

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

Stage Size 40 × 40 mm / 60 × 60 mm / 80 × 80 mm

OSMS-ZF

RoHS

CE

Z axis stepping motor driven stages for measurement and inspection, offering high stiffness and high precision.

The mounting platform is oriented parallel to the base and is perpendicular to the direction of travel.



- Unconventional design incorporates a horizontal platform Z axis stage which mounts the motor in the main body to minimize footprint.
- Minimized protrusions make these stages ideal for system assembly

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40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

## Specifications

Part Number		OSMS40-5ZF-0B	OSMS60-5ZF	OSMS60-10ZF	OSMS80-20ZF-0B	
Mechanical Specifications	Travel [mm]	5	5	10	20	
	Stage Size [mm]	40×40	60×60	60×60	80×80	
	Feed Screw	Ball screw diameter φ6mm, 1mm lead	Ball screw diameter φ6mm, 1mm lead	Ball screw diameter φ6mm, 1mm lead	Ball screw diameter φ8mm, 2mm lead	
	Positioning Slide	Outer rail structure	Outer rail structure	Outer rail structure	Outer rail structure	
	Stage Material	Aluminum	Aluminum	Aluminum	Aluminum	
	Finish	Black anodized	Black anodized	Black anodized	Black anodized	
Weight [kg]		0.35	0.6	0.6	1.6	
Accuracy Specifications	Resolution	(Full) [μm/pulse]	1.0	2.0	2.0	0.2
		(Half) [μm/pulse]	0.5	1.0	1.0	0.1
	MAX Speed [mm/sec]		2	4	4	1
	Positional Repeatability [μm]		5	5	5	5
	Load Capacity [N]		19.6 (2.0kgf)	39.2 (4.0kgf)	39.2 (4.0kgf)	147 (15.0kgf)
	Moment Stiffness	Pitch [°/N·cm]	2.0	0.4	0.4	0.2
		Yaw [°/N·cm]	2.0	1.0	1.0	1.0
		Roll [°/N·cm]	1.0	1.0	1.0	1.0
	Lost Motion [μm]		5	5	5	5
	Parallelism [μm]		50	50	50	50
	Running Parallelism [μm]		15	15	15	15
	Pitch [°]		25	20	20	25
Sensor	Sensor Part Number Micro photo sensor: GP1S097HCZ0F (Sharp Corporation): Limit Sensor (60-5ZF/60-10ZF) Micro photo sensor: PM-U25 (SUNX Co.,Ltd.): Limit Sensor (40-5ZF/80-20ZF)					
	Limit Sensor	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	
	Origin Sensor	None	None	None	None	
	Proximity Origin Sensor	None	None	None	None	

## Motor / Sensor Specifications

		5-phase stepping motor 0.35A/phase (Oriental Motor Co., Ltd.)	5-phase stepping motor 0.75A/phase (Oriental Motor Co., Ltd.)		
Motor	Type	5-phase stepping motor 0.35A/phase (Oriental Motor Co., Ltd.)	5-phase stepping motor 0.75A/phase (Oriental Motor Co., Ltd.)		
	Motor Part Number	PK513PA-C21 (□20mm)	PK523HPB-C12 (□28mm)	PK523HPB-C12 (□28mm)	A7177-90215KTG (□28mm)
	Step Angle	0.72°			
Sensor	Power Voltage	DC5 - 24V ±10% or lower			
	Current Consumption	30mA or lower (15mA or lower per sensor)	40mA or lower (20mA or lower per sensor)		30mA or lower (15mA or lower per sensor)
	Control Output	NPN open collector output DC30V or lower, 50mA or lower			
	Output Logic	When shaded: Output transistor OFF (no conduction)			

## Compatible Driver / Controller

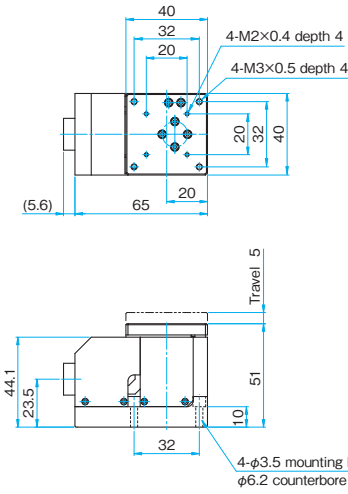
		MC-S0514ZU, SG-514MSC	SG-5M, SG-5MA, MC-S0514ZU, SG-514MSC, MC-7514PCL	MC-S0514ZU, SG-514MSC, MC-7514PCL
Control System	Compatible Driver	MC-S0514ZU, SG-514MSC	SG-5M, SG-5MA, MC-S0514ZU, SG-514MSC, MC-7514PCL	MC-S0514ZU, SG-514MSC, MC-7514PCL
	Compatible Controller	GSC-01, GSC-02, SHOT-702, HSC-103*, SHOT-302GS, SHOT-304GS, HIT-M-HIT-S, PGC-04-U		

\*HSC-103 : OSMS40-5ZF not compatible.

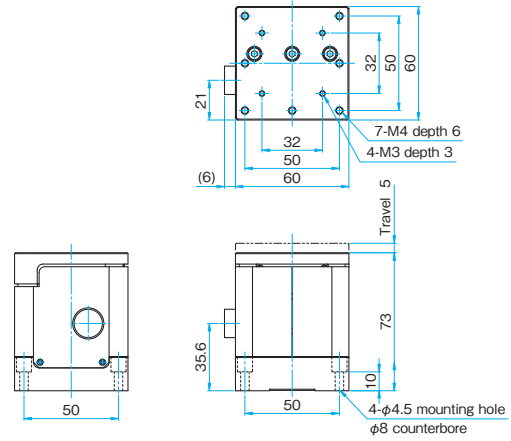


**Outline Drawing**

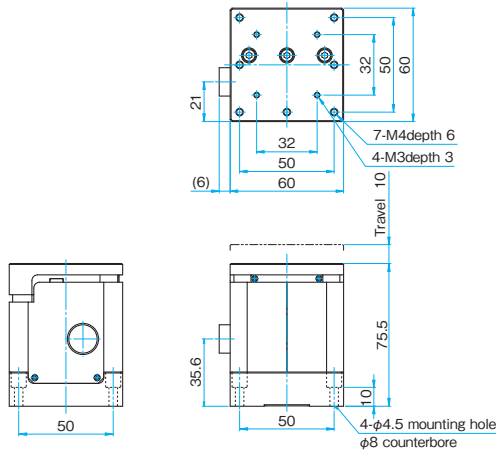
**OSMS40-5ZF-0B** Hexagon socket head cap screw M3×15...4 screws



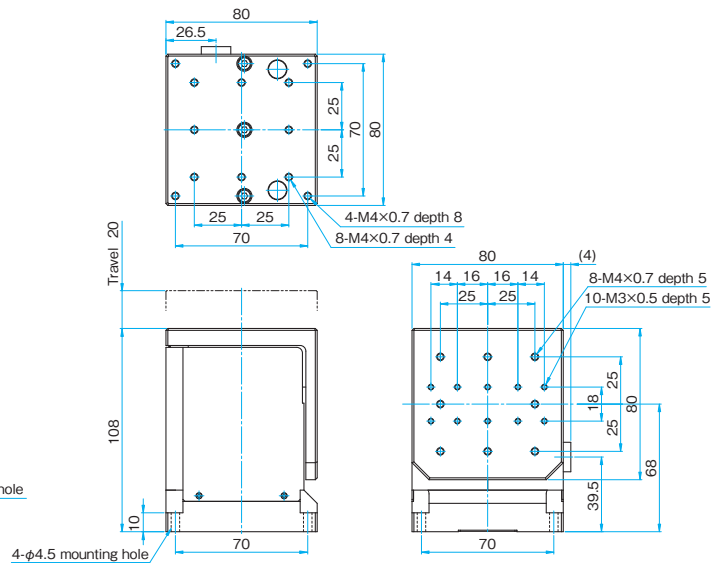
**OSMS60-5ZF** Hexagon socket head cap screw M4×15...4 screws



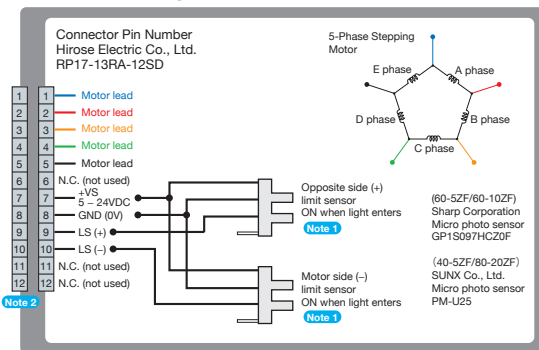
**OSMS60-10ZF** Hexagon socket head cap screw M4×15...4 screws



**OSMS80-20ZF-0B** Hexagon socket head cap screw M4×15...4 screws

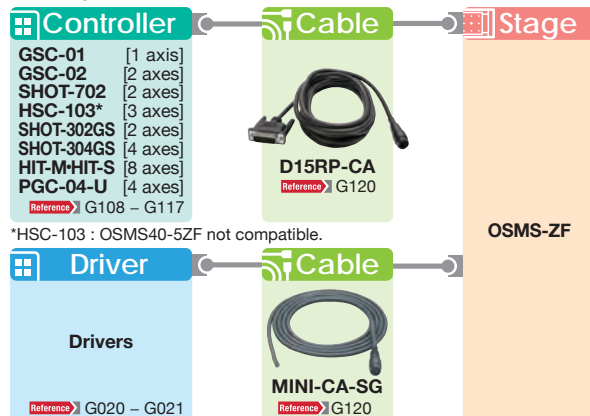


**Connection Diagram**



- Note 1** The motor side limit sensor is the + direction limit sensor. Motorized stages are not fitted with proximity origin sensors. Limit sensors are used as origin detection sensors.
- Note 2** Compatible cable connector: Hirose Electric Co., Ltd. RP17-13PA-12PC/RP17-PC-122

**Compatible Controllers / Drivers and Cables**



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