

AXLES AND SUSPENSION

Purpose

This document outlines the inspection and maintenance procedure for wheel bearings.

Safety

⚠ 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.

Bearing Inspection

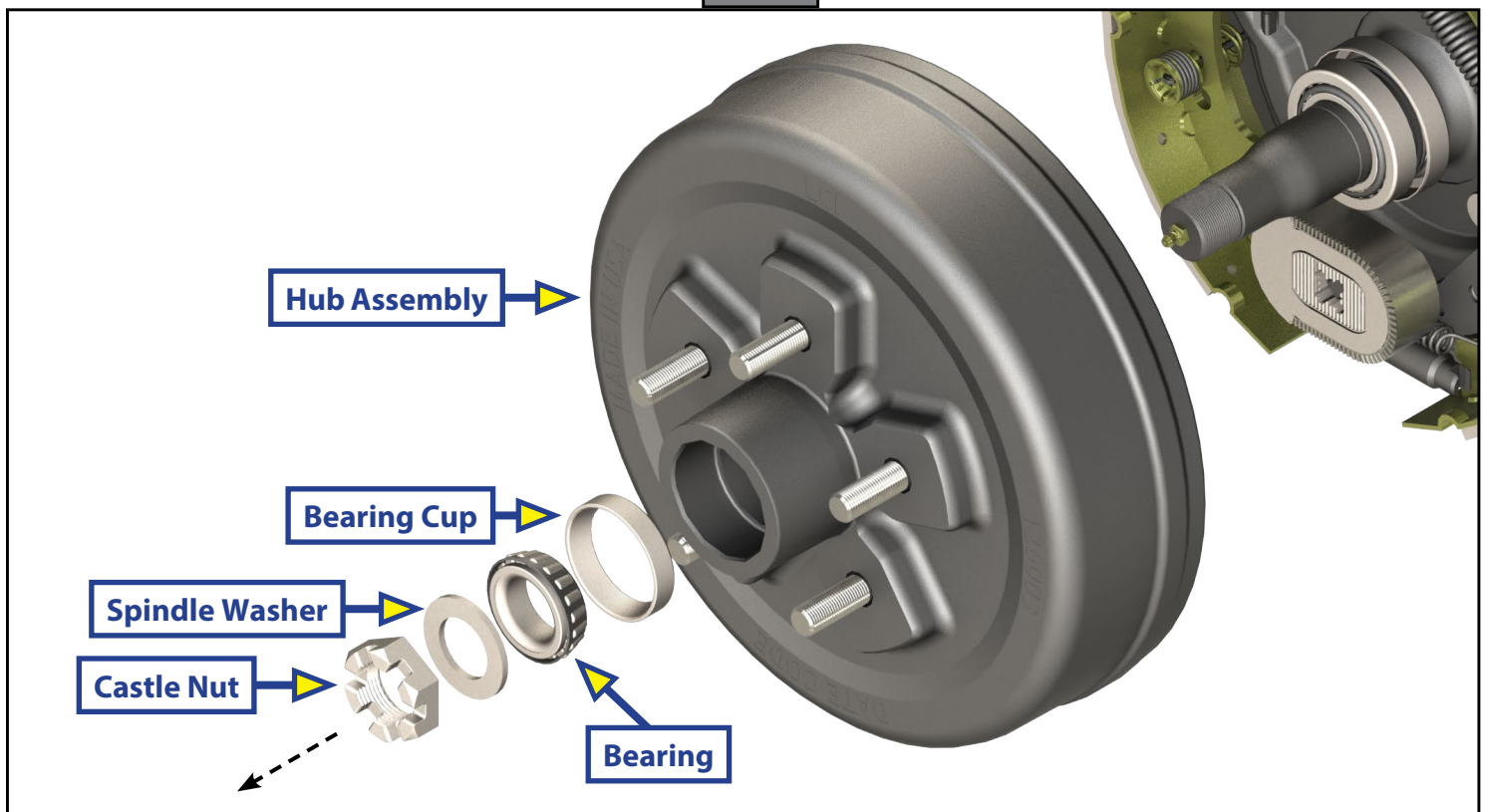
Wash all grease and oil from the bearing cone using a suitable solvent. Dry the bearing with a clean, lint-free cloth and inspect each roller completely. If any pitting, spalling, or corrosion is present, then the bearing must be replaced. The bearing cup inside the hub must be inspected.

NOTE: Bearings must always be replaced in sets of one cone and one cup.

⚠ CAUTION

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.

Fig. 1





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Replacing the Bearing Cup

1. With an appropriate seal pulling tool, remove the old grease seal from the hub assembly.

NOTE: As a new grease seal will be installed, it is acceptable to damage the old grease seal during removal. If any grease gets on the hub assembly during this process, clean it off immediately.

2. Remove the bearing from the hub assembly.
3. With the bearing removed, use a clean lint free towel to remove any old grease from the inside and outside of the hub assembly. Be thorough and ensure all old grease is removed
4. Place hub on a flat surface with bearing cup on the bottom.
5. With brass drift punch, lightly tap with a hammer around the small end of the cup to push it out. Tap around the cup in a circular manner, traveling around the edge of the cone until it comes free. Discard the bearing cup, as it must be replaced when replacing the bearings.
6. If replacing the outer bearing cone, flip the hub assembly over, supporting it with blocks of wood for stability. Perform the same brass drift punch procedure as performed in Step 5.
7. Clean the hub bore with a lint free rag, ensuring all old grease is removed. Using brake cleaner, work from the inside to the outside of the assembly to clean away any grease, brake dust, or rust.

NOTE: It is vital to remove any grease or buildup on the brake mating surfaces.

8. Replace the cup by tapping it in, ideally with a seal punch. Ensure the bearing cup is installed in the correct orientation, with the thicker side facing downward. If a seal punch is unavailable it is acceptable to use the brass drift punch. The cup should be seated against the retaining shoulder in the hub.

⚠ CAUTION

Replacing the bearing cup is a very precise process. The cup MUST be perfectly seated when replaced. If the cup is not seated correctly, damage to the assembly may not be covered by the warranty. Consult Lippert Components, Inc. prior to replacing bearing and bearing cup. The trailer should be taken to a certified service center for this work to be done.

⚠ 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.

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Fig. 2



Lippert Components, Inc. 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:

1. Place the new grease seal into the seal bore.
 - A. Apply a light film of sealant onto the outer rim of the seal.
 - B. 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.
2. Use a clean block of wood and hammer to drive the seal into the seal bore (Fig. 2).
 - A. Place the wood block evenly across the seal.
 - B. Hold the wood block firmly in-place as you begin to tap the seal squarely into the seal bore with the hammer.
 - C. Continue to tap the seal inward until the seal's outer face is flush to the hub's seal bore face.

⚠ CAUTION

Make sure the oil seal is properly oriented during part installation. Most oil seals have one side marked "AIR SIDE." This side MUST face outwards and not towards the bearing or component failure will occur. Make sure when installing a new oil seal the side marked "AIR SIDE" is facing outward, away from the bearing cone.

Bearing Cone and Grease Seal Installation

Bearing grease should be replaced annually or every 36,000 miles, whichever comes first.

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.

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Bearing Lubrication - Grease

Follow these procedures to repack bearings by hand:

1. Place grease into the palm of your hand (Fig. 3).
2. 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. 4).
3. Repeat this process while turning bearing from roller to roller until all rollers are coated.
4. Apply a light coat of grease into the bearing cup surface.
5. Reassemble bearing into cup.

Fig. 3



Fig. 4



Fig. 5



Bearing Lubrication - Oil

If your axles are equipped with oil lubricated hubs, then your lubrication procedure is to periodically fill the hub with a high quality hypoid gear oil to the level indicated on the clear plastic oil cap (Fig. 5). The oil can be filled through the rubber plug hole in the cap.

Recommended Oil Lube for axle bearings:

Oil designation : SAE 90, SAE 80W-90, SAE 75W-90

Approved Oil Sources	
Union Oil Co.	Unocal MP Gear Lube
Exxon Co.	Gear Oil GX 80W-90
Mobil Co.	Mobilube SHC 75W-90
Pennzoil Co.	Gear Plus 80W-90 GL-5
	Gear Plus 75W-90

Approved Grease Sources	
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



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The axle bearings are lubricated with a SAE 80-90W hypoid gear oil. Periodically check oil levels as follows:

1. Make sure trailer has been parked for a few minutes to allow oil to cool.
2. Check and refill brake hub oil to the level indicated on the plastic oil cap.
3. To fill brake hub with oil, remove rubber plug or cap plug from the hub's oil cap.
4. Fill oil through the plastic cap until oil level is complete.
5. Insert rubber plug or cap plug into plastic oil cap.
 - A. Tighten oil cap to 25 ft-lbs. Do not over-tighten oil cap or an oil leak may occur.

⚠ CAUTION

Do not over-tighten plastic oil cap. Over-tightening can damage O-ring, resulting in an oil leak.

Recommended Wheel Bearing Grease Specifications	
Thickener Type	Lithium Complex
Dropping Point	230°C (446°F) Minimum
Consistency	NLGI No. 2
Additives	EP, Corrosion and Oxidation Inhibitors
Base Oil	Solvent Refined Petroleum Oil
Base Oil Viscosity	@40°C (104°F) 150cSt (695 SUS) Minimum
Viscosity Index	80 Minimum
Pour Point	10°C (14°F) Minimum

Bearing Adjustment

1. Castle nut should be torqued to 50 ft-lbs.
2. Rotate the hub during the tightening process.
3. Loosen castle nut to back off the torque.
4. Tighten castle nut finger tight until snug.
5. Insert new cotter pin. If cotter pin does not line up with the hole, back castle nut off slightly until pin can be inserted.
6. Bend cotter pin over to lock castle nut in place. Nut should be free to move with only the cotter pin keeping it in place.

As a supplier of components to the RV industry, safety, education and customer satisfaction are our primary concerns. Should you have any questions, please do not hesitate to contact us at (574) 537-8900 or by email at customerservice@lci1.com. Self-help tips, technical documents, product videos and a training class schedule are available at lci1.com or by downloading the MyLCI app.