

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

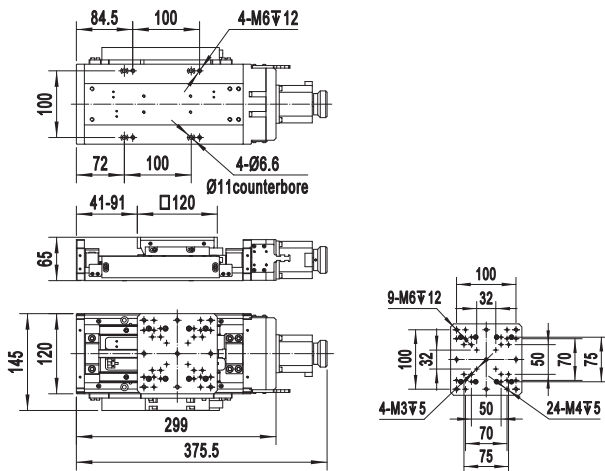
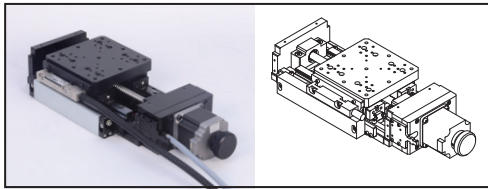
Selection chart:

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(μ m)	1							0.5		
20-fine-subdivision resolution(μ m)		1				1.25						
Highest speed(mm/s)		40				50						
Single-direction positioning accuracy		≤ 30							$\leq 70\mu$ m			
Repeatability/unidirectional(μ m)*		$\leq \pm 3$							$\leq \pm 5$			
Static clearance(μ m)*		≤ 3										
Backlash(μ m)*		≤ 5										
Static parallelism(mm)		≤ 0.1							≤ 0.12			
Dynamic straightness(μ m)		≤ 10				≤ 15		$\leq 15/100$ mm				
Dynamic parallelism(μ m)		≤ 15				≤ 20		$\leq 15/100$ mm				
Yaw(")		≤ 30				≤ 40		/				
Pitch(")		≤ 35				≤ 55		/				
Electrical specifications		Motor and its stepping angle($^{\circ}$)	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 Residual voltage 0.3V or less(when load current is 2mA)										
Status of output ports	Position limit sensor: output ON when sensor is blocked; 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 KAxx-Z series for details										
	Inverted direction(Kg)	15				25		40				

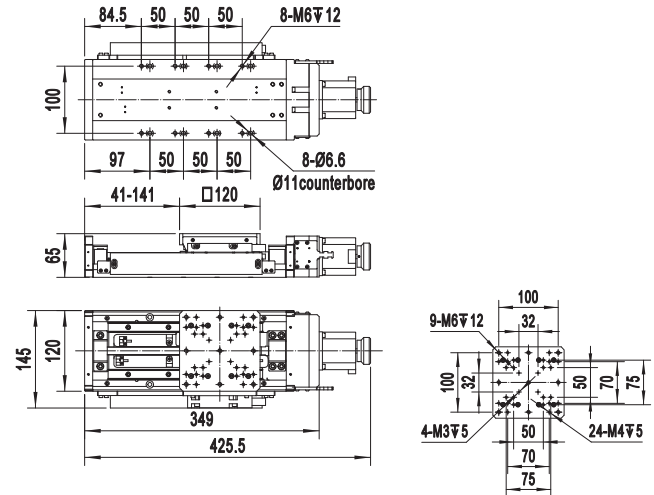
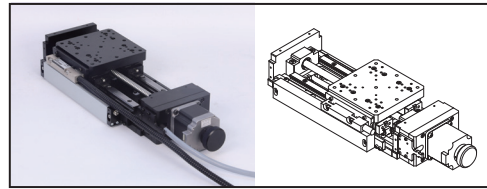
*Note: Measured in open loop mode.

Dimensions:

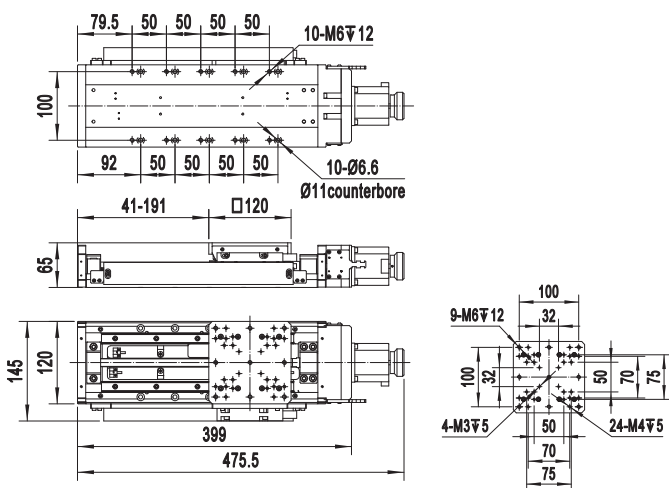
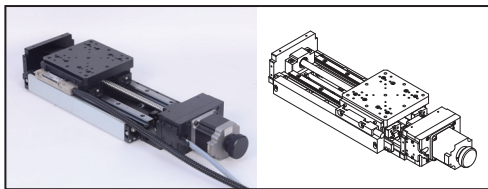
KA050



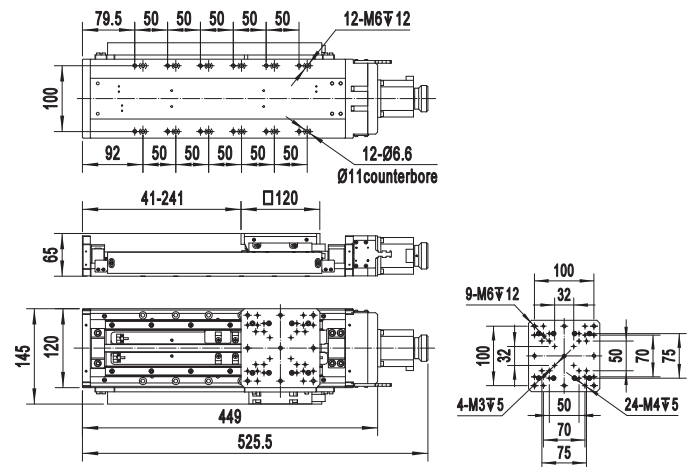
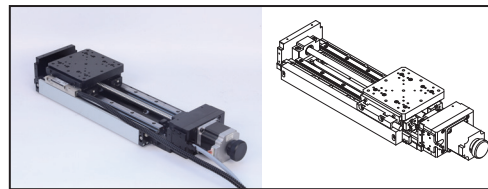
KA100



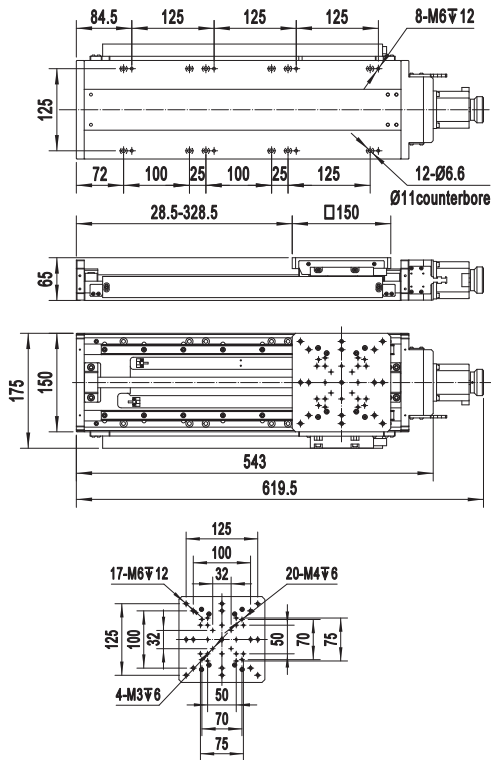
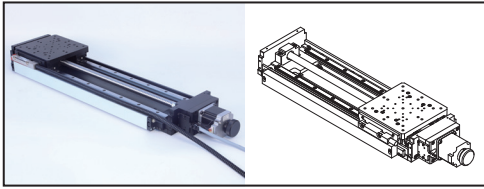
KA150



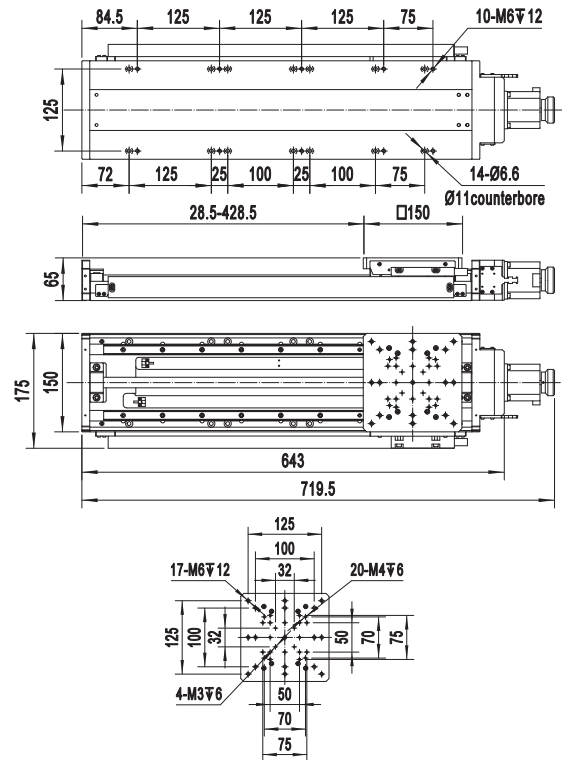
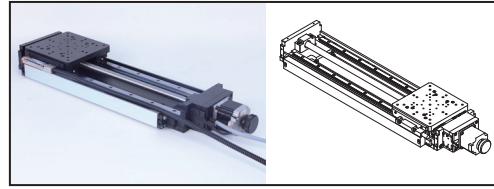
KA200



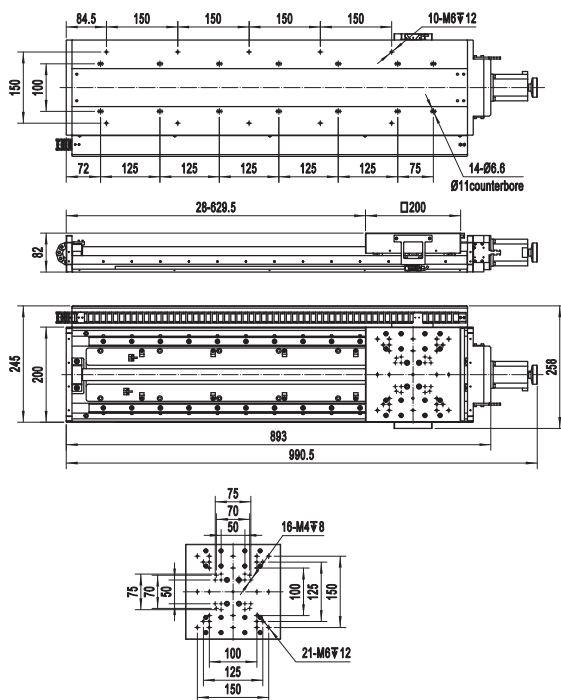
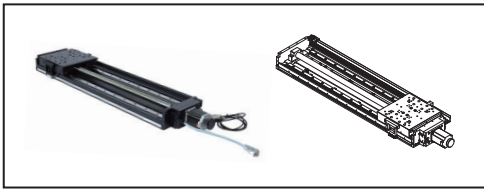
KA300



KA400



KA600



KA800

