



# Linear and Rotary Actuators

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Introduction

EZ limo EZS II  
Motorized Linear Slides  
Accessories  
Installation

EZ limo EZC

EZ limo EZHC  
EZ limo EZHP  
Motorized Cylinders

Accessories  
Installation

DRL

Accessories  
Installation  
Compact Linear Actuators

DG

Accessories  
Installation  
Hollow Rotary Actuators

# Overview of Linear and Rotary Actuators

Motors offer excellent controllability and are therefore used as the drive sources of various automated equipment. In many cases, a motor is combined with various mechanical components such as a ball screw, belt and pulley, and rack and pinion, to convert the motor rotation to a different type of motion needed to drive the equipment. Oriental Motor has various linear and rotary actuators consisting of a motor assembled with the necessary mechanical components, to meet the various needs of automated equipment.

## Features of Linear and Rotary Actuators

Equipped with a motor offering excellent controllability, our linear and rotary actuators offer the following advantages over hydraulic and pneumatic actuators:

- The actuator is very stable when operated, even at low speeds. It also offers smooth acceleration and deceleration operation.
- Motions can be programmed with multiple stopping points.
- With a linear and rotary actuator using a stepping motor, adjustment of position and speed can be performed easily using data. Setup change is also simple, as all you need do is to change the data.

## Advantages of Using Linear and Rotary Actuators

When automated equipment is designed, various factors must be taken into consideration including the production line layout, installation environment, ease of maintenance, configuration of electrical wiring and control system, and so on. This means many man-hours are needed to select the motor and other mechanical components and create a parts list, drawings, operating manuals, and the like.

Use of linear and rotary actuators can reduce this time and offers the benefits explained below.

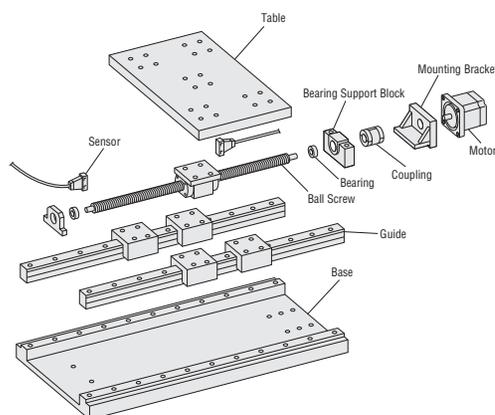
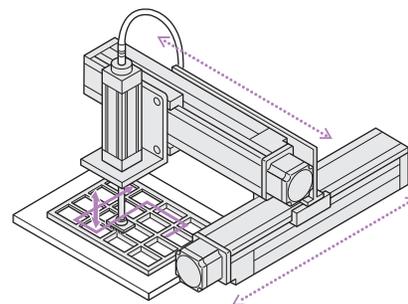
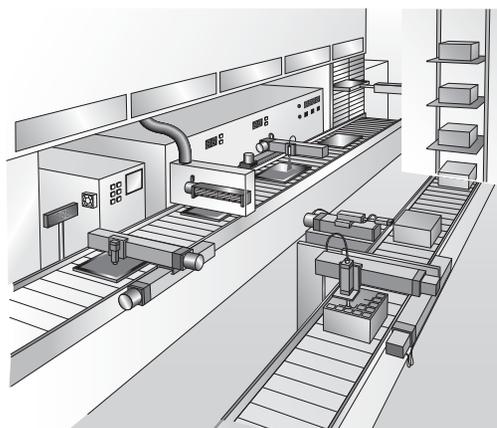
### Higher Design Efficiency

The primary feature of automated equipment is its ability to implement a series of basic operations such as "transfer," "push" and "rotate." In other words, you can design automated equipment by selecting and combining linear and rotary actuators capable of performing these basic operations. Since all you need is to select an actuator, you can save the time and effort.

### Shorter Production Time and Higher Quality

When building equipment in-house by assembling a motor and mechanical components (see the illustration on the right), the quality of assembly affects the traveling resistance and position accuracy, therefore ultimately adjustments will be needed to achieve the expected operating performance. On the other hand, our linear and rotary actuators are complete products guaranteed to provide the specified operating performance, so use of linear and rotary actuators reduces adjustment work and ensures uniform quality.

Oriental Motor offers various linear and rotary actuators to help you improve your design productivity.



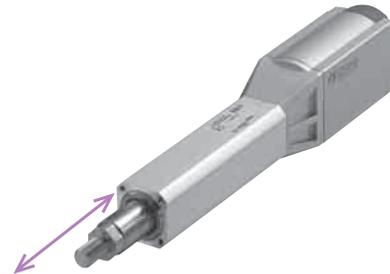
## Motorized Linear Slides

The motor is integrated with a linear motion mechanism, which makes an actuator ideal for transferring loads.



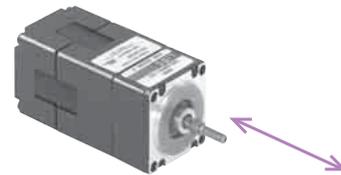
## Motorized Cylinders

The motor is integrated with a linear motion mechanism, which makes an actuator ideal for pushing and pulling load.



## Compact Linear Actuators

A stepping motor is integrated with a ball screw. An ideal actuator for pushing and pulling small loads or fine-tuning applications.



## Hollow Rotary Actuators

A motor is integrated with thrust bearings and a rotary table. Ideal for index-drive and high thrust load applications.

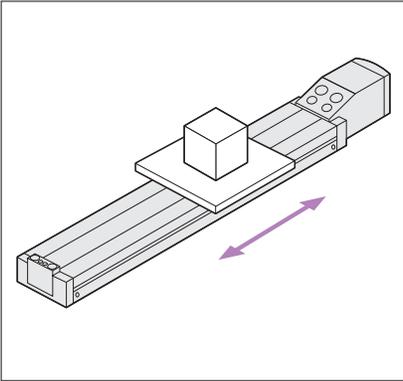


# How to Select an Actuator

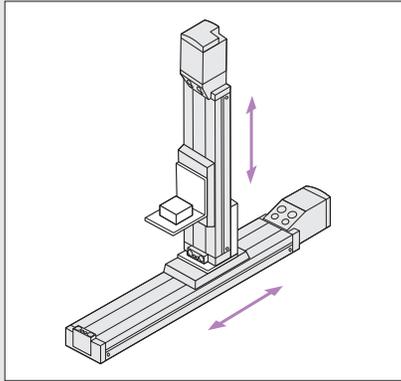
As components of automated equipment, linear and rotary actuators are used in many different ways. From the viewpoint of "motion," they are classified as follows.

## Transfer

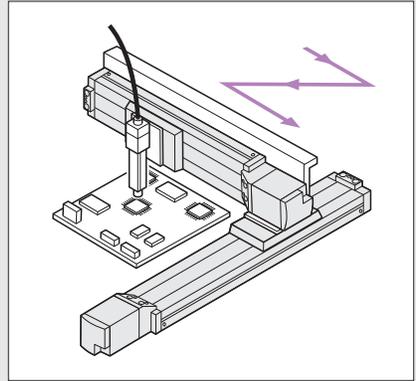
Transferring loads



Transferring loads (Vertical)

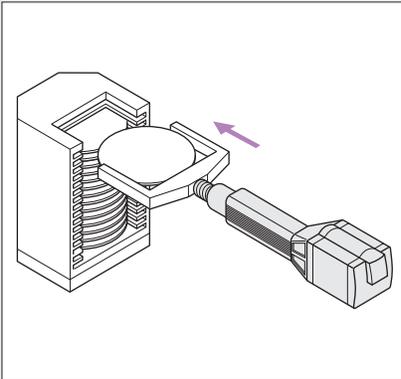


Moving a CCD camera

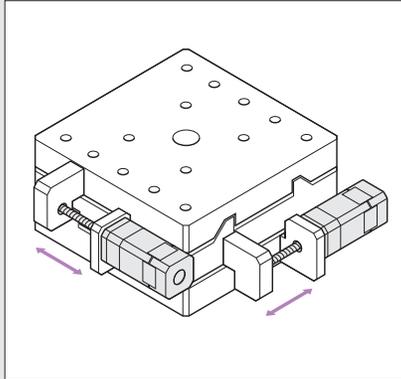


## Push, Pull

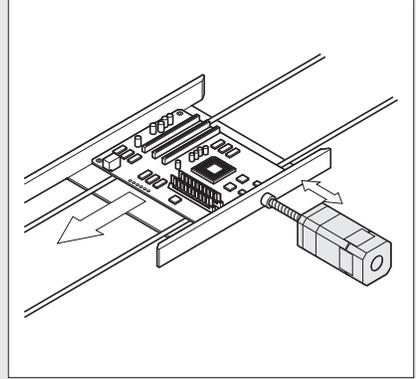
Storing loads



Driving mechanism for a micrometer head X-Y stage

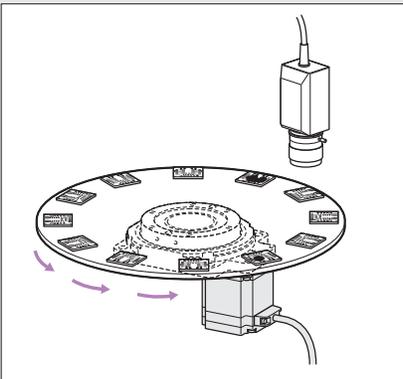


Centering of a board

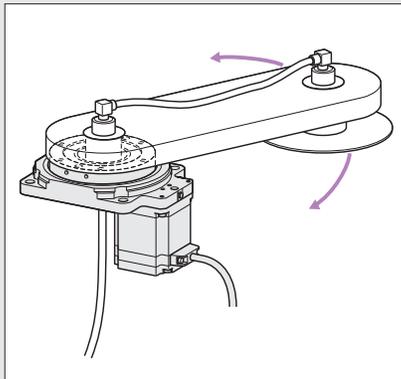


## Rotate

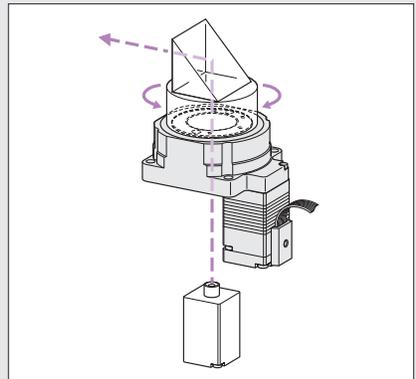
Positioning a table



Transferring by arm

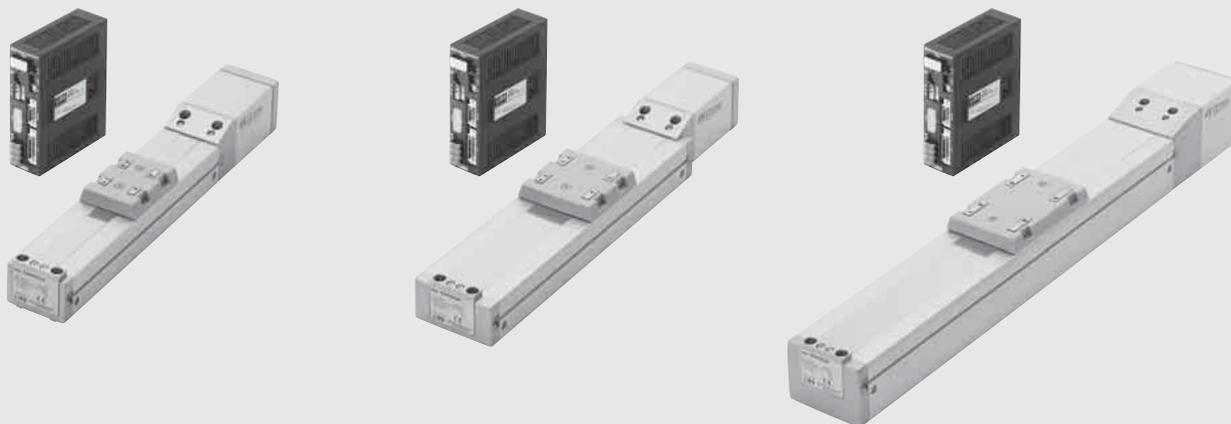


Adjusting an optical axis

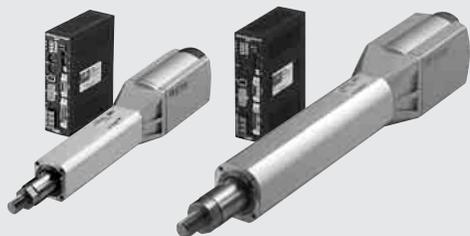


We have a broad selection of linear and rotary actuators designed to embody different "motions." Select one that best suits your required specifications (transfer speed, transportable mass, resolution, accuracy), functions, system configuration and other applicable conditions.

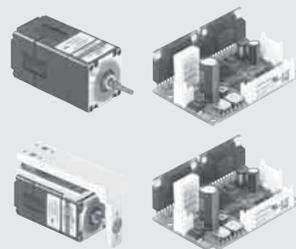
### Motorized Linear Slides



### Motorized Cylinders



### Compact Linear Actuators

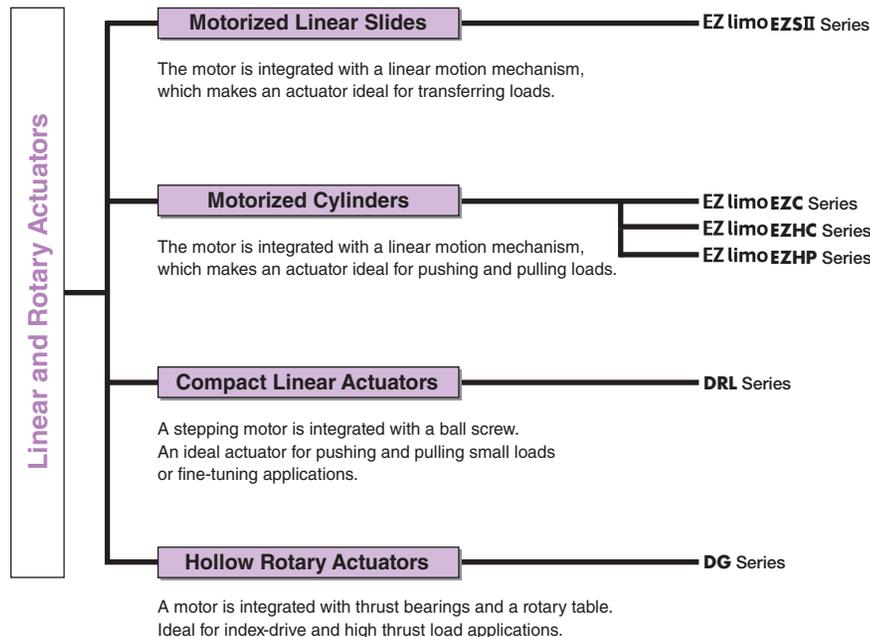


### Hollow Rotary Actuators



# Types of Linear and Rotary Actuators

Oriental Motor offers a full lineup of linear and rotary actuators meeting the needs of various applications.



## Motorized Linear Slides

**EZ limo EZSII Series**



The high-precision, compact body was made possible by adopting a rolled ball screw and guide frame structure.

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## Motorized Cylinders

EZ limo		
EZC Series	EZHC Series	EZHP Series



These motorized cylinders are equipped with a full range of essential functions for cylinder control and available in a wide variety of models. The **EZHC Series** achieves high-speed operation with a maximum speed of 600 mm/s, while the **EZHP Series** offers high thrust force of up to 400 N.

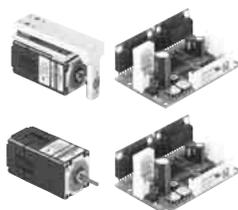
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## Compact Linear Actuators

**DRL Series**



The drive mechanism adopts a 5-phase stepping motor with ball screw. The compact linear actuators **DRL Series** has achieved high positioning accuracy in a space-saving design.

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## Hollow Rotary Actuators

**DG Series**



A hollow rotary actuator with a wide hollow section, featuring an output table on which a table or arm can be installed directly.

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