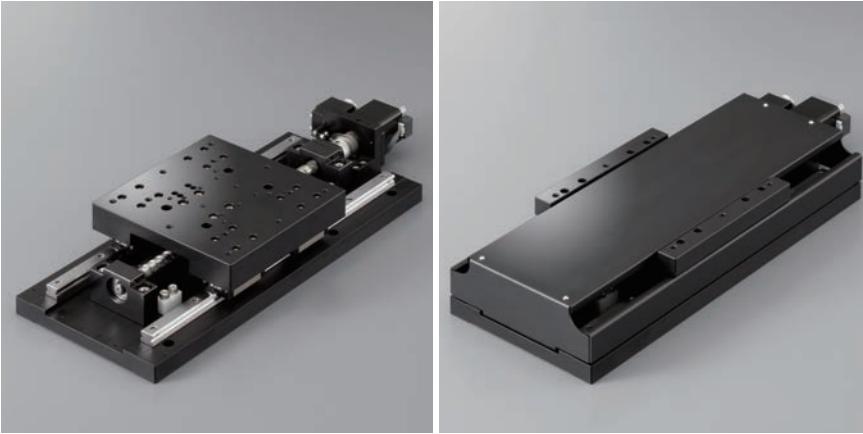


## Slide Guide KXS Series Guidance



### Functions

#### ● Cover type

- Anti-drop foreign material
- Grease antiscattering

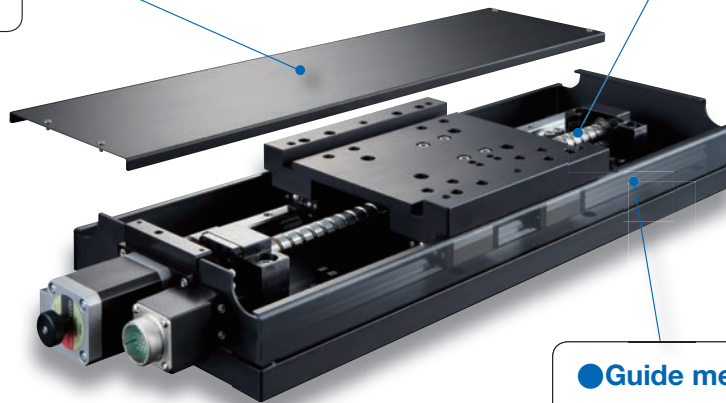
#### ● Motor option

- Servo motor
- $\alpha$ Step motor
- Electromagnetic brake

▶P.1-135~

#### ● Ball screw lead option

- High resolution (5mm)
- High speed (10mm)



#### ● Guide mechanism

Slide guide



### Features

#### ■ Long stroke

Slide guide allows long stroke.

#### ■ Low price

Realize low price in in-house production ball screws.

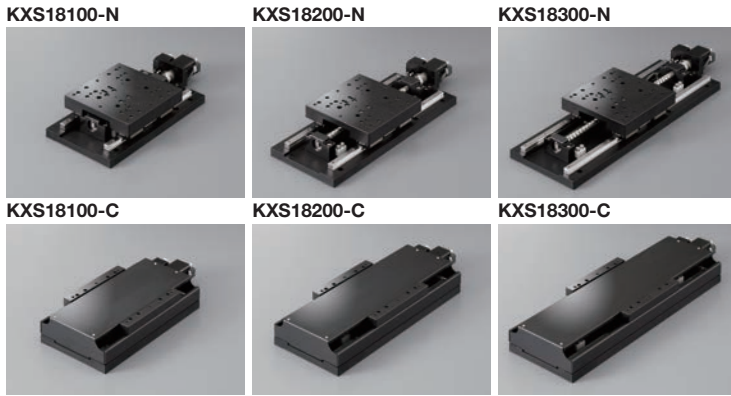
#### ■ High quality

Provide stable high quality by internally parts.

#### ■ Compact

Place the sensor inside body. No projection on any side.

## X-axis Slide Guide: KXS18100/KXS18200/KXS18300



Model Selection code Option code  
**KXS18100-N5-JA**

1 2 3 4 5

▶ Cable P.1-207~  
 ▶ Electrical specification P.1-135~

### 1 Travel length

100	100mm
200	200mm
300	300mm

### 2 Cover type

N	Uncovered	
C	Covered	

### 3 Ball screw lead selection

5	lead 5mm
10	lead 10mm

### 4 Motor option

Code	Specification
J	Standard
SA	With electromagnetic brake (Driver set)
QA	$\alpha$ Step (Driver set)
W	Servo motor (Amplifier set)

\* SA·QA·W included driver and cable.  
 \* See page ▶ P.1-135~ for details of Motor option.

### 5 Cable option

Code	Specification	Cable type
A	2m	D214-1-2E
B	2m One end loose	D214-1-2EK
C	4m	D214-1-4E
D	4m One end loose	D214-1-4EK
E	Connector	—
F	Robot cable 2m	D214-1-2R
G	Robot cable 2m one end loose	D214-1-2RK
H	Robot cable 4m	D214-1-4R
J	Robot cable 4m one end loose	D214-1-4RK
M	Cable for electromagnetic brake	—
P	Cable for $\alpha$ step	—
U	Cable for servo motor	—
Blank	Cable is not included (Standard)	—

\* One end loose position to only stage opposite side.  
 \* The price includes M, P and U.  
 Not available non-cable. See page ▶ P.1-207~ for details of cable.  
 \* See page ▶ P.1-207, 209~ for more cable details.  
 \* Please select "Code A, C, F or H" when connect with stepping motor controller(DS102/112).

[Note]  
 Please check available cable from compatibility list.  
 Not included cable for a main body. Please choose the code as below.

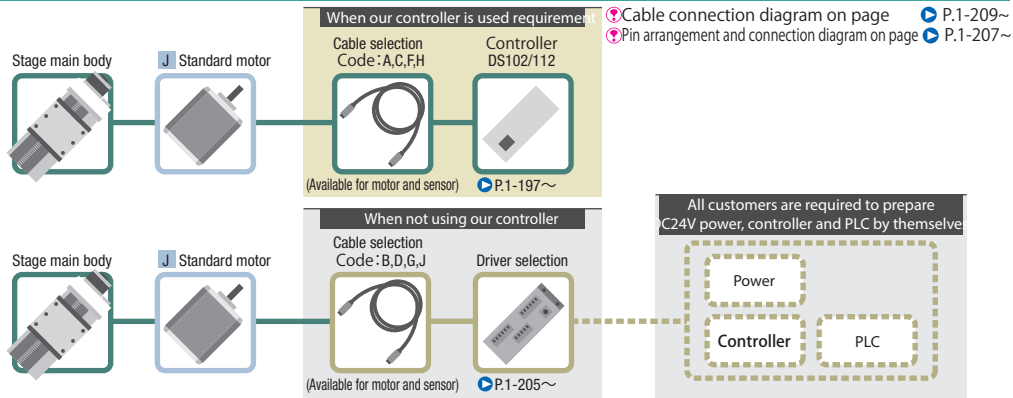
Motor / cable products list	Motor code	Cable code
	J	Blank, A~H, J
SA	M	
QA	P	
W	U	

SPEC								
Model	Uncovered	KXS18100-N5-J	KXS18100-N10-J	KXS18200-N5-J	KXS18200-N10-J	KXS18300-N5-J	KXS18300-N10-J	
	Covered	KXS18100-C5-J	KXS18100-C10-J	KXS18200-C5-J	KXS18200-C10-J	KXS18300-C5-J	KXS18300-C10-J	
Mechanical specification	Travel length	100mm			200mm		300mm	
	Table size	180×180mm						
	Feed screw (Ball screw)	φ15 lead 5	φ15 lead 10	φ15 lead 5	φ15 lead 10	φ15 lead 5	φ15 lead 10	
Accuracy specification	Guide	Slide guide						
	Main materials-Finishing	Aluminum—Black almite finishing						
	Weight	Uncovered	8.32kg		9.48kg		10.72kg	
		Covered	8.12kg		9.37kg		10.70kg	
	Resolution (Pulse)	Full/ Half Microstep	lead 5: 10 $\mu$ m/5 $\mu$ m lead 10: 20 $\mu$ m/10 $\mu$ m					
MAX speed	lead 5mm	30mm/sec						
	lead 10mm	50mm/sec						
Uni-directional positioning accuracy	Within 15 $\mu$ m			Within 20 $\mu$ m		Within 30 $\mu$ m		
Repeatability positioning accuracy	Within $\pm$ 1 $\mu$ m							
Load capacity	30kgf [294N]							
Moment stiffness	Pitch 0.005/yaw 0.008/roll 0.003[°/N·cm]							
Backlash	Within 2 $\mu$ m							
Straightness	Within 10 $\mu$ m			Within 15 $\mu$ m		Within 20 $\mu$ m		
Parallelism	Within 50 $\mu$ m							
Motion parallelism	Within 20 $\mu$ m							
Pitching/Yawing	Within 30°/Within 20°		Within 50°/Within 20°		Within 60°/Within 30°			
Sensor	Limit sensor	Installed						
	Origin sensor	Installed						
	Slit origin sensor	Installed						
Provided screw (Hexagon-headed bolt)	8 of M6—20							

\* Might be changed specification due to motors. See page ▶ P.1-213~ for details.

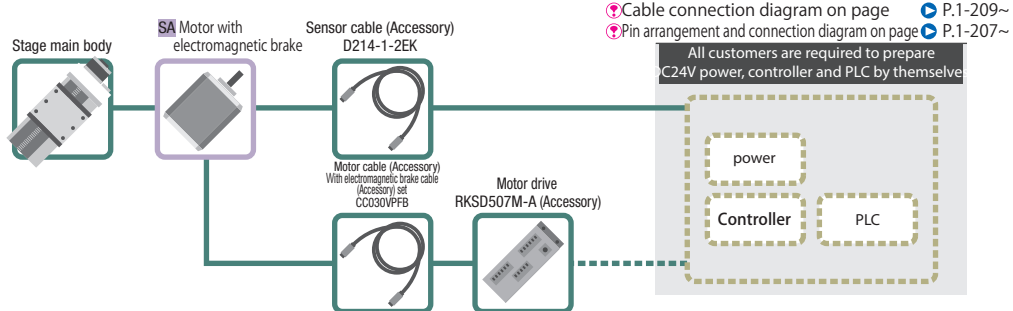
Motor option

**J** Standard motor  
 Motor model  
 PK546PB



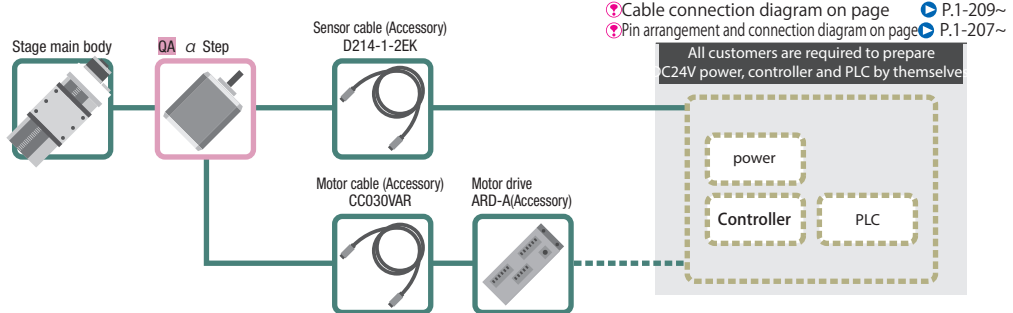
Motor option

**SA** With electromagnetic brake  
 Motor model  
 PKE566MC



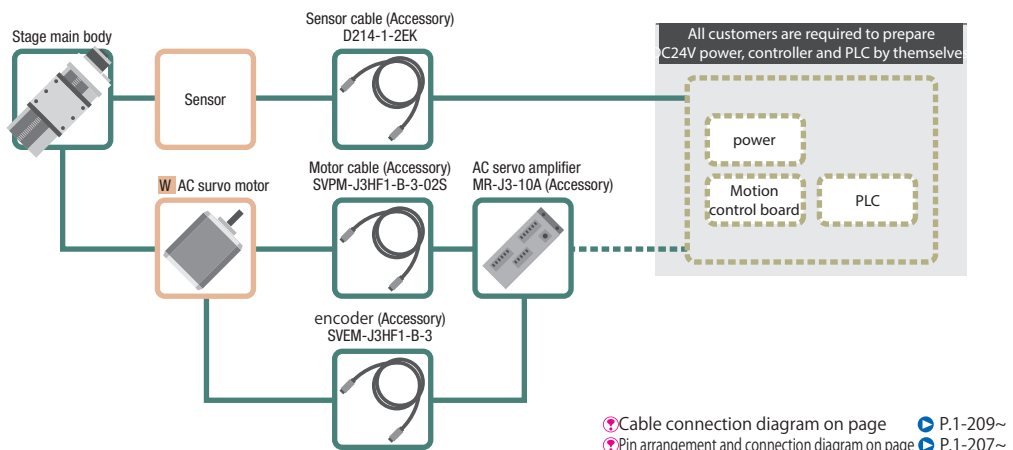
Motor option

**QA** α Step  
 Motor model  
 ARM46AC



Motor option

**W** AC servo motor  
 Motor model  
 HF-KP13



Motor code	J		SA	QA	W
Feature	Standard		With electromagnetic brake	Small step-out	High speed
Type	5 phase stepping motor 0.75A/Phase		5 phase stepping motor 0.75A/Phase	α step motor	AC servo motor
Motor model※	PK546PB		PKE566MC	ARM46AC	HF-KP13
Resolution	lead 5mm	Full/Half	10 μm/5 μm	5 μm (Set to 1000P/R)	18 bits encoder (262144P/R)
		Micro step (1/20 split)	0.5 μm	—	
	lead 10mm	Full/Half	20 μm/10 μm	10 μm (Set to 1000P/R)	
		Micro step (1/20 split)	1 μm	—	
MAX speed	lead 5mm	30mm/sec	140mm/sec	100mm/sec	200mm/sec
	lead 10mm	50mm/sec	215mm/sec	120mm/sec	400mm/sec

※Model is our own management model.

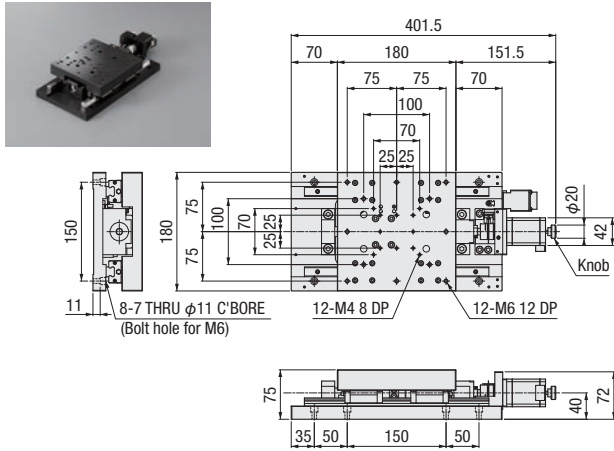
# Motorized Stage

## X-axis Slide Guide: KXS18100/KXS18200/KXS18300

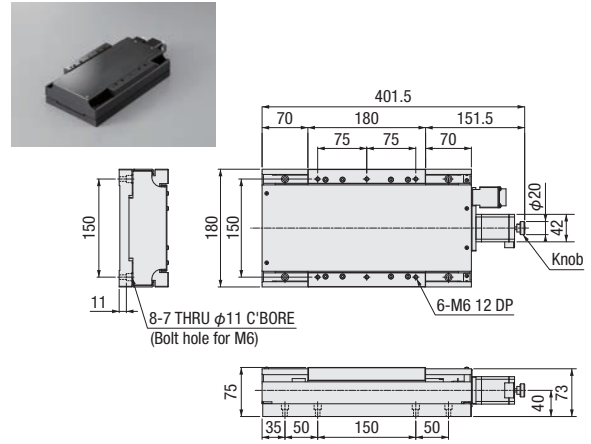
Motorized Stage

### Dimensional outline drawings

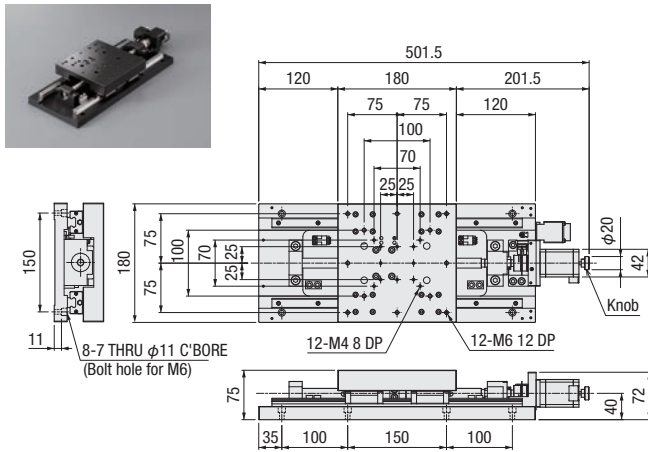
**KXS18100-N5-J (KXS18100-N10-J)**



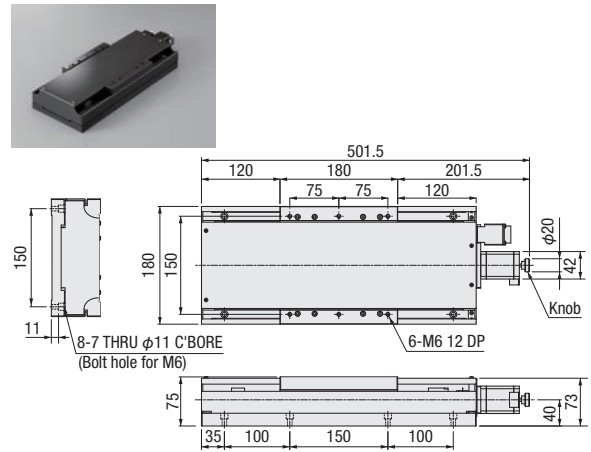
**KXS18100-C5-J (KXS18100-C10-J)**



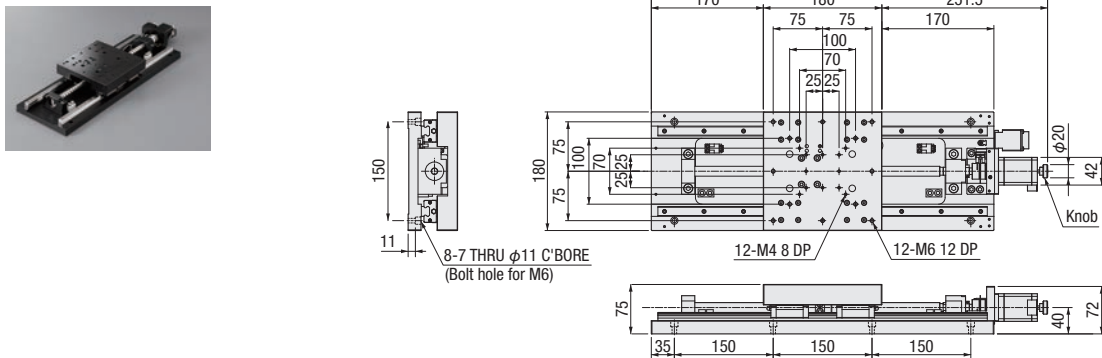
**KXS18200-N5-J (KXS18200-N10-J)**



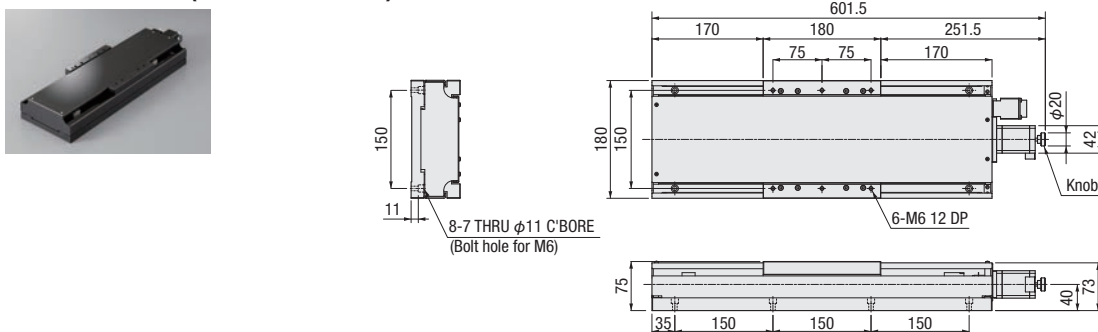
**KXS18200-C5-J (KXS18200-C10-J)**



**KXS18300-N5-J (KXS18300-N10-J)**



**KXS18300-C5-J (KXS18300-C10-J)**



X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X  
Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

φ100

φ120

Other

1

125



PART  
COMMUNITY

CAD  
DATA

SURUGA  
SEIKI

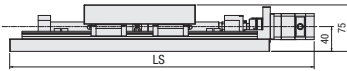
CAD  
3D・2D

**Dimensional outline drawings**

**J** Standard motor

Motor model PK546PB

That is applicable to  
uncovered and covered

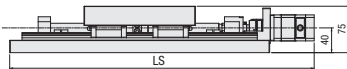


Model	J (Standard)	
	Motor size	LS
KXS18100-□□-J□	□42	402
KXS18200-□□-J□		502
KXS18300-□□-J□		602

**SA** With electromagnetic brake

Motor model PKE566MC

That is applicable to  
uncovered and covered

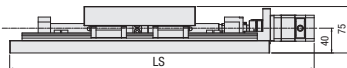


Model	SA (Electromagnetic brake)		J (Standard)
	Motor size	LS	LS
KXS18100-□□-SAM	□60	422.5	402
KXS18200-□□-SAM		525.5	502
KXS18300-□□-SAM		625.5	602

**QA** α step

Motor model ARM46AC

That is applicable to  
uncovered and covered

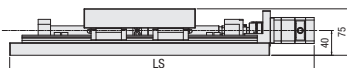


Model	QA (α step)		J (Standard)
	Motor size	LS	LS
KXS18100-□□-QAP	□42	395	402
KXS18200-□□-QAP		495	502
KXS18300-□□-QAP		595	602

**W** AC servo motor

Motor model HF-KP13

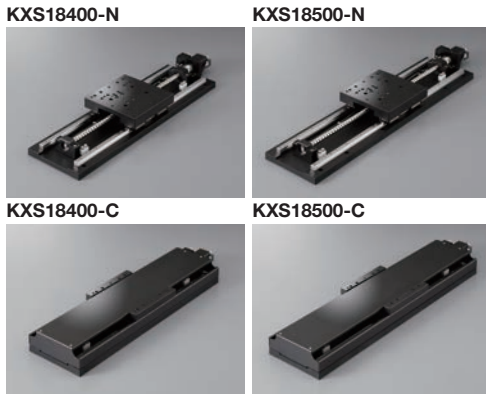
That is applicable to  
uncovered and covered



Model	W (Servo motor)		J (Standard)
	Motor size	LS	LS
KXS18100-□□-WU	□40	415	402
KXS18200-□□-WU		515	502
KXS18300-□□-WU		615	602

## X-axis Slide Guide: KXS18400/KXS18500

RoHS



Model Selection code Option code  
**KXS18400-N5-JA**  
 1 2 3 4 5

▶ Cable P.1-207~  
 ▶ Electrical specification P.1-135~

### 1 Travel length

400	400mm
500	500mm

### 2 Cover type

N	Uncovered	
C	Covered	

### 3 Ball screw lead selection

5	lead 5mm
10	lead 10mm

### 4 Motor option

Code	Specification
J	Standard
SA	With electromagnetic brake (Driver set)
QA	$\alpha$ Step (Driver set)
W	Servo motor (Amplifier set)

\*SA·QA·W included driver and cable.  
 \* See page ▶ P.1-135~ for details of Motor option.

### 5 Cable option

Code	Specification	Cable type
A	2m	D214-1-2E
B	2m One end loose	D214-1-2EK
C	4m	D214-1-4E
D	4m One end loose	D214-1-4EK
E	Only connector (Cable is not included)	—
F	Robot cable 2m	D214-1-2R
G	Robot cable 2m one end loose	D214-1-2RK
H	Robot cable 4m	D214-1-4R
J	Robot cable 4m one end loose	D214-1-4RK
M	Cable for electromagnetic brake	—
P	Cable for $\alpha$ step	—
U	Cable for servo motor	—
Blank	Cable is not included (Standard)	—

\* One end loose position to only stage opposite side.  
 \* The price includes M, P and U.  
 \* Not available non-cable. See page ▶ P.1-207~ for details of cable.  
 \* See page ▶ P.1-207, 209~ for more cable details.  
 \* Please select "Code A, C, F or H" when connect with stepping motor controller(DS102/112).

[Note]  
 Please check available cable from compatibility list.  
 Not included cable for a main body. Please choose the code as below.

Motor/cable products list	Motor code	Cable code
	J	Blank, A~H, J
SA	M	
QA	P	
W	U	

		SPEC			
Model	Uncovered	KXS18400-N5-J	KXS18400-N10-J	KXS18500-N5-J	KXS18500-N10-J
	Covered	KXS18400-C5-J	KXS18400-C10-J	KXS18500-C5-J	KXS18500-C10-J
Mechanical specification	Travel length	400mm		500mm	
	Table size	180×180mm			
	Feed screw (Ball screw)	$\phi$ 15 lead 5	$\phi$ 15 lead 10	$\phi$ 15 lead 5	$\phi$ 15 lead 10
	Guide	Slide guide			
Main materials-Finishing	Aluminum—Black almite finishing				
	Weight	Uncovered	11.92kg	13.10kg	13.26kg
Accuracy specification	Resolution (Pulse)	Full/ Half	lead 5: 10 $\mu$ m/5 $\mu$ m		lead 10: 20 $\mu$ m/10 $\mu$ m
		Microstep	lead 5: 0.5 $\mu$ m (1/20 on resolution)		lead 10: 1 $\mu$ m (1/20 on resolution)
	MAX speed	lead 5mm	30mm/sec		
		lead 10mm	50mm/sec		
	Uni-directional positioning accuracy	Within 35 $\mu$ m		Within 40 $\mu$ m	
	Repeatability positioning accuracy	Within $\pm$ 1 $\mu$ m			
	Load capacity	30kgf [294N]			
	Moment stiffness	Pitch 0.005/yaw 0.008/roll 0.003 ["/N·cm]			
	Backlash	Within 25 $\mu$ m		Within 30 $\mu$ m	
	Straightness	Within 25 $\mu$ m		Within 30 $\mu$ m	
Parallelism	Within 50 $\mu$ m		Within 30 $\mu$ m		
	Motion parallelism		Within 30 $\mu$ m		
Pitching/Yawing	Within 60"/Within 30"		Within 70"/Within 30"		
Sensor	Limit sensor	Installed		Installed	
	Origin sensor	Installed		Installed	
	Slit origin sensor	Installed		Installed	
Provided screw (Hexagon-headed bolt)		8 of M6—20		12 of M6—20	

\* Might be changed specification due to motors. See page ▶ P.1-213~ for details.

Motorized Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

$\phi$ 40

$\phi$ 50

$\phi$ 60

$\phi$ 70

$\phi$ 80

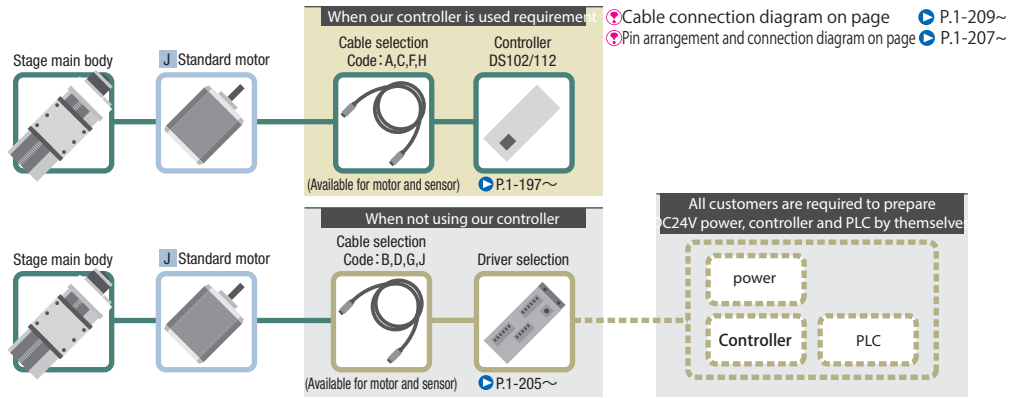
$\phi$ 100

$\phi$ 120

Other

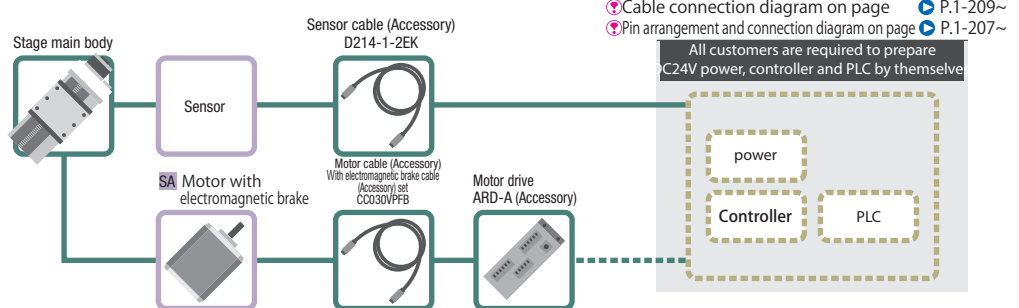
Motor option

**J** Standard motor  
 Motor model  
 PK546PB



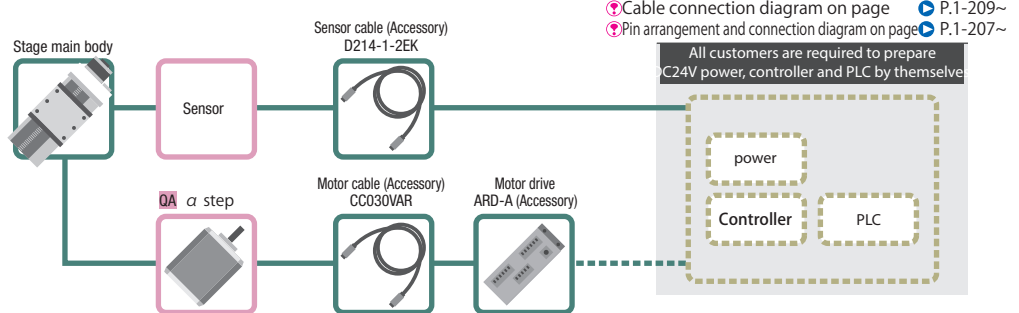
Motor option

**SA** With electromagnetic brake  
 Motor model  
 PKE566MC



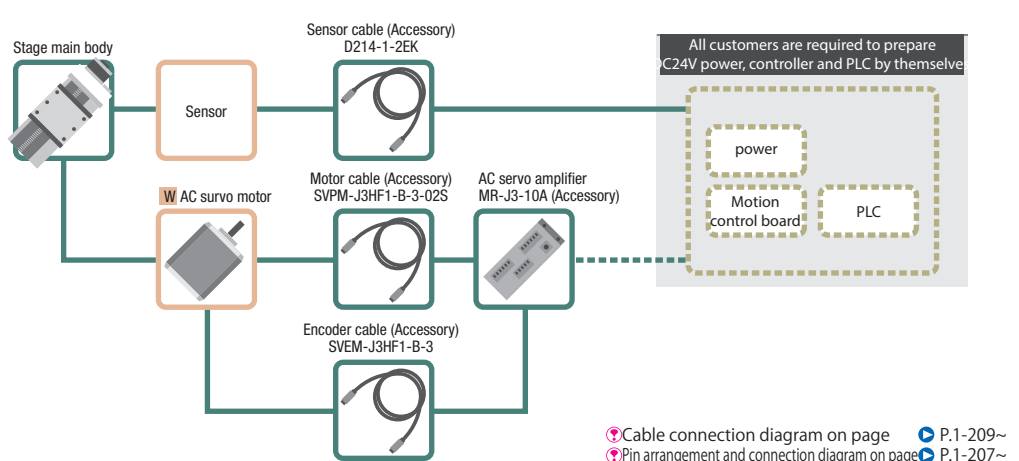
Motor option

**QA**  $\alpha$  Step  
 Motor model  
 ARM46AC



Motor option

**W** AC servo motor  
 Motor model  
 HF-KP13



Option Code	J		SA	QA	W
Feature	Standard		With electromagnetic brake	Small step-out	High speed
Type	5 phase stepping motor 0.75A/Phase		5 phase stepping motor 0.75A/Phase	$\alpha$ step motor	AC servo motor
Motor model*	PK546PB		PKE566MC	ARM46AC	HF-KP13
Resolution	lead 5mm	Full/Half	10 $\mu$ m/5 $\mu$ m	5 $\mu$ m (Set to 1000P/R)	18 bits encoder (262144P/R)
		Micro step (1/20 split)	0.5 $\mu$ m	—	
	lead 10mm	Full/Half	20 $\mu$ m/10 $\mu$ m	10 $\mu$ m (Set to 1000P/R)	
		Micro step (1/20 split)	1 $\mu$ m	—	
MAX speed	lead 5mm	30mm/sec	140mm/sec	100mm/sec	200mm/sec
	lead 10mm	50mm/sec	215mm/sec	125mm/sec	400mm/sec

\*Model is our own management model.

- Motorized Stage
- X
- XY
- Z
- Horizontal Z
- XYZ
- Goniometer
- Rotary
- Unit
- Controller
- Linear Ball
- CAVE-X Linear ball
- Cross Roller
- Slide Guide
- $\phi$ 40
- $\phi$ 50
- $\phi$ 60
- $\phi$ 70
- $\phi$ 80
- $\phi$ 100
- $\phi$ 120
- Other

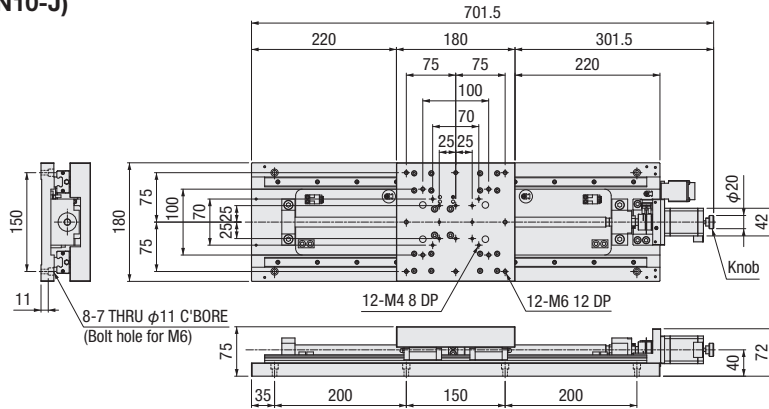
# Motorized Stage

## X-axis Slide Guide: KXS18400/KXS18500

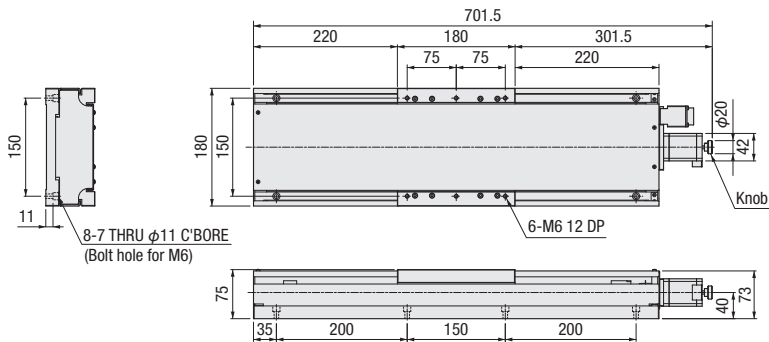
Motorized Stage

### Dimensional outline drawings

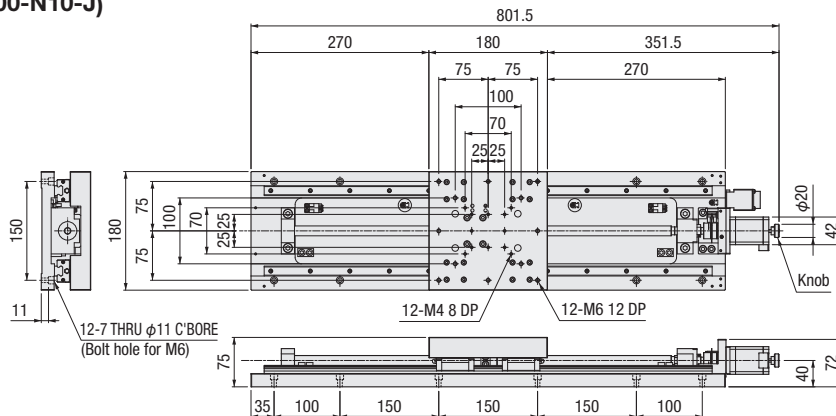
**KXS18400-N5-J (KXS18400-N10-J)**



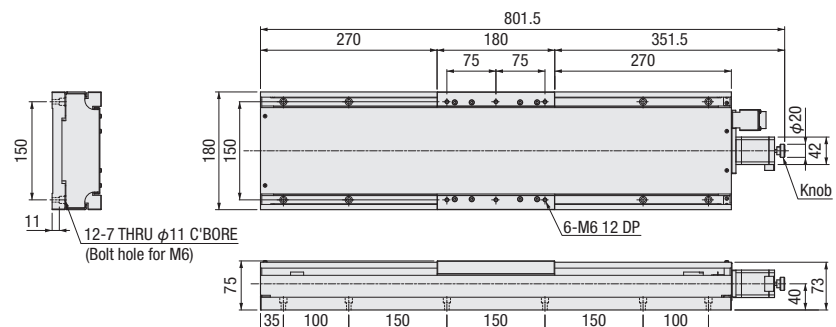
**KXS18400-C5-J (KXS18400-C10-J)**



**KXS18500-N5-J (KXS18500-N10-J)**



**KXS18500-C5-J (KXS18500-C10-J)**



X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

$\phi 40$

$\phi 50$

$\phi 60$

$\phi 70$

$\phi 80$

$\phi 100$

$\phi 120$

Other





PART  
COMMUNITY

CAD  
DATA



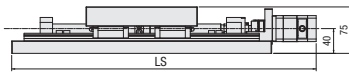
CAD  
3D·2D

**Dimensional outline drawings**

**J** Standard motor

Motor model PK546PB

That is applicable to  
uncovered and covered

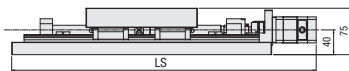


Model	J (Standard)	
	Motor size	LS
KXS18400-□□-J□	□42	702
KXS18500-□□-J□		802

**SA** With electromagnetic brake

Motor model PKE566MC

That is applicable to  
uncovered and covered

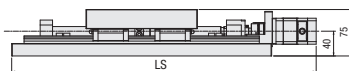


Model	SA (Electromagnetic brake)	J (Standard)	
	Motor size	LS	LS
KXS18400-□□-SAM	□60	725.5	702
KXS18500-□□-SAM		825.5	802

**QA** α step

Motor model ARM46AC

That is applicable to  
uncovered and covered

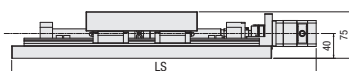


Model	QA (α step)		J (Standard)
	Motor size	LS	LS
KXS18400-□□-QAP	□42	695	702
KXS18500-□□-QAP		795	802

**W** AC servo motor

Motor model HF-KP13

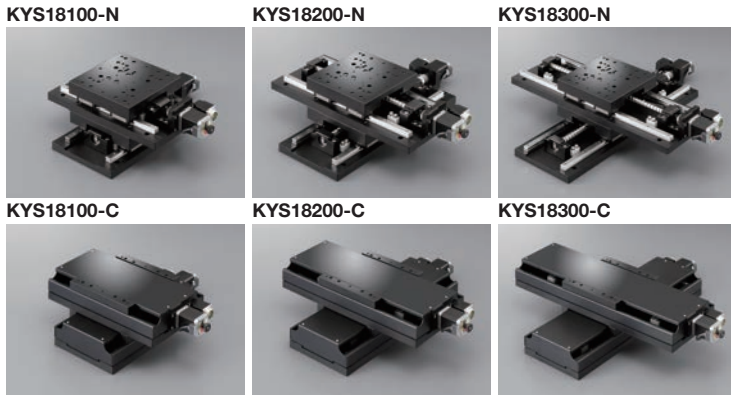
That is applicable to  
uncovered and covered



Model	W (Servo motor)		J (Standard)
	Motor size	LS	LS
KXS18400-□□-WU	□40	715	702
KXS18500-□□-WU		815	802

## XY-axis Slide Guide: KYS18100/KYS18200/KYS18300

RoHS



Model Selection code Option code  
**KYS18100-N5-JA**

☉ Cable P.1-207~  
 Ⓞ Electrical specification P.1-135~

### 1 Travel length

100	100mm
200	200mm
300	300mm

### 2 Cover type

N	Uncovered	
C	Covered	

### 3 Ball screw lead selection

5	lead 5mm
10	lead 10mm

### 4 Motor option

Code	Specification
J	Standard
SA	With electromagnetic brake (Driver set)
QA	α Step (Driver set)
W	Servo motor (Amplifier set)

### 5 Cable option

Code	Specification	Cable type
A	2m	D214-1-2E
B	2m One end loose	D214-1-2EK
C	4m	D214-1-4E
D	4m One end loose	D214-1-4EK
E	Only connector (Cable is not included)	—
F	Robot cable 2m	D214-1-2R
G	Robot cable 2m one end loose	D214-1-2RK
H	Robot cable 4m	D214-1-4R
J	Robot cable 4m one end loose	D214-1-4RK
M	Cable for electromagnetic brake	—
P	Cable for α step	—
U	Cable for servo motor	—
Blank	Cable is not included (Standard)	—

\* One end loose position to only stage opposite side.  
 \* The price includes M, P and U.  
 Not available non-cable.  
 See page ☉ P.1-207, 209~ for details of cable.  
 \* Please select "Code A, C, F or H" when connect with stepping motor controller(DS102/112).

[Note]  
 Please check available cable from compatibility list.  
 Not included cable for a main body. Please choose the code as below.

Motor/ cable products list	Motor code	Cable code
	J	Blank, A~H, J
	SA	M
	QA	P
W	U	

SPEC								
Model	Uncovered	KYS18100-N5-J	KYS18100-N10-J	KYS18200-N5-J	KYS18200-N10-J	KYS18300-N5-J	KYS18300-N10-J	
	Covered	KYS18100-C5-J	KYS18100-C10-J	KYS18200-C5-J	KYS18200-C10-J	KYS18300-C5-J	KYS18300-C10-J	
Mechanical specification	Travel length	100mm		200mm		300mm		
	Table size	180×180mm						
	Feed screw (Ball screw)	φ15 lead 5	φ15 lead 10	φ15 lead 5	φ15 lead 10	φ15 lead 5	φ15 lead 10	
	Guide	Slide guide						
Accuracy specification	Main materials-Finishing	Aluminum—Black almite finishing						
	Weight	Uncovered	16.64kg	18.96kg	21.44kg			
		Covered	16.24kg	18.74kg	21.4kg			
	Resolution (Pulse)	Full/ Half	lead 5: 10μm/5μm		lead 10: 20μm/10μm			
Sensor	Microstep	lead 5: 0.5μm (1/20 on resolution)		lead 10: 1μm (1/20 on resolution)				
	MAX speed	lead 5	30mm/sec					
	lead 10	50mm/sec						
Load capacity		21kgf [205.8N]	20kgf [196N]	19kgf [186.2N]				
Perpendicularity		Within 50μm/Travel	Within 100μm/Travel	Within 150μm/Travel				
Provided screw (Hexagon-headed bolt)	Limit sensor	Installed						
	Origin sensor	Installed						
	Slit origin sensor	Installed						
Signal accuracy specification	Uni-directional positioning accuracy	Within 15μm		Within 20μm		Within 30μm		
	Repeatability positioning accuracy	Within ±1μm						
	Backlash	Within 2μm						
	Pitching/Yawing		Within 30"/Within 20"		Within 50"/Within 20"		Within 60"/Within 30"	

\* Might be changed specification due to motors. See page ☉ P.1-213~ for details.

Motorized Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

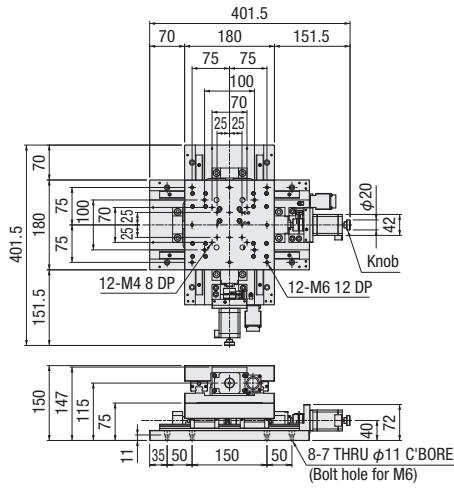
φ100

φ120

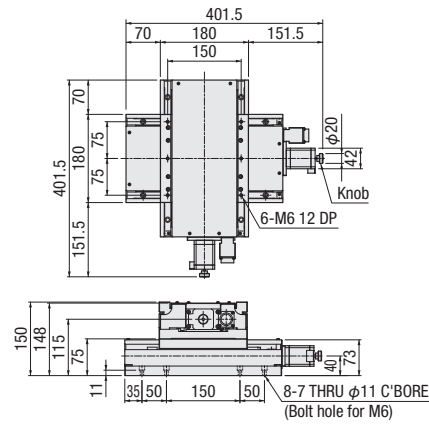
Other

Dimensional outline drawings

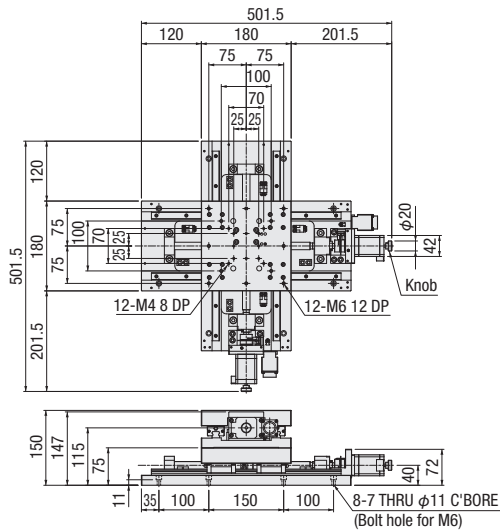
**KYS18100-N5-J (KYS18100-N10-J)**



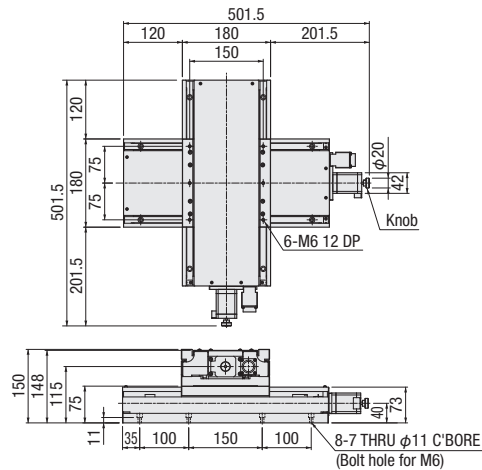
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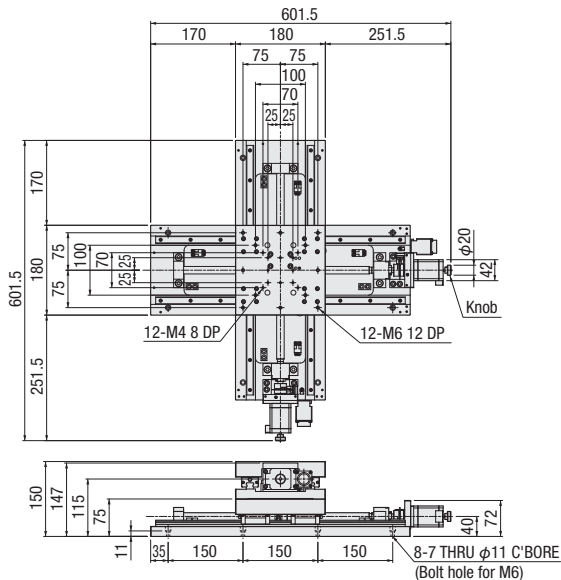
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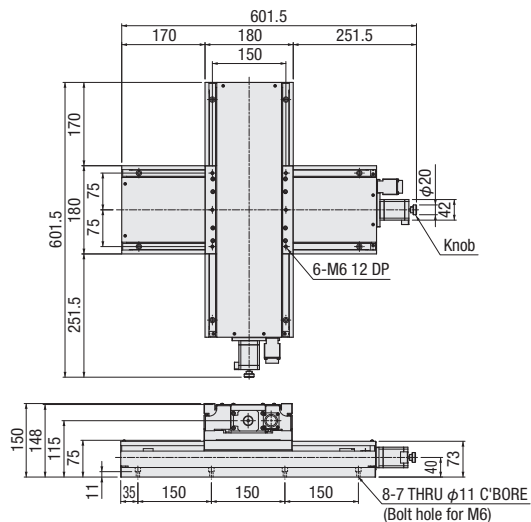
**KYS18200-C5-J (KYS18200-C10-J)**



**KYS18300-N5-J (KYS18300-N10-J)**



**KYS18300-C5-J (KYS18300-C10-J)**



Motorized Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

φ100

φ120

Other

1

132

## Z-axis Slide Guide: KZS18100/KZS18200/KZS18300



Model Selection code Option code  
**KZS18 100-N5-JA**

1 2 3 4 5

▶ Cable P.1-207~  
 ◻ Electrical specification P.1-135~

### 1 Travel length

100	100mm
200	200mm
300	300mm

### 2 Cover type

N	Uncovered	
C	Covered	

### 3 Ball screw lead selection

5	lead 5mm
---	----------

### 4 Motor option

Code	Specification
J	Standard
SA	With electromagnetic brake (Driver set)
QA	α Step (Driver set)
W	Servo motor (Amplifier set)

\* SA·QA·W included driver and cable.  
 \* See page ▶ P.1-135~ for details of Motor option.

### 5 Cable option

Code	Specification	Cable type
A	2m	D214-1-2E
B	2m One end loose	D214-1-2EK
C	4m	D214-1-4E
D	4m One end loose	D214-1-4EK
E	Only connector (Cable is not included)	—
F	Robot cable 2m	D214-1-2R
G	Robot cable 2m one end loose	D214-1-2RK
H	Robot cable 4m	D214-1-4R
J	Robot cable 4m one end loose	D214-1-4RK
M	Cable for electromagnetic brake	—
P	Cable for α step	—
U	Cable for servo motor	—
Blank	Cable is not included (Standard)	—

\* One end loose position to only stage opposite side.  
 \* The price includes M, P and U.  
 Not available non-cable.  
 \* See page ▶ P.1-207~ for details of cable.  
 \* See page Page207, 209~ for more cable details.  
 \* Please select "Code A, C, or F" when connect with stepping motor controller(DS102/112).

[Note]  
 Please check available cable from compatibility list.  
 Not included cable for a main body. Please choose the code as below.

Motor/ cable products list	Motor code	Cable code
	J	Blank, A~H, J
SA	M	
QA	P	
W	U	

SPEC				
Model	Uncovered	KZS18100-N5-J	KZS18200-N5-J	KZS18300-N5-J
	Covered	KZS18100-C5-J	KZS18200-C5-J	KZS18300-C5-J
Mechanical specification	Travel length	100mm	200mm	300mm
	Table size	180×180mm		
	Feed screw (Ball screw)	φ15 lead 5		
	Guide	Slide guide		
Main materials-Finishing		Aluminum—Black almite finishing		
Weight	Uncovered	13.9kg	15.06kg	16.3kg
	Covered	13.7kg	14.95kg	16.28kg
Accuracy specification	Resolution (Pulse)	10μm/5μm		
	MAX speed	0.5μm (1/20 on resolution)		
	Load capacity (Excitation)	30mm/sec		
Sensor	Vertical degree	Within 50μm/Travel	Within 100μm/Travel	Within 150μm/Travel
	Limit sensor	Installed		
	Origin sensor	Installed		
	Slit origin sensor	Installed		
Provided screw (Hexagon-headed bolt)		4 of M6—25		
Synchronous accuracy specification	Uni-directional positioning accuracy	Within 15μm	Within 20μm	Within 30μm
	Repeatability positioning accuracy	Within ±1μm		
	Backlash	Within 2μm		
	Pitching/Yawing	Within 30"/Within 20"	Within 50"/Within 20"	Within 60"/Within 30"

\* Might be changed specification due to motors. See page ▶ P.1-213~ for details.

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

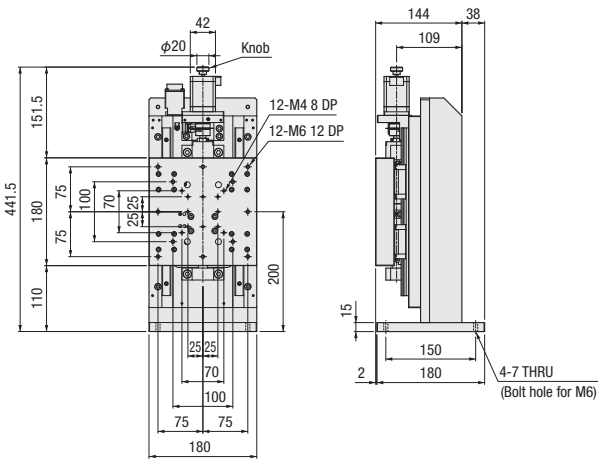
φ100

φ120

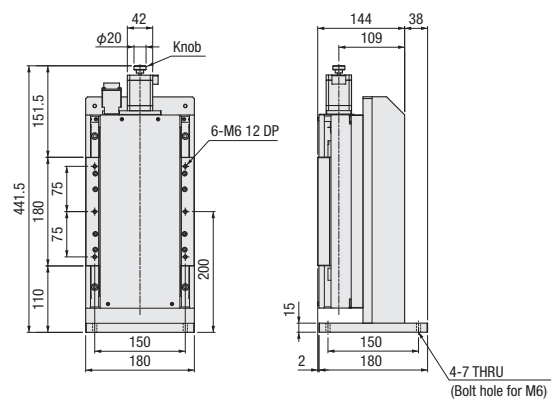
Other

**Dimensional outline drawings**

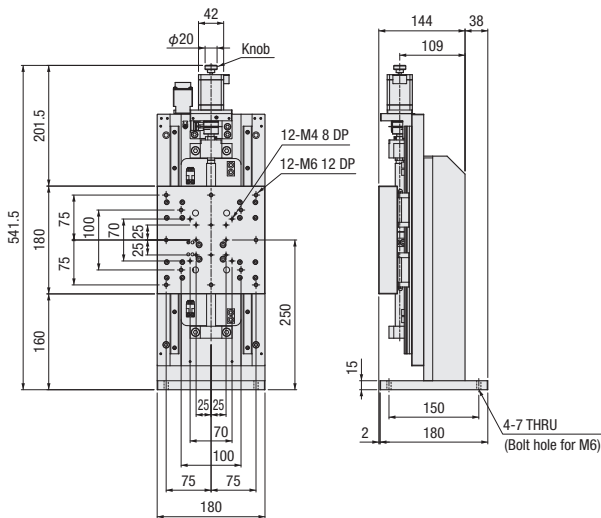
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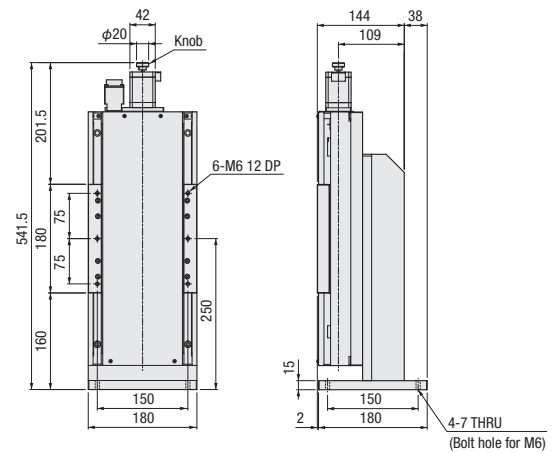
**KZS18100-C5-J**



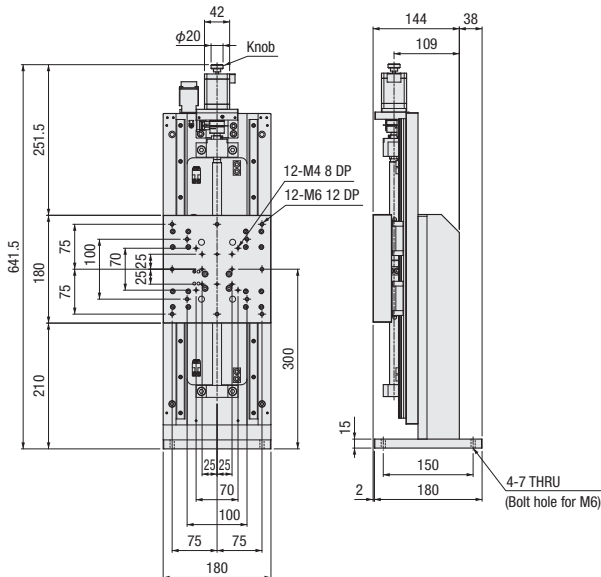
**KZS18200-N5-J**



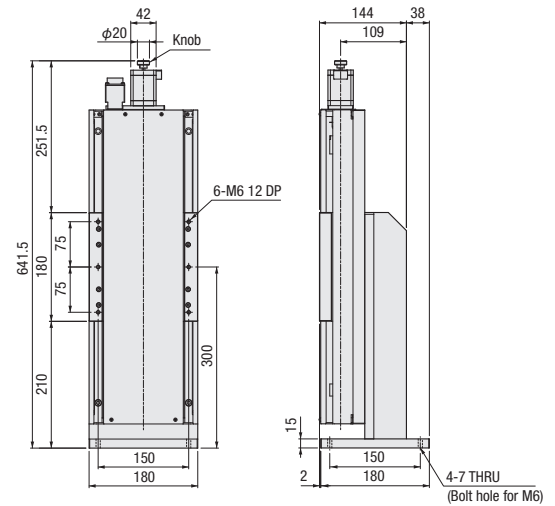
**KZS18200-C5-J**



**KZS18300-N5-J**



**KZS18300-C5-J**



Motorized Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

$\phi 40$

$\phi 50$

$\phi 60$

$\phi 70$

$\phi 80$

$\phi 100$

$\phi 120$

Other

## Electrical Specification: KXS Series

### Motor · Electrical specification

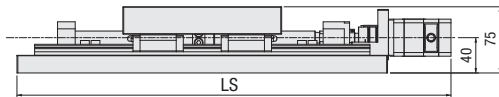
Motor code		J	SA	QA	W	
Models		KXS18100 / KXS18200 / KXS18300 / KXS18400 / KXS18500				
Motor Specification (*1)	Type	5 phase stepping motor 0.75A/Phase	5 phase stepping motor 0.75A/Phase	$\alpha$ step motor	AC servo motor	
	Feature	Standard	With electromagnetic brake	Small step-out	High speed	
	Model (*2)	PK546PB	PKE566MC	ARM46AC	HF-KP13	
	Electromagnetic brake	—	Installed	—	—	
	Maker	Oriental Motor Co.,Ltd.			Mitsubishi Electric corporation	
	Step angle (Position detector)	0.72°			18 bits encoder (262144P/R)	
	Mass	0.5kg	1.2kg	0.47kg	0.56kg	
	Motor size	□ size	42mm	60mm	42mm	40mm
		L size	74mm	94.5mm	68mm	82.4mm
	Excitation (moment) maximum torque	0.42N · m	0.96N · m	0.3N · m	0.95N · m	
Driver type	—	RKSD507M-A	ARD-A	MR-J3-10A		
Input power (Voltage · frequency)	▶ P.1-205~	Single phase AC100-120V 50/60Hz	Single phase AC100-115V 50/60Hz	Three and single phase AC200-230V 50/60Hz		
Sensor	Limit sensor	Installed				
	Origin sensor	Installed				
	Slit origin sensor	Installed				
	Model	Photo microsensor EE-SX674 (Omuron Co.,Ltd.)				
	Power voltage	DC5~24V ±10%				
	Consumption current	140mA or less (35mA or less per 1 sensor)				
	Control output	NPN open collector output DC5~24V 100mA or less Residual voltage 0.8V or less when the load current is 100mA Residual voltage 0.4V or less when the load current is 40mA				
Output logic	Limit, Origin sensor on detection (light shield condition): Output transistor OFF (Non-continuity) (Slit origin sensor is OFF when detected. (Non-continuity))					
Connector	Motor	Model	SRCN2A21-16P (JAE) motor side:5557-06R-210(MOLEX) electromagnetic brake side:5557-02R-210(MOLEX) motor side:5559-06P-210(MOLEX) electromagnetic brake side:5559-02P-210(MOLEX)	5557-10R-210 (MOLEX)	Motor cable — Encoder cable —	
		Receiving connector	SRCN6A21-16S (JAE)	350720-1 (Tyco Electronics Japan G.K.)	5559-10P-210 (MOLEX) Motor cable JN4FT045J1-R (JAE) Encoder cable 1674320-1 (Tyco Electronics Japan G.K.)	
	Sensor	Model	SRCN2A21-16P (JAE)			
		Receiving connector	SRCN6A21-16S (JAE)			
Accuracy specification	Resolution	lead 5mm	10 $\mu$ m/5 $\mu$ m		18 bits encoder (262144P/R)	
		Microstep	0.5 $\mu$ m (1/20 on resolution)			
	lead 10mm	Full/Half	20 $\mu$ m/10 $\mu$ m			
		Microstep	1 $\mu$ m (1/20 on resolution)			
	MAX speed	lead 5mm	30mm/sec	140mm/sec		100mm/sec
lead 10mm		50mm/sec	215mm/sec	125mm/sec	400mm/sec	

\*1 See page ▶ P.1-213~ for details of single motor specification.

\*2 Model is our own management model.

\* The electric specification of XY (PMG), Z (PZG) are the same.

### Dimensional outline drawings



Motor code	Size □ [mm]	LS				
		KXS18100	KXS18200	KXS18300	KXS18400	KXS18500
J	42	402	502	602	702	802
SA	60	422.5	525.5	625.5	725.5	825.5
QA	42	395	495	595	695	795
W	(40)	415	515	615	715	815

Linear Ball

CAVE-X  
Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

φ100

φ120

Other

Pin allocation • Connection diagram

Motor code	KXS series	Motor code	KXS series																																																							
J	<p>[Motor and sensor pin allocation (the same)] [Motor and sensor connection diagram (the same)]</p> <p>1 Motor lead (Blue) MOTOR                  2 Motor lead (Red)                  3 Motor lead (Orange)                  4 Motor lead (Green)                  5 Motor lead (Black)                  6 CWLS output                  7 Open                  8 CCWLS output                  9 Open                  10 Power input (+)                  11 NORG output                  12 Open                  13 Open                  14 ORG output                  15 Power input (-)                  16 F.G.</p>	S A	<p>Cable for motor (3m)</p> <p>• motor side                    5559-06P-210 (MOLEX)</p> <p>• driver side                    5557-06R-210 (MOLEX)</p> <p>1 Motor lead (B)                  2 Motor lead (R)                  3 Motor lead (Y)                  4 Motor lead (B)                  5 Motor lead (O)                  6 Motor lead (G)</p> <p>EMBRIDGE MOTOR</p> <p>Electromagnetic brake cable (3m)</p> <p>• motor side                    5559-02P-210 (MOLEX)</p> <p>1 Electromagnetic brake (B)                  2 Electromagnetic brake</p> <p>* Type of cable: CC030VPFB See page P.1-211 for details.</p>																																																							
	<p>[Motor and sensor pin allocation (sensor)] [Motor and sensor connection diagram (sensor)]</p> <p>1 Open                  2 Open                  3 Open                  4 Open                  5 Open                  6 CWLS output                  7 Open                  8 CCWLS output                  9 Open                  10 Power input (+)                  11 NORG output                  12 Open                  13 Open                  14 ORG output                  15 Power input (-)                  16 F.G.</p>		<p>[Motor and sensor pin allocation (sensor)] [Motor and sensor connection diagram (sensor)]</p> <p>1 Open                  2 Open                  3 Open                  4 Open                  5 Open                  6 CWLS output                  7 Open                  8 CCWLS output                  9 Open                  10 Power input (+)                  11 NORG output                  12 Open                  13 Open                  14 ORG output                  15 Power input (-)                  16 F.G.</p> <p>* Type of cable: D214-1-2EK See page P.1-212 for details.</p>																																																							
Q A	<p>※Motor cable model:CC030VAR See page P.1-211 for details.</p> <p>Cable for motor (3m)</p> <p>• motor side                    5559-10P-210 (MOLEX)</p> <p>1 Motor lead (W)                  2 Motor lead (B)                  3 Motor lead (P)                  4 Motor lead (G)                  5 Motor lead (R)                  6 Motor lead (G)                  7 Motor lead (B)                  8 Motor lead (O)                  9 Motor lead                  10 Drain wire</p> <p>EMBRIDGE MOTOR</p> <p>• driver side                    5557-10R-210 (MOLEX)</p>	W	<p>Motor cable type: SVPM-J3HF1-B-3-02S                  Encoder cable type: SVEM-J3HF1-B-3 See page P.1-211 for details.                  * An above cable is an accessory.</p> <p>SVPM-J3HF1-B-3-02S</p> <p>Servo amplifier side Motor side</p> <table border="1"> <tr> <td>Mark</td> <td>Green / Yellow</td> <td>Pin</td> <td>Signals</td> </tr> <tr> <td>FG</td> <td>Red</td> <td>1</td> <td>FG</td> </tr> <tr> <td>U</td> <td>White</td> <td>2</td> <td>UPhase</td> </tr> <tr> <td>V</td> <td>White</td> <td>3</td> <td>VPhase</td> </tr> <tr> <td>W</td> <td>Blue</td> <td>4</td> <td>WPhase</td> </tr> </table> <p>SVEM-J3HF1-B-3</p> <p>Servo amplifier side Motor (encoder) end</p> <table border="1"> <tr> <td>Signals</td> <td>Pin</td> <td>Wire</td> <td>Pin</td> <td>Signals</td> </tr> <tr> <td>PS</td> <td>1</td> <td>White</td> <td>3</td> <td>PS</td> </tr> <tr> <td>L.G.</td> <td>2</td> <td>Black</td> <td>6</td> <td>L.G.</td> </tr> <tr> <td>MR</td> <td>3</td> <td>Red</td> <td>5</td> <td>MRR</td> </tr> <tr> <td>MRR</td> <td>4</td> <td>Black</td> <td>4</td> <td>MRR</td> </tr> <tr> <td>BAT</td> <td>9</td> <td>Green</td> <td>2</td> <td>BAT</td> </tr> <tr> <td>SD</td> <td>アース</td> <td>Shield</td> <td>9</td> <td>SD</td> </tr> </table>	Mark	Green / Yellow	Pin	Signals	FG	Red	1	FG	U	White	2	UPhase	V	White	3	VPhase	W	Blue	4	WPhase	Signals	Pin	Wire	Pin	Signals	PS	1	White	3	PS	L.G.	2	Black	6	L.G.	MR	3	Red	5	MRR	MRR	4	Black	4	MRR	BAT	9	Green	2	BAT	SD	アース	Shield	9	SD
	Mark		Green / Yellow	Pin	Signals																																																					
FG	Red	1	FG																																																							
U	White	2	UPhase																																																							
V	White	3	VPhase																																																							
W	Blue	4	WPhase																																																							
Signals	Pin	Wire	Pin	Signals																																																						
PS	1	White	3	PS																																																						
L.G.	2	Black	6	L.G.																																																						
MR	3	Red	5	MRR																																																						
MRR	4	Black	4	MRR																																																						
BAT	9	Green	2	BAT																																																						
SD	アース	Shield	9	SD																																																						
<p>[Motor and sensor pin allocation (sensor)] [Motor and sensor connection diagram (sensor)]</p> <p>1 Open                  2 Open                  3 Open                  4 Open                  5 Open                  6 CWLS output                  7 Open                  8 CCWLS output                  9 Open                  10 Power input (+)                  11 Open                  12 Open                  13 Open                  14 ORG output                  15 Power input (-)                  16 F.G.</p>	<p>[Motor and sensor pin allocation (sensor)] [Motor and sensor connection diagram (sensor)]</p> <p>1 Open                  2 Open                  3 Open                  4 Open                  5 Open                  6 CWLS output                  7 Open                  8 CCWLS output                  9 Open                  10 Power input (+)                  11 Open                  12 Open                  13 Open                  14 ORG output                  15 Power input (-)                  16 F.G.</p> <p>* Type of cable: D212-1-2EK See page P.1-212 for details.</p>																																																									

Cable type

Code	Specification	Cable type
A	2m	D214-1-2E
B	2m One end loose	D214-1-2EK
C	4 m	D214-1-4E
D	4m One end loose	D214-1-4EK
F	Robot cable 2m	D214-1-2R
G	Robot cable 2m one end loose	D214-1-2RK
H	Robot cable 4m	D214-1-4R
J	Robot cable 4m one end loose	D214-1-4RK

Cable connection diagram shows page P.1-207~  
 Great deal purchase both of cable and code.

Motorized Stage

- X
- XY
- Z
- Horizontal Z
- XYZ
- Goniometer
- Rotary
- Unit
- Controller

Linear Ball

CAVE-X Linear ball

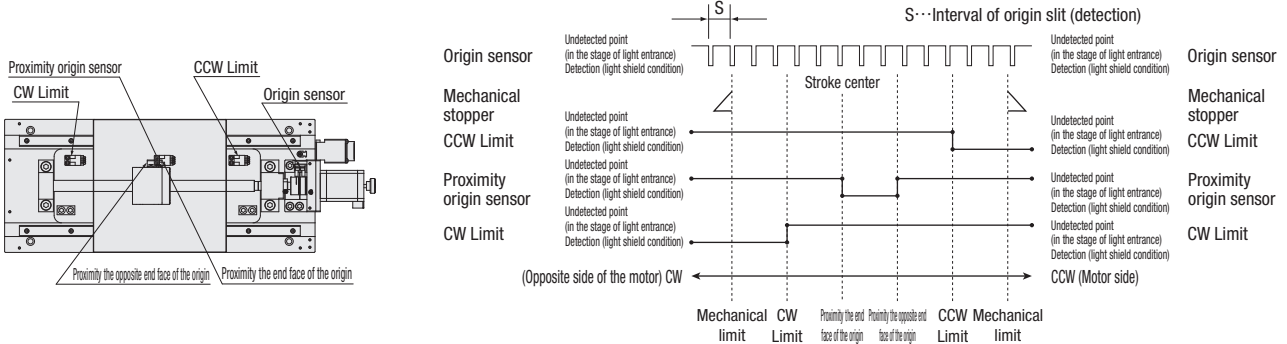
Cross Roller

Slide Guide

- φ40
- φ50
- φ60
- φ70
- φ80
- φ100
- φ120
- Other

## Electrical Specification: KXS Series

### Timing chart



Unit [mm]	Direction of CW ←		→ Direction of CCW				
	Reference coordinate	Mechanical limit	CW Limit	The proximity origin end face Stroke center	Proximity origin Opposite end face	CCW Limit	Mechanical limit
<b>KXS18100</b>	Return to origin	54	51	0	20	51	54
<b>KXS18200</b>	Return to origin	104	101	0	20	101	104
<b>KXS18300</b>	Return to origin	154	151	0	20	151	154
<b>KXS18400</b>	Return to origin	204	201	0	20	201	204
<b>KXS18500</b>	Return to origin	254	251	0	20	251	254
<b>The same</b>	Detection clearance of slit origin S=5 and 10 (By ball screw lead)						

- \* Applicable for motor code J and S.
- \* Return to origin means that is performed return to origin type 1 using DS102/DS112 series.
- \* Origin becomes any position till the origin sensor is detected shielded disk slit of the origin side after through the proximity end face.
- \* 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.

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

φ100

φ120

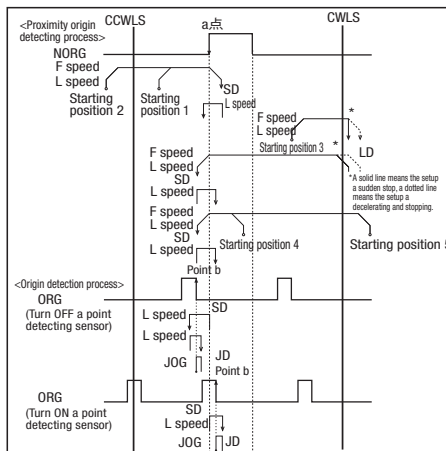
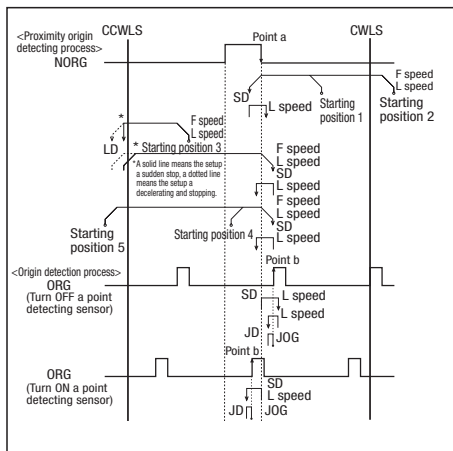
Other



**KXS series recommendation return to origin method**

**[Type 1]** Detect in the direction of CCW and perform detected process for CW edge (point a) of NORG signal. Next detect an edge of CCW side (point b) of ORG signal.

**[Type 2]** Detect in the direction of CW and perform detected process for CCW edge (point a) of NORG signal. Next detect on edge of CW side (point b) of ORG signal.



**[Type 7]**

After finished type1, perform detected process for CCW edge (point c) of TIMING signal.

**[Type 8]**

After finished type2, perform detected process for CW edge (point c) of TIMING signal.

Return to origin sequence ▶ P.1-201~

**Adaptive driver**

■ Driver ▶ P.1-205~

DC24 type input

Model	CRD5107P	SD5107P3-A22
Divisions	Micro step (1~1/250 [16 steps])	Normal (Full/Half)

AC100V input

Model	RKD507-A
Divisions	Micro step (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

Motorized Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Linear Ball

CAVE-X Linear ball

Cross Roller

Slide Guide

φ40

φ50

φ60

φ70

φ80

φ100

φ120

Other

1

138