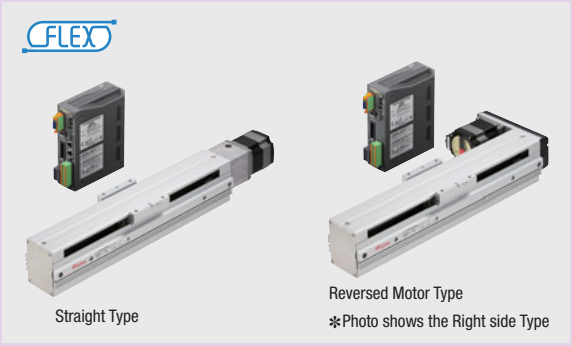
Electric Linear Slides
EAS Series αSTEP AZ/AR Equipped

<Additional Information>
● Technical reference ➜ Page H-1
● Regulations & Standards ➜ Page I-2



Straight Type

Reversed Motor Type
✻Photo shows the Right side Type

Electric linear slides that offer high performance, from low speed to high speed or with light loads or heavy loads, regardless of demanding operating conditions.

- Highly Accurate and Responsive Positioning Operation
- Compact, Powerful and Suitable for a Wide Variety of Applications
- Incorporates a Ball Screw Design
- Supports Large Transportable Mass
- Easy Belt Replacement (Reversed Motor Type)

FLEX What is FLEX?
FLEX is the collective name for products that support I/O control, Modbus (RTU) control, and FA network control via network converters.
These products enable simple connection and simple control, shortening the total lead time for system construction.

Features

Wide Variety of Products Broadens Equipment Design and Performance

The product line for compact, high accurate, and rigid slides also includes reversed motor types with shorter overall length.
The **AZ** Series or **AR** Series are equipped with standard motor. Various products are available.

Motor Type

αSTEP **AZ** Series
- Battery-Free, Absolute Sensor Equipped
- Positioning Information is Available without a Sensor
- High Reliability with Closed Loop Control
- High Efficiency Technology Reduces Motor Heat Generation and Saves Energy

Built-in Controllor Type

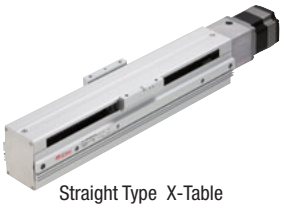
Pulse Input Type

αSTEP **AR** Series
- High Reliability with Closed Loop Control
- High Efficiency Technology Reduces Motor Heat Generation and Saves Energy

Built-in Controllor Type

Pulse Input Type

Linear Slides


Straight Type X-Table


Straight Type Y-Table


Reversed Motor Type X-Table


Reversed Motor Type Y-Table

● This photo shows **EAS6** (Width 75.4 mm×Height 83 mm).

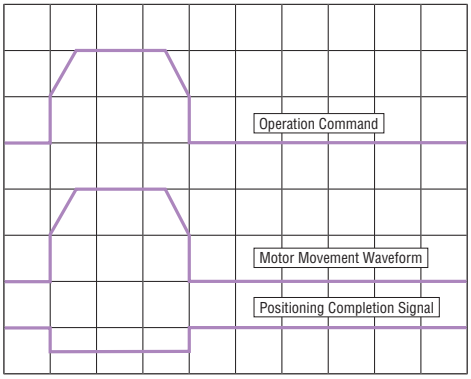
Capable of a Variety of Movements, Regardless of the Operating Conditions!

Offering the ability from low speed to high speed or with light loads or heavy loads, these electric linear slides are easier to use and offer high performance regardless of demanding operating conditions.

●Quick and Responsive

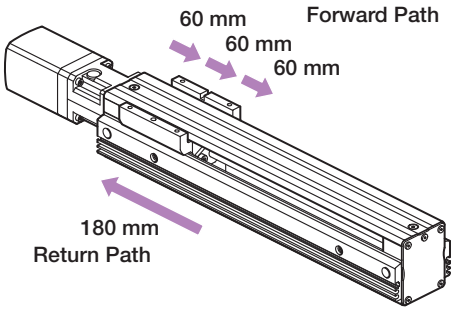
The high response of the closed loop motor and drive system provides superior short-distance positioning.

Since the αSTEP **AZ/AR** Series operates synchronously with pulse commands and generates high torque with a compact body, it offers excellent acceleration performance and response.



Example Product:
Product Name: **EAS4**
Lead Screw Pitch: 12 mm
Power Supply Input: 230 VAC

Example Operation:
Horizontal Load Mass: No load
Inching Drive: 60 mm (forward path 3 times), 180 mm (return path once)
Operating Speed: 800 mm/s
Acceleration: 20 m/s² (2 G)



Actual movement of the electric linear slide in relation to operation commands

This contributes to an increase in machine throughput.

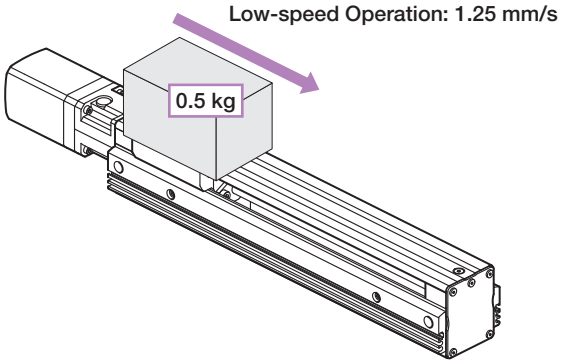
●Stability at Low Speeds

Thanks to the closed loop motor drive system smooth drive function*, resolution can be improved without a mechanical element. As a result, speed fluctuation is minimal even at low speeds, leading to improved stability.

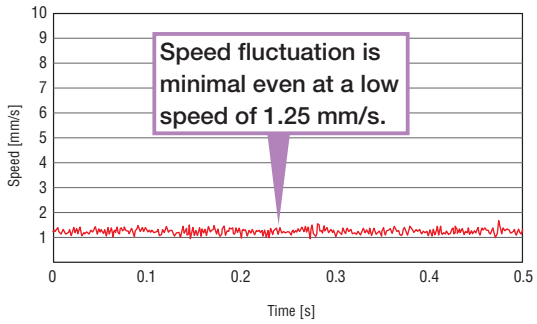
*About the smooth drive function:
The smooth drive function automatically microsteps based on the same traveling amount and traveling speed used in the full step mode, without changing the pulse input settings.

Example Product:
Product Name: **EAS4**
Lead Screw Pitch: 12 mm
Power Supply Input: 230 VAC

Example Operation:
Horizontal Load Mass: 0.5 kg
Running Current: 100%
Minimum Travel Amount: 0.01 mm
Operating Speed: 1.25 mm/s



Actual Slide Table Speed in Relation to Operation Commands (1.25 mm/s)



Speed fluctuations are minimal even at low speed.

●High-Speed

αSTEP AZ Equipped

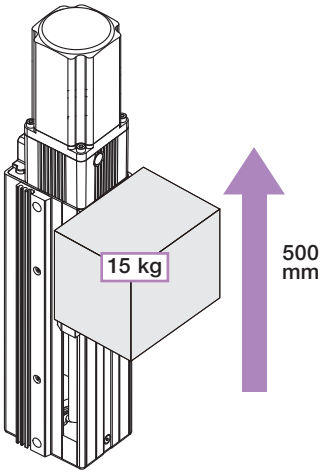
αSTEP AR Equipped

Only at Oriental Motor!

The positioning time, operating speed and acceleration can all be easily determined.
The product can be selected while estimating the movement from the same graph, even under changing operating conditions such as no load or inching.
Let our technical team help find the right actuator based on your profile demands.

Example Product:
Product Name: **EAS6**
Lead Screw Pitch: 6 mm
Power Supply Input: 230 VAC

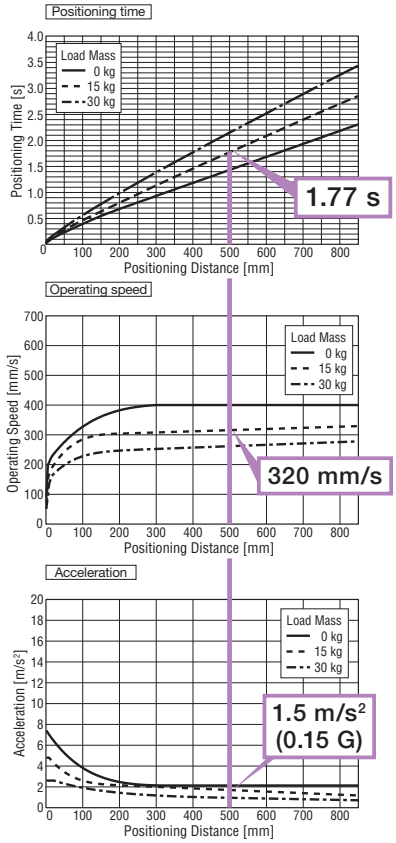
Example Operation:
Load Mass: 15 kg
Positioning Distance: 500 mm
Drive Direction: Vertical



High-Speed with a Heavy Load

High-speed is possible when transporting a heavy load in a vertical direction.

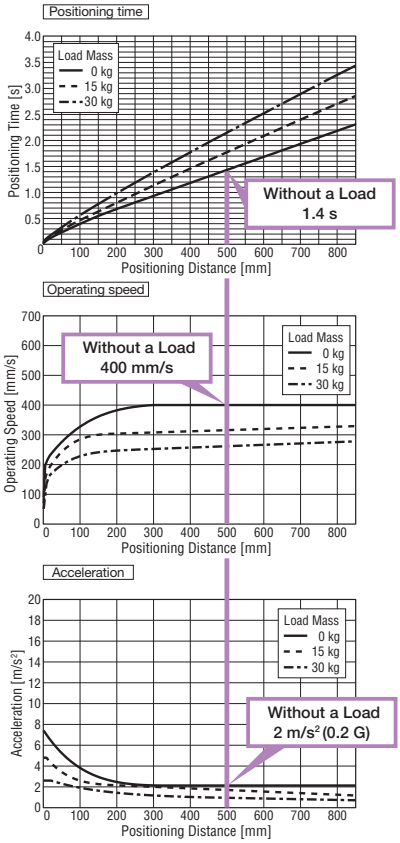
Load Mass: 15 kg
Positioning Distance: 500 mm
Positioning Time: 1.77 s
Operating Speed: 320 mm/s
Acceleration: 1.5 m/s² (0.15 G)



High-Speed with a Light Load

Operation is possible at an even higher speed when the load is absent, for example on the return.

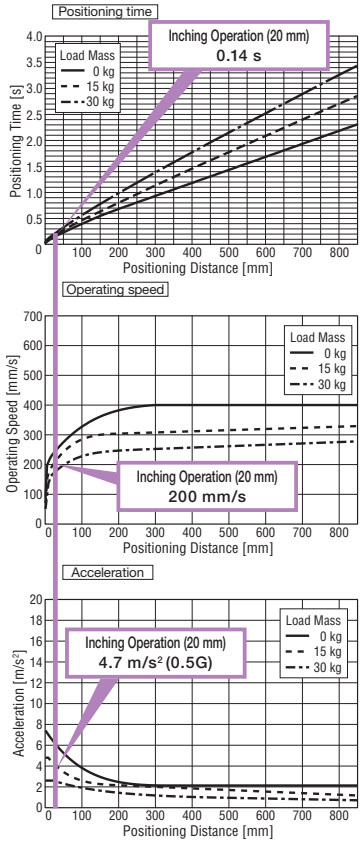
Load Mass: 0 kg
Positioning Distance: 500 mm
Positioning Time: 1.4 s
Operating Speed: 400 mm/s
Acceleration: 2 m/s² (0.2 G)



High-Speed during Inching Operation

Operation is possible at high speed during inching operation over short distances.

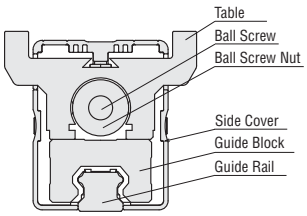
Load Mass: 15 kg
Positioning Distance: 20 mm
Positioning Time: 0.14 s
Operating Speed: 200 mm/s
Acceleration: 4.7 m/s² (0.5 G)



Compact and Powerful!

●Compact, High Accuracy, High Rigidity Slides

This electric linear slide incorporates a ball screw and a THK-manufactured LM Guide* as the guide. Since the high-accuracy LM Guide is directly installed in the enclosure base, these slides are suitable for applications which require traveling parallelism. (Traveling parallelism 0.03 mm) Being compact and stiff, this series is effective in supporting large transportable mass.



*"LM Guide" is a registered trademark of THK Co., Ltd.

For **EAS6**

◇**EAS6** Type Transportable Mass

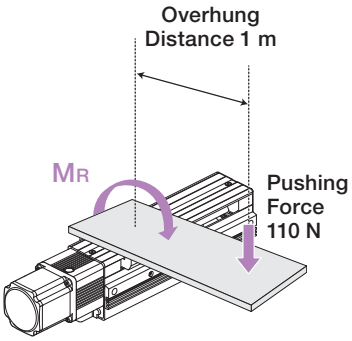
- Max. Horizontal Transportable Mass: 60 kg
- Max. Vertical Transportable Mass: 30 kg

◇Horizontal Installation

Even if the overhung length is 1 m, a pushing force of up to 110 N is possible.

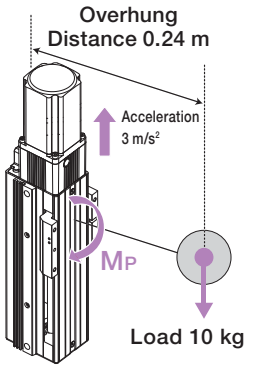
◇Vertical Installation

If the overhung length is 0.24 m, a load of up to 10 kg may be transported.



Static Permissible Moment

The moment load permitted by the linear guide while stopped



Dynamic Permissible Moment

The moment load permitted by the linear guide during operation

The pushing force of the load are values calculated from the **EAS6** static permissible moment of 110.0 N·m and dynamic permissible moment of 31.8 N·m. (The weight of the board has not been taken into account.)

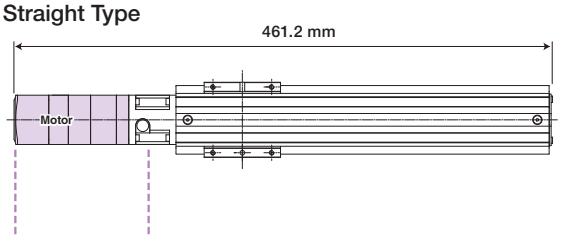
Dynamic Permissible Moment [N·m]	MP: 31.8 MY: 10.3 MR: 40.6
Static Permissible Moment [N·m]	MP: 86.0 MY: 34.0 MR: 110.0

●Direction of Motor Installation

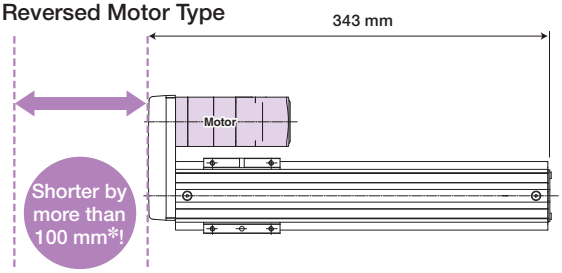
Reversed Motor types are provided for all electric linear slides. This contributes to a shorter overall length and space savings.

EAS4 with Electromagnetic Brake Type Stroke 200 mm

Straight Type



Reversed Motor Type

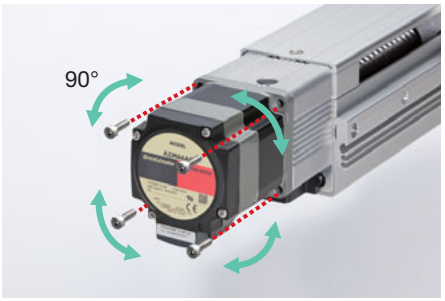


*When electromagnetic brake is installed

●Cable Outlet Direction

Rotatable in 4 directions (3 directions for Reversed Motor types)

Motor cable can be changed to any direction by simply rotating the motor. There is no need to leave space behind the motor since the cable outlet is on one side of the motor, allowing for easy connection and saving space.

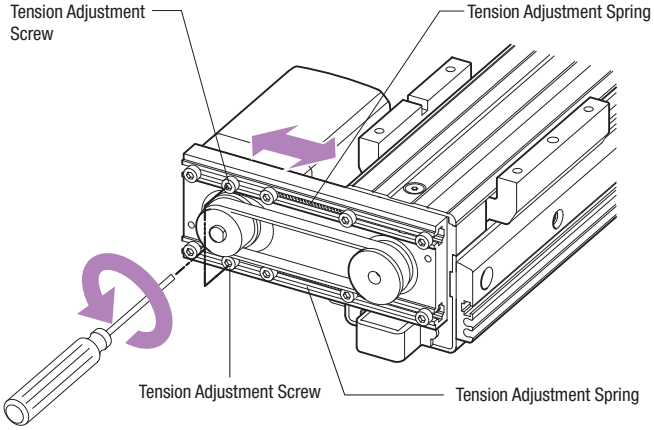


Easy Belt Replacement (Reversed Motor Type)

Thanks to Oriental Motor's unique belt tension adjustment mechanism, belt replacement is easy.

αSTEP AZ Equipped

αSTEP AR Equipped

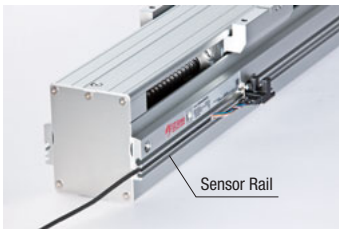


If the screw is loosened, the belt tension is adjusted to an appropriate value by the force of the spring.

Select from Types With/ Without Sensor Rail

With Sensor Rail

Sensors (sold separately) can be fixed to the sensor rails on the left and right sides of the slider.

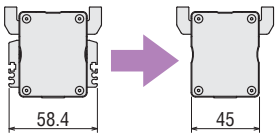


Without Sensor Rail

When sensors will not be used or when a sensor is installed somewhere other than the slider, the product without sensor rails is recommended.
Space can be reduced and the design can be minimized.

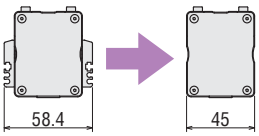
●**EAS4** X-Table

With Sensor Rails | Without Sensor Rails



●**EAS4** Y-Table

With Sensor Rails | Without Sensor Rails



The slider width is reduced by 13 mm

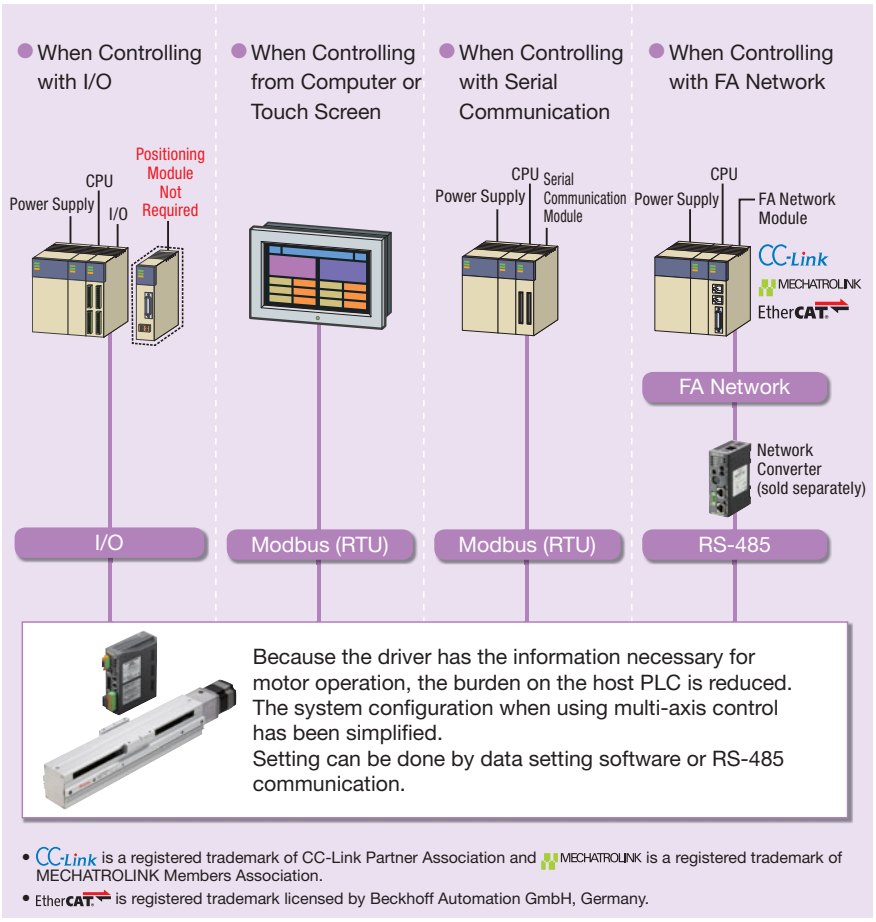
2 Driver Types Available to Match the System Configuration

Built-in Controller Type FLEX

With this type, the operating data is set in the driver, and is then selected and executed from the host system. Host system connection and control are performed with any of the following: I/O, Modbus (RTU), RS-485, or FA network. By using a network converter (sold separately), CC-link, MECHATROLINK or EtherCAT communication are possible.

FLEX

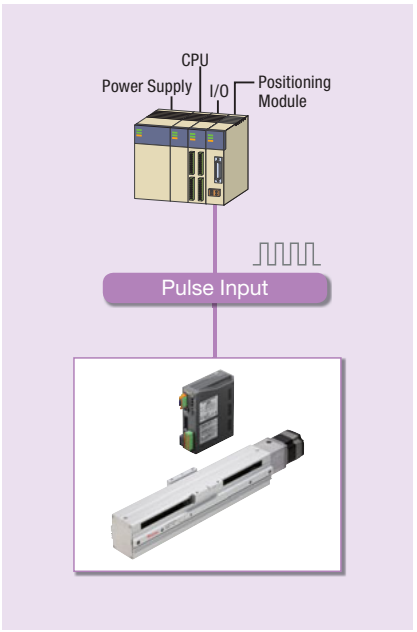
FLEX is the collective name for products that support I/O control, Modbus (RTU) control, and FA network control via network converters. These products enable simple connection and simple control, shortening the total lead time for system construction.



- CC-Link is a registered trademark of CC-Link Partner Association and MECHATROLINK is a registered trademark of MECHATROLINK Members Association.
- EtherCAT is registered trademark licensed by Beckhoff Automation GmbH, Germany.

Pulse Input Type

This type executes operations by inputting pulses into the driver. It controls the motor using a positioning module (pulse generator).



Set and Operate Easily from a PC

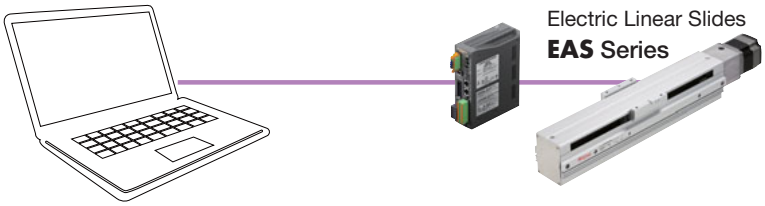
By using the data setting software **MEXE02**, data setting, saving, actual operation, and confirmation via each monitor function can be performed easily on a computer.

αSTEP AZ Equipped

αSTEP AR Equipped

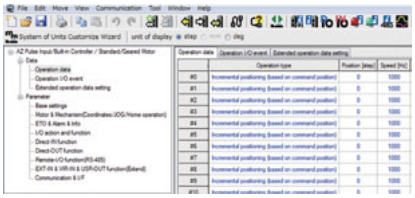
Data Setting Software **MEXE02**

The data setting software **MEXE02** can be downloaded from the website.



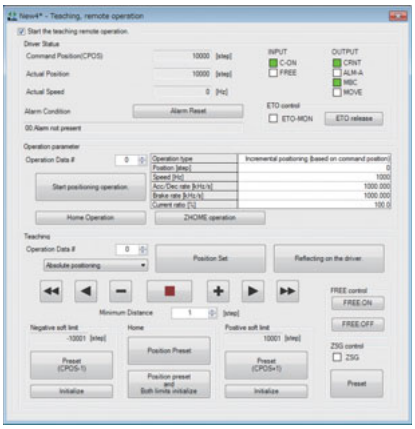
●Operating Data/Parameter Settings

You can easily set and save the operating data and parameters on a computer. And then by forwarding the saved data when you replace the driver, etc. the settings will be the same.



●Teaching and Remote Operation

Data setting software can be used to drive the motor. This can be used for teaching or test drive purposes.



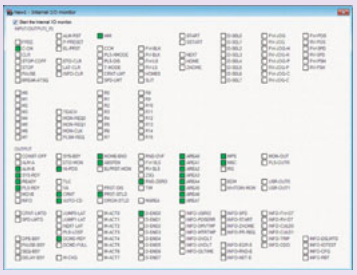
●Multi-Monitoring Compatible

Multi-monitoring enables remote operation or teaching while monitoring.

Various Monitoring Functions

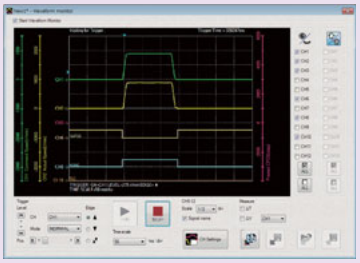
●I/O Monitoring

The status of the I/O wired to the driver can be checked on a computer. This can be used for post-wiring I/O checks or I/O checks during operation.



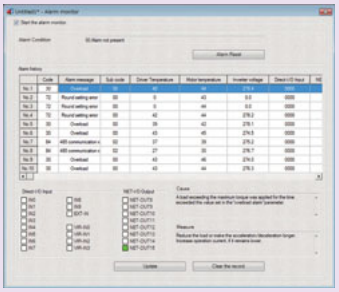
●Waveform Monitoring

The operating status of the motor (such as command speed and motor load factor) can be checked from an oscilloscope-like image. This can be used for equipment start-up and adjustment.



●Alarm Monitoring

When an abnormality occurs, the details of the abnormality and the solution can be checked.



Standardized Wiring, Control, and Maintenance Parts

Various mechanical components equipped with **αSTEP AZ** Series and **αSTEP AR** Series are available.
Wiring, control, and maintenance parts have been standardized, since the same motors and drivers are equipped, which reduces the startup time and simplifies operation.

Battery-Free, Absolute Sensor Equipped

αSTEP AZ Series

αSTEP AZ Series Equipped

Electric Linear Slides **EZS** Series | Electric Linear Slides **EAS** Series | Electric Cylinders **EAC** Series | Compact Linear Actuators **DRS2** Series | Hollow Rotary Actuators **DGII** Series

αSTEP AR Series

αSTEP AR Series Equipped

Electric Linear Slides **EZS** Series | Electric Linear Slides **EAS** Series | Electric Cylinders **EAC** Series | Hollow Rotary Actuators **DGII** Series

Merits of Standardization

●Wiring Standardization
Labor used for electrical design and wiring can be saved, since the I/O pin assignment is the same.

●Control Standardization
These products can be operated via the same method, since the control method is the same. For the network control, the remote I/O and the command code are also the same. The labor of making the program can be eliminated.

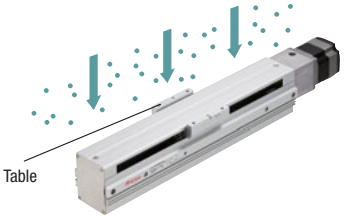
●Maintenance Parts Standardization
Maintenance parts can be minimized, since the motor, driver, and cable are common to all. Management costs (parts cost, management space) can be reduced.

αSTEP AZ Equipped
αSTEP AR Equipped

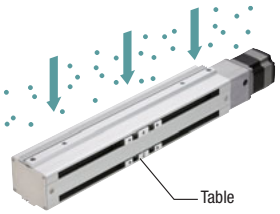
Product Line

Table	Straight Type	Reversed Motor Type (Right side / Left side)
X-Table*1		 Photo shows the right side type
Y-Table*2		 Photo shows the right side type

● A built-in controller type and pulse input type are available, in both AC input and DC input types.
*1 Infiltration of falling foreign particles can be reduced when installed horizontally.



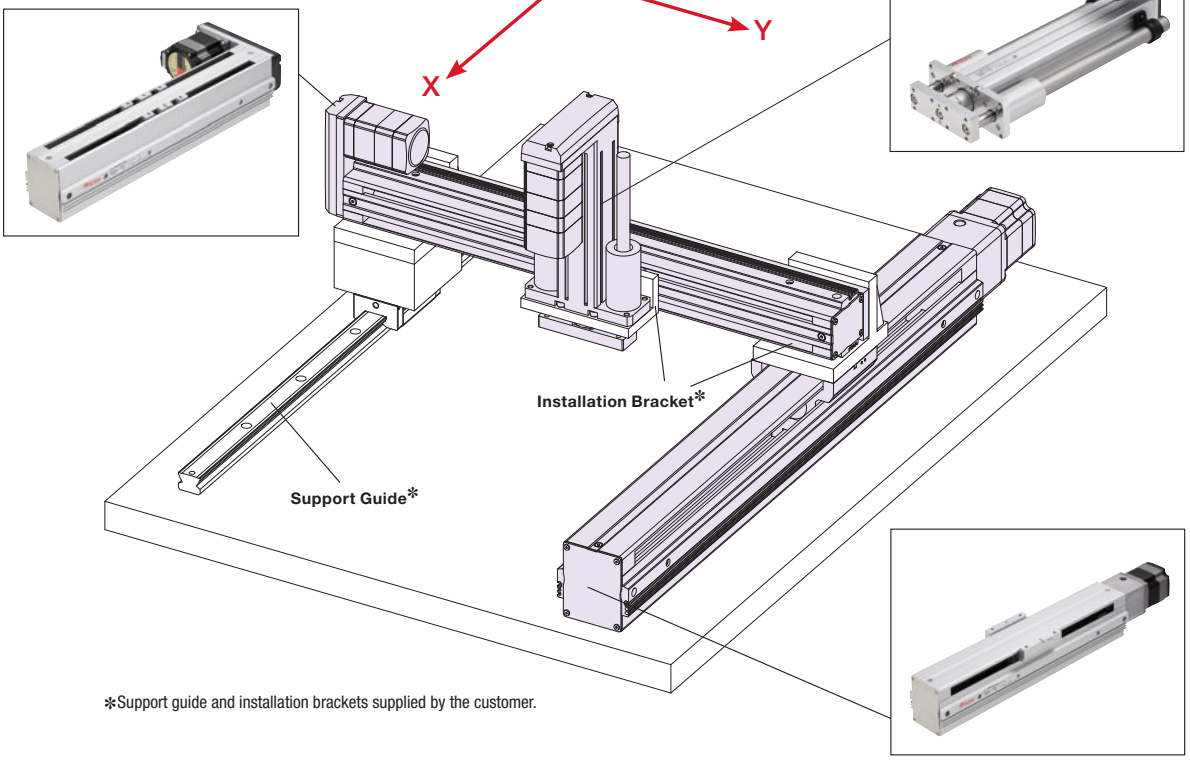
*2 Infiltration of falling foreign particles can be reduced when wall-mounted.



The image below shows a three axes system using the electric linear slide **EAS** Series on the X-Y axis and the electric cylinder **EAC** Series on the Z axis.

Z-Axis Electric Cylinders **EAC** Series
Reversed Motor Type with Shaft Guide Cover
Space-saving due to the reversed motor.

Y-Axis Electric Linear Slides **EAS** Series
Reversed Motor Type
Space-saving due to the reversed motor.



*Support guide and installation brackets supplied by the customer.

X-Axis Electric Linear Slides **EAS** Series
Straight Type