

What's New From New Venture Gear?



By Mike Weinberg
Contributing Editor

Since the '91 model year, there has been a new five-speed truck transmission available in the General Motors C and K trucks. The transmission is the New Venture 4500. New Venture Gear Co. is a joint effort between Chrysler Corporation's New Process Gear Division and the Hydra-matic Division of General Motors.

The 4500, also called the MT8, is a big, heavy-duty five-speed trans with more than enough torque capacity to handle loads in one-ton trucks. This unit has five forward speeds, with 5th gear overdriven, and an extra low-reduction gear for 1st. Under normal driving conditions, 1st speed on the shifter is 2nd

gear, with the extra reduction 1st gear being labeled low on the shifter. This unit may be identified by a cast-iron case, aluminum top shift cover, and aluminum extension housing. The unit is available in two- and four-wheel-drive versions and has PT0 covers on both sides of the case. All shift controls are housed in the shift cover, with the exception of the 5th (OD) shift rail.

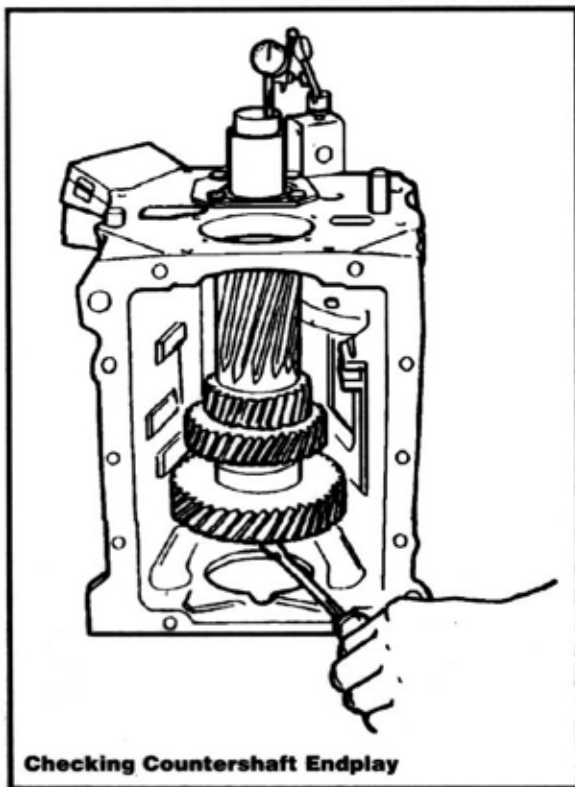
The overall design of this unit will remind you immediately of a large T5 unit. The 5th speed synchronizer and speed gear are mounted on the countershaft, and the input gear, mainshaft and countershaft are supported by tapered roller bearings.

Unit endplay on both shafts is $2\frac{1}{1000}$ " and is set by shims located under both rear-bearing supports. Do yourself a favor and read your endplay prior to teardown and be careful to tag the shim sets so you won't mix them up and make extra work for yourself. The synchro rings are compound lined, and should be soaked thoroughly in the proper lube before assembly. The synchronizers are of the strut, ball and spring type similar to those found in the HM290 and ZF S5-42 units. All the speed gears are supported on the

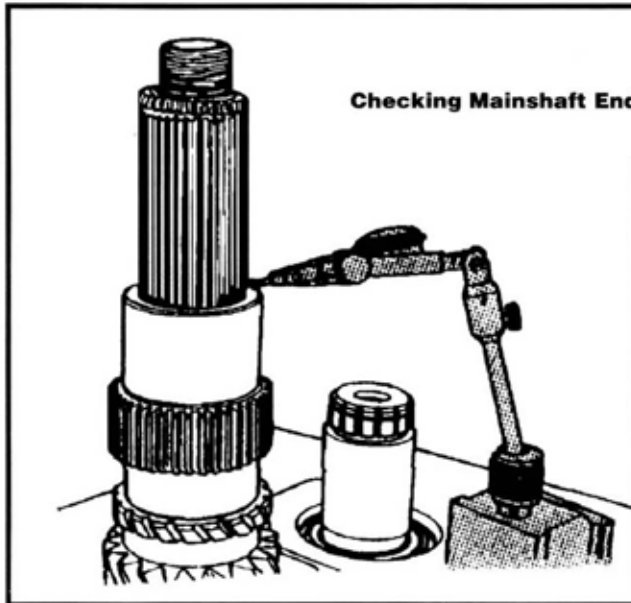
mainshaft by needle roller bearings. A new concept in this design is a two-piece setup on the main drive gear. The synchro cone and coupling teeth are detachable from the gear and can be replaced separately.

Thankfully this is a well thought out, relatively simple unit to work on. There is only one special tool that is a must. On the four-wheel-drive version, there is a large torsional vibration damper installed at the end of the output shaft. It is retained by a special nut that requires tool #38805 (Kent-Moore) to remove. Without this socket, you will not get this unit apart. The torque spec for this nut is 325 ft/lbs, so break down and put this socket in your tool box, it will be worth 10 times its price when you have a 4500 on the bench to repair. That aside, a couple of stout two- or three-jaw gear-and-bearing pullers and the usual hand tools will do you right.

There are a few things to keep in mind when you work on this unit. The extension housing is held on by bolts with 12-point, 10-millimeter heads. The heads round off easily, so make sure to use the correct socket. As is increasingly common on units with special lined synchro rings, it is critical to use the correct lube for smooth shifting and to en-

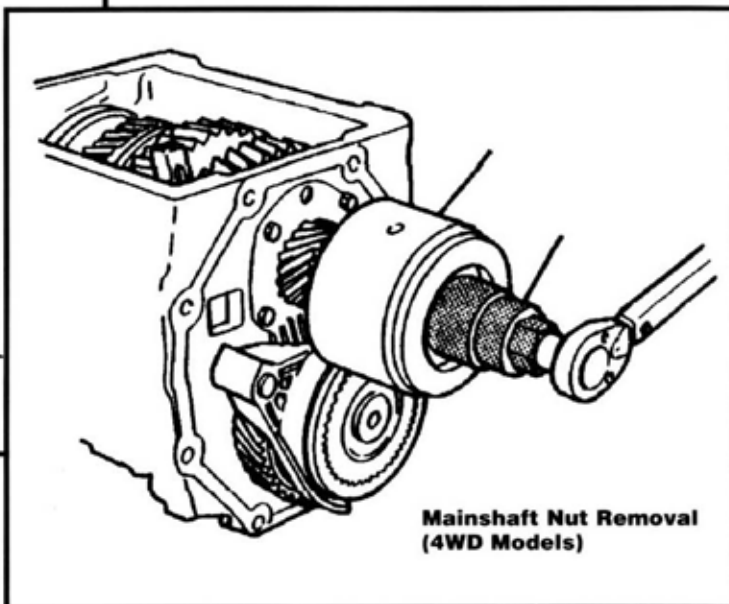


Checking Countershaft Endplay



Checking Mainshaft Endplay

fill, and GM list price for this fluid is about \$70 per gallon, so don't forget to add the cost of the lube to your work order. ■



**Mainshaft Nut Removal
(4WD Models)**

sure proper durability of the synchros. This unit specifies Castrol Syntorque GL-4 B transmission fluid. GM lists this fluid as part number 12345871. The trans takes an even gallon (8 pints) for a dry

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