

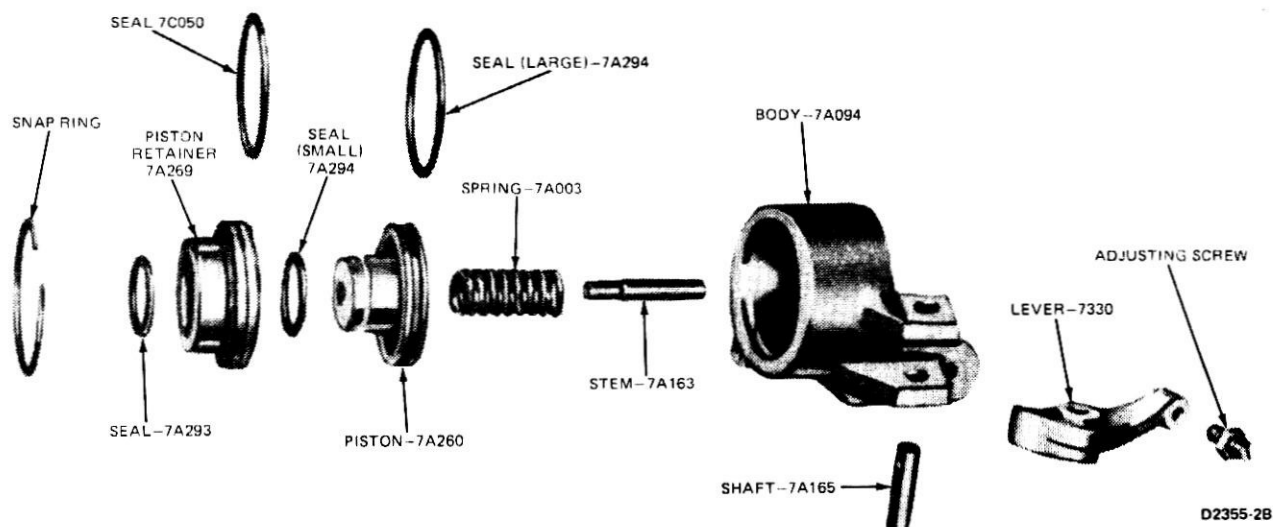


FIG. 27 Front Servo Disassembled

7. Inspect the servo band lining for excessive wear and bonding to the metal. **The band should be replaced if worn to a point where the grooves are not clearly evident.**
8. Inspect the band ends for cracks and check the band for distortion.

Assembly

1. Lubricate all parts of the front servo with transmission fluid to facilitate assembly.
2. Install the inner and outer O-rings on the piston retainer. Install a new O-ring on the return piston and on the servo piston (Fig. 27). Figure 28 shows correct piston details.
3. Position the servo piston release spring in the servo body. Install the servo piston, retainer, and return piston in the servo body as an assembly. Compress the assembly into the body, and secure it with the snap ring. **Make sure the snap ring is fully seated in the groove.**
4. Install the adjusting screw and locknut in the actuating lever if they were previously removed.

REAR SERVO

Disassembly

1. Remove the servo actuating lever shaft retaining pin with a 1/8 inch punch. Remove the shaft and actuating lever.
2. Press down on the servo spring retainer, and remove the snap ring. **Release the pressure on the retainer slowly to prevent the spring from flying out.**
3. Remove the retainer and servo spring (Fig. 29).
4. Force the piston out of the servo body with air pressure. Hold one hand over the piston to prevent damage.
5. Remove the piston seal ring.

Assembly

1. Install a new seal ring on the servo piston.
2. Install the piston in the servo body (Fig. 29). **Lubricate the parts to facilitate assembly.**

FRONT SERVO COMPONENTS IDENTIFICATION
— FMX AUTOMATIC TRANSMISSION

Model Usage	Retainer	Piston	Dim. A	Dim. B	Dim. C	Dim. D
PHB	C9AP-7A269-A	C9ZP-7A260-A	1.314 1.312	2.372 2.369	1.300 1.295	2.361 2.356

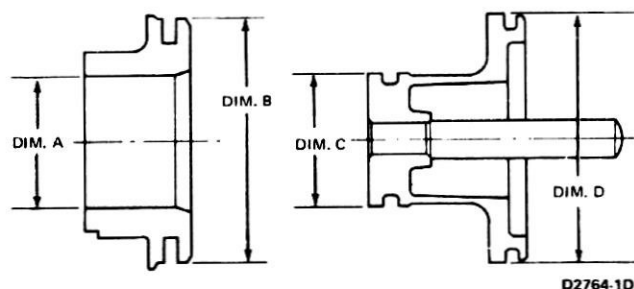


FIG. 28 Front Servo Component Identification

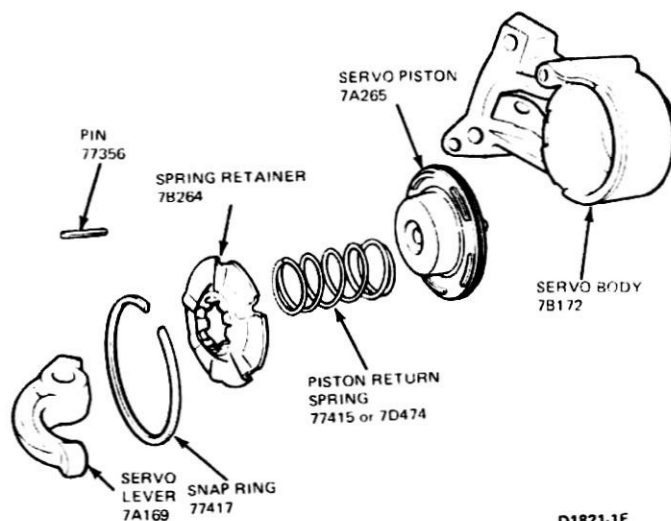


FIG. 29 Rear Servo Disassembled

Install the servo spring with the small coiled end against the servo piston.

3. Install the spring retainer. Compress the spring with a C-clamp. Then install the snap ring. **The snap ring must be fully seated in the groove.**
4. Install the actuating lever, with the socket in the lever bearing on the piston stem. Install the actuating lever shaft, aligning the retaining pin holes, and install the pin.

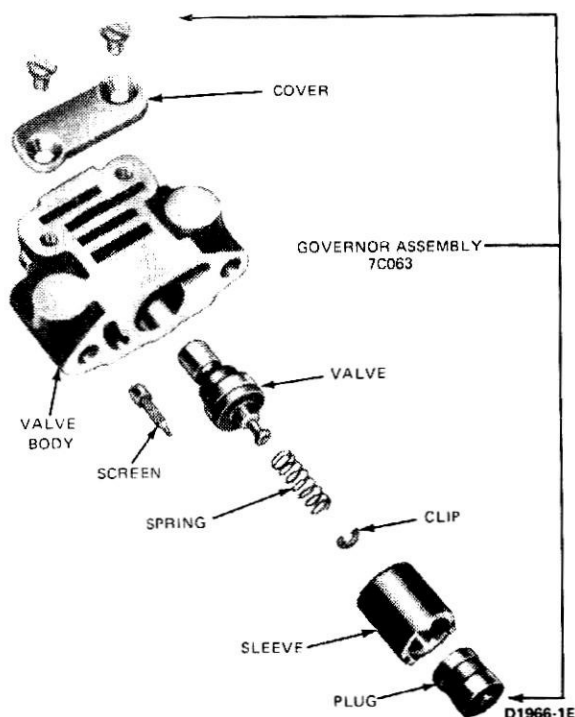


FIG. 30 Governor Disassembled

5. Check the actuating lever for free movement.

GOVERNOR

Disassembly

1. Remove the governor valve body cover.
2. Remove the valve body from the counterweight.
3. Remove the plug, sleeve, and the valve and spring from the body (Fig. 30).
4. Remove the screen from its bore in the valve body.

Assembly

1. Install the governor valve and spring assembly in the bore of the valve body. Install the sleeve and plug.
2. Install the screen (Fig. 30).
3. Install the body on the counterweight. **Make sure the fluid passages in the body and the counterweight are aligned.**
4. Position the valve body cover on the body, and install the screws.

PRESSURE REGULATOR

Disassembly

1. Remove the valves from the regulator body.
2. Remove the regulator body cover attaching screws, and remove the cover (Fig. 31).
3. Remove the separator plate.
4. Wash all parts thoroughly in clean solvent and blow dry with moisture-free compressed air.
5. Inspect the regulator body and cover mating surfaces for burrs.
6. Check all fluid passages for obstructions.

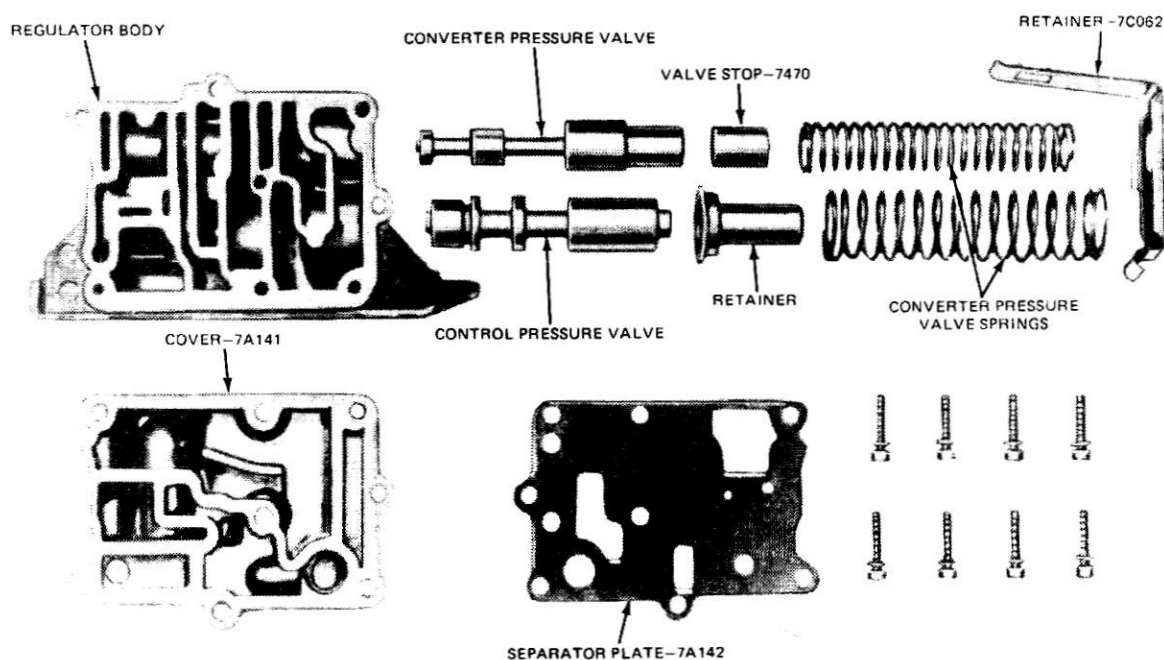


FIG. 31 Pressure Regulator Disassembled

7. Inspect the control pressure and converter pressure valves and bores for burrs and scores. Remove all burrs carefully with crocus cloth.
8. Check the free movement of the valve in their bores. Each valve should fall freely into its bore when both the valve and bore are dry.
9. Inspect the valve springs for distortion.

Assembly

1. Position the separator plate on the regulator cover.
2. Position the regulator cover and separator plate on the regulator body, and install the attaching screws. Torque the screws to specification as listed at the end of this Part.
3. Insert the valves in the pressure regulator body (Fig. 31).

DOWNSHIFT AND MANUAL LINKAGE

Disassembly

1. Remove the inner downshift lever shaft nut (Fig. 32). Then remove the inner downshift lever.

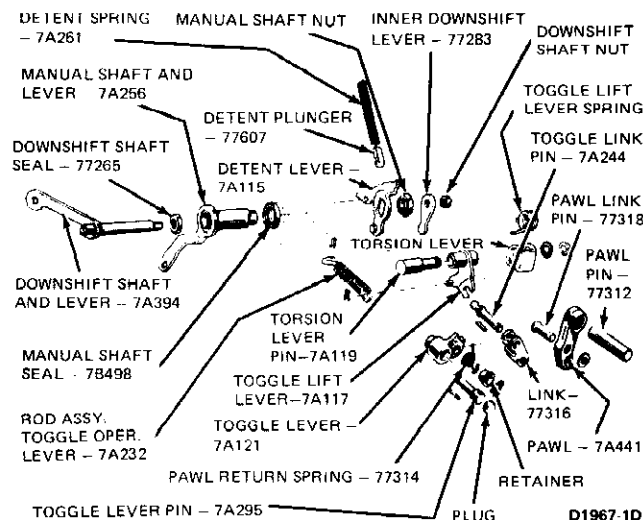


FIG. 32 Transmission Case Control Linkage

2. Remove the outer downshift lever and shaft. Remove the downshift shaft seal from the counterbore in the manual lever shaft.
3. Remove the cotter pin from the parking pawl toggle operating rod and remove the clip from the parking pawl operating lever. Remove the parking pawl operating rod.
4. Rotate the manual shift until the detent lever clears the detent plunger. Then remove the detent plunger and spring. **Do not allow the detent plunger to fly out of the case.**
5. Remove the manual lever shaft nut, and remove the detent lever. Remove the outer manual lever and shaft from the transmission case.
6. Tap the toggle lever sharply toward the rear of the case to remove the plug and pin.
7. Remove the pawl pin by working the pawl back and forth. Remove the pawl and toggle lever assembly, and then disassemble.

8. Remove the manual shaft seal and case vent tube. Remove the oil cooler return check valve from the back of the case.

Assembly

1. Coat the outer diameter of a new manual shaft seal with sealer, then install the seal in the case with a driver.
2. Install the vent tube in the transmission case.
3. Assemble the link to the pawl with the pawl link pin, washer, and pawl return spring. Assemble the toggle lever to the link with the toggle link pin. Position the pawl return spring over the toggle link pin, and secure in place with the washer and the small retainer clip (Fig. 32). Install the assembly in the transmission case by installing the pawl pin and the toggle lever pin. Press in the retaining plug tightly against the toggle lever pin. Install the torsion lever assembly. Position the spring on the torsion lever with a screwdriver. Make certain that the short side of toggle lift lever does not extend beyond the largest diameter of the ball on the toggle link pin (Fig. 32). Tap the toggle lift lever in or out as necessary to center the toggle lift lever on the ball.
4. Install the manual lever and shaft in the transmission case. Position the detent lever on the shaft, and secure with a nut. Tighten the nut to 20-30 ft-lbs torque. Rotate the manual lever to the rear of the case. Position the detent spring in the case. Hold the detent plug on the spring with a 3/16 inch socket wrench, then depress the spring until the plug is flush with the case. Carefully rotate the manual lever to the front of the case to secure the plug. **A piece of thin walled tubing may be used to depress the plug if a small socket wrench is not available.**
5. Position the ends of the parking pawl operating rod in the detent lever and toggle lift lever, and secure with the two small retaining pins.
6. Install a new seal on the downshift lever shaft, then install the lever and shaft in the case. Position the inner downshift lever on the inner end of the shaft with the mark O facing toward the center of the case. Install the lockwasher and nut, then tighten the nut to 17-20 ft-lbs torque.
7. Check the operation of the linkage. The linkage should operate freely without binding.

FRONT PUMP

Disassembly

1. Remove the stator support attaching screws and remove the stator support. **Mark the top surface of the pump driven gear with Prussian blue to assure correct assembly. Do not scratch the pump gears.**
2. Remove the drive and driven gears from the pump body.
3. Refer to Fig. 33 for a disassembled view of the front pump. Inspect the pump body housing, gear pockets and crescent for scores.
4. If the pump housing bushing is to be replaced, press the bushing from the front housing with the tools shown in Fig. 34.

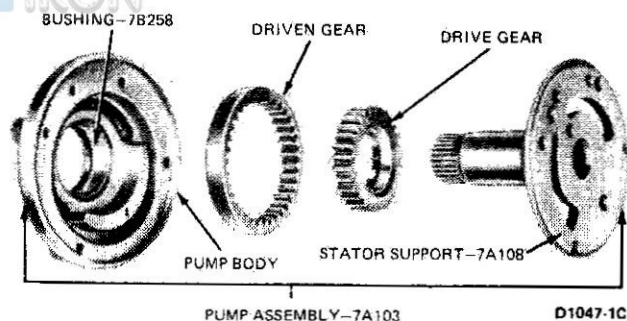


FIG. 33 Front Pump Disassembled

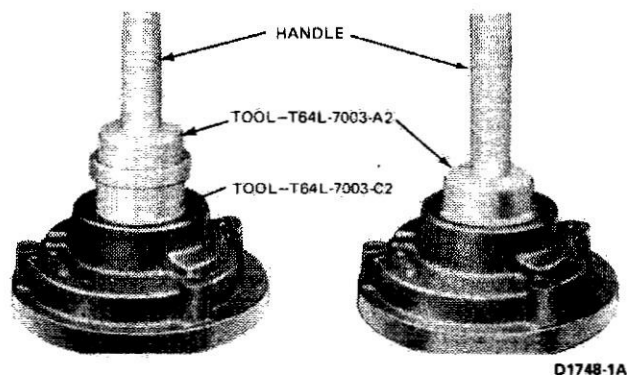


FIG. 34 Replacing Front Pump Housing Bushing

5. Press a new bushing into the pump housing with the handle and tool shown in Fig. 34.
6. If any parts other than the stator support, bushings or oil seal are found defective, replace the pump as a unit. Minor burrs and scores may be removed with crocus cloth. The stator support is serviced separately.
7. If the oil seal requires replacement, bolt the front pump to the transmission case with capscrews, and install the oil seal remover shown in Fig. 35. Then pull the front seal from the pump body.

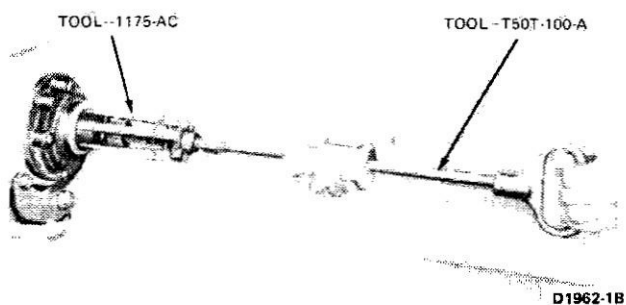


FIG. 35 Removing Front Pump Seal

8. Clean the pump body counterbore. Then inspect the bore for rough spots. Smooth up the counterbore with crocus cloth.
9. Remove the pump body from the transmission case.

Assembly

1. If the oil seal was removed, coat the outer diameter of a new seal with Motorcraft Sealing Compound, or its equivalent. Then position the seal in the pump

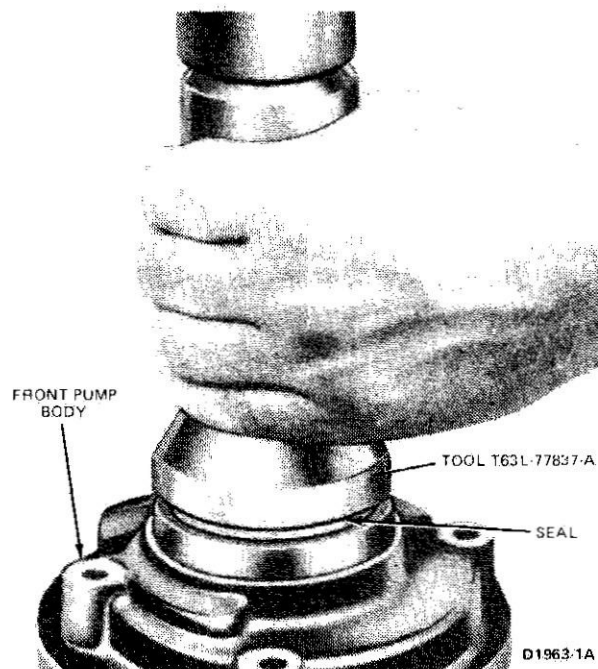


FIG. 36 Installing Front Pump Seal

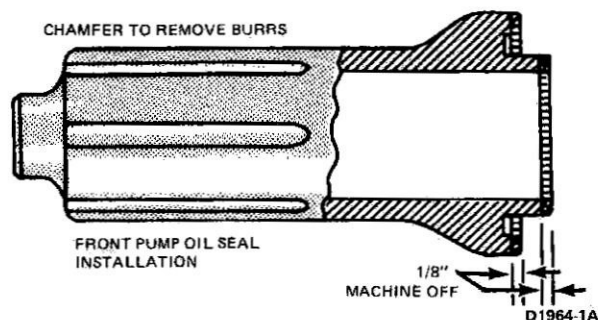


FIG. 37 Front Pump Seal Installing Tool Modification Drawing

body. Drive the seal into the pump body with the tool shown in Fig. 36, until the seal is firmly seated in the body. Tool 77837 may be reworked (Fig. 37) to install the latest type seal.

2. Place the pump driven gear in the pump body with the mark on the gear or tooth gear chamfer facing down. Install the drive gear in the pump body with the chamfered side of the flats facing down.
3. Install the stator support and attaching screws. Check the pump gears for free rotation.

REAR SUPPORT BUSHING REMOVAL AND INSTALLATION

1. Remove the three pressure tubes from the support housing.
2. Remove the rear support bushing if it is worn or damaged. Use a cape chisel and cut along the bushing seam until the chisel breaks through the bushing wall. Pry the loose ends of the bushing up with an awl and remove the bushing.
3. Press a new bushing into the support housing with tool shown in Fig. 38.