

Stainless Steel Crossed Roller Guide Motorized Stage

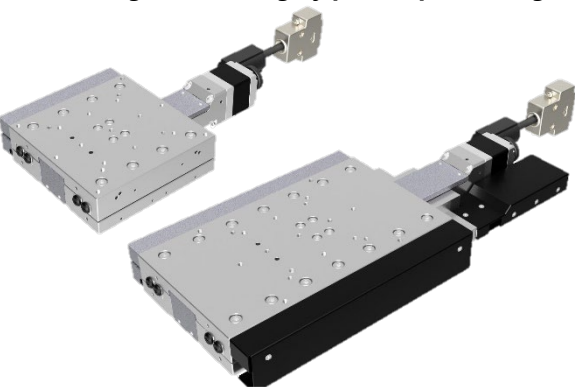
STMS



This cross-roller motorized stage combines three key features: a low-profile design, high rigidity, and excellent durability.

To prevent loss of rigidity due to the thin profile, stainless steel is used as the primary material, resulting in a compact stage that still offers exceptional structural strength.

A closed-loop feedback type with a built-in glass scale (GS series) is available. With an encoder resolution of 10 nm, the stage enables highly precise positioning.



Guide

- Motorized optical fiber alignment units, configured with the STMS or STMS(GS) series, are available in 6-axis and 12-axis configurations.

Part Number	Axes	X Axis Travel	Remarks
LDAU-8100A-L	6	50mm	Open-loop control
LDAU-8100A-R	6	50mm	Open-loop control
LDAU-8100A-0	12	50mm	Open-loop control
LDAU-8100A-L-SC	6	100mm	Open-loop control
LDAU-8100A-R-SC	6	100mm	Open-loop control
LDAU(GS)-8100A-L	6	50mm	Closed-loop control (XYZ axes)
LDAU(GS)-8100A-R	6	50mm	Closed-loop control (XYZ axes)
LDAU(GS)-8100A-0	12	50mm	Closed-loop control (XYZ axes)
LDAU(GS)-8100A-L-SC	6	100mm	Closed-loop control (XYZ axes)
LDAU(GS)-8100A-R-SC	6	100mm	Closed-loop control (XYZ axes)

Stainless Steel Crossed Roller Guide Motorized Stage STMS/STMS(GS) Series Lineup List

Part Number	Stage Size	Travel	Load Capacity	Scale Resolution	Positioning Slide	Primary Material/Finish	Weight
STSM100-50	100x100mm	50mm	98N (10.0kgf)	—	Crossed roller	Stainless steel/None	2.4kg
STSM100-50R	100x100mm	50mm	98N (10.0kgf)	—	Crossed roller	Stainless steel/None	2.4kg
STMS100-100	100x175mm	100mm	98N (10.0kgf)	—	Crossed roller	Stainless steel/None	4.4kg
STMS100-100R	100x175mm	100mm	98N (10.0kgf)	—	Crossed roller	Stainless steel/None	4.4kg
STMS(GS)100-50	100x100mm	50mm	98N (10.0kgf)	10nm	Crossed roller	Stainless steel/None	2.6kg
STMS(GS)100-50R	100x100mm	50mm	98N (10.0kgf)	10nm	Crossed roller	Stainless steel/None	2.6kg
STMS(GS)100-100	100x175mm	100mm	98N (10.0kgf)	10nm	Crossed roller	Stainless steel/None	4.6kg
STMS(GS)100-100R	100x175mm	100mm	98N (10.0kgf)	10nm	Crossed roller	Stainless steel/None	4.6kg

STMS Features at Glance

Design

CE compliant, achieving high precision in a low-profile design

Main material: stainless steel (Finish: none)
Available stage sizes: two options
• 100x100mm (Travel 50mm)
• 100x175mm (Travel 100mm)

Motor

- Equipped with a 5-phase stepper motor
- Compatible with the dedicated controller (SHRC-203)
- Requires motor cable (D15D15A-CA)
- For GS series, a scale cable is also required

Same hole pattern and mounting dimensions as the conventional TMM100 series



SHRC-203



D15D15A-CA

DM15HD14A-RC-3

Glass Scale Equipped Type Also Available Model: STMS(GS) Series
Offered as a standard product
Requires scale cable (DM15HD14A-RC-3)

STMS_STMS(GS)_E2508

Stainless Steel Crossed Roller Guide Motorized Stage



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To prevent loss of rigidity due to the thin profile, stainless steel is used as the primary material, resulting in a compact stage that still offers exceptional structural strength.



Guide

- Two options are available for table size and travel range: 100×100 mm (travel: 50 mm) or 100×175 mm (travel: 100 mm)

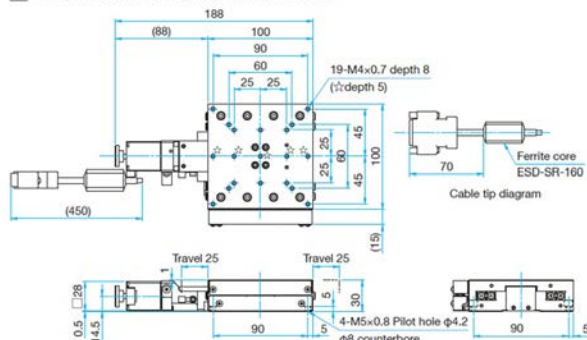
Part Number	Opposite Model Part Number	Stage Size	Travel	Weight
STMS100-50	STMS100-50R	100×100 mm	50 mm	2.4kg
STMS100-100	STMS100-100R	100×175 mm	100 mm	4.4kg

Specifications			
Part Number		STMS100-50	STMS100-100
Opposite Model Part Number		STMS100-50R	STMS100-100R
Mechanical Specifications	Travel [mm]	50	100
	Stage Size [mm]	100×100	100×175
	Feed Screw [mm]	Ball screw diameter φ6 lead 1	Ball screw diameter φ6 lead 1
	Positioning Slide	Crossed roller	Crossed roller
	Stage Material	Stainless steel	Stainless steel
	Finish	None	None
	Weight [kg]	2.4	4.4
Accuracy Specificati	Resolution (Full) [μm/pulse]	2	2
	Resolution (Half) [μm/pulse]	1	1
	MAX Speed [mm/sec]	5	5
	Positioning Accuracy [μm]	6	6
	Positional Repeatability [μm]	1	1
	Load Capacity [N]	98(10.0kgf)	98(10.0kgf)
	Moment Stiffness / Pitch ["/N・cm]	0.05	0.05
	Moment Stiffness / Yaw ["/N・cm]	0.05	0.05
	Moment Stiffness / Roll ["/N・cm]	0.05	0.05
	Lost Motion [μm]	1	1
	Backlash [μm]	1	1
	Parallelism [μm]	30	30
	Running Parallelism [μm]	10	10
	Pitch ["]	20	20
	Yaw ["]	15	15
Sensor	Sensor Part Number	Micro photo sensor : GP1S097HCZ (Sharp Corporation) Limit sensor, Origin sensor	
	Limit Sensor	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)
	Origin Sensor	Equipped (NORMAL OPEN)	Equipped (NORMAL OPEN)
	Proximity Origin Sensor	None	None
Motor / Sensor Specifications			
Motor	Type	5-phase stepping motor 0.5A/phase (Oriental Motor Co. Ltd.)	
	Motor Part Number	PK523HPB-C12	
	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	
	Output Logic	When shaded : Output transistor OFF (no conduction) : Limit Sensor When shaded : Output transistor ON (conduction) : Origin sensor	
Compatible Controllers			
Controllers		SHOT-702H・SHRC-203・HIT-MV・HIT-SA	

Outline Drawing

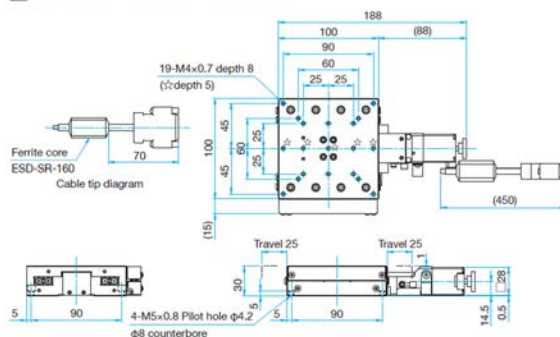
STMS100-50

Hexagonal socket head cap screw M4×10...4 screws



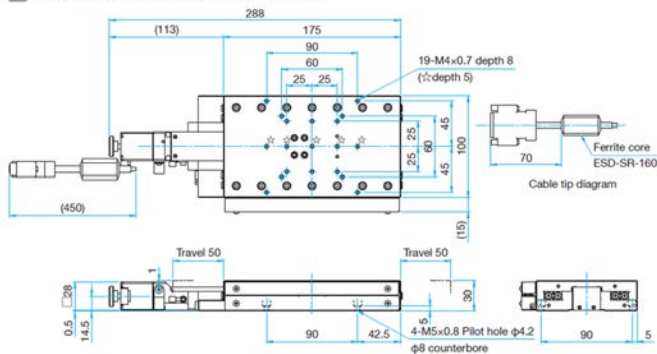
STMS100-50R

Hexagonal socket head cap screw M4×10...4 screws



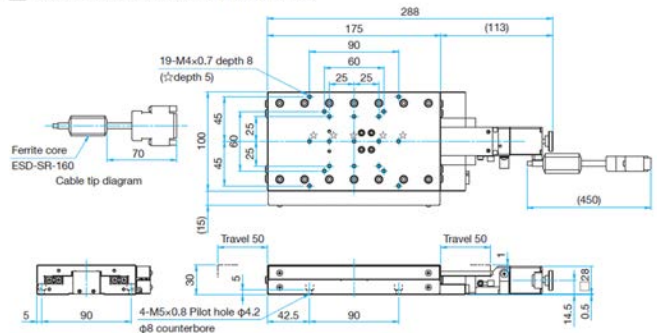
STMS100-100

Hexagonal socket head cap screw M4×10...4 screws

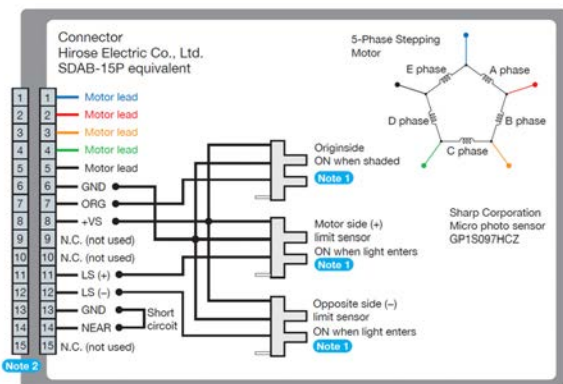


STMS100-100R

Hexagonal socket head cap screw M4×10...4 screws

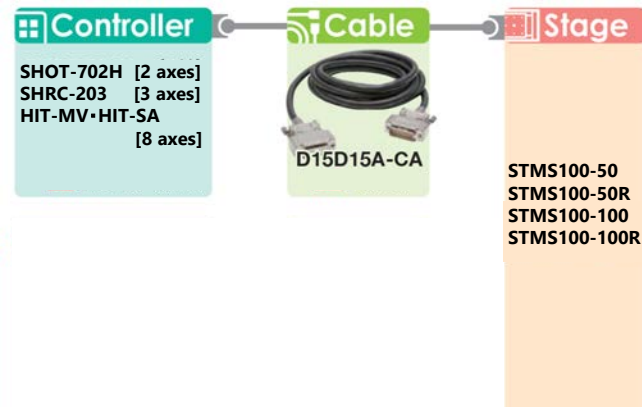


■ Connection Diagram



Note 1 The motor side limit sensor is the + direction limit sensor.
Motorized stages are not fitted with origin and proximity origin sensors.
Note 2 Compatible cable connector: DDK Ltd. 17JE-13150

■ Compatible Controllers and Cables



Stainless Steel Crossed Roller Guide

Motorized Stage with Scale

STMS(GS)

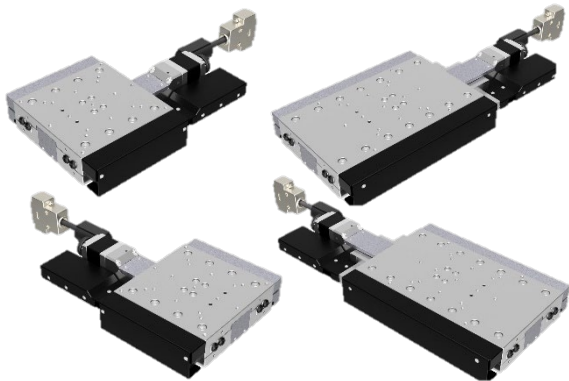
RoHS

CE

This cross-roller motorized stage combines three key features: a low-profile design, high rigidity, and excellent durability.

To prevent loss of rigidity due to the thin profile, stainless steel is used as the primary material, resulting in a compact stage that still offers exceptional structural strength.

Equipped with a glass scale, the closed-loop feedback system offers high-precision positioning with an encoder resolution of 10 nm.



Guide

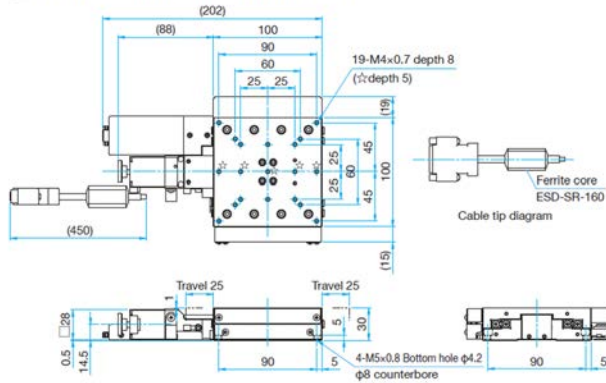
- Two options are available for table size and travel range:
100×100 mm (travel: 50 mm) or 100×175 mm (travel: 100 mm)

Part Number	Opposite Model Part Number	Stage Size	Travel	Weight
STMS(GS)100-50	STMS(GS)100-50R	100×100 mm	50 mm	2.6kg
STMS(GS)100-100	STMS(GS)100-100R	100×175 mm	100 mm	4.6kg

Specifications				
Part Number		STMS(GS)100-50		STMS(GS)100-100
Opposite Model Part Number		STMS(GS)100-50R		STMS(GS)100-100R
Mechanical Specifications	Travel [mm]	50		100
	Stage Size [mm]	100×100		100×175
	Feed Screw [mm]	Ball screw diameter φ6 lead 1		Ball screw diameter φ6 lead 1
	Positioning Slide	Crossed roller		Crossed roller
	Stage Material	Stainless steel		Stainless steel
	Finish	None		None
	Weight [kg]	2.6		4.6
Accuracy Specificati	Resolution (Full) [μm/pulse]	2		2
	Resolution (Half) [μm/pulse]	1		1
	MAX Speed [mm/sec]	5		5
	Positioning Accuracy [μm]	3		6
	Positional Repeatability [μm]	0.5		0.5
	Load Capacity [N]	98(10.0kgf)		98(10.0kgf)
	Moment Stiffness / Pitch ["/N ・ cm]	0.05		0.05
	Moment Stiffness / Yaw ["/N ・ cm]	0.05		0.05
	Moment Stiffness / Roll ["/N ・ cm]	0.05		0.05
	Lost Motion [μm]	1		1
	Backlash [μm]	1		1
	Parallelism [μm]	30		30
	Running Parallelism [μm]	10		10
	Pitch ["]	20		20
	Yaw ["]	15		15
Sensor	Sensor Part Number	Micro photo sensor : GP1S097HCZ (Sharp Corporation) Limit sensor, Origin sensor		
	Limit Sensor	Equipped (NORMAL CLOSE)	Equipped (NORMAL CLOSE)	
	Origin Sensor	Equipped (NORMAL OPEN)	Equipped (NORMAL OPEN)	
	Proximity Origin Sensor	None	None	
Encoder	Scale Resolution [nm]	10		10
Motor / Sensor Specifications				
Motor	Type	5-phase stepping motor 0.5A/phase (Oriental Motor Co. Ltd.)		
	Motor Part Number	PK523HPB-C12		
	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		
	Output Logic	When shaded : Output transistor OFF (no conduction) : Limit Sensor When shaded : Output transistor ON (conduction) : Origin sensor		
Compatible Controllers				
Controllers		SHRC-203、 HIT-MV ・ HIT-SA		

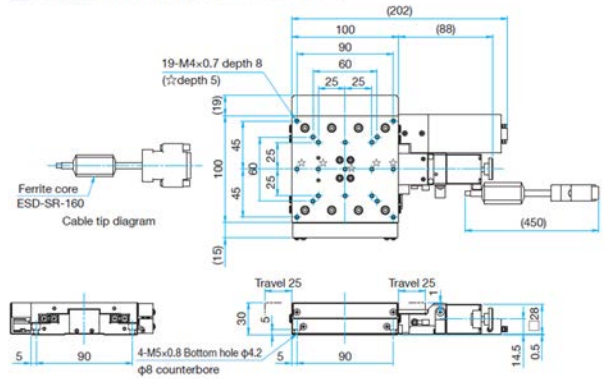
STMS(GS)100-50

1 Hexagonal socket head cap screw M4×10...4 screws



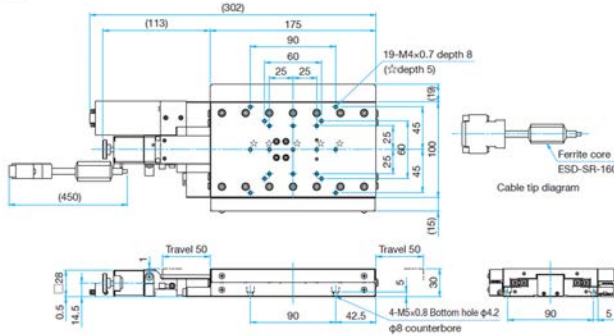
STMS(GS)100-50R

1 Hexagonal socket head cap screw M4×10...4 screws

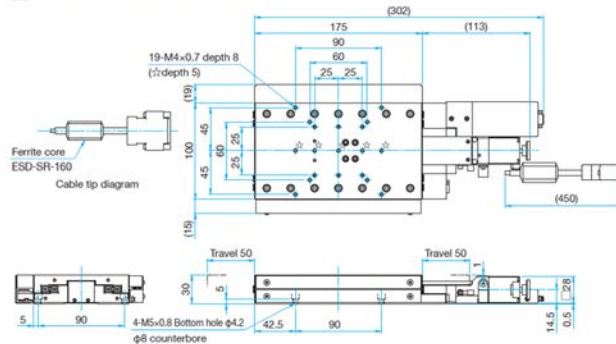


STMS(GS)100-100

1 Hexagonal socket head cap screw M4×10...4 screws

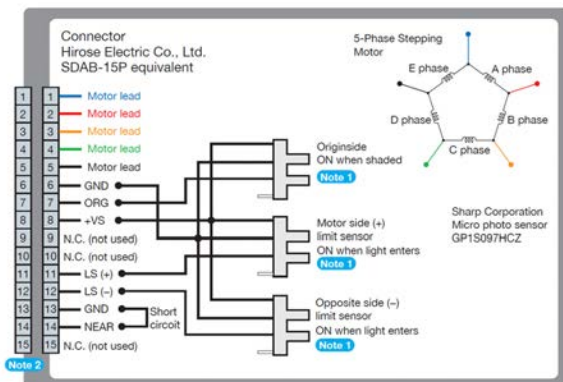


1 Hexagonal socket head cap screw M4×10...4 screws



STMS(GS)100-100R

■ Connection Diagram



- Note 1** The motor side limit sensor is the + direction limit sensor. Motorized stages are not fitted with origin and proximity origin sensors.
- Note 2** Compatible cable connector: DDK Ltd. 17JE-13150

■ Compatible Controllers and Cables

