

FR Front or Rear Hub

Installation of Hub bearings, axle, and end caps

- **Rear:** Remove the drive side end cap by using two 15mm cone wrenches, one on each end cap. If the non-drive side end cap loosens first, remove the drive side end cap by clamping the exposed non-drive side axle using a good quality axle vise. Be sure not to damage axle threads by using the appropriately sized clamp. We recommend the use of a Park Tool AV4 Axle Vise. There is a picture of a Park Tool AV4 in this document for your reference (Fig. 6). For complete 3D exploded diagrams of all hubs see Figures 1, 2, 3, 4.
- **NOTE:** If you have an early model hub with an axle that has slotted ends, DO NOT USE the slots to remove the end caps. Use only an axle vise.
- **Front:** On the front hub there are two piece end caps consisting of a thrust adjuster and the outer end cap itself. Remove the outer caps by holding the thrust adjuster with an adjustable wrench and unscrewing the outer cap. Then remove the thrust adjusters using an adjustable wrench. The second thrust adjuster can be removed by clamping the free end of the axle in an axle vise such as the Park Tool AV4 mentioned previously. On rear hubs, slide the free hub body assembly and the freehub spacer off of the axle.
- While holding the hub shell firmly, use a soft blow plastic or wooden hammer to tap on the non-drive end of the axle to drive out the opposing bearings. Be sure not to hit the axle so hard as to deform it's shape or damage the integrity of the threads. The axle is now free with the drive bearings still attached. Remove the bearings from the axle. Re-install the axle in the hub shell to drive out the remaining bearings.
- Be sure that all hub shell and axle bearing surfaces are clean and dry before installing new parts. When re-installing bearings we recommend a sealed bearing installation tool for proper bearing alignment. The FR Hubs use 4 sealed cartridge bearings that MUST be installed with the correct tool to insure proper alignment. This document includes a picture of the Wheel's Manufacturing Wizard Bearing Press (Fig. 5). In an emergency 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 *crucial* for proper bearing operation and longevity, so extreme care must be used. Remember to install axle before installing the second set of bearings! On rear hubs reinstall the freehub spacer, free hub body, and end caps. You may reference hub model exploded drawing in this document for correct assembly. End cap torque specification: drive side: 100kgf; non-drive side: 110kgf. On front hubs re-install end caps. Be sure that all seals and dust caps are in their correct position, and there is no undue resistance when turning the axle (and free hub body on rear hubs).

