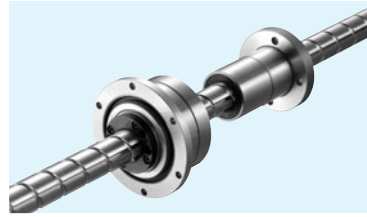
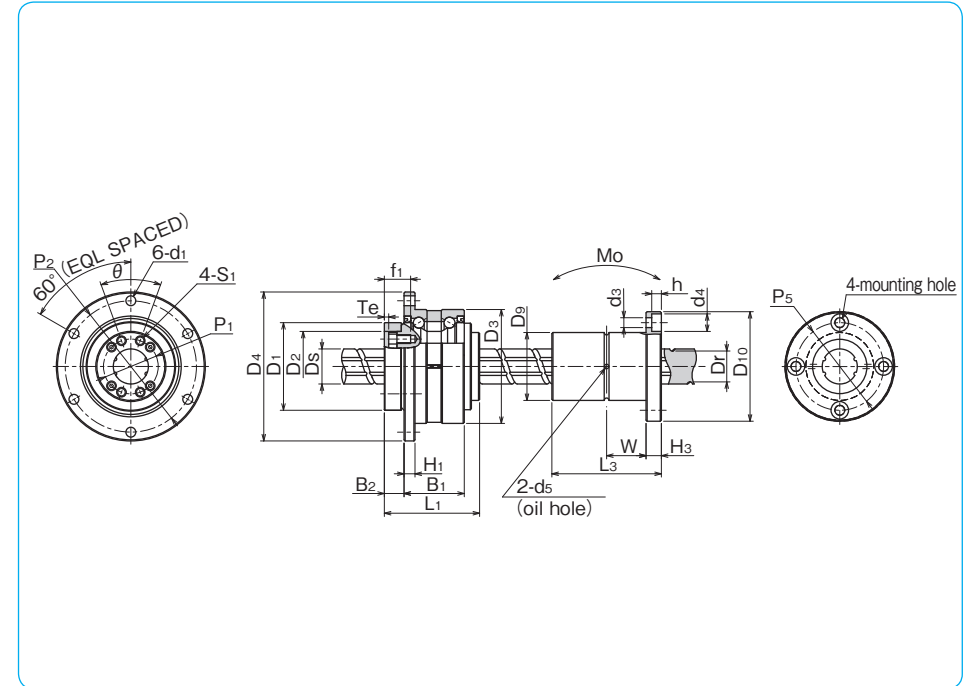
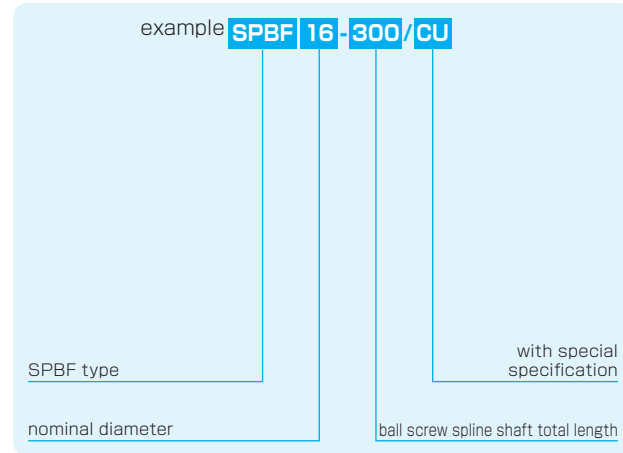


# SPBF TYPE



## part number structure



## ROTARY BALL SCREW NUT

| part number   | major dimensions     |                      |                |                          |    |                |                |                |                             |                | major dimensions of angular contact bearings |                |                |                          |                |     |
|---------------|----------------------|----------------------|----------------|--------------------------|----|----------------|----------------|----------------|-----------------------------|----------------|--|----------------|----------------|--------------------------|----------------|-----|
|               | D <sub>1</sub><br>h7 | D <sub>2</sub><br>H7 | L <sub>1</sub> | P <sub>1</sub><br>P.C.D. | θ  | S <sub>1</sub> | f <sub>1</sub> | T <sub>e</sub> | D <sub>3</sub><br>tolerance | D <sub>4</sub> | H <sub>1</sub>                               | B <sub>1</sub> | B <sub>2</sub> | P <sub>2</sub><br>P.C.D. | d <sub>1</sub> |     |
|               | mm                   | μm                   | mm             | mm                       | mm | mm             | mm             | mm             | μm                          | mm             | mm   | mm             | mm             | mm                       | mm             |     |
| <b>SPBF16</b> | 40                   | 0                    | 32             | 43.5                     | 25 | 40°            | M4             | 12             | 2                           | 52             | 68   | 5              | 27.5           | 9                        | 60             | 4.5 |
| <b>SPBF20</b> | 50                   | -25                  | 39             | 54                       | 31 | 40°            | M5             | 16             | 2                           | 62             | 78   | 6              | 34             | 11                       | 70             | 4.5 |
| <b>SPBF25</b> | 58                   | 0/-30                | 47             | 65                       | 38 | 40°            | M6             | 19             | 3                           | 72             | 92   | 8              | 43             | 12.5                     | 81             | 5.5 |

| ball screw spline shaft<br>D <sub>s</sub> | lead | root diameter<br>D <sub>r</sub> | ball screw basic load rating |                           | angular contact bearings basic load rating |                            | moment of inertia for the nut | moment of inertia for the ball screw shaft | mass                  |       | ball screw nut maximum revolutions based on D <sub>m</sub> ·N | size  |    |
|---|------|---------------------------------|------------------------------|---------------------------|--|----------------------------|-------------------------------|--|-----------------------|-------|---|-------|----|
|   |      |                                 | dynamic<br>C <sub>a</sub>    | static<br>C <sub>oa</sub> | dynamic<br>C <sub>aR</sub>                 | static<br>C <sub>oaR</sub> |                               |  | nut                   | shaft |   |       |    |
| mm  | mm   | mm                              | kN                           | kN                        | kN   | kN                         | kg·cm <sup>2</sup>            | kg·cm <sup>2</sup> /mm                     | kg                    | kg/m  | rpm   |       |    |
| 16  | 16   | 13.4                            | 4.62                         | 8.59                      | 11.1                                       | 22.2                       | 4,000                         | 0.60                                       | 4.43×10 <sup>-4</sup> | 0.45  | 1.47  | 4,179 | 16 |
| 20  | 20   | 17.2                            | 5.77                         | 12.2                      | 14.4                                       | 30.5                       | 3,200                         | 1.75                                       | 1.12×10 <sup>-3</sup> | 0.76  | 2.33  | 3,414 | 20 |
| 25  | 25   | 21.9                            | 8.62                         | 19.2                      | 18.2                                       | 39.8                       | 2,800                         | 3.86                                       | 2.74×10 <sup>-3</sup> | 1.26  | 3.65  | 2,692 | 25 |

## BALL SPLINE NUT

| part number   | major dimensions     |                |                 |                |                          |                                   |    |    |
|---------------|----------------------|----------------|-----------------|----------------|--------------------------|-----------------------------------|----|----|
|               | D <sub>9</sub><br>h6 | L <sub>3</sub> | D <sub>10</sub> | H <sub>3</sub> | P <sub>5</sub><br>P.C.D. | d <sub>3</sub> ×d <sub>4</sub> ×h |    |    |
|               | mm                   | mm             | mm              | mm             | mm                       | mm                                | mm | mm |
| <b>SPBF16</b> | 31                   | 50             | 50              | 7              | 40                       | 4.5×8×4.4                         |    |    |
| <b>SPBF20</b> | 35                   | 63             | 58              | 9              | 45                       | 5.5×9.5×5.4                       |    |    |
| <b>SPBF25</b> | 42                   | 71             | 65              | 9              | 52                       | 5.5×9.5×5.4                       |    |    |

| W    | d <sub>5</sub> | basic torque rating       |                           | basic load rating |                          | allowable static moment<br>M <sub>o</sub> | moment of inertia  | mass nut |
|------|----------------|---------------------------|---------------------------|-------------------|--------------------------|---|--------------------|----------|
|      |                | dynamic<br>C <sub>T</sub> | static<br>C <sub>oT</sub> | dynamic<br>C      | static<br>C <sub>o</sub> |   |                    |          |
| mm   | mm             | N·m                       | N·m                       | kN                | kN                       | N·m                                       | kg·cm <sup>2</sup> | kg       |
| 18   | 2              | 60                        | 110                       | 6.12              | 11.2                     | 46  | 0.52               | 0.2      |
| 22.5 | 2              | 105                       | 194                       | 8.9               | 16.3                     | 110                                       | 1.11               | 0.33     |
| 26.5 | 3              | 189                       | 346                       | 12.8              | 23.4                     | 171                                       | 2.01               | 0.45     |

•Please select the smallest maximum revolutions (rpm) in case that more than one portion rotate at the same time.

※Maximum revolutions with grease lubrication.

•Moment of inertia is calculated excluding the angular contact bearings.