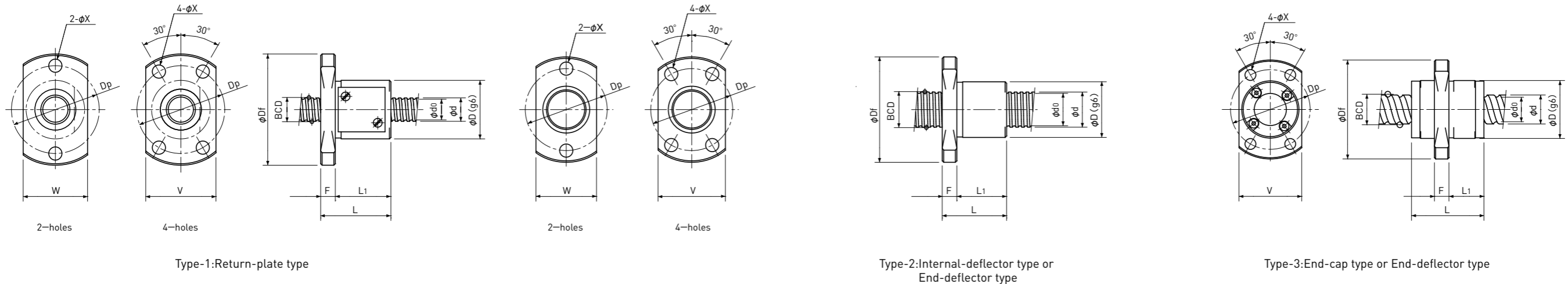


## Single Nut with Flange

Backlash type/Preload type



Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD  | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |            | Nut Rigidity N/μm | Nut dimension |    |    |      |                |     |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|------|------------|--------------------------|-------------------|---------------------|------------|-------------------|---------------|----|----|------|----------------|-----|----|----|----|-------------|-----------------------|
|                       |                      |      |           |      |            |                          |                   | Dynamic Ca          | Static Coa |                   | Nut type      | D  | Df | L    | L <sub>1</sub> | F   | W  | V  | Dp | Bolt Hole X |                       |
| FBS 01800.5 A         | 1.8                  | 0.5  | 0.4       | 1.95 | 4° 40'     | 1.5                      | 2.7×1             | 110 / -             | 130 / -    | 19 / -            | 1             | 6  | 14 | 8.5  | 7              | 1.5 | 8  | -  | 10 | 2.4         | FBS 01800.5 A         |
| FBS 0300.5 A          | 3                    | 0.5  | 0.4       | 3.10 | 2° 56'     | 2.6                      | 2.7×1             | 150 / -             | 220 / -    | 29 / -            | 1             | 8  | 16 | 11   | 8              | 3   | 8  | -  | 12 | 2.4         | FBS 0300.5 A          |
| FBS 0301 B            | 3                    | 1    | 0.6       | 3.18 | 5° 43'     | 2.4                      | 3.7×1             | 330 / -             | 440 / -    | 42 / -            | 1             | 9  | 19 | 14   | 11             | 3   | 11 | -  | 14 | 2.9         | FBS 0301 B            |
| FBS 0400.5 A          | 4                    | 0.5  | 0.4       | 4.10 | 2° 13'     | 3.6                      | 2.7×1             | 160 / -             | 290 / -    | 36 / -            | 1             | 10 | 20 | 13   | 10             | 3   | 12 | -  | 15 | 2.9         | FBS 0400.5 A          |
| FKB 0401 A            | 4                    | 1    | 0.6       | 4.15 | 4° 23'     | 3.4                      | 1×3               | 300 / 300           | 430 / 430  | 38 / 59           | 2             | 9  | 19 | 13   | 10             | 3   | 11 | 13 | 14 | 2.9         | FKB 0401 A            |
| FBS 0401 A            | 4                    | 1    | 0.8       | 4.15 | 4° 23'     | 3.3                      | 2.7×1             | 420 / 270           | 570 / 290  | 40 / 34           | 1             | 10 | 20 | 12   | 9              | 3   | 12 | 14 | 15 | 2.9         | FBS 0401 A            |
| FBS 0401 B            | 4                    | 1    | 0.8       | 4.15 | 4° 23'     | 3.3                      | 3.7×1             | 560 / 350           | 790 / 400  | 54 / 45           | 1             | 11 | 23 | 17   | 13             | 4   | 13 | 15 | 17 | 3.4         | FBS 0401 B            |
| FBS 0402 A            | 4                    | 2    | 0.8       | 4.15 | 8° 43'     | 3.3                      | 2.7×1             | 420 / 260           | 570 / 290  | 39 / 33           | 1             | 11 | 23 | 19   | 15             | 4   | 13 | 15 | 17 | 3.4         | FBS 0402 A            |
| FEB 0404 A            | 4                    | 4    | 0.8       | 4.2  | 16° 51'    | 3.3                      | 2.6×2             | 750 / -             | 1150 / -   | 73 / -            | 3             | 11 | 23 | 17.5 | 11             | 3   | -  | 15 | 17 | 3.4         | FEB 0404 A            |
| FEB 0408 A            | 4                    | 8    | 0.6       | 4.15 | 31° 32'    | 3.4                      | 1.7×4             | 590 / -             | 1110 / -   | 78 / -            | 3             | 11 | 23 | 20   | 12             | 3   | -  | 15 | 17 | 3.4         | FEB 0408 A            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS.

Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in p-A823,

you can calculate Rigidity using this formula.

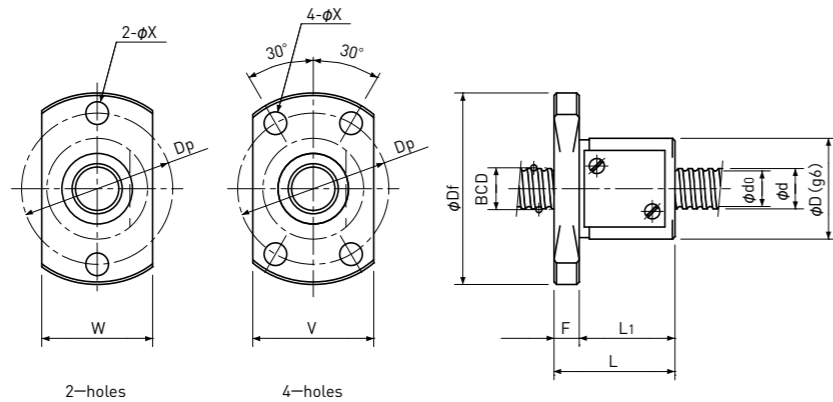
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

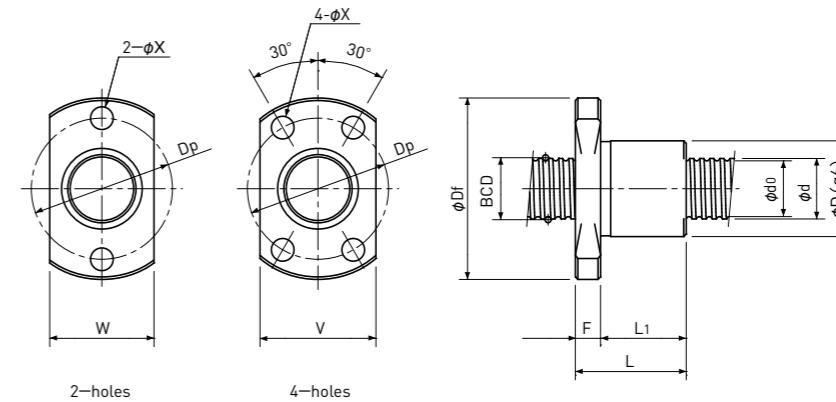
| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

## Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD  | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |            | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|------|------------|--------------------------|-------------------|---------------------|------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |      |            |                          |                   | Dynamic Ca          | Static Coa |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FBS 0500.5 A          | 5                    | 0.5  | 0.4       | 5.10 | 1°47'      | 4.6                      | 2.7×1             | 180 / -             | 370 / -    | 44 / -            | 1             | 11 | 23 | 13 | 10             | 3 | 13 | -  | 17 | 3.4         | FBS 0500.5 A          |
| FKB 0501 A            | 5                    | 1    | 0.6       | 5.15 | 3°32'      | 4.4                      | 1×3               | 330 / 330           | 560 / 560  | 45 / 70           | 2             | 10 | 20 | 13 | 10             | 3 | 12 | 14 | 15 | 2.9         | FKB 0501 A            |
| FBS 0501 B            | 5                    | 1    | 0.8       | 5.15 | 3°32'      | 4.3                      | 3.7×1             | 630 / 400           | 1000 / 500 | 65 / 55           | 1             | 12 | 24 | 17 | 13             | 4 | 14 | 15 | 18 | 3.4         | FBS 0501 B            |
| FBS 0504 A            | 5                    | 4    | 0.8       | 5.15 | 13°53'     | 4.3                      | 2.7×1             | 470 / 300           | 720 / 360  | 47 / 39           | 1             | 12 | 24 | 22 | 18             | 4 | 14 | 15 | 18 | 3.4         | FBS 0504 A            |

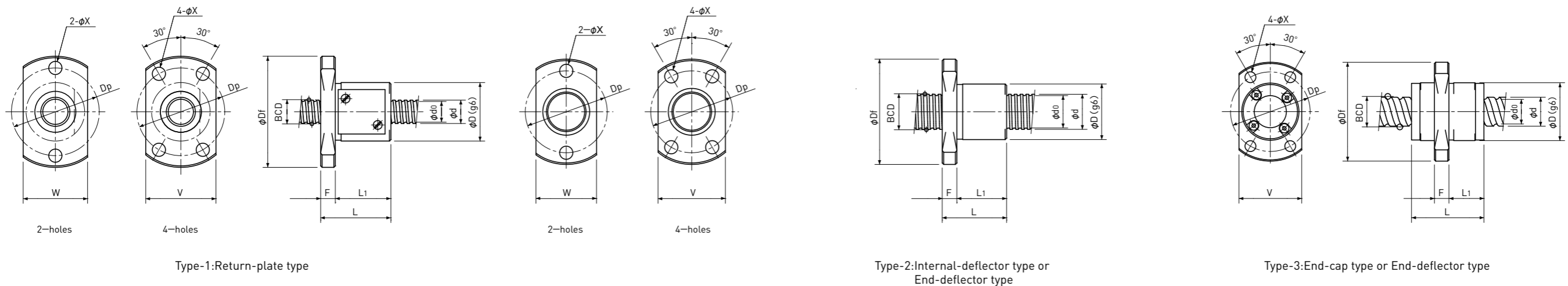
- Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
- Note 2) Ball Nut dimension is without seal at the both ends.  
If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.
- Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.  
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.  
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.
- Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.
- Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

## Precision Ball Screws

## Single Nut with Flange

## Backlash type/Preload type



Unit: mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD  | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |            | Nut Rigidity N/μm | Nut dimension |    |    |      |                |     |    |    |      |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|------|------------|--------------------------|-------------------|---------------------|------------|-------------------|---------------|----|----|------|----------------|-----|----|----|------|-------------|-----------------------|
|                       |                      |      |           |      |            |                          |                   | Dynamic Ca          | Static Coa |                   | Nut type      | D  | Df | L    | L <sub>1</sub> | F   | W  | V  | Dp   | Bolt Hole X |                       |
| FBS 0600.5 A          | 6                    | 0.5  | 0.4       | 6.10 | 1°30'      | 5.6                      | 2.7×1             | 190 / -             | 440 / -    | 50 / -            | 1             | 12 | 25 | 13   | 10             | 3   | 14 | -  | 19   | 3.4         | FBS 0600.5 A          |
| FKB 0601 A            | 6                    | 1    | 0.8       | 6.20 | 2°56'      | 5.3                      | 1×3               | 560 / 560           | 950 / 950  | 55 / 86           | 2             | 11 | 23 | 14.5 | 11             | 3.5 | 13 | 15 | 17   | 3.4         | FKB 0601 A            |
| FBS 0601 B            | 6                    | 1    | 0.8       | 6.15 | 2°58'      | 5.3                      | 3.7×1             | 680 / 430           | 1200 / 610 | 75 / 63           | 1             | 13 | 28 | 17   | 13             | 4   | 15 | 17 | 21.5 | 3.4         | FBS 0601 B            |
| FBS 0601.5 B          | 6                    | 1.5  | 1.0       | 6.20 | 4°24'      | 5.1                      | 3.7×1             | 980 / 620           | 1600 / 800 | 79 / 67           | 1             | 14 | 28 | 19   | 15             | 4   | 16 | 17 | 22   | 3.4         | FBS 0601.5 B          |
| FBS 0602 A            | 6                    | 2    | 1.0       | 6.20 | 5°52'      | 5.1                      | 2.7×1             | 750 / 470           | 1200 / 590 | 58 / 49           | 1             | 15 | 29 | 17   | 13             | 4   | 17 | 18 | 23   | 3.4         | FBS 0602 A            |
| FBS 0602.5 A          | 6                    | 2.5  | 1.0       | 6.20 | 7°19'      | 5.1                      | 2.7×1             | 750 / 470           | 1200 / 590 | 59 / 49           | 1             | 15 | 29 | 18   | 14             | 4   | 17 | 18 | 23   | 3.4         | FBS 0602.5 A          |
| FEB 0606 A            | 6                    | 6    | 1.0       | 6.30 | 16°52'     | 5.2                      | 1.6×2             | 870 / -             | 1450 / -   | 67 / -            | 3             | 14 | 27 | 17   | 8              | 4   | -  | 16 | 21   | 3.4         | FEB 0606 A            |
| FEB 0610 A            | 6                    | 10   | 1.2       | 6.30 | 26°48'     | 5.0                      | 1.2×2             | 950 / -             | 1600 / -   | 50 / -            | 3             | 14 | 27 | 23   | 11.5           | 4   | -  | 16 | 21   | 3.4         | FEB 0610 A            |
| FEB 0612 A            | 6                    | 12   | 1.2       | 6.30 | 31°13'     | 5.0                      | 0.7×2             | 600 / -             | 950 / -    | 29 / -            | 3             | 14 | 27 | 16   | 8.3            | 4   | -  | 16 | 21   | 3.4         | FEB 0612 A            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

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Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in p-A823,

you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

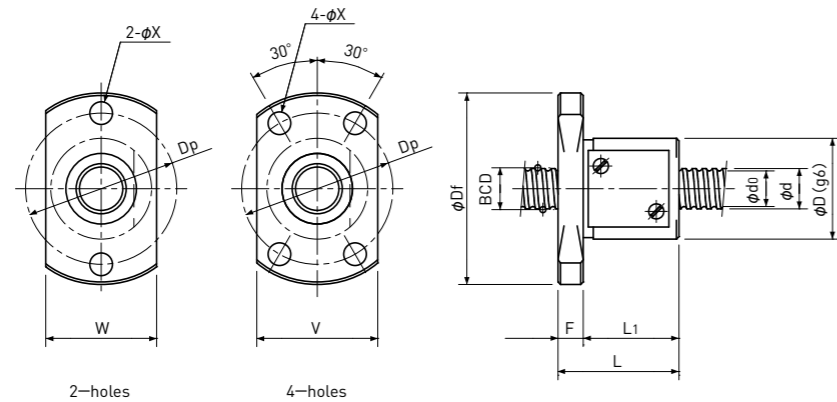
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

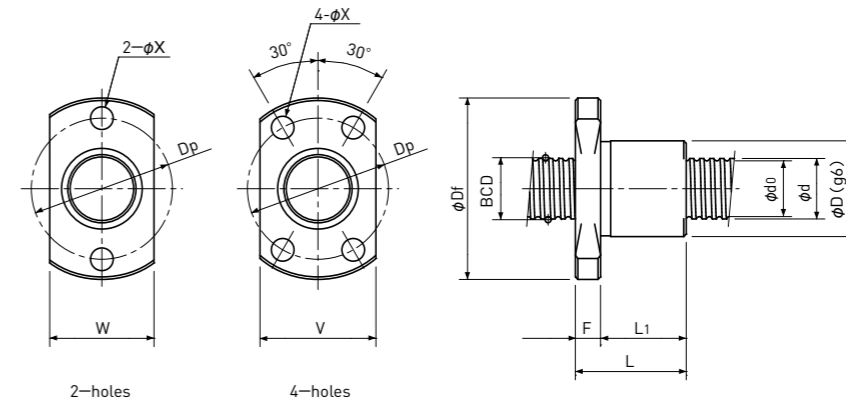
## Precision Ball Screws

## Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD  | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |             | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|------|------------|--------------------------|-------------------|---------------------|-------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |      |            |                          |                   | Dynamic Ca          | Static Coa  |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FBS 0800.5 A          | 8                    | 0.5  | 0.4       | 8.10 | 1°08'      | 7.6                      | 2.7×1             | 220 / —             | 590 / —     | 64 / —            | 1             | 14 | 27 | 13 | 10             | 3 | 16 | —  | 21 | 3.4         | FBS 0800.5 A          |
| FKB 0801 A            | 8                    | 1    | 0.8       | 8.20 | 2°13'      | 7.3                      | 1×3               | 650 / 650           | 1300 / 1300 | 70 / 109          | 2             | 13 | 26 | 15 | 11             | 4 | 15 | 17 | 20 | 3.4         | FKB 0801 A            |
| FBS 0801 B            | 8                    | 1    | 0.8       | 8.15 | 2°15'      | 7.3                      | 3.7×1             | 780 / 490           | 1650 / 820  | 95 / 80           | 1             | 16 | 30 | 17 | 13             | 4 | 18 | 18 | 24 | 3.4         | FBS 0801 B            |
| FKB 0801.5 A          | 8                    | 1.5  | 1.0       | 8.30 | 3°18'      | 7.2                      | 1×3               | 890 / 890           | 1650 / 1650 | 73 / 113          | 2             | 15 | 28 | 20 | 16             | 4 | 17 | 19 | 22 | 3.4         | FKB 0801.5 A          |
| FBS 0801.5 B          | 8                    | 1.5  | 1.0       | 8.20 | 3°20'      | 7.1                      | 3.7×1             | 1100 / 700          | 2200 / 1100 | 99 / 83           | 1             | 16 | 30 | 19 | 15             | 4 | 18 | 18 | 24 | 3.4         | FBS 0801.5 B          |
| FKB 0802 A            | 8                    | 2    | 1.2       | 8.30 | 4°23'      | 7.0                      | 1×3               | 1300 / 1300         | 2300 / 2300 | 77 / 121          | 2             | 15 | 28 | 18 | 14             | 4 | 17 | 19 | 22 | 3.4         | FKB 0802 A            |
| FBS 0802 B(1)         | 8                    | 2    | 1.0       | 8.20 | 4°26'      | 7.1                      | 3.7×1             | 1100 / 700          | 2200 / 1100 | 99 / 83           | 1             | 16 | 30 | 21 | 17             | 4 | 18 | 18 | 24 | 3.4         | FBS 0802 B(1)         |
| FBS 0802 B(2)         | 8                    | 2    | 1.5875    | 8.30 | 4°23'      | 6.6                      | 3.7×1             | 2400 / 1550         | 4100 / 2100 | 111 / 94          | 1             | 20 | 38 | 24 | 19             | 5 | 22 | 23 | 30 | 4.5         | FBS 0802 B(2)         |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

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Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.  
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.  
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
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Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

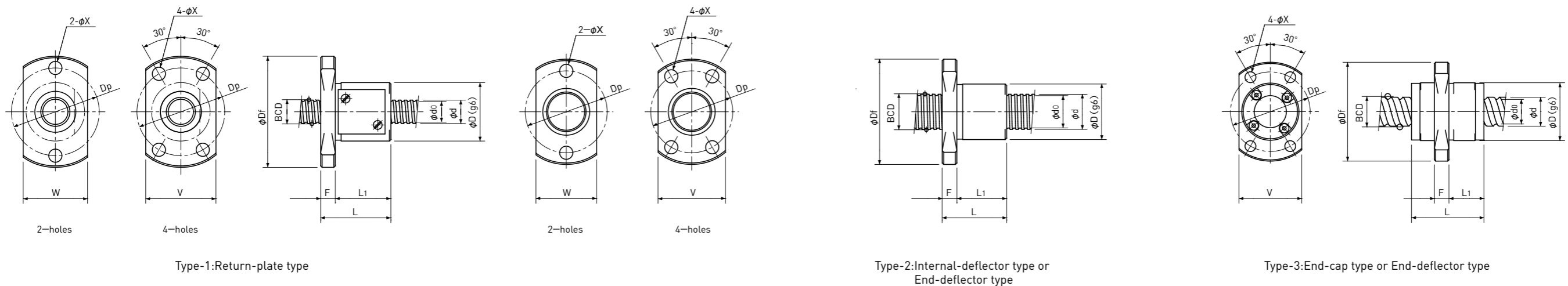
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

## Precision Ball Screws

## Single Nut with Flange

## Backlash type/Preload type



Unit: mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD  | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |             | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|------|------------|--------------------------|-------------------|---------------------|-------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |      |            |                          |                   | Dynamic Ca          | Static Coa  |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FDB 0802.5 A          | 8                    | 2.5  | 1.5875    | 8.00 | 5° 41'     | 6.3                      | 2.7×1             | 1850 / -            | 3000 / -    | 80 / -            | 2             | 16 | 29 | 16 | 12             | 4 | -  | 18 | 23 | 3.4         | FDB 0802.5 A          |
| FBS 0802.5 B          | 8                    | 2.5  | 1.5875    | 8.30 | 5° 29'     | 6.6                      | 3.7×1             | 2400 / 1550         | 4100 / 2100 | 111 / 93          | 1             | 20 | 38 | 26 | 21             | 5 | 22 | 23 | 30 | 4.5         | FBS 0802.5 B          |
| FBS 0803 A            | 8                    | 3    | 2.0       | 8.30 | 6° 34'     | 6.2                      | 2.7×1             | 2600 / 1650         | 4200 / 2100 | 85 / 70           | 1             | 20 | 38 | 25 | 20             | 5 | 22 | 23 | 30 | 4.5         | FBS 0803 A            |
| FBS 0804 A            | 8                    | 4    | 2.0       | 8.30 | 8° 43'     | 6.2                      | 2.7×1             | 2600 / 1650         | 4200 / 2100 | 84 / 70           | 1             | 21 | 39 | 28 | 23             | 5 | 23 | 23 | 31 | 4.5         | FBS 0804 A            |
| FBS 0805 A            | 8                    | 5    | 1.5875    | 8.30 | 10° 51'    | 6.6                      | 2.7×1             | 1850 / 1150         | 3000 / 1500 | 82 / 67           | 1             | 18 | 31 | 28 | 24             | 4 | 20 | 20 | 25 | 3.4         | FBS 0805 A            |
| FEB 0808 A            | 8                    | 8    | 1.5875    | 8.40 | 16° 52'    | 6.7                      | 1.6×2             | 2200 / -            | 3800 / -    | 95 / -            | 3             | 18 | 31 | 20 | 10             | 4 | -  | 20 | 25 | 3.4         | FEB 0808 A            |
| FEB 0810 A            | 8                    | 10   | 1.5875    | 8.40 | 20° 45'    | 6.7                      | 1.6×2             | 2200 / -            | 3900 / -    | 92 / -            | 3             | 18 | 31 | 24 | 13             | 4 | -  | 20 | 25 | 3.4         | FEB 0810 A            |
| FEB 0812 A            | 8                    | 12   | 1.5875    | 8.40 | 24° 27'    | 6.7                      | 1.6×2             | 2200 / -            | 4000 / -    | 90 / -            | 3             | 18 | 31 | 27 | 17             | 4 | -  | 20 | 25 | 3.4         | FEB 0812 A            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

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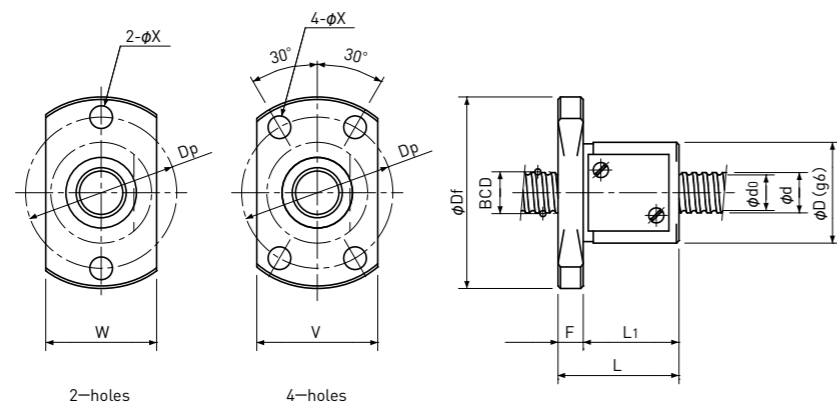
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

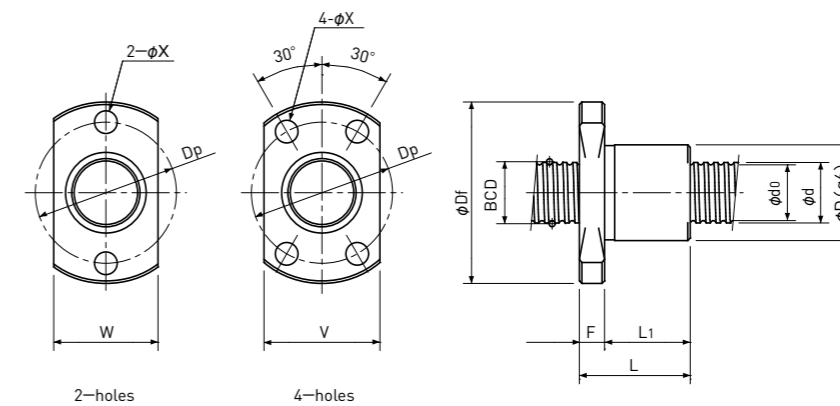
# Precision Ball Screws

## Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |             | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|-------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa  |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FKB 1001 A            | 10                   | 1    | 0.8       | 10.20 | 1°47'      | 9.3                      | 1×3               | 720 / 720           | 1650 / 1650 | 84 / 131          | 2             | 15 | 28 | 15 | 11             | 4 | 17 | 19 | 22 | 3.4         | FKB 1001 A            |
| FBS 1001 B            | 10                   | 1    | 0.8       | 10.15 | 1°48'      | 9.3                      | 3.7×1             | 840 / 530           | 2000 / 1000 | 113 / 95          | 1             | 19 | 37 | 18 | 13             | 5 | 21 | 22 | 29 | 4.5         | FBS 1001 B            |
| FKB 1001.5 A          | 10                   | 1.5  | 1.0       | 10.30 | 2°39'      | 9.2                      | 1×3               | 990 / 990           | 2100 / 2100 | 87 / 136          | 2             | 17 | 34 | 21 | 16             | 5 | 19 | 21 | 26 | 4.5         | FKB 1001.5 A          |
| FBS 1001.5 B          | 10                   | 1.5  | 1.0       | 10.20 | 2°41'      | 9.1                      | 3.7×1             | 1250 / 790          | 2800 / 1400 | 120 / 101         | 1             | 19 | 37 | 20 | 15             | 5 | 21 | 22 | 29 | 4.5         | FBS 1001.5 B          |
| FKB 1002 A            | 10                   | 2    | 1.2       | 10.30 | 3°32'      | 9.0                      | 1×3               | 1450 / 1450         | 3000 / 3000 | 93 / 144          | 2             | 17 | 34 | 19 | 14             | 5 | 19 | 21 | 26 | 4.5         | FKB 1002 A            |
| FBS 1002 B            | 10                   | 2    | 1.5875    | 10.30 | 3°32'      | 8.6                      | 3.7×1             | 2700 / 1750         | 5300 / 2700 | 134 / 112         | 1             | 23 | 41 | 24 | 19             | 5 | 25 | 25 | 33 | 4.5         | FBS 1002 B            |
| FKB 1002.5 A          | 10                   | 2.5  | 1.5875    | 10.40 | 4°23'      | 8.7                      | 1×3               | 2100 / 2100         | 3800 / 3800 | 96 / 150          | 2             | 18 | 35 | 21 | 16             | 5 | 20 | 22 | 27 | 4.5         | FKB 1002.5 A          |
| FBS 1002.5 B          | 10                   | 2.5  | 1.5875    | 10.30 | 4°25'      | 8.6                      | 3.7×1             | 2700 / 1750         | 5300 / 2700 | 133 / 112         | 1             | 24 | 44 | 27 | 21             | 6 | 26 | 27 | 35 | 5.5         | FBS 1002.5 B          |

- Note 1)The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
- Note 2)Ball Nut dimension is without seal at the both ends.  
If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS.  
Some type of Ball Nuts cannot equip with seals, please ask KSS representative.
- Note 3)The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.  
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.  
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.
- Note 4)All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.
- Note 5)Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

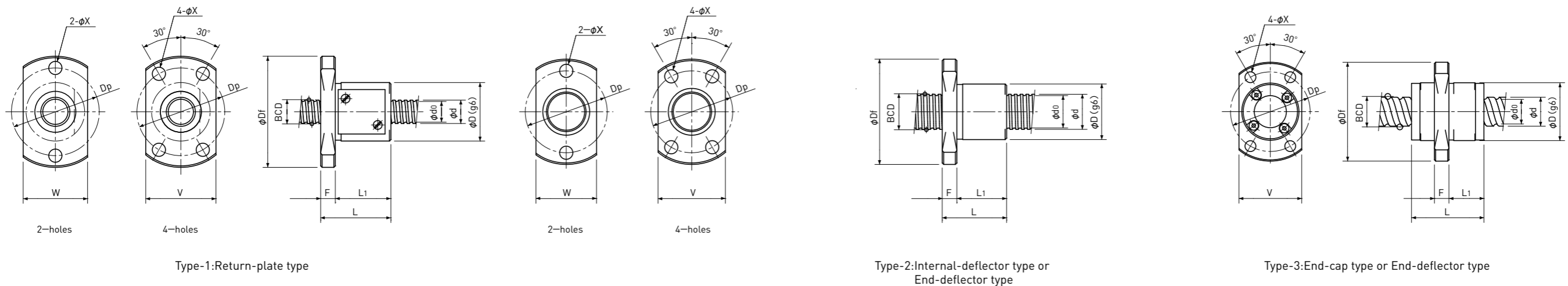
| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |

Preload type  
Backlash type

## Precision Ball Screws

## Single Nut with Flange

## Backlash type/Preload type



Unit: mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |             | Nut Rigidity N/μm | Nut dimension |    |    |      |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|-------------|-------------------|---------------|----|----|------|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa  |                   | Nut type      | D  | Df | L    | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FBS 1003 B            | 10                   | 3    | 2.0       | 10.30 | 5° 18'     | 8.2                      | 3.7×1             | 3900 / 2500         | 7200 / 3600 | 140 / 118         | 1             | 24 | 44 | 30   | 24             | 6 | 26 | 27 | 35 | 5.5         | FBS 1003 B            |
| FBS 1004 A            | 10                   | 4    | 2.0       | 10.30 | 7° 03'     | 8.2                      | 2.7×1             | 3000 / 1800         | 5200 / 2600 | 104 / 86          | 1             | 24 | 44 | 29   | 23             | 6 | 26 | 27 | 35 | 5.5         | FBS 1004 A            |
| FDB 1005 A            | 10                   | 5    | 2.0       | 10.30 | 8° 47'     | 8.2                      | 2.7×1             | 3000 / -            | 5200 / -    | 103 / -           | 2             | 23 | 40 | 26   | 21             | 5 | -  | 25 | 32 | 4.5         | FDB 1005 A            |
| FBS 1005 A            | 10                   | 5    | 2.0       | 10.30 | 8° 47'     | 8.2                      | 2.7×1             | 3000 / 1800         | 5200 / 2600 | 103 / 85          | 1             | 24 | 44 | 34   | 28             | 6 | 26 | 27 | 35 | 5.5         | FBS 1005 A            |
| FEB 1010 A            | 10                   | 10   | 2.0       | 10.50 | 16° 52'    | 8.4                      | 1.6×2             | 3300 / -            | 5900 / -    | 117 / -           | 3             | 23 | 40 | 24   | 13             | 5 | -  | 25 | 32 | 4.5         | FEB 1010 A            |
| FEB 1015 A            | 10                   | 15   | 2.0       | 10.50 | 24° 27'    | 8.4                      | 1.6×2             | 3300 / -            | 6400 / -    | 110 / -           | 3             | 23 | 40 | 33   | 22             | 5 | -  | 25 | 32 | 4.5         | FEB 1015 A            |
| FEB 1020 A            | 10                   | 20   | 1.5875    | 10.40 | 31° 28'    | 8.7                      | 0.7×4             | 2100 / -            | 4000 / -    | 88 / -            | 3             | 20 | 37 | 23   | 13             | 5 | -  | 22 | 29 | 4.5         | FEB 1020 A            |
| FEB 1030 A            | 10                   | 30   | 1.5875    | 10.40 | 42° 33'    | 8.7                      | 0.7×4             | 2100 / -            | 4000 / -    | 76 / -            | 3             | 20 | 37 | 31.5 | 21.7           | 5 | -  | 22 | 29 | 4.5         | FEB 1030 A            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.  
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.  
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.

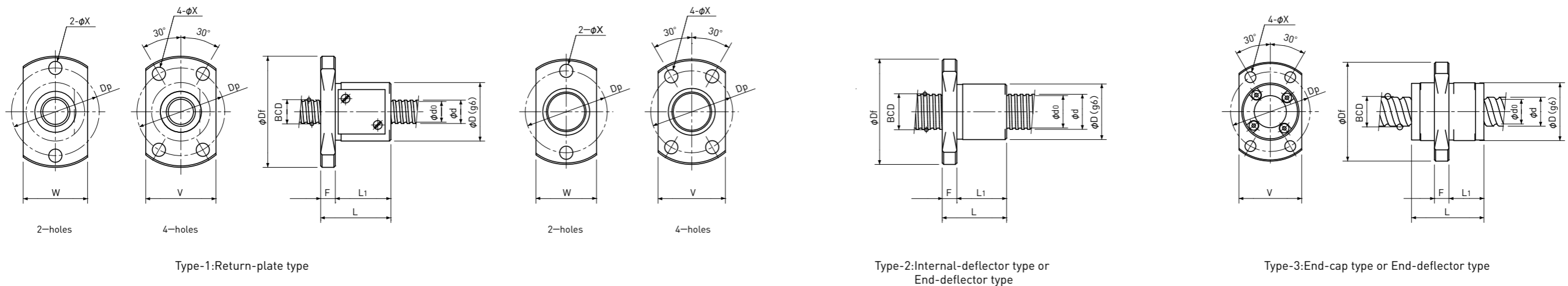
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

## Single Nut with Flange

Backlash type/Preload type



Unit: mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |              | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|--------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa   |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FKB 1201 A            | 12                   | 1    | 0.8       | 12.20 | 1°30'      | 11.3                     | 1×3               | 780 / 780           | 2000 / 2000  | 97 / 152          | 2             | 17 | 34 | 16 | 11             | 5 | 19 | 21 | 26 | 4.5         | FKB 1201 A            |
| FBS 1201 B            | 12                   | 1    | 0.8       | 12.15 | 1°30'      | 11.3                     | 3.7×1             | 910 / 570           | 2400 / 1200  | 131 / 110         | 1             | 22 | 40 | 18 | 13             | 5 | 24 | 24 | 32 | 4.5         | FBS 1201 B            |
| FKB 1202 A            | 12                   | 2    | 1.2       | 12.30 | 2°58'      | 11.0                     | 1×3               | 1600 / 1600         | 3700 / 3700  | 109 / 169         | 2             | 19 | 36 | 19 | 14             | 5 | 21 | 23 | 28 | 4.5         | FKB 1202 A            |
| FBS 1202 B            | 12                   | 2    | 1.5875    | 12.30 | 2°58'      | 10.6                     | 3.7×1             | 3000 / 1900         | 6400 / 3200  | 156 / 132         | 1             | 25 | 45 | 25 | 19             | 6 | 27 | 27 | 36 | 5.5         | FBS 1202 B            |
| FKB 1202.5 A          | 12                   | 2.5  | 1.5875    | 12.40 | 3°41'      | 10.7                     | 1×3               | 2300 / 2300         | 4700 / 4700  | 112 / 174         | 2             | 20 | 37 | 21 | 16             | 5 | 22 | 24 | 29 | 4.5         | FKB 1202.5 A          |
| FBS 1202.5 B          | 12                   | 2.5  | 1.5875    | 12.30 | 3°42'      | 10.6                     | 3.7×1             | 3000 / 1850         | 6400 / 3200  | 156 / 130         | 1             | 26 | 46 | 27 | 21             | 6 | 28 | 28 | 37 | 5.5         | FBS 1202.5 B          |
| FKB 1203 A            | 12                   | 3    | 2.0       | 12.50 | 4°22'      | 10.4                     | 1×3               | 3100 / 3100         | 5700 / 5700  | 115 / 179         | 2             | 22 | 41 | 32 | 26             | 6 | 24 | 26 | 32 | 5.5         | FKB 1203 A            |
| FBS 1203 B            | 12                   | 3    | 2.0       | 12.30 | 4°26'      | 10.2                     | 3.7×1             | 4300 / 2800         | 8700 / 4300  | 162 / 137         | 1             | 28 | 48 | 30 | 24             | 6 | 30 | 30 | 39 | 5.5         | FBS 1203 B            |
| FBS 1204 B            | 12                   | 4    | 2.381     | 12.30 | 5°55'      | 9.8                      | 3.7×1             | 5400 / 3400         | 10200 / 5100 | 165 / 139         | 1             | 28 | 48 | 33 | 27             | 6 | 30 | 30 | 39 | 5.5         | FBS 1204 B            |
| FBS 1205 A            | 12                   | 5    | 2.381     | 12.30 | 7°22'      | 9.8                      | 2.7×1             | 4100 / 2500         | 7400 / 3700  | 122 / 101         | 1             | 28 | 48 | 33 | 27             | 6 | 30 | 30 | 39 | 5.5         | FBS 1205 A            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

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Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

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Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in p-A823,

you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

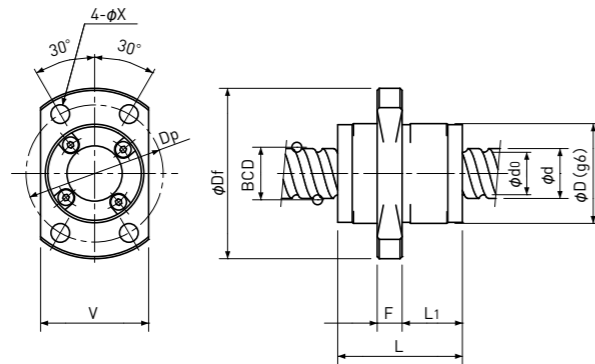
| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |



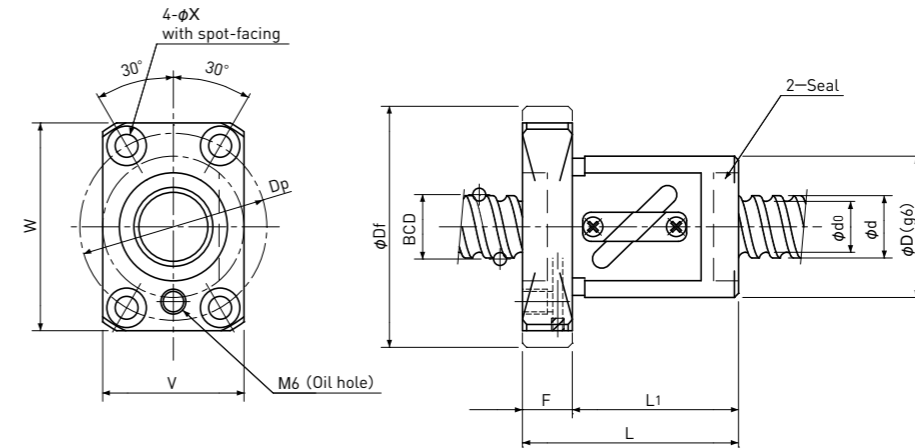
## Precision Ball Screws

## Single Nut with Flange

## Backlash type/Preload type



Type-3:End-cap type or End-deflector type



Type-4:Return-tube type

Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |             | Nut Rigidity N/μm | Nut dimension |    |    |    |                |    |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|-------------|-------------------|---------------|----|----|----|----------------|----|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa  |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F  | W  | V  | Dp | Bolt Hole X |                       |
| FEB 1210 A            | 12                   | 10   | 2.381     | 12.65 | 14° 07'    | 10.2                     | 1.7×2             | 5100 / -            | 9800 / -    | 152 / -           | 3             | 24 | 41 | 30 | 14.5           | 6  | -  | 26 | 33 | 4.5         | FEB 1210 A            |
| FBS 1210 T            | 12                   | 10   | 2.381     | 12.65 | 14° 07'    | 10.2                     | 2.5×1             | 3800 / 2350         | 7100 / 3350 | 113 / 93          | 4             | 30 | 50 | 50 | 40             | 10 | 45 | 32 | 40 | 4.5         | FBS 1210 T            |
| FEB 1312 A            | 13                   | 12   | 2.381     | 13.50 | 15° 48'    | 11.0                     | 1.6×2             | 5000 / -            | 9900 / -    | 151 / -           | 3             | 28 | 45 | 30 | 17             | 5  | -  | 30 | 37 | 4.5         | FEB 1312 A            |
| FEB 1315 A            | 13                   | 15   | 2.381     | 13.50 | 19° 29'    | 11.0                     | 1.6×2             | 5000 / -            | 10300 / -   | 147 / -           | 3             | 28 | 45 | 35 | 22             | 5  | -  | 30 | 37 | 4.5         | FEB 1315 A            |
| FEB 1320 A            | 13                   | 20   | 2.381     | 13.50 | 25° 15'    | 11.0                     | 1.6×2             | 5000 / -            | 10700 / -   | 142 / -           | 3             | 28 | 45 | 43 | 29             | 5  | -  | 30 | 37 | 4.5         | FEB 1320 A            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

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Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
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Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

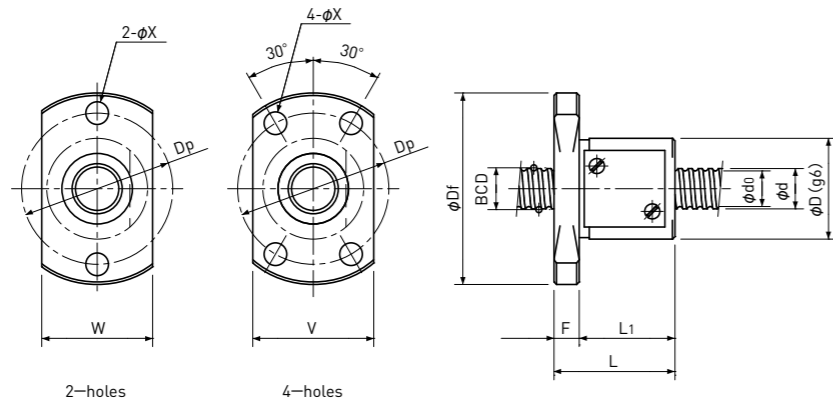
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

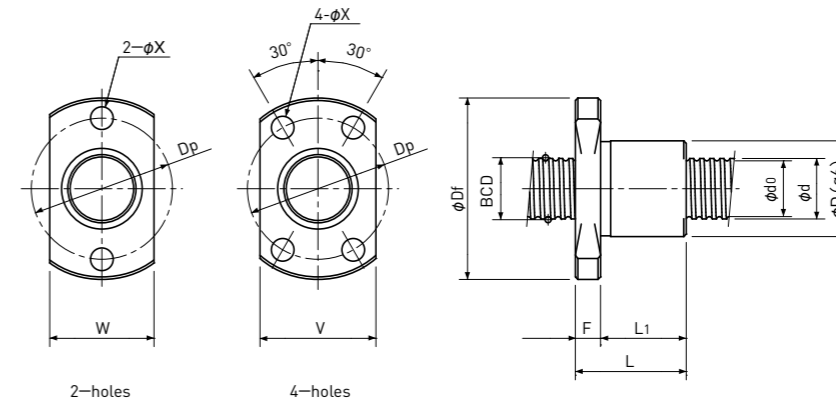
# Precision Ball Screws

## Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |              | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|--------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa   |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FBS 1401 B            | 14                   | 1    | 0.8       | 14.15 | 1°17'      | 13.3                     | 3.7×1             | 960 / 610           | 2900 / 1450  | 148 / 124         | 1             | 26 | 46 | 21 | 15             | 6 | 28 | 28 | 37 | 5.5         | FBS 1401 B            |
| FKB 1402 A            | 14                   | 2    | 1.2       | 14.30 | 2°33'      | 13.0                     | 1×3               | 1700 / 1700         | 4300 / 4300  | 122 / 190         | 2             | 21 | 40 | 20 | 14             | 6 | 23 | 26 | 31 | 5.5         | FKB 1402 A            |
| FBS 1402 B            | 14                   | 2    | 1.5875    | 14.30 | 2°33'      | 12.6                     | 3.7×1             | 3200 / 2000         | 7500 / 3800  | 176 / 148         | 1             | 26 | 46 | 25 | 19             | 6 | 28 | 28 | 37 | 5.5         | FBS 1402 B            |
| FKB 1402.5 A          | 14                   | 2.5  | 1.5875    | 14.40 | 3°10'      | 12.7                     | 1×3               | 2500 / 2500         | 5600 / 5600  | 127 / 197         | 2             | 22 | 41 | 22 | 16             | 6 | 24 | 26 | 32 | 5.5         | FKB 1402.5 A          |
| FBS 1402.5 B          | 14                   | 2.5  | 1.5875    | 14.30 | 3°11'      | 12.6                     | 3.7×1             | 3200 / 2000         | 7500 / 3700  | 176 / 148         | 1             | 28 | 48 | 27 | 21             | 6 | 30 | 30 | 39 | 5.5         | FBS 1402.5 B          |
| FKB 1403 A            | 14                   | 3    | 2.0       | 14.50 | 3°46'      | 12.4                     | 1×3               | 3400 / 3400         | 6800 / 6800  | 131 / 204         | 2             | 24 | 43 | 32 | 26             | 6 | 26 | 27 | 34 | 5.5         | FKB 1403 A            |
| FBS 1403 B            | 14                   | 3    | 2.0       | 14.30 | 3°49'      | 12.2                     | 3.7×1             | 4600 / 2900         | 10100 / 5000 | 184 / 154         | 1             | 30 | 51 | 30 | 24             | 6 | 32 | 32 | 42 | 5.5         | FBS 1403 B            |
| FKB 1404 A            | 14                   | 4    | 2.381     | 14.65 | 4°58'      | 12.2                     | 1×3               | 4500 / 4500         | 8600 / 8600  | 136 / 212         | 2             | 26 | 45 | 29 | 23             | 6 | 28 | 28 | 36 | 5.5         | FKB 1404 A            |
| FBS 1404 B            | 14                   | 4    | 2.381     | 14.30 | 5°05'      | 11.8                     | 3.7×1             | 5700 / 3600         | 11600 / 5800 | 187 / 157         | 1             | 30 | 51 | 33 | 27             | 6 | 32 | 32 | 42 | 5.5         | FBS 1404 B            |
| FBS 1405 B            | 14                   | 5    | 2.381     | 14.30 | 6°21'      | 11.8                     | 3.7×1             | 5700 / 3600         | 11600 / 5800 | 186 / 157         | 1             | 30 | 51 | 39 | 33             | 6 | 32 | 32 | 42 | 5.5         | FBS 1405 B            |

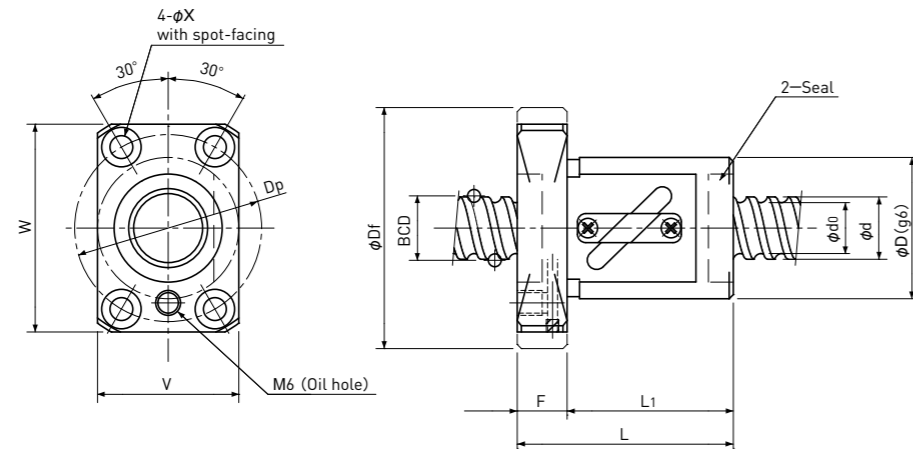
- Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
- Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.
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Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
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- Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |

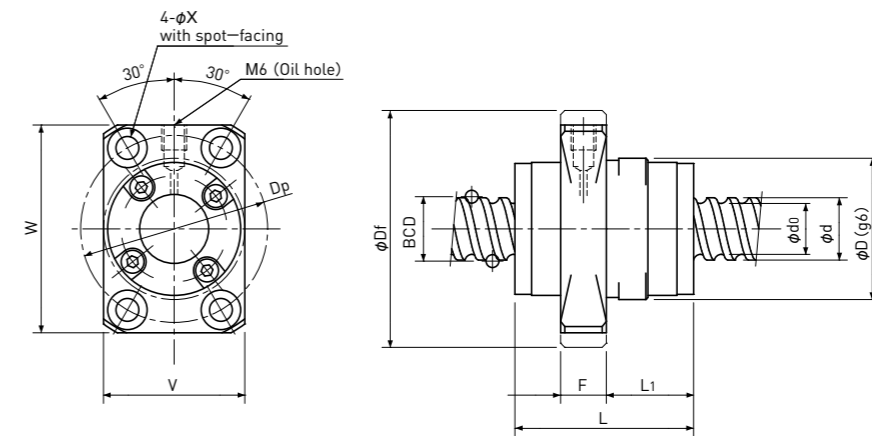
Preload type  
Backlash type

## Single Nut with Flange

Backlash type/Preload type



Type-4:Return-tube type



Type-5:End-deflector type

Unit : mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |              | Nut Rigidity N/μm | Nut dimension |    |    |    |                |    |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|--------------|-------------------|---------------|----|----|----|----------------|----|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa   |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F  | W  | V  | Dp | Bolt Hole X |                       |
| FBS 1504 T            | 15                   | 4    | 2.381     | 15.50 | 4° 42'     | 13.0                     | 2.5×1             | 4100 / 2580         | 8550 / 4300  | 136 / 112         | 4             | 32 | 56 | 41 | 31             | 10 | 48 | 32 | 43 | 5.5         | FBS 1504 T            |
| FEB 1505 A            | 15                   | 5    | 3.175     | 15.50 | 5° 41'     | 12.2                     | 3.7×1             | 8900 / -            | 17000 / -    | 208 / -           | 5             | 34 | 57 | 33 | 16             | 11 | 50 | 34 | 45 | 5.5         | FEB 1505 A            |
| FBS 1505 T            | 15                   | 5    | 3.175     | 15.80 | 5° 45'     | 12.4                     | 2.5×1             | 6900 / 4350         | 12500 / 6250 | 148 / 122         | 4             | 34 | 58 | 44 | 34             | 10 | 50 | 34 | 45 | 5.5         | FBS 1505 T            |
| FEB 1510 A            | 15                   | 10   | 3.175     | 15.50 | 11° 36'    | 12.2                     | 2.7×2             | 12000 / -           | 25000 / -    | 289 / -           | 5             | 34 | 57 | 43 | 21             | 11 | 50 | 34 | 45 | 5.5         | FEB 1510 A            |
| FBS 1510 T            | 15                   | 10   | 3.175     | 15.80 | 11° 23'    | 12.4                     | 1.5×1             | 4400 / 2540         | 7900 / 3450  | 87 / 69           | 4             | 34 | 58 | 52 | 40             | 12 | 50 | 34 | 45 | 6.0         | FBS 1510 T            |
| FEB 1520 A            | 15                   | 20   | 3.175     | 15.75 | 22° 01'    | 12.4                     | 1.7×2             | 8000 / -            | 16000 / -    | 178 / -           | 5             | 34 | 57 | 52 | 28.5           | 11 | 50 | 34 | 45 | 5.5         | FEB 1520 A            |
| FBS 1520 T            | 15                   | 20   | 3.175     | 15.80 | 21° 56'    | 12.4                     | 1.5×1             | 4400 / 2540         | 7900 / 3450  | 84 / 67           | 4             | 34 | 58 | 62 | 50             | 12 | 50 | 34 | 45 | 6.0         | FBS 1520 T            |
| FEB 1530 A            | 15                   | 30   | 3.175     | 15.75 | 31° 14'    | 12.4                     | 1.7×2             | 8000 / -            | 16000 / -    | 163 / -           | 5             | 34 | 57 | 71 | 45.5           | 11 | 50 | 34 | 45 | 5.5         | FEB 1530 A            |

Note 1)The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

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Note 4)All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

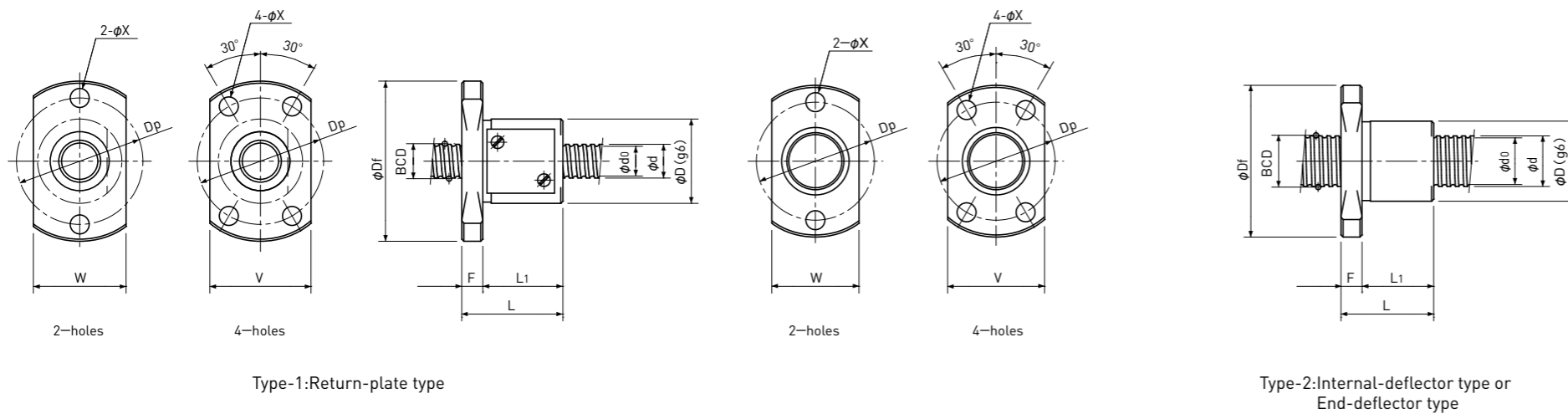
Note 5)Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |

## Precision Ball Screws

## Single Nut with Flange

Backlash type/Preload type



Unit: mm

| Ball Nut Model number | Shaft nominal dia. d | Lead | Ball size | BCD   | Lead angle | Root dia. d <sub>0</sub> | Number of Circuit | Basic Load Rating N |               | Nut Rigidity N/μm | Nut dimension |    |    |    |                |   |    |    |    |             | Ball Nut Model number |
|-----------------------|----------------------|------|-----------|-------|------------|--------------------------|-------------------|---------------------|---------------|-------------------|---------------|----|----|----|----------------|---|----|----|----|-------------|-----------------------|
|                       |                      |      |           |       |            |                          |                   | Dynamic Ca          | Static Coa    |                   | Nut type      | D  | Df | L  | L <sub>1</sub> | F | W  | V  | Dp | Bolt Hole X |                       |
| FBS 1601 B            | 16                   | 1    | 0.8       | 16.15 | 1°08'      | 15.3                     | 3.7×1             | 1000 / 640          | 3300 / 1650   | 164 / 138         | 1             | 28 | 48 | 21 | 15             | 6 | 30 | 30 | 39 | 5.5         | FBS 1601 B            |
| FKB 1602 A            | 16                   | 2    | 1.2       | 16.30 | 2°14'      | 15.0                     | 1×3               | 1850 / 1850         | 5000 / 5000   | 137 / 213         | 2             | 24 | 43 | 20 | 14             | 6 | 26 | 27 | 34 | 5.5         | FKB 1602 A            |
| FBS 1602 B            | 16                   | 2    | 1.5875    | 16.30 | 2°14'      | 14.6                     | 3.7×1             | 3400 / 2100         | 8600 / 4300   | 197 / 163         | 1             | 28 | 48 | 25 | 19             | 6 | 30 | 30 | 39 | 5.5         | FBS 1602 B            |
| FKB 1603 A            | 16                   | 3    | 2.0       | 16.50 | 3°19'      | 14.4                     | 1×3               | 3600 / 3600         | 8000 / 8000   | 146 / 227         | 2             | 26 | 45 | 32 | 26             | 6 | 28 | 28 | 36 | 5.5         | FKB 1603 A            |
| FBS 1603 B            | 16                   | 3    | 2.0       | 16.30 | 3°21'      | 14.2                     | 3.7×1             | 4900 / 3100         | 11600 / 5800  | 205 / 172         | 1             | 32 | 53 | 30 | 24             | 6 | 34 | 34 | 44 | 5.5         | FBS 1603 B            |
| FKB 1604 A            | 16                   | 4    | 2.381     | 16.65 | 4°22'      | 13.9                     | 1×3               | 4800 / 4800         | 10000 / 10000 | 152 / 237         | 2             | 28 | 47 | 29 | 23             | 6 | 30 | 30 | 38 | 5.5         | FKB 1604 A            |
| FBS 1604 B            | 16                   | 4    | 2.381     | 16.30 | 4°28'      | 13.8                     | 3.7×1             | 6200 / 3900         | 13600 / 6800  | 209 / 174         | 1             | 34 | 54 | 34 | 28             | 6 | 36 | 36 | 45 | 5.5         | FBS 1604 B            |
| FBS 1605 B            | 16                   | 5    | 3.175     | 16.50 | 5°31'      | 13.2                     | 3.7×1             | 9100 / 5700         | 18200 / 9100  | 217 / 182         | 1             | 38 | 57 | 42 | 36             | 6 | 40 | 40 | 48 | 5.5         | FBS 1605 B            |

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.  
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.  
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

| Basic Load Rating N |             | Nut Rigidity N/μm |
|---------------------|-------------|-------------------|
| Dynamic Ca          | Static Coa  |                   |
| 1000 / 640          | 3300 / 1650 | 164 / 138         |
|                     |             | Preload type      |
|                     |             | Backlash type     |