

## Ultrasonic Motor Driven Actuator Guide

These actuators have high resolution and high-speed. Provides a compact shape with silent and remote activation. Position can be held with the friction even when the power is OFF.



### Features

#### ■ Compact

Smaller motors are used compared to electromagnetic motors, enabling configuration of compact systems. These actuators are approximately the same size as manual types and allow remote control, making them suitable for position adjustment in compact spaces.

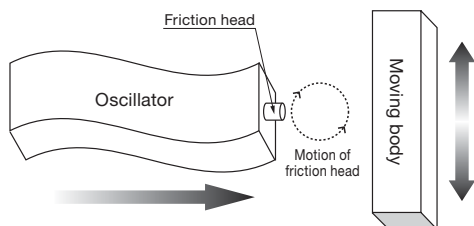
#### ■ Fine Adjustment

The SPD SEL HI/LOW selection switch of the 2-axis controller (PKA-ID-02) allows switching between coarse drive and fine drive to make fine angle and position adjustment smoothly.

#### ■ Silent Operation

Since the PKA series uses ultrasonic motors, the driving sound is extremely quiet, only a friction sound comes out.

### Drive System



The PKA series uses the ultrasonic motor drive system, in which the stage and actuator are powered by friction drive. It drives the table face by controlling the oscillator so that the tip of ultrasonic motor (friction head) moves in a circular orbit, and moving the pressure contacted moving object.

### Translation Stages

- Stage type actuator utilizing a cross roller guide with excellent rigidity and straightness.
- While the drive source is a small ultrasonic motor, high load capacity of 20N is ensured.
- Two table sizes, □40mm and □60mm, are available.



#### Specifications

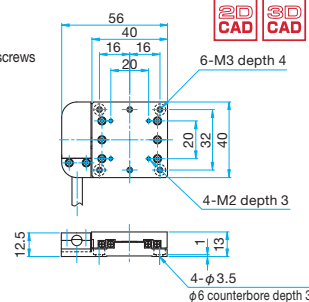
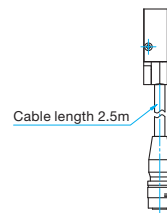
Part Number	PKA40-15X	PKA60-20X
Table Size [mm]	40×40	60×60
Travel [mm]	15	20
Resolution [μm]	2 or lower	2 or lower
Holding Power [N]	1	1
Load Capacity [N]	20 (about 2kgf)	20 (about 2kgf)
Weight [kg]	0.1	0.2

Catalog Code W8009

#### Outline Drawing

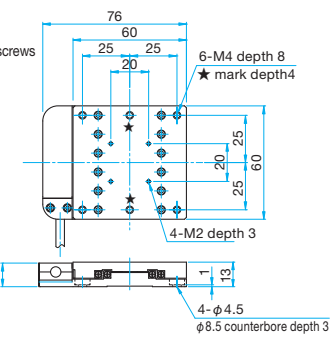
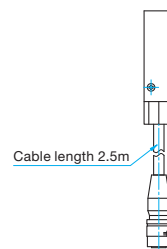
##### PKA40-15X

Hexagonal socket head cap screw M3×6...4 screws



##### PKA60-20X

Low head hexagon socket head cap screw M4×6...4 screws



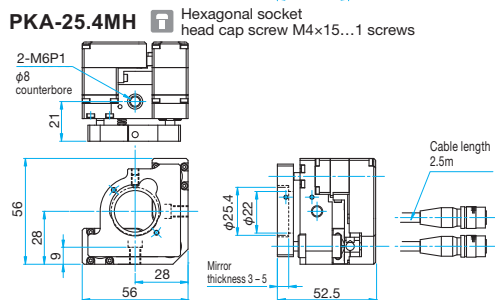
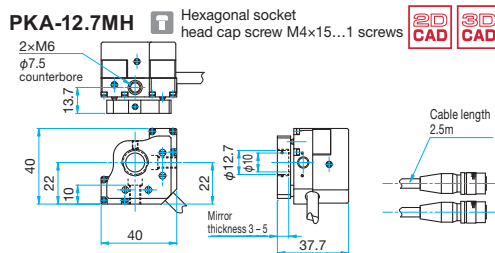
## Remote Control Mirror Holder

Catalog Code **W8010**



- These compact ultrasonic actuators are mounted on our high stability mirror holders (MHG series).

### Outline Drawing



### Specifications

Part Number	PKA-12.7MH	PKA-25.4MH
Compatible Optics Diameter [mm]	φ12.7	φ25.4
Compatible Optics Thickness [mm]	3 - 5	3 - 5
Number of Adjustable Axes	2	2
Travel [°]	±2.5	±3
Resolution [″]	2.0 or lower	0.5 or lower
Weight [kg]	0.2	0.4

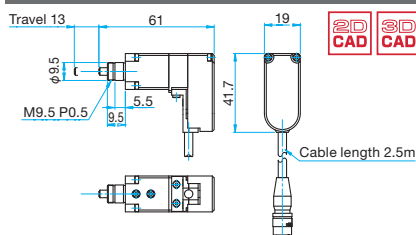
## Compact Actuator

Catalog Code **W8011**

- High thrust force produced by using ball screw design.
- Can be used to automate manual stages by replacing manual micrometer heads (travel: 13mm).
- High speed motion (about 0.5mm/sec)



### Outline Drawing



▶ Mounting nut and spanner are included.

### Specifications

Part Number	PKA-13ACT
Travel [mm]	13
Resolution [μm]	1 or lower
Holding Power [N]	30
Maximum Travel Speed [mm/s]	0.5 or more
Weight [kg]	0.2

## 2-Axis Controller

Catalog Code **W8012**



- Actuators can be manually controlled with jog sticks.
- Can be programmed with a PC WITH RS232C.

### Guide

- ▶ Compatible with the measurement and control software SGADVANCEE. [Reference](#) G024
- ▶ Sample programs are available for download on the website.
  - SG Sample 32/64-bit version for Windows® (only for RS232C)

### Attention

- ▶ Power requirement of the PKA-ID-02 is DC24V 1.8A. You need to purchase the PAT-001-POW1 (AC adapter) or prepare your own power supply separately.

List of Commands

Command Name	Command	Details
Absolute coordinate pulse set command	A	Specifies the absolute coordinate value.
Absolute travel pulse set command	M	Specifies the absolute travel.
Drive command	G	Starts driving.
Theoretical origin return command	N	Returns to the theoretical origin.
Stop command	L	Stops travel.
Theoretical origin setting command	R	Resets the coordinate value.
Status check command	Q	Returns the status of coordinate value, etc.
Status check command 2	!	Returns B (Busy) or R (Ready).
Internal information check command	?	Returns the internal information.
Speed setting command	S	Sets the pulse per step when the SPDSEL switch is set to LOW.

### Specifications

Part Number	PKA-ID-02
Number of Adjustable Axes	2
Interface	RS232C
Manual Operation	Jog stick
Power Voltage	DC24V 1.8A
Current Consumption [A]	1.8
Outer Dimensions [mm]	(W)50 × (D)142 × (H)100
Weight [kg]	0.53

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Remote

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ACT