

CANNONDALE® HEADSHOK® FORK MIGRATION CHECK PROCEDURE

Cannondale retailers should perform the following procedure on 1999 and later HeadShok forks every 40 hours of riding time when they are brought in for their regular service. The regular 40-hour service also includes boot and structure inspection, pulling up the fork boot to check for corrosion, and the lubrication of the needle bearing strips.

Migration of the needle bearings in medium and long travel HeadShok forks may occur over time and is a regular service item and generally not a warranty issue. All linear bearing systems will experience migration over time, and even million dollar industrial applications require periodic resetting, or disassembly and rebuilding.

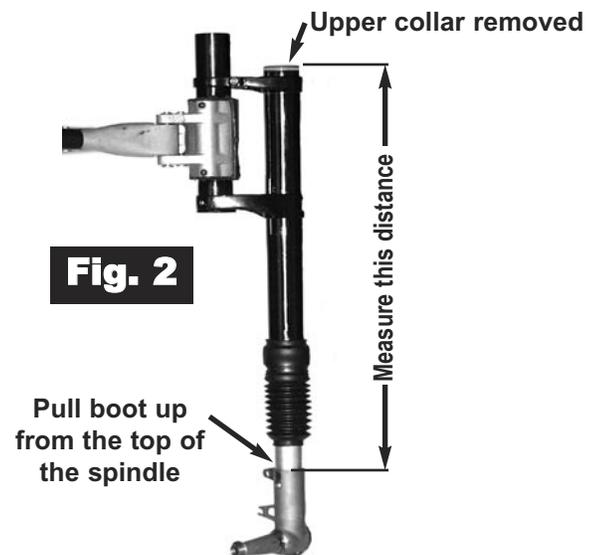
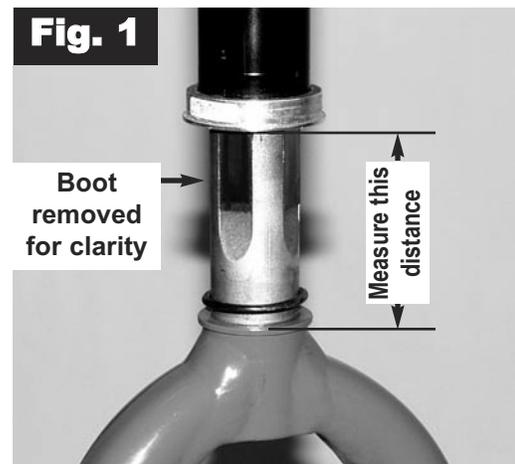
REQUIRED TOOLS:

Replacement zip ties for fork boots (# HD175/)
Metric tape measure or caliper
HeadShok damper removal tools (vary with type of fork)
HeadShok Bearing Reset Tool (# KT016/)
Royal Purple grease (# HD225/)

PROCEDURE

Migration may be the cause of reduced fork travel and harsh top-out clunking. By very precisely measuring the fork with the damping cartridge still in place according to the following procedure, one can determine if migration has occurred.

1. Make sure that there is air pressure of at least 125 psi in the air spring so that the fork is fully extended (topped-out). If the fork uses a coil spring, make sure that some preload is applied using the correct size hex wrench. See the fork's applicable owner's manual supplement for more information on coil spring preload.
2. Carefully cut the zip ties from the boot, making sure not to damage the boot. This will allow the inspection of the inner steerer tube, lubrication of the needle bearings, and the measurement of the fork to check for needle bearing migration. Also make sure that the lower collar of the telescoping assembly is tight.
3. Using a tape measure or a pair of calipers, measure from the lower collar on the bottom of the telescoping assembly to the flat surface on the top crown of the fork. **See Fig. 1.** For Lefty forks, the measurement will be taken between the top of the Lefty leg and the top of the pressed-on axle spindle. **See Fig. 2.** For 2001 Lefty forks, this will require the removal of the upper collar from the top of the Lefty using a 40mm headset wrench.

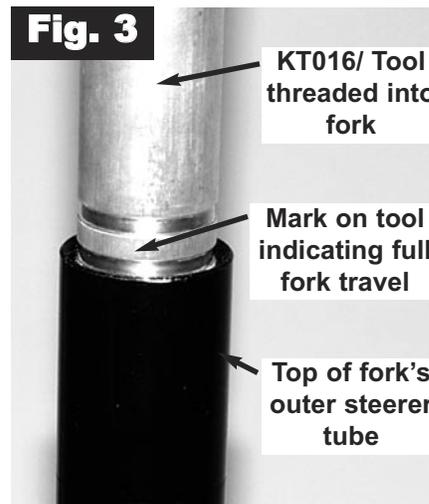


4. See the following chart of measurements and acceptable tolerances to determine if significant needle bearing migration has occurred.

<u>TYPE OF FORK</u>	<u>SHOULD MEASURE *</u>
Fatty-type 70mm forks:	63.6 - 68.6 mm (2.50" - 2.70")
Super Fatty-type 80mm forks:	74.0 - 79.0 mm (2.90" - 3.10")
Year 2000 (original) Lefty DLR fork:	528 - 533 mm (20.80" - 21.0")
Year 2001 Lefty M, DLR, or ELO fork:	536 - 541 mm (21.10" - 21.30")
Year 2001 Carbon Lefty ELO:	533 - 538 mm (21.0" - 21.20")

* These measurements are less than the nominal travel of the fork (70mm or 80mm) because of the negative spring preload while the cartridge is installed.

5. If the fork measures less than the above figures, the needle bearings have migrated and should be reset. Remove the damper cartridge from the fork and make sure that there is an inner race clip in place on top of the inner steerer tube. Then thread the HeadShok Bearing Reset Tool (# KT016/) into the fork in place of the cartridge. **Make sure that the tool is fully threaded into the fork and is snug against the race clip on the top of the inner steerer tube.** Then gently top-out (fully extend) the fork repeatedly until the length of the fully extended fork matches the corresponding mark on the tool, indicating that full travel has been achieved and the bearings properly reset. **Note that very little force is needed to properly reset the bearings, and excessive force may break the cages of the needle bearing strips in the fork's telescoping assembly.** The tool is marked for 70/80mm forks, 2000 Lefty forks, 2001 alloy Lefty forks, and the 2001 Carbon Lefty. **See Fig. 3.**



6. If significant bearing migration has occurred in a short period of time, or if the fork repeatedly migrates after resetting the bearings, the fork should be returned to the Cannondale Factory Tech Room (FTR) for service. The FTR is equipped to disassemble, evaluate, and rebuild a fork to minimize the reoccurrence of bearing migration.

To obtain a Return Authorization (RA) number for Factory Tech Room service or for more information about the FTR, contact your account manager or Cannondale dealer service representative.

7. Inspect the fork boot for cuts or tears, and replace it if any are found. Also make sure to inspect the fork's inner steerer for signs of corrosion, or a bent or cracked steerer, and apply a thin coat of Royal Purple grease (# HD225/) to the needle bearing races. Then reinstall the fork boot using new zip ties (# HD175/),

WARNING: Serious, structural corrosion on the inner steerer tube of a HeadShok fork will decrease the useful life of the fork. Corrosion or cracks on the steerer tube, or a bent steerer tube, may lead to failure of the fork, which could cause an accident with attendant risk or injury or death. HeadShok forks that show signs of such structural damage must be replaced immediately.

For warranty related questions or for more information on this or any Cannondale product, please feel free to contact us.

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