

CONTENTS

HIGH ACCURACY BALLSCREW ACTUATORS/SG SERIES

| | |
|---|---------|
| Variations, Model No. | 2 |
| Specifications | 3 |
| Accuracy | 4 |
| Inertia | 5 |
| | |
| SG20 Long block configuration | 6 |
| Long block configuration, dimensions, permissible speed and mass | 7 |
| Motor bracket configuration | 8 |
| Motor bracket configuration (intermediate flange) | 9-10 |
| List of motor bracket configurations and motor option | 11 |
| Sensors and sensor rails | 12 |
| Dowel pin hole | 13 |
| | |
| SG26 Long block configuration | 14 |
| Long block configuration, dimensions, permissible speed and mass | 15 |
| Motor bracket configuration | 16 |
| Motor bracket configuration (intermediate flange) | 17-18 |
| List of motor bracket configurations and motor option | 19 |
| Sensors and sensor rails | 20 |
| Dowel pin hole | 21 |
| | |
| SG33 Long block configuration | 22 |
| Long block configuration, dimensions, permissible speed and mass | 23 |
| Short block configuration | 24 |
| Short block configuration, dimensions, permissible speed and mass | 25 |
| Motor bracket configuration | 26 |
| Motor bracket configuration (intermediate flange) | 27-29 |
| List of motor bracket configurations and motor option | 30 |
| Parallel motor mounting | 31 |
| Sensors and sensor rails | 32 |
| Dowel pin hole | 33 |
| | |
| SG46 Long block configuration | 34 |
| Long block configuration, dimensions, permissible speed and mass | 35 |
| Short block configuration | 36 |
| Short block configuration, dimensions, permissible speed and mass | 37 |
| Motor bracket configuration | 38 |
| Motor bracket configuration (intermediate flange) | 39 |
| List of motor bracket configurations and motor option | 40 |
| Parallel motor mounting | 41 |
| Sensors and sensor rails | 42 |
| Dowel pin hole | 43 |
| | |
| SG55 Long block configuration | 44 |
| Long block configuration, dimensions, permissible speed and mass | 45 |
| Motor bracket configuration | 46 |
| Motor bracket configuration (intermediate flange) | 47 |
| List of motor bracket configurations and motor option | 48 |
| Sensors and sensor rails | 49 |
| Dowel pin hole | 50 |
| | |
| Sensor Specifications | 122-124 |

SG

SG20

SG26

SG33

SG46

SG55

SE

SE15

SE23

SE30

SE45

SC

SC23

SC30

SC45

Sensor

Technical Data

VARIATIONS

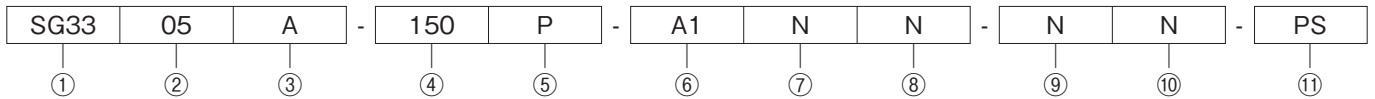
| | | | | | | |
|-----------------------|--|------|------|--------|------|------|
| Model No. | SG20 | SG26 | SG33 | SG3320 | SG46 | SG55 |
| Performance grade | P: Repeated positioning accuracy $\pm 1\mu\text{m}^*$ H: Repeated positioning accuracy $\pm 3\mu\text{m}^*$ | | | | | |
| Screw shaft dia. (mm) | 6 | 8 | 10 | 12 | 15 | 20 |
| Lead (mm) | 1 | ○ | | | | |
| | 2 | | ○ | ● | | |
| | 5 | ○ | ○ | ○ | ● | ● |
| | 10 | | | ○ | ○ | ● |
| | 20 | | | | ○ | ○ |



○: In-stock items ●: Manufactured by order

(Note 1) Asterisked (*) items may be different from the values shown above, depending on applied options and usage.

HOW TO INTERPRET MODEL NO.



① Model ② Lead

| ① Model | ② Lead |
|---------|-----------|
| SG20 | 1, 5 |
| SG26 | 2, 5 |
| SG33 | 5, 10, 20 |
| SG46 | 10, 20 |
| SG55 | 20 |

③ Slide block

| Model | Slide block |
|--------------------------|---|
| SG20 | A: With 1 long block B: With 2 long blocks |
| SG26 | A: With 1 long block B: With 2 long blocks |
| ^(NOTE 1) SG33 | A: With 1 long block B: With 2 long blocks |
| SG46 | C: With 1 short block D: With 2 short blocks |
| SG55 | A: With 1 long block B: With 2 long blocks |

④ Guide rail length ^(NOTE 2) ^(NOTE 3)

| Model | Guide rail length (mm) |
|-------|--|
| SG20 | 100, 150, 200 |
| SG26 | 150, 200, 250, 300 |
| SG33 | 150, 200, 300, 400, 500, 600* |
| SG46 | 340, 440, 540, 640, 740, 840*, 940*, 1040*, 1140*, 1240* |
| SG55 | 980, 1080, 1180, 1280*, 1380* |

⑤ Performance grade

| | |
|---|--|
| P | Repeated positioning accuracy $\pm 1\mu\text{m}$ |
| H | Repeated positioning accuracy $\pm 3\mu\text{m}$ |

⑥ Motor bracket configuration

| Model | Motor bracket configuration |
|-------|--|
| SG20 | A0, A1, A3, A5, A6, A8, A9, AA, R0 |
| 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□ |
| SG55 | A0, A1, A2, A3, A4, R0 |

⑦ Type of cover

| | |
|---|---------------|
| N | Without cover |
| C | With cover |
| L | Low housing |

⑧ Sensor

| Model | Sensor |
|-------|---|
| SG20 | N: Without sensor S: Photo-microsensor |
| | K, E: Proximity sensor 1: For sensor rails only |
| SG26 | Without sensor |
| SG33 | M, Y, C, P, H, J: Photo-microsensor K, E: Proximity sensor |
| SG46 | 1, 2, 3: For sensor rails only |
| SG55 | |

⑨ Surface treatment ^(Note 4)

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

⑩ Grease ^(Note 5)

| Model | Grease |
|-------|---|
| SG20 | N: Standard grease S: Dust preventive KURODA S grease |
| SG26 | |
| SG33 | |
| SG46 | |
| SG55 | |

⑪ Additional options

| | |
|-------|-------------------------------------|
| 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) Short slide block type (Symbol: C, D) is not available in lead 20mm.

(Note 2) For specifications of guide rail with long rails or intermediate stroke with non-standard length, consult KURODA.

(Note 3) Asterisked (*) items in the table apply only to performance grade H.

(Note 4) With standard surface treatment (Symbol: N), guide rails of SG20 and SG26 are not treated with anti corrosive coating. For SG33, SG46 and SG55, only guide rails are treated with black coating as the standard surface treatment.

(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.

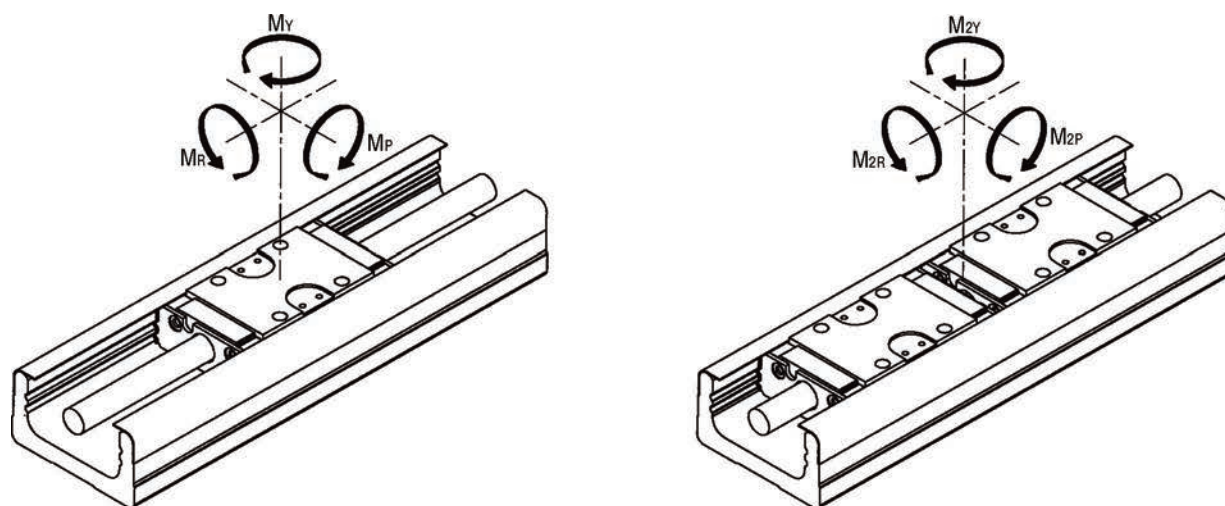
SPECIFICATIONS

| Model No. | | SG2001 | | SG2005 | | SG2602 | | SG2605 | | SG3305 | | SG3310 | | SG3320 | | SG4610 | | SG4620 | | SG5520 | | |
|--------------------|---------------------------|---------------------------|------------------------|--------|------------------------|---------------|------------------------|---------------|-------------------------|--------|-------------------------|---------------|-------|--------|------|--------|------|--------|-------|--------|------|--------|
| Performance grade | | H | P | H | P | H | P | H | P | H | P | H | P | H | P | H | P | H | P | H | P | |
| Guide | Radial clearance | μm | -3~0 | -6~-3 | -3~0 | -6~-3 | -4~0 | -8~-4 | -4~0 | -8~-4 | -3~0 | -7~-3 | -3~0 | -7~-3 | -3~0 | -7~-3 | -5~0 | -11~-5 | -5~0 | -11~-5 | -6~0 | -18~-6 |
| | Long block | Basic dynamic load rating | C | kN | | 4.27 | | 7.78 | | 12.6 | | 29.8 | | 43.2 | | | | | | | | |
| | | | Co | kN | | 7.89 | | 14.98 | | 22.7 | | 51.2 | | 74.0 | | | | | | | | |
| | | Static permissible moment | M_P | N·m | | 35 | | 99 | | 181 | | 610 | | 1,088 | | | | | | | | |
| | | | M_{2P} | N·m | | 199 | | 550 | | 1,035 | | 3,285 | | 5,465 | | | | | | | | |
| | | | M_Y | N·m | | 42 | | 118 | | 215 | | 727 | | 1,297 | | | | | | | | |
| | | | M_{2Y} | N·m | | 237 | | 656 | | 1,233 | | 3,914 | | 6,513 | | | | | | | | |
| | | | M_R | N·m | | 101 | | 255 | | 500 | | 1,612 | | 2,701 | | | | | | | | |
| | M_{2R} | N·m | | 201 | | 509 | | 1,000 | | 3,224 | | 5,402 | | | | | | | | | | |
| | Short block | Basic dynamic load rating | C | kN | | Not available | | Not available | | 7.8 | | Not available | | 19.9 | | | | | | | | |
| | | | Co | kN | | Not available | | Not available | | 11.4 | | Not available | | 28.8 | | | | | | | | |
| | | Static permissible moment | M_P | N·m | | Not available | | Not available | | 49 | | Not available | | 207 | | | | | | | | |
| | | | M_{2P} | N·m | | Not available | | Not available | | 368 | | Not available | | 1,336 | | | | | | | | |
| | | | M_Y | N·m | | Not available | | Not available | | 59 | | Not available | | 246 | | | | | | | | |
| M_{2Y} | | | N·m | | Not available | | Not available | | 439 | | Not available | | 1,593 | | | | | | | | | |
| M_R | | | N·m | | Not available | | Not available | | 250 | | Not available | | 907 | | | | | | | | | |
| M_{2R} | N·m | | Not available | | Not available | | 500 | | Not available | | 1,814 | | | | | | | | | | | |
| Ball screw | Shaft diameter | mm | 6 | | 8 | | 10 | | 12 | | 15 | | 20 | | | | | | | | | |
| | Lead | mm | 1 | 5 | 2 | 5 | 5 | 10 | 20 | 10 | 20 | 20 | | | | | | | | | | |
| | Spacer to ball ratio | | — | | — | | — | 1:1 | — | 1:1 | — | 1:1 | — | 2:1 | — | 2:1 | | | | | | |
| | Basic dynamic load rating | Ca | kN | | 0.63 | 0.65 | 2.60 | 2.35 | 3.35 | 2.11 | 2.20 | 1.39 | 2.32 | 1.46 | 4.40 | 2.77 | 4.40 | 3.36 | 5.40 | 4.12 | | |
| | Basic static load rating | Coa | kN | | 1.34 | 0.92 | 3.64 | 3.30 | 5.90 | 2.95 | 3.50 | 1.75 | 4.05 | 2.03 | 7.90 | 3.95 | 7.90 | 5.27 | 10.50 | 7.00 | | |
| Fixed side bearing | Model No. of bearing | | AC5-14DF or equivalent | | AC6-16DF or equivalent | | 708ADFP5 or equivalent | | 7001ADFP5 or equivalent | | 7002ADFP5 or equivalent | | 9.50 | | | | | | | | | |
| | Basic dynamic load rating | Cb | kN | | 1.31 | | 1.79 | | 4.40 | | 6.77 | | 7.74 | | | | | | | | | |
| | Basic static load rating | Cob | kN | | 1.25 | | 1.76 | | 4.36 | | 7.45 | | 9.50 | | | | | | | | | |

(Note 1) Static permissible moment, M_{2P} and M_{2Y} , means the values for when 2 slide blocks are used in close contact with each other.

(Note 2) For your use of P grade model of SG20 and SG26 at small stroke (SG2001: 7mm or less, SG2005: 25mm or less, SG2602: 14mm or less, SG2605: 25mm or less) and at high-frequency reciprocation, consult KURODA.

DIRECTION OF MOMENT



ACCURACY

| Model No. | Guide rail length (mm) | Repeated positioning accuracy (μm) | | Positioning accuracy (μm) | | Travelling parallelism B (μm) | | Backlash (μm) | | Starting torque ^(Note 2) (N·m) | |
|-----------|------------------------|---|------------------------|--|----|--|----|----------------------------|---|---|-------|
| | | H | P | H | P | H | P | H | P | H | P |
| SG20 | 100 | ± 3 | ± 1 | 50 | 20 | 25 | 10 | 5 | 2 | 0.01 | 0.012 |
| | 150 | | | | | | | | | | |
| | 200 | | | | | | | | | | |
| SG26 | 150 | ± 3 | ± 1 | 50 | 20 | 25 | 10 | 5 | 2 | 0.015 | 0.04 |
| | 200 | | | | | | | | | | |
| | 250 | | | | | | | | | | |
| | 300 | | | | | | | | | | |
| SG33 | 150 | ± 3 (± 5) | ± 1 (± 3) | 30 | 15 | 25 | 10 | 5 | 2 | 0.07 | 0.15 |
| | 200 | | | 35 | 20 | | | | | | |
| | 300 | | | 40 | 25 | | | | | | |
| | 400 | | | 40 | 25 | 35 | 15 | | | | |
| | 500 | | | 70 | — | 35 | — | | | | |
| | 600 | | | — | — | — | — | | | | |
| SG46 | 340 | ± 3 (± 5) | ± 1 (± 3) | 35 | 20 | 35 | 15 | 5 | 2 | 0.10 | 0.15 |
| | 440 | | | 40 | 25 | | | | | | |
| | 540 | | | 50 | 30 | | | | | | |
| | 640 | | | 80 | — | 50 | — | | | | |
| | 740 | | | — | — | — | — | | | | |
| | 840 | | | 100 | — | — | — | | | | |
| | 940 | | | — | — | — | — | | | | |
| | 1040 | | | — | — | — | — | | | | |
| | 1140 | | | — | — | — | — | | | | |
| | 1240 | | | — | — | — | — | | | | |
| SG55 | 980 | ± 3 | ± 1 | 80 | 35 | 50 | 25 | 5 | 2 | 0.12 | 0.17 |
| | 1080 | | | 40 | 30 | | | | | | |
| | 1180 | | | 100 | — | | | | | | |
| | 1280 | | | — | — | | | | | | |
| | 1380 | | | — | — | | | | | | |

(Note 1) Measurement is to be performed with KURODA's specified motor mounted.

(Note 2) Above starting torque value is applied when the standard grease is used. The value may change depending on the properties of the grease.

(Note 3) For repeated positioning accuracy, the value in parentheses is for parallel motor mounted configurations.

INERTIA

Inertia for slide block and ball screw of ballscrew actuator is shown in the following table. (Unit : $\times 10^{-5} \text{kg}\cdot\text{m}^2$)

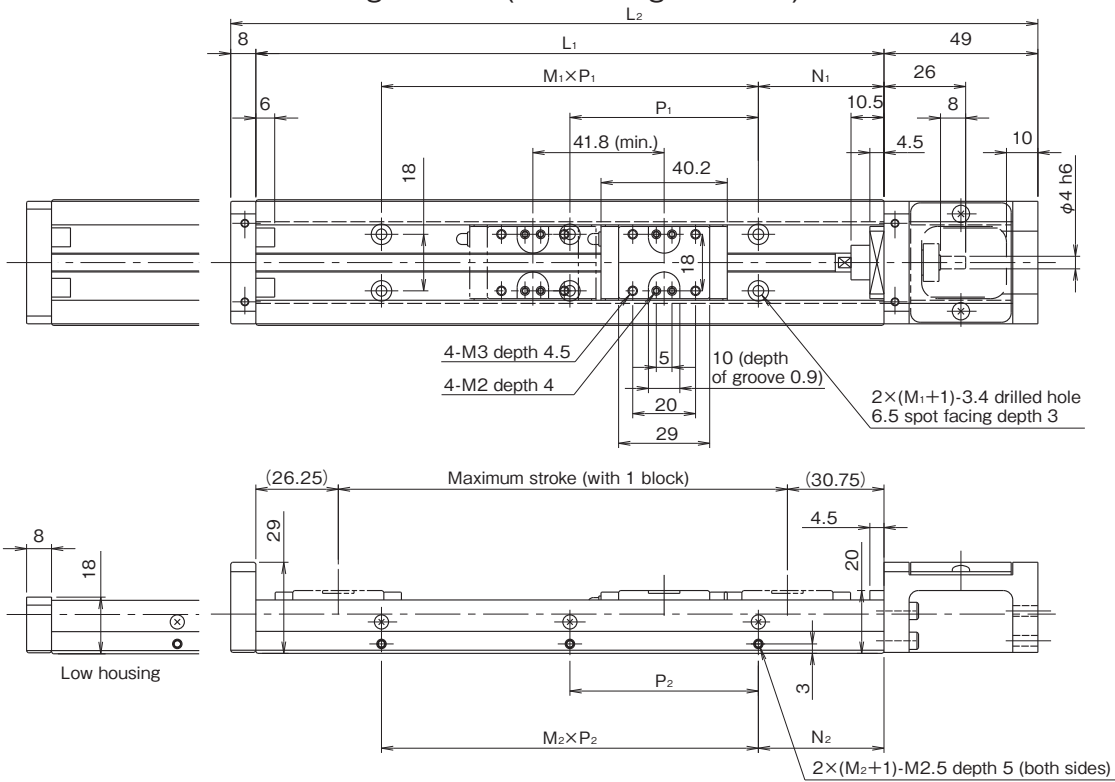
| Model No. | Guide rail length (mm) | Without dustproof cover | | | | With dustproof cover | | | |
|-----------|------------------------|-------------------------|----------|-------------|----------|----------------------|----------|-------------|----------|
| | | Long block | | Short block | | Long block | | Short block | |
| | | 1 block | 2 blocks | 1 block | 2 blocks | 1 block | 2 blocks | 1 block | 2 blocks |
| | | A | B | C | D | A | B | C | D |
| SG2001 | 100 | 0.0134 | — | — | — | 0.0135 | — | — | — |
| | 150 | 0.0183 | 0.0185 | | | 0.0184 | 0.0187 | | |
| | 200 | 0.0233 | 0.0235 | | | 0.0234 | 0.0237 | | |
| SG2005 | 100 | 0.0176 | — | — | — | 0.0200 | — | — | — |
| | 150 | 0.0226 | 0.0270 | | | 0.0250 | 0.0318 | | |
| | 200 | 0.0276 | 0.0320 | | | 0.0300 | 0.0368 | | |
| SG2602 | 150 | 0.0608 | — | — | — | 0.0616 | — | — | — |
| | 200 | 0.0765 | 0.0783 | | | 0.0773 | 0.0797 | | |
| | 250 | 0.0922 | 0.0939 | | | 0.0929 | 0.0954 | | |
| | 300 | 0.1080 | 0.1100 | | | 0.1090 | 0.1110 | | |
| SG2605 | 150 | 0.0699 | — | — | — | 0.0744 | — | — | — |
| | 200 | 0.0856 | 0.0963 | | | 0.0901 | 0.1050 | | |
| | 250 | 0.1010 | 0.1120 | | | 0.1060 | 0.1210 | | |
| | 300 | 0.1170 | 0.1280 | | | 0.1210 | 0.1370 | | |
| SG3305 | 150 | 0.164 | — | 0.156 | 0.164 | 0.171 | — | 0.160 | 0.171 |
| | 200 | 0.202 | — | 0.194 | 0.203 | 0.209 | — | 0.198 | 0.210 |
| | 300 | 0.279 | 0.299 | 0.271 | 0.279 | 0.286 | 0.313 | 0.275 | 0.286 |
| | 400 | 0.355 | 0.375 | 0.348 | 0.356 | 0.362 | 0.389 | 0.351 | 0.363 |
| | 500 | 0.432 | 0.452 | 0.424 | 0.432 | 0.439 | 0.466 | 0.428 | 0.439 |
| | 600 | 0.508 | 0.528 | 0.501 | 0.509 | 0.515 | 0.542 | 0.504 | 0.516 |
| SG3310 | 150 | 0.219 | — | 0.188 | 0.221 | 0.247 | — | 0.202 | 0.249 |
| | 200 | 0.257 | — | 0.227 | 0.259 | 0.285 | — | 0.240 | 0.287 |
| | 300 | 0.334 | 0.414 | 0.303 | 0.336 | 0.361 | 0.469 | 0.317 | 0.364 |
| | 400 | 0.410 | 0.490 | 0.380 | 0.412 | 0.438 | 0.546 | 0.394 | 0.440 |
| | 500 | 0.487 | 0.567 | 0.456 | 0.489 | 0.515 | 0.622 | 0.470 | 0.517 |
| | 600 | 0.563 | 0.643 | 0.533 | 0.565 | 0.591 | 0.699 | 0.547 | 0.593 |
| SG3320 | 150 | 0.594 | — | — | — | 0.706 | — | — | — |
| | 200 | 0.674 | — | — | — | 0.785 | — | — | — |
| | 300 | 0.833 | 1.150 | — | — | 0.944 | 1.380 | — | — |
| | 400 | 0.991 | 1.310 | — | — | 1.100 | 1.530 | — | — |
| | 500 | 1.150 | 1.470 | — | — | 1.260 | 1.690 | — | — |
| | 600 | 1.310 | 1.630 | — | — | 1.420 | 1.850 | — | — |
| SG4610 | 340 | 1.79 | 2.02 | 1.69 | 1.82 | 1.87 | 2.17 | 1.74 | 1.92 |
| | 440 | 2.18 | 2.41 | 2.08 | 2.20 | 2.25 | 2.56 | 2.13 | 2.31 |
| | 540 | 2.57 | 2.79 | 2.46 | 2.59 | 2.64 | 2.95 | 2.52 | 2.69 |
| | 640 | 2.95 | 3.18 | 2.85 | 2.98 | 3.03 | 3.33 | 2.90 | 3.08 |
| | 740 | 3.34 | 3.57 | 3.24 | 3.37 | 3.42 | 3.72 | 3.29 | 3.47 |
| | 840 | 3.73 | 3.96 | 3.63 | 3.75 | 3.80 | 4.11 | 3.67 | 3.83 |
| | 940 | 4.12 | 4.35 | 4.02 | 4.14 | 4.19 | 4.50 | 4.06 | 4.22 |
| | 1040 | 4.50 | 4.74 | 4.41 | 4.53 | 4.58 | 4.88 | 4.44 | 4.61 |
| | 1140 | 4.89 | 5.12 | 4.79 | 4.92 | 4.97 | 5.27 | 4.83 | 4.99 |
| | 1240 | 5.28 | 5.51 | 5.18 | 5.30 | 5.35 | 5.66 | 5.22 | 5.38 |
| SG4620 | 340 | 2.47 | 3.39 | 2.07 | 2.58 | 2.78 | 3.99 | 2.27 | 2.98 |
| | 440 | 2.86 | 3.77 | 2.46 | 2.96 | 3.17 | 4.38 | 2.66 | 3.37 |
| | 540 | 3.25 | 4.16 | 2.84 | 3.35 | 3.55 | 4.77 | 3.05 | 3.76 |
| | 640 | 3.64 | 4.55 | 3.23 | 3.74 | 3.94 | 5.16 | 3.44 | 4.14 |
| | 740 | 4.03 | 4.94 | 3.62 | 4.13 | 4.33 | 5.55 | 3.82 | 4.53 |
| | 840 | 4.41 | 5.34 | 4.02 | 4.51 | 4.71 | 5.93 | 4.17 | 4.82 |
| | 940 | 4.80 | 5.72 | 4.41 | 4.90 | 5.09 | 6.32 | 4.56 | 5.21 |
| | 1040 | 5.19 | 6.11 | 4.80 | 5.29 | 5.48 | 6.71 | 4.95 | 5.59 |
| | 1140 | 5.57 | 6.50 | 5.18 | 5.68 | 5.87 | 7.09 | 5.34 | 5.98 |
| SG5520 | 1240 | 5.96 | 6.89 | 5.57 | 6.06 | 6.26 | 7.48 | 5.72 | 6.37 |
| | 980 | 14.6 | 16.4 | — | — | 15.2 | 17.6 | — | — |
| | 1080 | 15.9 | 17.6 | | | 16.5 | 18.8 | | |
| | 1180 | 17.1 | 18.8 | | | 17.7 | 20.0 | | |
| | 1280 | 18.3 | 20.0 | | | 18.9 | 21.2 | | |
| 1380 | 19.5 | 21.3 | 20.1 | | | 22.5 | | | |

(Note 1) Dash (-) in the above table means the configuration is not available.

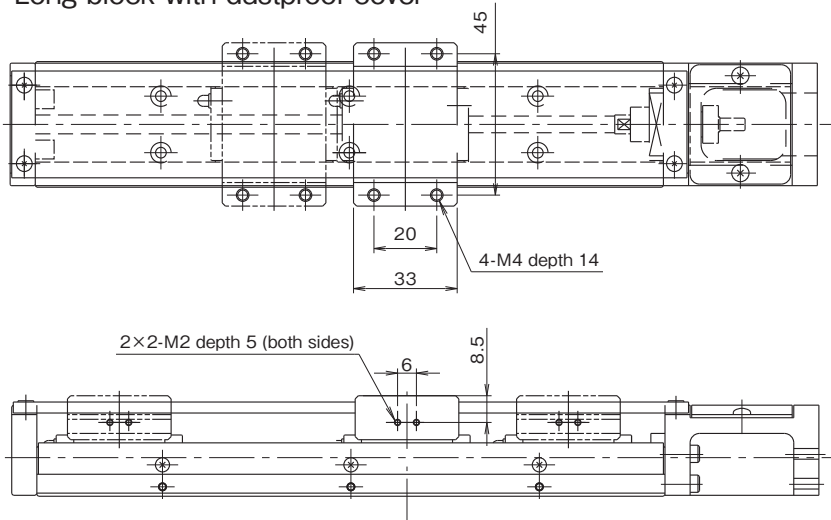
SG20

● LONG BLOCK CONFIGURATIONS

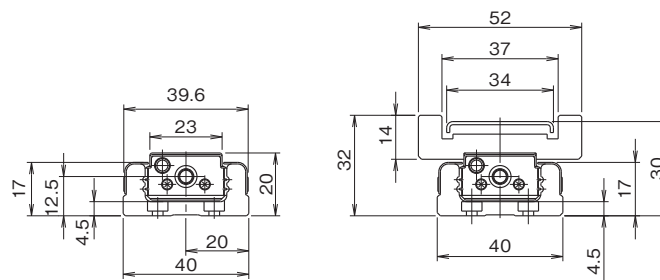
With 1 long block: A (With 2 long blocks: B)



Long block with dustproof cover



Without dustproof cover With dustproof cover



SG20

● LONG BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Long block | |
| | | | | | | A: 1 block | B: 2 blocks |
| 100 | 157 | 20 | 1 × 60 | 20 | 1 × 60 | 43 | — |
| 150 | 207 | 15 | 2 × 60 | 15 | 2 × 60 | 93 | 51 |
| 200 | 257 | 40 | | 40 | | 143 | 101 |

● PERMISSIBLE SPEED / MASS

| Guide rail length L_1 (mm) | Permissible speed (mm/s) | | Mass (kg) | | | | | |
|------------------------------------|--------------------------|-----|---------------|------|------------|------|---------------|------------|
| | Lead | | Without cover | | With cover | | Slide block | |
| | 1mm | 5mm | A | B | A | B | Without cover | With cover |
| 100 | 187 | 925 | 0.45 | — | 0.5 | — | 0.07 | 0.11 |
| 150 | | | 0.58 | 0.65 | 0.63 | 0.74 | | |
| 200 | | | 0.71 | 0.78 | 0.77 | 0.88 | | |

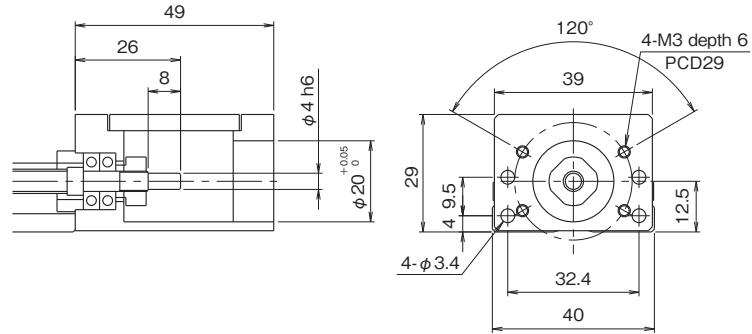
(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

(Note 2) For long rail configurations, please consult KURODA.

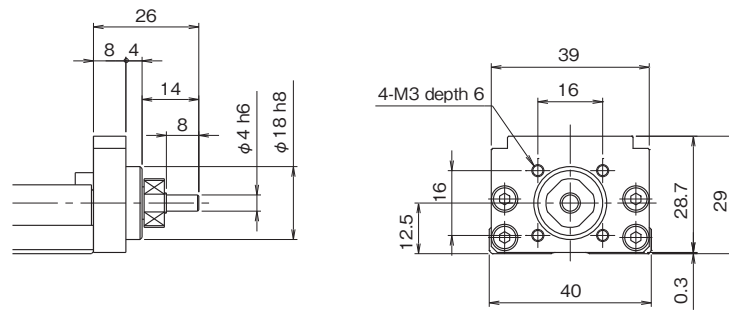
SG20

● MOTOR BRACKET CONFIGURATIONS

Motor bracket configuration: A0



Motor bracket configuration: R0

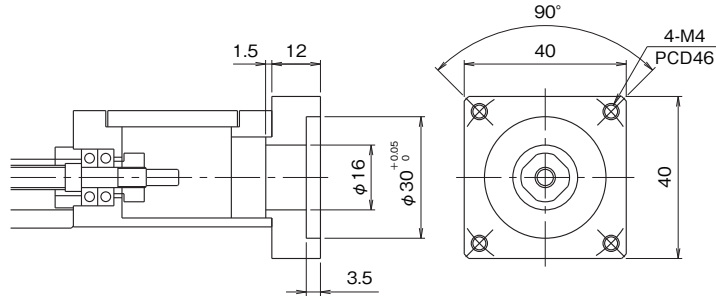


Mass of the R0 configuration is 0.04 kg less than the value shown in the table on page 7.

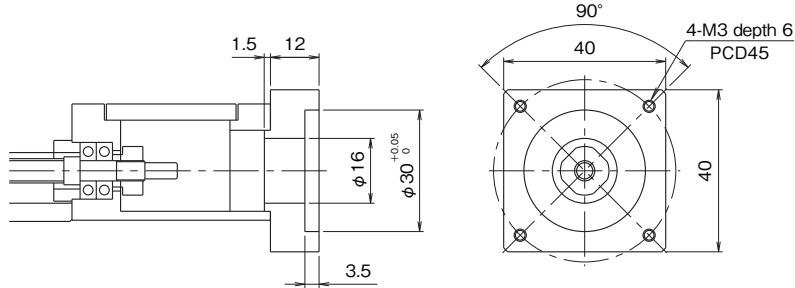
SG20

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

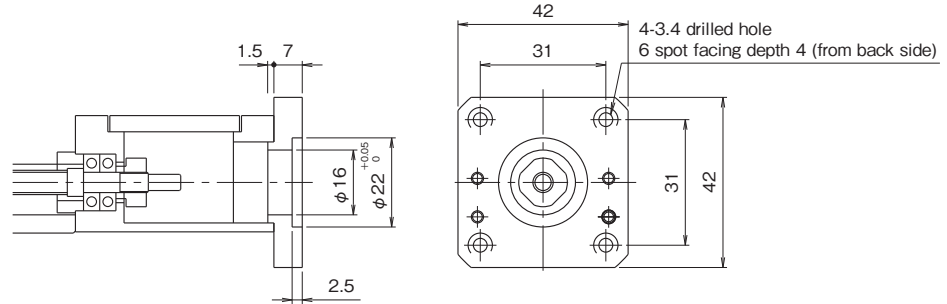
Motor bracket configuration: A1 (mass: 38g)



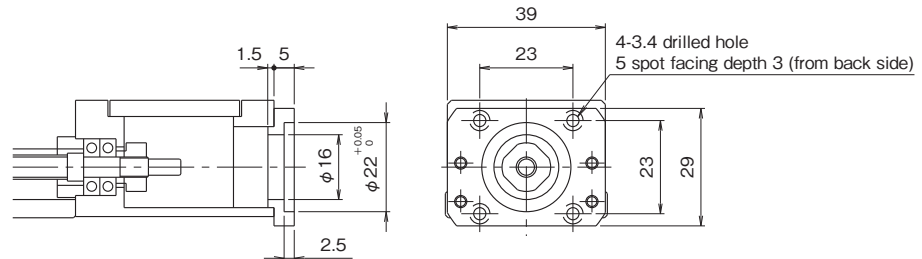
Motor bracket configuration: A3 (mass: 39g)



Motor bracket configuration: A5 (mass: 26g)



Motor bracket configuration: A6 (mass: 10g)

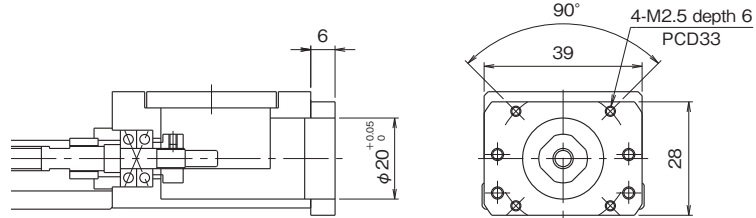


(Note) For A5 and A6 configurations, install the intermediate flange to motor before mounting it to actuator.

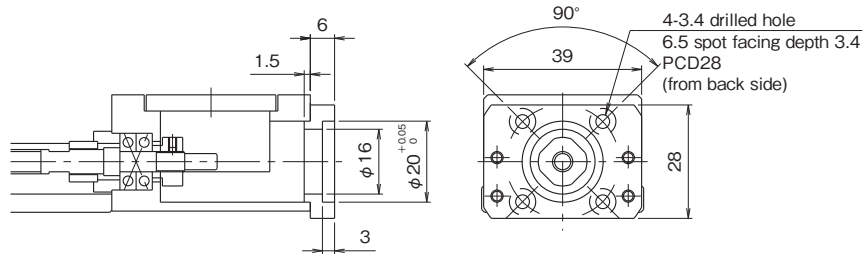
SG20

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

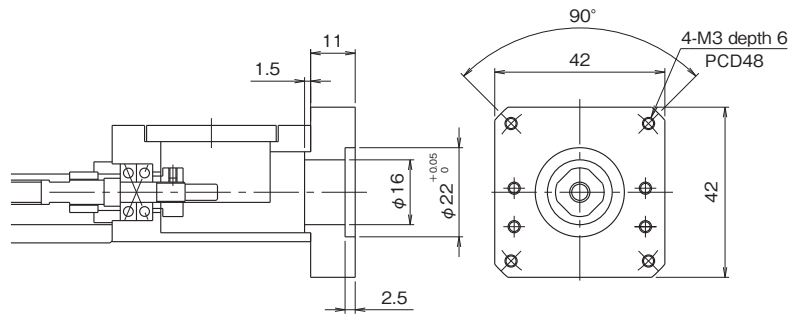
Motor bracket configuration: A8 (mass: 12g)



Motor bracket configuration: A9 (mass: 14g)



Motor bracket configuration: AA (mass: 46g)



(Note) For A9 and AA configurations, install the intermediate flange to motor before mounting it to actuator.

● MOTOR BRACKET CONFIGURATIONS AND MOTOR OPTION

| Motor type | Maker | Motor option | | | Motor bracket configuration | Recommended coupling |
|----------------|---------------------|----------------|-----------------|--------|-----------------------------|---|
| | | Series | Model No. | Output | | |
| AC SERVO motor | PANASONIC | MINAS E | MUMA5A | 50W | AA | SFC-010DA2(MIKI PULLEY) ACD-19A (ISEL) |
| | | | MUMA01 | 100W | | |
| | | MINAS A5 | MSME5A | 50W | A3 | |
| | | | MSME01 | 100W | | |
| | | MINAS A6 | MSMF5A | 50W | A3 | |
| | | | MSMF01 | 100W | | |
| | MITSUBISHI ELECTRIC | MELSERVO J3 | HF-KP (MP) 053 | | A1 | |
| | | | HF-KP (MP) 13 | | | |
| | | MELSERVO J4 | HG-AK0136 | | A9 | |
| | | | HG-AK0236 | | | |
| | | | HG-AK0336 | | A1 | |
| | | | HG-KR (MR) 053 | | | |
| | YASKAWA ELECTRIC | Σ-V | SGMMV-A1 | | A9 | |
| | | | SGMMV-A2 | | | |
| | | | SGMMV-A3 | | | |
| | | Σ-7 | SGMJV, SGMVA-A5 | | A1 | |
| | | | SGMJV, SGMVA-01 | | | |
| | | | SGMJV, SGMVA-C2 | | | |
| | SANYO ELECTRIC | SANMOTION R | R2AA04005 | | A1 | |
| | | | R2AA04010 | | | |
| | | | R2AA04010 | | | |
| ORIENTAL MOTOR | | α step | ARM2 | | A6 | |
| | | | ARM4 | | | |
| | | 5-Phase | CRK52 | | A5 | |
| | CRK54 | | | | | |
| | RKS54 | | | | | |
| | 2-Phase | PKP22 | | A5 | | |
| PKP24 | | | | | | |
| SANYO ELECTRIC | 5-Phase | F series □42mm | | A5 | | |

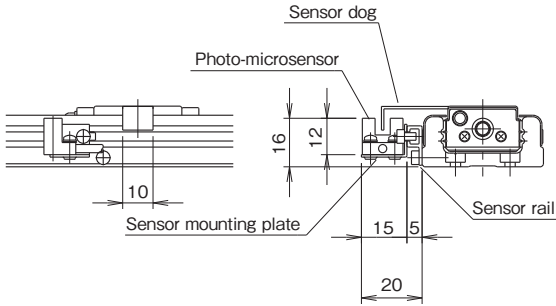
- For motors other than above-mentioned, consult KURODA.
- When selecting a rigid type of coupling for connecting a motor, consult KURODA.
- For detailed specifications of above-mentioned motors and couplings, refer to catalogs or websites provided by the makers.

SG20

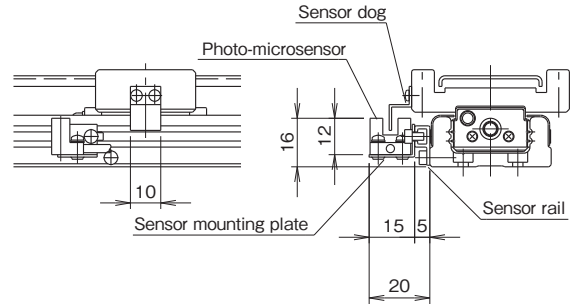
● SENSOR

Symbol S (NPN): Photo-microsensor (Panasonic Industrial Devices SUNX)

Without dustproof cover

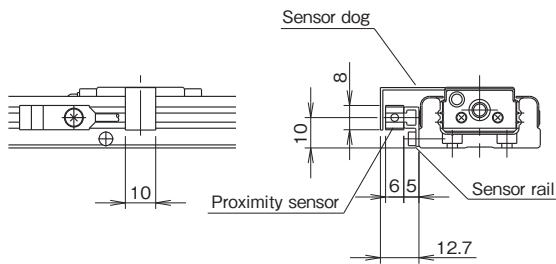


With dustproof cover

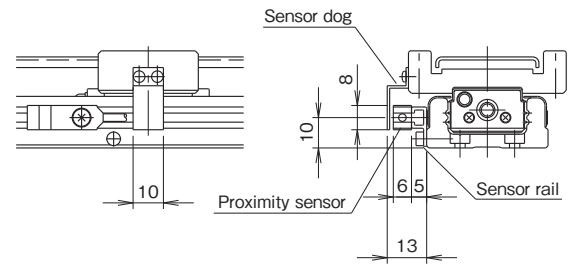


Symbol K (NPN)/E (PNP): Proximity sensor (Azbil)

Without dustproof cover



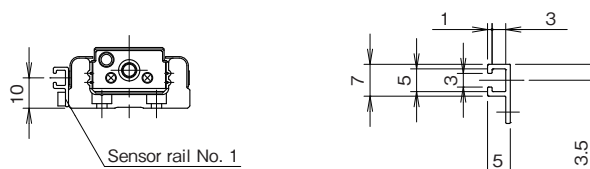
With dustproof cover



● SENSOR RAIL

Sensor rails only available with no sensors.

Sensor rail No. 1

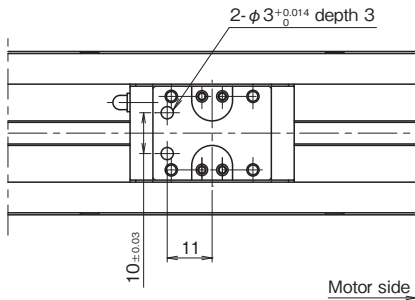


SG20

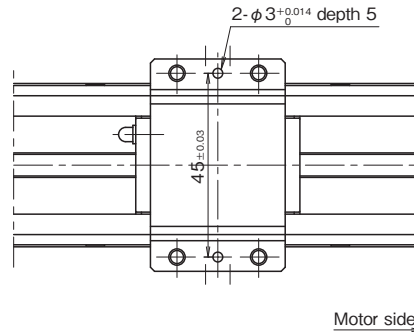
● DOWEL PIN HOLE

Dowel pin holes are applicable on the slide blocks with part number "PS", sub-tables "PR" or slide blocks and sub-tables "PSR". For actuators with 2 blocks, they are on both driving-side block and driven-side block. Please note that dowel pins are not equipped.

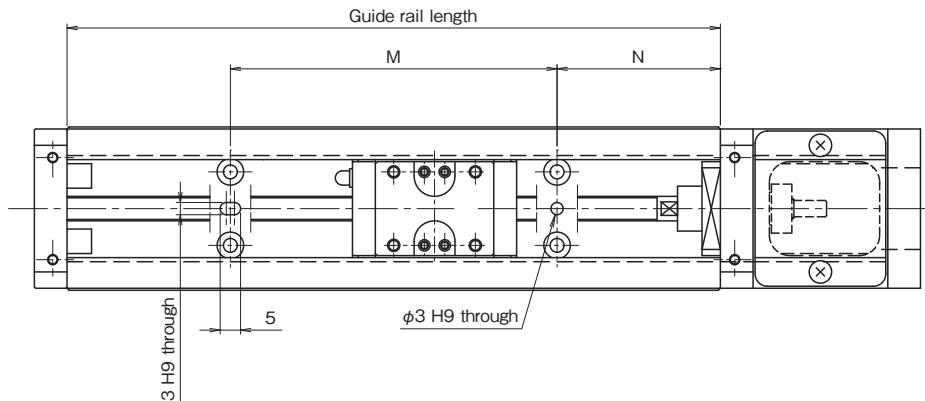
Long block without dustproof cover with "PS"



Long block with dustproof cover with "PS"



Guide rail with "PR"



(Unit: mm)

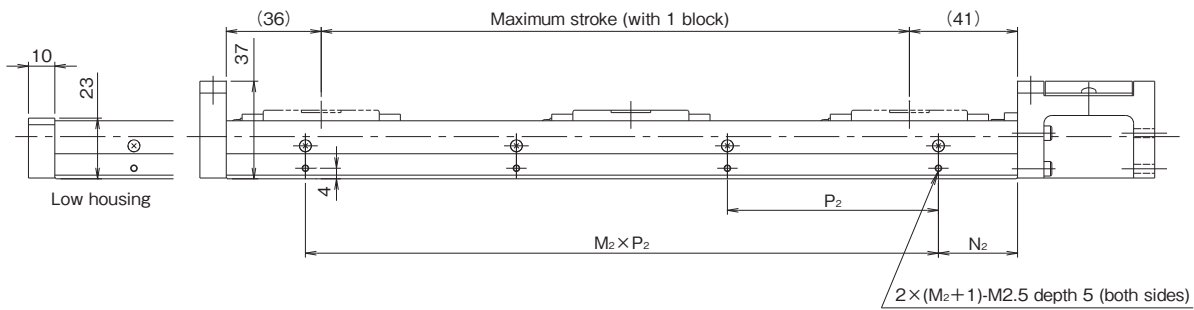
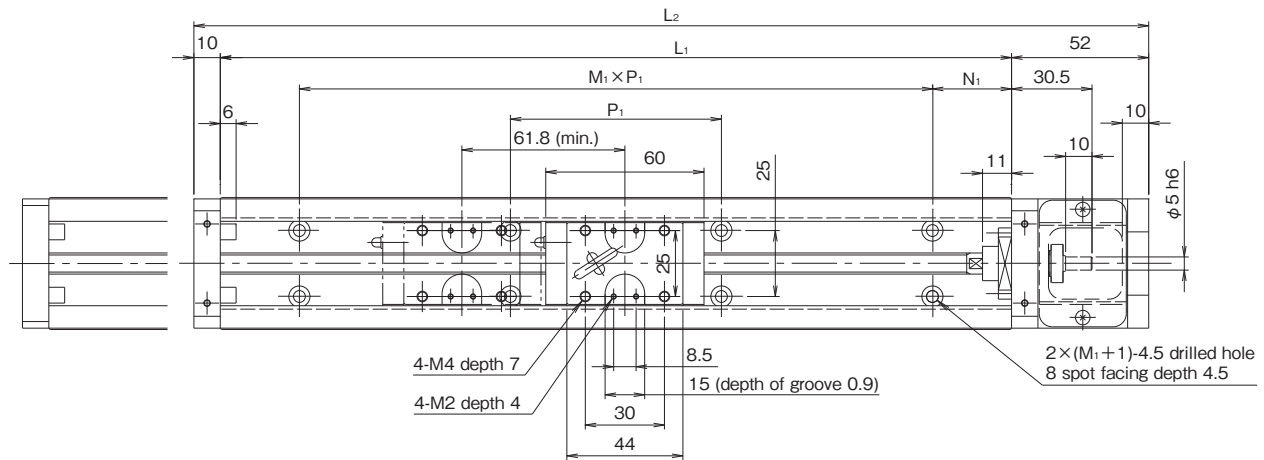
| Guide rail length | N | M | Dowel pin height |
|-------------------|----|-----|------------------|
| 100 | 20 | 60 | Less than 4.5 |
| 150 | 15 | 120 | |
| 200 | 40 | | |

Notice: In case dowel pin is stuck out from the U-guide rail, it may interfere with and break the slide block.

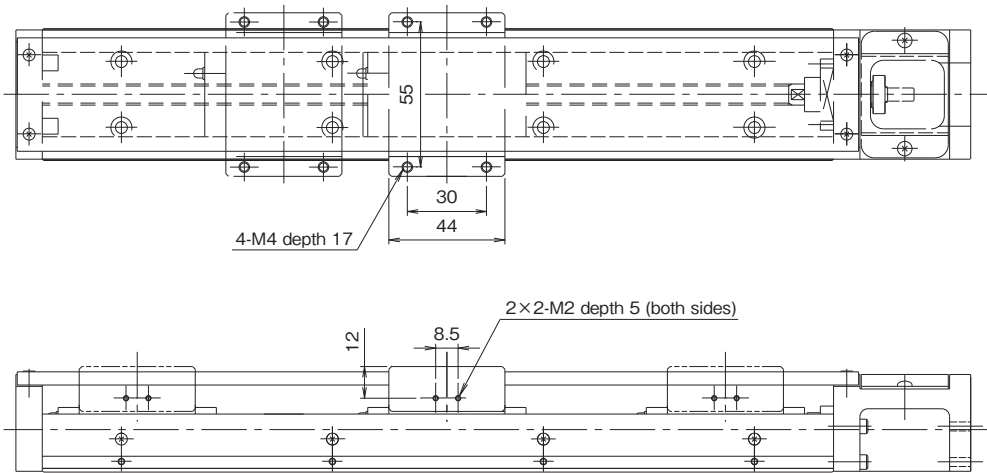
SG26

● LONG BLOCK CONFIGURATIONS

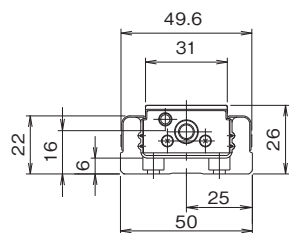
With 1 long block: A (With 2 long blocks: B)



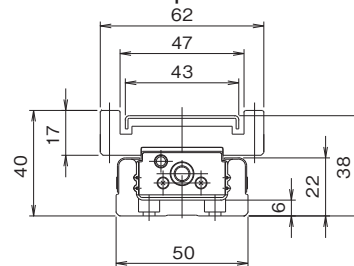
Long block with dustproof cover



Without dustproof cover



With dustproof cover



SG26

● LONG BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Long block | |
| | | | | | | A: 1 block | B: 2 blocks |
| 150 | 212 | 35 | 1 × 80 | 35 | 1 × 80 | 73 | — |
| 200 | 262 | 20 | 2 × 80 | 20 | 2 × 80 | 123 | 61 |
| 250 | 312 | 45 | | 45 | | 173 | 111 |
| 300 | 362 | 30 | 3 × 80 | 30 | 3 × 80 | 223 | 161 |

● PERMISSIBLE SPEED / MASS

| Guide rail length L_1 (mm) | Permissible speed (mm/s) | | Mass (kg) | | | | | |
|------------------------------------|--------------------------|-----|---------------|------|------------|------|---------------|------------|
| | Lead | | Without cover | | With cover | | Slide block | |
| | 2mm | 5mm | A | B | A | B | Without cover | With cover |
| 150 | 281 | 694 | 0.93 | — | 1.07 | — | 0.17 | 0.24 |
| 200 | | | 1.14 | 1.31 | 1.3 | 1.54 | | |
| 250 | | | 1.36 | 1.53 | 1.53 | 1.78 | | |
| 300 | | | 1.57 | 1.74 | 1.76 | 2.01 | | |

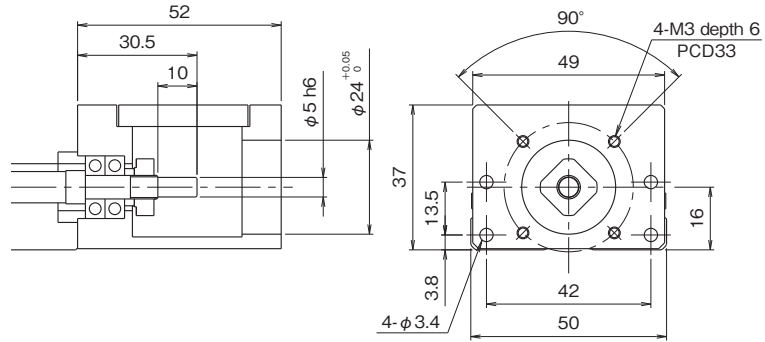
(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

(Note 2) For long rail configurations, please consult KURODA.

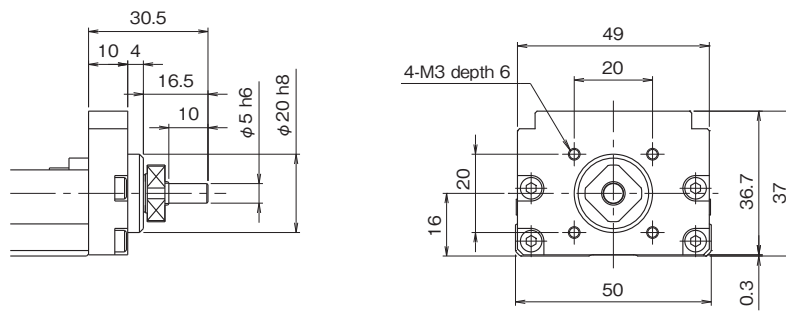
SG26

● MOTOR BRACKET CONFIGURATIONS

Motor bracket configuration: A0



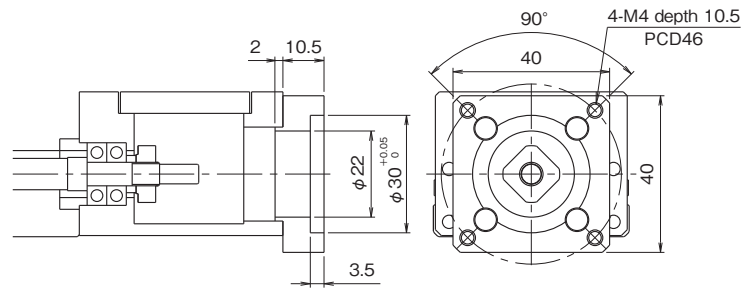
Motor bracket configuration: R0



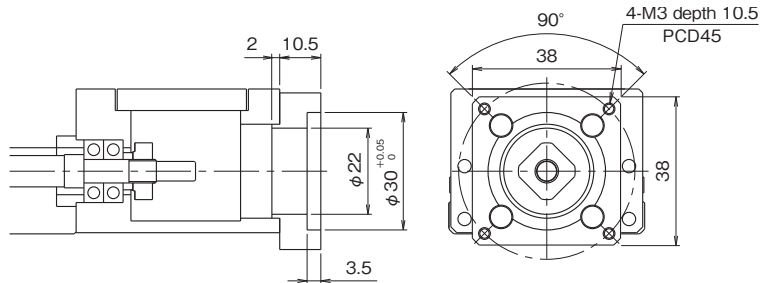
Mass of the R0 configuration is 0.08 kg less than the value shown in the table on page 15.

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

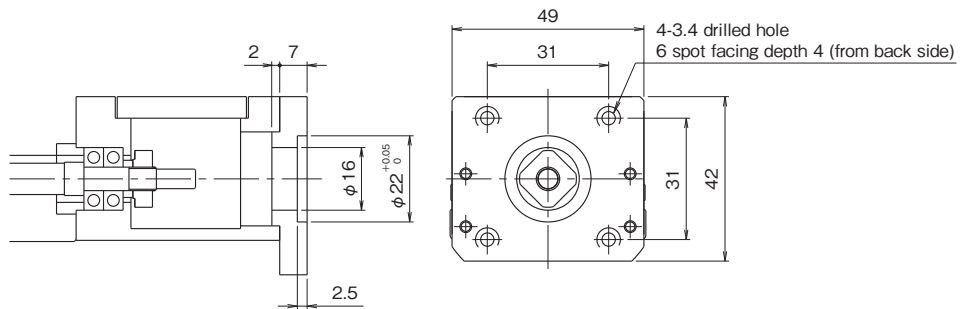
Motor bracket configuration: A1 (mass: 28g)



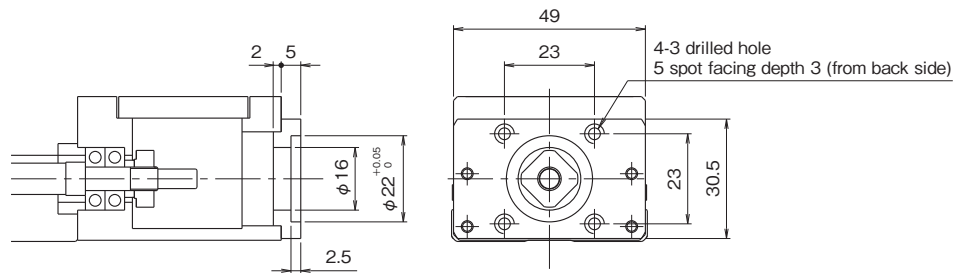
Motor bracket configuration: A3 (mass: 24g)



Motor bracket configuration: A5 (mass: 32g)



Motor bracket configuration: A6 (mass: 16g)

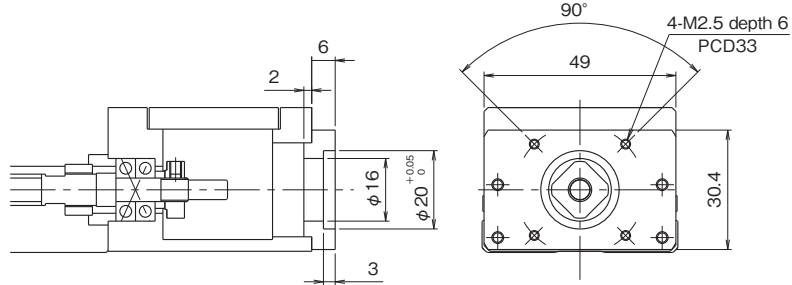


(Note) For A5 and A6 configurations, install the intermediate flange to motor before mounting it to actuator.

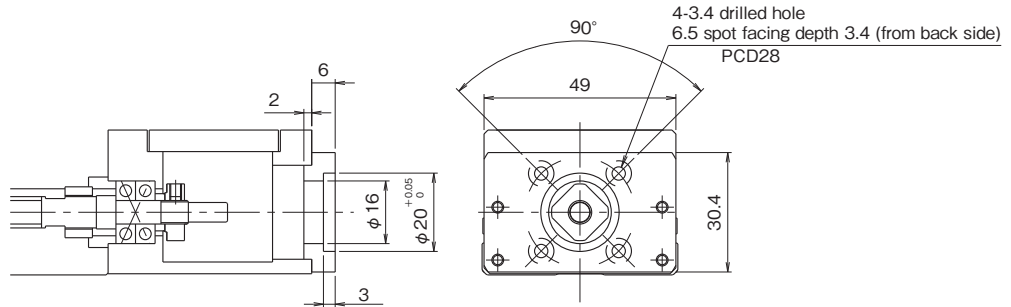
SG26

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

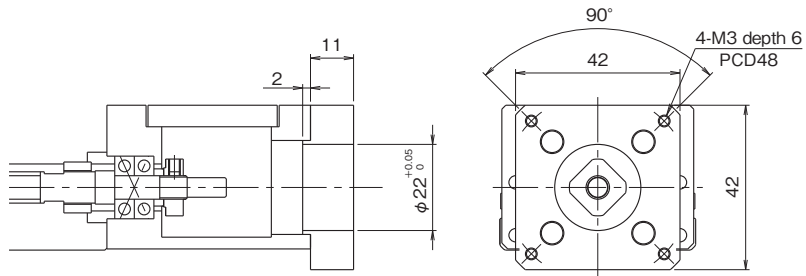
Motor bracket configuration: A8 (mass: 21 g)



Motor bracket configuration: A9 (mass: 21 g)



Motor bracket configuration: AA (mass: 41 g)



(Note) For A9 configuration, install the intermediate flange to motor before mounting it to actuator.

SG
SG20
SG26
SG33
SG46
SG55

SE
SE15
SE23
SE30
SE45

SC
SC23
SC30
SC45

Sensor

Technical Data

● MOTOR BRACKET CONFIGURATIONS AND MOTOR OPTION

| Motor type | Maker | Motor option | | | Motor bracket configuration | Recommended coupling |
|-----------------|---------------------|---------------|-----------------|--------|-----------------------------|---|
| | | Series | Model No. | Output | | |
| AC SERVO motor | PANASONIC | MINAS E | MUMA5A | 50W | AA | SFC-010DA2(MIKI PULLEY) ACD-19A (ISEL) |
| | | | MUMA01 | 100W | | |
| | | MINAS A5 | MSME5A | 50W | A3 | |
| | | | MSME01 | 100W | | |
| | | MINAS A6 | MSMF5A | 50W | A3 | |
| | | | MSMF01 | 100W | | |
| | MITSUBISHI ELECTRIC | MELSERVO J3 | HF-KP (MP) 053 | 50W | A1 | |
| | | | HF-KP (MP) 13 | 100W | | |
| | | MELSERVO J4 | HG-AK0136 | 10W | A9 | |
| | | | HG-AK0236 | 20W | | |
| | | | HG-AK0336 | 30W | A1 | |
| | | | HG-KR (MR) 053 | 50W | | |
| | HG-KR (MR) 13 | 100W | | | | |
| | YASKAWA ELECTRIC | Σ -V | SGMMV-A1 | 10W | A9 | |
| | | | SGMMV-A2 | 20W | | |
| | | | SGMMV-A3 | 30W | | |
| | | | SGMJV, SGMVA-A5 | 50W | A1 | |
| | | | SGMJV, SGMVA-01 | 100W | | |
| | | | SGMJV, SGMVA-C2 | 150W | | |
| | | Σ -7 | SGM7M-A1 | 10W | A9 | |
| SGM7M-A2 | | | 20W | | | |
| SGM7M-A3 | | | 30W | A1 | | |
| SGM7J, SGM7A-A5 | | | 50W | | | |
| SGM7J, SGM7A-01 | | | 100W | | | |
| SGM7J, SGM7A-C2 | | | 150W | | | |
| SANYO ELECTRIC | SANMOTION R | R2AA04005 | 50W | A1 | | |
| | | R2AA04010 | 100W | | | |
| Stepping motor | ORIENTAL MOTOR | α step | ARM2 | □28mm | A6 | |
| | | | ARM4 | □42mm | A5 | |
| | | 5-Phase | CRK52 | □28mm | A6 | |
| | | | CRK54 | □42mm | | |
| | | | RKS54 | □42mm | A5 | |
| | | 2-Phase | PKP22 | □28mm | A6 | |
| | PKP24 | | □42mm | A5 | | |
| | SANYO ELECTRIC | 5-Phase | F series □42mm | □42mm | A5 | |

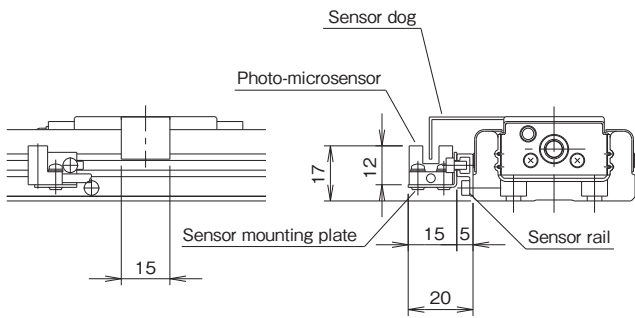
- For motors other than above-mentioned, consult KURODA.
- When selecting a rigid type of coupling for connecting a motor, consult KURODA.
- For detailed specifications of above-mentioned motors and couplings, refer to catalogs or websites provided by the makers.

SG26

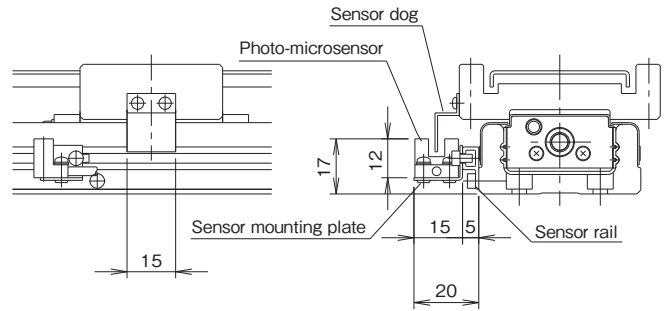
● SENSOR

Symbol S (NPN): Photo-microsensor (Panasonic Industrial Devices SUNX)

Without dustproof cover

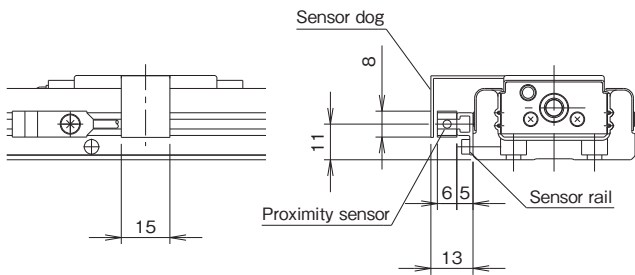


With dustproof cover

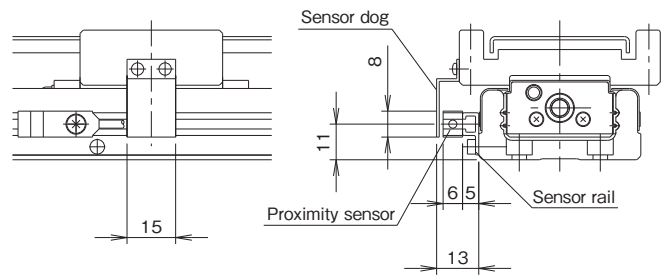


Symbol K (NPN)/E (PNP): Proximity sensor (Azbil)

Without dustproof cover



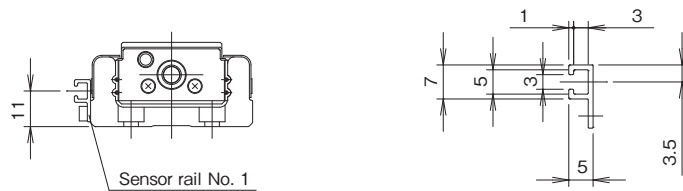
With dustproof cover



● SENSOR RAIL

Sensor rails only available with no sensors.

Sensor rail No. 1

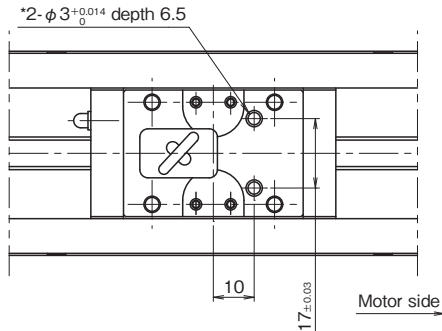


SG26

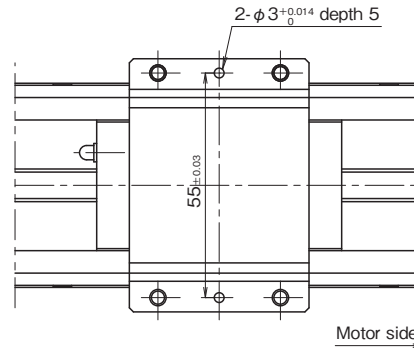
● DOWEL PIN HOLE

Dowel pin holes are applicable on the slide blocks with part number "PS", sub-tables "PR" or slide blocks and sub-tables "PSR". For actuators with 2 blocks, they are on both driving-side block and driven-side block. Please note that dowel pins are not equipped.

Long block without dustproof cover with "PS"

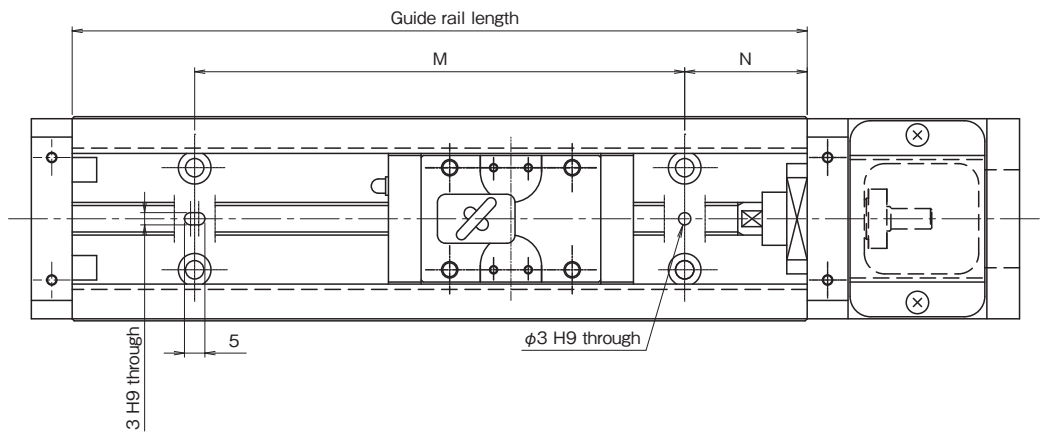


Long block with dustproof cover with "PS"



The hole with asterisk (*) may have diameter 4 counterbores depth 2 for erasing the quenching layer when needed.

Guide rail with "PR"



(Unit: mm)

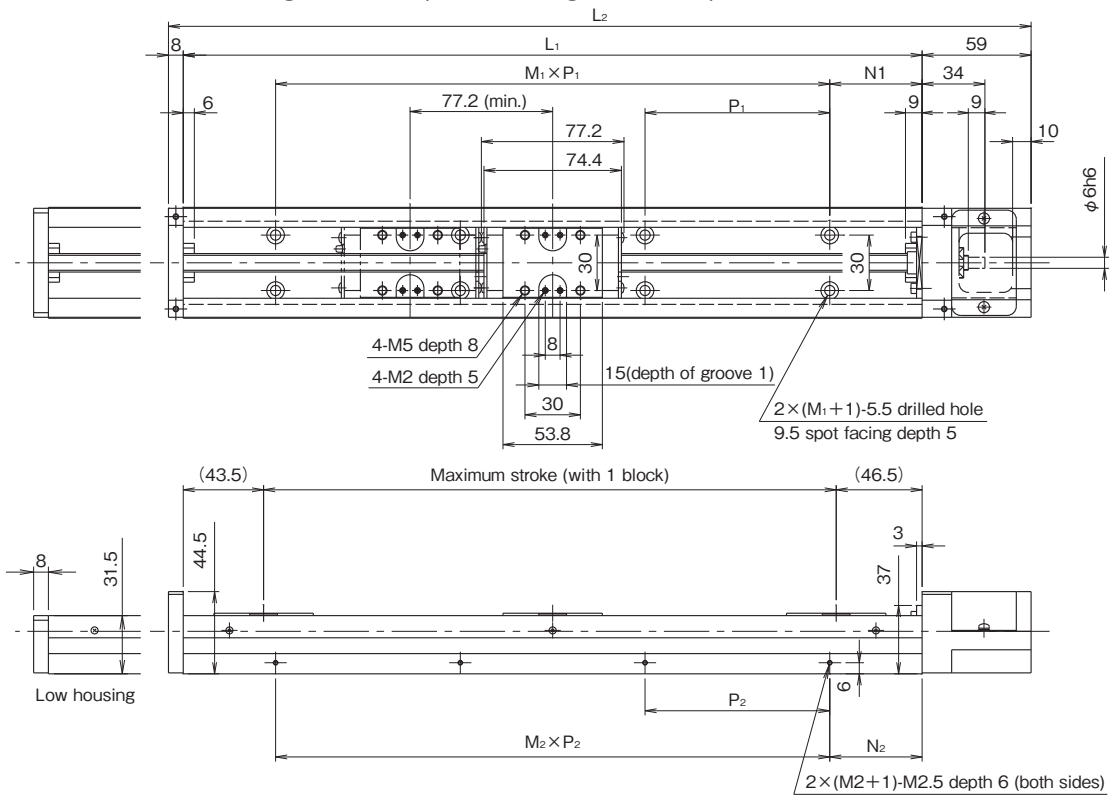
| Guide rail length | N | M | Dowel pin height |
|-------------------|----|-----|------------------|
| 150 | 35 | 80 | Less than 6 |
| 200 | 20 | 160 | |
| 250 | 45 | | |
| 300 | 30 | 240 | |

Notice: In case dowel pin is stuck out from the U-guide rail, it may interfere with and break the slide block.

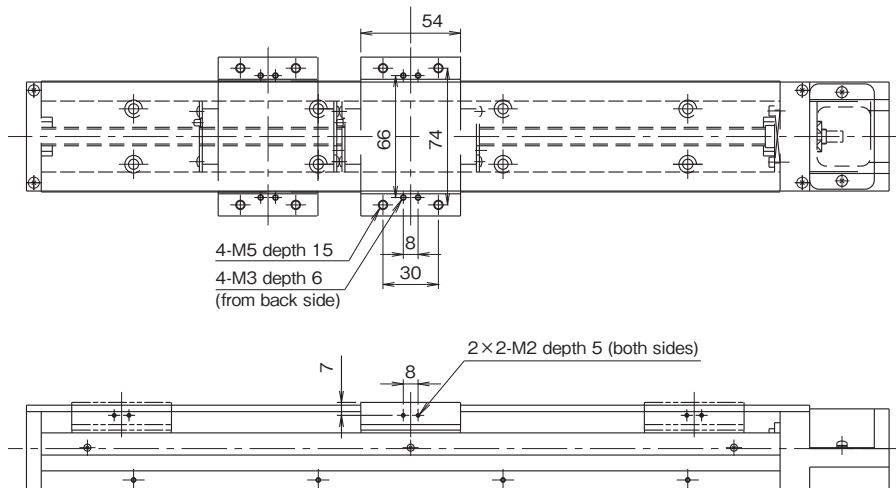
SG33

● LONG BLOCK CONFIGURATIONS

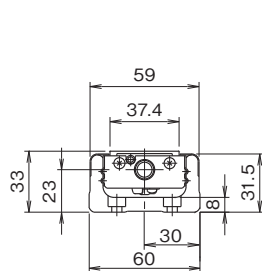
With 1 long block: A (With 2 long blocks: B)



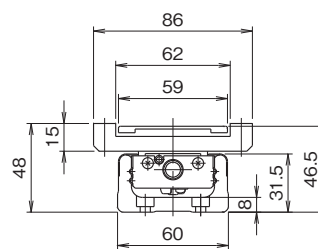
With dustproof cover



Without dustproof cover



With dustproof cover



SG33

● LONG BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Long block | |
| | | | | | | A: 1 block | B: 2 blocks |
| 150 | 217 | 25 | 1×100 | 25 | 1×100 | 60 | — |
| 200 | 267 | 50 | 1×100 | 50 | 1×100 | 110 | — |
| 300 | 367 | | 2×100 | | 2×100 | 210 | 133 |
| 400 | 467 | | 3×100 | | 3×100 | 310 | 233 |
| 500 | 567 | | 4×100 | | 4×100 | 410 | 333 |
| 600 | 667 | | 5×100 | | 5×100 | 510 | 433 |

● PERMISSIBLE SPEED / MASS

| Guide rail length L_1 (mm) | Permissible speed (mm/s) | | | Mass (kg) | | | | Slide block | |
|------------------------------------|--------------------------|------|------|---------------|-----------|------------|-----------|---------------|------------|
| | Lead | | | Without cover | | With cover | | Without cover | With cover |
| | 5mm | 10mm | 20mm | A | B | A | B | | |
| 150 | 550 | 1100 | 1500 | 1.6 (1.7) | — | 1.8 (1.9) | — | 0.30 | 0.40 |
| 200 | | | | 2.0 (2.1) | — | 2.1 (2.2) | — | | |
| 300 | | | | 2.6 (2.7) | 2.9 (3.0) | 2.8 (2.9) | 3.2 (3.3) | | |
| 400 | | | | 3.2 (3.4) | 3.6 (3.8) | 3.5 (3.7) | 3.9 (4.1) | | |
| 500 | | | | 3.9 (4.1) | 4.2 (4.4) | 4.2 (4.4) | 4.6 (4.8) | | |
| 600 | 310 | 620 | | 4.6 (4.8) | 4.9 (5.1) | 4.9 (5.1) | 5.3 (5.5) | | |

(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

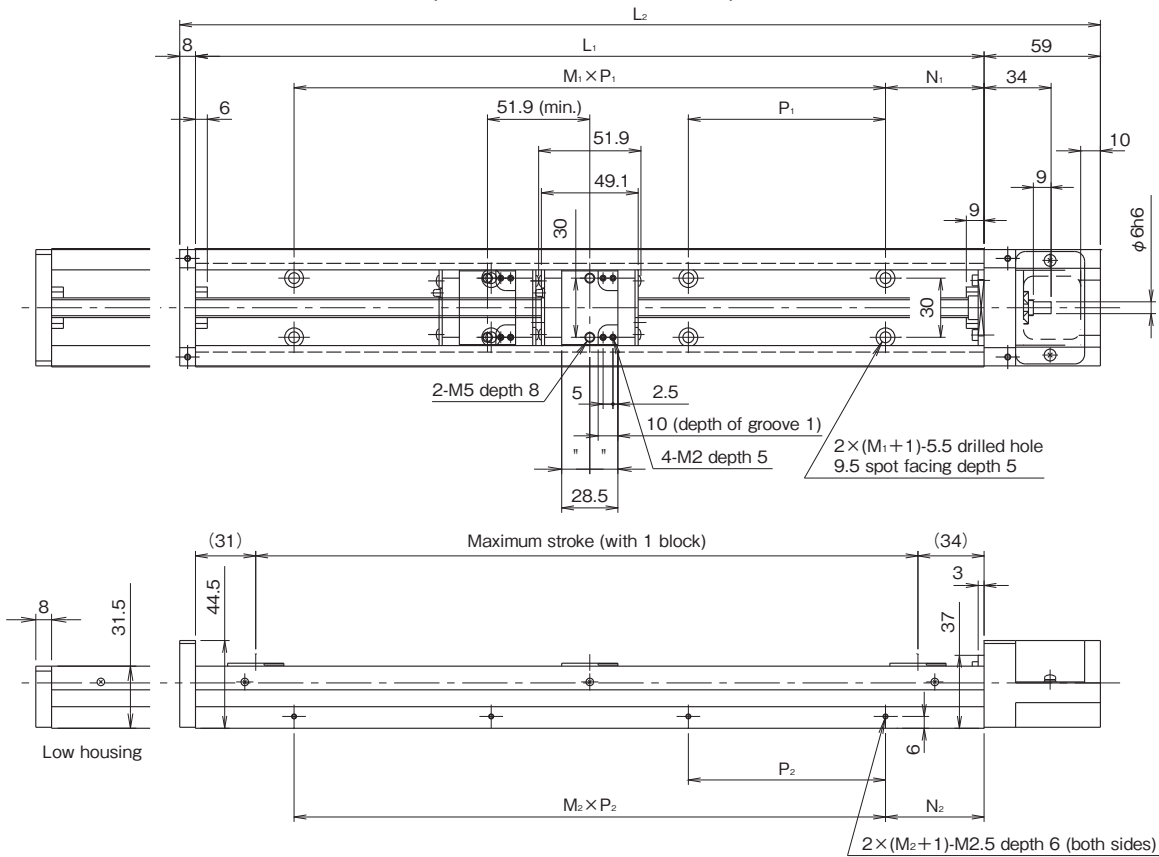
(Note 2) The figures in parentheses in the above table apply to SG3320 configuration.

(Note 3) For long rail configurations, please consult KURODA.

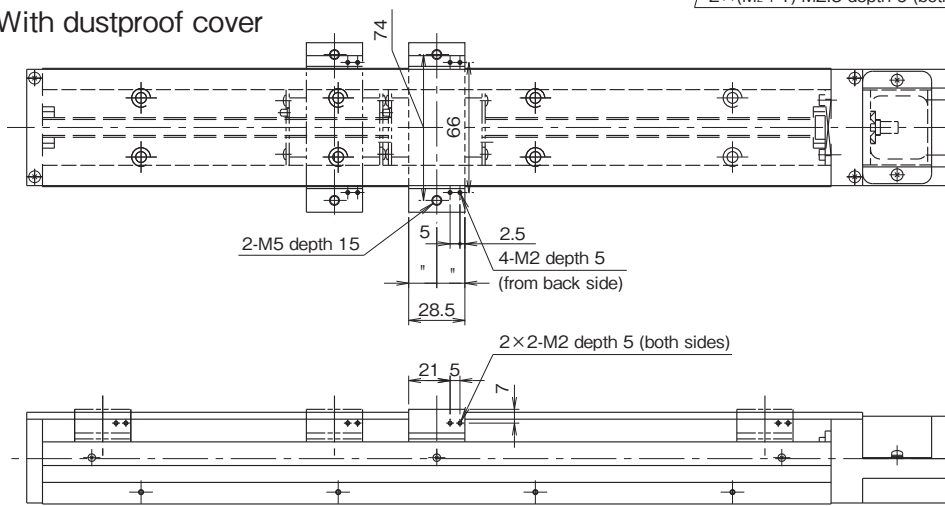
SG33

● SHORT BLOCK CONFIGURATIONS

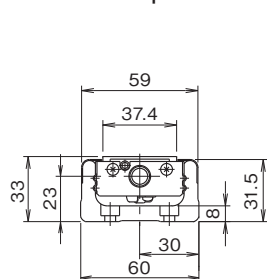
With 1 short block: C (With 2 short blocks: D)



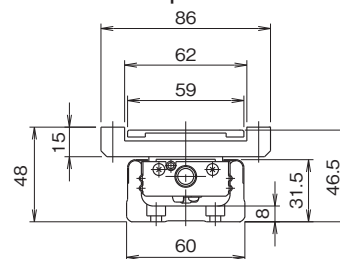
With dustproof cover



Without dustproof cover



With dustproof cover



SG33

● SHORT BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Short block | |
| | | | | | | C: 1 block | D: 2 blocks |
| 150 | 217 | 25 | 1×100 | 25 | 1×100 | 85 | 34 |
| 200 | 267 | 50 | 1×100 | 50 | 1×100 | 135 | 84 |
| 300 | 367 | | 2×100 | | 2×100 | 235 | 184 |
| 400 | 467 | | 3×100 | | 3×100 | 335 | 284 |
| 500 | 567 | | 4×100 | | 4×100 | 435 | 384 |
| 600 | 667 | | 5×100 | | 5×100 | 535 | 484 |

● PERMISSIBLE SPEED / MASS

| Guide rail length L_1 (mm) | Permissible speed (mm/s) | | Mass (kg) | | | | | |
|------------------------------------|--------------------------|------|---------------|-----|------------|-----|---------------|------------|
| | Lead | | Without cover | | With cover | | Slide block | |
| | 5mm | 10mm | C | D | C | D | Without cover | With cover |
| 150 | 550 | 1100 | 1.5 | 1.7 | 1.6 | 1.9 | 0.15 | 0.20 |
| 200 | | | 1.8 | 2 | 2 | 2.2 | | |
| 300 | | | 2.5 | 2.7 | 2.6 | 2.9 | | |
| 400 | | | 3.1 | 3.3 | 3.3 | 3.5 | | |
| 500 | 460 | 930 | 3.8 | 3.9 | 4 | 4.2 | | |
| 600 | 310 | 620 | 4.4 | 4.6 | 4.7 | 4.9 | | |

(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

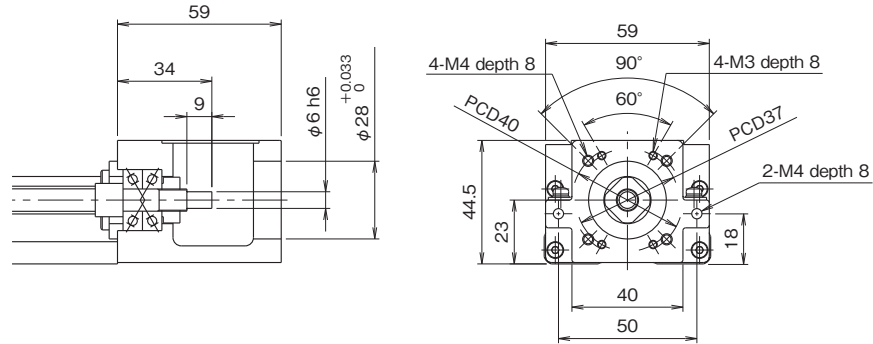
(Note 2) Short-block configuration is not available for SG3320

(Note 3) For long rail configurations, please consult KURODA.

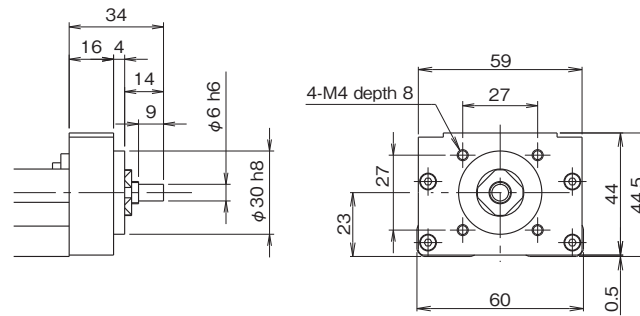
SG33

● MOTOR BRACKET CONFIGURATIONS

Motor bracket configuration: A0



Motor bracket configuration: R0

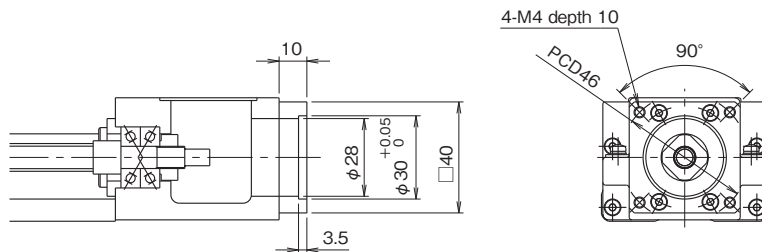


Mass of the R0 configuration is 0.1 kg less than the values shown in the tables on pages 23 and 25.

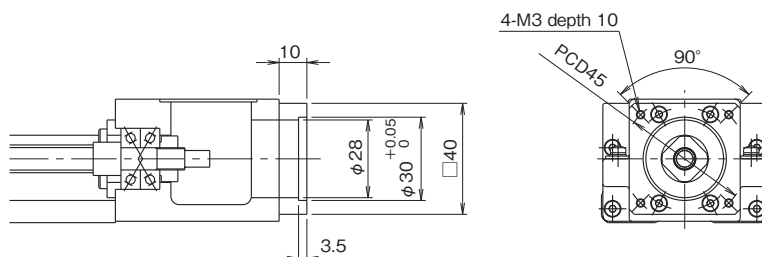
SG33

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

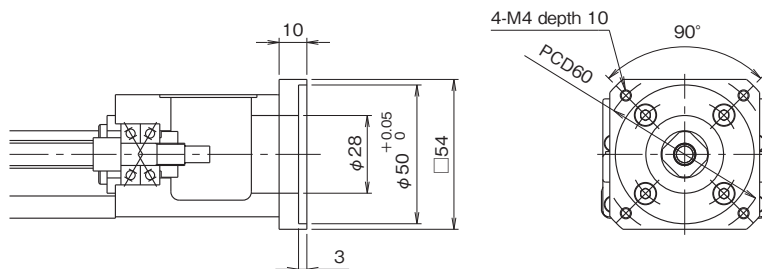
Motor bracket configuration: A1 (mass: 66g)



Motor bracket configuration: A2 (mass: 67g)



Motor bracket configuration: A3 (mass: 133g)



SG

SG20

SG26

SG33

SG46

SG55

SE

SE15

SE23

SE30

SE45

SC

SC23

SC30

SC45

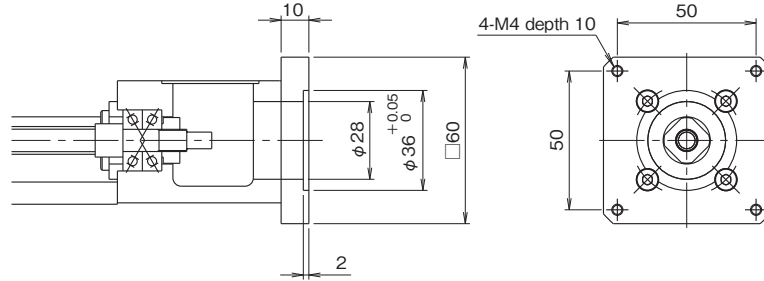
Sensor

Technical Data

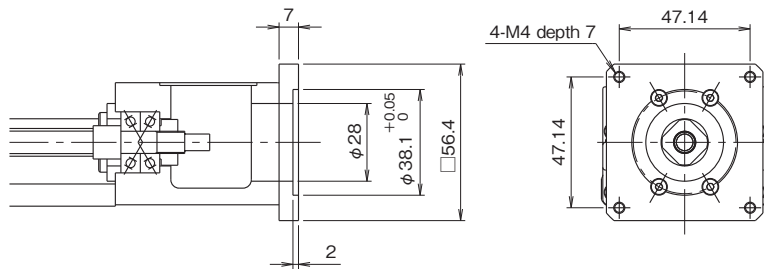
SG33

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

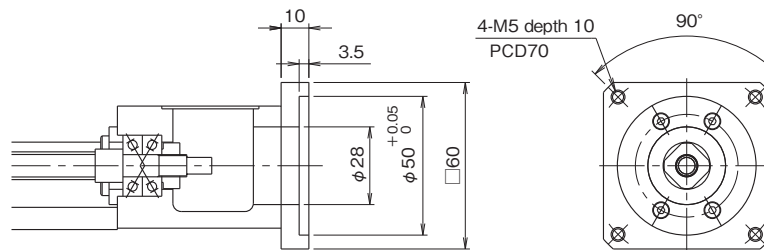
Motor bracket configuration: A4 (mass: 212g)



Motor bracket configuration: A5 (mass: 125g)



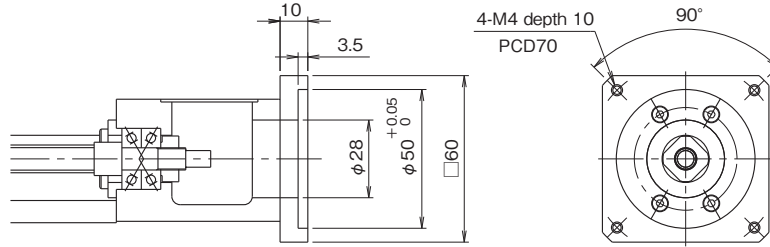
Motor bracket configuration: A6 (mass: 215g)



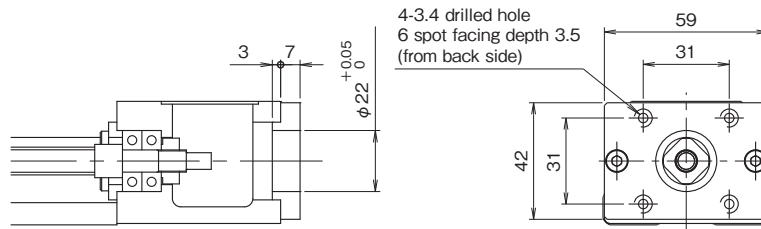
SG33

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

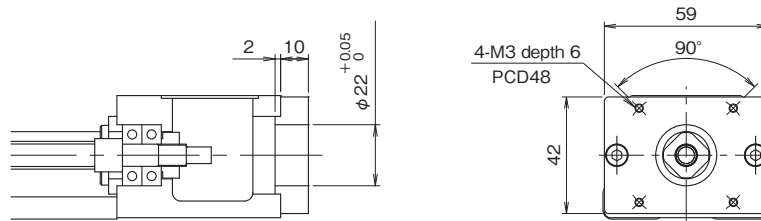
Motor bracket configuration: A7 (mass: 215g)



Motor bracket configuration: B1 (mass: 111g)



Motor bracket configuration: B2 (mass: 167g)



(Note) For B1 and B2 configuration, install the intermediate flange to motor before mounting it to actuator.

● MOTOR BRACKET CONFIGURATIONS AND MOTOR OPTION

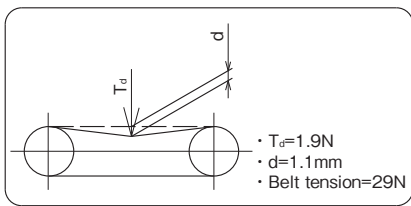
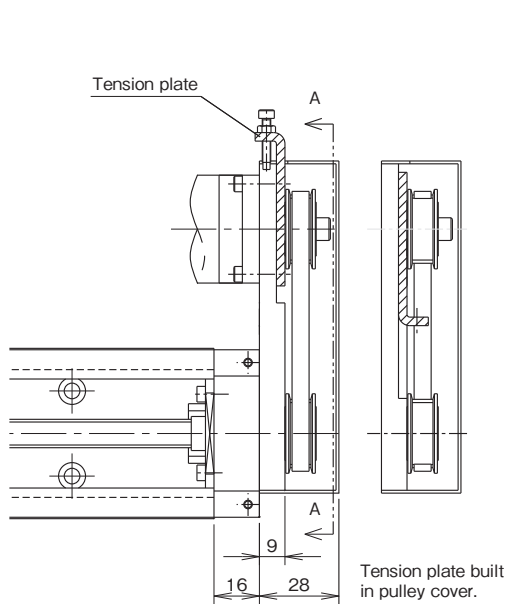
| Motor type | Maker | Motor option | | | Motor bracket configuration | Recommended coupling |
|-----------------|---------------------|----------------|-----------------|----------------|--|--|
| | | Series | Model No. | Output | | |
| AC SERVO motor | PANASONIC | MINAS E | MUMA5A | 50W | B2 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | MUMA01 | 100W | | |
| | | | MUMA02 | 200W | A7 | XBW-27C2 (NABEYA BI-TECH) |
| | | MINAS A5 | MSME5A | 50W | A2 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | MSME01 | 100W | | |
| | | | MSME02 | 200W | A7 | XBW-27C2 (NABEYA BI-TECH) |
| | | MINAS A6 | MSMF5A | 50W | A2 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | MSMF01 | 100W | | |
| | | | MSMF02 | 200W | A7 | XBW-27C2 (NABEYA BI-TECH) |
| | MITSUBISHI ELECTRIC | MELSERVO J3 | HF-KP (MP) 053 | 50W | A1 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | HF-KP (MP) 13 | 100W | | |
| | | | HF-KP (MP) 23 | 200W | A6 | XBW-27C2 (NABEYA BI-TECH) |
| | | MELSERVO J4 | HG-KR (MR) 053 | 50W | A1 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | HG-KR (MR) 13 | 100W | | |
| | | | HG-KR (MR) 23 | 200W | A6 | XBW-27C2 (NABEYA BI-TECH) |
| | YASKAWA ELECTRIC | Σ-V | SGMJV, SGM7A-A5 | 50W | A1 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | SGMJV, SGM7A-01 | 100W | | |
| | | | SGMJV, SGM7A-C2 | 150W | A6 | XBW-27C2 (NABEYA BI-TECH) |
| | | | SGMJV, SGM7A-02 | 200W | | |
| | | Σ-7 | SGM7J, SGM7A-A5 | 50W | A1 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | SGM7J, SGM7A-01 | 100W | | |
| SGM7J, SGM7A-C2 | | | 150W | A6 | XBW-27C2 (NABEYA BI-TECH) | |
| SGM7J, SGM7A-02 | | | 200W | | | |
| SANYO ELECTRIC | SANMOTION R | R2AA04005 | 50W | A3 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | |
| | | R2AA04010 | 100W | | | |
| | | R2AA06020 | 200W | A6 | XBW-27C2 (NABEYA BI-TECH) | |
| Stepping motor | ORIENTAL MOTOR | α step | ARM4 | □42mm | B1 | SFC-010DA2 (MIKI PULLEY) ACD-19A (ISEL) |
| | | 5-Phase | CRK54 | □42mm | | |
| | | | RKS54 | □42mm | | |
| | | 2-Phase | PKP24 | □42mm | | |
| | | | PK26 | □60mm | A5 | SFC-020D2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | SANYO ELECTRIC | 5-Phase | F series □42mm | □42mm | B1 |
| | F series □60mm | | | □42mm | A4 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |

- For motors other than above-mentioned, consult KURODA.
- When selecting a rigid type of coupling for connecting a motor, consult KURODA.
- For detailed specifications of above-mentioned motors and couplings, refer to catalogs or websites provided by the makers.

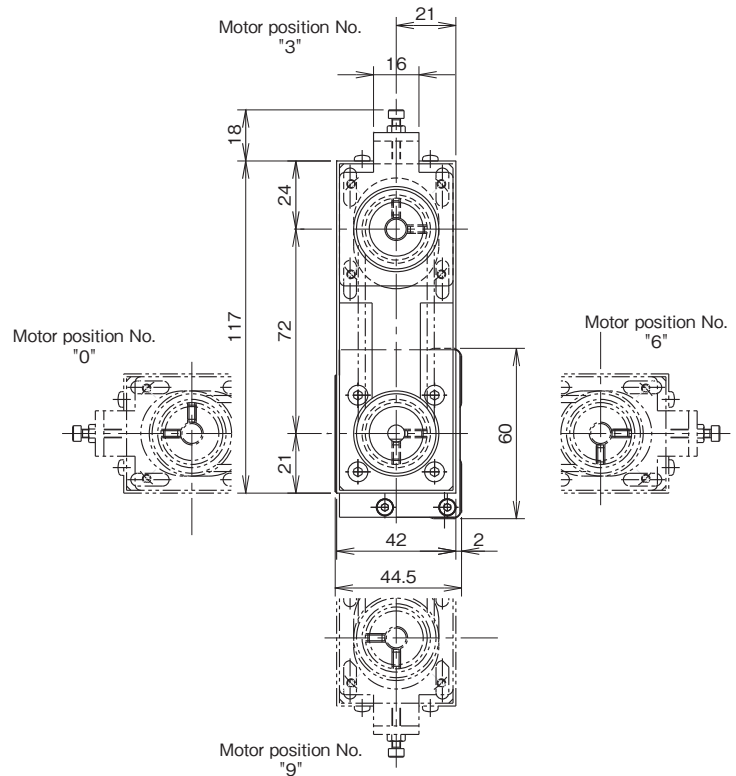
SG SG20 SG26 SG33 SG46 SG55 SE SE15 SE23 SE30 SE45 SC SC23 SC30 SC45 Sensor Technical Data

SG33

● PARALLEL MOTOR MOUNTING



Tension of belt



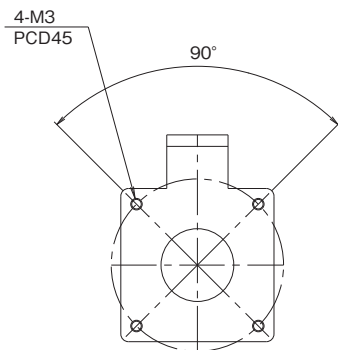
A-A sectional view

- Pulley unit position can be adjusted at every 90 degree.
- Motor parallel mounting can be equipped with dustproof cover and sensor.
- Tension plate position can be built in pulley cover.
- The mass is 0.2kg larger than the values shown in tables on pages 23 and 25.
- Inertia moment is $2.22 \times 10^{-9} \text{kg} \cdot \text{m}^2$ larger than the value shown in table on page 5.

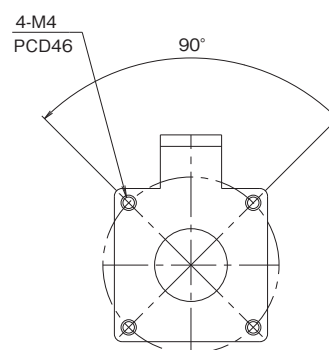
| Mark | Pulley Inner dia. | Applicable motor |
|----------------------------|---------------------|---|
| E <input type="checkbox"/> | Inner dia. $\phi 8$ | Panasonic 50 - 100W motor and so on |
| F <input type="checkbox"/> | Inner dia. $\phi 8$ | Yaskawa 50 - 100W motor and so on |
| | | Mitsubishi Electric 50 - 100W motor and so on |
| | | Sanyo Electric 50 - 100W motor and so on |

Fullfill the motor position No. in .
Check the spec. if the motor can be assembled before using.

Parallel motor mounting type E
Tension plate dimension



Parallel motor mounting type F
Tension plate dimension



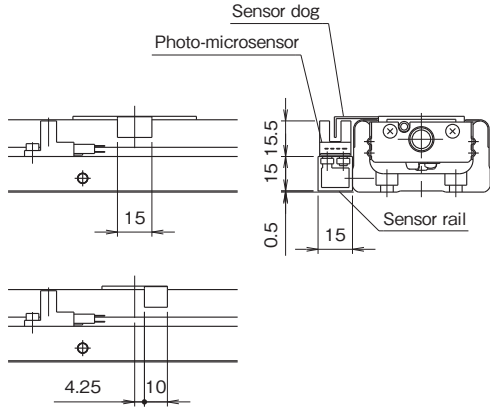
SG33

● SENSOR

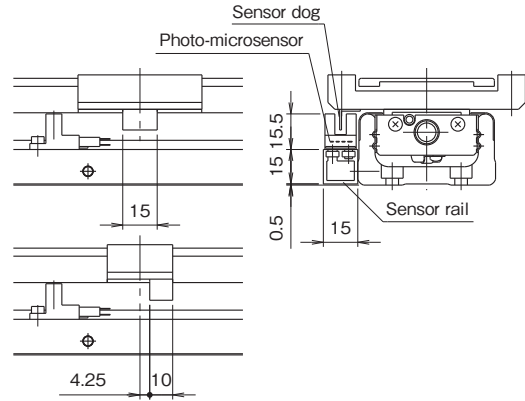
Symbol C (NPN) / P (PNP), M (NPN) / Y (PNP): Photo-microsensor (OMRON, Panasonic Industrial Devices SUNX)

Note 1) 2 sensor dogs are used for SG33□D-150 sensor with Symbol "C" or "P".

Without dustproof cover

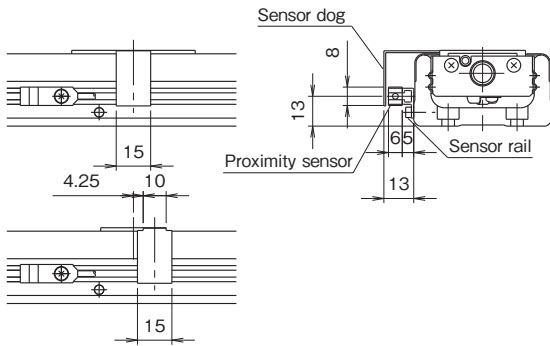


With dustproof cover

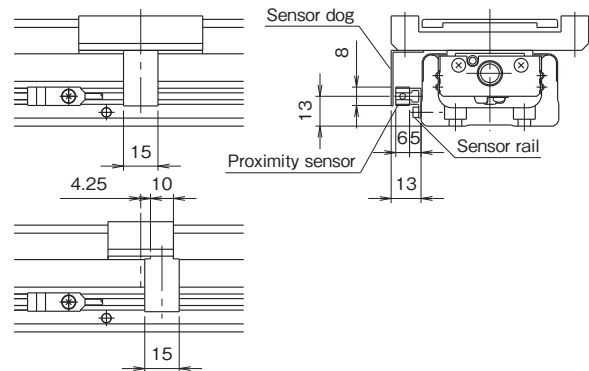


Symbol K (NPN) / E (PNP): Proximity sensor (Azbil)

Without dustproof cover

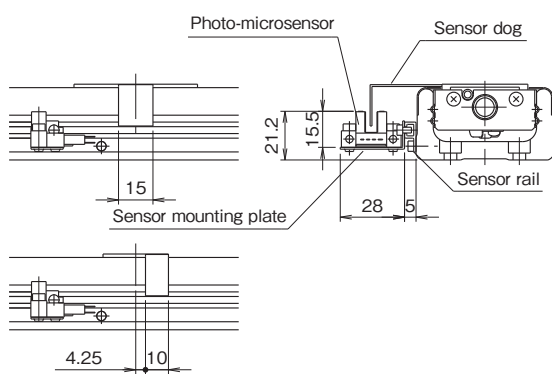


With dustproof cover

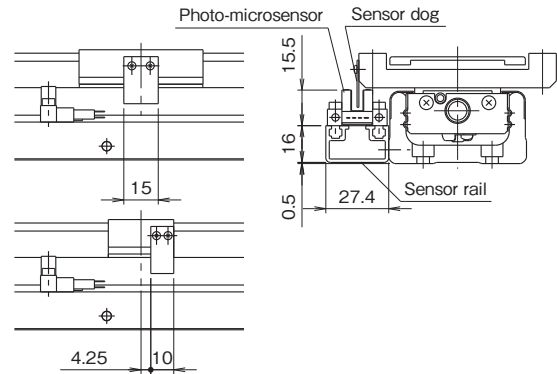


Symbol H (NPN) / J (PNP): Photo-microsensor (OMRON)

Without dustproof cover



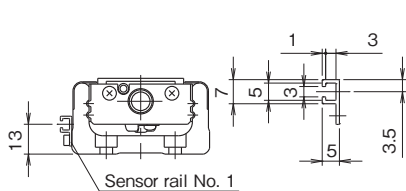
With dustproof cover



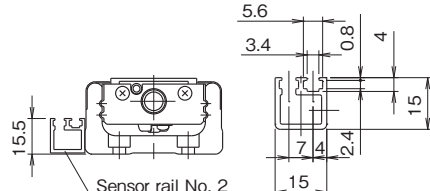
● SENSOR RAIL

Sensor rails only available with no sensors.

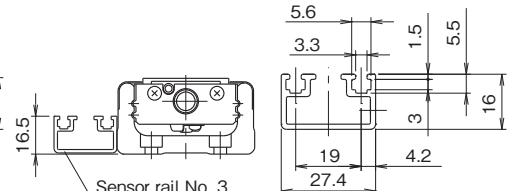
Sensor rail No. 1



Sensor rail No. 2



Sensor rail No. 3

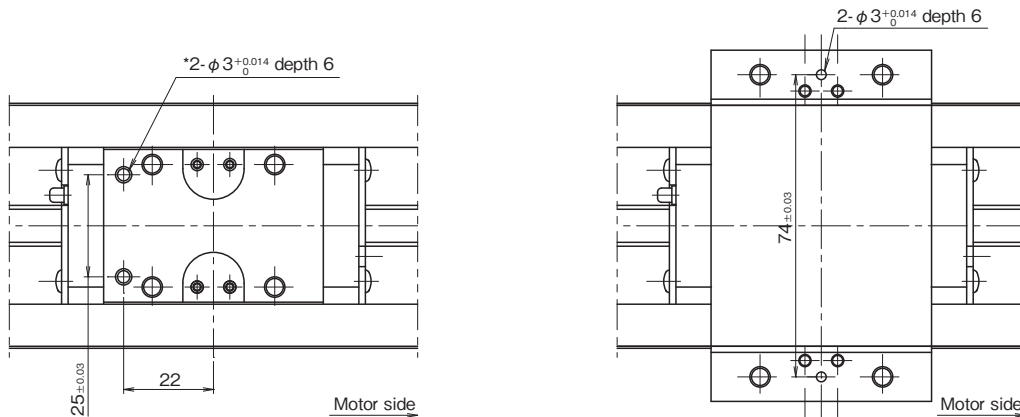


SG33

● DOWEL PIN HOLE

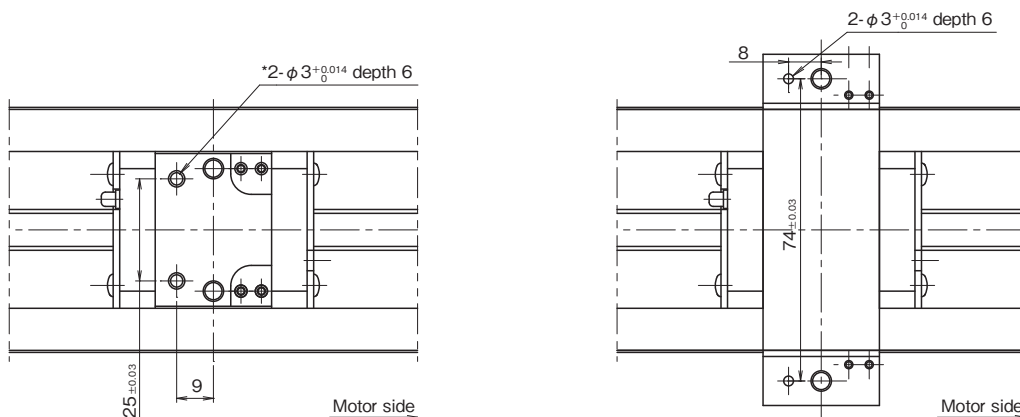
Dowel pin holes are applicable on the slide blocks with part number "PS", sub-tables "PR" or slide blocks and sub-tables "PSR". For actuators with 2 blocks, they are on both driving-side block and driven-side block. Please note that dowel pins are not equipped.

Long block without dustproof cover with "PS" Long block with dustproof cover with "PS"



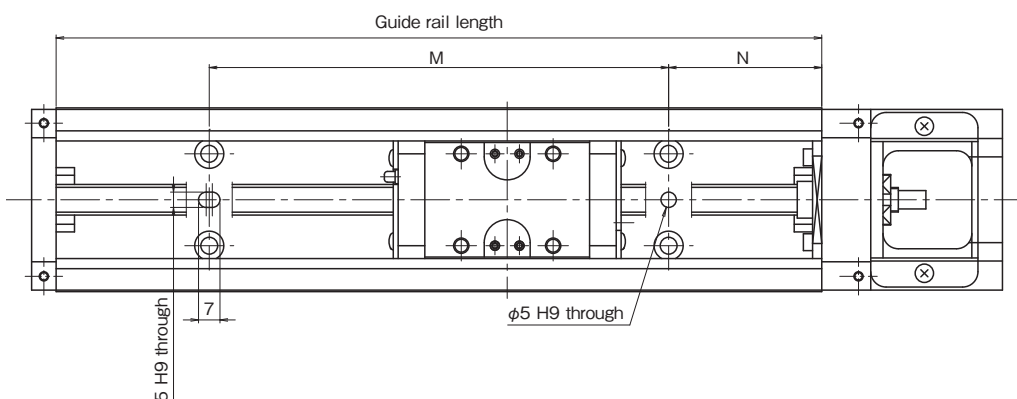
The hole with asterisk (*) may have diameter 4 counterbores depth 2 for erasing the quenching layer when needed.

Short block without dustproof cover with "PS" Short block with dustproof cover with "PS"



The hole with asterisk (*) may have diameter 4 counterbores depth 2 for erasing the quenching layer when needed.

Guide rail with "PR"



(Unit: mm)

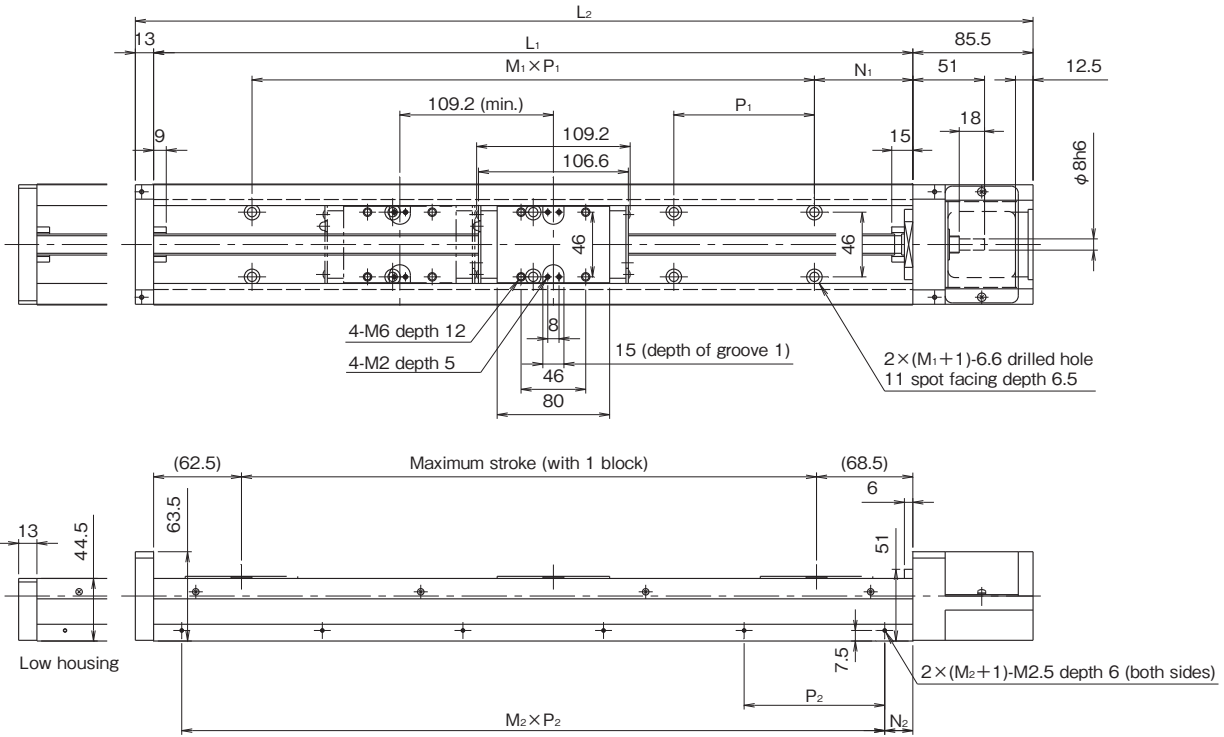
| Guide rail length | N | M | Dowel pin height |
|-------------------|----|-----|------------------|
| 150 | 25 | 100 | Less than 8 |
| 200 | 50 | 100 | |
| 300 | | 200 | |
| 400 | | 300 | |
| 500 | | 400 | |
| 600 | | 500 | |

Notice: In case dowel pin is stuck out from the U-guide rail, it may interfere with and break the slide block.

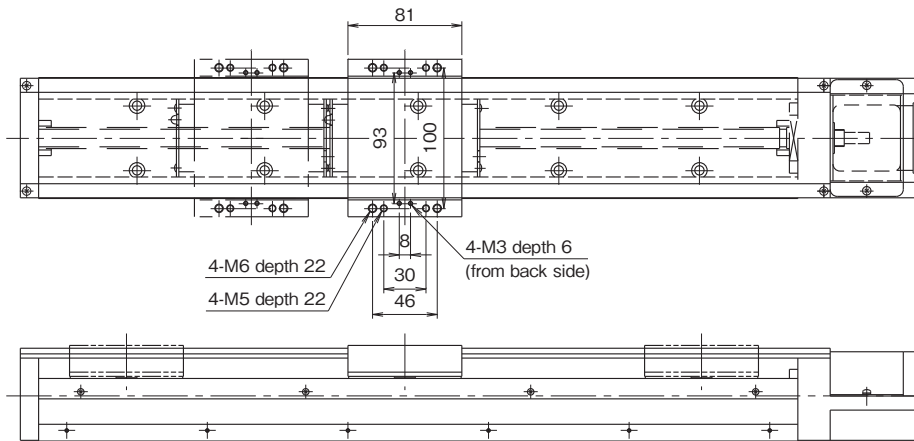
SG46

● LONG BLOCK CONFIGURATIONS

With 1 long block: A (With 2 long blocks: B)

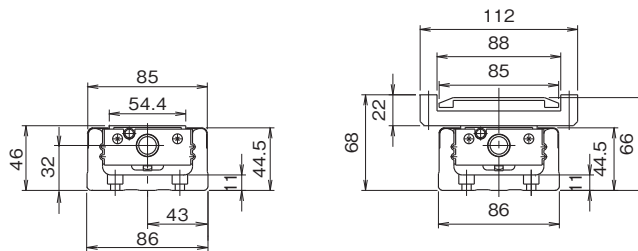


With dustproof cover



Without dustproof cover

With dustproof cover



SG46

● LONG BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Long block | |
| | | | | | | A: 1 block | B: 2 blocks |
| 340 | 438.5 | 70 | 2×100 | 20 | 3×100 | 209 | 100 |
| 440 | 538.5 | | 3×100 | | 4×100 | 309 | 200 |
| 540 | 638.5 | | 4×100 | | 5×100 | 409 | 300 |
| 640 | 738.5 | | 5×100 | | 6×100 | 509 | 400 |
| 740 | 838.5 | | 6×100 | | 7×100 | 609 | 500 |
| 840 | 938.5 | | 7×100 | | 8×100 | 709 | 600 |
| 940 | 1038.5 | | 8×100 | | 9×100 | 809 | 700 |
| 1040 | 1138.5 | | 9×100 | | 10×100 | 909 | 800 |
| 1140 | 1238.5 | | 10×100 | | 11×100 | 1009 | 900 |
| 1240 | 1338.5 | | 11×100 | | 12×100 | 1109 | 1000 |

● PERMISSIBLE SPEED / MASS

| Guide rail length L_1 (mm) | Permissible speed (mm/s) | | Mass (kg) | | | | Slide block | |
|------------------------------------|--------------------------|------|---------------|------|------------|------|---------------|------------|
| | Lead | | Without cover | | With cover | | Without cover | With cover |
| | 10mm | 20mm | A | B | A | B | | |
| 340 | 740 | 1480 | 6.5 | 7.5 | 7.0 | 8.0 | 0.90 | 1.20 |
| 440 | | | 8.0 | 8.5 | 8.5 | 9.5 | | |
| 540 | | | 9.0 | 10.0 | 10.0 | 11.0 | | |
| 640 | | | 10.5 | 11.5 | 11.0 | 12.5 | | |
| 740 | 650 | 1300 | 12.0 | 13.0 | 12.5 | 14.0 | | |
| 840 | 500 | 1000 | 13.0 | 14.0 | 14.0 | 15.5 | | |
| 940 | 390 | 780 | 14.5 | 15.5 | 15.5 | 16.5 | | |
| 1040 | 315 | 630 | 16.0 | 17.0 | 17.0 | 18.0 | | |
| 1140 | 260 | 520 | 17.5 | 18.0 | 18.5 | 19.5 | | |
| 1240 | 220 | 440 | 18.5 | 19.5 | 19.5 | 21.0 | | |

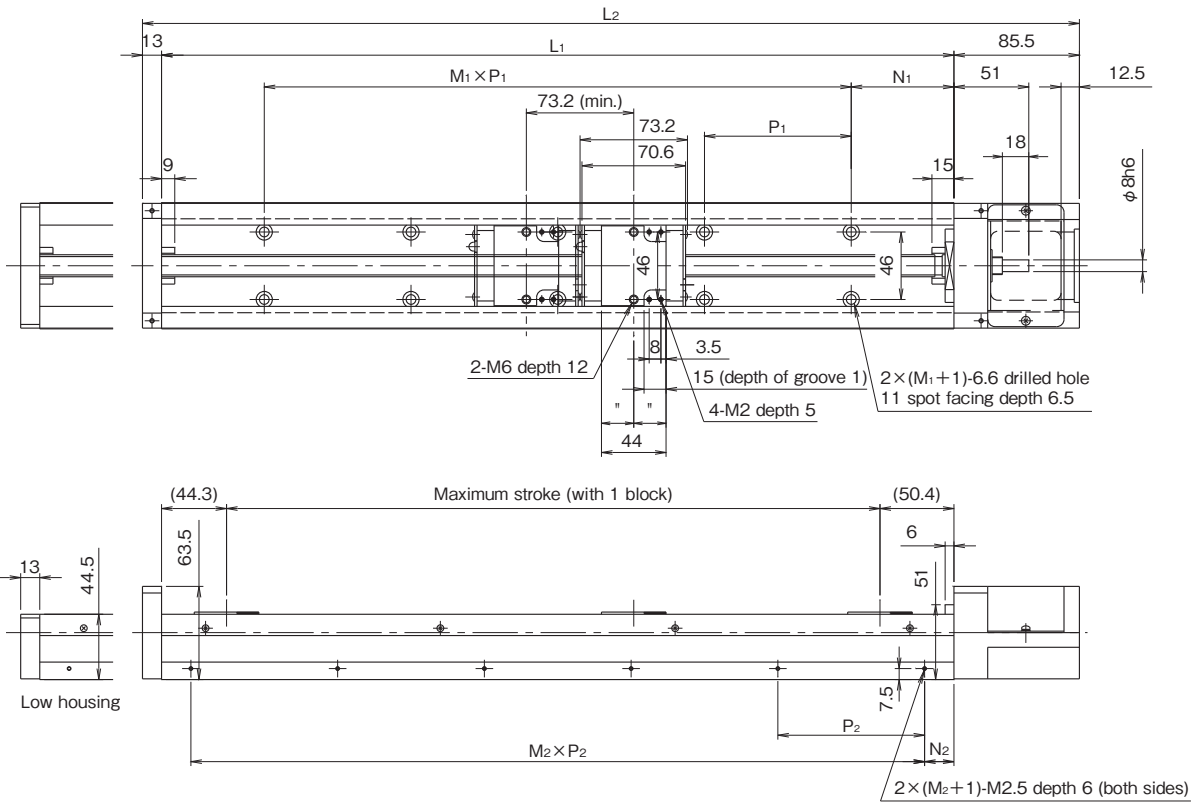
(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

(Note 2) For long rail configurations, please consult KURODA.

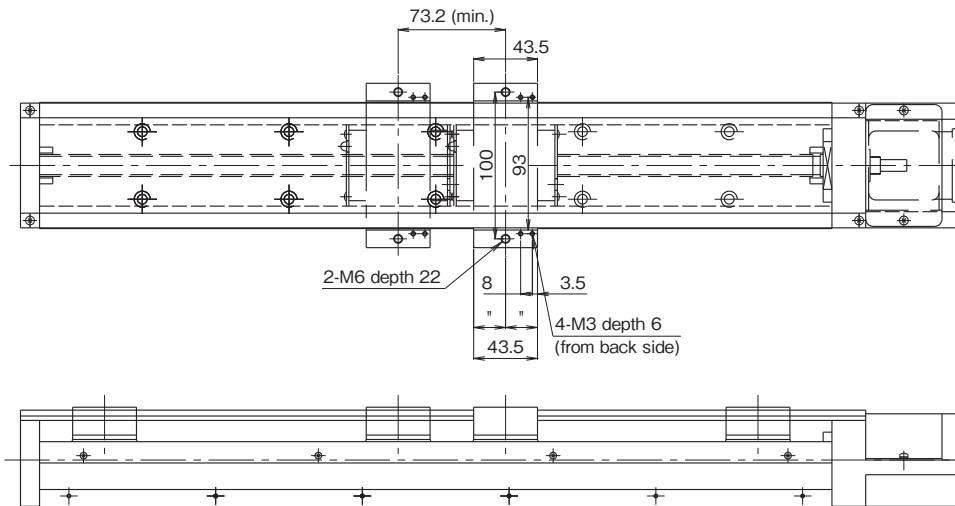
SG46

● SHORT BLOCK CONFIGURATIONS

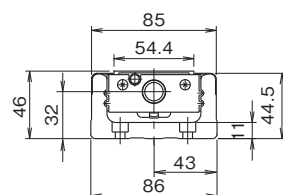
With 1 short block: C (With 2 short blocks: D)



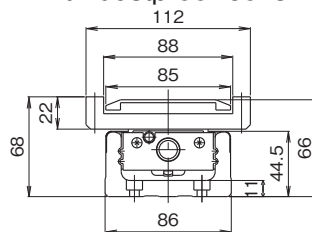
Short block with dustproof cover



Without dustproof cover



With dustproof cover



SG46

● SHORT BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Short block | |
| | | | | | | C: 1 block | D: 2 blocks |
| 340 | 438.5 | 70 | 2×100 | 20 | 3×100 | 245 | 172 |
| 440 | 538.5 | | 3×100 | | 4×100 | 345 | 272 |
| 540 | 638.5 | | 4×100 | | 5×100 | 445 | 372 |
| 640 | 738.5 | | 5×100 | | 6×100 | 545 | 472 |
| 740 | 838.5 | | 6×100 | | 7×100 | 645 | 572 |
| 840 | 938.5 | | 7×100 | | 8×100 | 745 | 672 |
| 940 | 1038.5 | | 8×100 | | 9×100 | 845 | 772 |
| 1040 | 1138.5 | | 9×100 | | 10×100 | 945 | 872 |
| 1140 | 1238.5 | | 10×100 | | 11×100 | 1045 | 972 |
| 1240 | 1338.5 | | 11×100 | | 12×100 | 1145 | 1072 |

● PERMISSIBLE SPEED / MASS

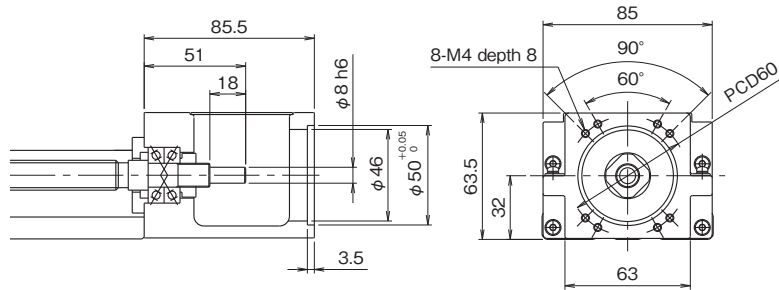
| Guide rail length L_1 (mm) | Permissible speed (mm/s) | | Mass (kg) | | | | Slide block | |
|------------------------------------|--------------------------|------|---------------|------|------------|------|---------------|------------|
| | Lead | | Without cover | | With cover | | Without cover | With cover |
| | 10mm | 20mm | C | D | C | D | | |
| 340 | 740 | 1480 | 6.0 | 6.5 | 6.5 | 7 | 0.50 | 0.70 |
| 440 | | | 7.5 | 8.0 | 8 | 8.5 | | |
| 540 | | | 8.5 | 9.5 | 9.5 | 10 | | |
| 640 | | | 10.0 | 10.5 | 10.5 | 11.5 | | |
| 740 | 650 | 1300 | 11.5 | 12.0 | 12 | 13 | | |
| 840 | 500 | 1000 | 13.0 | 13.5 | 13.5 | 14 | | |
| 940 | 390 | 780 | 14.0 | 14.5 | 15 | 15.5 | | |
| 1040 | 315 | 630 | 15.5 | 16.0 | 16.5 | 17 | | |
| 1140 | 260 | 520 | 17.0 | 17.5 | 18 | 18.5 | | |
| 1240 | 220 | 440 | 18.5 | 19.0 | 19 | 20 | | |

(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

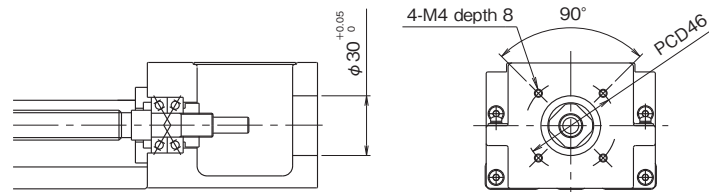
(Note 2) For long rail configurations, please consult KURODA.

● MOTOR BRACKET CONFIGURATIONS

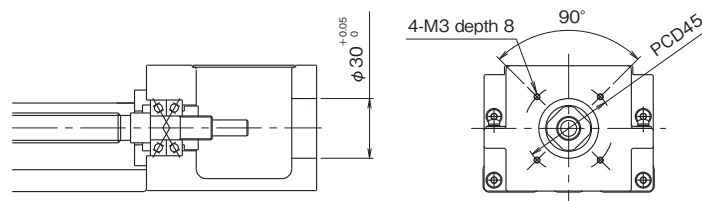
Motor bracket configuration: A0



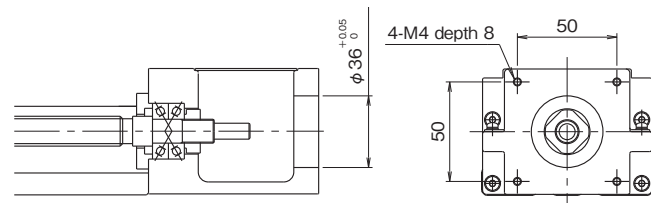
Motor bracket configuration: B0



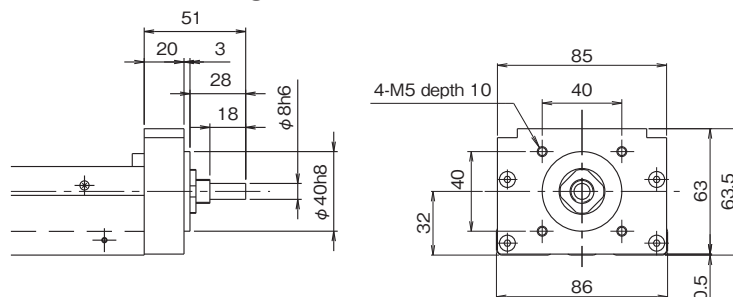
Motor bracket configuration: C0



Motor bracket configuration: D0



Motor bracket configuration: R0

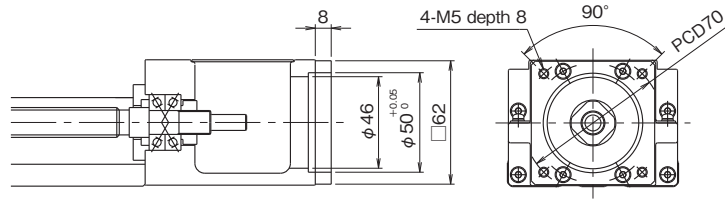


Mass of the R0 configuration is 0.3 kg less than the value shown in the table on page 37.

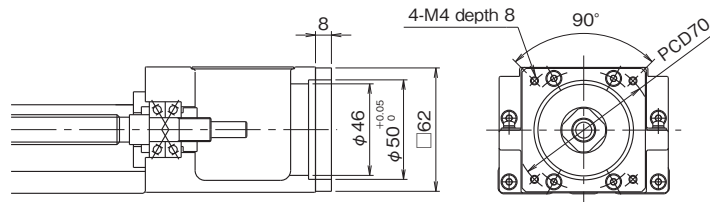
SG46

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

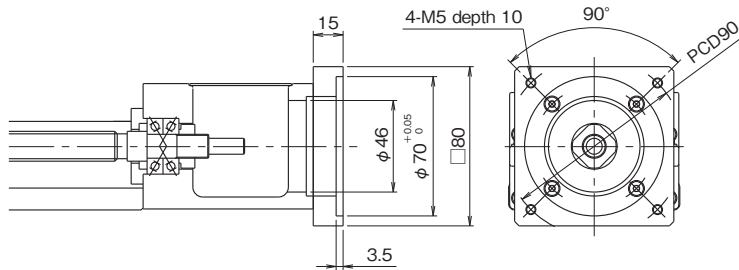
Motor bracket configuration: A1 (mass: 103g)



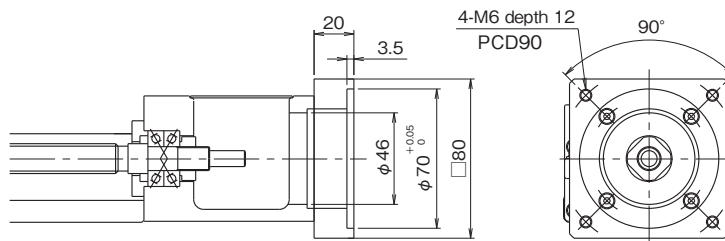
Motor bracket configuration: A2 (mass: 106g)



Motor bracket configuration: A3 (mass: 448g)



Motor bracket configuration: A4 (mass: 628g)



● MOTOR BRACKET CONFIGURATIONS AND MOTOR OPTION

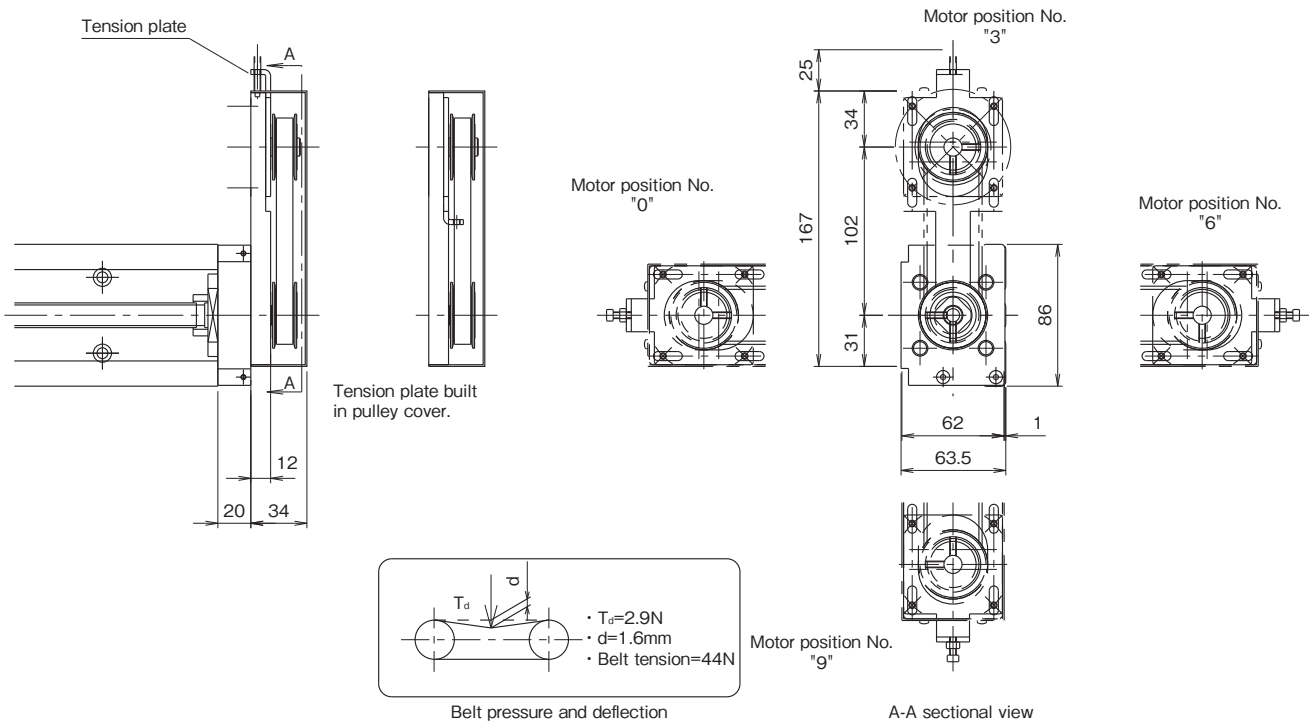
| Motor type | Maker | Motor option | | | Motor bracket configuration | Recommended coupling | |
|-----------------|------------------|---------------------|--|-------------------------------|--|--|--|
| | | Series | Model No. | Output | | | |
| AC SERVO motor | PANASONIC | MINAS E | MUMA02 | 200W | A2 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | |
| | | | MUMA04 | 400W | | | |
| | | MINAS A5 | MSME5A | 50W | C0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | |
| | | | MSME01 | 100W | | | |
| | | | MSME02 | 200W | A2 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | |
| | | | MSME04 | 400W | | | |
| | | | MSME08 | 750W | A3 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | |
| | | MINAS A6 | MSMF5A | 50W | C0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | |
| | | | MSMF01 | 100W | | | |
| | | | MSMF02 | 200W | A2 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | |
| | | | MSMF04 | 400W | | | |
| | | MSMF08 | 750W | A3 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | | |
| | | MITSUBISHI ELECTRIC | MELSERVO J3 | HF-KP (MP) 053 | 50W | B0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) |
| | | | | HF-KP (MP) 13 | 100W | | |
| | HF-KP (MP) 23 | | | 200W | A1 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | |
| | HF-KP (MP) 43 | | | 400W | | | |
| | HF-KP (MP) 73 | | | 750W | A4 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | |
| | MELSERVO J4 | | HG-KR (MR) 053 | 50W | B0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | |
| | | | HG-KR (MR) 13 | 100W | | | |
| | | | HG-KR (MR) 23 | 200W | A1 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | |
| | | | HG-KR (MR) 43 | 400W | | | |
| | | | HG-KR (MR) 73 | 750W | A4 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | |
| | YASKAWA ELECTRIC | Σ -V | SGMJV, SGMAV-A5 | 50W | B0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | |
| | | | SGMJV, SGMAV-01 | 100W | | | |
| | | | SGMJV, SGMAV-C2 | 150W | | | |
| | | | SGMJV, SGMAV-02 | 200W | A1 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | |
| | | | SGMJV, SGMAV-04 | 400W | | | |
| | | | SGMJV, SGMAV-06 | 600、 550W | | | |
| | | | SGMJV, SGMAV-08 | 750W | | | A4 |
| | | Σ -7 | SGM7J, SGM7A-A5 | 50W | B0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | |
| SGM7J, SGM7A-01 | | | 100W | | | | |
| SGM7J, SGM7A-C2 | | | 150W | | | | |
| SGM7J, SGM7A-02 | | | 200W | A1 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | | |
| SGM7J, SGM7A-04 | | | 400W | | | | |
| SGM7J, SGM7A-06 | | | 600W | | | | |
| SGM7J, SGM7A-08 | | | 750W | | | A4 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) |
| SANYO ELECTRIC | SANMOTION R | R2AA04005 | 50W | B0 | SFC-020DA2 (MIKI PULLEY) ACD-27A (ISEL) | | |
| | | R2AA04010 | 100W | | | | |
| | | R2AA06020 | 200W | A1 | SFC-030DA2 (MIKI PULLEY) ACD-34A (ISEL) | | |
| | | R2AA06040 | 400W | | | | |
| | | R2AA08075 | 750W | A4 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | | |
| Stepping motor | ORIENTAL MOTOR | α step | ARM6 | <input type="checkbox"/> 60mm | D0 | SFC-020DA2 (MIKI PULLEY) | |
| | SANYO ELECTRIC | 5-Phase | F series <input type="checkbox"/> 60mm | <input type="checkbox"/> 60mm | D0 | LACD-27A (ISEL) | |

- For motors other than above-mentioned, consult KURODA.
- When selecting a rigid type of coupling for connecting a motor, consult KURODA.
- For detailed specifications of above-mentioned motors and couplings, refer to catalogs or websites provided by the makers.

SG46

● PARALLEL MOTOR MOUNTING

● SG46



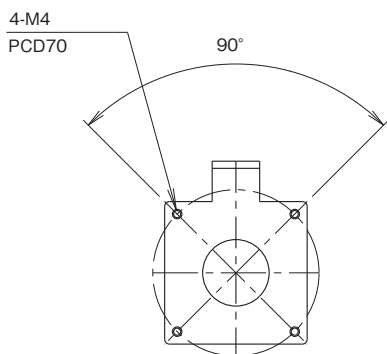
- Pulley unit position can be adjusted at every 90 degree.
- Motor parallel mounting can be equipped with dustproof cover and sensor.
- Tension plate position can be built in pulley cover.
- The mass is 0.7kg larger than the values shown in tables on pages 35 and 37.
- Inertia moment is $1.24 \times 10^{-5} \text{kg} \cdot \text{m}^2$ larger than the value shown in table on page 5.

| Mark | Pulley Inner dia. | Applicable motor |
|----------------------------|----------------------|---|
| E <input type="checkbox"/> | Inner dia. $\phi 11$ | Panasonic 200W motor and so on Yaskawa 200W motor and so on |
| F <input type="checkbox"/> | Inner dia. $\phi 14$ | Mitsubishi Electric 200W motor and so on Sanyo Electric 200W motor and so on |
| G <input type="checkbox"/> | Inner dia. $\phi 8$ | Oriental Motor Stepping Motor <input type="checkbox"/> 60 series and so on |

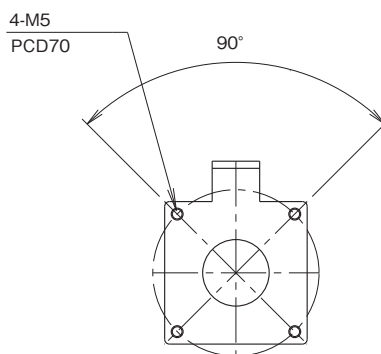
Fullfill the motor position No. in .

Check the spec. if the motor can be assembled before using.

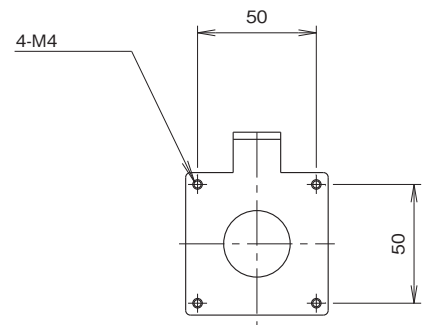
Parallel motor mounting type E
Tension plate dimension



Parallel motor mounting type F
Tension plate dimension



Parallel motor mounting type G
Tension plate dimension

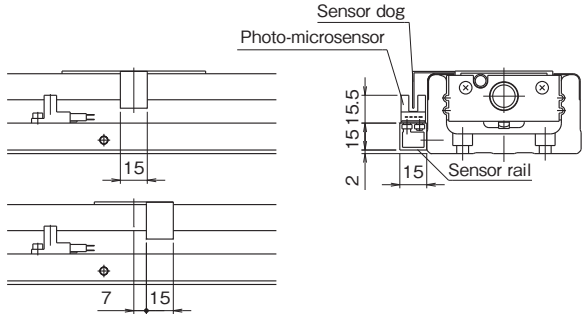


SG46

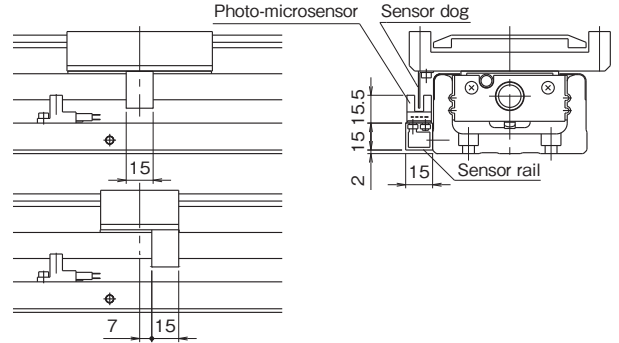
● SENSOR

Symbol C (NPN) / P (PNP), M (NPN) / Y (PNP): Photo-microsensor (OMRON, Panasonic Industrial Devices SUNX)

Without dustproof cover

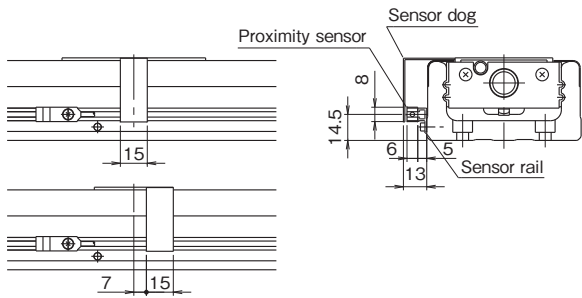


With dustproof cover

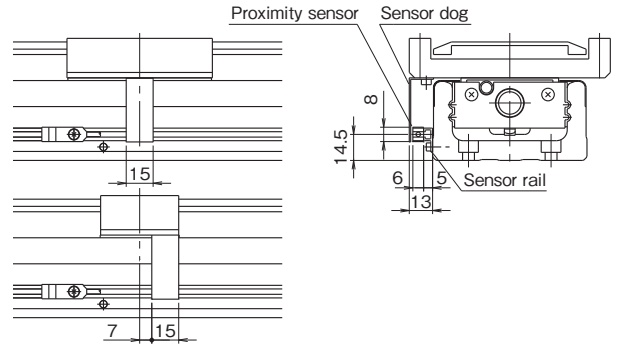


Symbol K (NPN) / E (PNP): Proximity sensor (Azbil)

Without dustproof cover

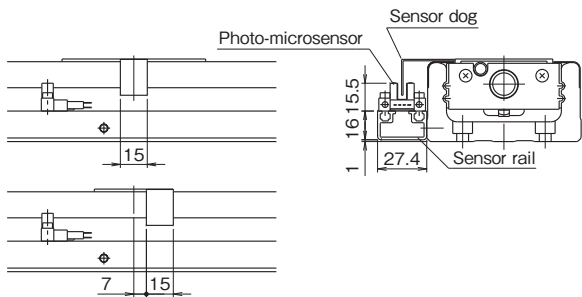


With dustproof cover

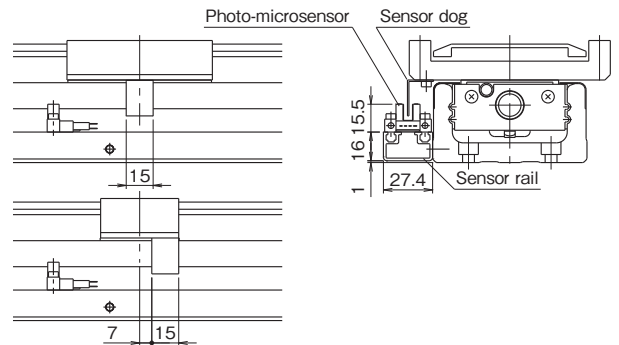


Symbol H (NPN) / J (PNP): Photo-microsensor (OMRON)

Without dustproof cover



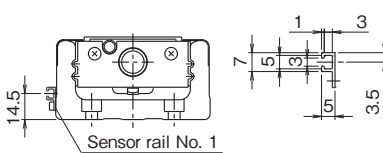
With dustproof cover



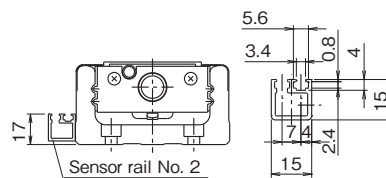
● SENSOR RAIL

Sensor rails only available with no sensors.

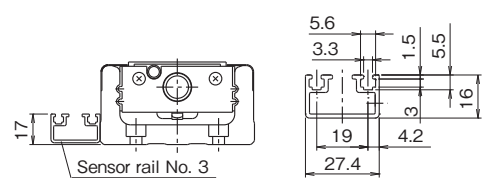
Sensor rail No. 1



Sensor rail No. 2



Sensor rail No. 3

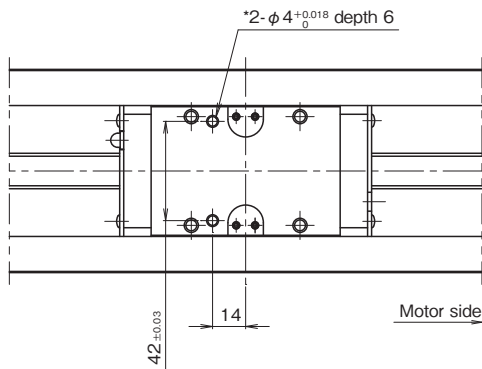


SG46

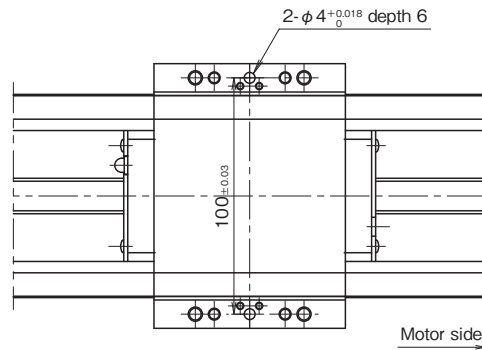
● DOWEL PIN HOLE

Dowel pin holes are applicable on the slide blocks with part number "PS", sub-tables "PR" or slide blocks and sub-tables "PSR". For actuators with 2 blocks, they are on both driving-side block and driven-side block. Please note that dowel pins are not equipped.

Long block without dustproof cover with "PS"

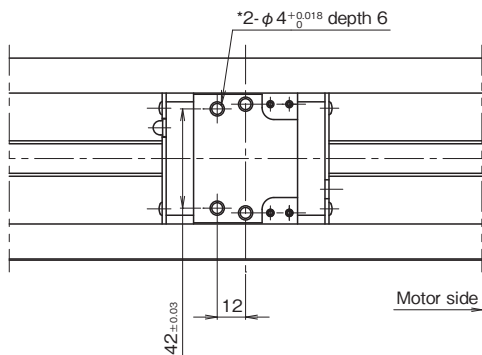


Long block with dustproof cover with "PS"

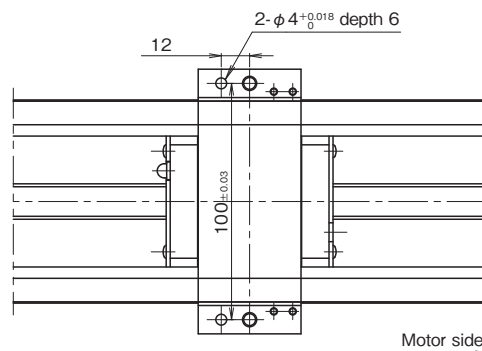


The hole with asterisk (*) may have diameter 5 counterbores depth 2 for erasing the quenching layer when needed.

Short block without dustproof cover with "PS"

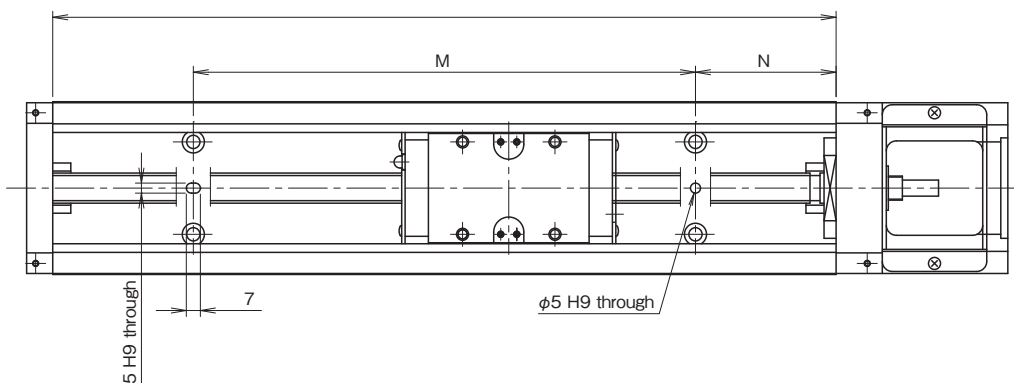


Short block with dustproof cover with "PS"



The hole with asterisk (*) may have diameter 5 counterbores depth 2 for erasing the quenching layer when needed.

Guide rail with "PR"



(Unit: mm)

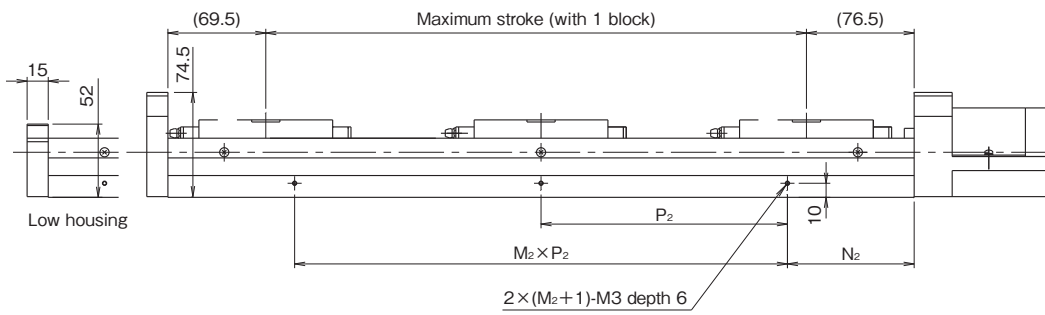
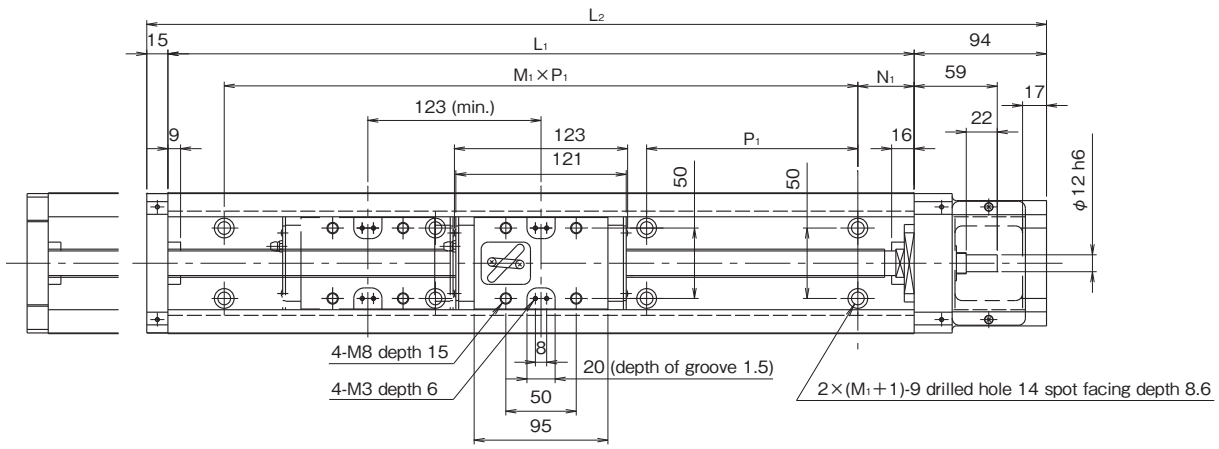
| Guide rail length | N | M | Dowel pin height |
|-------------------|----|------|------------------|
| 340 | 70 | 200 | Less than 11 |
| 440 | | 300 | |
| 540 | | 400 | |
| 640 | | 500 | |
| 740 | | 600 | |
| 840 | | 700 | |
| 940 | | 800 | |
| 1040 | | 900 | |
| 1140 | | 1000 | |
| 1240 | | 1100 | |

Notice: In case dowel pin is stuck out from the U-guide rail, it may interfere with and break the slide block.

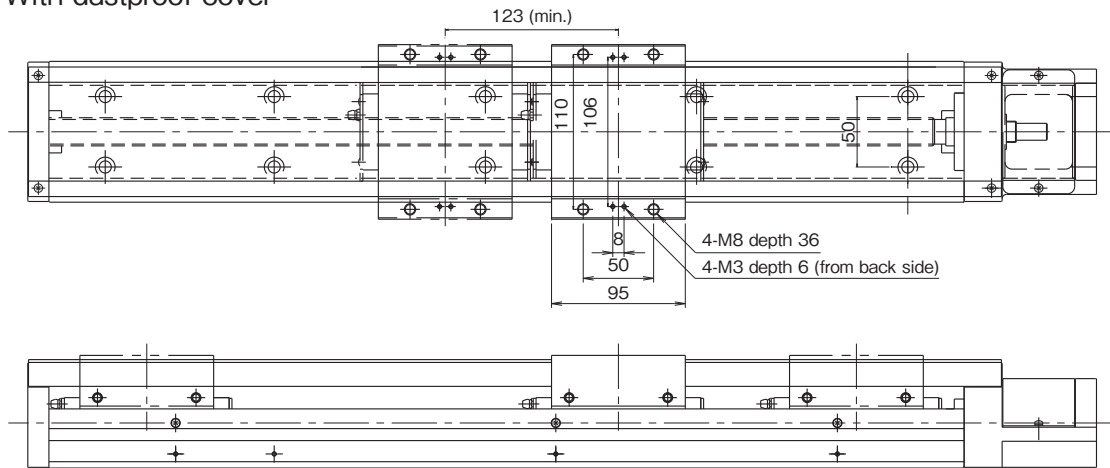
SG55

● LONG BLOCK CONFIGURATIONS

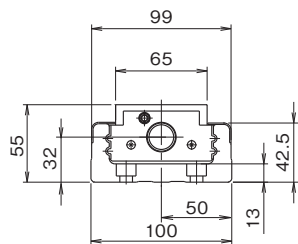
With 1 long block: A (With 2 long blocks: B)



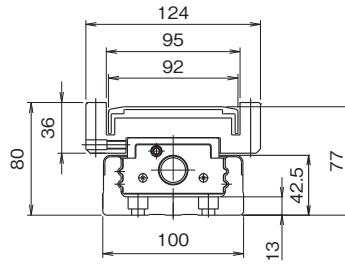
With dustproof cover



Without dustproof cover



With dustproof cover



SG55

● LONG BLOCK DIMENSIONS

(Unit: mm)

| Guide rail length L_1 | Overall length L_2 | N_1 | $M_1 \times P_1$ | N_2 | $M_2 \times P_2$ | Maximum stroke | |
|----------------------------|-------------------------|-------|------------------|-------|------------------|----------------|-------------|
| | | | | | | Long block | |
| | | | | | | A: 1 block | B: 2 blocks |
| 980 | 1089 | 40 | 6×150 | 90 | 4×200 | 834 | 711 |
| 1080 | 1189 | 15 | 7×150 | 40 | 5×200 | 934 | 811 |
| 1180 | 1289 | 65 | | 90 | | 1034 | 911 |
| 1280 | 1389 | 40 | 8×150 | 40 | 6×200 | 1134 | 1011 |
| 1380 | 1489 | 15 | 9×150 | 90 | | 1234 | 1111 |

● PERMISSIBLE SPEED / MASS

| Guide rail length L_1 (mm) | Permissible speed (m/s) | Mass (kg) | | | | | | |
|------------------------------------|-------------------------|--------------|---------------|----|------------|------|---------------|------------|
| | | Lead 20mm | Without cover | | With cover | | Slide block | |
| | | | A | B | A | B | Without cover | With cover |
| 980 | 1120 | 20 | 22 | 21 | 24 | 1.70 | 2.30 | |
| 1080 | 910 | 22 | 24 | 23 | 26 | | | |
| 1180 | 750 | 23 | 25 | 25 | 27 | | | |
| 1280 | 630 | 25 | 27 | 27 | 29 | | | |
| 1380 | 530 | 27 | 29 | 29 | 31 | | | |

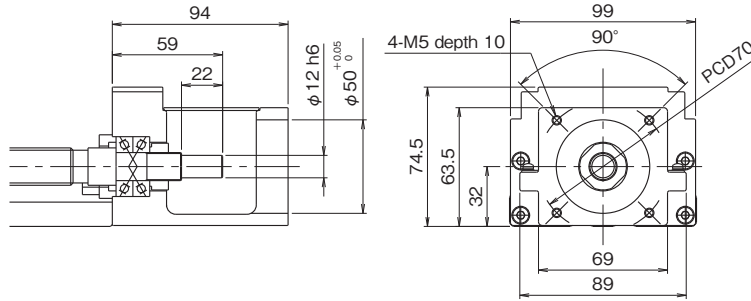
(Note 1) The mass indicated in the columns "Without cover" and "With cover" in the above table includes the mass of slide block.

(Note 2) For long rail configurations, please consult KURODA.

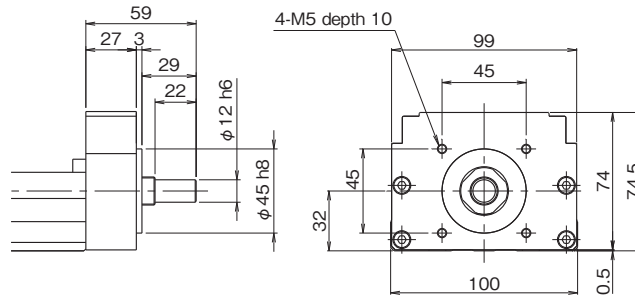
SG55

● MOTOR BRACKET CONFIGURATIONS

Motor bracket configuration: A0



Motor bracket configuration: R0

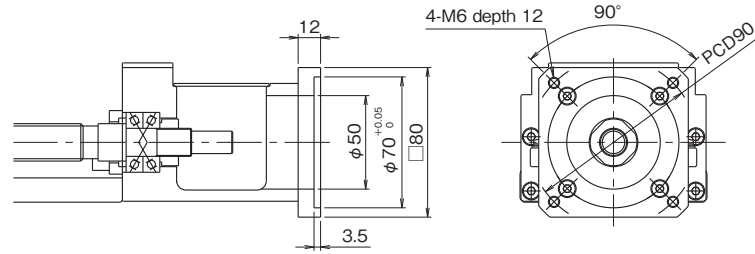


Mass of the R0 configuration is 0.3 kg less than the value shown in the table on page 45.

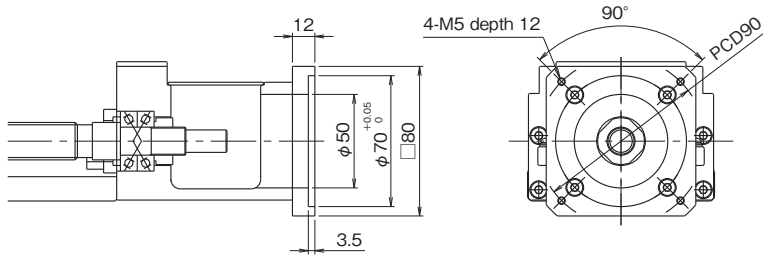
SG55

● MOTOR BRACKET CONFIGURATIONS (INTERMEDIATE FLANGE)

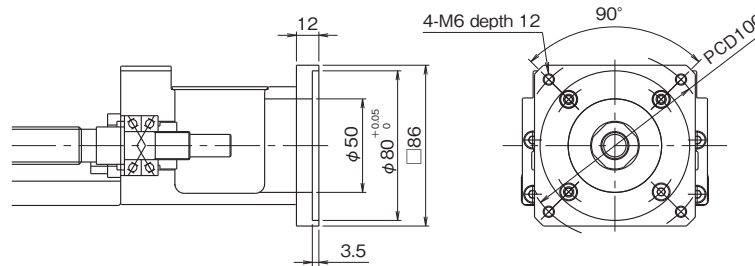
Motor bracket configuration: A1 (mass: 329g)



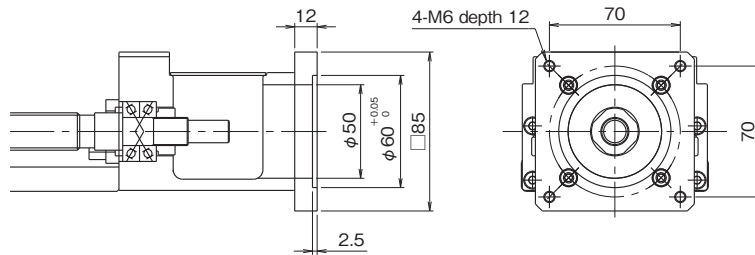
Motor bracket configuration: A2 (mass: 333g)



Motor bracket configuration: A3 (mass: 399g)



Motor bracket configuration: A4 (mass: 449g)



● MOTOR BRACKET CONFIGURATIONS AND MOTOR OPTION

| Motor type | Maker | Motor option | | | Motor bracket configuration | Recommended coupling |
|-----------------|---------------------|--------------|-----------------|----------|--|--|
| | | Series | Model No. | Output | | |
| AC SERVO motor | PANASONIC | MINAS A5 | MSME08 | 750W | A2 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) |
| | | MINAS A6 | MSMF08 | | | |
| | MITSUBISHI ELECTRIC | MELSERVO J3 | HF-KP (MP) 23 | 200W | A0 | SFC-035DA2 (MIKI PULLEY) ACD-39A (ISEL) |
| | | | HF-KP (MP) 43 | 400W | | |
| | | | HF-KP (MP) 73 | 750W | A1 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) |
| | | MELSERVO J4 | HG-KR (MR) 23 | 200W | A0 | SFC-035DA2 (MIKI PULLEY) ACD-39A (ISEL) |
| | | | HG-KR (MR) 43 | 400W | | |
| | | | HG-KR (MR) 73 | 750W | A1 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) |
| | YASKAWA ELECTRIC | Σ-V | SGMJV, SGM7A-02 | 200W | A0 | SFC-035DA2 (MIKI PULLEY) ACD-39A (ISEL) |
| | | | SGMJV, SGM7A-04 | 400W | | |
| | | | SGMJV, SGM7A-06 | 600、550W | | |
| | | | SGMJV, SGM7A-08 | 750W | A1 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) |
| | | Σ-7 | SGM7J, SGM7A-02 | 200W | A0 | SFC-035DA2 (MIKI PULLEY) ACD-39A (ISEL) |
| | | | SGM7J, SGM7A-04 | 400W | | |
| SGM7J, SGM7A-06 | | | 600W | A1 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | |
| SGM7J, SGM7A-08 | | | 750W | | | |
| SANYO ELECTRIC | SANMOTION R | R2AA06020 | 200W | A0 | SFC-035DA2 (MIKI PULLEY) ACD-39A (ISEL) | |
| | | R2AA06040 | 400W | | | |
| | | R2AA08075 | 750W | A1 | SFC-040DA2 (MIKI PULLEY) ACD-44A (ISEL) | |
| Stepping motor | ORIENTAL MOTOR | α step | ARM9 | □85mm | A4 | SFC-035DA2 (MIKI PULLEY) ACD-39A (ISEL) |
| | SANYO ELECTRIC | 5-Phase | F series □85mm | □86mm | | |

- For motors other than above-mentioned, consult KURODA.
- When selecting a rigid type of coupling for connecting a motor, consult KURODA.
- For detailed specifications of above-mentioned motors and couplings, refer to catalogs or websites provided by the makers.

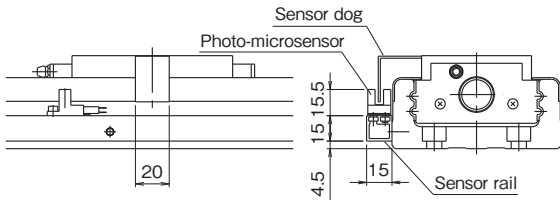
SG SG20 SG26 SG33 SG46 SG55 SE SE15 SE23 SE30 SE45 SC SC23 SC30 SC45 Sensor Technical Data

SG55

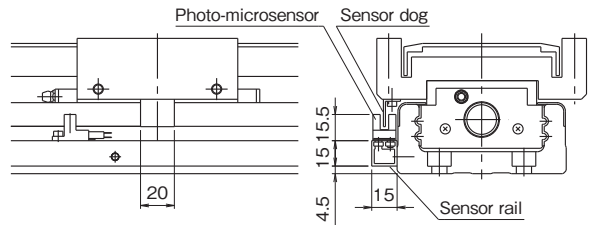
● SENSOR

Symbol C (NPN) / P (PNP), M (NPN) / Y (PNP): Photo-microsensor (OMRON, Panasonic Industrial Devices SUNX)

Without dustproof cover

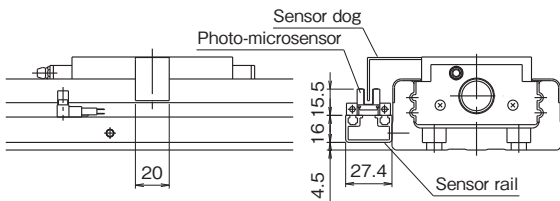


With dustproof cover

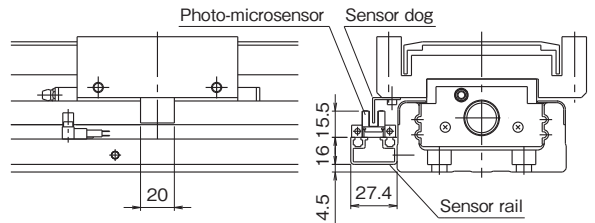


Symbol H (NPN) / J (PNP): Photo-microsensor (OMRON)

Without dustproof cover

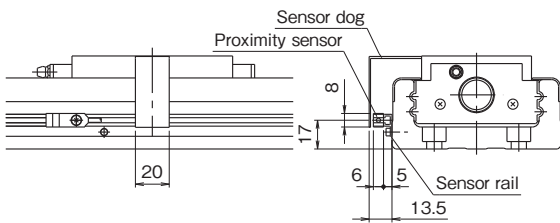


With dustproof cover

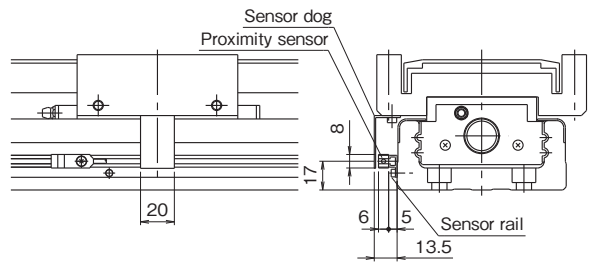


Symbol K (NPN) / E (PNP): Proximity sensor (Azbil)

Without dustproof cover



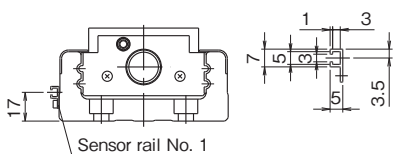
With dustproof cover



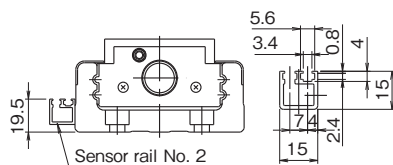
● SENSOR RAIL

Sensor rails only available with no sensors.

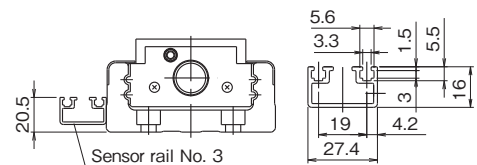
Sensor rail No. 1



Sensor rail No. 2



Sensor rail No. 3

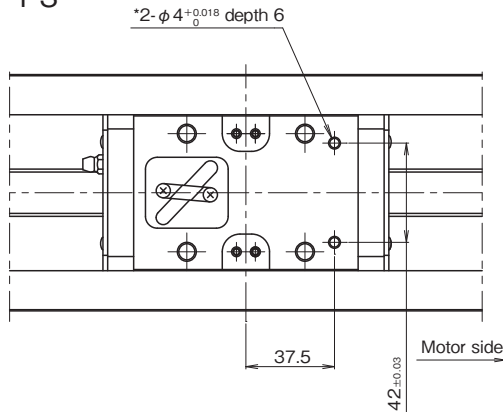


SG55

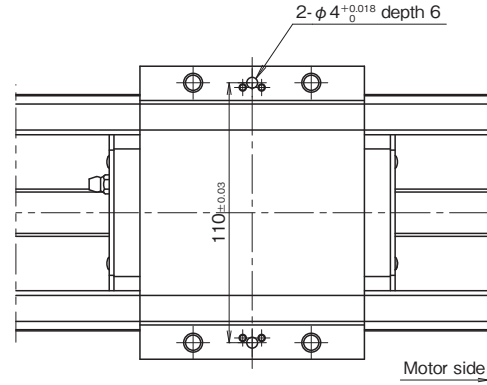
● DOWEL PIN HOLE

Dowel pin holes are applicable on the slide blocks with part number "PS", sub-tables "PR" or slide blocks and sub-tables "PSR". For actuators with 2 blocks, they are on both driving-side block and driven-side block. Please note that dowel pins are not equipped.

Long block without dustproof cover with "PS"

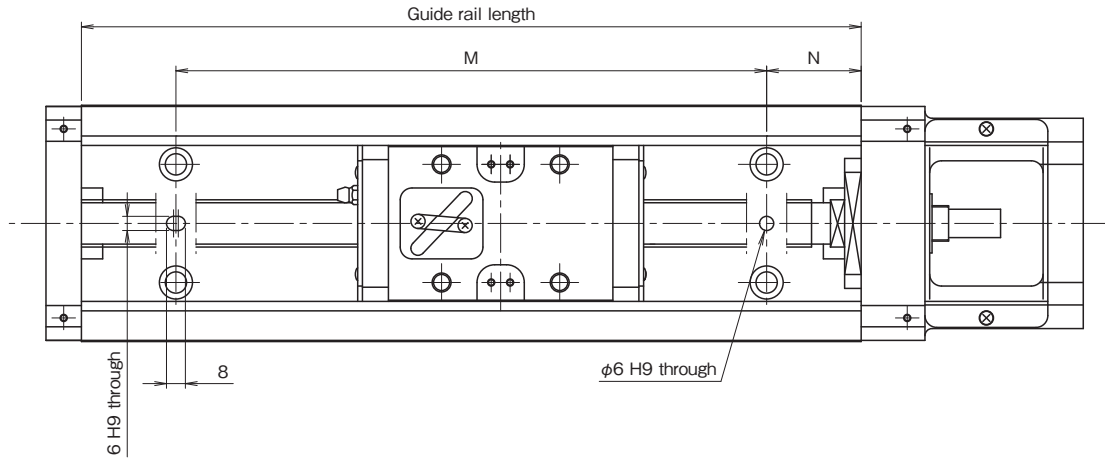


Long block with dustproof cover with "PS"



The hole with asterisk (*) may have diameter 5 counterbores depth 2 for erasing the quenching layer when needed.

Guide rail with "PR"



(Unit: mm)

| Guide rail length | N | M | Dowel pin height |
|-------------------|----|------|------------------|
| 980 | 40 | 900 | Less than 13 |
| 1080 | 15 | 1050 | |
| 1180 | 65 | 1050 | |
| 1280 | 40 | 1200 | |
| 1380 | 15 | 1350 | |

Notice: In case dowel pin is stuck out from the U-guide rail, it may interfere with and break the slide block.