

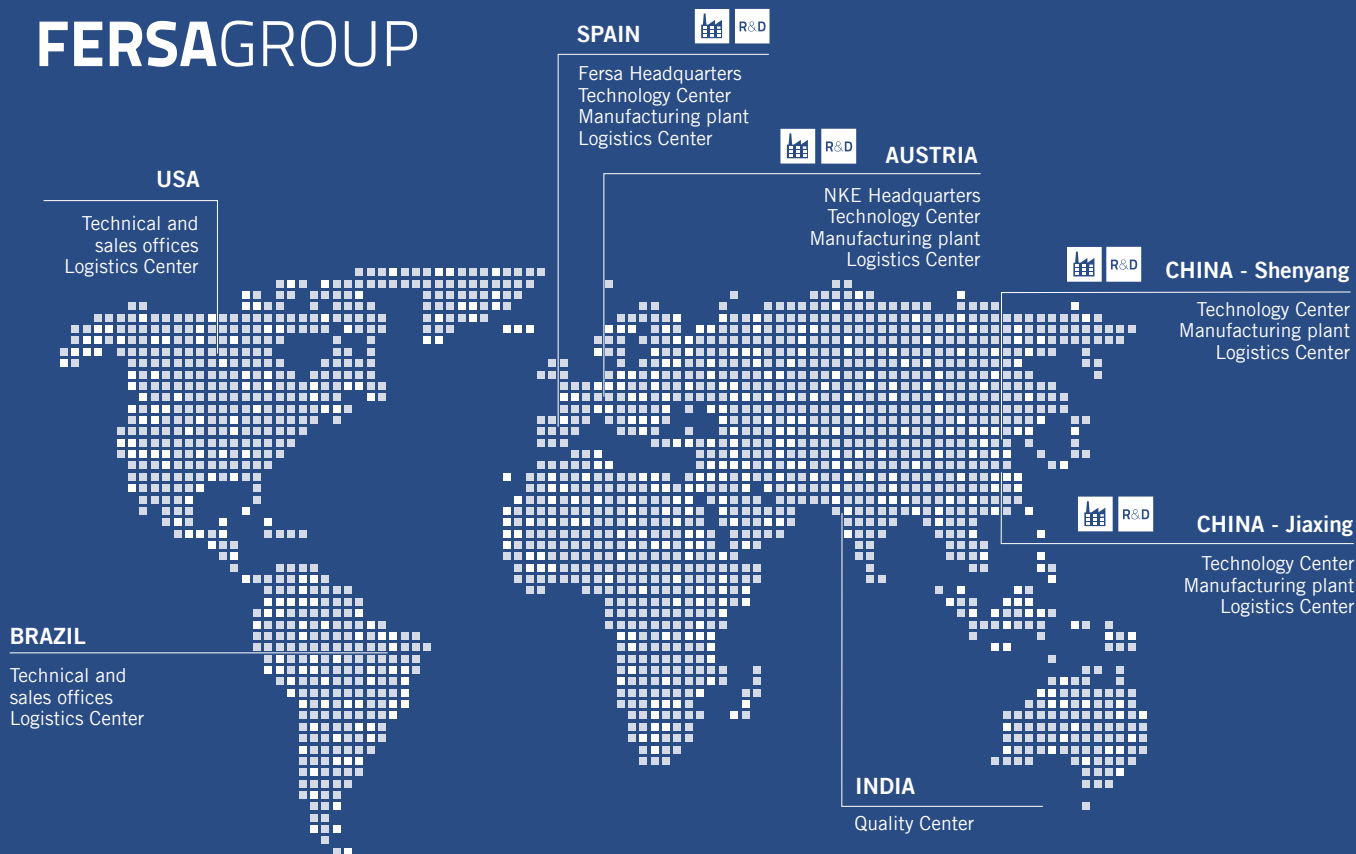
# WE ARE FERSA GROUP A SPANISH-AUSTRIAN COMPANY

Fersa Group was created through the merger of two European bearing manufacturers: Fersa Bearings in Spain and NKE in Austria. Both are globally active in the design, production and distribution of high quality bearings for the global automotive and industrial markets.

Over 50 years of manufacturing experience and the trust of leading OEMs, Tier 1 and their respective aftermarkets endorse our products and services.

Fersa Group has an extensive network of distribution centers that service globally. We count with local facilities in Austria, Brazil, China, Spain and USA and state-of-the-art manufacturing centers in Austria, China and Spain.

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**NKE**  
B E A R I N G S

# ELECTRICALLY INSULATED BEARINGS

FERSAGROUP

# THE PERFECT SOLUTION TO INDUSTRIAL APPLICATIONS

**NKE AUSTRIA GmbH is a premium bearing manufacturer with headquarters in Steyr, Austria. The company was founded in 1996 by a group of senior staff members of the former Steyr Wälzlager.**

NKE manufactures both standard and special bearings for all industrial applications. Our core competences – engineering, product development, final processing of components, assembly, quality assurance, logistics, sales and marketing – are centralised in Steyr. The site is accredited with ISO 9001:2015 (design, development, manufacturing and distribution of bearings), ISO 14001:2015 and OHSAS 18001.

**NKE bearings are distributed through international representative offices and more than 240 distribution outlets in over 60 countries.**

## Bearing damage by the passage of electrical current

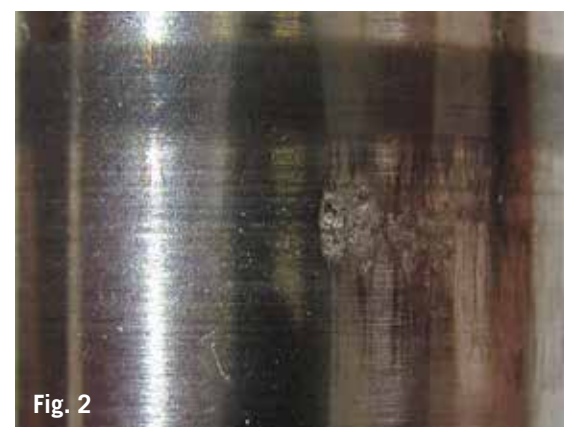
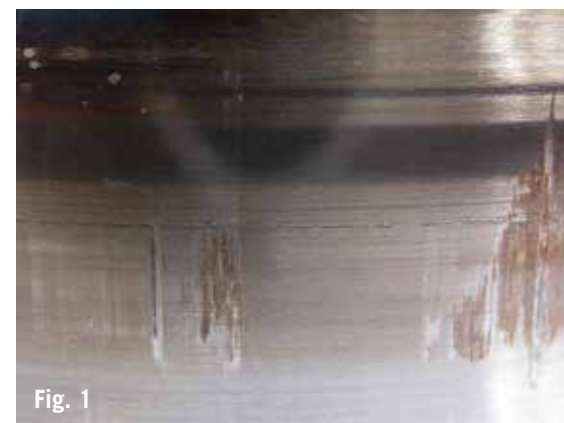
Under adverse conditions the rolling bearings used in electrical machines can sustain damage through current discharge.

### The electrical current passing through the bearing may be caused by

- / incorrect or faulty wiring
- / faulty or damaged earth connections resulting in insufficient potential equalisation
- / unshielded and/or asymmetric wiring in electric motors
- / asymmetrical magnetic flux
- / fast acting frequency converters

## Damage by current passage: electrical corrosion

Current passage has led to a formation of craters/flutes on the inner ring raceway (fig. 1) and the lateral surface of the rolling elements (fig. 2) of a cylindrical roller bearing



## The solutions

The potential for damage can be eliminated by:

- / ensuring correct wiring
- / sufficient earth connection
- / isolated coupling to the electrical machine
- / electric filters
- / grounding of rotors and brushes

Moreover, it is advantageous to NKE electrically insulated bearings.

# AUSTRIAN QUALITY COMBINED WITH ADVANCED TECHNOLOGY

## NKE electrically insulated bearings – efficient and effective

NKE provides **bearings with oxide ceramic insulating layers on the bearing ring**. Applied with plasma technology, the insulation has a guaranteed breakdown resistance of at least **1000V AC or DC**

Two variants are available:

- / **SQ77:** Insulation on the outer ring
- / **SQ77E:** Insulation on the inner ring (Fig. below)



NKE Suffixes	SQ77	SQ77E	
Meaning	Outer ring coating	Inner ring coating	
Diameter range [mm]	Outer diameter $90 \leq D \leq 500$	Bore diameter $75 \leq d \leq 150$	Bore diameter $150 \leq d \leq 315$
Bearing Type	DGBB, CRB Special types up to D=1000mm on request	DGBB CRB	DGBB CRB

Frequently used bearing types in **SQ77** execution (insulation on the outer ring) are available on stock or with short lead times. Examples:

### / Cylindrical roller bearings

Design: NJ, NU, NUP  
Dimension series: 210-230, 310-330  
Cage: brass and polyamide  
Radial clearance groups: C0, C3, C4

### / Deep groove ball bearings

Dimension series: 6212-6226; 6312-6326  
Cage: brass  
Radial clearance groups: C3, C4

Other bearing types and SQ77E (insulation on the inner ring) on request.

### Advantages:

- / Higher operational reliability through optimum protection against current passages
- / More economical than insulation on housings or shafts
- / Interchangeable: Same dimensions and technical properties as conventional bearings
- / Coating resistant to mechanical damage if correctly handled

### Typical applications:

- / Traction motors of railway vehicles
- / Electric motors (AC/DC)
- / Generators (e.g. in wind turbine generators)