

Rotation Motorized Stages

Stage Size ϕ 40 mm / ϕ 60 mm

OSMS-YAW

RoHS

CE

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

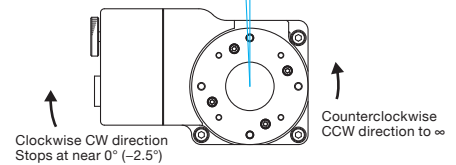


- Suitable for rotating optics about the optical axis, measuring, inspection and evaluation instruments.
- 360° continuous motion
- Low, compact profile
Adapters to hold a variety of optics are available.

Guide

▶ Rotation Range

Minus limit sensor: -2.5° | Scale: 0°



- ▶ 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			OSMS-40YAW	OSMS-60YAW	OSMS-60YAW-W
Part Number					
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]	$\phi 40$		$\phi 60$	$\phi 60$
	Travel Mechanism (reduction ratio)	Worm gear (1:144)		Worm gear (1:144)	Worm gear (1:144)
	Positioning Slide	Bearing method		Bearing method	Bearing method
	Stage Material	Aluminum / Aluminum bronze		Aluminum / Aluminum bronze	Aluminum / Aluminum bronze
	Weight [kg]	0.35		0.45	1.0
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 [$^\circ$]	0.1		0.1	—
	Positional Repeatability [$^\circ$]	0.02		0.02	0.02
	Load Capacity [N]	19.6 (2.0kgf)		29.4 (3.0kgf)	29.4 (3.0kgf)
	Moment Stiffness [$^\circ$ /N-cm]	2		1	—
	Lost Motion [$^\circ$]	0.05		0.05	0.05
	Backlash [$^\circ$]	0.1		0.1	0.1
	Parallelism [μ m]	50		50	—
	Concentricity [μ m]	30		30	—
Wobble [mm]	0.02		0.02	—	
Sensor	Sensor Part Number	Micro Photoelectric Sensor: PM-F25 (SUNX Co., Ltd.)		Micro Photoelectric Sensor: PM-R25 (SUNX Co., Ltd.)	Micro Photoelectric Sensor: PM-R25 (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 (Tamagawa Seiki Co., Ltd.)
	Motor Part Number	TS3664N4E10 ($\square 24$ mm)
	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	SG-5M, SG-5MA, MC-S0514ZU, SG-514MSC, MC-7514PCL
	Compatible Controller	GSC-01, GSC-02, SHOT-702, GIP-101, HSC-103, SHOT-302GS, SHOT-304GS, HIT-M-HIT-S, PGC-04-U

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Options

40 x 40 mm

60 x 60 mm

80 x 80 mm

85 x 85 mm

100 x 100 mm

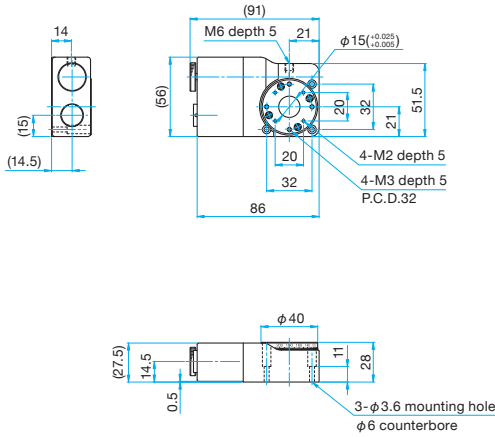
120 x 120 mm

Others

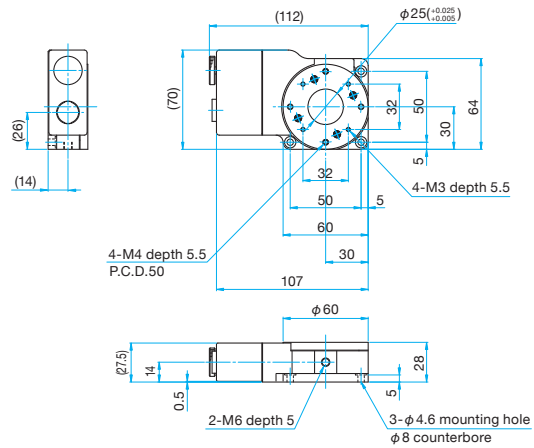


Outline Drawing

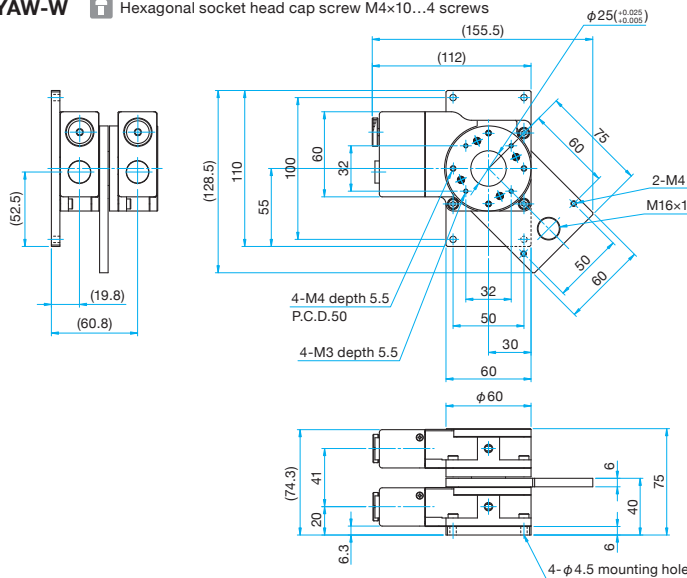
OSMS-40YAW Hexagonal socket head cap screw M3x15...3 screws



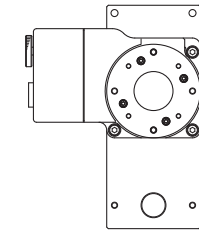
OSMS-60YAW Hexagonal socket head cap screw M4x10...3 screws



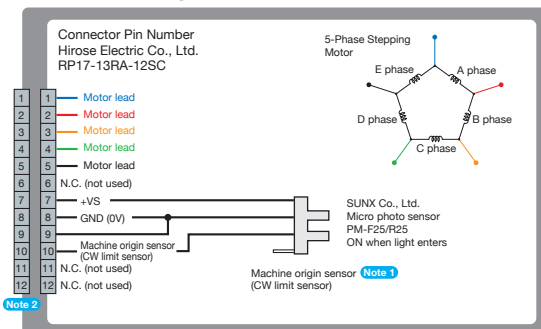
OSMS-60YAW-W Hexagonal socket head cap screw M4x10...4 screws



When homing of OSMS-60YAW-W is performed, the position will become as shown below.



Connection Diagram



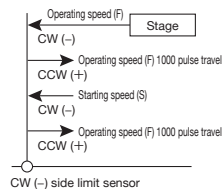
Note 1 When a travel command in the "+" direction is issued, the mounting table rotates to ∞ in the CCW (counterclockwise) direction viewed from the top surface, but it is stopped by the machine origin sensor (CW limit sensor) in the CW (clockwise) direction. Detect the machine origin using the method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

Note 2 Compatible cable connector: Hirose Electric Co., Ltd. RP17-13PA-12PC/RP17-PC-122

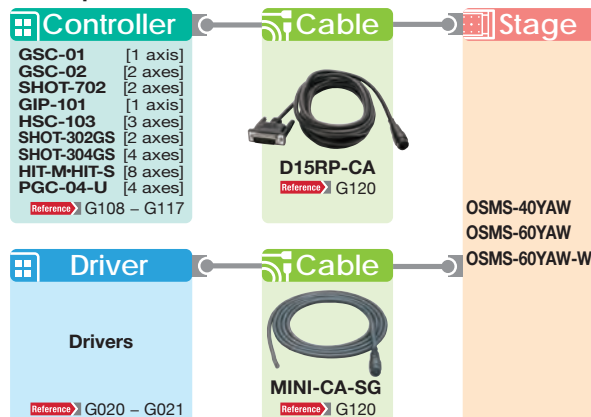
Machine Origin Detection

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.



Compatible Controllers / Drivers and Cables



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