

# [High Precision] Motorized Goniometer Stages - Worm Gear

Stage Surface Size: 40×40, 60×60



■ **Features:** Offer a variety of size / work distance (Height of Rotation Center) options.

☉ For CAD data, see the MISUMI website.

### ■ Goniometer Stage (1-Axis)

### ■ Goniometer Stage (2-Axis)

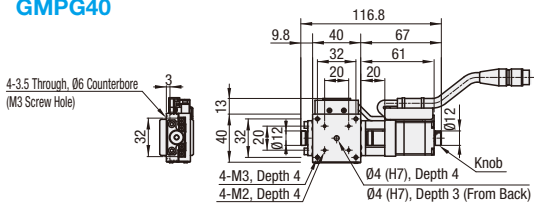


- M** Material: Aluminum Alloy
- S** Surface Treatment: Black Anodize
- A** Accessory GMPG40/GMPWG40: SCB3-6 (4 pcs.)
- GMPG60/GMPWG60: SCB4-10 (4 pcs.)

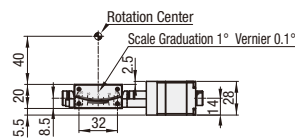
☉ For Controllers, Handset Terminals, see P.1-1735-93~P.1-1735-94

☉ The sensor cover position shown on the photo is L (Standard). **RoHS10**

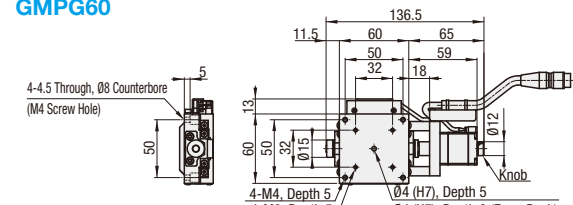
### GMPG40



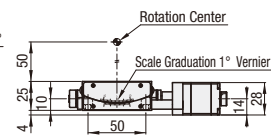
40-40



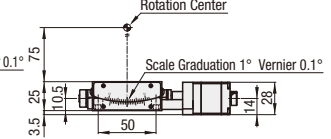
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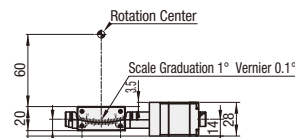
60-50



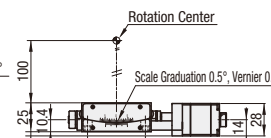
60-75



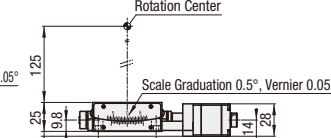
40-60



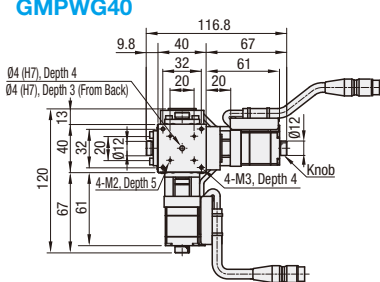
60-100



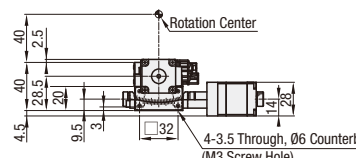
60-125



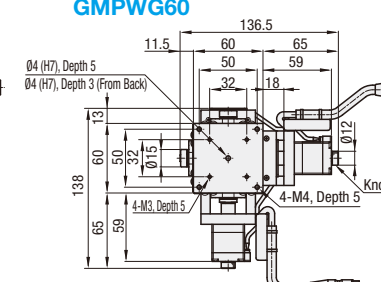
### GMPWG40



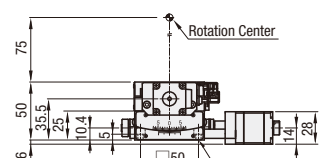
40-40



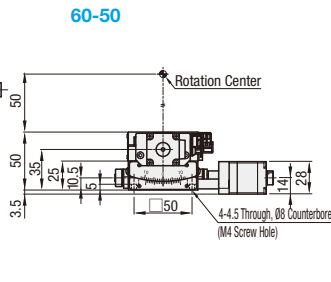
### GMPWG60



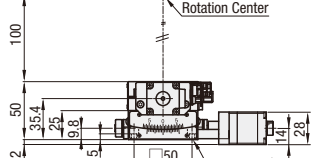
60-75



### 60-100



60-100



☉ See the CAD data for detailed dimensions. ☉ The sensor cover position shown on the diagram is L (Standard).

Part Number		Sensor	Cable	Mechanical Standards			Accuracy Standards			
Type	No.	Cover Position		Stage Surface (mm)	Rotational Moving Amount (°) Top/Bottom	Weight (kg)	Moment Rigidity (N·cm)			
				Pitching	Yawing	Rolling				
GMPG	40-40	L (Standard) R (Reversed)	N (Cable not included (separately sold)) The cable is separately sold. For cables separately sold, see MSCB_option on P.1-1735-95	40x40	±8°	0.4	1.3	1.16	0.27	
	40-60				±6°					
	60-50				±10°					
	60-75				±8°					
	60-100				±6°					
	60-125				±5°					
GMPWG	40-40	L (Standard) R (Reversed)		N (Cable not included (separately sold)) The cable is separately sold. For cables separately sold, see MSCB_option on P.1-1735-95	60x60	±8°	0.5	0.3	0.1	0.11
	60-50					±6°				
	60-75					±5°				
	60-100					±8°/±6°				
	60-125					±10°/±8°				
	60-100					±8°/±6°				
GMPWG	40-40	L (Standard) R (Reversed)	N (Cable not included (separately sold)) The cable is separately sold. For cables separately sold, see MSCB_option on P.1-1735-95		40x40	±8°/±6°	0.8	1.57	2.32	1.57
	60-50					±10°/±8°				
	60-75					±8°/±6°				
	60-100					±6°/±5°				
	60-125					±8°/±6°				
	60-100					±6°/±5°				



Ordering Example **Part Number** - **Sensor** - **Cable**  
GMPG40-40 - L - N



Days to Ship **Configure Online**

### ■ Common Specifications

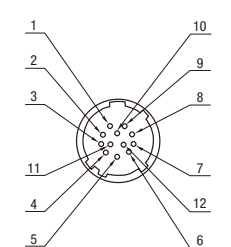
Type	GMPG 1-Axis						GMPBWG 2-Axis			
	40-40	40-60	60-50	60-75	60-100	60-125	40-40	60-50	60-75	60-100
Number of Axes	1-Axis						2-Axis			
Feed Screw	Worm Gear (1/240)		Worm Gear (1/160)	Worm Gear (1/225)	Worm Gear (1/292)	Worm Gear (1/360)	Worm Gear (1/240)	Top: Worm Gear (1/160) Bottom: Worm Gear (1/225)	Top: Worm Gear (1/225) Bottom: Worm Gear (1/292)	Top: Worm Gear (1/292) Bottom: Worm Gear (1/360)
Guide	Cross Roller Guide									
Height of Stage	20±0.2mm		25±0.2mm				40±0.4mm		50±0.4mm	
Height of Rotation Center	40±0.2mm	60±0.2mm	50±0.2mm	75±0.2mm	100±0.2mm	125±0.2mm	40±0.4mm	50±0.4mm	75±0.4mm	100±0.4mm
Rotation Center Runout	0.01mm or Less									
Resolution (Pulse)	≈0.003°		≈0.0045°	≈0.0032°	≈0.0025°	≈0.002°	≈0.003°	≈0.0045°	≈0.0032°	≈0.0025°
MAX Speed	Top Half		Bottom Half		Top Half		Bottom Half		Top Half	
	15°/sec[5kHz]	15°/sec[5kHz]	22.5°/sec[5kHz]	16°/sec[5kHz]	12.5°/sec[5kHz]	10°/sec[5kHz]	15°/sec[5kHz]	22.5°/sec[5kHz]	16°/sec[5kHz]	12.5°/sec[5kHz]
Positioning repeatability	Within ±0.005°		Within ±0.003°				Within ±0.005°		Within ±0.005°	
Load Capacity	29.4N		49N				24.5N		44.1N	
Lost Motion	0.01° or Less									

### ■ Electrical Specifications

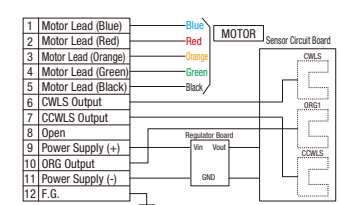
Motor	Type	5-Phase Stepping Motor 0.75A/Phase (Oriental Motor Co., Ltd.)
	Part Number	C005C-90215P
	Step Angle	0.72°
Connector	Part Number	HR10A-10J-12P (73) (Hirose Electric Co., LTD.)
	Compatible Receptacle Connector	HR10A-10P-12S (73) (Hirose Electric Co., LTD.)
Sensor	Limit Sensor	Provided
	Home Position Sensor (ORG1)	Provided
	Slit Home Origin Sensor (ORG2)	Not Provided
	Part Number	Photomicrosensor: EE-SX4320 (OMRON Corp.)
	Power Supply Voltage	DC5~24V ±10%
	Current Consumption	60mA or less
Control Output	NPN Open Collector Output DC5~24V, 8mA or less	
Output Logic	Residual Voltage 0.3V or less (when load current is 2mA) Detecting (Dark): Output Transistor OFF (Non-Conducting)	

☉ Sensors with Part Number EE-SX4134 will be discontinued and replaced by next-generation products with Part Number EE-SX4320 from November 2018.

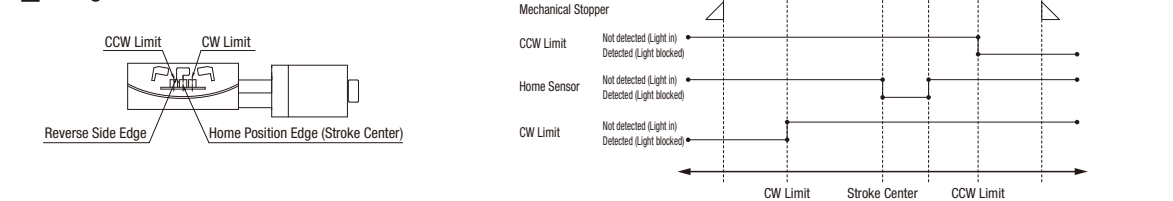
### ■ Connector Pin Configuration



### ■ Wiring Diagram



### ■ Timing Chart



Travel Distance (deg)	Reference Position	CW Direction				CCW Direction			
		CW Limit	Home Position Edge Stroke Center	Other Signal Edge	CCW Limit	CW Limit	Home Position Edge Stroke Center	Other Signal Edge	CCW Limit
40-40	Homing Position	8.5	0	2.5	8.5				
40-60	Homing Position	6.5	0	2.1	6.5				
60-50	Homing Position	10.5	0	2.5	10.5				
60-75	Homing Position	8.3	0	1.8	8.3				
60-100	Homing Position	6.3	0	1.4	6.3				
60-125	Homing Position	5.2	0	1.1	5.2				

☉ Homing Routine Above: When MSC1102/112 Series controller is used and when the Homing Routine Type 4 is executed.

☉ The coordinates shown are design values. There may be approx. ±0.5 deg misalignment on the physical dimensions.

☉ For details about Homing, see P.1-1735-97