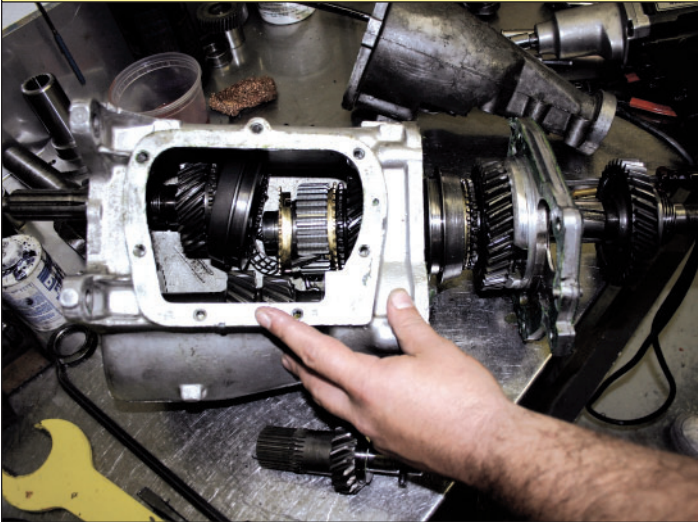


**13 Remove Output Shaft and Upper Gearset**



Remove the output shaft and upper gearset from the main case. Sometimes you have to pry between the main case and the mid plate. Don't worry about things flying apart.

**Important!**

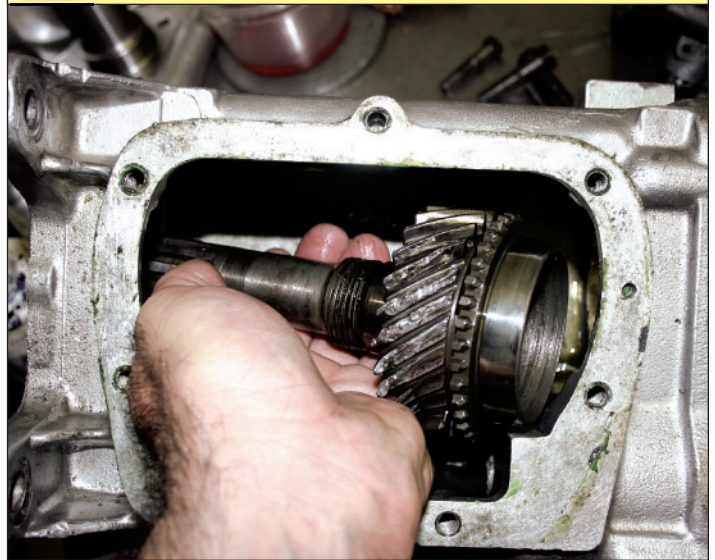


**15 Remove Reverse Idler and Thrust Washer**



**!** Remove forward or inside reverse idler and thrust washer. If you are reusing any thrust washers, make sure that the washer tangs are still able to prevent it from spinning.

**14 Remove Input Shaft**



Pick out as many loose parts as possible, and then remove the input shaft. Broken inputs, such as this one, make great clutch-alignment tools.

**Critical Inspection**

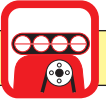
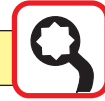
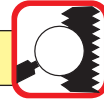


**16 Inspect Reverse Idler Gear**

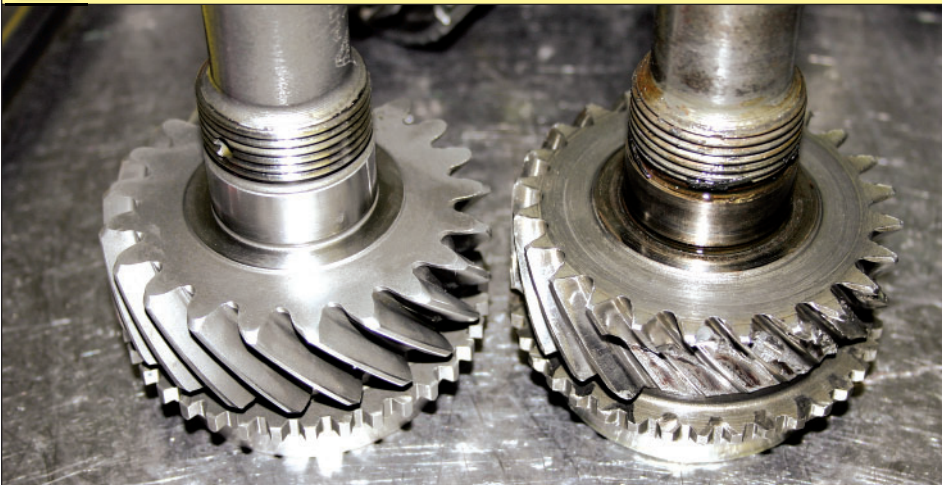


**!** Inspect the forward edge of the inside reverse idler. The groove cut into the forward edge is due to the 1-2 slider hitting it. This causes a whirring noise heard only in first gear. Worn forks and slider grooves can aggravate this common design flaw.



**Critical Inspection, Special Tool, Performance Tip****17 Fix Countershaft Bore**

The front countershaft bore of the main case reveals a severe elongation. Boring it and installing a bushing is a common fix. This needs to be done in a machine shop on a vertical mill. Since this is a 7/8-inch-diameter countershaft, we can just bore the case to the 1-inch size and use a later-style head set. I'll scrap this case and use a new Auto Gear Supercase. If the countershaft bore is no longer a press fit and the shaft can slide in or out of the case by hand, the case needs to be repaired or replaced.

**18 Update Input Shaft**

The newer-style M20 input (left) has 21 teeth on a larger diameter, in contrast to 24 teeth on a smaller diameter (right). This makes for thicker and stronger gear teeth, and as a result, the input shaft can transmit more torque.

**Performance Tip****19 Install Updated Countergear**

The M20 countergear (right) is the new design with 25 teeth, in contrast to the early 29-tooth finer pitch (left). It also takes a 1-inch countershaft. This upgrade started in 1966. The three holes in the new gear's front face are for an anti-backlash plate. Remove these plates on every M20 countergear because they have a tendency to break or loosen.