TT 08-015

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Proper bearing and seal maintenance

Tech tip

For Improved Bearing Performance.

1. Work with clean tools, in clean surroundings.
2. Keep bearings wrapped until ready to install.
3. Pre-lube bearings before installation. The SKF Taper Bearing Packer, BP270 assures a professional job.

4. Keep bearing lubricants clean and in covered containers when not in use.
5. Remove all outside dirt from housing before exposing bearings.
6. Clean the inside of the housing before replacing bearings.
7. Never spin a bearing dry with compressed air.
8. Never hammer directly on a bearing.
9. Never mix old and new bearing parts.

For Improved Seal Performance.

1. Work with clean tools.
2. Pre-lube the seal with the same lubricant being retained.
3. Double-check the seal part number before installation.
4. Inspect the shaft and bore for burrs, nicks or other damage before installing a new seal.
5. Never reuse old seals.
6. Never hammer directly on a seal. The SKF seal drivers, included in the #19 Cabinet assures a professional job.

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Avoiding bearing failure

Tech tip

The mileage of vehicles most likely to need wheel bearing replacement is between 80,000 and 118,000 miles. Even so, for maximum safety and reliability, SKF recommends that you inspect the wheel bearings during any brake replacement work regardless of the age of the vehicle.

Most manufacturers recommend lubrication at 24,000 miles for the front wheel bearings on rear wheel drive vehicles. However, many times the bearings are not lubricated until the brakes are replaced, which means that bearings can go almost twice as long as recommended before being re-lubricated.

Always be alert for the early warning signs of worn bearings including any friction noise on wheel rotation or unusual slowness in the turning action of the suspended wheel assembly.

When replacing wheel bearings, SKF recommends that you replace the bearings or hubs on both wheels because both wheels have the same mileage and were subjected to the same wear and road condition. This practice helps assure your customers' safety and helps you avoid costly callbacks.

Whenever brakes are replaced, it's a good practice to check the bearings and replace the seals.

Handle with care. Bearings, despite their rugged construction and solid feel, are actually very sensitive machinery components. They must always be handled with extreme care. Even the smallest mishandling during transport, storage or mounting can damage the internal geometry of the bearing which in turn will result in premature bearing failure and potential damage to other related components.

Dirt is deadly. When working with bearings make sure that the workplace is as clean as possible. Even tiny particles of dirt or grit entering a bearing will damage the bearing internally and inevitably shorten its operating life.

The right tools. An important consideration is the type of tools that are used for removal and installation of the bearings. The right kinds of tools can be one of your best investments, enabling you to do the job better and faster.

Avoiding bearing failure – cont.

Mounting Procedures. Follow the correct mounting procedure. Always consult the car manufacturer's workshop manuals. In particular, mounting force applied incorrectly to parts of the bearing will produce indentations in the bearing raceways, which in turn will lead to early bearing failure. If the bearing or the seal are in any way damaged during mounting, early failure will occur. You will hear noise from the bearing after only a short time on the road.

General Recommendations.

1. Work with clean tools in clean surroundings.
2. Always choose the correct grease.
3. Always be sure to check the contact surface for the seal lip. It must be in good condition. Even the smallest mark or rust will damage the seal lip and allow water penetration and eventual corrosion.
4. Never use a hammer to hit directly on the bearing.
5. Do not try to set clearances on Hub units. They are set at the factory with the correct preload. However, tighten the nut to the correct preload as written in the workshop manual.
6. Do not try to set clearances on "set right" arrangements. These bearings are manufactured so that the bearing will have the correct clearance when the locking nut is tightened to the torque specified in the car's shop manual.
7. Always check the condition of the housing and axle when changing wheel bearings. Even the smallest wear will create misalignment, which will result in early failure.
8. Never take a Hub Unit apart before mounting. The raceways and seals will be damaged and the bearings destroyed. The unit will fail prematurely.
9. Do not try to move or adjust the seal on a hub unit. The seal will be destroyed and water penetration will occur, leading to corrosion and premature failure.

Proper bearing cleaning

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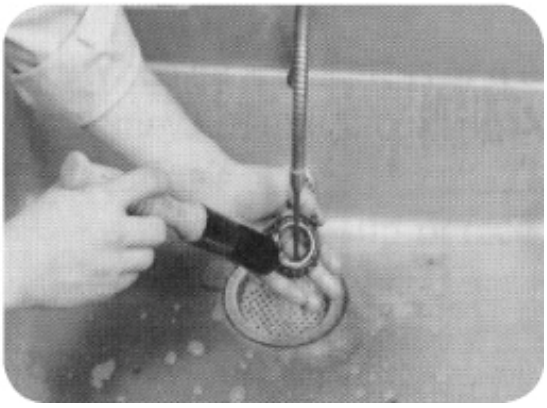
Tech tip

Proper bearing cleaning can mean the difference between good performance and bearing failure. While you must always remember to handle any bearing with extreme care, you also must follow specific procedures when cleaning the bearing. If cleaning is done incorrectly, the bearing, shaft or housing may become damaged, creating a more costly repair job.

To begin the cleaning process for your bearings, soak the bearings in a metal basket suspended in a clean container or tank holding a recommended solvent, overnight if possible. If a basket is not available, suspend the bearings with a wire or place them on a metal plate at the bottom of the container. Do not rest the bearings directly on the bottom of the bucket. (They may not clean as efficiently due to sediment on the bottom of the container.)

After dirt and grease are removed, rinse the bearings in another clean bucket of solvent (fig. 1). The bearings should then be thoroughly dried. The safest method is natural air-drying. Compressed air, which is free from condensed moisture, may be used to blow out the bearings, but only after all dirt and chips have been removed (fig. 2). If compressed air is used, do not allow bearings to spin and always wear safety glasses to protect your eyes from injury.

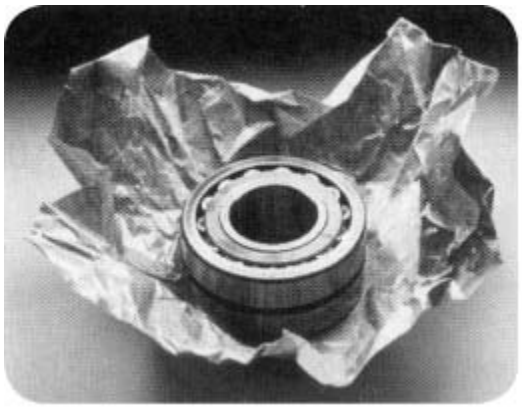


After cleaning, inspect the bearing thoroughly for nicks, leftover dirt and damage. Inspected bearings, which are considered “good” may be used again. However, if re-assembly cannot be done immediately, they should be protected.

Proper bearing cleaning – cont.

Dip the cleaned bearings in a protective lubricant or coat all surfaces with a light grease (fig. 3). Rotate each bearing to work the grease thoroughly in and around the roller and on the races. Then wrap the bearings in waterproof paper and place each in a clean box or carton (fig. 4). If cartons are not available, just wrap them in waterproof paper. Mark the outside of each package to identify the bearing enclosed.

(fig. 3)



(fig. 4)