Ford's 5-Speed Medium-Duty Transmissions

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Contributing Editor

There is a lot of pressure on transmission shops today. The cost of doing business is very high. The transmissions are difficult and expensive to diagnose and repair, making turnaround time longer. One way for shops to increase their gross sales and add to the bottom line is to broaden the services they offer. There are a huge number of medium-duty trucks on the road, as well as fleet vehicles and rental car companies whose vehicles need clutches and transmission repair. Why not get into some of this work? Downtime for these vehicles is very costly and you'll find that that "how much?" is not as important as "how fast?" Medium-duty-truck gear boxes are larger and heavier than their passenger car cousins, but actually are easier to work on. It's is nice to work on a box that you can actually get your hands into.

FS4005 And FS3005 5-Speed Transmissions

Application – F600,700,800 and B600 and 700 Trucks.

These units are available in the following models: FS4005A and

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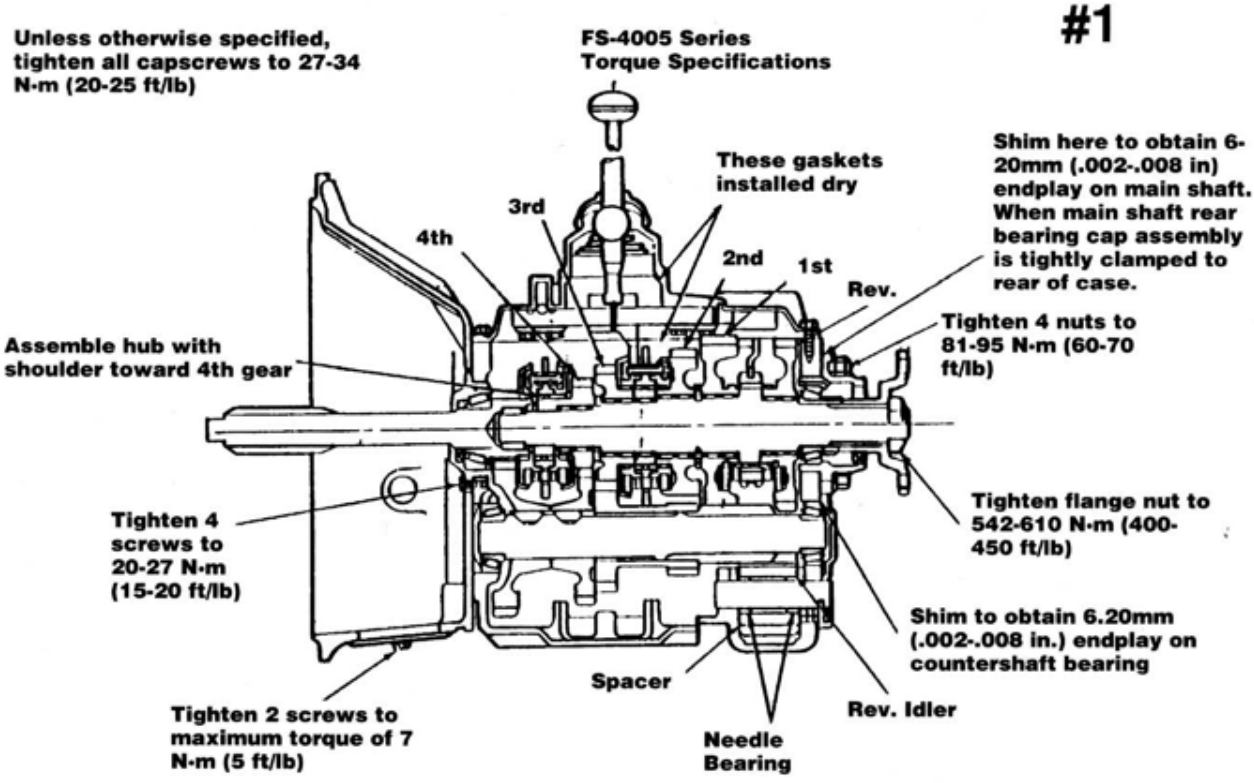
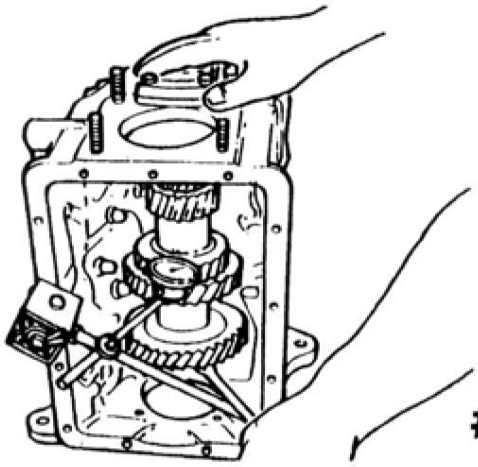
#1



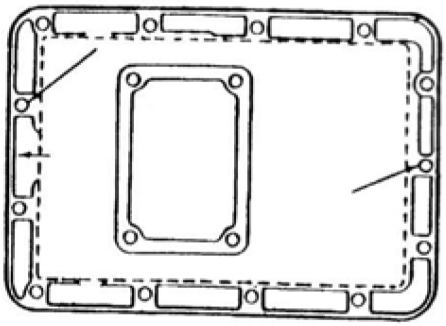
Roll countershaft to be certain bearings and bearing caps are seated. Position a dial indicator, such as TOOL-4201C as shown. Pry on countershaft to get countershaft end play. End play must be between 0.005mm and 0.20mm (0.002-0.008 inch). Add shims for more end play or remove shims for less end play. Note: Each time a change is made, tighten capscrews and roll countershaft. At final assembly, coat both sides of each shim with Gasket and Trim Adhesive D7AZ-19B508-A (ESR-M11P17-AA and ESE-M2G52-A) or equivalent. Apply a band of Pipe Sealant with Teflon, D8AZ-19554-A (ESR-M18P7-A and ESG-M4G194-A) or equivalent sealer to bearing capscrews approximately 3mm (.125 inch) from end of thread, 9mm (.375) long. Do not dip capscrews. Tighten capscrews to 28-33 N·m (20-25 ft/lb).



#2

Up To Standards

Install two control-cover capscrews in locations shown. These are special alignment holes. Tighten screws in alignment holes to 27-34 N·m (20-25 ft/lb).
Locate gasket and shift lever control top in position. Install bolts and washers. Tighten to 27-34 N·m (20-25 ft/lb).



#3

FS3005A models and the CL455/FS4005B and FS3005B models. All models have constant mesh 1st and reverse gears and use spit-pin synchronizers for 2nd, 3rd, 4th and 5th gears. The A models have a standard ratio, and the B models have a "short step" ratio for 4th gear to make shift splits easier on trucks equipped with a 2-speed rear axle.

Understanding Fuller Model Designations:

FS4005
S=synchronized
4=torque rating x 100 (400 ft/lbs of torque)
0=design level
05=number of forward speeds

The input shaft, main shaft rear bearing and countershaft front and rear bearings are all tapered design. The reverse idler gear is supported by needle bearings. Endplay is set by metal shims under the extension housing and the rear countershaft bearing cap. Endplay on both shafts should be set at 2-8/1000 of an inch (See Figures 1 and 2). It is important to

note that because of the shim arrangement, the surfaces on the front input-bearing retainer, extension housing, front countershaft-bearing cover and rear countershaft bearing cap are all sealed with Loctite anaerobic sealer or Ford gasket maker (D7AZ-19B508A). When ordering parts for one of the units, make sure to get a shim kit which will give you the selective shims necessary to correct endplay.

All speed gears are supported by caged needle bearings. Be sure to make index marks on the mainshaft components on tear down so they will be reassembled correctly. Example: The shoulder on the 4-5 synchro hub should face 4th gear.

The shift cover is made of aluminium and contains the shift rails, forks, detent balls and springs and the interlock balls and the reverse shift restraint. These units will show wear on the shift cover and components, so careful examination is a must. The shift forks use bronze lined steel fork pads which are replaceable. If a shift cover is replaced, it will come with new bolts for the shift-rail retainers. Be sure to use the new bolts provided with the cover for the rail retainers as the holes will be untapped and the bolts are self-tapping. When placing the shift cover on the trans, make sure that all synchronizers are in the neutral position and insert two cover bolts as shown in Figure 3. These bolts will locate the cover properly.

These units are lubed with 90W gear oil. In regions where the temperature falls below 10 degrees and cold shift complaints are common, use SAE 50W oil. Fill capacity is 10.5 pints dry.

Getting hold of a Ford service manual will pay off in smooth-shifting units with few comebacks. Thar's gold in them thar trucks; advertise to attract more of this business and you and your accountant will smile all the way to the bank. TD