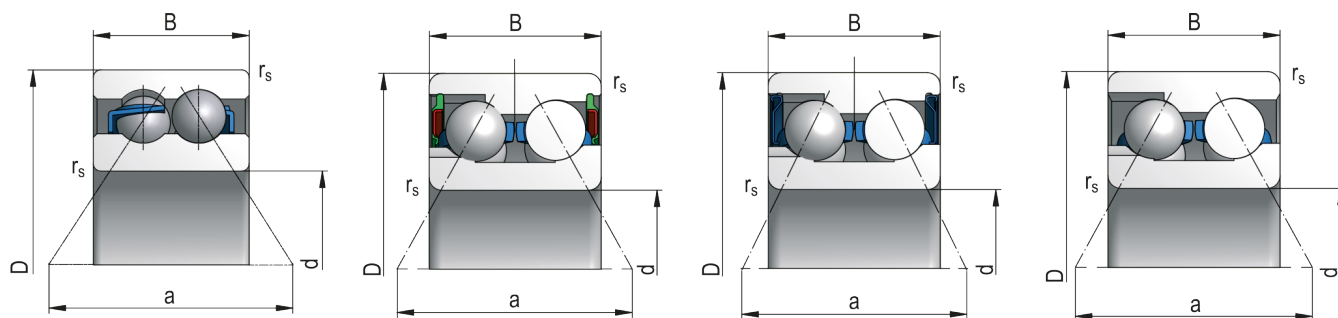


# Double row angular contact ball bearing



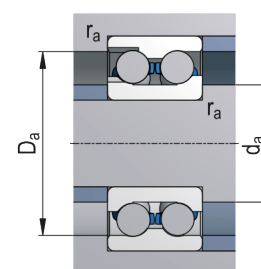
| Bearing Designation | 3302E | 3302E-2RS |
|---------------------|-------|-----------|
|---------------------|-------|-----------|

## Dimensions (mm)

|                    |     |
|--------------------|-----|
| d                  | 15  |
| D                  | 42  |
| B                  | 19  |
| r <sub>s</sub> min | 1,5 |
| a                  | 24  |

## Abutment and Fillet Dimensions (mm)

|                    |      |
|--------------------|------|
| d <sub>a</sub> min | 19,5 |
| D <sub>a</sub> max | 35   |
| r <sub>a</sub> max | 0,6  |



## Basic Load Rating (kN)

|                |       |
|----------------|-------|
| C              | 14,59 |
| C <sup>0</sup> | 13,84 |

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

|        |       |
|--------|-------|
| Grease | 10600 |
| Oil    | 12600 |

|             |       |
|-------------|-------|
| Weight [kg] | 0,129 |
|-------------|-------|

## Tolerance Class

| Tolerance Class | Inner Ring       |     |                 |     |       |           |          |               |      |          |
|-----------------|------------------|-----|-----------------|-----|-------|-----------|----------|---------------|------|----------|
|                 | Cylindrical Bore |     |                 |     |       |           |          |               |      |          |
|                 | $\Delta_{dmp}$   |     | $V_{dp}$        |     |       | $V_{dmp}$ | $K_{ia}$ | $\Delta_{Bs}$ |      | $V_{Bs}$ |
|                 |                  |     | Diameter Series |     |       |           |          |               |      |          |
|                 | max              | min | 7,8,9           | 0,1 | 2,3,4 | max       | max      | max           | min  | max      |
| $\mu m$         |                  |     |                 |     |       |           |          |               |      |          |
| P0              | 0                | -8  | 10              | 8   | 6     | 6         | 10       | 0             | -120 | 20       |
| P6              | 0                | -7  | 9               | 7   | 5     | 5         | 7        | 0             | -120 | 20       |

| 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 = P6         | -                 | -   | -                              | -   | -             | -                 | -   | -                              | -   | -             |

| Tolerance Class | Outer Ring     |     |                 |     |       |                                      |           |          |   |     |
|-----------------|----------------|-----|-----------------|-----|-------|--------------------------------------|-----------|----------|---|-----|
|                 | $\Delta_{Dmp}$ |     | $V_{Dp}$        |     |       | bearings <sup>2)</sup><br>with seals | $V_{Dmp}$ | $K_{ea}$ | $\Delta_{CS}, V_{CS}$   |     |
|                 |                |     | Diameter Series |     |       |                                      |           |          |   |     |
|                 | max            | min | 7,8,9           | 0,1 | 2,3,4 | max                                  | max       | max      | min   | max |
|                 | $\mu m$        |     |                 |     |       |                                      |           |          |   |     |
| P0              | 0              | -11 | 14              | 11  | 8     | 16                                   | 8         | 20       | Corresponds to $\Delta_{BS}, V_{BS}$<br>of the same bearing<br>inner ring |     |
| P6              | 0              | -9  | 11              | 9   | 7     | 13                                   | 7         | 10       |   |     |

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

## Axial Clearance

| C2      |     | normal |     | C3  |     | C4  |     |
|---------|-----|--------|-----|-----|-----|-----|-----|
| min     | max | min    | max | min | max | min | max |
| $\mu m$ |     |        |     |     |     |     |     |
| 1       | 12  | 6      | 23  | 13  | 31  | 27  | 47  |

## 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   | $\Delta_{Is}$  | 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   | $S_t^{ea}$     | shaft washer raceway axial runout   |
| $T_1$           | nominal effective width of cup sub-unit  | $S_t^e$        | housing washer raceway axial runout   |
| $T_2$           | nominal effective width of cone sub-unit   | $S_{ia}^e$     | inner ring flat seat face axial runout of assembled bearing   |
| $H$             | rated width of unidirectional axial bearing  | $S_{ea}^e$     | outer ring flat seat face axial runout of assembled bearing   |
| $H_1$           | rated height of unidirectional ball axial bearing including the body ring  | $S_d^{ea}$     | 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                      |