Technical Bulletin
from

Kawasaki 800 Front Pulley/Sprocket Attachment

If you have any questions concerning this technical bulletin, please contact us via e-mail at support@scootworks.com. This will ensure you receive the most prompt and accurate reply.

Rev 1.1; 3/20/2003

Bulletin , Kawasaki 800 Driveline Attachment

This technical bulletin is to advise of a change published by Scootworks, in the torque setting of the front countershaft nut and non-use of the OEM locking washer for the Vulcan 800 belt drive. In addition, this information should be of interest to chain driven Vulcan 800 owners, so please help spread this information to other 800 Vulcan owners you might encounter.

An oddity has been observed for some time, related to the countershaft nut tension on 800 Vulcans (front drive sprocket or pulley). Very often, while removing the chain drive system for replacement with a belt drive, the front sprocket nut has been observed as being loose...to the point of removal by hand once the locking washer is unlocked. This has been observed on new Vulcans as early as <1000 miles. On some occasions, a bit of countershaft erosion (damage to the splined shaft) was discovered from the sprocket being loose on the countershaft. Some small amount of splined countershaft erosion isn't unusual over time, but a loose sprocket can greatly accelerate the wear. A modified drive hub is available from Scootworks to correct this problem. Read the technical bulletin about "Improved Vulcan Drive Hub", and contact sales@scootworks.com for more information.

We've responded to reports since 1999, of noisy belt drive front pulleys. It was most often because of the front nut loosening while in use. Sometimes, due to loud pipes, etc., this condition isn't easily detected until some damage has occurred.

An engineering study was performed on the front splined shaft, nut design, thread pitch and count, composition of shaft and nut, etc. Additionally, several experiments were performed spanning 2 years, and a solution for this problem has been published (and effected, on those that were tested) within a new installation PDF on the Scootworks website. This solution has proven itself over many hundreds of thousands of miles in the field, hence the need exists to propagate this information to users in the field.

The OEM specification for the countershaft nut is 94 ft/lbs. This is initially OK, but after a bit of use, the locking washer (being of a soft metal) will wear and allow a small amount of clearance to exist. As the soft locking washer begins to wear, the drive sprocket/pulley will move about during acceleration/deceleration and from engine pulses. The more the drive sprocket or pulley moves, the more the washer wears, and so on. Acceleration and deceleration also accelerates wear caused by this loosening. A bit of investigation into the countershaft and securing nut parameters yields a more correct setting of 150 ft/lbs.

Vulcans 800's driven by riders who tend to use heavy engine braking, have a higher propensity to loosen this nut than those who slow their bike with brakes (while in 5^{th} gear) and downshift back to 1^{st} as they roll to a stop. Engine braking is abusive to the driveline (including the clutch), so opt for your brakes instead.

It is recommended that all belt drive owners check their front drive pulley for security. Remove the chrome engine cover from the front pulley area, place the engine in 1st gear, unlock the locking washer on the countershaft, use a torque wrench/27mm socket, hold the rear brake securely, remove the nut from the countershaft.

Mark the location of the rear wheel adjusters, and loosen. Counting turns of the nuts on the adjusters helps make readjustment easier. Chain driven 800 owners do not need to loosen the rear axle/adjusters. Loosen the adjusters by approximately 4 turns.

Remove the pulley and inspect the shaft. Remove any paint that might be on the rear surface of the pulley that contacts the spacer, and on the front surface that is contacted by the locking nut. Clean the threads inside of the 27mm nut, and the threads on the output shaft with alcohol, to remove any oils. Slip the pulley (with the 12 point fasteners facing outward), back onto the splined shaft. **_DO NOT_** install the locking washer.

It's now time to apply the RED (permanent) Loctite. Be sure the threads in the front pulley's nut are free of oil, and the threads on the shaft at also clean and dry. **Apply a liberal amount of RED Loctite to the threads inside of the nut and on the end of the output shaft prior to installing the nut…not to the splines on the shaft. Install the nut and torque to approximately 75 ft/lbs. (until the engine begins to turn). Adjust the rear wheel adjusters to their original location, to tension the belt. Place the transmission in 1st gear, hold the rear brake firmly, and bring the torque up to 150 ft/lbs. Make _SURE_ you torque to 150 ft lbs. within a short time of using the RED loctite, as it will cure and you'll be unable to finish torque setting to 150 ft/lbs. Wait 24 hours before riding the bike after setting the torque to 150 ft/lbs., to allow time for the Loctite to cure. This is VERY important.**

This newest belt drive system installation info is available in pdf format at http:www.scootworks.com in the Information Resource Center under [Installation Instructions], Vulcan 800 Belt Drive'. Please visit this document and read it in it's entirety.

If you should have any countershaft damage, Scootworks has a new front pulley repair kit that will compensate for a large amount of wear on the countershaft splines, as opposed to having to disassemble the engine. You can learn about it by reading the technical bulletin about "Improved Vulcan Drive Hub", and contact sales@scootworks.com for more information. At this time, no such "fix" exists for the chain driven version of the 800 Vulcan, other than shaft replacement.