

Single row cylindrical roller bearings with wider inner ring



Bearing Designation **NUB209E**

Dimensions (mm)

| | |
|---------------------|-----|
| d | 45 |
| D | 85 |
| B | 23 |
| C | 19 |
| r _s min | 1,1 |
| r _{1s} min | 1,1 |

Abutment and Fillet Dimensions (mm)

| | | | |
|--------------------|------|--------------------|---|
| F _w | 54,5 | r _a max | 1 |
| d _a min | 51,5 | r _b max | 1 |
| d _a max | 53 | b | - |
| D _a max | 78,5 | | |
| D _a min | - | | |

Basic Load Rating (kN)

| | |
|----------------|------|
| C | 63,1 |
| C ₀ | 66,5 |

Limiting Speed for Lubrication (min⁻¹)

| | |
|--------|------|
| Grease | 7500 |
| Oil | 8800 |

Weight [kg] **0,473**

Tolerance Class

| Tolerance Class | Inner Ring | | | | | | | | | |
|-----------------|------------------|-----|-----------------|-----|-------|-----------|----------|----------------|------|-----------|
| | Cylindrical Bore | | | | | | | | | |
| | Δ_{dmp} | | V_{dp} | | | V_{dmp} | K_{ia} | Δ_{B_s} | | V_{B_s} |
| | | | Diameter Series | | | | | | | |
| | max | min | 7,8,9 | 0,1 | 2,3,4 | max | max | max | min | max |
| μm | | | | | | | | | | |
| P0 | 0 | -12 | 15 | 12 | 9 | 9 | 15 | 0 | -120 | 20 |
| P6 | 0 | -10 | 13 | 10 | 8 | 8 | 10 | 0 | -120 | 20 |

| Tolerance Class | Inner Ring | | | | | | | | | |
|-----------------|-------------------|-----|--------------------------------|-----|---------------|-------------------|-----|--------------------------------|-----|---------------|
| | Tapered Bore 1:12 | | | | | Tapered Bore 1:30 | | | | |
| | Δ_{dmp} | | $\Delta_{d1mp} - \Delta_{dmp}$ | | $V_{dp}^{1)}$ | Δ_{dmp} | | $\Delta_{d1mp} - \Delta_{dmp}$ | | $V_{dp}^{1)}$ |
| | | | | | | | | | | |
| | max | min | max | min | max | max | min | max | min | max |
| μm | | | | | | | | | | |
| P0 | 25 | 0 | 25 | 0 | 15 | - | - | - | - | - |

| Tolerance Class | Outer Ring | | | | | | | | | |
|-----------------|----------------|-----|-----------------|-----|-------|--------------------------------------|-----------|----------|---|--|
| | Δ_{Dmp} | | V_{Dp} | | | bearings ²⁾ with seals | V_{Dmp} | K_{ea} | Δ_{CS}, V_{CS} | |
| | | | Diameter Series | | | | | | | |
| | max | min | 7,8,9 | 0,1 | 2,3,4 | max | max | max | max | |
| | μm | | | | | | | | | |
| P0 | 0 | -15 | 19 | 19 | 11 | 26 | 11 | 35 | Corresponds to Δ_{BS}, V_{BS} of the same bearing inner ring | |
| P6 | 0 | -13 | 16 | 16 | 10 | 20 | 10 | 18 | | |

1) Valid in any bore radial plane

2) P0 - Valid only for bearings in diameter series 2, 3 and 4 * P6 - Valid only for bearings in diameter series 0, 1, 2, 3 and 4

Radial Clearance - Cylindrical Bore

| C2 | | normal | | C3 | | C4 | | C5 | |
|---------|-----|--------|-----|-----|-----|-----|-----|-----|-----|
| min | max | min | max | min | max | min | max | min | max |
| μm | | | | | | | | | |
| 5 | 35 | 30 | 60 | 50 | 80 | 70 | 100 | 95 | 125 |

Tolerance Symbols and Their Meaning

| | | | |
|-----------------|--|----------------|---|
| d | nominal bore diameter | H_4 | rated height of spherical-roller bearing |
| d_1 | nominal diameter of larger theoretical tapered bore diameter | Δ_{Bs} | inner ring single width deviation |
| d_2 | nominal diameter of the shaft washer of double direction thrust bearings | Δ_{Cs} | outer ring single width deviation |
| Δ_{ds} | deviation of single bore diameter from nominal | Δ_{Ts} | bearing single width deviation (total) |
| Δ_{dmp} | mean cylindrical bore diameter deviation in single radial plane (for tapered bore Δ_{dmp} is valid for theoretical bore diameter) | Δ_{T1s} | cone sub-unit effective width deviation |
| Δ_{d1mp} | deviation of mean larger theoretical diameter of tapered bore | Δ_{T2s} | cup sub-unit effective width deviation |
| Δ_{d2mp} | mean shaft washer bore diameter deviation of double direction thrust bearings in single radial plane | Δ_{Hs} | height deviation of single direction axial bearings from nominal value |
| V_{dp} | single bore diameter variation in single radial plane | Δ_{H1s} | height deviation of single direction axial ball bearings with sphered housing washer from nominal value |
| V_{dmp} | mean cylindrical bore diameter variation | Δ_{H2s} | height deviation of double direction axial bearings from nominal value |
| V_{d2p} | shaft washer bore diameter variation of double direction thrust bearings in single radial plane | Δ_{H3s} | height deviation of double direction axial ball bearings with sphered housing washer from nominal value |
| D | nominal outside diameter | Δ_{H4s} | height deviation of axial spherical-roller bearing from the rated value |
| Δ_{Ds} | deviation of single outside diameter from the nominal dimension | C | outer ring nominal width |
| Δ_{Dmp} | mean outside cylindrical surface diameter deviation in single plane | V_{Bs} | inner ring single width variation |
| V_{Dp} | single outside cylindrical surface diameter variation in single radial plane | V_{Cs} | outer ring single width variation |
| V_{Dmp} | mean outside cylindrical surface diameter variation | K_{ia} | radial runout of assembled bearing inner ring |
| B | inner ring nominal width | K_{ea} | radial runout of assembled bearing outer ring |
| T | total nominal width of tapered roller bearings | S_i | shaft washer raceway axial runout |
| T_1 | nominal effective width of cup sub-unit | S_e | housing washer raceway axial runout |
| T_2 | nominal effective width of cone sub-unit | S_e^{ia} | inner ring flat seat face axial runout of assembled bearing |
| H | rated width of unidirectional axial bearing | S_e^{ea} | outer ring flat seat face axial runout of assembled bearing |
| H_1 | rated height of unidirectional ball axial bearing including the body ring | S_d | flat seat face axial runout |
| H_2 | rated height of bidirectional axial bearing | S_D | runout of outside cylindrical surface towards outer ring face |
| H_3 | rated height of bidirectional axial ball bearing including body rings | S_s | runout of supporting face towards seat face for single row tapered roller bearings |