



Installation Instructions Transpak for Ford C-4 1970 and Later

Part No. 50229

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Congratulations. You have just purchased the most complete and versatile transmission recalibration kit available. We feel that the installation instructions on the following pages are as complete and clear as possible. Installation of your Transpak is a job that can be handled by anyone with a minimum of mechanical experience. It is important to closely follow the instructions. Read each step and if you don't understand go back and read it again.

NOTE: The Transpak is not a cure-all for ailing

transmissions. If your transmission is slipping or in poor general shape, the installation of a Transpak kit may worsen these conditions. However, on a good operating transmission in average condition the Transpak will provide the kind of transmission performance that you're looking for.

Before beginning, Check the parts list on Page 8 of these instructions to make sure you have all the necessary parts. Also check the tool list on Page 8. A minimum of tools are required.



C-4 '70 AND LATER INTRODUCTION

This kit can be installed in a few hours by carefully following directions. Read all instructions first to familiarize yourself with the parts and procedures. Work slowly and do not force any parts. Burrs and dirt are the number one enemies of an automatic transmission. Cleanliness is very important. We suggest a clean work bench top from which oil can easily be cleaned or a large piece of cardboard.

This kit contains all parts necessary to obtain any of three levels of performance depending on intended use:

1. **Heavy Duty:** Towing, campers, motorhomes, police, taxi, etc.
2. **Street:** Dual purpose performance vehicles. Street and strip high-performance cars, on and off road desert vehicles and 4-wheelers.
3. **Competition:** Race cars only, not intended to be driven on the street. Trailered or towed race vehicles only.

Automatic transmissions operate at temperatures between 150°F and 250°F. It is suggested that the vehicle be allowed to cool for a few hours to avoid burns from hot oil and parts. The vehicle should be off the ground for ease of installation. Jack stands, wheel ramps, or a hoist will work fine. **Make sure the vehicle is firmly supported!!** Try to raise it 1-2 feet so you have plenty of room to work easily. Have a small box or pan handy to put small parts in so they won't be lost. Also have a drain pan to catch oil in.

NOTE: FoMoCo has produced two styles of '70 and later valve bodies. This kit allows modifications to both and in the text will be referred to as "Pinto" and "All Except Pinto". The "Pinto" style may be found in Pinto, Bobcat, and some '79 and later intermediate cars. Check Figure 5 for identification.

DISASSEMBLY

STEP 1. C-4's do not have a drain plug. You may want to install a B&M Pan Drain Plug Kit at this time, part #80250. Drain the oil by removing the back oil pan bolts and work towards the front slowly. (Some vehicles have the dipstick tube attached to the oil pan. This can be removed first to drain some oil.) Do not remove the two front bolts yet. If the pan sticks to the gasket, insert a screwdriver between the pan and the case and pry the pan down slightly to break it loose. Now remove the two front bolts slowly. This will lower the pan to allow the rest of the fluid to drain. Lower the pan and set it aside. Put the pan bolts in your tray.

STEP 2. Manually operate the kickdown lever on the transmission with the gas pedal depressed half way.

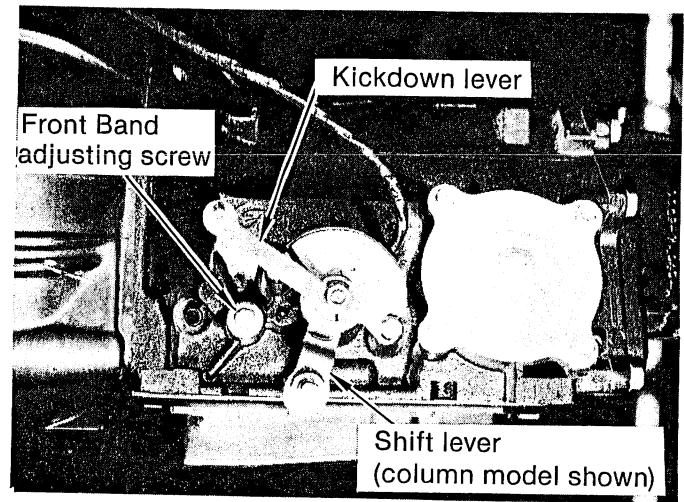


FIGURE 1

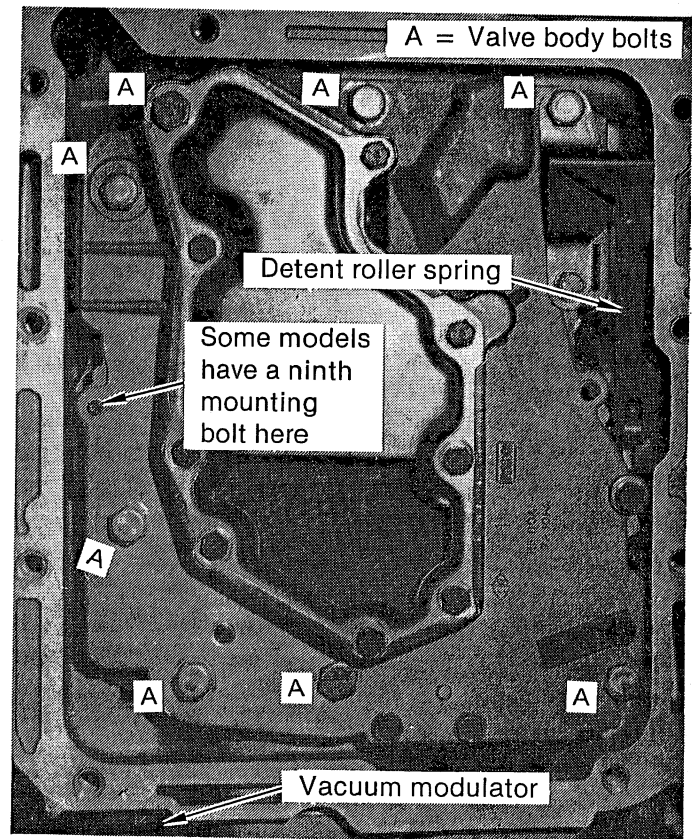


FIGURE 2 (ALL EXCEPT PINTO)

Note how it moves freely with no bind. Observe how the internal linkage engages the valve body. Note position of detent roller spring. (See Fig. 2)

STEP 3. Remove the eight or nine valve body attaching bolts (See Fig. 2) and remove the valve body by pulling straight down. Keep drain pan positioned as there is still a pint of oil between valve body and case. Upon removing last bolt some oil will escape between case and valve body. Put the valve body in the oil pan. Pinto models have a check valve next to the screen. (See Fig. 3). Note: Detent roller spring comes out with valve body (See Fig. 2).

Step 4. Adjust the front band: Loosen the outer jam nut with $\frac{3}{4}$ " wrench and back out to the end of threads.

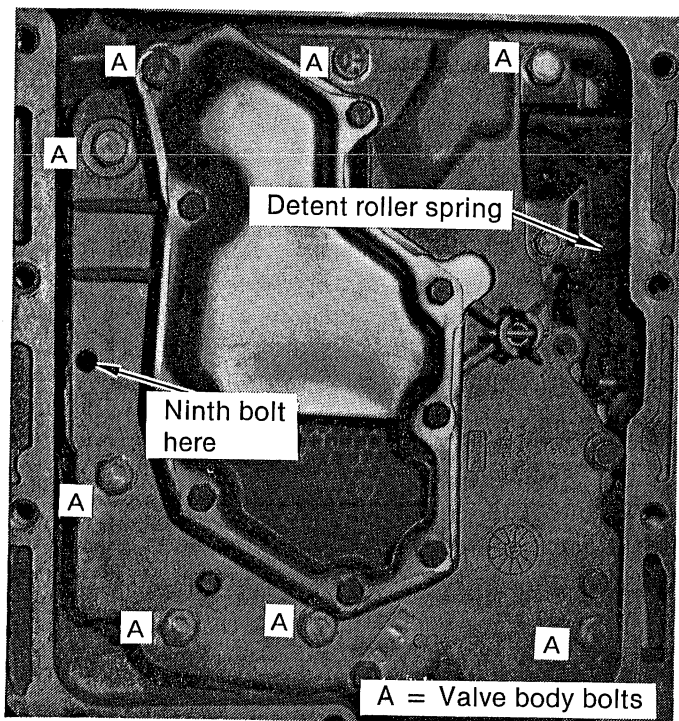


FIGURE 3 (PINTO ONLY)

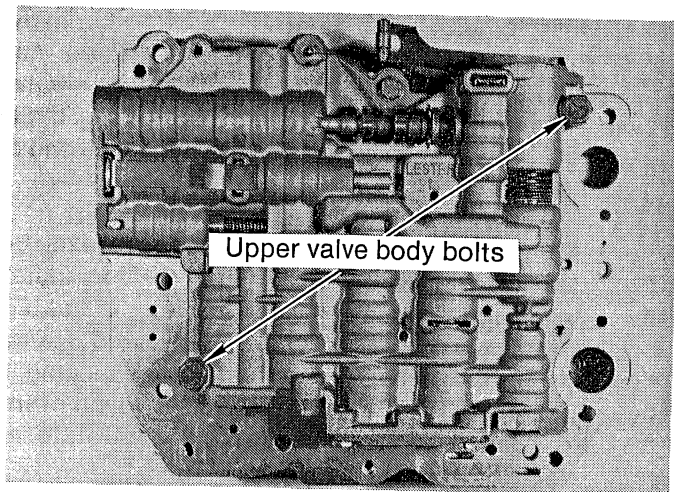


FIGURE 4

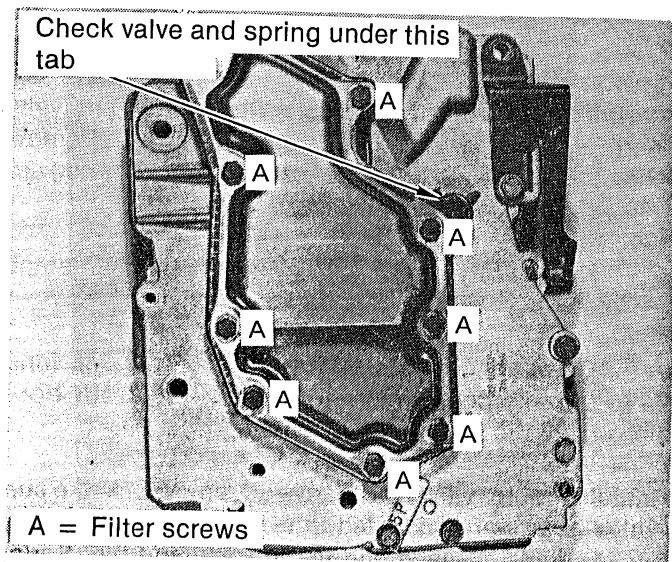


FIGURE 5 (ALL EXCEPT PINTO)

Heavy Duty and Street: Tighten the band adjusting screw to 120 in-lbs and back off $1\frac{3}{4}$ turns.

Competition: Tighten the band adjusting screw to 120 in-lbs and back off $1\frac{1}{2}$ turns. Hold band adjusting screw in this position and tighten jam nut securely.

STEP 5. If your unit has a bolt-in modulator (See Fig. 2), remove it and install new modulator supplied with kit along with new gasket. Make sure rod is in place between modulator and valve. Do not use gold rod in kit. If you have a push-in modulator that is retained with a clamp, make no modifications at this time.

STEP 6. Lay the valve body on the bench with the filter side down. Remove the two upper $\frac{1}{4}$ " bolts with a $\frac{7}{16}$ " wrench. (See Fig. 4)

STEP 7. Turn the valve body over and remove the filter screws. (See Fig. 5). Remove filter and set it aside. Note: These screws are long. All except Pinto will have a check valve and spring under a tab in the corner of the filter. Remove the valve and spring and set them aside. (See Fig. 6)

STEP 8. Remove the remaining valve body screws and detent roller spring. There are nine of these screws and they are medium length. The valve body consists of three main components. The main housing with the valve is called a **casting**. The thinner aluminum casting that the filter is attached to is called the **transfer plate**. The thin steel plate with all the holes is called a **separator plate**.

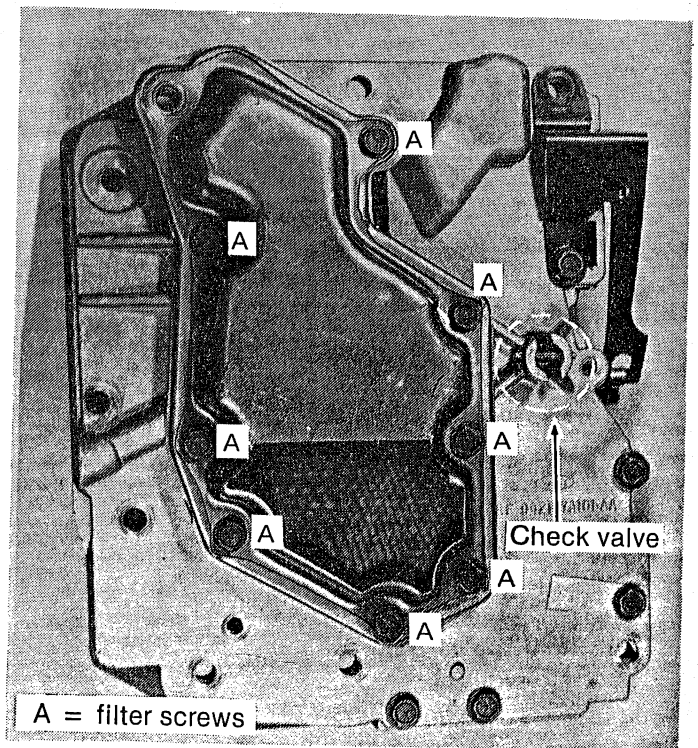


FIGURE 5 (PINTO ONLY)

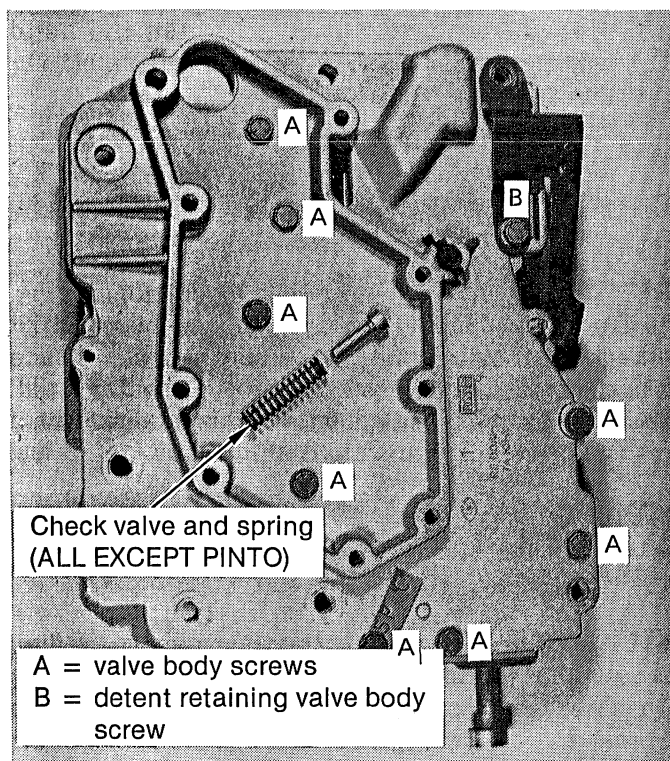


FIGURE 6

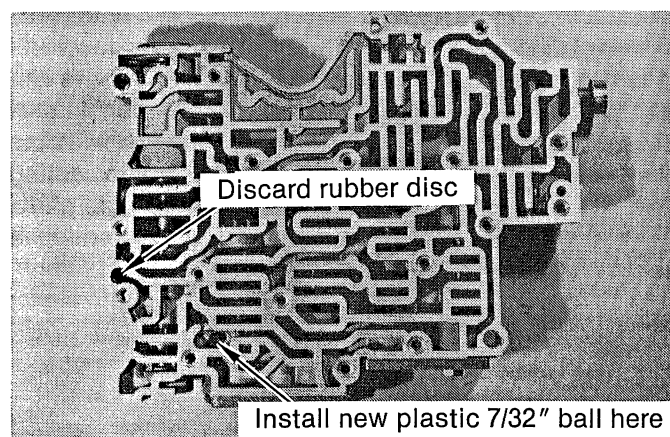


FIGURE 7 (ALL EXCEPT PINTO)

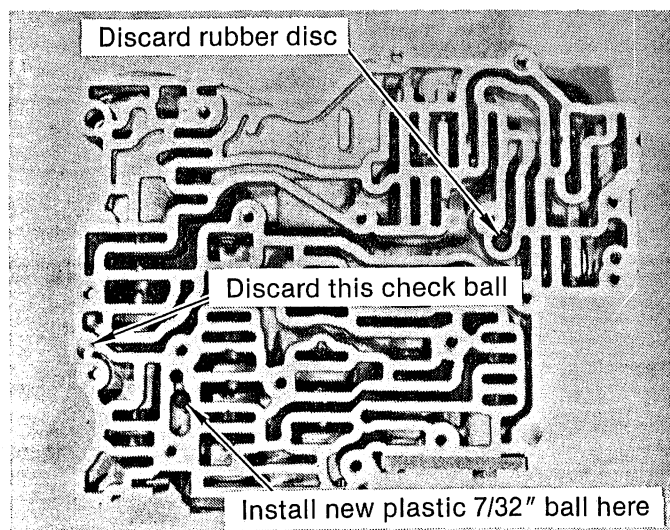


FIGURE 7 (PINTO ONLY)

STEP 9. Lift the **transfer plate** assembly off the **casting**. There is one black plastic check ball (all except Pinto) or two check balls (Pinto only) and a flat black rubber disc in the **casting**. (See Fig. 7) Remove these and discard them. Set the **transfer plate** assembly aside.

STEP 10. Remove the accumulator valve end plug. (See Fig. 8) This plug is held in by a retaining pin. Push in on the plug to allow the pin to fall out. There is a spring underneath that will push the plug out. Remove the plug and the intermediate servo accumulator valve and spring. Install accumulator valve first into bore and spring second. Install end plug as removed. Push in on plug until retaining pin can drop in place and install pin. Spring tension will hold pin in place.

STEP 11. Remove the cut-back valve end plate bolts and end plate.

Heavy Duty: No modification necessary for this application.

Street and Competition: Remove the cut-back valve. Install the 7/32" diameter steel ball from the kit into the cut-back valve bore. Install the cut-back valve as removed. The end of the valve should be below the surface of the **casting**. If it is not, grind a sufficient amount off the small end of the valve.

Remove the transition spring and valve. Remove the 2-3 back-out valve and spring. Discard the springs. Install the 2-3 back-out valve plug into the bore. Install 2-3 back-out valve and transition valve as removed. Transition valve must be below the surface of the casting. If not, grind a sufficient amount off the small end of the transition valve. Install the cut-back end plate as removed and install two bolts finger tight.

STEP 12. Remove the booster valve sleeve. This sleeve is held in by a retaining pin. (See Fig. 8) Push in on the sleeve to allow the pin to fall out. There is a spring underneath that will push the sleeve and valve out. Remove the aluminum sleeve and valve. Remove the outer pressure regulator spring (large diameter) and replace it with the yellow spring from the kit.

Heavy Duty & Street: Leave stock inner (small) pressure regulator spring installed in bore.

Competition: Remove and discard stock inner (small) pressure regulator spring from bore. Replace with the brown spring from kit.

Install booster valve and sleeve as removed. Make sure valve is properly installed in sleeve before assembly. Hold sleeve in place and install retaining pin. Spring tension will hold pin in place.

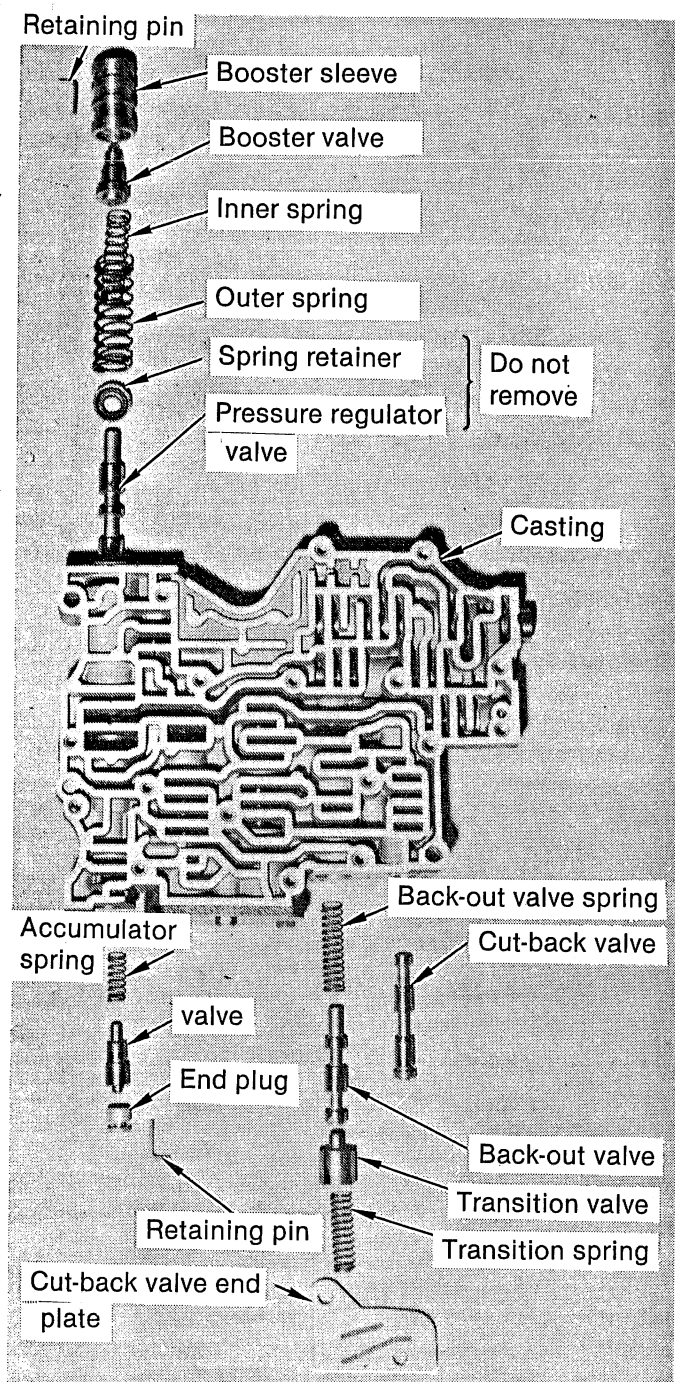


FIGURE 8 (ALL EXCEPT PINTO)

STEP 13. Heavy Duty & Street: Go to next step.

Competition: Turn casting over. Push in on lo servo modulator retainer plug. Carefully remove spring retainer by pulling straight up as retainer plug has a spring behind it (See Fig. 9). Leave lo servo modulator valve and spring in bore. Install $7/32$ " diameter steel ball inside spring against valve. Install lo servo modulator retainer plug and push into bore. Install spring retainer. Tip of lo servo modulator plug will fit into hole of spring retainer when properly installed. Turn casting back with passages facing up. Make sure that none of the remaining pins have fallen out (See Fig. 8).

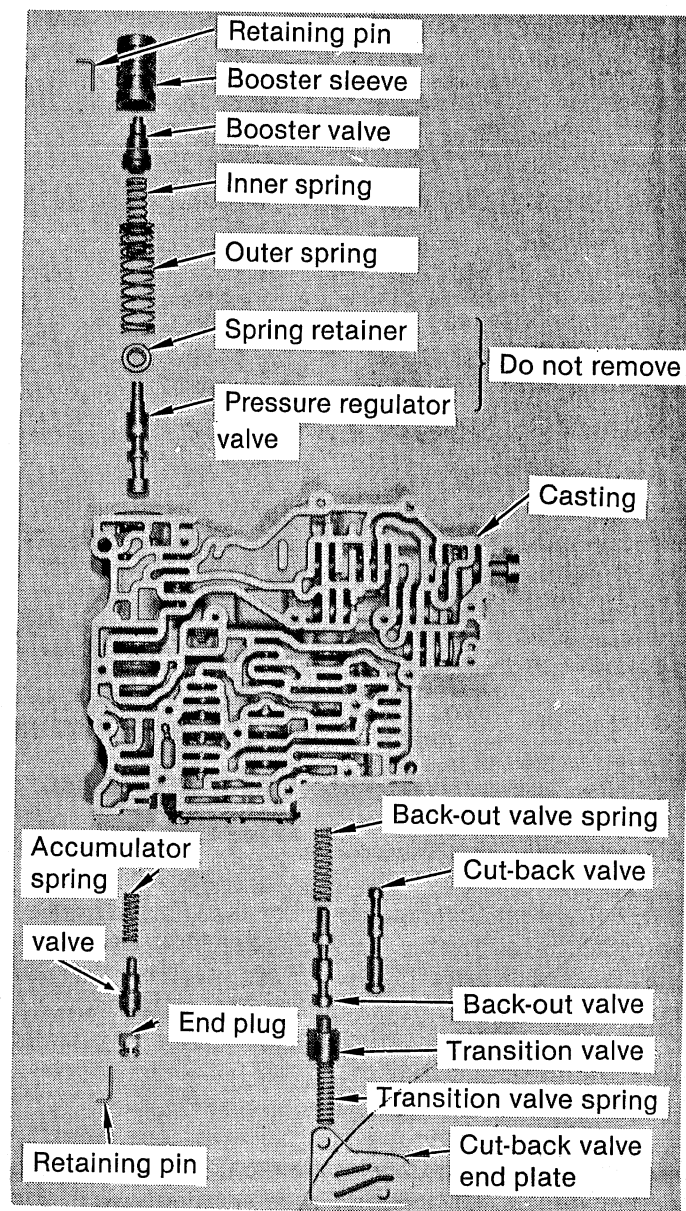


FIGURE 8 (PINTO ONLY)

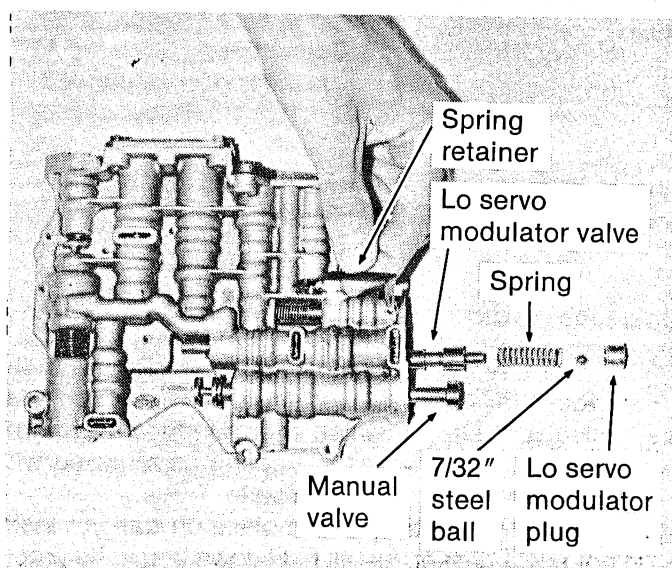
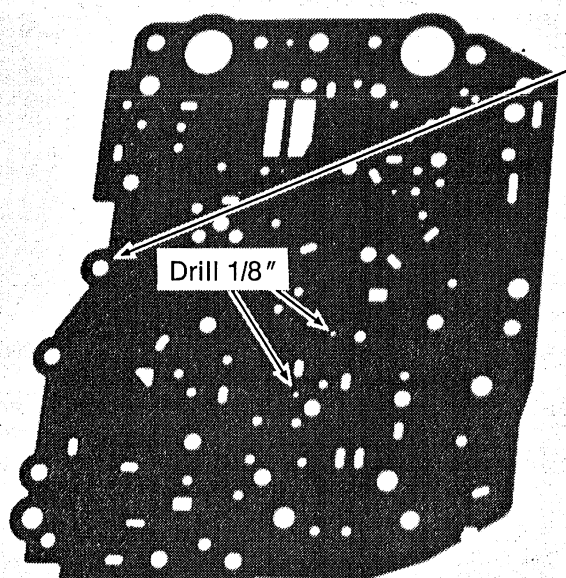
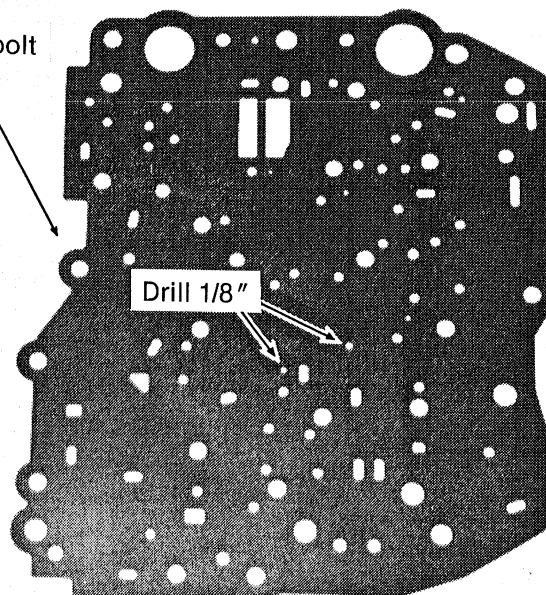


FIGURE 9



(ALL EXCEPT PINTO)
Hold down plate
(’70—’72 most
models)

Hold down bolt



(PINTO ONLY)
Models with nine valve body
attaching bolts do not have a
hold down plate

FIGURE 10

STEP 14. Lay **casting** on bench with passages facing up. Install new 7/32" plastic ball in passage indicated in Figure 7. Set the **casting** aside.

STEP 15. Place the **transfer plate** assembly in front of you with the **separator plate** up. (See Fig. 10) Note the position of the hold-down bolt. Remove the hold-down bolt and the **separator plate**. Pinto only: There will be a check valve and spring under the separator plate. Remove it and set it aside.

Step 16. Scrape off any excess gasket material from the **separator plate** and **transfer plate** casting. Discard the rubber check balls in the transfer plate. Wash the **transfer plate** in solvent. See Fig. 10 for separator plate drilling.

Heavy Duty, Street & Competition: Use the 1/8" drill supplied and enlarge the two holes marked.

Deburr the drilled holes with a file, stone or sandpaper. Wash the separator plate in solvent.

STEP 17. Lay the **transfer plate** in front of you with the passages up. Install new plastic 7/32" diameter ball supplied with kit in position shown in Figure 11. Pinto only: Install check valve and spring as removed with face of valve against **separator plate**.

ALL: Install **separator plate** in place on **transfer plate**. Do not use a gasket. Install hold-down bolt in its proper position. (See Fig. 10) Install bolts in place and tighten bolts finger tight.

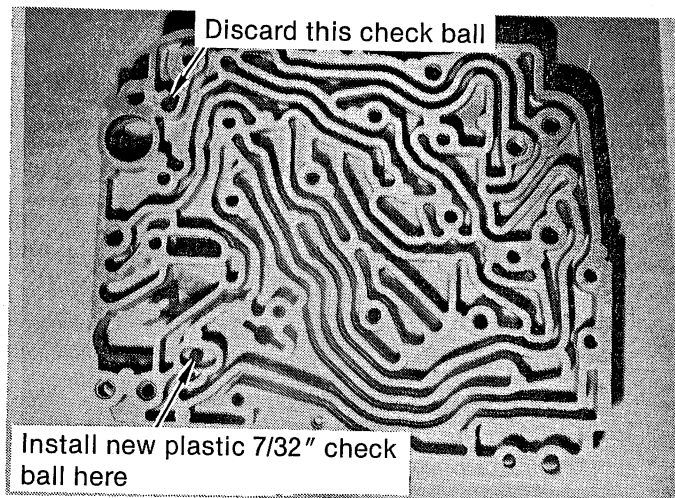
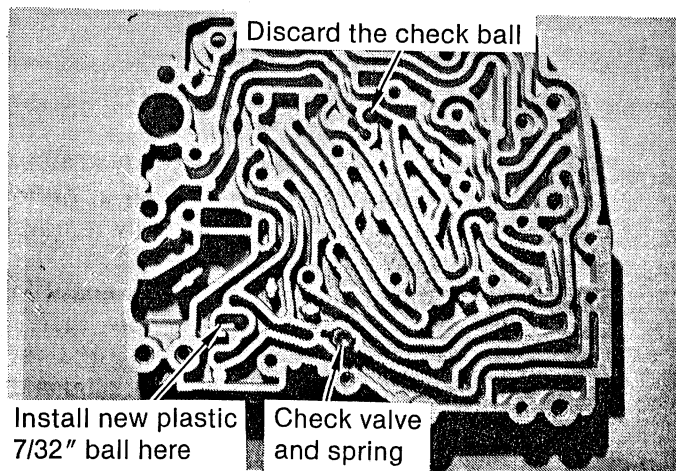


FIGURE 11 (ALL EXCEPT PINTO)



Note: Valve faces up
against plate.

FIGURE 11 (PINTO ONLY)

STEP 18. Install **transfer plate** assembly onto **casting**. Make sure that all casting end plates and pins are below machined hydraulic surface. Make sure casting check ball is in place. (See Fig. 7) Install eight medium length valve body bolts in place in position shown in Figure 6. Tighten finger tight. The **casting** and **transfer plate** should be flat against the **separator plate**. If it is not there is an interference problem that must be corrected. Do not install detent roller spring yet.

STEP 19. Turn valve body over and install the two long 1/4" bolts. (See Fig. 4) Tighten to 80-120 in.-lbs. Also tighten all valve body and end plate bolts to 20-40 in.-lbs. in this sequence: one or two long hold down bolts, eight valve body bolts, end plate bolts. All except Pinto: Install check valve and spring. Face of valve goes into casting first with spring on top. Tab on filter will hold valve assembly in place. The screen (filter) supplied will fit most C-4 transmissions. Bronco's and Pinto-Mustang II require special screens. If you need one of these special screens you can purchase one at your local auto parts store. Install new screen. (Note: Some C-4 transmissions are factory equipped with an extension tube as part of the filter. Install tube onto new screen.) Align screen with casting and install bolts and tighten to 20-40 in.-lbs. The valve body is now assembled.

REASSEMBLY

STEP 20. Install valve body into transmission carefully. Align selector lever tab to manual valve slot and align kickdown lever to approximate position then engage selector lever into manual valve while working kickdown lever slightly by hand to find its working position. (A slight spring action will be felt.) You should be able to hold the valve body flat against the case without excessive force. The kickdown lever should move freely with no bind as it did before removal. Install valve body bolts finger tight. The long bolt goes thru the filter. Install detent roller spring in corner. (See Fig. 1) Again check for free operation of kickdown and shifter linkage. Tighten valve body bolts to 80-120 in.-lbs. Tighten detent roller spring casting bolt 20-40 in.-lbs. Failure to properly install valve body can result in damage to linkage, valve body and/or case.

STEP 21. Clean pan and scrape any excess gasket material from pan and case surface. Install pan with new gasket and tighten pan bolts to 12-16 ft.-lbs. Install dipstick tube into pan if your model was so equipped and tighten securely.

STEP 22. Check shifter adjustment: Detents on selector lever must correspond with detents in the transmission. There should be a slight amount of clearance between the shift lever and the neutral stop when the shifter is in neutral. Adjustment can be made by loosening the pinch bolt on shifter end of shifter rod and retightening after adjustment.

STEP 23. Depress gas pedal to full throttle. Check to see if carburetor is opening fully and adjust if necessary. Adjust kickdown linkage so full throttle operates kickdown lever on transmission to full position.

Competition: Use stock modulator rod. Disconnect modulator vacuum hose to modulator and plug source at manifold. If screw in type modulator, use modulator supplied with kit. If shift points are too late for particular track usage, reconnect vacuum source to modulator.

STEP 24. Lower vehicle. Try to keep the rear wheels off the ground if possible. Add four quarts B&M Trick Shift or type "F" automatic transmission fluid. Start the engine and put the selector lever in **Neutral**. Check the fluid level and add fluid until it is to the **add** mark. Shift the transmission into all gear positions. If the rear wheels are off the ground allow the unit to shift through all gears about 10 times. Lower vehicle and check fluid. It should be between the **add** and **full** mark.

Drive vehicle for 1-2 miles to warm up fluid. Check fluid level and add to **full** mark. **Do not overfill!!** This will cause foaming and overheating.

TO RAISE OR LOWER SHIFT POINTS

Part throttle shift points can be adjusted for personal preference. Method of adjustment varies depending on type of modulator.

- A. Modulator supplied with kit: A small screw adjustment inside the vacuum tube can be turned to change shift points. Turn screw clockwise to raise shift points. Turn screw counterclockwise to lower shift points. Do not turn screw more than four turns in either direction.
- B. Non-adjustable push-in type with clamp retainer: Three steps can be made to obtain lower part throttle shift points only. Shift points cannot be raised.
 1. Replace factory modulator rod with special gold rod supplied in kit. This will lower your shift points approximately 5 mph.
 2. Install shim under modulator base using factory modulator. This will lower your shift points approximately 7-8 mph.
 3. Install both shim and special gold rod. This will lower your shift points by approximately 12-15 mph.

Note: The above modifications will have no noticeable effect on full throttle shift points.

TROUBLESHOOTING GUIDE

FORD C-4

Malfunction	Probable Cause
Slips	Low fluid level
	Pressure regulator valve assembly improperly installed
	Booster valve installed improperly
	Valve body or end plate bolts loose
Overheating or foaming at dipstick tube or breather	High fluid level
	Cooler plugged
	Cooler insufficient
Erratic shifting	Shifter misadjusted
	Kickdown rod misadjusted
	Low fluid level
	High fluid level
	Vacuum line cracked or leaking
	Valve body bolts loose
Late hard shifts	End plate bolts loose
	Vacuum line cracked or leaking
	Modulator damaged
	Kickdown linkage misadjusted. Competition level driven on street
Will not shift	Valve bolts loose
	End plate bolts loose
One gear only	Shifter not engaged properly
Early soft shifts	Modulator rod missing or incorrect

TOOLS REQUIRED FOR C-4 TRANSPAK INSTALLATION

- 1 Speed Handle or Ratchet—3/8" drive
- 1 1/2" Socket—3/8" drive
- 1 7/16" Socket—3/8" drive
- 1 5/16" Socket—3/8" drive
- 1 Small Screwdriver
- 1 Phillips Screwdriver
- 1 3/4" Wrench
- 1 Small File
- 1 Torque Wrench 0-250 in.-lbs. —3/8" drive
- 1 3/8" 12-point socket—3/8" drive

PARTS LIST FOR C-4 TRANSPAK INSTALLATION

- 1 Vacuum Modulator
- 1 Pressure Regulator Spring (yellow)
- 1 Pressure Regulator Spring (brown)
- 1 Modulator Shim
- 1 Modulator Rod
- 1 2-3 Back-out Valve Plug
- 2 7/32" Plastic Ball
- 2 7/32" Steel Ball
- 1 1/8" Drill
- 1 Screen (Filter)
- 1 Pan Gasket