

# Precision Motorized Stages with built in Glass-scale Encoder

Stage Size 165 × 165 mm / 165 × 220 mm / 165 × 420 mm

HST(GS)

RoHS

CE

Linear scales consist of “scales” used as a ruler and a “detector” which obtains positional information from the scales.



- Linear scales are used in indispensable processes in many fields, and mainly used in equipment for manufacturing electronic devices such as semiconductors, flat panel displays (FPD), and printed wiring boards, electronic component mounting machine, machine tools, and carrier machine.

### Guide

- ▶ Interpolated resolution of the glass scale is set to 0.05μm.
- ▶ Contact our sales team about custom configurations.

### Attention

- ▶ When operating the HST(GS) series with closed loop control, in order to use it within the specifications listed in the catalog, the number of motor divisions of the controller is recommended to be set to 100 or higher (travel per pulse is 0.05μm or less).

Application Systems

Optics &amp; Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators &amp; Adjusters

Motorized Stages

Light Sources &amp; Laser Safety

Index

Guide

Controllers/Drivers

Softwares

Stepping Motor

AC Servo Motor

Cables

Piezo

X Translation

Theta Rotation

Goniometer

Vacuum

Options

40 × 40 mm

60 × 60 mm

80 × 80 mm

85 × 85 mm

100 × 100 mm

120 × 120 mm

Others

Specifications					
Part Number		HST(GS)-50X-0B	HST(GS)-100X-0B	HST(GS)-200X-0B	
Mechanical Specifications	Travel [mm]	50	100	200	
	Stage Size [mm]	165×165	165×220	165×420	
	Feed Screw	Ball screw diameter φ10mm, 2mm lead	Ball screw diameter φ10mm, 2mm lead	Ball screw diameter φ10mm, 2mm lead	
	guide	Crossed roller guide	Crossed roller guide	Crossed roller guide	
	Stage Material	Steel	Steel	Steel	
	Weight [kg]	8.8	10.7	18.9	
Accuracy Specifications	Resolution	(Full) [μm/pulse]	4	4	4
		(Half) [μm/pulse]	2	2	2
	MAX Speed [mm/sec]	10	10	20	
	Positioning Accuracy [μm]	3	4	5	
	Positional Repeatability [μm]	0.5	0.5	0.8	
	Load Capacity [N]	392 (40.0kgf)	392 (40.0kgf)	392 (40.0kgf)	
	Moment Stiffness	Pitch [°/N·cm]	0.01	0.01	0.01
		Yaw [°/N·cm]	0.01	0.01	0.01
		Roll [°/N·cm]	0.005	0.005	0.005
	Lost Motion [μm]	0.5	0.5	0.5	
Backlash [μm]	1	1	1		
Parallelism [μm]	50	70	100		
Running Parallelism [μm]	10	10	20		
Pitch [°] / Yaw [°]	15/15	20/20	20/20		
Sensor	Sensor Part Number	Micro photo sensor: GP1S092HCPIF (Sharp Corporation)			
	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	Equipped (NORMAL OPEN)	Equipped (NORMAL OPEN)	Equipped (NORMAL OPEN)	

Motor / Sensor Specifications				
Motor	Type	5-phase stepping motor 1.4A/phase (Oriental Motor Co., Ltd.)		
	Motor Part Number	PKP544N18B (□42mm)	PKP544N18B (□42mm)	PKP546N18B (□42mm)
	Step Angle	0.72°		
Sensor	Power Voltage	DC5 – 24V ±10%		
	Current Consumption	80mA or lower (20mA 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): Limit sensor When shaded: Output transistor ON (conduction): Origin sensor, Proximity Origin Sensor		
Scale head	Power Voltage / Current Consumption	DC5V±5% / 100mA		

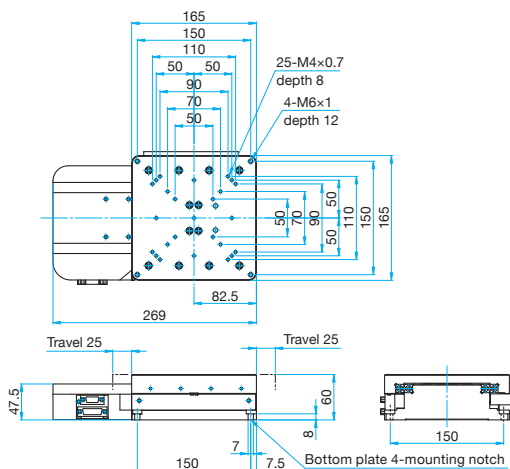
Compatible Cable		
Cable	Driver Cable	D15D15A-CA
	Scale Cable	GSEF-CA-3

Compatible Controller	
Compatible Controller	SHOT-302GS, SHOT-304GS, HIT-M·HIT-SH

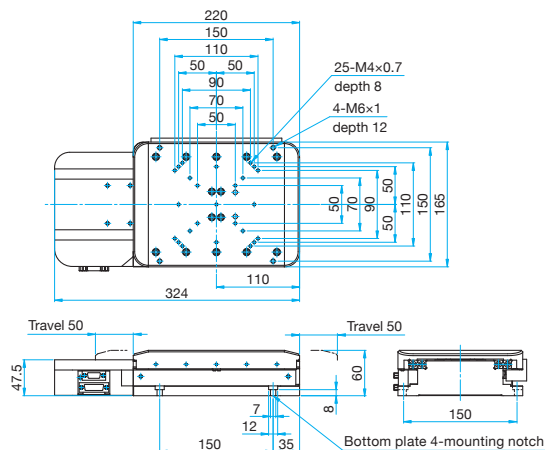


## Outline Drawing

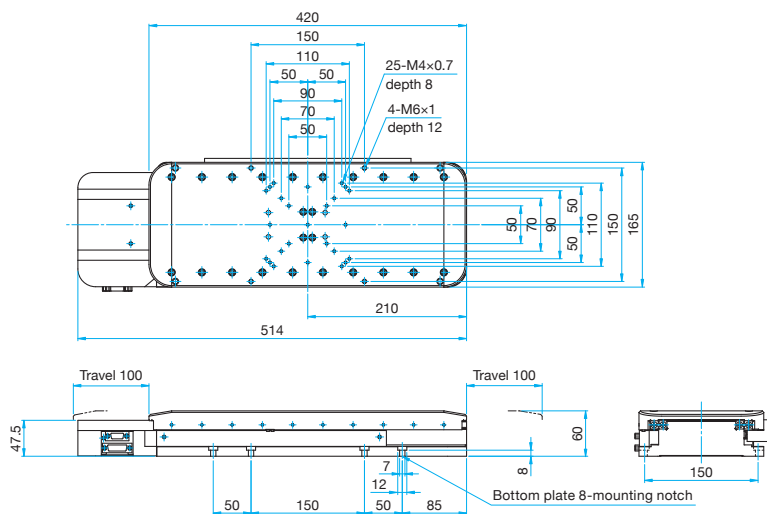
**HST(GS)-50X-0B** Hexagon socket head cap screw M6x15...4 screws



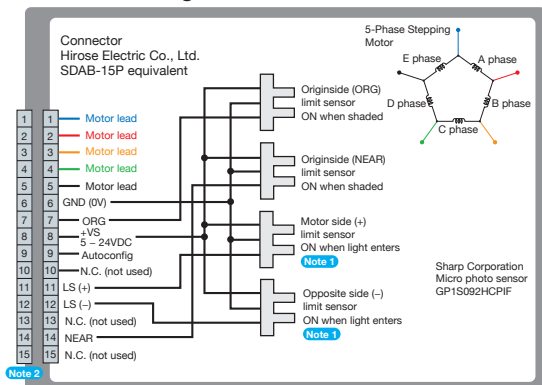
**HST(GS)-100X-0B** Hexagon socket head cap screw M6x15...4 screws



**HST(GS)-200X-0B** Hexagon socket head cap screw M6x15...8 screws



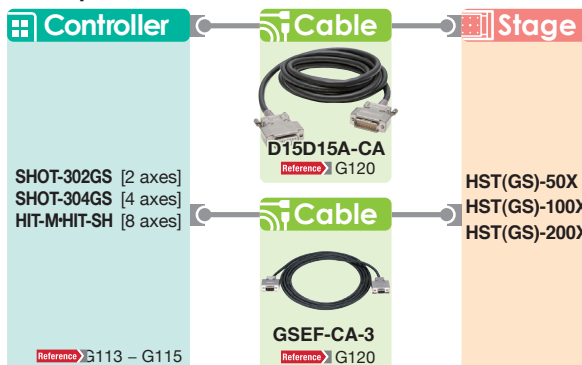
## Connection Diagram



**Note 1** The motor side limit sensor is the + direction limit sensor.

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

## Compatible Controllers / Cables



Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

Controllers/Drivers

Softwares

Stepping Motor

AC Servo Motor

Cables

Piezo

X Translation

Theta Rotation

Goniometer

Vacuum

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