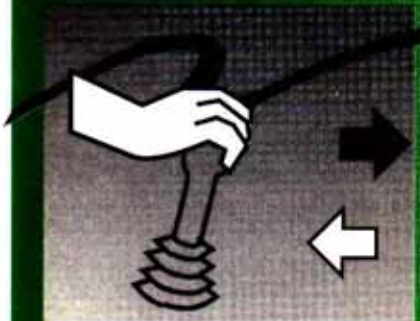

Solving New Venture 4500 5th-Gear Problems and Other Odds and Ends

Up To Standards

By Mike Weinberg
Contributing Editor

Having just moved our business, Rockland Standard Gear, into a new 66,000-square-foot building, and to start the New Year off on the right foot, I am going to clean up some old business.

Over the past few years there has been an ongoing problem in the field with the New Venture 4500 transmission. This heavy-duty 5-speed truck transmission has been a good design, capable of the demands of the 1-ton-truck market. The unit developed a design problem with the 5th-gear lock nut backing off in use and allowing the 5th gear to move out of position, resulting in the loss of 5th speed.

All attempts to solve this problem have created other, even worse, complications. Some shops I have spoken with tried drilling the nut and the shaft and using a roll pin to stake the nut in place. This was expensive, because the hardness of the shaft required that the drilling be done in a machine shop, and the roll pin sheared soon after the attempts. Back to square one. Out of desperation, other shops tack-welded the nut in place. This usually resulted in the mainshaft snapping at the weld area because of the change in the molecular strength of the steel from the welding heat.

Chrysler has released a new kit that is designed to fix this problem. The Chrysler part number is 05013887AA. In the kit you will find a new clamp-nut assembly, a Belleville-type spring disc washer and a tube of thread sealant. I have outlined the recommended replacement procedure:

1. Remove the casting 5th-gear nut following the instructions in the service manual.

Warning: If the 5th-gear nut has backed off while in use, the 5th gear also must be replaced with the 5th-gear nut. Do not waste your time and money trying to use the old 5th gear with this kit.

2. Clean the threads of the NEW 5th-gear clamp nut and the mainshaft using Mopar Brake Cleaner, Part #04549623, and a wire brush. Make no adjustments to the clamp-nut cross bolt at this point.

3. Apply the thread sealant included in the kit to the threads of the new clamp nut.

4. Install the spring disc washer included in the kit onto the mainshaft with the CONCAVE side toward 5th gear.

5. Carefully slide the new clamp nut over the mainshaft splines and up to the threaded section of the mainshaft. Make sure the FLAT side of the nut faces the spring disc washer. If the new clamp nut will not slide easily over the splines of the mainshaft, loosen the cross bolt ¼ turn at a time until the nut will go over the splines. Do not engage the clamp-nut threads at this time.

6. Warning: Perform the following steps EXACTLY. Tighten the cross bolt until the gap in the clamp nut is closed. Back the cross bolt out EXACTLY ONE TURN. Install nut wrench special tool #6743 onto the 5th-gear nut.

7. Install splined socket tool #6993 (4X2) or 6984 (4X4) onto the output shaft and attach a breaker bar to the splined socket. If you do not have this tool, shift the transmission into two gears at the same time and have a helper hold the unit steady on the bench. Tighten the 5th-gear nut until the flat side bottoms on the 5th-gear spring washer. Using a torque wrench of the right capacity, torque the nut to 270-280 ft./lbs. (369-382 n·m).

8. Now tighten the cross bolt on the clamp nut to 8-10 ft./lbs.

Matching Speedometer Gears

If I had a dollar for every tech call I've gotten over the years regarding mismatched speedometer gears, I would be comfortably retired. This applies to automatics as well as sticks. Many times a shop will have a junkyard swap or a core or exchange unit that does not match the speedometer drive and driven gears, and an incredible amount of time is wasted trying to correct the speedometer

reading. With a calculator and a simple formula it becomes easy to find the ratio of the speedometer gears and to make a correction.

For example, we have the original unit from the vehicle and it has a 7-tooth drive gear and a 21-tooth driven gear. You have sitting on the shelf a reman unit that has an 8-tooth drive gear. How many teeth on a new driven gear will we need to make it work?

1. Divide the tooth count on the old drive gear by the tooth count on the new drive gear:

7 teeth divided by 8 teeth = 0.875, the drive-gear ratio old to new.

2. Divide the tooth count on the old driven gear by the ratio from step 1:

21 teeth X 0.875 = 24 teeth.

Using a 24-tooth driven gear with an 8-tooth drive gear will make the unit correct.

A word of caution here is necessary. When making these calculations, you frequently will come up with fractional numbers: 22.30, for example. Round off the number up or down to the closest side. A 22.30 gear will be considered a 22-tooth gear, because the fraction is less than 50%; a fraction greater than 50% will be rounded off to the next whole number; 22.72 will become 23. This method will work all the time for all your customers except police department vehicles that have certified speedometers. A regular customer will never notice the slight difference due to rounding, but the cops will. These vehicles must be serviced with the correct gears at all times.

Getting The Most From Technical-Support Services

With the increasingly complex nature of our business, more and more shops are subscribing and using tech-support hotlines. ATSG, ATRA, TransGo etc. all provide wonderful benefits to their subscribers. Our company, Rockland Standard Gear, provides a tech hotline for our customers as part of our service. In order to get the maximum efficiency out of your tech service, you need to provide it with some important information.

When you make a call have at your fingertips the year, make, model, engine size and production date of the vehicle. You also must identify the type of transmission. We can't see over the phone what unit you have, and it becomes a great time waster. Have ready a description of the unit if you are not sure what it is. For instance, tag numbers, case casting numbers, the number of speeds, iron or aluminum cases, top loader, side loader etc. all help the tech guys to help you. The customer wants the unit back in the car, you want the unit back in the car, and we want the unit back in the car, so work with us to speed the process and make 1999 a profitable year for all concerned.

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87 Useful information.
88 Not useful information.
89 We need more information.