

Axle stub wear limits and preparation

Wear limits

To inspect the wear on the bearing journals, the hub needs to be removed from the axle first. For ECO Plus and Plus 3 axles, the entire hub unit can be removed via the axle nut. On ECO Plus 2 axles it is recommended to remove the axle bolt first. This is done as a precautionary measure, so that any resistance does not damage the threads.

Once removed and the axle stub is cleaned off excess grease, the bearing journal surface must be inspected as it may have a brown stain on it (see Photo 1). Every sign of this stain must be removed.

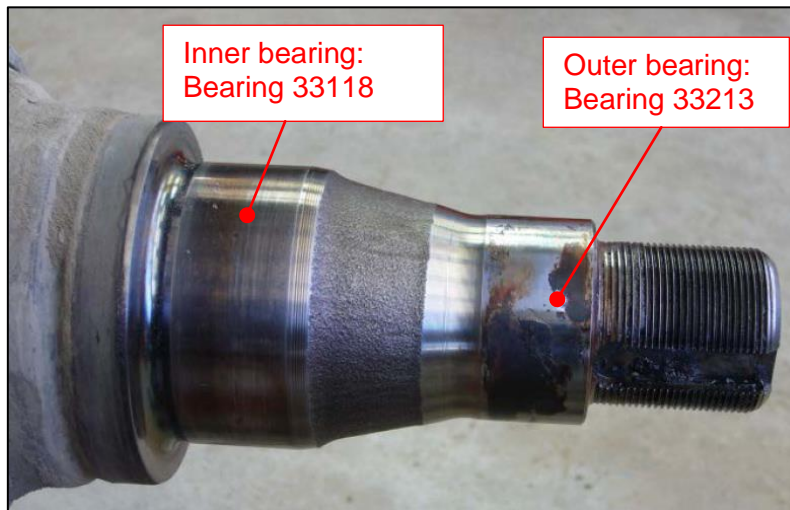


Photo 1: Axle stub – showing bearing journals

The bearing journals have a very fine tolerance which needs to be maintained to ensure optimum performance. Do not use sandpaper or emery tape to clean the journal. Only the use of scotch pad or similar is allowed.

Once the stain and blemishes are gone, the bearing journals need to be measured with a micrometer (not a vernier calliper). The minimum journal diameter are given in the table below. The measurements need to be greater than the values given in the table.

Wear limit	Bearing journal	Normal journal diameter	Minimum journal diameter
Eco and EcoPlus axles	Inner bearing - 33118	Ø90 mm	Ø89,90 mm
	Outer bearing - 33213	Ø65 mm	Ø64,90 mm

Assembly of the hub back onto the axle

For ECO Plus and Plus 3 axles, before assembling the hub back onto the axle, it must be ensured that the bearing surfaces are clean. Once clean the bearing journals must have A&P (Assembly and protection) spray applied or alternatively a thin layer of ECO-Li Plus grease can be applied to the bearing journal and axle beam threads.

Workshop Instruction: Eco Plus 2 Axle Bolt & Thread Service

1. Tools Required

- Eco Plus 2 hubcap removal spanner
- Mallet
- Paintbrush
- Ratchet with size 46 socket
- Circlip pliers
- M32x2 tap
- Q20 lubrication spray or similar
- BPW Eco-Li Plus grease
- Spanjaard Nickel Compound



2. Procedure

2.1. Remove the Axle Bolt

1. Place the Eco Plus 2 hubcap removal spanner over the hubcap and lightly tap ANTI-CLOCKWISE with the mallet until the position indicators have moved from position A to position B. (see below)



Position A: Groove on hubcap and mark on hub aligned in the TIGHT position



Position B: Groove on hubcap and mark on hub aligned in the LOOSE position

2. Remove the hubcap and the O-ring.



3. Unclip and remove the safety pin.



4. Using the circlip pliers, remove the circlip.

Please Note: The circlip is removed as a precautionary measure, so that any resistance does not damage the threads.



5. Use the ratchet and size 46 socket to loosen and remove the axle bolt.
6. Remove the hub and drum from the axle.



2.2. Re-Tap the Thread

1. Use a cloth to clean the bearing journals and the inside of the thread.



2. Spray Q20 or similar lubricant into the threaded hole.



3. Insert the M32x2 tap into the thread and re-tap the entire length of the thread. Please Note: This procedure is only to clean, not to cut a new thread. Do not force the tap.



4. Use a cloth or pressurised air to remove all shavings from the thread.



2.3. Re-Assemble the Hub

1. Using the paintbrush, apply a thin film of Nickel Compound to the clean bearing journals.

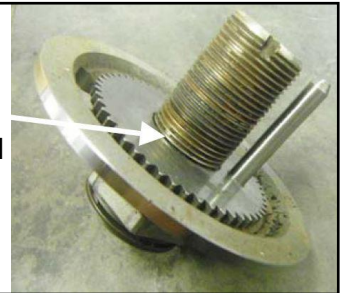


2. Lift and slide the hub and drum assembly onto the axle.

3. Inspect the axle bolt and:
 - a. If the bolt is of the old design, replace it with the new bolt. (BPW Part Number: 09.001.37.03.0)
 - b. If the bolt is of the new design, use a cloth to clean off all the grease.

Old Axle Bolt:

Distinguishable by the fully threaded shank.



4. Apply a thin film of Nickel Compound to the clean threads.



5. Insert the bolt into the axle and use the ratchet to fasten the bolt while rotating the hub by hand, until the self torquing bolt audibly clicks over.



6. Using the circlip pliers, insert the circlip, ensuring it is securely in place.



7. Insert the safety pin and place the clips behind the axle bolt.



NB: Ensure that the safety pin is correctly located in the slot behind the bolt head as shown in the images below.



8. Insert a new O-Ring into the groove on the hub.
(BPW Part No: 02.5678.65.00)



9. Apply a thin layer of grease to the hubcap in the area of the bayonet lock.



10. Mount the hubcap on the hub, ensuring that the grooves are aligned as shown in Position A (see below). Use the Eco Plus 2 hubcap spanner and a mallet to tap the hubcap in a CLOCKWISE direction until the indicators are aligned as shown in Position B.



Position A: Groove on hubcap and mark on hub aligned in the LOOSE position



Position B: Groove on hubcap and mark on hub aligned in the TIGHT position