

BPW Aluminium Hub

BPW Axles has recently launched the high strength forged aluminium hub. The hub has been designed for the lightweight trailer in mind. With a 54 kg weight saving on a tri-axle unit one can carry an approximate 68 litres of fuel and due to the fewer trips being travel save on CO₂ emissions. It is easily retrofittable in that it can be interchanged with the standard steel hub. The difference is that the track length will increase by 10mm, this in turn will increase the stability of the vehicle. The aluminium hub is used on trailers with single wheels with either the drum (SN 4218), or disk (TS2 4309 or TSB 4309) braked axle. The hub is KTL_{Zn} coated and uses the current ECO Plus bearing and seal technology.

Replacing bearings

When the time comes to replace the bearings, the following steps need to be carefully adhered too.

Removing the bearing cups

1. Disassemble all removable components from the aluminium hub. Wheel studs, seals, axle nuts and locking rings must be replaced without heating.
2. Place the aluminium hub (1) on a soft surface, e.g. wood (2), see Fig. 1.
3. Manufacture a sheet metal strip (3) to protect the wheel hub during welding. Dimensions: 40 mm x 0.5 mm x 475 mm.
4. Insert the sheet metal strip into the aluminium hub.
5. Adjust the inert gas welding unit:
 - amperage: 260 A
 - voltage: 36 V
 - wire thickness: 1 mm

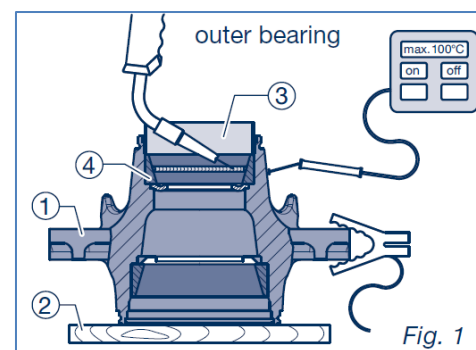


Fig. 1

Repair guide!

The specified basic conditions (current strength, voltage, wire thickness) must be strictly maintained to prevent the temperature in the hub from rising above 100° C. **Hubs that have been heated above 100 °C can lead to failures during operation.**

6. Place the welding bead in the bearing cup of the outer bearing (4) so that it runs all the way round. Remove the sheet metal strip.
7. Turn the aluminium hub over, insert the sheet metal strip (3) and place a welding bead in the bearing cup of the inner bearing (5); see Fig. 2.

The cooling welding bead pulls the bearing ring together so that it can be easily dismantled.

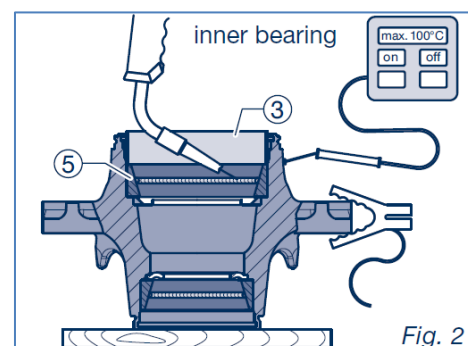
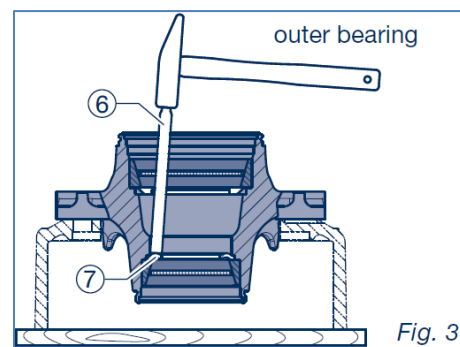


Fig. 2

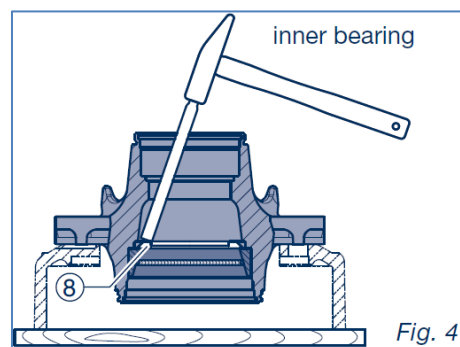
8. Place the aluminium hub on a brake drum; see Fig. 3.
9. Use a mandrel (6) to drive out the bearing cup of the outer Bearing (7), with light hammer blows.



Repair guide!

Do not damage the bearing seats with the mandrel. Aluminium hubs with a damaged bearing seat must be replaced.

10. Drive out the bearing cup of the inner bearing (8), with a mandrel using light hammer blows; see Fig. 4.



Assembly of the bearing cups

1. Before the bearing cups are assembled, the aluminium hub must be heated to 80 - 90° C in an oven. Press in the bearing cups as quickly as possible using the BPW pressing tool 15.011.20052 and 15.013.20052.
2. Mount seals, tapered roller bearings, axle nuts, locking rings and wheel studs according to the workshop manuals.