

BEARINGS EUROPE | **NBI**[®]

APPLICATION ENGINEERING
PRODUCT DESIGN
MANUFACTURING





NBI, the value of a brand



NBI Bearings Europe was set up as an ambitious project more than a decade ago. The purpose was to become a reliable choice to the most prestigious traditional European manufacturers. Experienced engineers design and produce a wide range of products in accordance with the highest European quality standards.

Our philosophy of continuous improvement has created the optimum choice for customers seeking premium quality products and flexible solutions for standard products and tailor made bearings. In order to provide full technical assistance to our customers, **NBI** offers an outstanding support by our Engineering Department.

Our extensive experience, in-depth knowledge in a wide range of applications, and co-operation with prestigious R&D Centers has positioned **NBI** as the optimum solution for many leading machinery manufacturers.

NBI STRENGTHS

CUSTOMERS

- Focus on market needs
- Short delivery time
- Wide stock range
- Competitive prices
- Customized service
- Bespoke solutions

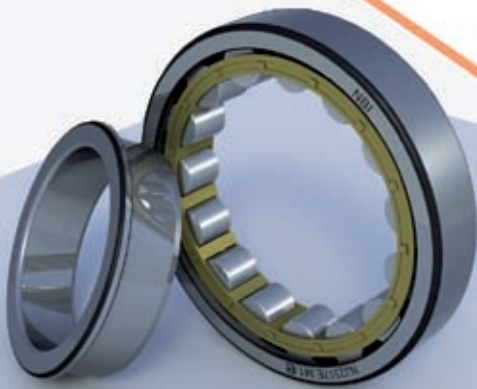
FACILITIES

- Own manufacturing plant (25,000 m²)
- 4,000 m² warehouse with automatic line
- Latest manufacturing technology
- Highest precision quality control devices
- Co-operation with the best Research Institutes

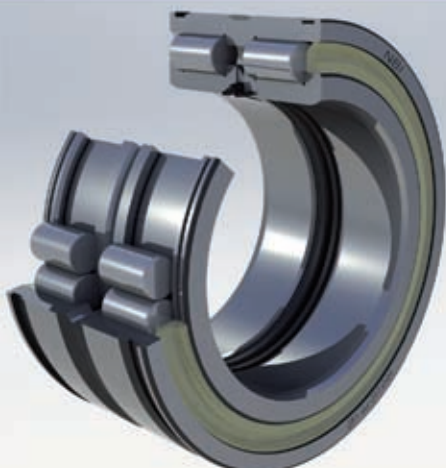
HUMAN RESOURCES

Excellent engineers in:

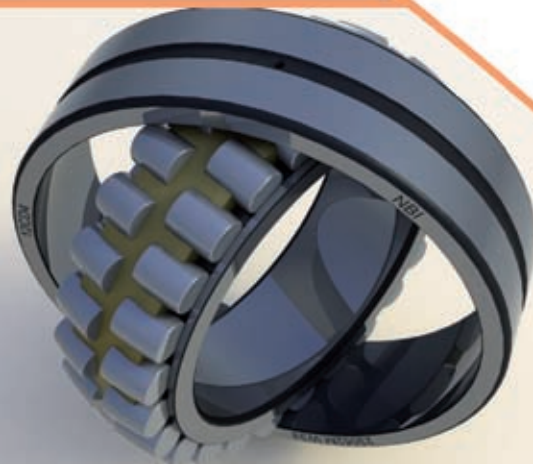
- Application engineering
- R&D+i
- Product design
- Quality and manufacturing engineering



▲ Cylindrical roller bearing



▲ Double row full complement cylindrical roller bearing



▲ Spherical roller bearing

Facilities



Equipped with the latest production and quality control technology available, we provide efficient support to our customers.

NBI's central warehouse with its vast storage capacity, 25,000 square meters of production facilities, and the experience and *know-how* of over 300 professionals is ready to satisfy our customers' needs at any time.

◀ NBI's headquarters in Spain (5,000 m²)



▲ Automatic warehouse (6,500 references)



▲ Conventional warehouse (4,000 m²)



▲ General view of one of the production areas in our manufacturing plant



▲ NBI Manufacturing plant

Application engineering

BEARING SELECTION

The main activity of our Application Engineering department is giving full support to our clients in the selection, type, and size of bearings which are the most appropriate for their particular technical requirements.

This entire process requires a close co-operation with our clients' engineering department.

TECHNICAL ASSISTANCE

The **NBI** Application Engineering department also provides technical assistance and support our customers in other aspects, such as:

- Fit selection
- Lubricant recommendations
- Design of bearing locations
- Bearing clearance calculations
- Advice in handling, mounting and dismounting
- Bearing failure examination and root cause analysis
- Bearing life calculations
- Failure frequency calculations
- Training courses in bearing technology for different audiences (technical courses for Universities)

TAILOR MADE SOLUTIONS

When standard bearings are not the optimum to fulfil the requirements of the customer application, **NBI's** engineers are able to offer optimized designs that will satisfy their needs.



RESEARCH AND DEVELOPMENT

We are fully committed to continuous improvements. At **NBI Bearings Europe** we are fully aware of the importance to channel resources into research and development. This has enabled us to reach *State of the Art* in terms of products and innovative processes which will give rise to significant advantages to our clients.



Currently, we are working on more than 20 investigation projects

NBI INNOVATION

At **NBI** we firmly believe that the only way to be satisfied with our work and product is through continuous innovation and hard work, which is why we invest many of our resources into new materials research, extreme bearing testing and more efficient ways of sustainable production.

TECHNOLOGICAL PARTNERS





Product design

NBI INTERNAL STANDARDS

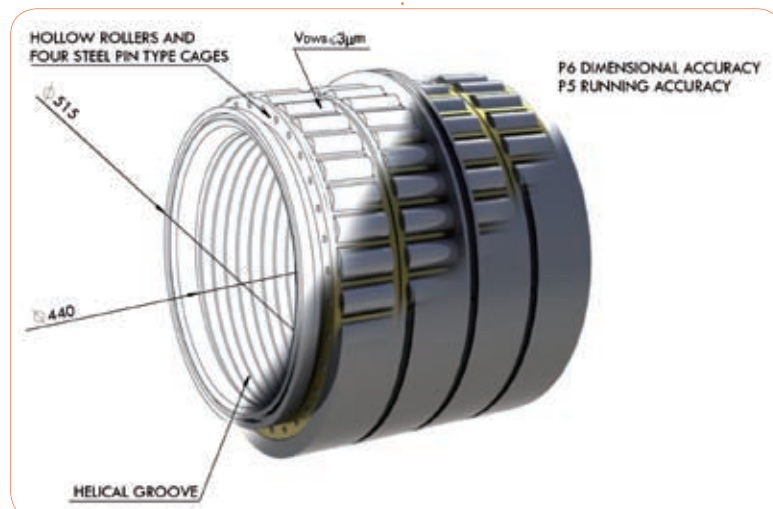
NBI Internal Standards establish the guidelines for designing **NBI** bearing components. These Standards have been developed based on our technical knowledge and expertise, so **NBI** bearings are manufactured according to the latest *State of the Art*.

Our Internal Standards and quality specifications are the result of an optimum compendium of the following factors:

- European and American International bearing standards (DIN, ISO, ASTM, ...)
- Technical developments in cooperation with technological research centres
- Internal developments and analysis
- Technology and experience improvements in the production teams
- Application Engineering findings as a result of technical analysis and communication with customers
- Tribology: relationship between friction, wear and lubrication

3D MODELS

True scale 3D models are the final result of the **NBI** bearing design process. They are the output of combining **NBI** Internal Standards, functionality, performance analysis, and computer aided engineering.

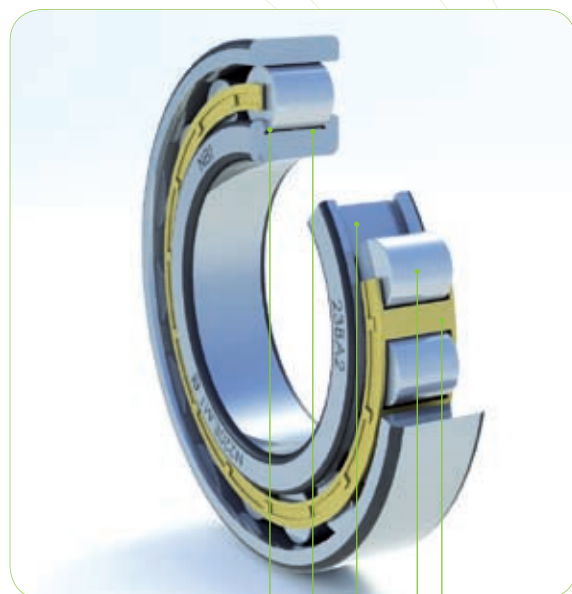




ENHANCED+: new bearing line

NBI combines experience in designing and producing bearings with the latest technology in material research and manufacturing technology to create a new bearing line with superior benefits:

- Increased dynamic load capacity
- Significant reduction in friction, thereby saving energy and thus helping to conserve our environment
- Increased service life



Optimized design of bearing ring flanges



+ **INCREASED AXIAL LOAD CARRYING CAPACITY**

Modified contact geometry



+ **BETTER COMPENSATION OF MISALIGNMENTS**

Reduced raceway roughness



+ **REDUCED FRICTION, LOWER OPERATING TEMPERATURE**

Manufacturing process with tighter tolerances



+ **UNIFORM LOAD DISTRIBUTION**

Optimized cage design



+ **IMPROVED ROLLER GUIDANCE AND LUBRICATION**

Optimized internal geometry



+ **IMPROVED LOAD CAPACITY, FEWER LOCALIZED STRESS PEAKS**

Clean bearing steel



+ **ENHANCED FATIGUE LIFE**

Latest heat treatment, technology and equipment



+ **FINE GRAIN STRUCTURE IMPROVES BEARING LIFE**



Manufacturing plant

FULL TRACEABILITY

Due to batch identification systems

SPC CONTROLLED QUALITY SYSTEM

All processes are subjected to stringent quality SPC control procedures (*Statistical Process Control*)

CNC TURNING EQUIPMENT

This guarantees close dimensional and geometrical tolerances plus a stable surface quality

AICHELIN HEAT TREATMENT LINE

Computerized tempering and quenching processes guarantee an optimum microstructure with uniform grain structure and thus steady quality

CNC PRECISION GRINDING MACHINERY

High dimensional and geometrical accuracy with fine surface finish

CNC SUPER-FINISHING EQUIPMENT

Controlled low stress surface finish with ultra-low surface roughness

EXPERIENCED ENGINEERS

Rich experience and knowledge in bearing manufacturing with a focus on high quality

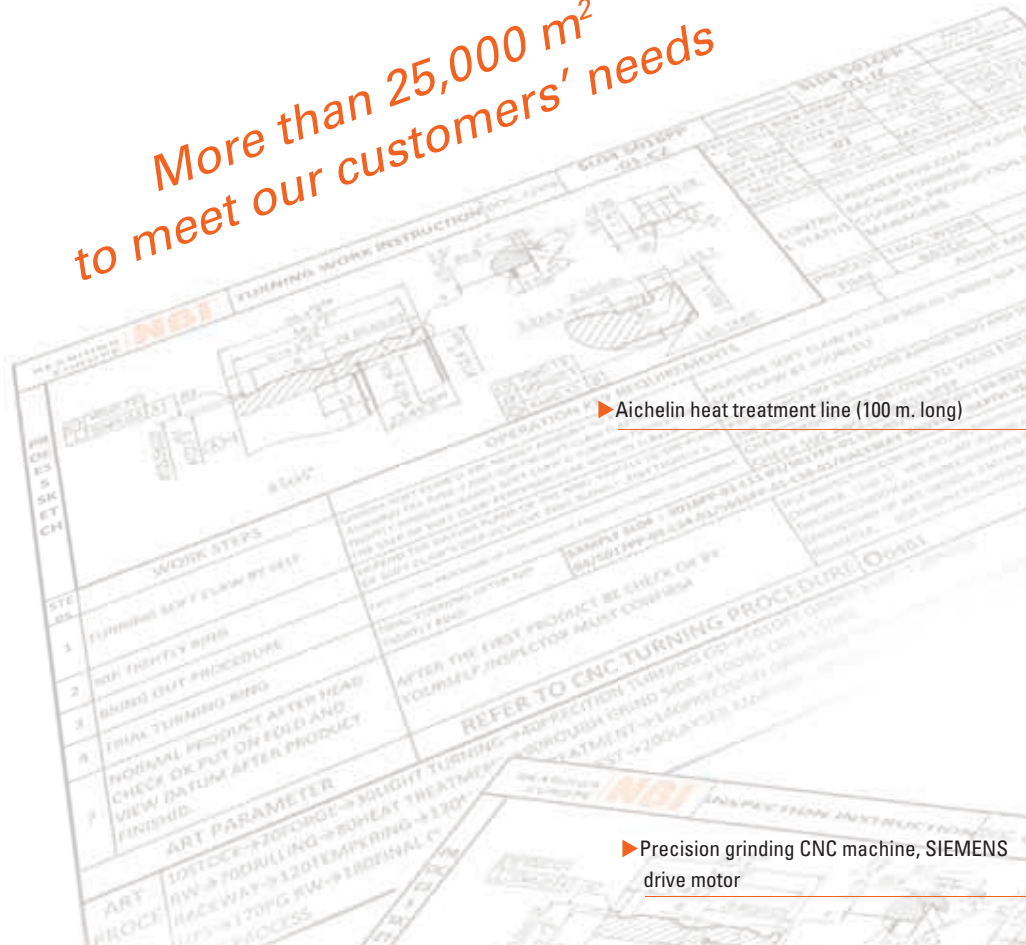
NBI uses the latest technology, knowledge and expertise

All processes are performed by CNC controlled equipment

NBI is a fully qualified alternative to the traditional and well-known brands



More than 25,000 m²
to meet our customers' needs



▶ Aichelin heat treatment line (100 m. long)



▶ Precision grinding CNC machine, SIEMENS drive motor



◀ Grinding CNC machine (weight: 60 Tn)



◀ CNC super-finishing machine



Quality management

Measuring service

NBI makes our highly advanced measuring capacities available to our customers.

This allows us to provide specific measuring documentation, according to each customer's individual requirements.

Bearing inspection program

NBI has set up several specific inspection procedures for all types of bearings:

- Ultrasonic inspection
- Crack inspection
- Surface roughness
- Noise and vibration
- Dimensionals and geometrical control according to DIN620
- Dimensionals and geometrical control according to NBI internal standards
- Residual magnetism
- Visual appearance
- Coating thickness and uniformity
- Functional inspection

Material inspection

Before, during, and after manufacturing our chemical and metallurgical laboratory permanently performs quality tests.

Main inspection equipment

NBI uses the most advanced equipment to control its quality.



▲ ACCRETECH form measuring equipment



▲ ACCRETECH roughness and profile tester



Our customers



GEAR BOXES
 PUMPS AND COMPRESSORS
 MECHANICAL PRESSES
 ELECTRIC MOTORS
 CEMENT MACHINERY



CONSTRUCTION MACHINERY
 AGRICULTURAL MACHINERY
 PULP AND PAPER MACHINERY
 WIND ENERGY
 OFF SHORE



MACHINERY FOR STEEL PRODUCTION
 CRANES AND LIFTING EQUIPMENT
 JAW CRUSHERS
 MINING MACHINERY



flexibility

creativity

reliable choice

NBI is established in more than 50 countries worldwide, and the number of companies that rely on us increases everyday.

The most powerful asset we have is our customers' statements.

NBI's extensive experience and in-depth knowledge in a wide range of applications has positioned **NBI** as the optimum solution for many leading machinery manufacturers.

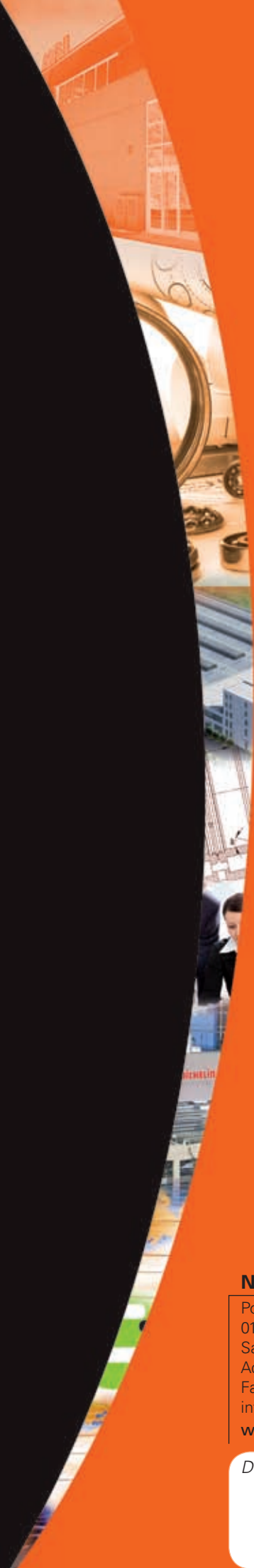
compromise

experience

innovation

reliability

technology



A reliable choice

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