



CKA Birla Group |



**Build a solid business
that grows
year after year!**



Bearing for oil and gas industry

WHO IS
NBC



Founded in 1946, NBC is India's first bearings manufacturer and the last word in quality and durability. In 2020, the company acquired leading European manufacturer, Kinex Bearings to further boost its expertise.

77 years since its beginning, NBC remains India's leading bearings manufacturer and exporter. NBC is also the world's only bearings manufacturer to receive the prestigious Deming Grand Prize for Total Quality Management.



1946 India's
first bearing
manufacturer



250+ million
bearings
manufacturing
capacity



3100+variants
of bearings
offered



5 manufacturing
locations



Leading
exporter



Happy customers
in 30+ countries



R&D and
Innovation
Centre



2800+People



Automotive



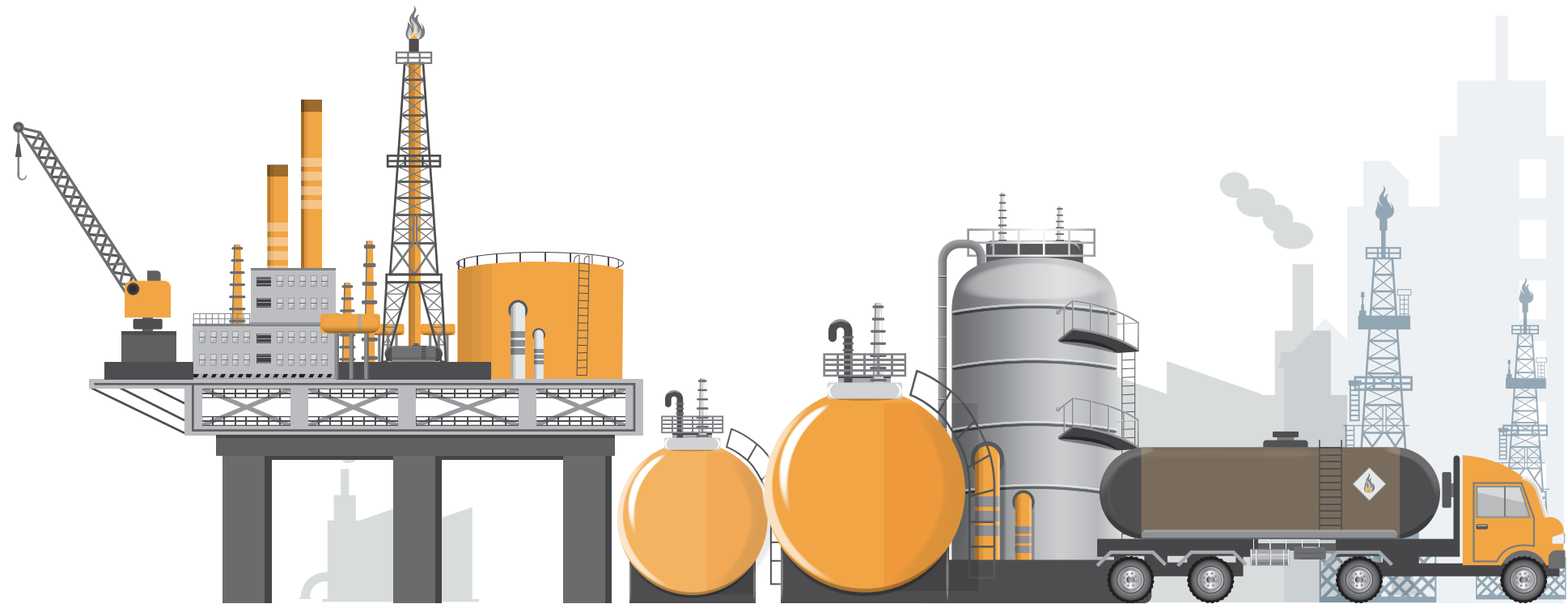
Industrial



Railway



Aerospace



**TAPERED
ROLLER
BEARING**

- Top Drive
- Rotary Table
- Mud Pump
- Swivel Drive

**TAPERED
ROLLER
BEARING
(TDO)**

- Traveling Block,
Crown Block, Sheaves
- Rotary Table
- Draw Work
- Mud Pump

**CYLINDRICAL
ROLLER
BEARING**

- Top Drive
- Rotary Table
- Draw Work
- Mud Pump
- Swivel Drive

**DEEP
GROOVE BALL
BEARING**

- Draw Work

**SPHERICAL
ROLLER
BEARING**

- Top Drive
- Draw Work
- Mud Pump

**SPHERICAL
ROLLER
THRUST
BEARING**

- Top Drive

**TAPERED
THRUST
ROLLER
BEARING**

- Top Drive
- Swivel Drive

WHY NBC BEARINGS ARE IMPORTANT FOR OIL AND GAS

Oil and gas sector is a complex and dynamic industry that plays a significant role in meeting global energy demands. The industry relies on wide range of machinery and technology in various stages of exploration, production, processing, and distribution.



Bearings play a critical role in the oil and gas industry, where equipment operates in harsh and demanding environments. They are used in various applications, including top drive systems, traveling and crown blocks, sheaves, draw work, rotary table, mud pumps, and swivel drive. They allow for smooth and efficient operation by enabling rotational motion while minimizing friction and wear. When selecting bearings for the oil and gas industry, several factors need to be considered, such as:

- High temperatures
- Heavy loads and vibrations
- High speeds
- Corrosive environment

Therefore, it is crucial to select bearings that are specifically designed and manufactured to withstand these harsh environments. Specialized bearings with advanced materials, coatings, heat treatment, and seals are crucial to ensure reliable performance and extended service life in the oil and gas industry. Therefore, it is recommended to consult with bearing manufacturers or industry experts to determine the most suitable bearing types and specifications for specific applications in the oil and gas sector

NBC SOLUTIONS FOR OIL AND GAS EQUIPMENTS

TRAVELING BLOCKS, CROWN BLOCKS, AND SHEAVES

Traveling blocks, Crown Blocks, and Sheaves are an integral component of drilling and are responsible for supporting and guiding the drill string as it moves vertically during drilling operations. Bearings play a crucial role in smooth operation of travel blocks by reducing friction and enabling rotational movement.



Bearings
used

- Double Row Tapered Roller Bearing (TDO)

TOP DRIVE SYSTEM

The top drive system is a critical component in the oil and gas industry, specifically drilling operations. Bearing plays an essential function in the operation of a top drive system, which is a drilling rig component used to rotate and handle the drill rig string during drilling operations.



Bearings
used

- Tapered Roller Bearing
- Cylindrical Roller Bearing
- Spherical Roller Bearing
- Spherical Roller Thrust Bearing
- Tapered Roller Thrust Bearing

NBC SOLUTIONS FOR OIL AND GAS EQUIPMENTS

DRAW WORKS

Draw works are an essential component of drilling rigs used for extraction of oil or gas from the ground. In draw works bearings are primarily used in Crown Block, Swivel, and Hook Block. Bearing plays crucial role in the smooth and efficient functioning of draw works by enabling precise movements under heavy loads.



Bearings
used

- Double Row Tapered Roller Bearing
- Spherical Roller Bearing
- Cylindrical Roller Bearing
- Deep Groove Ball Bearing

ROTARY TABLE

Rotary table is a key component of a drilling rig that is responsible for providing the rotational force necessary to turn the drill string and ultimately the drill bit during drilling operations. Bearings in the rotary table help absorb the vibrations and shocks, preventing them from being transferred to other components of the drilling rig.



Bearings
used

- Tapered Roller Bearing
- Thrust Ball Bearing
- Cylindrical Roller Bearing

NBC SOLUTIONS FOR OIL AND GAS EQUIPMENTS

MUD PUMP

Mud pumps are critical equipment used in drilling rigs for circulating drilling mud down the string and back up to the surface. Bearings play an important role in mud pumps by providing support and facilitating the smooth operation of various moving components such as crankshaft, cross head, connecting rods, pinion shaft, and valve train.



Bearings
used

- Spherical Roller Bearings
- Tapered Roller Bearing
- Cylindrical Roller Bearing
- Needle Roller Bearing
- Double Row Tapered Roller Bearing

SWIVEL DRIVES

Swivel drives are responsible for rotation and supporting the weight of the drill string and other downhole tools during drilling operations. Furthermore, it also facilitates the transfer of drilling fluids such as mud through the drill string. Bearing plays a crucial role in swivel drives as it contributes to the load distribution, friction reduction, and misalignment compensation.



Bearings
used

- Thrust Tapered Roller Bearing
- Tapered Roller Bearing
- Cylindrical Roller Bearing

NBC SOLUTIONS FOR OIL AND GAS EQUIPMENTS

GEARBOX

Gearbox is an essential piece of equipment, and any breakdown would lead to serious implications. Therefore, the main challenge for the bearing is to match the high-reliability demand of the equipment.

NBC Benefits:

- Reduced friction and heat generation
- Better lubrication due to enhanced finishes
- Compact bearing designs



Bearings
used

- Tapered Roller Bearings
- Spherical Roller Bearings

- Cylindrical Roller Bearings
- Deep Groove Ball Bearings

PUMPS

As pumps are exposed to heavy varying loads, it becomes imperative that bearings used shall sustain the stresses generated by these loads for reliable operation.

NBC Benefits:

- Reduced friction
- Reduced noise and vibration
- Less heat generation



Bearings
used

- Deep Groove Ball Bearings
- Angular Contact Ball Bearings

- Tapered Roller Bearings
- Cylindrical Roller Bearings

NBC SOLUTIONS FOR OIL AND GAS EQUIPMENTS

FANS/BLOWERS Medium

The presence of contamination and unbalanced forces coupled with the problem of high speed and light load requires highly engineered bearings to meet reliability expectations.

NBC Benefits:

- Enhanced bearing life
- Low operating temperature
- Low maintenance



Bearings
used

- Spherical Roller Bearings
- Self-aligning Ball Bearings
- Ball Housed Units

MOTORS

In the case of motors, it is important that the bearings ensure reliable, continuous smooth, and quiet rotation.

NBC Benefits:

- Low noise
- Low vibration
- Current insulation
- Longer operating life



Bearings
used

- Deep Groove Ball Bearings
- Angular Contact Ball Bearings
- Cylindrical Roller Bearings

NBC SOLUTIONS FOR OIL AND GAS INDUSTRY

SPHERICAL ROLLER BEARINGS



BRASS CAGE BEARINGS



Features and benefits

- **Two-piece cage design**
This allows both rows to run independently, avoiding the risk of roller slippage, smearing and cage damage.
- **Enhanced roller finishing to reduce friction**
Enhanced race/roller surface finish results in improved lubrication film, which avoids metal-to-metal contact and lowers bearing operating temperature.
- **Improved and robust cage design**
Helps in better roller cage interaction and can accommodate more rollers and longer cage life by providing surface treatment.
- **Central Guide Ring/Flange**
The central guide ring/flange provides optimal guidance to the rollers and limits rollers skew thus, avoids unnecessary force on the cage.
- **Maximum and Larger Rollers**
This enhances load carrying capacity.

Size range	30-2000 mm OD
Variants	Straight bore, Tapered bore (1:12, 1:30)
Cage	Brass, Steel
Clearances	C2, CN, C3, C4, C5

NBC SOLUTIONS FOR OIL AND GAS INDUSTRY

TAPERED ROLLER BEARING



Features and benefits

- Optimized geometries of raceway and rolling elements for improved load capacity
- Precise cages play for enhanced bearing life
- Modified crowning on rollers/races for reduced roller stresses and uniform load distribution
- Case hardened (on demand) for Increased shock resistance and enhanced life
- Superior surface finish on raceways for reduced friction and low operating temperature
- Improved design of large cone flange for reduced friction and bearing torque

CYLINDRICAL ROLLER BEARING



Features and benefits

- Clean bearing steel for longer bearing service life
- Optimized internal geometry for improved load capacity
- Special profiling on rollers/races for reduced stresses and uniform load distribution
- Superior surface finish on raceways for reduced friction, lower operating temperature
- Modified crowning on rollers/raceways for better compensation of misalignment
- Modified cage design for enhanced lubrication
- Improved design of bearing guiding flanges Suitable for taking up higher axial loadings (NJ and NUP)

SPECIAL SOLUTIONS

HCR WEAR RESISTANT BEARINGS

Wear resistance coating on rolling elements helps avoid metal to metal contact in low film thickness and protects against adhesive and abrasive wear.



Features

- Optimized coating with metal-containing amorphous carbon with a multilamellar structure
- No columnar structure provides high adhesion strength
- High dimensional accuracies

Benefits

- Low coefficient of friction even in dry condition: Resistant to adhesive wear and micro pitting
- Enhanced fatigue life in insufficient lubrication condition
- Debris tolerance: removes dents created in the contaminated application

OIL IMPREGNATED BEARINGS

Oil impregnated bearings composed of 70-80% of lubricating synthetic oil. Oil is moulded and solidified with polymer to form a casing which acts as a lubricant reservoir throughout bearing's life.



Features

- Improved lubrication with consistent lubricant supply
- Superior lubricant: Synthetic oil
- Excellent performance in water and dusty environment
- Environment-friendly molding process

Benefits

- Long life and maintenance-free
- Higher operational reliability
- No re-lubrication needed
- No lubricant washout issue

SPECIAL SOLUTIONS

SEALED SPHERICAL ROLLER BEARINGS

Sealed Spherical Roller bearings are like conventional spherical roller bearing in design and features, however for extra protection of bearing and lubricant from any external agents it has contact seals in the recesses of the outer ring.



Features

- Effective and high-performance contact seals
- Different seal materials to suit different operating temperatures

Benefits

- Reduced lubricant consumption
- Lower operating and maintenance costs
- Excellent protection against water splashes and contamination

INSULATED BALL BEARINGS

Electrical insulation coating prevents electrical pitting in the bearings and improves bearing life in motor application.



Features

- Aluminium oxide coating using plasma spraying technology
- Current insulation
- High thermal stability

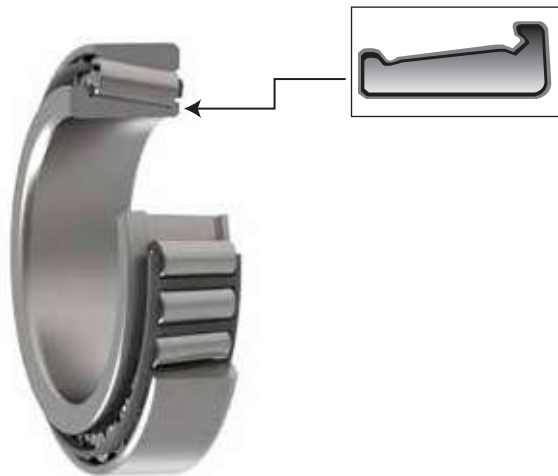
Benefits

- Extending bearing service life by avoiding damage caused by electric current flow.
- Higher operational reliability of electrical machinery

SPECIAL SOLUTIONS

CASE CARBURIZED BEARINGS

Case carburized bearings have a tough ductile core and a hard wear-resistant outer surface.



Features

- Made of ultra clean low carbon steel
- Ductile core helps enduring heavy shock loads
- Compressive residual surface stresses

Benefits

- Reduced possibility of catastrophic damage due to surface cracks
- Better performance in boundary lubrication condition
- Ability to handle/manage some level of debris
- Sustains higher level of hoop stress

CONDITION MONITORING SERVICES FROM NBC



NBC provides intelligent solutions for Condition Monitoring in order to improve the reliability of your assets.

Our expertise in various streams of Condition Monitoring helps industries maintain their machinery failure-free.

With a result-oriented approach towards avoiding machinery failure, the scope of CMS largely consists of Vibration Analysis and Lube Oil Analysis.

- **Vibration monitoring & analysis**
- **In-situ dynamic balancing**
- **Laser shaft alignment**
- **Thermography**
- **Annual maintenance contract / On-call service**

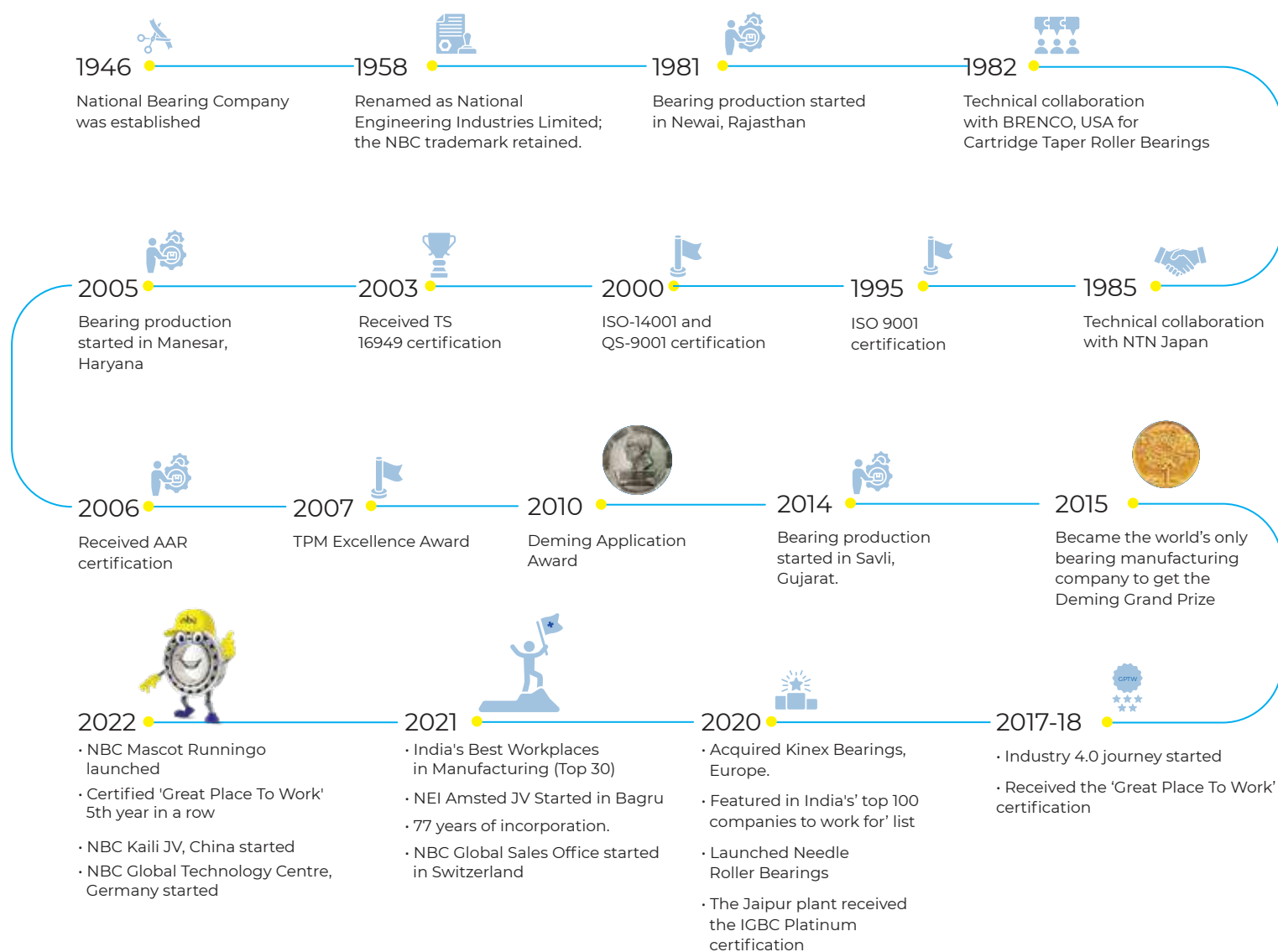
OTHER PRODUCTS FROM NBC

Since the challenges faced by industry are many, NBC offers a diverse range of exceptional bearings. NBC bearings are available in sizes from 06 mm bore to 2000 mm outer diameter.



* Products with special features like high temperature application, special heat treatment, coated roller/races and cage options are also available across product range.

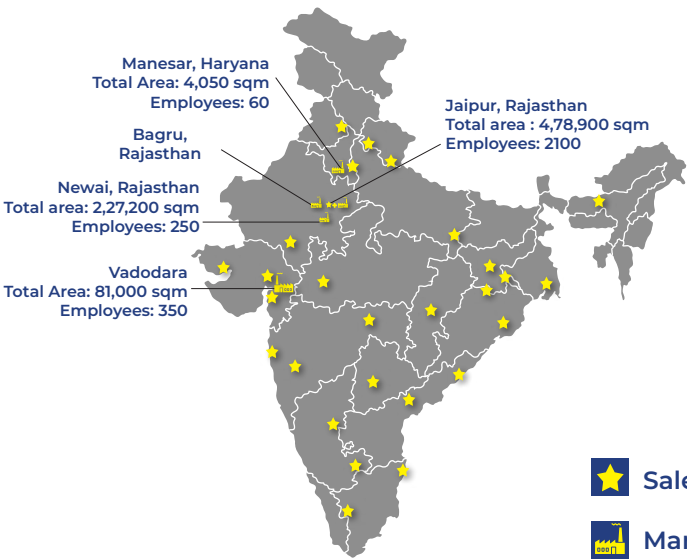
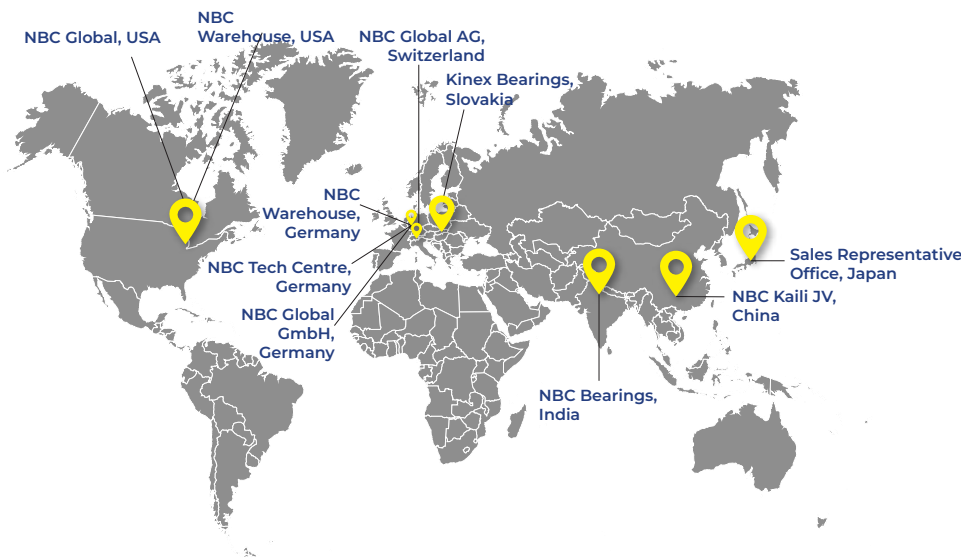
NBC MILESTONES



OUR GLOBAL REACH

The NBC Bearings: Product, Technology & Services

NBC provides a wide range of bearings and associated service solutions to diverse industries such as Industrial, Automotive, Railways, and Aerospace. As a company that has been established for over 77 years, NBC Bearings has an international presence with offices and R&D centers across the globe. For us, engineering goes beyond manufacturing; it is the fusion of Product, Technology, and Services that make us different and the most preferred choice of our customers worldwide.



Over 550 stockists and thousand of retailers across India



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