

Understanding The HM290 5-Speed Transmission

GM introduced a new truck transmission in the 1988 model year. Designed by Getrag in Germany and manufactured at the Hydra-matic Division plant at Muncie, IN, it was called the HM290 and redesignated the 5LM60 transmission. Designed in both four- and five-speed models, it is found in the GM "C" and "K" light-duty trucks from '88 up, and the S-10 models from 1990 on. This transmission comes in two- and four-wheel-drive versions. The gearbox has a torque capacity of 300 ft/lbs and a GVW rating of 7,000 lbs. maximum. Input-shaft speed is rated at 6,000 rpm. Ratios are 4.01-1 first gear, 2.32-1 second gear, 1.40-1 third gear, 1.00-1 fourth gear, 0.73-1 fifth gear (overdrive) and 3.74-1 reverse. You may see the four-speed version called an MCO and the five-speed called an MG5. Don't be confused. These are regular production option codes.

All gears in this transmission are helical cut and in constant mesh, including reverse. Endplay is set by shims on the input bearing, rear mainshaft bearing and countershaft front bearing. There are four selective snap rings in this unit. The input shaft bearing retaining snap ring, the 3-4 synchro hub-to-mainshaft snap ring, the 2nd-gear race snap ring, and the 5-Rev synchro hub-to-mainshaft snap ring all come in a variety of selective sizes (See Figure 1). You will need to refer to the service manual for proper clearances. The endplay in this unit, because of its close tolerances, is super critical. All the speed gears and reverse idler are supported by needle roller bearings. The shift mechanism is complex and was designed to be very smooth in operation. The main shift shaft has four rollers that act as bearings. Be careful not to lose them on tear down. All shift rails are supported by Tef-



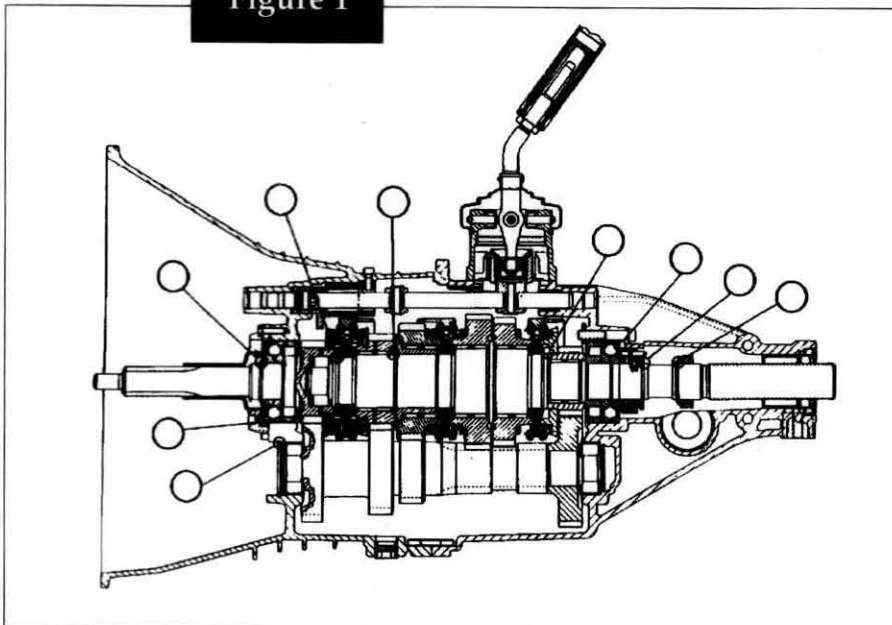
**By Mike Weinberg
Contributing Editor**

lon-coated bronze bushings. Lube capacity is 2.0 quarts of GM Synchronesh fluid. This fluid, part number 1052931, is a 5w-30 motor oil with the additive package designed to work with the compound used on the synchro rings. A great many shift complaints and noise problems are traced to incorrect lube in the unit. The synchronizers are typical German design with struts (keys) with internal detent balls and springs. The coupling teeth of the speed gears and the synchro sliders are back-tapered to prevent gear jump-out. Careful examination of the surfaces during repair is essential to prevent a comeback.

This is a complex unit by American standards, and some technicians who are having trouble become frustrated. A word to the wise: You will need a good service manual and some essential tools to build this unit successfully. An assembly pallet, Kent-Moore #J36515, which includes J36515-10, a two-wheel-drive rear bearing alignment cable, and J36516, an output-shaft spanner nut wrench are musts (See Figures 2 & 3). Believe me, you will not rebuild one of these units easily without these tools. If you find yourself doing a number of these, there are more tools in the Kent-Moore catalog which will make life easier.

The '88-'89 models used a four-part bearing at the rear of the main-

Figure 1



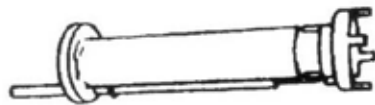
shaft, Part #23049495. This bearing was redesigned in 1990, and now is Part #8672210. Check with your parts supplier for the correct parts and latest supersessions. This trans-

Figure 2



mission is extremely sensitive to fluid level. Low fluid levels cause rapid bearing failure, as well as damage to the shift forks and syn-

Figure 3



chronizers. Make sure that the unit is full with the proper lube. If one arrives at your door that has been run dry, prepare the customer for the worst, as the damage will be major.

We have become used to transmissions that are full of very expensive parts. This means that you must take greater care in rebuilding because the comebacks will break you. This is not a unit to be afraid of, despite what you may have heard already. You never rode a bike until the first time either. This is a unit to be studied, to be understood and to PROFIT from. ■

Rockland Standard Gear Inc.

YOUR ONE-STOP SOURCE FOR:

STANDARD TRANSMISSIONS

New & Remanufactured Units In Stock - Huge Parts Inventory!
5 & 6-Speed Specialists!
Tremec T56, TKO500 & TKO600
• New Venture Gear • ZF • Borg Warner • Aisin Warner
Master Distributor