

# WHEEL

WHEEL BEARING KIT  
BRAKE DISC HUB KIT

NTN® 

#SECURITYINSIDE



With You

# WHY CHOOSE AN NTN-SNR BEARING?

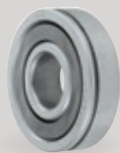
- A wide range of standard and special bearings
- 4 range extensions per year
- A range that covers 98% of registered vehicles in Europe
- A broad range for European and Asian applications: Audi, Daewoo, Fiat Group, Honda, Mazda, Mitsubishi, Renault Group, Peugeot-Citroën Group, Subaru, Suzuki, Opel Group...
- All components (caps, bolts, circlips...) are included in the kits
- Installation instructions in the kit (ASB® technology)
- The correct tightening torque is printed on the wheel bearing kit box
- NTN-SNR is a development and supply partner to major vehicle manufacturers such as, Renault, Fiat, PSA, VW, Ford, and Mazda

For a wheel bearing to operate correctly it not only depends on the bearing being fitted correctly (follow the manufacturer's instructions) it also relies on the quality of the components used to manufacture the bearing.

While supplying exceptionally high-quality components to manufacture the wheel bearings, NTN-SNR also pays particular attention to all the other components supplied in the wheel bearing kit, components such as the screws, bolts, nuts, stop rings, caps and seals, as many of these components cannot be reused, the NTN-SNR wheel bearing kits provide mechanics with all of the components needed to replace the wheel bearing correctly.

If one bolt or nut fails, if one nut comes loose, it's the whole assembly that fails this is why NTN SNR only supply the correct parts for a correct fitment. Copying a component based on a drawing or a sample can be dangerous if poor quality materials are used, heat treatment of the hubs is very important to the safe operation of the bearing; these important aspects for the production of a reliable safe part cannot always be seen with a visual inspection.

## THE EVOLUTION OF THE WHEEL BEARING



### Standard

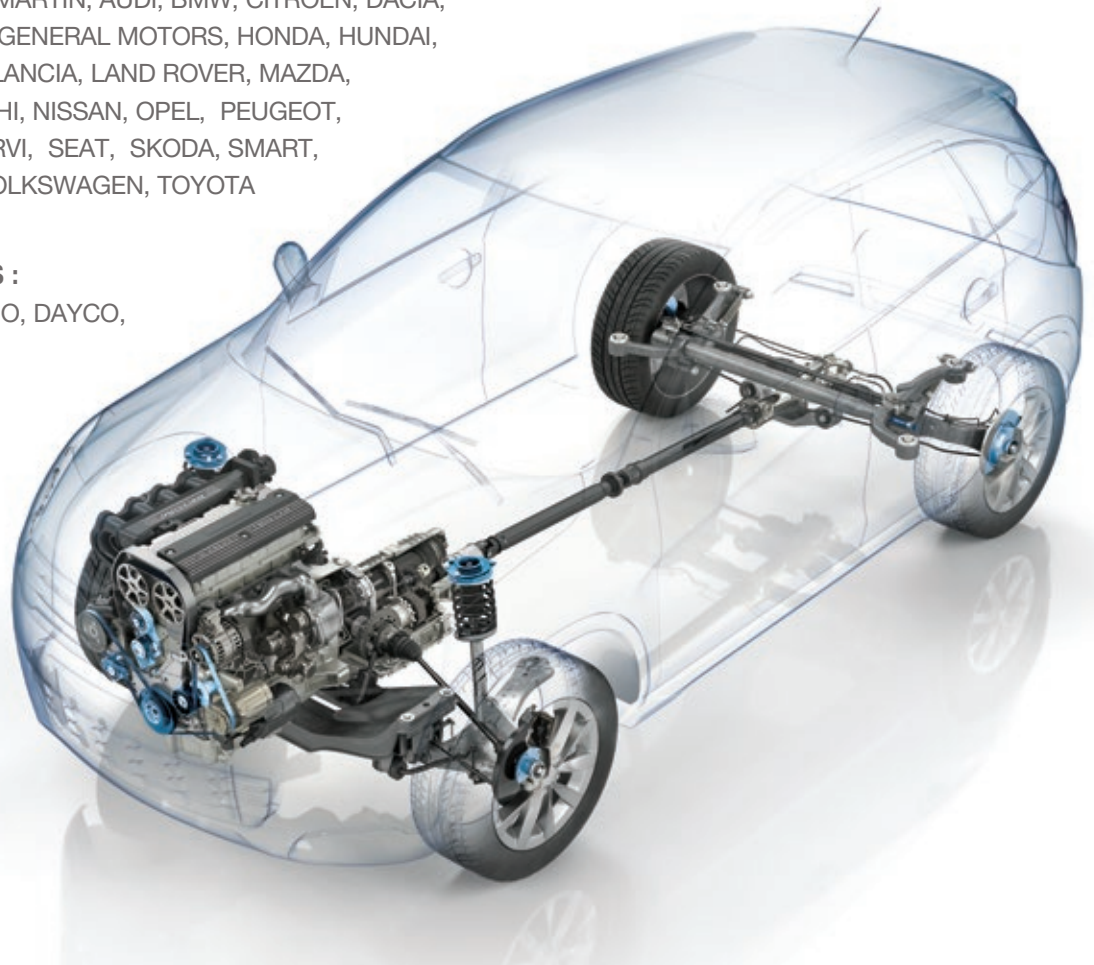
Génération 0	Génération 1	Génération 2
Seal	Encoder seal	Flange
Lubrication	Axial load:	Axial load
Fastening	- pre-loaded	toothed wheel
Axial load	- pre-lubricated	Encoder seal
Renault 12 Ford Ka	Suzuki Swift Kia Cee'd Hyundai i30	VW Golf Smart Fortwo Audi A3

# MAIN AUTOMOTIVE CUSTOMERS

ALFA ROMEO, ASTON MARTIN, AUDI, BMW, CITROEN, DACIA, DAIMLER, FIAT, FORD, GENERAL MOTORS, HONDA, HUNDAI, ISUZU, JAGUAR, KIA, LANCIA, LAND ROVER, MAZDA, MERCEDES, MITSUBISHI, NISSAN, OPEL, PEUGEOT, PORSCHE, RENAULT, RVI, SEAT, SKODA, SMART, SUZUKI, VAUXHALL, VOLKSWAGEN, TOYOTA

## AUTOMOTIVE SUPPLIERS :

BEHR, BOSCH, BREMBO, DAYCO, DELPHI, FTE, GATES, VALEO, ZF



## Safety-critical part

### Brake disc with bearing

Disc with bearing pressed in

Renault Trafic  
Peugeot 5008  
Mercedes Citan

### Génération 3

Fasteners (bolts)  
Sensor holder

Toyota Yaris  
Ford Focus  
Alfa 159

# A RANGE OF WHEEL HUB KITS FITTED WITH BEARINGS

Since 2003, the NTN-SNR Group has been developing a complete range of brake disc hub kits fitted with bearings for the most popular vehicles of the Renault, Nissan, Vauxhall and PSA ranges. The brake disc hub kit contains OEM products, including the bearing pressed into the brake disc and the small parts needed for installation such as nuts and grease cap.

## WHAT DOES THIS ASSEMBLY COMPRISE OF?

### A BEARING

NTN-SNR bearings are OEM parts. They are the same bearings as we supply to the auto manufacturers as original equipment. We have comprehensive expertise regarding installation and operating conditions thanks to the following aspects:

- Knowledge of the manufacturers' recommendations
- Mathematical modelling and calculations
- Our testing at engineering test centres
- Expertise in the method of fitting bearings which we carry out at our own test facilities

Note that once the bearing has been installed, it cannot be extracted from its housing without destroying it (the outer ring of the bearing). When a disc is worn, the complete assembly must be replaced. NTN-SNR recommends replacing brake discs in pairs.

### A BRAKE DISC HUB

In developing this part together with our brake partners, we followed the OEM product development process:

- Validation of drawings
- First article inspection of samples: dimensional and metallurgical analyses
- This disc is an original equipment quality product.

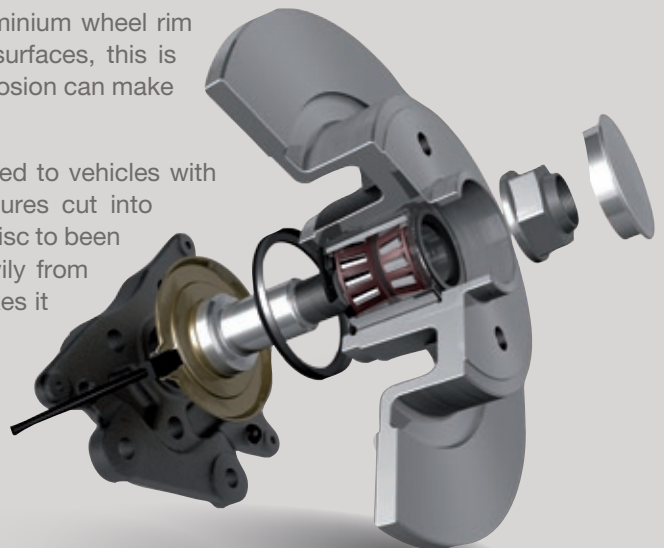
### AN ASSEMBLY

The bearing is specifically designed for a given disc. One of the main keys to its correct operation lies in controlling the tolerance of the bearing. The installation of the bearing in to its housing entails a reduction in the diameter of the bearing. That reduction needs to be anticipated in the design stage and kept carefully under control during production. Only first-rate suppliers like NTN-SNR can guarantee assembly of such precision.

## WHY PAINT BRAKE DISC HUB KITS?

We paint the contact area between the disc hub and the aluminium wheel rim because it can cause corrosion problems between the two surfaces, this is normally particularly bad where alloy wheels are fitted, this corrosion can make it very difficult to remove the wheel from the vehicle

We paint the entire surface of the disc, if the disc is to be fitted to vehicles with aluminium wheels. Aluminium wheels often have large apertures cut into them to enhance the look of the wheel, this allows more of the disc to be seen through the wheel itself, a corroded hub detracts heavily from the overall aesthetic look of the wheel, a painted disc hub makes it possible to reduce this problem.





## AT THE HEART OF YOUR SAFETY

ASB<sup>®</sup> technology plays an essential role in the operation of many on-board systems. The ASB<sup>®</sup> bearing sensor transmits information taken from the wheel, to a number of different computers in the vehicle.



### ABS

Helps prevent the wheels from locking during sudden or harsh braking and reduces stopping distance while maintaining a controlled steering response.



### ESP

Enables the vehicle to maintain a controlled direction if the tyres lose road traction (skidding)



### SPEED

Enables the computer to interpret and display the exact speed of the vehicle



### NAVIGATION

The ASB<sup>®</sup> system makes it possible to detect your position even in a tunnel.



### HILL-START ASSIST

Prevents the vehicle from rolling backward when stopped on an incline

## Bearings are safety-critical components!

Selecting a poor quality ASB<sup>®</sup> sensor bearing can lead to the following problems:

- An ABS signal malfunction that supplies incorrect information
- Spurious activation of the ABS system, which can adversely affect vehicle operation.
- Incorrect estimation of the speeds of each wheel by the computer

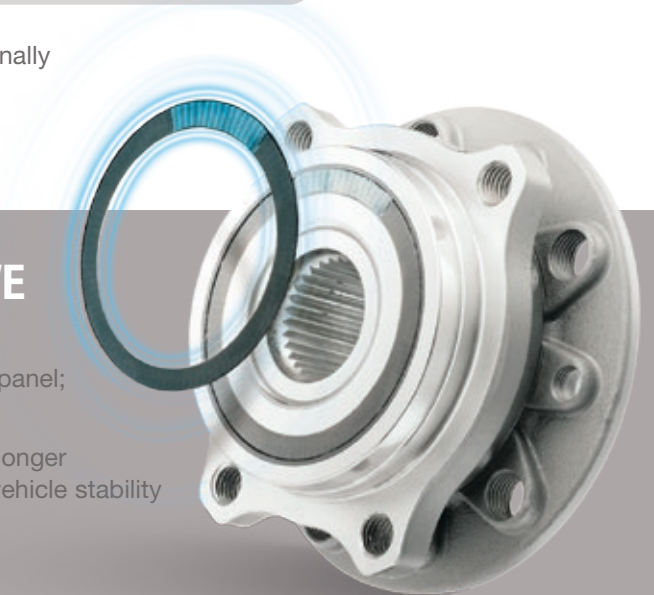


The ESP system can no longer ensure a controlled direction of the vehicle

- Incorrect speed indication, resulting in the risk of unintentionally and dangerously exceeding the speed limit

## LOSS OF THE ASB<sup>®</sup> SIGNAL CAN HAVE DRAMATIC CONSEQUENCES...

- The ABS fault indicator will light up on the instrument panel; the ABS system will no longer work - this is an MOT failure.
- The ABS system will no longer function correctly; it will no longer prevent the wheels from locking up, and no longer ensure vehicle stability during braking



For your safety and for the safety of your customers you can trust the NTN-SNR brand.

# NTN-SNR, ORIGINAL QUALITY

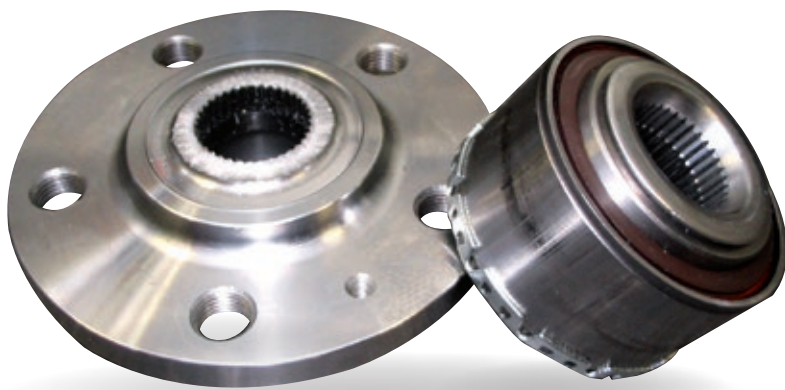
NTN-SNR is top manufacturer of wheel bearings in Europe; these safety-critical components are manufactured on every continent.

Quality and performance are at the core of our success, but product reliability and driver safety is also among our highest priorities.

NTN-SNR bearings are designed and produced using the most advanced technologies incorporating the best quality steels, lubrications, heat treatments, seals, etc.

Before the production run of any bearing, all our prototype bearings are tested for 18 months to ensure compliance with the manufacturers' technical specifications.

**Cheap copied parts can be dangerous!**



**CHEAP COPIED BEARINGS**



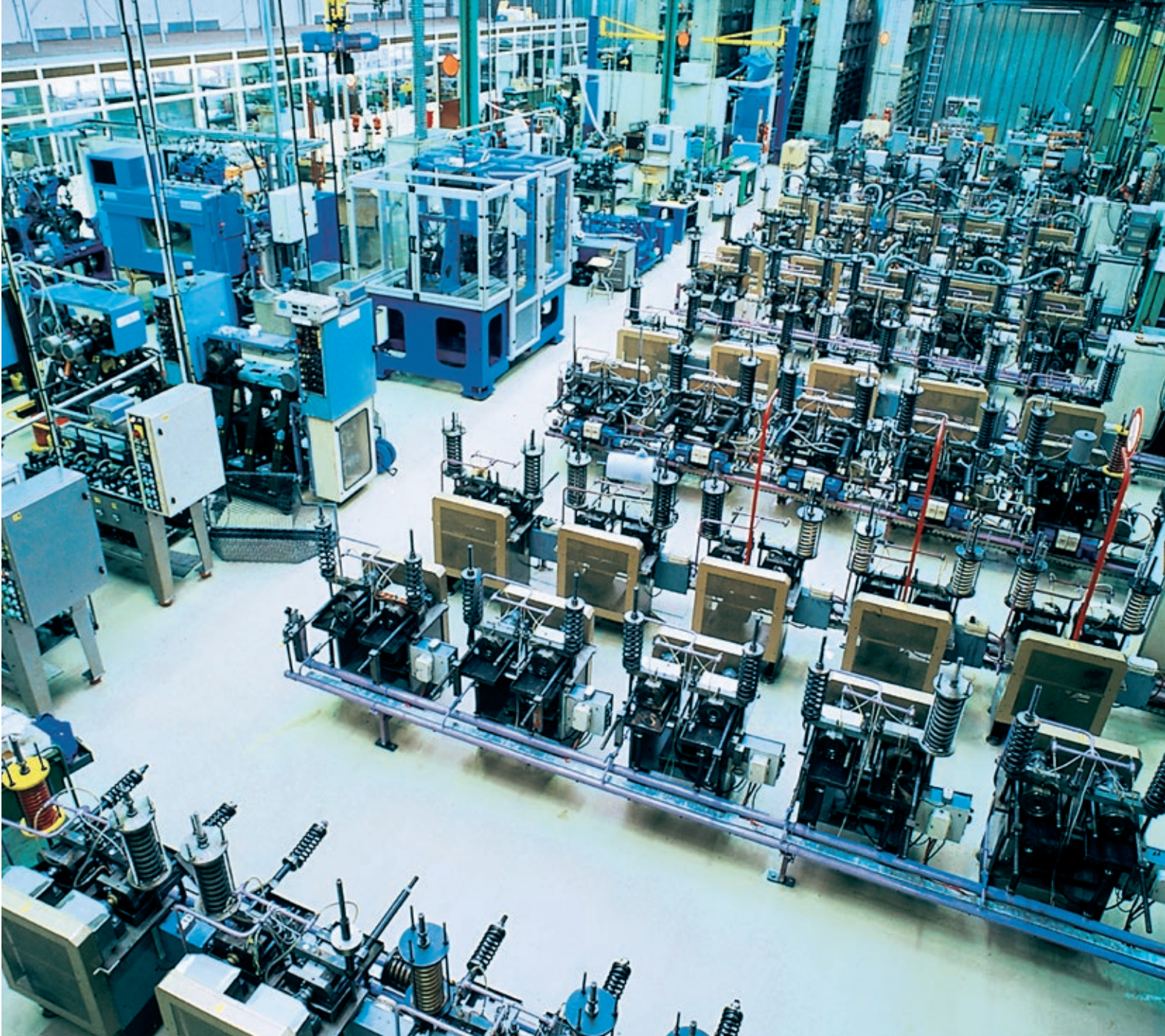
**ORIGINAL NTN-SNR BEARING**

Cheap copied bearings have appeared on the market over the past few years, these bearings can put the life of drivers and their passengers at risk if they fail.

NTN-SNR have conducted tests on a range of copied bearing products and test results show some dangerous problems with a lot of the products tested as listed below.

- The installed bearings do not comply with the OEM specifications, especially with regard to service life and quality. Reduced service life can lead to premature deterioration and the risk of brake disc malfunction.
- The magnetic encoders installed on the discs, which are used for ABS and ESP systems, are not of OEM quality. Some were found to have the wrong number of magnetic pick-ups giving incorrect readings.

**These defects are very serious and could be the cause of fatal accidents!**



The NTN-SNR Test Centre, working together with the R&D department, also conducted tests on the cheap copied wheel bearings. These bearings can be installed in place of NTN-SNR ASB® bearing XMGB40899 bearing fitted to the front of the VW Polo VII and Fox, the Audi A2 and A3, the Seat Cordoba IV and Ibiza V, and the Skoda Fabia.

The tests were conducted in compliance with the technical specifications of Volkswagen. **The results show premature and dangerous failures of these products.**

## How to identify an original NTN-SNR bearing

- The NTN or SNR logo and date code are the most effective means of identifying an NTN-SNR bearing.

# NTN-SNR: BEARING REMOVAL AND INSTALLATION INSTRUCTIONS

Follow these precautions:

- Always check the technical manual relating to the vehicle.
- Prepare the vehicle and the necessary tools before starting the installation. Make sure they are clean and in good condition.
- Make sure that the kit is the right one. Take the bearing out of its packaging at the last minute and place it on a clean work surface.
- Clean the parts and assemblies located near the bearing and make sure that they are in good condition. In particular, inspect for scratches, scrapes or dents on the hub, stub axle and drive shaft. Replace any damaged or worn parts.
- Do not remove any parts which are not included in the kit.
- Never disassemble or separate the components of a bearing.
- For correct installation of the bearing, always use suitable tools.
- Always apply fitting pressure through the outer ring of the bearing, the installation force must never be transmitted through the seal or inner rings (pressure through the seal or inner rings will result in internal damage to the bearing, making it noisy and fail prematurely)
- Apply the tightening torques recommended by the manufacturer (this can be found on the label of the kit).



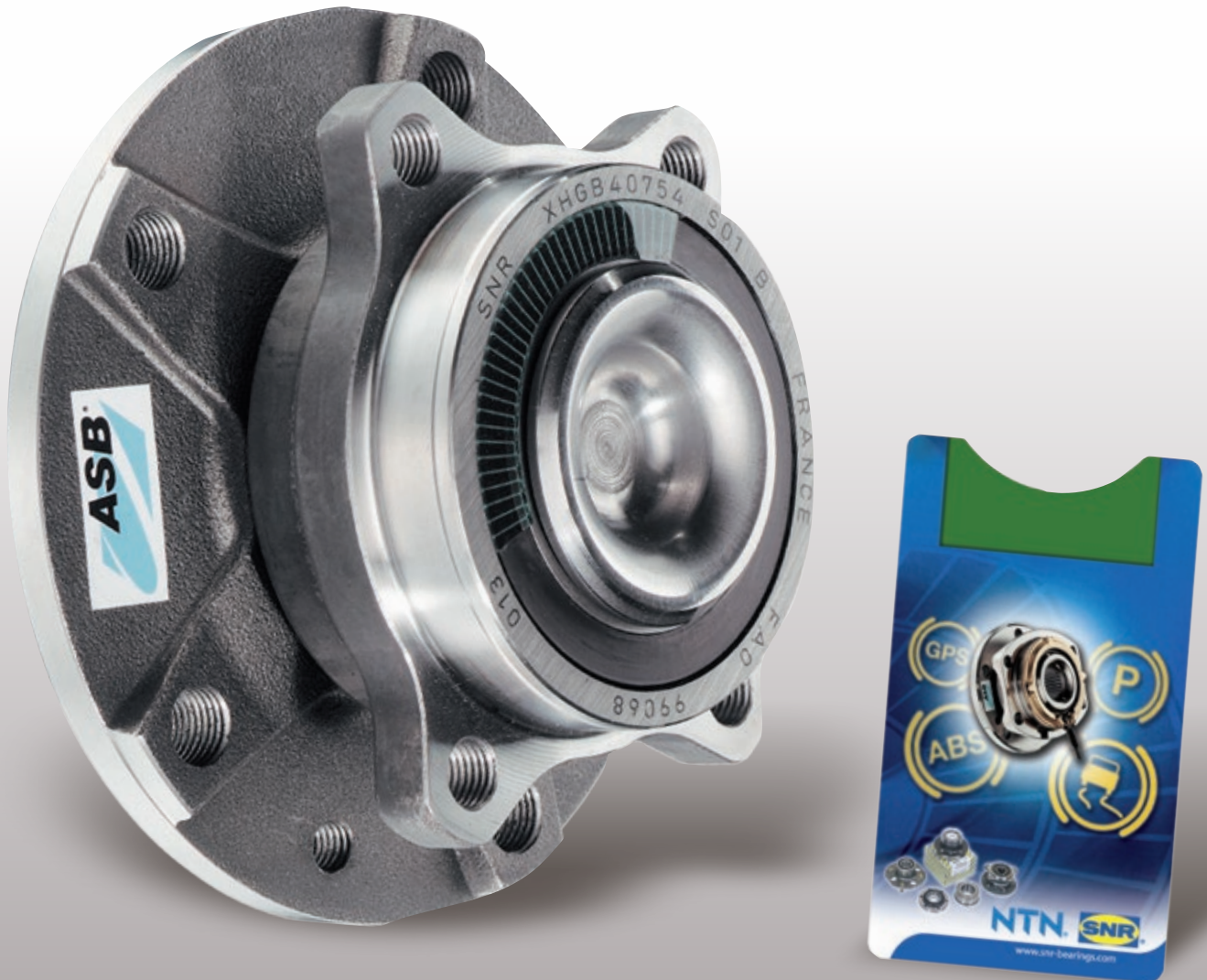
Special tools developed  
for special bearings !





Follow these instructions for installation/removal of a bearing equipped with ASB® technology:

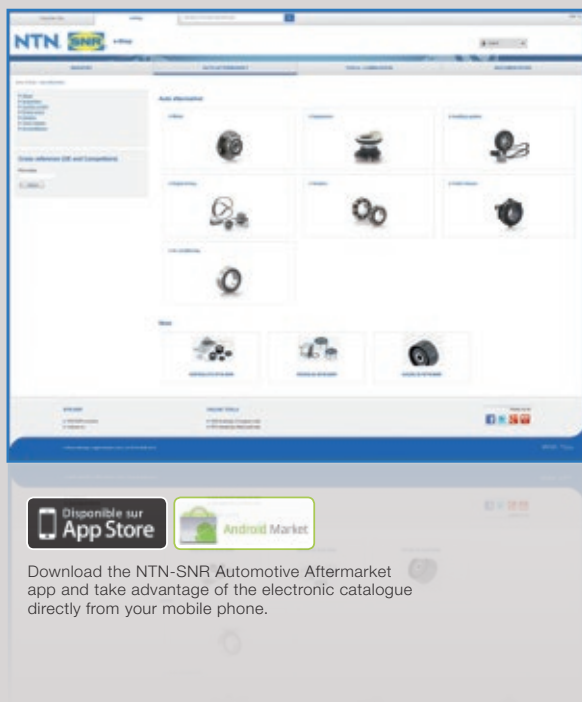
- 1st generation bearings (symbol: XGB...): Follow the bearing orientation: the markings on the bearing indicate the face with the magnetic encoder, which must always be fitted facing toward the centre of the vehicle ( i.e. facing engine , gearbox or the centre of the axle)
- The bearing must be pressed-in using tools that have the required clearances in order to avoid denting or damaging the encoder (the old bearing is perfect for this task).
- Bearings must be handled and stored carefully in order to protect them from any impacts and contamination by metallic particles or moisture.
- Bearings must be kept away from any magnetic sources that may come into contact with the ASB® encoder ( contact with a magnetic source such as a screw driver will damage the ASB® encoder )
- Any bearing with a magnetic encoder which is damaged and or dented, in particular due an impact, must not be used.



Use an ASB tester card to safely identify which side of the bearing the ASB® is fitted, the side with the bearings ID and date code is stamped also indemnifies the side the encoder is fitted.

# NTN-SNR

## At the service of its customers



### Online ordering

Online ordering offers the customer a number of benefits, in particular see the availability of products in real time, select the destination and shipping method from a pre-recorded list, create orders from an Excel or CSV file, create a list of favourite products, etc...

### Online catalogue

A new catalogue updated at least 4 times per year (each time the product range is expanded), with access to product data sheets and photos of the products, all of which can be printed out in pdf format.

### iPhone/Android application

Our iPhone app (iParts NTN-SNR) has been updated and an Android version has now been created. The system now includes transmission bearings there which were previously not included



## 24 000 M<sup>2</sup> ENTIRELY DEDICATED to the Automotive Aftermarket

Intended to serve a large area extending from South America to Russia and from Western Europe to the Middle East, this ultra-modern building is optimised for order processing and has been designed with environmental friendliness in mind. This major investment has been made in response to the growth of the market and reflects the goal of NTN-SNR to develop and consolidate its position as market leader.

“We have worked on developing Western Europe, which is our main market, and on exports, which represent a significant share of our sales nowadays. The continuity of that development over the coming years necessitates changes in our logistics methodology,” says Eric Malavasi, Director of Automotive Aftermarket and Logistics. This new building, along with the modernisation of processes, enables NTN-SNR to pursue growth in the automotive aftermarket segment and to optimise throughput of the 7,000 products that it offers to its clients. It allows us to supply 40 tonnes of parts per day under ideal conditions.

# NTN-SNR, YOUR N°1 PARTNER



As a manufacturing leader, NTN-SNR defends original quality beside automotive constructors and independent aftermarket companies.

Driven by your requirements and the engagement of our teams, our know-how is also demonstrated by a quality of service which values your activity.

That is why NTN-SNR, the world's leading wheel bearing manufacturer, is today your legitimate partner.

[www.ntn-snr.com](http://www.ntn-snr.com)

**NTN**® **SNR**®

**BEARINGS AND  
WHEEL KITS**



With You

**PARTNER FOR TODAY AND TOMORROW**



Original quality first.



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