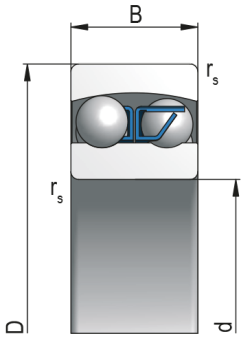
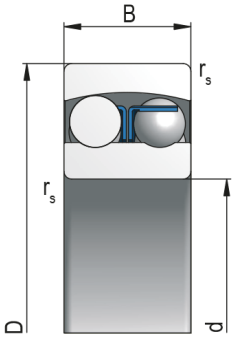
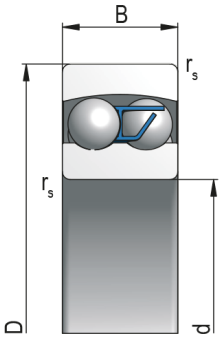
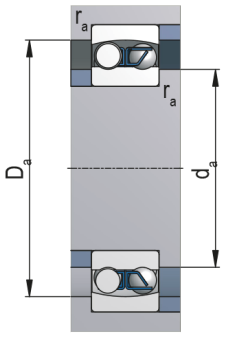
# Double row self-aligning ball bearings




| Bearing Designation | | - Cylindrical Bore |
|---|---|---|
| | | - Tapered Bore (1:12) |
| | | - 2RS |

## Dimensions (mm)

| | |
|---|---|
| d | |
| D | |
| B | |
| $r_s$ min | |

## Abutment and Fillet Dimensions (mm)

| | |
|---|---|
| $d_a$ min | |
| $D_a$ max | |
| $r_a$ max | |

## Basic Load Rating (kN)

| | |
|---|---|
| C | |
| $C_0$ | |

## Limiting Speed for Lubrication (min $^{-1}$)

| | |
|---|---|
| Grease | |
| Olej | |

| | |
|---|---|
| Weight [kg] | |
| Adapter Sleeve | |
| Weight - K [kg] | |

## Coefficients

| | |
|---|---|
| e | |
| $Y_1$ | |
| $Y_2$ | |
| $Y_0$ | |

ZVL SLOVAKIA, a.s. • Na stanicu 22 • 010 09 Žilina • Slovakia
phone.: +421 41 707 60 32 • fax: +421 41 707 60 24
sales.zvl@zvlslovakia.sk • www.zvlslovakia.sk

## Tolerance Class

| Tolerance Class | Inner Ring | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Cylindrical Bore | | | | | | | | | |
| | $\Delta_{dmp}$ | | $V_{dp}$ | | | $V_{dmp}$ | $K_{ia}$ | $\Delta_{B_s}$ | | $V_{B_s}$ |
| | | | Diameter Series | | | | | | | |
| | | | 7,8,9 | 0,1 | 2,3,4 | | | | | |
| | max | min | max | max | max | max | max | max | min | max |
| | µm | | | | | | | | | |
| P0 | | | | | | | | | | |
| P6 | | | | | | | | | | |

| Tolerance Class | Inner Ring | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tapered Bore 1:12 | | | | | Tapered Bore 1:30 | | | | |
| | $\Delta_{dmp}$ | | $\Delta_{d1mp} - \Delta_{dmp}$ | | $V_{dp}$ [1] | $\Delta_{dmp}$ | | $\Delta_{d1mp} - \Delta_{dmp}$ | | $V_{dp}$ [1] |
| | max | min | max | min | max | max | min | max | min | max |
| | µm | | | | | | | | | |
| P0 = P6 | | | | | | | | | | |

| Tolerance Class | Outer Ring | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $\Delta_{Dmp}$ | | $V_{Dp}$ | | | bearings [2] with seals | $V_{Dmp}$ | $K_{ea}$ | $\Delta_{CS}$, $V_{CS}$ |
| | | | Diameter Series | | | | | | |
| | | | 7,8,9 | 0,1 | 2,3,4 | | | | |
| | max | min | max | max | max | max | max | max | |
| | µm | | | | | | | | |
| P0 | | | | | | | | | Corresponds to $\Delta_{BS}$, $V_{BS}$ of the same bearing inner ring |
| P6 | | | | | | | | | |

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 | | | | | | | | | |
| | | | | | | | | | |

## Radial Clearance - Tapered Bore

| C2 | | normal | | C3 | | C4 | | C5 | |
|---|---|---|---|---|---|---|---|---|---|
| min | max | min | max | min | max | min | max | min | max |
| µm | | | | | | | | | |
| | | | | | | | | | |

ZVL SLOVAKIA, a.s. • Na stanicu 22 • 010 09 Žilina • Slovakia
phone.: +421 41 707 60 32 • fax: +421 41 707 60 24
sales.zvl@zvlslovakia.sk • www.zvlslovakia.sk

## Tolerance Symbols and Their Meaning

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

ZVL SLOVAKIA, a.s. • Na stanicu 22 • 010 09 Žilina • Slovakia
phone.: +421 41 707 60 32 • fax: +421 41 707 60 24
sales.zvl@zvlslovakia.sk • www.zvlslovakia.sk