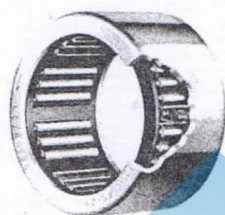
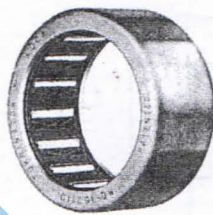


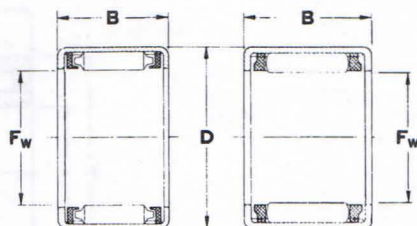
# 単向軸承



FC



RC



FC形  
ミリサイズ

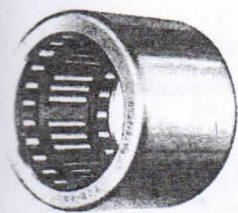
RC形  
インチサイズ

| 主要寸法(mm)    |               |                                | 呼び番号       |                 | ハウジング<br>小<br>外<br>径<br>寸<br>法<br>(mm) | 質量<br>(g) | トルク<br>容<br>量<br>(kgf·m) | 組合わされる支持用<br>ニードルベアリング |          |
|-------------|---------------|--------------------------------|------------|-----------------|----------------------------------------|-----------|--------------------------|------------------------|----------|
| dr          | D             | B <sup>0</sup> <sub>0.25</sub> | ミリ系列       | インチ系列           |                                        |           |                          | 総 ころ                   | ケージ付     |
| 4           | 8             | 6                              | FC-4K(2)   | —               | 12                                     | 1         | 0.027                    | F-48                   | —        |
| 6           | 10            | 12                             | FC-6       | —               | 14                                     | 4         | 0.25                     | F-68                   | FJ-69    |
| 6           | 10            | 12                             | FC-6K(2)   | —               | 14                                     | 3         | 0.20                     | F-68                   | FJ-69    |
| 6.350(1/8)  | 11.112(3/8)   | 12.70(1/2)                     | —          | RC-040708       | 16                                     | 4         | 0.20                     | B-45                   | J-45     |
| 6.350(1/8)  | 11.112(3/8)   | 12.70(1/2)                     | —          | RC-040708-FS(1) | 16                                     | 4         | 0.20                     | B-45                   | J-45     |
| 8           | 14            | 12                             | FC-8       | —               | 20                                     | 7         | 0.38                     | FH-810                 | FJH-810  |
| 8           | 12            | 12                             | FCL-8K(2)  | —               | 18                                     | 4         | 0.33                     | F-810                  | FJ-810   |
| 9.525(3/8)  | 15.875(5/8)   | 12.70(1/2)                     | —          | RC-061008       | 22                                     | 8         | 0.52                     | BH-68                  | JH-68    |
| 9.525(3/8)  | 15.875(5/8)   | 12.70(1/2)                     | —          | RC-061008-FS(1) | 22                                     | 8         | 0.52                     | BH-68                  | JH-68    |
| 10          | 16            | 12                             | FC-10      | —               | 25                                     | 9         | 0.54                     | FH-1010                | FJH-1010 |
| 10          | 14            | 12                             | FCL-10K(2) | —               | 23                                     | 5         | 0.45                     | F-1010                 | FJ-1010  |
| 12          | 18            | 16                             | FC-12      | —               | 27                                     | 12        | 1.35                     | FH-1212                | FJH-1212 |
| 12.700(1/2) | 19.050(3/4)   | 12.70(1/2)                     | —          | RC-081208       | 28                                     | 9         | 0.85                     | BH-88                  | JH-88    |
| 12.700(1/2) | 19.050(3/4)   | 12.70(1/2)                     | —          | RC-081208-FS(1) | 28                                     | 9         | 0.85                     | BH-88                  | JH-88    |
| 14          | 20            | 16                             | FC-14K(2)  | —               | 29                                     | 16        | 1.45                     | F-1412                 | FJ-1412  |
| 15.875(5/8) | 22.225(7/8)   | 15.88(5/8)                     | —          | RC-101410       | 30                                     | 14        | 1.65                     | BH-108                 | JH-108   |
| 15.875(5/8) | 22.225(7/8)   | 15.88(5/8)                     | —          | RC-101410-FS(1) | 30                                     | 14        | 1.65                     | BH-108                 | JH-108   |
| 16          | 22            | 16                             | FC-16      | —               | 31                                     | 18        | 2.10                     | F-1612                 | FJ-1612  |
| 19.050(3/4) | 25.400(1)     | 15.88(5/8)                     | —          | RC-121610       | 36                                     | 15        | 2.25                     | B-1210                 | J-1210   |
| 19.050(3/4) | 25.400(1)     | 15.88(5/8)                     | —          | RC-121610-FS(1) | 36                                     | 15        | 2.25                     | B-1210                 | J-1210   |
| 20          | 26            | 16                             | FC-20      | —               | 38                                     | 21        | 3.15                     | F-2012                 | FJ-2012  |
| 25          | 32            | 20                             | FC-25      | —               | 46                                     | 34        | 7.00                     | F-2516                 | FJ-2516  |
| 25.400(1)   | 33.338(1 1/8) | 15.88(5/8)                     | —          | RC-162110       | 48                                     | 26        | 4.75                     | BH-168                 | JH-1612  |
| 25.400(1)   | 33.338(1 1/8) | 15.88(5/8)                     | —          | RC-162110-FS(1) | 48                                     | 26        | 4.75                     | BH-168                 | JH-1612  |
| 30          | 37            | 20                             | FC-30      | —               | 51                                     | 42        | 9.70                     | F-3020                 | FJ-3020  |

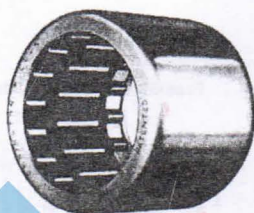
注(1)サフィックス“-FS”は現品に刻印されていない場合もあるが、保持器の色が必ず赤色であるので識別できる。

注(2)K付のものは低トルク用である。

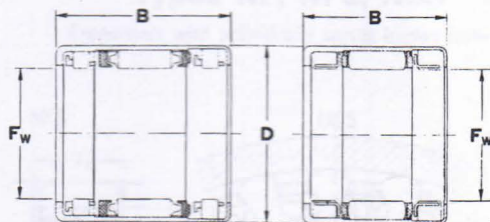
〔備考〕在庫については必ずご確認ください、選定に際しては必ずNSKにご相談ください。



FCB



RCB



FCB形  
ミリサイズ

RCB形  
インチサイズ

| 主 要 寸 法(mm)                                        |                                                      |                                                    | 呼 び 番 号 |                                | ハウジング<br>最 小<br>外 径 寸 法<br>(mm) | 質量<br>(g) | トルク<br>容 量<br>(kgf·m) | 基 本 動<br>定 格 荷 重<br>C<br>(kgf) | 基 本 静<br>定 格 荷 重<br>Co<br>(kgf) |
|----------------------------------------------------|------------------------------------------------------|----------------------------------------------------|---------|--------------------------------|---------------------------------|-----------|-----------------------|--------------------------------|---------------------------------|
| dr                                                 | D                                                    | B<br>0<br>0.25                                     | ミリ系列    | インチ系列                          |                                 |           |                       |                                |                                 |
| 8                                                  | 14                                                   | 20                                                 | FCB-8   | —                              | 20                              | 11        | 0.38                  | 216                            | 130                             |
| 9.525( $\frac{3}{8}$ )<br>9.525( $\frac{3}{8}$ )   | 15.875( $\frac{5}{8}$ )<br>15.875( $\frac{5}{8}$ )   | 22.22( $\frac{7}{8}$ )<br>22.22( $\frac{7}{8}$ )   | —<br>—  | RCB-061014<br>RCB-061014-FS(1) | 22<br>22                        | 14<br>14  | 0.52<br>0.52          | 360<br>360                     | 246<br>246                      |
| 10                                                 | 16                                                   | 20                                                 | FCB-10  | —                              | 25                              | 13        | 0.54                  | 251                            | 156                             |
| 12                                                 | 18                                                   | 26                                                 | FCB-12  | —                              | 27                              | 18        | 1.35                  | 365                            | 263                             |
| 12.700( $\frac{1}{2}$ )<br>12.700( $\frac{1}{2}$ ) | 19.050( $\frac{3}{4}$ )<br>19.050( $\frac{3}{4}$ )   | 22.22( $\frac{7}{8}$ )<br>22.22( $\frac{7}{8}$ )   | —<br>—  | RCB-081214<br>RCB-081214-FS(1) | 28<br>28                        | 16<br>16  | 0.85<br>0.85          | 435<br>436                     | 315<br>315                      |
| 15.875( $\frac{5}{8}$ )<br>15.875( $\frac{5}{8}$ ) | 22.225( $\frac{7}{8}$ )<br>22.225( $\frac{7}{8}$ )   | 25.40(1)<br>25.40(1)                               | —<br>—  | RCB-101416<br>RCB-101416-FS(1) | 30<br>30                        | 23<br>23  | 1.65<br>1.65          | 485<br>485                     | 370<br>370                      |
| 16                                                 | 22                                                   | 26                                                 | FCB-16  | —                              | 31                              | 24        | 2.10                  | 395                            | 315                             |
| 19.050( $\frac{3}{4}$ )<br>19.050( $\frac{3}{4}$ ) | 25.400(1)<br>25.400(1)                               | 25.40(1)<br>25.40(1)                               | —<br>—  | RCB-121616<br>RCB-121616-FS(1) | 36<br>36                        | 26<br>26  | 2.25<br>2.25          | 530<br>530                     | 430<br>430                      |
| 20                                                 | 26                                                   | 26                                                 | FCB-20  | —                              | 38                              | 28        | 3.15                  | 485                            | 415                             |
| 25                                                 | 32                                                   | 30                                                 | FCB-25  | —                              | 46                              | 48        | 7.00                  | 655                            | 555                             |
| 25.400(1)<br>25.400(1)                             | 33.338(1 $\frac{1}{8}$ )<br>33.338(1 $\frac{1}{8}$ ) | 26.99(1 $\frac{1}{8}$ )<br>26.99(1 $\frac{1}{8}$ ) | —<br>—  | RCB-162117<br>RCB-162117-FS(1) | 48<br>48                        | 45<br>45  | 4.75<br>4.75          | 935<br>935                     | 795<br>795                      |
| 30                                                 | 37                                                   | 30                                                 | FCB-30  | —                              | 51                              | 54        | 9.70                  | 670                            | 620                             |

注(1)サフィックス“-FS”は現品に刻印されていない場合もあるが、保持器の色が必ず赤色であるので識別できる。

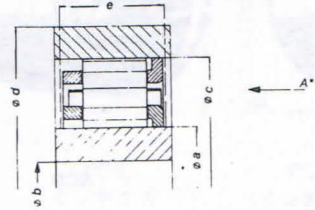
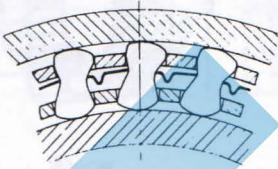
注(2)有庫においては必ずご確認ください。また、寸法表に示した転がり軸受付ローラクラッチのほかに、滑り軸受付ローラクラッチもご要求に窓じ製作い

(備考) じます。選定に際しては必ずNSKにご相談ください。



## Type BW

Freewheels with individually spring-loaded sprags



BW

| SIZE        | $\phi a$<br>+0.008<br>-0.005 | $\phi C$<br>+0.013 | sprag apc     | emun | $\phi$ dmin | $\phi$ bmax | sprags |      |           | drag strips | clips or T-bar | direction of rotation | weight<br>g | Mnom<br>Nm |
|-------------|------------------------------|--------------------|---------------|------|-------------|-------------|--------|------|-----------|-------------|----------------|-----------------------|-------------|------------|
|             |                              |                    |               |      |             |             | normal | M 50 | type      |             |                |                       |             |            |
| BWX 133590  | 22.225                       | 38.887             | 8.330 - 0.075 | 10   | 49.8        | 17.3        | 12     | -    | disengage | -           | -              | right                 | 30          | 74         |
| BW 13143A   | 27.767                       | 44.425             | 8.330 - 0.075 | 13.5 | 57.2        | 21.6        | 14     | -    | engage    | -           | -              | right                 | 55          | 139        |
| BWX 134079  | 27.767                       | 44.425             | 8.330 - 0.075 | 13.5 | 57.2        | 21.6        | -      | 14   | engage    | -           | -              | right                 | 55          | 139        |
| BW 13252    | 27.767                       | 44.425             | 8.330 - 0.075 | 19.1 | 57.2        | 21.6        | 14     | -    | engage    | -           | 1 T            | right                 | 80          | 233        |
| BWX 137105  | 31.750                       | 48.412             | 8.330 - 0.075 | 13.5 | 62.5        | 24.6        | 12     | -    | disengage | 3           | 1 T            | right                 | 70          | 136        |
| BWX 1310028 | 31.750                       | 48.412             | 8.330 - 0.075 | 13.5 | 62.5        | 24.6        | -      | 12   | disengage | 3           | 1 T            | right                 | 70          | 136        |
| BWX 137068  | 31.750                       | 48.412             | 8.330 - 0.075 | 16   | 62.5        | 24.6        | 16     | -    | disengage | 2           | 4              | left                  | 80          | 234        |
| BWX 133392  | 38.092                       | 54.750             | 8.330 - 0.075 | 16   | 70.4        | 29.7        | 18     | -    | disengage | -           | -              | left                  | 85          | 324        |
| BWX 134408  | 38.092                       | 54.750             | 8.330 - 0.075 | 16   | 70.4        | 29.7        | -      | 18   | disengage | -           | -              | left                  | 85          | 324        |
| BWC 13230   | 38.092                       | 54.750             | 8.330 - 0.075 | 16   | 70.4        | 29.7        | 18     | -    | disengage | 2           | 1 T            | left                  | 85          | 324        |
| BW 13244    | 41.275                       | 57.937             | 8.330 - 0.075 | 13.5 | 74.2        | 32.0        | 14     | -    | disengage | 2           | 1 T            | right                 | 70          | 210        |
| BWX 137094  | 41.275                       | 57.937             | 8.330 - 0.075 | 13.5 | 74.2        | 32.0        | -      | 14   | disengage | 2           | 1 T            | right                 | 70          | 210        |
| BWX 132909  | 44.450                       | 61.112             | 8.330 - 0.075 | 16   | 78.5        | 34.5        | 20     | -    | disengage | 2           | 3              | right                 | 95          | 424        |
| BWX 137095  | 44.450                       | 61.112             | 8.330 - 0.075 | 16   | 78.5        | 34.5        | -      | 20   | disengage | 2           | 3              | right                 | 95          | 424        |
| BWX 137424  | 49.721                       | 66.383             | 8.330 - 0.075 | 13.5 | 85.4        | 38.8        | 22     | -    | engage    | -           | -              | right                 | 100         | 366        |
| BWX 133339  | 49.721                       | 66.383             | 8.330 - 0.075 | 13.5 | 85.4        | 38.8        | 22     | -    | disengage | 2           | 4              | right                 | 100         | 366        |
| BWX 137096  | 49.721                       | 66.383             | 8.330 - 0.075 | 13.5 | 85.4        | 38.8        | -      | 22   | disengage | 2           | 4              | right                 | 100         | 366        |
| BWX 137222  | 49.721                       | 66.383             | 8.330 - 0.075 | 19.1 | 85.4        | 38.8        | 22     | -    | engage    | -           | -              | right                 | 100         | 667        |
| BW 13214A   | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | 14     | -    | disengage | 2           | 1 T            | right                 | 80          | 356        |
| BWX 136538  | 54.765                       | 71.427             | 8.330 - 0.075 | 13.5 | 91.7        | 42.6        | 24     | -    | disengage | 3           | 4              | right                 | 95          | 497        |
| BW 13217A   | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | 22     | -    | disengage | 2           | 4              | right                 | 115         | 560        |
| BWX 137097A | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | -      | 22   | disengage | 2           | 4              | right                 | 115         | 560        |
| BW 13264A   | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | 22     | -    | engage    | 3           | 10             | right                 | 115         | 560        |
| BWX 1310038 | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | -      | 22   | engage    | 3           | 10             | right                 | 115         | 560        |
| BW 13167A   | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | 22     | -    | engage    | -           | -              | right                 | 115         | 560        |
| BWX 133780A | 54.765                       | 71.427             | 8.330 - 0.075 | 16   | 91.7        | 42.6        | -      | 22   | engage    | -           | -              | right                 | 115         | 560        |
| BWX 136709  | 54.765                       | 71.427             | 8.330 - 0.075 | 21   | 91.7        | 42.6        | 24     | -    | engage    | 3           | 10             | right                 | 165         | 907        |
| BWX 134293  | 54.765                       | 71.427             | 8.330 - 0.075 | 25.4 | 91.7        | 42.6        | 24     | -    | engage    | -           | -              | right                 | 200         | 1164       |
| BWX 1310023 | 54.765                       | 71.427             | 8.330 - 0.075 | 25.4 | 91.7        | 42.6        | -      | 24   | disengage | 3           | 8              | right                 | 200         | 1164       |
| BW 13189    | 61.910                       | 78.580             | 8.330 - 0.075 | 21   | 101.1       | 48.2        | 26     | -    | engage    | 4           | 3              | right                 | 180         | 1117       |
| BW 13243    | 72.217                       | 88.882             | 8.330 - 0.075 | 13.5 | 114.3       | 56.1        | 24     | -    | disengage | 3           | 4              | right                 | 120         | 616        |
| BWX 137101  | 72.217                       | 88.882             | 8.330 - 0.075 | 13.5 | 114.3       | 56.1        | -      | 24   | disengage | 3           | 4              | right                 | 120         | 616        |
| BWX 1310059 | 72.217                       | 88.882             | 8.330 - 0.075 | 13.5 | 114.3       | 56.1        | 30     | -    | engage    | 3           | 4              | left                  | 135         | 793        |
| BWX 137290  | 72.217                       | 88.882             | 8.330 - 0.075 | 16   | 114.3       | 56.1        | 30     | -    | disengage | -           | 10             | right                 | 160         | 996        |
| BWC 13168   | 72.217                       | 88.882             | 8.330 - 0.075 | 21   | 114.3       | 56.1        | 30     | -    | engage    | -           | -              | left                  | 205         | 1520       |
| BWX 134012  | 72.217                       | 88.882             | 8.330 - 0.075 | 21   | 114.3       | 56.1        | 30     | -    | engage    | 4           | 10             | left                  | 215         | 1489       |
| BWX 136950  | 72.217                       | 88.882             | 8.330 - 0.075 | 21   | 114.3       | 56.1        | -      | 30   | engage    | 4           | 10             | left                  | 215         | 1489       |
| BWX 133687  | 79.698                       | 96.363             | 8.330 - 0.075 | 13.5 | 123.9       | 61.9        | 20     | -    | disengage | 3           | 1 T            | right                 | 130         | 566        |
| BWX 137322  | 79.698                       | 96.363             | 8.330 - 0.075 | 25.4 | 123.9       | 61.9        | 34     | -    | disengage | 5           | 12             | right                 | 280         | 2396       |
| BWX 137428  | 79.698                       | 96.363             | 8.330 - 0.075 | 25.4 | 123.9       | 61.9        | -      | 34   | disengage | 5           | 17             | right                 | 280         | 2396       |
| BWX 133416  | 87.290                       | 103.960            | 8.330 - 0.075 | 19.1 | 133.6       | 67.8        | 36     | -    | engage    | 4           | 6              | left                  | 240         | 1922       |
| BWX 136715  | 87.290                       | 103.960            | 8.330 - 0.075 | 16   | 133.6       | 67.8        | 24     | -    | disengage | -           | 6              | right                 | 160         | 964        |
| BWX 134008  | 85.776                       | 104.776            | 9.500 - 0.100 | 25.4 | 135         | 66.8        | -      | 34   | engage    | 5           | 12             | right                 | 320         | 3000       |
| BWC 13261   | 103.231                      | 119.893            | 8.330 - 0.075 | 16   | 154.2       | 80.2        | 36     | -    | disengage | 4           | 6              | left...               | 205         | 1529       |
| BWX 137104  | 103.231                      | 119.893            | 8.330 - 0.075 | 16   | 154.2       | 80.2        | -      | 36   | disengage | 4           | 6              | left...               | 205         | 1529       |
| BWC 13236   | 117.391                      | 136.391            | 9.500 - 0.100 | 16   | 175.3       | 91.4        | 30     | -    | disengage | 5           | 6              | left                  | 205         | 1994       |
| BWX 133403  | 123.881                      | 142.880            | 9.500 - 0.100 | 25.4 | 183.6       | 96.2        | 44     | -    | engage    | -           | -              | right                 | 460         | 5740       |
| BWX 134311  | 123.881                      | 142.880            | 9.500 - 0.100 | 25.4 | 183.6       | 96.2        | -      | 44   | engage    | 6           | 11             | right                 | 480         | 5740       |
| BWX 134034  | 165.074                      | 184.074            | 9.500 - 0.100 | 32.3 | 236.2       | 128.2       | -      | 58   | engage    | 8           | 20             | r/l                   | 620         | 10100      |

Permissible taper between cam surfaces  $\leq 0.007$  mm on 25 mm hight. For races made of casehardened steel, casehardening should be  $\geq 1.3$  mm relative to the finished part. The running surfaces must have a surface hardness of HRC = 60...62. The core hardness should be between HRC = 35 and 45. The surface roughness of the cam surfaces must not exceed  $6.3 \mu$  m.

subrication (see catalogue page 36)

pelivery (see catalogue page 36, but without end bearings)

Further information see type BW catalogue.

Extension of tolerance by + 0.013 mm permissible

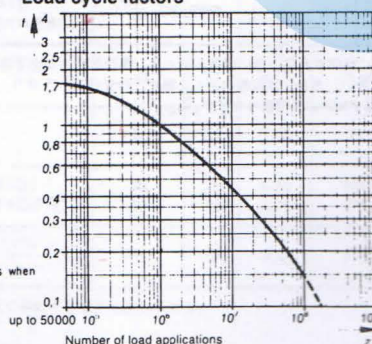
Direction of rotation of freewheel outer race when the inner race is stationary. This applies when looking at the centering flange of the outer cage from A.

The centering flanges of types BWC 13261 and 137104 are facing each other.

All dimensions are in mm.

Measurements and design are subject to modifications.

## Load cycle factors

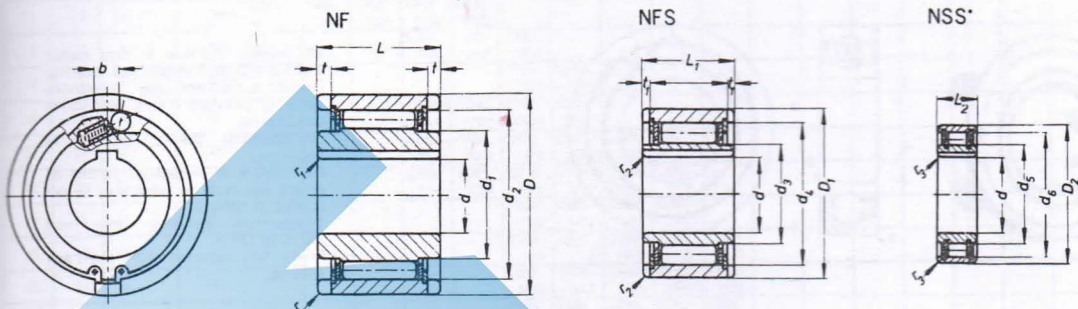


To calculate the required freewheel size according to the catalogue, the maximum operational torque  $M_{op}$  has to be divided by the load cycle factor  $Z$ .



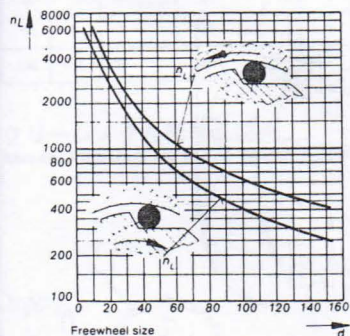
## Types NF, NFS, NSS

Freewheels with individually spring-loaded rollers

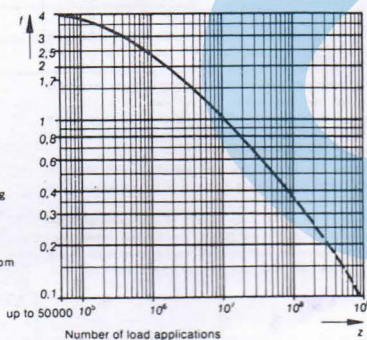


| NF      |            |              |         |      |     |     |      |          |     |     | NFS        |              |          |       |     |    |     |          |     |  |  | NSS*       |              |          |    |    |    |     |  |  |  |  |
|---------|------------|--------------|---------|------|-----|-----|------|----------|-----|-----|------------|--------------|----------|-------|-----|----|-----|----------|-----|--|--|------------|--------------|----------|----|----|----|-----|--|--|--|--|
| d<br>H7 | Mnom<br>Nm | weight<br>kg | D<br>n6 | d1   | d2  | L   | t    | b<br>H11 | r   | r1  | Mnom<br>Nm | weight<br>kg | D1<br>n6 | d3    | d4  | L1 | t1  | b<br>H11 | r2  |  |  | Mnom<br>Nm | weight<br>kg | D2<br>r6 | d5 | d6 | L2 | r3  |  |  |  |  |
| 8       | 10         | 0.1          | 37      | 20   | 30  | 20  | 3    | 6        | 1.0 | 1.5 | 6          | 0.1          | 35       | 18.5  | 27  | 13 | 1.3 | 4        | 1.0 |  |  | 2          | 0.03         | 24       | 12 | 19 | 8  | 0.3 |  |  |  |  |
| 10      |            |              |         |      |     |     |      |          |     |     |            |              |          |       |     |    |     |          |     |  |  | 4          | 0.04         | 30       | 16 | 25 | 9  | 0.5 |  |  |  |  |
| 12      | 10         | 0.1          | 37      | 20   | 30  | 20  | 3    | 6        | 1.0 | 1.5 | 6          | 0.1          | 35       | 18.5  | 27  | 13 | 1.3 | 4        | 1.0 |  |  | 6          | 0.05         | 32       | 19 | 27 | 10 | 0.5 |  |  |  |  |
| 15      | 33         | 0.3          | 47      | 26   | 37  | 30  | 3.5  | 7        | 1.5 | 1.5 | 20         | 0.1          | 42       | 24.0  | 36  | 18 | 1.3 | 5        | 1.0 |  |  | 8          | 0.10         | 35       | 21 | 30 | 11 | 0.5 |  |  |  |  |
| 17      |            |              |         |      |     |     |      |          |     |     | 20         | 0.1          | 47       | 25.5  | 36  | 19 | 2.0 | 5        | 1.5 |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 20      | 80         | 0.6          | 62      | 37   | 52  | 36  | 3.5  | 8        | 2.0 | 2.0 | 50         | 0.2          | 52       | 30.0  | 44  | 21 | 1.5 | 6        | 1.5 |  |  | 23         | 0.12         | 47       | 30 | 40 | 14 | 1.0 |  |  |  |  |
| 25      | 120        | 1.1          | 80      | 49   | 68  | 40  | 4    | 9        | 2.5 | 2.0 | 80         | 0.4          | 62       | 36.6  | 52  | 24 | 2.0 | 8        | 2.0 |  |  | 35         | 0.15         | 52       | 34 | 45 | 15 | 1.0 |  |  |  |  |
| 30      | 220        | 1.6          | 90      | 52.5 | 75  | 48  | 5    | 12       | 2.5 | 2.0 | 120        | 0.6          | 72       | 40.0  | 60  | 27 | 2.5 | 10       | 2.0 |  |  | 55         | 0.25         | 62       | 42 | 55 | 16 | 1.0 |  |  |  |  |
| 35      | 280        | 2.3          | 100     | 58   | 80  | 53  | 6    | 13       | 2.5 | 2.5 | 150        | 0.7          | 80       | 48.0  | 70  | 31 | 3.5 | 12       | 2.0 |  |  | 90         | 0.33         | 72       | 49 | 63 | 17 | 1.0 |  |  |  |  |
| 40      | 460        | 3.1          | 110     | 62   | 90  | 63  | 7    | 15       | 3.0 | 2.5 | 230        | 0.9          | 90       | 54.5  | 78  | 33 | 3.5 | 12       | 2.5 |  |  | 120        | 0.42         | 80       | 54 | 70 | 18 | 1.0 |  |  |  |  |
| 45      | 640        | 3.7          | 120     | 69   | 95  | 63  | 7    | 16       | 3.0 | 2.5 | 330        | 1.2          | 100      | 59.0  | 85  | 36 | 3.5 | 14       | 2.5 |  |  | 140        | 0.46         | 85       | 57 | 74 | 19 | 1.0 |  |  |  |  |
| 50      | 1000       | 5.4          | 130     | 82   | 110 | 80  | 8.5  | 17       | 3.5 | 3.0 | 470        | 1.7          | 110      | 64.5  | 92  | 40 | 4.5 | 14       | 3.0 |  |  | 150        | 0.50         | 90       | 64 | 80 | 20 | 1.0 |  |  |  |  |
| 55      | 1250       | 6.1          | 140     | 83   | 115 | 80  | 9    | 18       | 3.5 | 3.0 |            |              |          |       |     |    |     |          |     |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 60      | 1800       | 8.5          | 150     | 93.5 | 125 | 95  | 9    | 18       | 3.5 | 3.5 | 650        | 2.8          | 130      | 84.0  | 110 | 46 | 5.5 | 18       | 3.5 |  |  | 270        | 0.80         | 110      | 80 | 98 | 22 | 1.5 |  |  |  |  |
| 70      | 2500       | 13.0         | 170     | 106  | 140 | 110 | 9    | 20       | 3.5 | 3.5 | 950        | 4.0          | 150      | 91.0  | 125 | 51 | 6.5 | 20       | 3.5 |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 80      | 4100       | 18.0         | 190     | 122  | 160 | 125 | 9    | 20       | 4.0 | 3.5 | 1300       | 5.8          | 170      | 100.0 | 140 | 58 | 7.5 | 20       | 3.5 |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 90      | 7100       | 25.3         | 215     | 133  | 180 | 140 | 11.5 | 24       | 4.0 | 4.0 |            |              |          |       |     |    |     |          |     |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 100     | 8300       | 42.1         | 260     | 157  | 210 | 150 | 14.5 | 28       | 4.0 | 4.0 |            |              |          |       |     |    |     |          |     |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 130     | 14800      | 65.0         | 300     | 188  | 240 | 180 | 17   | 32       | 5.0 | 5.0 |            |              |          |       |     |    |     |          |     |  |  |            |              |          |    |    |    |     |  |  |  |  |
| 150     | 19200      | 95.0         | 320     | 205  | 260 | 180 | 17   | 32       | 5.0 | 5.0 |            |              |          |       |     |    |     |          |     |  |  |            |              |          |    |    |    |     |  |  |  |  |

### Overrunning speeds



### Load cycle factors



To calculate the required freewheel size according to the nominal torque given in the catalogue, the maximum operational torque  $M_{op}$  has to be divided by the load cycle factor  $f$ .

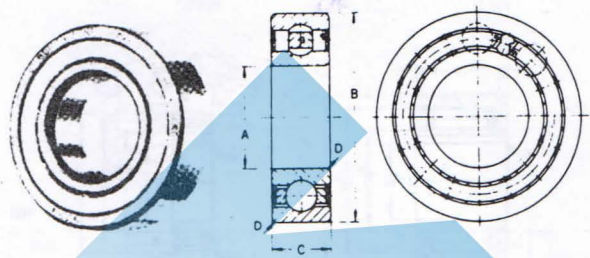
### Keyway

NF 8-150 DN 6885 sheet 1  
NFS 8-12 DN 6885 sheet 1, NFS 15-80 DN 6885 sheet 3  
NSS 8-12 DN 6885 sheet 1, NSS 15-60 DN 6885 sheet 3

All dimensions in mm.  
Measurements and design are subject to modifications.

\*Nominal dimensions to ball bearing series 62 (exception NSS 8) without keyways at face to outer race.

When mounting in steel cases the wall must be at least twice as thick as the outer race. If non-steel e.g. aluminium cases are used, the wall must be at least four times as thick as the outer race.



KK models combine a cam clutch within a standard metric ball bearing. Overall dimensions and tolerances same as standard metric light series ball bearing. No additional bearing support is required. Furnished with protective coating of grease and must be lubricated before putting in service. Temperature operating range from -40 F. to 175° F. Press fits required with shaft and housing.

| Model Number | Torque Capacity (Lb-Ft) | Maximum Overrunning RPM |      |            |      | Dimensions |        |        |        |        |        | Mounting Data |            | Radial Load   |        | weight (Lb) | List Price |         |
|--------------|-------------------------|-------------------------|------|------------|------|------------|--------|--------|--------|--------|--------|---------------|------------|---------------|--------|-------------|------------|---------|
|              |                         | Inner Race              |      | Outer Race |      | A          |        | B      |        | C      | D      | Shaft         | Housing    | Capacity (Lb) |        |             |            |         |
|              |                         | Grease                  | Oil  | Grease     | Oil  | MM         | Inches | MM     | Inches | Inches | Inches | Dia Inches    | Dia Inches | Dynamic       | Static |             |            |         |
| s            | KK-17                   | 10                      | 6300 | 7800       | 4200 | 5200       | 17     | .6690  | 40     | 1.5748 | .472   | .06           | 6702       | 1.5737        | 1620   | 1000        | .18        | \$48.00 |
|              |                         |                         |      |            |      |            |        | .6693  |        | 1.5744 |        |               | 6698       | 1.5744        |        |             |            |         |
| s            | KK-20                   | 22                      | 6300 | 7800       | 4200 | 5200       | 20     | .7870  | 47     | 1.8504 | .551   | .06           | 7885       | 1.8493        | 2250   | 1410        | .26        | 50.00   |
|              |                         |                         |      |            |      |            |        | .7874  |        | 1.8500 |        |               | 7880       | 1.8500        |        |             |            |         |
| s            | KK-25                   | 29                      | 4800 | 5900       | 3400 | 4200       | 25     | .9839  | 52     | 2.0472 | .591   | .06           | 9854       | 2.0459        | 2300   | 1410        | .33        | 55.00   |
|              |                         |                         |      |            |      |            |        | .9843  |        | 2.0467 |        |               | 9849       | 2.0467        |        |             |            |         |
| s            | KK-30                   | 36                      | 4000 | 5000       | 2800 | 3500       | 30     | 1.1807 | 62     | 2.4409 | .630   | .06           | 1.1822     | 2.4396        | 3350   | 2250        | .52        | 60.00   |
|              |                         |                         |      |            |      |            |        | 1.1811 |        | 2.4404 |        |               | 1.1817     | 2.4404        |        |             |            |         |
| s            | KK-35                   | 51                      | 2960 | 3100       | 2160 | 2700       | 35     | 1.3775 | 72     | 2.8346 | .670   | .08           | 1.3793     | 2.8333        | 4400   | 3020        | .70        | 75.00   |
|              |                         |                         |      |            |      |            |        | 1.3780 |        | 2.8341 |        |               | 1.3787     | 2.8341        |        |             |            |         |

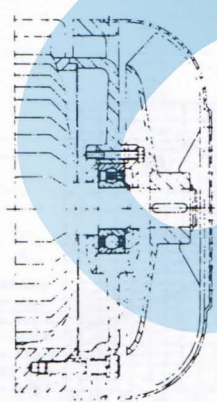
The design of the KK series clutches combines a cam-type clutch within a standard bearing having the same overall dimensions and tolerances as the metric light series ball bearing.

The overall space requirement is minimized, and in most applications the necessity of providing a supplemental bearing (see illustration) is eliminated.

The clutch function is carried out by means of cams designed in tandem which operate on the two shoulders on either side of the ball track and are held in position by a cage which also positions the bearing balls.

Torque is transmitted through press fits on both the bore and the outside diameter of the clutch. Normal ball bearing procedures should be used in the installation and removal of the KK clutches.

The cams incorporated in these units lift off at cage speeds of approximately 2500 RPM. When the clutch is installed in accordance to correct ball bearing fitting practice, the cage speed is slightly greater than half nominal speed when outer race is the overrunning member, and slightly less than half nominal speed when the inner race is overrunning.



A KK clutch incorporated in an electric motor acting as a backstop to prevent reverse rotation.