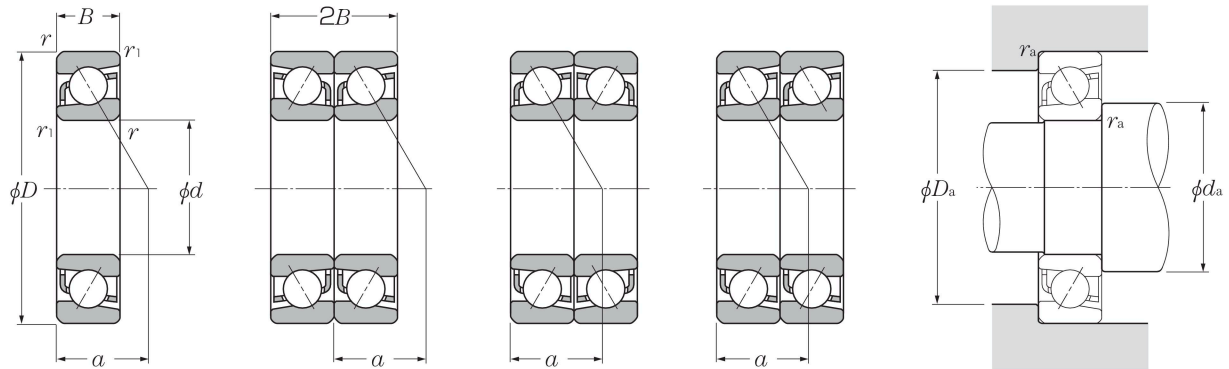


# Single and Duplex Angular Contact Ball Bearings



Single

Back-to-back arrangement (DB)

Face-to-face arrangement (DF)

Tandem arrangement (DT)

$d$  10 ~ 30mm

| $d$ | Boundary dimensions |     |      |                   |                    | Basic load ratings     |                          |                         |                           | Limiting speeds <sup>1)</sup> |                   | Bearing <sup>2)</sup> numbers | Load centerkg<br>mm<br>$a$ | Mass<br>kg<br>single<br>(approx.) |
|-----|---------------------|-----|------|-------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|-------------------------------|-------------------|-------------------------------|----------------------------|-----------------------------------|
|     | $D$                 | $B$ | $2B$ | $r_{s\ min}^{3)}$ | $r_{is\ min}^{3)}$ | dynamic<br>kN<br>$C_r$ | static<br>kN<br>$C_{or}$ | dynamic<br>kgf<br>$C_r$ | static<br>kgf<br>$C_{or}$ | grease                        | oil               |                               |                            |                                   |
|     | mm                  | mm  | mm   | mm                | mm                 |                        |                          |                         |                           | min <sup>-1</sup>             | min <sup>-1</sup> |                               |                            |                                   |
| 10  | 26                  | 8   | 16   | 0.3               | 0.15               | 4.65                   | 2.07                     | 470                     | 212                       | 29 000                        | 39 000            | 7000                          | 9                          | 0.023                             |
|     | 30                  | 9   | 18   | 0.6               | 0.3                | 5.45                   | 2.74                     | 555                     | 279                       | 28 000                        | 37 000            | 7200                          | 10.5                       | 0.029                             |
|     | 30                  | 9   | 18   | 0.6               | 0.3                | 5.00                   | 2.52                     | 510                     | 257                       | 24 000                        | 32 000            | 7200B                         | 13                         | 0.029                             |
|     | 35                  | 11  | 22   | 0.6               | 0.3                | 10.1                   | 4.95                     | 1 030                   | 500                       | 26 000                        | 34 000            | 7300                          | 12                         | 0.04                              |
|     | 35                  | 11  | 22   | 0.6               | 0.3                | 9.50                   | 4.60                     | 970                     | 470                       | 22 000                        | 29 000            | 7300B                         | 15                         | 0.041                             |
| 12  | 28                  | 8   | 16   | 0.3               | 0.15               | 5.05                   | 2.46                     | 515                     | 251                       | 26 000                        | 35 000            | 7001                          | 10                         | 0.025                             |
|     | 32                  | 10  | 20   | 0.6               | 0.3                | 7.60                   | 3.95                     | 775                     | 405                       | 25 000                        | 33 000            | 7201                          | 11.5                       | 0.035                             |
|     | 32                  | 10  | 20   | 0.6               | 0.3                | 7.00                   | 3.65                     | 775                     | 405                       | 21 000                        | 28 000            | 7201B                         | 14                         | 0.036                             |
|     | 37                  | 12  | 24   | 1                 | 0.6                | 11.2                   | 5.25                     | 1 140                   | 535                       | 23 000                        | 30 000            | 7301                          | 13                         | 0.044                             |
|     | 37                  | 12  | 24   | 1                 | 0.6                | 10.5                   | 4.95                     | 1 080                   | 505                       | 19 000                        | 26 000            | 7301B                         | 16.5                       | 0.045                             |
| 15  | 32                  | 9   | 18   | 0.3               | 0.15               | 5.80                   | 3.15                     | 590                     | 320                       | 23 000                        | 31 000            | 7002                          | 11.5                       | 0.035                             |
|     | 35                  | 11  | 22   | 0.6               | 0.3                | 9.05                   | 4.70                     | 925                     | 480                       | 22 000                        | 29 000            | 7202                          | 12.5                       | 0.046                             |
|     | 35                  | 11  | 22   | 0.6               | 0.3                | 8.35                   | 4.35                     | 855                     | 445                       | 18 000                        | 25 000            | 7202B                         | 16                         | 0.046                             |
|     | 42                  | 13  | 26   | 1                 | 0.6                | 13.5                   | 7.20                     | 1 370                   | 735                       | 19 000                        | 26 000            | 7302                          | 15                         | 0.055                             |
|     | 42                  | 13  | 26   | 1                 | 0.6                | 12.5                   | 6.65                     | 1 270                   | 680                       | 17 000                        | 22 000            | 7302B                         | 19                         | 0.057                             |
| 17  | 35                  | 10  | 20   | 0.3               | 0.15               | 7.15                   | 3.85                     | 730                     | 390                       | 21 000                        | 28 000            | 7003                          | 12.5                       | 0.046                             |
|     | 40                  | 12  | 24   | 0.6               | 0.3                | 12.0                   | 6.60                     | 1 220                   | 675                       | 19 000                        | 26 000            | 7203                          | 14.5                       | 0.064                             |
|     | 40                  | 12  | 24   | 0.6               | 0.3                | 11.0                   | 6.10                     | 1 120                   | 625                       | 17 000                        | 22 000            | 7203B                         | 18                         | 0.066                             |
|     | 47                  | 14  | 28   | 1                 | 0.6                | 15.9                   | 8.65                     | 1 630                   | 880                       | 18 000                        | 24 000            | 7303                          | 16                         | 0.107                             |
|     | 47                  | 14  | 28   | 1                 | 0.6                | 14.8                   | 8.00                     | 1 510                   | 820                       | 15 000                        | 20 000            | 7303B                         | 20.5                       | 0.109                             |
| 20  | 42                  | 12  | 24   | 0.6               | 0.3                | 9.70                   | 5.60                     | 990                     | 570                       | 19 000                        | 25 000            | 7004                          | 15                         | 0.08                              |
|     | 47                  | 14  | 28   | 1                 | 0.6                | 14.5                   | 8.40                     | 1 480                   | 855                       | 17 000                        | 23 000            | 7204                          | 17                         | 0.1                               |
|     | 47                  | 14  | 28   | 1                 | 0.6                | 13.3                   | 7.70                     | 1 360                   | 785                       | 15 000                        | 20 000            | 7204B                         | 21.5                       | 0.102                             |
|     | 52                  | 15  | 30   | 1.1               | 0.6                | 18.7                   | 10.4                     | 1 910                   | 1 060                     | 16 000                        | 21 000            | 7304                          | 18                         | 0.138                             |
|     | 52                  | 15  | 30   | 1.1               | 0.6                | 17.3                   | 9.65                     | 1 770                   | 985                       | 13 000                        | 18 000            | 7304B                         | 22.5                       | 0.141                             |
| 25  | 42                  | 9   | 18   | 0.3               | 0.15               | 7.15                   | 4.95                     | 730                     | 505                       | 17 000                        | 22 000            | 7905                          | 14                         | 0.05                              |
|     | 47                  | 12  | 24   | 0.6               | 0.3                | 10.7                   | 6.85                     | 1 100                   | 700                       | 16 000                        | 21 000            | 7005                          | 16.5                       | 0.093                             |
|     | 52                  | 15  | 30   | 1                 | 0.6                | 16.2                   | 10.3                     | 1 650                   | 1 050                     | 14 000                        | 19 000            | 7205                          | 19                         | 0.125                             |
|     | 52                  | 15  | 30   | 1                 | 0.6                | 14.8                   | 9.40                     | 1 510                   | 960                       | 12 000                        | 16 000            | 7205B                         | 24                         | 0.129                             |
|     | 62                  | 17  | 34   | 1.1               | 0.6                | 26.4                   | 15.8                     | 2 690                   | 1 610                     | 13 000                        | 17 000            | 7305                          | 21                         | 0.23                              |
|     | 62                  | 17  | 34   | 1.1               | 0.6                | 24.4                   | 14.6                     | 2 490                   | 1 490                     | 11 000                        | 15 000            | 7305B                         | 27                         | 0.234                             |
| 30  | 47                  | 9   | 18   | 0.3               | 0.15               | 7.55                   | 5.75                     | 770                     | 585                       | 14 000                        | 19 000            | 7906                          | 15.5                       | 0.058                             |
|     | 55                  | 13  | 26   | 1                 | 0.6                | 13.9                   | 9.45                     | 1 410                   | 965                       | 13 000                        | 18 000            | 7006                          | 19                         | 0.135                             |

1) This value achieved with machined cages; when pressed cages are used, 80% of this value is acceptable.  
 2) Bearing numbers appended with the code "B" have a contact angle of 40°; bearings with this code have a contact angle of 30°.  
 3) Smallest allowable dimension for chamfer dimension  $r$ .