

## Horizontal Z-axis Stage: KHE04006-C/KHE06008-C(Linear ball guide)

Motorized Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

KHE04006



KHE06008



RoHS

\* The photo shows an image.  
The holes and the shape may differ in certain respects from the actual product.



▶ Cable P.1-207~  
▶ Electrical specification P.1-115~

### 1 Table size

04	□40mm
06	□60mm

### 2 Travel length

006	6mm
008	8mm

### 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)	—

\* If you choose the option specification, please add the difference to standard price.  
Electrical specification ▶ P.1-115~  
\* See page ▶ P.1-207, 209~ for more cable details.  
\* Please select "Code F or H" when connect with stepping motor controller(DS102/112).

Linear Ball

CAVE-X  
Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

φ100

φ120

Other

### SPEC

Model	KHE04006-C	KHE06008-C
Travel length	6mm	8mm
Table size	40×40mm	60×60mm
Feed screw (Ball screw)	φ6 lead 1	φ8 lead 1
Guide	Linear ball guide	
Main materials-Finishing	Steel—Opposite side of the end face finishing	
Weight	0.5kg	0.92kg
Resolution (Pulse)	2μm (Full)/1μm (Half)	
MAX speed	10mm/sec	
Positioning accuracy	—	
Repeatability positioning accuracy	Within ±5μm	
Load capacity	3kgf [29N]	4kgf [39N]
Lost motion	Within 5μm	
Parallelism	Within 80μm	
Limit sensor	Installed	
Origin sensor	Installed	
Provided screw (Hexagon-headed bolt)	3 of M3—16	4 of M4—14

Dimensional outline drawings



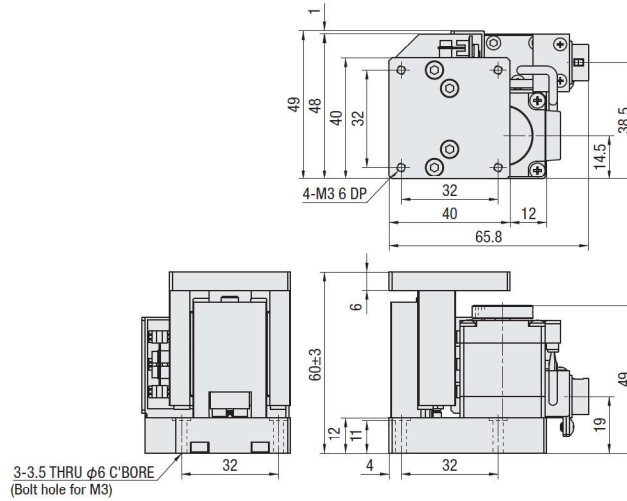
PART  
COMMUNITY

CAD  
DATA

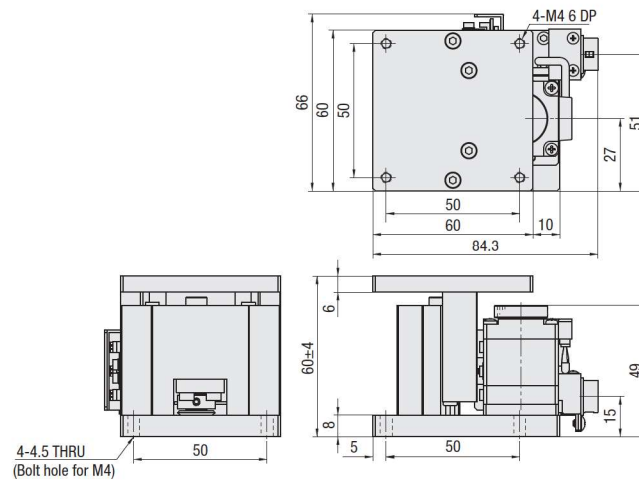
SURUGA  
SEIKI

CAD  
3D·2D

KHE04006-C



KHE06008-C



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Slide  
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$\phi 40$

$\phi 50$

$\phi 60$

$\phi 70$

$\phi 80$

$\phi 100$

$\phi 120$

Other

1

114

## Electrical Specification: KHE04006-C/KHE06008-C

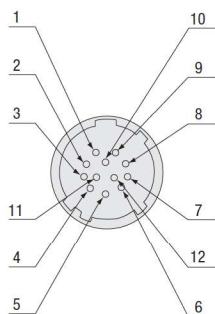
### Electrical specification

Models		KHE04006-C	KHE06008-C
Motor (*1)	Type	5 phase stepping motor 0.75A/Phase	
	Maker	Oriental Motor Co.,Ltd.	
	Model (*2)	PK523HPB-C17	
	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(Omuron 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	
	Limit output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)	
	Origin output logic	Detection (Light): Output transistor ON (Continuity)	

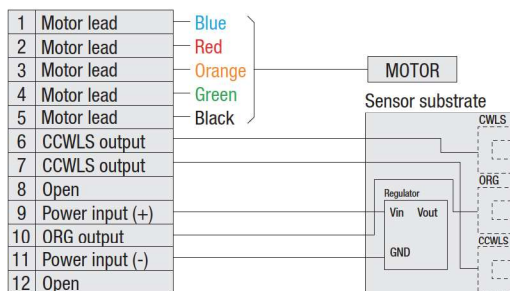
\*1 See page P.1-177~ for details of single motor specification

\*2 Model is our own management model.

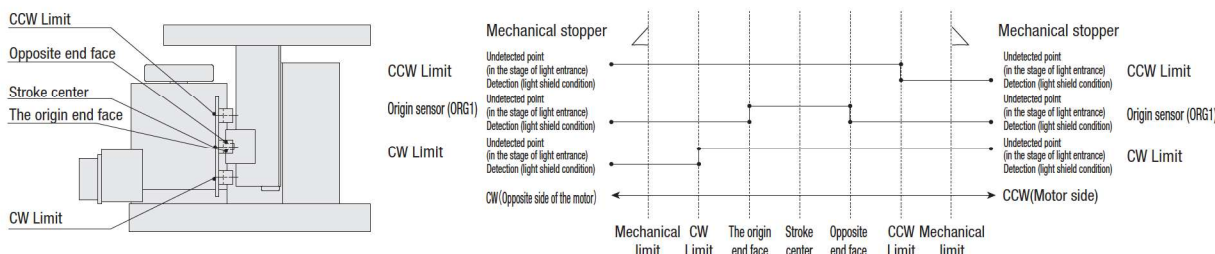
### Pin allocation



### Connection diagram



### Timing chart



Unit [mm]		Direction of CW ←					→ Direction of CCW	
	Reference coordinate	Mechanical limit	CW Limit	Origin	Stroke center	Opposite end face	CCW Limit	Mechanical limit
<b>KHE04006-C</b>	Return to origin	3	2.2	0	1	2	4.2	5
	Stroke center	4	3.2	1	0	1	3.2	4
<b>KHE06008-C</b>	Return to origin	4	3.2	0	1	2	5.2	6
	Stroke center	5	4.2	1	0	1	4.2	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 deg.

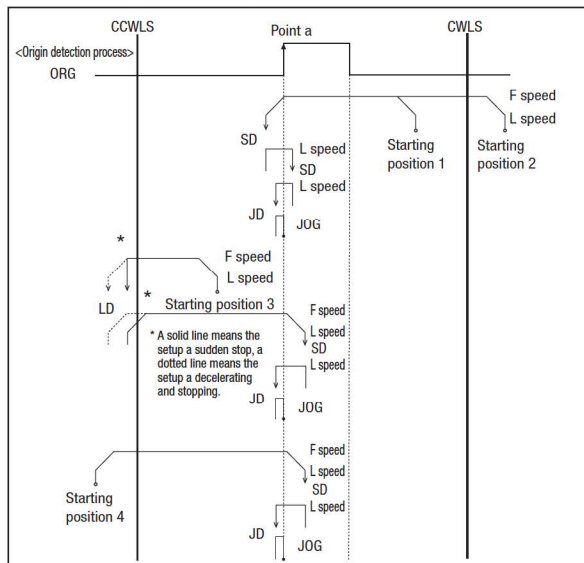
Note: The timing chart shows only timing of sensor, it is not for output signal logic.

Refer to ON/OFF display of output transistor that shows on electrical specifications-sensor-output logic for output signal logic.

## KHE series recommendation return to origin method

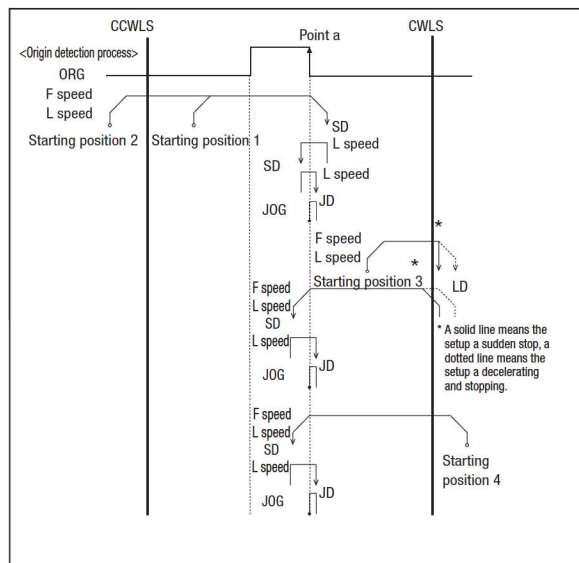
Suruga's motorized stages are different from the specification depending on the models. Therefore return to origin method other than recommendation may not be work correctly. Set to the way of recommendation return origin when using our controller.

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



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

**[Type4]** Detect in the direction of CW and perform detected process for CW edge of ORG 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~](#)

DC24 type input

Model	CRD5107P	SD5107P3-A22
Divisions	1~1/250 (16 steps)	Full/Half

AC100V input

Model	RKD507-A
Divisions	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	DS102NR	DS102MS
	With	DS102NR-IO	DS102MS-IO
DC24V	Without	DS112NR	DS112MS
	With	DS112NR-IO	DS112MS-IO



DS112/102

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