

POSSIBLE WHEEL BEARING DEGRADATION

BRAKE KITS AND SENSORS

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

EFFECTS

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

SCRATCHES ON THE BALLS



CAUSES

- Use of harsh force during bearing installation
- Skewed installation of the bearing
- Transmission of installation force via the rolling elements



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



• 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

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

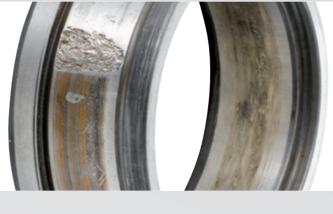
Replace all parts supplied in the SNR kits

FATIGUE SPALLING

Missing sealing cap or failure to replace cap



- Fatigue Incorrect installation
- Incorrect geometry of a neighboring parts



· Removal of material by flaking along the raceway



RECOMMENDATIONS

- When installing the bearing:
- Follow the general recommendations associated with the
- 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

Make sure bearing elements have correct lubrication

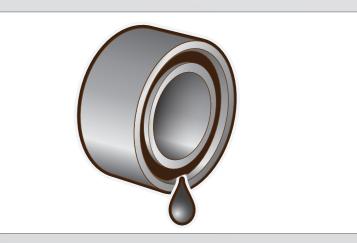
GREASE LEAKS

CAUSES

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

EFFECTS

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



RECOMMENDATIONS

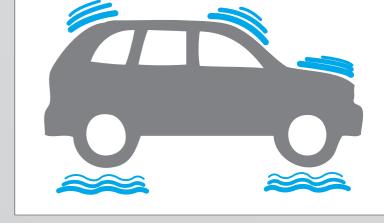
- When installing the bearing:
- Verify that there is no overheating problem
- Check bearing seal integrity

VIBRATIONS

CAUSES

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



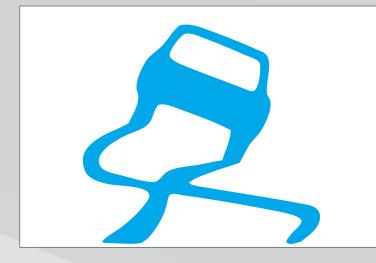
RECOMMENDATIONS

- 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
- Risk of bearing damage (spalling, scratches on the balls)



• Check running gear geometry

RECOMMENDATIONS

- 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



- 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

lights up or remains lit

- Encoder damage
- Bearing installed backwards **EFFECTS**

ABS[®] indicator on the instrument panel





RECOMMENDATIONS

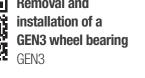
- Verify cleanliness of sensor and encoder
- Never bring the sensor or the encoder near a magnetic source • Check the condition of the encoder seal using the SNR tester
- When installing the bearing: • Take care not to damage the sensor (tearing off), replace it if
- Position the bearing with the encoder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



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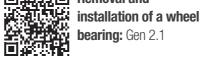






Removal and installation of a rear brake disc with integrated bearing

















Find our wheel bearing removal and installation tutorials on VouTube