POSSIBLE WHEEL BEARING DEGRADATION
BRAKE KITS AND SENSORS

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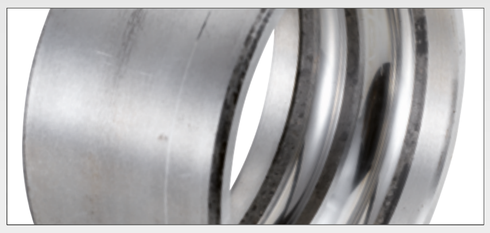
With You

GENERAL RECOMMENDATIONS

- Use original quality parts
- Work at clean and orderly stations to prevent parts from falling
- Use good tools (hammers prohibited, freezer and hot plate unsuitable)
- In case of abnormal noise or force of any kind during installation, bearing must be replaced
- Use suitable tooling and apply assembly force at the correct position on the part being installed
- 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)
- Do not lower the vehicle to the ground with the bearing loose (loose stub axle or driveshaft loosened or removed)
- Do not tighten the driveshaft nut or spindle with the vehicle on the ground
- 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
- Handle the products carefully
- Apply the tightening torques specified by the vehicle manufacturer. Refer to our TechScaN'R app

FLANGE INDENTATIONS OR FRACTURES



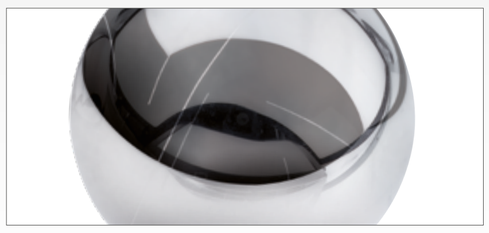
CAUSES
- Use of harsh force during bearing installation
- Skewed installation of the bearing
- Dropping the bearing on a hard floor
- Transmission of installation force via the rolling elements

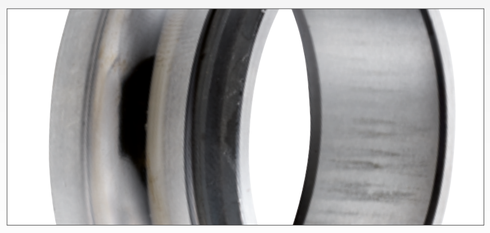
EFFECTS
- Existence of localized indentations along the edge of the raceway
- Damaged or broken flange
- Clacking sound during installation
- Play in the wheel

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

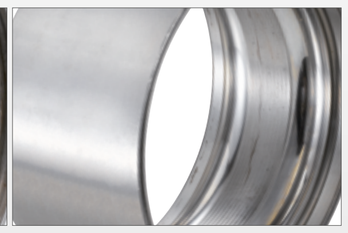
Water Ingress:
- Inappropriate use of the vehicle.
- Missing baffle sealing element
- Deterioration of bearing seal during maintenance
- Missing sealing cap or failure to replace cap

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

FATIGUE SPALLING



CAUSES
- Fatigue
- Incorrect installation
- Incorrect geometry of a neighboring parts

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

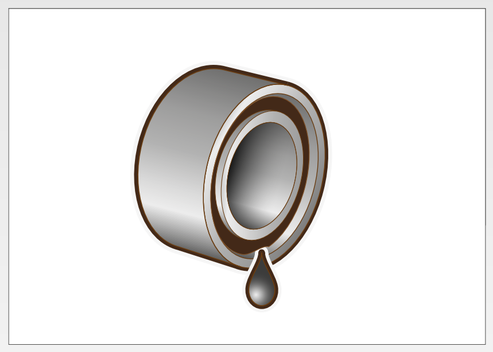
GREASE LEAKS

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)

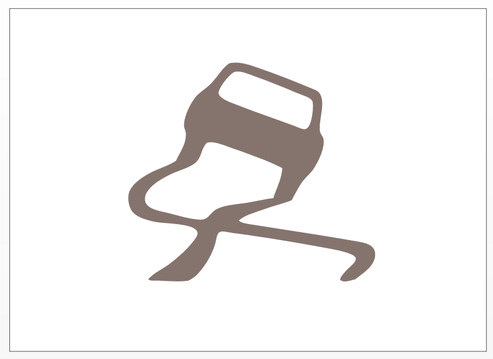
RECOMMENDATIONS
- Check wheel balancing and good condition of tyres
- Follow the general recommendations associated with the installation

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 in 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 of the vehicle))

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

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