

Ezi-Robo[®]

Actuator series Driven by Ezi-SERVO

- High precision XYθ Alignment Stage for high accuracy of positioning (Repeatability : less $\pm 0.5\mu\text{m}$, Angle Reproducibility less 0.001°)
- Provide DLL Library for PC (Windows) Interface
- 3 Axes Integrated Slim Stage (Height : 60mm)
- Position Accuracy Improvement than conventional 5 phase stepping motor by Ezi-SERVO Adoption

MAS

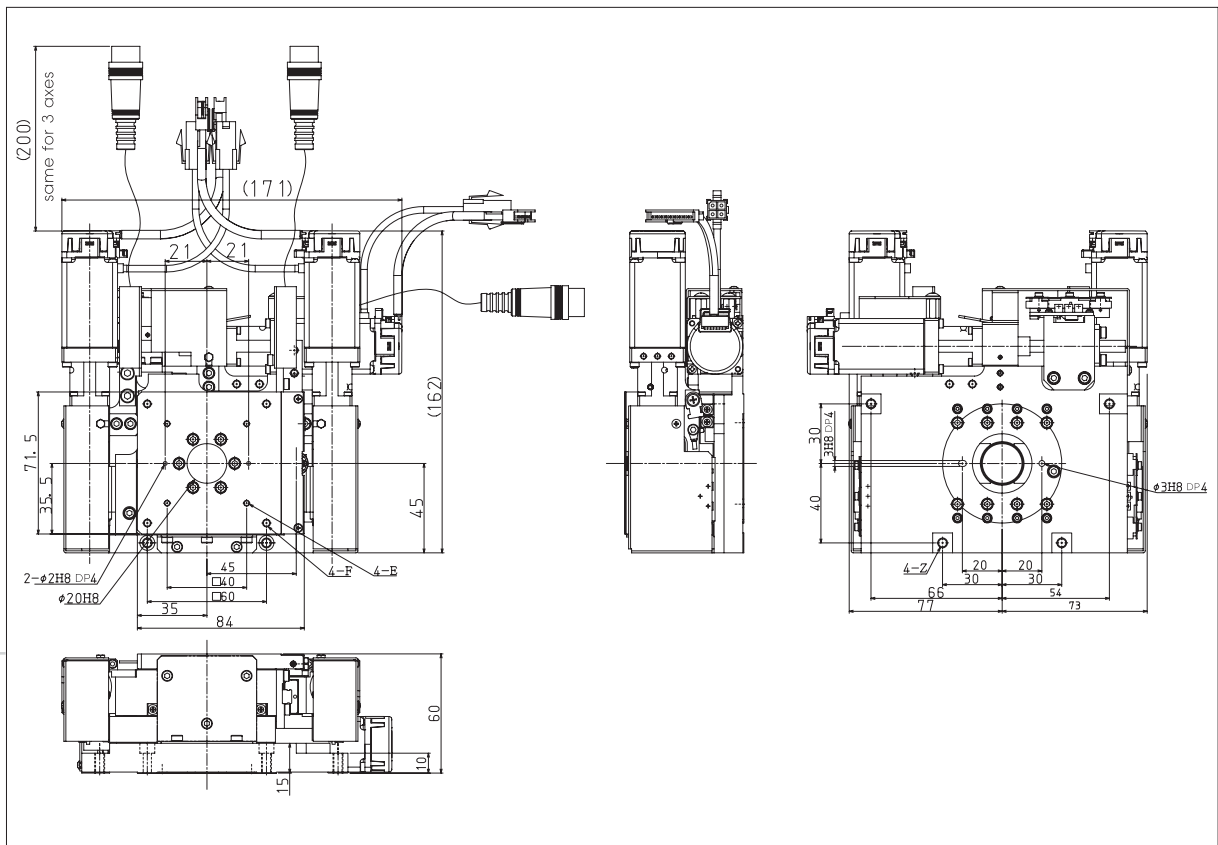


● Slim High Precision XYθ Alignment Stage (KAS-070)

Table Size : 70 x 70



■ Ezi-Robo-MAS-PR-MI-28M-D-KAS-070



● Main Features

- High precision XYθ Alignment Stage for high accuracy of positioning
- Provide DLL Library for PC (Windows) Interface
- 3 Axes Integrated Slim Stage
- High Precision Ball Screw mechanism accomplished Long Life
- Equipped with center hole opening while full stroke moving
- Position Accuracy Improvement than conventional 5 phase stepping motor by High Accuracy Optical Encoder of Ezi-SERVO Adoption

● XYθ Alignment Stage optimized for Vision Inspection



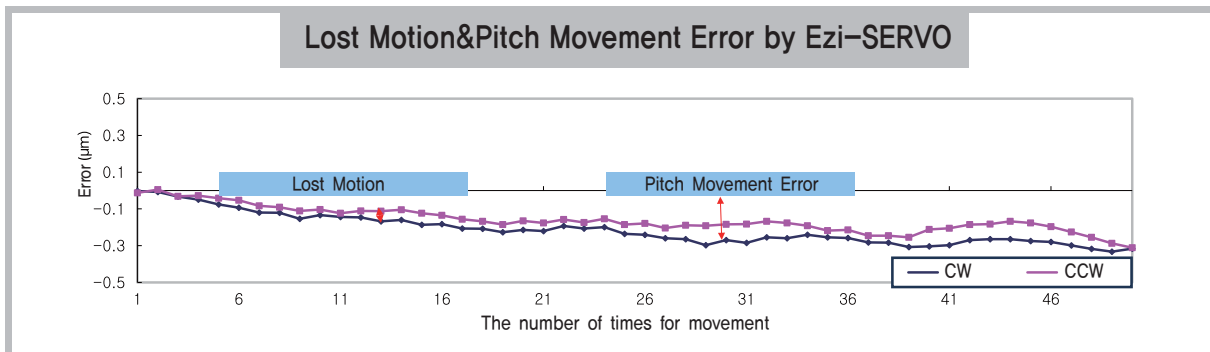
Ezi-Robo-MAS-PR-MI-28M-D-K070-A

〈Measure Lost Motion and Pitch Movement Error〉

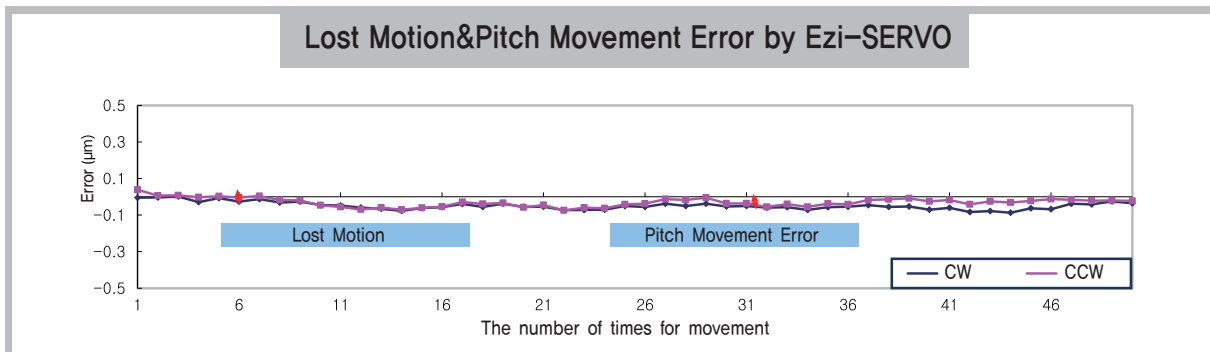
Below data describes measured data by Japan KOHZU company (www.kohzu.com) for Lost Motion and Pitch Movement Error with Ezi-SERVO 28M Motor equipped at MAS Automatic XYθ Series (left picture), X, Y Axes to measure 50 times of movement under 1 step [0,5um] and θ Axis to measure 50 times of repeated positioning under 1 step 1,2133 [arcsec]. (Measurement Device : Laser Interferometer)

- * Tested Motor : EzM-28M-D
- * Tested Drive : EzS-NDR-MI-28M-D
- * Steps per 1 Revolution : 1,000[Step/Revolution] (Relevant to 5 Phase motor of Half Step)

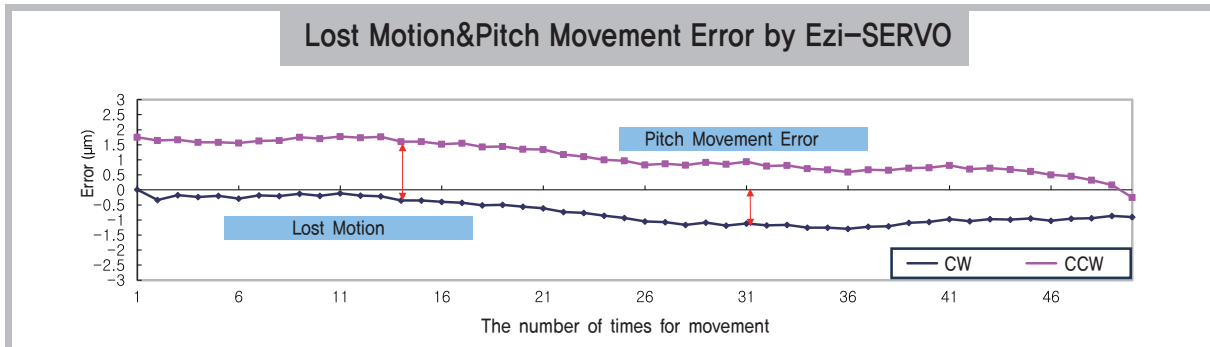
XAxis



YAxis



θAxis



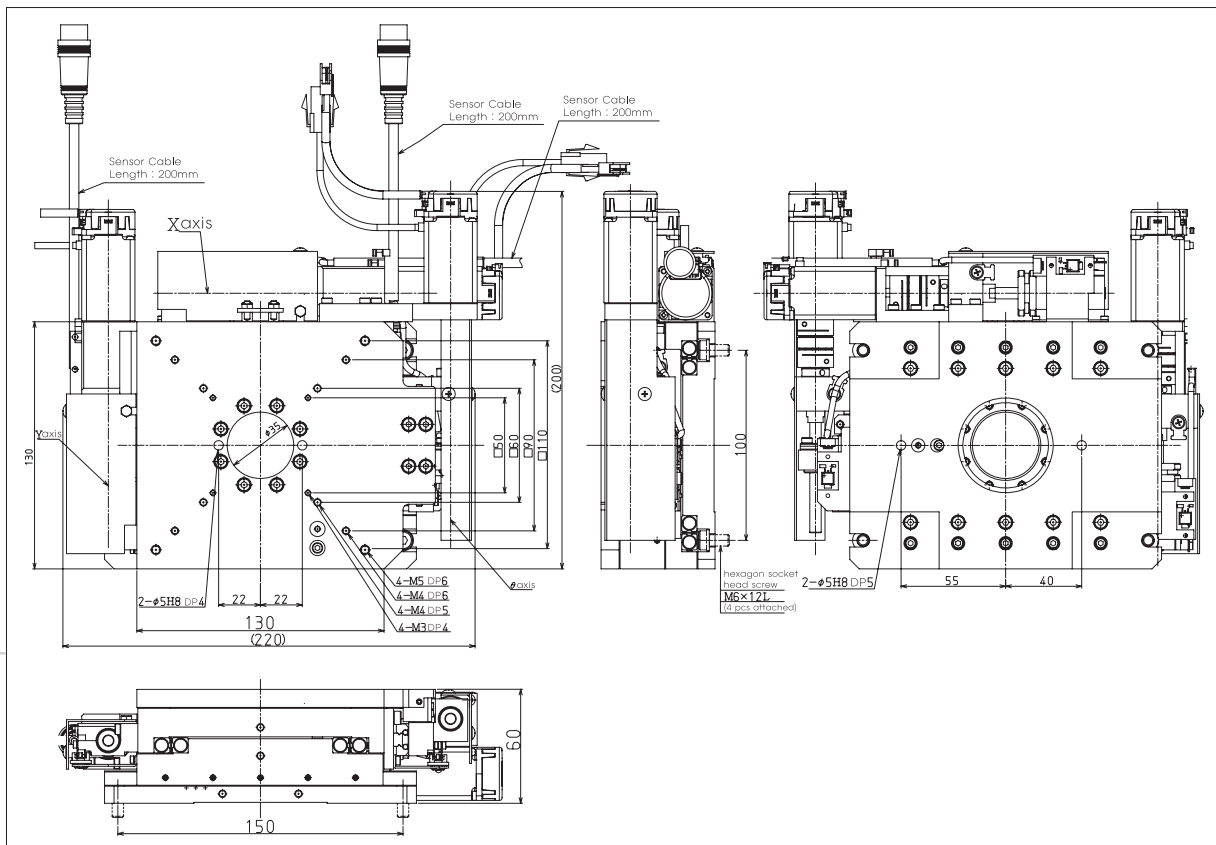
- Stage for vision inspection application requires minimization of CW/CCW direction error (Lost Motion) and accurate fine pitch of movement
- More accurate and fast positioning contribute to shorten manufacturing tap-time
- Ezi-SERVO 28M motor adopts 16,000[ppr] optical encoder so in case of evaluation under 16,000[Step/Rev] setting, possible to get an improvement of Lost Motion and fine pitch of movement error

● Slim High Precision XYθ Alignment Stage (KAS-070)

Table Size : 130 x 130



■ Ezi-Robo-MAS-PR-MI-28M-D-KAS-130



● Main Features

- High precision XYθ Alignment Stage for high accuracy of positioning
- Provide DLL Library for PC (Windows) Interface
- 3 Axes Integrated Slim Stage
- High Precision Ball Screw mechanism accomplished Long Life
- Equipped with center hole opening while full stroke moving
- Position Accuracy Improvement than conventional 5 phase stepping motor by High Accuracy Optical Encoder of Ezi-SERVO Adoption

● XYθ Alignment Stage optimized for Image Processing



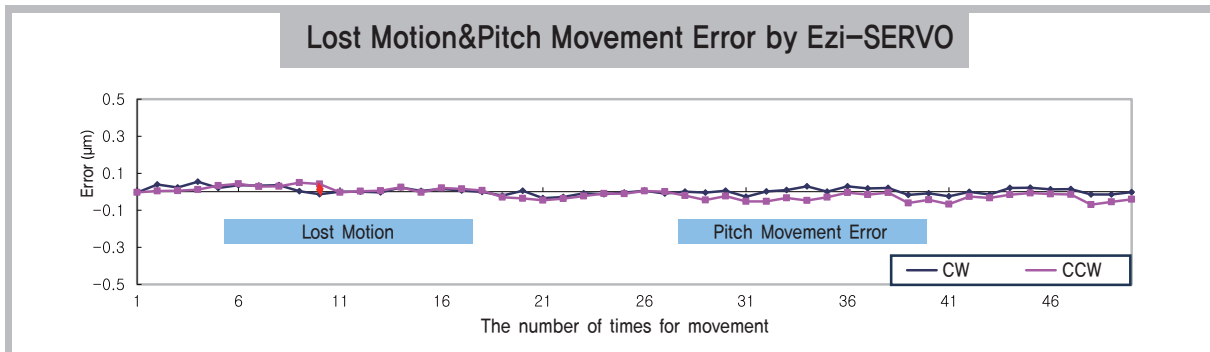
Ezi-Robo-MAS-PR-MI-28M-D-K130-A

〈Measure Lost Motion and Pitch Movement Error〉

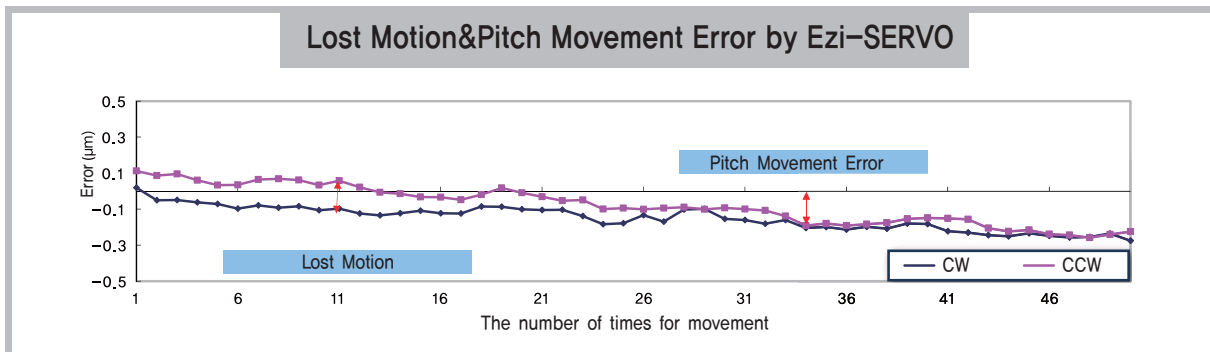
Below data describes measured data by Japan KOHZU company (www.kohzu.com) for Lost Motion and Pitch Movement Error with Ezi-SERVO 28M Motor equipped at MAS Automatic XYθ Series (left picture), X, Y Axes to measure 50 times of movement under 1 step [0,5um] and θ Axis to measure 50 times of repeated positioning under 1 step 1,2133 [arcsec]. (Measurement Device : Laser Interferometer)

- * Tested Motor : EzM-28M-D
- * Tested Drive : EzS-NDR-MI-28M-D
- * Steps per 1 Revolution : 1,000[Step/Revolution] (Relevant to 5 Phase motor of Half Step)

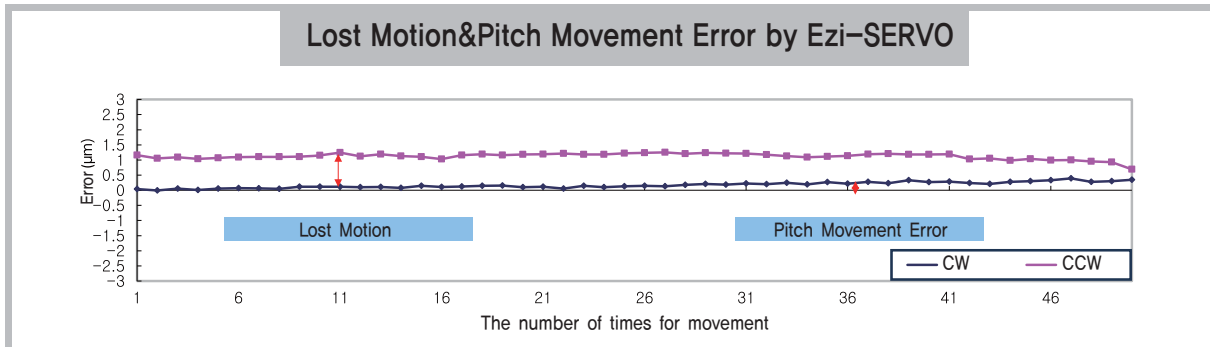
XAxis



YAxis



θAxis



- Stage for vision inspection application requires minimization of CW/CCW direction error (Lost Motion) and accurate fine pitch of movement
- More accurate and fast positioning contribute to shorten manufacturing tap-time
- Ezi-SERVO 28M motor adopts 16,000[ppr] optical encoder so in case of evaluation under 16,000[Step/Rev] setting, possible to get an improvement of Lost Motion and fine pitch of movement error

● Specification

Model Number	Ezi-Robo-MAS-PR-MI-28M-D-K070-A		Ezi-Robo-MAS-PR-MI-28M-D-K130-A	
	XY Specification	θ Specification	XY Specification	θ Specification
Table Size	70 x 70 [mm]		130 x 130 [mm]	
Travel Range	±0.5mm	±0.5°	±0.5mm	±0.5°
Hight	60mm		60mm	
Guide	Cross Roller Guide, Cross Roller Bearing		Cross Roller Guide, Cross Roller Bearing	
Resolution*1	0.001mm	0.00127° / STEP	0.001mm / STEP	0.000674° / STEP
Max Speed*2	10mm / sec		10mm / sec	
Repeatability(XY)	Within ±0.5μm		Within ±0.5μm	
Angle Reproducibility(θ)		Within 0.001°		Within 0.001°
Lost Motion	Within 2μm	Within 0.005°	Within 2μm	Within 0.005°
Straightness	Within 1μm / 10mm		Within 1μm / 10mm	
Backlash	Within 1μm	Within 0.005°	Within 1μm	Within 0.005°Within
Motor	EzM-28M-D (FASTECH)		EzM-28M-D (FASTECH)	

Cautions)

*1 Specification based on Ezi-SERVO 28M Motor resolution as 1,000[Step/rev].

*2 Max. speed is 10[kpps] under Ezi-SERVO 28M Motor resolution as 1,000[Step/rev]. Please be careful not to set operation speed over Max. speed 10[kpps].

● Applications

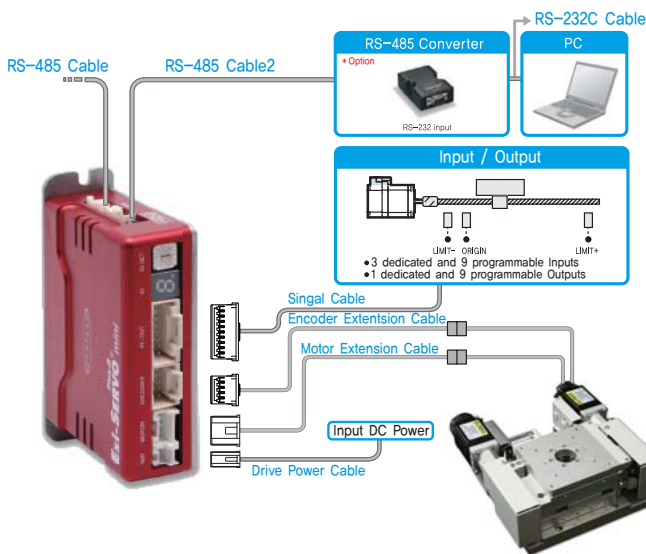
- Camera Module Alignment and Inspection
- Mini substrate alignment measurement and bonding for LCD or OLED etc
- Mark Alignment of Screen printing
- Optical equipment, Medical Instrument, Bio Device Alignment and Evaluation

● Optimized Ezi-SERVO Plus R series for PC based Alignment System Structure



- Provide DLL Library for PC (Windows) Interface
- Positioning Control by RS-485 Network (Controller Embedded)
- Non-use of Motion Board reduce cost and wiring
- CW/CCW movement error (Lost Motion) minization enables more fast and accurate positioning
- Position accuracy improvement by precise fine pitch movement
(Position accuracy is 3 times improved than current 5 phase motor)

● System Configuration



● Applicable Product Line-up

Products	Specifications
Ezi-SERVO-PR-MI	Controller Embedded, Mini Type
Ezi-SERVO-ST-MI	Pulse Input Type, Mini Type

● Parts

- Power Connector
- Encoer Connector
- Signal Connector
- Motor Connector



Fast, Accurate, Smooth Motion

FASTECH Co., Ltd.

Rm #1202, Bucheon Technopark 401 Dong, Yakdea-dong,
Wonmi-Gu, Bucheon-si, Gyeonggi-do, Rep. Of Korea (Zip)420-734
TEL : 82-32-234-6300,6301 FAX : 82-32-234-6302
E-mail : fastech@fastech.co.kr Homepage : www.fastech.co.kr