



INDEX

ADJUSTMENTS	4
DIAGNOSING	6
REMOVAL-INSTALLATION	11
DISASSEMBLY-ASSEMBLY	18
SUB-ASSEMBLY	50
CASE	70
VALVE BODY	74
SPECIFICATIONS	92

AUTOMATIC TRANSMISSION SERVICE GROUP



Technical Service Information

INTRODUCTION

FORD C-5

The C-5 transmission was produced from 1982 thru 1987. It is similar to the C-4 with a slight modification to the valve body and the addition of a centrifugal lock-up converter clutch.

When diagnosing this unit, you can use the same trouble shooting methods as the C-4.

We thank the Ford Motor Company for the illustrations and information that made this booklet possible.

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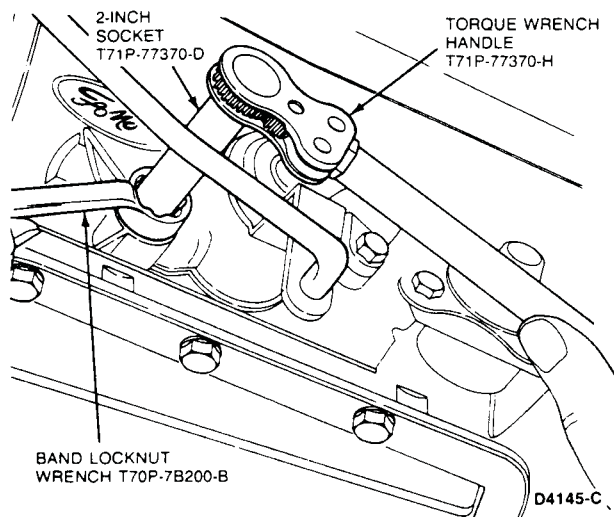
NOTES----NOTES----NOTES----NOTES

The only adjustments that can be made on the transmission are adjustments of the bands and line pressure.

To prevent damage to the transmission and to assure proper adjustment, it is essential that the tools and procedures described below are used whenever adjustments are made.

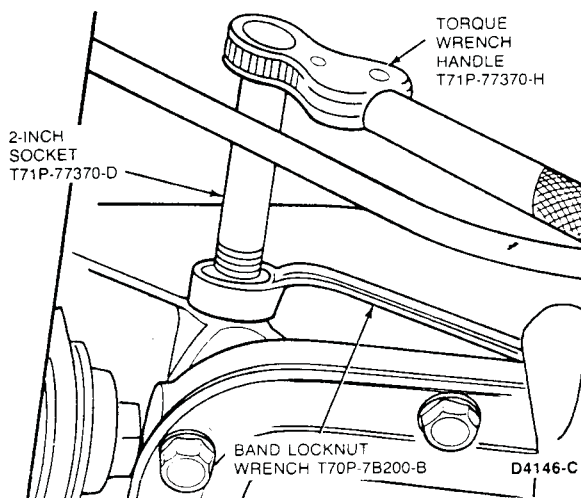
Intermediate Band Adjustment

1. Clean all dirt from the band adjusting screw area. Remove and discard the locknut.
2. Install a new locknut on the adjusting screw.
3. Tighten the adjusting screw using Band Adjustment Torque Wrench T71P-77370-A and Socket T71P-77370-D or equivalent. Band Adjustment Torque Wrench T71P-77370-A or equivalent is a pre-set torque wrench which will click when the torque on the adjusting screw reaches 13.5 N·m (10 lb-ft).
4. Back off the adjusting screw exactly 4¼ turns.
5. Hold the adjusting screw to prevent it from turning, and tighten the locknut to 54 N·m (40 lb-ft).



Low Reverse Band Adjustment

1. Clean all dirt from the band adjusting screw area. Remove and discard the locknut.
2. Install a new locknut on the adjusting screw.
3. Tighten the adjusting screw using Band Adjustment Torque Wrench T71P-77370-A and Socket T71P-77370-D or equivalent. Band Adjustment Torque Wrench T71P-77370-A or equivalent is a pre-set torque wrench which will click when the torque on the adjusting screw reaches 13.5 N·m (10 lb-ft).
4. Back off the adjusting screw exactly three full turns.
5. Hold the adjusting screw to prevent it from turning, and tighten locknut to 54 N·m (40 lb-ft).



Line Pressure

When a replacement vacuum diaphragm is installed, the line pressure must be checked. If the pressure is not to specifications, a longer or shorter throttle valve rod must be installed to return the pressure to within the specified limits. In order to obtain the proper line pressure, five selective rods are available.

Length	Color Code
1.5925-1.5875 inch	Green
1.6075-1.6025 inch	Blue
1.6225-1.6175 inch	Orange
1.6375-1.6325 inch	Black
1.6585-1.6535 inch	Pink and White

The following procedure will determine if a change in the length of the rod is required:

1. Attach a tachometer to the engine.

Gear Ranges

P—PARK position enables the transmission output shaft to be locked, thus preventing the vehicle from rolling either forward or backward. Because the output shaft is mechanically locked by a parking pawl anchored in the case, the PARK position should not be selected until the vehicle has come to a stop. The engine may be started in the PARK position.

R—REVERSE position enables the vehicle to be operated in a reverse direction.

N—NEUTRAL position enables the engine to be started and operated without driving the vehicle.

D—DRIVE range is used for all normal driving conditions and maximum economy. DRIVE range has three gear ratios, from the starting ratio to direct drive. Downshifts are available for safe passing by depressing the accelerator fully to the floor.

2—This position limits the transmission to second gear. The 2 position is particularly useful when driving up moderately steep grades or for braking purposes on mountain downgrades. Use the 2 position for starting up when the roads are slippery. Do not exceed 88 km/h (55 mph) in this position. If you want to upshift to high gear from the 2 position, move the gear shift selector lever to the D position.

1—Manual low range can be selected at any vehicle speed. The transmission will shift to second gear immediately and remain in second until vehicle speed is reduced to approximately 48 km/h (30 mph), at which time the transmission will shift to first gear and remain in first gear regardless of speed or throttle position. This is particularly beneficial for maintaining maximum engine braking when continuous first gear operation is desirable.

Downshifts

Under certain conditions the transmission will downshift automatically to a lower gear range without moving the shift selector lever. The three categories of automatic downshifts are coast down, torque demand, and forced or kickdown shifts.

Coastdown

The "coastdown" downshift occurs when the vehicle is coasting down to a stop.

Torque Demand

The "torque demand" downshift occurs (automatically) during part throttle acceleration when the demand for torque is greater than the engine can provide at that gear ratio.

Kickdown

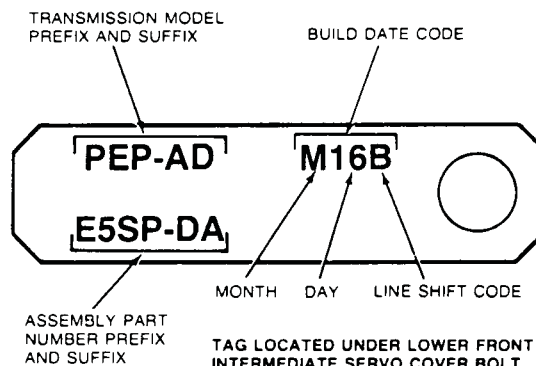
For maximum acceleration, the driver can force a downshift by depressing the accelerator pedal to the floor. A forced downshift ("kickdown") into second gear is possible between about 48 and 88 km/h (30 and 55 mph). Below approximately 48 km/h (30 mph), a forced kickdown to first gear will occur. All shift speeds specifications are subject to variation due to axle ratio, tire size and engine calibration requirements.

Torque Converter

Selected applications of C5 automatic transmission have a converter clutch torque converter. The converter clutch is designed to centrifugally engage at various operating speeds, depending on particular vehicle model and driving conditions. When this clutch engages, a mechanical connection exists between the engine and rear wheels. This feature is provided to improve both driveline efficiency and fuel economy. While the clutch is engaged the vehicle may respond in ways similar to driving with a manual transmission. This is normal and should not be considered adverse or as indicating need for service.

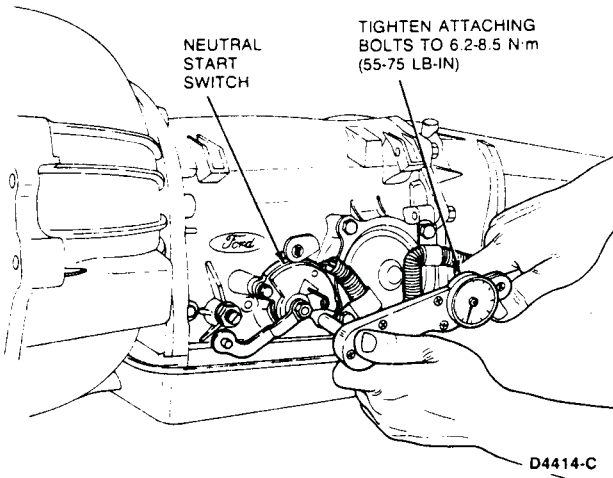
Transmission Identification

The identification tag is located under the lower front intermediate servo cover bolt. The tag shows model prefix and suffix, assembly part numbers, and the build date code. The first line on the tag shows the transmission model prefix and suffix. A number appearing after the suffix indicates that internal parts have been changed after initial production start-up. For example, a PEP-AD model transmission that has been changed internally would read PEP-AD1. Both transmissions are basically the same, but some service parts in the PEP-AD1 transmission are slightly different than the PEP-AD transmission. **Therefore, it is important that the codes on the transmission identification tag be checked when ordering parts or making inquiries about the transmission.**

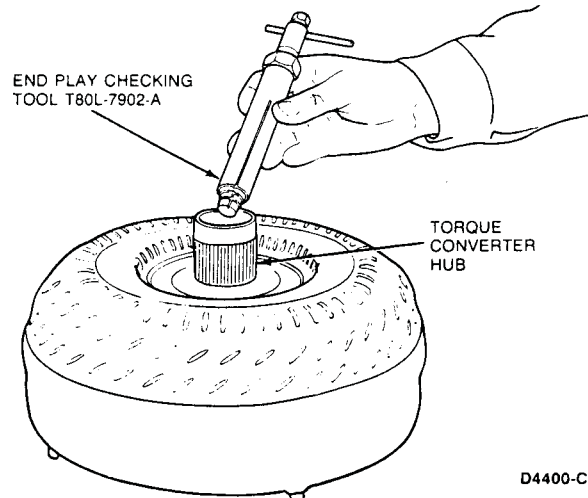


D4140-D

4. Tighten switch attaching bolts to 6.21-8.47 N·m (55-75 lb-in) and remove drill.



2. Lock the tool in position by tightening the threaded inner post.



3. Attach Dial Indicator TOOL-4201-C or equivalent to the end play checking tool.

With the indicator stylus contacting the converter shell and the indicator zeroed, lift up on the checking tool handles.

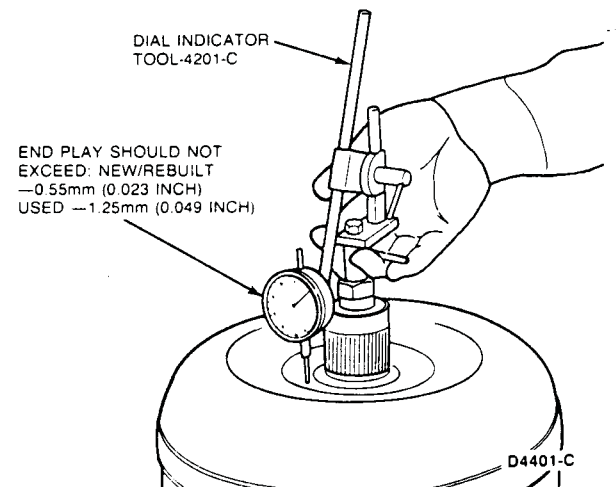
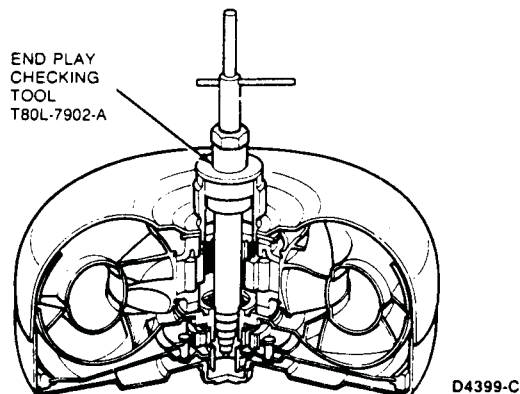
If the indicator reading is above 0.58mm (0.023 inch) on a new or rebuilt converter, or if the indicator reading is above 1.25mm (0.049 inch) on a used converter, the converter is not suitable for service; replace the converter.

DIAGNOSIS AND TESTING

Torque Converter Checks

Endplay Check

1. Position End Play Checking Tool T80L-7902-A or equivalent in the converter hub. Make sure the tool is fully seated.



2. Attach a hand vacuum pump to the transmission vacuum diaphragm unit.
3. Attach a suitable hydraulic pressure gauge similar to Pressure Gauge T57L-77820-A or equivalent to the control pressure outlet on the transmission.
4. Firmly apply the parking brake. On vehicles equipped with a vacuum brake release, apply the service brakes. Otherwise, the parking brake will release when the selector is moved to DRIVE.
5. Start engine and allow it to reach normal operating temperature.
6. Set the engine idle speed to the specified rpm.
7. Adjust engine speed to 1000 rpm and apply 34 kPa (10 inches) of vacuum to vacuum diaphragm unit. Read and record the control pressure in all selector positions.
8. Compare the pressure readings from Step 7 to the specified pressure chart and proceed as follows:
 - Pressure within specification: no change required.
 - Pressure below specification: use the next longest rod.
 - Pressure above specification: use the next shortest rod.

If the length of the rod is not known, it should be measured with a micrometer.

LINE PRESSURE CHART

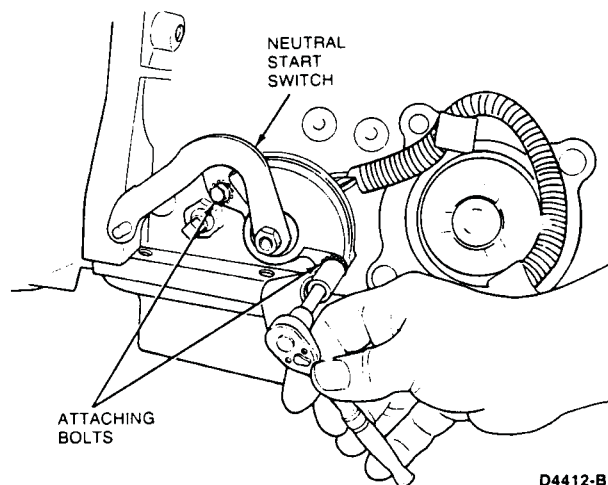
Transmission Model*	Range	34 kPa 10 inch Vacuum
PEP-Z, AC, AD, AE, AP, PEP-AFI	D 2,1 R	93-107 100-112 156-178
PEP-AF	D 2,1 R	86-99 100-110 144-162

*Refer to the ID tag for the transmission model.

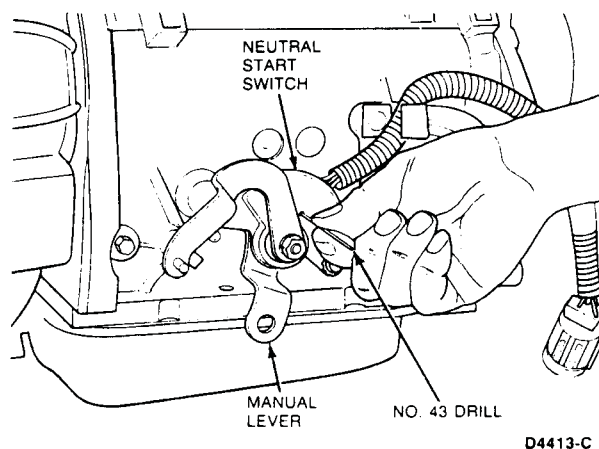
CD4144-E

Neutral Start Switch Adjustment

1. Loosen the neutral start switch attaching bolts.

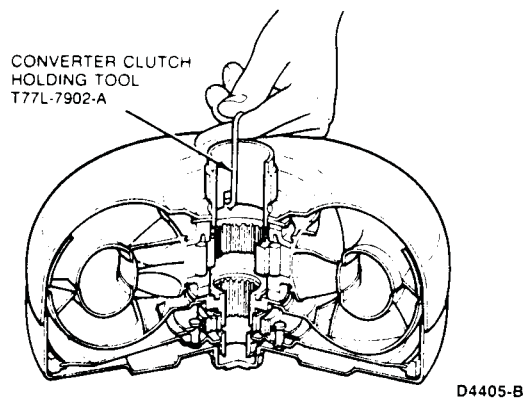


2. Position the manual lever in NEUTRAL.
3. Insert a No. 43 drill end shank fully into switch. Move switch as necessary to allow drill to rest against the case.

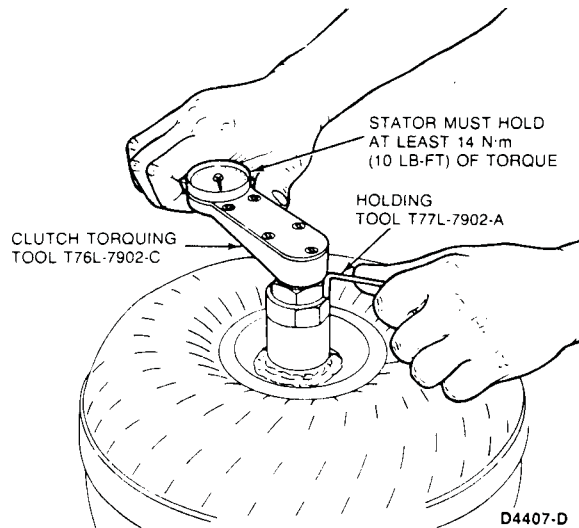


One-Way Clutch Check

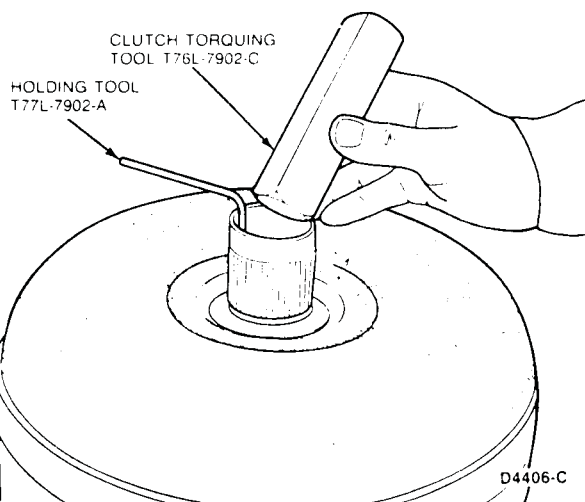
1. Install Converter Clutch Holding Tool T77L-7902-A or equivalent into one of the grooves provided in the reactor thrust washer.



3. Grip the holding wire securely and turn the torquing tool both clockwise and counterclockwise using a torque wrench.
4. When turned in a clockwise direction, the clutch will turn freely. When turned counterclockwise the clutch should lock and hold torque up to 14 N·m (10 lb-ft).

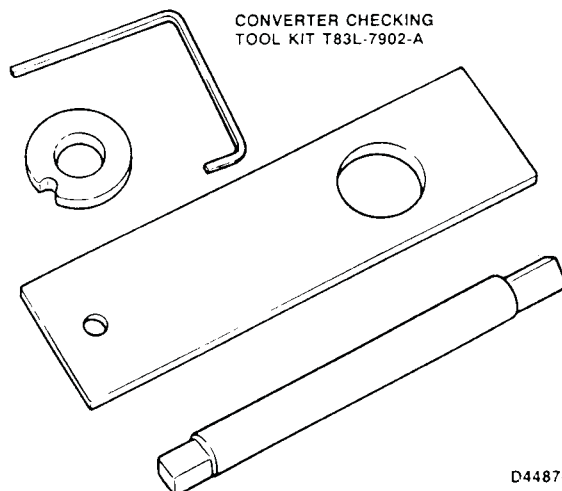


2. With the holding wire in position, install Converter Clutch Torquing Tool T76L-7902-C or equivalent.



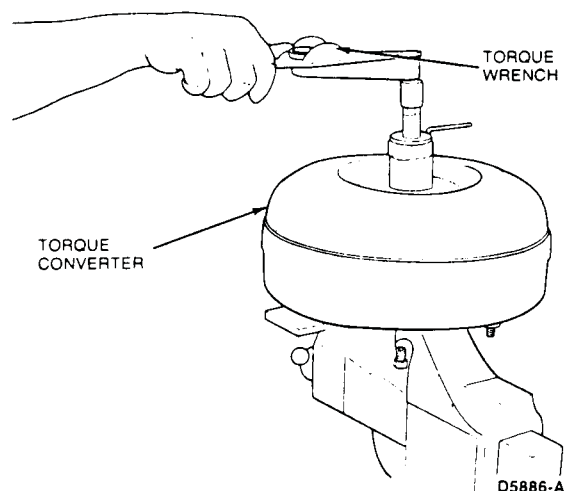
Stator To Turbine and Converter Clutch Interference Check

1. Position the converter on the bench, flywheel side down, or in a vise using Holding Fixture T83L-7902-A3 or equivalent. If using the holding fixture, clamp the fixture tightly in a vise. Place the converter on the holding fixture, aligning the pilot hub and one stud in the appropriate holes.
2. Install Converter Clutch Holding Tool T77L-7902-A or equivalent into one of the grooves provided in the reactor thrust washer.



3. With the holding tool in position, spline the torque adapter turning Tool T83L-7902-A1 or equivalent in the converter. Make sure the shaft splines engage the splines in the turbine hub.
4. Install the pilot guide Tool T83L-7902-A2 or equivalent over the shaft and onto the impeller hub.
5. Hold the converter assembly (if using the vise and holding fixture, steady the converter with one hand). Turn the torque converter turbine by rotating both clockwise and counterclockwise using a torque wrench and 3/4-inch drive socket.
6. Replace the converter if there is a loud scraping noise, or if the input shaft will not turn with 7 N·m (5 lb-ft) of torque.

NOTE: A slight rubbing noise is acceptable.



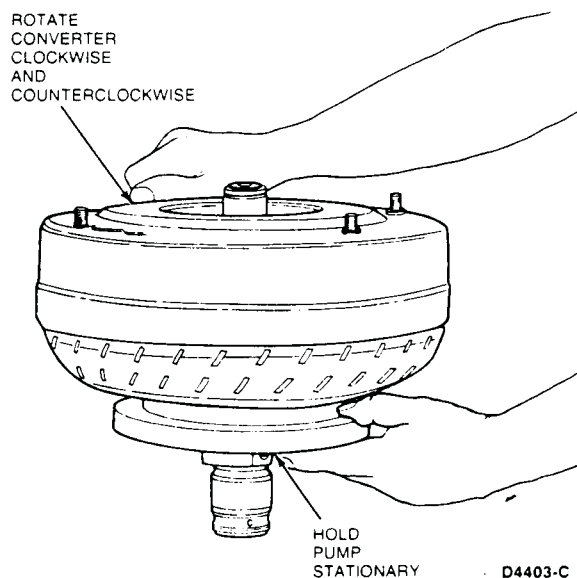
Stator To Impeller Interference Check

1. Place the pump assembly on the bench with the splined end of the stator support facing up.
2. Install the torque converter on the pump assembly. Make sure the stator support and stator splines engage and that the converter hub engages the pump drive gear.

3. While holding the pump stationary, turn the torque converter both clockwise and counterclockwise.

The converter should rotate freely without binding or scraping noises.

If a binding or loud scraping noise is evident replace the converter.



REMOVAL AND INSTALLATION

Transmission

Removal

1. Open the hood and install protective covers on the fenders.
2. Disconnect the negative battery cable.
3. On vehicles equipped with a 3.8L engine, remove the air cleaner assembly.
4. Remove the fan shroud attaching bolts and position the shroud back over the fan.
5. On vehicles equipped with 3.8L engine, loosen the clamp and disconnect the Thermactor air injection hose at the catalytic converter check valve.

The check valve is located on the right side of the engine compartment near the dash panel.



Technical Service Information

6. On vehicles equipped with a 3.8L engine, remove the two transmission-to-engine attaching bolts located at the top of the transmission bell housing.

These bolts are accessible from the engine compartment.

7. Raise the vehicle. Refer to the Pre-Delivery manual, Section 50-04.
8. Remove the driveshaft. To maintain initial driveshaft balance, mark the rear of the driveshaft yoke and axle companion flange so they can be installed in their original positions. Refer to Section 15-60.
9. Disconnect the muffler inlet pipe from the catalytic converter outlet pipe.

Support the muffler/pipe assembly by wiring it to a convenient underbody bracket.
10. Remove the nuts attaching the exhaust pipe(s) to the exhaust manifold(s).
11. Pull back on the catalytic converter(s) to release the converter hangers from the mounting bracket.
12. Remove the speedometer clamps bolts and pull the speedometer out of the extension housing.
13. Separate the neutral start switch harness connector.
14. Disconnect the kickdown rod at the transmission lever.
15. Disconnect the shift linkage at the linkage bellcrank using Shift Linkage Grommet Remover T84P-7341-A or equivalent. On vehicles equipped with floor mounted shift, remove the shift cable routing bracket attaching bolts and disconnect the cable at the transmission lever.
16. Remove the converter dust shield.
17. Remove the torque converter to drive plate attaching nuts. To gain access to the converter nuts, turn the crankshaft and drive plate using a ratchet handle and socket on the crankshaft pulley attaching bolt.
18. Remove the starter attaching bolts. Refer to Section 28-02.
19. Loosen the nuts attaching the rear support to the No. 3 crossmember.
20. Position a transmission jack under the transmission oil pan. Secure the transmission to the jack with a safety chain.

21. Remove the through bolts attaching the No. 3 crossmember to the body brackets.
22. Lower the transmission enough to allow access to the cooler line fittings. Disconnect the cooler lines using Cooler Line Disconnect Tool T82L-9500-AH or equivalent.
23. On vehicles with 3.8L engine, remove the four remaining transmission-to-engine attaching bolts (two each side). On all other models, remove the six transmission-to-engine attaching bolts.
24. Pull the transmission back to disengage the converter studs from the drive plate. Lower the transmission out of the vehicle.

Installation

1. Lubricate converter pilot with chassis grease.
2. Raise transmission into vehicle. As transmission is being slowly raised into position, rotate torque converter until studs and drain plug are aligned with holes in flywheel.

NOTE: Some vehicles may have an orange balancing mark on one converter stud and one flywheel stud hole. If these marks are present, make sure they are aligned.

3. Move the converter/transmission assembly forward against the back of the engine. Make sure the converter studs engage the drive plate and that the transmission dowels on the back of the engine engage the bolt holes in the bell-housing.
4. On vehicles equipped with a 3.8L engine, install four transmission-to-engine attaching bolts (two each side). On all other models, install the six transmission-to-engine attaching bolts. Tighten the attaching bolts to 55-67 N·m (40-50 lb-ft).
5. Connect the cooler lines.
6. Raise the transmission and install the No. 3 crossmember through bolts. Tighten the attaching nuts to specification. Refer to the appropriate engine Section for specifications.
7. Remove the safety chain and transmission jack.
8. Tighten the rear support attaching nuts to 41-67 N·m (30-50 lb-ft).
9. Before installing torque converter-to-flywheel attaching nuts, a check should be made to ensure that converter is properly seated. The converter should move freely with respect to the flywheel. Grasp the stud. Movement back and forth should result in a metallic clank noise if converter is properly seated. If converter will not



Technical Service Information

REMOVAL AND INSTALLATION (Continued)

move, the transmission must be removed and the converter repositioned so that the impeller hub is properly engaged in the pump gear.

If converter is free, install attaching nuts. Tighten attaching nuts to 27-46 N·m (20-34 lb-ft).

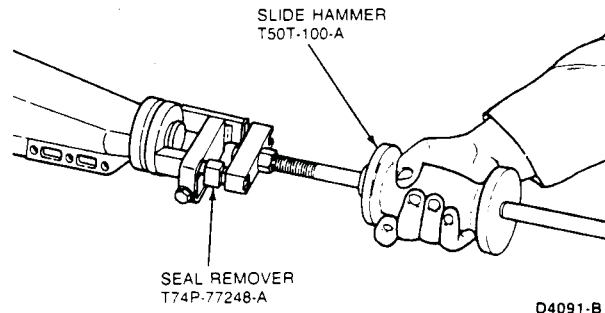
10. Install torque converter-to-drive plate attaching nuts. Tighten attaching nuts to 27-46 N·m (20-34 lb-ft).
11. Position the dust shield. On vehicles with column mounted shift, position the linkage bellcrank bracket. Install the attaching bolts and tighten to 17-21 N·m (12-16 lb-ft).
12. Connect the shift linkage to the linkage bellcrank using Shift Linkage Grommet Replacer T84P-7341-B or equivalent. On vehicles equipped with floor mounted shift, connect the cable to the shift lever and install the routing bracket attaching bolt.
13. Connect kickdown rod to transmission lever.
14. Connect the neutral start switch harness.
15. Install the speedometer and the clamp bolt. Tighten the clamp bolt to 4-6 N·m (36-54 lb-in).
16. Install the catalytic converter(s) using new seal(s) at the pipe(s) to exhaust manifold connection(s).
17. Install the pipe(s)-to-exhaust manifold attaching nuts. Do not tighten the attaching nuts at this time.
18. Remove the wire supporting the muffler/pipe assembly and connect the pipe to the converter outlet. Do not tighten the attaching nuts at this time.
19. Align the exhaust system and tighten the manifold and converter outlet attaching nuts.
20. Install driveshaft in transmission. Connect shaft to the rear axle companion flange so the index marks, made during disassembly, are aligned. Lubricate slip yoke splines with Multi-Purpose Long Life Lubricant C1AZ-19590-B or equivalent grease. Refer to Section 15-60.
21. Check and, if necessary, adjust shift linkage. Refer to Section 17-02.
22. Lower the vehicle.
23. On vehicles with 3.8L engine, remove the four remaining transmission-to-engine attaching bolts (two each side). On all other models, remove the six transmission-to-engine attaching bolts.

24. On vehicles equipped with a 3.8L engine, connect the Thermactor air injection hose to the converter check valve.
25. Position fan shroud and install attaching bolts.
26. On vehicles equipped with a 3.8L engine, install the air cleaner assembly.
27. Connect the negative battery cable.
28. Start engine. Make sure engine cranks only when the selector lever is positioned in the NEUTRAL (N) or PARK (P) detent.
29. Check and, if necessary, adjust the transmission fluid level. Refer to Section 17-01.
30. Raise the vehicle and inspect for fluid leaks.

Extension Housing Seal

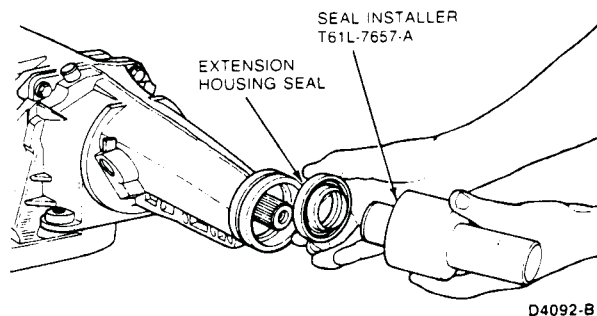
Removal

Remove the extension housing seal using Seal Remover T74P-77248-A and Impact Slide Hammer T50T-100-A or equivalent.



Installation

Install the extension housing seal using Extension Housing Seal Replacer T61L-7657-A or equivalent.





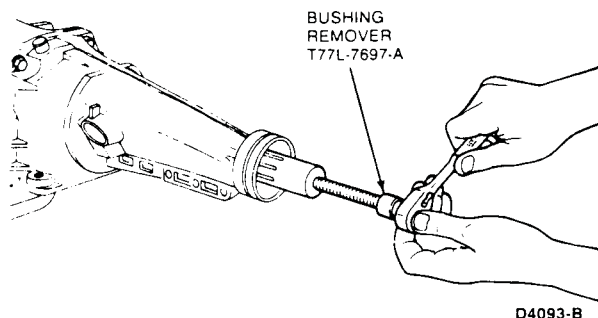
Technical Service Information

REMOVAL AND INSTALLATION (Continued)

Extension Housing Bushing

Removal

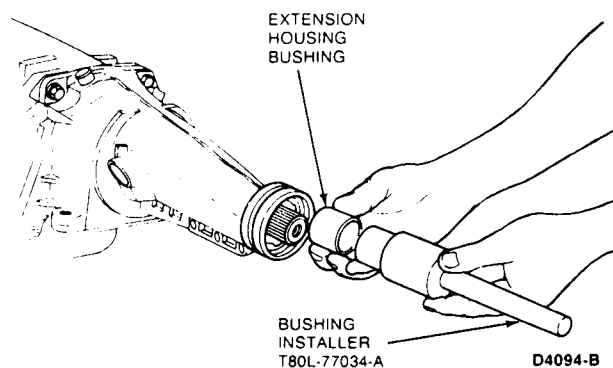
1. Remove extension housing seal. Refer to Extension Housing Seal Removal.
2. Remove the extension housing bushing using Extension Housing Bushing Remover T77L-7697-A or equivalent.



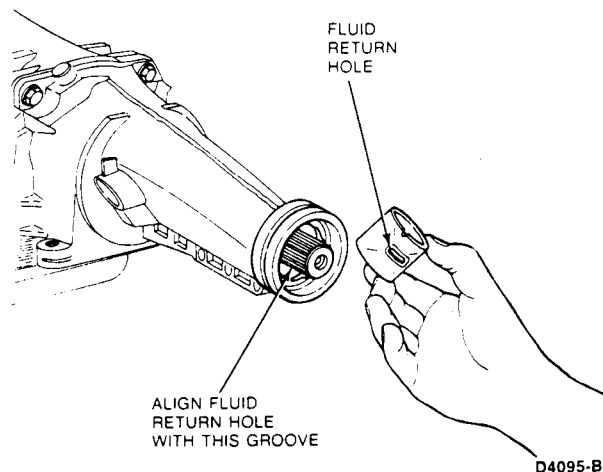
Installation

1. Install the extension housing bushing using Extension Housing Bushing Installer T80L-77034-A or equivalent.

NOTE: When the bushing is installed, the fluid drain-back hole must face downward in alignment with the extension housing fluid return groove.



2. Install extension housing seal as outlined.



Low-Reverse Servo

Except Mustang/Capri with 3.8L Engine

Removal

1. Raise the vehicle. Refer to Pre-Delivery manual, Section 50-04.
2. Loosen the low-reverse band adjusting screw locknut. Tighten the band adjusting screw to 14 N·m (10 lb-ft). (Tightening the screw will ensure that the band strut will be held against the case by the band, preventing it from falling down when the reverse servo piston assembly is removed).
3. Disengage the neutral start switch wiring harness from the routing clips.

Note the position of the clips before removing the four servo cover attaching bolts.
4. Remove the servo cover attaching bolts. Remove the servo cover and seal from the case.
5. Remove the servo piston from the case. The piston seal cannot be replaced without replacing the piston. The seal is bonded to the piston.



Technical Service Information

REMOVAL AND INSTALLATION (Continued)

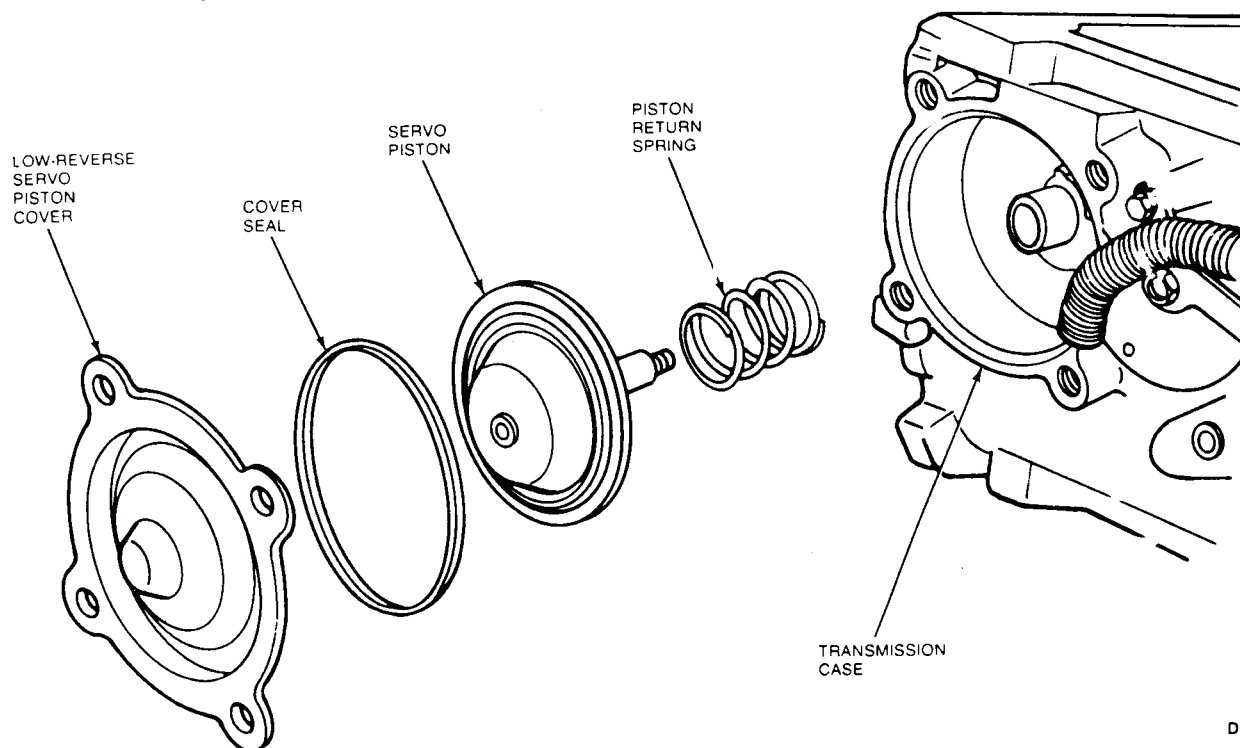
Installation

1. Install the piston in the case. Install a new seal on the cover. Use two 5/16-18 x 1 1/4-inch long bolts 180 degrees apart to position the cover against the case. Install two cover attaching bolts. Remove the two installation bolts and install the remaining two attaching bolts. Tighten the attaching bolts to 17-27 N·m (13-20 lb-ft).
2. Position the neutral start switch wiring harness in the routing clips.

3. Adjust the low-reverse band as outlined.

NOTE: If the band cannot be adjusted properly, the low-reverse band struts are not in position. Remove the oil pan and valve body. Install the struts, valve body and pan. Adjust the band.

4. Lower the vehicle.
5. Check and, if necessary, adjust the transmission fluid level. Refer to Section 17-01.



D3491-C

Low Reverse Servo

Mustang/Capri with 3.8L Engine

Removal

1. Open the hood and install protective covers on the fenders.
2. Remove the fan shroud attaching bolts and position the shroud back over the fan.
3. Raise the vehicle. Refer to Pre-Delivery manual, Section 50-04.
4. Position a transmission jack to support the transmission.
5. Remove the No. 3 crossmember to body bracket through bolts.
6. Lower the transmission.
7. Loosen the low-reverse band adjusting screw locknut. Tighten the band adjusting screw to 14 N·m (10 lb-ft). (Tightening the screw will ensure that the band strut will be held against the case by the band, preventing it from falling down when the low-reverse servo piston assembly is removed).
8. Disengage the neutral start switch wiring harness from the routing clips. Note the position of the clips before removing the servo cover attaching bolts.
9. Remove the four servo cover attaching bolts. Remove the servo cover and seal from the case.
10. Remove the servo piston and return spring from the case. The piston seal cannot be replaced without replacing the piston. The seal is bonded to the piston.



Technical Service Information

REMOVAL AND INSTALLATION (Continued)

Installation

1. Install the return spring and piston in the case. Install a new seal on the cover. Use two 5/16-18 by 1 1/4-inch bolts, 180 degrees apart to position the cover against the case. Install two cover attaching bolts. Remove the two installation bolts and install the remaining two attaching bolts. Tighten the attaching bolts to 17-27 N·m (13-20 lb-ft).
2. Position the neutral start switch wiring harness in the routing clips.
3. Adjust the low-reverse band as outlined.

NOTE: If the band cannot be adjusted properly, the low-reverse band struts are not in position.

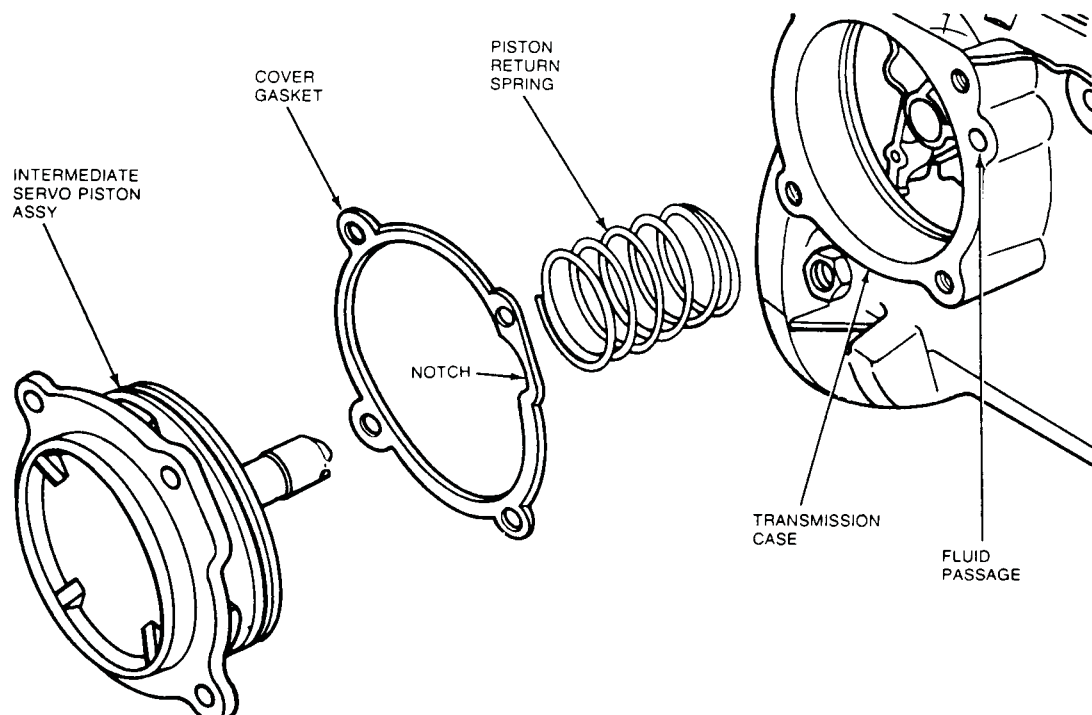
- Remove the fluid pan and valve body. Install the struts, valve body and pan. Adjust the band.
4. Raise the transmission into position and install the crossmember through bolts. Tighten the attaching nuts to specification. Refer to the appropriate engine Section.
 5. Remove the transmission jack.
 6. Lower the vehicle.
 7. Position the fan shroud and install the four attaching bolts.
 8. Check and, if necessary, adjust the transmission fluid level. Refer to Section 17-01.

Intermediate Servo

Removal

1. Open the hood and install protective covers on the fenders.
2. Remove the fan shroud attaching bolts and position the shroud back over the fan.
3. Raise the vehicle. Refer to Pre-Delivery manual, Section 50-04.
4. Position a transmission jack to support the transmission.
5. Remove the No. 3 crossmember-to-body bracket through bolts.

6. Lower the transmission.
7. On vehicles equipped with 3.8L engine, disconnect the transmission cooler line using Cooler Line Disconnect Tool T82L-9500-AH or equivalent.
8. Remove the servo cover attaching bolts. Note the location of the transmission ID tag.
9. Remove the servo cover/piston assembly and the piston return spring from the case.
10. Remove and discard the servo cover gasket.
11. Disassemble servo as outlined, if necessary.



D3492-C



REMOVAL AND INSTALLATION (Continued)

Installation

1. Position a new gasket on the servo cover. Note that the notch in the gasket has to align with a fluid passage in the case.
2. Install piston return spring and servo cover/piston assembly in the case. Use two 5/16-18 x 1 1/4-inch bolts, 180 degrees apart to position the cover against the case. Install two cover attaching bolts. Remove two installation bolts and install remaining two attaching bolts. Make sure transmission ID tag is installed under the lower bolt on the intermediate servo cover. Tighten attaching bolts to 22-30 N·m (16-22 lb-ft).
3. Adjust the intermediate band, as outlined.

NOTE: If the band cannot be adjusted properly, the intermediate band strut is not in position. Remove the oil pan and valve body. Install the struts, valve body and pan. Adjust the band.
4. On models equipped with a 3.8L engine, connect the transmission cooler line.
5. Raise the transmission into position and install the crossmember through bolts. Tighten the attaching nuts to specification. Refer to appropriate engine Section.
6. Remove the transmission jack.
7. Lower the vehicle.
8. Position the fan shroud and install the attaching bolts.
9. Check and if necessary, adjust the transmission fluid level. Refer to Section 17-01.

Valve Body

Removal

1. Raise the vehicle. Refer to Pre-Delivery manual Section 50-04.
2. Drain the transmission fluid. Loosen the pan attaching screw and washer assemblies to drain the fluid from the transmission. If the same fluid is to be used again, filter the fluid through a 100 mesh screen. Reuse the fluid only if it is in good condition.
3. Remove the transmission oil pan attaching screw and washer assemblies, pan and gasket.
4. Shift the transmission manual lever to PARK.
5. Remove the filter screen attaching bolt and the filter screen.

6. Remove the valve body-to-case attaching bolts. Hold the manual valve in the valve body and remove the valve body from the case. Failure to hold the manual valve while removing the control assembly could cause the manual valve to become bent or damaged.
7. Disassemble the valve body as outlined, if necessary.
8. Thoroughly clean and remove all gasket material from the pan and pan mounting face of the case. Remove and discard the nylon shipping plug from the oil pan.

Installation

1. Shift the manual lever at the transmission into the PARK detent position. Position the valve body on the case. Make sure the inner downshift lever is between the downshift lever stop and the downshift valve and that the two lands on the end of the manual valve engage the actuating pin on the manual detent lever. Install seven valve body-to-case bolts. Do not tighten the bolts at this time.
2. Tighten all the control valve body-to-case attaching bolts to 10-13 N·m (80-120 lb-in).
3. Position the filter screen and install the attaching bolt. Tighten the bolt to 3-4.5 N·m (25-40 lb-in).
4. Place a new gasket on the pan. Install the pan and attaching screw and washer assemblies. Tighten the screw and washer assemblies to 17-21 N·m (13-16 lb-ft).
5. Lower the vehicle and fill the transmission with fluid.
6. Check the transmission pan area for fluid leakage. Refer to Section 17-01.

Extension Housing

Removal

1. Raise the vehicle. Refer to Pre-Delivery manual, Section 50-04.
2. Remove the driveshaft. To maintain initial driveshaft balance, mark the rear driveshaft yoke and axle companion flange so they can be installed in their original position. Refer to Section 15-60.
3. Position a transmission jack to support the transmission.
4. Remove the speedometer cable from the extension housing.

REMOVAL AND INSTALLATION (Continued)

5. Remove the engine rear support-to-crossmember attaching nuts.
6. Raise the transmission and remove the rear support-to-body bracket through bolts. Remove the crossmember.
7. Loosen the extension housing attaching bolts and allow the transmission to drain.
8. Remove the six extension housing-to-case attaching bolts and vacuum tube clip.

Installation

1. Install a new extension housing gasket on the case. Install the extension housing and vacuum tube clip. Install and tighten six attaching bolts to 38-54 N·m (28-40 lb-ft).
2. Position the crossmember and install the through bolts. Tighten the attaching nuts to 48-68 N·m (35-50 lb-ft).
3. Lower the transmission and install the engine rear support-to-crossmember attaching nuts. Tighten the attaching nuts to specification. Refer to the appropriate engine Section.
4. Remove the transmission jack.
5. Install the speedometer cable in the extension housing.
6. Install the driveshaft in the transmission. Connect the driveshaft to the rear axle flange so that the index marks, made during disassembly, are aligned. Lubricate the slip yoke splines with Multi-Purpose Long Life Lubricant C1AZ-19590-B grease or equivalent. Refer to Section 15-60.
7. Lower the vehicle and fill the transmission with fluid. Refer to Section 17-01.
8. Check the extension housing area for fluid leakage.

Governor

Removal

1. Remove the extension housing as outlined.
2. Remove the governor housing-to-governor distributor attaching bolts. Slide the governor away from the distributor body and off the output shaft.
3. Disassemble the governor as outlined if necessary.

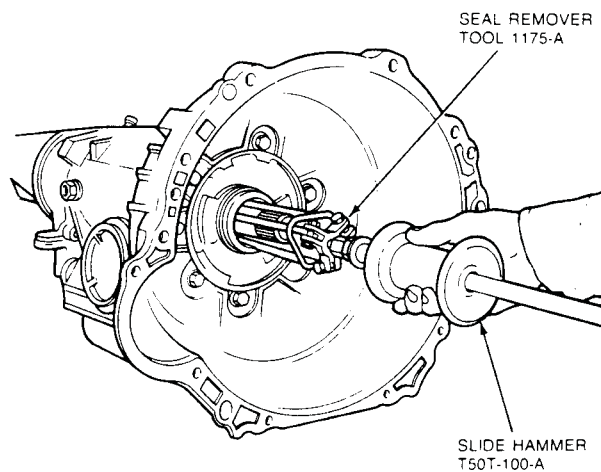
Installation

1. Slide the governor over the output shaft and position on the governor distributor body. Install the attaching bolts and tighten to 9-13 N·m (80-120 lb-in).
2. Install the extension housing as outlined.

Converter Hub Seal

Removal

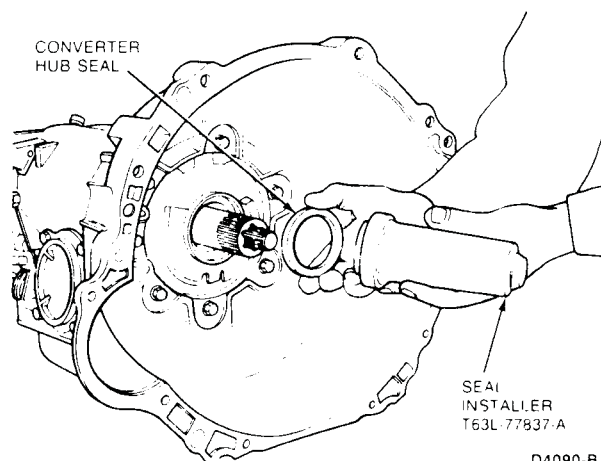
Remove the pump seal using Seal Remover TOOL-1175-AC and Impact Slide Hammer T50T-100-A or equivalent.



D4089-B

Installation

Install the seal using Front Pump Seal Replacer T63L-77837-A or equivalent.



D4090-B

Governor

Disassembly

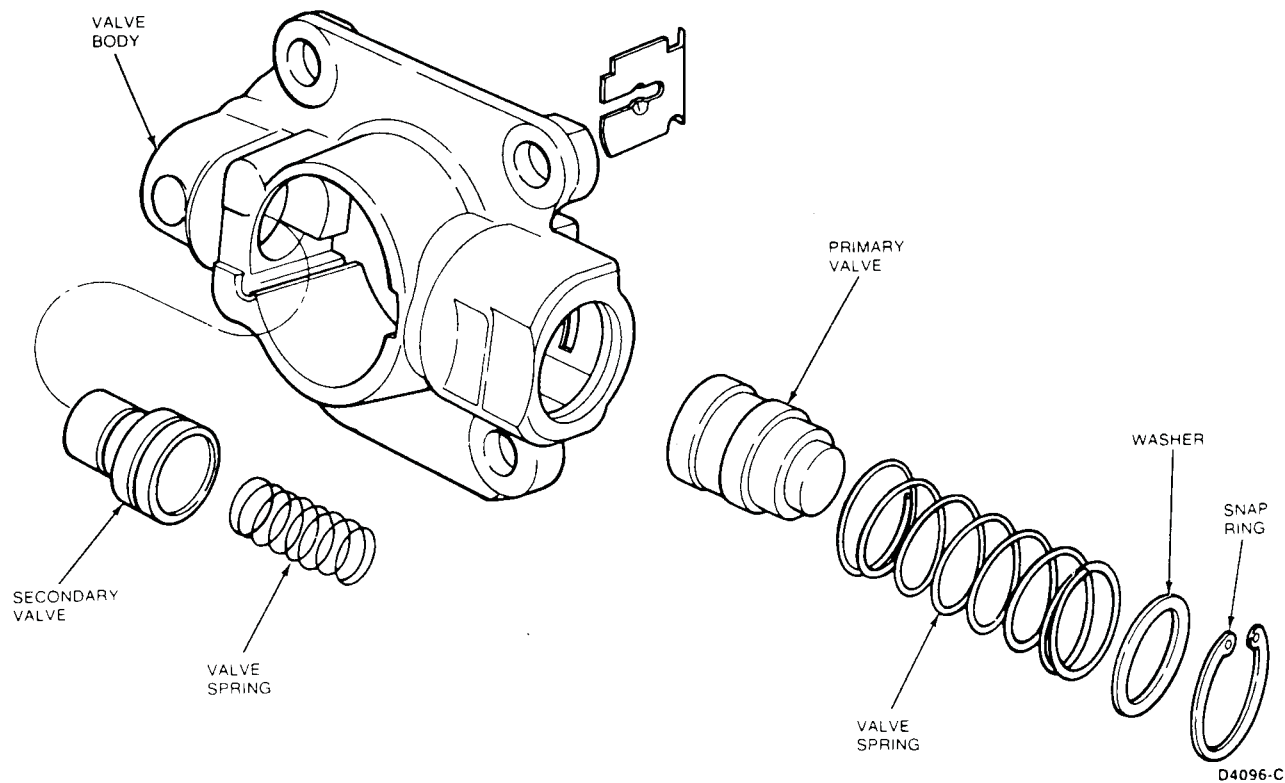
1. Using internal snap ring pliers, remove the snap ring from the governor bore containing the primary valve.
2. Remove the primary valve spring and the spring seat washer.
3. Remove the primary valve from the governor valve.
4. Remove the secondary valve spring retaining plate.
5. Remove the secondary valve and spring from the governor bore.

Assembly

1. Install the secondary valve in the governor bore.
2. Position the secondary valve spring and, while compressing the spring, install the spring retainer plate.

Note the direction in which the plate is installed. To make sure the spring is held in the correct position, install the plate with the concave area facing the spring.

3. Install the primary valve in the governor bore.
4. Install the primary valve spring, the spring seat washer and the snap ring.



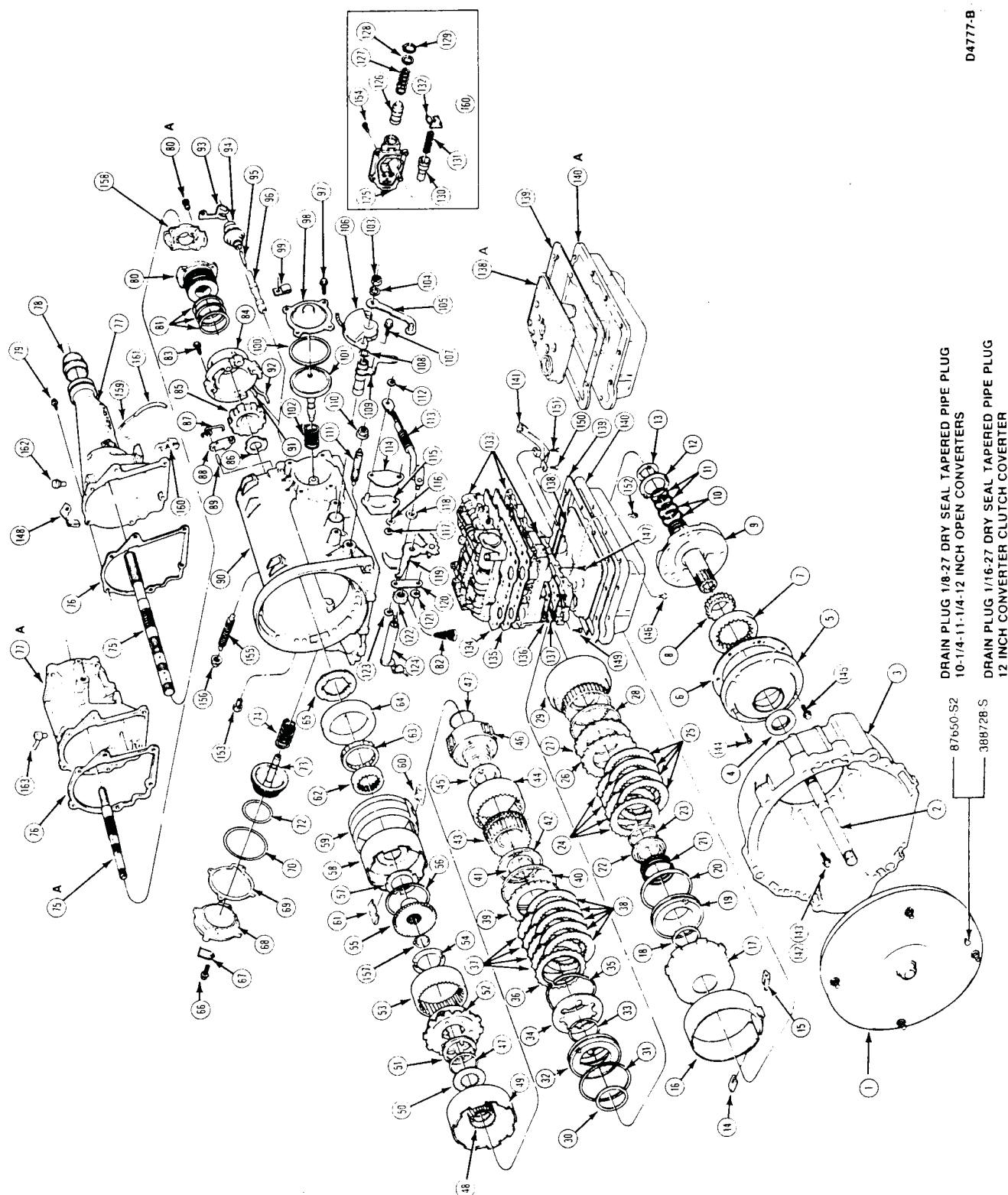


DISASSEMBLY AND ASSEMBLY

NOTE: Before beginning the transmission overhaul, review the following guidelines. These general rules are provided to emphasize the need for attention to detail and care when servicing an automatic transmission.

- Refer to Section 17-01 for procedures detailing the cleaning and inspection of individual components.
- Thorough cleaning of the transmission exterior will reduce the possibility that damaging contaminants might enter the subassemblies during disassembly and assembly.
- All fasteners must be tightened to the torque indicated in the next. In addition to appearing in the text, the necessary torques can be found in Specifications.
- When building-up subassemblies, each component part should be lubricated with clean transmission fluid. It is also good practice to lubricate the subassemblies as they are installed in the case.
- Needle bearings, thrust washers and seals should be lightly coated with petroleum jelly during subassembly build-up or transmission assembly.
- Many components and surfaces in the transmission are precision machined. Careful handling during disassembly, cleaning, inspection and assembly can prevent unnecessary damage to machined surfaces.
- When building-up subassemblies or assembling the transmission always use new gaskets and seals.
- The transmission service area should be kept clean, well organized and supplied with clean lint-free shop cloths.
- Whenever a seal is removed from a piston, shaft or servo, note the type of seal and, when applicable, the direction of the sealing lip.
- Always use the specified transmission oil when lubricating seals or other components prior to assembly (refer to Specifications for the proper oil).
- Fluid used with the C5 automatic transmission contains a detergent which retains, in suspension, particles generated during normal transmission use. This characteristic may result in a dark coloration of the fluid and does not by itself indicate malfunction or need for service.

DISASSEMBLY AND ASSEMBLY (Continued)



D4777-B

DRAIN PLUG 1/8-27 DRY SEAL TAPERED PIPE PLUG
10-1/4-11-1/4-12 INCH OPEN CONVERTERS

87650-S2
388728-S



Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

REF. NO.	BASIC PART NO.	DESCRIPTION	REF. NO.	BASIC PART NO.	DESCRIPTION
1.	7902	Converter Assembly	62.	7D171	Race — Overrun Clutch — Inner
2.	7017	Shaft — Input	63.	7E392	Spring Assembly — OWC
3.	7976	Housing Converter	63A.	7190	Roller — OWC
4.	7A248	Seal Assembly — Front Oil Pump	64.	7B456	Race — Overrun Clutch — Outer
5.	7A103	Body — Front Pump	65.	7D072	Wshr. — Rev. Drum to Case — Thrust-#9
6.	7A136	Gasket — Front Oil Pump	66.	374193	Bolt 5/16-18 x 3/4 Hex Wshr. HD (7D027 to 7005)
7.	7C011	Gear — Frt. Oil Pump Driven	67.	7B148	Tag — Service Identification
8.	7C010	Gear — Frt. Oil Pump Drive	68.	7D027	Cover — Interm. Band Servo
9.	7A108	Stator Support — Frt. Oil Pump	69.	7D026	Gasket — Interm. Band Servo
10.	7D020	Seal — Rev. CL Cyl.	70.	7D024	Seal — Interm. Band Servo Cover — Large
11.	7D019	Seal — FWD CL Cyl.	72.	7D025	Seal — Interm. Band Servo Piston — Small
12.	7D014	Washer — Frt. Pump Supt. Thrust (Sel.)-#1	73.	7D021	Piston Assembly — Interm. Band Servo
13.	7D091	Washer — Rev. CL Thrust-#2	74.	7D028	Spring — Interm. Band Servo Piston
14.	7D029	Strut — Intermediate Brake	75.	7060	Shaft Assembly — Output (4x2)
15.	7D029	Strut — Interm. Brake (Anchor Int. Bnd.)	75A.	7060	Shaft Assembly — Output (4x4)
16.	7D034	Band Assembly — Intermediate	76.	7086	Gasket — Extension (4x2) & (4x4)
17.	7D044	Drum Assy. — Interm. Brake (Rev. High CL)	77.	7A039	Extension Assembly (4x2)
18.	7D404	Seal — Rev. CL Inner	77A.	7A039	Extension Assembly (4x4)
19.	7A262	Piston Assembly — High Clutch	78.	7052	Seal Assembly — Ext. Oil
20.	7A548	Seal — High CL Outer	79.	379296-S	Bolt 3/8-16 x 1-3/8 Hex Wshr. HD (7A039 to 7005) 6 Req'd.
21.	7C151	Spring — High CL Piston	80.	7D220	Body — Gov. Oil Collector
22.	7D041	Retainer — CL Piston Spring	80A.	7E242	Screen Assembly — Gov. Oil
23.	383691	Ring — 2-1/4 Retainer	81.	7D011	Ring — Governor Seal
24.	7B442	Plate — CL Ext. Spline (Steel)	82.	7E387	Screen — Pump Inlet
25.	7B164	Plate Assembly — CL Int. Spline (Friction)	83.	20386-S	Bolt — 5/16-18 Hex HD (7C232 to 7005) 4 Req'd.
26.	7B066	Plate — Clutch Pressure	84.	7C232	Sleeve — Oil Distributor
27.	7G022	Spring — Rev. CL Press Plate Disc.	85.	7A233	Gear — Output Shaft Parking
28.	383320-1-2-3	Snap Ring (Selective)	86.	7B368	Wshr. — Output Shaft Thrust — RR-#10
29.	7A360	Cylinder — FWD Clutch	87.	7D070	Spring — P.P. Return
30.	389731-S	Seal — 2.0 O-Ring	88.	7A120	Pawl. Assembly — Parking
31.	7A548	Seal — FWD CL Outer	89.	387641	PIN — 1/2 x 1.57 Straight
32.	7A262	Piston Assembly — FWD Clutch	90.	7005	Case Assembly
33.	7D256	Ring — FWD CL PST Spring Press	91.	7D000	Tube — Oil Distributor
34.	7B070	Spring — FWD CL Piston Disc	92.	7D000	Tube — Oil Distributor
35.	7N169	Ring — Ret. Wave Int.	93.	7F006	Clip — Throt. Cntl. Valve Diaphragm
36.	7B066	Plate — FWD CL Press	94.	7A377	Diaphragm Assembly — TV Control
37.	7B442	Plate — CL Ext. Spline (Steel)	95.	7A380	Rod — TV Control
38.	7B164	Plate Assembly CL Int. Spline (Friction)	96.	7D080	Valve — Throttle Control
39.	7B066	Plate — Clutch Press	97.	20346-S	Bolt — 5/16-18 x 3-3/4 Hex HD (7D036 to 7005) 4 Req'd.
40.	389239-320-1-2-3	Ring — Retaining Ext. (SEL)	98.	7D036	Cover Rev. Band Servo
41.	7D090	Wshr. — FWD CL Hub — Thrust-#3	99.	370408-S100	Clip — Electrical Wiring Harness
42.	378874-S	Retainer — 4-1/4 Snap	100.	7D040	Seal — Rev. Bnd. Servo Piston Cover
43.	7E058	Hub & Bshg. Assembly — FWD CL	101.	7D030	Piston Assembly — Low Rev. Servo
44.	7A153	Gear — Output Shaft Ring	102.	7D031	Spring — Low Rev. Servo Piston
45.	7D056	Wshr. — Rev. Planet Pinion — Thrust-#4	103.	33798-S	Nut — 5/16-24 x 4 Hex
46.	7A398	Planet Assembly — FWD	104.	34806-S	Wshr. — 5/16 (7D261 to 7A394)
47.	378254-S	Retainer — 1-13/16 Snap (2 Req'd.)	105.	7A394	Lever Assembly — Downshift Control — Outer
48.	7A348	Gear — Sun	106.	7A247	Switch Assembly — Neutral Start
49.	7D064	Shell — Input	107.	55651-S2	Screw & Wshr. Assy. (7A247 to 7005) 2 Req'd.
50.	7D066	Wshr. — Input Shell Thrust-#5	108.	386078-S	Seal — 3/8 O-Ring
51.	7F025	Wshr. — Rev. PLT Carrier — Thrust (Frt.)-#6	109.	7A256	Lever Assembly — Manual Control
52.	7D006	Planet Assy. — Reverse	110.	389049	Nut — 1/2-28 Hex Sealer (Intermediate)
53.	7A153	Gear — Output Shaft Ring	111.	389048	Screw — 1/2-28 x 2.88 Adjusting (Intermediate)
54.	7D061	Wshr. — Rev. Drum Thrust-#7	112.	387271	Ring — 1/4 Ret Type RB Ext. (7A117 to 7A232)
55.	7D164	Hub — Output Shaft	113.	7A232	Rod Assembly — Park Lever Act
56.	378784-S	Ring — 4-1/4 Retaining	114.	7F286	Spacer — Parking Lever
57.	7D061	Wshr. — Rev. Drum Thrust-#8	115.	7A117	Lever Assembly — Parking Actuating
58.	7C498	Drum Assy. — Rev. Brake (Low and Rev.)	116.	353956	Wshr. — .380-.385 x .62 O.D. (7A117 & 7F285 to 7005)
59.	7D095	Band Assembly — Reverse	117.	97411-S	Ring Retaining (7A117 to 7005)
60.	7D029	Strut — Rev. Brake (Acct. Rev. Bnd.)	118.	7E433	Roller Park Lever Actuating Rod
61.	7D038	Strut — Rev. Band (Anchor)			

CD4778-A



Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

REF. NO.	BASIC PART NO.	DESCRIPTION	REF. NO.	BASIC PART NO.	DESCRIPTION
119.	7A115	Lever Assembly — Man Vlv. Detent — Inner	147.	375051-S	Screw — 1/4-20 x 1 Hex Wshr. HD (7A100 to 7005) 6 Req'd
120.	7C495	Link — P.P. Toggle Oper. Lever	148.	7B085	Clip — Vacuum Tube
121.	387271	Ring — 1/4 Ret. Type RB Ext. (7C495 to 7005)	149.	389094-S	Screw — 1/4-20 x 2.08 Hex Wshr. HD (7A100 to 7005) 2 Req'd
122.	380525	Nut — 9/16-18 Hex (7A115 to 7A256)	150.	375051-S	Screw — 1/4-20 x 1.00 Hex Wshr. HD (7E332 & 7A100 to 7005) 1 Req'd
123.	387271	Ring — 1/4 Ret. Type RB Ext. (7A232 to 7C495)	151.	380916-S	Screw — 10-24 x .88 Hex Wshr. HD (7E332 & 7A101 to 7A092) 1 Req'd
124.	7D261	Lever Assy. — Downshift Detent — Inner	152.	389407-S	Screw — 10-24 x .425 Hex Wshr. HD (7F003 to 7A100) 1 Req'd
125.	7A300	Body — Governor Valve	153.	375050-S	Bolt — 1/4-20 x 1.50 Hex Wshr. HD Upper Body to Lower Body (2 Req'd.)
126.	7C054	Valve — Governor Primary	154.	382875-S	Bolt 1/4-20 x .68 Hex Wshr. HD 4 Req'd
127.	7D275	Spring — Gov. Primary Valve	155.	387643	Screw 1/2-16 x 2.88 Adjusting (Reverse)
128.	378366-S	Wshr. — 1/2 Flat	156.	388307	Nut 1/2-16 Hex Sealer (Reverse)
129.	379370-S	Retaining Ring — Internal	157.	97532	Ring 1-3/16 Retainer (7D163 to 7060)
130.	7D216	Valve — Gov. Secondary	158.	7C063	Body Assembly Governor
131.	7D217	Spring — Gov. Secondary Valve	159.	7G063	Tube — Vent (On Some Applications)
132.	7D218	Retainer — Gov. Sec. Valve Spring	160.	7G073	Clip — Vent Tube Hose (On Some Applications)
133.	7A100	Control Assembly — Main	161.	381332-SX01A	Vent Hose .341DX .620D x 5.40 (On Some Applications)
134.	7A008	Plate — Control Vlv. Body Sep.	162.	7034	Vent Assembly (On Some Applications)
135.	7D100	Gasket — Control Vlv. Body Sep.	163.	7034	Vent Assembly — Elbow (4x4 Applications)
136.	7F496	Plate — 3-2 Timing Body Sep.	Additional Main Control Fasteners		
137.	7F497	Gasket — 3-2 Timing Body Sep.		380916-S	Screw — 10-24 x .875 Hex HD Upper Body to Lower Body (1 Req'd.)
138.	7F003	Screen & Grommet Assy. — Oil Pan 4x2		389093	Bolt — 10-24 x 2.150 Hex Wshr. HD Timing Body to Upper Body (8 Req'd.)
138A.	7F003	Screen & Grommet Assy. — Oil Pan 4x4		380916-S	Screw — 10-24 x .88 Hex Wshr. HD Lower Body to Upper Body (8 Req'd.)
139.	7A191	Gasket — Oil Pan 4x2 & 4x4		389092	Bolt — 10-24 x 1.145 Hex Wshr. HD Timing Body to Lower Body (1 Req'd.)
140.	7A194	Pan Assembly — Oil Pan 4x2		389091	Bolt — 1/4-20 x .875 Hex Wshr. HD Timing Body to Lower Body (1 Req'd.)
140A.	7A194	Pan Assembly — Oil Pan 4x4		387935	Screw — 10-24 x .44 Hex Wshr. HD Separator Plate to Timing Body (1 Req'd.)
141.	7E332	Spring Assembly — Man. Vlv. Detent			
142.	379062	Bolt — 3/8-16 x 1.75 Hex Wshr. HD (7976 & 7A103 to 7005) 7 Req'd.			
143.	379197-S	Bolt — 7/16-14 x 1.12 Hex Wshr. HD (7976 to 7005) 5 Req'd.			
144.	378148-S	Screw — 10-24 x .68 Cross Recessed HD (7A103 to 7005) 1 Req'd.			
145.	379296-S	Bolt — 3/8-16 x 1.38 Hex Wshr. HD (7A103 to 7005) 7 Req'd.			
146.	390089-S	Screw & Wshr. Assy. 5/16-18 x .62 Hex Wshr. HD (7A194 to 7005) 11 Req'd.			

CD4572-A

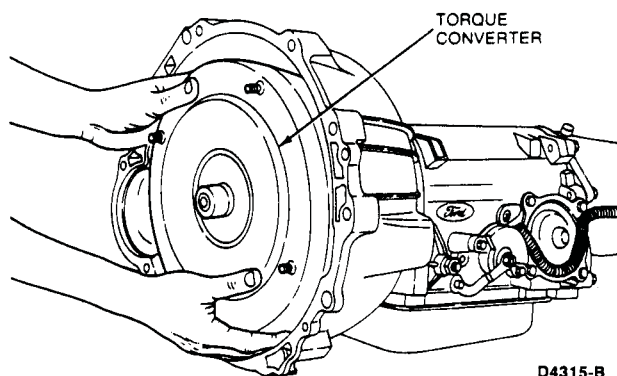
DISASSEMBLY AND ASSEMBLY (Continued)

Transmission

Disassembly

1. Grasp the torque converter firmly and pull straight out of the transmission.

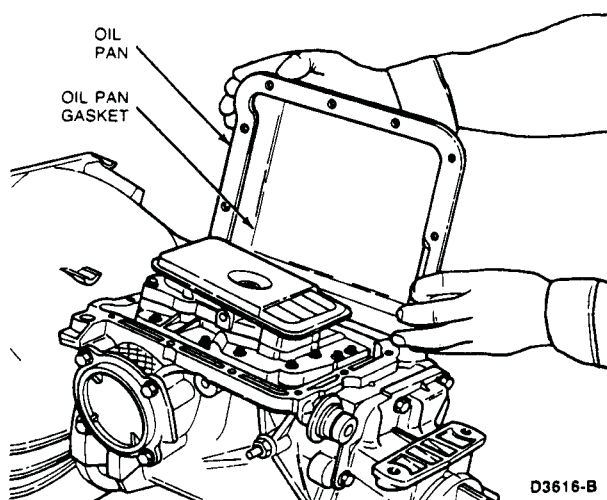
NOTE: The torque converter is relatively heavy. Be prepared to handle the weight.



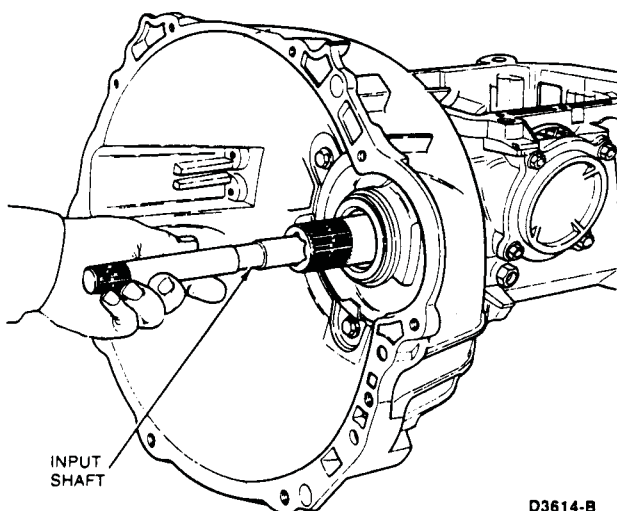
3. Remove the 11 oil pan attaching screw and washer assemblies, the oil pan and the pan gasket.

Discard the gasket.

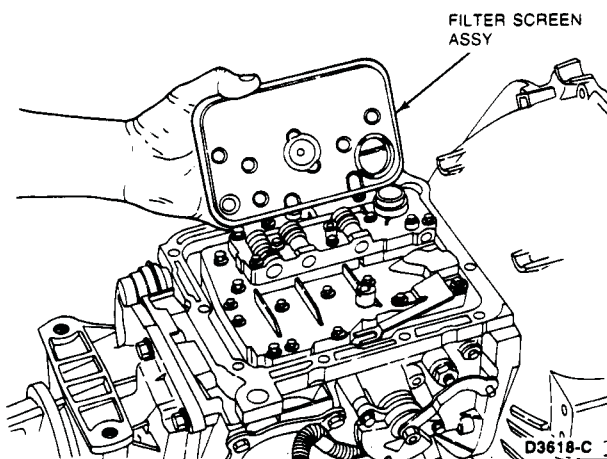
NOTE: After the pan is removed, locate the oil filler tube shipping plug in the case. Remove and discard the plug.



2. Remove the input shaft.

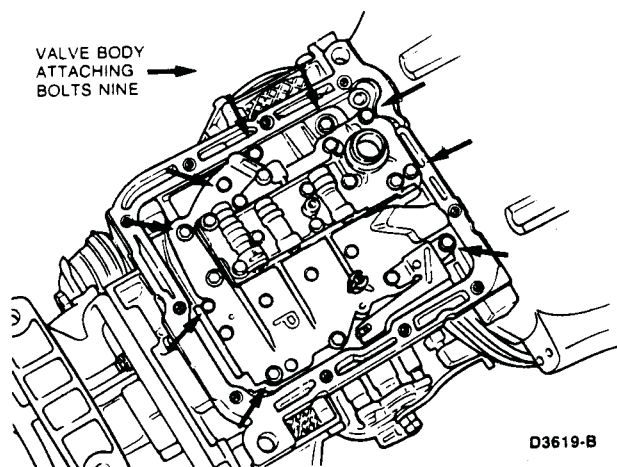


4. Remove the oil filter screen attaching screw and the filter screen.



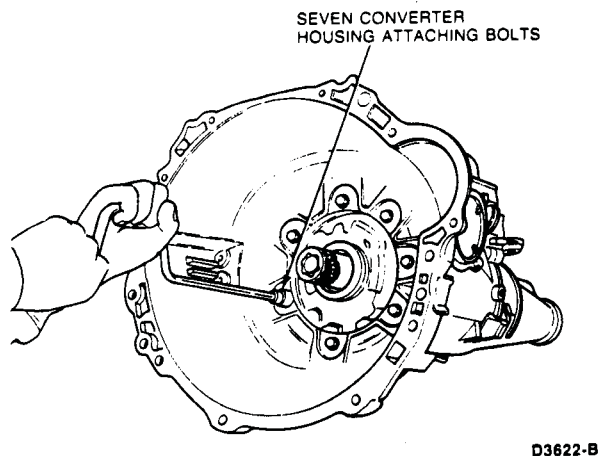
DISASSEMBLY AND ASSEMBLY (Continued)

5. Remove the nine valve body attaching bolts and lift the valve body up and out of case.

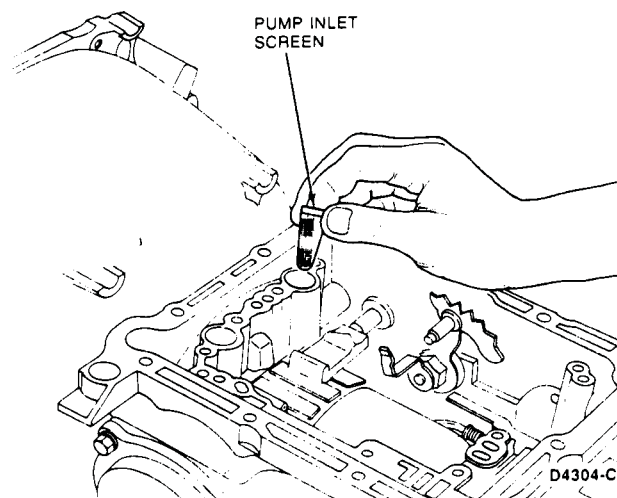


7. Remove the seven converter housing attaching bolts and the converter housing.

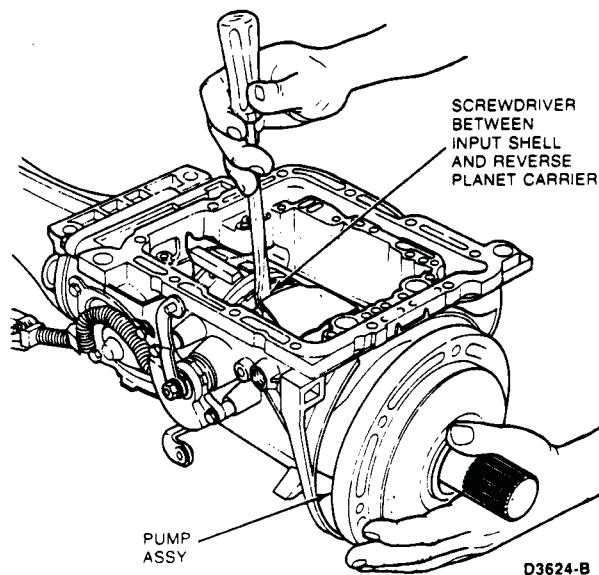
NOTE: The three lower attaching bolts have been coated with an anerobic sealer. It may require more torque to remove these bolts.



6. Remove the pump inlet screen from the pump pressure passage.



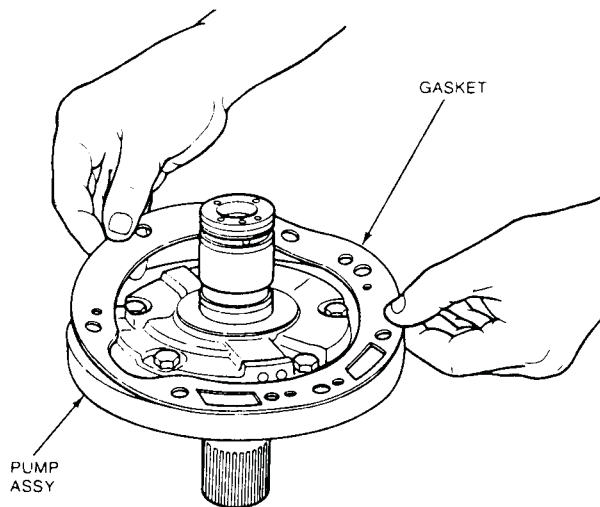
8. Position a large screwdriver or pry bar between the input shell and the reverse planet carrier. Pry the input shell forward until the pump can be removed from the case.



DISASSEMBLY AND ASSEMBLY (Continued)

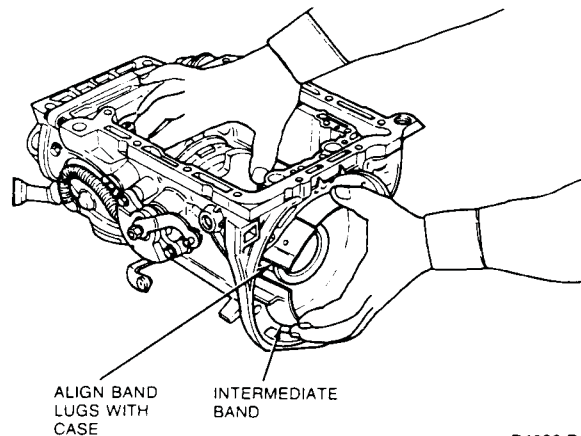
Remove and discard the pump gasket.

NOTE: Inspect the stator support for the No. 1 thrust washer. If the washer is not present remove it from the top of the reverse-high clutch.



D4288-B

10. Rotate the intermediate band counterclockwise until the band lugs are aligned with the clearance relief provided in the case and remove the band.

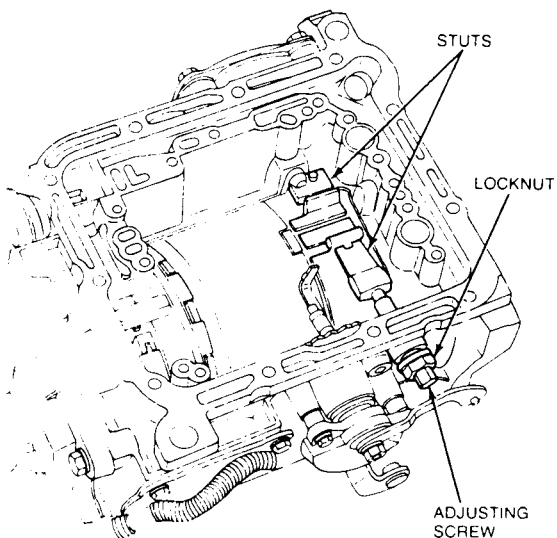


D4028-B

9. Loosen the intermediate band adjusting screw locknut.

Thread the adjusting screw out of the case and remove the band struts.

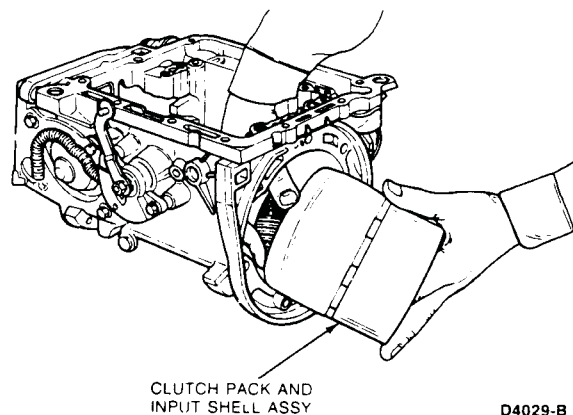
Remove the locknut from the adjusting screw and discard.



D4026-B

11. Remove the clutch packs, front planetary and input shell as an assembly.

Place the assembly on the bench with the sun gear facing up.



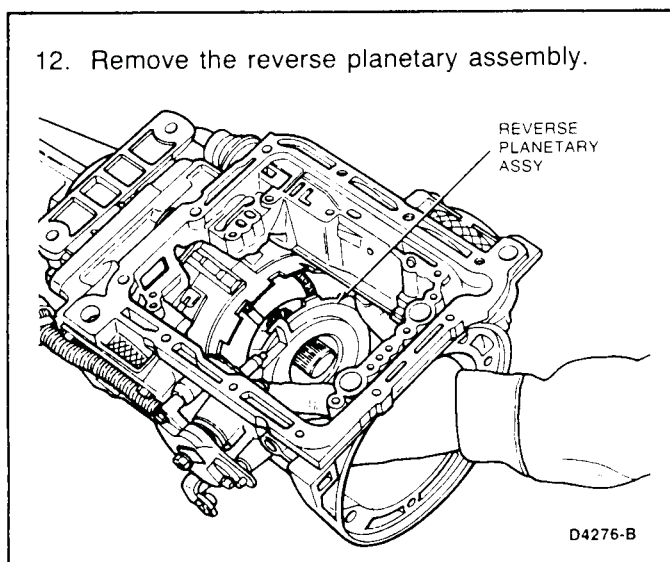
D4029-B



Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

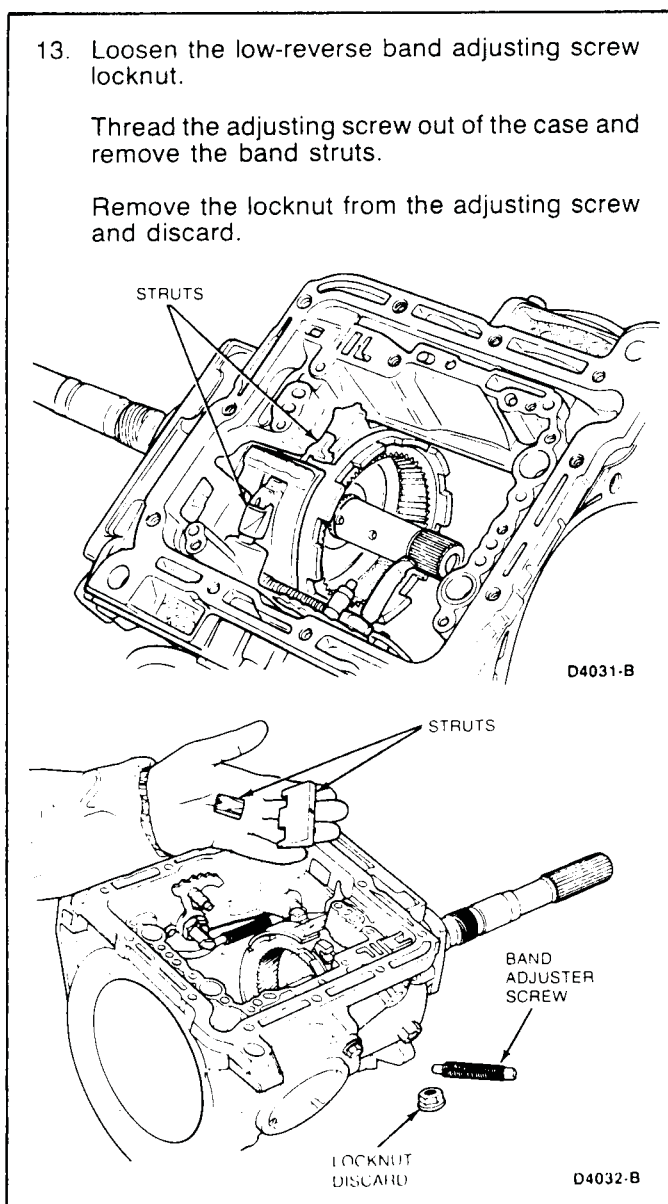
12. Remove the reverse planetary assembly.



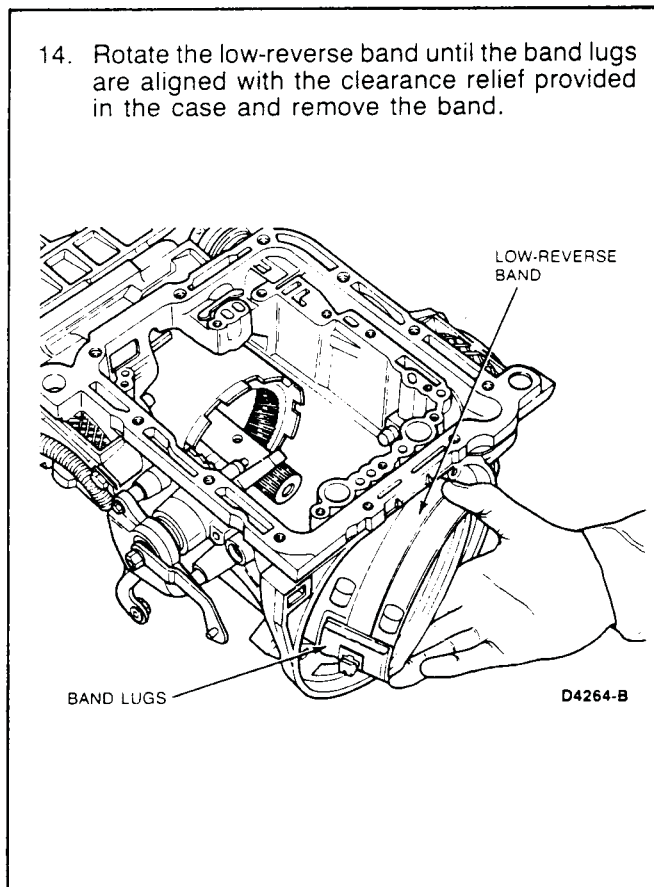
13. Loosen the low-reverse band adjusting screw locknut.

Thread the adjusting screw out of the case and remove the band struts.

Remove the locknut from the adjusting screw and discard.

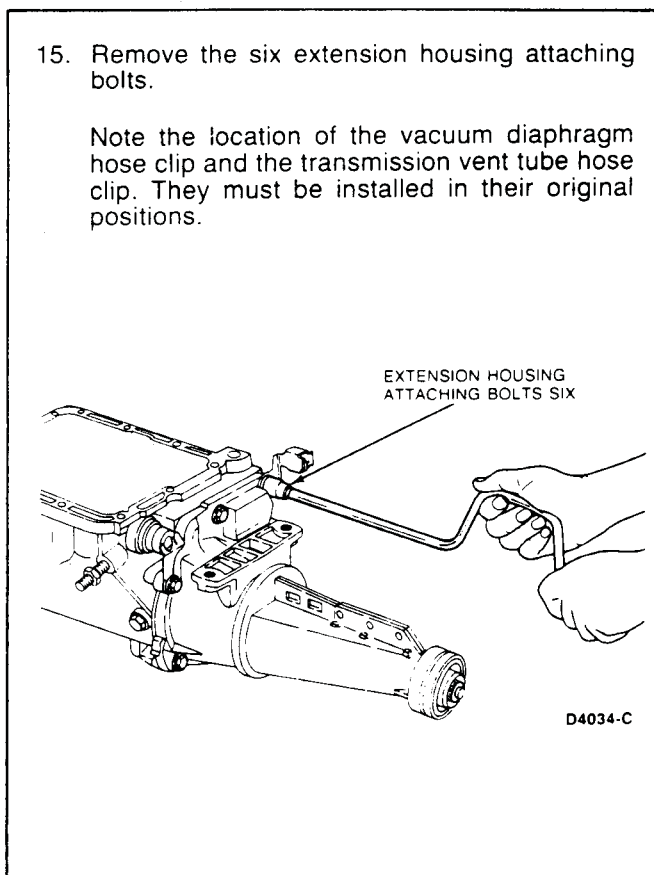


14. Rotate the low-reverse band until the band lugs are aligned with the clearance relief provided in the case and remove the band.



15. Remove the six extension housing attaching bolts.

Note the location of the vacuum diaphragm hose clip and the transmission vent tube hose clip. They must be installed in their original positions.

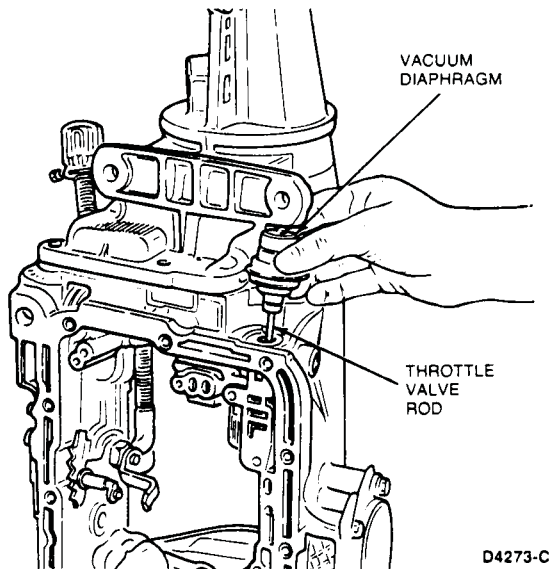




Technical Service Information

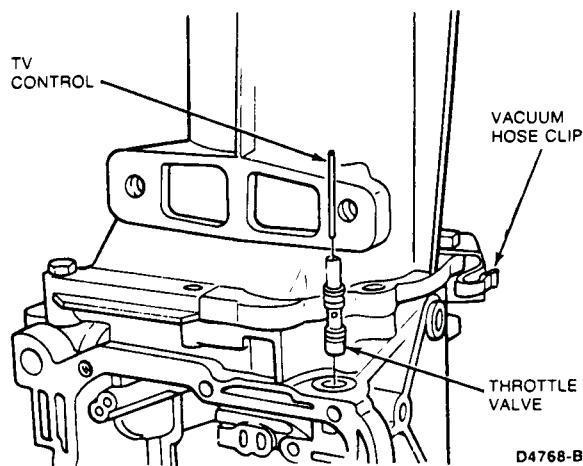
DISASSEMBLY AND ASSEMBLY (Continued)

16. Remove the vacuum diaphragm.



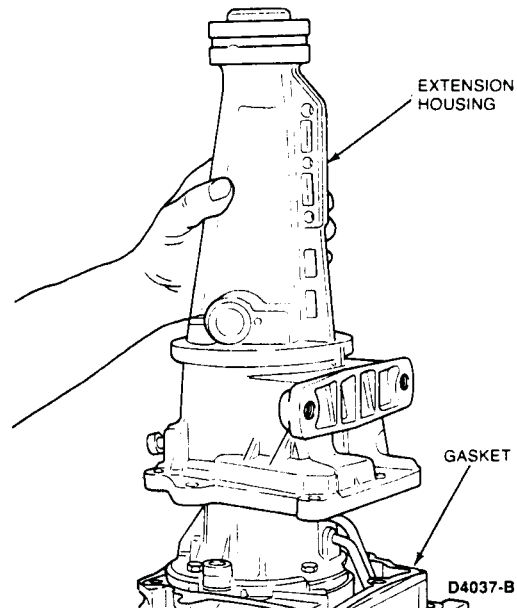
17. Remove the TV control rod and throttle valve using a magnet.

Note the position of the throttle valve in the bore. The valve must be installed in its original position (large hole facing out).

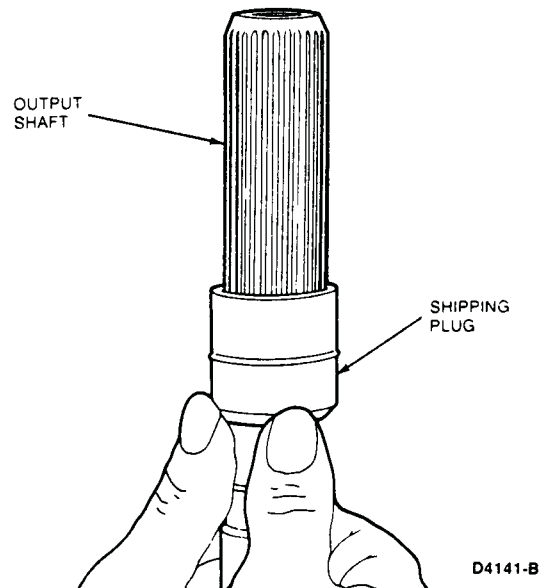


18. Remove the extension housing and the extension housing gasket.

Discard the gasket.

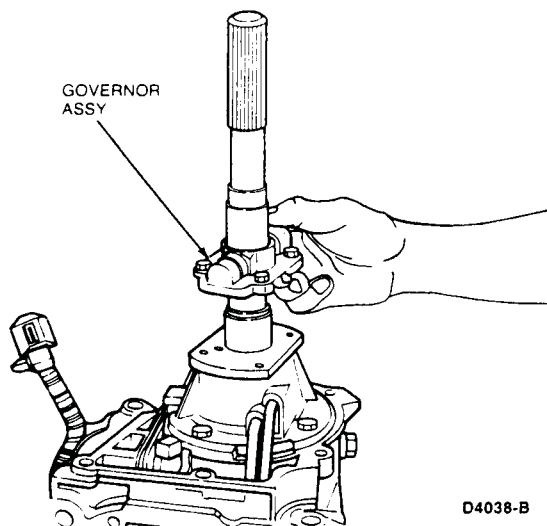


After removing the extension housing, remove the rubber shipping plug from the output shaft and discard.



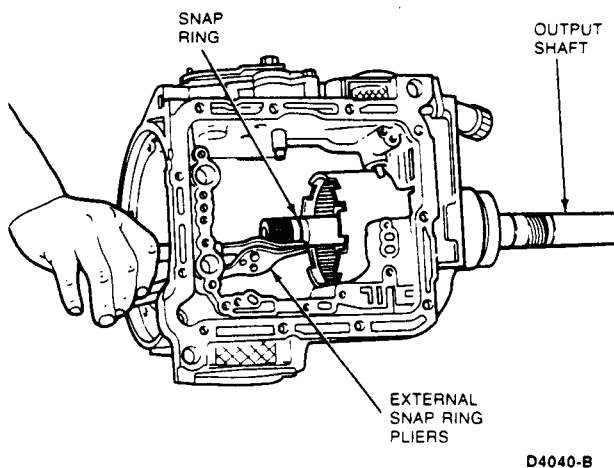
DISASSEMBLY AND ASSEMBLY (Continued)

19. Remove the governor attaching bolts and slide the governor off the output shaft.

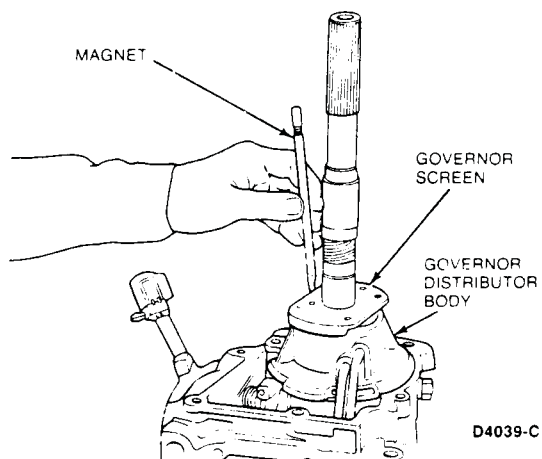


21. Using external snap ring pliers, remove the snap ring retaining the reverse ring gear and hub assembly to the output shaft.

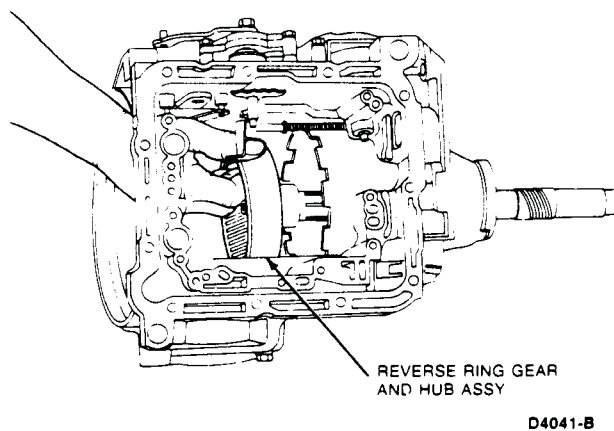
NOTE: It may be necessary to push the output shaft forward to gain access to the snap ring.



20. Using a magnet, lift the governor screen out of the governor distributor body.



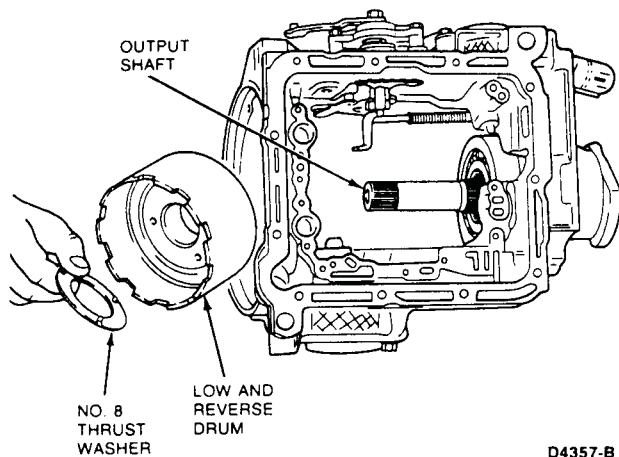
22. Remove the reverse ring gear and hub assembly.



DISASSEMBLY AND ASSEMBLY (Continued)

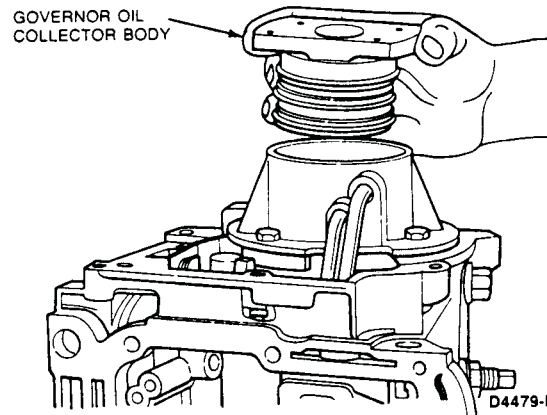
23. Remove the low-reverse drum.

After removal, remove the No. 8 thrust washer from the low-reverse drum.



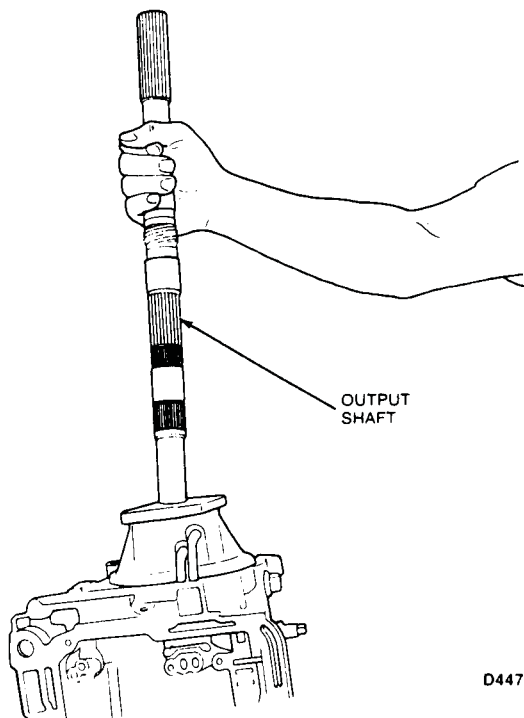
D4357-B

25. Lift the governor oil collector body out of the case.



D4479-B

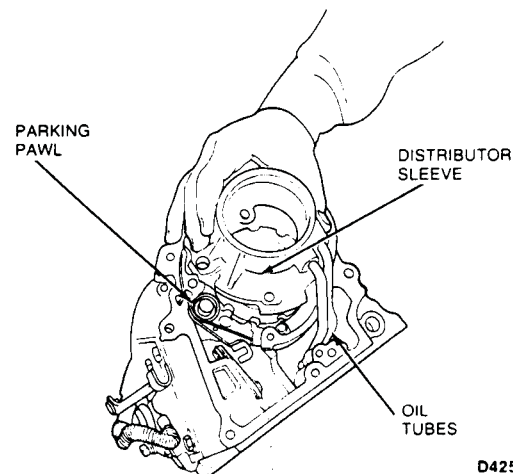
24. Lift the output shaft out of the case.



D4478-B

26. Remove the distributor sleeve attaching bolts and lift the sleeve out of the case.

Do not bend or distort the oil tubes as the tubes are removed from the case with the distributor sleeve.



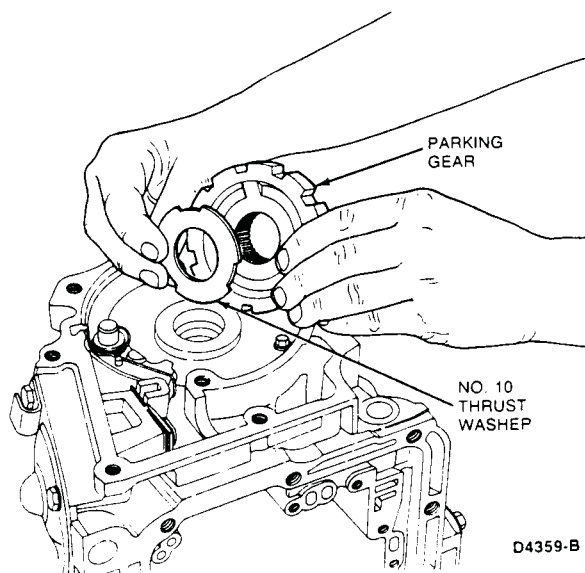
D4257-B



Technical Service Information

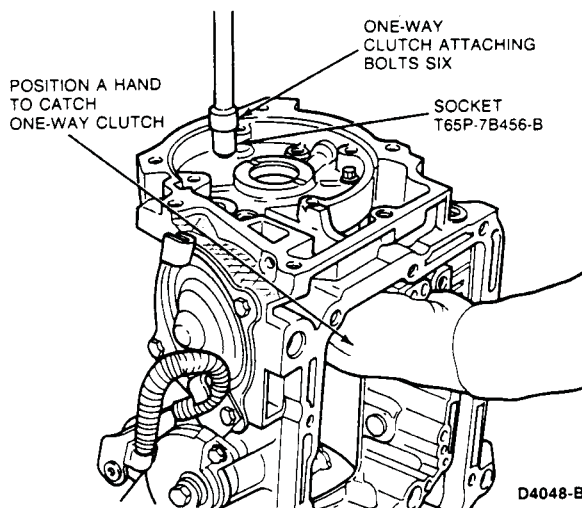
DISASSEMBLY AND ASSEMBLY (Continued)

27. Remove the parking gear and the No. 10 thrust washer.



29. Using Case Bolt Socket T65P-7B456-B or equivalent, remove the six one-way clutch outer race attaching bolts.

Position a hand in the case to catch the clutch assembly as the last attaching bolt is removed.

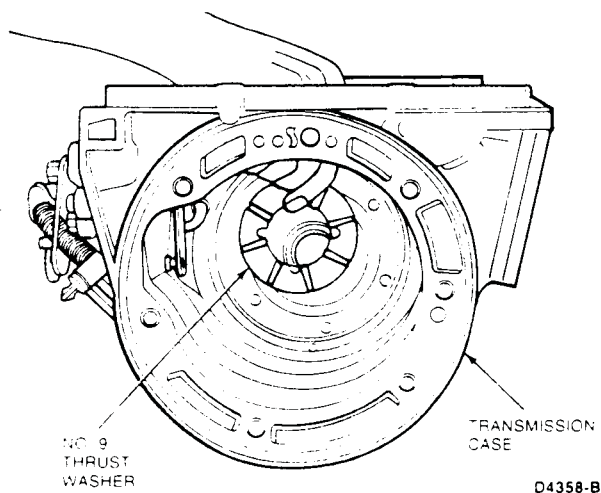


28. Remove the parking pawl, pivot pin and return spring from the case as an assembly.



30. Remove the No. 9 thrust washer from the back of the case.

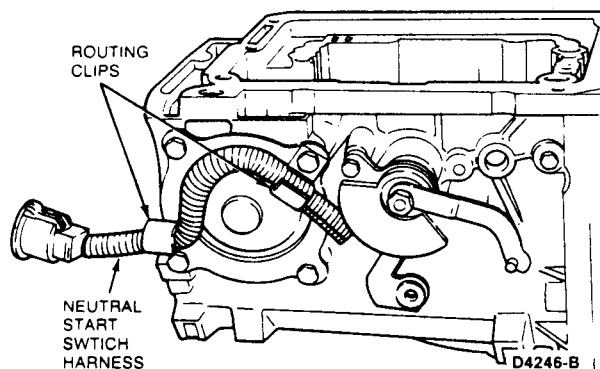
Check the back of the one-way clutch if the washer is not in the case.



DISASSEMBLY AND ASSEMBLY (Continued)

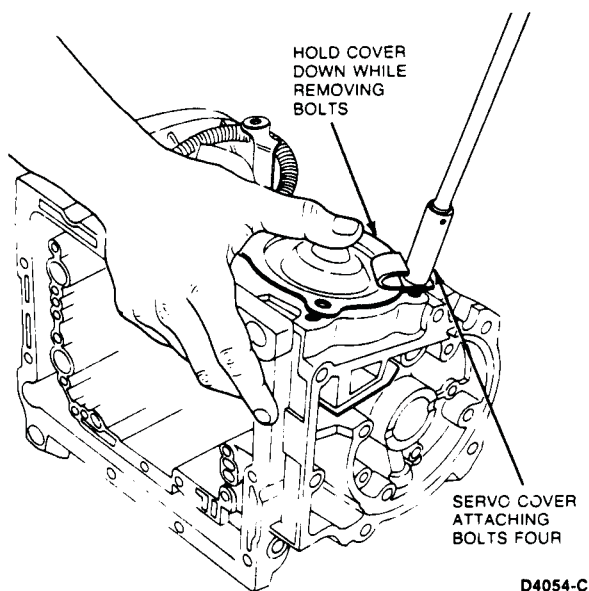
31. Disengage the neutral start switch wiring harness from the routing clips.

It may be necessary to slightly bend the clip to permit removal of the harness.

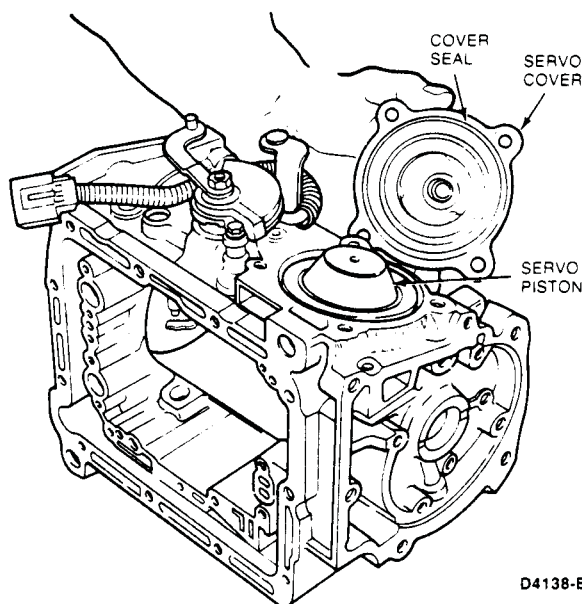


32. Remove the four low-reverse servo cover attaching bolts. Note the location and direction of the wiring harness routing clips before removing the bolts.

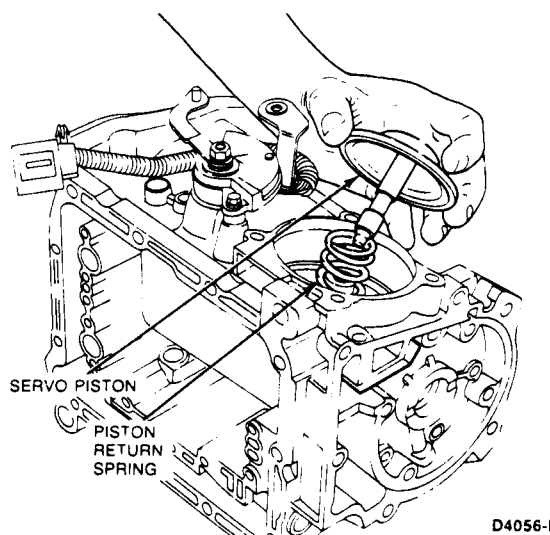
As the bolts are removed, hold the cover in against spring pressure.



33. Remove the cover and discard the seal.



34. Remove the low-reverse servo piston and the piston return spring.

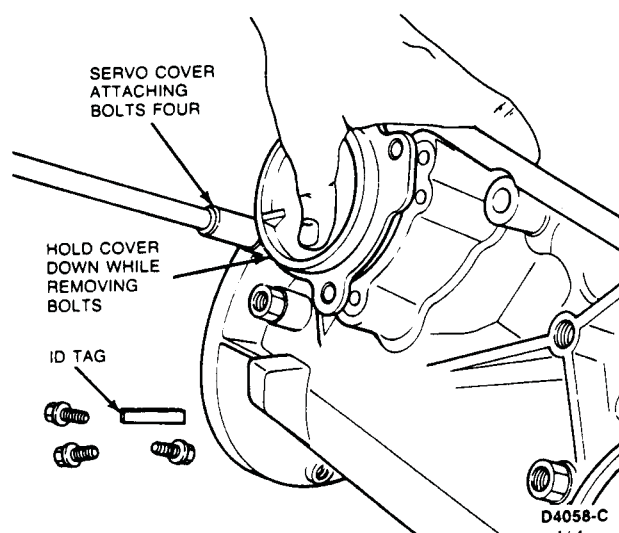


DISASSEMBLY AND ASSEMBLY (Continued)

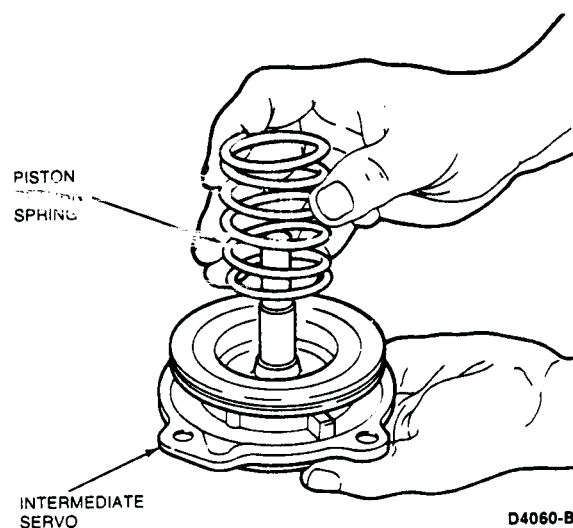
35. Remove the four intermediate servo cover attaching bolts.

Note location of transmission ID tag.

As the bolts are removed, hold the cover in against spring pressure.

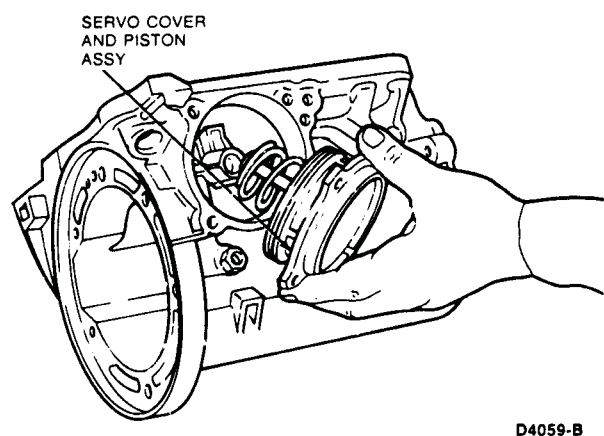


37. Remove the return spring from the servo piston rod.

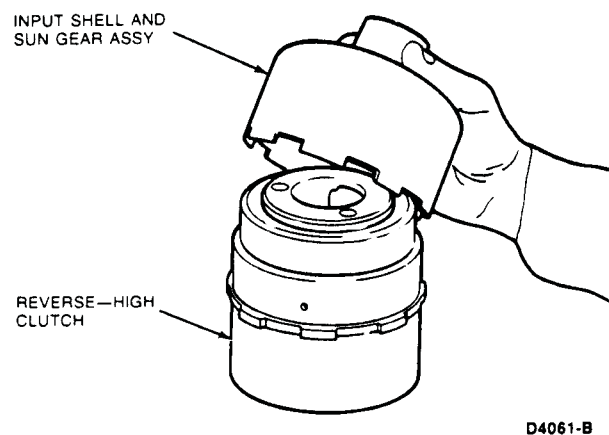


36. Remove the cover and servo piston as an assembly.

Remove and discard the cover gasket.



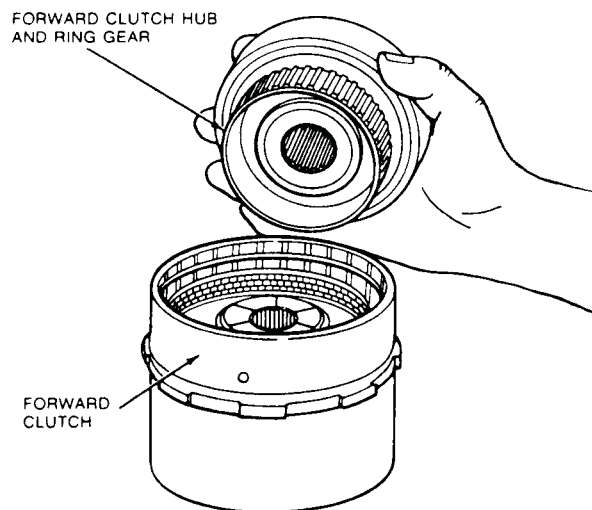
38. Lift the input shell and sun gear assembly off the reverse-high clutch.



DISASSEMBLY AND ASSEMBLY (Continued)

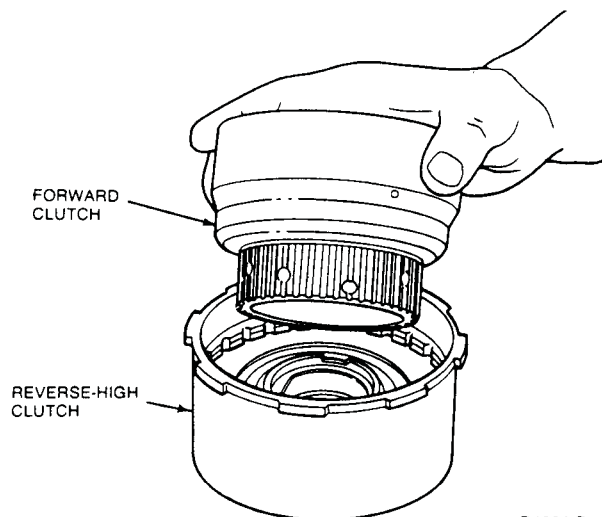
39. Lift the forward clutch hub and ring gear out of the forward clutch.

The front planetary carrier is removed with the hub.



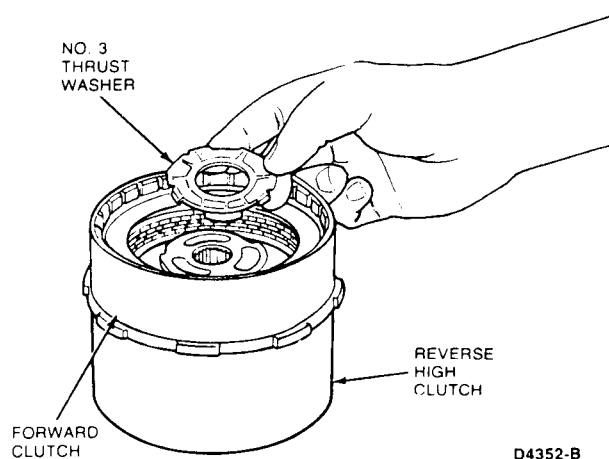
D4062-B

41. Remove the forward clutch from the reverse-high clutch.



D4064-B

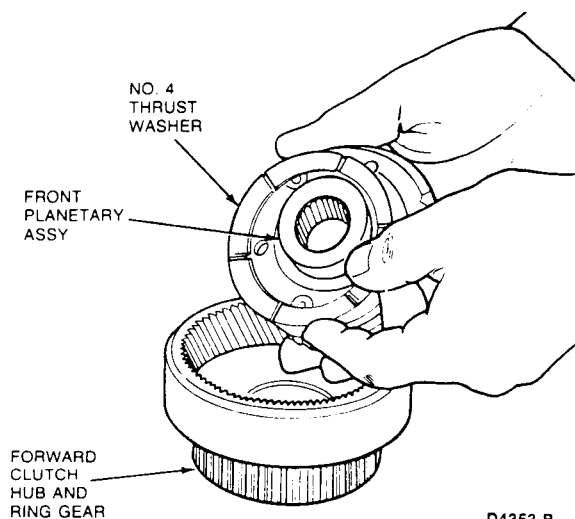
40. Remove the No. 3 thrust washer from the forward clutch hub.



D4352-B

42. Remove the front planetary assembly from the forward clutch hub and ring gear.

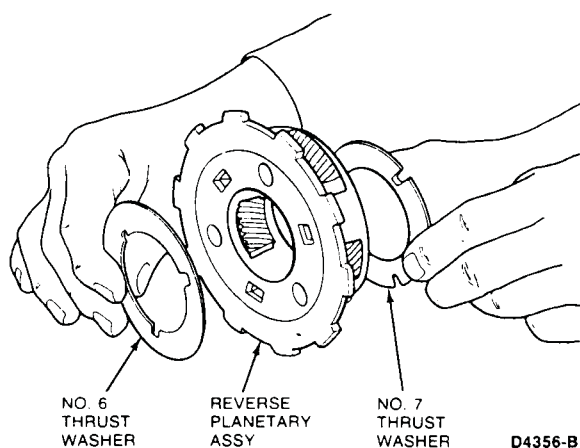
Remove the No. 4 thrust washer from the planetary assembly.



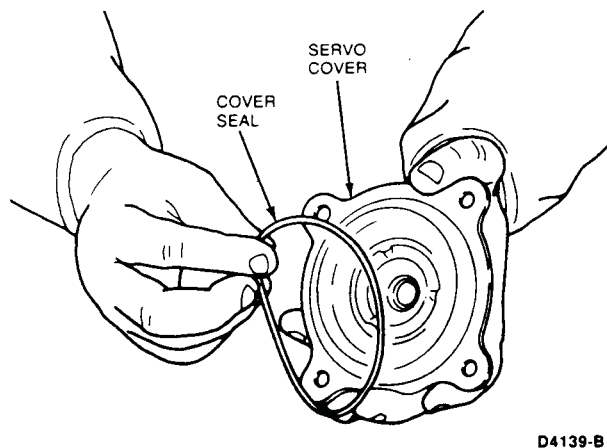
D4353-B

DISASSEMBLY AND ASSEMBLY (Continued)

43. Remove the No. 6 and No. 7 thrust washers from the reverse planetary assembly.

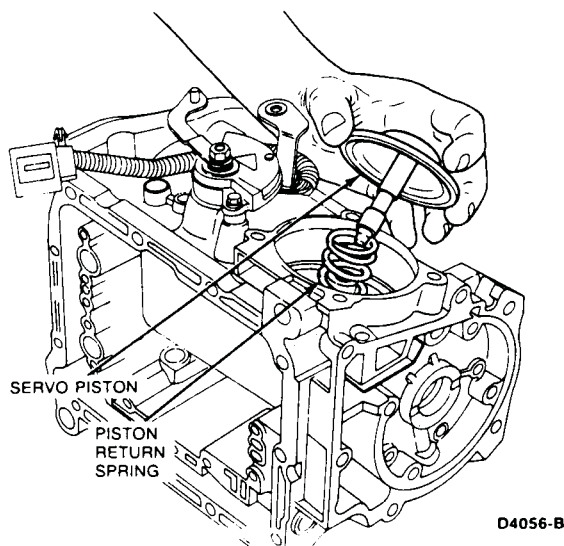


2. Install a new seal on the low-reverse servo cover.

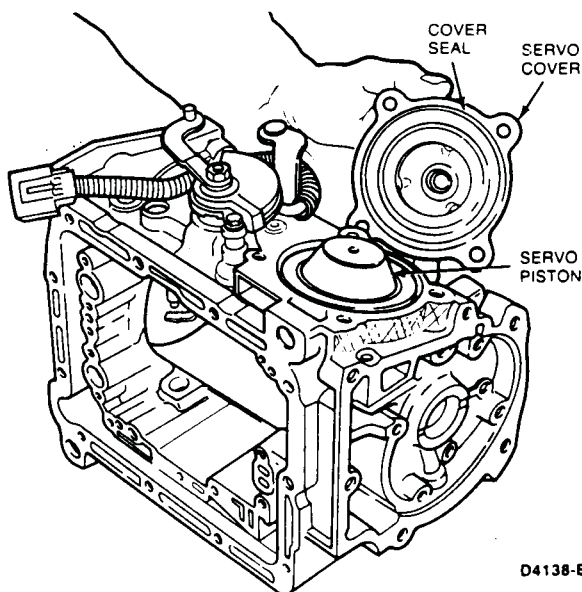


Assembly

1. Install the low-reverse servo piston return spring and the servo piston.



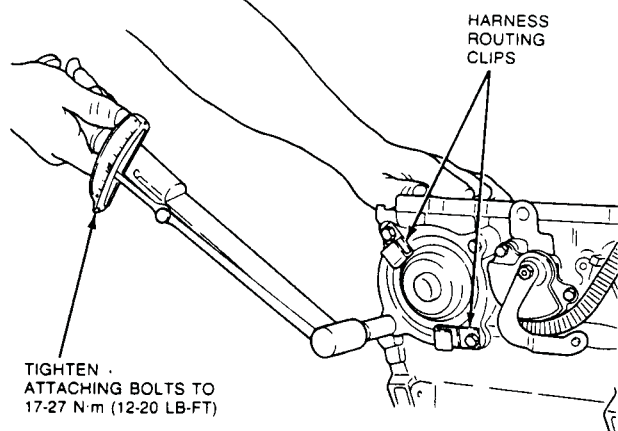
3. Position the low-reverse servo cover on the case and install the four bolts.



DISASSEMBLY AND ASSEMBLY (Continued)

Tighten the attaching bolts to 17-27 N·m (12-20 lb-ft).

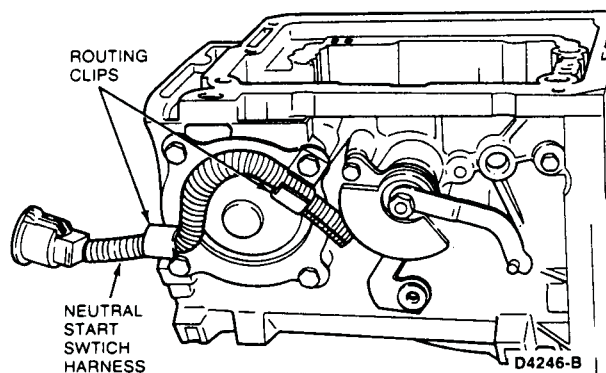
Note the location of the neutral start switch harness routing clips.



D4245-C

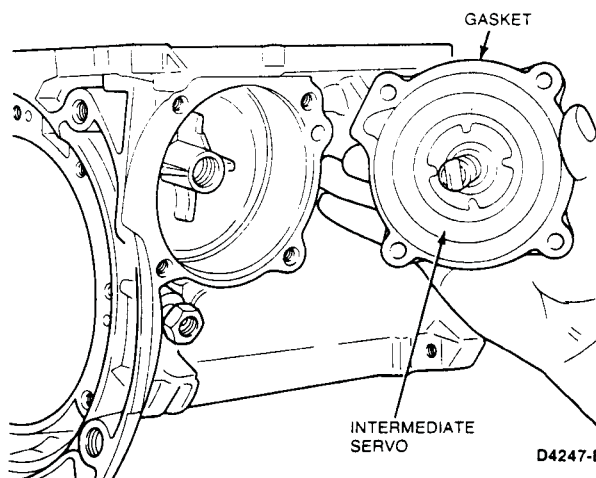
4. Route the neutral start switch harness through the clips.

Bend the clips over slightly to hold the harness in position.



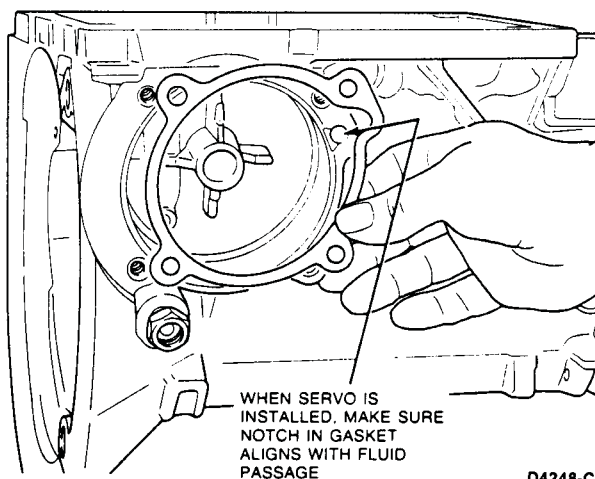
D4246-B

5. Position a new gasket on the low-intermediate servo cover.



D4247-B

Align the gasket so that when the servo cover is installed, the notch in the gasket will align with the fluid port in the case.

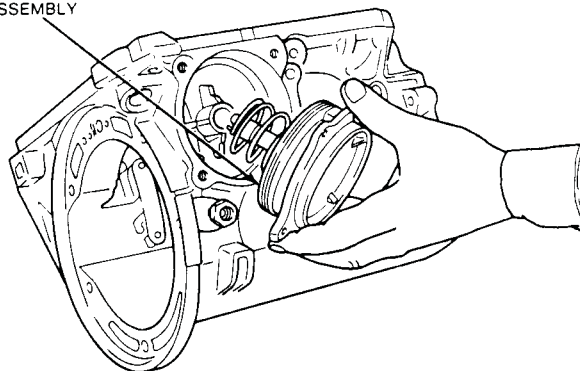


D4248-C

DISASSEMBLY AND ASSEMBLY (Continued)

6. Install the low-intermediate servo cover, piston and return spring as an assembly.

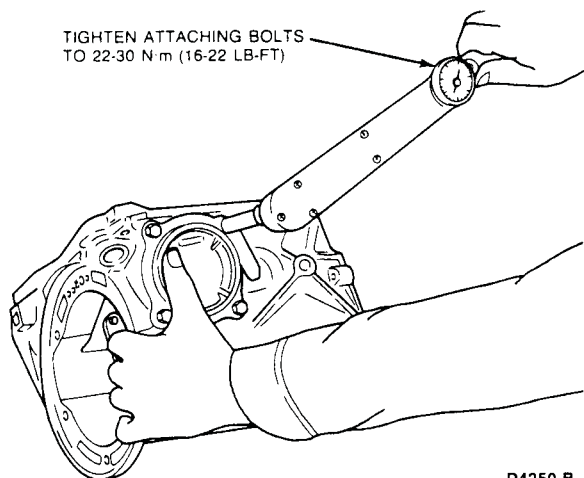
SERVO COVER
AND PISTON
ASSEMBLY



D4249-B

Install the four cover attaching bolts and tighten to 22-30 N·m (16-22 lb-ft).

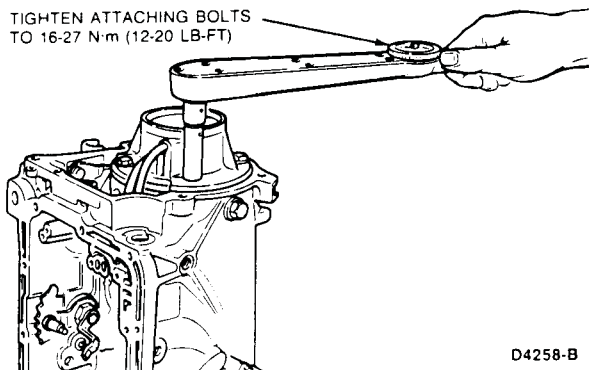
TIGHTEN ATTACHING BOLTS
TO 22-30 N·m (16-22 LB-FT)



D4250-B

7. Lightly coat the No. 9 thrust washer with petroleum jelly and position the washer in the case.

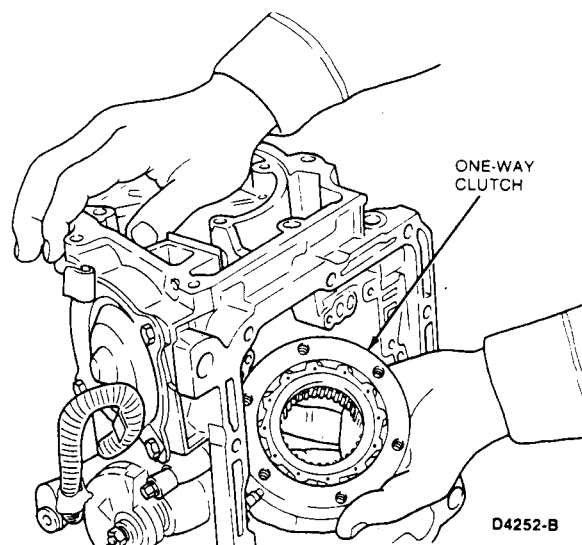
TIGHTEN ATTACHING BOLTS
TO 16-27 N·m (12-20 LB-FT)



D4258-B

8. If necessary, assemble the one-way clutch.

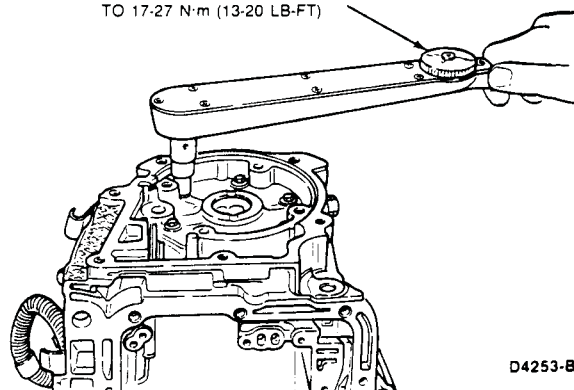
Position the one-way clutch in the case and install the attaching bolts.



D4252-B

Tighten the attaching bolts to 17-27 N·m (13-20 lb-ft) using Case Bolt Socket T65P-7B456-B or equivalent.

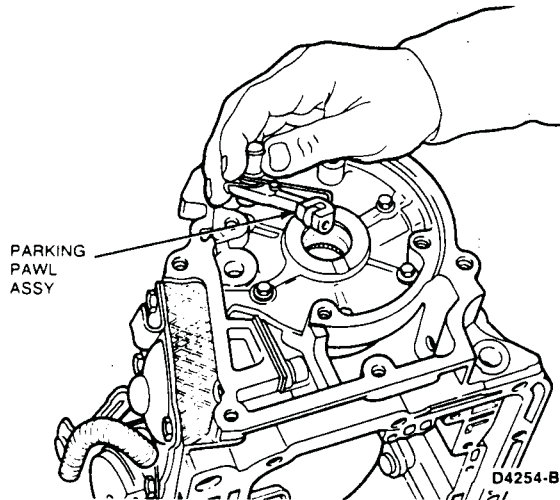
TIGHTEN ATTACHING BOLTS
TO 17-27 N·m (13-20 LB-FT)



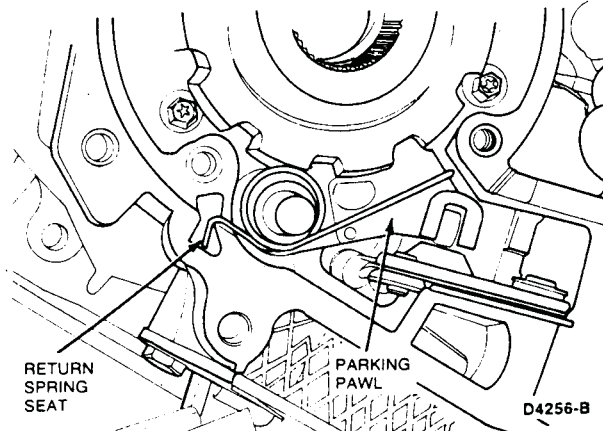
D4253-B

DISASSEMBLY AND ASSEMBLY (Continued)

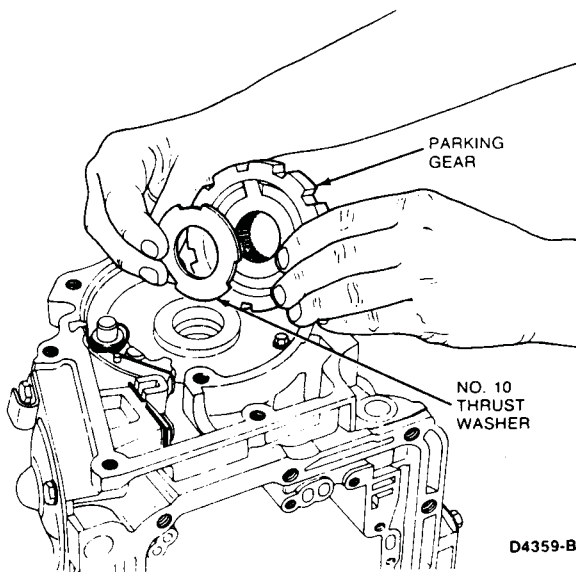
9. Install the parking pawl, pivot pin and return spring in the case as an assembly.



11. Spring load the parking pawl by looping the bend in the spring over the spring seat provided in the case.

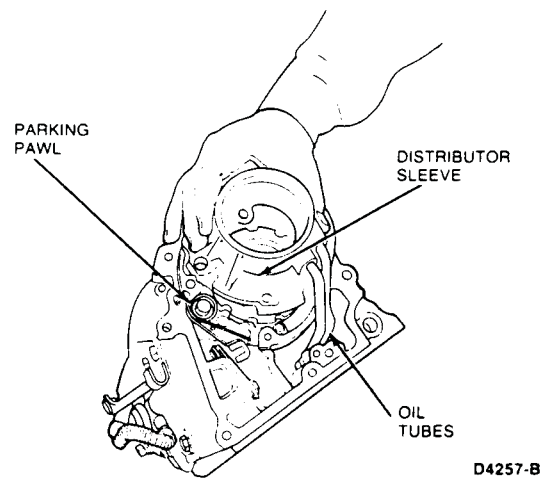


10. Position the No. 10 thrust washer and parking gear on the case.



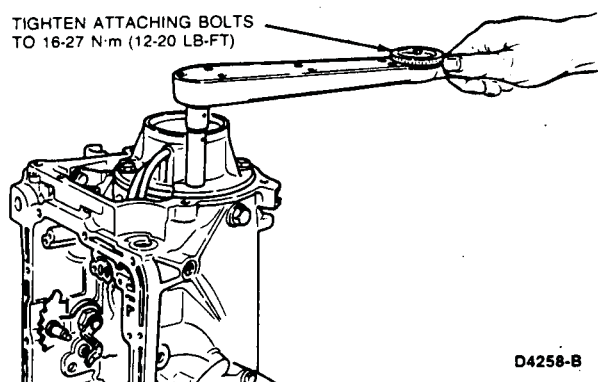
12. Position the distributor sleeve on the case making sure the oil tubes are properly seated in the case fluid passages.

During installation of the distributor sleeve, make sure the parking pawl spring remains seated against the case.

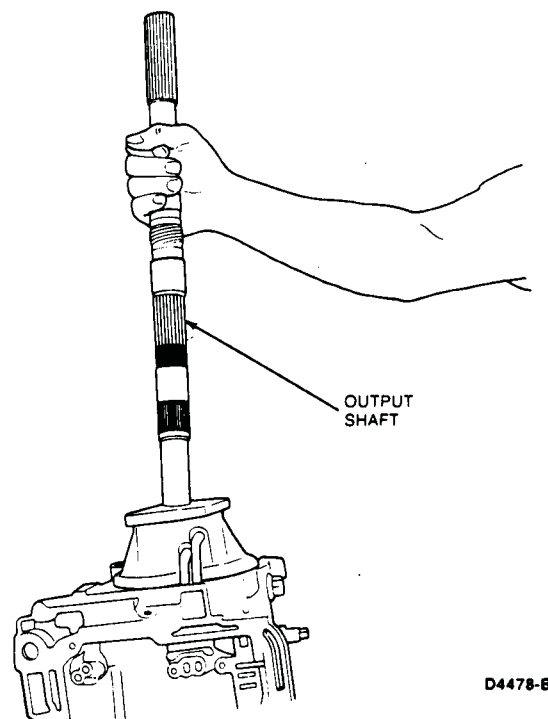


DISASSEMBLY AND ASSEMBLY (Continued)

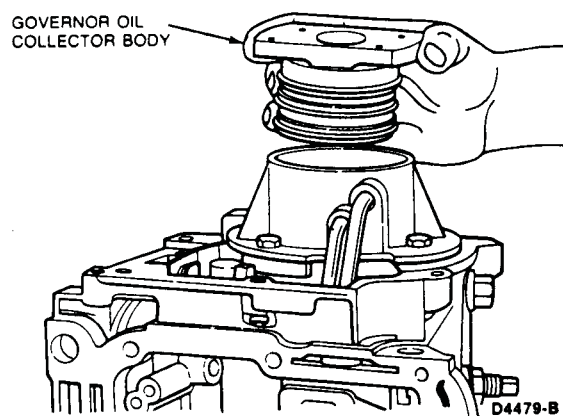
13. Install the six distributor sleeve attaching bolts and tighten to 16-27 N·m (12-20 lb-ft).



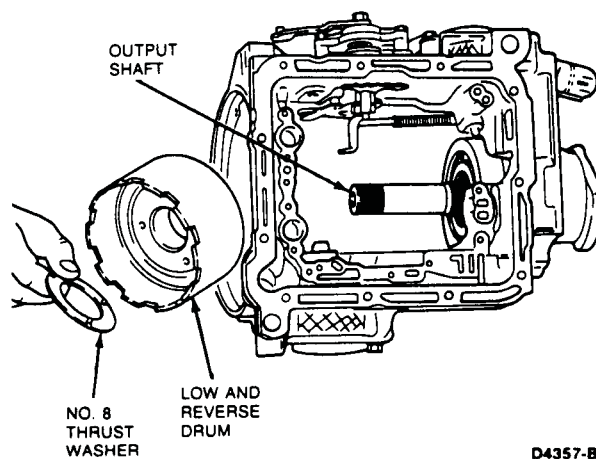
15. Install the output shaft through the governor oil collector body.



14. Install the governor oil collector in the case.



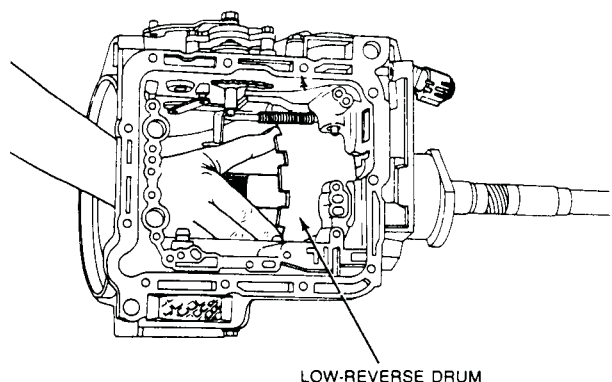
16. Lightly coat the No. 8 thrust washer with petroleum jelly and position on the low-reverse drum.



DISASSEMBLY AND ASSEMBLY (Continued)

17. Install the low-reverse drum.

To check the one-way clutch for proper operation, turn the low-reverse drum both clockwise and counterclockwise. The drum should turn when rotated clockwise and lock-up when turned counterclockwise.

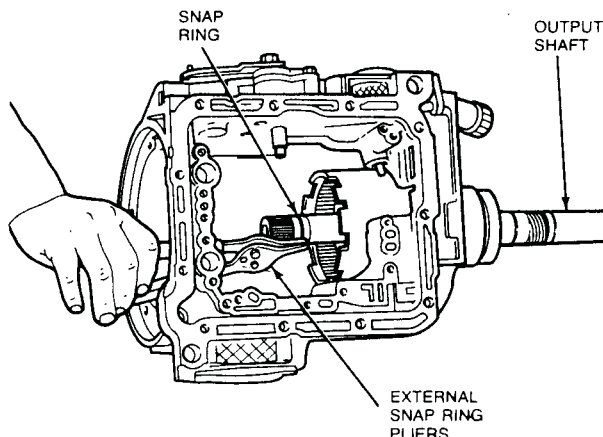


LOW-REVERSE DRUM

D4261-B

19. Using external snap ring pliers, install the reverse ring gear and hub assembly retaining ring.

It may be necessary to push the output shaft forward to gain access to the snap ring groove.



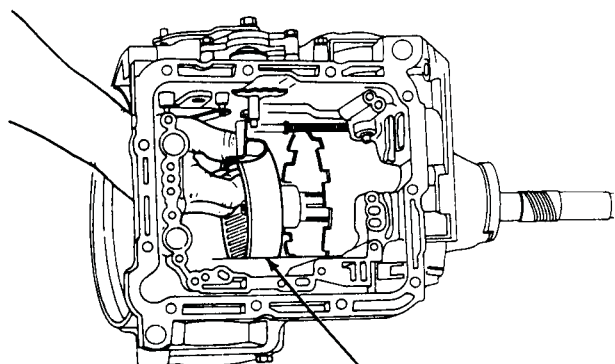
SNAP RING

OUTPUT SHAFT

EXTERNAL SNAP RING PLIERS

D4040-B

18. Install the reverse ring gear and hub.

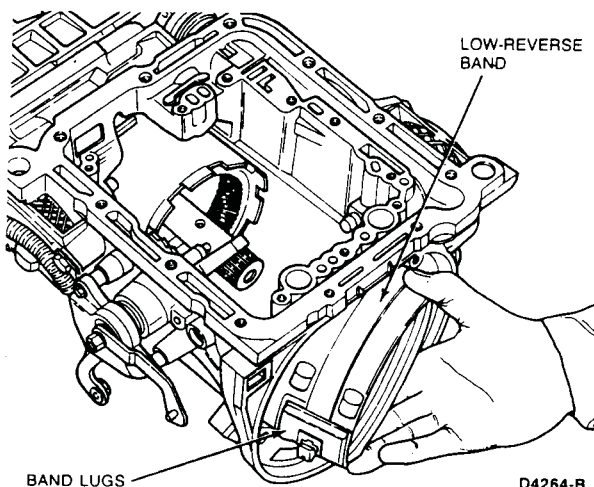


REVERSE RING GEAR AND HUB ASSY

D4041-B

20. Align the band lugs with the relief clearance provided in the case and install the low-reverse band.

Note the direction of the band lugs. The double lug must face the adjuster screw.



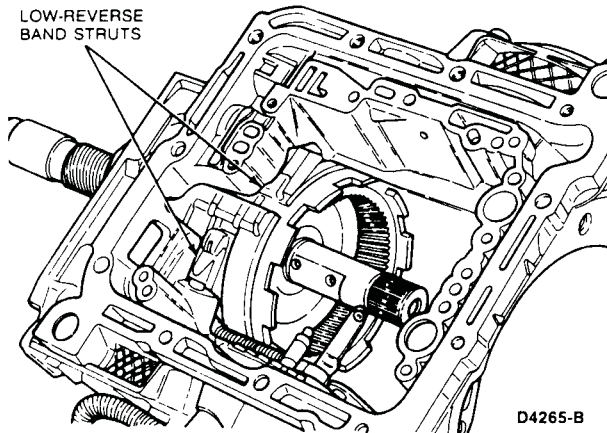
LOW-REVERSE BAND

BAND LUGS

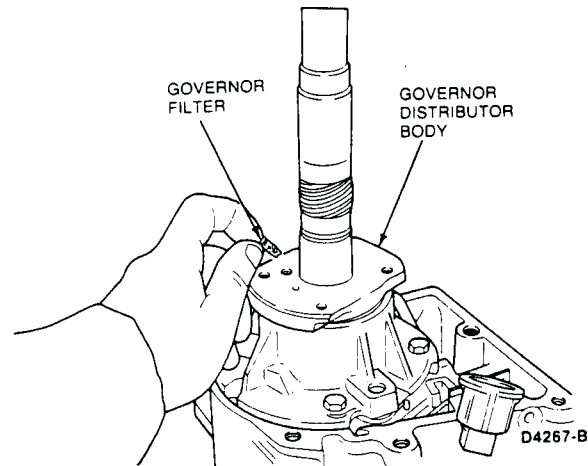
D4264-B

DISASSEMBLY AND ASSEMBLY (Continued)

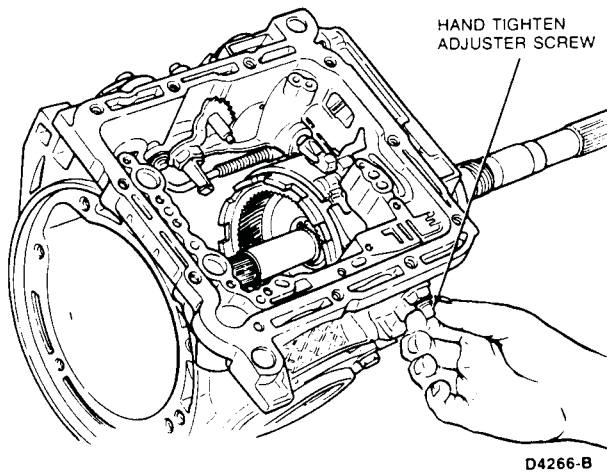
21. Install the band struts.



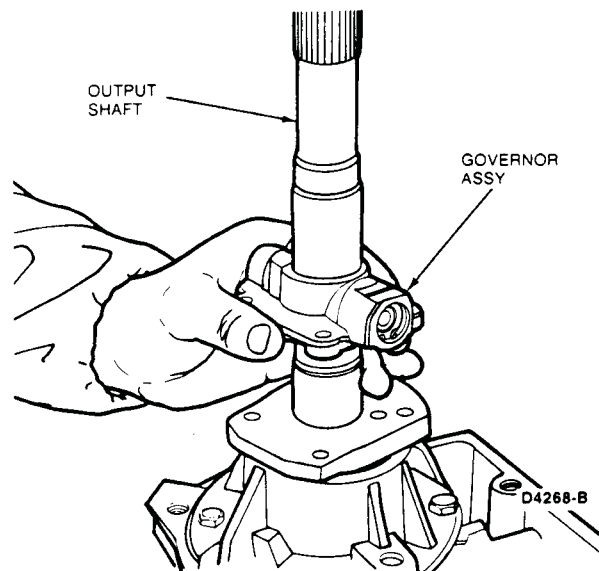
23. Install the governor screen in the governor distributor body.



22. Install a new locknut on the adjuster screw and thread into the case. Hand tighten the adjuster screw to hold the band in position.

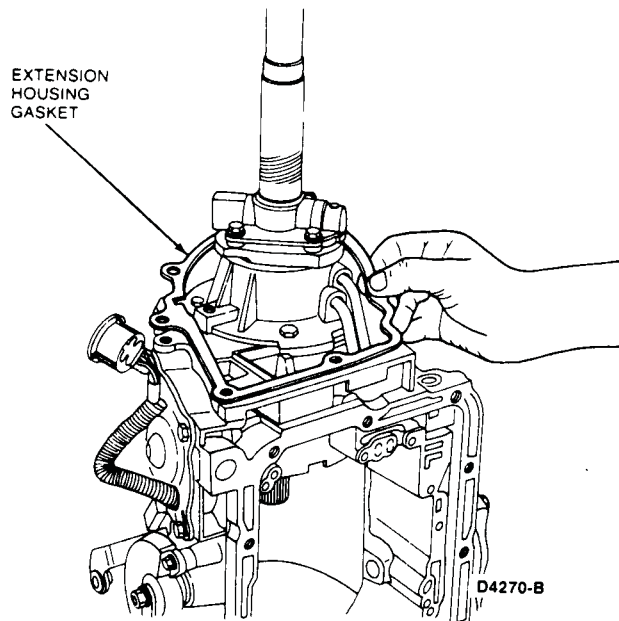


24. Position the governor on the governor distributor body and install the attaching screws. Tighten to 9-13 N·m (80-120 lb-in).

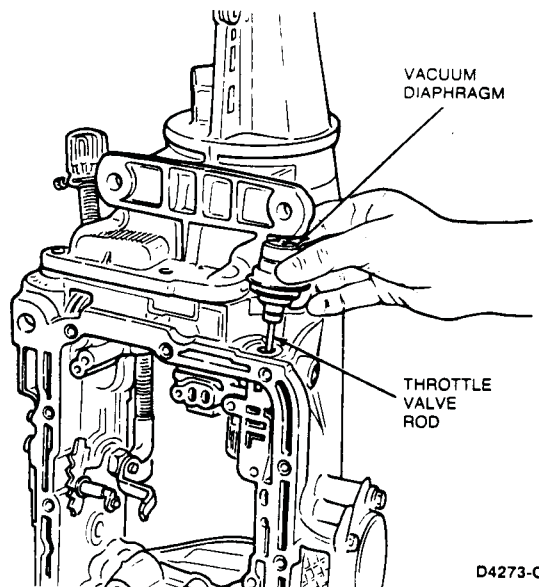


DISASSEMBLY AND ASSEMBLY (Continued)

25. Position a new extension housing gasket on the case and install the extension housing (do not install the attaching bolts).

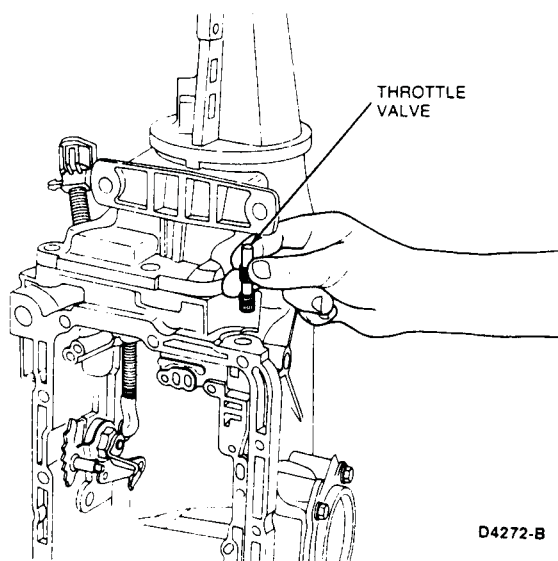


27. Install the throttle valve rod and vacuum diaphragm.



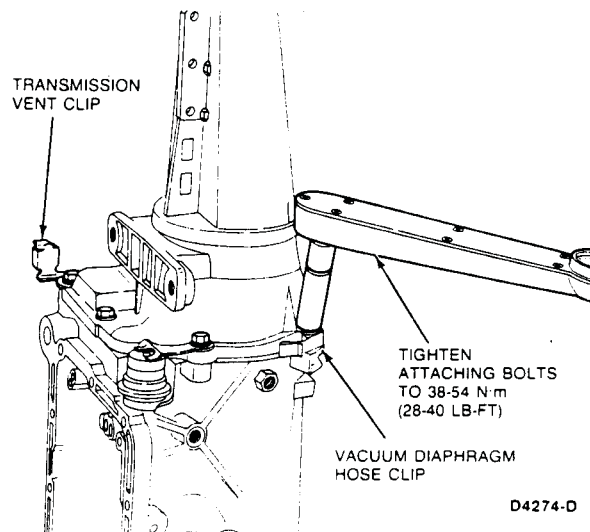
26. Install the throttle valve.

NOTE: The end with the larger hole faces out. The throttle valve rod fits in that hole.



28. Install the six extension housing attaching bolts and tighten to 38-54 N·m (28-40 lb-ft).

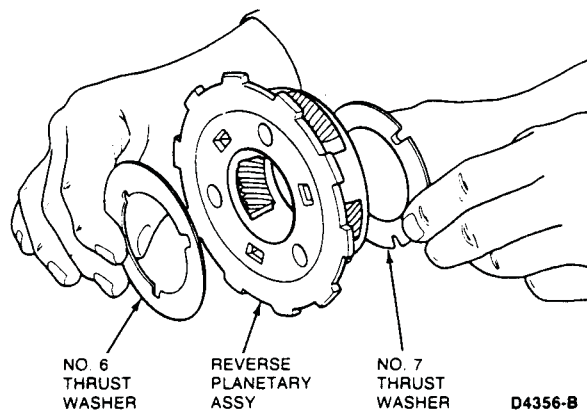
Make sure the vacuum diaphragm hose clip and the transmission vent clip are installed in their original locations.



DISASSEMBLY AND ASSEMBLY (Continued)

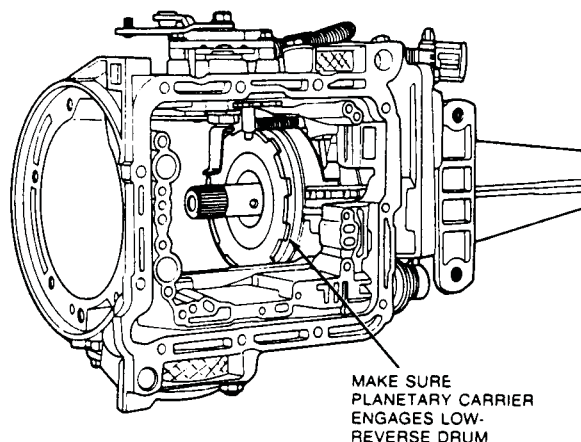
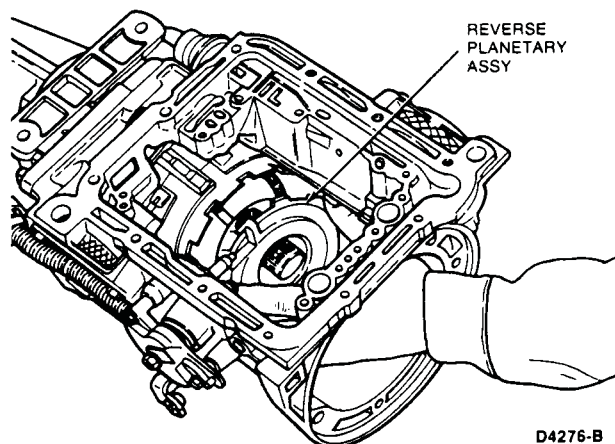
29. Position the No. 6 and No. 7 thrust washers on the reverse planetary assembly.

Lightly coat the thrust washers with petroleum jelly before positioning on the carrier.

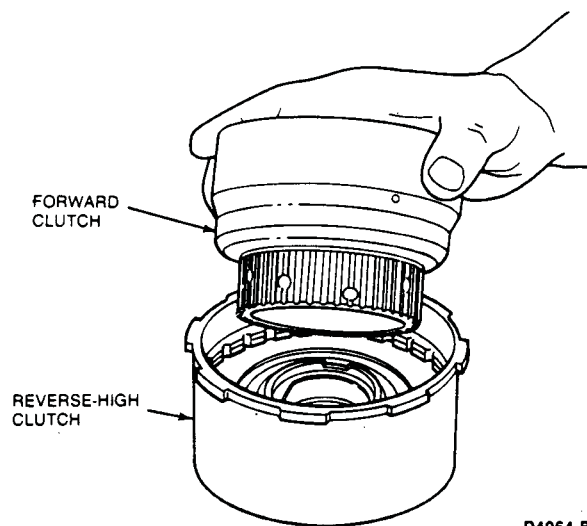


30. Install the reverse planetary assembly.

NOTE: Make sure the lugs are fully engaged in the low-reverse drum slots.

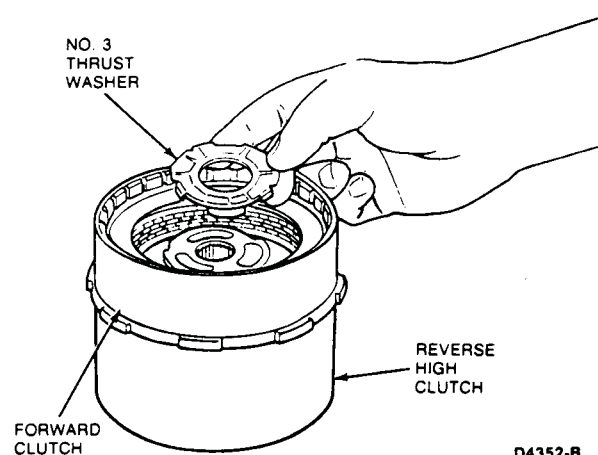


31. Install the forward clutch in the reverse-high clutch.



32. Position the No. 3 thrust washer on the forward clutch hub.

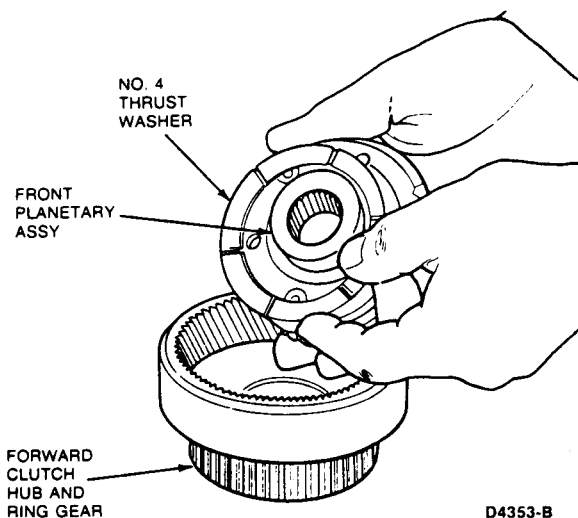
Lightly coat the washer with petroleum jelly before positioning on the hub.



DISASSEMBLY AND ASSEMBLY (Continued)

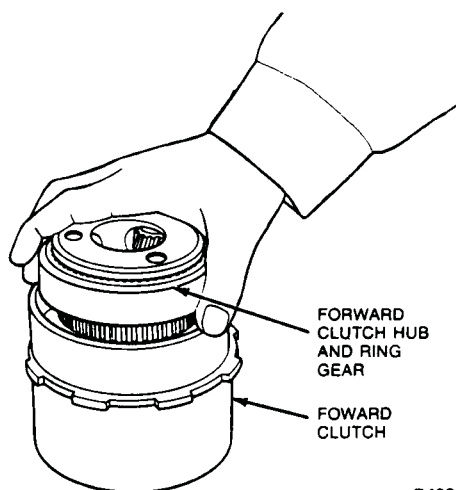
33. Position the No. 4 thrust washer on the front planetary assembly and install the planetary in the forward clutch hub.

Lightly coat the thrust washer with petroleum jelly before positioning on the carrier.



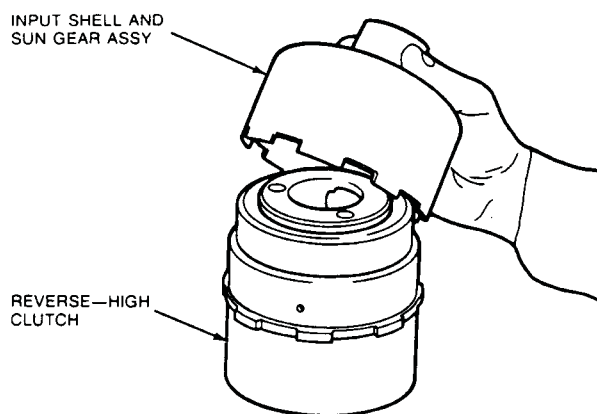
D4353-B

34. Install the forward clutch hub and ring gear in the forward clutch.



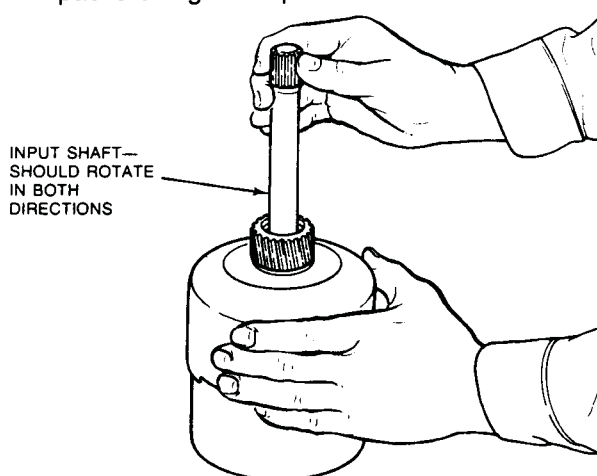
D4281-B

35. Install the input shell and sun gear assembly on the reverse-high clutch.



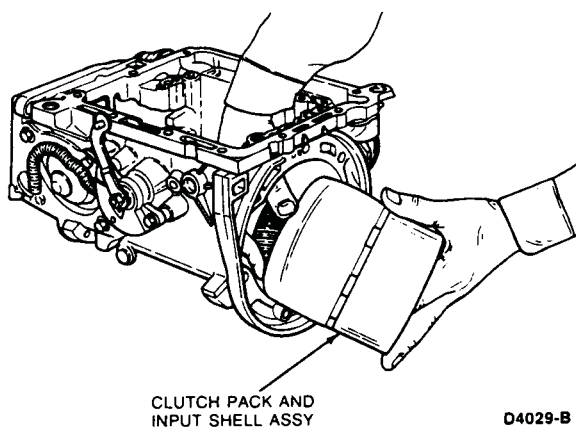
D4061-B

36. To check for proper assembly, rotate the clutch packs using the input shaft.



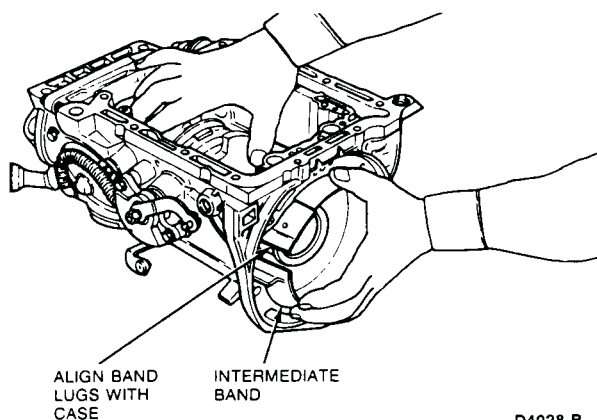
D4283-B

37. Install the clutch packs, front planetary and input shell as an assembly.



D4029-B

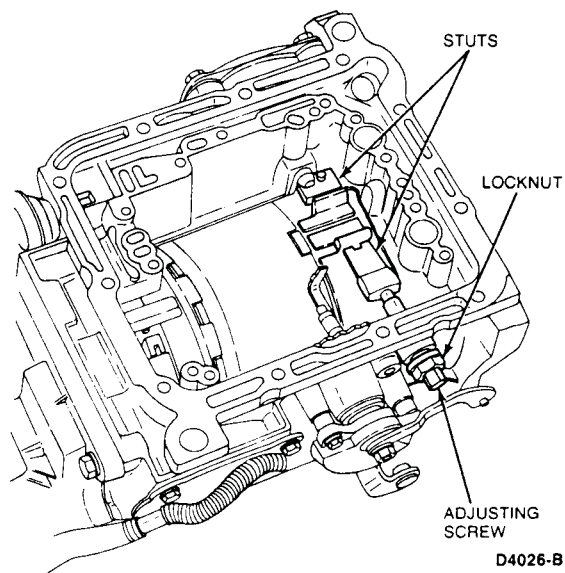
38. Align the intermediate band lugs with the relief clearance provided in the case and install the intermediate band.



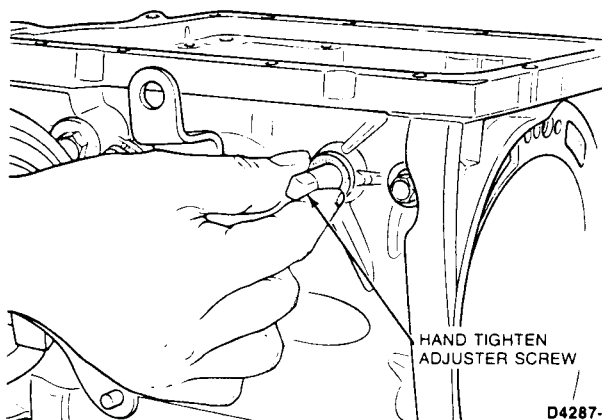
D4028-B

39. Install the intermediate band struts.

Install a new locknut on the adjuster screw and thread into the case. Hand tighten the adjuster screw to hold the band in position.

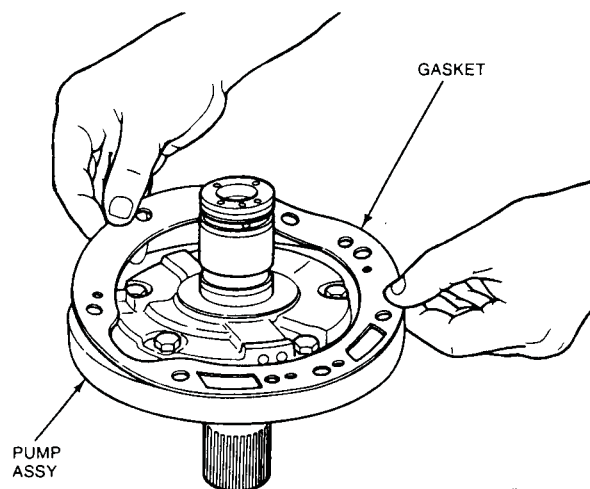


D4026-B



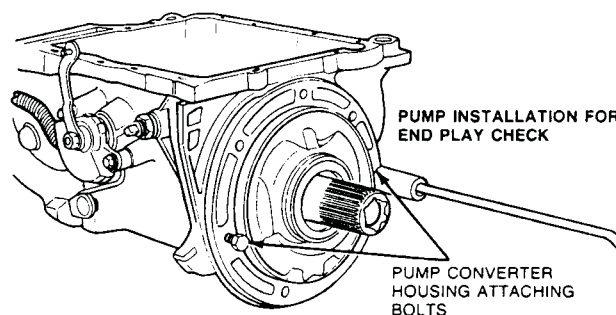
D4287-B

40. Install a new gasket on the pump assembly.



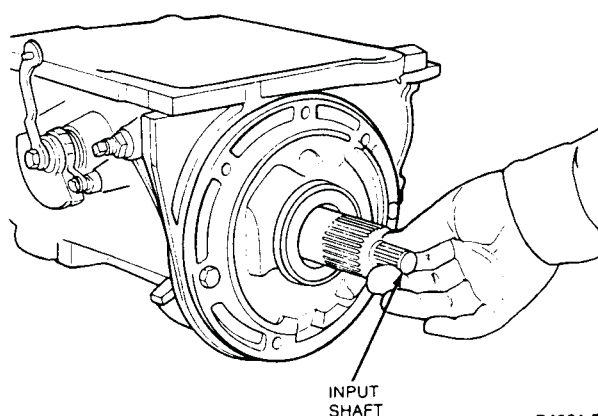
D4288-B

41. Position the pump assembly in the case and install two pump/converter housing attaching bolts.



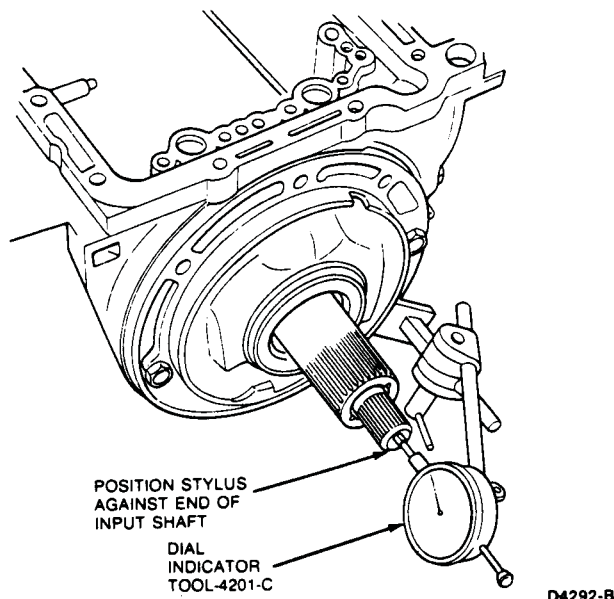
D4290-B

42. Install the input shaft.



D4291-B

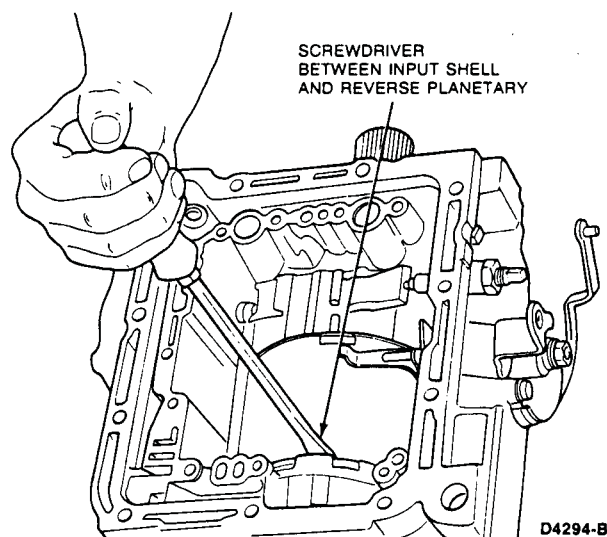
43. Mount Dial Indicator TOOL-4201-C or equivalent, and position the indicator stylus against the end of the input shaft.



D4292-B

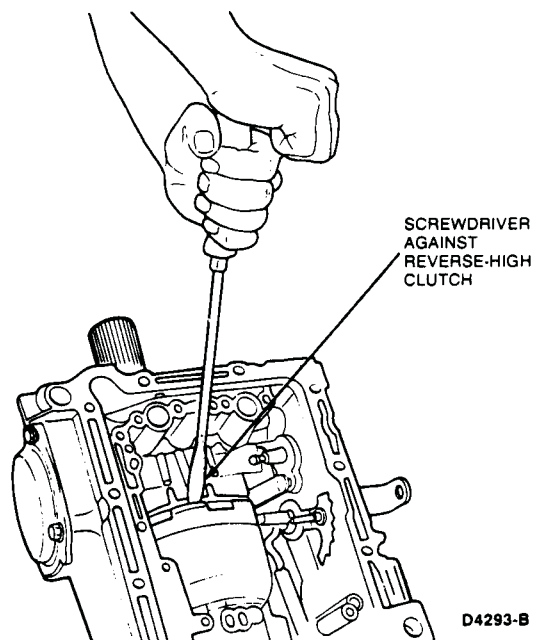
45. Make sure the input shaft is fully seated and zero the dial indicator. Position a screwdriver blade between the input shell and the reverse planetary assembly.

Pry the input shell forward and observe the dial indicator reading.



D4294-B

44. Position the blade of a screwdriver against a lug on the reverse-high clutch and push the gear train rearward by tapping on the screwdriver handle.



D4293-B

If the end play is not within the specified limit of 0.20-1.07mm (0.008-0.042 inch), the No. 1 and No. 2 thrust washers must be changed. These thrust washers should be replaced in pairs to obtain the specified clearance.

Use the thrust washer chart to select the proper thrust washer thickness.

The selective washers must be installed in pairs. Use the following chart to determine the correct washer thickness and washer pairs.

Thrust Washer No. 1		Thrust Washer No. 2
Color	Thickness	Washer Number
Red	0.053-0.0575	2
Green	0.070-0.0745	3
Neutral	0.087-0.0915	2 or 3 plus spacer ①

① This is a selective spacer used with washer 2 or 3. When used, install next to stator support. CD3477-B

DISASSEMBLY AND ASSEMBLY (Continued)

46. If the end play was within the specified limits, remove the dial indicator and the bolts holding the pump assembly in the case. Proceed to Step 47.

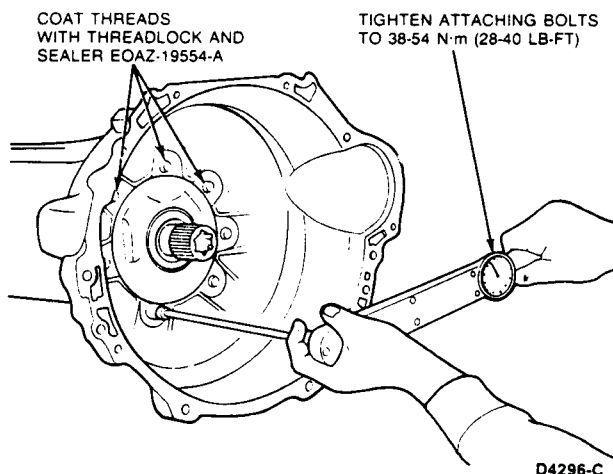
If the end play was not within the specified limits, remove the dial indicator and the pump assembly.

Install the correct thrust washers and position the pump in the case. Recheck end play and proceed to Step 47.

47. Position the converter housing and install the seven attaching bolts.

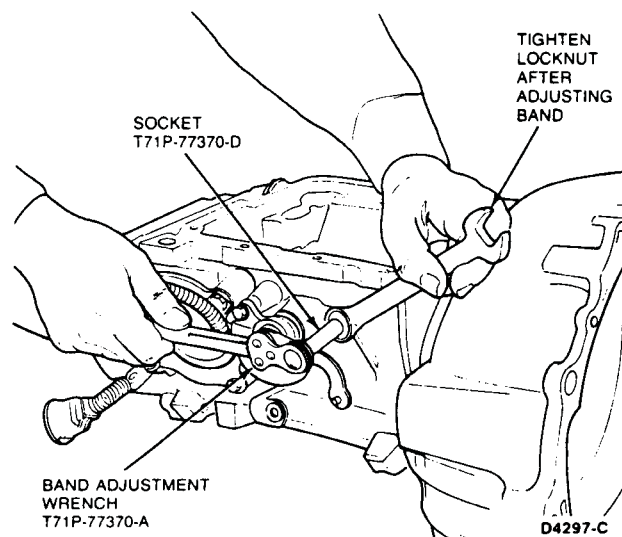
NOTE: Clean the three lower attaching bolts, converter housing and case bolt holes with a wire brush to remove loose particles. Apply a coating of Threadlock and Sealer, E0AZ-19554-A or equivalent to bolts before installation.

Tighten the attaching bolts to 38-54 N·m (28-40 lb-ft).



48. Adjust the intermediate band as follows:

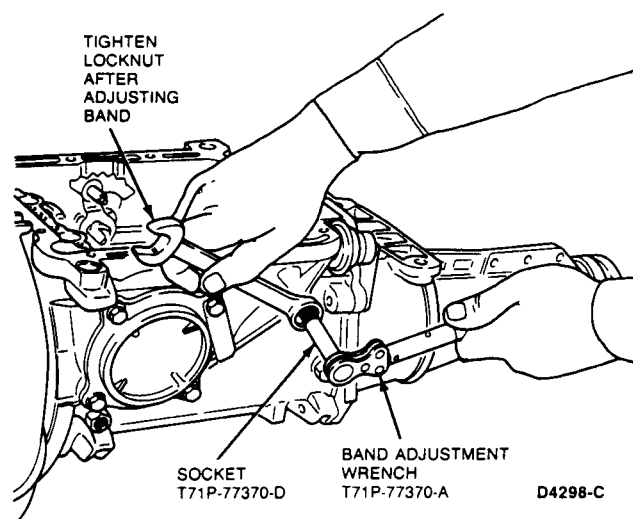
- Thread the adjuster screw out of the case several turns.
- Tighten the band adjuster screw using Band Adjustment Torque Wrench T71P-77370-A and Socket T71P-77370-D or equivalent. When the band is tightened to the correct tension, the wrench will overrun.
- From the point where the adjuster wrench overruns, back off the adjuster screw 4 1/4 turns.
- Tighten adjuster screw locknut to 47-61 N·m (35-45 lb-ft) while holding adjuster screw in position.



DISASSEMBLY AND ASSEMBLY (Continued)

49. Adjust the low-reverse band as follows:

- Thread the adjuster screw out of the case several turns.
- Tighten the band adjuster screw using Band Adjustment Torque Wrench T71P-77370-A and Socket T71P-77370-D or equivalent. When the band is tightened to the correct tension, the wrench will overrun.
- From the point where the adjuster wrench overruns, back off the adjuster screw 3 turns.
- Tighten adjuster screw locknut to 47-61 N·m (35-45 lb-ft) while holding adjuster screw in position.

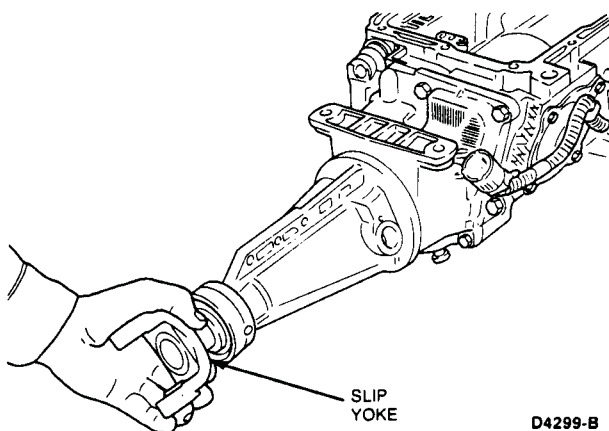


50. To check the transmission for proper assembly, turn the output shaft using a slip yoke. Make sure the shift linkage is not in the PARK position when making this check.

The output shaft should turn in both directions.

Move the shift linkage to PARK position and attempt to turn the output shaft using a slip yoke.

The output shaft should not turn in either direction.



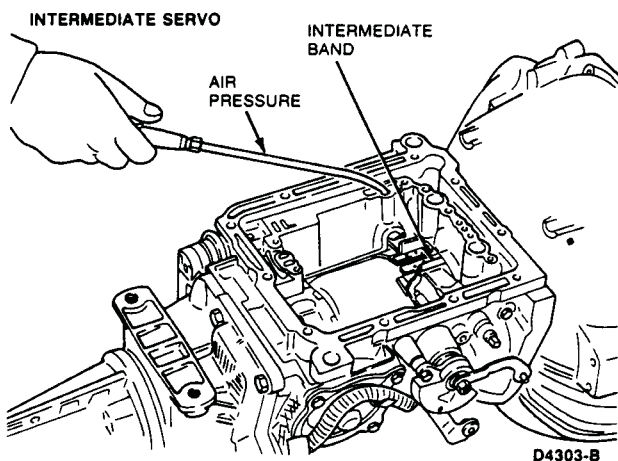
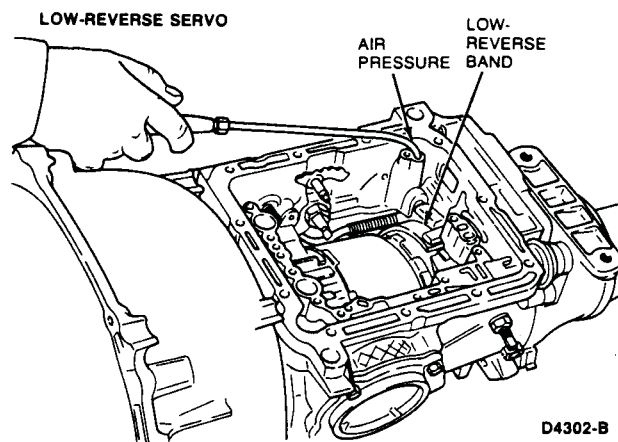
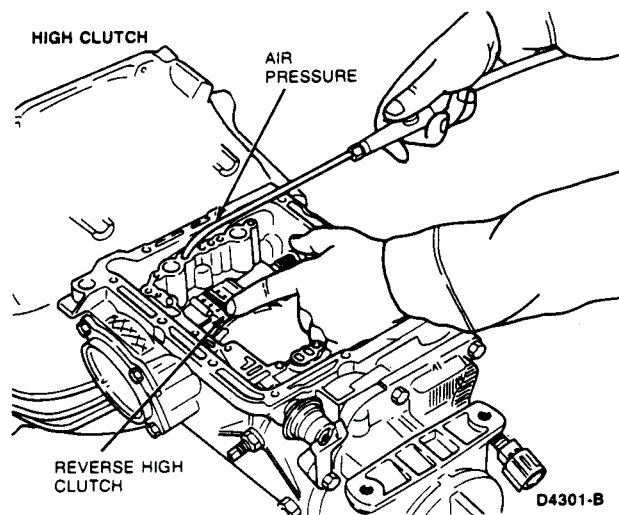
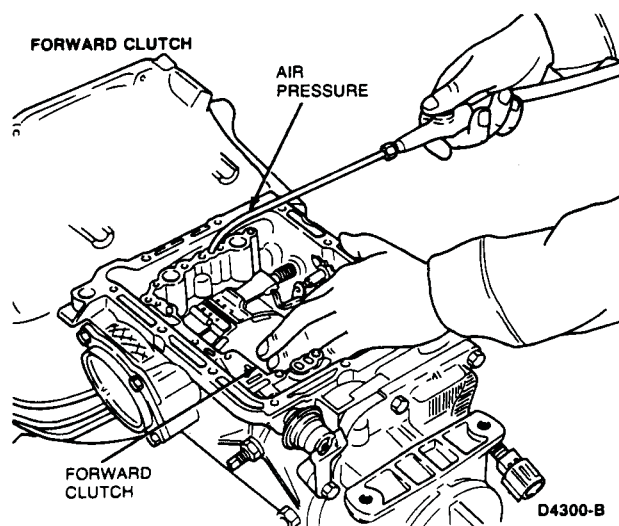
DISASSEMBLY AND ASSEMBLY (Continued)

51. The clutch packs and band servos can be checked for proper assembly and installation in the case by applying air pressure to the appropriate hydraulic circuit as shown.

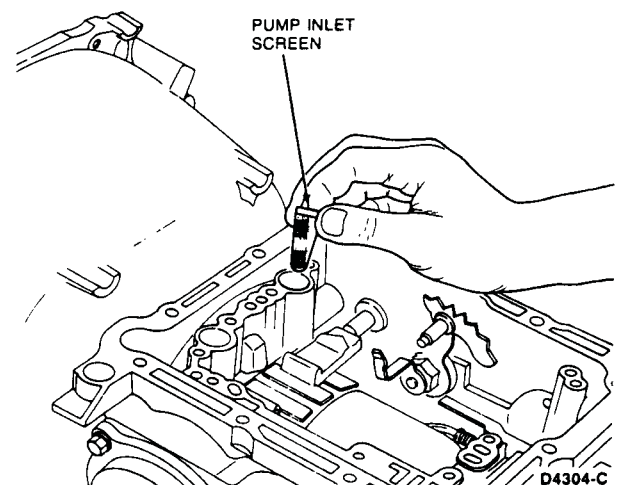
Air pressure has to be regulated to 172 kPa (25 psi) for this check.

The clutches should be heard and felt to apply smoothly and without leakage. When the air pressure is released, the clutch should return to the released position.

When air pressure is applied to a servo, the band can be seen coming on and releasing when air pressure is removed.



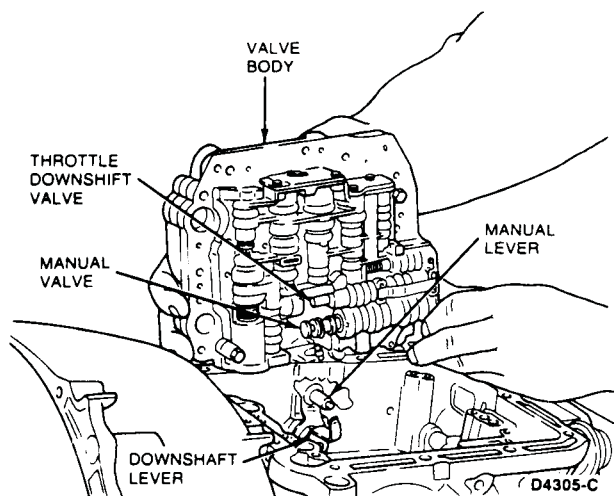
52. Install the pump inlet screen.



DISASSEMBLY AND ASSEMBLY (Continued)

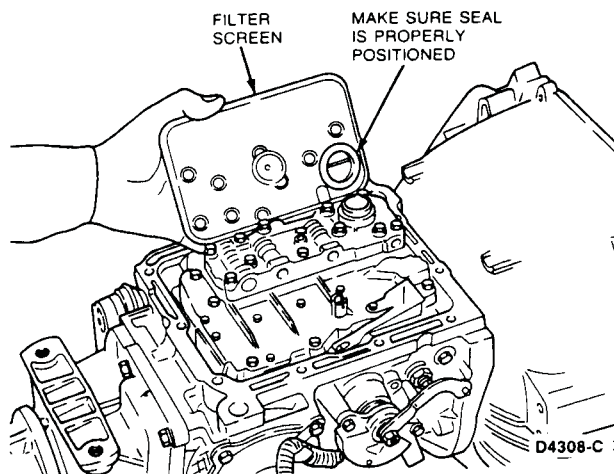
53. Install the valve body.

As the valve body is lowered onto the case, make sure the manual valve engages the manual lever and that the downshift lever is positioned to engage the throttle downshift valve.



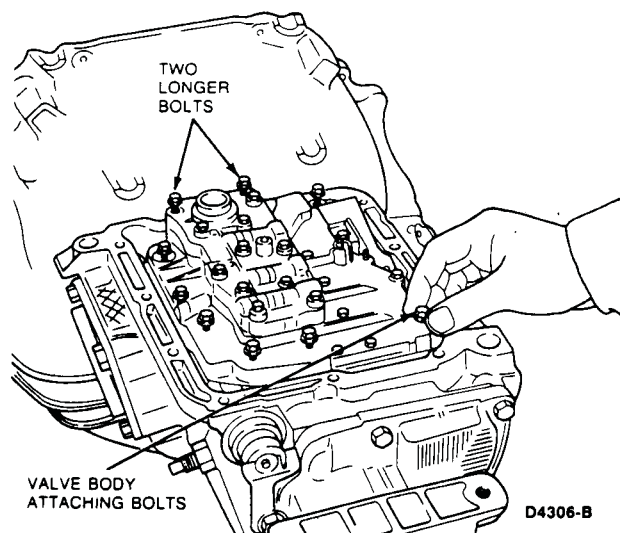
55. After cleaning the filter screen, install the valve body.

Make sure the filter screen seal is present and properly positioned before installing the filter.

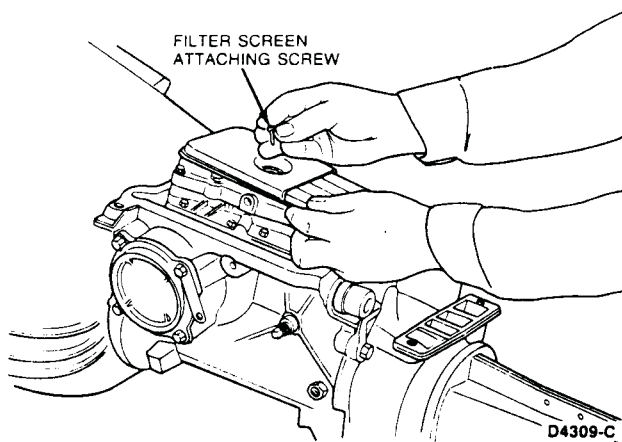


54. Install the nine valve body attaching bolts. Tighten to 9-13 N·m (80-120 lb-in).

Note the location of the two longer bolts.

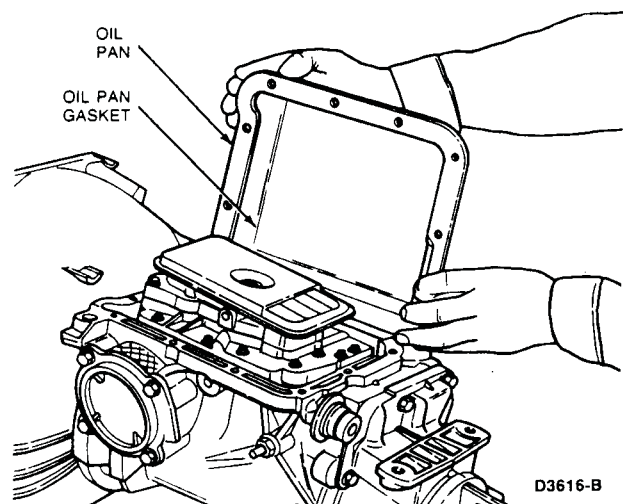


56. Install the filter screen attaching screw. Tighten to 3-4.5 N·m (25-40 lb-in).

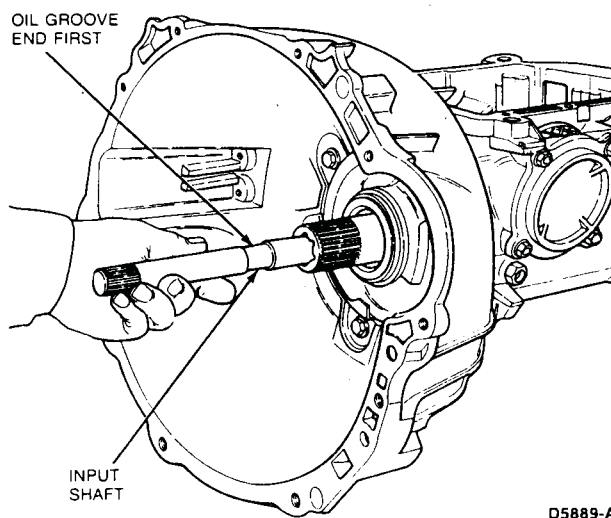


DISASSEMBLY AND ASSEMBLY (Continued)

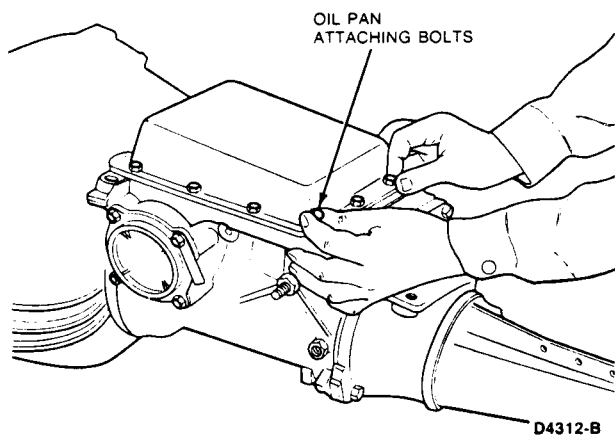
57. Position a new gasket on the oil pan and install the pan.



59. Install the input shaft oil groove end first.

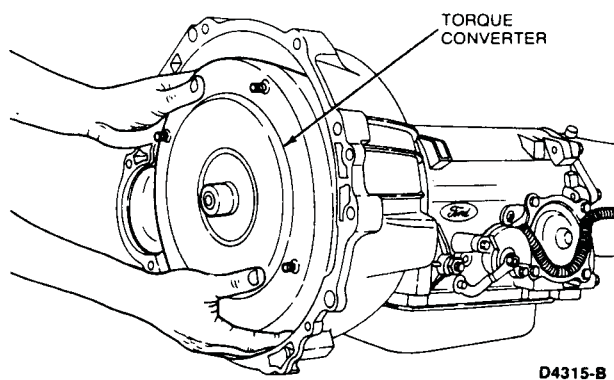


58. Install the oil pan attaching bolts. Tighten to 16-22 N·m (12-16 lb-ft).



60. Install the torque converter.

Make sure the converter is fully seated, engaging the input shaft, stator support and pump drive gear.



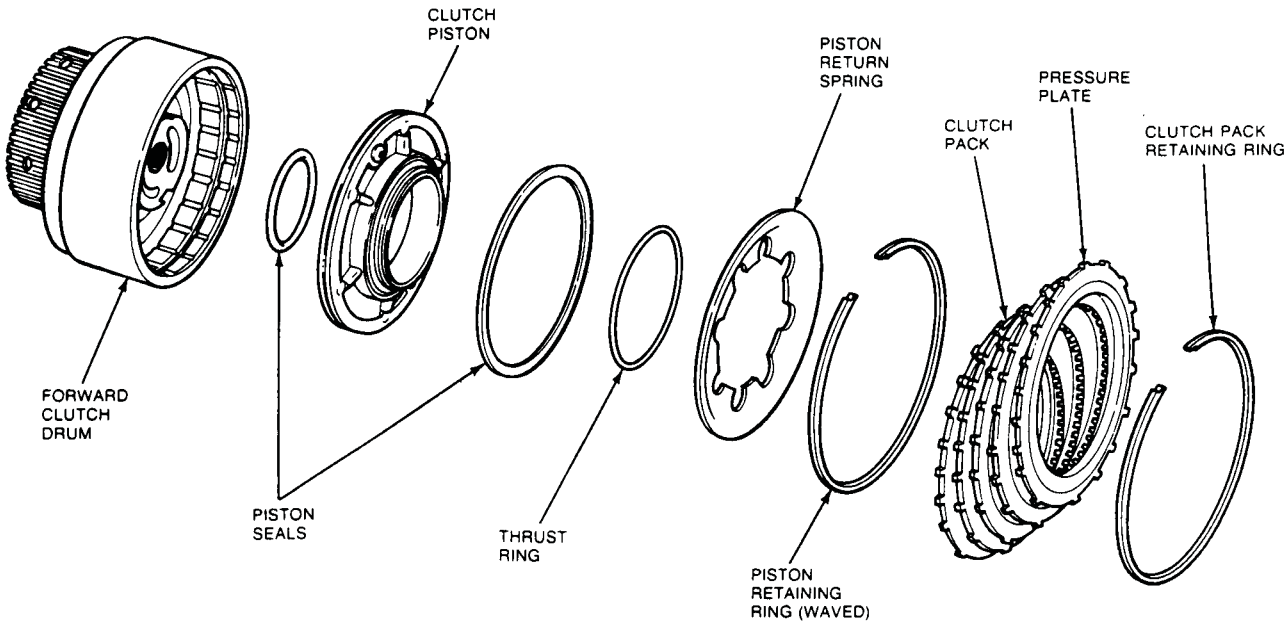


Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

Subassemblies

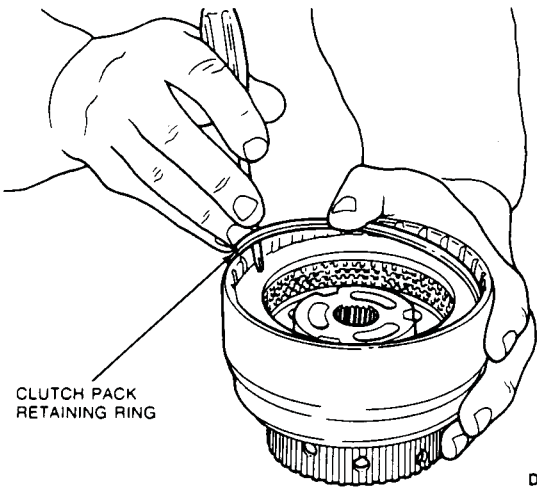
Forward Clutch



D4067-B

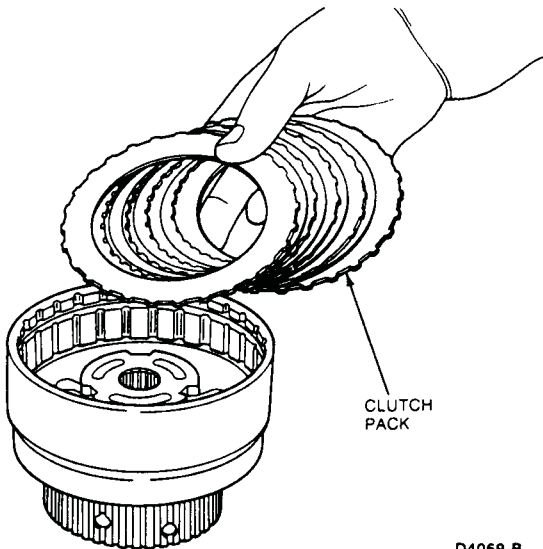
Disassembly

1. Remove clutch pack retaining ring.



D4068-B

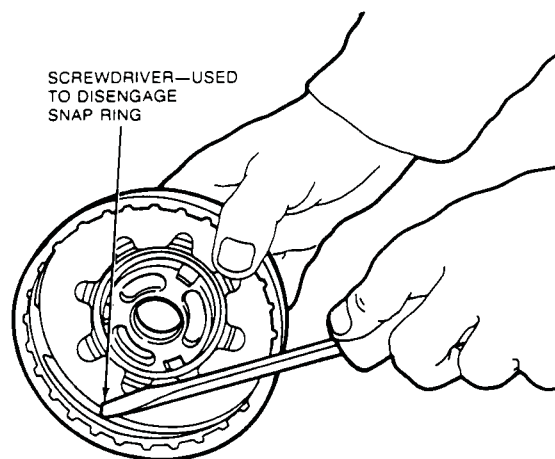
2. Remove the clutch pack.



D4069-B

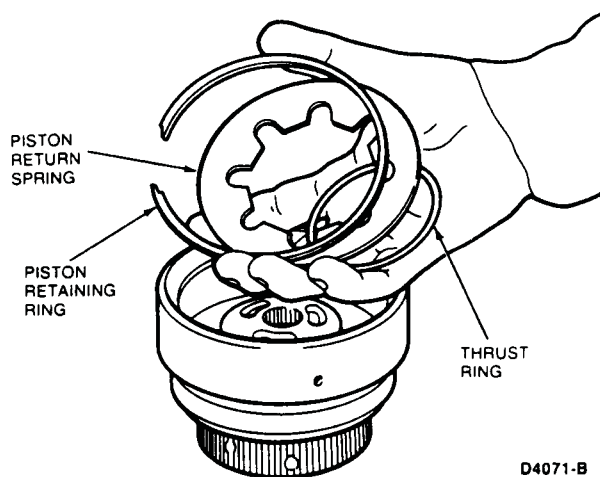
DISASSEMBLY AND ASSEMBLY (Continued)

- Using a screwdriver, disengage the piston retaining ring from the clutch drum ring groove.



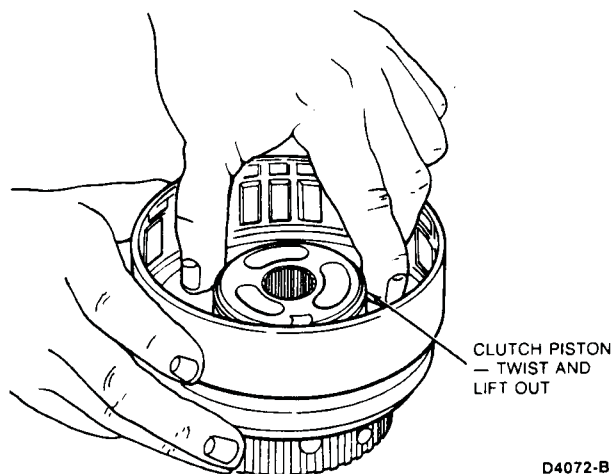
D4070-B

- Remove the piston retaining ring, the piston return spring and the thrust ring.



D4071-B

- Remove the clutch piston.



D4072-B

If the piston is difficult to remove, air pressure can be used to aid removal.

NOTE: USE AIR PRESSURE, IF NECESSARY, TO REMOVE CLUTCH PISTON.

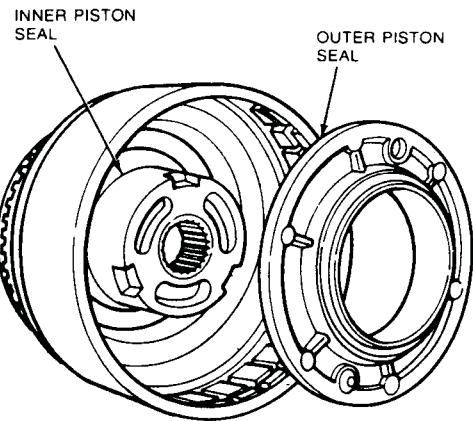


D4073-B

DISASSEMBLY AND ASSEMBLY (Continued)

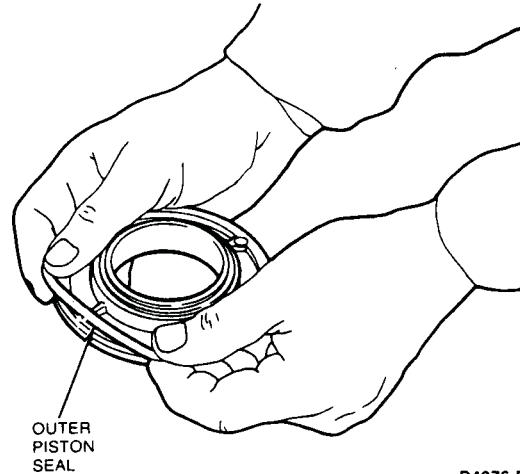
6. Remove the outer seal from the clutch piston and the inner seal from the clutch drum hub. Note the direction of the sealing lip of the outer seal.

Discard the seals.



D4074-B

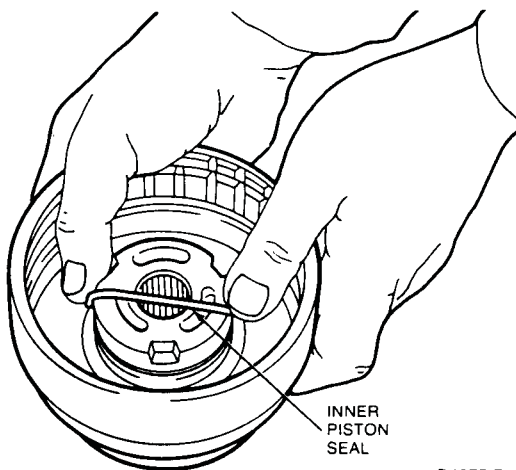
2. Install a new seal on the clutch piston (outer seal). Note the direction of the sealing lip.



D4076-B

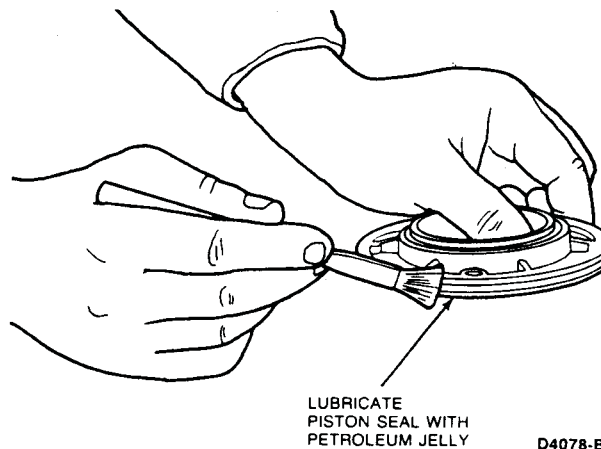
Assembly

1. Install a new seal on the clutch drum hub (inner seal.)



D4075-B

3. Lubricate the piston seals with petroleum jelly.

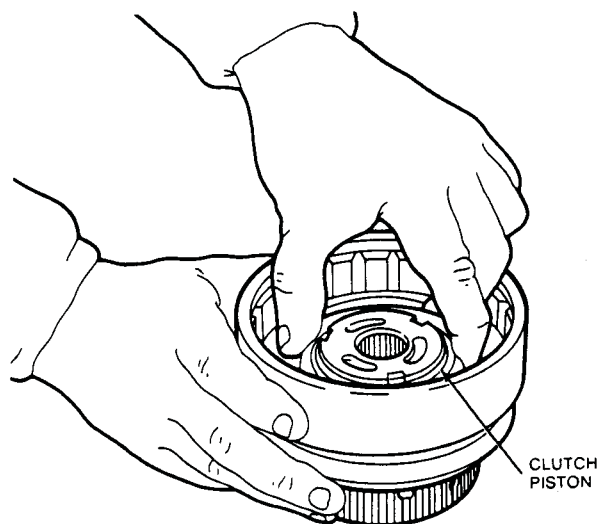


D4078-B

DISASSEMBLY AND ASSEMBLY (Continued)

4. Install the clutch piston in the clutch drum.

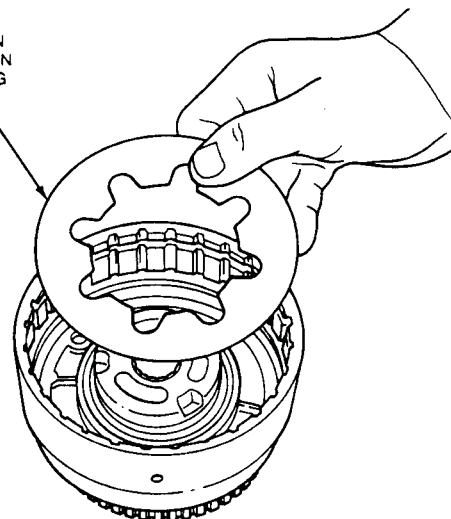
To seat the piston in the drum, rotate the piston while pushing downward on it.



D4079-B

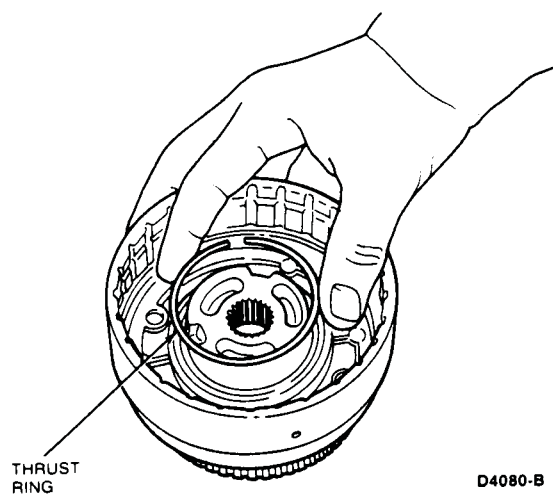
6. Install the piston return spring.

PISTON
RETURN
SPRING



D4081-B

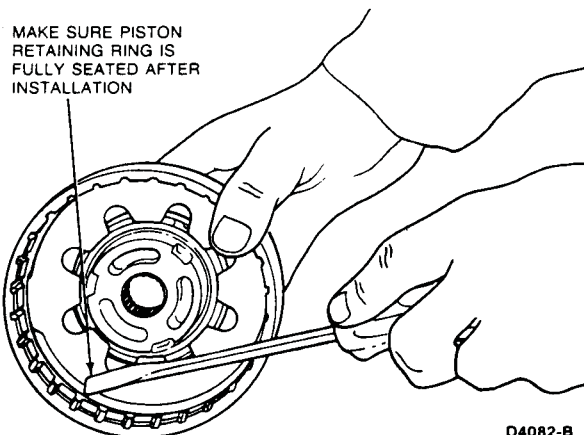
5. Install the thrust ring.



D4080-B

7. Install the piston retaining ring.

Make sure the ring is fully seated in the clutch drum groove.

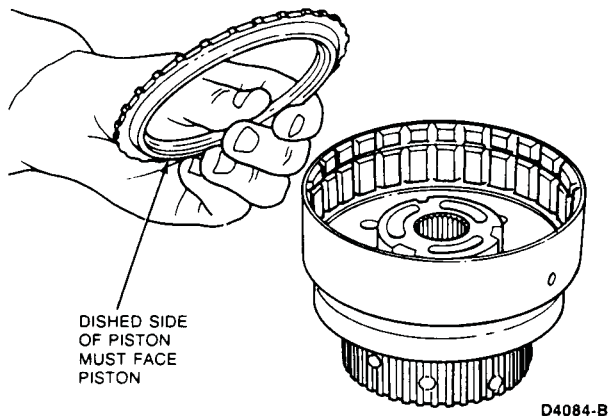


D4082-B

DISASSEMBLY AND ASSEMBLY (Continued)

8. Install the forward pressure plate.

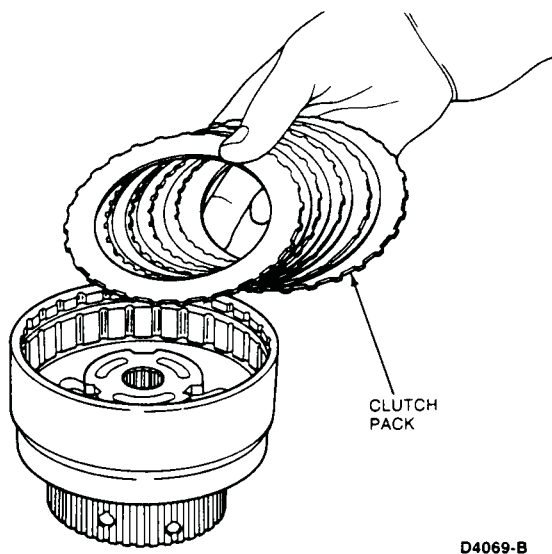
NOTE: The dished side of the plate has to face the piston.



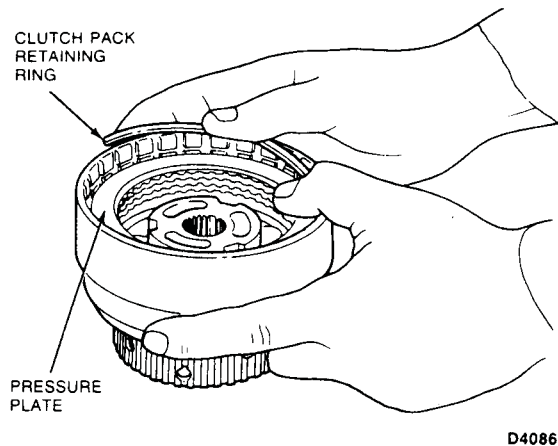
9. Install the clutch pack.

Starting with a friction plate, alternately install the friction and metallic plates. The last plate to be installed is the rear pressure plate.

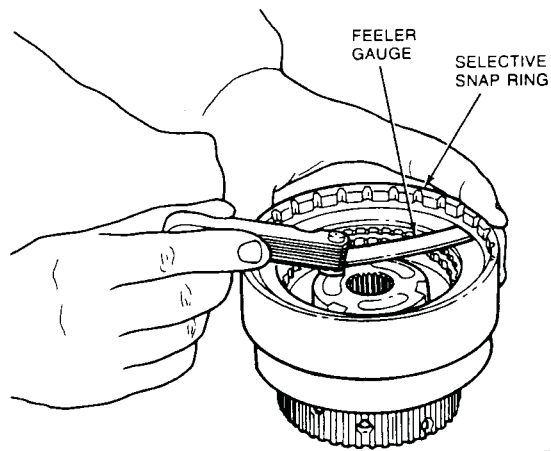
NOTE: If new clutch plates are being installed, they must be soaked in transmission fluid for 15 minutes before the clutch pack can be assembled.



10. Install the rear pressure plate and the clutch pack retaining ring.



11. Using a feeler gauge, check the clearance between the pressure plate and the clutch pack retaining ring. The pressure plate should be held downward as the clearance is checked.



The clearance should be 0.64-1.3mm (0.025-0.050 inch).

If the clearance is not within the specified service limits, selective snap rings are available in the following thicknesses:

- 1.27-1.37mm (0.050-0.054 inch)
- 1.62-1.72mm (0.064-0.068 inch)
- 1.98-2.08mm (0.078-0.082 inch)
- 2.33-2.43mm (0.092-0.096 inch)
- 2.64-2.74mm (0.104-0.108 inch)

If necessary, install the correct size snap ring and recheck the clearance.

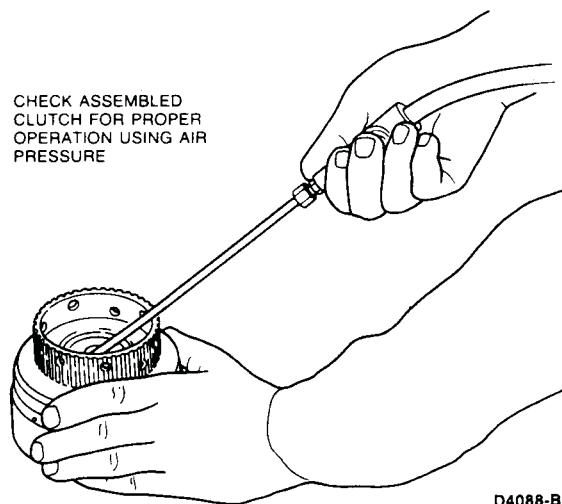
DISASSEMBLY AND ASSEMBLY (Continued)

12. Check the clutch for proper operation using air pressure.

The clutch should be heard and felt to apply smoothly and without leakage.

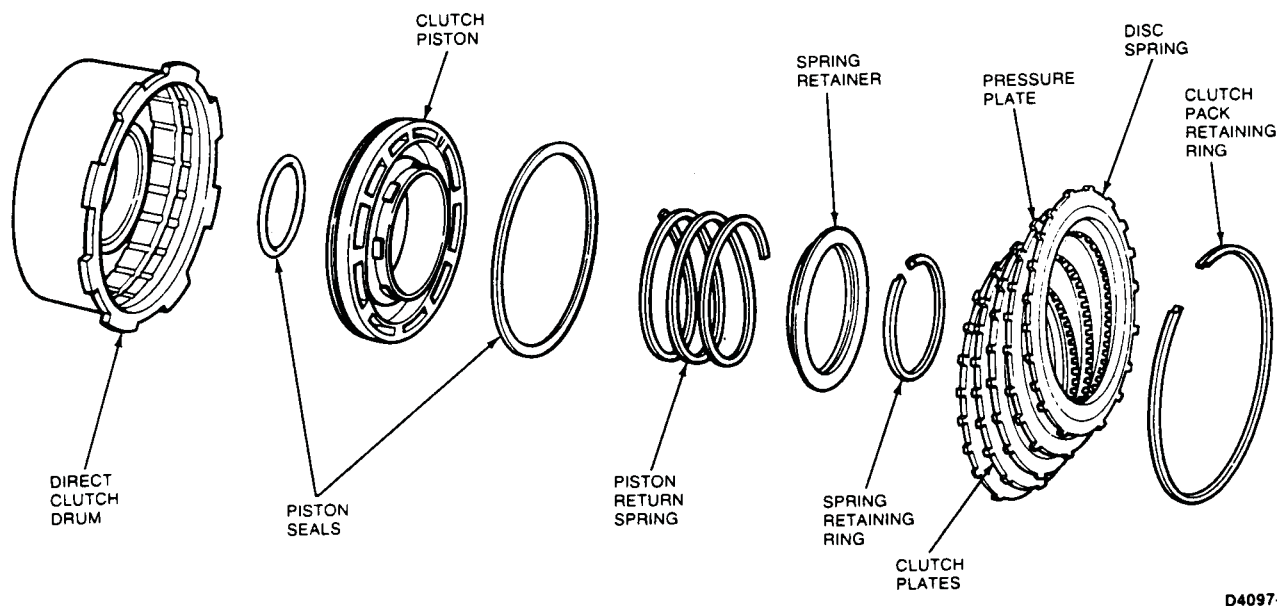
When the air pressure is removed, the piston should return to the released position.

CHECK ASSEMBLED
CLUTCH FOR PROPER
OPERATION USING AIR
PRESSURE



D4088-B

Reverse-High Clutch

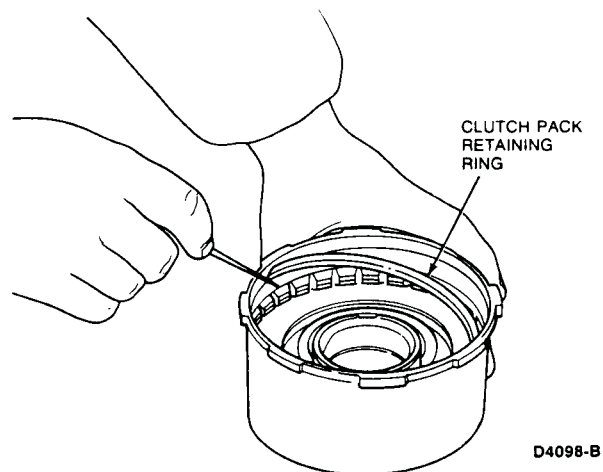


D4097-B

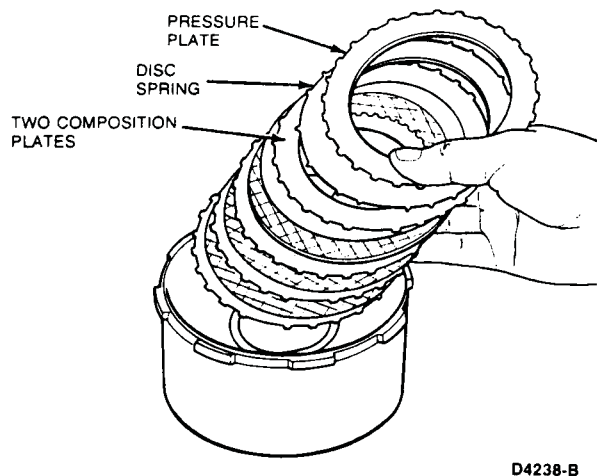
DISASSEMBLY AND ASSEMBLY (Continued)

Disassembly

1. Remove the clutch pack retaining ring.

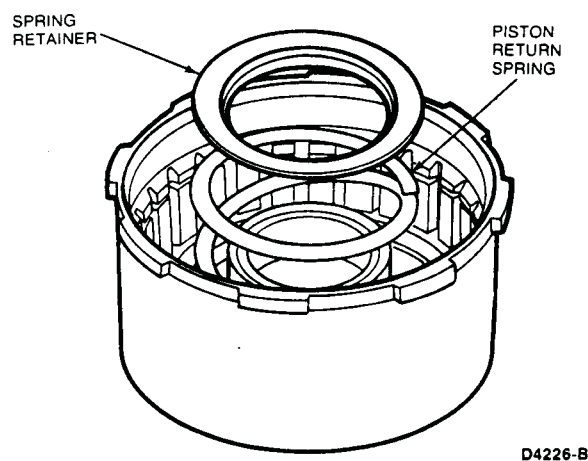
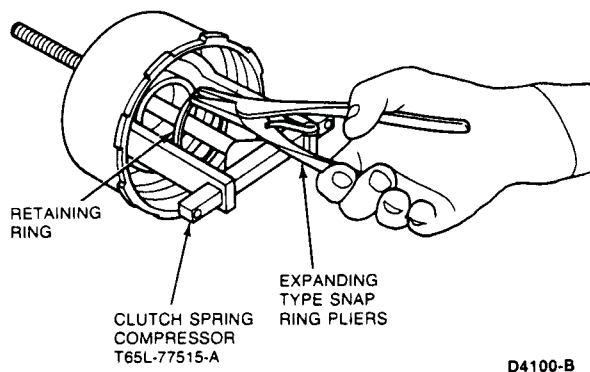


2. Remove the clutch pack.



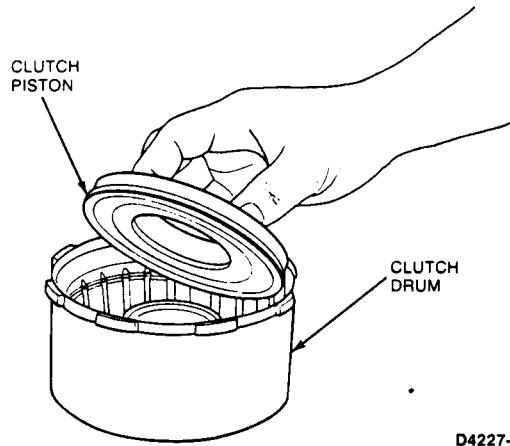
3. Using Clutch Spring Compressor T65L-77515-A or equivalent, compress the piston return spring and remove the spring retaining ring using external snap ring pliers.

After removing the spring compressor tool, remove the spring retainer and piston return spring.



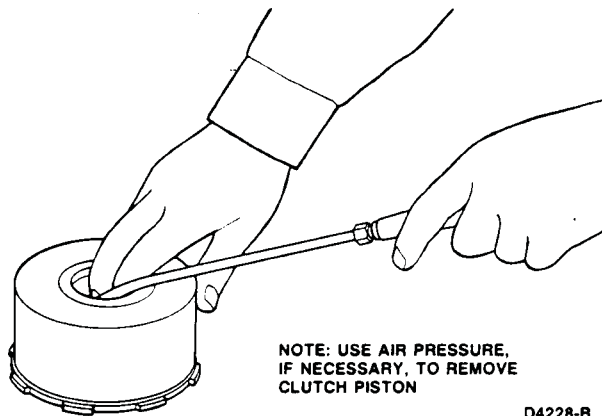
DISASSEMBLY AND ASSEMBLY (Continued)

4. Remove the clutch piston.



D4227-B

NOTE: If the piston is difficult to remove, air pressure can be used to aid removal.

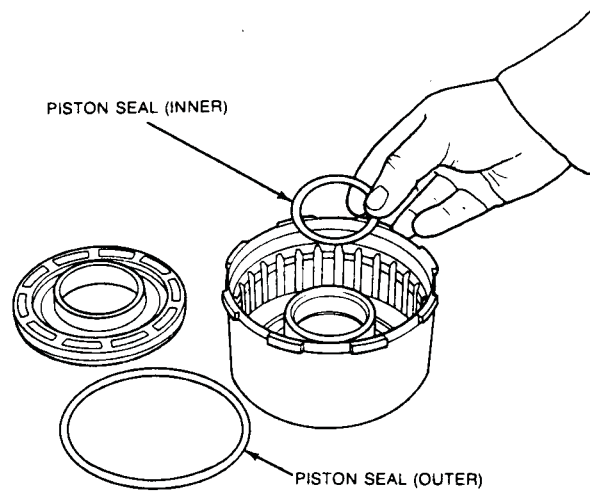


NOTE: USE AIR PRESSURE, IF NECESSARY, TO REMOVE CLUTCH PISTON

D4228-B

5. Remove the outer seal from the clutch piston and the inner seal from the clutch drum hub.

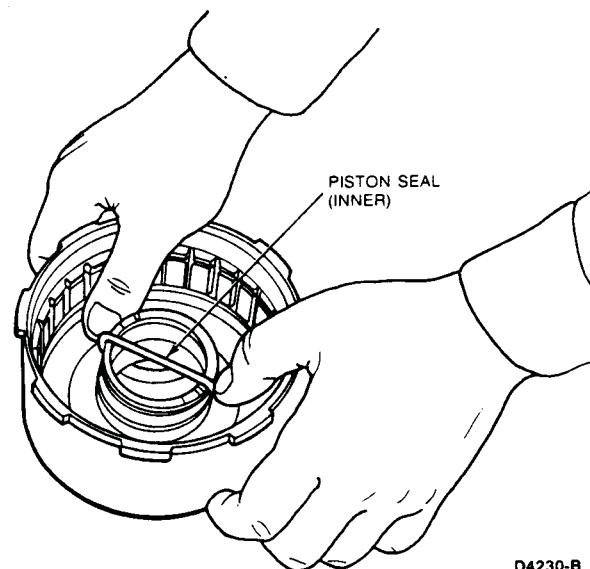
Discard the seals.



D4229-B

Assembly

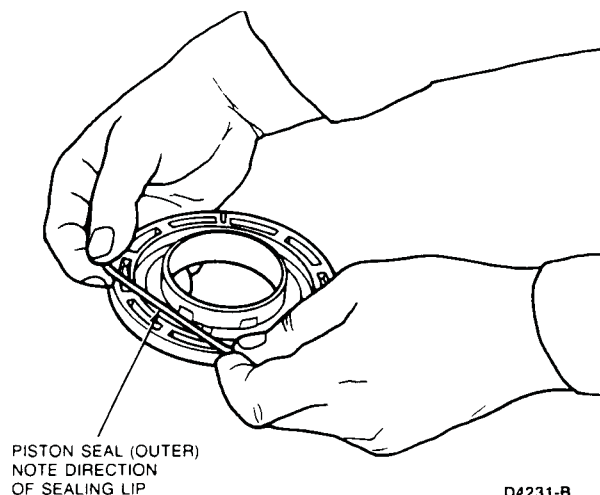
1. Install a new seal on the clutch drum hub (inner seal).



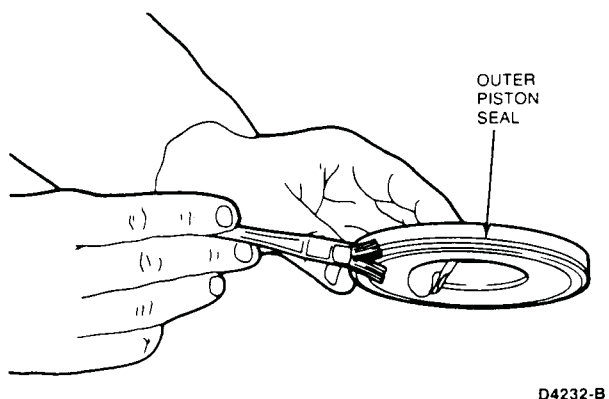
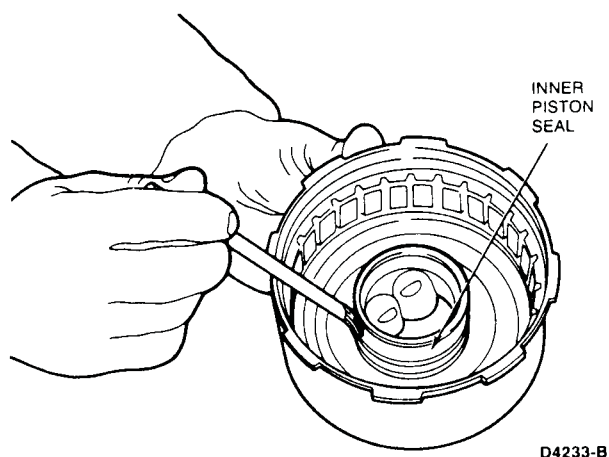
D4230-B

DISASSEMBLY AND ASSEMBLY (Continued)

2. Install a new seal on the clutch piston (outer seal). Note the direction of the sealing lip.

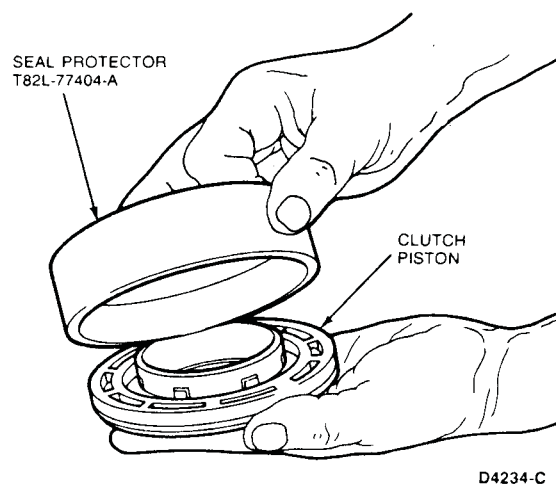


3. Lubricate the piston seals with petroleum jelly.

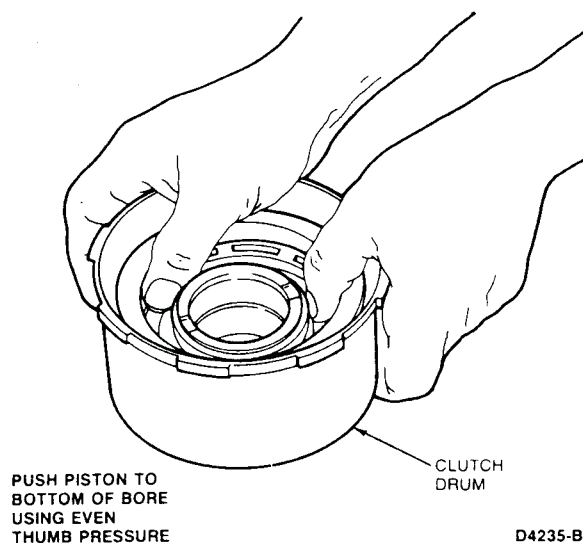


4. Install the piston in Lip Seal Protector T82L-77404-A or equivalent.

Lubricate the inside of the seal installer with petroleum jelly before installing the piston.

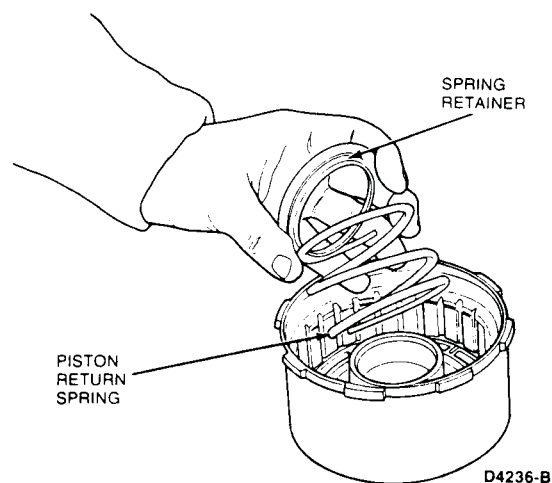


5. Position the tool in the clutch drum and push the piston to the bottom of the drum using even thumb pressure.

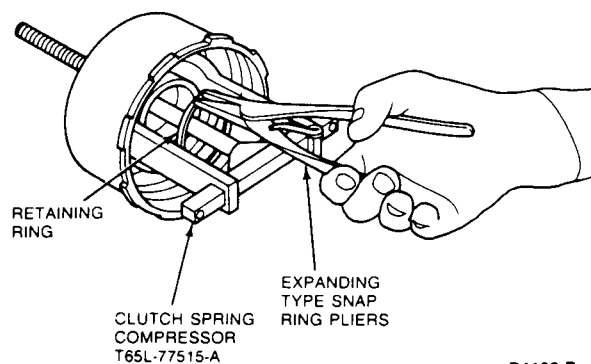


DISASSEMBLY AND ASSEMBLY (Continued)

6. Position the piston return spring and spring retainer on the clutch piston.



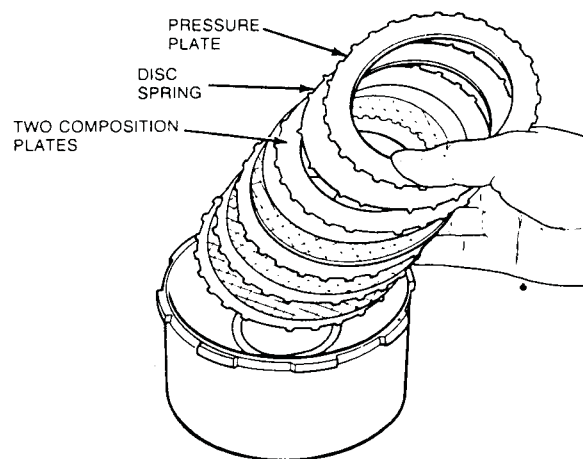
7. Compress the return spring using Clutch Spring Compressor T65L-77515-A or equivalent and install the spring retaining ring.



8. To check the clutch pack clearance, install the clutch pack as follows:

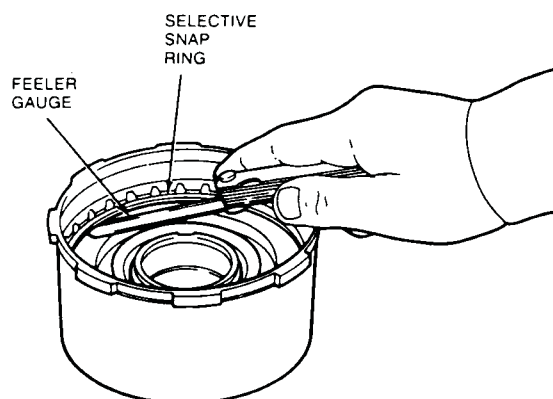
- Install a metallic plate.
- Alternately install composition and metallic plates until two composition plates remain.
- Install the two remaining composition plates together.
- Install the disc spring.
- Install the pressure plate (thicker metallic plate).

CAUTION: This is not the correct plate installation sequence. After checking clearance the pack must be removed and the plates installed in the correct order.



9. Install the clutch pack retaining ring.

Using a feeler gauge, check the clearance between the pressure plate and the clutch pack retaining ring. The pressure plate should be held downward as the clearance is checked.



DISASSEMBLY AND ASSEMBLY (Continued)

The clearance should be 0.64-1.35mm (0.025-0.050 inch).

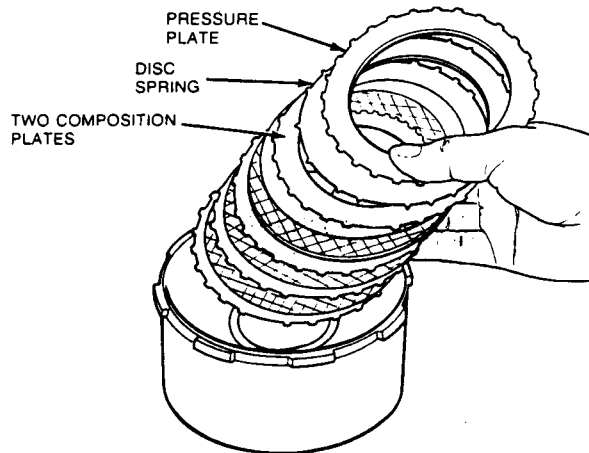
If the clearance is not within the specified service limits, selective snap rings are available in the following thicknesses:

- 1.27-1.37mm (0.050-0.054 inch)
- 1.62-1.72mm (0.064-0.068 inch)
- 1.98-2.08mm (0.078-0.082 inch)
- 2.64-2.74mm (0.092-0.096 inch)

10. Remove the clutch pack retaining ring and the clutch pack.

Install the clutch plates as follows:

- Install a metallic plate.
- Alternately install the composition and metallic plates.
- Install the pressure plate.
- Install the disc spring with the splines facing the snap ring.
- Install the clutch pack retaining ring.

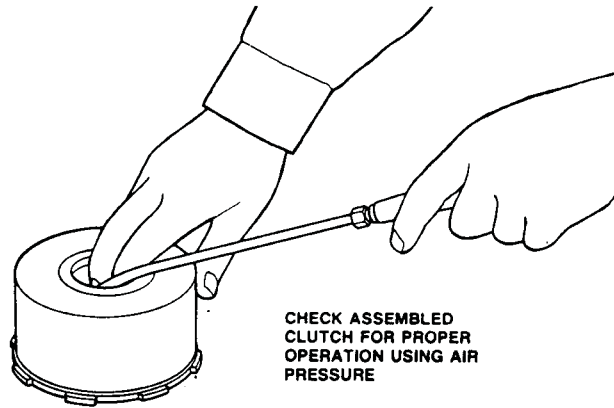


D4238-B

11. Check the clutch for proper operation using air pressure.

The clutch should be heard and felt to apply smoothly and without leakage.

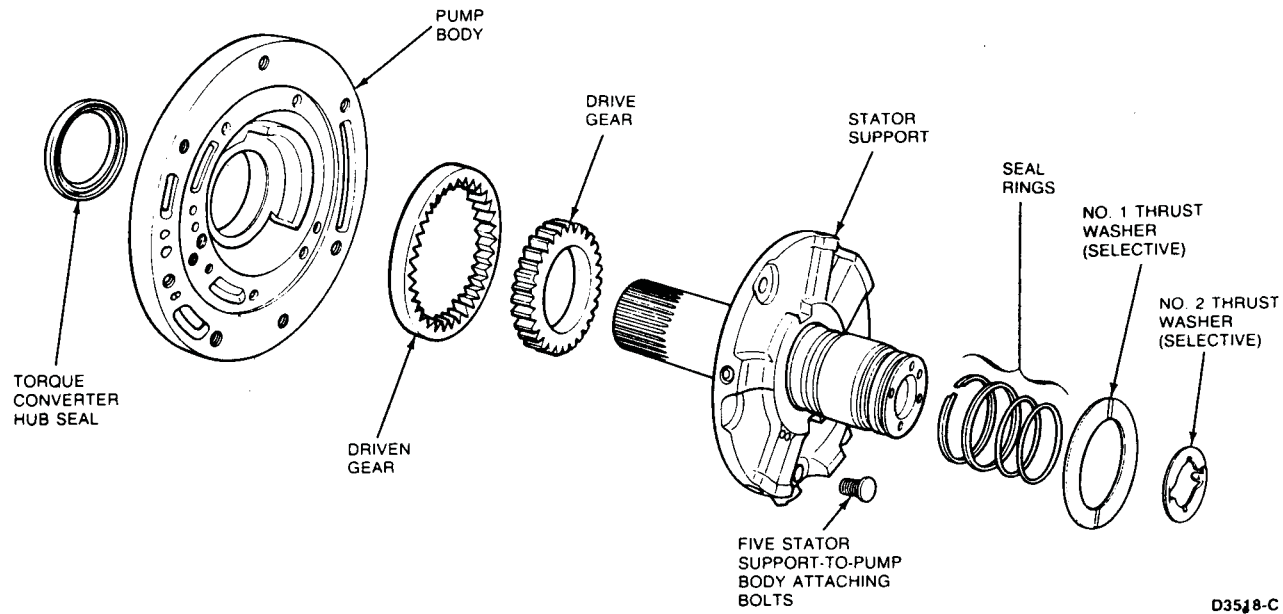
When the air pressure is removed the piston should return to the released position.



D4241-B

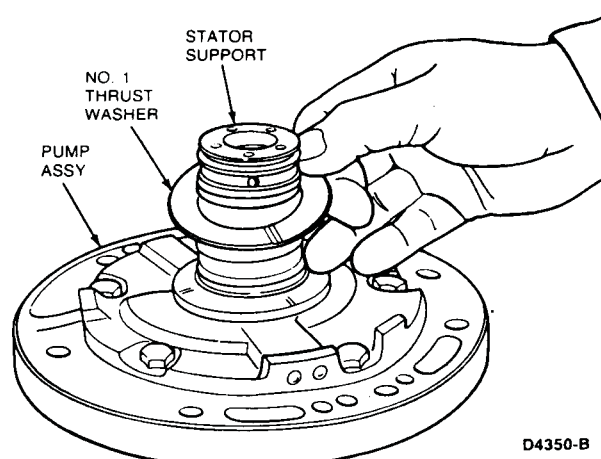
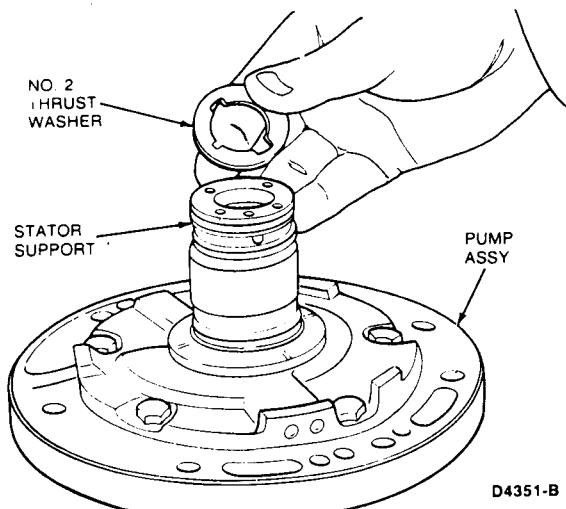
DISASSEMBLY AND ASSEMBLY (Continued)

Pump



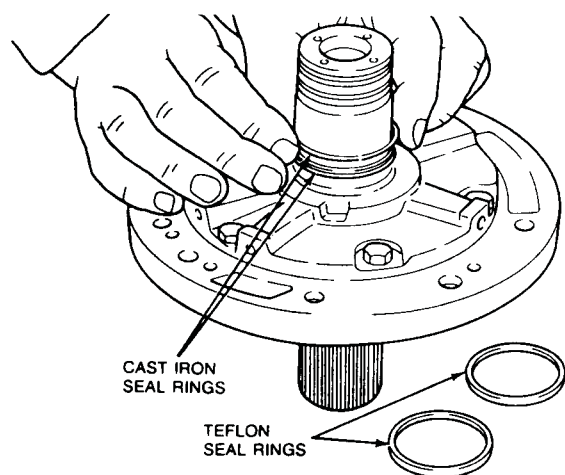
Disassembly

1. Remove the No. 1 and No. 2 thrust washers from the stator support.



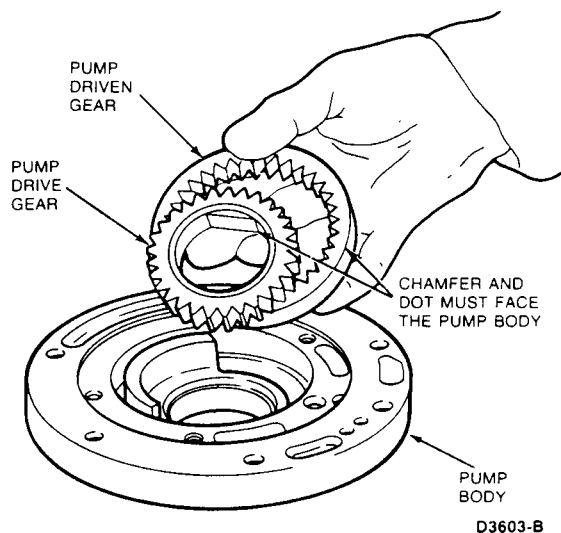
DISASSEMBLY AND ASSEMBLY (Continued)

2. Remove the teflon and cast iron seal rings from the stator support.



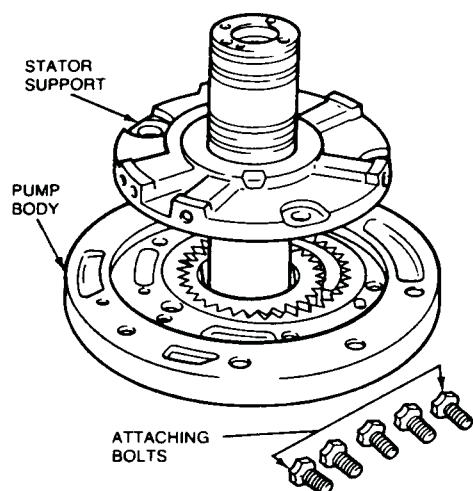
D3521-B

4. Remove the pump gears from the pump body.



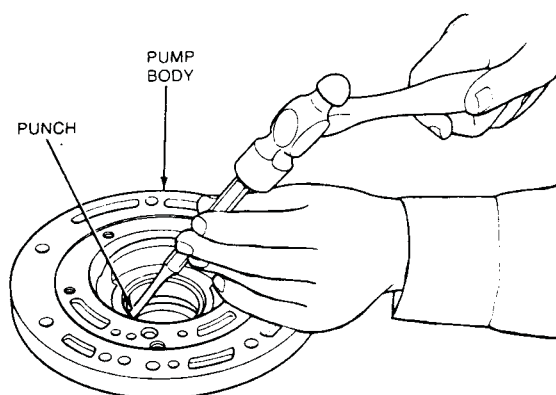
D3603-B

3. Remove the five stator support-to-pump body attaching bolts, and lift the stator support out of the pump body.



D3604-B

5. If necessary, remove the converter hub seal from the pump body using a hammer and punch.

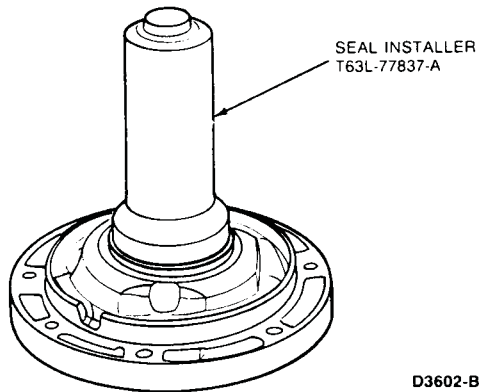


D3524-B

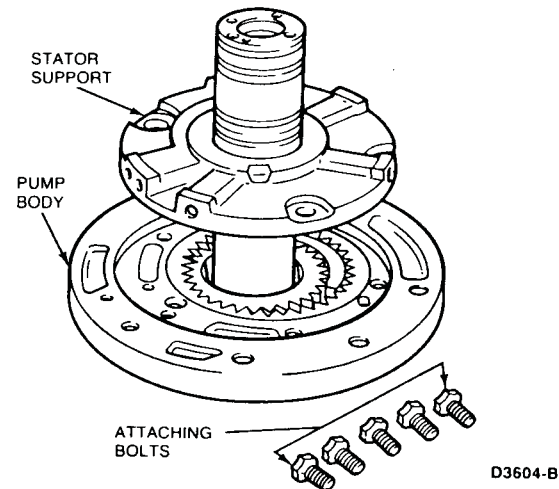
DISASSEMBLY AND ASSEMBLY (Continued)

Assembly

1. If removed, install a new converter hub seal using Front Seal Replacer T63L-77837-A or equivalent.

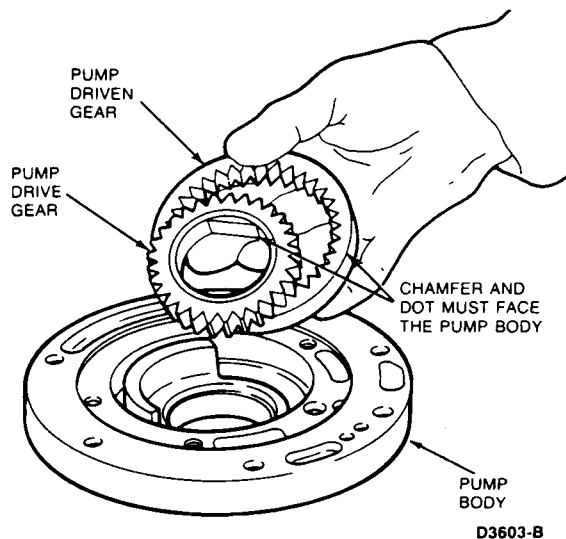


3. Position the stator support in the pump body and install the five attaching bolts.

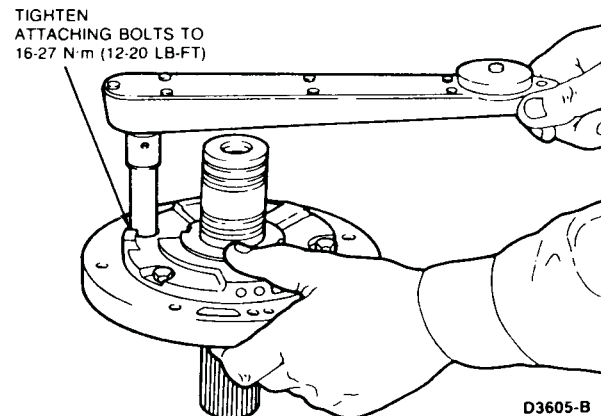


2. Lubricate the pump gears with petroleum jelly and install in the pump body.

NOTE: When properly installed, the chamfer on the inside diameter of the drive gear and the dot on the driven gear will face the inside of the pump body.



4. Tighten the stator support-to-pump body attaching bolts to 16-27 N·m (12-20 lb-ft).

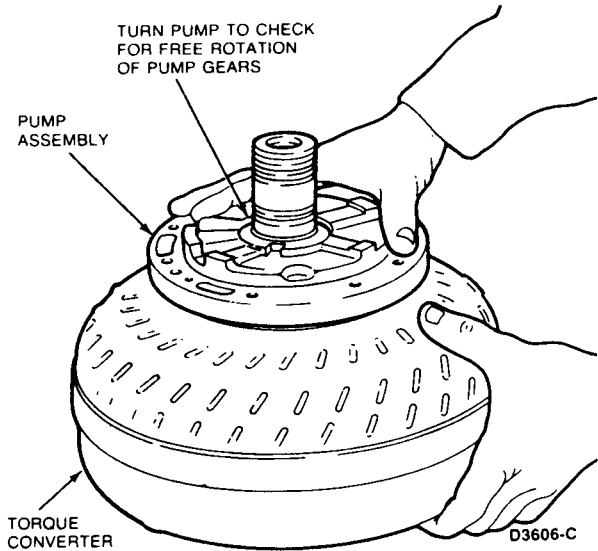




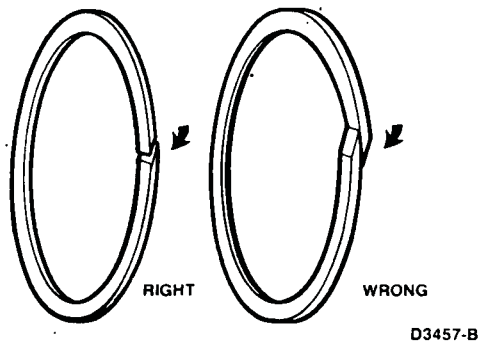
Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

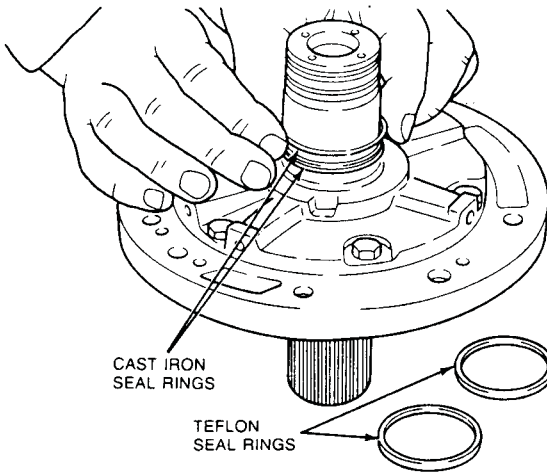
5. Position the assembled pump on the torque converter making sure the converter hub engages the pump drive gear. To check for free rotation of the pump gears, hold the converter and turn the pump. If the pump does not turn freely, it must be disassembled and the cause for the binding condition must be determined.



6. Install the seal rings on the stator. Make sure the plastic seal rings are installed in the upper grooves and that the scarf ends overlap properly.



When the cast iron rings are installed in the lower grooves, make sure the ends are securely interlocked.



D3521-B

NOTE: The No. 1 and No. 2 thrust washers are selective thicknesses and are used to limit transmission end play to a specified tolerance. These thrust washers should be replaced in pairs to obtain the desired end play of 0.020-1.07mm (0.008-0.042 inch).

- If the end play is known, select the proper washers from the charts.
- If the end play is not known, install the original thrust washers. Check End Play as outlined under Transmission Assembly.

The selective washers must be installed in pairs. Use the following chart to determine the correct washer thicknesses and washer pairs.

Thrust Washer No. 1		Thrust Washer No. 2
Color	Thickness	Washer Number
Red	0.053-0.0575	2
Green	0.070-0.0745	3
Neutral	0.087-0.0915	2 or 3 plus spacer ①

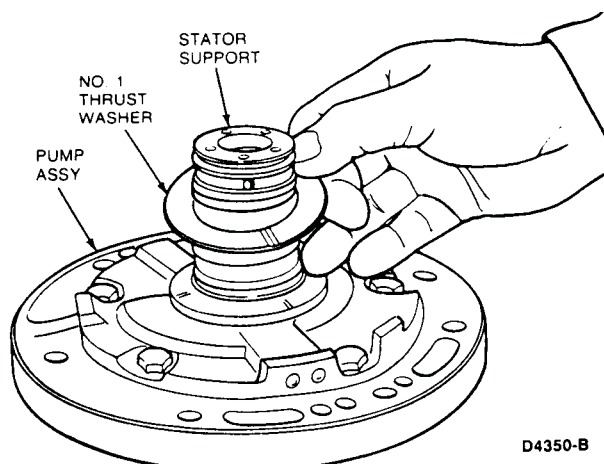
① This is a selective spacer used with washer 2 or 3. When used, install next to stator support. CD3477-B



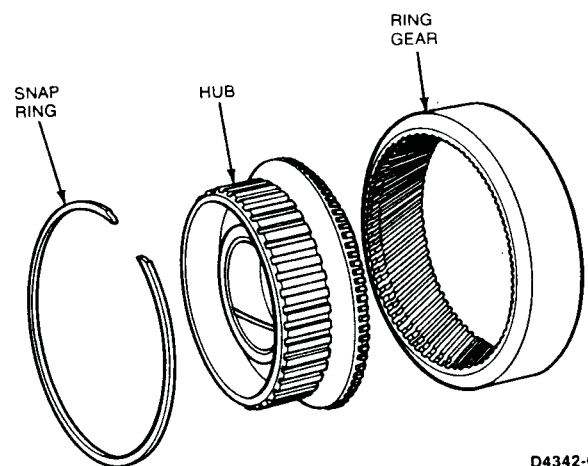
Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

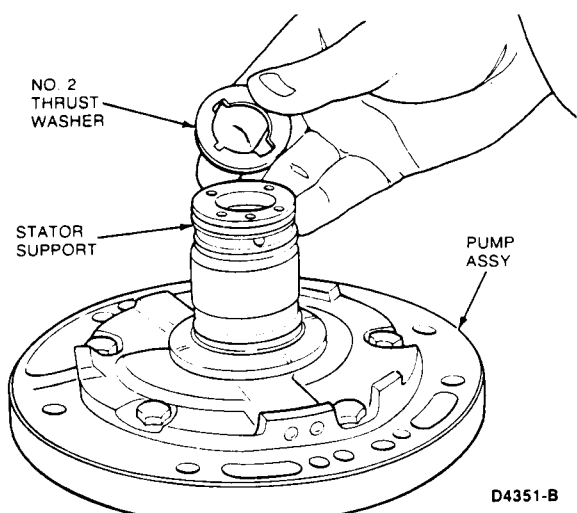
7. Lubricate the No. 1 thrust washer with petroleum jelly and install on the stator support.



Forward Clutch Hub and Ring Gear

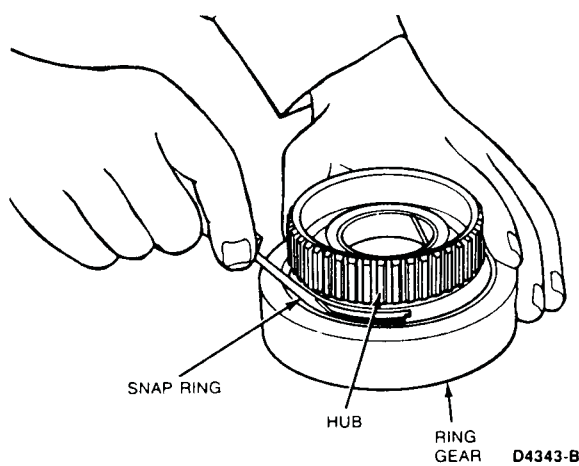


8. Lubricate the No. 2 thrust washer with petroleum jelly and install on the stator support.



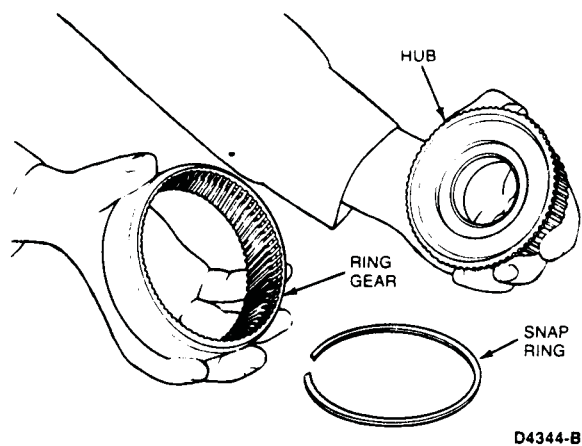
Disassembly and Assembly

1. Remove the snap ring retaining the hub to the ring gear.



DISASSEMBLY AND ASSEMBLY (Continued)

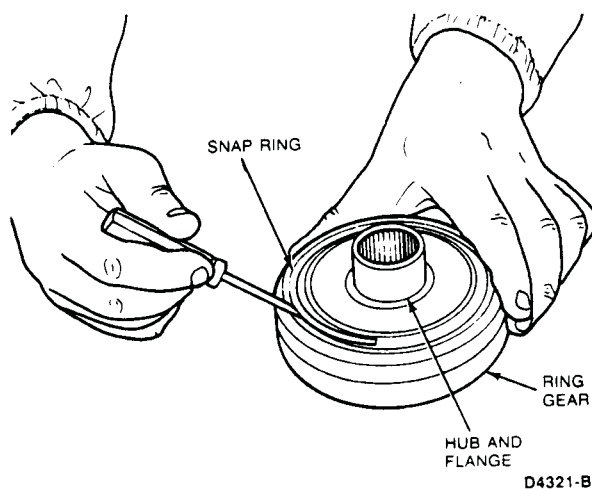
2. Separate the hub from the ring gear.



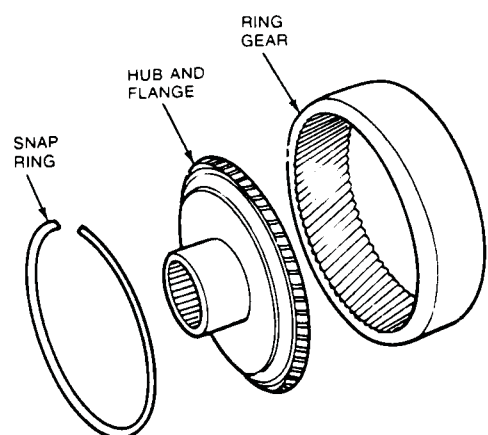
3. To assemble the ring gear and hub, reverse Steps 1 and 2.

Disassembly and Assembly

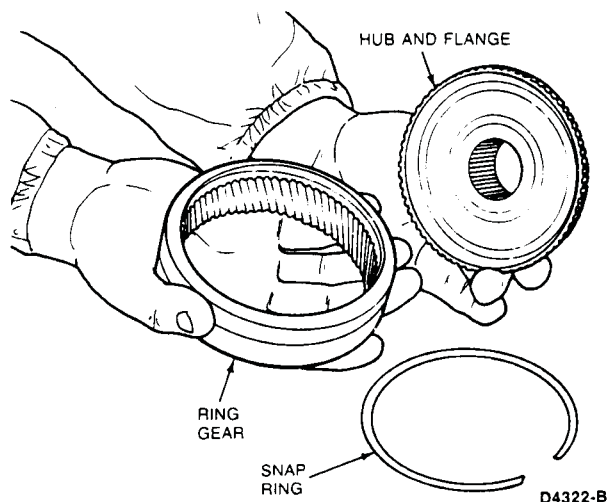
1. Remove the snap ring retaining the hub and flange to the ring gear.



Reverse Clutch Hub and Ring Gear



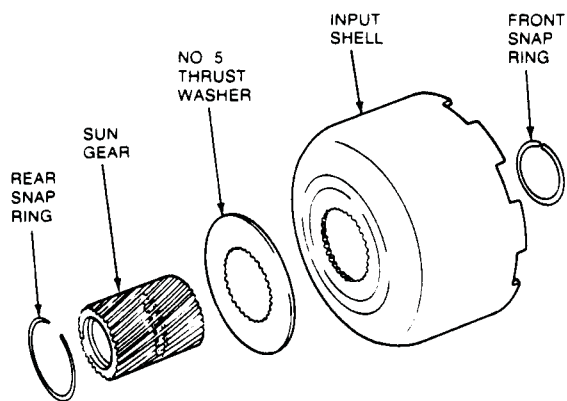
2. Separate the hub and flange from the ring gear.



3. To assemble the ring gear and hub, reverse Steps 1 and 2.

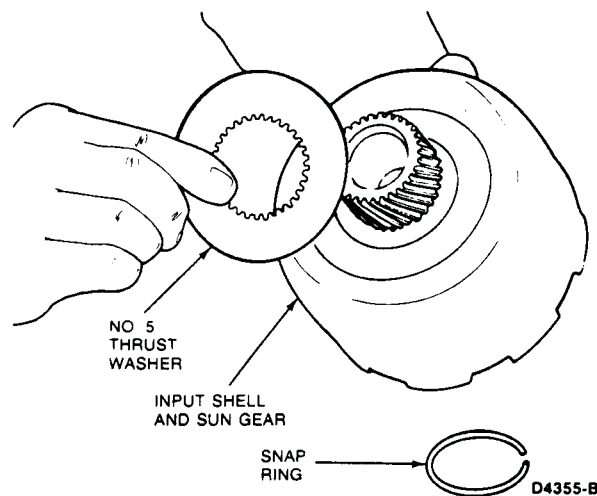
DISASSEMBLY AND ASSEMBLY (Continued)

Input Shell and Sun Gear



D4316-B

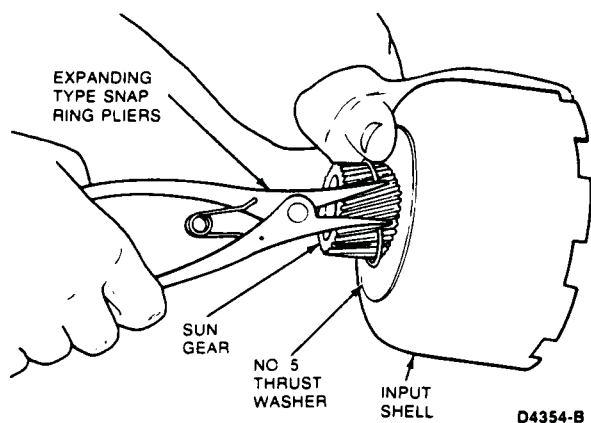
2. Remove the No. 5 thrust washer from the input shell.



D4355-B

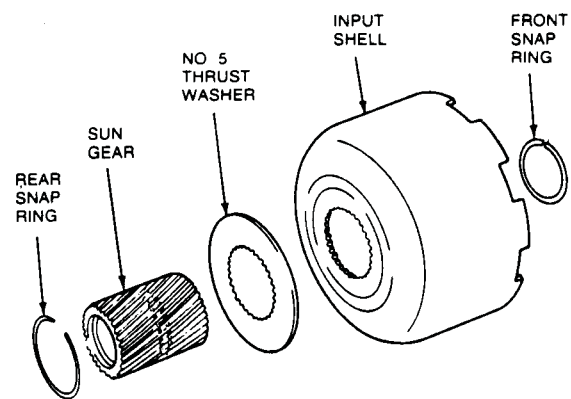
Disassembly and Assembly

1. Using external snap ring pliers, remove the rear snap ring from the sun gear.



D4354-B

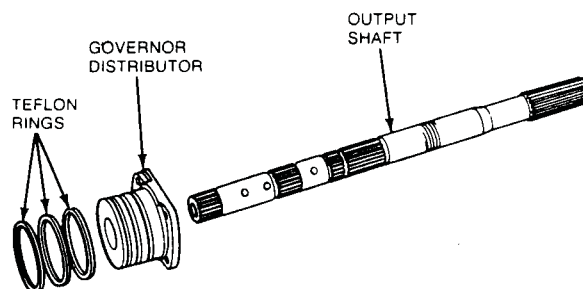
3. Remove the sun gear from the input shell.
4. If necessary, remove the front snap ring from the sun gear using external snap ring pliers.



D4316-B

5. To assemble the input shell and sun gear, reverse Steps 1 through 4.

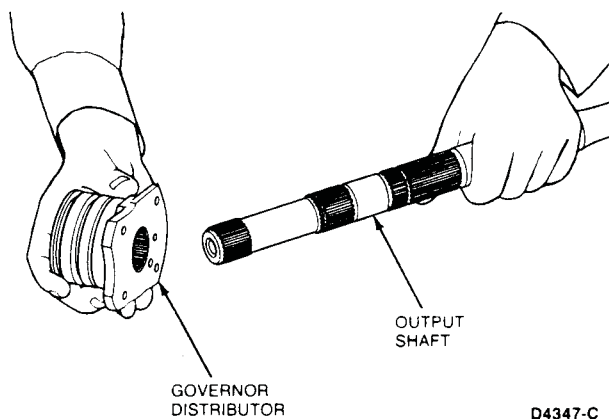
Output Shaft and Governor Distributor



D4345-C

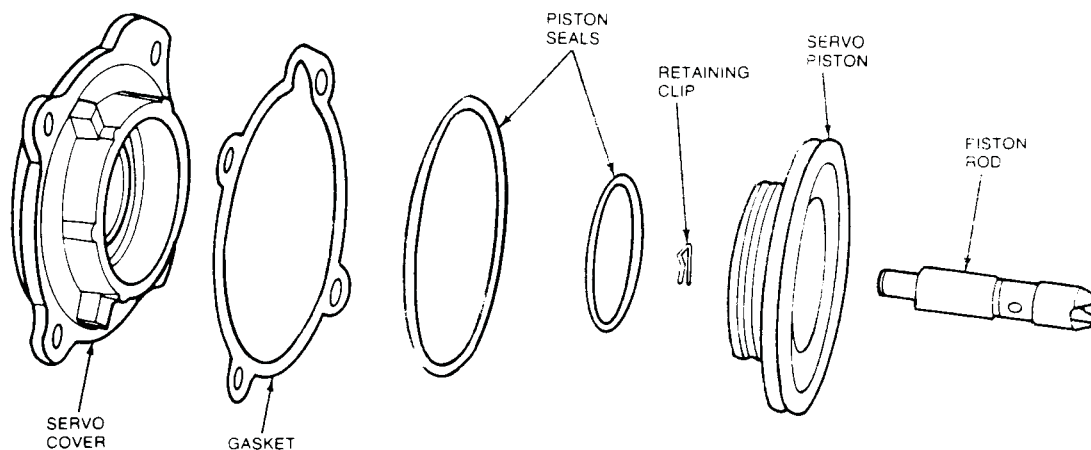
Disassembly and Assembly

1. Lift the governor distributor from the case.
2. The governor seal rings are made of Teflon® and therefore can be removed by hand.
3. To assemble reverse Steps 1 and 2.



D4347-C

Intermediate Servo

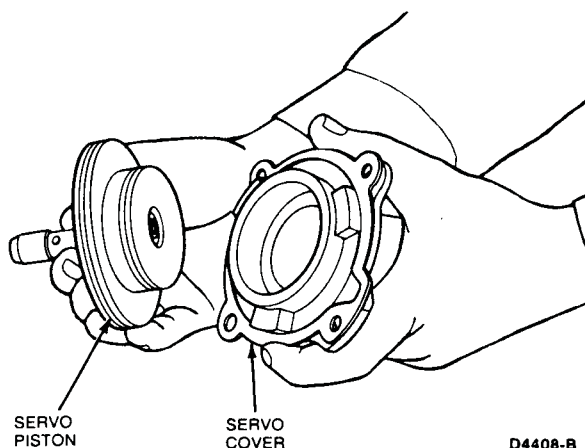


D4411-B

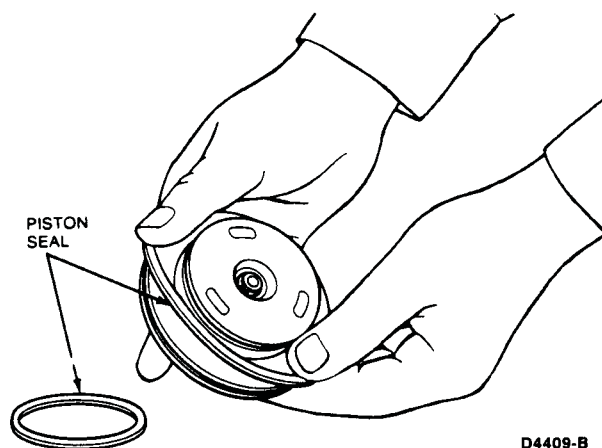
DISASSEMBLY AND ASSEMBLY (Continued)

Disassembly and Assembly

1. Remove the servo piston from the servo cover.

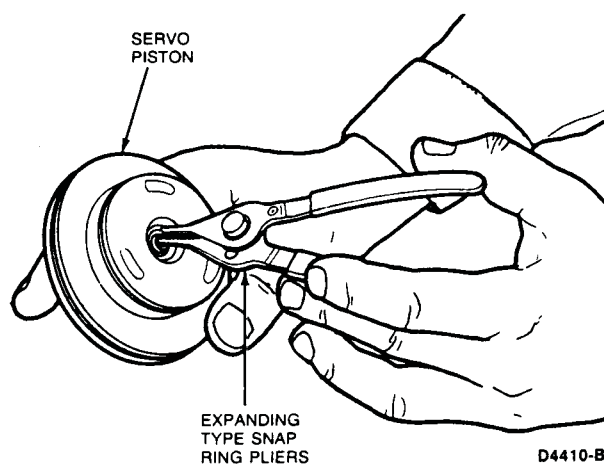


2. Remove the seals from the piston.



3. If necessary, the piston rod can be removed from the piston.

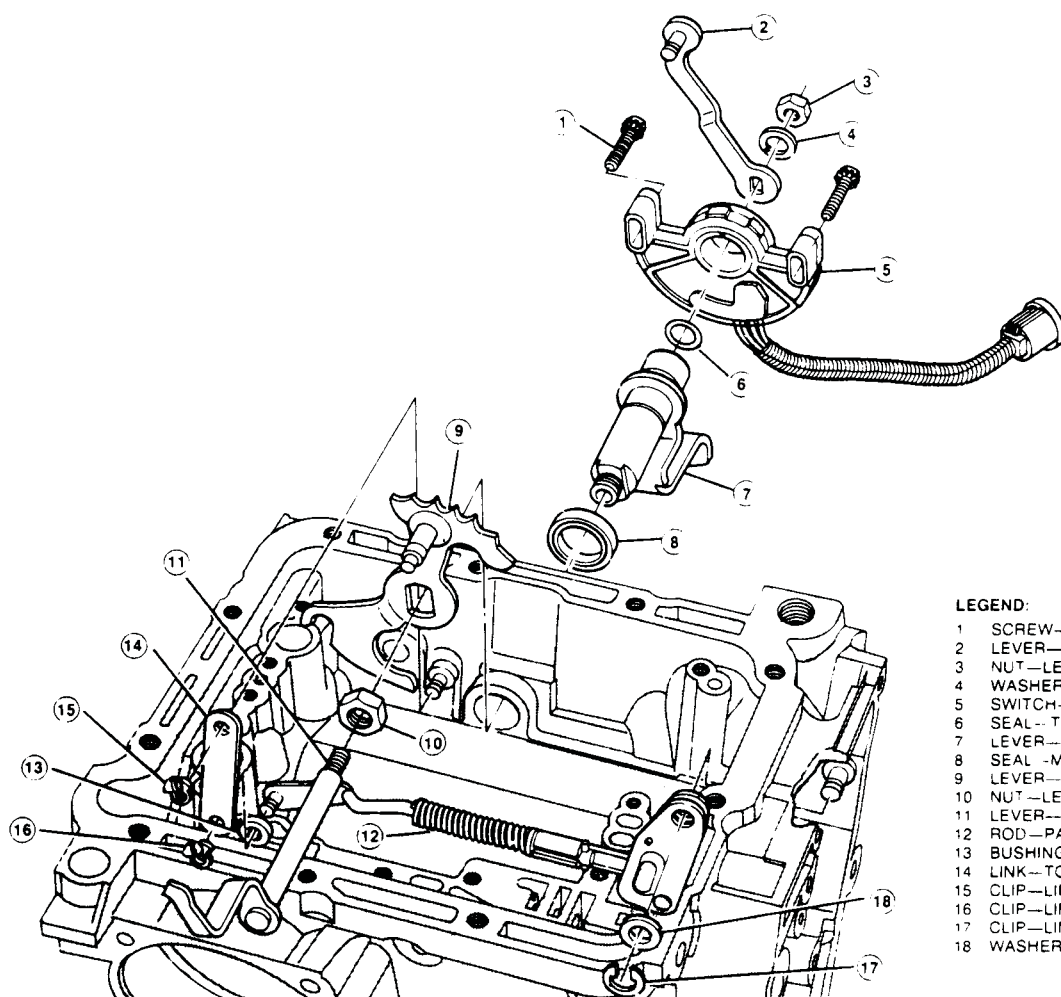
Remove the piston-to-rod retaining ring using expanding type snap ring pliers.



4. To assemble the intermediate servo, reverse Steps 1, 2 and 3.

DISASSEMBLY AND ASSEMBLY (Continued)

Manual and Throttle Linkage



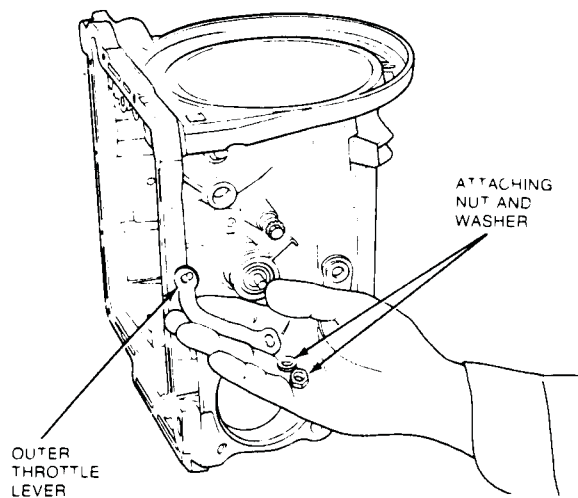
LEGEND:

- 1 SCREW—SWITCH ATTACHING
- 2 LEVER—OUTER THROTTLE
- 3 NUT—LEVER ATTACHING
- 4 WASHER—LEVER ATTACHING
- 5 SWITCH—NEUTRAL START
- 6 SEAL—THROTTLE LEVER SHAFT
- 7 LEVER—OUTER MANUAL
- 8 SEAL—MANUAL LEVER SHAFT
- 9 LEVER—INNER MANUAL
- 10 NUT—LEVER ATTACHING
- 11 LEVER—INNER THROTTLE
- 12 ROD—PARK PAWL TOGGLE
- 13 BUSHING—TOGGLE ROD PIN
- 14 LINK—TOGGLE ROD PIVOT
- 15 CLIP—LINK RETAINING
- 16 CLIP—LINK RETAINING
- 17 CLIP—LINK RETAINING
- 18 WASHER—LINK RETAINING

D4415-B

Disassembly

1. Remove the outer throttle lever attaching nut and lock washer. Remove the lever from the throttle lever shaft.

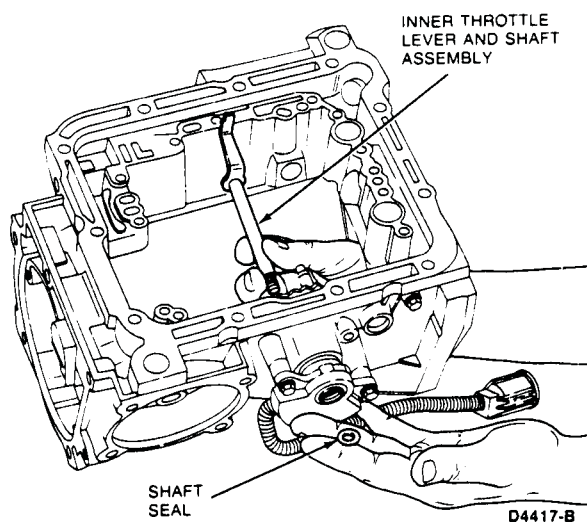


D4416-B

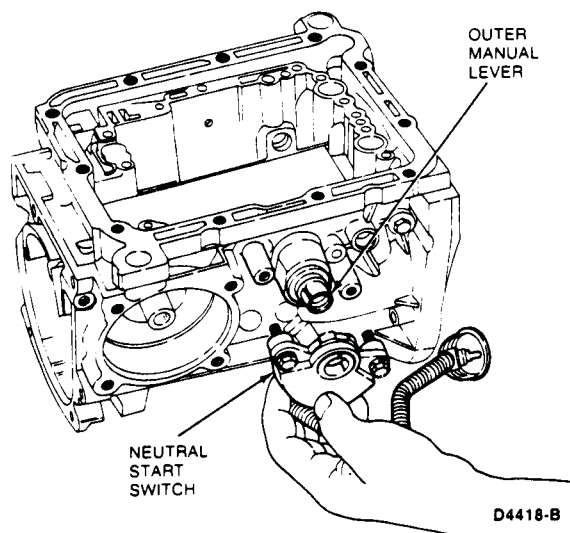
DISASSEMBLY AND ASSEMBLY (Continued)

2. Remove the inner lever and shaft assembly.

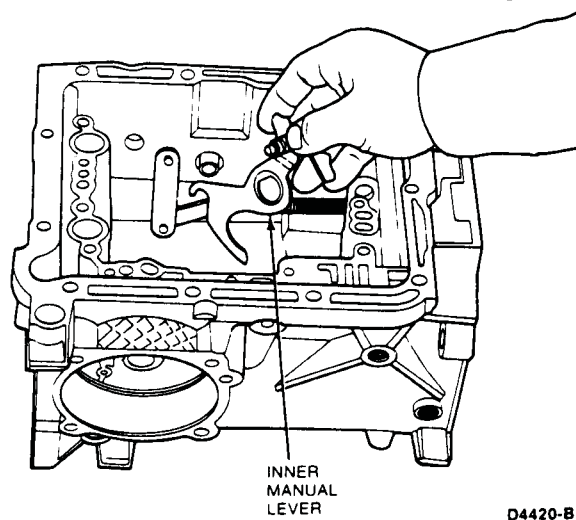
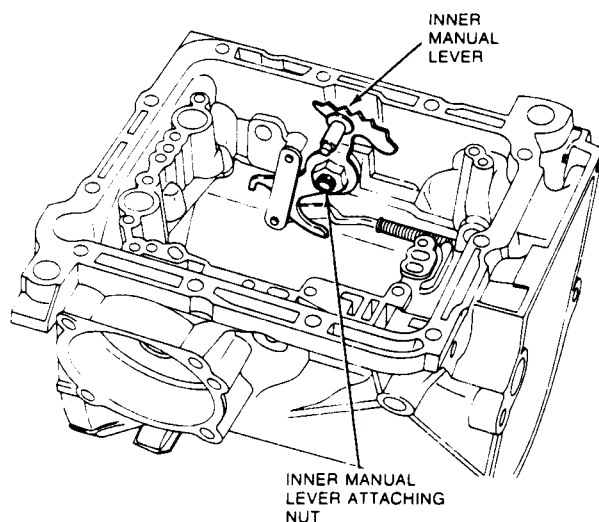
NOTE: The shaft seal, located in the neutral start switch, will be removed when the shaft is pulled out of the case.



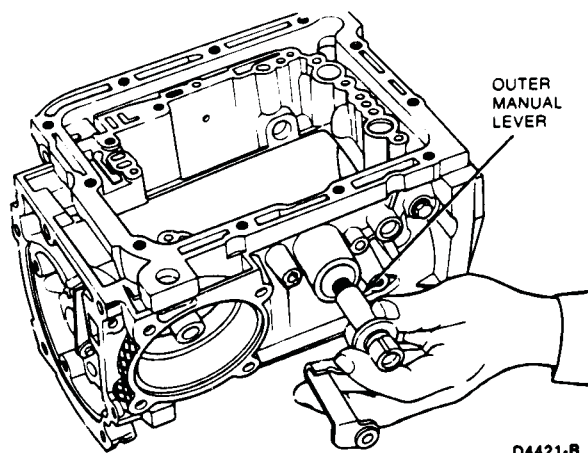
3. Remove the neutral start/back-up lamp switch attaching screws and slide the switch off the outer manual lever.



4. Remove the inner manual lever attaching nut and the lever.

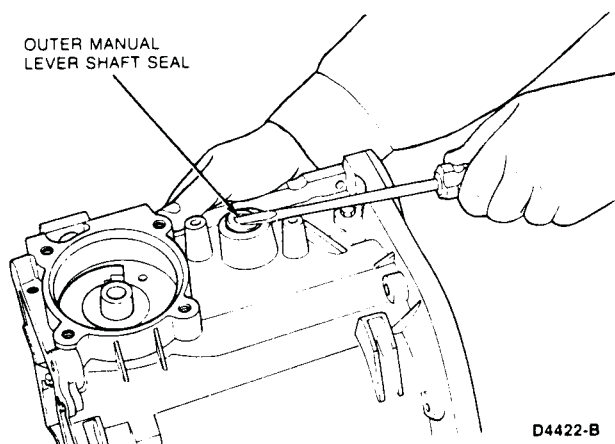


5. Remove the outer manual lever and shaft assembly.

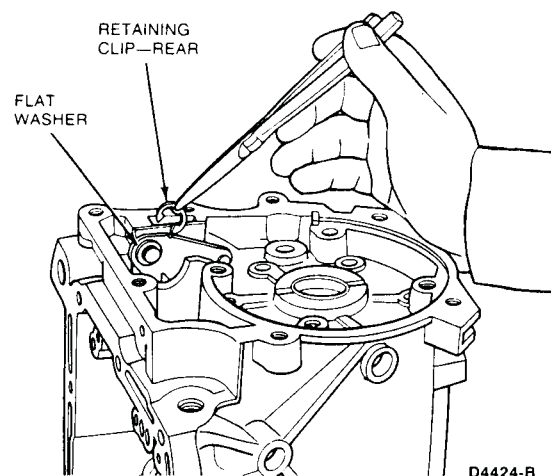


DISASSEMBLY AND ASSEMBLY (Continued)

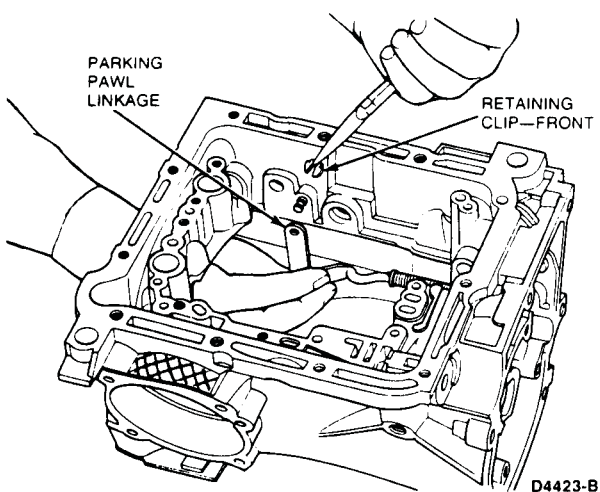
6. Remove the outer manual lever shaft seal using a large screwdriver.



8. Remove the rear parking pawl linkage retaining clip and flat washer.

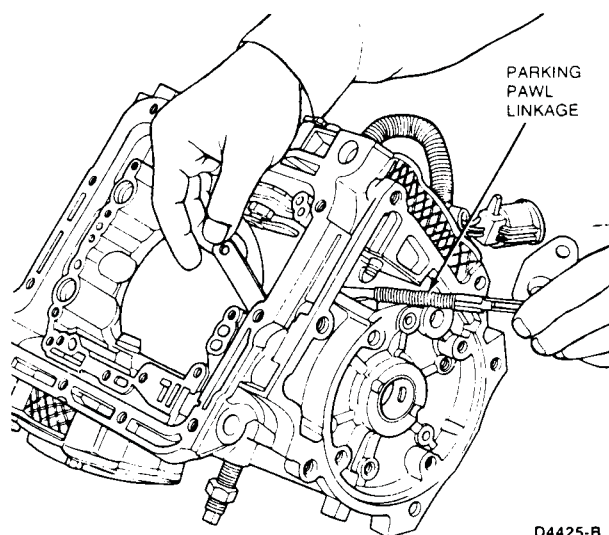


7. Remove the front parking pawl linkage retaining clip.



9. Remove the parking pawl linkage through the back of the transmission.

NOTE: Further disassembly of the linkage is unnecessary unless inspection determines a part to be unserviceable.

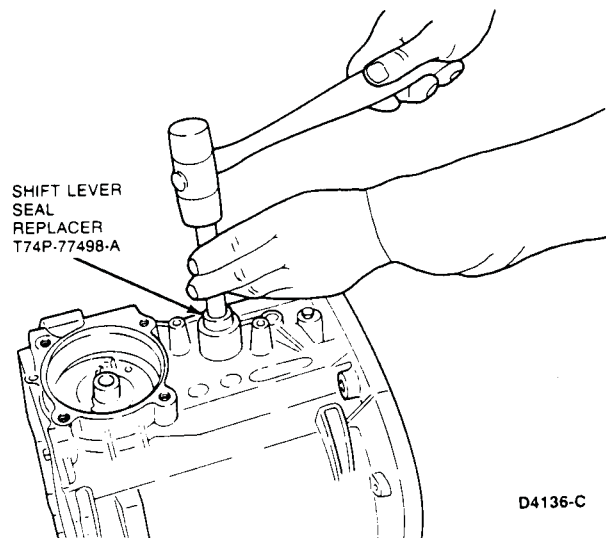


DISASSEMBLY AND ASSEMBLY (Continued)

Assembly

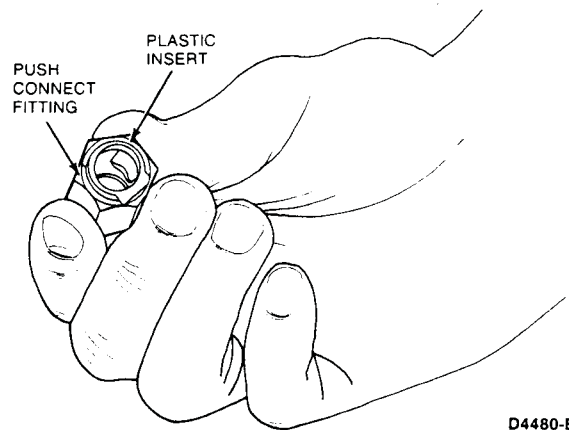
To assemble the linkage, reverse the disassembly procedure except for the following:

Install the manual lever shaft seal using Shift Lever Seal Replacer T74P-77498-A or equivalent. If the tool is not available, a socket wrench can also be used.



Assembly

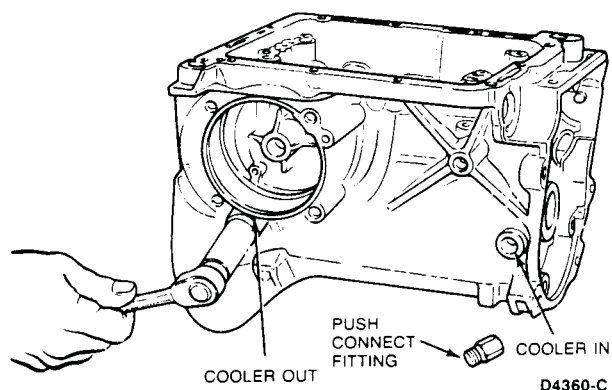
1. Inspect the plastic insert in the push connect fitting for cracks or breakage.



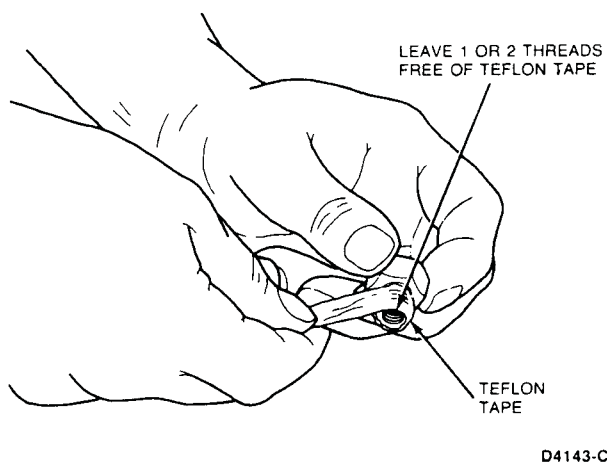
Cooler Line Fittings

Disassembly

Remove the cooler line fittings from the case.



2. If the fitting is OK, wrap the threads with Pipe Sealant With Teflon® D8AZ-19554-A or equivalent. NOTE: Leave 1 or 2 threads free of Teflon® tape.
3. Install the fittings and tighten to 24-31 N·m (18-23 lb-ft).



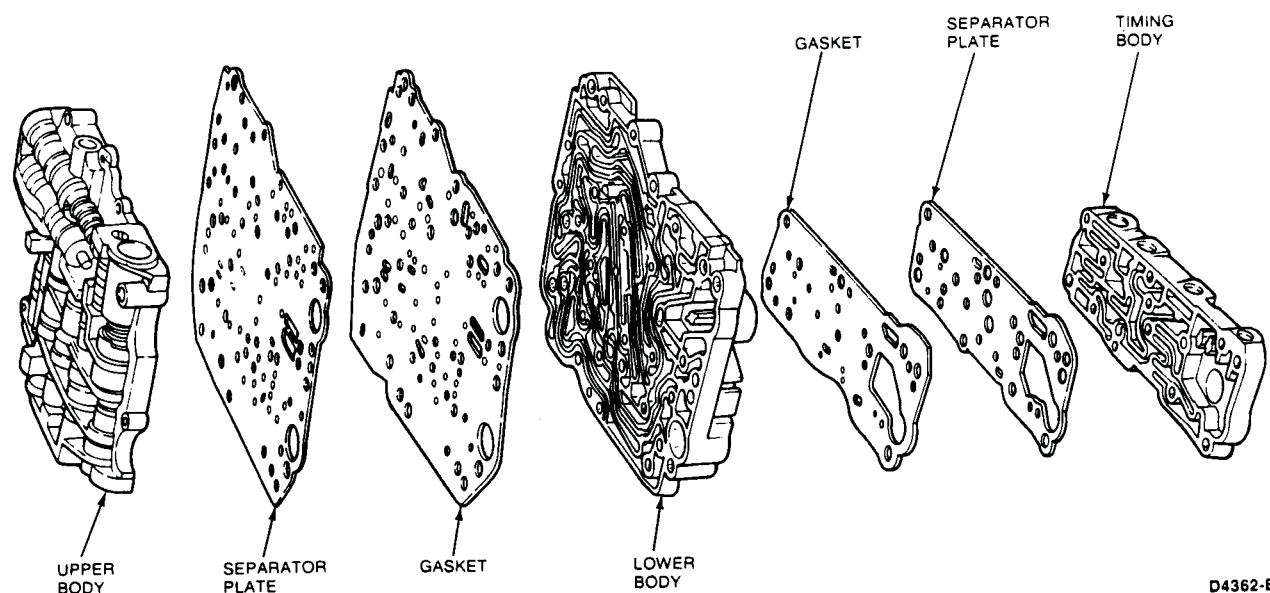


Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

Valve Body

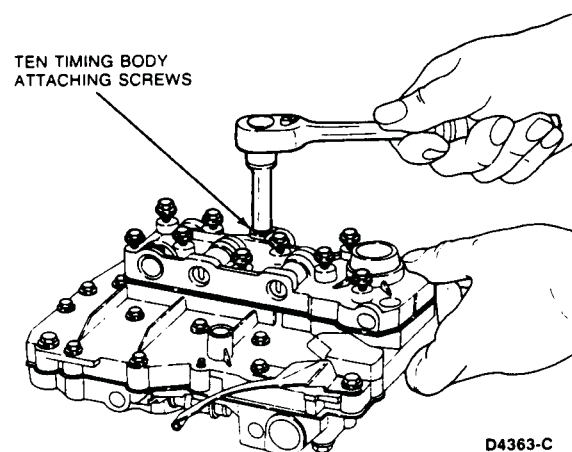
NOTE: For proper cleaning and inspection of individual valve body components and valve body, refer to Section 17-01.



D4362-B

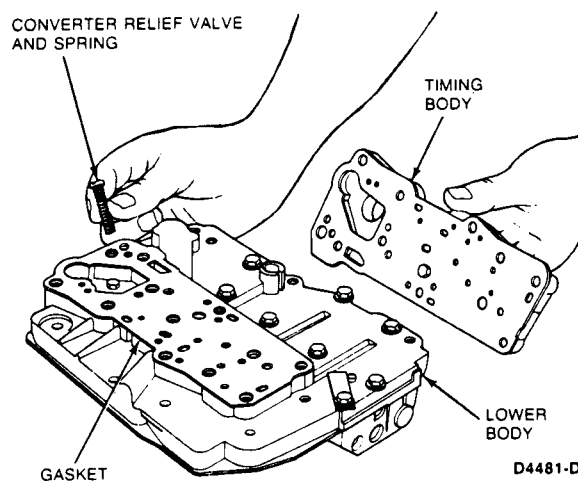
Disassembly

1. Remove the 10 timing body-to-lower body attaching screws.



D4363-C

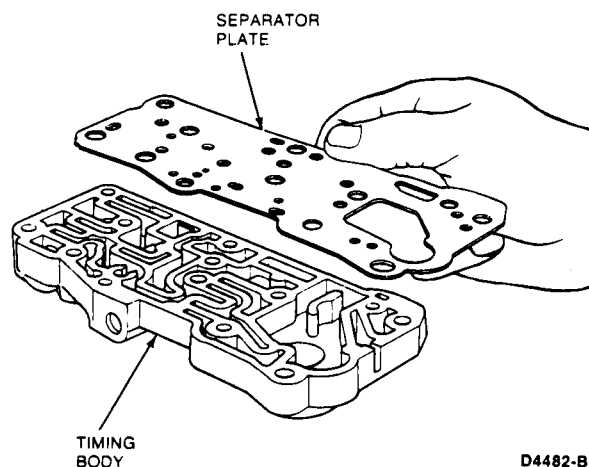
2. Remove the timing body and converter relief valve from the lower body. Remove and discard gasket.



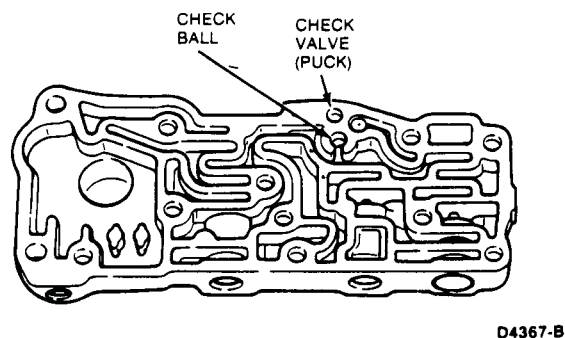
D4481-D

DISASSEMBLY AND ASSEMBLY (Continued)

3. Remove the timing body separator plate attaching screw and remove the separator plate.

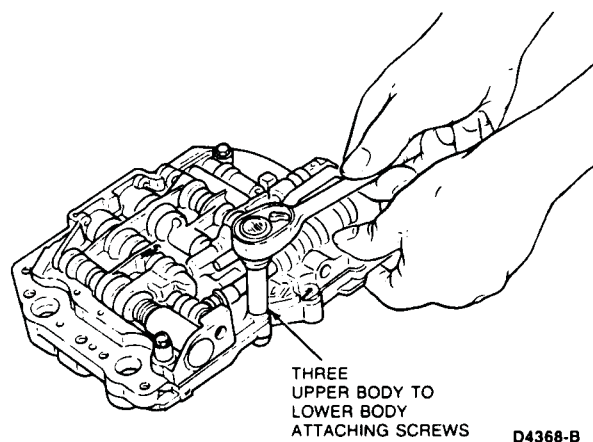


4. Remove the check valve and check ball from the timing body.



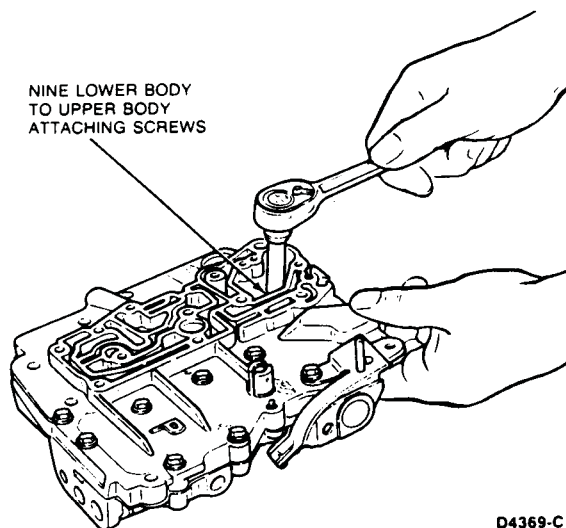
NOTE: In this Step, the upper and lower body attaching screws will be removed. After removal of the screws, do not lift the lower body away from the upper body. The lower body contains check balls which have to be held in position when the bodies are separated. The proper separation technique is provided in Step 6.

5. Remove the three upper body-to-lower body attaching screws.



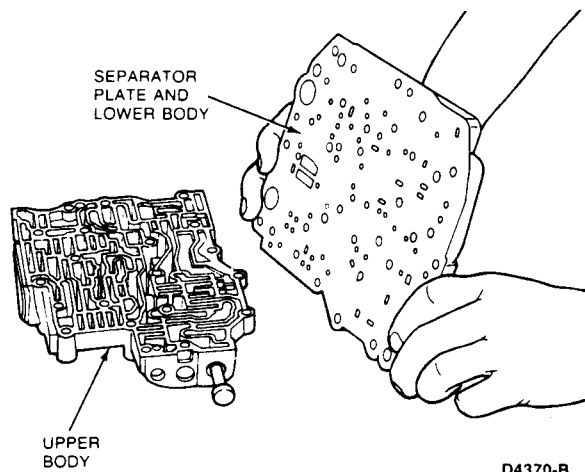
Turn the valve body over and remove the nine lower body-to-upper body attaching screws.

Remove detent spring.

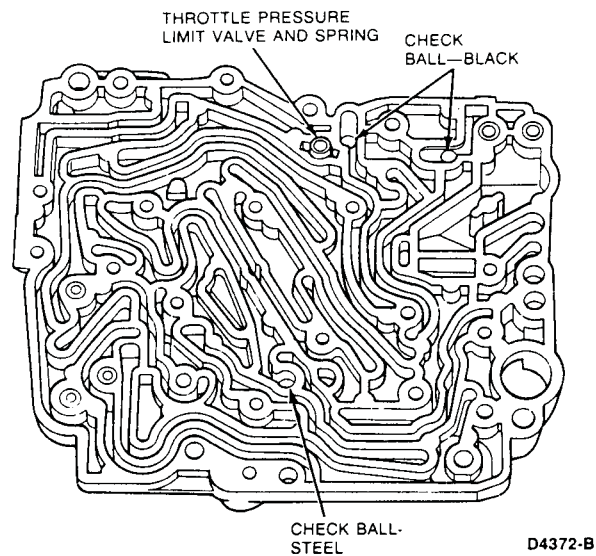


DISASSEMBLY AND ASSEMBLY (Continued)

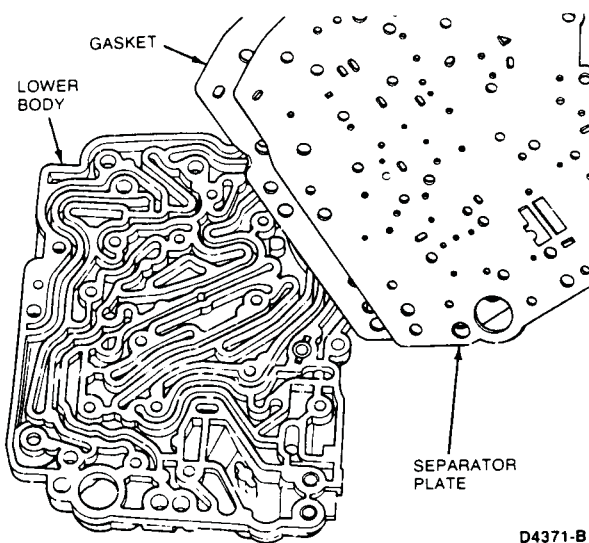
6. Grip the separator plate and the lower body. While holding the separator plate against the lower body, lift the body and plate away from the upper body. Turn the lower body over and place it on the bench with the separator plate facing up.



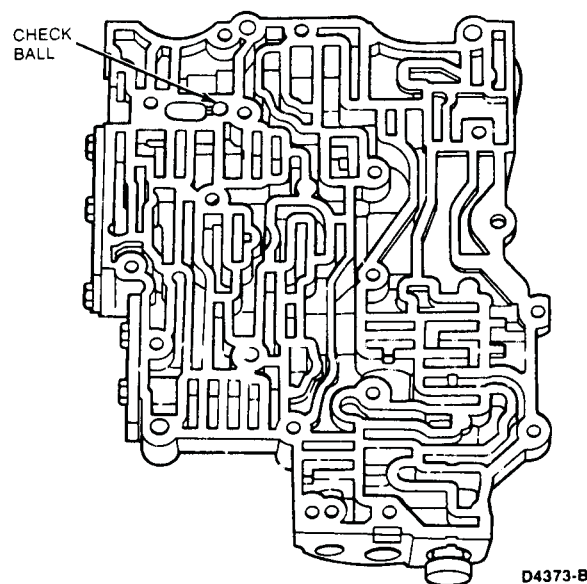
8. Remove the check balls and pressure limit valve from the lower body.



7. Remove the separator plate and gasket from the lower body and discard the gasket.



9. Remove the check ball from the upper body.



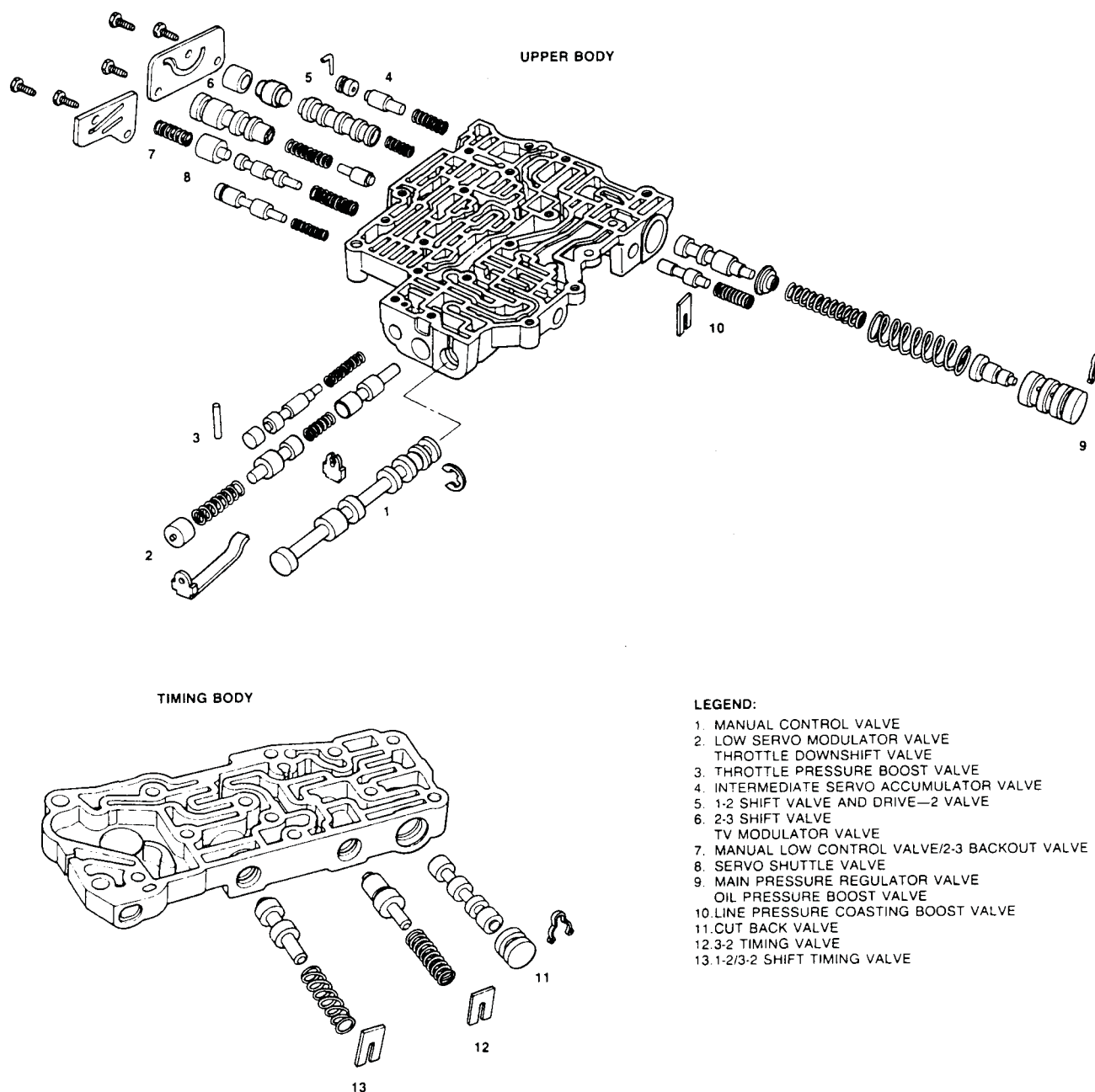
DISASSEMBLY AND ASSEMBLY (Continued)

10. The following illustrations show the individual valves.

Each valve body bore has been assigned a reference number on the disassembled view. The illustrations have been assigned a corresponding reference number.

Each set of illustrations contain the views necessary to remove and install the components contained in a particular valve body bore.

NOTE: Refer to Specifications for the dimensions required to fabricate a valve spring compressor tool. This tool will be very useful when installing those springs retained by a flat plate.



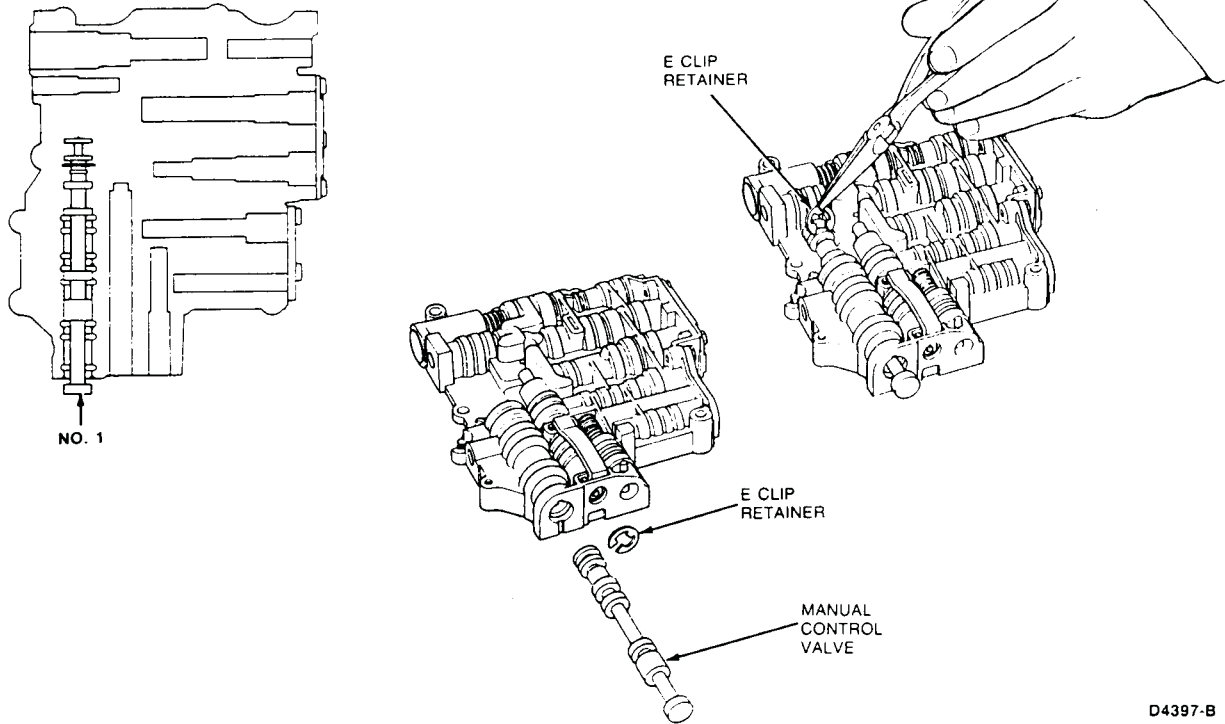
D4374-E



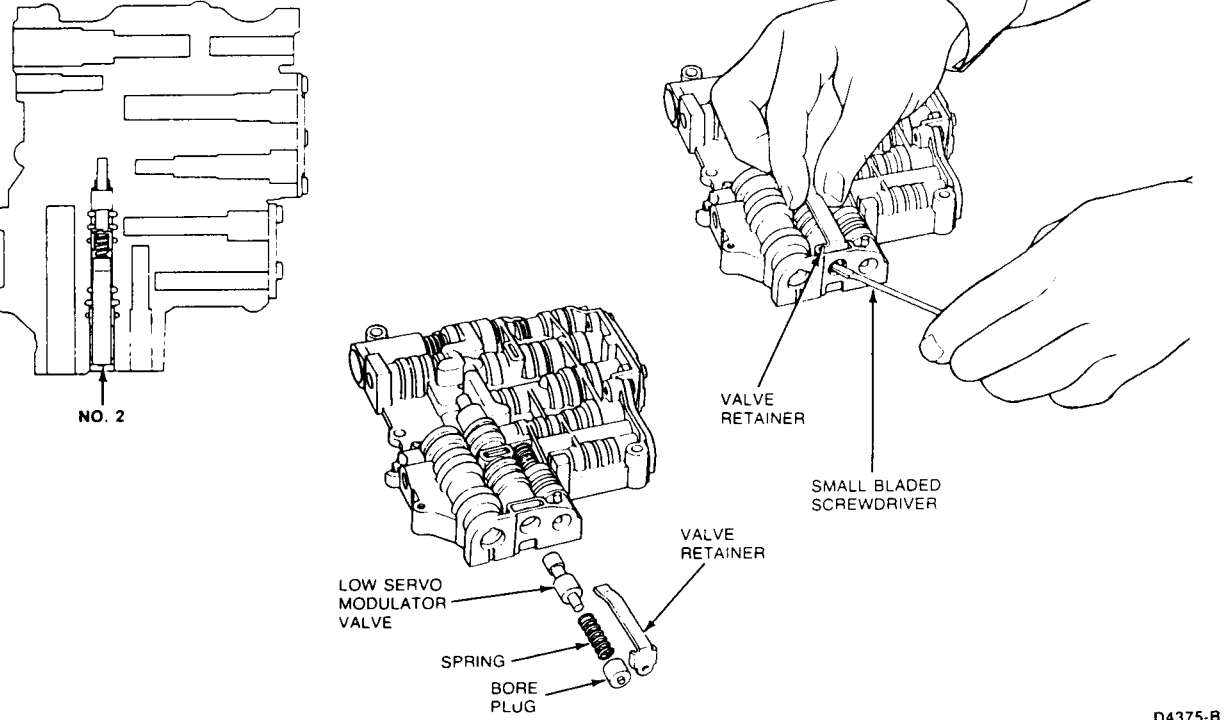
Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

NO. 1 MANUAL CONTROL VALVE



NO. 2 LOW SERVO MODULATOR VALVE THROTTLE DOWNSHIFT VALVE

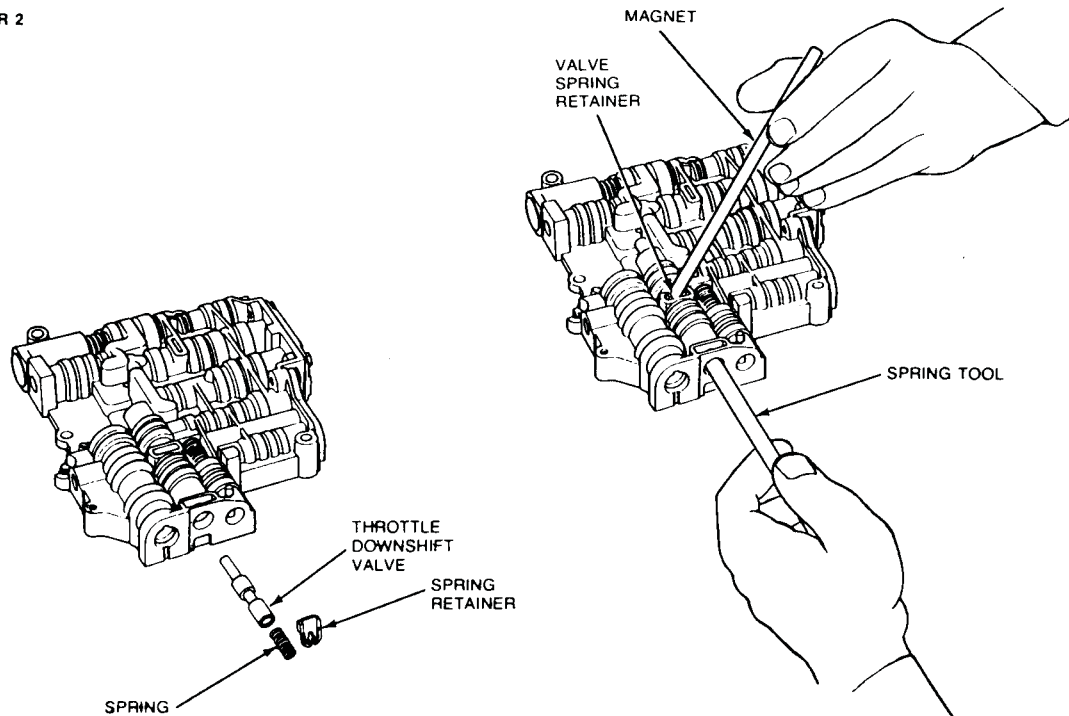




Technical Service Information

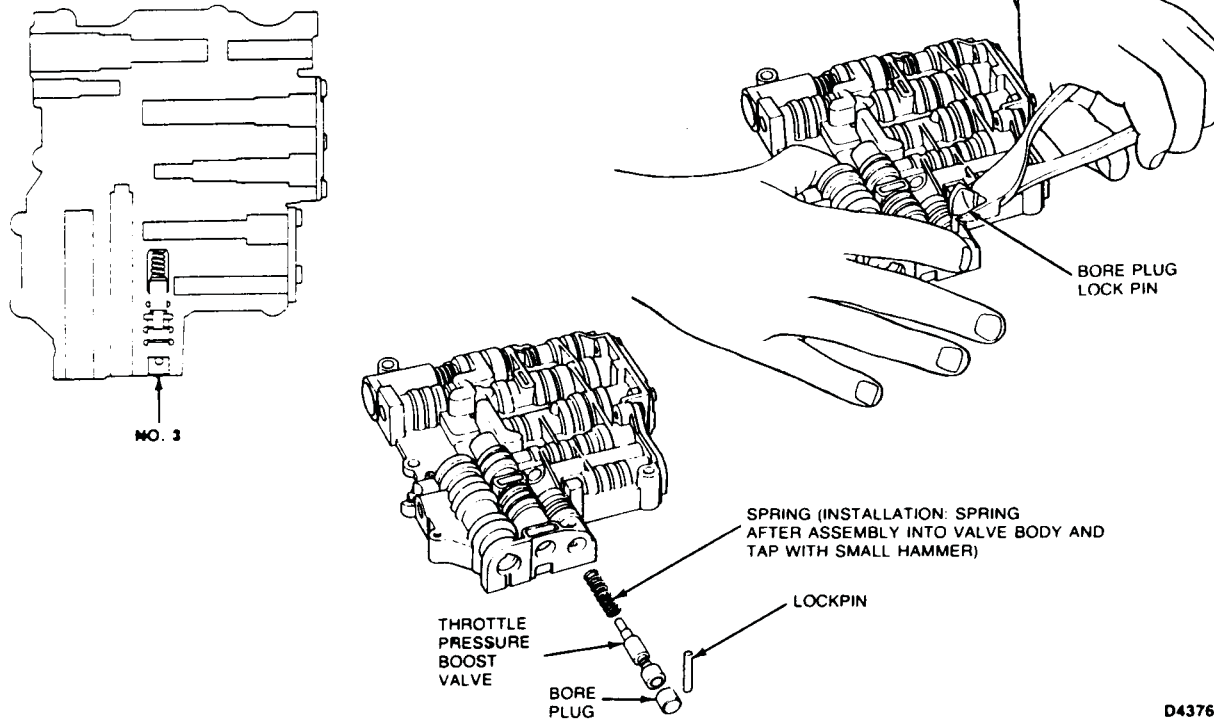
DISASSEMBLY AND ASSEMBLY (Continued)

BORE NUMBER 2



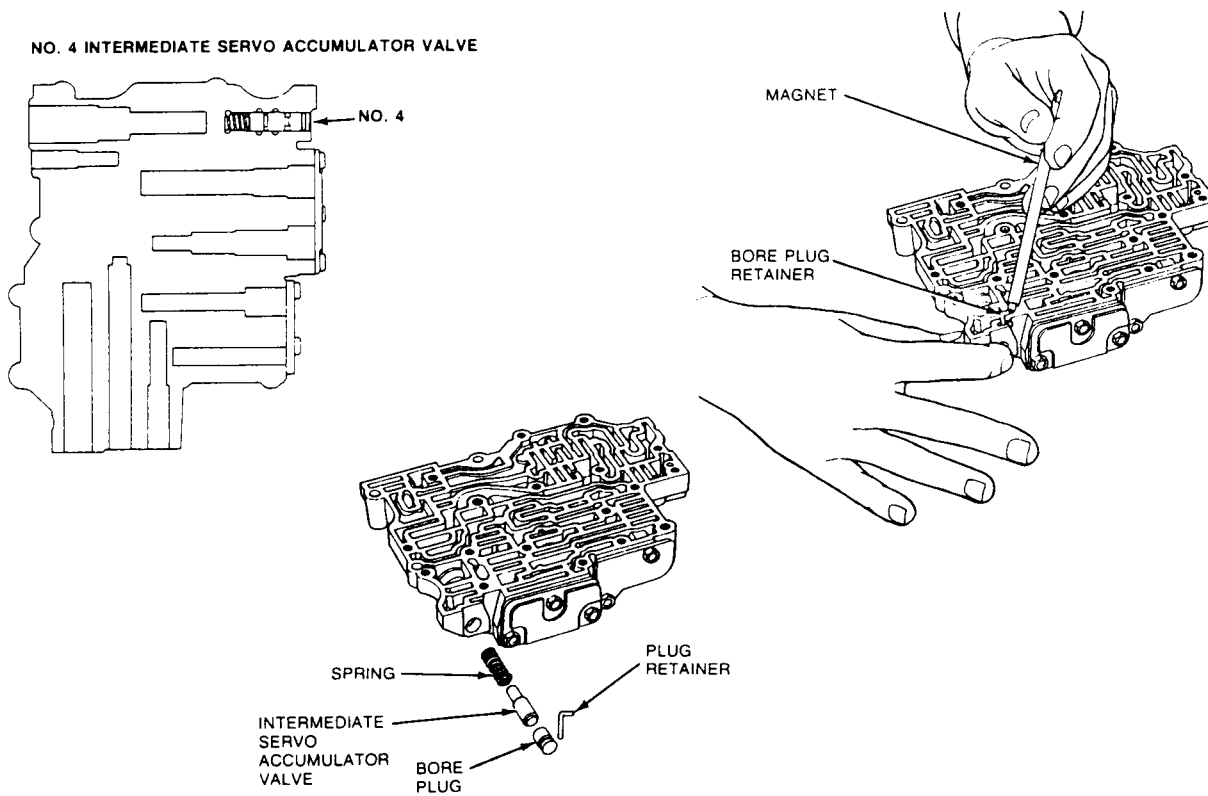
D4385-C

NO. 3 THROTTLE PRESSURE BOOST VALVE



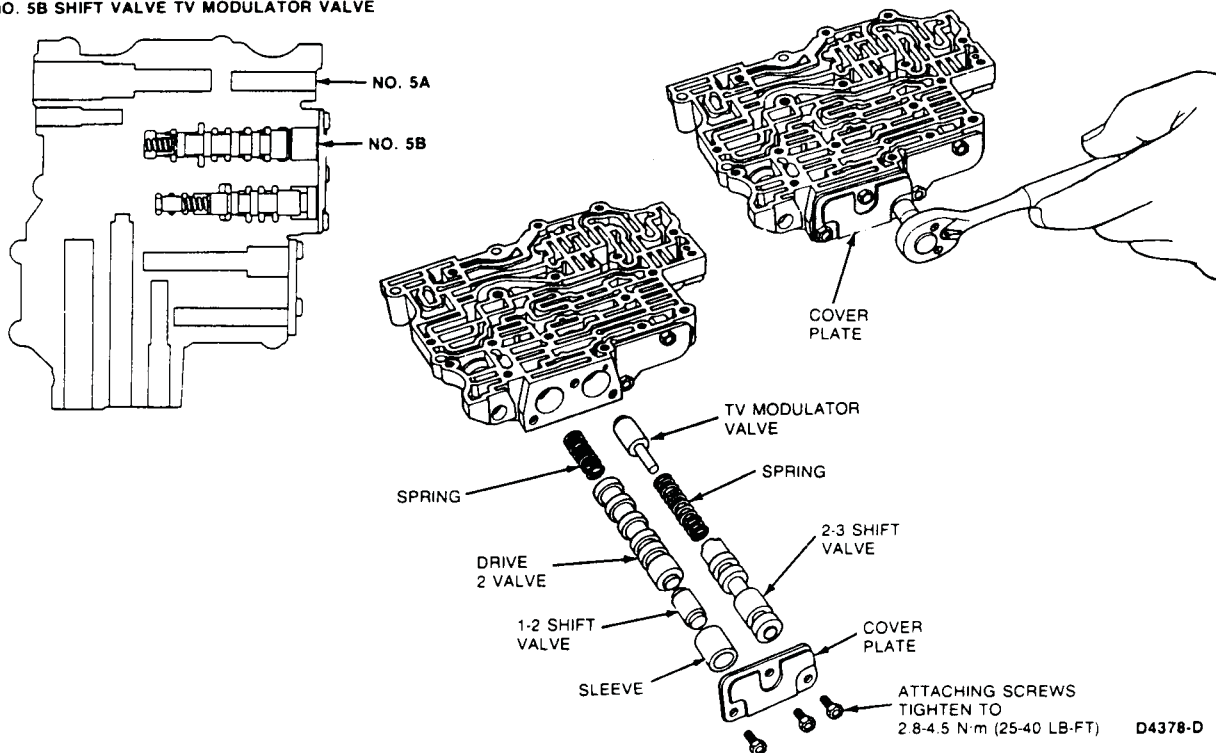
D4376-C

NO. 4 INTERMEDIATE SERVO ACCUMULATOR VALVE



D4377-B

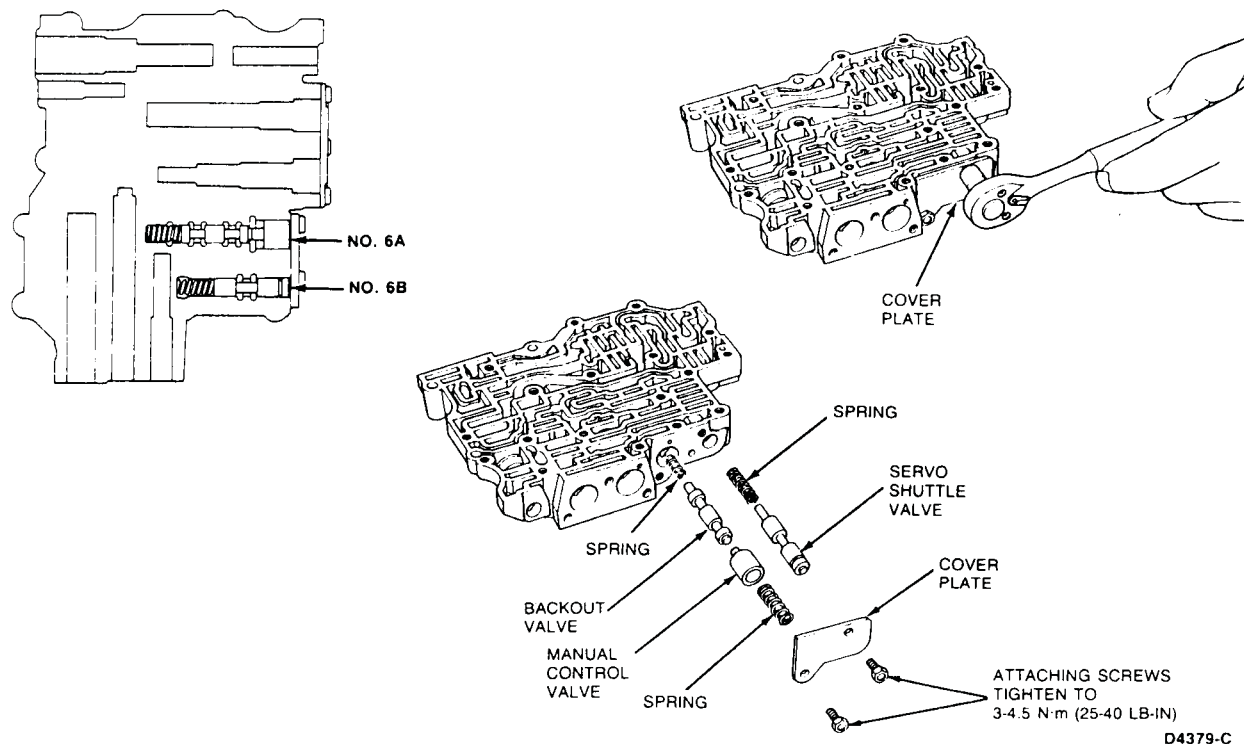
NO. 5A 1-2 SHIFT VALVE AND DRIVE-2 VALVE NO. 5B SHIFT VALVE TV MODULATOR VALVE



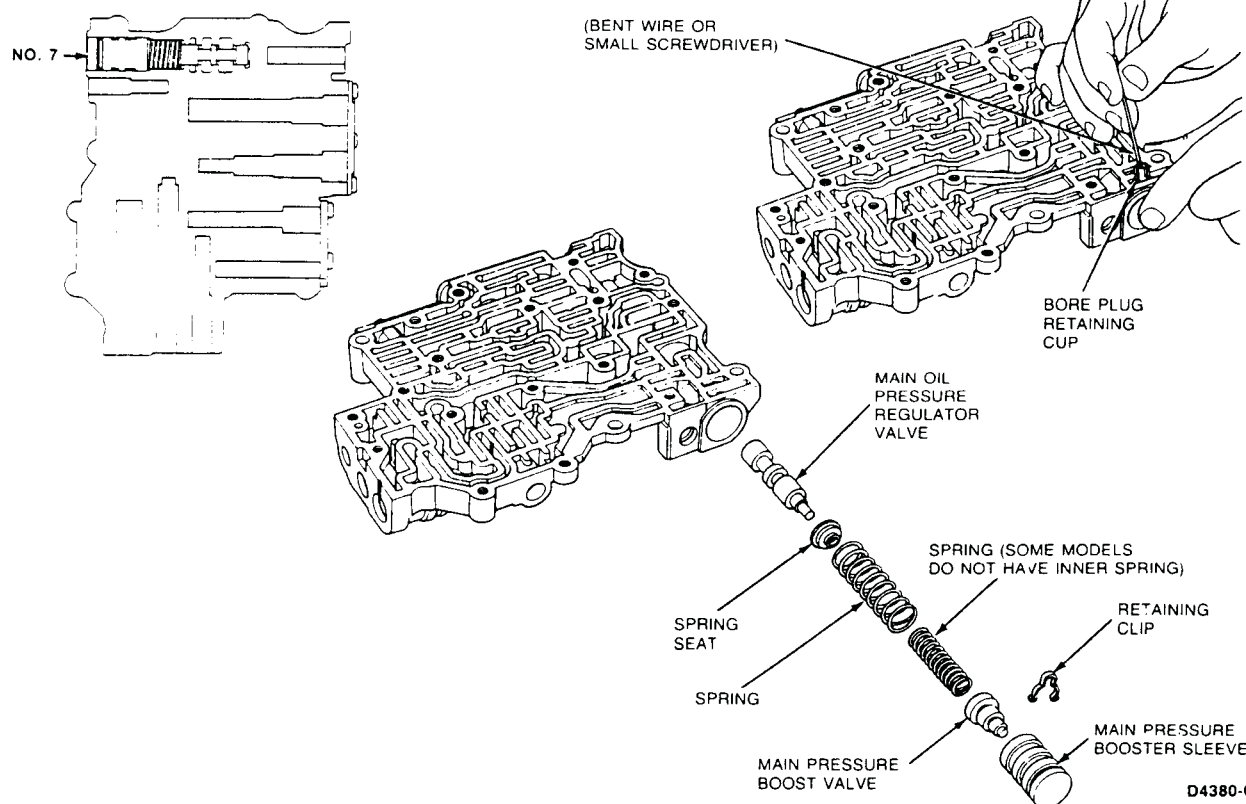
D4378-D

DISASSEMBLY AND ASSEMBLY (Continued)

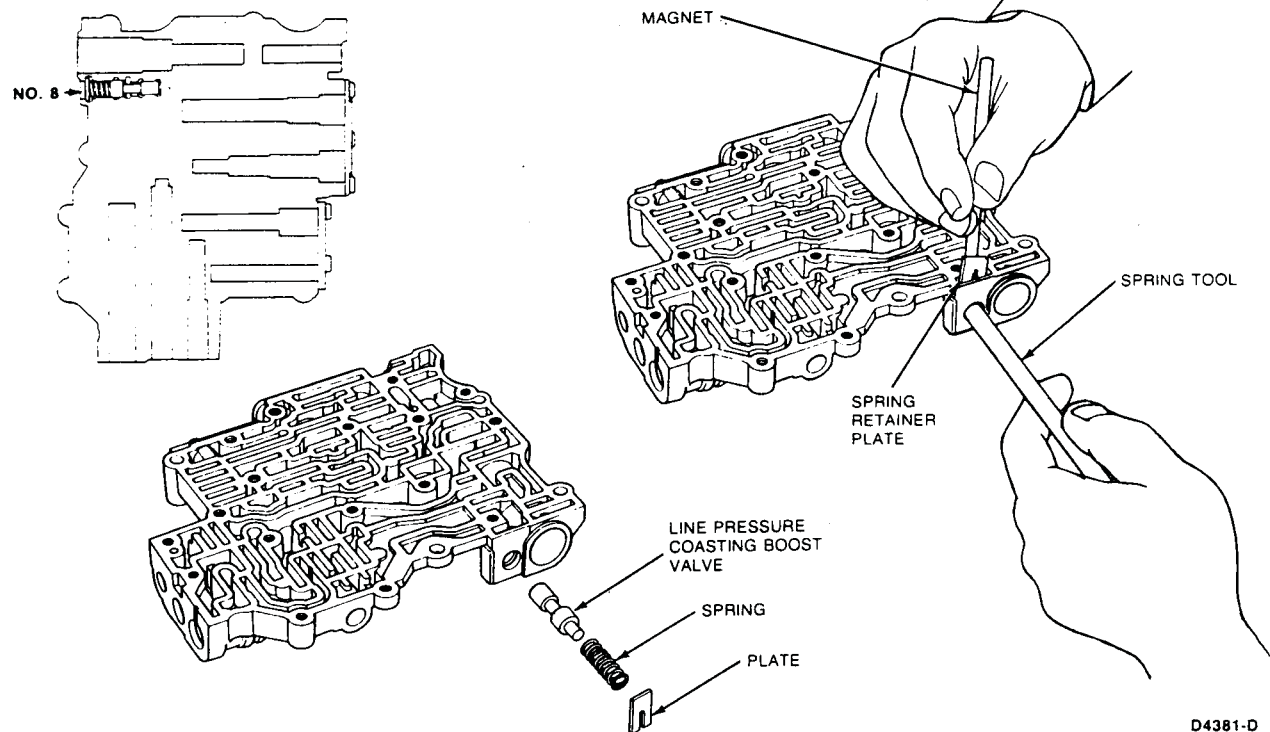
NO. 6A MANUAL LOW CONTROL VALVE/2-3 BACKOUT VALVE
NO. 6B SERVO SHUTTLE VALVE



NO. 7 MAIN PRESSURE BOOST VALVE
OIL PRESSURE REGULATOR VALVE

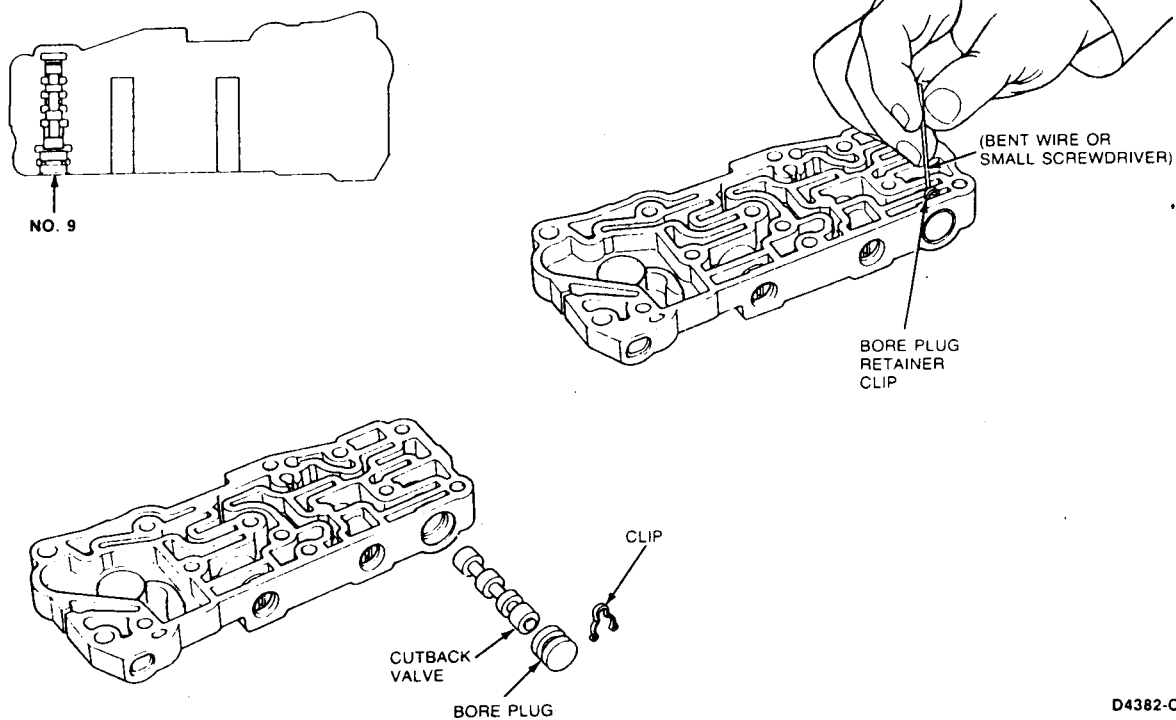


NO. 8 LINE PRESSURE COASTING VALVE



D4381-D

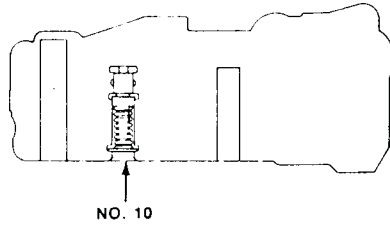
NO. 9 CUT BACK VALVE



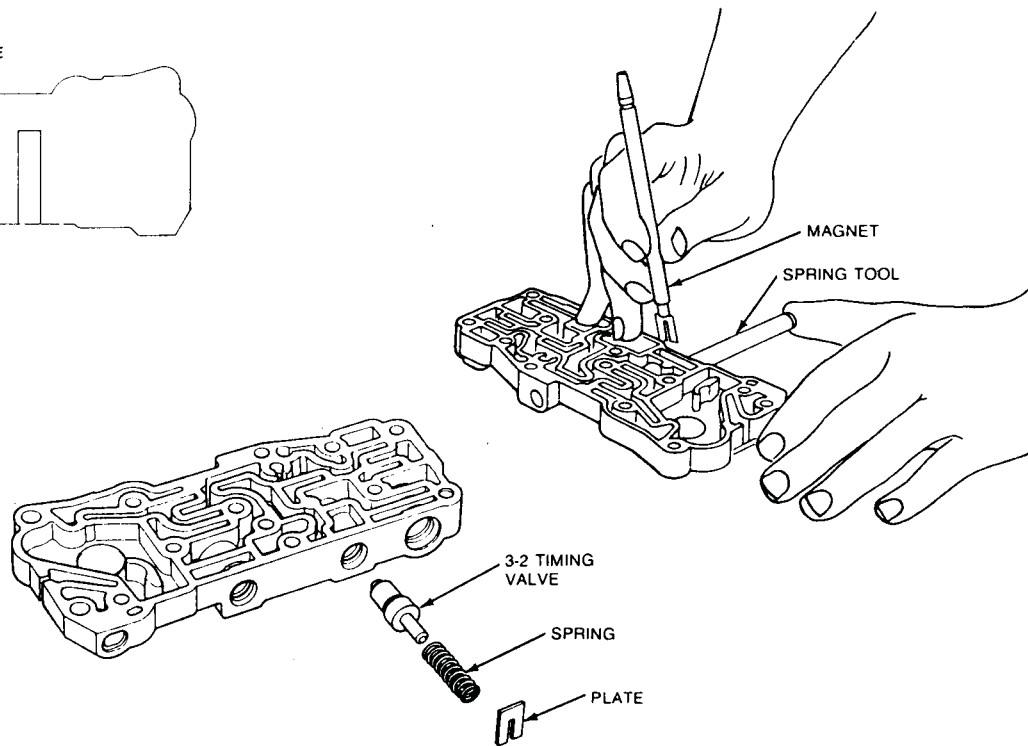
D4382-C

DISASSEMBLY AND ASSEMBLY (Continued)

NO. 10 3-2 TIMING VALVE

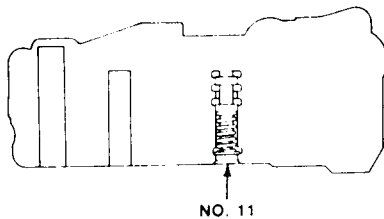


NO. 10

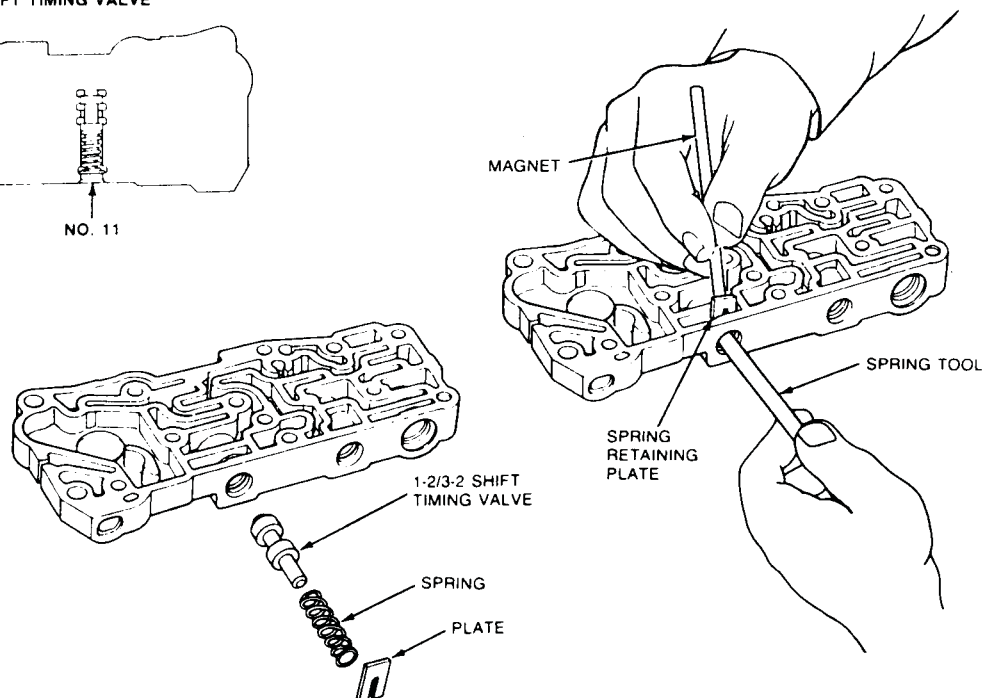


D4383-C

NO. 11 1-2/3-2 SHIFT TIMING VALVE



NO. 11



D4384-C



Technical Service Information

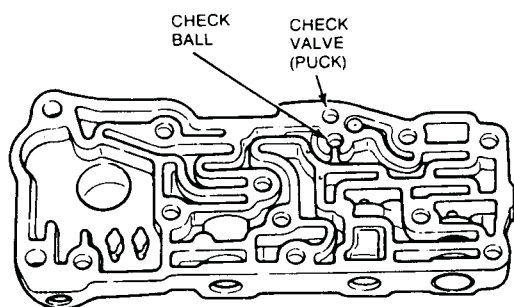
DISASSEMBLY AND ASSEMBLY (Continued)

Assembly

1. To assemble the valve body, reverse disassembly procedures.

NOTE: Depending on vehicle application, there may be either a black check valve (puck) or a tan check valve (puck) in the timing body. For reassembly, or when the puck requires replacement, make sure the correct valve is installed.

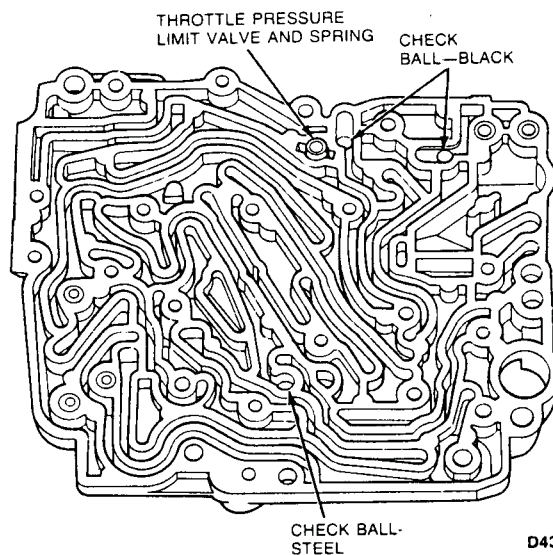
2. Install the check valve and check ball in the timing body.



D4367-B

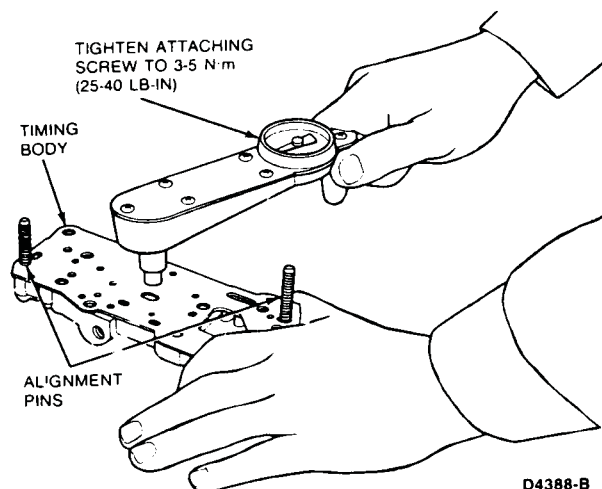
5. Install the check balls and pressure limit valve in the lower body using petroleum jelly to retain.

Note the location of the steel ball. This ball is larger than the others and must be positioned as shown.



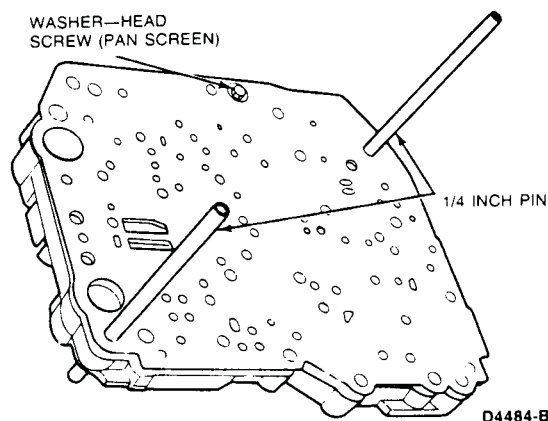
D4372-B

3. Position the separator plate on the timing body using alignment pins or tapered punches.
4. Use alignment pins to hold plate in position while the attaching 10-24 by .44, 5/16-inch hex head screw is tightened. Tighten to 3-5 N·m (25-40 lb-in).



D4388-B

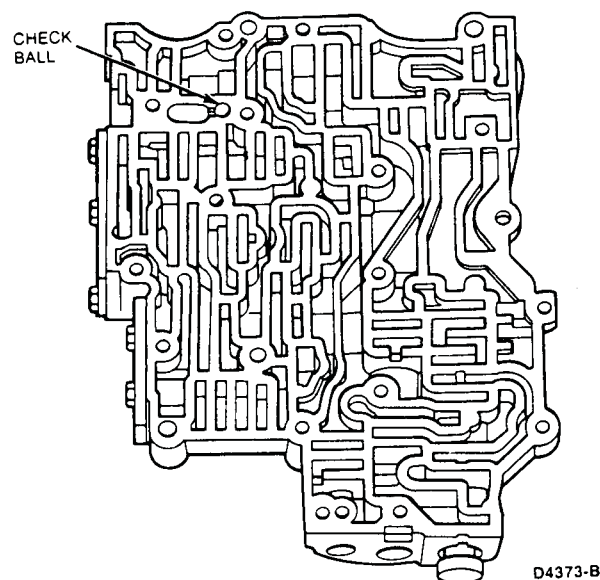
6. Place gasket on body then install locating pins. Install separator plate using two 1/4-inch drill bits or pins as alignment dowels. Temporarily attach plate to body with oil filter screen screw and tighten. Remove alignment pins.



D4484-B

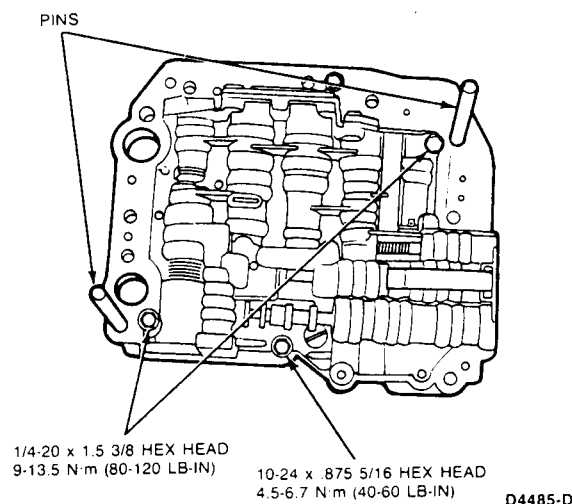
DISASSEMBLY AND ASSEMBLY (Continued)

7. Install the check ball in the upper body using petroleum jelly to retain.



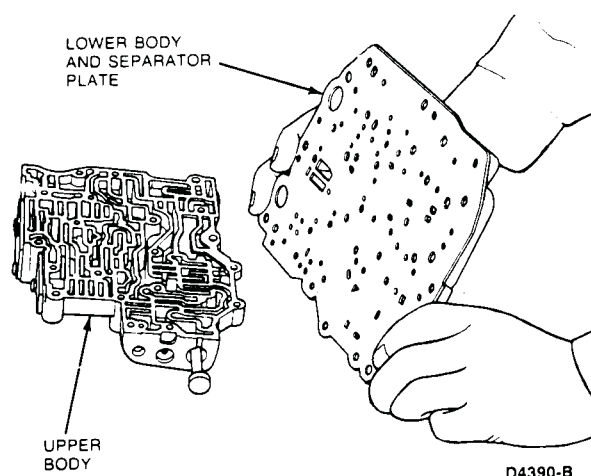
9. Check separator plate with alignment pins. Align bodies with two screws (1/4-20 by 1.5, 3/8-inch hex head). Tighten to 9-13.5 N·m (80-120 lb-in).

Install the 10-24 by .575, 5/16-inch hex head screw and tighten to 4.5-6.7 N·m (40-60 lb-in). Remove alignment pins and oil filter screw from separator plate.



8. Grip the lower body and separator plate.

Hold the separator plate against the body and turn it over. While holding the plate, position the lower body on the upper body.

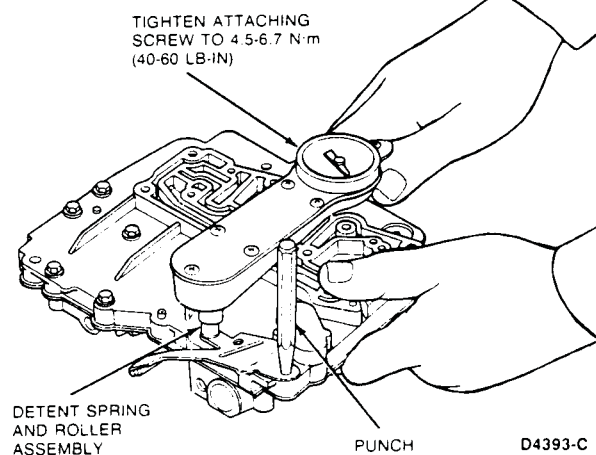


10. Position the detent spring and roller assembly on the lower body and install the attaching screw.

Tighten the attaching 10-24 by .875, 5/16-inch hex head screw to 4.5-6.7 N·m (40-60 lb-in). Use a drift to hold the assembly in alignment while the attaching screw is tightened.

Install the nine additional 10-24 by .875, 5/16-inch hex head screws and tighten to 4.5-6.7 N·m (40-60 lb-in).

NOTE: Remember to tighten the screw in the suction passage, under the filter screen.

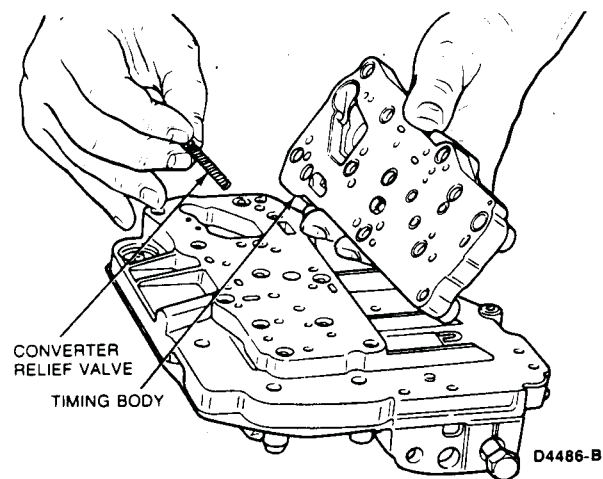




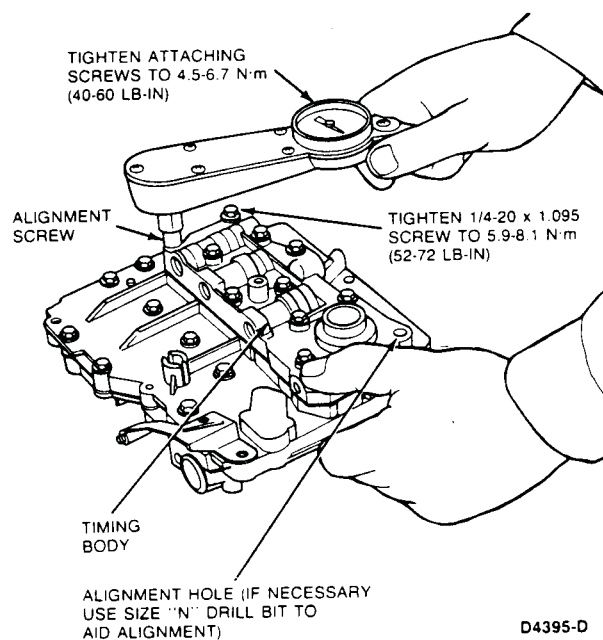
Technical Service Information

DISASSEMBLY AND ASSEMBLY (Continued)

11. Install the gasket on the lower valve body. Install the converter relief valve in the lower body and position the timing body on the lower body.



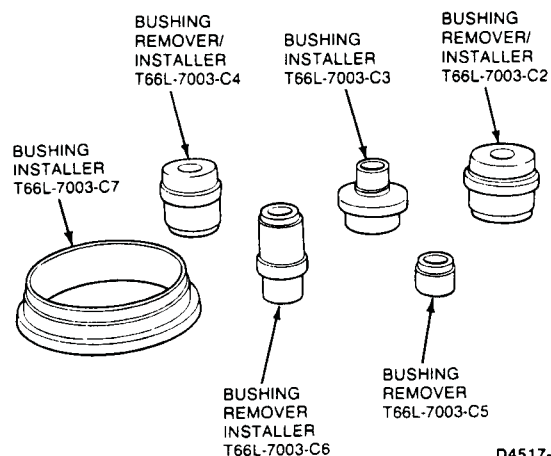
12. Align timing body with one 10-24 by 2.15, 5/16-inch hex head screw (finger-tighten only). Visually check alignment through the hole indicated.
13. Install the other timing body attaching screws (seven 10-24 by 2.15, 5/16-inch hex head and one 10-24 by 1.145) and tighten to 4.5-6.7 N·m (40-60 lb-in). Tighten the 1/4-20 by 1.095, attaching screw to 5.9-8.1 N·m (52-72 lb-in).



Bushings

NOTE: The tools used in the following bushing removal and installation procedures are available as a set in Bushing Removal and Installation Kit T66L-7003-C or equivalent. The Driver Handle T80T-4000-W or equivalent is not included in the kit.

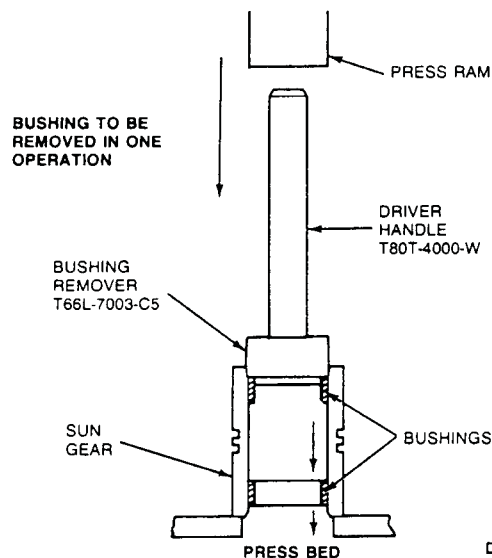
BUSHING REMOVAL AND INSTALLATION KIT T66L-7003-C



Sun Gear Bushing

Removal

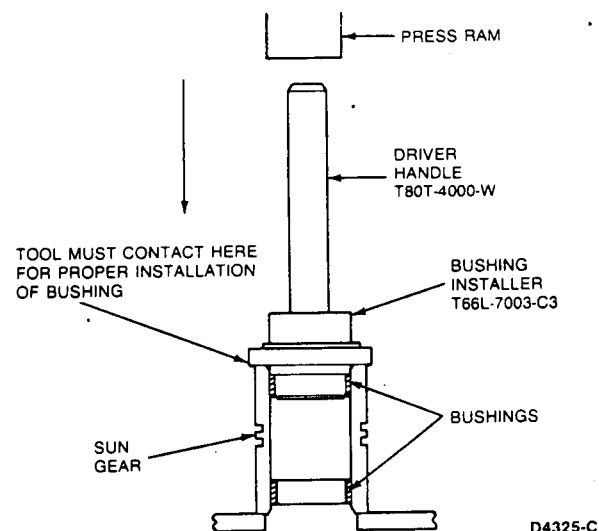
1. Remove the sun gear from the input shell as outlined.
2. Press both bushings from sun gear simultaneously using Bushing Remover T66L-7003-C5 and Driver Handle T80T-4000-W or equivalent.



DISASSEMBLY AND ASSEMBLY (Continued)

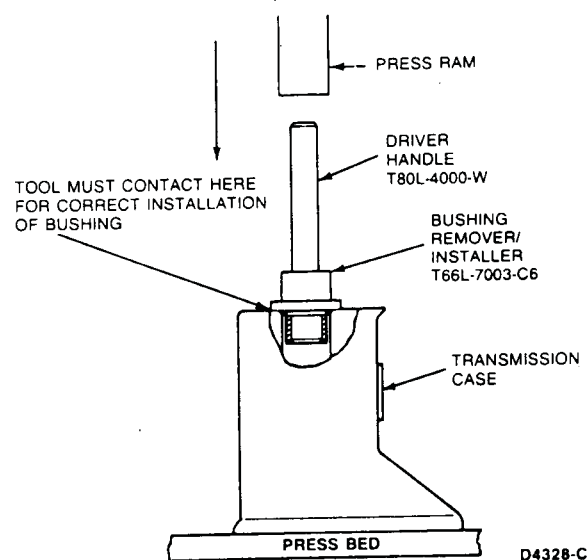
Installation

1. Press bushings into sun gear separately, using Bushing Installer T66L-7003-C3 and Driver Handle T80T-4000-W or equivalent.
2. Assemble the input shell and sun gear as outlined.



Installation

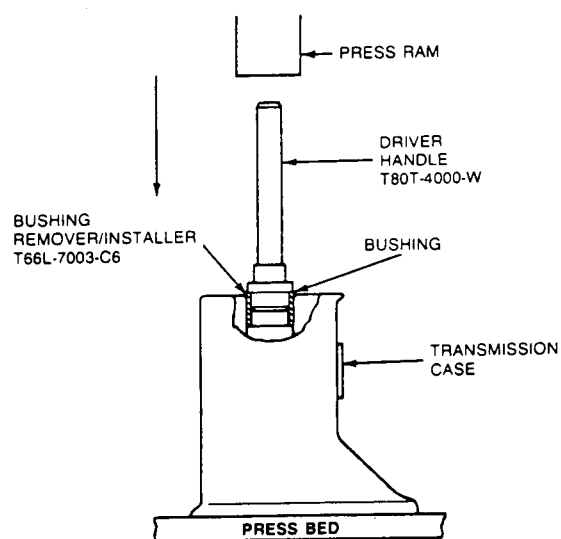
Press bushing into case using Bushing Remover/Installer T66L-7003-C6 and Driver Handle T80T-4000-W or equivalent.



Case Bushing

Removal

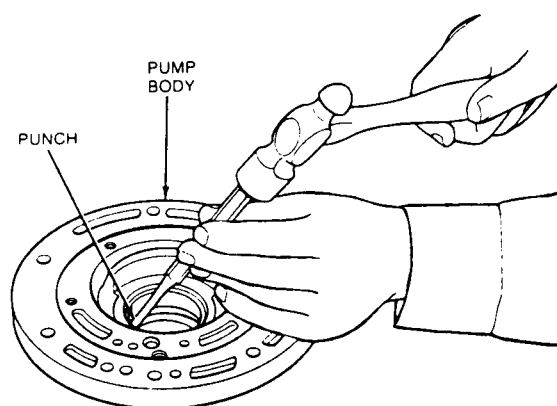
Press bushing from case using Bushing Remover/Installer T66L-7003-C6 and Driver Handle T80T-4000-W or equivalent.



Pump Body Bushing

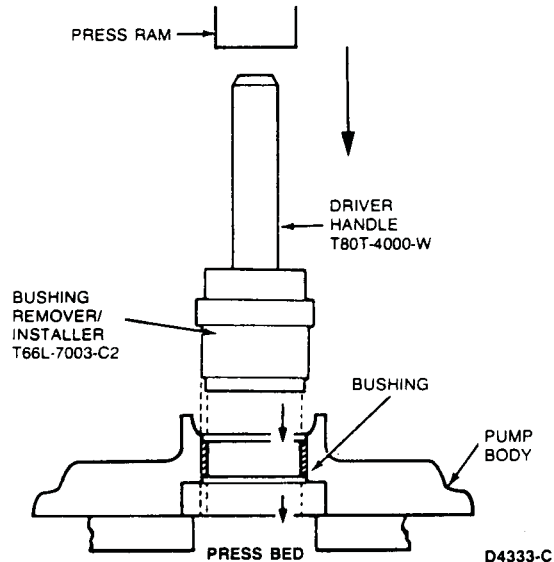
Removal

1. If necessary, remove the seal from the pump body using a punch.

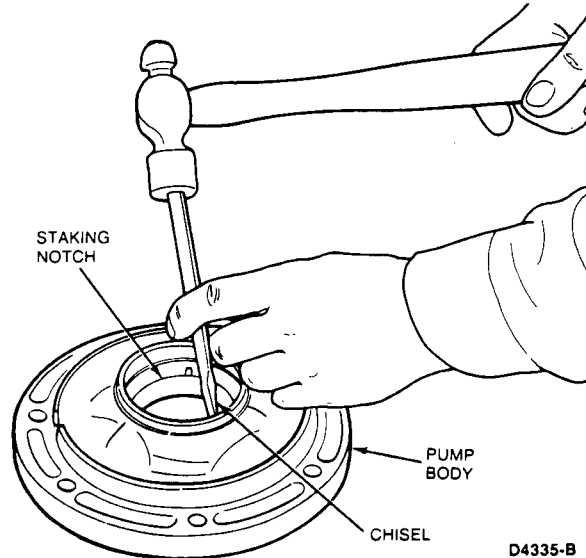


DISASSEMBLY AND ASSEMBLY (Continued)

2. Press bushing from pump body using Bushing Remover T66L-7003-C2 and Driver Handle T80T-4000-W or equivalent.

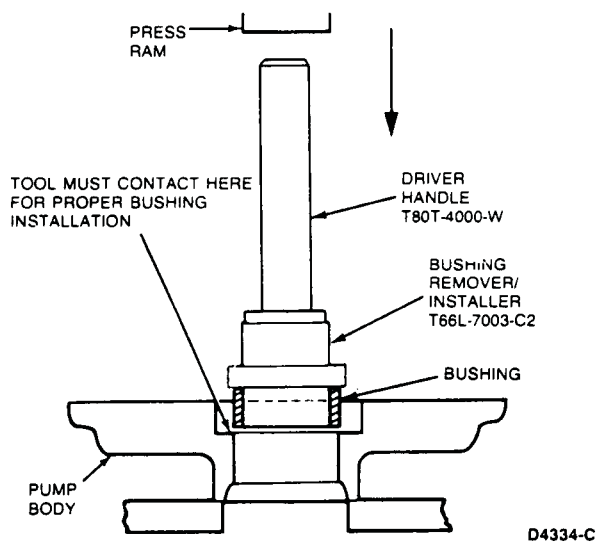


2. Stake bushing to pump body using a chisel. The bushing bore contains two notches 180 degrees apart, and it is at these points that the bushing is to be staked.



Installation

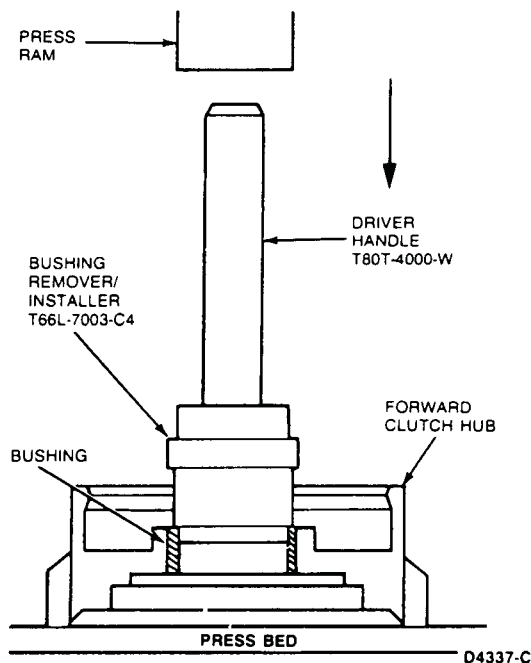
1. Press bushing into case using Bushing Installer T66L-7003-C2 and Driver Handle T80T-4000-W or equivalent.



Forward Clutch Hub Bushing

Removal

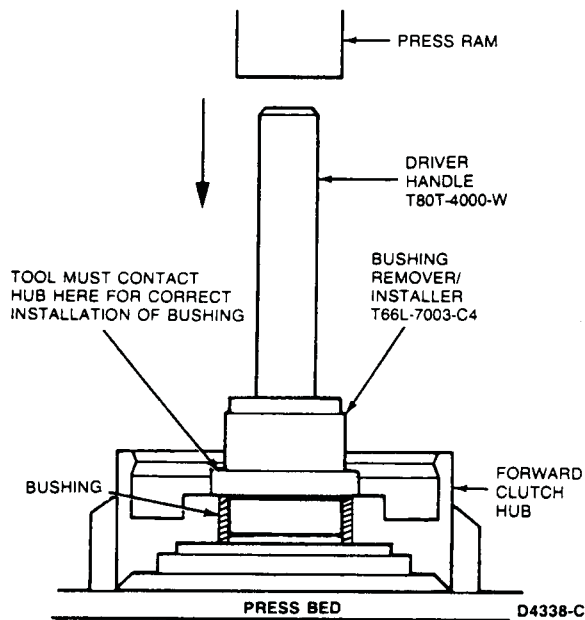
1. Remove the forward clutch hub from the ring gear as outlined.
2. Press the bushing from the clutch hub using Bushing Remover/Installer T66L-7003-C4 and Driver Handle T80T-4000-W or equivalent.



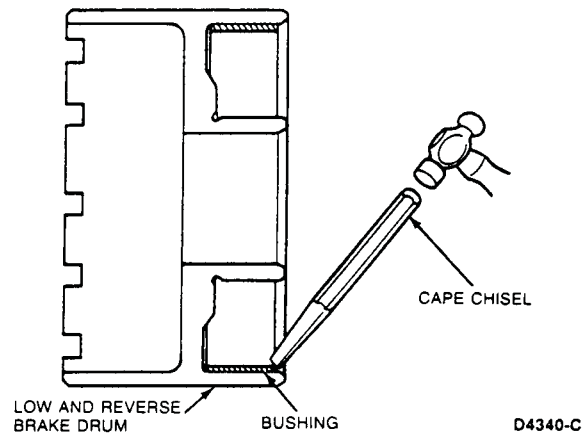
DISASSEMBLY AND ASSEMBLY (Continued)

Installation

1. Press the bushing into the clutch hub using Bushing Remover/Installer T66L-7003-C4 and Driver Handle T80T-4000-W or equivalent.
2. Assemble the hub and ring gear as outlined.



4. Pry the cut ends of the bushing away from the drum hub using a sharp awl.
5. Grasp the raised edge of the bushing with pliers and "peel" the bushing out of the drum hub.



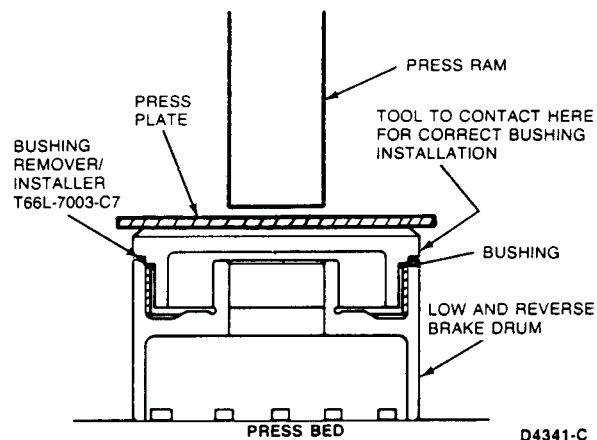
Low and Reverse Brake Drum

Removal

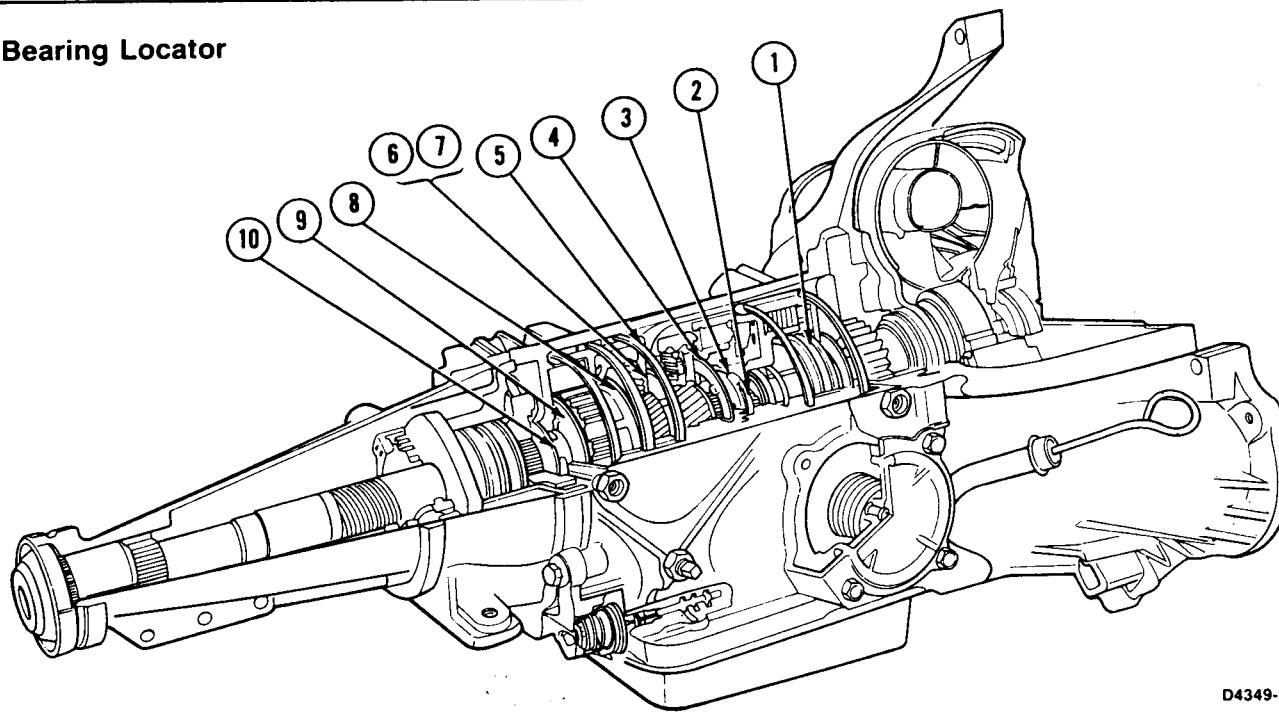
1. Locate the seam in the bushing.
2. Using a cape chisel, cut a shallow groove along three-quarters of the length of the bushing seam.
3. Make repeated shallow cuts along the bushing seam until the chisel cuts through the bushing wall.

Installation

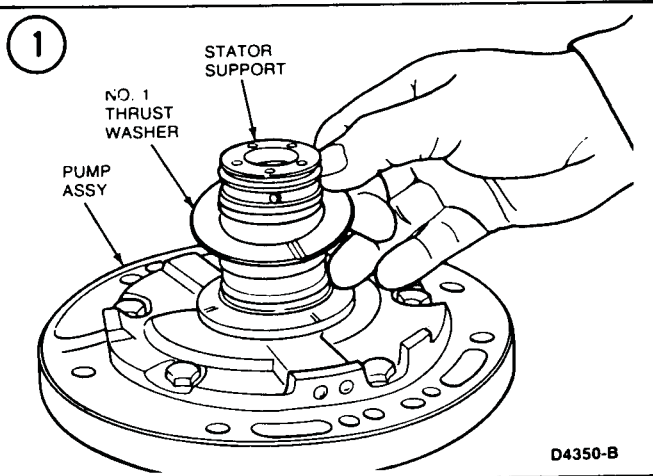
Press the bushing into the drum hub using Bushing Remover/Installer T66L-7003-C7 or equivalent and a flat piece of steel stock (press plate).



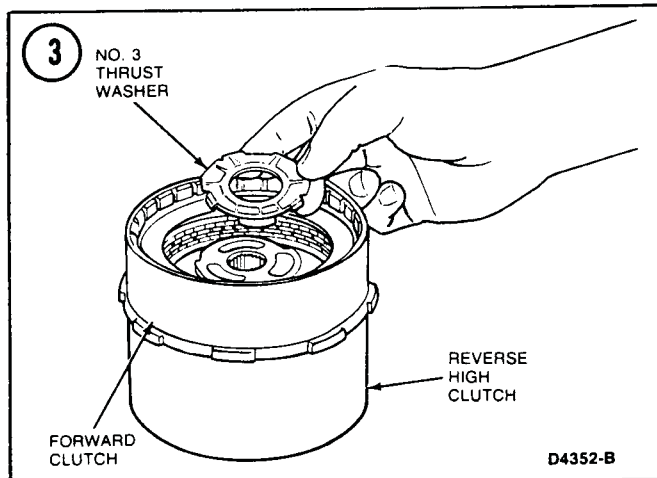
Bearing Locator



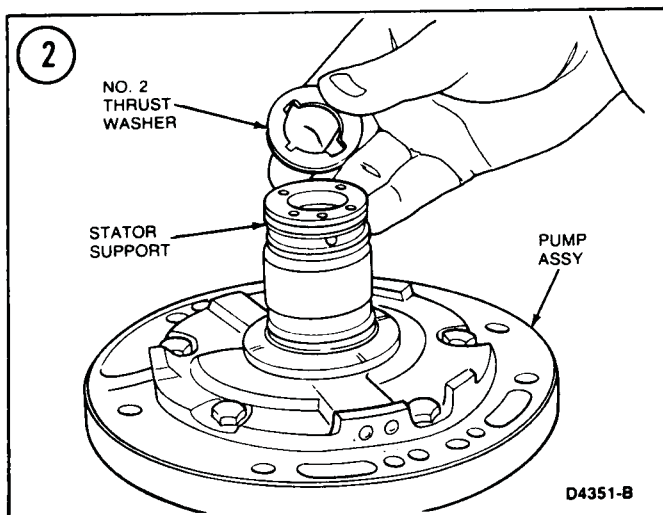
D4349-B



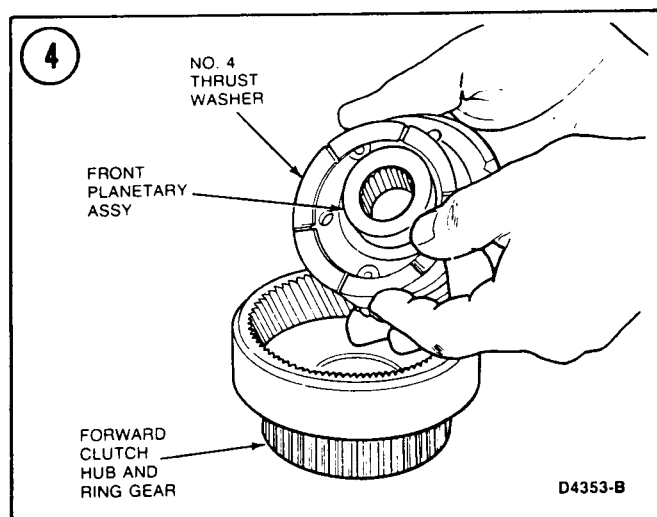
D4350-B



D4352-B

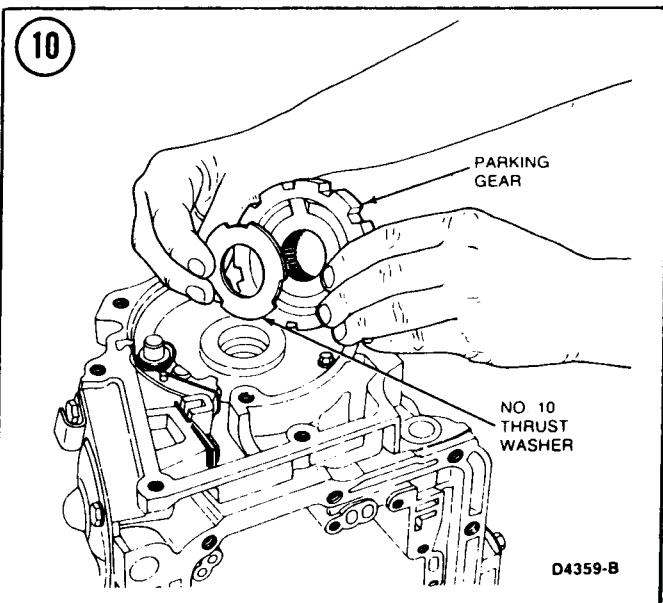
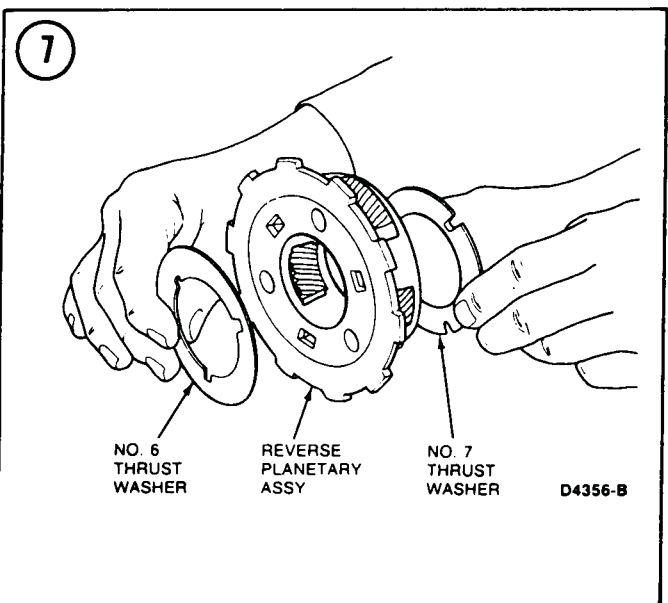
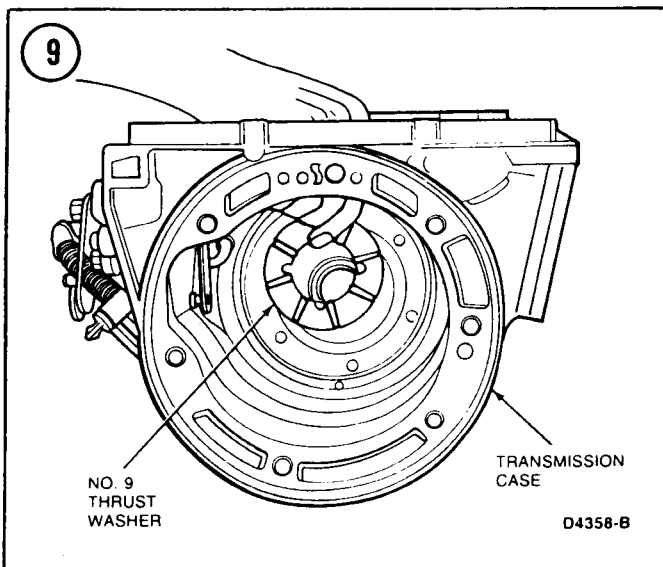
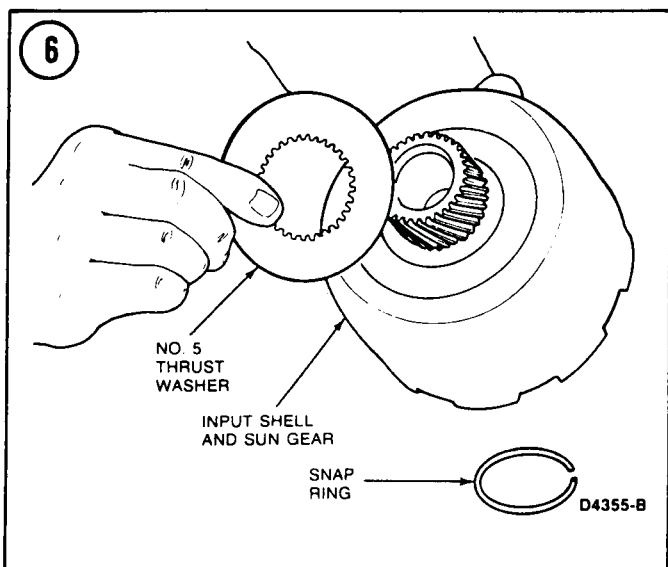
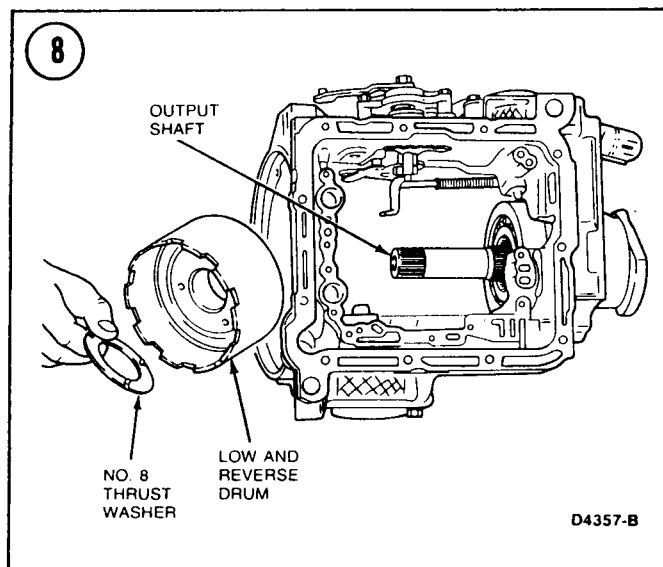
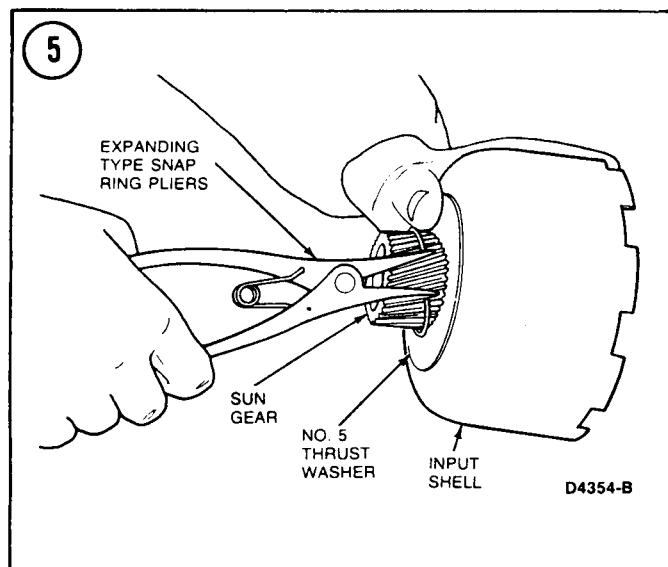


D4351-B



D4353-B

DISASSEMBLY AND ASSEMBLY (Continued)





Technical Service Information

C-5 AUTOMATIC TRANSMISSION VACUUM DIAPHRAGM ASSEMBLY SPECIFICATIONS

Diaphragm Type	Diaphragm Part No.	Identification	Throttle Valve Rod ^{①②}	
			Length	Identification
S-HAD	D7DZ-7A377-A	1 White Stripe	1.5925-1.5876 1.6075-1.6025	Green Daub Blue Daub
SAD	E2TZ-7A377-A	No Identification	1.6225-1.6175 1.6375-1.6325	Orange Daub Black Daub
S-SAD	D5AZ-7A377-B	1 Green Stripe	1.6585-1.6535	Pink/White Daub
HAD	D7BZ-7A377-B	Blue Cover		

① Selective fit rods SAD — Single Area Diaphragm S-SAD — Super Single Area Diaphragm S-HAD — Super High Altitude Diaphragm
② Part of diaphragm kit HAD — High Altitude Diaphragm

CD3459-G

CLUTCH AND BAND APPLICATION

Gear	Reverse and High Clutch	Forward Clutch	One-Way Clutch	Intermediate Band	Low-Reverse Band
1st (D Range)		Applied	Applied		
1st (1 Range)		Applied			Applied
2nd		Applied		Applied	
3rd	Applied	Applied			
Reverse	Applied				Applied

CD4765-A

TORQUE SPECIFICATIONS

Description	N·m	Lb·In	Description	N·m	Lb·Ft
End Plates To Valve Body	2.82-4.51	25-40	Oil Pan To Case	16-22	12-16
Separator Plate To Timing Valve Body	2.82-4.51	25-40	Stator Support To Pump	17-27	12-20
Upper Body To Lower Body (Long) (1/4-20)	9.03-13.55	80-120	Converter to Flywheel	27-46	20-34
Upper Body To Lower Body (Short) (10-24)	4.51-6.77	40-60	Converter Housing Cover To Converter Housing	17-21	12-16
Detent Spring and Lower Body To Upper Body	4.51-6.77	40-60	Converter Housing To Case	38-55	28-40
Lower Body To Upper Body (10-24)	4.51-6.77	40-60	Engine Rear Cover Plate To Transmission	16-22	12-16
3-2 Timing Valve Body To Upper Body (10-24)	4.51-6.77	40-60	Rear Servo Cover To Case	17-27	12-20
3-2 Timing Valve Body To Lower Body (1/4-20)	5.9-8.1	52-72	Intermediate Servo Cover To Case	22-30	16-22
3-2 Timing Valve Body To Lower Body (10-24)	4.51-6.77	40-60	Oil Distributor Sleeve To Case	16-27	12-20
Screen To Timing Valve Body	2.82-4.51	25-40	Extension Housing To Case	38-54	28-40
Detent Spring and Main Control To Case	9.03-13.55	80-120	Pump and Converter Housing To Case	38-51	28-38
Main Control To Case	9.03-13.55	80-120	Engine To Transmission (3.8L)	38-51	28-38
Governor To Governor Oil Collector Body	9.03-13.55	80-120	Transmission To Engine (3.3L)	55-67	40-50
Pump Assembly To Case	2.25-3.95	20-38	Outer Throttle Lever To Shaft	16-22	12-16
Neutral Switch To Case	6.21-8.47	55-75	Band Adjusting Screws To Case	13.5	10
Push Connector To Transmission Case	24-31	18-23	Inner Manual Lever To Shaft	41-54	30-40
Speedometer Clamp Bolt	4-6	36-54	Pump Pressure Plug To Case	9-16	6-12
	N·m	Lb·Ft	Intermediate Band and Reverse Band Adjusting Screw Locknut	47-61	35-45
Overrunning Clutch Race To Case	18-27	13-20	Drain Plug To Converter Cover	16-23	12-17

CD3102-H



Technical Service Information

SPECIFICATIONS (Continued)

SELECTIVE THRUST WASHERS

(Selective Washers Must Be Installed In Pairs)

THRUST WASHER NO. 1		THRUST WASHER NO. 2
Color of Washer	Thickness	Washer Number
Red	0.053-0.0575	2
Green	0.070-0.0745	3
Neutral	0.087-0.0915	2 or 3 Plus Spacer ^①

① This is a selective spacer used with washer 2 or 3. When used, install next to stator support.

APPROXIMATE REFILL CAPACITIES*

Vehicle	Trans/Converter Type	Engine	Capacity		
			U.S. (Qts.)	Imperial (Qts.)	Liters
LTD/Marquis Mustang/Capri Thunderbird/Cougar	C-5 12 inch Converter Clutch	3.8L (232 CID)	11	8.8	10.4

*Use Motorcraft Type H Automatic Transmission Fluid XT-4-H (ESP-M2C166-H)

CLUTCH PLATES

Model	Forward Clutch			Reverse Clutch		
	External Spline (Steel)	Internal Spline (Comp.)	Free Pack Clear	External Spline (Steel)	Internal Spline (Comp.)	Free Pack Clear
PEP Thunderbird/Cougar LTD/Marquis Mustang/Capri	4	5	.635-1.27mm (.025-.050 inch)	3	3	.635-1.27mm (.025-.050 inch)

CHECKS AND ADJUSTMENTS

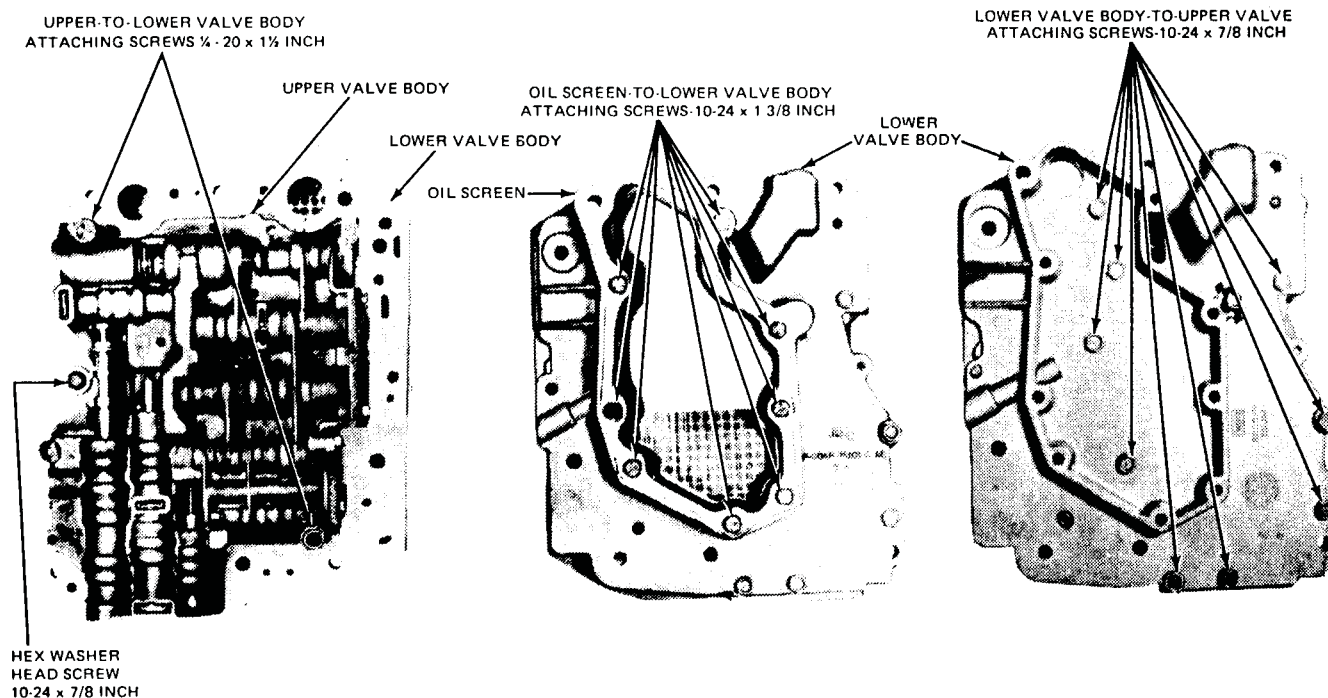
Operation	Specification
Transmission End Play	.203-1.06mm (0.008-0.042 inch) (Selective Thrust Washers Available).
Torque Converter End Play	New or Rebuilt 0.584 mm (0.023 inch) maximum. Used 1.27mm (0.050 inch) maximum.
(Intermediate) Band Adjustment Front	Remove and discard locknut. Install new nut. Adjust screw to 13.55 N·m (10 lb-ft), then backoff 4-1/4 turns. Hold screw and tighten locknut to 54.33 N·m (40 lb-ft).
(Reverse) Band Adjustment Rear	Remove and discard locknut. Adjust screw to 13.55 N·m (10 lb-ft), then back off 3 turns. Install new locknut and tighten to 54.33 N·m (40 lb-ft).
Selective Snap Ring Thickness (Fwd. or Rev. Clutch)	0.050-0.054, 0.064-0.068, 0.078-0.082, 0.092-0.096, (0.104-0.108 — Fwd Clutch Only).

CD3101-K

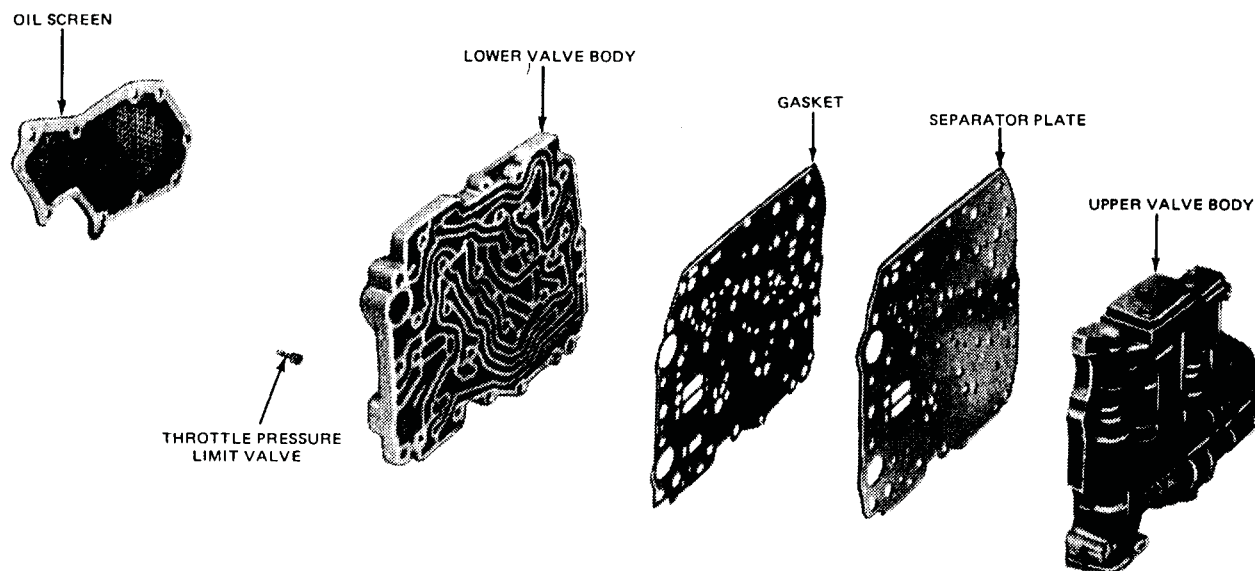


Technical Service Information

C-4 VALVE BODY

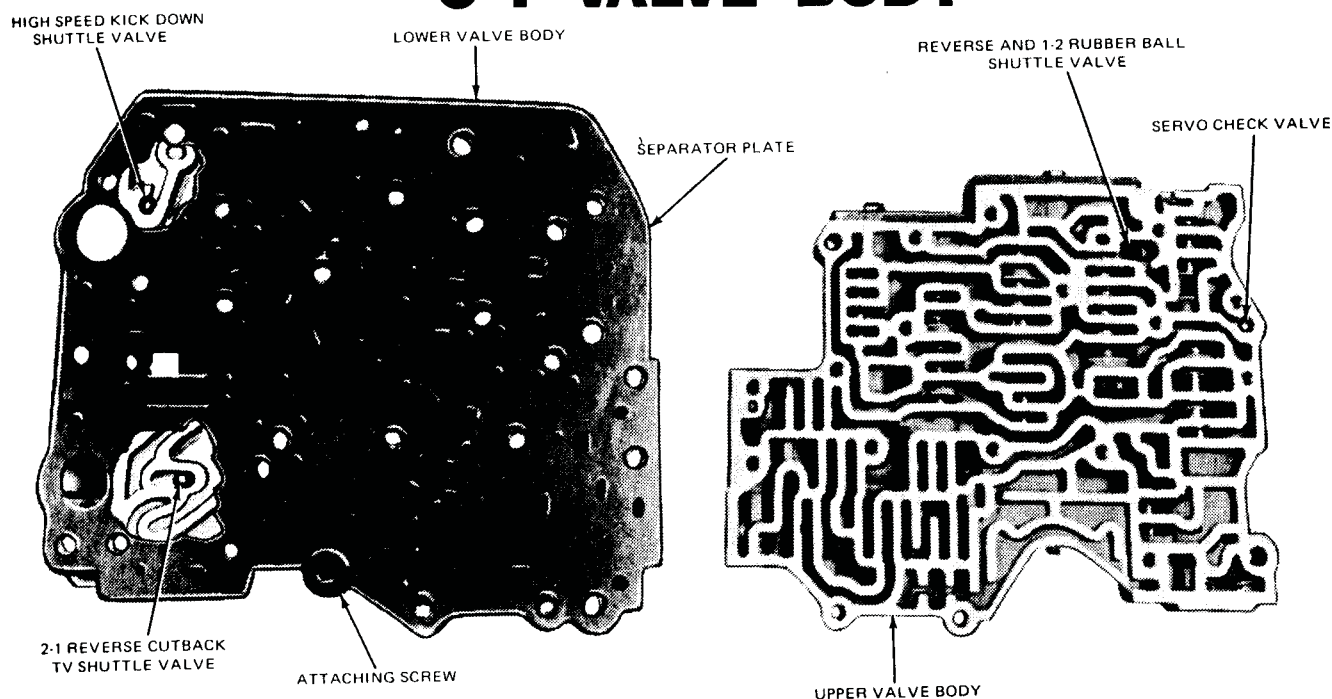


Control Valve Body and Screen Attaching Screws



Upper and Lower Valve Bodies Disassembled

C-4 VALVE BODY

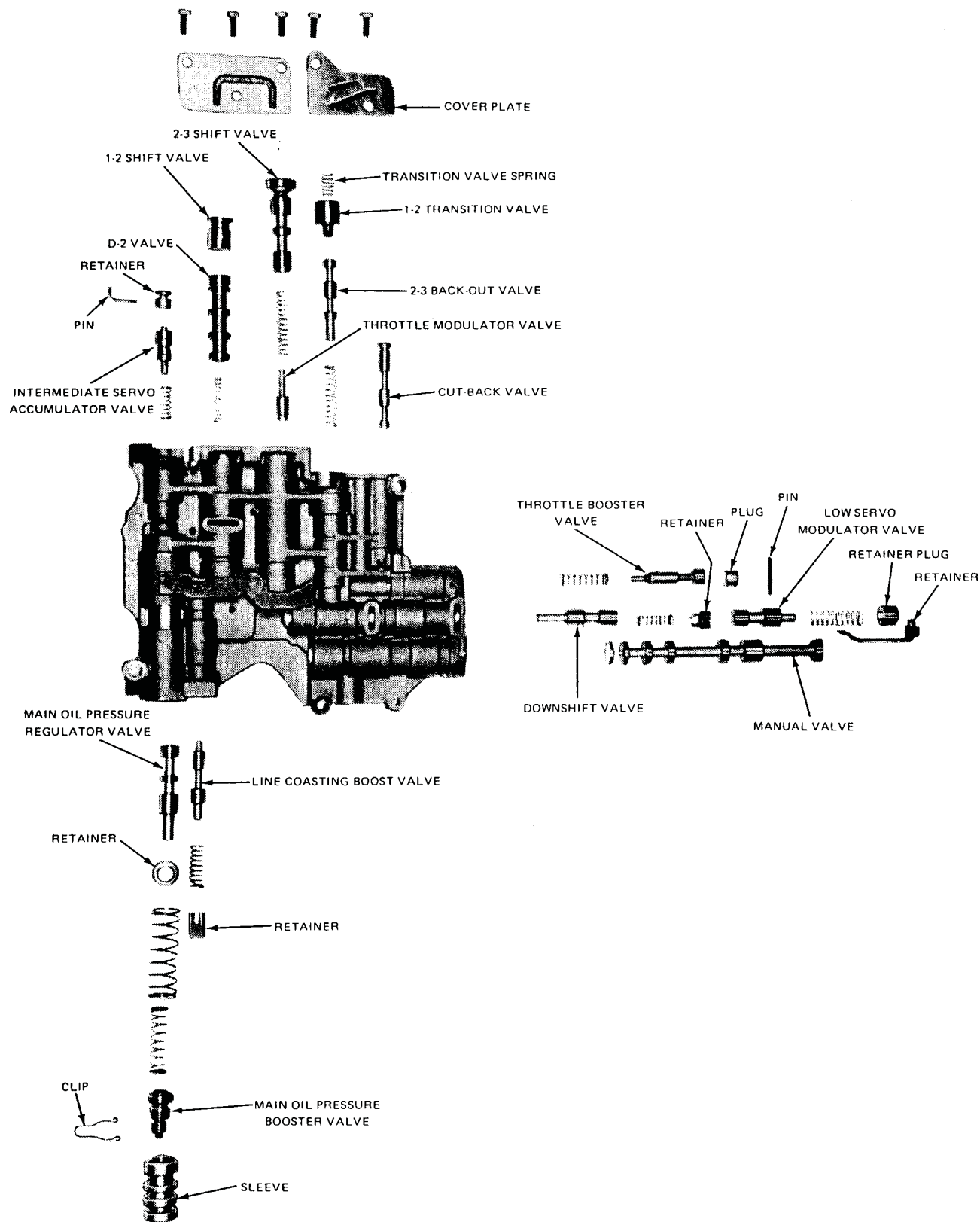


Separating Upper and Lower Valve Bodies

Assembly

1. Place the shuttle valves in the upper and lower bodies as shown in Fig. 49. Position a new gasket and the separator plate on the lower body and install but do not tighten the attaching screw.
2. Place the lower body and plate assembly on the upper valve body and install the eleven attaching screws finger tight (Fig. 47).
3. Install the oil screen screws loosely, without the screen, to properly align the upper and lower valve bodies, gasket and separator plate.
4. Tighten the four bolts that are covered by the screen to 4.5-7.0 N·m (40-60 in-lbs).
5. Position the throttle pressure limit valve and spring in the lower valve body (Fig. 48). Remove the oil screen attaching screws and place the gasket and oil screen in position on the lower valve body. Reinstall the screen attaching screws (Fig. 47). Tighten all the valve body and screen attaching screws to 4.5-7.0 N·m (40-60 in-lbs).
6. **Insert the downshift valve (Fig. 50) into the body with the small diameter facing inward.** Install the downshift valve spring and retainer. Insert the low servo modulator valve, spring and retainer plug in the body. Depress the plug and install the retainer.
7. Place the throttle booster valve spring, valve (small diameter end into spring) and plug into the body (Fig. 50). Depress the plug and press in the retaining pin. **Be sure the three grooves are at the top of the pin as it is installed.**
8. Place the spring, 2-3 back-out valve and the transition valve and spring in the body.
9. Place the cut-back valve in the body. Secure the cut-back and the transition valve cover plate to the body with the two attaching screws. Tighten the screws to 3.0-4.5 N·m (25-40 in-lbs).
10. Place the throttle modulator valve, spring and 2-3 shift valve in the body.
11. Place the spring, D-2 valve and the 1-2 shift valve in the body.
12. Secure the 1-2 shift valve and the 2-3 shift valve cover plate to the body with the three attaching screws. Tighten the screws to 3.0-4.5 N·m (25-40 in-lbs).
13. Place the spring, intermediate servo accumulator valve and retainer in the body. Depress the retainer and install the retaining pin (Fig. 50).
14. Insert the line coasting boost valve and spring in the body. Depress the spring and install the retainer.
15. Insert the main oil pressure regulator valve and spring retainer in the body (Fig. 50). Install the two springs, sleeve and the main oil pressure booster valve in the body.
16. Hold the main oil pressure booster valve in place and install the retaining clip.
17. Slide the manual valve into the valve body. Make sure that the end with the two lands closest together is inserted first. Insert the retaining clip on the valve after the second land.

C-4 VALVE BODY



Upper Valve Body Disassembled

FIGURE 50