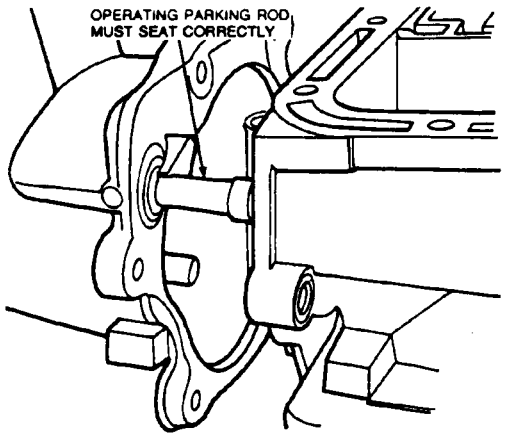
10. Check extension housing area for fluid leaks.

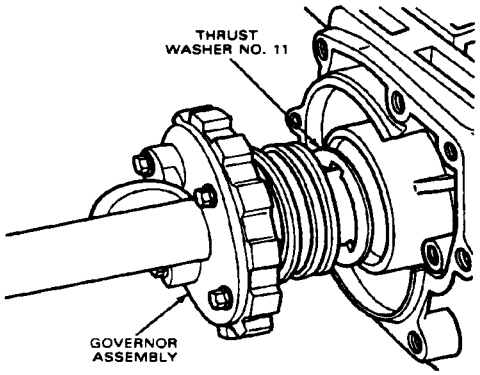


Governor

Removal

1. Remove extension housing as described.
2. Remove governor body to oil collector body attaching bolts.
3. Remove governor body, valve, spring and weight from collector body.

   NOTE: Components are not retained once the governor body to oil collector body attaching bolts have been removed. It is therefore necessary to hold the governor body and components while removing or installing.



Installation

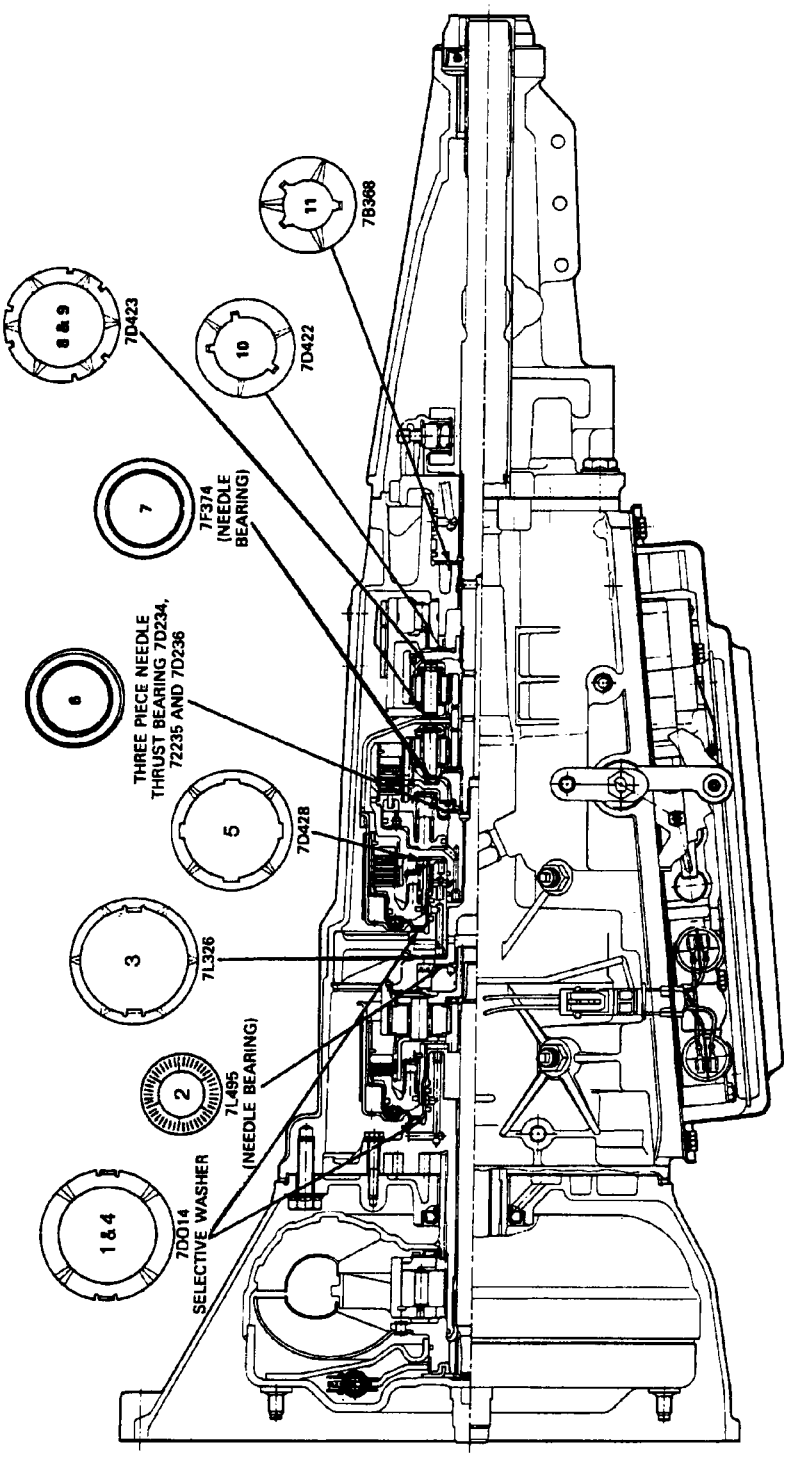
1. Assemble governor body and components.
2. Position governor body over the oil feed holes of the oil collector body.
3. Install governor body to oil collector body attaching bolts and tighten to specification.
4. Install extension housing as outlined.

DISASSEMBLY AND ASSEMBLY

NOTE: Before beginning the transmission overhaul, review the following guidelines. These general rules are provided to emphasize the need for attention to detail and care when servicing an automatic transmission.

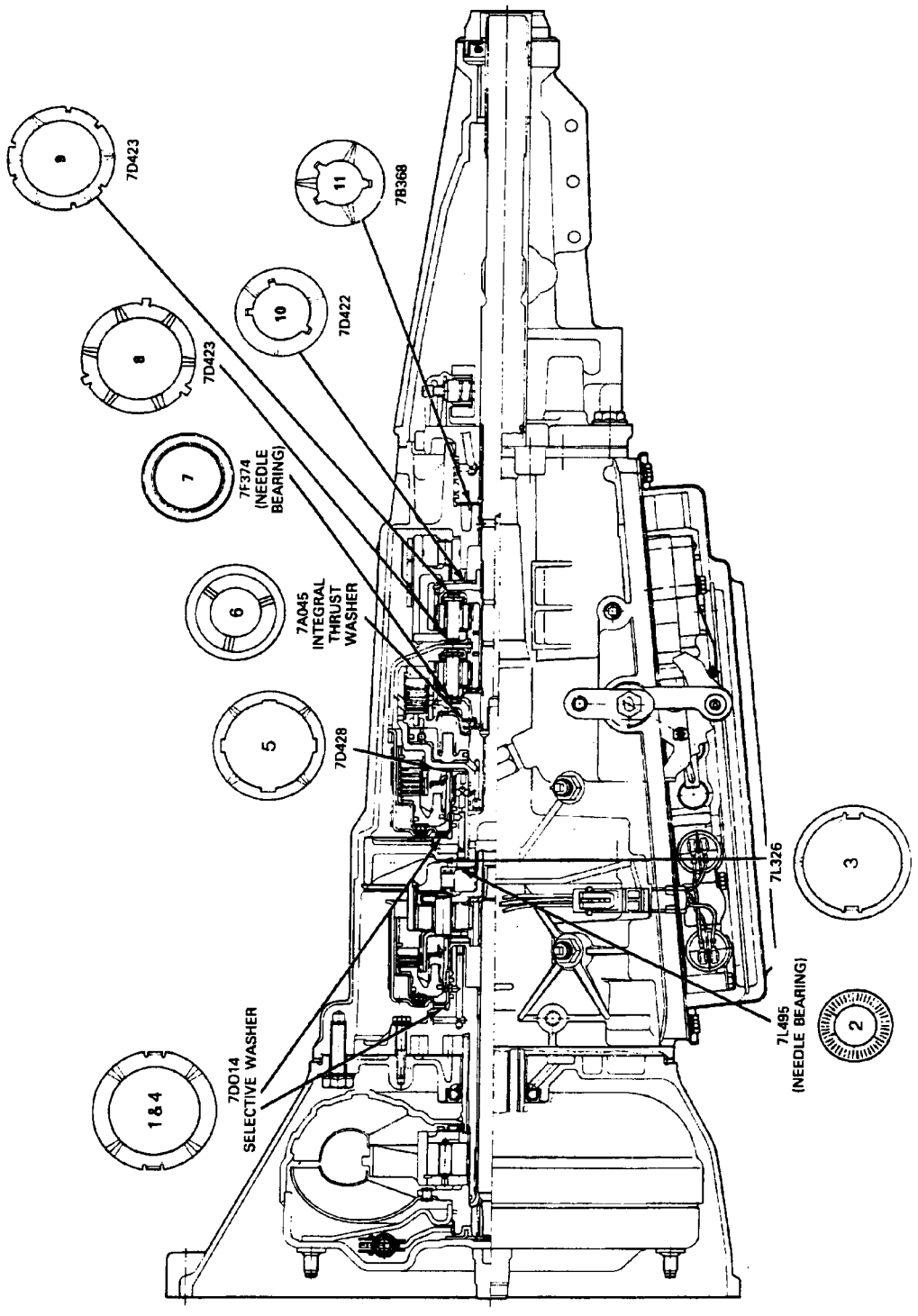
- If the transmission is being removed for major overhaul, it is important to completely clean all transmission components including converter, cooler, cooler lines, main control valve body, governor, all clutches, and all check balls after any transmission servicing that generates contamination. These contaminants are a major cause of recurring transmission troubles and must be removed from the system before the transmission is put back into service.
- Thorough cleaning of the transmission exterior will reduce the possibility that damaging contaminants might enter the sub-assemblies during disassembly and assembly.
- All fasteners must be tightened to specification.
- When building up sub-assemblies, each component part should be lubricated with clean transmission fluid. It is also good practice to lubricate the sub-assemblies as they are installed in the case.
- Needle bearings, thrust washers and seals should be lightly coated with petroleum jelly during sub-assembly buildup or transmission assembly.
- Many components and surfaces in the transmission are precision machined. Careful handling during disassembly, cleaning, inspection and assembly can prevent unnecessary damage to machined surfaces.
- When building up sub-assemblies or assembling the transmission, aways use new gaskets and seals.
- The transmission service area should be kept clean, well organized and supplied with clean lint-free shop cloths.
- Whenever a seal is removed from a piston, shaft or servo, note the type of seal and when applicable, the direction of the sealing lip.
- Always use the specified transmission fluid when lubricating seals or other components prior to assembly. Refer to Specifications.

4.0L Engines

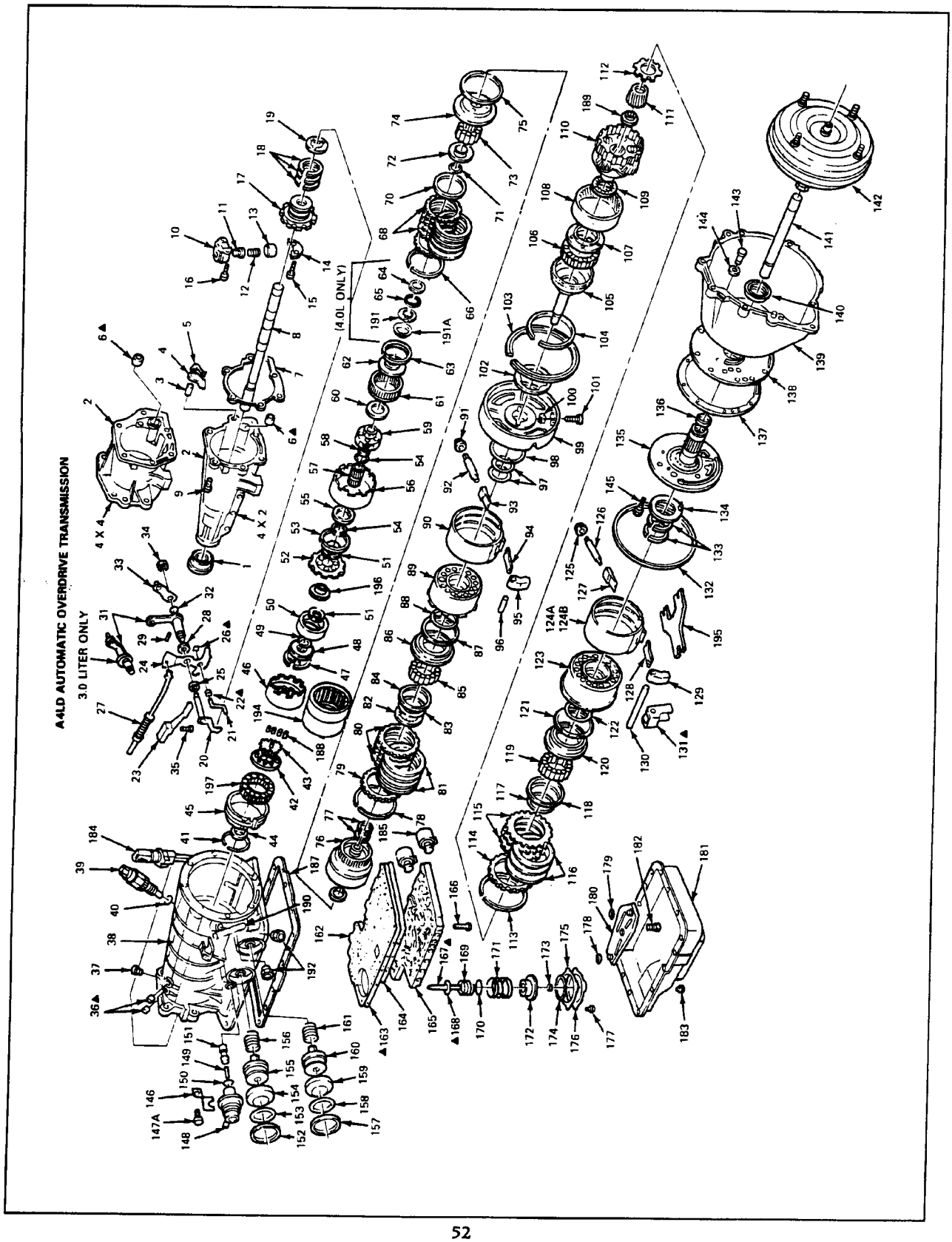


THRUST WASHER LOCATION AND IDENTIFICATION
A4LD TRANSMISSION 4.0L ENGINES

2.3L, 2.9L and 3.0L Engines



THRUST WASHER LOCATION AND IDENTIFICATION
A4LD TRANSMISSION 2.3L, 2.9L AND 3.0L ENGINES


A4LD AUTOMATIC OVERDRIVE TRANSMISSION
3.0 LITER ONLY
4 X 4
4 X 2
(4.0L ONLY)

KEY TO EXPLODED VIEW — A4LD TRANSMISSION

Ref. No.	Basic Part No.	Description
1	7052	Seal Assy (Ext. Hsg.) Oil
2	7A039	Housing (Extn.)
3	7D071	Shaft (Parking Pawl)
4	7A441	Pawl (Parking)
5	7D070	Spring (Parking Pawl Return)
▲ 6	7D419	Cup — Parking Rod Guide
7	7086	Gasket (Extn. Hsg.)
8	7060	Shaft Assy (Output) 4.0L Vehicle, Shaft has no Lube Hole
* 9	E800152-S72	Screw — Extension to Case
10	7A300	Body — Gov. Valve
11	7C054	Valve (Governor Primary)
12	7A302	Spring (Governor Valve)
13	7D324	Weight — (Governor Outer)
14	7F124	Counterweight — Governor
15	E602164-S72	Bolt (Gov. Body to Collector Body) — (2 Req'd)
16	E800156-S	Bolt — M6 x 20 (Gov. Body to Collector Body) — 2 Req'd)
17	7D220	Body (Gov. Oil Collector)
18	7D011	Ring (Gov. Hsg. Seal) — (3 Req'd)
19	7B368	Washer (Output Shaft Thrust Gr) — #11
20	7D261	Lever Assy — Dwn/Shft Det. — Inner
21	7E333	Pin — Man. Vlv. Det. Lever — Inner
▲22	E630020-S	Washer — Flat Steel
23	7E332	Spring Assy — Man. Vlv. Detent
24	7C494	Lever — Manual Valve
25	E820112-S	Nut (Lev. to Lev. Assy Dwn/Shft Det. Inner)
▲26	E662312-S	Clip — Rod Retaining
27	7D410	Rod Assy — Park Pawl Actu.
28	7B498	Seal Assy — Main Control Lvr. Oil
29	E840125-S	Pin — Spring Roller (Retain Outer Man. Lvr. Assy.)
31	7A256	Lever Assy — Manual Control
32	386078-S	O Ring — Outer Man. Lvr. Shaft Oil
33	7A394	Lever Assy — Dwn/Shft Cntl — Outer
34	E820109-S72	Nut — Hex M8 x 1 (Outer Man. Lvr. to Shaft)
35	E800185-S72	Screw M6 x 30 (Valve Body to Case)
▲36	E840115-S	Pin — Rev. Band Anchor (2 Req'd)
37	7034	Vent Assy — Case
38	7005	Case Assembly
39	7A247	Switch Assy — Gr. Shift Neutral
40	E853116-S	Seal — O Ring
41	E860120-S	Ring — Retaining 4.0L
42	7D191	Retainer — Overrun Cl. Spring 2.3L, 2.9L & 3.0L
43	7D170	Spring — Overrun Clutch 2.3L, 2.9L & 3.0L
44	7D422	Washer (O.P. Shaft Hub Thrust #10)
45	7D095	Band Assy. — Reverse
46	7C498	Drum Assy (Rev. Brake) 2.3L, 2.9L & 3.0L
47	E860122-S	Ring 87 mm Retain Forward Ring Gear to Hub
48	7D164	Hub — Output Shaft — 57 Ext — 34 Int Teeth
49	E661125-S	Retaining Ring 25 x 1.2
50	7A153	Gear — Output Shaft Ring
51	7D423	Washer — Planet Carrier Thrust — (2 Req'd) #8 and #9
52	7D006	Planet Assy (Rev.)
53	E860119-S	Ring (Planet to Drum) Except 4.0L
54	E860121-S	Ring — 39 mm (Input Shell to Sun Gr. Assy.) — (2 Req'd)
55	7D066	Washer (Input Shell Thrusts)Except 4.0L
56	7D064	Shell (Input)
57	7D063	Gear Assy (Sun)
58	7D235	Brg. Thrust — Sun Gear Race — RR
59	7A398	Planet Assy (Fwd)
60	7F374	Brg. Assy. — Cl. Int. Drum Thrust — #7
61	7D392	Gear (Ring Fwd) 72 Ext. 57 Int. Teeth
62	7D393	Hub (Fwd Ring Gear)
63	E860122-S	Ring — Ret 87 mm (Fwd. Ring Gr. to Hub)
64	7D235	Washer (Fwd. Cyl. Hub Thrust) — #6
65	7D234	Needle Thrust Bearing #6
66	E860115-S	Ret. Ring (Sel. Fit)
67	7B066	Plate (Fwd Clutch Pressure)
68	7B442	Plate (Clutch) Forward
69	7B164	Plate Assy — Clutch (Fwd)
70	7E457	Spring — Forward Clutch Cushion
71	E860109-S	Ring 34 mm (Hub to Fwd. Ring Gear)
72	7D041	Ret (Fwd. Cl. Piston Spring)
73	7C151	Spring — Fwd. Cl. Piston (15 Req'd)
74	7A262	Piston Assy (Fwd. Clutch)
75	7A548	Seal (Clutch Piston Oil)
76	7D424	Cyl. Assy. (Fwd. Clutch)
77	7D019	Seal (Fwd Clutch Cyl.) — 2 Req'd
78	E860126-S	Ret Ring (Select Fit)
79	7B066	Plate (Clutch Press) Rev.
80	7B442	Plate (Clutch) High
81	7B164	Plate Assy. (Clutch) High
82	7D428	Washer (Intm. Brake Drum Thrust) — #5
83	E860125-S	Ring 63 mm (High Cl. Pst. In Int. Brk. Drum)
84	7D041	Ret. (Rev. Clutch Piston Spring) — 8 Tabs
85	7C151	Spring (Rev. Clutch Piston) 20 Req'd
86	7A258	Piston (Rev. Clutch)
87	7A548	Seal (Clutch Piston Oil)
88	7D404	Seal (High Clutch Piston Inner)
89	7D044	Drum Assy (Interm. Brake)
90	7D034	Band Assy (Interm. Servo)
91	388307-S100	Net & Seal — Hex
92	7C492	Screw (Rev. Band Adj.)
93	7D430	Strut (Interm. Brk. Band Anchor)
94	7D029	Strut (Interm. Brk. Band Apply)
95	7D396	Lever (Interm. Band Servo)
96	7D433	Shaft (Interm. Band Act. Lever)
97	7D429	Seal Ring (High Clutch) 2 Req'd — Viton
98	7D014	Washer (Frt. Pump Input Thrust) — Sel. Fit — #4
99	7G033	Support Assy — Center O/D
100	E826160-S76	Nut & Cage Assy S/L Mtl. M6
101	E804373	Screw Cap — Hex 8.8 M6 x 15
102	7L326	Washer (Center Support Thrust) — #3
103	E860366-S	Ring Retaining (Retain 7G033 In Case)
104	E860119-S	Ring — Ret. (110.1 mm x 1.6) Except 4.0L
105	7A658	Shaft — Center Assy — O/D
106	7C109	Clutch Assy — Overrun — O/D
107	7L339	Washer — Over Clutch — O/D
108	7653	Gear — O/D Ring
109	7L495	Brg. Assy — O/D Inner Race — #2
110	7B446	Carrier Assy — Plt. Gear — O/D
111	7D063	Gear Assy — Sun O/D
112	7660	Adapter — O/D Clutch
113	E860126-S	Ring — Retaining (Sel. Fit)
114	7B006	Plate — O/D Clutch Pressure
115	7B442	Plate — O/D Clutch
116	7B164	Plate Assy — O/D Clutch Int. Spline
117	E860125-S	Ring — Ret. 63 mm (O/D Cl. Pst. to O/D Brk. Drum)
118	7D041	Retainer — O/D Cl. Pst. Spring — 8 Tabs
119	7C151	Spring — O/D Cl. Piston (20 Req'd)
120	7A258	Piston — O/D Clutch

*All light trucks transmissions use (4) E800152-S72 Screws and (2) E804137-S72 Studs.

KEY TO EXPLODED VIEW — A4LD TRANSMISSION (Cont'd.)

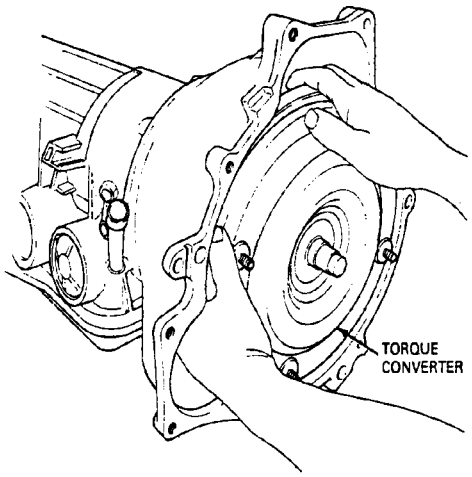
Ref. No.	Basic Part No.	Description
121	7A548	Seal — O/D Cl. Piston — Outer
122	7D404	Seal — O/D Cl. Piston — Inner
123	7L669	Drum Assy — O/D
124A	7D034	Band Assy — O/D, 2.3L, 2.9L, 3.0L
124B	7F196	Band Assy — O/D 4.0L (not shown)
125	388307-S100	Nut & Seal — Hex
126	7C492	Screw — O/D Band Adj.
127	7D430	Strut — O/D Brk. Drum Anchor
128	7D029	Strut — O/D Brk. Drum Apply 2.3L, 2.9L & 3.0L
129	7D396	Lever — O/D Band Servo
130	7D433	Shaft — O/D Band Adj. Lever
▲131	7A653	Bracket — O/D
132	7D441	Seal (Front Oil Pump)
133	7D429	Seal (Interm. Brk. Drum) — 2 Req'd
134	7D014	Washer (Frt. Pump Input Thrust) Sel. Fit — #1
135	7L201	Support & Gear Assy (Frt. Pump)
136	7L323	Seal (Front Pump Support)
137	7A136	Gasket — Oil Pump
138	7B472	Plate (Oil Pump Adaptor)
139	7975	Hsg. Assy — Converter
140	7A248	Seal Assy (Frt. Oil Pump)
141	7017	Input Shaft
142	7902	Converter Assembly
143	E804594-S	Screw M10 x 30 (Conv. Hsg. to Case) 8 Req'd
144	E854104-S	"O" Ring
145	E804372-S72	Bolt — Flg. Hd. 8.8 x M8 x 35.0 (Pump Supt. Assy to Conv. as Assy) 5 Req'd
146	7E458	Clamp — TV Control Diaphragm
147	E800341-S72	Bolt M6 x 12 mm (Valve Clamp to Case)
147A	E804533-S	Stud-M6 x M6 x 12.0 (2.9L 4x4 and all 4.0L)
148	7A377	Diaphragm Assy — TV Control
149	7A380	Rod — TV Control
150	E853110-S	O'Ring — Throttle Valve
151	7D080	Valve — Throttle Control
152	E860343-S	Ring — Ret. 67 x 15 Intermediate
153	E853170-S	O-Ring — Servo Cover to Case — Interm.
154	7L493	Cover & Seal Assy. Inter. Band Servo
155	7E221	Piston & Rod Assy. — Intermediate
156	7D028	Spring Interm. Band Servo Piston
157	E860343	Ring — Ret. 67 x 15 — O/D
158	E853170-S	Seal — Servo Cover to Case — O/D
159	7L493	Cover & Seal Assy. — O/D Band Servo
160	7E221	Piston & Rod Assy. — O/D
161	7D028	Spring — O/D Band Servo Piston
162	7D100	Gasket — Cont. Vlv. Body. Sep.
▲163	7A008	Plate — Vlv. Body. Separating
164	7D100	Gasket — Cont. Vlv. Body. Separating
165	7A100	Control Assy — Main
166	E800153-S72	Screw M6 x 40 (Valve Body to Case) 19 Req'd
▲167	7D190	Rod — Rev. Band Servo Piston
▲168	E830138-S	Ret. — Rev. Servo Cushion Spring
169	7E207	Spring — Rev. Servo Accum.
170	7423	Seal — Rev. Brd. Servo Pst. Oil — Small
171	7D031	Spring — Rev. Servo Piston
172	7D030	Piston & Rod Assy — Rev. Servo
▲173	E860167-S	Ring Retainer (Ret. Rod to Piston)
174	7423	Seal — Rev. Brd. Servo Ret. Oil — Large
175	7L173	Gasket — Rev. Servo Sep. Plate Cover
176	7D036	Cover — Rev. Brd. Servo Piston
177	E800156-S72	Bolt M6 x 20 (Rev. Servo to Vlv. Bdy.) 4 Req'd
178	E853137-S	O'Ring — Oil Screen Assy — Small
179	E853132-S	O'Ring — Oil Screen Assy — Large
180	7A098	Screen Assy — Oil Pan
181	7A364	Oil Pan
182	E800154-S72	Screw — M6 x 45 (Vlv. Bdy. to Case) 5 Req'd
183	E800158-S72	Screw — M8 x 14 (Oil Pan to Case) 18 Req'd
184	14488	Connector — Conv. Cl. Overide3-4 Shift
185	6916	Solenoid Assy — Converter Clutch
186	6916	Solenoid Assy — 3-4 Shift
187	7A191	Gasket — Oil Pan
188	7190	Roller Overrun Clutch 2.3L, 2.9L & 3.0L
189	7D235	Race-Sun Gear Thrust Brg. — Rear
190	7M463	Tube-Lube Oil Inlet — Short
191	7D236	Washer — Fwd. Ring Gear Thrust — #6
191A	7D0901	Washer — Fwd. Clutch Thrust
192	N804798-S100	Connector Assy-Oil Tube — 2 Req'd
193	7A045	Integral Thrust Washer 2.3L, 2.9L and 3.0L Engines
194	7C489	Drum Assy (Rev. Brake) 4.0L
195	7F205	Strut-O/D Brk. Drum Apply (4.0L)
196	7B176	Output Shaft Sleeve (4.0L only)
197	7C109	Overrun Clutch — Sprag Type (4.0L only)

Transmission

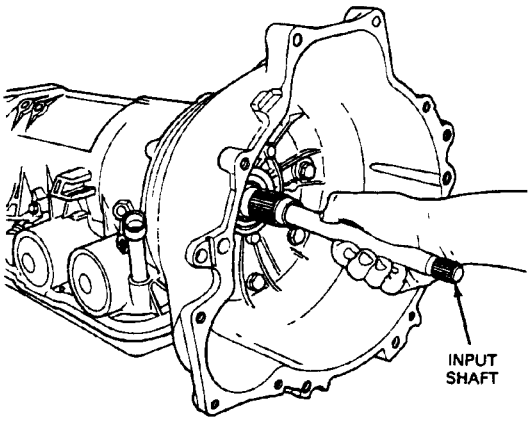
NOTE: Bolt identification sizes for the following procedures indicate the head size, not the thread size.

Disassembly

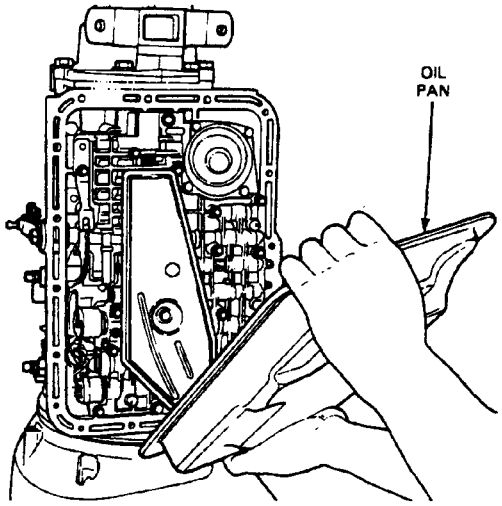
1. Remove torque converter.



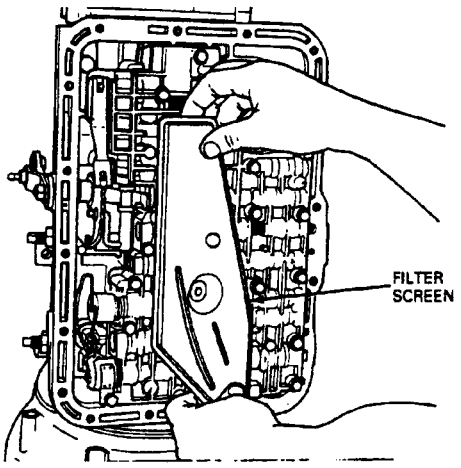
2. Remove input shaft.
   NOTE: The two splined ends are different.



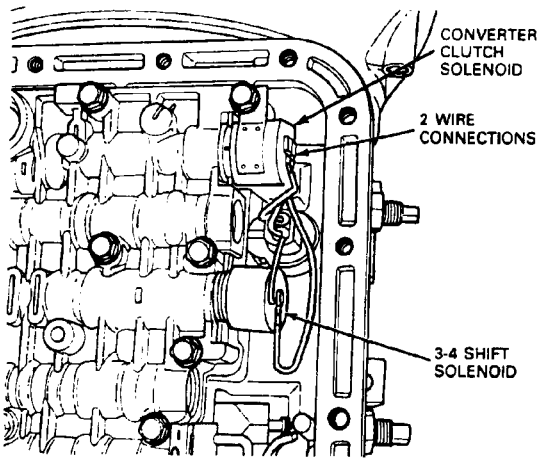
3. Remove eighteen 13mm bolts, then oil pan.



4. Remove 10mm bolt (M6 x 45mm long) then remove filter screen.
5. Remove detent spring.

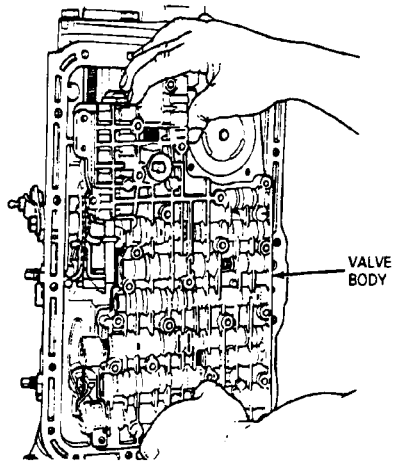


6. Disconnect 2 wires at converter clutch solenoid. Disconnect the 2 wires at the 3-4 shift solenoid.

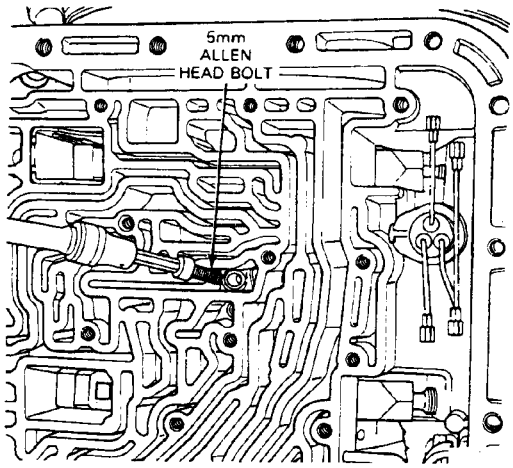


7. Remove twenty five-10mm bolts retaining valve body to case. While easing valve body out of the transmission, unlock and remove selector lever connecting link. Remove valve body and gasket.

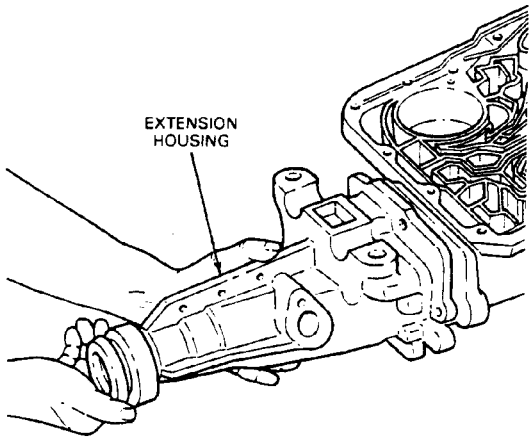
   NOTE: There are four different lengths of bolts—30mm, 35mm, 40mm and 45mm.



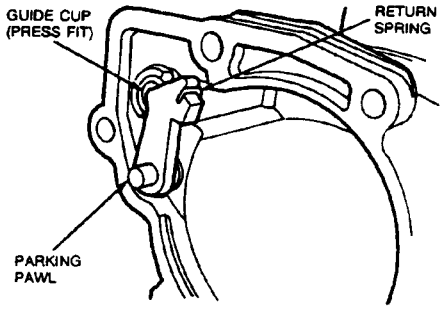
8. Remove 5mm allen-head retaining bolt holding center support.



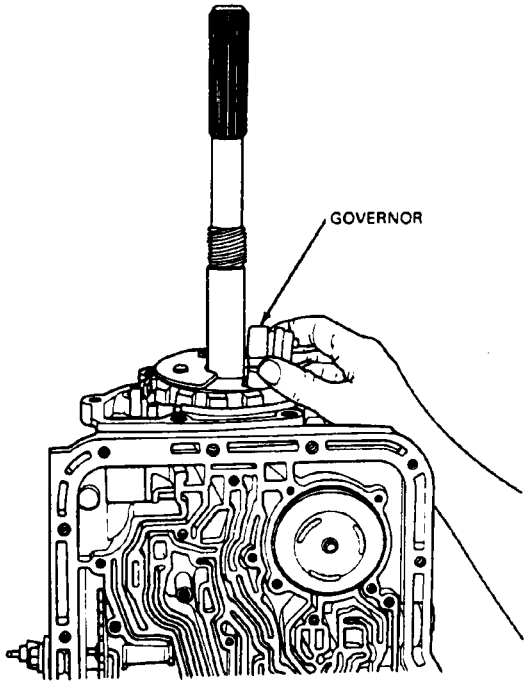
9. Remove six 17mm bolts and studs, then remove extension housing.



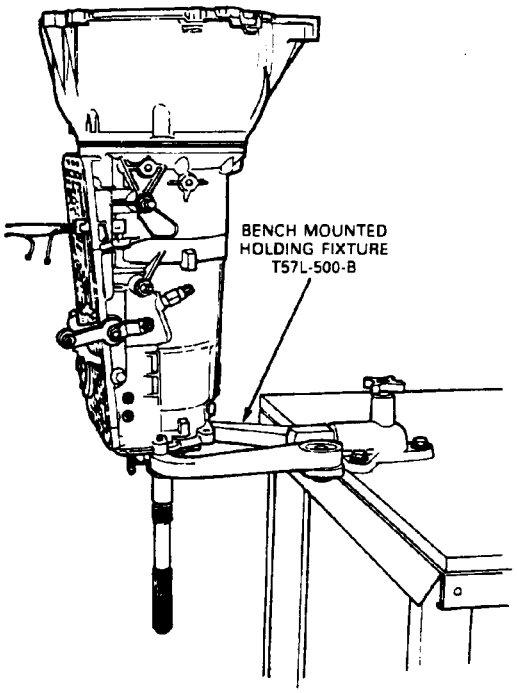
10. Remove the parking pawl and the return spring.



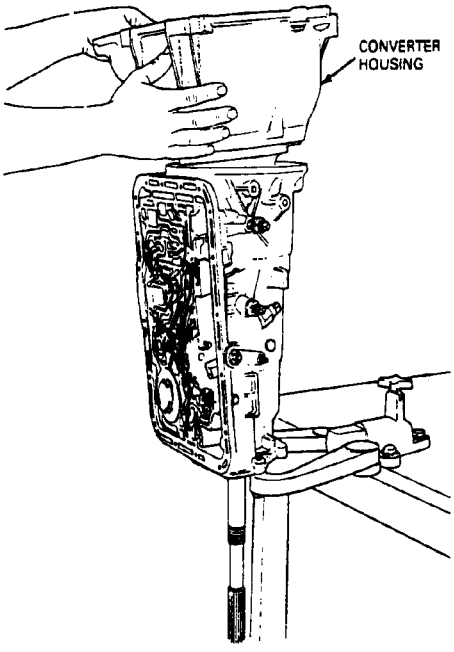
11. Remove two 10mm bolts, then remove governor.



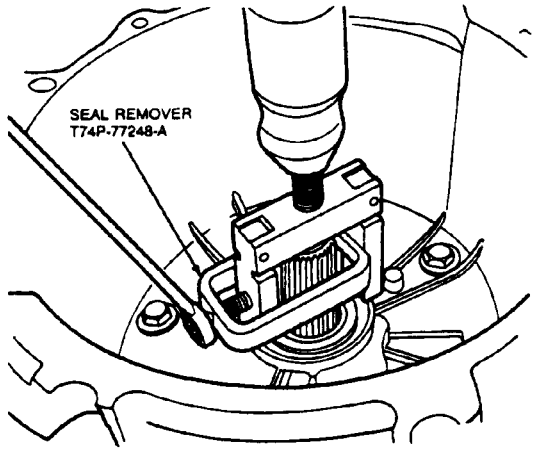
12. Mount transmission in Bench Mounted Holding Fixture T57L-500-B (or equivalent) as shown.
13. Two 10mm bolts, 50mm long will be required.



14. Remove eight 17mm bolts, then remove converter housing and pump as an assembly.
15. Rotate and lift so that clutches will stay in place. Remove the No. 1 thrust washer and the gasket.

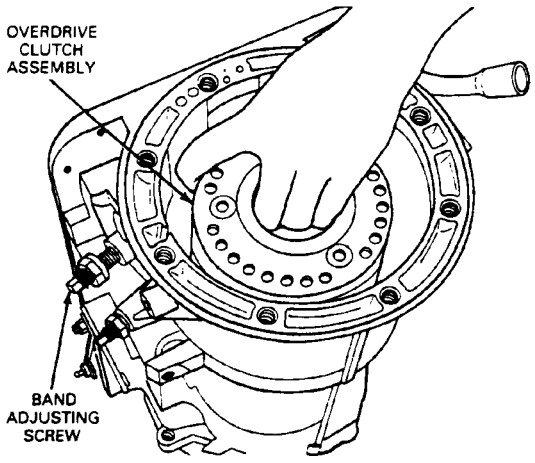


16. Remove hydraulic pump oil seal using Seal Remover T74P-77248-A, or equivalent, with a spanner.
17. Remove the hydraulic pump from the converter housing and remove the steel plate (behind oil seal) with the O-ring.

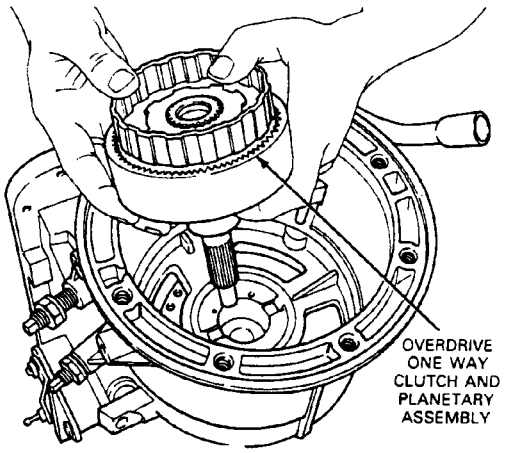


18. Loosen overdrive band lock nut and back off adjusting screw.
19. Lock nut will be discarded and a new nut will be used, as lock nut and seal are one piece.
20. Remove anchor and apply struts.
21. Lift out overdrive clutch assembly and band.

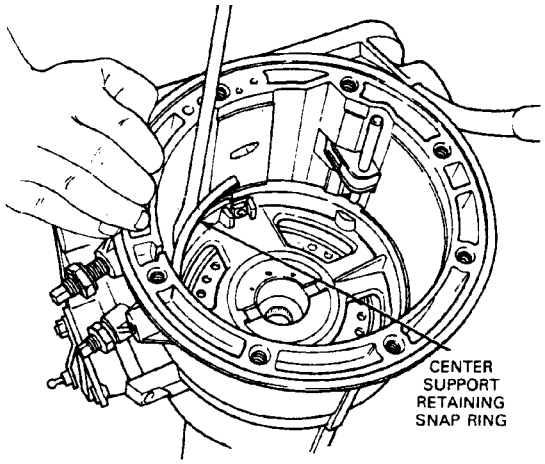
    NOTE: Identify band as "overdrive" and identify either "apply" or "anchor" end for reinstallation in order to distinguish it from the intermediate band. 4.0L applications use a double wrap design band.



22. Lift out overdrive one-way clutch and planetary assembly.

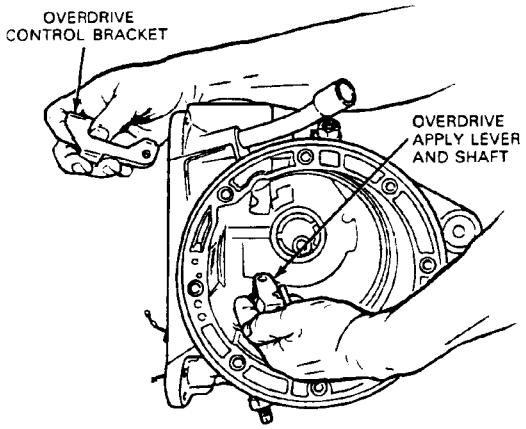


23. Remove center support retaining snap ring.

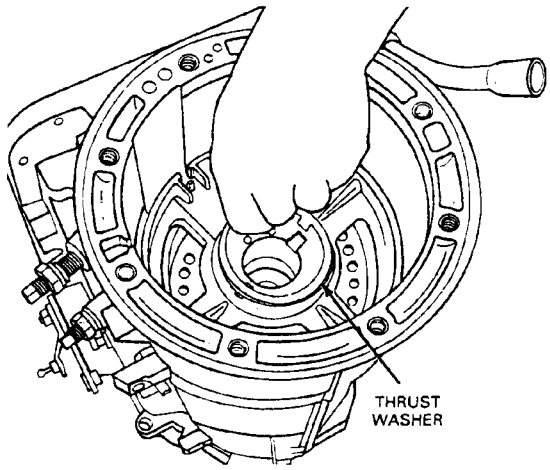


24. Remove overdrive apply lever and shaft.
25. Remove overdrive control bracket from valve body side of case.

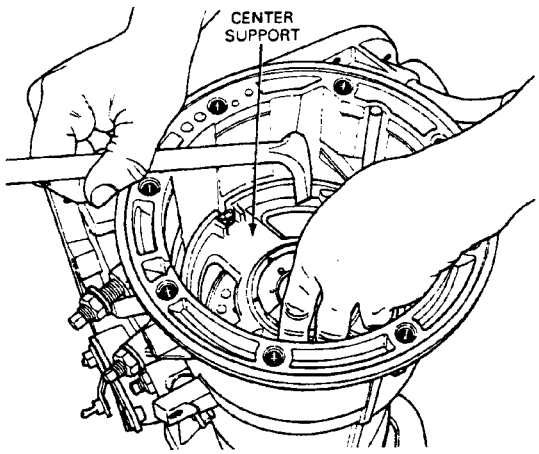
NOTE: The overdrive apply lever does not have a boss on the shaft hole as compared to the intermediate apply lever. The overdrive apply lever shaft is longer as compared to the intermediate apply lever shaft.



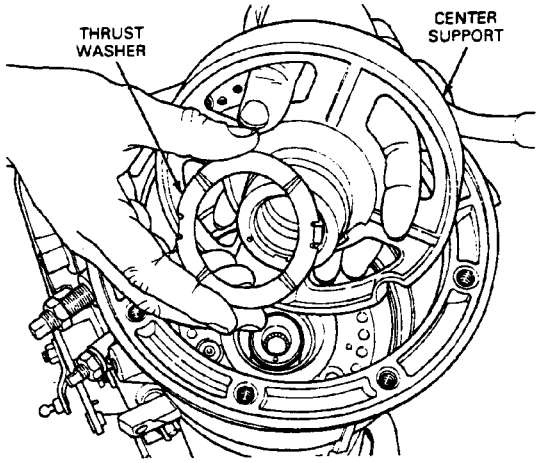
26. Remove thrust washer on top of center support.
NOTE: Identify thrust washer for reassembly.



27. Remove center support being careful to pry upward evenly.

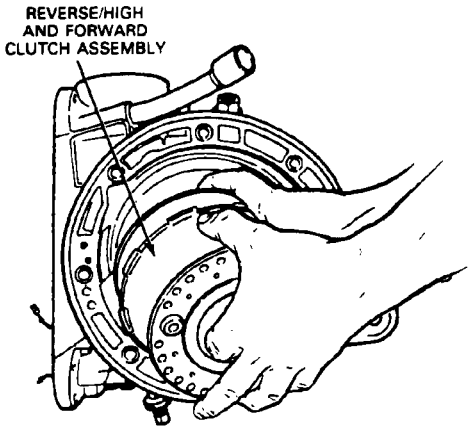


28. Remove thrust washer below center support.
NOTE: Identify thrust washer for reassembly.



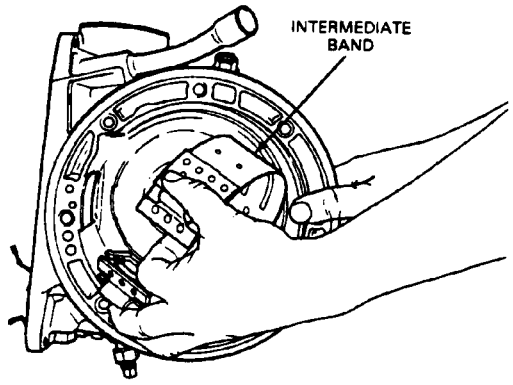
29. Loosen intermediate band lock nut and back off adjusting screw.
30. Lock nut will be discarded.
31. Turn transmission in holder, down 90 degrees.
32. Remove anchor and apply struts.

33. Remove reverse / high and forward clutch assembly.



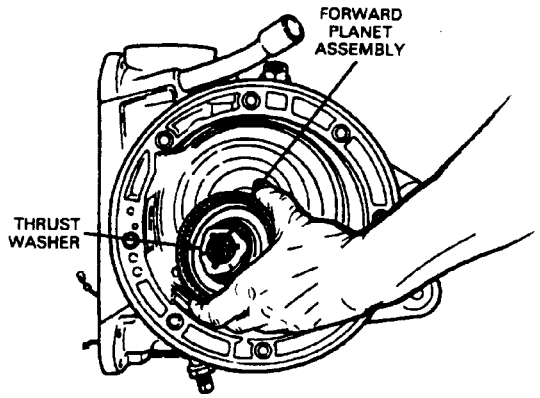
34. Remove intermediate band.

NOTE: Identify band as "Intermediate" and identify which end is "apply" or "anchor" side for reinstallation purposes.

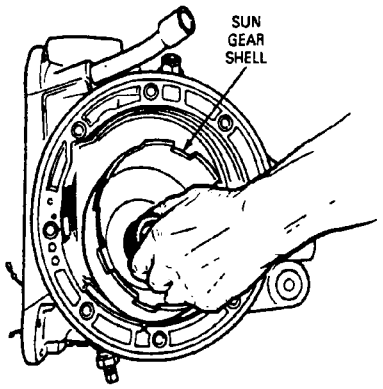


35. Remove forward planet assembly. Depending on application, some vehicles will have transmissions with aluminum planet carrier assemblies and some will have stamped steel planet carrier assemblies.

36. Note and identify No. 6 thrust washer, or thrust bearing.

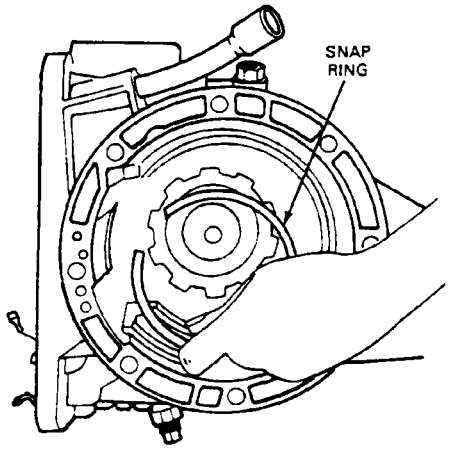


37. Remove sun gear shell.

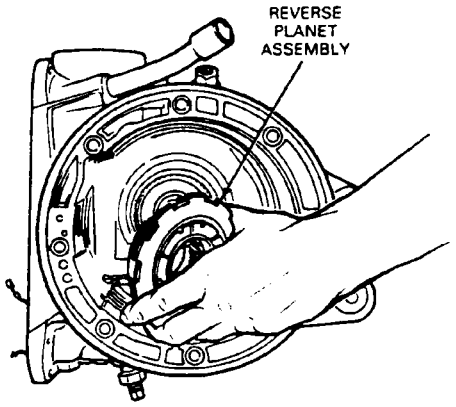


38. For all applications except 4.0L; remove large snap ring from reverse planet gear carrier.

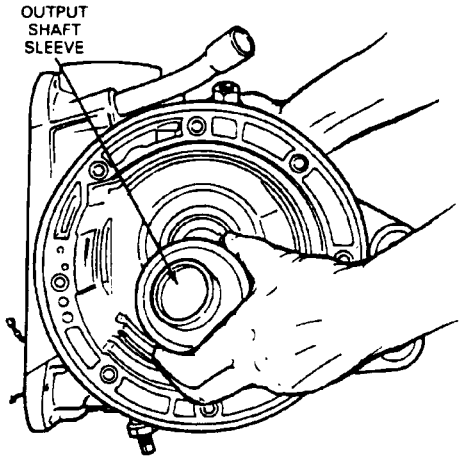
NOTE: Transmissions used with 4.0L engines do not use a snap ring at this location.



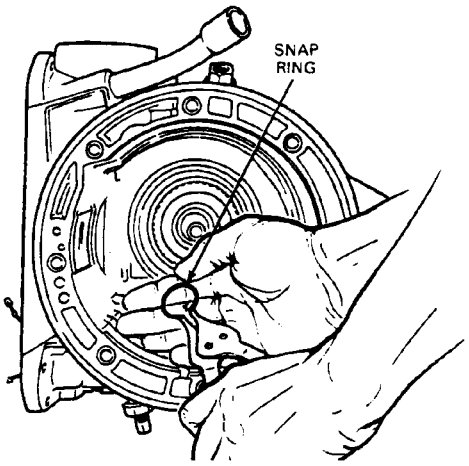
39. Remove reverse planet assembly.
40. Note and identify thrust washers on both sides. They are identical.



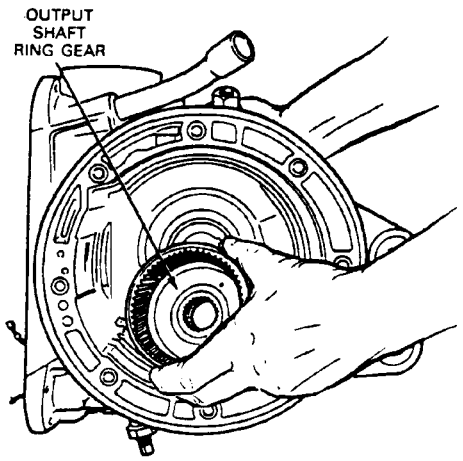
a. With 4.0L applications; remove output shaft sleeve (lubricant guide).



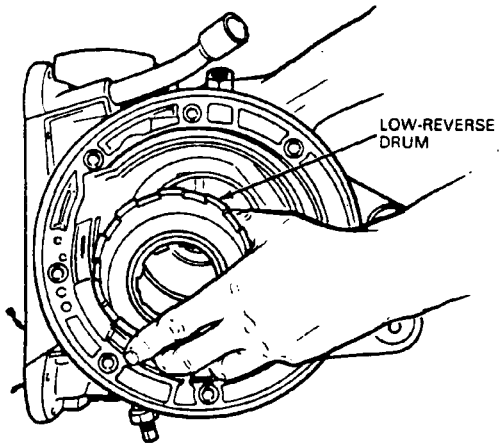
41. Remove small snap ring on output shaft.



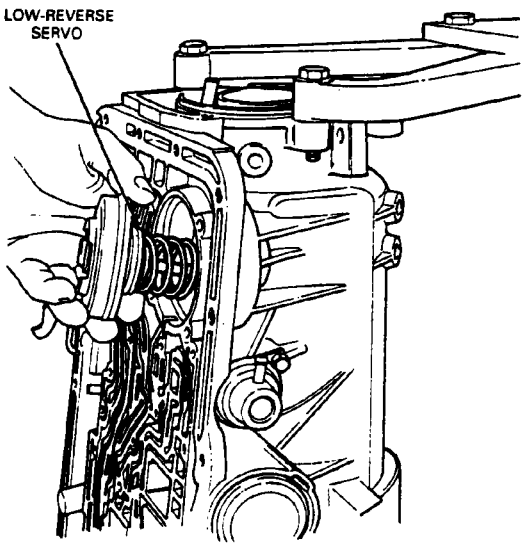
42. Remove output shaft ring gear.



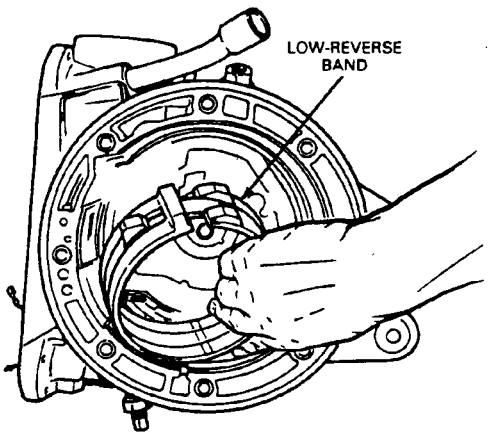
43. Remove low-reverse drum and one-way clutch assembly.



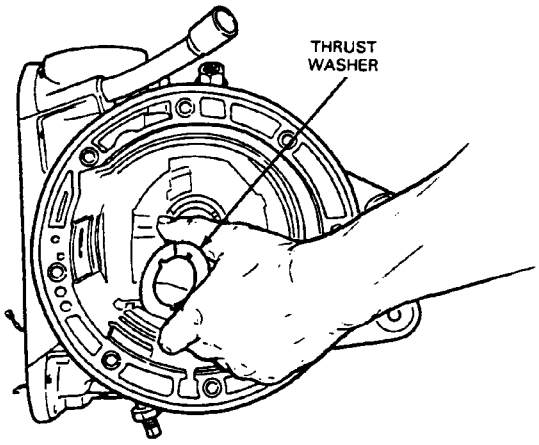
44. Remove low-reverse servo from valve body side of case.



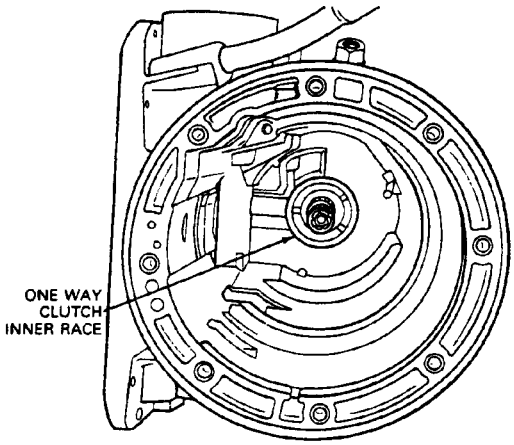
45. Remove low-reverse band.



46. Remove thrust washer.

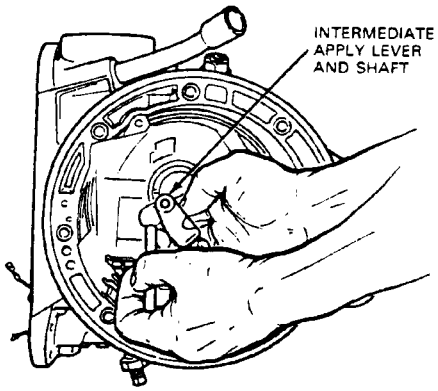


NOTE: Inner race of rear one-way clutch is not removable from case.



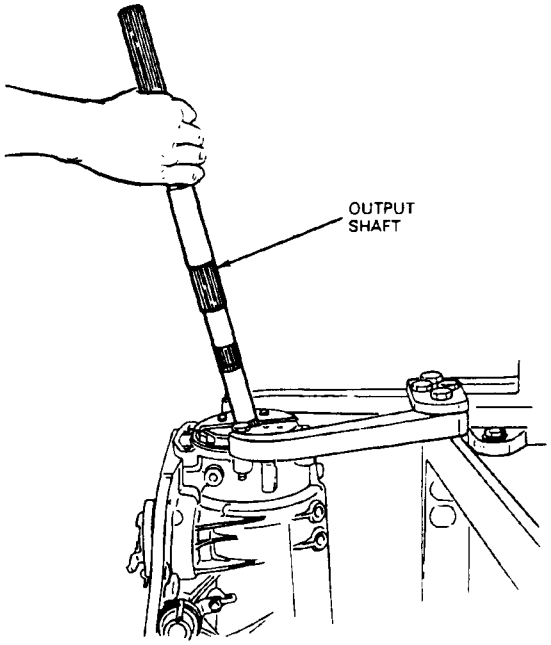
47. Remove intermediate apply lever and shaft.
48. This apply lever has a boss on the shaft hole and the shaft is shorter than the overdrive shaft.

    NOTE: A control bracket is not used.

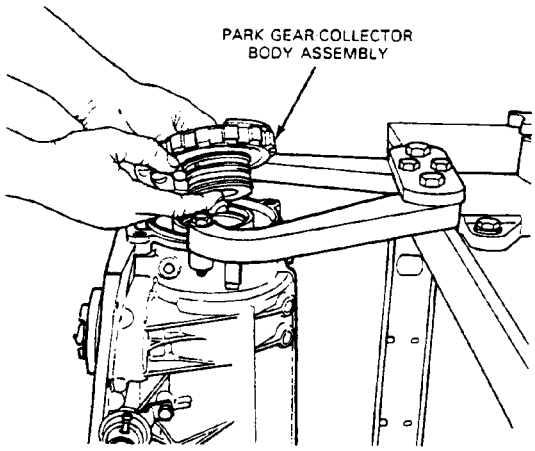


49. Turn transmission so that output shaft points upward.
50. Remove output shaft by pulling upward.

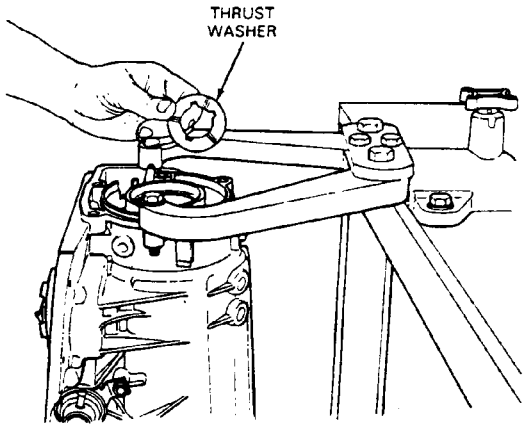
    NOTE: If output shaft is to be replaced, 4.0L applications use an output shaft that does not have a lubricant hole.



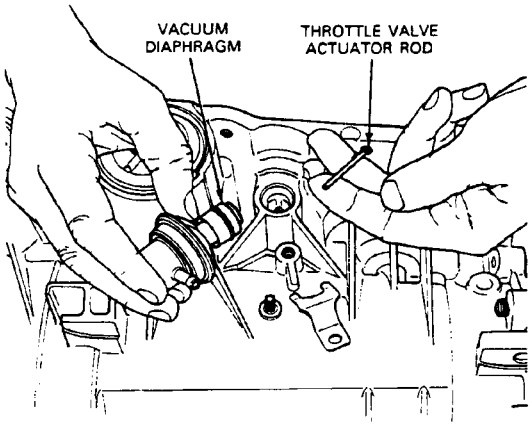
51. Remove park gear / collector body assembly from rear of case.



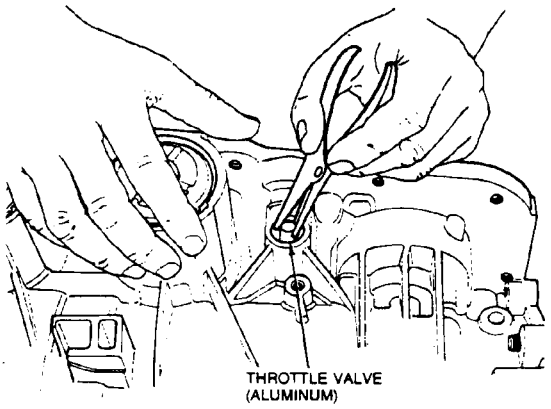
52. Remove thrust washer.



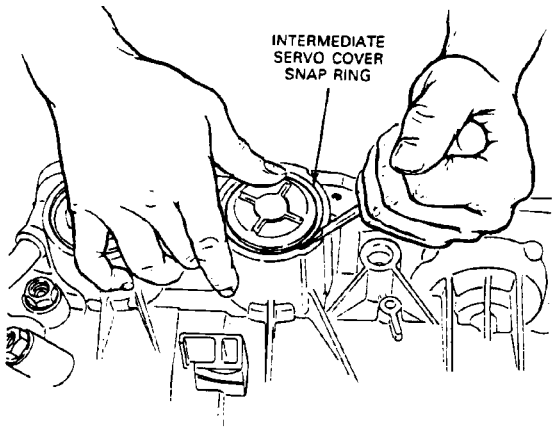
53. Remove one 10mm (M6 x 12mm long) bolt and retainer.
54. Remove vacuum diaphragm and throttle valve actuator rod.



55. Verify that the throttle valve moves freely using flat needle nose pliers.
56. Remove throttle valve, using needlenose pliers.



57. Remove intermediate servo cover snap ring.
58. Transmission case is notched out to permit easy snap ring removal.

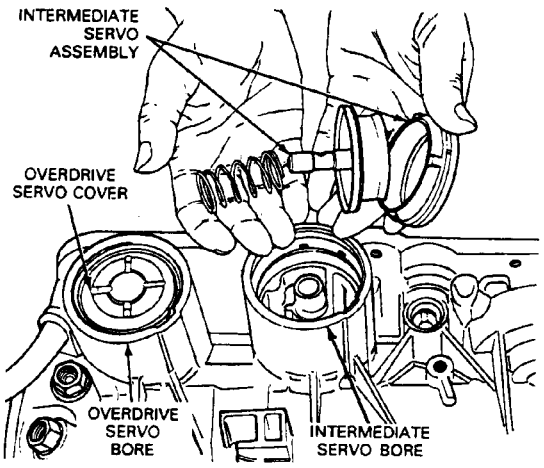


59. Remove intermediate servo cover, piston and spring.
60. Remove overdrive servo cover snap ring.
61. Remove overdrive servo cover, piston and spring.

WARNING: COVERS CAN POP OFF DUE TO SPRING PRESSURE BEHIND PISTON.

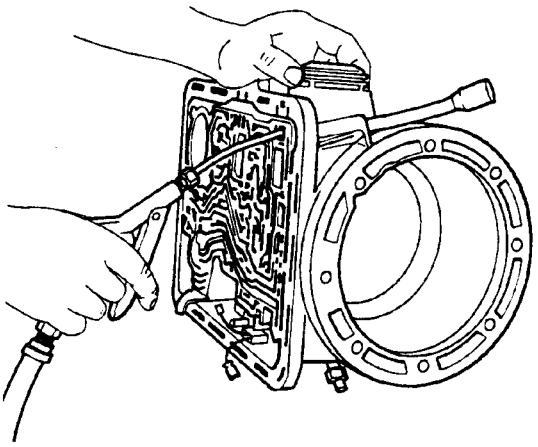
62. Covers usually can be removed by tapping lightly on cover or side of case.
63. Occasionally, covers must be removed using air pressure.

CAUTION: Identify the overdrive cover and piston from the intermediate cover and piston. Keep separate or tag for proper installation. Installation in the incorrect bore could cause band concerns due to pressure differences.



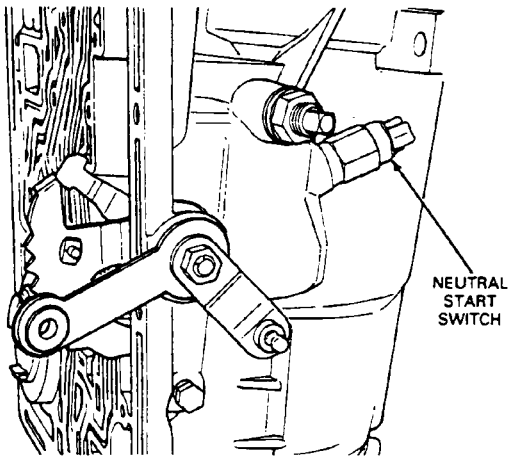
64. Air pressure may be used on release sides of pistons.

CAUTION: Air pressure should not be greater than 137 kPa (20 psi).

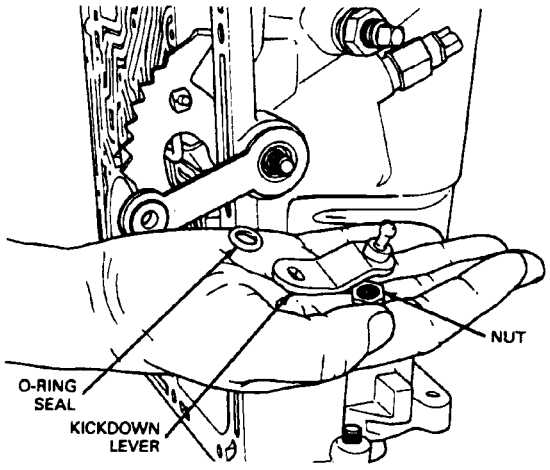


65. Remove neutral start switch using Neutral Start Switch Socket T74P-77247-A or equivalent.

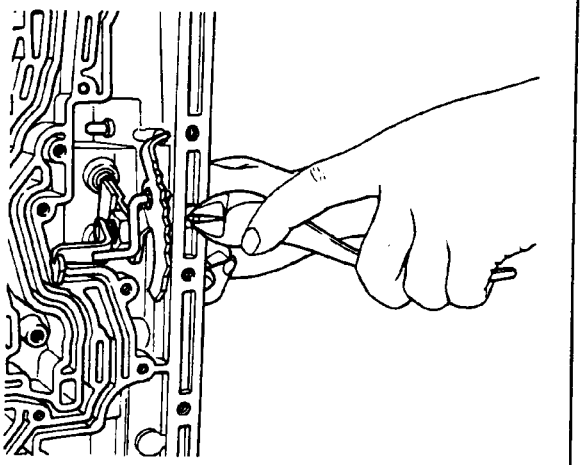
CAUTION: Do not use an open-end wrench. Damage to neutral start switch can result.



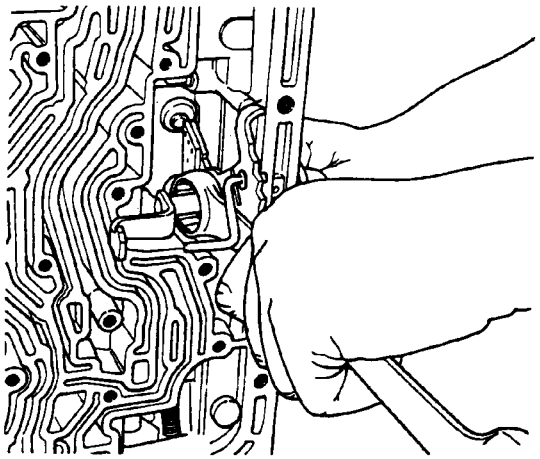
66. Remove 13mm kickdown lever nut, lever and O-ring seal.



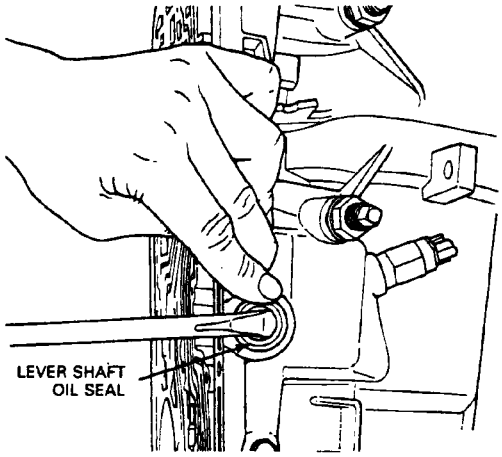
67. Remove linkage centering pin, taking care not to damage case flange.



68. Remove 7/8 inch nut, manual lever, internal kickdown lever and park pawl rod and detent plate assembly.

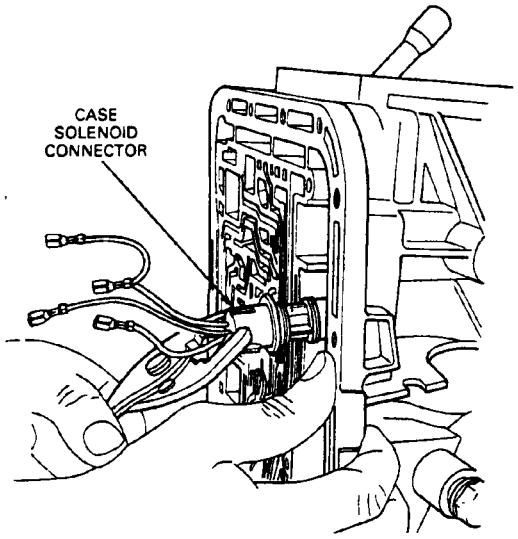


69. Remove lever shaft oil seal.



70. Remove case solenoid connector.
71. A tab on the outside of the case on backside of connector must be depressed while pulling with pliers. The tab is depressed with a small pair of locking pliers.

    NOTE: The connector need not be removed unless it is to be replaced, and / or if the case is to be immersed in a degreaser.



Assembly

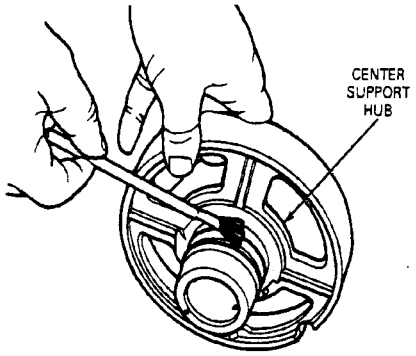
NOTE: Before beginning assembly of the transmission, the following high clutch seal sizing procedure must be performed.

1. Install new high clutch seals on the support hub. It is necessary to size these seals.

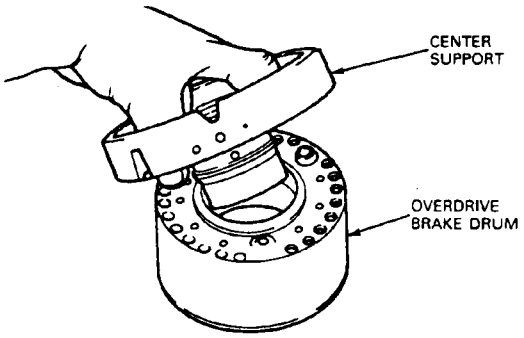
   NOTE: The seal grooves have a "dovetail" contour with straight sidewalls on the pressure sealing sides.

   NOTE: If this is not done, the seals can be cut or rolled over when entering the intermediate brake drum cavity.

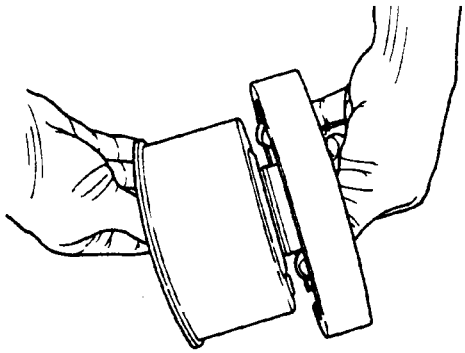
Apply a liberal amount of petroleum jelly to the center support hub and seals.



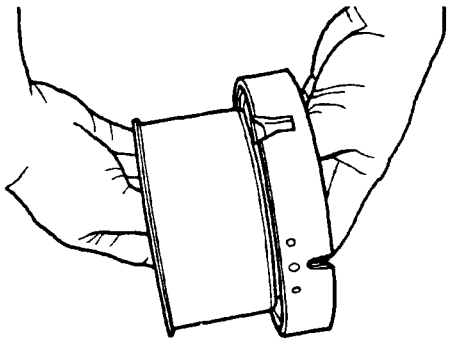
2. Use overdrive brake drum as sizing tool. Carefully rotate the center support while inserting.



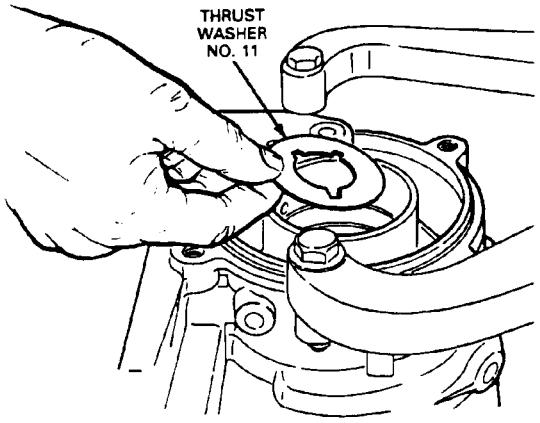
3. Observe the seals as they enter the cavity to see that they do not roll over or get cut.



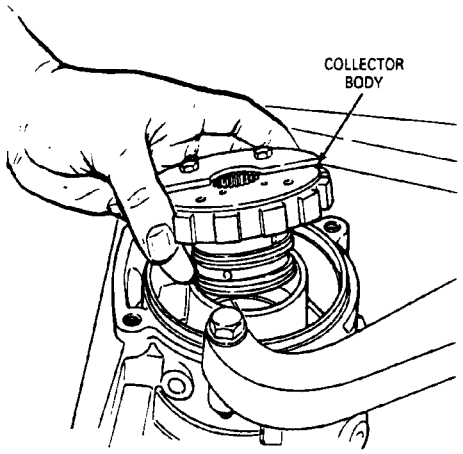
4. Be sure the center support is seated fully into the overdrive drum. Allow to stand for several minutes so that the seals seat in the grooves. Set aside until required for reassembly later in this section.



5. Place thrust washer No. 11 (7B368) into back of case.

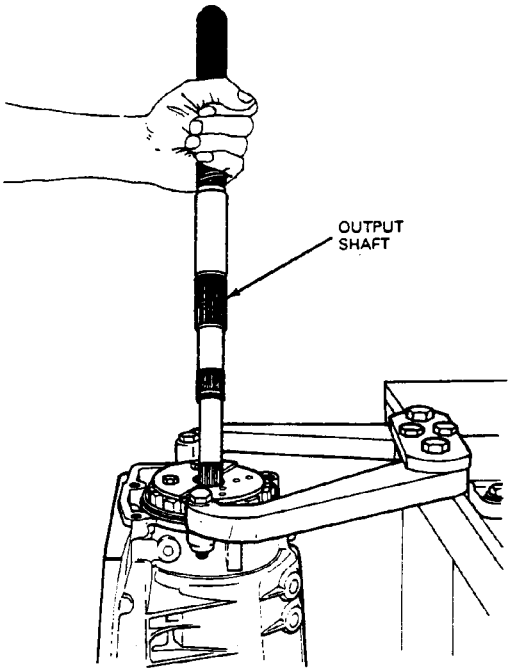


6. Install collector body in rear of case.

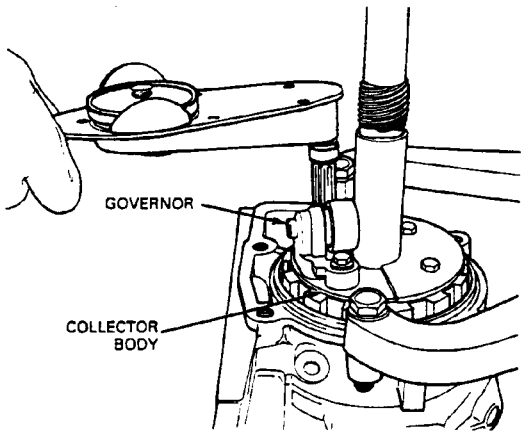


7. Install output shaft.

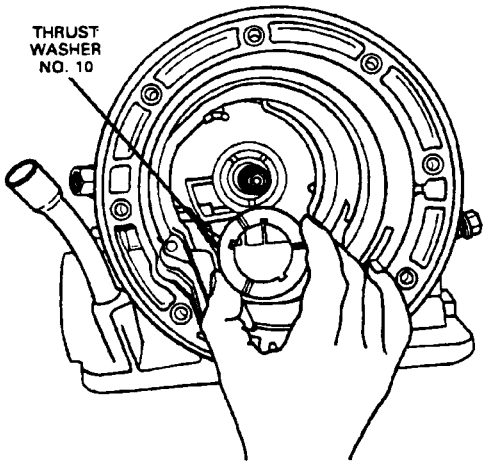
NOTE: If a new output shaft is being installed, 4.0L applications use an output shaft that does not have a lubricant hole.



8. Install governor on collector body with two retaining bolts. Tighten to 9-14 N·m (84-120 lb-in).

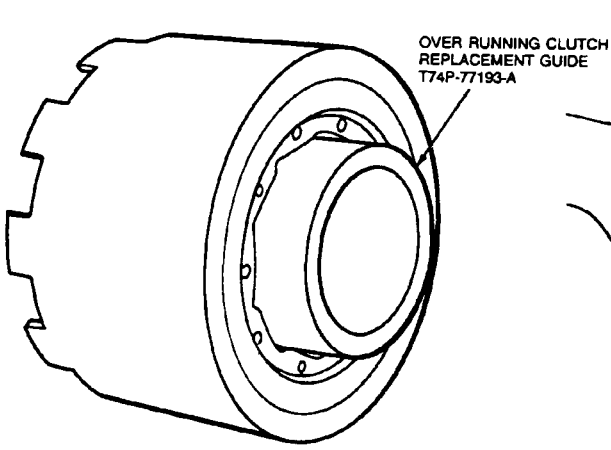


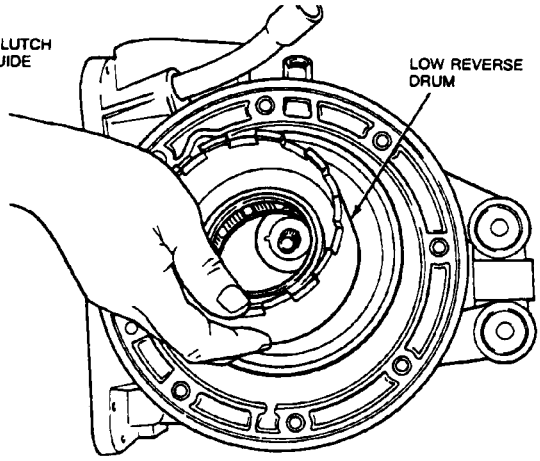
9. Place thrust washer No. 10 (7D422) into case from the front.



10. Install low-reverse drum using Overrunning Clutch Replacement Guide Tool T74P-77193-A or equivalent.

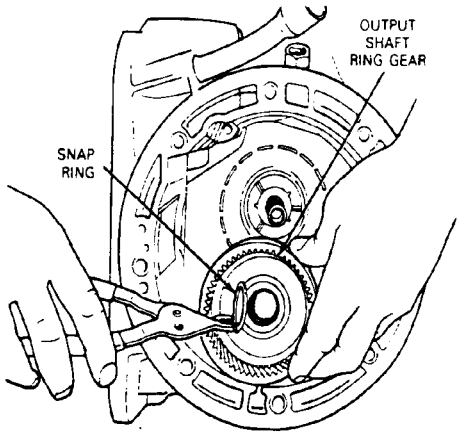
NOTE: With 4.0L applications, use a "sprag" type overrunning clutch and the replacement guide tool is not required.



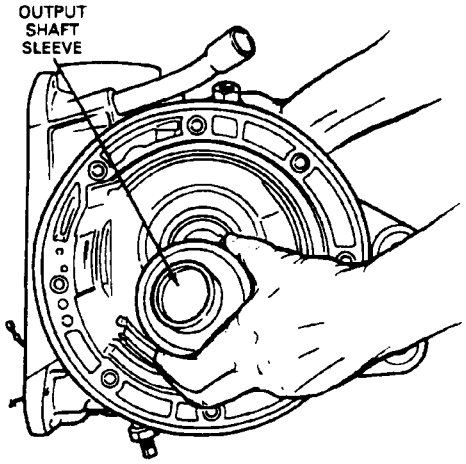


11. Install output shaft ring gear and snap ring onto output shaft.

    NOTE: Always use a new snap ring for assembly.

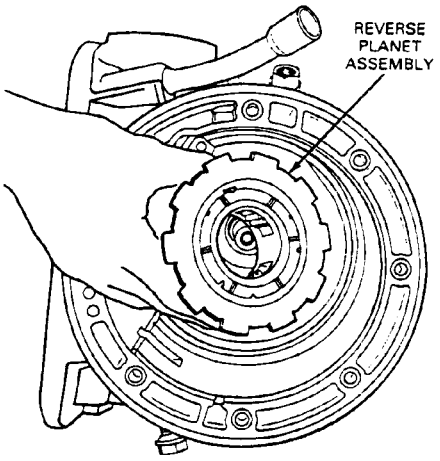


a. With 4.0L applications; install the output shaft sleeve (lubricant guide).



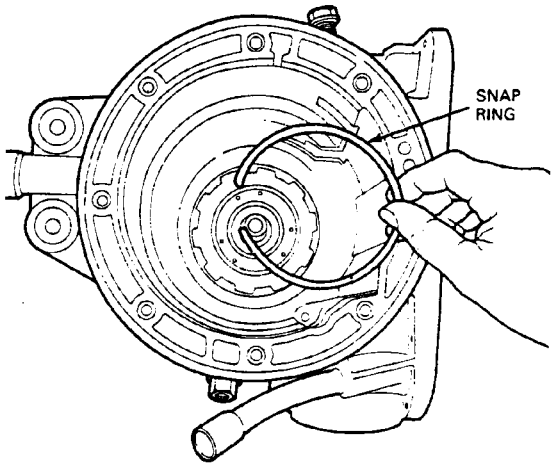
12. Install thrust washer No. 9 (7D423), reverse planet assembly and thrust washer No. 8 (7D423).

13. Use petroleum jelly to hold thrust washers in position on planet assembly.

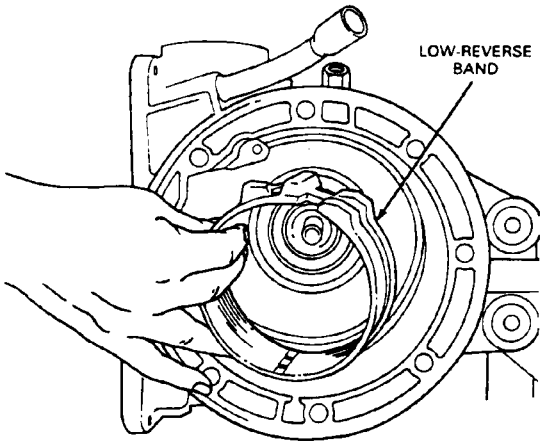


14. Install snap ring in drum to hold planet assembly in place.

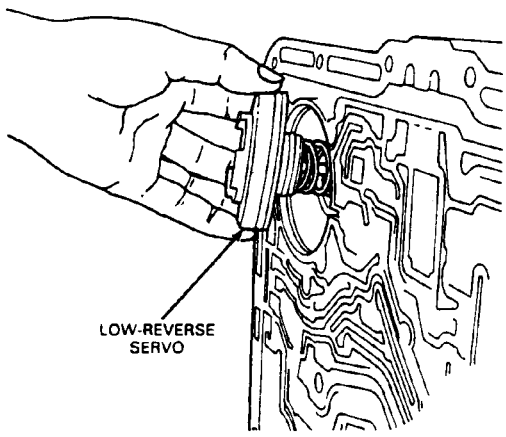
    NOTE: 4.0L applications do not have a snap ring at this location.



15. Install low-reverse band.

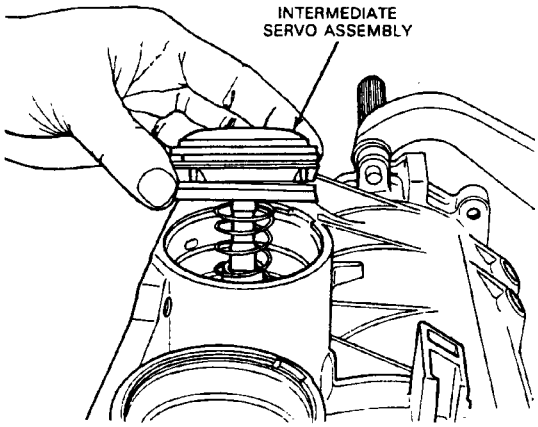


16. Replace servo piston or O-ring if necessary.
17. Install low-reverse servo piston to hold band in position.

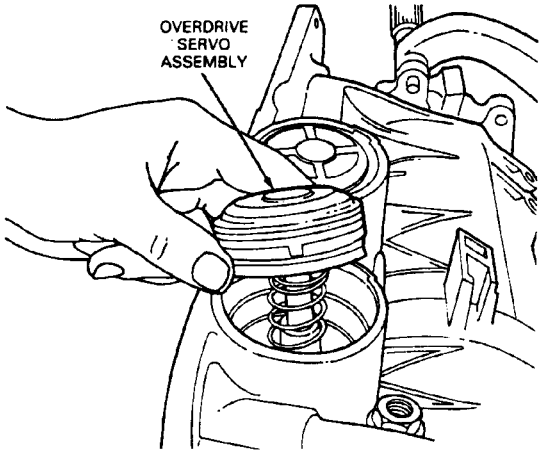


18. Replace piston or O-ring if necessary.

19. Install intermediate servo spring, piston, cover and snap ring. Refer to the Specifications portion of this section for proper means of identifying overdrive from intermediate servo covers and components.

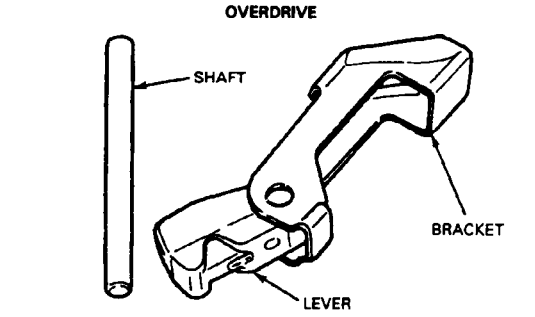


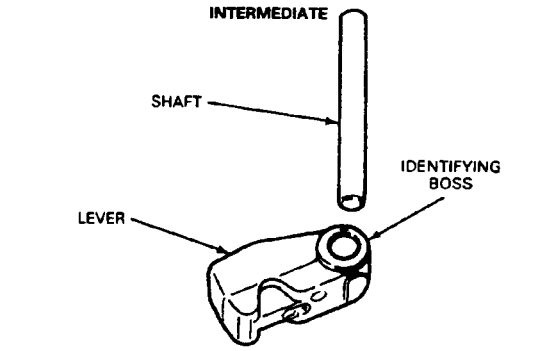
20. Replace piston or O-ring if necessary.
21. Install overdrive servo spring, piston, cover and snap ring. Ensure correct cover is installed, as identified by a tag during disassembly.



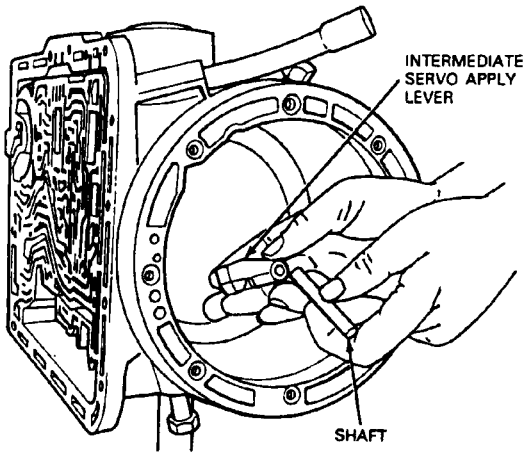
22. Locate and identify intermediate servo apply lever and shaft.

23. The intermediate servo apply lever is the lever that has a boss on the shaft hole and the shaft is shorter than the overdrive shaft.

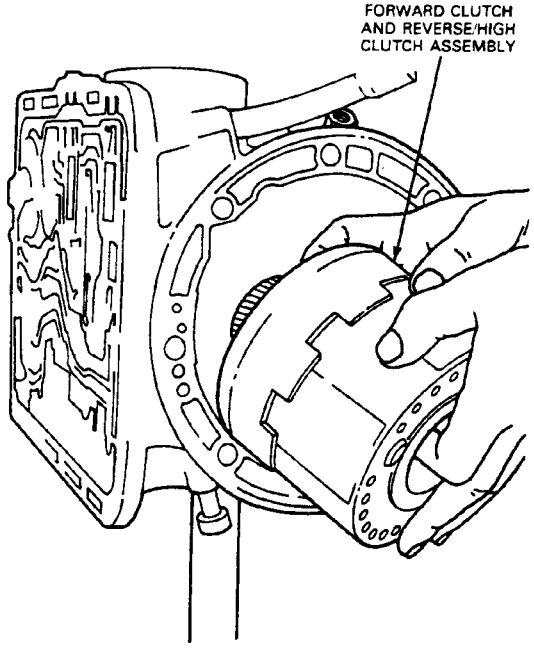




24. Install intermediate servo apply lever and shaft into case.

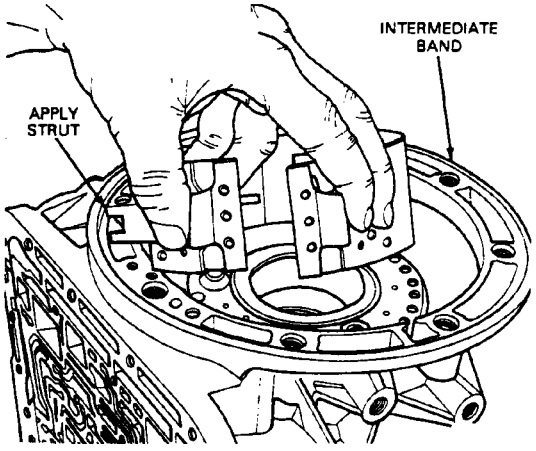


25. Install the complete forward clutch and reverse and high clutch assemblies.

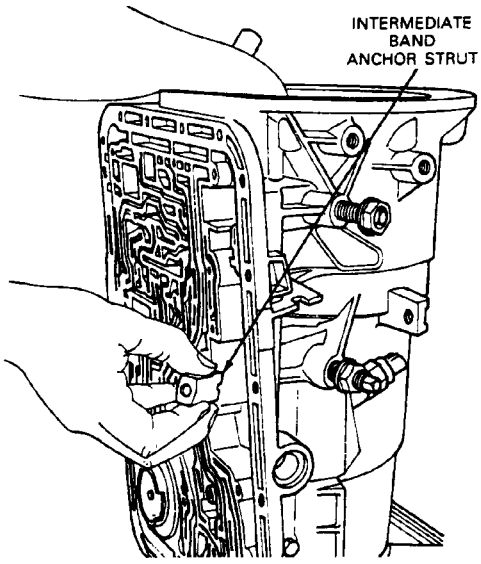


26. Turn transmission so that the output shaft points downward.

27. Install intermediate band and apply strut.

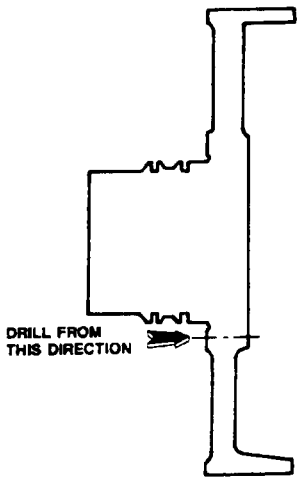


28. Install the intermediate band anchor strut and input shaft (temporarily) as an alignment guide, then go to the transmission rear end play check.

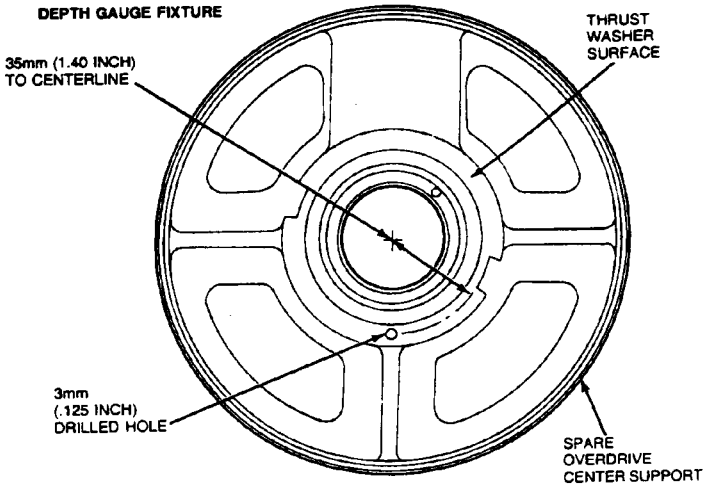


29. The transmission rear end play check determines:
    a. the amount of space existing between the thrust washer surfaces of the overdrive center support and the intermediate brake drum.
    b. the thickness of the No. 4 thrust washer that is required to obtain an end play of 0.30-0.54mm (0.012-0.022 inch).

To perform the end play check, fabricate a depth gauge fixture from a spare overdrive center support. A 3mm (1/8 inch) hole must be drilled through the thrust washer surface of the center support. This allows Depth Micrometer D80P-4201-A or equivalent access to the area between the thrust surfaces of the support and the intermediate brake drum. Remove the rubber seals from the spare center support to allow easy insertion into the intermediate brake drum.

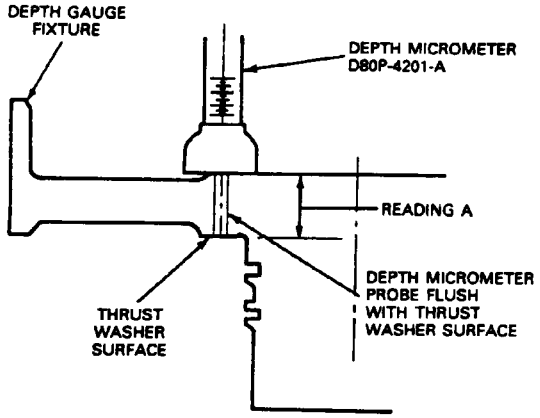


SIDE VIEW

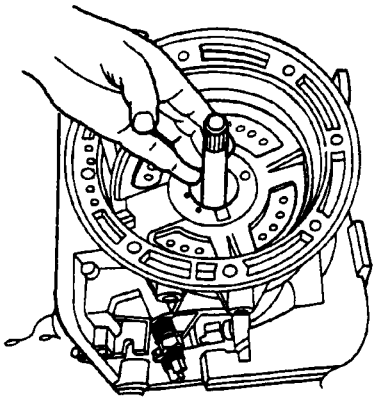


TOP VIEW

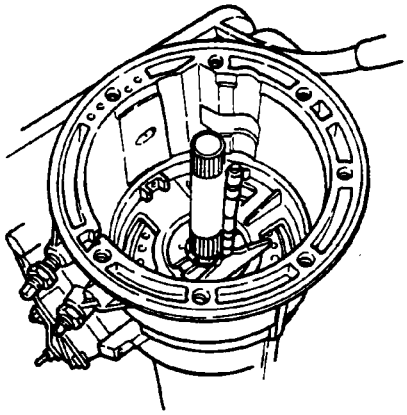
30. Place Depth Micrometer D80P-4201-A or equivalent over drilled hole in the fabricated depth gauge fixture. Extend micrometer probe until it is flush with the thrust washer surface of the fixture. Record the micrometer reading. This is Reading A.



31. Install the depth gauge and input shaft fixture into the intermediate brake drum and make sure it is fully seated in the transmission case. Gently "wiggle" input shaft to allow center support fixture to slide into intermediate brake drum using its own weight. The fixture axially locates the drum in its proper position.

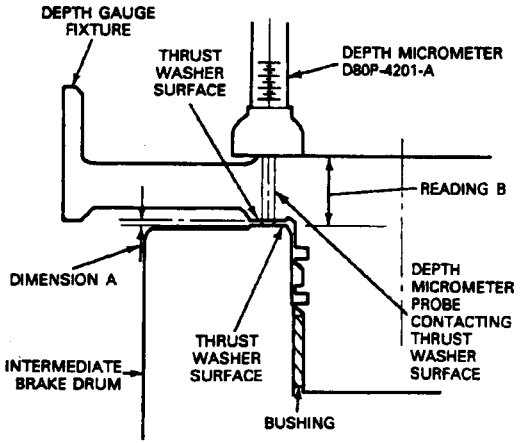


32. Place depth micrometer over the drilled hole in the fixture.



33. Continue extending the micrometer probe until it contacts the thrust washer surface of the intermediate brake drum. This is Reading B.

34. Subtract Reading A from Reading B. The difference between these readings is Dimension A. This is the space between the thrust surfaces.



35. Remove and rotate the fixture 180 degrees. Repeat steps 30 through 34.

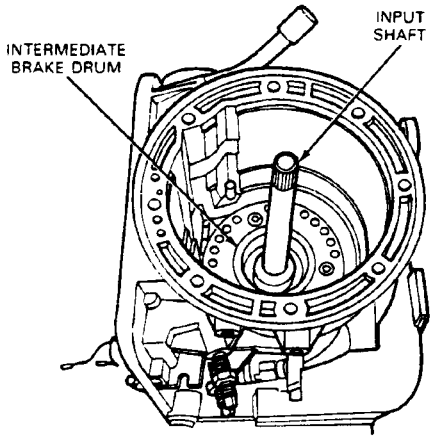
36. Average the two Dimension A readings to obtain the final Dimension A reading.

37. Locate the final Dimension A reading in the following chart and select the proper thrust washer required to obtain the specified end play of 0.30-0.54mm (0.012-0.022 inch). If Dimension A is outside the specified limits, this indicates improper assembly, missing parts or parts out of specification. This requires a rebuild of the unit.

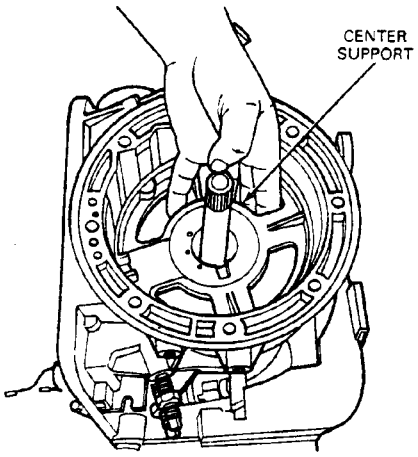
TRANSMISSION END PLAY SELECTIVE THRUST WASHER CHART

Dimension A		Thrust Washer Identification	Thrust Washer Thickness		Thrust Washer Part Number
mm	Inch		mm	Inch	
1.46-1.65	0.057-0.064	A	1.2	0.047	89DT-7D014-HA
1.66-1.85	0.065-0.073	1	1.4	0.055	89DT-7D014-AA
1.86-1.95	0.074-0.077	2	1.6	0.063	89DT-7D014-BA
1.96-2.05	0.078-0.081	3	1.7	0.067	89DT-7D014-CA
2.06-2.15	0.082-0.085	4	1.8	0.071	89DT-7D014-DA
2.16-2.25	0.086-0.089	5	1.9	0.075	89DT-7D014-EA
2.26-2.35	0.090-0.093	6	2.0	0.079	89DT-7D014-FA
2.36-2.45	0.094-0.100	7	2.1	0.083	89DT-7D014-GA
2.46-2.65	0.097-0.104	B	2.2	0.087	89DT-7D014-MA
2.66-2.85	0.105-0.112	C	2.4	0.094	89DT-7D014-JA
2.86-3.05	0.113-0.119	D	2.6	0.102	89DT-7D014-KA
3.06-3.15	0.120-0.096	E	2.8	0.110	89DT-7D014-LA

38. Remove depth gauge and input shaft fixture from overdrive drum. This procedure (sizing of seals) was begun in steps 1 through 4 of this section (Transmission Assembly). Position the correct No. 4 (7D014) selective washer on rear of center support using petroleum jelly.
39. Insert the input shaft (short splines down) through the center support and into the splines in the forward clutch cylinder.

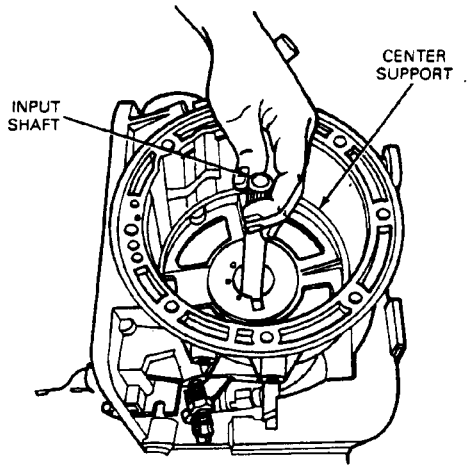


40. Carefully place the center support into the case, but do not start it into the intermediate brake drum. Be sure it is square with the case and the 5mm allen-head bolt retainer nut is oriented with the bolt hole in the case.



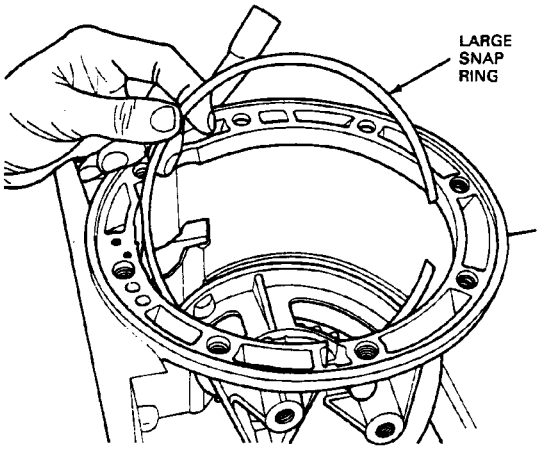
41. DO NOT apply any pressure to the center support. Gently "wiggle" the input shaft allowing the center support to slide into the intermediate brake drum using its own weight. Perform this operation until the support is fully seated. Remove the input shaft.

42. Position No. 3 (7L326) thrust washer on top of center support.

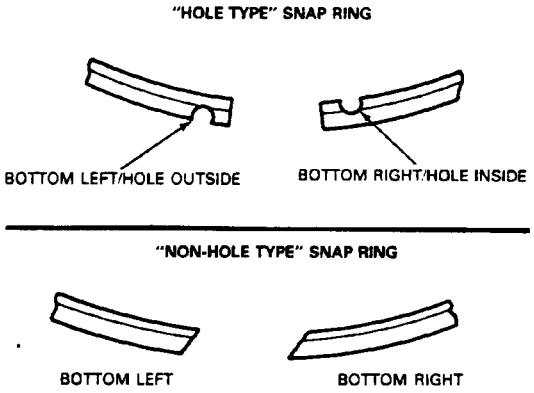


43. Install large snap ring to retain center support in position with taper snap ring toward the front of the transmission.

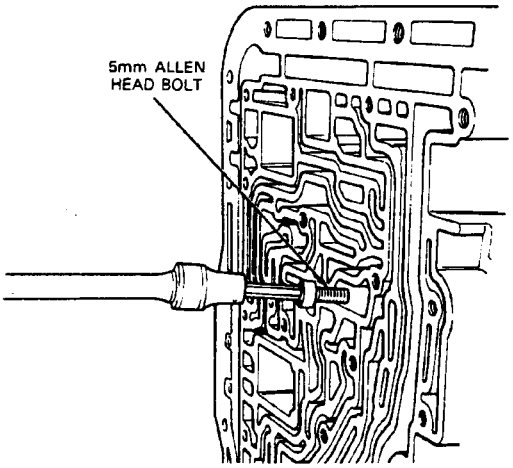
NOTE: The ends of the snap ring should be positioned in the wide shallow cavity located in the five o'clock position.



NOTE: Two types of center support retaining snap rings are used. One is identified by holes located in the inner and outer diameter; the other type of snap ring has no holes. They should be positioned as shown.

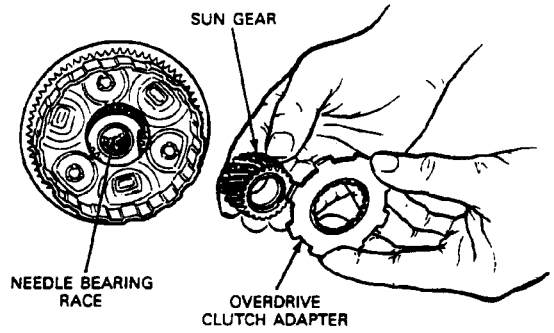


44. Install 5mm allen-head bolt that retains center support to case.

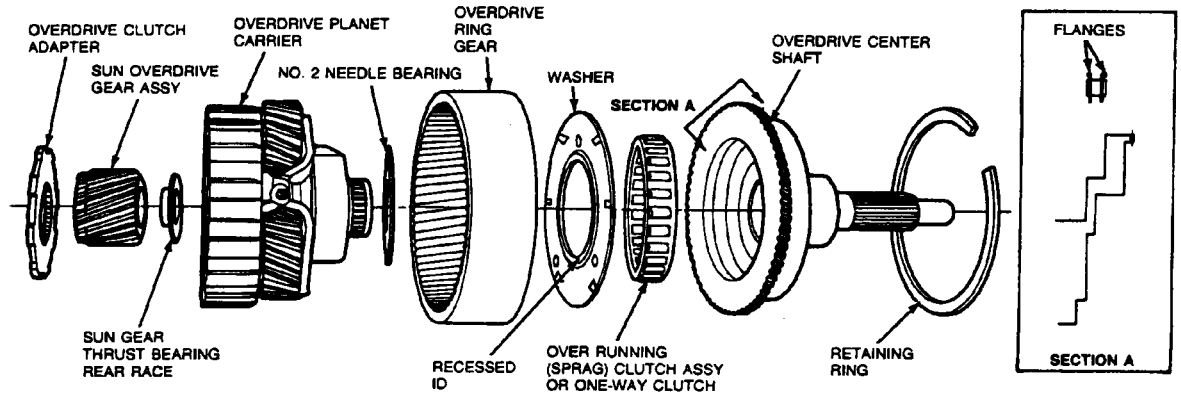


45. Install sun gear and overdrive clutch adapter into overdrive planet assembly and one-way clutch. The part number on the adapter should face the sun gear.

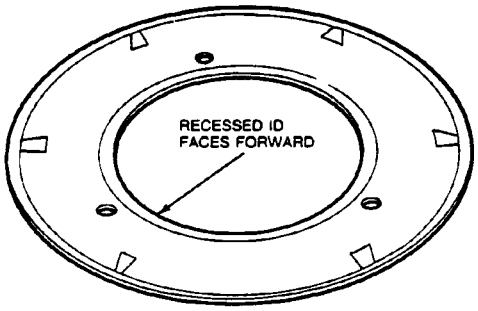
46. Take care to center needle bearing race inside of planetary. Be sure it stays centered, and positioned with the extruded lip in the upward position (toward sun gear).



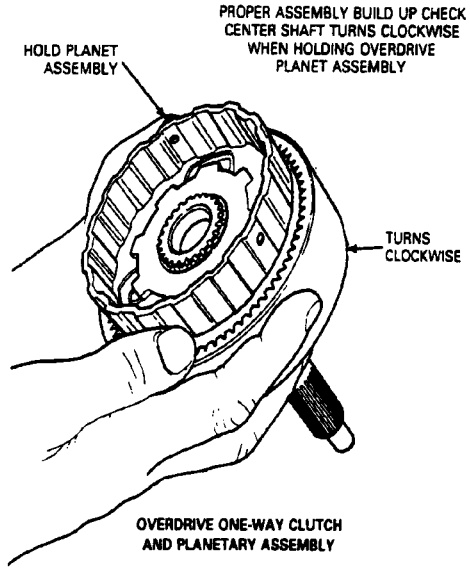
47. Assemble the overdrive planet and one-way clutch assembly.
    a. The one-way clutch assembly MUST be installed into the centershaft in such a way that the flanges of the inner and outer cages are toward the overdrive planet assembly which is toward the front of the transmission.



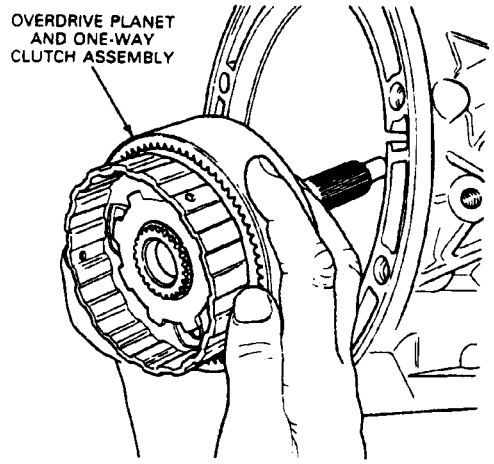
b. The overdrive clutch washer, that is positioned between the overdrive planet carrier and centershaft must be installed in such a way that the "recessed ID" faces forward (not against sprag clutch).



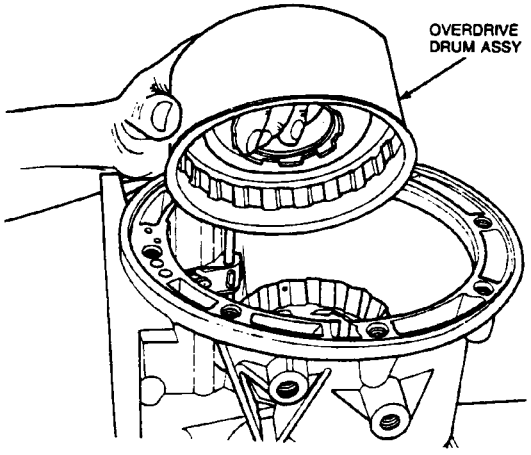
c. To perform the proper assembly buildup check, hold the planet assembly—then the centershaft should turn clockwise.



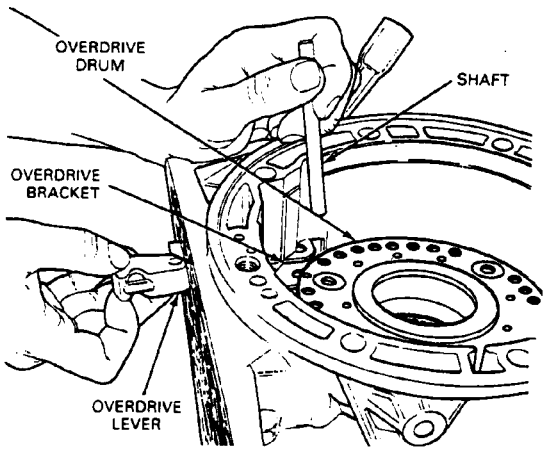
48. Install overdrive planet assembly and one-way clutch into case.



49. Install overdrive drum assembly.



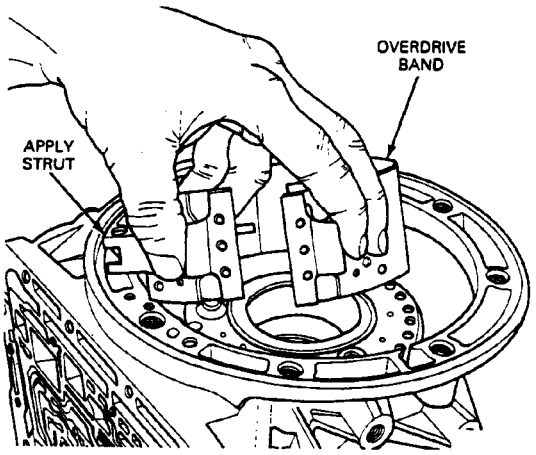
50. Install overdrive bracket, apply lever, and shaft.



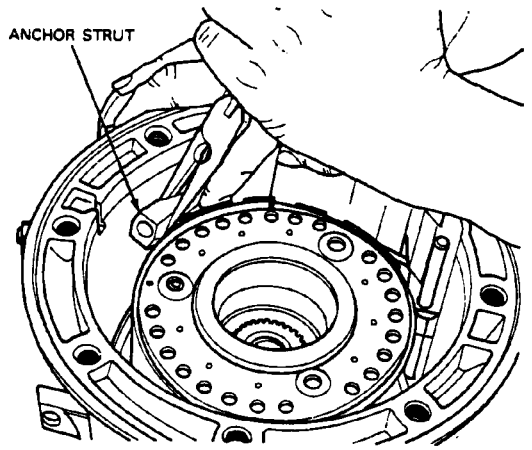
51. Install overdrive band and apply strut.

NOTE: Ensure correct band is installed as identified by a tag during disassembly.

NOTE: Band and strut for 2.3L, 2.9L and 3.0L applications shown. 4.0L applications use a double wrap design band.



52. Install anchor strut.



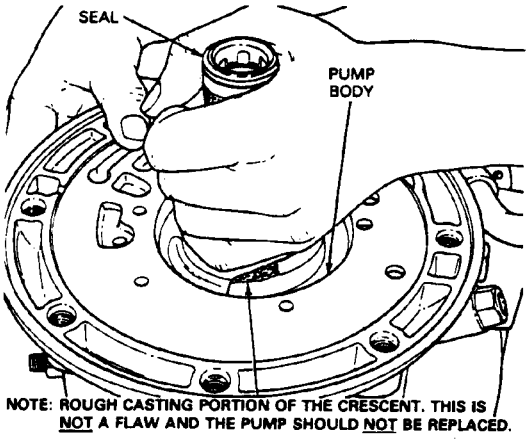
53. Verify that needle bearing race in overdrive planetary is centered and overdrive clutch is fully seated.

54. Place No. 1 (7D014) selective washer on top of overdrive clutch drum and temporarily install pump assembly into case. Be sure that it is fully seated in the case.

55. The pump body must be below the level of the case gasket in the case.

    NOTE: Check for damaged or missing front pump support seal. Replace if necessary.

    NOTE: Rough casting portion of the crescent. This is not a flaw and the pump should NOT be replaced.



56. Mount Dial Indicator D78P-4201-G or equivalent on the pump with plunger resting on the transmission housing. Set dial indicator to zero.

57. Swing indicator around so plunger contacts the pump. Check dial reading. This reading is the amount of end play. Note reading for later use.

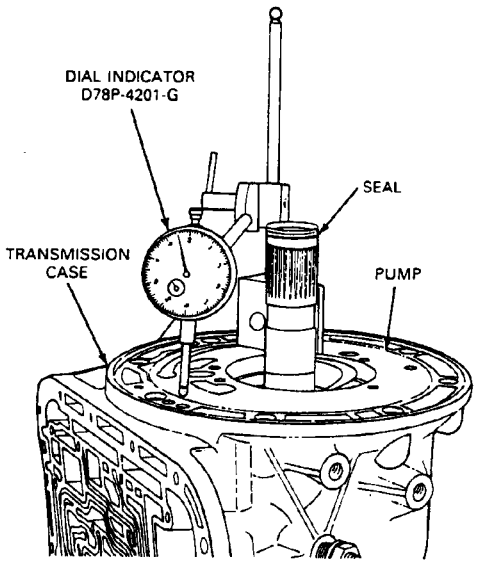
58. Move dial indicator block to opposite side of the pump (180 degrees). Repeat steps 56 and 57.

59. Find average of two readings. This average reading of end play should be from 0.18mm to 0.64mm (0.007 to 0.025 inch). If reading exceeds the limits, change No. 1 selective washer.

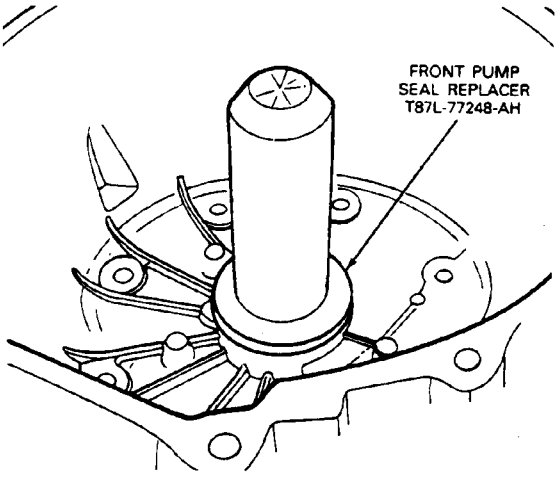
60. The available selective washers are:

TRANSMISSION END PLAY SELECTIVE THRUST WASHER CHART

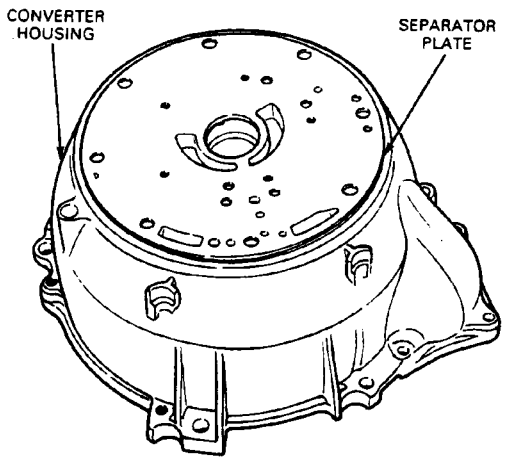
Thrust Washer Thickness		Thrust Washer Identification	Thrust Washer Part Number
mm	Inch		
1.2	0.047	A	89DT-7D014-HA
1.4	0.055	1	89DT-7D014-AA
1.6	0.063	2	89DT-7D014-BA
1.7	0.067	3	89DT-7D014-CA
1.8	0.071	4	89DT-7D014-DA
1.9	0.075	5	89DT-7D014-EA
2.0	0.079	6	89DT-7D014-FA
2.1	0.083	7	89DT-7D014-GA
2.2	0.087	B	89DT-7D014-MA
2.4	0.094	C	89DT-7D014-JA
2.6	0.102	D	89DT-7D014-KA
2.8	0.110	E	89DT-7D014-LA



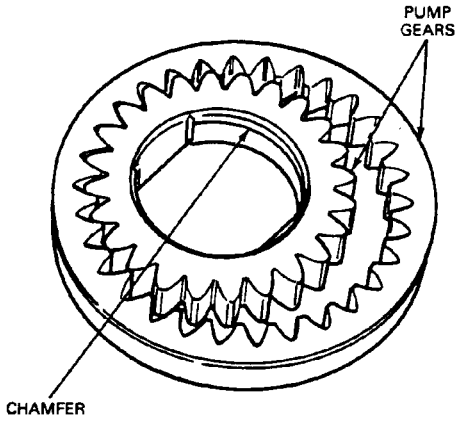
61. Install a new hydraulic pump oil seal using Front Pump Alignment Set T74P-77103-X and Front Pump Seal Replacer T87L-77248-AH or equivalent. Stake the seal in place with tool T87L-77248-BH in 2 places between the existing stakes.



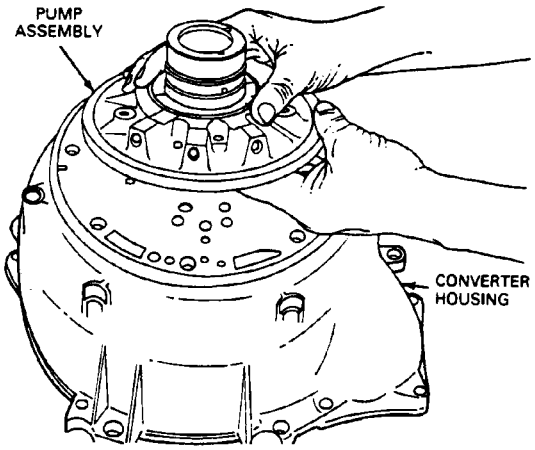
62. Properly position separator plate on converter housing.



63. Properly position two pump gears into pump housing.
64. The inside edge of the small gear has a chamfer on one side. This chamfer must be positioned toward the front of the transmission.
65. The larger gear has a dimple on one side which must be positioned toward the rear of the transmission.

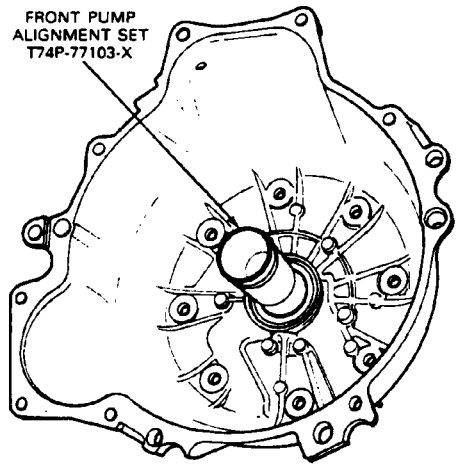


66. Position pump assembly onto separator plate and converter housing.
67. Install bolts finger-tight.



68. Align pump in converter housing using Front Pump Alignment Set T74P-77103-X or equivalent. This tool must be used in order to prevent seal leakage, gear noise, pump breakage or bushing failure.

69. To use tool, select the arbor with the smallest ID that will fit completely over the pump shaft. Assemble the common handle to the selected arbor and slide the tool down over the shaft until it bottoms against the pump. The outside diameter of the tool arbor will then automatically center the pump in the converter housing.

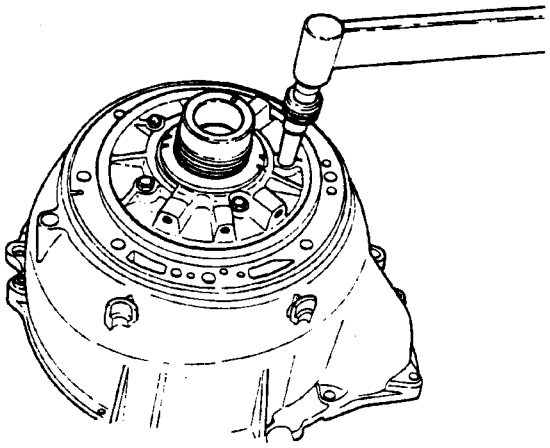


70. With alignment tool installed, tighten five new 6mm hex allen-head pump bolts (E804375-S72M) to 23-27 N·m (17-20 ft-lb).

    CAUTION: Be sure to install new bolts (E804375-S72M).

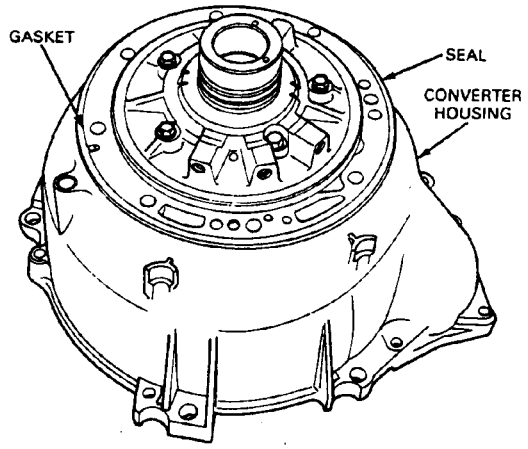
71. Remove alignment tool.

72. Insert the input shaft into the pump and install the converter into the pump gears. Rotate the converter to check for free movement, then remove the converter and input shaft.



73. Coat converter housing gasket with petroleum jelly and position on housing.

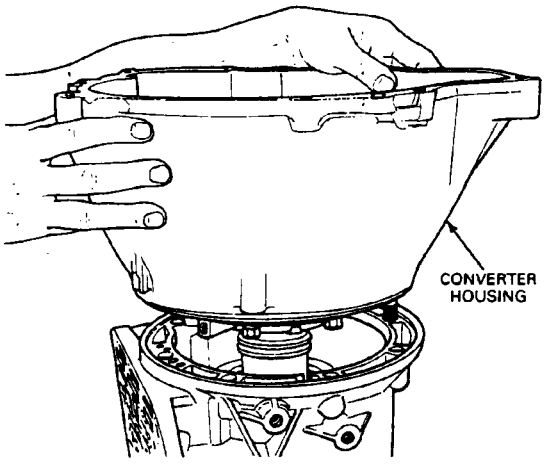
74. Install seal on converter housing.



75. Using petroleum jelly, position No. 1 selective washer on rear of pump.

76. Align converter housing and pump to the transmission.

77. Install eight 17mm bolts, with new "O" rings, and tighten to 37-52 N·m (27-38 ft-lb).



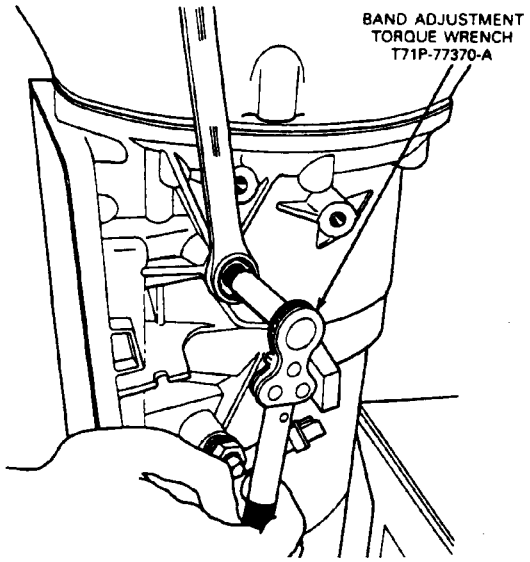
78. Using Band Adjustment Torque Wrench T71P-77370-A or equivalent, adjust overdrive band.

79. Install a new lock nut on adjusting screw. Tighten adjusting screw until the tool handle clicks. This is 14 N·m (10 ft-lb).

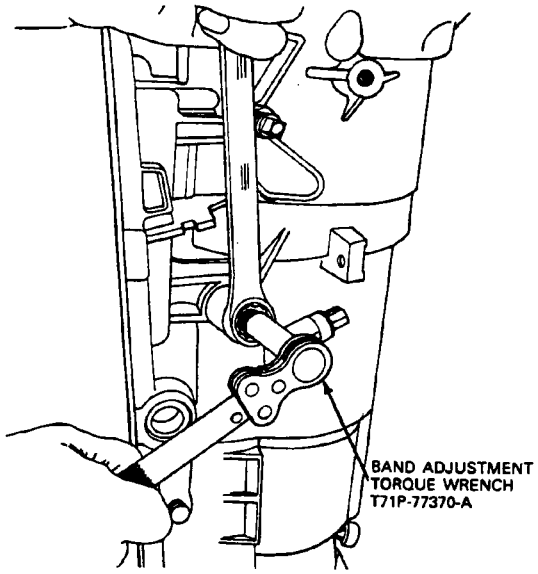
80. Back off adjusting screw exactly two turns (2.3L, 2.9L and 3.0L engine applications).

    a. For 4.0L engine applications back off adjusting screw exactly three and a half turns.

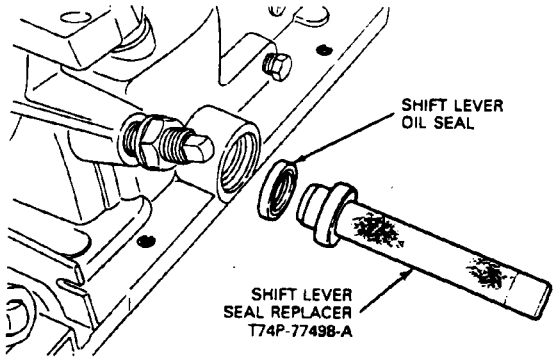
81. Hold adjusting screw from turning. Tighten the lock nut to 48-61 N·m (35-45 ft-lb).



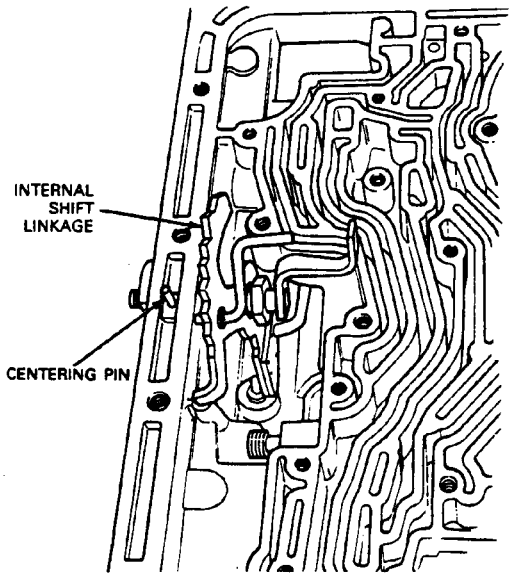
82. Following the previous method, adjust the intermediate band backing off the adjusting screw two turns before tightening the lock nut.



83. Install shift lever oil seal using Shift Lever Seal Replacer T74P-77498-A or equivalent.

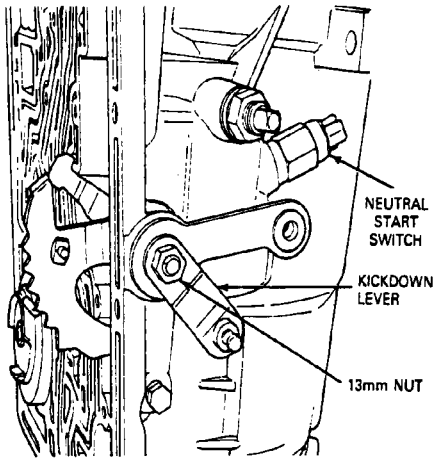


84. Install internal shift linkage, including external manual control lever, and centering pin. Tighten 7/8 inch nut to 41-54 N·m (30-40 ft-lb).

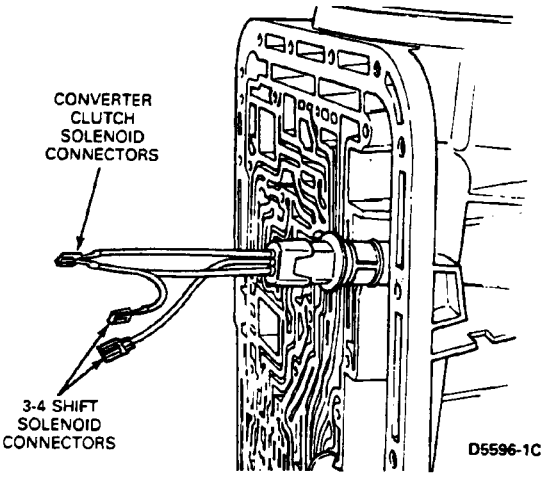


85. Install O-ring, kickdown lever and 13mm nut. Tighten to 10-14 N·m (7-10 ft-lb).

86. Install neutral start switch using Neutral Start Switch Socket T74P-77247-A "Thin Wall" socket or equivalent. Tighten to 9.5-13.6 N·m (84-120 in-lb).

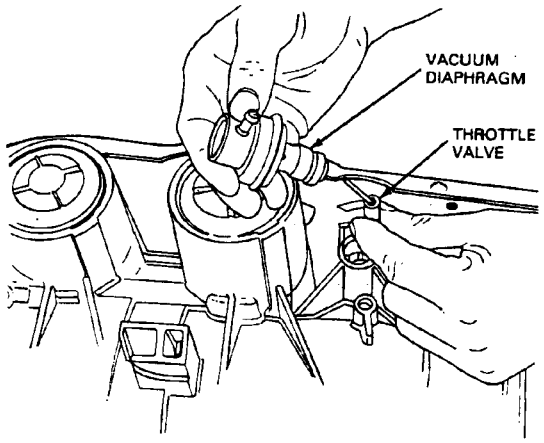


87. Install converter clutch solenoid connector.



88. Install throttle valve, rod, vacuum diaphragm, retaining clamp and bolt.

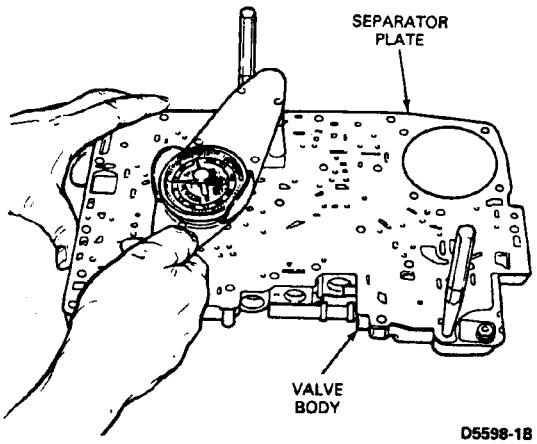
89. Be sure the throttle valve moves freely in its bore. Use a pencil magnet to check movement if throttle valve is steel. If throttle valve is aluminum, use the end of a rubber object to check movement.



90. Align valve body to separator plate and gasket using tapered punches.

91. Install two 10mm bolts. Tighten to 9.5-12.1 N·m (84-107 in-lb).

92. Petroleum jelly must be used to keep gasket in proper location on the separator plate during assembly.



93. Remove transmission from holding fixture and place on bench bottom up.

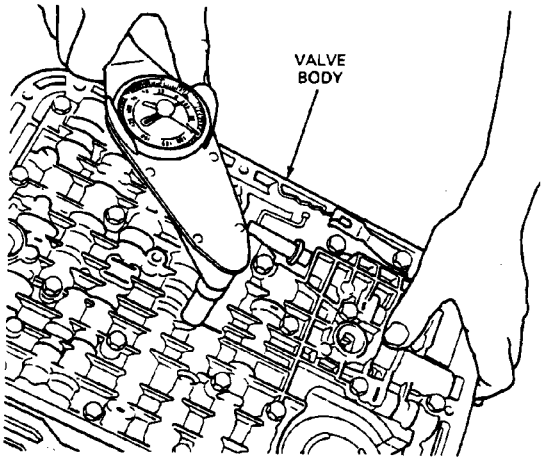
94. Attach and lock the selector lever connecting rod (Z-Link) to the manual valve. Ease control body into the case.

CAUTION: Use care not to bend selector lever connecting rod (Z-Link).

Insert correct length bolts, finger-tight, in holes A and B to position control body to case.

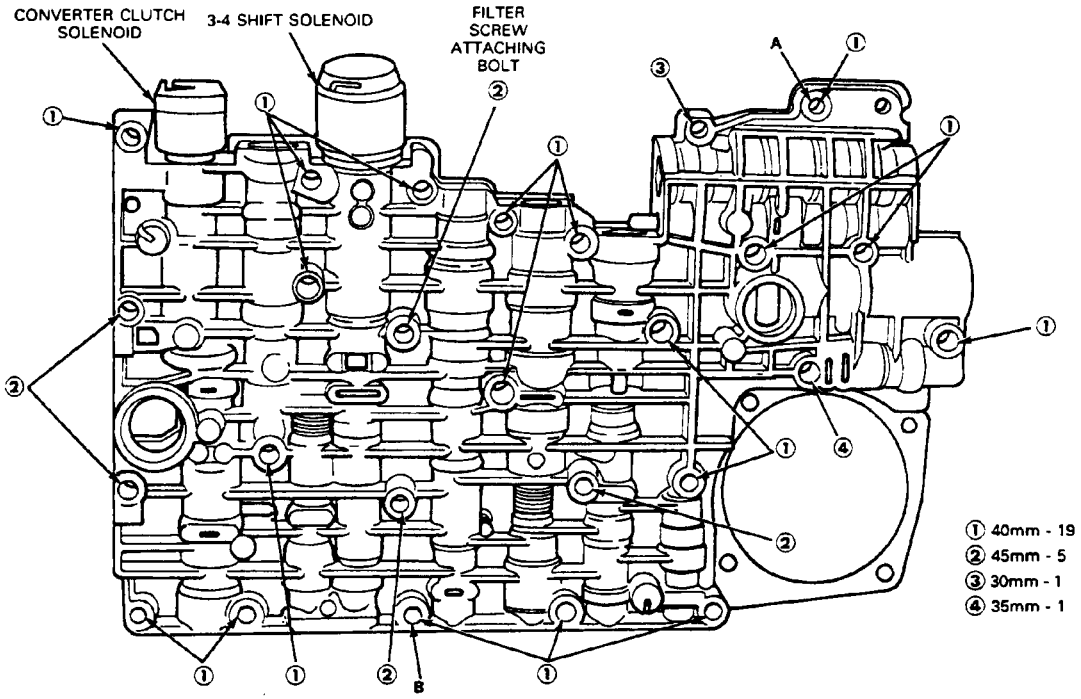
95. Insert all remaining bolts (correct length) except the filter screen bolt. Tighten to specification.

96. Remove bolt from hole A and install the detent spring to bolt. Assemble and tighten A and B locations to specification. Install converter clutch solenoid wires.



97. For body bolt locations and sizes, refer to the following illustration.

98. Follow tightening sequence from center of valve body to outer edges.



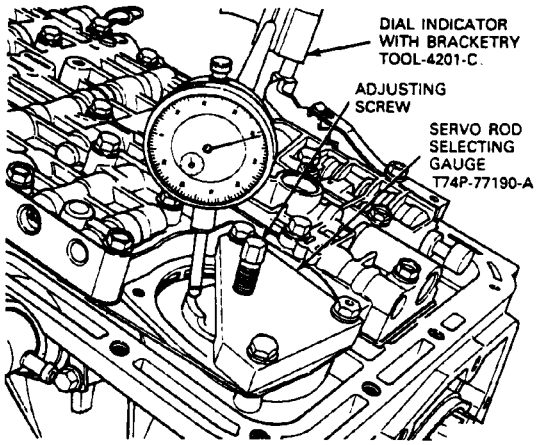
99. Install the reverse servo piston assembly into servo bore along with a reverse servo check spring D4ZZ-70031-A or equivalent.

100. Install a new servo cover gasket and tool T74P-77190-A or equivalent and tighten with three attaching bolts.

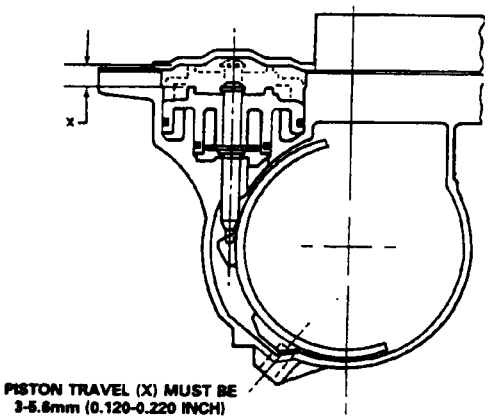
101. Tighten servo tool adjusting screw to 4 N•m (35 in-lb).

102. Install Dial Indicator with Bracketry TOOL-4201-C on transmission case and position indicator on piston pad. Set dial indicator to zero.

103. Back out the servo tool adjusting screw until piston bottoms out on the tool. Record the distance the servo piston traveled.



104. If piston travel is between 3 and 5.6mm (.120 and .220 inch), it is within specification.



105. If piston travel is greater than 5.6mm (.220 inch), use the next longer piston and rod.

106. If piston travel is less than 3mm (.120 inch), use the next shorter piston and rod.

Length — mm	Length — Inches	I.D.
54/53 mm	2.112/2.085	1 Groove
51/50 mm	2.014/1.986	No Groove
49/48 mm	1.915/1.888	2 Grooves

107. Using the above procedure, check the piston travel with the new selected piston and rod (if required) to make sure that the piston travel is between 3 and 5.6mm (.120 to .220 inch).

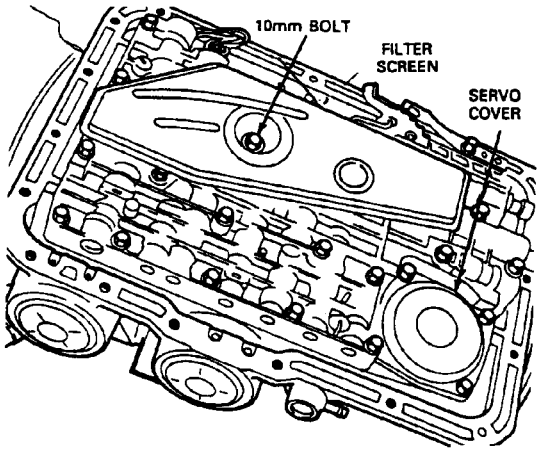
108. Remove the servo adjusting tool and the reverse servo piston checking spring.

109. Install the servo piston assembly, accumulator spring, gasket and cover.

110. Install four 10mm servo retaining bolts and tighten to 10-13 N·m (7-10 ft-lb).

111. Install new O-rings on the screen and lubricate with petroleum jelly.

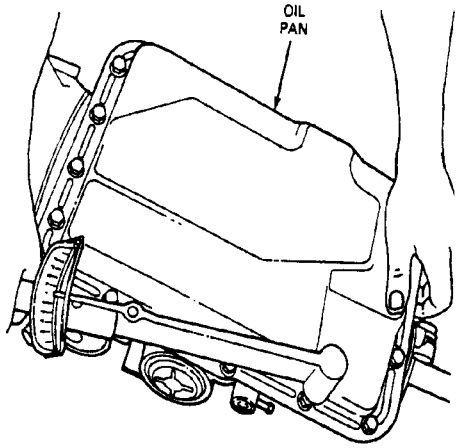
112. Install filter screen and one 10mm bolt. Tighten to 8-11 N·m (71-97 in-lb).



113. Remove any trace of old gasket on case and oil pan.

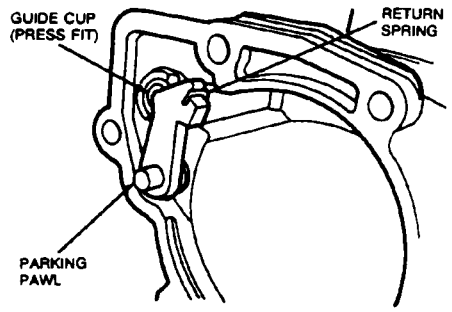
114. Position oil pan gasket on case and install oil pan.

115. Install 18-13mm oil pan retaining bolts. Tighten to 11-13 N·m (8-10 ft-lb).



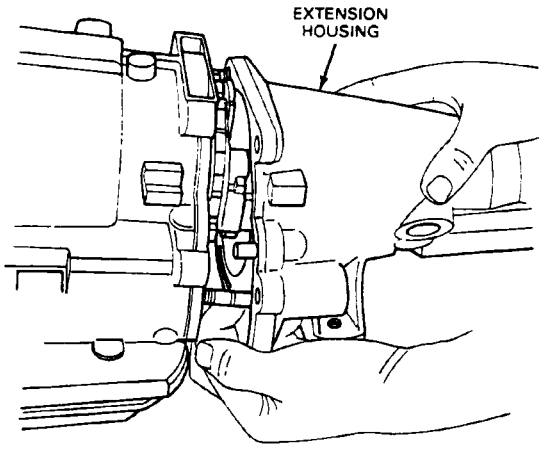
116. Remove any trace of old gasket on end of case and extension housing.

117. Install parking pawl and its return spring in the extension housing and preload.



118. Using a new gasket, install the extension housing. Be sure to correctly seat the operating parking rod in the extension guide cup.

119. Install six extension housing retaining fasteners. Tighten to 37-52 N·m (27-38 ft-lb).

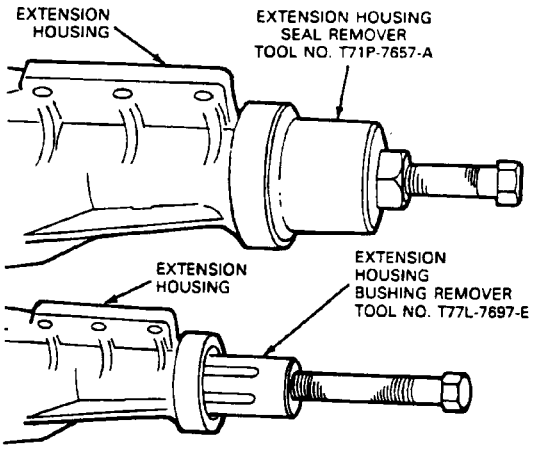


120. Remove extension housing seal using Extension Housing Seal Remover T71P-7657-A or equivalent.

121. Remove extension housing bushing using Extension Housing Bushing Remover T77L-7697-E or equivalent.

122. Install extension housing bushing using Extension Housing Bushing Replacer T77L-7697-F or equivalent.

123. Install extension housing seal using Extension Housing Seal Replacer T74P-77052-A or equivalent.

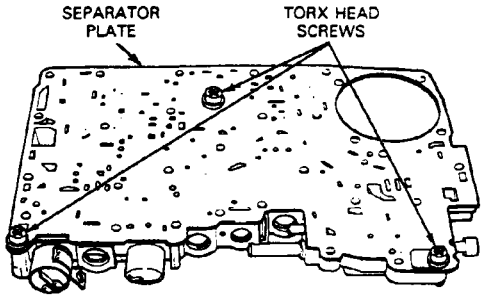


Sub-assemblies

Valve Body

Disassembly

1. Remove three Torx® head screws retaining separator plate and gasket to valve body.



2. With separator plate and gasket removed, note location of:
   - Converter pressure relief valve and spring
   - TV pressure relief valve and spring
   - Three shuttle balls and one check ball
   - Accumulator check valve (two)