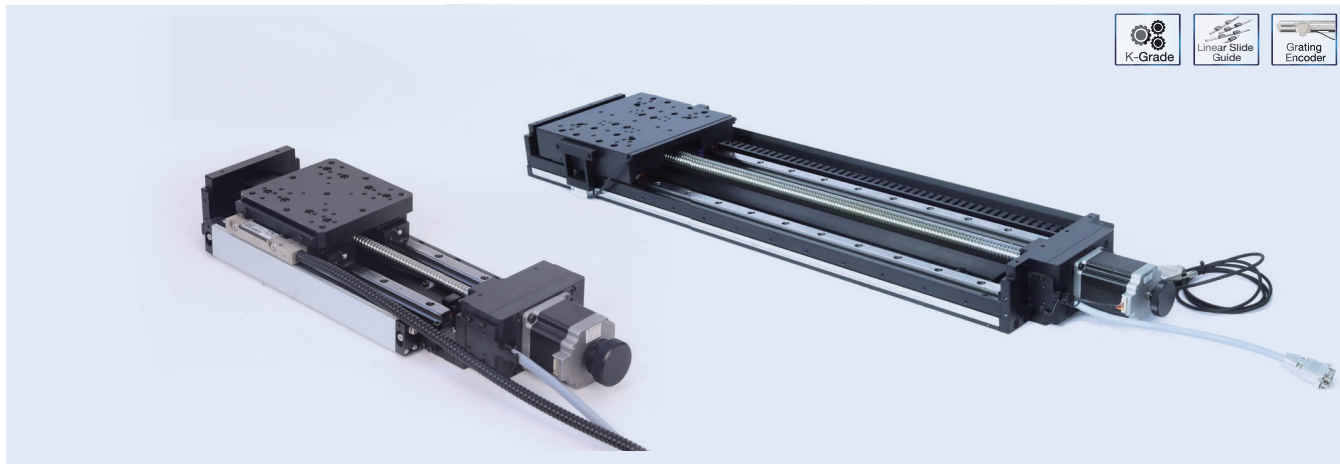




## Description:

The KA series products are precision closed-loop linear stages designed for medium to large strokes. These stages utilize an external grating ruler outside, by using MC600 or TMC series controllers, this stage is able to achieve a closed-loop resolution of  $1\mu\text{m}/0.5\mu\text{m}$ . The base features a high-rigidity U-type structure, ensuring suitability for operations under heavy load, high rigidity, and multi-dimensional combinations. An optional stainless-steel dustproof cover protects the inner parts from particles and dust, ensuring better stability, durability, and long-term accuracy.

This KA series is equipped with precision ball screws, linear-slider guides, and high-performance shaft coupling units. This design offers excellent adaptability for accurate operations in complex environments.

## Features:

- Equipped with a grating ruler, providing closed-loop resolution of  $1\mu\text{m}/0.5\mu\text{m}$ .
- U-type aluminum alloy base plates treated by fine machining and black anodic oxidation for enhanced rigidity and aesthetic appeal.
- Utilizes precise-grade linear-slider guides to ensure high load capability and accuracy.
- Dust cover is optional.
- Default configuration includes a two-phase stepping motor, with the option to upgrade to a servo motor.

## Naming rules:

### KA 100-(ST242)(-C)(-ER)(-SR)

Series code  
KA: high precision, ball screws, linear slider guides, aluminum alloy, closed loop ( $1\mu\text{m}$  resolution)

Travel range:  
050:50mm  
100:100mm  
150:150mm  
200:200mm  
300:300mm  
400: 400mm

Motor type:  
None (default):two-phase 57 stepping motor  
ST242: two-phase 42 stepping motor  
ASP1: Panasonic 100W AC servo motor  
ASY2: Yaskawa 200W AC servo motor  
P1: Installation plate and Shaft coupling of Panasonic 100W AC servo motor  
Y2: Installation plate and Shaft coupling of Yaskawa 200W AC servo motor

Grating ruler position:  
None (default):left side  
ER: right side

Position of sensors:  
None(default):internal  
SL: External, left side  
SR: External, right side  
Note: The sensor and the grating ruler cannot be located on the same side

Type of protection:  
None(default):no protection  
C:with protection

### KA 600-(ASP4)(-ER)

Series code  
KA: high precision, ball screws, linear slider guides, aluminum alloy, closed loop ( $0.5\mu\text{m}$  resolution)

Travel range:  
600:600mm  
800 :800mm  
1000:1000mm

Grating ruler position:  
None(default):left  
ER: right

None ( default ) : two-phase 57 stepping motor  
ASP4: Panasonic 400W AC servo motor  
ASY4: Yaskawa 400W AC servo motor  
P4: Equipped with installation plate, shaft coupling and Panasonic 400W AC servo motor  
Y4: Equipped with installation plate, shaft coupling and Yaskawa 400W AC servo motor

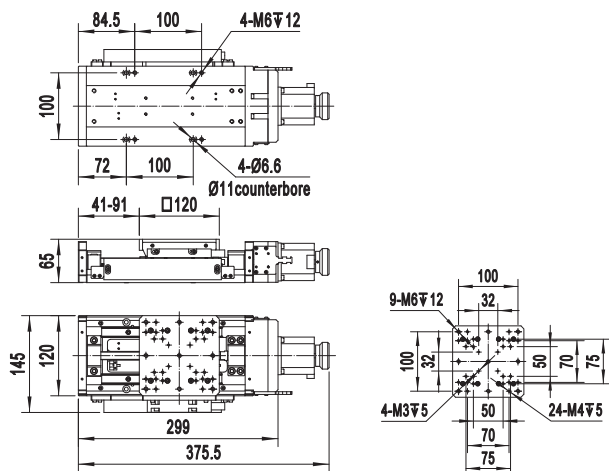
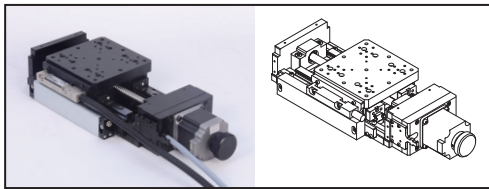
## Selection chart:

| Model                                               |                                       | KA050                                                                                                               | KA100                            | KA150 | KA200 | KA300                       | KA400 | KA600                       | KA800 | KA1000 |
|-----------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------|-------|-------|-----------------------------|-------|-----------------------------|-------|--------|
| Mechanical specifications                           | Travel range(mm)                      | 50                                                                                                                  | 100                              | 150   | 200   | 300                         | 400   | 600                         | 800   | 1000   |
|                                                     | Stage surface size(mm)                | 120×120                                                                                                             |                                  |       |       | 150X150                     |       | 200X200                     |       |        |
|                                                     | Transmission mechanism                | Precision ball screw φ 12×4                                                                                         |                                  |       |       | Precision ball screw φ 16×5 |       | Precision ball screw φ 25×5 |       |        |
|                                                     | Guide mechanism                       | Linear-slider guides                                                                                                |                                  |       |       |                             |       |                             |       |        |
|                                                     | Main body material, surface treatment | Black anodized aluminum alloy                                                                                       |                                  |       |       |                             |       |                             |       |        |
|                                                     | Weight(Kg)                            | 6.6                                                                                                                 | 6.8                              | 7.2   | 7.6   | 9.9                         | 10.9  | 22.3                        | 26    | 29.5   |
|                                                     | Shaft coupling(OD - OD1- OD2)(mm)     | 30-6.35-8                                                                                                           |                                  |       |       |                             |       | 34-8-12                     |       |        |
| Accuracy specifications                             | Closed loop resolution(μm)            | 1                                                                                                                   |                                  |       |       |                             |       | 0.5                         |       |        |
|                                                     | 20-fine-subdivision resolution(μm)    | 1                                                                                                                   |                                  |       |       | 1.25                        |       |                             |       |        |
|                                                     | Highest speed(mm/s)                   | 40                                                                                                                  |                                  |       |       | 50                          |       |                             |       |        |
|                                                     | Single-direction positioning accuracy | ≤30                                                                                                                 |                                  |       |       |                             |       | ≤70μm                       |       |        |
|                                                     | Repeatability/unidirectional(μm)*     | ≤±3                                                                                                                 |                                  |       |       |                             |       | ≤±5                         |       |        |
|                                                     | Static clearance(μm)*                 | ≤3                                                                                                                  |                                  |       |       |                             |       |                             |       |        |
|                                                     | Backlash(μm)*                         | ≤5                                                                                                                  |                                  |       |       |                             |       |                             |       |        |
|                                                     | Static parallelism(mm)                | ≤0.1                                                                                                                |                                  |       |       |                             |       | ≤0.12                       |       |        |
|                                                     | Dynamic straightness(μm)              | ≤10                                                                                                                 |                                  |       |       | ≤15                         |       | ≤15/100mm                   |       |        |
|                                                     | Dynamic parallelism(μm)               | ≤15                                                                                                                 |                                  |       |       | ≤20                         |       | ≤15/100mm                   |       |        |
|                                                     | Yaw(")                                | ≤30                                                                                                                 |                                  |       |       | ≤40                         |       | /                           |       |        |
|                                                     | Pitch(")                              | ≤35                                                                                                                 |                                  |       |       | ≤55                         |       | /                           |       |        |
|                                                     | Electrical specifications             | Motor and its stepping angle(° )                                                                                    | Two-phase 57 stepping motor, 1.8 |       |       |                             |       |                             |       |        |
| Brand and model number of motor                     |                                       | Shinano, SST59D3206                                                                                                 |                                  |       |       |                             |       | Shinano, SST59D5301         |       |        |
| Working current(A)                                  |                                       | 2.8                                                                                                                 |                                  |       |       |                             |       | 3.0                         |       |        |
| Holding torque of motor(N·m)                        |                                       | 1.44                                                                                                                |                                  |       |       |                             |       | 1.57                        |       |        |
| Brand and model number of grating ruler             |                                       | Fagor, MX or MKX series                                                                                             |                                  |       |       |                             |       | LAMOTION                    |       |        |
| Brand and model number of stepping driver(optional) |                                       | Moons, SR4                                                                                                          |                                  |       |       |                             |       |                             |       |        |
| Type of plug for stag                               |                                       | DB9(pin)                                                                                                            |                                  |       |       |                             |       |                             |       |        |
| Type of cable for stage                             |                                       | High flexibility cable(Helukabel, Germany)                                                                          |                                  |       |       |                             |       |                             |       |        |
| Length of connection cable(m)                       |                                       | 0.2                                                                                                                 |                                  |       |       |                             |       |                             |       |        |
| Position-limit sensors(built-in)                    |                                       | 2×PM-L25(SUNX, Japan)                                                                                               |                                  |       |       |                             |       |                             |       |        |
| Origin-point sensors(built-in)                      |                                       | 1×PM-L25(SUNX, Japan)                                                                                               |                                  |       |       |                             |       |                             |       |        |
| Voltage of power supply for sensors(V)              |                                       | DC5 ~ 24V±10%                                                                                                       |                                  |       |       |                             |       |                             |       |        |
| Current consumption(mA)                             |                                       | <60(total)                                                                                                          |                                  |       |       |                             |       |                             |       |        |
| Control output                                      |                                       | NPN open collector output DC5 ~ 24V 8mA or less<br>Residual voltage 0.3V or less(when load current is 2mA)          |                                  |       |       |                             |       |                             |       |        |
| Status of output ports                              |                                       | Position limit sensor: output ON when sensor is blocked;<br>Origin-point sensor: output OFF when sensor is blocked; |                                  |       |       |                             |       |                             |       |        |
| Maximum load capacity                               | Horizontal direction(Kg)              | 30                                                                                                                  |                                  |       |       | 50                          |       | 80                          |       |        |
|                                                     | Vertical direction(Kg)                | Please use "xx-Z" model for vertical load, refer to KAx-Z series for details                                        |                                  |       |       |                             |       |                             |       |        |
|                                                     | Inverted direction(Kg)                | 15                                                                                                                  |                                  |       |       | 25                          |       | 40                          |       |        |

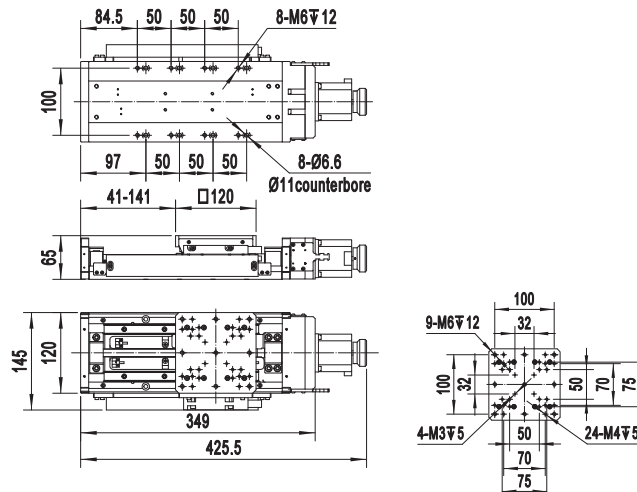
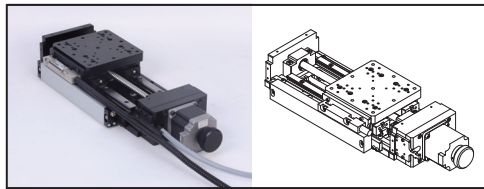
\*Note: Measured in open loop mode.

## Dimensions:

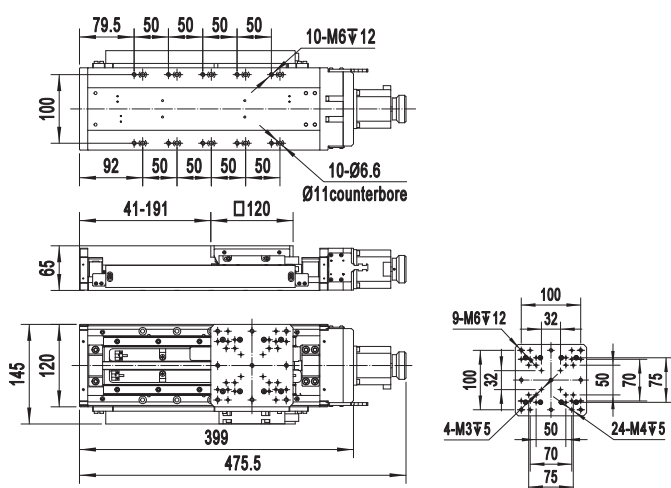
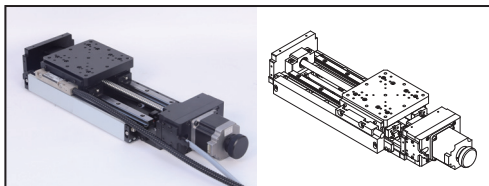
KA050



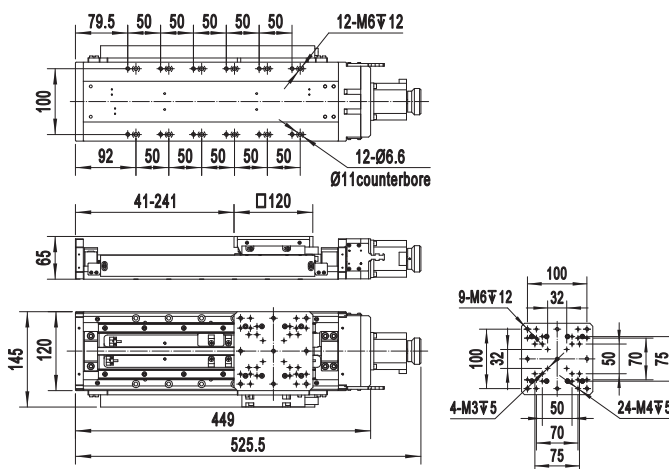
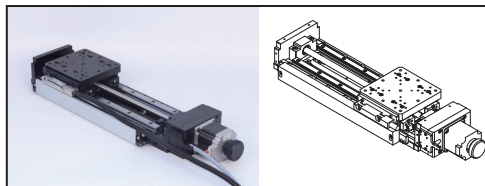
KA100



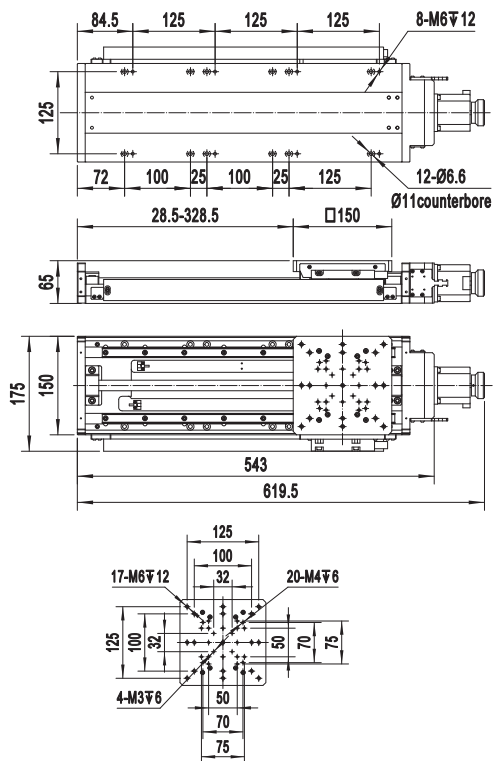
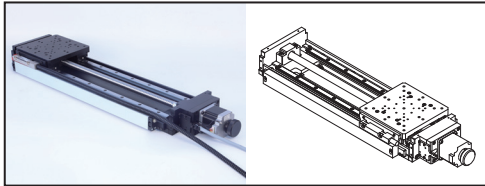
KA150



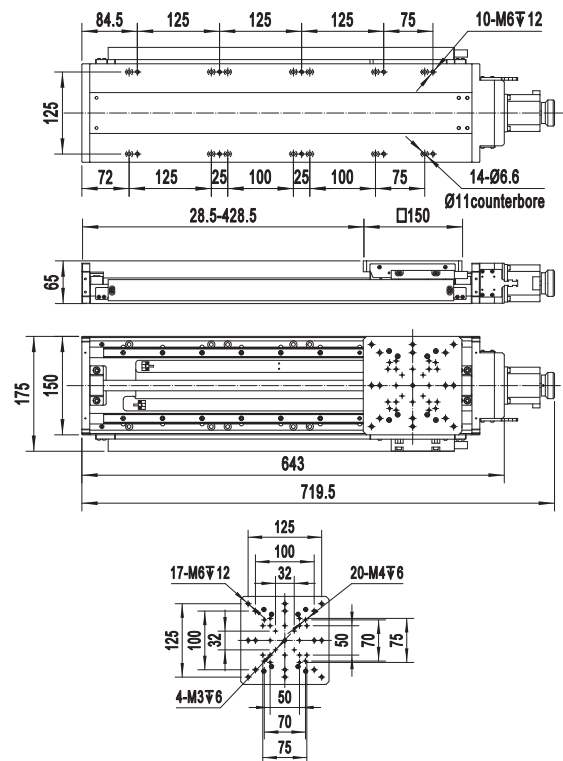
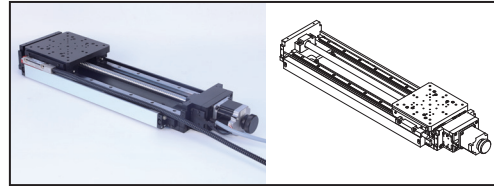
KA200



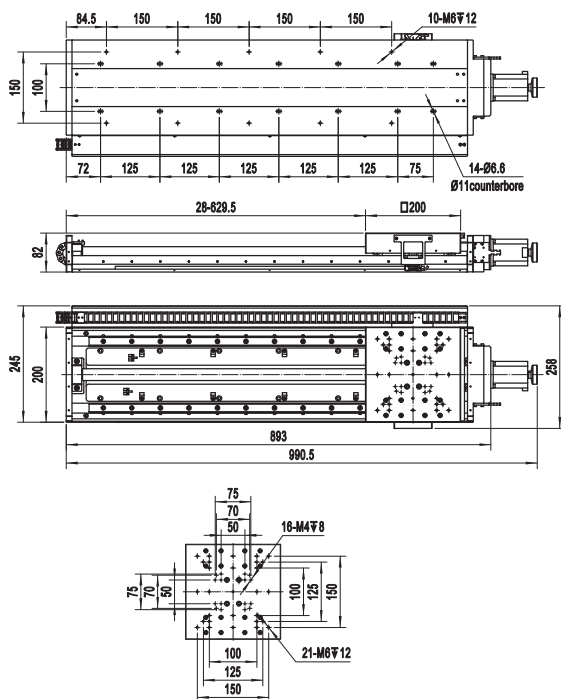
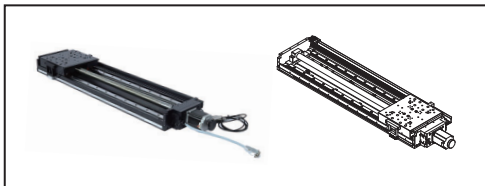
KA300



KA400



KA600



KA800

