

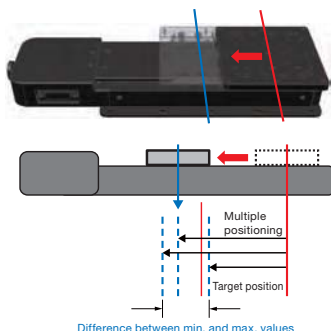
Motorized Stages Guide

Measurement of Linear Stage Accuracy

Positional Accuracy

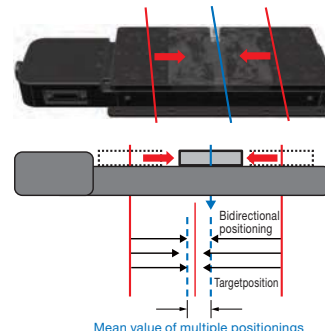
Positioning Accuracy

Positioning is performed successively from the reference position in one direction at a fixed interval across the range of travel. The difference between the target values and measured values at each of the positioning points is calculated, and the difference between the minimum and maximum values is taken to be the positioning accuracy.



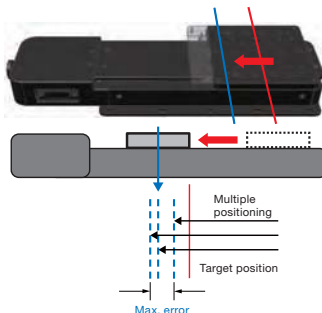
Lost Motion

Positioning is performed multiple times in the (+) forward and (-) backward directions on any position (e.g. both ends or center point) of the stage, and the mean value of the deviation amount with respect to the stop position is calculated. The maximum of the numerical values is taken to be lost motion.



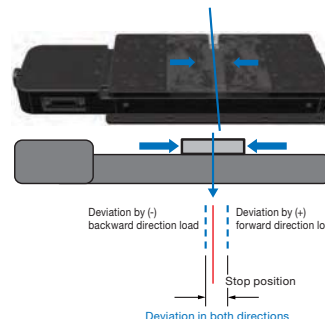
Positional Repeatability

Positioning is performed multiple times from the same direction on any position (e.g. both ends or center point) of the stage, and the maximum value of the deviation amount with respect to the stop position is calculated. The maximum of those numerical values is taken to be positional repeatability.



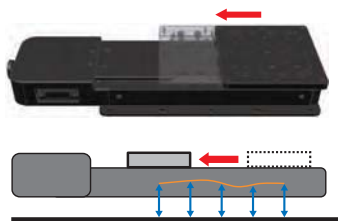
Backlash

A fixed load is applied to the (+) forward or (-) backward direction on any position (e.g. both ends or center point) of the stage. The total deviation in the respective direction at that time is taken to be backlash.



Working Accuracy

Running Parallelism



This is the displacement in the height direction between the stage mounting surface and the travel guide of the stage.

The displacement in the vertical direction of the table during stage motion along the full stroke is taken to be the running parallelism.

Orthogonality of Motion

Measure the working displacement of the Y axis when referenced to the X axis of the XY axis stage with a square. The displacement at this time is taken to be the orthogonality of motion.

Perpendicularity of Motion

Place a dial gauge on the Z stage, and measure the displacement with respect to a vertical plate. The displacement at this time is taken to be the perpendicularity of motion.

(Reference) Measurement Result (HPS60-20X)

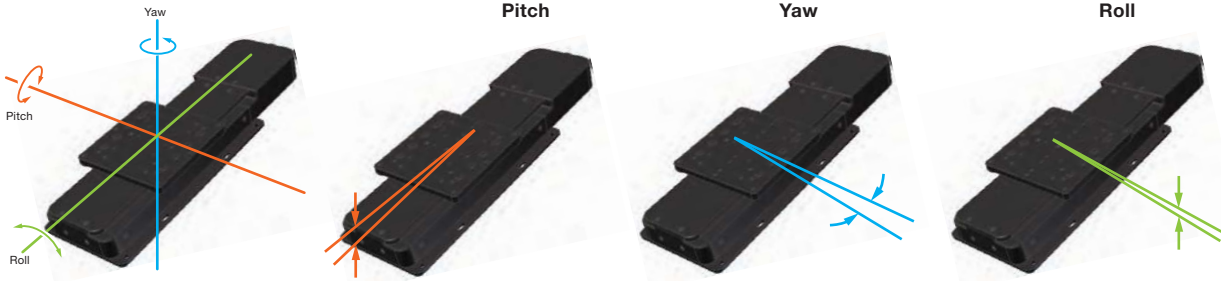
	1		2		3		4		5		6		7		8		9	
	0		2500		5000		7500		10000		12500		15000		17500		20000	
Target Position [μm]	0		2500		5000		7500		10000		12500		15000		17500		20000	
Positioning Direction	↑	↓	↑	↓	↑	↓	↑	↓	↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
Position Deviation [μm]	0.0	-1.2	-0.1	-0.5	0.2	-0.8	-0.3	-0.5	-0.1	-1.4	-0.4	-1.1	-1.7	-2.3	0.3	0.1	-1.5	-1.8
(Measured Value - Target Position)																		
1st time																		
2nd time	-0.6	-1.2	-0.2	-0.4	0.1	-0.7	-0.2	-0.6	-0.3	-1.4	-0.8	-0.9	-1.7	-2.5	0.0	-0.1	-1.5	-1.9
3rd time	-0.4	-0.9	-0.1	-0.8	0.2	-1.3	-0.4	-0.7	-0.1	-1.3	-0.8	-1.2	-1.5	-2.6	0.3	0.0	-1.5	-1.9
4th time	-0.2	-1.6	-0.3	-0.6	-0.2	-0.9	-0.4	-0.6	-0.3	-1.2	-1.2	-1.2	-1.5	-2.5	0.3	-0.2	-1.5	-2.0
5th time	-1.0	-1.2	-0.3	-0.6	0.0	-1.4	-0.5	-0.6	-0.2	-1.2	-0.6	-1.1	-1.6	-2.6	0.2	-0.1	-1.7	-2.0
Mean Position Deviation X	-0.44	-1.22	-0.20	-0.58	0.06	-1.02	-0.36	-0.60	-0.20	-1.30	-0.68	-1.10	-1.60	-2.50	0.22	-0.06	-1.54	-1.92
Standard Deviation X	0.38	0.25	0.10	0.15	0.17	0.31	0.11	0.07	0.10	0.10	0.18	0.12	0.10	0.12	0.13	0.11	0.09	0.08
X+S	-0.06	-0.97	-0.10	-0.43	0.23	-0.71	-0.25	-0.53	-0.10	-1.20	-0.50	-0.98	-1.50	-2.38	0.35	0.05	-1.45	-1.84
X-S	-0.82	-1.47	-0.30	-0.73	-0.11	-1.33	-0.47	-0.67	-0.30	-1.40	-0.86	-1.22	-1.70	-2.62	0.09	-0.17	-1.63	-2.00
Lost Motion B=X ↑ -X ↓	0.78		0.38		1.08		0.24		1.10		0.42		0.90		0.28		0.38	
Maximum (Position Deviation) Value S ↑ +S ↓ + B	1.41		0.63		1.56		0.42		1.30		0.72		1.12		0.52		0.55	
Wobble per Rotation	1.00		0.80		0.80		0.90		0.70		1.60		2.60		1.90			

■Result

Maximum Lost Motion	1.10μm
Average Lost Motion	0.62μm
Positional Repeatability	
Unidirectional Positioning ↑	0.77μm
↓	0.62μm
Positioning Accuracy	2.97μm

Moment Stiffness (Pitch/Yaw/Roll)

Moment stiffness is the stage strength against load exerted at a point away from the center of the table face. (The center of the table face does not match the center of gravity of work.) It indicates the degree of tilt of the table face (sec) when 1N load is exerted at a point 1cm away from the center of the stage face.



Angular Accuracy

Pitch

Pitch is the angle displacement of the table face in the pitch direction while the stage is in motion. It indicates the maximum angle displacement during full travel.

Parallelism

It indicates the parallelism of the table fixed on the stage against the base plane.

Yaw

Yaw is the angle displacement of the table face in the yaw direction while the stage is in motion. It indicates the maximum angle displacement during full travel.

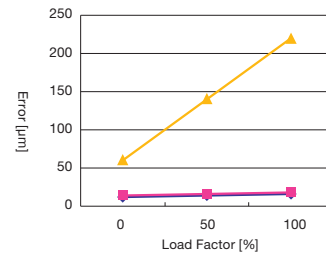
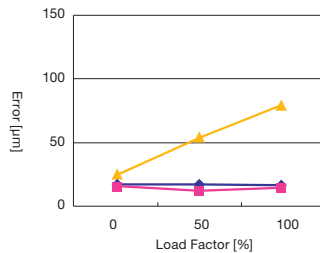
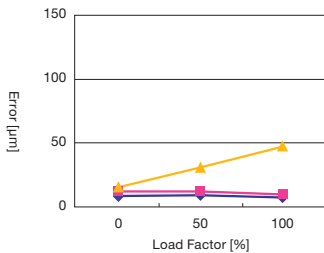
(Reference) Measurement of XY axis Stage Accuracy

OSMS20-85

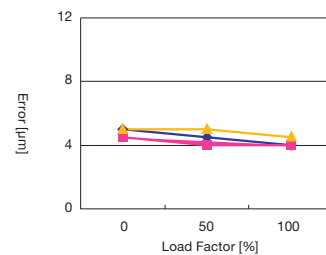
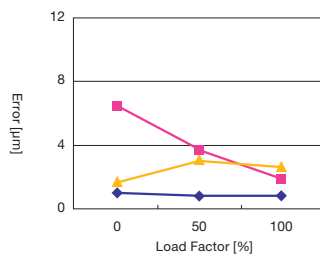
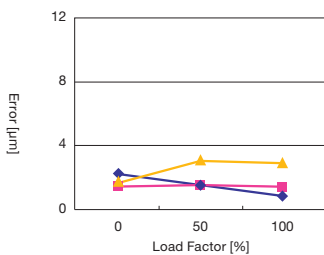
OSMS26-200

OSMS33-300

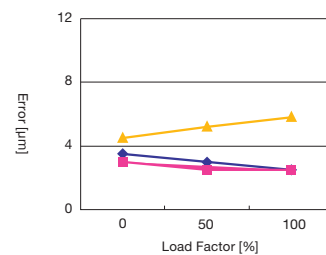
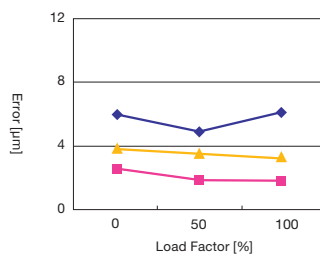
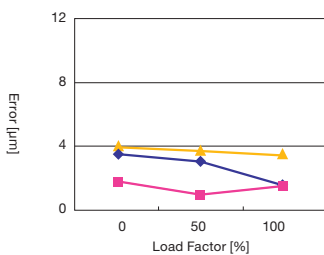
Positioning Accuracy



Positional Repeatability



Lost Motion



Legend: Single axis (blue diamond), X axis of XY (pink square), Y axis of XY (yellow triangle)



Higher load factor at the travel end of motorized stages increases the deflection on Y axis, resulting in extremely poor positioning accuracy.

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

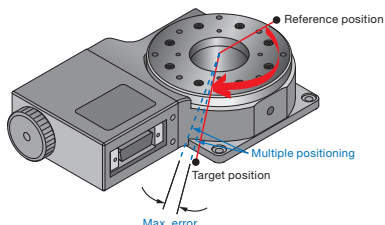
Others

Motorized Stages Guide

Measurement of Rotation Stage Accuracy

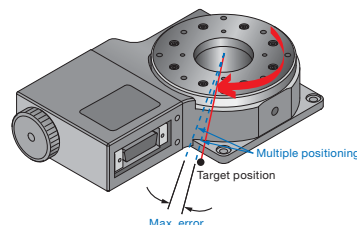
Positional Accuracy

Positioning Accuracy



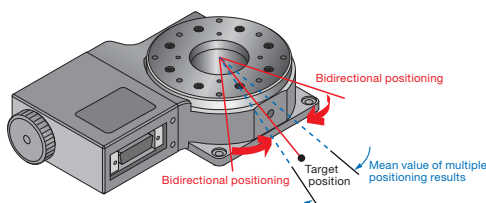
Positioning is performed successively from the reference position in one direction at a fixed interval across almost the entire range of travel. The difference between the target values and measured values at each of the positioning points is calculated, and the difference between the minimum and maximum values is taken to be the positioning accuracy.

Positional Repeatability



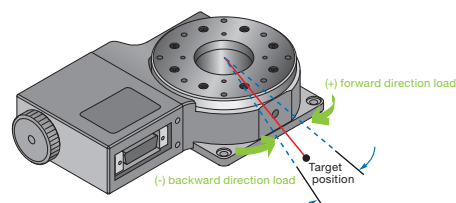
Positioning is performed multiple times from the same direction on any position of the stage, and the maximum value of the deviation amount with respect to the stop position is calculated. The maximum of those numerical values is taken to be positional repeatability.

Lost Motion



Positioning is performed multiple times in the (+) forward and (-) backward directions on any position (e.g. both ends or center point) of the stage, and the mean value of the deviation amount with respect to the stop position is calculated. The maximum of the numerical values is taken to be lost motion.

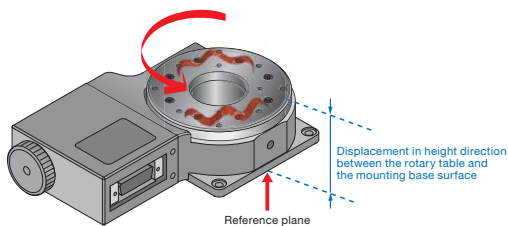
Backlash



A fixed load is applied to the (+) forward or (-) backward direction on any position of the stage. The total deviation in the respective direction at that time is taken to be backlash.

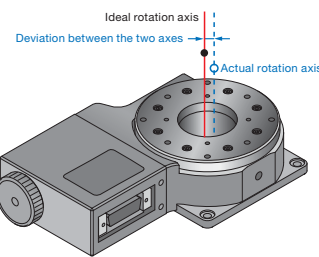
Working Accuracy

Wobble



Wobble is the maximum displacement in the height direction between the rotary table and the mounting base surface when the rotation stage is rotated once.

Concentricity



Concentricity is the difference between the ideal rotation center and the actual rotation center when the rotation stage is rotated once.

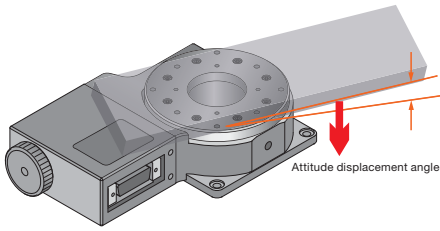
(Reference) Measurement Result (OSMS-60YAW)

Target Position [°]	0	1	2	3	4	5	6	7	8	9	10	11	12
Positioning Direction	0	29	58	87	116	145	174	203	232	261	290	319	348
Position Deviation [°]	0.000	0.015	-0.009	0.003	-0.010	-0.001	-0.013	-0.004	-0.012	0.001	-0.007	0.009	-0.007
1st time	0.002	0.015	-0.007	0.003	-0.009	-0.001	-0.012	-0.004	-0.012	0.001	-0.006	0.009	-0.007
2nd time	0.003	0.015	-0.007	0.003	-0.009	-0.001	-0.012	-0.004	-0.012	0.001	-0.007	0.009	-0.007
3rd time	0.003	0.015	-0.007	0.003	-0.009	-0.001	-0.012	-0.004	-0.012	0.001	-0.007	0.009	-0.007
4th time	0.003	0.016	-0.007	0.003	-0.009	-0.001	-0.013	-0.004	-0.012	0.000	-0.006	0.009	-0.007
5th time	0.002	0.016	-0.007	0.004	-0.009	-0.001	-0.013	-0.004	-0.012	0.001	-0.007	0.009	-0.007
Mean Position Deviation X	0.002	0.015	-0.007	0.003	-0.010	-0.001	-0.012	-0.004	-0.012	0.001	-0.007	0.009	-0.007
Standard Deviation X	0.001	0.000	-0.001	0.000	-0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X+S	0.003	0.016	-0.007	0.004	-0.009	-0.001	-0.012	-0.004	-0.012	0.001	-0.006	0.009	-0.007
X-S	0.001	0.015	-0.008	0.003	-0.010	-0.001	-0.013	-0.004	-0.012	0.000	-0.007	0.009	-0.007
Lost Motion B=X↑-X↓	0.0135	0.0107	0.0084	0.0088	0.0125	0.0154	0.0163	0.0136	0.0122	0.0127	0.0130	0.0139	0.0120
Maximum (Position Deviation) Value S↑+S↓+ B	0.0148	0.0116	0.0091	0.0091	0.0129	0.0158	0.0168	0.0142	0.0127	0.0131	0.0133	0.0144	0.0125

Result	Maximum Lost Motion	0.0163°	Wobble Accuracy	12μm
	Positional Repeatability		Parallelism	27μm
	Unidirectional Positioning ↑	0.0022°	Concentricity	8μm
	↓	0.0009°		
	Positioning Accuracy	0.0330°		

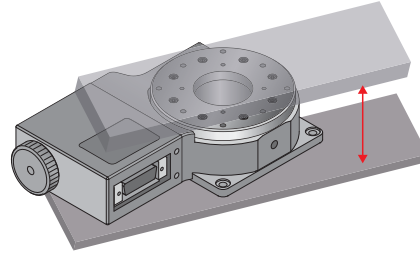
Angular Accuracy

Moment Stiffness



The angular displacement of the stage when unit moment load is applied.

Parallelism



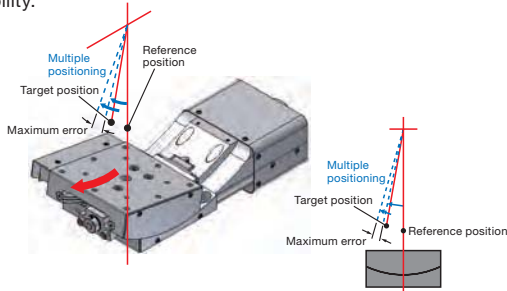
The parallelism of the table fixed on the stage against the base plane.

Measurement of Goniometer Stage Accuracy

Positional Accuracy

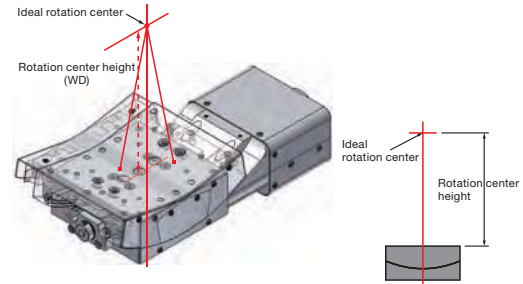
Positional Repeatability

Positioning is performed multiple times from the same direction on any position of the stage, and the maximum value of the deviation amount with respect to the stop position is calculated. The maximum of those numerical values is taken to be positional repeatability.



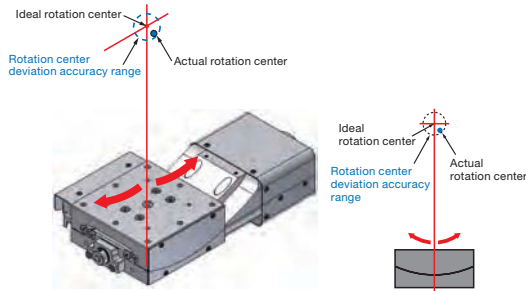
Rotation Center Height

The distance to the top surface of the table from the ideal rotation center.



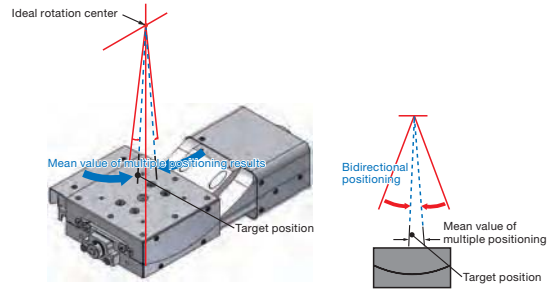
Rotation Center Deviation Accuracy

The maximum deviation range from the ideal rotation center position when a goniometer stage is moved throughout the full travel.



Lost Motion

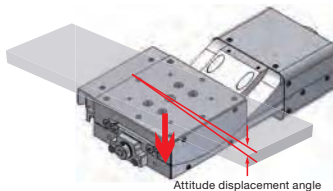
Positioning is performed multiple times in the (+) forward and (-) backward directions on any position (e.g. both ends or center point) of the stage, and the mean value of the deviation amount with respect to the stop position is calculated. The maximum of the numerical values is taken to be lost motion.



Angular Accuracy

Moment Stiffness

The angular displacement of the stage when unit moment load is applied.



Quality Assurance

We verify the working accuracy when stage assembly is completed. All products we ship are compliant to JIS or have passed company regulations.

Serial Number

A sticker like the one shown in the picture is affixed onto Sigma Koki products. It shows information such as our company logo, part number, and serial number.



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40 x 40 mm

60 x 60 mm

80 x 80 mm

85 x 85 mm

100 x 100 mm

120 x 120 mm

Others

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Accuracy Verification

Motorized stage accuracy is, in principle, confirmed in compliance with the JIS test code for machine tools (JIS B 6190). In addition, all measuring instruments are traceable standard instruments compliant to the national standard.



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40 x 40 mm

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100 x 100 mm

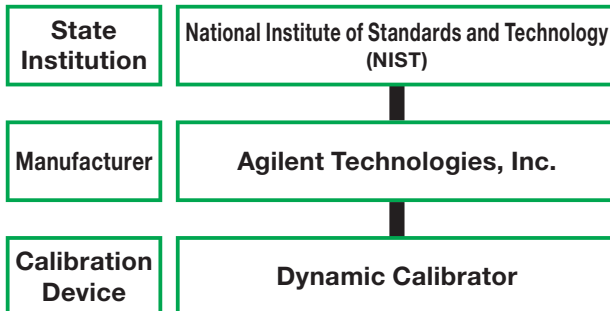
120 x 120 mm

Others

Category	Measurement Item	Device Used	Standards
Linear Stage	Positioning Accuracy	Dynamic Calibrator (HP5529A)	JIS B 6190
	Positional Repeatability		
	Lost Motion		
	Running Parallelism	Dial Indicator	Company Standard
	Pitch/Yaw	Auto Collimator	Company Standard

It has to be guaranteed that measured values and indicated values are within the specification range of international standard values. In other words, traceability must be ensured. JIS defined this traceability as “the capacity to trace measurement results back to the domestic measurement standards, with the use of measuring instruments that have gone through a sequence of calibrations with high-ranking standards.”

Linear Stage Traceability System Diagram



Category	Measurement Item	Device Used	Standards
Rotation Stage	Positional Repeatability	Rotary Encoder	Company Standard
	Lost Motion		
	Wobble Accuracy	Dial Indicator	Company Standard
Goniometer Stage	Positional Repeatability	Rotary Encoder	Company Standard
	Lost Motion		
	Rotation Center Height	Three Dimensional Instrumentation	Company Standard
	Rotation Center Deviation Accuracy		

Accuracy Check in Assembled State

We check accuracy of motorized stages as a single unit. Regarding the accuracy check in assembled state, we need to confirm use conditions etc. Contact our International Sales Division separately.

Accuracy Check at Delivery Destination

We cannot conduct accuracy check at delivery destinations. We will request a check from organizations such as Japan Quality Assurance Organization as necessary. Contact our International Sales Division separately for more information.

Interpretation of the Specification Table

Specifications				
1...	Part Number	**_**		
2...	Opposite Model	**_**R		
3... 4... 5... 6... 7... 8...	Mechanical Specifications	Travel	**mm	
		Stage Size	**x**mm	
		Feed Screw		
		Positioning Slide		
		Stage Material		
9... 10... 11... 12... 13... 14... 15... 16... 17... 18... 19... 20... 21... 22... 23... 24... 25...	Accuracy Specifications	Resolution	(Full)	**μm/pulse
			(Half)	**μm/pulse
		MAX Speed	**mm/sec	
		Repeatability	**μm	
		Positioning Accuracy	**μm	
		Load Capacity	**N (**kgf)	
		Moment Stiffness	Pitch	**"/N·cm
			Yaw	**"/N·cm
			Roll	**"/N·cm
		Lost Motion	**μm	
		Backlash	**μm	
		Parallelism	**μm	
		Running Parallelism	**μm	
		Orthogonality of Motion	**μm	
Perpendicularity of Motion	**μm			
Pitch / Yaw	**"/**"			
Sensor	Sensor Part Number			
	Limit Sensor			
	Origin Sensor			
	Proximity Origin Sensor			

Motor / Sensor Specifications			
26... 27... 28...	Motor	Type	
		Motor Part Number	
		Step Angle	
29... 30... 31... 32...	Sensor	Power Voltage	
		Current Consumption	
		Control Output	
		Output Logic	

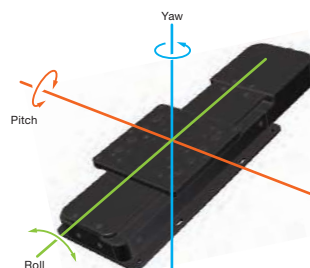
Compatible Driver / Controller			
33...	Control System	Compatible Driver	
34...		Compatible Controller	

[Memo]

The drawing shows the types of tilt when a linear stage travels.

Towards the direction of travel...

- Pitch Rotation around the axis in the horizontal plane perpendicular to the direction of travel
- Yaw Rotation around the axis in the vertical plane perpendicular to the direction of travel
- Roll Rotation around the axis in the horizontal plane parallel to the direction of travel



- 1 Part Number
2 Opposite Model
- [Mechanical Specifications]**
- 3 Travel Indicates the full travel.
4 Stage Size Size of top table face.
5 Feed Screw * Precision ground screws
* Ball screw
6 Positioning Slide * Crossed roller guide
* Outer rail structure
7 Stage Material Material used for the product.
8 Weight Self weight of the product.
- [Accuracy Specifications]**
- 9 Resolution (Half) Refer to the accuracy verification page for more information. [Reference](#) G004 – G007
(Full) Travel per pulse for half step
10 MAX Speed Travel per pulse for full step
11 Repeatability MAX speed of the product (maximum travel speed).
12 Positioning Accuracy Deviation between the measured value and the target value at the positioning point.
13 Load Capacity Deviation in stop positions when unidirectional positioning is performed multiple times.
14 Moment Stiffness Load capacity at the center of the stage.
Stage strength against a load exerted at a position away from the center of the table top (the table center and the center of gravity of a work does not match). It indicates the degree of tilt of the table top (°) when 1N load is exerted at the position 1cm away from the center of the stage surface.
- Pitch Stiffness in the direction of tilt around the axis in the horizontal plane perpendicular to the direction of travel when moving the stage for full travel.
Yaw Stiffness in the direction of tilt around the axis in the vertical plane perpendicular to the direction of travel when moving the stage for full travel.
Roll Stiffness in the direction of tilt around the axis in the horizontal plane parallel to the direction of travel when moving the stage for full travel.
- 15 Lost Motion Deviation between the stop position of forward positioning and that of backward positioning.
16 Backlash Deviation in each direction when a certain load is exerted in forward and backward directions at an arbitrary position on the stage.
17 Parallelism The parallelism of the table fixed on the stage against the base plane.
* Note that it is different from "Running Parallelism".
18 Running Parallelism Displacement in the vertical direction of the table during stage motion along the full travel.
19 Orthogonality of Motion Working displacement in the direction perpendicular to the Y axis when referenced to the X axis motion of the XY axis stage.
20 Perpendicularity of Motion Displacement between the Z axis stage and the perpendicular optical breadboard when moving the stage for full travel.
21 Pitch Maximum angle displacement in the direction of tilt around the axis in the horizontal plane perpendicular to the direction of travel when moving the stage for full travel.
Yaw Maximum angle displacement in the direction of tilt around the axis in the vertical plane perpendicular to the direction of travel when moving the stage for full travel.
- [Sensor]**
- 22 Sensor Part Number Sensor used for the product.
23 Limit Sensor Indicates whether fitted with a limit sensor.
24 Origin Sensor Indicates whether fitted with an origin sensor.
25 Proximity Origin Sensor Indicates whether fitted with a proximity origin sensor.
- [Motor Specifications]**
- 26 Type Type of motor.
27 Motor Part Number Part number of motor used for the product.
28 Step Angle Step angle of the motor.
- [Sensor Specifications]**
- 29 Power Voltage Specifications of the sensor.
30 Current Consumption
31 Control Output
32 Output Logic
- [Compatible Driver / Controller]**
- 33 Compatible Driver Driver/controller compatible with the product.
34 Compatible Controller

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Stepping Motors Guide

Operating Environment of Motorized Stages

Use motorized positioning stages within the following operational environment temperature range. Contact our International Sales Division separately if you desire to use the stages outside the operational environment temperature range.

***Operating environment**

Temperature: 5°C – 40°C
Humidity: 30% – 80% (without condensation)

***Recommended environment**

Temperature: 23°C ±5°
Humidity: 60±10% (without condensation)

Operational environment temperature changes depending on various conditions such as the type of motorized positioning stage, installation and operation conditions.

Avoid use of the stages in the following sites.

- Sites subject to water or oil
- Sites subject to direct sunlight or radiant heat
- Sites subject to dirt and dust
- Sites subject to vibration or impact
- Sites close to fire
- Sites subject to inflammable gas and corrosive gas

Life Cycle

Although the life cycle varies depending on intended use or application, 2,000 to 3,000 hours for linear systems and 1,000 to 1,500 hours/year (about 3 to 4 hours/day) for rotation/goniometer systems are assumed.

Note that the above assumption may not apply to repeated operations (high-speed drive or high-load drive). Careful maintenance or supply of grease is important for using the products for a long time without a problem.

Reference G122 Maintenance / Cleanroom / Vacuum Grease

Storage

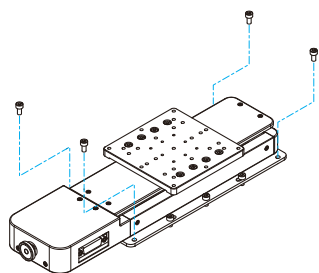
When not using motorized stages for a long time, store motorized stages wrapped with anti-rust paper, or store in a plastic bag with a desiccant.

Storage Temperature: 0°C – 40°C
Humidity: 10% – 85% (without condensation)

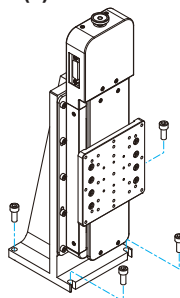
Example of Installation Procedure

Linear

OSMS

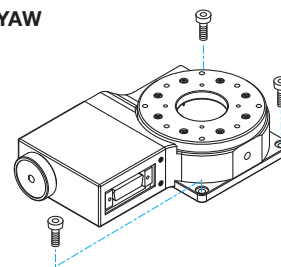


OSMS-(Z)



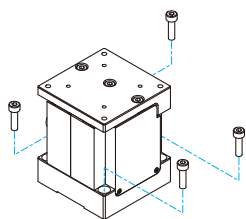
Rotation

OSMS-YAW

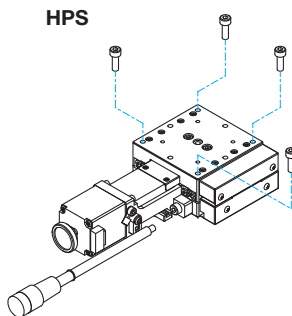


Goniometer

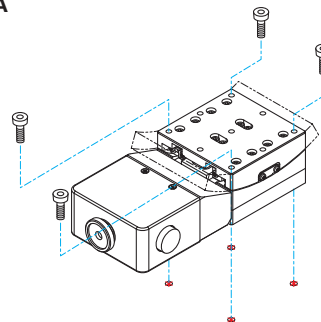
OSMS-ZF



HPS



SGSP-A



Attention

- ▶ Recommended parallelism for stage mounting surface is 0.02 or lower. A product might be warped when it exceeds 0.02, causing abnormal operation.
- ▶ When mounting another product on the upper table of a motorized stage, make sure that the stage is not subjected to abnormal external force.
- ▶ Foreign substances in tapped holes on the upper table or on the side of the stage will cause malfunction.

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Others

Mounting Orientation

The values in the specifications of each product are based on installation on a level surface. Note that load capacity and other precision values will significantly change for upside down, lateral horizontal and other installation orientations, because mounting on other than the horizontal surface require securing with screws.

Category	Series Name	Positioning Slide	Upside Down	Lateral Horizontal	Lateral Vertical
Linear	OSMS	Outer Rail	○	○	○
	HPS	Ball Guide	○	○	△
	TAMM, HST	Crossed Roller	○	○	△
Rotation	OSMS-YAW	Bearing (120YAW, 180YAW: Crossed Roller)	○	△	△
	HDS-YAW	Bearing	○	△	△
	HST-YAW	Crossed Roller	○	○	△
Goniometer	OSMS-A/B	Ball Guide	○	○	△
	SGSP-A/B	Crossed Roller	○	△	△

○: Possible with limits on load capacity and other accuracy.

△: Possible depending on the model, with limits on load capacity and other accuracy.











×: Not allowed

Please contact our Sales Division regarding other unclear points related to mounting orientation.

Selection Guide

Motorized stages are categorized in several different travel axes and types by the differences in structure or positioning slide.

Since precision, stiffness and price differ depending on the type, select a product ideal for the intended purpose.

Precision	Linear		Rotation		Goniometer	
	Series Name	Relevant Product	Series Name	Relevant Product	Series Name	Relevant Product
 High Bottom	HST Crossed Roller Reference > G068 -		HST-YAW Bearing Reference > G086		OSMS Ball Guide Reference > G090	
	TAMM Crossed Roller Reference > G064		HDS-YAW Bearing Reference > G088			
	HPS Ball Guide Reference > G060		OSMS-YAW Bearing Reference > G082 -		SGSP Crossed Roller Reference > G096	
	OSMS Outer Rail Reference > G032 -					

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Others

Stepping Motors Guide

Linear

HPS Series



Durable linear stages with excellent cost performance.



Motor Variation

Compatible with 2 phase stepping motor, a stepping motor and AC servo motor manufactured by Oriental Motor Co., Ltd. in addition to the standard 5 phase stepping motor.

Low Price

Integration of the main unit and guide has reduced the number of parts and assembly man-hours, offering low price.

High Durability

Ball screws are used for the feed mechanism to achieve both low price and durability.

OSMS Series



Stepping motor stages compatible with versatile travel range between 35 to 500mm and can be used in any orientation.



Slim Body

These stages are our standard CE-compliant motorized stages, covering motors neatly. These stages offer attractive range of travel by fully utilizing the features of the outer rails.

Line Up

Full closed loop control for stage table positioning, and linear encoder version for coordinate counting are standard line up.

Option

Various options are available according to the application. Geared motors and electromagnetic brakes are available for high-load specifications and Z axis specifications, respectively. Contact our International Sales Division for more information.

Safety Cover

Safety specifications of these stages are compliant with safety requirements on electrical measuring and control equipment and electrical equipment for laboratory use (EN61010-1:2010).

Slim Body

The structure in which the U-shaped outer rail and inner block with center integrated ball screw offers high stiffness, high precision and minimum footprint.



Base Plate

Stages can be installed by securing with bolts without removing their covers. If rigidity is required, the base plates can be removed.

5 Phase Stepping Motor

Achieves the minimum size and minimum weight with high speed and high torque. The rated current is 0.75A/phase which is common to all sizes.

XY axis mounting becomes easier.



Two single axis stages can be assembled directly and used as an XY axis stage without the need of XY-axis mounting plates.

<Line Up>

Part Number	Stage Size [mm]	Wide [mm]	Height [mm]	Travel [mm]	Load Capacity [N]
OSMS20-35(X)	85x85	85	35.7	35	78.4
OSMS20-85(X)	85x85	85	35.7	85	78.4
OSMS26-50(X)	100x100	100	43	50	117
OSMS26-100(X)	100x100	100	43	100	117
OSMS26-200(X)	100x100	100	43	200	117
OSMS26-300(X)	100x100	100	43	300	117
OSMS33-300(X)	120x120	120	56.7	300	196
OSMS33-500(X)	120x120	120	56.7	500	196



Translation Motorized Stages, Flat Z axis - 5 Phase Stepping Motor

Motorized Extended Guide Goniometer



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80 x 80 mm

85 x 85 mm

100 x 100 mm

120 x 120 mm

Others

TAMM Series

RoHS CE

Motorized crossed roller stages that combine compactness, low-profile and high durability



High Durability

Line contact with rollers and V groove rail offers high stiffness, low friction and virtually no differential slip, suitable for minute feeding.

Compact/ Low-profile

"Ideal for space-saving and assembly of systems with low optical axis."

Sizes

40×40mm/60×60mm/100×100mm/100×175mm are available.

HST Series

RoHS CE



High Precision

High precision stages with steel body relatively strong against heat, and in which precision ball screws and crossed roller guide are arranged with highest precision.

High Load Capacity

Achieved the maximum load capacity of 392N (40.0kgf).

High Stability

Steel body fitted with large table face can mount anything.

Rotation

OSMS-YAW Series

RoHS CE

Stepping motor driven rotation stages fitted with bearing guide and worm gear feed mechanism



Low Price

Number of parts and assembly time were reduced to lower the price.

Compact/ Low-profile

Ideal for space-saving and assembly of systems with low optical axis.

Sizes

φ40/φ60/φ80/φ120/φ160mm are available.

HDS-YAW

RoHS CE

High durability rotation motorized stages for minute angle adjustment.



High Durability

Ball screws and steel belts used in the drive mechanism offer excellent durability in minute angles.

Isokinetic

Since it converts linear motion by the ball screw into rotational motion by the steel belt, there is no difference between traveling center and end by rotation speed and resolution.

Sizes

φ40/φ60/φ80/φ120/φ160mm are available.

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80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Stepping Motors Guide

HST-YAW Series

RoHS CE

High precision and high stability rotation motorized stages fitted with bearing positioning slide



High Precision High repeatability stages fitted with bearing positioning slide.

High Load Capacity Achieved the maximum load capacity of 392N (40.0kgf).

High Stability Steel body fitted with large table face can mount anything.

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100 × 100 mm

120 × 120 mm

Others

Goniometer

OSMS Series

RoHS CE

High precision motorized goniometers with integrated bearing ways for superior stiffness, accuracy and durability



Their smooth movement is ideal for frequent angle adjustment.

Low Price Number of parts and assembly time were reduced to lower the price.

High Precision High Stiffness High Durability Integrated ball guide structure in which guides are directly processed on the main body minimized machining/assembly errors and improved rotation center accuracy.

SGSP-A/B Series

RoHS

Stepping motor driven motorized goniometer stages fitted with crossed roller guide



High Stiffness High stiffness goniometer stages fitted with excellent abrasion resistant crossed roller guide.

Operability Products with two axes combined offer further flexible alignment.

Lightweight Aluminum body offers lightweight.