How to install a TREMEC TKO 600 in a 1957 Ford Fairlane with an FE Engine and Standard Transmission

Forword by Jim Nolan

All parts and technical information for this transmission swap was supplied by Wedan Street and Performance of Columbus, In. What you're reading here is what the grunt in the ditches went through to perform the swap using a limited amount of tools and facilities.

1. The first thing you should do is make sure the car is raised sufficiently on JackStands to allow the old transmission to be extracted and the TREMEC to be installed underneath the car using a floor jack. The TREMEC has sufficient flat area on bottom of case to allow a very simple platform to be made and inserted in floor jack to hold the transmission. You can also buy a very nice platform made for this purpose at your local Auto Parts Store. Before anything is removed, DISCONNECT THE BATTERY.

2. These items were removed in the following order.
   A. Drain the transmission oil from the old transmission.
   B. Remove the Driveshaft.
   C. Remove the Emergency brake cable and brackets.
   D. Remove the Speedometer cable.
   E. Remove the backup light wiring and any other brackets or wires tied to the old transmission.
   F. Remove the old shifter and shift linkage.
   G. Removed front seat from car.
   H. Removed front carpet.

3. Once everything is removed from the old transmission you need to support the motor as far rearward as possible. I used the back area of the motor where the oil pan is bolted to the motor. I used a block of wood to absorb the lip area of the pan so as not to distort it and small hydraulic jack to apply support for the engine.

4. Now you can remove transmission cross member and then remove the old transmission using the floor jack and platform.

5. Now is the time to remove all the Spark Plugs from the engine. Believe me this will make life easier for the next phase of the swap.

6. Remove the Starter from the bell housing. Then, remove the clutch and pressure plate. This is where the removal of the spark plugs pays off. Leave the flywheel on the engine.

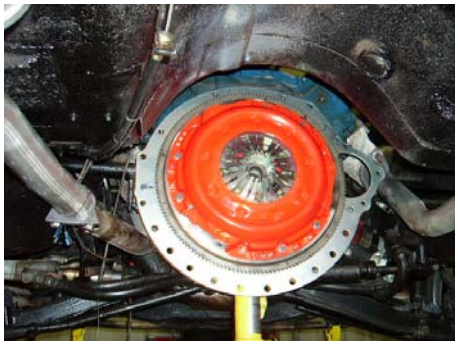
7. At this time you can remove the old bell housing. Now clean the face of the flywheel. Then, STOP. Climb out from under the car, clean the grease from all your tools, put them away and clean the floor underneath the car. You'll feel better about climbing back under the car, also you'll be using new parts and using precision instruments to take measurements. You don't need your tools, instruments, parts and head hair clogged with dirt and grease.

8. Temporarily install the new Lakewood Bell Housing for fit. If your bell housing was like mine you'll fing that the dowel pin holes in the engine won't allow the bell housing to go on. The holes in my Lakewood Bell Housing was .004 too small for the ½ inch dowel pins. At this time I used a ½ inch reamer to open up the holes in the Lakewood Bell Housing. Once the Bell Housing will fit the engine you have to use 7/16 Allen bolts to secure the bell housing to the engine. (The Bell Housing body is too close to the bolt holes to allow a hex bolt to be used.)

9. Obtain a magnetic base and plunge indicator for the DIALING IN of the bell housing. You want to know if the opening for the transmission of the bell housing is centered within .005 of the crankshaft. Follow the procedure Lakewood has sent with the new bell housing. Before you take this measurement be sure to take sandpaper and clean the paint off the surface you're going to indicate. If you don't, you'll get erratic indications. If it doesn't measure within .005, Lakewood sells offset dowel pins so you can get it within limits. Mine ended up being .003 off center. Lakewood sells a nice bell housing.

10. Once the Bell Housing is dialed in you can remove it and then remove the flywheel. At this time be honest with yourself, is that old flywheel surface good enough to use with the new equipment I'm installing. If not, by all means replace it. At this time remove the old pilot bushing and install the new Pilot Bearing.

11. Install the Lakewood Block Plate and then install the flywheel using new bolts, torque to required specifications. At this time you will also install the new clutch and pressure plate using new bolts, torque to specifications. Make sure you use a GOOD clutch alignment tool to center the clutch plate. I used a universal alignment tool from NAPA that wasn't worth _ _ _ t.



12. At this time there's work to be done to the New Lakewood Bell Housing. Run a tap through all the tapped holes to get the paint out and provide easy installation of new bolts. Also the clutch fork pivot bracket had to be removed from the old bell housing and installed on the new Lakewood Bell Housing. Drill the rivets out that hold the bracket to the bell housing. That's the only way I could get them out. They won't punch out from the back of the bell housing. Once the bracket is removed from the old bell housing, enlarge the holes in the bracket to 5/16 inch. Then, tap the holes in the Lakewood Bell Housing that hold the bracket to 5/16 inch. Use 5/16 Allen head bolts dipped in thread locker to install the new bracket on the Lakewood Bell housing. Make sure bolts don't extend through the bell housing to interfere with the mating of the TREMEC and the Bell Housing. Install the clutch fork and holding spring along with the new Throw-Out bearing.

13. Install the Lakewood Bell Housing and secure with all the bolts that came with the purchase. Now you can re-install the Starter also.

14. Measure the distance from the housing face of the transmission to the shifter locating you're going to use. Then measure that length from the bell housing face and cut a round hole in the transmission tunnel for the shifter to stick through. Make the hole just large enough for the shifter to work without having too large a hole.

15. Remove the six bolts from the shifter housing of the new TREMEC transmission. Remove the housing. Cover the hole with a clean cloth and tape it into position so dirt can't get in.

16. Install a scissors jack underneath the bell housing and remove the small hydraulic jack previously used at back of motor. Install the TREMEC using the floor jack and platform. Secure the transmission with new bolts and lock nuts.

17. Lower the Tremec using the scissors jack until you can re-install the shifter mechanism using a thin coat of silicone for gasket material and secure with the six bolts using loc-tight on the threads. Raise the transmission back in place using scissors jack. The 57 Fairlane doesn't need the tunnel raised for this swap.

18. Now is the time to make the transmission CROSS MEMBER. I took the old cross member and laid it on a sheet of painters paper taped to my work bench. I traced the lines down each side of the cross member mounting pads and used that as a template for the 57's Frame angle. I then marked the two bottom holes that secure the cross member to the frame. I marked transmission mount hole location from the old cross member also.
    I then removed the old cross member from the painters paper and started designing the new cross member. I made the center section that would hold the transmission mount 8" long and then intersected the lines from the frame sides to that 8" line. I used 3/16 thick angle iron for the frame mount sides and 2" X 2" X 1/8 thick square tubing for the cross member. I drew the entire mount on the painters paper and cut each piece of the new cross member to lay on this sheet of painters paper. The cutting of the tubing was made easy by using a thin metal cutting blade in my hand held Skill Saw. I then tack welded the cross member together and held it in place underneath the car with C clamps to the transmission to mark hole locations for the frame mount pads of the new cross member. It fit perfect first time. The drawing did it.
    I then took the new cross member to a professional welder that welded it up to withstand any kind of torque that I'd throw at it. After final welding I cut off the Emergency Brake brackets from the old cross member and welded them on to the new cross member using my 110 Volt mig welder. I painted the new cross member and installed it. The transmission mount I used was a universal mount that Brad sent me for this installation. When drilling the holes for your final transmission mount location, first check to see how much engine – transmission offset you have. The engine and transmission on a Ford isn't in the center of the frame. Mine was ½ inch to the passenger side. This is to keep the U-Joints from wearing out prematurely.



19. Now for a DRIVESHAFT. Brad told me to call Marc at Accurate Driveline and Machine (formerly Patterson Driveshaft) in Indianapolis. I called him at 10:00 on a Friday morning. Took the transmission yoke that came with the transmission and he made and balanced the driveshaft that day. (Marc also informed me how to measure the length driveshaft I needed. Whoever makes your driveshaft will let you know.)
    A word of caution is in order here. Be careful taking the inner rubber plug out of the end of the tail shaft. Use two sets of needle nose pliers and extract the plug. You can't get the transmission yoke into the tail shaft or determine driveshaft length until you do.
    I was back at the house by 5:00 that evening. I then painted the driveshaft and installed it the next day. The Transmission end of the driveshaft was made to fit the 1350 yoke while the axle pinion end was made to fit the 1310 pinion yoke. Marc said since I was using this car for more touring than racing I didn't want to use a universal joint that was one half 1350 and the other 1310. I went with what he advised. These people don't waste time and they are considerate of yours. Thanks Marc.

20. Hook up the back-up lights and install the new speedometer cable.

21. For a shifter stick I cut the stick off an old Fenton shifter I had. It was 12" long with a two inch pull-back. I drilled two holes 7/8" apart at the bottom to fit the TREMEC stub. I then heated the stick and bent it over 2 ½ inches towards the drivers side. I polished the stick back out and it looks brand new and made that way. I chose this coarse of action since I didn't want the floor shift boot to look ridiculous with two inches of spacers at the bottom of the stick just to move it closer. It works great, feels great and looks great. In the Hurst Catalog I couldn't find any shifter stick that accomplished what I needed for my 57 Ford.

22. I used a hose and funnel to snake down through the engine compartment and into the TREMEC to fill the transmission with 5.25 pints of transmission fluid that Brad supplied me with. Easily done.

23. Re-installed the clutch fork rod and spring and made sure of the clutch adjustment.

24. Re-installed the carpet (cut new hole for shifter) placed boot over shifter and used awl with plastic handle to mark location of boot screw holes. You do this by taking a torch, heating tip of awl to red hot and inserting it through hole in boot plate and through carpet. You then drill the hole for the boot screws through this hole you've burnt. If you don't do it this way or similar, the carpet will get wound up in the drill.

25. Re-installed front seat.

26. I re-connected battery cable and started engine. I sat for 30 minutes shifting gears and turning the rear wheels while the car was still on jack stands.

Conclusion of TREMEC Swap

When you first start shifting gears on the new TREMEC you'll find that the gears are hard to find and it takes excessive force to make it go into gear. But gradually you'll find that it starts getting better. Once I got it out on the road the shifting started becoming effortless. I've drove the car for two days now and it just keeps getting better. Now, the transmission shifts easily and there's no excessive force used in getting it into gear.

What I DON'T LIKE about the transmission is that the reverse gear is not synchronized and you need to put it in 4th gear before you put it in reverse. If you don't, the gears will clash and wake you up if you're asleep. Also, sometimes when you're sitting still and you try to put it in 1st gear it's takes excessive force. If you go to 2nd first you won't have that trouble though.

What I DO LIKE about the transmission. The TREMEC is a whole lot smoother than my old Borg Warner T85. Shifting gears is effortless. I'm doing 1850 rpm at 60 mph. and 2150 rpm at 70 mph. That's better than my old T85. I'm hearing noises in my car now that I didn't hear before because of the gear noise of my old transmission. There's no high speed vibration any more either. Absolutely love it. It's made a whole new car for me.

I'd like to give all the credit for this swap going flawlessly to Brad Wedan of Wedan Street and Performance in Columbus, In. When you're a novice like me, you need someone like Brad with the knowledge and experience to get you through the little problems associated with a swap like this. All the correct parts used in this swap were provided by Brad.

Most of the time when you do something of this magnitude you have to SETTLE for some things not being what you really wanted or expected. With this swap, I didn't settle for nothing but the best. Thanks Brad.