NOTICE- Read before installing

1) When mounting the bellhousing to the front pump, make sure there is **NO CONTACT** between the transmission pan and the bellhousing. If there is contact, the pan must be ground down to make sure there is clearance.

If the bellhousing is in contact with the transmission pan when torqued down, you will get a false torque reading which will result in front pump gasket failure.

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2) Do not remove allen bolts from pump.

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3) Torque the bellhousing mounting bolts to 45 ft lbs.

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4) Use Dexron III fluid from a major refinery (Castrol, Valvoline, Pennzoil, Quaker State, Kendall)

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5) All C4 transmissions are shipped with a "cut lever" to allow the use of an aftermarket shifter. You may switch the OEM shifter lever (and kickdown linkage on Street/Strip models) from your old C4 to the new unit if desired. Consult our website or a shop manual for instructions.

(over)

6) Make sure the bellhousing, torque converter and flexplate are a matched set. Most problems start here.

7) Make sure both dowel pins are in the back of the block.

8) Ford engines always use a block plate. This spaces the converter and anchors the starter housing for proper starter engagement.

9) Always fill the transmission with 3-4 quarts of fluid before starting the engine. Once the engine is running add 3-4 more quarts and check the fluid level.

10) 95% of all transmission problems come from low fluid levels, mismatched parts or incorrectly adjusted shifter linkage.

Performance Automatic, Inc. will not repair under warranty customer installation errors causing damage to the transmissions and/or related components. This would include, but not limited to: damaged pump, pump gears, stripped pump mounting bolt holes, cracked bellhousings and low fluid levels.

① DO NOT REMOVE ALLEN BOLTS FROM PUMP!

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② IMPORTANT: TORQUE BELLHOUSING TO 40 FT. LBS.

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③ COOLER LINE FITTING:

- ☐ 1/4" PIPE
- -OR-
- ☐ 1/8" PIPE

Torque Converter & Transmission Installation Instructions

STEP 1 – Before you begin, allow the vehicle cool for about one hour. Disconnect the battery. Raise the vehicle and support on jack stands. The higher you raise it, the easier it will be to work under. If you are installing a new converter and transmission, skip to STEP 3.

STEP 2 – Drain oil from the transmission by removing the drain plug. Pans without plugs must be slowly removed by freeing one of the pan and allowing the bolts on the other end to hold the pan. The pan will drop down to allow the fluid to drain into the drain pan. Remove the remaining bolts and slowly lower the pan and pour the remaining fluid into the drain pan.

STEP 3 – Expose converter-flex plate bolts by removing the converter dust cover. FORD-CHRYSLER rotate converter to locate the drain plug at 6 o'clock. Remove plug & drain converter. Separate converter from flex plate. Remove four bolts on Ford & Chrysler and three bolts on GM.

STEP 4 – Remove drive shaft, disconnect speedometer, selector, throttle linkage, vacuum lines, cooler line connections, dipstick & filler tube and starter motor on Ford and Chrysler.

STEP 5 – Support bottom of transmission with wide block of wood or a transmission jack. Remove cross member. Lower the transmission slightly. Support rear of engine if engine is mounted at the front. Remove engine to transmission bolts. Before separating engine & transmission, take precaution to keep the converter in the transmission- **DO NOT ALLOW IT TO FALL OUT!** Remove transmission with converter.

FORD C4 & C6 TRANSMISSIONS CAUTION!

Input shaft may pull out with the converter. Be careful to avoid this from happening. Some Ford input shafts must be installed one way due to different length spline. Installing the wrong way will damage the converter. If the shaft has slipped part way out, simply push it back in as far as it will go. Inspect the input shaft for wear and burrs. You may need to replace the input shaft. Performance Automatic sell aftermarket hardened shafts.

Converter Installation

STEP 1 – Inspect the mating surfaces of engine block and transmission case for nicks, dirt etc. If necessary, use a mill file to remove raised areas. Be careful not to remove metal from mating surfaces! Examine crank pilot hole and converter pilot for dirt, rust, paint etc. Clean as necessary with emery cloth. Also check the conditions of the dowel holes and pins. Replace the pins if loose or damaged.

STEP 2 – Coat the wiping surface of the converter hub with transmission fluid. Add one (1) quart of fluid to the converter. Install the converter on the transmission, support the weight of the converter as to not damage the front pump seal. Rotate the converter as you push it on. The splined couplings (input shaft and stator support) and the pump lugs must engage properly to allow the converter to slide all the way

into the transmission. Take measurement "A" shown in Figure 2. The correct method of measuring "A" is shown in Figure 3. Now take measurement "B" on the engine as shown in Figure 2. This is the distance between the engine block and the mating surface and the converter mount mating surface on the flex plate. Compare the two measurements that you have taken. "A" must be greater than "B". If "A"is not greater than "B", converter is not installed properly. Pull converter off slightly, then push it on again, rotating at the same time. Continue to do this until you feel the conveter move inward and stop at proper engagement. Repeat measurement "A" and compare it again with "B". "A" must be greater than "B". Do not proceed further until you have installed converter properly. See Depth Chart for correct depths.

** Before installation, make sure you have the correct dipstick configuration for your application. Performance Automatic offers a complete line of dipsticks for most applications. Improper fluid levels can lead to immediate failure and will void your warranty.

Initial Installation Checks

1 – Check flex plate for cracks around crank and converter mounting holes.

2 – Make sure converter bolt pattern and bolt hole size matches the flexplate. Most 10" and smaller diameter converters utilize a 7/16"x20 bolt hole. It may be necessary to enlarge the converter bolt holes on the flexplate.

3 – Check driveshaft yoke for excessive wear and apply small film of transmission fluid to the yoke befre installation.

Installation

STEP 1 – Install transmission on dowel pins. Converter MUST be free to rotate and move forward and backward (endplay) after the transmission is bolted to the engine. Transmission and converter should mate with the engine, crankshaft and flex plate with relative ease. Face of transmission flange must be flush with the engine all the way around before any bolts are tightened. NEVER use bolts to "draw up" the transmission to the engine. DO NOT allow the transmission to hang on the dowel pins. Transmission must be supported until at least two (2) bolts have been installed and completely tightened.

STEP 2 – Check freedom of movement (thrust) of converter as soon as transmission and engine are bolted together. Converter must rotate freely and must have end play. Converter must be free to move at minimum of 1/8", but not more than 3/16". If no end-play exist, converter is not properly installed. Remove transmission and correct. NOTE: If using a motor plate/mid-plate please refer to the instruction sheet with the spacer kit.

Ford C4 & C6 Transmissions

The Converter drain plug must be exposed thru holes in the flex plate.

Chrysler Transmissions

Align converter drain plug opposite small hole in the flex plate. This will align all four bolt holes properly.

STEP 3 – When endplay is satisfactory, complete the transmission installation. Apply Loctite to the converter bolts before installing them. Tighten converter bolts to 30 ft/lbs.

STEP 4 – Attach shifter linkage to shifter arm on transmission. If installing an aftermarket shifter, skip this step and follow that manufacturers instructions for shifter adjustment. Otherwise put the transmission and shifter in neutral and install cable/linkage to transmission and check for proper movement in each gear. There should be no tension on the shifter lever when in any gear and the cable should slide in and out of the lever with no resistance. If your transmission utilizes a vacuum modulator, hook that up as well as any wiring used. Attached cooler lines and tighten to 12 ft/lbs.

STEP 5 – Rear wheels must be elevated at least 3 inches off the ground. Install four quarts of transmission fluid. Start engine and complete filling as quickly as possible. Do not overfill. Run the selector thru all ranges with light throttle and re-check fluid. Fluid level should be on full mark with selector gear in neutral or park when vehicle is on a level surface.

STEP 6 – Inspect for leaks with engine running. Inspect all connections, especially cooler lines and radiator fittings.

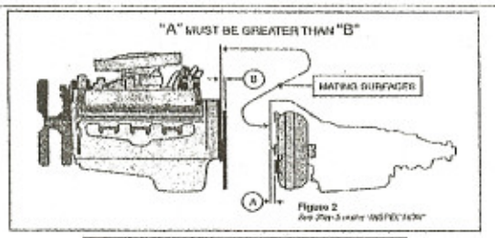
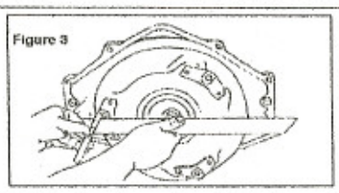


Figure 2

Figure 3



Measure the depth of mounting pad face (A) from the mounting flange face. Notice that the right hand that is holding the straight edge is also pushing the converter in toward the transmission.

DEPTH CLEARANCE:
Chrysler - Torqueflite 727 1-1/4" from Bell Housing to Ring Gear
Chrysler - Torqueflite 727 19/32" from Bell Housing to Pads
GM Turbo-Hydramatic 350 1-1/8" from Bell Housing to Pads
GM Turbo-Hydramatic 700R4/4L60E/2004R 1-1/8" from Bell Housing to Pads
GM Turbo-Hydramatic 400 1-3/16" from Bell Housing to Pads
GM Powerglide 1-1/8" from Bell Housing to Pads
GM 4L80E 1-1/64" from Bell Housing to Pads
GM 4L60ELS1 1-1/64" from Bell Housing to Pads
GM Allison 1-1/8" from Bell Housing to Pads
Ford C-6/C-4 1-1/8" from Bell Housing to Pads
Ford Case Filled C-4 27/32" from Bell Housing to Pads
Ford AODE 1-1/32" from Bell Housing to Pads
Ford AOD 1" from Bell Housing to Pads
Ford 5R55S 1" from Bell Housing to Motor Plate
Ford E4OD/4R100/5R110 58/64ths from Bell Housing to Pads
*Distance may very either way .050".