

**SAFE AND RELIABLE  
SOLUTIONS FOR  
SMOOTHER JOURNEYS!**



**Bearings for Passenger Cars**

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.

75 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



200+ million  
bearings  
manufactured/  
annum



2300+ variants  
of bearings  
offered



5 manufacturing  
locations



2800+People



Happy customers  
in 30+ countries



Automotive



Industrial



Railway



Aerospace



R&D Centres  
in India, Slovakia,  
Germany



500+ Stockists  
10000+ Retailers



# COMPREHENSIVE SOLUTIONS FOR AUTOMOTIVE INDUSTRY



UNITISED TAPERED  
ROLLER BEARINGS



UNITISED TAPERED  
ROLLER BEARINGS 2



DOUBLE ROW  
ANGULAR CONTACT  
GEN 1



GEN 2 WHEEL HUB  
BEARINGS



CLUTCH RELEASE  
BEARINGS



NEEDLE ROLLER  
BEARINGS



PRE-SET HUB  
BEARINGS



WATER PUMP  
BEARINGS



TAPERED ROLLER  
BEARINGS



CYLINDRICAL ROLLER  
BEARINGS



DEEP GROOVE  
BALL BEARINGS



PINION BEARINGS



POWER DENSE - Special heat treatment,  
Integrated solutions



The primary function of the bearing in the engine operation is to allow the rotation of the crankshaft with the minimum power loss. The critical application areas of these bearings in the engine are Belt Tensioner Pulleys, Cam Shaft, Connecting Rod and Mass Balance Shaft.

#### **Critical application requirements of bearings:**

- High operating temperatures
- Cyclic bearing loads carrying capacity
- Resistance to contamination
- High speed

#### **NBC Engine Bearing Solutions:**

- Low Torque Bearings: LT Series
- Low noise, Vibration, and Harshness (NVH)
- Special surface heat treatment
- Improved internal geometry
- Sealing solution

#### **Bearings offered:**



Sealed Type DGBB  
(Single and Double Side)



Thin Series  
Deep Groove  
Ball Bearing

# TRANSMISSION



Transmission bearings support the gearbox shaft systems and effectively transmit power. They also help achieve minimum power loss, low noise, and smooth continuous operation of vehicles. The critical application areas of these bearings are Input Shaft/Counter Shaft, Gear Blanks, and Differential Shaft.

## **Critical application requirements of bearings:**

- High speeds for E gearboxes
- High component/system reliability
- Resistance to contamination
- High service life
- High static loading

## **NBC Solutions:**

- Low Torque solutions for improved efficiency: LT Series Bearings
- Power Dense solution
- Special surface treatment
- Improved internal geometry for higher static loading
- Sealing solutions

## **Bearings offered:**



Deep Groove  
Ball Bearing



Taper Roller  
Bearing



Cylindrical Roller  
Bearing



# WHEEL-END APPLICATION



Difficult weather conditions and rough terrain can impact the performance of the wheel-end system. However, robust wheel-end application bearings provide operational reliability under heavy radial and thrust loads and gruelling road conditions. The critical application areas of a bearing are the wheel hub and axle.

## **Critical application requirements of these bearings are:**

- Ease of mounting and maintenance with long service life
- Ability to withstand shock loads
- Resistance to contamination
- Integrated solutions

## **NBC solutions:**

- Power Dense solutions
- 'More Life' solutions with special heat treatment: ML Bearing
- Maintenance-free solutions: Oil Impregnated Bearing Cage (OIBC)
- Low torque solutions for higher efficiency: LT Series
- Improved sealing solutions
- Next-gen integrated solutions for ease of assembly

## **Bearings used:**



Sealed Type DGBB  
(Single and  
Double Side)



Double Row  
Angular Contact  
Gen 1



Gen 2  
Wheel Hub  
Bearings



Gen 3

# NBC ADVANCED SOLUTIONS

## SENSOR BEARINGS

*Sensor Bearings are special bearings in which sensors are integrated within the bearing unit to measure critical parameters like Shaft Speed (RPM), the direction of rotation, and temperature. They are compact, reliable, simple, and ready to mount.*



### Features

- High speed, low torque, and low noise bearing
- Integrated with sensors capable to measure

### Benefits

- Compact & robust design yielding reliable results & ready to use
- Onboard condition monitoring of the system
- Hassle-free & integrated solution for EV OEM

## OIL IMPREGNATED BEARINGS

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



### Features

- Superior lubricant – synthetic oil
- Lesser torque due to no churning phase
- Excellent performance in water and dusty environment

### Benefits

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



# NBC ADVANCED SOLUTIONS

## CRS BEARINGS

*CRS stands for controlled compressive residual stress. It is a special proprietary process that enhances the fatigue life of the bearing multiple times. Our unique surface treatment induces high residual compressive stress compared to conventional methods.*



### Features

- Introduced compressive residual stresses to enhance fatigue life
- Resistance to bending and higher radial load
- Improved surface texturing helps the lubricant retention

### Benefits

- Higher operational reliability
- Higher performance and higher power density
- Improved lubricant effectiveness

## BLACK OXIDE BEARINGS

*The black oxide conversion treatment applied to the rings and rolling elements improves lubricant adhesion on the raceway, enhancing the bearing's performance by reducing smearing wear and micro pitting, especially during run-in periods.*



### Features

- Increased wear resistance during the initial running-in period
- Improved adhesion properties of the lubricant

### Benefits

- Longer operating time
- Increased wear resistance

# NBC ADVANCED SOLUTIONS

## HCR- WEAR RESISTANT BEARINGS

*Wear resistance coating on rolling elements helps to avoid metal-to-metal contact in dry and low lambda lubricated conditions.*



### Features

- Optimized coating with metal-containing amorphous carbon coating with a multilamellar structure
- High dimensional accuracies

### Benefits

- Higher operational reliability
- Resistant to adhesive wear and micro pitting
- Debris tolerance - removes dents created in the contaminated application

## INSUOHM BEARINGS

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



### Features

- Improves bearing's life in the electrical current passage
- High insulation resistance
- High dimensional stability after coating

### Benefits

- Increased machine uptime
- Reduced overall operating costs
- Insulation over a wide range of operating temperatures

# NBC ADVANCED SOLUTIONS

## SLC BEARINGS

*NBC has developed an SLC bearing to enhance the life of these bearings. In addition, special heat treatment is given to the bearings made of low-carbon steel, which forms a hard surface and rigid core on the components.*



### Features

- Hard, worn/fatigue surface
- Tough, crack-resistant core
- Compressive residual stresses

### Benefits

- Better performance under shock loads and misalignment
- Improved contamination resistance
- Enhanced bearing life

## HYBRID BEARINGS

*Hybrid Bearing, also known as anti-friction ball bearing, consists of a rolling element made of Silicon nitride in place of steel. Silicon nitride rolling elements perform exceptionally well in high-speed operating conditions.*



### Features

- Lower friction
- Reduced weight
- Current insulation

### Benefits

- High-speed capability
- Less wear under slippage
- Higher operational reliability



# NBC ADVANCED SOLUTIONS

## LOW TORQUE BEARINGS

*Various studies show that only 13 to 15% of the energy is used to move the vehicle; the rest is lost due to mechanical and friction losses. The low torque bearing technology reduces energy consumption by reducing torque in the bearing.*



### Features

- Optimization of bearing raceways curvature
- Effective sealing solution
- Modified cage geometry

### Benefits

- Low Carbon emissions
- Reduced heat loss and friction losses
- Enhanced fuel economy

## OPTIMILE BEARINGS

*The Optimile Bearing has an extended life because of heat treatment processes, thereby improving the steel grain structure at the surface and core.*



### Features

- Improves the yield strength and rolling contact fatigue properties
- Offers better resistance to wear and seizure

### Benefits

- Higher capacity of bearing within a given size (Improved yield strength)
- Greatly extended bearing's life in a contaminated environment
- Downsizing possible; higher power density

# NBC ADVANCED SOLUTIONS

## MEDIUM CARBON STEEL BEARINGS

*In automotive applications, the bearings should be capable of taking shock-load in severe contaminated lubrication conditions. Medium Carbon Steel bearings offer optimal performance due to their modified intrinsic microstructure properties.*



### Features

- High amount of retained austenite and hardness after heat treatment
- Consists of carbides or/and carbonitrides
- Hard surface and rigid core

### Benefits

- Higher resistance to fractures and crack
- Better performance in a contaminated environment

## HIGH-SPEED ELECTRIC MOTOR BEARINGS

*Electric Motor Bearings (EMB) are for high-speed applications with expectations of lightweight, low friction, high transient ramp capability, high RPM, and low noise.*



### Features

- Lightweight cage design
- Optimized internal design
- Grease with noise suppression properties

### Benefits

- High-speed stability
- Low noise
- Energy efficient bearing

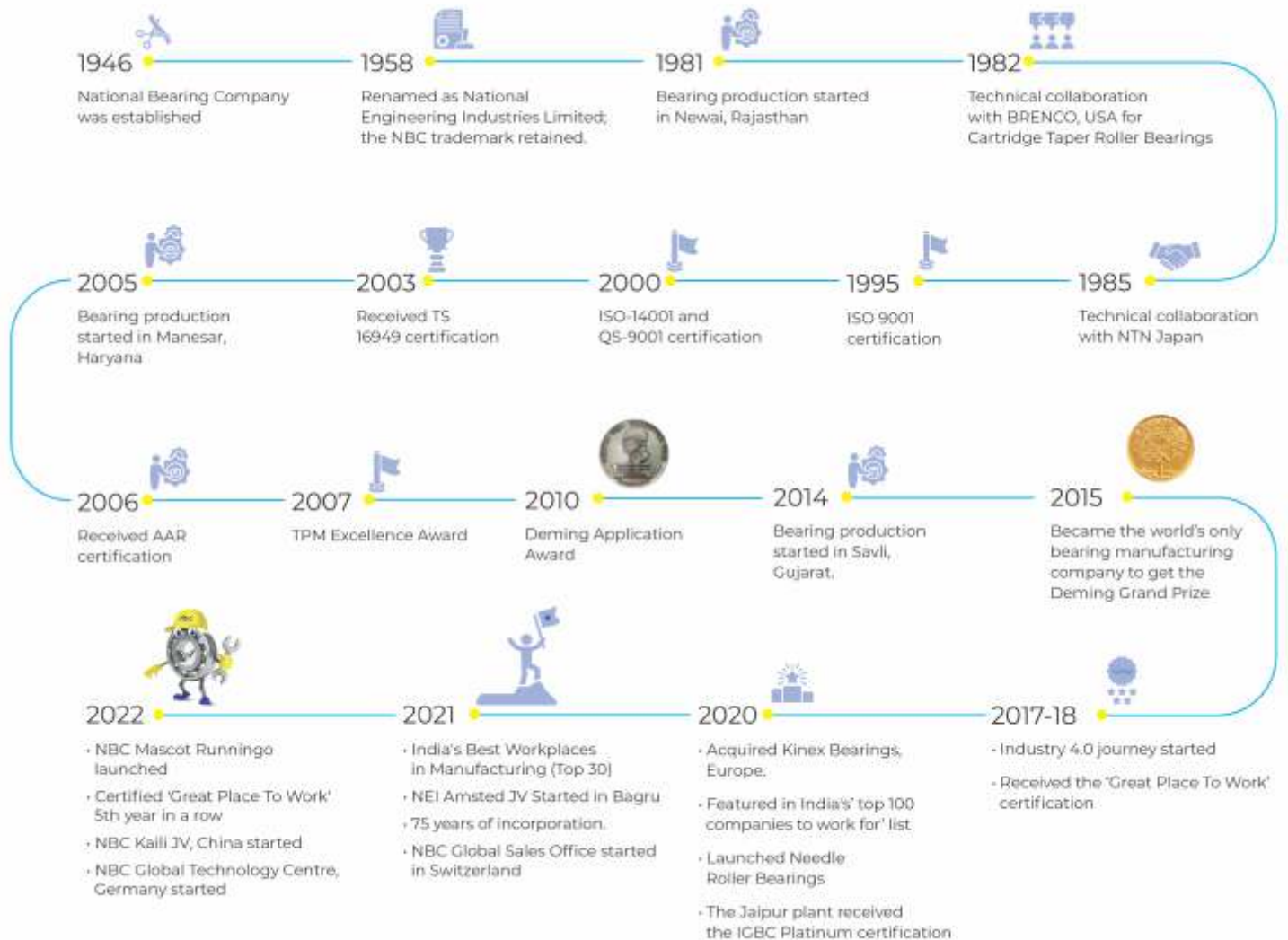
# OTHER PRODUCTS FROM NBC

Since the challenges faced by industries 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.





## 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 75 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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