Manual Transmissions:

The Other Kind Of Overhaul Kits

By Mike Weinberg
Contributing Editor

If there were one word that best described the current state of the transmission repair-industry, what would it be? Complex? This business always has been complex. Expensive? Maybe. The cost of repairs certainly is expensive, but not out of line with the cost of modern vehicles. The cost of comebacks certainly has become expensive in terms of labor and parts. High-tech? All of life today is high-tech. I am not sure I can even work all the functions of late-model appliances. Variety? Now that fits. Never has there been such a variety of car models, powertrains and technology.

This massive variety of transmission models has put tremendous pressure on all aspects of our industry. The shops must maintain much larger inventories of parts to deal with so many models of transmissions. Suppliers are working overtime to source new parts and fill the demands of an endless expansion of new transmission designs. The tech services are burning the midnight oil unraveling the mysteries of new designs.

The development and refinement of the overhaul kit were the beginning of the rebuilding industry. The older generation of rebuilders remembers when all the parts didn't come in one box, when there were no precision bushings, when every piece had to be ordered by part number from the dealer. Necessity being the mother of invention, various companies were formed to supply the transmission rebuilder with a source of parts. The repair of transmissions and other specialized automotive assemblies became an industry. Our industry started the idea of recycling way before it was fashionable with the tree huggers.

> *"Our industry started the idea of recycling way before it was fashionable with the tree huggers."*

Just as the overhaul kit became the basis for conveniently rebuilding automatic transmissions, so it is with manual gearboxes. Once each piece had to be bought separately; overhaul kits now are available for virtually every manual transmission and transfer case. If a soft-parts overhaul on an automatic transmission is defined as the replacement of all seals, metal-clad and rubber; all bushings; thrust bearings and washers, and all friction materials to return the unit

continues next page

to its original design specs, what does it take to do a "soft" overhaul on a stick trans? Exactly the same requirements, meaning that all seals, gaskets, bushings, bearings and friction materials (synchro rings) are to be replaced to restore a unit to original specs.

But here variety comes into play, with manual transmissions having a much greater variation in parts than automatics. It is critical to have absolute identification of the manual trans being repaired because of the differences in bearings used in similar models. In many cases it is necessary to have the main bearing numbers to identify which of the more than 500 overhaul kits available will be correct.

In order to perform quality rebuilds, one must use quality parts. This may seem like a magnificent grasp of the obvious, but in the real world there are many confusing issues as to what is a quality part. The first rule is that OEM parts are a good place to start. The amount of testing that the auto manufacturers perform before they accept a part from a vendor is intense. If the part is accepted by the carmaker, you can bet that it has gone through exhaustive testing and development.

Do not confuse a part that fails because it was underspec'd in the design with a part that is inferior in manufacture. One of the most critical parts in the standard-transmission overhaul kit is the bearings. The two most critically precise parts in an automobile are the lifters (engine tappets), and ball and tapered bearings. The best-quality bearings are manufactured in the U.S., Japan and Germany.

Now price clouds the issue. Quality parts that have the blessing of OEM quality-assurance testing cost slightly more than will-fit parts that meet the dimensions but not the durability required. If your only concern is the lowest price when you buy parts, you are destined to live a miserable, comeback-filled existence. The parts bought to repair a transmission are not for decorating your office, but rather to be resold at a profit. The few extra dollars spent for OEM-quality parts will be passed on to the customer along with the obvious benefits of precision, durability and design compatibility. A virtual flood of bearings whose only virtue is a cheap price is coming into this country from eastern Europe and communist China. If it isn't good enough for the factory, it shouldn't be good enough for you.

"Now price clouds the issue ... If your only concern is the lowest price when you buy parts, you are destined to live a miserable, comeback-filled existence."

The second problem seen in the field is the misguided attempt to save money by just replacing a few worn parts. With the current availability of quality overhaul kits for virtually all manual transmissions and transfer cases, just replacing one or two obviously worn parts turns into rolling the dice. Bearings are rated for millions of revolutions under load. If one is bad, how much life do the others have left in them? Go to Vegas to gamble. At home, work on sure things.

A leak in a manual transmission is much more dangerous than in an automatic unit. Very few gearboxes have dipsticks to check the lube levels, so the chance of the consumer spotting a low-oil condition in the gearbox is about zero. If an automatic trans gets low on oil, the nature of the unit's operation should alert the driver. Slippage, neutralizing out and lack of movement usually get the car owner's attention. When the driver notices that the gearbox is low on oil, it is too late and the cost of repair is very high.

Good-quality seals and gaskets are life insurance for your workmanship and reputation. Replacing all the parts needed for a thorough overhaul makes troubleshooting a unit that won't leave the lift a lot easier. If you know that the seals, bearings and synchro rings are new and of OEM quality, usually you can discount them as the source of the problem.

Being in business is managing risk. You run your business to be as risk free as possible. You don't take chances with the safety of shop personnel, you don't take chances with the safety of your customers' cars, and you don't take chances with your good name and reputation. Using an overhaul kit with quality OEM parts goes a long way toward cutting your risk of an expensive comeback and increases your chances of satisfying your customer. TD

THE BOTTOM LINE:

Tell us your opinion of this article:

Circle the corresponding number on the free information card.

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