

# T-56 Corvette 6-Speed

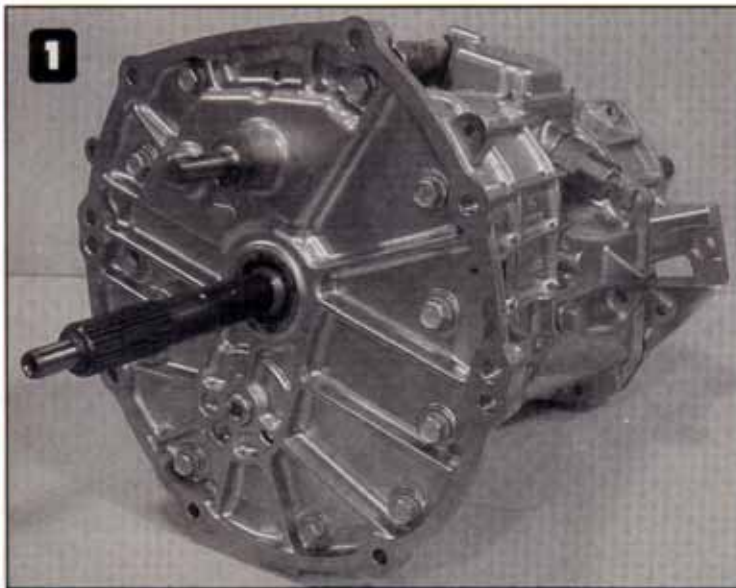
**By Mike Weinberg**  
**Contributing Editor**

**T**he T-56 has been used in Camaros, Firebirds and the Dodge Viper since 1993. In 1997 this unit was redesigned for use in the 1997 and later C5 Corvette models. This unit has six forward speeds, with 5th and 6th being overdriven, and a synchronized reverse.

There is considerable difference between the Corvette design and the regular F-body models. In the

Corvette, the T-56 trans is mounted directly to a Getrag rear axle. The clutch is mounted to the engine, and power is transferred to the transmission through a torque tube.

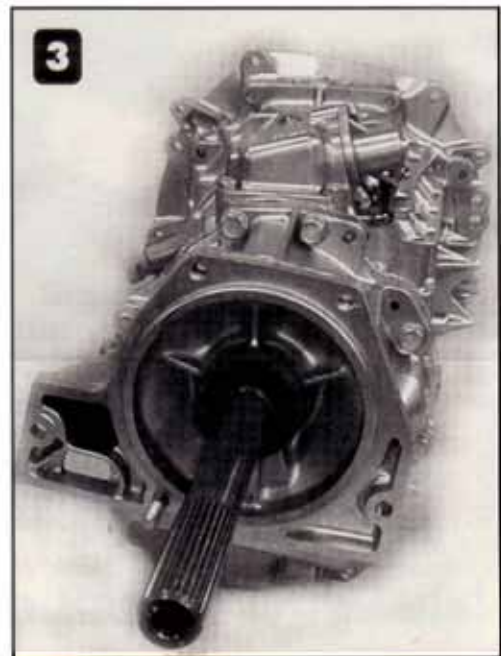
There are many design changes to the case, synchronizers and the speed gears of the Corvette model, and these parts are not interchangeable with those in the F-body units.



**1** Looking at the Corvette T-56 from the front, we can see the shift rail protruding from the case cover at the front because of the rear mounting of the transmission.



**2** In this passenger-side view of the trans we see the reverse lockout solenoid mounted on top of the case in the shift tower. The vent is visible below it, and the backup-light switch is in the center of the case.



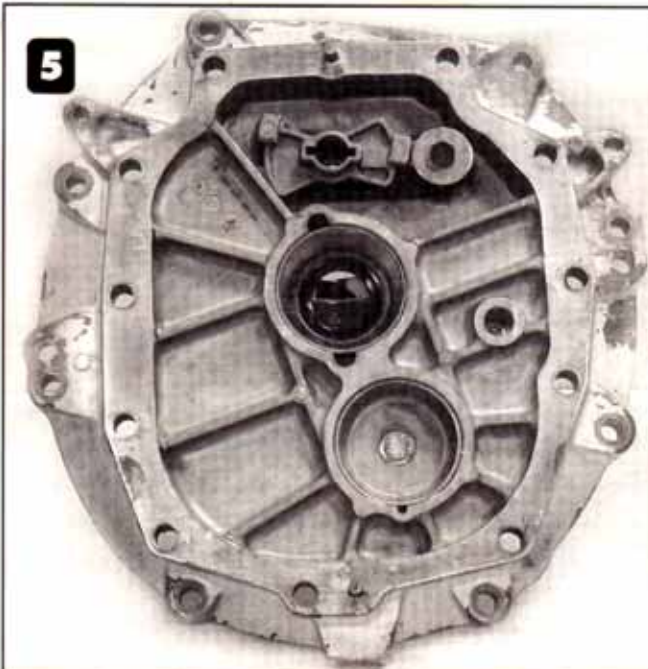
**3** Looking at the case from behind, we see the long output shaft that engages the Getrag final drive and the output seal. The mounting flange bolts up to the rear end and has an O-ring for sealing the case. At the top of the trans is the shift cover that houses the shift selector and detent mechanism.



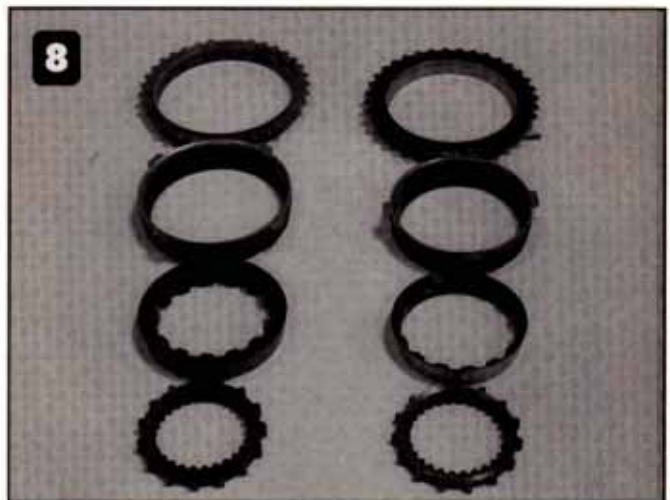
**4** In this driver's-side view of the unit, the skip-shift solenoid is under the shift tower. The fill plug is in the middle of the case, and clearly visible below it is the fluid-fill label, which specifies DEXRON III synthetic ATF. This unit uses carbon-fiber rings and must be filled with synthetic ATF *only*. The use of any other fluid will cause premature failure and shift problems.



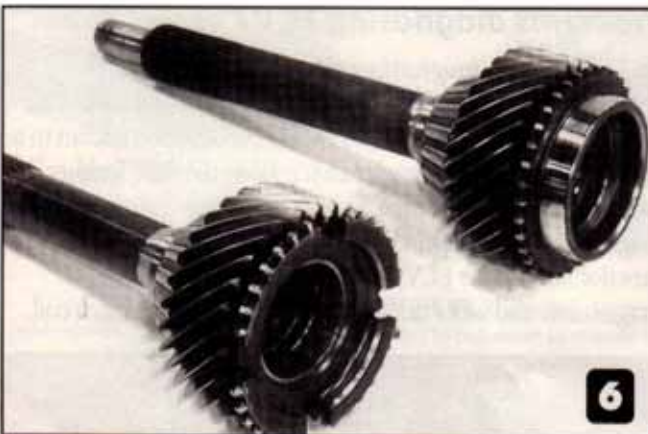
**7** This view shows the inner and outer synchro cones, the double-lined 4th-gear synchro ring with four locating tabs, and the splined inner washer. On the F-body T-56, 3rd- and 4th-gear synchro rings have only a single lining.



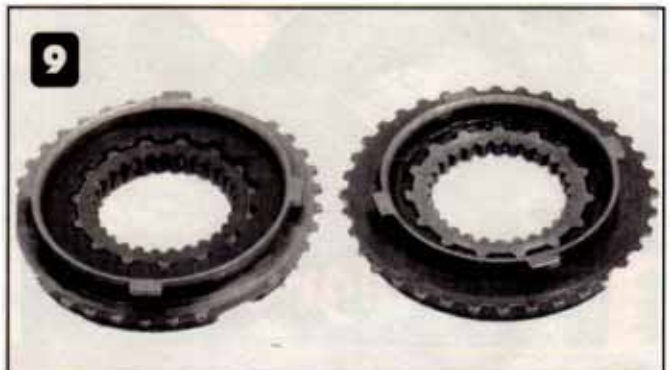
**5** Viewing the front cover plate from the inside, you can see that where the main shift rail exits through the front of the cover a bias spring assembly has been added to center the shift rail in the neutral position.



**8** With them laid out side by side, the difference between the 3rd and 4th synchro-ring components is plain. Because of the higher inertia levels present in the Corvette, the surface area of the 3rd-speed ring has been increased considerably over that of the 4th-gear ring set on the right. Both 3rd and 4th are now double-lined synchros.



**6** On the left is the Corvette input shaft, with the conventional T-56 shaft on the right. The difference between the two shafts is obvious with there being no synchro cone on the Corvette shaft.

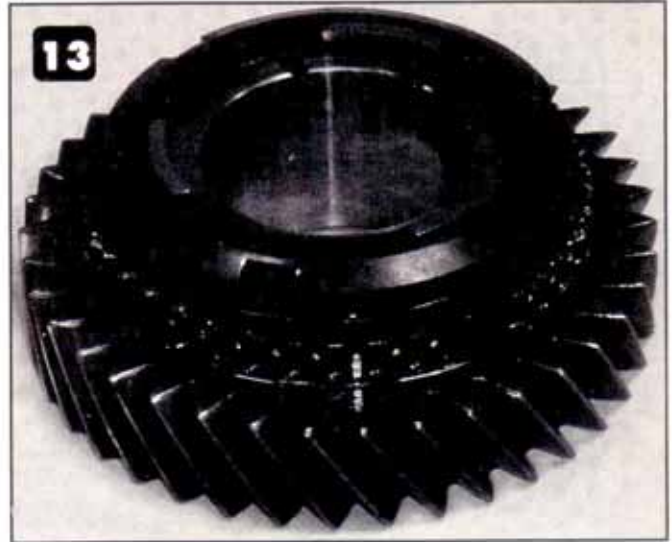


**9** In the 3rd-gear synchro-ring set assembled on the left, the diameter of the lined ring is much larger. This increased surface area is to deal with the punishment of high horsepower and torque loads under downshift conditions.

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**10**  
Here you can see the 4th-gear synchronizer components assembled on the main shaft. The arrow points to the locating tabs for the double-lined ring that index in the slots on the input or main drive gear. When assembling the input shaft to the main shaft, take care to locate the tabs properly. It doesn't take much to bend these tabs if they are not assembled properly.



**13**  
The outer steel cone is placed on the double-lined cone. The arrow indicates the slots for the synchro keys in the synchro assembly.



**11**  
The 1st- and 2nd-gear synchro rings also have been modified for use in the Corvette. You can see that a cone has been added to the speed gear. There is now a single-lined inner cone in the foreground, a double-lined synchro ring on the right and a steel outer cone to the left. This gives 1st- and 2nd-speed gears triple-lined synchro assemblies.



**14**  
The double-lined synchro ring now is assembled on top of the inner single-lined cone with the locating tabs in the slots of the speed gear. **10**



**12**  
The single-lined inner cone is placed on the cone of the 1st-speed gear.

**THE BOTTOM LINE:**

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