KURODA JENATEC

Bidirectional Actuator

SE/SG series

High-precision open/close gripping motions
achieved with a single actuator

Bidirectional Actuator

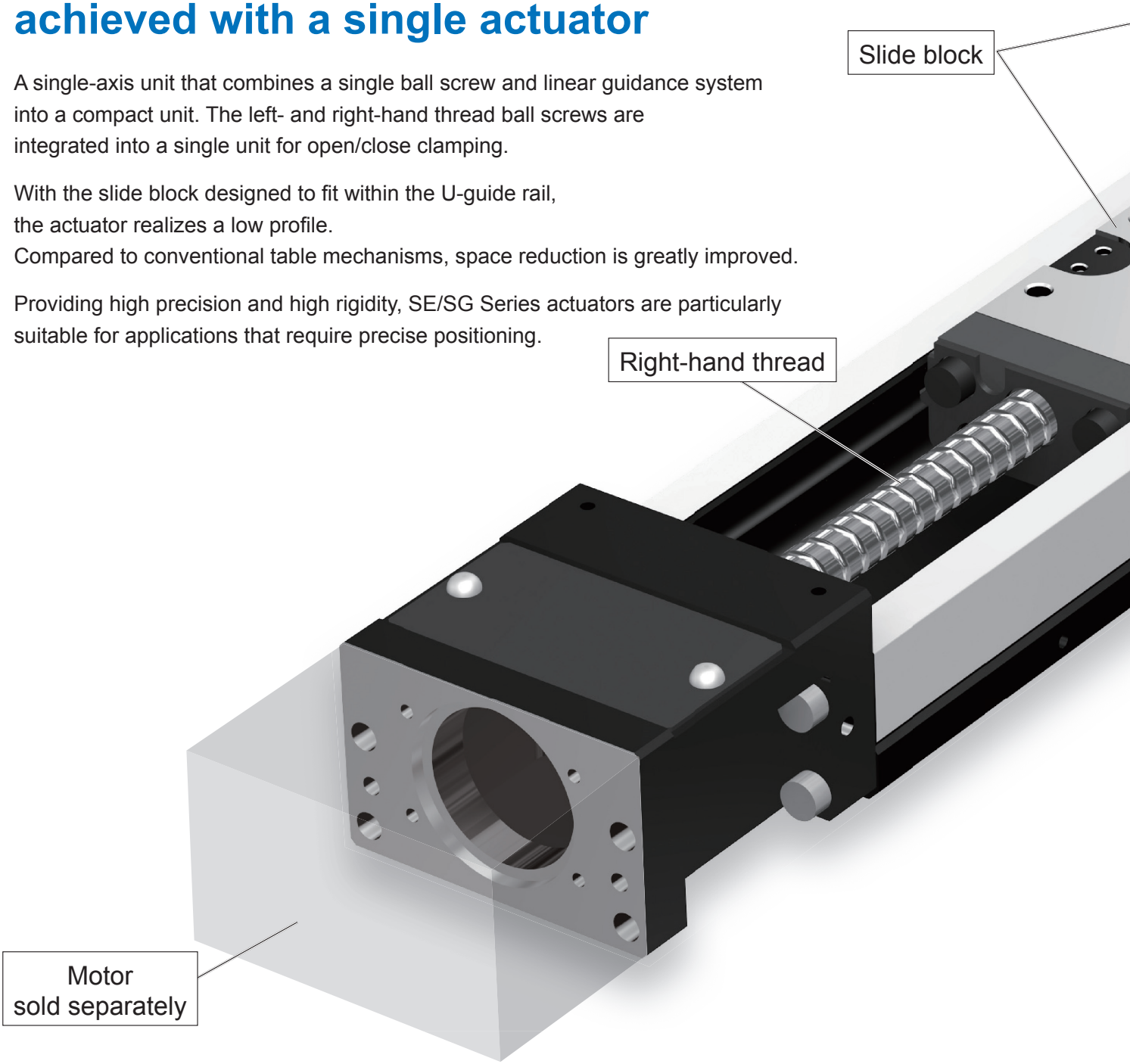
SE/SG Series

Open/close gripping motions achieved with a single actuator

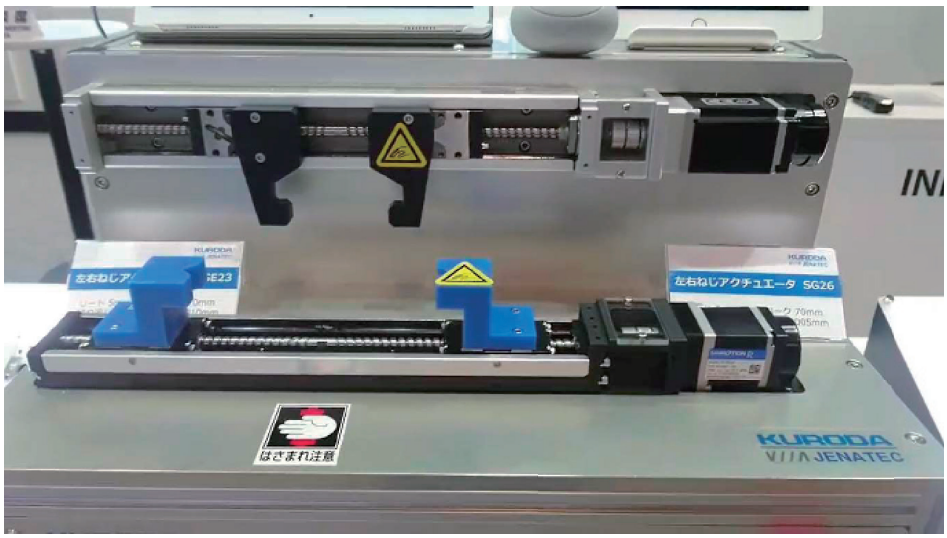
A single-axis unit that combines a single ball screw and linear guidance system into a compact unit. The left- and right-hand thread ball screws are integrated into a single unit for open/close clamping.

With the slide block designed to fit within the U-guide rail, the actuator realizes a low profile.
Compared to conventional table mechanisms, space reduction is greatly improved.

Providing high precision and high rigidity, SE/SG Series actuators are particularly suitable for applications that require precise positioning.



Repeated positioning accuracy
SE: ±0.010mm or less
SG: ±0.005mm or less



Sizes, Specifications

	Model No.	Stroke [mm]	Repeated positioning accuracy [mm]	◎: Standard product ●: Made-to-order product
SE	SE1501B-150B-****-*S	30	±0.010	◎
	SE1502B-150B-****-*S			◎
	SE2302B-250B-****-*S	45		◎
	SE2305B-250B-****-*S			◎
	SE2305B-300B-****-*S	70		◎
	SE3004B-400B-****-*S	100		●
	SE3005B-400B-****-*S			◎
	SE3010B-400B-****-*S			◎
	SE4510B-540B-****-*S	130		●
SG	SG2602B-300B-****-*S	70	±0.005	◎
	SG2605B-300B-****-*S			◎
	SG3305B-400B-****-*S	100		◎
	SG3310B-400B-****-*S			◎
	SG4610B-540B-****-*S	130		●

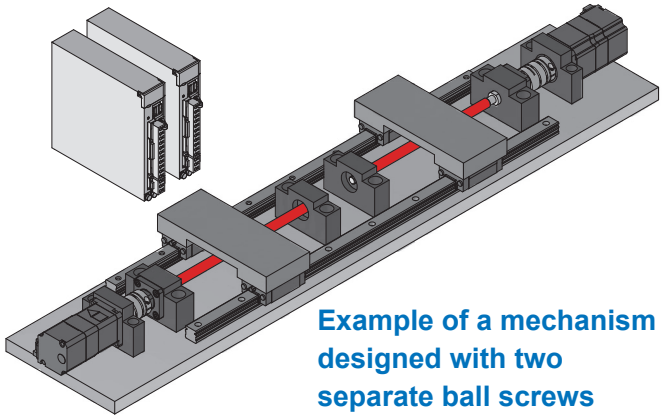
Gripping Force

SE	SG	Motor capacity [W]	Gripping force [N]
SE1501	✳	10	20
		20	20
		30	20
SE1502	✳	10	25
		20	40
		30	40
SE2302	SG2602	50	126
		100	137
SE2305	SG2605	50	50
		100	101
SE3004	✳	50	60
		100	120
		200	253
SE3005	SG3305	50	50
		100	101
		200	202
SE3010	SG3310	50	25
		100	50
		200	101
SE4510	SG4610	50	25
		100	50
		200	101

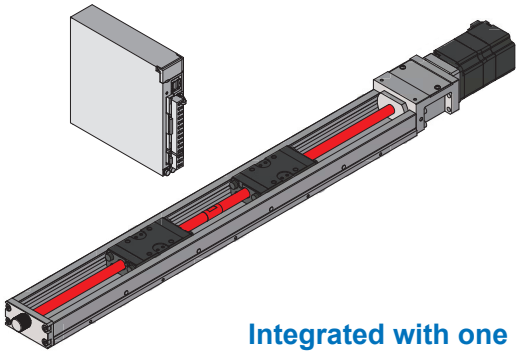
- The gripping force is a reference value from the pushing force from the rated torque of the typical motor capacity applied to the actuator, or from the maximum axial load that affects the ball screw.
- The gripping force may vary depending on the transport mass, speed, material, and installation conditions. Please set the operating conditions appropriately.
- If the force exceeds the value indicated here, malfunction or damage to the actuator may occur.

Reduces procurement costs as well as design and assembly time, all while contributing to space efficiency

SE/SG bidirectional actuators reduce the overall space required for components, enabling smaller equipment design.
By simultaneously using left and right screw threads in the actuator's drive component, the need to prepare one ball screw for each motion function is eliminated. The decreased number of components supports cost reduction as well as simplified supply chain management.
The integrated design eliminates the need for complicated, fine adjustment that would otherwise be needed to achieve shaft center alignment and synchronized operation. The number of assembling processes and, consequently, total time required for installation is decreased.
The reduced number of linear components accordingly reduces the number of peripheral components such as motors and amplifiers.



Example of a mechanism designed with two separate ball screws



Integrated with one bidirectional actuator

Approximately 40% reduction in assembly time, component count, and supply chain management burden

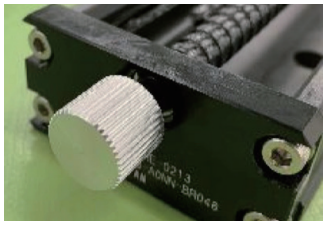
Approximately 20% reduction in dimensional footprint of equipment

Dual motion functions achieved with a single actuator

Manual adjustment handle included

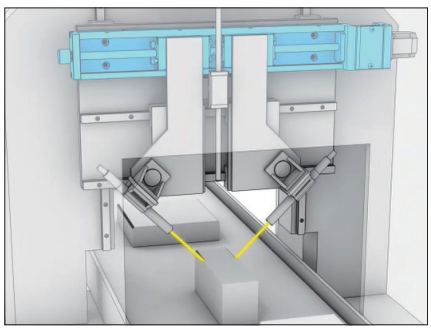
The manual handle can be used to easily rotate the screw shaft when assembling the device, for example, to check the position and operation of the slide block.

* Do not touch the handle while it is in operation because it is a rotating part and there is a risk of it being caught.

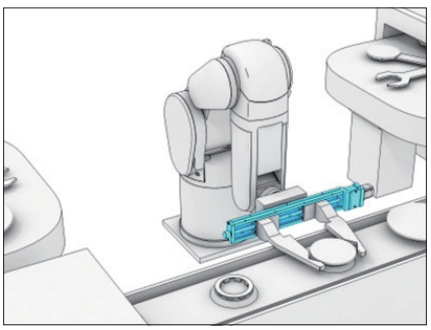


Kuroda S-Grease included

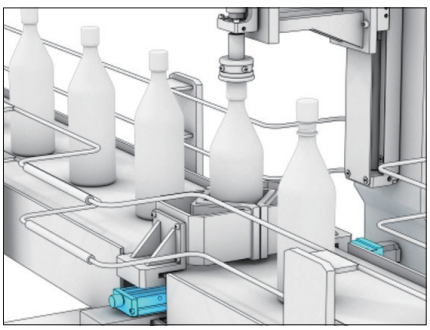
It also has low particle generation properties that make it suitable for use in semiconductor manufacturing equipment.



Workpiece chamfering machine



Robot hand



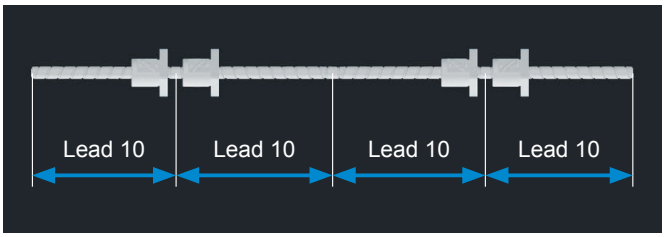
Centering of workpiece

Kaniactuator (Custom offering)

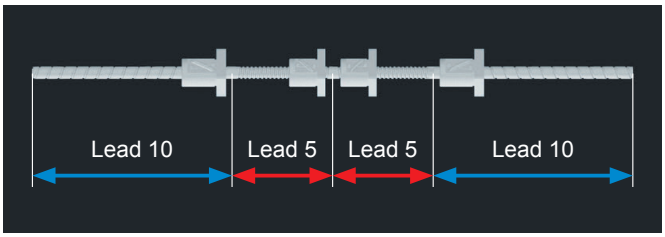
Two sets of open/close blocks. A second gripping mechanism is combined using two additional slide blocks.
By selecting a design with distinct leads, various gripping operations become possible with a single unit.

An actuator with two gripping features, like crab claws ("Kani")

Single lead



Multiple leads

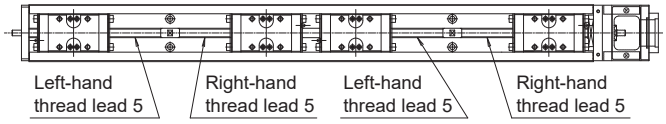


Available sizes

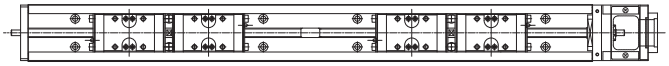
Distinct lead designs possible (ex: 10mm lead for all, or 4mm lead for the inside and 5mm lead for the outside)

Model No.	Lead ●● [mm]			Repeated positioning accuracy [mm]
SE30●●V-***V-****-*S	4	5	10	±0.010
SE45●●V-***V-****-*S	5	10	20	±0.010

Single lead

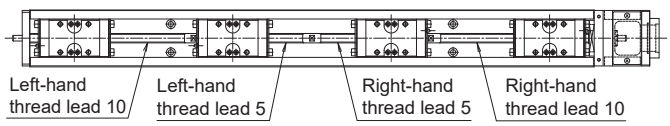


[Before opening/closing]

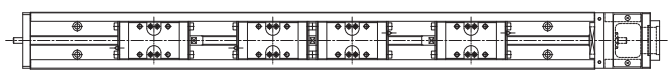


[After opening/closing]

Multiple leads



[Before opening/closing]



[After opening/closing]

Model Number Interpretation Key (Note 1)

Model No.	Lead	Slide block	–	Guide rail Length	Performance sign	–	Motor bracket configuration	Type of cover	Sensor	–	Surface treatment	Grease	–	Dowel pin hole
SE15	01	B		150	B		A0	N	N		N	S		
(1)	(2)	(3)		(4)	(5)		(6)	(7)	(8)		(9)	(10)		(11)

(1) Model and (2) lead

Model No.	Lead
SE15	1, 2
SE23	2, 5
SE30	4, 5, 10
SE45	10
SG26	2, 5
SG33	5, 10
SG46	10

(3) Slide block

Standard	B: With two long blocks
Crab actuator	V

(4) Guide rail length (Note 2)

Model No.	Length
SE15	150
SE23	250, 300
SE30	400
SE45	540
SG26	300
SG33	400
SG46	540

(5) Performance symbol

Standard	B
Crab actuator	V

(6) Motor bracket configuration

Model	Motor bracket configuration
SE15	A0, A1, A2, A3
SE23	A0, A1, A2, A3, A5, A6, A7
SE30	A0, A1, A2, A3, A4, A5, A7, B1, RN, E□, F□
SE45	A0, A1, A2, A3, A4, A5, A6, RN, E□, F□, G□
SG26	A0, A1, A3, A5, A6, A8, A9, AA, R0
SG33	A0, A1, A2, A3, A4, A5, A6, A7, B1, B2, R0, E□, F□
SG46	A0, A1, A2, A3, A4, B0, C0, D0, R0, E□, F□, G□

(7) Cover shape

N	No cover
C	With upper surface cover

(8) Sensor (Note 3)

SE15	N: None K, E: Proximity sensor 1: Only sensor rail
SE23	N: None S: Photo micro-sensor K, E: Proximity sensor 1: Only sensor rail
SE30	N: None M, Y, C, P: Photo micro-sensor K, E: Proximity sensor 1: Only sensor rail
SE45	
SG26	N: None S: Photo micro-sensor K, E: Proximity sensor 1: Only sensor rail
SG33	N: None M, Y, C, P, H, J: Photo micro-sensor K, E: Proximity sensor 1, 2, 3: Only sensor rail
SG46	

(9) Surface treatment

N	Standard specification
L	Rust preventive black oxide film treatment

(10) Grease

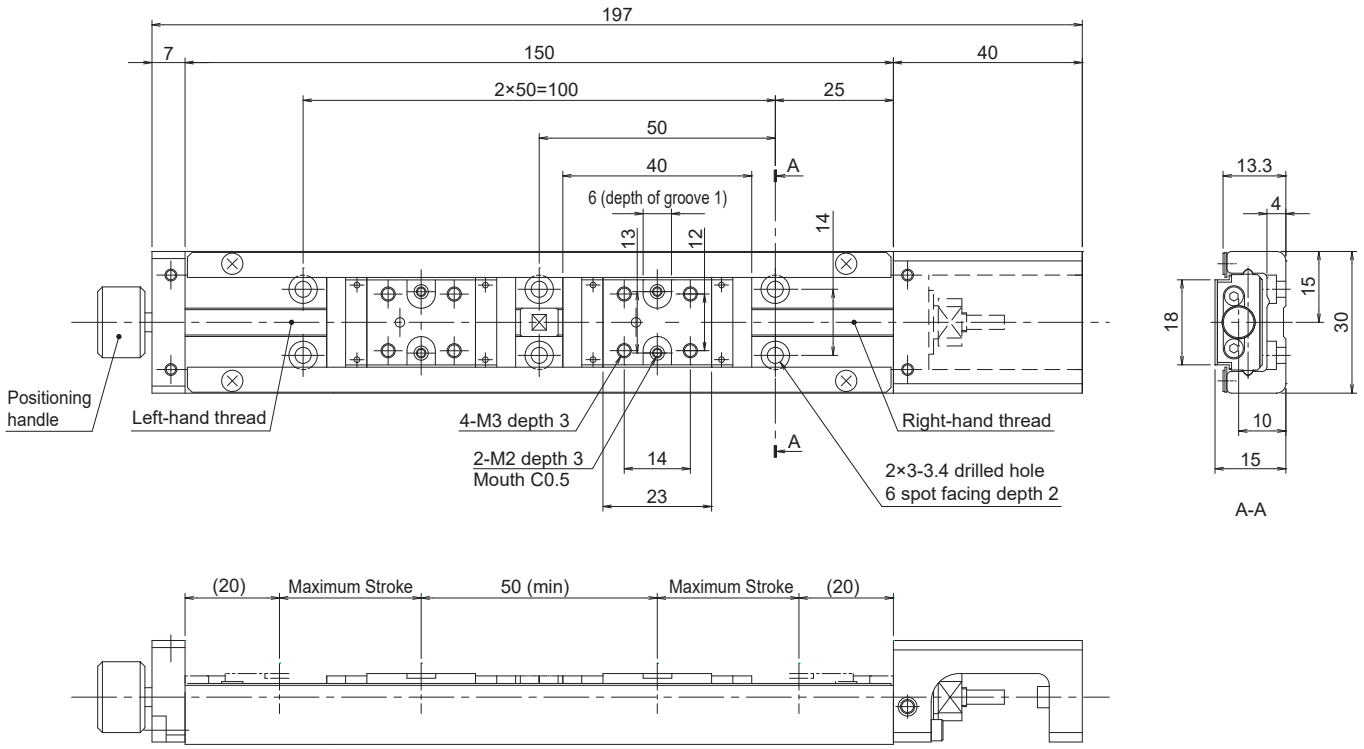
All	S: Low particle generating grease (Kuroda S-Grease)

(11) Dowel pin hole

Blank	No dowel pin hole
PS	For slide block only
PR	For guide rail only
PSR	For both slide block and guide rail

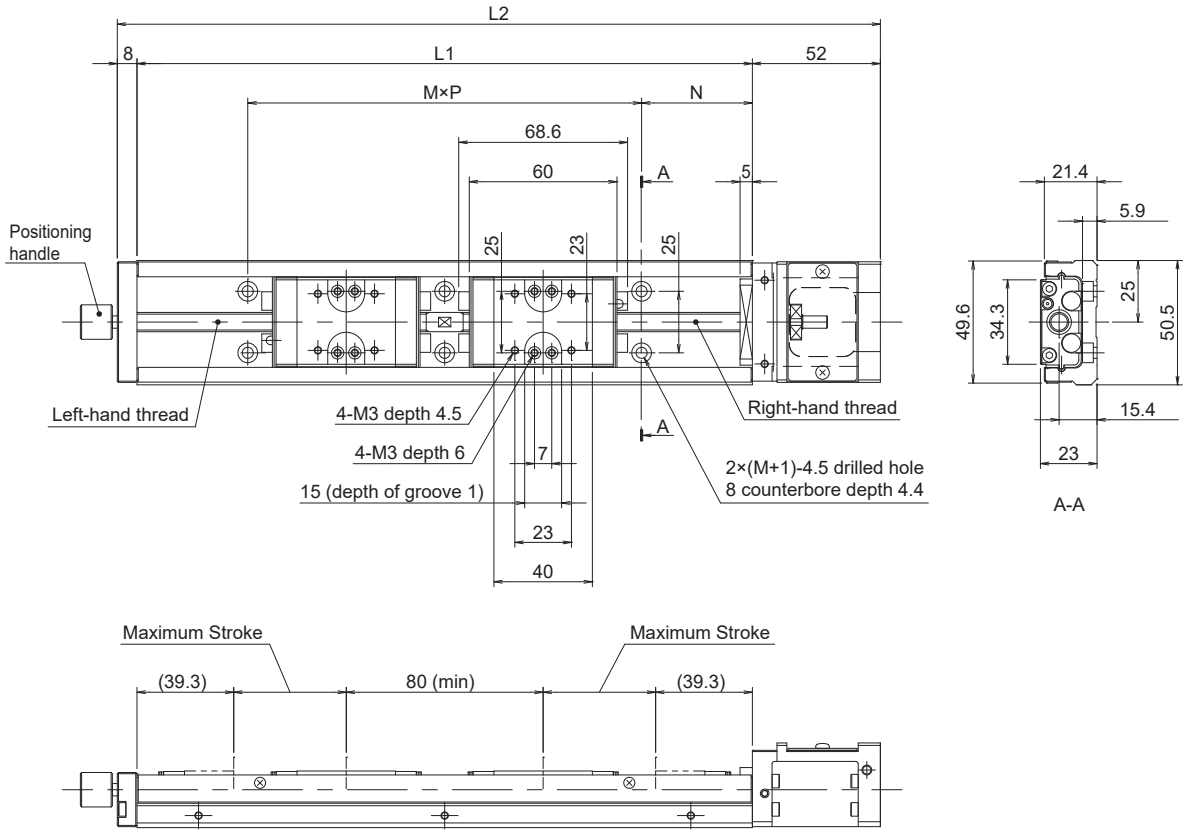
(Note 1) For details, please refer to the KURODA catalog [Ball screw actuator].
(Note 2) Please consult with us for long guide rail specifications and intermediate stroke specifications other than the standard length.
(Note 3) One sensor and one sensor dog are located on the motor bracket side.

SE1501/1502



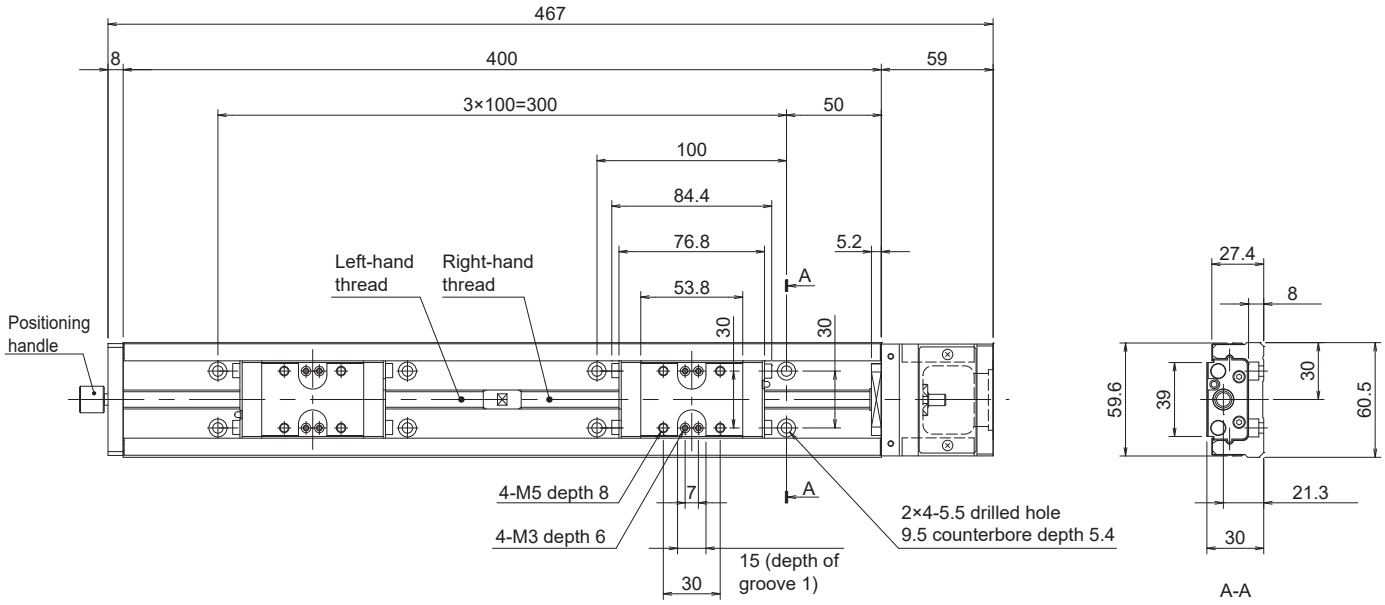
Specification/Model		SE1501B-150B	SE1502B-150B
Lead [mm]		1	2
Basic dynamic load rating [kN]	Ball Screw part Ca	0.39	0.54
	Guide part C	1.6	
	Bearing part Cb	0.5	
Basic static load rating [kN]	Ball Screw part Ca	0.77	0.76
	Guide part C	2.7	
	Bearing part Cb	0.19	
Static permissible moment [N・m]	M_P	10	
	M_Y	11	
	M_R	28	
Gripping force [N]	Motor capacity [10W]	20	25
	Motor capacity [20W]	20	40
	Motor capacity [30W]	20	40
Stroke [mm]		30	
Repeated positioning accuracy [mm]		±0.010	
Positioning accuracy [mm]		0.070	
Travelling parallelism B [mm]		0.015	
Backlash [mm] [or less]		0.020	
Starting torque [N・m] [or less]		0.012	
Ball screw shaft conversion inertia [kg・m^2]		1.61×10^{-7}	

SE2302/2305



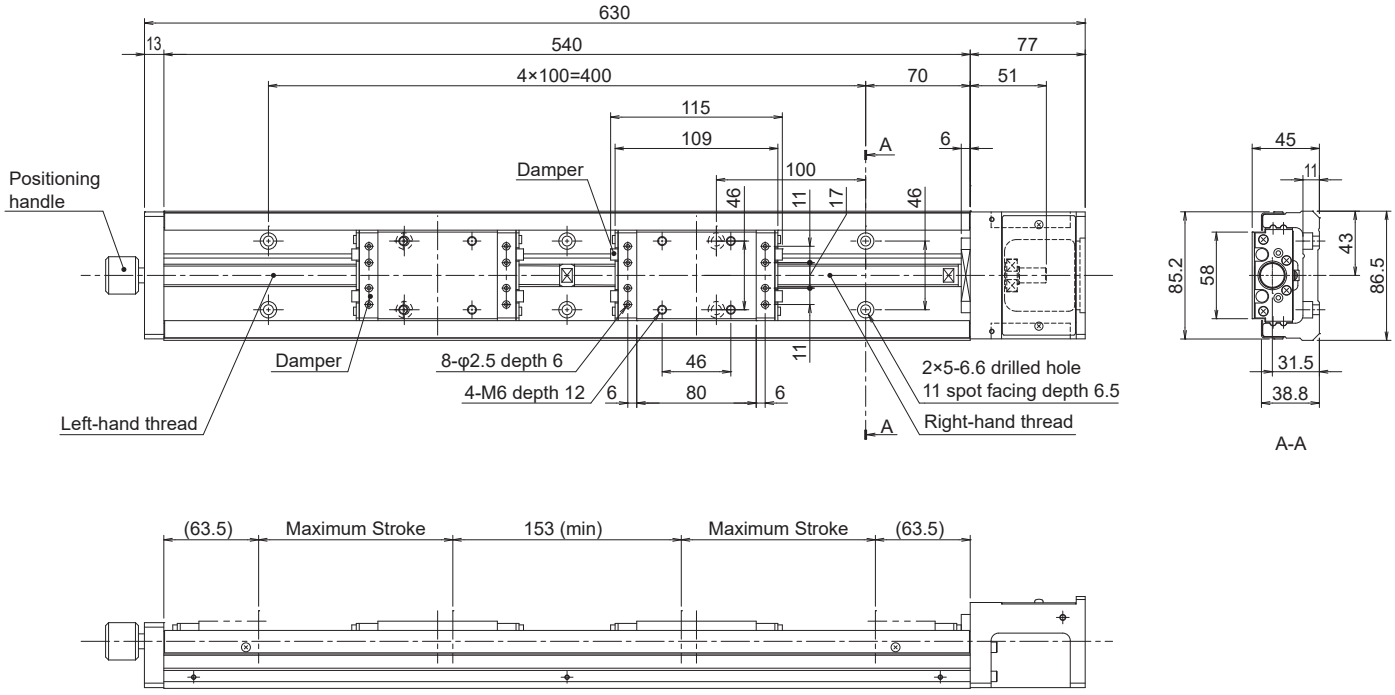
Specification/Model		SE2302B-250B	SE2305B-250B	SE2305B-300B
Lead [mm]		2	5	5
Basic dynamic load rating [kN]	Ball Screw part Ca	1.8	1.9	
	Guide part C	4.3		
	Bearing part Cb	1.79		
Basic static load rating [kN]	Ball Screw part Ca	3.2	3.1	
	Guide part C	7.0		
	Bearing part Cb	1.76		
Static permissible moment [N·m]	M_P	46		
	M_Y	51		
	M_R	134		
Gripping force [N]	Motor capacity [50W]	126	50	
	Motor capacity [100W]	137	101	
Stroke [mm]		45		70
Repeated positioning accuracy [mm]		±0.010		
Positioning accuracy [mm]		0.085		
Travelling parallelism B [mm]		0.015		
Backlash [mm] [or less]		0.020		
Starting torque [N·m] [or less]		0.040		
Ball screw shaft conversion inertia [kg·m^2]		9.36×10^{-7}	1.10×10^{-6}	1.26×10^{-6}
Guide rail length	L1	250		300
Total length	L2	310		360
N		45		30
M×P		2×80		3×80

SE3004/3005/3010



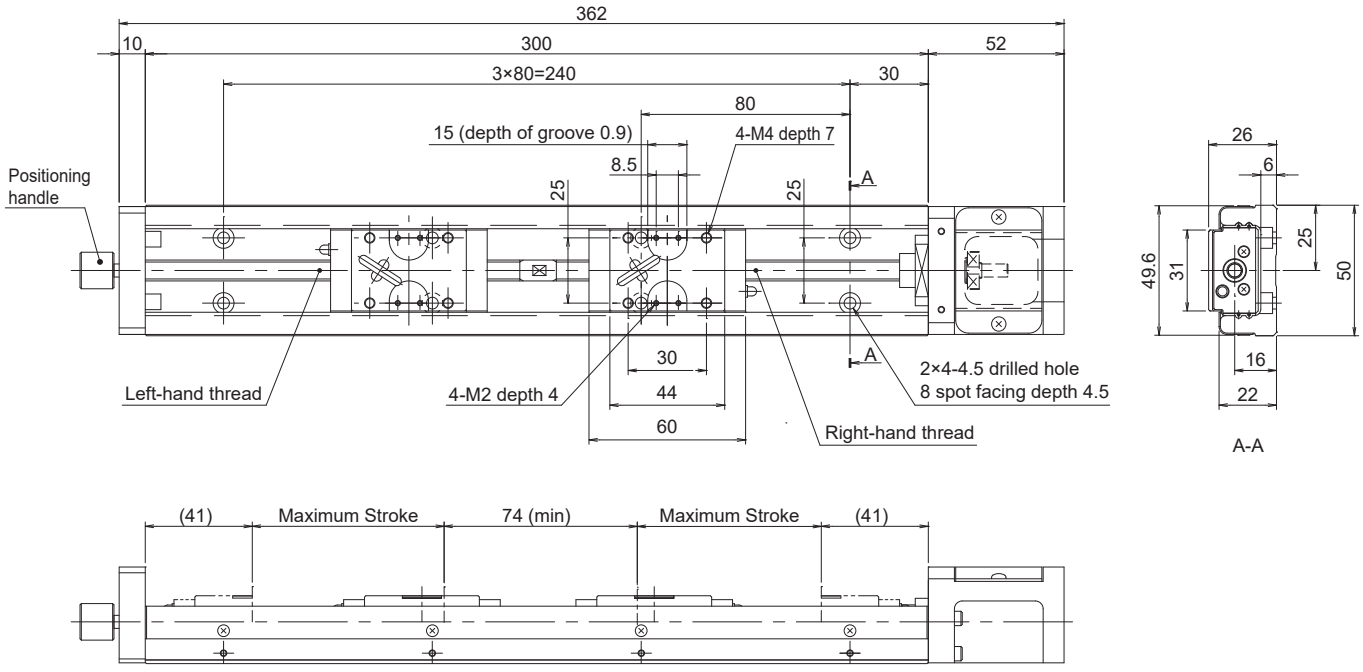
Specification/Model		SE3004B-400B	SE3005B-400B	SE3010B-400B
Lead [mm]		4	5	10
Basic dynamic load rating [kN]	Ball Screw part Ca	3.0		2.0
	Guide part C	7.0		
	Bearing part Cb	4.4		
Basic static load rating [kN]	Ball Screw part Ca	5.3		3.2
	Guide part C	11.8		
	Bearing part Cb	4.36		
Static permissible moment [N・m]	M_P	101		
	M_Y	120		
	M_R	260		
Gripping force [N]	Motor capacity [50W]	60	50	25
	Motor capacity [100W]	120	101	50
	Motor capacity [200W]	253	202	101
Stroke [mm]		100		
Repeated positioning accuracy [mm]		±0.010		
Positioning accuracy [mm]		0.095		
Travelling parallelism B [mm]		0.025		
Backlash [mm] [or less]		0.020		
Starting torque [N・m] [or less]		0.15		
Ball screw shaft conversion inertia [kg・m^2]		3.61×10^{-6}	3.74×10^{-6}	4.86×10^{-6}

SE4510



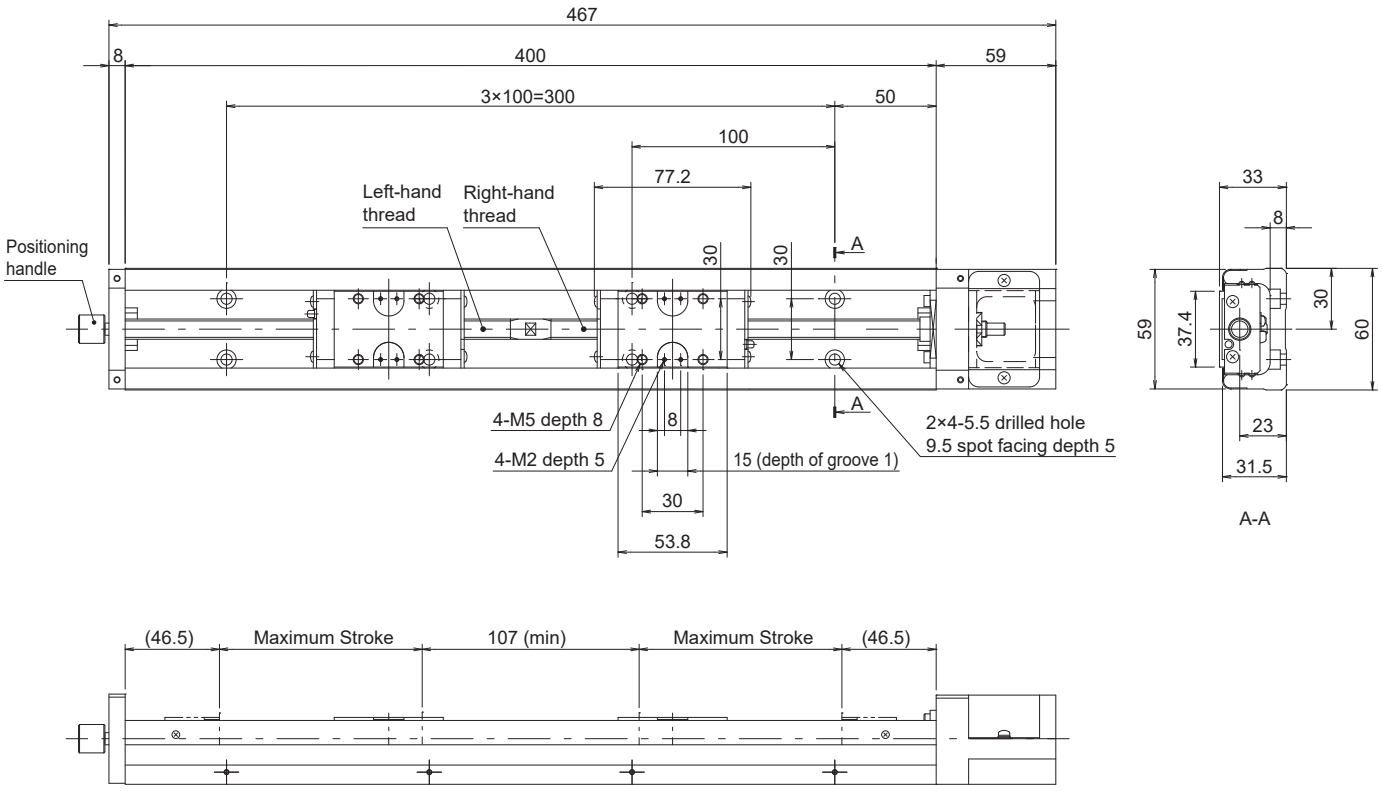
Specification/Model		SE4510B-540B
Lead [mm]		10
Basic dynamic load rating [kN]	Ball Screw part Ca	5.1
	Guide part C	27
	Bearing part Cb	5.9
Basic static load rating [kN]	Ball Screw part Ca	10.5
	Guide part C	45
	Bearing part Cb	3.2
Static permissible moment [N・m]	M_P	572
	M_Y	681
	M_R	1410
Gripping force [N]	Motor capacity [50W]	25
	Motor capacity [100W]	50
	Motor capacity [200W]	101
Stroke [mm]		130
Repeated positioning accuracy [mm]		±0.010
Positioning accuracy [mm]		0.110
Travelling parallelism B [mm]		0.040
Backlash [mm] [or less]		0.020
Starting torque [N・m] [or less]		0.20
Ball screw shaft conversion inertia [kg・m^2]		2.81×10^{-5}

SG2602/2605



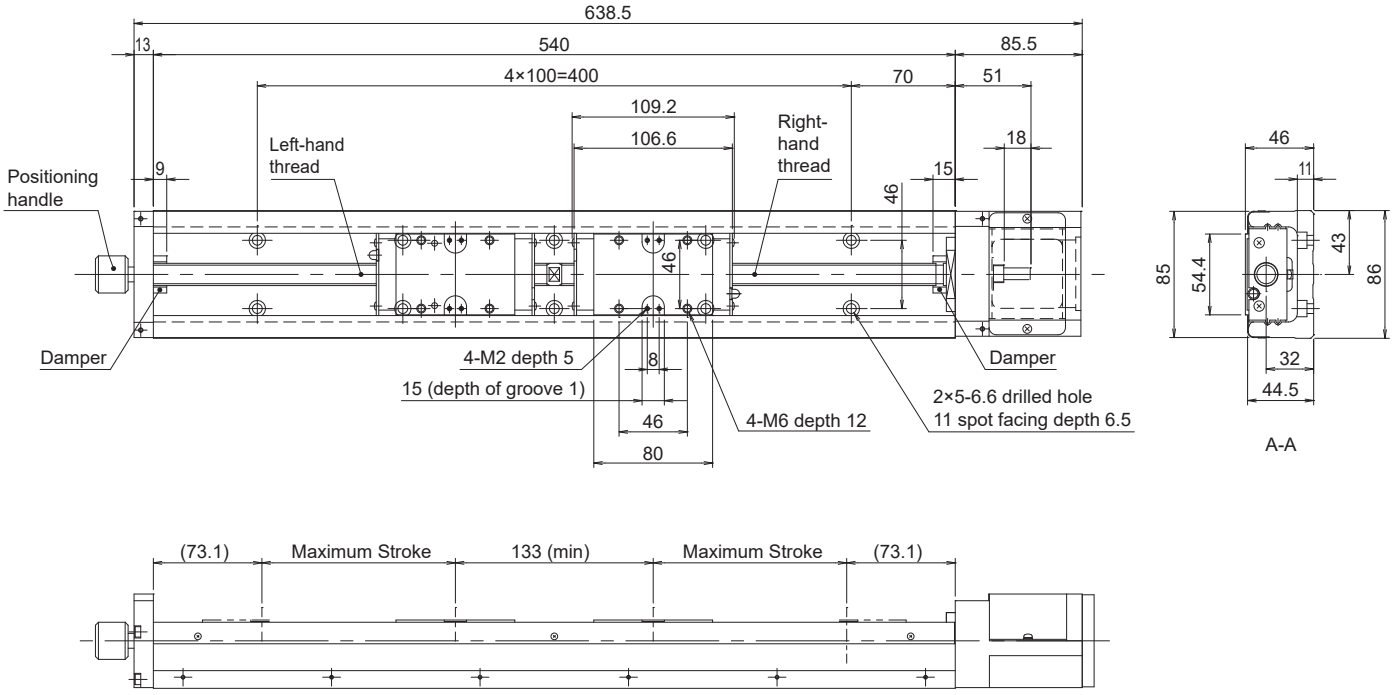
Specification/Model		SG2602B-300B	SG2605B-300B
Lead [mm]		2	5
Basic dynamic load rating [kN]	Ball Screw part Ca	2.6	2.35
	Guide part C	7.78	
	Bearing part Cb	1.79	
Basic static load rating [kN]	Ball Screw part Ca	3.64	3.3
	Guide part C	14.98	
	Bearing part Cb	1.76	
Static permissible moment [N・m]	M_P	99	
	M_Y	118	
	M_R	255	
Gripping force [N]	Motor capacity [50W]	126	50
	Motor capacity [100W]	137	101
Stroke [mm]		70	
Repeated positioning accuracy [mm]		±0.005	
Positioning accuracy [mm]		0.050	
Travelling parallelism B [mm]		0.025	
Backlash [mm] [or less]		0.020	
Starting torque [N・m] [or less]		0.040	
Ball screw shaft conversion inertia [kg・m^2]		9.39×10^{-6}	1.28×10^{-6}

SG3305/3310



Specification/Model		SG3305B-400B	SG3310B-400B
Lead [mm]		5	10
Basic dynamic load rating [kN]	Ball Screw part Ca	3.35	2.2
	Guide part C	12.6	
	Bearing part Cb	4.4	
Basic static load rating [kN]	Ball Screw part Ca	5.9	3.5
	Guide part C	22.7	
	Bearing part Cb	4.36	
Static permissible moment [N・m]	M_P	181	
	M_Y	215	
	M_R	500	
Gripping force [N]	Motor capacity [50W]	50	25
	Motor capacity [100W]	101	50
	Motor capacity [200W]	202	101
Stroke [mm]		100	
Repeated positioning accuracy [mm]		±0.005	
Positioning accuracy [mm]		0.035	
Travelling parallelism B [mm]		0.025	
Backlash [mm] [or less]		0.020	
Starting torque [N・m] [or less]		0.15	
Ball screw shaft conversion inertia [kg・m^2]		3.75×10^{-6}	4.90×10^{-6}

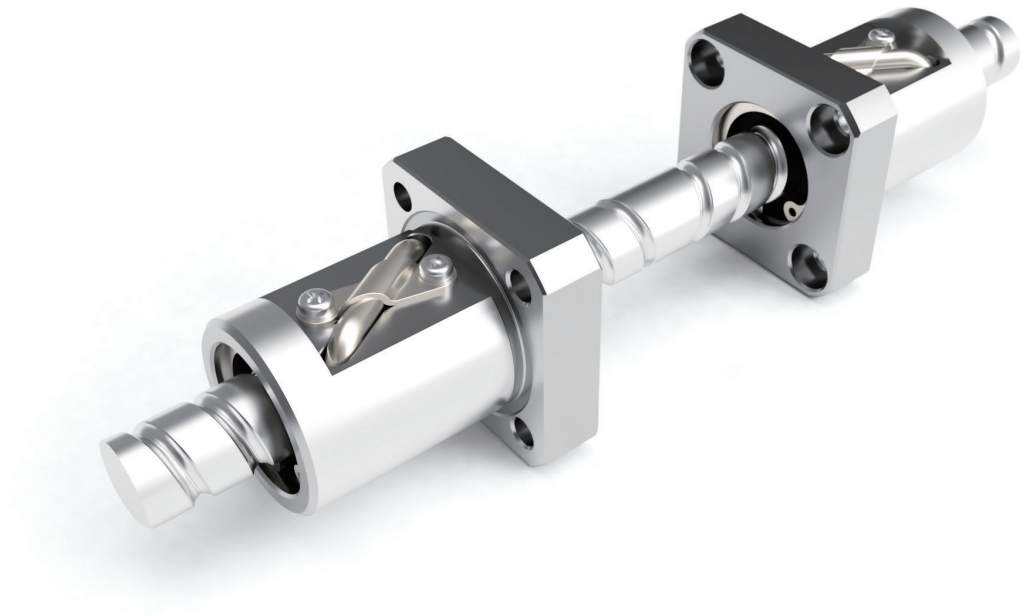
SG4610



Specification/Model		SG4610B-540B
Lead [mm]		10
Basic dynamic load rating [kN]	Ball Screw part Ca	4.4
	Guide part C	29.8
	Bearing part Cb	6.77
Basic static load rating [kN]	Ball Screw part Ca	7.9
	Guide part C	51.2
	Bearing part Cb	7.45
Static permissible moment [N·m]	M_P	610
	M_Y	727
	M_R	1612
Gripping force [N]	Motor capacity [50W]	25
	Motor capacity [100W]	50
	Motor capacity [200W]	101
Stroke [mm]		130
Repeated positioning accuracy [mm]		±0.005
Positioning accuracy [mm]		0.040
Travelling parallelism B [mm]		0.040
Backlash [mm] [or less]		0.02
Starting torque [N·m] [or less]		0.20
Ball screw shaft conversion inertia [kg·m^2]		2.79×10^{-5}

Bilateral Ball Screws Also Available

In addition to bilateral actuators,
bilateral ball screws are also available for customization
to meet your design requirements.



		Lead [mm]												
		1	2	3	4	5	6	8	10	12	15	16	20	32
Screw shaft Nominal diameter [mm]	Ø6	●	●											
	Ø8	●	●			●		●						
	Ø10		●		●	●			●					
	Ø12		●		●	●			●					
	Ø15			●	●	●			●				●	
	Ø16				●	●								
	Ø20			●	●	●			●				●	
	Ø25					●	●							
	Ø28					●	●							
	Ø32					●	●		●					●
	Ø36						●						●	
	Ø40								●					
	Ø45									●				
	Ø50											●		
	Ø55							●						
	Ø63								●					

* The sizes listed in this table are actual production results. If you need a size other than the above, please contact us.
* Please contact us for specifications and dimensions.

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CAT.NO.KB131-REV2

* The information in this document is current as of the end of June 2021.
Product appearance and specifications are subject to change without notice in order to keep up with technological advances and improvements.

2021.11(S)