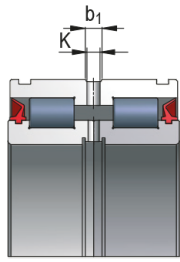
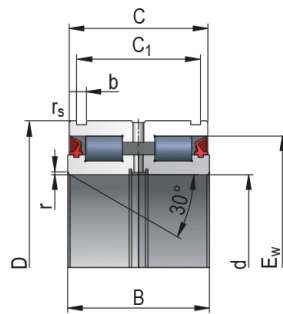


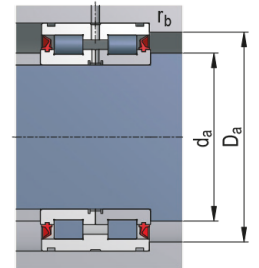
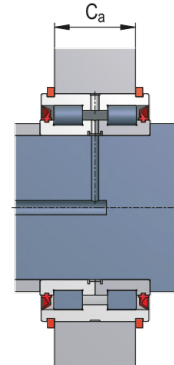
# Full complement cylindrical roller bearings, type NNF



NNF



NNF



NNF

## Bearing Designation

NNF5013-PP

## Dimensions (mm)

|        |     |
|--------|-----|
| d      | 65  |
| D      | 100 |
| B      | 46  |
| C      | 45  |
| rs min | 0,6 |

## Abutment and Fillet Dimensions (mm)

|                |      |                    |     |
|----------------|------|--------------------|-----|
| E <sub>w</sub> | 89,8 | d <sub>a min</sub> | 70  |
| b              | 3,2  | D <sub>a max</sub> | 95  |
| C <sub>1</sub> | 40,2 | r <sub>a max</sub> | 0,6 |
| C <sub>a</sub> | 34   | r <sub>b max</sub> | 0,6 |
| b <sub>1</sub> | 4,5  | r                  | 1   |
|                |      | K                  | 3,5 |

## Basic Load Rating (kN)

|                |        |
|----------------|--------|
| C              | 143    |
| C <sub>0</sub> | 243,06 |

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

|        |      |
|--------|------|
| Grease | 1300 |
|--------|------|

## Weight [kg]

1,300

## Snap Ring

DIN 471

100x3

## Tolerance Class

| Tolerance Class | Inner Ring       |     |                 |     |       |           |          |               |      |                   |                |     |                                |     |               |
|-----------------|------------------|-----|-----------------|-----|-------|-----------|----------|---------------|------|-------------------|----------------|-----|--------------------------------|-----|---------------|
|                 | Cylindrical Bore |     |                 |     |       |           |          |               |      | Tapered Bore 1:12 |                |     |                                |     |               |
|                 | $\Delta_{dmp}$   |     | V               |     |       | $V_{dmp}$ | $K_{ia}$ | $\Delta_{BS}$ |      | $V_{BS}$          | $\Delta_{dmp}$ |     | $\Delta_{d1mp} - \Delta_{dmp}$ |     | $V_{dp}^{1)}$ |
|                 |                  |     | Diameter Series |     |       |           |          |               |      |                   |                |     |                                |     |               |
|                 | max              | min | 7,8,9           | 0,1 | 2,3,4 | max       | max      | max           | min  | max               | min            | max | min                            | max |               |
| $\mu m$         |                  |     |                 |     |       |           |          |               |      |                   |                |     |                                |     |               |
| P0              | 0                | -15 | 19              | 19  | 11    | 11        | 20       | 0             | -150 | 25                | -              | -   | -                              | -   | -             |
| P6              | 0                | -12 | 15              | 15  | 9     | 9         | 10       | 0             | -150 | 25                | 30             | 0   | 30                             | 0   | 19            |

| 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              | 30                | 0   | 30                             | 0   | 19            | 15                | 0   | 30                             | 0   | 19            |  |

| 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 |           |          |   |  |
|                 | max            | min | 7,8,9           | 0,1 | 2,3,4 |                                      | max       | max      |   |  |
|                 | $\mu m$        |     |                 |     |       |                                      |           |          |   |  |
| P0              | 0              | -15 | 19              | 19  | 11    | 26                                   | 11        | 35       | Corresponds to $\Delta_{BS}, V_{BS}$<br>of the same bearing<br>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 |
| $\mu m$ |     |        |     |     |     |     |     |     |     |
| 10      | 40  | 40     | 70  | 60  | 90  | 80  | 110 | 110 | 140 |

## 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 (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   | $S_e^{ia}$     | 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                      |