POSSIBLE WHEEL BEARING DEGRADATION
BRAKE KITS AND SENSORS
1. Flange indentations or fractures
2. Scratches on the balls
3. Water ingress due to a sealing failure
4. Fatigue spalling
5. Seizing / overheating / lubrication failures
6. Grease leakage
7. Vibrations
8. Loss of steering precision
9. “Clack” noise
10. ABS malfunctions
GENERAL RECOMMENDATIONS

- Use original quality parts
- Do not lower the vehicle to the ground with the bearing loose (loose stub axle or driveshaft loosened or removed)
- Work at clean and orderly stations to prevent parts from falling
- Do not tighten the driveshaft nut or stub axles with the vehicle on the ground
- Use good tools (hammers prohibited, freezer and hot plate unsuitable)
- To ensure correct operation of the magnetic encoder, do not mark the magnetic surface of the bearing and do not bring it near a magnetic source (magnet or screwdriver); do not remove the ABR plastic cover till ready for installation
- In case of abnormal noise or force of any kind during installation, bearing must be replaced
- Handle the products carefully
- Use suitable tooling and apply assembly force at the correct position on the part being installed
- Apply the tightening torques specified by the vehicle manufacturer. Refer to our TechScaN’R app
- Be sure to check the condition of the mating surfaces of the hub or stub axle and of the kingpin (no cracks, wear or deep scratches)
FIND OUR WHEEL BEARING REMOVAL AND INSTALLATION TUTORIALS ON YouTube:

- Removal and installation of a GEN3 wheel bearing GEN3
- Wheel bearing and sensor: Detection of ABS malfunctions
- Removal and installation of a rear brake disc with integrated bearing
- Removal and installation of a cartridge wheel bearing
- Removal and installation of a wheel bearing: Gen 2.1
- Removal and installation of a cartridge wheel bearing: on a vehicle

FOLLOW OUR NEWS

Thanks to our TechScaN’R app, find all our technical data that you may need about our products. Download the app to your smartphone!
FLANGE INDENTATIONS OR FRACTURES

CAUSES

- Use of harsh force during bearing installation
- Skewed installation of the bearing
- Dropping the bearing on a hard floor
- Transmission of installation force via the rolling elements

EFFECTS

- Existence of localized indentations along the edge of the raceway
- Damaged or broken flange
- Clacking sound during installation
- Play in the wheel

RECOMMENDATIONS

When installing the bearing:

- Apply force to the correct ring: the press-fitting force must not be transmitted through the rolling elements
- Follow the general recommendations associated with the installation
SCRATCHES ON THE BALLS

CAUSES
- Use of harsh force during bearing installation
- Skewed installation of the bearing
- Dropping the bearing on a hard floor
- Transmission of installation force via the rolling elements

EFFECTS
- Damage to balls that come in contact with the inner edge of the raceway due to a gap between the inner rings
- Circular deterioration of balls with discharge of material
- Scratches, “croquet ball” appearance
- Reproduction of indentations on the raceway

RECOMMENDATIONS
- While performing any work on the wheel axles, do not move the vehicle without the nut or bolt that retains the bearing
WATER ENGRESS DUE TO A SEALING FAILURE

CAUSES
Water Ingress:
- Inappropriate use of the vehicle.
- Missing baffle sealing element
- Deterioration of bearing seal during maintenance
- Missing cap or failure to replace cap

EFFECTS
- Localized or generalized oxidation of the bearing
- More-or-less extensive reddish or black stains
- Surface attacked by more-or-less deep pitting
- Reproduction of indentations on the raceway

RECOMMENDATIONS
When installing the bearing:
- Do not disassemble a sealed bearing
- Avoid splashing liquids
- Follow the general recommendations associated with the installation
- Replace all parts supplied in the NTN-SNR kits
CAUSES
- Fatigue
- Incorrect installation
- Incorrect geometry of a neighboring part

EFFECTS
- Removal of material by flaking along the raceway

RECOMMENDATIONS
When installing the bearing:
- Follow the general recommendations associated with the installation
- Be sure to check the condition of the mating surfaces of the hub or stub axle and of the kingpin (no cracks or wear)
SEIZING / OVERHEATING / LUBRICATION FAILURES

CAUSES
- Lack of lubrication or inappropriate lubrication
- Micro-welds between the bearing components
- “Mixed” grease following ingress of contaminants

EFFECTS
- Shallow metal pullouts on the bearing raceway
- Welding of the bearing components
- Discoloration of components

RECOMMENDATIONS
When installing the bearing:
- Monitor for abnormal grease leakage
- Follow the general recommendations associated with the installation
- Make sure bearing elements have correct lubrication
GREASE LEAKAGE

CAUSES
- Extremely high bearing temperature, causing grease to deteriorate
- Damage of sealing systems during installation (seals)

EFFECTS
Water ingress in the bearing
- Evidence of grease leaking from the bearing seals

RECOMMENDATIONS
When installing the bearing:
- Verify that there is no overheating problem
- Check bearing seal integrity
VIBRATIONS

CAUSES
• Poor condition of neighboring parts (spalling problem)
• Loose bearing

EFFECTS
• Vibrations felt in the steering wheel or in the passenger compartment, while driving
• Risk of bearing damage (spalling, scratches on the balls)

RECOMMENDATIONS
• Check wheel balancing and good condition of tyres
• Follow the general recommendations associated with the installation
LOSS OF STEERING PRECISION

CAUSES
- Incorrect geometry adjustment of the car’s front axle
- Rigidity problem of the car’s front axle suspension or worn suspension bush
- Loose bearing

EFFECTS
- On straight line, the vehicle tends to go to the right or to the left
- Risk of bearing damage (spalling, scratches on the balls)

RECOMMENDATIONS
- Check running gear geometry
- Replace the worn ball joints or suspension bush
- Follow the general recommendations associated with the installation
“CLACK” NOISE

CAUSES
• Slight displacement of the bearing on the stub axle

EFFECTS
• Clack noise in the front suspension (during parking maneuvers)
• Bearing deterioration

RECOMMENDATIONS
When installing the bearing:
• Verify good dimensional condition and conformance of kingpin seat
ABS MALFUNCTIONS

CAUSES
- Computer error
- Sensor error
- Connector problem
- Encoder damage
- Bearing installed backwards

EFFECTS
- ABS® indicator on the instrument panel lights up or remains lit

RECOMMENDATIONS
- Verify cleanliness of sensor and encoder
- Never bring the sensor or the encoder near a magnetic source
- Check the condition of the encoder seal using the NTN-SNR tester card
When installing the bearing:
- Take care not to damage the sensor (tearing off), replace it if that happens
- Position the bearing with the encoder facing the sensor (inboard side of the vehicle)