

SE Series: High Rigidity ROLLED

Ball Screw Actuator



●No Need for Adjustment

Ball screw and slide guide are integrated to make complex precision adjustment unnecessary and drastically reduces the workload for mounting the ballscrew actuator.

●Compact, Space Savings

Slide block is set in U-guide rail, making it possible to reduce the size and space considerably as compared with the usual table type structure.

●High Precision Positioning

The linear motion unit, which is gothic-arched in the same way as the ball screw groove, allows for high precision positioning.

●Wide variety of Options

A wide variety of options is available for the SE series, such as dustproof cover, sensors, motor mounting brackets, parallel motor mounting units, and so on to meet various needs. For details, see the table of supported options.

VARIATIONS

| Model No. | SE15 | SE23 | SE30 | SE45 |
|-----------------------|--|------|------|------|
| Performance grade | H: Repeated positioning accuracy $\pm 3\mu\text{m}^*$ U: Repeated positioning accuracy $\pm 5\mu\text{m}^{**}$ W: Repeated positioning accuracy $\pm 10\mu\text{m}^{**}$ | | | |
| Screw shaft dia. (mm) | 6 | 8 | 10 | 15 |
| Lead (mm) | 1 | ◎ | | |
| | 2 | ◎ | ● | |
| | 4 | | ◎ | |
| | 5 | | ◎ | ◎ |
| | 6 | | | ◎ |
| | 8 | | ● | |
| | 10 | | | ◎ |
| 20 | | | ◎ | ◎ |

◎ Stocking item

● Manufactured to order

(*) There is no Performance Grade H in SC30 leads 6mm and 20mm

(**) Performance may be different from the values shown above, depending on applied options and usage

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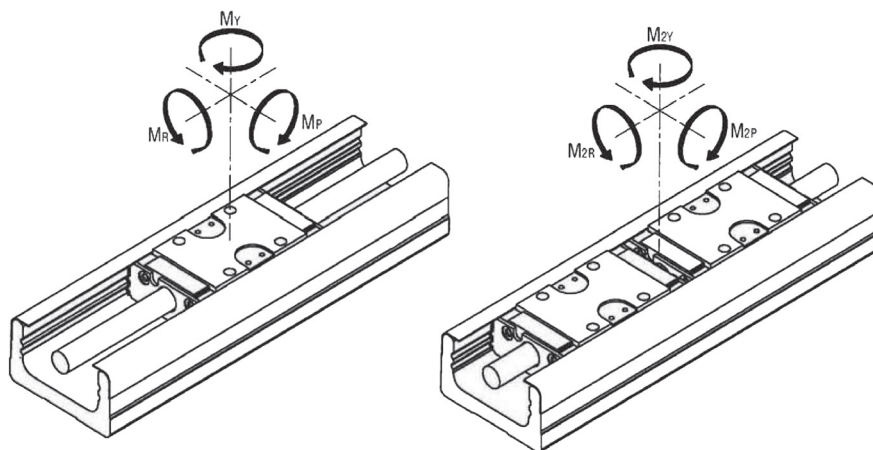
Ball Screw Actuator

SPECIFICATIONS

| Model No. | | | SE1501 | SE1502 | SE2302 | SE2305 | SE3004 | SE3005 | SE3006* | SE3010 | SE3020* | SE4505 | SE4510 | SE4520 | | | | | | | |
|--------------------|---------------------------|---------------------------|-----------------|-------------------|---------------|------------------------|---------------|---------------|---------------|------------------------|---------|--------|--------|---------------------|-------|------|---|---|---|---|--|
| Performance grade | | | W | U | H | W | U | H | W | U | H | W | U | H | W | U | H | W | U | H | |
| Guide | Long block | Radial clearance | μm | | -3~0 | | -3~0 | | -3~0 | | | | -5~0 | | | | | | | | |
| | | Basic dynamic load | C | kN | | 1.60 | | 4.30 | | 7.0 | | | | 27.0 | | | | | | | |
| | Static permissible moment | Basic static load | C ₀ | kN | | 2.70 | | 7.00 | | 11.8 | | | | 45.0 | | | | | | | |
| | | M _p | M _p | N·m | | 10 | | 46 | | 101 | | | | 572 | | | | | | | |
| | | | M _{2P} | N·m | | 60 | | 276 | | 606 | | | | 3,432 | | | | | | | |
| | | | M _Y | N·m | | 11 | | 51 | | 120 | | | | 681 | | | | | | | |
| | | | M _{ZY} | N·m | | 71 | | 306 | | 720 | | | | 4,086 | | | | | | | |
| | | | M _R | N·m | | 28 | | 134 | | 260 | | | | 1,410 | | | | | | | |
| | M _{2R} | | N·m | | 56 | | 268 | | 520 | | | | 2,820 | | | | | | | | |
| | Short block | Basic dynamic load | C | kN | | | | | | | | | | 16.9 | | | | | | | |
| | | Basic static load | C ₀ | kN | | | | | | | | | | 28.1 | | | | | | | |
| | | Static permissible moment | M _p | N·m | | Not available | | Not available | | Not available | | | | 223 | | | | | | | |
| | | | M _{2P} | N·m | | Not available | | Not available | | Not available | | | | 1,341 | | | | | | | |
| | | | M _Y | N·m | | Not available | | Not available | | Not available | | | | 266 | | | | | | | |
| M _{ZY} | | | N·m | | Not available | | Not available | | Not available | | | | 1,598 | | | | | | | | |
| M _R | N·m | | Not available | | Not available | | Not available | | | | 887 | | | | | | | | | | |
| M _{2R} | N·m | | Not available | | Not available | | Not available | | | | 1,774 | | | | | | | | | | |
| Ball screw | Shaft diameter | mm | 6 | | 8 | | | | 10 | | | | 15 | | | | | | | | |
| | Lead | mm | 1 | 2 | 2 | 5 | 4 | 5 | 6 | 10 | 20 | 5 | 10 | 20 | | | | | | | |
| | Basic dynamic load | C _a | kN | | 0.39 | 0.65 | 1.80 | 1.90 | 3.00 | 3.00 | 3.00 | 2.00 | 2.20 | 5.10 | 5.10 | 3.10 | | | | | |
| | Basic static load | C _{0a} | kN | | 0.77 | 0.76 | 3.20 | 3.10 | 5.30 | 5.30 | 5.30 | 3.20 | 3.50 | 10.50 | 10.50 | 6.60 | | | | | |
| | Model No. of bearing | | | 604 or equivalent | | AC6-16DF or equivalent | | | | 708ADFP5 or equivalent | | | | 5201A or equivalent | | | | | | | |
| Fixed side bearing | Basic dynamic load | C _b | kN | | 0.50 | | 1.79 | | 4.40 | | | | 5.90 | | | | | | | | |
| | Basic static load | C _{0b} | kN | | 0.19 | | 1.76 | | 4.36 | | | | 3.20 | | | | | | | | |

*There is no Performance Grade H in model SE30 leads 6mm and 20mm.

DIRECTION OF MOMENT



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ACCURACY

| Model No. | Guide Rail Length (mm) | *Repeated Positioning Accuracy (μm) | | | Positioning Accuracy (μm) | | | Traveling Parallelism (μm) | | | Backlash (μm) | | | **Starting Torque (N·m) | | |
|-----------|------------------------|-------------------------------------|----|---------|---------------------------|-----|----|----------------------------|----|---|---------------|-------|-------|-------------------------|---|---|
| | | W | U | H | W | U | H | W | U | H | W | U | H | W | U | H |
| SE15 | 100 | ±10 | ±5 | ±3 | 65 | 60 | 15 | 15 | 20 | 5 | 5 | 0.010 | 0.012 | 0.012 | | |
| | 150 | | | | 70 | | | | | | | | | | | |
| | 200 | | | | 75 | | | | | | | | | | | |
| SE23 | 150 | ±10 | ±5 | ±3 | 70 | 60 | 15 | 15 | 20 | 5 | 5 | 0.03 | 0.06 | 0.06 | | |
| | 200 | | | | 75 | | | | | | | | | | | |
| | 250 | | | | 85 | | | | | | | | | | | |
| | 300 | | | | 90 | | | | | | | | | | | |
| SE30 | 150 | ±10 | ±5 | ±3 (±5) | 70 | 60 | 15 | 15 | 20 | 5 | 5 | 0.07 | 0.15 | 0.15 | | |
| | 200 | | | | 80 | | | | | | | | | | | |
| | 300 | | | | 90 | | | | | | | | | | | |
| | 400 | | | | 95 | | | | | | | | | | | |
| | 500 | | | | 100 | | | | | | | | | | | |
| | 600 | | | 110 | 100 | 25 | 25 | | | | | | | | | |
| | 700 | | | 120 | - | 25 | - | - | | | | | | | | |
| | 750 | | | 130 | - | - | - | - | | | | | | | | |
| SE45 | 340 | ±10 | ±5 | ±3 (±5) | 95 | 60 | 35 | 35 | 20 | 5 | 5 | 0.1 | 0.2 | 0.2 | | |
| | 440 | | | | 100 | | | | | | | | | | | |
| | 540 | | | | 110 | | | | | | | | | | | |
| | 640 | | | | 120 | 100 | 40 | 40 | | | | | | | | |
| | 740 | | | | 130 | 120 | 40 | 40 | | | | | | | | |
| | 840 | | | | 150 | 150 | 50 | 50 | | | | | | | | |
| | 940 | | | | 170 | 150 | 50 | 50 | | | | | | | | |

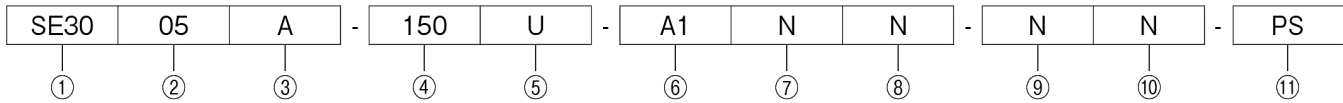
*For repeated positioning accuracy, the value in parentheses is for parallel motor mounted configurations

** Above starting torque value is applied when the standard grease is used. The value may change depending on the properties of the grease. Measurement is to be performed with KURODA's specified motor mounted.

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HOW TO INTERPRET MODEL NO.



① Model ② Lead

| ① Model | ② Lead | ② Sub guide rail |
|---------|-----------------|------------------|
| SE15 | 1, 2 | SB |
| SE23 | 2, 5 | |
| SE30 | 4, 5, 6, 10, 20 | |
| SE45 | 5, 10, 20 | |

③ Slide block

| Model | Slide block |
|--------------|--|
| SE15 | A: With 1 long block B: With 2 long blocks |
| SE23 SE30 | A: With 1 long block B: With 2 long blocks E: With 1 long block (LUBSEAL) F: With 2 long blocks (LUBSEAL) |
| SE45 | A: With 1 long block B: With 2 long blocks C: With 1 short block D: With 2 short blocks E: With 1 long block (LUBSEAL) F: With 2 long blocks (LUBSEAL) G: With 1 short block (LUBSEAL) H: With 2 short blocks (LUBSEAL) |

④ Guide rail length (Note 1) (Note 2)

| Model | Guide rail length (mm) |
|-------|--|
| SE15 | 100, 150, 200 |
| SE23 | 150, 200, 250, 300 |
| SE30 | 150, 200, 300, 400, 500, 600, 700*, 750* |
| SE45 | 340, 440, 540, 640, 740, 840, 940 |

⑤ Performance grade (Note 3)

| | |
|---|---|
| H | Repeated positioning accuracy $\pm 3\mu\text{m}$ |
| U | Repeated positioning accuracy $\pm 5\mu\text{m}$ |
| W | Repeated positioning accuracy $\pm 10\mu\text{m}$ |
| L | Sub guide rail |

⑥ Motor bracket configuration

| Model | Motor bracket configuration | Sub guide rail |
|-------|--|----------------|
| SE15 | A0, A1, A2, A3 | NN |
| 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□ | |

⑦ Type of cover

| | |
|---|---------------|
| N | Without cover |
| C | With cover |

⑧ Sensor

| Model | Sensor |
|-------|---|
| SE15 | N: Without sensor K, E: Proximity sensor 1: For sensor rails only |
| SE23 | N: Without sensor S: Photo-microsensor K, E: Proximity sensor 1: For sensor rails only |
| SE30 | N: Without sensor M, Y, C, P: Photo-microsensor |
| SE45 | K, E: Proximity sensor 1: For sensor rails only |

⑨ Surface treatment (Note 4)

| | |
|---|------------------------------|
| N | Standard treatment |
| L | Anti corrosive black coating |

⑩ Grease (Note 5)

| Model | Grease |
|-------|---|
| SE15 | N: Standard grease S: Dust preventive KURODA S grease |
| SE23 | |
| SE30 | |
| SE45 | |

⑪ Additional options (Note 6)

| | |
|-------|---|
| Blank | No dowel pin hole |
| PS | For slide block only |
| PR | For guide rail only |
| PSR | For both slide block and guide rail |
| ML | For reversed guide rail reference surface |
| MPS | For both reversed guide rail reference surface and slide block |
| MPR | For both reversed guide rail reference surface and guide rail |
| MSR | For reversed guide rail reference surface, slide block and guide rail |

(Note 1) For specifications of guide rail with long rails or intermediate stroke with non-standard length, consult KURODA.

(Note 2) The SE30 rail lengths marked with "*" are not available in Performance Grade H.

(Note 3) There is no Performance Grade H in SE30 leads 6mm and 20mm.

(Note 4) With standard specifications of surface treatment (Symbol: N), only guide rails are treated with black coating.

(Note 5) With standard grease (Symbol: N), Multemp PS No.2 Grease (KYODO YUSHI CO., LTD.) is contained in slide block and ball screw components.

(Note 6) Dowel pin hole configuration is not available for SE15.

(Note 7) With Lubrication unit LUBSEAL