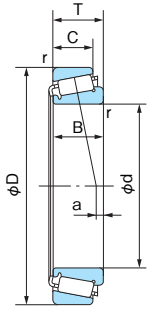
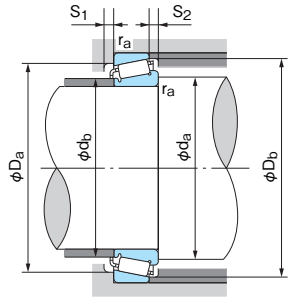
# Tapered Roller Bearings

## Metric Series

Bore Diameter: 40～50mm




**■Dynamic equivalent radial load**

Pr=XFr+YFa

| $\frac{Fa}{Fr} \leqq e$ | | $\frac{Fa}{Fr} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_1$ |

Values e and $Y_1$ from table.

**■Static equivalent radial load**

Larger value of following to be used:

Por=0.5Fr+$Y_0$Fa

Por=Fr

Values $Y_0$ from table.

1N=0.102kgf

| Boundary dimensions (mm) | | | | | | | Bearing No. | (Ref.) ISO355 Dimension series | Basic dynamic load rating Cr (N) | Basic static load rating Cor (N) | Limiting speed (min-1) | | Abutment and fillet dimensions (mm) | | | | | | | | Load center (mm) a (1) | Constant e | Axial load factor | | Mass(kg) Reference | Bearing No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | T | B | C | Cone r (min) | Cup r (min) | | | | | Grease lubrication | Oil lubrication | da (min) | db (max) | Da (min) | Db (min) | $S_1$ (min) | $S_2$ (min) | Cone ra (max) | Cup ra (max) | | | $Y_1$ | $Y_0$ | | |
| 40 | 62 | 15 | 15 | 12 | 0.6 | 0.6 | **H-E32908J** | 2BC | 33500 | 48500 | 5900 | 7800 | 44.5 | 45 | 55 | 59 | 3 | 3 | 0.6 | 0.6 | 3.1 | 0.29 | 2.07 | 1.14 | 0.164 | **H-E32908J** |
| | 68 | 19 | 19 | 14.5 | 1 | 1 | **H-E32008J** | 3CD | 53500 | 71400 | 5600 | 7400 | 45.5 | 46 | 60 | 65 | 4 | 4.5 | 1 | 1 | 3.9 | 0.38 | 1.58 | 0.87 | 0.282 | **H-E32008J** |
| | 68 | 22 | 22 | 18 | 1 | 1 | **H-E33008J** | 2BE | 60400 | 84600 | 5500 | 7400 | 45.5 | 46 | 60 | 65 | 3 | 4 | 1 | 1 | 7.3 | 0.28 | 2.12 | 1.17 | 0.326 | **H-E33008J** |
| | 75 | 26 | 26 | 20.5 | 1.5 | 1.5 | **H-E33108J** | 2CE | 82200 | 108000 | 5200 | 6900 | 48.5 | 47 | 65 | 71 | 4 | 5.5 | 1.5 | 1.5 | 7.7 | 0.36 | 1.69 | 0.93 | 0.508 | **H-E33108J** |
| | 80 | 19.75 | 18 | 16 | 1.5 | 1.5 | **H-E30208J** | 3DB | 62900 | 69200 | 5000 | 6700 | 48.5 | 49 | 69 | 75 | 3 | 3.5 | 1.5 | 1.5 | 2.7 | 0.37 | 1.60 | 0.88 | 0.434 | **H-E30208J** |
| | 80 | 24.75 | 23 | 19 | 1.5 | 1.5 | **H-E32208J** | 3DC | 77700 | 90800 | 5000 | 6600 | 48.5 | 48 | 68 | 75 | 3 | 5.5 | 1.5 | 1.5 | 5.3 | 0.37 | 1.60 | 0.88 | 0.554 | **H-E32208J** |
| | 80 | 32 | 32 | 25 | 1.5 | 1.5 | **H-E33208J** | 2DE | 108000 | 139000 | 5000 | 6700 | 48.5 | 47 | 67 | 76 | 5 | 7 | 1.5 | 1.5 | 11.3 | 0.36 | 1.68 | 0.92 | 0.758 | **H-E33208J** |
| | 90 | 25.25 | 23 | 20 | 2 | 1.5 | **H-E30308J** | 2FB | 90600 | 101000 | 4500 | 6100 | 50 | 52 | 77 | 82 | 3 | 5 | 2 | 1.5 | 5.4 | 0.35 | 1.74 | 0.96 | 0.757 | **H-E30308J** |
| | 90 | 25.25 | 23 | 17 | 2 | 1.5 | **H-E30308DJ** | 7FB | 80500 | 90200 | 3800 | 5300 | 50 | 51 | 71 | 86 | 3 | 8 | 2 | 1.5 | –4.6 | 0.83 | 0.73 | 0.40 | 0.757 | **H-E30308DJ** |
| | 90 | 35.25 | 33 | 27 | 2 | 1.5 | **H-E32308J** | 2FD | 116000 | 139000 | 4600 | 6200 | 50 | 50 | 73 | 82 | 3 | 8 | 2 | 1.5 | 10.9 | 0.35 | 1.74 | 0.96 | 1.06 | **H-E32308J** |
| 45 | 68 | 15 | 15 | 12 | 0.6 | 0.6 | **H-E32909J** | 2BC | 34700 | 52400 | 5300 | 7100 | 49.5 | 50 | 61 | 64 | 3 | 3 | 0.6 | 0.6 | 2.5 | 0.32 | 1.88 | 1.04 | 0.190 | **H-E32909J** |
| | 75 | 20 | 20 | 15.5 | 1 | 1 | **H-E32009J** | 3CC | 62800 | 86500 | 5000 | 6600 | 50.5 | 51 | 67 | 72 | 4 | 4.5 | 1 | 1 | 3.5 | 0.39 | 1.53 | 0.84 | 0.354 | **H-E32009J** |
| | 75 | 24 | 24 | 19 | 1 | 1 | **H-E33009J** | 2CE | 69600 | 101000 | 5000 | 6700 | 50.5 | 51 | 67 | 71 | 4 | 5 | 1 | 1 | 7.6 | 0.29 | 2.04 | 1.12 | 0.416 | **H-E33009J** |
| | 80 | 26 | 26 | 20.5 | 1.5 | 1.5 | **E33109J** | 3CE | 87500 | 120000 | 4800 | 6400 | 53.5 | 52 | 69 | 76.5 | 4 | 5.5 | 1.5 | 1.5 | 6.6 | 0.38 | 1.57 | 0.86 | 0.563 | **E33109J** |
| | 85 | 20.75 | 19 | 16 | 1.5 | 1.5 | **H-E30209J** | 3DB | 67200 | 77400 | 4600 | 6100 | 53.5 | 54 | 74 | 80 | 3 | 4.5 | 1.5 | 1.5 | 1.8 | 0.40 | 1.48 | 0.81 | 0.502 | **H-E30209J** |
| | 85 | 24.75 | 23 | 19 | 1.5 | 1.5 | **H-E32209J** | 3DC | 78300 | 94100 | 4600 | 6100 | 53.5 | 53 | 73 | 81 | 3 | 5.5 | 1.5 | 1.5 | 3.8 | 0.40 | 1.48 | 0.81 | 0.587 | **H-E32209J** |
| | 85 | 32 | 32 | 25 | 1.5 | 1.5 | **E33209J** | 3DE | 112000 | 149000 | 4600 | 6200 | 53.5 | 52 | 76.5 | 81 | 5 | 7 | 1.5 | 1.5 | 10.2 | 0.39 | 1.56 | 0.86 | 0.803 | **E33209J** |
| | 100 | 27.25 | 25 | 22 | 2 | 1.5 | **E30309J** | 2FB | 113000 | 128000 | 4100 | 5400 | 55 | 59 | 86 | 93 | 3 | 5 | 2 | 1.5 | 5.9 | 0.35 | 1.74 | 0.96 | 1.01 | **E30309J** |
| | 100 | 27.25 | 25 | 18 | 2 | 1.5 | **E30309DJ** | 7FB | 95100 | 107000 | 3400 | 4700 | 55 | 56 | 79 | 96 | 3 | 9 | 2 | 1.5 | –5.7 | 0.83 | 0.73 | 0.40 | 0.973 | **E30309DJ** |
| | 100 | 38.25 | 36 | 30 | 2 | 1.5 | **E32309J** | 2FD | 146000 | 180000 | 4100 | 5500 | 55 | 56 | 82 | 93 | 3 | 8 | 2 | 1.5 | 11.4 | 0.35 | 1.74 | 0.96 | 1.43 | **E32309J** |
| 50 | 72 | 15 | 15 | 12 | 0.6 | 0.6 | **E32910J** | 2BC | 35900 | 56300 | 4900 | 6600 | 54.5 | 55 | 65 | 69 | 3 | 3 | 0.6 | 0.6 | 1.3 | 0.34 | 1.76 | 0.97 | 0.195 | **E32910J** |
| | 80 | 20 | 20 | 15.5 | 1 | 1 | **H-E32010J** | 3CC | 65700 | 94500 | 4600 | 6100 | 55.5 | 56 | 72 | 77 | 4 | 4.5 | 1 | 1 | 2.3 | 0.42 | 1.42 | 0.78 | 0.389 | **H-E32010J** |
| | 80 | 24 | 24 | 19 | 1 | 1 | **E33010J** | 2CE | 73000 | 110000 | 4600 | 6100 | 55.5 | 56 | 72 | 76 | 4 | 5 | 1 | 1 | 6.6 | 0.32 | 1.90 | 1.04 | 0.451 | **E33010J** |
| | 85 | 26 | 26 | 20 | 1.5 | 1.5 | **E33110J** | 3CE | 89400 | 127000 | 4400 | 5900 | 58.5 | 56 | 74 | 81.5 | 4 | 6 | 1.5 | 1.5 | 5.4 | 0.41 | 1.46 | 0.80 | 0.594 | **E33110J** |
| | 90 | 21.75 | 20 | 17 | 1.5 | 1.5 | **H-E30210J** | 3DB | 76500 | 91700 | 4300 | 5700 | 58.5 | 58 | 79 | 85 | 3 | 4.5 | 1.5 | 1.5 | 1.65 | 0.42 | 1.43 | 0.79 | 0.566 | **H-E30210J** |
| | 90 | 24.75 | 23 | 19 | 1.5 | 1.5 | **H-E32210J** | 3DC | 85000 | 105000 | 4300 | 5700 | 58.5 | 58 | 78 | 85 | 3 | 5.5 | 1.5 | 1.5 | 4.1 | 0.42 | 1.43 | 0.79 | 0.643 | **H-E32210J** |
| | 90 | 32 | 32 | 24.5 | 1.5 | 1.5 | **H-E33210J** | 3DE | 119000 | 167000 | 4300 | 5700 | 58.5 | 57 | 77 | 86.5 | 5 | 7.5 | 1.5 | 1.5 | 8.9 | 0.41 | 1.45 | 0.80 | 0.887 | **H-E33210J** |
| | 110 | 29.25 | 27 | 23 | 2.5 | 2 | **E30310J** | 2FB | 137000 | 152000 | 3700 | 4900 | 62 | 65 | 95 | 102 | 3 | 6 | 2 | 2 | 6.4 | 0.35 | 1.74 | 0.96 | 1.32 | **E30310J** |
| | 110 | 29.25 | 27 | 19 | 2.5 | 2 | **E30310DJ** | 7FB | 115000 | 133000 | 3100 | 4300 | 62 | 62 | 87 | 105 | 3 | 10 | 2 | 2 | –5.8 | 0.83 | 0.73 | 0.40 | 1.25 | **E30310DJ** |
| | 110 | 42.25 | 40 | 33 | 2.5 | 2 | **E32310J** | 2FD | 176000 | 220000 | 3700 | 5000 | 62 | 62 | 90 | 102 | 3 | 9 | 2 | 2 | 12.9 | 0.35 | 1.74 | 0.96 | 1.89 | **E32310J** |

Note: (1) Minus value of load center "a" indicates that the center is located outside of cone backface.