

1996 Ford Contour GL

1995-96 AUTOMATIC TRANSMISSIONS Ford CD4E Overhaul

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Ford CD4E Overhaul

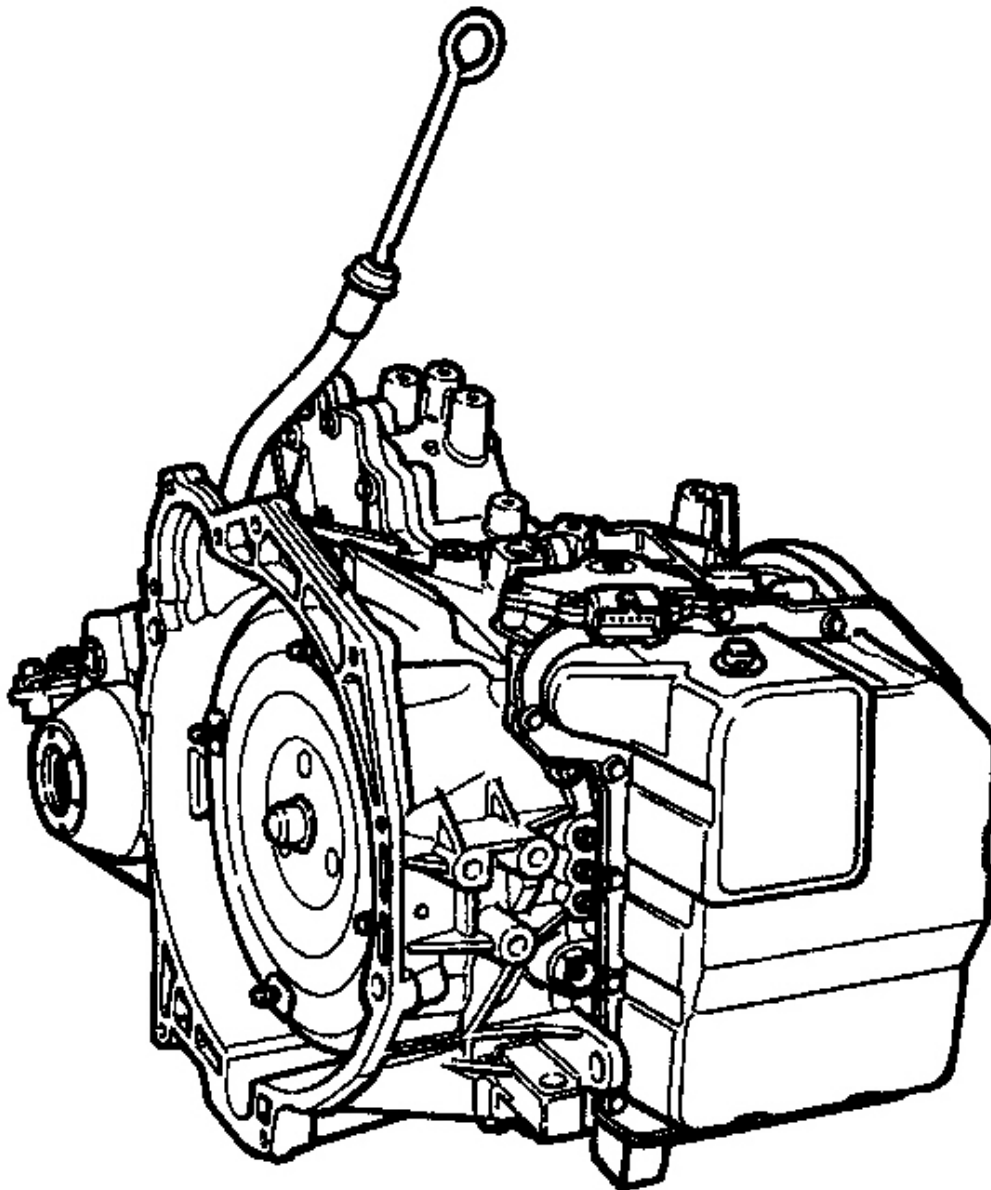
APPLICATION

APPLICATION

Application	Transmission
Contour & Mystique	
2.0L	CD4E
2.5L	CD4E
Probe	CD4E

IDENTIFICATION

The CD4E automatic transmission is identified by identification tag located on rear of transaxle and bottom of main control cover assembly. See **Fig. 1** and **Fig. 2** .



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Fig. 1: Identifying CD4E Transaxle CD4E Transaxle Assembly
Courtesy of FORD MOTOR CO.

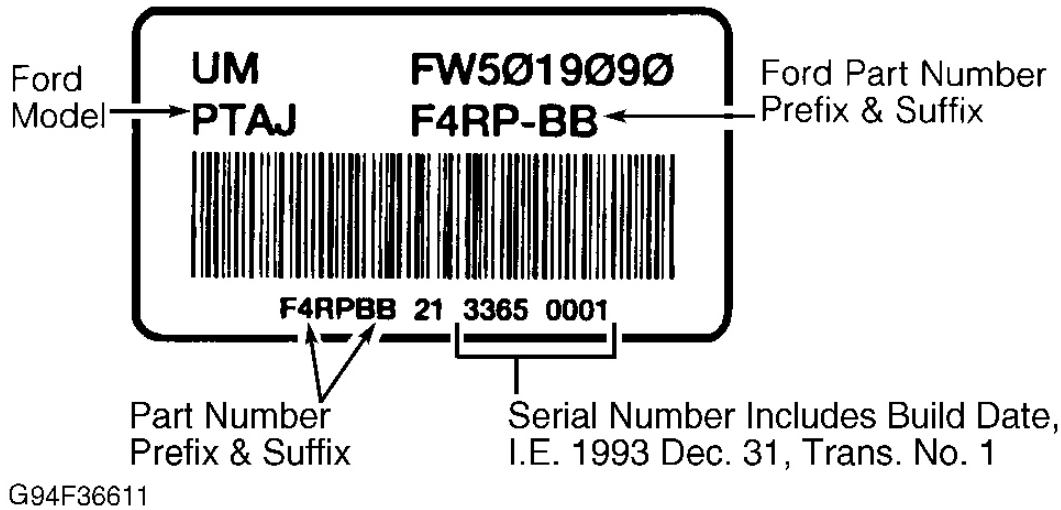


Fig. 2: Identifying CD4E Transaxle Identification Tag
 Courtesy of FORD MOTOR CO.

NOTE: For CD4E transaxle electronic testing and repair, see appropriate **ELECTRONIC CONTROLS** article.

DESCRIPTION & OPERATION

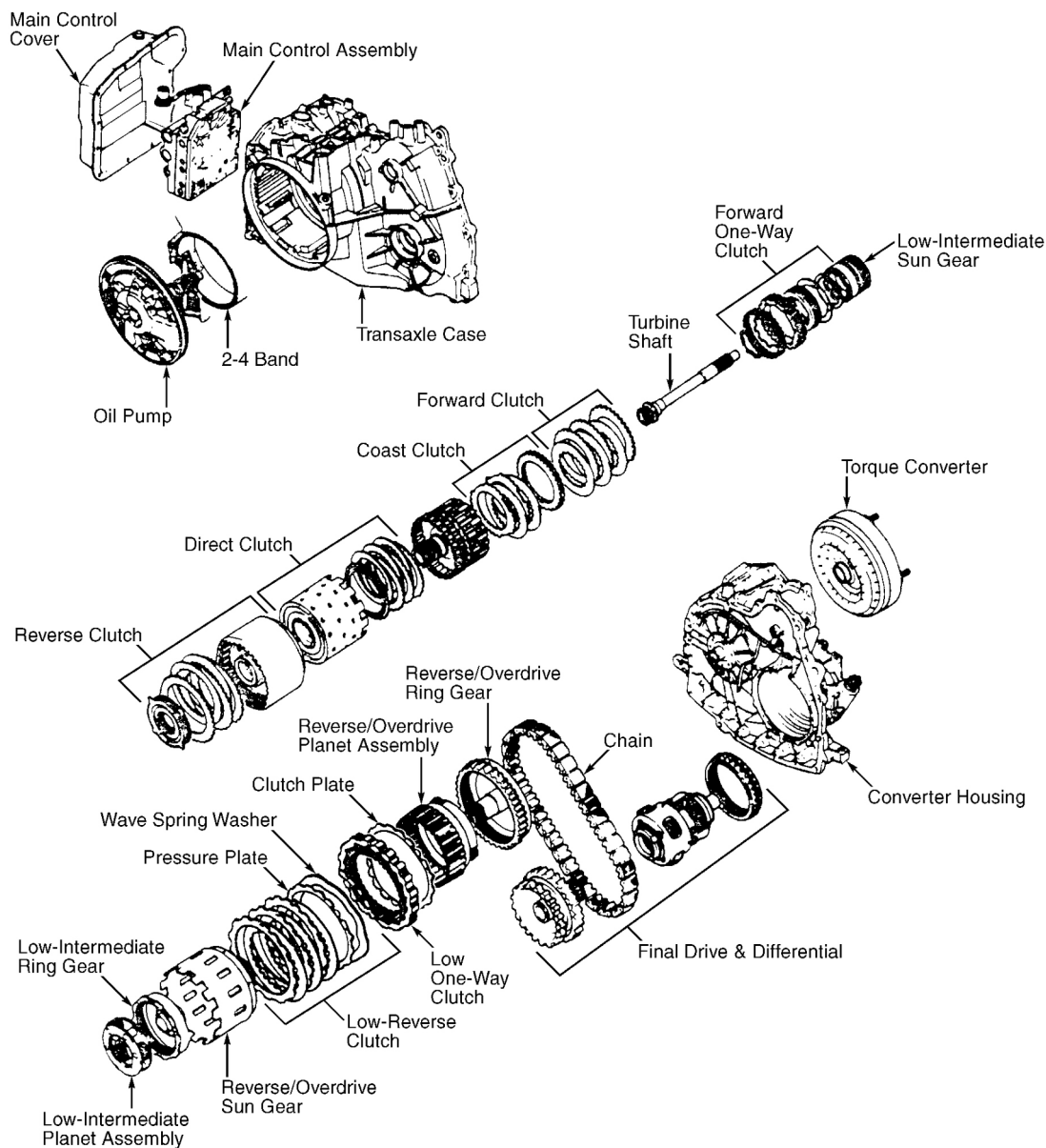
The CD4E is a 4-speed transaxle assembly. The CD4E is controlled by both electronic and mechanical systems utilizing a compound planetary gearset, chain drive, final drive planetary gearset and an open differential. One band, 5 friction clutches, and 2 one-way clutches provide 4 forward gear ratios and reverse. See **Fig. 3**.

Input signals from sensors are sent to the Powertrain Control Module (PCM). The PCM can determine when the time and conditions are right for a shift or converter clutch application. The PCM can also determine line pressure needed to optimize shift feel.

Five electronic solenoids accomplish the following functions:

- 2 On/Off solenoids for shifting.
- One Pulse-Width Modulator (PWM) solenoid for Torque Converter Clutch (TCC) control.
- One Electronic Pressure Control (EPC) solenoid for line pressure control.
- One 3-2 timing/coast clutch solenoid to control release of coast clutch, coordinated release of the direct clutch, and apply of the low and intermediate band.

PCM has built-in self-diagnosis, fail-safe code and warning code display for the main input sensors and solenoid valves.



93H59862

Fig. 3: Exploded View Of CD4E Transaxle
Courtesy of FORD MOTOR CO.

LUBRICATION & ADJUSTMENTS

NOTE: See appropriate TRANSMISSION SERVICING - A/T article in TRANSMISSION SERVICING section.

ON-VEHICLE SERVICE

DIFFERENTIAL OIL SEALS

Removal

1. Raise and support vehicle. Drain transmission fluid. Remove front wheels and inner fender splash guards. Carefully raise staked portion of axle nut. Remove and discard axle nut. Remove stabilizer bar-to-control arm nut, spacer and bolt. On Contour and Mystique models, remove tie rod end.
2. On all models, remove lower control arm ball joint clamp bolt. Pry downward on lower control arm to separate control arm from knuckle. Slide knuckle assembly off axle shaft.

NOTE: If removing right drive axle, unbolt axle bearing bracket from engine block.

3. Insert pry bar between transaxle case and axle flange. Carefully apply force to pry bar until axle circlip is disengaged. On all models, carefully withdraw axle assembly from transaxle, and install appropriate plug. Using appropriate puller, remove seal.

Installation

1. Apply lubrication to new seal. Using appropriate driver, install seal. Install NEW circlip on transaxle end of axle. Remove transaxle plug, and carefully install axle into transaxle. Ensure circlip snaps into retaining groove.
2. Install axle into hub. Install NEW axle nut. On Contour and Mystique models, install NEW ball joint clamp bolt and nut. Tighten bolts to specifications. See **TORQUE SPECIFICATIONS**. Stake axle nut with blunt nose chisel. To complete installation, reverse removal procedure. Fill transaxle with 6 quarts of Mercon ATF.

INTERMEDIATE & OVERDRIVE SERVO

NOTE: Manufacturer does not recommend removal of intermediate and overdrive servo while transaxle is installed in vehicle. On-vehicle removal of servo cover is only recommended for fluid leakage repair.

Removal & Installation

1. Raise and support vehicle. Remove left front fender splash shield. Using Servo Cover Remover/Replacer (T94P-77000-L), compress servo cover assembly. See **Fig. 4**. Remove retaining ring and release servo cover pressure.
2. Remove tool. Remove servo cover assembly, piston and return spring. Inspect condition of piston and cover. Replace as needed. To install, reverse removal procedure. Lower vehicle and check fluid level.

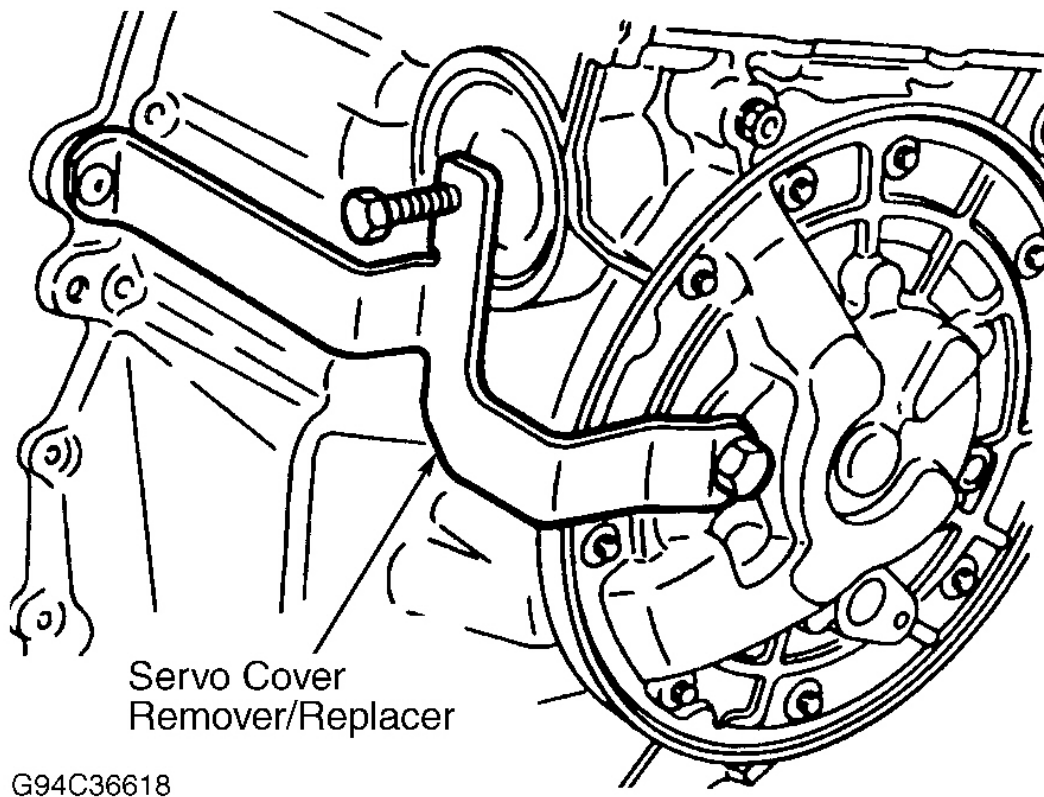


Fig. 4: Compressing Servo Cover Assembly
Courtesy of FORD MOTOR CO.

OIL COOLER FLUSHING

Contaminates **MUST** be removed from oil cooler before transmission is put back into service. Replace cooler supply tubes if leaking. Thoroughly flush oil cooler and lines if a major service or transaxle removal has occurred. It is recommended that a mechanically agitated cleaner, such as Rotunda (014-00028), be used.

TRANSMISSION SPEED SENSOR (TSS)

Removal & Installation

Raise and support vehicle. Remove left front fender splash shield. Disconnect TSS harness connector. The TSS is located on exterior of pump assembly. Unbolt and remove TSS. To install, reverse removal procedure. Replace "O" ring as needed. Tighten bolt to specification. See **TORQUE SPECIFICATIONS**.

VALVE BODY/THERMOSTATIC OIL LEVEL CONTROL VALVE

Removal

1. On all models, disconnect negative battery cable. On Contour and Mystique models, disconnect positive battery cable, remove battery from vehicle. Position power distribution box aside, and remove battery tray. On all models, remove air cleaner assembly. Disconnect transaxle harness connector. Compress tabs on transaxle electrical harness receptacle and push into case. Raise and support vehicle.
2. Remove drain plug and drain fluid. Remove left front fender splash shield. On Contour and Mystique models, remove receiver-drier bracket screws and position away from main control cover assembly (if necessary). Disconnect manual lever position sensor connector and remove sensor. On all models, secure cooler lines away from main control cover assembly (side cover).
3. Remove cover and gasket. Remove 12 valve body bolts. Slightly lift valve body and remove "Z" link. Remove valve body with wiring harness. Remove thermostatic oil level control valve bracket. Pull valve straight out of transaxle case.

Installation

1. Install thermostatic oil level control valve in transaxle case. Install bracket. Tighten bolt to specification. See **TORQUE SPECIFICATIONS**. Install new "O" ring on valve body harness connector receptacle. Install receptacle in transaxle case.
2. Insert "Z" link into end of manual valve. Place valve body in position on transaxle case and install 12 valve body bolts. Tighten bolts in sequence. See **Fig. 6**. Tighten bolts to specification.
3. Remove manual control lever bolt and lever assembly. Using Shifter Shaft Alignment Tool (T94P-77000-H), move manual control lever shaft to "D" position. Install pin to hold tool in position. Move manual valve detent lever assembly to "D" position. See **Fig. 7**.
4. Loosen nut on ball stud of manual valve detent lever actuating rod assembly. Snug nut on ball stud. Remove shifter pin. Rotate Shifter Shaft Alignment tool until socket can be installed on nut. Tighten bolt to specification.
5. Rotate lever back to "D" position and recheck adjustment. Remove pin and alignment tool. Install manual control lever assembly. Tighten bolt to specification. Install main control cover (side cover) with new gasket. Tighten bolts in sequence. See **Fig. 8**. Tighten bolts to specification.
6. To complete installation, reverse removal procedures. Tighten drain plug to specification. Add 6 qts. of ATF. Start and run vehicle. Add fluid as necessary.

VEHICLE SPEED SENSOR (VSS)**Removal & Installation (Contour & Mystique)**

Disconnect negative battery cable. Raise and support vehicle. Disconnect VSS harness connector. Disconnect speedometer cable. Unbolt and remove VSS. To install, reverse removal procedure. Replace "O" ring as needed. Tighten bolt to specification. See **TORQUE SPECIFICATIONS**.

Removal & Installation (Probe)

1. Disconnect negative battery cable, then positive battery cable. Remove battery and battery tray. Remove air cleaner assembly. Install appropriate engine support frame. Unbolt and move cruise control servo. Unbolt fuel filter bracket. Unbolt left transaxle mount from chassis.
2. Slightly lower engine/transaxle assembly. Raise and support vehicle. Disconnect VSS harness connector. VSS is located near dipstick tube. Unbolt and rotate VSS 180 degree and remove. To install, reverse

removal procedure. Replace "O" ring as needed. Tighten bolt to specification. See **TORQUE SPECIFICATIONS**.

TROUBLE SHOOTING

PRELIMINARY INSPECTION

1. Ensure vehicle is thoroughly road tested to verify driver's complaint. Determine if problem occurs during upshift, downshift, coasting or engagement. If noise is diagnosed, check if noise is affected by RPM, vehicle speed, gear selection or temperature. Ensure vehicle is at normal operating temperature when checking.
2. Inspect fluid level and condition. Visually inspect for vehicle modifications, electronic add-ons, fluid leaks and/or incorrect linkage adjustment. Check for Diagnostic Trouble Codes (DTCs) before any mechanical repair is performed. See appropriate ELECTRONIC CONTROLS article for DTC diagnosis and repair procedures. If no DTCs are present, see applicable symptom diagnosis.
3. If the following symptoms are present, it is necessary to complete electronic diagnosis and repair before any mechanical diagnosis and repair is performed. See appropriate ELECTRONIC CONTROLS article for trouble code diagnosis and repair procedures.
 - No Reverse
 - Harsh Engagement
 - All Or Some Shifts Not Present
 - Early, Late, Erratic, Soft, Slipping And/Or Harsh Shifting
 - No First Gear (In "D" Position).
 - No Low Gear.
 - No Torque Converter Clutch
 - Torque Converter Clutch Always Engaged
 - Poor Vehicle Performance
 - Engine Will Not Crank
 - Transaxle Overheating
 - No Engine Braking In Low ("L")
 - No Engine Braking In Second ("2")
 - Vehicle Movement In Neutral ("N")

ENGAGEMENT FAULTS

No Forward Engagement, Reverse Okay

Check shift linkage, oil pump external or internal (support sealing rings) leakage, valve body malfunction (internal leak, stuck regulator valve and/or leaking forward accumulator), forward and coast clutch assembly, low one-way clutch, forward one-way clutch and low/intermediate planetary carrier.

No Reverse Engagement, Forward Okay

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Check external and internal shift linkage, low line pressure, valve body (stuck valve), oil Pump internal leak (No. 6 and 7 sealing rings), reverse clutch assembly, low/reverse clutch assembly, forward/coast/direct clutch cylinder, case (oil passages cross leakage or porosity) and reverse/overdrive gear set.

Harsh Reverse &/Or Forward Engagement

Check fluid level, axle shafts and CV joints, engine/transaxle mounts, shift linkage, line pressure, restricted oil filter, valve body, forward clutch assembly, reverse clutch assembly, low/reverse clutch assembly and direct clutch assembly.

Delayed/Soft Reverse &/Or Forward Engagement

Check fluid level, axle shafts and CV joints, engine/transaxle mounts, shift linkage, line pressure, restricted oil filter, valve body, forward clutch assembly, reverse clutch assembly, low/reverse clutch assembly and direct clutch assembly.

No Forward Or Reverse Engagement

Check fluid level, shift linkage, line pressure, oil pump, restricted oil filter, valve body, torque converter, turbine shaft to forward/coast/direct clutch cylinder, chain and sprocket assembly, park pawl mechanism, axle shafts and CV joints, final drive assembly and planetary gear assemblies.

SHIFTING FAULTS

All Or Some Shifts Not Present

Check fluid level, shift linkage, speedometer drive/driven gear, valve body, band, low one-way clutch assembly, overdrive/reverse sun gear and shell, case, oil pump, direct clutch assembly, intermediate/overdrive servo, coast clutch assembly and forward one-way clutch assembly.

Early Or Late Shifting

Check tire size and speedometer drive/driven gear.

Erratic/Hunting Shift Timing

Check fluid, vehicle speed input, valve body and miscellaneous internal failures.

Soft/Slipping Shift Feel

Check fluid condition, shift linkage, low line pressure, valve body, oil pump assembly and leaking filter and/or seal.

Harsh Shift Feel

Check fluid level and condition, axle shafts and CV joints, high line pressure, valve body and torque converter.

No First Gear (In "D" Position)

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Check shift linkage, valve body and internal seal(s) leakage.

No Low Gear

Check shift linkage and valve body.

MISCELLANEOUS FAULTS

No Torque Converter Clutch

Check valve body and torque converter.

Torque Converter Clutch Always Engaged

Check valve body, oil pump assembly, torque converter and transaxle case.

Stiff Shift Lever Operation

Check shift interlock system, shift linkage and manual valve (valve body).

Poor Vehicle Performance

Check correct shift linkage to shift lever indexing, torque converter (TCC applied and one-way clutch).

No Engine Braking In Manual Low Position

Check valve body, coast clutch assembly, low/reverse clutch assembly and oil pump assembly.

No Engine Braking In Manual 2nd Position

Check shift linkage, valve body, forward one-way clutch assembly, coast clutch assembly and oil pump assembly.

Vehicle Movement In Neutral Position

Check shift linkage, oil pump assembly and forward/coast clutch assembly.

CLUTCH & BAND APPLICATION

CLUTCH & BAND APPLICATION

Selector Lever Application	Elements In Use
Reverse ("R")	Low/Reverse Clutch & Reverse Clutch
Drive ("D")	
First	Forward Clutch, Forward 1-Way Clutch & Low 1-Way Clutch

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Second	Low/Intermediate Band, Forward Clutch & Forward 1- Way Clutch
Third	Direct Clutch, Forward Clutch & Forward 1-Way Clutch
Fourth	Low/Intermediate Band, Direct Clutch & Forward Clutch
Manual Second	Low/Intermediate Band, Forward Clutch, Forward 1-Way Clutch & Coast Clutch
Manual First	Forward Clutch, Forward 1-Way Clutch, Coast Clutch, Low/Reverse Clutch & Low 1- Way Clutch

TESTING

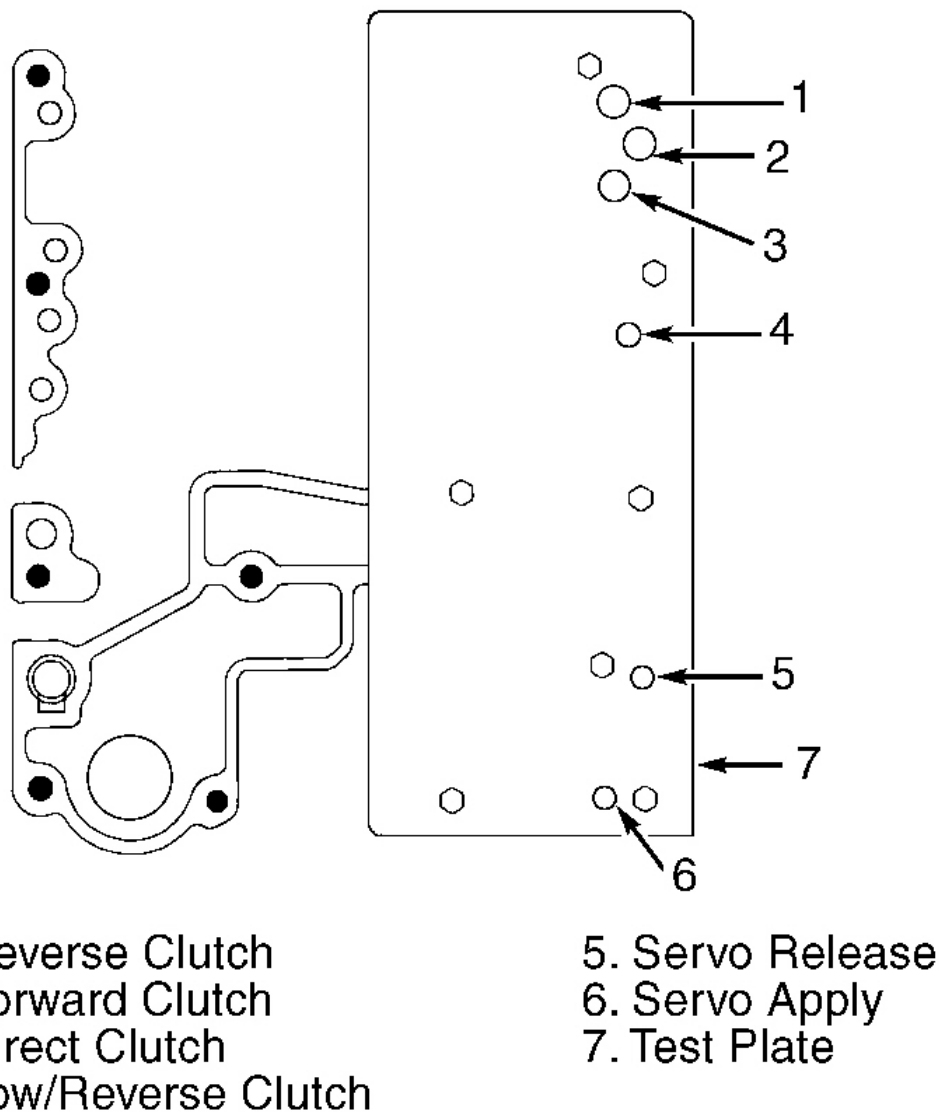
AIR PRESSURE CHECK

1. Disconnect negative battery cable. Remove air cleaner assembly. Disconnect transaxle harness connector. Compress tabs on transaxle electrical harness receptacle and push into case. Raise and support vehicle.
2. Remove drain plug and drain fluid. Remove left front fender splash shield. Secure cooler lines away from main control cover assembly (side cover). Remove cover and gasket. Remove 12 valve body bolts. Slightly lift valve body and remove "Z" link.
3. Remove valve body with wiring harness. Remove thermostatic oil level control valve bracket. Pull valve straight out of transaxle case.

CAUTION: DO NOT air check coast clutch unless air pressure is maintained in forward clutch circuit, or piston may be forced out of forward clutch piston.

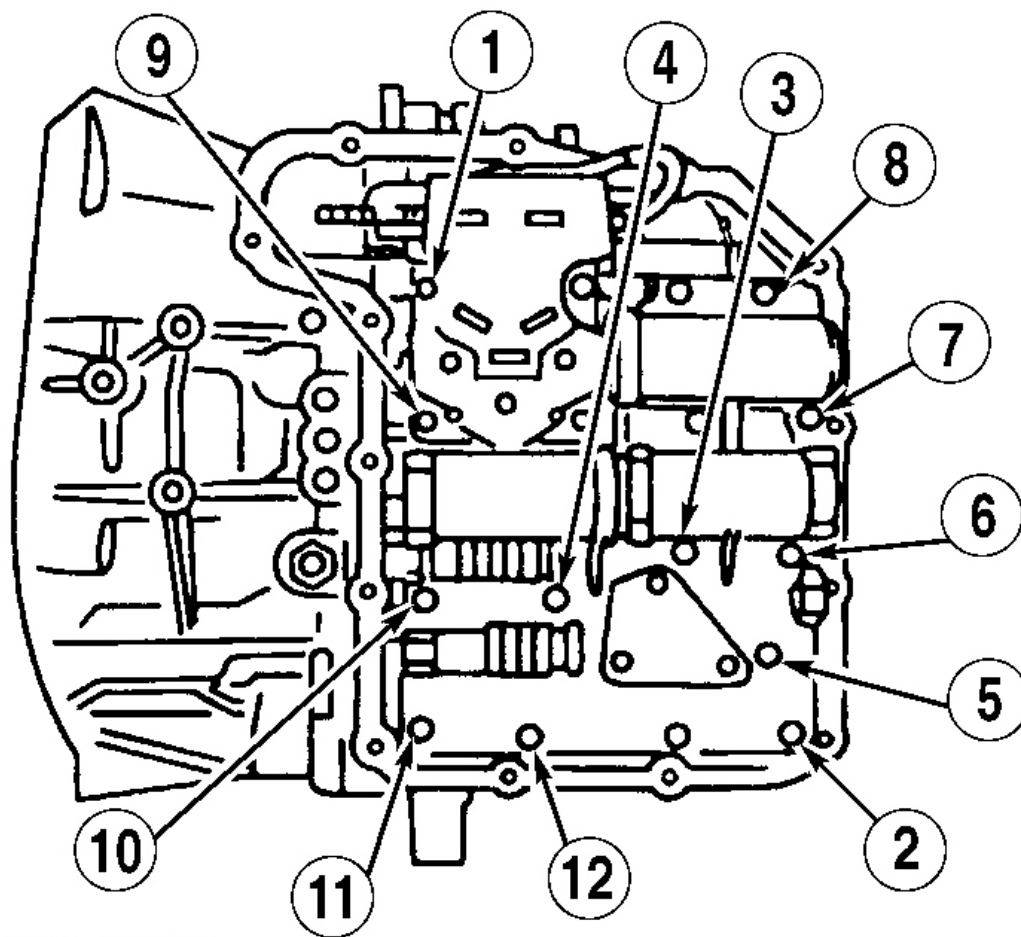
4. Install Transmission Test Plate (T94P-77000-S). Air check clutch hydraulic circuits for function and leakage. See **Fig. 5**. If leakage is detected, disassemble transaxle and inspect. Remove test plate.
5. Install thermostatic oil level control valve in transaxle case. Install bracket. Tighten bolt to specification. See **TORQUE SPECIFICATIONS**. Install new "O" ring on valve body harness connector receptacle. Install receptacle in transaxle case.
6. Insert "Z" link into end of manual valve. Place valve body in position on transaxle case and install 12 valve body bolts. Tighten bolts in sequence. See **Fig. 6**. Tighten bolts to specification.
7. Remove manual control lever bolt and lever assembly. Using Shifter Shaft Alignment Tool (T94P-77000-H), move manual control lever shaft to "D" position. Install pin to hold tool in position. See **Fig. 7**. Move manual valve detent lever assembly to "D" position.
8. Loosen nut on ball stud of manual valve detent lever actuating rod assembly. Snug nut on ball stud. Remove shifter pin. Rotate Shifter Shaft Alignment tool until socket can be installed on nut. Tighten bolt to specification.

9. Rotate lever back to "D" position and recheck adjustment. Remove pin and alignment tool. Install manual control lever assembly. Tighten bolt to specification. See **TORQUE SPECIFICATIONS**. Install main control cover (side cover) with new gasket. Tighten bolts in sequence. See **Fig. 8**. Tighten bolts to specification.
10. To complete installation, reverse removal procedures. Tighten drain plug to specification. Add six qts. of Mercon ATF. Start and run vehicle. Add fluid as necessary.



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Fig. 5: Air Checking Transaxle Assembly
 Courtesy of FORD MOTOR CO.



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Fig. 6: Valve Body Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.

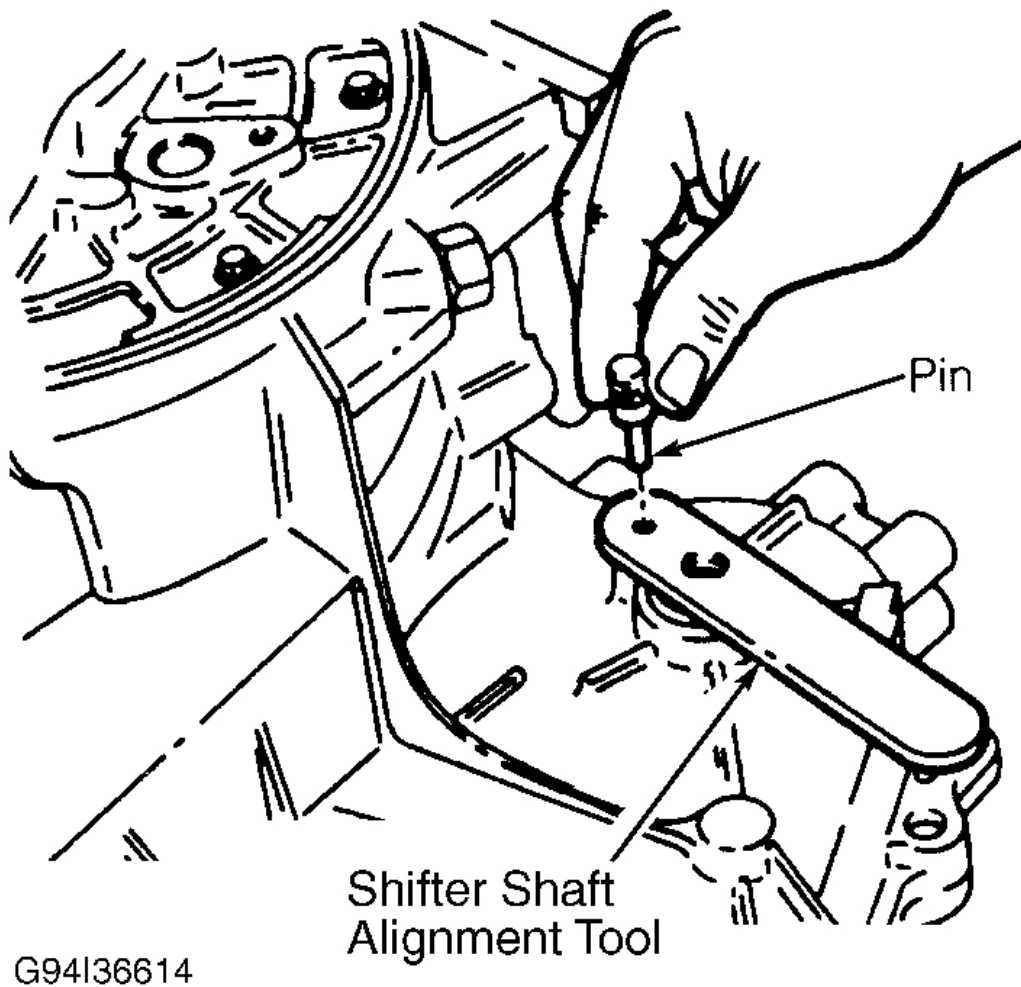
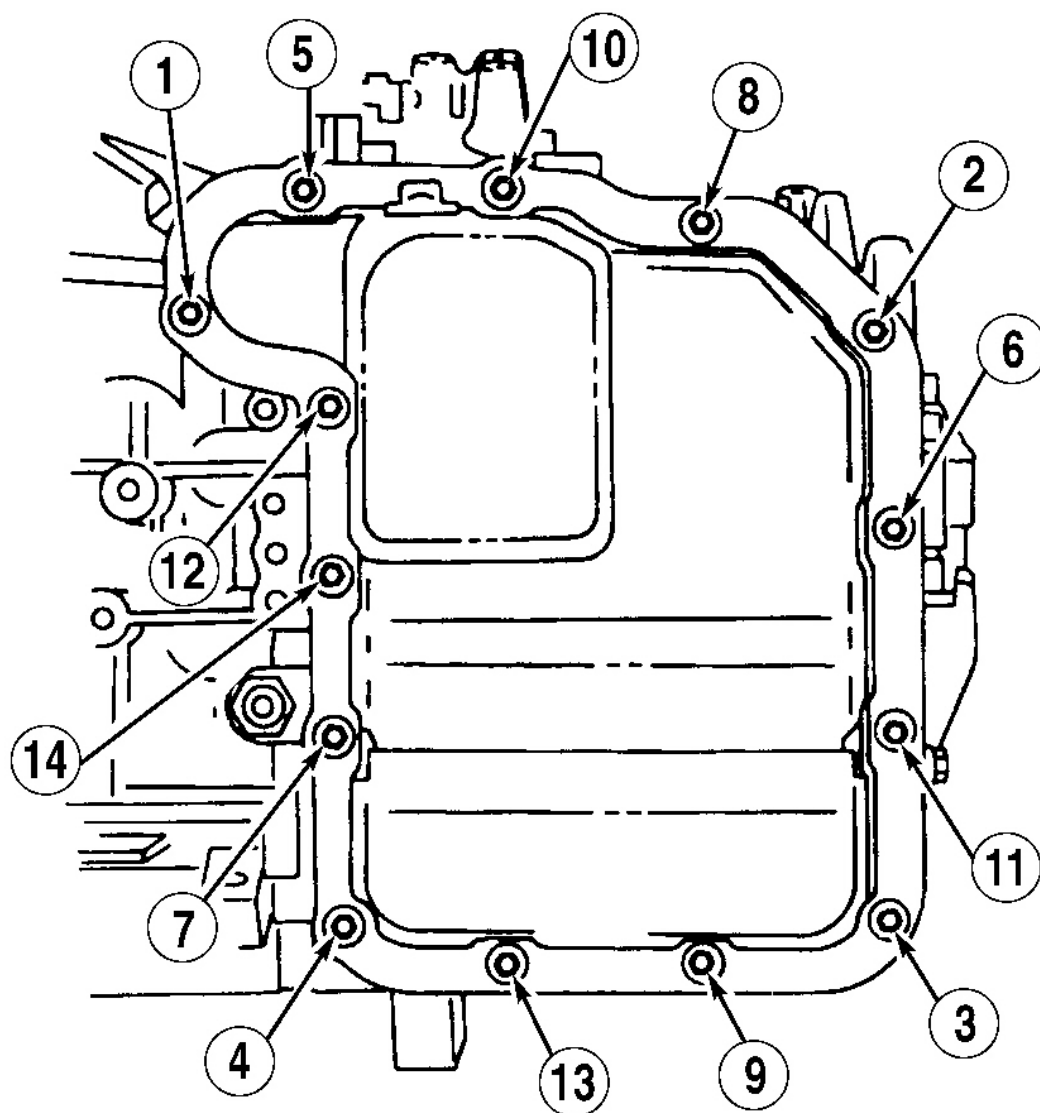


Fig. 7: Installing Shifter Shaft Alignment Tool
Courtesy of FORD MOTOR CO.



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Fig. 8: Cover Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.

CAUTION: Perform line pressure test before performing stall speed test. If line pressure is low at stall, DO NOT perform stall speed test or transaxle damage will occur. DO NOT maintain Wide Open Throttle (WOT) in any gear for more than 5 seconds.

LINE PRESSURE TEST

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Test Procedure

Connect pressure gauge to line pressure test port. See **Fig. 9**. Start engine. Apply service and parking brakes. Check pressure in all gears. See **LINE PRESSURE SPECIFICATIONS (PSI)**. If line pressure is not within specification, perform appropriate electronic test. See appropriate ELECTRONIC CONTROLS article. If no electronic faults are present, perform air pressure checks and service valve body or pump as required. See AIR PRESSURE TEST.

Line Pressure Low At Idle In All Ranges

Check low fluid level, restricted inlet filter, loose valve body or valve body components, oil pump leakage and sticking main regulator valve.

Line Pressure High In All Ranges

Check main regulator valve, solenoid body and wiring harness and perform Quick Test procedure.

LINE PRESSURE SPECIFICATIONS (PSI)

Selector Position	Idle RPM	WOT Stall RPM
"P" & "N"	64-76	N/A
"R"	64-76	259-294
"D"	45-63	168-184
"2"	45-63	168-184
"L"	45-63	168-184

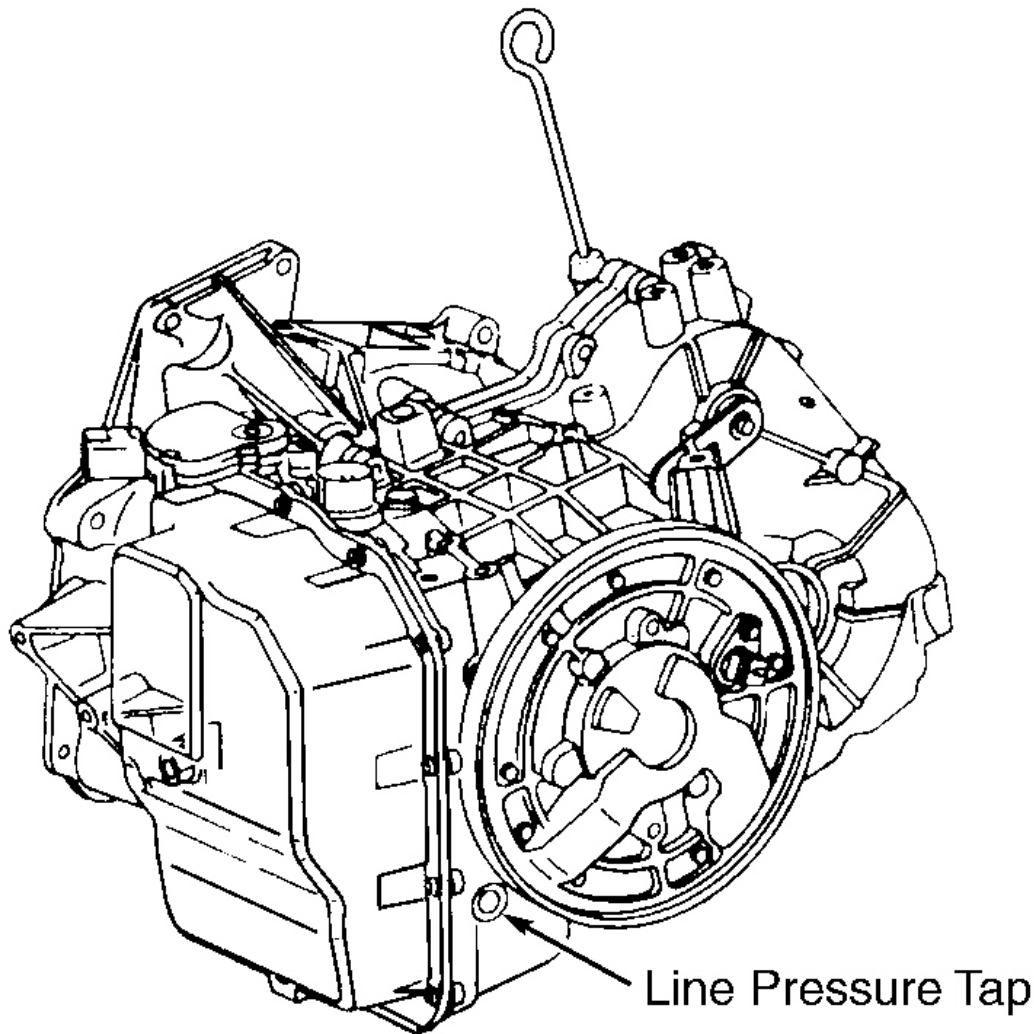


Fig. 9: Identifying Line Pressure Test Port
Courtesy of FORD MOTOR CO.

STALL SPEED TEST

NOTE: After each test, shift transaxle into Neutral and run engine for at least 15 seconds to cool torque converter and transmission fluid.

CAUTION: DO NOT maintain Wide Open Throttle (WOT) in any gear for more than 5 seconds. If engine RPM exceeds maximum specified stall speed, release accelerator immediately. Clutch or band slippage is indicated.

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The stall speed test checks the operation of the following items:

- Converter One-Way Clutch
 - Forward Clutch
 - Low/Reverse One-Way Clutch
 - Reverse Clutch
 - Forward One-Way Clutch
 - Engine Performance
1. Apply service and parking brakes. Connect tachometer to engine, and record RPM reached in each gear selector range (except Neutral) at WOT. See **STALL SPEED SPECIFICATIONS (RPM)**. If stall speeds exceed specification, ensure engine is mechanically okay and tuned to specification. If engine is okay, remove torque converter and check torque converter one-way clutch for slippage.
 2. If stall speed is too high in "D", "2" or "1", the following components may be faulty:
 - Forward Clutch
 - Forward One-Way Clutch
 - Low One-Way Clutch
 3. If stall speed is too high in "R", the following components may be faulty:
 - Low/Reverse Clutch
 - Reverse Clutch

STALL SPEED SPECIFICATIONS (RPM)

Model	Stall Speed RPM
Contour & Mystique	
2.0L	2315-2700
2.5L	2325-2710
Probe (2.0L)	2260-2675

SHIFT POINT ROAD TEST

1. Ensure engine and transaxle is at normal operating temperature. Road test vehicle in "D". Apply minimum throttle and observe speeds at which upshift occurs and torque converter engages. See **VEHICLE SHIFT SPEEDS**.

VEHICLE SHIFT SPEEDS

Operating Conditions	Shift Speed MPH: Probe	⁽¹⁾ Shift Speed MPH: Exc. Probe
Minimum Throttle ⁽²⁾		
1-2	9-19	9-19
2-3	20-30	⁽³⁾ 18-28
3-4	35-45	33-43
Partial Throttle ⁽⁴⁾		

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1-2	12-22	(5) 18-28
2-3	27-37	(6) 33-43
3-4	54-64	51-61
WOT		
1-2	30-40	30-40
2-3	62-72	(7) 61-71
3-4	97-107	(8) 93-103
Coast ⁽⁹⁾		
4-3	17-27	27-37
3-2	N/A	N/A
3-1	5-15	(10) 5-15
2-1	5-15	(10) 5-15
Manual 2-1	27-37	(11) 30-40

(1) Contour and Mystique 2.0L.

(2) Minimum throttle opening (13%).

(3) 17-27 MPH (Contour and Mystique 2.5L).

(4) Partial throttle opening (30%).

(5) 16-26 MPH (Contour and Mystique 2.5L).

(6) 30-40 MPH (Contour and Mystique 2.5L).

(7) 64-74 MPH (Contour and Mystique 2.5L).

(8) 103-113 MPH (Contour and Mystique 2.5L).

(9) Closed throttle, coating condition. Downshift may be imperceptible.

(10) 6-16 MPH (Contour and Mystique 2.5L).

(11) 33-43 MPH (Contour and Mystique 2.5L).

TORQUE CONVERTER

CONVERTER END PLAY CHECK

With torque converter removed from transaxle, position End Play Checking Device (T80L-7902-A) and Sleeve (T94P-77000-V) in converter hub. Tighten nut on device. Position a dial indicator on device. Position dial indicator pointer on converter shell. See **Fig. 10**. Lift up on device handles. If dial indicator reading exceeds .050" (1.27 mm), replace converter.

LEAKAGE CHECK

With torque converter removed from transaxle, check for leakage using torque converter leak tester.

ONE-WAY CLUTCH CHECK

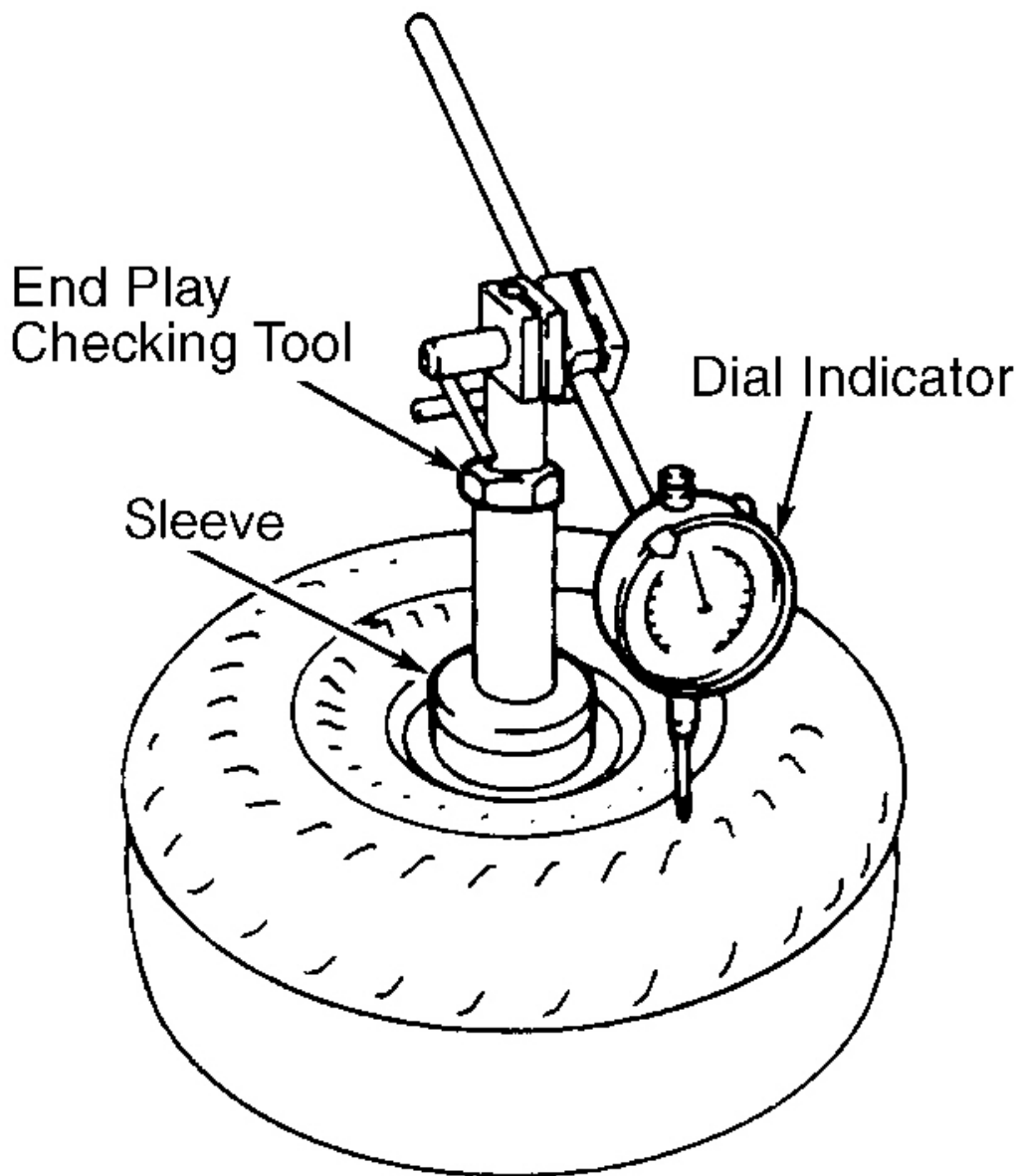
Place 90 degree end of pick tool in slot on bottom of converter stator. While holding pick, rotate inner race with fingers. One-way clutch should not rotate in counter-clockwise direction and should rotate in clockwise direction. Replace converter if one-way clutch does not operate as specified.

PUMP INSERT CHECK

Install oil pump shaft into torque converter. Using torque wrench with 5/16" socket, ensure insert can hold up to 10 ft. lbs. Replace converter if insert turns.

TURBINE TORQUE CHECK

Install End Play Checking Tool (T81P-7902-D) with sleeve into turbine splines in converter. Using torque wrench, measure turbine turning torque. Replace converter if torque exceeds 71 INCH lbs. (8 N.m).



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Fig. 10: Measuring Torque Converter End Play
Courtesy of FORD MOTOR CO.

REMOVAL & INSTALLATION

See appropriate TRANSMISSION REMOVAL - A/T article in TRANSMISSION SERVICING.

TRANSAXLE DISASSEMBLY

NOTE: For identification and position verification of thrust bearings and washers, see **Fig. 33**.

1. Ensure outside of transaxle is clean. Mount transaxle on stand. Remove and drain torque converter. Remove drain plug from transaxle if fluid was not drained before removal. Pull oil pump shaft from end of turbine shaft.
2. Using appropriate puller, remove torque convert hub seal. Remove differential seals. Remove transmission speed sensor from outside of pump housing. Remove dipstick tube and grommet. Remove vehicle speed sensor. Remove manual lever position sensor.
3. Remove main control cover assembly (side cover) bolts in crisscross pattern. Remove cover and gasket. Compress tabs on transaxle electrical harness receptacle and push into case. Remove 12 valve body bolts. Slightly lift valve body and remove "Z" link.
4. Remove valve body with wiring harness. Remove thermostatic oil level control valve bracket. Pull valve straight out of transaxle case. Remove forward clutch circuit servo filter (if equipped). Using Servo Cover Remover/Replacer (T94P-77000-L), compress servo cover assembly. Remove retaining ring and release servo cover pressure. Remove tool. Remove servo cover assembly, piston and return spring.
5. Position transaxle so converter housing is facing upward. Remove 20 converter housing-to-transaxle case bolts. Separate case halves. See **Fig. 2**. Remove and discard split flange gasket. Remove No. 15 thrust bearing, No. 14 shim and speedometer drive gear from final drive/differential assembly.
6. Remove final drive/differential assembly. Unsnap and remove front chain cover. Remove driven sprocket No. 13 thrust bearing. Remove No. 10 thrust washer from reverse/overdrive ring gear assembly. Lift drive chain assembly, driven sprocket assembly and reverse/overdrive ring gear assembly together from case.
7. Remove rear chain cover with magnet attached. Using blind hole puller, remove oil filter recirculating regulator exhaust seal and discard. See **Fig. 11**. Remove and discard oil filter. Remove driven sprocket No. 12 thrust bearing assembly and No. 11 shim.
8. Unsnap socket end of manual valve detent lever actuating rod assembly from parking cam actuator lever assembly. Unsnap opposite end of actuating rod. Remove reverse/overdrive ring gear No. 9 thrust bearing assembly. Remove reverse/overdrive planetary carrier assembly with No. 8 thrust bearing. Inspect reverse/overdrive carrier pinion gear end play. Clearance should be .006-.028" (.15-.72 mm). Replace carrier assembly if clearance is not within specification.
9. Remove reverse/overdrive sun gear and shell assembly. See **Fig. 3**. Remove No. 7 thrust bearing. Remove low/intermediate ring gear assembly. Remove No. 6 thrust bearing. Remove low/intermediate planetary carrier assembly. Inspect low/intermediate carrier pinion gear end play. Clearance should be .006-.028" (.15-.72 mm). Replace carrier assembly if clearance is not within specification.
10. Remove low/intermediate sun gear No. 5 thrust bearing, forward one-way clutch and low/intermediate sun gear assembly. Remove No. 4 turbine shaft thrust bearing. Remove turbine shaft. Remove Forward/Coast/Direct (F/C/D) cylinder assembly and reverse clutch drum assembly. Remove pump support No. 1 thrust bearing assembly.
11. Remove low one-way clutch retaining snap ring. Remove thrust plate. Remove low one-way clutch assembly. Remove low/reverse clutch wave spring and clutch plates. Remove retaining snap ring. Remove low/reverse clutch return spring assembly. Pull out low/reverse clutch piston from bore.
12. Turn transaxle case over with pump facing upward. Remove 9 pump housing bolts. Using appropriate

puller with slide hammer, remove pump assembly. Slide out intermediate and overdrive band from case. Remove final drive ring gear from converter housing.

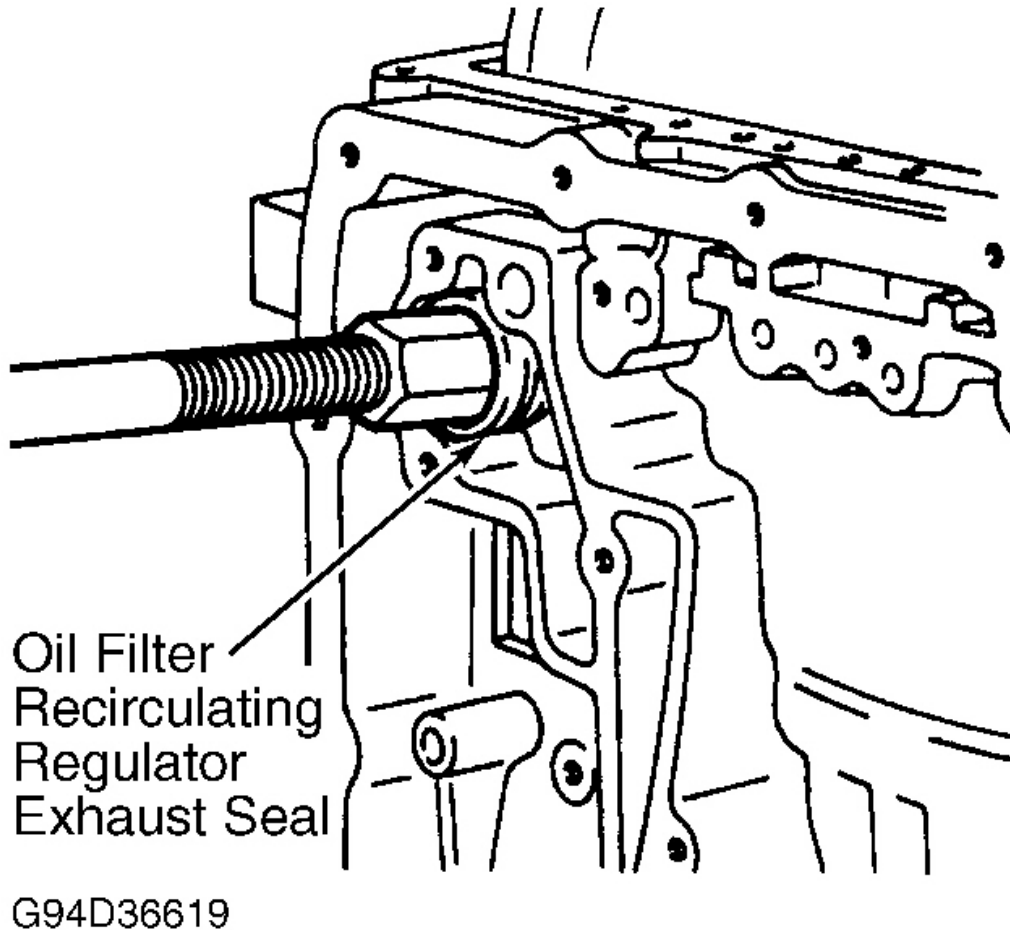


Fig. 11: Removing Oil Filter Seal
Courtesy of FORD MOTOR CO.

COMPONENT DISASSEMBLY & REASSEMBLY

FORWARD ONE-WAY CLUTCH & LOW-INTERMEDIATE SUN GEAR ASSEMBLY

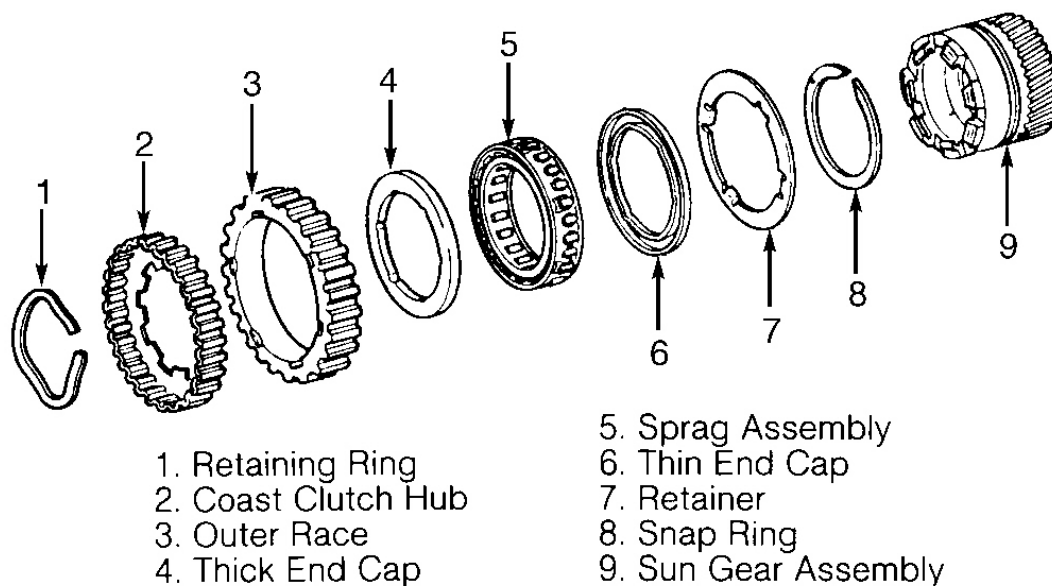
NOTE: Inspect clutch discs for wear and/or overheating. Individual clutch disc thicknesses are not supplied by manufacturer.

Disassembly

Remove coast clutch hub retaining ring. Remove coast clutch hub. Remove forward one-way clutch outer race and sprag assembly with end caps. Separate sprag assembly and end caps from outer race. Note position of end caps. End caps are different thicknesses. See **Fig. 12**. Remove forward one-way clutch retainer. Remove retaining ring from sun gear assembly. Inspect parts for wear or damage, replace as needed.

Reassembly

Install retaining ring gear on sun gear assembly. Install clutch retainer. Assemble sprag assembly and end caps. Ensure end caps are in correct position. Install remaining components in reverse order of disassembly. Check operation of assembly. With sun gear facing upward, sun gear should turn clockwise while holding outer race. See **Fig. 12**.



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Fig. 12: Exploded View Of Forward One-Way Low-Intermediate Sun Gear Assy.
Courtesy of FORD MOTOR CO.

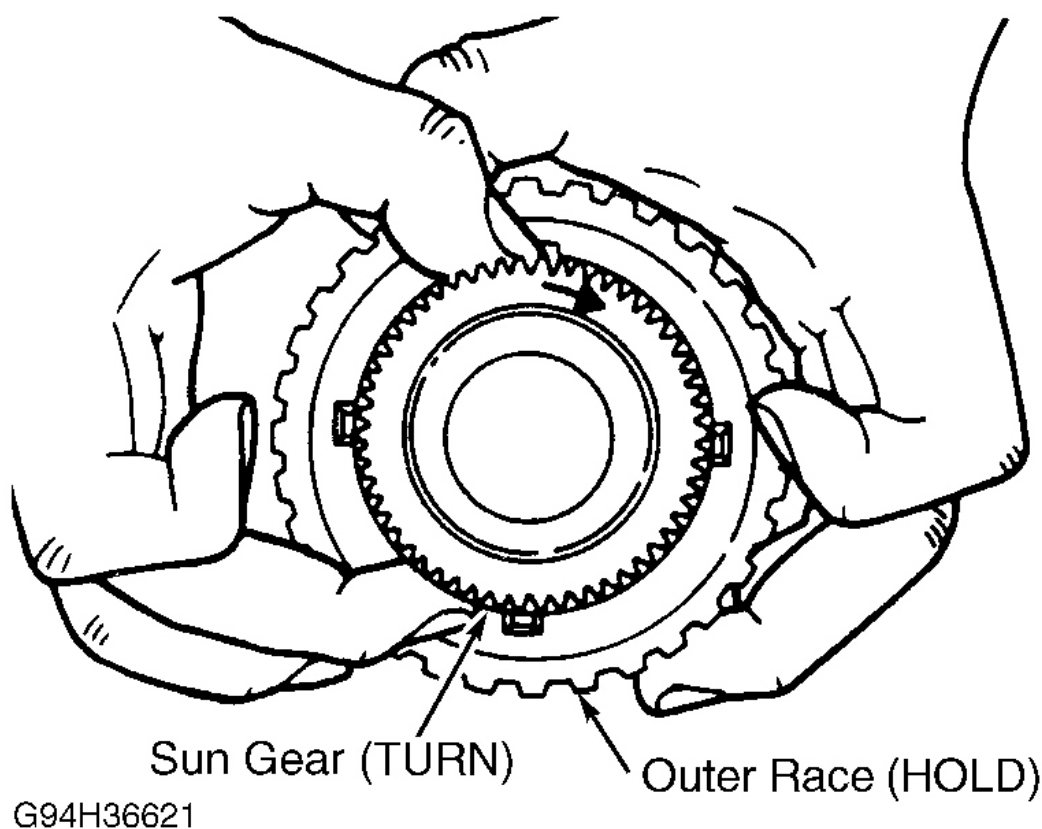


Fig. 13: Inspecting Forward One-Way Clutch Operation
Courtesy of FORD MOTOR CO.

LOW ONE-WAY CLUTCH ASSEMBLY

Disassembly & Reassembly

Position clutch with inner and outer race grooves facing upward. Remove inner race. Remove roller assembly. Clean and inspect parts for wear or damage. Replace as needed. To reassemble, reverse disassembly procedures. Check operation of clutch assembly. Inner race should turn clockwise while holding outer race. See **Fig. 15**.

CAUTION: The inner race groove must face up.

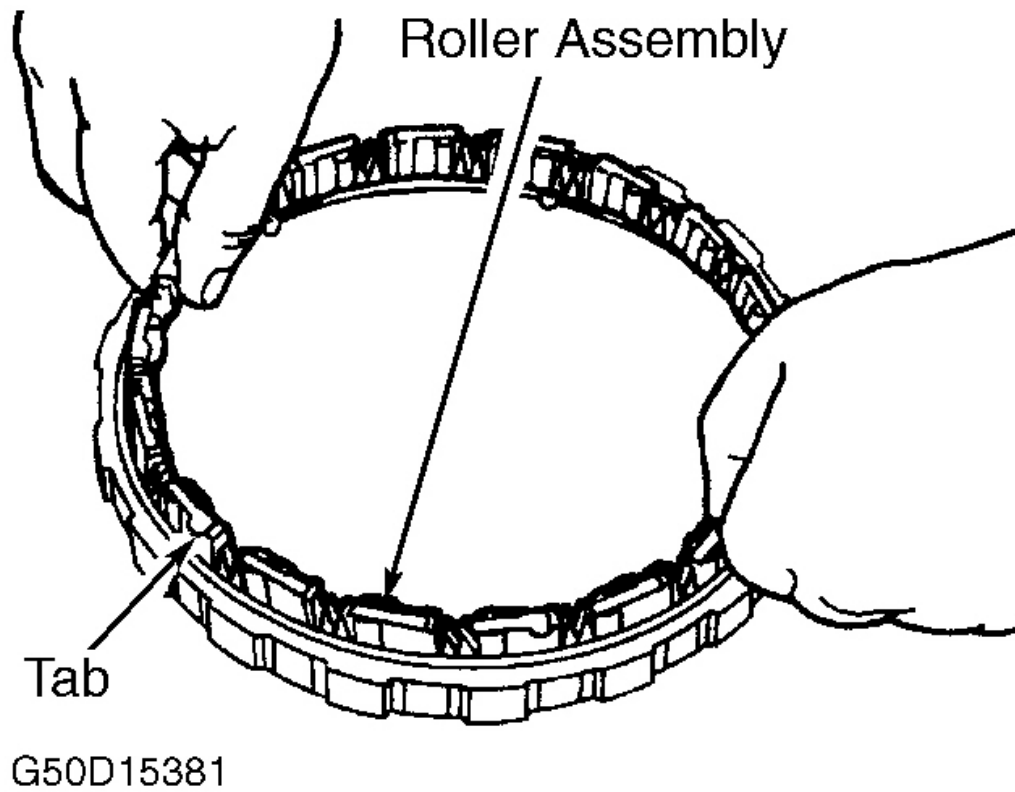


Fig. 14: Installing Roller Assembly
Courtesy of FORD MOTOR CO.

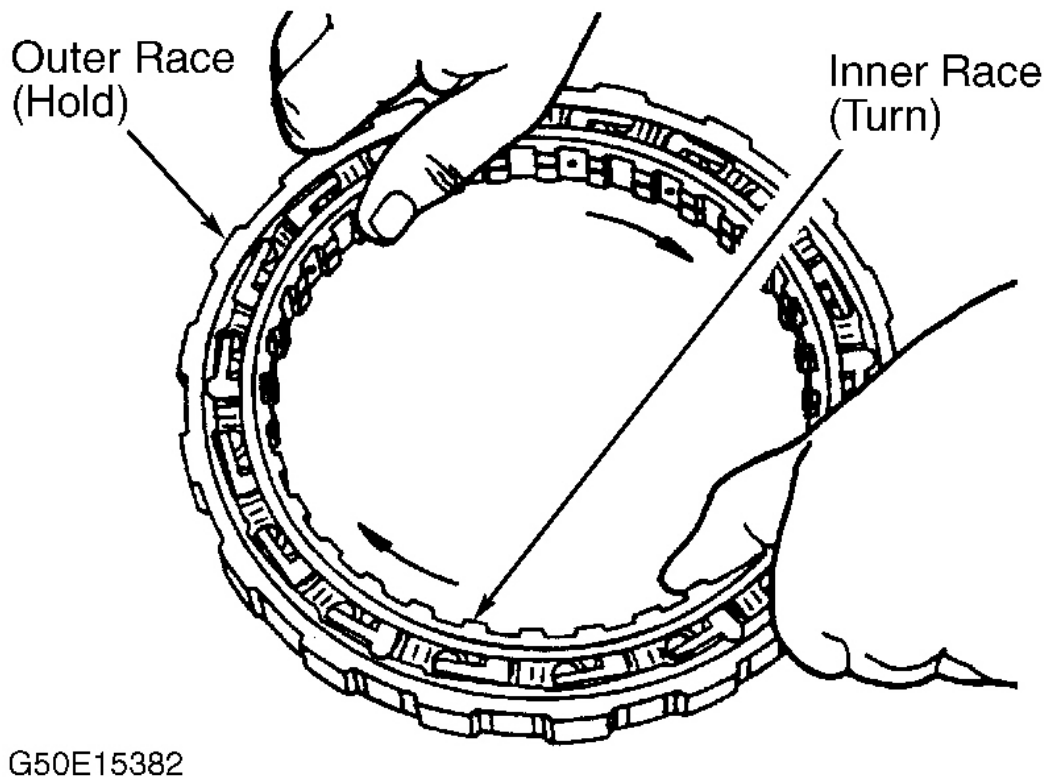


Fig. 15: Rotating Inner Race Clockwise
Courtesy of FORD MOTOR CO.

FINAL DRIVE/DIFFERENTIAL ASSEMBLY

NOTE: Final drive differential backlash specification is not available from manufacturer.

Disassembly & Reassembly

Using pin punch, remove pinion shaft roll pin. Remove pinion shaft. Remove pinion gears, side gears and thrust washers. Clean and inspect parts for wear or damage. Replace as needed. To reassemble, reverse disassembly procedures. Check thrust clearance of final drive planetary pinion gears. Thrust clearance should be .006-.025" (.17-.65 mm). Replace thrust washers as needed.

FORWARD/COAST/DIRECT CLUTCH CYLINDER ASSEMBLY

Disassembly

1. Support assembly on block of wood (shell facing downward). Remove reverse clutch hub retaining ring.

Remove reverse clutch hub. Remove reverse clutch drum assembly from direct clutch hub and shell assembly. See **REVERSE CLUTCH DRUM**. See **Fig. 16**. Remove direct clutch hub and shell from forward/coast/direct clutch cylinder. Remove No. 2 direct clutch thrust washer.

2. Remove direct clutch pressure plate retaining snap ring. See **Fig. 17**. Remove clutch plates. Using spring compressor, compress direct clutch support. Remove snap ring. Remove direct clutch return spring assembly. Remove direct clutch piston.
3. Turn assembly over. Remove forward clutch snap ring. Remove clutch plates. Using spring compressor, compress clutch return spring assembly. Remove snap ring and spring assembly. Remove forward/coast piston.

Reassembly

1. Before assembling forward/coast clutch drum, soak friction plates in transmission fluid for 15 minutes. Replace all necessary seals. Using Coast Clutch Piston Seal Protector (T94P-77000-D3), install coast clutch piston into forward clutch piston assembly.
2. Install clutch spring assembly. Compress spring assembly and install snap ring. Install clutch plates. See **Fig. 17**. Install pressure plate snap ring and measure clearance between pressure plate and snap ring. Forward/Coast clutch pack clearance should be .020-.043" (.50-1.09 mm). If clearance is not within specification, select proper thickness snap ring. Snap rings are available in the following thicknesses: .050-.054" (1.28-1.38 mm), .055-.059" (1.39-1.49 mm), .060-.064" (1.52-1.62 mm) and .065-.069" (1.65-1.75 mm).
3. Turn assembly over. Install direct clutch piston. Install spring assembly. Compress spring assembly and install snap ring. Install clutch plates. See **Fig. 17**. Mount dial indicator on clutch cylinder. Position dial indicator plunger on direct clutch pressure plate. See **Fig. 18**. Using two picks, pull pressure plate upward.
4. Record clearance measurement. Move dial indicator to opposite side of pressure plate. Measure clearance and average with previous measurement. Direct clutch pack clearance should be .020-.044" (.52-1.12 mm). If clearance is not within specification, select proper thickness snap ring. Snap rings are available in the following thicknesses: .050-.054" (1.28-1.38 mm), .055-.059" (1.39-1.49 mm), .060-.064" (1.52-1.62 mm) and .065-.069" (1.65-1.75 mm).

NOTE: **Install all necessary seals during reassembly process.**

5. Install No. 2 direct clutch thrust washer on clutch cylinder with tabs facing down. Set clutch cylinder assembly on block of wood. Install direct clutch hub and shell on clutch cylinder. See **Fig. 16**.
6. Install reverse clutch drum assembly and clutch hub. Install retaining snap ring. Turn assembly over. Install clutch cylinder hub seal. Size seal using coast clutch piston seal sizer. See **Fig. 19**.
7. To air check assembly, install assembly, with reverse clutch drum, onto oil pump support. Ensure pump support sealing rings are in good condition. Using air nozzle, blow air into oil pump passages. See **Fig. 20**. **DO NOT** blow air into passage No. 1 (converter clutch bypass). Ensure air pressure does not exceed 40 psi. Leaking air indicates sealing malfunction. Inspect and repair as needed.

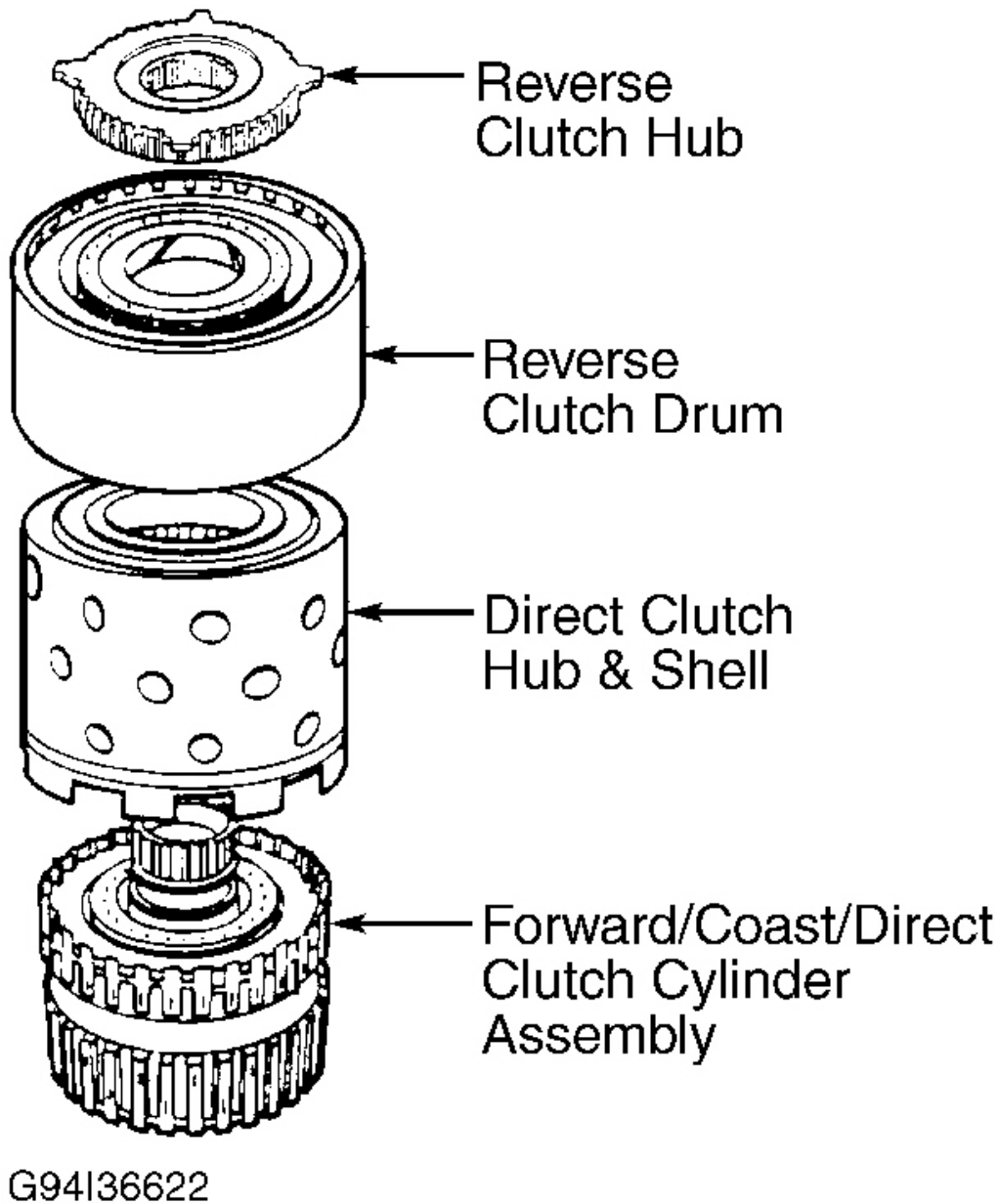
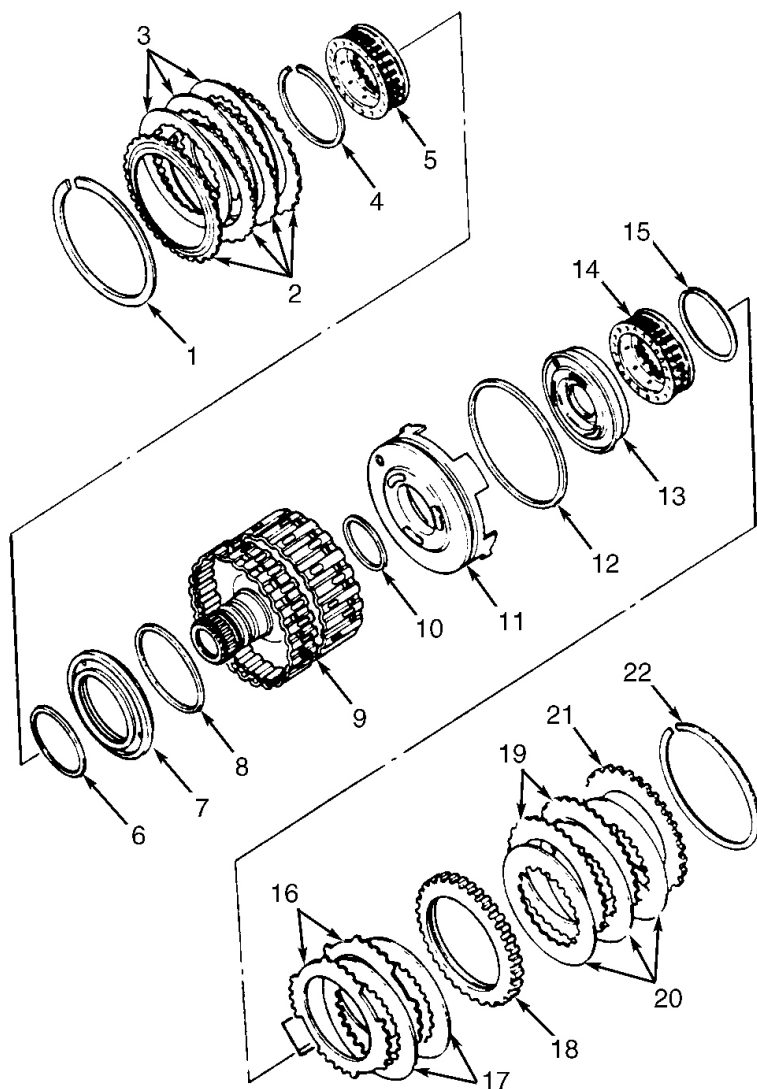


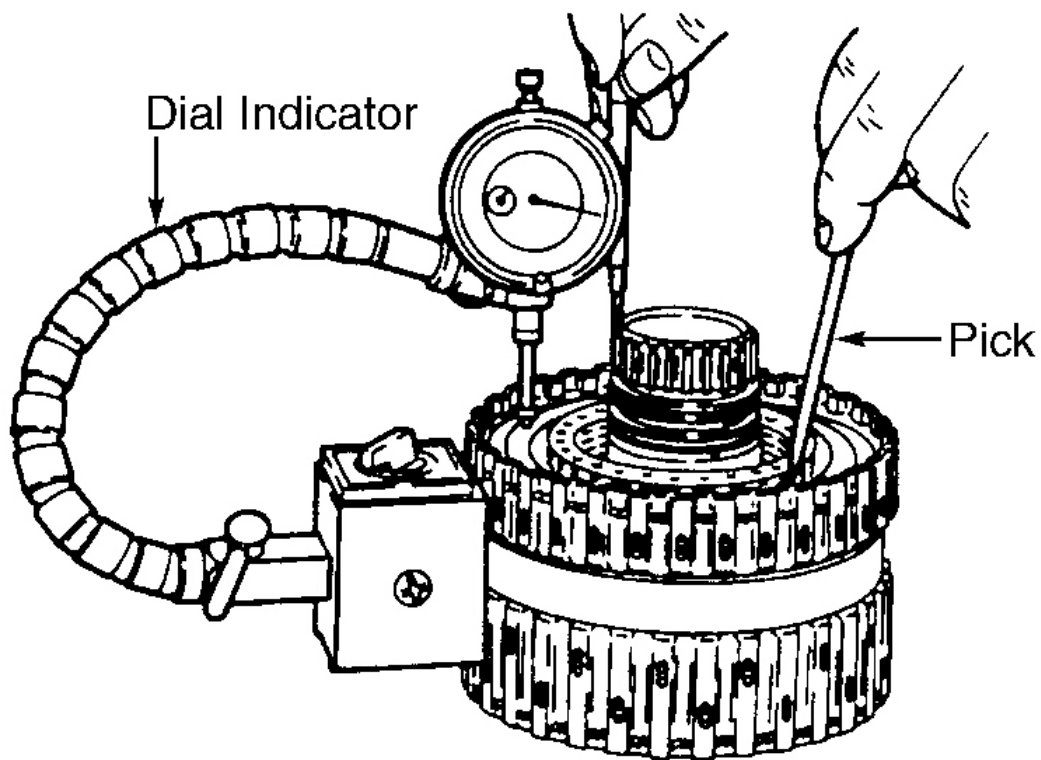
Fig. 16: Identifying Forward/Coast/Direct Clutch Assembly With Reverse Clutch Assembly
Courtesy of FORD MOTOR CO.



- | | |
|--------------------------------|-----------------------------|
| 1. Snap Ring | 12. Outer Piston Seal |
| 2. Pressure Plate/Steel Plates | 13. Coast Clutch Piston |
| 3. Friction Plates | 14. Return Spring Assembly |
| 4. Snap Ring | 15. Snap Ring |
| 5. Return Spring Assembly | 16. Steel Clutch Plates |
| 6. Inner Piston Seal | 17. Friction Clutch Plates |
| 7. Direct Clutch Piston | 18. Coast Pressure Plate |
| 8. Outer Piston Seal | 19. Forward Friction Plates |
| 9. Clutch Cylinder Assembly | 20. Forward Steel Plates |
| 10. Inner Seal | 21. Forward Pressure Plate |
| 11. Forward Clutch Piston | 22. Snap Ring |

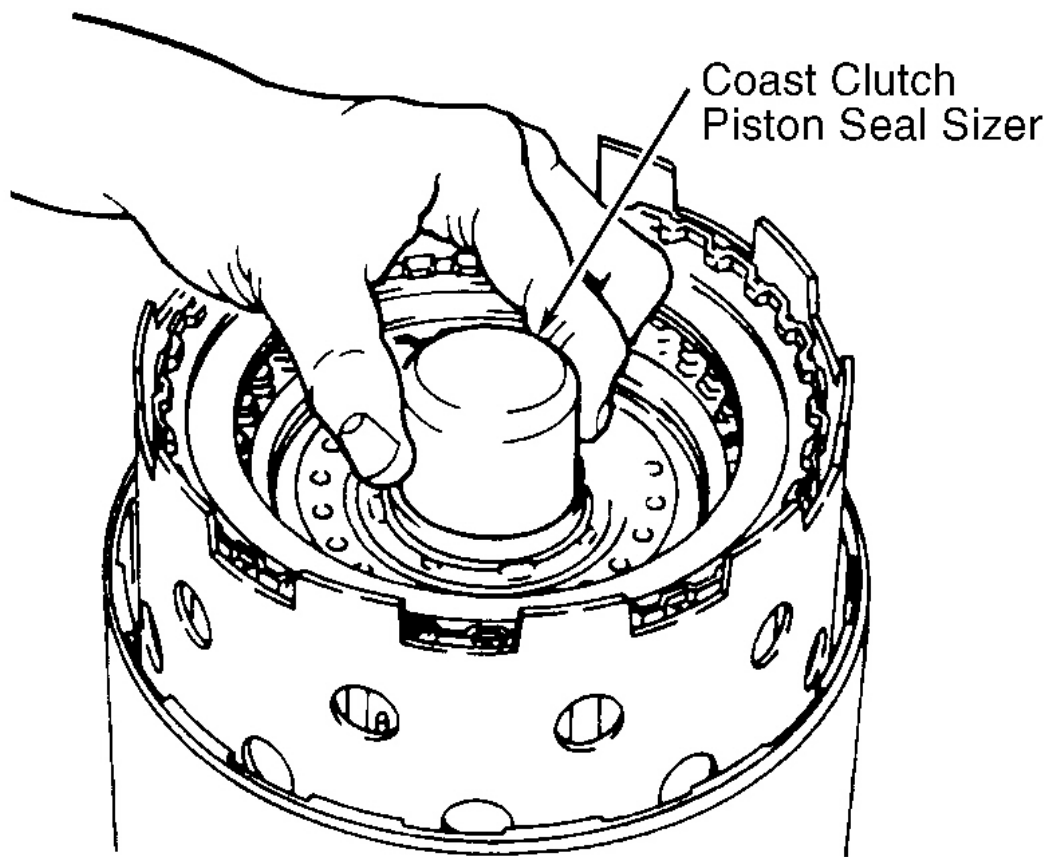
G94J36623

Fig. 17: Exploded View Of Forward/Coast/Direct Clutch Assembly
Courtesy of FORD MOTOR CO.



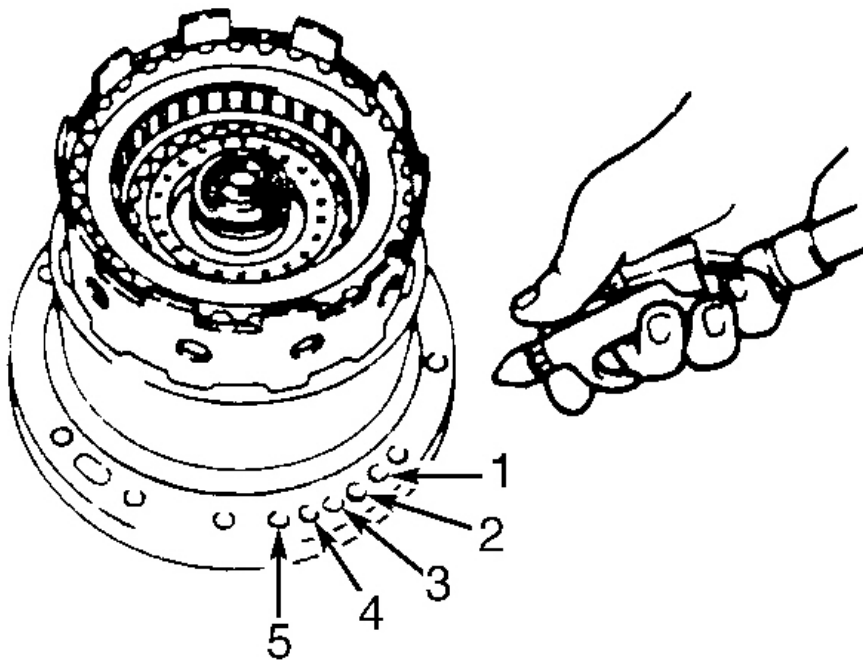
G94A36624

Fig. 18: Measuring Direct Clutch Pack Clearance
Courtesy of FORD MOTOR CO.



G94B36625

Fig. 19: Installing Piston Seal Sizer
Courtesy of FORD MOTOR CO.



- | | |
|-----------------------------|------------------|
| 1. Converter Clutch By-Pass | 4. Direct Clutch |
| 2. Reverse Clutch | 5. Coast Clutch |
| 3. Forward Clutch | |

G94C36626

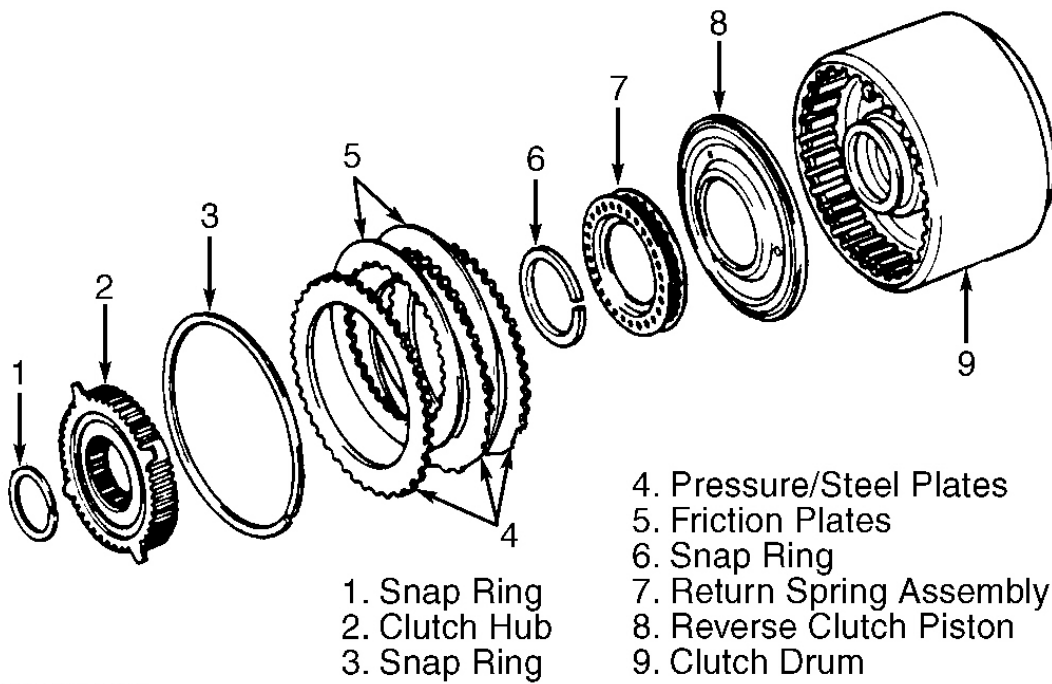
Fig. 20: Air Checking Forward/Coast/Direct Clutch Assembly
 Courtesy of FORD MOTOR CO.

REVERSE CLUTCH DRUM

Disassembly & Reassembly

1. Remove reverse clutch pressure plate snap ring. Remove reverse clutch pressure plate with clutch plates. See [Fig. 21](#). Using compressor, compress spring assembly and remove snap ring. Remove spring assembly. Remove reverse clutch piston.
2. Before assembling reverse clutch drum, soak friction plates in transmission fluid for 15 minutes. Replace all necessary seals. Using Reverse Clutch Piston Seal Protector (T94P-77000-D2), install reverse clutch piston. See [Fig. 22](#). Install spring assembly. Compress spring assembly and install retaining snap ring. Install clutch discs and pressure plate. See [Fig. 21](#).
3. Install pressure plate snap ring and measure clearance between pressure plate and snap ring. Reverse clutch pack clearance should be .012-.035" (.33-.89 mm). If clearance is not within specification, select

proper thickness snap ring. Snap rings are available in thicknesses; .055-.059" (1.40-1.50 mm), .060-.064" (1.52-1.63 mm) and .066-.070" (1.68-1.78 mm).



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Fig. 21: Exploded View Of Reverse Clutch Assembly
Courtesy of FORD MOTOR CO.

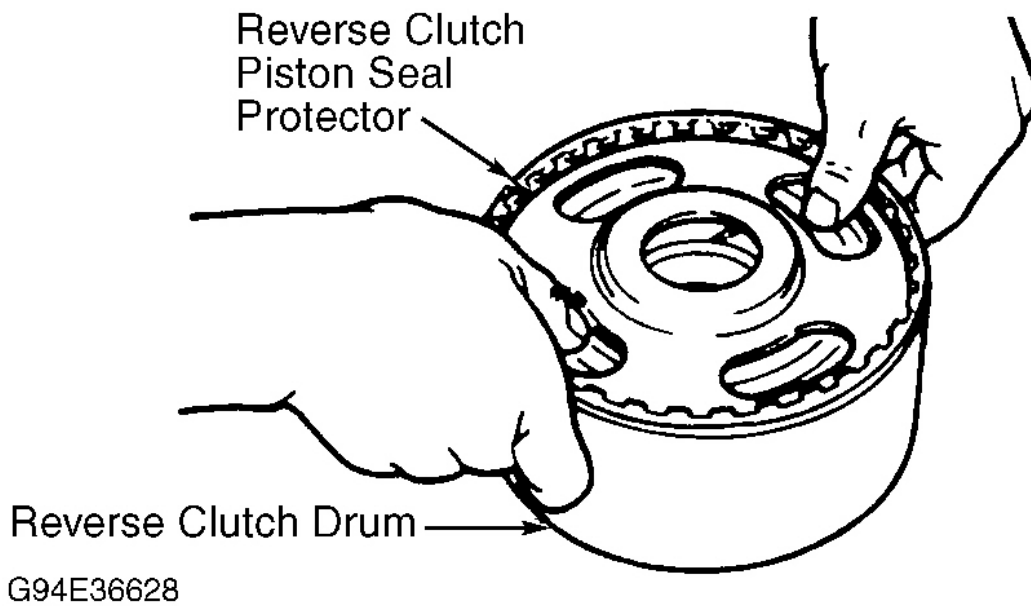


Fig. 22: Installing Piston Seal Protector
Courtesy of FORD MOTOR CO.

OIL PUMP

Disassembly

Remove pump support sealing rings. Remove Torx T30 bolts. Separate pump assembly. Remove pump drive gear and insert. Remove pump driven gear. After components are cleaned, inspect components and housing for irregular wear or damage. Replace as needed.

Reassembly

1. Install pump driven gear with identification dot facing pump body. Install pump drive gear with gear insert. Using gauge bar and depth micrometer, measure clearance between each gear and oil pump body facing.
2. Clearance should be .0016-.0032" (.040-.080 mm). If clearance is not within specification, replace oil pump assembly. Install Pump Alignment Pins (T94P-77000-P). Fill pump gear cavity with ATF to top of gears. Install separator plates and pump support assembly. Tighten bolts to specification. See **TORQUE SPECIFICATIONS**.
3. Install sealing rings. Install oil pump shaft. Using torque wrench, measure pump rotating torque. Maximum rotating torque is 2 INCH lbs. (.3 N.m). If rotating torque exceeds specification, disassembly and inspect pump assembly for contamination or improper end clearance.

VALVE BODY

NOTE: CD4E transaxles built after May 1995 contain high-impedance (12.5-19 ohms) TCC solenoid valve bodies, identified by natural (Beige) solenoid valve body connector. Low-impedance (1-2 ohms) TCC solenoid valve bodies are identified by Black solenoid valve body connector. 1993-95 transaxles may be serviced with either high-impedance or low-impedance TCC solenoid valve bodies. **DO NOT** use low-impedance solenoid valve bodies on 1996 transaxles.

NOTE: Remove and clean one valve at a time to avoid incorrect installation.

Disassembly & Reassembly

1. Remove manual valve. Unbolt and remove solenoid valve body and gasket. Remove pressure tap plate and gasket. Remove manual valve detent spring assembly and adjacent bolt. Remove 3 accumulator body-to-transfer plate bolts. Disassemble accumulator body assembly with separator plate and gaskets from main valve body. See **Fig. 23**.
2. Disassemble main valve body from separator plate and gaskets from transfer plate. Remove intermediate/overdrive accumulator valve plug retaining plate. Thread 6 mm bolt into plug and remove. Remove accumulator.
3. Remove, clean and install each valve individually as needed. Lubricate moving parts with ATF. Ensure all valves move (snap) freely. If valve sticks in its bore and cannot be freed, main valve body must be replaced. **DO NOT** attempt to hone valve bores. Reassemble components in reverse order of disassembly. Tighten bolts to specification. See **TORQUE SPECIFICATIONS**.

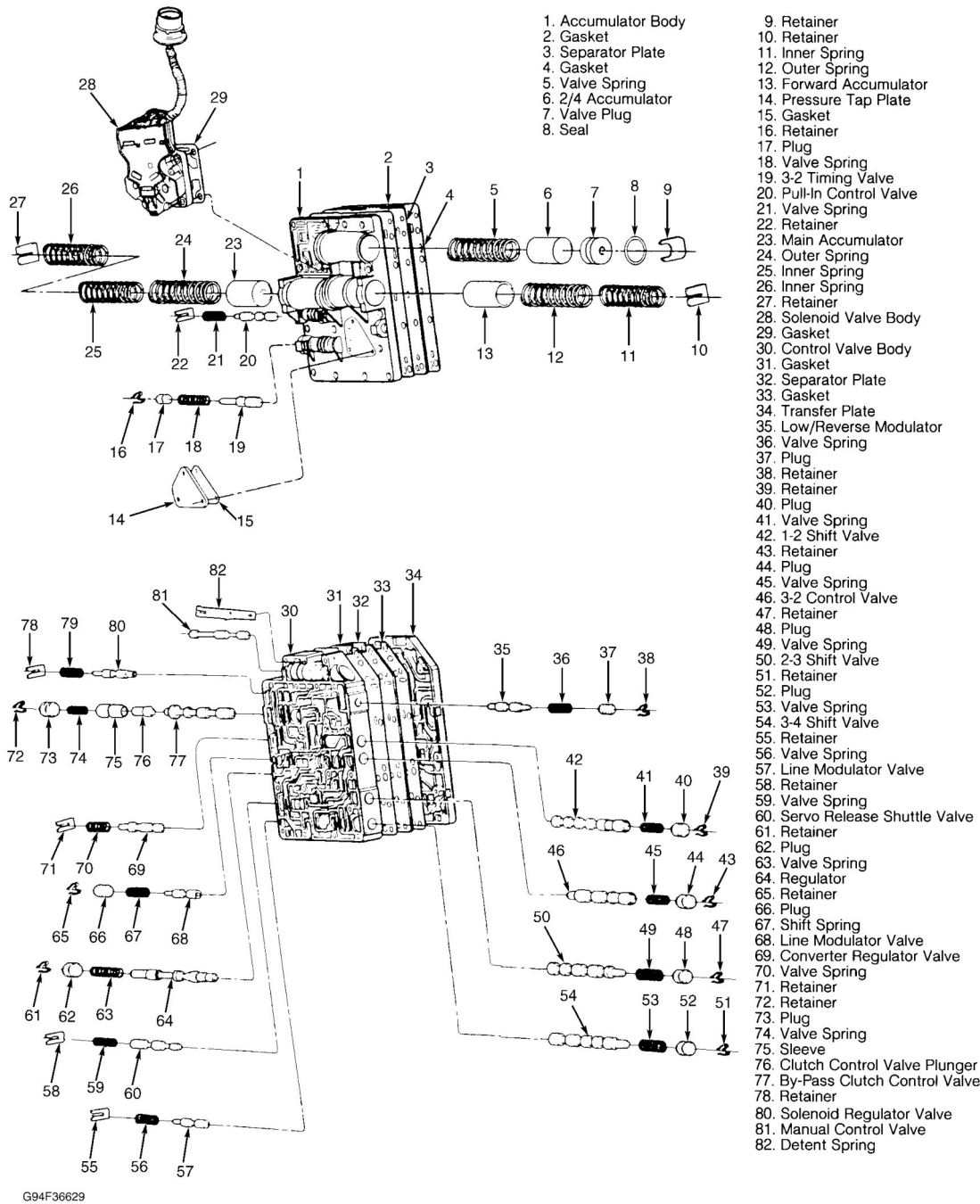


Fig. 23: Exploded View Of Valve Body Assembly
Courtesy of FORD MOTOR CO.

TRANSAXLE CASE

Inspection

Inspect case for cracks and stripped threads. Inspect gasket surfaces and mating surfaces for burrs. Check vent

for obstructions, and check all fluid passages for obstructions and leakage. Inspect case bushing for scores. Check all parking linkage parts for wear or damage.

TRANSAXLE REASSEMBLY

NOTE: Handle all parts carefully to avoid damaging bearings and mating surfaces. Lubricate all parts with **MERCON ATF**. Use petroleum jelly on gaskets, thrust washers and needle bearings to retain them in place. Use all new gaskets and seals, and tighten bolts evenly.

NOTE: For identification and position of thrust bearings and washers, see Fig. 33.

1. Slide intermediate/overdrive band assembly into transaxle case. Install oil pump assembly in transaxle case. Tighten bolts to specification in crisscross pattern. See **TORQUE SPECIFICATIONS**.
2. Install low/reverse clutch piston into Low/Reverse Clutch Piston Outer Seal Protector (T94P-77000-D1). Install Low/Reverse Clutch Piston Inner Seal Protector (T94P-77000-D1) into piston. Install piston and remove protectors. See **Fig. 24**.
3. Install low/reverse clutch return spring assembly. Install snap ring. Install low/reverse clutch wave spring (measuring purposes only). Install low/reverse clutch plates, and pressure plate. See **Fig. 3** and **Fig. 24**. Install low one-way clutch thrust plate (measuring purposes only).
4. Measure in 2 locations, clearance between low/reverse clutch pressure plate and thrust plate. Average measurements. Clearance should be .021-.046" (.54-1.17 mm). If clearance is not within specification, select proper thickness pressure plate. Pressure plates are available in the following thicknesses: .097-.101" (2.47-2.57 mm), .089-.093" (2.26-2.36 mm) and .081-.085" (2.06-2.16 mm).

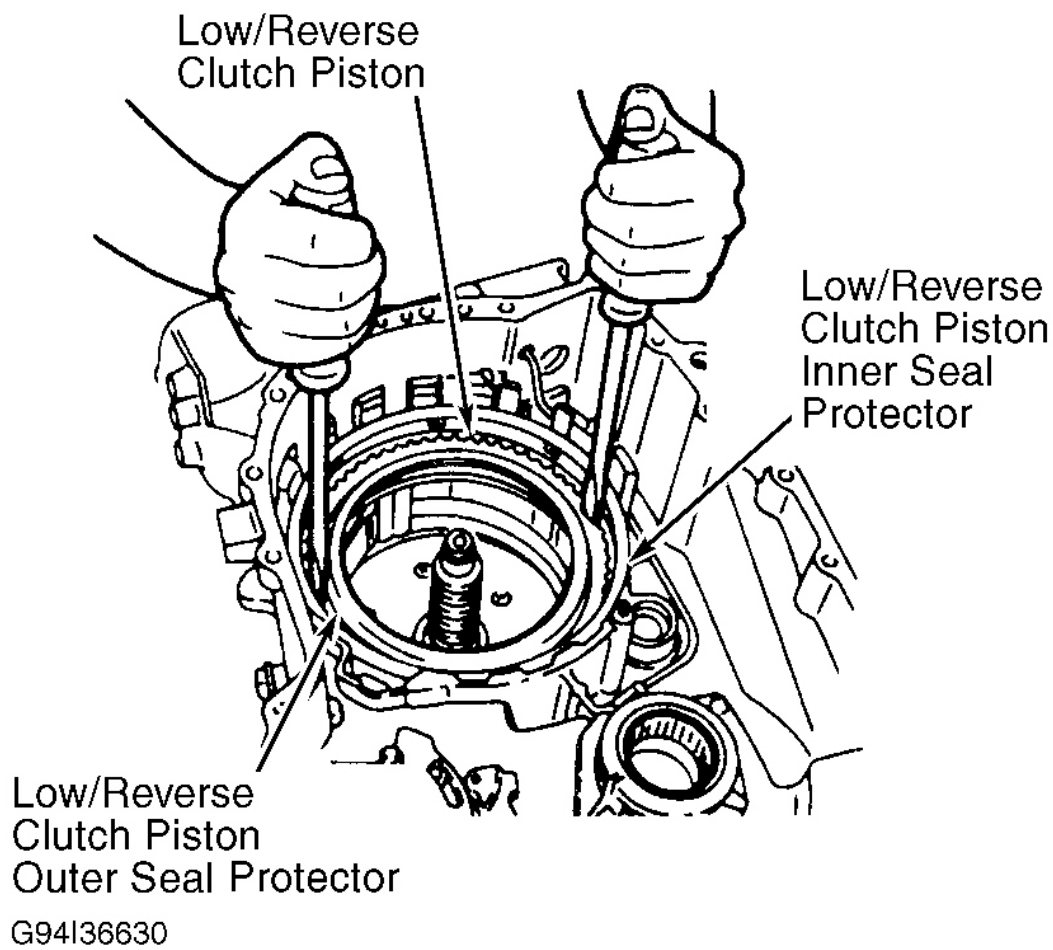
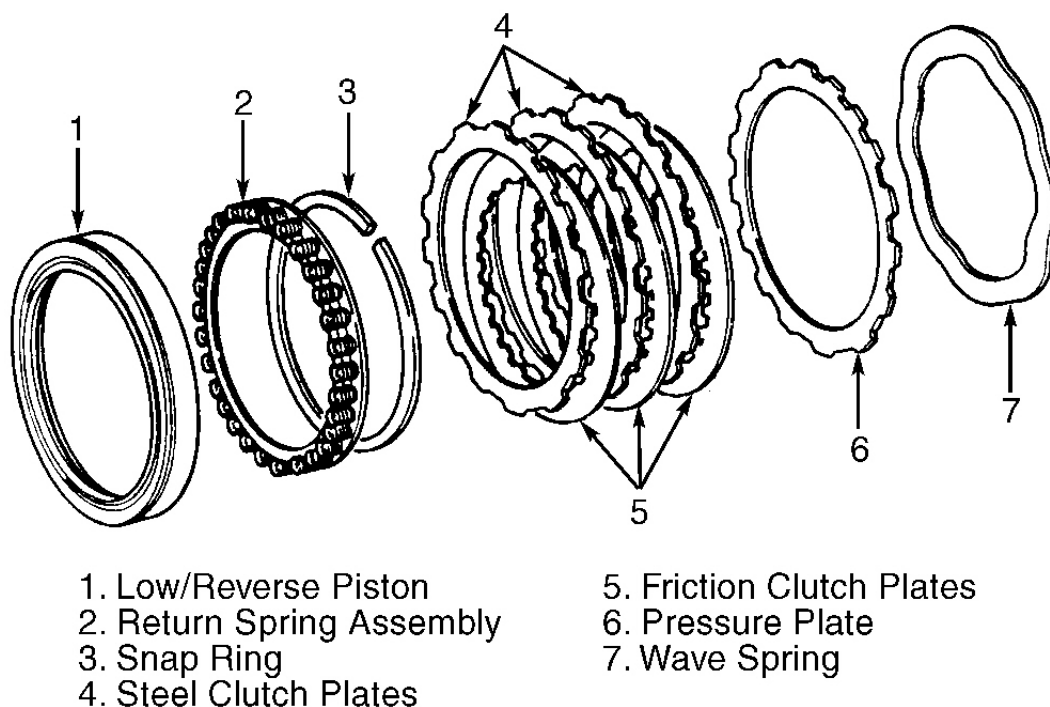


Fig. 24: Installing Low/Reverse Clutch Piston
Courtesy of FORD MOTOR CO.



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Fig. 25: Exploded View Of Low/Reverse Clutch Assembly
Courtesy of FORD MOTOR CO.

5. Remove low/reverse pressure plate, clutch discs and wave spring. Install No. 1 pump support thrust bearing. Remove seal sizer from forward/coast/direct cylinder assembly and install. Install turbine shaft assembly.
6. Install No. 4 turbine shaft thrust bearing. Install forward one-way clutch and low-intermediate sun gear assembly. Install No. 5 low-intermediate sun gear thrust bearing. Install low-intermediate planetary carrier assembly. Install No. 6 low-intermediate planetary thrust bearing. Install low-intermediate ring gear.
7. Install No. 7 reverse/overdrive sun gear thrust bearing. Install reverse/overdrive sun gear and shell assembly. Install reverse/overdrive planetary carrier assembly with No. 8 thrust bearing. Install low/reverse clutch plates.
8. Install low/reverse clutch pressure plate previously selected. Install low/reverse clutch wave spring. Install low one-way clutch assembly with I.D. ring on inner ring, facing upward. Install low one-way clutch thrust plate. Install low one-way clutch snap ring.
9. Install manual valve detent lever actuating rod. Install Preload Tool Adapter/Aligner Set (T94P-77000-R), on reverse/overdrive planetary carrier assembly. See **Fig. 26** through **Fig. 28** . Tighten mounting bolts to 119 INCH lbs. (13.5 N.m).
10. Install Gauge Bar (T94P-77000-Q), with short spacers across transaxle case. Measure distance from top of gauge bar to No. 12 driven sprocket bearing assembly (Dimension "A"). See **Fig. 26** through **Fig. 28** .

11. Measure distance from top of gauge bar to bearing surface on reverse/overdrive planetary carrier assembly (Dimension "B"). See **Fig. 26** through **Fig. 28**. Dimension "A" - Dimension "B" = Dimension "C". Use Dimension "C" to select correct No. 11 driven sprocket shim. See **DRIVEN SPROCKET SHIM SELECTION CHART**.

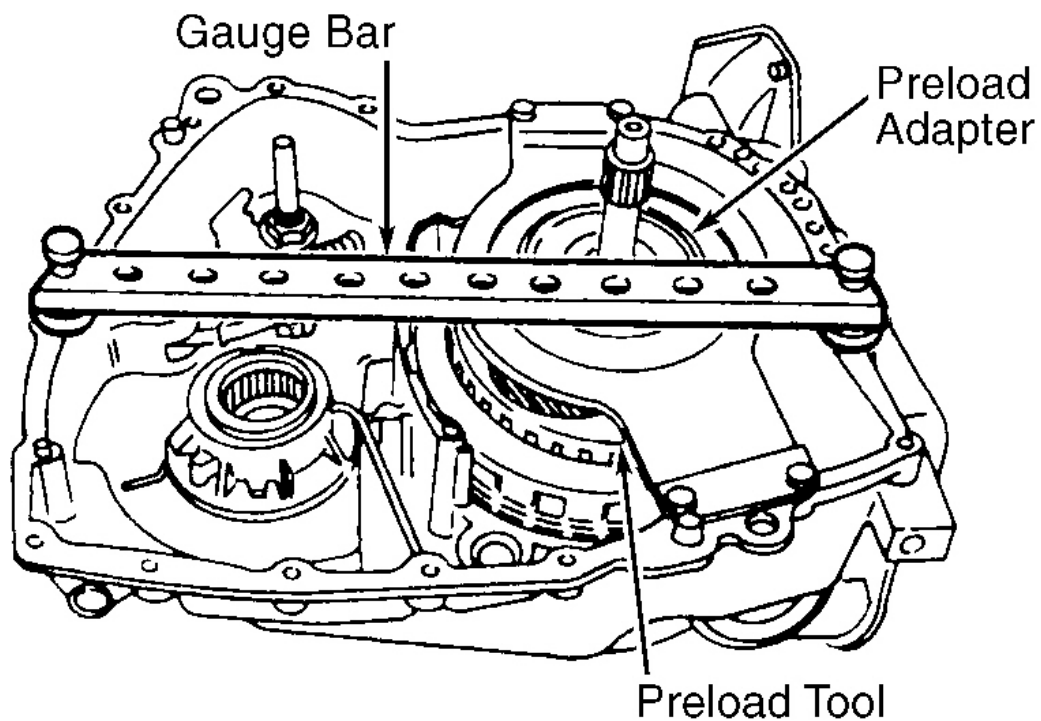
DRIVEN SPROCKET SHIM SELECTION CHART

Dimension "C" In. (mm)	Shim Thickness In. (mm)
.558-.565 (14.17-14.34)	.083-.087 (2.10-2.20)
.551-.557 (14.00-14.16)	.076-.080 (1.92-2.02)
.544-.550 (13.83-13.99)	.069-.073 (1.75-1.85)
.538-.543 (13.66-13.82)	.062-.066 (1.57-1.67)
.531-.537 (13.49-13.65)	.055-.059 (1.40-1.50)
.524-.530 (13.32-13.48)	.048-.052 (1.22-1.32)

12. Remove gauge bar and preload tool. Install selected No. 11 shim. Install No. 12 driven sprocket bearing assembly. Ensure No. 18 needle bearing is lubricated. Install No. 9 reverse/overdrive ring gear thrust bearing. Install reverse/overdrive ring gear assembly (measuring purposes only).
13. Install Preload Tool Adapter/Aligner Set (T94P-77000-R) on reverse/overdrive ring gear. Tighten mounting bolts to 119 INCH lbs. (13.5 N.m). Install Gauge Bar (T94P-77000-Q), with short spacers across transaxle case. See **Fig. 26** through **Fig. 28**.
14. Measure distance between top of gauge bar to face of reverse/overdrive ring gear assembly (Dimension "D"). See **Fig. 29**. Combined thickness of gauge bar and short spacers (1.00" (25.4 mm) is Dimension "E". Dimension "D" - Dimension "E" = Dimension "F". Use Dimension "F" to select correct No. 10 drive sprocket thrust washer. See **DRIVE SPROCKET THRUST WASHER SELECTION CHART**.

DRIVE SPROCKET THRUST WASHER SELECTION CHART

Dimension "E" In. (mm)	Washer Thickness In. (mm)
.034-.044 (.86-1.12)	.056-.059 (1.41-1.51)
.024-.033 (.60-.85)	.066-.070 (1.67-1.77)
.013-.023 (.34-.59)	.076-.080 (1.93-2.03)
.003-.013 (.08-.33)	.086-.090 (2.19-2.29)



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Fig. 26: Installing Preload Tool Adapter/Aligner Set
Courtesy of FORD MOTOR CO.

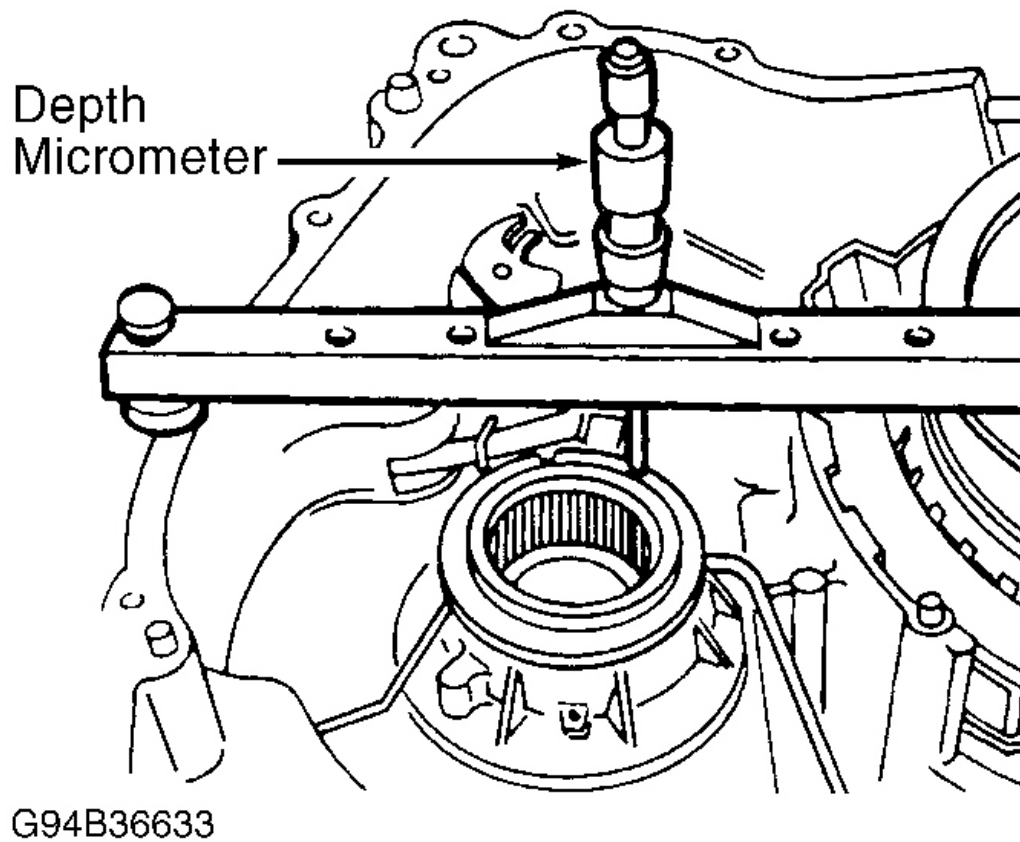


Fig. 27: Measuring Dimension "A"
Courtesy of FORD MOTOR CO.

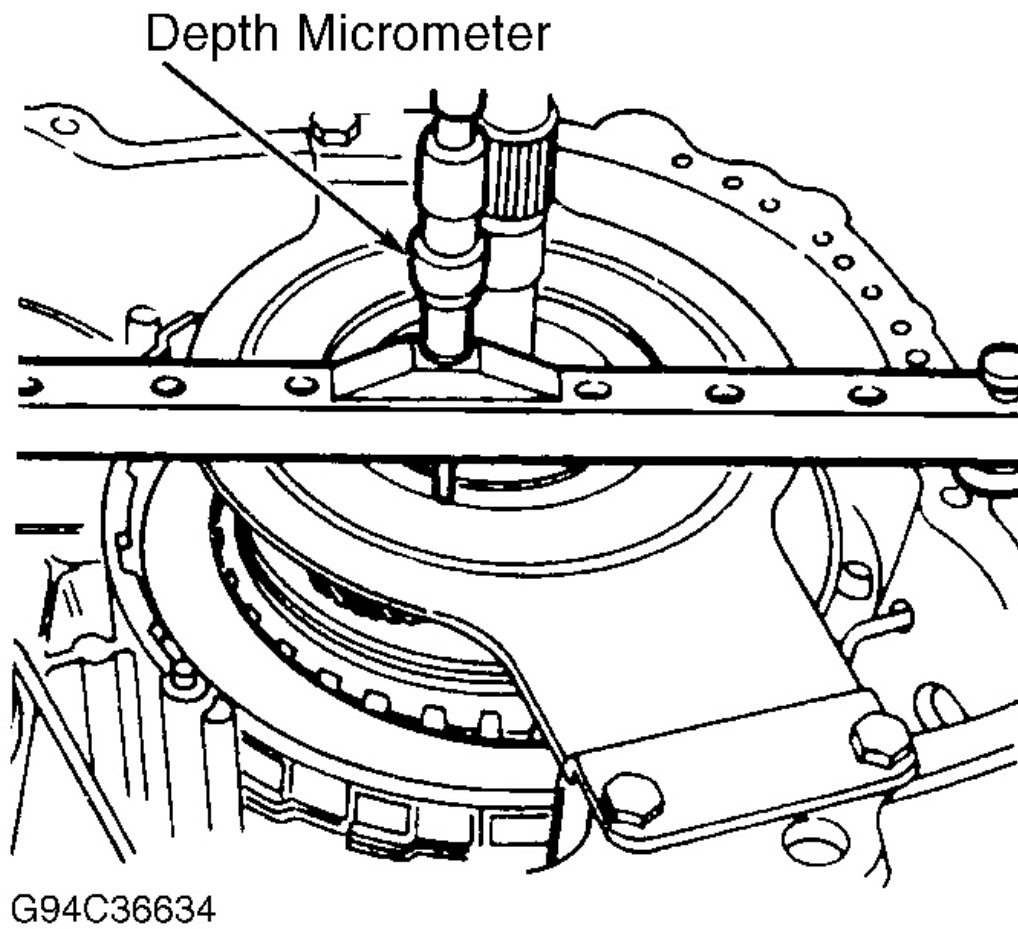


Fig. 28: Measuring Dimension "B"
Courtesy of FORD MOTOR CO.

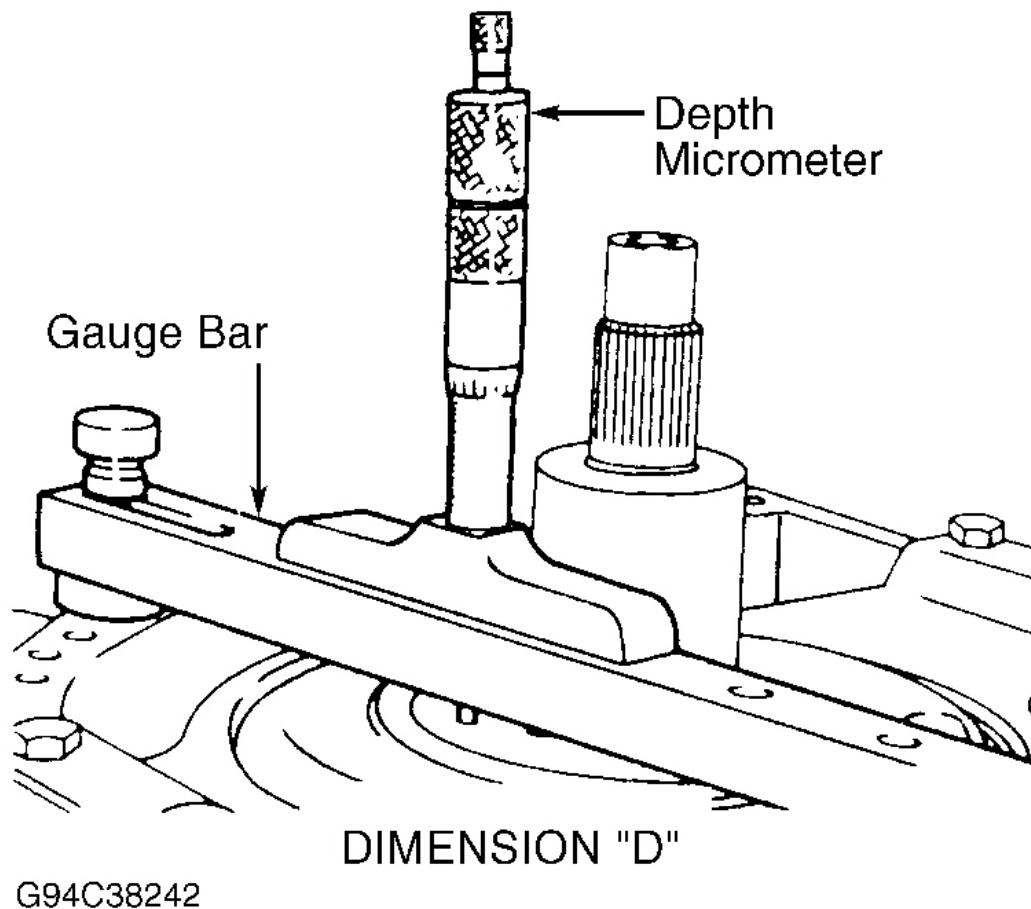


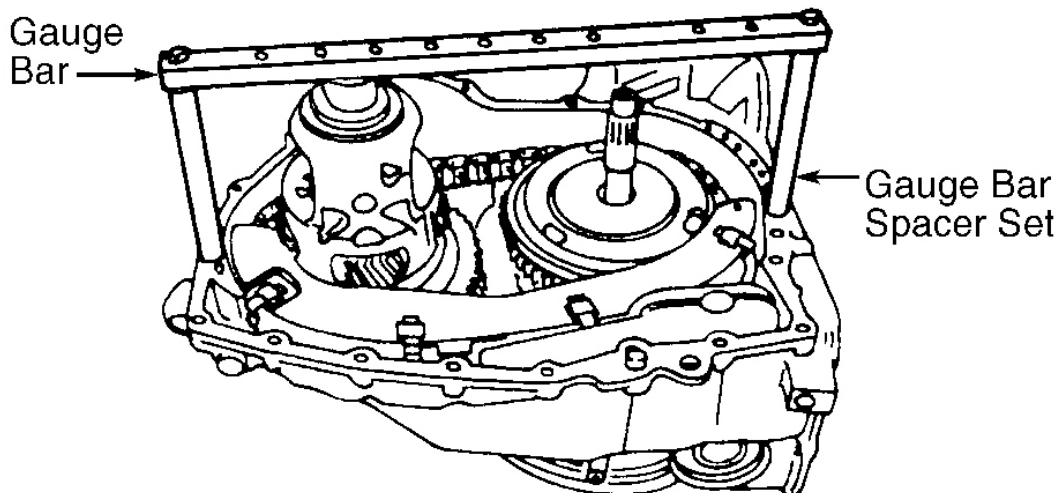
Fig. 29: Measuring Reverse/Overdrive Ring Gear Height
Courtesy of FORD MOTOR CO.

15. Remove gauge bar and preload tool. Apply petroleum jelly to selected No. 10 drive sprocket thrust washer and install on converter housing. Remove reverse/overdrive ring gear assembly. Install oil filter and seal assembly. Temporarily install appropriate guide pin through filter eyelet into transaxle case hole.
16. Install oil filter recirculating regulator exhaust seal. Remove guide pin. Install rear chain cover in transaxle case. Assemble drive chain assembly on driven sprocket assembly, and reverse/overdrive ring gear assembly with copper colored link facing up. Install and fully seat chain and sprocket/ring gear assembly.
17. Install front chain cover. Install No. 13 driven sprocket thrust bearing assembly. Install final drive planetary/differential assembly. Install Gauge Bar (T94P-77000-Q) with Spacer Set (T94P-77000-T) on transaxle case. Tighten mounting bolts to 119 INCH lbs. (13.5 N.m). See **Fig. 30**.
18. Measure distance from top of gauge bar to shim surface area of final drive assembly. Measure in 2 places and average measurements (Dimension "G"). Combined thickness of gauge bar with long spacers (7.00" (177.8 mm) is Dimension "H".

19. Dimension "G" - Dimension "H" = Dimension "I". Use Dimension "I" to select correct No. 14 differential bearing shim. See **DIFFERENTIAL BEARING SHIM SELECTION CHART**.

DIFFERENTIAL BEARING SHIM SELECTION CHART

Dimension "I" In. (mm)	Washer Thickness In. (mm)
5.136-5.148 (130.45-130.76)	.039-.043 (.98-1.08)
5.123-5.136 (130.15-130.45)	.050-.054 (1.28-1.38)
5.113-5.123 (129.87-130.15)	.062-.066 (1.57-1.67)
5.101-5.113 (129.56-129.87)	.074-.078 (1.87-1.97)
5.089-5.101 (129.27-129.56)	.085-.089 (2.17-2.27)



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DIMENSION "G"

Fig. 30: Determining Final Drive Shim Thickness
Courtesy of FORD MOTOR CO.

20. Remove gauge bar and spacers. Install and fully seat speedometer drive gear with tabs facing downward. Install selected No. 14 differential bearing shim. Install No. 15 differential bearing. Install converter housing with gasket.
21. Install 20 housing bolts and tighten to specification in crisscross pattern. See **TORQUE SPECIFICATIONS**. Lubricate and install intermediate and overdrive servo piston and return spring assembly in transaxle case bore. Note number of grooves of servo apply rod. Install Servo Piston Rod Selector (T94P-77000-M) on piston.
22. Loosely assemble legs and bar of selector. See **Fig. 31** and **Fig. 32**. Tighten selector assembly legs. Tighten center bolt to 36 INCH lbs. (4.1 N.m). Measure and record distance between top of center bolt and selector tool bar (Dimension "J"). See **Fig. 31** and **Fig. 32**. Unscrew center bolt until piston

movement stops. Measure distance between center bolt and bar (Dimension "K"). Dimension "J" - Dimension "K" = Dimension "L" (piston travel).

23. Verify that piston travel (Dimension "L") is .094-.193" (2.40-4.90 mm). If distance is not within specification, replace servo piston and recheck. See **SERVO APPLY ROD SELECTION CHART**.

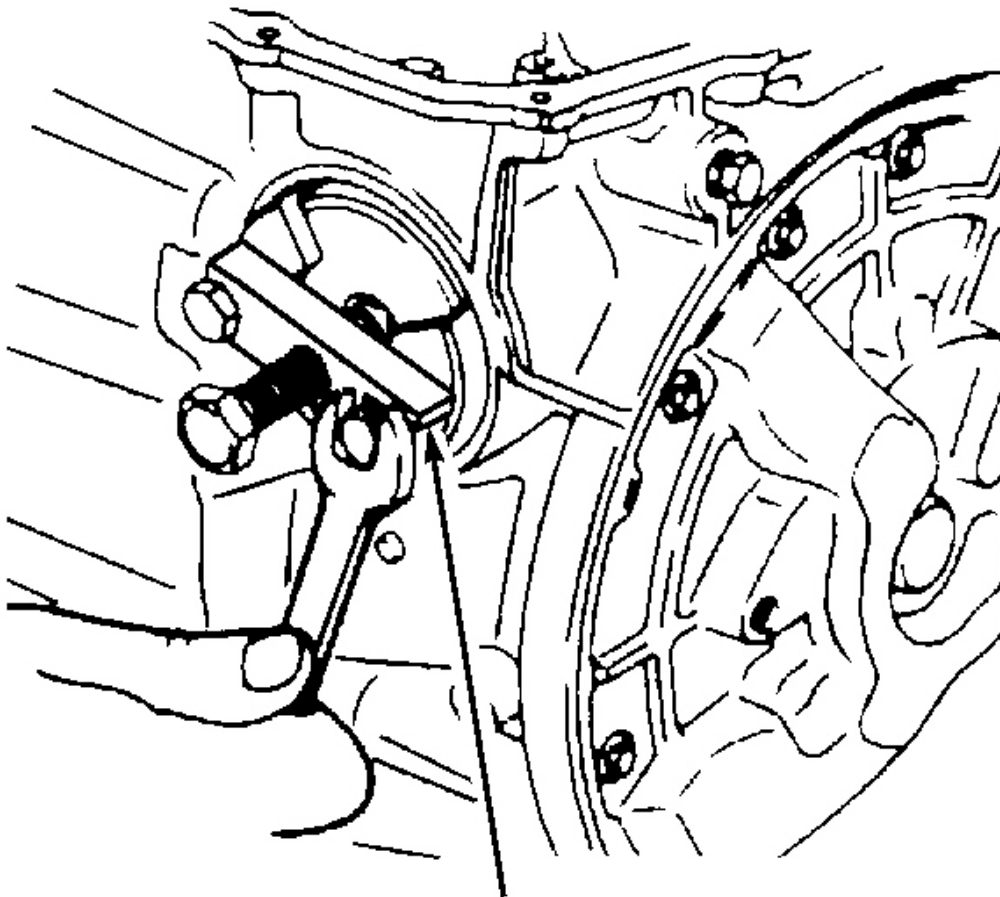
SERVO APPLY ROD SELECTION CHART

No. Of Rod Grooves	Part Number	Rod Length In. (mm)
0	F3RP-74188-CB	4.26 (108.1)
1	F3RP-74188-BB	4.22 (107.1)
2	F3RP-74188-AB	4.16 (105.7)

24. Remove servo piston selection tool. Install NEW servo cover cap. Using Servo Cover Remover/Replacer (T94P-77000-L), compress servo cover assembly. Install retaining ring. Release servo cover pressure. Remove tool.

CAUTION: DO NOT air check coast clutch since piston may be forced out of forward clutch piston.

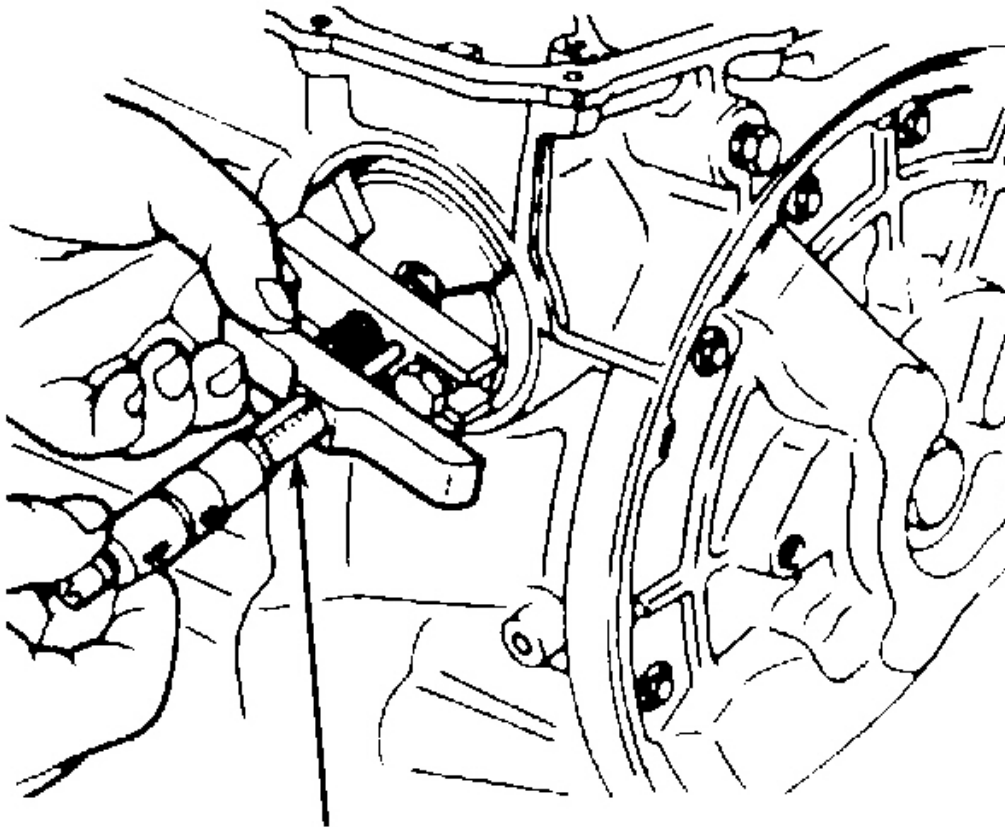
25. Install Transmission Test Plate (T94P-77000-S). Air check clutch hydraulic circuits for function and leakage. See **Fig. 5**. If leakage is detected, disassemble transaxle and inspect. Remove test plate.
26. Install thermostatic oil level control valve. Tighten bracket bolt to specification. See **TORQUE SPECIFICATIONS**. Install forward clutch circuit filter (if equipped). Install new "O" ring on valve body harness connector receptacle. Install receptacle in transaxle case.
27. Insert "Z" link into end of manual valve. Place valve body in position on transaxle case and install 12 bolts. Tighten bolts in sequence. See **Fig. 6**. Tighten bolts to specification.
28. Remove manual control lever bolt and lever assembly. Using Shifter Shaft Alignment Tool (T94P-77000-H), move manual control lever shaft to "D" position. Install pin to hold tool in position. Move manual valve detent lever assembly to "D" position. See **Fig. 7**.
29. Loosen nut on ball stud of manual valve detent lever actuating rod assembly. Snug nut on ball stud. Remove shifter pin. Rotate shifter shaft alignment tool until socket can be installed on nut. Tighten bolt to specification.
30. Rotate lever back to "D" position and recheck adjustment by installing alignment pin. Remove pin and alignment tool. Install manual control lever assembly. Tighten bolt to specification. Rotate manual control lever to "N" position. Install manual lever position sensor. Install main control cover (side cover) with new gasket. Tighten bolts in sequence. See **Fig. 8**. Tighten bolts to specification.
31. Install vehicle speed sensor. Tighten bolt to specification. Install dipstick tube with new grommet. Install dipstick. Install transmission speed sensor. Install differential seals and converter seal. Install drain plug. Install oil pump drive shaft. Install torque converter. Remove transaxle from mount.



Servo Piston
Rod Selector

G94F36637

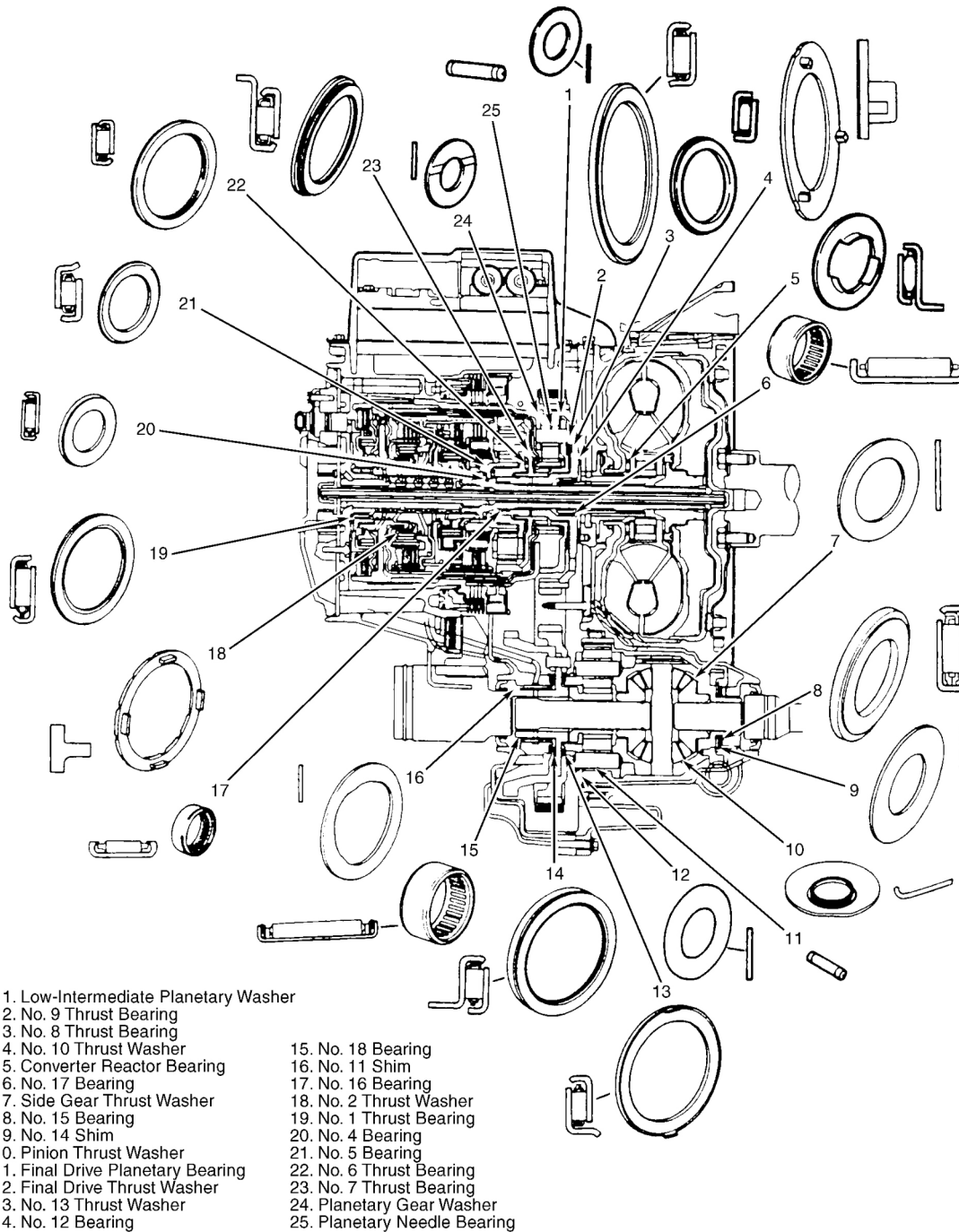
Fig. 31: Installing Servo Piston Rod Selector
Courtesy of FORD MOTOR CO.



Depth Micrometer

G94G36638

Fig. 32: Measuring Dimension "J"
Courtesy of FORD MOTOR CO.



G94H36639

Fig. 33: Identifying Thrust Bearing, Shims & Washers
 Courtesy of FORD MOTOR CO.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

1996 Ford Contour GL

1995-96 AUTOMATIC TRANSMISSIONS Ford CD4E Overhaul

Application	Ft Lbs. (N.m)
Axle Nut	
Contour & Mystique	246 (340)
Probe	174-235 (235-319)
Drain Plug	19-21 (25-29)
Ball Joint Clamp Bolt	
Contour & Mystique	54-67 (74-92)
Probe	25-42 (34-57)
Bearing Bracket Bolt	
Contour & Mystique	15-23 (21-32)
Probe	31-46 (42-62)
Main Control Cover Bolt	10-13 (14-18)
Manual Control Lever Bolt	18-22 (25-30)
Stabilizer Link Nut	
Contour & Mystique	14-23 (20-32)
Probe	27-40 (36-54)
Steering Knuckle Clamp Bolt	25-42 (34-57)
Tie Rod End Nut	20 (28)
Transaxle Case Bolt	15-18 (20-24)
Transmission Speed Sensor Bolt	11 (15)
Wheel Lug Nut	
Contour & Mystique	85-105 (115-142)
Probe	65-87 (88-118)
INCH Lbs. (N.m)	
Accumulator-To-Transfer Plate Bolt	89 (10)
Control Valve-To-Transfer Plate Bolt	80-97 (11-13)
Manual Valve Lever Ball Stud Nut	96-117 (11-13)
Oil Level Control Valve Bolt	96-117 (11-13)
Oil Pump Bolt	115 (13)
Pressure Tap Plate Bolt	71 (8)
Transmission Speed Sensor	106-124 (12-14)
Valve Body-To-Transaxle Case Bolt	80-97 (9-11)
Vehicle Speed Sensor Bolt	44-53 (5-6)

TRANSAXLE SPECIFICATIONS**TRANSAXLE SPECIFICATIONS**

Application	In. (mm)
Direct Clutch Pack Clearance	.020-.044 (.52-1.12)
Forward/Coast Clutch Pack Clearance	.020-.043 (.50-1.09)
Reverse Clutch Pack Clearance	.012-.035 (.33-.89)

1996 Ford Contour GL

1995-96 AUTOMATIC TRANSMISSIONS Ford CD4E Overhaul

Low/Reverse Clutch Pack Clearance	.021-.046 (.54-1.17)
Low/Intermediate Planetary Thrust Clearance	.006-.028 (.15-.72)
Oil Pump Drive Gear Clearance	.0015-.0030 (.040-.080)
Oil Pump Driven Gear Clearance	.0015-.0030 (.040-.080)
Reverse/OD Planetary Thrust Clearance	.006-.028 (.15-.72)
INCH lbs. (N.m)	
Oil Pump Rotating Torque	2 (.3)