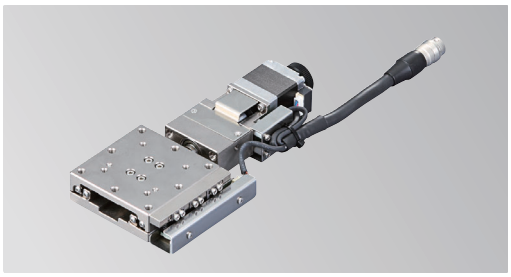
High performance

■KXT series

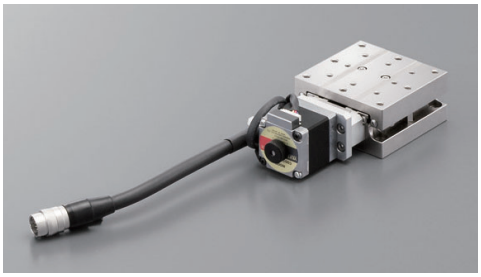
Specialized necessary functions. Outstanding cost performance.

■PG series



Thin type with integration guide.
Available wide range variation such as table-size and sensor options.

■CAVE-X POSITIONER KXG series



Much compact than former linear ball guide and cross-roller guide stages.

■CAVE-X POSITIONER KXL series

Selectable travel range between 30mm to 300mm.

For proper operation

▽Mounting

Fix at lease 4 corners with attached screws.

▽About the object that is mounted upper or lower the stage.

When a stage is mounted on uneven or an object that is uneven, the stage table may deformed, and may also affeted the accuracy.

▽Positioning

■Positioning of stage mounting

All products SPEC shows must be shown flat setting condition. Pay attention to mount such as up side down, vertical on the side and horizontal on the side. Load capacity and accuracy might be changed by the posioning. Please feel free to ask us for more information.

X-axis Linear Ball Guide: KXT04015/KXT06015

KXT04015-LC

KXT06015-LC

RoHS

* This photos shows a cover position is an image in case of L.
The holes and the shape may differ in certain respects from the actual product.

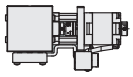
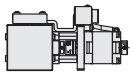
Model: KXT 04015-LC (Selection code: 1 2) (Option code: 3)

Cable P.1-207～
Electrical specification P.1-019～

1 Table size

04	□40mm
06	□60mm

2 Sensor cover location

L	L position 
R	Opposite hand 

3 Cable option

Code	Specification	Cable type
F	Robot cable 2m	D214-2-2R
G	Robot cable 2m one end loose	D214-2-2RK
H	Robot cable 4m	D214-2-4R
J	Robot cable 4m one end loose	D214-2-4RK
Blank	Cable is not included (Standard)	—

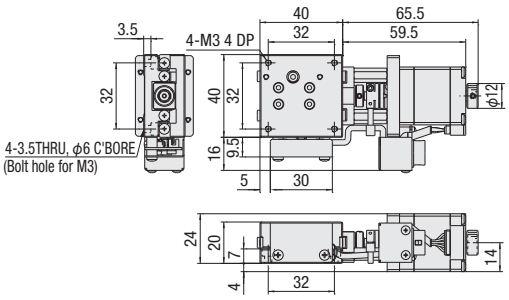
* The one end loose side might be on an opposite side of stage.
See page P.1-207,209～ for cable details.
Please select "Code F or H" when connect with stepping motor controller(DS102/112).

SPEC

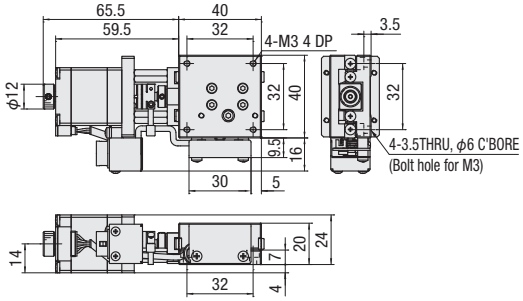
Model		KXT04015-LC	KXT06015-LC
(Right or left handed/opposite hand)		KXT04015-RC	KXT06015-RC
Mechanical specification	Travel length	15mm	
	Table size	40×40mm	60×60mm
	Feed screw (Ball screw)	ϕ6 lead 1	
	Guide	Linear ball guide	
	Main materials-Finishing	Steel—Opposite side of the end face finishing	
	Weight	0.38kg	0.60kg
Accuracy specification	Resolution (Pulse)	2μm (Full)/1μm (Half)	
	MAX speed	10mm/sec	
	Uni-directional positioning accuracy	8μm	
	Repeatability positioning accuracy	±0.5μm	
	Load capacity	10kgf [98N]	
	Moment stiffness	Pitch 0.38/yaw 0.35/roll 0.21 ["/N・cm]	Pitch 0.1/yaw 0.08/roll 0.05 ["/N・cm]
	Lost motion	2.5μm	
	Straightness	10μm	
	Parallelism	20μm	
	Pitching/Yawing	30"／25"	35"／30"
Sensor	Limit sensor	Installed	
	Origin sensor	Installed	
Provided screw (Hexagon-headed bolt)		4 of M3-8	4 of M4-8

Dimensional outline drawings

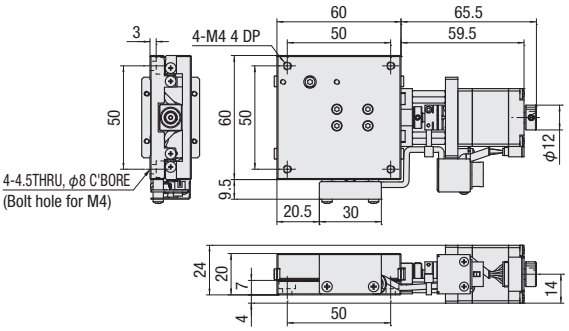
KXT04015-LC



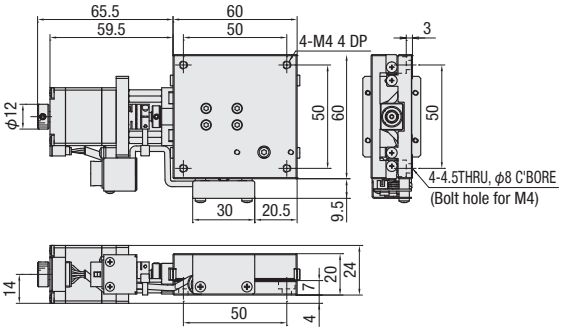
KXT04015-RC



KXT06015-LC



KXT06015-RC



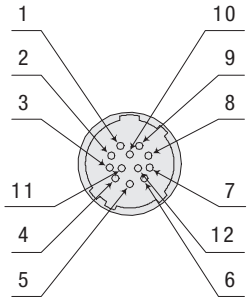
Electrical Specification: KXT04015/KXT06015

Electrical specification

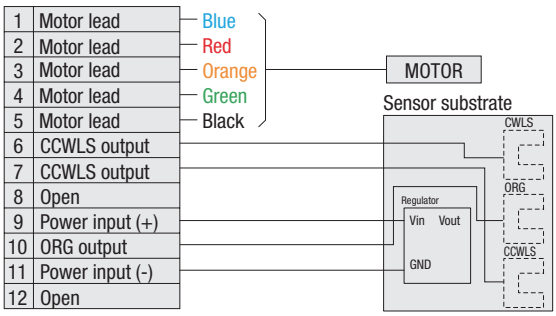
Models		KXT04015	KXT06015
Motor (*1)	Type	5 phase stepping motor 0.75A/Phase	
	Maker	Oriental Motor Co., Ltd.	
	Model (*2)	C005C-90215P-1	
	Step angle	0.72°	
Connector	Model	HR10A-10R-12PC (71) (Hirose Electric Co., Ltd.)	
	Receiving connector	HR10A-10P-12S (73) (Hirose Electric Co., Ltd.)	
Sensor	Limit sensor	Installed	
	Origin sensor	Installed	
	Model	Photo microsensor EE-SX4320 (Omron Co., Ltd.)	
	Power voltage	DC5～24V ±10%	
	Consumption current	Total 60mA or less	
	Control output	NPN open collector output DC5~24V 8mA or less Residual voltage 0.3V or less when the load current is 2mA	
	Output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)	

*1 See page P.1-213~ for details of single motor specification.
*2 Model is our own management model.

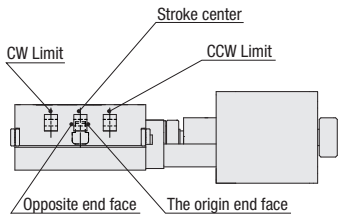
Pin allocation

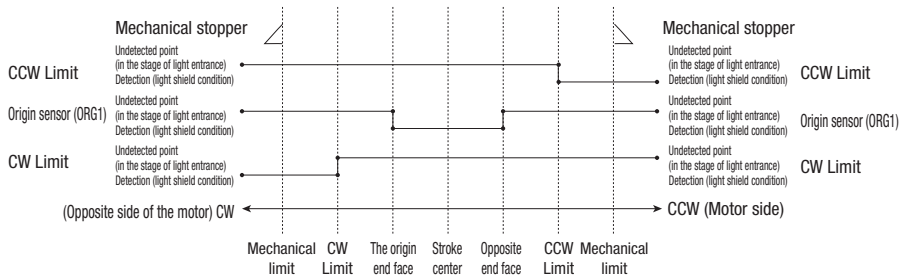


Connection diagram



Timing chart





Unit [mm] Direction of CW ◄——► Direction of CCW

	Reference coordinate	Mechanical limit	CW Limit	The origin end face	Stroke center	Opposite end face	CCW Limit	Mechanical limit
KXT	Return to origin	7	6.2	0	1.5	3	9.2	10
	Stroke center	8.5	7.7	1.5	0	1.5	7.7	8.5

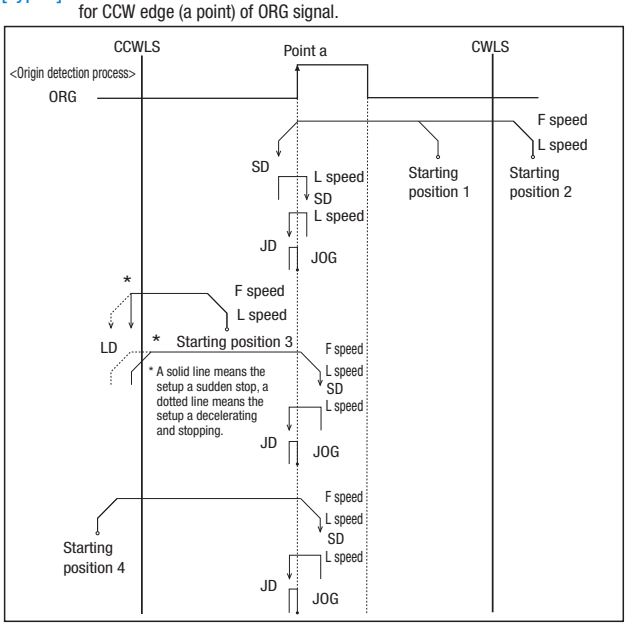
* Return to origin means that is performed return to origin type 4 using DS102/DS112 series.
* The coordinate value should be on the design. Dimension error may occur about plus or minus 0.5 mm.

Note: The timing chart shows only timing of sensor, it is not for output signal logic.
Refer to ON/OFF display of output transistor that shows on electrical specifications-sensor-output logic for output signal logic.

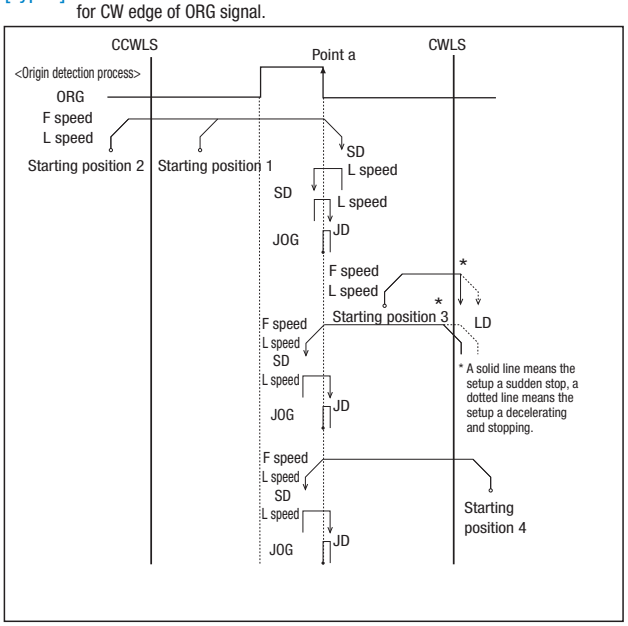
KXT series recommendation return to origin method

Suruga's motorized stages are different from the specification depending on the models. Therefore return to origin method other than recommendation may not be working correctly. Set to the way of recommendation return origin when using our controller.

[Type3] Detect in the direction of CCW and perform detected process for CCW edge (a point) of ORG signal.



[Type4] Detect in the direction of CW and perform detected process for CW edge of ORG signal.



[Type9] After finished Type3, perform detected process for CCW edge of TIMING signal.

[Type10] After finished Type4, perform detected process for CW edge of TIMING signal.

Return to origin sequence P.1-201～

Adaptive driver

■ **Driver** P.1-205～

DC24V type input

Model	CVD507-K-A9	CRD5107P
Divisions	1～1/250 (16 steps)	1～1/250 (16 steps)

Adaptive stepping motor controller

■ **Controller** P.1-197～

Input power	General-purpose input/output port	Driver type (Divisions)	
		Normal (Full/Half)	Micro step (1~1/250 [16 steps])
AC100-240V	Without	DS102ANR	DS102AMS
	With	DS102ANR-IO	DS102AMS-IO
DC24V	Without	DS112ANR	DS112AMS
	With	DS112ANR-IO	DS112AMS-IO


DS112/102