**CK BIRLA** GROUP

**nbc** flexible solutions

**nbc** flexible solutions

# Taper Roller Bearings

This version supersedes all previously published versions. All the bearing mentioned in this catalogue are manufactured with normal tolerance class. We can, however, supply other class bearing against specific requirement.

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CELEBRATING 75 YEARS

2 WHEELERS    3 WHEELERS    4 WHEELERS    TRACTORS    LCV, HCV    INDUSTRIES    RAILWAYS    AEROSPACE

WINNER DEMING GRAND PRIZE

Founded in 1946, NBC is India's first bearings manufacturer and the last word in quality and durability. In 2020, the company acquired leading European manufacturer, Kinex Bearings to further boost its expertise.

75 years since its beginning, NBC remains India's leading bearings manufacturer and exporter. NBC is also the world's only bearings manufacturer to receive the prestigious Deming Grand Prize for Total Quality Management.

- 1946 India's first bearing manufacturer
- 250+ million bearings manufactured/ annum
- 3100+ variants of bearings offered
- 5 manufacturing locations
- Leading exporter
- Happy customers in 30+ countries
- R&D and Innovation Centre
- 2800+ People
- Automotive
- Industrial
- Railway
- Aerospace

## Products from NBC

Since the challenges faced by industry are many, NBC offers a diverse range of exceptional bearings. NBC bearings are available in sizes from 04 mm bore to 2000 mm outer diameter.

**Ball Bearings**
- Deep Groove
- Gen - 1
- Gen - 3
- Angular Contact

**Needle Bearings**

**Tapered Roller Bearings**
- Single Row
- Double Row
- Four Row
- Unitised Tapered Roller Bearing
- Cartridge Tapered Roller Bearing (Railways)

**Thrust Bearings**
- Ball thrust
- Roller thrust

**Cylindrical Bearings**
- Single Row
- Double Row
- Four Row
- Cylindrical Bearing Unit (CBU)

**Pillow Block Bearings**
- UCP
- UCF
- UCT

**Spherical Bearings**
- Roller
- Plain

**Special Products & Technology**
- Oil Impregnated Polymer Lubricated
- EMB Series High Speed (EV application)
- SIB Series Sensor Integrated
- Bearing with Conductive Wire
- TRB Hub Unit
- Low Torque TRB
- Pre-set Hub
- Insuohm Series (Insulated)
- Ceramic Rolling Element (Hybrid)
- TRB Matched Set
- Black Oxide Treatment
- HCR Series

∗ Products with special features like high temperature application, special heat treatment, coated roller/races and cage options are also available across product range.

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# 19 Taper Roller Bearing

## Taper Roller Bearing Configuration

Taper roller bearing have cup, cone and rollers which are tapered in shape. The rollers are restrained by a flange on the cone, against which their large end slides. These bearings can take combined loads simultaneously i.e. radial and axial load. Projection lines of the cup and cone raceways and rollers meet at a common point on the bearing axis. The axial load carrying capacity of bearings increases with the increasing contact angle. Bearings are separable. Cup can be separated from cone assembly. Hence both can be mounted separately. The raceway and rollers have crown profiles. Improved surface finish of flange enable cooler running by forming a full lubrication film with roller head.
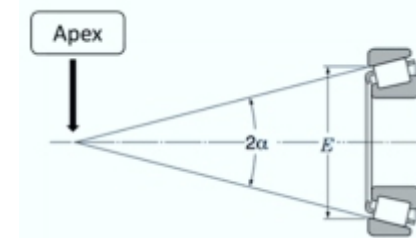
E : Nominal small end dimeter of outer ring
α : Nominal contact angle

Cone assembly          Cup

Separable bearing

Depending upon the application requirement the taper roller bearings are available in double row and four row combinations. These bearings are preset assemblies ready to mount.

## Double Row Taper Roller Bearing

### Face -to -face arrangement (TDI)

When the bearings are matched face-to-face,

➢ An intermediate spacer is positioned between the two cups.

➢ The load lines converge towards the bearing axis.

➢ Axial loads acting in both directions can be accommodated by each bearing. Face-to-face arrangement (TDI)
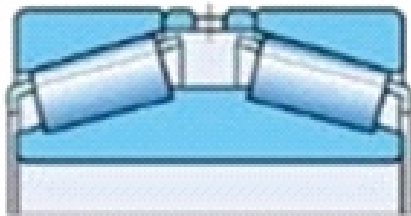
### Back-to-back arrangement (TDO)

When the bearings are arranged back-to-back

➢ An intermediate spacer is positioned both between the two cones.

➢ The load lines diverge towards the bearing axis, thus providing relatively rigid bearing arrangements, which can also take up tilting moments.

➢ Axial loads acting in both directions can be accommodated by each bearing
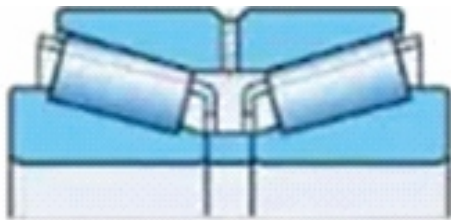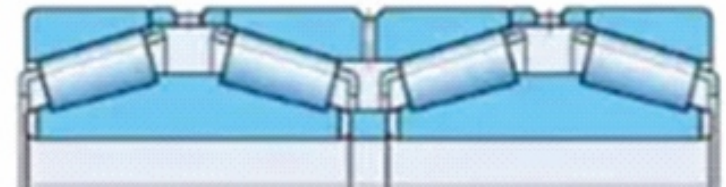
## Four-row tapered roller bearings

Four-row tapered roller bearings can accommodate radial and axial loads at low to moderate speeds. These bearings are specially designed for rolling mill applications. They are used in work roll and back up roll applications in rolling mills. The bearings may be in straight bore or tapered bore.

### TQO (Straight bore four row bearing arrangement):

➢ Two double cones with cone spacer, two single cups

➢ Two single cups on sides and a Double cup in middle.

➢ Two cup spacers separating single cup and double cup.

➢ Spacers have holes for lubrication.

➢ Cone spacers are hardened to reduce face wear.

**2 X TDI: (Two double row straight bore bearings separated by spacer)**
It comprises of two double row taper roller bearings matched face to face separated by spacer between inside two cups and two cones
NBC also provides set of 2X TDI.

**TQIT (Tapered Bore Four-Row Arrangement)**

➤ One double cone & two single cones, all with tapered bore matched through all the cones and four single cups and three cup spacers or two double cups with spacer.

➤ Lubrication holes in three cup spacers.

➤ Faces of single cones and both faces of double cone contact each other.

**TQI bearings** are available in straight bore with two single cones and one double cone matched together & two double cups with spacer.
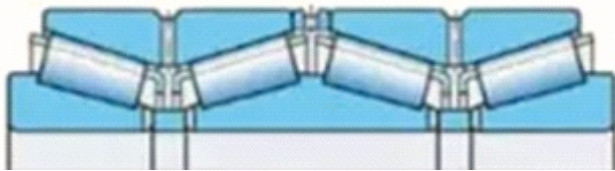


The variants are also provided with helical groove inside bore and slots on face of the bearings for better lubrication. The double and four row bearings are pre-set assemblies from company with exact spacer width to maintain initial bench end play (BEP).The bench end play in each bearing is adjusted by cup & cone spacers. The total spacer width is the measured distance between the adjacent cup & cones and BEP value. The bearings are mostly used in steel plants on roll neck.
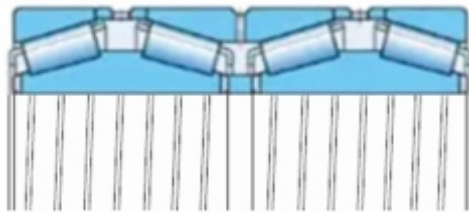


4R- TRB with helical groove inside bore

# Single Row Taper Roller Bearing (Inch series)

**Equivalent radial load dynamic**

$P_r = XF_r + YF_a$

| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**

$P_{or} = 0.5F_r + Y_oF_a$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e, $Y_2$ and $Y_o$ see the table below.

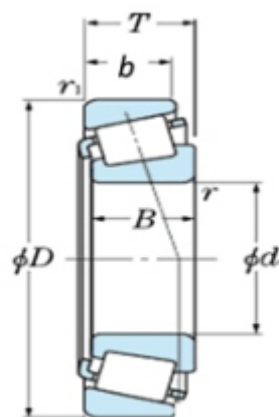| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 15.875 | 42.862 | 14.288 | 14.288 | 9.525 | 1.5 | 1.5 | 20 | 18 | 2055 | 1835 | 2 | 0.70 | 0.85 | 0.47 | 11590/11520 | 0.101 |
| 17.462 | 39.878 | 13.843 | 14.605 | 10.668 | 1.3 | 1.3 | 22 | 23 | 2283 | 2345 | 3 | 0.29 | 2.10 | 1.15 | LM11749/LM11710 | 0.081 |
| 19.05 | 45.237 | 15.494 | 16.637 | 12.065 | 1.3 | 1.3 | 33 | 30 | 3345 | 3048 | 4 | 0.30 | 2.00 | 1.10 | LM11949/LM11910 | 0.119 |
| 19.05 | 49.225 | 18.034 | 19.05 | 14.288 | 1.2 | 1.2 | 45 | 42 | 4625 | 4303 | 5 | 0.28 | 2.14 | 1.18 | M12644/ M12611 | 0.180 |
| 21.43 | 50.005 | 17.526 | 18.288 | 13.97 | 1.3 | 1.3 | 45 | 42 | 4635 | 4322 | 5 | 0.28 | 2.16 | 1.19 | M12649/M12610 | 0.166 |
| 23.812 | 61.912 | 28.575 | 30.416 | 23.812 | 2.36 | 3.3 | 82 | 79 | 8403 | 8012 | 10 | 0.28 | 2.14 | 1.18 | 3659/3620 | 0.300 |
| 25 | 57.15 | 16.8 | 17.2 | 12.7 | 1.0 | 1.5 | 45 | 46 | 4591 | 4691 | 6 | 0.40 | 1.49 | 0.82 | N1449XA | 0.210 |
| 25.4 | 57.15 | 19.431 | 19.431 | 14.732 | 1.6 | 1.6 | 47 | 49 | 4795 | 4995 | 6 | 0.54 | 1.11 | 0.61 | M84548/ M84510 | 0.236 |
| 25.4 | 63.5 | 20.638 | 20.638 | 15.875 | 1.3 | 1.5 | 47 | 48 | 4818 | 4873 | 6 | 0.35 | 1.71 | 0.94 | 15100S/15250X | 0.225 |
| 25.4 | 65.088 | 22.225 | 21.463 | 15.875 | 1.5 | 1.5 | 54 | 52 | 5457 | 5301 | 6 | 0.73 | 0.82 | 0.45 | 23100/23256 | 0.356 |
| 26.988 | 50.29 | 14.224 | 14.732 | 10.668 | 3.5 | 1.3 | 31 | 32 | 3174 | 3282 | 4 | 0.37 | 1.60 | 0.88 | L44649/L44610 | 0.117 |
| 28.575 | 57.15 | 19.845 | 19.355 | 15.875 | 3.5 | 1.5 | 52 | 53 | 5332 | 5443 | 7 | 0.33 | 1.82 | 1.00 | 1988/1922 | 0.216 |
| 28.575 | 62 | 18.161 | 19.05 | 14.288 | 3.5 | 1.3 | 47 | 48 | 4818 | 4873 | 6 | 0.35 | 1.71 | 0.94 | 15112R/15245 | 0.274 |
| 28.575 | 73.025 | 22.225 | 22.225 | 17.462 | 0.8 | 3.3 | 68 | 74 | 6896 | 7564 | 9 | 0.45 | 1.32 | 0.73 | 02872/02820 | 0.477 |
| 29.985 | 62 | 19.05 | 20.638 | 14.288 | 1.3 | 1.3 | 47 | 48 | 4818 | 4873 | 6 | 0.35 | 1.71 | 0.94 | 15117/15245 | 0.275 |
| 30.162 | 64.292 | 21.433 | 21.433 | 16.67 | 1.6 | 1.6 | 58 | 61 | 5880 | 6259 | 7 | 0.55 | 1.09 | 0.60 | M86649/M86610 | 0.336 |
| 31.75 | 59.131 | 15.875 | 16.764 | 11.811 | 3.56 | 1.3 | 39 | 42 | 3939 | 4230 | 5 | 0.41 | 1.46 | 0.80 | LM67048/LM67010 | 0.184 |
| 31.75 | 62 | 18.161 | 19.05 | 14.288 | 3.5 | 1.3 | 47 | 48 | 4818 | 4873 | 6 | 0.35 | 1.71 | 0.94 | 15123/15245 | 0.225 |
| 31.75 | 62 | 19.05 | 20.638 | 14.288 | 3.5 | 1.3 | 47 | 48 | 4818 | 4873 | 6 | 0.35 | 1.71 | 0.94 | 15125/15245 | 0.239 |

# Single Row Taper Roller Bearing (Inch series)

**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

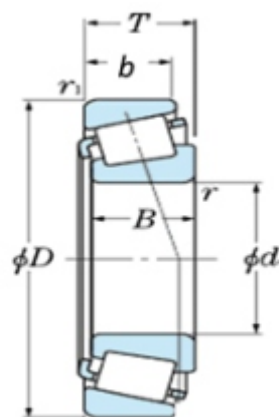**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_0$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 31.75 | 68.263 | 22.225 | 22.225 | 17.463 | 3.5 | 1.5 | 57 | 57 | 5777 | 5821 | 7 | 0.42 | 1.44 | 0.79 | 02475/02420 | 0.379 |
| 31.75 | 69.012 | 19.845 | 19.583 | 15.875 | 3.5 | 1.3 | 51 | 55 | 5240 | 5586 | 7 | 0.38 | 1.57 | 0.86 | 14125A/14276 | 0.350 |
| 31.75 | 72.626) | 30.162 | 29.997 | 23.812 | 1.5 | 3.3 | 88 | 89 | 8962 | 9042 | 11 | 0.33 | 1.80 | 0.99 | 3188S/3120 | 0.574 |
| 33.338 | 68.262 | 22.225 | 22.225 | 17.462 | 0.8 | 1.6 | 64 | 72 | 6508 | 7339 | 9 | 0.55 | 1.09 | 0.60 | M88048/M88010 | 0.382 |
| 33.338 | 69.012 | 19.845 | 19.583 | 15.875 | 0.8 | 1.3 | 51 | 55 | 5240 | 5586 | 7 | 0.38 | 1.57 | 0.86 | 14131/14276 | 0.334 |
| 34.925 | 76.2 | 29.37 | 28.575 | 23.02 | 1.5 | 3.3 | 88 | 106 | 8962 | 10836 | 13 | 0.55 | 1.10 | 0.60 | HM89446X1XA/HM89410F | 0.644 |
| 34.925 | 76.2 | 29.37 | 28.575 | 23.02 | 3.5 | 3.3 | 88 | 106 | 8962 | 10836 | 13 | 0.55 | 1.10 | 0.60 | HM89446/HM89410 | 0.641 |
| 34.925 | 76.2 | 29.37 | 28.575 | 23.812 | 1.5 | 2.8 | 99 | 109 | 10092 | 11152 | 13 | 0.40 | 1.49 | 0.82 | N1696XA/31520 | 0.641 |
| 34.925 | 65.088 | 18.034 | 18.288 | 13.97 | 3.5 | 1.3 | 56 | 61 | 5708 | 6218 | 7 | 0.38 | 1.59 | 0.88 | LM48548/LM48510 | 0.250 |
| 34.925 | 69.012 | 19.845 | 19.583 | 15.875 | 1.5 | 1.3 | 51 | 55 | 5240 | 5586 | 7 | 0.38 | 1.57 | 0.86 | 14137A/14276 | 0.319 |
| 34.925 | 72.233 | 25.4 | 25.4 | 19.842 | 2.4 | 2.4 | 73 | 85 | 7421 | 8614 | 10 | 0.55 | 1.09 | 0.60 | HM88649/HM88610 | 0.498 |
| 34.925 | 73.025 | 23.813 | 24.608 | 19.05 | 1.5 | 0.8 | 80 | 86 | 8152 | 8716 | 10 | 0.29 | 2.07 | 1.14 | 25877/25821 | 0.444 |
| 34.925 | 73.025 | 23.813 | 24.608 | 19.05 | 1.5 | 2.3 | 80 | 86 | 8152 | 8716 | 10 | 0.29 | 2.07 | 1.14 | 25877/25820 | 0.444 |
| 34.925 | 76.2 | 29.37 | 28.575 | 23.812 | 1.5 | 3.3 | 90 | 97 | 9213 | 9878 | 12 | 0.40 | 1.49 | 0.82 | 31594/31520 | 0.619 |
| 34.925 | 76.2 | 29.37 | 28.575 | 23.812 | 1.5 | 2.8 | 73 | 72 | 7478 | 7370 | 9 | 0.40 | 1.49 | 0.82 | LTN1683FXA | 0.583 |
| 34.989 | 79.985 | 32.751 | 30.925 | 25 | 2.5 | 2.5 | 97 | 104 | 9933 | 10632 | 13 | 0.37 | 1.64 | 0.90 | 3478X/3424S | 0.765 |
| 34.989 | 82.931 | 23.812 | 25.4 | 19.05 | 0.8 | 0.8 | 86 | 98 | 8757 | 10031 | 12 | 0.33 | 1.79 | 0.99 | 25572/25520 | 0.645 |
| 37.966 | 63 | 17 | 17 | 13.5 | 2 | 1.3 | 44 | 53 | 4465 | 5445 | 7 | 0.42 | 1.43 | 0.79 | N1504XA/JL69310 | 0.195 |

# Single Row Taper Roller Bearing (Inch series)

**Equivalent radial load dynamic**

$P_r = XF_r + YF_a$

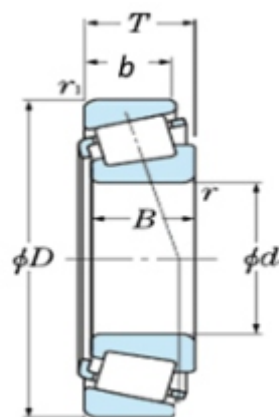| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**

$P_{or} = 0.5F_r + Y_oF_a$

When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 38.1 | 65.088 | 18.034 | 18.288 | 13.97 | 3.5 | 1.3 | 48 | 56 | 4864 | 5678 | 7 | 0.33 | 1.82 | 1.00 | LM29749/LM29710 | 0.232 |
| 38.1 | 79.375 | 29.37 | 29.771 | 23.812 | 3.5 | 3.2 | 102 | 111 | 10389 | 11335 | 14 | 0.37 | 1.64 | 0.90 | 3490/3420 | 0.675 |
| 38.1 | 65.107 | 19.812 | 20 | 15.748 | 2.3 | 1.3 | 52 | 68 | 5320 | 6962 | 8 | 0.43 | 1.40 | 0.77 | N1261X1/ N1261FPX1 | 0.267 |
| 38.1 | 65.107 | 19.812 | 20 | 15.748 | 2.3 | 1.3 | 52 | 68 | 5320 | 6962 | 8 | 0.43 | 1.40 | 0.77 | TS1N1261FPX1X1 | 0.267 |
| 38.1 | 65.107 | 19.812 | 20 | 15.748 | 2.3 | 1.3 | 52 | 68 | 5320 | 6962 | 8 | 0.43 | 1.40 | 0.77 | TS1N1261FPX1X1T2X | 0.257 |
| 38.1 | 88.5 | 26.988 | 29.083 | 22.225 | 3.6 | 1.6 | 110 | 112 | 11210 | 11384 | 14 | 0.26 | 2.28 | 1.25 | 418/414 | 0.810 |
| 39.688 | 73.025 | 19.395 | 22.098 | 15.265 | 2.3 | 1.5 | 55 | 65 | 5608 | 6628 | 8 | 0.31 | 1.94 | 1.06 | U399/U360L | 0.36 |
| 39.688 | 76.2 | 23.812 | 25.654 | 19.05 | 3.5 | 0.8 | 86 | 97 | 8791 | 9888 | 12 | 0.30 | 2.00 | 1.10 | TMB2789/2729 | 0.477 |
| 39.688 | 76.2 | 23.812 | 25.654 | 19.05 | 3.6 | 0.8 | 82 | 92 | 8334 | 9378 | 11 | 0.30 | 2.00 | 1.10 | 2789/2729 | 0.477 |
| 40 | 80 | 21 | 22.403 | 17.826 | 3.5 | 1.3 | 69 | 76 | 7034 | 7778 | 9 | 0.27 | 2.22 | 1.22 | 344/332 | 0.469 |
| 40.988 | 67.975 | 17.5 | 18 | 13.5 | 3.5 | 1.5 | 51 | 61 | 5172 | 6259 | 7 | 0.35 | 1.71 | 0.94 | LM300849X/LM300811 | 0.239 |
| 41.275 | 73.431 | 19.558 | 19.812 | 14.732 | 3.6 | 0.8 | 65 | 73 | 6649 | 7458 | 9 | 0.40 | 1.50 | 0.83 | LM501349/LM501310 | 0.333 |
| 41.275 | 76.2 | 22.225 | 23.017 | 17.462 | 3.6 | 0.8 | 74 | 83 | 7571 | 8494 | 10 | 0.39 | 1.53 | 0.84 | 24780/24720 | 0.423 |
| 41.275 | 82.55 | 26.543 | 25.654 | 20.193 | 3.5 | 3.3 | 94 | 112 | 9590 | 11366 | 14 | 0.55 | 1.09 | 0.60 | M802048/M802011 | 0.619 |
| 41.275 | 82.55 | 26.543 | 25.654 | 20.193 | 3.5 | 3.3 | 92 | 106 | 9428 | 10758 | 13 | 0.55 | 1.09 | 0.60 | ASTM802048XA/11F | 0.628 |
| 41.275 | 82.55 | 26.543 | 25.654 | 20.193 | 3.5 | 3.3 | 92 | 106 | 9428 | 10758 | 13 | 0.55 | 1.10 | 0.60 | LTASTM802048XA/11F | 0.629 |
| 41.275 | 87.312 | 30.162 | 30.886 | 23.812 | 1.5 | 3.5 | 109 | 123 | 11074 | 12528 | 15 | 0.31 | 1.96 | 1.08 | 3585/3525 | 0.834 |
| 41.275 | 88.9 | 30.162 | 29.37 | 23.02 | 3.5 | 3.3 | 109 | 119 | 11093 | 12134 | 15 | 0.55 | 1.10 | 0.60 | ASTBHM803146XA/10 | 0.857 |
| 41.275 | 95.25 | 30.958 | 28.575 | 22.225 | 3.5 | 0.8 | 110 | 118 | 11169 | 12063 | 14 | 0.74 | 0.81 | 0.45 | HM903245XA/HM903210 | 1.036 |

# Single Row Taper Roller Bearing (Inch series)

**Equivalent radial load**
*dynamic*
$P_r = XF_r + YF_a$

| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

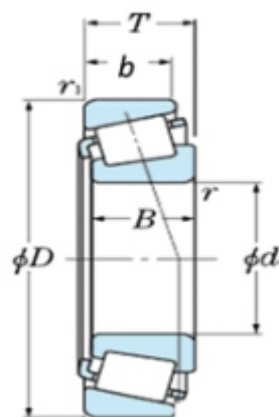*static*
$Por = 0.5F_r + Y_oF_a$
When $Por < F_r$ use $Por = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_0$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 42.07 | 91 | 39.688 | 40.386 | 33.338 | 3.5 | - | 168 | 186 | 17120 | 18966 | 23 | - | - | - | 4T4395XA CONE ASSLY. | 0.771 |
| 42.875 | 82.931 | 26.988 | 25.4 | 22.225 | 3.5 | 2.3 | 86 | 98 | 8768 | 10010 | 12 | 0.33 | 1.79 | 0.99 | 25577/25523 | 0.615 |
| 44.45 | 95.25 | 27.783 | 28.575 | 22.225 | 0.8 | 2.3 | 122 | 142 | 12433 | 14434 | 17 | 0.33 | 1.82 | 1.00 | 33885/33821 | 0.976 |
| 44.45 | 92.075 | 30.163 | 29.37 | 23.02 | 3.6 | 3.3 | 111 | 125 | 11303 | 12742 | 15 | 0.55 | 1.09 | 0.60 | HM803149/HM803112 | 0.920 |
| 44.45 | 93.264 | 30.162 | 30.302 | 23.812 | 3.56 | 3.3 | 114 | 134 | 11645 | 13660 | 16 | 0.34 | 1.77 | 0.97 | 3782/3720 | 0.961 |
| 44.45 | 95.25 | 30.958 | 28.875 | 22.225 | 3.5 | 0.8 | 110 | 12 | 11234 | 1213 | 1 | 0.74 | 0.81 | 0.45 | HM903249/HM303210 | 1.838 |
| 44.45 | 111.125 | 38.1 | 36.975 | 30.162 | 3.5 | 3.3 | 160 | 181 | 16360 | 18400 | 22 | 0.30 | 2.02 | 1.11 | 535/532A | 1.838 |
| 44.45 | 112.713 | 30.133 | 26.909 | 20.638 | 0.8 | 3.3 | 119 | 141 | 12159 | 14322 | 17 | 0.88 | 0.68 | 0.37 | 55176C/55443 | 1.500 |
| 44.987 | 79.975 | 23.75 | 26 | 18 | 2.5 | 1.5 | 72 | 86 | 7311 | 8810 | 11 | 0.32 | 1.88 | 1.03 | U497/U460 | 0.500 |
| 45.242 | 77.788 | 21.43 | 19.842 | 16.667 | 3.5 | 0.8 | 64 | 73 | 6496 | 7401 | 9 | 0.43 | 1.40 | 0.77 | LM603049/LM603012 | 0.381 |
| 45.242 | 77.788 | 19.842 | 19.842 | 15.08 | 3.5 | 0.8 | 64 | 73 | 6496 | 7411 | 9 | 0.43 | 1.41 | 0.77 | LM603049/LM603011 | 0.358 |
| 45.242 | 77.788 | 19.842 | 19.842 | 15.08 | 3.5 | 0.8 | 65 | 72 | 6649 | 7382 | 9 | 0.43 | 1.40 | 0.77 | ASTLM603049/TS1LM603011 | 0.360 |
| 45.242 | 77.788 | 19.842 | 19.842 | 15.08 | 3.5 | 0.8 | 65 | 72 | 6649 | 7382 | 9 | 0.43 | 1.40 | 0.77 | ASTLM603049T2X/TS1LM603011FT2X | 0.358 |
| 45.618 | 82.931 | 23.812 | 25.4 | 19.05 | 3.5 | 2.3 | 86 | 98 | 8757 | 10031 | 12 | 0.33 | 1.79 | 0.99 | 25590/25520 | 0.543 |
| 45.618 | 82.931 | 26.988 | 25.4 | 20 | 3.56 | 2.5 | 84 | 93 | 8574 | 9429 | 11 | 0.40 | 1.49 | 0.82 | LTN1684FXA | 0.550 |
| 45.618 | 83.058 | 23.876 | 25.4 | 19.114 | 3.58 | 2 | 88 | 98 | 8994 | 10034 | 12 | 0.33 | 1.82 | 1.00 | 4T25590/25522 | 0.538 |
| 45.618 | 88.9 | 20.638 | 22.225 | 16.513 | 3.5 | 1.3 | 87 | 94 | 8882 | 9562 | 11 | 0.32 | 1.88 | 1.03 | 369S/362A | 0.548 |
| 45.618 | 95.25 | 30.162 | 29.37 | 23.02 | 3.5 | 3.3 | 123 | 149 | 12502 | 15158 | 18 | 0.55 | 1.10 | 0.60 | HM804846/HM804810 | 0.773 |
| 49.213 | 103.18 | 43.658 | 44.475 | 36.51 | 3.5 | 3.3 | 195 | 232 | 19865 | 23649 | 28 | 0.30 | 2.02 | 1.11 | 5395/5335 | 0.773 |

# Single Row Taper Roller Bearing (Inch series)

**Equivalent radial load**

*dynamic*

$P_r = XF_r + YF_a$

| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

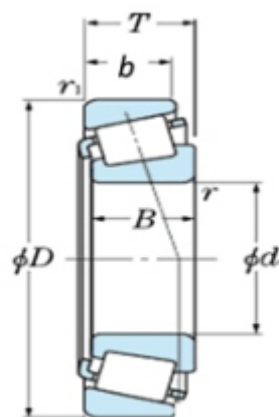*static*

$Por = 0.5F_r + Y_oF_a$

When $Por < F_r$ use $Por = F_r$

For values of e, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 49.987 | 112.713 | 30.1875 | 26.909 | 20.638 | 3.5 | 3.3 | 119 | 141 | 12159 | 14322 | 17 | 0.88 | 0.68 | 0.37 | 55187C/55443 | 1.415 |
| 50 | 93.564 | 30.162 | 30.302 | 23.812 | 2.0 | 3.3 | 116 | 139 | 11874 | 14179 | 17 | 0.34 | 1.77 | 0.97 | N1280/3720 | 0.862 |
| 50.8 | 93.264 | 30.162 | 30.302 | 23.812 | 3.56 | 3.3 | 114 | 134 | 11645 | 13660 | 16 | 0.34 | 1.77 | 0.97 | 3780XA/3720 | 0.840 |
| 50.8 | 92.075 | 24.608 | 25.4 | 19.845 | 3.56 | 0.8 | 95 | 116 | 9659 | 11865 | 14 | 0.38 | 1.59 | 0.87 | 28580/28521 | 0.703 |
| 50.8 | 93.264 | 30.162 | 30.302 | 23.812 | 3.56 | 3.3 | 114 | 134 | 11645 | 13660 | 16 | 0.34 | 1.76 | 0.97 | 3780/3720 | 0.618 |
| 50.8 | 95.25 | 27.783 | 28.575 | 22.225 | 3.5 | 0.8 | 125 | 142 | 12770 | 14438 | 17 | 0.33 | 1.82 | 1.00 | 4TB33889XA/22F | 0.853 |
| 50.8 | 96.838 | 21 | 21.946 | 15.875 | 2.3 | 0.8 | 86 | 95 | 8734 | 9643 | 12 | 0.35 | 1.69 | 0.93 | 385A/382A | 0.663 |
| 50.8 | 101.6 | 31.75 | 31.75 | 25.4 | 3.5 | 3.3 | 137 | 157 | 13952 | 15994 | 19 | 0.40 | 1.50 | 0.82 | 49585XA/20 | 1.135 |
| 50.8 | 104.775 | 30.163 | 30.958 | 23.812 | 0.8 | 3.18 | 146 | 169 | 14847 | 17233 | 21 | 0.33 | 1.80 | 0.99 | 45285AXA/45220 | 1.208 |
| 50.8 | 111.125 | 30.162 | 26.909 | 20.638 | 3.6 | 3.3 | 124 | 149 | 12673 | 15189 | 18 | 0.88 | 0.68 | 0.37 | 55200C/55437 | 1.340 |
| 50.8 | 116.8 | 36.512 | 36.512 | 28.575 | 0.8 | 0.8 | 167 | 209 | 17051 | 21271 | 25 | 0.49 | 1.23 | 0.68 | TS2HM807046XA/10TSF | 1.545 |
| 52.388 | 111.125 | 30.162 | 26.909 | 20.638 | 3.6 | 3.3 | 111 | 149 | 11315 | 15189 | 18 | 0.88 | 0.68 | 0.38 | 55206C/55437 | 1.310 |
| 53.975 | 107.95 | 36.512 | 36.957 | 28.575 | 3.5 | 3.3 | 160 | 181 | 16360 | 18410 | 22 | 0.30 | 2.02 | 1.11 | 539/532X | 1.450 |
| 53.975 | 114.981 | 65.085 | 26.909 | 44.445 | 2.3 | 0.50-Ch | 200 | 287 | 20391 | 29246 | 35 | 0.88 | 0.68 | 0.38 | 55194/55452D | 3.120 |
| 53.975 | 123.825 | 36.512 | 32.791 | 25.4 | 3.5 | 3.3 | 177 | 193 | 18004 | 19674 | 24 | 0.74 | 0.81 | 0.45 | 72212C/72487 | 2.010 |
| 57.15 | 104.775 | 30.162 | 29.317 | 24.605 | 2.3 | 3.3 | 131 | 155 | 13358 | 15800 | 19 | 0.34 | 1.79 | 0.98 | 462A/453X | 1.060 |
| 57.15 | 112.712 | 30.162 | 30.162 | 23.813 | 8.0 | 3.3 | 170 | 219 | 17308 | 22294 | 27 | 0.34 | 1.77 | 0.97 | 39581/39520 | 1.315 |
| 59.985 | 109.985 | 29.751 | 28 | 23.813 | 2.4 | 1.5 | 131 | 172 | 13403 | 17492 | 21 | 0.40 | 1.50 | 0.83 | 3977X/3922X (X32212) | 1.200 |

# Single Row Taper Roller Bearing (Inch series)



**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

| $\frac{Fa}{Fr} \leqq e$ | | $\frac{Fa}{Fr} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

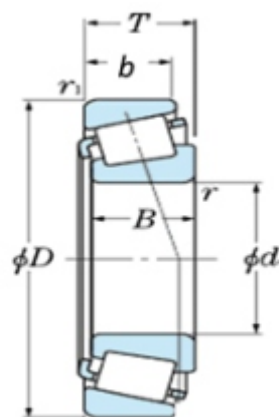**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | $Y_2$ | $Y_o$ | | |
| mm | | | | | | | KN | | Kgf | | KN | e | | | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 60 | 112.712 | 30.162 | 30.162 | 23.812 | 0.8 | 3 | 170 | 219 | 17313 | 22300 | 27 | - | - | - | N1258 CONE ASSLY. | 1.368 |
| 60.325 | 100 | 25.4 | 25.4 | 19.845 | 3.6 | 3.3 | 95 | 141 | 9684 | 14373 | 17 | 0.42 | 1.43 | 0.79 | 28985/28921 | 0.750 |
| 63.5 | 110 | 29.37 | 30.048 | 23.02 | 7.1 | 1.5 | 131 | 172 | 13403 | 17492 | 21 | 0.40 | 1.49 | 0.82 | 3982X/3927XA | 1.100 |
| 63.5 | 112.712 | 30.163 | 30.048 | 23.813 | 7.1 | 3.3 | 131 | 172 | 13403 | 17492 | 21 | 0.40 | 1.50 | 0.83 | 3982X/3920 | 1.214 |
| 63.5 | 112.712 | 30.162 | 30.162 | 23.812 | 3.6 | 3.3 | 145 | 203 | 14781 | 20693 | 25 | 0.34 | 1.76 | 0.97 | 39585/39520 | 1.380 |
| 63.5 | 119.985 | 32.751 | 30.914 | 26.949 | 2.3 | 0.8 | 170 | 219 | 17319 | 22273 | 27 | 0.34 | 1.77 | 0.97 | 39586/39528 | 1.500 |
| 63.5 | 122.238 | 38.1 | 38.354 | 29.718 | 7.1 | 1.5 | 213 | 249 | 21692 | 25403 | 30 | 0.34 | 1.78 | 0.98 | HM212047/HM212010 | 1.933 |
| 63.5 | 130 | 36.937 | 33.937 | 28 | 6.5 | 3.5 | 192 | 212 | 19580 | 21570 | 26 | 0.38 | 1.57 | 0.86 | JHM513640/JHM513615 | 2.126 |
| 63.5 | 140.03 | 36.512 | 33.236 | 23.52 | 5.1 | 2.3 | 206 | 226 | 20996 | 23028 | 28 | 0.87 | 0.69 | 0.38 | 4TB78250/78551 | 2.488 |
| 65 | 105 | 24 | 23 | 18.5 | 3.0 | 1.0 | 94 | 128 | 9582 | 13048 | 16 | 0.45 | 1.33 | 0.73 | JLM710949C/JLM710910 | 0.750 |
| 65.088 | 135.755 | 53.975 | 56.007 | 44.45 | 3.5 | 3.3 | 297 | 356 | 30255 | 36279 | 43 | 0.32 | 1.85 | 1.02 | 6379/6320 | 3.598 |
| 65.088 | 135.755 | 53.975 | 56.007 | 44.45 | 7.5 | 3.2 | 305 | 356 | 31075 | 36290 | 43 | 0.32 | 1.88 | 1.03 | ASTB6379X1XA/6320 | 3.603 |
| 66.675 | 123.825 | 38.1 | 36.678 | 30.162 | 3.6 | 3.3 | 180 | 221 | 18381 | 22528 | 27 | 0.35 | 1.71 | 0.94 | 559/552A | 1.900 |
| 66.675 | 110 | 22 | 21.996 | 18.824 | 3.6 | 1.3 | 96 | 114 | 9819 | 11621 | 14 | 0.40 | 1.50 | 0.83 | 395S/394A | 0.784 |
| 66.675 | 112.712 | 30.162 | 30.048 | 23.813 | 3.5 | 3.3 | 131 | 172 | 13403 | 17482 | 21 | 0.40 | 1.49 | 0.82 | 3984/3920 | 1.142 |
| 66.675 | 112.712 | 30.162 | 30.048 | 23.813 | 4.51 | 2.6 | 138 | 183 | 14059 | 18650 | 22 | 0.40 | 1.50 | 0.83 | 3984MANXA/20F | 1.157 |
| 66.675 | 112.712 | 30.162 | 30.162 | 23.813 | 3.6 | 3.0 | 170 | 219 | 17313 | 22300 | 27 | 0.34 | 1.76 | 0.97 | 39590/39520 | 1.203 |
| 66.675 | 122.238 | 38.1 | 38.354 | 29.718 | 3.56 | 3.3 | 209 | 244 | 21350 | 24873 | 30 | 0.34 | 1.76 | 0.97 | HM212049/HM212011 | 1.860 |
| 66.675 | 122.238 | 38.1 | 38.354 | 29.718 | 3.56 | 3.3 | 212 | 248 | 21646 | 25321 | 30 | 0.34 | 1.78 | 0.98 | N1691XA/HM212011 | 1.862 |

# Single Row Taper Roller Bearing (Inch series)



**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

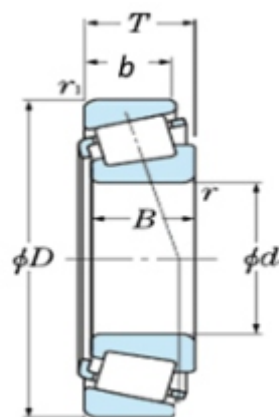| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**
$P_{or} = 0.5F_r + Y_o F_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 66.675 | 127 | 36.512 | 36.512 | 26.988 | 3.5 | 3.3 | 184 | 231 | 18758 | 23496 | 28 | 0.50 | 1.20 | 0.66 | HM813844/10 | 1.961 |
| 68.262 | 110 | 22 | 21.996 | 18.824 | 2.3 | 1.3 | 86 | 114 | 8767 | 11621 | 14 | 0.40 | 1.50 | 0.83 | 399A/394A | 0.759 |
| 68.262 | 152.4 | 47.625 | 46.038 | 31.75 | 3.5 | 3 | 284 | 283 | 28964 | 28847 | 33 | 0.66 | 0.91 | 0.50 | AST9185XA/9121F | 3.688 |
| 69.85 | 120 | 29.794 | 29.007 | 24.237 | 3.5 | 2.0 | 150 | 190 | 15310 | 19368 | 23 | 0.38 | 1.56 | 0.86 | 482/472 | 1.320 |
| 69.85 | 127 | 36.512 | 36.17 | 28.575 | 3.5 | 3.3 | 185 | 233 | 18872 | 23741 | 28 | 0.36 | 1.65 | 0.91 | 566/563 | 1.900 |
| 69.85 | 146.05 | 41.275 | 39.688 | 25.4 | 3.5 | 3.3 | 243 | 250 | 24778 | 25492 | 30 | 0.78 | 0.77 | 0.42 | H913849/10 | 2.870 |
| 69.865 | 120 | 32.545 | 32.545 | 26.195 | 3.6 | 3.3 | 168 | 219 | 17094 | 22343 | 27 | 0.36 | 1.67 | 0.92 | 47487/47420 | 1.467 |
| 71.438 | 120 | 32.545 | 32.545 | 26.195 | 3.5 | 3.3 | 173 | 219 | 17589 | 22331 | 27 | 0.36 | 1.67 | 0.92 | 4TB47490/47420 | 1.418 |
| 71.438 | 127 | 36.512 | 36.17 | 28.575 | 3.5 | 3.3 | 185 | 233 | 18872 | 23741 | 28 | 0.36 | 1.65 | 0.91 | 567A/563 | 1.85 |
| 73.025 | 139.992 | 36.512 | 36.098 | 28.575 | 3.5 | - | 196 | 27 | 20025 | 2742 | - | - | - | - | 576 CONE ASSLY. | 1.705 |
| 73.025 | 112.712 | 25.4 | 25.4 | 19.05 | 3.56 | 3.3 | 107 | 151 | 10903 | 15392 | 18 | 0.49 | 1.23 | 0.68 | TMB29685/TMB29620 | 0.873 |
| 73.025 | 127 | 36.512 | 36.17 | 28.575 | 3.5 | 3.3 | 185 | 233 | 18872 | 23741 | 28 | 0.36 | 1.65 | 0.91 | 567/563 | 1.825 |
| 76.2 | 149.225 | 53.975 | 54.229 | 44.45 | 9.65 | 3.3 | 323 | 411 | 32904 | 41845 | 48 | 0.36 | 1.66 | 0.91 | 6461A/6420 | 4.240 |
| 76.2 | 127 | 30.162 | 31 | 22.225 | 3.5 | 3.3 | 154 | 198 | 15675 | 20224 | 24 | 0.42 | 1.43 | 0.79 | 42687/42620 | 1.460 |
| 77.788 | 127 | 30.162 | 31 | 22.225 | 3.5 | 3.3 | 153 | 198 | 15635 | 20169 | 24 | 0.42 | 1.43 | 0.79 | 42690XA/42620F | 1.376 |
| 80 | 140 | 35.25 | 33 | 28 | 3.0 | 3.0 | 208 | 282 | 21247 | 28767 | 33 | 0.40 | 1.49 | 0.82 | M32216A/M32216E | 2.192 |
| 82.55 | 139.992 | 36.512 | 36.098 | 28.575 | 3.5 | 3.2 | 195 | 258 | 19854 | 26300 | 30 | 0.40 | 1.49 | 0.82 | 580/572F | 2.155 |
| 82.55 | 136.525 | 30.162 | 29.769 | 22.225 | 3.5 | 3.3 | 142 | 189 | 14477 | 19276 | 23 | 0.44 | 1.35 | 0.74 | 495/493 | 2.020 |
| 82.55 | 139.7 | 36.512 | 36.098 | 28.575 | 3.5 | 3.3 | 195 | 259 | 19900 | 26371 | 31 | 0.40 | 1.49 | 0.82 | 580/572X | 2.138 |

# Single Row Taper Roller Bearing (Inch series)

**Equivalent radial load**
*dynamic*
$P_r = XF_r + YF_a$

| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

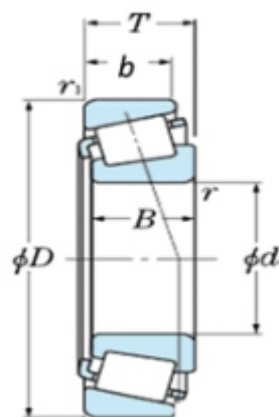*static*
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_0$ | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 82.55 | 139.992 | 36.512 | 36.098 | 28.575 | 3.5 | 3.3 | 195 | 259 | 19900 | 26371 | 31 | 0.40 | 1.49 | 0.82 | 580/572 | 2.138 |
| 82.57 | 150 | 38.5 | 36 | 30 | 6.5 | 2 | 254 | 306 | 25924 | 31233 | 36 | 0.42 | 1.43 | 0.79 | N1573/32217F | 2.770 |
| 85 | 130 | 30 | 29 | 24 | 3.0 | 2.5 | 140 | 223 | 14271 | 22732 | 27 | 0.44 | 1.36 | 0.75 | JM716649/JM716610 | 1.370 |
| 85.725 | 136.525 | 30.162 | 26.769 | 22.225 | 3.5 | 3.3 | 145 | 190 | 14739 | 19409 | 22 | 0.44 | 1.35 | 0.74 | 497/493 | 1.525 |
| 92.075 | 146.05 | 33.338 | 34.925 | 26.195 | 3.5 | 3.3 | 189 | 277 | 19261 | 28267 | 32 | 0.45 | 1.34 | 0.74 | 47890/20 | 2.057 |
| 92.075 | 152.4 | 39.688 | 36.322 | 30.162 | 3.56 | 3.3 | 202 | 280 | 20619 | 28573 | 32 | 0.44 | 1.36 | 0.75 | 598/592A | 2.619 |
| 95 | 135 | 20 | 20 | 14 | 5.0 | 2.5 | 92 | 146 | 9407 | 14900 | 17 | 0.58 | 1.03 | 0.57 | JL819349/JL819310 | 0.862 |
| 95.25 | 152.4 | 39.688 | 36.322 | 30.162 | 5.0 | 3.3 | 203 | 281 | 20665 | 28654 | 32 | 0.44 | 1.36 | 0.75 | 594A/592A | 2.090 |
| 95.25 | 168.275 | 41.275 | 41.275 | 30.162 | 3.5 | 3.3 | 251 | 347 | 25574 | 35372 | 39 | 0.47 | 1.28 | 0.70 | 683/672 | 2.680 |
| 98.425 | 157.162 | 36.512 | 36.116 | 26195 | 3.5 | 3.3 | 213 | 308 | 21703 | 31346 | 35 | 0.47 | 1.26 | 0.70 | 52387/52618 | 2.521 |
| 99.975 | 156.975 | 42 | 42 | 34 | 3.0 | 3.5 | 281 | 381 | 28656 | 38807 | 43 | 0.33 | 1.82 | 1.00 | HM220149/HM220110 | 2.797 |
| 101.6 | 200 | 52.761 | 49.212 | 34.25 | 3.5 | 3.3 | 352 | 481 | 35893 | 49047 | 52 | 0.63 | 0.95 | 0.52 | 98400/98788 | 6.850 |
| 107.95 | 158.75 | 23.02 | 21.438 | 15.875 | 3.56 | 3.3 | 129 | 197 | 13176 | 20061 | 22 | 0.61 | 0.98 | 0.54 | TMB37425/TMB37625 | 1.370 |
| 107.95 | 158.75 | 23.02 | 21.438 | 15.875 | 3.5 | 3.3 | 130 | 191 | 13298 | 19435 | 21 | 0.61 | 0.98 | 0.54 | 4TB37425/37625F | 1.385 |
| 127 | 165.895 | 18.258 | 17.462 | 13.495 | 1.5 | 1.5 | 96 | 148 | 9823 | 15117 | 16 | 0.29 | 2.04 | 1.12 | 4TBLL225749/10 | 0.922 |
| 127 | 182.56 | 39.69 | 38.1 | 33.34 | 3.5 | 3.3 | 269 | 430 | 27401 | 43833 | 46 | 0.31 | 1.94 | 1.06 | 48290/48220 | 3.320 |
| 127 | 228.6 | 53.975 | 49.428 | 38.1 | 3.4 | 3.3 | 464 | 593 | 47312 | 60398 | 61 | 0.74 | 0.81 | 0.45 | HM926747/HM926710 | 8.830 |
| 127 | 304.8 | 88.9 | 82.55 | 57.15 | 6.4 | 6.4 | 991 | 1281 | 101153 | 130755 | 124 | 0.73 | 0.82 | 0.45 | HH932132/HH932110 | 30.100 |
| 127 | 234.95 | 63.5 | 63.5 | 49.212 | 6.4 | 3.3 | 525 | 827 | 53533 | 84328 | 84 | 0.63 | 0.95 | 0.52 | 95500/95925 | 11.800 |

nbc
flexible solutions

nbc
flexible solutions

# Single Row Taper Roller Bearing (Inch series)



**Equivalent radial load**
*dynamic*
$P_r=XF_r+YF_a$

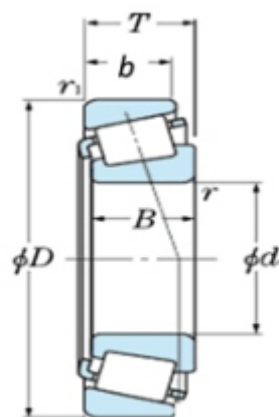| $\frac{Fa}{Fr}\leqq e$ | | $\frac{Fa}{Fr}>e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y2 |

*static*
$Por=0.5F_r+Y_oF_a$
When $P_{or}<F_r$ use $P_{or}=F_r$
For values of e, Y2 and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Approx.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | Y2 | Yo | | |
| d | D | T | B | b | r | r1 | Cr | Cor | Cr | Cor | Cu | | | | | |
| 139.7 | 236.538 | 57.15 | 56.64 | 44.45 | 3.5 | 3.3 | 492 | 815 | 50153 | 83038 | 82 | 0.32 | 1.88 | 1.03 | HM231132/HM231110 | 10.260 |
| 146.05 | 236.538 | 57.15 | 56.642 | 44.45 | 3.5 | 3.3 | 488 | 794 | 49795 | 81020 | 80 | 0.32 | 1.88 | 1.03 | HM231140/HM231110 | 9.340 |
| 152.4 | 285.75 | 76.2 | 73.025 | 55.563 | 1.5 | 6.4 | 778 | 1101 | 79331 | 112267 | 106 | 0.40 | 1.50 | 0.83 | EE217060/112 | 20.6 |
| 152.4 | 307.975 | 88.9 | 93.662 | 66.675 | 9.7 | 6.8 | 1000 | 1350 | 101937 | 137615 | 128 | 0.33 | 1.82 | 1.00 | HH234048/HH234010 | 30.000 |
| 155.575 | 336.55 | 85.725 | 79.375 | 53.975 | 6.4 | 6.0 | 1060 | 1358 | 108060 | 138389 | 126 | 0.81 | 0.74 | 0.41 | H936340/H936313 | 36.600 |
| 159.951 | 244.475 | 47.625 | 46.83 | 33.338 | 3.5 | 3.3 | 354 | 585 | 36086 | 59633 | 58 | 0.35 | 1.71 | 0.94 | 81630/81962 | 7.210 |
| 165.1 | 336.55 | 92.07 | 95.25 | 69.85 | 3.3 | 6.4 | 1349 | 1730 | 137496 | 176330 | 160 | 0.37 | 1.62 | 0.89 | HH437549/HH437510 | 39.000 |
| 165.1 | 225.425 | 41.275 | 39.688 | 33.338 | 3.5 | 3.3 | 261 | 575 | 26614 | 58632 | 57 | 0.38 | 1.58 | 0.87 | 46790/46720 | 4.650 |
| 174.625 | 311.15 | 82.55 | 82.55 | 65.088 | 6.4 | 6.4 | 1000 | 1600 | 101937 | 163099 | 150 | 0.33 | 1.82 | 1.00 | H238148/H238110 | 27.500 |
| 174.625 | 247.65 | 47.62 | 47.62 | 38.1 | 3.5 | 3.3 | 393 | 694 | 40032.7 | 70693 | 68 | 0.44 | 1.36 | 0.75 | 67787/67720 | 1.230 |
| 190.5 | 266.7 | 47.63 | 46.83 | 38.1 | 3.5 | 3.3 | 399 | 728 | 40689.3 | 74179 | 69 | 0.48 | 1.25 | 0.69 | 67885/67820 | 8.000 |
| 190.5 | 428.625 | 106.362 | 95.25 | 61.912 | 6.4 | 6.4 | 1341 | 1522 | 136699 | 155097 | 132 | 0.76 | 0.79 | 0.43 | EE350750/EE351687 | 63.100 |
| 203.2 | 482.6 | 117.475 | 95.25 | 73.025 | 6.4 | 6.4 | 1400 | 2000 | 142857 | 204081 | 169 | 0.87 | 0.69 | 0.38 | EE380080/EE380190 | 96.000 |
| 206.38 | 336.55 | 98.25 | 100.01 | 77.79 | 3.3 | 3.3 | 1288 | 2049 | 131260 | 208879 | 185 | 0.33 | 1.82 | 1.00 | H242649/H242610 | 34.280 |
| 228.6 | 320.68 | 50.8 | 49.21 | 33.34 | 6.4 | 3.3 | 462 | 743 | 47125.9 | 75719 | 67 | 0.49 | 1.22 | 0.67 | 88900/88126 | 12.660 |
| 234.95 | 384.175 | 112.712 | 112.712 | 90.488 | 6.4 | 6.4 | 1460 | 2730 | 148979 | 278571 | 237 | 0.33 | 1.82 | 1.00 | H247549/H247510 | 50.500 |
| 247.65 | 346.075 | 63.5 | 63.5 | 50.8 | 6.4 | 6.4 | 840 | 1600 | 85653.1 | 163149 | 141 | 0.34 | 1.76 | 0.97 | M348449/10 | 17.5 |
| 247.65 | 406.4 | 115.89 | 117.475 | 93.662 | 6.4 | 3.3 | 3902 | 6315 | 397749 | 643680 | 540 | 0.38 | 1.58 | 0.87 | HH249949/H249910 (N1053) | 60.200 |
| 254 | 533.4 | 133.35 | 120.65 | 77.78 | 6.4 | 6.4 | 2328 | 3301 | 237268 | 336510 | 232 | 0.87 | 0.69 | 0.38 | HH953749/HH953710 | 135.000 |

# Single Row Taper Roller Bearing (Inch series)



**Equivalent radial load**

*dynamic*

$P_r = XF_r + YF_a$

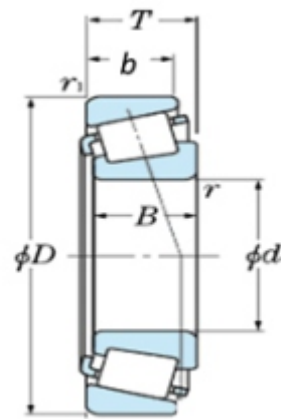| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

*static*

$P_{or} = 0.5F_r + Y_oF_a$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | $Y_2$ | $Y_0$ | | |
| mm | | | | | | | KN | | Kgf | | KN | e | | | | |
| d | D | T | B | b | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | |
| 266.7 | 444.5 | 121.031 | 117.475 | 88.9 | 6.4 | 6.4 | 2057 | 3522 | 209673 | 359040 | 284 | 0.58 | 1.03 | 0.57 | H852849/H852810 | 72.000 |
| 317.5 | 635 | 165.1 | 146.015 | 114.3 | 19.0 | 12.7 | 2910 | 4960 | 296938 | 506122 | 379 | 0.94 | 0.64 | 0.35 | NP340527/NP360214 | 233.100 |
| 317.5 | 622.3 | 147.638 | 131.762 | 82.55 | 14.2 | 12.7 | 2946 | 4281 | 300301 | 436414 | 285 | 0.94 | 0.64 | 0.35 | H961649/H961610 | 176.800 |
| 317.5 | 444.5 | 63.5 | 61.912 | 39.688 | 8.0 | 1.5 | 750 | 1300 | 76530 | 132653 | 106 | 0.38 | 1.58 | 0.87 | EE291250/EE291750 | 26.500 |
| 368.3 | 609.6 | 142.875 | 139.7 | 111.125 | 8.0 | 6.4 | 2750 | 5060 | 280612 | 516326 | 383 | 0.35 | 1.71 | 0.94 | EE321145/EE321240 | 156.000 |
| 371.475 | 501.65 | 74.612 | 66.675 | 50.8 | 6.4 | 3.3 | 910 | 1820 | 92763 | 185525 | 143 | 0.44 | 1.36 | 0.75 | EE231462/EE231975 | 36.000 |
| 381 | 522.288 | 85.725 | 84.138 | 61.912 | 6.4 | 3.3 | 1320 | 2910 | 134693 | 296938 | 226 | 0.39 | 1.54 | 0.85 | LM565949/565910 | 50.700 |
| 385.762 | 514.35 | 82.55 | 82.55 | 63.5 | 6.4 | 3.3 | 1300 | 3200 | 132518 | 326198 | 249 | 0.42 | 1.43 | 0.79 | LM665949/LM665910 | 50.000 |
| 425.45 | 685.698 | 142.875 | 142.8 | 104.775 | 12.7 | 6.4 | 3050 | 5810 | 311224 | 592857 | 424 | 0.40 | 1.50 | 0.83 | EE328167/328269 | 188.000 |
| 479.425 | 679.45 | 128.588 | 128.588 | 101.6 | 6.4 | 6.4 | 3000 | 7000 | 305810 | 713558 | 504 | 0.33 | 1.82 | 1.00 | M272749/M242710 | 141.000 |
| 489.026 | 634.873 | 80.962 | 80.962 | 63.5 | 6.4 | 3.3 | 1440 | 3580 | 146834 | 365045 | 260 | 0.34 | 1.76 | 0.97 | EE243192/243250 | 62.500 |
| 571.5 | 812.8 | 155.58 | 155.575 | 120.65 | 6.4 | 6.4 | 5106 | 10600 | 520489 | 1080530 | 723 | 0.33 | 1.82 | 1.00 | M278749/M278710 | 227.000 |
| 630 | 850 | 108 | 100 | 78 | 6.0 | 6.0 | 2500 | 5680 | 255102 | 579591 | 380 | 0.41 | 1.46 | 0.80 | 10079/630 | 164.000 |
| 660.4 | 939.8 | 136.525 | 127 | 98.425 | 6.4 | 6.4 | 4014 | 7800 | 409123 | 795107 | 510 | 0.41 | 1.46 | 0.80 | EE538260/EE538370 | 293.730 |
| 710 | 950 | 114 | 106 | 80 | 6.0 | 6.0 | 2800 | 6500 | 285423 | 662589 | 420 | 0.46 | 1.30 | 0.72 | 10079/710 | 211.000 |
| 900 | 1180 | 124 | 122 | 87 | 8.0 | 8.0 | 4140 | 9740 | 422018 | 992864 | 588 | 0.40 | 1.49 | 0.82 | 10079/900 | 330.000 |
| 900 | 1280 | 190 | 170 | 135 | 7.5 | 7.5 | 6450 | 14500 | 657492 | 1478084 | 864 | 0.54 | 1.11 | 0.61 | 71/900 | 703.000 |
| 1320 | 1600 | 176 | 165 | 142 | 6.0 | 6.0 | 6350 | 20550 | 647299 | 2094801 | 1121 | 0.36 | 1.67 | 0.92 | 20078/1320 | 719.000 |

## 19.2 Single Row Taper Roller Bearing (Metric series)

**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

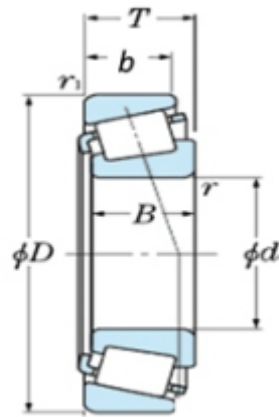| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y2 |

**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, Y2 and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | Y₂ | Yo | | |
| d | D | T | B | b | r₁ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 15 | 35 | 11.75 | 11 | 10 | 0.6 | 0.6 | 16 | 15 | 1642 | 1509 | 2 | 0.32 | 1.88 | 1.03 | 30202 | 0.05 |
| 15 | 42 | 14.25 | 13 | 11 | 1.5 | 1.5 | 25 | 20 | 2592 | 2069 | 2 | 0.29 | 2.11 | 1.16 | 30302 | 0.096 |
| 17 | 40 | 13.25 | 12 | 11 | 1.0 | 1.0 | 24 | 22 | 2479 | 2234 | 3 | 0.35 | 1.74 | 0.96 | 30203 | 0.080 |
| 20 | 42 | 15 | 15 | 12 | 0.6 | 0.6 | 29 | 30 | 2980 | 3028 | 4 | 0.37 | 1.60 | 0.88 | 32004X | 0.097 |
| 20 | 47 | 15.25 | 14 | 12 | 1.5 | 1.5 | 33 | 30 | 3345 | 3068 | 4 | 0.35 | 1.74 | 0.96 | 30204 | 0.121 |
| 20 | 52 | 16.25 | 15 | 13 | 1.5 | 1.5 | 35 | 33 | 3537 | 3384 | 4 | 0.30 | 2.00 | 1.10 | 30304 | 0.160 |
| 20 | 52.055 | 14.9 | 15 | 11 | 0.5 | 1.1 | 39 | 33 | 3981 | 3334 | 4 | 0.50 | 1.20 | 0.66 | MLN1518FXA | 0.159 |
| 21.5 | 47 | 16.5 | 16.5 | 13 | 1.0 | 1.0 | 39 | 40 | 4007 | 4067 | 5 | 0.37 | 1.60 | 0.88 | N1061 | 0.136 |
| 22 | 52.055 | 14.9 | 15 | 12 | 1.1 | 1.1 | 38 | 31 | 3837 | 3181 | 4 | 0.35 | 1.70 | 0.93 | MLN1519FXA | 0.153 |
| 25 | 52 | 19.25 | 18 | 16 | 1.0 | 1.0 | 48 | 48 | 4912 | 4883 | 6 | 0.36 | 1.67 | 0.92 | 32205 (Low Carbon Steel) | 0.184 |
| 25 | 47 | 15 | 15 | 11.5 | 3.3 | 0.6 | 31 | 34 | 3174 | 3445 | 4 | 0.43 | 1.39 | 0.77 | 32005 | 0.120 |
| 25 | 47 | 15 | 15 | 11.5 | 3.3 | 0.6 | 31 | 34 | 3174 | 3445 | 4 | 0.43 | 1.40 | 0.77 | 32005F | 0.120 |
| 25 | 47 | 15 | 15 | 11.5 | 3.3 | 0.6 | 31 | 34 | 3174 | 3445 | 4 | 0.43 | 1.39 | 0.77 | 32005x1N | 0.130 |
| 25 | 47 | 15 | 15 | 11.5 | 0.6 | 1.0 | 40 | 34 | 3615 | 4063 | 4 | 0.43 | 1.40 | 0.77 | ML32005X1XAT2X | 0.110 |
| 25 | 47 | 17 | 17 | 14 | 0.6 | 0.6 | 36 | 40 | 3676 | 4098 | 5 | 0.29 | 2.07 | 1.14 | 33005 | 0.130 |
| 25 | 47 | 17 | 17 | 14 | 0.6 | 0.6 | 41 | 40 | 4201 | 4098 | 5 | 0.29 | 2.07 | 1.14 | ML33005 | 0.129 |
| 25 | 52 | 16.25 | 15 | 13 | 1.0 | 1.0 | 40 | 40 | 4101 | 4084 | 5 | 0.37 | 1.60 | 0.88 | 30205 | 0.148 |

## Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
*dynamic*
$P_r = XF_r + YF_a$

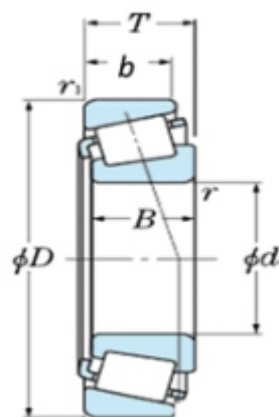| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

*static*
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 25 | 52 | 16.25 | 15 | 13 | 1.0 | 1.0 | 41 | 41 | 4180 | 4181 | 5 | 0.37 | 1.62 | 0.89 | 30205F | 0.148 |
| 25 | 52 | 19.25 | 18 | 16 | 1.0 | 1.0 | 46 | 45 | 4681 | 4587 | 5 | 0.36 | 1.67 | 0.92 | 32205 | 0.184 |
| 25 | 52 | 22 | 22 | 18 | 1.0 | 1.0 | 53 | 58 | 5423 | 5861 | 7 | 0.35 | 1.71 | 0.94 | 33205 | 0.219 |
| 25 | 52 | 14.5 | 15 | 11 | 1.0 | 1.0 | 40 | 33 | 4059 | 3385 | 4 | 0.38 | 1.59 | 0.88 | MLN1466XA | 0.136 |
| 25 | 62 | 18.25 | 17 | 15 | 2.0 | 2.0 | 52 | 46 | 5252 | 4679 | 6 | 0.30 | 2.00 | 1.10 | 30305 | 0.260 |
| 25 | 62 | 18.25 | 17 | 14 | 1.5 | 2.2 | 47 | 42 | 4795 | 4312 | 5 | 0.55 | 1.10 | 0.60 | 30305C | 0.264 |
| 25 | 62 | 25.25 | 24 | 20 | 2.0 | 2.0 | 71 | 665 | 7193 | 67788 | 81 | 0.30 | 2.00 | 1.10 | 32305 | 0.381 |
| 28 | 58 | 20.25 | 19 | 16 | 1.0 | 1.0 | 58 | 56 | 5964 | 5749 | 7 | 0.27 | 2.21 | 1.21 | ML322/28XA | 0.246 |
| 28 | 67 | 30.5 | 32 | 24 | 2.5 | 1.0 | 94 | 91 | 9624 | 9256 | 11 | 0.24 | 2.53 | 1.39 | N1114 | 0.513 |
| 30 | 55 | 17 | 17 | 13 | 1.0 | 1.0 | 44 | 48 | 4455 | 4842 | 6 | 0.43 | 1.40 | 0.77 | 32006X (Low Carbon steel) | 0.172 |
| 30 | 55 | 17 | 17 | 13 | 1.0 | 1.0 | 43 | 48 | 4338 | 4842 | 6 | 0.43 | 1.39 | 0.77 | 32006X | 0.172 |
| 30 | 62 | 17.25 | 16 | 14 | 1.0 | 1.0 | 49 | 49 | 5034 | 4975 | 6 | 0.37 | 1.60 | 0.88 | 30206 | 0.241 |
| 30 | 62 | 21.25 | 20 | 17 | 1.0 | 1.0 | 62 | 66 | 6336 | 6677 | 8 | 0.37 | 1.60 | 0.88 | 32206 | 0.299 |
| 30 | 62 | 25 | 25 | 19.5 | 1.0 | 1.0 | 71 | 75 | 7284 | 7686 | 9 | 0.34 | 1.76 | 0.97 | 33206 | 0.340 |
| 30 | 72 | 20.75 | 19 | 16 | 2.0 | 2.0 | 70 | 64 | 7094 | 6484 | 8 | 0.31 | 1.90 | 1.05 | 30306 | 0.387 |
| 30 | 72 | 20.75 | 19 | 14 | 1.5 | 2.2 | 66 | 579 | 6690 | 59021 | 71 | 0.55 | 1.10 | 0.60 | 30306C | 0.381 |
| 30 | 72 | 20.75 | 19 | 14 | 1.5 | 1.5 | 49 | 52 | 4944 | 5250 | 6 | 0.83 | 0.72 | 0.40 | 30306D | 0.398 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

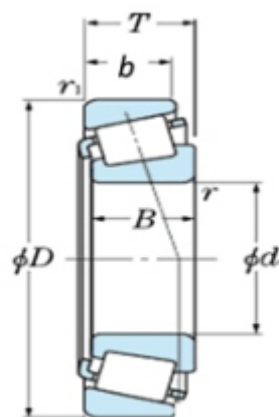| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | $Y_2$ | $Y_o$ | | |
| | | | mm | | | | KN | | Kgf | | KN | e | | | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 30 | 72 | 28.75 | 27 | 23 | 1.5 | 1.5 | 85 | 96 | 8665 | 9786 | 12 | 0.31 | 1.94 | 1.06 | 32306 | 0.560 |
| 32 | 58 | 17 | 17 | 13 | 1.0 | 1.0 | 42 | 47 | 4304 | 4791 | 6 | 0.45 | 1.32 | 0.73 | 320/32X | 0.188 |
| 35 | 62 | 18 | 18 | 14 | 1.5 | 0.5 | 48 | 54 | 4875 | 5545 | 7 | 0.45 | 1.32 | 0.73 | 32007X | 0.224 |
| 35 | 72 | 18.25 | 17 | 15 | 2.0 | 2.0 | 59 | 58 | 6062 | 5923 | 7 | 0.37 | 1.60 | 0.88 | 30207 | 0.315 |
| 35 | 72 | 24.25 | 23 | 19 | 1.5 | 1.5 | 83 | 89 | 8472 | 9123 | 11 | 0.37 | 1.60 | 0.88 | 32207 | 0.447 |
| 35 | 72 | 24.25 | 23 | 19 | 2.0 | 2.0 | 71 | 78 | 7193 | 7910 | 9 | 0.58 | 1.03 | 0.57 | 32207B | 0.457 |
| 35 | 72 | 28 | 28 | 22 | 1.5 | 1.5 | 98 | 109 | 9990 | 11111 | 13 | 0.35 | 1.70 | 0.93 | 33207 | 0.539 |
| 35 | 80 | 22.75 | 21 | 18 | 2.0 | 2.0 | 68 | 74 | 6930 | 7533 | 9 | 0.31 | 1.90 | 1.05 | 30307 | 0.520 |
| 35 | 80 | 22.75 | 21 | 15 | 2.0 | 1.5 | 71 | 72 | 7241 | 7291 | 9 | 0.83 | 0.73 | 0.40 | 30307DFXA | 0.513 |
| 35 | 80 | 32.75 | 31 | 25 | 2.5 | 2.5 | 109 | 109 | 11154 | 11142 | 13 | 0.31 | 1.90 | 1.05 | 32307 | 0.737 |
| 36 | 62 | 17 | 17 | 13 | 1.5 | 1.5 | 45 | 50 | 4567 | 5097 | 6 | 0.45 | 1.32 | 0.73 | TS2N1126 | 0.197 |
| 38 | 63 | 17 | 17 | 13.5 | 1.3 | 1.3 | 50 | 53 | 5103 | 5445 | 7 | 0.41 | 1.46 | 0.80 | MLJL69349X1XA/10F | 0.190 |
| 40 | 80 | 21 | 22.4 | 17.83 | 3.5 | 1.3 | 76 | 75 | 7764 | 7645 | 9 | 0.27 | 2.20 | 1.21 | TMB344A/332 | 0.482 |
| 40 | 68 | 19 | 19 | 14.5 | 1.0 | 1.0 | 57 | 67 | 5834 | 6809 | 8 | 0.38 | 1.58 | 0.87 | 32008X | 0.273 |
| 40 | 80 | 19.75 | 18 | 16 | 2.0 | 2.0 | 70 | 69 | 7147 | 7054 | 8 | 0.37 | 1.60 | 0.88 | 30208 | 0.435 |
| 40 | 80 | 24.75 | 23 | 19 | 1.5 | 1.5 | 89 | 94 | 9031 | 9541 | 11 | 0.37 | 1.60 | 0.88 | 32208 | 0.523 |
| 40 | 80 | 32 | 32 | 25 | 1.5 | 1.5 | 92 | 94 | 9346 | 9585 | 11 | 0.36 | 1.68 | 0.92 | 4TB33208XA | 0.721 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load dynamic**
$P_r = XF_r + YF_a$

| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

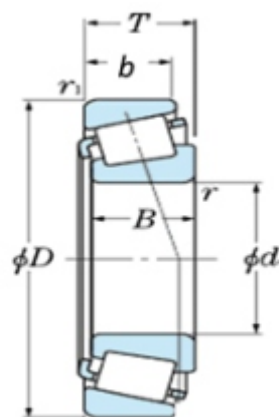**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and Yo see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 40 | 80 | 34 | 34 | 27 | 2.0 | 2.0 | 115 | 145 | 11759 | 14781 | 18 | 0.43 | 1.39 | 0.77 | N1090 | 0.788 |
| 40 | 85 | 18.5 | 18.25 | 17 | 1.5 | 0.3 | 65 | 64 | 6588 | 6524 | 8 | 0.37 | 1.60 | 0.88 | N1062 | 0.547 |
| 40 | 85 | 33 | 32.5 | 28 | 2.5 | 2.0 | 129 | 141 | 13202 | 14347 | 17 | 0.34 | 1.74 | 0.96 | TS2T2EE040XA | 0.870 |
| 40 | 90 | 25.25 | 23 | 20 | 2.0 | 1.5 | 94 | 91 | 9613 | 9317 | 11 | 0.35 | 1.74 | 0.96 | 30308 | 0.769 |
| 40 | 90 | 25.25 | 23 | 17 | 2.0 | 1.5 | 85 | 96 | 8665 | 9786 | 12 | 0.82 | 0.73 | 0.40 | 31308 | 0.725 |
| 40 | 90 | 35.25 | 33 | 27 | 2.5 | 2.5 | 132 | 142 | 13449 | 14465 | 17 | 0.35 | 1.74 | 0.96 | 32308 | 1.016 |
| 40 | 90 | 35.25 | 33 | 27 | 2.5 | 2.5 | 132 | 142 | 13449 | 14465 | 17 | 0.35 | 1.71 | 0.94 | 32308F | 1.016 |
| 40 | 95 | 27.5 | 25 | 19 | 2.0 | 1.5 | 102 | 102 | 10412 | 10377 | 12 | 0.79 | 0.76 | 0.42 | 331257 | 0.895 |
| 45 | 75 | 20 | 20 | 15.5 | 1.3 | 2.0 | 66 | 78 | 6679 | 7992 | 10 | 0.39 | 1.53 | 0.84 | 32009X | 0.347 |
| 45 | 85 | 20.75 | 19 | 16 | 2.0 | 2.0 | 68 | 68 | 6941 | 6922 | 8 | 0.40 | 1.48 | 0.81 | 30209 | 0.451 |
| 45 | 85 | 24.75 | 23 | 19 | 1.5 | 1.5 | 95 | 104 | 9636 | 10571 | 13 | 0.40 | 1.48 | 0.81 | 32209 | 0.582 |
| 45 | 100 | 27.25 | 25 | 18 | 2.0 | 1.5 | 110 | 112 | 11246 | 11427 | 14 | 0.83 | 0.73 | 0.40 | 31309X1 | 0.957 |
| 45 | 100 | 27.25 | 25 | 22 | 2.0 | 1.5 | 127 | 129 | 12947 | 13160 | 16 | 0.35 | 1.74 | 0.96 | 30309 | 1.009 |
| 45 | 100 | 27.25 | 25 | 18 | 2.5 | 2.5 | 111 | 114 | 11348 | 11570 | 14 | 0.83 | 0.73 | 0.40 | 31309 | 0.960 |
| 45 | 100 | 38.25 | 36 | 30 | 2.5 | 2.5 | 161 | 176 | 16452 | 17951 | 21 | 0.35 | 1.71 | 0.94 | 32309XA (32309) | 1.372 |
| 45 | 100 | 38.25 | 36 | 30 | 2.5 | 2.5 | 161 | 176 | 16452 | 17951 | 21 | 0.35 | 1.71 | 0.94 | 32309 (32309F) | 1.373 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**

*dynamic*

$P_r = XF_r + YF_a$

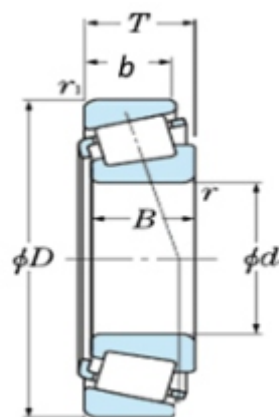| $\frac{F_a}{F_r} \leq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y2 |

*static*

$P_{or} = 0.5F_r + Y_oF_a$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e, Y2 and Yo see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | Y₂ | Y₀ | | |
| d | D | T | B | b | r₁ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 45 | 100 | 28.35 | 36 | 30 | 2.5 | 2.5 | 161 | 176 | 16452 | 17951 | 21 | 0.35 | 1.74 | 0.96 | 32309 | 1.360 |
| 45 | 100 | 38.25 | 36 | 30 | 2.5 | 2.5 | 166 | 176 | 18920 | 17951 | 21 | 0.35 | 1.74 | 0.96 | ASTB32309 | 1.373 |
| 50 | 80 | 20 | 20 | 15.5 | 1.3 | 2.0 | 71 | 90 | 7250 | 9164 | 11 | 0.42 | 1.42 | 0.78 | 32010X | 0.373 |
| 50 | 80 | 20 | 20 | 15.5 | 3.0 | 1.0 | 71 | 90 | 7250 | 9164 | 11 | 0.42 | 1.43 | 0.79 | 32010X1 | 0.366 |
| 50 | 80 | 24 | 24 | 19 | 1.5 | 1.0 | 79 | 104 | 8038 | 10632 | 13 | 0.32 | 1.90 | 1.04 | 33010 | 0.433 |
| 50 | 80 | 24 | 24 | 19 | 1.8 | 1.0 | 81 | 105 | 8291 | 10676 | 13 | 0.32 | 1.90 | 1.04 | ASTBN1569XA | 0.440 |
| 50 | 90 | 21.75 | 20 | 17 | 1.5 | 1.5 | 88 | 95 | 8985 | 9715 | 12 | 0.42 | 1.43 | 0.79 | 30210 | 0.552 |
| 50 | 90 | 24.75 | 23 | 19 | 1.5 | 1.5 | 95 | 104 | 9670 | 10632 | 13 | 0.42 | 1.43 | 0.79 | 32210 | 0.648 |
| 50 | 90 | 32 | 32 | 24.5 | 1.5 | 1.5 | 129 | 158 | 13129 | 16106 | 19 | 0.41 | 1.45 | 0.80 | 33210 | 0.860 |
| 50 | 90 | 21.75 | 20 | 17 | 3.5 | 1.5 | 90 | 95 | 9193 | 9667 | 12 | 0.42 | 1.43 | 0.79 | ASTB30210X1 | 0.548 |
| 50 | 110 | 29.25 | 27 | 23 | 2.5 | 2.0 | 151 | 155 | 15413 | 15800 | 19 | 0.35 | 1.71 | 0.94 | 30310 | 1.280 |
| 50 | 110 | 29.25 | 27 | 19 | 2.5 | 2.0 | 111 | 126 | 11315 | 12844 | 15 | 0.83 | 0.72 | 0.40 | 31310 | 1.210 |
| 50 | 110 | 42.25 | 40 | 33 | 2.5 | 2.0 | 212 | 218 | 21582 | 22232 | 27 | 0.35 | 1.71 | 0.94 | AST32310 (AST32310PX1) | 1.819 |
| 50 | 110 | 42.25 | 40 | 33 | 2.5 | 2.0 | 124 | 126 | 12673 | 12844 | 15 | 0.35 | 1.74 | 0.96 | 32310 | 1.210 |
| 55 | 90 | 23 | 23 | 17.5 | 1.5 | 1.5 | 90 | 118 | 9134 | 12029 | 14 | 0.41 | 1.48 | 0.81 | 32011 | 0.557 |
| 55 | 95 | 30 | 30 | 23 | 2.0 | 2.0 | 127 | 160 | 12901 | 16259 | 19 | 0.37 | 1.60 | 0.88 | 33111 | 0.846 |

## Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
*dynamic*
$P_r = XF_r + YF_a$

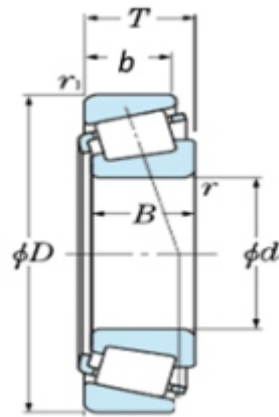| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

*static*
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 55 | 100 | 22.75 | 21 | 18 | 2.0 | 1.5 | 104 | 111 | 10618 | 11315 | 14 | 0.40 | 1.48 | 0.81 | 30211 | 0.740 |
| 55 | 100 | 26.75 | 25 | 21 | 2.5 | 2.5 | 121 | 134 | 12319 | 13619 | 16 | 0.40 | 1.48 | 0.81 | 32211 | 0.824 |
| 55 | 100 | 35 | 35 | 27 | 2.0 | 1.5 | 159 | 192 | 16212 | 19572 | 23 | 0.40 | 1.50 | 0.83 | 33211 | 1.160 |
| 55 | 105 | 36 | 36 | 28.5 | 2.5 | 2.5 | 171 | 193 | 17467 | 19643 | 24 | 0.35 | 1.70 | 0.93 | ASTBN1091XA | 1.326 |
| 55 | 105 | 36 | 36 | 25.5 | 2.5 | 2.5 | 159 | 129 | 16235 | 13099 | 16 | 0.35 | 1.70 | 0.93 | N1091 | 1.324 |
| 55 | 120 | 31.5 | 29 | 25 | 2.5 | 2.0 | 177 | 184 | 18039 | 18756 | 22 | 0.35 | 1.74 | 0.96 | 30311 | 1.610 |
| 55 | 120 | 31.5 | 29 | 21 | 2.5 | 2.0 | 136 | 158 | 13827 | 16091 | 19 | 0.82 | 0.73 | 0.40 | 31311 | 1.560 |
| 55 | 120 | 45.5 | 43 | 35 | 2.5 | 2.0 | 236 | 269 | 24090 | 27421 | 33 | 0.55 | 1.10 | 0.60 | 32311C | 2.370 |
| 55 | 120 | 45.5 | 43 | 35 | 2.5 | 2.0 | 239 | 274 | 24398 | 27941 | 33 | 0.35 | 1.74 | 0.96 | 32311 | 2.489 |
| 55 | 130 | 33.45 | 31.2 | 22 | 2.0 | 1.5 | 159 | 180 | 16171 | 18364 | 22 | 0.44 | 1.36 | 0.75 | TMBSPN1099 | 1.850 |
| 55 | 140 | 45 | 40 | 33 | 2.5 | 2.0 | 233 | 276 | 23750 | 28124 | 34 | 0.65 | 0.92 | 0.51 | 4TN1243 | 3.427 |
| 55 | 140 | 45 | 45 | 32 | 2.5 | 3.0 | 197 | 276 | 20037 | 28104 | 34 | 1.06 | 0.57 | 0.31 | N1649FXA | 3.681 |
| 60 | 110 | 23.75 | 22 | 19 | 3.0 | 2.0 | 120 | 128 | 12205 | 13068 | 16 | 0.40 | 1.48 | 0.81 | 30212X1 | 0.902 |
| 60 | 95 | 27 | 27 | 21 | 1.5 | 1.5 | 97 | 151 | 9857 | 15403 | 18 | 0.33 | 1.82 | 1.00 | 33012 | 0.691 |
| 60 | 100 | 30 | 30 | 23 | 1.5 | 1.5 | 132 | 172 | 13461 | 17543 | 21 | 0.40 | 1.51 | 0.83 | 33112 | 0.907 |
| 60 | 110 | 23.75 | 22 | 19 | 2.0 | 1.5 | 121 | 129 | 12330 | 13150 | 16 | 0.40 | 1.48 | 0.81 | 30212 | 0.902 |
| 60 | 110 | 29.75 | 28 | 24 | 2.0 | 1.5 | 156 | 179 | 15870 | 18247 | 22 | 0.40 | 1.50 | 0.83 | 32212 | 1.160 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

| $\frac{Fa}{Fr} \leqq e$ | | $\frac{Fa}{Fr} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y2 |

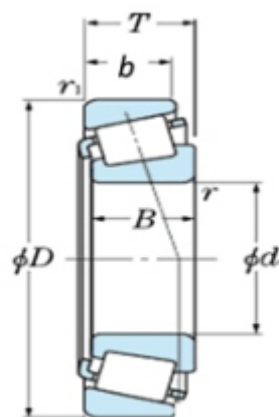**static**
$Por = 0.5F_r + Y_oF_a$
*When $P_{or} < F_r$ use $P_{or} = F_r$*
For values of e, Y2 and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | Y₂ | Y₀ | | |
| d | D | T | B | b | r₁ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 60 | 130 | 33.5 | 31 | 26 | 3.5 | 3.5 | 192 | 197 | 19546 | 20082 | 24 | 0.35 | 1.74 | 0.96 | 30312 | 1.930 |
| 60 | 130 | 48.5 | 46 | 37 | 3.0 | 2.5 | 273 | 315 | 27857 | 32110 | 38 | 0.35 | 1.74 | 0.96 | 32312 | 2.990 |
| 60 | 135 | 33.5 | 30.95 | 22 | 3.5 | 3.3 | 173 | 182 | 17651 | 18563 | 22 | 0.83 | 0.73 | 0.40 | 330632C | 2.079 |
| 60 | 130 | 33.5 | 31 | 22 | 3.0 | 2.5 | 194 | 181 | 19734 | 18436 | 22 | 0.83 | 0.73 | 0.40 | MLB30312DXA | 1.925 |
| 60 | 130 | 48.5 | 46 | 37 | 3.0 | 2.5 | 281 | 315 | 28603 | 32110 | 38 | 0.35 | 1.74 | 0.96 | ASTB32312 | 2.990 |
| 60 | 150 | 51 | 51 | 38 | 4.0 | 3.0 | 276 | 354 | 28131 | 36035 | 43 | 0.76 | 0.79 | 0.44 | N1579FXA | 4.609 |
| 65 | 100 | 23 | 23 | 17.5 | 1.5 | 1.5 | 93 | 128 | 9476 | 13048 | 16 | 0.46 | 1.31 | 0.72 | 32013X | 0.629 |
| 65 | 100 | 27 | 21 | 21 | 1.5 | 1.5 | 110 | 158 | 11189 | 16106 | 19 | 0.35 | 1.71 | 0.94 | 33013 | 0.736 |
| 65 | 110 | 28 | 28 | 22.5 | 3.0 | 2.5 | 138 | 183 | 14059 | 18660 | 22 | 0.40 | 1.50 | 0.83 | JM511946/JM511910 | 1.055 |
| 65 | 112.712 | 29.02 | 30 | 23.812 | 3.0 | 3.3 | 123 | 183 | 12552 | 18660 | 22 | 0.40 | 1.50 | 0.83 | JM511945XAP6X/3920 | 1.188 |
| 65 | 120 | 24.75 | 23 | 20 | 2.0 | 1.5 | 140 | 151 | 14271 | 15392 | 18 | 0.40 | 1.48 | 0.81 | 30213 | 1.180 |
| 65 | 120 | 32.75 | 31 | 27 | 2.0 | 1.5 | 174 | 199 | 17719 | 20255 | 24 | 0.40 | 1.48 | 0.81 | 32213 | 1.574 |
| 65 | 120 | 41 | 41 | 32 | 2.0 | 1.5 | 221 | 266 | 22491 | 27115 | 32 | 0.39 | 1.54 | 0.85 | 33213 | 1.980 |
| 65 | 120 | 41 | 41 | 32 | 2.0 | 1.5 | 221 | 266 | 22491 | 27115 | 32 | 0.39 | 1.54 | 0.85 | 33213F | 1.980 |
| 65 | 140 | 36 | 33 | 28 | 3.0 | 2.5 | 228 | 239 | 23291 | 24363 | 29 | 0.34 | 1.76 | 0.97 | 30313 | 2.430 |
| 65 | 140 | 36 | 33 | 23 | 3.0 | 2.5 | 173 | 204 | 17533 | 20387 | 25 | 0.82 | 0.73 | 0.40 | 31313 | 2.370 |
| 65 | 140 | 51 | 48 | 39 | 3.0 | 2.5 | 304 | 347 | 30940 | 35372 | 42 | 0.34 | 1.76 | 0.97 | 32313 | 3.660 |
| 65 | 145 | 39.75 | 36.5 | 26.5 | 3.5 | 3.3 | 208 | 223 | 21213 | 22691 | 27 | 0.81 | 0.74 | 0.41 | 77213L | 2.955 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
**dynamic**
$P_r=XF_r+YF_a$

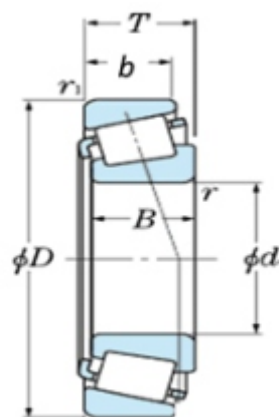| $\frac{F_a}{F_r}\leqq e$ | | $\frac{F_a}{F_r}>e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**
$P_{or}=0.5F_r+Y_oF_a$
When $P_{or}<F_r$ use $P_{or}=F_r$
For values of e, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_0$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 65 | 145 | 87.25 | 36.5 | 26.5 | 3.5 | 3.3 | 353 | 488 | 35974 | 49730 | 59 | 0.81 | 0.74 | 0.41 | 477213LXA | 6.350 |
| 70 | 110 | 25 | 25 | 19 | 1.5 | 1.5 | 116 | 160 | 11874 | 16310 | 20 | 0.43 | 1.40 | 0.77 | 32014 | 0.864 |
| 70 | 125 | 26.25 | 24 | 21 | 4.0 | 1.5 | 154 | 172 | 15687 | 17513 | 21 | 0.42 | 1.43 | 0.79 | 30214X1 | 1.242 |
| 70 | 125 | 26.25 | 24 | 21 | 2.5 | 2.5 | 176 | 172 | 17928 | 17513 | 21 | 0.42 | 1.43 | 0.79 | MLB30214X2XA | 1.231 |
| 70 | 125 | 26.25 | 24 | 21 | 2.5 | 2.5 | 154 | 172 | 15687 | 17513 | 21 | 0.42 | 1.43 | 0.79 | 30214X2XA | 1.231 |
| 70 | 125 | 26.25 | 24 | 21 | 2.5 | 2.5 | 154 | 172 | 15687 | 17513 | 21 | 0.42 | 1.43 | 0.79 | 30214 | 1.240 |
| 70 | 125 | 33.25 | 31 | 27 | 2.0 | 1.5 | 180 | 211 | 18381 | 21478 | 26 | 0.42 | 1.43 | 0.79 | 32214 | 1.585 |
| 70 | 125 | 41 | 41 | 32 | 2.5 | 2.5 | 225 | 282 | 22948 | 28746 | 34 | 0.41 | 1.47 | 0.81 | 33214 | 2.100 |
| 70 | 150 | 38 | 35 | 25 | 3.0 | 2.5 | 187 | 231 | 19052 | 23547 | 27 | 0.82 | 0.73 | 0.40 | 31314 | 2.860 |
| 70 | 150 | 38 | 35 | 30 | 3.0 | 2.5 | 255 | 269 | 26031 | 27421 | 32 | 0.35 | 1.71 | 0.94 | 30314 | 2.990 |
| 70 | 150 | 54 | 51 | 42 | 3.0 | 2.5 | 349 | 406 | 35621 | 41386 | 48 | 0.34 | 1.76 | 0.97 | 32314 | 4.330 |
| 70 | 150 | 64 | 61 | 42 | 6.0 | 2.5 | 344 | 363 | 35050 | 37034 | 43 | 0.35 | 1.71 | 0.94 | N1257 (32314) | 4.676 |
| 70 | 165 | 51 | 51 | 34 | 3.0 | 2.5 | 299 | 366 | 30479 | 37309 | 43 | 0.75 | 0.80 | 0.44 | 4TN1244 | 5.177 |
| 75 | 160 | 45 | 45 | 30 | 3.0 | 2.5 | 286 | 328 | 29131 | 33466 | 38 | 0.75 | 0.80 | 0.44 | 4TN1247FP5 | 4.070 |
| 75 | 115 | 25 | 25 | 19 | 3.2 | 2.5 | 120 | 170 | 12273 | 17309 | 21 | 0.46 | 1.30 | 0.72 | 32015X1F | 0.888 |
| 75 | 115 | 25 | 25 | 19 | 3.2 | 2.5 | 120 | 169 | 12250 | 17258 | 21 | 0.46 | 1.31 | 0.72 | 32015X1XA | 0.888 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load dynamic**
$P_r = XF_r + YF_a$

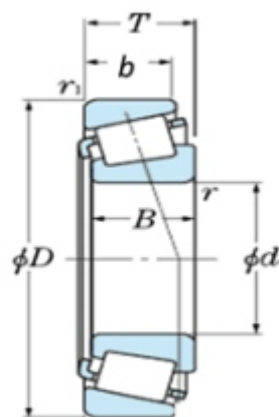| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 75 | 130 | 27.25 | 25 | 22 | 2.5 | 2.5 | 156 | 175 | 15870 | 17839 | 22 | 0.44 | 1.38 | 0.76 | 30215 | 1.410 |
| 75 | 130 | 33.25 | 31 | 27 | 2.0 | 1.5 | 199 | 240 | 20237 | 24471 | 29 | 0.44 | 1.38 | 0.76 | 32215 | 1.740 |
| 75 | 130 | 41 | 41 | 31 | 2.5 | 3.0 | 235 | 303 | 23987 | 30846 | 37 | 0.43 | 1.40 | 0.77 | 33215 | 2.225 |
| 75 | 160 | 40 | 37 | 26 | 3.0 | 2.5 | 242 | 256 | 24661 | 26096 | 30 | 0.82 | 0.73 | 0.40 | 31315 | 3.380 |
| 75 | 160 | 40 | 37 | 31 | 3.0 | 2.5 | 287 | 310 | 29296 | 31621 | 36 | 0.35 | 1.74 | 0.96 | 30315 | 3.543 |
| 75 | 160 | 58 | 55 | 45 | 3.0 | 2.5 | 388 | 452 | 39503 | 46075 | 53 | 0.34 | 1.76 | 0.97 | 32315 | 5.280 |
| 80 | 170 | 61.5 | 58 | 48 | 3.0 | 2.5 | 397 | 543 | 40469 | 55352 | 62 | 0.34 | 1.76 | 0.97 | 32316 | 6.370 |
| 80 | 125 | 29 | 29 | 22 | 1.5 | 1.5 | 159 | 221 | 16166 | 22508 | 27 | 0.42 | 1.42 | 0.78 | 32016X | 1.284 |
| 80 | 125 | 29 | 29 | 22 | 1.5 | 1.5 | 155 | 217 | 15755 | 22120 | 26 | 0.42 | 1.43 | 0.79 | 32016 | 1.270 |
| 80 | 130 | 35 | 34 | 28.5 | 3.0 | 2.5 | 193 | 253 | 19672 | 25810 | 30 | 0.39 | 1.55 | 0.85 | JM515649/10 | 1.681 |
| 80 | 130 | 37 | 37 | 29 | 2.0 | 1.5 | 202 | 277 | 20585 | 28236 | 33 | 0.42 | 1.44 | 0.79 | 33116 | 1.839 |
| 80 | 140 | 28.25 | 26 | 22 | 3.0 | 3.0 | 158 | 169 | 16098 | 17248 | 20 | 0.42 | 1.43 | 0.79 | 30216 | 1.720 |
| 80 | 140 | 35.25 | 33 | 28 | 2.5 | 2.0 | 231 | 277 | 23524 | 28225 | 33 | 0.42 | 1.43 | 0.79 | 32216 | 2.180 |
| 80 | 140 | 46 | 46 | 35 | 2.5 | 2.0 | 246 | 362 | 25054 | 36892 | 43 | 0.42 | 1.43 | 0.79 | 33216 | 2.830 |
| 85 | 180 | 44.5 | 41 | 28 | 4.0 | 3.0 | 242 | 195 | 24669 | 19878 | 22 | 0.42 | 1.43 | 0.79 | 31317 | 4.600 |
| 85 | 192 | 64 | 64 | 45 | 4.0 | 3.0 | 451 | 538 | 46012 | 54811 | 59 | 0.75 | 0.80 | 0.44 | 4TN1248FP5 | 8.665 |
| 85 | 150 | 30.5 | 28 | 24 | 0.4 | 0.3 | 205 | 232 | 20893 | 23649 | 27 | 0.42 | 1.43 | 0.79 | 30217X | 0.172 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
*dynamic*
$P_r = XF_r + YF_a$

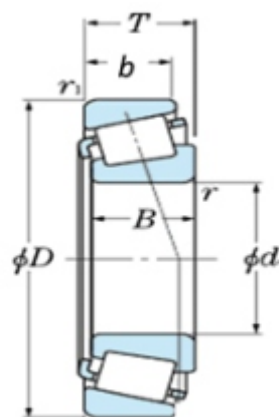| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

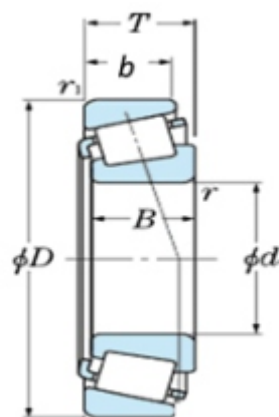*static*
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, Y2 and Yo
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | Y₂ | Yo | | |
| mm | | | | | | | KN | | Kgf | | KN | e | | | | |
| d | D | T | B | b | r₁ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 85 | 150 | 38.5 | 36 | 30 | 2.5 | 2.0 | 251 | 300 | 25574 | 30581 | 35 | 0.42 | 1.43 | 0.79 | 32217 | 2.745 |
| 85 | 150 | 46 | 46 | 38 | 3.0 | 2.5 | 272 | 387 | 27735 | 39462 | 45 | 0.33 | 1.82 | 1.00 | JH217249/JH217210 | 3.080 |
| 85 | 150 | 49 | 49 | 37 | 2.5 | 2.0 | 318 | 420 | 32424 | 42813 | 49 | 0.42 | 1.43 | 0.79 | 33217 | 3.600 |
| 85 | 180 | 44.5 | 41 | 34 | 4.0 | 3.0 | 306 | 363 | 31193 | 37003 | 41 | 0.34 | 1.76 | 0.97 | 30317 | 4.970 |
| 85 | 180 | 63.5 | 60 | 49 | 4.0 | 3.0 | 438 | 587 | 44648 | 59837 | 66 | 0.34 | 1.76 | 0.97 | 32317 | 7.300 |
| 85 | 150 | 38.5 | 36 | 30 | 2.5 | 2.0 | 258 | 300 | 26259 | 30581 | 35 | 0.42 | 1.43 | 0.79 | ASTB32217 | 2.745 |
| 85 | 150 | 30.5 | 28 | 24 | 2.5 | 2.1 | 237 | 236 | 24133 | 24034 | 27 | 0.42 | 1.43 | 0.79 | MLB30217XA | 2.095 |
| 90 | 140 | 32 | 32 | 24 | 2.0 | 1.5 | 189 | 271 | 19295 | 27625 | 32 | 0.42 | 1.43 | 0.79 | 32018 | 1.790 |
| 90 | 140 | 32 | 32 | 24 | 2.0 | 1.5 | 189 | 271 | 19295 | 27625 | 32 | 0.42 | 1.43 | 0.79 | 32018XXA | 1.763 |
| 90 | 150 | 45 | 45 | 35 | 2.5 | 2.0 | 254 | 420 | 25900 | 42827 | 48 | 0.39 | 1.54 | 0.85 | 33118 | 3.130 |
| 90 | 160 | 42.5 | 40 | 34 | 3.0 | 3.0 | 302 | 396 | 30803 | 40316 | 45 | 0.42 | 1.43 | 0.79 | 32218 | 3.439 |
| 90 | 190 | 46.5 | 43 | 36 | 4.0 | 3.0 | 354 | 434 | 36086 | 44241 | 48 | 0.34 | 1.76 | 0.97 | 30318 | 5.800 |
| 90 | 190 | 67.5 | 64 | 53 | 4.0 | 3.0 | 557 | 677 | 56742 | 69011 | 75 | 0.35 | 1.71 | 0.94 | 32318 | 8.780 |
| 95 | 200 | 49 | 45 | 32 | 4.0 | 3.0 | 292 | 355 | 29766 | 36188 | 39 | 0.82 | 0.73 | 0.40 | 31319 | 6.950 |
| 95 | 145 | 39 | 39 | 32.5 | 2.5 | 2.5 | 246 | 365 | 25049 | 37238 | 42 | 0.28 | 2.14 | 1.18 | 33019 (33019F) | 2.277 |
| 95 | 170 | 34.5 | 32 | 27 | 3.0 | 2.5 | 242 | 318 | 24686 | 32395 | 36 | 0.42 | 1.43 | 0.79 | 30219 | 3.040 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**

*dynamic*

$P_r = XF_r + YF_a$

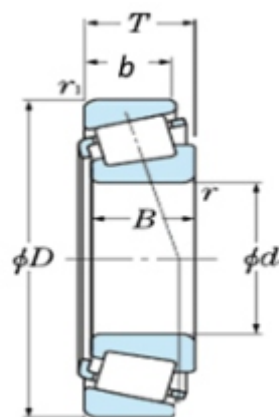| $\frac{F_a}{F_r} \leq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

*static*

$P_{or} = 0.5F_r + Y_oF_a$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 95 | 170 | 45.5 | 43 | 37 | 3.0 | 2.5 | 353 | 445 | 35963 | 45362 | 50 | 0.42 | 1.43 | 0.79 | 32219 | 4.240 |
| 95 | 170 | 45.5 | 43 | 37 | 3.5 | 3.5 | 335 | 418 | 34136 | 42582 | 47 | 0.42 | 1.43 | 0.79 | 32219X1XA | 4.129 |
| 95 | 200 | 49.5 | 45 | 38 | 4.0 | 3.0 | 369 | 478 | 37615 | 48726 | 52 | 0.34 | 1.76 | 0.97 | 30319 | 6.800 |
| 95 | 200 | 71.5 | 67 | 55 | 4.0 | 3.0 | 571 | 669 | 58158 | 68236 | 73 | 0.35 | 1.74 | 0.96 | 32319 | 9.669 |
| 100 | 215 | 77.5 | 73 | 60 | 4.0 | 3.0 | 580 | 861 | 59123 | 87768 | 92 | 0.34 | 1.76 | 0.97 | 32320 | 12.700 |
| 100 | 150 | 32 | 32 | 24 | 2.0 | 1.5 | 193 | 286 | 19626 | 29154 | 33 | 0.46 | 1.31 | 0.72 | 32020XF | 1.904 |
| 100 | 150 | 32 | 32 | 24 | 2.5 | 3.0 | 193 | 287 | 19660 | 29225 | 33 | 0.46 | 1.31 | 0.72 | 32020X | 1.912 |
| 100 | 150 | 39 | 39 | 32.5 | 2.0 | 1.5 | 251 | 390 | 25574 | 39755 | 44 | 0.29 | 2.09 | 1.15 | 33020 | 2.370 |
| 100 | 155 | 36 | 35 | 28 | 3.0 | 2.5 | 216 | 312 | 22030 | 31824 | 35 | 0.47 | 1.28 | 0.70 | JM720249/10F | 2.343 |
| 100 | 180 | 37 | 34 | 29 | 3.0 | 2.5 | 289 | 335 | 29501 | 34159 | 37 | 0.42 | 1.43 | 0.79 | 30220 | 3.780 |
| 100 | 180 | 49 | 46 | 39.0 | 3.0 | 2.5 | 372 | 460 | 37882 | 46891 | 51 | 0.42 | 1.43 | 0.79 | 32220 | 4.924 |
| 105 | 225 | 81.5 | 77 | 63 | 4.0 | 3.0 | 659 | 911 | 67176 | 92864 | 96 | 0.34 | 1.76 | 0.97 | 32321 | 14.500 |
| 105 | 160 | 35 | 35 | 26 | 2.5 | 2.0 | 205 | 336 | 20938 | 34230 | 38 | 0.44 | 1.36 | 0.75 | 32021 | 2.400 |
| 105 | 190 | 39 | 36 | 30 | 3.0 | 25.0 | 317 | 382 | 323430 | 38942 | 41 | 0.42 | 1.43 | 0.79 | 30221F | 4.377 |
| 105 | 190 | 53 | 50 | 43 | 3.0 | 2.5 | 381 | 579 | 38838 | 59021 | 63 | 0.42 | 1.43 | 0.79 | 32221 | 6.300 |
| 110 | 200 | 41 | 38 | 32 | 3.0 | 2.5 | 327 | 440 | 33333 | 44852 | 47 | 0.42 | 1.43 | 0.79 | 30222 | 5.210 |
| 110 | 200 | 56 | 53 | 46 | 3.0 | 2.5 | 492 | 642 | 50120 | 65443 | 69 | 0.42 | 1.43 | 0.79 | 32222 | 7.430 |
| 110 | 240 | 54.5 | 50 | 42 | 4.0 | 3.0 | 430 | 580 | 43833 | 59123 | 60 | 0.34 | 1.76 | 0.97 | 30322 | 11.100 |

# Single Row Taper Roller Bearing (Metric series)

Equivalent radial load dynamic

$P_r = XF_r + YF_a$

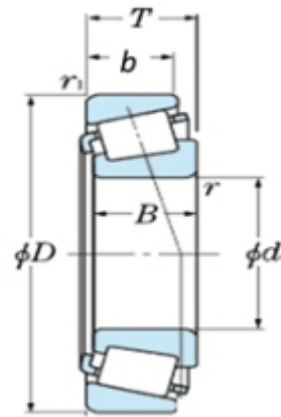| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

static

$P_{or} = 0.5F_r + Y_oF_a$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 110 | 240 | 63 | 57 | 38 | 4.0 | 3.0 | 425 | 590 | 43323 | 60143 | 61 | 0.82 | 0.73 | 0.40 | 31322 | 12.500 |
| 110 | 240 | 84.5 | 80 | 65 | 4.0 | 3.0 | 816 | 1132 | 83140 | 115392 | 117 | 0.34 | 1.76 | 0.97 | 32322 | 18.000 |
| 110 | 170 | 47 | 47 | 37 | 2.5 | 2.0 | 323 | 500 | 32881 | 50968 | 55 | 0.29 | 2.07 | 1.14 | 33022 | 3.800 |
| 110 | 170 | 38 | 38 | 29 | 2.5 | 2.0 | 259 | 381 | 26434 | 38836 | 42 | 0.43 | 1.40 | 0.77 | 32022XF | 3.000 |
| 110 | 170 | 38 | 38 | 29 | 2.5 | 2.0 | 266 | 381 | 27142 | 38836 | 42 | 0.43 | 1.40 | 0.77 | ASTB32022X | 3.003 |
| 120 | 215 | 61.5 | 58 | 50 | 3.0 | 2.5 | 557 | 751 | 56743 | 76555 | 78 | 0.44 | 1.36 | 0.75 | 32224 | 9.260 |
| 120 | 180 | 38 | 38 | 29 | 2.5 | 2.0 | 274 | 420 | 27971 | 42813 | 45 | 0.46 | 1.30 | 0.72 | 32024 | 3.250 |
| 120 | 260 | 59.5 | 55 | 46 | 4.0 | 3.0 | 589 | 746 | 60041 | 76045 | 75 | 0.34 | 1.76 | 0.97 | 30324 | 14.200 |
| 120 | 260 | 68 | 62 | 42 | 4.0 | 3.0 | 533 | 676 | 54332 | 68909 | 68 | 0.82 | 0.73 | 0.40 | 31324 | 15.200 |
| 120 | 260 | 90.5 | 86 | 69 | 4.0 | 3.0 | 864 | 1230 | 88073 | 125382 | 124 | 0.34 | 1.76 | 0.97 | 32324 | 15.200 |
| 120 | 215 | 43.5 | 40 | 34 | 3.0 | 2.5 | 345 | 470 | 35204 | 47959 | 49 | 0.44 | 1.36 | 0.75 | 30224 | 6.500 |
| 130 | 230 | 67.75 | 64 | 54 | 4.0 | 3.0 | 594 | 820 | 60510 | 83588 | 84 | 0.44 | 1.36 | 0.75 | 32226 | 11.500 |
| 130 | 280 | 98.75 | 93 | 78 | 5.0 | 4.0 | 895 | 1263 | 91233 | 128746 | 124 | 0.34 | 1.76 | 0.97 | 32326 | 27.600 |
| 140 | 250 | 71.75 | 68 | 58 | 4.0 | 3.0 | 610 | 980 | 62181 | 99898 | 98 | 0.44 | 1.36 | 0.75 | 32228 | 14.700 |
| 140 | 210 | 45 | 45 | 34 | 2.5 | 2.0 | 373 | 589 | 38068 | 60122 | 61 | 0.46 | 1.30 | 0.72 | 32028XF | 5.280 |
| 150 | 225 | 48 | 48 | 36 | 3.0 | 2.5 | 365 | 670 | 37207 | 68298 | 68 | 0.46 | 1.30 | 0.72 | 32030 | 6.400 |
| 150 | 270 | 77 | 73 | 60 | 4.0 | 3.0 | 700 | 1130 | 71428 | 115306 | 110 | 0.43 | 1.40 | 0.77 | 32230 | 18.400 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**
**dynamic**
$P_r = XF_r + YF_a$

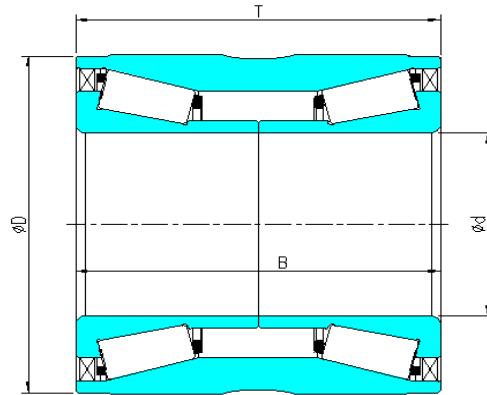| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

**static**
$P_{or} = 0.5F_r + Y_oF_a$
When $P_{or} < F_r$ use $P_{or} = F_r$
For values of e, $Y_2$ and $Y_o$
see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | mm | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 160 | 240 | 51 | 51 | 38 | 3.0 | 2.5 | 415 | 730 | 42304 | 74414 | 72 | 0.46 | 1.30 | 0.72 | 32032 | 7.700 |
| 160 | 375 | 86.55 | 79.4 | 50 | 4.7 | 4.7 | 880 | 1090 | 89704 | 111111 | 99 | 0.66 | 0.91 | 0.50 | 7832 | 39.400 |
| 160 | 290 | 84 | 80 | 67 | 4.0 | 3.0 | 897 | 1430 | 91437 | 145770 | 137 | 0.43 | 1.40 | 0.77 | 32232 | 23.400 |
| 170 | 260 | 57 | 57 | 43 | 3.0 | 2.5 | 519 | 920 | 52905 | 93782 | 89 | 0.44 | 1.36 | 0.75 | 32034 | 10.600 |
| 170 | 260 | 57 | 57 | 43 | 3.0 | 2.5 | 519 | 920 | 52905 | 93782 | 89 | 0.44 | 1.36 | 0.75 | 32034X | 10.600 |
| 170 | 360 | 127 | 120 | 100 | 5.0 | 4.0 | 1430 | 2120 | 145918 | 216326 | 193 | 0.36 | 1.67 | 0.92 | 32334 | 57.900 |
| 170 | 230 | 38 | 38 | 30 | 2.0 | 2.5 | 286 | 590 | 29183 | 60204 | 58 | 0.38 | 1.58 | 0.87 | 32934 | 4.500 |
| 170 | 230 | 39 | 38 | 31 | 3.1 | 2.5 | 335 | 590 | 34159 | 60161 | 58 | 0.38 | 1.58 | 0.87 | JHM534149/110 | 4.510 |
| 180 | 320 | 91 | 86 | 71 | 5.0 | 4.0 | 950 | 1650 | 96840 | 168196 | 153 | 0.46 | 1.30 | 0.72 | 32236 | 29.800 |
| 190 | 290 | 64 | 64 | 48 | 3.0 | 2.5 | 655 | 1210 | 66769 | 123344 | 113 | 0.44 | 1.36 | 0.75 | 32038X | 14.700 |
| 190 | 340 | 97 | 92 | 75 | 5.0 | 4.0 | 1150 | 1850 | 117227 | 188583 | 168 | 0.43 | 1.40 | 0.77 | 32238 | 35.200 |
| 200 | 360 | 104 | 98 | 82 | 5.0 | 4.0 | 1300 | 2200 | 132558 | 224330 | 197 | 0.41 | 1.46 | 0.80 | 32240 | 43.2 |
| 220 | 340 | 76.5 | 66.675 | 62 | 4.0 | 4.0 | 987 | 14401 | 100581 | 1467992 | 1290 | 0.35 | 1.71 | 0.94 | 2007144 | 22.300 |
| 220 | 340 | 76 | 76 | 57 | 4.0 | 3.0 | 1045 | 1652 | 106525 | 168369 | 148 | 0.43 | 1.40 | 0.77 | 4TB32044X | 24.305 |
| 220 | 400 | 72 | 65 | 54 | 5.0 | 4.0 | 1000 | 1460 | 101968 | 148873 | 127 | 0.43 | 1.40 | 0.77 | 7244(30244) | 35.200 |
| 240 | 320 | 51 | 48 | 41 | 3.0 | 2.5 | 470 | 990 | 47910 | 100917 | 89 | 0.46 | 1.30 | 0.72 | 32948 | 11.000 |

# Single Row Taper Roller Bearing (Metric series)



**Equivalent radial load**

*dynamic*

$P_r = XF_r + YF_a$

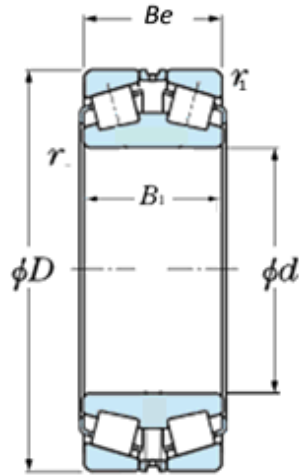| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | 0 | 0.4 | $Y_2$ |

*static*

$Por = 0.5F_r + Y_oF_a$

*When $P_{or} < F_r$ use $P_{or} = F_r$*

For values of e, $Y_2$ and Yo see the table below.

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| mm | | | | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | b | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | | | | | |
| 240 | 360 | 76 | 72 | 62 | 4.0 | 3.0 | 900 | 1750 | 91743 | 178389 | 153 | 0.46 | 1.30 | 0.72 | 32048 | 27.300 |
| 255 | 560 | 123.05 | 104.8 | 70 | 6.0 | 6.0 | 1780 | 2490 | 181632 | 254081 | 199 | 0.87 | 0.69 | 0.38 | 30651 | 120.000 |
| 260 | 360 | 64.5 | 60 | 52 | 3.5 | 3.5 | 800 | 1323 | 81543 | 134883 | 115 | 0.37 | 1.62 | 0.89 | 2007952 | 17.700 |
| 280 | 420 | 87 | 82 | 71 | 5.0 | 4.0 | 1110 | 2040 | 113265 | 208163 | 171 | 0.37 | 1.62 | 0.89 | 2007156 | 39.300 |
| 300 | 460 | 100.7 | 95 | 82 | 5.0 | 5.0 | 1699 | 2610 | 173204 | 266024 | 213 | 0.31 | 1.94 | 1.06 | 2007160 | 55.900 |
| 300 | 460 | 100 | 100 | 74 | 5.0 | 4.0 | 1484 | 2980 | 151428 | 304081 | 243 | 0.43 | 1.40 | 0.77 | 32060 | 58.000 |
| 320 | 480 | 100 | 100 | 74 | 5.0 | 4.0 | 1520 | 2940 | 155102 | 300000 | 237 | 0.42 | 1.43 | 0.79 | 32064 | 59.000 |
| 320 | 670 | 210 | 200 | 170 | 7.5 | 7.5 | 4570 | 8040 | 466326 | 820408 | 607 | 0.37 | 1.62 | 0.89 | 32364 | 331.200 |
| 500 | 670 | 85 | 78 | 60 | 6.0 | 5.0 | 1470 | 3100 | 149893 | 316101 | 223 | 0.43 | 1.40 | 0.77 | 10079/500 | 74.100 |

## Unitized Taper Roller Bearing (Metric Series)



**Equivalent radial load dynamic**

$$P_r = XF_r + YF_a$$

| | $\dfrac{F_a}{F_r} \leqq e$ | | $\dfrac{F_a}{F_r} > e$ | |
|---|---|---|---|---|
| | $X$ | $Y$ | $X$ | $Y$ |
| | 1 | $Y_1$ | 0.67 | $Y_2$ |

**static**

$$P_{or} = F_r + Y_oF_a$$

For values of $e$, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial load factors | | Bearing Number | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Dynamic | Static | Dynamic | Static | | | | | | |
| | | | | KN | | Kgf | | KN | e | $Y_2$ | $Y_o$ | | |
| d | D | T | B | Cr | Cor | Cr | Cor | Cu | | | | | |
| 40 | 73 | 55 | 55 | 99.6 | 158.4 | 10156 | 16152 | 19.3 | 0.39 | 1.55 | 0.85 | TS2N1331XAT2XLLX | 0.992 |
| 49 | 84 | 48 | 48 | 118.5 | 186.5 | 12084 | 19018 | 22.7 | 0.38 | 1.58 | 0.9 | N1501XAT2XLLX | 1.05 |
| 49 | 84 | 48 | 48.185 | 124 | 219.1 | 12645 | 22342 | 26.7 | 0.33 | 1.82 | 1 | N1293XAT2XLLX | 1.15 |
| 55 | 90 | 60 | 60 | 137.9 | 234.9 | 14062 | 23953 | 26.7 | 0.41 | 1.48 | 0.81 | N1758XAT2XLLX | 1.41 |
| 68 | 127 | 115 | 115 | 365.6 | 581.4 | 37281 | 59287 | 70.9 | 0.41 | 1.47 | 0.81 | N1496XAT2XLLX | 6.034 |
| 70 | 130 | 130 | 130.00 | 361.9 | 600.3 | 36904 | 61214 | 73.1 | 0.41 | 1.47 | 0.81 | N1615XAT2XLLX | 7.09 |
| 82 | 140 | 115 | 115.31 | 379 | 574 | 38647 | 58532 | 34.1 | 0.4 | 1.49 | 0.82 | N1764XAT2XLLX | 6.57 |
| 90 | 160 | 125 | 125 | 453.7 | 831.9 | 46265 | 84831 | 98.5 | 0.4 | 1.49 | 0.82 | N1495XAT2XLLX | 10.34 |
| 100 | 165 | 140 | 140.386 | 486.5 | 929 | 49609 | 94732 | 104.1 | 0.4 | 1.49 | 0.82 | N1612XAT2XLLX | 10.866 |

# Double Row Taper Roller Bearing



**TDI (X-Arrangement)**



**TDO (O-Arrangement))**

## Equivalent radial load

**dynamic**

$$Pr = XF_r + YF_a$$

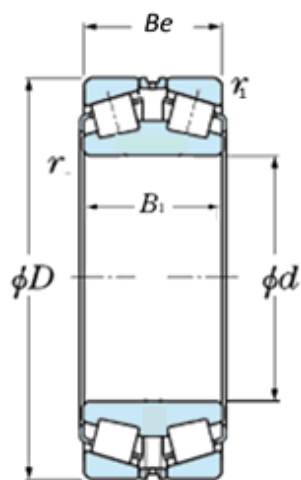| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | $Y_1$ | 0.67 | $Y_2$ |

**static**

$$Por = F_r + Y_o F_a$$

For values of $e$, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Dynamic | Static | Dynamic | Static | | e | $Y_1$ | $Y_2$ | $Y_o$ | | | |
| mm | | | | | | KN | | Kgf | | KN | | | | | | | |
| d | D | Bi | Be | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | | | |
| 101.6 | 146.05 | 49.212 | 39.688 | 1.5 | 0.8 | 182 | 331 | 18571 | 33775 | 38 | 0.39 | 1.73 | 2.58 | 1.69 | L521945/L521910D | TDI | 2.430 |
| 101.6 | 200.025 | 115.888 | 80.216 | 3.6 | 2.4 | 591 | 936 | 60245 | 95413 | 101 | 0.63 | 1.07 | 1.60 | 1.05 | 98400/98789D | TDO | 15.000 |
| 105 | 190 | 117.25 | 96 | 3.0 | 1.1 | 610 | 1100 | 62181 | 112131 | 119 | 0.42 | 1.61 | 2.39 | 1.57 | 97521 | TDO | 14.000 |
| 109.987 | 159.987 | 74.612 | 58.738 | 3.6 | 0.8 | 318 | 642 | 32426 | 65463 | 72 | 0.40 | 1.69 | 2.51 | 1.65 | LM522549/LM522510D | TDO | 4.600 |
| 120 | 260 | 136 | 124 | 1.5 | 3.0 | 1050 | 1426 | 107142 | 145510 | 143 | 0.82 | 0.82 | 1.23 | 0.80 | 31324DF | TDI | 30.200 |
| 120.65 | 174.625 | 77.788 | 61.913 | 3.6 | 0.8 | 359 | 728 | 36607 | 74233 | 79 | 0.33 | 2.05 | 3.05 | 2.00 | M224749/M224710D | TDO | 5.710 |
| 127 | 196.85 | 101.6 | 85.725 | 3.5 | 0.8 | 550 | 1150 | 56122 | 11734 | 121 | 0.34 | 1.99 | 2.96 | 1.94 | 67388/67322D | TDO | 11.000 |
| 127 | 234.95 | 142.875 | 114.3 | 3.5 | 1.5 | 897 | 1654 | 91465 | 168655 | 169 | 0.37 | 1.82 | 2.72 | 1.78 | NA95500/95927CD | TDO | 27.300 |
| 127.792 | 228.6 | 115.888 | 84.138 | 3.5 | 2.3 | 570 | 1200 | 58104 | 122324 | 123 | 0.73 | 0.92 | 1.38 | 0.90 | HM926749/HM926710D | TDI | 19.000 |
| 130 | 230 | 150 | 120 | 4.0 | 2.0 | 1087 | 1645 | 110780 | 167686 | 168 | 0.42 | 1.61 | 2.39 | 1.57 | 97526 | TDO | 25.300 |
| 133.35 | 196.85 | 92.075 | 92.075 | 3.3 | 1.5 | 550 | 1200 | 56065 | 122324 | 126 | 0.34 | 1.99 | 2.96 | 1.94 | 67390D/67322 | TDI | 9.500 |
| 133.35 | 199.949 | 101.6 | 85.725 | 3.5 | 0.8 | 540 | 1138 | 55063 | 116040 | 119 | 0.34 | 1.99 | 2.96 | 1.94 | 67390/67326D | TDO | 10.530 |
| 140 | 300 | 140 | 154 | 1.5 | 4.0 | 1200 | 1830 | 122324 | 186544 | 176 | 0.82 | 0.82 | 1.23 | 0.80 | 31328X/DF | TDI | 51.500 |
| 150 | 250 | 137.25 | 112 | 2.5 | 1.0 | 785 | 1560 | 80020 | 159021 | 155 | 0.25 | 2.70 | 4.02 | 2.64 | 2097730 | TDI | 25.800 |
| 150 | 270 | 172 | 138 | 4.0 | 1.5 | 1554 | 2388 | 158362 | 243425 | 233 | 0.42 | 1.61 | 2.39 | 1.57 | 97530 | TDO | 39.100 |
| 150 | 320 | 164 | 150 | 1.5 | 4.0 | 1360 | 2250 | 138775 | 229591 | 212 | 0.82 | 0.82 | 1.23 | 0.80 | 31330XDF | TDI | 58.500 |

nbc flexible solutions

nbc flexible solutions

# Double Row Taper Roller Bearing

TDI (X-Arrangement)          TDO (O-Arrangement))

**Equivalent radial load dynamic**

$$P_r = XF_r + YF_a$$

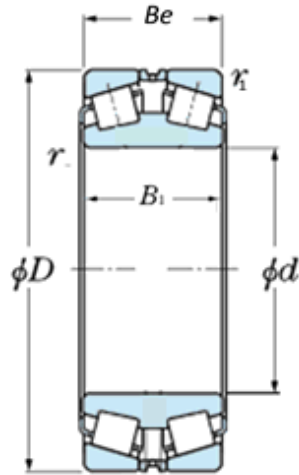| | $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|---|
| X | Y | X | Y |
| 1 | $Y_1$ | 0.67 | $Y_2$ |

**static**

$$P_{or} = F_r + Y_o F_a$$

For values of $e$, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| mm | | | | | | KN | | Kgf | | KN | e | $Y_1$ | $Y_2$ | $Y_o$ | | | |
| d | D | Bi | Be | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | | | |
| 152.4 | 254 | 142.876 | 111.125 | 7.9 | 3.5 | 996 | 1930 | 101529 | 196738 | 190 | 0.41 | 1.65 | 2.45 | 1.61 | NA99600/99102CD | TDO | 27.300 |
| 159.95 | 244.48 | 107.95 | 79.37 | 3.5 | 1.5 | 677 | 1069 | 69059 | 108970 | 106 | 0.35 | 1.93 | 2.87 | 1.89 | 81630/81963D | TDO | 18.180 |
| 160 | 270 | 150 | 120 | 2.5 | 1.0 | 1070 | 1890 | 109072 | 192661 | 183 | 0.32 | 2.11 | 3.14 | 2.06 | 2097732 | TDI | 27.200 |
| 165.1 | 288.925 | 142.875 | 111.125 | 1.5 | 7.0 | 1334 | 2140 | 135984 | 218145 | 204 | 0.32 | 2.11 | 3.14 | 2.06 | HM237535/HM237510D | TDO | 36.500 |
| 170 | 260 | 114 | 114 | 1.0 | 2.5 | 1050 | 1915 | 107142 | 195408 | 186 | 0.44 | 1.53 | 2.28 | 1.50 | 32034XDF | TDI | 21.000 |
| 177.8 | 279.4 | 133.353 | 96.838 | 3.3 | 1.6 | 863 | 1872 | 87971 | 190826 | 178 | 0.53 | 1.27 | 1.90 | 1.25 | 82680X/82620D | TDO | 29.000 |
| 177.8 | 288.925 | 123.825 | 123.825 | 1.5 | 3.3 | 1090 | 1980 | 111111 | 201835 | 187 | 0.32 | 2.11 | 3.14 | 2.06 | HM237546D/HM237510 | TDI | 31.000 |
| 180 | 280 | 128 | 128 | 1.0 | 2.5 | 1100 | 2320 | 112130 | 236493 | 220 | 0.42 | 1.61 | 2.39 | 1.57 | 32036X/DF | TDI | 29.500 |
| 180 | 300 | 163.25 | 134 | 3.0 | 1.0 | 1403 | 2360 | 143162 | 240816 | 221 | 0.26 | 2.60 | 3.87 | 2.54 | 2097736 | TDO | 43.500 |
| 180 | 280 | 133.25 | 108 | 3.0 | 1.0 | 1081 | 1810 | 110306 | 184693 | 172 | 0.29 | 2.33 | 3.47 | 2.28 | 2097136 | TDO | 29.000 |
| 190.5 | 266.7 | 103.188 | 84.138 | 3.5 | 0.8 | 625 | 1540 | 63730 | 157031 | 147 | 0.48 | 1.41 | 2.09 | 1.38 | 67885/67820D | TDO | 16.900 |
| 190.5 | 368.3 | 158.75 | 152.4 | 3.3 | 3.3 | 1690 | 3200 | 172448 | 326530 | 287 | 0.40 | 1.69 | 2.51 | 1.65 | EE420750D/EE421450 | TDI | 77.900 |
| 190.5 | 368.3 | 193.675 | 136.525 | 6.4 | 1.5 | 1800 | 3300 | 183542 | 336494 | 296 | 0.40 | 1.69 | 2.51 | 1.65 | EE420751/421451 | TDO | 87.000 |
| 200 | 310 | 151 | 123 | 3.0 | 1.0 | 1144 | 2080 | 116641 | 212029 | 192 | 0.37 | 1.82 | 2.72 | 1.78 | 2097140 | TDI | 38.300 |
| 200 | 340 | 183 | 150 | 4.0 | 1.5 | 1898 | 3400 | 193622 | 346938 | 308 | 0.24 | 2.81 | 4.19 | 2.75 | 2097740 | TDO | 65.500 |

# Double Row Taper Roller Bearing



**TDI (X-Arrangement)**



**TDO (O-Arrangement))**

### Equivalent radial load dynamic

$$Pr = XFr + YFa$$

| | $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|---|
| X | Y | X | Y |
| 1 | $Y_1$ | 0.67 | $Y_2$ |

### static

$$Por = Fr + Y_oFa$$

For values of $e$, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| mm | | | | | | KN | | Kgf | | KN | e | $Y_1$ | $Y_2$ | $Y_o$ | | | |
| d | D | Bi | Be | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | | | |
| 200.025 | 317.5 | 146.05 | 111.125 | 4.3 | 1.5 | 1257 | 2337 | 128174 | 238299 | 214 | 0.52 | 1.30 | 1.93 | 1.27 | 93787/93127CD | TDO | 40.800 |
| 203.2 | 276.225 | 95.25 | 73.025 | 3.5 | 0.8 | 706 | 1467 | 71989 | 149587 | 138 | 0.32 | 2.11 | 3.14 | 2.06 | LM241149NW/LM241110D | TDO | 15.6 |
| 206.375 | 336.55 | 184.15 | 180.975 | 3.3 | 1.5 | 2549 | 4072 | 259799 | 415066 | 368 | 0.33 | 2.05 | 3.05 | 2.00 | H242649D/H242610 | TDI | 63.750 |
| 220 | 340 | 163 | 130 | 4.0 | 1.5 | 1760 | 2980 | 179357 | 303772 | 267 | 0.35 | 1.93 | 2.87 | 1.89 | 2097144 | TDO | 49.300 |
| 220.662 | 314.325 | 131.762 | 106.362 | 6.4 | 1.5 | 1070 | 2450 | 109183 | 250000 | 222 | 0.33 | 2.05 | 3.05 | 2.00 | M244249/M244210D | TDO | 30.600 |
| 228.46 | 431.8 | 184.15 | 184.15 | 6.4 | 6.4 | 1657 | 2512 | 168902 | 256055 | 214 | 0.88 | 0.77 | 1.14 | 0.75 | EE113091/EE113170 | TDI | 108.400 |
| 228.46 | 355.6 | 158.751 | 117.475 | 6.8 | 0.8 | 1200 | 2500 | 122362 | 254920 | 221 | 0.33 | 2.05 | 3.05 | 2.00 | EE130902/131402D | TDO | 52.300 |
| 234.95 | 384.175 | 238.125 | 193.675 | 6.4 | 1.5 | 2500 | 5450 | 255102 | 556122 | 474 | 0.33 | 2.05 | 3.05 | 2.00 | H247549/H247510D | TDO | 105.000 |
| 240 | 320 | 109 | 90 | 3.0 | 1.1 | 794 | 1610 | 80886 | 164118 | 144 | 0.36 | 1.88 | 2.79 | 1.83 | 2097948 | TDI | 22.000 |
| 240 | 360 | 165 | 130 | 4.0 | 1.0 | 1360 | 2940 | 138634 | 299694 | 258 | 0.31 | 2.18 | 3.24 | 2.13 | 2097148 | TDI | 46.000 |
| 240 | 400 | 209 | 168 | 5.0 | 2.0 | 2151 | 4050 | 219215 | 412844 | 348 | 0.36 | 1.88 | 2.79 | 1.83 | 2097748 | TD1 | 98.500 |
| 241.3 | 327.025 | 185.224 | 217.466 | 3.3 | 2.0 | 765 | 1740 | 77982 | 177370 | 155 | 0.41 | 1.65 | 2.45 | 1.61 | 8578/8520DF | TDI | 54.000 |
| 247.65 | 406.4 | 234.95 | 231.776 | 1.5 | 6.4 | 3902 | 6315 | 397749 | 643680 | 540 | 0.82 | 0.82 | 1.23 | 0.80 | HH249949D/HH249910 | TDO | 98.000 |
| 247.65 | 406.4 | 247.65 | 206.2 | 1.5 | 6.4 | 2680 | 5800 | 273191 | 591233 | 496 | 0.33 | 2.05 | 3.05 | 2.00 | NP985601/NP490062 | TDO | 122.000 |
| 260 | 360 | 133 | 109 | 3.5 | 1.2 | 1380 | 2652 | 140673 | 270336 | 230 | 0.37 | 1.82 | 2.72 | 1.78 | 2097952 | TDO | 36.800 |

# Double Row Taper Roller Bearing

**TDI (X-Arrangement)**  **TDO (O-Arrangement))**

**Equivalent radial load dynamic**

$$P_r = XF_r + YF_a$$

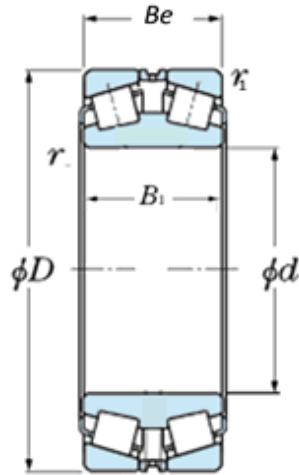| | $\dfrac{F_a}{F_r} \leqq e$ | | $\dfrac{F_a}{F_r} > e$ | |
|---|---|---|---|---|
| | X | Y | X | Y |
| | 1 | $Y_1$ | 0.67 | $Y_2$ |

**static**

$$P_{or} = F_r + Y_0 F_a$$

For values of $e$, $Y_2$ and $Y_0$ see the table below.

| Boundary Dimension | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type | Mass Kg. (Approx.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| | | mm | | | | KN | | Kgf | | KN | e | $Y_1$ | $Y_2$ | $Y_0$ | | | |
| d | D | Bi | Be | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | | | |
| 260 | 400 | 185 | 146 | 1.3 | 3.7 | 1760 | 3790 | 179409 | 386341 | 323 | 0.29 | 2.33 | 3.47 | 2.28 | 2097152 | TDO | 74.300 |
| 260 | 420 | 170 | 170 | 5.0 | 5.0 | 2392 | 4047 | 243786 | 412559 | 342 | 0.40 | 1.69 | 2.51 | 1.65 | 47752 | TDI | 88.500 |
| 260 | 440 | 225 | 180 | 4.0 | 1.3 | 2440 | 4750 | 248726 | 484200 | 398 | 0.24 | 2.81 | 4.19 | 2.75 | 2097752 | TDI | 124.000 |
| 279.4 | 457.2 | 244.475 | 244.475 | 1.5 | 6.4 | 4793 | 8838 | 488742 | 900963 | 634 | 0.33 | 2.05 | 3.05 | 2.00 | HH255149D/HH255110 | TDI | 163.600 |
| 280 | 420 | 188 | 154 | 5.0 | 2.0 | 1910 | 4080 | 194897 | 416326 | 342 | 0.37 | 1.82 | 2.72 | 1.78 | 2097156 | TDO | 85.000 |
| 300 | 420 | 160 | 128 | 4.0 | 1.0 | 1510 | 3630 | 153925 | 370031 | 301 | 0.36 | 1.88 | 2.79 | 1.83 | 2097960 | TDO | 62.900 |
| 300 | 500 | 204 | 152 | 1.8 | 4.7 | 2510 | 4910 | 255861 | 500510 | 395 | 0.32 | 2.11 | 3.14 | 2.06 | 1097760 | TDO | 148.000 |
| 300 | 440 | 105 | 105 | 4.0 | 4.0 | 980 | 2050 | 99929 | 209034 | 169 | 0.88 | 0.77 | 1.14 | 0.75 | 370660D | TDO | 55.500 |
| 303.213 | 495.3 | 263.525 | 263.525 | 6.4 | 3.3 | 4180 | 9420 | 426226 | 960538 | 758 | 0.33 | 2.05 | 3.05 | 2.00 | HH258249DW/HH258210 | TDI | 220.000 |
| 304.8 | 438.048 | 152.4 | 153.984 | 4.8 | 1.5 | 1450 | 3400 | 147808 | 346585 | 280 | 0.42 | 1.61 | 2.39 | 1.57 | EE129120X/EE129172DF | TDO | 71.000 |
| 305 | 510 | 200 | 200 | 5.0 | 5.0 | 1650 | 6000 | 168196 | 611621 | 480 | 0.74 | 0.91 | 1.36 | 0.89 | N1326 | TDI | 163.000 |
| 305.08 | 500 | 200 | 200 | 5.0 | 4.0 | 2562 | 4692 | 261182 | 478288 | 377 | 0.87 | 0.78 | 1.16 | 0.76 | N1021 | TDI | 154.600 |
| 305.08 | 500 | 200 | 200 | 5.0 | 5.0 | 2731 | 5095 | 278392 | 519327 | 409 | 0.87 | 0.78 | 1.16 | 0.76 | N1021M | TDI | 154.600 |
| 320 | 620 | 250 | 282.75 | 6.0 | 2.5 | 4323 | 6431 | 440669 | 655596 | 493 | 0.73 | 0.92 | 1.38 | 0.90 | N1051 | TDI | 400.000 |
| 333.375 | 469.9 | 109.5 | 152.4 | 6.4 | 1.5 | 2320 | 5500 | 236734 | 561224 | 442 | 0.33 | 2.05 | 3.05 | 2.00 | HM261049/HM261010D | TDO | 97.000 |

## Double Row Taper Roller Bearing



**TDI (X-Arrangement)**     **TDO (O-Arrangement))**

### Equivalent radial load
**dynamic**

$$P_r = XF_r + YF_a$$

| | $\dfrac{F_a}{F_r} \leqq e$ | | $\dfrac{F_a}{F_r} > e$ | |
|---|---|---|---|---|
| | $X$ | $Y$ | $X$ | $Y$ |
| | 1 | $Y_1$ | 0.67 | $Y_2$ |

**static**

$$P_{or} = F_r + Y_o F_a$$

For values of $e$, $Y_2$ and $Y_o$ see the table below.

| Boundary Dimension | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| mm | | | | | | KN | | Kgf | | KN | e | $Y_1$ | $Y_2$ | $Y_o$ | | | |
| d | D | Bi | Be | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | | | |
| 340 | 460 | 159 | 128 | 4.0 | 1.0 | 1955 | 4190 | 199287 | 427115 | 337 | 0.36 | 1.88 | 2.79 | 1.83 | 2097968 | TDO | 71.000 |
| 340 | 580 | 241 | 170 | 1.8 | 5.0 | 3200 | 6080 | 326530 | 620408 | 469 | 0.42 | 1.61 | 2.39 | 1.57 | 1097768 | TDO | 235.000 |
| 360 | 480 | 159 | 128 | 4.0 | 1.0 | 1760 | 4380 | 179591 | 446938 | 347 | 0.32 | 2.11 | 3.14 | 2.06 | 2097972 | TDO | 73.700 |
| 379 | 681.5 | 307 | 307 | 6.0 | 6.0 | 7418 | 14300 | 756116 | 1457696 | 1057 | 0.40 | 1.69 | 2.51 | 1.65 | N1208 | TDI | 522.550 |
| 380 | 620 | 240 | 170 | 6.0 | 2.5 | 3565 | 6850 | 237010 | 353660 | 515 | 0.46 | 1.47 | 2.18 | 1.43 | 1097776 | TDO | 250.000 |
| 384.18 | 546.1 | 222.25 | 177.8 | 6.4 | 1.6 | 3703 | 8207 | 327982 | 841030 | 631 | 0.33 | 2.05 | 3.05 | 2.00 | HM266449/HM266410D | TDO | 165.000 |
| 390 | 590 | 200 | 200 | 2.5 | 7.0 | 3079 | 6821 | 313818 | 695311 | 516 | 0.73 | 0.92 | 1.38 | 0.90 | JM966747DW/JM966718W | TDI | 190.157 |
| 400 | 701.5 | 380 | 380 | 3.0 | 6.0 | 6885 | 15339 | 701835 | 1563609 | 1121 | 0.50 | 1.35 | 2.01 | 1.32 | N1129 | TDI | 633.100 |
| 440 | 650 | 211 | 152 | 6.0 | 2.5 | 2860 | 6900 | 291836 | 704081 | 506 | 0.46 | 1.47 | 2.18 | 1.43 | 97188 | TDO | 212.000 |
| 457.2 | 596.9 | 165.1 | 120.65 | 9.7 | 1.5 | 2080 | 5462 | 212093 | 556949 | 405 | 0.40 | 1.69 | 2.51 | 1.65 | EE244180/244236D | TDO | 109.000 |
| 480 | 650 | 179 | 130 | 6.0 | 2.5 | 2589 | 5510 | 263868 | 561672 | 400 | 0.42 | 1.61 | 2.39 | 1.57 | 1097996 | TDO | 151.000 |
| 482.6 | 615.95 | 184.15 | 146.05 | 6.4 | 1.5 | 2850 | 8150 | 290609 | 831039 | 596 | 0.33 | 2.05 | 3.05 | 2.00 | LM272249/LM272210D | TDO | 129.000 |
| 488.95 | 634.873 | 180.975 | 136.525 | 6.4 | 1.5 | 2700 | 7800 | 275314 | 795350 | 567 | 0.47 | 1.44 | 2.14 | 1.40 | LM772748/LM772710D | TDO | 135.000 |
| 488.95 | 660.4 | 206.38 | 158.75 | 6.4 | 1.5 | 3500 | 9100 | 356779 | 927625 | 657 | 0.31 | 2.18 | 3.24 | 2.13 | EE640192/EE640261CD | TDO | 200.000 |
| 510 | 800 | 285 | 285 | 6.0 | 6.0 | 7641 | 12679 | 778858 | 1292457 | 880 | 0.87 | 0.78 | 1.16 | 0.76 | N1219 | TDI | 518.335 |

# Double Row Taper Roller Bearing



**TDI (X-Arrangement)**



**TDO (O-Arrangement))**

## Equivalent radial load

**dynamic**

$$P_r = XF_r + YF_a$$

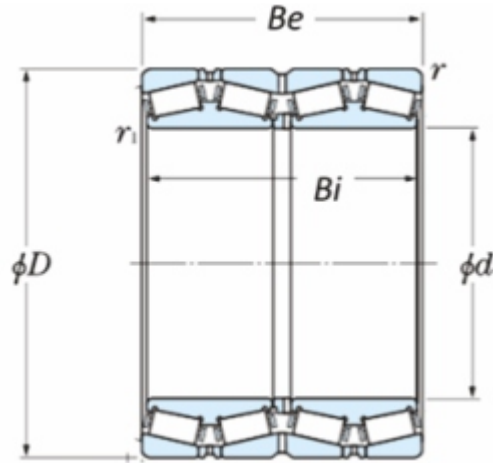| $\frac{F_a}{F_r} \leqq e$ | | $\frac{F_a}{F_r} > e$ | |
|---|---|---|---|
| X | Y | X | Y |
| 1 | $Y_1$ | 0.67 | $Y_2$ |

**static**

$$P_{or} = F_r + Y_o F_a$$

For values of $e$, $Y_2$ and $Y_o$ see the table below.

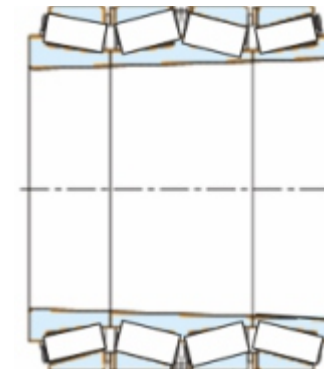| Boundary Dimension | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| | | mm | | | | KN | | Kgf | | KN | e | $Y_1$ | $Y_2$ | $Y_o$ | | | |
| d | D | Bi | Be | r | $r_1$ | Cr | Cor | Cr | Cor | Cu | | | | | | | |
| 530 | 710 | 190 | 136 | 5.0 | 1.5 | 2780 | 6720 | 283673 | 685714 | 474 | 0.40 | 1.69 | 2.51 | 1.65 | 10979/530 | TDO | 182.000 |
| 558.8 | 736.6 | 225.425 | 177.8 | 6.4 | 1.5 | 4120 | 11380 | 420108 | 1160396 | 792 | 0.40 | 1.69 | 2.51 | 1.65 | LM377449/LM377410CD | TDO | 239.000 |
| 558.8 | 736.6 | 225.425 | 177.8 | 6.4 | 1.5 | 4120 | 11380 | 420108 | 1160396 | 792 | 0.35 | 1.93 | 2.87 | 1.89 | LM377449/LM377410D | TDO | 248.00 |
| 558.8 | 736.5 | 165.1 | 114.3 | 6.4 | 3.3 | 2300 | 6220 | 234526 | 634241 | 433 | 0.51 | 1.32 | 1.97 | 1.29 | EE542220/542291D | TDO | 171.000 |
| 560 | 750 | 213 | 156 | 6.0 | 2.5 | 3637 | 8060 | 370755 | 821590 | 559 | 0.34 | 1.99 | 2.96 | 1.94 | 10979/560 | TDO | 235.000 |
| 560 | 820 | 242 | 242 | 8.0 | 11.0 | 5049 | 11557 | 598212 | 1121305 | 790 | 0.83 | 0.81 | 1.21 | 0.80 | 8471/560 | TDI | 427.000 |
| 600 | 800 | 210 | 160 | 6.0 | 2.5 | 3981 | 9846 | 405841 | 1003690 | 670 | 0.37 | 1.82 | 2.72 | 1.78 | 10979/600 | TDO | 242.000 |
| 710 | 950 | 240 | 175 | 6.0 | 2.5 | 4727 | 11000 | 481804 | 1121305 | 711 | 0.46 | 1.47 | 2.18 | 1.43 | 10979/710 | TDO | 440.000 |
| 850 | 1120 | 268 | 188 | 6.0 | 2.5 | 6860 | 18700 | 700000 | 1908163 | 1148 | 0.46 | 1.47 | 2.18 | 1.43 | 10979/850 | TDO | 647.000 |

## Four Row Taper Roller Bearing



**TQO(X- Arrangement)**　　　　**TQI (O- Arrangement with Straight bore)**　　　**TQIT (O- Arrangement with tapered bore)**

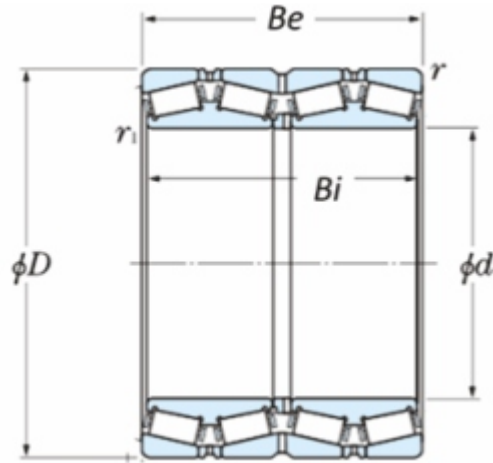| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type* | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| | | | | | | | KN | | Kgf | | KN | | | | | | | |
| d | D | C | Be | Bi | r₁ | r | Cr | Cor | Cr | Cor | Cu | e | Y₁ | Y₂ | Y₀ | | | |
| 60.325 | 100 | 106.362 | 106.362 | 106.362 | 0.8 | 3.3 | 286 | 559 | 29163 | 57000 | 68 | 0.43 | 1.57 | 2.34 | 1.53 | 28985D/28921/29921D | TQO | 3.30 |
| 127 | 182.526 | 158.75 | 158.75 | 158.750 | 3.3 | 3.3 | 759 | 1730 | 77370 | 176351 | 185 | 0.31 | 2.18 | 3.24 | 2.13 | 48290DGW/20/20D | TDI | 13.800 |
| 136.525 | 190.5 | 161.925 | 161.925 | 161.925 | 1.6 | 3.3 | 807 | 1890 | 82346 | 192857 | 199 | 0.32 | 2.11 | 3.14 | 2.06 | 48393DW/20/20D | TQI | 14.000 |
| 177.8 | 247.65 | 192.088 | 192.088 | 192.088 | 1.5 | 3.2 | 1578 | 2768 | 160836 | 282192 | 269 | 0.44 | 1.53 | 2.28 | 1.50 | 67790DW/20/21D | TQO | 28.130 |
| 180.843 | 284.162 | 101.6 | 239.715 | 239.715 | 3.3 | 1.5 | 1694 | 3663 | 172699 | 373364 | 347 | 0.33 | 2.05 | 3.05 | 2.00 | M240631T/44TD/47T/44D | TQIT | 60.000 |
| 187.325 | 269.875 | 211.138 | 211.138 | 211.138 | 3.3 | 1.5 | 1426 | 3400 | 145362 | 346585 | 324 | 0.33 | 2.05 | 3.05 | 2.00 | M238849D/10/10D | TQO | 41.800 |
| 190.5 | 266.7 | 188.912 | 187.325 | 187.325 | 1.5 | 3.3 | 1313 | 3185 | 133884 | 324768 | 303 | 0.48 | 1.41 | 2.09 | 1.38 | 67885DW/20/20D | TQO | 33.400 |
| 200 | 340 | 305 | 305 | 305.000 | 4.0 | 4.0 | 2900 | 5761 | 295666 | 587238 | 522 | 0.35 | 1.93 | 2.87 | 1.89 | 2077144 | TQO | 104.000 |
| 206.375 | 282.575 | 190.5 | 190.5 | 190.500 | 3.3 | 3.3 | 1226 | 3151 | 125011 | 321213 | 294 | 0.51 | 1.32 | 1.97 | 1.29 | 67985DW/20/21D | TDI | 36.500 |
| 215.9 | 288.925 | 177.8 | 177.8 | 177.800 | 0.8 | 3.3 | 1400 | 3600 | 142712 | 366972 | 333 | 0.43 | 1.57 | 2.34 | 1.53 | LM742749DW/14/14D | TDI | 32.000 |
| 220.663 | 314.325 | 239.713 | 239.713 | 239.713 | 1.5 | 3.3 | 2415 | 5100 | 246177 | 519878 | 463 | 0.33 | 2.05 | 3.05 | 2.00 | M244249D/10/10D | TDI | 60.400 |
| 241.478 | 349.18 | 228.6 | 228.6 | 228.600 | 1.5 | 3.3 | 2080 | 4920 | 212093 | 501682 | 434 | 0.36 | 1.88 | 2.79 | 1.83 | EE127097D/135/136D | TQO | 71.000 |
| 244.475 | 327.025 | 193.675 | 193.675 | 193.675 | 1.5 | 3.3 | 1804 | 4309 | 183930 | 439246 | 384 | 0.32 | 2.11 | 3.14 | 2.06 | LM247748DGW/10/10D | TDI | 43.590 |
| 246.327 | 381 | 301.625 | 301.625 | 301.625 | 6.4 | 1.5 | 2841 | 6850 | 289551 | 698267 | 593 | 0.33 | 2.05 | 3.05 | 2.00 | M252330T/45TD/49T/10DM | TQIT | 111.000 |

Type*:
TQO: Two double cones, one cone spacer, two single cups, two cup spacers, one double cup
TQI:Two double cups with one spacer in between, two singe cone and one double cone all matched  (without spacer) with straight bore.
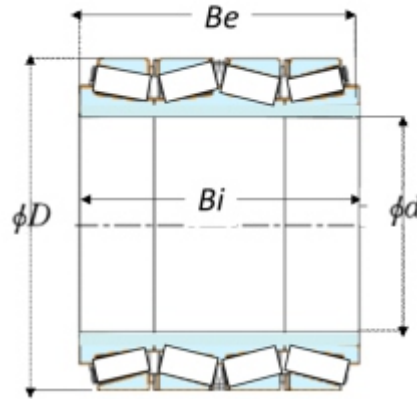TQIT:Two double cups with one spacer in between, two singe cone and one double cone all matched (without spacer) with tapered bore.
TDI: 2sets of  double row taper roller bearings of TDI configuration separated by spacer  between  insides two cups and two cones.
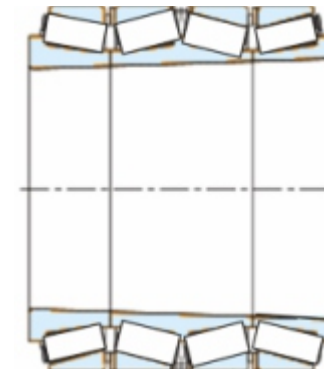
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# Four Row Taper Roller Bearing



**TQO(X- Arrangement)**          **TQI (O- Arrangement with Straight bore)**          **TQIT (O- Arrangement with tapered bore)**

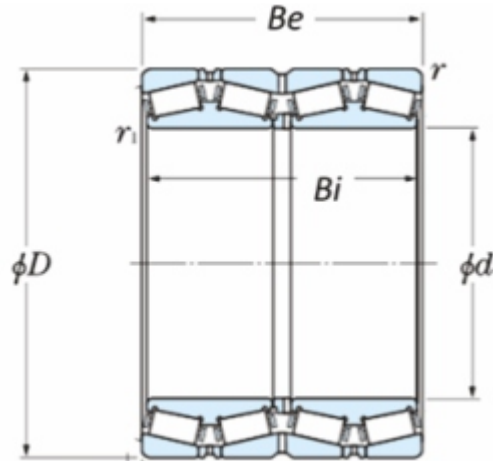| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type* | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| | | | | | | | KN | | Kgf | | KN | | | | | | | |
| d | D | C | Be | Bi | r₁ | r | Cr | Cor | Cr | Cor | Cu | e | Y₁ | Y₂ | Y₀ | | | |
| 254 | 358.775 | 269.875 | 269.875 | 269.875 | 3.3 | 3.3 | 3200 | 7100 | 326198 | 723751 | 619 | 0.33 | 2.05 | 3.05 | 2.00 | M249748D/10/10D | TDI | 86.000 |
| 260 | 440 | 128 | 330 | 330.000 | 5.0 | 1.5 | 3795 | 7772 | 386850 | 792253 | 651 | 0.30 | 2.25 | 3.35 | 2.20 | 477752 | TQIT | 196.000 |
| 266.7 | 355.6 | 228.6 | 230.19 | 230.190 | 1.6 | 3.2 | 2137 | 5405 | 217855 | 550968 | 469 | 0.36 | 1.88 | 2.79 | 1.83 | LM451349DW/10/10D | TQO | 65.500 |
| 269.875 | 381 | 282.575 | 282.575 | 282.575 | 4.0 | 4.0 | 2957 | 7077 | 301474 | 721427 | 606 | 0.33 | 2.05 | 3.05 | 2.00 | M252349D/10/10D | TDI | 96.590 |
| 279.4 | 393.7 | 269.875 | 269.875 | 269.875 | 1.5 | 6.4 | 2340 | 6560 | 238775 | 669387 | 556 | 0.38 | 1.78 | 2.64 | 1.74 | EE135111DW/55/56D | TQO | 103.000 |
| 279.578 | 380.9 | 244.48 | 244.48 | 244.480 | 1.5 | 3.2 | 2269 | 6020 | 231301 | 613690 | 513 | 0.43 | 1.57 | 2.34 | 1.53 | LM654644DW/10/10D | TQO | 81.670 |
| 280 | 460 | 324 | 324 | 324.000 | 3.0 | 6.0 | 3853 | 8350 | 392711 | 851172 | 688 | 0.46 | 1.47 | 2.18 | 1.43 | 1077756 | TQO | 220.000 |
| 280.27 | 379.89 | 244.48 | 244.48 | 244.480 | 1.5 | 3.2 | 3026 | 5900 | 308425 | 601427 | 503 | 0.43 | 1.57 | 2.34 | 1.53 | N1028 | TQO | 79.200 |
| 285.75 | 380.9 | 244.48 | 244.48 | 244.480 | 1.5 | 3.2 | 2269 | 6020 | 231302 | 613690 | 512 | 0.43 | 1.57 | 2.34 | 1.53 | LM654648DW/10/10D | TQO | 76.420 |
| 288.925 | 406.4 | 298.45 | 298.45 | 298.450 | 3.3 | 3.3 | 3603 | 8954 | 367238 | 912722 | 751 | 0.33 | 2.05 | 3.05 | 2.00 | M255449D/10/10D | TQO | 125.000 |
| 300 | 460 | 390 | 390 | 390.000 | 5.0 | 5.0 | 4945 | 10550 | 504077 | 1075433 | 862 | 0.31 | 2.18 | 3.24 | 2.13 | 2077160 | TDI | 238.000 |
| 317.5 | 422.275 | 269.875 | 269.875 | 269.875 | 1.5 | 3.3 | 3360 | 8150 | 342857 | 831632 | 671 | 0.32 | 2.11 | 3.14 | 2.06 | LM258648DGW/10/10D | TQO | 105.000 |
| 317.5 | 447.675 | 327.025 | 327.025 | 327.025 | 3.3 | 3.3 | 4298 | 10676 | 438258 | 1088610 | 871 | 0.33 | 2.05 | 3.05 | 2.00 | HM259049DGW/10/10D | TQO | 166.000 |
| 343.05 | 457.1 | 254 | 254 | 254.000 | 1.6 | 3.2 | 2778 | 6752 | 283175 | 688247 | 543 | 0.47 | 1.44 | 2.14 | 1.40 | LM761649DW/10/10D | TQO | 110.000 |
| 355.6 | 482.6 | 269.875 | 265.112 | 265.112 | 1.5 | 3.3 | 3209 | 7650 | 327065 | 779817 | 607 | 0.47 | 1.44 | 2.14 | 1.40 | LM763449DW/10/10D | TQO | 134.000 |
| 355.6 | 488.95 | 317.5 | 317.5 | 317.500 | 1.5 | 3.3 | 3500 | 10500 | 356779 | 1070336 | 831 | 0.33 | 2.05 | 3.05 | 2.00 | M263349DW/10/10D | TQO | 177.000 |

Type*:
TQO: Two double cones, one cone spacer, two single cups, two cup spacers, one double cup
TQI:Two double cups with one spacer in between, two singe cone and one double cone all matched  (without spacer) with straight bore.
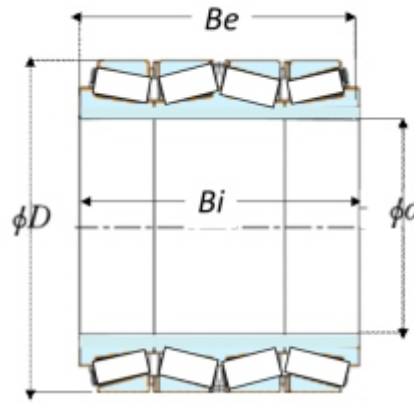TQIT:Two double cups with one spacer in between, two singe cone and one double cone all matched (without spacer) with tapered bore.
TDI: 2sets of  double row taper roller bearings of TDI configuration separated by spacer  between  insides two cups and two cones.
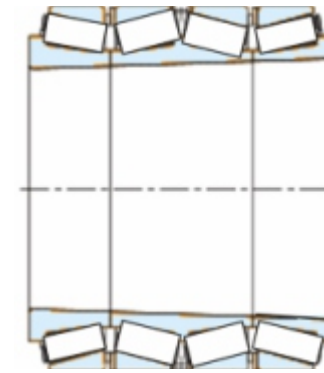
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# Four Row Taper Roller Bearing



TQO(X- Arrangement)          TQI (O- Arrangement with Straight bore)          TQIT (O- Arrangement with tapered bore)

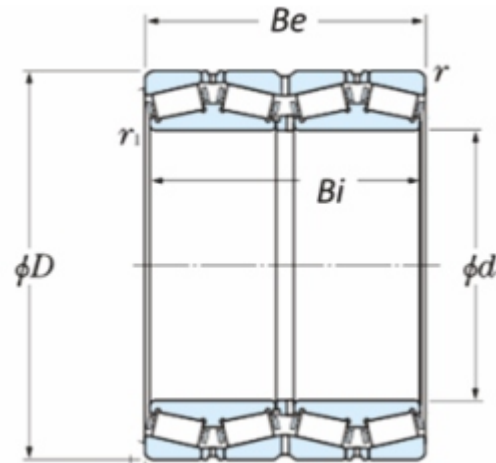| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type* | Mass Kg. (Apporox.) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| mm | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| | | | | | | | KN | | Kgf | | KN | | | | | | | |
| d | D | C | Be | Bi | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | e | $Y_1$ | $Y_2$ | $Y_0$ | | | |
| 368.3 | 523.875 | 382.588 | 382.588 | 382.588 | 3.3 | 6.4 | 4800 | 14000 | 489297 | 1427115 | 1090 | 0.33 | 2.05 | 3.05 | 2.00 | HM265049DW/10/10D | TDI | 267.000 |
| 380 | 620 | 418.5 | 420 | 420.000 | 6.0 | 6.0 | 7268 | 15000 | 740877 | 1529052 | 1129 | 0.46 | 1.47 | 2.18 | 1.43 | 1077776 | TDI | 480.000 |
| 384.175 | 546.1 | 400.05 | 400.05 | 400.050 | 3.3 | 6.4 | 8165 | 15800 | 832314 | 1610601 | 1215 | 0.33 | 2.05 | 3.05 | 2.00 | HM266449DW/10/10D | TDI | 305.000 |
| 385.762 | 514.35 | 317.5 | 317.5 | 317.500 | 3.3 | 3.3 | 4248 | 12029 | 433160 | 1226573 | 934 | 0.42 | 1.61 | 2.39 | 1.57 | LM665949DW/10/10D | TQO | 188.000 |
| 400 | 530 | 370 | 370 | 370.000 | 3.0 | 5.0 | 4350 | 13650 | 443877 | 1392857 | 1050 | 0.40 | 1.69 | 2.51 | 1.65 | N1325 | TDI | 213.000 |
| 406.4 | 546.1 | 288.93 | 288.93 | 288.930 | 1.5 | 6.4 | 3680 | 10200 | 375128 | 1039755 | 779 | 0.48 | 1.41 | 2.09 | 1.38 | LM767749DW/10/10D | TQO | 185.000 |
| 431.8 | 571.5 | 336.55 | 336.55 | 336.550 | 1.5 | 6.4 | 4050 | 12900 | 412844 | 1314985 | 970 | 0.47 | 1.44 | 2.14 | 1.40 | LM769349DW/10/10D | TQO | 230.000 |
| 450 | 595 | 368 | 368 | 368.000 | 3.0 | 6.0 | 5840 | 16506 | 595315 | 1682569 | 1226 | 0.33 | 2.05 | 3.05 | 2.00 | M270449DGW/10/10D | TDI | 284.000 |
| 460 | 730 | 438.5 | 438.5 | 438.500 | 5.0 | 10.0 | 9704 | 18000 | 990173 | 1836734 | 1286 | 0.73 | 0.92 | 1.38 | 0.90 | 777792 | TQO | 728.000 |
| 460 | 625 | 421 | 421 | 421.000 | 9.5 | 8.0 | 9430 | 19850 | 961264 | 2023445 | 1458 | 0.33 | 2.05 | 3.05 | 2.00 | M271149D/10/10D | TQO | 377.150 |
| 475 | 620 | 380 | 380 | 380.000 | 3.0 | 5.0 | 6737 | 18014 | 686752 | 1836239 | 1319 | 0.31 | 2.18 | 3.24 | 2.13 | JM171649DGW/10/10D | TQO | 293.800 |
| 480 | 700 | 77 | 420 | 420.000 | 6.0 | 2.5 | 9824 | 18500 | 1001473 | 1885831 | 1325 | 0.37 | 1.82 | 2.72 | 1.78 | 577796 | TQO | 537.000 |
| 482.6 | 647.7 | 417.512 | 417.512 | 417.512 | 3.3 | 6.4 | 6050 | 19000 | 616718 | 1936799 | 1378 | 0.33 | 2.05 | 3.05 | 2.00 | M272647DW/10/10D | TDI | 398.000 |
| 488.95 | 660.4 | 361.95 | 365.125 | 365.125 | 8.0 | 6.4 | 6153 | 16100 | 627166 | 1641182 | 1162 | 0.31 | 2.18 | 3.24 | 2.13 | EE640193DW/60/61D | TDI | 358.800 |
| 489.026 | 634.873 | 320.675 | 320.68 | 320.680 | 3.3 | 3.3 | 5001 | 14155 | 509810 | 1442895 | 1028 | 0.34 | 1.99 | 2.96 | 1.94 | EE243193DW/250/251D | TQO | 270.000 |

Type*:
TQO: Two double cones, one cone spacer, two single cups, two cup spacers, one double cup
TQI:Two double cups with one spacer in between, two singe cone and one double cone all matched  (without spacer) with straight bore.
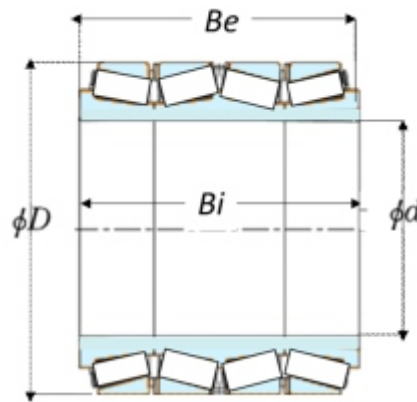TQIT:Two double cups with one spacer in between, two singe cone and one double cone all matched (without spacer) with tapered bore.
TDI: 2sets of  double row taper roller bearings of TDI configuration separated by spacer  between  insides two cups and two cones.
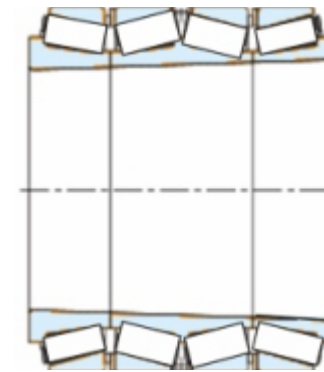
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# Four Row Taper Roller Bearing

**TQO(X- Arrangement)**      **TQI (O- Arrangement with Straight bore)**      **TQIT (O- Arrangement with tapered bore)**

| Boundary Dimension | | | | | | | Basic Load Rating | | | | Fatigue Load Limit | Constant | Axial Load Factor | | | Bearing Number | Type* | Mass Kg. (Apporox.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | Dynamic | Static | Dynamic | Static | | | | | | | | |
| | | | | | | | KN | | Kgf | | KN | | | | | | | |
| d | D | C | Be | Bi | $r_1$ | r | Cr | Cor | Cr | Cor | Cu | e | $Y_1$ | $Y_2$ | $Y_0$ | | | |
| 500 | 720 | 420 | 420 | 420.000 | 8.0 | 8.0 | 7775 | 18275 | 792574 | 1862895 | 1296 | 0.33 | 2.05 | 3.05 | 2.00 | 771/500 | TQO | 560.000 |
| 500 | 830 | 570 | 570 | 570.000 | 10.0 | 10.0 | 1264 | 26625 | 128871 | 2714037 | 1839 | 0.38 | 1.78 | 2.64 | 1.74 | 10777/500 | TQO | 1250.000 |
| 558.8 | 736.6 | 322.26 | 322.26 | 322.260 | 3.3 | 6.4 | 7159 | 16088 | 729741 | 1639969 | 1120 | 0.34 | 1.99 | 2.96 | 1.94 | EE843221D/90/91D | TQO | 375.000 |
| 571.5 | 812.8 | 593.725 | 593.725 | 593.725 | 3.3 | 6.4 | 11800 | 33800 | 1202854 | 3445464 | 2307 | 0.33 | 2.05 | 3.05 | 2.00 | M278749DGW/10/10D | TDI | 1012.000 |
| 600 | 800 | 365 | 365 | 365.000 | 5.0 | 5.0 | 6836 | 19692 | 696882 | 2007380 | 1340 | 0.37 | 1.82 | 2.72 | 1.78 | 779/600 | TQO | 531.000 |
| 630 | 920 | 515 | 515 | 515.000 | 10.0 | 10.0 | 11385 | 27582 | 1160586 | 2811651 | 1820 | 0.42 | 1.61 | 2.39 | 1.57 | 771/630 | TQO | 1160.000 |
| 649.924 | 914.898 | 674 | 672 | 672.000 | 3.6 | 6.0 | 13900 | 44600 | 1418367 | 4551020 | 2934 | 0.33 | 2.05 | 3.05 | 2.00 | M281349D/10/10D | TQO | 144.000 |
| 660.4 | 812.8 | 365.13 | 365.13 | 365.130 | 3.2 | 6.4 | 8873 | 20973 | 904526 | 2137921 | 1405 | 0.48 | 1.41 | 2.09 | 1.38 | L281149D/10/10D | TQO | 420.000 |
| 710 | 900 | 610 | 610 | 610.000 | 1.6 | 6.6 | 7914 | 24867 | 807005 | 2535638 | 1622 | 0.46 | 1.47 | 2.18 | 1.43 | N1217 | - | 771.000 |

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