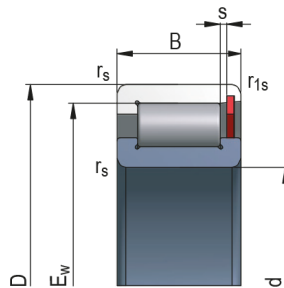
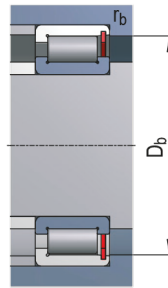


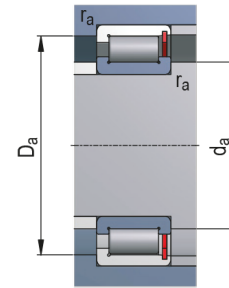
# Full complement cylindrical roller bearings, type NCF



NCF



NCF



NCF

## Bearing Designation

### Dimensions (mm)

|         |  |
|---------|--|
| d       |  |
| D       |  |
| B       |  |
| rs min  |  |
| r1s min |  |

### Abutment and Fillet Dimensions (mm)

|        |  |        |  |
|--------|--|--------|--|
| Fw     |  | ra max |  |
| s      |  | rb max |  |
| da min |  |        |  |
| Da max |  |        |  |
| Db max |  |        |  |

### Basic Load Rating (kN)

|    |  |
|----|--|
| C  |  |
| C0 |  |

### Limiting Speed for Lubrication (min<sup>-1</sup>)

|        |  |
|--------|--|
| Grease |  |
| Oil    |  |

## Weight [kg]

## Tolerance Class

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

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

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 |
| $\mu m$ |     |        |     |     |     |     |     |     |     |
|         |     |        |     |     |     |     |     |     |     |

## 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                                                                                | $\Delta_{Bs}$  | inner ring single width deviation                                                                       |
| $d_2$           | nominal diameter of the shaft washer of double direction thrust bearings                                                                    | $\Delta_{Cs}$  | outer ring single width deviation                                                                       |
| $\Delta_{ds}$   | deviation of single bore diameter from nominal                                                                                              | $\Delta_{Ts}$  | bearing single width deviation (total)                                                                  |
| $\Delta_{dmp}$  | mean cylindrical bore diameter deviation in single radial plane<br>(for tapered bore $\Delta_{dmp}$ is valid for theoretical bore diameter) | $\Delta_{T1s}$ | cone sub-unit effective width deviation                                                                 |
| $\Delta_{d1mp}$ | deviation of mean larger theoretical diameter of tapered bore                                                                               | $\Delta_{T2s}$ | cup sub-unit effective width deviation                                                                  |
| $\Delta_{d2mp}$ | mean shaft washer bore diameter deviation of double direction thrust bearings in single radial plane                                        | $\Delta_{Hs}$  | height deviation of single direction axial bearings from nominal value                                  |
| $V_{dp}$        | single bore diameter variation in single radial plane                                                                                       | $\Delta_{H1s}$ | height deviation of single direction axial ball bearings with sphered housing washer from nominal value |
| $V_{dmp}$       | mean cylindrical bore diameter variation                                                                                                    | $\Delta_{H2s}$ | 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                                             | $\Delta_{H3s}$ | height deviation of double direction axial ball bearings with sphered housing washer from nominal value |
| $D$             | nominal outside diameter                                                                                                                    | $\Delta_{H4s}$ | height deviation of axial spherical-roller bearing from the rated value                                 |
| $\Delta_{Ds}$   | deviation of single outside diameter from the nominal dimension                                                                             | $C$            | outer ring nominal width                                                                                |
| $\Delta_{Dmp}$  | 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                                                                                                    | $S_{ia}$       | inner ring flat seat face axial runout of assembled bearing                                             |
| $H$             | rated width of unidirectional axial bearing                                                                                                 | $S_{ea}$       | 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                      |