



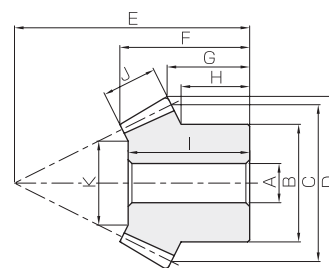
SB · SBY

## Steel Bevel Gears

Module 1.5 ~ 6



| Specifications  |                    |
|-----------------|--------------------|
| Precision grade | JIS B 1704 grade 3 |
| Gear teeth      | Gleason            |
| Pressure angle  | 20°                |
| Material        | S45C               |
| Heat treatment  | —                  |
| Tooth hardness  | less than 194HB    |

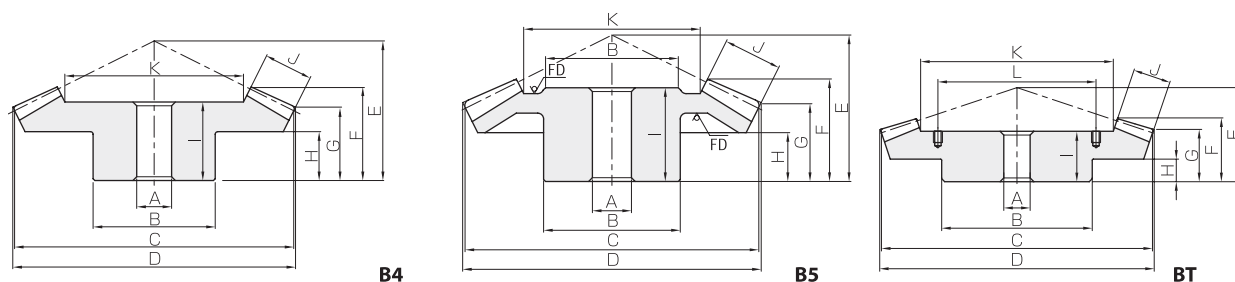


B3

| Catalog No.                              | Gear ratio | Module       | No. of teeth | Shape | Bore            | Hub dia. | Pitch dia. | Outside dia. | Mounting distance | Total length | Crown to back length | Hub width |
|------------------------------------------|------------|--------------|--------------|-------|-----------------|----------|------------|--------------|-------------------|--------------|----------------------|-----------|
|                                          |            |              |              |       | A <sub>H7</sub> | B        | C          | D            | E                 | F            | G                    | H         |
| <b>SB1.5-3020</b><br><b>SB1.5-2030</b>   | 1.5        | <b>m1.5</b>  | 30           | B4    | 10              | 30       | 45         | 46.24        | 28                | 18.53        | 13.93                | 8         |
|                                          |            |              | 20           | B3    | 8               | 25       | 30         | 33.13        | 33                | 18.63        | 11.54                | 8.83      |
| <b>SB2-3020</b><br><b>SB2-2030</b>       |            | <b>m2</b>    | 30           | B4    | 10              | 35       | 60         | 61.65        | 40                | 26.87        | 21.24                | 15        |
|                                          |            |              | 20           | B3    | 10              | 30       | 40         | 44.18        | 45                | 25.06        | 16.39                | 11.67     |
| <b>SB2.5-3020</b><br><b>SB2.5-2030</b>   |            | <b>m2.5</b>  | 30           | B4    | 15              | 45       | 75         | 77.07        | 50                | 34.22        | 26.55                | 18        |
|                                          |            |              | 20           | B3    | 12              | 35       | 50         | 55.22        | 55                | 31.06        | 19.24                | 12.5      |
| <b>SB3-3020</b><br><b>SB3-2030</b>       |            | <b>m3</b>    | 30           | B4    | 15              | 50       | 90         | 92.48        | 55                | 35.56        | 26.86                | 17        |
|                                          |            |              | 20           | B3    | 15              | 45       | 60         | 66.27        | 70                | 40.48        | 27.09                | 20        |
| <b>SB4-3020</b><br><b>SB4-2030</b>       |            | <b>m4</b>    | 30           | B4    | 20              | 70       | 120        | 123.3        | 75                | 47.71        | 37.48                | 25        |
|                                          |            |              | 20           | B3    | 15              | 60       | 80         | 88.32        | 90                | 48.53        | 32.77                | 23.33     |
| <b>SB5-3020</b><br><b>SB5-2030</b>       |            | <b>m5</b>    | 30           | B4    | 25              | 90       | 150        | 154.13       | 90                | 58.45        | 43.1                 | 24        |
|                                          |            |              | 20           | B3    | 20              | 80       | 100        | 110.45       | 110               | 62.11        | 38.48                | 28.33     |
| <b>SB1.5-3015</b><br><b>SB1.5-1530</b>   | 2          | <b>m1.5</b>  | 30           | B4    | 8               | 25       | 45         | 45.88        | 25                | 17.85        | 14.63                | 9         |
|                                          |            |              | 15           | B3    | 6               | 16       | 22.5       | 26.11        | 32                | 17.23        | 10.4                 | 7.88      |
| <b>SB2-3015</b><br><b>SB2-1530</b>       |            | <b>m2</b>    | 30           | B4    | 10              | 30       | 60         | 61.17        | 31                | 21.6         | 17.17                | 10        |
|                                          |            |              | 15           | B3    | 8               | 22       | 30         | 34.81        | 40                | 20.59        | 11.2                 | 8         |
| <b>SB2.5-3015</b><br><b>SB2.5-1530</b>   |            | <b>m2.5</b>  | 30           | B4    | 15              | 40       | 75         | 76.46        | 40                | 28.75        | 22.71                | 15        |
|                                          |            |              | 15           | B3    | 12              | 30       | 37.5       | 43.51        | 55                | 31.81        | 19                   | 15.63     |
| <b>SB3-3015</b><br><b>SB3-1530</b>       |            | <b>m3</b>    | 30           | B4    | 16              | 50       | 90         | 91.76        | 50                | 37.31        | 29.26                | 18        |
|                                          |            |              | 15           | B3    | 12              | 35       | 45         | 52.22        | 70                | 43.88        | 26.8                 | 22.5      |
| <b>SB4-3015</b><br><b>SB4-1530</b>       |            | <b>m4</b>    | 30           | B4    | 20              | 60       | 120        | 122.34       | 60                | 42.4         | 32.34                | 20        |
|                                          |            |              | 15           | B3    | 16              | 50       | 60         | 69.62        | 85                | 48.74        | 27.41                | 22.5      |
| <b>SB5-3015</b><br><b>SB5-1530</b>       |            | <b>m5</b>    | 30           | B5    | 20              | 70       | 150        | 152.93       | 75                | 52.5         | 40.43                | 25        |
|                                          |            |              | 15           | B3    | 20              | 60       | 75         | 87.03        | 110               | 63.61        | 38.01                | 31.25     |
| <b>SB6-3015</b><br><b>SB6-1530</b>       |            | <b>m6</b>    | 30           | B5    | 25              | 80       | 180        | 183.49       | 90                | 62.56        | 48.49                | 28        |
|                                          |            |              | 15           | B3    | 25              | 70       | 90         | 104.44       | 125               | 68.48        | 38.61                | 30        |
| <b>SB2.5-3618</b><br><b>SB2.5-1836</b>   | 2          | <b>m2.5</b>  | 36           | B4    | 15              | 55       | 90         | 91.46        | 43                | 28.52        | 21.96                | 13        |
|                                          |            |              | 18           | B3    | 12              | 38       | 45         | 51.01        | 64                | 34.27        | 20.5                 | 17.25     |
| <b>SB3-3618</b><br><b>SB3-1836</b>       |            | <b>m3</b>    | 36           | B4    | 20              | 60       | 108        | 109.76       | 52                | 34.95        | 26.76                | 17        |
|                                          |            |              | 18           | B3    | 16              | 46       | 54         | 61.23        | 75                | 40.01        | 22.81                | 19        |
| <b>SB4-3618</b><br><b>SB4-1836</b>       |            | <b>m4</b>    | 36           | B4    | 20              | 70       | 144        | 146.34       | 72                | 49           | 38.34                | 25        |
|                                          |            |              | 18           | B3    | 20              | 60       | 72         | 81.62        | 100               | 52.77        | 30.41                | 25        |
| <b>SB1-4020</b><br><b>SB1-2040</b>       | 2          | <b>m1</b>    | 40           | B4    | 8               | 25       | 40         | 40.59        | 22                | 15.07        | 12.59                | 8         |
|                                          |            |              | 20           | B3    | 6               | 16       | 20         | 22.41        | 28                | 13.78        | 8.6                  | 7         |
| <b>SB1.25-4020</b><br><b>SB1.25-2040</b> |            | <b>m1.25</b> | 40           | B4    | 10              | 32       | 50         | 50.73        | 27                | 18.54        | 15.23                | 10        |
|                                          |            |              | 20           | B3    | 8               | 22       | 25         | 28.01        | 36                | 18.66        | 11.75                | 10.25     |
| <b>SB1.5-4020</b><br><b>SB1.5-2040</b>   |            | <b>m1.5</b>  | 40           | B4    | 10              | 38       | 60         | 60.88        | 35                | 25.01        | 20.88                | 15        |
|                                          |            |              | 20           | B3    | 8               | 25       | 30         | 33.61        | 46                | 25.54        | 16.9                 | 14.75     |
| <b>SB2-4020</b><br><b>SB2-2040</b>       |            | <b>m2</b>    | 40           | B4    | 12              | 40       | 80         | 81.17        | 45                | 32.37        | 26.17                | 18        |
|                                          |            |              | 20           | B3    | 12              | 32       | 40         | 44.81        | 60                | 34.16        | 21.2                 | 18        |
| <b>SB2.5-4020</b><br><b>SB2.5-2040</b>   |            | <b>m2.5</b>  | 40           | B4    | 15              | 50       | 100        | 101.46       | 55                | 39.73        | 31.46                | 20        |
|                                          |            |              | 20           | B3    | 12              | 40       | 50         | 56.01        | 75                | 43.78        | 26.5                 | 22.5      |
| <b>SB3-4020</b><br><b>SB3-2040</b>       |            | <b>m3</b>    | 40           | B4    | 20              | 60       | 120        | 121.76       | 65                | 45.85        | 36.76                | 24        |
|                                          |            |              | 20           | B3    | 16              | 50       | 60         | 67.22        | 90                | 50.81        | 31.8                 | 27.5      |
| <b>SB4-4020</b><br><b>SB4-2040</b>       |            | <b>m4</b>    | 40           | B4    | 20              | 70       | 160        | 162.34       | 80                | 53.92        | 42.34                | 28        |
|                                          |            |              | 20           | B3    | 20              | 60       | 80         | 89.62        | 120               | 66.59        | 42.41                | 35        |
| <b>SB5-4020</b><br><b>SB5-2040</b>       |            | <b>m5</b>    | 40           | B5    | 25              | 100      | 200        | 202.93       | 90                | 55.33        | 42.93                | 26        |
|                                          |            |              | 20           | B3    | 20              | 80       | 100        | 112.03       | 140               | 68.92        | 43.01                | 35        |
| <b>SB6-4020</b><br><b>SB6-2040</b>       |            | <b>m6</b>    | 40           | B5    | 25              | 85       | 240        | 243.52       | 105               | 65.05        | 48.52                | 28        |
|                                          |            |              | 20           | B3    | 25              | 90       | 120        | 134.44       | 160               | 78.16        | 43.6                 | 32.5      |
| <b>SBY8-4020</b><br><b>SBY8-2040</b>     |            | <b>m8</b>    | 40           | BT    | 35              | 180      | 320        | 324.69       | 130               | 75.36        | 54.69                | 25        |
|                                          |            |              | 20           | B3    | 30              | 120      | 160        | 179.25       | 210               | 98           | 54.81                | 40        |

[Caution on Product Characteristics]

- ① The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see page 451 for more details.
- ② Dimensions of the outside diameter, the overall length and crown to back length are all theoretical values, and some differences will occur due to the corner chamfering of the gear tips.
- ③ For convenience in handling, BT Shaped Gears have tapped holes on their holding surface. To find the L dimensions and tap sizes, please refer to page 452.



\* FD has die-forged finish.

| Length of bore<br>I | Face width<br>J | Holding surface dia.<br>K | Allowable torque (N·m) |                    | Allowable torque (kgf·m) |                    | Backlash<br>(mm) | Weight<br>(kg) | Catalog No.                              |
|---------------------|-----------------|---------------------------|------------------------|--------------------|--------------------------|--------------------|------------------|----------------|------------------------------------------|
|                     |                 |                           | Bending strength       | Surface durability | Bending strength         | Surface durability |                  |                |                                          |
| 16<br>17            | 9               | 27.37<br>17.05            | 5.82<br>4.04           | 0.65<br>0.44       | 0.59<br>0.41             | 0.07<br>0.04       | 0.05~0.15        | 0.12<br>0.063  | <b>SB1.5-3020</b><br><b>SB1.5-2030</b>   |
| 23<br>22            | 11              | 37.56<br>21.34            | 13.1<br>9.07           | 1.52<br>1.01       | 1.33<br>0.92             | 0.16<br>0.10       | 0.06~0.16        | 0.26<br>0.14   | <b>SB2-3020</b><br><b>SB2-2030</b>       |
| 30<br>28            | 15              | 45.61<br>27.42            | 26.9<br>18.7           | 3.21<br>2.14       | 2.75<br>1.91             | 0.33<br>0.22       | 0.07~0.17        | 0.55<br>0.25   | <b>SB2.5-3020</b><br><b>SB2.5-2030</b>   |
| 31<br>37            | 17              | 57.14<br>34.71            | 44.9<br>31.2           | 5.45<br>3.63       | 4.58<br>3.18             | 0.56<br>0.37       | 0.08~0.18        | 0.83<br>0.50   | <b>SB3-3020</b><br><b>SB3-2030</b>       |
| 40<br>43            | 20              | 78.59<br>46.89            | 98.2<br>68.1           | 12.3<br>8.20       | 10.0<br>6.95             | 1.25<br>0.84       | 0.12~0.27        | 1.91<br>1.10   | <b>SB4-3020</b><br><b>SB4-2030</b>       |
| 50<br>56            | 30              | 91.22<br>54.83            | 215<br>150             | 27.6<br>18.4       | 22.0<br>15.3             | 2.81<br>1.87       | 0.14~0.34        | 4.13<br>2.34   | <b>SB5-3020</b><br><b>SB5-2030</b>       |
| 15<br>15.5          | 8               | 28.36<br>10.72            | 5.02<br>2.60           | 0.47<br>0.24       | 0.51<br>0.26             | 0.05<br>0.02       | 0.05~0.15        | 0.10<br>0.028  | <b>SB1.5-3015</b><br><b>SB1.5-1530</b>   |
| 18<br>19            | 11              | 37.4<br>16.81             | 12.1<br>6.28           | 1.18<br>0.59       | 1.24<br>0.64             | 0.12<br>0.06       | 0.06~0.16        | 0.21<br>0.064  | <b>SB2-3015</b><br><b>SB2-1530</b>       |
| 24<br>29            | 15              | 44.21<br>16.42            | 24.9<br>12.9           | 2.48<br>1.24       | 2.54<br>1.32             | 0.25<br>0.13       | 0.07~0.17        | 0.41<br>0.15   | <b>SB2.5-3015</b><br><b>SB2.5-1530</b>   |
| 30<br>41            | 20              | 47.78<br>19.56            | 45.6<br>23.6           | 4.60<br>2.30       | 4.65<br>2.41             | 0.47<br>0.23       | 0.08~0.18        | 0.83<br>0.31   | <b>SB3-3015</b><br><b>SB3-1530</b>       |
| 36<br>46            | 25              | 70.1<br>32.2              | 104<br>54.0            | 10.9<br>5.43       | 10.7<br>5.51             | 1.11<br>0.55       | 0.12~0.27        | 1.64<br>0.66   | <b>SB4-3015</b><br><b>SB4-1530</b>       |
| 48<br>58            | 30              | 90.41<br>32.83            | 199<br>103             | 21.3<br>10.6       | 20.3<br>10.5             | 2.17<br>1.09       | 0.14~0.34        | 2.72<br>1.28   | <b>SB5-3015</b><br><b>SB5-1530</b>       |
| 57<br>63            | 35              | 109.74<br>45.48           | 336<br>174             | 36.9<br>18.5       | 34.2<br>17.7             | 3.77<br>1.88       | 0.16~0.36        | 4.75<br>1.94   | <b>SB6-3015</b><br><b>SB6-1530</b>       |
| 24<br>32            | 16              | 57.72<br>25.44            | 35.9<br>18.1           | 4.08<br>2.04       | 3.66<br>1.84             | 0.42<br>0.21       | 0.07~0.17        | 0.72<br>0.27   | <b>SB2.5-3618</b><br><b>SB2.5-1836</b>   |
| 30<br>37            | 20              | 68.28<br>28.56            | 63.7<br>32.0           | 7.34<br>3.67       | 6.49<br>3.27             | 0.75<br>0.37       | 0.08~0.18        | 1.15<br>0.44   | <b>SB3-3618</b><br><b>SB3-1836</b>       |
| 42<br>49            | 26              | 91.86<br>39.72            | 149<br>74.8            | 17.7<br>8.85       | 15.2<br>7.62             | 1.80<br>0.90       | 0.12~0.27        | 2.66<br>1.04   | <b>SB4-3618</b><br><b>SB4-1836</b>       |
| 12<br>12            | 6               | 26.58<br>9.17             | 2.61<br>1.32           | 0.29<br>0.15       | 0.27<br>0.13             | 0.03<br>0.02       | 0.03~0.13        | 0.068<br>0.019 | <b>SB1-4020</b><br><b>SB1-2040</b>       |
| 16<br>17            | 8               | 33.61<br>13.22            | 5.33<br>2.69           | 0.61<br>0.31       | 0.54<br>0.27             | 0.06<br>0.03       | 0.04~0.14        | 0.14<br>0.046  | <b>SB1.25-4020</b><br><b>SB1.25-2040</b> |
| 22<br>24            | 10              | 39.64<br>17.28            | 9.47<br>4.77           | 1.11<br>0.56       | 0.97<br>0.49             | 0.11<br>0.06       | 0.05~0.15        | 0.27<br>0.089  | <b>SB1.5-4020</b><br><b>SB1.5-2040</b>   |
| 27<br>32            | 15              | 48.46<br>20.92            | 24.2<br>12.2           | 2.92<br>1.46       | 2.46<br>1.24             | 0.30<br>0.15       | 0.06~0.16        | 0.51<br>0.19   | <b>SB2-4020</b><br><b>SB2-2040</b>       |
| 35<br>41            | 20              | 60.28<br>24.56            | 49.0<br>24.7           | 6.04<br>3.02       | 4.99<br>2.52             | 0.62<br>0.31       | 0.07~0.17        | 1.09<br>0.40   | <b>SB2.5-4020</b><br><b>SB2.5-2040</b>   |
| 38<br>47            | 22              | 73.81<br>29.61            | 80.4<br>40.5           | 10.1<br>5.06       | 8.20<br>4.13             | 1.03<br>0.52       | 0.08~0.18        | 1.68<br>0.70   | <b>SB3-4020</b><br><b>SB3-2040</b>       |
| 45<br>62            | 28              | 102.39<br>42.78           | 185<br>93.3            | 24.1<br>12.0       | 18.9<br>9.51             | 2.46<br>1.23       | 0.12~0.27        | 3.34<br>1.47   | <b>SB4-4020</b><br><b>SB4-2040</b>       |
| 50<br>63            | 30              | 138.92<br>57.84           | 327<br>165             | 43.9<br>21.9       | 33.3<br>16.8             | 4.47<br>2.24       | 0.14~0.34        | 5.63<br>2.67   | <b>SB5-4020</b><br><b>SB5-2040</b>       |
| 58<br>70            | 40              | 158.56<br>61.11           | 600<br>302             | 83.2<br>41.6       | 61.2<br>30.8             | 8.48<br>4.24       | 0.16~0.36        | 7.77<br>4.08   | <b>SB6-4020</b><br><b>SB6-2040</b>       |
| 61<br>90            | 50              | 219.2<br>96.39            | 1350<br>679            | 196<br>98.1        | 138<br>69.3              | 20.0<br>10.0       | 0.20~0.45        | 25.75<br>9.41  | <b>SBY8-4020</b><br><b>SBY8-2040</b>     |

[Caution on Secondary Operations]

① Please read "Caution on Performing Secondary Operations" (Page 452) when performing modifications and/or secondary operations for safety concerns. Haguruma Kobo, the KHK's system for quick modification of KHK stock gears is also available.