POSSIBLE WHEEL BEARING DEGRADATION
BRAKE KITS AND SENSORS

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GENERAL RECOMMENDATIONS

- Use original quality parts
- Work at clean and orderly stations to prevent parts from falling
- Use standard tools (hammer prohibited, torque and fret tool available)
- 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 flange (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 drawknut nut or splines on the vehicle on the ground

- To ensure correct operation of the magnetic sensor, do not mark the magnetic surface of the bearing and do not bring it near a magnetic source (magentic or screened), do not remove the ABS plastic cover till ready for installation
- Handle the products carefully
- Apply the tightening torque specified by the vehicle manufacturer. Refer to our TechScaN’R app

FLANGE INDENTATIONS OR FRACTURES

- Causes:
  - Incorrect geometry of a neighboring part
  - Incorrect installation
  - Fatigue

- Effects:
  - Scratches, "croquet ball" appearance
  - Between the inner rings, the inner edge of the raceway due to a gap
  - Raceway
  - Deep pitting
  - Black stains

- Recommendations:
  - Replace the worn ball joints or suspension bushing
  - Check running gear geometry

SPALLING

- Causes:
  - Fatigue
  - Incorrect installation
  - Increased geometry on the neighboring parts

- Effects:
  - Abrasion generalizer on the bearing
  - More or less severe cracking or block damage
  - Under-abrasions in the bore
  - Deep metal pullouts on the bearing raceway

- Recommendations:
  - Replace the bearing
  - Select the appropriate bearing for the installation
  - Replace the worn ball joints or suspension bushing

SEIZING / OVERHEATING / LUBRICATION FAILURES

- Causes:
  - Lubrication: or inadequate lubrication
  - Rear bearing overloads the bearing
  - Wheel bearings overheating

- Effects:
  - Seizure of the bearing
  - Failure of the bearing during running without lubrication
  - Play in the bearing

- Recommendations:
  - Drive the vehicle with the sealed bearing to an authorized dealer
  - Check cleanliness of sensor and encoder
  - Use original quality parts

GREASE LEAKS

- Causes:
  - Grease high temperature, seizing groove in the cover
  - Grease splashing at wrong installation point

- Effects:
  - Grease leaks from the bearing
  - Failure of grease retention from the bearing

- Recommendations:
  - Sealing the bearing
  - Verify that there is a connecting problem
  - Check bearing run-out

LOSS OF STEERING PRECISION

- Causes:
  - Loss of lubrication
  - Bearing deterioration

- Effects:
  - Risk of bearing damage (spalling, scratches on the balls)
  - Vibrations felt in the steering wheel or in the passenger compartment, while driving
  - On straight line, the vehicle tends to go to the right or to the left

- Recommendations:
  - Secure the bearing run-out and play of the ring
  - Verify the general recommendations associated with the installation

ABS MALFUNCTIONS

- Causes:
  - Computer error
  - Sensor failure
  - Connector problems
  - Positioning

- Effects:
  - ABS malfunction (deteriorating behaviour)
  - No ABS response

- Recommendations:
  - Replace the worn ball joints or suspension bushing
  - Follow the general recommendations associated with the installation

VIBRATIONS

- Causes:
  - Tires not specific for the car
  - Speed limit not observed in the temperature limit

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

- Recommendations:
  - Verify good dimensional condition and conformance of kingpin seat
  - Follow the general recommendations associated with the installation
  - Replace the worn ball joints or suspension bushing

SCRATCHES ON THE BALLS

- Causes:
  - Wheel bearings overheating
  - Rear bearing overloads the bearing
  - Wheel bearings overheating

- Effects:
  - Scratches, “croquet ball” appearance
  - Between the inner rings, the inner edge of the raceway due to a gap
  - Raceway
  - Deep pitting
  - Black stains

- Recommendations:
  - Replace the worn ball joints or suspension bushing
  - Check running gear geometry

FATIGUE SPALLING

- Causes:
  - Fatigue
  - Incorrect installation
  - Increased geometry on the neighboring parts

- Effects:
  - Abrasion generalizer on the bearing
  - More or less severe cracking or block damage
  - Under-abrasions in the bore
  - Deep metal pullouts on the bearing raceway

- Recommendations:
  - Replace the bearing
  - Select the appropriate bearing for the installation
  - Replace the worn ball joints or suspension bushing

RECOMMENDATIONS

Follow the general recommendations associated with the installation

For more information, visit our website:
www.ntn-snr.com

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