

C 4120 V/VE240



CARB toroidal roller bearings are unique: as well as accommodating misalignment without increased stress levels, they also provide frictionless axial movement within the bearing in the non-locating position in self-aligning bearing arrangements. This full complement bearing, which has a lower speed rating, uses as many rollers as possible, giving it the highest possible load rating.

- Accommodate misalignment and axial displacement within the bearing
- Very high radial load carrying capacity
- Provide frictionless axial movement
- Long bearing system life

| Bore type        |              | Cylindrical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
|------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|---|--------|---------------|---|--------|------------------|---|-------|-------|----------------|----------|---------------------------------|----------------|----------|-------------------------------------------|----------------|--------------|--------------------------------|----------------|--------------|--------------------------------|------------------|-----------|-------------------|
|                  |              | <table><tr><th colspan="3">Dimensions</th></tr><tr><td>d</td><td>100 mm</td><td>Bore diameter</td></tr><tr><td>D</td><td>165 mm</td><td>Outside diameter</td></tr><tr><td>B</td><td>65 mm</td><td>Width</td></tr><tr><td>d<sub>2</sub></td><td>≈ 120 mm</td><td>Shoulder diameter of inner ring</td></tr><tr><td>D<sub>1</sub></td><td>≈ 148 mm</td><td>Shoulder or recess diameter of outer ring</td></tr><tr><td>s<sub>1</sub></td><td>max. 17.7 mm</td><td>Permissible axial displacement</td></tr><tr><td>s<sub>2</sub></td><td>max. 17.7 mm</td><td>Permissible axial displacement</td></tr><tr><td>r<sub>1,2</sub></td><td>min. 2 mm</td><td>Chamfer dimension</td></tr></table> | Dimensions |  |  | d | 100 mm | Bore diameter | D | 165 mm | Outside diameter | B | 65 mm | Width | d <sub>2</sub> | ≈ 120 mm | Shoulder diameter of inner ring | D <sub>1</sub> | ≈ 148 mm | Shoulder or recess diameter of outer ring | s <sub>1</sub> | max. 17.7 mm | Permissible axial displacement | s <sub>2</sub> | max. 17.7 mm | Permissible axial displacement | r <sub>1,2</sub> | min. 2 mm | Chamfer dimension |
| Dimensions       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| d                | 100 mm       | Bore diameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| D                | 165 mm       | Outside diameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| B                | 65 mm        | Width                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| d <sub>2</sub>   | ≈ 120 mm     | Shoulder diameter of inner ring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| D <sub>1</sub>   | ≈ 148 mm     | Shoulder or recess diameter of outer ring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| s <sub>1</sub>   | max. 17.7 mm | Permissible axial displacement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| s <sub>2</sub>   | max. 17.7 mm | Permissible axial displacement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |
| r <sub>1,2</sub> | min. 2 mm    | Chamfer dimension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |  |  |   |        |               |   |        |                  |   |       |       |                |          |                                 |                |          |                                           |                |              |                                |                |              |                                |                  |           |                   |

|                     |             | <table><tr><th colspan="3">Abutment dimensions</th></tr><tr><td>d<sub>a</sub></td><td>min. 111 mm</td><td>Diameter of shaft abutment</td></tr><tr><td>d<sub>a</sub></td><td>max. 135 mm</td><td>Diameter of shaft abutment</td></tr><tr><td>D<sub>a</sub></td><td>max. 154 mm</td><td>Abutment diameter housing</td></tr><tr><td>r<sub>a</sub></td><td>max. 2 mm</td><td>Radius of fillet</td></tr></table> | Abutment dimensions |  |  | d <sub>a</sub> | min. 111 mm | Diameter of shaft abutment | d <sub>a</sub> | max. 135 mm | Diameter of shaft abutment | D <sub>a</sub> | max. 154 mm | Abutment diameter housing | r <sub>a</sub> | max. 2 mm | Radius of fillet |
|---------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--|--|----------------|-------------|----------------------------|----------------|-------------|----------------------------|----------------|-------------|---------------------------|----------------|-----------|------------------|
| Abutment dimensions |             |                                                                                                                                                                                                                                                                                                                                                                                                             |                     |  |  |                |             |                            |                |             |                            |                |             |                           |                |           |                  |
| d <sub>a</sub>      | min. 111 mm | Diameter of shaft abutment                                                                                                                                                                                                                                                                                                                                                                                  |                     |  |  |                |             |                            |                |             |                            |                |             |                           |                |           |                  |
| d <sub>a</sub>      | max. 135 mm | Diameter of shaft abutment                                                                                                                                                                                                                                                                                                                                                                                  |                     |  |  |                |             |                            |                |             |                            |                |             |                           |                |           |                  |
| D <sub>a</sub>      | max. 154 mm | Abutment diameter housing                                                                                                                                                                                                                                                                                                                                                                                   |                     |  |  |                |             |                            |                |             |                            |                |             |                           |                |           |                  |
| r <sub>a</sub>      | max. 2 mm   | Radius of fillet                                                                                                                                                                                                                                                                                                                                                                                            |                     |  |  |                |             |                            |                |             |                            |                |             |                           |                |           |                  |

## Calculation data

|                           |                |              |
|---------------------------|----------------|--------------|
| AGA performance class     |                | AGA Explorer |
| Basic dynamic load rating | C              | 475 kN       |
| Basic static load rating  | C <sub>0</sub> | 655 kN       |
| Fatigue load limit        | P <sub>u</sub> | 71 kN        |
| Limiting speed            |                | 1 300 r/min  |
| Misalignment factor       | k <sub>1</sub> | 0.09         |
| Internal clearance factor | k <sub>2</sub> | 0.125        |

## Tolerances and clearances

### GENERAL BEARING SPECIFICATIONS

- Tolerances: Normal, P5, tapered bore 1:12, tapered bore 1:30
- Radial internal clearance: cylindrical bore, tapered bore

### BEARING INTERFACES

- Seat tolerances for standard conditions
- Tolerances and resultant fit