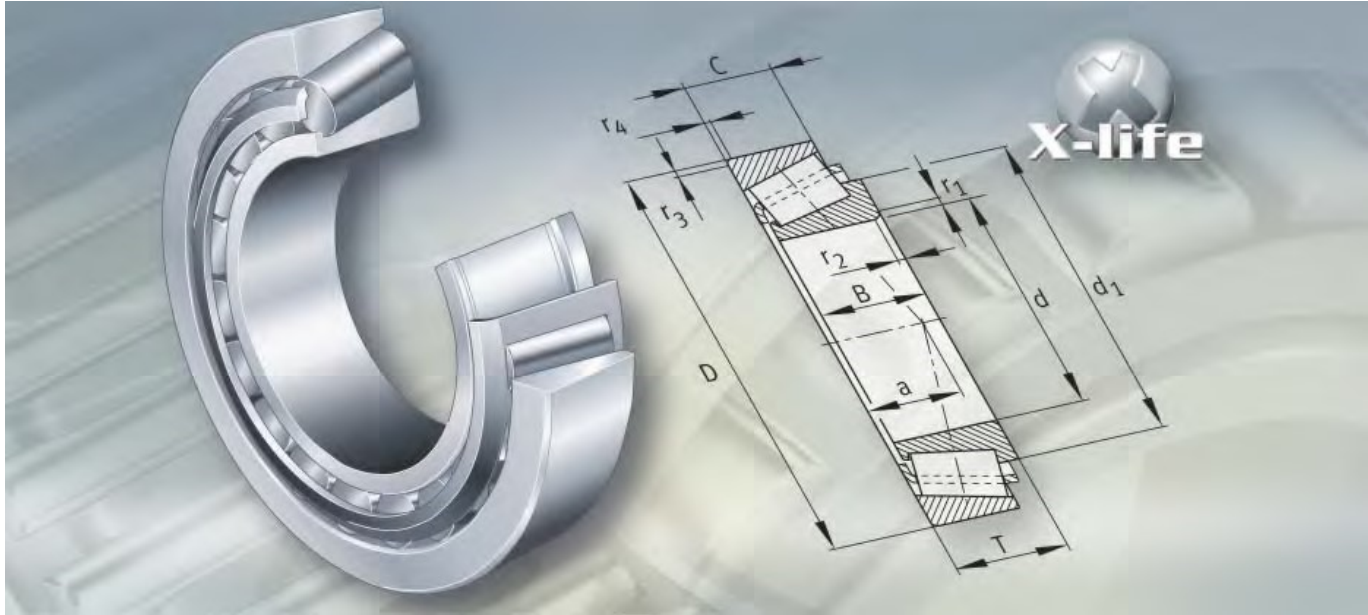


FAG



Tapered roller bearings

Tapered roller bearings

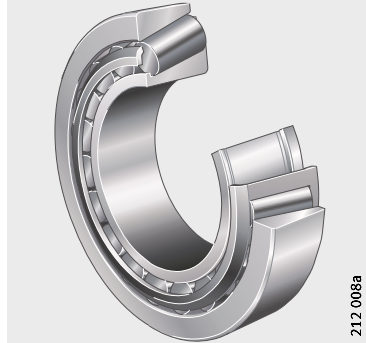
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Product overview Tapered roller bearings

Single row

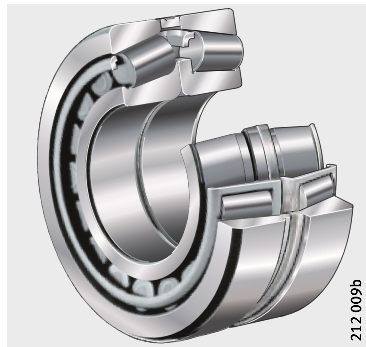
302, 303, 313, 320, 322,
323, 323..-A, 323..-B, 329,
330, 331, 332, T, K



212 008a

Matched pairs

313..-N11CA, 320..-N11CA,
322..-N11CA, 329..-N11CA



212 009b

Integral tapered roller bearings Sealed on one side

JK0S



00010A96

Tapered roller bearings

Features Tapered roller bearings comprise solid inner and outer rings with tapered raceways and tapered rollers in a window cage.

The bearings are in the form of:

- standard designs
- open variants matched in pairs
- integral designs sealed on one side, JK0S.

Open bearings are not self-retaining. As a result, the inner ring with the rollers and the cage can be fitted separately from the outer ring.

Metric and inch size bearings are available.

Designs with a K in the designation have inch dimensions.

For new designs, however, bearings in metric sizes should always be used in preference.

X-life

Tapered roller bearings of series T7FC are supplied in X-life design. These bearings have improved surfaces, a higher performance combination of material and heat treatment as well as an optimised contact geometry. This improves the friction behaviour and increases the basic dynamic load rating. Under the same operating conditions, a significant increase in basic rating life is achieved. For certain applications, this means that a smaller bearing arrangement can be designed.

X-life bearings are indicated in the dimension tables.

Radial and axial load capacity

Tapered roller bearings can support axial loads in one direction and high radial loads.

They must normally be axially adjusted against a second bearing fitted in a mirror image arrangement. This bearing combination is fitted in an O or X arrangement, *Figure 1* and *Figure 2*, page 520.

Contact angle

The axial load carrying capacity is dependent on the contact angle; i.e. the larger the angle, the higher the load to which the bearing can be subjected.

The size of the contact angle and thus the load carrying capacity is indicated by the bearing-specific value e in the dimension tables. Bearings of series 313, 323..-B, T5ED and T7FC have a very high axial load carrying capacity due to their particularly large contact angle.



Tapered roller bearings

Compensation of angular misalignments

The modified line contact between the tapered rollers and the raceways ensures optimum stress distribution at the contact points, prevents edge stresses and allows the bearings to undergo angular adjustment.

At a load ratio $P/C_r \leq 0,2$, the tilting of the bearing rings relative to each other must not exceed a maximum of 4 angular minutes. For higher loads or tilting angles, please contact us.

Matched bearings

Tapered roller bearings with the suffix N11CA are matched in pairs in an X arrangement and can therefore support high axial forces in both directions and moment loads.

The axial internal clearance of the bearing pair is defined by a ring between the two outer rings and is indicated in the suffix, see section Axial internal clearance, page 529.

We can also supply tapered roller bearings by agreement as matched pairs in an O arrangement (N11BA).

When ordering, the number of bearings must be stated, not the number of bearing pairs.

Integral tapered roller bearings

Tapered roller bearings of series JK0S are ready-to-fit units sealed on one side and are predominantly fitted in pairs in an O arrangement. They are not separable and do not require greasing.

No setting of axial internal clearance required

There is no need to set the axial internal clearance of the bearing pair. It is the result of the very narrowly toleranced projection (dimension u) between the inner and outer ring when the inner rings are clamped using a shaft nut or shaft end cover.

In order to achieve the correct axial internal clearance after fitting, the inner and outer rings have a tight fit.

In the case of integral tapered roller bearings fitted in pairs in an O arrangement, a suitable slot is formed on the outer ring for the snap ring BR. The snap ring must be ordered separately.

Sealing

Tapered roller bearings of standard design and matched in pairs are not sealed.

Integral tapered roller bearings JK0S have a lip seal on one side.

Lubrication

Tapered roller bearings of standard design and matched in pairs can be lubricated with oil or grease.

Integral tapered roller bearings JK0S are filled with a high quality grease.

Operating temperature Open tapered roller bearings can be used at operating temperatures from $-30\text{ }^{\circ}\text{C}$ to $+120\text{ }^{\circ}\text{C}$.
 For continuous operating temperatures above $+120\text{ }^{\circ}\text{C}$, please contact us.
 Bearings with a lip seal can be used at operating temperatures from $-30\text{ }^{\circ}\text{C}$ to $+110\text{ }^{\circ}\text{C}$, restricted by the grease and sealing ring material.

Cages Open tapered roller bearings have sheet steel cages.
 Integral bearings JKOS have cages made from glass fibre reinforced polyamide 66.

Suffixes Suffixes for available designs: see table.

Available designs

| Suffix | Description | Design |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| A | Modified internal construction | Standard |
| N11CA-A.. | Two tapered roller bearings matched in an X arrangement, with an intermediate ring between the outer rings. Axial internal clearance in μm | |
| B | Increased contact angle | |
| X | External dimensions matched to international standards | |
| P5 | Increased accuracy | Special design, available by agreement and in certain series only |



Tapered roller bearings

Design and safety guidelines Calculation of axial force

Under radial load, an internal axial force is induced in the bearing that must be supported by a second bearing and taken into consideration when calculating the equivalent bearing load.

Depending on the bearing arrangement (O or X arrangement), the axial force must first be determined for bearings adjusted clearance-free without preload, *Figure 1*, *Figure 2* and table Load ratio and axial bearing load, page 521.

The following preconditions apply:

- The radial forces act at the central contact points and are positive
- Bearing A is subjected to a radial load F_{rA} , bearing B to a load F_{rB}
- F is an external axial force acting on bearing A.

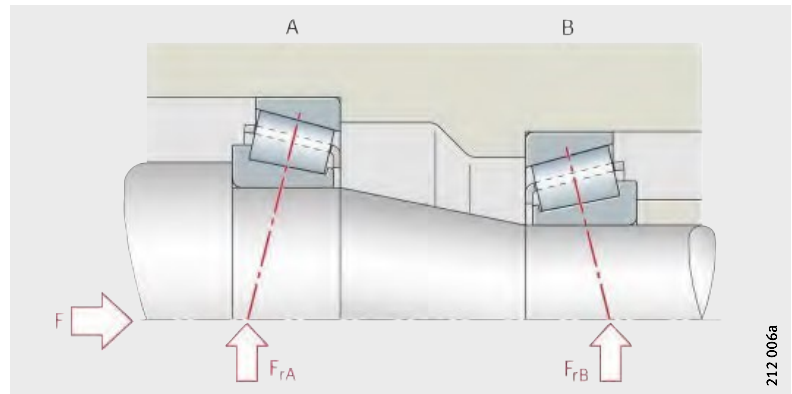


Figure 1
Bearings in O arrangement

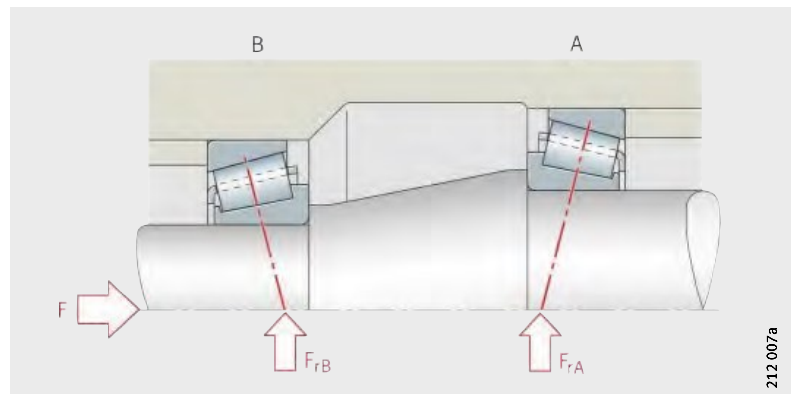


Figure 2
Bearings in X arrangement

**Load ratio
and axial bearing load**

| Load ratio | | Axial force $F_a^{1)}$ | |
|----------------------------------------------|---------------------------------------------------------------------------|------------------------------------------|------------------------------------------|
| Radial bearing load | External axial force | Bearing A | Bearing B |
| $\frac{F_{rA}}{Y_A} \leq \frac{F_{rB}}{Y_B}$ | $F \geq 0$ | $F_a = F + 0,5 \cdot \frac{F_{rB}}{Y_B}$ | 2) |
| $\frac{F_{rA}}{Y_A} > \frac{F_{rB}}{Y_B}$ | $F > 0,5 \cdot \left(\frac{F_{rA}}{Y_A} - \frac{F_{rB}}{Y_B} \right)$ | $F_a = F + 0,5 \cdot \frac{F_{rB}}{Y_B}$ | 2) |
| | $F \leq 0,5 \cdot \left(\frac{F_{rA}}{Y_A} - \frac{F_{rB}}{Y_B} \right)$ | 2) | $F_a = 0,5 \cdot \frac{F_{rA}}{Y_A} - F$ |

1) Axial force F_a , to be used in calculation of the equivalent dynamic bearing load.

2) If no formula is given, the axial force is not taken into consideration.

**Load ratio
and axial bearing load for JK05**

| Load ratio ¹⁾ $Y = Y_A = Y_B$ | Axial force $F_a^{2)}$ | |
|--------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|
| | Bearing A | Bearing B |
| $F_{rA} \leq F_{rB}$ | $F_a = F + 0,5 \cdot \frac{F_{rB}}{Y}$ | – |
| $F_{rA} > F_{rB}$ $F > 0,5 \cdot \left(\frac{F_{rA}}{Y} - \frac{F_{rB}}{Y} \right)$ | $F_a = F + 0,5 \cdot \frac{F_{rB}}{Y}$ | – |
| $F_{rA} > F_{rB}$ $F \leq 0,5 \cdot \left(\frac{F_{rA}}{Y} - \frac{F_{rB}}{Y} \right)$ | – | $F_a = 0,5 \cdot \frac{F_{rA}}{Y} - F$ |

1) Bearings arranged in pairs.

2) Axial force F_a , to be used in calculation of the equivalent dynamic bearing load.



Tapered roller bearings

Equivalent dynamic bearing load

Single bearing under dynamic load

For single bearings under dynamic load (and also for integral tapered roller bearings JKOS), the following applies:

| Load ratio | Equivalent dynamic bearing load |
|--------------------------|-----------------------------------|
| $\frac{F_a}{F_r} \leq e$ | $P = F_r$ |
| $\frac{F_a}{F_r} > e$ | $P = 0,4 \cdot F_r + Y \cdot F_a$ |

P N
Equivalent dynamic bearing load for combined load
F_a N
Axial dynamic bearing load
F_r N
Radial dynamic bearing load
e, Y –
Factors from dimension tables.

For bearing pairs under dynamic load in an X or O arrangement, the following applies:

Bearing pairs under dynamic load

| Load ratio | Equivalent dynamic bearing load |
|--------------------------|-----------------------------------------------|
| $\frac{F_a}{F_r} \leq e$ | $P = F_r + 1,12 \cdot Y \cdot F_a$ |
| $\frac{F_a}{F_r} > e$ | $P = 0,67 \cdot F_r + 1,68 \cdot Y \cdot F_a$ |

P N
Equivalent dynamic bearing load for combined load
F_a N
Axial dynamic bearing load of bearing pair
F_r N
Radial dynamic bearing load of bearing pair
e, Y –
Factors for single bearings from dimension tables.

For matched bearing pairs 313(320, 322, 329)..N11CA under dynamic load, the following applies:

Matched bearing pairs under dynamic load

| Load ratio | Equivalent dynamic bearing load |
|--------------------------|--------------------------------------|
| $\frac{F_a}{F_r} \leq e$ | $P = F_r + Y_1 \cdot F_a$ |
| $\frac{F_a}{F_r} > e$ | $P = 0,67 \cdot F_r + Y_2 \cdot F_a$ |

P N
Equivalent dynamic bearing load for combined load
F_a N
Axial dynamic bearing load of bearing pair
F_r N
Radial dynamic bearing load of bearing pair
e, Y₁, Y₂ –
Factors for bearing pairs from dimension tables.

Equivalent static bearing load

Single bearing under static load

For single bearings under static load (and also for integral tapered roller bearings JK0S), the following applies:

| Load ratio | Equivalent static load |
|----------------------------------------------------|---------------------------------------------|
| $\frac{F_{0a}}{F_{0r}} \leq \frac{1}{2 \cdot Y_0}$ | $P_0 = F_{0r}$ |
| $\frac{F_{0a}}{F_{0r}} > \frac{1}{2 \cdot Y_0}$ | $P_0 = 0,5 \cdot F_{0r} + Y_0 \cdot F_{0a}$ |

P_0 N
Equivalent static bearing load for combined load
 F_{0a} N
Axial static bearing load
 F_{0r} N
Radial static bearing load
 Y_0 –
Factor from dimension tables.

Bearing pairs under static load

For bearing pairs under static load in an X or O arrangement, the following applies:

$$P_0 = F_{0r} + 2 \cdot Y_0 \cdot F_{0a}$$

P_0 N
Equivalent static bearing load for combined load
 F_{0a} N
Axial static bearing load of bearing pair
 F_{0r} N
Radial static bearing load of bearing pair
 Y_0 –
Factor for single bearings from dimension tables.



Matched bearing pairs under static load

For matched bearing pairs 313(320, 322, 329)..-N11CA under static load, the following applies:

$$P_0 = F_{0r} + Y_0 \cdot F_{0a}$$

P_0 N
Equivalent static bearing load for combined load
 F_{0a} N
Axial static bearing load of bearing pair
 F_{0r} N
Radial static bearing load of bearing pair
 Y_0 –
Factor for bearing pairs from dimension tables.

Tapered roller bearings

Basic load ratings and fatigue limit load for bearing pairs

If two bearings of the same size and design are fitted immediately adjacent to each other in an O or X arrangement, the basic dynamic load rating C_r , the basic static load rating C_{0r} and the fatigue limit load C_{ur} of the bearing pair are as follows:

- $C_r = 1,715 \cdot C_{r \text{ single bearing}}$
- $C_{0r} = 2 \cdot C_{0r \text{ single bearing}}$
- $C_{ur} = 2 \cdot C_{ur \text{ single bearing}}$

Matched bearings

For matched bearing pairs 313..-N11CA, 320..-N11CA, 322..-N11CA and 329..-N11CA, the basic load ratings are given in the dimension tables.

Minimum radial load

In order to ensure operation without slippage, the bearings must be subjected to a minimum load $F_{r \text{ min}}$ in a radial direction. This applies particularly in the case of high speeds and high accelerations. In continuous operation, roller bearings with cage must have a minimum radial load of the order of $P/C_r > 0,02$.

Speeds



The limiting speeds n_G in the dimension tables must not be exceeded.

Matched bearings

The limiting speed n_G is possible if the less favourable thermal balance of the bearing pair is taken into consideration in the operating conditions.

Design of bearing arrangements Shaft and housing tolerances

Recommended shaft tolerances for radial bearings with cylindrical bore, see table, page 150.

Recommended housing tolerances for radial bearings, see table, page 152.

Recommended shaft and housing tolerances for JKOS bearings, see table.

Tolerances for JKOS bearings

| Circumferential load | Tolerance | |
|----------------------|-----------|---------|
| | Shaft | Housing |
| on inner ring | m6 | H7 |
| outer ring | g6 | M7 |

Mounting dimensions

The dimension tables give the maximum dimensions of the radii r_a and r_b and the diameters of the abutment shoulders.

Cage projection



In the open bearings, the cages project laterally to a certain extent. In order to prevent the cages grazing the adjacent construction, the lateral minimum distances C_a and C_b in the dimension tables must be taken into consideration in the design of the adjacent construction.

Accuracy Metric bearings

The main dimensions conform to DIN ISO 355 and DIN 720, the dimensional and geometrical tolerances conform to DIN 620-2.

Width tolerance to PN

Single row tapered roller bearings 303, 313, 322, 323..-A, 323..-B, T2EE, T4CB, T4DB, T5ED and T7FC as well as JK0S correspond to tolerance class PN.

Bearings 320, 329, 330, 331 and 332 for shaft diameters over 200 mm have width tolerances to tolerance class PN.

Inner ring tolerances, Part 1

| Bore mm d | | Bore deviation μm Δ_{dmp} | | Variation μm V_{dp} | | Radial runout μm K_{ia} |
|-----------------|-------|----------------------------------------------------------|------|-----------------------------------------------|------|---------------------------------------------------|
| over | incl. | max. | min. | max. | max. | max. |
| 10 | 18 | 0 | -12 | 12 | 9 | 15 |
| 18 | 30 | 0 | -12 | 12 | 9 | 18 |
| 30 | 50 | 0 | -12 | 12 | 9 | 20 |
| 50 | 80 | 0 | -15 | 15 | 11 | 25 |
| 80 | 120 | 0 | -20 | 20 | 15 | 30 |
| 120 | 180 | 0 | -25 | 25 | 19 | 35 |
| 180 | 250 | 0 | -30 | 30 | 23 | 50 |
| 250 | 315 | 0 | -35 | 35 | 26 | 60 |
| 315 | 400 | 0 | -40 | 40 | 30 | 70 |



Inner ring tolerances, Part 2

| Bore mm d | | Width deviation μm Δ_{Bs} | | Width deviation μm | | | | | |
|-----------------|-------|----------------------------------------------------------|------|----------------------------------|------|--------------------------|------|--------------------------|------|
| over | incl. | max. | min. | Δ_{T_s} | | $\Delta_{\text{T}_{1s}}$ | | $\Delta_{\text{T}_{2s}}$ | |
| | | | | max. | min. | max. | min. | max. | min. |
| 10 | 18 | 0 | -120 | +200 | 0 | +100 | 0 | +100 | 0 |
| 18 | 30 | 0 | -120 | +200 | 0 | +100 | 0 | +100 | 0 |
| 30 | 50 | 0 | -120 | +200 | 0 | +100 | 0 | +100 | 0 |
| 50 | 80 | 0 | -150 | +200 | 0 | +100 | 0 | +100 | 0 |
| 80 | 120 | 0 | -200 | +200 | -200 | +100 | -100 | +100 | -100 |
| 120 | 180 | 0 | -250 | +350 | -250 | +150 | -150 | +200 | -100 |
| 180 | 250 | 0 | -300 | +350 | -250 | +150 | -150 | +200 | -100 |
| 250 | 315 | 0 | -350 | +350 | -250 | +150 | -150 | +200 | -100 |
| 315 | 400 | 0 | -400 | +400 | -400 | +200 | -200 | +200 | -200 |

Tapered roller bearings

Outer ring tolerances

| Outside diameter mm D | | Outside diameter deviation μm Δ_{Dmp} | | Variation μm | | Radial runout μm K_{ea} |
|-----------------------------|-------|------------------------------------------------------------------|------|----------------------------|-------------------|-----------------------------------------------|
| over | incl. | max. | min. | V_{Dp} max. | V_{Dmp} max. | max. |
| 18 | 30 | 0 | -12 | 12 | 9 | 18 |
| 30 | 50 | 0 | -14 | 14 | 11 | 20 |
| 50 | 80 | 0 | -16 | 16 | 12 | 25 |
| 80 | 120 | 0 | -18 | 18 | 14 | 35 |
| 120 | 150 | 0 | -20 | 20 | 15 | 40 |
| 150 | 180 | 0 | -25 | 25 | 19 | 45 |
| 180 | 250 | 0 | -30 | 30 | 23 | 50 |
| 250 | 315 | 0 | -35 | 35 | 26 | 60 |
| 315 | 400 | 0 | -40 | 40 | 30 | 70 |
| 400 | 500 | 0 | -45 | 45 | 34 | 80 |

The width tolerance Δ_{Cs} is identical to Δ_{Bs} for the inner ring of the same bearing.

Width tolerance to P6X

Tapered roller bearings 320, 329, 330, 331 and 332 for shaft diameters up to 200 mm have restricted width tolerances to tolerance class P6X.

Inner ring tolerances, Part 1

| Bore mm d | | Bore deviation μm Δ_{dmp} | | Variation μm | | Radial runout μm K_{ia} |
|-----------------|-------|---------------------------------------------------|------|----------------------------|-------------------|--------------------------------------------|
| over | incl. | max. | min. | V_{dp} max. | V_{dmp} max. | max. |
| 10 | 18 | 0 | -12 | 12 | 9 | 15 |
| 18 | 30 | 0 | -12 | 12 | 9 | 18 |
| 30 | 50 | 0 | -12 | 12 | 9 | 20 |
| 50 | 80 | 0 | -15 | 15 | 11 | 25 |
| 80 | 120 | 0 | -20 | 20 | 15 | 30 |
| 120 | 180 | 0 | -25 | 25 | 19 | 35 |
| 180 | 200 | 0 | -30 | 30 | 23 | 50 |

Inner ring tolerances, Part 2

| Bore mm d | | Width deviation μm Δ_{Bs} | | Width deviation μm | | | | | |
|-----------------|-------|------------------------------------------------------|------|----------------------------------|------|----------------|------|----------------|------|
| over | incl. | max. | min. | Δ_{Ts} | | Δ_{T1s} | | Δ_{T2s} | |
| | | | | max. | min. | max. | min. | max. | min. |
| 10 | 18 | 0 | -50 | +100 | 0 | +50 | 0 | +50 | 0 |
| 18 | 30 | 0 | -50 | +100 | 0 | +50 | 0 | +50 | 0 |
| 30 | 50 | 0 | -50 | +100 | 0 | +50 | 0 | +50 | 0 |
| 50 | 80 | 0 | -50 | +100 | 0 | +50 | 0 | +50 | 0 |
| 80 | 120 | 0 | -50 | +100 | 0 | +50 | 0 | +50 | 0 |
| 120 | 180 | 0 | -50 | +150 | 0 | +50 | 0 | +100 | 0 |
| 180 | 200 | 0 | -50 | +150 | 0 | +50 | 0 | +100 | 0 |

Outer ring tolerances

| Outside diameter mm D | | Outside diameter deviation μm Δ_{Dmp} | | Variation μm | | Radial runout μm K_{ea} | Width deviation μm Δ_{Cs} | |
|-----------------------------|-------|---------------------------------------------------------------|------|----------------------------|-------------------|--------------------------------------------|---------------------------------------------------|------|
| over | incl. | max. | min. | V_{Dp} max. | V_{Dmp} max. | max. | max. | min. |
| 30 | 50 | 0 | -14 | 14 | 11 | 20 | 0 | -100 |
| 50 | 80 | 0 | -16 | 16 | 12 | 25 | 0 | -100 |
| 80 | 120 | 0 | -18 | 18 | 14 | 35 | 0 | -100 |
| 120 | 150 | 0 | -20 | 20 | 15 | 40 | 0 | -100 |
| 150 | 180 | 0 | -25 | 25 | 19 | 45 | 0 | -100 |
| 180 | 250 | 0 | -30 | 30 | 23 | 50 | 0 | -100 |
| 250 | 315 | 0 | -35 | 35 | 26 | 60 | 0 | -100 |

Restricted tolerance P5

We can by agreement supply tapered roller bearings with restricted tolerances to tolerance class P5 to DIN 620-2.

Inner ring tolerances, Part 1

| Bore mm d | | Bore deviation μm Δ_{dmp} | | Variation μm | | Radial runout μm K_{ia} |
|-----------------|-------|---------------------------------------------------|------|----------------------------|-------------------|--------------------------------------------|
| over | incl. | max. | min. | V_{dp} max. | V_{dmp} max. | max. |
| 10 | 18 | 0 | -7 | 5 | 5 | 5 |
| 18 | 30 | 0 | -8 | 6 | 5 | 5 |
| 30 | 50 | 0 | -10 | 8 | 5 | 6 |
| 50 | 80 | 0 | -12 | 9 | 6 | 7 |
| 80 | 120 | 0 | -15 | 11 | 8 | 8 |
| 120 | 180 | 0 | -18 | 14 | 9 | 11 |
| 180 | 250 | 0 | -22 | 17 | 11 | 13 |
| 250 | 315 | 0 | -25 | - | - | - |
| 315 | 400 | 0 | -30 | - | - | - |



Inner ring tolerances, Part 2

| Bore mm d | | Width deviation μm Δ_{Bs} | | Width deviation μm Δ_{Ts} | |
|-----------------|-------|---------------------------------------------------|------|---------------------------------------------------|------|
| over | incl. | max. | min. | max. | min. |
| 10 | 18 | 0 | -200 | +200 | -200 |
| 18 | 30 | 0 | -200 | +200 | -200 |
| 30 | 50 | 0 | -240 | +200 | -200 |
| 50 | 80 | 0 | -300 | +200 | -200 |
| 80 | 120 | 0 | -400 | +200 | -200 |
| 120 | 180 | 0 | -500 | +350 | -250 |
| 180 | 250 | 0 | -600 | +350 | -250 |
| 250 | 315 | 0 | - | +350 | -250 |
| 315 | 400 | 0 | - | +400 | -400 |

Tapered roller bearings

Outer ring tolerances

| Outside diameter mm D | | Outside diameter deviation μm Δ_{Dmp} | | Variation μm V_{Dp} | | Radial runout μm K_{ea} |
|-----------------------------|-------|---------------------------------------------------------------|------|----------------------------------------|-------------------|--------------------------------------------|
| over | incl. | max. | min. | max. | V_{Dmp} max. | max. |
| 18 | 30 | 0 | -8 | 6 | 5 | 6 |
| 30 | 50 | 0 | -9 | 7 | 5 | 7 |
| 50 | 80 | 0 | -11 | 8 | 6 | 8 |
| 80 | 120 | 0 | -13 | 10 | 7 | 10 |
| 120 | 150 | 0 | -15 | 11 | 8 | 11 |
| 150 | 180 | 0 | -18 | 14 | 9 | 13 |
| 180 | 250 | 0 | -20 | 15 | 10 | 15 |
| 250 | 315 | 0 | -25 | 19 | 13 | 18 |
| 315 | 400 | 0 | -28 | 22 | 14 | 20 |
| 400 | 500 | 0 | -33 | - | - | 23 |

Total width tolerance of matched bearings

The total width tolerance of bearing pairs 313..-N11CA, 320..-N11CA, 322..-N11CA and 329..-N11CA is determined from the axial internal clearance and the deviations of the width Δ_{T5} of the single bearings, see Inner ring tolerances, Part 2, page 525.

Bearings in inch sizes

Tapered roller bearings of series K are manufactured as standard with normal tolerances to ANSI/ABMA. The width Δ_{Bs} and radial runout correspond to tolerance class PN to DIN 620-2. The bore and outside diameters of bearings in inch sizes have plus tolerances.

Inner ring tolerances, Part 1

| Bore mm d | | Bore deviation μm Δ_{dmp} | | Width deviation μm Δ_{T5} | |
|-----------------|-------|---------------------------------------------------|------|---------------------------------------------------|------|
| over | incl. | max. | min. | max. | min. |
| - | 81 | +13 | 0 | +200 | 0 |
| 81 | 102 | +25 | 0 | +200 | 0 |

Inner ring tolerances, Part 2

| Bore mm d | | Width deviation (in relation to bore) μm Δ_{Bs} | | Radial runout μm K_{ia} |
|-----------------|-------|----------------------------------------------------------------------------|------|--------------------------------------------|
| over | incl. | max. | min. | |
| 10 | 18 | 0 | -120 | 15 |
| 18 | 30 | 0 | -120 | 18 |
| 30 | 50 | 0 | -120 | 20 |
| 50 | 80 | 0 | -150 | 25 |
| 80 | 120 | 0 | -200 | 30 |

Outer ring tolerances

| Outside diameter mm D | | Outside diameter deviation μm Δ_{Dmp} | | Radial runout μm K_{ea} |
|-----------------------------|-------|---------------------------------------------------------------|------|--------------------------------------------|
| over | incl. | max. | min. | |
| 18 | 30 | +25 | 0 | 18 |
| 30 | 50 | +25 | 0 | 20 |
| 50 | 80 | +25 | 0 | 25 |
| 80 | 120 | +25 | 0 | 35 |
| 120 | 150 | +25 | 0 | 40 |

Chamfer dimensions

The limit values for chamfer dimensions r are only valid for tapered roller bearings with inch dimensions. Values for metric tapered roller bearings, see Limit values for chamfer dimensions, page 138.

Limit values for chamfer dimensions r_{\max} for the inner ring

| Nominal bearing bore diameter d mm | | Chamfer dimension ¹⁾ | |
|------------------------------------------|-------|---------------------------------|-------------|
| over | incl. | r_1 mm | r_2 mm |
| – | 50,8 | +0,4 | +0,9 |
| 50,8 | 101,6 | +0,5 | +1,25 |
| 101,6 | 254 | +0,65 | +1,8 |

¹⁾ r_{\min} : see dimension tables.

Limit values for chamfer dimensions r_{\max} for the outer ring

| Nominal outside diameter D mm | | Chamfer dimension ¹⁾ | |
|-------------------------------------|-------|---------------------------------|-------------|
| over | incl. | r_3 mm | r_4 mm |
| – | 101,6 | +0,6 | +1,05 |
| 101,6 | 168,3 | +0,65 | +1,15 |
| 168,3 | 266,7 | +0,85 | +1,35 |
| 266,7 | 355,6 | +1,7 | +1,7 |

¹⁾ r_{\min} : see dimension tables.

Axial internal clearance

In tapered roller bearings, the axial internal clearance is the result of mounting against a second bearing during installation.

Matched bearings

The axial internal clearance is defined here by an intermediate ring and is indicated in the suffix.

Example:

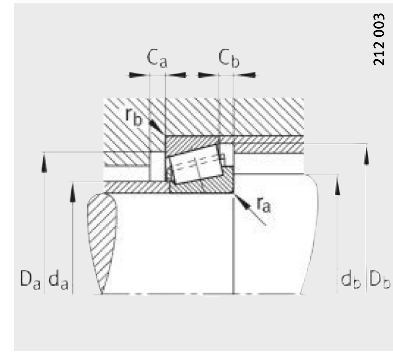
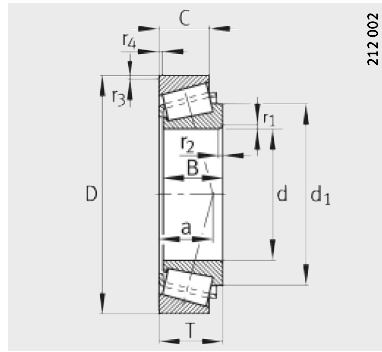
- A80-120 indicates that the axial internal clearance of the bearing pair before fitting is between 80 μm and 120 μm .

Once bearing pairs are fitted, the preset axial internal clearance is reduced by the fit conditions and the axial clamping forces.



Tapered roller bearings

Single row



Mounting dimensions

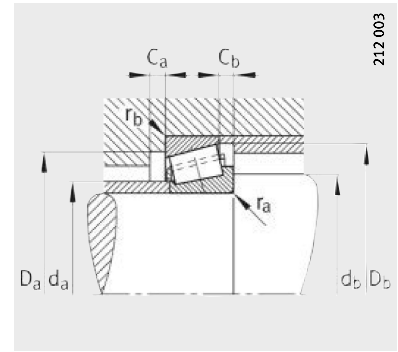
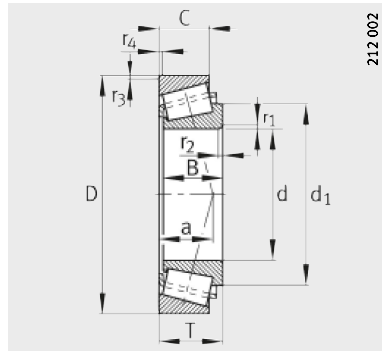
| Dimension table · Dimensions in mm | | | | | | | | | | | | | | |
|------------------------------------|------------------------------------|------------------|------------|----|----|------|-------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| Designation | Interchange designation to ISO 355 | Mass m ≈kg | Dimensions | | | | | | | | | Mounting dimensions | | |
| | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 30202-A | – | 0,054 | 15 | 35 | 11 | 10 | 11,75 | 0,6 | 0,6 | 8 | 26,4 | 20 | 19 | 29 |
| 30302-A | T2FB015 | 0,096 | 15 | 42 | 13 | 11 | 14,25 | 1 | 1 | 10 | 28,2 | 22 | 21 | 36 |
| 30203-A | T2DB017 | 0,056 | 17 | 40 | 12 | 11 | 13,25 | 1 | 1 | 10 | 29,1 | 23 | 23 | 34 |
| 32203-A | T2DD017 | 0,105 | 17 | 40 | 16 | 14 | 17,25 | 1 | 1 | 11 | 28,7 | 22 | 23 | 34 |
| 30303-A | T2FB017 | 0,129 | 17 | 47 | 14 | 12 | 15,25 | 1 | 1 | 11 | 31,6 | 25 | 23 | 40 |
| 32303-A | T2FD017 | 0,18 | 17 | 47 | 19 | 16 | 20,25 | 1 | 1 | 12 | 31,5 | 24 | 23 | 39 |
| 32004-X | T3CC020 | 0,108 | 20 | 42 | 15 | 12 | 15 | 0,6 | 0,6 | 10 | 33 | 25 | 25 | 36 |
| 30204-A | T2DB020 | 0,092 | 20 | 47 | 14 | 12 | 15,25 | 1 | 1 | 11 | 34,5 | 27 | 26 | 40 |
| 30304-A | T2FB020 | 0,188 | 20 | 52 | 15 | 13 | 16,25 | 1,5 | 1,5 | 11 | 36,1 | 28 | 27 | 44 |
| 32304-A | T2FD020 | 0,241 | 20 | 52 | 21 | 18 | 22,25 | 1,5 | 1,5 | 14 | 35,3 | 27 | 27 | 43 |
| 32005-X | T4CC025 | 0,12 | 25 | 47 | 15 | 11,5 | 15 | 0,6 | 0,6 | 12 | 38 | 30 | 30 | 40 |
| 33005 | – | 0,139 | 25 | 47 | 17 | 14 | 17 | 0,6 | 0,6 | 11 | 36,8 | 30 | 30 | 41 |
| 30205-A | T3CC025 | 0,155 | 25 | 52 | 15 | 13 | 16,25 | 1 | 1 | 13 | 38,5 | 31 | 31 | 44 |
| 32205-A | T2CD025 | 0,186 | 25 | 52 | 18 | 16 | 19,25 | 1 | 1 | 14 | 40,2 | 31 | 31 | 44 |
| 33205 | T2DE025 | 0,214 | 25 | 52 | 22 | 18 | 22 | 1 | 1 | 14 | 39,6 | 30 | 31 | 43 |
| 31305-A | T7FB025 | 0,297 | 25 | 62 | 17 | 13 | 18,25 | 1,5 | 1,5 | 20 | 46,3 | 34 | 32 | 47 |
| 30305-A | T2FB025 | 0,289 | 25 | 62 | 17 | 15 | 18,25 | 1,5 | 1,5 | 13 | 42,3 | 34 | 32 | 54 |
| 32305-A | T2FD025 | 0,362 | 25 | 62 | 24 | 20 | 25,25 | 1,5 | 1,5 | 16 | 42,3 | 33 | 32 | 53 |
| 320/28-X | T4CC028 | 0,156 | 28 | 52 | 16 | 12 | 16 | 1 | 1 | 13 | 41 | 33 | 34 | 45 |
| 32006-X | T4CC030 | 0,195 | 30 | 55 | 17 | 13 | 17 | 1 | 1 | 14 | 44,1 | 35 | 36 | 48 |
| 30206-A | T3DB030 | 0,237 | 30 | 62 | 16 | 14 | 17,25 | 1 | 1 | 14 | 45,6 | 37 | 36 | 53 |
| 32206-A | T3DC030 | 0,274 | 30 | 62 | 20 | 17 | 21,25 | 1 | 1 | 16 | 45,9 | 37 | 36 | 52 |
| 33206 | T2DE030 | 0,394 | 30 | 62 | 25 | 19,5 | 25 | 1 | 1 | 16 | 46,1 | 36 | 36 | 53 |
| 31306-A | T7FB030 | 0,441 | 30 | 72 | 19 | 14 | 20,75 | 1,5 | 1,5 | 24 | 54 | 40 | 37 | 55 |
| 30306-A | T2FB030 | 0,445 | 30 | 72 | 19 | 16 | 20,75 | 1,5 | 1,5 | 15 | 49,3 | 40 | 37 | 62 |
| 32306-A | T2FD030 | 0,587 | 30 | 72 | 27 | 23 | 28,75 | 1,5 | 1,5 | 18 | 49,3 | 39 | 37 | 59 |
| 320/32-X | T4CC032 | 0,188 | 32 | 58 | 17 | 13 | 17 | 1 | 1 | 14 | 46,5 | 38 | 38 | 50 |
| 32007-X | T4CC035 | 0,257 | 35 | 62 | 18 | 14 | 18 | 1 | 1 | 15 | 50 | 40 | 41 | 54 |
| 30207-A | T3DB035 | 0,334 | 35 | 72 | 17 | 15 | 18,25 | 1,5 | 1,5 | 15 | 52,7 | 44 | 42 | 62 |
| 32207-A | T3DC035 | 0,482 | 35 | 72 | 23 | 19 | 24,25 | 1,5 | 1,5 | 18 | 53,9 | 43 | 42 | 61 |
| 33207 | T2DE035 | 0,585 | 35 | 72 | 28 | 22 | 28 | 1,5 | 1,5 | 18 | 53 | 42 | 42 | 61 |
| 31307-A | T7FB035 | 0,582 | 35 | 80 | 21 | 15 | 22,75 | 2 | 1,5 | 26 | 59,9 | 44 | 44 | 62 |
| 30307-A | T2FB035 | 0,573 | 35 | 80 | 21 | 18 | 22,75 | 2 | 1,5 | 16 | 55,2 | 45 | 44 | 70 |
| 32307-B | T5FE035 | 0,802 | 35 | 80 | 31 | 25 | 32,75 | 2 | 1,5 | 25 | 59,8 | 42 | 44 | 61 |
| 32307-A | T2FE035 | 0,741 | 35 | 80 | 31 | 25 | 32,75 | 2 | 1,5 | 20 | 55,2 | 44 | 44 | 66 |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 29 | 32 | 2 | 1,5 | 0,6 | 0,6 | 14 700 | 14 100 | 0,35 | 1,73 | 0,95 | 1 320 | 23 800 | 13 500 |
| 36 | 38 | 2 | 3 | 1 | 1 | 23 000 | 20 500 | 0,29 | 2,11 | 1,16 | 2 110 | 21 000 | 12 500 |
| 34 | 37 | 2 | 2 | 1 | 1 | 18 500 | 17 800 | 0,35 | 1,74 | 0,96 | 1 890 | 21 000 | 12 100 |
| 34 | 37 | 3 | 3 | 1 | 1 | 28 500 | 29 000 | 0,31 | 1,92 | 1,06 | 3 000 | 21 000 | 10 800 |
| 41 | 42 | 2 | 3 | 1 | 1 | 27 500 | 24 500 | 0,29 | 2,11 | 1,16 | 2 600 | 18 200 | 12 400 |
| 41 | 43 | 3 | 4 | 1 | 1 | 36 000 | 35 000 | 0,29 | 2,11 | 1,16 | 4 050 | 18 200 | 11 500 |
| 37 | 39 | 3 | 3 | 0,6 | 0,6 | 24 000 | 28 500 | 0,37 | 1,6 | 0,88 | 3 000 | 18 200 | 10 900 |
| 41 | 43 | 2 | 3 | 1 | 1 | 27 000 | 27 000 | 0,35 | 1,74 | 0,96 | 2 900 | 16 800 | 10 500 |
| 45 | 47 | 2 | 3 | 1,5 | 1,5 | 34 000 | 32 500 | 0,3 | 2 | 1,1 | 3 600 | 15 400 | 9 800 |
| 45 | 47 | 3 | 4 | 1,5 | 1,5 | 46 000 | 47 500 | 0,3 | 2 | 1,1 | 5 600 | 15 400 | 9 300 |
| 42 | 44 | 3 | 3,5 | 0,6 | 0,6 | 26 500 | 33 500 | 0,43 | 1,39 | 0,77 | 3 600 | 15 400 | 9 200 |
| 42 | 44 | 3 | 3 | 0,6 | 0,6 | 33 000 | 41 500 | 0,29 | 2,07 | 1,14 | 4 650 | 15 400 | 9 400 |
| 46 | 48 | 2 | 3 | 1 | 1 | 32 500 | 35 000 | 0,37 | 1,6 | 0,88 | 3 900 | 14 000 | 9 100 |
| 46 | 48 | 3 | 3 | 1 | 1 | 40 000 | 44 500 | 0,36 | 1,67 | 0,92 | 5 100 | 14 000 | 8 100 |
| 46 | 49 | 4 | 4 | 1 | 1 | 48 500 | 58 000 | 0,35 | 1,71 | 0,94 | 6 900 | 14 000 | 8 200 |
| 55 | 59 | 3 | 5 | 1,5 | 1,5 | 37 000 | 38 500 | 0,83 | 0,73 | 0,4 | 4 400 | 11 900 | 7 200 |
| 55 | 57 | 2 | 3 | 1,5 | 1,5 | 47 000 | 45 500 | 0,3 | 2 | 1,1 | 5 100 | 12 600 | 8 200 |
| 55 | 57 | 3 | 5 | 1,5 | 1,5 | 62 000 | 66 000 | 0,3 | 2 | 1,1 | 7 800 | 12 600 | 7 900 |
| 46 | 49 | 3 | 4 | 1 | 1 | 34 000 | 40 500 | 0,43 | 1,39 | 0,77 | 4 550 | 13 300 | 8 300 |
| 49 | 52 | 3 | 4 | 1 | 1 | 38 500 | 46 500 | 0,43 | 1,39 | 0,77 | 5 300 | 12 600 | 7 900 |
| 56 | 57 | 2 | 3 | 1 | 1 | 43 500 | 48 000 | 0,37 | 1,6 | 0,88 | 5 500 | 11 900 | 7 400 |
| 56 | 59 | 3 | 4 | 1 | 1 | 53 000 | 62 000 | 0,37 | 1,6 | 0,88 | 7 400 | 11 900 | 6 700 |
| 56 | 59 | 5 | 5,5 | 1 | 1 | 65 000 | 77 000 | 0,34 | 1,76 | 0,97 | 9 400 | 11 200 | 7 100 |
| 65 | 68 | 3 | 6,5 | 1,5 | 1,5 | 45 000 | 46 500 | 0,83 | 0,73 | 0,4 | 5 300 | 9 800 | 6 500 |
| 65 | 66 | 3 | 4,5 | 1,5 | 1,5 | 60 000 | 61 000 | 0,31 | 1,9 | 1,05 | 6 900 | 10 500 | 7 200 |
| 65 | 66 | 4 | 5,5 | 1,5 | 1,5 | 80 000 | 89 000 | 0,31 | 1,9 | 1,05 | 10 800 | 10 500 | 6 900 |
| 52 | 55 | 3 | 4 | 1 | 1 | 39 000 | 48 500 | 0,45 | 1,32 | 0,73 | 5 600 | 11 900 | 7 500 |
| 56 | 59 | 4 | 4 | 1 | 1 | 45 500 | 57 000 | 0,45 | 1,32 | 0,73 | 6 700 | 11 200 | 6 900 |
| 65 | 67 | 3 | 3 | 1,5 | 1,5 | 54 000 | 59 000 | 0,37 | 1,6 | 0,88 | 6 800 | 9 800 | 6 400 |
| 65 | 67 | 3 | 5,5 | 1,5 | 1,5 | 71 000 | 84 000 | 0,37 | 1,6 | 0,88 | 10 200 | 9 800 | 6 000 |
| 65 | 68 | 5 | 6 | 1,5 | 1,5 | 86 000 | 105 000 | 0,35 | 1,7 | 0,93 | 12 800 | 9 800 | 6 200 |
| 71 | 76 | 4 | 7,5 | 2 | 1,5 | 60 000 | 64 000 | 0,83 | 0,73 | 0,4 | 7 500 | 8 800 | 5 800 |
| 71 | 74 | 3 | 4,5 | 2 | 1,5 | 73 000 | 75 000 | 0,31 | 1,9 | 1,05 | 8 600 | 9 400 | 6 600 |
| 71 | 76 | 4 | 7,5 | 2 | 1,5 | 95 000 | 116 000 | 0,55 | 1,1 | 0,6 | 14 300 | 8 800 | 6 300 |
| 71 | 74 | 4 | 7,5 | 2 | 1,5 | 100 000 | 113 000 | 0,31 | 1,9 | 1,05 | 13 500 | 9 400 | 6 400 |

Tapered roller bearings

Single row



Mounting dimensions

Dimension table (continued) · Dimensions in mm

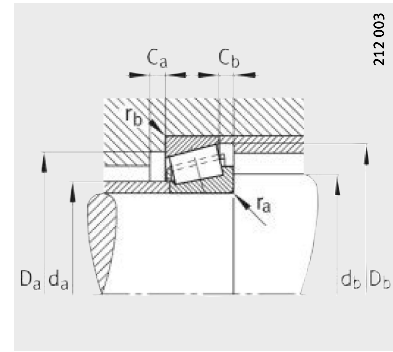
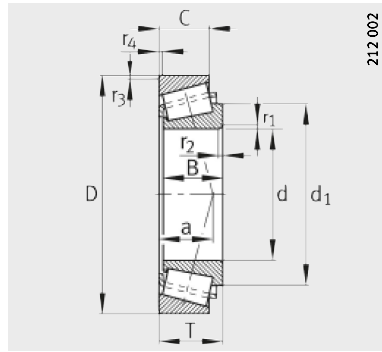
| Designation | Interchange designation to ISO 355 | X-life | Mass m ≈kg | Dimensions | | | | | | | | | Mounting dimensions | | |
|-----------------|------------------------------------|-----------|------------------|------------|-----|------|------|-------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| | | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 32008-XA | T3CD040 | - | 0,312 | 40 | 68 | 19 | 14,5 | 19 | 1 | 1 | 15 | 55 | 46 | 46 | 60 |
| 33108 | T2CE040 | - | 0,541 | 40 | 75 | 26 | 20,5 | 26 | 1,5 | 1,5 | 18 | 58,7 | 47 | 47 | 65 |
| 30208-A | T3DB040 | - | 0,435 | 40 | 80 | 18 | 16 | 19,75 | 1,5 | 1,5 | 17 | 58,4 | 49 | 47 | 69 |
| 32208-A | T3DC040 | - | 0,551 | 40 | 80 | 23 | 19 | 24,75 | 1,5 | 1,5 | 19 | 59,2 | 48 | 47 | 68 |
| 33208 | T2DE040 | - | 0,741 | 40 | 80 | 32 | 25 | 32 | 1,5 | 1,5 | 21 | 60,1 | 47 | 47 | 67 |
| T2EE040 | - | - | 0,881 | 40 | 85 | 32,5 | 28 | 33 | 2,5 | 2 | 22 | 61,9 | 48 | 51 | 70 |
| 31308-A | T7FB040 | - | 0,727 | 40 | 90 | 23 | 17 | 25,25 | 2 | 1,5 | 30 | 68,2 | 51 | 49 | 71 |
| 30308-A | T2FB040 | - | 0,812 | 40 | 90 | 23 | 20 | 25,25 | 2 | 1,5 | 20 | 63,3 | 52 | 49 | 77 |
| 32308-A | T2FD040 | - | 1,06 | 40 | 90 | 33 | 27 | 35,25 | 2 | 1,5 | 23 | 63,3 | 50 | 49 | 73 |
| 32308-B | - | - | 1,18 | 40 | 90 | 33 | 27 | 35,25 | 2 | 1,5 | 28 | 67 | 50 | 49 | 69 |
| 32009-XA | T3CC045 | - | 0,329 | 45 | 75 | 20 | 15,5 | 20 | 1 | 1 | 17 | 62 | 51 | 51 | 67 |
| 33109 | T3CE045 | - | 0,597 | 45 | 80 | 26 | 20,5 | 26 | 1,5 | 1,5 | 19 | 63,8 | 52 | 52 | 69 |
| 30209-A | T3DB045 | - | 0,47 | 45 | 85 | 19 | 16 | 20,75 | 1,5 | 1,5 | 18 | 64 | 54 | 52 | 74 |
| 32209-A | T3DC045 | - | 0,57 | 45 | 85 | 23 | 19 | 24,75 | 1,5 | 1,5 | 20 | 64,8 | 53 | 52 | 73 |
| 33209 | T3DE045 | - | 0,895 | 45 | 85 | 32 | 25 | 32 | 1,5 | 1,5 | 22 | 66,2 | 52 | 52 | 72 |
| T7FC045 | - | XL | 0,92 | 45 | 95 | 26,5 | 20 | 29 | 2,5 | 2,5 | 33 | 73,6 | 53 | 59 | 71 |
| T2ED045 | - | - | 1,2 | 45 | 95 | 35 | 30 | 36 | 2,5 | 2,5 | 24 | 68,8 | 54 | 56 | 80 |
| 31309-A | T7FB045 | - | 0,998 | 45 | 100 | 25 | 18 | 27,25 | 2 | 1,5 | 32 | 75,8 | 56 | 54 | 79 |
| 30309-A | T2FB045 | - | 1 | 45 | 100 | 25 | 22 | 27,25 | 2 | 1,5 | 21 | 70,7 | 59 | 54 | 86 |
| 32309-BA | T5FD045 | - | 1,48 | 45 | 100 | 36 | 30 | 38,25 | 2 | 1,5 | 30 | 74,2 | 55 | 54 | 76 |
| 32309-A | T2FD045 | - | 1,43 | 45 | 100 | 36 | 30 | 38,25 | 2 | 1,5 | 25 | 71,1 | 56 | 54 | 82 |
| 32010-X | T3CC050 | - | 0,384 | 50 | 80 | 20 | 15,5 | 20 | 1 | 1 | 18 | 67,5 | 56 | 56 | 72 |
| 33010 | T2CE050 | - | 0,47 | 50 | 80 | 24 | 19 | 24 | 1 | 1 | 17 | 65,8 | 56 | 56 | 72 |
| 33110 | T3CE050 | - | 0,604 | 50 | 85 | 26 | 20 | 26 | 1,5 | 1,5 | 20 | 69,1 | 56 | 57 | 74 |
| 30210-A | T3DB050 | - | 0,603 | 50 | 90 | 20 | 17 | 21,75 | 1,5 | 1,5 | 20 | 68,8 | 58 | 57 | 79 |
| 32210-A | T3DC050 | - | 0,602 | 50 | 90 | 23 | 19 | 24,75 | 1,5 | 1,5 | 21 | 70 | 58 | 57 | 78 |
| 33210 | T3DE050 | - | 0,971 | 50 | 90 | 32 | 24,5 | 32 | 1,5 | 1,5 | 23 | 71,8 | 57 | 57 | 77 |
| T7FC050 | - | XL | 1,24 | 50 | 105 | 29 | 22 | 32 | 3 | 3 | 36 | 80,9 | 59 | 65 | 78 |
| 31310-A | T7FB050 | - | 1,23 | 50 | 110 | 27 | 19 | 29,25 | 2,5 | 2 | 35 | 81,4 | 62 | 60 | 87 |
| 30310-A | T2FB050 | - | 1,27 | 50 | 110 | 27 | 23 | 29,25 | 2,5 | 2 | 23 | 77,6 | 65 | 60 | 95 |
| 32310-A | T2FD050 | - | 1,9 | 50 | 110 | 40 | 33 | 42,25 | 2,5 | 2 | 29 | 78,4 | 62 | 60 | 90 |

| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 62 | 65 | 4 | 4,5 | 1 | 1 | 53 000 | 71 000 | 0,38 | 1,58 | 0,87 | 8 300 | 9 800 | 6 200 |
| 68 | 71 | 4 | 5,5 | 1,5 | 1,5 | 79 000 | 103 000 | 0,36 | 1,69 | 0,93 | 12 800 | 8 800 | 5 500 |
| 73 | 74 | 3 | 3,5 | 1,5 | 1,5 | 61 000 | 67 000 | 0,37 | 1,6 | 0,88 | 7 600 | 8 800 | 5 900 |
| 73 | 75 | 3 | 5,5 | 1,5 | 1,5 | 79 000 | 93 000 | 0,37 | 1,6 | 0,88 | 11 200 | 8 800 | 5 300 |
| 73 | 76 | 5 | 7 | 1,5 | 1,5 | 105 000 | 134 000 | 0,36 | 1,68 | 0,92 | 16 600 | 8 400 | 5 700 |
| 75 | 80 | 6 | 5 | 2,5 | 2 | 114 000 | 139 000 | 0,34 | 1,74 | 0,96 | 17 000 | 8 400 | 5 600 |
| 81 | 86 | 4 | 8 | 2 | 1,5 | 76 000 | 83 000 | 0,83 | 0,73 | 0,4 | 9 400 | 7 400 | 5 200 |
| 81 | 82 | 3 | 5 | 2 | 1,5 | 91 000 | 102 000 | 0,35 | 1,74 | 0,96 | 11 900 | 7 800 | 5 800 |
| 81 | 82 | 4 | 8 | 2 | 1,5 | 120 000 | 146 000 | 0,35 | 1,74 | 0,96 | 17 900 | 7 800 | 5 600 |
| 81 | 85 | 4 | 8 | 2 | 1,5 | 120 000 | 149 000 | 0,55 | 1,1 | 0,6 | 18 100 | 7 400 | 5 500 |
| 69 | 72 | 4 | 4,5 | 1 | 1 | 61 000 | 86 000 | 0,39 | 1,53 | 0,84 | 10 200 | 8 800 | 5 500 |
| 73 | 77 | 4 | 5,5 | 1,5 | 1,5 | 84 000 | 115 000 | 0,38 | 1,57 | 0,86 | 14 400 | 8 400 | 5 000 |
| 78 | 80 | 3 | 4,5 | 1,5 | 1,5 | 70 000 | 82 000 | 0,4 | 1,48 | 0,81 | 9 600 | 7 800 | 5 400 |
| 78 | 80 | 3 | 5,5 | 1,5 | 1,5 | 82 000 | 100 000 | 0,4 | 1,48 | 0,81 | 12 000 | 7 800 | 4 900 |
| 78 | 81 | 5 | 7 | 1,5 | 1,5 | 107 000 | 146 000 | 0,39 | 1,56 | 0,86 | 18 300 | 7 800 | 5 200 |
| 83 | 91 | 5 | 9 | 2,5 | 2,5 | 105 000 | 109 000 | 0,87 | 0,69 | 0,38 | 15 100 | 7 000 | 5 900 |
| 83 | 89 | 6 | 6 | 2,5 | 2,5 | 143 000 | 175 000 | 0,32 | 1,86 | 1,02 | 21 500 | 7 400 | 5 000 |
| 91 | 95 | 4 | 9 | 2 | 1,5 | 96 000 | 108 000 | 0,83 | 0,73 | 0,4 | 12 700 | 6 700 | 4 650 |
| 91 | 92 | 3 | 5 | 2 | 1,5 | 111 000 | 125 000 | 0,35 | 1,74 | 0,96 | 14 800 | 7 000 | 5 200 |
| 91 | 94 | 5 | 8 | 2 | 1,5 | 144 000 | 187 000 | 0,55 | 1,1 | 0,6 | 23 000 | 6 700 | 5 000 |
| 91 | 93 | 4 | 8 | 2 | 1,5 | 154 000 | 193 000 | 0,35 | 1,74 | 0,96 | 23 900 | 7 000 | 4 950 |
| 74 | 77 | 4 | 4,5 | 1 | 1 | 64 000 | 93 000 | 0,42 | 1,42 | 0,78 | 11 200 | 7 800 | 5 000 |
| 74 | 76 | 4 | 5 | 1 | 1 | 75 000 | 113 000 | 0,32 | 1,9 | 1,04 | 13 900 | 7 800 | 5 400 |
| 78 | 82 | 4 | 6 | 1,5 | 1,5 | 86 000 | 122 000 | 0,41 | 1,46 | 0,8 | 15 200 | 7 400 | 4 600 |
| 83 | 85 | 3 | 4,5 | 1,5 | 1,5 | 79 000 | 96 000 | 0,42 | 1,43 | 0,79 | 11 300 | 7 400 | 5 000 |
| 83 | 85 | 3 | 5,5 | 1,5 | 1,5 | 88 000 | 109 000 | 0,42 | 1,43 | 0,79 | 13 200 | 7 400 | 4 750 |
| 83 | 87 | 5 | 7,5 | 1,5 | 1,5 | 115 000 | 163 000 | 0,41 | 1,45 | 0,8 | 20 400 | 7 000 | 4 700 |
| 91 | 100 | 5 | 10 | 3 | 3 | 127 000 | 135 000 | 0,87 | 0,69 | 0,38 | 18 900 | 6 300 | 5 500 |
| 100 | 104 | 4 | 10 | 2,5 | 2 | 111 000 | 125 000 | 0,83 | 0,73 | 0,4 | 14 700 | 6 300 | 4 300 |
| 100 | 102 | 4 | 6 | 2,5 | 2 | 130 000 | 148 000 | 0,35 | 1,74 | 0,96 | 17 600 | 6 300 | 4 800 |
| 100 | 102 | 5 | 9 | 2,5 | 2 | 187 000 | 237 000 | 0,35 | 1,74 | 0,96 | 29 500 | 6 300 | 4 550 |



Tapered roller bearings

Single row



Mounting dimensions

Dimension table (continued) · Dimensions in mm

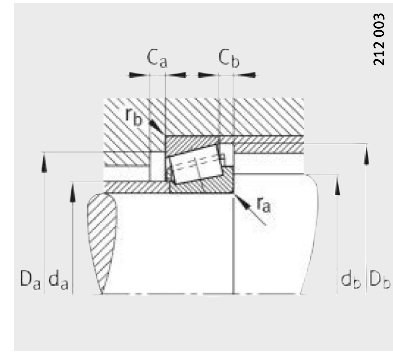
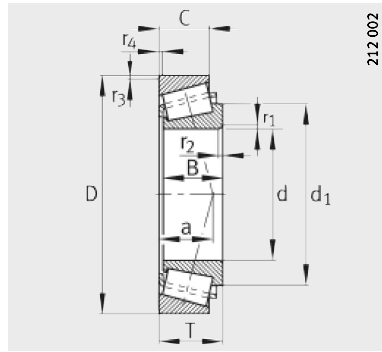
| Designation | Interchange designation to ISO 355 | X-life | Mass m ≈kg | Dimensions | | | | | | | | | Mounting dimensions | | |
|-------------|------------------------------------|--------|------------------|------------|-----|------|------|-------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| | | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 32011-X | T3CC055 | - | 0,64 | 55 | 90 | 23 | 17,5 | 23 | 1,5 | 1,5 | 20 | 75,8 | 63 | 62 | 81 |
| 33011 | T2CE055 | - | 0,673 | 55 | 90 | 27 | 21 | 27 | 1,5 | 1,5 | 19 | 74,2 | 63 | 62 | 81 |
| 33111 | T3CE055 | - | 0,894 | 55 | 95 | 30 | 23 | 30 | 1,5 | 1,5 | 22 | 76,2 | 62 | 62 | 83 |
| 30211-A | T3DB055 | - | 0,92 | 55 | 100 | 21 | 18 | 22,75 | 2 | 1,5 | 21 | 76,5 | 64 | 64 | 88 |
| 32211-A | T3DC055 | - | 0,87 | 55 | 100 | 25 | 21 | 26,75 | 2 | 1,5 | 23 | 76,2 | 63 | 64 | 87 |
| 33211 | T3DE055 | - | 1,17 | 55 | 100 | 35 | 27 | 35 | 2 | 1,5 | 26 | 78,8 | 62 | 64 | 85 |
| T7FC055 | - | XL | 1,64 | 55 | 115 | 31 | 23,5 | 34 | 3 | 3 | 40 | 88,6 | 65 | 72 | 86 |
| 31311-A | T7FB055 | - | 1,57 | 55 | 120 | 29 | 21 | 31,5 | 2,5 | 2 | 39 | 88 | 68 | 65 | 94 |
| 30311-A | T2FB055 | - | 1,8 | 55 | 120 | 29 | 25 | 31,5 | 2,5 | 2 | 25 | 84,7 | 71 | 65 | 104 |
| 32311-B | T5FD055 | - | 2,47 | 55 | 120 | 43 | 35 | 45,5 | 2,5 | 2 | 36 | 89,6 | 65 | 65 | 91 |
| 32311-A | T2FD055 | - | 2,4 | 55 | 120 | 43 | 35 | 45,5 | 2,5 | 2 | 30 | 85 | 68 | 65 | 99 |
| 32012-X | T4CC060 | - | 0,614 | 60 | 95 | 23 | 17,5 | 23 | 1,5 | 1,5 | 21 | 80 | 67 | 67 | 85 |
| 33012 | T2CE060 | - | 0,714 | 60 | 95 | 27 | 21 | 27 | 1,5 | 1,5 | 20 | 78,6 | 67 | 67 | 85 |
| 33112 | T3CE060 | - | 1,01 | 60 | 100 | 30 | 23 | 30 | 1,5 | 1,5 | 23 | 81,3 | 67 | 67 | 88 |
| 30212-A | T3EB060 | - | 0,919 | 60 | 110 | 22 | 19 | 23,75 | 2 | 1,5 | 22 | 82,3 | 70 | 69 | 96 |
| 32212-A | T3EC060 | - | 1,18 | 60 | 110 | 28 | 24 | 29,75 | 2 | 1,5 | 24 | 82,8 | 69 | 69 | 95 |
| 33212 | T3EE060 | - | 1,55 | 60 | 110 | 38 | 29 | 38 | 2 | 1,5 | 28 | 86,2 | 69 | 69 | 93 |
| T5ED060 | - | - | 1,82 | 60 | 115 | 38 | 31 | 39 | 4 | 2,5 | 33 | 90,9 | 69 | 76 | 91 |
| T7FC060 | - | XL | 2,03 | 60 | 125 | 33,5 | 26 | 37 | 3 | 3 | 42 | 96,5 | 71 | 78 | 94 |
| 31312-A | T7FB060 | - | 1,94 | 60 | 130 | 31 | 22 | 33,5 | 3 | 2,5 | 41 | 95,6 | 73 | 72 | 103 |
| 30312-A | T2FB060 | - | 2,02 | 60 | 130 | 31 | 26 | 33,5 | 3 | 2,5 | 26 | 92,1 | 77 | 72 | 112 |
| 32312-BA | T5FD060 | - | 3,15 | 60 | 130 | 46 | 37 | 48,5 | 3 | 2,5 | 39 | 97 | 71 | 72 | 100 |
| 32312-A | T2FD060 | - | 3,19 | 60 | 130 | 46 | 37 | 48,5 | 3 | 2,5 | 32 | 92,1 | 74 | 72 | 107 |
| 32013-X | T4CC065 | - | 0,62 | 65 | 100 | 23 | 17,5 | 23 | 1,5 | 1,5 | 23 | 85,2 | 72 | 72 | 90 |
| 33013 | T2CE065 | - | 0,766 | 65 | 100 | 27 | 21 | 27 | 1,5 | 1,5 | 21 | 84,6 | 72 | 72 | 89 |
| 33113 | T3DE065 | - | 1,31 | 65 | 110 | 34 | 26,5 | 34 | 1,5 | 1,5 | 26 | 89,6 | 73 | 72 | 96 |
| 30213-A | T3EB065 | - | 1,27 | 65 | 120 | 23 | 20 | 24,75 | 2 | 1,5 | 23 | 90 | 77 | 74 | 106 |
| 32213-A | T3EC065 | - | 1,49 | 65 | 120 | 31 | 27 | 32,75 | 2 | 1,5 | 27 | 91 | 76 | 74 | 104 |
| T5ED065 | - | - | 1,91 | 65 | 120 | 38 | 31 | 39 | 4 | 2,5 | 35 | 95,9 | 74 | 80 | 95 |
| 33213 | T3EE065 | - | 2,02 | 65 | 120 | 41 | 32 | 41 | 2 | 1,5 | 30 | 92,5 | 74 | 74 | 102 |
| T7FC065 | - | XL | 2,23 | 65 | 130 | 33,5 | 26 | 37 | 3 | 3 | 44,5 | 100,9 | 75 | 83 | 98 |
| 31313-A | T7GB065 | - | 2,36 | 65 | 140 | 33 | 23 | 36 | 3 | 2,5 | 44 | 102,6 | 79 | 77 | 111 |
| 30313-A | T2GB065 | - | 2,4 | 65 | 140 | 33 | 28 | 36 | 3 | 2,5 | 28 | 99,6 | 83 | 77 | 122 |
| 32313-BA | T5GD065 | - | 3,7 | 65 | 140 | 48 | 39 | 51 | 3 | 2,5 | 42 | 104,3 | 77 | 77 | 109 |
| 32313-A | T2GD065 | - | 3,61 | 65 | 140 | 48 | 39 | 51 | 3 | 2,5 | 34 | 99,6 | 80 | 77 | 117 |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 83 | 86 | 4 | 5,5 | 1,5 | 1,5 | 81 000 | 118 000 | 0,41 | 1,48 | 0,81 | 14 600 | 7 000 | 4 700 |
| 83 | 86 | 5 | 6 | 1,5 | 1,5 | 94 000 | 142 000 | 0,31 | 1,92 | 1,06 | 18 000 | 7 000 | 4 950 |
| 88 | 91 | 5 | 7 | 1,5 | 1,5 | 113 000 | 163 000 | 0,37 | 1,6 | 0,88 | 20 400 | 6 700 | 4 250 |
| 91 | 94 | 4 | 4,5 | 2 | 1,5 | 91 000 | 107 000 | 0,4 | 1,48 | 0,81 | 12 400 | 6 700 | 4 600 |
| 91 | 95 | 4 | 5,5 | 2 | 1,5 | 109 000 | 135 000 | 0,4 | 1,48 | 0,81 | 16 200 | 6 700 | 4 050 |
| 91 | 96 | 6 | 8 | 2 | 1,5 | 138 000 | 194 000 | 0,4 | 1,5 | 0,83 | 24 400 | 6 700 | 4 400 |
| 101 | 109 | 5 | 10,5 | 3 | 3 | 152 000 | 165 000 | 0,87 | 0,69 | 0,38 | 23 400 | 5 600 | 4 950 |
| 110 | 113 | 4 | 10,5 | 2,5 | 2 | 123 000 | 139 000 | 0,83 | 0,73 | 0,4 | 16 400 | 5 600 | 4 100 |
| 110 | 111 | 4 | 6,5 | 2,5 | 2 | 151 000 | 173 000 | 0,35 | 1,74 | 0,96 | 20 600 | 6 000 | 4 500 |
| 110 | 112 | 5 | 10,5 | 2,5 | 2 | 194 000 | 265 000 | 0,55 | 1,1 | 0,6 | 33 000 | 5 600 | 4 350 |
| 110 | 111 | 5 | 10,5 | 2,5 | 2 | 211 000 | 270 000 | 0,35 | 1,74 | 0,96 | 33 500 | 6 000 | 4 300 |
| 88 | 91 | 4 | 5,5 | 1,5 | 1,5 | 82 000 | 123 000 | 0,43 | 1,39 | 0,77 | 15 200 | 6 700 | 4 400 |
| 88 | 90 | 5 | 6 | 1,5 | 1,5 | 95 000 | 148 000 | 0,33 | 1,83 | 1,01 | 18 800 | 6 700 | 4 650 |
| 93 | 96 | 5 | 7 | 1,5 | 1,5 | 116 000 | 171 000 | 0,4 | 1,51 | 0,83 | 21 500 | 6 300 | 4 000 |
| 101 | 103 | 4 | 4,5 | 2 | 1,5 | 102 000 | 121 000 | 0,4 | 1,48 | 0,81 | 14 000 | 6 300 | 4 250 |
| 101 | 104 | 4 | 5,5 | 2 | 1,5 | 133 000 | 169 000 | 0,4 | 1,48 | 0,81 | 20 600 | 6 000 | 3 800 |
| 101 | 105 | 6 | 9 | 2 | 1,5 | 169 000 | 237 000 | 0,4 | 1,48 | 0,82 | 29 500 | 6 000 | 4 050 |
| 103 | 110 | 6 | 8 | 4 | 2,5 | 156 000 | 223 000 | 0,53 | 1,13 | 0,62 | 28 000 | 5 600 | 4 100 |
| 111 | 119 | 6 | 11 | 3 | 3 | 181 000 | 200 000 | 0,82 | 0,73 | 0,4 | 28 500 | 5 300 | 4 600 |
| 118 | 123 | 5 | 11,5 | 3 | 2,5 | 146 000 | 169 000 | 0,83 | 0,73 | 0,4 | 20 100 | 5 300 | 3 750 |
| 118 | 120 | 5 | 7,5 | 3 | 2,5 | 174 000 | 202 000 | 0,35 | 1,74 | 0,96 | 24 200 | 5 300 | 4 300 |
| 118 | 122 | 6 | 11,5 | 3 | 2,5 | 220 000 | 300 000 | 0,55 | 1,1 | 0,6 | 38 000 | 5 300 | 4 050 |
| 118 | 120 | 6 | 11,5 | 3 | 2,5 | 242 000 | 310 000 | 0,35 | 1,74 | 0,96 | 38 500 | 5 300 | 4 000 |
| 93 | 97 | 4 | 5,5 | 1,5 | 1,5 | 82 000 | 125 000 | 0,46 | 1,31 | 0,72 | 15 800 | 6 300 | 4 200 |
| 93 | 96 | 5 | 6 | 1,5 | 1,5 | 100 000 | 161 000 | 0,35 | 1,72 | 0,95 | 20 300 | 6 300 | 4 300 |
| 103 | 106 | 6 | 7,5 | 1,5 | 1,5 | 149 000 | 225 000 | 0,39 | 1,55 | 0,85 | 28 500 | 6 000 | 3 700 |
| 111 | 113 | 4 | 4,5 | 2 | 1,5 | 119 000 | 142 000 | 0,4 | 1,48 | 0,81 | 16 600 | 5 600 | 3 850 |
| 111 | 115 | 4 | 5,5 | 2 | 1,5 | 156 000 | 200 000 | 0,4 | 1,48 | 0,81 | 24 500 | 5 600 | 3 600 |
| 108 | 115 | 6 | 8 | 4 | 2,5 | 161 000 | 235 000 | 0,56 | 1,07 | 0,59 | 29 500 | 5 300 | 3 850 |
| 111 | 115 | 6 | 9 | 2 | 1,5 | 203 000 | 285 000 | 0,39 | 1,54 | 0,85 | 35 500 | 5 600 | 3 750 |
| 116 | 124 | 5 | 11 | 3 | 3 | 186 000 | 211 000 | 0,87 | 0,69 | 0,38 | 30 500 | 5 000 | 4 350 |
| 128 | 132 | 5 | 13 | 3 | 2,5 | 163 000 | 188 000 | 0,83 | 0,73 | 0,4 | 22 200 | 5 000 | 3 600 |
| 128 | 130 | 5 | 8 | 3 | 2,5 | 196 000 | 228 000 | 0,35 | 1,74 | 0,96 | 27 000 | 5 000 | 3 950 |
| 128 | 133 | 6 | 12 | 3 | 2,5 | 248 000 | 340 000 | 0,55 | 1,1 | 0,6 | 43 000 | 5 000 | 3 800 |
| 128 | 130 | 6 | 12 | 3 | 2,5 | 270 000 | 345 000 | 0,35 | 1,74 | 0,96 | 43 500 | 5 000 | 3 800 |

Tapered roller bearings

Single row



Mounting dimensions

Dimension table (continued) · Dimensions in mm

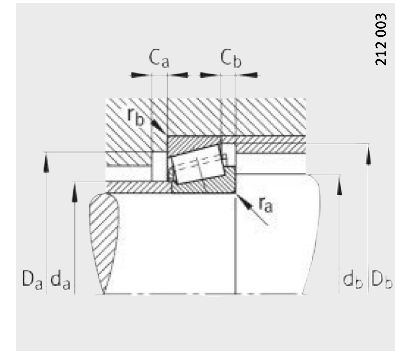
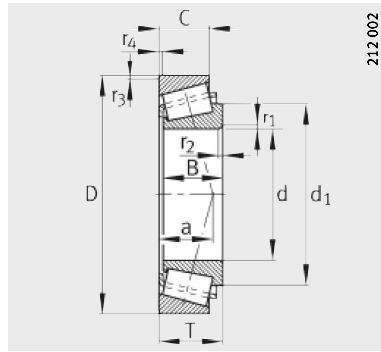
| Designation | Interchange designation to ISO 355 | X-life | Mass m ≈kg | Dimensions | | | | | | | | | Mounting dimensions | | |
|-----------------|------------------------------------|-----------|------------------|------------|-----|------|------|-------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| | | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 32914 | T2BC070 | - | 0,494 | 70 | 100 | 20 | 16 | 20 | 1 | 1 | 18 | 85,9 | 76 | 76 | 93 |
| 32014-X | T4CC070 | - | 0,967 | 70 | 110 | 25 | 19 | 25 | 1,5 | 1,5 | 24 | 92 | 78 | 77 | 98 |
| 33014 | T2CE070 | - | 1,14 | 70 | 110 | 31 | 25,5 | 31 | 1,5 | 1,5 | 22 | 91 | 78 | 77 | 99 |
| 33114 | T3DE070 | - | 1,71 | 70 | 120 | 37 | 29 | 37 | 2 | 1,5 | 28 | 96 | 79 | 79 | 104 |
| 30214-A | T3EB070 | - | 1,31 | 70 | 125 | 24 | 21 | 26,25 | 2 | 1,5 | 25 | 95,4 | 81 | 79 | 110 |
| 32214-A | T3EC070 | - | 1,82 | 70 | 125 | 31 | 27 | 33,25 | 2 | 1,5 | 28 | 96 | 80 | 79 | 108 |
| 33214 | T3EE070 | - | 2,06 | 70 | 125 | 41 | 32 | 41 | 2 | 1,5 | 31 | 97,9 | 79 | 79 | 107 |
| T7FC070 | - | XL | 2,62 | 70 | 140 | 35,5 | 27 | 39 | 3 | 3 | 47 | 108,6 | 81 | 90 | 106 |
| 31314-A | T7GB070 | - | 2,9 | 70 | 150 | 35 | 25 | 38 | 3 | 2,5 | 47 | 109 | 84 | 82 | 118 |
| 30314-A | T2GB070 | - | 3,02 | 70 | 150 | 35 | 30 | 38 | 3 | 2,5 | 30 | 106,6 | 89 | 82 | 130 |
| 32314-BA | T5GD070 | - | 4,52 | 70 | 150 | 51 | 42 | 54 | 3 | 2,5 | 44 | 112 | 83 | 82 | 117 |
| 32314-A | T2GD070 | - | 4,27 | 70 | 150 | 51 | 42 | 54 | 3 | 2,5 | 37 | 106,6 | 86 | 82 | 125 |
| 32915 | T2BC075 | - | 0,519 | 75 | 105 | 20 | 16 | 20 | 1 | 1 | 19 | 90,5 | 81 | 81 | 98 |
| 32015-X | T4CC075 | - | 0,922 | 75 | 115 | 25 | 19 | 25 | 1,5 | 1,5 | 25 | 97,3 | 83 | 82 | 103 |
| 33015 | T2CE075 | - | 1,16 | 75 | 115 | 31 | 25,5 | 31 | 1,5 | 1,5 | 23 | 96,4 | 83 | 82 | 104 |
| 33115 | T3DE075 | - | 1,79 | 75 | 125 | 37 | 29 | 37 | 2 | 1,5 | 30 | 101,4 | 84 | 84 | 109 |
| 30215-A | T4DB075 | - | 1,55 | 75 | 130 | 25 | 22 | 27,25 | 2 | 1,5 | 27 | 100,1 | 86 | 84 | 115 |
| 32215-A | T4DC075 | - | 1,93 | 75 | 130 | 31 | 27 | 33,25 | 2 | 1,5 | 29 | 101,6 | 85 | 84 | 115 |
| 33215 | T3EE075 | - | 2,47 | 75 | 130 | 41 | 31 | 41 | 2 | 1,5 | 32 | 104,5 | 83 | 84 | 111 |
| T7FC075 | - | XL | 3,34 | 75 | 150 | 38 | 29 | 42 | 3 | 3 | 51 | 116,2 | 87 | 96 | 114 |
| 31315 | T7GB075 | - | 3,79 | 75 | 160 | 37 | 26 | 40 | 3 | 2,5 | 50 | 115,8 | 91 | 87 | 127 |
| 30315-A | T2GB075 | - | 3,64 | 75 | 160 | 37 | 31 | 40 | 3 | 2,5 | 32 | 114 | 95 | 87 | 139 |
| 32315-B | T5GD075 | - | 5,7 | 75 | 160 | 55 | 45 | 58 | 3 | 2,5 | 47 | 120,4 | 90 | 87 | 124 |
| 32315-A | T2GD075 | - | 5,37 | 75 | 160 | 55 | 45 | 58 | 3 | 2,5 | 39 | 114 | 91 | 87 | 133 |
| 32016-X | T3CC080 | - | 1,29 | 80 | 125 | 29 | 22 | 29 | 1,5 | 1,5 | 27 | 103,6 | 89 | 87 | 112 |
| 33016 | T2CE080 | - | 1,67 | 80 | 125 | 36 | 29,5 | 36 | 1,5 | 1,5 | 26 | 102,6 | 90 | 87 | 112 |
| 33116 | T3DE080 | - | 1,9 | 80 | 130 | 37 | 29 | 37 | 2 | 1,5 | 31 | 106,6 | 89 | 89 | 114 |
| 30216-A | T3EB080 | - | 1,68 | 80 | 140 | 26 | 22 | 28,25 | 2,5 | 2 | 28 | 106,9 | 91 | 90 | 124 |
| 32216-A | T3EC080 | - | 2,36 | 80 | 140 | 33 | 28 | 35,25 | 2,5 | 2 | 31 | 107,5 | 90 | 90 | 122 |
| 33216 | T3EE080 | - | 2,93 | 80 | 140 | 46 | 35 | 46 | 2,5 | 2 | 35 | 111,8 | 89 | 90 | 119 |
| T7FC080 | - | XL | 3,95 | 80 | 160 | 41 | 31 | 45 | 3 | 3 | 54 | 123,6 | 93 | 103 | 121 |
| 31316 | T7GB080 | - | 4,19 | 80 | 170 | 39 | 27 | 42,5 | 3 | 2,5 | 53 | 122,4 | 97 | 92 | 134 |
| 30316-A | T2GB080 | - | 4,34 | 80 | 170 | 39 | 33 | 42,5 | 3 | 2,5 | 34 | 121,7 | 102 | 92 | 148 |
| 32316-B | T5GD080 | - | 7,02 | 80 | 170 | 58 | 48 | 61,5 | 3 | 2,5 | 49 | 126,9 | 96 | 92 | 130 |
| 32316-A | T2GD080 | - | 6,57 | 80 | 170 | 58 | 48 | 61,5 | 3 | 2,5 | 42 | 122 | 98 | 92 | 142 |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 94 | 96 | 4 | 4 | 1 | 1 | 71 000 | 116 000 | 0,32 | 1,9 | 1,05 | 14 000 | 6 300 | 3 800 |
| 103 | 105 | 5 | 6 | 1,5 | 1,5 | 104 000 | 159 000 | 0,43 | 1,38 | 0,76 | 20 100 | 5 600 | 3 800 |
| 103 | 105 | 5 | 5,5 | 1,5 | 1,5 | 136 000 | 223 000 | 0,28 | 2,11 | 1,16 | 28 500 | 5 600 | 3 900 |
| 111 | 115 | 6 | 8 | 2 | 1,5 | 174 000 | 260 000 | 0,38 | 1,58 | 0,87 | 33 000 | 5 300 | 3 500 |
| 116 | 118 | 4 | 5 | 2 | 1,5 | 130 000 | 160 000 | 0,42 | 1,43 | 0,79 | 19 000 | 5 300 | 3 700 |
| 116 | 119 | 4 | 6 | 2 | 1,5 | 163 000 | 214 000 | 0,42 | 1,43 | 0,79 | 26 500 | 5 300 | 3 400 |
| 116 | 120 | 7 | 9 | 2 | 1,5 | 210 000 | 300 000 | 0,41 | 1,47 | 0,81 | 38 000 | 5 300 | 3 500 |
| 126 | 133 | 6 | 12 | 3 | 3 | 208 000 | 237 000 | 0,87 | 0,69 | 0,38 | 34 000 | 4 750 | 4 100 |
| 138 | 141 | 5 | 13 | 3 | 2,5 | 187 000 | 219 000 | 0,83 | 0,73 | 0,4 | 26 000 | 4 750 | 3 400 |
| 138 | 140 | 5 | 8 | 3 | 2,5 | 223 000 | 260 000 | 0,35 | 1,74 | 0,96 | 30 500 | 4 750 | 3 750 |
| 138 | 143 | 7 | 12 | 3 | 2,5 | 285 000 | 395 000 | 0,55 | 1,1 | 0,6 | 48 500 | 4 750 | 3 550 |
| 138 | 140 | 6 | 12 | 3 | 2,5 | 310 000 | 405 000 | 0,35 | 1,74 | 0,96 | 49 500 | 4 750 | 3 500 |
| 99 | 101 | 4 | 4 | 1 | 1 | 74 000 | 124 000 | 0,33 | 1,8 | 0,99 | 15 000 | 6 000 | 3 550 |
| 108 | 110 | 5 | 6 | 1,5 | 1,5 | 105 000 | 165 000 | 0,46 | 1,31 | 0,72 | 20 900 | 5 600 | 3 600 |
| 108 | 110 | 6 | 5,5 | 1,5 | 1,5 | 139 000 | 232 000 | 0,3 | 2,01 | 1,11 | 30 000 | 5 600 | 3 700 |
| 116 | 120 | 6 | 8 | 2 | 1,5 | 178 000 | 275 000 | 0,4 | 1,51 | 0,83 | 34 500 | 5 300 | 3 300 |
| 115 | 124 | 4 | 5 | 2 | 1,5 | 135 000 | 169 000 | 0,44 | 1,38 | 0,76 | 20 200 | 5 300 | 3 600 |
| 121 | 124 | 4 | 6 | 2 | 1,5 | 170 000 | 227 000 | 0,44 | 1,38 | 0,76 | 28 000 | 5 000 | 3 200 |
| 121 | 125 | 7 | 10 | 2 | 1,5 | 206 000 | 310 000 | 0,43 | 1,4 | 0,77 | 39 000 | 5 000 | 3 350 |
| 136 | 143 | 6 | 13 | 3 | 3 | 238 000 | 275 000 | 0,87 | 0,69 | 0,38 | 38 500 | 4 750 | 3 850 |
| 148 | 151 | 6 | 14 | 3 | 2,5 | 203 000 | 236 000 | 0,83 | 0,73 | 0,4 | 27 500 | 4 500 | 3 250 |
| 148 | 149 | 5 | 9 | 3 | 2,5 | 250 000 | 295 000 | 0,35 | 1,74 | 0,96 | 34 500 | 4 500 | 3 600 |
| 148 | 151 | 7 | 14 | 3 | 2,5 | 330 000 | 470 000 | 0,55 | 1,1 | 0,6 | 57 000 | 4 500 | 3 350 |
| 148 | 149 | 7 | 13 | 3 | 2,5 | 360 000 | 475 000 | 0,35 | 1,74 | 0,96 | 57 000 | 4 500 | 3 300 |
| 117 | 120 | 6 | 7 | 1,5 | 1,5 | 137 000 | 211 000 | 0,42 | 1,42 | 0,78 | 26 000 | 5 000 | 3 500 |
| 117 | 119 | 6 | 6,5 | 1,5 | 1,5 | 175 000 | 290 000 | 0,28 | 2,16 | 1,19 | 37 000 | 5 000 | 3 600 |
| 121 | 126 | 6 | 8 | 2 | 1,5 | 188 000 | 300 000 | 0,42 | 1,44 | 0,79 | 37 000 | 5 000 | 3 100 |
| 130 | 132 | 4 | 6 | 2,5 | 2 | 154 000 | 190 000 | 0,42 | 1,43 | 0,79 | 21 900 | 5 000 | 3 350 |
| 130 | 134 | 5 | 7 | 2,5 | 2 | 197 000 | 260 000 | 0,42 | 1,43 | 0,79 | 31 000 | 5 000 | 3 050 |
| 130 | 135 | 7 | 11 | 2,5 | 2 | 250 000 | 380 000 | 0,43 | 1,41 | 0,78 | 47 000 | 4 750 | 3 200 |
| 146 | 152 | 7 | 14 | 3 | 3 | 270 000 | 315 000 | 0,87 | 0,69 | 0,38 | 44 000 | 4 500 | 3 700 |
| 158 | 159 | 6 | 15,5 | 3 | 2,5 | 227 000 | 270 000 | 0,83 | 0,73 | 0,4 | 30 500 | 4 500 | 3 100 |
| 158 | 159 | 5 | 9,5 | 3 | 2,5 | 285 000 | 345 000 | 0,35 | 1,74 | 0,96 | 39 500 | 4 500 | 3 300 |
| 158 | 160 | 7 | 13,5 | 3 | 2,5 | 355 000 | 510 000 | 0,55 | 1,1 | 0,6 | 61 000 | 4 200 | 3 250 |
| 158 | 159 | 7 | 13,5 | 3 | 2,5 | 400 000 | 530 000 | 0,35 | 1,74 | 0,96 | 63 000 | 4 500 | 3 200 |

Tapered roller bearings

Single row



Mounting dimensions

Dimension table (continued) · Dimensions in mm

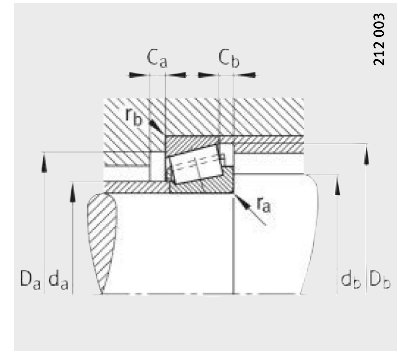
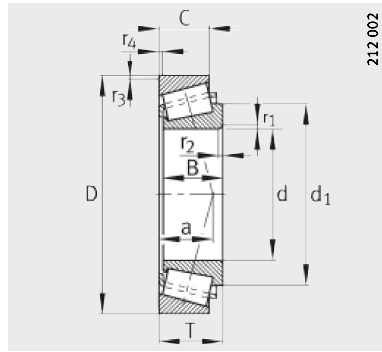
| Designation | Interchange designation to ISO 355 | X-life | Mass m ≈ kg | Dimensions | | | | | | | | | Mounting dimensions | | |
|-----------------|------------------------------------|-----------|-------------------|------------|-----|----|------|------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| | | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 32017-X | T4CC085 | - | 1,36 | 85 | 130 | 29 | 22 | 29 | 1,5 | 1,5 | 29 | 109,5 | 94 | 92 | 117 |
| 33017 | T2CE085 | - | 1,75 | 85 | 130 | 36 | 29,5 | 36 | 1,5 | 1,5 | 26 | 108,5 | 94 | 92 | 118 |
| 33117 | T3DE085 | - | 2,38 | 85 | 140 | 41 | 32 | 41 | 2,5 | 2 | 33 | 114,2 | 95 | 95 | 122 |
| 30217-A | T3EB085 | - | 2,29 | 85 | 150 | 28 | 24 | 30,5 | 2,5 | 2 | 30 | 114,4 | 97 | 95 | 132 |
| 32217-A | T3EC085 | - | 2,72 | 85 | 150 | 36 | 30 | 38,5 | 2,5 | 2 | 34 | 114,6 | 96 | 95 | 130 |
| 33217 | T3EE085 | - | 3,58 | 85 | 150 | 49 | 37 | 49 | 2,5 | 2 | 37 | 117,8 | 95 | 95 | 128 |
| T7FC085 | - | XL | 4,92 | 85 | 170 | 45 | 33 | 48 | 4 | 4 | 55 | 131,1 | 100 | 110 | 131 |
| 31317 | T7GB085 | - | 4,88 | 85 | 180 | 41 | 28 | 44,5 | 4 | 3 | 55 | 129,3 | 103 | 99 | 143 |
| 30317-A | T2GB085 | - | 4,83 | 85 | 180 | 41 | 34 | 44,5 | 3 | 3 | 36 | 127,6 | 107 | 99 | 156 |
| 32317-B | T5GD085 | - | 7,86 | 85 | 180 | 60 | 49 | 63,5 | 4 | 3 | 51 | 133,9 | 102 | 99 | 138 |
| 32317-A | T2GD085 | - | 7,5 | 85 | 180 | 60 | 49 | 63,5 | 4 | 3 | 44 | 128 | 103 | 99 | 150 |
| 32018-XA | T3CC090 | - | 1,76 | 90 | 140 | 32 | 24 | 32 | 2 | 1,5 | 30 | 115,3 | 100 | 99 | 125 |
| 33018 | T2CE090 | - | 2,48 | 90 | 140 | 39 | 32,5 | 39 | 2 | 1,5 | 28 | 116 | 100 | 99 | 127 |
| 33118 | T3DE090 | - | 3,19 | 90 | 150 | 45 | 35 | 45 | 2,5 | 2 | 36 | 121,5 | 100 | 100 | 130 |
| 30218-A | T3FB090 | - | 2,64 | 90 | 160 | 30 | 26 | 32,5 | 2,5 | 2 | 32 | 121,3 | 103 | 100 | 140 |
| 32218-A | T3FC090 | - | 3,78 | 90 | 160 | 40 | 34 | 42,5 | 2,5 | 2 | 36 | 122 | 102 | 100 | 138 |
| 31318 | T7GB090 | - | 5,5 | 90 | 190 | 43 | 30 | 46,5 | 4 | 3 | 58 | 135,9 | 109 | 104 | 151 |
| 30318-A | T2GB090 | - | 5,83 | 90 | 190 | 43 | 36 | 46,5 | 4 | 3 | 37 | 135 | 113 | 104 | 165 |
| 32318-A | T2GD090 | - | 8,51 | 90 | 190 | 64 | 53 | 67,5 | 4 | 3 | 47 | 137,4 | 108 | 104 | 157 |
| 32919 | T2BC095 | - | 0,825 | 95 | 130 | 23 | 18 | 23 | 1,5 | 1,5 | 23 | 113 | 102 | 102 | 121 |
| 32019-XA | T4CC095 | - | 1,86 | 95 | 145 | 32 | 24 | 32 | 2 | 1,5 | 32 | 121 | 105 | 104 | 130 |
| 33019 | T2CE095 | - | 2,33 | 95 | 145 | 39 | 32,5 | 39 | 2 | 1,5 | 29 | 120,2 | 104 | 104 | 131 |
| 30219-A | T3FB095 | - | 3,13 | 95 | 170 | 32 | 27 | 34,5 | 3 | 2,5 | 34 | 128 | 110 | 107 | 149 |
| 32219-A | T3FC095 | - | 4,24 | 95 | 170 | 43 | 37 | 45,5 | 3 | 2,5 | 39 | 129,6 | 108 | 107 | 145 |
| T7FC095 | - | XL | 5,23 | 95 | 180 | 45 | 33 | 49 | 4 | 4 | 61 | 141,5 | 108 | 119 | 138 |
| 31319-A | T7GB095 | - | 7,08 | 95 | 200 | 45 | 32 | 49,5 | 4 | 3 | 61 | 142,5 | 114 | 109 | 157 |
| 30319-A | T2GB095 | - | 6,77 | 95 | 200 | 45 | 38 | 49,5 | 4 | 3 | 40 | 139 | 118 | 109 | 172 |
| 32319-A | T2GD095 | - | 10,3 | 95 | 200 | 67 | 55 | 71,5 | 4 | 3 | 49 | 141 | 115 | 109 | 166 |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 122 | 125 | 6 | 7 | 1,5 | 1,5 | 141 000 | 224 000 | 0,44 | 1,36 | 0,75 | 28 000 | 5 000 | 3 300 |
| 122 | 125 | 6 | 6,5 | 1,5 | 1,5 | 184 000 | 315 000 | 0,29 | 2,06 | 1,13 | 39 500 | 5 000 | 3 350 |
| 130 | 135 | 7 | 9 | 2,5 | 2 | 221 000 | 350 000 | 0,41 | 1,48 | 0,81 | 43 000 | 4 750 | 3 000 |
| 140 | 141 | 5 | 6,5 | 2,5 | 2 | 178 000 | 224 000 | 0,42 | 1,43 | 0,79 | 25 500 | 4 750 | 3 200 |
| 140 | 142 | 5 | 8,5 | 2,5 | 2 | 226 000 | 305 000 | 0,42 | 1,43 | 0,79 | 36 000 | 4 750 | 2 900 |
| 140 | 144 | 7 | 12 | 2,5 | 2 | 295 000 | 435 000 | 0,42 | 1,43 | 0,79 | 53 000 | 4 500 | 3 050 |
| 153 | 161 | 7 | 15 | 4 | 4 | 310 000 | 365 000 | 0,8 | 0,75 | 0,41 | 50 000 | 4 200 | 3 500 |
| 166 | 169 | 6 | 16,5 | 4 | 3 | 255 000 | 300 000 | 0,83 | 0,73 | 0,4 | 34 000 | 4 200 | 2 950 |
| 166 | 167 | 6 | 10,5 | 3 | 3 | 310 000 | 375 000 | 0,35 | 1,74 | 0,96 | 42 000 | 4 200 | 3 150 |
| 166 | 169 | 7 | 14,5 | 4 | 3 | 405 000 | 590 000 | 0,55 | 1,1 | 0,6 | 69 000 | 4 200 | 2 950 |
| 166 | 167 | 8 | 14,5 | 4 | 3 | 435 000 | 580 000 | 0,35 | 1,74 | 0,96 | 67 000 | 4 200 | 2 950 |
| 131 | 134 | 6 | 8 | 2 | 1,5 | 164 000 | 255 000 | 0,42 | 1,42 | 0,78 | 30 500 | 4 750 | 3 200 |
| 131 | 135 | 7 | 6,5 | 2 | 1,5 | 216 000 | 365 000 | 0,27 | 2,23 | 1,23 | 45 000 | 4 750 | 3 150 |
| 140 | 144 | 7 | 10 | 2,5 | 2 | 265 000 | 420 000 | 0,4 | 1,51 | 0,83 | 51 000 | 4 500 | 2 850 |
| 150 | 150 | 5 | 6,5 | 2,5 | 2 | 201 000 | 255 000 | 0,42 | 1,43 | 0,79 | 29 000 | 4 500 | 3 050 |
| 150 | 152 | 5 | 8,5 | 2,5 | 2 | 260 000 | 355 000 | 0,42 | 1,43 | 0,79 | 42 000 | 4 500 | 2 800 |
| 176 | 179 | 6 | 16,5 | 4 | 3 | 275 000 | 325 000 | 0,83 | 0,73 | 0,4 | 35 500 | 3 900 | 2 850 |
| 176 | 176 | 6 | 10,5 | 4 | 3 | 330 000 | 395 000 | 0,35 | 1,74 | 0,96 | 43 500 | 3 900 | 3 100 |
| 176 | 177 | 8 | 14,5 | 4 | 3 | 485 000 | 660 000 | 0,35 | 1,74 | 0,96 | 75 000 | 3 900 | 2 750 |
| 123 | 125 | 5 | 5 | 1,5 | 1,5 | 102 000 | 181 000 | 0,36 | 1,68 | 0,92 | 22 000 | 4 750 | 2 900 |
| 136 | 140 | 6 | 8 | 2 | 1,5 | 170 000 | 275 000 | 0,44 | 1,36 | 0,75 | 32 500 | 4 500 | 3 000 |
| 136 | 139 | 7 | 6,5 | 2 | 1,5 | 221 000 | 380 000 | 0,28 | 2,16 | 1,19 | 46 500 | 4 500 | 3 050 |
| 158 | 159 | 5 | 7,5 | 3 | 2,5 | 222 000 | 285 000 | 0,42 | 1,43 | 0,79 | 31 500 | 4 200 | 2 900 |
| 158 | 161 | 5 | 8,5 | 3 | 2,5 | 300 000 | 415 000 | 0,42 | 1,43 | 0,79 | 48 500 | 4 200 | 2 750 |
| 164 | 172 | 7 | 16 | 4 | 4 | 325 000 | 400 000 | 0,87 | 0,69 | 0,38 | 54 000 | 3 900 | 3 250 |
| 186 | 187 | 6 | 17,5 | 4 | 3 | 305 000 | 370 000 | 0,83 | 0,73 | 0,4 | 39 500 | 3 650 | 2 750 |
| 186 | 184 | 6 | 11,5 | 4 | 3 | 360 000 | 440 000 | 0,35 | 1,74 | 0,96 | 47 500 | 3 650 | 3 000 |
| 186 | 186 | 8 | 16,5 | 4 | 3 | 530 000 | 710 000 | 0,35 | 1,74 | 0,96 | 80 000 | 3 650 | 2 600 |

Tapered roller bearings

Single row



Mounting dimensions

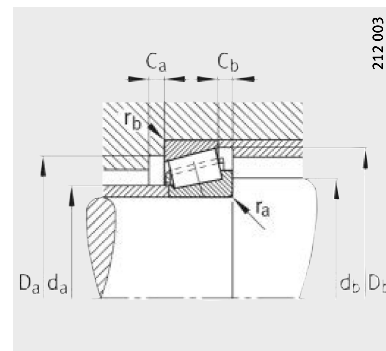
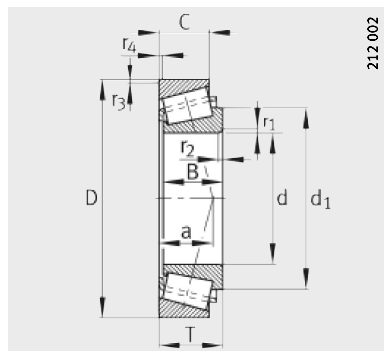
| Dimension table (continued) · Dimensions in mm | | | | | | | | | | | | | | |
|------------------------------------------------|------------------------------------|------------------|------------|-----|----|------|------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| Designation | Interchange designation to ISO 355 | Mass m ≈kg | Dimensions | | | | | | | | | Mounting dimensions | | |
| | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 32020-X | T4CC100 | 1,94 | 100 | 150 | 32 | 24 | 32 | 2 | 1,5 | 33 | 126,6 | 109 | 109 | 134 |
| 33020 | T2CE100 | 2,42 | 100 | 150 | 39 | 32,5 | 39 | 2 | 1,5 | 29 | 124,7 | 108 | 109 | 135 |
| T2EE100 | – | 4,25 | 100 | 165 | 46 | 39 | 47 | 3 | 3 | 36 | 131,3 | 112 | 116 | 145 |
| 30220-A | T3FB100 | 3,75 | 100 | 180 | 34 | 29 | 37 | 3 | 2,5 | 36 | 135 | 116 | 112 | 157 |
| 32220-A | T3FC100 | 5,15 | 100 | 180 | 46 | 39 | 49 | 3 | 2,5 | 42 | 138,5 | 114 | 112 | 154 |
| 33220 | T3FE100 | 6,77 | 100 | 180 | 63 | 48 | 63 | 3 | 2,5 | 46 | 140 | 112 | 112 | 151 |
| 30320-A | T2GB100 | 8,3 | 100 | 215 | 47 | 39 | 51,5 | 4 | 3 | 42 | 151 | 127 | 114 | 184 |
| 31320-X | T7GB100 | 8,81 | 100 | 215 | 51 | 35 | 56,5 | 4 | 3 | 68 | 159,5 | 121 | 114 | 168 |
| 32320-A | T2GD100 | 12,9 | 100 | 215 | 73 | 60 | 77,5 | 4 | 3 | 53 | 152 | 123 | 114 | 177 |
| 32921 | T2CC105 | 1,15 | 105 | 145 | 25 | 20 | 25 | 1,5 | 1,5 | 25 | 125 | 114 | 112 | 135 |
| 32021-X | T4DC105 | 2,33 | 105 | 160 | 35 | 26 | 35 | 2,5 | 2 | 35 | 133 | 116 | 115 | 143 |
| 33021 | T2DE105 | 3,34 | 105 | 160 | 43 | 34 | 43 | 2,5 | 2 | 31 | 131,5 | 116 | 115 | 145 |
| 32221-A | T3FC105 | 6,07 | 105 | 190 | 50 | 43 | 53 | 3 | 2,5 | 44 | 144,6 | 120 | 117 | 161 |
| 32321-A | T2GD105 | 15,1 | 105 | 225 | 77 | 63 | 81,5 | 4 | 3 | 56 | 160,9 | 128 | 119 | 185 |
| 32922 | T2CC110 | 1,26 | 110 | 150 | 25 | 20 | 25 | 1,5 | 1,5 | 26 | 130,9 | 118 | 117 | 140 |
| 32022-X | T4DC110 | 3,35 | 110 | 170 | 38 | 29 | 38 | 2,5 | 2 | 37 | 141 | 122 | 120 | 152 |
| 33022 | T2DE110 | 4,16 | 110 | 170 | 47 | 37 | 47 | 2,5 | 2 | 33 | 139,2 | 123 | 120 | 152 |
| 33122 | T2EE110 | 5,54 | 110 | 180 | 56 | 43 | 56 | 2,5 | 2 | 44 | 147,5 | 121 | 120 | 155 |
| 30222-A | T3FB110 | 5,23 | 110 | 200 | 38 | 32 | 41 | 3 | 2,5 | 39 | 148,7 | 129 | 122 | 174 |
| 32222-A | T3FC110 | 7,35 | 110 | 200 | 53 | 46 | 56 | 3 | 2,5 | 46 | 153,5 | 126 | 122 | 170 |
| 30322-A | T2GB110 | 11 | 110 | 240 | 50 | 42 | 54,5 | 4 | 3 | 45 | 169,2 | 141 | 124 | 206 |
| 31322-X | T7GB110 | 12,3 | 110 | 240 | 57 | 38 | 63 | 4 | 3 | 75 | 178 | 135 | 124 | 188 |
| 32322-A | T2GD110 | 19 | 110 | 240 | 80 | 65 | 84,5 | 4 | 3 | 58 | 171,5 | 137 | 124 | 198 |
| 32924 | T2CC120 | 1,82 | 120 | 165 | 29 | 23 | 29 | 1,5 | 1,5 | 29 | 141 | 128 | 127 | 154 |
| T4CB120 | – | 1,97 | 120 | 170 | 25 | 19,5 | 27 | 3 | 3 | 35 | 144,7 | 130 | 132 | 157 |
| 32024-X | T4DC120 | 3,29 | 120 | 180 | 38 | 29 | 38 | 2,5 | 2 | 40 | 151 | 131 | 130 | 161 |
| 33024 | T2DE120 | 4,55 | 120 | 180 | 48 | 38 | 48 | 2,5 | 2 | 36 | 148,5 | 132 | 130 | 160 |
| 30224-A | T4FB120 | 6,25 | 120 | 215 | 40 | 34 | 43,5 | 3 | 2,5 | 44 | 163 | 140 | 132 | 187 |
| 32224-A | T4FD120 | 9,28 | 120 | 215 | 58 | 50 | 61,5 | 3 | 2,5 | 51 | 165,2 | 136 | 132 | 181 |
| 30324-A | T2GB120 | 14,3 | 120 | 260 | 55 | 46 | 59,5 | 4 | 3 | 48 | 183,5 | 152 | 134 | 221 |
| 31324-X | T7GB120 | 15,4 | 120 | 260 | 62 | 42 | 68 | 4 | 3 | 82 | 192 | 145 | 134 | 203 |
| 32324 | – | 21,1 | 120 | 260 | 86 | 69 | 90,5 | 4 | 3 | 66 | 187 | 148 | 134 | 213 |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 141 | 144 | 6 | 8 | 2 | 1,5 | 173 000 | 285 000 | 0,46 | 1,31 | 0,72 | 33 500 | 4 500 | 2 900 |
| 141 | 143 | 7 | 6,5 | 2 | 1,5 | 225 000 | 395 000 | 0,29 | 2,09 | 1,15 | 47 500 | 4 500 | 2 900 |
| 151 | 157 | 8 | 8 | 3 | 3 | 300 000 | 470 000 | 0,32 | 1,88 | 1,04 | 56 000 | 4 200 | 2 600 |
| 168 | 168 | 5 | 8 | 3 | 2,5 | 250 000 | 325 000 | 0,42 | 1,43 | 0,79 | 35 500 | 4 200 | 2 800 |
| 168 | 171 | 5 | 10 | 3 | 2,5 | 335 000 | 475 000 | 0,42 | 1,43 | 0,79 | 54 000 | 3 900 | 2 600 |
| 168 | 172 | 10 | 15 | 3 | 2,5 | 430 000 | 660 000 | 0,4 | 1,48 | 0,82 | 77 000 | 3 900 | 2 650 |
| 201 | 197 | 6 | 12,5 | 4 | 3 | 410 000 | 500 000 | 0,35 | 1,74 | 0,96 | 54 000 | 3 350 | 2 750 |
| 201 | 202 | 7 | 21,5 | 4 | 3 | 385 000 | 480 000 | 0,83 | 0,73 | 0,4 | 51 000 | 3 100 | 2 550 |
| 201 | 200 | 8 | 17,5 | 4 | 3 | 610 000 | 840 000 | 0,35 | 1,74 | 0,96 | 94 000 | 3 350 | 2 370 |
| 136 | 140 | 5 | 5 | 1,5 | 1,5 | 128 000 | 217 000 | 0,34 | 1,75 | 0,96 | 25 500 | 4 500 | 2 650 |
| 150 | 154 | 6 | 9 | 2,5 | 2 | 202 000 | 330 000 | 0,44 | 1,35 | 0,74 | 38 000 | 4 200 | 2 800 |
| 150 | 153 | 7 | 9 | 2,5 | 2 | 265 000 | 450 000 | 0,28 | 2,12 | 1,17 | 53 000 | 4 200 | 2 850 |
| 178 | 180 | 5 | 10 | 3 | 2,5 | 385 000 | 550 000 | 0,42 | 1,43 | 0,79 | 63 000 | 3 650 | 2 490 |
| 211 | 209 | 9 | 18,5 | 4 | 3 | 670 000 | 930 000 | 0,35 | 1,74 | 0,96 | 102 000 | 3 100 | 2 220 |
| 141 | 145 | 5 | 5 | 1,5 | 1,5 | 133 000 | 231 000 | 0,36 | 1,69 | 0,93 | 27 000 | 4 500 | 2 500 |
| 160 | 163 | 7 | 9 | 2,5 | 2 | 242 000 | 395 000 | 0,43 | 1,39 | 0,77 | 45 000 | 3 900 | 2 650 |
| 160 | 161 | 7 | 10 | 2,5 | 2 | 295 000 | 520 000 | 0,29 | 2,09 | 1,15 | 61 000 | 4 200 | 2 750 |
| 170 | 174 | 9 | 13 | 2,5 | 2 | 370 000 | 630 000 | 0,42 | 1,43 | 0,79 | 73 000 | 3 650 | 2 470 |
| 188 | 187 | 6 | 9 | 3 | 2,5 | 315 000 | 415 000 | 0,42 | 1,43 | 0,79 | 45 500 | 3 650 | 2 550 |
| 188 | 190 | 6 | 10 | 3 | 2,5 | 410 000 | 590 000 | 0,42 | 1,43 | 0,79 | 66 000 | 3 350 | 2 380 |
| 226 | 220 | 8 | 12,5 | 4 | 3 | 480 000 | 590 000 | 0,35 | 1,74 | 0,96 | 71 000 | 2 800 | 2 410 |
| 226 | 224 | 7 | 25 | 4 | 3 | 465 000 | 590 000 | 0,83 | 0,73 | 0,4 | 70 000 | 2 800 | 2 240 |
| 226 | 222 | 9 | 19,5 | 4 | 3 | 740 000 | 1 020 000 | 0,35 | 1,74 | 0,96 | 126 000 | 2 800 | 2 050 |
| 158 | 160 | 6 | 6 | 1,5 | 1,5 | 176 000 | 305 000 | 0,35 | 1,72 | 0,95 | 34 500 | 3 900 | 2 370 |
| 157 | 164 | 5 | 7,5 | 3 | 3 | 153 000 | 238 000 | 0,47 | 1,27 | 0,7 | 26 000 | 3 900 | 2 420 |
| 170 | 173 | 7 | 9 | 2,5 | 2 | 250 000 | 420 000 | 0,46 | 1,31 | 0,72 | 47 500 | 3 650 | 2 460 |
| 170 | 171 | 6 | 10 | 2,5 | 2 | 310 000 | 560 000 | 0,31 | 1,97 | 1,08 | 65 000 | 3 650 | 2 600 |
| 203 | 201 | 6 | 9,5 | 3 | 2,5 | 330 000 | 445 000 | 0,44 | 1,38 | 0,76 | 48 000 | 3 100 | 2 460 |
| 203 | 204 | 7 | 11,5 | 3 | 2,5 | 485 000 | 730 000 | 0,44 | 1,38 | 0,76 | 81 000 | 3 100 | 2 120 |
| 246 | 237 | 10 | 13,5 | 4 | 3 | 560 000 | 700 000 | 0,35 | 1,74 | 0,96 | 83 000 | 2 650 | 2 160 |
| 246 | 244 | 9 | 26 | 4 | 3 | 540 000 | 700 000 | 0,83 | 0,73 | 0,4 | 82 000 | 2 500 | 2 010 |
| 246 | 239 | 9 | 21,5 | 4 | 3 | 670 000 | 970 000 | 0,39 | 1,53 | 0,84 | 118 000 | 2 650 | 2 020 |

Tapered roller bearings

Single row



Mounting dimensions

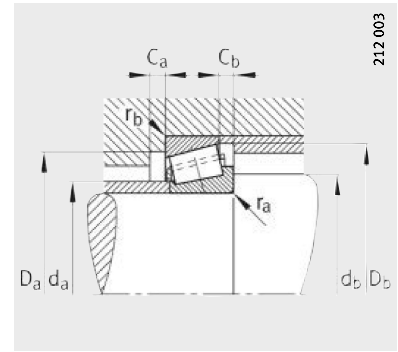
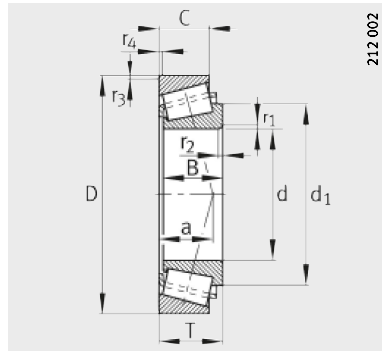
| Dimension table (continued) · Dimensions in mm | | | | | | | | | | | | | | |
|------------------------------------------------|------------------------------------|------------------|------------|-----|-----|----|--------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|
| Designation | Interchange designation to ISO 355 | Mass m ≈kg | Dimensions | | | | | | | | | Mounting dimensions | | |
| | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. |
| 32926 | T2CC130 | 2,4 | 130 | 180 | 32 | 25 | 32 | 2 | 1,5 | 32 | 154,7 | 141 | 139 | 167 |
| T4CB130 | – | 2,53 | 130 | 185 | 27 | 21 | 29 | 3 | 3 | 38 | 156,3 | 140 | 143 | 171 |
| 32026-X | T4EC130 | 5,02 | 130 | 200 | 45 | 34 | 45 | 2,5 | 2 | 44 | 166,2 | 144 | 140 | 178 |
| 30226-A | T4FB130 | 7,08 | 130 | 230 | 40 | 34 | 43,75 | 4 | 3 | 46 | 177,1 | 152 | 144 | 203 |
| 32226-A | T4FD130 | 11,7 | 130 | 230 | 64 | 54 | 67,75 | 4 | 3 | 56 | 178 | 146 | 144 | 193 |
| 30326 | – | 17,2 | 130 | 280 | 58 | 49 | 63,75 | 5 | 4 | 53 | 194 | 164 | 148 | 239 |
| 31326-X | T7GB130 | 19,1 | 130 | 280 | 66 | 44 | 72 | 5 | 4 | 87 | 206 | 157 | 148 | 218 |
| 32326 | – | 26,7 | 130 | 280 | 93 | 78 | 98,75 | 5 | 4 | 68 | 197,3 | 160 | 147 | 230 |
| 32928 | T2CC140 | 2,6 | 140 | 190 | 32 | 25 | 32 | 2 | 1,5 | 34 | 164,8 | 150 | 149 | 177 |
| 32028-X | T4DC140 | 5,39 | 140 | 210 | 45 | 34 | 45 | 2,5 | 2 | 46 | 175,8 | 153 | 150 | 187 |
| 30228-A | T4FB140 | 8,81 | 140 | 250 | 42 | 36 | 45,75 | 4 | 3 | 48 | 187 | 163 | 154 | 219 |
| 32228-A | T4FD140 | 14 | 140 | 250 | 68 | 58 | 71,75 | 4 | 3 | 60 | 193,5 | 159 | 154 | 210 |
| 31328-X | T7GB140 | 23,1 | 140 | 300 | 70 | 47 | 77 | 5 | 4 | 94 | 223 | 169 | 158 | 235 |
| 32328-A | – | 37,8 | 140 | 300 | 102 | 85 | 107,75 | 5 | 4 | 74 | 215 | 170 | 157 | 247 |
| 32030-X | T4EC150 | 6,47 | 150 | 225 | 48 | 36 | 48 | 3 | 2,5 | 50 | 188 | 164 | 162 | 200 |
| 33030 | T2EE150 | 8,23 | 150 | 225 | 59 | 46 | 59 | 3 | 2,5 | 48 | 190 | 164 | 162 | 200 |
| 30230-A | T4GB150 | 11,1 | 150 | 270 | 45 | 38 | 49 | 4 | 3 | 52 | 201 | 175 | 164 | 234 |
| 32230-A | T4GD150 | 18,5 | 150 | 270 | 73 | 60 | 77 | 4 | 3 | 64 | 206,7 | 171 | 164 | 226 |
| 31330-X | T7GB150 | 28 | 150 | 320 | 75 | 50 | 82 | 5 | 4 | 100 | 237 | 181 | 168 | 251 |
| 32330-A | – | 46,1 | 150 | 320 | 108 | 90 | 114 | 5 | 4 | 79 | 230 | 184 | 167 | 264 |
| 32932 | T2DC160 | 4,13 | 160 | 220 | 38 | 30 | 38 | 2,5 | 2 | 38 | 188 | 173 | 170 | 204 |
| 32032-X | T4EC160 | 7,81 | 160 | 240 | 51 | 38 | 51 | 3 | 2,5 | 53 | 201 | 175 | 172 | 213 |
| 30232 | – | 13,8 | 160 | 290 | 48 | 40 | 52 | 4 | 3 | 51 | 216,5 | 189 | 174 | 252 |
| 32232-A | T4GD160 | 23,4 | 160 | 290 | 80 | 67 | 84 | 4 | 3 | 69 | 223 | 183 | 174 | 242 |
| 30332-A | T2GB160 | 29,9 | 160 | 340 | 68 | 58 | 75 | 5 | 4 | 63 | 237 | 201 | 178 | 290 |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 171 | 173 | 6 | 7 | 2 | 1,5 | 208 000 | 370 000 | 0,34 | 1,77 | 0,97 | 41 500 | 3 650 | 2 220 |
| 171 | 178 | 6 | 8 | 3 | 3 | 179 000 | 275 000 | 0,47 | 1,27 | 0,7 | 29 500 | 3 350 | 2 270 |
| 190 | 192 | 8 | 11 | 2,5 | 2 | 325 000 | 550 000 | 0,43 | 1,38 | 0,76 | 61 000 | 3 100 | 2 330 |
| 216 | 217 | 7 | 9,5 | 4 | 3 | 355 000 | 470 000 | 0,44 | 1,38 | 0,76 | 49 000 | 2 800 | 2 300 |
| 216 | 219 | 7 | 13,5 | 4 | 3 | 560 000 | 850 000 | 0,44 | 1,38 | 0,76 | 93 000 | 2 800 | 1 950 |
| 262 | 255 | 8 | 14,5 | 5 | 4 | 600 000 | 740 000 | 0,35 | 1,73 | 0,95 | 86 000 | 2 500 | 2 030 |
| 262 | 261 | 9 | 28 | 5 | 4 | 610 000 | 790 000 | 0,83 | 0,73 | 0,4 | 92 000 | 2 380 | 1 830 |
| 262 | 260 | 10 | 20,5 | 5 | 4 | 830 000 | 1 120 000 | 0,34 | 1,75 | 0,96 | 133 000 | 2 500 | 1 850 |
| 181 | 184 | 6 | 7 | 2 | 1,5 | 214 000 | 395 000 | 0,36 | 1,67 | 0,92 | 43 000 | 3 350 | 2 070 |
| 200 | 202 | 8 | 11 | 2,5 | 2 | 340 000 | 590 000 | 0,46 | 1,31 | 0,72 | 65 000 | 2 800 | 2 170 |
| 236 | 234 | 9 | 9,5 | 4 | 3 | 415 000 | 560 000 | 0,44 | 1,38 | 0,76 | 66 000 | 2 650 | 2 030 |
| 236 | 238 | 8 | 13,5 | 4 | 3 | 640 000 | 990 000 | 0,44 | 1,38 | 0,76 | 120 000 | 2 500 | 1 740 |
| 282 | 280 | 9 | 30 | 5 | 4 | 700 000 | 910 000 | 0,83 | 0,73 | 0,4 | 102 000 | 2 380 | 1 670 |
| 282 | 280 | 10 | 22,5 | 5 | 4 | 1 170 000 | 1 710 000 | 0,35 | 1,74 | 0,96 | 198 000 | 2 380 | 1 460 |
| 213 | 216 | 8 | 12 | 3 | 2,5 | 385 000 | 680 000 | 0,46 | 1,31 | 0,72 | 73 000 | 2 650 | 1 980 |
| 213 | 217 | 8 | 13 | 3 | 2,5 | 465 000 | 880 000 | 0,36 | 1,65 | 0,9 | 96 000 | 2 650 | 1 930 |
| 256 | 250 | 9 | 11 | 4 | 3 | 465 000 | 630 000 | 0,44 | 1,38 | 0,76 | 74 000 | 2 500 | 1 870 |
| 256 | 254 | 8 | 17 | 4 | 3 | 740 000 | 1 150 000 | 0,44 | 1,38 | 0,76 | 137 000 | 2 500 | 1 570 |
| 302 | 300 | 9 | 32 | 5 | 4 | 790 000 | 1 040 000 | 0,83 | 0,73 | 0,4 | 115 000 | 2 240 | 1 530 |
| 302 | 299 | 12 | 24 | 5 | 4 | 1 330 000 | 1 950 000 | 0,35 | 1,74 | 0,96 | 221 000 | 2 240 | 1 320 |
| 210 | 212 | 7 | 8 | 2,5 | 2 | 295 000 | 530 000 | 0,35 | 1,73 | 0,95 | 56 000 | 2 650 | 1 890 |
| 228 | 231 | 8 | 13 | 3 | 2,5 | 420 000 | 740 000 | 0,46 | 1,31 | 0,72 | 90 000 | 2 500 | 1 850 |
| 276 | 269 | 9 | 12 | 4 | 3 | 405 000 | 570 000 | 0,37 | 1,61 | 0,89 | 65 000 | 2 380 | 1 870 |
| 276 | 274 | 10 | 17 | 4 | 3 | 870 000 | 1 380 000 | 0,44 | 1,38 | 0,76 | 162 000 | 2 380 | 1 410 |
| 322 | 310 | 9 | 17 | 5 | 4 | 890 000 | 1 140 000 | 0,35 | 1,74 | 0,96 | 123 000 | 2 240 | 1 510 |

Tapered roller bearings

Single row



Mounting dimensions

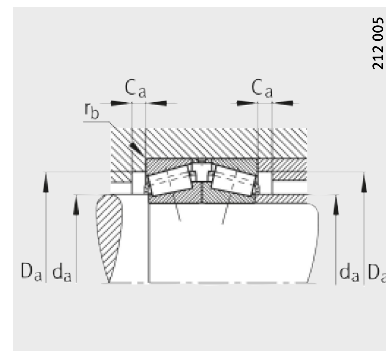
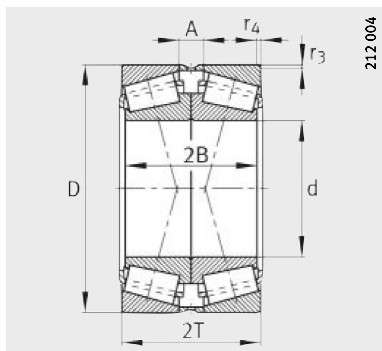
| Dimension table (continued) · Dimensions in mm | | | | | | | | | | | | | | | |
|------------------------------------------------|------------------------------------|------------------|------------|-----|------|-----|------|-----------------------------------------|-----------------------------------------|--------|---------------------|------------------------|------------------------|------------------------|--|
| Designation | Interchange designation to ISO 355 | Mass m ≈kg | Dimensions | | | | | | | | | | Mounting dimensions | | |
| | | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ | d _a max. | d _b min. | D _a min. | |
| 32934 | T3DC170 | 4,42 | 170 | 230 | 38 | 30 | 38 | 2,5 | 2 | 42 | 199 | 183 | 180 | 213 | |
| 32034-X | T4EC170 | 11,4 | 170 | 260 | 57 | 43 | 57 | 3 | 2,5 | 57 | 216 | 187 | 182 | 230 | |
| 30234-A | T4GB170 | 19,2 | 170 | 310 | 52 | 43 | 57 | 5 | 4 | 60 | 233 | 203 | 188 | 269 | |
| 32234-A | T4GD170 | 28,6 | 170 | 310 | 86 | 71 | 91 | 5 | 4 | 74 | 238 | 196 | 188 | 259 | |
| 32936 | T4DC180 | 7,08 | 180 | 250 | 45 | 34 | 45 | 2,5 | 2 | 54 | 217 | 193 | 190 | 225 | |
| 32036-X | T3FD180 | 14,2 | 180 | 280 | 64 | 48 | 64 | 3 | 2,5 | 60 | 230 | 199 | 192 | 247 | |
| 30236-A | T4GB180 | 17,9 | 180 | 320 | 52 | 43 | 57 | 5 | 4 | 62 | 242 | 211 | 198 | 278 | |
| 32236-A | T4GD180 | 32,5 | 180 | 320 | 86 | 71 | 91 | 5 | 4 | 77 | 249,5 | 204 | 198 | 267 | |
| 32938 | T4DC190 | 7,55 | 190 | 260 | 45 | 34 | 45 | 2,5 | 2 | 55 | 226 | 204 | 200 | 235 | |
| 32038-X | T4FD190 | 14,8 | 190 | 290 | 64 | 48 | 64 | 3 | 2,5 | 63 | 241 | 209 | 202 | 257 | |
| 32238-A | T4GD190 | 39,1 | 190 | 340 | 92 | 75 | 97 | 5 | 4 | 81 | 263 | 216 | 207 | 286 | |
| 32940-A | T3EC200 | 8,97 | 200 | 280 | 51 | 39 | 51 | 3 | 2,5 | 54 | 239 | 216 | 212 | 257 | |
| 32040-X | T4FD200 | 19 | 200 | 310 | 70 | 53 | 70 | 3 | 2,5 | 67 | 256 | 221 | 212 | 273 | |
| 30240-A | T4GB200 | 25,5 | 200 | 360 | 58 | 48 | 64 | 5 | 4 | 69 | 272 | 237 | 217 | 315 | |
| 32240-A | T3GD200 | 43 | 200 | 360 | 98 | 82 | 104 | 5 | 4 | 83 | 274,5 | 226 | 217 | 302 | |
| 32944 | T3EC220 | 10,3 | 220 | 300 | 51 | 39 | 51 | 3 | 2,5 | 59 | 260 | 234 | 232 | 275 | |
| 32044-X | T4FD220 | 24,3 | 220 | 340 | 76 | 57 | 76 | 4 | 3 | 73 | 280 | 243 | 234 | 300 | |
| 32244-A | – | 59,5 | 220 | 400 | 108 | 90 | 114 | 5 | 4 | 95 | 310,5 | 258 | 237 | 336 | |
| 32948 | T4EC240 | 11 | 240 | 320 | 51 | 39 | 51 | 3 | 2,5 | 65 | 281 | 254 | 252 | 294 | |
| 32048-X | T4FD240 | 28,2 | 240 | 360 | 76 | 57 | 76 | 4 | 3 | 79 | 300 | 261 | 254 | 318 | |
| 32248-A | – | 80,5 | 240 | 440 | 120 | 100 | 127 | 5 | 4 | 105 | 332 | 286 | 257 | 372 | |
| 32952 | T3EC260 | 18,6 | 260 | 360 | 63,5 | 48 | 63,5 | 3 | 2,5 | 70 | 309 | 279 | 272 | 328 | |
| 32052-X | T4FC260 | 41,1 | 260 | 400 | 87 | 65 | 87 | 5 | 4 | 86 | 331,5 | 287 | 278 | 352 | |
| 32956 | T4EC280 | 19,9 | 280 | 380 | 63,5 | 48 | 63,5 | 3 | 2,5 | 75 | 330 | 298 | 292 | 348 | |
| 32056-X | T4FC280 | 40,5 | 280 | 420 | 87 | 65 | 87 | 5 | 4 | 91 | 349 | 305 | 298 | 370 | |
| 32960 | T3FD300 | 31,2 | 300 | 420 | 76 | 57 | 76 | 4 | 3 | 80 | 362 | 324 | 314 | 383 | |
| 32064-X | T4GD320 | 60,5 | 320 | 480 | 100 | 74 | 100 | 5 | 4 | 104 | 397,5 | 350 | 338 | 424 | |
| 32264 | – | 170 | 320 | 580 | 150 | 125 | 159 | 6 | 5 | 136 | 439 | 372 | 340 | 486 | |
| 32968 | T4FD340 | 35,5 | 340 | 460 | 76 | 57 | 76 | 4 | 3 | 91 | 404 | 361 | 354 | 421 | |
| 32972 | T4FD360 | 37,1 | 360 | 480 | 76 | 57 | 76 | 4 | 3 | 97 | 423 | 380 | 374 | 439 | |



| | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed | Reference speed |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|-------------------|
| D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ | min ⁻¹ |
| 220 | 222 | 7 | 8 | 2,5 | 2 | 295 000 | 560 000 | 0,38 | 1,57 | 0,86 | 59 000 | 2 650 | 1 780 |
| 248 | 249 | 10 | 14 | 3 | 2,5 | 500 000 | 880 000 | 0,44 | 1,35 | 0,74 | 106 000 | 2 380 | 1 690 |
| 292 | 288 | 8 | 14 | 5 | 4 | 590 000 | 810 000 | 0,44 | 1,38 | 0,76 | 89 000 | 2 240 | 1 590 |
| 292 | 294 | 10 | 20 | 5 | 4 | 980 000 | 1 560 000 | 0,44 | 1,38 | 0,76 | 179 000 | 2 240 | 1 310 |
| 240 | 241 | 8 | 11 | 2,5 | 2 | 360 000 | 710 000 | 0,48 | 1,25 | 0,69 | 84 000 | 2 380 | 1 660 |
| 268 | 267 | 10 | 16 | 3 | 2,5 | 620 000 | 1 090 000 | 0,42 | 1,42 | 0,78 | 128 000 | 2 240 | 1 520 |
| 302 | 297 | 9 | 14 | 5 | 4 | 610 000 | 850 000 | 0,45 | 1,33 | 0,73 | 93 000 | 2 240 | 1 500 |
| 302 | 303 | 10 | 20 | 5 | 4 | 1 010 000 | 1 640 000 | 0,45 | 1,33 | 0,73 | 187 000 | 2 100 | 1 230 |
| 249 | 251 | 8 | 11 | 2,5 | 2 | 370 000 | 750 000 | 0,48 | 1,26 | 0,69 | 89 000 | 2 380 | 1 550 |
| 278 | 279 | 10 | 16 | 3 | 2,5 | 630 000 | 1 120 000 | 0,44 | 1,36 | 0,75 | 130 000 | 2 240 | 1 450 |
| 322 | 323 | 10 | 22 | 5 | 4 | 1 140 000 | 1 820 000 | 0,44 | 1,38 | 0,76 | 203 000 | 1 960 | 1 150 |
| 268 | 271 | 9 | 12 | 3 | 2,5 | 495 000 | 930 000 | 0,39 | 1,52 | 0,84 | 107 000 | 2 240 | 1 410 |
| 298 | 297 | 11 | 17 | 3 | 2,5 | 760 000 | 1 370 000 | 0,43 | 1,39 | 0,77 | 154 000 | 2 100 | 1 290 |
| 342 | 336 | 9 | 16 | 5 | 4 | 760 000 | 1 060 000 | 0,44 | 1,38 | 0,76 | 113 000 | 1 960 | 1 300 |
| 342 | 340 | 11 | 22 | 5 | 4 | 1 320 000 | 2 080 000 | 0,41 | 1,48 | 0,81 | 225 000 | 1 960 | 1 060 |
| 288 | 290 | 9 | 12 | 3 | 2,5 | 495 000 | 980 000 | 0,43 | 1,41 | 0,78 | 110 000 | 2 100 | 1 280 |
| 326 | 326 | 12 | 19 | 4 | 3 | 890 000 | 1 630 000 | 0,43 | 1,39 | 0,77 | 179 000 | 1 820 | 1 130 |
| 382 | 380 | 12 | 24 | 5 | 4 | 1 540 000 | 2 550 000 | 0,44 | 1,38 | 0,76 | 270 000 | 1 540 | 910 |
| 308 | 311 | 9 | 12 | 3 | 2,5 | 510 000 | 1 050 000 | 0,46 | 1,31 | 0,72 | 116 000 | 1 960 | 1 160 |
| 346 | 346 | 12 | 19 | 4 | 3 | 900 000 | 1 680 000 | 0,46 | 1,31 | 0,72 | 181 000 | 1 680 | 1 060 |
| 422 | 415 | 14 | 27 | 5 | 4 | 1 850 000 | 3 100 000 | 0,44 | 1,38 | 0,76 | 320 000 | 1 400 | 800 |
| 348 | 347 | 11 | 15,5 | 3 | 2,5 | 750 000 | 1 500 000 | 0,41 | 1,48 | 0,81 | 161 000 | 1 680 | 990 |
| 382 | 383 | 14 | 22 | 5 | 4 | 1 150 000 | 2 140 000 | 0,43 | 1,38 | 0,76 | 225 000 | 1 540 | 920 |
| 368 | 368 | 11 | 15,5 | 3 | 2,5 | 740 000 | 1 520 000 | 0,43 | 1,39 | 0,76 | 162 000 | 1 540 | 940 |
| 402 | 402 | 14 | 22 | 5 | 4 | 1 200 000 | 2 300 000 | 0,46 | 1,31 | 0,72 | 238 000 | 1 400 | 840 |
| 406 | 405 | 12 | 19 | 4 | 3 | 990 000 | 2 030 000 | 0,39 | 1,52 | 0,84 | 208 000 | 1 330 | 820 |
| 462 | 461 | 15 | 26 | 5 | 4 | 1 560 000 | 3 050 000 | 0,46 | 1,31 | 0,72 | 305 000 | 1 190 | 690 |
| 560 | 555 | 16 | 34 | 6 | 6 | 3 000 000 | 5 200 000 | 0,44 | 1,38 | 0,76 | 490 000 | 1 050 | 530 |
| 446 | 446 | 12 | 19 | 4 | 3 | 1 080 000 | 2 370 000 | 0,44 | 1,37 | 0,75 | 236 000 | 1 190 | 690 |
| 466 | 466 | 14 | 19 | 4 | 3 | 1 060 000 | 2 370 000 | 0,46 | 1,31 | 0,72 | 233 000 | 1 120 | 660 |

Tapered roller bearings

Matched pairs



Mounting dimensions

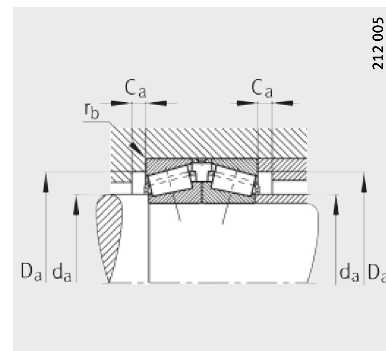
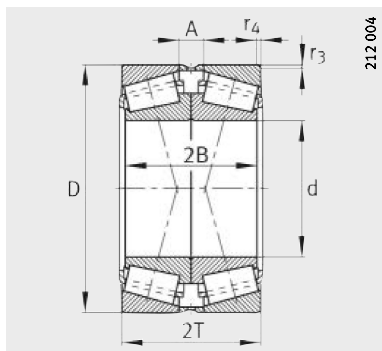
| Dimension table · Dimensions in mm | | | | | | | | | |
|------------------------------------|-----------------------------------|------------|-----|-----|------|-----------------------------------------|------|------------------------|------------------------|
| Designation | Mass for bearing pair m ≈kg | Dimensions | | | | | | Mounting dimensions | |
| | | d | D | 2B | 2T | r ₃ , r ₄ min. | A | d _a max. | D _a min. |
| 31306-A-N11CA-A50-90 | 0,85 | 30 | 72 | 38 | 41,5 | 1,5 | 13,5 | 40 | 55 |
| 31307-A-N11CA-A40-70 | 1,13 | 35 | 80 | 42 | 45,5 | 1,5 | 15,5 | 44 | 62 |
| 31308-A-N11CA-A50-90 | 1,52 | 40 | 90 | 46 | 50,5 | 1,5 | 16,5 | 51 | 71 |
| 31309-A-N11CA-A60-100 | 2,1 | 45 | 100 | 50 | 54,5 | 1,5 | 18,5 | 56 | 79 |
| 31310-A-N11CA-A60-100 | 2,9 | 50 | 110 | 54 | 58,5 | 2 | 20,5 | 62 | 87 |
| 31311-A-N11CA-A80-120 | 3,4 | 55 | 120 | 58 | 63 | 2 | 21 | 68 | 94 |
| 31312-A-N11CA-A80-120 | 4,2 | 60 | 130 | 62 | 67 | 2,5 | 23 | 73 | 103 |
| 31313-A-N11CA-A80-120 | 5,05 | 65 | 140 | 66 | 72 | 2,5 | 26 | 79 | 111 |
| 31314-A-N11CA-A100-140 | 6,2 | 70 | 150 | 70 | 76 | 2,5 | 26 | 84 | 118 |
| 31315-N11CA-A100-140 | 7,2 | 75 | 160 | 74 | 80 | 2,5 | 28 | 91 | 127 |
| 32016-X-N11CA-A150-200 | 2,58 | 80 | 125 | 58 | 58 | 2 | 14 | 89 | 112 |
| 31316-N11CA-A100-140 | 8,9 | 80 | 170 | 78 | 85 | 2,5 | 31 | 97 | 134 |
| 31317-N11CA-A120-160 | 10,4 | 85 | 180 | 82 | 89 | 3 | 33 | 103 | 143 |
| 31318-N11CA-A120-160 | 11,8 | 90 | 190 | 86 | 93 | 3 | 33 | 109 | 151 |
| 31318-N11CA-A160-200 | 11,8 | 90 | 190 | 86 | 93 | 3 | 33 | 109 | 151 |
| 31319-A-N11CA-A120-160 | 14 | 95 | 200 | 90 | 99 | 3 | 35 | 114 | 157 |
| 32020-X-N11CA-A200-230 | 4 | 100 | 150 | 64 | 64 | 1,5 | 16 | 109 | 134 |
| 31320-X-N11CA-A120-160 | 19 | 100 | 215 | 102 | 113 | 3 | 43 | 121 | 168 |
| 32222-A-N11CA-A250-280 | 14,9 | 110 | 200 | 106 | 112 | 2,5 | 20 | 126 | 170 |
| 31322-X-N11CA-A140-180 | 26,2 | 110 | 240 | 114 | 126 | 3 | 50 | 135 | 188 |
| 32224-A-N11CA-A230-280 | 19,1 | 120 | 215 | 116 | 123 | 2,5 | 23 | 136 | 181 |
| 31324-X-N11CA-A140-180 | 33,7 | 120 | 260 | 124 | 136 | 3 | 52 | 145 | 203 |
| 32026-X-N11CA-A200-250 | 10,3 | 130 | 200 | 90 | 90 | 2 | 22 | 144 | 178 |
| 31326-X-N11CA-A160-200 | 40,9 | 130 | 280 | 132 | 144 | 4 | 56 | 157 | 218 |



| | | | Basic load ratings for bearing pair | | Calculation factors | | | | Fatigue limit load | Limiting speed Bearing pair | Reference speed Bearing pair |
|----------------|----------------|----------------|-------------------------------------|-----------------------|---------------------|----------------|----------------|----------------|--------------------|-----------------------------|------------------------------|
| D _a | C _a | r _b | dyn. C _r | stat. C _{0r} | e | Y ₁ | Y ₂ | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | max. | N | N | | | | | N | min ⁻¹ | min ⁻¹ |
| 65 | 3 | 1,5 | 77 000 | 93 000 | 0,83 | 0,82 | 1,22 | 0,8 | 10 600 | 9 800 | 5 200 |
| 71 | 4 | 1,5 | 103 000 | 128 000 | 0,83 | 0,82 | 1,22 | 0,8 | 14 900 | 8 800 | 4 600 |
| 81 | 4 | 1,5 | 130 000 | 165 000 | 0,83 | 0,82 | 1,22 | 0,8 | 18 900 | 7 400 | 4 150 |
| 91 | 4 | 1,5 | 165 000 | 217 000 | 0,83 | 0,82 | 1,22 | 0,8 | 25 500 | 6 700 | 3 750 |
| 100 | 4 | 2 | 189 000 | 250 000 | 0,83 | 0,82 | 1,22 | 0,8 | 29 500 | 6 300 | 3 450 |
| 110 | 4 | 2 | 210 000 | 275 000 | 0,83 | 0,82 | 1,22 | 0,8 | 32 500 | 5 600 | 3 250 |
| 118 | 5 | 2,5 | 250 000 | 335 000 | 0,83 | 0,82 | 1,22 | 0,8 | 40 000 | 5 300 | 3 000 |
| 128 | 5 | 2,5 | 280 000 | 375 000 | 0,83 | 0,82 | 1,22 | 0,8 | 44 500 | 5 000 | 2 900 |
| 138 | 5 | 2,5 | 320 000 | 435 000 | 0,83 | 0,82 | 1,22 | 0,8 | 52 000 | 4 750 | 3 200 |
| 148 | 6 | 2,5 | 350 000 | 475 000 | 0,83 | 0,82 | 1,22 | 0,8 | 55 000 | 4 500 | 2 600 |
| 117 | 6 | 2 | 235 000 | 420 000 | 0,42 | 1,6 | 2,38 | 1,56 | 52 000 | 5 000 | 2 800 |
| 158 | 6 | 2,5 | 390 000 | 540 000 | 0,83 | 0,82 | 1,22 | 0,8 | 61 000 | 4 500 | 2 470 |
| 166 | 6 | 3 | 435 000 | 600 000 | 0,83 | 0,82 | 1,22 | 0,8 | 68 000 | 4 200 | 2 360 |
| 176 | 6 | 3 | 470 000 | 650 000 | 0,83 | 0,82 | 1,22 | 0,8 | 71 000 | 3 900 | 2 270 |
| 176 | 6 | 3 | 470 000 | 650 000 | 0,83 | 0,82 | 1,22 | 0,8 | 71 000 | 3 900 | 2 270 |
| 186 | 6 | 3 | 520 000 | 740 000 | 0,83 | 0,82 | 1,22 | 0,8 | 79 000 | 3 650 | 2 180 |
| 141 | 6 | 1,5 | 295 000 | 570 000 | 0,46 | 1,47 | 2,19 | 1,44 | 67 000 | 4 500 | 2 300 |
| 201 | 7 | 3 | 660 000 | 960 000 | 0,83 | 0,82 | 1,22 | 0,8 | 102 000 | 3 100 | 2 040 |
| 188 | 5 | 2,5 | 710 000 | 1180 000 | 0,42 | 1,61 | 2,39 | 1,57 | 133 000 | 3 350 | 1 910 |
| 226 | 7 | 3 | 790 000 | 1170 000 | 0,83 | 0,82 | 1,22 | 0,8 | 141 000 | 2 800 | 1 790 |
| 203 | 7 | 2,5 | 830 000 | 1450 000 | 0,44 | 1,55 | 2,31 | 1,52 | 162 000 | 3 100 | 1 700 |
| 246 | 9 | 3 | 930 000 | 1400 000 | 0,83 | 0,82 | 1,22 | 0,8 | 165 000 | 2 500 | 1 610 |
| 190 | 8 | 2 | 560 000 | 1100 000 | 0,43 | 1,55 | 2,31 | 1,52 | 122 000 | 3 100 | 1 870 |
| 262 | 9 | 4 | 1050 000 | 1590 000 | 0,83 | 0,82 | 1,22 | 0,8 | 184 000 | 2 380 | 1 460 |

Tapered roller bearings

Matched pairs



Mounting dimensions

Dimension table (continued) · Dimensions in mm

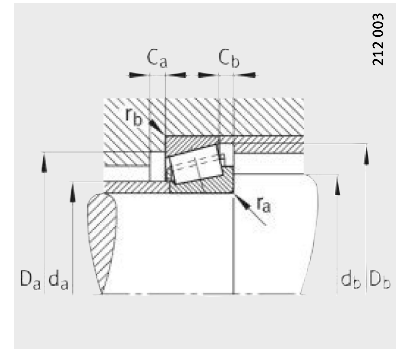
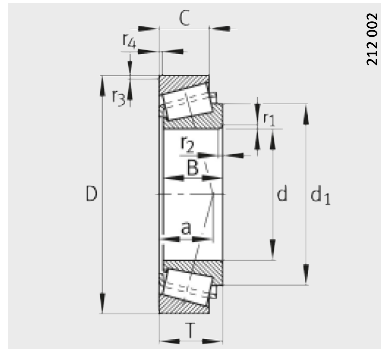
| Designation | Mass for bearing pair m ≈kg | Dimensions | | | | | | Mounting dimensions | |
|-------------------------------|-----------------------------------------|------------|-----|-----|-------|---------------------------------|------|------------------------|----------------|
| | | d | D | 2B | 2T | r ₃ , r ₄ | A | d _a | D _a |
| | | | | | | min. | | max. | min. |
| 32228-A-N11CA-A250-300 | 29,5 | 140 | 250 | 136 | 143,5 | 3 | 27,5 | 159 | 210 |
| 31328-X-N11CA-A160-200 | 45,6 | 140 | 300 | 140 | 154 | 4 | 60 | 165 | 242 |
| 32030-X-N11CA-A280-330 | 13,1 | 150 | 225 | 96 | 96 | 2,5 | 24 | 164 | 200 |
| 31330-X-N11CA-A180-230 | 57,7 | 150 | 320 | 150 | 164 | 4 | 64 | 177 | 260 |
| 32234-A-N11CA-A300-380 | 59,4 | 170 | 310 | 172 | 182 | 4 | 40 | 196 | 259 |
| 32038-X-N11CA-A350-400 | 29,6 | 190 | 290 | 128 | 128 | 2,5 | 32 | 209 | 257 |
| 32040-X-N11CA-A350-400 | 39,1 | 200 | 310 | 140 | 140 | 2,5 | 34 | 221 | 273 |
| 32944-N11CA-A420-470 | 20,3 | 220 | 300 | 102 | 102 | 2,5 | 24 | 235 | 275 |
| 32244-A-N11CA-A400-450 | 123 | 220 | 400 | 216 | 228 | 4 | 48 | 258 | 336 |
| 32048-X-N11CA-A450-500 | 58,3 | 240 | 360 | 228 | 152 | 3 | 38 | 261 | 318 |
| 32960-N11CA-A650-700 | 63,6 | 300 | 420 | 152 | 152 | 3 | 38 | 324 | 383 |
| 32964-N11CA-A600-650 | 67,2 | 320 | 440 | 152 | 152 | 3 | 38 | 344 | 402 |
| 32968-N11CA-A550-600 | 73,1 | 340 | 460 | 152 | 152 | 3 | 38 | 361 | 421 |

| | | | Basic load ratings for bearing pair | | Calculation factors | | | | Fatigue limit load | Limiting speed Bearing pair | Reference speed Bearing pair |
|----------------|----------------|----------------|-------------------------------------|-----------------------|---------------------|----------------|----------------|----------------|--------------------|-----------------------------|------------------------------|
| D _a | C _a | r _b | dyn. C _r | stat. C _{0r} | e | Y ₁ | Y ₂ | Y ₀ | C _{ur} | n _G | n _B |
| max. | min. | max. | N | N | | | | | N | min ⁻¹ | min ⁻¹ |
| 236 | 8 | 3 | 1 100 000 | 1 980 000 | 0,44 | 1,55 | 2,31 | 1,52 | 241 000 | 2 500 | 1 390 |
| 282 | 14 | 4 | 1 200 000 | 1 810 000 | 0,83 | 0,82 | 1,22 | 0,8 | 204 000 | 2 380 | 1 340 |
| 213 | 8 | 2,5 | 660 000 | 1 350 000 | 0,46 | 1,47 | 2,19 | 1,44 | 167 000 | 2 650 | 1 580 |
| 302 | 14 | 4 | 1 360 000 | 2 090 000 | 0,83 | 0,82 | 1,22 | 0,8 | 230 000 | 2 240 | 1 220 |
| 292 | 10 | 4 | 1 680 000 | 3 100 000 | 0,44 | 1,55 | 2,31 | 1,52 | 360 000 | 2 240 | 1 050 |
| 278 | 10 | 2,5 | 1 080 000 | 2 250 000 | 0,44 | 1,53 | 2,27 | 1,49 | 260 000 | 2 240 | 1 160 |
| 298 | 11 | 2,5 | 1 300 000 | 2 750 000 | 0,43 | 1,57 | 2,34 | 1,53 | 310 000 | 2 100 | 1 030 |
| 288 | 10 | 2,5 | 850 000 | 1 960 000 | 0,43 | 1,59 | 2,36 | 1,55 | 221 000 | 2 100 | 1 020 |
| 382 | 12 | 4 | 2 650 000 | 5 100 000 | 0,44 | 1,55 | 2,31 | 1,52 | 540 000 | 1 540 | 730 |
| 346 | 12 | 3 | 1 540 000 | 3 350 000 | 0,46 | 1,47 | 2,19 | 1,44 | 360 000 | 1 680 | 850 |
| 406 | 12 | 3 | 1 760 000 | 4 300 000 | 0,39 | 1,71 | 2,54 | 1,67 | 440 000 | 1 330 | 660 |
| 426 | 12 | 3 | 1 810 000 | 4 550 000 | 0,42 | 1,62 | 2,42 | 1,59 | 460 000 | 1 260 | 360 |
| 446 | 12 | 3 | 1 850 000 | 4 750 000 | 0,44 | 1,54 | 2,3 | 1,51 | 475 000 | 1 260 | 550 |



Tapered roller bearings

Single row
Inch sizes



Mounting dimensions

Dimension table · Dimensions in mm

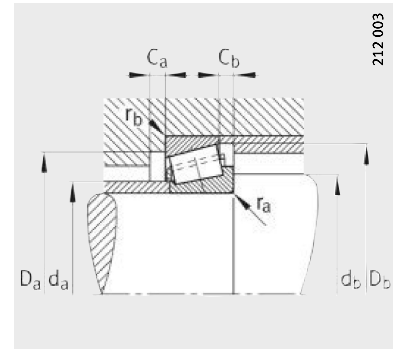
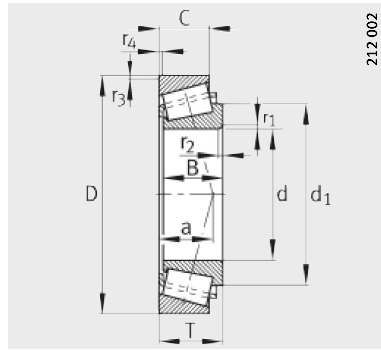
| Designation | Mass m ≈kg | Dimensions | | | | | | | | |
|---------------------------|------------------|---------------|---------|--------|--------|--------|-----------------------------------------|-----------------------------------------|--------|---------------------|
| | | d | D | B | C | T | r ₁ , r ₂ min. | r ₃ , r ₄ min. | a ≈ | d ₁ ≈ |
| KLM11749-LM11710 | 0,086 | 17,462 | 39,878 | 14,605 | 10,668 | 13,843 | 1,3 | 1,3 | 9 | 29,6 |
| KM12649-M12610 | 0,163 | 21,43 | 50,005 | 18,288 | 13,97 | 17,526 | 1,3 | 1,3 | 11 | 34,5 |
| KLM12749-LM12710 | 0,12 | 21,986 | 45,237 | 16,637 | 12,065 | 15,494 | 1,3 | 1,3 | 10 | 34,8 |
| K15578-15520 | 0,217 | 25,4 | 57,15 | 17,462 | 13,495 | 17,462 | 1,3 | 1,5 | 12 | 42,8 |
| KL44649-L44610 | 0,137 | 26,988 | 50,292 | 14,732 | 10,668 | 14,224 | 3,5 | 1,3 | 11 | 40,1 |
| KM86647-M86610 | 0,353 | 28,575 | 64,292 | 21,432 | 16,67 | 21,433 | 1,5 | 1,5 | 18 | 50,3 |
| KM86649-M86610 | 0,375 | 30,162 | 64,292 | 21,433 | 16,67 | 21,433 | 1,5 | 1,5 | 18 | 50,7 |
| KLM48548-LM48510 | 0,273 | 34,925 | 65,088 | 18,288 | 13,97 | 18,034 | 3,5 | 1,3 | 14 | 49,7 |
| KHM88649-HM88610 | 0,5 | 34,925 | 72,233 | 25,4 | 19,842 | 25,4 | 2,3 | 2,3 | 21 | 56,8 |
| KL68149-L68111 | 0,179 | 34,988 | 59,974 | 16,764 | 11,938 | 15,875 | 3,5 | 1,3 | 13 | 48,8 |
| KJL69349-JL69310 | 0,217 | 38 | 63 | 17 | 13,5 | 17 | 3,5 | 1,3 | 15 | 51,8 |
| K3382-3320 | 0,651 | 39,688 | 80,167 | 30,391 | 23,812 | 29,37 | 3,5 | 3,3 | 19 | 57 |
| KLM300849-LM300811 | 0,255 | 40,987 | 67,975 | 18 | 13,5 | 17,5 | 3,5 | 1,5 | 14 | 55,8 |
| KLM501349-LM501310 | 0,365 | 41,275 | 73,431 | 19,812 | 14,732 | 19,558 | 3,5 | 0,8 | 16 | 57,2 |
| KLM501349-LM501314 | 0,385 | 41,275 | 73,431 | 19,812 | 16,604 | 21,43 | 3,5 | 0,8 | 18 | 57,2 |
| KM802048-M802011 | 0,661 | 41,275 | 82,55 | 25,654 | 20,193 | 26,543 | 3,5 | 3,3 | 23 | 64,15 |
| K3585-3525 | 0,857 | 41,275 | 87,313 | 30,886 | 23,812 | 30,163 | 1,5 | 3,3 | 20 | 64,5 |
| K25577-25523 | 0,715 | 42,875 | 82,931 | 25,4 | 22,225 | 26,988 | 3,5 | 2,3 | 21 | 64,1 |
| K3782-3720 | 0,976 | 44,45 | 93,264 | 30,302 | 23,812 | 30,162 | 3,5 | 3,3 | 22 | 72,3 |
| K53178-53377 | 0,95 | 44,45 | 95,25 | 28,3 | 20,638 | 30,958 | 2 | 2,3 | 31 | 70,65 |
| K527-522 | 1,29 | 44,45 | 101,6 | 36,068 | 26,988 | 34,925 | 3,5 | 3,3 | 22 | 73,8 |
| K17887-17831 | 0,421 | 45,23 | 79,985 | 20,638 | 15,08 | 19,842 | 2 | 1,3 | 16 | 63 |
| K45284-45220 | 1,25 | 50,8 | 104,775 | 30,958 | 23,813 | 30,162 | 6,4 | 3,3 | 22 | 79,6 |
| K4580-4535 | 1,7 | 50,8 | 104,775 | 40,157 | 33,338 | 39,688 | 3,5 | 3,3 | 28 | 81,5 |
| K72200-72487 | 2,181 | 50,8 | 123,825 | 32,791 | 25,4 | 36,512 | 3,5 | 3,3 | 38 | 89,6 |
| KLM806649-LM806610 | 0,445 | 53,975 | 88,9 | 19,05 | 13,492 | 19,05 | 2,3 | 2 | 21 | 72,3 |
| KL507949-L507910 | 0,4 | 57,15 | 87,312 | 18,258 | 14,288 | 18,258 | 1,5 | 1,5 | 17 | 73,3 |
| K387-A-382-A | 0,593 | 57,15 | 96,838 | 21,946 | 15,875 | 21 | 3,5 | 0,8 | 19 | 76,6 |
| K39580-39520 | 1,44 | 57,15 | 112,712 | 30,162 | 23,812 | 30,162 | 3,5 | 3,3 | 23 | 89,95 |
| K39581-39520 | 1,44 | 57,15 | 112,712 | 30,162 | 23,812 | 30,162 | 7,9 | 3,3 | 23 | 89,6 |
| K555-S-552-A | 2,44 | 57,15 | 123,825 | 36,678 | 30,163 | 38,1 | 3,5 | 3,3 | 30 | 92,8 |
| K28985-28921 | 0,77 | 60,325 | 100 | 25,4 | 19,845 | 25,4 | 3,5 | 3,3 | 23 | 82,9 |
| K3982-3920 | 1,3 | 63,5 | 112,712 | 30,048 | 23,812 | 30,162 | 3,5 | 3,3 | 27 | 89 |
| K559-552-A | 2,07 | 63,5 | 123,825 | 36,678 | 30,163 | 38,1 | 3,5 | 3,3 | 30 | 92,8 |



| Mounting dimensions | | | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|
| d _a | d _b | D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G |
| max. | min. | min. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ |
| 21,5 | 23 | 34 | 37 | 3 | 3 | 1,3 | 1,3 | 21 200 | 20 800 | 0,29 | 2,1 | 1,15 | 2 190 | 21 000 |
| 25,5 | 27,5 | 44 | 46 | 4 | 3,5 | 1,3 | 1,3 | 37 500 | 39 000 | 0,28 | 2,16 | 1,19 | 4 400 | 16 800 |
| 26 | 27,5 | 39,5 | 42 | 3 | 3 | 1,3 | 1,3 | 28 500 | 32 000 | 0,31 | 1,96 | 1,08 | 3 550 | 16 800 |
| 30,5 | 32,5 | 51 | 53 | 2 | 4 | 1,3 | 1,5 | 38 500 | 44 000 | 0,35 | 1,73 | 0,95 | 4 950 | 12 600 |
| 31 | 37,5 | 44,5 | 47 | 2,5 | 3,5 | 3,5 | 1,3 | 26 000 | 29 500 | 0,37 | 1,6 | 0,88 | 3 150 | 14 000 |
| 38 | 40 | 54 | 61 | 4 | 4,5 | 1,5 | 1,5 | 52 000 | 67 000 | 0,55 | 1,1 | 0,6 | 8 000 | 11 200 |
| 38,2 | 41 | 54 | 61 | 3 | 4,5 | 1,5 | 1,5 | 52 000 | 67 000 | 0,55 | 1,1 | 0,6 | 8 000 | 11 200 |
| 40 | 46 | 58 | 61 | 3 | 4 | 3,5 | 1,3 | 46 500 | 56 000 | 0,38 | 1,59 | 0,88 | 6 400 | 10 500 |
| 42,5 | 48,5 | 60 | 69 | 3 | 5 | 2,3 | 2,3 | 68 000 | 91 000 | 0,55 | 1,1 | 0,6 | 11 300 | 9 400 |
| 39 | 45,5 | 53 | 56 | 3 | 4 | 3,5 | 1,3 | 34 000 | 44 500 | 0,42 | 1,44 | 0,79 | 5 000 | 11 200 |
| 42,5 | 49 | 56 | 60 | 3 | 4 | 3,5 | 1,3 | 39 500 | 53 000 | 0,42 | 1,44 | 0,79 | 6 100 | 10 500 |
| 45,5 | 52 | 71 | 74,8 | 2 | 5 | 3,5 | 3,3 | 94 000 | 109 000 | 0,27 | 2,2 | 1,21 | 13 400 | 8 800 |
| 45 | 52 | 61 | 65 | 3 | 4 | 3,5 | 1,5 | 46 000 | 63 000 | 0,35 | 1,72 | 0,95 | 7 300 | 9 800 |
| 46,5 | 53 | 67 | 70 | 4 | 4,5 | 3,5 | 0,8 | 55 000 | 68 000 | 0,4 | 1,5 | 0,83 | 8 100 | 9 400 |
| 46,5 | 53 | 66 | 70 | 1,5 | 4,5 | 3,5 | 0,8 | 55 000 | 68 000 | 0,4 | 1,5 | 0,83 | 8 100 | 9 400 |
| 51 | 57 | 70 | 79 | 3 | 5,5 | 3,5 | 3,3 | 83 000 | 111 000 | 0,55 | 1,1 | 0,6 | 13 800 | 7 800 |
| 48 | 50 | 75 | 81 | 3,5 | 6 | 1,5 | 3,3 | 97 000 | 121 000 | 0,31 | 1,96 | 1,08 | 14 900 | 7 800 |
| 49 | 55 | 72 | 77 | 6 | 15 | 3,5 | 2,3 | 81 000 | 105 000 | 0,33 | 1,79 | 0,99 | 12 900 | 8 400 |
| 52 | 58 | 82 | 88 | 3 | 5 | 3,5 | 3,3 | 104 000 | 137 000 | 0,34 | 1,77 | 0,97 | 17 000 | 7 000 |
| 53 | 60 | 80 | 89 | 2 | 7 | 2 | 2,3 | 89 000 | 98 000 | 0,74 | 0,81 | 0,45 | 11 500 | 7 400 |
| 53 | 59 | 89 | 95 | 4 | 8 | 3,5 | 3,3 | 127 000 | 152 000 | 0,28 | 2,12 | 1,17 | 18 800 | 7 000 |
| 52 | 56 | 70 | 74 | 3 | 4,5 | 2 | 1,3 | 60 000 | 77 000 | 0,37 | 1,64 | 0,9 | 9 200 | 8 400 |
| 59 | 71 | 93 | 99 | 4 | 6 | 6,4 | 3,3 | 126 000 | 162 000 | 0,33 | 1,81 | 0,99 | 20 000 | 6 300 |
| 61 | 67 | 90 | 99 | 4 | 6 | 3,5 | 3,3 | 159 000 | 226 000 | 0,34 | 1,79 | 0,98 | 28 500 | 6 300 |
| 67 | 79 | 102 | 116 | 3,5 | 8,5 | 3,5 | 3,3 | 135 000 | 150 000 | 0,74 | 0,81 | 0,45 | 17 900 | 5 600 |
| 60 | 63 | 80 | 85 | 4 | 5,5 | 2,3 | 2 | 59 000 | 78 000 | 0,55 | 1,1 | 0,6 | 9 500 | 7 400 |
| 62 | 65 | 79 | 83 | 2 | 3,5 | 1,5 | 1,5 | 56 000 | 88 000 | 0,39 | 1,54 | 0,85 | 10 400 | 7 400 |
| 62 | 69 | 89 | 92 | 4 | 5 | 3,5 | 0,8 | 76 000 | 95 000 | 0,35 | 1,69 | 0,93 | 11 200 | 6 700 |
| 66 | 72 | 101 | 107 | 6 | 6 | 3,5 | 3,3 | 137 000 | 192 000 | 0,34 | 1,77 | 0,97 | 23 800 | 5 600 |
| 66 | 81 | 101 | 107 | 6 | 6 | 7,9 | 3,3 | 137 000 | 192 000 | 0,34 | 1,77 | 0,97 | 23 800 | 5 600 |
| 67 | 73 | 109 | 116 | 2,5 | 7,5 | 3,5 | 3,3 | 169 000 | 236 000 | 0,35 | 1,73 | 0,95 | 29 500 | 5 600 |
| 67 | 73 | 89 | 96 | 3 | 5,5 | 3,5 | 3,3 | 91 000 | 135 000 | 0,43 | 1,41 | 0,78 | 16 700 | 6 300 |
| 71 | 77 | 99 | 106 | 4 | 6 | 3,5 | 3,3 | 119 000 | 176 000 | 0,4 | 1,49 | 0,82 | 21 900 | 6 000 |
| 72 | 78 | 108 | 116 | 4 | 7,5 | 3,5 | 3,3 | 169 000 | 236 000 | 0,35 | 1,73 | 0,95 | 29 500 | 5 600 |

Tapered roller bearings

Single row
Inch sizes



Mounting dimensions

Dimension table (continued) · Dimensions in mm

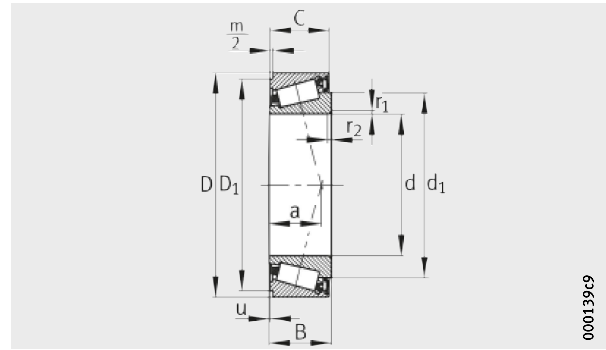
| Designation | Mass m ≈kg | Dimensions | | | | | | | | |
|-----------------------------|------------------|---------------|---------|--------|--------|--------|---------------------------------|---------------------------------|-----|----------------|
| | | d | D | B | C | T | r ₁ , r ₂ | r ₃ , r ₄ | a | d ₁ |
| | | | | | | | min. | min. | ≈ | ≈ |
| K3984-3920 | 1,31 | 66,675 | 112,712 | 30,048 | 23,812 | 30,162 | 3,5 | 3,3 | 27 | 89 |
| KHM212049-HM212011 | 1,93 | 66,675 | 122,238 | 38,354 | 29,718 | 38,1 | 3,5 | 3,3 | 27 | 91,5 |
| KH414242-H414210 | 2,77 | 66,675 | 136,525 | 41,275 | 31,75 | 41,275 | 3,5 | 3,3 | 30 | 100,9 |
| KH715341-H715311 | 3,42 | 66,675 | 136,525 | 46,038 | 36,512 | 46,038 | 3,5 | 3,3 | 38 | 111,1 |
| K47490-47420 | 1,61 | 71,438 | 120 | 32,545 | 26,195 | 32,545 | 3,5 | 3,3 | 27 | 95,2 |
| K33287-33462 | 1,21 | 73,025 | 117,475 | 30,162 | 23,812 | 30,162 | 3,5 | 3,3 | 28 | 95,2 |
| AK47686-47620 | 1,94 | 82,55 | 133,35 | 33,338 | 26,195 | 33,338 | 3,5 | 3,3 | 30 | 108,2 |
| K580-572 | 2,21 | 82,55 | 139,992 | 36,098 | 28,575 | 36,512 | 3,5 | 3,3 | 31 | 110,7 |
| K663-653 | 2,71 | 82,55 | 146,05 | 41,275 | 31,75 | 41,275 | 3,5 | 3,3 | 33 | 114 |
| K498-492-A | 1,69 | 84,138 | 133,35 | 29,769 | 22,225 | 30,163 | 3,5 | 3,3 | 30 | 110,6 |
| K497-492-A | 1,63 | 85,725 | 133,35 | 29,769 | 22,225 | 30,162 | 3,5 | 3,3 | 30 | 110,6 |
| KHM218248-HM218210 | 2,57 | 89,975 | 146,975 | 40 | 32,5 | 40 | 7,1 | 3,5 | 32 | 119 |
| K598-A-593-X | 2,37 | 92,075 | 150 | 36,322 | 27 | 35,992 | 6,4 | 3 | 33 | 121,5 |
| K594-592-A | 2,55 | 95,25 | 152,4 | 36,322 | 30,162 | 39,688 | 3,5 | 3,3 | 37 | 122,7 |
| K594-A-592-A | 2,75 | 95,25 | 152,4 | 36,322 | 30,162 | 39,688 | 5,1 | 3,3 | 37 | 121,5 |
| K683-672 | 4,03 | 95,25 | 168,275 | 41,275 | 30,162 | 41,275 | 3,5 | 3,3 | 38 | 133,2 |
| K42381-42584 | 1,92 | 96,838 | 148,43 | 28,971 | 21,433 | 28,575 | 3,5 | 3 | 32 | 123,3 |
| K90381-90744 | 5,69 | 96,838 | 188,912 | 46,038 | 31,75 | 50,8 | 3,5 | 3,3 | 64 | 142,9 |
| KJM720249-JM720210 | 2,38 | 100 | 155 | 35 | 28 | 36 | 3 | 2,5 | 36 | 127,5 |
| KJM822049-JM822010 | 2,51 | 110 | 165 | 35 | 26,5 | 35 | 3 | 2,5 | 38 | 139 |
| KJHM522649-JHM522610 | 4,7 | 110 | 180 | 46 | 38 | 47 | 3 | 2,5 | 41 | 145 |
| K64450-64700 | 3,55 | 114,3 | 177,8 | 41,275 | 30,162 | 41,275 | 3,5 | 3,3 | 43 | 147,2 |
| KHH231649-HH231615 | 24,1 | 139,7 | 295,275 | 87,312 | 57,15 | 82,55 | 9,7 | 6,4 | 56 | 199,1 |
| K107060-107105 | 16,7 | 152,4 | 268,288 | 74,612 | 57,15 | 74,612 | 6,4 | 6,4 | 60 | 204 |
| K36990-36920 | 3,18 | 177,8 | 227,012 | 30,162 | 23,02 | 30,162 | 1,5 | 1,5 | 43 | 203,8 |
| KLL352149-LL352110 | 2,6 | 279,4 | 317,5 | 24,384 | 18,288 | 24,384 | 1,5 | 1,5 | 45 | 299 |
| KLL481448-LL481411 | 52,7 | 673,1 | 793,75 | 61,912 | 49,212 | 66,675 | 6,4 | 6,4 | 117 | 725 |



| Mounting dimensions | | | | | | | | Basic load ratings | | Calculation factors | | | Fatigue limit load | Limiting speed |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|--------------------------|---------------------|------|----------------|--------------------|-------------------|
| d _a | d _b | D _a | D _b | C _a | C _b | r _a | r _b | dyn. C _r | stat. C _{0r} | e | Y | Y ₀ | C _{ur} | n _G |
| max. | min. | min. | min. | min. | min. | max. | max. | N | N | | | | N | min ⁻¹ |
| 74 | 80 | 99 | 106 | 4 | 6 | 3,5 | 3,3 | 119 000 | 176 000 | 0,4 | 1,49 | 0,82 | 21 900 | 6 000 |
| 75,5 | 82 | 108 | 116 | 4 | 8 | 3,5 | 3,3 | 193 000 | 255 000 | 0,34 | 1,78 | 0,98 | 32 000 | 5 600 |
| 81 | 85 | 121 | 129 | 6 | 9 | 3,5 | 3,3 | 225 000 | 290 000 | 0,36 | 1,67 | 0,92 | 36 000 | 5 000 |
| 83 | 89 | 118 | 132 | 8 | 9,5 | 3,5 | 3,3 | 230 000 | 370 000 | 0,47 | 1,27 | 0,7 | 46 500 | 4 750 |
| 79 | 86 | 107 | 114 | 4 | 6 | 3,5 | 3,3 | 152 000 | 224 000 | 0,36 | 1,67 | 0,92 | 28 000 | 5 300 |
| 79 | 87 | 104 | 112 | 4 | 6 | 3,5 | 3,3 | 124 000 | 189 000 | 0,44 | 1,38 | 0,76 | 23 900 | 5 600 |
| 90 | 97 | 119 | 128 | 5 | 7 | 3,5 | 3,3 | 153 000 | 235 000 | 0,4 | 1,48 | 0,82 | 29 000 | 5 000 |
| 91 | 98 | 125 | 133 | 5 | 7,5 | 3,5 | 3,3 | 177 000 | 265 000 | 0,4 | 1,49 | 0,82 | 32 000 | 4 750 |
| 92 | 99 | 131 | 139 | 5 | 8 | 3,5 | 3,3 | 211 000 | 305 000 | 0,41 | 1,47 | 0,81 | 37 000 | 4 750 |
| 91 | 98 | 120 | 128 | 4 | 7,5 | 3,5 | 3,3 | 134 000 | 200 000 | 0,44 | 1,35 | 0,74 | 24 100 | 5 000 |
| 93 | 99 | 120 | 128 | 4 | 7,5 | 3,5 | 3,3 | 134 000 | 200 000 | 0,44 | 1,35 | 0,74 | 24 100 | 5 000 |
| 99 | 112 | 133 | 141 | 5,5 | 7,5 | 7,1 | 3,5 | 233 000 | 355 000 | 0,33 | 1,8 | 0,99 | 43 000 | 4 750 |
| 101 | 113 | 135 | 144 | 4 | 9 | 6,4 | 3 | 182 000 | 285 000 | 0,44 | 1,36 | 0,75 | 34 000 | 4 500 |
| 104 | 110 | 135 | 144 | 1 | 8 | 3,5 | 3,3 | 182 000 | 285 000 | 0,44 | 1,36 | 0,75 | 34 000 | 4 500 |
| 104 | 113 | 135 | 144 | 4 | 9 | 5,1 | 3,3 | 182 000 | 285 000 | 0,44 | 1,36 | 0,75 | 34 000 | 4 500 |
| 106 | 113 | 149 | 160 | 5 | 9 | 3,5 | 3,3 | 226 000 | 350 000 | 0,47 | 1,28 | 0,7 | 41 000 | 4 200 |
| 104 | 110 | 134 | 142 | 4 | 6,5 | 3,5 | 3 | 139 000 | 216 000 | 0,49 | 1,22 | 0,67 | 25 500 | 4 500 |
| 113 | 125 | 161 | 179 | 2,5 | 12 | 3,5 | 3,3 | 270 000 | 340 000 | 0,87 | 0,69 | 0,38 | 38 000 | 3 650 |
| 109 | 115 | 140 | 149 | 4 | 6,5 | 3 | 2,5 | 187 000 | 305 000 | 0,47 | 1,27 | 0,7 | 36 000 | 4 500 |
| 119 | 124 | 149 | 159 | 4,5 | 8 | 3 | 2,5 | 188 000 | 305 000 | 0,5 | 1,21 | 0,66 | 35 500 | 4 200 |
| 122 | 127 | 162 | 172 | 5 | 7 | 3 | 2,5 | 320 000 | 510 000 | 0,41 | 1,48 | 0,81 | 58 000 | 3 900 |
| 125 | 131 | 160 | 172 | 5 | 9 | 3,5 | 3,3 | 241 000 | 395 000 | 0,52 | 1,16 | 0,64 | 45 000 | 3 650 |
| 161 | 177 | 258 | 264 | 9 | 19 | 9,7 | 6,4 | 830 000 | 1 120 000 | 0,32 | 1,88 | 1,04 | 130 000 | 2 380 |
| 171 | 181 | 237 | 249 | 8 | 13,5 | 6,4 | 6,4 | 670 000 | 1 070 000 | 0,39 | 1,55 | 0,85 | 127 000 | 2 500 |
| 186 | 188 | 214 | 221 | 4 | 7 | 1,5 | 1,5 | 187 000 | 395 000 | 0,44 | 1,36 | 0,75 | 41 500 | 2 500 |
| 286 | 288 | 309 | 312 | 4 | 4,5 | 1,5 | 1,5 | 162 000 | 440 000 | 0,35 | 1,73 | 0,95 | 28 500 | 1 820 |
| 690 | 702 | 765 | 771 | 7 | 14 | 6,4 | 6,4 | 1 170 000 | 3 300 000 | 0,36 | 1,67 | 0,92 | 270 000 | 630 |

Integral tapered roller bearings

Sealed on one side



000139C9

Dimension table · Dimensions in mm

| Designation | | Mass Bearing ¹⁾ m ≈kg | Dimensions | | | | | | | | | | | Mounting dimensions | | |
|-----------------------------|--------------|-------------------------------------------|------------|-----|----|------|-----------------------------------------|----------------|------|--------|------|----------------------------------|------------------------|------------------------|------------------------|-----|
| Bearing | Snap ring | | d | D | B | C | r ₁ , r ₂ min. | D ₁ | m/2 | a ≈ | u | Δ _u Devi- ation | d ₁ ≈ | Shaft | | |
| | | | | | | | | | | | | | d _a max. | d _b min. | r _a max. | |
| JK0S030 | BR55 | 0,19 | 30 | 55 | 19 | 18,5 | 1 | 51,4 | 0,75 | 15 | 0,02 | +0,05 | 43,6 | 35 | 36 | 1 |
| JK0S040³⁾ | BR68 | 0,3 | 40 | 68 | 21 | 20,5 | 1 | 64,4 | 0,75 | 16 | 0,03 | +0,05 | 53,8 | 46 | 46 | 1 |
| JK0S050 | BR80 | 0,41 | 50 | 80 | 22 | 21,5 | 1 | 75,7 | 1 | 19 | 0,02 | +0,05 | 66,4 | 56 | 56 | 1 |
| JK0S060 | BR95 | 0,67 | 60 | 95 | 26 | 25 | 1,5 | 89,3 | 1,25 | 23 | 0,03 | +0,05 | 79,5 | 67 | 67 | 1,5 |
| JK0S070-A | BR110 | 0,93 | 70 | 110 | 27 | 26,5 | 1,5 | 104,8 | 1,25 | 25 | 0,03 | +0,05 | 91,5 | 78 | 77 | 1,5 |
| JK0S080-A | BR125 | 1,32 | 80 | 125 | 30 | 29,5 | 1,5 | 119,8 | 1,25 | 28 | 0,03 | +0,05 | 104,2 | 89 | 87 | 1,5 |

Other sizes and designs are also available; please contact us.

Ordering note

FAG integral tapered roller bearings are interchangeable with each other.

When ordering, please always state the number of individual bearings, not the number of bearing pairs.

The snap ring must be ordered separately, for example

2 tapered roller bearings JK0S080-A

1 snap ring BR125

¹⁾ Ungreased.

²⁾ For snap ring connection located against a sharp edge.

³⁾ Also available with 95% grease filling; designation: JK0S040-J14.