

Solving a Tough Problem With the Tremec T45 Transmission

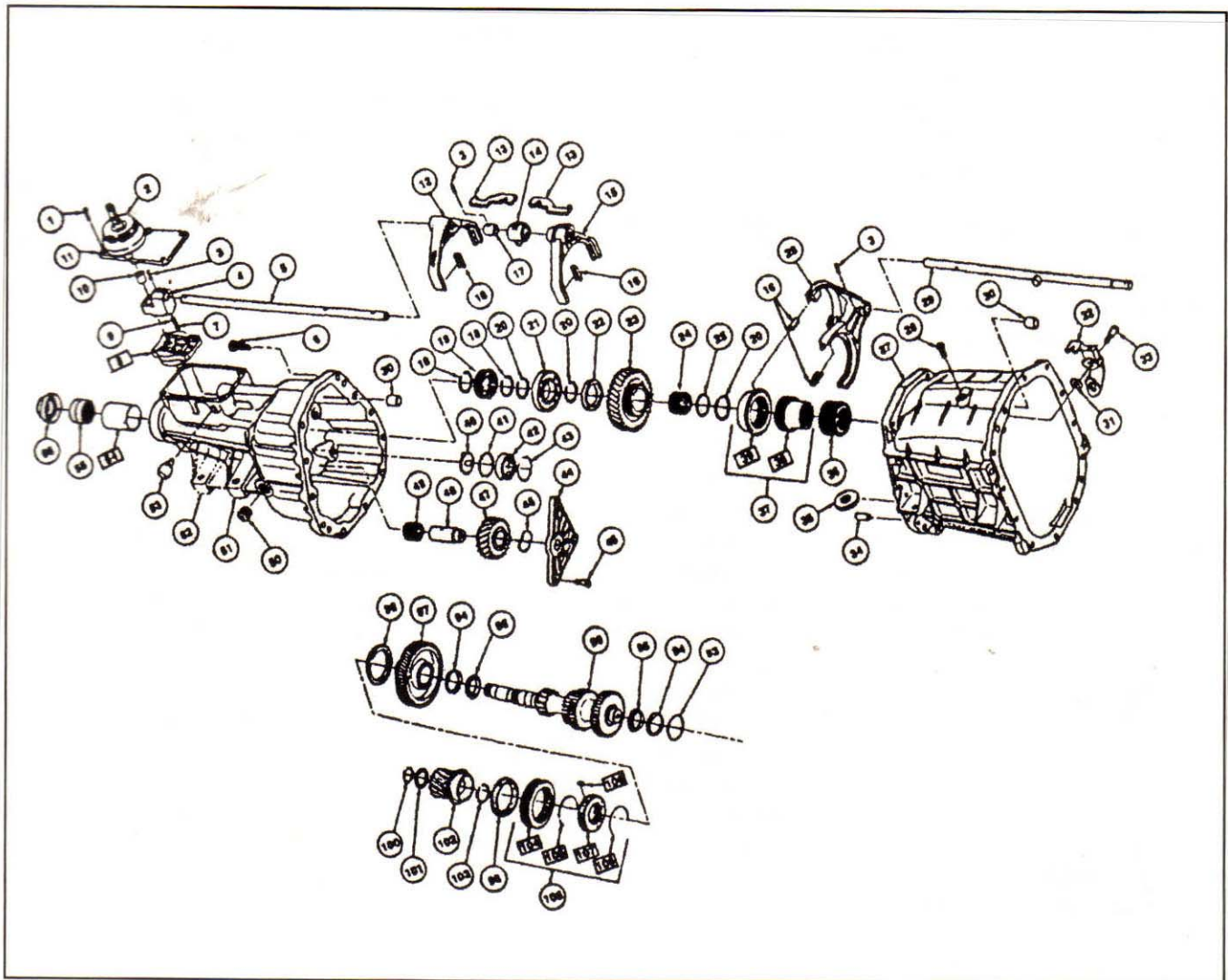
**By Mike Weinberg
Contributing Editor**

The T45 five-speed transmission was introduced in the Ford Mustang in the 1996 model year and continued

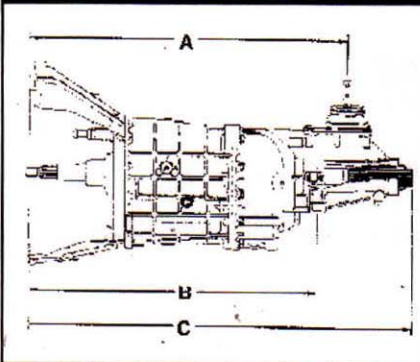
in production through the 2001 models. Tremec Transmissions Corp. in Mexico manufactures this transmission for Ford.

Tremec is a state-of-the-art OEM transmission manufacturer that makes five- and six-speed

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Installation Dimensions Tremec T45



Dimensional data shown in millimeters

Application	Model #	A	B	C
Mustang GT	1381-000-001	689.0	624.2	832.3
Mustang Cobra	1381-000-002	689.0	722.1	832.3
'99 MY Mustang GT/Cobra	1381-000-011	689.0	624.2	832.3

Model	Torque Range (lb.-ft.)	Dry Weight (lbs.)	Spline Data		Gear-Ratio Chart						
			Input	Output	1st	2nd	3rd	4th	5th	6th	Rev.
1381-000-001	325	109	10T	31T	3.37	1.99	1.33	1.00	0.67	N/A	3.22
1381-000-002	325	109	10T	31T	3.37	1.99	1.33	1.00	0.67	N/A	3.22
1381-000-011	325	109	10T	31T	3.37	1.99	1.33	1.00	.67	N/A	3.22

Features and Benefits:

Five-speed application	4.6-liter Mustang applications, GT and Cobra
Overdrive – fifth speed	Provides extended ratio coverage
Aluminum die-cast housings	Lightweight, durable construction
Internal, single-rail shift system	Enhanced shift feel, improved durability
Tapered roller bearings on shafts	Reduced noise and improved durability
Constant-mesh, double-disconnect reverse	Positive engagement, improved reverse durability, reduced noise, improved shiftability in forward
Integral clutch housing w/front-cover end-loading design, optimized fastener size/spacing	Increased driveline bending strength
Leak paths reduced	Enhanced customer satisfaction
Overdrive synchronizers placed on countershaft	Lower shift effort and reduced noise
Advanced synchronizer technology:	
• Powdered-steel formed blocker rings	Consistency, high quality
• Organic friction material	Improved durability
• Double-cone design	Lower shift effort
• Patented strut-type design	Improved durability

transmissions used in many late-model vehicles. It produces the T5, T45, 3550, TKO and 3650 five-speed transmissions and the T56 six-speed transmission. The T56 units are used in the Camaro, Firebird, CS Corvette, Dodge Viper, Ford Mustang and Aston Martin.

The T56 also is manufactured in several aftermarket versions for replacement of the T5 in GM and Ford vehicles. The T56 has proved to be the transmission of choice for many hot-rodders, kit-car manufacturers and enthusiasts who want more perfor-

mance from modified or high-horsepower street and race cars.

Incorporated here are installation dimensions for the T45 transmission, ratios, and torque and horsepower ratings. You can download additional installation information on the other Tremec transmissions listed here at no cost from our Web site, rsgear.com, by clicking on the Tremec information section.

The T5 was the original transmission chosen by Ford for 5-liter Mustang models. It was replaced in 1996 with the T45. In 2003 the Mustang used a 3650

transmission and added the T56 six-speed. The 3550 and TKO units were designed as aftermarket replacements for the T5, which no longer was capable of handling the increased horsepower and torque of the later Mustang models.

We have published numerous articles about these various Tremec products in the past. The T45 has had an ongoing problem with a failure to engage reverse gear or a reverse-gear jump-out. The following repair procedure for this problem, outlined in Technical Service

Bulletin 1381-596-003, and the resulting design changes are the product of a lot of research and development by the Tremec engineers. Duplicating the customer's complaint of reverse jump-out or failure to engage is very important, as these problems can be occasional. If this means taking the car away from the customer and driving it until the complaint shows up, by all means do so. Reverse problems can occur because of faulty mounts, clutch concerns or shifter problems, so confirming the complaint before performing the following repair procedure is vital.

Repair procedure:

1. Remove the transmission from the vehicle and drain the unit thoroughly.
2. Remove the four bolts retaining the shifter assembly (item 1), and remove shifter assembly (item 2).
3. Using the correct punch, drive out the roll pin holding the offset lever (item 3).
4. Remove the extension-housing retaining bolts (item 6) and remove extension-housing assembly. The offset lever, spring and detent ball (items 4, 7 and 9) will come off with the extension housing.
5. Remove the snap rings and speedometer drive gear (items 18 and 19).
6. Remove rear main-shaft bearing and snap rings (items 20 and 21)
7. Remove reverse driven gear, bearing assembly and reverse thrust washer (items 22, 23 and 24) from main shaft.
8. Remove rear cluster-gear snap ring, rear thrust washer and reverse drive gear (items

100, 101, & 102).

Fork Selection:

Three forks are available for reverse. They have different locations on the fork for the roll pin that retains it to the 5th/reverse shift rail. Use the following procedure to measure reverse-engagement travel to se-

lect the correct fork:


1. Looking into the extension housing from the case side, place a small quantity of standard modeling clay on the reverse idler bracket (item 44) near the 5th/reverse shift-rail support hole, near the exterior wall of the extension housing.

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2. Re-install the extension housing and secure with two bolts; and re-install the offset lever, spring, ball and roll pin (items 3, 4, 7, and 9) onto the main shift rail.

3. Reattach the shifter assembly securely and, using the vehicle shift lever, make a LIGHT-effort shift into reverse gear.

4. Remove the shifter assembly and extension housing as before, and make the following measurement:

5. Using a depth micrometer or vernier caliper, carefully measure from the face of the extension housing that bolts to the case to the impression left by the reverse shift rail in the modeling clay. This is the length of travel for reverse engagement. Using the following criteria, select the correct 5th/reverse fork, and replace the fork that was in the transmission.

- If the measurement is less than 68.344 mm, use the "long" fork, part number 1381-596-005.

- If the measurement is greater than 69.233 mm, use the "short" fork, part number 1381-596-006.

The nominal measurement is 68.840 mm, and fork part number 1381-596-003 should be used when the measurement falls between the two previous values.

6. Reassemble the transmission in the reverse order of disassembly and road test to verify that the complaint of reverse-gear jump-out or partial engagement has been corrected. **TD**

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