

MOTORCYCLE SERVICE NEWS

YAMAHA INTERNATIONAL CORPORATION
MONTEBELLO, CALIFORNIA

DATE 8/18/70

NUMBER

244

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COUNTERSHAFT SPROCKET REMOVAL PROCEDURE

Improper removal of the countershaft sprocket can cause such problems as excessive chain wear, hard shifting, jumping out of gear, and oil leaks. The most common method used to remove the sprocket is to remove the chain, bend back the locking tab and then break the lock nut loose with a hand-held impact driver.

The countershaft sprocket lock nut has a tendency, if properly installed, to tighten up as miles are accumulated on the machine. When the impact driver is used in such a situation it requires several, sometimes many, heavy blows to remove the nut. This heavy pounding can cause a shift in the position of the entire countershaft with the subsequent results listed in the preceding paragraph.

In order to keep such a situation from occurring, we recommend the following:

1. Prior to commencing any repair work, look ahead and decide if the sprocket will have to be removed.
2. Bend down the locking tab, first with a chisel and hammer, then with a flat drift punch. The pounding necessary for this procedure is minimal and will cause no damage if done carefully.
3. Place the correct size socket over the nut and attach a medium length (18" - 24") breaker bar to the socket.
4. With the chain removed, use one of the following methods to hold the sprocket while the lock nut is being loosened:
 - A. Make a holding tool out of a short length of chain welded to a bar. The chain can be laid over the sprocket and the bar placed under a frame member, such as the swing arm pivot, while the nut is loosened.
 - B. A YG1 magneto holding tool can be placed over the sprocket teeth in the same manner as above; or, if you wish, an exhaust pipe ring nut wrench can be used.
5. Finally, the chain can be left on the sprocket and the rear brake can be firmly engaged while the nut is loosened.

NOTE: Pneumatic or electric impact drivers do not impart the lateral thrust of hand impact types and, in addition, usually do not require a holding device. Therefore, one should be used whenever possible to remove all such lock nuts.

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ASSEMBLY:

1. Lubricate the lip of the countershaft oil seal prior to installing the countershaft sprocket spacer. Install the spacer and countershaft sprocket and then install the lock washer and nut.
2. Make sure the splined portion of the lock washer is seated over the countershaft splines and tighten the lock nut finger tight.
3. Reverse the order of #4 in the disassembly section. During tightening, DO NOT USE AN EXTENSION ON THE BREAKER BAR OR A HIGH TORQUE SETTING ON THE PNEUMATIC OR ELECTRIC DRIVER AS THE NUT MIGHT BE OVER-TIGHTENED WITH THOSE PROCEDURES.
4. Bend the lock washer tab up firmly against the lock nut with water pump pliers. If necessary, use a blunt drift punch after bending to make sure the tab is flush against the lock nut.

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