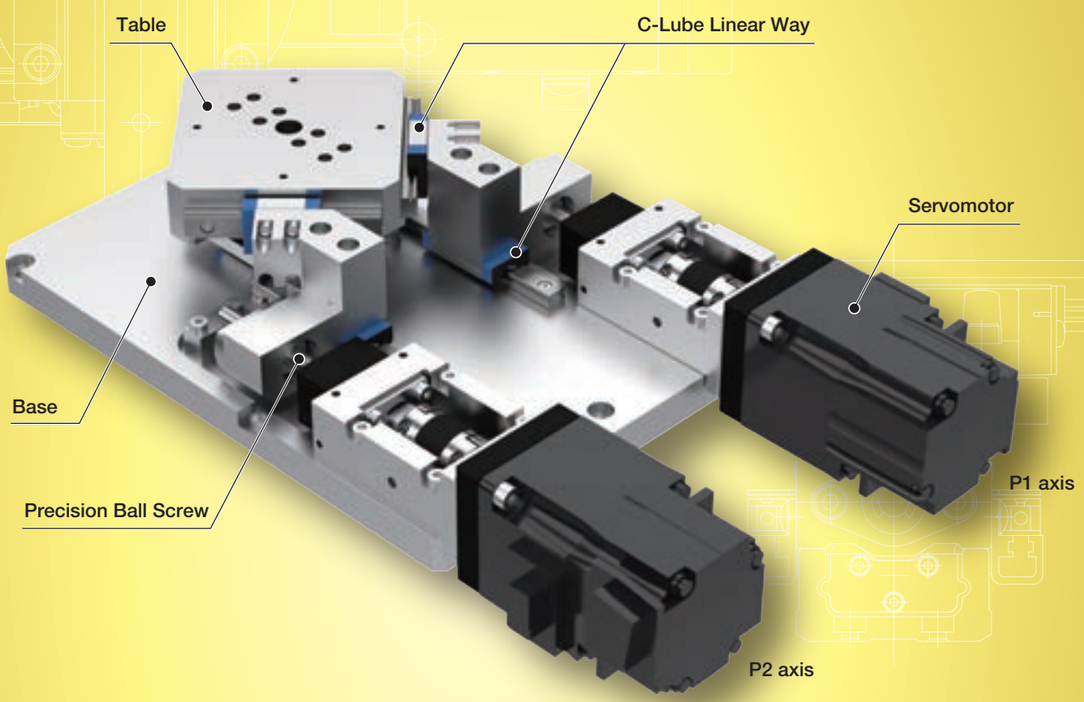
PD…S

PD···S

Ball screw
XY direction



Major product specifications

Driving method	Precision Ball Screw
Linear motion rolling guide	Linear Way (ball type)
Built-in lubrication part	Lubrication part C-Lube is built-in
Material of table and base	Aluminum alloy
Sensor	–

Accuracy

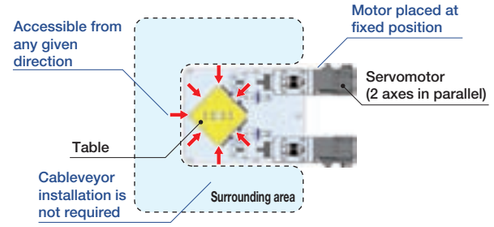
Unit mm

Positioning repeatability	±0.002
Positioning accuracy	–
Lost motion	–
Parallelism in table motion A	–
Parallelism in table motion B	–
Attitude accuracy	–
Straightness	–
Backlash	–

Points

● The original structure provides excellent operability.

1 This unique XY stage has motors arranged in parallel. Since the motors are arranged in one direction, side work is easy to perform from any direction. The motors are fixed in one position so they will not move even when the table is operating and there is no need to provide extra space to prevent interference.



● Low Profile and Simple Appearance

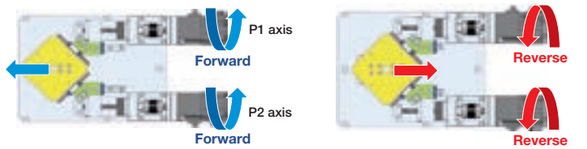
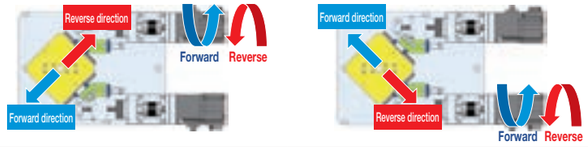
2 By arranging the motors in parallel, an extremely low sectional height compared to conventional stages is achieved. The wiring and cableveyors required for conventional stages are also not necessary, making this stage lightweight and compact with a simple appearance.

● Flexible customization is available

3 The Parallel Drive Stage™ PD enables freedom in design. Customization is easy and flexible allowing for changing dimensions, adding special specifications, etc.

Scan the QR code below to view a video of the product in operation.

Operation explanation for Parallel Drive Stage™ PD

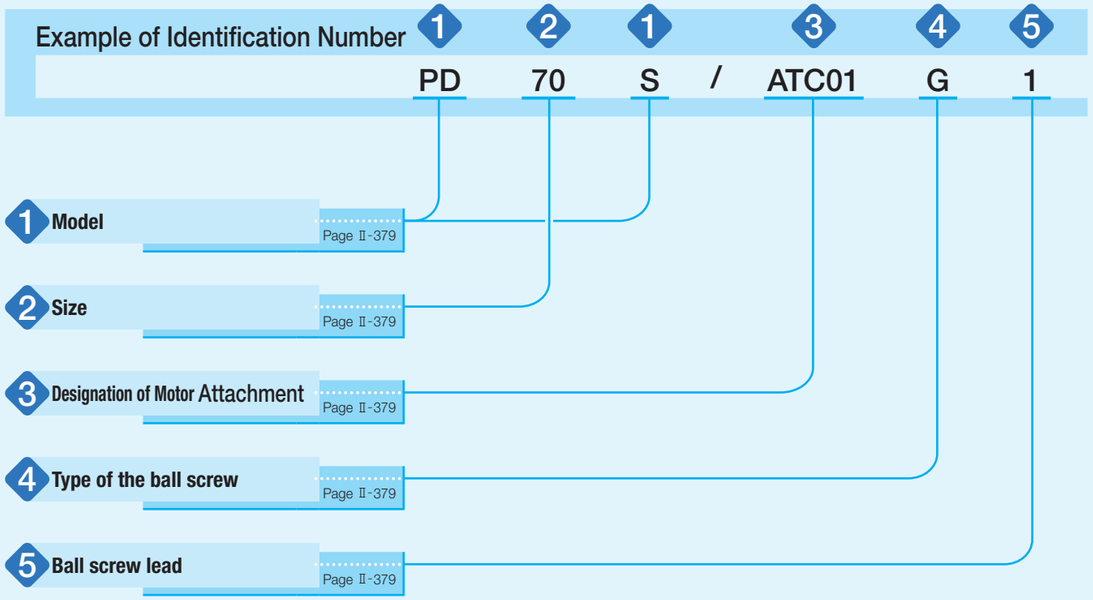
Operation explanation	Image
When the P1 and P2 axes are rotated in the same direction, the table moves in the X direction.	
When the P1 and P2 axes are rotated in reverse configuration, the table moves in the Y direction.	
When only one of the two axes is rotated, the table moves diagonally.	

Remarks
- Various movements such as arc motion are possible by combining the operations above.
- Forward motion is rotation to the right (clockwise) when looking at the motor unit from the ball screw side.

Variations

IKO can accommodate most customer requirements.
Specifications not listed in the catalog are also available, such as covers for use in clean environments. Please contact IKO for more information.

Identification Number



Identification Number and Specification

1 Model
PD···S: Parallel Drive Stage

2 Size
70: Table width dimension

3 Designation of Motor Attachment
Select the motor attachment from the list in Table 1.
- Motor should be prepared by customer.
- Please specify the motor attachment applicable for motor use.
- A coupling shown in Table 2 is mounted on the main body before shipment. However, the final position adjustment should be made by customer since it is only temporarily fixed.

4 Type of the ball screw
G: Ground screw

5 Ball screw lead
1: Lead 1mm

Identification Number and Specification

Table 1 Application of the motor attachment

Models of motor to be used					Flange size mm	Motor Attachment	Female thread dimensions		
Type	Manufacturer	Series	Model	Rated output W			Even distribution	Dimensions	PCD
AC servomotor	YASKAWA ELECTRIC CORPORATION	Σ-7/Σ-10	SGM7J-A5A/SGMXJ-A5A SGM7A-A5A/SGMXA-A5A	50	□40	ATC01	4	M4 Through	46
	Mitsubishi Electric Corporation	J4/J5	HG-MR053 HG-KR053/HK-KT053W	50	□40	ATC01	4	M4 Through	46
	Panasonic Corporation	MINAS A6	MSMF5A	50	□38	ATC02	4	M3 Through	45
	Hitachi Industrial Equipment Systems Co., Ltd.	AD	ADMA-R5L	50	□40	ATC01	4	M4 Through	46

Remark: For detailed motor specifications, please see the respective motor manufacturers' catalogs.

Table 2 Coupling models

Motor attachment	Coupling models	Manufacturer	Coupling inertia J_c $\times 10^{-5}$kg・m²
ATC01	XGT-19C-5×8	Nabeya Bi-tech Kaisha	0.084
ATC02			

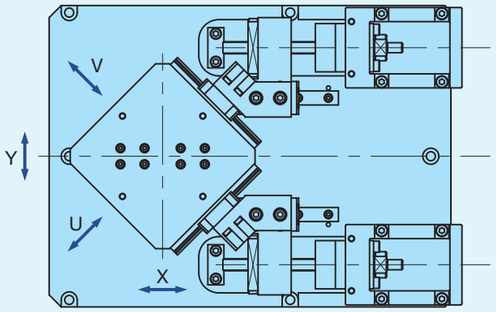
Remark: For detailed coupling specifications, please see the respective manufacturers' catalogs.

Specifications

Table 3 Specifications

Model and size	Positioning repeatability mm	Effective stroke mm		Maximum speed (1) mm/s		Ball screw lead mm	Maximum carrying mass (2) kg
		X, Y directions	U, V directions	X, Y directions	U, V directions		
PD70S	±0.002	±10	±7	50	35	1	5

Notes (1) Values when the motor rotational speed is 3000 rpm. To measure the practical maximum speed, it is required to consider operation patterns based on the motor used and load conditions.
(2) The mass is with the table equipped at the center position.



Mounting

The typical tightening torque to be used when fixing the Parallel Drive Stage™ PD···S is indicated in Table 4. If sudden acceleration / deceleration occurs frequently or moment is applied, it is recommended to tighten them to 1.3 times higher torque than that indicated in the table. In addition, when high accuracy is required with no vibration and shock, it is recommended to tighten the screws to torque smaller than that indicated in the table and use an adhesive agent to prevent loosening of screws.

Table 4 Screw tightening torque (1) unit: N · m

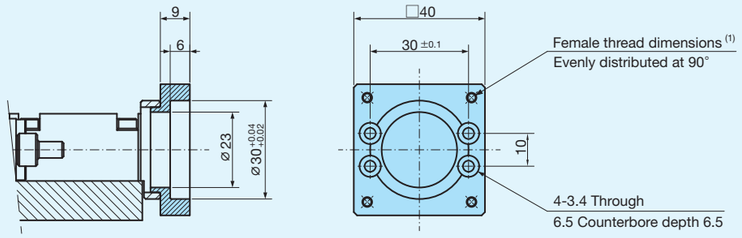
Tightening target		Bolt size	Tightening torque
PD···S	Table and base	M3 × 0.5	1.2
		M4 × 0.7	2.7
Motor attachment		M3 × 0.5	1.2
Coupling XGT-19C-5 × 8		M2	0.5 (2)

Notes (1) Reference value when using a hexagon socket head bolt.
(2) Manufacturer recommended value.

Dimensions of Motor Attachment

PD70S

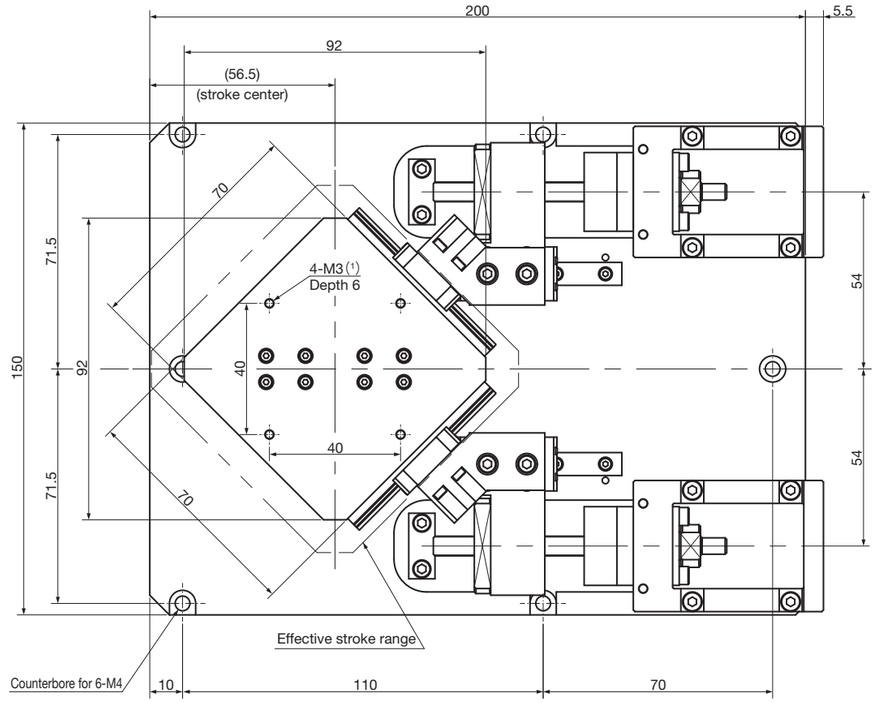
ATC01
ATC02

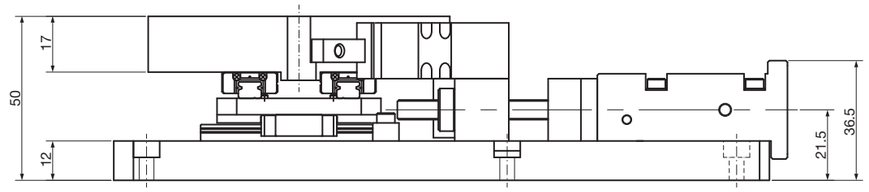


Note (1) For female thread dimensions, see Table 1 Application of the motor attachment on page II-380.

IKO Parallel Drive Stage™ PD

PD70S





Mass (Ref.): 1.9 kg

Note (1) If the fixing depth of the mounting bolt is too deep, it may affect the running performance of the table. Never insert a bolt longer than the depth of the through hole.