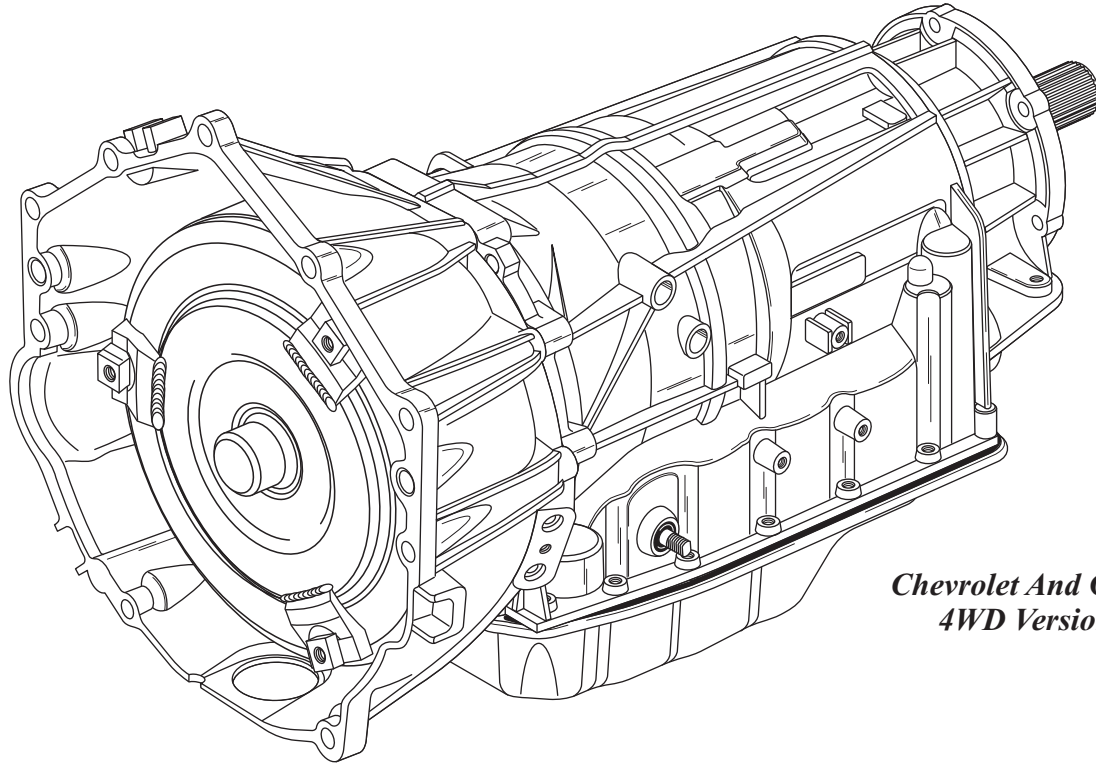


HYDRA-MATIC 6L80
(6 Speed)

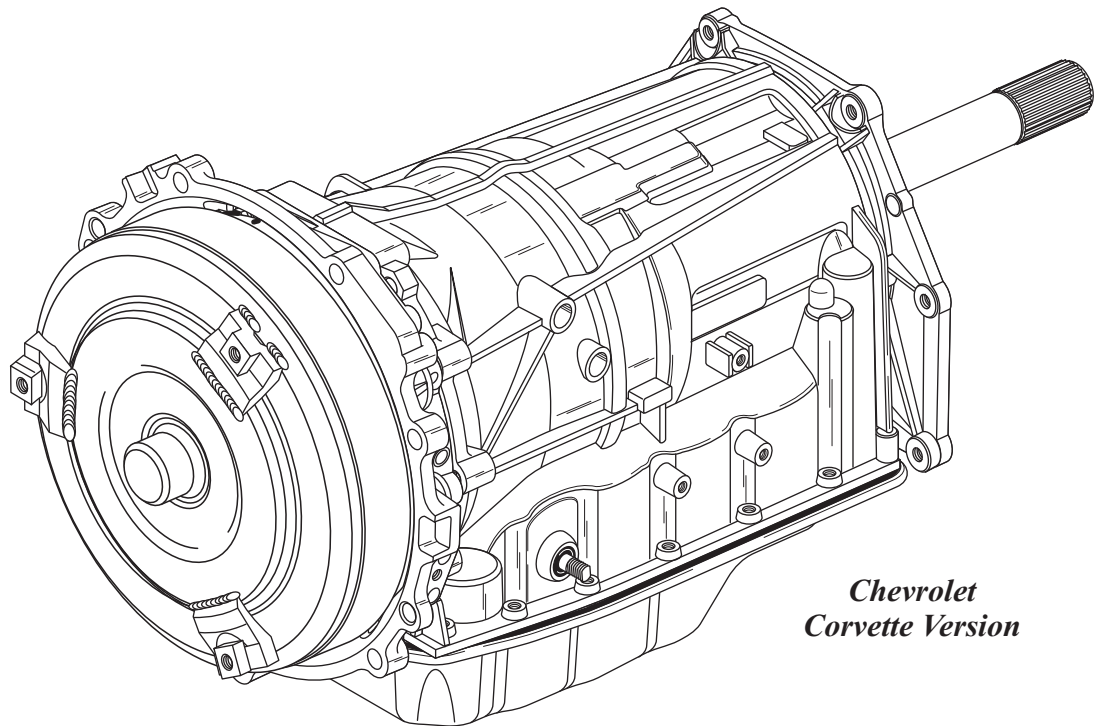
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Technical Service Information



*Chevrolet And GMC
4WD Version*

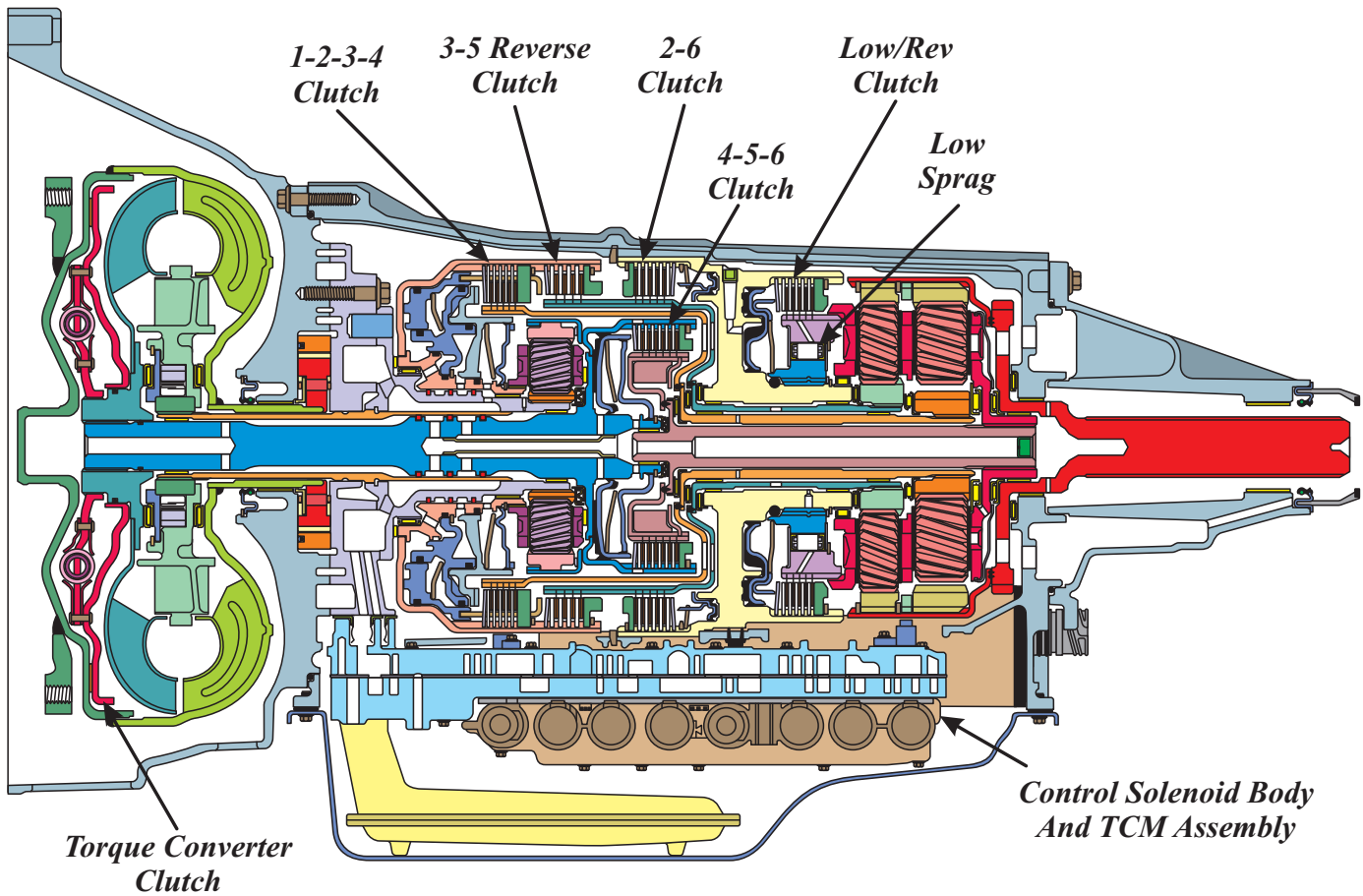


*Chevrolet
Corvette Version*

Figure 1

Technical Service Information

INTERNAL COMPONENT IDENTIFICATION AND LOCATION



COMPONENT APPLICATION CHART

RANGE	1-2-3-4 Clutch	3-5, Rev Clutch	4-5-6 Clutch	2-6 Clutch	Low & Rev Clutch	Low Sprag	Torg Conv Clutch	GEAR RATIO
Park					Applied			
Reverse		Applied			Applied			3.06
Neutral					Applied			
"D"-1st	Applied				Applied	Holding		4.03
"D"-2nd	Applied			Applied			Applied*	2.36
"D"-3rd	Applied	Applied					Applied*	1.53
"D"-4th	Applied		Applied				Applied*	1.15
"D"-5th		Applied	Applied				Applied*	0.85
"D"-6th			Applied	Applied			Applied*	0.67
"M"-2nd	Applied			Applied			Applied*	2.36
"M"-1st	Applied				Applied	Holding		4.03

* TCC IS AVAILABLE IN 2ND THRU 6TH GEAR, BASED ON THROTTLE POSITION, FLUID TEMP AND VEHICLE SPEED.

Figure 4

Technical Service Information

ELECTRONIC COMPONENTS (CONT'D)

TORQUE CONVERTER CLUTCH (TCC) SOLENOID

The Torque Converter Clutch (TCC) PC Solenoid is a "normally-low", electronic pressure regulator used to control the apply and release of the torque converter clutch based on current flow through its coil windings. The TCC PC solenoid regulates actuator feed limit fluid pressure to the TCC regulator valve, located in the lower valve body, and provides a signal pressure to shift the TCC control valve, located in the pump, to the apply position, as shown in Figure 12. When the TCM determines to apply the TCC, the TCC PC solenoid is commanded to specific pressures, dependent on vehicle operating conditions, resulting in a smooth apply or release of the TCC. The solenoid's ability to "Ramp" the TCC apply and release pressures result in a smoother TCC operation.

When vehicle operating conditions are appropriate to apply the TCC, the TCM increases current flow to allow the TCC PC solenoid to increase PCS TCC fluid pressure, to move the TCC control valve to the apply position, as shown in Figure 12, and move the TCC regulator valve to the regulating position to regulate fluid pressure proportional to solenoid pressure. Release pressure is directed to exhaust, and regulated apply pressure is directed to the apply

side of the converter clutch plate/damper assembly. The TCM then increases the pressure to control a slippage of 20-80 RPM between the clutch plate and converter cover. This "Ramping" procedure provides improved dampening of engine vibrations and allows the TCC to apply at low engine speeds in 2nd, 3rd, 4th, 5th and 6th gear.

Release of the TCC is achieved by decreasing TCC solenoid pressure to a level low enough to allow spring force to move the TCC control valve and TCC regulating valve to the release position.

There are also some operating conditions that may prevent or enable TCC apply, such as engine temp, transmission temperature, brake switch activation.

If the TCM detects that the TCC system is stuck ON or OFF, a DTC will be activated.

The TCC PC Solenoid is part of the Control Solenoid Body And TCM Assembly and is not serviced separately.

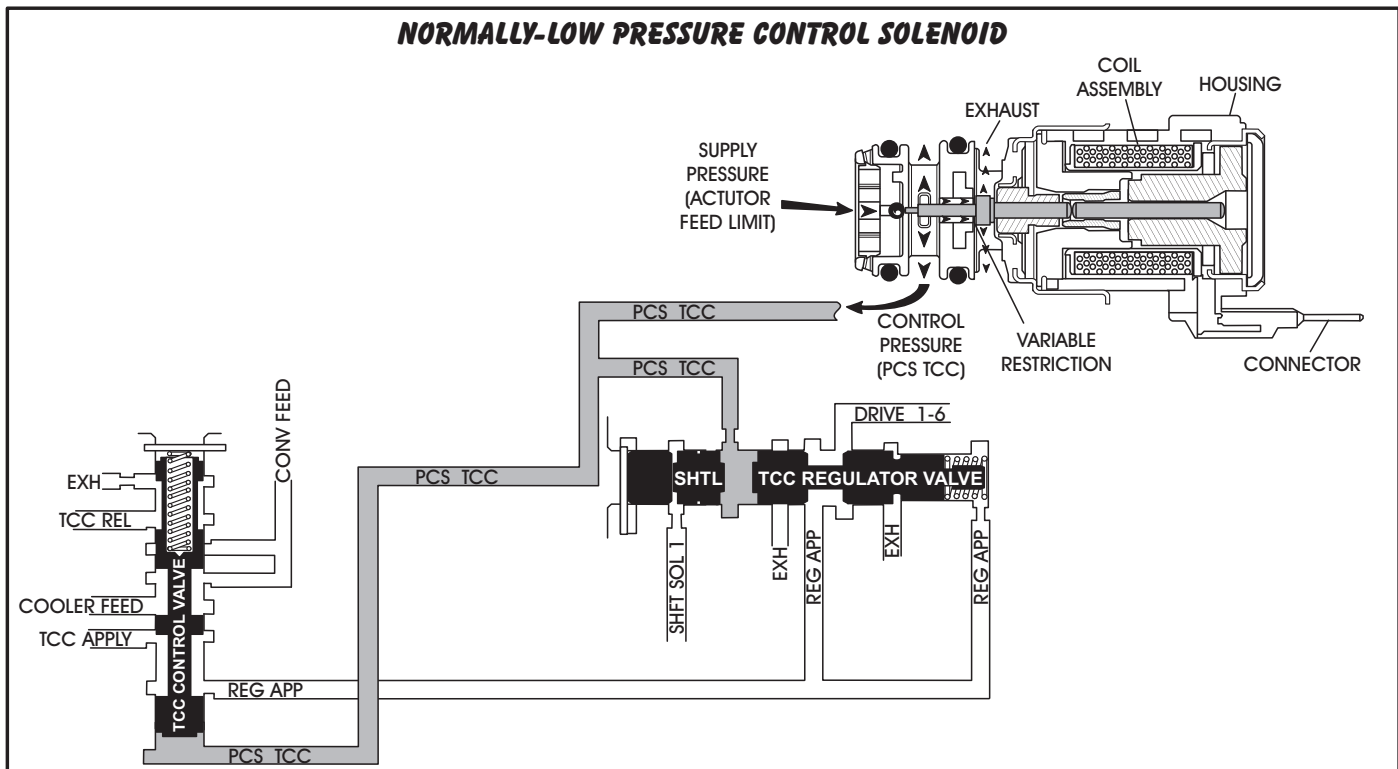


Figure 12

Technical Service Information

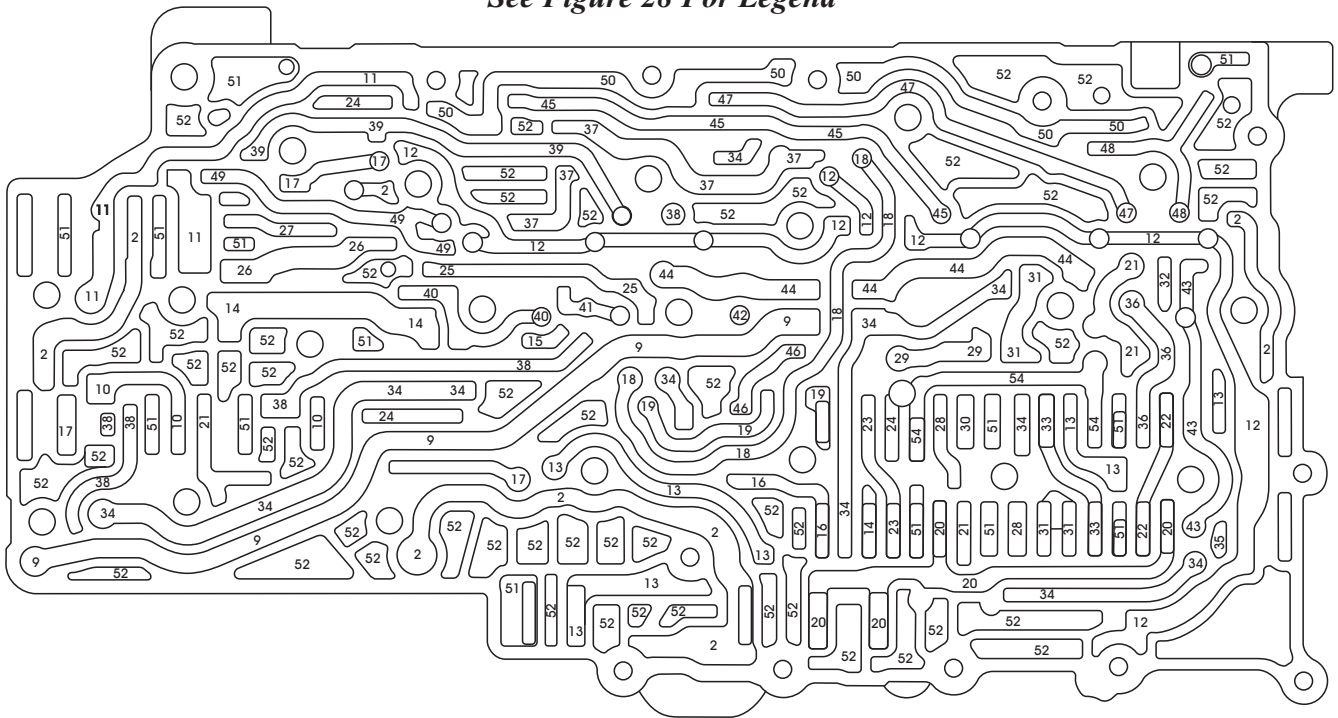
DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION		
DTC	DESCRIPTION	DTC TYPE*
P0218	<i>Transmission Fluid Overtemperature, Over 270°F for 10 minutes.</i>	A
P0562	<i>System Voltage Low, 11 volts or less for 10 seconds.</i>	A
P0563	<i>System Voltage High, Greater than 18 volts for 12 seconds.</i>	A
P0601	<i>TCM (Internal), Read Only Memory (ROM).</i>	A
P0602	<i>TCM, Not Programmed.</i>	A
P0603	<i>TCM (Internal), Long term memory reset.</i>	A
P0604	<i>TCM (Internal), Random Access Memory (RAM).</i>	A
P0634	<i>TCM (Internal), Overtemperature.</i>	A
P0667	<i>TCM (Internal), Temperature Sensor Performance.</i>	A
P0668	<i>TCM (Internal), Temperature Sensor circuit voltage low.</i>	A
P0669	<i>TCM (Internal), Temperature Sensor circuit voltage high.</i>	A
P0703	<i>Brake Switch Circuit, signal is invalid for 4 seconds.</i>	A
P0711	<i>Transmission Fluid Temperature (TFT), Sensor performance.</i>	C
P0712	<i>Transmission Fluid Temperature (TFT), Sensor circuit voltage low.</i>	A
P0713	<i>Transmission Fluid Temperature (TFT), Sensor circuit voltage high.</i>	A
P0716	<i>Input Speed Sensor (ISS), Sensor performance.</i>	A
P0717	<i>Input Speed Sensor (ISS), Sensor circuit voltage low.</i>	A
P0719	<i>Brake Switch Circuit, Circuit voltage low.</i>	A
P0722	<i>Output Speed Sensor (OSS), Sensor circuit voltage low.</i>	C
P0723	<i>Output Speed Sensor (OSS), Sensor intermittent.</i>	B
P0724	<i>Brake Switch Circuit, Circuit voltage high.</i>	A
P0729	<i>Incorrect 6th Gear Ratio.</i>	C
P0731	<i>Incorrect 1st Gear Ratio.</i>	A
P0732	<i>Incorrect 2nd Gear Ratio.</i>	A
P0733	<i>Incorrect 3rd Gear Ratio.</i>	A
P0734	<i>Incorrect 4th Gear Ratio.</i>	A
P0735	<i>Incorrect 5th Gear Ratio.</i>	A
P0736	<i>Incorrect Reverse Gear Ratio.</i>	A
P0741	<i>Torque Converter Clutch (TCC), System Stuck OFF.</i>	A
P0742	<i>Torque Converter Clutch (TCC), System Stuck ON.</i>	B
P0751	<i>Shift Solenoid (SS) 1 Valve Performance, Stuck OFF.</i>	B
P0752	<i>Shift Solenoid (SS) 1 Valve Performance, Stuck ON.</i>	A
<p>*DTC TYPES A - Emission-related, turns the MIL "ON" immediately after the 1st failure. B - Emission-related, turns the MIL "ON" after two consecutive drive cycles with failure. C - Non-emission-related, no lamps and may display message on driver information center.</p>		

Figure 22

Technical Service Information

LOWER VALVE BODY, SPACER PLATE SIDE

See Figure 28 For Legend



LOWER VALVE BODY, TCM/SOLENOID BODY SIDE

See Figure 28 For Legend

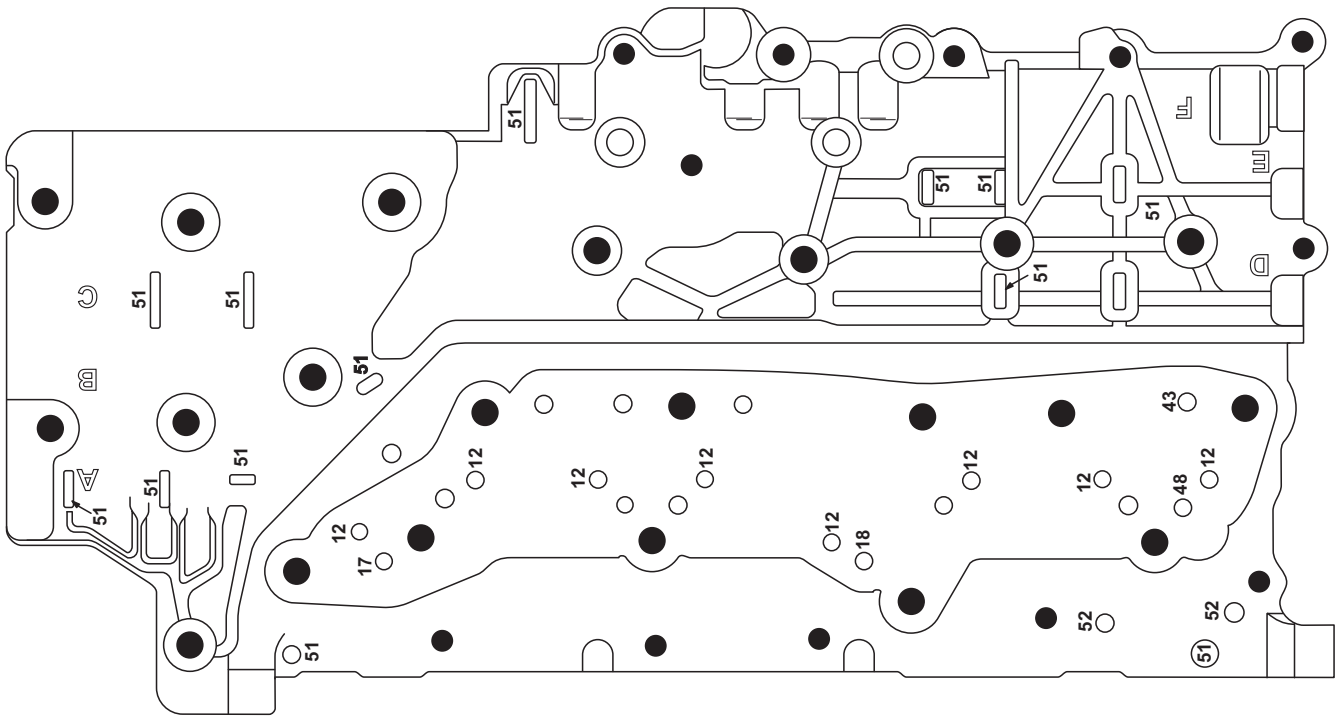


Figure 26

Technical Service Information

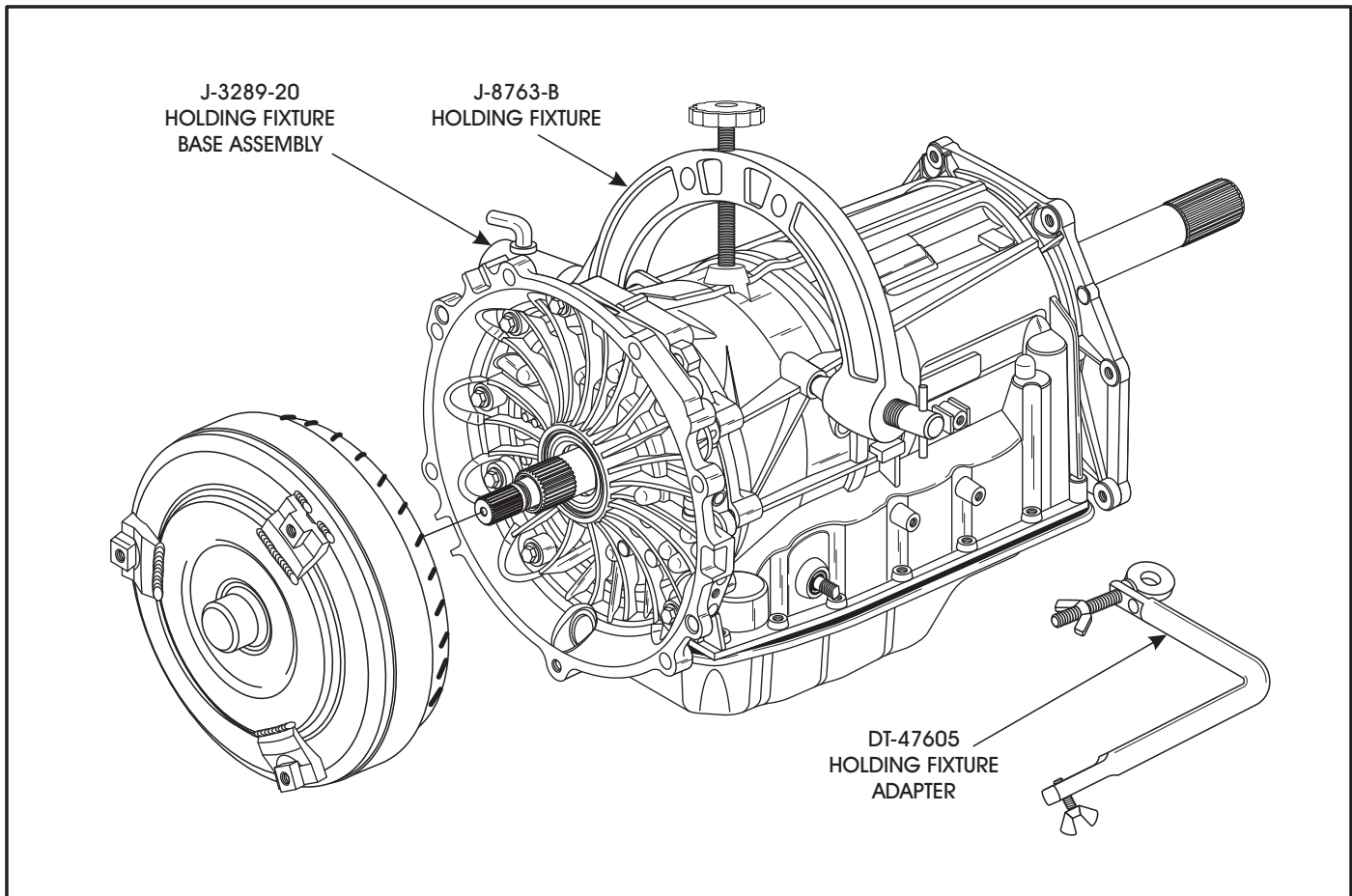


Figure 37

TRANSMISSION DISASSEMBLY

EXTERNAL PARTS

1. Remove the torque converter, as shown in Figure 37.
2. Install holding fixture J-8763-B, as shown in Figure 37, using fixture adapter DT-47605 if necessary and is shown in place in Figure 38.
3. Rotate transmission in fixture so that converter housing is facing up and secure with locking pin in fixture base.
4. Allow any remaining transmission fluid to drain from the extension housing.
5. Rotate transmission so that bottom pan is facing up as shown in Figure 39.

Continued on Page 32

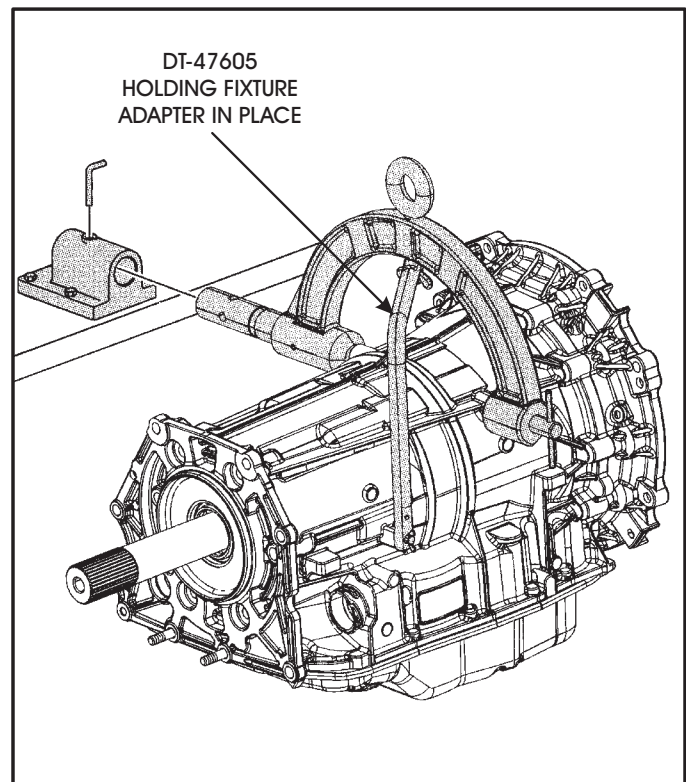


Figure 38

Technical Service Information

COMPONENT REBUILD

TRANSMISSION CASE ASSEMBLY (CONT'D)

7. Remove park pawl actuator guide retaining pin and actuator guide, as shown in Figure 56.
8. Remove and discard the park pawl actuator guide "O" rings.
9. Install new park pawl actuator guide "O" rings and lube with a small amount of Trans-Jel®.
10. Install the park pawl actuator guide, as shown in Figure 56, ensuring you do not damage the "O" ring seals.
11. Install the actuator guide retaining pin into the case, as shown in Figure 56.
12. Install new rear case seal using seal installer, as shown in Figure 57.
13. Install new case plugs as necessary, as shown in Figure 58.

Component Rebuild
Continued on Page 41

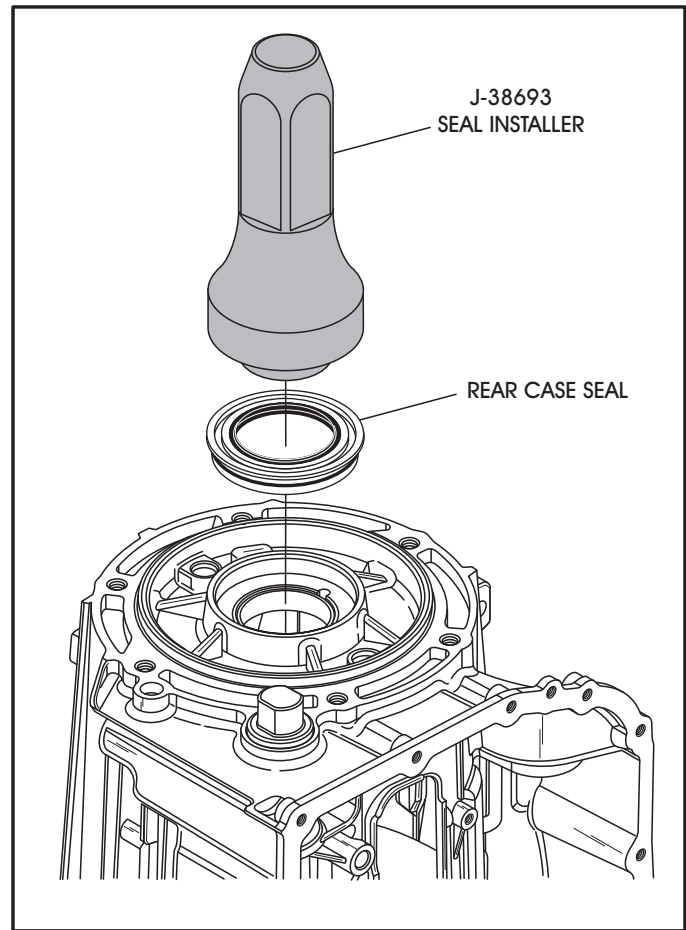


Figure 57

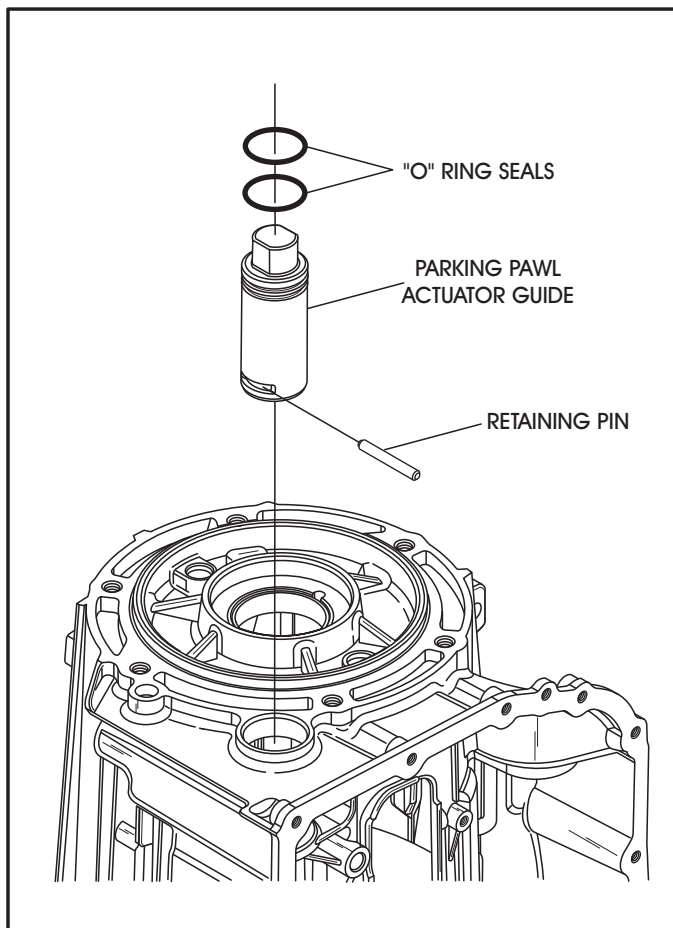


Figure 56

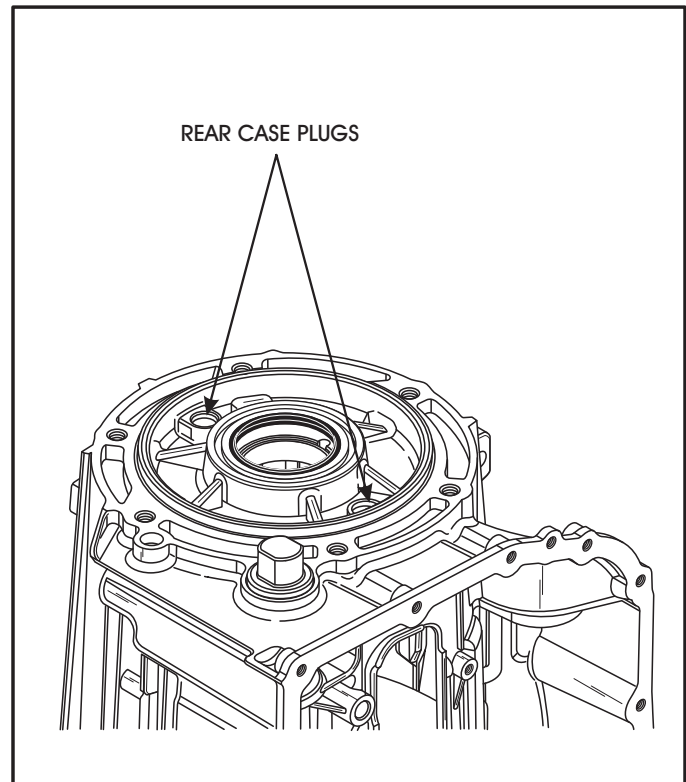


Figure 58

Technical Service Information

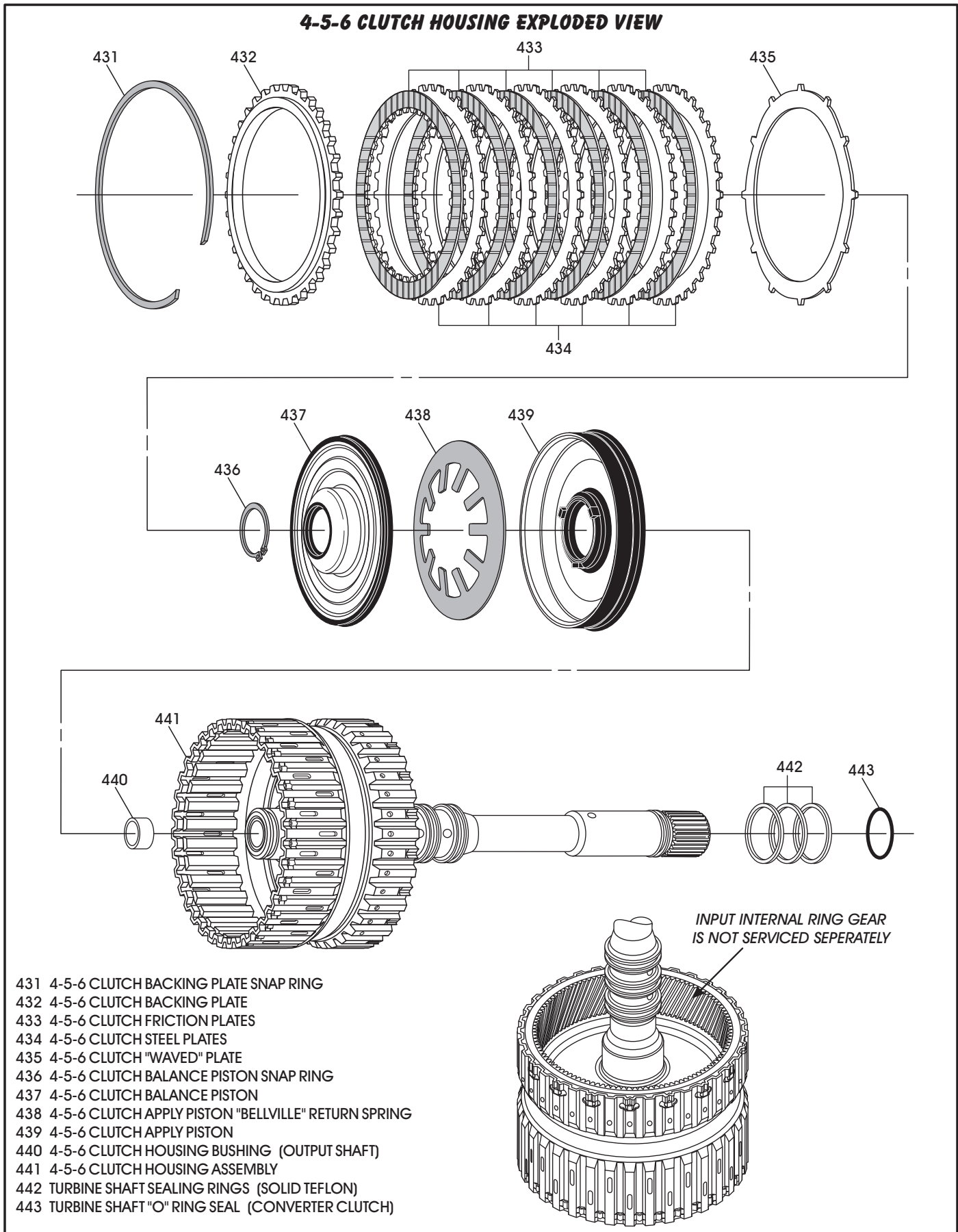
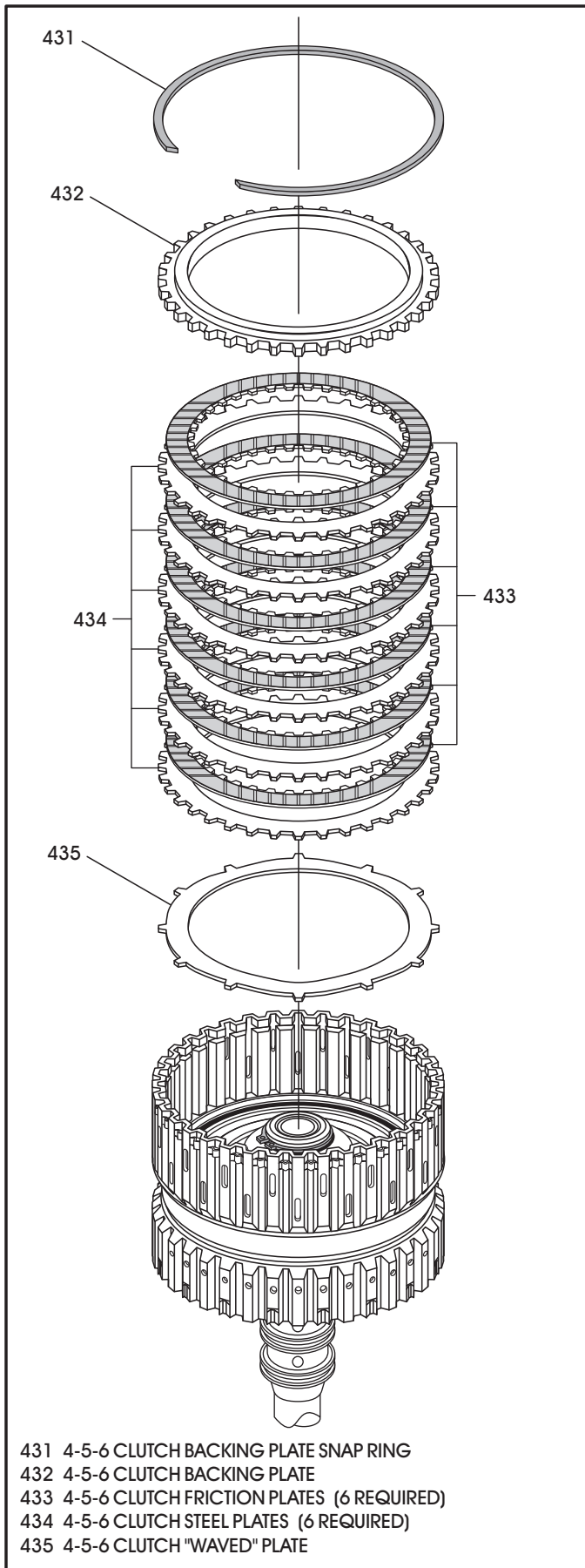


Figure 76

Technical Service Information



- 431 4-5-6 CLUTCH BACKING PLATE SNAP RING
- 432 4-5-6 CLUTCH BACKING PLATE
- 433 4-5-6 CLUTCH FRICTION PLATES (6 REQUIRED)
- 434 4-5-6 CLUTCH STEEL PLATES (6 REQUIRED)
- 435 4-5-6 CLUTCH "WAVED" PLATE

Figure 78

4-5-6 CLUTCH HOUSING ASSEMBLY

11. Install the 4-5-6 clutch "wave" plate, as shown in Figure 78.
12. Install the 4-5-6 clutch plates beginning with a steel plate and alternating with friction plate until you have installed 6 of each, as shown in Figure 78.
13. Install the 4-5-6 clutch backing plate, as shown in Figure 78.
14. Install the 4-5-6 clutch backing plate selective snap ring, as shown in Figure 78.
15. Install and zero dial indicator on 4-5-6 clutch housing, as shown in Figure 79.
16. While one finger blocks top passage in turbine shaft, apply regulated air to the opposite top hole and observe dial indicator reading, as shown in Figure 79.
17. Change the selective snap ring as necessary, to get 1.28-1.89mm (.050" - .074"), using the chart in Figure 80

Continued on Page 52

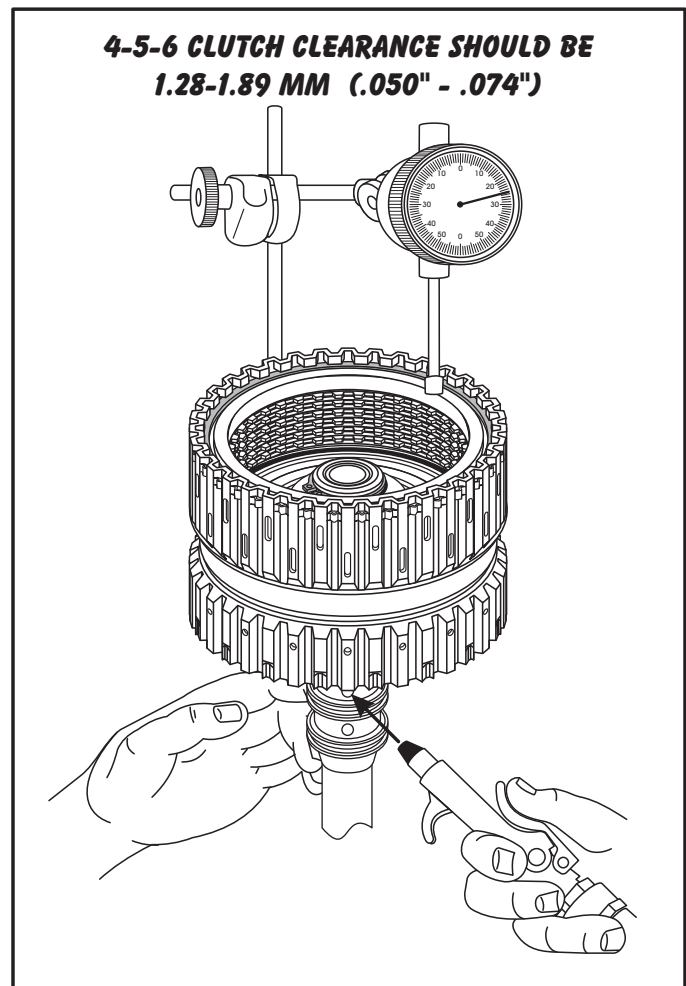
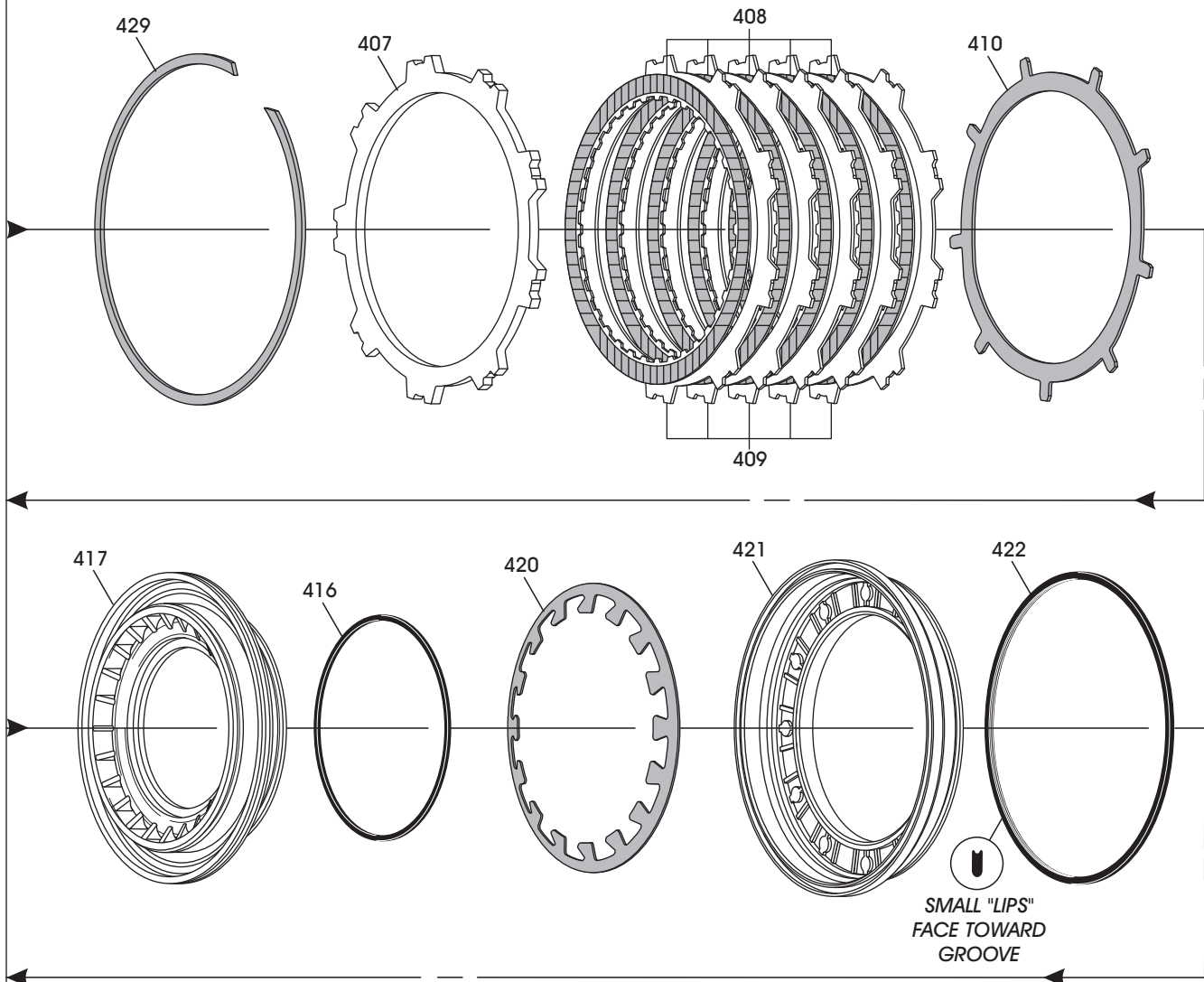


Figure 79

Technical Service Information

1-2-3-4 AND 3-5 REVERSE CLUTCH HOUSING EXPLODED VIEW



- 400 3-5 REVERSE CLUTCH BACKING PLATE SNAP RING
- 401 3-5 REVERSE CLUTCH BACKING PLATE
- 402 3-5 REVERSE CLUTCH FRICTION PLATES
- 403 3-5 REVERSE CLUTCH STEEL PLATES
- 404 3-5 REVERSE CLUTCH "WAVED" PLATE
- 405 3-5 REVERSE CLUTCH APPLY RING
- 407 1-2-3-4 CLUTCH BACKING PLATE
- 408 1-2-3-4 CLUTCH FRICTION PLATES
- 409 1-2-3-4 CLUTCH STEEL PLATES
- 410 1-2-3-4 CLUTCH "WAVED" PLATE
- 411 1-2-3-4 CLUTCH BALANCE PISTON SNAP RING
- 412 1-2-3-4 CLUTCH BALANCE PISTON
- 413 1-2-3-4 CLUTCH APPLY PISTON "BELLVILLE" RETURN SPRING
- 414 1-2-3-4 CLUTCH APPLY PISTON
- 415 1-2-3-4 CLUTCH PISTON HOUSING SNAP RING
- 416 1-2-3-4 CLUTCH APPLY PISTON SEAL

- 417 1-2-3-4 CLUTCH APPLY PISTON HOUSING
- 418 3-5 REVERSE CLUTCH PISTON DAM SEAL
- 419 3-5 REVERSE CLUTCH PISTON INNER SEAL (1ST DESIGN)
- 420 3-5 REVERSE CLUTCH APPLY PISTON "BELLVILLE" SPRING
- 421 3-5 REVERSE CLUTCH APPLY PISTON
- 422 3-5 REVERSE CLUTCH PISTON OUTER SEAL
- 423 1-2-3-4 CLUTCH PISTON INNER SEAL
- 424 1-2-3-4 CLUTCH PISTON HOUSING SEAL
- 425 1-2-3-4 CLUTCH PISTON HOUSING SEAL
- 426 3-5 REVERSE CLUTCH HOUSING REAR BUSHING
- 427 3-5 REVERSE CLUTCH HOUSING ASSEMBLY
- 428 3-5 REVERSE CLUTCH HOUSING BEARING ASSEMBLY
- 429 1-2-3-4 CLUTCH BACKING PLATE SNAP RING

Figure 88

Technical Service Information

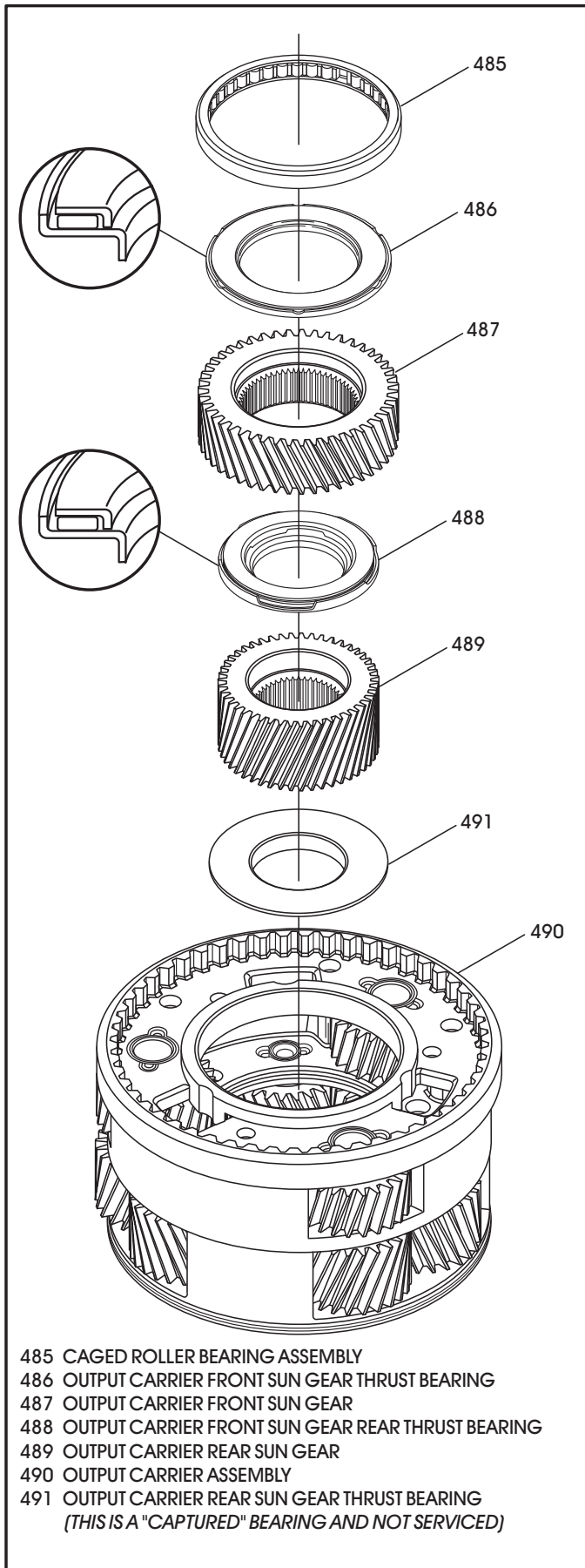


Figure 124

REAR CARRIER AND OUTPUT SHAFT (CONT'D)

5. Disassemble the rear planetary carrier using Figure 124 as a guide.
6. Remove and discard the center support roller bearing using a slide hammer, as shown in Figure 125.
7. After bearing removal, remove parts, as shown in Figure 124.

Note: Always install new roller bearing (485).

Note: The last bearing is a captured bearing and is not serviced. If this bearing (491) is damaged, it will require a carrier.

Continued on Page 76

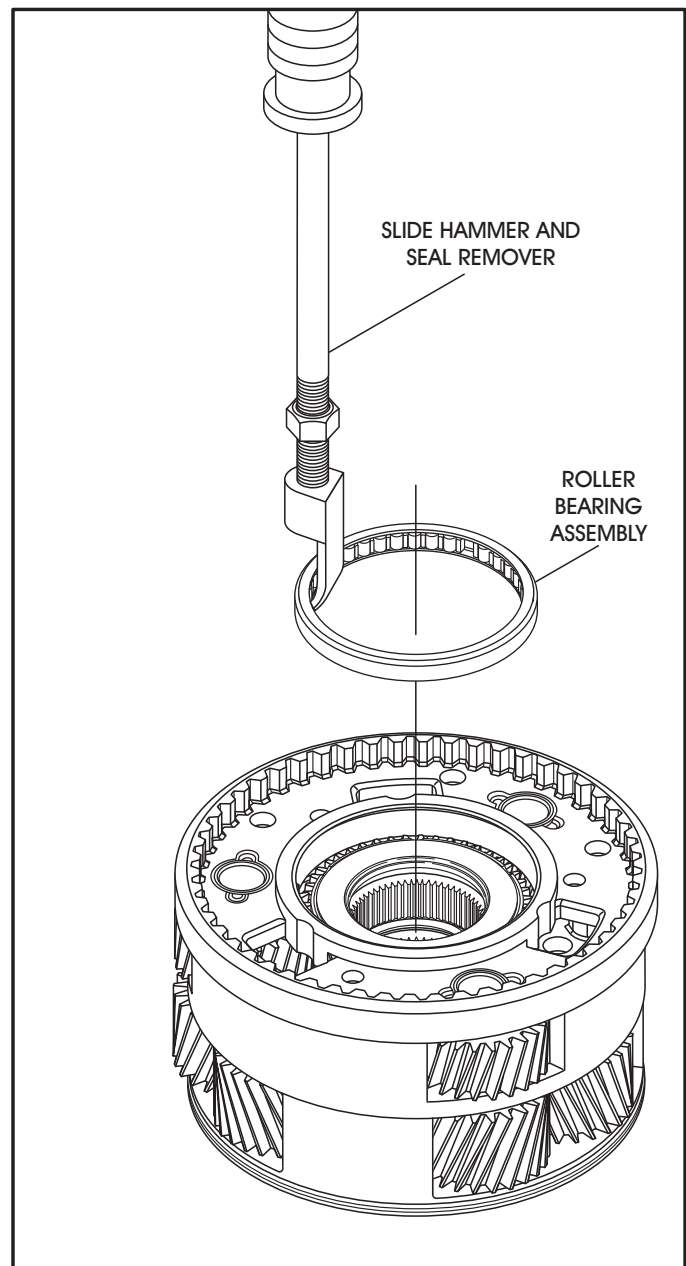


Figure 125

Technical Service Information

FINAL ASSEMBLY

INTERNAL COMPONENTS

1. Rotate transmission case in fixture so that rear of preassembled case is facing up, as shown in Figure 153.
2. Lubricate rear case bushing and rear seal inside diameters with a small amount of Trans-Jel®, as shown Figure 153.
3. Install the output shaft to case thrust bearing into case, in the direction shown in Figure 154.
4. Ensure the DT-47786 lifting tool is completely threaded into the output shaft assembly, as shown in Figure 154. Due to the weight of the assembly, incomplete threading may let the assembly break free, causing damage/injury.
5. Install the pre-assembled output shaft assembly into the case, as shown in Figure 154, using the DT-47786 lifting tool.

Continued on Page 90

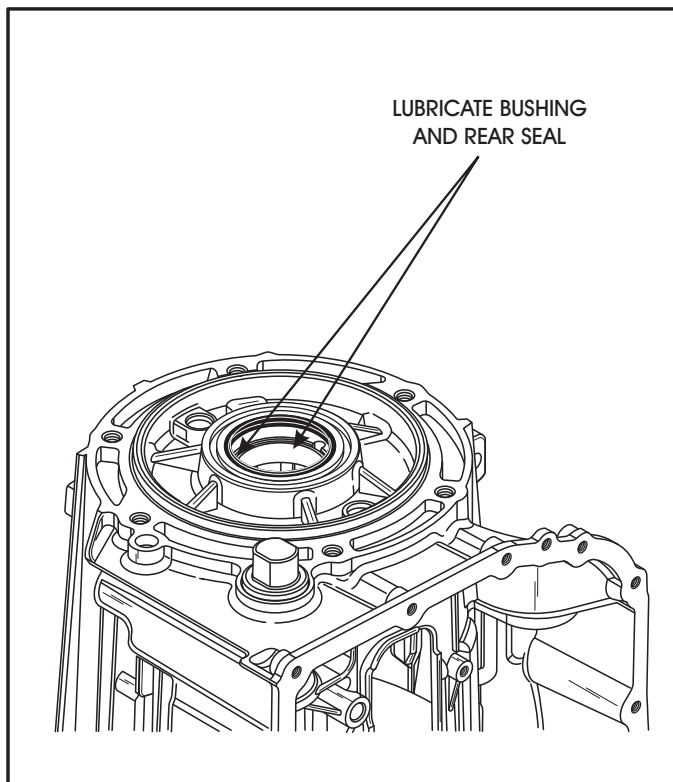


Figure 153

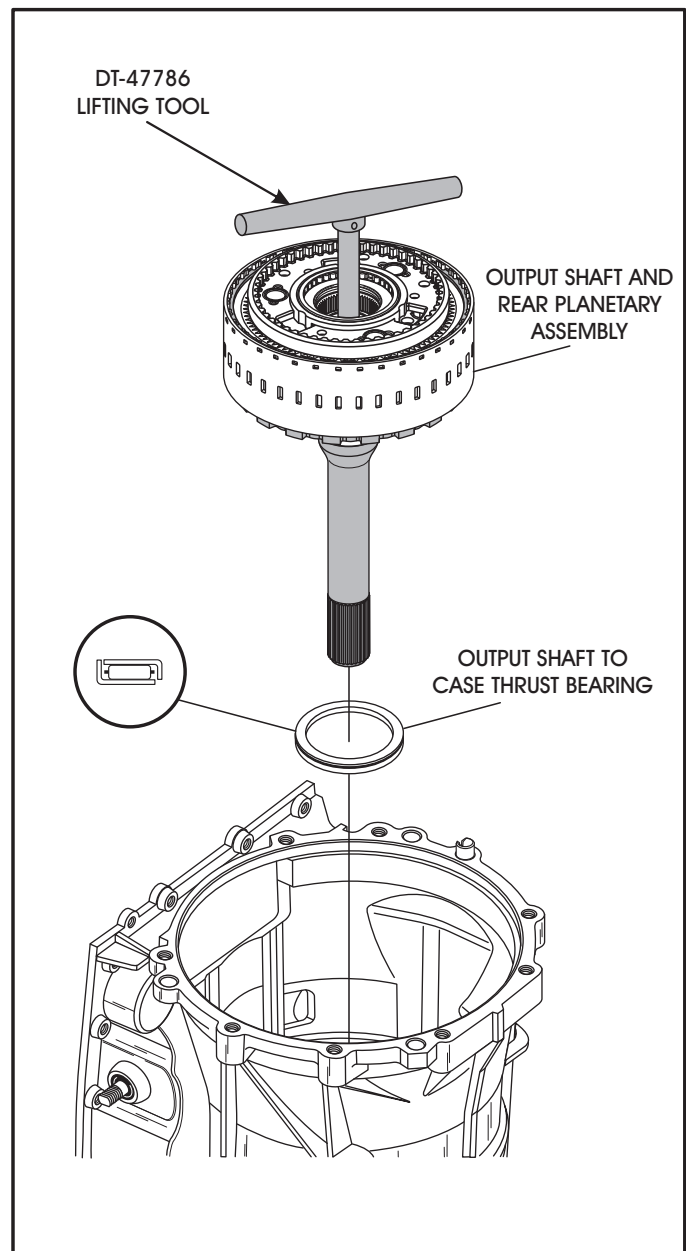


Figure 154

Technical Service Information

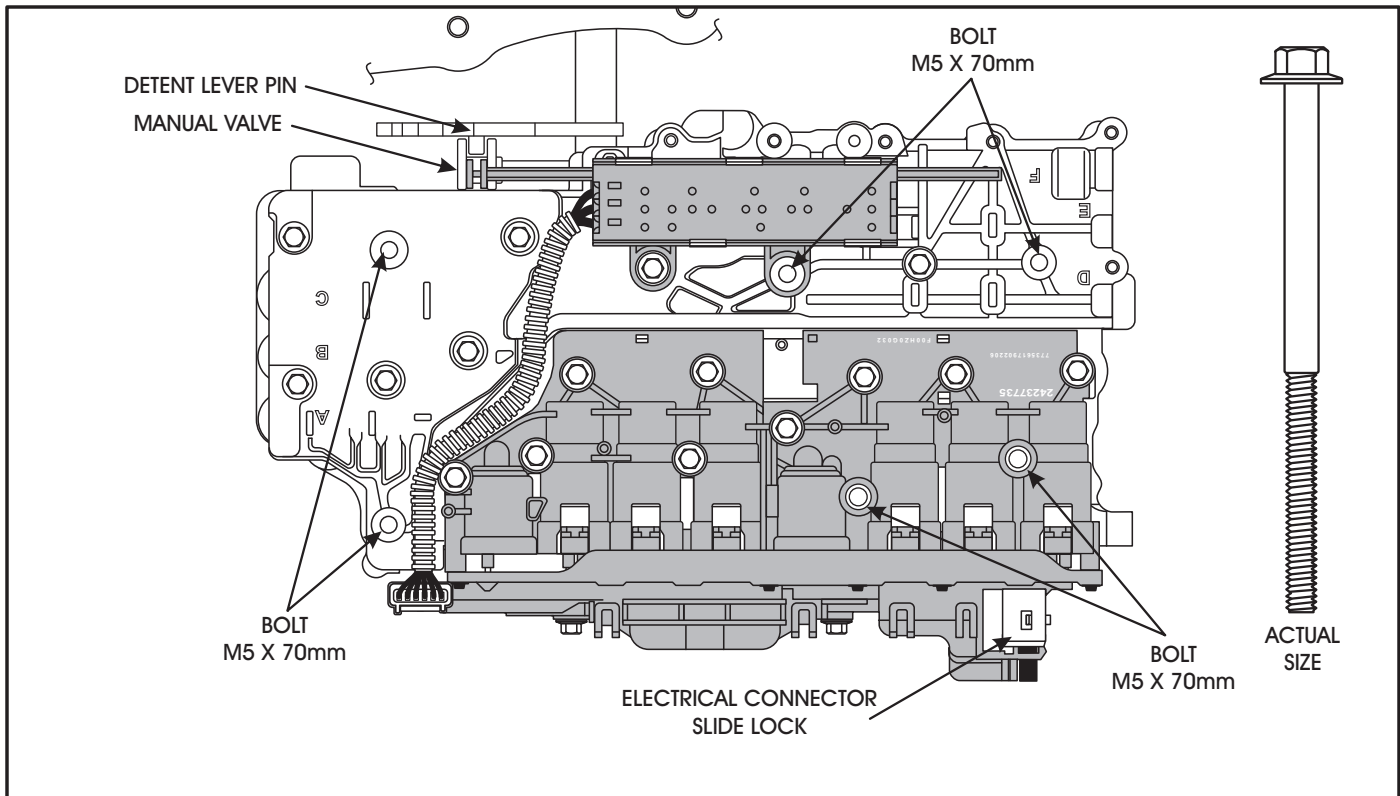


Figure 171

FINAL ASSEMBLY

INTERNAL COMPONENTS (CONT'D)

39. If not already done, install new filter seal into oil pump bore, as shown in Figure 172, using the proper seal driver.
40. Install a new oil filter assembly, as shown in Figure 172.
41. Install the detent spring and roller, as shown in Figure 172, torque bolt to 12 N·m (106 in.lb.).
Note: Ensure roller is centered over inside detent lever.

Continued on Page 98

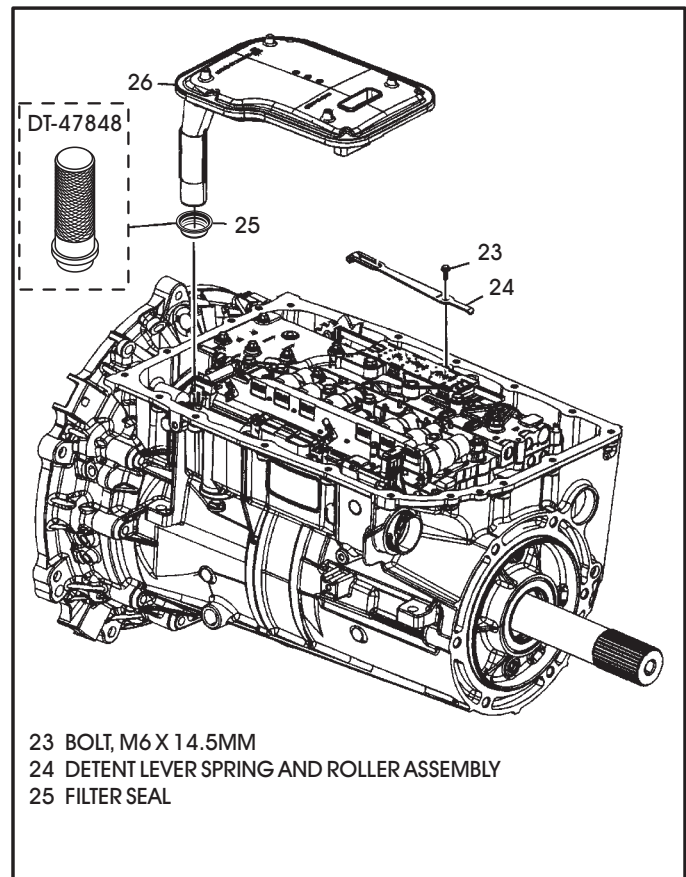


Figure 172

Technical Service Information

<i>6L80 Transmission General Specifications</i>		<i>6L80 Pump Selective Specifications</i>		
RPO Codes	MYC	Important		
Production Location	Ypsilanti MI (USA)	Rotor and slide must be chosen from the same size classification as the oil pump body. Allowable rotor and slide to oil pump body end play		
Transmission Drive	Rear Wheel Drive	Slide to Pump Body Face 0.020-0.051 mm (0.0008-0.0020 in.)		
1st Gear Ratio	4.027	Rotor to Pump Body Face 0.020-0.038mm (0.0008-0.0015 in.)		
2nd Gear Ratio	2.364	The oil pump assembly has "selective" rotor and slide components. These components are chosen based on pump body dimensions. Oil pump rotor and slide components are available in three size classifications (1, 2, 3) with the following tolerances.		
3rd Gear Ratio	1.532	PUMP POCKET DEPTH		
4th Gear Ratio	1.152	SIZE CLASSIFICATION	THICKNESS (MM)	THICKNESS (IN)
5th Gear Ratio	0.852	1	17.980-17.994	.7079" - .7084"
6th Gear Ratio	0.667	2	17.994-18.007	.7084" - .7089"
Reverse Gear Ratio	3.064	3	18.007-18.003	.7089" - .7100"
Torque Converter Size	258/300 mm	ROTOR SELECTION		
Pressure Taps	Line Pressure	ROTOR SELECTION	THICKNESS (MM)	THICKNESS (IN)
Fluid Type	Dexron VI®	1	17.948-17.961	.7066" - .7071"
Case Material	Cast Aluminum	2	17.961-17.974	.7071" - .7076"
6L80 Net Weight	100kg (220 lb.)	3	17.974-17.987	.7076" - .7081"
		SLIDE SELECTION		
		SLIDE SELECTION	THICKNESS (MM)	THICKNESS (IN)
		1	17.948-17.961	.7066" - .7071"
		2	17.961-17.974	.7071" - .7076"
		3	17.974-17.987	.7076" - .7081"
CLUTCH BACKING PLATE RETAINING RING SPECIFICATIONS				
1-2-3-4 CLUTCH				
THICKNESS		O.D. COLOR		
2.15-2.25mm (.085" - .089")		YELLOW		
2.42-2.52mm (.095" - .099")		NONE		
2.69-2.79mm (.106" - .110")		PURPLE		
2.96-3.06mm (.117" - .120")		LIGHT BLUE		
3.23-3.33mm (.127" - .131")		ORANGE		
4-5-6 CLUTCH				
THICKNESS		O.D. COLOR		
1.61-1.71mm (.063" - .067")		YELLOW		
2.02-2.12mm (.080" - .083")		NONE		
2.44-2.54mm (.096" - .100")		PURPLE		
3-5 REVERSE CLUTCH				
THICKNESS		O.D. COLOR		
		GRAY		
1.88-1.98mm (.074" - .078")		LIGHT GREEN		
2.15-2.25mm (.085" - .089")		YELLOW		
2.42-2.52mm (.095" - .099")		NONE		
2.69-2.79mm (.106" - .110")		PURPLE		
Important: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing snap ring, and then choose a thicker or thinner snap ring that will bring the measurement within specification.				

Figure 185