



## Precision Alignment Stage

7 PRECISION ALIGNMENT STAGE 2014



302-2725 Rue Notre Dame  
Montreal, QC, H8S 2H3  
CANADA  
+1 (514) 452-4693  
sales@laserand.com



[www.laserand.com](http://www.laserand.com)

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Precision XXY Alignment Stage Character & Applications	P.04
Precision XXY Alignment Stage Structures and Lubrication System	P.05
Precision XXY Alignment Stage Manufacture Process	P.06
Precision XXY Alignment Stage Quick Menu	P.07~P.08
Precision XXY Alignment Stage Movement Theory	P.09~P.11
Precision XXY Alignment Stage Module Description	P.12

GAU05 Series Module P.13~P.22

	Standard Central Transmission / Driven Module	P.13~P.14
	Hi-Rigidity Side Transmission / Driven Module	P.15~P.18
	Hi-Rigidity Central Transmission / Driven Module	P.19~P.22


GAU06 Series Module P.23~P.24

	Standard Central Transmission / Driven & Drive Module	P.23~P.24
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GAU10 Series Module P.25~P.30

	Standard Central Transmission / Driven & Drive Module	P.25~P.26
	Hi-Rigidity Side Transmission / Driven & Drive Module	P.27~P.28
	Hi-Rigidity Central Transmission / Driven & Drive Module	P.29~P.30

GAU11 Series Module P.31~P.32






	Standard Central Transmission / Driven & Drive Module	P.31~P.32
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## GAU12 Series Module P.33~P.38



	Standard Central Transmission / Driven Module	P.33~P.34
	Hi-Rigidity Side Transmission / Driven Module	P.35~P.36
	Hi-Rigidity Central Transmission / Driven Module	P.37~P.38

## Precision XXY Alignment Stage Model Number Description P.39



## GAS00 Series Module P.40~P.48


	GAS00-100 Dimensions & Specifications	P.40
	GAS00-160 Dimensions & Specifications	P.41~P.44
	GAS00-190 Dimensions & Specifications	P.45
	GAS00-200 Dimensions & Specifications	P.46~P.47
	GAS00-250 Dimensions & Specifications	P.48

## GAS01 Series Module P.49~P.60

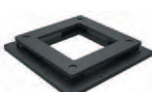
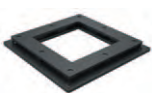
	GAS01-250 Dimensions & Specifications	P.49~P.54
	GAS01-350 Dimensions & Specifications	P.55~P.60

## GAS02 Series Module P.61~P.78

	GAS02-400 Dimensions & Specifications	P.61~P.66
	GAS02-500 Dimensions & Specifications	P.67~P.72

	GAS02-750 Dimensions & Specifications	P.73~P.78
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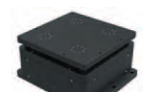

## GAS03 Series Module P.79~P.90

	GAS03-1000 Dimensions & Specifications	P.79~P.84
	GAS03-1500 Dimensions & Specifications	P.85~P.90

## Special Designed XXY Alignment Stages P.91~P.93

	Electric-magnetic XXY Alignment Stage Dimensions & Specifications	P.91~P.92
	Pneumatic XXY Alignment Stage Dimensions & Specifications	P.93

## Elevator Structure Design P.94~P.95

	GAZS350 Dimensions & Specifications	P.94
	GAZS600 Dimensions & Specifications	P.95

Precision XXY Alignment Stage, Motor, and Driver reference data	P.96~P.103
Precision XXY Alignment Stage Electrical Specifications	P.104~P.108
Precision XXY Alignment Stage Testing Method	P.109~P.110

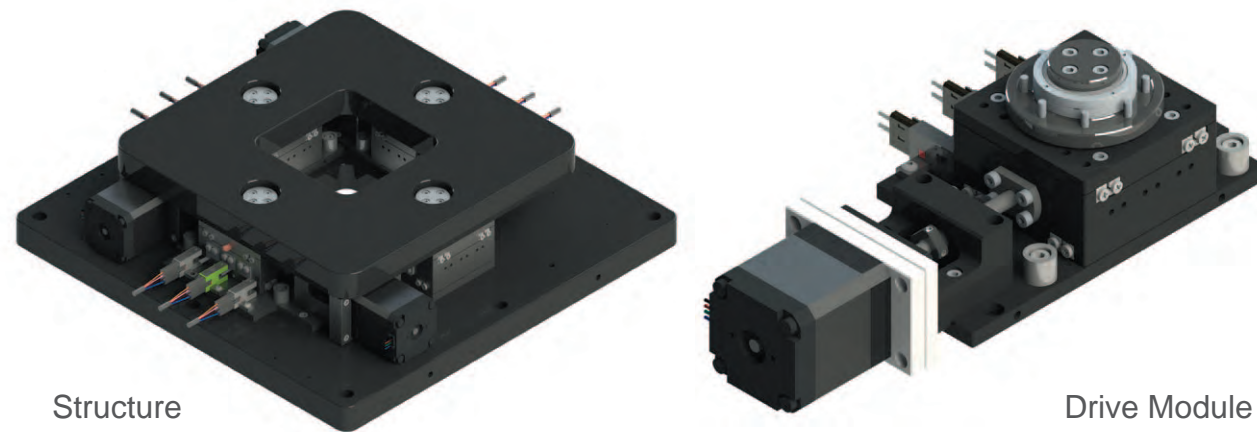
## Motor replacement (disassembly &amp; assembly) description P.111~P.116

Precision XXY Alignment Stage CC Series Motor replacement (disassembly & assembly) description	P.111~P.113
Precision XXY Alignment Stage RS、RC Series Motor replacement (disassembly & assembly) description	P.114~P.116
Precision XXY Alignment Stage Feeding Calculation	P.117~P.122
Precision XXY Alignment Stage Feeding Calculation Examples	P.123
Precision XXY Alignment Stage Cryogenic Treatment Description	P.124

## Cautions

- ※ Failure that occurs when the product is not used in specified environment and method.
- ※ To improve products and services, we reserve the right to change product engineering. The catalog is subject to addition, revision and deletion without notice. Please visit GMT website: [www.gmtlinear.com](http://www.gmtlinear.com), or contact the regional sales for the latest information.

## Character / Applications



### Character

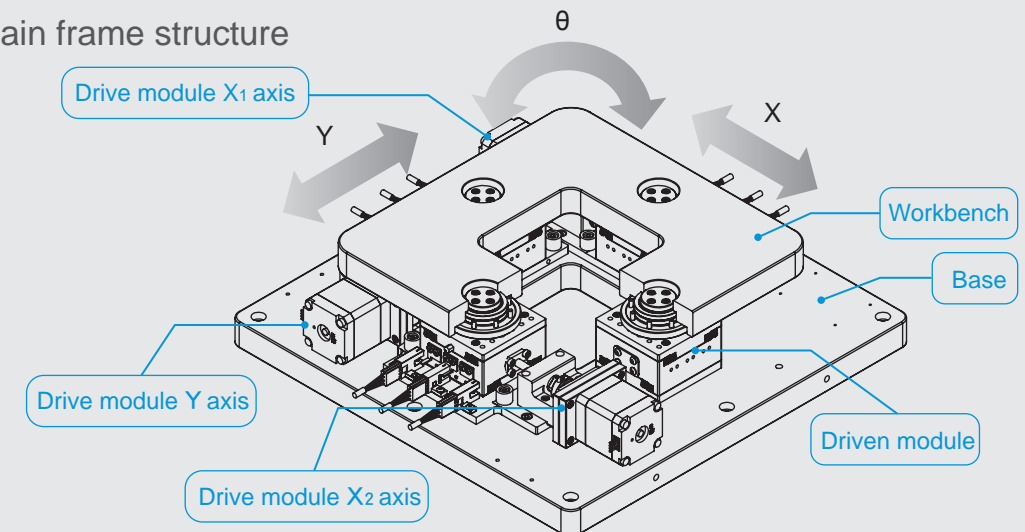
- ◆ The Ultra-thin stage design has been applied innovative module structure.  
Four planes between the base and workbench have been equipped the unique module formed by the XYθ-axis positioning stage assembly with special cross roller bearing, to perform an ultra-thin structure character.
- ◆ High Rigidity & Accuracy  
Pre-load setup applied to the crossed roller bearing of the module to achieve its high rigidity and high accuracy structure.
- ◆ Hollow structure  
Fit to be applied to optical inspection devices or induction purpose with its wing-free design by applied the XYθ-module structure.
- ◆ Lubrication system  
Longer usage life and reliable accuracy of the Alignment Stage itself is guaranteed by lubrication.
- ◆ system integrated slide rails well-filled lubricant.  
Workbench dimension range from 100x100mm to 1500x1500mm available for selections formed by driven module quantity to meet higher accuracy or loading needs.

### Applications

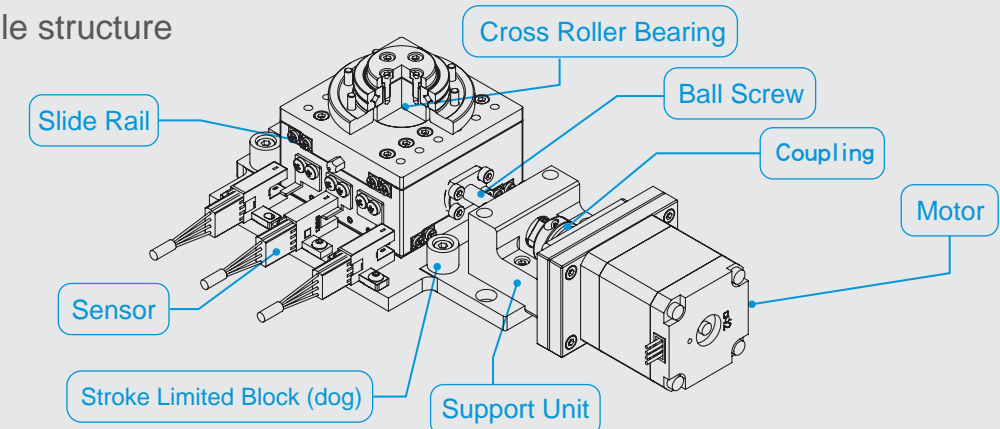
- |                                    |  |
|------------------------------------|--|
| ◆ Panel Lamination Machinery       | ◆ Glass Angular Cutting & Grinding Equipment |
| ◆ Panel Film Laminating Machine    | ◆ Wafer Alignment Equipment                  |
| ◆ Print Screen and 3D Screen Print | ◆ P.C.D. Exposure Equipment                  |
| ◆ Software Cutting Equipment       | ◆ Semi-conductor Equipment                   |

## Structures and Lubrication System

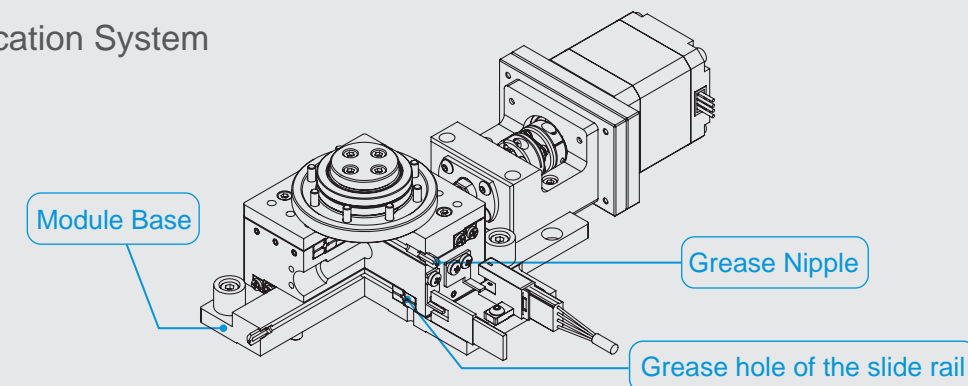
### Main frame structure



### Module structure



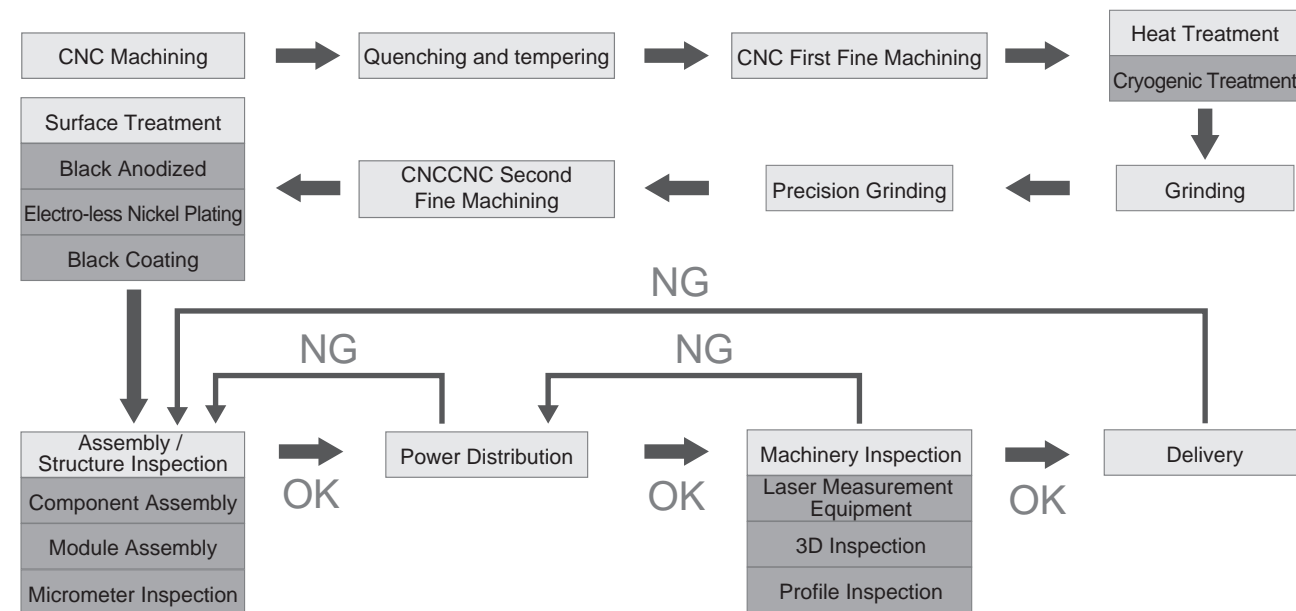
### Lubrication System



※ The system works to keep the slide rail and retainers been lubricated by the lubricant injected into structure through the grease nipple, and flow to the grease holes of two sides of the slide rails through T-shape channel.



## Manufacture Process



## GAS00 Quick Menu

Model no.		GAS00								
Specifications		100HC	160CC	160HC	160HAC	160LC	190HC	200CC	200HC	250HC
Type		Heavy Loading Type (Central Transmission)	Standard Type (Central Transmission)	Heavy Loading Type (Central Transmission)	Heavy Loading Type (Central Transmission)	Lightweight Type (Central Transmission)	Heavy Loading Type (Central Transmission)	Standard Type (Central Transmission)	Heavy Loading Type (Central Transmission)	Heavy Loading Type (Central Transmission)
Workbench Size(mm)		100x100	160x160				190x190	200x200		250x250
Base Size(mm)		120x120	170x170				210x210	350x350		350x350
Travel Stroke(mm)		±2x±2	±3x±3				±4x±4	±8x±8		±5x±5
Move Angle(θ)		±2°	±2°				±3°	±3°		±2°
Height(mm)		35	45	45	50	50	65	60		90
Loading(Kgf)		5	20	30	50	30	65	110	130	120
Frame Weight(Kg)		2	6	6	6	6	12	35	25	27
Workbench Material		Carbon Steel								
Workbench Surface Treatment		Black finished								
Base Material		Carbon Steel	Dura Aluminum							
Base Surface Trea		Black finished	Black anodized							
Repeatability Accuracy (um)	UP	±1								
	P	±5								
	N	±15								

## GAS01 Quick Menu

Model no.		GAS01					
Specifications		250CC	250RS	250RC	350CC	350RS	350RC
Type		Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)	Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)
Workbench Size(mm)		250x250			350x350		
Base Size(mm)		350x350			450x450		
Travel Stroke(mm)		±5×±5			±5×±5		
Move Angle(θ)		±3°			±2°		
Height(mm)		90		98	90		98
Loading(Kgf)		80	100	100	80	100	100
Frame Weight(Kg)		18	19	23	23	26	30
Workbench Material		Dura Aluminum					
Workbench Surface Treatment		Black anodized					
Base Material		Dura Aluminum					
Base Surface Treatment		Black anodized					
Repeatability Accuracy(um)	UP	±1					
	P	±5					
	N	±15					

※上述行程為對位平台不旋轉角度時可行走之距離因應表述角度選用調整，實際極限可能較大請注意。

※上述角度為對位平台在home點時，可旋轉之角度。

※極限行程限制塊為保護裝置，請勿做為尺寸定位使用。

## GAS02 Quick Menu

Model no.	GAS02								
Specifications	400CC	400RS	400RC	500CC	500RS	500RC	750CC	750RS	750RC
Type	Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)	Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)	Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)
Workbench Size(mm)	400x400			500x500			750x750		
Base Size(mm)	500x500			600x600			850x850		
Travel Stroke(mm)	±10x±10			±10x±10			±10x±10		
Move Angle(θ)	±3.5°			±2.5°			±1.5°		
Height(mm)	110		119.8	110		119.8	110		119.8
Loading(Kgf)	105	130	130	105	130	130	105	130	130
Frame Weight(Kg)	37	42	46	44	51	53	63	70	72
Workbench Material	Dura Aluminum								
Workbench Surface Treatment	Black anodized								
Base Material	Dura Aluminum								
Base Surface Treatment	Black anodized								
Repeatability Accuracy(um)	UP	±1							
	P	±5							
	N	±15							

## GAS03 Quick Menu

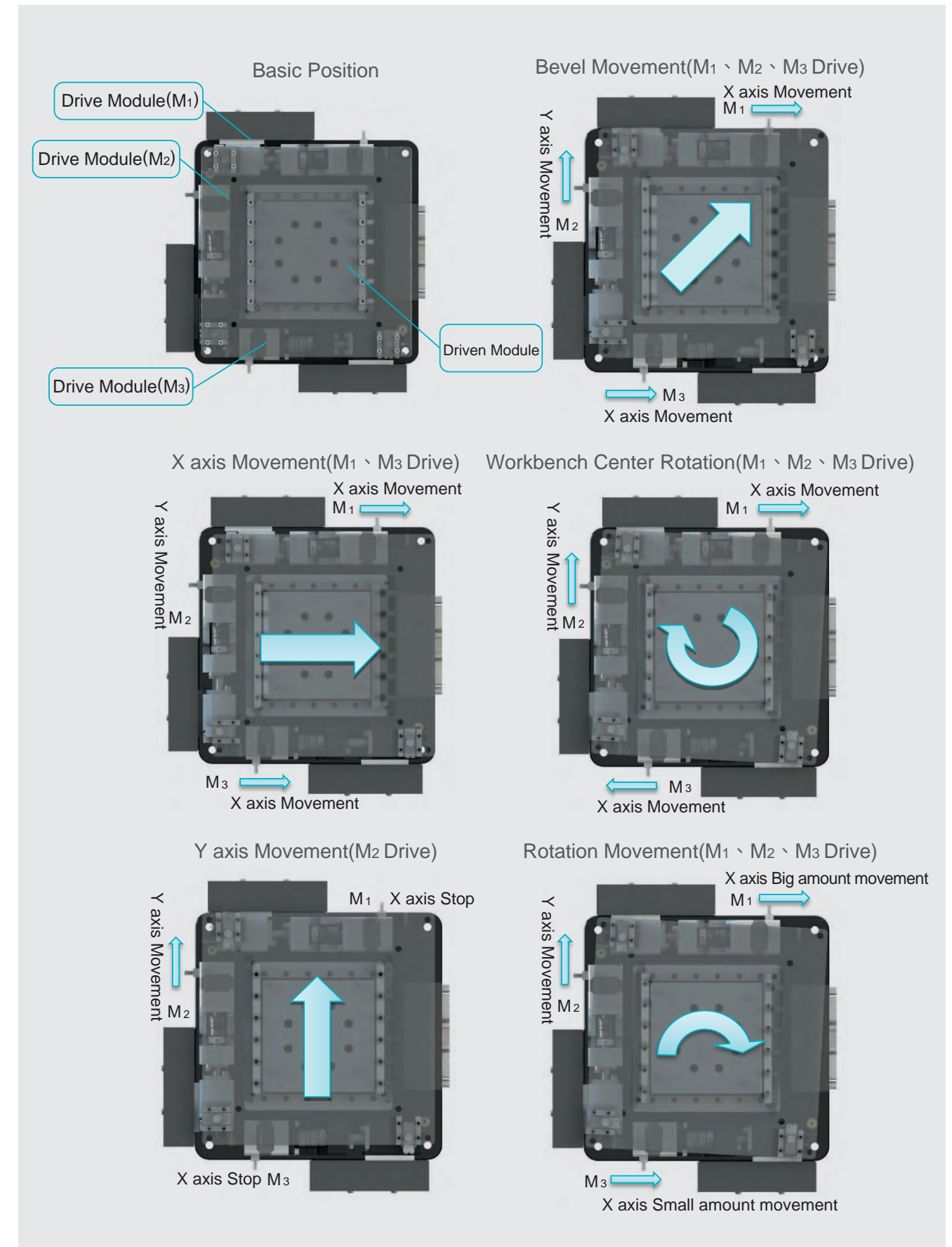
Model no.	GAS03					
Specifications	1000CC	1000RS	1000RC	1500CC	1500RS	1500RC
Type	Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)	Standard Type (Central Transmission)	Hi-Rigidity (Side Transmission)	Hi-Rigidity (Central Transmission)
Workbench Size(mm)	1000x1000			1500x1500		
Base Size(mm)	1200x1200			1700x1700		
Travel Stroke(mm)	±15x±15			±15x±15		
Move Angle(θ)	±2°			±1°		
Height(mm)	160		178	160		178
Loading(Kgf)	160	200	200	160	200	200
Frame Weight(Kg)	223	247	274	440	462	520
Workbench Material	Dura Aluminum					
Workbench Surface Treatment	Black anodized					
Base Material	Dura Aluminum					
Base Surface Treatment	Black anodized					
Repeatability Accuracy(um)	UP	±1				
	P	±5				
	N	±15				

※上述行程為對位平台不旋轉角度時可行走之距離因應表述角度選用調整，實際極限可能較大請注意。

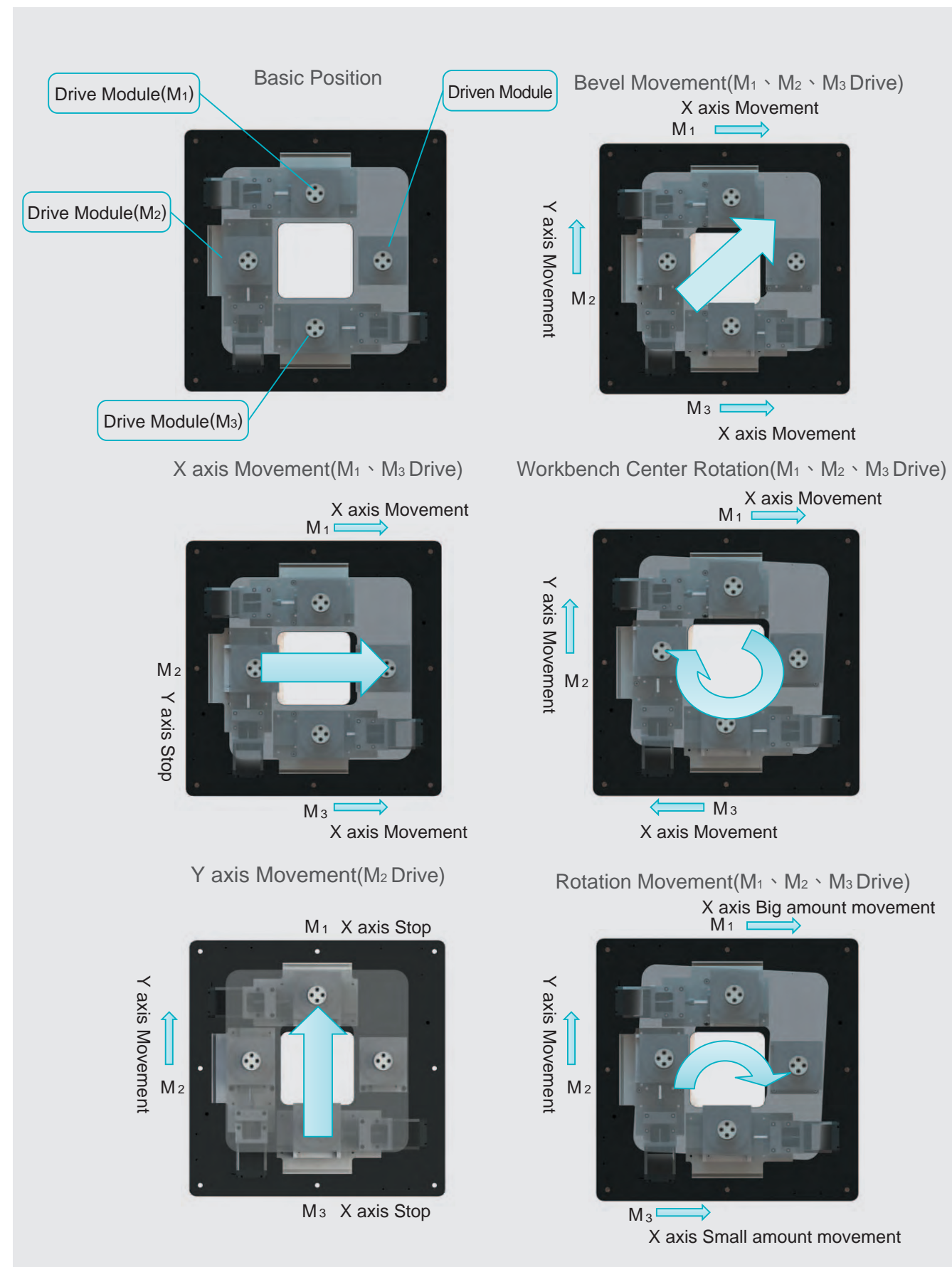
※上述角度為對位平台在home點時，可旋轉之角度。

※極限行程限制塊為保護裝置，請勿做為尺寸定位使用。

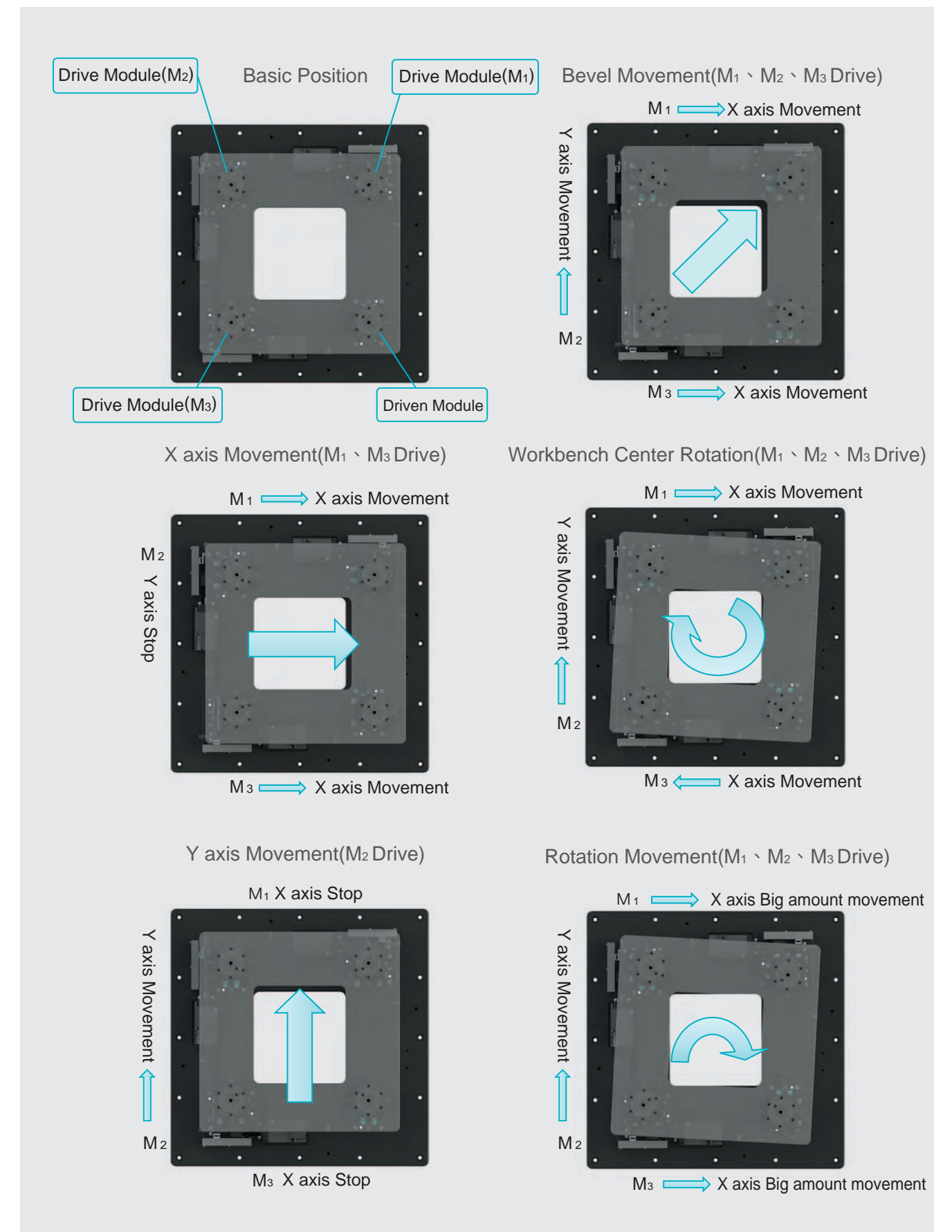
## GAS00 Central Transmission Theory



## GAS01/GAS02/GAS03 Central Transmission Theory



## GAS01/GAS02/GAS03 Side Transmission Theory





## Precision XXY Alignment Stage

### Model number description

GAU05		CC		D		P		X	
Model		Type		Transmission type		Accuracy grade		Motor type	
GAU05		CC	Standard Central Transmission	D	Drive	UP	Super Precision	X	NIL
GAU06		RC	Hi-Rigidity Central Transmission	S	Driven	P	Precision		
GAU10		RS	Hi-Rigidity Side Transmission			N	Standard		
GAU11		AC	Hi-Rigidity Central Transmission Ø8-P1						
GAU12		AS	Hi-Rigidity Side Transmission Ø8-P1						
		BC	Hi-Rigidity Central Transmission Ø12-P2						
		BS	Hi-Rigidity Side Transmission Ø12-P2						

※Ball screw diameter segmentation is defined in GAU05 Hi-Rigidity series as specified types of AC, AS, BC, BS only. For more details, please refer to P.13 ~ P. 22.

### Module model numbers

GAU05	—	CCS
		CCD
		RSS
		ASD
		RSD
		BSD
		RCS
		ACD
		RCD
		BCD

GAU06	—	CCS
		CCD

GAU10	—	CCS
		CCD
		RSS
		RSD
		RCS
		RCD

GAU11	—	CCS
		CCD

GAU12	—	CCS
		CCD
		RSS
		RSD
		RCS
		RCD

## GAU05-CCS

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

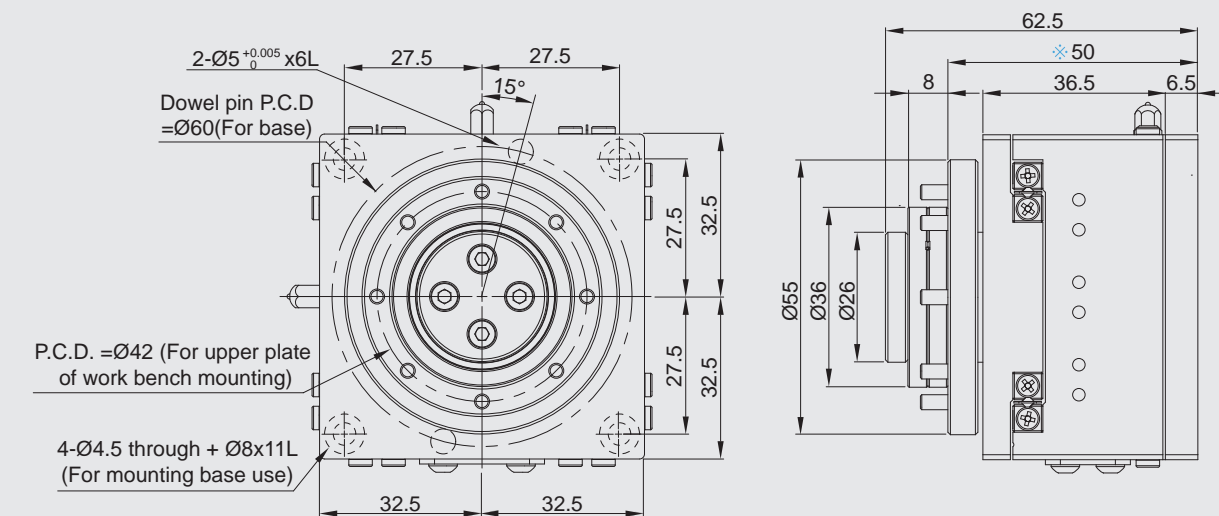
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU05-CCS	8-M3x0.5x7.5 L	$\varnothing 36^{+0.025}_0$ x8 L	$\varnothing 30$ through	$\varnothing 58 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-CCS	4-M4x0.7x8 L	$2-\varnothing 5^{+0.005}_0$ x8 L	$2-\varnothing 5^{+0.003}_0$ x13 L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-CCS
Travel stroke (mm)	$\pm 5 \times \pm 5$
Module material	Dura aluminum
Module height (mm)	62.5
Main frame weight (kg)	1
Accuracy	Load capacity $F_s$ (kgf)
	64

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



## GAU05-CCD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

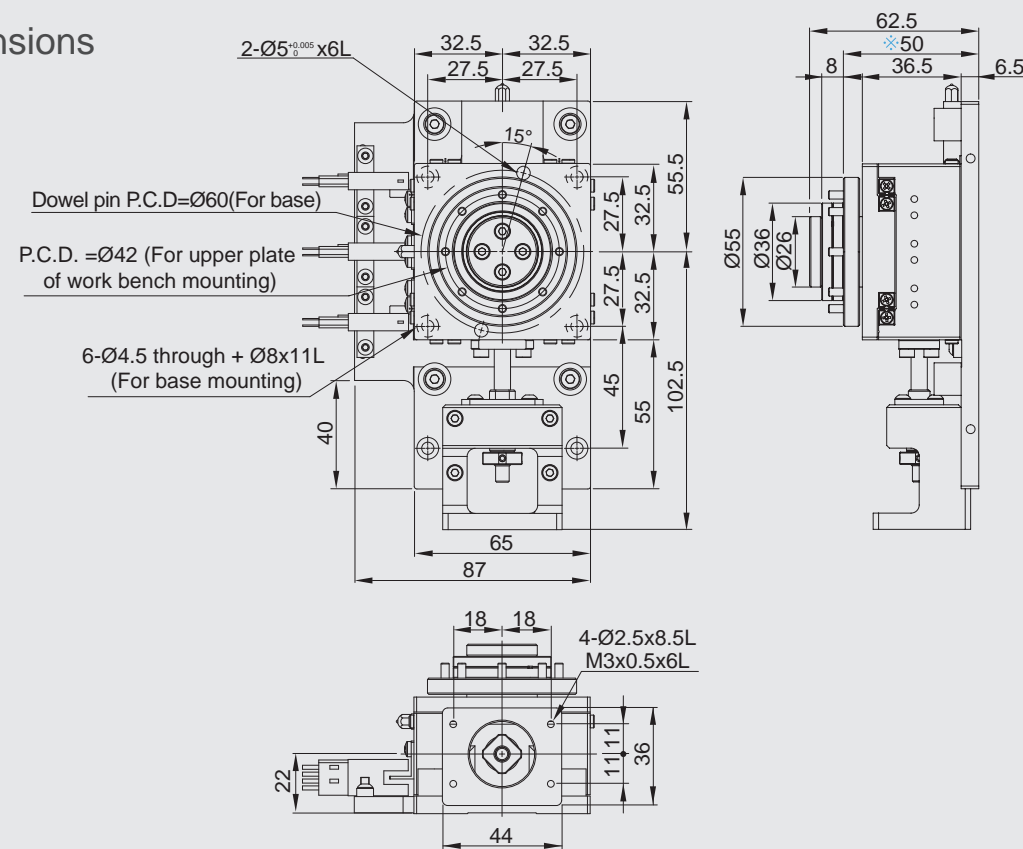
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU05-CCD	8-M3x0.5x7.5 L	$\varnothing 36^{+0.025}_{-0}$ x8 L	$\varnothing 30$ 通孔	$\varnothing 58 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-CCD	4-M4x0.7x8 L	2- $\varnothing 5^{+0.005}_{-0}$ x8 L	2- $\varnothing 5^{+0.003}_{-0}$ x13 L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU05-CCD	
Speci- fications	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Dura aluminum
	Module height (mm)	62.5
	Main frame weight (kg)	1
Accuracy	Load capacity (kgf)	64
	Ball screw specification	$\varnothing 6$ -P1
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU05-RSS

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

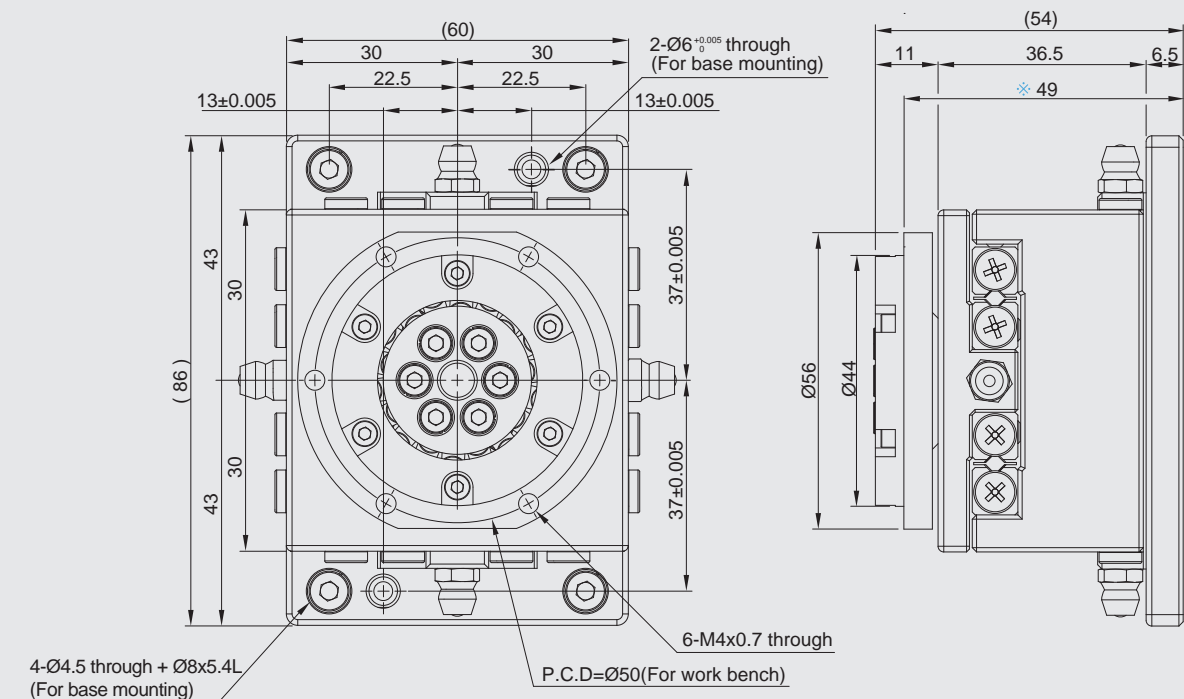
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-RSS	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_{-0}$ x6 L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-RSS	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_{-0}$ x10 L	2- $\varnothing 6^{+0.003}_{-0}$ x15 L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU05-RSS	
Speci- fications	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	54
	Main frame weight (kg)	1.5
Accuracy	Load capacity Fs (kgf)	117

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU05-ASD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

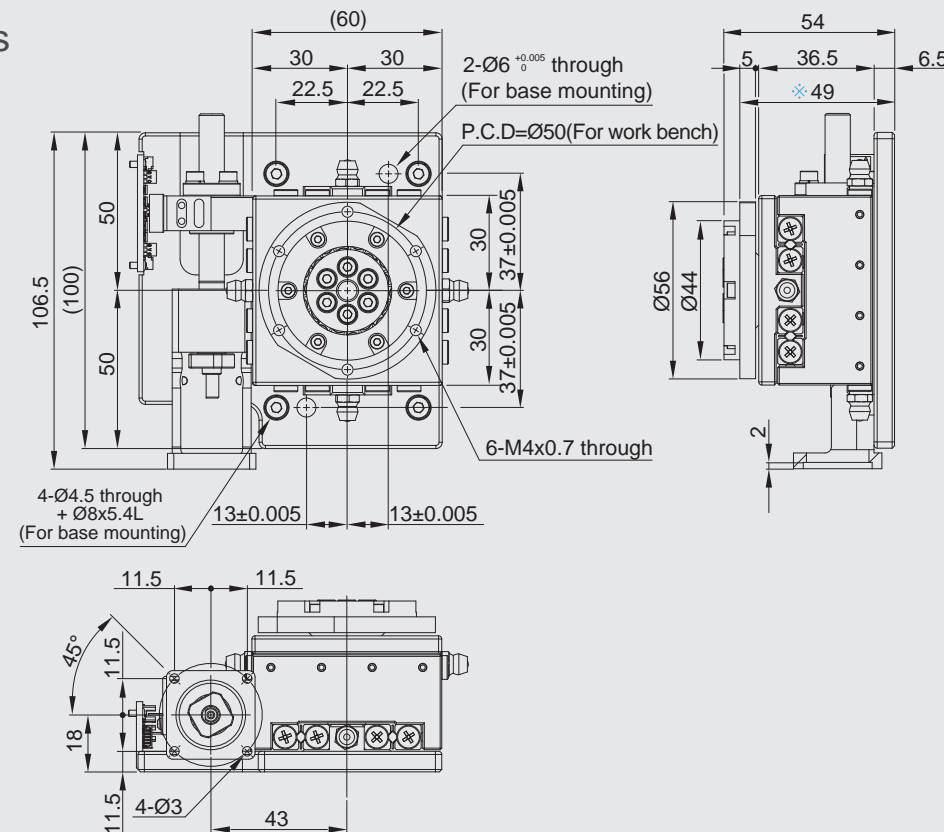
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-ASD	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_{-0} \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-ASD	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_{-0} \times 10$ L	2- $\varnothing 6^{+0.003}_{-0.003} \times 15$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-ASD	
Specifi-cations	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	54
	Main frame weight (kg)	2
Accuracy	Load capacity (kgf)	117
	Ball screw specification	$\varnothing 8$ -P1
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU05-RSD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

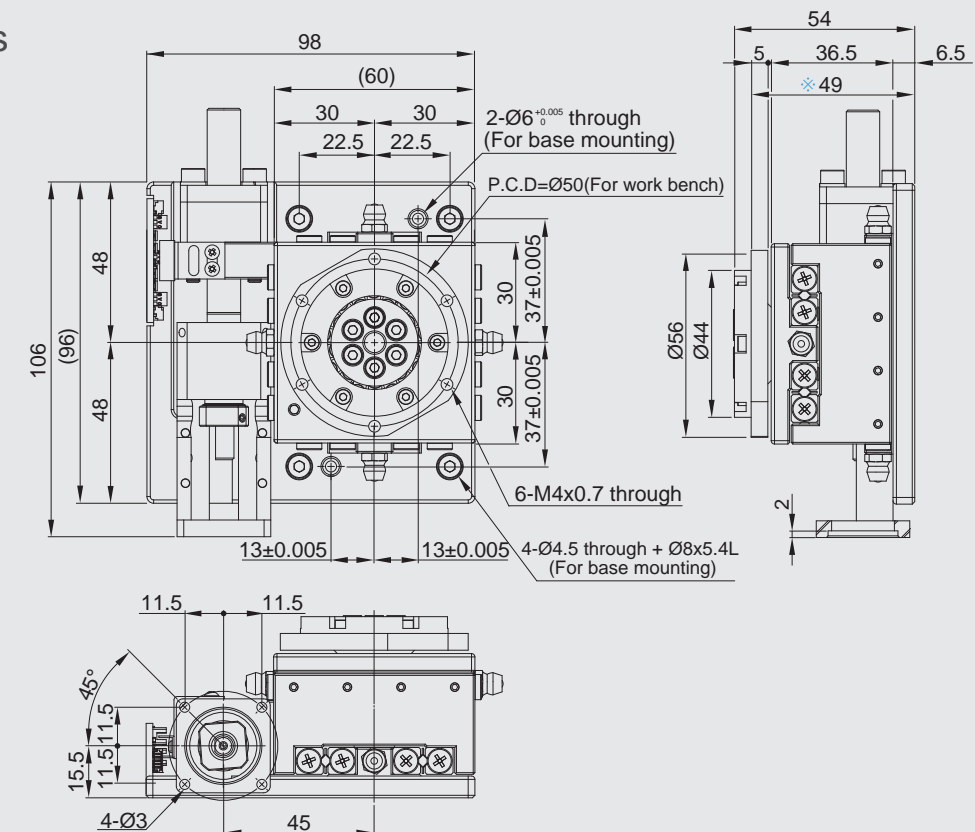
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-RSD	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_{-0} \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-RSD	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_{-0} \times 10$ L	2- $\varnothing 6^{+0.003}_{-0.003} \times 15$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-RSD	
Specifi-cations	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	54
	Main frame weight (kg)	2
Accuracy	Load capacity (kgf)	117
	Ball screw specification	$\varnothing 10$ -P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU05-BSD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

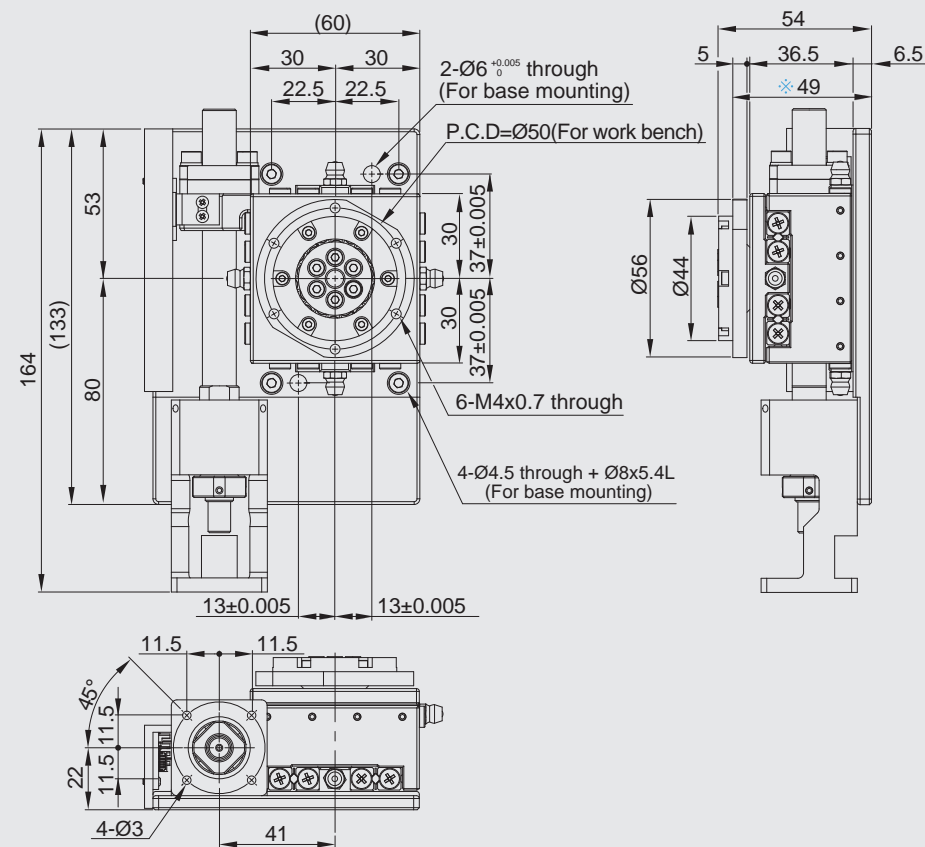
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-BSD	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_0 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-BSD	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_0 \times 10$ L	2- $\varnothing 6^{0}_{-0.003} \times 15$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-BSD	
Specifications	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	54
	Main frame weight (kg)	2
Accuracy	Load capacity (kgf)	117
	Ball screw specification	$\varnothing 12$ -P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Roller ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU05-RCS

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

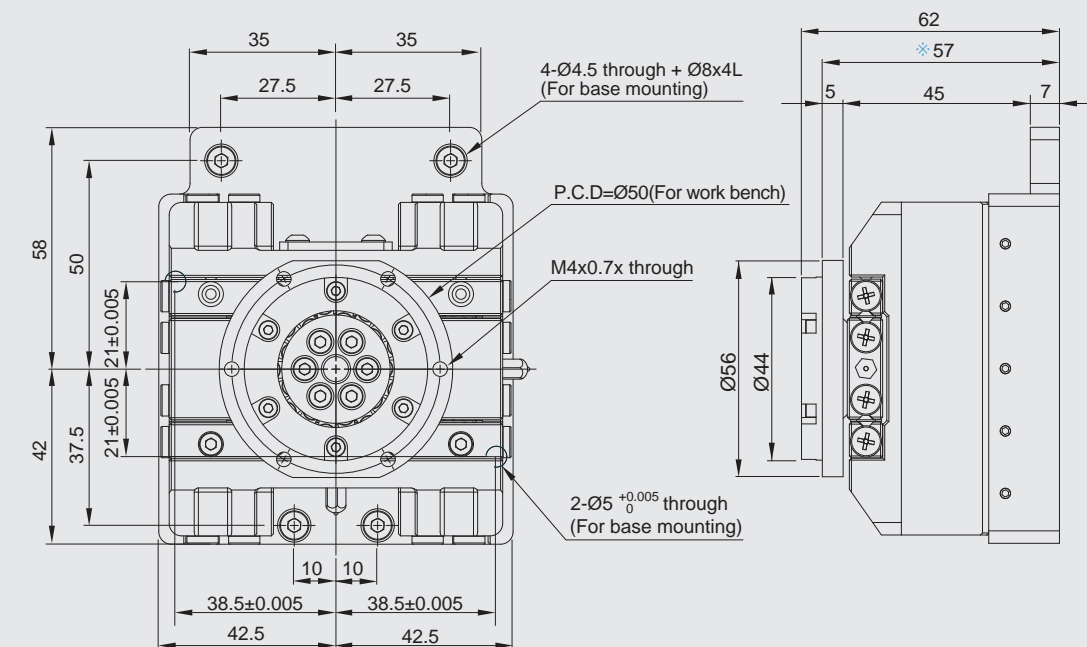
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-RCS	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_0 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-RCS	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_0 \times 10$ L	2- $\varnothing 6^{0}_{-0.003} \times 15$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-RCS	
Specifications	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	62
	Main frame weight (kg)	2.3
Accuracy	Load capacity Fs (kgf)	155

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



## GAU05-ACD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

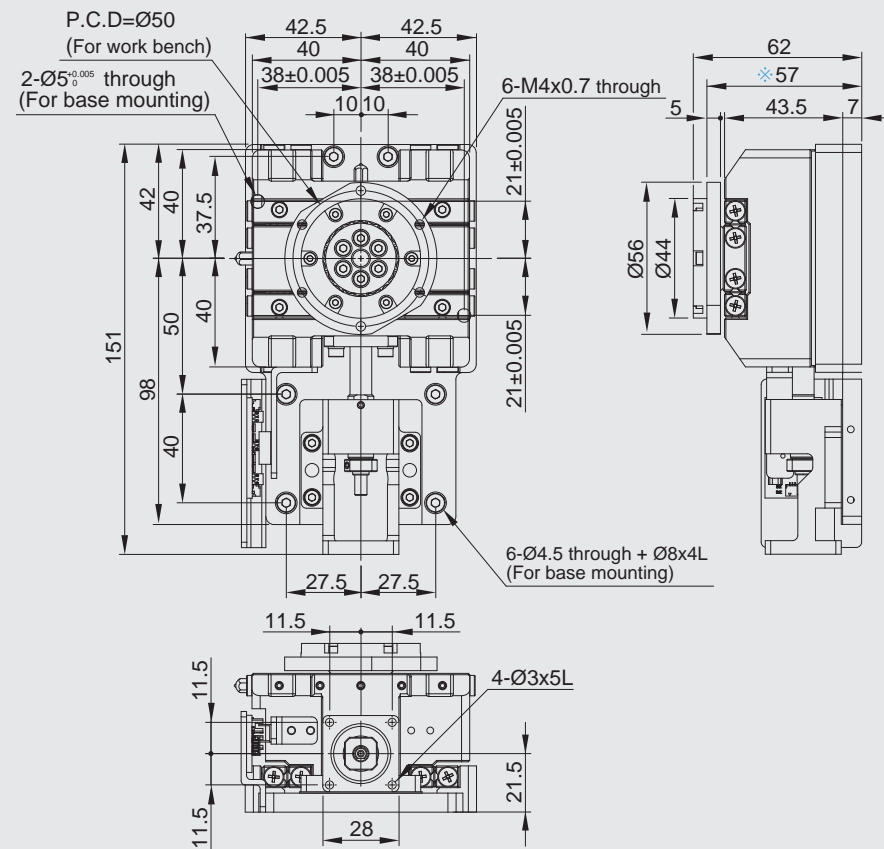
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-ACD	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_{-0} \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-ACD	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_{-0} \times 10$ L	2- $\varnothing 6^{+0.003}_{-0} \times 15$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-ACD	
Specifi-cations	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	62
	Main frame weight (kg)	3
Accuracy	Load capacity (kgf)	155
	Ball screw specification	$\varnothing 8$ -P1
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU05-RCD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

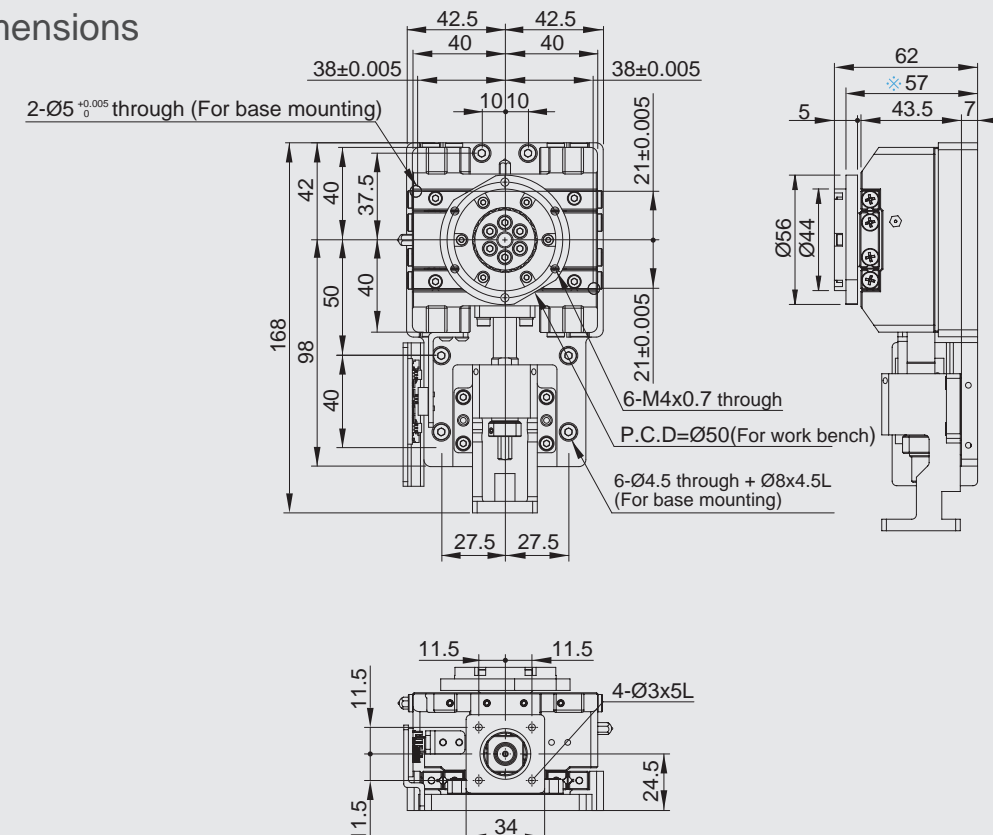
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-RCD	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_{-0} \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-RCD	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_{-0} \times 10$ L	2- $\varnothing 6^{+0.003}_{-0} \times 15$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.	GAU05-RCD	
Specifi-cations	Travel stroke (mm)	$\pm 5 \times \pm 5$
	Module material	Carbon steel
	Module height (mm)	62
	Main frame weight (kg)	3
Accuracy	Load capacity (kgf)	155
	Ball screw specification	$\varnothing 10$ -P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



## GAU05-BCD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

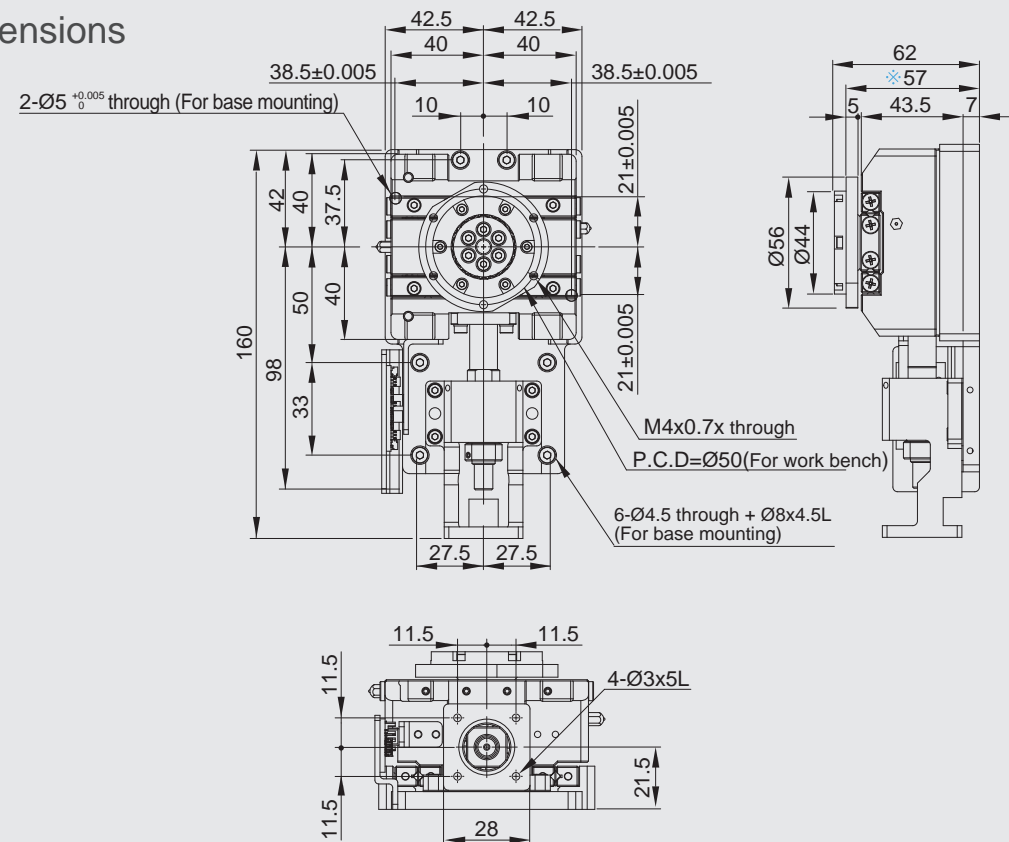
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU05-BCD	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 58 \times 5$ L	$\varnothing 44^{+0.03}_0 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU05-BCD	4-M4x0.7x10 L	2- $\varnothing 6^{+0.005}_0 \times 10$ L	2- $\varnothing 6^{+0.003}_0 \times 15$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU05-BCD
Travel stroke (mm)	$\pm 5 \times \pm 5$
Module material	Carbon steel
Module height (mm)	62
Main frame weight (kg)	3
Load capacity (kgf)	155
Ball screw specification	$\varnothing 12$ -P2
UP	Ground ball screw
P	Ground ball screw
N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU06-CCS

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

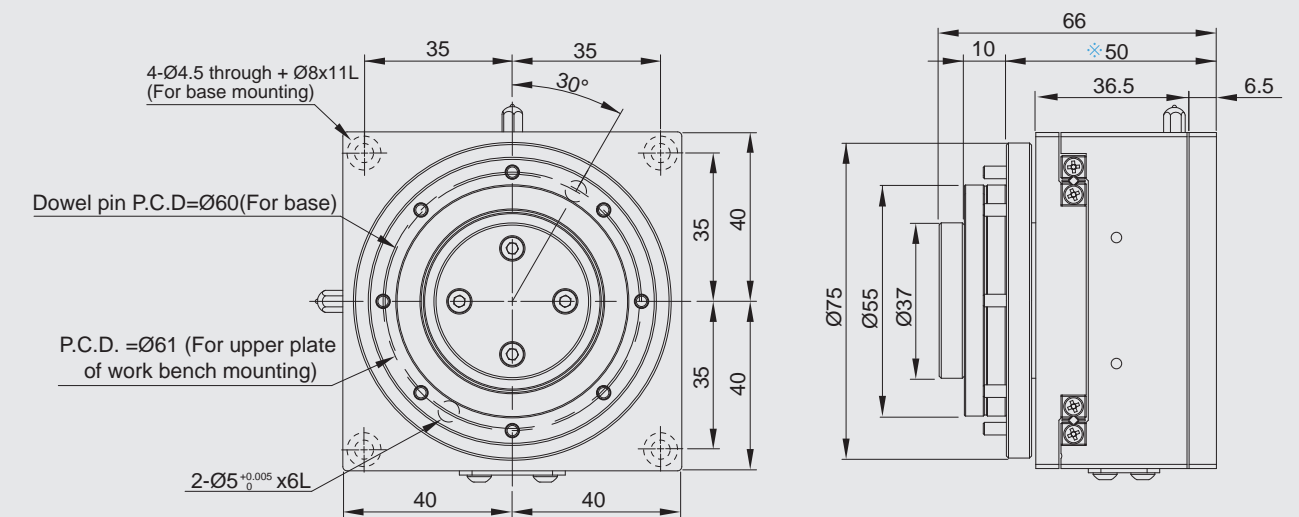
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU06-CCS	8-M3x0.5x7.5 L	$\varnothing 55^{+0.025}_0 \times 10$ L	$\varnothing 44$ through	$\varnothing 76 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU06-CCS	4-M4x0.7x8 L	2- $\varnothing 5^{+0.005}_0 \times 8$ L	2- $\varnothing 5^{+0.003}_0 \times 13$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU06-CCS
Travel stroke (mm)	$\pm 5 \times \pm 5$
Module material	Dura aluminum
Module height (mm)	66
Main frame weight (kg)	1.5
Load capacity Fs (kgf)	74

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU06-CCD

Travel stroke  $\pm 5 \times \pm 5$

Work bench machining dimensions

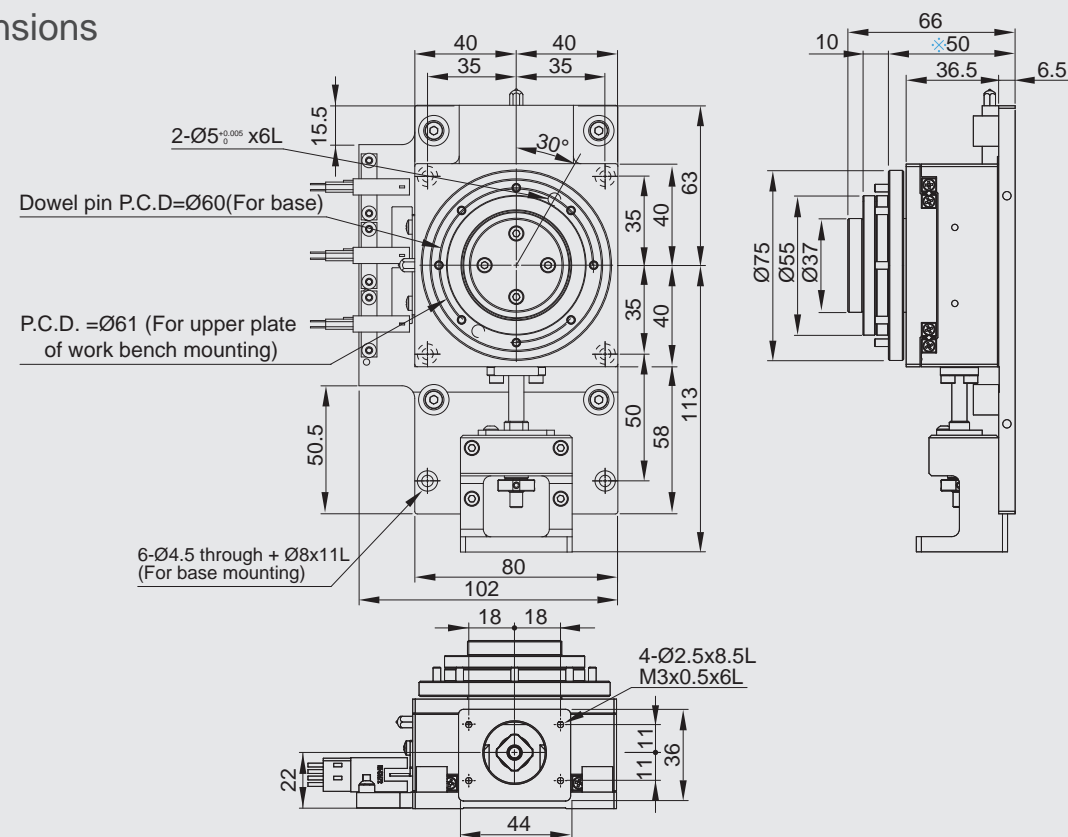
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU06-CCD	8-M3x0.5x7.5 L	$\varnothing 55^{+0.025}_0 \times 10$ L	$\varnothing 44$ through	$\varnothing 76 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU06-CCD	4-M4x0.7x8 L	$2-\varnothing 5^{+0.005}_0 \times 8$ L	$2-\varnothing 5^{+0.003}_0 \times 13$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU06-CCD
Travel stroke (mm)	$\pm 5 \times \pm 5$
Module material	Dura aluminum
Module height (mm)	66
Main frame weight (kg)	1.5
Load capacity (kgf)	74
Ball screw specification	$\varnothing 6$ -P1
UP	Ground ball screw
P	Ground ball screw
N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU10-CCS

Travel stroke  $\pm 10 \times \pm 10$

Work bench machining dimensions

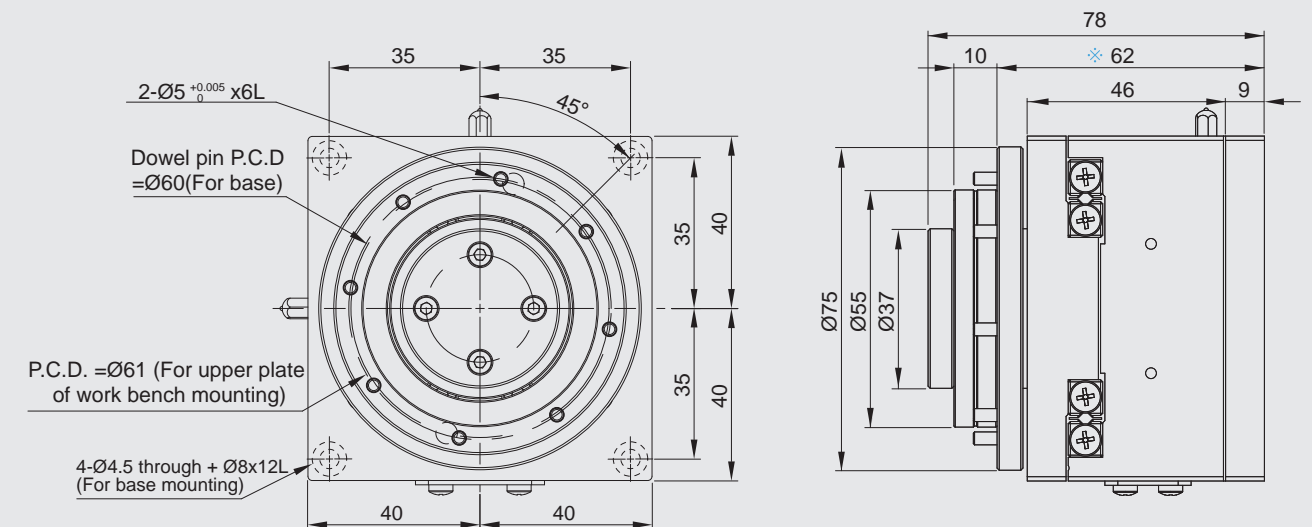
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU06-CCS	8-M3x0.5x7.5 L	$\varnothing 55^{+0.025}_0 \times 10$ L	$\varnothing 44$ through	$\varnothing 76 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU06-CCS	4-M4x0.7x8 L	$2-\varnothing 5^{+0.005}_0 \times 8$ L	$2-\varnothing 5^{+0.003}_0 \times 13$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU10-CCS
Travel stroke (mm)	$\pm 10 \times \pm 10$
Module material	Dura aluminum
Module height (mm)	78
Main frame weight (kg)	2
Load capacity Fs (kgf)	155

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU10-CCD

Travel stroke  $\pm 10 \times \pm 10$

Work bench machining dimensions

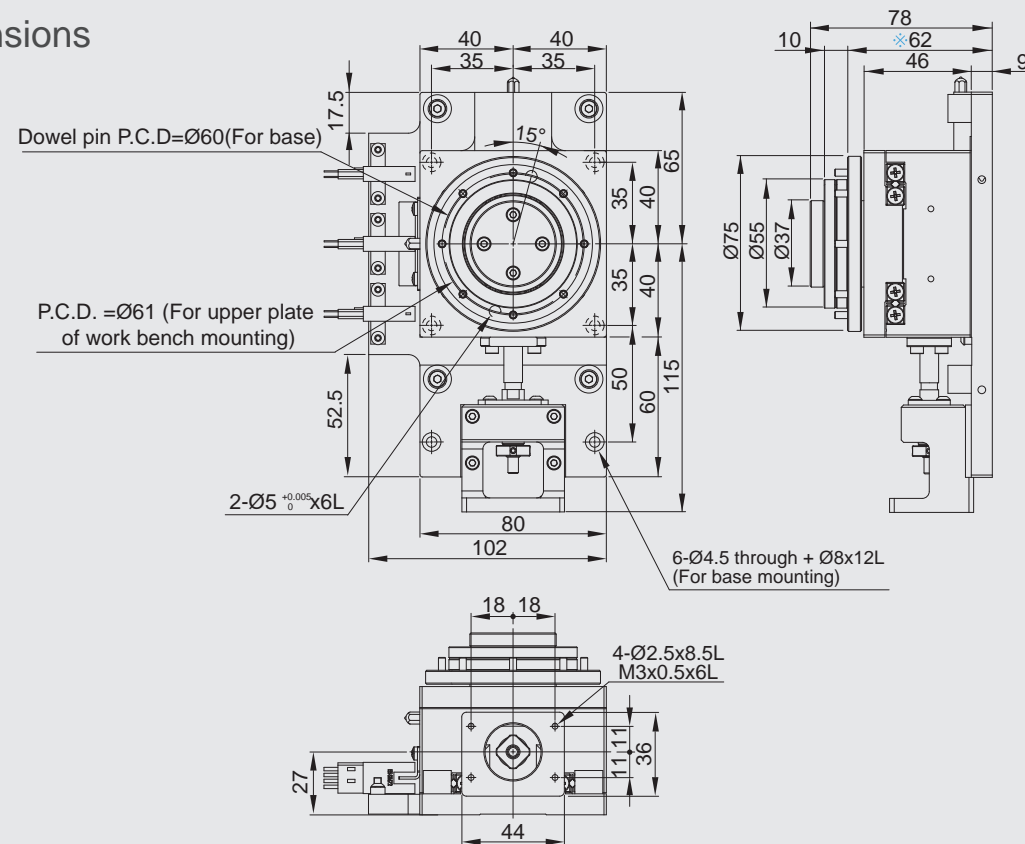
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU010-CCD	8-M3x0.5x7.5 L	$\varnothing 55^{+0.025}_0 \times 10$ L	$\varnothing 44$ through	$\varnothing 76 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU010-CCD	4-M4x0.7x8 L	2- $\varnothing 5^{+0.005}_0 \times 8$ L	2- $\varnothing 5^{+0.005}_0 \times 13$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.		GAU10-CCD
Speci- fications	Travel stroke (mm)	$\pm 10 \times \pm 10$
	Module material	Dura aluminum
	Module height (mm)	78
	Main frame weight (kg)	2
Accuracy	Load capacity (kgf)	155
	Ball screw specification	$\varnothing 8$ -P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

## GAU10-RSS

Travel stroke  $\pm 10 \times \pm 10$

Work bench machining dimensions

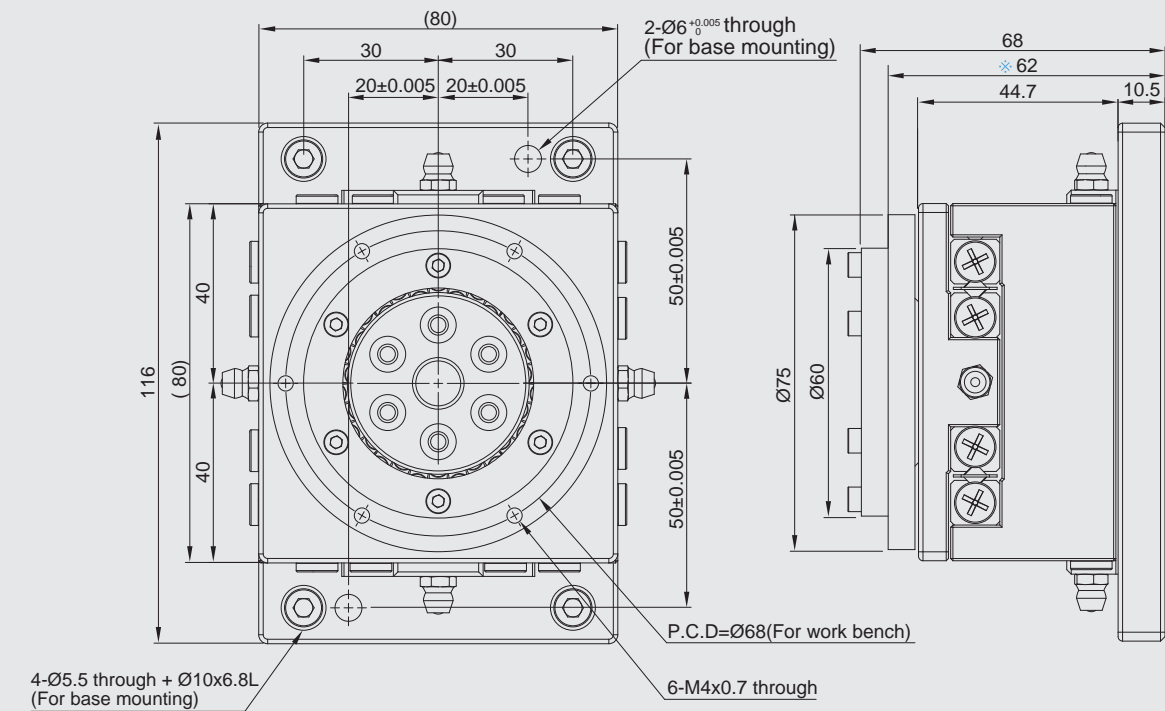
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU10-RSS	6- $\varnothing 4.5$ through $\varnothing 8 \times 4.4$ L	$\varnothing 76 \times 6$ L	$\varnothing 60^{+0.03}_0 \times 10$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU10-RSS	4-M5x0.8x12.5 L	2- $\varnothing 6^{+0.005}_0 \times 10$ L	2- $\varnothing 6^{+0.005}_0 \times 20$ L



### Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.		GAU10-RSS
Speci- fications	Travel stroke (mm)	$\pm 10 \times \pm 10$
	Module material	Carbon steel
	Module height (mm)	68
	Main frame weight (kg)	3
Accuracy	Load capacity $F_s$ (kgf)	159

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



## GAU10-RSD

Travel stroke  $\pm 10 \times \pm 10$

### Work bench machining dimensions

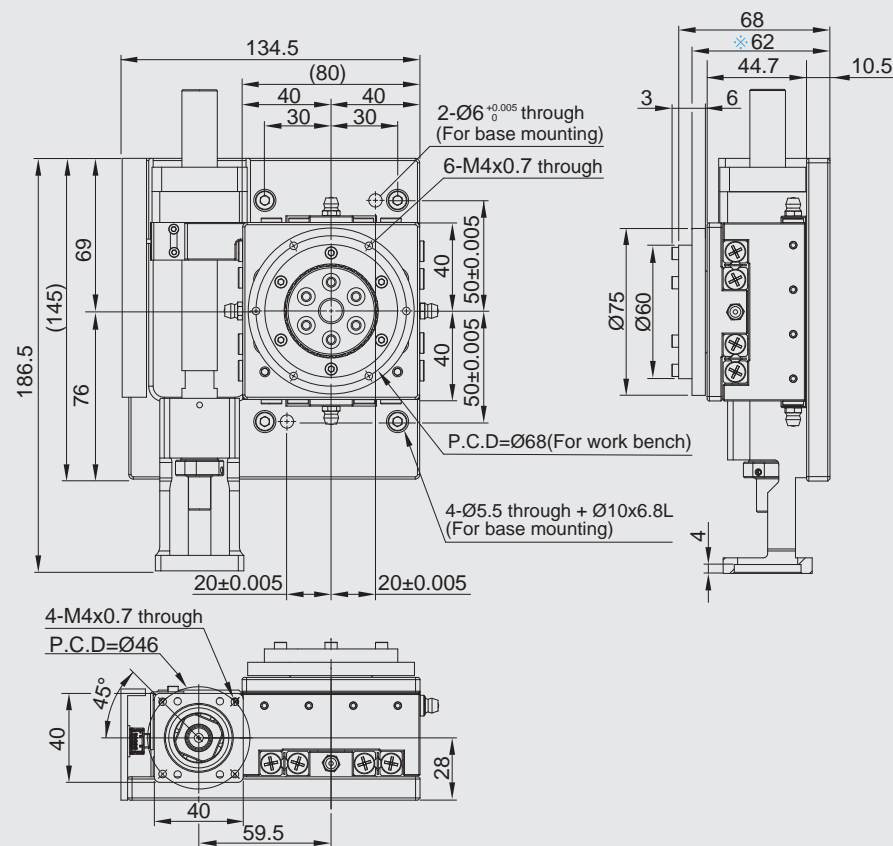
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU10-RSD	6-Ø4.5 through Ø8x4.4 L	Ø76x6 L	Ø60 <sup>+0.03</sup> <sub>0</sub> x10 L

### Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU10-RSD	4-M5x0.8x12.5 L	2- $\varnothing 6^{+0.005}_0$ x10 L	2- $\varnothing 6^{0}_{0.003}$ x20 L



## Dimensions



- ✧ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.		GAU10-RSD
Specifi- cations	Travel stroke (mm)	±10×±10
	Module material	Carbon steel
	Module height (mm)	58
	Main frame weight (kg)	8
Accuracy	Load capacity (kgf)	159
	Ball screw specification	ø16-P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU10-RCS

Travel stroke  $\pm 10 \times \pm 10$

### Work bench machining dimensions

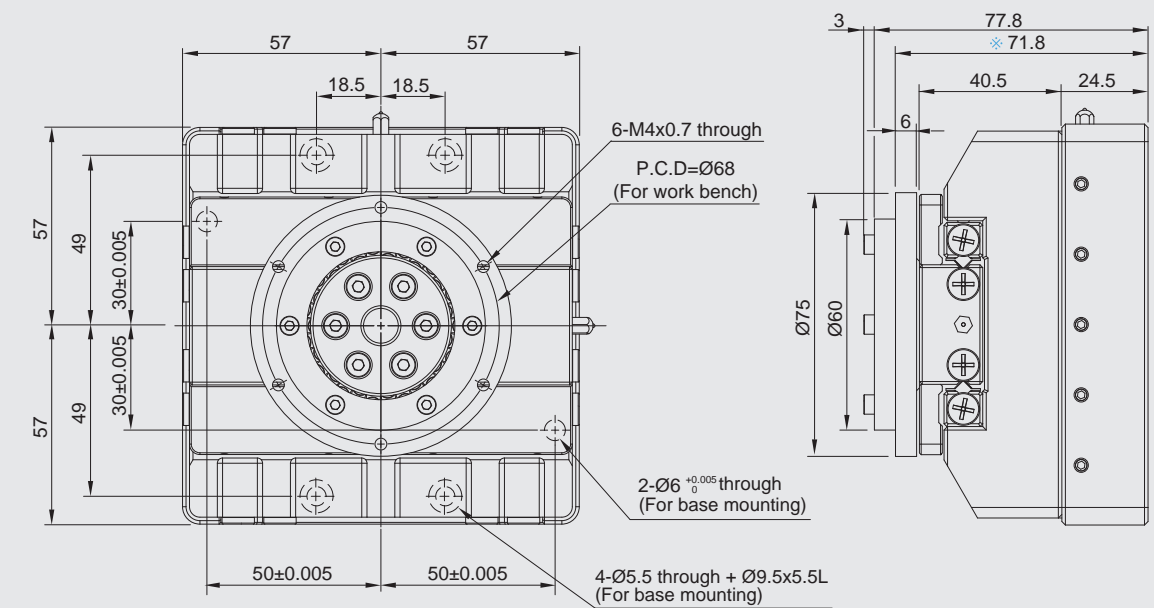
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU10-RCS	6-Ø4.5 through Ø8x4.4 L	Ø76x6 L	Ø60 <sup>+0.03</sup> <sub>0</sub> x10 L

### Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU10-RCS	4-M5x0.8x12.5 L	2-Ø6 <sup>+0.005</sup> <sub>0</sub> x10 L	2-Ø6 <sup>0</sup> <sub>-0.003</sub> x20



## Dimensions



✧ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.		GAU10-RCS
Specifi- cations	Travel stroke (mm)	±10x±10
	Module material	Carbon steel
	Module height (mm)	77.8
	Main frame weight (kg)	5.7
Accuracy	Load capacity Fs (kgf)	219

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



## GAU10-RCD

Travel stroke  $\pm 10 \times \pm 10$

### Work bench machining dimensions

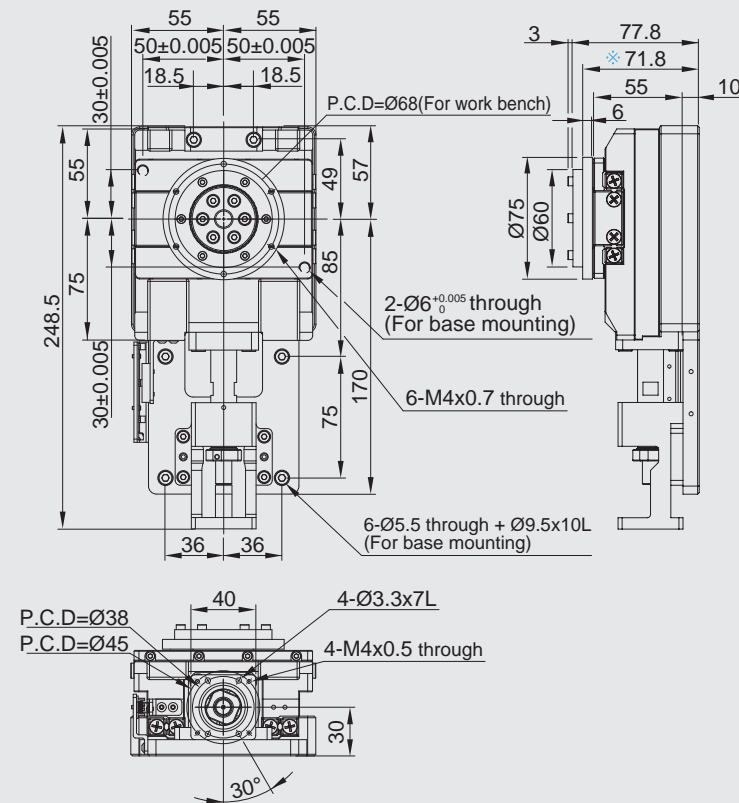
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU10-RCD	6-Ø4.5 through Ø8x4.4 L	Ø76x6 L	Ø60 <sup>+0.03</sup> x10 L

### Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU10-RCD	4-M5x0.8x12.5 L	2-Ø6 <sup>+0.005</sup> 0x10 L	2-Ø6 <sup>0</sup> <sub>-0.003</sub> x20 L



## Dimensions



- ✧ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.		GAU10-RCD
Specifi- cations	Travel stroke (mm)	±10×±10
	Module material	Carbon steel
	Module height (mm)	77.8
	Main frame weight (kg)	4.7
Accuracy	Load capacity (kgf)	219
	Ball screw specification	ø16-P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU11-CCS

Travel stroke  $\pm 10 \times \pm 10$

### Work bench machining dimensions

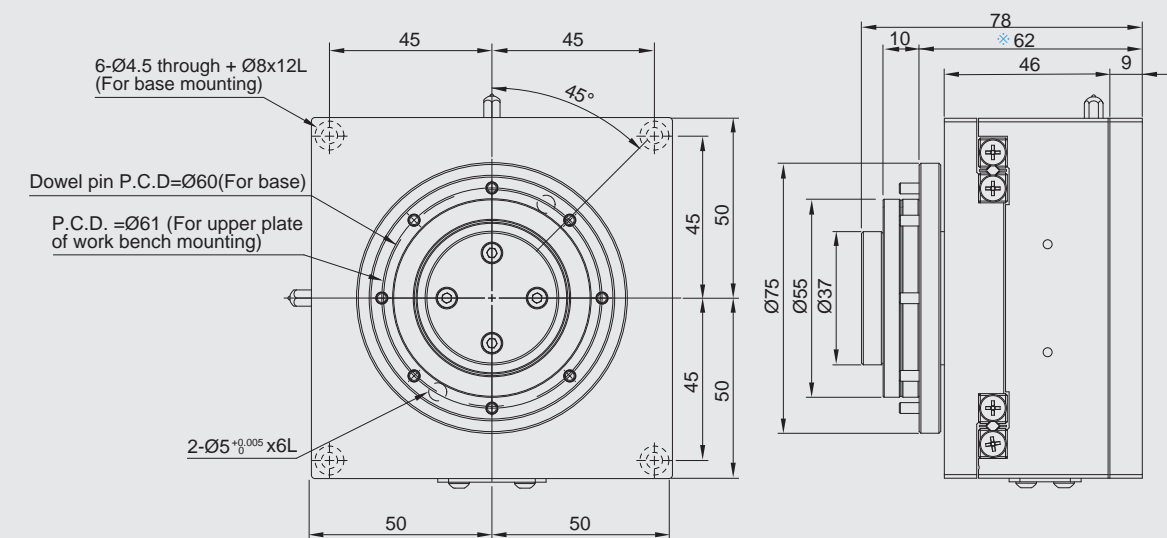
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU11-CCS	8-M3x0.5x7.5 L	Ø55 <sup>+0.025</sup> x10 L	Ø44 through	Ø76x6 L

### Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU11-CCS	4-M4x0.7x8 L	2-Ø5 <sup>+0.005</sup> <sub>-0</sub> x8 L	2-Ø5 <sup>0</sup> <sub>-0.003</sub> x13 L



## Dimensions



✧ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

### Model number description

Model no.		GAU11-CCS
Specifi- cations	Travel stroke (mm)	±10x±10
	Module material	Dura aluminum
	Module height (mm)	78
	Main frame weight (kg)	3
Accuracy	Load capacity Fs (kgf)	220

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU11-CCD

Travel stroke  $\pm 10 \times \pm 10$

Work bench machining dimensions

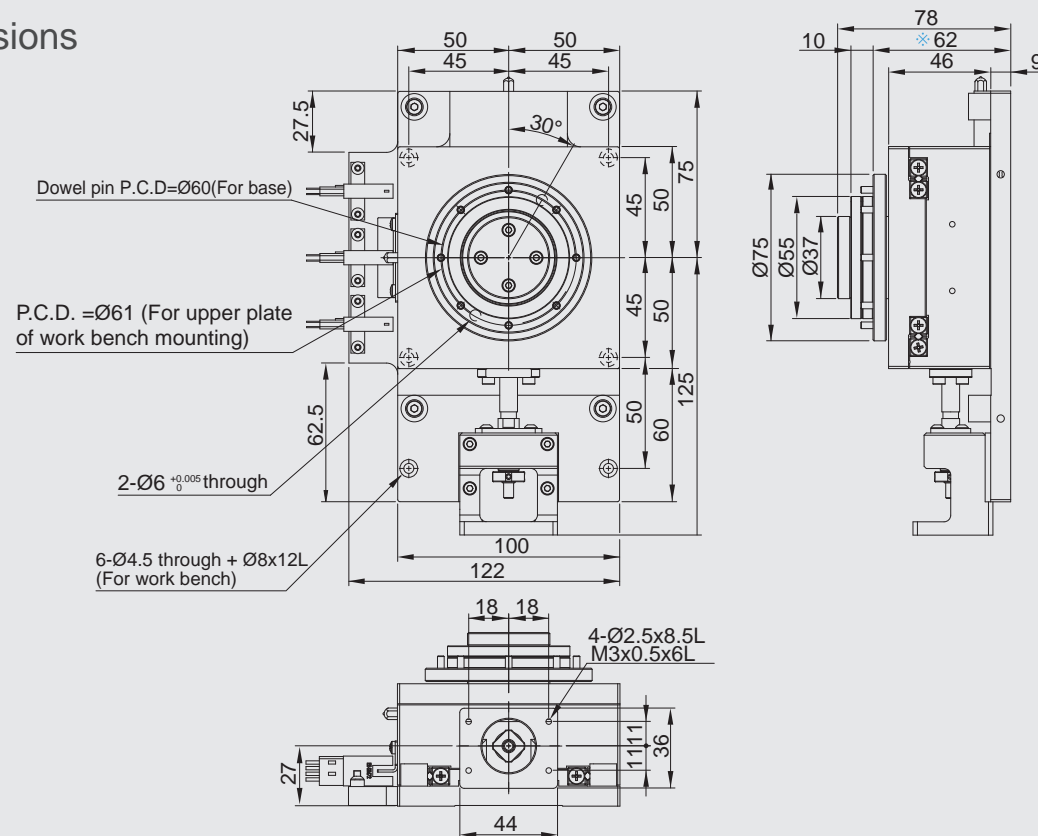
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU11-CCD	8-M3x0.5x7.5 L	$\varnothing 55^{+0.025}_0 \times 10$ L	$\varnothing 44$ through	$\varnothing 76 \times 6$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU11-CCD	4-M4x0.7x8 L	$2-\varnothing 5^{+0.005}_0 \times 8$ L	$2-\varnothing 5^{+0.003}_0 \times 13$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.		GAU11-CCD
Speci- fications	Travel stroke (mm)	$\pm 10 \times \pm 10$
	Module material	Dura aluminum
	Module height (mm)	78
	Main frame weight (kg)	3
Accuracy	Load capacity (kgf)	220
	Ball screw specification	$\varnothing 8$ -P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU12-CCS

Travel stroke  $\pm 15 \times \pm 5$

Work bench machining dimensions

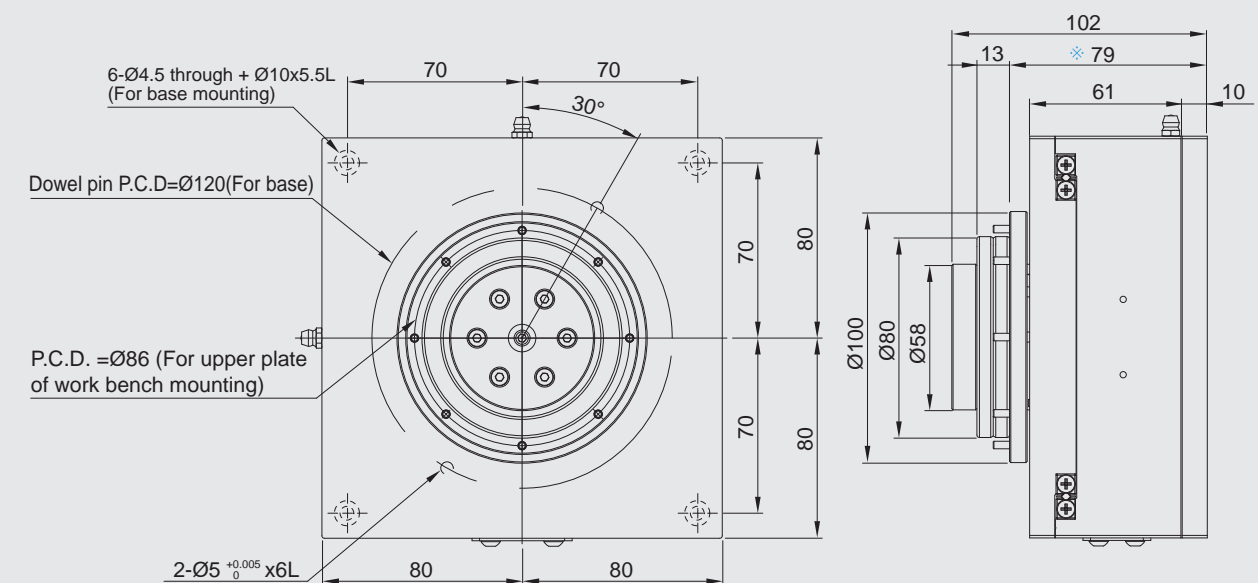
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU12-CCS	8-M3x0.5x7.5 L	$\varnothing 80^{+0.025}_0 \times 13$ L	$\varnothing 70$ through	$\varnothing 105 \times 7$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU12-CCS	4-M4x0.7x8 L	$2-\varnothing 5^{+0.005}_0 \times 8$ L	$2-\varnothing 5^{+0.003}_0 \times 13$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.		GAU12-CCS
Speci- fications	Travel stroke (mm)	$\pm 15 \times \pm 5$
	Module material	Dura aluminum
	Module height (mm)	102
	Main frame weight (kg)	8.5
Accuracy	Load capacity Fs (kgf)	325

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU12-CCD

Travel stroke  $\pm 15 \times \pm 5$

Work bench machining dimensions

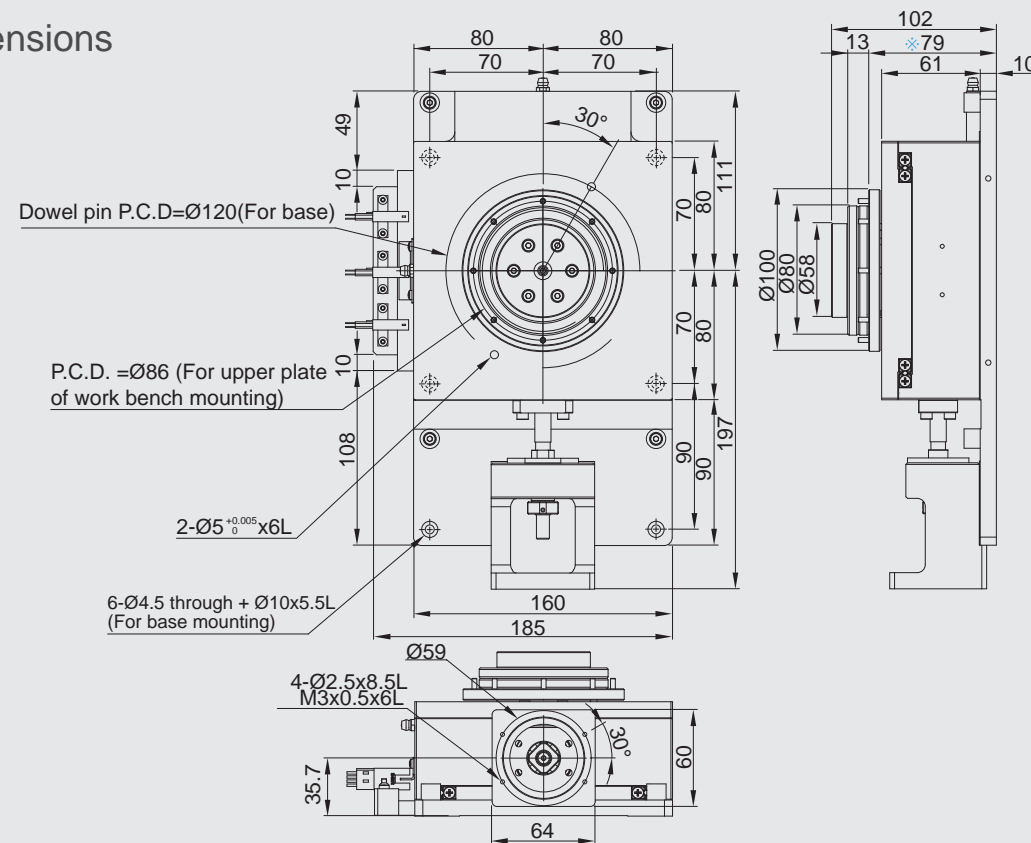
Model no.	Thread size	Bearing O.D.	軸承上蓋尺寸	Bearing Collar support size
GAU12-CCD	8-M3x0.5x7.5 L	$\varnothing 80^{+0.025}_0 \times 13$ L	$\varnothing 70$ through	$\varnothing 105 \times 7$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU12-CCD	4-M4x0.7x8 L	$2-\varnothing 5^{+0.005}_0 \times 8$ L	$2-\varnothing 5^{0.003}_0 \times 13$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU12-CCD	
Specifications	Travel stroke (mm)	$\pm 15 \times \pm 5$
	Module material	Dura aluminum
	Module height (mm)	102
	Main frame weight (kg)	8.5
Accuracy	Load capacity (kgf)	325
	Ball screw specification	$\varnothing 10$ -P4
	UP	Ground ball screw
	P	Ground ball screw
	N	Roller ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU12-RSS

Travel stroke  $\pm 15 \times \pm 15$

Work bench machining dimensions

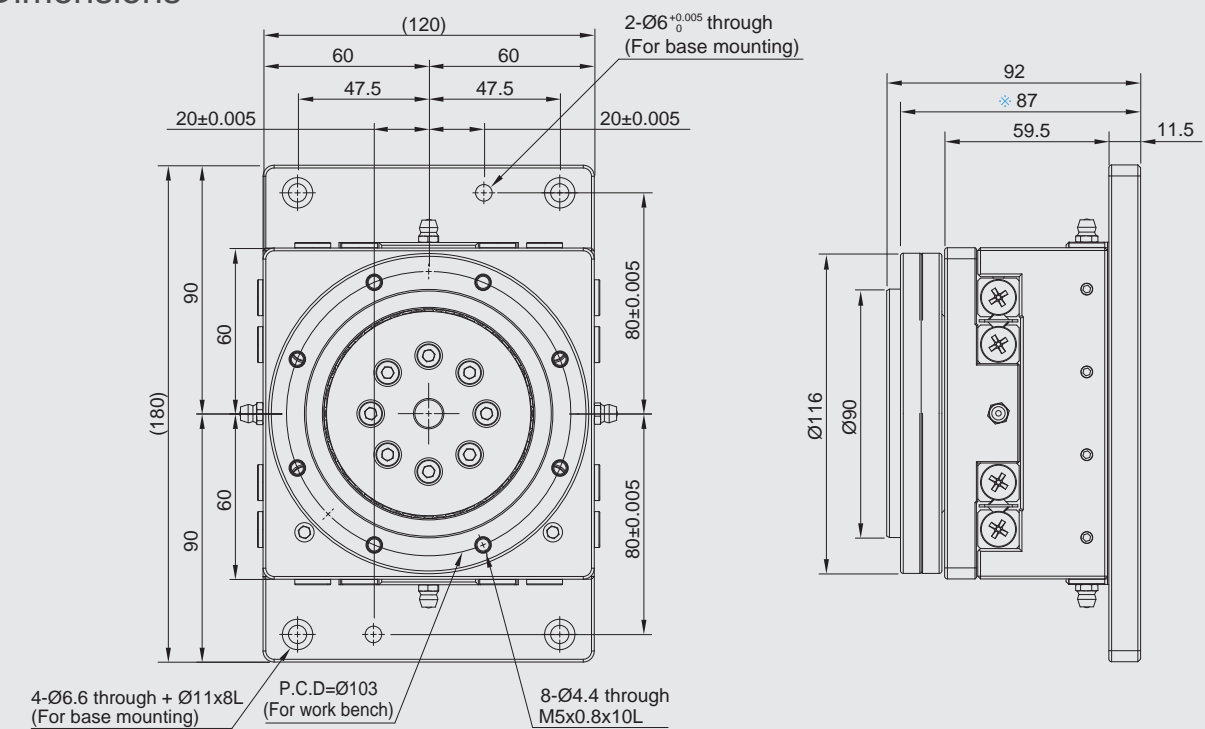
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU12-RSS	8- $\varnothing 5.5$ through $\varnothing 9.5 \times 5.5$ L	$\varnothing 91 \times 10$ L	$\varnothing 116^{+0.03}_0 \times 10$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU12-RSS	4-M5x0.8x12.5 L	$2-\varnothing 6^{+0.005}_0 \times 10$ L	$2-\varnothing 6^{0.003}_0 \times 20$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU12-RSS	
Specifications	Travel stroke (mm)	$\pm 15 \times \pm 15$
	Module material	Carbon steel
	Module height (mm)	92
	Main frame weight (kg)	9.5
Accuracy	Load capacity $F_s$ (kgf)	402

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



## GAU12-RSD

Travel stroke  $\pm 15 \times \pm 15$

Work bench machining dimensions

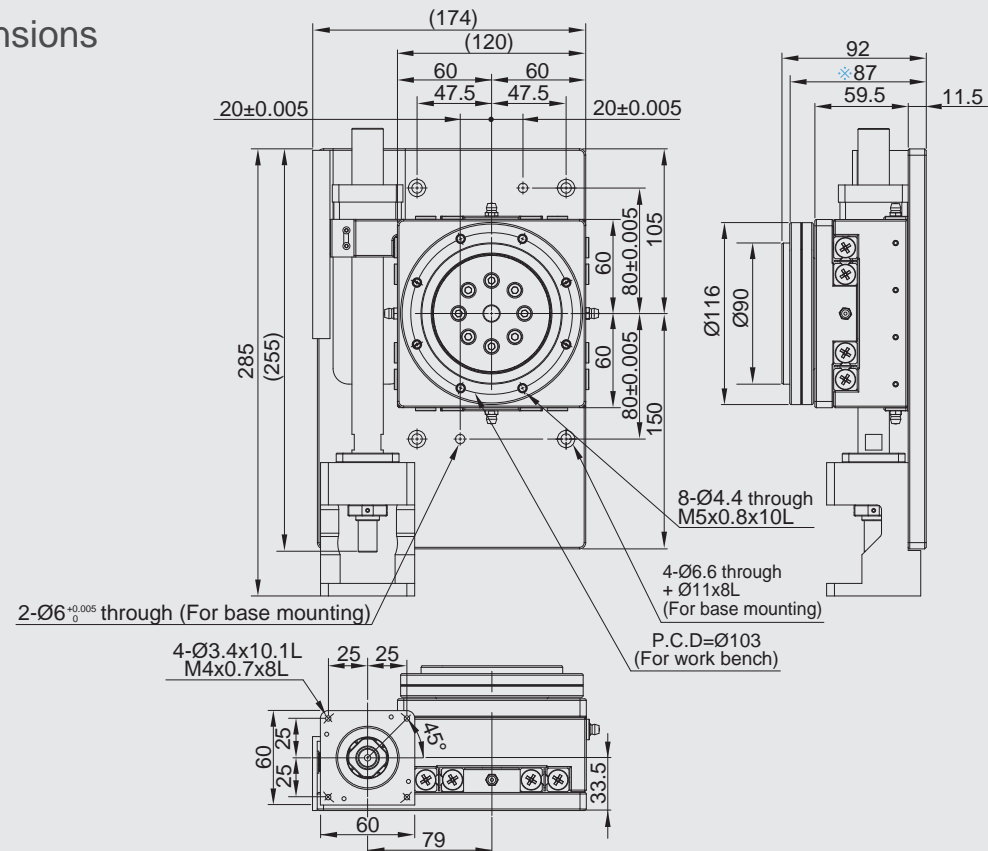
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU12-RSD	8- $\varnothing 5.5$ through $\varnothing 9.5 \times 5.5$ L	$\varnothing 91 \times 10$ L	$\varnothing 116^{+0.03}_0 \times 10$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU12-RSD	4-M5x0.8x15 L	2- $\varnothing 6^{+0.005}_0 \times 10$ L	2- $\varnothing 6^{+0.005}_0 \times 20$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU12-RSD	
Travel stroke (mm)	$\pm 15 \times \pm 15$	
Module material	Carbon steel	
Module height (mm)	92	
Main frame weight (kg)	13	
Load capacity (kgf)	402	
Ball screw specification	$\varnothing 20$ -P2	
UP	Ground ball screw	
P	Ground ball screw	
N	Rolled ball screw	

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

## GAU12-RCS

Travel stroke  $\pm 15 \times \pm 15$

Work bench machining dimensions

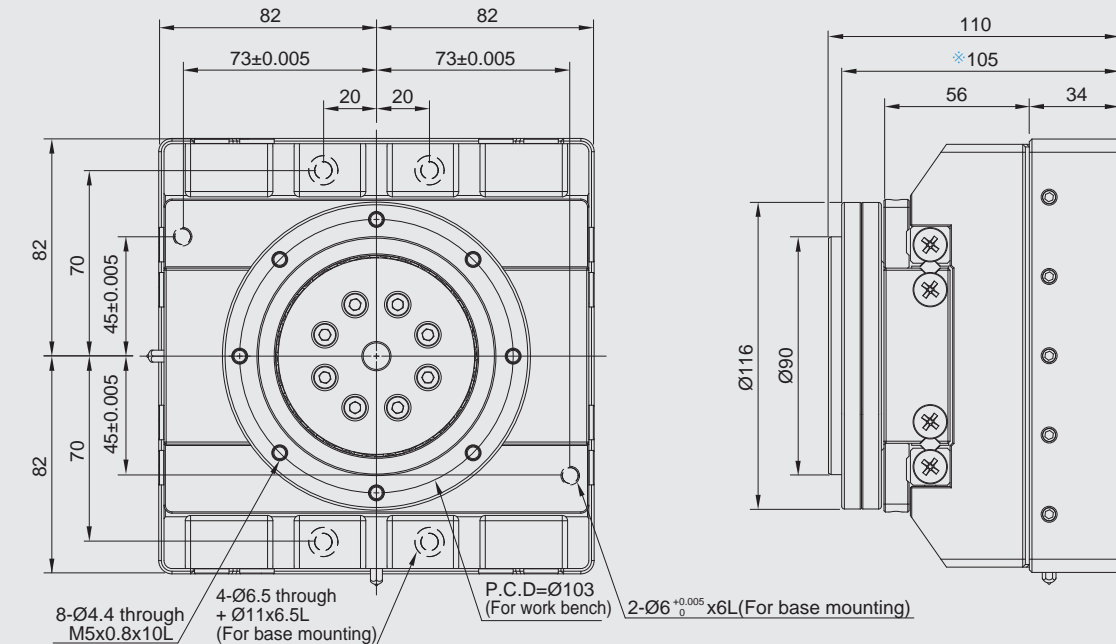
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU12-RCS	8- $\varnothing 5.5$ through $\varnothing 9.5 \times 5.5$ L	$\varnothing 91 \times 10$ L	$\varnothing 116^{+0.03}_0 \times 10$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU12-RCS	4-M5x0.8x15 L	2- $\varnothing 6^{+0.005}_0 \times 10$ L	2- $\varnothing 6^{+0.005}_0 \times 20$ L



## Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

## Model number description

Model no.	GAU12-RCS	
Travel stroke (mm)	$\pm 12 \times \pm 12$	
Module material	Carbon steel	
Module height (mm)	110	
Main frame weight (kg)	14	
Load capacity Fs (kgf)	625	

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.



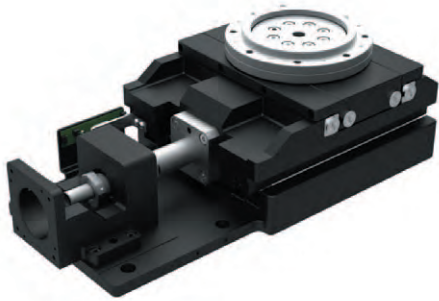
GAU12-RCD  
Travel stroke  $\pm 15 \times \pm 15$

Work bench machining dimensions

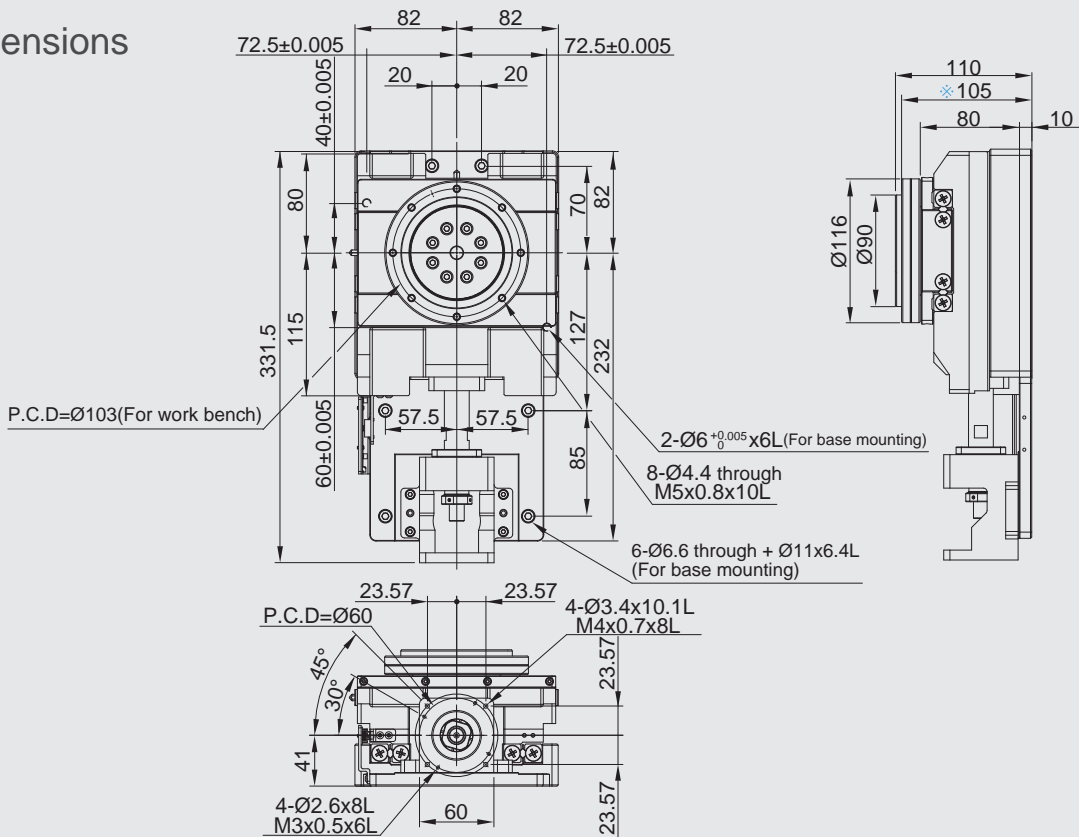
Model no.	Fixing hole size	Bearing O.D.	Bearing Collar support size
GAU12-RCD	8- $\varnothing 5.5$ through $\varnothing 9.5 \times 5.5$ L	$\varnothing 91 \times 10$ L	$\varnothing 116^{+0.03}_{-0}$ $\times 10$ L

Base machining dimensions

Model no.	Thread size	Dowel pin hole	Dowel pin
GAU12-RCD	4-M5 $\times 0.8 \times 12.5$ L	2- $\varnothing 6^{+0.005}_{-0}$ $\times 10$ L	2- $\varnothing 6^{+0.003}_{-0}$ $\times 20$ L



Dimensions



※ Differential high of the driven and drive module applied to the same stage is less than 0.01 mm.

Model number description

Model no.		GAU12-RCD
Specifi-cations	Travel stroke (mm)	$\pm 15 \times \pm 15$
	Module material	Carbon steel
	Module height (mm)	110
	Main frame weight (kg)	20
Accuracy	Load capacity (kgf)	625
	Ball screw specification	$\varnothing 20$ -P2
	UP	Ground ball screw
	P	Ground ball screw
	N	Rolled ball screw

※ Travel stroke limitation block is a protective device which is not applied to positioning scale purpose.

Model number description

GAS00

160

CC

P

N

2

C

Model no.
GAS00
GAS01
GAS02
GAS03

Table size	
100	100x100
160	160x160
190	190x190
200	200x200
250	250x250
350	350x350
400	400x400
500	500x500
750	750x750
1000	1000x1000
1500	1500x1500

Type	
HC	重載型(中央傳動)
HAC	重載型(中央傳動)
LC	輕量型(中央傳動)
CC	標準型(中央傳動)
RC	高剛性型(中央傳動)
RS	高剛性型(側邊傳動)
SC	超高剛性型-碳鋼(中央傳動)
WC	超高剛性型-杜拉鋁(中央傳動)
AC	超高剛性型-氣壓式(中央傳動)

Accuracy Grade	
UP	超精密
P	精密
N	標準

Motor type	
C	五相
N	兩相
G	伺服
XC	客供五相
XN	客供二相
XG	客供伺服

Connection cable	
2	2m連接線 單邊散線
4	4m連接線 單邊散線
6	6m連接線 單邊散線

Driver	
C	標準品
空白	無配置

※ GAS00 series is not compatible to servo motor.

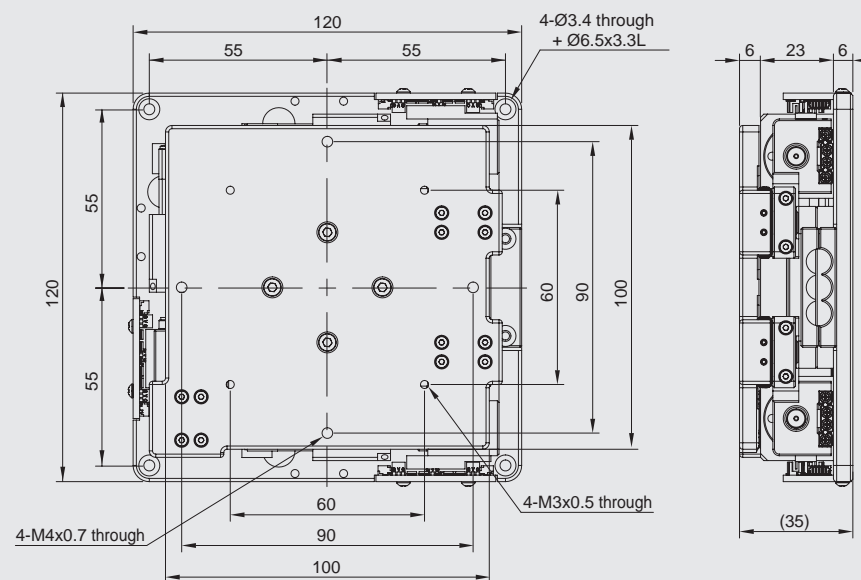
## GAS00-100HC

Travel stroke  $\pm 2 \times \pm 2, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.

### Dimensions



### Model No. Description

Model No.		GAS00-100HC		
Mechanical Specifications	Work bench size(mm)	100x100		
	Base size(mm)	120x120		
	Height(mm)	35		
	Travel stroke(mm)	$\pm 2 \times \pm 2$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Carbon steel / Black finished		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	5		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□20 Single shaft / TS3682N1	□20 Single shaft / TS3692N1	□20 Single shaft / 2MS-N20U28A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / GTR22G-D
		GMT / GTR515B	GMT / GTR24M3	GMT / DS022A

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

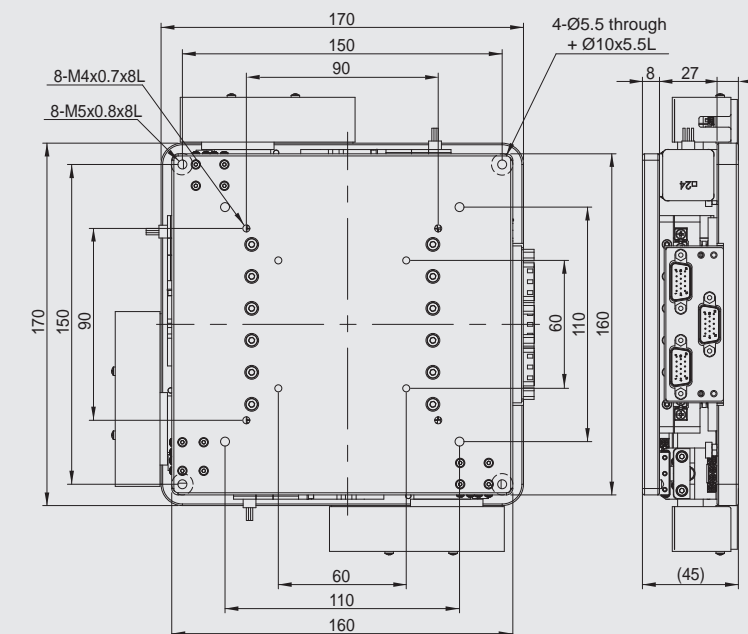
## GAS00-160CC

Travel stroke  $\pm 3 \times \pm 3, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS00-160CC		
Mechanical Specifications	Work bench size(mm)	160x160		
	Base size(mm)	170x170		
	Height(mm)	45		
	Travel stroke(mm)	$\pm 3 \times \pm 3$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	20		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 5-phase stepper motor
	Motor shaft / Model no.	□24 Single shaft / TS3664N1E2	□24 Single shaft / TS3664N1E2	□24 Single shaft / TS3664N1E2
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C
		GMT / GTR515B	GMT / GTR515B	GMT / GTR515B

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

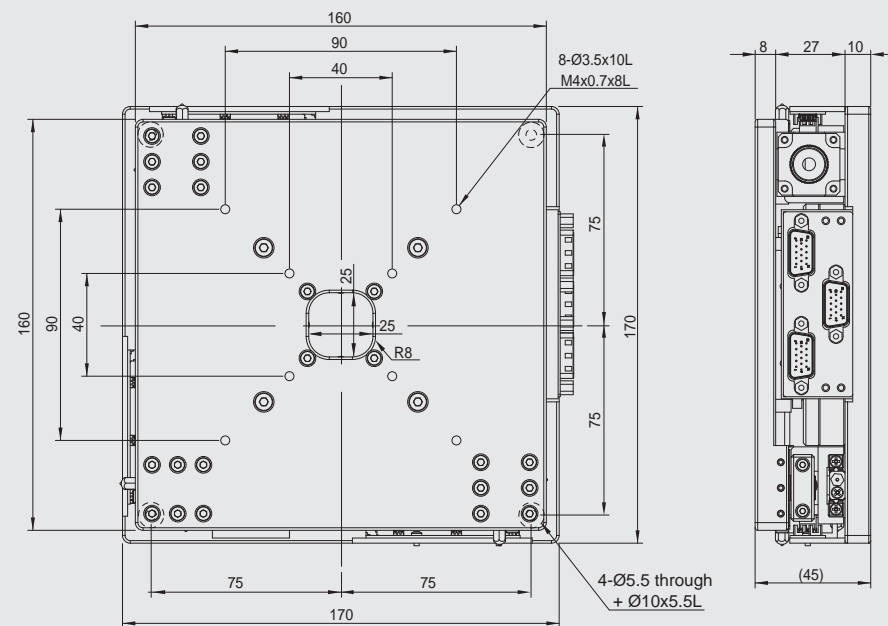
## GAS00-160HC

Travel stroke  $\pm 3 \times \pm 3, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS00-160HC		
Mechanical Specifications	Work bench size(mm)	160x160		
	Base size(mm)	170x170		
	Height(mm)	45		
	Travel stroke(mm)	$\pm 3 \times \pm 3$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	30		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 5-phase stepper motor
	Motor shaft / Model no.	□24 Double shaft / TS3664N11E2	□24 Double shaft / TS3664N11E2	□24 Double shaft / TS3664N11E2
	Recommended driver brand /	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C
	Model no. (Optional)	GMT / GTR515B	GMT / GTR515B	GMT / GTR515B

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

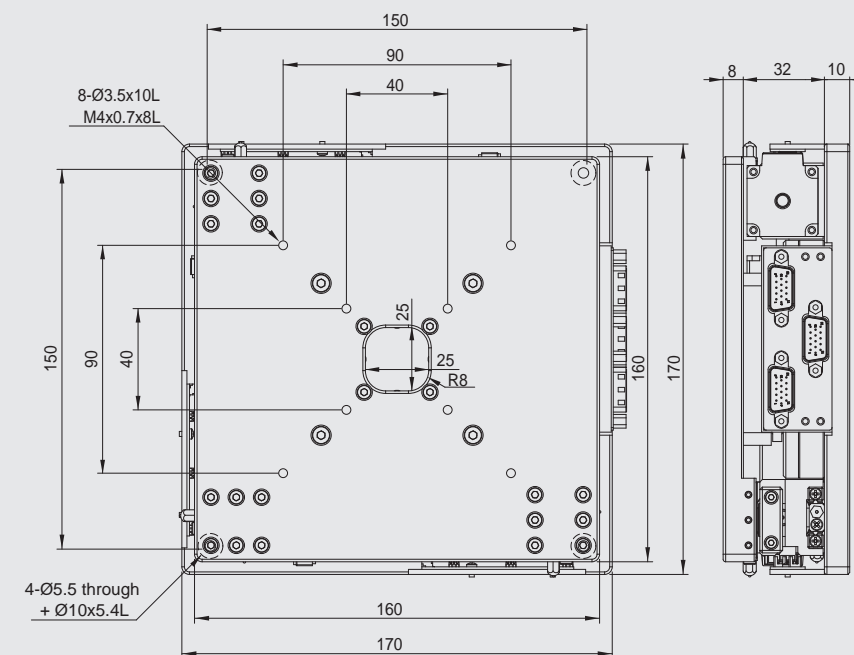
## GAS00-160HAC

Travel stroke  $\pm 3 \times \pm 3, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS00-160HAC		
Mechanical Specifications	Work bench size(mm)	160x160		
	Base size(mm)	170x170		
	Height(mm)	50		
	Travel stroke(mm)	$\pm 3 \times \pm 3$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	50		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	SANYO / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□28 Double shaft / SH5281-7211	□28 Double shaft / TS3641N11E2	□28 Double shaft / 2MS-N28D32A
	Recommended driver brand /	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT/ GTR22G-D
	Model no. (Optional)	GMT / GTR515B	GMT / GTR24M3	GMT / DS022A

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



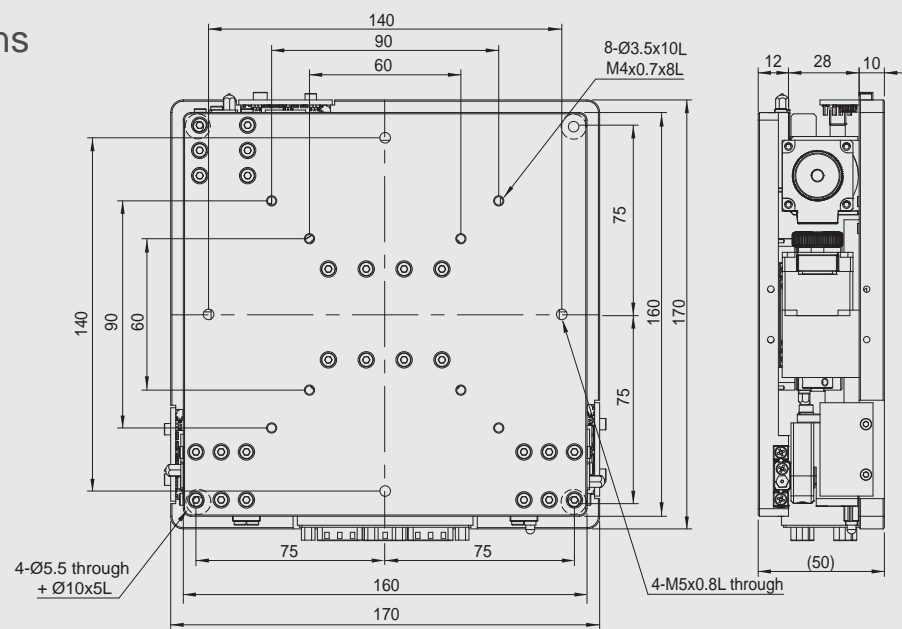
## GAS00-160LC

Travel stroke  $\pm 3 \times \pm 3, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS00-160LC		
Mechanical Specifications	Work bench size(mm)	160x160		
	Base size(mm)	170x170		
	Height(mm)	50		
	Travel stroke(mm)	$\pm 3 \times \pm 3$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	30		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	SANYO / 5相歩進	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□28 Double shaft / SH5281-7211	□28 Double shaft / TS3641N11E2	□28 Double shaft / 2MS-N28D32A
	Recommended driver brand /	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / GTR22G-D
	Model no. (Optional)	GMT / GTR515B	GMT / GTR24M3	GMT / DS2-022A

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

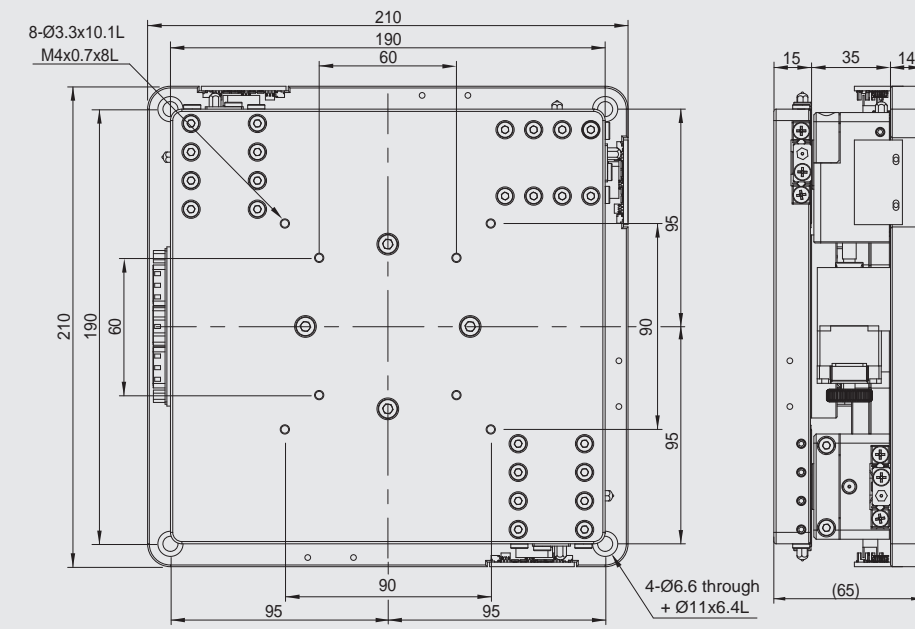
## GAS00-190HC

Travel stroke  $\pm 4 \times \pm 4, \pm 3^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

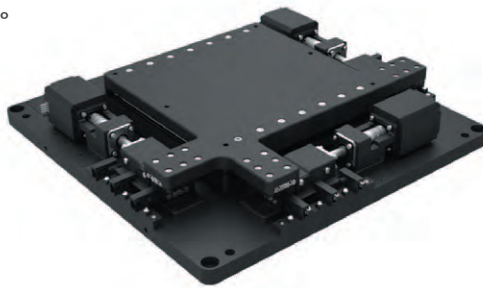
Model No.		GAS00-190HC		
Mechanical Specifications	Work bench size(mm)	190x190		
	Base size(mm)	210x210		
	Height(mm)	65		
	Travel stroke(mm)	$\pm 4 \times \pm 4$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	65		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	SANYO / 5相歩進	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□28 Double shaft / SH5281-7211	□28 Double shaft / TS3641N11E2	□28 Double shaft / 2MS-N28D32A
	Recommended driver brand /	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / GTR22G-D
	Model no. (Optional)	GMT / GTR515B	GMT / GTR24M3	GMT / DS2-022A

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



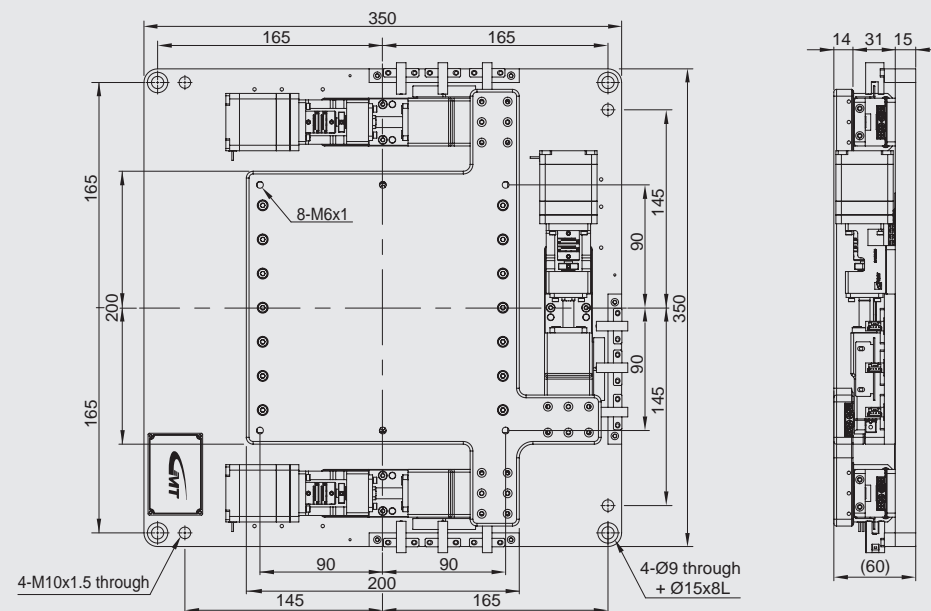
## GAS00-200CC

Travel stroke  $\pm 8 \times \pm 8, \pm 3^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



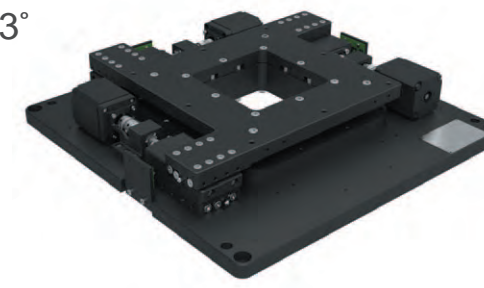
## Model No. Description

Model No.		GAS00-200CC		
Mechanical Specifications	Work bench size(mm)	200x200		
	Base size(mm)	350x350		
	Height(mm)	60		
	Travel stroke(mm)	$\pm 8 \times \pm 8$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P1		
	Parallel loading capacity(kgf)	110		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

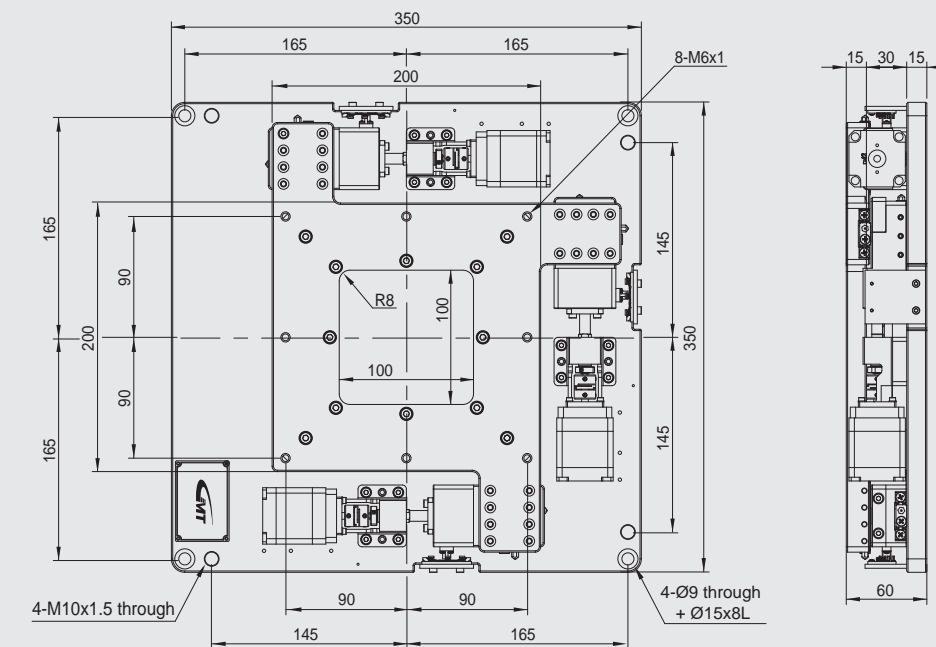
## GAS00-200HC

Travel stroke  $\pm 8 \times \pm 8, \pm 3^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



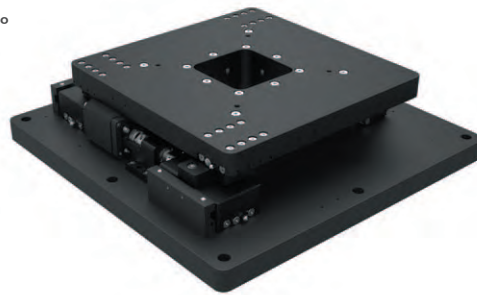
## Model No. Description

Model No.		GAS00-200HC		
Mechanical Specifications	Work bench size(mm)	200x200		
	Base size(mm)	350x350		
	Height(mm)	60		
	Travel stroke(mm)	$\pm 8 \times \pm 8$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

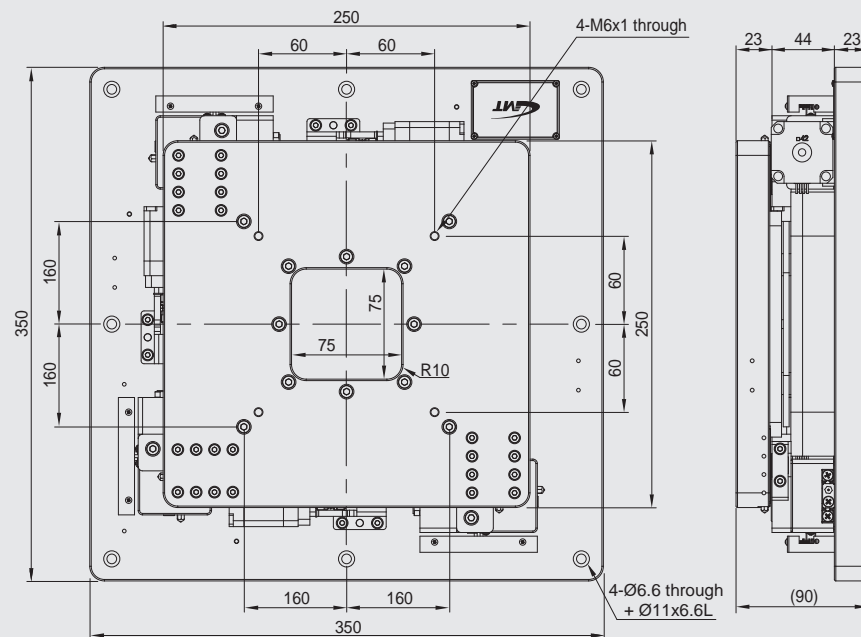
## GAS00-250HC

Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS00-250HC		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Carbon steel / Black finished		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P1		
	Parallel loading capacity(kgf)	120		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	10	20	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / GTR32G-D
		GMT / GTR515B	GMT / GTR24M3	GMT / DS032A

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

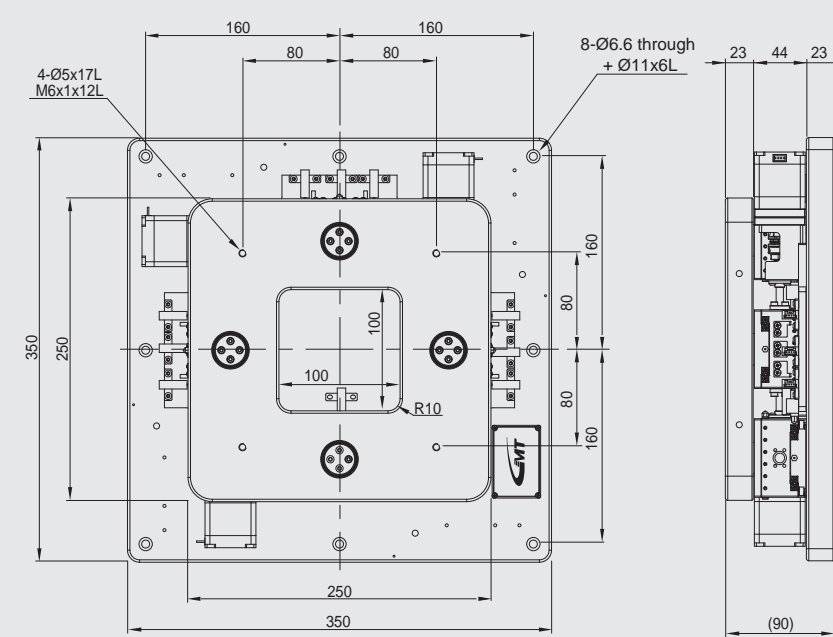
## GAS01-250CC

Travel stroke  $\pm 5 \times \pm 5, \pm 3^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS01-250CC		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	80		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N1E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS01-250CC

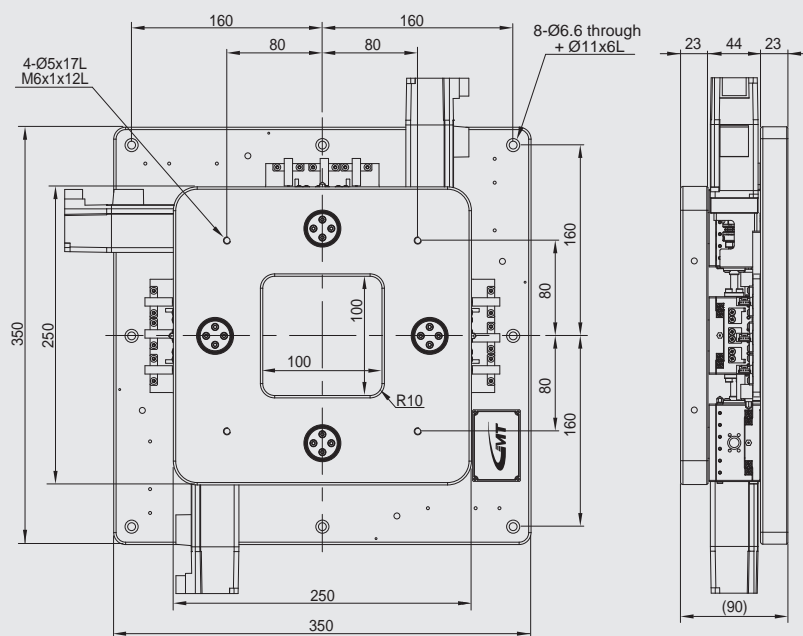
Travel stroke  $\pm 5 \times \pm 5, \pm 3^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS01-250CC		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	80		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	30
Electrical Specifications	Motor brand / Type	MITSUBISHI / 50W	Panasonic / 50W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR053	□40 / MSMD5AZG1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS01-250RS

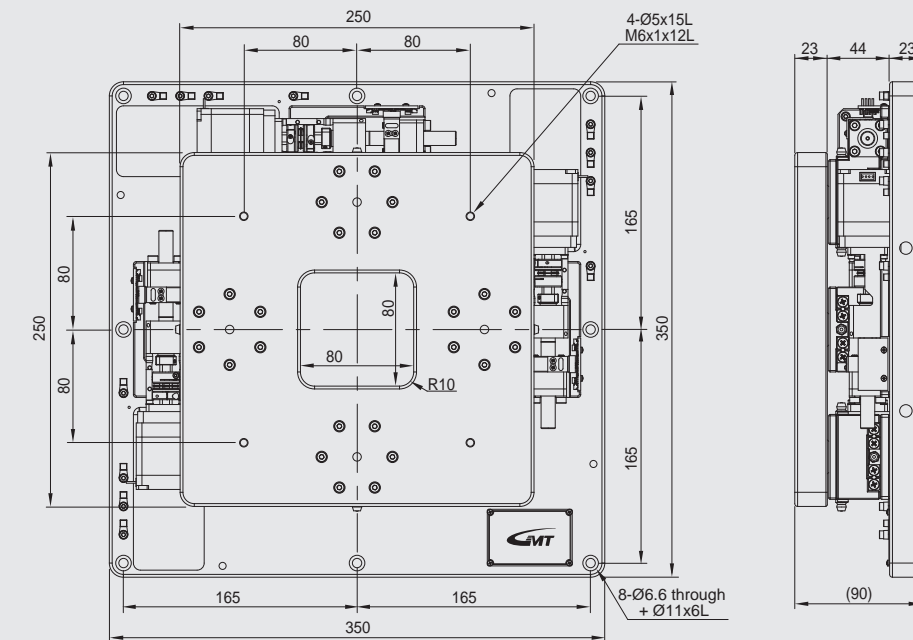
Travel stroke  $\pm 5 \times \pm 5, \pm 3^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS01-250RS		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



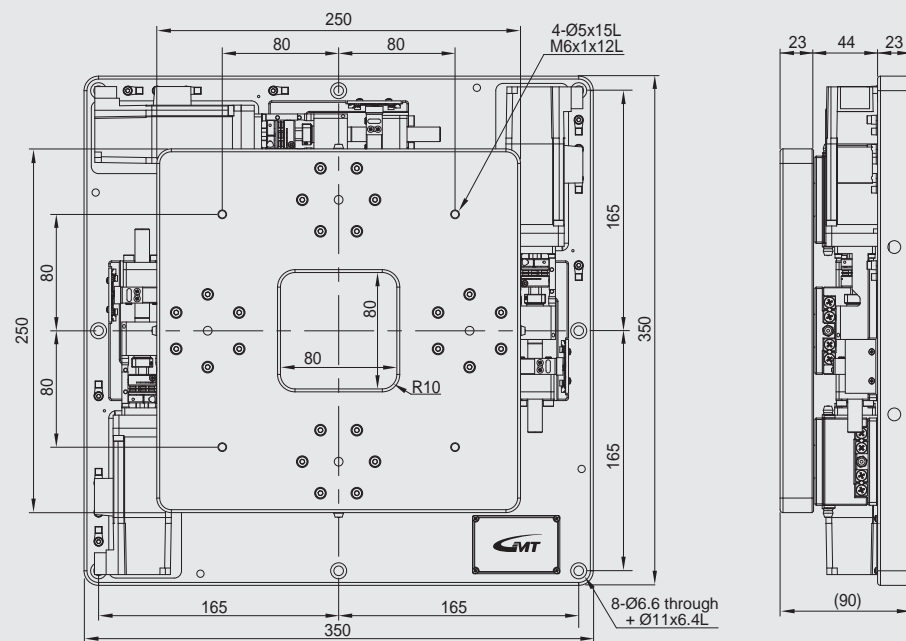
## GAS01-250RS

Travel stroke  $\pm 5 \times \pm 5, \pm 3^\circ$   
Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS01-250RS		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	30
Electrical Specifications	Motor brand / Type	MITSUBISHI / 50W	Panasonic / 50W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR053	□40 / MSMD5AZG1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

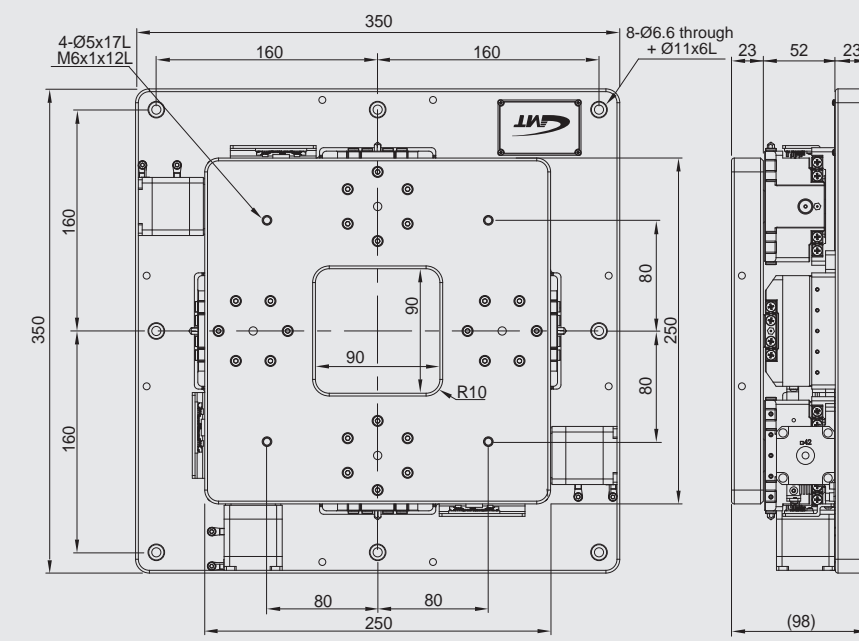
## GAS01-250RC

Travel stroke  $\pm 5 \times \pm 5, \pm 3^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS01-250RC		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	98		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	30
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS01-250RC

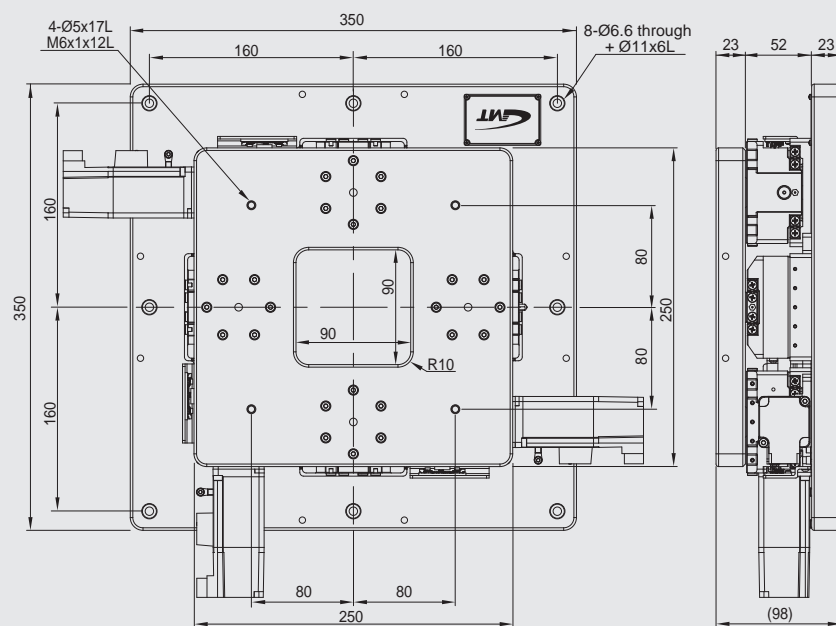
Travel stroke  $\pm 5 \times \pm 5, \pm 3^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

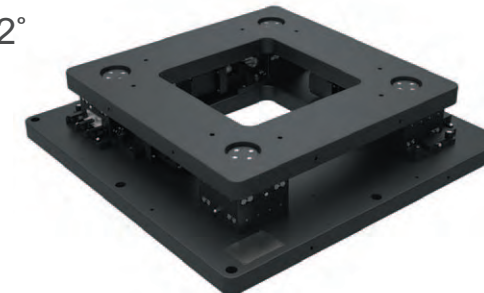
Model No.		GAS01-250RC		
Mechanical Specifications	Work bench size(mm)	250x250		
	Base size(mm)	350x350		
	Height(mm)	98		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (θ)	$\pm 3^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	30
Electrical Specifications	Motor brand / Type	MITSUBISHI / 50W	Panasonic / 50W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR053	□40 / MSMD5AZG1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS01-350CC

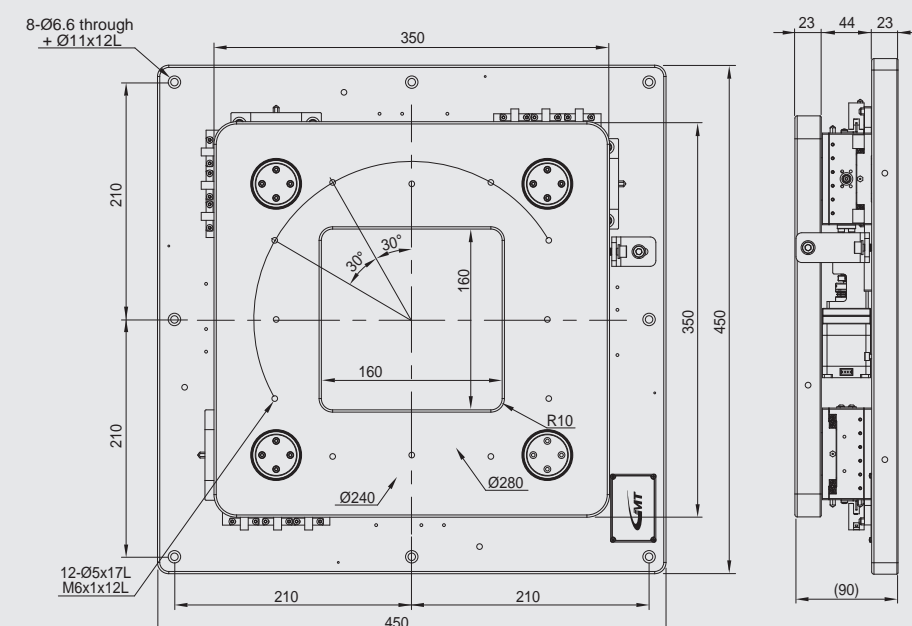
Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



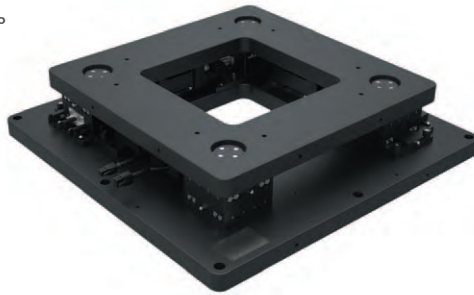
## Model No. Description

Model No.		GAS01-350CC		
Mechanical Specifications	Work bench size(mm)	350x350		
	Base size(mm)	450x450		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	80		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	40
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N1E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

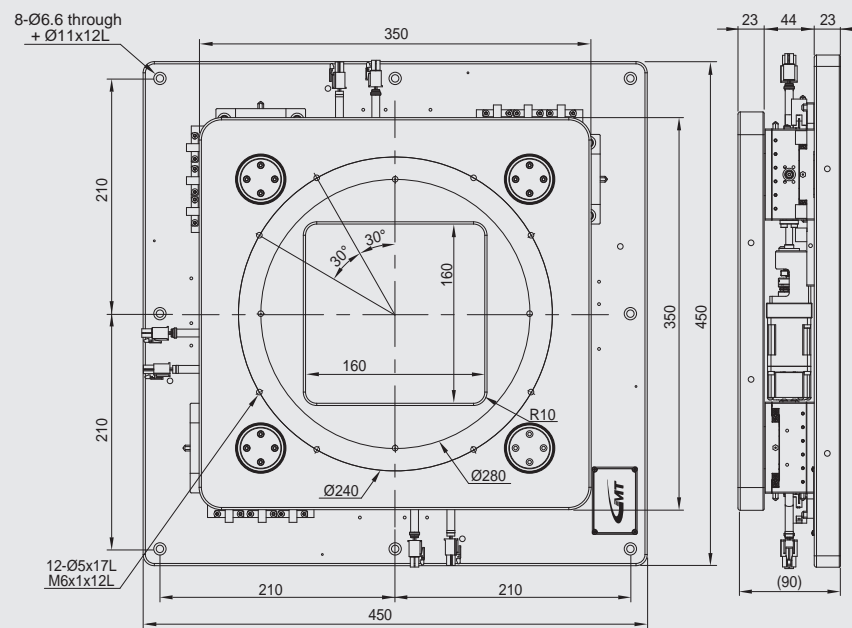
## GAS01-350CC

Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$   
Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



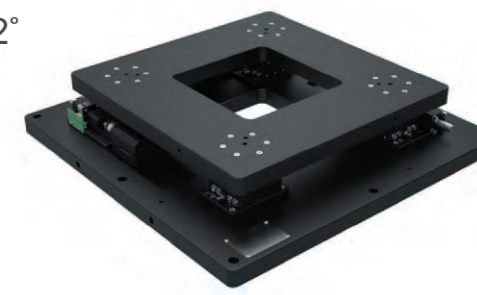
### Model No. Description

Model No.		GAS01-350CC		
Mechanical Specifications	Work bench size(mm)	350x350		
	Base size(mm)	450x450		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø6-P1		
	Parallel loading capacity(kgf)	80		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	40
Electrical Specifications	Motor brand / Type	MITSUBISHI / 50W	Panasonic / 50W	Panasonic / 50W
	Motor shaft / Model no.	□40 / HG-KR053	□40 / MSMD5AZG1S	□40 / MSMD5AZG1S
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Panasonic / MADHT1505

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

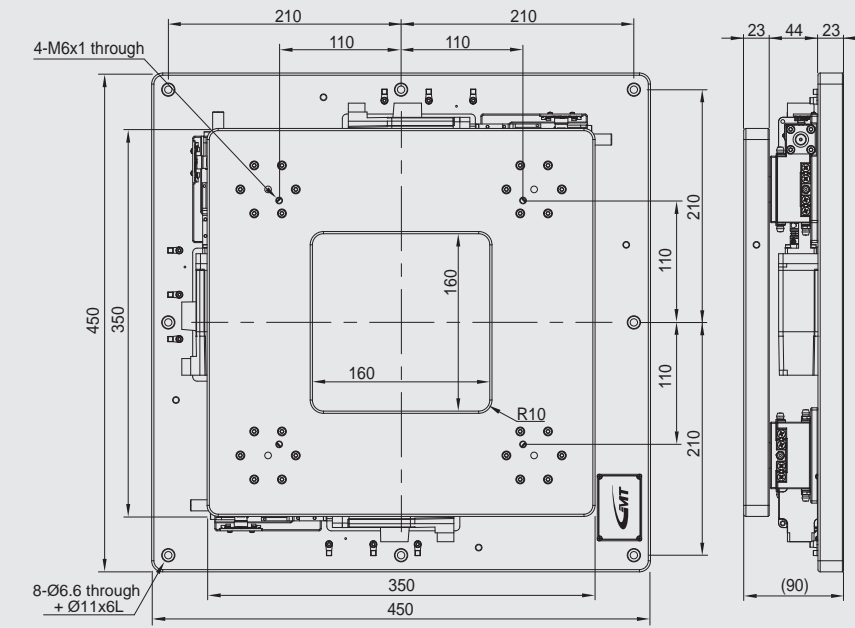
## GAS01-350RS

Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

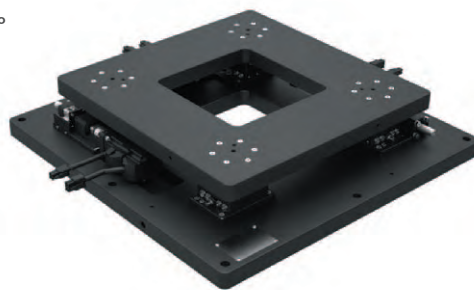
Model No.		GAS01-350RS		
Mechanical Specifications	Work bench size(mm)	350x350		
	Base size(mm)	450x450		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	40
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



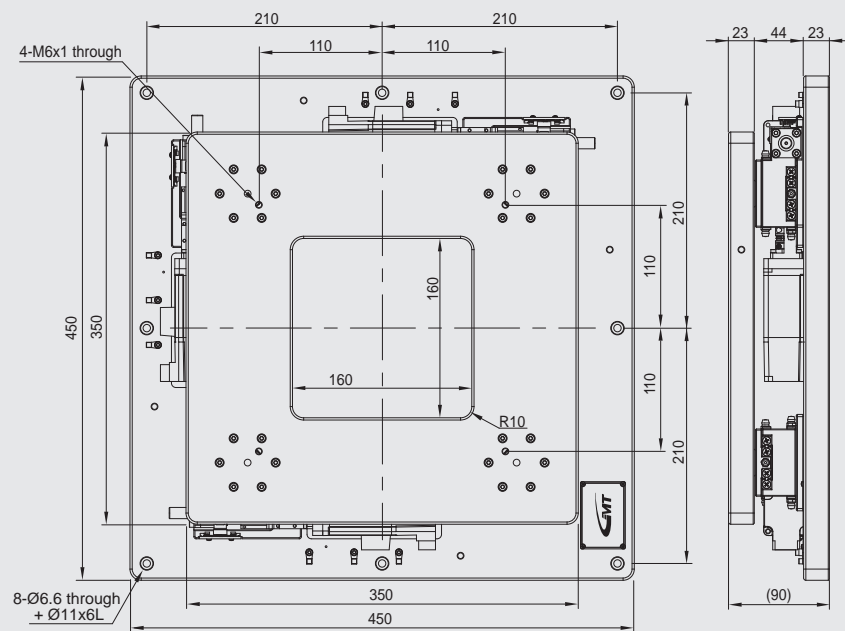
## GAS01-350RS

Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$   
Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS01-350RS		
Mechanical Specifications	Work bench size(mm)	350x350		
	Base size(mm)	450x450		
	Height(mm)	90		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	40
Electrical Specifications	Motor brand / Type	MITSUBISHI / 50W	Panasonic / 50W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR053	□40 / MSMD5AZG1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

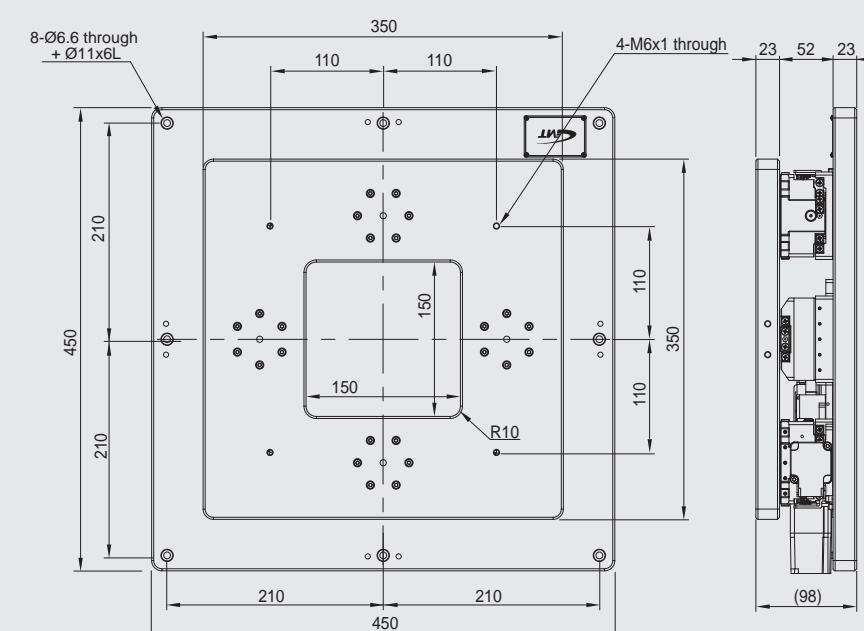
## GAS01-350RC

Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$   
Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS01-350RC		
Mechanical Specifications	Work bench size(mm)	350x350		
	Base size(mm)	450x450		
	Height(mm)	98		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	40
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS01-350RC

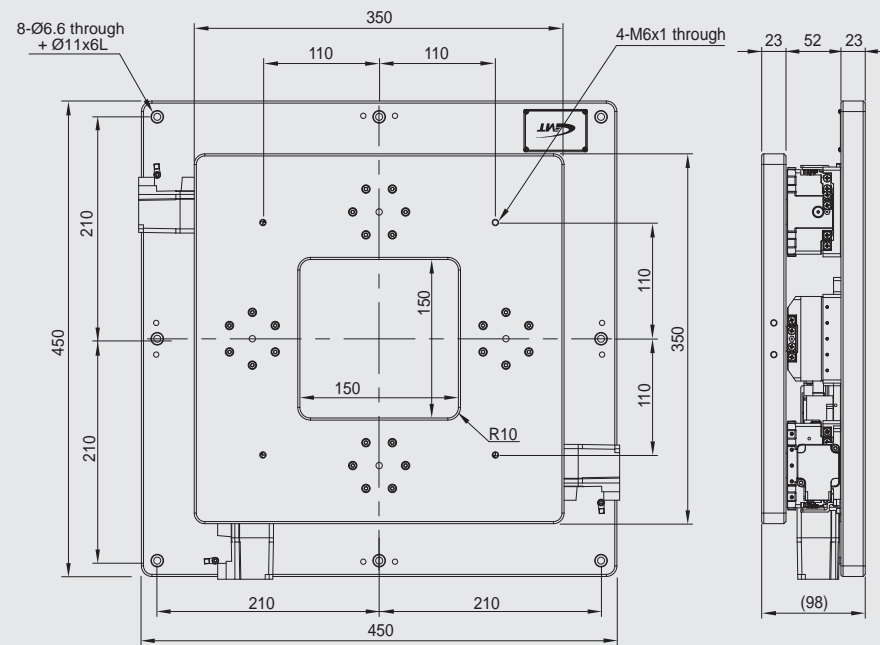
Travel stroke  $\pm 5 \times \pm 5, \pm 2^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

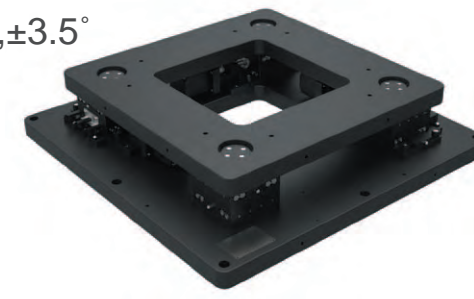
Model No.		GAS01-350RC		
Mechanical Specifications	Work bench size(mm)	350x350		
	Base size(mm)	450x450		
	Height(mm)	98		
	Travel stroke(mm)	$\pm 5 \times \pm 5$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P2		
	Parallel loading capacity(kgf)	100		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	15	25	40
Electrical Specifications	Motor brand / Type	MITSUBISHI / 50W	Panasonic / 50W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR053	□40 / MSMD5AZG1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-400CC

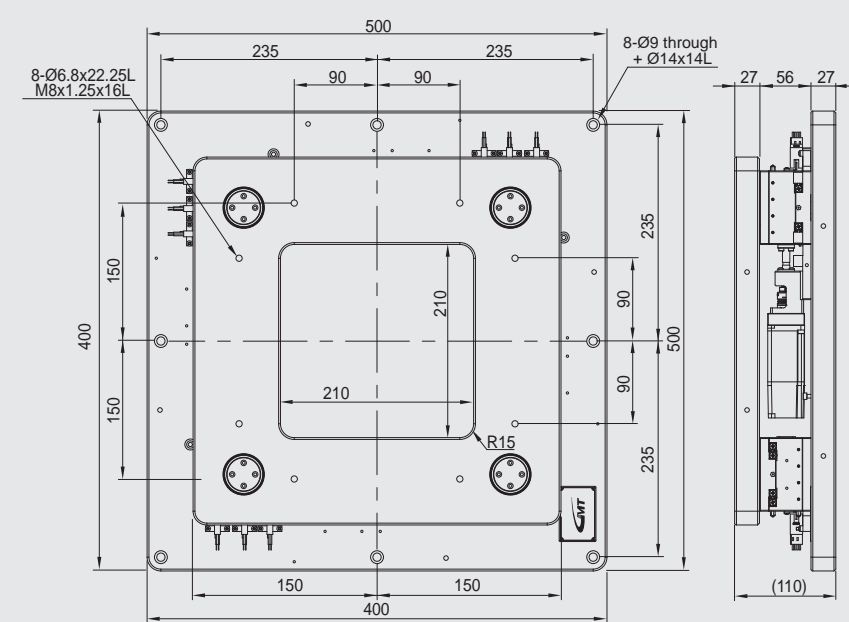
Travel stroke  $\pm 10 \times \pm 10, \pm 3.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

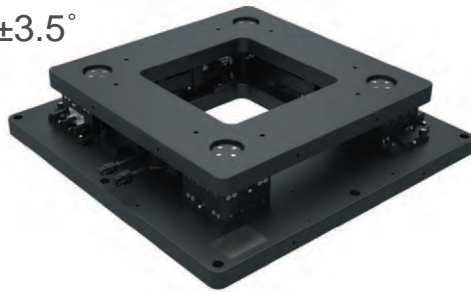
Model No.		GAS02-400CC		
Mechanical Specifications	Work bench size(mm)	400x400		
	Base size(mm)	500x500		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 3.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P2		
	Parallel loading capacity(kgf)	105		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	20	30	50
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N1E7	□42 Single shaft/TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-400CC

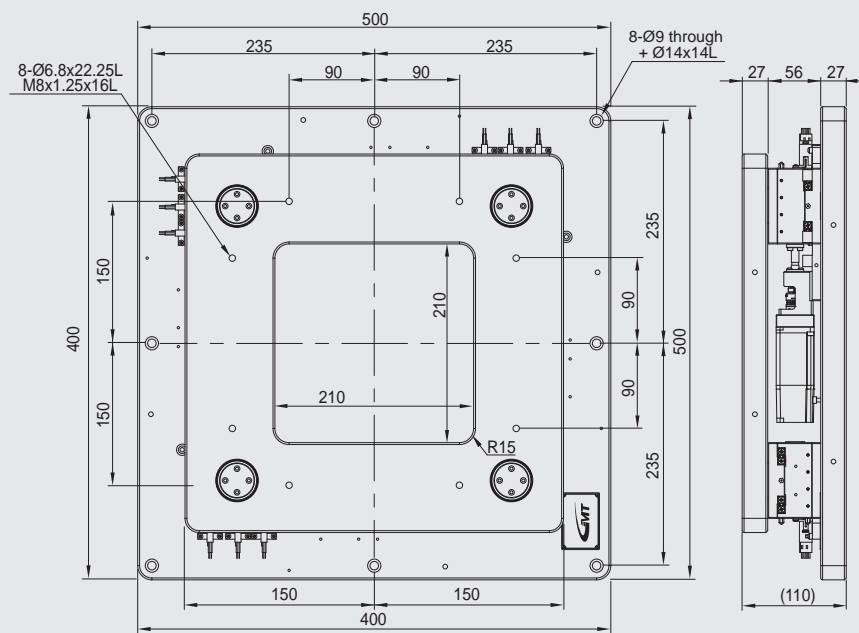
Travel stroke  $\pm 10 \times \pm 10, \pm 3.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

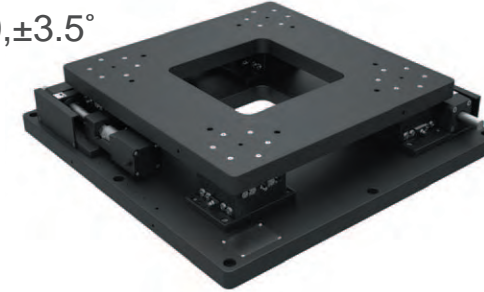
Model No.		GAS02-400CC		
Mechanical Specifications	Work bench size(mm)	400x400		
	Base size(mm)	500x500		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 3.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P2		
	Parallel loading capacity(kgf)	105		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	20	30	50
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-400RS

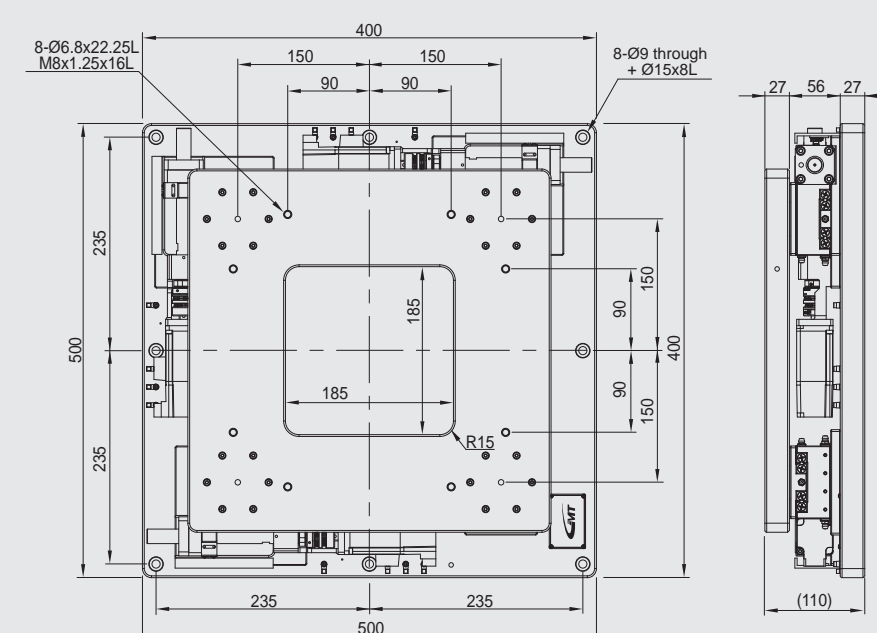
Travel stroke  $\pm 10 \times \pm 10, \pm 3.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS02-400RS		
Mechanical Specifications	Work bench size(mm)	400x400		
	Base size(mm)	500x500		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 3.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	20	30	50
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

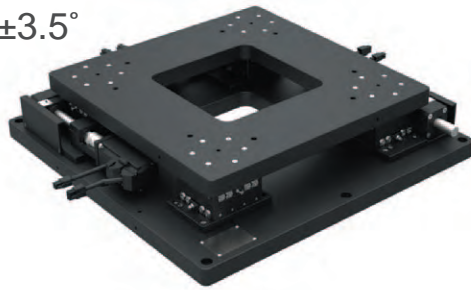
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



## GAS02-400RS

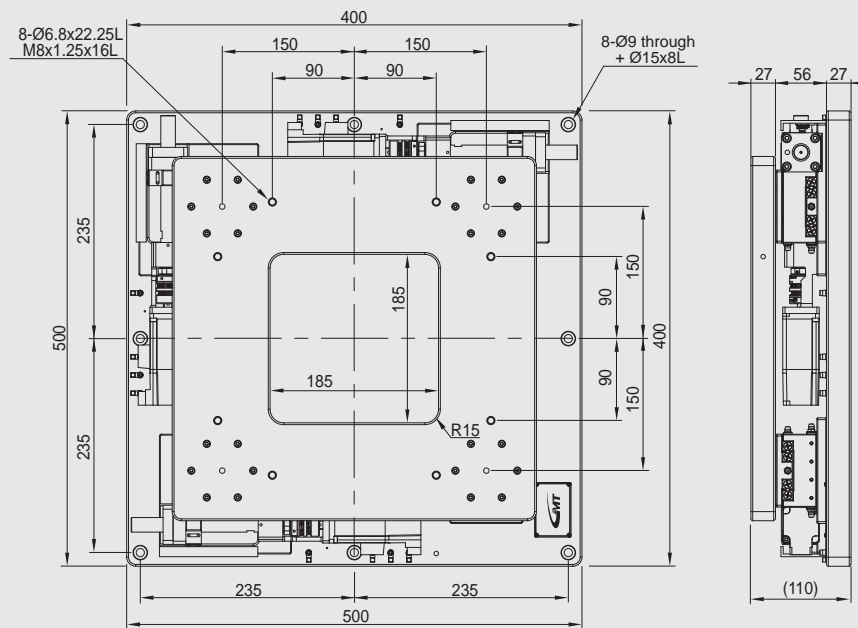
Travel stroke  $\pm 10 \times \pm 10, \pm 3.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

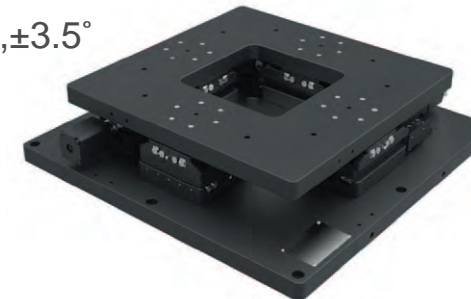
Model No.		GAS02-400RS		
Mechanical Specifications	Work bench size(mm)	400x400		
	Base size(mm)	500x500		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 3.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	20	30	50
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-400RC

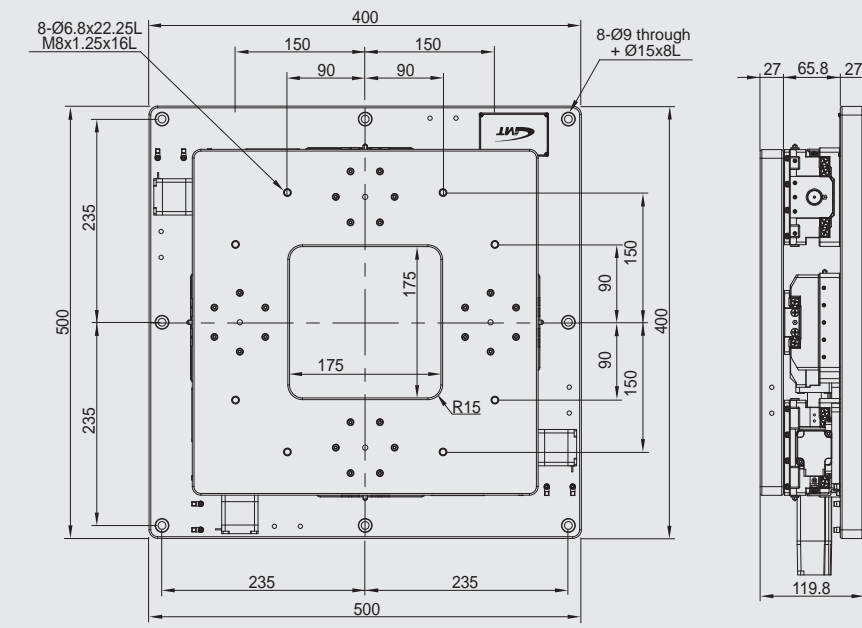
Travel stroke  $\pm 10 \times \pm 10, \pm 3.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

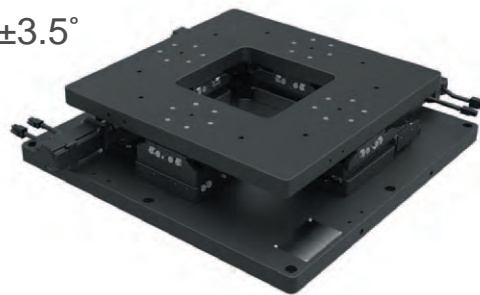
Model No.		GAS02-400RC		
Mechanical Specifications	Work bench size(mm)	400x400		
	Base size(mm)	500x500		
	Height(mm)	119.8		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 3.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	20	30	50
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-400RC

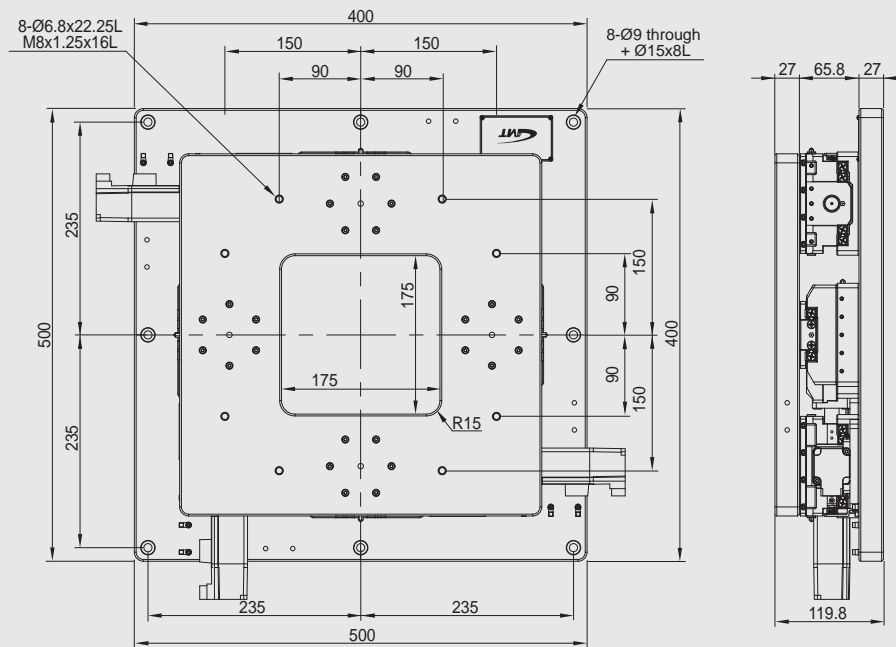
Travel stroke  $\pm 10 \times \pm 10, \pm 3.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

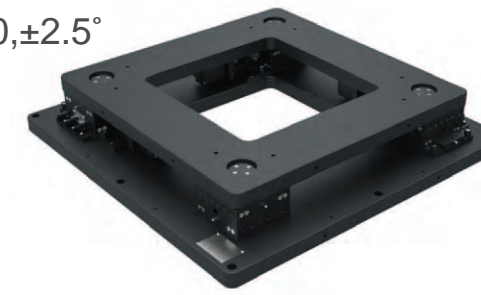
Model No.		GAS02-400RC		
Mechanical Specifications	Work bench size(mm)	400x400		
	Base size(mm)	500x500		
	Height(mm)	119.8		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 3.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	20	30	50
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-500CC

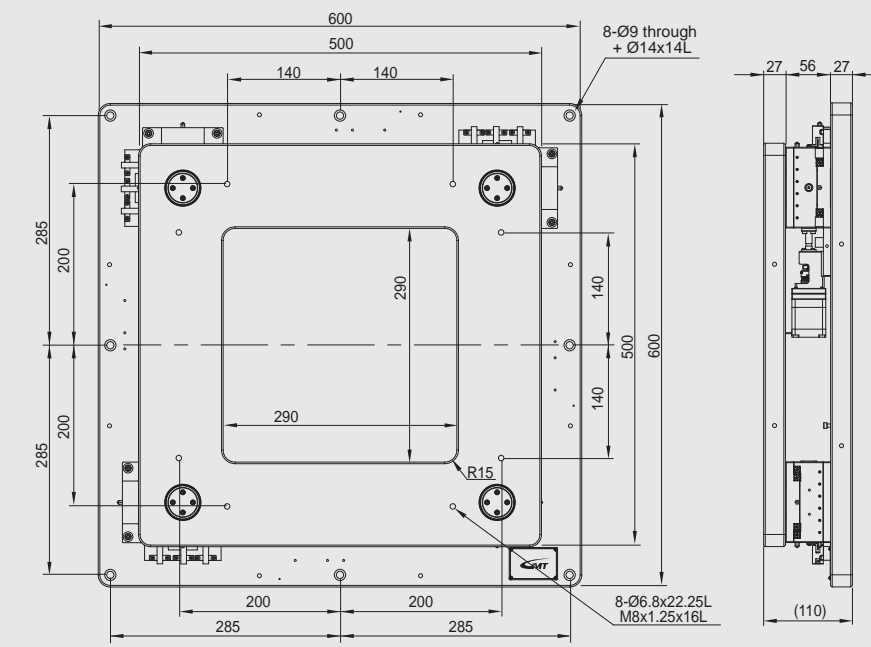
Travel stroke  $\pm 10 \times \pm 10, \pm 2.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

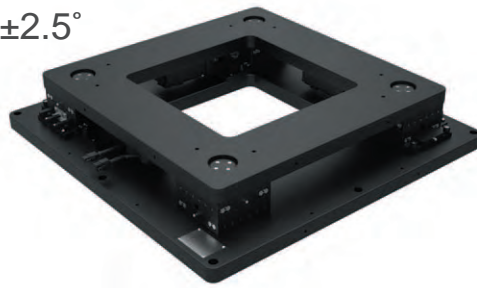
Model No.		GAS02-500CC		
Mechanical Specifications	Work bench size(mm)	500x500		
	Base size(mm)	600x600		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 2.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P2		
	Parallel loading capacity(kgf)	105		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	30	40	80
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N1E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-500CC

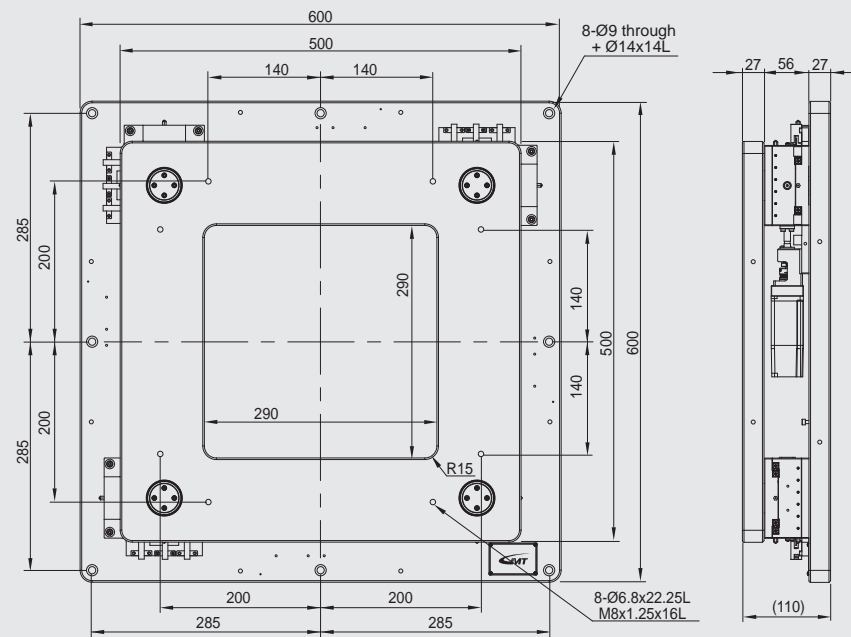
Travel stroke  $\pm 10 \times \pm 10, \pm 2.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

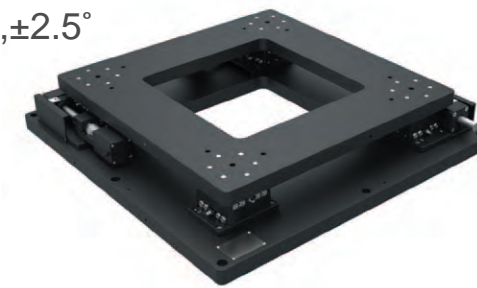
Model No.		GAS02-500CC		
Mechanical Specifications	Work bench size(mm)	500x500		
	Base size(mm)	600x600		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 2.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P2		
	Parallel loading capacity(kgf)	105		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	30	40	80
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-500RS

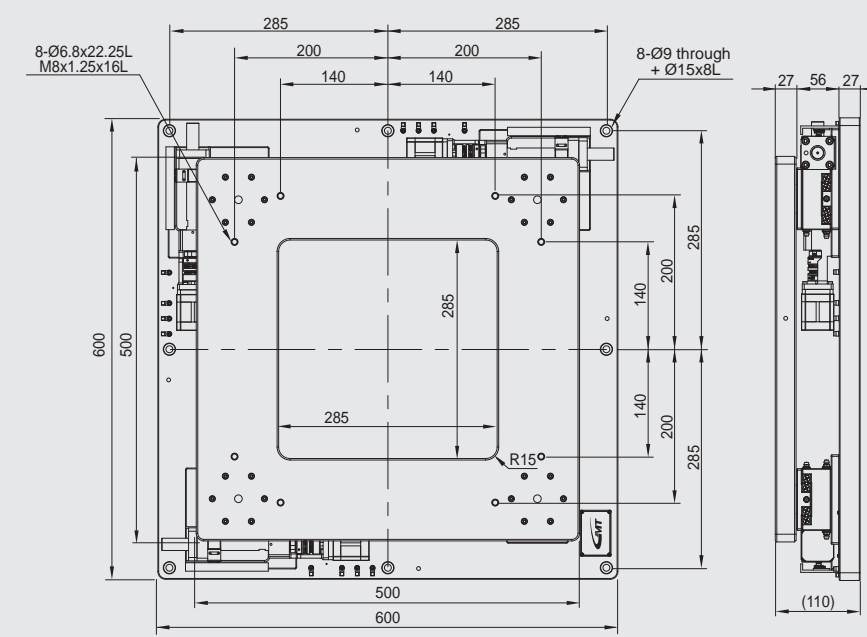
Travel stroke  $\pm 10 \times \pm 10, \pm 2.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS02-500RS		
Mechanical Specifications	Work bench size(mm)	500x500		
	Base size(mm)	600x600		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 2.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	30	40	80
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

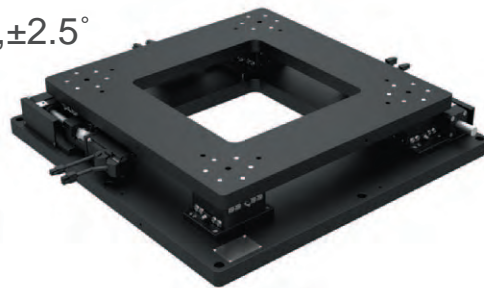
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



## GAS02-500RS

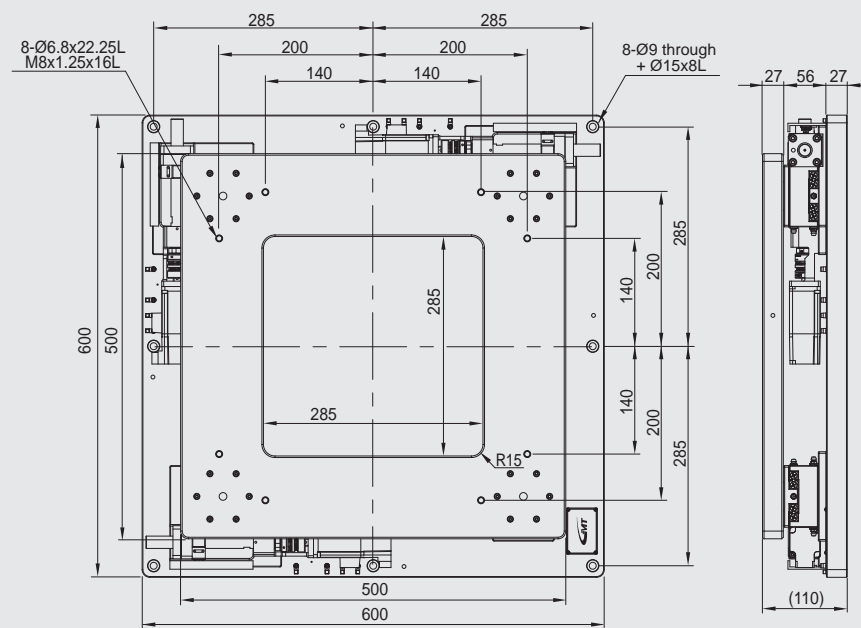
Travel stroke  $\pm 10 \times \pm 10, \pm 2.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

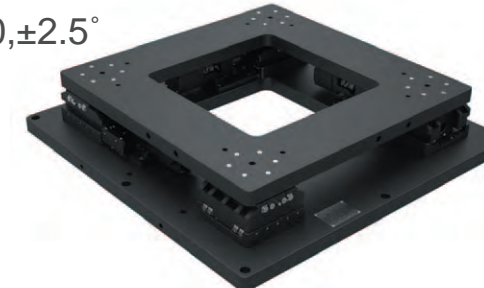
Model No.		GAS02-500RS		
Mechanical Specifications	Work bench size(mm)	500x500		
	Base size(mm)	600x600		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 2.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	30	40	80
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-500RC

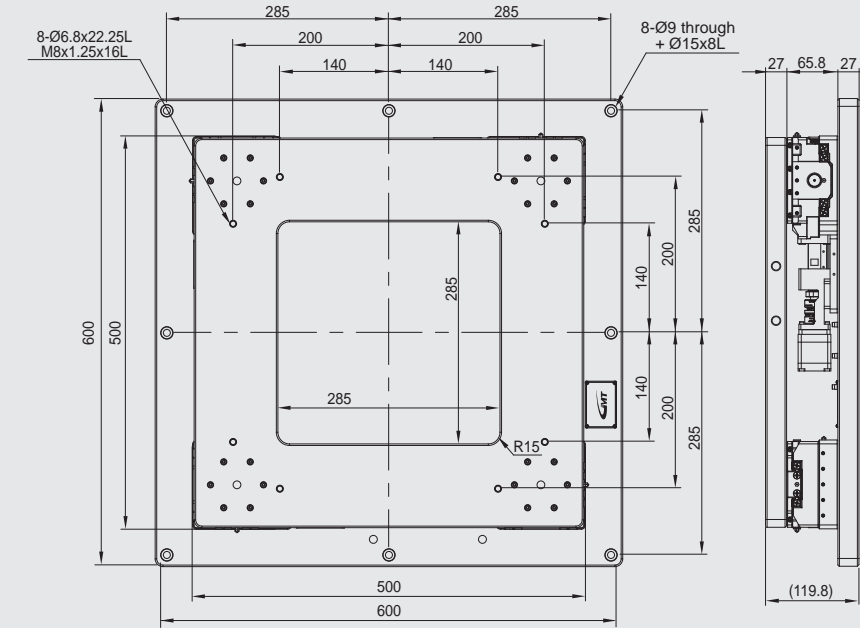
Travel stroke  $\pm 10 \times \pm 10, \pm 2.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

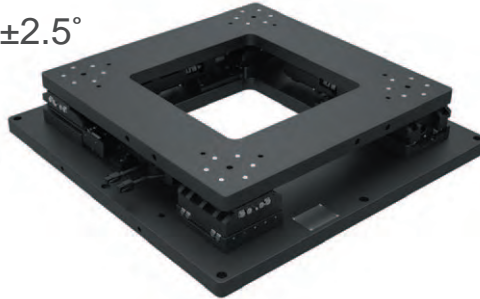
Model No.		GAS02-500RC		
Mechanical Specifications	Work bench size(mm)	500x500		
	Base size(mm)	600x600		
	Height(mm)	119.8		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 2.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	30	40	80
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-500RC

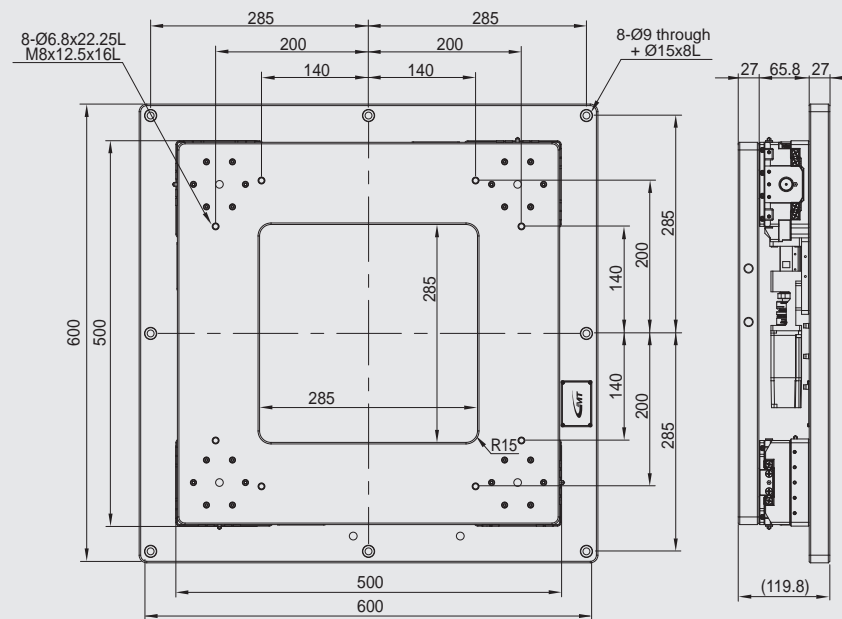
Travel stroke  $\pm 10 \times \pm 10, \pm 2.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS02-500RC		
Mechanical Specifications	Work bench size(mm)	500x500		
	Base size(mm)	600x600		
	Height(mm)	119.8		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 2.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	30	40	80
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-750CC

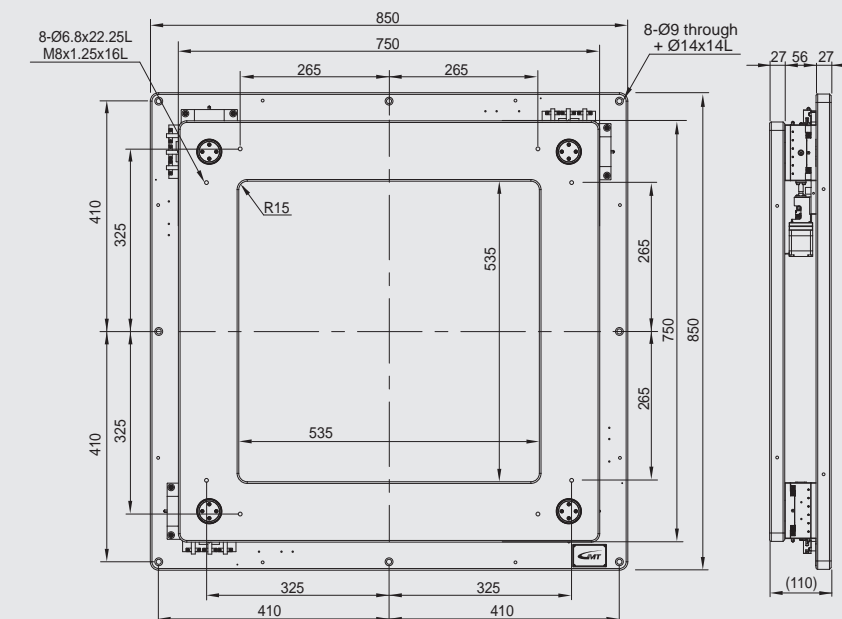
Travel stroke  $\pm 10 \times \pm 10, \pm 1.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS02-750CC		
Mechanical Specifications	Work bench size(mm)	750x750		
	Base size(mm)	850x850		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 1.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P2		
	Parallel loading capacity(kgf)	105		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	60	100
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N1E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT/GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-750CC

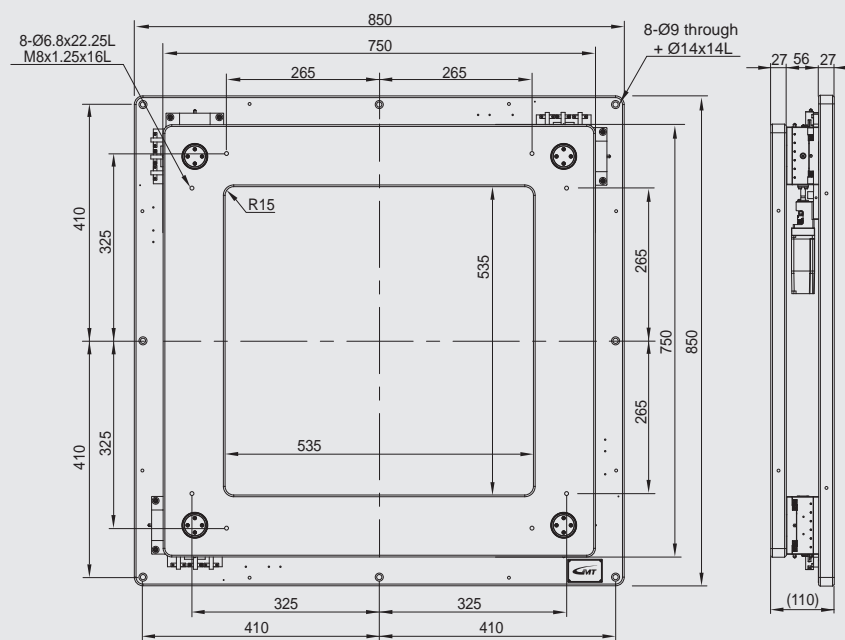
Travel stroke  $\pm 10 \times \pm 10, \pm 1.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

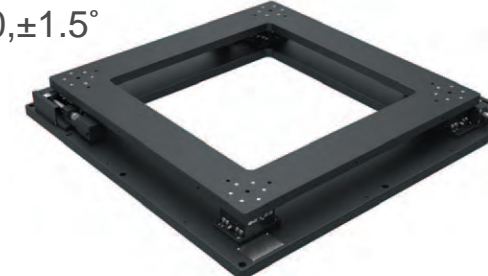
Model No.		GAS02-750CC		
Mechanical Specifications	Work bench size(mm)	750x750		
	Base size(mm)	850x850		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 1.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø8-P2		
	Parallel loading capacity(kgf)	105		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	60	100
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-750RS

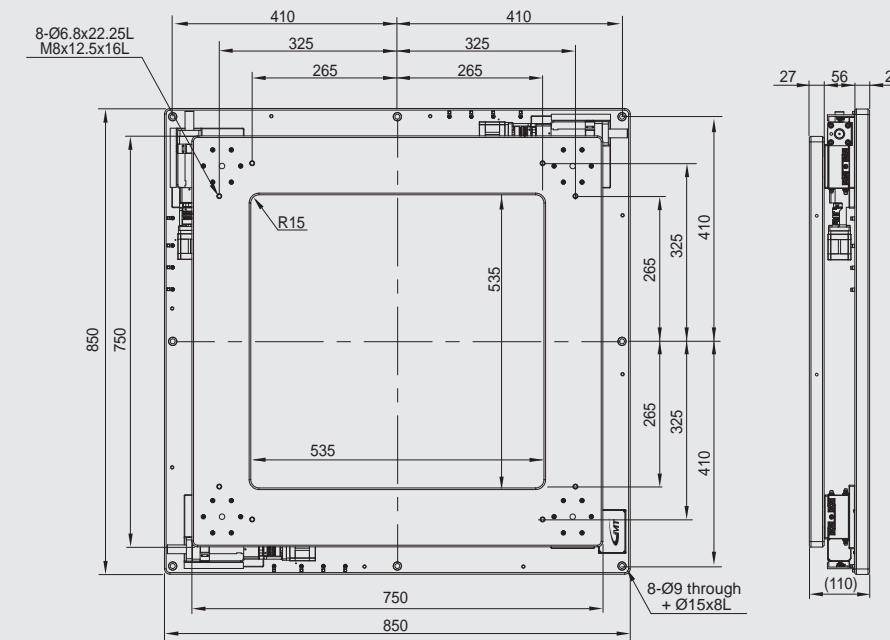
Travel stroke  $\pm 10 \times \pm 10, \pm 1.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS02-750RS		
Mechanical Specifications	Work bench size(mm)	750x750		
	Base size(mm)	850x850		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 1.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	60	100
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



## GAS02-750RS

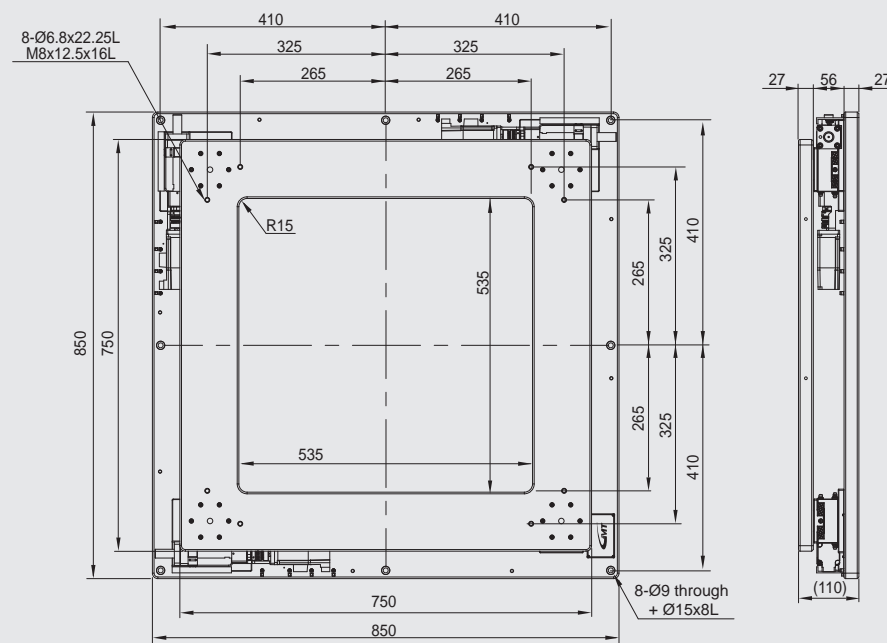
Travel stroke  $\pm 10 \times \pm 10, \pm 1.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

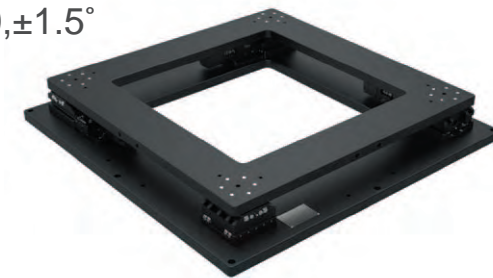
Model No.		GAS03-750RS		
Mechanical Specifications	Work bench size(mm)	750x750		
	Base size(mm)	850x850		
	Height(mm)	110		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 1.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	60	100
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-10A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-750RC

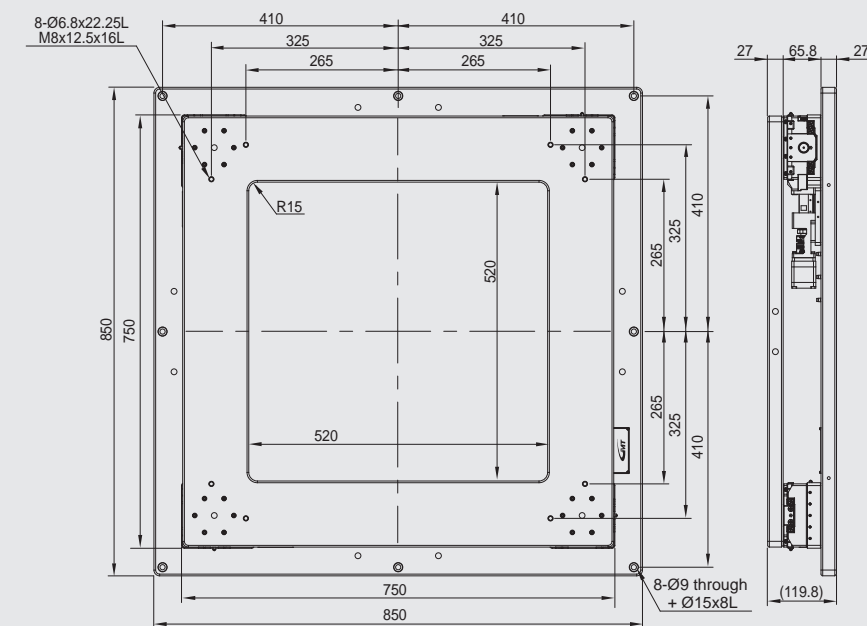
Travel stroke  $\pm 10 \times \pm 10, \pm 1.5^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

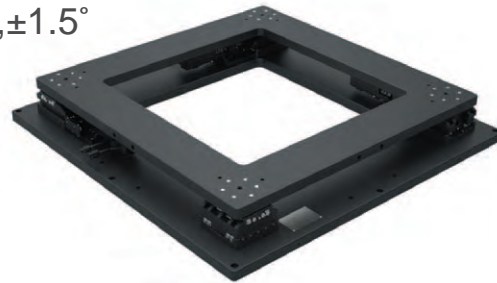
Model No.		GAS02-750RC		
Mechanical Specifications	Work bench size(mm)	750x750		
	Base size(mm)	850x850		
	Height(mm)	119.8		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 1.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	60	100
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□42 Single shaft / TS3667N3E7	□42 Single shaft / TS3617N3E10	□42 Single shaft / 2MS-N42U47A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	GMT / GTR22G-D

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS02-750RC

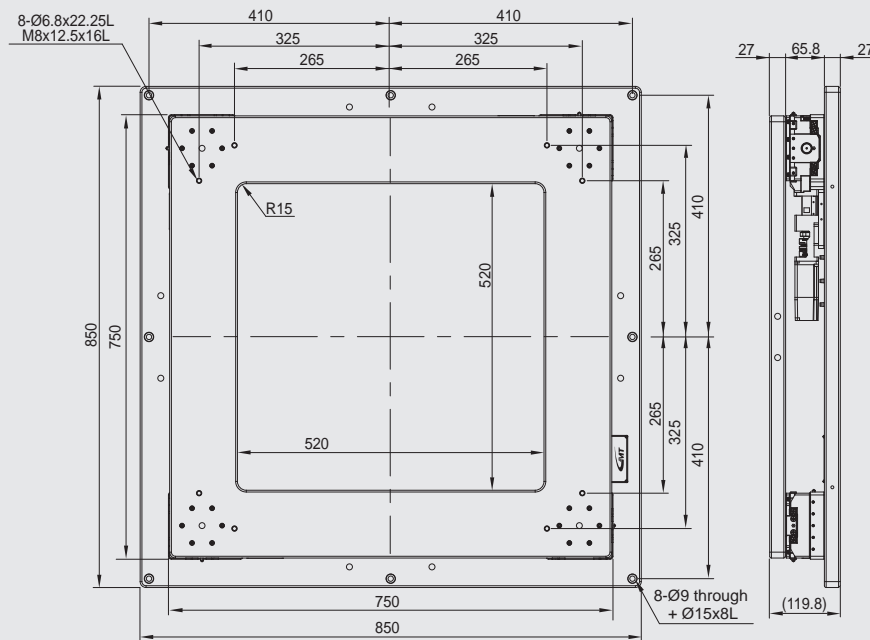
Travel stroke  $\pm 10 \times \pm 10, \pm 1.5^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

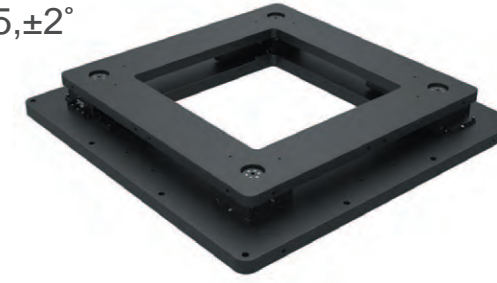
Model No.		GAS02-750RC		
Mechanical Specifications	Work bench size(mm)	750x750		
	Base size(mm)	850x850		
	Height(mm)	119.8		
	Travel stroke(mm)	$\pm 10 \times \pm 10$		
	Angle (°)	$\pm 1.5^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø16-P2		
	Parallel loading capacity(kgf)	130		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	60	100
Electrical Specifications	Motor brand / Type	MITSUBISHI / 100W	Panasonic / 100W	Delta / 100W
	Motor shaft / Model no.	□40 / HG-KR13	□40 / MSMD012G1S	□40 / ECMA-C10401ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-105A	Panasonic / MADHT1505	Delta / ASD-A2-0121-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1000CC

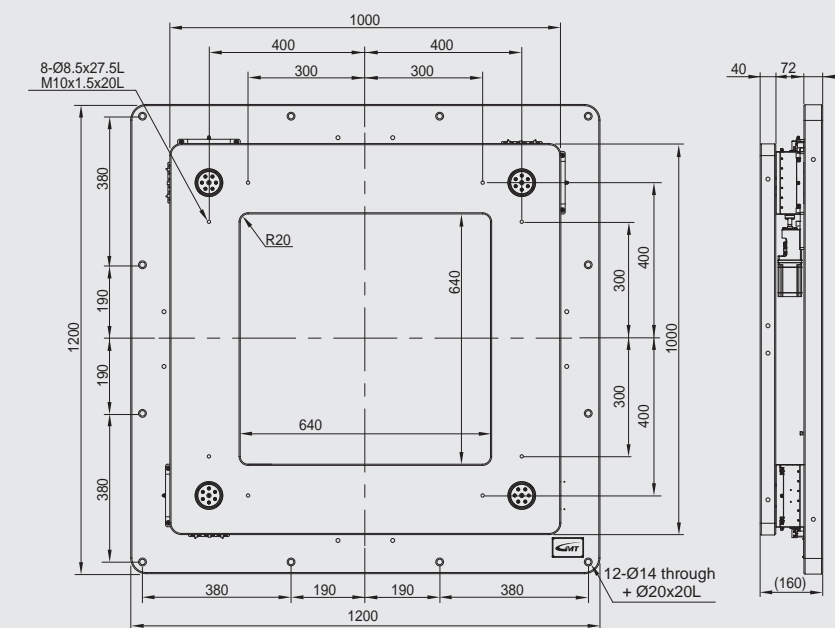
Travel stroke  $\pm 15 \times \pm 15, \pm 2^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

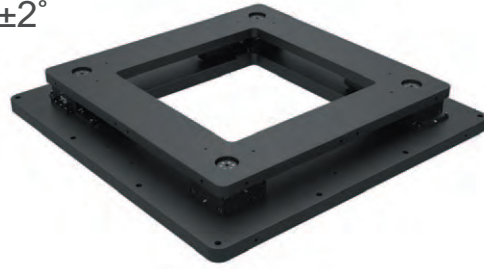
Model No.		GAS03-1000CC		
Mechanical Specifications	Work bench size(mm)	1000x1000		
	Base size(mm)	1200x1200		
	Height(mm)	160		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P4		
	Parallel loading capacity(kgf)	160		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	50	80	120
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□60 Single shaft / TS3624N3E5	□60 Single shaft / TS3606N4E10	□57 Single shaft / 2MS-N57U41A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1000CC

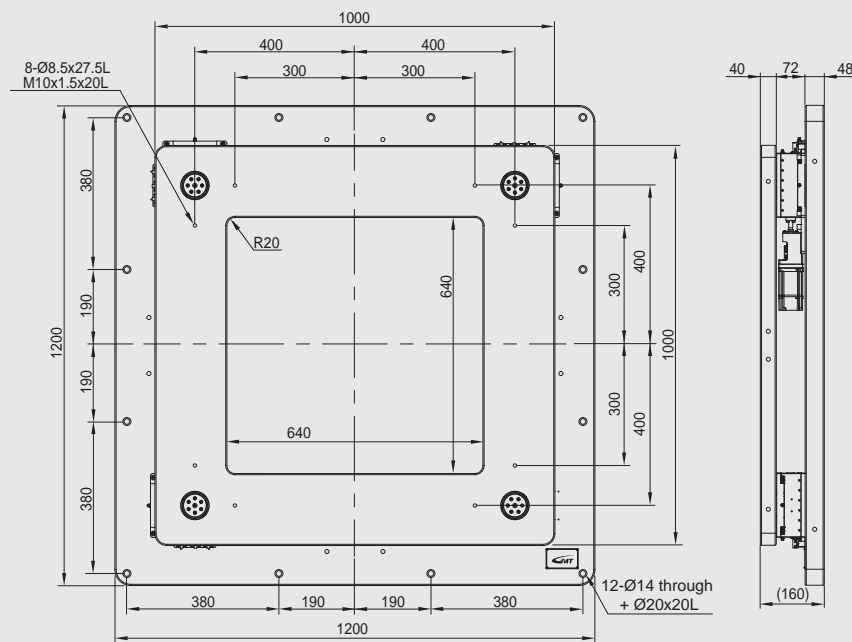
Travel stroke  $\pm 15 \times \pm 15, \pm 2^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

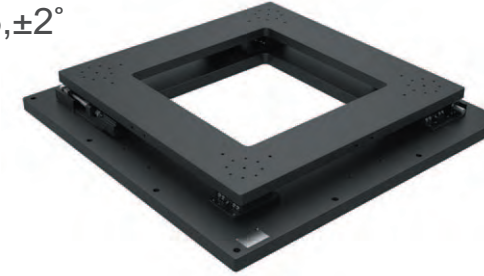
Model No.		GAS03-1000CC		
Mechanical Specifications	Work bench size(mm)	1000x1000		
	Base size(mm)	1200x1200		
	Height(mm)	160		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P4		
	Parallel loading capacity(kgf)	160		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	40	80	120
Electrical Specifications	Motor brand / Type	MITSUBISHI / 200W	Panasonic / 200W	Delta / 200W
	Motor shaft / Model no.	□60 / HG-KR23	□60 / MSMD022G1S	□60 / ECMA-C10602ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-20A	Panasonic / MADHT1507	Delta / ASD-A2-0221-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1000RS

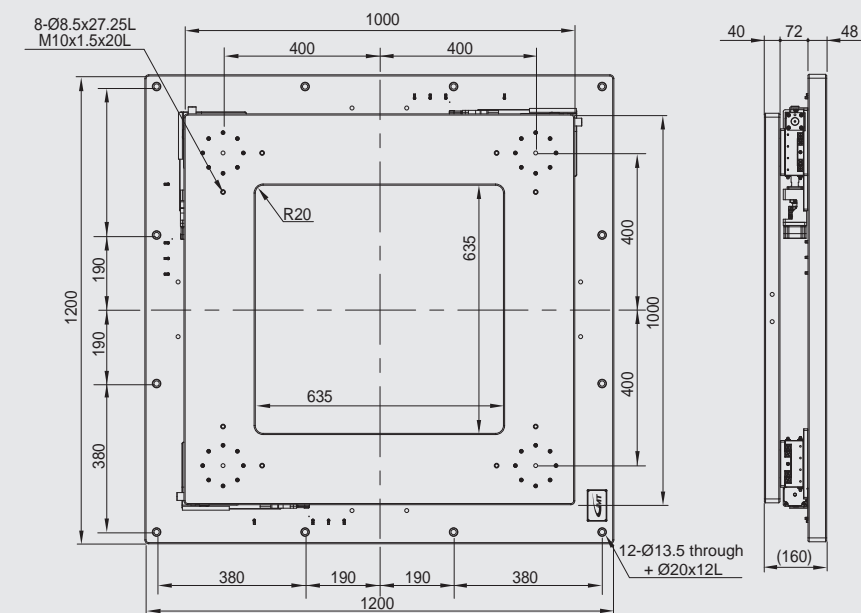
Travel stroke  $\pm 15 \times \pm 15, \pm 2^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.		GAS03-1000RS		
Mechanical Specifications	Work bench size(mm)	1000x1000		
	Base size(mm)	1200x1200		
	Height(mm)	160		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (θ)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	50	80	120
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□60 Single shaft / TS3624N3E5	□60 Single shaft / TS3606N4E10	□57 Single shaft / 2MS-N57U41A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	

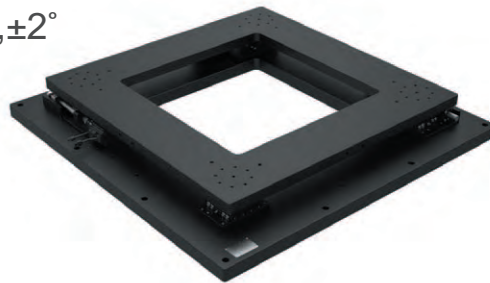
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



## GAS03-1000RS

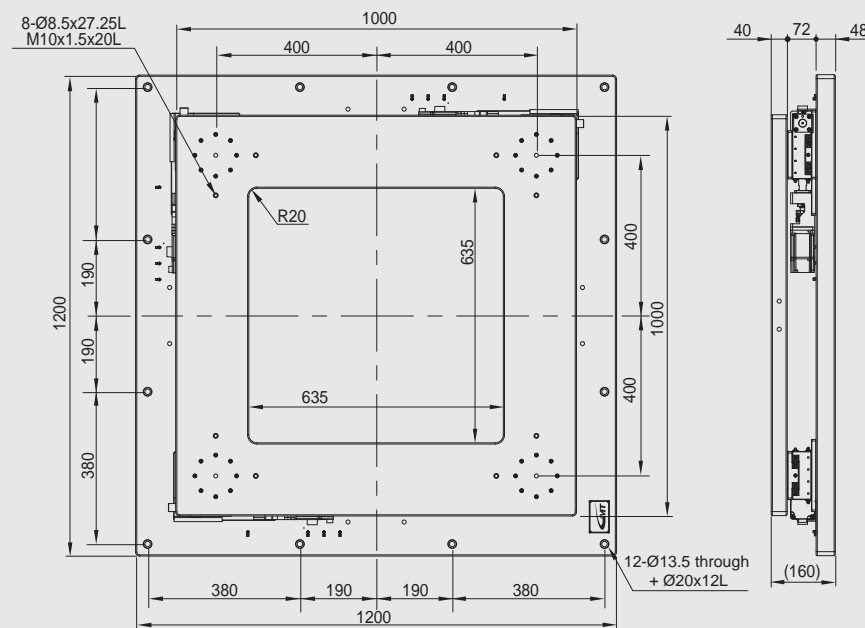
Travel stroke  $\pm 15 \times \pm 15, \pm 2^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

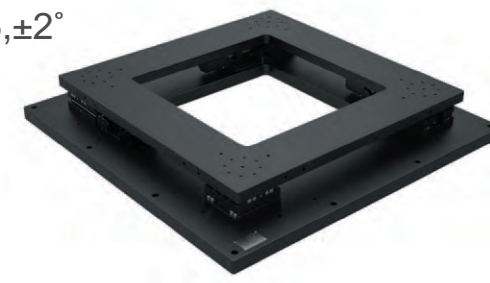
Model No.		GAS03-1000RS		
Mechanical Specifications	Work bench size(mm)	1000x1000		
	Base size(mm)	1200x1200		
	Height(mm)	160		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	50	80	120
Electrical Specifications	Motor brand / Type	MITSUBISHI / 200W	Panasonic / 200W	Delta / 200W
	Motor shaft / Model no.	□60 / HG-KR23	□60 / MSMD022G1S	□60 / ECMA-C10602ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-20A	Panasonic / MADHT1507	Delta / ASD-A2-0221-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1000RC

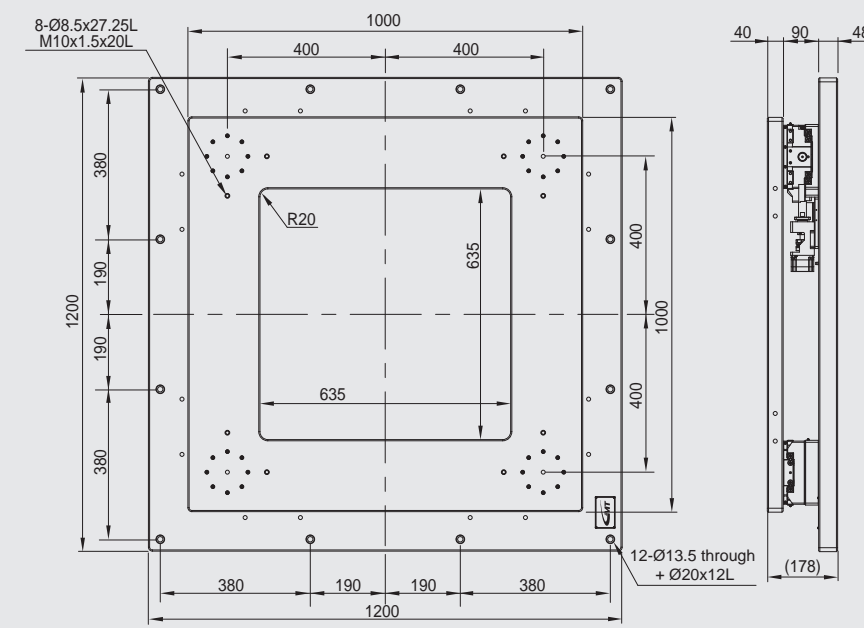
Travel stroke  $\pm 15 \times \pm 15, \pm 2^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

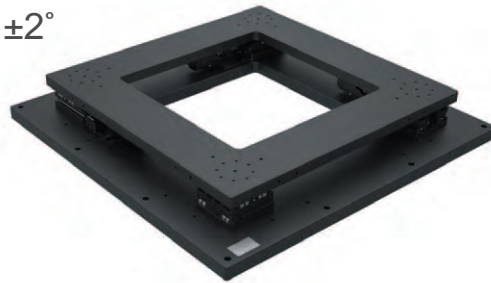
Model No.		GAS03-1000RC		
Mechanical Specifications	Work bench size(mm)	1000x1000		
	Base size(mm)	1200x1200		
	Height(mm)	178		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	50	80	120
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□60 Single shaft / TS3624N3E5	□60 Single shaft / TS3606N4E10	□57 Single shaft / 2MS-N57U41A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1000RC

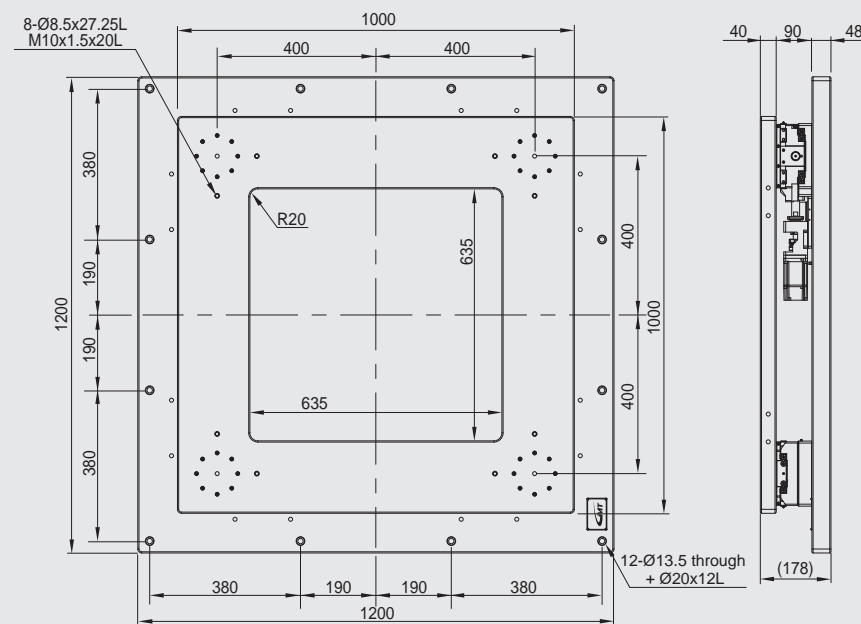
Travel stroke  $\pm 15 \times \pm 15, \pm 2^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS03-1000RC		
Mechanical Specifications	Work bench size(mm)	1000x1000		
	Base size(mm)	1200x1200		
	Height(mm)	178		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 2^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	50	80	120
Electrical Specifications	Motor brand / Type	MITSUBISHI / 200W	Panasonic / 200W	Delta / 200W
	Motor shaft / Model no.	□60 / HG-KR23	□60 / MSMD022G1S	□60 / ECMA-C10602ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-20A	Panasonic / MADHT1507	Delta / ASD-A2-0221-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1500CC

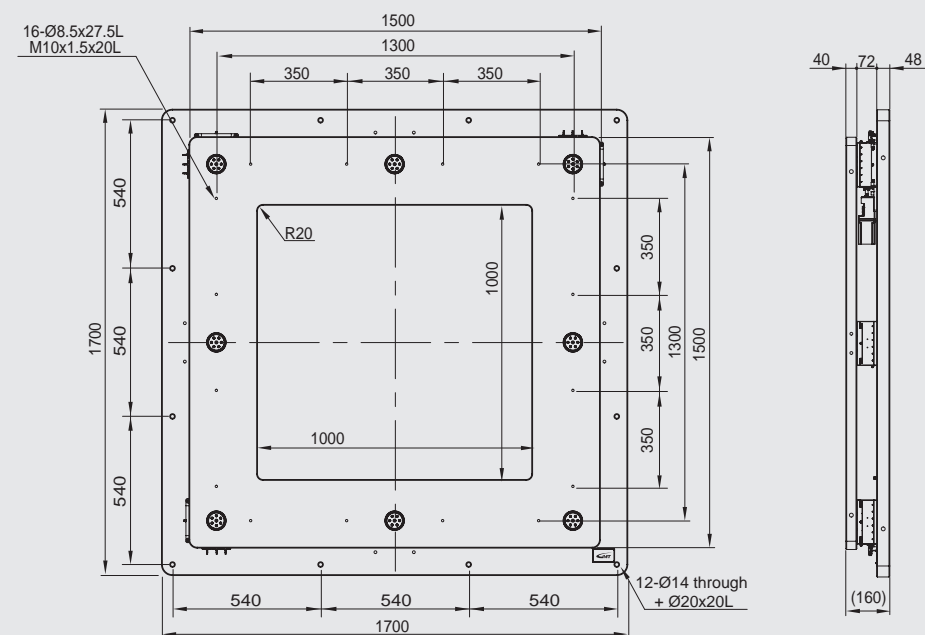
Travel stroke  $\pm 15 \times \pm 15, \pm 1^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS03-1500CC		
Mechanical Specifications	Work bench size(mm)	1500x1500		
	Base size(mm)	1700x1700		
	Height(mm)	160		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 1^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P4		
	Parallel loading capacity(kgf)	160		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	60	100	150
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□60 Single shaft / TS3624N3E5	□60 Single shaft / TS3606N4E10	□57 Single shaft / 2MS-N57U41A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1500CC

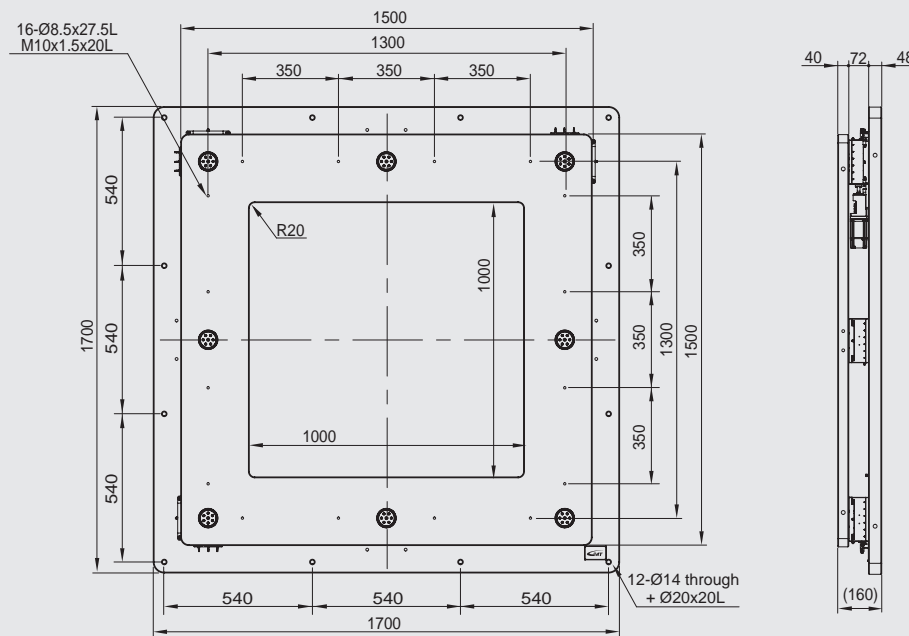
Travel stroke  $\pm 15 \times \pm 15, \pm 1^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS03-1500CC		
Mechanical Specifications	Work bench size(mm)	1500x1500		
	Base size(mm)	1700x1700		
	Height(mm)	160		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 1^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø10-P4		
	Parallel loading capacity(kgf)	160		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	60	100	150
Electrical Specifications	Motor brand / Type	MITSUBISHI / 200W	Panasonic / 200W	Delta / 200W
	Motor shaft / Model no.	□60 / HG-KR23	□60 / MSMD022G1S	□60/ ECMA-C10602ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-20A	Panasonic / MADHT1507	Delta / ASD-A2-0221-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1500RS

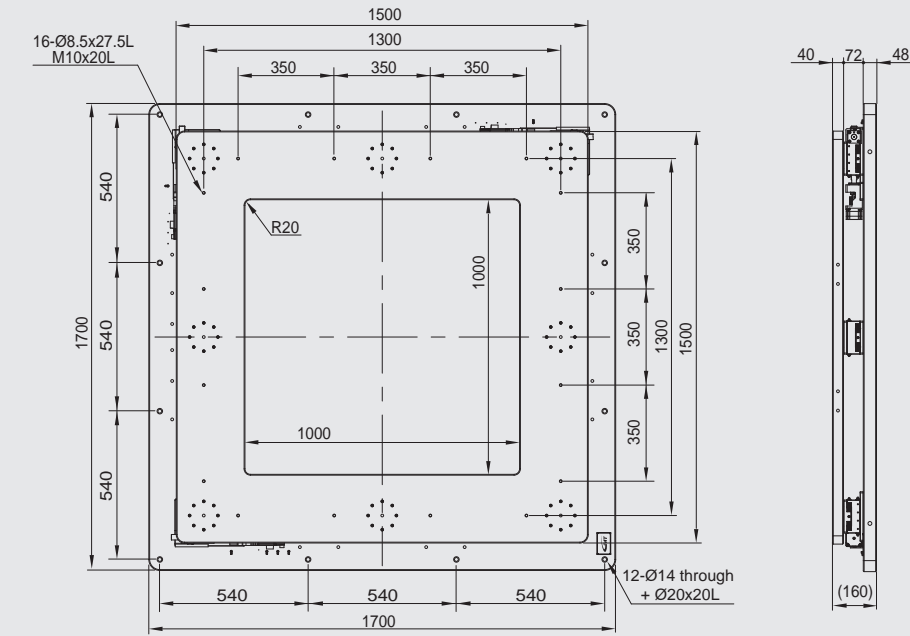
Travel stroke  $\pm 15 \times \pm 15, \pm 1^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS03-1500RS		
Mechanical Specifications	Work bench size(mm)	1500x5000		
	Base size(mm)	1700x1700		
	Height(mm)	168		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 1^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	60	100	150
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□60 Single shaft / TS3624N3E5	□60 Single shaft / TS3606N4E10	□57 Single shaft / 2MS-N57U41A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	

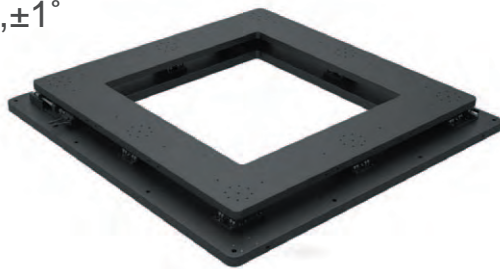
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.



## GAS03-1500RS

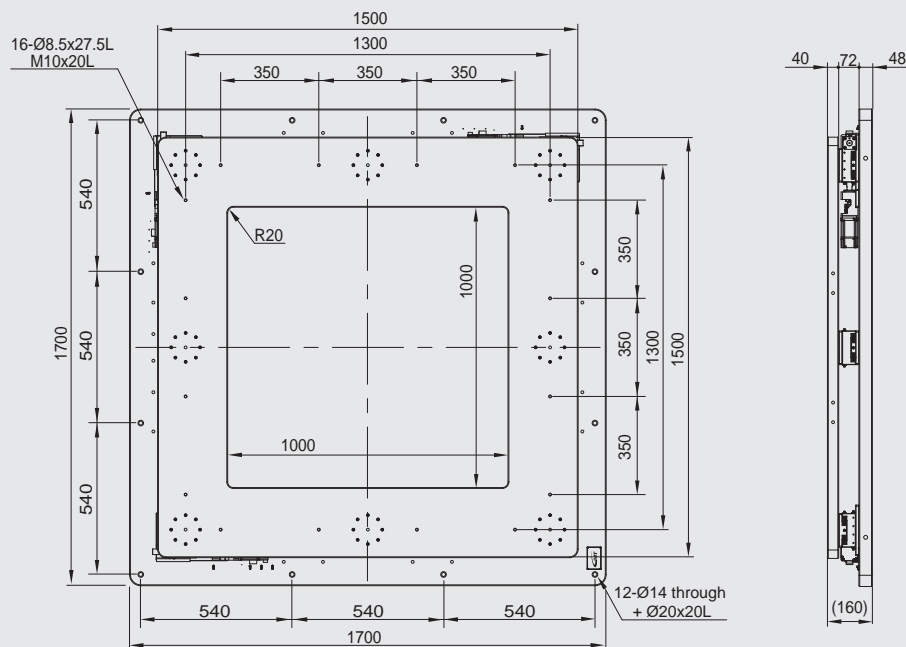
Travel stroke  $\pm 15 \times \pm 15, \pm 1^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

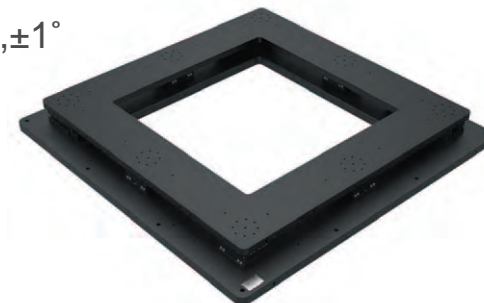
Model No.		GAS03-1500RS		
Mechanical Specifications	Work bench size(mm)	1500x5000		
	Base size(mm)	1700x1700		
	Height(mm)	168		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 1^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	60	100	150
Electrical Specifications	Motor brand / Type	MITSUBISHI / 200W	Panasonic / 200W	Delta / 200W
	Motor shaft / Model no.	□60 / HG-KR23	□60 / MSMD022G1S	□60 / ECMA-C10602ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-20A	Panasonic / MADHT1507	Delta / ASD-A2-0221-L

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1500RC

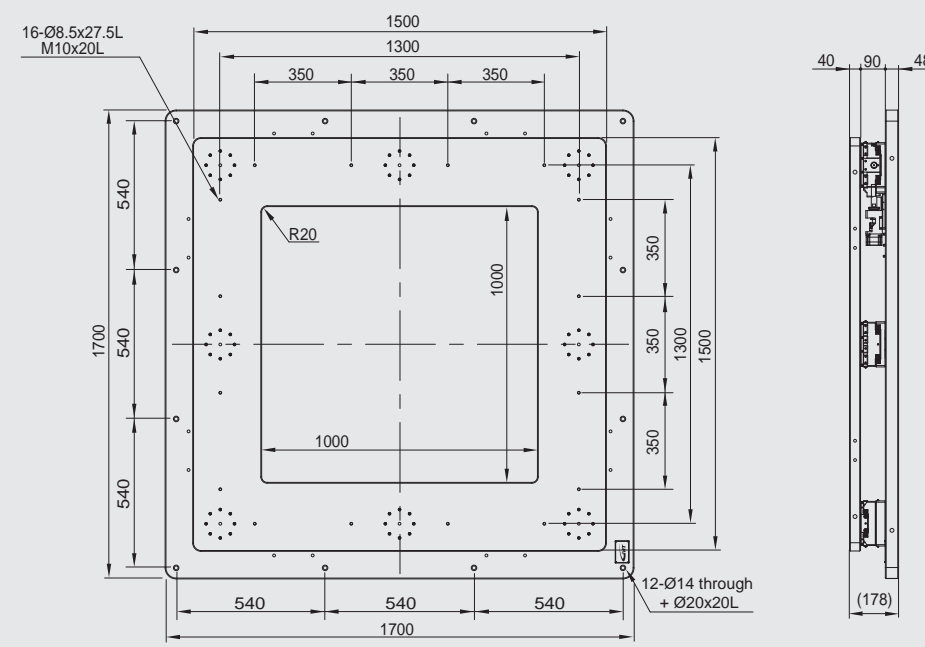
Travel stroke  $\pm 15 \times \pm 15, \pm 1^\circ$

Stepper system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS03-1500RC		
Mechanical Specifications	Work bench size(mm)	1500x5000		
	Base size(mm)	1700x1700		
	Height(mm)	178		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (°)	$\pm 1^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	60	100	150
Electrical Specifications	Motor brand / Type	TAMAGAWA / 5-phase stepper motor	TAMAGAWA / 2-phase stepper motor	GMT / 2-phase stepper motor
	Motor shaft / Model no.	□60 Single shaft / TS3624N3E5	□60 Single shaft / TS3606N4E10	□57 Single shaft / 2MS-N57U41A
	Recommended driver brand / Model no. (Optional)	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / eTD-24A	GMT / DS2-032A
		GMT / GTR515B	GMT / GTR24M3	

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## GAS03-1500RC

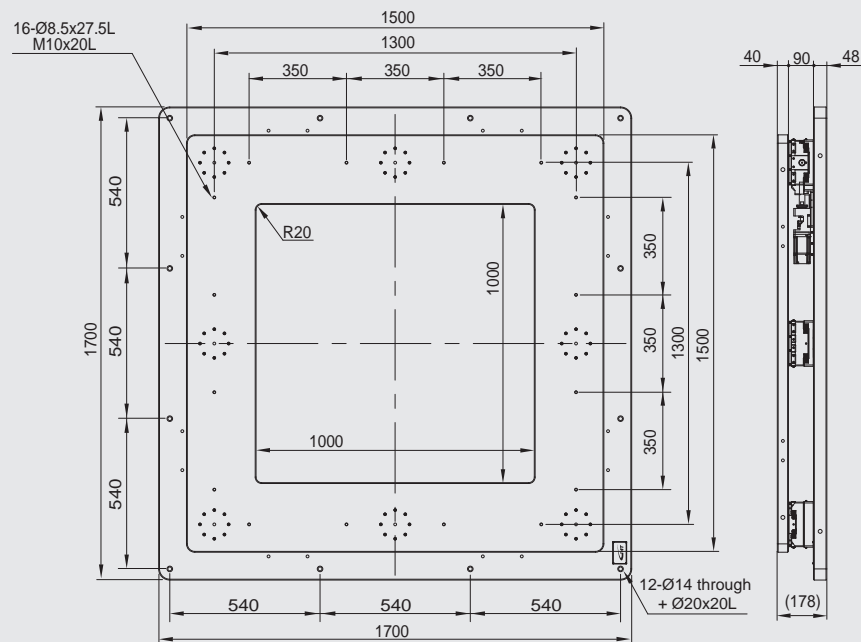
Travel stroke  $\pm 15 \times \pm 15, \pm 1^\circ$

Servo system



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.		GAS03-1500RC		
Mechanical Specifications	Work bench size(mm)	1500x5000		
	Base size(mm)	1700x1700		
	Height(mm)	178		
	Travel stroke(mm)	$\pm 15 \times \pm 15$		
	Angle (θ)	$\pm 1^\circ$		
	Work bench material/Surface treatment	Dura aluminum / Black anodized		
	Base material/Surface treatment	Dura aluminum / Black anodized		
Accuracy Grade	Ball screw specifications	Ø20-P2		
	Parallel loading capacity(kgf)	200		
	Repeatability accuracy(um)	UP:±1	P:±5	N:±15
	Parallelism(um)	60	100	150
Electrical Specifications	Motor brand / Type	MITSUBISHI / 200W	Panasonic / 200W	Delta / 200W
	Motor shaft / Model no.	□60 / HG-KR23	□60 / MSMD022G1S	□60 / ECMA-C10602ES
	Recommended driver brand / Model no. (Optional)	MITSUBISHI / MR-J4-20A	Panasonic / MADHT1507	Delta / ASD-A2-0221-L

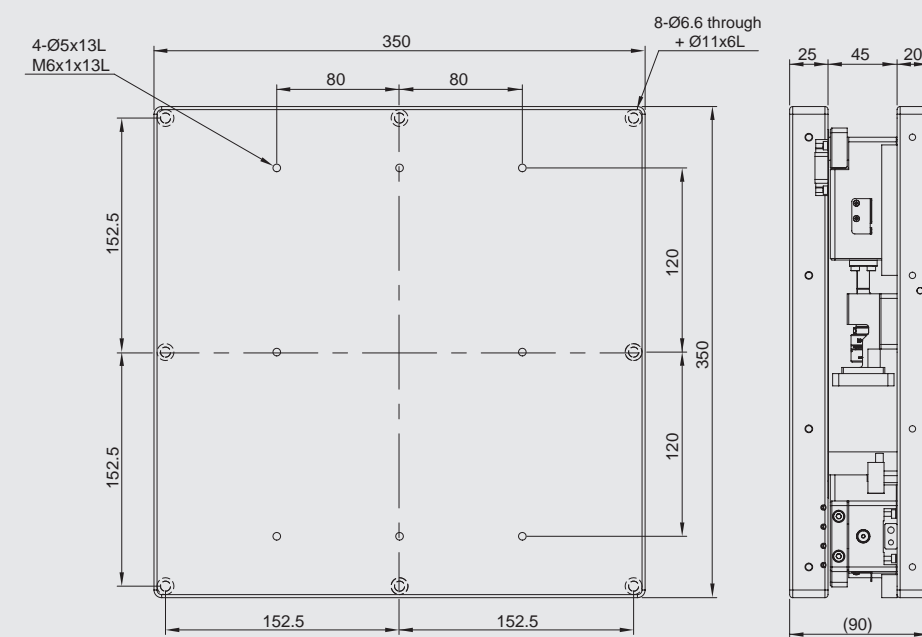
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## Ultra High Stiffness (Carbon Steel)



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base.
- Available optional surface treatment of electro-less nickel plating or black dyed per chosen material.

### Dimensions

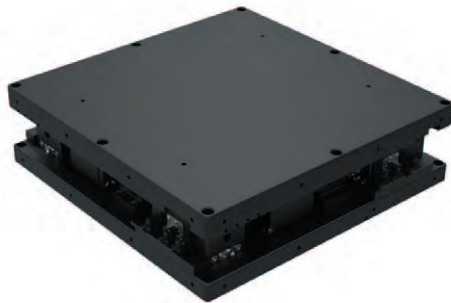


### Model No. Description

Model No.		GAS00-350SC			
Work bench size(mm)	350x350 mm	Ball screw lead	1 mm	Repeatability accuracy	UP ±1 um
Base size (mm)	350x350 mm	Main frame weight	55 Kg		P ±5 um
Height (mm)	90 mm	Work bench material	Carbon steel		N ±15 um
Travel stroke (mm)	$\pm 10 \times \pm 10$ mm	Work bench Surface treatment	Black finished	Parallelism	UP 15 um
Angle (θ)	$\pm 3^\circ$	Base material	Carbon steel		P 25 um
Loading capacity (Fv)	$45 \leq 0.01$ mm	Base surface treatment	Black finished		N 30 um
Loading capacity (Fs)	$500 \leq 0.01$ mm	Side-pushed loading capacity (Fs)	$200 \leq 0.01$ mm		

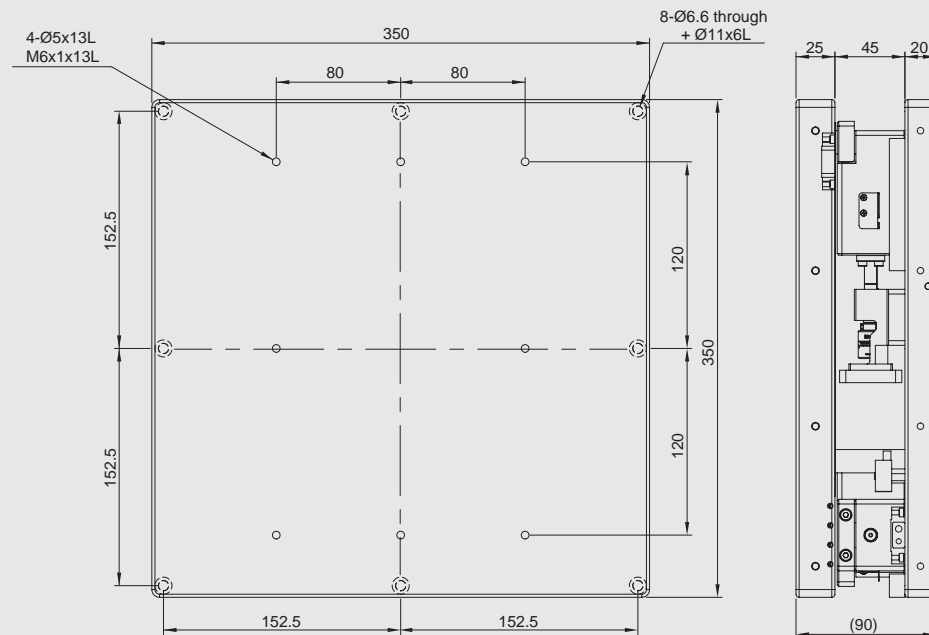
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## Ultra High Stiffness (Dura Aluminum)



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



## Model No. Description

Model No.	GAS00-350WC					
Work bench size(mm)	350x350 mm	Ball screw lead	1 mm	Repeatability accuracy	UP	±1 um
Base size (mm)	350x350 mm	Main frame weight	35 Kg		P	±5 um
Height (mm)	90 mm	Work bench material	Dura Aluminum		N	±15 um
Travel stroke (mm)	±10x±10 mm	Work bench Surface treatment	Black anodized	Parallelism	UP	15 um
Angle (θ)	±3°	Base material	Dura Aluminum		P	25 um
Loading capacity (Fv)	45 ≤ 0.01mm	Base surface treatment	Black anodized		N	30 um
Loading capacity (Fs)	500 ≤ 0.01mm	Side-pushed loading capacity (Fs)	60 ≤ 0.01mm			

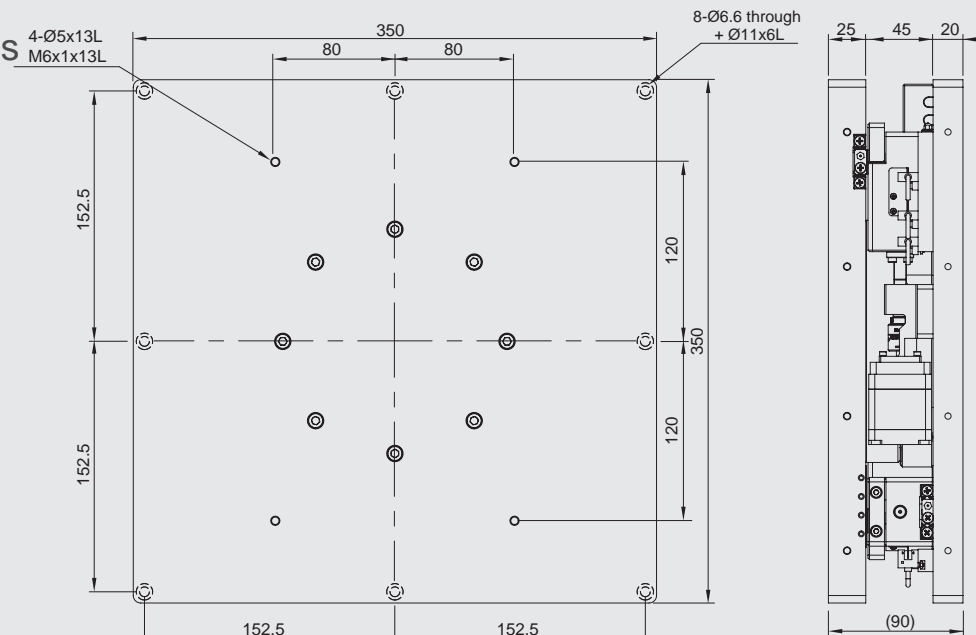
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## Ultra High Stiffness (Dura Aluminum)



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base with either electro-less nickel plating or black finished.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

## Dimensions



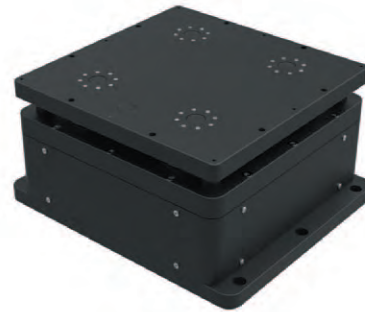
## Model No. Description

Model No.	GAS00-350AC					
Work bench size(mm)	350x350 mm	Ball screw lead	1 mm	Repeatability accuracy	UP	±1 um
Base size (mm)	350x350 mm	Main frame weight	27 Kg		P	±5 um
Height (mm)	90 mm	Work bench material	Dura Aluminum		N	±15 um
Travel stroke (mm)	±10x±10 mm	Work bench Surface treatment	Black anodized	Parallelism	UP	15 um
Angle (θ)	±3°	Base material	Dura Aluminum		P	25 um
Loading capacity (Fv)	45 ≤ 0.01mm	Base surface treatment	Black anodized		N	30 um
Loading capacity (Fs)	500 ≤ 0.01mm	Side-pushed loading capacity (Fs)	50 ≤ 0.01mm			

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

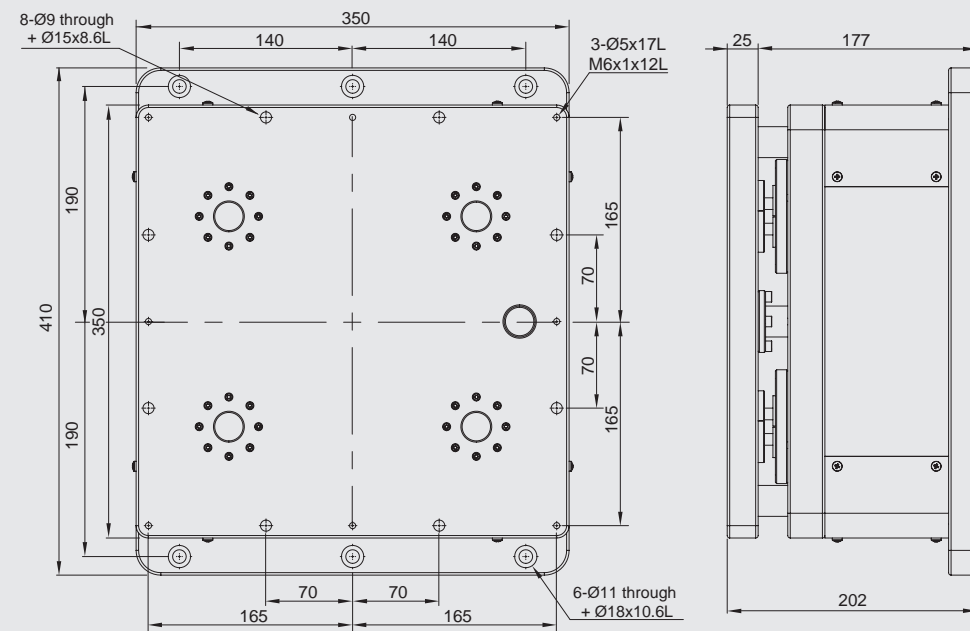


## Z Axis GZAS350



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base with either electro-less nickel plating or black finished.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions



### Model No. Description

Model No.	GAZS350			馬達規格	
Work bench size(mm)	350x350 mm	Work bench material	Dura Aluminum	Motor brand	Delta
Base size (mm)	350x410 mm	Work bench Surface treatment	Refer to above description concerning material option.	Motor model	ECMA-C30604
Height (mm)	202(+30) mm	Base material	Dura Aluminum	Motor power rate/Frame size	400W / □60
Travel stroke (mm)	±15 mm	Base surface treatment	Refer to above description concerning material option.	Magnetizing max. static torque	1.3 N·m
Ball screw lead	5 mm	Parallelism	40 µm	Rotor inertia(g·cm <sup>2</sup> )	300
Main frame weight	65 Kg	Repeatability accuracy	±2 µm		
Loading capacity (Fv)	200	Loading capacity (Fs)	200		

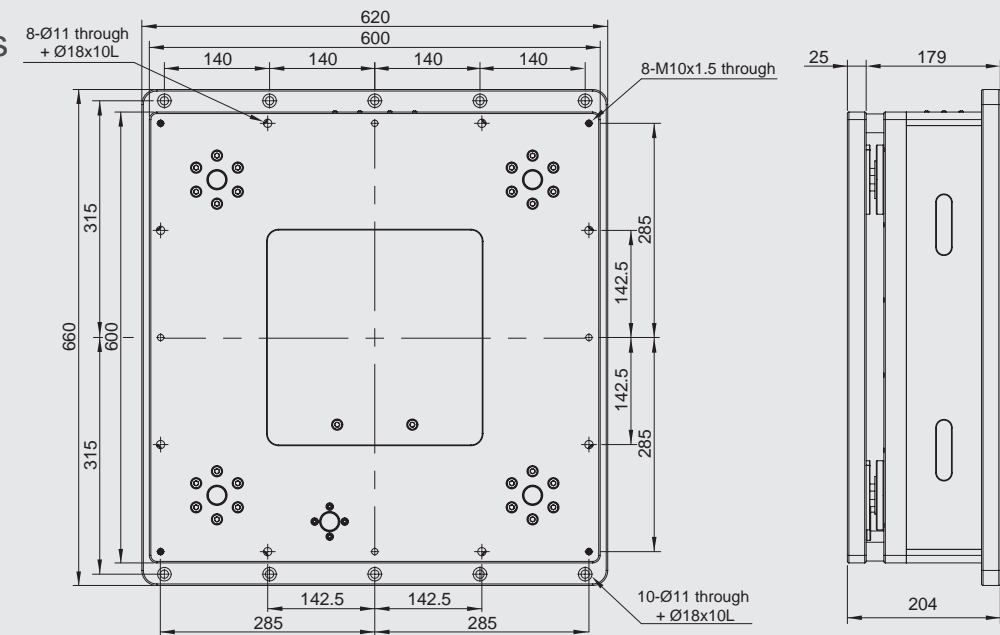
- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## Z Axis GZAS600



- The maximum travel stroke is calculated from the work bench positioned at the central point.
- Available optional material of carbon steel (S50C, S50C hardened to HRC28-32) for the workbench and base with either electro-less nickel plating or black finished.
- Duralumin material designed available surface treatment with nature aluminum anodized or black anodized.

### Dimensions

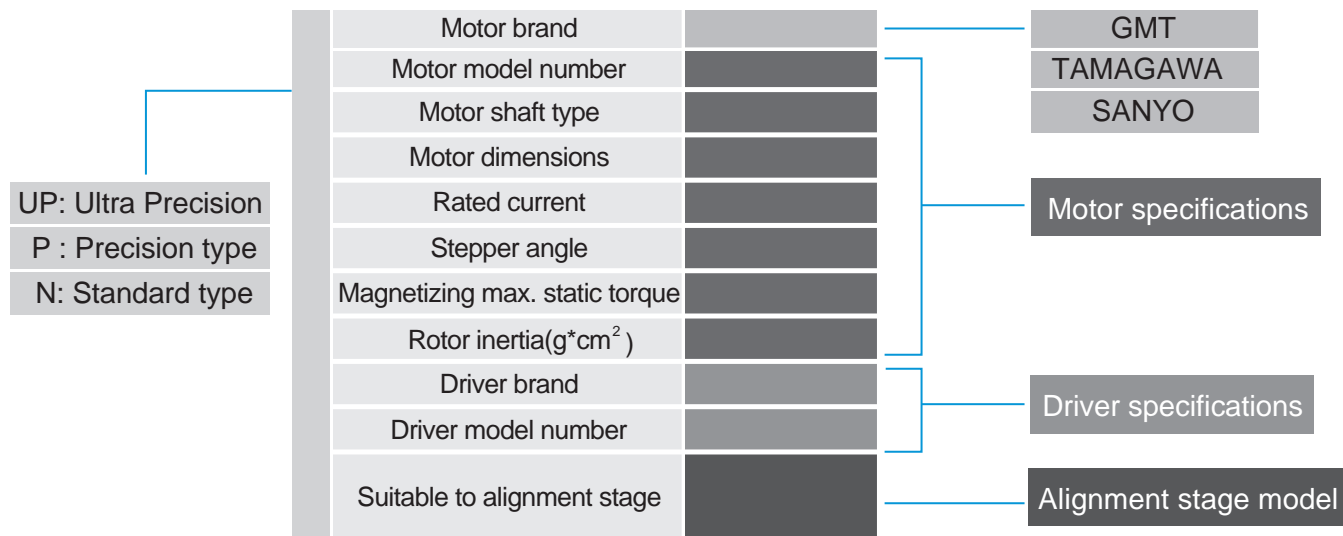


### Model No. Description

Model No.	GAZS600			馬達規格	
Work bench size(mm)	600x600 mm	Work bench material	Dura Aluminum	Motor brand	Delta
Base size (mm)	620x660 mm	Work bench Surface treatment	Refer to above description concerning material option.	Motor model	ECMA-C30604
Height (mm)	±15 mm	Base material	Dura Aluminum	Motor power rate/Frame size	400W / □60
Travel stroke (mm)	5 mm	Base surface treatment	Refer to above description concerning material option.	Magnetizing max. static torque	1.3 N·m
Ball screw lead	204(+30) mm	Parallelism	80 µm	Rotor inertia(g·cm <sup>2</sup> )	300
Main frame weight	170 Kg	Repeatability accuracy	±2 µm		
Loading capacity (Fv)	200	Loading capacity (Fs)	400		

- ※ Above introduced motor types/Driver brand and model no. are recommended as default which are available to be changed as request or discussed for other alternative motor and driver GMT may offer. (Please refer to GMT motor catalogue for more options.)
- ※ Above Travel stroke is defined as the moving distance while the alignment stage is not rotated, please choose suitable angle as per specification and note the practical limitation of the stage might be wider.
- ※ The rotation angle above specified has been defined as rotatable angle at home position.
- ※ Stroke limitation block is protective device; do not use it as the dimension positioning purpose.

## Motor comparison reference



## Stepper system

- 5-phase stepper motor in Japanese brand and its compatible driver are recommended while Ultra Precision type is selected.
- 2-phase stepper motor in Japanese brand and its compatible driver are recommended while Precision type is selected.
- GMT 2-phase stepper motor and driver are recommended while standard type is selected.
- [Connection cable, driver are supplied optionally on request. Please refer to GMT Motor & Driver catalogue for more details.](#)
- Standard connection cable is corresponding connection type for stage side which is including single-sided connector in 2 m long with discrete wires as common accessory stocked for optional purchasing.
- The most preferred driver is recommended to be specified by GMT as considerations. For different needs, please choose the suitable driver based on real functional needs.
- Please consider to integrate break system in case vertical loading application of the alignment stage.

## Servo system

- Servo motor in Japanese brand and its compatible driver are recommended while Ultra Precision type is selected.
- Servo motor in Japanese brand and its compatible driver are recommended while Precision type is selected.
- Servo motor in Taiwanese brand and driver are recommended while standard type is selected.
- Please consider to integrate break system in case vertical loading application of the alignment stage.

## Delivery content

- Standard delivery content includes Alignment stage, Coupling, and Motor.
- Easy pack delivery contains Alignment stage only.

## Ultra Precision Models

U P	Motor brand	TAMAGAWA			SANYO
	Motor model no.	TS3682N1	TS3664N1E2	TS3664N11E2	SH5281-7211
	Motor shaft type	Single shaft	Single shaft	Double shaft	Double shaft
	Motor dimensions	□20x30	□24x30.5	□24x30.5	□28x32
	Rated current	0.35	0.75	0.75	0.75
	Stepper angle	0.72	0.72	0.72	0.72
	Magnetizing max. static torque(N·m)	0.013	0.018	0.018	0.041
	Rotor inertia(g·cm <sup>2</sup> )	1.9	4.2	4.2	10
	Recommended driver	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C
	Driver brand / Model no.	GMT/GTR515B	GMT/GTR515B	GMT/GTR515B	GMT/GTR515B
	Suitable alignment stage	GAS00-100HC	GAS00-160CC	GAS00-160HC	GAS00-160HAC
					GAS00-160LC
					GAS00-190HC

## Ultra Precision Models

U P	Motor brand	TAMAGAWA	
	Motor model no.	TS3667N3E7	TS3624N3E5
	Motor shaft type	Single shaft	Single shaft
	Motor dimensions	□42x47	□60x86.5
	Rated current	0.75	1.4
	Stepper angle	0.72	0.72
	Magnetizing max. static torque(N·m)	0.24	1.3
	Rotor inertia(g·cm <sup>2</sup> )	68	440
	Recommended driver	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C
	Driver brand / Model no.	GMT/GTR515B	GMT/GTR515B
	Suitable alignment stage	GAS00-200CC	GAS03-1000CC
		GAS00-200HC	GAS03-1000RS
		GAS00-250HC	GAS03-1000RC
		GAS01-250CC	GAS03-1500CC
		GAS01-250RS	GAS03-1500RS
		GAS01-250RC	GAS03-1500RC
		GAS01-350CC	
		GAS01-350RS	
		GAS01-350RC	
		GAS01-400CC	
		GAS01-400RS	
		GAS01-400RC	
		GAS01-500CC	
		GAS01-500RS	
		GAS01-500RC	
		GAS01-750CC	
		GAS01-750RS	
		GAS01-750RC	
		GAS00-350SC	
		GAS00-350AC	
		GAS00-350WC	

Precision Models

P	Motor brand	TAMAGAWA		
	Motor model no.	TS3641N11E2	TS3617N3E10	TS3606N4E10
	Motor shaft type	Double shaft	Single shaft	Single shaft
	Motor dimensions	□28x33.5	□42x47	□60x85
	Rated current	0.95	0.4	2
	Stepper angle	1.8	1.8	1.8
	Magnetizing max. static torque(N·m)	0.06	0.32	2.2
	Rotor inertia(g·cm <sup>2</sup> )	8	68	900
	Recommended driver	TOHAN DENSHI / eTD-24A	TOHAN DENSHI / eTD-24A	TOHAN DENSHI / eTD-24A
	Driver brand / Model no.	GMT/GTR24M3	GMT/GTR24M3	GMT/GTR24M3
	Suitable alignment stage	GAS00-160HAC GAS00-160LC GAS00-190HC	GAS00-200CC GAS00-200HC GAS00-250HC GAS01-250CC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS01-400CC GAS01-400RS GAS01-400RC GAS01-500CC GAS01-500RS GAS01-500RC GAS01-750CC GAS01-750RS GAS01-750RC GAS00-350SC GAS00-350AC GAS00-350WC	GAS03-1000CC GAS03-1000RS GAS03-1000RC GAS03-1500CC GAS03-1500RS GAS03-1500RC

Standard Models

N	Motor brand	GMT	
	Motor model no.	2MS-N20U28A	2MS-N28D32A
	Motor shaft type	Single shaft	Double shaft
	Motor dimensions	□20x28	□28x31.3
	Rated current	0.2	0.67
	Stepper angle	1.8	1.8
	Magnetizing max. static torque(N·m)	0.016	0.06
	Rotor inertia(g·cm <sup>2</sup> )	1.9	9
	Recommended driver	GMT/GTR22G-D	GMT/GTR22G-D
	Driver brand / Model no.	GMT/DS022A	GMT/DS022A
	Suitable alignment stage	GAS00-100H	GAS00-160HAC GAS00-160LC GAS00-190HC

Standard Models

N	Motor brand	GMT	
	Motor model no.	2MS-N42U47A	2MS-N57U41A
	Motor shaft type	Single shaft	Single shaft
	Motor dimensions	□42x47	□57x41
	Rated current	1.68	2.8
	Stepper angle	1.8	1.8
	Magnetizing max. static torque(N·m)	0.43	0.54
	Rotor inertia(g·cm <sup>2</sup> )	68	120
	Recommended driver	GMT/GTR32G-D	GMT/GTR32G-D
	Driver brand / Model no.	GMT/DS022A	
	Suitable alignment stage	GAS00-200CC GAS00-200HC GAS00-250HC GAS01-250CC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS01-400CC GAS01-400RS GAS01-400RC GAS01-500CC GAS01-500RS GAS01-500RC GAS01-750CC GAS01-750RS GAS01-750RC GAS00-350SC GAS00-350AC GAS00-350WC	GAS03-1000CC GAS03-1000RS GAS03-1000RC GAS03-1500CC GAS03-1500RS GAS03-1500RC



Ultra Precision Models

U P	Motor brand	MITSUBISHI		
	Motor model no.	HG-KR053	HG-KR13	HG-KR23
	Motor power rating / Frame size	50W/□40	100W/□40	200W/□60
	Magnetizing max. static torque(N·m)	0.15	0.32	0.64
	Rotor inertia(g·cm <sup>2</sup> )	45	77.7	221
	Driver brand	MITSUBISHI	MITSUBISHI	MITSUBISHI
	Driver model no.	MR-J4-10A	MR-J4-10A	MR-J4-20A
	Suitable alignment stage	GAS01-250CC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC	GAS02-400CC GAS02-400RS GAS02-400RC GAS02-500CC GAS02-500RS GAS02-500RC GAS02-750CC GAS02-750RS GAS02-750RC	GAS03-1000CC GAS03-1000RS GAS03-1000RC GAS03-1500CC GAS03-1500RS GAS03-1500RC

Precision Models

P	Motor brand	Panasonic		
	Motor model no.	MSMD5AZG1S	MSMD012G1S	MSMD022G1S
	Motor power rating / Frame size	50W/□38	100W/□38	200W/□60
	Magnetizing max. static torque(N·m)	0.16	0.32	0.64
	Rotor inertia(g·cm <sup>2</sup> )	25	51	140
	Driver brand	Panasonic	Panasonic	Panasonic
	Driver model no.	MADHT1505	MADHT1505	MADHT1507
	Suitable alignment stage	GAS01-250CC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC	GAS02-400CC GAS02-400RS GAS02-400RC GAS02-500CC GAS02-500RS GAS02-500RC GAS02-750CC GAS02-750RS GAS02-750RC	GAS03-1000CC GAS03-1000RS GAS03-1000RC GAS03-1500CC GAS03-1500RS GAS03-1500RC

Standard Models

N	Motor brand	Panasonic	Delta	
	Motor model no.	MSMD5AZG1S	ECMA-C10401ES	ECMA-C10602ES
	Motor power rating / Frame size	50W/□38	100W/□40	200W/□60
	Magnetizing max. static torque(N·m)	0.16	0.32	0.64
	Rotor inertia(g·cm <sup>2</sup> )	25	37	177
	Driver brand	Panasonic	Delta	Delta
	Driver model no.	MADHT1505	ASD-A2-0121-L	ASD-A2-0221-L
	Suitable alignment stage	GAS01-350CC	GAS01-250CC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS02-400CC GAS02-400RS GAS02-400RC GAS02-500CC GAS02-500RS GAS02-500RC GAS02-750CC GAS02-750RS GAS02-750RC	GAS03-1000CC GAS03-1000RS GAS03-1000RC GAS03-1500CC GAS03-1500RS GAS03-1500RC

Recommendation for Ultra Precision Models

P U	Motor brand	TAMAGAWA	SANYO
	Motor model no.	TS3667N13E7	1035510-8211
	Motor shaft type	Double shaft	Double shaft
	Motor dimensions	□42x47	□42x49
	Rated current	0.75	1.4
	Stepper angle	0.72	0.72
	Magnetizing max. static torque(N·m)	0.24	0.245
	Rotor inertia(g·cm <sup>2</sup> )	68	65
	Recommended driver	TOHAN DENSHI / TD-5D14C	TOHAN DENSHI / TD-5D14C
	Driver brand / Model no.	GMT/GTR515B	GMT/GTR515B
	Suitable alignment stage	GAS00-200CC	GAS00-200CC
		GAS00-200HC	GAS00-200HC
		GAS01-250RS	GAS01-250RS
		GAS01-250RC	GAS01-250RC
		GAS01-350CC	GAS01-350CC
		GAS01-350RS	GAS01-350RS
		GAS01-350RC	GAS01-350RC
		GAS01-400CC	GAS01-400CC
		GAS01-400RS	GAS01-400RS
		GAS01-400RC	GAS01-400RC
		GAS01-500CC	GAS01-500CC
GAS01-500RS		GAS01-500RS	
GAS01-500RC		GAS01-500RC	
GAS01-750CC		GAS01-750CC	
GAS01-750RS		GAS01-750RS	
GAS01-750RC		GAS01-750RC	
GAS00-350SC		GAS00-350SC	
GAS00-350AC		GAS00-350AC	
GAS00-350WC		GAS00-350WC	

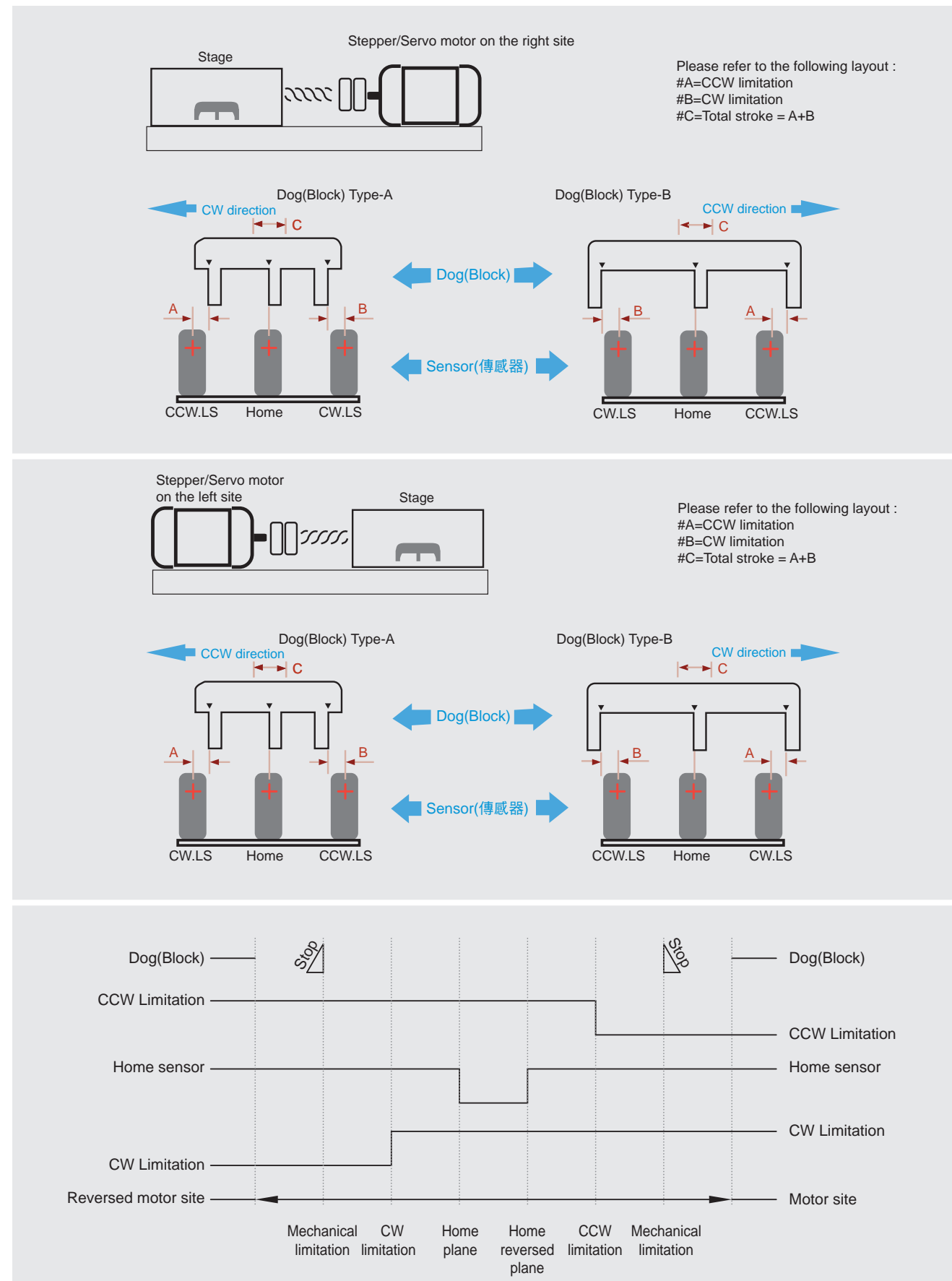
Recommendation for Precision Models

P	Motor brand	SANYO				
	Motor model no.	SH2281-5271	SH2281-5231	103H5205-0411	103H5210-0440	103H5210-0440
	Motor shaft type	Single shaft	Double shaft	Double shaft	Single shaft	Double shaft
	Motor dimensions	□28x32	□28x32	□42x33	□42x46	□42x46
	Rated current	1	1	1.2	1.2	1.2
	Stepper angle	1.8	1.8	1.8	1.8	1.8
	Magnetizing max. static torque(N·m)	0.055	0.055	0.2N*m	0.37N*m	0.37N*m
	Rotor inertia(g·cm <sup>2</sup> )	10	10	36	74	74
	Recommended driver	TOHAN DENSHI / eTD-24A	TOHAN DENSHI / eTD-24A	TOHAN DENSHI / eTD-24A	TOHAN DENSHI / eTD-24A	TOHAN DENSHI / eTD-24A
	Driver brand / Model no.	GMT/GTR24M3	GMT/GTR24M3	GMT/GTR24M3	GMT/GTR24M3	GMT/GTR24M3
	Suitable alignment stage	GAS00-160HAC	GAS00-160LC GAS00-190HC	GAS00-200CC GAS00-200HC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS01-400CC GAS01-400RS GAS01-400RC GAS01-500CC GAS01-500RS GAS01-500RC GAS01-750CC GAS01-750RS GAS01-750RC GAS00-350SC GAS00-350AC GAS00-350WC	GAS00-200CC GAS00-200HC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS01-400CC GAS01-400RS GAS01-400RC GAS01-500CC GAS01-500RS GAS01-500RC GAS01-750CC GAS01-750RS GAS01-750RC GAS00-350SC GAS00-350AC GAS00-350WC	GAS00-200CC GAS00-200HC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS01-400CC GAS01-400RS GAS01-400RC GAS01-500CC GAS01-500RS GAS01-500RC GAS01-750CC GAS01-750RS GAS01-750RC GAS00-350SC GAS00-350AC GAS00-350WC

Recommendation for Standard Models

N	Motor brand	GMT	
	Motor model no.	2MS-N42D47A	2MS-N57D41A
	Motor shaft type	Double shaft	Single shaft
	Motor dimensions	□42x47	□57x41
	Rated current	1.68	2.8
	Stepper angle	1.8	1.8
	Magnetizing max. static torque(N·m)	0.43	0.54
	Rotor inertia(g·cm <sup>2</sup> )	68	120
	Recommended driver	GMT/GTR32G-D	GMT/GTR32G-D
	Driver brand / Model no.	GMT/DS022A	
	Suitable alignment stage	GAS00-200CC GAS00-200HC GAS01-250RS GAS01-250RC GAS01-350CC GAS01-350RS GAS01-350RC GAS01-400CC GAS01-400RS GAS01-400RC GAS01-500CC GAS01-500RS GAS01-500RC GAS01-750CC GAS01-750RS GAS01-750RC GAS00-350SC GAS00-350AC GAS00-350WC	GAS03-1000CC GAS03-1000RS GAS03-1000RC GAS03-1500CC GAS03-1500RS GAS03-1500RC

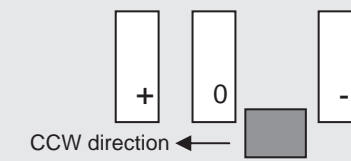
## Sensor and block layout / Sequence Diagram



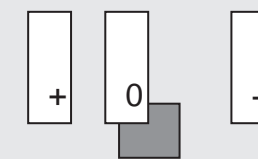
## Home point return instruction

### A.Block is out of the sensor

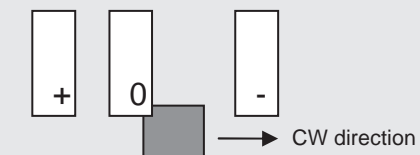
- 1.Be sure home sensor is OFF , move the block foward to CCW direction. (Speed=1000~3000pps)



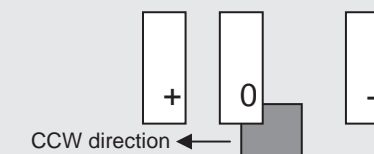
- 2.Move the block till the home sensor is ON, stop the block. (Speed=1000~3000pps)



- 3.Move toward to reversed direction (CW direction), till the home sensor is OFF, stop the block. (Speed=500pps)

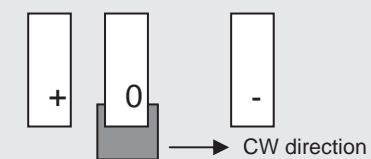


- 4.Home sensor is OFF, reversed direction move till the home sensor is ON. (Speed=20 ~50pps)

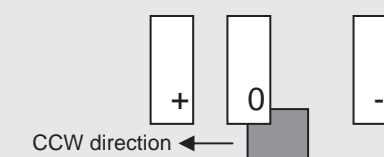


### B.Block is alinged to the sensor

- 1.Move toward to CW direction till the home sensor is OFF, stops the block. (Speed=500pps)



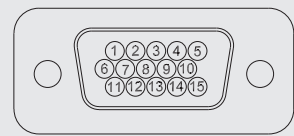
- 2.Home sensor is OFF, move toward to CCW direction till the home sensor is ON. (Speed=20 ~ 50pps)





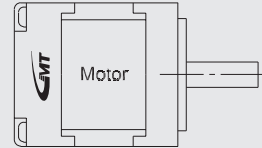
### Models

GAS00-200CC 、 GAS01-250CC 、 GAS01-350CC 、 GAS02-400CC  
GAS02-500CC 、 GAS02-750CC 、 GAS03-1000CC 、 GAS03-1500CC



Male terminal  
pin layout definition

1	Motor lead A+ / A	<	Green B
2	Motor lead A- / B	<	Green R
3	Motor lead B+ / C	<	Pink B
4	Motor lead B- / D	<	Pink R
5	Motor lead A com / E	<	Blue B
6	CW limitation signal output	>	Blue R
7	CCW limitation signal output	>	White B
8	Open	>	White R
9	Power input (+)	<	Gray B
10	Home signal output	>	Gray R
11	Power input (-)	<	Yellow B
12	Ground	<	Yellow R
13	Motor lead B com	<	Purple B
14	Open	<	Purple R
15	Open	<	



Red	+	PM-T64
Black	OUT	
White	-	
Red	+	PM-T64
Black	OUT	
White	-	
Red	+	PM-T64
Black	OUT	
White	-	

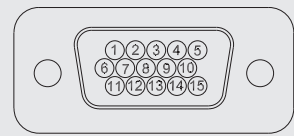
Please connect wiring 1, 2, 3, 4, of 2-phase with 4 leads motor.

Please connect wiring 1, 2, 3, 4, 5, and 13 of 2-phase with 6 leads motor.

Please connect wiring 1, 2, 3, 4, 5, and 13 of 5-phase motor.

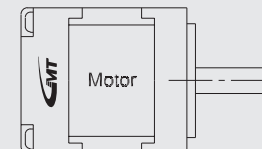
### Models

GAS00-100HC 、 GAS00-160CC 、 GAS00-160HC 、 GAS00-160HAC 、 GAS00-160LC 、 GAS00-190HC 、 GAS00-200HC  
GAS00-250HC 、 GAS01-250RS 、 GAS01-250RC 、 GAS01-350RS 、 GAS01-350RC 、 GAS02-400RS 、 GAS02-400RC 、 GAS02-500RS 、  
GAS02-500RC 、 GAS02-750RS 、 GAS02-750RC 、 GAS03-1000RS 、 GAS03-1000RC 、 GAS03-1500RS 、 GAS03-1500RC



Male terminal  
pin layout definition

1	Motor lead A+ / A	<	Green B
2	Motor lead A- / B	<	Green R
3	Motor lead B+ / C	<	Pink B
4	Motor lead B- / D	<	Pink R
5	Motor lead A com / E	<	Blue B
6	CW limitation signal output	>	Blue R
7	CCW limitation signal output	>	White B
8	Open	>	White R
9	Power input (+)	<	Gray B
10	Home signal output	>	Gray R
11	Power input (-)	<	Yellow B
12	Ground	<	Yellow R
13	Motor lead B com	<	Purple B
14	Open	<	Purple R
15	Open	<	



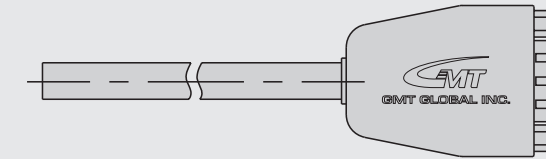
Red	+	EE-SX4134
Orange	OUT	
Black	-	
Red	+	EE-SX4134
Yellow	OUT	
Black	-	
Red	+	EE-SX4134
Blue	OUT	
Black	-	

Please connect wiring 1, 2, 3, 4, of 2-phase with 4 leads motor.

Please connect wiring 1, 2, 3, 4, 5, and 13 of 2-phase with 6 leads motor.

Please connect wiring 1, 2, 3, 4, 5, and 13 of 5-phase motor.

### Connector from the stage

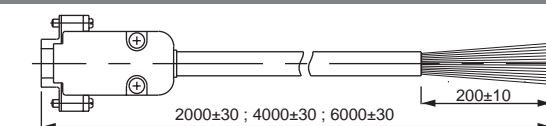


D-SUB-15Pin Male connector

- D-SUB connector is the standard design attached to all GMT Alignment stage series.
- Standard connecting cable is corresponding connection type for stage side which is including single-sided connector in 2 m long with discrete 15 wires accessory stocked for optional purchasing, as common standard accessory.
- D-SUB standard connecting cable, D-SUB TO HRS converting cable, D-SUB TO NJC converting cable are all optional accessories (sold separately).
- In case the alignment stage has been equipped HRS/NJC connector, we may supply D-SUB TO HRS / D-SUB TO NJC on request optionally. (Charge to the client)
- When standard connecting cable is used, please make insulation treatment on the unused wires at the discrete wire end.
- Connecting cable length over 6 m may cause abnormal operation.
- Minimum bendable radius of connecting cable is 5 times the cable diameter.

### Connection cable

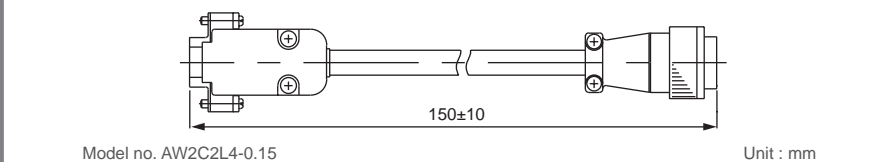
#### D-SUB Standard connection cable



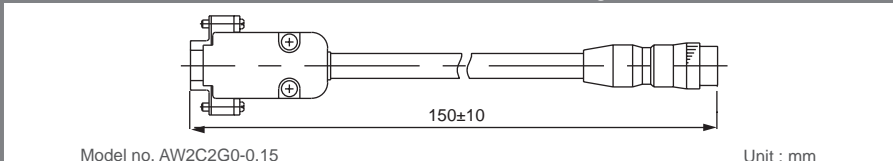
Model no. AW1C2A2-2 ; AW1C2A2-4 ; AW1C2A2-6 unit : mm

Stage site D-SUB female			Control side single-sided discrete wire 15 wires		
Motor lead	1	Green line/black spot	1	Control side corresponding connection points	
Motor lead	2	Green line/red spot	2		
Motor lead	3	Pink line/black spot	3		
Motor lead	4	Pink line/red spot	4		
Motor lead	5	Blue line/black spot	5		
CWLS output	6	Blue line/red spot	6		
CCWLS output	7	White line/black spot	7		
Motor rotation ORG2 output	8	White line/red spot	8		
Power input(+)	9	Gray line/black spot	9		
Travel stroke ORG1 output	10	Gray line/red spot	10		
Power input(-)	11	Yellow line/black spot	11		
Ground	12	Yellow line/red spot	12		
Motor lead	13	Purple line/black spot	13		
Open	14	Yellow line/red spot	14		
Open	15		15		

## Converting Cable

D-SUB TO NJC Converting Cable			
			
滑台側 D-SUB母端			控制側 NJC 公端
Motor lead	1	Green line/black spot	1 Motor lead
Motor lead	2	Green line/red spot	2 Motor lead
Motor lead	3	Pink line/black spot	3 Motor lead
Motor lead	4	Pink line/red spot	4 Motor lead
Motor lead	5	Blue line/black spot	5 Motor lead
CWLS output	6	Blue line/red spot	6 CWLS output
CCWLS output	7	White line/black spot	8 CCWLS output
Motor rotation ORG2 output	8	White line/red spot	11 Motor rotation ORG2 output
Power input(+)	9	Gray line/black spot	10 Power input(+)
Travel stroke ORG1 output	10	Gray line/red spot	14 Travel stroke ORG1 output
Power input(-)	11	Yellow line/black spot	15 Power input(-)
Ground	12	Yellow line/red spot	16 Ground
Motor lead	13	Purple line/black spot	9 Open
Open	14	Yellow line/red spot	12 Open
Open	15	Open	13 Open
			16 Open

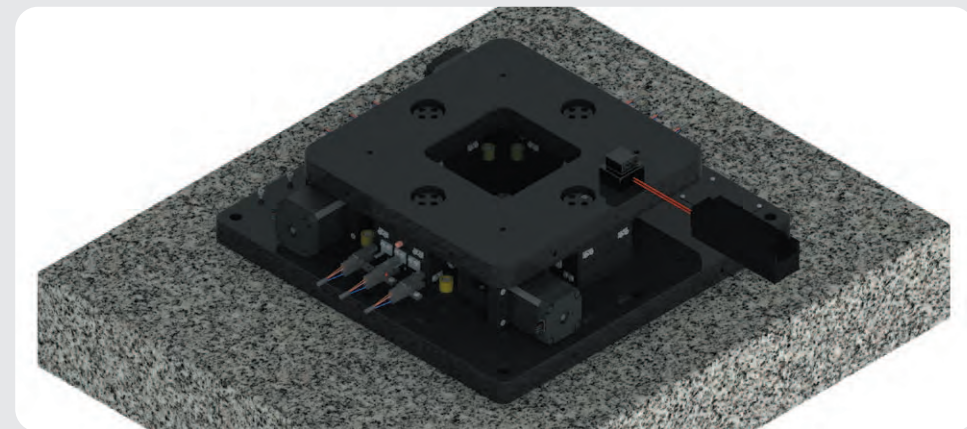
## Converting Cable

D-SUB TO HRS Converting Cable			
			
滑台側 D-SUB母端			控制側 HRS 公端
Motor lead	1	Green line/black spot	1 Motor lead
Motor lead	2	Green line/red spot	2 Motor lead
Motor lead	3	Pink line/black spot	3 Motor lead
Motor lead	4	Pink line/red spot	4 Motor lead
Motor lead	5	Blue line/black spot	5 Motor lead
CWLS output	6	Blue line/red spot	6 CWLS output
CCWLS output	7	White line/black spot	7 CCWLS output
Motor rotation ORG2 output	8	White line/red spot	8 Motor rotation ORG2 output
Power input(+)	9	Gray line/black spot	9 Power input(+)
Travel stroke ORG1 output	10	Gray line/red spot	10 Travel stroke ORG1 output
Power input(-)	11	Yellow line/black spot	11 Power input(-)
Ground	12	Yellow line/red spot	12 Ground
Motor lead	13	Purple line/black spot	13 Open
Open	14	Yellow line/red spot	14 Open
Open	15		

## Inspection Method

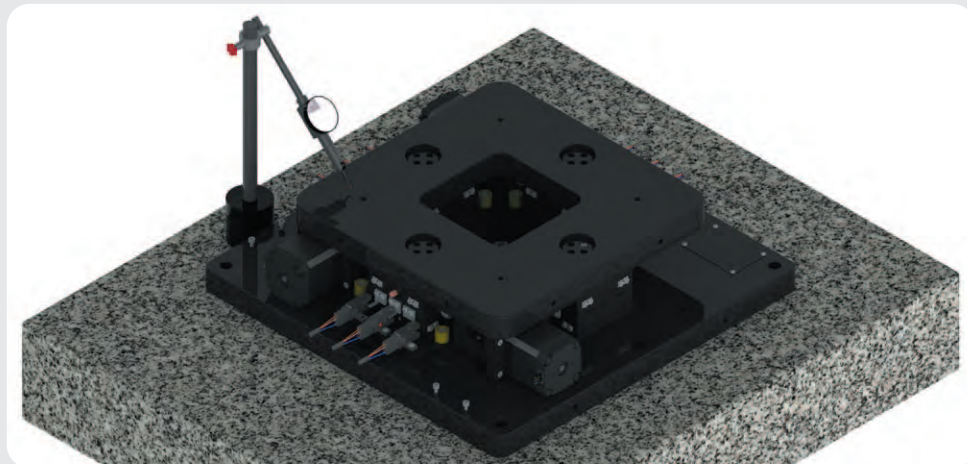
### Repeatability (unit : μm)

Use laser interferometer or Zeiss coordinate measuring machine (CMM) to repeat measurement for seven times. With half of the obtained maximum error from the error based on one direction to any point stop, measure in the middle point of movement distance and in the directions of two ends and obtain the maximum difference as the repeatability positioning precision.



### Parallelism (unit : μm)

Put the stage on granite workbench. Use micrometer or Zeiss coordinate measuring machine (CMM) for measurement. At the middle of stage work area, use the measured maximum difference as the parallelism.



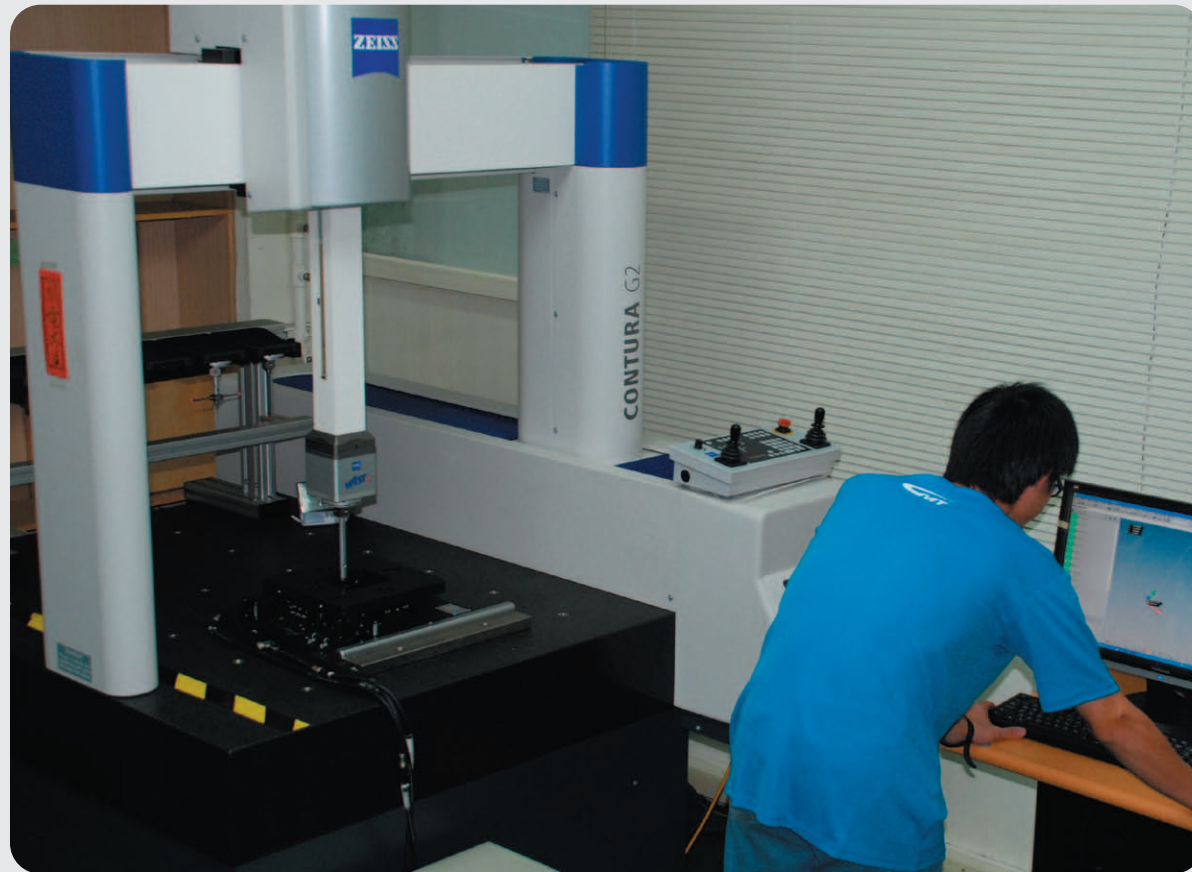
### Cautions of application environment

- ※Keep alignment stage out of the environment with iron powder, or dust, oil mist, cutting fluid, humidity, salt, solvents.
- ※Prevent the alignment stage application positioned at the place with direct sunlight and radiation, and strong electric field and strong magnetic place, and the place easily to be vibrated or impact.

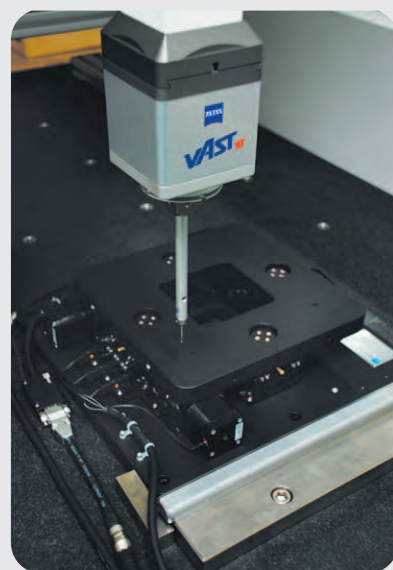


## 3D measurement

### Inspection Method



GMT apply Zeiss coordinate measuring machine (CMM).



## Motor Disassembly Description (No recommend to disassembly except necessary concern)

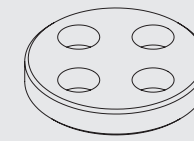
Please make marks on the stage before disassembly to prevent precision variation after re-assembly.

※ Driver module X<sub>1</sub> axis, driver module X<sub>2</sub>, driver module Y, driven module relative position.

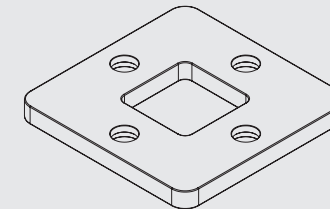
※ Driving bearing and module relative positions.

### Assembly parts description

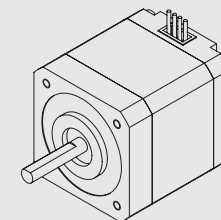
1. Bearing top cover



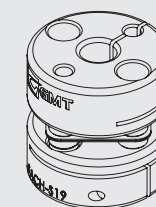
2. Work bench



3. Motor

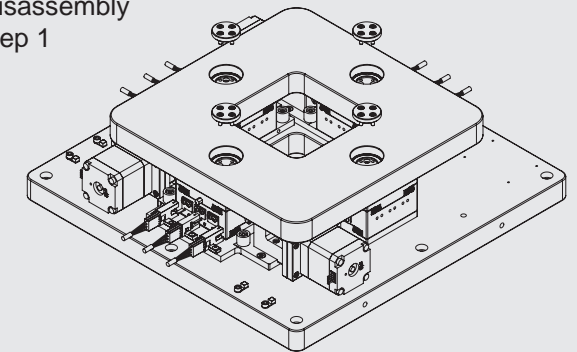


4. Coupling



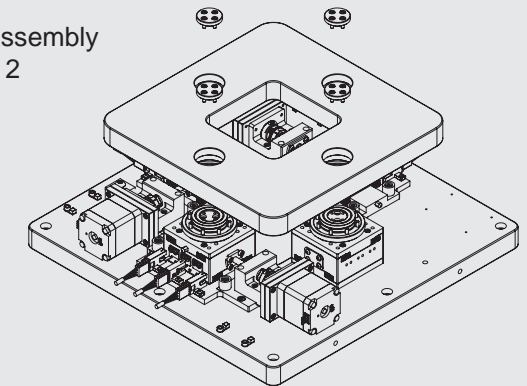
### Disassembly process

Disassembly  
step 1



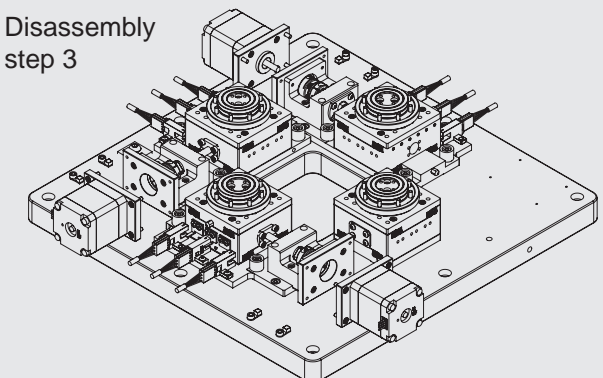
Description : Disassembly 4 bearing top covers.

Disassembly  
step 2



Description : Remove work bench and bearing top covers and mark sequence numbers on driving bearings positions for later assembly identification purpose.

Disassembly  
step 3



Description : Release couplings, motors, and remove. Install new couplings and motors.

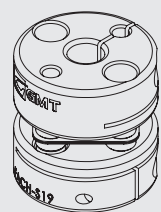


## Motor Reassembly Description – CC series (No recommend to disassembly except necessary concern)

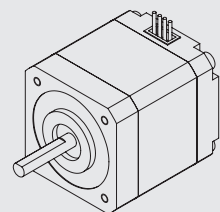
- Please make sequence number marks on the stage before disassembly to prevent precision variation after re-assembly.
- ※ Driver module X1 axis, driver module X2, driver module Y, driven module relative position.
  - ※ Driving bearing and module relative positions.
  - ※ Please make parallelism test after re-assembly as test method on page 109.

### Assembly parts description

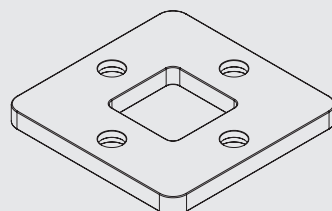
#### 1. Coupling



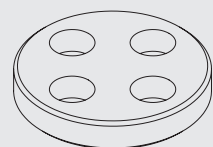
#### 2. Motor



#### 3. Work bench

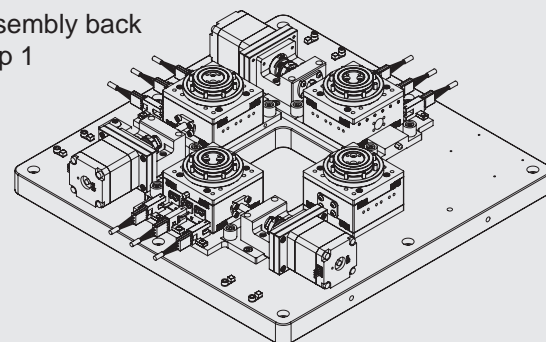


#### 4. Bearing top cover



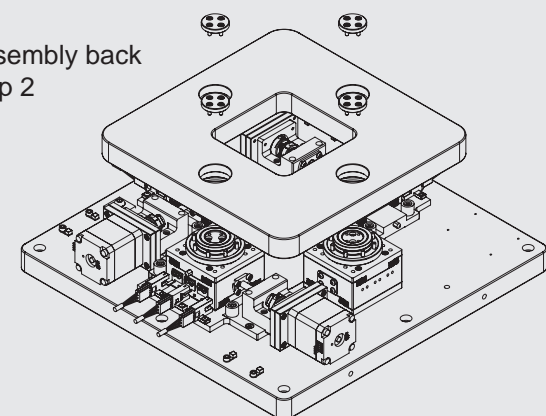
### Assembly process

#### Assembly back step 1



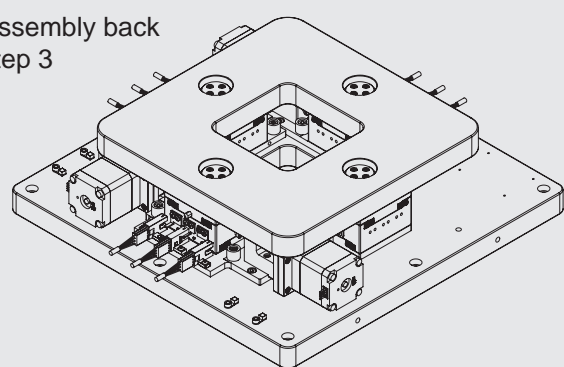
Description : Install motors on the mounting base.

#### Assembly back step 2



Description : Following the sequence numbers marked on the bearings to install back to previous positions.

#### Assembly back step 3



Description : Assembly the work bench according to marks. Install 4 bearing top covers securely.

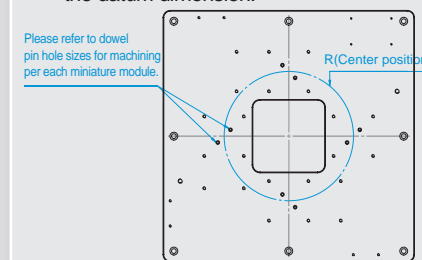
## Miniature Module Mounting Description – CC series

※ Please follow steps to assemble miniature modules

### Mounting positions description

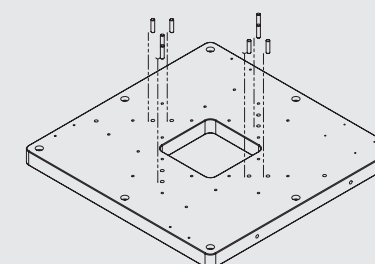
#### Base dimensions mounting step 1

※Dowel pin holes referred to R (center position) as the datum dimension.



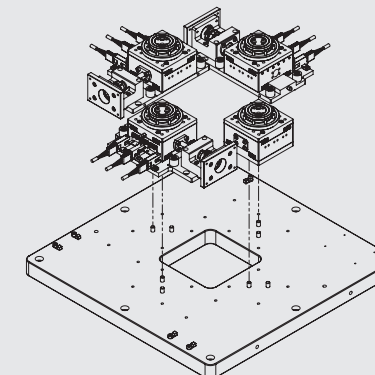
#### Base dimensions mounting step 2

※Dowel pin positioned at the machining holes place.



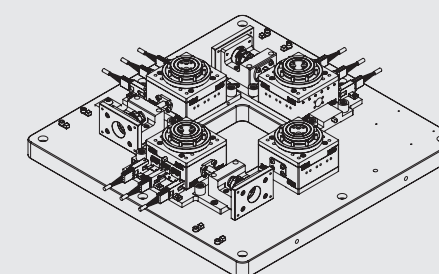
#### Base dimensions mounting step 3

※ Combine the module with the pins.



#### Base dimensions mounting step 4

※ Lock the screws to the module tightly.

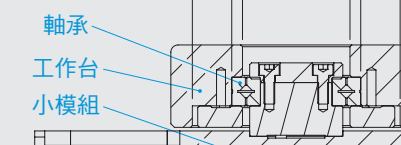


#### Work bench assembly step 1

③ Please refer bearing dimensions according to the bearing collar support size of each miniature module for machining.

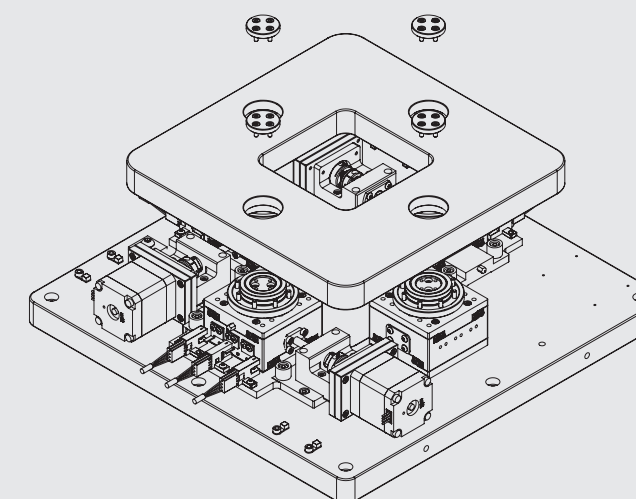
④ Please refer bearing dimensions according to the bearing collar support size of each miniature module for machining.

⑤ Please refer bearing dimensions according to the bearing collar support size of each miniature module for machining.



※A, B, C, dimensions are referred to work bench of CC miniature module series for machining size.

#### Work bench assembly step 2

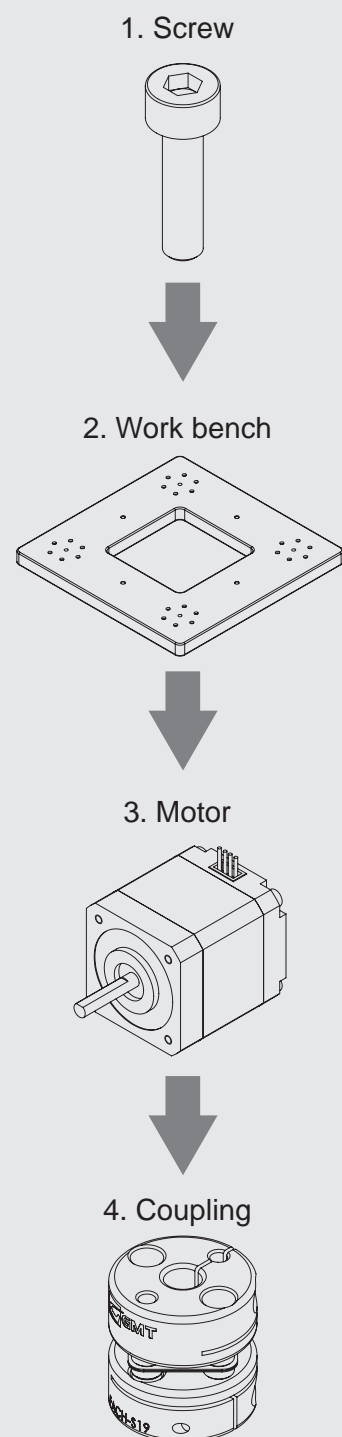


※ Tightly lock bearing top cover.

## Motor Disassembly Description (No recommend to disassembly except necessary concern)

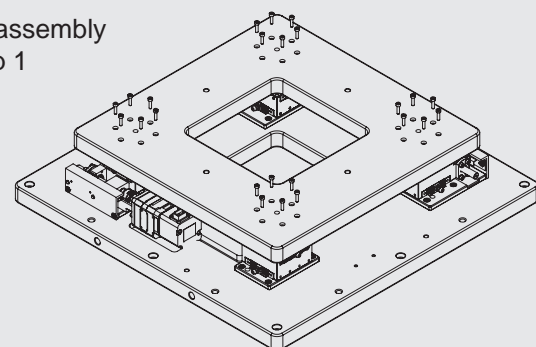
Please make sequence number marks on the stage before disassembly to prevent precision variation after re-assembly.  
 ※ Driver module X1 axis, driver module X2, driver module Y, driven module relative position.  
 ※ Driving bearing and module relative positions.  
 ※ Please make parallelism test after re-assembly.

### Assembly parts description



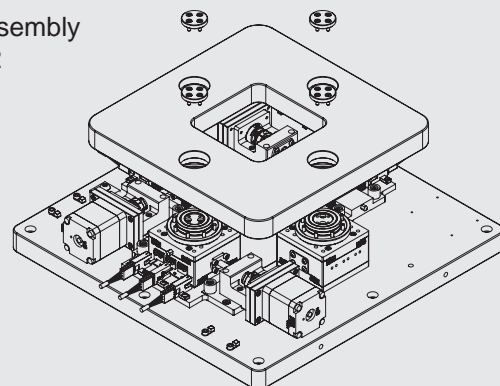
### Disassembly process

#### Disassembly step 1



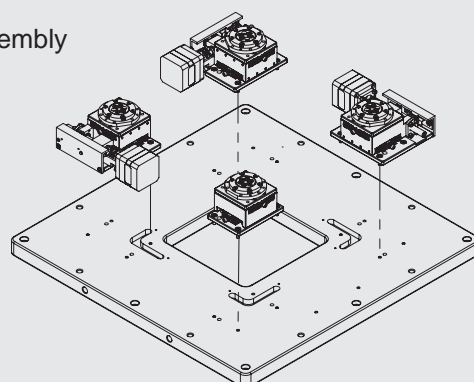
Description : Remove 24 screws; make sure sequence number marks on screws and work bench for location identification.

#### Disassembly step 2



Description : Remove work bench and screws.

#### Disassembly step 3

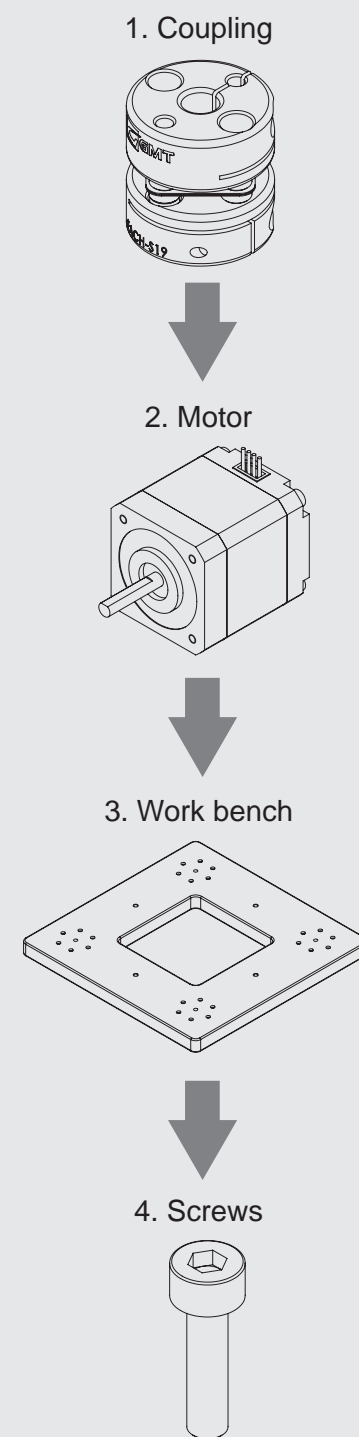


Description : Release couplings, and motors before remove. And, install new couplings and motors.

## Motor Reassembly Description –RS, RC series (No recommend to disassembly except necessary concern)

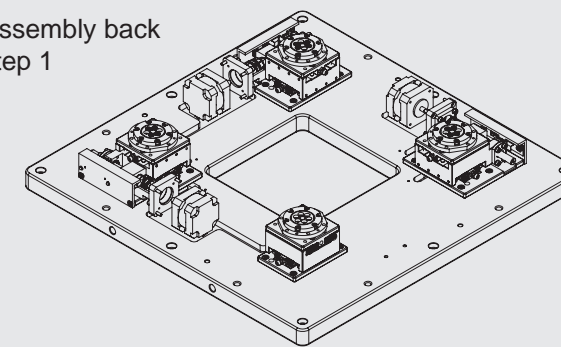
Please make sequence number marks on the stage before disassembly to prevent precision variation after re-assembly.  
 ※ Driver module X1 axis, driver module X2, driver module Y, driven module relative position.  
 ※ Driving bearing and module relative positions.  
 ※ Please make parallelism test after re-assembly as test method on page 109.

### Assembly parts description



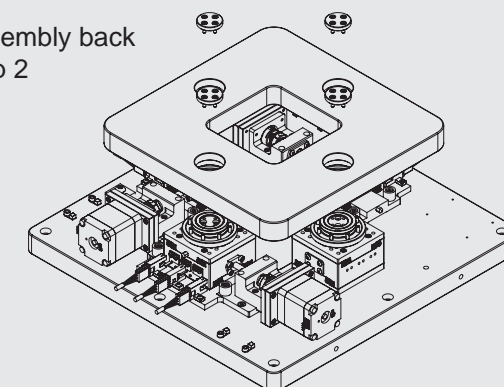
### Disassembly process

#### Assembly back step 1



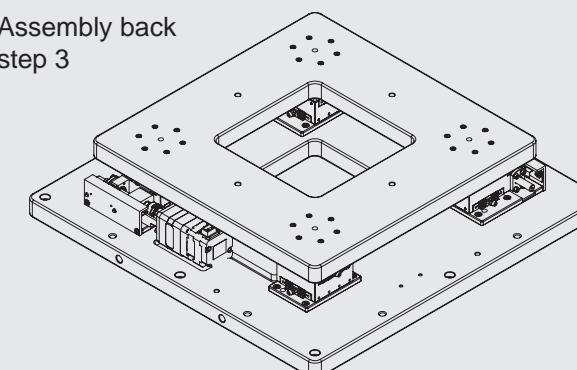
Description : Install motors on the mounting base.

#### Assembly back step 2



Description : After work bench has been positioned, screw on 24 screws upon the sequence number marks made during disassembly.

#### Assembly back step 3



Description : Ensure 24 screws been lock tightly.

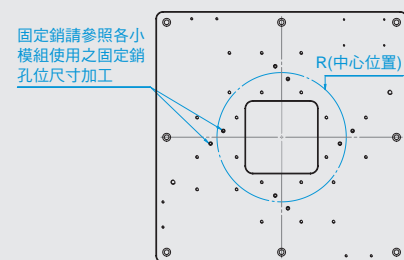
## 小模組安裝孔位說明

※ 請依照步驟說明之方法進行小模組之安裝。

### 安裝孔位說明

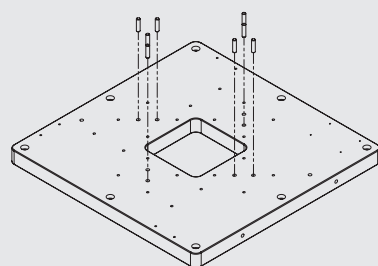
#### 基座尺寸安裝步驟 1

※銷孔位以R(中心位置)做為基準尺寸。



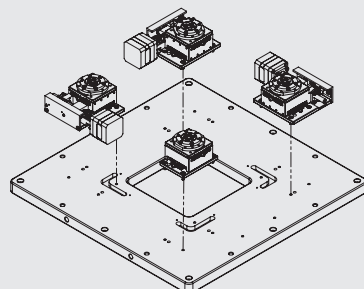
#### 基座尺寸安裝步驟 2

※銷先放置於加工孔銷之位置。



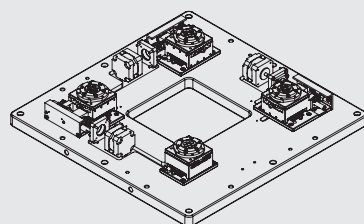
#### 基座尺寸安裝步驟 3

※將模組與銷結合。



#### 基座尺寸安裝步驟 4

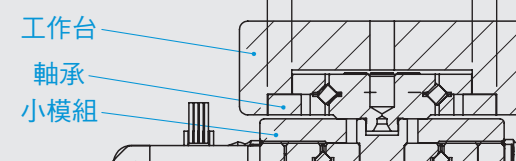
※將螺絲與模組鎖緊。



#### 工座台尺寸安裝步驟 1

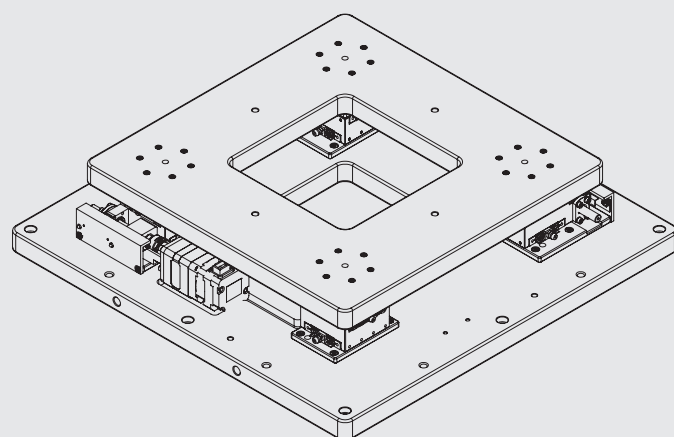
Ⓐ 此軸承尺寸請參照各小模組使用軸承之大小做加工

Ⓑ 此軸承尺寸請參照各小模組使用軸承之大小做加工



※A、B尺寸請參照RS、RC系列小模組工作台需加工說明。

#### 工座台尺寸安裝步驟 2



※確認螺絲是否確實鎖固完成。

## XXY Alignment Stage GAS00 feeding calculation formula

The equation of calculating the respective feeding at any X, Y, or  $\delta\theta$  axis.

$$X_1 \text{ axis : } \delta X_1 = R \cos(\delta\theta + \theta_{X1} + \theta_0) - R \cos(\theta_{X1} + \theta_0) \dots\dots(1)$$

$$X_2 \text{ axis : } \delta X_2 = R \cos(\delta\theta + \theta_{X2} + \theta_0) - R \cos(\theta_{X2} + \theta_0) \dots\dots(2)$$

$$Y \text{ axis : } \delta Y = R \sin(\delta\theta + \theta_Y + \theta_0) - R \sin(\theta_Y + \theta_0) \dots\dots(3)$$

$$\begin{aligned} \delta X_1 &: X_1 \text{ axis relative feeding(mm)} \\ \delta X_2 &: X_2 \text{ axis relative feeding(mm)} \\ \delta Y &: Y \text{ axis relative feeding(mm)} \end{aligned} \quad \left. \vphantom{\begin{aligned} \delta X_1 \\ \delta X_2 \\ \delta Y \end{aligned}} \right\} \text{Ball screw feeding}$$

R : The radius of assumed pitch circle diameter (P.C.D.) connected from crossed roller bearing center of each axis.

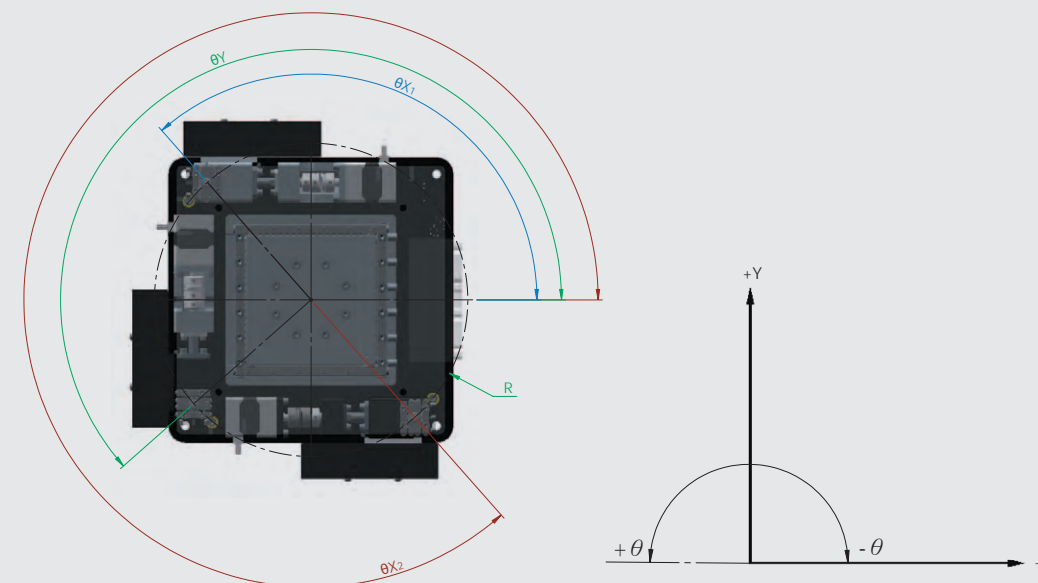
$\theta_{X1}$  : The position (angle) linked to the crossed roller bearing center of  $X_1$  axis.

$\theta_{X2}$  : The position (angle) linked to the crossed roller bearing center of  $X_2$  axis.

$\theta_Y$  : The position (angle) linked to the crossed roller bearing center of Y axis.

Refer to parameter table

## Figuration





## Parameter

Parameter	Model no.		R(mm)	θY°	θX1°	θX2°	Coordinates
	GAS00	100HC	$\sqrt{42^2 + 40.5^2}$	226	43.95	316	X <sub>1</sub> (42 , 40.5) X <sub>2</sub> (-42 , -40.5) Y(42 , 40.5)
	GAS00	160CC	$\sqrt{62^2 + 70^2}$	221.5	131.5	311.5	X <sub>1</sub> (-62 , 70) X <sub>2</sub> (62 , -70) Y(-70 , -62)
	GAS00	160HC	$\sqrt{64^2 + 63.5^2}$	225.2	135.2	315.2	X <sub>1</sub> (-64 , 63.5) X <sub>2</sub> (64 , -63.5) Y(-63.5 , -64)
	GAS00	160HAC	$\sqrt{64^2 + 63.5^2}$	225.2	135.2	315	X <sub>1</sub> (-64 , 63.5) X <sub>2</sub> (64 , -63.5) Y(-63.5 , -64)
	GAS00	160LC	$\sqrt{65^2 + 65^2}$	225	45	315	X <sub>1</sub> (-65 , 65) X <sub>2</sub> (65 , -65) Y(-65 , -65)
	GAS00	190HC	$\sqrt{71.5^2 + 70^2}$	225.6	135.6	315.6	X <sub>1</sub> (-71.5 , 70) X <sub>2</sub> (71.5 , -70) Y(-70 , -71.5)
	GAS00	200CC	$\sqrt{82^2 + 136^2}$	148.9	121.1	238.9	X <sub>1</sub> (-82 , 136) X <sub>2</sub> (-82 , -136) Y(-136 , 82)
	GAS00	200HC	$\sqrt{77^2 + 113^2}$	209.7	119.7	299.7	X <sub>1</sub> (-77 , 133) X <sub>2</sub> (77 , -133) Y(-133 , -77)
	GAS00	250HC	$\sqrt{100^2 + 117^2}$	220.5	130.5	310.5	X <sub>1</sub> (-100 , 117) X <sub>2</sub> (100 , -117) Y(-100 , -117)

## GAS01/GAS02/GAS03 feeding calculation formula

The equation of calculating the respective feeding at any X, Y, or δθ axis.

$$X_1 \text{ axis : } \delta X_1 = R \cos(\delta\theta + \theta X_1 + \theta_0) - R \cos(\theta X_1 + \theta_0) \dots\dots(1)$$

$$X_2 \text{ axis : } \delta X_2 = R \cos(\delta\theta + \theta X_2 + \theta_0) - R \cos(\theta X_2 + \theta_0) \dots\dots(2)$$

$$Y \text{ axis : } \delta Y = R \sin(\delta\theta + \theta Y + \theta_0) - R \sin(\theta Y + \theta_0) \dots\dots(3)$$

$\delta X_1$  : X<sub>1</sub> axis relative feeding(mm)  
 $\delta X_2$  : X<sub>2</sub> axis relative feeding(mm)  
 $\delta Y$  : Y axis relative feeding(mm)

} Ball screw feeding

R : The radius of assumed pitch circle diameter (P.C.D.) connected from crossed roller bearing center of each axis.

θX<sub>1</sub> : The position (angle) linked to the crossed roller bearing center of X<sub>1</sub> axis.

θX<sub>2</sub> : The position (angle) linked to the crossed roller bearing center of X<sub>2</sub> axis.

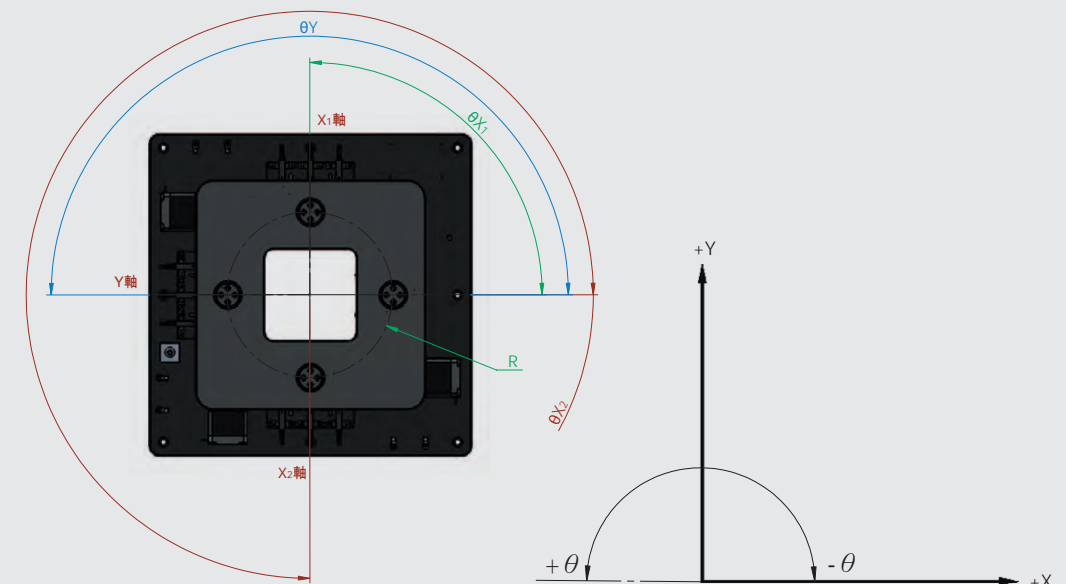
θY : The position (angle) linked to the crossed roller bearing center of Y axis.

θ<sub>0</sub> : Calculate the work bench angle prior movement.

δθ : Work bench rotation angle. [°]

} Refer to parameter table

## Figuration





## Parameter

Parameter	Model no.		R(mm)	$\theta Y^\circ$	$\theta X1^\circ$	$\theta X2^\circ$	Coordinates
	GAS01	250CC	90	180	90	270	$X_1(0, 90)$ $X_2(0, -90)$ $Y(-90, 0)$
	GAS01	250RS	90	180	90	270	$X_1(0, 90)$ $X_2(0, -90)$ $Y(-90, 0)$
	GAS01	250RC	90	180	90	270	$X_1(0, 90)$ $X_2(0, -90)$ $Y(-90, 0)$
	GAS01	350RC	120	180	90	270	$X_1(0, 120)$ $X_2(0, -120)$ $Y(-120, 0)$
	GAS02	400RC	145	180	90	270	$X_1(0, 145)$ $X_2(0, -145)$ $Y(-145, 0)$

## GAS00/GAS01/GAS02 feeding calculation formula

The equation of calculating the respective feeding at any X, Y, or  $\delta\theta$  axis.

$$X_1 \text{ axis : } \delta X_1 = R \cos(\delta\theta + \theta X_1 + \theta_0) - R \cos(\theta X_1 + \theta_0) \dots\dots(1)$$

$$X_2 \text{ axis : } \delta X_2 = R \cos(\delta\theta + \theta X_2 + \theta_0) - R \cos(\theta X_2 + \theta_0) \dots\dots(2)$$

$$Y \text{ axis : } \delta Y = R \sin(\delta\theta + \theta Y + \theta_0) - R \sin(\theta Y + \theta_0) \dots\dots(3)$$

$$\left. \begin{array}{l} \delta X_1 : X_1 \text{ axis relative feeding(mm)} \\ \delta X_2 : X_2 \text{ axis relative feeding(mm)} \\ \delta Y : Y \text{ axis relative feeding(mm)} \end{array} \right\} \text{Ball screw feeding}$$

R : The radius of assumed pitch circle diameter (P.C.D.) connected from crossed roller bearing center of each axis.

$\theta X_1$  : The position (angle) linked to the crossed roller bearing center of  $X_1$  axis.

$\theta X_2$  : The position (angle) linked to the crossed roller bearing center of  $X_2$  axis.

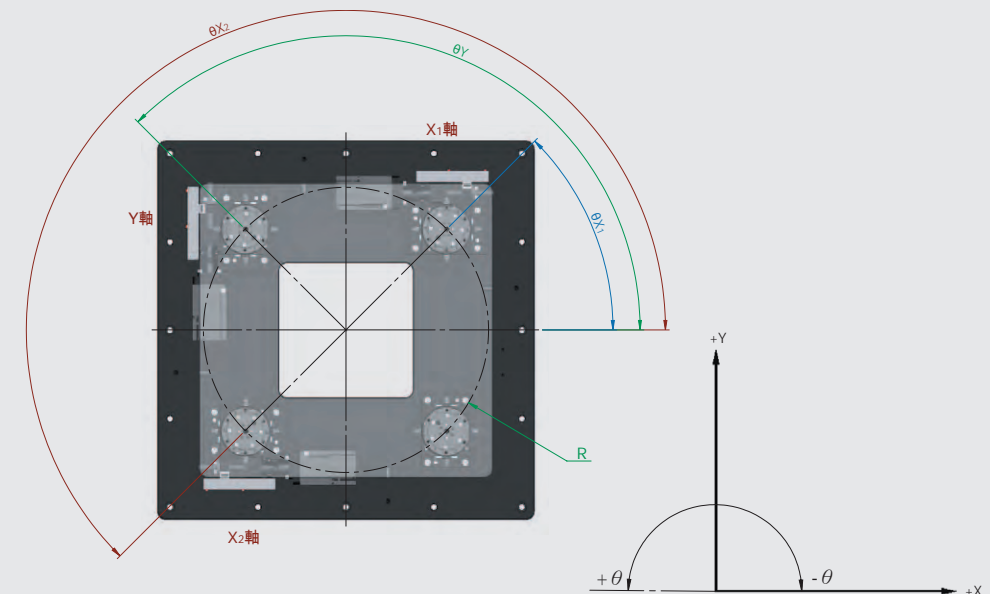
$\theta Y$  : The position (angle) linked to the crossed roller bearing center of Y axis.

$\theta_0$  : Calculate the work bench angle prior movement.

$\delta\theta$  : Work bench rotation angle. [°]

Refer to parameter table

## Figuration



## Parameter

Parameter	Model no.		R(mm)	θY°	θX1°	θX2°	Coordinates
	GAS01	350CC	$120\sqrt{2}$	135	45	225	X <sub>1</sub> (120 , 120) X <sub>2</sub> (-120 , -120) Y(-120 , 120)
	GAS01	350RS	$120\sqrt{2}$	135	45	225	X <sub>1</sub> (120 , 120) X <sub>2</sub> (-120 , -120) Y(-120 , 120)
	GAS02	400CC	$145\sqrt{2}$	135	45	225	X <sub>1</sub> (145 , 145) X <sub>2</sub> (-145 , -145) Y(-145 , 145)
	GAS02	400RS	$145\sqrt{2}$	135	45	225	X <sub>1</sub> (145 , 145) X <sub>2</sub> (-145 , -145) Y(-145 , 145)
	GAS02	500CC	$195\sqrt{2}$	135	45	225	X <sub>1</sub> (195 , 195) X <sub>2</sub> (-195 , -195) Y(-195 , 195)
	GAS02	500RS	$195\sqrt{2}$	135	45	225	X <sub>1</sub> (195 , 195) X <sub>2</sub> (-195 , -195) Y(-195 , 195)
	GAS02	500RC	$195\sqrt{2}$	135	45	225	X <sub>1</sub> (195 , 195) X <sub>2</sub> (-195 , -195) Y(-195 , 195)
	GAS02	750CC	$320\sqrt{2}$	135	45	225	X <sub>1</sub> (320 , 320) X <sub>2</sub> (-320 , -320) Y(-320 , 320)
	GAS02	750RS	$320\sqrt{2}$	135	45	225	X <sub>1</sub> (320 , 320) X <sub>2</sub> (-320 , -320) Y(-320 , 320)
	GAS02	750RC	$320\sqrt{2}$	135	45	225	X <sub>1</sub> (320 , 320) X <sub>2</sub> (-320 , -320) Y(-320 , 320)
	GAS03	1000CC	$400\sqrt{2}$	135	45	225	X <sub>1</sub> (400 , 400) X <sub>2</sub> (-400 , -400) Y(-400 , 400)
	GAS03	1000RS	$400\sqrt{2}$	135	45	225	X <sub>1</sub> (400 , 400) X <sub>2</sub> (-400 , -400) Y(-400 , 400)
	GAS03	1000RC	$400\sqrt{2}$	135	45	225	X <sub>1</sub> (400 , 400) X <sub>2</sub> (-400 , -400) Y(-400 , 400)
	GAS03	1500CC	$650\sqrt{2}$	135	45	225	X <sub>1</sub> (650 , 650) X <sub>2</sub> (-650 , -650) Y(-650 , 650)
	GAS03	1500RS	$650\sqrt{2}$	135	45	225	X <sub>1</sub> (650 , 650) X <sub>2</sub> (-650 , -650) Y(-650 , 650)
	GAS03	1500RC	$650\sqrt{2}$	135	45	225	X <sub>1</sub> (650 , 650) X <sub>2</sub> (-650 , -650) Y(-650 , 650)

## Feeding calculation examples

### Model no. GAS02-400CC

Movement mode : Set home position as the center of each axis travel stroke, and follow the following steps of movement feeding to move the upper table.

1. Parallel movement to have X direction +1 mm, Y direction +0.5mm
2. Set workbench center as the rotation center to rotate +2°.
3. To rotate -0.3° from the position of step 2.

It is not necessary to calculate parallel movement of X, Y directions as there is feeding movement of each axis already. Then, calculate +2° rotation.

Each parameter referred from the parameter table of GAS02-400CC is list as below:

$$R=145^{(1/2)}$$

$$\theta Y^{\circ}=135^{\circ}$$

$$\theta X1^{\circ}=45^{\circ}$$

$$\theta X2^{\circ}=225^{\circ}$$

Set workbench center as the rotation center to rotate +2°

$$\theta 0=0^{\circ}$$

(Current position as the start)

$$\delta \theta = 2^{\circ}$$

Apply above known data to formula (1), (2), (3) on page 119 to obtain as below:

$$\delta X_1 = 145\sqrt{2} * \cos(2^{\circ} + 45^{\circ} + 0^{\circ}) - 145\sqrt{2} * \cos(45^{\circ} + 0^{\circ}) = -5.14876 \text{ (mm)}$$

$$\delta X_2 = 145\sqrt{2} * \cos(2^{\circ} + 225^{\circ} + 0^{\circ}) - 145\sqrt{2} * \cos(225^{\circ} + 0^{\circ}) = 5.14876 \text{ (mm)}$$

$$\delta Y = 145\sqrt{2} * \sin(2^{\circ} + 135^{\circ} + 0^{\circ}) - 145\sqrt{2} * \sin(135^{\circ} + 0^{\circ}) = -5.14876 \text{ (mm)}$$

To rotate -0.3° from the position of 2°

$$\theta 0 = 2^{\circ}$$

(Current position as the start)

$$\delta \theta = -0.3^{\circ}$$

Apply above known data to formula (1), (2), (3) on page 119 to obtain as below:

$$\delta X_1 = 145\sqrt{2} * \cos(-0.3^{\circ} + 45^{\circ} + 2^{\circ}) - 145\sqrt{2} * \cos(45^{\circ} + 2^{\circ}) = 0.78333 \text{ (mm)}$$

$$\delta X_2 = 145\sqrt{2} * \cos(-0.3^{\circ} + 225^{\circ} + 2^{\circ}) - 145\sqrt{2} * \cos(225^{\circ} + 2^{\circ}) = -0.78333 \text{ (mm)}$$

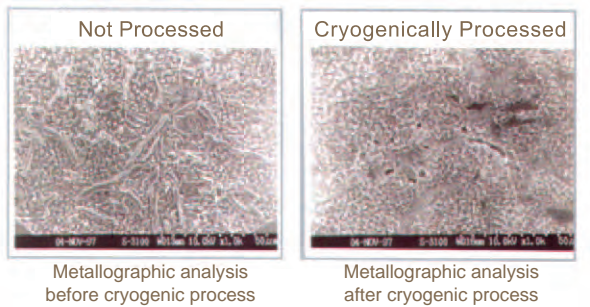
$$\delta Y = 145\sqrt{2} * \sin(-0.3^{\circ} + 135^{\circ} + 2^{\circ}) - 145\sqrt{2} * \sin(135^{\circ} + 2^{\circ}) = 0.78333 \text{ (mm)}$$

All GMT Slide Rail Set / Slide Table is well been cryogenic processing. Cryogenic process is to place the part in the medium with temperature under 196°C, followed step by step progress of new technic to improve material character. Found by relevant search, cryogenic process is not only obviously increase on strength and life of black (colour)metal, plastic and china...etc, but also improve the structure evenly. Increase of dimension stability brings huge economic benefit and promising application in aviation 、 aerospace 、 optics 、 creatures 、 chemistry 、 machinery, electronic and light industry.

◆Purpose of cryogenic process :

Improving physical character (mechanical character) of metal or other material by progress of subzero processing, to raise usage life, efficiency and quality of parts or workpiece.

EX : Comparison of  
Meta llographic analysis



◆Benefic analysis of aluminum alloy after cryogenic process :

- Improvement during process or in the end of process:
- (1) Deformation of microstructure stress caused by designed material shape.
  - (2) Effectively controlling aging deformation.
  - (3) After mechanical testing, mechanism strength has been obviously improved, and perfectly perform the desinged mechanism.

Material	Parts	Hardness	Durability	Processing Life	Dimension Stability
SKD11	Blanking Die, Punch, Cutting Blade,Roller	+	+	+	+
S50C	Auto-mation components, base plate	+	+	/	+
SUJ-2	Rail, Roll Guide	+	+	/	+
SUS	Austenite(300)	+	+	/	+
	Martensitic(420J2 , 440)	+	+	+	+
	Separated(630 , 631)	+	+	/	+
AL合金	Automatic machinery 、 precision processing 、 die manufacture 、 electronic and precision instrument 、 SMT 、 PC board soldering device	/	+	/	+