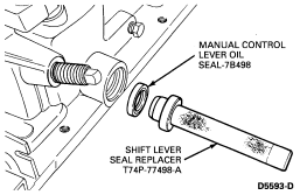
**Transmission**

**SPECIAL SERVICE TOOL(S) REQUIRED**

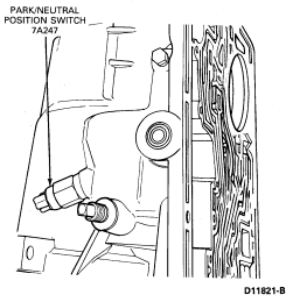
| Description | Tool Number |
|---|---|
| Shift Lever Seal Replacer (in A4LD Service Kit T74P-77000-A) | T74P-77498-A |
| Neutral Start Switch Socket (in A4LD Service Kit T74P-77000-A) | T74P-77247-A |
| Overrunning Clutch Replacing Guide | T74P-77193-A |
| Gauge Bar | T80L-77003-A |
| Extension Housing Bushing Replacer | T77L-7697-F |
| Extension Housing Seal Replacer | T74P-77052A |
| Bench Mounted Holding Fixture | T57L-500-B |
| Band Adjustment Torque Wrench | T71P-77370-A |
| Servo Rod Selecting Gauge (in A4LD Service Kit T74P-77000-A) | T74P-77190-A |

1. Install the manual control lever oil seal (7B498) using Shift Lever Seal Replacer T74P-77498-A.



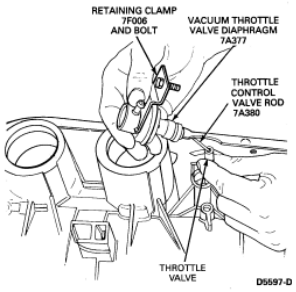

**CAUTION: Do not use open end type wrench. The switch assembly could be damaged.**

2. Install the park/neutral position switch using Neutral Start Switch Socket T74P-77247-A.



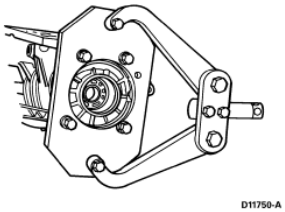

**CAUTION: Make sure the throttle control valve (7D080) moves freely in the bore.**

3. Install throttle control valve , throttle control valve rod (7A380) , vacuum throttle valve diaphragm (7A377) and vacuum diaphragm clamp. Hold in position by tightening M6 x 12mm screw with a 10mm wrench.



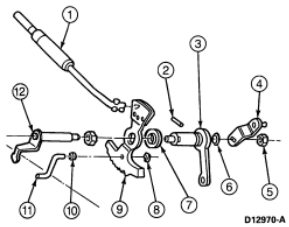

**NOTE: The Bench Mounted Holding Fixture T57L-500-B should still be attached to adapter plate. If not, re-attach fixture arm at this time.**

4. Re-attach the adapter plate to transmission case (7005) on the extension housing face using four M10 x 30mm screws as shown.



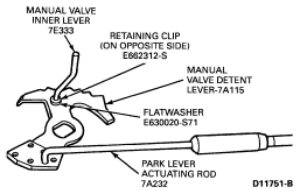

**WARNING: MAKE SURE LOCK PIN ON BENCH MOUNTED HOLDING FIXTURE (T57L-500-B) IS SECURE.**

5. Install the transmission case with Bench Mounted Holding Fixture T57L-500-B in bench pivot and rotate to position, transmission oil pan rail face up.




| Item | Part Number | Description |
|---|---|---|
| 1 | 7A232 | Park Actuating Rod |
| 2 | E840125-S | Pin |
| 3 | 7A256 | Manual Control Lever |
| 4 | 7A394 | Downshift Control Lever — Outer |
| 5 | E820109-S72 | Nut |
| 6 | 386078 | O-Ring |
| 7 | 7B498 | Seal |
| 8 | E662312-S | Clip |
| 9 | 7A115 | Detent Lever — Inner |
| 10 | E630020-S71 | Washer |
| 11 | 7E333 | Manual Valve Detent Lever Inner Pin |
| 12 | 7D261 | Downshift Control Lever — Inner |

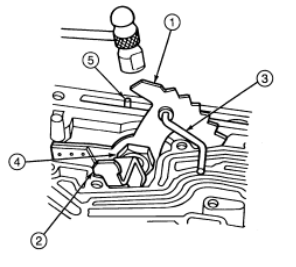
6. Assemble the manual valve detent lever (7A115) , parking lever actuating rod (7A232) , manual valve detent lever inner pin (7E333) , flat washer (E630020-S71) and retaining clip (E662312-S) as shown.




7. Place the manual valve detent lever , parking lever actuating rod , and manual valve detent lever inner pin into position.
8. Insert the downshift detent lever (7D261) with the inner lever-to-lever hex nut in position.
9. Install the manual control lever (7A256) so that inner lever flats match the flats on the outer lever.

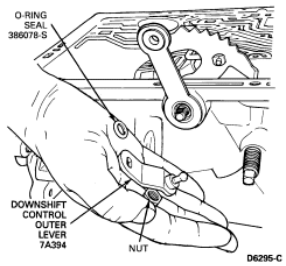
**CAUTION: Do not bend manual valve detent lever inner pin . Care should be taken to not damage pan rail when installing the linkage centering pin.**

10. Install linkage centering pin. Pin should be flush with oil pan rail. Tighten 7/8 Inch hex nut (E820112-S) to 41-54 Nm (30-40 ft-lb).



| Item | Part Number | Description |
|---|---|---|
| 1 | 7A115 | Manual Valve Detent Lever |
| 2 | 7D261 | Downshift Detent Lever |
| 3 | 7E333 | Manual Valve Detent Lever Inner Pin |
| 4 | E820112 | Lever-to-Lever Hex Nut |
| 5 | E840125-C | Centering Pin |

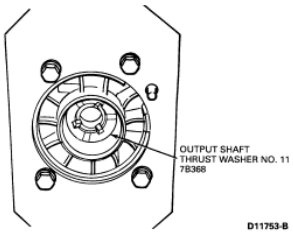
11. Install the downshift control lever oil seal (386078) and downshift control outer lever. Use a 13mm wrench to tighten the outer nut to 10-15 Nm (7-11 ft-lb).



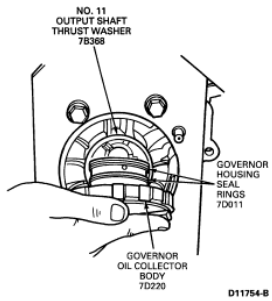

**CAUTION: The tabs on No. 11 output shaft thrust washer point into case.**

**NOTE: Petroleum jelly can be used to hold No. 11 washer in place.**

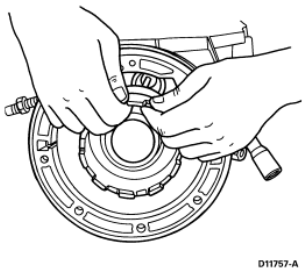
12. Install No. 11 output shaft thrust washer into rear of case bore.




13. Install the governor oil collector body (7D220) with three new governor housing seal rings (7D011) into rear case bore.



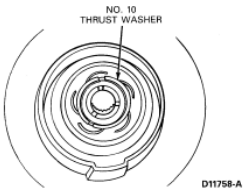

14. Install the reverse brake drum assembly.




**CAUTION: The tabs on No. 10 output shaft hub thrust washer (7D422) point into the one-way clutch (7A089) .**

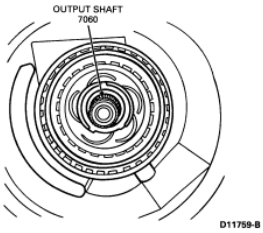
**NOTE: The size of No. 10 thrust washer is model dependent.**

15. Install No. 10 output shaft hub thrust washer against the one-way clutch using petroleum jelly to hold the washer in place during assembly.



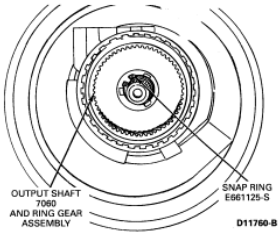

**CAUTION: The output shaft (7060) is model dependent.**

16. Install the output shaft through governor oil collector body spline.



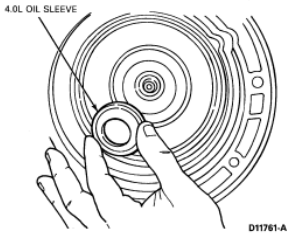

**CAUTION: Always use a new snap ring.**

17. Install the output shaft hub (7D164) and ring gear (7A153) assembly. Retain with a new snap ring (E661125-S) (25 x 2.0mm) in the output shaft groove.




**NOTE: This oil sleeve is only used in 4.0L applications, use petroleum jelly to hold in place.**

18. Install the oil sleeve.

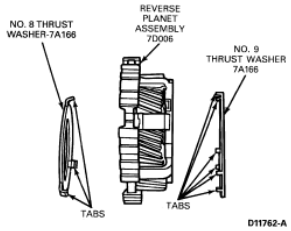



**CAUTION: The tabs on the thrust washers point into the reverse planet (7D006) .**

**NOTE: Use petroleum jelly to hold the thrust washers in place for assembly.**

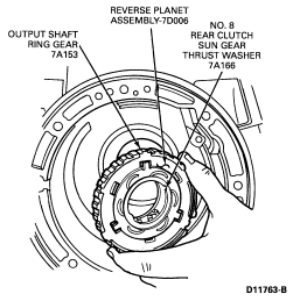
**NOTE: No. 8 and No. 9 thrust washers are model dependent.**

19. Position No. 8 rear clutch sun gear thrust washer (7A166) on the front face and No. 9 rear clutch sun gear thrust washer on the rear face of reverse planet .




**CAUTION: Make sure the thrust washers stay in place.**

20. Install the reverse planet assembly with No. 8 and No. 9 rear clutch sun gear thrust washers held in place into the output shaft ring gear .

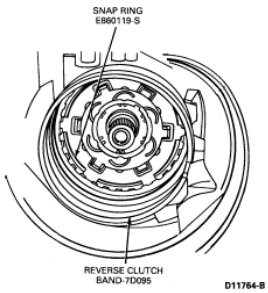



**CAUTION: This snap ring is not used in 4.0L applications.**

21. Install the snap ring into the reverse brake drum (7C498) groove to hold reverse planet assembly in place.

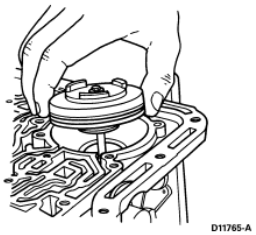
**CAUTION: Make sure band is resting on two anchor pins in the case.**

22. Install reverse clutch band (7D095) onto the reverse brake drum .

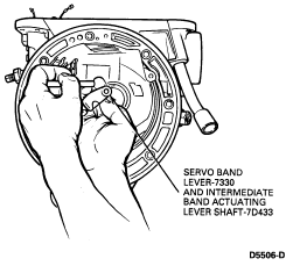



**NOTE: The reverse band servo springs (7D031) will be installed later.**

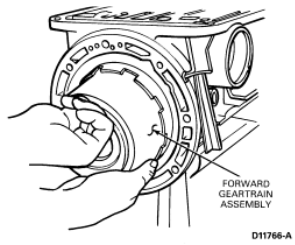
23. Install the reverse band servo piston and rod (7D189) temporarily to hold the reverse clutch band in position.




24. Install the servo band lever (7330) and intermediate band actuating lever shaft as identified at removal.

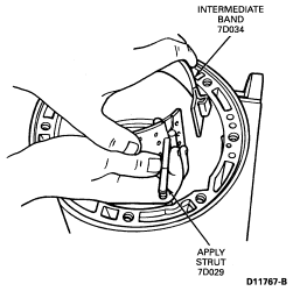



25. Install the previously completed forward geartrain assembly as a unit.




**WARNING: MAKE SURE THE LOCK PIN ON BENCH MOUNTED HOLDING FIXTURE T57L-500-B IS SECURE.**

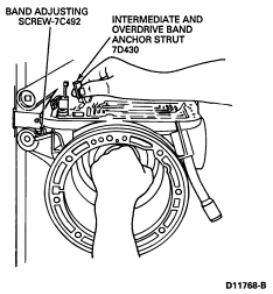
26. Rotate the transmission assembly to position, converter housing gasket surface face up.
27. Install the intermediate band and strut.



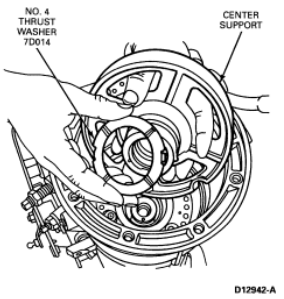

**NOTE: Use the band adjusting screw as a temporary alignment guide.**

**NOTE: The intermediate and intermediate band anchor struts are the same.**

28. Install the intermediate band anchor strut and band adjusting screw.




**NOTE: Use petroleum jelly to back of washer to hold in place. For non-clip together transmissions, install correctly selected No. 4 thrust washer over center support hub as shown below.**




**NOTE: For clip together type forward geartrain only, install the correct No. 5 thrust bearing over the hub of the forward clutch through the bottom of the reverse drum. Refer to Rear No. 4 Thrust Washer Clearance Selection and Rear No. 5 Thrust Bearing Clearance Selection under Selective Thrust Washers in the Specifications portion of this section.**

29. Remove the center overdrive support from the overdrive brake drum (7L669) and install two seal rings onto the hub and apply a liberal amount of petroleum jelly to the hub and seals.

D11773-A

**CAUTION: Do not apply pressure to the rear planet support (7A130) while installing as damage to sealing rings may result. Make sure it is seated.**

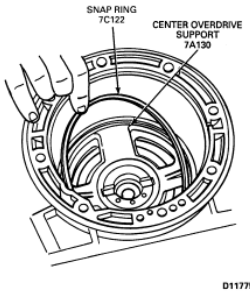
30. Position the center overdrive support into the reverse clutch drum (7D044) . Use the input shaft (7017) as an aid to seat center overdrive support. Gently wiggle the input shaft from side to side until center overdrive support is seated against the case shoulder.

D11774-A

31. Remove the input shaft .

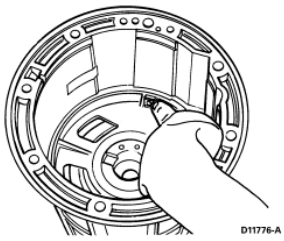
**CAUTION: Install the snap ring (7064) in groove with the taper side of ring up.**

32. Install the large snap ring into groove in the case to retain the center overdrive support.



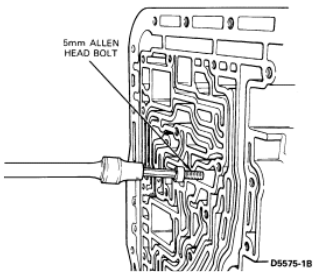

D11775-B

33. Make sure the nut and cage assembly (E826160-S76) is in place as shown.



D11776-A

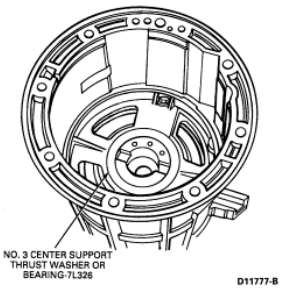
34. Use a 5mm Allen wrench to install one M6 x 20mm capscrew into the nut and cage assembly (E826160-S76) as shown. Tighten to 9-13 Nm (80-115 in-lb).



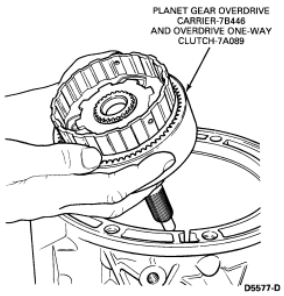

D5575-1B

**NOTE: There will be a thrust washer for non clip together type and a bearing for 4.0L engine clip together type assemblies.**

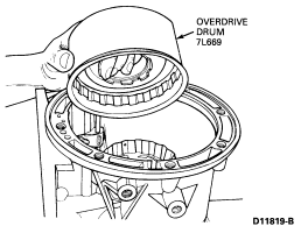
35. Position No. 3 center support thrust washer (7L326) or bearing on the thrust surface of the center overdrive support as shown.



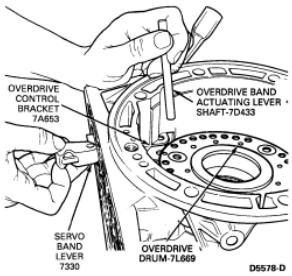

36. Install the planet gear overdrive carrier (7B446) and one-way clutch into the rear planet support .




37. Install the overdrive drum assembly.

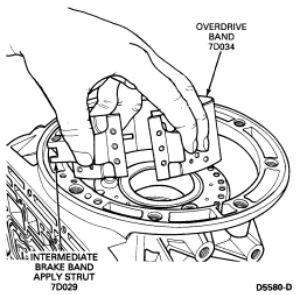



38. Install the overdrive control bracket. Apply servo band lever and overdrive band actuating lever shaft as identified in disassembly.



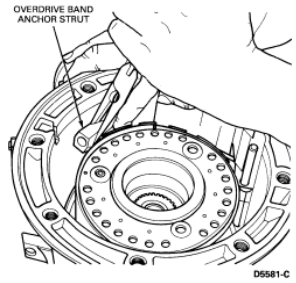

39. Install the overdrive band assembly over the overdrive drum.

40. Install the intermediate brake band apply strut.




**NOTE: Use the band adjusting screw as a temporary alignment guide.**

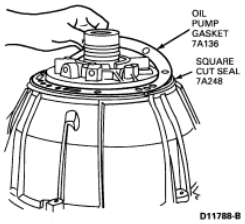
41. Install the overdrive band anchor strut (7D430) and the band adjusting screw.




**NOTE: Refer to Selective Thrust Washers under Specifications in this section for proper thrust washer clearance selection procedures.**

**NOTE: Make sure O-ring seal is installed on converter housing and pump assembly.**

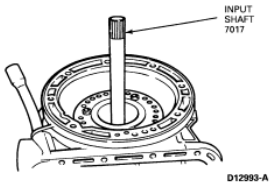
42. Place a new oil pump gasket (7A136) on the oil pump adapter plate (7B472) as shown. Use petroleum jelly to hold oil pump gasket in place.



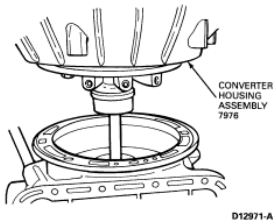

**NOTE: Perform transmission front end play check. Refer to Checks and Adjustments under Specifications in this section.**

43. Install correct No. 1 thrust washer (7D014) on front pump support and gear (7A103) . Use petroleum jelly to hold washer in place.

44. Install input shaft to guide converter pump when installed.




45. Position the completed converter housing (7976) and front pump support and gear assembly (with oil pump gasket ) and No. 1 thrust washer to the case . Use a 17mm socket to install eight new M10 x 33mm screws (E80495-S200). Tighten to 36-52 Nm (27-38 ft-lb).



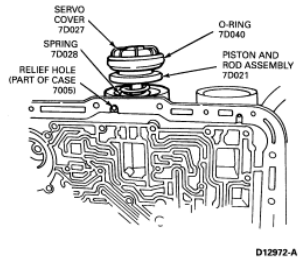

**WARNING: MAKE SURE THE LOCK PIN ON BENCH MOUNTED HOLDING FIXTURE (T57-500-B) IS SECURE.**

**NOTE: Perform Band Adjustment. Refer to Band Adjustment under Specifications in this section for procedure.**

46. Rotate the transmission assembly to position oil pan rail face up.

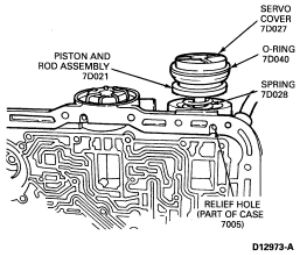
**CAUTION: Do not damage O-ring during installation. Do not press servo cover and O-ring past relief hole in case, O-ring damage may occur.**

47. Install the previously identified intermediate servo spring, piston and cover assembly with O-ring and retain with snap ring.

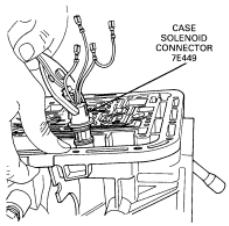


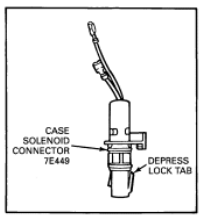

**CAUTION: Do not damage O-ring during installation. Do not press servo cover and O-ring past relief hole in case, or O-ring damage may occur.**

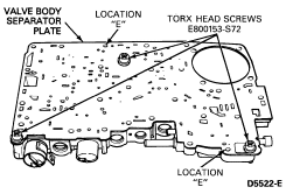
48. Install previously identified overdrive servo spring, piston and cover assembly with O-ring and retain with snap ring.




49. Push the solenoid case connector into the case until the lock tab snaps into place.




**CAUTION: Make sure all holes in gasket line up with holes in separator plate.**

**NOTE: Use petroleum jelly to hold control valve body to case gasket in place.**

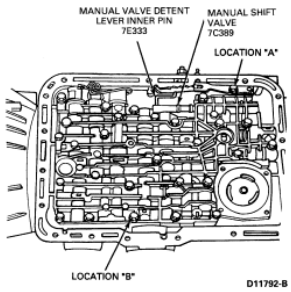
50. Place a new control valve body to case gasket on valve body separating plate.

**CAUTION: Do not bend the manual valve detent lever inner pin .**

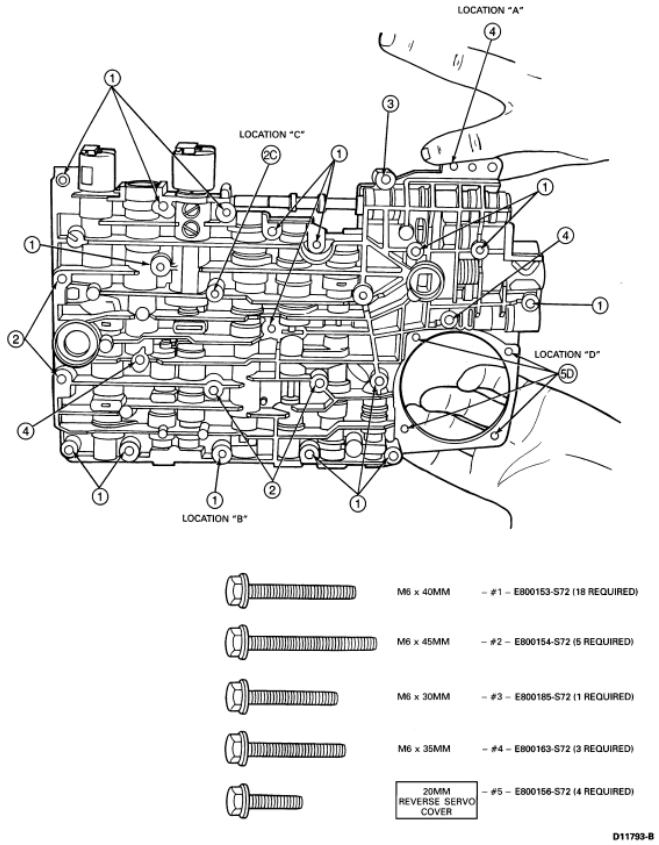
**NOTE: This step is for proper alignment of valve body to case.**

51. Position the main control valve body (7A100) on case with the manual valve detent lever inner pin placed into the hole on the manual shift valve.

See the next illustration for screw size, identification, and hole location.

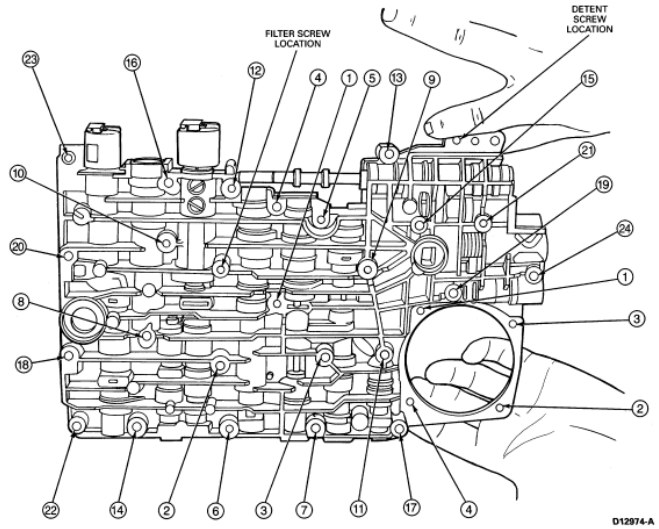



**Main Control Valve Body Screw Location**

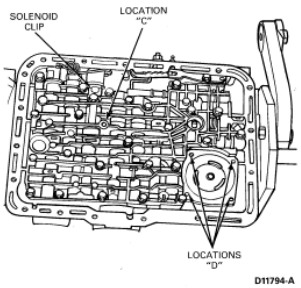



52. Install four M6 x 45mm screws in locations "2" finger-tight.
53. Install two M6 x 35mm screws in locations "4" finger-tight.
54. Install one M6 x 30mm screw in location "3" finger-tight.
55. Install 18 M6 x 40mm screws in location "1" finger-tight.
56. Tighten screws to 8-11 Nm (71-97 in-lb) in sequence shown using a 10mm socket.

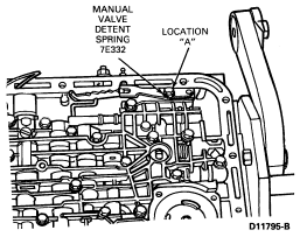
**Valve Body Torque Sequence**



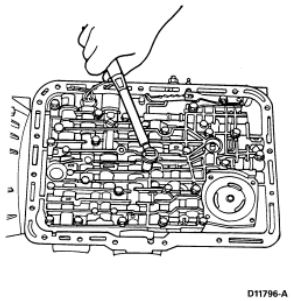

**NOTE: Make sure the solenoid retaining clip is in place. Location "C" is for the filter screen. Locations "D" are for the reverse servo cover. Do not insert screws here yet. See the illustration for screw size, identification and location.**




57. Remove screw from location "A" on main control valve body .
58. Install manual valve detent spring (7E332) . Retain by reinserting screw in location "A" and tighten to 8-11 Nm (71-97 in-lb).




59. Use a 10mm socket to tighten the valve body screws. Start at center of main control valve body and move to outer edges. Tighten all valve body screws to 8-11 Nm (71-97 in-lb).

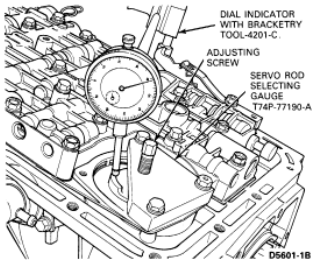


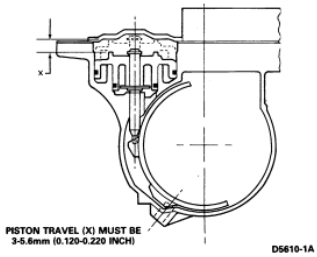

60. Remove reverse band servo piston and rod from case assembly.
61. Install the reverse band servo piston and rod assembly into servo bore along with a reverse band servo spring .

62. Install new reverse servo separator plate cover gasket (7L173) and Servo Rod Selecting Gauge T74P-77190-A and tighten with three attaching bolts.
63. Tighten servo tool adjusting screw to 4 Nm (35 in-lb).
64. Install Dial Indicator With Bracketry TOOL-4201-C or equivalent on transmission case and position indicator on piston pad. Set dial indicator to zero.

    **NOTE: If piston travel in this step is between 3 and 5.6mm (.120 and .220 Inch), it is within specification. If piston travel is greater than 5.6mm (.220 Inch), use the next longer piston and rod. If piston travel is less than 3mm (.120 Inch), use the next shorter reverse band servo piston and rod .**

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



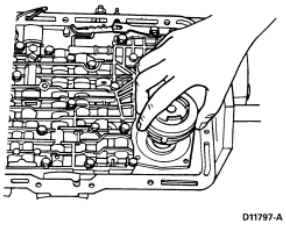




66. Using the above procedure, check the piston travel with the new selected reverse band servo piston and rod (if required) to make sure that the piston travel is between 3 and 5.6mm (.120 to .220 inch).
67. Remove the servo adjusting tool and the reverse reverse band servo spring .

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

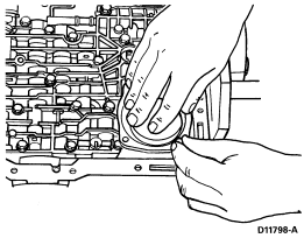
**CAUTION: Replace the rear band servo piston oil seals (7423) if damaged.**

68. Install the reverse band servo spring to the reverse band servo piston and rod .
69. Re-install the reverse band servo piston and rod into the case .

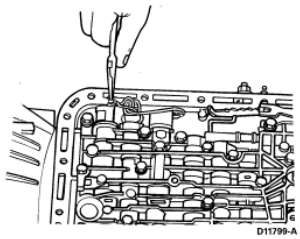



**NOTE: See the valve body screw location illustration.**

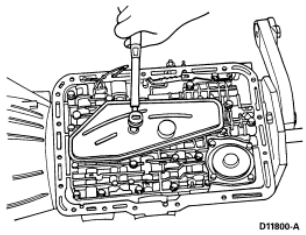
70. Use a 10mm socket to install four number 5 length screws to attach the reverse band servo cover (7D036) and reverse servo separator plate cover gasket at locations "D." Tighten to 9-13 Nm (80-115 in-lb).



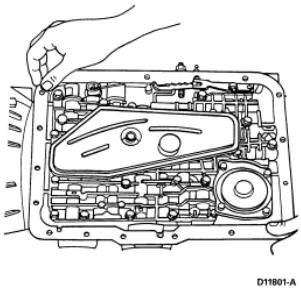

71. Using needlenose pliers, connect solenoid case connector wires to torque converter clutch solenoid and 3/4 shift solenoid assembly.




72. Install new oil pan screen ring (7A469) on the oil screen assembly seal and gasket kit. Lubricate with petroleum jelly. Position oil screen seal and gasket kit and use a 10mm socket to install one No. 2 length screw M6 x 45mm in location "C." Tighten to 8-11 Nm (71-97 in-lb).



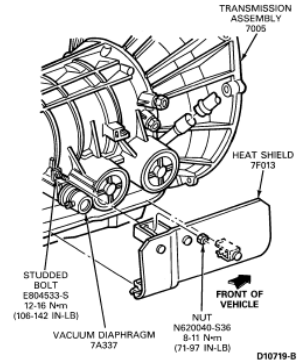

73. Position a new oil pan to case gasket (7A191) on case oil pan rail. Position transmission oil pan (7A194) on top of gasket. Use a 13mm socket to install eighteen M8 x 14mm screws (E800158-S72). Tighten to 11-13 Nm (97-115 in-lb).



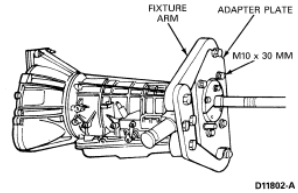

74. Remove the Bench Mounted Holding Fixture T57L-500-B transmission fixture arm with adapter plate from the bench fixture pivot. Place on a flat surface.

**NOTE: A heat shield is on all 4.0L applications.**

75. Position the heat shield onto the oil pan rail. Install retaining nut (N620040-S36). Tighten to 8-11 Nm (71-97 in-lb).

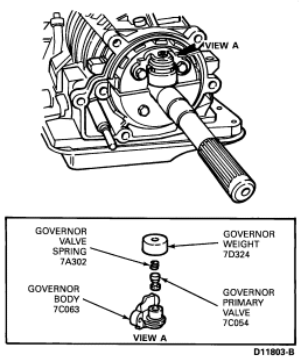



76. Remove the fixture arm and adapter plate held on by four M10 x 30mm screws.




**CAUTION: The governor assembly can come apart until installed in place.**

77. Assemble the governor-less counterweight (7C063) , governor primary valve (7C054), governor valve spring (7A302) , governor weight (7D324) , governor body counter weight (7F124) . Install the governor assembly to the governor oil collector body with two M6 x 20mm screws. Tighten to 9-13 Nm (84-115 in-lb).

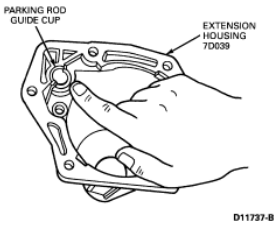



**CAUTION: Make sure the parking lever actuating rod is correctly seated into the case oil pressure plug.**

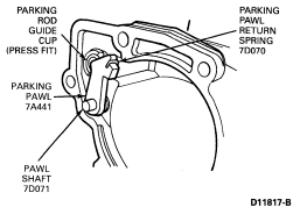
**NOTE: Use petroleum jelly to hold the gasket in place.**

78. Install a new extension housing gasket (7086) on the case.

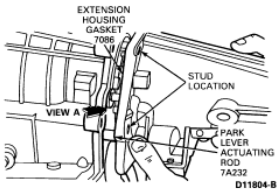
**NOTE: The guide cup is a press fit into the extension housing and is not serviced separately.**




79. Install the parking pawl, pawl return spring, and pawl shaft into the extension housing.




80. Install the extension housing (7A039) to case using four M10-30mm screws, and two studs. Tighten to 36-52 Nm (27-38 ft-lb).

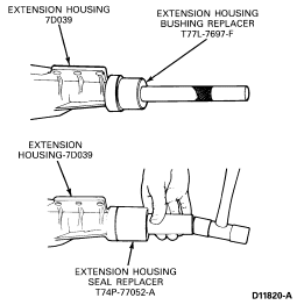



**CAUTION: Tool will bottom when bushing is in proper position.**

**NOTE: Install extension housing bushing only if removed in disassembly.**

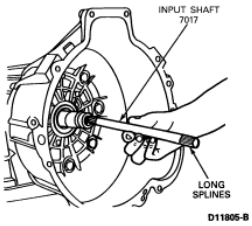
81. Install the extension housing bushing using Extension Housing Bushing Replacer T77L-7697-F.

82. Install the extension housing seal using Extension Housing Seal Replacer T74P-77052-A.




**CAUTION: The splines are not the same on both ends. The shaft end with the shorter spline goes into the front pump support and gear .**

83. Install the input shaft into the front pump support and gear .




**CAUTION: Make sure the converter hub is fully engaged in the front pump support and gear and rotates freely. Do not damage hub seal.**

**WARNING: THE TORQUE CONVERTER CAN FALL OUT IF THE TRANSMISSION IS TIPPED.**

**NOTE: Dimension "A" should be 10.23-14.43mm (7/16-9/16 Inch).**

**CAUTION: If the torque converter slides out and back you may damage the hub seal.**

84. Install the torque converter (7902) by pushing and rotating the converter.