

White Industries Rear Hub Instructions

Tool required: 2mm allen/hex wrench, 19mm socket, 20mm socket, and mallet.

1. Loosen the set screws located in the adjusting collar by using a 2mm allen wrench inserted thru the access hole in the hub shell by $\frac{1}{2}$ a turn (Fig.1). Rotate the axle to locate and loosen all three set screws. If you loosen the set screw more than $\frac{1}{2}$ a turn, it will bind on the inside of the hub shell and you will not be able to remove the hub collar.

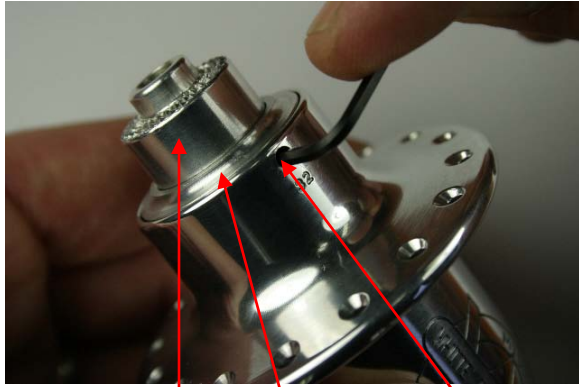


Fig.1 Axle end, hub collar, access hole.



Fig.2 Remove axle end.

2. Pull out the non-drive side axle end located next to the hub collar (Fig.2). If the axle end will not pull out by hand, thread a 6mm bolt into the axle end (Fig.3); slide a QR skewer through the hub from the opposite side so the skewer butts up against the end of the bolt. Tap on the end of the QR to drive the axle end from the axle (Fig.4).



Fig.3 Thread 6mm bolt into axle end.



Fig.4 Tapping QR to free axle end.

3. Push the axle out from the non-drive side toward the drive side of the hub. Use a dowel or socket, we used a 10mm socket, that is the same size as the outside diameter of the axle (Fig.5), butt the socket up against the axle and tap on the socket to drive the axle through the hub shell (Fig.6). Once the axle is clear of the hub collar, remove the collar, you can then continue to push the axle through the shell by tapping on the socket. Be very careful as you tap, the pawls have a tendency to be knocked free. Try to work on the hub over a shop towel so that the pawls, should they fall out, will not be lost.



Fig.5 Place socket or dowel against axle.



Fig.6 Tap socket to drive axle through shell.

Alternatively, hold onto the freehub body with a shop towel and pull the freehub body and axle assembly out and away from hub shell (Fig.7). **Caution: The splines on the Campy freehub bodies can be extremely sharp.**



Fig.7 Pulling freehub body and axle out.

4. Remove thrust washer from axle/free hub assembly (Fig.11). Use a mallet to tap on the end of axle and push it through the freehub body (Fig.12). Finish removing the axle by pulling it out of the freehub body (Fig.13). Check the drive side press on axle end. The press on axle end should be firmly affixed to the axle, check it by trying to twist it (Fig.14).



Fig.11 Remove thrust washer.



Fig.12 Tap axle through freehub body.



Fig.13 Pull axle out of freehub body.



Fig.14 Checking fit of pressed on axle end.

5. Check the bearings in the hub shell and freehub body for roughness. If it is determined that the bearings are in need of replacement, pull the bearings from the bearing bore utilizing a bearing removal/puller tool. As a last resort, a hammer and punch may be used to strike at the back inner race of the bearing working the bearing from the bearing seat outwards. Please take note that this can damage the bearing beyond repair, so only do this if you are going to replace the bearings.

If new bearings are needed, they should be pressed in place using a bearing press or tapped in place using a mallet and a socket that is the same diameter as the outer race of the bearing, we've used a 20mm socket for 6902 bearings. Do not tap on the seal or the inner race of the bearing as this can damage the bearing beyond repair. When pressing the new bearing it is critical that the bearing is straight when being pressed and seated into the bearing bore.

6. Clean out the ratchet ring area in the hub shell so that it is free of grease. Replace pawls and spring as needed and coat pawl and spring pockets with a light oil or dry lube (Fig.9). **DO NOT GREASE**. Check the function of each pawl by gently depressing each pawl (Fig.10). The pawls should easily spring back into place.

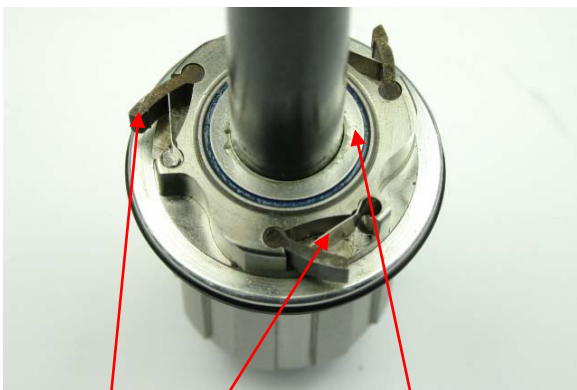


Fig.9 Pawls, springs, thrust washer



Fig.10 Checking pawl movement.

7. Lightly grease the axle. Slide the axle with the pressed on axle end through the freehub body (Fig.15). You may need to tap the end of the axle to fully seat it against the bearing (Fig.16). Slide the thrust washer on the axle (Fig.17) and then slide axle through the hub shell (Fig.18).



Fig.15 Insert axle into freehub body.



Fig.16 Tapping axle into place.



Fig.17 Install thrust washer.



Fig.18 Slide axle through hub shell.

When the freehub body contacts the hub shell twist the driver counter clockwise to engage the pawls into the ratchet ring located in the hub shell. One or more of the pawls may become stuck at this point preventing the freehub from completely seating. Carefully use the end of your 2mm hex wrench to push them free and then continue to rotate the freehub as you push down on it until fully seated and the pawls engage (Fig.19). Be patient, the freehub body doesn't always drop right into place; it may take a few attempts before it is fully seated. After that, tap the axle end with a mallet to fully seat it against the bearing (Fig.20).



Fig.19 Freeing pawls with 2mm hex wrench.



Fig.20 Tap axle end with mallet.

8. Install the adjusting collar (Fig.21) and the adjustable axle end (Fig.22). The recess on the adjusting collar should face outwards.



Fig.21 Installing adjusting collar.



Fig.22 Inserting adjustable axle end.

9. Adjusting the hub: Set the hub down on the drive side axle end, apply a slight downward pressure to the hub or rim. Press down on the adjusting collar to take up any play in the hub (Fig.23).



Fig.23 Press down on adjusting collar.



Fig.24 Press collar while tightening set screws.

Place a socket, we used a 19mm, over the adjustable axle end that **presses solely on the adjusting collar as you tighten the set screws snugly** (Fig.24). You cannot adjust the play in the hub by pressing on the axle ends, so don't tighten a QR skewer in the hub or clamp it tightly in a truing stand to remove play as this will not work, After tightening the set screws, use your thumbs to press alternately on each axle end to feel for any play (Fig.25). If you feel some play, loosen the set screws and repeat step #9.



Fig.25 Checking hub for play.

10. Once the hub is properly adjusted try a quick spin around the block to make sure all remains in adjustment.

WARRANTY: This warranty applies to all products sold by an authorized White Industries Dealer to the original owner. It covers any and all material and workmanship defects for one year from the date of purchase. Bearings are the exception and are warranted for 60 days from the date of purchase. With proper maintenance bearings should last much longer. White Industries limited warranty does not cover 1) normal wear and tear 2) damage, failure or loss caused by misuse, accident, improper assembly or installation 3) parts subjected to use not consistent with the use originally intended for the product.