

CHRYSLERA404thruA670

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Technical Service Information

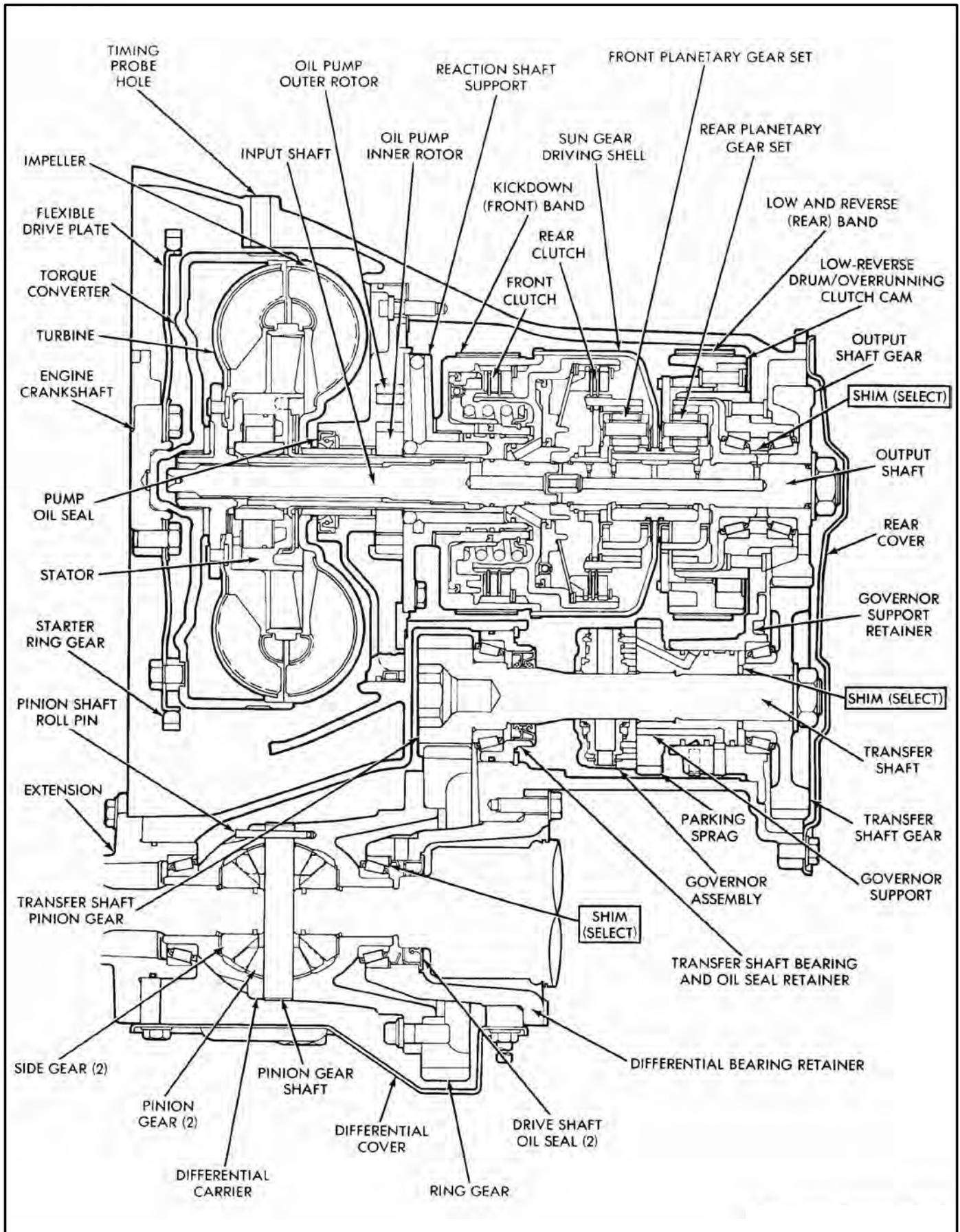


Figure 2

Technical Service Information

"APPROXIMATE" SHIFT SPEEDS			
Overall Ratio	3.48	2.78	3.22
Minimum Throttle 1-2 Upshift 2-3 Upshift 3-1 Downshift	11-15 MPH 16-21 MPH 11-14 MPH	10-14 MPH 15-20 MPH 10-13 MPH	11-15 MPH 16-22 MPH 11-15 MPH
Wide Open Throttle 1-2 Upshift 2-3 Upshift	33-39 MPH 55-64 MPH	37-44 MPH 61-71 MPH	33-38 MPH 62-73 MPH
Kickdown Limit 3-2 WOT Downshift 3-2 Part Throttle Downshift 3-1 WOT Downshift	51-60 MPH 28-32 MPH 30-35 MPH	57-66 MPH 26-30 MPH 32-38 MPH	56-66 MPH 29-33 MPH 31-36 MPH

Figure 3

OPERATING INSTRUCTIONS (Cont'd)

Mountain Driving

When driving in the mountains with either heavy loads or when pulling trailers, the "2" (Second) or the "1" (Low) position should be selected on the upgrades which require heavy throttle for 1/2 mile or more. This reduces the possibility of overheating the transaxle and converter under these conditions. The "2" (Second) or "1" (Low) positions may also be used, and is recommended, for engine braking on severe downgrades.

Towing the Vehicle

ATSG recommends that the vehicle *not be towed* with the front wheels on the ground, or consult the particular owners manual.

GENERAL DIAGNOSIS

Automatic transaxle malfunctions may be caused by 4 general conditions: poor engine performance, improper adjustments, hydraulic malfunctions, and mechanical malfunctions. Diagnosis on any of these concerns, should always begin by checking the easily accessible variables first. Check the fluid level and condition, manual cable adjustment and throttle cable adjustment. Then perform a road test to determine if the concern has been corrected, or that more diagnosis is necessary. If the concern still exists after the preliminary tests and corrections are completed, hydraulic pressure tests should be done.

Fluid Level and Condition

Before removing the dipstick, wipe all dirt off of the protective disc and the dipstick handle.

Since this torque converter fills in both the Park and Neutral positions, place the selector lever in the "P" Park position to be sure that the fluid level check is accurate. The engine should be running at idle speed and transaxle fluid should be at normal operating temperature, which is approximately 180F. The fluid level is correct if it is between "Max. Level" and "Add" marks, in the crosshatched area on the dipstick, as shown in Figure 4.

Low fluid level can cause a variety of conditions because it allows the pump to take in air along with the fluid. As in any hydraulic system, air bubbles make the fluid spongy and pressures will be low and build up slowly.

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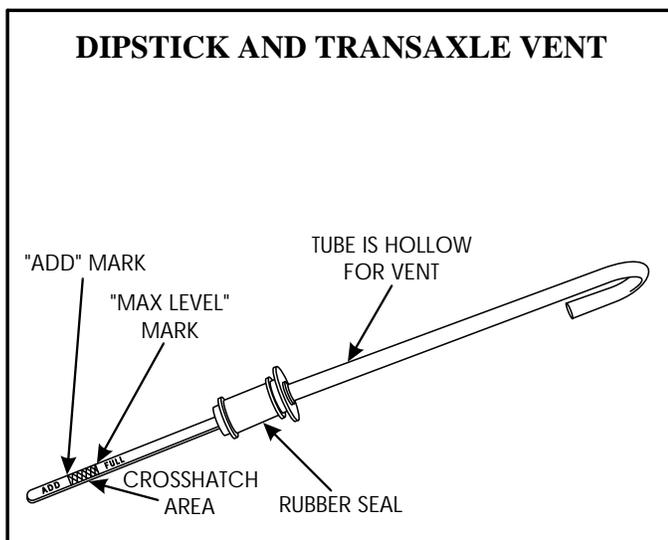
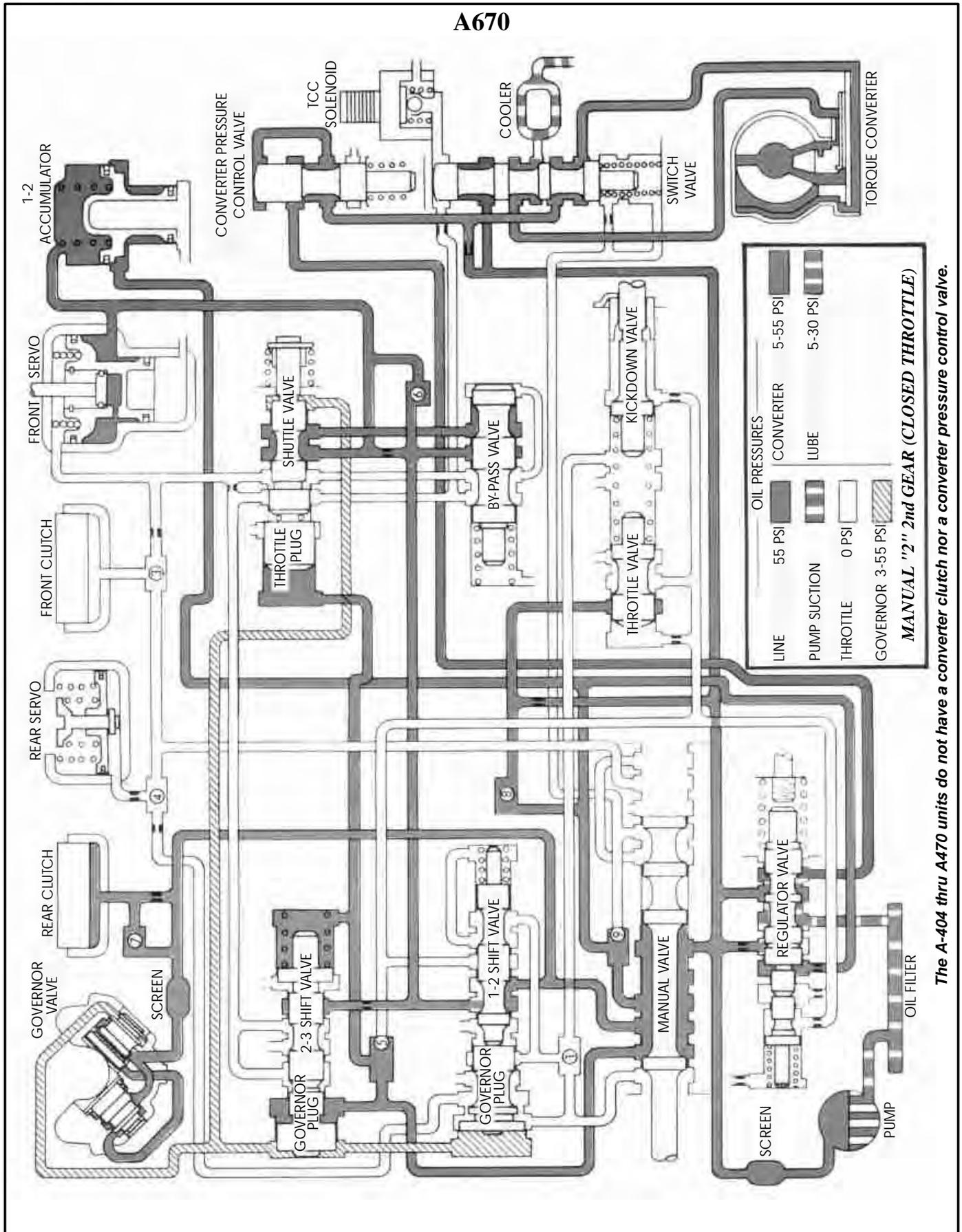


Figure 4

Technical Service Information

A670



The A-404 thru A470 units do not have a converter clutch nor a converter pressure control valve.

Figure 10

Technical Service Information

Governor Pressure Test

Test only if transaxle shifts at wrong vehicle speeds when throttle cable is correctly adjusted.

Connect a 0-150 psi pressure gauge to governor pressure test port, located at lower right side of case below differential cover, as shown in Figure 14.

Operate vehicle on road test while watching the pressure gauge and the vehicles speed. Governor pressure should be ***approximately*** equal to vehicle speed. The governor pressure should respond smoothly to changes in vehicle speed and should return to 0 to 3 psi when vehicle is stopped. High pressure at a standstill, above 3 psi, may prevent the transaxle from downshifting.

Pressure Test Result Indications

1. If proper line pressure, minimum to maximum, is found in any one test, the pump and the pressure regulator are working properly.
2. Low pressure in "D", "2", and "1", but correct pressure in "R", indicates forward (rear) clutch circuit leakage.
3. Low pressure in "R", but correct pressure in "2", and "1", indicates the direct (front) clutch circuit is leaking.
4. Low pressure in "R" and "1", but correct pressure in "2", indicates leakage in the rear servo circuit.
5. Low line pressure in all selector lever positions, indicates a defective oil pump, a clogged filter, or a stuck pressure regulator valve.

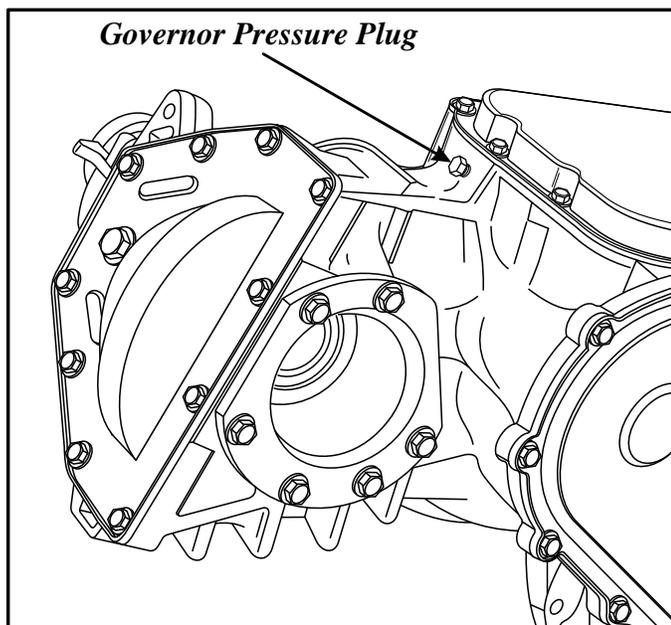


Figure 14

TORQUE CONVERTER STALL TEST

WARNING:

Do not let anyone stand in front of the vehicle during a torque converter stall test.

The stall test consists of determining the engine speed obtainable at full throttle in the "D" position only. This test checks the torque converter stator clutch operation, and the holding ability of the transaxle forward (rear) clutch. The transaxle fluid level should be checked and the engine at normal operating temperature before stall test operation.

Note: Both the parking brake and service brakes must be fully applied, and the front wheels chocked while making this test.

Do not hold the throttle open any longer than is necessary to obtain maximum engine speed reading on the tachometer, and ***never*** longer than 5 seconds at a time. If engine speed exceeds the maximum limits shown in the stall speed chart in Figure 15, release the accelerator immediately, since transaxle clutch slippage is indicated.

Stall Speed Below Specification

Low stall speeds with a properly tuned engine indicate converter stator clutch concerns, and a road test will be necessary.

If the vehicle has poor acceleration from stops, but operates properly at highway speeds, the stator overrunning clutch is slipping.

If the acceleration rate from stops is normal, but abnormally high throttle opening is required to maintain highway speeds, the stator overrunning clutch has siezed.

Both of these stator defects require replacement of the torque converter assembly.

Stall Speed Above Specification

If stall speed exceeds the maximum specified in the chart in Figure 15, by more than 200 rpm, the wrong converter, or transaxle clutch slippage is indicated. Ensure that you have the proper torque converter installed. Follow the transaxle oil pressure tests and air pressure checks outlined in this section to determine the cause for slippage.

Technical Service Information

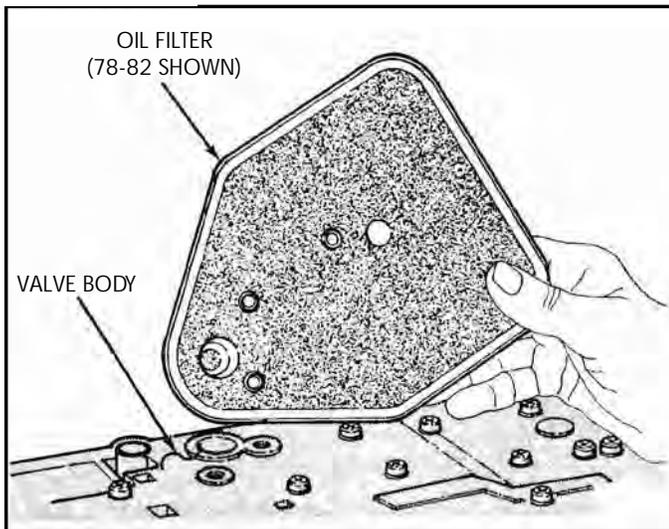


Figure 31

TRANSAXLE DISASSEMBLY (Cont'd)

9. Remove and discard the oil filter, as shown in Figure 31. *Note: We have shown the 78-82 model filter in Figure 31. The filter changes in 1983, but we will discuss this on assembly.*
10. Remove the retaining "E" clip from the parking rod, as shown in Figure 32.
11. Remove the parking rod from the inside detent lever and transaxle, as shown in Figure 33.
12. Remove the Park/Neutral switch from case to relieve pressure on valve body (See Figure 34).
13. Remove the seven valve body attaching bolts, as shown in Figure 35.

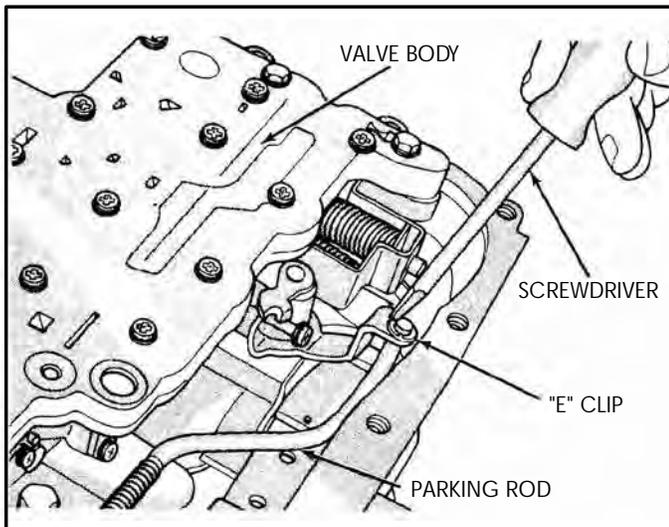


Figure 32

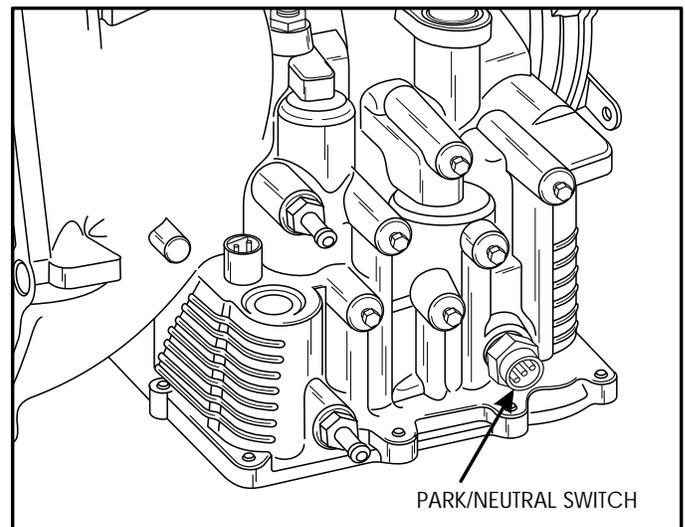


Figure 34

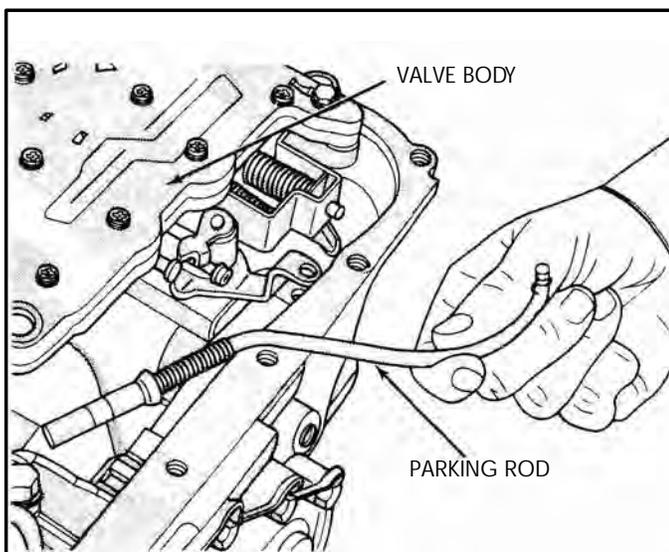


Figure 33

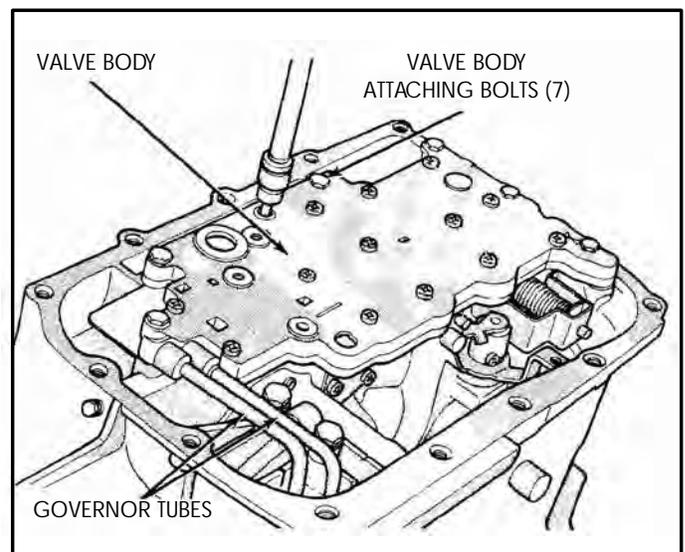


Figure 35

Technical Service Information

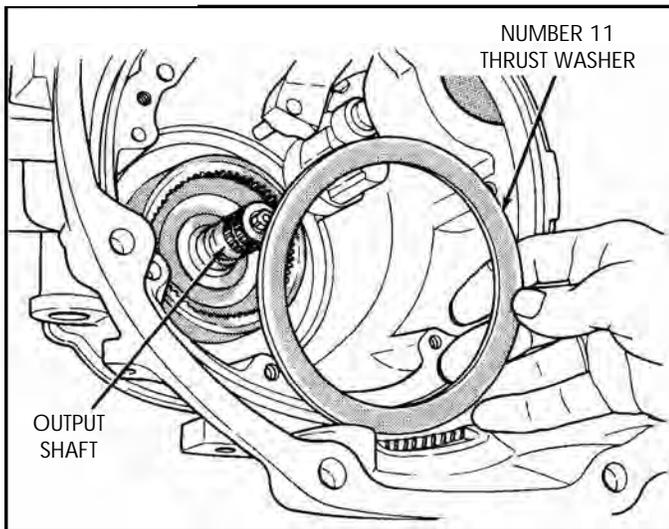


Figure 60

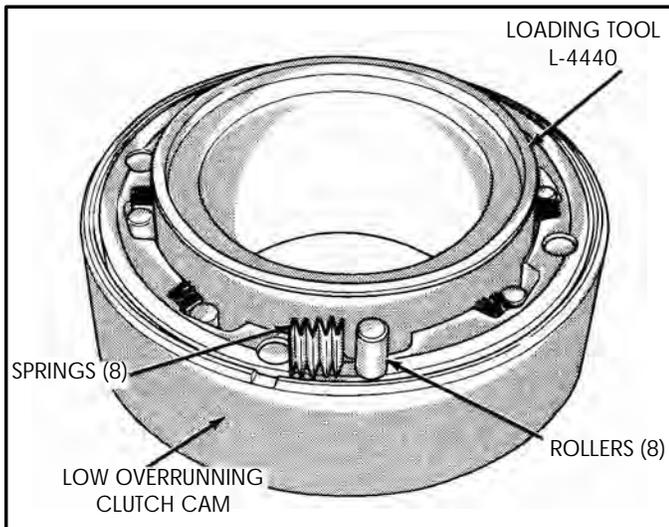


Figure 61

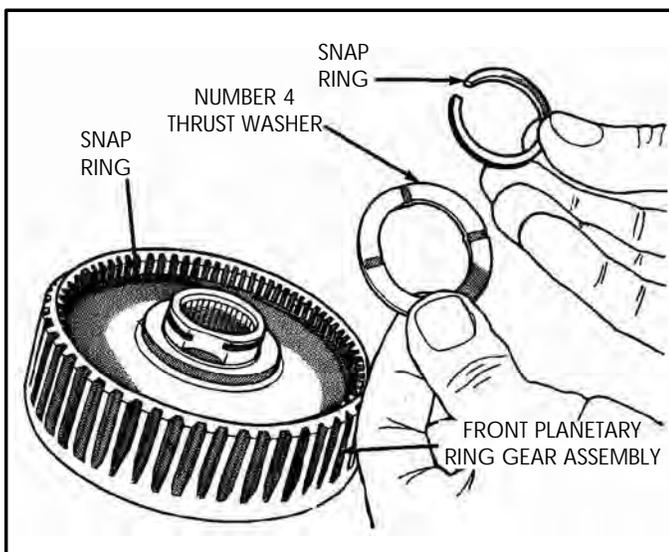


Figure 62

TRANSAXLE DISASSEMBLY (Cont'd)

39. Remove the number 11 thrust washer from the transaxle case, as shown in Figure 60.
40. The output shaft, transfer shaft and differential repair will be covered in the component repair section.

COMPONENT REBUILD SECTION

Low Overrun Clutch And Cam

1. Place the low overrun cam on a flat working surface, as shown in Figure 61.
2. Install the loading tool L-4440 into the overrun clutch cam, as shown in Figure 61.
3. Install *new* overrun clutch rollers and springs, eight of each, as shown in Figure 61.
4. Place the entire assembly aside, including the loading tool, for the final assembly process. The loading tool will make it easy to install this assembly into the transaxle case, during the final assembly process.

Front Planetary Assembly

1. Remove and discard retaining snap ring, as shown in Figure 62.
2. Remove the number 4 thrust washer, as shown in Figure 62.
3. Remove planetary ring gear and the number 5 thrust washer, as shown in Figure 63.

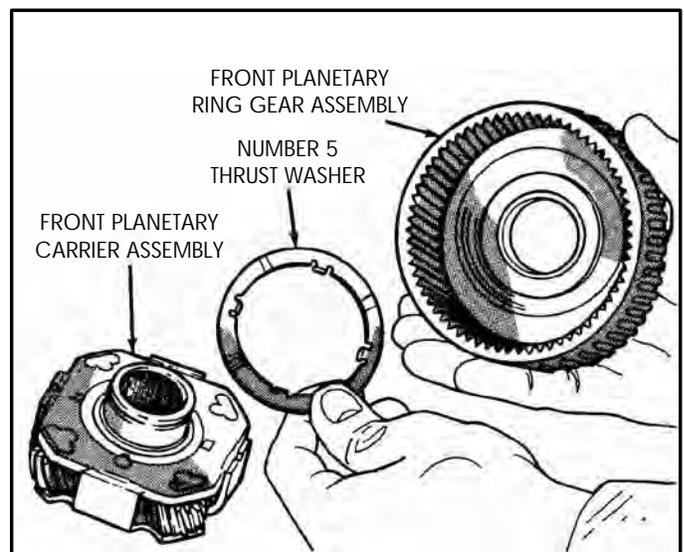


Figure 63

Technical Service Information

Rear (Forward) Drum Assembly (Cont'd)

10. Install new lip seals into the grooves in the rear clutch piston with the lips facing the bottom of the housing (See Figure 76).
11. Lubricate both lip seals and the surfaces that they ride on in housing with a small amount of Trans-Jel®.
12. Install the piston into the rear clutch housing with a rotating motion and *slight* downward pressure, ensuring no damage to lip seals
13. Install "Bellville" return spring into housing, as shown in Figure 76.
14. Install the "Waved" snap ring into the bottom groove, as shown in Figure 75, and ensure that it is fully seated.
15. Install the apply plate into rear clutch housing, as shown in Figure 74.
16. Install *new* friction and steel plates into the rear clutch housing, beginning with a friction plate and alternating with a steel plate, until proper amount of plates have been installed.
*Note: Some Models 3 Friction, and 2 Steels
Some Models 4 Friction, and 3 Steels*
17. Install the pressure plate into the rear clutch housing, as shown in Figure 74.
18. Install the pressure plate retaining snap ring into its groove, as shown in Figure 73, ensuring that it is fully seated.

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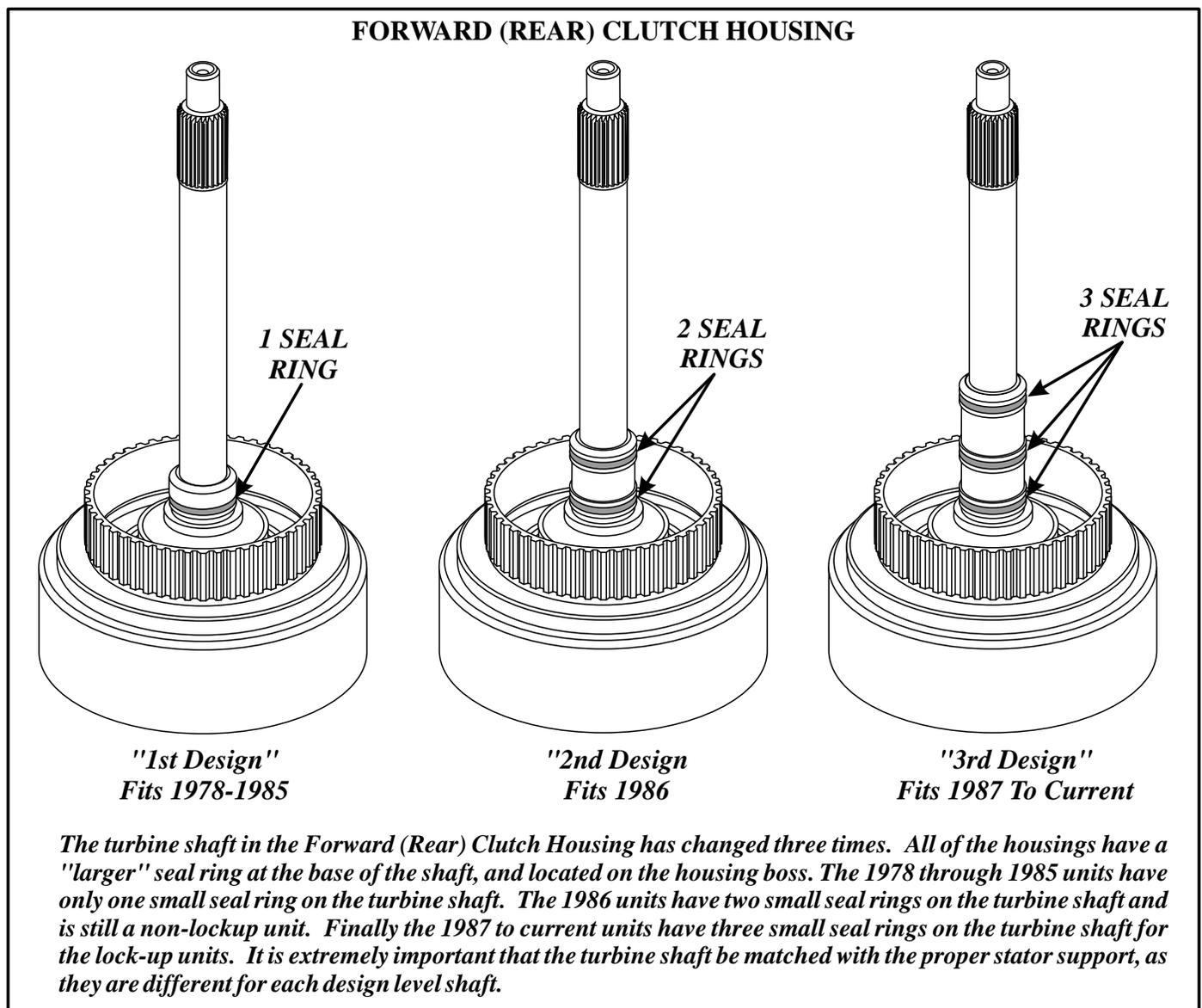


Figure 77

Technical Service Information

COMPONENT REBUILD SECTION (Cont'd)

Valve Body Assembly

1. Remove the retaining screw for detent spring, as shown in Figure 90, and remove the detent spring.
2. Remove valve body to transfer plate retaining screws, as shown in Figure 91.
3. Separate the transfer plate and valve body, as shown in Figure 92.
4. Remove the checkballs from the valve body cavities, as shown in Figure 93.

Note: *There are two different checkball configurations. Shown in Figure 93 is the 1980 to current version.*

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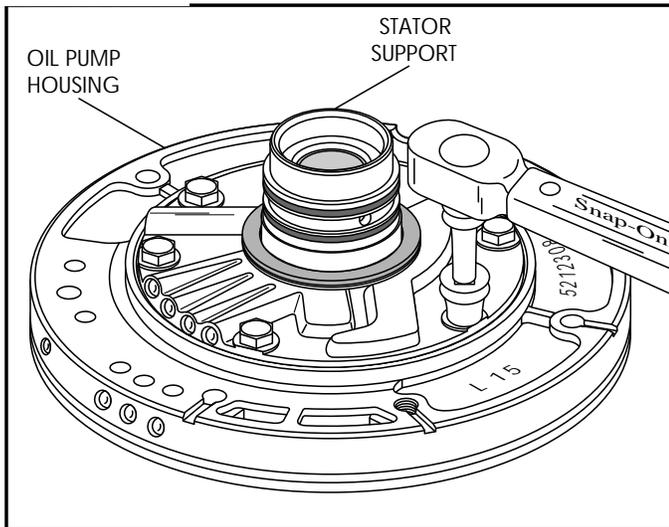


Figure 89

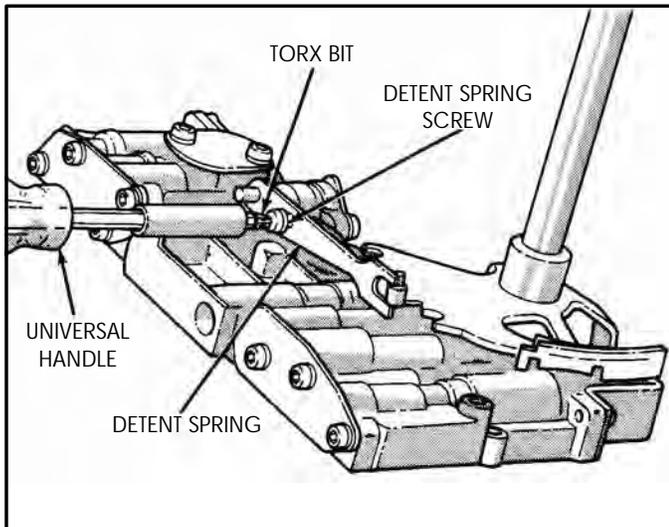


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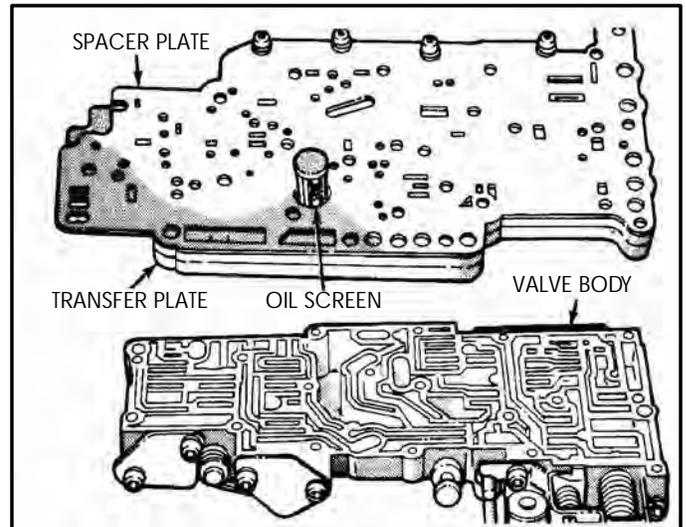


Figure 92

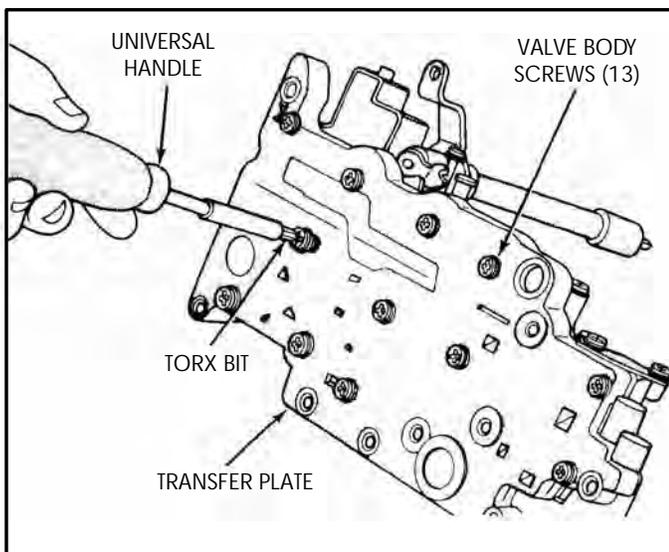


Figure 91

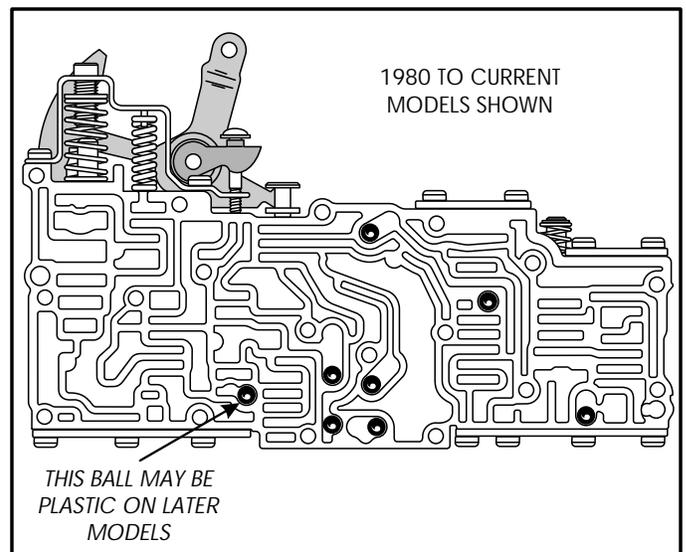


Figure 93

Technical Service Information

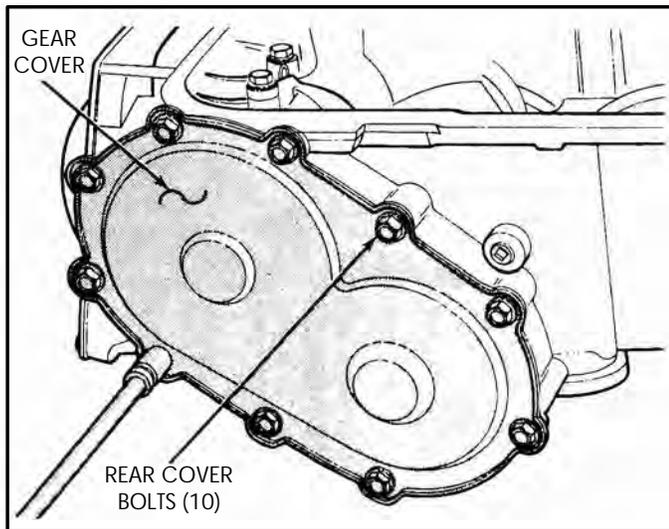


Figure 116

GEAR TRAIN DISASSEMBLY

1. If disassembly of the gear train is necessary proceed as follows.
2. Remove the 10 gear cover bolts, as shown in Figure 116.
3. Remove the rear transfer gear cover and clean off the R.T.V. sealant (See Figure 117).
4. Using special tool L-4434 installed with two bolts, as shown in Figure 118, remove the transfer shaft gear retaining nut and washer.
5. Install gear puller on the transfer shaft gear, as shown in Figure 120, and remove transfer gear using the puller (See Figure 120).

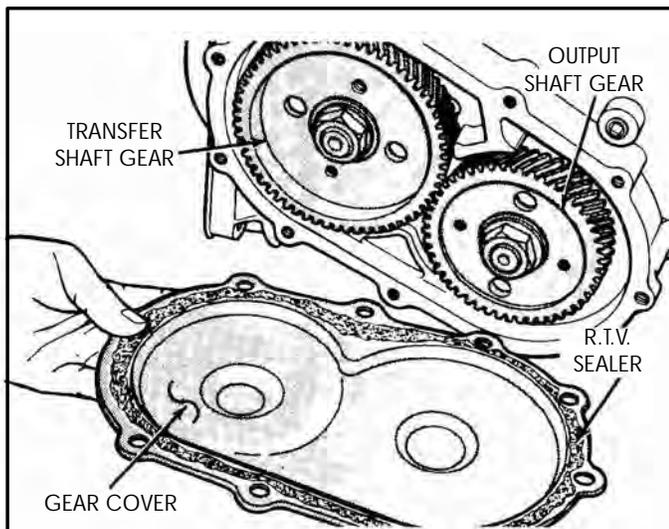


Figure 117

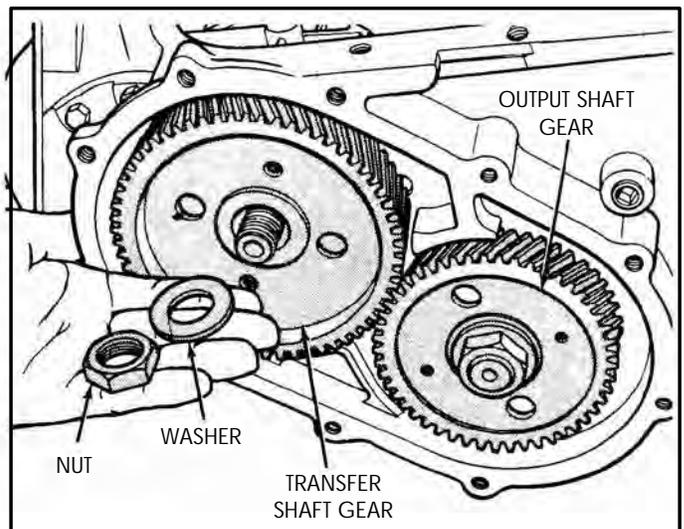


Figure 119

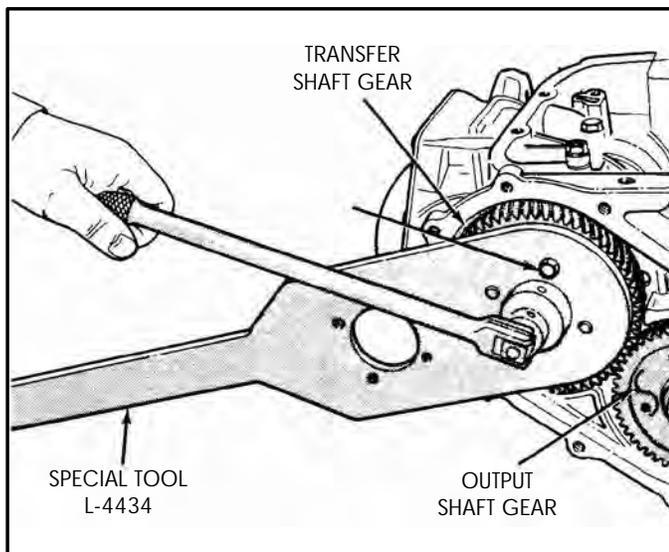


Figure 118

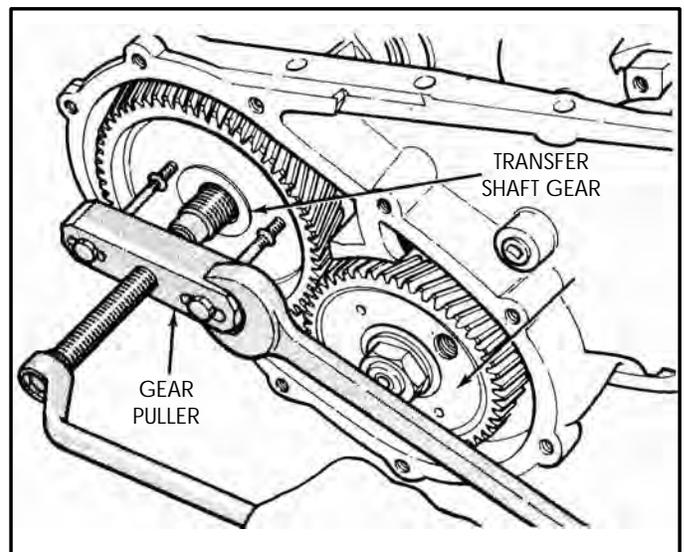


Figure 120

Technical Service Information

GEAR TRAIN REPAIR

Differential Assembly

1. Remove the differential carrier bearing cones using the special tools and procedures shown in Figures 144 and 145. The same tools are used for both sides.
2. Install new bearing cones on the differential carrier using special tool L-4410, and press on with an arbor press, as shown in Figure 146. Again the same tools are used for both sides. **Note: Tag the bearing cups as they "must" remain with the original bearing cone. They are matched and must not be mixed. Use only a press for installation as a hammer may not align cups or cones properly.**
3. If it was necessary to replace the ring gear, install it on the carrier and torque all ring gear bolts to 70 ft.lbs. as shown in Figure 148. **Note: Always install "New" ring gear bolts when the ring gear is changed.**

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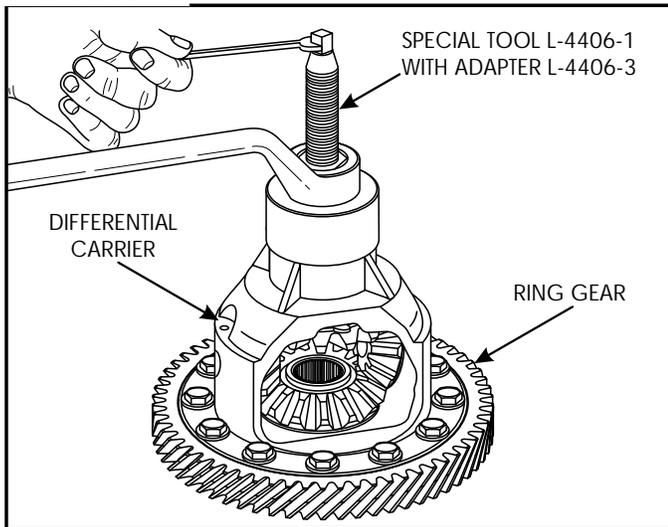


Figure 144

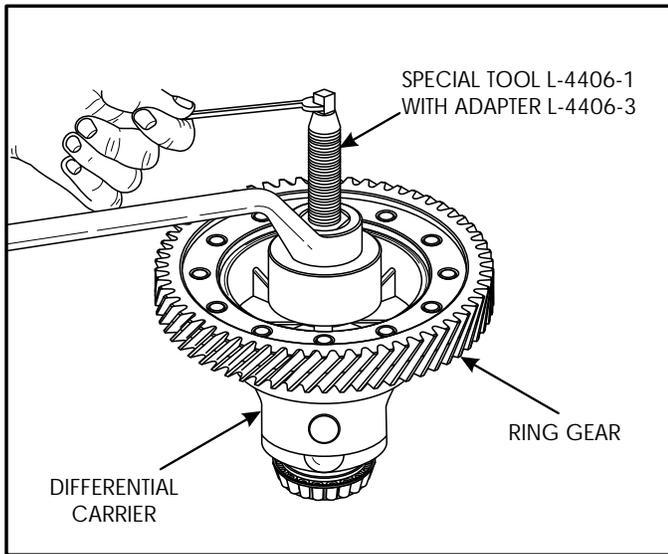


Figure 145

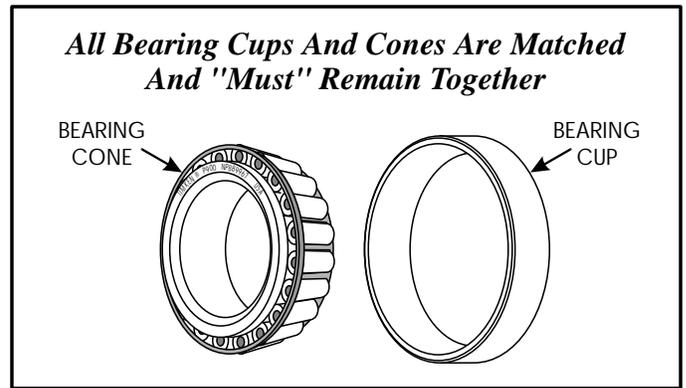


Figure 147

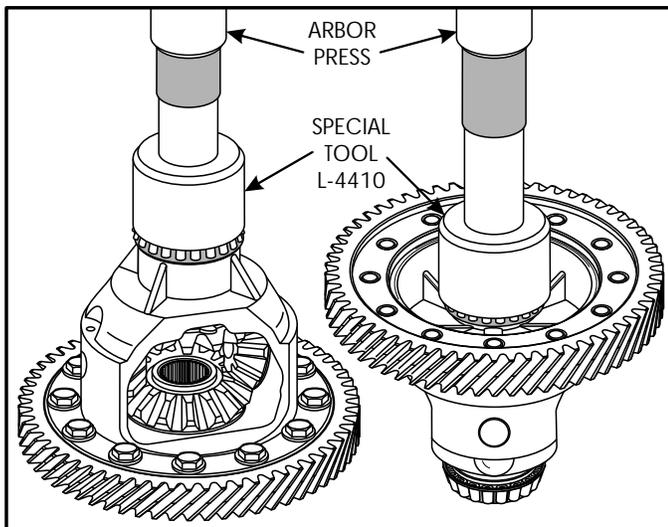


Figure 146

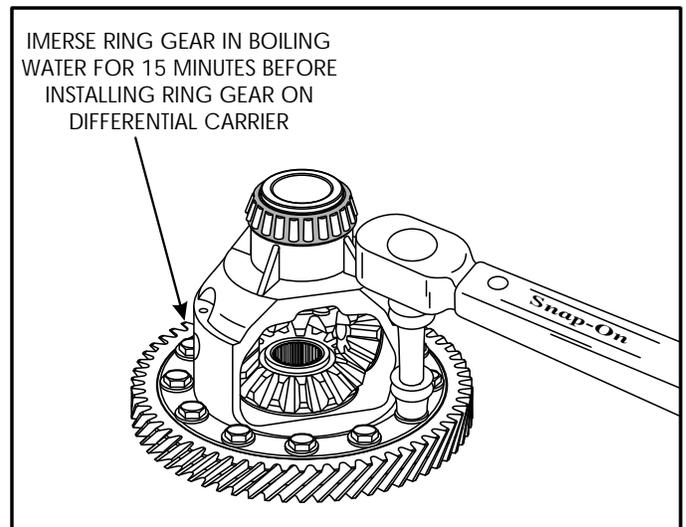


Figure 148

Technical Service Information

GEAR TRAIN REPAIR (Cont'd)

Output Shaft

1. Remove output gear bearing cone using special tool and adapters, as shown in Figure 164.
2. Install new bearing cone on output gear, using special tool L-4408 and arbor press, as shown in Figure 165.

Note: Tag all bearing cups as they "must" remain with the original bearing cone. They are matched and must not be mixed. Use only a press for installation, as a hammer may not align cups or cones properly.

3. Remove the output shaft from rear planetary ring gear using press (See Figure 166).

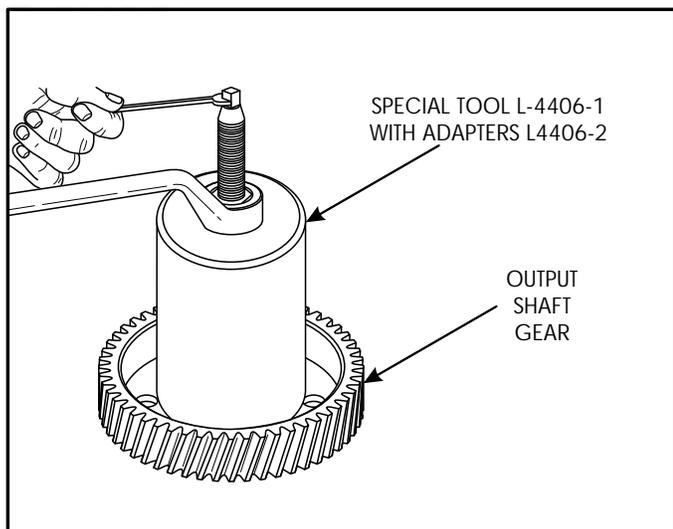


Figure 164

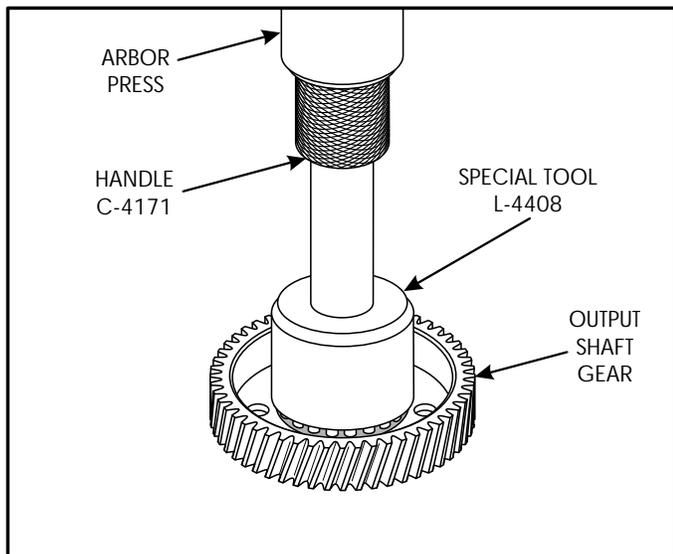


Figure 165

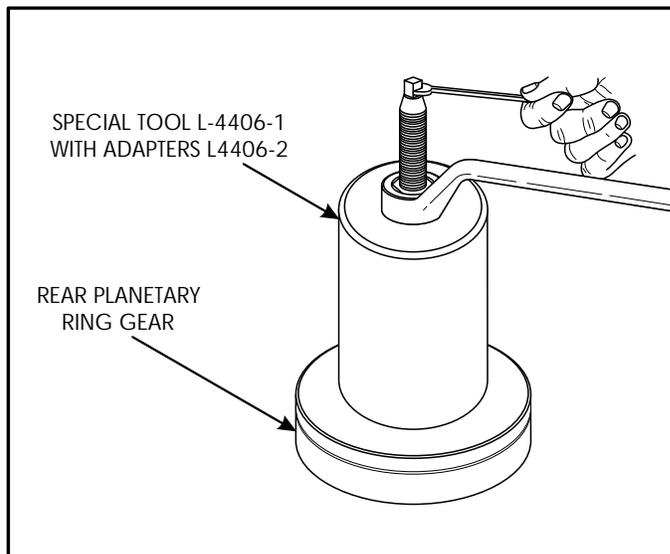


Figure 167

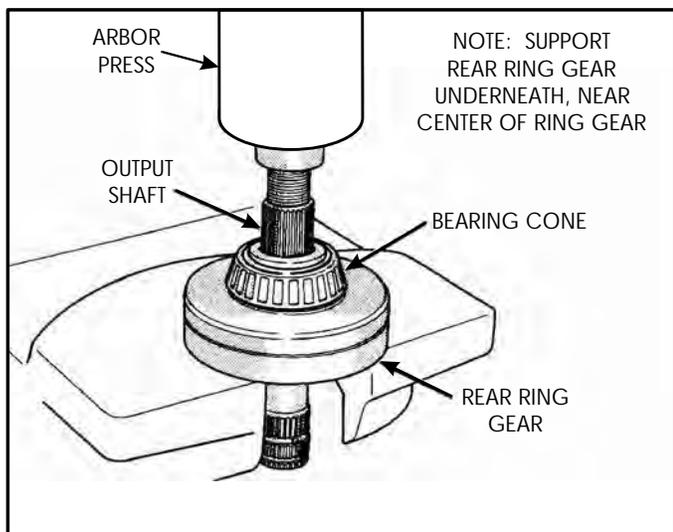


Figure 166

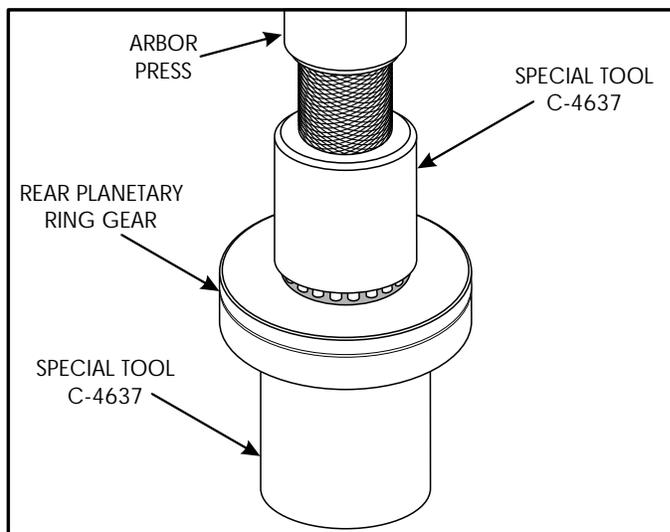


Figure 168

Technical Service Information

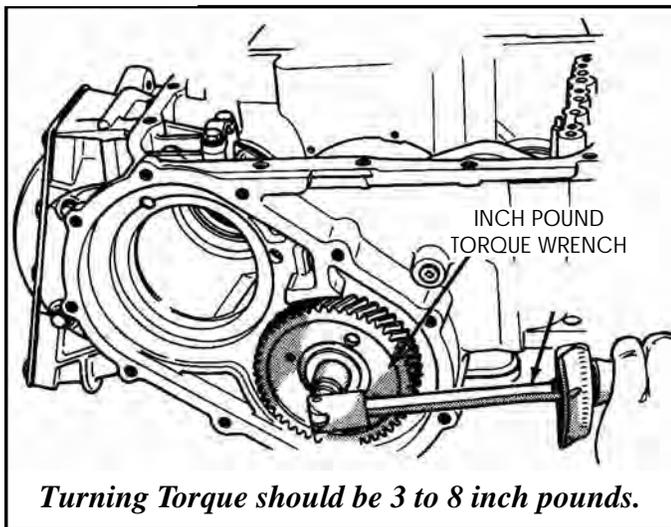


Figure 180

GEAR TRAIN REPAIR (Cont'd)

Output Shaft (Cont'd)

12. After turning torque is correct on output shaft, reinstall the differential assembly, as shown in Figure 181.
13. Install *new* "O" ring on extension housing, as shown in Figure 181, and lube with a small amount of Trans-Jel®.
14. Torque the four extension housing bolts down to 28 N·m (20 ft.lbs.) (See Figure 182).
15. Apply a 1/8" bead of R.T.V. to the differential cover, as shown in Figure 183.
16. Install the differential cover onto transaxle case and torque the ten bolts to 19 N·m (14 ft.lbs.), as shown in Figure 184.

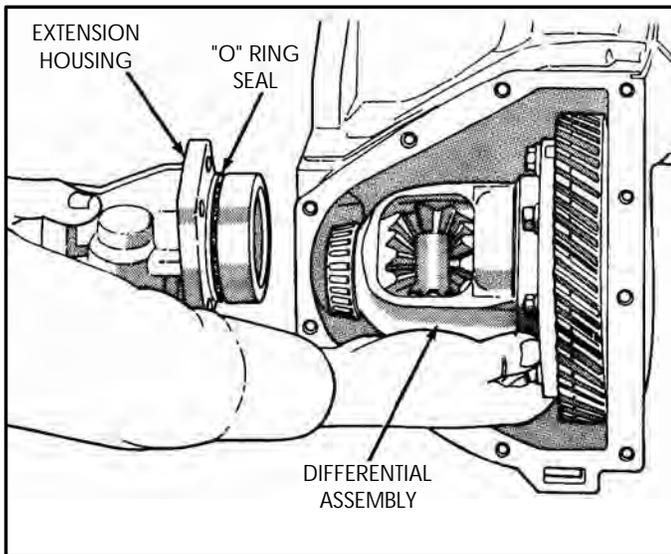


Figure 181

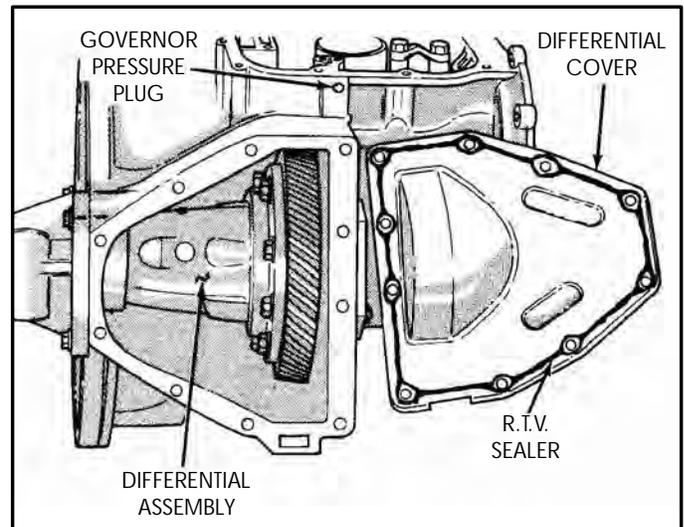


Figure 183

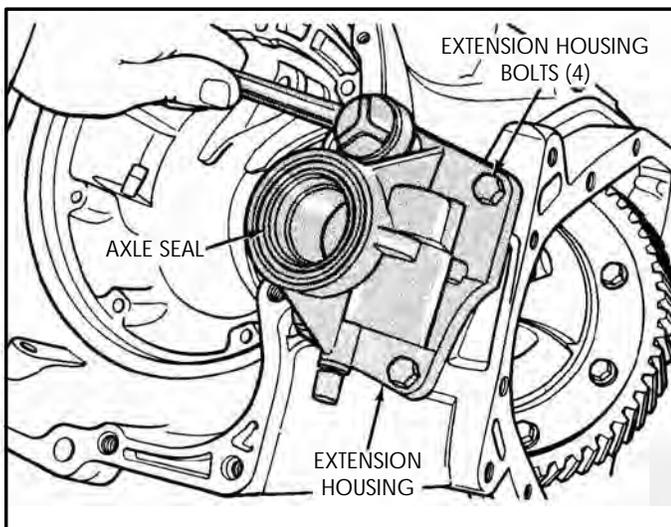


Figure 182

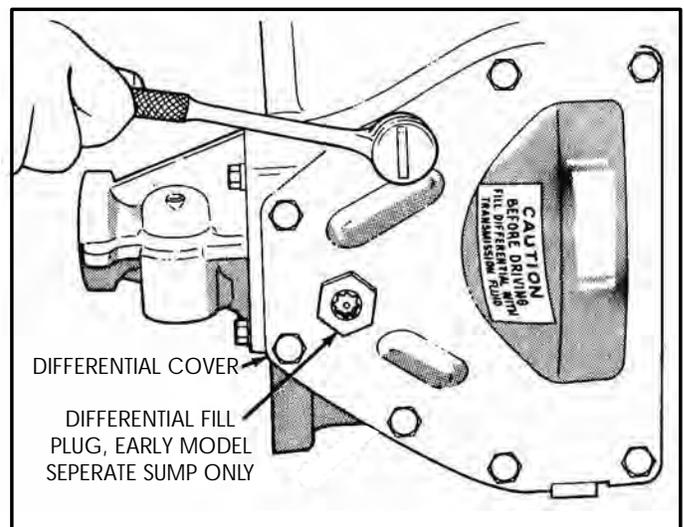


Figure 184

Technical Service Information

TRANSAXLE ASSEMBLY

Servos And Accumulator Components (Cont'd)

6. Install kickdown piston rod guide and snap ring, as shown in Figure 211.
7. Compress the piston rod guide over piston rod and install snap ring, as shown in Figure 212.
8. Install new piston seal rings on accumulator piston, as shown in Figure 213.
9. Install accumulator piston spring on top of the accumulator piston, as shown in Figure 213.
10. Install the accumulator cover, compress against spring and install snap ring using the snap ring pliers shown in Figure 215.

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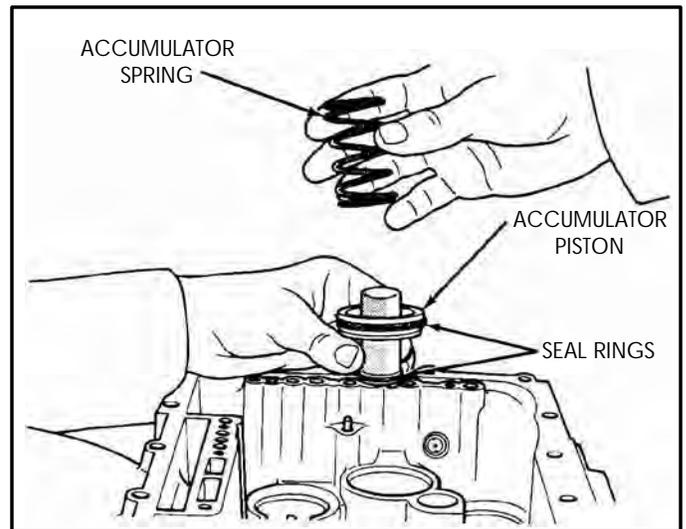


Figure 213

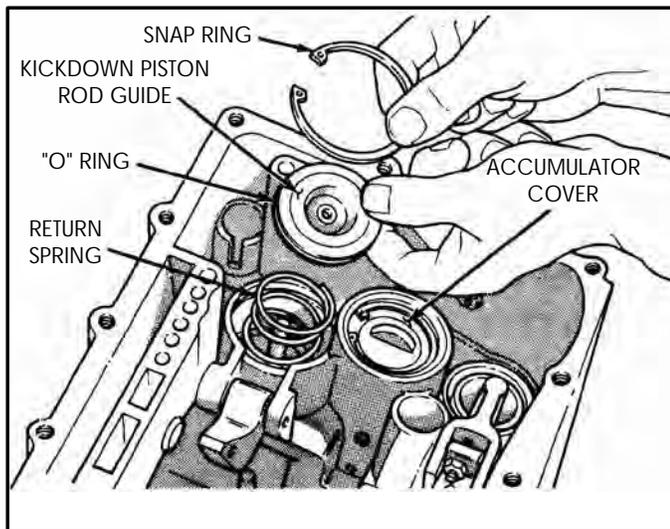


Figure 211

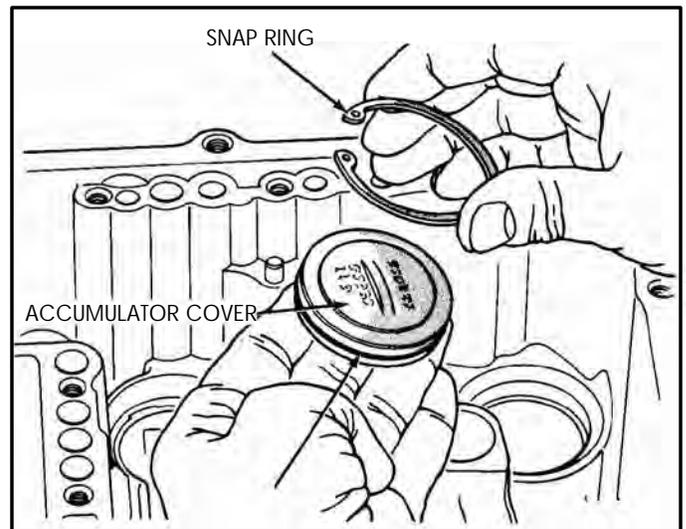


Figure 214

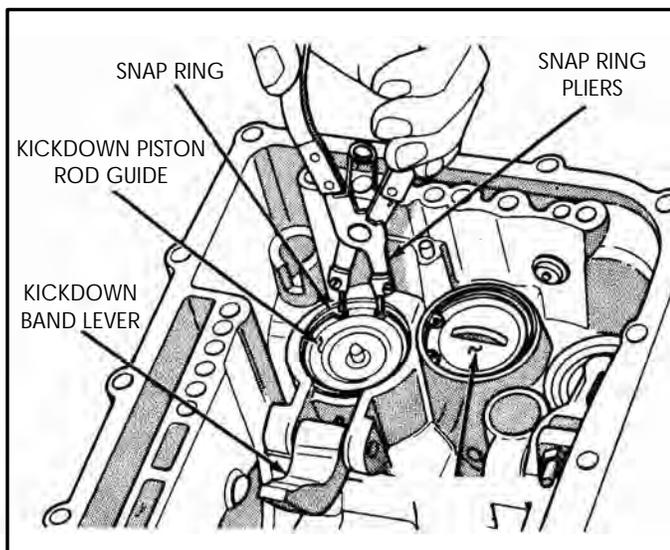


Figure 212

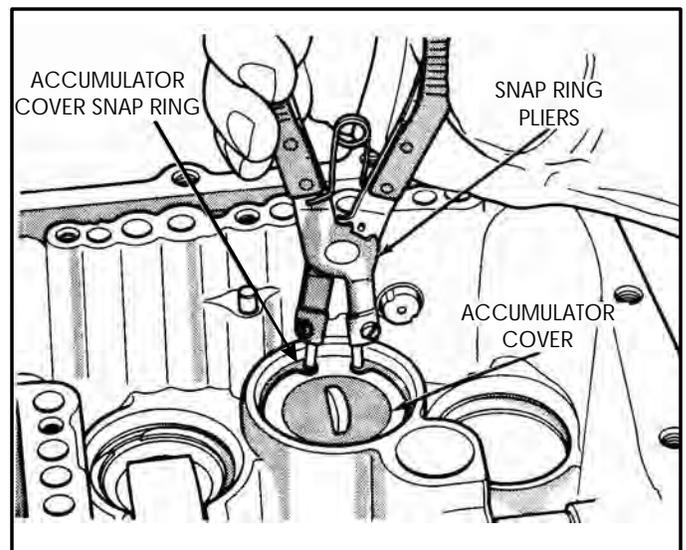


Figure 215

Technical Service Information

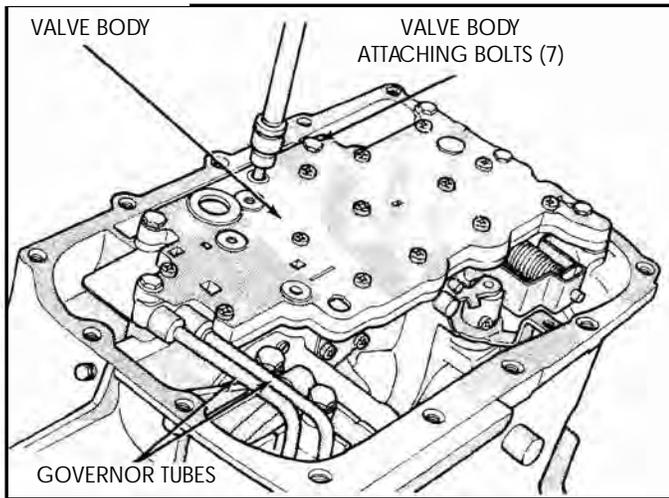


Figure 238

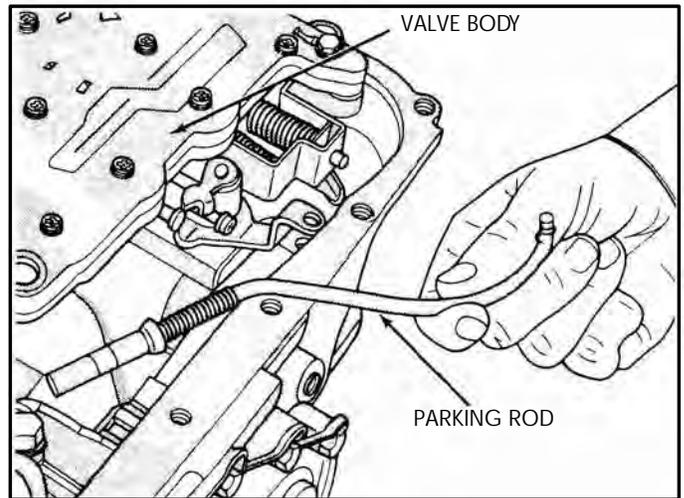


Figure 239

TRANSAXLE ASSEMBLY (Cont'd)

Bottom Pan Components

7. Install the *proper* oil filter onto the valve body, as shown in Figure 241.

Note: The 1978-1982 models use "Only" the three hole type filter. The 1983-UP models use "Only" the two hole type filter. Refer to Figure 241 for illustrations of both types.

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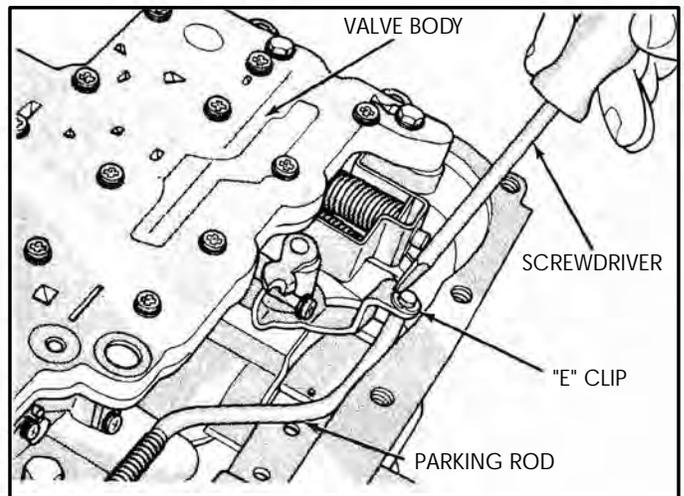


Figure 240

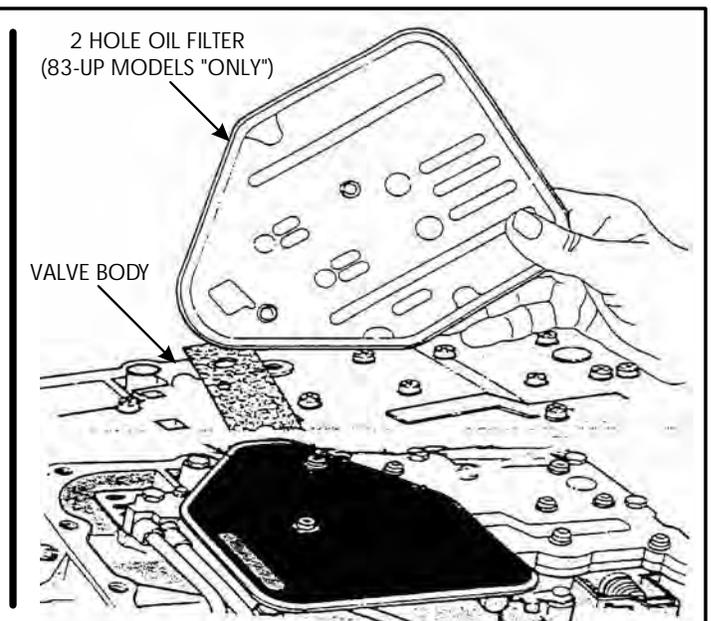
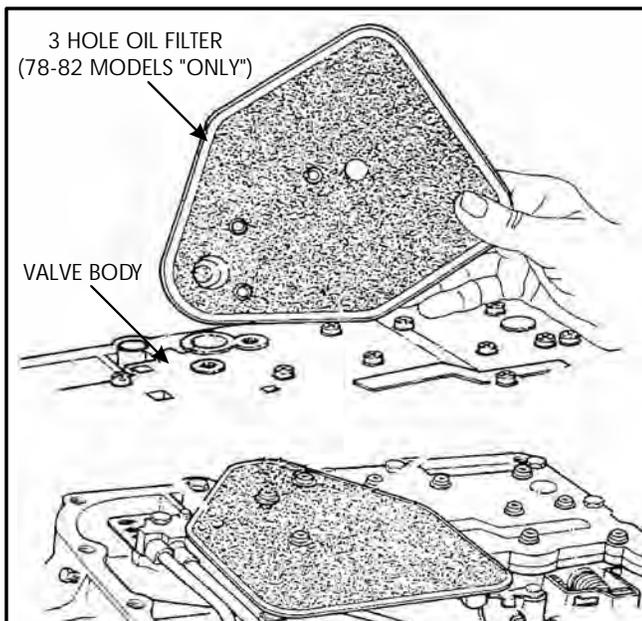


Figure 241