

ZVL SLOVAKIA, a.s.

Na stanicu 22 • 010 09 Žilina • Slovakia

Phone: +421 41 707 60 32 • Fax: +421 41 707 60 24

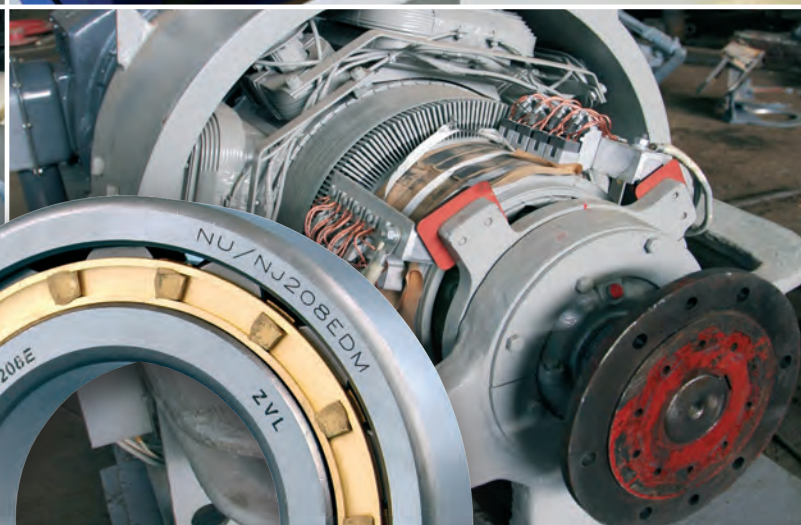
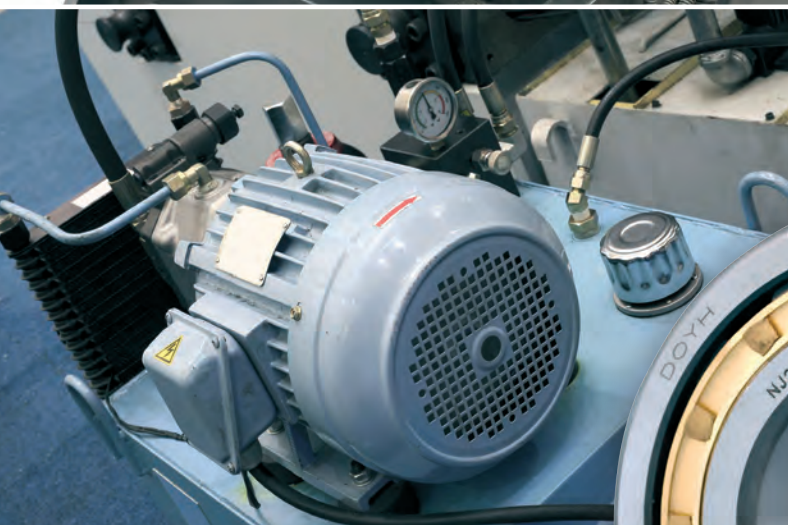
[sales.zvl@zvllovakia.sk](mailto:sales.zvl@zvllovakia.sk)

[www.zvllovakia.sk](http://www.zvllovakia.sk)





## ELECTRIC MOTOR BEARINGS





## SPECIFIC REQUIREMENTS FOR ELECTRIC MOTOR BEARINGS

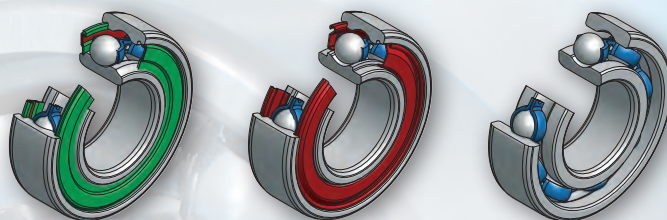
- tolerance of the abutment dimensions is min. P6
- low vibration level
- radial play C3 or in agreed range
- abutment dimensions nonconforming to catalogue values

## CHARACTERISTICS OF ELECTRIC MOTOR BEARINGS

### INNER CONSTRUCTION OF THE BEARINGS

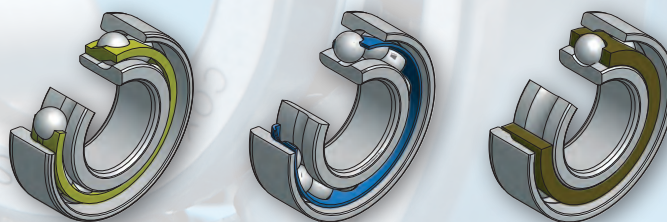
#### Single Row Deep Groove Ball Bearings

- **Bearing Design:** open, shields on both sides, seals on both sides
- **Properties:**
  - high radial and axial load rating in proportion to its outer dimensions
  - little sensitivity to stress, which can occur while mounting the belt pulley, shaft, etc.
- **Application:** asynchronous and synchronous electric motors



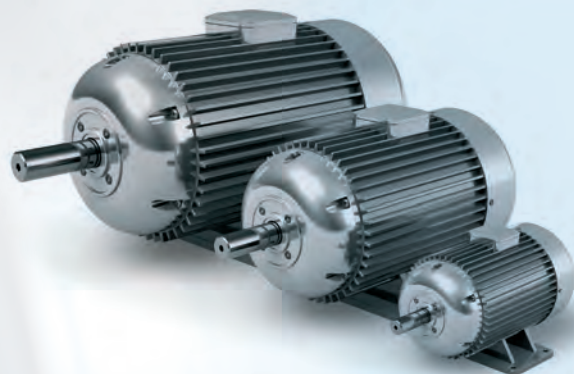
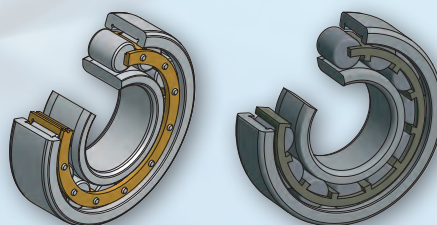
#### Single Row Angular Contact Ball Bearings

- **Bearing Design:** raceways of the rings are designed in such a way that the connecting line of their contact points with the balls creates with the perpendicular line to the bearing axis an acute angle
- **Properties:**
  - it allows to accommodate radial loads acting simultaneously with a relative high axial load in one direction
  - for axial load accommodation in both directions the bearings are arranged in pairs against each other
- **Application:** on the rear part of the shaft in bigger motors, especially when there is large axial load in one or in both directions



#### Single Row Cylindrical Roller Bearings

- **Bearing Design:** the bearings are separable and are produced in several designs
- **Properties:** higher load rating in comparison to ball bearings of the same size
- **Application:** medium and big electric motors, mainly on the rear part of the shaft





# NEW GENERATION OF ZVL BEARINGS FOR ELECTRIC MOTORS

## CAGE DESIGN

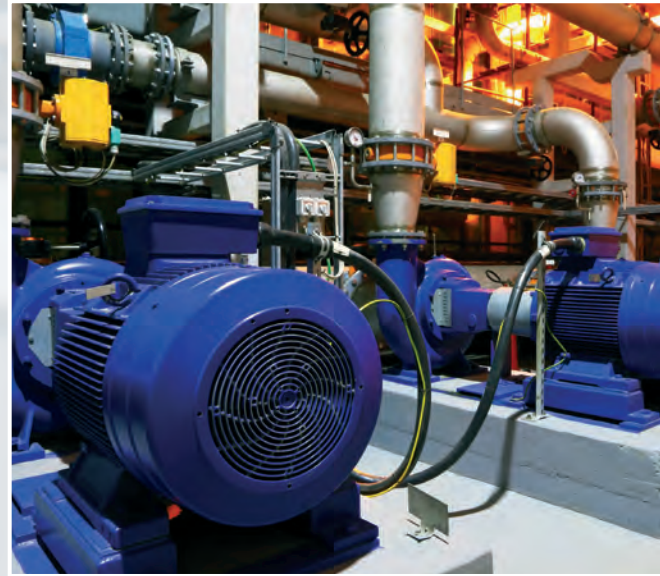
- new production processes are used (pressing, scouring)
- the design ensures lower friction (higher surface quality)
- lower noise production
- it is possible to deliver bearings with plastic cage on request

## SEAL DESIGN

- standard material: NBR
- for higher temperatures we offer suitable materials HNBR, FKM, VITON
- optimized sealing performance – lower friction supports higher rotation speed of the bearings

## GREASE

- ensures additional lowering of the noise level
- grease is adjusted to the operational conditions (in some cases highly specialized grease)
- the grease ensures long failure-free operation of the bearings
- the properties of the grease are tested with the help of special equipment



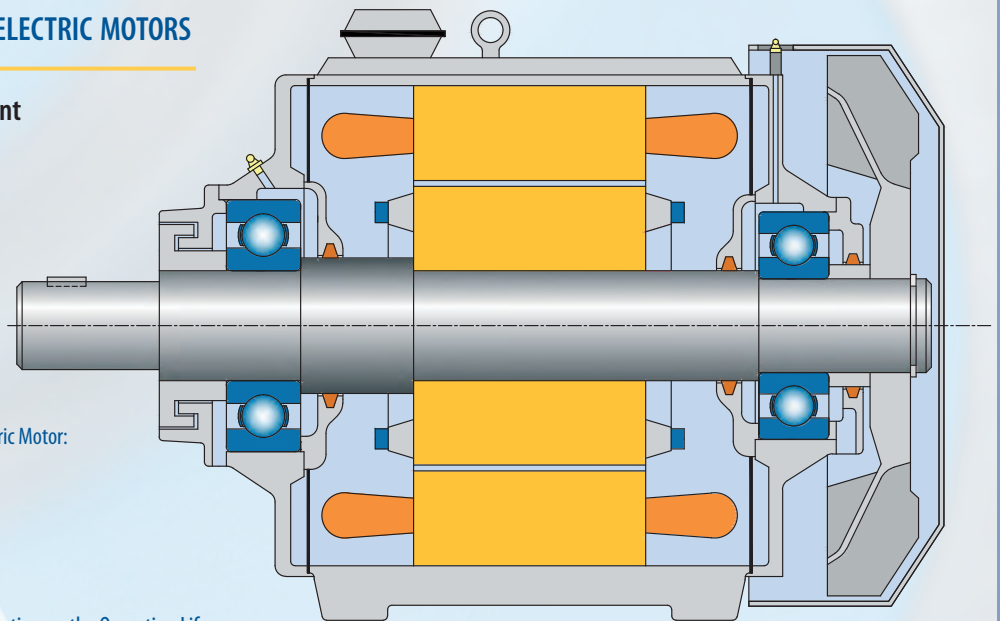
## SPECIAL BEARING DESIGNS FOR ELECTRIC MOTORS

To avoid passing of the electric current

ZVL SLOVAKIA is preparing:

- Bearings with ceramic balls
- Insulation of Bearings with special coating

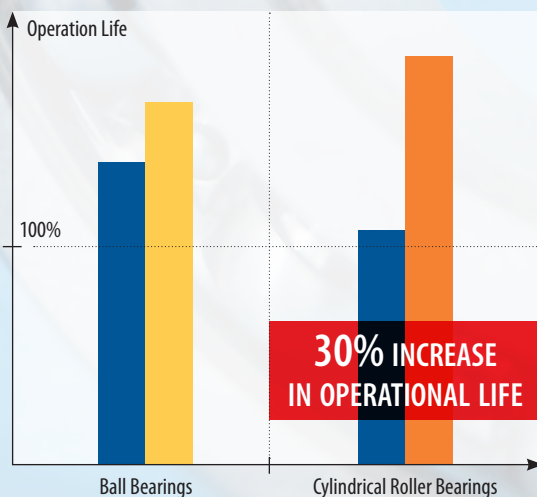
Arrangement Example of ZVL bearings in an Electric Motor:



## INNOVATION OF BEARINGS

Influence of the Innovation of the Inner Construction on the Operation Life

■ Previous Design    ■ New Design    ■ Design E



Influence of the Innovation of the Inner Construction on the Frictional Moment

