



RV Bearing Kits / Grease and Oil Seals

Installation and Owner's Manual

(For Aftermarket Applications)

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Introduction

Additional information about this product can be obtained from lci1.com/support or by using the LippertNOW app. Replacement kits can be ordered from <https://store.lci1.com/> or by using the LippertNOW app.

The LippertNOW app is available for free on Apple App Store® for iPhone® and iPad® and also on Google Play™ for Android™ users.

App Store® and iPad® are registered trademarks of Apple Inc.

Google Play™ and Android™ are trademarks of Google Inc.

For additional support on this product, scan this QR code or go to: <https://support.lci1.com/hub-drum>



Safety

Read and understand all instructions before installing or operating this product. Adhere to all safety labels. This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the Lippert limited warranty.

⚠ WARNING

THE “WARNING” SYMBOL ABOVE IS A SIGN THAT A PROCEDURE HAS A SAFETY RISK INVOLVED AND MAY CAUSE DEATH OR SERIOUS PERSONAL INJURY IF NOT PERFORMED SAFELY AND WITHIN THE PARAMETERS SET FORTH IN THIS MANUAL.

⚠ WARNING

FAILURE TO FOLLOW THE INSTRUCTIONS PROVIDED IN THIS MANUAL MAY RESULT IN DEATH, SERIOUS INJURY, RV DAMAGE OR VOIDING OF THE COMPONENT WARRANTY.

⚠ WARNING

WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN PERFORMING SERVICE OR MAINTENANCE OPERATIONS. ALWAYS WEAR EYE PROTECTION WHEN SERVICING TRAILER AXLES, BRAKES, HUBS, SPRINGS AND WHEELS. NOT USING PPE MAY RESULT IN DEATH, SERIOUS PERSONAL INJURY AND/OR SEVERE PRODUCT AND PROPERTY DAMAGE.

⚠ CAUTION

THE “CAUTION” SYMBOL ABOVE IS A SIGN THAT A SAFETY RISK IS INVOLVED AND MAY CAUSE PERSONAL INJURY AND/OR PRODUCT OR PROPERTY DAMAGE IF NOT SAFELY ADHERED TO AND WITHIN THE PARAMETERS SET FORTH IN THIS MANUAL.

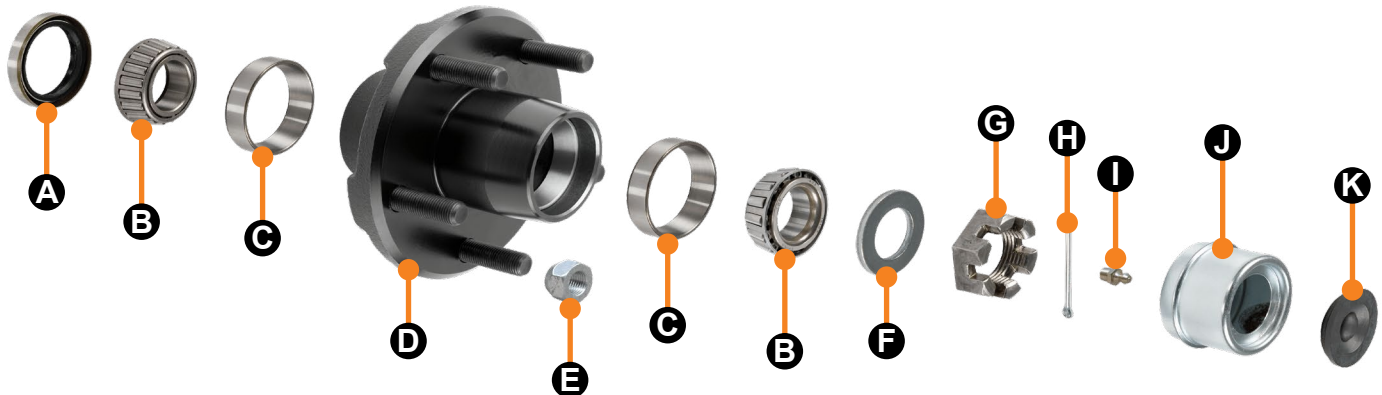
⚠ CAUTION

MOVING PARTS CAN PINCH, CRUSH OR CUT. KEEP CLEAR AND USE CAUTION.

Resources Required

- 1 to 2 persons, depending on task
- Pneumatic air or impact gun
- Torque wrench
- Lug wrench
- Socket and wrench set
- Hammer
- Hardwood block of wood
- Floor jacks and jack stands
- Personal protective equipment
- Grease / anti-seize (see specifications)

Idler Hub Exploded View



CALLOUT	DESCRIPTION
STANDARD IDLER WHEEL END PARTS	
A	Grease Seal
B	Inner / Outer Bearing Cone
C	Inner / Outer Bearing Cup
D	Idler
E	Lug Nut
F	Spindle Washer, Round
G	Castle Spindle Nut
H	Cotter Pin
I	Grease Zerk, Lubed
J	Lubed Dust Cap
K	Dust Cap Rubber Plug

NOTE: Image is shown for general part identification purposes only. Other Idler Hub assemblies may have parts that differ from this image.

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Preparation

Wheels may have either an idler hub assembly or a disc brake assembly. Please refer to the appropriate section for instructions to remove and replace the bearings and grease seals in the corresponding assembly.

Idler Hub Removal

⚠ WARNING

ALWAYS LIFT THE RV BY ITS FRAME AND NEVER BY ITS AXLE OR SUSPENSION. UNLIKE RV FRAMES, AXLE AND SUSPENSION COMPONENTS ARE NOT DESIGNED OR RATED FOR THE DEAD WEIGHT POINT-OF-CONTACT LOADS. DO NOT GO UNDER THE RV UNLESS IT IS SUPPORTED BY APPROPRIATELY-RATED JACK STANDS. IMPROPERLY SUPPORTED RVs CAN COLLAPSE, RESULTING IN DEATH, SERIOUS PERSONAL INJURY AND/OR SEVERE PRODUCT AND PROPERTY DAMAGE.

NOTE: It is normal to have a small residual amount of grease on the exterior of a new hub. Most of the time, simply wiping off the residual grease is an appropriate solution. However, if there is noticeable diminished braking capability or grease continues to weep, the hub should be checked by a qualified service provider. It is not normal for a hub to continue to weep grease after its initial installation. Excess grease can coat the brake pads, magnets and braking surfaces inside of the hub.

Disassemble the idler hub assembly for bearing replacement, inspection or maintenance as follows:

1. Make sure RV is on level ground.
2. Create a clean area to place removed parts to prevent possible contamination or damage to removed parts.
3. Chock tires before beginning wheel disassembly. Chocked tires will prevent RV from rolling while brakes are disengaged during disassembly, cleaning, inspection and assembly operations.

4. Loosen wheel lug nuts before raising the RV to prevent tire from spinning during lug nut removal.
5. After lug nuts have been loosened, raise the RV until the tire spins freely.
6. Continue to lift and support RV per manufacturer's recommendations. Use appropriately-rated jack stands. Place jack stands under the trailer's frame only.
7. Remove all lug nuts from wheel (Fig. 1), then remove wheel from brake hub (Fig. 2).

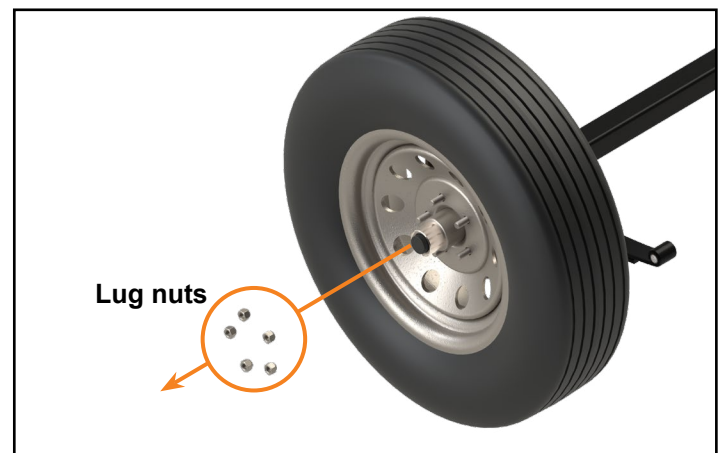


Fig.1



Fig.2

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8. Set wheel and lug nuts aside for later re-assembly.

NOTE: Do **NOT** lean removed tire against RV or any jacks. Leaning a heavy tire against a suspended trailer could cause damage to the outside of the RV or place undue side pressure against a jack, possibly causing the RV to become unstable.

9. Remove the non-lubed dust cap (Fig. 3A) from hub by prying its edge out of the hub.

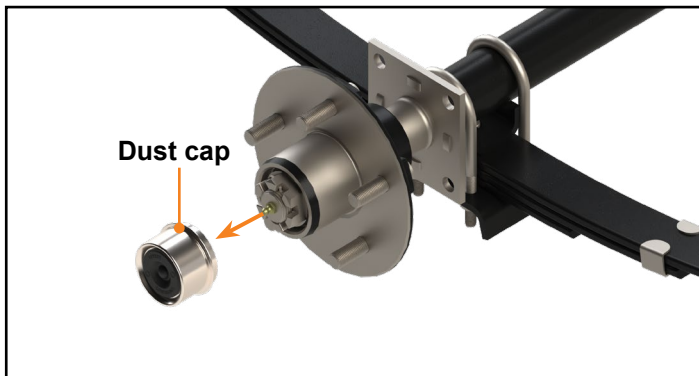


Fig.3

10. Pull cotter pin (Fig. 4A) from castle spindle nut (Fig. 4B) and discard.

NOTE: The cotter pin is a one-time-use item. Do **NOT** reinstall removed cotter pin.

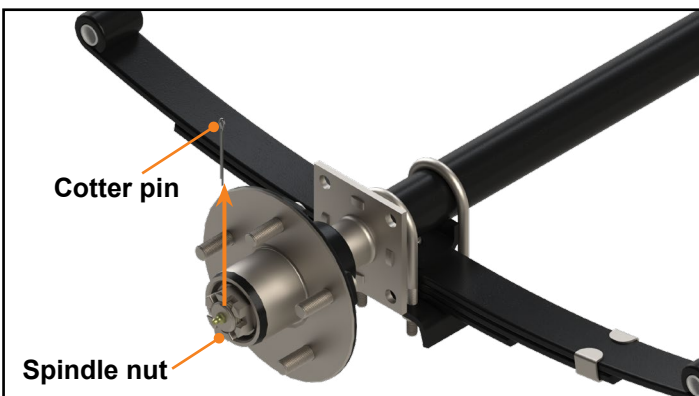


Fig.4

11. Remove the castle spindle nut (Fig. 5).

NOTE: Remaining grease on components can act as a mastic. Inspect removed castle spindle nut for attached spindle washer. If spindle washer did not come off with the castle spindle nut, inspect the outer bearing. Grease may have allowed the washer to stick to it.

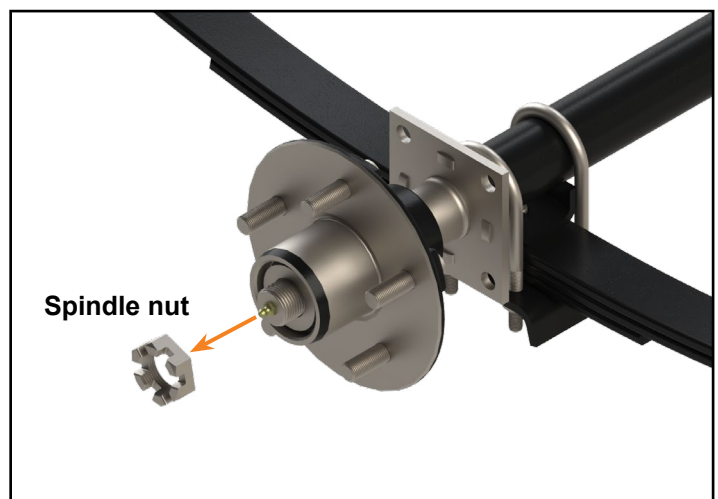


Fig.5

12. Remove spindle washer (Fig. 6A).

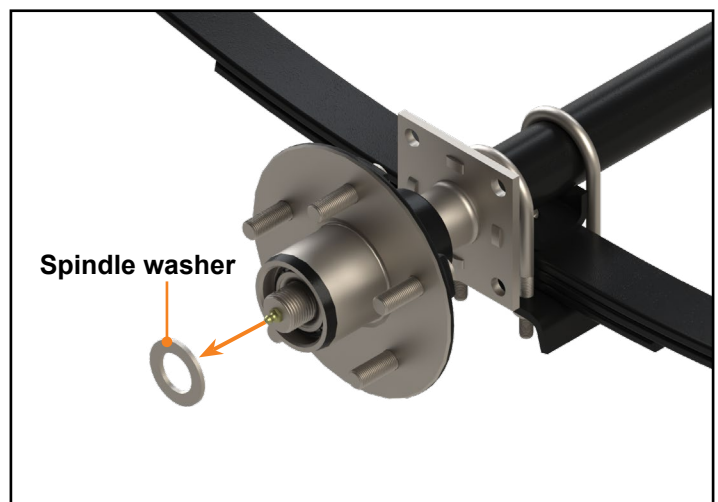


Fig.6

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13. Pull idler hub off of spindle as follows:

- A. Make sure brakes have been disengaged.
- B. To prevent outer bearing cone falling freely from the assembly, place one hand on the back side outer rim of the hub and the other hand over the outside of the hub nose (Fig. 7) to cover the bearing cone.
- C. Slightly turn the hub while pulling to free the hub from the spindle (Fig. 7).
- D. Secure the bearing and place it in the clean, removed-part area.

NOTE: The inner bearing cone and cup remains installed within the hub contained by the grease seal and will not fall out.

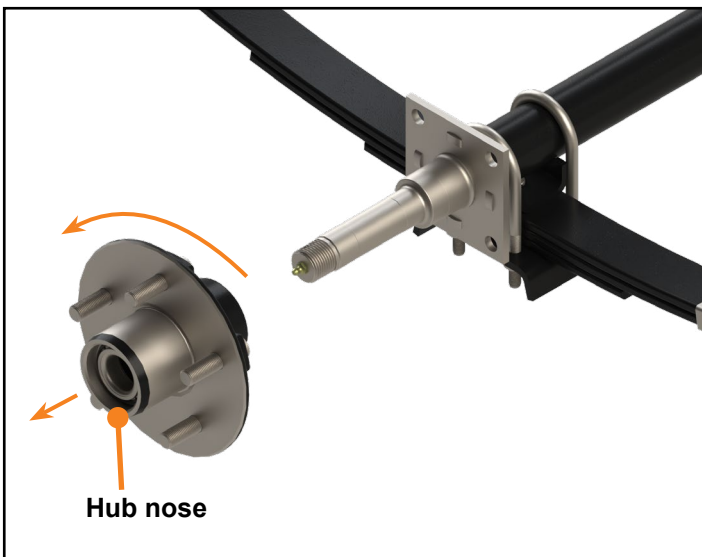


Fig.7

14. Remove the grease seal from the hub bore as follows:

- A. Set the idler hub aside on a clean, solid surface with the outer bearing cup side facing down.
- B. Use a seal puller or equivalent to remove grease seal from hub.

NOTE: Do not reinstall removed seal. Discard removed seal.

Bearing Inspection

⚠ WARNING

WEAR PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN USING CAUSTIC MATERIALS. AEROSOL, LIQUID AND OIL-BASED PASTE MATERIALS CAN PRESENT SPLASH HAZARDS AND SKIN CONTACT ENVIRONMENTS THAT CAN RESULT IN SERIOUS ADVERSE EYE AND SKIN IRRITATIONS. FOLLOW ALL RECOMMENDED SAFETY PRECAUTIONS WHEN USING SUCH MATERIALS.

Upon inspection, bearings should look new and can be reassembled and used if in this condition.

Bearing cones and cups are not interchangeable after installation. Each bearing must be matched with its mating cup. Bearing cones and cups are replaced in matching sets of one cone and one cup.

1. Wash all grease and oil from the bearing cones using a suitable solvent.
2. Dry bearing cones with a clean, lint-free cloth.
3. Inspect bearing cone cages and rollers for any pitting, spalling, corrosion, flat spots, abnormal condition or discoloration.
4. If any of these imperfections are present, then the bearing cone and cup (race) must be replaced at the same time.
5. To remove a bearing cup (race) for replacement from the brake hub, go to Bearing Cup Inspection and Removal procedure.

Bearing Cup Inspection and Removal

⚠ WARNING

WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN PERFORMING SERVICE OR MAINTENANCE OPERATIONS. ALWAYS WEAR EYE PROTECTION WHEN SERVICING RV AXLES, BRAKES, HUBS, SPRINGS AND WHEELS. NOT USING PPE MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



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Clean idler hub as follows:

1. Wipe all grease and oil from the hub, using care not to scratch or otherwise mar the bearing race.
2. Apply brake cleaner to hub.
3. Use lint-free cloths to dry the hub and bearing cups.
4. Inspect bearing cups (raceways) for pitting, spalling, corrosion, flat spots, abnormal condition or discoloration.
 - A. If the bearing cup (race) is in good condition, and its mating bearing cone is in reusable condition, the cup can remain installed in the hub for reuse.
 - B. If the bearing cup (race) is in good condition, but the bearing cone is not, the cup must be replaced.
 - C. If the bearing cup (race) is damaged, the cup must be replaced.
5. Replace damaged bearing cups (race) as follows:
 - A. For either inner or outer bearing cup, use a brass drift punch and hammer to lightly tap around the cup's exposed bearing race edge to push it out.
 - B. Move the drift punch evenly around the bearing cup edge to make sure the cup is pushed out evenly to prevent binding or damage to the bearing cup or hub bore.
 - C. Set the removed bearing cup aside and place it with its mating bearing cone.

NOTE: Removed bearing cones and cups are not interchangeable.

NOTE: Used bearing cone and cup sets must remain matched and re-installed as a matched set until the set is replaced with a new matching set.

6. After removal of the bearing cups from the hub, reapply brake cleaner to the hub and the hub bearing cup bores to make sure all surfaces are properly prepared for component reassembly.

NOTE: Make sure a drip pan is placed underneath the hub to capture the cleaner and permit its proper disposal.

Installation

Hub Reassembly and Preparation

Prepare the idler hub for reassembly onto the spindle as follows:

1. Obtain appropriate hub for installation.
2. Inspect hub for cleanliness.
3. If both bearing cups are installed in the hub bearing bores, go to the Inner Bearing Cone and Grease Seal procedure.
4. If either one of the bearing cups is not installed in the hub, do as follows:
 - A. Place hub on a solid, flat surface with installed bearing cup side of the hub facing down.
 - B. Obtain the appropriate bearing cup for installation.

⚠ CAUTION

BEARING CUP REPLACEMENT IS A PRECISE PROCEDURE. WHEN INSTALLED, THE BEARING CUP MUST BE FULLY SEATED AGAINST THE RETAINING SHOULDER OF THE HUB. IF THE CUP IS NOT SEATED CORRECTLY, DAMAGE TO THE COMPLETED HUB ASSEMBLY MAY OCCUR, VOIDING WARRANTY.

NOTE: Bearing cup replacement is a precise procedure. Consult Lippert prior to replacing a bearing cup. The trailer should be taken to a certified service center for this work to be done.

- C. Gently place new bearing cup into hub bearing bore.
- D. Using a brass drift punch, lightly tap around the outer edge of the cup to drive it into the hub bearing bore.
- E. Continue tapping the drift punch around the circumference of the cup's edge until the cup is fully seated against the hub's bearing bore retaining shoulder.
- F. Wipe the inside of the bearing cup (race) with a clean, lint-free cloth.
- G. Inspect the bearing cup (race) to make sure no damage occurred during installation.

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5. If no bearing cups are installed in the hub, do as follows:

- A. Perform step 4 of this procedure.
- B. Flip hub, exposing the other, open hub bearing bore.
- C. Perform step 4 of this procedure again.
- D. Make sure both bearing cup races are clean and ready for bearing cone and grease seal installation.

6. After both bearing cups have been installed in the brake or idler hub, go to Inner Bearing Cone and Grease Seal procedure.

Inner Bearing Cone and Grease Seal

- 1. Make sure all old grease has been removed from wheel hub, bearings and axle spindle.
- 2. Make sure all mating surfaces for new bearing cone and grease seal are clean.
- 3. Bearings should be packed by machine, if possible. However, packing by hand is a viable alternative.

WARNING

DO NOT MIX LITHIUM, CALCIUM, SODIUM OR BARIUM COMPLEX GREASES. MIXING OF THESE INCOMPATIBLE COMPOUNDS CAN CREATE A CORROSIVE AND/OR TOXIC CHEMICAL WITH FUMES THAT CAN RESULT IN A SERIOUS HEALTH RISK IF EXPOSED TO SKIN OR LUNGS. WHEN CONVERTING FROM ONE GREASE TO ANOTHER, MAKE SURE ALL OLD GREASE IS REMOVED COMPLETELY PRIOR TO APPLYING NEW GREASE.

4. Hand pack inner bearing cone as follows:

- A. If previously removed inner bearing cone is in reusable condition, place a generous amount of grease into the palm of your hand (Fig.14).

NOTE: Select an appropriate grease that is temperature-rated for the wheel's application. Reference Recommended Wheel Bearing Grease Specifications and Approved Sources - Bearing Grease charts.

- B. If the previously-removed inner bearing cone cannot be reused, obtain a new inner bearing cone and place a generous amount of grease into the palm of your hand (Fig.14).

C. Press widest end of bearing into the outer edge of the grease pile, forcing grease into the inner area of the bearing between two adjacent rollers (Fig.14).

D. Repeat this process while turning bearing from roller to roller until all rollers are coated.

E. Apply a light coat of grease into the bearing cup surface (race).

F. Install new grease-packed bearing cone into the cup.

5. Lippert recommends replacing the grease seal whenever bearing packing is required. Install a new grease seal into the hub seal bore to capture the inner bearing cone as follows:

A. Place the new grease seal into the seal bore.

B. Apply a light film of sealant onto the outer rim of the seal.

C. Make sure seal is set square to the hub seal bore before pressing the seal all the way in or the seal may become damaged.

D. Use a clean, hardwood block of wood and hammer to drive the seal into the seal bore (Fig.15).

E. Place the wood block evenly across the seal.



Fig.8

F. Hold the wood block firmly in place as you begin to tap the seal squarely into the seal bore with the hammer.

G. Continue to tap the seal inward until the seal's outer face is flush to the hub's seal bore face.

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Fig.9

Recommended Wheel Bearing Grease Specifications

Thickener type	Lithium complex
Dropping point	446° F (230° C) minimum
Consistency	NLGI No. 2
Additives	EP, corrosion and oxidation inhibitors
Base oil	Solvent refined petroleum oil
Base oil viscosity	@104° F (40° C) 695 SUS (150cSt) minimum
Viscosity index	80 minimum
Pour point	14° F (-10° C) minimum

Approved Sources - Bearing Grease

Mobil Oil	Mobilgrease HP
Exxon/Standard	Ronex MP
Kendall Refining Co.	Kendall L-427
Ashland Oil Co.	Valvoline Val-plex EP Grease
Pennzoil Prod. Co	Premium Wheel Bearing Grease 707L

Periodic Bearing Inspection

A physical bearing inspection should be conducted every 36,000 miles or 12 months, whichever comes first. An inspection of the bearing condition can detect early bearing issues.

Upon inspection, bearings should look brand new and can be reassembled and used if in this condition. If discoloration, pitting, corrosion, flat spots or some abnormal condition is observed, the bearing and race should be replaced at the same time. Bearings are available at auto part stores.

Bearing Lubrication Inspection

Should be performed annually unless periodic brake inspections reveal abnormal braking performance.



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Notes



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