



# **RKB**

**BEARING INDUSTRIES**

*The Alternative Power*



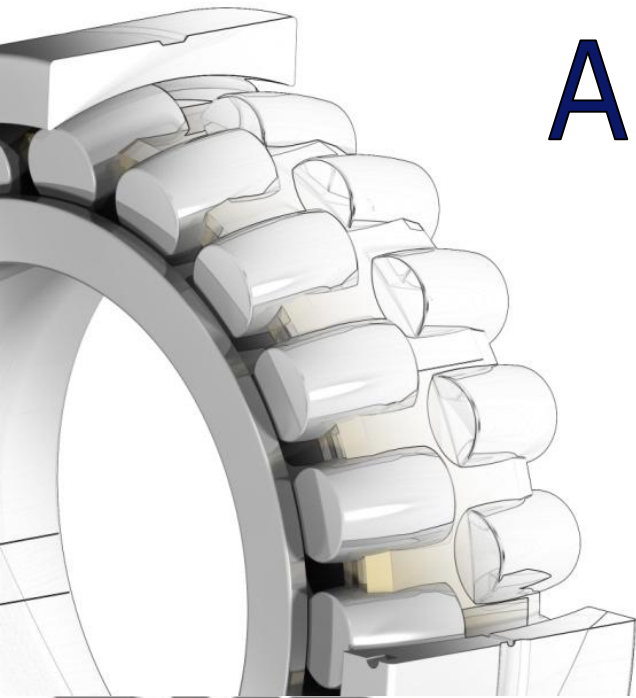
Engineered in Switzerland  
Technological Bearings



# THE SWISS WORLD-CLASS BEARING MANUFACTURER



# About RKB



**RKB**  
BEARING INDUSTRIES

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# The Mission

To be the real alternative  
to the big marks

# The Vision

RKB Bearings: chasing  
the art of excellence in  
the bearing industry

# The Target

To provide customers worldwide with a consistent source of tangible competitive advantages thanks to RKB's pioneer business model in the bearing industry

# About RKB



A medium-scale global corporation



A pioneer business model in the bearing industry



The real alternative to the big marks



Listed and traded OTC

# Noteworthy

RKB Group establishment in 1996, after more than **50 years** of activity in the bearing industry

Exports to more than **50** countries\*

\* As of December 2008

Vertically integrated organization to assure the premium-class consistency

Facilities asset exceeding **88500 sqm**\*

\* As of December 2008. Group consolidated data



# Noteworthy

Manufacturing technology for bearings  
up to **1925 mm** and unit mass exceeding **4000 Kg**\*

\* As of January 2009

Evolving **EUR 35 million** of strategic in stock items  
(The biggest in Europe)\*

\* As of January 2009. Internal source related to technological and middle-big size bearings

Monthly capacity exceeding **350 Tons** of production\*

\* As of January 2009. Group consolidated data

# The Structure

## RKB BEARING INDUSTRIES GROUP

**RKB EUROPE SA** - Executive Headquarters & Technological Center - *Switzerland*

**RKB SA** - Holding Company - *Switzerland*

**RKB EUROPE LOGISTICS WAREHOUSE** - *Italy*

**RKB ADVANCED SOFTWARE ENGINEERING** - Main - *Switzerland*

**RKB ADVANCED SOFTWARE ENGINEERING** - Subsidiary - *Romania*

**AKIYAMA GROUP** - General Advisor - *Japan*

**RKB LN PLANT** - Manufacturing Facility (Machinings) - *PRC*

**RKB T3 PLANT** - Manufacturing Facility (Machinings) - *PRC*

**RKB MS PLANT** - Manufacturing Facility (Machinings) - *PRC*

**RKB LOGISTICS (Netherlands) BV** - *The Netherlands*

**RKB BEARING INDUSTRIES BELGIUM** - *Belgium*

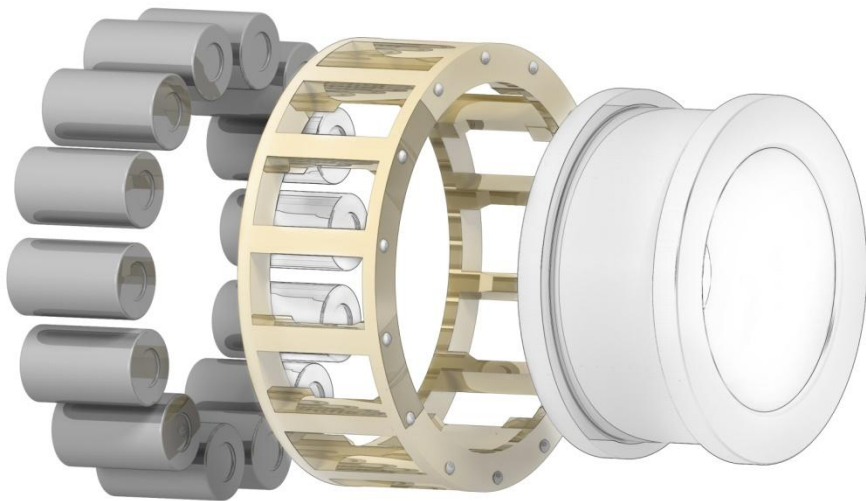
**RKB EUROPE BENELUX BRANCH** - *The Netherlands*

**RKB LOGISTICS ASIAN BRANCH** - *Vietnam*

**RKB LOGISTICS LATAM BRANCH** - *Mexico*

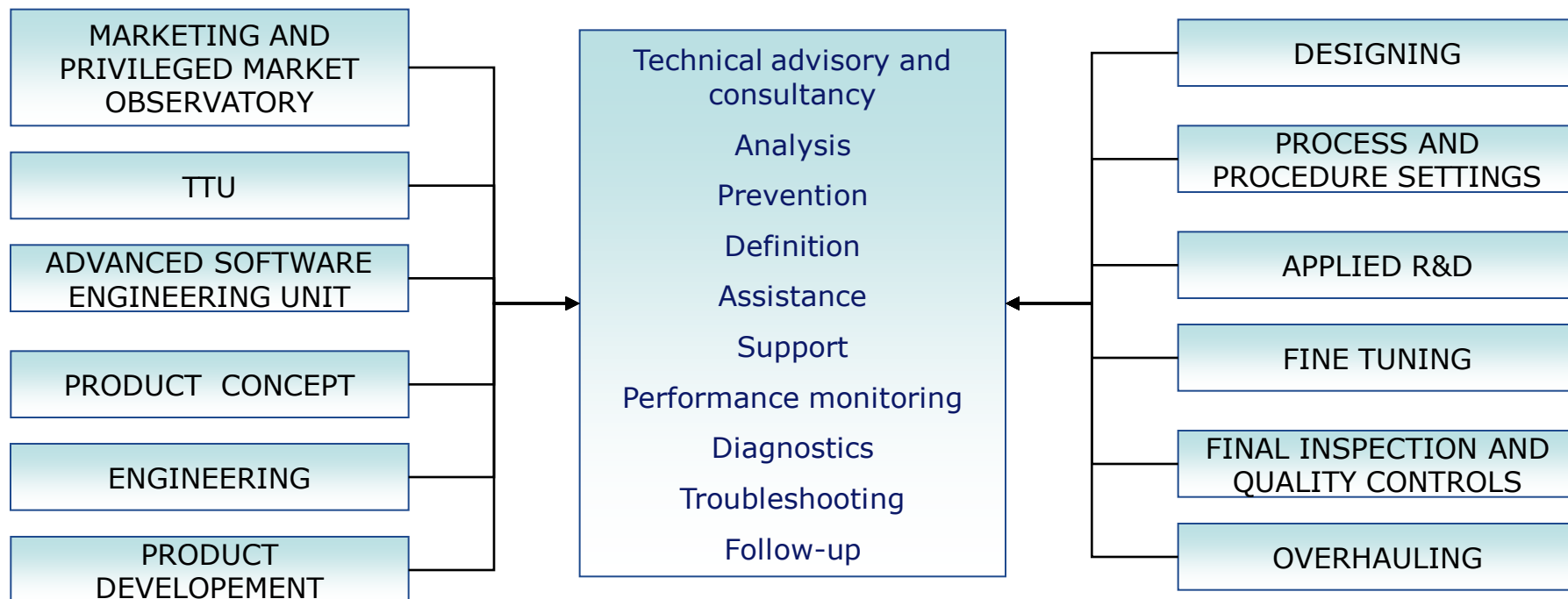
■ Actual  
■ 2010  
■ 2011  
■ 2012

# F o c u s



# The Structure

## PRE – POST SALES OPERATIONS



# The Structure

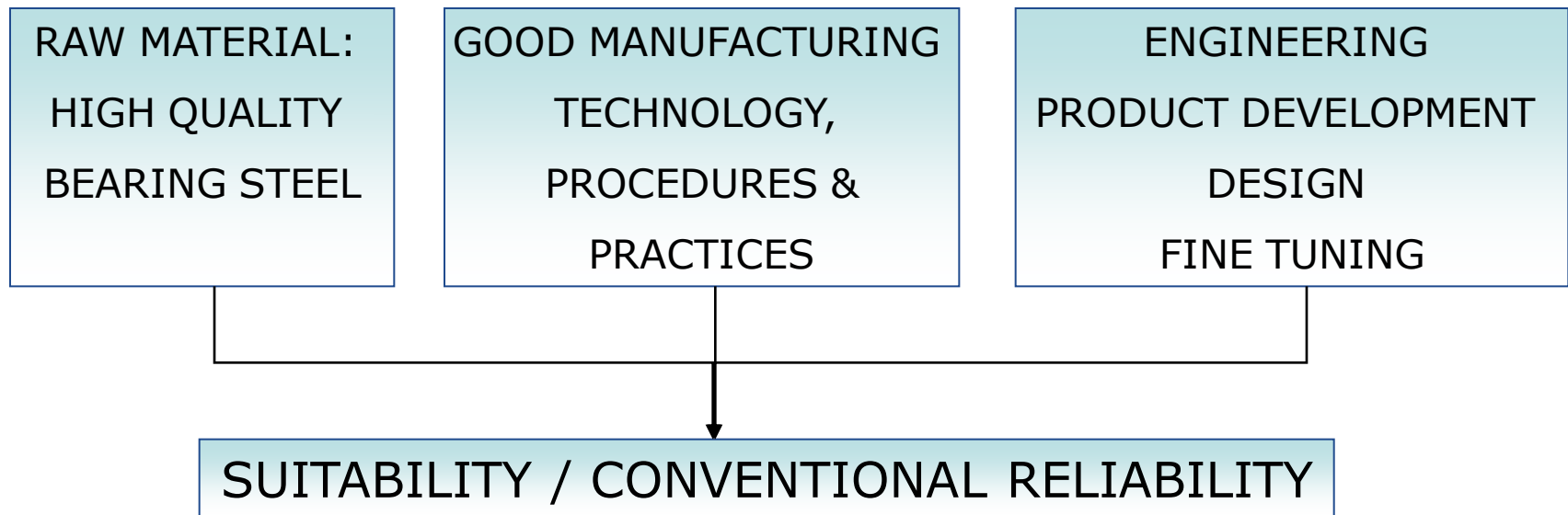
## ROLLING BEARINGS ESSENTIAL MANUFACTURING OPERATIONS

DESIGNING  
ENGINEERING  
FINE TUNING  
SETTING  
FORMING/FORGING\*  
HEAT TREATMENTS – SOFTENING  
TURNING\*  
HEAT TREATMENTS – HARDENING  
GRINDING\*  
PRECISION GRINDING\*  
ASSEMBLING  
MULTILEVEL QUALITY CONTROLS

\* Machinings

# Highlights

## ISO ROLLING BEARING ASSUMPTIONS



### References:

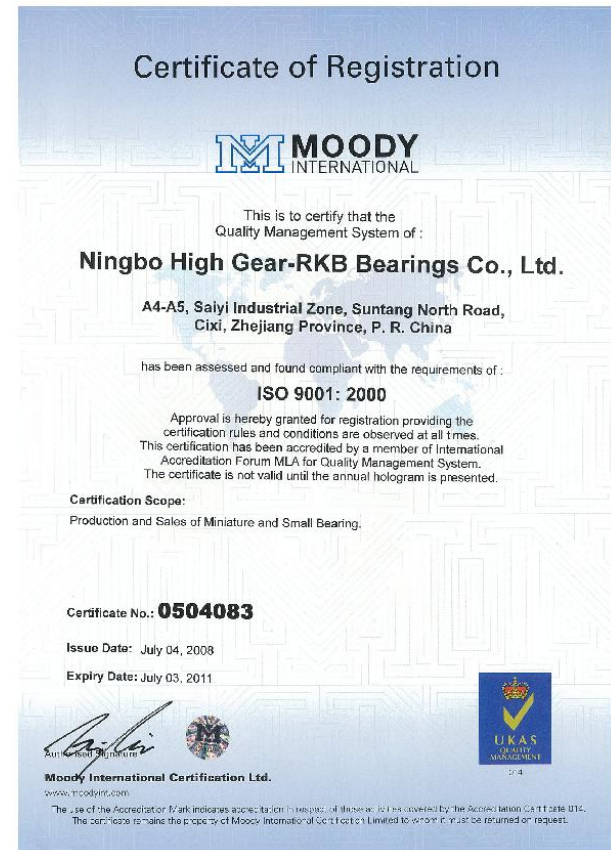
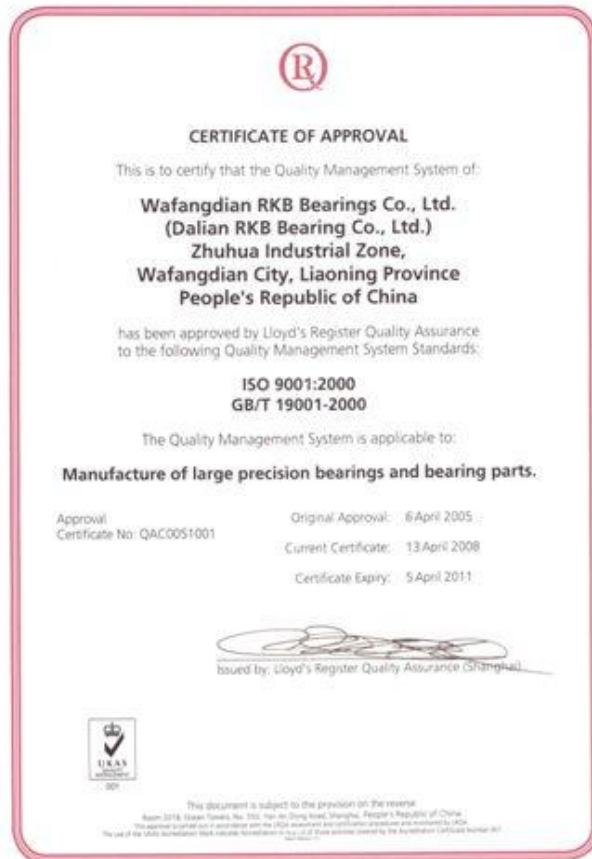
- ISO 281:2007 (E) Introduction
- ISO 76:2006 (E) Scope
- UNI EN 10247 Foreword and Introduction
- ISO 5593 Rolling Bearings - Vocabulary



# Bearing Industry Matrix

GROUP 1. World Class Bearing Manufacturers	GROUP 2. Specialized Bearing Manufacturers
<ul style="list-style-type: none"> <li>• Premium brands</li> <li>• Multinationals</li> <li>• Market leaders in the related area of main influence</li> <li>• Vertically integrated for the consistency</li> <li>• Comprehensive available product range with track record</li> <li>• Full-scale global network (production and distribution)</li> <li>• Top level of knowledge with tradition</li> <li>• Strong R&amp;D activity</li> <li>• High level of innovation</li> <li>• Strong I.P. activity</li> </ul>	<ul style="list-style-type: none"> <li>• Niche players</li> <li>• Medium-scale corporations</li> <li>• High rate of vertical integration for the consistency</li> <li>• Specific product range with expertise</li> <li>• International presence</li> <li>• Valuable knowledge with track record</li> <li>• Specific and inspired R&amp;D activity</li> <li>• High level of innovation</li> <li>• Strong I.P. activity</li> <li>• Focus on value-added effective solutions (product and service)</li> <li>• Attitude and approach based on corporate consistency</li> </ul>
GROUP 3. Manufacturers from the former Soviet block	GROUP 4. Emerging Markets Manufacturers (including Private Labels and Spurious Sources)
<ul style="list-style-type: none"> <li>• Previously state-run firms</li> <li>• Privatized in parts or merged by premium brands</li> <li>• Standard product range, mainly small/medium size for common applications</li> <li>• Basic technology (partially upgraded)</li> <li>• Limited level of innovation, R&amp;D and I.P. activity</li> <li>• Low level of efficiency</li> <li>• Discontinuity in experience and know-how due to brain drain of specialists</li> </ul>	<ul style="list-style-type: none"> <li>• Price-oriented</li> <li>• Production on order without track record</li> <li>• Focused on domestic market for high-batch production</li> <li>• Short-term experience of international markets and applications</li> <li>• No vertical integration/mix of outsourcing</li> <li>• Dysfunctional organisation methods</li> <li>• Basic technology and material for light-duty conditions</li> <li>• Basic knowledge of manufacturing processes</li> <li>• Weak knowledge of bearing applications engineering</li> <li>• Weak background (e.g. formal conformity and compliance, representations and warranties)</li> <li>• Lack of pre and post-sales service organization</li> <li>• Lack of modern advanced engineering tools (copy-based engineering)</li> <li>• Lack of R&amp;D and I.P. activity</li> <li>• Risk of continuity and sustainability</li> <li>• Risk of production instability</li> </ul>

# ISO Certificates





# ISO Certificates



# Affidavit Certificates

## AFFIDAVIT OF CONFORMANCE (Vendor Certificate)



### Rolling Bearings

Since the RKB Group's business operations consist of designing, engineering, manufacturing and marketing world-class rolling bearings, here it is stated that the RKB branded units, components and parts that we supply are and will be produced as per the International Standards in conformity with the purchasing orders and with the technical data referring to the related catalogues and/or to the approved data sheets/drawings.

- **Dimensions**
  - Deep groove ball bearings as per ISO 15:1981;
  - Thrust ball bearings as per ISO 104:1979 and DIN 71/715;
  - Tapered roller bearings as per ISO 355:1977;
  - Cylindrical roller bearings as per ISO 15:1981;
  - Spherical roller bearings as per ISO 15:1981;
  - Inch size bearings as per AFBMA 19 and BS 292.
- **Materials of rings and rolling parts**
  - High-carbon chrome bearing steel JIS-SUJ2 / SAE 52100 / DIN 100CR6 with quality specifications as per ASTM-A295, E3 and E45 and surface hardness as per ASTM-E19 and E112;
  - Case-hardened carburizing steel SAE 9315 / ASTM-A837.
- **Tolerances**
  - Designations as per ISO 1132:1982;
  - Metric sizes as per ISO 492;
  - Inch sizes as per AFBMA B3-19.
- **Internal clearances**
  - As per ISO 5753:1981 and DIN 620/4.
- **Load ratings**
  - Calculated following the instructions of ISO 281 (dynamic values) and ISO 76 (static values) with extended magnitude of rating life as per ISO 1281-1 and updated modified factors.

The RKB Group adopts a global ISO 14001 environmental policy and specific divisions of its factories have been approved for Quality Certification in accordance with ISO 9001 and ISO 14001.

RKB Certificate No. 4546885/Japan forms an integral part of this document.

Salerno, April 2010

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Executive Headquarters and Technological Center  
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## 商標登録証

(CERTIFICATE OF TRADEMARK REGISTRATION)

### 登録第 4546885 号

(REGISTRATION NUMBER)



商標 (THE MARK)

(標準文字)

RKB-J

指定商品又は指定役務並びに商品及び役務の区分 (LIST OF GOODS AND SERVICES):

第 7 類 軸, 軸受け, 軸継ぎ手, ベアリング, 動力伝達装置  
(GROUP 7 BEARINGS AND TRANSMISSION PARTS - GENERAL MECHANICS)

第 12 類 軸, 軸受け, 軸継ぎ手, ベアリング, 動力伝達装置  
(GROUP 12 BEARINGS AND TRANSMISSION PARTS - NAVALS AND AERONAUTICALS)

商標権者 (OWNER OF THE TRADEMARK RIGHT):

岡山県倉敷市阿知 3 丁目 1 8 番 5 号 秋山茶舗内

田中 明枝

AKIYAMA CO.  
5 - 18 - 3 OKAYAMA  
JAPAN

出願番号 (APPLICATION NUMBER) 商願 2000-142312

出願年月日 (FILING DATE) 平成 12 年 12 月 21 日 (December 21, 2000)

この商標は、登録するものと確定し、商標原簿に登録されたことを証する。  
(THIS IS TO CERTIFY THAT THE TRADEMARK IS REGISTERED ON THE REGISTER OF THE JAPAN PATENT OFFICE.)

平成 14 年 3 月 1 日 (March 1, 2002)

特許庁長官 (COMMISSIONER JAPAN PATENT OFFICE)

## 及川耕造

(KOZO OIKAWA)



# Affidavit Certificates

## AFFIDAVIT OF BEARING MANUFACTURER (Entitlement Certificate)



### Rolling Bearings

Herewith we declare under full liability that the RKB Bearing Industries Group is a Swiss fully vertically integrated world-class bearing manufacturer. In fact, RKB performs all of the following operations within its perimeter, which is necessary to be considered a rolling bearing manufacturer:

- Pre and post sales operations;
- Designing;
- Engineering;
- Fine-tuning;
- Selling;
- Definition of protocols and procedures;
- Definition of production technology (equipment and machines);
- Purchasing of raw materials and raw parts;
- Machinings and heat-treatments:
  - Forming/forging;
  - Softening treatments;
  - Turning;
  - Hardening treatments;
  - Grinding;
  - Precision fine-grinding;
  - Assembling;
  - Additional operations (grooves, slots, holes etc.);
- Multilevel quality controls;
- Overhauling;
- Logistics and warehouse;
- Research and development.

The present Certificate forms an integral and substantive part of RKB's Representations and Warranties compliance procedure.

Balerna, April 2010

RKB Europe SA  
Executive Headquarters and Technological Center

Via Primo Agosto - 6828 Balerna  
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info@rkbEurope.com - www.rkbbearings.com  
VAT No. 682 866

Engineered in Switzerland  
Technological Bearings



## AFFIDAVIT OF ORIGIN (Producer Certificate)



### Rolling Bearings

Herewith we declare under full liability that RKB T2 Segment (general antifriction bearings - mix series) and T3 Segment (technological bearings and assemblies for heavy engineering applications, including AOB) bearings are:

conceived, developed, engineered, designed, fine-tuned and controlled/inspected in RKB Swiss Executive Headquarters:

RKB Europe SA Company Limited by Shares and traded OTC Registration Number: CH-501.3.007.617-8 Vat Number: 682 866	RKB Group Headquarters Balerna - Switzerland
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and manufactured/machined in the following owned, controlled and certified production facilities:

RKB T3 PLANT International Equity Joint Venture Protocol Number: 0286380 Enterprise Number: 2102015058	RKB Technological Bearings Co., Ltd. Dalian - PRC
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RKB LN PLANT International Equity Joint Venture Protocol Number: 0261424 Enterprise Number: 2102014441	Dalian RKB Bearings Co., Ltd. Dalian - PRC
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According to the criterion of the last substantial transformation (Community Customs Code art. 22-26 CEE No. 2913 dtd 12/10/1992), RKB rolling bearings are of non-preferential origin (PRC), since fine-grinding operations are performed in RKB T3 Plant or RKB LN Plant.

R&D activities are performed in RKB Executive Headquarters in Switzerland and, worldwide, in collaboration with scientific institutions and academic centers.

Balerna, April 2010

RKB Europe SA  
Executive Headquarters and Technological Center

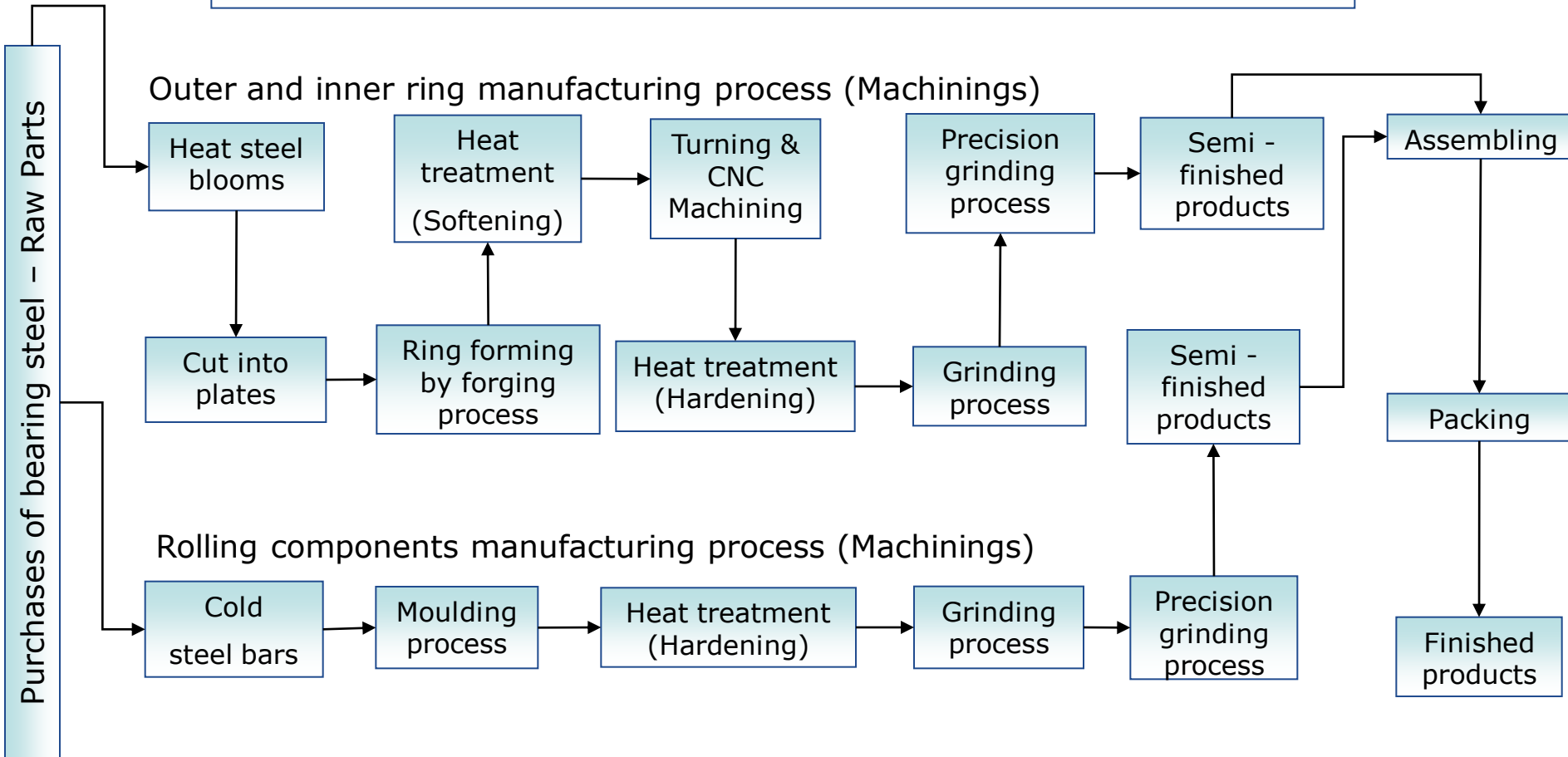
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# The Structure

## RKB BASIC MACHININGS FLOW CHART



# Highlights

## THE LATEST TECHNOLOGY

- Leading-edge R&D and Engineering supported by advanced calculation and simulation tools for continuous improvement of inner design and geometry of bearing parts
- Fully equipped metrological and chemical laboratories for comprehensive bearing analysis
- Top quality hardened bearing steel with cleanliness specifications up to Grade A as per Standards specs ASTM E3 and E45 (JX80X Series Protocol and RD1-800 Series Protocol)
- Special bearing steel grade Type.RA or Type.RAV for premium reliability in critical severe applications (equivalent to Grade 6 and Grade 7)
- Manufacturing finishing up to roughness value  $R_a = 0,2$  (latest generation CNC super-finishing grinders)
- 'Tough-rollers' manufacturing technology\*
- Anti-wear surface treatment technology for rings and/or rollers (AWT)
- Phosphate treatment technology (PT)
- Special heat treatment technology for rings stabilization up to S4
- Advanced hardening treatment technology (including bainite HB)

\*dia. min. 30/40 mm

# Outlook





# Outlook



# Outlook





# Outlook



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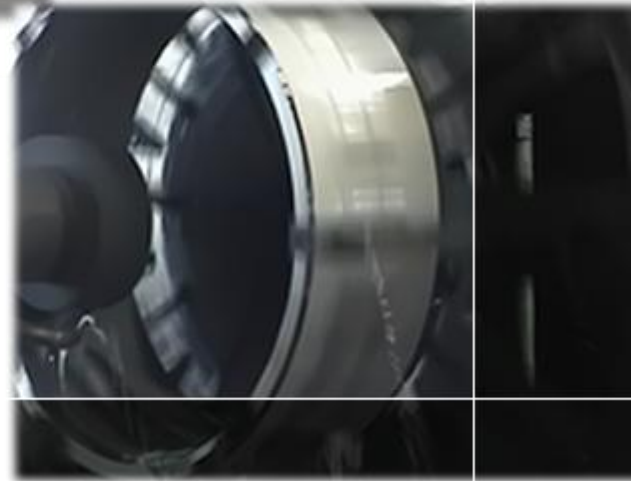


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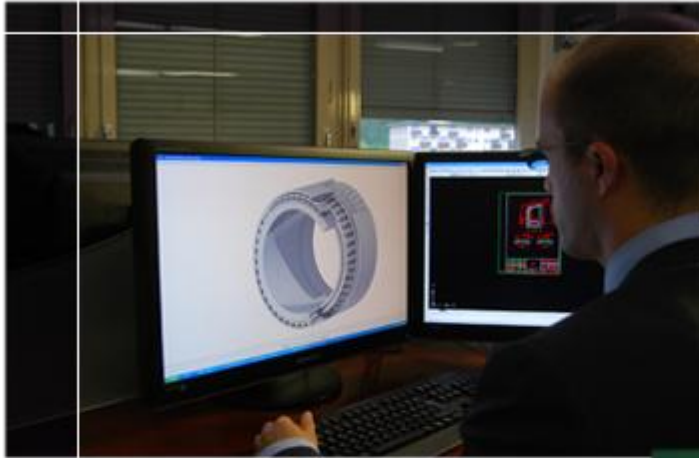




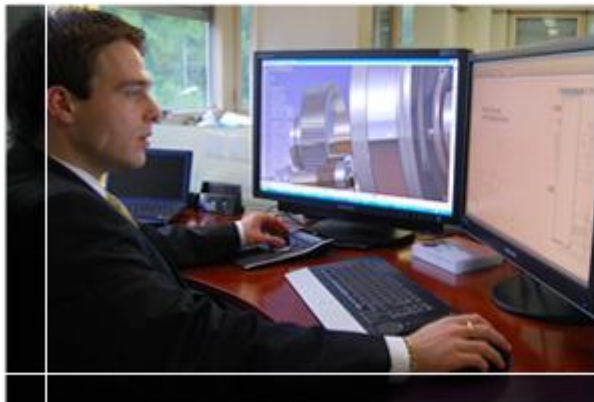
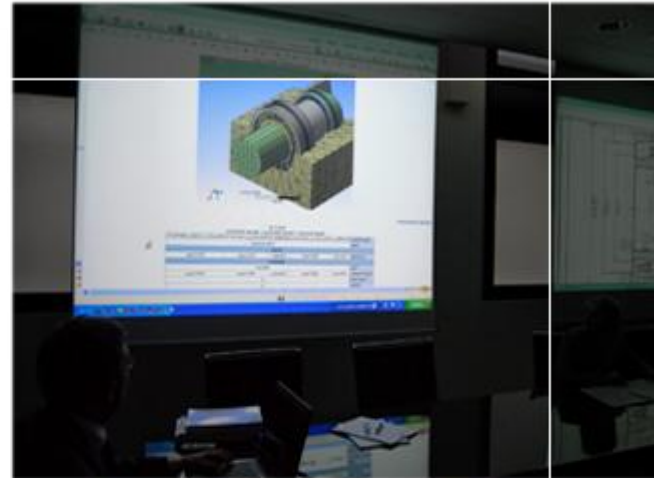
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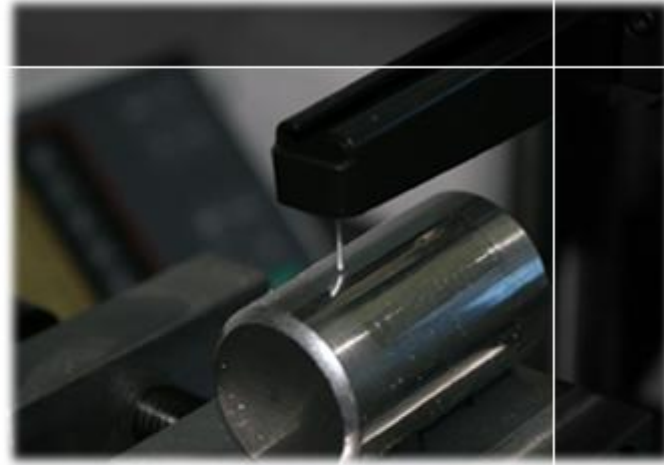


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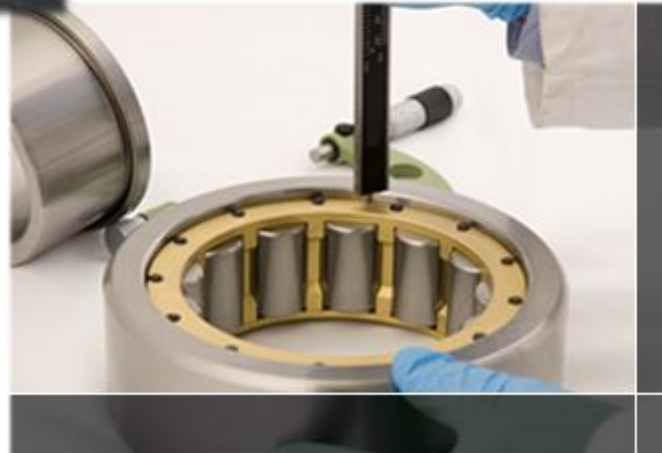
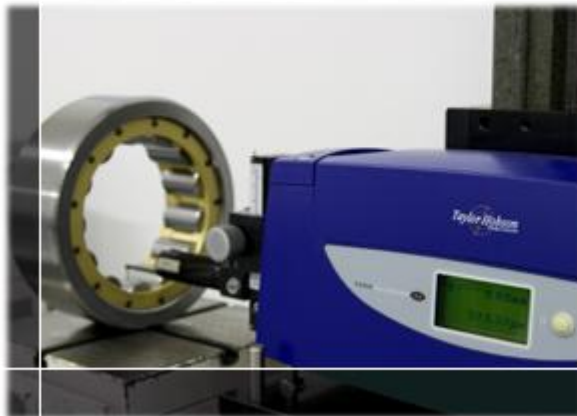
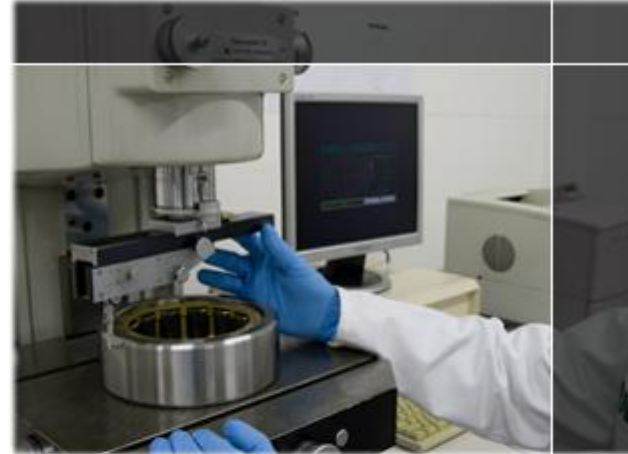


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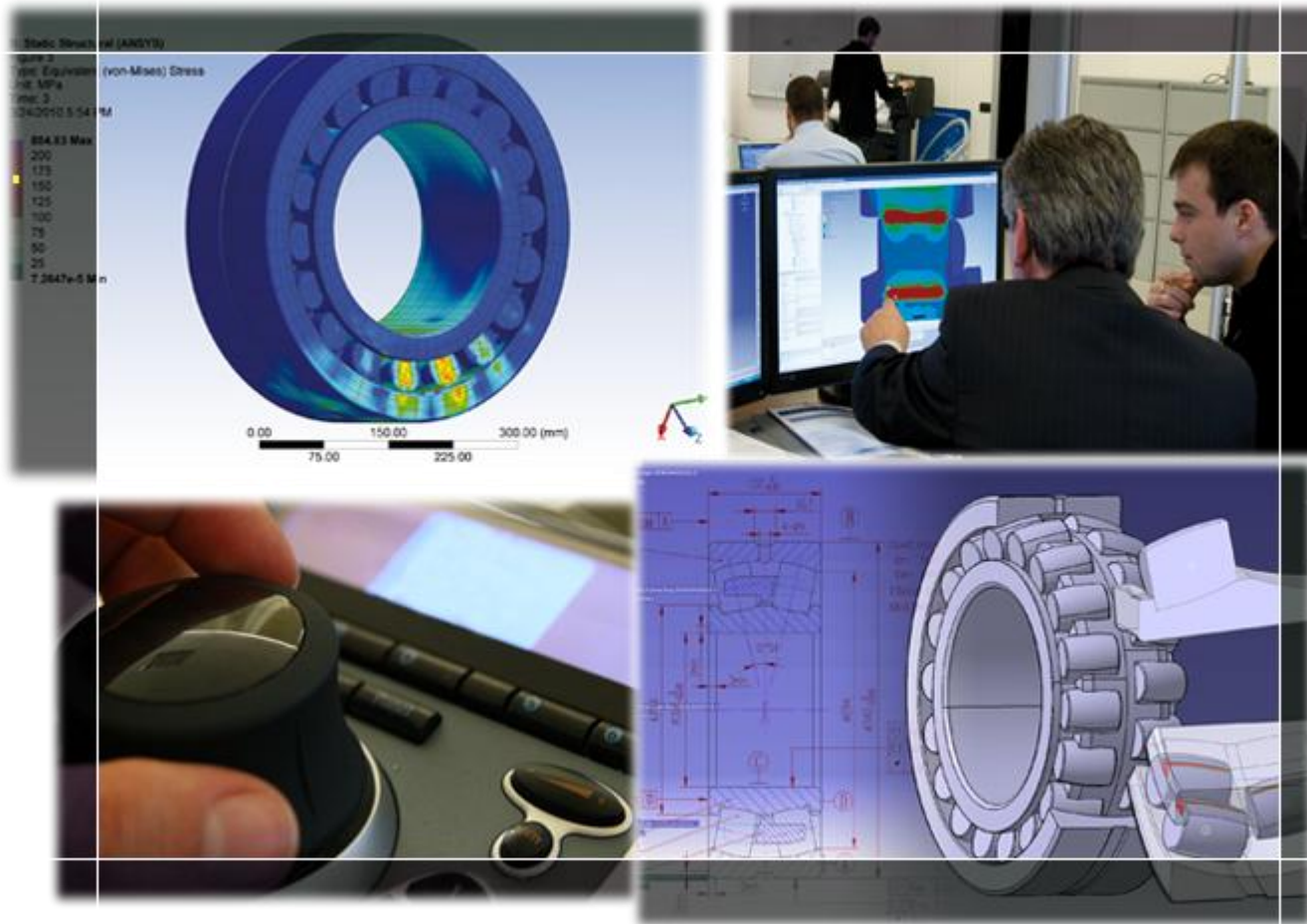
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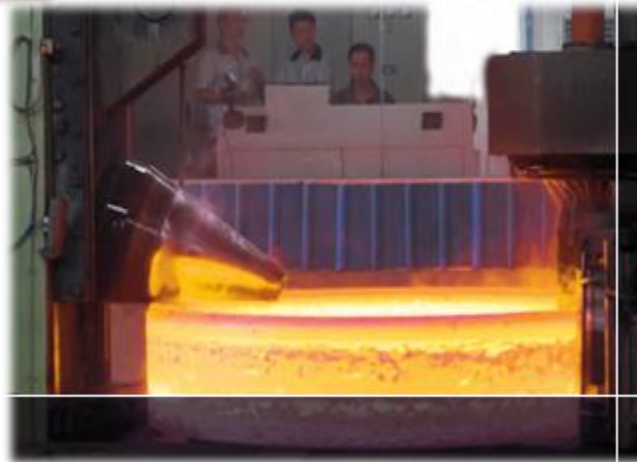


# Outlook





# Outlook



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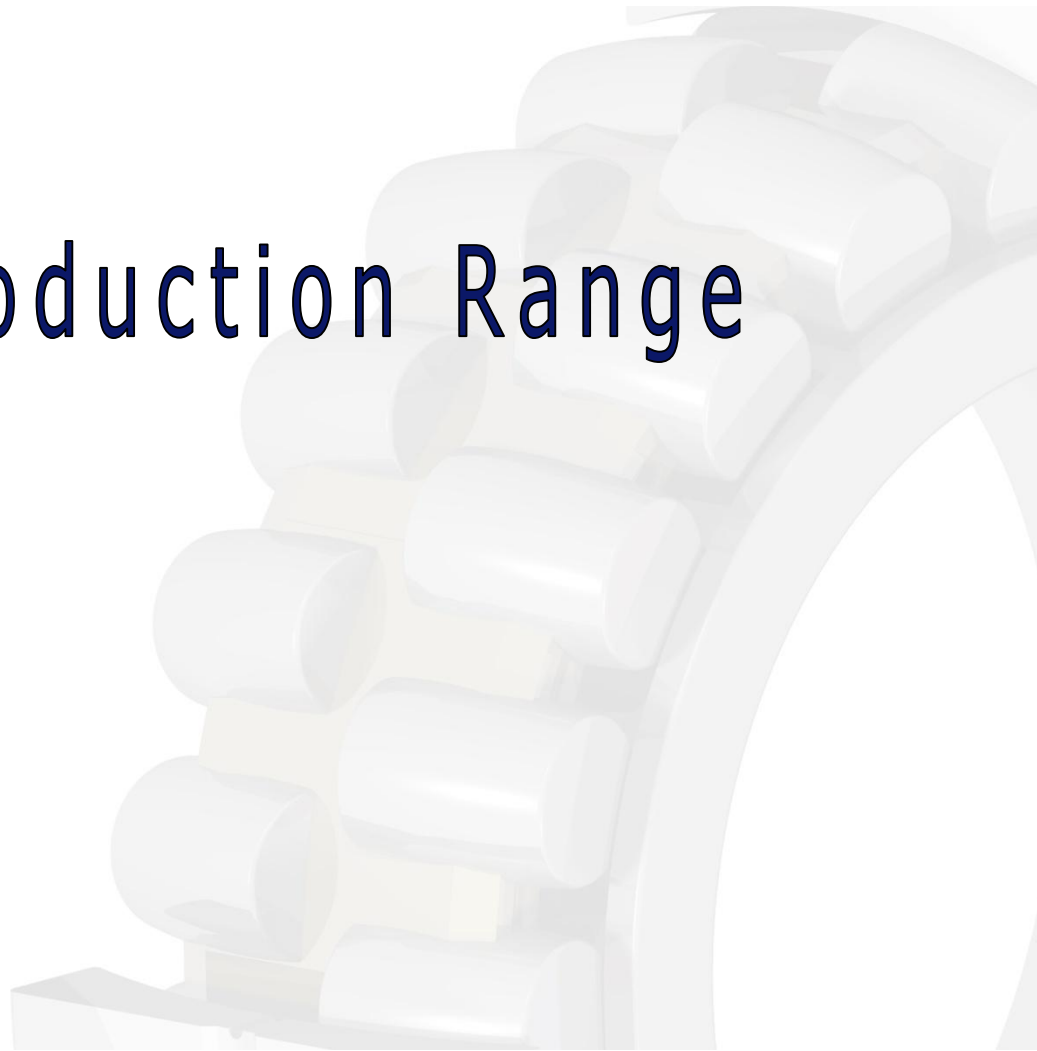
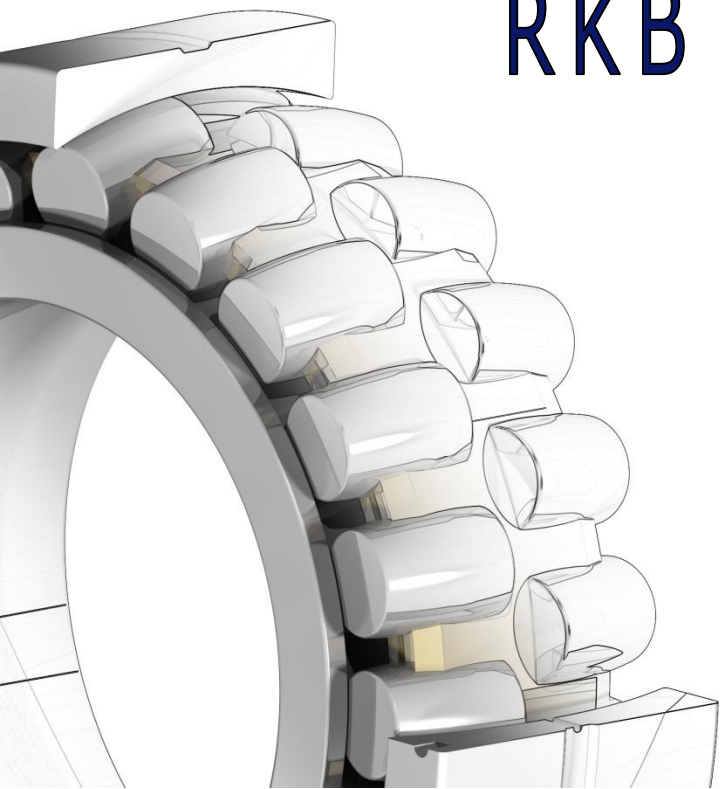




# Outlook



# RKB Production Range





# The Segmentation

RKB segments its own production, focusing mainly on three specific areas of the industrial bearings:

- T1 – Miniature and small size high precision bearings
- T2 – General antifriction bearings (mix series)
- T3 – Bearings and assemblies for heavy engineering applications (including AOB/Tailored)

This concentration and specialization of resources permits to respond to the market requirements in an efficient and effective way

# RKB Production Range



1. Deep groove ball bearings

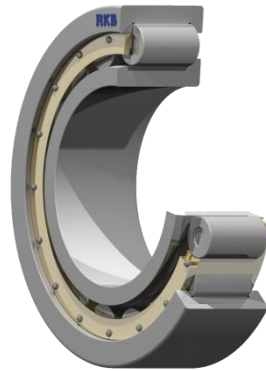


2. Single angular contact ball bearings

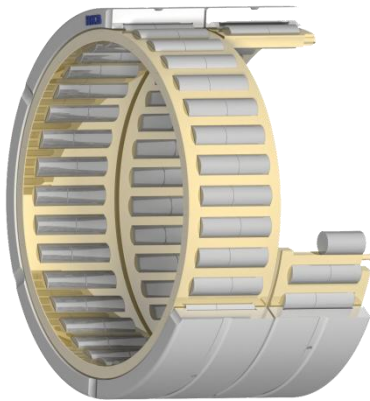


3. Double row angular contact ball bearings

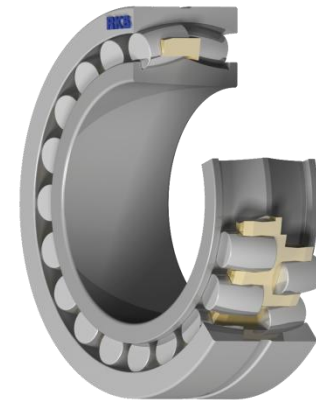
# RKB Production Range



4. Cylindrical roller bearings



5. Multi row cylindrical roller bearings



6. Spherical roller bearings

# RKB Production Range



7. Single row taper roller bearings and matched paired sets



8. Double row taper roller bearings



9. Four row taper roller bearings

# RKB Production Range



10. Thrust ball and roller bearings



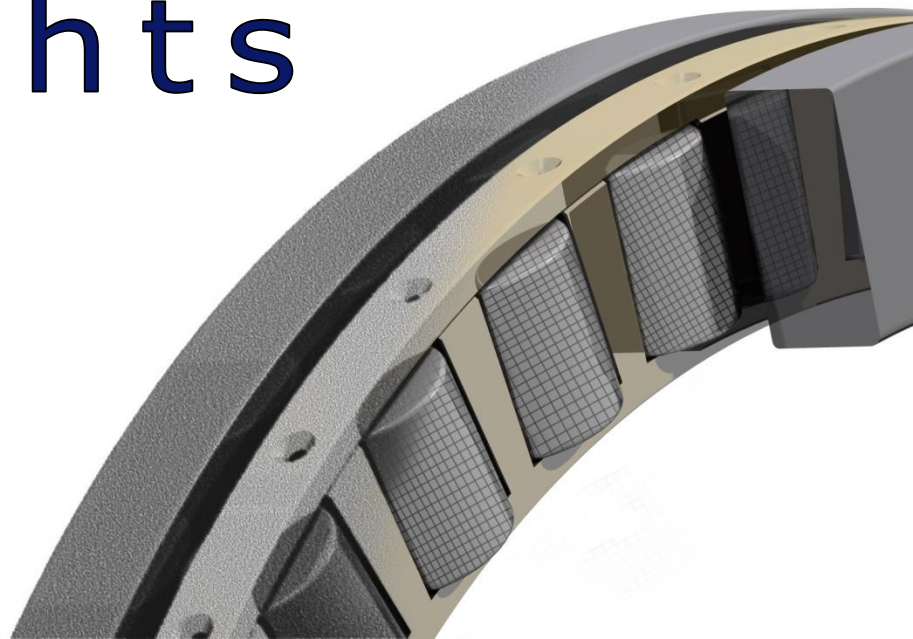
11. Spherical roller thrust bearings



12. Taper roller thrust bearings



# Highlights



# Highlights

## THE BLENDING OF RKB'S OVERALL CAPABILITIES

1. Technological bearings premium-class for heavy engineering applications
2. Wealth of experience, expertise, know-how and technology accumulated in the most challenging applications
3. Capital intensive strategic stock with a comprehensive product range for a full-scale global network
4. Leading time-to-market

# Highlights

## STRENGTHS

1. Engineered bearings for heavy applications
2. Reliable customized value added cost-effective solutions
3. Corporate consistency
4. Technical and product know-how
5. Experience in western advanced markets
6. Flexibility with a vertically integrated system
7. Service, expertise and best practices
8. Active strategic stock management
9. R&D
10. Reference and track-record
11. Strong intellectual property protection activity

# F o c u s

At RKB we are aware that our consistency is at the base of our bearings reliability, and that our bearings reliability becomes a crucial part of our customers' reputation.





# **RKB**

**BEARING INDUSTRIES**

*The Alternative Power*

**RKB EUROPE SA**

**RKB LN PLANT - RKB T3 PLANT - RKB MS PLANT**

**RKB SA**

**RKB EUROPE LOGISTICS WAREHOUSE**

**AKIYAMA GROUP**

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