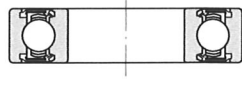
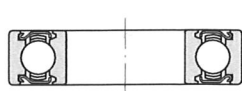
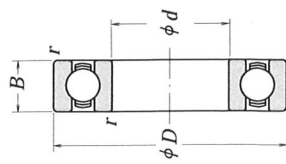


Bore Diameter 25 – 45 mm



Open Type

Shielded Type
ZZ

Non-Contact
Sealed Type
VV

Contact
Sealed Type
DD · DDU

With Snap
Ring Groove
N

With Snap
Ring
NR

| Boundary Dimensions (mm) | Basic Load Ratings (kgf) | | | Factor | Limiting Speeds (min ⁻¹) | | | Bearing Numbers | | |
|--------------------------|--------------------------|-----------------|-----------------|--------|--------------------------------------|------------------|-----------|------------------|--------|--------|
| | C _r | C _{br} | C _{or} | | Grease Open Z · ZZ | Oil DU DDU | Open Z | Open Shielded | Sealed | Sealed |
| 25 | 37 | 4 500 | 3 150 | 16.1 | 18 000 | 10 000 | 22 000 | ZZ | VV | DD |
| | 42 | 7 050 | 4 550 | 15.4 | 16 000 | 10 000 | 19 000 | ZZ | VV | DDU |
| | 47 | 8 850 | 5 600 | 15.1 | 15 000 | — | 18 000 | — | — | — |
| | 47 | 10 100 | 5 850 | 14.5 | 15 000 | 9 500 | 18 000 | ZZ | VV | DDU |
| | 52 | 14 000 | 7 850 | 13.9 | 13 000 | 9 000 | 15 000 | ZZ | VV | DDU |
| 28 | 62 | 20 600 | 11 200 | 13.2 | 11 000 | 8 000 | 13 000 | ZZ | VV | DDU |
| | 52 | 12 500 | 7 400 | 14.5 | 14 000 | 8 500 | 16 000 | ZZ | VV | DDU |
| | 58 | 16 600 | 9 500 | 13.9 | 12 000 | 8 000 | 14 000 | ZZ | VV | DDU |
| | 68 | 26 700 | 14 000 | 12.4 | 10 000 | 7 500 | 13 000 | ZZ | VV | DDU |
| | 30 | 47 000 | 3 650 | 4.700 | 480 | 9 000 | 18 000 | ZZ | VV | DD |
| 32 | 47 | 7 250 | 5 000 | 15.8 | 14 000 | 8 500 | 17 000 | ZZ | VV | DDU |
| | 55 | 11 700 | 7 350 | 15.2 | 13 000 | — | 15 000 | — | — | — |
| | 55 | 13 200 | 8 300 | 14.7 | 13 000 | 8 000 | 15 000 | ZZ | VV | DDU |
| | 62 | 19 500 | 11 300 | 13.8 | 11 000 | 7 500 | 13 000 | ZZ | VV | DDU |
| | 72 | 26 700 | 15 000 | 13.3 | 9 500 | 6 700 | 12 000 | ZZ | VV | DDU |
| 35 | 58 | 15 100 | 9 150 | 14.5 | 12 000 | 7 500 | 14 000 | ZZ | VV | DDU |
| | 65 | 20 700 | 11 600 | 13.6 | 10 000 | 7 100 | 12 000 | ZZ | VV | DDU |
| | 75 | 29 900 | 17 000 | 13.2 | 9 000 | 6 300 | 11 000 | ZZ | VV | DDU |
| | 47 | 4 900 | 4 100 | 16.7 | 14 000 | 7 500 | 16 000 | ZZ | VV | DD |
| | 55 | 10 600 | 7 250 | 15.5 | 12 000 | 7 500 | 15 000 | ZZ | VV | DDU |
| 40 | 62 | 11 700 | 8 200 | 15.6 | 11 000 | — | 13 000 | — | — | — |
| | 62 | 14 100 | 10 300 | 14.8 | 11 000 | 6 700 | 13 000 | ZZ | VV | DDU |
| | 72 | 25 700 | 15 300 | 13.8 | 9 500 | 6 300 | 11 000 | ZZ | VV | DDU |
| | 80 | 33 500 | 19 200 | 13.2 | 8 500 | 6 000 | 10 000 | ZZ | VV | DDU |
| | 52 | 6 350 | 5 550 | 17.0 | 12 000 | 6 700 | 14 000 | ZZ | VV | DD |
| 45 | 62 | 13 700 | 10 000 | 15.7 | 11 000 | 6 300 | 13 000 | ZZ | VV | DDU |
| | 68 | 12 600 | 9 650 | 16.0 | 10 000 | — | 12 000 | — | — | — |
| | 68 | 16 800 | 11 500 | 15.3 | 10 000 | 6 000 | 12 000 | ZZ | VV | DDU |
| | 80 | 29 100 | 17 900 | 14.0 | 8 500 | 5 600 | 10 000 | ZZ | VV | DDU |
| | 90 | 40 500 | 24 000 | 13.2 | 7 500 | 5 300 | 9 000 | ZZ | VV | DDU |
| 50 | 58 | 6 600 | 6 150 | 17.2 | 11 000 | 6 000 | 13 000 | ZZ | VV | DD |
| | 68 | 14 100 | 10 900 | 15.9 | 9 500 | 5 600 | 12 000 | ZZ | VV | DDU |
| | 75 | 14 900 | 11 400 | 15.9 | 9 000 | — | 11 000 | — | — | — |
| | 75 | 20 900 | 15 200 | 15.3 | 9 000 | 5 300 | 11 000 | ZZ | VV | DDU |
| | 85 | 31 500 | 20 400 | 14.4 | 7 500 | 5 300 | 9 000 | ZZ | VV | DDU |
| 100 | 53 000 | 32 000 | 13.1 | 6 700 | 4 800 | 8 000 | ZZ | VV | DDU | |

Notes (1) For tolerances for the snap ring grooves and snap ring dimensions, refer to Pages A50 to A53.

(2) When heavy axial loads are applied, increase d_a and decrease d_s from the above values.

(3) Ring types N and NR applicable only to open-type bearings. Please consult NSK about the snap ring groove dimensions of sealed or shielded bearings.

Dynamic Equivalent Load

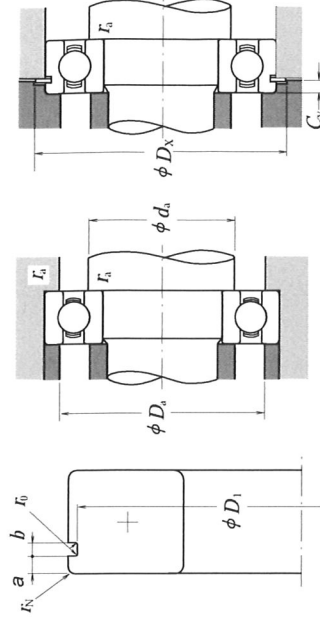
$$P = X F_r + Y F_a$$

| $\frac{f_a F_a}{C_{br}}$ | $\frac{F_a}{F_r} \leq e$ | | $\frac{F_a}{F_r} > e$ | |
|--------------------------|--------------------------|---|-----------------------|------|
| | X | Y | X | Y |
| 0.172 | 1 | 0 | 0.56 | 2.30 |
| 0.345 | 1 | 0 | 0.56 | 1.99 |
| 0.689 | 1 | 0 | 0.56 | 1.71 |
| 1.03 | 1 | 0 | 0.56 | 1.55 |
| 1.38 | 1 | 0 | 0.56 | 1.45 |
| 2.07 | 1 | 0 | 0.56 | 1.31 |
| 3.45 | 1 | 0 | 0.56 | 1.15 |
| 5.17 | 1 | 0 | 0.56 | 1.04 |
| 6.89 | 1 | 0 | 0.56 | 1.00 |

Static Equivalent Load

$$\frac{F_a}{F_r} > 0.8, P_0 = 0.6 F_r + 0.5 F_a$$

$$\frac{F_a}{F_r} \leq 0.8, P_0 = F_r$$



| With Snap Ring Groove | Snap Ring Groove Dimensions (mm) | | | Snap Ring Dimensions (mm) | | | Abutment and Fillet Dimensions (mm) | | | Mass (kg) approx. |
|-----------------------|----------------------------------|--------|---------|---------------------------|--------|---------|-------------------------------------|---------|---------|-------------------|
| | a max. | b min. | D1 max. | D2 max. | f max. | d1 min. | r1 max. | D2 min. | Cy max. | |
| N NR | 1.3 | 0.95 | 35.7 | 39.8 | 0.85 | 27 | 35 | 40.5 | 1.8 | 0.021 |
| N NR | 1.7 | 0.95 | 40.7 | 44.8 | 0.85 | 27 | 40 | 45.5 | 2.3 | 0.042 |
| N NR | 2.06 | 1.35 | 44.6 | 52.7 | 1.12 | 29 | 43 | 53.5 | 2.9 | 0.059 |
| N NR | 2.46 | 1.35 | 49.73 | 57.9 | 1.12 | 30 | 47 | 58.5 | 3.3 | 0.079 |
| N NR | 3.28 | 1.9 | 59.61 | 67.7 | 1.7 | 31.5 | 36 | 68.5 | 4.6 | 0.129 |
| N NR | 2.06 | 1.35 | 49.73 | 57.9 | 1.12 | 32 | 48 | 58.5 | 2.9 | 0.235 |
| N NR | 2.46 | 1.35 | 55.6 | 63.7 | 1.12 | 33 | 35.5 | 64.5 | 3.3 | 0.096 |
| N NR | 3.28 | 1.9 | 64.82 | 74.6 | 1.7 | 34.5 | 38 | 76 | 4.6 | 0.175 |
| N NR | 1.3 | 0.95 | 40.7 | 44.8 | 0.85 | 32 | 40 | 45.5 | 1.8 | 0.287 |
| N NR | 1.7 | 0.95 | 45.7 | 49.8 | 0.85 | 32 | 45 | 50.5 | 2.3 | 0.024 |
| N NR | 2.08 | 1.35 | 52.6 | 60.7 | 1.12 | 32 | 53 | 61.5 | 3.3 | 0.052 |
| N NR | 3.28 | 1.9 | 59.61 | 67.7 | 1.7 | 35 | 36.5 | 68.5 | 4.6 | 0.087 |
| N NR | 3.28 | 1.9 | 68.81 | 78.6 | 1.7 | 35 | 38.5 | 80 | 4.6 | 0.116 |
| N NR | 2.08 | 1.35 | 55.6 | 63.7 | 1.12 | 37 | 38.5 | 64.5 | 2.9 | 0.199 |
| N NR | 3.28 | 1.9 | 62.6 | 70.7 | 1.7 | 37 | 40 | 72 | 4.6 | 0.345 |
| N NR | 3.28 | 1.9 | 71.83 | 81.6 | 1.7 | 38.5 | 44.5 | 83 | 4.6 | 0.464 |
| N NR | 1.3 | 0.95 | 45.7 | 49.8 | 0.85 | 37 | 45 | 50.5 | 1.8 | 0.122 |
| N NR | 1.7 | 0.95 | 53.7 | 57.8 | 0.85 | 39 | 51 | 58.5 | 2.3 | 0.225 |
| N NR | 2.08 | 1.9 | 59.61 | 67.7 | 1.7 | 40 | 60 | 71.5 | 4.6 | 0.389 |
| N NR | 3.28 | 1.9 | 68.81 | 78.6 | 1.7 | 41.5 | 44.5 | 80 | 4.6 | 0.027 |
| N NR | 3.28 | 1.9 | 76.81 | 86.6 | 1.7 | 43 | 47 | 88 | 4.6 | 0.107 |
| N NR | 1.3 | 0.95 | 50.7 | 54.8 | 0.85 | 42 | 42 | 55.5 | 1.8 | 0.151 |
| N NR | 1.7 | 0.95 | 60.7 | 64.8 | 0.85 | 44 | 46 | 65.5 | 2.3 | 0.284 |
| N NR | 2.49 | 1.9 | 64.82 | 74.6 | 1.7 | 42 | 66 | 76 | 3.8 | 0.464 |
| N NR | 3.28 | 1.9 | 76.81 | 86.6 | 1.7 | 45 | 47.5 | 88 | 4.6 | 0.031 |
| N NR | 3.28 | 1.9 | 86.79 | 96.5 | 2.46 | 48 | 50.5 | 98 | 4.6 | 0.112 |
| N NR | 1.3 | 0.95 | 56.7 | 60.8 | 0.85 | 47 | 47.5 | 61.5 | 1.8 | 0.175 |
| N NR | 1.7 | 0.95 | 66.7 | 70.8 | 0.85 | 49 | 50 | 72 | 2.3 | 0.331 |
| N NR | 2.49 | 1.9 | 71.83 | 81.6 | 1.7 | 49 | 71 | 83 | 3.8 | 0.464 |
| N NR | 3.28 | 1.9 | 81.81 | 91.6 | 1.7 | 50 | 53.5 | 93 | 4.6 | 0.024 |
| N NR | 3.28 | 2.7 | 96.8 | 106.5 | 2.46 | 53 | 55.5 | 108 | 5.4 | 0.052 |

Remarks 1. Diameter Series 7 (extra thin section bearings) are also available, please contact NSK.

2. When using bearings with rotating outer rings, contact NSK if they are sealed, shielded, or have snap rings.