

# High accuracy, Compact, Excellent

Providing powerful support for your automation design such as precision positioning or workpiece transportation.

## Single Axis Actuator

# SX

### High accuracy

High grade accuracies applied as standard.  
(for all standard grade products)

Guarantee repeatability positioning accuracy  $\pm 5\mu\text{m}$ . (Advance)  
Selectable high accuracy. ( $\pm 3\mu\text{m}$ )



### Compact

Low-profile achieved by the integral structure of blocks.

Block integral structure.  
Selectable high accuracy. ( $\pm 3\mu\text{m}$ )

### Excellent Cost vs. Performance

High grade specifications are offered at reasonable standard grade prices.  
High grade accuracy at standard grade prices.



# Cost VS. Performance

**SURUGA  
SEIKI**



# Single axis robot, actuators

## Single axis robot, actuators



Product Name	Single Axis actuator	SX15 • 20 • 26 • 30 • 45	Standard/Uncovered, non-bracket, Lubrication units MX type
Page		A-019 • 021 • 025 • 029 • 033	



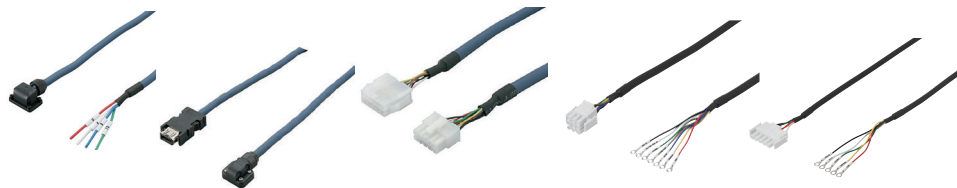
Attachment tools for single axis actuator SX	Single actuator SX30 motor wrap type
A-023 • 027 • 031 • 035	A-037



Single actuator SX45 motor wrap type	Coupling
A-039	A-042



Single actuator SX20 • 26 • 30 • 45 with motor Standard/covered type
A-043~052



Cable for single actuator SX with motor
A-056

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**SURUGA SEIKI CO., LTD. Sales Div**

Operation Hours(Japan time)Monday to Friday



## Structures and features

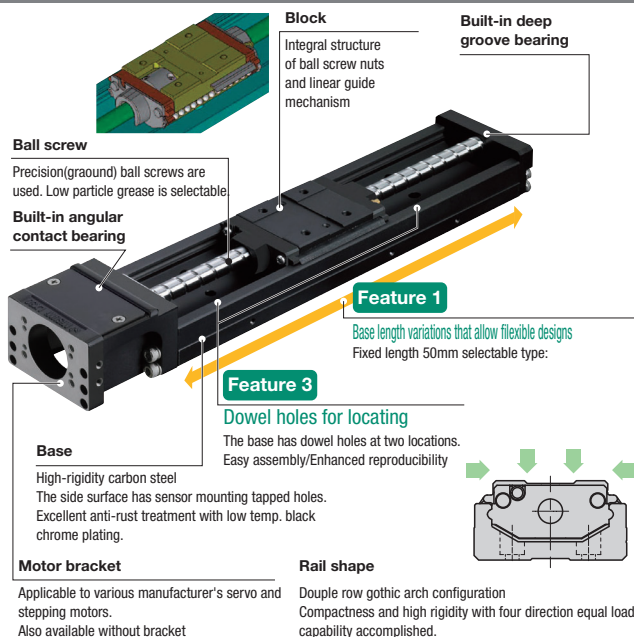
**Feature 1** Base length variations that allow flexible designs

**Feature 2** Space saving low-profile stage

**Feature 3** Locating dowel holes on the base

**Feature 4** Locating dowel holes on blocks (Cover type)

### Standard type

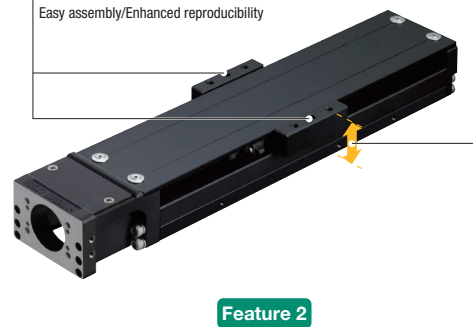


### Covered type

#### Feature 4

#### Locating dowel holes on blocks (Cover type)

Cover block has dowel holes at two locations. Easy assembly/Enhanced reproducibility



#### Feature 2

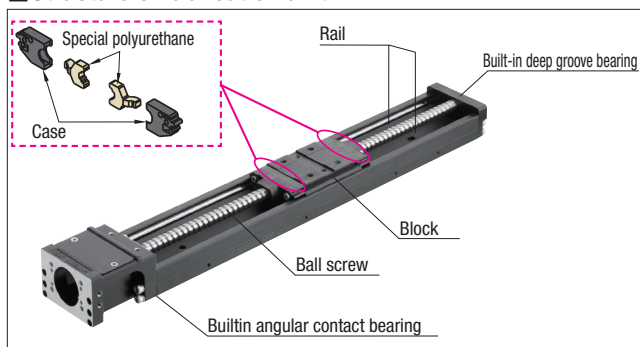
#### Low-profile stage

Block integral structure  
Cover type blocks also achieve low-profile

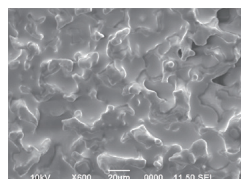
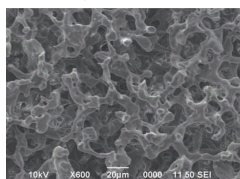
Cover type height	SX15	21mm
	SX20	27mm
	SX26	33mm
	SX30	40mm
	SX45	57mm

## LINEAR AXIS ACTUATOR LUBRICATION UNITS SERIES

### Structure of lubrication unit MX



### Enlarged photos of special polyurethane pores

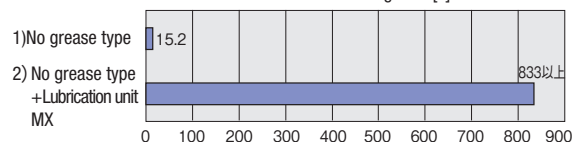


Grease impregnated special polyurethane provides appropriate supply of grease on the ball screw and rail.

### Features

- Long term maintenance-free condition
  - Lubrication unit MX is a self-lubrication unit constructed of grease-impregnated special polyurethane.
  - Oil film is always formed on the ball screw and rail, provides maintenance free for long period of time.
- Cost advantages
  - MX unit-equipped products significantly reduce lubrication frequency. To sharply reduce the load of a user required in maintenance and cost.

### Endurance test results Continuous testing time [h]



MX unit-equipped products showed no damages and kept good lubrication conditions even after exceeding 800hrs, while part seizure was observed with completely degreased samples within 20hrs.

\*These are not guaranteed values but reference values.

#### Test conditions

(1) Part number	SX2605-B1-300
(2) Installation orientation	Vertical test
(3) Load condition	15kgf load
(4) Test stroke	200mm
(5) Travel speed	136mm/s

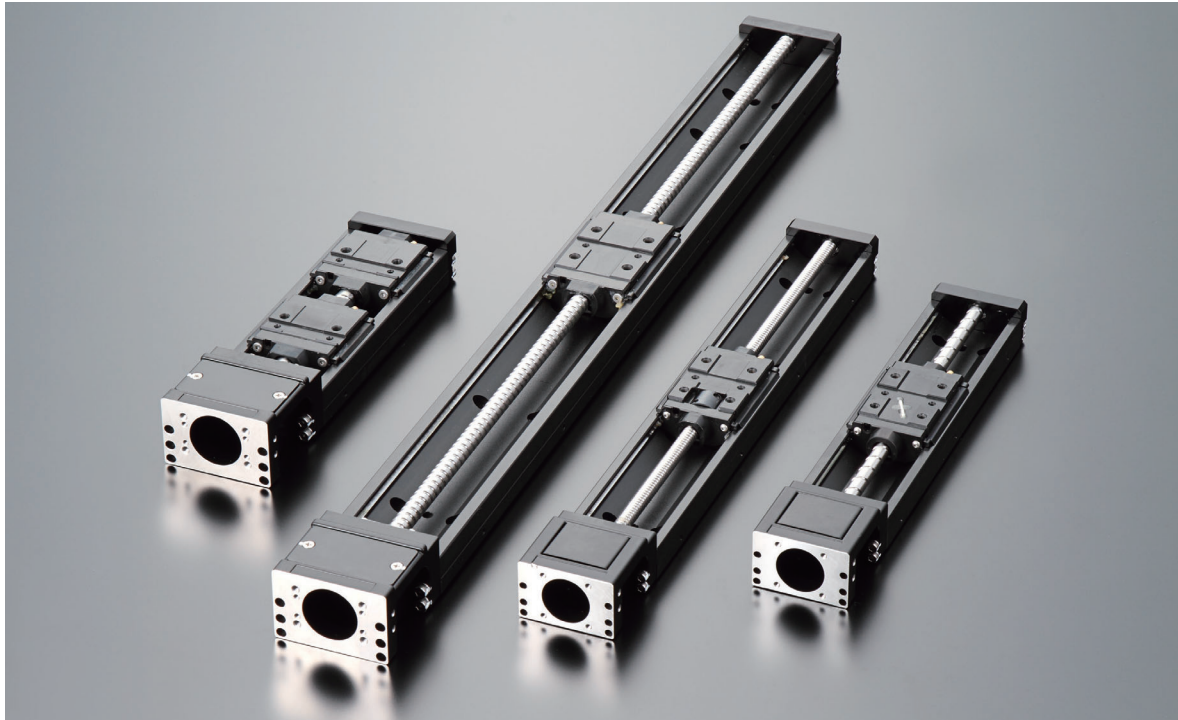
## Application Example of SX

Providing powerful support for your automation design such as precision positioning or workpiece transportation.

SX integrated with ball screw nuts and linear guide is a necessity for high-precision manufacturing process.

Applicable to high precision and high load. We can provide various types of screw lead

Providing powerful support for your automation design



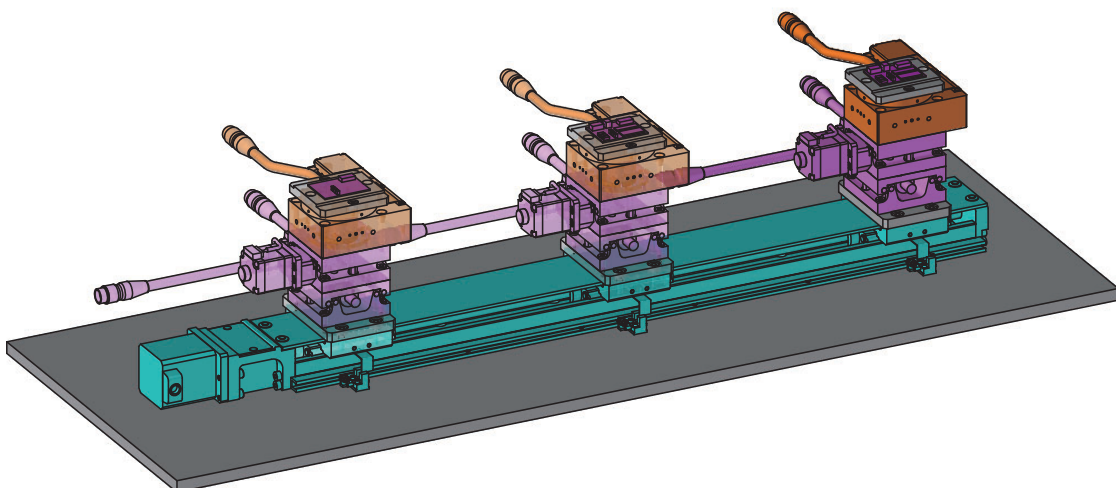
## Application example

### Components example

#### Outline

Using SX for components

Achieving reduction of machine element with using a long stroke system.

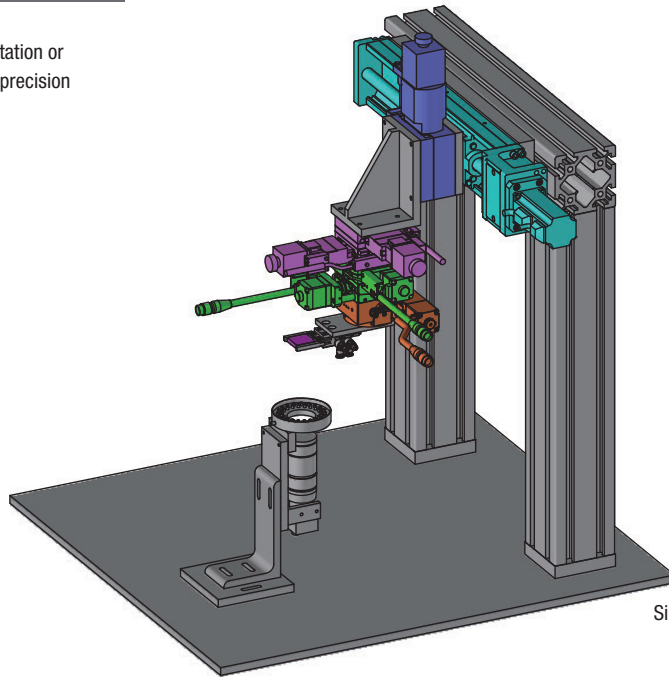


Single axis actuator : SXM3005C-3-R-600  
XY : KYG06020-C  
θ : KRB06011

## ■ Chip assembly device

### Outline

Using SX for chip assembly  
System for workpiece transportation or  
assembly combined with high-precision  
stages.

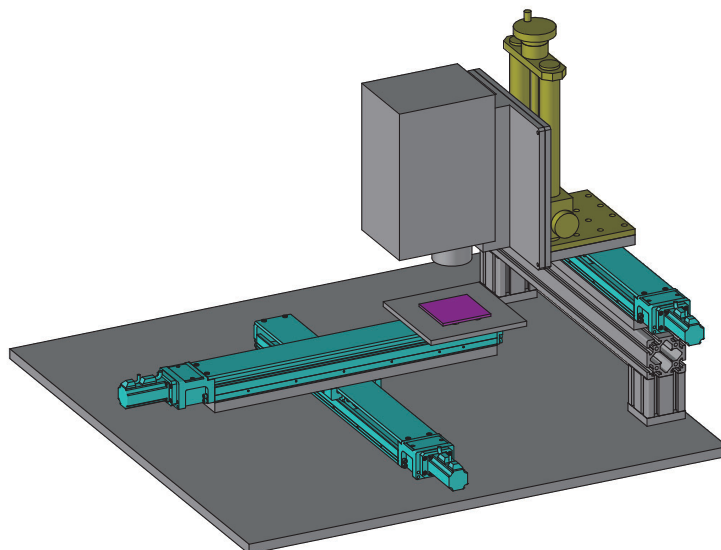


Single axis actuator : SX4510-B1-A4540-340  
Z : KS102-100-5  
XY : PMG615-L24AL-5  
TxTy : KAW06050-L  
 $\theta$  : KRB06011

## ■ LCD luminance inspection device

### Outline

Using SX for object focusing  
Change the inspection smoothly.



Single axis actuator : SX4520C-B1-A4540-590(3 pcs.)  
Z : B34

## Application Example of SX

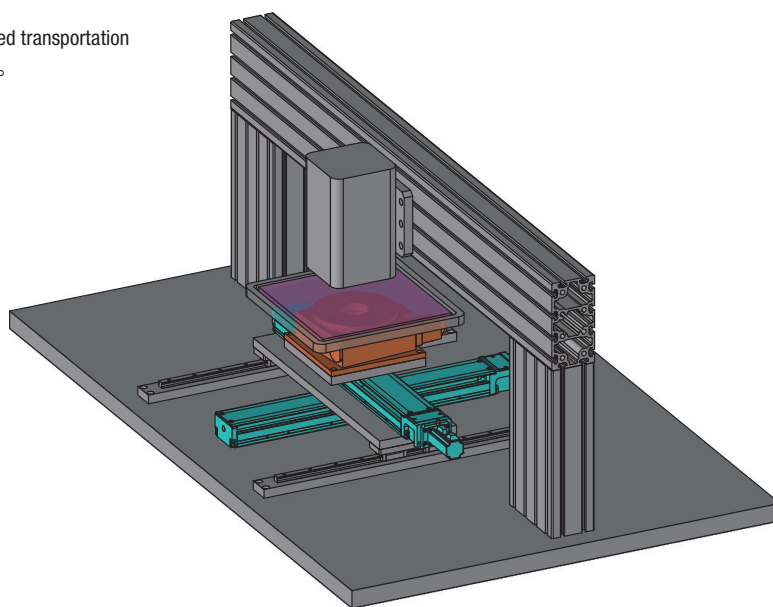
### Application example

#### ■ Laser processing machine

##### Outline

Using SX for laser radiation position adjustment

Workpiece handling, high-speed transportation or alignment to be carried out.



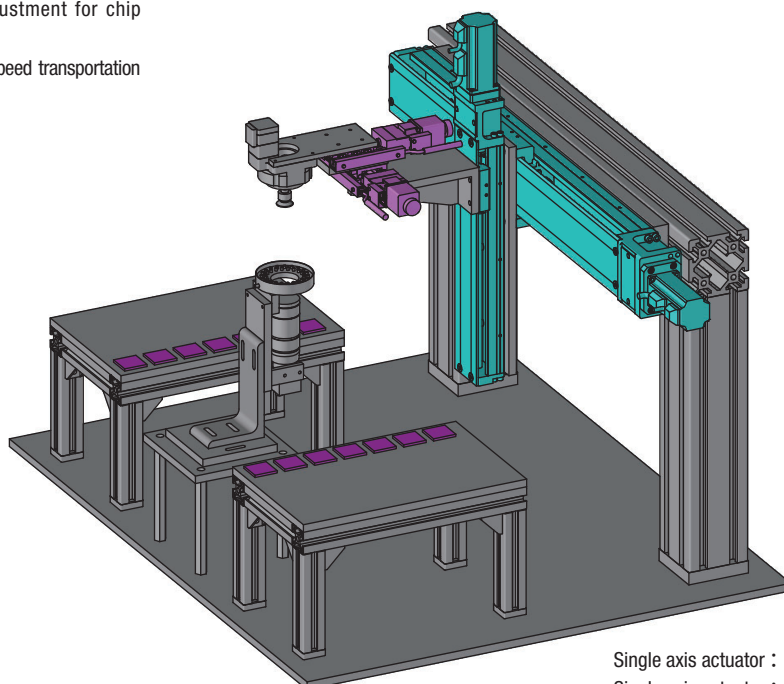
Single axis actuator : SX4520C-B1-A4540-590(2 pcs.)  
θ : KS402-180-5

#### ■ Chip transportation machine

##### Outline

SX is used in position adjustment for chip transportation.

Workpiece handling or high-speed transportation to be carried out.



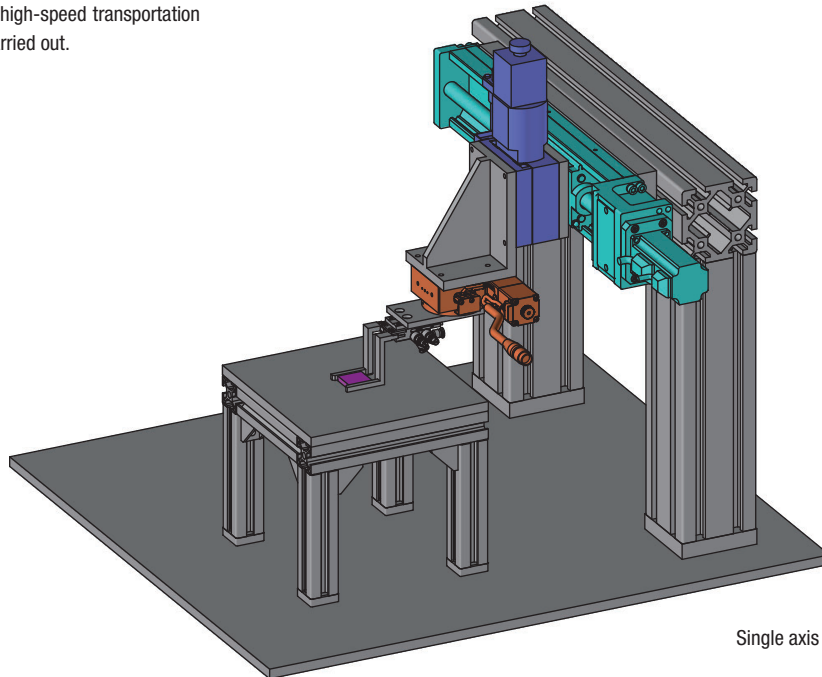
Single axis actuator : SX3005C-B1-A3040-300  
Single axis actuator : SX4520C-B1-A4540-590  
XY : PMG615-R24AR-5



## Fuel cells component assembly device

### Outline

Using SX for fuel cells assembly of vehicle  
Workpiece handling, high-speed transportation  
or alignment to be carried out.

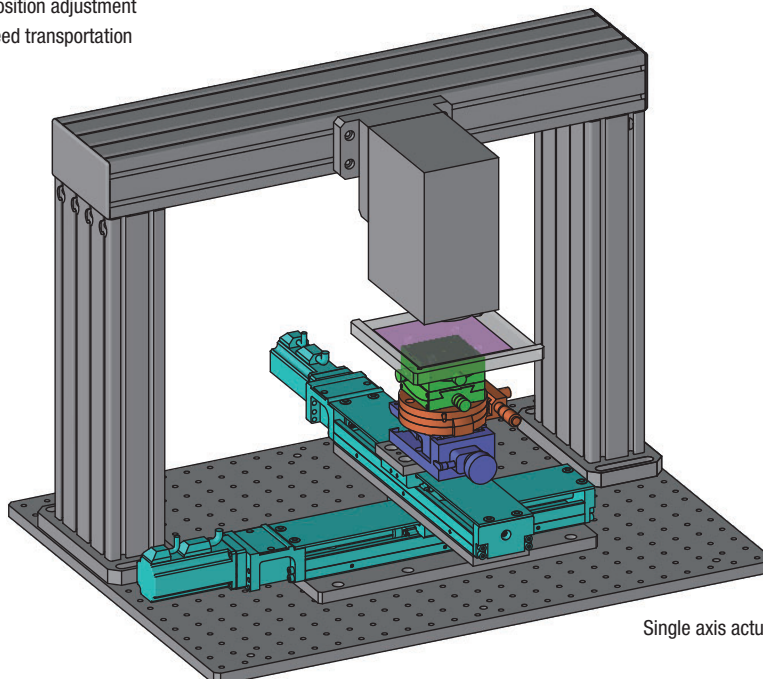


Single axis actuator : SX4510-B1-A4540-340  
 $\theta$  : KRB06011

## Layer thickness measurement system

### Outline

Using SX for laser radiation position adjustment  
Workpiece handling, high-speed transportation  
or alignment to be carried out.



Single axis actuator : SX3005C-B1-A3040-300  
Z : —  
 $\theta$  : B43-85N  
TxTy : B55-60NR



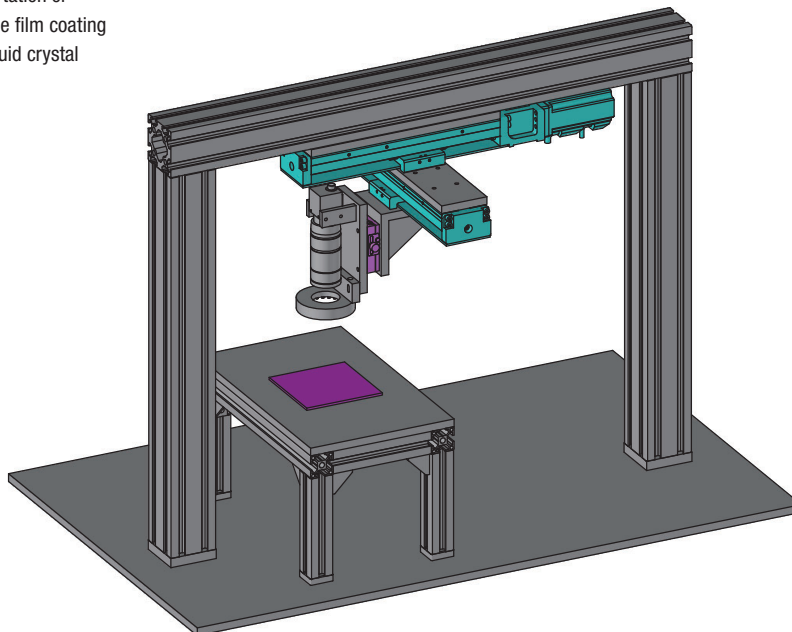
## Application Example of SX

### Application example

#### Film coating alignment machine

##### Outline

Using SX for workpiece transportation or focusing the initial position in the film coating alignment that is located the liquid crystal molecules to the one direction.

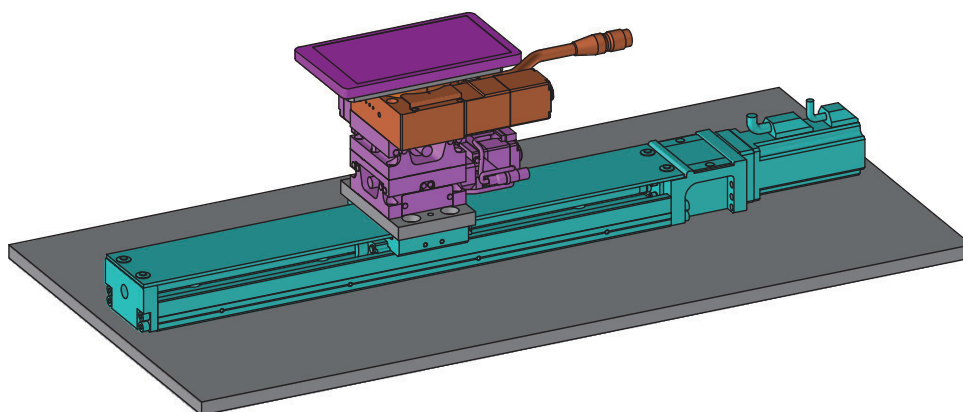


Single Axis actuator : SX3005C-B1-A3040-250(2 pcs.)  
Z : BSS16-60CZR

#### Device for sticking display panel

##### Outline

Using SX for smart phone panels assembly  
Panel transportation or positioning to be carried out.

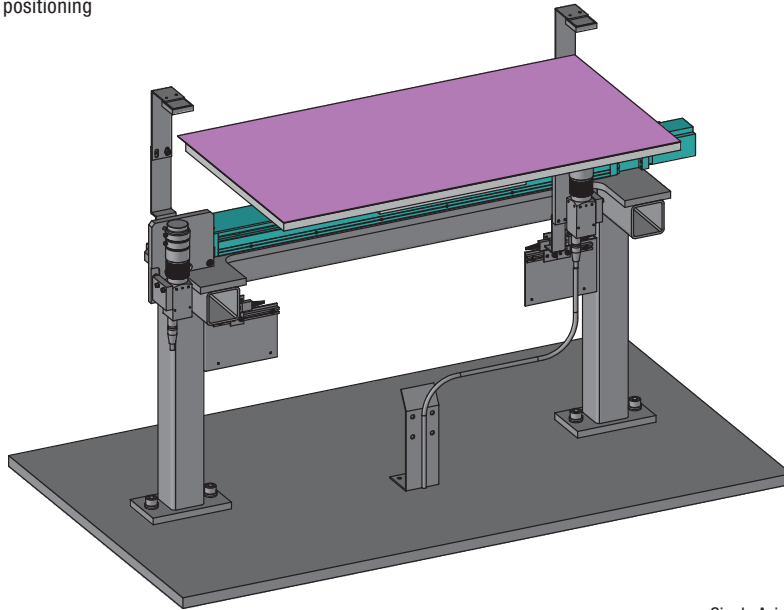


Single Axis actuator : SX3010C-B1-A3040-400  
X : KXG06020-C  
Y : KXG06020-C

## ■ Positioning adjustment, recognition

### Outline

Using SX for workpiece positioning or adjustment after positioning  
It is suitable for a precision positioning

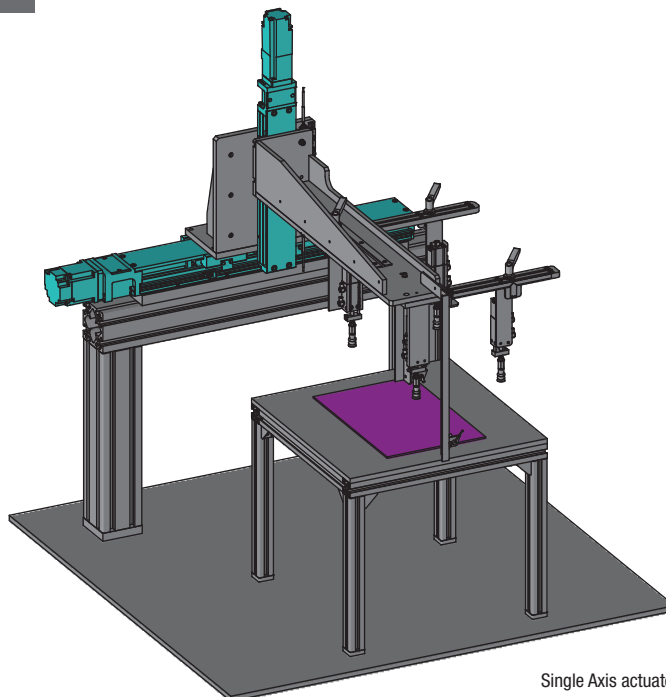


Single Axis actuator : SX3005C-B1-A3040-600

## ■ Panel transportation machine

### Outline

Using SX for panel transportation  
Achieving a high—speed transportation with SX that attached X-axis and Y-axis.



Single Axis actuator : SX3005C-S2-A3040-300  
Single Axis actuator : SX4520C-B2-A4560-540-EP3

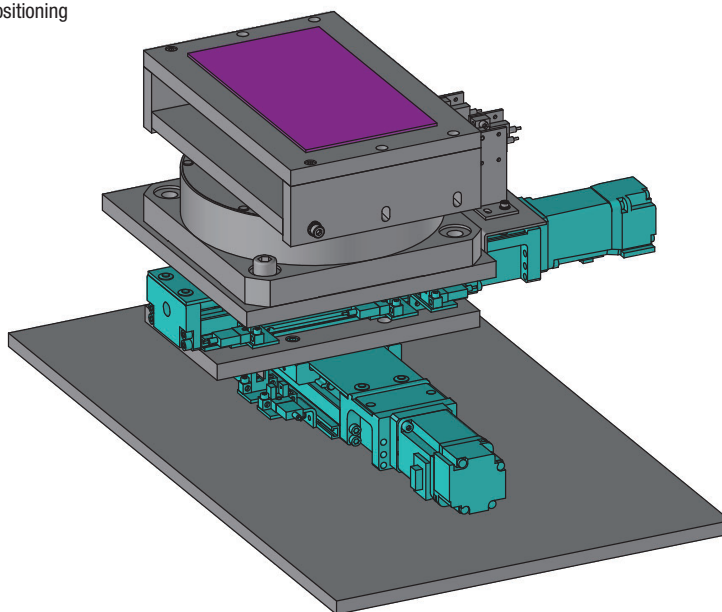
## Application Example of SX

### Application example

#### ■ XYθ-Table

##### Outline

Two of SX and rotation stage application example  
Providing a variety of the motion for positioning

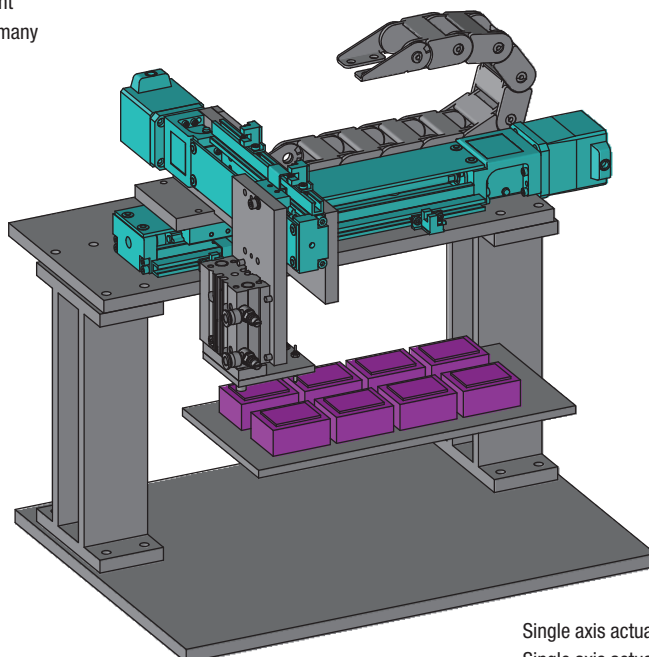


Single axis actuator : SX3010C-S2-A3040-200(2 pcs.)

#### ■ XYZ-direction movable continuity test mechanism

##### Outline

Using SX for XYZ three-direction adjustment  
It is suitable for a precision positioning of many workpiece in a short time.



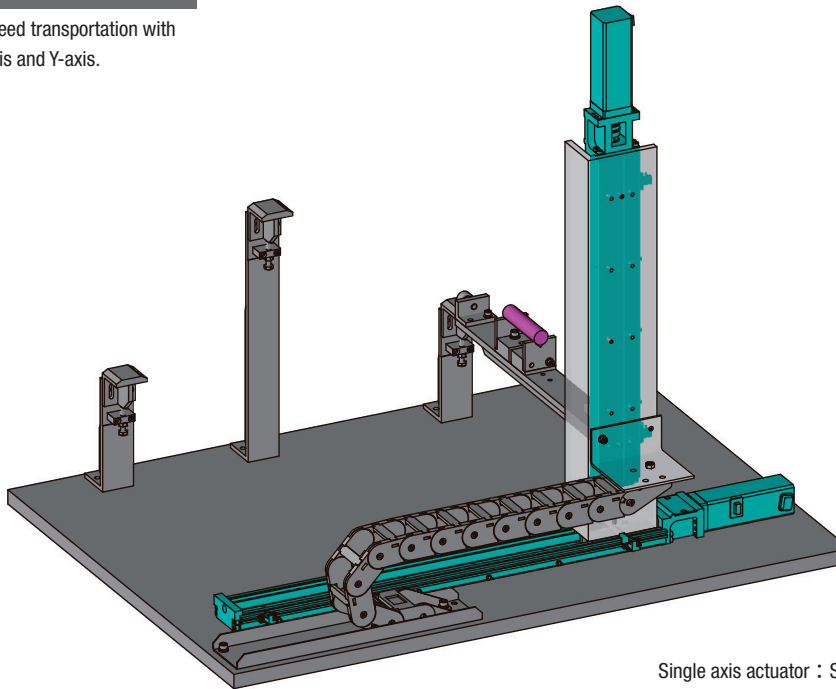
Single axis actuator : SXM2001C-T4-D4-3-2-L-150  
Single axis actuator : SXM2602C-T4-D4-3-2-L-250



## XZ-stage

### Outline

Achieving a high — speed transportation with SX that attached X-axis and Y-axis.

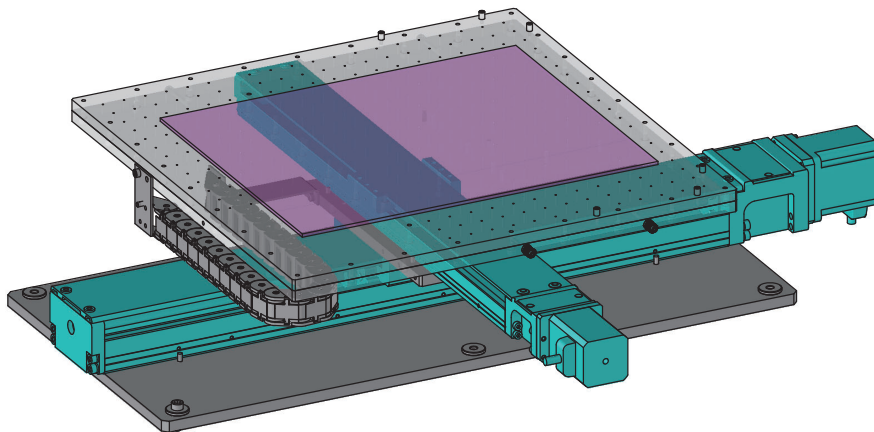


Single axis actuator : SXM3010-A2B-AM10-3-2-R-450  
Single axis actuator : SXM3010-A2B-AM10-3-2-L-600

## XY-stage

### Outline

Long stroke SX are combined.  
Efficiently move a big workpiece



Single axis actuator : SX4510C-B1-T4560-590  
Single axis actuator : SX3005C-B1-T3042-500

## Application Example of SX

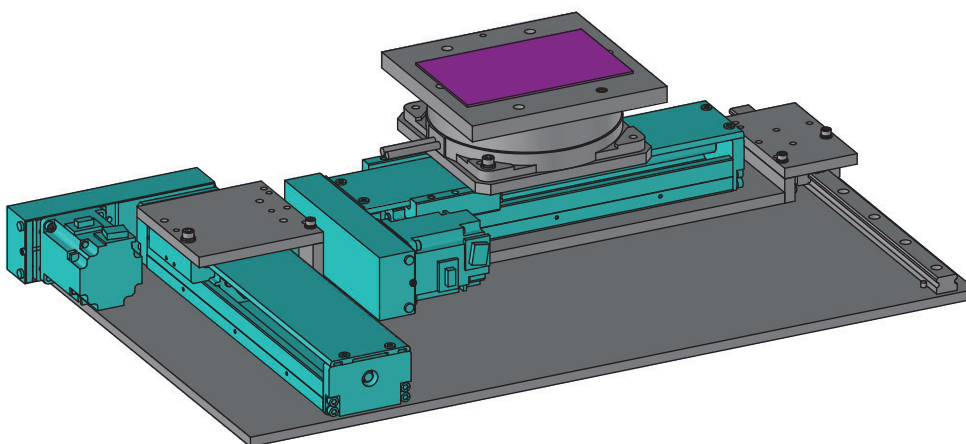
### Application example

#### ■ XYθ-Table

##### Outline

Using the wrap type SX

Can be set at an optimal location even with a limited height.



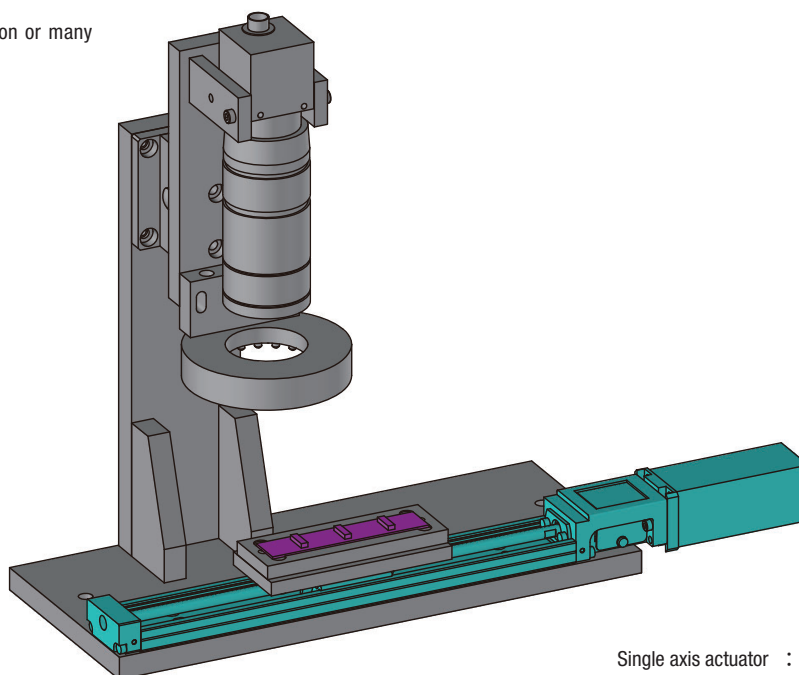
Single axis actuator : SXR4510C-B1-RA4560-340(2 pcs.)

#### ■ Multi-point continuous inspection mechanism

##### Outline

Using multi-block type SX

Applicable multi — point inspection or many workpiece

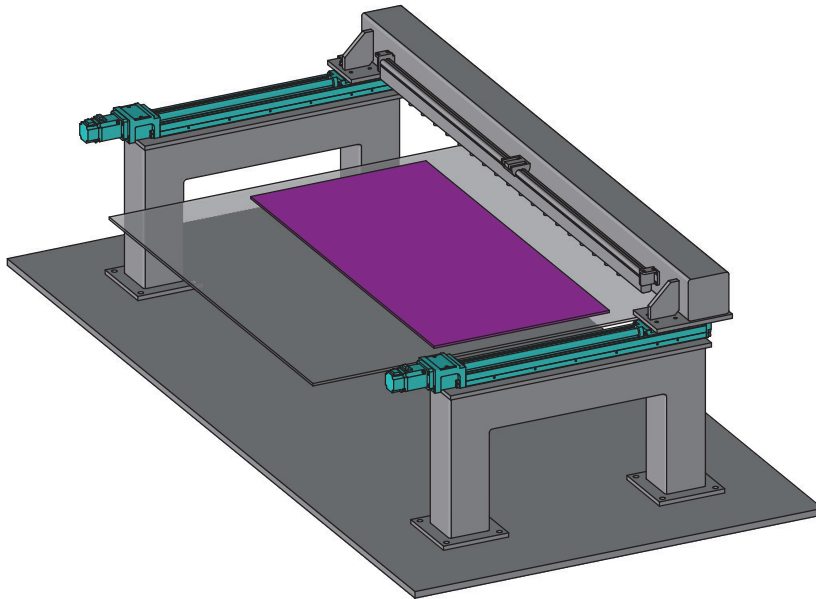


Single axis actuator : SX1502-B1-A1525-200

## ■ Using SX for the static electricity remover

### Outline

Long stroke SX is suitable for a big workpiece.  
SX has a very fascinating large variety of strokes.

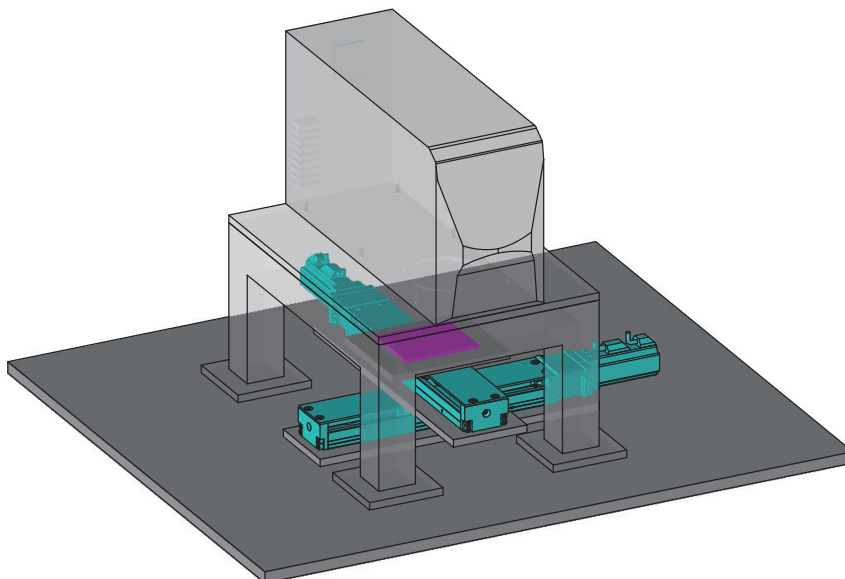


Single axis actuator : SX4510-B1-A4540-590(2 pcs.)

## ■ Printing system

### Outline

The workpiece is moved by using 2-axis SX  
Applicable precision adjustment such as  
printing with SX



Single axis actuator : SX3005C-B1-A3040-300(2 pcs.)