



Ritchey WCS V4 Rear Hub Service Instruction

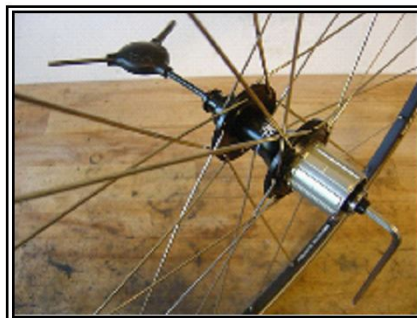
Up to 2007 road & MTN wheels

WCS Protocol – WCS Carbon – WCS Girder – WCS Zeta – WCS Apex



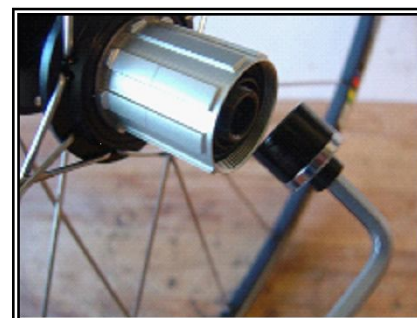
Tools required

- Screwdriver
- Bearings tools
- Axle vice
- 5 mm Allen Key
- 10 mm Allen Key
- Steel Hammer
- Rubber Hammer



1. Removing the axle-ends

Unscrew the axle-ends in order to remove them

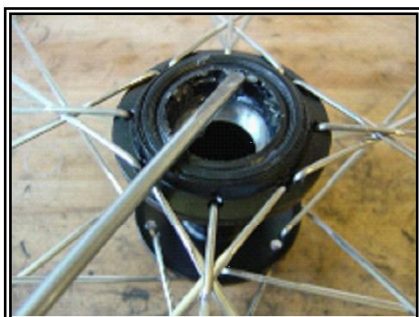
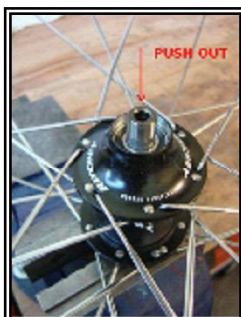




2. Removing the FH-body, the axle and the bearings from the hub

Push out the FH-body, the axle and the bearings from the hub

ATTENTION! Be careful not to lose the steel washer (usually stuck to the FH-body)

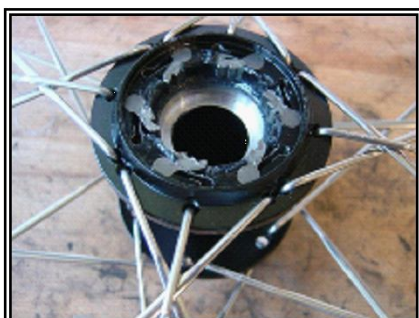


3. Removing and replacing the dust seal, the pawls and the springs

Control the state of the bearings. If they are damaged or worn we suggest replacing them. Carefully pry off the seal covering the pawls and springs. Clean them out and reinstall them. We suggest to substitute the springs if worn out. Do not use too much grease in order to preserve the spring functionality; oil is preferred.

Spare parts

- 52-262-191 Pawl&spring kit Protocol& MTN WCS Disc (V4)
- 52-262-213 Pawl&spring kit WCS Zeta&Apex&MTN Disc WCS++CF

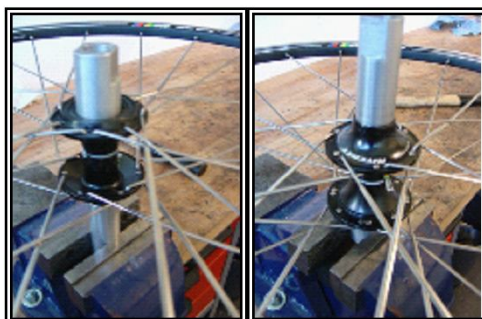




5. Replacing new bearings & new FH-body

Place the bearings carefully, pressing them in position applying the force only to the external ring of the bearing. If a sealed bearing installation tool is not available, a socket tool with the same diameter as the bearing can be used, however, bearing alignment is very crucial for proper bearing operation and longevity, extreme care must be taken. Remember to install axle before installing the second bearing! Be sure that all hub shell and axle bearing surfaces are clean and dry before installing new parts.

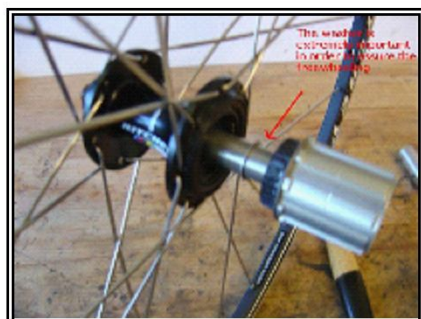
Lightly grease the ratchet teeth surface on the new free hub body with a quality bearing grease. Make sure that all axle bearing surfaces are clean and dry before installing the new free hub body



IMPORTANT ADVICE! Don't forget to put the steel washer between the hub bearing and the FH-body bearing.

Spare parts

- 52-262-195 Bearing hub shell kit Protocol & MTN WCS Disc (V4)
- 52-262-211 Bearing hub shell kit WCS Zeta & Apex Rear
- 52-262-260 Bearing hub shell kit MTN Disc WCS++CF Rear
- 52-262-180 Axle Kit WCS Protocol (V4) Rear Black
- 52-262-190 Axle Kit MTN WCS Disc (V4) Rear (12518)
- 52-262-212 Axle Kit WCS Zeta & Apex Rear (13982)
- 52-262-262 Axle Kit MTN Disc WCS++CF Rear (14682)
- 52-262-185 FH Body WCS Protocol (V4) Shimano 9/Sram (12509)
- 52-262-186 FH Body WCS Protocol (V4) Campy (12510)
- 52-262-187 FH Body WCS Protocol (V4) Shimano 10 (12511)
- 52-262-188 FH Body MTN WCS Disc (V4)
- 52-262-210 FH Body WCS Zeta & Apex Shimano 9/Sram (13978)
- 52-262-214 FH Body WCS Zeta & Apex Campy 10 (13985)
- 52-262-261 FH Body MTN Disc WCS++CF (14681)



6. Replacing the axle-ends

Screw the axle-ends back into their original position
(refer to photos of pag. 1)

7. Controlling the engagement of pawls

Control the function of the FH-body engagement. The engagement – disengagement function must work smoothly. Be sure that all seals and dust caps are in their correct position, and there is no undue resistance when turning the axle