

1990 Ford Bronco

1986-92 AUTOMATIC TRANSMISSIONS Ford C-6 Overhaul

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Ford C-6 Overhaul

APPLICATION

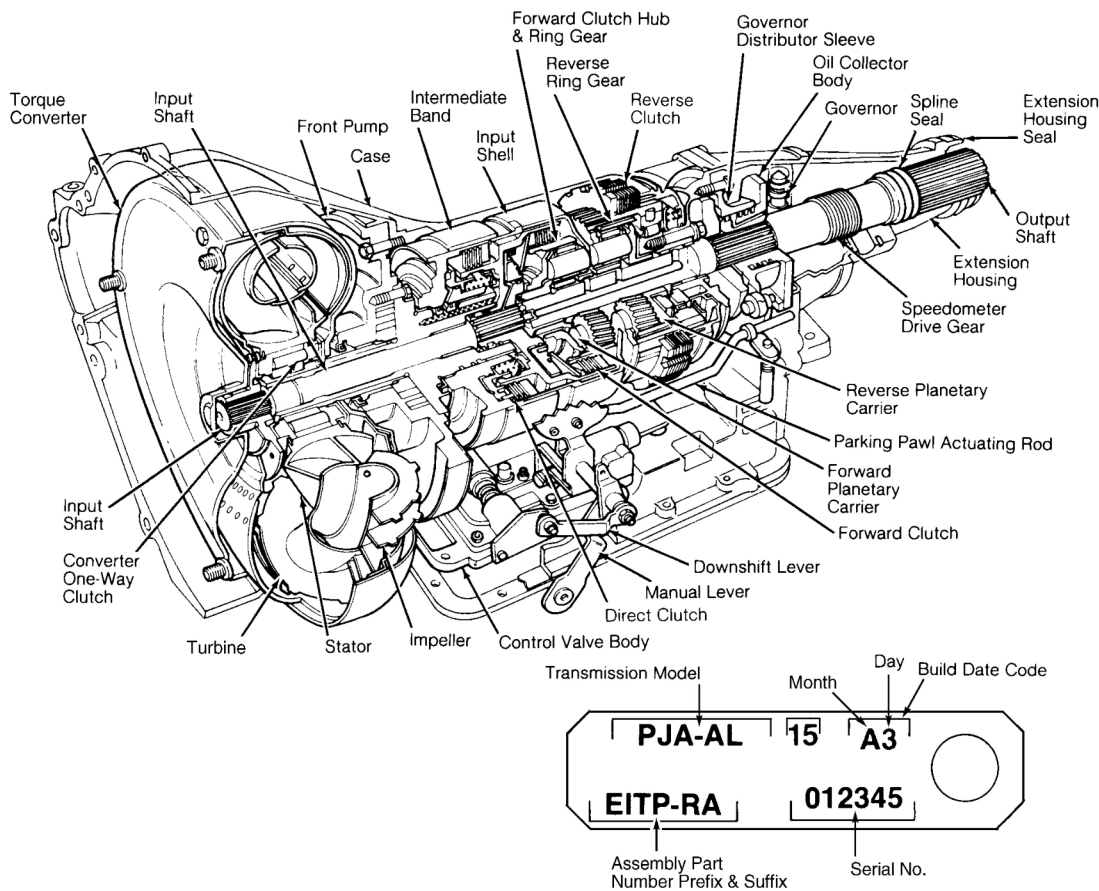
TRANSMISSION APPLICATIONS

Vehicle Application	Transmission
1986-89 Bronco 4.9L & 5.8L	C6
1986-90 Bronco 5.0L	C6
1986-88 Chassis Cab 4.9L, 5.8L & 7.5L	C6
1986-84 Chassis Cab 5.0L	C6
1986-87 Chassis Cab 6.9L	C6
1988 Chassis Cab 7.3L	C6
1986-92 Club Wagon 4.9L	C6
1986-91 Club Wagon 5.8L	C6
1986-87 Club Wagon 6.9L	C6
1988 Club Wagon 7.3L	C6
1986-89 Club Wagon 7.5L	C6
1986 Cutaway 4.9L	C6
1986-91 Cutaway 5.8L & 7.5L	C6
1986-87 Cutaway 6.9L	C6
1988 Cutaway 7.3L	C6
1986-92 Econoline 4.9L	C6
1986-92 Econoline 5.8L	C6
1986-87 Econoline 6.9L	C6
1988 Econoline 7.3L	C6
1986-89 Econoline 7.5L	C6
1986-92 Pickup 4.9L, 5.8L & 7.5L	C6
1986-90 Pickup 5.0L	C6
1986-87 Pickup 6.9L	C6
1988-89 Pickup 7.3L	C6

IDENTIFICATION

An identification tag is located under lower front intermediate servo cover bolt. A number appearing after the suffix indicates internal parts in transmission have been changed after initial production start-up.

For example, a PJA-AL 15 model transmission that has been changed internally would read PJA-AL 16. Always refer to this number when ordering parts. See **Fig. 1**.



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Fig. 1: Identification Tag & Cut-Away View Of C-6 Transmission
Courtesy of FORD MOTOR CO.

DESCRIPTION

C-6 transmission is a 3-speed unit capable of providing automatic upshifts and downshifts through 3 forward gear ratios and also providing manual selection of 1st and 2nd gears.

Transmission consists of a torque converter, compound planetary gear train controlled by a single band, 3 multiple disc clutches, a one-way clutch and hydraulic control system.

LUBRICATION & ADJUSTMENTS

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

ON-VEHICLE SERVICE

VALVE BODY

Removal

1. Loosen oil pan retaining bolts. Tap pan to break gasket loose, allowing fluid to drain. Remove oil pan and gasket. Remove and discard Nylon shipping plug from filler tube hole.

NOTE: Nylon plug is used to retain fluid in transmission during shipment and should be discarded when oil pan is removed.

2. Remove valve body retaining bolts and lower valve body from transmission case. For valve body repairs, see **VALVE BODY** under COMPONENT DISASSEMBLY & REASSEMBLY.

Installation

Position valve body on case, ensuring selector and downshift levers are engaged. Install and tighten valve body retaining bolts to specification. See **TORQUE SPECIFICATIONS**. See **Fig. 2**. Install oil pan with NEW gasket, and tighten bolts evenly to specification.

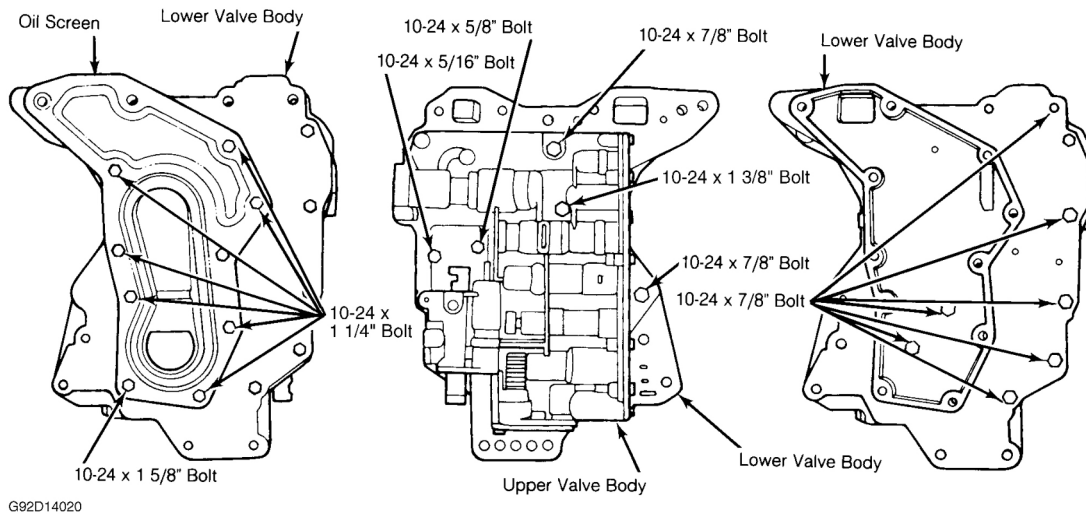


Fig. 2: Identifying Valve Body Bolt Locations
Courtesy of FORD MOTOR CO.

INTERMEDIATE SERVO

Removal

Remove engine rear support-to-crossmember bolt. Remove crossmember-to-frame retaining bolts and remove crossmember. Disconnect muffler Inlet pipe from exhaust manifolds and allow pipe to hang. Place a drain pan under servo and remove cover retaining bolts. Remove cover, piston, spring and gasket. See **Fig. 3**.

NOTE: As piston is being removed, screw in intermediate band adjustment screw. This keeps tension on band, keeping struts properly engaged in band end notches as piston is removed.

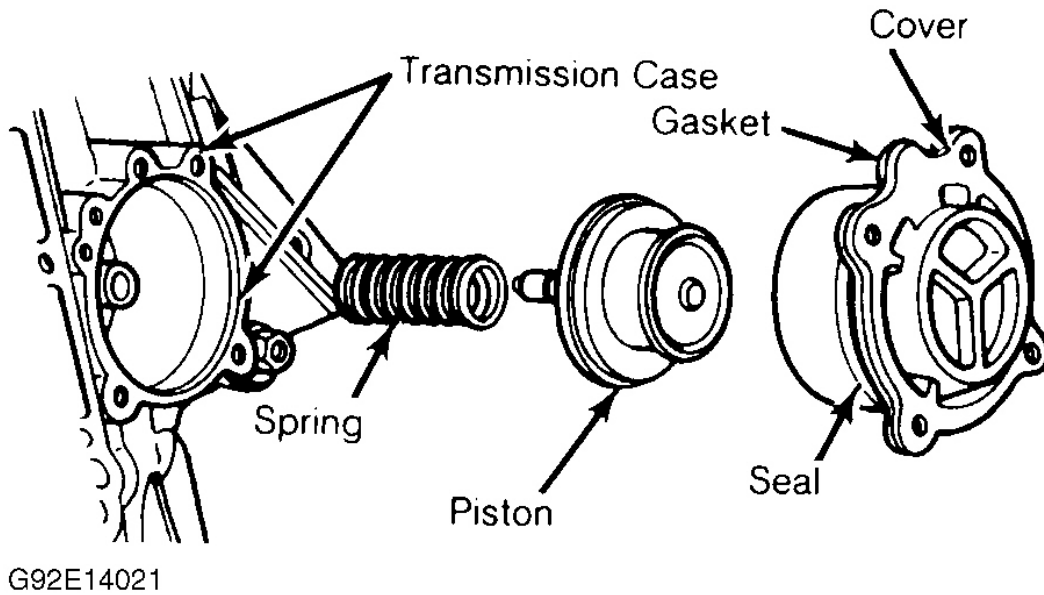


Fig. 3: Exploded View Of Intermediate Servo
 Courtesy of FORD MOTOR CO.

Seal Replacement

1. Apply air pressure to port in servo cover, and remove piston and rod. Remove seal from cover. Replace complete piston and rod assembly if piston or piston sealing lips are damaged.
2. Dip NEW seal in transmission fluid and install on cover. Coat NEW gasket with petroleum jelly and install on cover. Dip piston in transmission fluid and install in cover.

Installation

To install, reverse removal procedure. Install service identification tag and back off band adjusting screw as servo cover bolts are being tightened.

Intermediate Band Adjustment

Tighten intermediate band adjustment screw to specification. See **TORQUE SPECIFICATIONS**. Back off screw 1 1/2 turns. Hold adjustment screw in this position and tighten lock nut to specification. Refill transmission to correct fluid level.

EXTENSION HOUSING SEAL & BUSHING

Removal

Remove propeller shaft. Pry out seal. Using Extension Housing Bushing Remover (T77L-7697-D), remove bushing from extension housing. Ensure seal is not damaged.

Installation

1. Using Extension Housing Bushing Replacer (T77L-7697-C), install bushing into extension housing. Before installing a new seal, inspect sealing surface of propeller shaft yoke for wear or damage. If scores or grooves are found, replace yoke.
2. Using Seal Driver (T61L-7657-B), install seal in extension housing. Ensure seal is fully seated in bore. Coat inside of seal and yoke splines with wheel bearing grease, and install propeller shaft.

EXTENSION HOUSING & GOVERNOR**Removal**

1. Remove propeller shaft. Remove transfer case (if equipped). See appropriate TRANSFER CASE article in TRANSFER CASES section. See menu below. Remove speedometer cable. Remove rear engine support-to-extension housing bolts. Raise transmission with jack to take weight off support. Remove support from crossmember.
 - Borg-Warner 1345, see **TRANSFER CASE - BORG-WARNER 1345**
 - 1350 & 1356, see **TRANSFER CASE - BORG-WARNER 1350 & 1356**
2. Place drain pan under rear of transmission. Remove extension housing-to-case bolts. Slide housing off output shaft. Remove governor body-to-oil collector flange bolts. Separate governor from flange. For governor repairs, see **GOVERNOR** under COMPONENT DISASSEMBLY & REASSEMBLY.

Installation

To install, reverse removal procedure. Tighten all nuts and bolts to specification. See **TORQUE SPECIFICATIONS**. Ensure all mating surfaces are clean. Refill transmission to correct fluid level.

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. Use a mechanically agitated cleaner such as Rotunda (014-00028).

TORQUE CONVERTER FLUSHING

Whenever transmission has been disassembled to replace worn or damaged parts or because valve body sticks due to foreign material, converter must be cleaned using a mechanically agitated cleaner, such as Rotunda (014-00028). Under no conditions should converter be cleaned by hand agitation using solvent.

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. See applicable symptom diagnosis.

SYMPTOM DIAGNOSIS**Slow Initial Engagement**

Improper fluid level or plugged filter. Improperly adjusted linkage or low control valve pressure.

Rough Initial Engagement

Improper fluid level. Idle speed too high. Sticking valve body or high control valve pressure.

No Or Delayed Forward Engagement, Reverse Okay

Manual linkage improperly adjusted. Forward clutch stator support seal rings leaking or clutch assembly burnt. Valve body sticking. Improper torque on valve body attaching bolts.

No Or Delayed Reverse Engagement, Forward Okay

Manual linkage improperly adjusted. Reverse clutch stator support seal rings leaking or clutch assembly burnt. Valve body sticking. Improper torque on valve body attaching bolts.

No Or Delayed Reverse Engagement And/Or No Engine Braking In Manual Low

Planetary low one-way clutch damaged. Reverse-high or low-reverse servo seal leaking.

No Engine Braking In Manual 2nd

Intermediate band improperly adjusted or servo leaking. Intermediate one-way clutch damaged. Glazed intermediate band.

Forward Engagement Slips, Shudders Or Chatters On Engagement

Improperly adjusted linkage. Low control valve pressure. Valve body sticking or improperly torqued. Defective forward clutch assembly. Low one-way clutch damaged.

Reverse Engagement Slips, Shudders Or Chatters On Engagement

Improperly adjusted linkage. Low control valve pressure. Low one-way clutch damaged. Reverse clutch piston seals defective or clutch assembly defective.

Starts Up In 2nd Or 3rd Gear

Improper intermediate band adjustment. Defective governor sticking or loose valve body. Cross leaks between valve body and case mating surfaces.

Incorrect Shift Points, Harsh Or No Upshift

Defective vacuum diaphragm unit. EGR system inoperative. Improper vacuum to diaphragm unit. Sticking or improperly adjusted throttle valve rod. Improper control valve pressure. Dirty or sticking valve body or governor assembly. Vacuum Regulator Valve (VRV) improperly adjusted or defective (7.3L Diesel).

Early, Soft Or Slipping Upshift

Low control valve pressure. Dirty or sticking valve body or governor. Leaking or improperly torqued valve body. Throttle valve control rod sticking. Burnt clutches. Improperly adjusted VRV. (7.3L Diesel).

Erratic Shifts

Poor engine performance. Improper valve body bolt torque. Valve body or governor sticking. Governor collector body seal rings leaking.

No Forced Downshift

Improperly adjusted or sticking throttle valve rod. Damaged internal linkage. Dirty or sticking valve body or governor.

Engine Overrevs On 3-2 Downshifts

Intermediate band out of adjustment. Leaking or damaged intermediate servo. Sticking or leaking valve body. Control valve pressure too low. Glazed band or drum.

Transmission Overheats

Improper fluid level. Engine idle too high. Engine cooling system defective. Transmission pressure too low. Restriction in cooler or cooler lines. Seized converter one-way clutch.

Transmission Noisy (Valve Resonance)

Improper fluid level. Improperly adjusted linkage. Improper control valve pressure. Internal oil pressure leaks. Dirty or sticking valve body.

TESTING

NOTE: Before testing, always check fluid level, linkage adjustment and vacuum diaphragm.

ROAD TEST

1. Check minimum throttle upshift in Drive. Transmission should start in 1st gear, shift to 2nd and then shift to 3rd as speed increases. See **SHIFT SPEEDS (MPH)** under TESTING.
2. With transmission in 3rd gear, depress accelerator through detent (to floor). Transmission should shift from 3rd to 2nd or 3rd to 1st, depending on vehicle speed. See **SHIFT SPEEDS (MPH)** under TESTING.
3. Check closed throttle downshift from 3rd to 1st by coasting down from about 30 MPH in 3rd gear. Shift

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should occur as shown in table. With transmission selector lever in "2" position, transmission should operate only in 2nd gear.

4. With transmission in 3rd gear and road speed above 50 MPH, transmission should shift to 2nd gear when selector lever is moved from "D" into "2" or "1". When manual shift is made below 30 MPH, transmission should shift from 2nd or 3rd to 1st.

NOTE: This check will determine if governor pressure and shift control valve are operating properly.

5. Slipping or engine speed flare-up in any gear usually indicates clutch or band problems. In most cases, the clutch or band that is slipping can be determined by noting transmission operation in all selector positions and comparing which internal units are applied in those positions. See **CLUTCH & BAND APPLICATION CHART**.

CLUTCH & BAND APPLICATION CHART

Selector Lever Position	Elements In Use
"D" (Drive)	
1st Gear	Forward Clutch & One-Way Clutch
2nd Gear	Forward Clutch & Intermediate Band
3rd Gear	Reverse-High Clutch & Forward Clutch
"L1" (Manual Low)	Forward Clutch & Low-Reverse Clutch
"R" (Reverse)	Reverse-High Clutch & Low-Reverse Clutch
"N" (Neutral)	All Clutches & Bands Released Or Ineffective
"P" (Park)	All Clutches & Bands Released Or Ineffective

LINE PRESSURE TEST

Engine Vacuum Method

1. Attach tachometer to engine. Install vacuum gauge (using "T" fitting) into manifold vacuum line at vacuum diaphragm unit. Attach a 0-400 psi pressure gauge to line pressure takeoff point at transmission. See **Fig. 4**.
2. Apply both parking and service brakes. Adjust idle speed to specified RPM. If engine idle speed cannot be brought within limits, check for a binding throttle and downshift linkage, vacuum leaks in vacuum diaphragm or vacuum leaks in all other vacuum operated units (such as power brake).
3. With engine at curb idle speed and normal operating temperature, read and record line pressure in all selector positions at specified manifold vacuum. Compare line pressures obtained in tests with pressures specified under **LINE PRESSURE SPECIFICATIONS**.

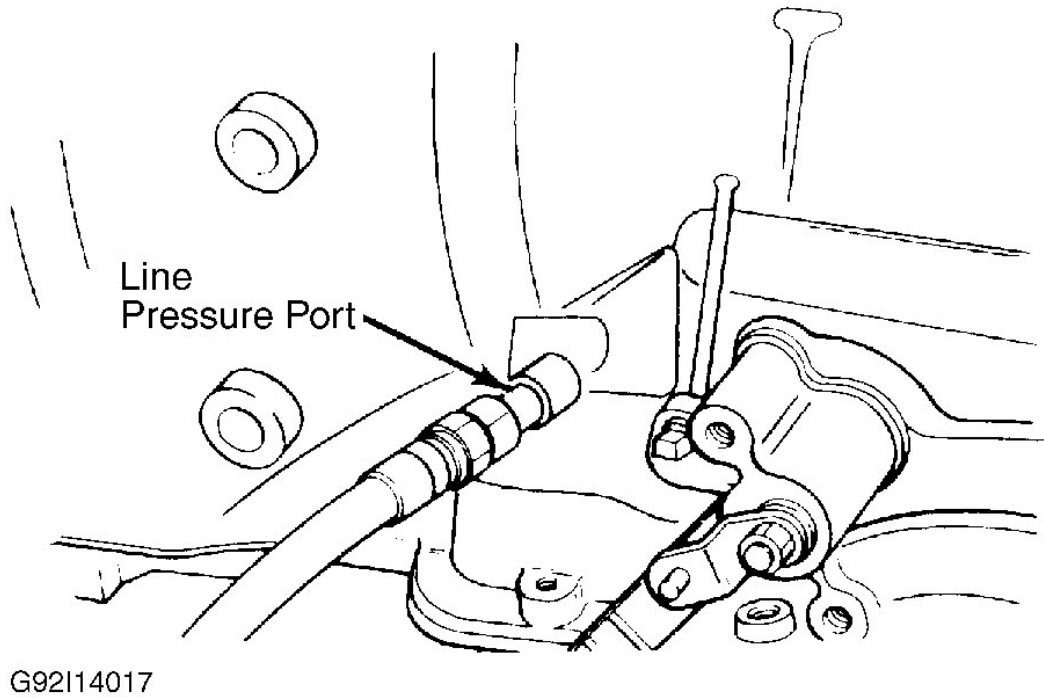


Fig. 4: Identifying Line Pressure Port
Courtesy of FORD MOTOR CO.

Vacuum Pump Method

1. Attach tachometer to engine and a 0-400 psi pressure gauge to pressure take-off point at transmission. See **Fig. 4**. Disconnect and plug manifold vacuum line at diaphragm unit.
2. Connect vacuum source to vacuum diaphragm. Apply parking and service brakes. Start engine and vacuum pump, setting vacuum to 15 in. Hg. Read and record line pressure in all shift selector positions with engine idling.
3. Increase engine speed to 1000 RPM, and reduce vacuum to 10 in. Hg. Read and record line pressure in "D", "2" and "1" shift selector positions.
4. With engine still at 1000 RPM, reduce vacuum to one in. Hg. Read and record line pressure in "D", "2", "1" and "R". Compare the line pressures obtained in the tests with the pressures given in **LINE PRESSURE SPECIFICATIONS**.

NOTE: Governor pressure can be checked at same time line pressure test is performed.

5. With vehicle raised and no load on engine, place selector lever in "D" and apply 10 in. Hg. Increase speed slowly while watching speedometer. Check speed at which line pressure cutback occurs. It should occur between 10-20 MPH.

6. If cutback does not occur within specifications, check shift speeds to ensure problem is governor and not a stuck cutback valve.

CAUTION: DO NOT exceed 60 MPH (speedometer speed) during test. If line pressures are not within specifications, proceed to LINE PRESSURE TEST RESULTS to determine problems.

LINE PRESSURE TEST RESULTS

Low At Idle In All Ranges

Check for low fluid level, restricted intake screen or filter, and loose oil tubes. Check for loose valve body or regulator-to-case bolts. Check for excessive leakage in front pump, case or control valve body. Check for sticking line pressure regulator valve.

Okay At Idle In All Ranges, But Low At 10 In. Hg

Check vacuum diaphragm unit. Check if control rod or throttle valve is stuck.

High At Idle In All Ranges

Check vacuum diaphragm unit, manifold vacuum line, throttle rod, and control rod. Check for sticking regulator boost valve(s).

Okay At Idle In All Ranges, Okay At 10 In. Hg, But Low At One In. Hg

Check for excessive leakage, low pump capacity or restricted oil pan screen.

Low In "P"

Check valve body pressure regulator.

Low In "R"

Check high clutch and/or reverse clutch.

Low In "N"

Check valve body for correct operation.

Low In "D"

Check for faulty forward clutch operation.

Low In "2"

Check forward clutch and servo.

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Low in "1"

Check forward clutch and/or reverse clutch.

LINE PRESSURE SPECIFICATIONS

NOTE: Specifications given are guidelines only. Actual values may vary by $\pm 10\%$. See Fig. 5.

LINE PRESSURE

Transmission Model	Range	15-17" Hg Vac. (Idle)	10" Hg Vac. (P. Throttle)	0.5" Hg Vac. (WOT Stall)
All 4.9L	P, N, D, 2, 1 R	50 - 80 65 - 120	75 - 110 120 - 170	155 - 170 245 - 265
All 5.8L	P, N, D, 2, 1 R	50 - 65 60 - 100	75 - 100 120 - 170	155 - 170 245 - 265
All 7.5L	P, N, D, 2, 1 R	55 - 95 85 - 145	100 - 120 155 - 185	155 - 185 245 - 275

NOTE: Above line pressures are applicable to all altitudes.

LINE PRESSURE (HIGH ALTITUDE APPLICATIONS)

24.5" Hg. Absolute Barometric Pressure (At 5000 Ft.)				
All With High Altitude Vacuum Diaphragm (Aneroid)	P, N, D, 2, 1 R	50 - 65 60 - 95	60 - 100 105 - 150	135 - 165 200 - 255

29.5" Hg. Absolute Barometric Pressure (At Sea Level)				
All With High Altitude Vacuum Diaphragm (Aneroid)	P, N, D, 2, 1 R	50 - 80 60 - 130	80 - 120 130 - 180	155 - 185 245 - 275

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Fig. 5: Line Pressure Specifications
Courtesy of FORD MOTOR CO.

VACUUM DIAPHRAGM UNIT

Vacuum Supply & Diaphragm Check

1. Disconnect vacuum line at diaphragm unit, and install a vacuum gauge in vacuum line using a "T" fitting. If transmission fluid is present in vacuum hose, diaphragm is leaking and vacuum diaphragm unit must be replaced. With engine idling, gauge must show a steady vacuum. If reading is low, unplug vacuum hose at diaphragm and plug. If vacuum is now acceptable, replace diaphragm. If vacuum is still not acceptable, check for vacuum leak or poor engine vacuum.
2. If reading is okay, rapidly accelerate engine momentarily. Vacuum must drop rapidly at acceleration and return upon deceleration. If vacuum reading does not change or changes slowly, vacuum line is plugged, restricted or connected to reservoir supply.

VACUUM REGULATOR VALVE (VRV) 7.3L DIESEL

Operational Check & Adjustment

1. Shut engine off. Disconnect 2 port vacuum connector from VRV located on left side of fuel injection pump. Remove throttle cable from lever on right side of pump.
2. Remove throttle return spring. Install one end of spring over throttle lever ball stud and other end over throttle cable support bracket.
3. Attach a vacuum pump to upper port of VRV on vacuum supply side. Attach a vacuum gauge to lower port of VRV (labeled TRANS on VRV). Apply and maintain 20 in. Hg to VRV. See **Fig. 6**.
4. Pump vacuum up as it bleeds off. Cycle throttle lever 5 times from idle to wide open throttle with vacuum applied. Insert Gauge Block (T83T-7B200-AH) or .515" gauge block between pump boss and throttle wide open stop. Ensure lever stop is against block. Gauge attached to lower port should indicate 6-8 in. Hg. If reading is incorrect, adjust VRV to 7 in. Hg.
5. To adjust, loosen 2 adjustment screws that attach VRV to fuel injection pump. Rotate VRV until proper vacuum is obtained and tighten adjusting screws. If VRV cannot be adjusted to proper specifications, replace VRV and repeat procedure in step 2).
6. Remove gauge block. Reattach throttle return spring and throttle cable. Apply and maintain 20 in. Hg to VRV. While maintaining vacuum, cycle the throttle lever from idle to wide open throttle 5 times. Vacuum gauge **MUST** indicate at least 13 in. Hg with throttle at idle position.
7. If vacuum gauge indicates less than 13 in. Hg, VRV must be replaced and procedure for adjustment must be repeated. After final adjustment, remove vacuum pump and gauge from VRV and reattach vacuum connector.
8. Start engine. Check throttle operation and transmission shift linkage.

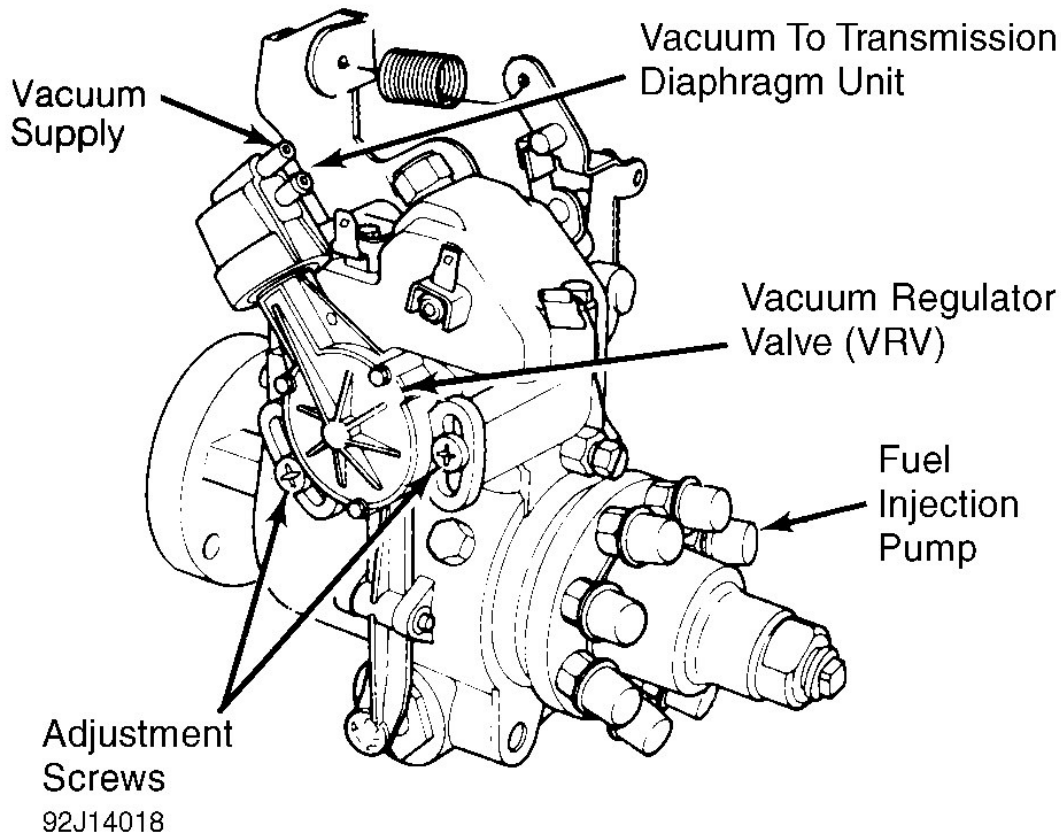


Fig. 6: Vacuum Regulator Valve (7.3L Diesel)
Courtesy of FORD MOTOR CO.

STALL SPEED TEST

CAUTION: DO NOT hold throttle open longer than 5 seconds at a time during testing. If engine speed exceeds maximum limit of stall speed, release throttle immediately as clutches or bands are slipping.

Testing Procedure

Install tachometer, and fully apply parking and service brakes. Start engine and run at curb idle at normal operating temperature. Stall transmission in each driving range at full throttle. Note maximum RPM obtained. Engine speed should be within limits shown in appropriate STALL SPEEDS table.

NOTE: Allow a cooling period of 15 seconds with transmission in Neutral and engine speed at 1000 RPM between each test.

STALL SPEEDS 1988 MODELS

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Engine	Stall Speed - RPM Range
4.9L EFI	1610-1868
5.0L EFI	2092-2443
5.8L EFI	2312-2666
7.3L Diesel	1715-1966
7.5L EFI	2049-2362

STALL SPEEDS 1989 MODELS

Engine	Stall Speed - RPM Range
4.9L EFI	1610-1868
5.0L EFI	2092-2443
5.8L EFI	2312-2666
7.5L EFI	2049-2362

STALL SPEEDS 1990 MODELS

Engine	Stall Speed - RPM Range
4.9L EFI	1563-1855
5.0L EFI	2101-2457
5.8L EFI	2216-2605
7.5L EFI	1944-2277

STALL SPEEDS 1991-92 MODELS

Engine	Stall Speed - RPM Range
4.9L PFI	1560-1870
5.0L PFI	1616-1871
5.8L 4V	1569-1729
7.3L Diesel	1700-1860
7.5L PFI	1610-1871

STALL SPEED TEST RESULTS

Stall Speed Too High

In "D", "2", "1", and "R": general transmission problems are indicated and a line pressure test should be made to locate faulty unit(s). In "D" only: planetary one-way clutch slippage is indicated. In "D", "2", and "1": forward clutch slippage is indicated. In "R" only: high and/or reverse clutch slippage indicated.

Stall Speed Too Low

Converter stator one-way clutch faulty. Ensure engine performance is satisfactory before condemning converter assembly. Converter cannot be overhauled and must be replaced if defective.

SHIFT SPEEDS (MPH)

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NOTE: Following table is approximate. See **Fig. 7**. Shift speeds may vary due to production tolerances, rear axle ratios and emission control equipment.

NOTE: Specifications given are for 1991 models; all models are similar. Specifications may vary by $\pm 10\%$ year to year.

Throttle Opening	Drive Range	Shift	Low Limit MPH	High Limit MPH
Minimum Throttle	D	1 - 2	6	16
Minimum Throttle	D	2 - 3	9	23
Closed Throttle	D	3 - 1	6	8
Closed Throttle	1	2 - 1	23	36
Part Throttle (To Detent)	D	1 - 2	25	44
Part Throttle (To Detent)	D	2 - 3	41	69
Max. Downshift (To Detent)	D	3 - 2	28	57
Wide Open Throttle (WOT)	D	1 - 2	34	47
Wide Open Throttle (WOT)	D	2 - 3	59	74
Max. Downshift (WOT)	D	3 - 2	50	65
Max. Downshift (WOT)	D	3 - 1	22	34

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Fig. 7: C-6 Shift Speed Chart

AIR PRESSURE CHECKS

1. A no-drive condition can exist, even with correct transmission fluid pressure, because of inoperative clutches or bands. Erratic shifts could be caused by stuck governor valve. Inoperative units can be located through a series of checks by substituting air pressure for fluid pressure to determine location of malfunction.
2. To make air pressure checks, remove oil pan and drain transmission fluid. Remove control valve body and apply air at points noted. See **Fig. 8**. Check unit operations as follows:

Forward Clutch

Apply air pressure to transmission case forward clutch passage. A dull thud can be heard when clutch piston is applied, or movement of piston can be felt by placing a finger on input shell.

Governor

Apply air pressure to governor line pressure passage and listen for sharp clicking or whistling noise, indicating governor valve movement.

Reverse-High Clutch

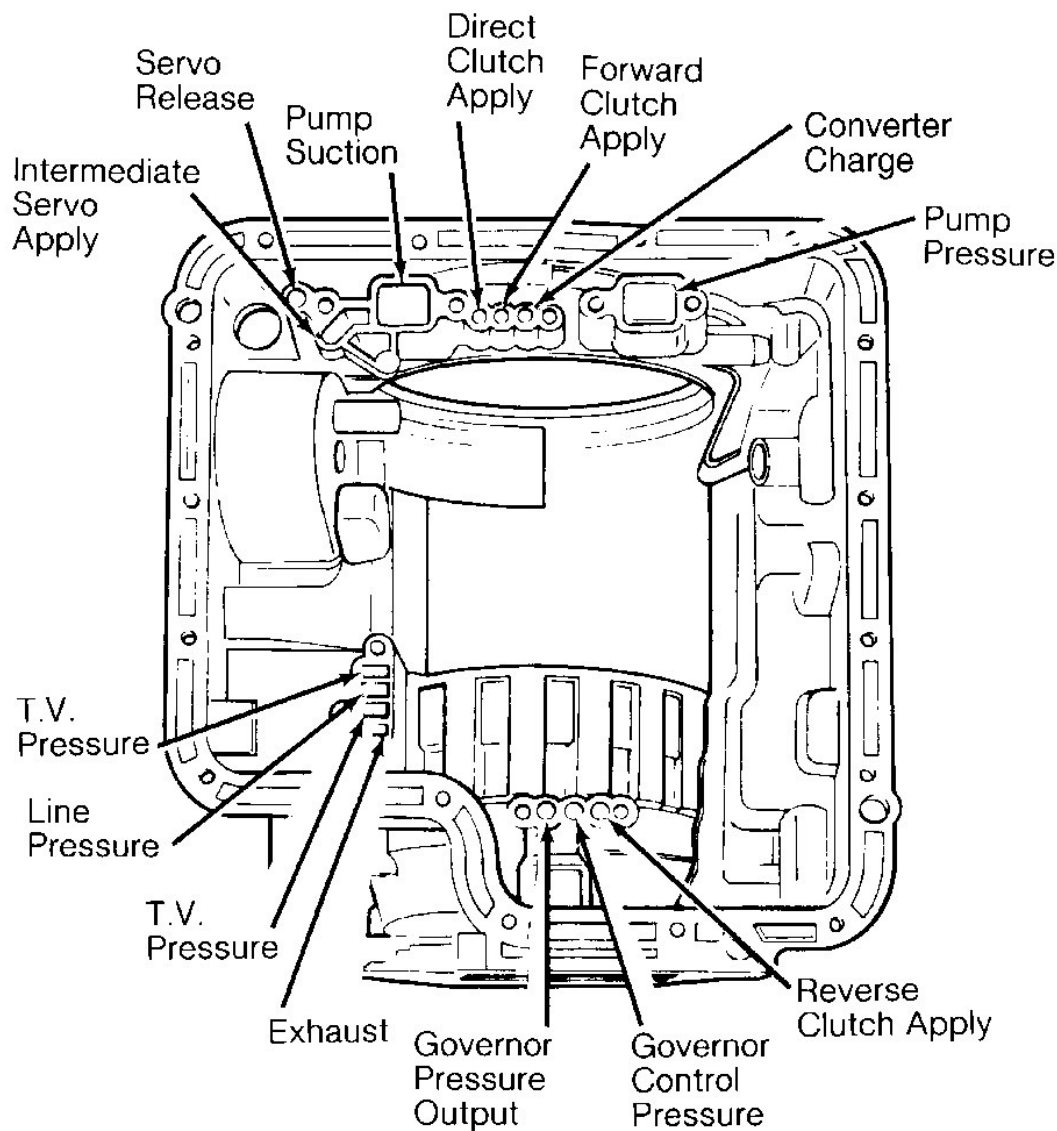
Apply air pressure to reverse-high clutch passage. Dull thud should be heard when clutch piston is applied. If thud is not heard, place finger tips on clutch drum. Movement should be felt.

Intermediate Servo

Hold air nozzle in intermediate servo apply passages. Operation of servo will be indicated by tightening of intermediate band around drum. With air still applied at apply passage, use 2nd air nozzle to apply air at the servo release passage. Band should now release (combination of air pressure and spring on release side of piston should overcome apply pressure).

Low-Reverse Clutch

Apply air pressure to reverse clutch apply passage. A dull thud should be heard if clutch is operating properly.



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Fig. 8: Identifying Pressure Ports With Valve Body Removed
 Courtesy of FORD MOTOR CO.

REMOVAL & INSTALLATION

TRANSMISSION

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

TORQUE CONVERTER

NOTE: Converter is a sealed unit and cannot be disassembled for service. Replace if found to be defective. Make the following tests to ensure converter is defective before replacing unit.

LEAK TEST

If torque converter welds indicate leakage, attach Torque Converter Leak Detector (Rotunda 021-00054) to converter and follow detector kit instructions.

TURBINE & STATOR END PLAY CHECK

1. Insert Tester (T80L-7902-D) into converter pump drive hub until it bottoms. Expand sleeve in turbine spline by tightening threaded inner post of tester until it is securely locked into spline. See **Fig. 9**.
2. Attach dial indicator to tool with indicator button on converter pump drive hub. Zero dial face. Lift tool upward as far as possible and note indicator reading.
3. Reading is total end play of turbine and stator. If end play exceeds .021" (.53 mm) on new or rebuilt converter, or .040" (1.02 mm) on used converter, replace torque converter assembly.

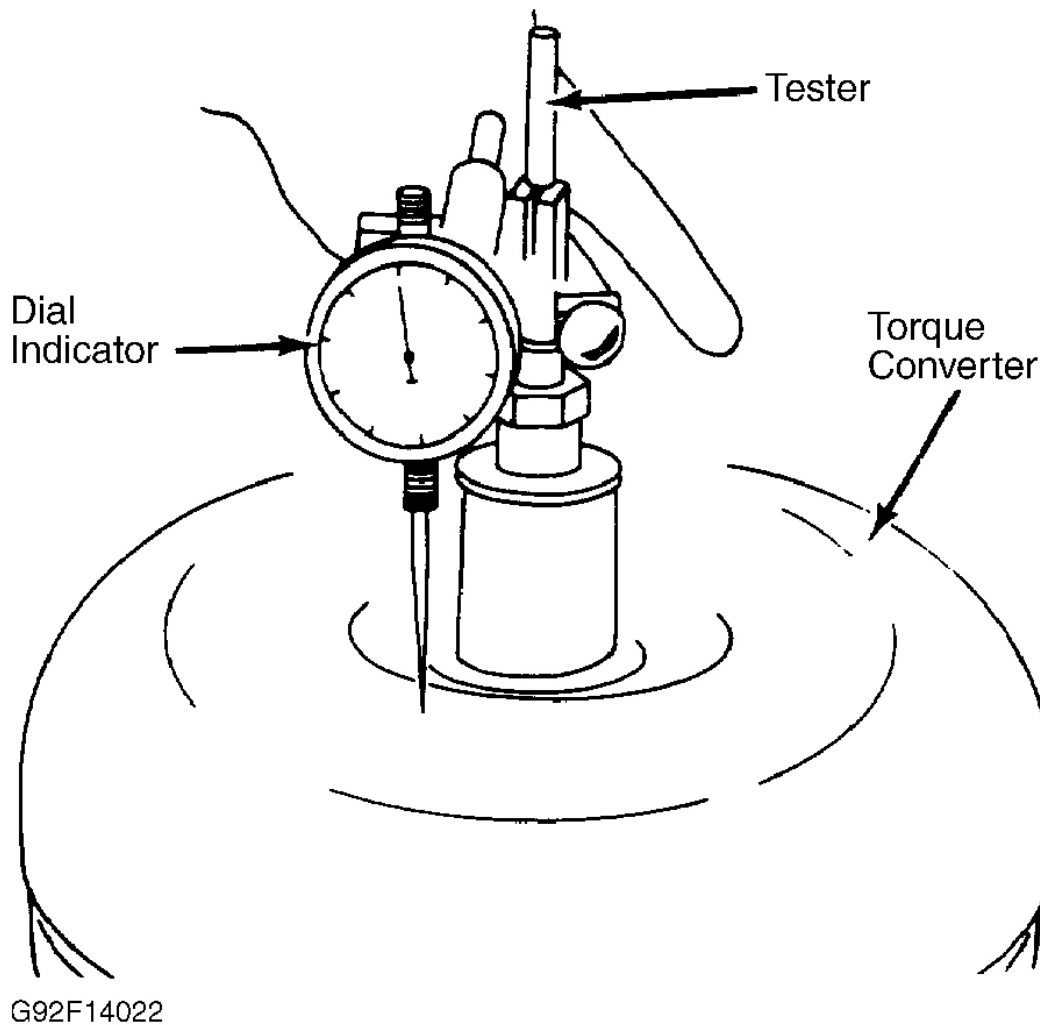
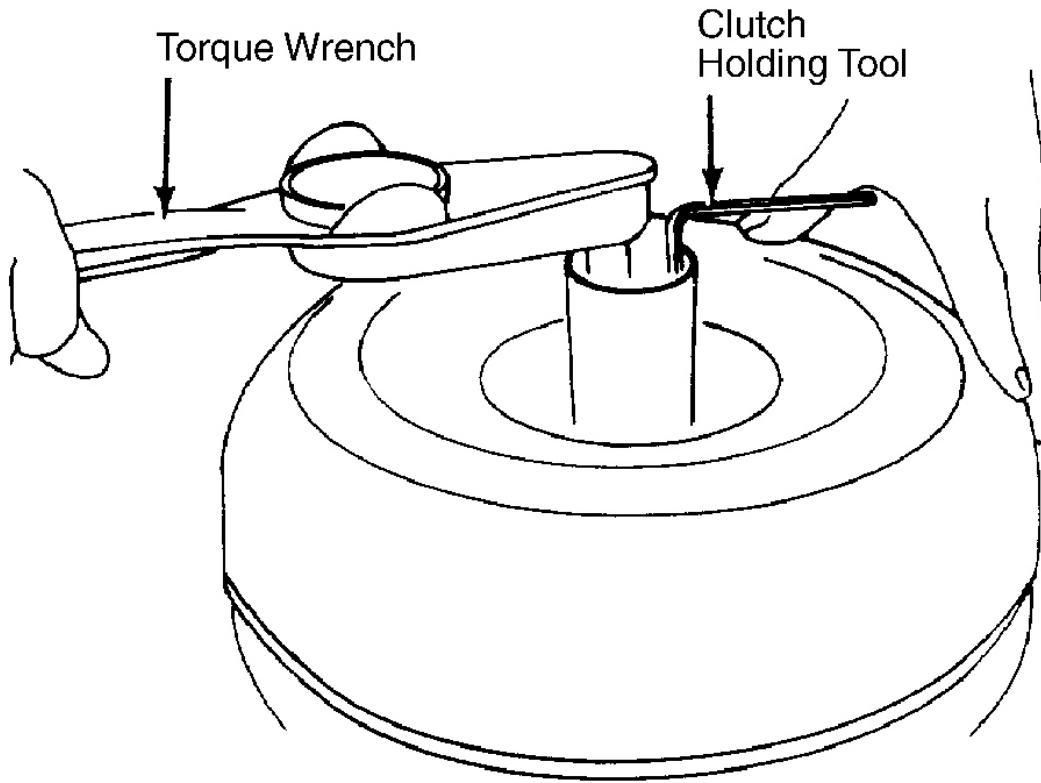


Fig. 9: Measuring Torque Converter End Play
Courtesy of FORD MOTOR CO.

CONVERTER ONE-WAY CLUTCH CHECK

1. Insert one-way Clutch Holding Tool (T77L-7902-R) into one of the grooves in the stator thrust washer. Insert Torque Adapter (T77L-7902-B) into converter pump drive hub so as to engage one-way clutch inner race.
2. Attach a torque wrench to torque adapter. With clutch holding wire held stationary, turn torque wrench counterclockwise. See **Fig. 10**. Converter one-way clutch should lock-up and hold a 10 ft. lbs. (14 N.m) force. One-way clutch should rotate freely in a clockwise direction.
3. Repeat lock-up test in at least 5 different locations around torque converter. If clutch fails to lock-up and hold, replace torque converter.



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Fig. 10: Checking Stator One-Way Clutch
Courtesy of FORD MOTOR CO.

STATOR-TO-IMPELLER INTERFERENCE CHECK

1. Position front pump assembly on bench with spline end of stator shaft pointing up. Mount converter on pump so splines of one-way clutch inner race engage splines of stator support and converter hub engages pump drive gear.
2. While holding pump stationary, rotate converter counterclockwise. Converter should rotate freely without interference or scraping within assembly. Should interference or a scraping condition within converter exist or if converter does not rotate freely, replace converter unit.

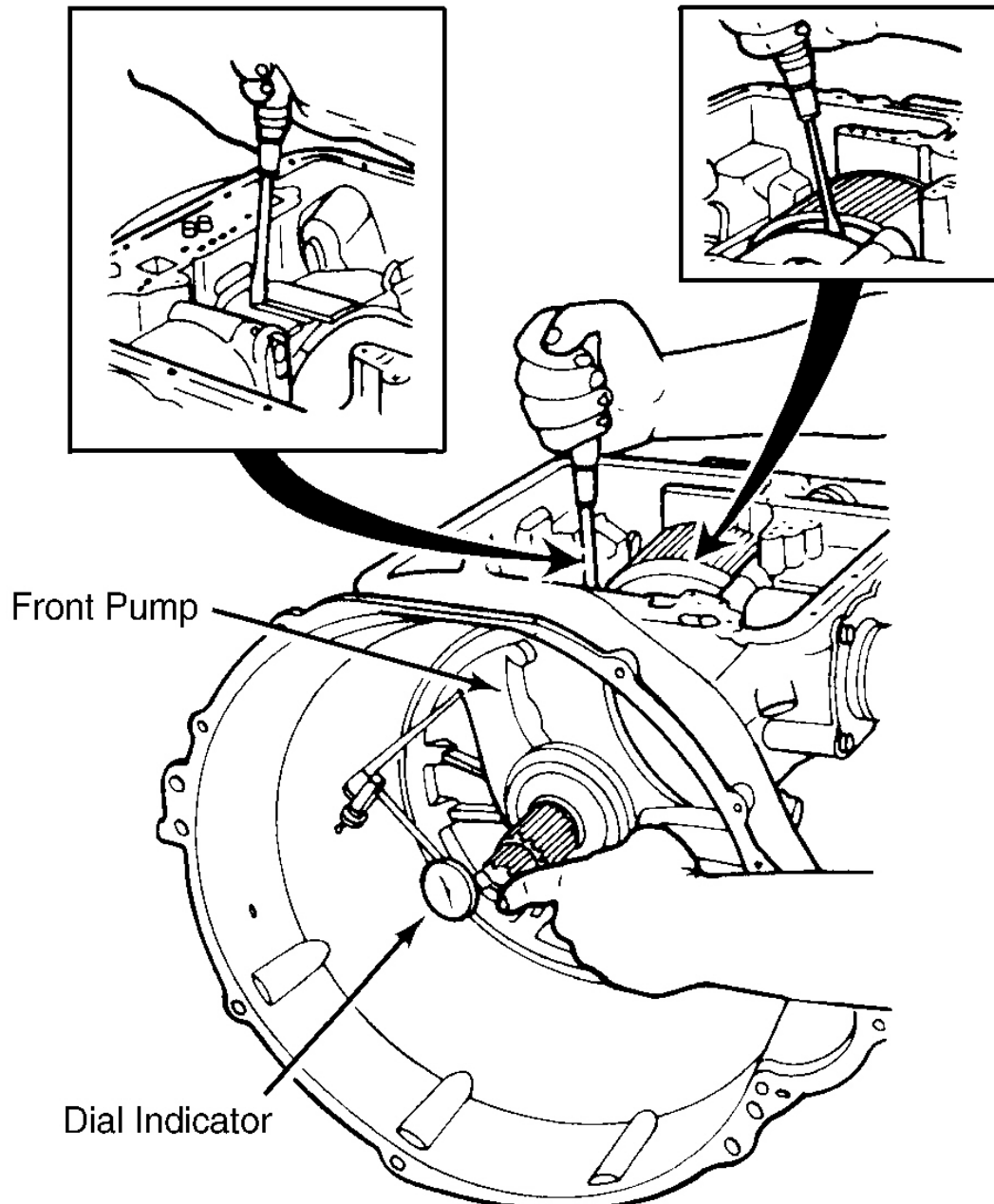
STATOR-TO-TURBINE INTERFERENCE CHECK

1. Place converter on bench, front side down. Install front pump assembly to engage mating splines of stator support, stator and pump drive gear lugs.
2. Install input shaft, engaging the splines with turbine hub. While holding pump stationary, rotate turbine with input shaft.
3. Turbine should rotate freely in both directions without interference or noise. If interference or noise

exists, stator front thrust washer may be worn and converter should be replaced.

TRANSMISSION DISASSEMBLY

1. With transmission in a holding fixture, remove oil pan and gasket. Remove retaining bolts, and lift valve body assembly from transmission case.
2. Attach a dial indicator to front pump with indicator contact against input shaft. See **Fig. 11**. Install Oil Seal Replacer (T61L-7697-B) in extension housing to center output shaft.
3. Measure transmission end play. Push gear train to rear of case. Press input shaft inward until it bottoms. Zero dial indicator.
4. Push gear train forward. Read and record end play for reassembly reference. Remove tools from transmission.



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Fig. 11: Measuring Transmission End Play
Courtesy of FORD MOTOR CO.

5. Remove vacuum diaphragm, rod and primary throttle valve from case. Slide input shaft from front pump. Remove front pump retaining bolts, pry gear train forward and remove pump.
6. Loosen band adjustment screw. Remove 2 band struts. Rotate band 90 degrees counterclockwise to align

band ends with slot in case. Remove band from reverse-high clutch drum.

7. Remove forward part of gear train from transmission as an assembly. See **Fig. 12**. Remove servo cover retaining bolts, servo cover, piston, spring and gasket from case. Remove large snap ring securing reverse planet carrier in low-reverse clutch hub.
8. Lift carrier from drum. Remove snap ring securing reverse ring gear and hub on output shaft. Slide assembly from shaft. Rotate low-reverse hub in clockwise direction and remove from case.
9. Remove reverse-high clutch snap ring and withdraw clutch discs, plates and pressure plate from case. See **Fig. 20**. Remove extension housing retaining bolts and vent tube from case.

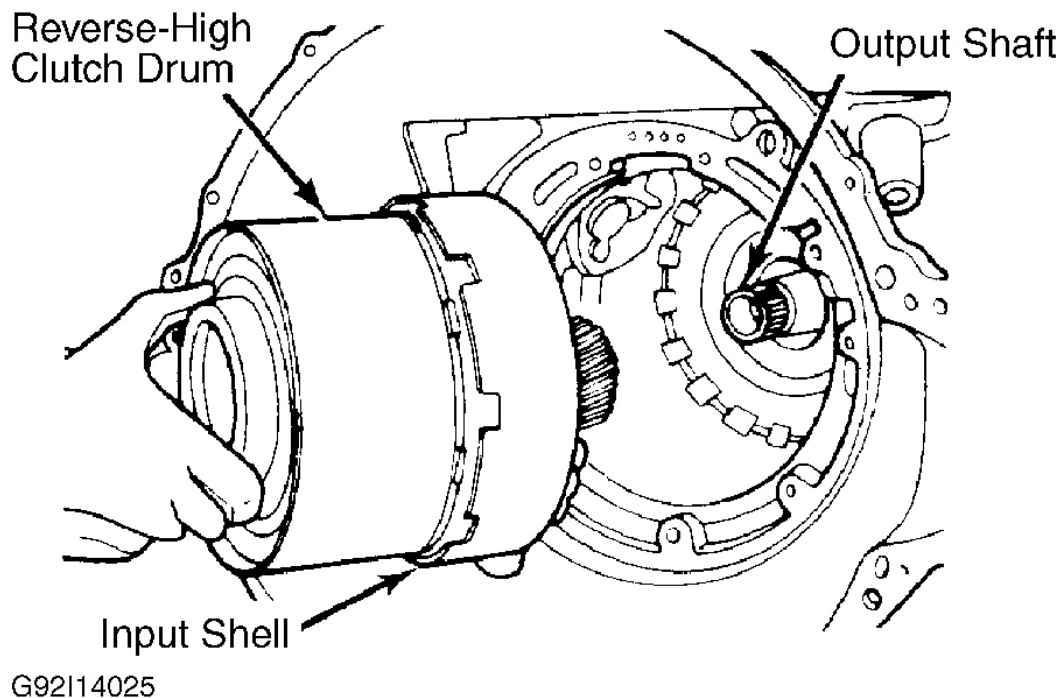


Fig. 12: Removing Reverse-High Clutch Drum
Courtesy of FORD MOTOR CO.

10. Remove extension housing and gasket. Slide output shaft assembly from case. Remove distributor sleeve retaining bolts. Remove sleeve, parking pawl gear and thrust washer.

NOTE: If thrust washer is staked in place, use a sharp chisel to cut off metal from behind thrust washer. Remove any metal particles from case.

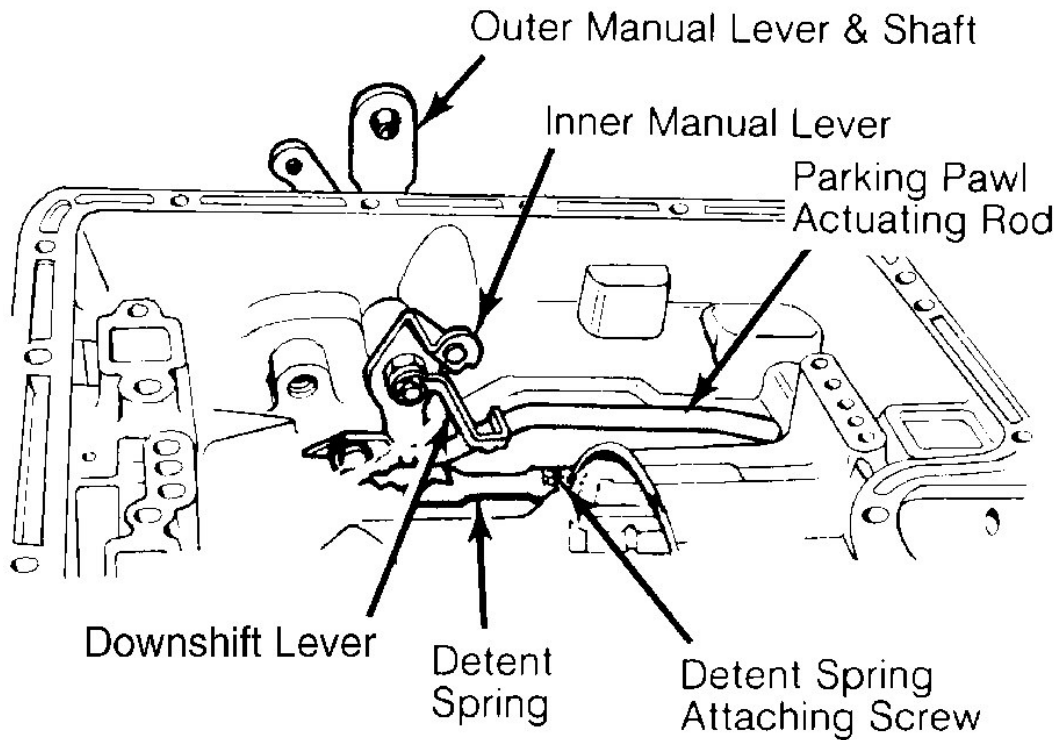
11. Compress reverse clutch piston release spring. Remove snap ring. Lift out springs and retainer assembly.
12. Remove one-way clutch inner race retaining bolts from rear of case. Remove inner race. Remove reverse clutch piston by applying air pressure to low-reverse clutch apply passage in case. See **Fig. 8**.

COMPONENT DISASSEMBLY & REASSEMBLY

DOWNSHIFT & MANUAL LINKAGE

Disassembly

1. Remove nut and lock washer securing outer downshift lever to transmission and remove lever. Slide downshift lever out from inside case and remove seal from recess in manual lever shaft.
2. Remove neutral safety switch. Remove "C" clip securing parking pawl actuating rod to manual lever. Remove actuating rod from case. See **Fig. 13**.
3. Remove nut retaining inner manual lever to shaft. Remove inner lever from shaft. Slide outer lever and shaft from case. Remove seal from case using a puller and slide hammer.



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Fig. 13: Identifying Linkage Components
Courtesy of FORD MOTOR CO.

Reassembly

1. Dip new seal in transmission fluid, and install it into case. Slide outer manual lever and shaft into case. Position inner lever on shaft. Ensure leaf spring roller is positioned in inner manual lever detent.

2. Install retaining nut and tighten. Install parking pawl actuating rod and secure to inner manual lever with "C" clip. Slide neutral safety switch onto outer shaft lever.
3. Install retaining bolt. With manual lever in neutral, rotate switch and install gauge pin (No. 43 drill) into gauge pin hole. Tighten switch retaining bolt to specification. See **TORQUE SPECIFICATIONS**.
4. Install a NEW downshift lever seal in outer lever shaft recess. Slide downshift lever and shaft into position. Place outer downshift lever on shaft. Install and tighten lock washer and nut to specification.

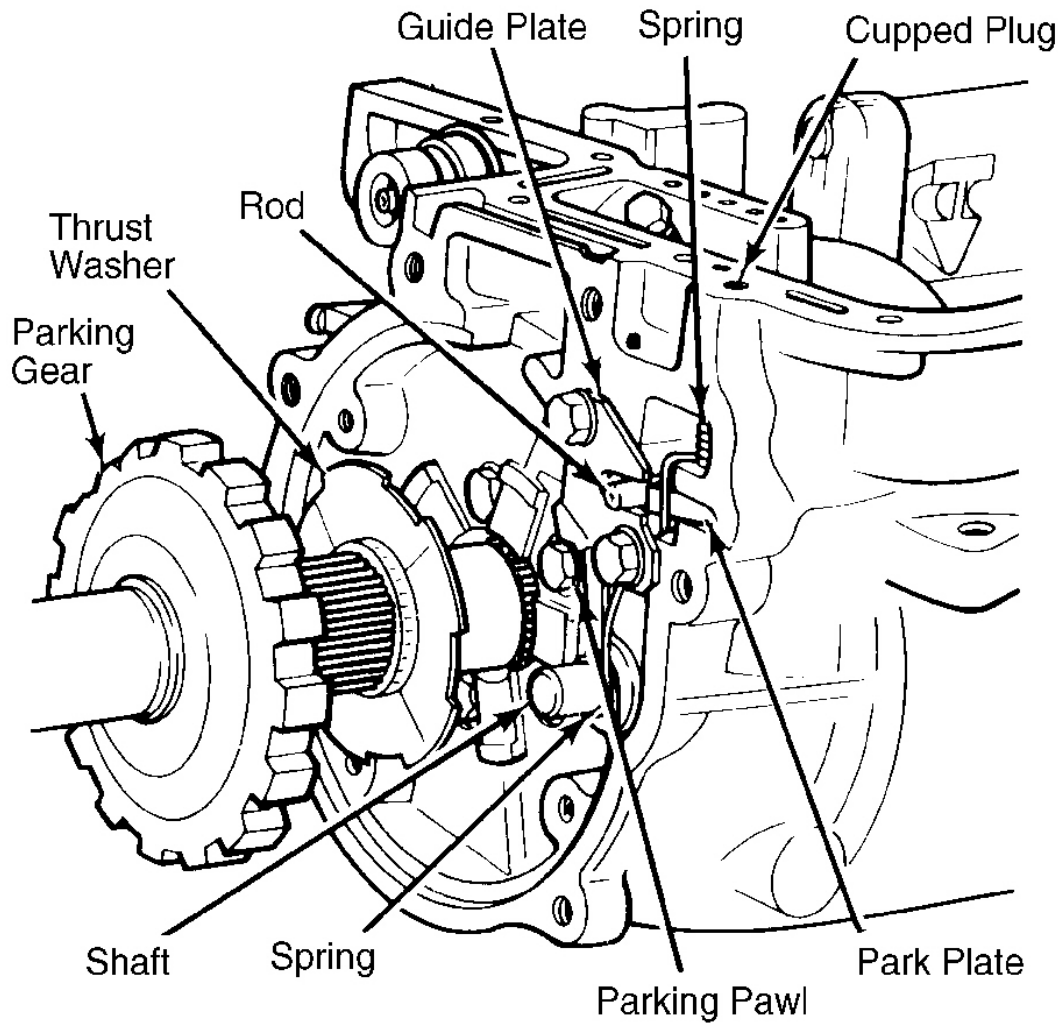
PARKING PAWL LINKAGE

Disassembly

1. Remove bolts retaining parking pawl guide plate in case. Remove plate. Remove spring, parking pawl and shaft from case. See **Fig. 14**.
2. Working from pan mounting surface, drill a 1/8" hole through center of cupped plug. Pull plug from case with a wire hook.
3. Unhook end of spring from park plate slot. Thread a 1/4"-20 x 1 1/4" screw into park plate shaft. Pull shaft from case with screw. Remove spring and park plate.

Reassembly

1. Position spring and park plate in case, and install shaft. Place end of spring into slot of park plate. Install a new cupped plug to retain shaft. Install parking pawl shaft in case.
2. Slip parking pawl and spring into place on shaft. Position guide plate on case. Ensure actuating rod is seated in slot of plate. Secure plate with 2 bolts and lock washers.



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Fig. 14: Identifying Parking Pawl Linkage
 Courtesy of FORD MOTOR CO.

SERVO APPLY LEVER

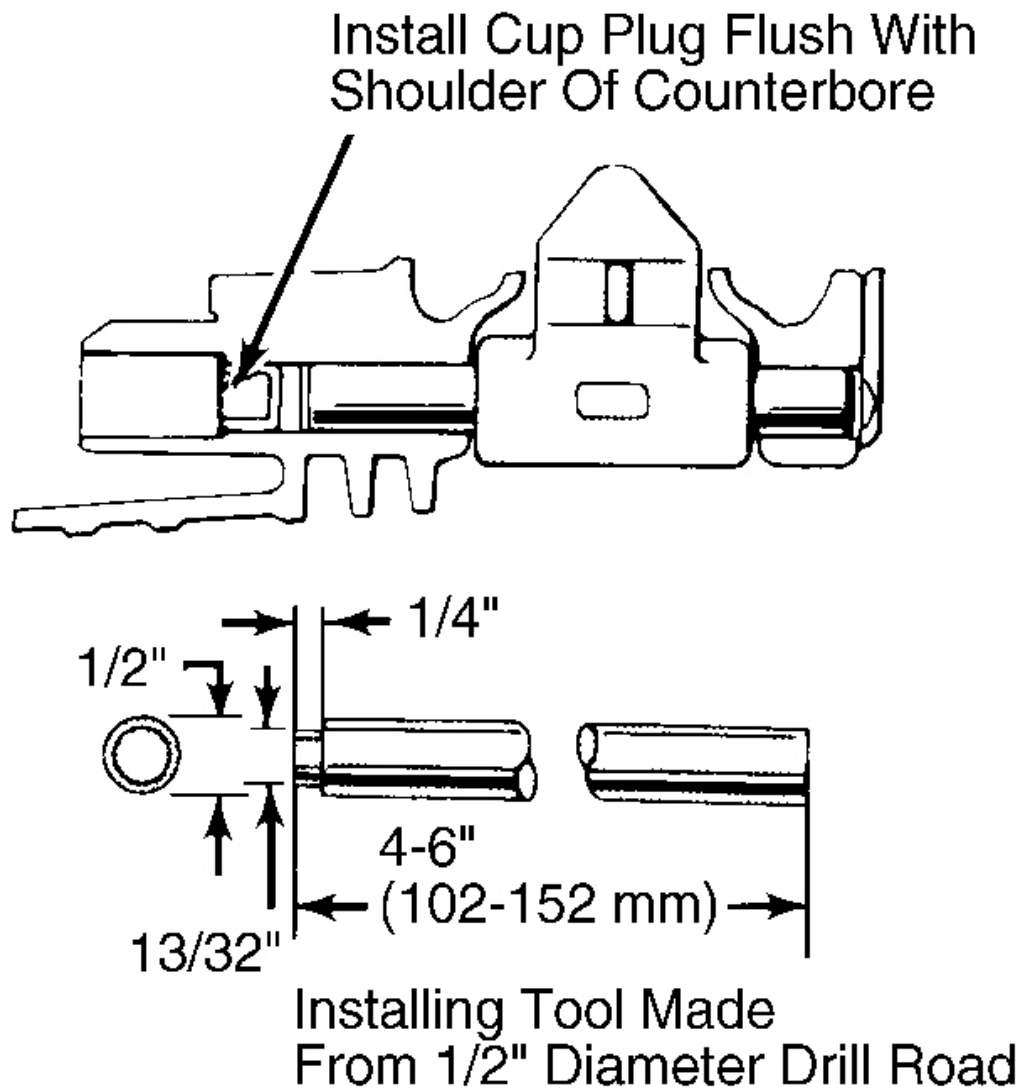
Disassembly

Working from inside case, carefully tap servo apply lever shaft to remove the cup plug. Shaft can be withdrawn by hand.

NOTE: Cup plug should be coated with Loctite to prevent leakage.

Reassembly

Hold servo apply lever in position and install shaft. Using fabricated tool, drive cup plug into position in case. See **Fig. 15**. Ensure plug is flush with shoulder of counterbore.



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Fig. 15: Installing Servo Apply Lever Cup Plug
Courtesy of FORD MOTOR CO.

VALVE BODY

Disassembly

1. Remove 9 screws retaining screen-to-lower valve body and remove screen and gasket. See **Fig. 2**. Remove 5 upper-to-lower valve body and hold-down plate retaining screws.
2. Remove 7 retaining screws from underside of lower valve body and separate bodies, removing separator plate and gasket. DO NOT lose check balls and springs. Remove the separator plate screen. See **Fig. 16**.

NOTE: Valve body-to-screen gasket must be replaced when valve body is serviced.

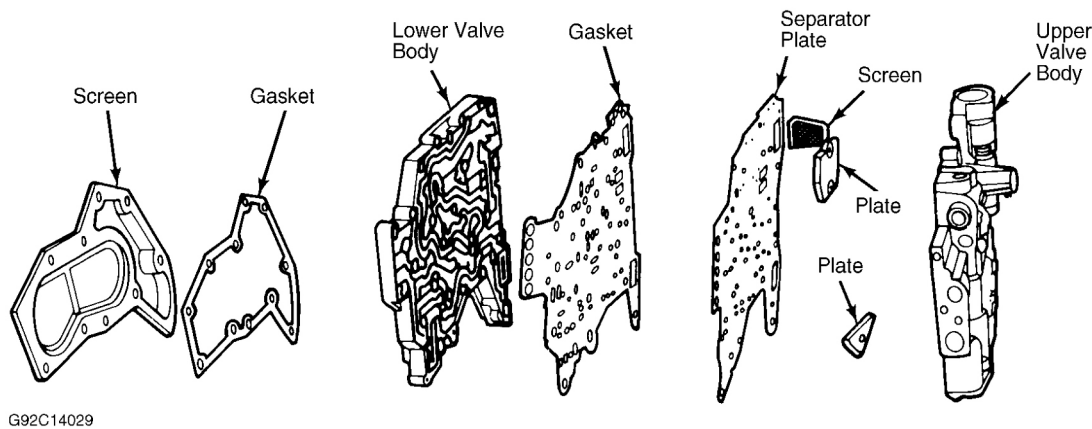


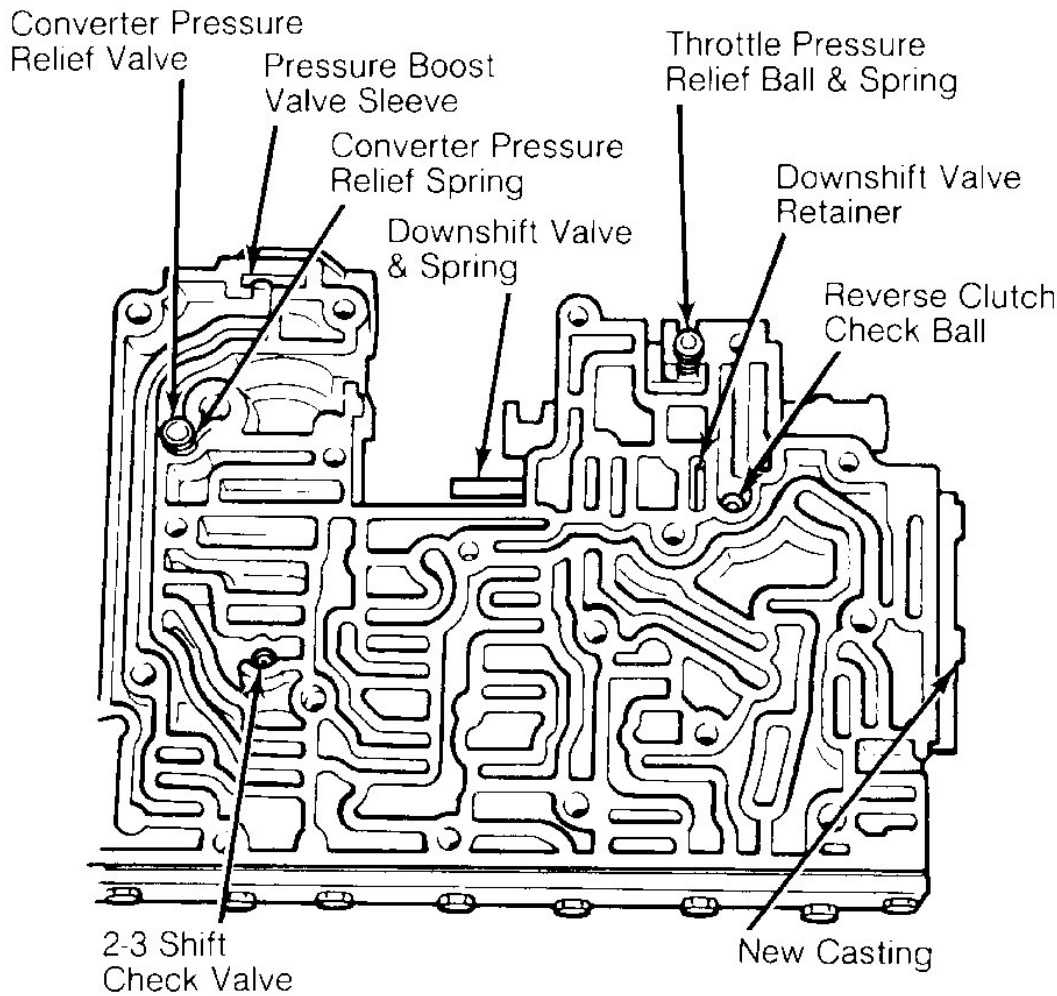
Fig. 16: Exploded View of Control Valve Body Assembly
Courtesy of FORD MOTOR CO.

3. Remove manual valve retaining pin from upper valve body. Slide manual valve out of valve body. Cover downshift valve port using finger, and remove downshift valve retainer. Remove spring and downshift valve. See **Fig. 18**.
4. Apply hand pressure to pressure boost valve sleeve and remove retaining clip from underside of valve body. Slowly release pressure and remove sleeve and pressure boost valve. Remove 2 springs, retainer and main regulator valve from bore.
5. Apply hand pressure to throttle boost valve plate and remove 2 retaining screws. Release pressure and remove plate, throttle boost valve, spring, manual low 2-1 scheduling valve and spring from bore.
6. Apply hand pressure on remaining valve body plate and remove 8 retaining screws. Hold valve body so plate faces upward.
7. Release hand pressure on plate and remove. Remove spring and intermediate servo modulator valve from body. Remove intermediate servo accumulator valve and springs.
8. Remove 2-3 backout valve and spring. Remove 2-3 shift valve, spring and throttle modulator valve. Remove 1-2 shift valve, DR-2 shift valve and spring. Remove coasting regulator valve and cutback valve from body.

CAUTION: For gasoline and Diesel applications, DO NOT interchange valve body repair kits or components. Cross-matching components may cause shift concerns.

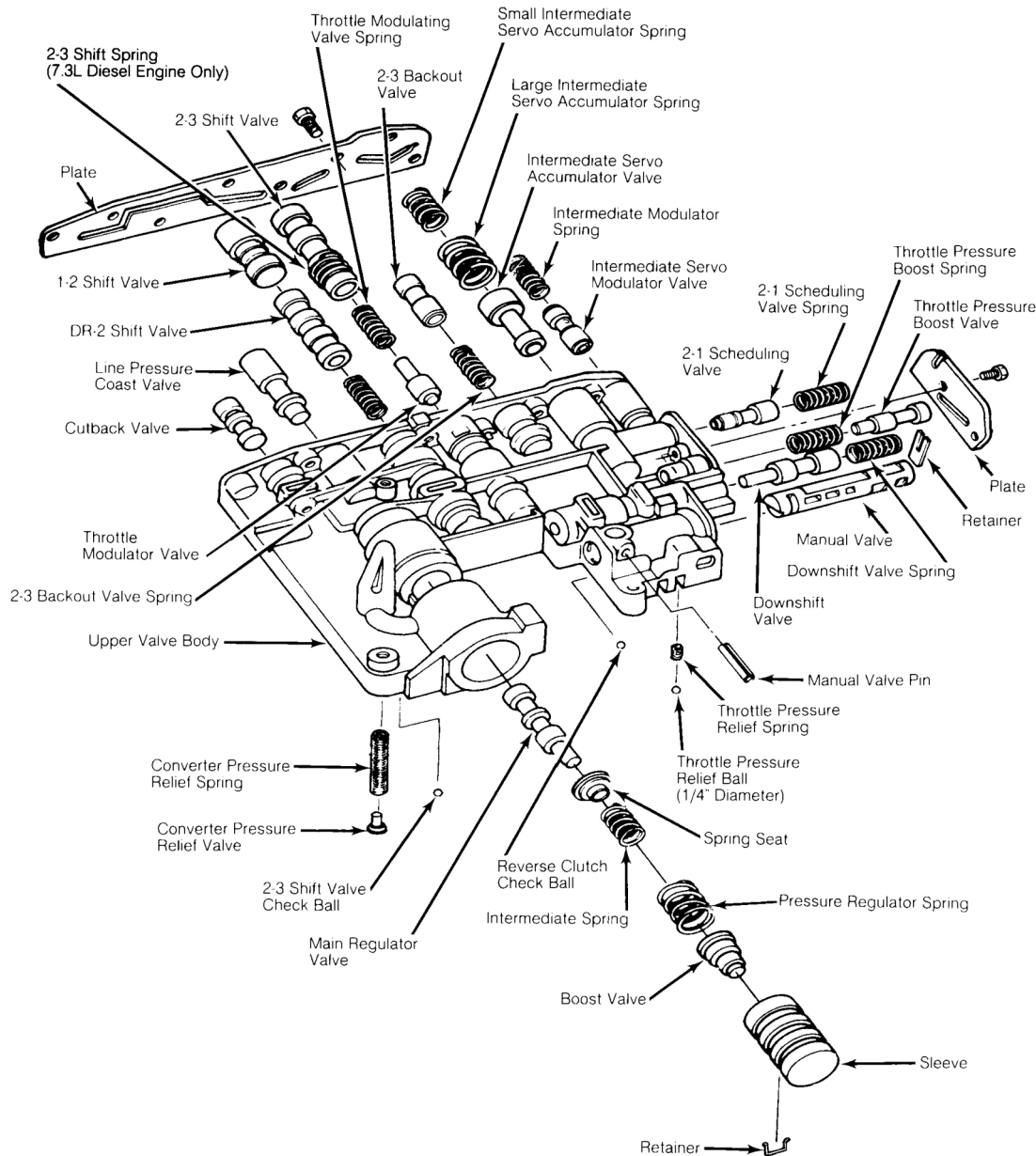
Reassembly

To reassemble, reverse disassembly procedure. Coat check balls with petroleum jelly to hold in place during reassembly. See **Fig. 17**. When installing screen in separator plate, ensure tabs are flush with separator plate surface. Tighten all bolts and screws evenly to specification. See **TORQUE SPECIFICATIONS**. See **Fig. 2**.



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Fig. 17: Identifying Valve Body Check Valves & Balls
 Courtesy of FORD MOTOR CO.



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Fig. 18: Exploded View of Upper Valve Body Assembly
Courtesy of FORD MOTOR CO.

FRONT PUMP

Disassembly

Remove 2 seal rings and selective thrust washer. Remove large square cut seal from outside diameter of pump housing. Remove 5 bolts securing stator support to pump housing. Lift support from housing. Remove drive and driven gears from housing. See **Fig. 19**.

Pump Housing Bushing Replacement

Remove bushing from pump housing using a driver and hammer. Place new bushing into position. Ensure half moon slot in bushing is on top and in line with oil lube hole near seal bore. Press bushing in .060-.080" (1.52-2.03 mm) below front face of bushing bore.

NOTE: After assembly, half moon slot must be aligned with lube hole to provide proper lubrication.

Reassembly

1. Install drive and driven gear into pump housing with identification mark or chamfered surface of each gear installed toward front of pump housing. Position stator support in pump housing. Install and tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS**.
2. Carefully install 2 NEW seal rings on stator support. Ensure ends of rings are engaged to lock them in place. Install a NEW square cut seal on outside diameter of pump housing.
3. Install selective thrust washer. Place pump on torque converter. Ensure drive gear engages converter hub. Rotate pump to ensure gears rotate freely.

CAUTION: Different clutch assemblies are used in various models. When disassembling clutches, note number and location of plates used for reassembly reference.

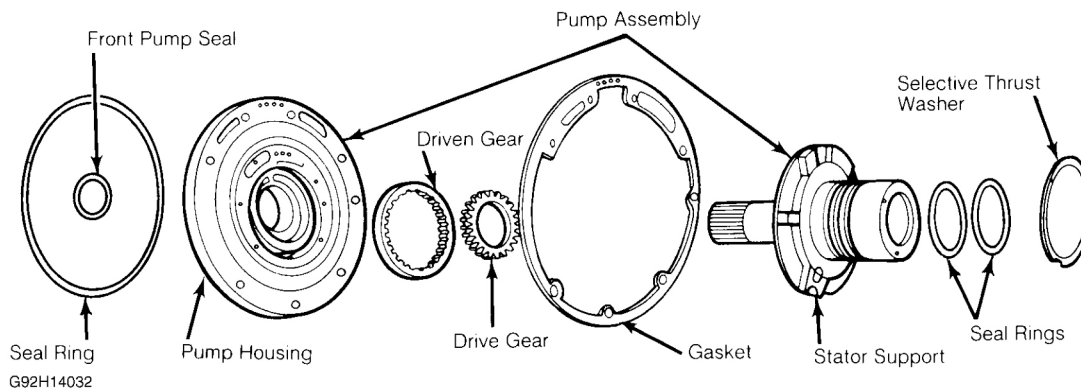


Fig. 19: Exploded View of Front Pump Assembly
Courtesy of FORD MOTOR CO.

REVERSE-HIGH CLUTCH

Disassembly

1. Remove pressure plate snap ring by prying up using screwdriver. Remove pressure, drive and driven plates. Using Clutch Spring Compressor (T65L-77515-A), compress piston return springs.
2. Remove snap ring, clutch spring compressor, spring retainer and springs. Apply air pressure to piston

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apply hole in drum and remove piston. Remove piston outer seal from piston and inner seal from clutch drum. See **Fig. 20**.

Bushing Replacement

To remove front bushing, use a cape chisel and cut along bushing seam until chisel breaks through bushing wall. Pry loose ends of bushing up to remove. Remove rear bushing using a press ram and bushing adapter. Install bushings using bushing drivers.

Reassembly

1. Dip NEW seals in transmission fluid and install one seal on piston and one in drum. Install piston into clutch drum. Position return springs in pockets as shown. See **Fig. 21**. Place spring retainer over springs. Using compressor tool, compress spring and install snap ring. Ensure snap ring is sealed inside guides on spring retainer.
2. Install clutch plates alternately starting with a steel drive plate. If new clutch plates are being installed, friction plates must be soaked in transmission fluid for 15 minutes before installation.
3. See **CLUTCH PLATE CHART** under FORWARD CLUTCH for the number of clutch plates required. Install pressure plate and retaining snap ring.
4. Using a feeler gauge, measure clearance between pressure plate and snap ring. Hold pressure plate downward while measuring. Ensure clearance is .022-.036" (.56-.91 mm).
5. If clearance is not within specifications, replace selective snap ring to meet proper clearance. See **SELECTIVE SNAP RINGS**. Install correct thickness snap ring, and recheck clearance.

SELECTIVE SNAP RINGS

Part Number	(1) Thickness In. (mm)
377434	.058 (1.47)
377126	.067 (1.70)
377127	.076 (1.93)
377128	.085 (2.16)
377444	.094 (2.39)
386841	.112 (2.84)
386842	.130 (3.30)
(1) Snap ring thicknesses have .002" (.05 mm) tolerance.	

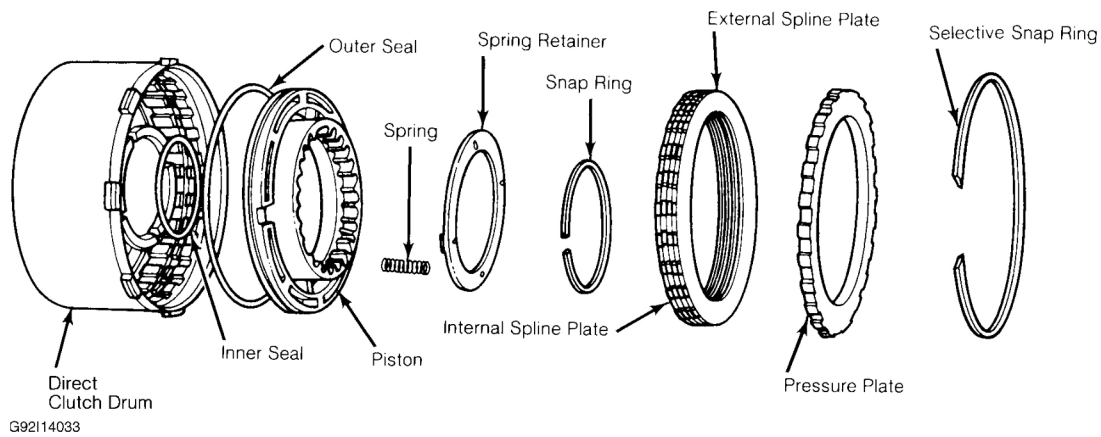


Fig. 20: Exploded View of Reverse-High Clutch Assembly
 Courtesy of FORD MOTOR CO.



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Fig. 21: Positioning Reverse-High Clutch Return Springs
Courtesy of FORD MOTOR CO.

FORWARD CLUTCH

Disassembly

1. Remove clutch pressure plate retaining snap ring. Remove rear pressure plate, internal and external plates, wave plate and forward pressure plate from clutch drum. See **Fig. 22**.
2. Remove snap ring securing disc spring in drum, and remove disc spring. Apply air pressure to clutch apply passage in drum, and remove piston. Remove seals from piston and drum.

Reassembly

1. Dip 2 NEW seals in transmission fluid. Install smaller seal on clutch hub and larger seal on piston. Install clutch piston in cylinder.
2. Ensure steel pressure ring is in groove on piston. Place disc spring in clutch drum with dished face downward. Secure in place with retaining snap ring.

NOTE: If new friction plates are being installed, soak them in transmission fluid for 15 minutes prior to installation.

3. Install forward pressure plate with flat side up and beveled side downward. Dip clutch plates in transmission fluid.
4. Install wave plate. Install clutch plates starting with a steel plate, then a friction plate. Install remaining plates in this sequence. See **CLUTCH PLATE CHART** for the number of clutch plates required. Install pressure plate and retaining snap ring.

CLUTCH PLATE CHART

Application/Engine Size	Number Of Steel Plates	Number Of Friction Plates
Forward Clutch		
4.9L	(1) 3	3
5.0L	(1) 4	4
5.8L	(1) 4	4
7.3L Diesel	(1) 4	4
7.5L	(1) 4	4
Reverse-High Clutch		
4.9L	(1) 3	3
5.0L	(1) 3	4
5.8L	(1) 4	4
7.3L Diesel	(1) 4	4
7.5L	(1) 4	4
Low-Reverse Clutch		
4.9L	(1) 3	3
5.0L	(2) 4	4
5.8L	(2) 5	5
7.3L Diesel	(2) 5	5
7.5L	(2) 6	6
(1) Plus a wave plate next to inner pressure plate.		
(2) Plus a wave plate next to piston.		

5. Using a feeler gauge, measure clearance between snap ring and pressure plate. Hold pressure plate down while measuring. Ensure clearance is .021-.046" (.53-1.17 mm). If clearance is not within specifications, replace selective snap ring to meet proper clearance. See **SELECTIVE SNAP RINGS**. Install correct thickness snap ring and recheck clearance.

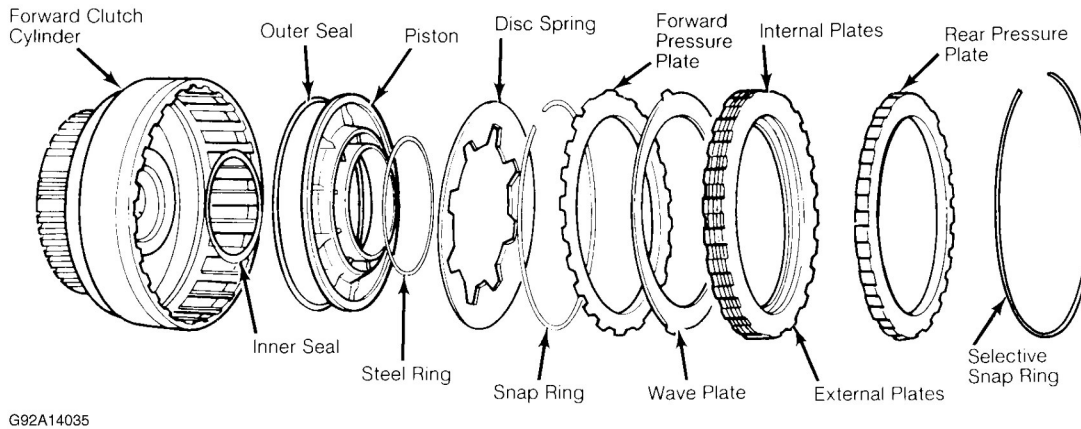


Fig. 22: Exploded View Of Forward Clutch Assembly
 Courtesy of FORD MOTOR CO.

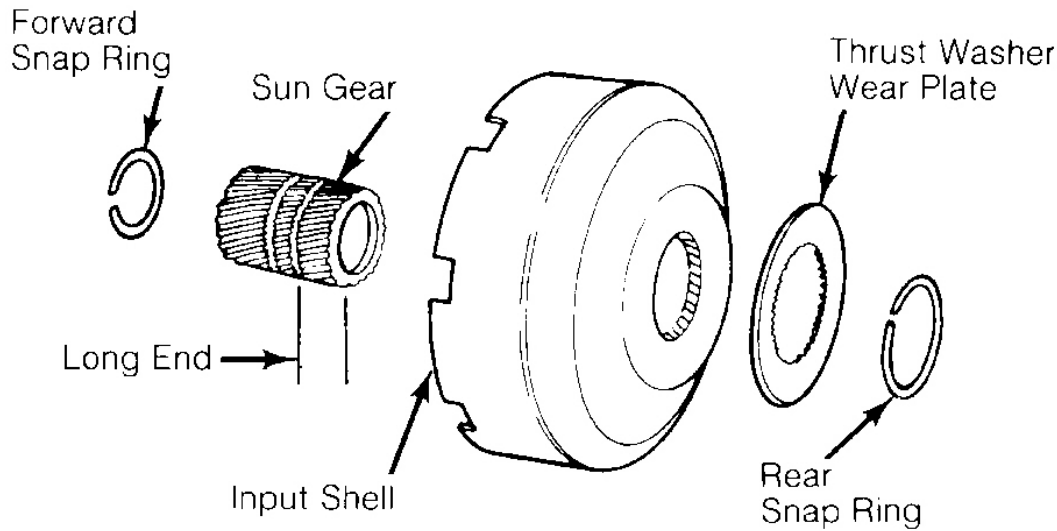
INPUT SHELL & SUN GEAR

Disassembly

Remove rear (external) snap ring from sun gear, and remove thrust washer from sun gear and input shell. Working inside input shell, remove sun gear. Remove forward (internal) snap ring from gear. See **Fig. 23**.

Reassembly

Install forward snap ring on short end of sun gear. Working inside input shell, slide sun gear and snap ring into place. Ensure longer end of gear is at rear. Place thrust washer on rear side of input shell. Install wear plate and rear snap ring.



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Fig. 23: Exploded View of Input Shell & Sun Gear
Courtesy of FORD MOTOR CO.

OUTPUT SHAFT HUB & RING GEAR

Disassembly & Reassembly

Remove hub retaining snap ring, and lift hub from ring gear. When installing, secure hub with retaining snap ring. Ensure snap ring is fully engaged in groove. See **Fig. 24**.

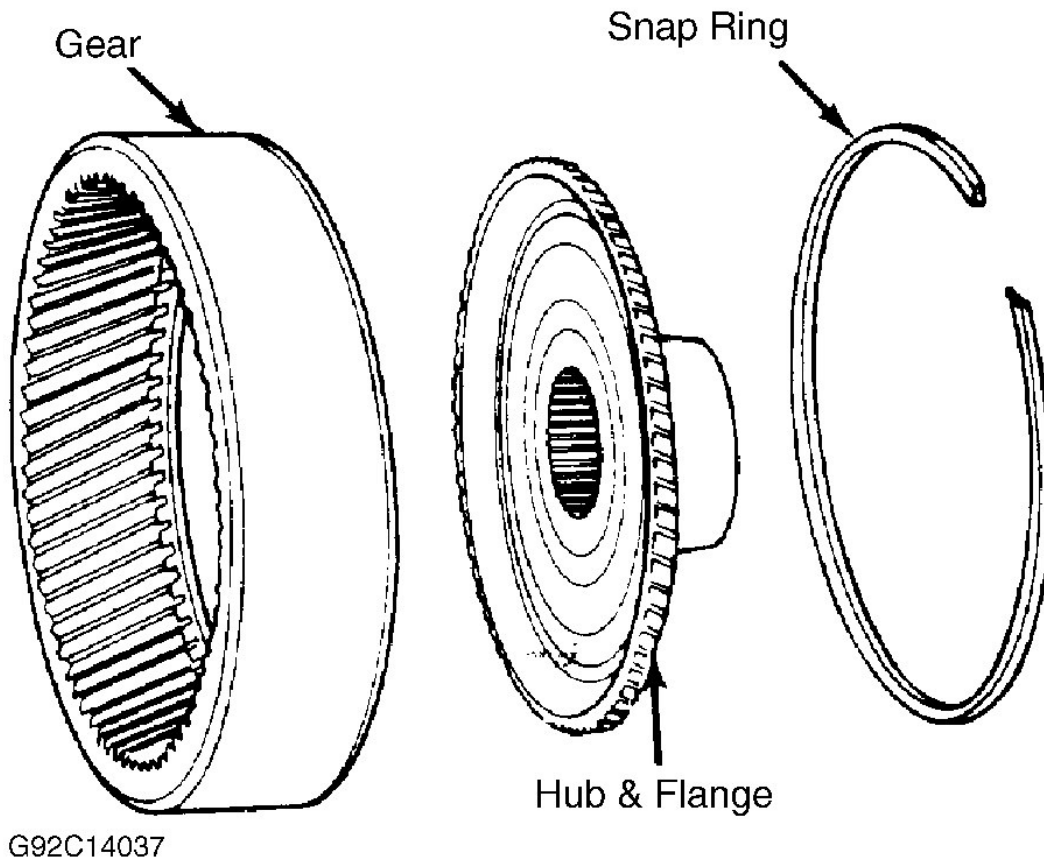


Fig. 24: Identifying Output Shaft Hub & Ring Gear Assembly
Courtesy of FORD MOTOR CO.

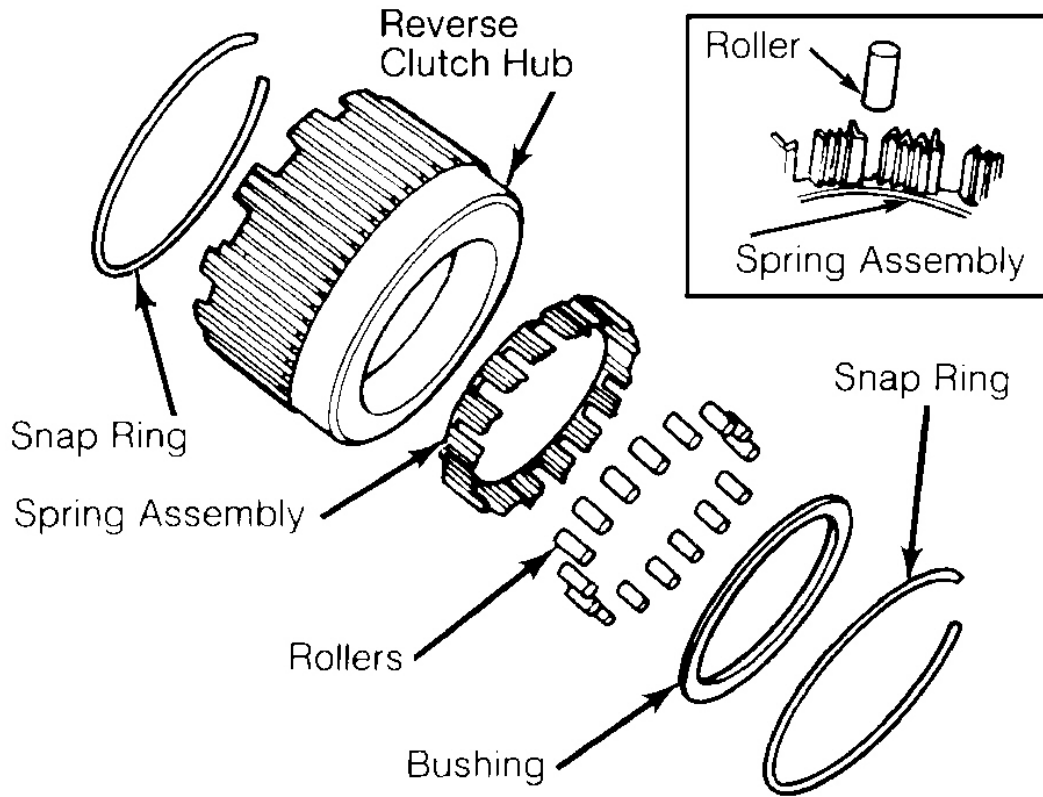
LOW-REVERSE ONE-WAY CLUTCH HUB

Disassembly

Remove snap ring and bushing from rear of low-reverse clutch hub. Remove rollers from spring assembly. Lift spring assembly from hub. Remove snap ring from hub. See **Fig. 25**.

Reassembly

1. Install snap ring in forward groove of low-reverse clutch hub. Place hub on bench with forward end down. Install clutch spring assembly on top of snap ring.
2. Install a roller into each spring assembly compartment. Install bushing on top of spring assembly. Install remaining snap ring at rear of clutch hub to secure assembly.



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Fig. 25: Exploded View Of Low-Reverse One-Way Clutch Hub
Courtesy of FORD MOTOR CO.

INTERMEDIATE SERVO

Disassembly

Apply air pressure to port in servo cover and remove piston assembly. Remove seal from cover.

NOTE: Piston and rod are serviced as an assembly. Replace if piston or sealing lip is damaged.

Reassembly

Dip new seal in transmission fluid, and install seal on cover. Dip piston assembly in transmission fluid, and install assembly in cover.

LOW-REVERSE CLUTCH PISTON

Clutch is assembled during transmission reassembly. Remove inner and outer seals from clutch piston. Dip NEW seals in transmission fluid and install on piston.

GOVERNOR

Disassembly

Remove governor retaining bolts and governor. Remove snap ring securing governor collector body to output shaft. Slide governor off front of shaft. Remove seal rings from collector body. See **Fig. 26**.

CAUTION: Diesel governor is NOT interchangeable with gasoline application models.

Reassembly

1. Carefully install NEW seal rings on collector body. Working from front end of output shaft, slide collector body into place on shaft.
2. Secure in place with snap ring. Ensure snap ring is fully seated in groove. Position governor on collector body. Install and tighten retaining screws to specification. See **TORQUE SPECIFICATIONS**.

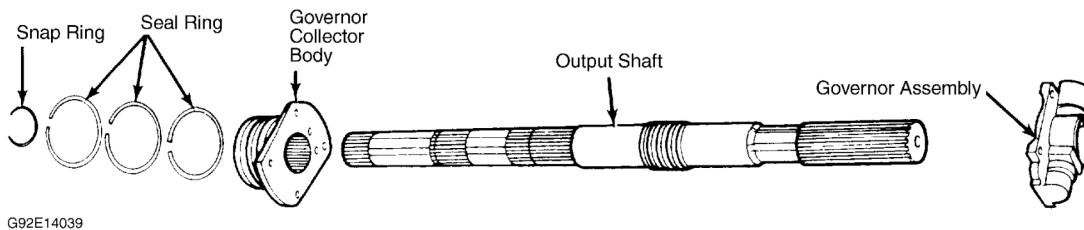
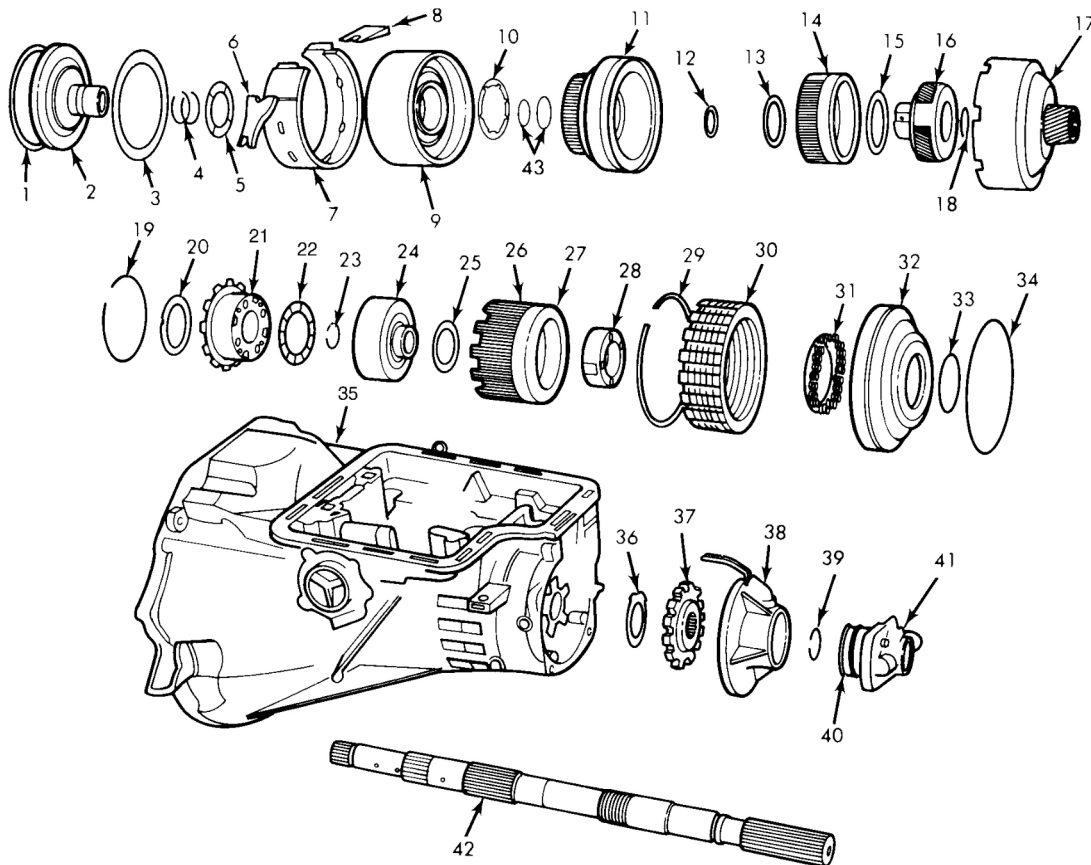


Fig. 26: Exploded View Of Output Shaft & Governor Assembly
Courtesy of FORD MOTOR CO.

TRANSMISSION REASSEMBLY

1. With transmission mounted in fixture, tap low-reverse clutch piston into case using soft mallet. Install low-reverse clutch return spring and retainer assembly in clutch piston. Hold one-way clutch inner race in position, and install and tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS**.
2. Place transmission case on bench with front end facing downward. Position parking gear thrust washer and gear on case. It is not necessary to restake thrust washer. Position oil distributor and tubes on rear of case.
3. Install and tighten retaining bolts. Install output shaft and governor as an assembly. See **Fig. 27**. Place a NEW gasket on rear of case. Install extension housing and retaining bolts. Tighten bolts to specification.



1. Seal Ring
2. Front Pump
3. Gasket
4. Seal Rings
5. No. 1 Thrust Washer
6. Strut Intermediate Brake Band
7. Intermediate Brake Band
8. Strut Intermediate Brake Band Anchor
9. Direct Clutch
10. No. 2 Thrust Washer
11. Forward Clutch Assembly
12. No. 3 Thrust Washer
13. Needle Bearing
14. Forward Planet Ring & Hub
15. No. 5 Thrust Washer

16. Forward Planet Assembly
17. Input Shell & Sun Gear
18. No. 6 Thrust Washer
19. Needle Bearing
20. Snap Ring
21. No. 7 Thrust Washer
22. Reverse Planet Assembly
23. No. 8 Thrust Washer
24. Reverse Ring Gear & Hub
25. Retaining Ring
26. Reverse Ring Gear & Hub
27. No. 9 Thrust Washer
28. One-Way Clutch
29. One-Way Clutch Inner Race
30. Snap Ring
31. Reverse Clutch Plates

31. Reverse Piston Return Spring & Retainer
32. Reverse Piston
33. Inner Seal
34. Outer Seal
35. Case
36. No. 10 Thrust Washer
37. Parking Gear
38. Governor Distributor Sleeve
39. Snap Ring
40. Governor Collector
41. Governor
42. Output Shaft
43. Forward Clutch Seal Rings

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Fig. 27: Exploded View Of Transmission Case & Drive Train Assembly
Courtesy of FORD MOTOR CO.

4. Coat NEW servo cover gasket with petroleum jelly and position it on servo cover. Place servo spring on piston rod and install in case. Install retaining bolts. Ensure identification tag is under one of the cover bolts and tighten. Align low-reverse clutch hub and one-way clutch with inner race at rear of case.

NOTE: Soak friction plates in ATF for 15 minutes before installing.

5. Rotate low-reverse clutch hub clockwise while applying pressure to seat it on inner race. Install low-reverse clutch plates, starting with the waved plate next to the piston. Follow with a steel plate, and then a

friction plate, until all plates are installed.

6. Retain plates with petroleum jelly. Install pressure plate and snap ring. Test operation of low-reverse clutch assembly by applying air pressure to low-reverse clutch pressure apply hole in case. See **Fig. 8**.
7. Install reverse planet ring gear thrust washer, ring gear and hub assembly. Install snap ring in groove of output shaft. Install front and rear thrust washers onto reverse planet assembly. Retain with petroleum jelly.
8. Install assembly into ring gear, and install snap ring. Place reverse-high clutch on bench with front end facing downward. Install thrust washer on rear end of assembly and retain washer with petroleum jelly.
9. Install splined end of forward clutch into open end of reverse-high clutch with splines engaging direct clutch plates. Install thrust washer on front end of forward planet ring gear and hub. Retain with petroleum jelly.
10. Install ring gear into forward clutch. Install thrust washer on front end of forward planet assembly and retain with petroleum jelly. Install assembly into ring gear. Install input shell and sun assembly. Install reverse-high clutch, forward clutch, forward planet assembly, input shell and sun gear as an assembly into case.
11. Install intermediate band around direct clutch drum. Install band struts and tighten band adjustment screw enough to retain band. Place selective bronze thrust washer on rear shoulder of stator support and retain with petroleum jelly. See **STATOR SUPPORT SELECTIVE THRUST WASHERS**.
12. If end play was not within specifications when disassembled, replace washer at this time with one of proper thickness. Ensure transmission end play is .008-.044" (.20-1.12mm)

STATOR SUPPORT SELECTIVE THRUST WASHERS

Color Code	Thickness In. (mm)
Blue	.056-.060 (1.42-1.52)
Natural (White)	.073-.077 (1.85-1.96)
Red	.088-.092 (2.24-2.34)

13. Using 5/16" x 3" bolts, make 2 alignment studs by cutting heads off and grinding a taper on cut end. Install studs opposite each other in case mounting holes.
14. Slide a NEW gasket onto studs. Position front pump on case, being careful not to damage seal on pump housing, and remove studs. Install 6 of the mounting bolts and tighten to specification.
15. Tighten intermediate band adjustment screw to specification. Back off screw 1 1/2 turns. Hold adjustment screw in this position and tighten lock nut to specification. See **TORQUE SPECIFICATIONS**.
16. Install input shaft with long splined end inserted into forward clutch assembly. Measure end play again to ensure correct assembly. Install control valve body into case, ensuring levers engage valves properly.
17. Install primary throttle valve, rod and vacuum diaphragm in case. Install oil pan with NEW gasket. Install retaining bolts and tighten to specification. Install torque converter.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Converter Cover-To-Housing Bolt	12-16 (16-22)

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Converter Drain Plug	8-28 (11-38)
Converter-To-Flywheel Bolt	20-34 (27-46)
Cooler Tube Connector Lock Nut	20-35 (27-47)
Diaphragm Assembly-To-Case Bolt	12-16 (16-22)
Distributor Sleeve-To-Case Bolt	12-16 (16-22)
Downshift Lever-To-Shaft Nut	12-16 (16-22)
Extension Housing-To-Case Bolt	25-35 (34-47)
Filler Tube-To-Engine Bolt (E-Series)	
4.9L	33-42 (45-57)
5.0L, 5.8L & 7.5L	40-50 (54-68)
7.3L Diesel	24-35 (33-47)
Front Pump-To-Case Bolt	16-30 (22-41)
Guide Plate-To-Case Bolt	12-16 (16-22)
Intermediate Band	
Adjustment Screw	⁽¹⁾ 10 (14)
Lock Nut	35-40 (47-54)
Intermediate Servo Cover-To-Case Bolt	14-20 (19-27)
Manual Valve Inner Lever-To-Shaft Nut	30-40 (41-54)
One-Way Clutch Race-To-Case Bolt	18-25 (24-34)
Rear Engine Support-To-Extension Housing Bolt	60-80 (81-108)
Stator Support-To-Pump Bolt	12-16 (16-22)
Transmission-To-Engine Bolt	
Diesel	50-65 (68-88)
Gasoline	40-50 (54-68)
Yoke-To-Output Shaft Nut	130 (176)
INCH Lbs. (N.m)	
Converter Housing-To-Converter Cover Bolt (7.5L)	30-60 (3.4-6.8)
Detent Spring-To-Case Bolt	80-120 (9.0-13.6)
End Plates-To-Valve Body Bolt	20-40 (2.3-4.5)
Governor Body-To-Oil Collector Flange Bolt	90-120 (10.2-13.6)
Inner Downshift Lever Stop Bolt	20-45 (2.3-5.1)
Neutral Safety Switch-To-Case Bolt	55-75 (6.2-8.5)
Oil Pan-To-Case Bolt	96-144 (10.8-16.3)
Reinforcement Plate-To-Valve Body Bolt	20-45 (2.3-5.1)
Screen & Lower-To-Upper Valve Body Bolt	40-55 (4.5-6.2)
Shift Valve Plate-To-Upper Body Bolt	20-45 (2.3-5.1)
Upper-To-Lower Body Bolt	40-55 (4.5-6.2)
Valve Body-To-Case Bolt	95-125 (10.7-14.1)
VRV-To-Injection Pump Bolt (7.3L Diesel)	75-90 (8.5-10.2)

(1) After tightening intermediate band adjustment screw to specification, back off screw 1 1/2 turns.