

FUWA K HITCH (AUSTRALIA) PTY LTD

UNITIZED WHEEL END MAINTENANCE PROCEEDURES



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SCOPE

SKF LUNAR ADH range consists of a cartridge (THU1) bearing unit. This bearing is permanently sealed and lubricated, and the bearing is not serviceable. While the LUNAR hub offers reduced maintenance, it still requires regular inspection. This procedure covers inspection, removal and installation. Please consult "AXLE MAINTENANCE PROCEDURES" for information not covered in this procedure e.g. wheel rim installation.

Axles can be identified from the hubcap with inscription on it:

"SKF LUNAR HUB WITH CR SEALING TECHNOLOGY."

Description of SKF LUNAR ADH components is below:

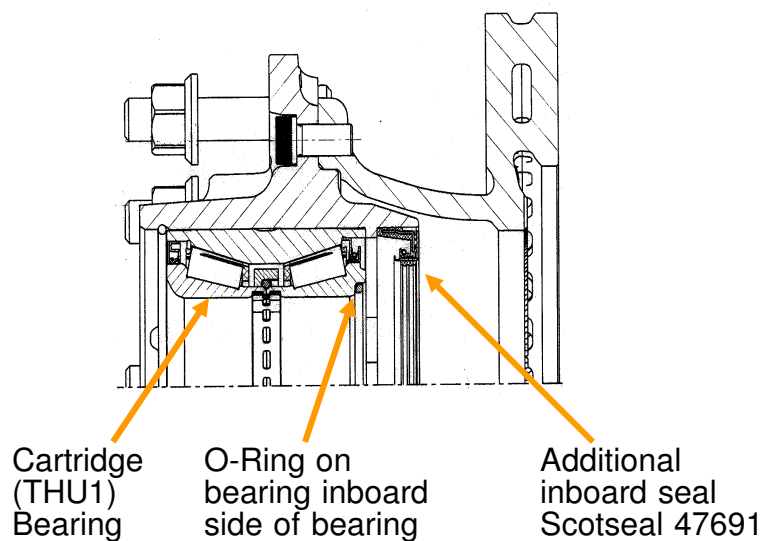


Figure 1

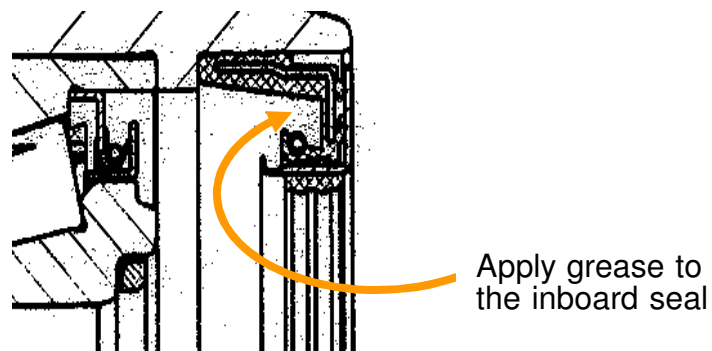


Figure 2

INSPECTION

1) Inspection Interval.

- Normal Duty Operation - Inspect the wheel end every 200,000kms or 12 months, whichever comes first.
- Heavy Duty Operation - Inspect the wheel end every 100,000kms or 6 months, whichever comes first.

Note: Additional inspections should be carried out before removing the hub assembly.

Inspection:

The wheel inspection consists of checking smooth rotation and movement, seal leaks, and bearing endplay.

2.1 **Checking Smooth Rotation and Movement:**

1. Rotate the Hub.
2. Listen for worn bearings that make a low-pitched grinding sound while the hub is rotated. The wheel rims will amplify the noise if assembled. If the bearing is noisy, check the bearing endplay.

2.2 **Checking the Seals:**

1. Check the additional inboard seal for leakage. There maybe some grease on the spindle shoulder from installation, this is not classified as leakage.
2. Remove hubcap and check O-Ring for splits or cracks. Replace O-Ring (P/N: CRS.OR150.0x5.0-S) if damaged.

2.3 **Checking bearing endplay:**

1. Check the bearing endplay:
 - a. Remove the wheel rim and tyre.
 - b. Remove the hubcap.
 - c. Attach a magnetic base of a dial indicator to the end of the spindle with the dial indicator point touching the hub.
 - d. Push the hub inward until the dial indicator does not change and zero the dial indicator. Do not rotate the hub.
 - e. Pull the hub outward until the dial indicator does not change and record the dial indicator reading. Do not rotate the hub.
2. Take the following action depending on the endplay recorded:
 - a. If endplay is less than 0.08mm, no action is required.
 - b. If endplay is above 0.08mm, then:
 - i. Open the lock tab washer.
 - ii. While rotating the hub a minimum of 10 times, tighten the castellated nut, torque the nut to 950Nm (700 lb/ft).
 - iii. Fold at least two of the tabs on the lock tab washer over the nut to lock the nut in position.
 - c. If endplay is above 0.20mm after tightening the nut, then replace the bearing.

3. Removing the hub.

Following standard procedures to remove tyre and wheel rim depending on wheel rim used, ensure that all safety requirements are followed.

1. Ensure the hub weight is securely held to support its weight when hub is removed from axle.
2. Remove six hubcap bolts and hubcap.
3. Open the tabs on lock tab washer.
4. Remove the castellated nut and thrust washer.
5. Hold the hub with both hands and pull the hub as straight as possible to prevent damaging or dislodging the center clip in the bearing inner ring. If hub does not slide off, then tap lightly & evenly on the axle inboard of where the additional seal is located on the axle, while pulling on the hub. If hub still does not move, then use a puller.

4. Installing the hub.

Do not try and assemble the hub with wheel and rim attached. The additional seal should be replaced each time the hub is removed, fit a new seal (P/N: Scotseal 47691) before installing hub.

1. Using a clean rag, clean the hub bore and axle spindle.
2. Check the axle spindle, hub bore, and axle spindle shoulder for scratches, burrs and any surface imperfection. If required use emery paper to repair. Clean again after using the emery paper.
3. Inspect the thread and nut, clean & lubricate both and run the nut up the full length of the thread to ensure it is free and not affected by high spots.
4. Apply a light film of anti-fretting grease (P/N: LGAF 3E) to the entire bore of the bearing unit, including the O-Ring on the inboard side of the bore. Also apply the same lubricant to the inside diameter of the additional seal.
5. To ensure proper seal life, **Partly fill annulus** (cavity) between the Scotseal and LUNAR bearing unit. (About 50% is adequate) with grease (P/N VKG 1(Lithium complex grease, LGWA 2, mineral grade Operating temp. up to 180 C)
6. Apply grease to the seal. (As shown in figure 2)
7. Take time to carefully align the hub bore with the axle spindle, and slide the hub straight on. If the hub jams, remove the hub repeat installation taking additional care aligning the hub. Do not force the hub if it jams.
8. Lightly lubricate the face of the castellated nut with grease (P/N: VKG 1 (as above), install the thrust washer and the castellated nut.
9. Torque the nut to 950Nm (700 lb/ft), **While rotating the hub a minimum of 10 times.**
10. Fold at least two of the tabs on the lock tab washer over the nut to lock the nut in position.
11. Ensure the hub rotates freely, and measure the bearing endplay as per section 2.3.

12. Check hubcap and hubcap mating surfaces are free of dirt and burrs. Check the O-Ring for splits or cracks, replace O-ring if damaged. Lightly grease the O-Ring before installing hubcap. Lockwashers of the split, conical or internal toothed design may be used in conjunction with the fastening bolts (do not use flat washers). Thread all bolts loosely, and then tighten down uniformly in a star pattern with 16 to 22 Nm.

6. Replacing the additional seal (P/N: Scotseal 47691).

The additional seal must be replaced each time the hub is removed. Be careful not to confuse the additional seal with the inner and outer seals within the cartridge bearing, these seals are not replaceable.

1. Remove the additional seal using a seal removal tool (SRT-1). If this tool is not used, ensure the end of the cartridge bearing is protected by placing a plate over the end of the bearing.
2. Place the hub assembly flat or at least 45° angle on a clean surface for seal installation.
3. Check the hub bore is clean and free of any scratches and burrs.
4. Lightly lubricate the seal outside diameter evenly with a thin film of grease. Also apply a thin layer of grease to the hub bore that the seal is being pressed into.
5. Press the seal by hand evenly into the bore. A rubber mallet or soft-faced tool may be used to gently tap the seal into the place. Ensure the seal is evenly seated and bottomed out in the bore. As in any seal installation, apply an even driving force to avoid cocking the seal or damaging the flange surface. Replace the seal if it is cocked or damaged during installation.

DO NOT WELD WHEEL HUBS

Welding on any portion of a Wheel Hub will result in substantial structural damage.

Scotseal is a registered trade mark of SKF.