

Repairing Standard Transmissions In The Real World

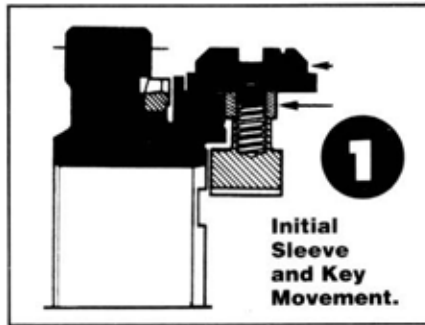


By Mike Weinberg
Contributing Editor

About a decade ago there were about 28,000 transmission shops in this country. Today the total number of shops that do strictly transmission repair is about half of that number. Such a high rate of attrition is due to many factors.

Changing technology has made the art of transmission repair much more complex and difficult. This has caused many old-time rebuilders to leave the business and has reduced the numbers of people who would start a rebuilding business. The entire nature of the industry has changed with a huge proliferation of parts and new models of transmissions. The units cost more to repair, labor costs are very high, and the endless increases in government regulation and taxation increase the cost of doing business.

Comebacks have become very expensive and time consuming. The whole car and its interlocking control systems now affect the transmission and drivability. There is basically no new blood entering

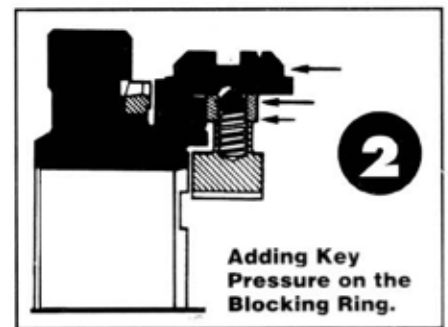


our work force. In America there seems to be a stigma attached to working with your hands. Parents push their children to go to college or else become "social outcasts." The fact is that the only surplus America enjoys today is one of young people with bachelor of art degrees, and most of them wind up flipping burgers while they seek employment.

Please understand that I have nothing against higher education as a path toward a career, but unlike in Europe – where skilled tradesmen are respected, well-schooled graduates of apprenticeship programs – Americans have little appreciation

for the skills necessary to repair today's vehicle population.

The local high school guidance counselors used to send us kids who fell into their "vocational" category. These for the most part were the druggies, dropouts and behavior problems. When I called and asked them to stop sending me people, they were shocked. I informed them that the people we needed in our industry were the top 10% of the graduating class – young people who possess good reading and retention skills, sufficiently educated in basic math to make complex precision measurements, an understanding of basic electrical theory, and a great curiosity of how



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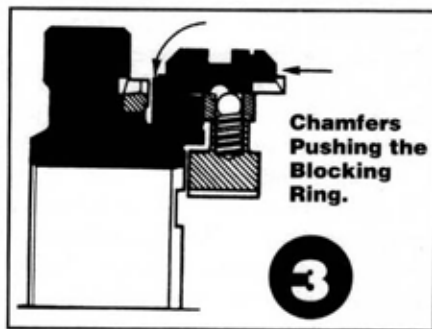


Up To Standards

machinery works. Needless to say, the experts on child guidance thought I was crazy until I asked them whether they wanted to have a moron install the brakes on their car.

Perhaps the greatest cause for consolidation of shops in our industry is poor management. Shops that don't know their bottom line and the cost of doing business never charge enough for their work to be profitable. With the high cost of parts and labor, comebacks eat further into profits. The strong, well-managed shops increase their business, and the poorly run businesses close their doors. This is the hand we are dealt, and we have to learn to play to the best of our ability.

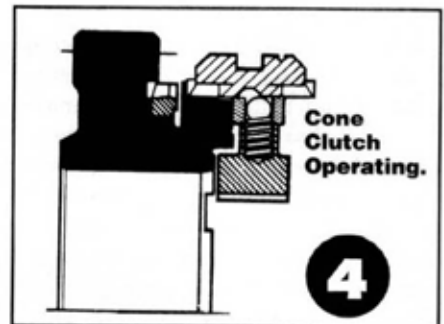
Standard transmissions (including transfer cases) are generally expensive repairs. Every part on a stick unit is a "hard" part. This means you have to learn to sell high-dollar repair orders. This also means that any comebacks will involve the failure of expensive parts and, consequently, big dollar losses for the shop. As I see it the biggest competition we have is the junkyard. Many repair jobs are quoted and lost to the car owner who finds a used unit at the local salvage yard. Learn to take control of the sale by quoting a price for a rebuild and the



price for a new unit, which invariably will justify the price for your work, and call around to find the price and availability of used units. You now have given your customer alternatives to choose from without losing the ability to profit from whatever decision they make.

Good rebuilding habits and understanding the operation of the units you work on will do wonders for your comeback rate. I hope you are as tired of hearing this as I am of saying it, but beg, borrow, buy, or steal a factory repair manual. Don't be unarmed in a battle of wits. Sell all the parts that are needed to make a successful, long-lasting repair. That means if you have to change one gear because it was damaged, sell the customer the opposing gear. If you do this up front you won't have to pay for it out of your pocket when the unit is noisy. Sell all the bearings. If you replace only the one that is worn and a high-mileage "good" bearing gives up under warranty, the customer won't pay for the ruined geartrain and labor — you will.

The two great evil spirits of standard-transmission work are noise and synchronization problems. Almost all these troubles will go away if you understand the principles of operation of a stick-shift unit. End play, preload and backlash are the determination of how long your unit will last and how quietly and smoothly it will function.



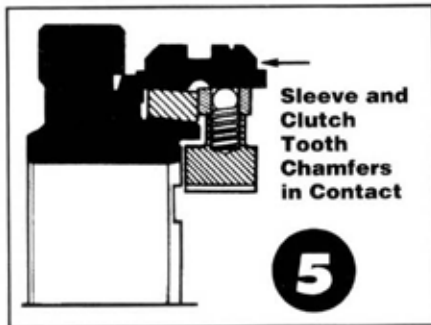
Shift problems all but end if you understand how a synchronizer works. At the beginning of a shift, the fork moves the synchro slider toward the intended speed gear. The synchro keys move with the slider to press the synchro (blocking) ring onto the cone of the speed gear to slow it down or speed it up in relation to the opposing shaft speed. With the clutch disengaged the wheels are driving the transmission. As the synchro ring brakes the speed gear it prevents the slider from engaging the coupling teeth of the speed gear until the shaft speeds are equal. When the shafts are turning at roughly equal speeds, the

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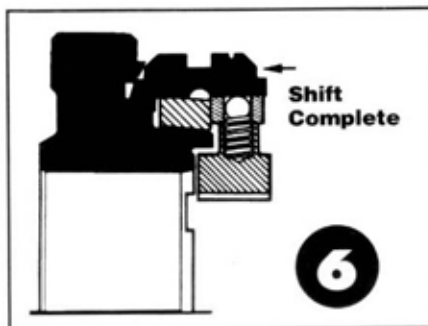


ring relaxes and lines up with the slider, permitting the completion of a smooth, clash-free shift. The unit should then remain in gear no matter what changes are made in the throttle opening. Any wear in these components, excess end play or damaged parts will prevent this sequence from happening. As you can see, understanding the theory is the only way you can evaluate all the components properly before making the repair.

The old Boy Scout motto "Be prepared" is something we should live by. Learning the theory,

possessing the information (read *manual*), having the proper tools and paying attention to detail will mean the difference between profit and loss, success and failure.

Of the hundreds of tech calls that I handle, about 20% are mysteries to be solved. By this I mean unusual problems that test everyone's ability. About 50% are routine noise and shift problems that can be solved by careful review of the repair procedures and parts used. The last 30% are generated by shops that don't have a clue as to what they are working on. They haven't made the



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investment in themselves in tools and knowledge to be successful and are destined to fail. The information is available, but you have to look for it. It has all been done for us.

Our quest to make money doing standard-transmission repairs (professionalism) will be, as with automatics, an endless pursuit of knowledge and perfection of our technique. Every avenue must be explored to do a better, more thorough job. If you don't know how to swim, it ain't a good idea to try to learn in the deep end of the pool. It's hard out there in the real world, but being prepared goes a long way toward easing the burden. **TD**

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