



**KINEX BEARINGS**  
Bearings for Industrial Applications





## ABOUT US

115+ Years of Experience

### Brief Introduction

#### Reliable Partner in Creation of New Motion Solutions

KINEX BEARINGS belongs with its portfolio among important global suppliers of standard and special rolling bearings as well as engineering components aimed for beddings in various industrial applications. The main task and goal is to ensure supplies of complete bearings assortment manufactured in individual plants, to develop cooperation with customers and to provide them services in accordance with their requirements.

In order to achieve maximum customer satisfaction and a flexible response to market requirements, KINEX BEARINGS integrates research and development, planning, production and comprehensive sales and after-sales service.

The required product properties are supported by our own R&D department, testing and material laboratory. We are also experienced in non-destructive quality control of individual parts in the production process.



### Quality

The focus on clients, with the aim of fulfilling their requirements and expectations, is one of the basic foundations of the company's strategy. The implementation of a certified quality management system in all the KINEX BEARINGS companies is an efficient tool for the correct identification of requirements and expectations from clients as well as for monitoring and increasing their satisfaction.

#### Quality Certificates

- > AS 9100
- > ISO 9001
- > ISO 14001
- > ISO 45001
- > ISO 50001
- > IATF 16949
- > ISO/TS 22163:2017
- > Nadcap AC7102
- > TSI
- > EN 1090-1
- > EN 1090-2



### From Ideas, Through Innovations, to Perfection ...

- > World's No.1 supplier of special bearings for textile industry
- > European leader in cylindrical roller bearings for railway vehicles
- > One of the world's suppliers of special bearings for water pumps for automotive
- > Stable partner for customers all around the world
- > Manufacturer of high precision engineering components for various industrial sectors

### Historical Milestones

- 1906 > **KINEX, a.s.**  
foundation of the plant in Bytca, beginning of the engineering production „Povazsky zelezopriemysel“
- 1948 > **KINEX- KLF, a.s.**  
foundation of the plant in Kysucke Nove Mesto
- 1950 > **Production of balls and ball bearings**  
the first produced bearing in Slovakia was 6204 type
- 1953 > **Production of rollers and cylindrical roller bearings**  
single-row cylindrical roller bearings
- 1959 > **Production of railway bearings**  
single-row cylindrical roller bearings for railway vehicles
- 1964 > **Production of aerospace bearings**  
for various aerospace industry applications
- 1968 > **Production of textile industry bearings**  
special double-row ball bearings
- 1978 > **Production of water pump bearings**  
special double-row bearings
- 1987 > **Production of bottom bracket bearings**  
special double-row bearings
- 2005 > **KINEX BEARINGS, a.s.**  
foundation of a trading company
- 2009 > **New aerospace bearings production area**  
realized in Bytca plant
- 2013 > **KINEX Trading (Shanghai) Co., Ltd**  
foundation of a subsidiary in China
- 2016 > **Merger of companies**  
KINEX BEARINGS, a.s., KINEX - KLF, a.s. and KINEX, a.s. merge into KINEX BEARINGS, a.s.
- 2016 > **Production of engineering components**  
foundation of Machinery division
- 2020 > **CK Birla Group**  
KINEX BEARINGS enters international industrial group

### Headquarters and Production Plants



#### Slovakia, Bytča (HQ)

Total land area: 86 336 m<sup>2</sup>  
Production area: 41 659 m<sup>2</sup>  
Established from: 1906



#### Slovakia, Kysucké Nové Mesto

Total land area: 97 713 m<sup>2</sup>  
Production area: 63 571 m<sup>2</sup>  
Established from: 1948



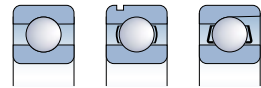


# ASSORTMENT OF STANDARD ROLLER BEARINGS

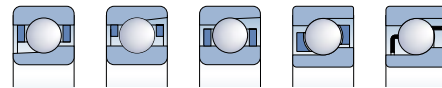
Bearings for Industrial Applications



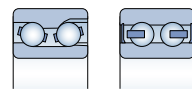
Single Row Deep Groove Ball Bearings



Single Row Angular Contact Ball Bearings



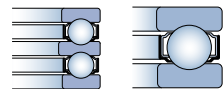
Double Row Angular Contact Ball Bearings



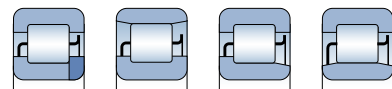
Double Row Self-Aligning Ball Bearings



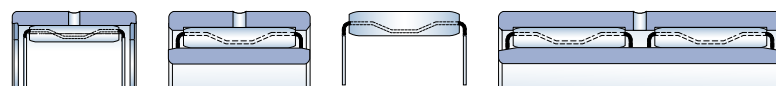
Thrust Ball Bearings



Single Row Cylindrical Roller Bearings



Needle Roller Bearings

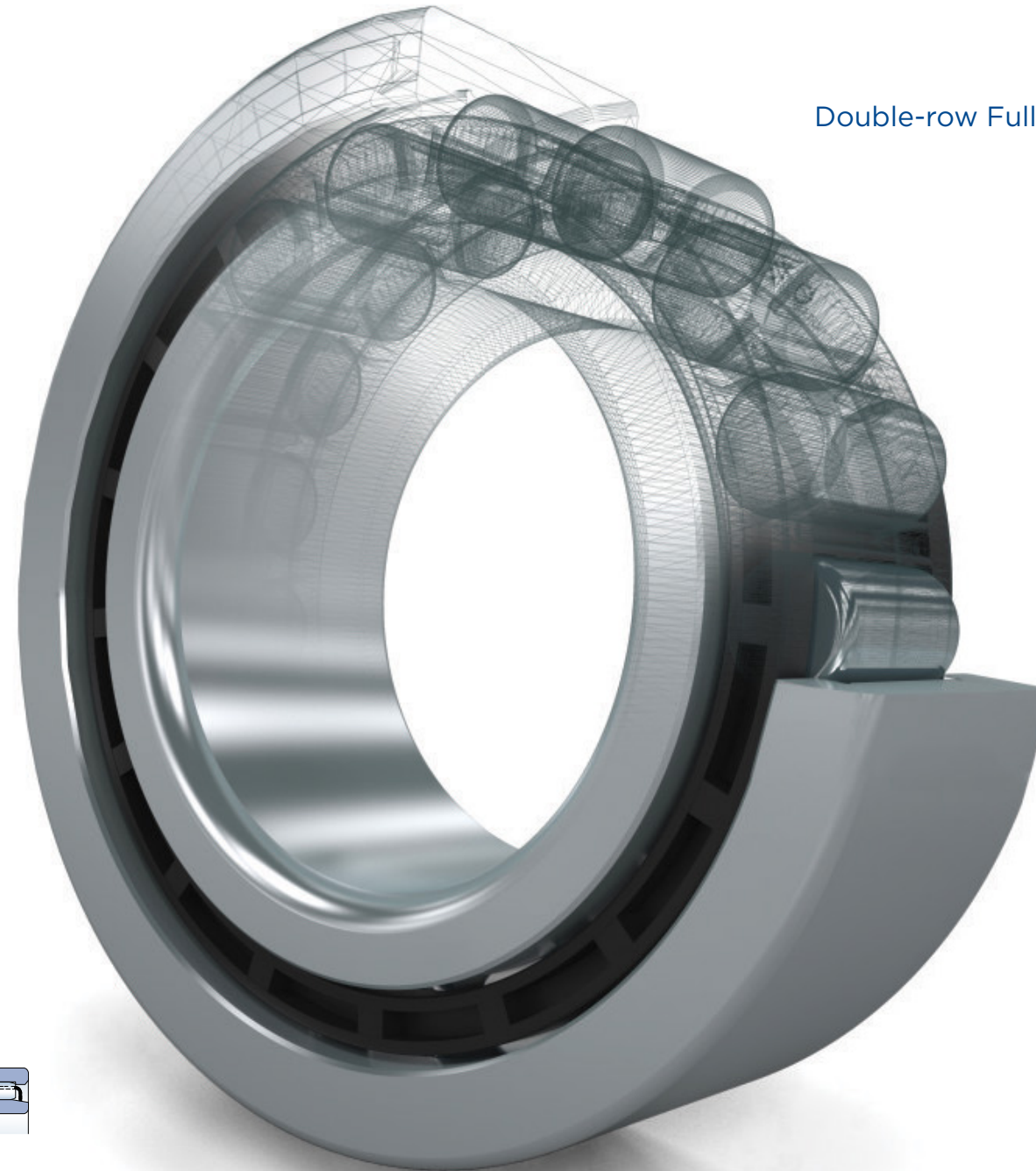


Single Row Tapered Roller Bearings

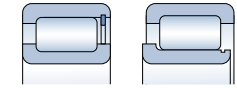


## > Benefits of KINEX BEARINGS

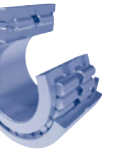
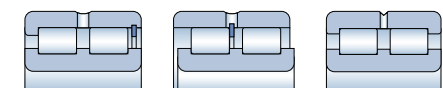
- technical parameters going beyond standards
- new performance dimension in industrial applications
- extension of operating life
- special solution made to meet the customer requirements



Single-row Full-complement Cylindrical Roller Bearings



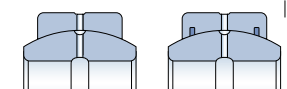
Double-row Full-complement Cylindrical Roller Bearings



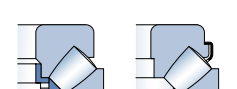
Double - Row Spherical Roller Bearings



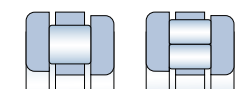
Spherical Plain Radial Bearings



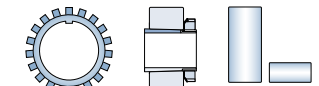
Spherical roller thrust bearings



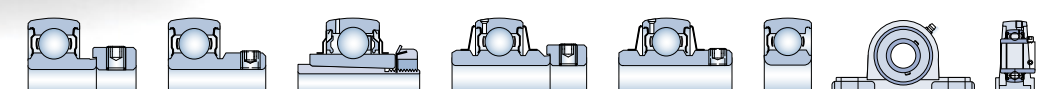
Cylindrical Roller Thrust Bearings



Accessories



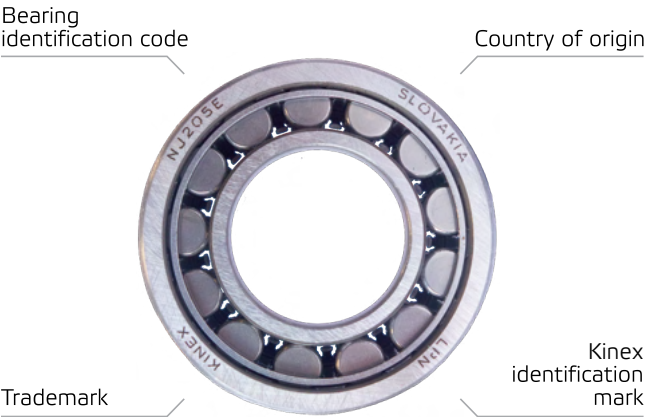
Insert Bearings and Housed units



> Calculations and tests proved longer usability and durability of KINEX bearings, improved safety and lower maintenance costs.

# VARIANTS AND BEARINGS DESIGNATION

## Bearings for Industrial Applications



### Prefixes Material Different from Standard Bearing Steel (1)

- X** corrosion resisiting steel, e.g. X 623
- T** case hardened steel, e.g. T 32240

### Shields or Seals (9)

- RS** seal on one side, e.g. 6304RS
- 2RS** seals on both sides, e.g. 6204-2RS
- RSN** seal on one side and snap ring groove in outer ring opposite to seal side, e.g. 6306RSN
- RSNB** seal on one side and snap ring groove in outer ring on the same side as seal, e.g. 6210RSNB
- 2RSN** seals on both sides and snap ring groove in outer ring, e.g. 6310-2RSN
- RSR** seal on one side adhering to flat surface of inner ring, e.g. 624RSR
- 2RSR** seals on both sides adhering to flat surface of inner ring, e.g. 608-2RSR
- Z** metal shield on one side, e.g. 6206Z
- ZZ** metal shields on both sides, e.g. 6304-ZZ
- ZN** metal shield on one side and snap ring groove in outer ring opposite to metal shield, e.g. 6208ZN
- ZNB** metal shield on one side and snap ring groove in outer ring on the same side as shield, e.g. 6306ZNB
- ZZN** metal shields on both sides and snap ring groove in outer ring, e.g. 6208-ZZN
- ZR** metal shield on one side adhering to flat surface of inner ring, e.g. 608ZR
- ZZR** metal shields on both sides adhering to flat surface of inner ring, e.g. 608-ZZR

### Bearing Ring Design Variation (10)

- K** tapered bore, taper 1:12, e.g. 6207K
- K30** tapered bore, taper 1:30, e.g. 24064K30M
- N** snap ring groove in outer ring, e.g. 6308N
- NR** snap ring groove in outer ring and inserted snap ring, e.g. 6310NR
- NX** snap ring groove in outer ring whose boundary dimensions do not correspond to ISO 464, e.g. 6210NX
- D** split inner ring, e.g. 3309D
- W33** groove and lubrication holes in bearing outer ring surface, e.g. 23148W33M
- O** lubrication grooves in bearing outer ring, e.g. NU1014O

### Cages (11)

Cage material for bearings in basic design is not usually indicated.

- J** pressed steel cage, rolling element centred, e.g. 6034J
- Y** pressed brass cage, rolling elements centred, e.g. 6001Y
- F** machined steel cage, rolling elements centred, e.g.6418F
- L** machined light metal cage, rolling elemnents centred, e.g. NG180L C3S0
- M** machined brass or bronze cage, rolling elements centred, e.g. NU330M
- T** machined cage made of textite, rolling elements centred, e.g. 6005T
- TN** machined cage made of polyamide or similar plastic, rolling elements centred, e.g. 6207TN
- TNG** machined cage made of polyamide or similar plastic with glass fibres, rolling elements centred, e.g. 2305TNG

Cage design (introduced symbols are always used in connection with cage material symbols).

- A** cage centred on outer ring, e.g. NU226MA
- B** cage centred on inner ring, e.g. 6210TB
- P** machined window-type cage, e.g. NU1060MAP
- H** one-piece open-type cage, e.g. 6209TNH
- S** cage with lubrication grooves, e.g. NJ418MAS
- V** bearing without cage, full rolling element number, e.g. NU209V

### Tolerance Class (12)

- P0** standard tolerance class (not indicated), e.g. 6204
- P6** higher tolerance class than standard, e.g. 6322 P6
- P5** higher tolerance class than P6, e.g. 6201 P5
- P5A** in some parameters higher tolerance class than P5, e.g. 6006TB P5A
- P4** higher tolerance class than P5, e.g. 6207 P4
- P4A** in some parameters higher tolerance class than P4, e.g. 6007 P4A
- P2** higher tolerance class than P4, e.g. 6306 P2
- P6E** higher tolerance class for rotating electric machines, e.g. 6204 P6E

### Clearances (13)

- C2** clearance less than normal, e.g. 608 C2 normal clearance (not indicated), e.g. 6204
- C3** clearance greater than normal, e.g. 6310 C3
- C4** clearance greater than C3, e.g. NU320M C4
- C5** clearance greater than C4, e.g. 22330M C5
- NA** radial clearance for bearings with non-interchangeable rings (always after radial clearance symbol), e.g. NU215 P63NA
- R...** radial clearance in non-standardized range (range in mm), e.g. 6210A R10-20
- A...** axial clearance in non-standardized range (range in mm), e.g. 3210 A20-30

### Vibration Level (14)

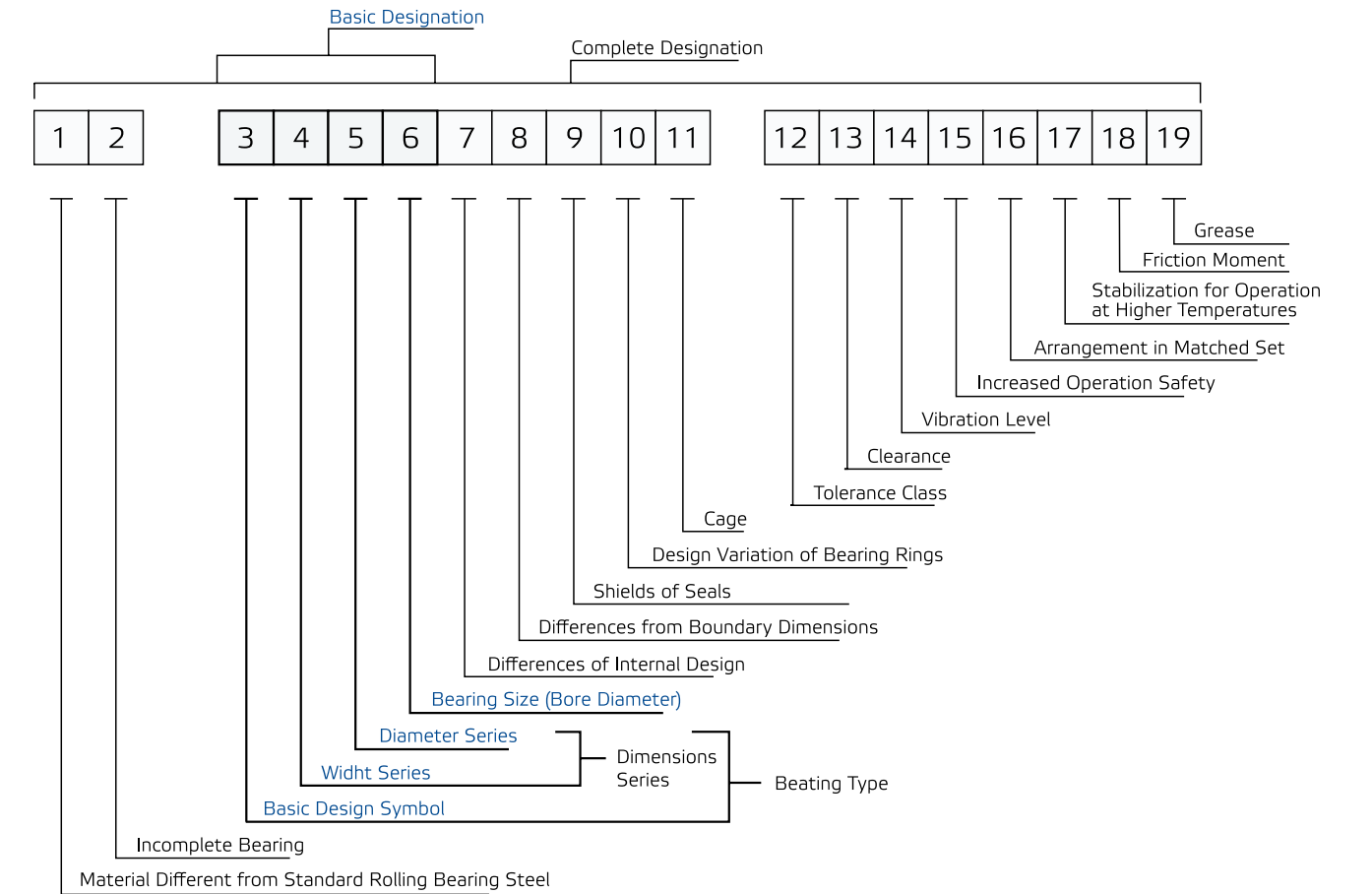
- C6** reduced vibration level lower than normal (not indicated) e.g. 6304 C6
- C06** reduced vibration level lower than C6, e.g. 6205 C06
- C66** reduced vibration level lower than C06, e.g. 6205 C66

Concrete C06 and C66 values are determined after negotiations between customer and supplier.  
Note: Bearings in tolerance class P5 and higher have vibration level C6

### Stabilization for Operation at Higher Temperature (17)

- Both rings have stabilized dimensions for operation at higher temperature
- S0** for operating temperature up to up to 150°C
  - S1** up to 200°C
  - S2** up to 250°C
  - S3** up to 300°C
  - S4** up to 350°C
  - S5** up to 400°C

Designation example - NG160 LB C4S3.





# SERVING INDUSTRIES

Bearings for Industrial Applications



## Bearings for Agriculture Industry

### Enhancing Performance and Durability in the Field

Agricultural machinery is constantly subjected to tough working conditions, including exposure to dirt, moisture, heavy loads, and vibrations. Bearings are vital components that help ensure the smooth operation and longevity of this equipment. Choosing the right bearing for each application not only enhances performance but also reduces maintenance and downtime.



> Double-Row Spherical Roller Bearings

Applications: Tractors, Harvesters, Balers.

Spherical roller bearings are designed to handle both radial and axial loads, making them perfect for agricultural equipment like tractors, harvesters, and balers.



> Single Row Tapered Roller Bearings

Applications: Seed Drills, Ploughs, Combine Harvesters, Trolly.

Tapered roller bearings are ideal for handling combined radial and axial loads, which are common in agricultural machinery like seed drills, ploughs, and combine harvesters.



> Single Row Deep Groove Ball Bearings

Applications: Trailers, Sprayers, Pumps, Chaff Cutter.

Deep groove ball bearings are highly versatile and can support both radial and axial loads, making them a popular choice for agricultural trailers, sprayers, and pumps.



> Needle Roller Bearings

Applications: Balers, Mowers, Hay Rakes.

These bearings offer excellent durability and are resistant to wear, making them ideal for high-frequency applications where consistent performance is critical.



> Double Row Self-Aligning Ball Bearings

Applications: Conveyors, Grain Handling Equipment, Elevators.

Self-aligning ball bearings are designed to correct shaft misalignment, making them ideal for conveyors and grain handling equipment.



> Housed units

Applications: Augers, Fans, Silos.

These bearings are commonly used in augers, fans, and silo equipment, where they support rotating shafts, help reduce friction and providing long-term reliability.

## Bearings for Power Industry

### Ensuring Efficiency, Reliability, and Performance

In the power generation industry, reliability and efficiency are critical. Bearings are essential components that support rotating machinery, reduce friction, and ensure smooth operation across various equipment. Selecting the right type of bearing for each application is key to maximizing performance and reducing downtime.



> Double-Row Spherical Roller Bearings

Applications: Steam Turbines, Wind Turbines, Gearboxes.

In steam and wind turbines, these bearings help support rotating shafts subjected to high loads, ensuring smooth, reliable operation under harsh conditions.



> Single Row Cylindrical Roller Bearings

Applications: Electric Motors, Generators, Compressors.

Bearings are commonly used in electric motors and generators within power plants, as they can operate at high speeds while providing the necessary durability and performance.



> Single Row Tapered Roller Bearings

Applications: Coal Pulverizers, Hydraulic Turbines, Pumps.

In coal pulverizers and hydraulic turbines, these bearings provide the strength needed to endure significant forces and vibrations.



> Single and Double Row Angular Contact Ball Bearings

Applications: Gas Turbines, Steam Turbines, Pumps.

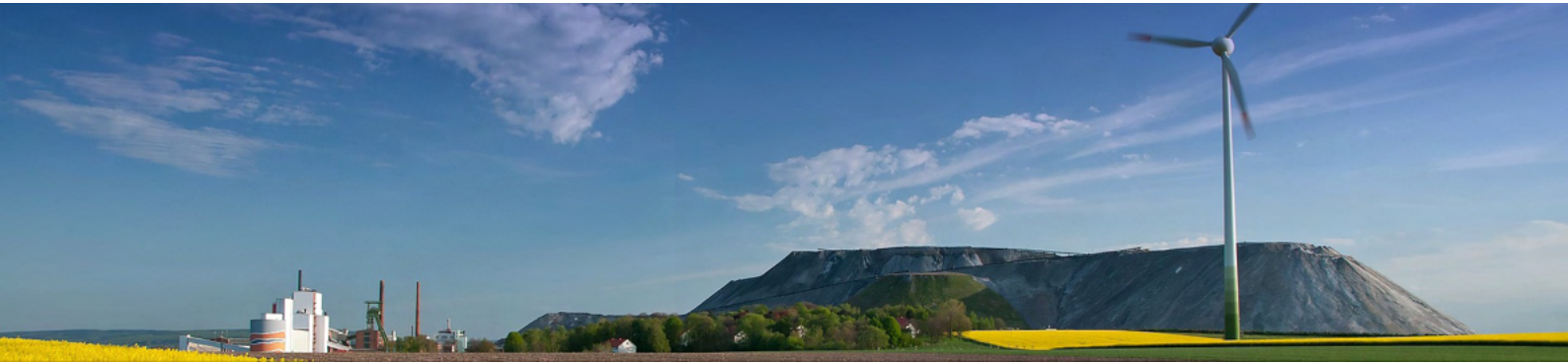
In gas and steam turbines, these bearings are essential for maintaining precise alignment and smooth rotation of the shafts.



> Spherical and Cylindrical Roller Thrust Bearings

Applications: Hydroelectric Generators, Turbines, Vertical Shafts.

Thrust bearings are specifically designed to support axial loads, which makes them ideal for vertical applications.







## Bearings for Mining Industry

### Reliability and Durability in Tough Environments

Mining is one of the most demanding industries, where heavy machinery operates in extreme conditions, facing high loads, dirt, debris, and intense vibrations. Bearings play a critical role in ensuring the performance and longevity of equipment in this harsh environment. Choosing the right bearing for each application is crucial for maximizing uptime and efficiency.



➤ Double-Row Spherical Roller Bearings  
Applications: Crushers, Conveyors, Vibrating Screens.



➤ Single Row Cylindrical Roller Bearings  
Applications: Excavators, Drills, Pulverizers.



➤ Single Row Tapered Roller Bearings  
Applications: Conveyor Pulleys, Gearboxes, Trucks.



➤ Spherical and Cylindrical roller thrust bearings  
Applications: Draglines, Cranes, Hoists.



➤ Needle Roller Bearings  
Applications: Rock Crushers, Mining Shovels, Compact Equipment.



➤ Single Row Deep Groove Ball Bearings  
Applications: Conveyors, Pumps, Motors.



## Bearings for Marine Industry

### Engineered Solutions for Marine Durability and Performance

The marine industry faces some of the most challenging conditions, including exposure to saltwater, heavy loads, high speeds, and severe contamination risks. Bearings used in this industry must withstand these harsh environments while providing reliable performance and durability. Here's an overview of the most commonly used bearings and their specific applications.



➤ Double-Row Spherical Roller Bearings  
Applications: Propulsion Systems, Marine Engines.



➤ Single Row Cylindrical Roller Bearings  
Applications: Pumps, Electro motors, Deck Machinery.



➤ Single Row Tapered Roller Bearings  
Applications: Winches, Gearboxes.



➤ Spherical and Cylindrical Roller Thrust Bearings  
Applications: Vertical Propulsion Shafts, Azimuth Thrusters, Winches and Hoists.



➤ Single Row Deep Groove Ball Bearings  
Applications: Small Electric Motors, Water Jets, Navigation Systems.

## Bearings for Construction Industry

### Durability and Strength to Power Heavy-Duty Machinery

The construction industry demands robust and reliable equipment that can endure harsh environments, heavy loads, and continuous operation. Bearings are critical components in construction machinery, helping to support moving parts, reduce friction, and extend the life of equipment. Using the right bearings is essential for ensuring high performance and minimizing downtime.



➤ Double-Row Spherical Roller Bearings  
Applications: Excavators, Cranes, Wheel Loaders.



➤ Single Row Cylindrical Roller Bearings  
Applications: Concrete Mixers, Conveyor Belts.



➤ Single Row Deep Groove Ball Bearings  
Applications: Electric Motors, Pumps, Fans.



➤ Spherical and Cylindrical Roller Thrust Bearings  
Applications: Excavator Swivels, Tower Cranes, Heavy Lifting Equipment.



➤ Needle Roller Bearings  
Applications: Hydraulic Cylinders, Scissor Lifts, Mobile Cranes.



➤ Single Row Tapered Roller Bearings  
Applications: Dump Trucks, Bulldozers, Gearboxes.

## Bearings for Recycling Industry

### High-Performance Bearings for Reliable Operation in Demanding Conditions

The recycling industry requires robust and durable equipment that can handle continuous operation in abrasive, high-vibration environments. Bearings used in recycling applications need to withstand heavy loads, contamination, and impacts to ensure optimal machine efficiency and longevity. Here's an overview of the most commonly used bearings in recycling applications.



➤ Double-Row Spherical Roller Bearings  
Applications: Shredders, Sorting Equipment, Crushers.



➤ Single Row Tapered Roller Bearings  
Applications: Bale Presses, Pulverizers, Gearboxes.



➤ Single Row Deep Groove Ball Bearings  
Applications: Vibrating Screens, Feeder Systems.



➤ Spherical and Cylindrical Roller Thrust Bearings  
Applications: Conveyor Drum Pulleys, Vertical Shafts in Shredders, Compactors.



➤ Single Row Cylindrical Roller Bearings  
Applications: Sorting Conveyors, Magnetic Separators, Large Motors and Generators.





## Bearings for Chemical Industry

### Precision, Durability, and Resistance for Critical Operations

The chemical industry operates under harsh conditions, where machinery is often exposed to high temperatures, corrosive substances, heavy loads, and continuous operation. Bearings play a crucial role in ensuring the reliability and efficiency of pumps, compressors, mixers, and other equipment used in chemical processing.



> Double-Row Spherical Roller Bearings  
Applications: Mixing Tanks, Conveyors, Centrifuges.



> Single Row Cylindrical Roller Bearings  
Applications: Reactors, Heat Exchangers, Fans.



> Single Row Tapered Roller Bearings  
Applications: Pumps, Extruders, Gearboxes.



> Spherical and Cylindrical Roller Thrust Bearings  
Applications: Agitators, Vertical Pumps, High-Pressure Compressors.



> Angular Contact Ball Bearings  
Applications: Centrifugal Pumps, Centrifuges, Processing Equipment.



## Bearings for Paper Industry

### Precision, Reliability, and Endurance for Continuous Operations

The paper industry relies on high-speed, high-load machinery that operates under demanding conditions, including moisture, heat, and heavy loads. Bearings are essential components that keep paper-making machines running smoothly and efficiently. Choosing the right bearing is crucial for minimizing downtime, reducing maintenance costs, and ensuring optimal performance.



> Double-Row Spherical Roller Bearings  
Applications: Press and Dryer Sections, Calenders.



> Single Row Cylindrical Roller Bearings  
Applications: Paper Rollers, Felt Rolls, Rewinders.



> Single Row Tapered Roller Bearings  
Applications: Conveyor Systems, Roll Stands.



> Spherical and Cylindrical Roller Thrust Bearings  
Applications: Press Rolls, Reel Spools, Cutting Machines.



> Single Row Deep Groove Ball Bearings  
Applications: Fans and Blowers, Pumps, Electric Motors.



> Double Row Self-Aligning Ball Bearings  
Applications: Dryer Rolls, Coater Machines, Paper Reelers.

## Bearings for Oil & Gas Industry

### Extreme Durability and Reliability in Challenging Conditions

The oil and gas industry operates in some of the most demanding environments, where equipment must withstand extreme temperatures, heavy loads, high pressures, and exposure to corrosive substances. Bearings play a critical role in ensuring the efficient and reliable operation of drilling rigs, pumps, compressors, and turbines.



> Double-Row Spherical Roller Bearings  
Applications: Drilling Equipment, Mud Pumps.



> Single Row Cylindrical Roller Bearings  
Applications: Compressors, Turbines, Pumps.



> Single Row Deep Groove Ball Bearings  
Applications: Electric Motors, Pumps, Centrifuges.



> Spherical and Cylindrical Roller Thrust Bearings  
Applications: Offshore Drilling Rigs, Downhole Tools, Mud Pumps.



> Needle Roller Bearings  
Applications: Valve Actuators, Subsea Equipment, Drill Bits.



> Single Row Tapered Roller Bearings  
Applications: Gearboxes, Pipelines, Blowout Preventers.

## Bearings for Steel Industry

### High Durability and Precision for Heavy-Duty Applications

The steel industry operates in some of the harshest environments, with equipment exposed to high temperatures, heavy loads, and continuous operation. Bearings are critical components that ensure smooth, reliable performance in various stages of steel production. Selecting the right bearing is essential to maintain productivity, minimize downtime, and reduce maintenance costs.



> Double-Row Spherical Roller Bearings  
Applications: Conveyors, Hot Rolling Mills.



> Single Row Cylindrical Roller Bearings  
Applications: Cold Rolling Mills, Gearboxes, Work Rolls.



> Single Row Deep Groove Ball Bearings  
Applications: Electric Motors, Blowers, Conveyors.



> Spherical and Cylindrical Roller Thrust Bearings  
Applications: Rolling Mills, Extrusion Presses, Vertical and Horizontal Axle Loads.



> Single Row Tapered Roller Bearings  
Applications: Steel Plant Gearboxes, Crane Hooks, Blast Furnace Fans.



> Needle Roller Bearings  
Applications: Shearing Machines, Presses, Rolling Guideways.



# INTERNAL PRODUCTION CAPABILITIES

Bearings for Industrial Applications



## Everything Under One Roof

### State of Art Production Facility

- › European Machineries
- › In Process Quality Control
- › Best Practices
- › Lean Manufacturing



### Research and Development

- › Concept
- › Lifetime Calculations
- › Simulations /ANSYS, MESYS/
- › Final Design



### Testing Laboratory

- › Durability testing according to FORD methodology
- › Testing according to customer methodology requirements
- › Salt chamber



### Quality Inspection

- › Dimensional checking
- › MPI - Magnetic Particle Inspection
- › TE - Temper Etch
- › UT - Ultrasonic testing
- › ET - Eddy Current Inspection



### Metallurgical and Metrology Laboratory

- › Microstructure
- › Chemical Composition
- › Microhardness
- › ZEISS length gauge
- › Hardness
- › TAILOR HOBSON Circular Gauges
- › TAILOR HOBSON Profilometers
- › Measuring Microscopes KEYENCE, ZEISS
- › 3D CMM ZEISS, HEXAGON
- › Calibration Laboratory



## Packaging

At KINEX BEARINGS, we understand that the journey of delivering high-quality bearings extends beyond production. That's why our packaging is designed to ensure that every bearing reaches you in perfect condition, ready for use.

### Key Features of KINEX Packaging

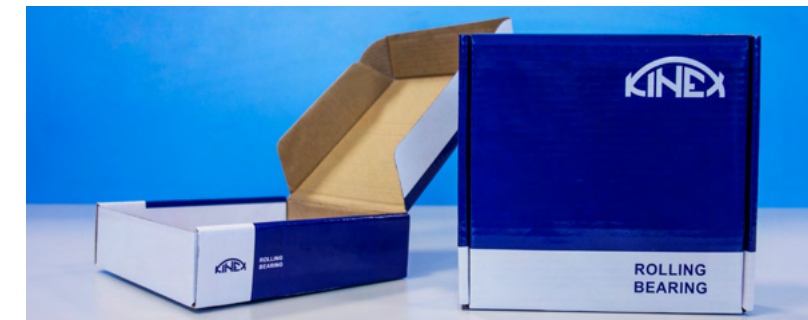
**Protection First:** Our packaging is engineered to provide superior protection against impact, moisture, and contamination, preserving the integrity and performance of each bearing.

**Durability & Safety:** Strong, reliable packaging materials safeguard our bearings during transport and storage, preventing damage from external factors like vibration or temperature changes and moisture.

**Clearly Labeled:** Every package is labeled with detailed product information, including bearing type, making identification quick and easy.

**Secure Sealing:** Each package is securely sealed to prevent contamination, ensuring your KINEX bearings arrive in optimal condition, ready for immediate application.

**Eco-Friendly Materials:** We are committed to sustainability and use environmentally friendly packaging materials wherever possible, ensuring minimal environmental impact.



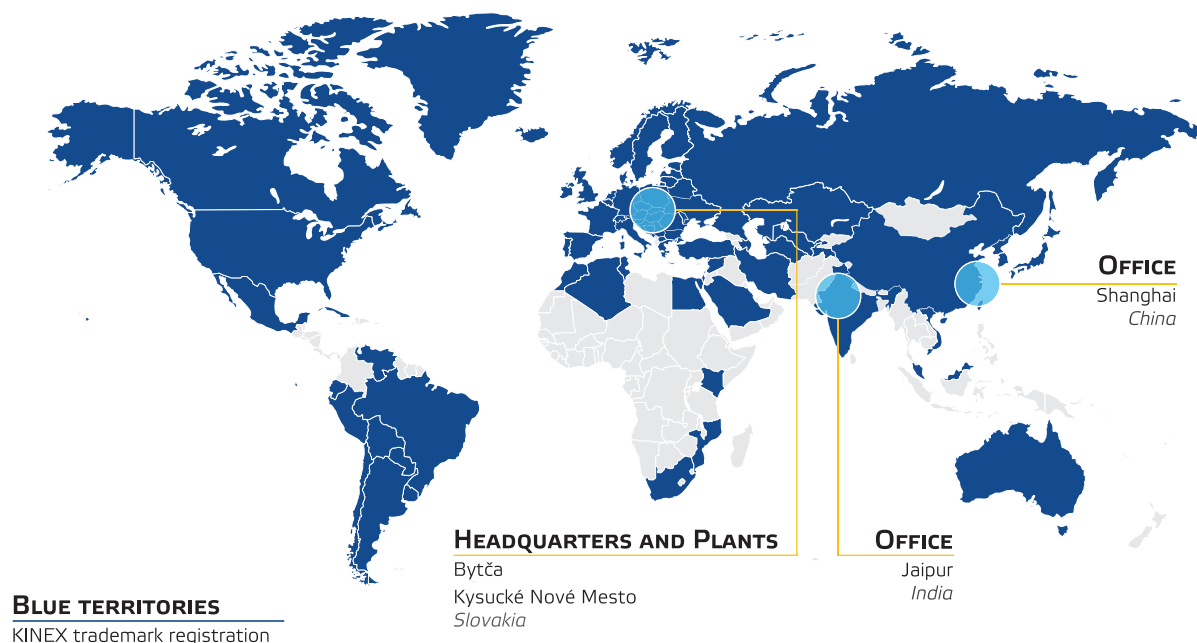
### › Precision Packaged for Any Industry

Our packaging solutions are tailored to meet the diverse needs of industries like automotive, railway, agriculture, mining, and more, ensuring the quality and reliability of our products are preserved every step of the way.





## YOUR PARTNER FOR INDUSTRY



### > Contact

KINEX BEARINGS, a.s.  
1.mája 71/36  
014 83 Bytča  
Slovakia  
+421 41 5556 620  
marketing@kinexbearings.sk  
www.kinex.sk

