

Rotation Motorized Stages

Stage Size ϕ 80 mm / ϕ 120 mm / ϕ 160 mm

OSMS-YAW

RoHS

CE

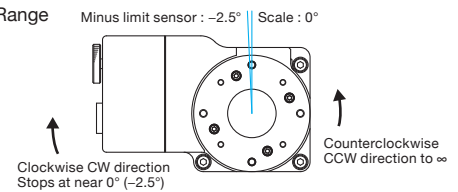
Stepping motor driven rotation stages utilizing precision bearings and worm gear drive mechanisms.



- Suitable for rotating optics about the optical axis, measuring, inspection and evaluation instruments.
 - 360° continuous motion
 - Low, compact profile
- Adapters to hold a variety of optics are available.

Guide

▶ Rotation Range



- ▶ Homing of rotation motorized stages is performed using the CW limit sensor as the origin sensor.
- ▶ Origin detection is adjusted so that the stage stops at 0 degrees when homing is performed in the MINI system at half step.

Attention

- ▶ Load capacity and precision may be derated when mounted upside down or vertically. Contact us for informations regarding your specific application.

Specifications

Part Number		OSMS-80YAW	OSMS-120YAW	OSMS-160YAW	OSMS-120YAW-W
Mechanical Specifications	Rotation Range	Move in the counterclockwise CCW direction to ∞ , and stop at near 0 degree (-2.5°) in the clockwise CW direction.			
	Stage Size [mm]	$\phi 80$	$\phi 120$	$\phi 160$	$\phi 120$
	Travel Mechanism (reduction ratio)	Worm gear (1:144)	Worm gear (1:144)	Worm gear (1:144)	Worm gear (1:144)
	Positioning Slide	Bearing method	Crossed roller	Crossed roller	Crossed roller
	Stage Material	Aluminum / Aluminum bronze	Aluminum / Aluminum bronze	Aluminum / Aluminum bronze	Aluminum / Aluminum bronze
	Weight [kg]	1.1	2.0	2.5	5.5
Accuracy Specifications	Resolution	(Full) [$^\circ$ /pulse]	0.005	0.005	0.005
		(Half) [$^\circ$ /pulse]	0.0025	0.0025	0.0025
	MAX Speed [$^\circ$ /sec]		30	30	30
	Positioning Accuracy [$^\circ$]		0.15	0.1	0.1
	Positional Repeatability [$^\circ$]		0.02	0.02	0.02
	Load Capacity [N]		98 (10.0kgf)	196 (20.0kgf)	196 (20.0kgf)
	Moment Stiffness [$^\circ$ /N·cm]		0.2	0.1	0.1
	Lost Motion [$^\circ$]		0.05	0.05	0.05
	Backlash [$^\circ$]		0.08	0.08	0.08
	Parallelism [μ m]		50	50	60
	Concentricity [μ m]		30	30	30
	Wobble [mm]		0.02	0.02	0.02
Sensor	Sensor Part Number		Micro Photoelectric Sensor: PM-F25 (SUNX Co., Ltd.)		
	Limit Sensor		Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)
	Origin Sensor		None	None	None
	Proximity Origin Sensor		None	None	None

Motor / Sensor Specifications

Motor	Type	5-phase stepping motor 0.75A/phase (Oriental Motor Co., Ltd.)
	Motor Part Number	PK525HPB-C4 (□28mm)
	Step Angle	0.72°
Sensor	Power Voltage	DC5 – 24V $\pm 10\%$
	Current Consumption	15mA or lower
	Control Output	NPN open collector output DC30V or lower, 50mA or lower
	Output Logic	When shaded: Output transistor OFF (no conduction)

Compatible Driver / Controller

Control System	Compatible Driver	MC-S0514ZU, SG-514MSC, MC-7514PCL
	Compatible Controller	SHOT-702, HSC-103, GIP-101, SHOT-302GS, SHOT-304GS, HIT-M-HIT-S, PGC-04-U

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Options

40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

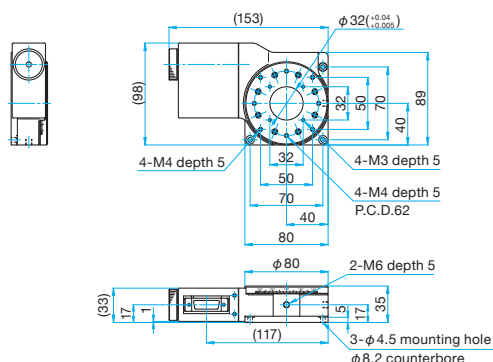
120 × 120 mm

Others

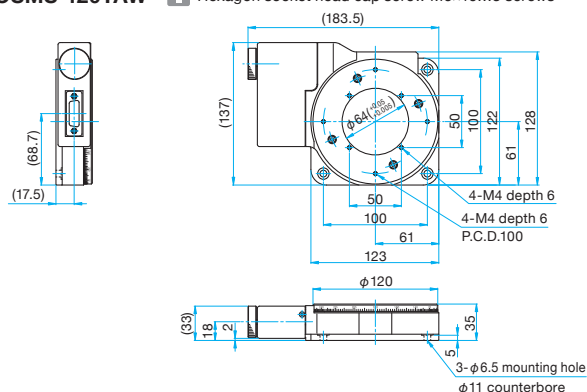


Outline Drawing

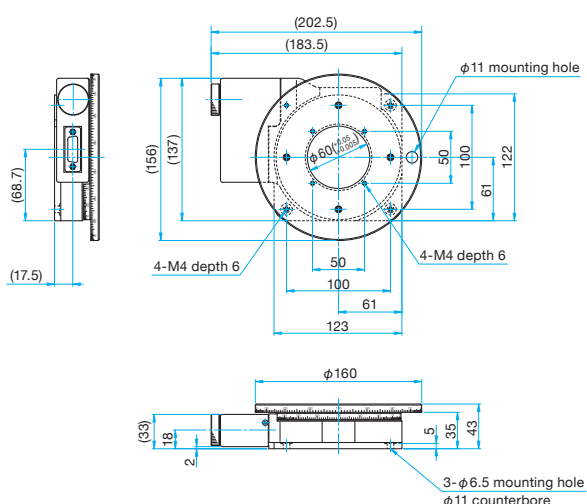
OSMS-80YAW Hexagonal socket head cap screw M4×10...3 screws



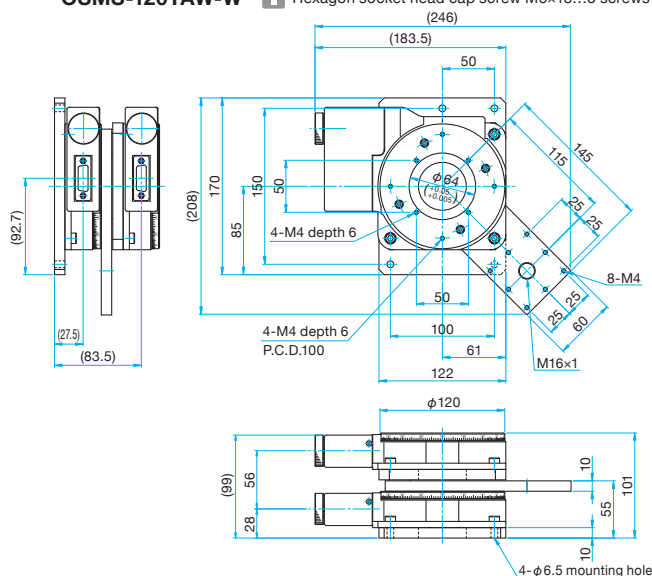
OSMS-120YAW Hexagon socket head cap screw M6×10...3 screws



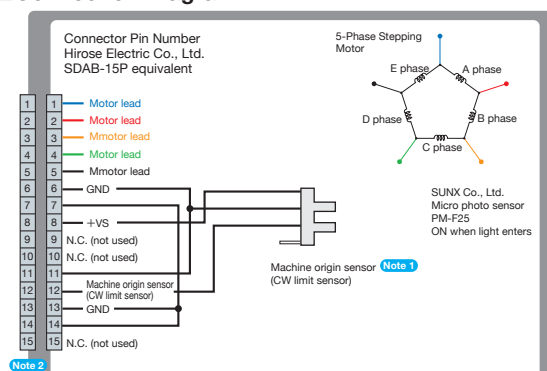
OSMS-160YAW Hexagon socket head cap screw M6×10...3 screws



OSMS-120YAW-W Hexagon socket head cap screw M6×18...3 screws



Connection Diagram



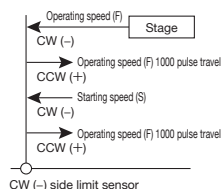
Note 1 When a travel command in the "+" direction is issued, the mounting table rotates to ∞ in the CCW (counterclockwise) direction viewed from the top surface, but it is stopped by the machine origin sensor (CW limit sensor) in the CW (clockwise) direction. Detect the machine origin using the method (MINI system) that detects the origin with a machine origin sensor (CW limit sensor).

Note 2 Compatible cable connector: DDK Ltd. 17JE-13150

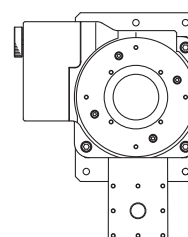
Machine Origin Detection

MINI System

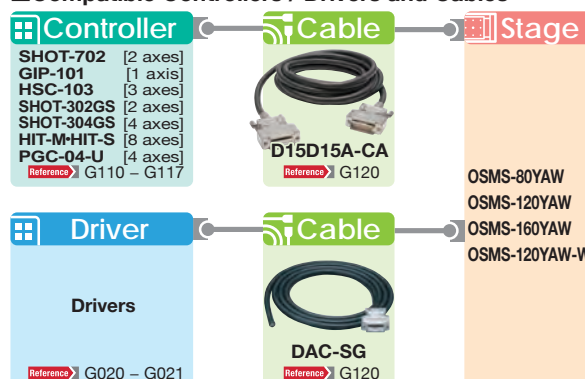
When the machine origin detection command is issued, the stage starts traveling in the CW (-) direction at the operating speed (F) set with the memory switch, and stops by the CW (-) side limit sensor. Then it travels in the CCW (+) direction at the operating speed (F) for 1000 pulses. After stop, it starts traveling in the CW (-) direction again at the starting speed (S), and stops by the CW (-) side limit sensor. After that, it travels in the CCW (+) direction at the operating speed (F) for 1000 pulses. This position is regarded as the machine origin.



If homing of OSMS-120YAW-W is performed, the position will become as shown below.



Compatible Controllers / Drivers and Cables



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