

COMPONENT DISASSEMBLY & REASSEMBLY

NOTE: See Fig. 52 and Fig. 53 for exploded view of internal parts, thrust washer and needle bearing locations.

GOVERNOR ASSEMBLY

Disassembly

Remove retaining screws and separate counterweight from governor body. Remove cover screws and cover. Remove plug, sleeve, and valve governor body. See Fig. 30 . Remove governor screen.

NOTE: Handle all parts carefully to avoid damage. Lubricate parts with ATF before reassembly (petroleum jelly may be used on gaskets and thrust washers). Use all NEW gaskets and seals.

Reassembly

1. If removed, install clip and spring on valve. Install valve into governor body. Install sleeve in body with points outward.
2. Install plug in sleeve with knurled face inward. Install cover. Install screen in body with steel band (brass colored) inward and tip of screen facing outward.
3. Position governor body on counterweight and install retaining screws. Tighten screws to specification. See TORQUE SPECIFICATIONS . When correctly assembled, finished face of governor body should be flush with face of counterweight.

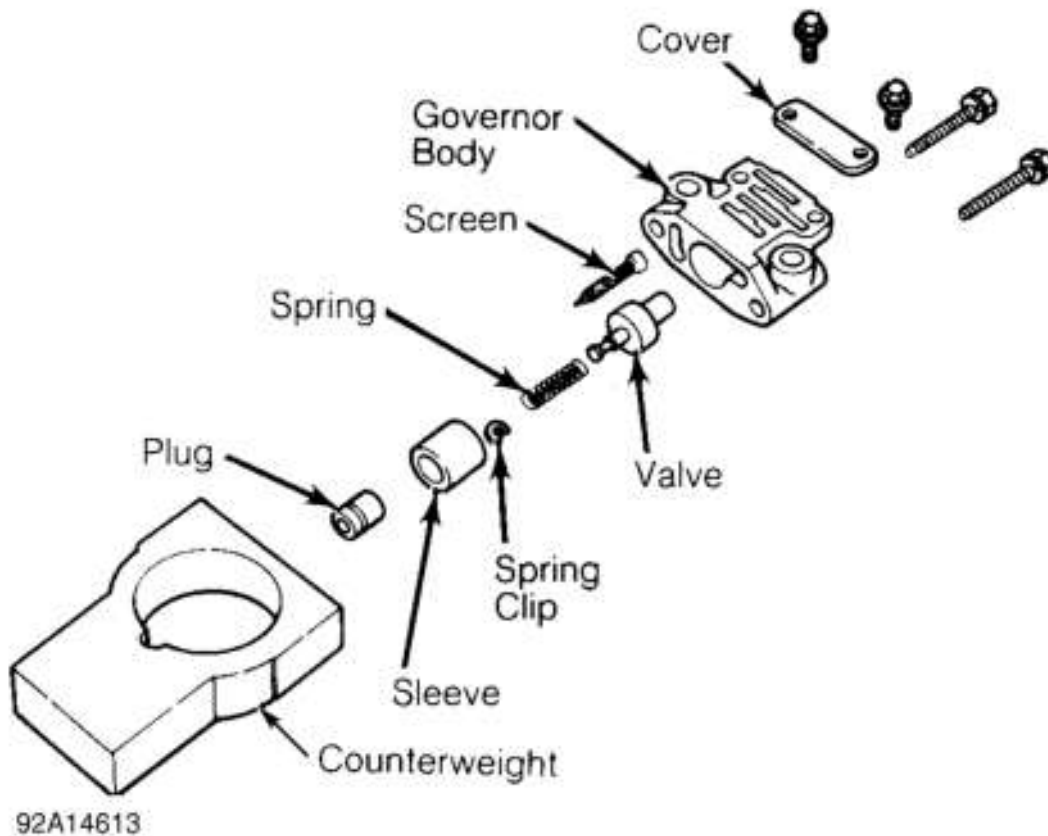


Fig. 30: Exploded View of Governor Assembly
 Courtesy of FORD MOTOR CO.

INTERMEDIATE ONE-WAY CLUTCH

Disassembly & Reassembly

Remove clutch retaining ring and lift off clutch retaining plate. Remove clutch outer race by lifting on race while turning counterclockwise. Carefully lift one-way clutch from inner race. See **Fig. 31** . To reassemble, reverse disassembly procedure.

NOTE: If a roller is damaged or lost, entire one-way clutch assembly must be replaced.

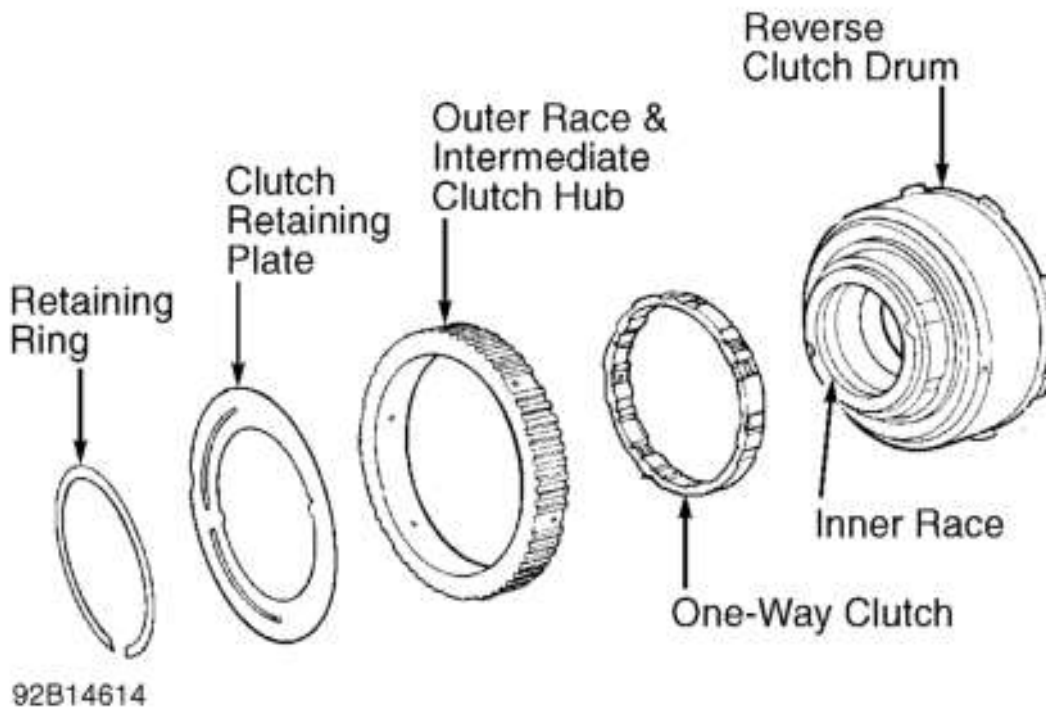


Fig. 31: Exploded View of Intermediate One-Way Clutch Assembly
 Courtesy of FORD MOTOR CO.

OUTPUT SHAFT ASSEMBLY

Disassembly & Reassembly

1. Remove retaining ring and separate output hub assembly from ring gear. Remove direct clutch from ring gear and No. 8 needle bearing from rear of direct clutch.
2. Remove 4 output shaft seal rings and hub-to-shaft retaining ring. Separate hub from output shaft. Remove 2 direct clutch seal rings from end of output shaft. See **Fig. 32** . To reassemble, reverse disassembly procedure.

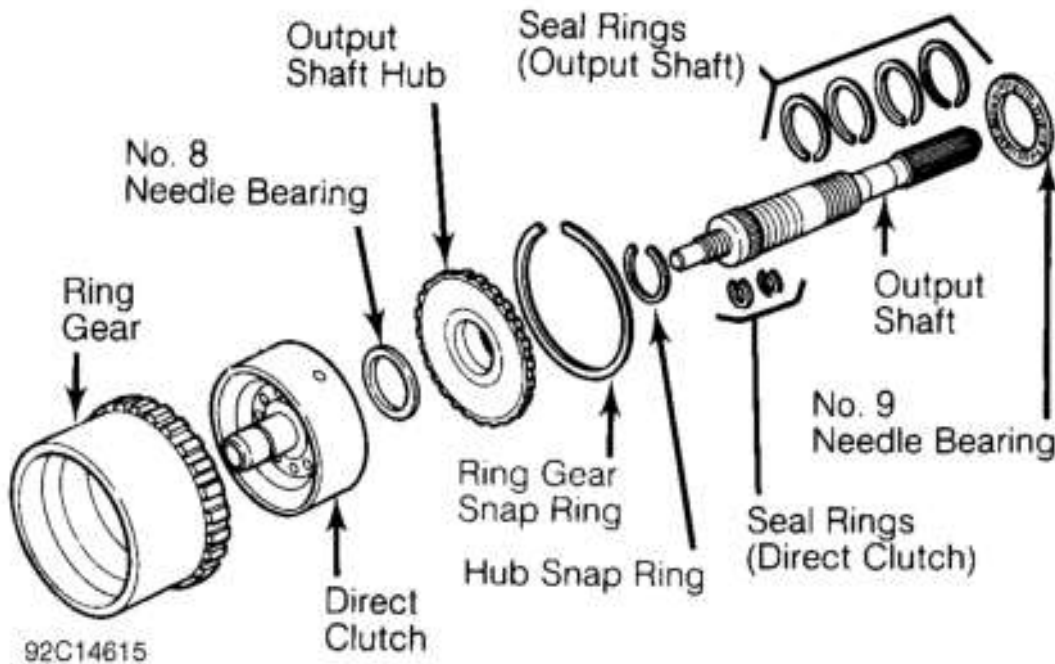


Fig. 32: Exploded View of Output Shaft Assembly
 Courtesy of FORD MOTOR CO.

MANUAL & THROTTLE LINKAGE

Disassembly

1. Hold outer throttle lever stationary and remove retaining nut, lock washer, and throttle lever. Using a small screwdriver, remove oil seal from outer manual lever counterbore.

CAUTION: Failure to hold outer throttle lever when removing retaining nut will allow inner throttle lever to rotate against valve body surface, which could result in damage to surface.

2. Using a sharp narrow screwdriver, remove manual shaft retaining pin from case. Hold inner manual lever stationary and remove manual lever retaining nut with a 21 mm wrench. Remove throttle lever. Remove inner throttle lever and T.V. torsion spring. See **Fig. 4**.
3. Remove inner manual lever and parking pawl actuating rod as an assembly. Separate rod from lever if necessary. Remove manual lever shaft seal from case using a seal puller.

Reassembly

To reassemble, reverse disassembly procedure. See **Fig. 5**. Install new manual lever seal using Seal Installer (T74P-77498-A). Before installing outer throttle lever, install NEW seal in outer manual lever using a 13 mm socket. Install seal with identification number facing forward.

DIRECT CLUTCH ASSEMBLY

Disassembly

1. Remove No. 7 direct clutch hub inner needle bearing and bearing support. Using a screwdriver, remove clutch pack selective retaining snap ring and lift out clutch pack. See **Fig. 33**.
2. Using a Compressor (T65L-77515-A), compress piston return springs and remove retaining snap ring. Remove tool and lift spring retainer assembly and piston from clutch drum.
3. If necessary, piston can be removed by applying compressed air to lubrication hole in clutch drum. Note position and direction of lip seals. Remove seals from drum and piston.

Inspection

1. Check piston check ball for freedom of movement. Check for leakage by turning piston upside down (flat side up), allowing check ball to seat in piston.
2. Pour small quantity of solvent over check ball. If solvent drips past check ball, replace piston.

Reassembly

1. Using Seal Protector (T80L-77234-A), install inner seal on clutch drum hub with sealing lip facing down into drum. Lubricate seals and seal protector with petroleum jelly prior to installation. Ensure inner seal is positioned in groove. Install outer seal on piston with lip pointing away from spring posts.
2. Coat piston seals, clutch drum sealing area, and piston inner seal area with petroleum jelly. Install piston into clutch drum using Seal Protector (T80L-77254-A) to prevent damaging seals.
3. Position piston spring and retainer assembly in clutch drum. Compress assembly and install retaining snap ring. Install clutch pack into drum. Install pressure plate on top of clutch pack. Install clutch pack selective retaining ring.
4. Using a feeler gauge, measure clearance between clutch pack retaining ring and pressure plate with pressure plate held down. See **DIRECT CLUTCH PLATE USAGE & CLEARANCE**.
5. If clearance is not within specifications, selective snap rings are available in various sizes. See **DIRECT CLUTCH SNAP RINGS**. Install correct size snap ring and recheck clearance.
6. To check clutch for proper operation, use compressed air at 30 psi (2.1 kg/cm²). See **Fig. 34**. Clutch should be heard and felt to apply smoothly and without leakage.

DIRECT CLUTCH PLATE USAGE & CLEARANCE

Engine Application	Steel Plates	Friction Plates	Clearance In. (mm)
3.8L SC	6	6	.060-.088 (1.53-2.23)
All Others ⁽¹⁾	5	5	.050-.067 (1.27-1.70)

(1) Some models equipped with 4.6L or 5.0L engines may have 6 steel plates and 6 friction plates with .060-.092" (1.53-2.34 mm) clearances.

DIRECT CLUTCH SNAP RINGS

Part No.	(1) Thickness
E0AZ7D483-A	.052" (1.32 mm)
E0AZ7D483-B	.066" (1.68 mm)
E0AZ7D483-C	.080" (2.03 mm)
E0AZ7D483-D	.094" (2.39 mm)

(1) Snap ring thicknesses have .002" (.05 mm) tolerance.

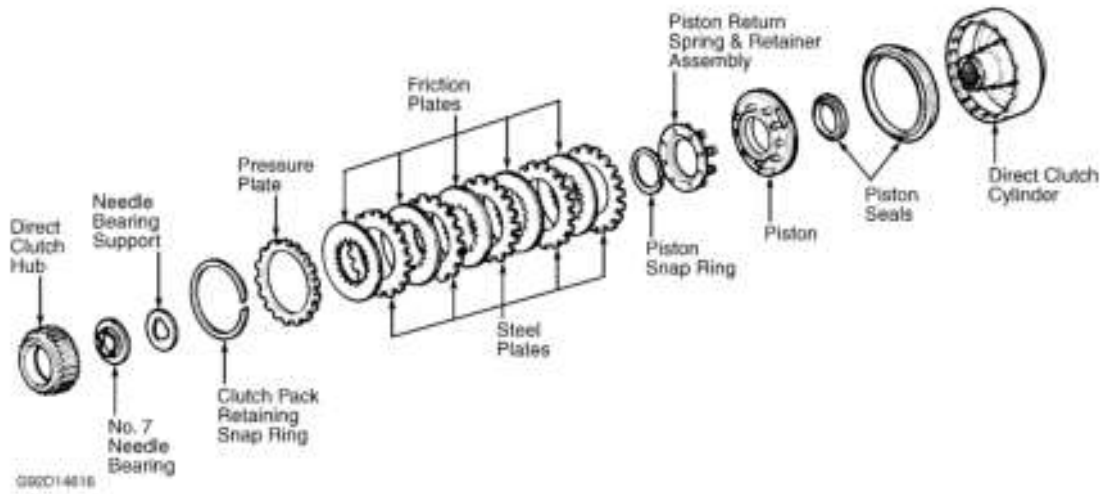


Fig. 33: Exploded View of Direct Clutch Assembly
Courtesy of FORD MOTOR CO.

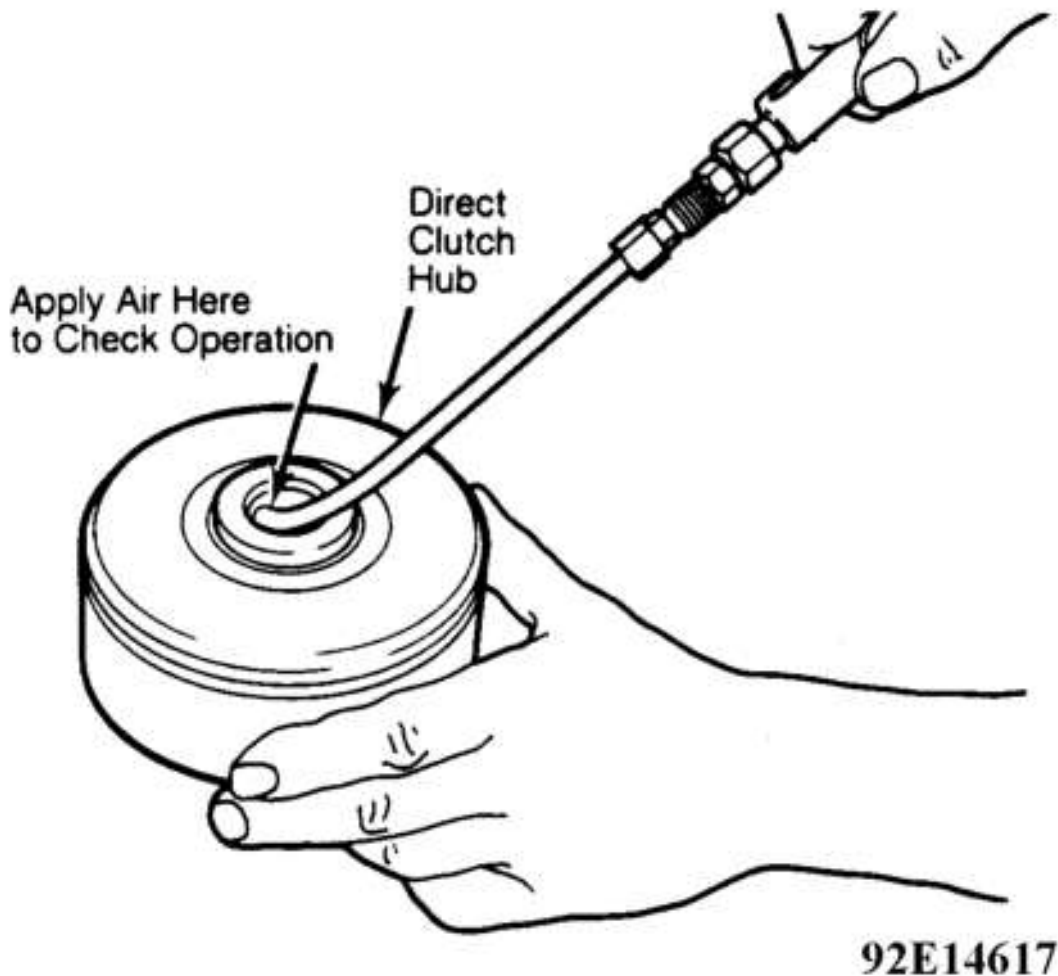


Fig. 34: Checking Direct Clutch Operation
 Courtesy of FORD MOTOR CO.

FORWARD CLUTCH

Disassembly

1. Lift clutch hub and No. 3 needle bearing from forward clutch assembly. Using a screwdriver, pry clutch pack selective retaining snap ring from drum. Remove clutch pack. See **Fig. 35**.
2. Using Compressor Tool (T65L-77515-A), compress piston return spring and remove retaining snap ring. Lift out retainer and return spring.
3. Remove clutch piston from drum. Note position of inner and outer piston seals, then remove seals. Ensure check balls in piston are free.

Reassembly

1. Lubricate and install inner and outer seals on piston with seal lips facing into clutch drum. Lubricate piston seals and drum sealing area with petroleum jelly. Install piston into drum using Seal Protector (T80L-77140-A) to prevent damaging seals.

2. Position return spring and retainer on piston. Compress return spring and install retaining snap ring. Install clutch pack into clutch drum starting with waved plate. Install clutch pack retaining snap ring.
3. Using a feeler gauge, measure clearance between retaining snap ring and pressure plate with pressure plate held down. Ensure clearance is .040-.071" (1.02-1.80 mm) for 3.8L EFI (4 clutches) engine and .050-.089" (1.27-2.26 mm) for all others (5 clutches).

NOTE: If vehicle is not available at time of repair, application can be identified by number of clutches. See **FORWARD CLUTCH PLATE USAGE** .

FORWARD CLUTCH PLATE USAGE

Application	Steel Plates	Friction Plates
3.8L EFI ⁽¹⁾	4	4
All Others ⁽¹⁾	5	5
(1) Plus one waved plate installed next to piston.		

FORWARD & REVERSE CLUTCH SNAP RINGS

Part No.	(1) Thickness
C8AZ7D483-C	.062" (1.57 mm)
C7AZ7D483-A	.078" (1.98 mm)
C8AZ7D483-B	.090" (2.29 mm)
C8AZ7D483-A	.104" (2.64 mm)
(1) Snap ring thicknesses have .002" (.05 mm) tolerance.	

4. If clearance is not within specification, selective snap rings are available in various sizes. See **FORWARD & REVERSE CLUTCH SNAP RINGS** . Install correct size snap ring and recheck clearance.
5. With reassembly completed, use compressed air and check forward clutch operation. Clutch should be heard and felt to apply smoothly and without leakage.

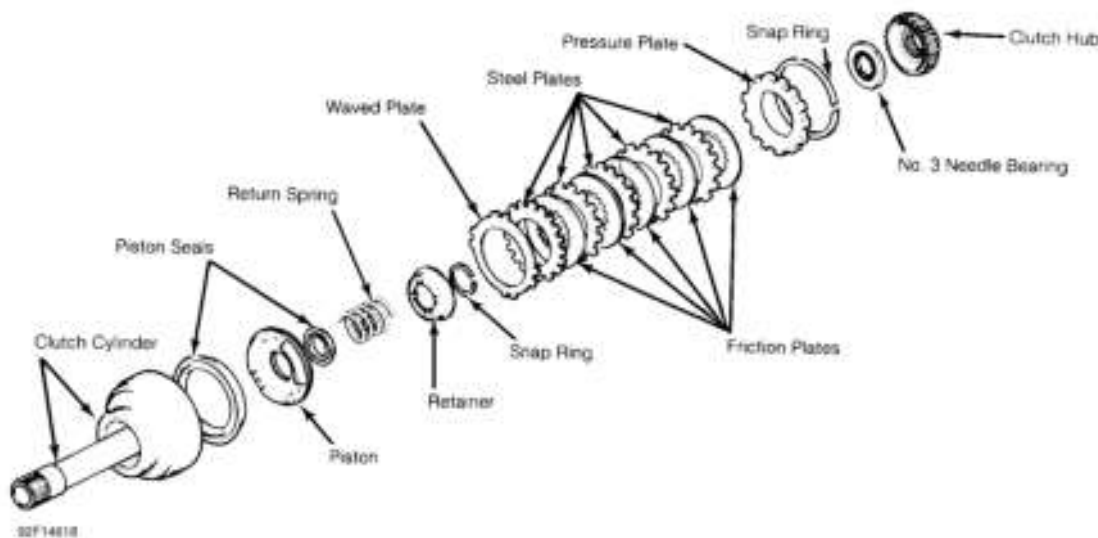


Fig. 35: Exploded View of Forward Clutch Assembly
Courtesy of FORD MOTOR CO.

REVERSE CLUTCH

Disassembly

1. Remove No. 2 needle bearing. Using a screwdriver, pry clutch pack retaining snap ring from clutch drum. Lift out clutch pack. See **Fig. 36**.
2. Compress return spring and remove waved snap ring. Remove return spring and thrust ring. Remove piston from drum. Remove seals from piston.
3. It may be necessary to apply compressed air to clutch drum lubrication hole to remove piston. Block remaining hole with finger.

Reassembly

1. Prior to reassembly, ensure check ball in inner piston seal is free. Install NEW oil seal on piston. Coat seals and sealing surface in clutch drum with petroleum jelly.
2. Install piston into clutch drum using Inner and Outer Seal Protectors (T80L-77403-B and A) to prevent damaging seals. Seals used on reverse clutch piston are square cut; direction of installation is not important.
3. Install thrust ring and return spring. Compress return spring and install waved snap ring with points facing downward. Install apply plate into clutch drum with dished side facing piston. Install clutch pack and retaining snap ring.
4. Using a feeler gauge, measure clearance between clutch pack snap ring and pressure plate while pushing down on pressure plate. Ensure clearance is .030-.056" (.76-1.42 mm) for 3.8L EFI engine (3 friction plates) and .040-.075" (1.02-1.91 mm) for all other models (4 friction plates).
5. If clearance is not within specification, selective snap rings are available in various sizes. See **FORWARD & REVERSE CLUTCH SNAP RINGS**. Install correct size snap ring and recheck clearance.
6. With reverse clutch reassembly completed, check clutch operation using compressed air. Ensure clutch is heard and felt to apply smoothly and without leakage. Install No. 2 thrust washer or No. 2 needle bearing.

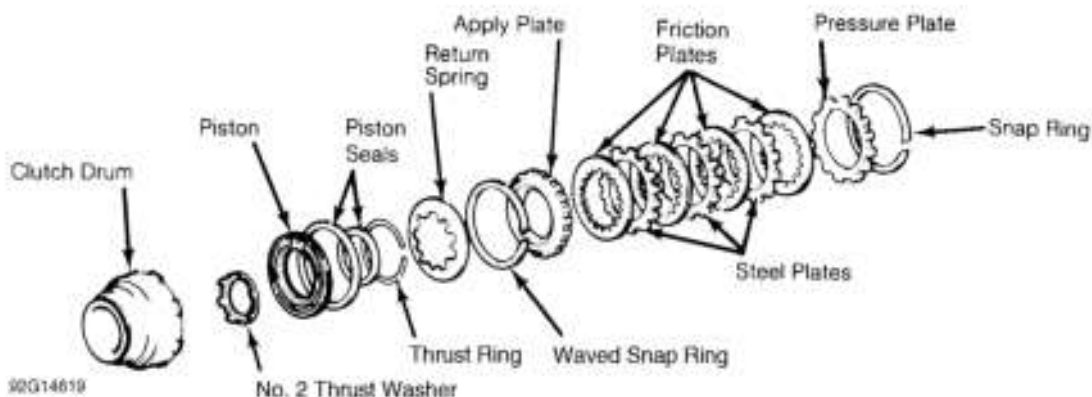


Fig. 36: Exploded View of Reverse Clutch Assembly
Courtesy of FORD MOTOR CO.

CENTER SUPPORT & PLANETARY ONE-WAY CLUTCH

NOTE: If a roller from planetary one-way clutch is lost or damaged, entire one-way clutch assembly must be replaced.

Disassembly

Remove center support from planetary carrier by lifting up on center support while rotating it counterclockwise. Carefully remove planetary one-way clutch from planetary assembly. See **Fig. 37**.

Reassembly

If necessary, assemble one-way clutch. See **Fig. 2**. Lubricate clutch races and clutch assembly with petroleum jelly to aid in assembly. Install one-way clutch in planetary carrier. Install center support into one-way clutch by rotating center support counterclockwise.

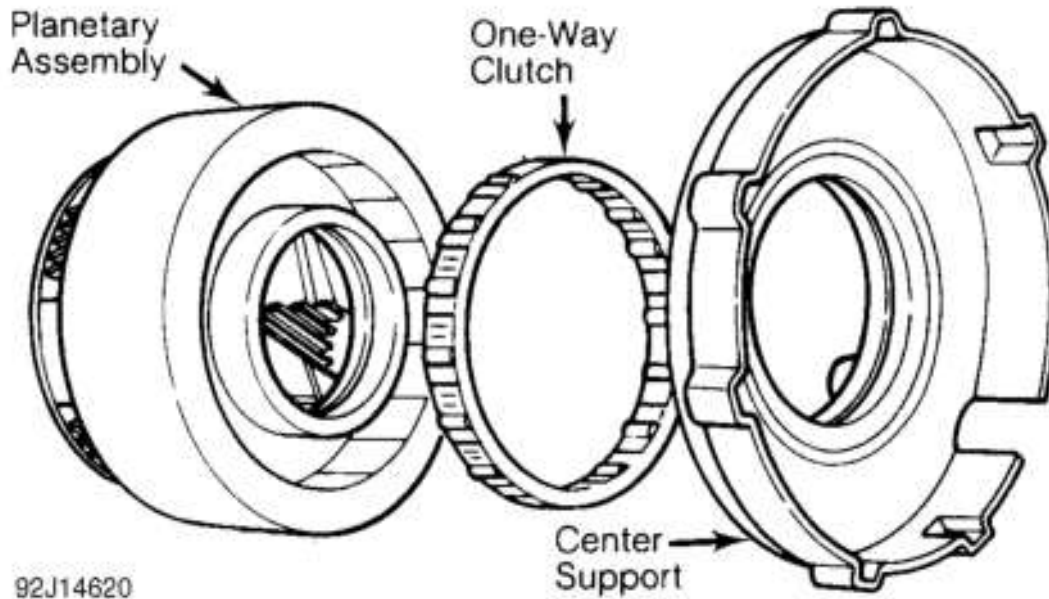


Fig. 37: Exploded View of Center Support & Planetary Assembly
Courtesy of FORD MOTOR CO.

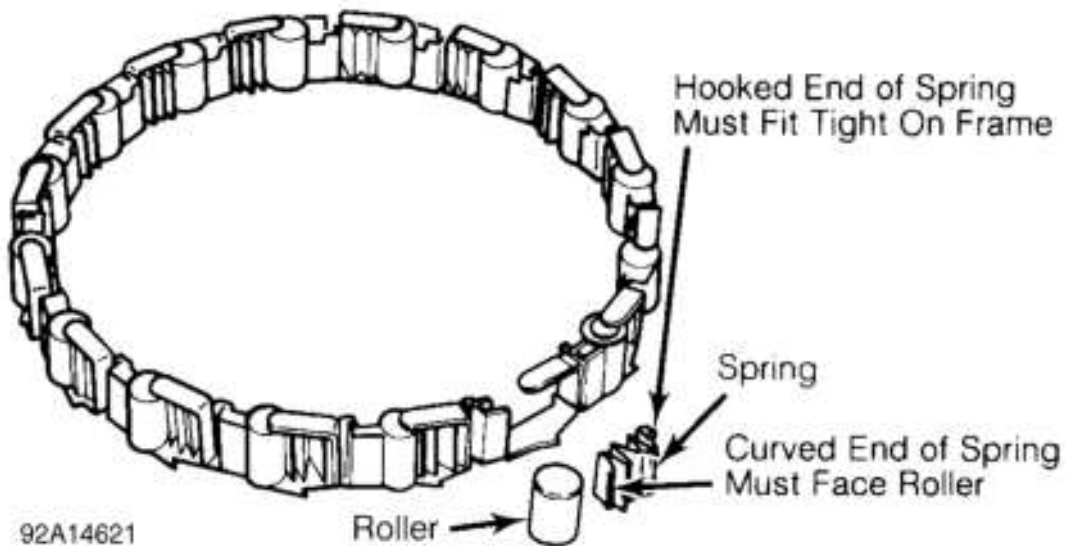


Fig. 38: Assembling Planetary One-Way Clutch
 Courtesy of FORD MOTOR CO.

SUN GEAR & DRIVING SHELL

Disassembly

Remove No. 4 needle bearing from driving shell. Remove forward sun gear and No. 5 needle bearing from shell. Remove No. 5 needle bearing from forward sun gear. See **Fig. 39** .

Reassembly

Sun gear and driving shell will be reassembled as part of **TRANSMISSION REASSEMBLY** .

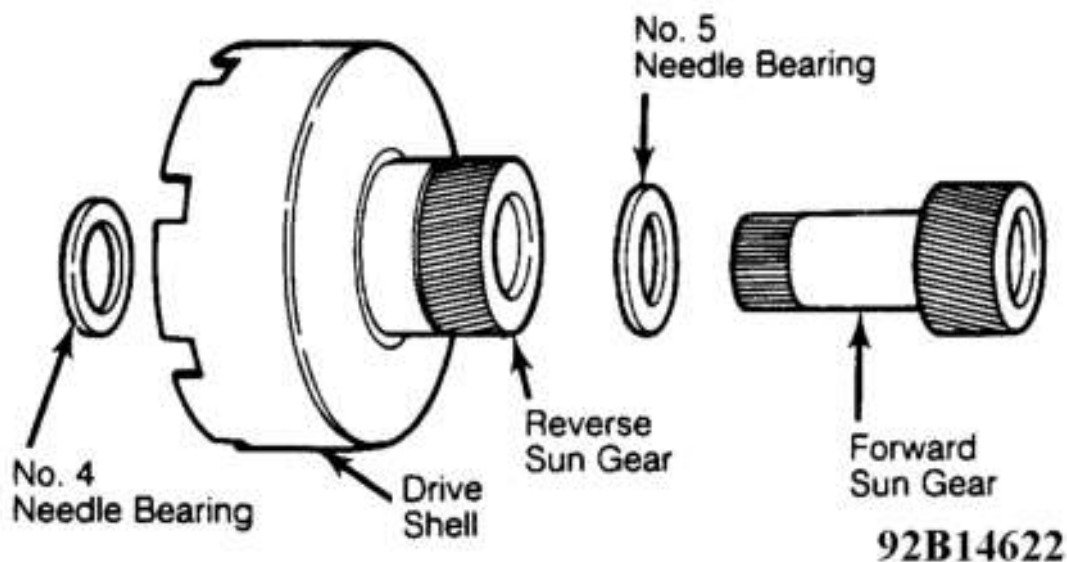


Fig. 39: Exploded View of Sun Gear & Drive Shell.
 Courtesy of FORD MOTOR CO.

OIL PUMP & INTERMEDIATE CLUTCH PISTON

Disassembly

1. Lift No. 1 thrust washer from stator support. Remove 4 seal rings from stator support. Remove pump body-to-case seal and discard. See **Fig. 40**.
2. Remove spring retainer assembly by carefully dislodging the tabs. Lift intermediate clutch piston from pump assembly. Remove retaining bolts and separate stator support from pump body. Remove drive and driven gears from pump body.

NOTE: Reverse clutch seal rings on stator support are larger than forward clutch seal rings.

Reassembly

1. Install drive gear and driven gear into pump body with chamfer on both gears facing into pump body. Position stator support on pump body. Install and tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS**. Install pump body-to-case seal around outer diameter of pump body.
2. Install NEW seals on intermediate clutch piston. Seal lips point away from spring posts. Coat piston seal and pump body sealing area with petroleum jelly. Use Seal Protector (T80L-77005-A) and install piston in pump body, ensuring piston bleed hole is located at 12 o'clock position (toward top of transmission case).
3. Snap spring retainer assembly into place on pump body using even pressure. Install seal rings on stator support. The 2 larger rings are installed closest to pump.

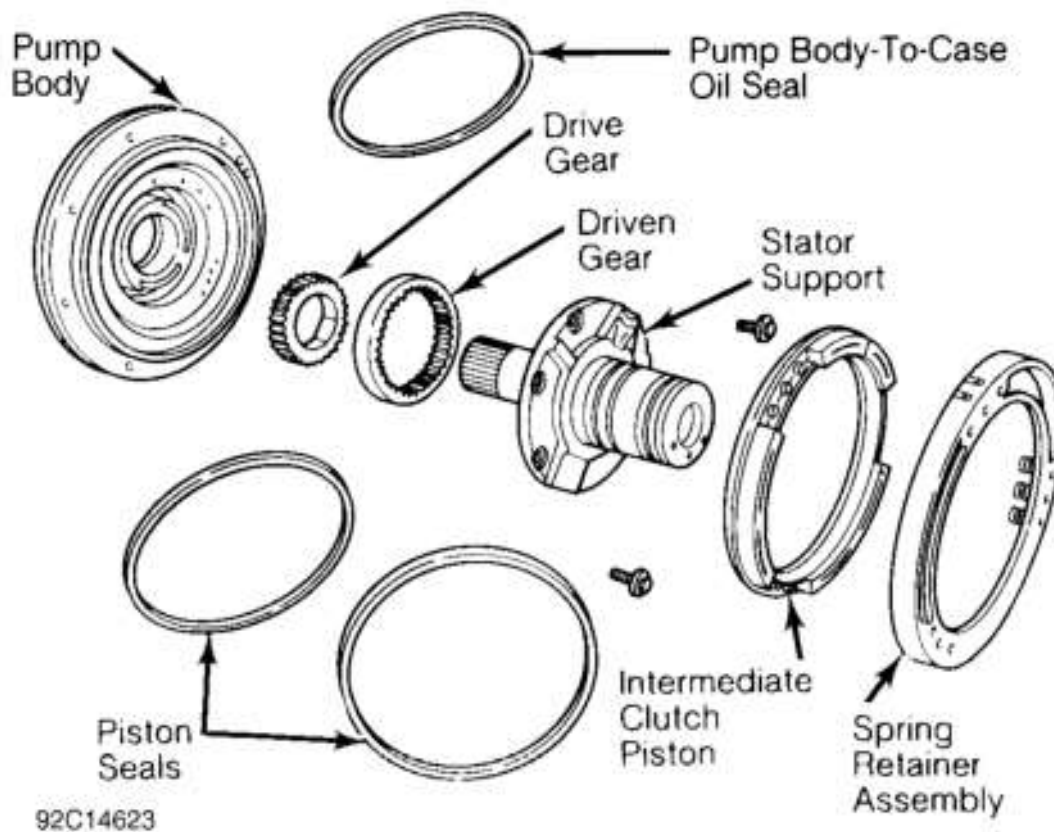


Fig. 40: Exploded View of Oil Pump & Intermediate Clutch
 Courtesy of FORD MOTOR CO.

ACCUMULATOR & SERVOS

2-3 Accumulator

Install NEW seals on accumulator piston. Ensure diagonal cuts on seals are properly aligned. See **Fig. 41**.

Low-Reverse Servo

Inspect sealing edge on both servo cover and piston. Replace cover or piston, if necessary. Ensure servo piston rod length is same as the one removed. See **Fig. 41**.

Overdrive Servo

Separate piston from servo cover. Install NEW seals on piston and cover. Lubricate and assemble piston to cover. See **Fig. 41**.

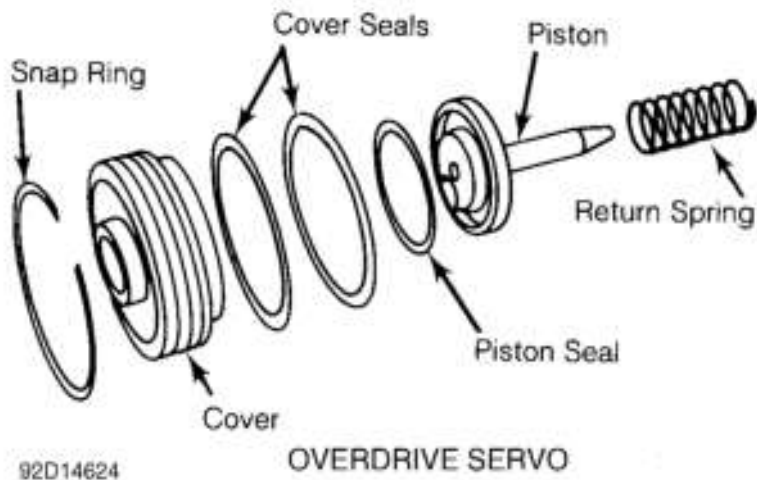
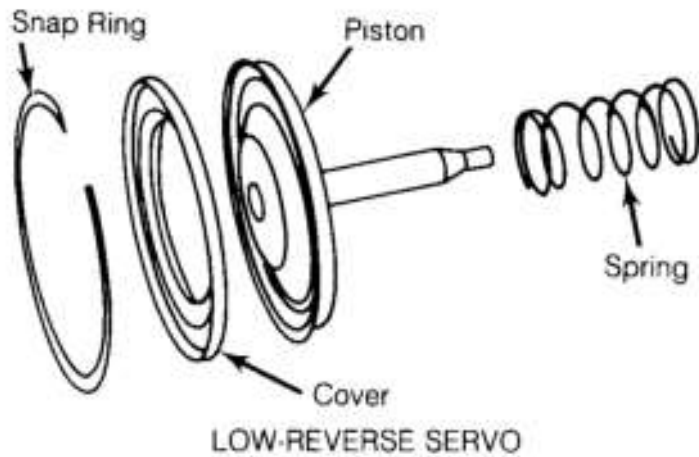
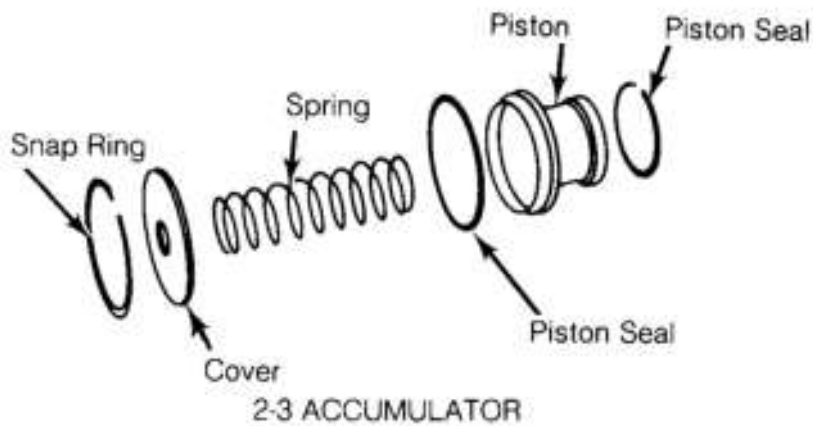


Fig. 41: Exploded View of Accumulator & Servo Assemblies
 Courtesy of FORD MOTOR CO.

VALVE BODY ASSEMBLY

NOTE: As valves are removed from each valve body bore, place individual parts in correct order and in relative position to valve body for reassembly reference. Tag all springs as they are removed for reassembly reference.

Disassembly

1. Remove and discard valve body gasket. Remove retaining bolts. Remove separator plate, reinforcement plates, and separator plate gasket. Discard gasket.
2. Remove 2 relief valves and 7 check balls from valve body. Note location of Orange check ball. Orange check ball is **NOT** interchangeable with 6 Black check balls. See [Fig. 42](#) .
3. Remove retaining plates, valves and springs. Keep all valves and springs in original order for reassembly reference. See [Fig. 44](#) .

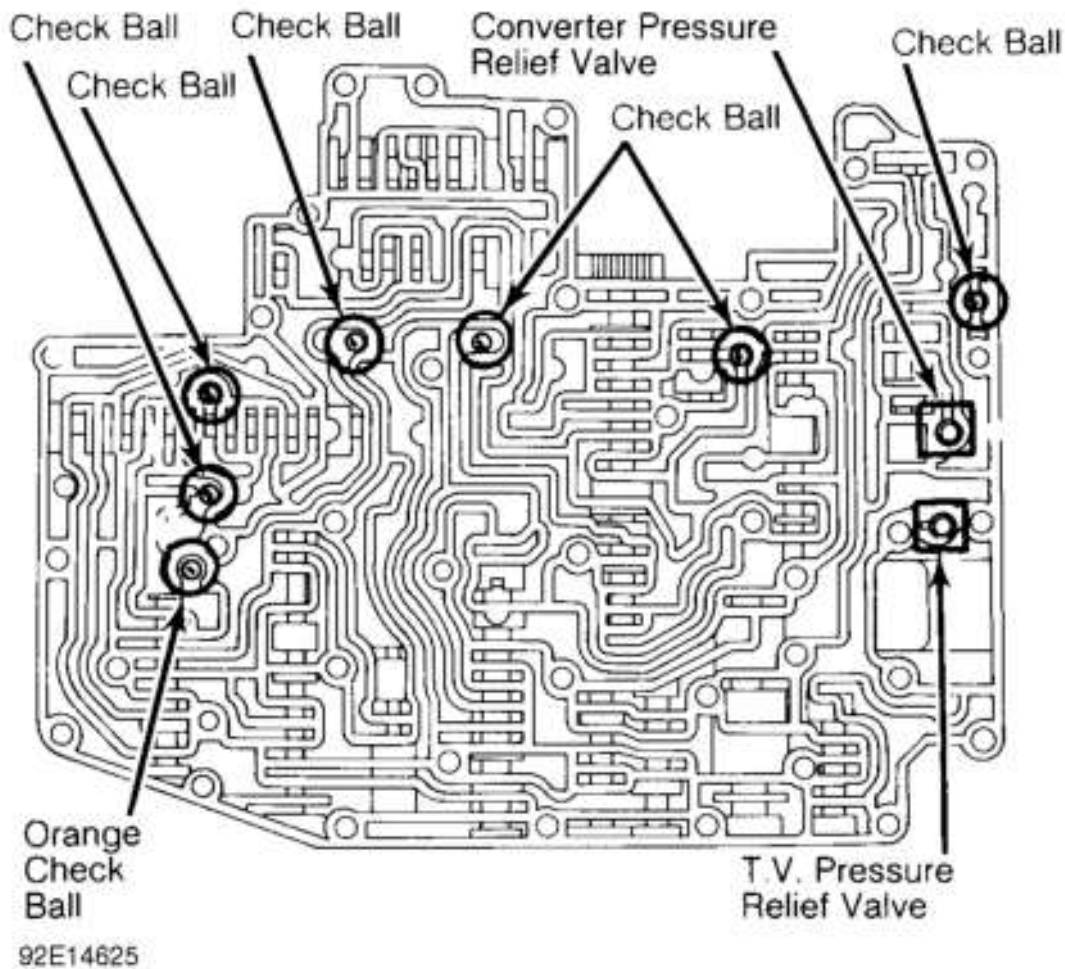


Fig. 42: Locating Check Balls in Valve Body
Courtesy of FORD MOTOR CO.

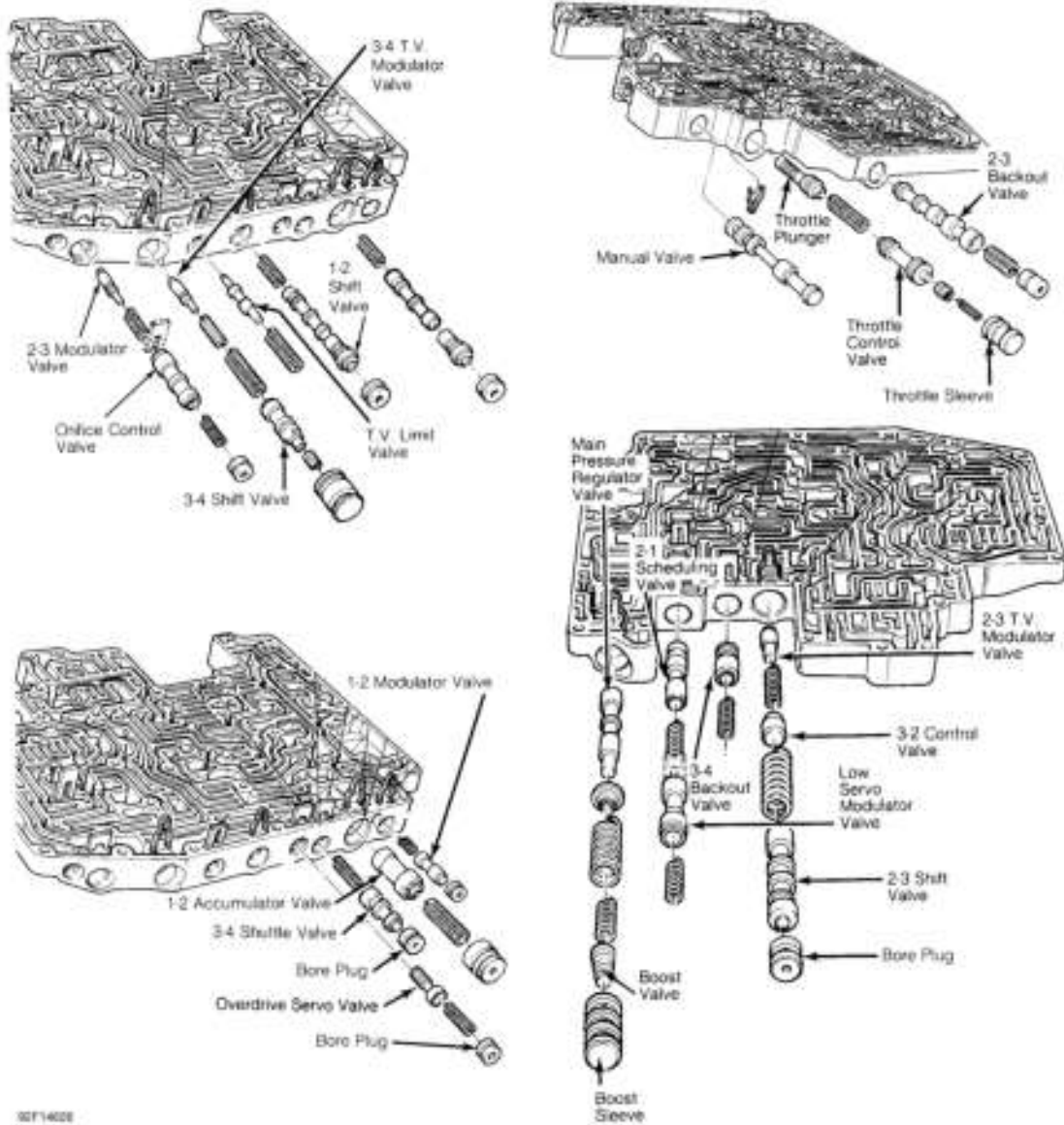


Fig. 43: Exploded Views of Valve Body Components
 Courtesy of FORD MOTOR CO.

Cleaning & Inspection

1. Clean all parts thoroughly in clean solvent, and blow dry with compressed air. Inspect all valves and plug bores for scoring. Check all fluid passages for obstructions.
2. Inspect all mating surfaces, plugs, and valves for burrs and scoring. If necessary, use crocus cloth to polish valves and plugs.
3. Inspect all springs for distortion. Check all valves and plugs for free movement in their respective bores. Valves and plugs, when dry, must fall free of their own weight within their respective bores.

CAUTION: Avoid rounding off sharp edges of valves and plugs with crocus cloth. These edges perform a cleaning action.

Reassembly

1. Install all valves into their respective bores using illustrations as guide. Ensure chamfered stem of throttle control valve faces throttle plunger. Retainer plate used for 2-3 capacity modulator valve is thicker and longer than other retainer plates. Ensure notch in plugs face bottom of bore.
2. The 1-2 accumulator valve and valve body diameters are not the same for all models. The 1-2 accumulator valve bore plug "O" ring must face outside of valve body. To install Overdrive servo valve bore plug, turn retaining plate into plug slot.
3. Install valve body check balls. See **Fig. 42** . Ensure Orange check ball is correctly installed. This check ball is larger than others and is not interchangeable. Install pressure relief valves and springs. See **Fig. 43** .
4. Install Alignment Pins (T80L-77100-A) into holes. See **Fig. 45** . These 2 holes are smaller than other bolt holes to assure proper alignment of gasket and separator plate with valve body. These 2 holes also align valve body gasket and valve body assembly with case.
5. Using a NEW separator plate gasket, slide plate and gasket over alignment pins. Position 3 reinforcement plates and loosely install retaining bolts. See **Fig. 43** .
6. Loosely install detent spring guide bolt. Detent spring guide bolt is same length as short valve body-to-case retaining bolts. Starting at center (large) reinforcement plate and working outward, tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** . Remove alignment pins.

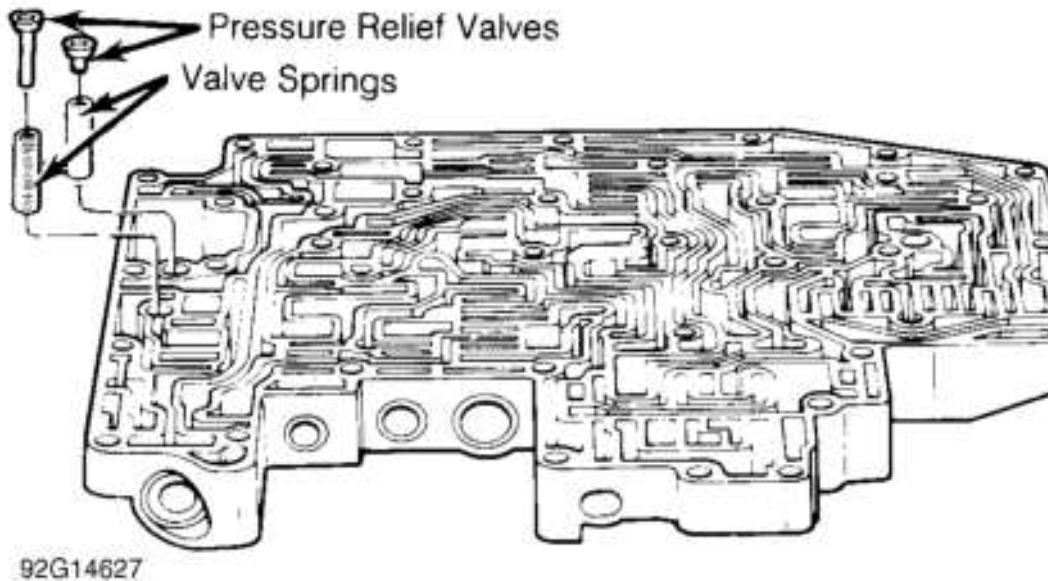


Fig. 44: Installing Pressure Relief Valves
Courtesy of FORD MOTOR CO.

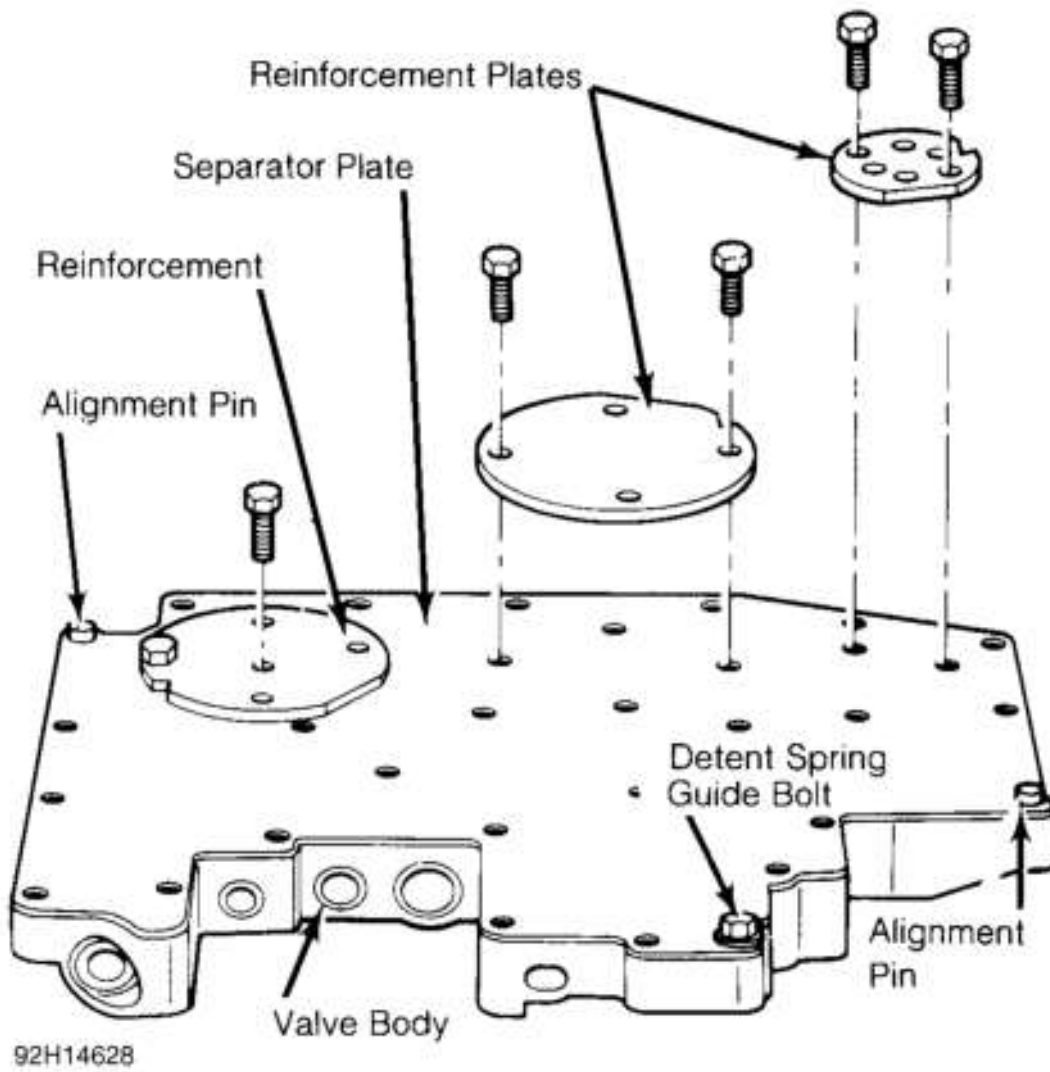


Fig. 45: Identifying Valve Body Plates
Courtesy of FORD MOTOR CO.