Low-profile ZF Axis Motorized Stages

OSMS-ZFW

RoHS CE

A low-profile horizontal surface Z-axis stage with a wedge mechanism as the stage elevation structure.

- The overall height of the stage has been reduced to a low profile by using a wedge mechanism moving guide that combines a crossed roller guide (with a slip-stop structure) and ball spline.
- Even when the motor is de-energized, the stage can hold a loaded object as long as the load is within the load capacity value.



Guide

 Please contact our sales department if you need a motor replacement, etc.

Attention

- Some specifications may not be met when the product is used inverted or mounted on a vertical surface. Please contact our sales department for details on specific conditions of use.
- The projection and overall height of the stage will change when the stage is moved due to the wedge system.

(Reference drawing)



OSMS-ZFW Series Lineup List

Part Number		Stage Size	Travel	Load	Travel Mechanism		Stage	M
METRIC	INCH	[mm]	[mm]	Capacity	(reduction ratio)	Positioning Slide	Material	weight
OSMS60-5ZFW	-	60x60	5	58.8N	Wedge method	Crossed roller	Aluminum	1.3kg
				(6.0kgf)	(1:5)	/Linear shaft	Aluminum	
OSMS65-5ZFW-M6	OSMS65-5ZFW-INCH	65x65	5	58.8N	Wedge method	Crossed roller	Aluminum	1.3kg
				(6.0kgf)	(1:5)	/Linear shaft	Aluminum	
OSMS120-5ZFW-M6	OSMS120-5ZFW-INCH	120x120	5	98.0N	Wedge method	Crossed roller		3.2kg
				(10.0kgf)	(1:5)	/Ball spline	Aluminum	

What is the wedge method?

High rigidity and safety

High precision and reproducibility

Low profile and Compact Design Moving guides are placed on each slide surface to configure the wedge method. This ensures high rigidity as a stage and stable lifting and lowering motion.

Crossed roller guides and shaft guides located on each slide guide face provide high repeatability of positioning.

The overall height of the stage can be made thinner. This allows the stage to be placed efficiently even in limited space.

High load capacity

Due to the deceleration effect of the wedge method, a constant load can be maintained even when the motor is not energized. This allows the stage to move while holding the mounted object stably.







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- Table surface size can be selected from 60x60, 65x65, and 120x120 mm. The travel is 5mm for all sizes.
- METRIC and INCH types are available for mounting on the •
- table surface for each size. The main body of the METRIC and INCH type stages are the • same.

Specifications								
Dort Number	METRIC		OSMS60-5ZFW	OSMS65-5ZFW-M6	OSMS120-5ZFW-M6			
Part Number	INCH		-	OSMS65-5ZFW-INCH	OSMS120-5ZFW-INCH			
Mechanical Specifications	Travel [mm]		5	5	5			
	Stage Size [mm]		60×60	65×65	120×120			
	Food Carow (Ball screw diameter	Ball screw diameter	Ball screw diameter			
	Feed Screw [mmj	ф6mm, 1mm lead	ф6mm, 1mm lead	φ8mm, 1mm lead			
	Travel Mechanism (reduction ratio)		Wedge method (1:5)	Wedge method (1:5)	Wedge method (1:5)			
	Positioning Slide		Crossed roller	Crossed roller	Crossed roller			
			/Linear Shaft	/Linear Shaft	/ball spline			
	Stage Materia		Aluminum	Aluminum	Aluminum			
	Finish		Black anodized	Black anodized	Black anodized			
	Weight [kg]		1.3	1.3	3.2			
	Resolution (Full) [µm/pulse]		0.4	0.4	0.4			
	Resolution (Half) [µm/pulse]		0.2	0.2	0.2			
	MAX Speed [mm/sec]	1.5	1.5	1.5			
	Positioning Accuracy [µm]		1	1	0.8			
	Load Capacit	y (N)	58.8 (6.0kgf)	58.8 (6.0kgf)	98 (10.0kgf)			
Accuracy	Moment	Pitch ["/N • cm]	1.5	1.5	0.5			
Specifications	Stiffness	Yaw ["/N · cm]	1	1	0.5			
		Roll ["/N • cm]	1.5	1.5	0.5			
	Lost Motion	[µm]	2	2	1			
	Parallelism [µm]		50	50	80			
	Running Parallelism(µm)		15	15	5			
	Pitch / Yaw ["]		30/25	30/25	25/25			
	Sensor Part Number		Micro photo sensor: GP1S097HCZ (Sharp Corporation)					
Sensor	Limit Sensor		Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)			
	Origin Sensor		Equipped (NORMAL OPEN)	Equipped (NORMAL OPEN)	Equipped (NORMAL OPEN)			
	Proximity Origin Sensor		None	None	None			
Motor / Senso	r Specification	S						
	Туре		5-phase stepping motor 0.5A/phase		5-phase stepping motor 0.75A/phase			
Motor	Motor Part Number		PK545-NBW (Oriental Motor Co., Ltd.)					
	Step Angle		0.72°					
Sensor	Power Voltage		DC5 - 24V ±10%					
	Current Consumption		60mA or lower (20mA or lower per sensor)					
	Control Output		NPN open collector output DC30V or lower, 50mA or lower					
			Residual voltage 0.4V or less (at 16mA load current)					
			Residual voltage 0.7V or less (at 50mA load current)					
	Output Logic		When light is shielded: Output transistor OFF (no conducting): Limit sensor					
			When light is shielded: Output transistor ON (conduction): Origin sensor					
Compatible Dr	iver / Cont <u>roll</u>	er						
	Compatible Driver		SG-5M, MC-S0514ZU, MC-S7514PCL					
Control	Compatible Controller		SHOT-702H、GIP-101B、HSC-103、SHOT-302GS、SHOT-304GS、SHRC-203、					
			HIT-MV • HIT-SA、 PGC-04-U					



Outline Drawing

OSMS60-5ZFW



OSMS65-5ZFW-M6

Low head hexagon socket head cap screw M6×8...4 screws



OSMS120-5ZFW-M6

Low head hexagon socket head cap screw M6×8...4 screws



OSMS65-5ZFW-INCH

Low head hexagon socket head cap screw 1/4-20UNC×3/8...4 screws



OSMS120-5ZFW-INCH

Low head hexagon socket head cap screw 1/4-20UNC×3/8...4 screws





Connection Diagram



 Note 1
 The upper limit sensor is the limit sensor in the + direction

 Motorized stages are not fitted with origin and proximity origin sensors.

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

Compatible Controllers / Drivers and Cables



OSMS-ZF

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



We also have a lineup of very compact CE-compliant stages that incorporate the motor body in our unique space-saving design. The stage surface that moves up and down is horizontal for smooth movement.

Protrusions are kept to a minimum, making it ideal for equipment integration.

Translation Motorized Stages, Flat Z axis - 5 Phase Stepping Motor OSMS-ZF Series Lineup List

Part Number	Stage Size	Travel	Load Capacity	Positioning Slide	Stage Material	Weight
OSMS40-5ZF-0B	40x40mm	5mm	19.6N (2.0kgf)	Outer rail structure	Aluminum	0.35kg
OSMS60-5ZF	60x60mm	5mm	29.4N (3.0kgf)	Outer rail structure	Aluminum	0.6kg
OSMS60-10ZF	60x60mm	10mm	39.2N (4.0kgf)	Outer rail structure	Aluminum	0.6kg
OSMS80-20ZF-0B	80x80mm	20mm	147.0N (15.0kgf)	Outer rail structure	Aluminum	1.6kg

