Linear and Rotary Actuators

Motorized Cylinders

EZ limo **EZCⅡ** Series

EZ limo **EZA** Series

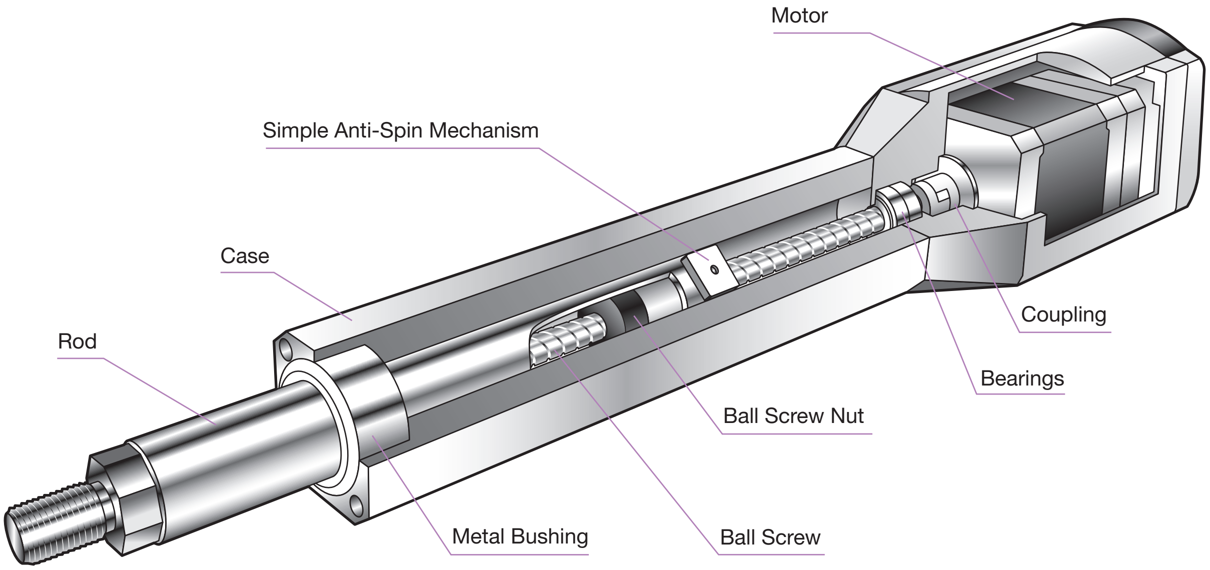
EZ limo **PWAⅡ** Series

Features of Motorized Cylinders

Motorized cylinders are capable of driving a load linearly in a precise, accurate manner through the rotation of a ball screw controlled by a stepping motor. These cylinders incorporate features that add greater convenience to positioning operation and are available in various product series and models.

■Highly Accurate Positioning Operation

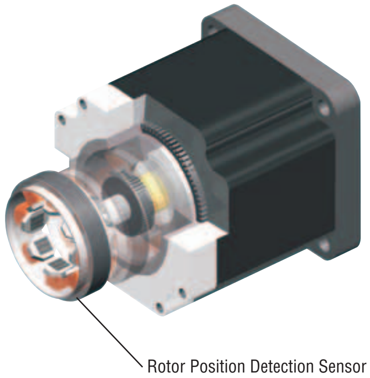
The ball screw is driven by a closed loop αSTEP stepping motor to position heavy loads with high accuracy. Integrating a motor with a linear motion mechanism, this type of actuator is ideal for applications where the load is pushed or pulled.



■Uses a Control Motor to Achieve Accurate, Multi-Functional Positioning

The motorized cylinders use an αSTEP motor. The αSTEP motor utilizes our unique closed loop control to maintain positioning operation even during abrupt load fluctuations and accelerations.

The controller features a variety of functions including the teaching function, push function, area output function and absolute function, thereby achieving a high-performance, high-functional motorized cylinder that is easy to use.

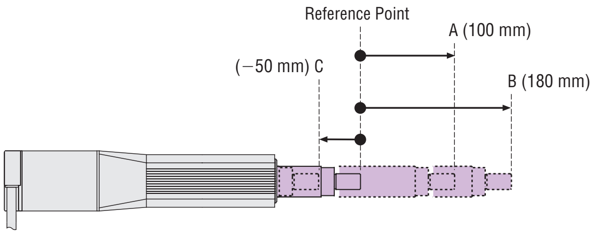


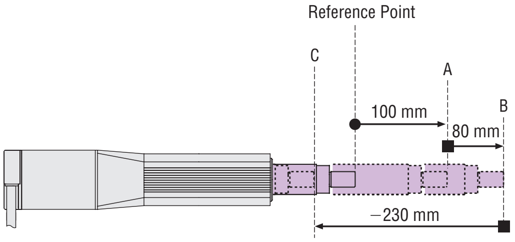
Offering Features That Add Greater Convenience to Positioning Function

This controller is capable of controlling a cylinder without tuning. It lets you use high-performance functions through simple operations.

Two Modes to Set Positioning Data Setting

Data can be set in the absolute mode (absolute-position specification) or the incremental mode (incremental-position specification).



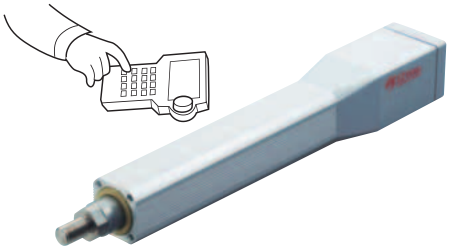


Absolute Mode:
The absolute position (distance) from the reference point is set.

Incremental Mode:
The position achieved by the motor after the last movement (= current position) is defined as the starting point for the next movement.

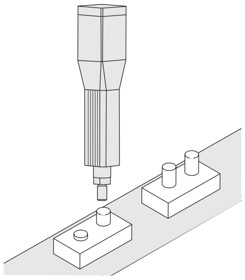
Teaching Function

You can directly move the rod to a desired position and store the position obtained or use a teaching pendant to move the rod to a desired position and then store it.



Push Function

The rod can be held steadily when pushed against the load.

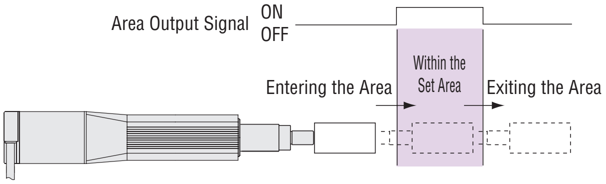


Function to Select Home Detection Methods

You can select sensorless return to home or return to home using sensors.

Area Output Signal

A signal is output when the cylinder rod enters a set area.



You can easily perform all tasks from data setting to actual operation by using our teaching pendant or data editing software.

- Teaching Pendant
  (Sold separately)
  EZT1

- Data Editing Software
  (Sold separately)
  EZED1

Linked Operation

By linking multiple sets of operation data, all you need is to input a start signal. You can then change the cylinder speed without physically stopping the cylinder.

Function for Automatic Control of an Electromagnetic Brake

The controller automatically controls the electromagnetic brake during operation and when stopping.

Features and Types of Motorized Cylinders

EZCII Series

The ball screw is rotated by an αSTEP motor to position even heavy loads with high accuracy. Integrating a motor with a linear motion mechanism, this type of actuator is ideal for applications where the load is pushed or pulled.

EZCII Series (Using an αSTEP)

Drive Method: Ball screw

Maximum Stroke 300 mm

Maximum Speed 600 mm/s

Maximum Transportable Mass* Horizontal 60 kg/Vertical 30 kg

Repetitive Positioning Accuracy ±0.02 mm

✻The value when an external guide is used.
●The above figures are representative values. For details, refer to the product information page.

EZA Series

With a built-in LM Guide®, the **EZA** Series offers improved performance and greater ease of use while maintaining a compact size. There is no need for a guide mechanism, such as an external guide, requiring cumbersome installation.

●LM Guide is registered trademark of THK Co., LTD.

EZA Series (Using an αSTEP)

Drive Method: Ball screw

Maximum Stroke 300 mm

Maximum Speed 600 mm/s

Maximum Transportable Mass Horizontal 9 kg*/Vertical 30 kg

Repetitive Positioning Accuracy ±0.02 mm

✻Maximum horizontal transportable mass is 60 kg when an external guide is used.
✻Maximum horizontal transportable mass varies with the moment.
●The above figures are representative values. For details, refer to the product information page.

PWAII Series

An αSTEP motor is used to turn the gears, thus driving the ball screw back and forth.
With the folded motor configuration, the **PWAII** Series provides high thrust force while maintaining a compact size. It's perfect for applications with push motion and pressurized positioning.

PWAII Series (Using an αSTEP)

Drive Method: Ball screw + Gear

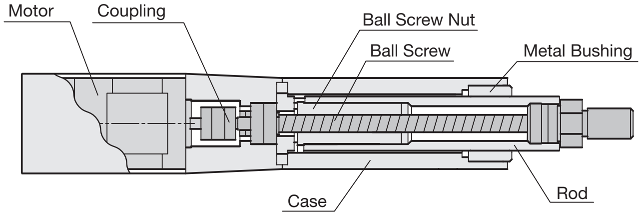
Maximum Stroke 100 mm

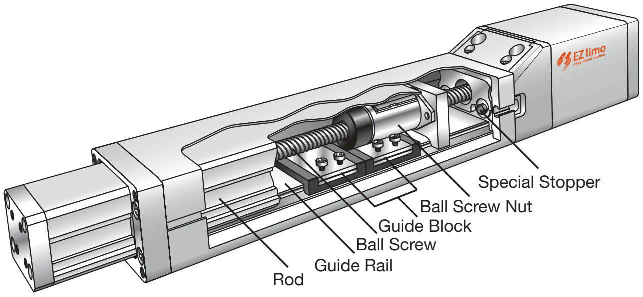
Maximum Speed 200 mm/s

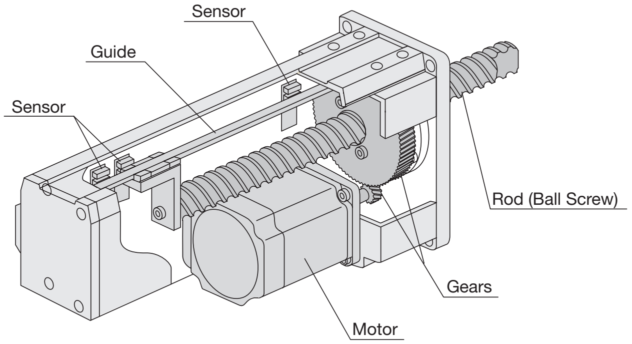
Maximum Push Force 5000 N

Repetitive Positioning Accuracy ±0.02 mm

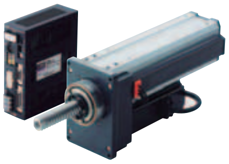
●The above figures are representative values. For details, refer to the product information page.


Motor
Coupling
Ball Screw Nut
Ball Screw
Metal Bushing
Case
Rod


EZ limo
Special Stopper
Ball Screw Nut
Guide Block
Ball Screw
Guide Rail
Rod


Sensor
Guide
Sensor
Rod (Ball Screw)
Gears
Motor

Selection of Motorized Cylinders

Series	Cylinder Size [Frame Size]	Power Supply Voltage	Lead [mm]	Thrust Force [N]	Push Power*1 [N]	Maximum Transportable Mass in Horizontal Direction*2 [kg] 20 40 60 200 400	Maximum Transportable Mass in Vertical Direction*2 [kg] 10 20
EZCⅡ Series Drive Method: Ball screw 	**EZC4** [42 mm×42 mm]	24 VDC	12	~70	100	15	6.5
			6	~140	200	30	14
		Single-Phase 100-115 VAC	12	~70	100	15	6.5
		Single-Phase 200-230 VAC	6	~140	200	30	14
	EZC6 [60 mm×60 mm]	24 VDC	12	~200	400	30	15
			6	~400	500	60	30
		Single-Phase 100-115 VAC	12	~200	400	30	15
		Single-Phase 200-230 VAC	6	~400	500	60	30
EZA Series Drive Method: Ball screw 	**EZA4** [42 mm×42 mm]	24 VDC	12	~70	100	15	6.5
			6	~140	200	30	14
		Single-Phase 100-115 VAC	12	~70	100	15	6.5
		Single-Phase 200-230 VAC	6	~140	200	30	14
	EZA6 [60 mm×60 mm]	24 VDC	12	~200	400	30	15
			6	~400	500	60	30
		Single-Phase 100-115 VAC	12	~200	400	30	15
		Single-Phase 200-230 VAC	6	~400	500	60	30
PWAⅡ Series Drive Method: Ball screw+Gears 	**PWA6** [130 mm×87 mm]	Single-Phase 100-115 VAC Single-Phase 200-230 VAC	5	1000	~600	100	
	PWA8 [200 mm×130 mm]	Single-Phase 100-115 VAC Single-Phase 200-230 VAC	1.6	5000	~3500	500	

*1 Maximum speed of push-motion operation of the **EZCⅡ**/**EZA** Series and **PWAⅡ** Series are 25 mm/s and 6 mm/s, respectively.
*2 The value when an external guide is used.

Maximum Speed [mm/s]	Repetitive Positioning Accuracy [mm]	Stroke [mm]	Electromagnetic Brake		Page
100 200 300 400 500 600 700		50 100 150 200 250 300 350	Not Equipped	Equipped	
600	±0.02	50~300 (50 mm increments)	●	●	E-62
300		50~300 (50 mm increments)	●	●	
600		50~300 (50 mm increments)	●	●	E-64
300		50~300 (50 mm increments)	●	●	
600		50~300 (50 mm increments)	●	●	E-66
300		50~300 (50 mm increments)	●	●	
600		50~300 (50 mm increments)	●	●	E-68
300		50~300 (50 mm increments)	●	●	
600	±0.02	50~300 (50 mm increments)	●	●	E-75
300		50~300 (50 mm increments)	●	●	
600		50~300 (50 mm increments)	●	●	E-76
300		50~300 (50 mm increments)	●	●	
600		50~300 (50 mm increments)	●	●	E-77
300		50~300 (50 mm increments)	●	●	
600		50~300 (50 mm increments)	●	●	E-78
300		50~300 (50 mm increments)	●	●	
200	±0.02	100	●	●	E-83
70		100	●	●	E-83

How to Read Specifications

Motorized Cylinders EZ limo EZCII Series

① Drive Method	Ball Screw	② Repetitive Positioning Accuracy [mm]	±0.02	③ Resolution [mm]	0.01

Model	④ Lead [mm]	⑤ Transportable Mass [kg]		Thrust ⑥ [N]	Push Force ⑦ [N]	⑧ Holding Force [N]	⑨ Maximum Speed [mm/s]
		Horizontal	Vertical				
EZC4D□-K	12	∼15	–	∼70	100	70	600
EZC4D□M-K			∼6.5				
EZC4E□-K	6	∼30	–	∼140	200	140	300
EZC4E□M-K			∼14				

① Drive Method

Mechanism used to convert motor rotation to linear motion.

② Repetitive Positioning Accuracy

A value indicating the amount of error that generates when positioning is performed repeatedly to the same position in the same direction.

③ Resolution

Distance the table moves with one pulse input.

④ Lead

Distance the table moves in one motor shaft rotation.

⑤ Transportable Mass

- Horizontal Direction

  Mass that can be moved under rated conditions in the horizontal direction.

- Vertical Direction

  Mass that can be moved under rated conditions in the vertical direction.

⑥ Thrust

Thrust force at constant speed with no load.

⑦ Push Force

Maximum push force during a push operation in which a load is pressed continuously.

⑧ Holding Force

Holding force at motor standstill during power is ON or the holding force when the electromagnetic brake is operating.

⑨ Maximum Speed

Maximum speed allowed to be moved with the maximum transportable mass.