

# Two Axis Motorized Crossed Roller Goniometers

## Stage Size 60 × 60 mm

SGSP-B

RoHS

Two axis aluminum body motorized goniometer with crossed roller bearings.



- Light weight with compact footprint.
- Rotation center heights available: 75mm or 100mm.

### Attention

- Preassembled for best perpendicularity of  $\alpha$  and  $\beta$  axis stages. Note that if you disassemble the two axes, the optimized alignment will be lost.

### Specifications

Part Number		SGSP-60B75	SGSP-60B100	
Mechanical Specifications	Angle Range [ ° ]	(Upper) $\beta$ axis: $\pm 7$	$\beta$ axis: $\pm 5$	
		(Lower) $\alpha$ axis: $\pm 5$	$\alpha$ axis: $\pm 4$	
	Stage Size [mm]	60×60	60×60	
	Positioning Slide	Crossed roller	Crossed roller	
	Travel Mechanism	Worm and worm wheel	Worm and worm wheel	
	Stage Material	Aluminum	Aluminum	
	Finish	Black anodized	Black anodized	
Size Tolerance	Weight [kg]	1.10 (2 axes)	1.20 (2 axes)	
	Stage Height [mm]	55	65	
	Rotation Center Height [mm]	75	100	
Accuracy Specifications	Rotation Center Deflection Accuracy [mm]	—	—	
	Resolution	(Full) [°/pulse]	$\alpha$ axis: about 0.001, $\beta$ axis: about 0.002	$\alpha$ axis: about 0.001, $\beta$ axis: about 0.001
		(Half) [°/pulse]	$\alpha$ axis: about 0.0005, $\beta$ axis: about 0.001	$\alpha$ axis: about 0.0005, $\beta$ axis: about 0.0005
	MAX Speed [°/sec]	6	6	
	Load Capacity [N]	19.1 (1.9kgf)	19.1 (1.9kgf)	
Sensor	Moment Stiffness [°/N·cm]	—	—	
	Lost Motion [ ° ]	—	—	
	Sensor Part Number	GP1S092HCPI (Sharp Corporation)		
	Limit Sensor	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	
Origin Sensor	Origin Sensor	None	None	
	Proximity Origin Sensor	None	None	

### Motor / Sensor Specifications

Motor	Type	5-phase stepping motor 0.75A/phase (Oriental Motor Co., Ltd.)
	Motor Part Number	C9863-90215P
	Step Angle	0.72°
Sensor	Power Voltage	DC5 – 24V $\pm$ 10%
	Current Consumption	80mA or lower (40mA or lower a per axis 20mA or lower per a sensor)
	Control Output	NPN open collector output DC30V or lower, 50mA or lower
	Output Logic	When shaded: Output transistor OFF (no conduction)

### Configuration

Part Number	SGSP-60B75	SGSP-60B100
(Upper) $\beta$ axis	SGSP-60A75	SGSP-60A100
(Lower) $\alpha$ axis	SGSP-60A100	SGSP-60A130

### (Reference) Precision Specifications of Single Axis Stage

Part Number	SGSP-60A75	SGSP-60A100	SGSP-60A130	
Accuracy Specifications	Positional Repeatability [ ° ]	$\pm 0.004$	$\pm 0.004$	$\pm 0.004$
	Moment Stiffness [°/N·cm]	1	1	1
	Lost Motion [ ° ]	0.02	0.02	0.02

### Compatible Driver / Controller

Control System	Compatible Driver	SG-5M, MC-S0514ZU, SG-514MSC
	Compatible Controller	GSC-02, SHOT-702, HSC-103, 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

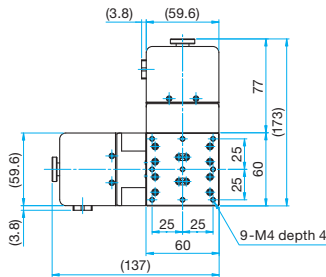
120 × 120 mm

Others

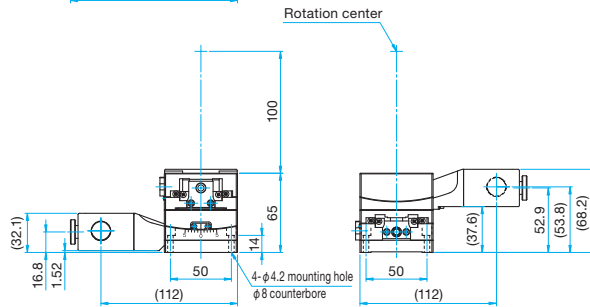
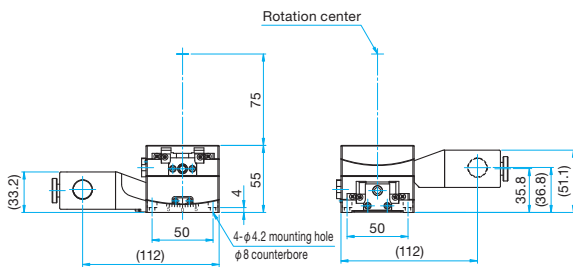
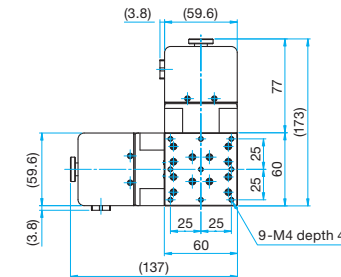


**Outline Drawing**

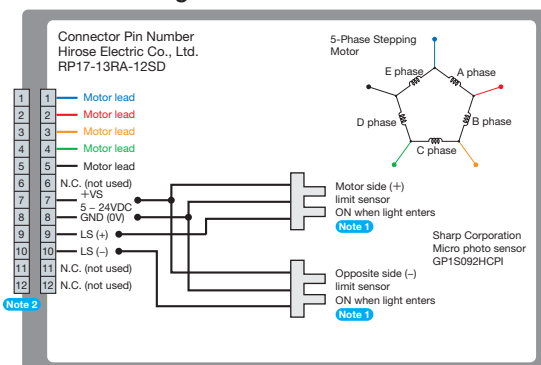
**SGSP-60B75** Hexagonal socket head cap screw M4x8...4 screws



**SGSP-60B100** Hexagonal socket head cap screw M4x18...4 screws

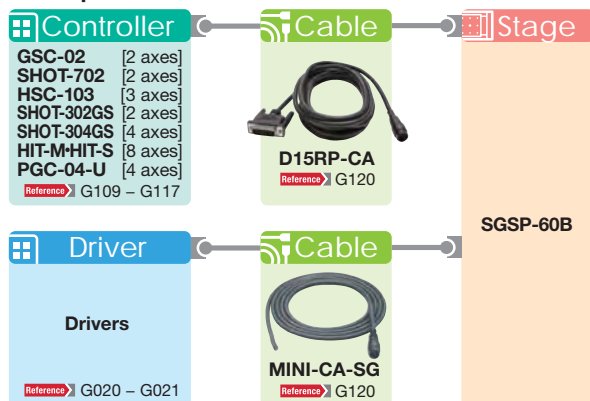


**Connection Diagram**



**Note 1** The motor side limit sensor is the + direction limit sensor.  
**Note 2** Compatible cable connector: Hirose Electric Co., Ltd. PR17-13PA-12PC/RP17-PC-122

**Compatible Controllers / Drivers and Cables**



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Others