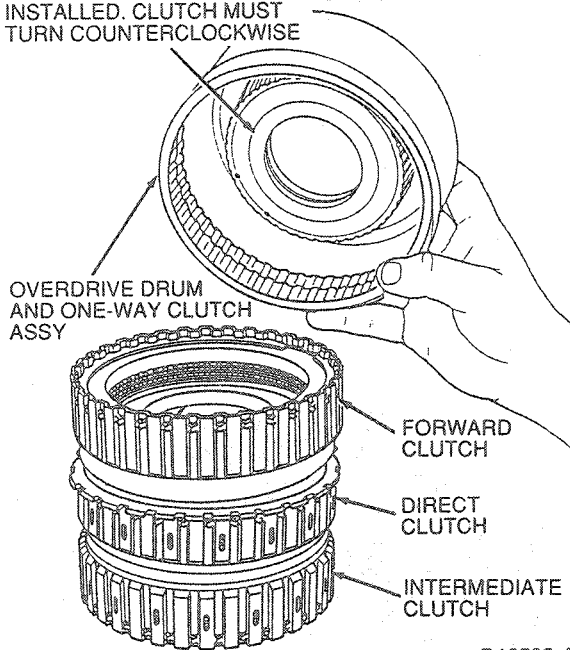


## DISASSEMBLY AND ASSEMBLY (Continued)

Item	Part Number	Description
1	—	Top Oil Cap (Part of 7D171)
2	7D171	Overdrive One-Way Clutch
3	—	Outer Race (Part of 7D171)
4	7L669	Overdrive Drum
5	—	Bottom Oil Cap (Part of 7D171)

9. Install overdrive drum and one-way clutch assembly. Ensure drum is fully seated.

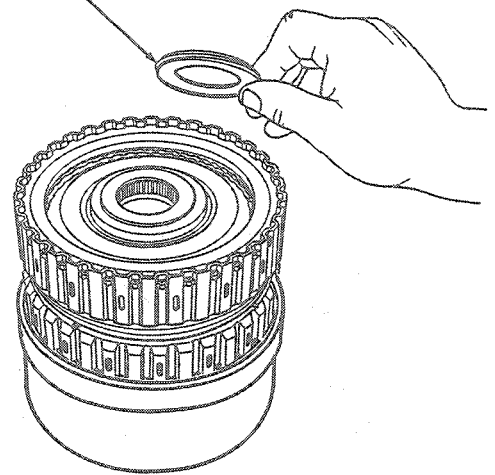
NOTE: ONE-WAY CLUTCH OUTER RACE GROOVE MUST BE VISIBLE, IF PROPERLY INSTALLED. CLUTCH MUST TURN COUNTERCLOCKWISE



D10593-A

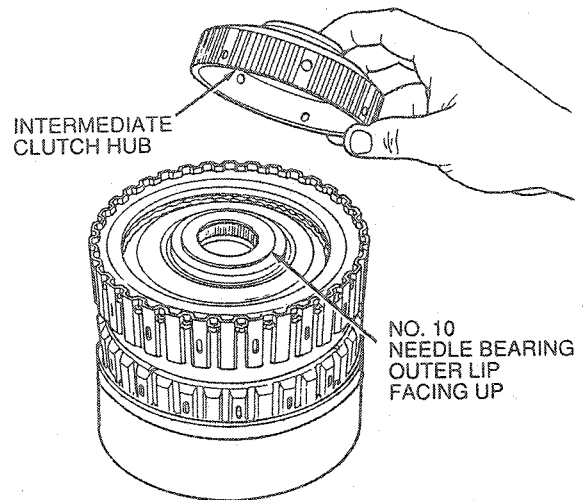
10. Turn assembly over and set on overdrive drum.
11. Install No. 10 needle bearing onto intermediate clutch hub using petroleum jelly to hold in place.

NO. 10 NEEDLE BEARING



D10592-A

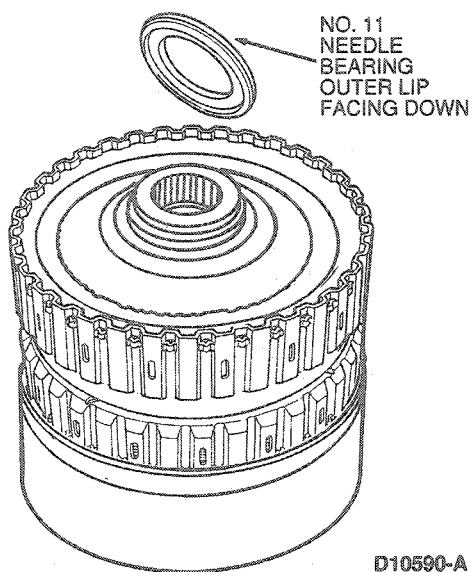
12. Install intermediate clutch hub with No. 10 needle bearing. Ensure hub is fully seated.



D10591-A

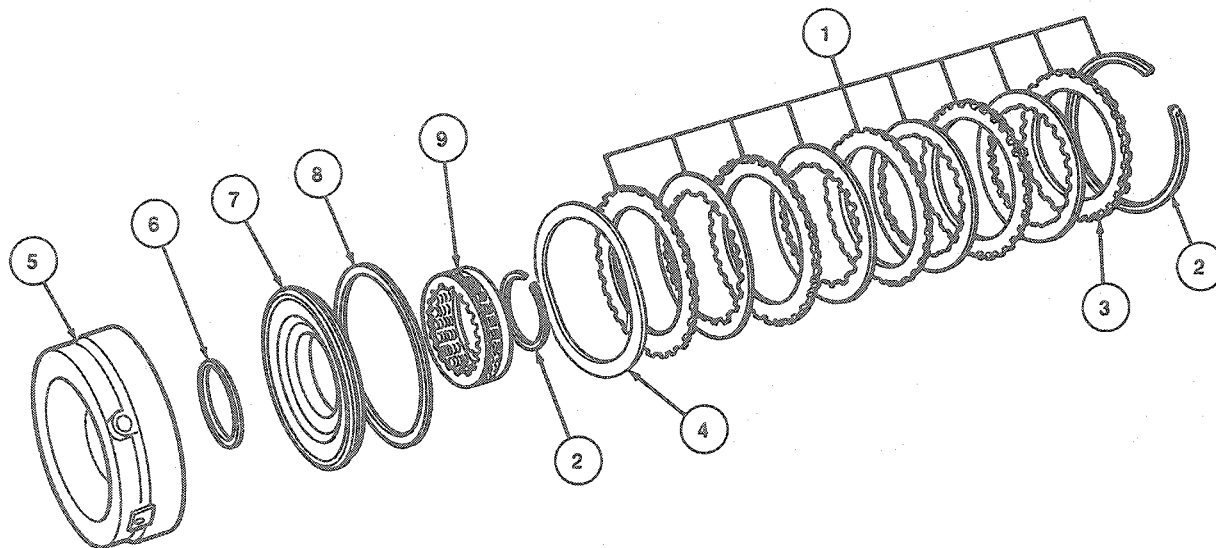
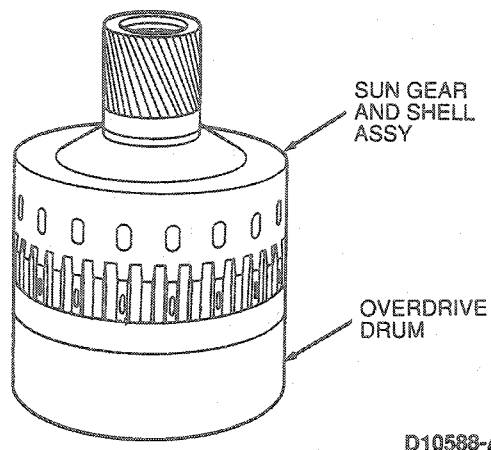
## DISASSEMBLY AND ASSEMBLY (Continued)

13. Install No. 11 needle bearing with outer lip facing down.



Reverse Clutch  
Disassembled View

14. Install sun gear and shell assembly.



D5955-D

Item	Description
1	Clutch Pack
2	Snap Ring
3	Pressure Plate
4	Wave Spring

(Continued)

Item	Description
5	Clutch Cylinder
6	Inner Piston Seal
7	Piston
8	Outer Piston Seal
9	Return Spring

DISASSEMBLY AND ASSEMBLY (Continued)

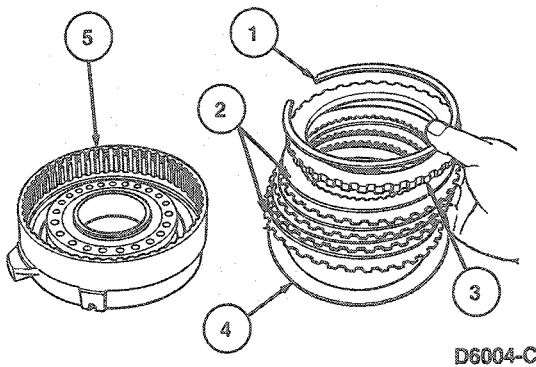
Disassembly

Tools Required:

- Clutch Spring Compressor T65L-77515-A
- Reverse Clutch Outer Lip Seal Protector T86P-70403-A
- Dial Indicator with Bracketry TOOL-4201-C

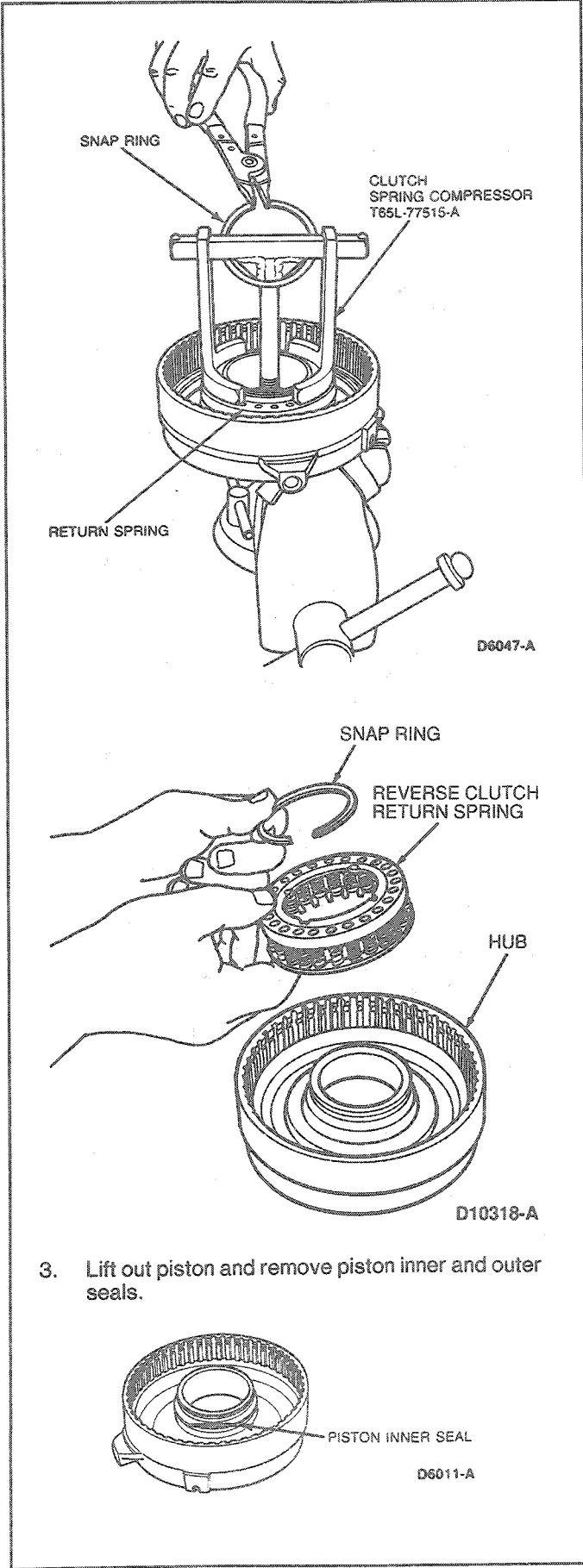
NOTE: Number of pieces in clutch pack will vary with application.

1. Remove snap ring, pressure plate, clutch pack and wave spring.

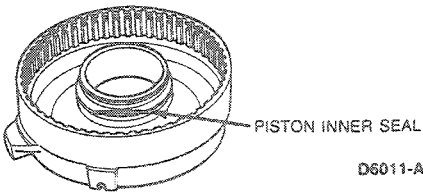


Item	Description
1	Snap Ring
2	Clutch Pack Assy
3	Pressure Plate
4	Wave Spring
5	Cylinder

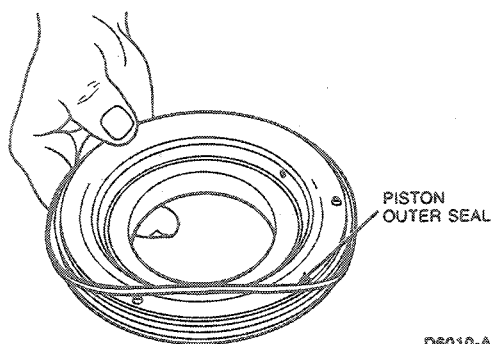
2. Using Clutch Spring Compressor T65L-77515-A, remove snap ring and return spring.



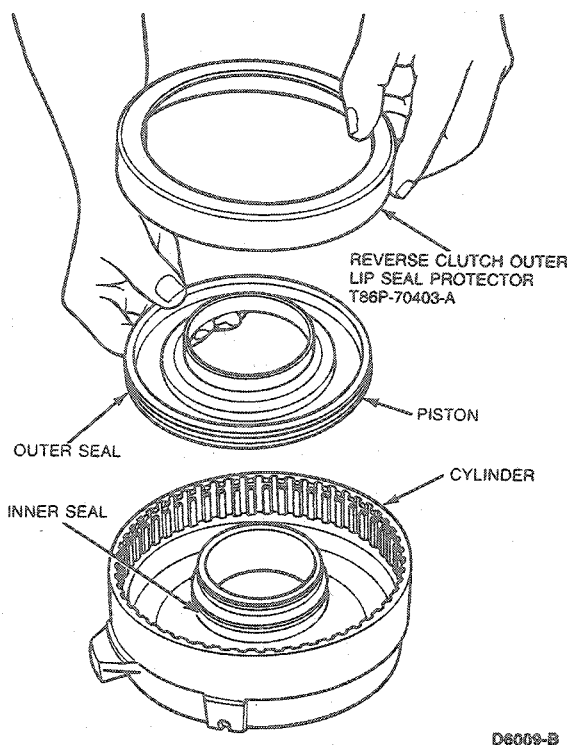
3. Lift out piston and remove piston inner and outer seals.



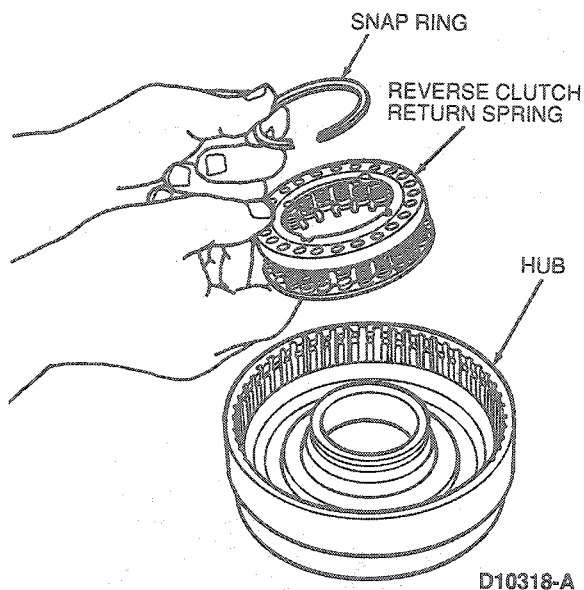
## DISASSEMBLY AND ASSEMBLY (Continued)

**Assembly**

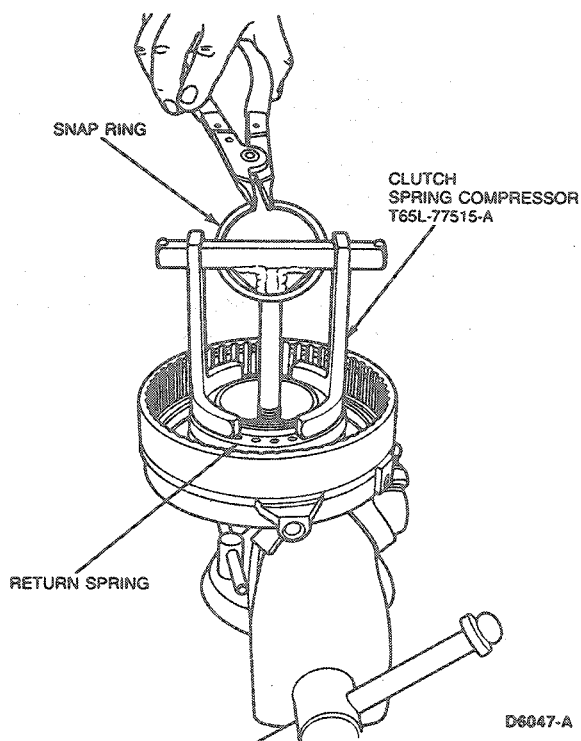
1. Install inner and outer piston lip seals (lips facing toward bottom of cylinder) and install piston using Reverse Clutch Outer Lip Seal Protector T86P-70403-A.



2. Install return spring .

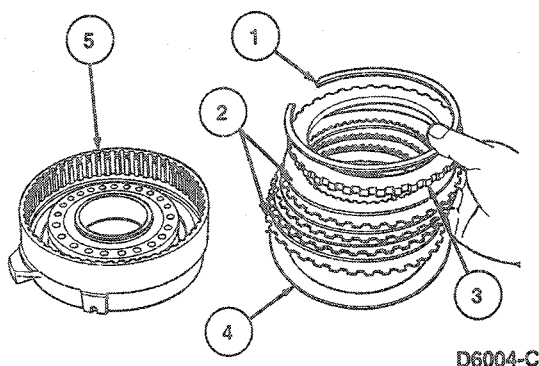


3. Compress return spring using Clutch Spring Compressor T65L-77515-A. Install snap ring.



4. Install wave spring, clutch pack, pressure plate and snap ring.

## DISASSEMBLY AND ASSEMBLY (Continued)

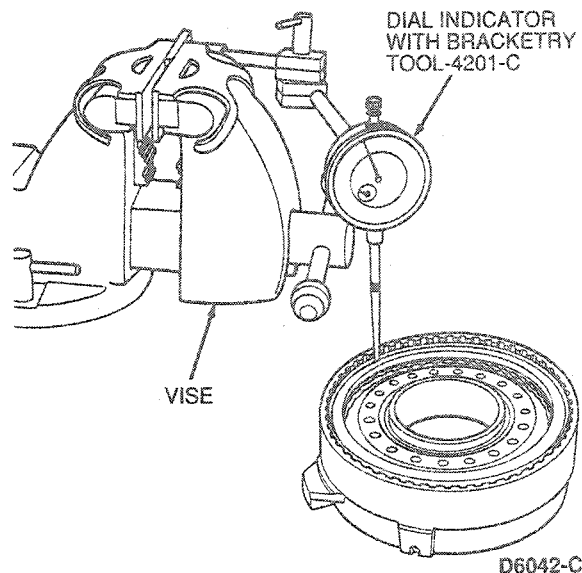


Item	Description
1	Snap Ring
2	Clutch Pack Assy
3	Pressure Plate
4	Wave Spring
5	Cylinder

5. Check clutch pack clearance using feeler gauge or Dial Indicator with Bracketry TOOL-4201-C or equivalent. Push firmly downward on the clutch pack. Release pressure and zero dial indicator. Lift pressure plate to the bottom of the snap ring. Note dial indicator reading. Take two readings, 180 degrees apart, and determine the average of the two readings. The clearance should be: 0.97-1.63mm (0.038-0.064 inch). If the clearance is not within specification, selective snap rings are available in the following thicknesses:

Selective Snap Rings
1.52-1.62mm (0.059-0.064 inch)
1.98-2.08mm (0.078-0.081 inch)
2.45-2.55mm (0.096-0.100 inch)
2.92-3.02mm (0.115-0.118 inch)

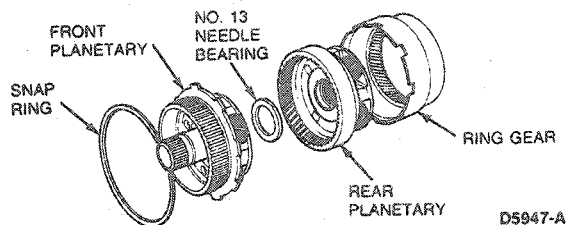
After installing the correct snap ring, check the clearance.



## Planetary Assembly

## Disassembly

1. Remove snap ring.
2. Remove front planetary.
3. Remove No. 13 needle bearing.
4. Remove rear planetary from shell and ring gear assembly.



## Assembly

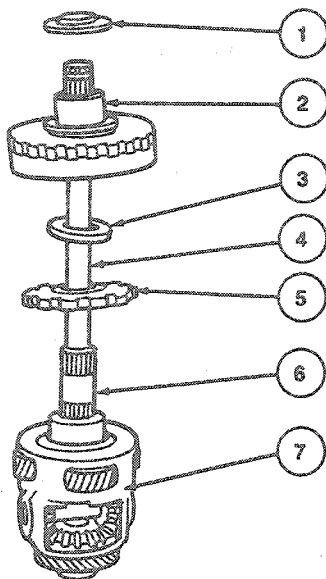
1. Install rear planetary into shell and ring gear assembly.
2. Install No. 13 needle bearing.
3. Install front planetary.
4. Install snap ring.

## Differential and Gearset

## Disassembly

1. Remove rear planetary support, No. 15 needle bearing, park wheel, No. 16 needle bearing and final drive sun gear by lifting off.

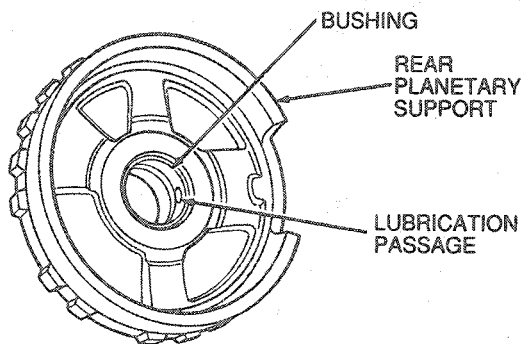
DISASSEMBLY AND ASSEMBLY (Continued)



D10319-A

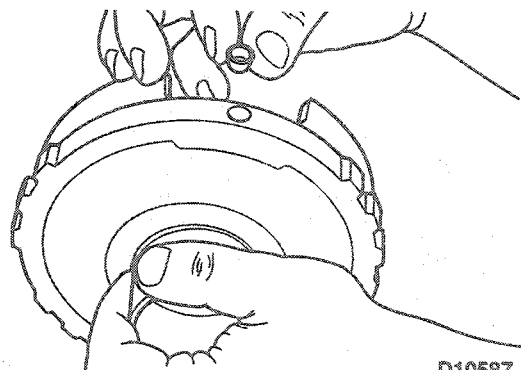
Item	Description
1	No. 15 Needle Bearing
2	Rear Planetary Support
3	No. 16 Needle Bearing
4	Output Shaft
5	Park Wheel
6	Final Drive Sun Gear
7	Differential Assy

2. Check to be sure hole in bushing in rear planet is aligned with lubrication passage. If not, replace support, as bushing is not serviced.



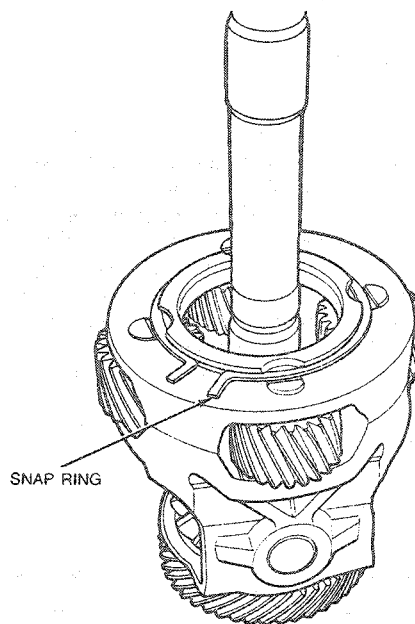
D10320-A

3. Remove seal and discard.



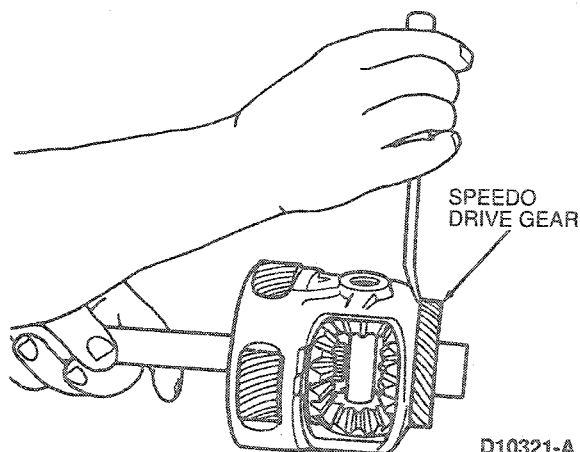
D10587-A

4. Check snap ring to verify that it is fully seated in its groove.



D6204-A

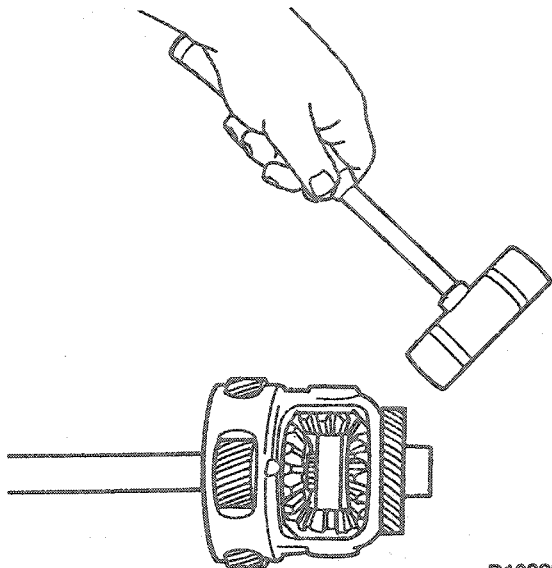
5. If necessary remove speedometer drive gear by gently prying off with a screwdriver.



D10321-A

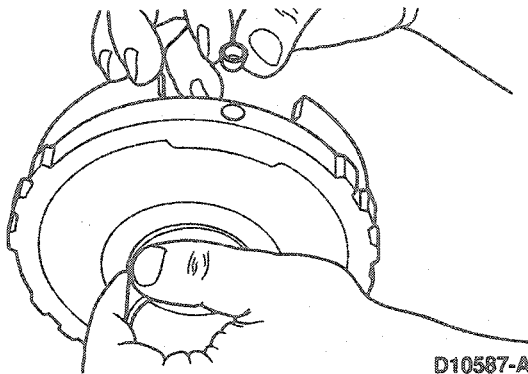
**DISASSEMBLY AND ASSEMBLY (Continued)****Assembly**

1. If removed, position speedometer drive gear and gently tap into place using soft-faced hammer. Be sure gear is fully seated.



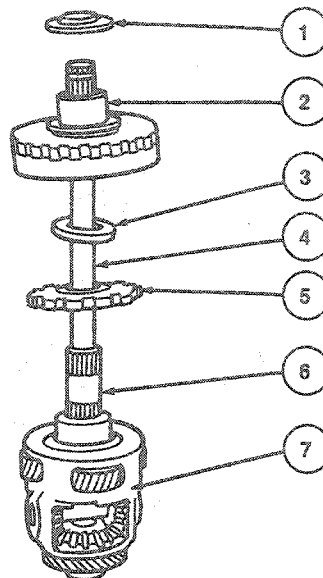
D10322-A

2. Install rear lubrication tube seal in support.



D10587-A

3. Slide final drive sun gear, No. 16 needle bearing, park wheel, No. 15 needle bearing and rear planetary support into place.



D10319-A

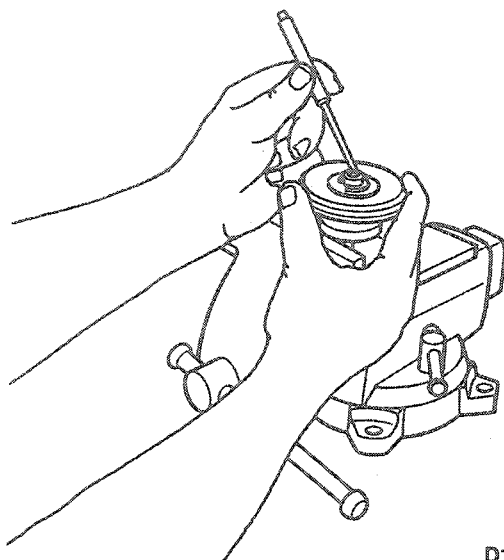
Item	Description
1	No. 15 Needle Bearing
2	Rear Planetary Support
3	No. 16 Needle Bearing
4	Output Shaft
5	Park Wheel
6	Final Drive Sun Gear
7	Differential Assy

**Low-Intermediate Servo****Disassembly**

1. Remove spring retainer.
2. Remove piston return spring.
3. Remove servo piston and rod from cover.

**DISASSEMBLY AND ASSEMBLY (Continued)**

4. Place piston assembly in soft jawed vise, pry off piston rod retaining clips and remove rod and cushion spring.

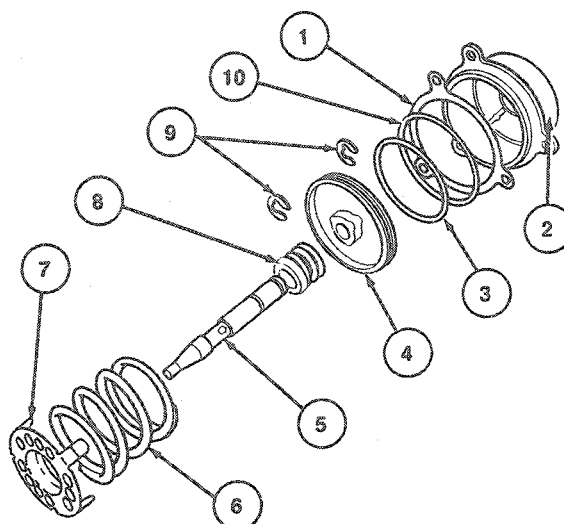


D10323-A

5. Remove servo piston seal.
6. Remove seal and gasket from cover.

**Assembly**

1. Install front piston rod retaining clip on piston rod.
2. Install cushion spring and piston.
3. Compress assembly and install rear piston rod retaining clip.
4. Install servo piston seal.
5. Install cover seal and gasket.
6. Lubricate piston seals with petroleum jelly.
7. Install assembled piston components into servo cover.
8. Install piston return spring into cover.
9. Install retainer onto spring.



D5946-C

Item	Description
1	Servo Cover Gasket
2	Servo Cover
3	Piston Seals
4	Servo Piston
5	Piston Rod
6	Piston Return Spring
7	Spring Retainer
8	Cushion Spring
9	Piston Retaining Clips
10	Cover Seal

TD5946C

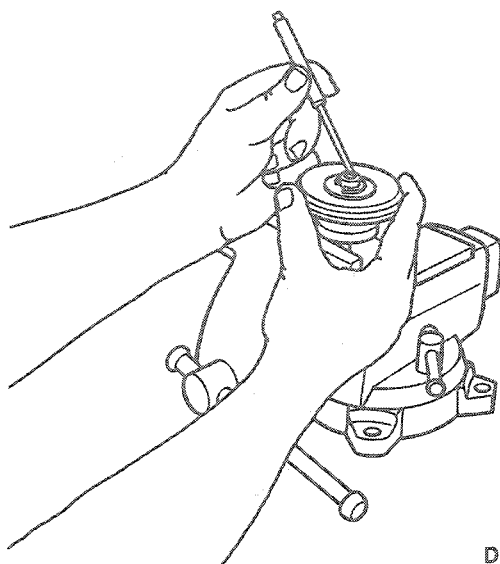
**Overdrive Servo****Disassembly**

1. Remove return spring.
2. Remove servo piston from cover.



**DISASSEMBLY AND ASSEMBLY (Continued)**

3. Place piston assembly in soft jawed vise, pry off rear piston rod retaining clip and remove washer.



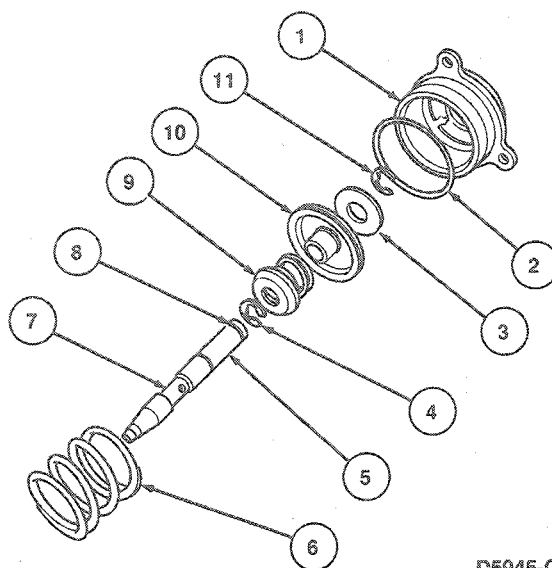
D10323-A

**NOTE:** Piston and seal are an assembly. If seal is damaged, replace the piston assembly.

4. Remove servo piston and seal.
5. Remove cushion spring.
6. Remove front piston rod retaining clip, if necessary.
7. Remove cover seal.

**Assembly**

1. Install front piston rod retaining clip on piston rod.
2. Install cushion spring, piston and washer.
3. Compress assembly and install rear piston rod retaining clip.
4. Lubricate piston seal with petroleum jelly.
5. Install cover seal.
6. Install assembled servo components into case cover.



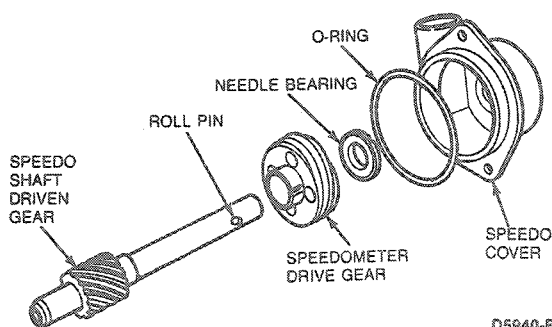
D5945-C

Item	Description
1	Servo Cover
2	Cover Seal
3	Washer
4	Front Retaining Clip
5	Front Groove
6	Piston Return Spring
7	Servo Rod
8	Rear Groove
9	Cushion Spring
10	Servo Piston
11	Rear Retaining Clip

TD5945C

**Speedometer Drive Gear Assembly****Disassembly**

1. Remove seal and discard.
2. Remove speedometer drive bearing and gear from speedometer shaft.



D5940-B

**DISASSEMBLY AND ASSEMBLY (Continued)****Assembly**

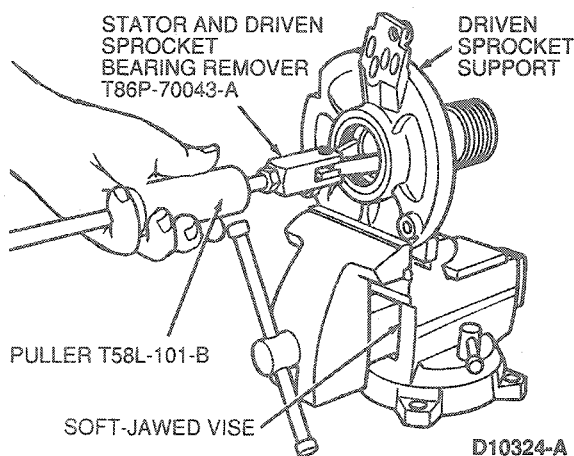
1. Push speedometer drive gear onto speedo shaft aligning slots in gear with shaft roll pin.
2. Install speedometer drive gear bearing on speedometer drive gear with outer race (black side) facing up.
3. Install new seal on cover.
4. Install two 8mm cover bolts. Tighten to 9-12 N·m (7-9 lb-ft).

**Driven Sprocket Support****Tools Required:**

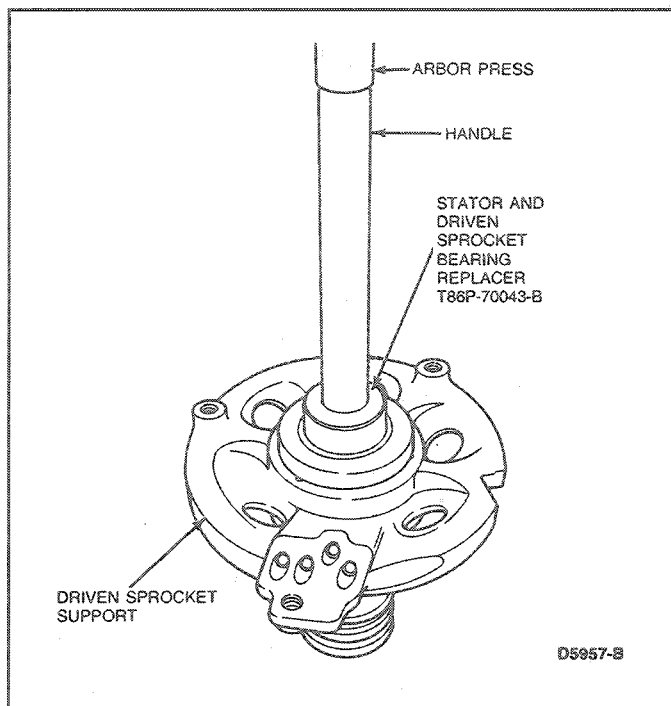
- Puller T58L-101-B
- Stator and Driven Sprocket Bearing Remover T86P-70043-A
- Stator and Driven Sprocket Bearing Replacer T86P-70043-B
- Impact Slide Hammer T50T-100-A

**Disassembly**

1. Clamp sprocket support vertically in a soft-jawed vise.
2. Remove driven sprocket support needle bearing using Stator and Driven Sprocket Bearing Remover T86P-70043-A, Impact Slide Hammer T50T-100-A and Puller T58L-101-B.

**Assembly**

1. Press driven sprocket support needle bearing using Stator and Driven Sprocket Bearing Replacer T86P-70043-B.

**Transaxle Assembly****Tools Required:**

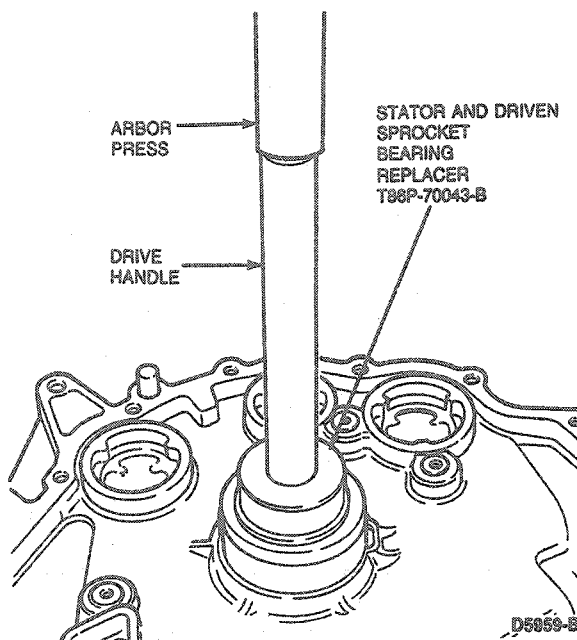
- Output Shaft Seal Replacer T86P-1177-B
- Overdrive Servo Rod Tool T86P-70023-B
- Stator and Driven Sprocket Bearing Replacer T86P-70043-B
- Front Clutch Loading Tool T86P-70389-A
- End Play Tool T87P-70014-AH
- Front Pump Seal Installer T87L-77837-AH
- Transmission Test Plate T91P-7006-A
- Gear Position Sensor Adjuster T91P-70010-A
- Dial Indicator with Bracketry TOOL-4201-C

**Assembly**

1. Position case in horizontal position.

## DISASSEMBLY AND ASSEMBLY (Continued)

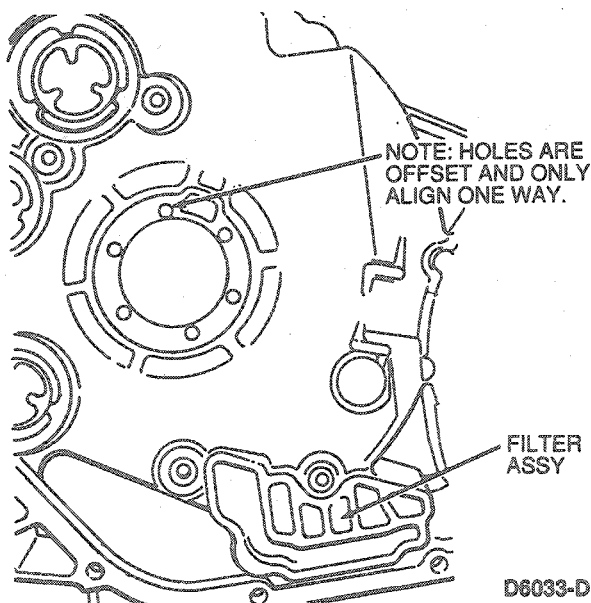
2. If bearing was removed, install drive sprocket support needle bearing using Stator and Driven Sprocket Bearing Replacer T86P-70043-B.



NOTE: Bolt holes are offset. Sprocket support can only be aligned one way. Drain hole points downward.

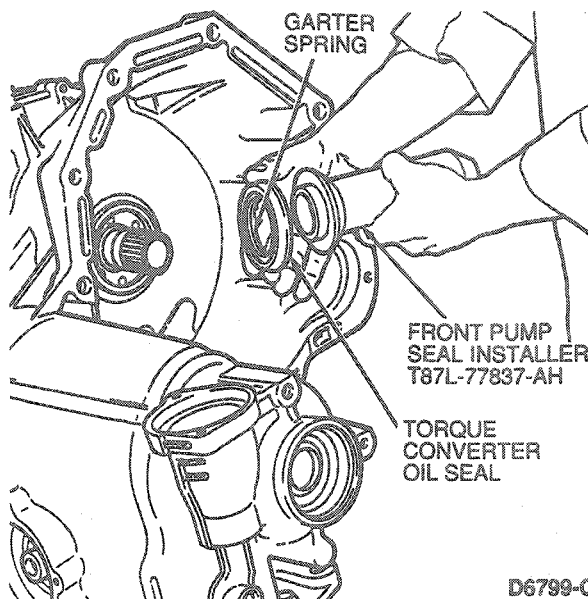
If removed, install drive sprocket support. Install six (T-30) Torx® bolts and tighten to 7-9 N·m (5-7 lb-ft).

3. Clean filter with compressed air and install.



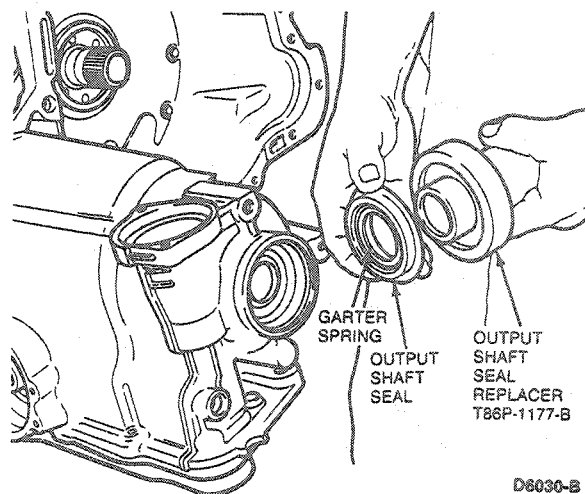
NOTE: After installation, verify presence of garter spring on seal.

4. Install converter oil seal using Front Pump Seal Installer T87L-77837-AH.



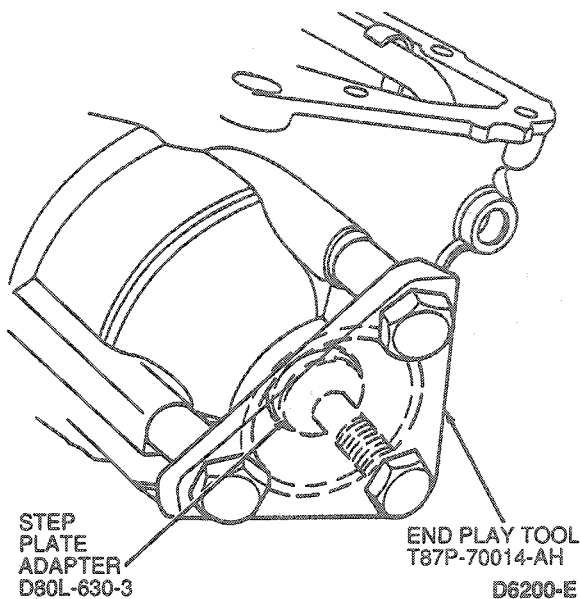
NOTE: After installation, verify presence of garter spring on seal.

5. Install RH output shaft seal using Output Shaft Seal Replacer T86P-1177-B.

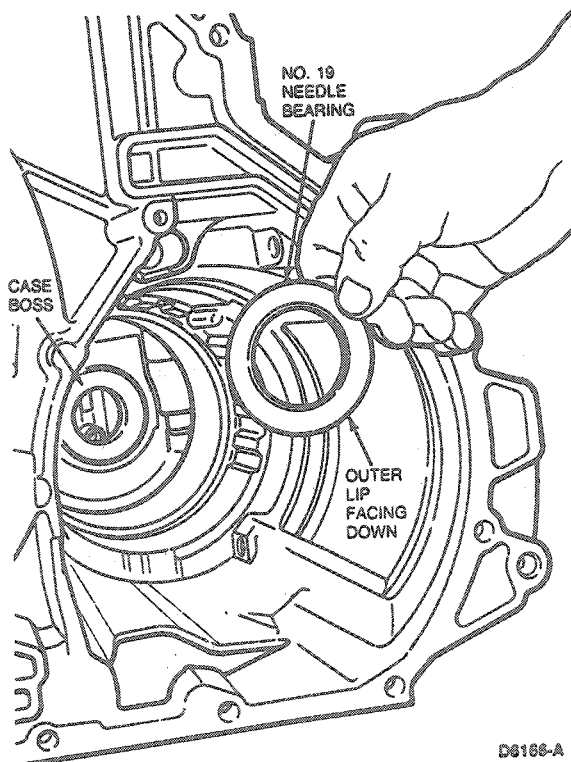


## DISASSEMBLY AND ASSEMBLY (Continued)

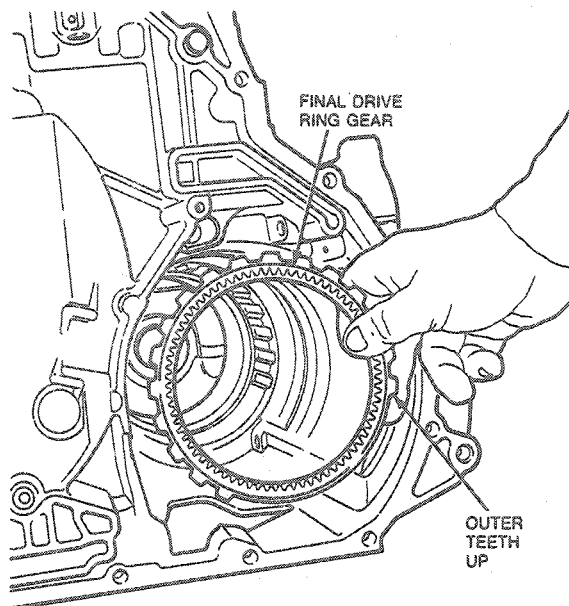
6. Loosely install End Play Tool T87P-70014-AH and two bolts over RH output shaft opening. Tool will be used later to perform selective thrust washer checks.



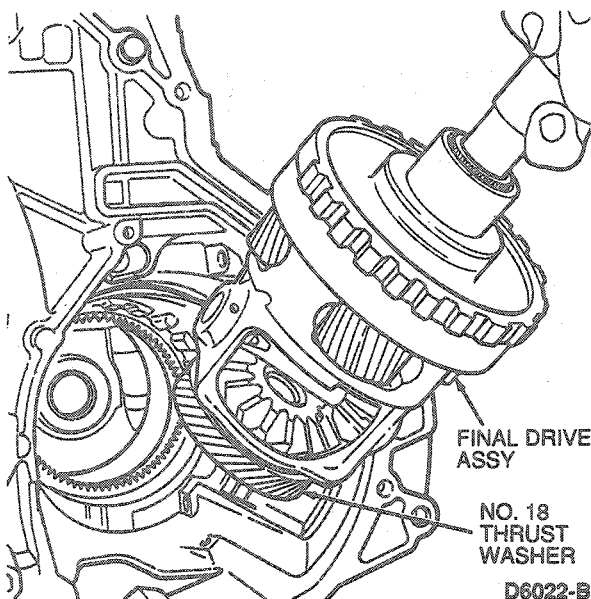
7. Place case in vertical position. Install No. 19 needle bearing over case boss with flat side facing up, outer lip facing down.



8. Install final drive ring gear with external splines up. Using a hammer handle if necessary, tap gently to fully seat into case splines.



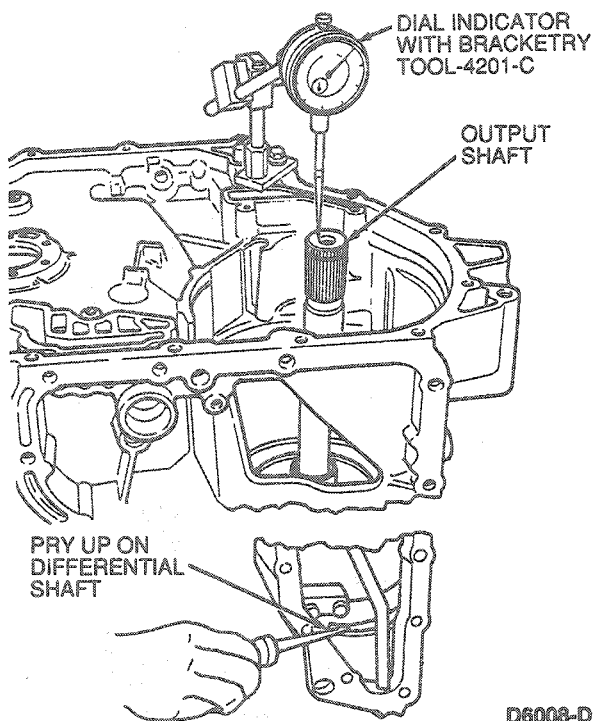
9. Assemble No. 18 thrust washer to differential assembly using petroleum jelly.  
10. Lower final drive assembly into case. Use hammer to gently tap into place.



11. Install snap ring and align opening of snap ring with rear lube tube passage.  
12. Perform end clearance check for No. 18 selective thrust washer as follows:
- Place screwdriver under differential case and pry up.
  - Mount Dial Indicator with Bracketry TOOL-4201-C or equivalent with stylus on end of output shaft.

## DISASSEMBLY AND ASSEMBLY (Continued)

- Back out screw on tool installed in Step 5 until it no longer touches shaft.
- Zero dial indicator.
- Tighten screw to 4-5 N·m (35-44 lb-in).
- Observe reading on dial indicator.

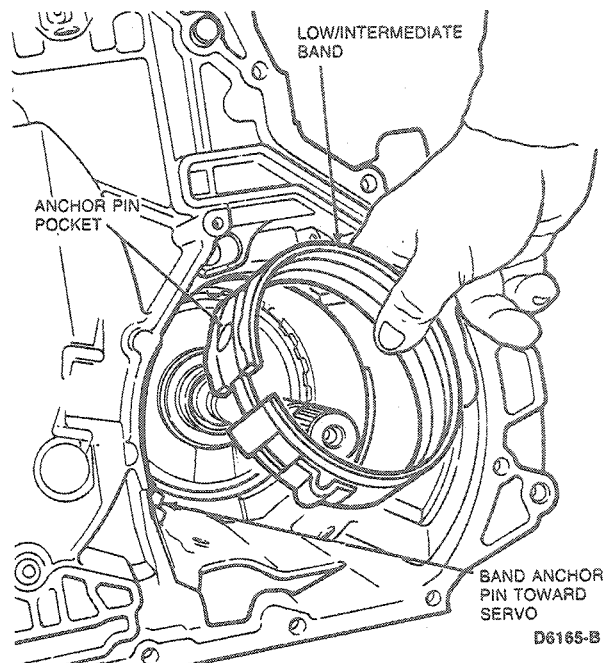


The clearance should be 0.1-0.40mm (0.004-0.016 inch). If the clearance is not within specification, selective thrust washers are available in the following thicknesses:

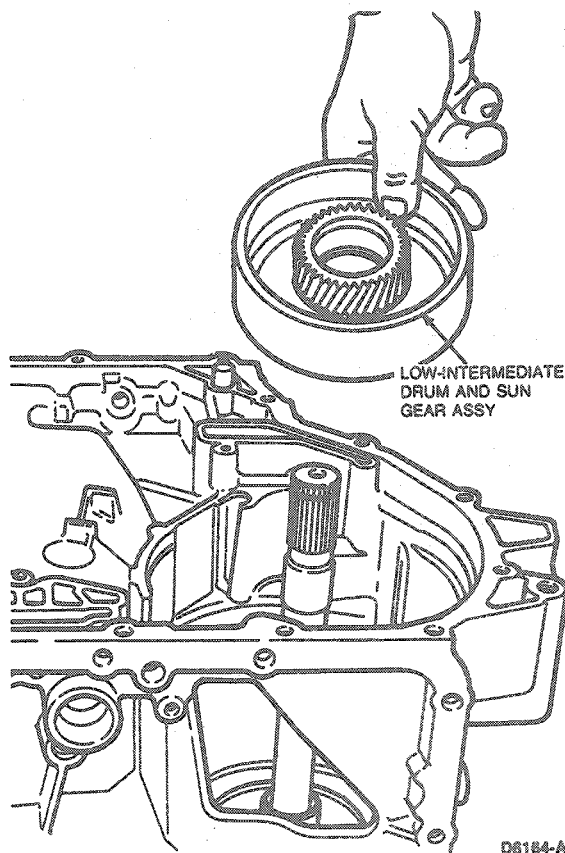
Selective Snap Rings
1.20-1.28mm (0.047-0.050 inch) Red
1.30-1.38mm (0.051-0.054 inch) Green
1.40-1.46mm (0.055-0.058 inch) Blue
1.50-1.58mm (0.059-0.062 inch) Black
1.60-1.68mm (0.062-0.066 inch) White
1.70-1.78mm (0.067-0.070 inch) Brown
1.80-1.88mm (0.071-0.074 inch) Gold

NOTE: After completing end clearance check, back off screw on tool and leave tool in position for No. 5 and No. 8 selective thrust washer clearance check to be performed later.

13. After installing the correct thrust washer, check the clearance.
14. Install low-intermediate band into case and align anchor pin pocket with anchor pin.

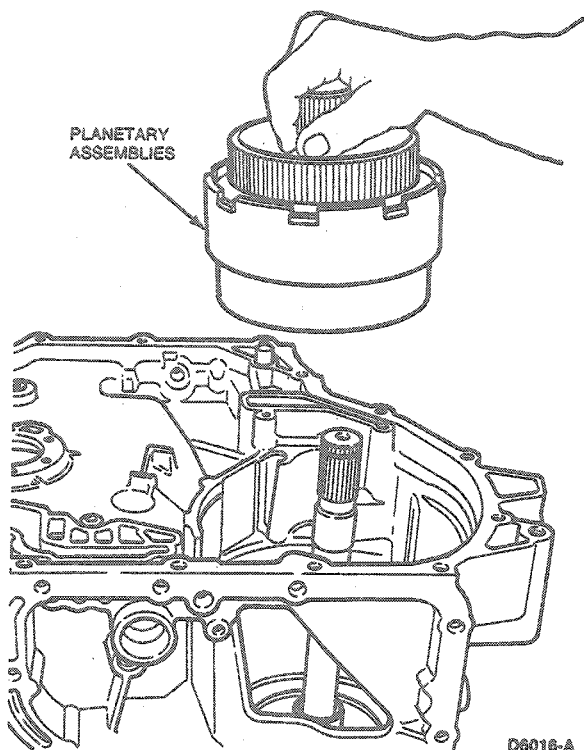


15. Install low-intermediate drum and sun gear.



## DISASSEMBLY AND ASSEMBLY (Continued)

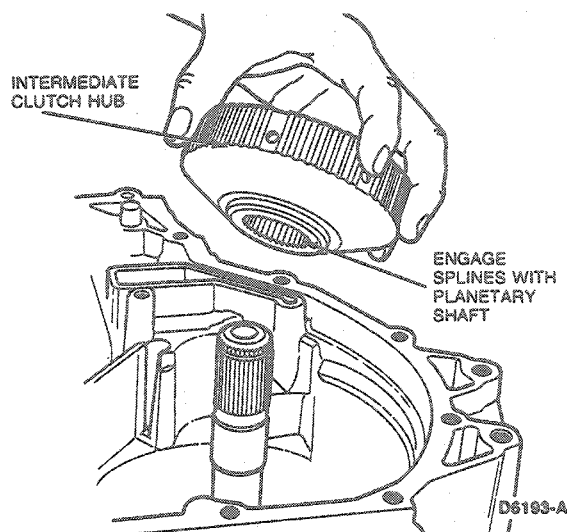
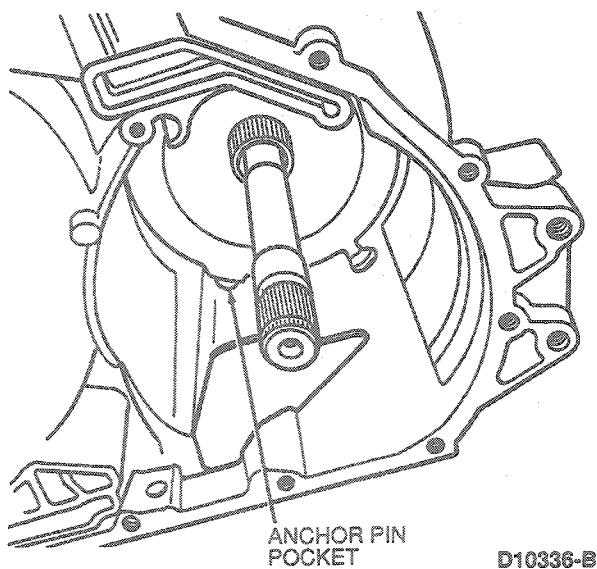
16. Slide planetary assembly over output shaft.



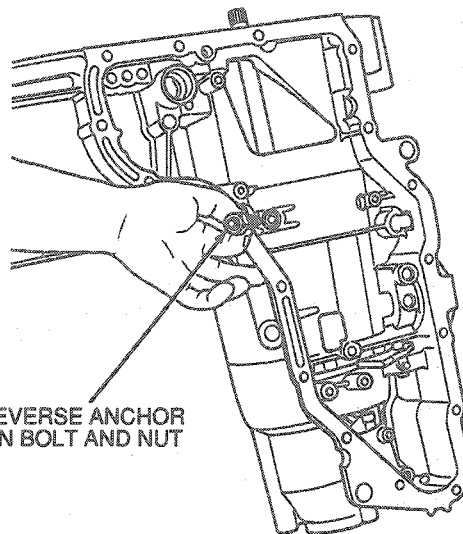
17. Lower reverse clutch into case. Ensure clutch plates have full engagement.

NOTE: To seat reverse clutch, the intermediate clutch hub can be used as a tool to complete clutch plate engagement. Rotating planet with hub will allow clutch splines to engage.

18. Align clutch cylinder anchor pin pocket with anchor pin case hole.



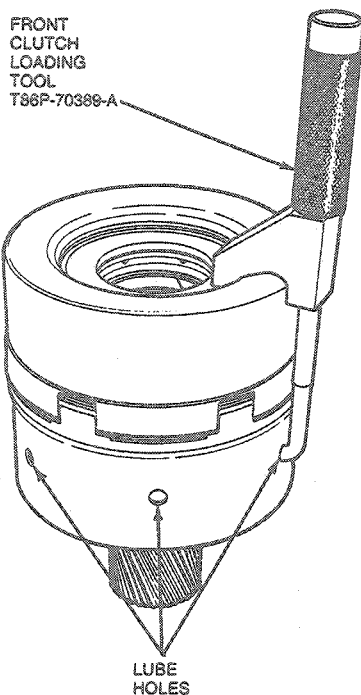
19. Start reverse anchor pin bolt but **do not** tighten at this time.



20. Attach Front Clutch Loading Tool T86P-70389-A to forward / intermediate / direct clutch assembly.

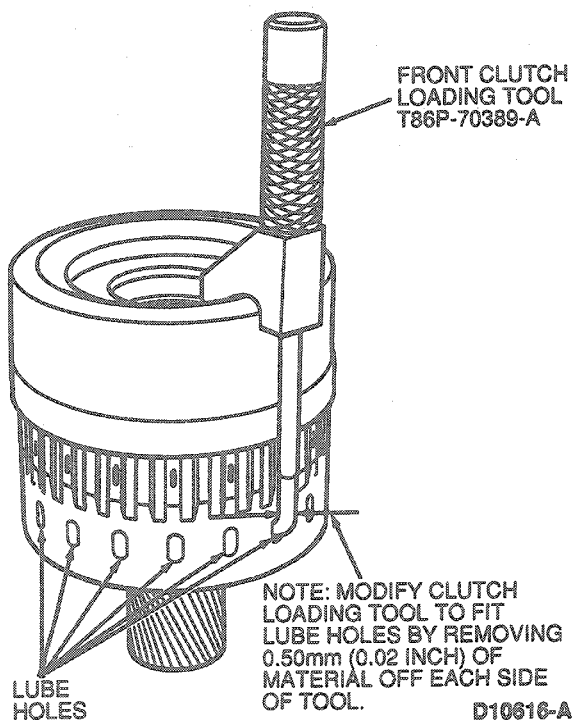
## DISASSEMBLY AND ASSEMBLY (Continued)

All Except 3.2L SHO



D6199-B

3.2L SHO

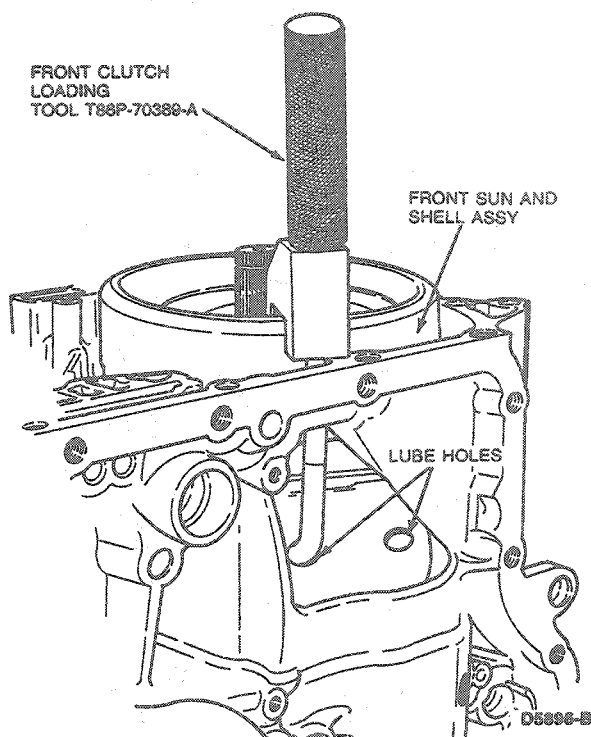


D10616-A

21. Lower assembly into case, aligning shell and sun gear splines into forward planetary.

**CAUTION:** Ensure the assembly is fully seated before removing the tool.

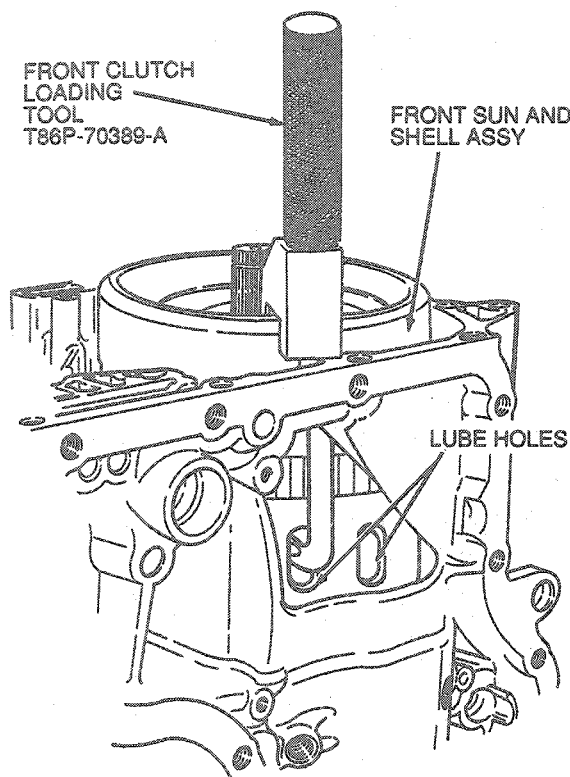
All Except 3.2L SHO



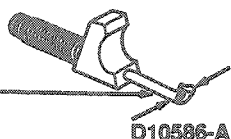
D6199-B

## DISASSEMBLY AND ASSEMBLY (Continued)

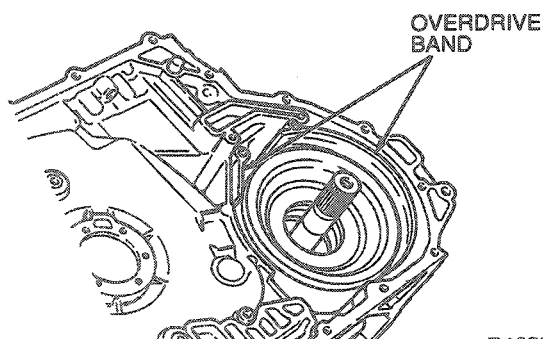
## 3.2L SHO



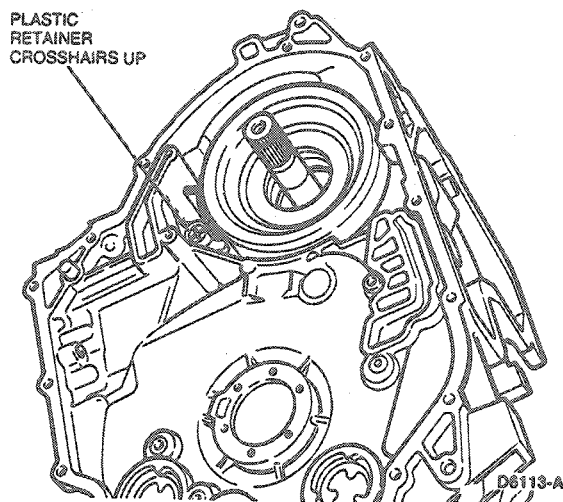
NOTE: MODIFY CLUTCH LOADING TOOL TO FIT LUBE HOLES BY REMOVING 0.50mm (0.02 INCH) OF MATERIAL OFF EACH SIDE OF TOOL.



22. Install overdrive band into case.



23. Install plastic retainer with cross hairs facing up.



NOTE: Perform Steps 24 through 34 to check the driven sprocket end-play clearance for No. 8 selective thickness thrust washers.

24. Tighten screw on end-play tool previously installed to 4-5 N-m (35-44 lb-in).

25. Ensure that the No. 5 thrust washer is removed from the driven sprocket support.

NOTE: Make sure that all pieces are clean and dry. Do not use petroleum jelly for this step.

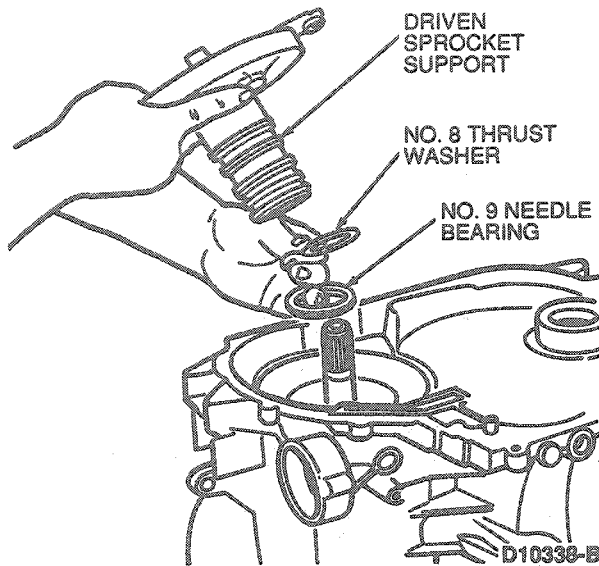
26. Install No. 8 thrust washer into No. 9 needle bearing.

27. Lower needle bearing / thrust washer assembly over the output shaft and carefully center the assembly.

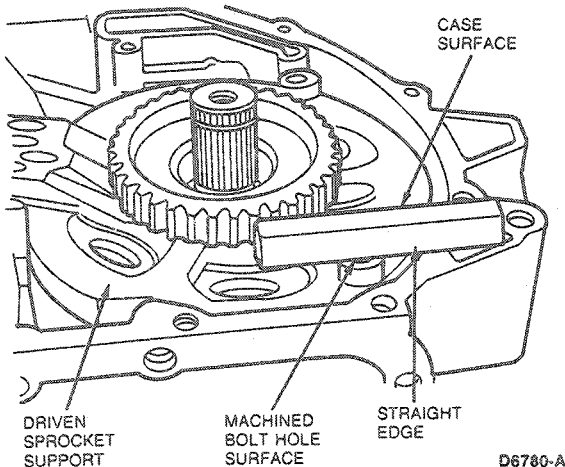


## DISASSEMBLY AND ASSEMBLY (Continued)

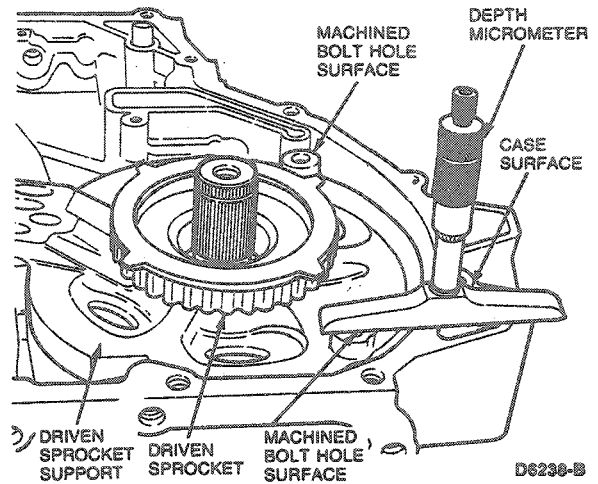
28. Install driven sprocket support making sure it is seated fully. Do not force it. If it is not fully seated, remove support and re-center needle bearing / thrust washer assembly and install support.



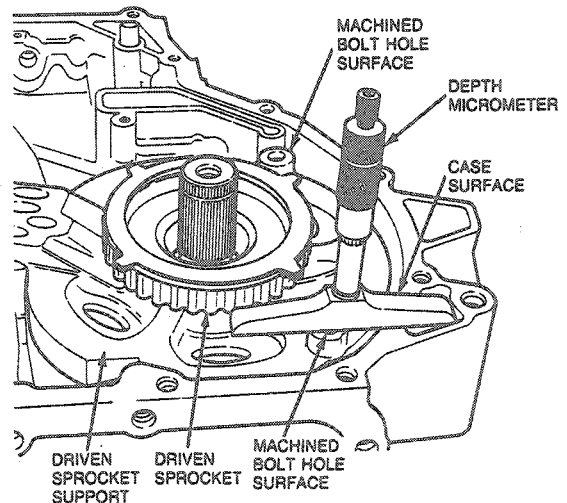
29. Install the driven sprocket.  
30. Determine with straight edge or flat block whether machined bolt hole surfaces on support are above or below case machined surface.



31. If support machined bolt hole surfaces are **above** case machined surface, place depth micrometer on machined bolt hole surface of support, centering spindle over machined surface of case. Measure distance to case machined surface at both support bolt hole machined surfaces and determine average from both readings. If reading exceeds 0.21mm (0.008 inch), measure existing washer and refer to No. 8 thrust washer selection chart. Choose a washer that will bring the assembly within specifications.



32. Select correct No. 8 thrust washer, repeat Steps 26 through 29 and record reading; this reading will be used in selecting the No. 5 thrust washer in the following steps. Go to Step 35.  
33. If support machined bolt hole surfaces are **below** case machined surface, place and lightly hold depth micrometer on machined surface of case, centering spindle over machined bolt hole surface of support. Measure distance to machined bolt hole surface at both support hole bosses and determine average from both readings. If reading is over 0.46mm (0.018 in) measure existing washer refer to No. 8 thrust washer selection chart. Choose a washer that will bring the assembly within specifications.



## DISASSEMBLY AND ASSEMBLY (Continued)

## NO. 8 THRUST WASHER SELECTION

Thrust Washer Thicknesses		Color
mm	Inches	
1.53-1.43	0.060-0.056	Natural
1.78-1.68	0.070-0.066	Dark Green
2.02-1.92	0.079-0.075	Light Blue
2.27-2.17	0.089-0.085	Red

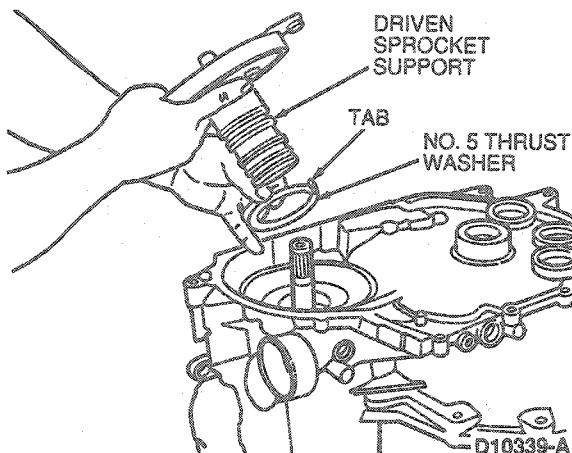
34. Select correct No. 8 thrust washer, repeat Steps 26 through 34 and record reading. This reading will be used in selecting the No. 5 thrust washer in the following steps. Go to Step 35.

NOTE: Perform the following steps to check the driven sprocket end-play clearance for No. 5 selective thickness thrust washer.

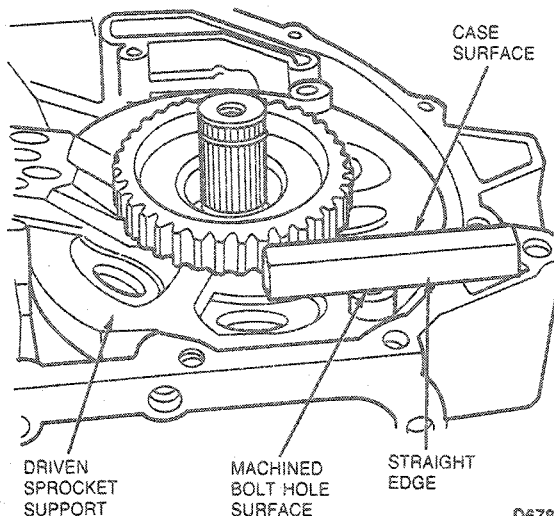
35. Remove driven sprocket, driven sprocket support, and No. 9 and No. 8 needle bearing / thrust washer assembly.

NOTE: Make sure that all pieces are clean and dry. Use petroleum jelly on tab only to hold washer in place for this step.

36. Install No. 5 thrust washer on driven sprocket support, aligning tab on washer with slot in support.



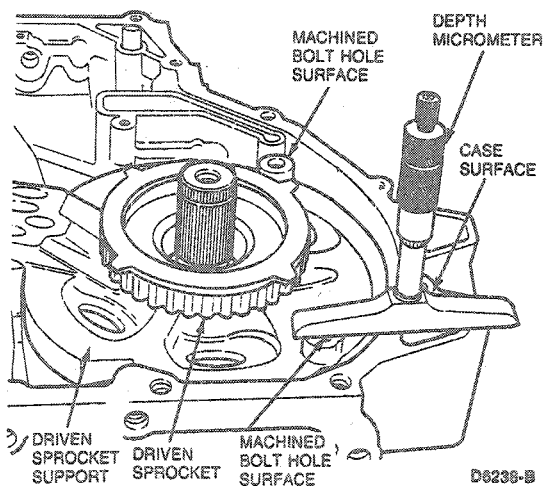
37. Install driven sprocket support and No. 5 thrust washer into case. Do not install No. 9 and No. 8 needle bearing / thrust washer assembly at this time. Be sure support is fully seated.
38. Determine with straightedge or flat block whether machined bolt hole surfaces on support are above or below case machined surface.



D6780-A

39. If support machined bolt hole surfaces are above case machined surface, place depth micrometer on support bolt hole surface and measure down to case-machined surface. Do this on both holes to get an average. Compare this reading to the No. 8 thrust washer reading in Step 32. The difference between the two readings is the No. 5 thrust washer clearance.

NOTE: The No. 5 thrust washer reading must always allow the driven sprocket support to be the same height or to set lower in the case than the No. 8 thrust washer reading did. If not, a thinner No. 5 thrust washer must be selected. If the support does set lower in the case, the difference must not be greater than 0.85mm (0.033 inch) or a thicker No. 5 thrust washer must be selected. Refer to No. 5 thrust washer selection chart following Step 41.

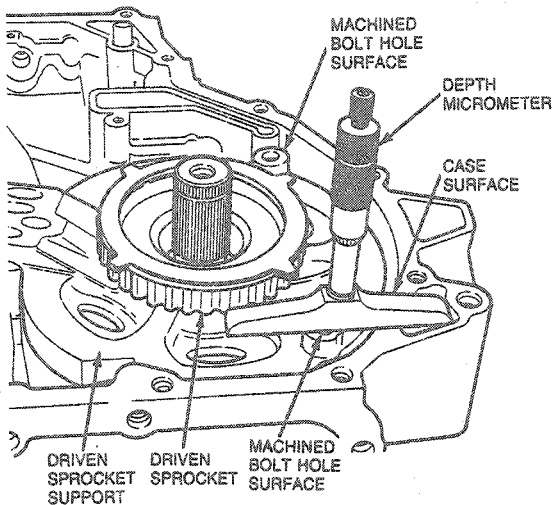


D6236-B

## DISASSEMBLY AND ASSEMBLY (Continued)

40. If support machined bolt hole surfaces are below case machined surface, place depth micrometer on case-machined surface and measure down to machined surface of both bolt holes on support to get an average. Compare this reading to the No. 8 thrust washer reading in Step 34. The difference between the two readings is the No. 5 thrust washer clearance.

NOTE: The No. 5 thrust washer reading must always allow the driven sprocket support to be the same height or to set lower in the case than the No. 8 thrust washer reading did. If not, a thinner No. 5 thrust washer must be selected. If the support does set lower in the case, the difference must not be greater than 0.85mm (0.033 inch) or a thicker No. 5 thrust washer must be selected. Refer to No. 5 thrust washer selection chart following Step 41.



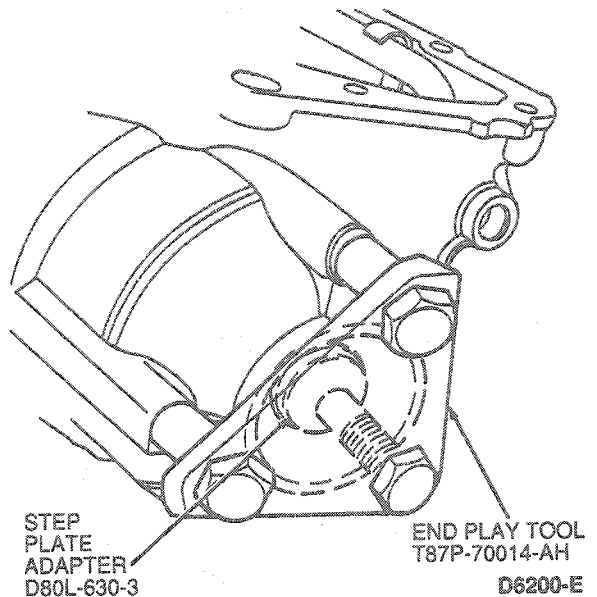
D6015-B

41. Recheck sprocket support clearance after changing selective thrust washers. The No. 5 thrust washer clearance must be between 0.00 and 0.85mm (0.00 and 0.033 inch).

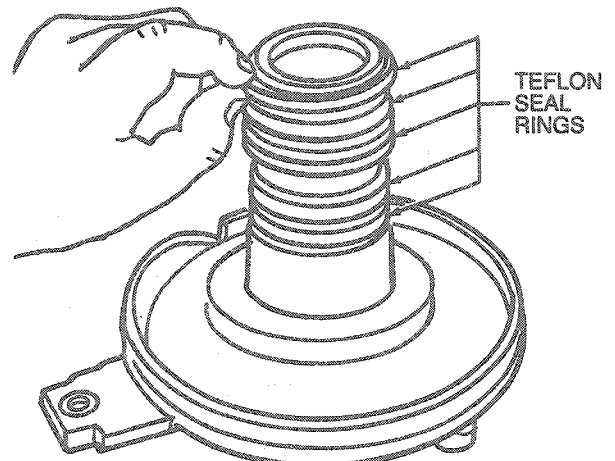
## NO. 5 THRUST WASHER SELECTION

Thrust Washer Thickness		Color
mm	Inches	
2.28-2.18	0.090-0.086	Green
2.53-2.43	0.099-0.095	Black
2.77-2.87	0.109-0.105	Natural
3.02-2.92	0.118-0.115	Red

42. Remove tool from bottom of case.



43. Remove driven sprocket support and install No. 9 needle bearing and correct No. 8 and No. 5 thrust washers.
44. Install Teflon® seals on driven sprocket support. Make sure that seals are lapped correctly.



CAUTION: SEAL RINGS MUST BE LAPPED CORRECTLY

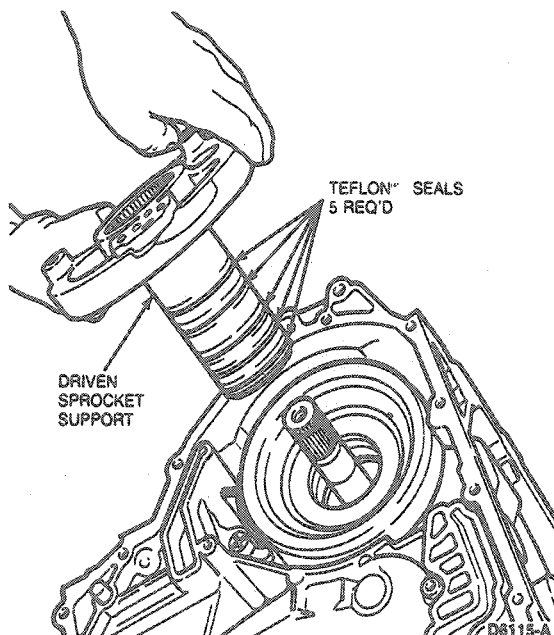
CORRECT

INCORRECT

D10617-A

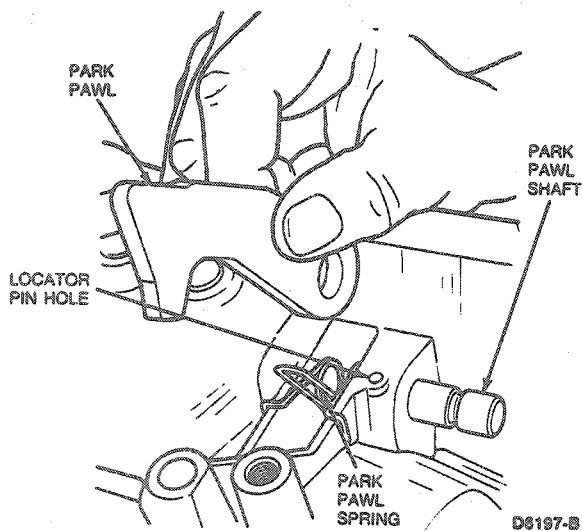
## DISASSEMBLY AND ASSEMBLY (Continued)

45. Lower driven sprocket support assembly into case. Make sure support is fully seated and the tab is between the ridges on the case.

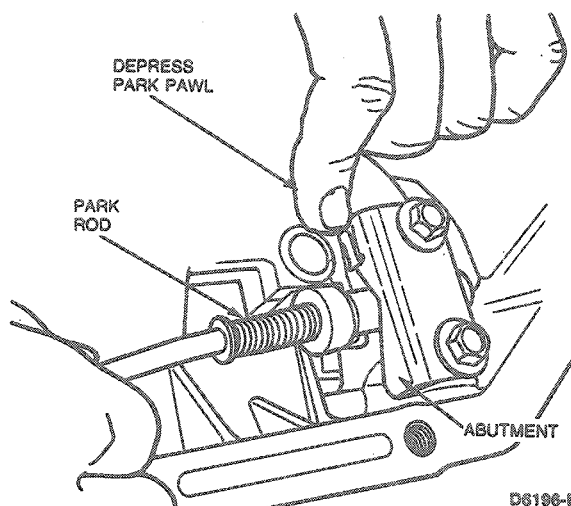


NOTE: Ensure that the park pawl engages the park gear and returns freely.

46. Install park pawl, return spring, park pawl shaft and locator pin.

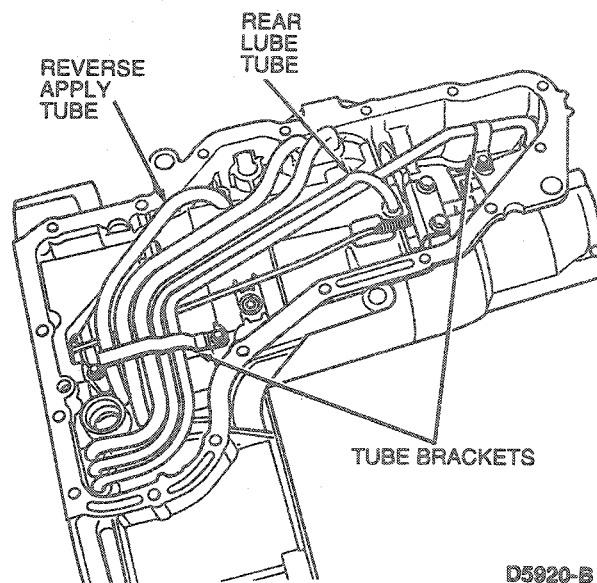


47. Install park rod actuating lever and park rod in case. Install park rod abutment and start abutment bolts. Push in park pawl and locate rod between pawl and abutment.



48. Install tubes in position and tap lightly until fully seated. Apply Threadlock 262, E2FZ-19554-B (ESE-M4G204-A3) or equivalent around tube-to-case surface.

49. Install tube retaining brackets.

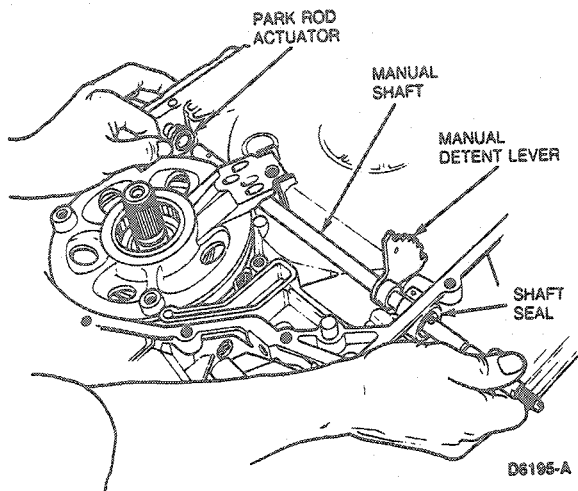


50. Install manual shaft seal by tapping into case.

51. Start manual shaft through seal and slide manual detent lever onto shaft.

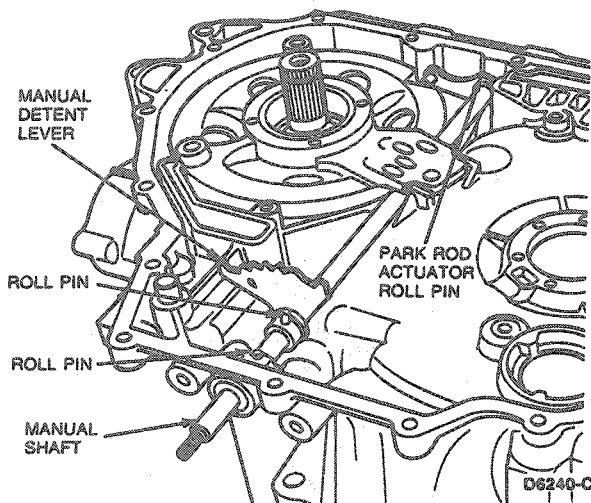
## DISASSEMBLY AND ASSEMBLY (Continued)

52. Slide manual shaft through park rod actuating lever and tap into case hole.

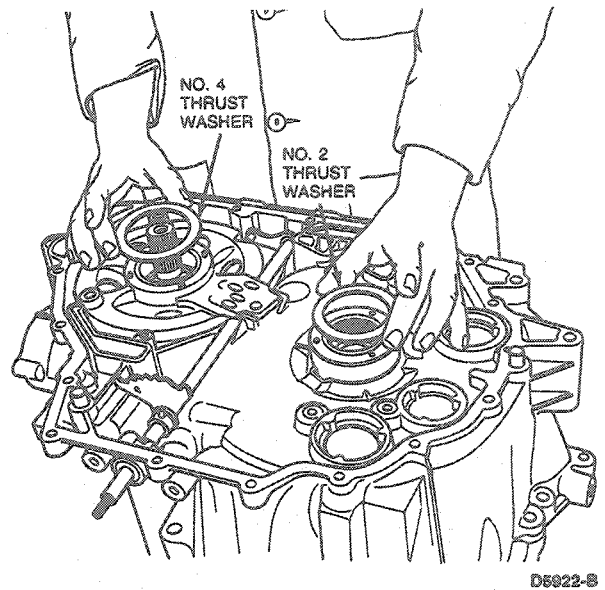


53. Install new manual shaft lock pin through case hole, aligning with groove in shaft.

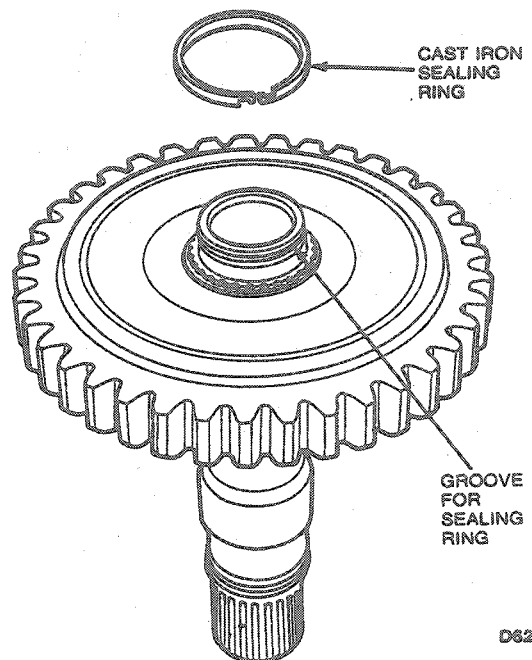
54. Install new roll pins in detent lever and park rod actuating lever.



55. Install No. 2 and No. 4 tabbed thrust washers onto drive and driven sprocket supports. Align tabs on thrust washers with holes in sprocket supports. Apply grease to washers to help hold in position.



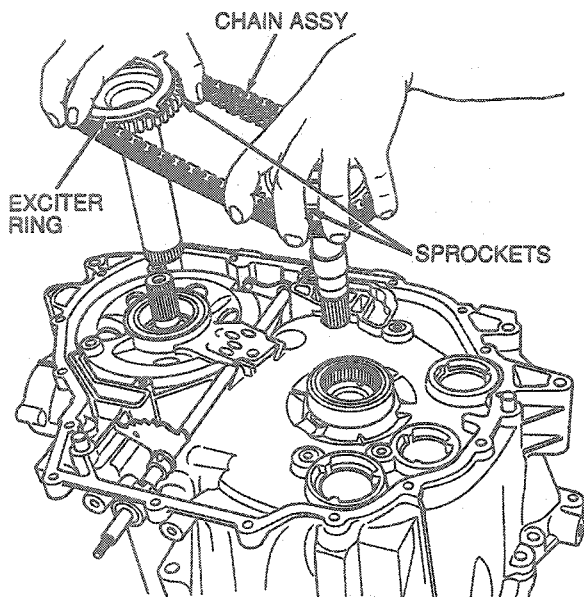
56. Lubricate and install input shaft cast iron sealing ring onto input shaft.



**CAUTION:** Be careful not to damage or bend tabs on exciter ring. Chain cover may not seat correctly causing a leak.

## DISASSEMBLY AND ASSEMBLY (Continued)

57. Install chain on drive and driven sprockets. Lower assembly into sprocket supports simultaneously with chain parallel to case surface, rotating sprockets to ensure that they are fully seated.

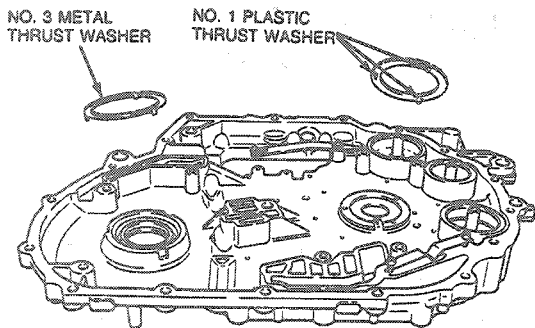


**CAUTION:** BE CAREFUL NOT TO DAMAGE OR BEND TABS ON EXCITER RING. CHAIN COVER MAY NOT SEAT CORRECTLY CAUSING A LEAK.

D5909-D

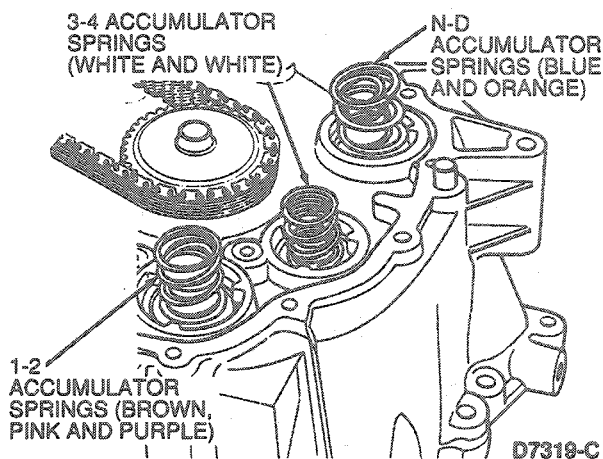
**CAUTION:** Be careful not to damage or bend tabs on exciter ring. Chain cover may not seat correctly causing a leak.

58. Install No. 1 and No. 3 thrust washers on chain cover. Use petroleum jelly to hold in place. Make sure tabs align with slots in chain cover.



D5949-A

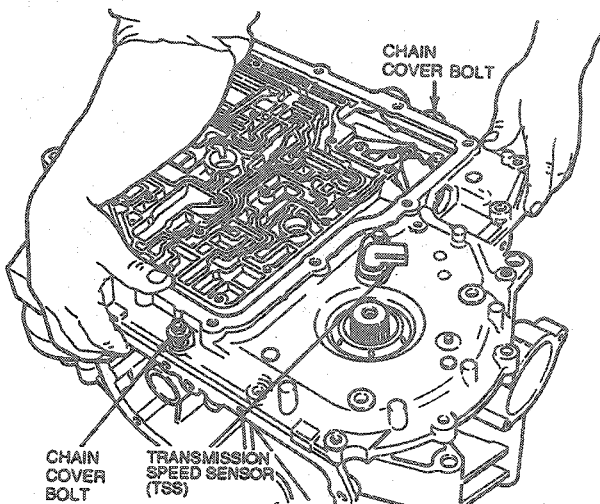
59. Install new chain cover gasket on case.  
60. Install accumulator springs in correct position in case.



D7319-C

61. Make sure chain cover alignment pins are on case.  
62. Carefully align chain cover input shaft bore with input shaft. Apply gentle downward pressure on chain cover to overcome accumulator spring pressure and start two chain cover bolts. If removed, install transmission speed sensor.

**CAUTION:** Be extremely careful to prevent damage to the input shaft cast iron sealing ring.



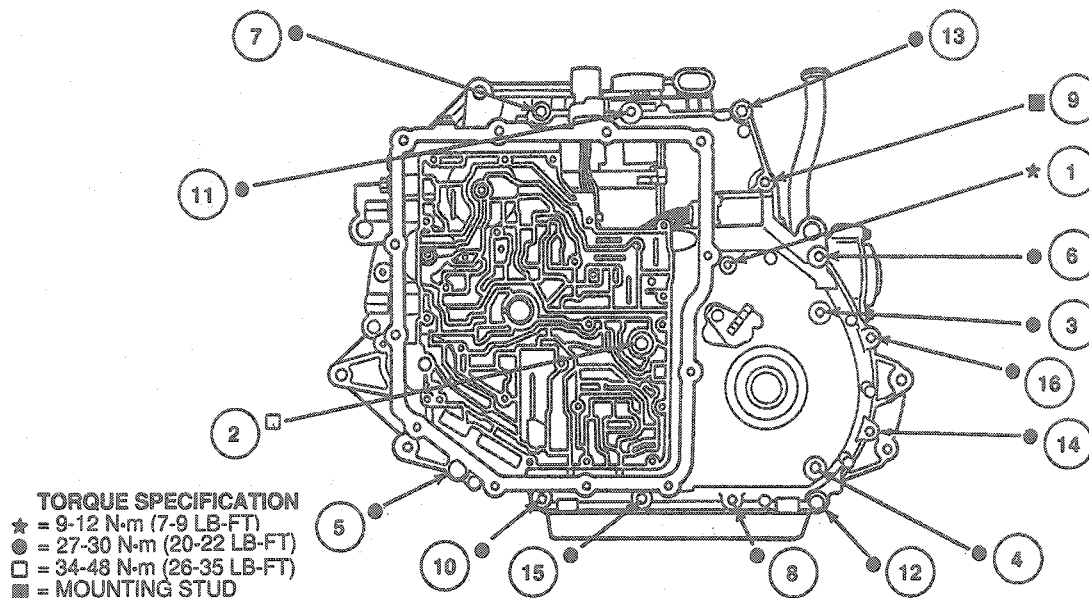
D6172-C

**NOTE:** After installing chain cover, input shaft should have some end play and should rotate freely. If it will not rotate freely, remove chain cover and inspect cast iron seal for damage.



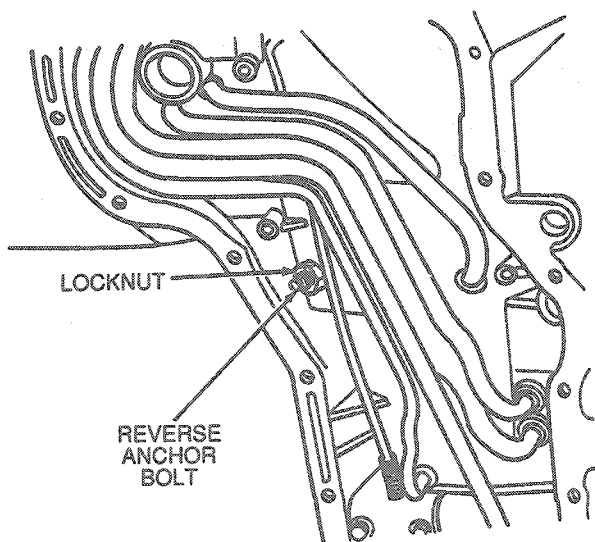
## DISASSEMBLY AND ASSEMBLY (Continued)

63. Start remaining chain cover bolts and tighten 10mm bolts to 27-33 N·m (20-26 lb-ft). Tighten 8mm bolt to 9-12 N·m (7-9 lb-ft). Tighten 13mm bolt to 34-48 N·m (26-35 lb-ft). Tighten bolts in sequence shown.



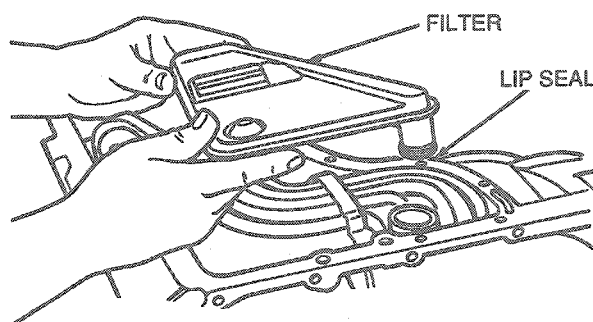
D8846-C

64. Tighten reverse drum 6mm Allen head anchor bolt to 10-12 N·m (7.5-9 lb-ft) and 19mm locknut to 34-47 N·m (26-35 lb-ft).



D11461-A

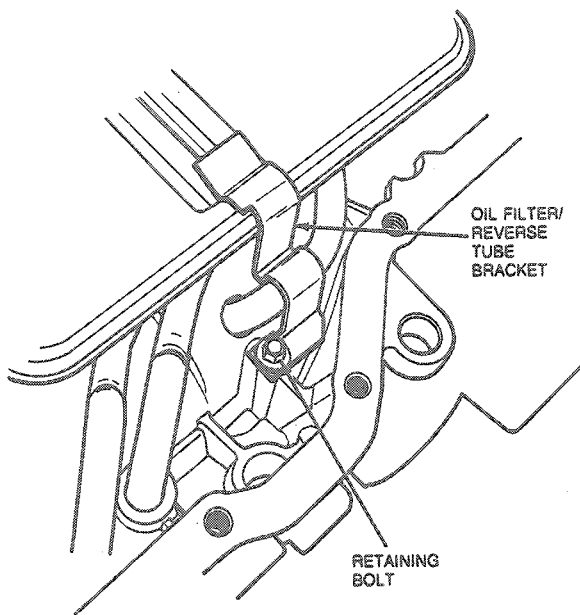
65. Install lip seal onto oil filter and press oil filter into case.



D10335-B

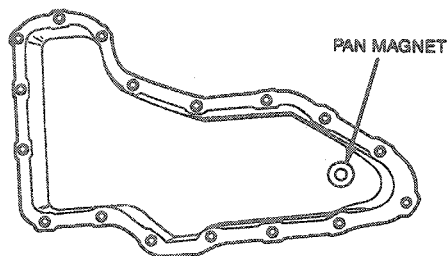
## DISASSEMBLY AND ASSEMBLY (Continued)

66. Install reverse apply tube/oil filter bracket.



D6194-A

67. Install magnet in oil pan.



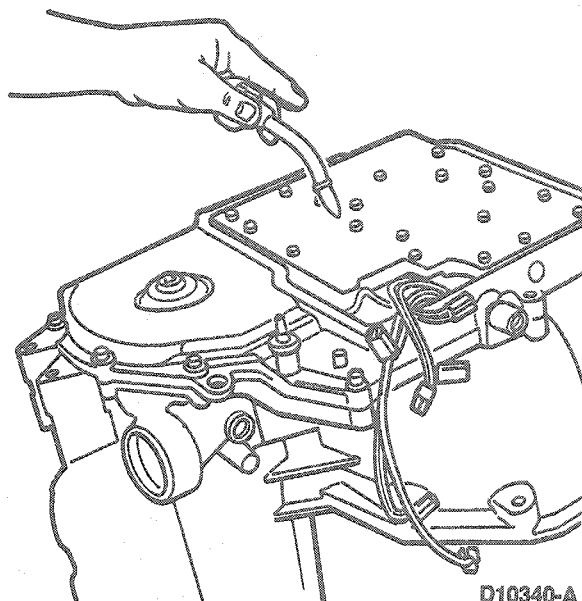
D6626-A

68. Install new oil pan gasket on case and install oil pan. Tighten bolts to 13-15 N·m (8-11 lb-ft).

69. Install output shaft seal and circlip.

70. Perform air pressure checks using AXODE (AX4S) Transmission Test Plate T91P-7006-A. After pressure checks have been performed, remove tool.

**NOTE:** When applying regulated 276 kPa (40 psi) air pressure to the appropriate passage, a dull thud should be heard when the clutch or band applies. There should be no hissing sound when clutch or band is applied.



**CAUTION:** Seals must be lapped correctly or internal leakage will occur.

71. Install four new Teflon® seals on pump driveshaft and install shaft.

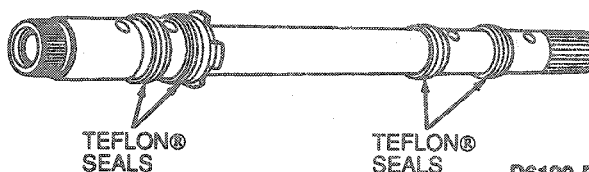
**CAUTION:** SEALS MUST BE LAPPED CORRECTLY



CORRECT



INCORRECT

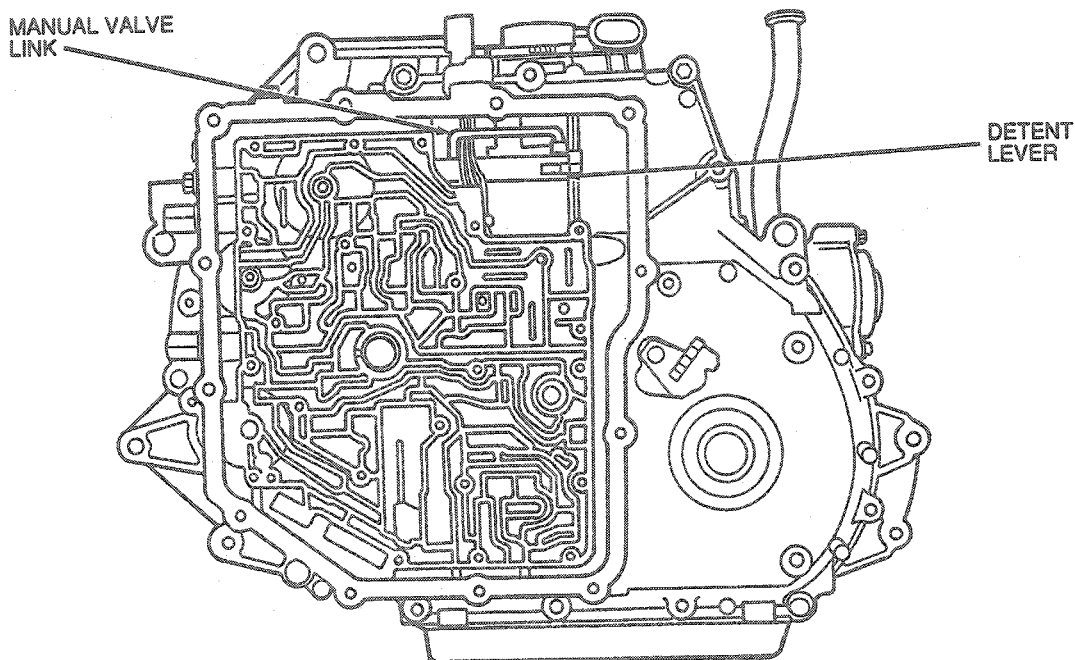
TEFLON®  
SEALS

D6120-B



## DISASSEMBLY AND ASSEMBLY (Continued)

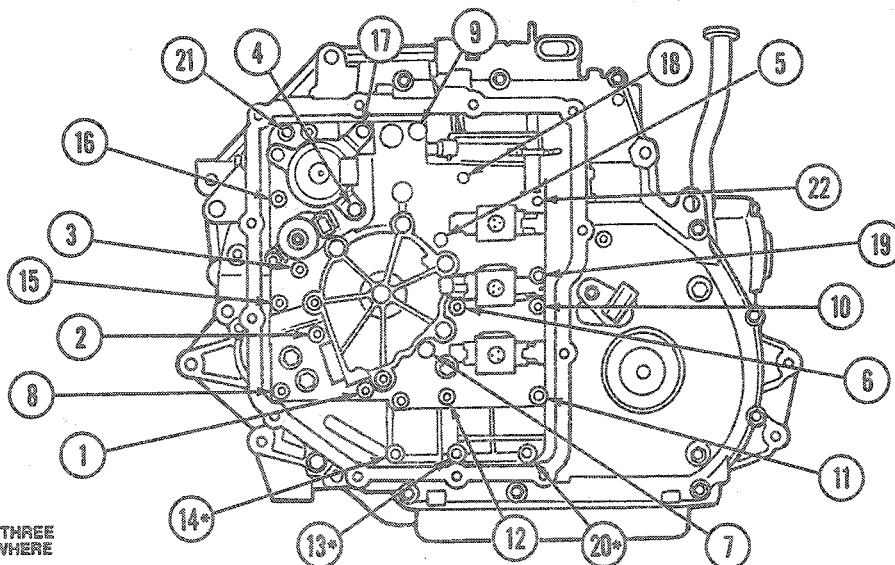
72. Connect manual valve link to detent lever.



D6167-C

73. Start oil pump and valve body over pump shaft and connect manual valve link to manual valve. Push valve body down until seated.

74. Install 22 valve body bolts and tighten in sequence to 9-12 N·m (7-9 lb-ft).



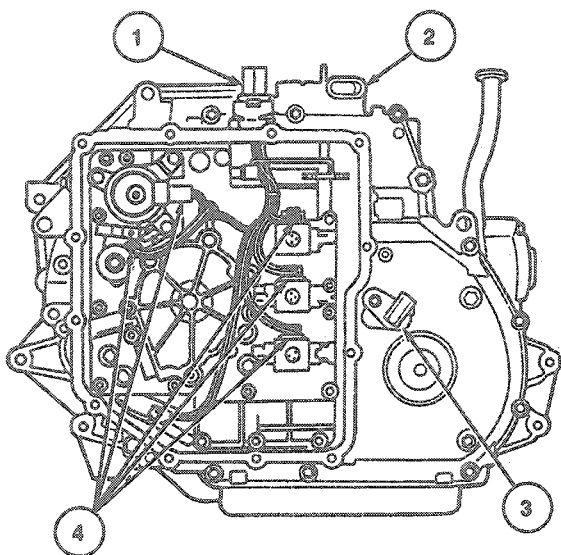
NOTE: INSTALL THREE SHORT BOLTS WHERE INDICATED BY\*.

D8829-B

NOTE: Install three short bolts where indicated by\*.

75. Install electrical connectors on proper solenoids and sensor until a slight click is felt.

## DISASSEMBLY AND ASSEMBLY (Continued)

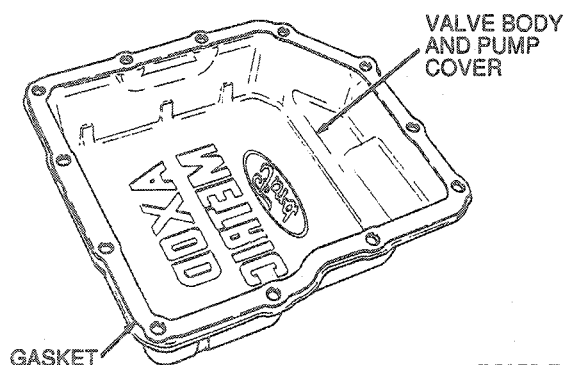


D11456-A

Item	Part Number	Description
1	—	Connector
2	—	Park/Neutral Position Switch Assy
3	7M101	Transmission Speed Sensor
4	—	Electrical Connectors

TD11456A

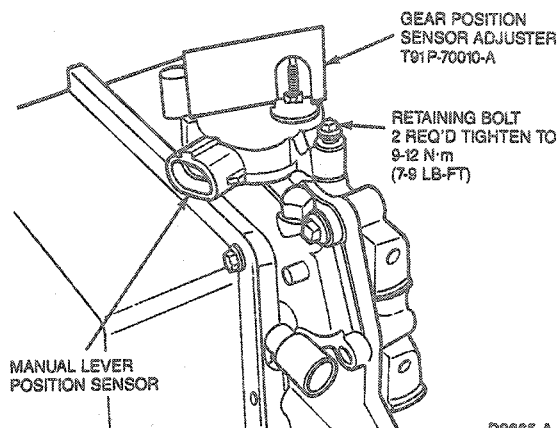
76. Install oil pump and valve body cover gasket onto cover.



D5958-B

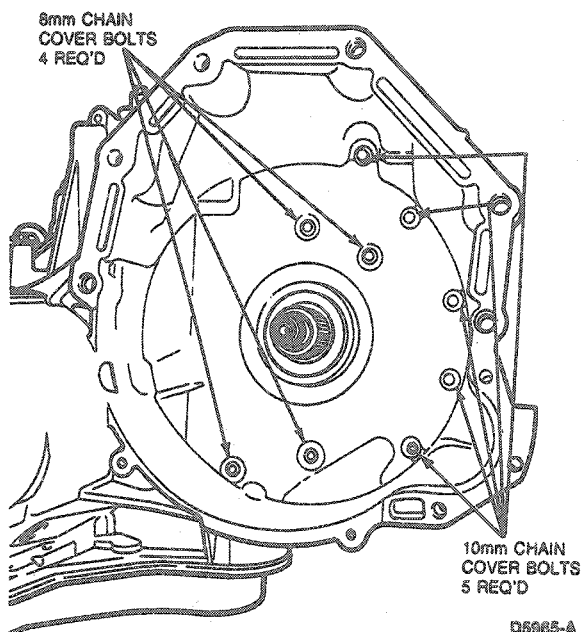
77. Install cover and tighten to 21-25 N·m (15-18 lb-ft).  
 78. Rotate transaxle to horizontal position.  
 79. Place gear shift selector in the neutral position.  
 80. Install manual lever position sensor (MLP) and loosely install two retaining bolts.

81. Align MLP slots using Gear Position Sensor Adjuster T91P-70010-A.  
 82. Tighten retaining bolts to 9-12 N·m (7-9 lb-ft). Remove tool.



D6665-A

83. Install remaining chain cover bolts in bellhousing and torque bolts to 25-28 N·m (18-21 lb-ft) for 10mm or 9-12 N·m (7-9 lb-ft) for 8mm bolts.



D5665-A

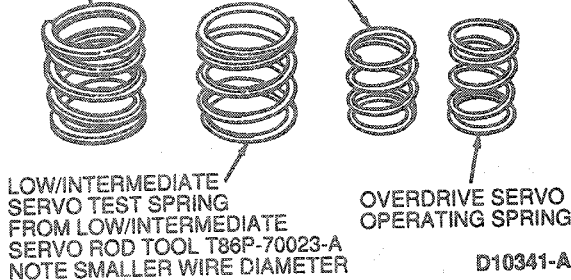
**CAUTION:** The test spring from the Overdrive Servo Tool is plain in color and has a higher free height than the operational spring. Extreme care must be used not to assemble the transaxle using the test spring.

## DISASSEMBLY AND ASSEMBLY (Continued)

84. Install test spring, from Overdrive Servo Rod Tool T86P-70023-B in transaxle case.

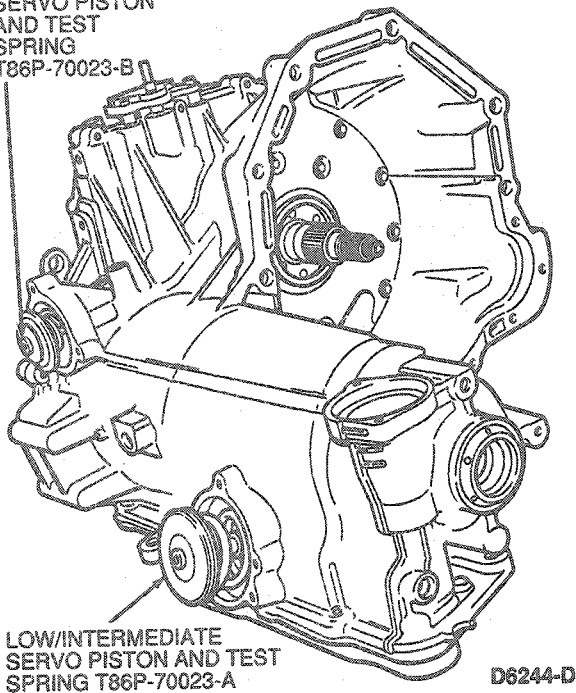
LOW/INTERMEDIATE SERVO  
OPERATING SPRING

OVERDRIVE SERVO TEST SPRING  
FROM OVERDRIVE SERVO ROD  
TOOL T86P-70023-B. NOTE  
SHORTER FREE HEIGHT.



85. Install overdrive servo piston and rod into case.

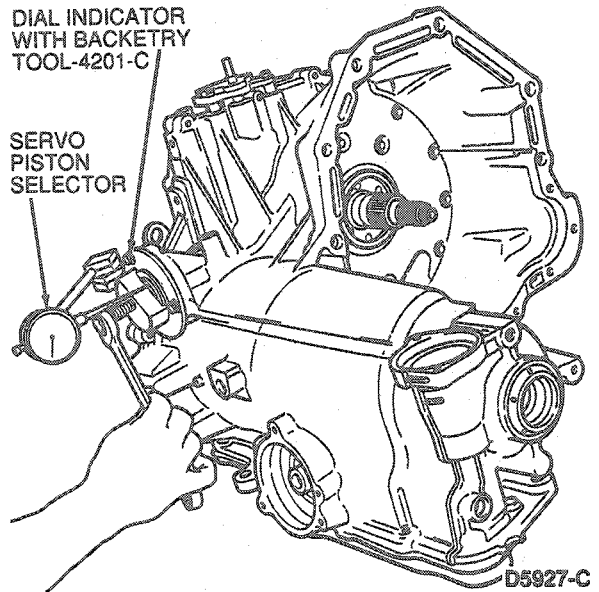
OVERDRIVE  
SERVO PISTON  
AND TEST  
SPRING  
T86P-70023-B



86. Install Overdrive Servo Rod Tool T86P-70023-B and secure using servo cover bolts. Tighten bolts to 9-12 N·m (7-9 lb-ft).
87. Tighten center screw on tool to 1.13 N·m (10 lb-in).
88. Mount Dial Indicator with Bracketry TOOL-4201-C or equivalent and position stylus through hole in Overdrive Servo Rod Tool. Make certain indicator stylus has contacted servo piston on a flat surface. Do not contact step on piston. Zero dial indicator.

DIAL INDICATOR  
WITH BRACKETRY  
TOOL-4201-C

SERVO  
PISTON  
SELECTOR



89. Back off center screw until piston movement stops and read dial indicator. The reading should be 1.8-3.8mm (0.070-0.149 inch). If measurement does not meet specifications, refer to overdrive piston rod selection chart to determine which rod to install.

Overdrive Servo Rod Length		Number of Grooves (grooves are at the tip)
mm	Inch	
99.33	3.91	0
98.05	3.86	1
96.78	3.81	2

90. Install new piston rod and repeat Steps 85 through 90 to verify amount of piston travel. If within specifications, remove tool and test spring.

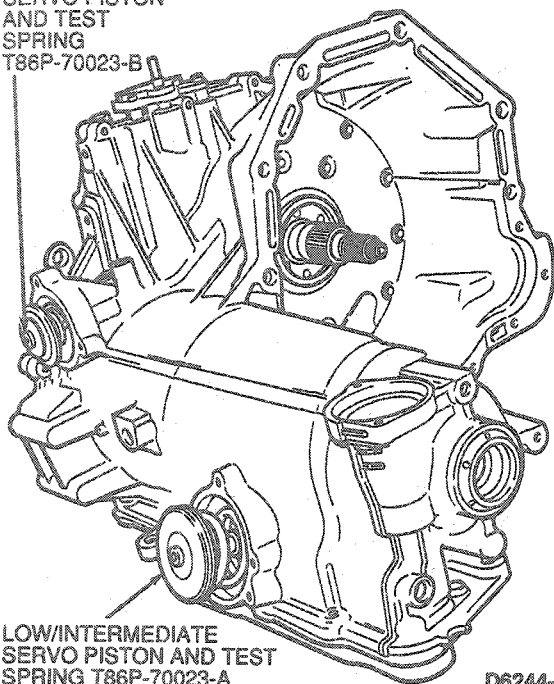
**CAUTION:** The test spring from the Low / Intermediate Servo Tool is plain in color and has a thinner wire diameter than the operational spring. Extreme care must be used not to assemble the transaxle using the test spring.

91. Install low / intermediate spring retainer on test spring, from Low / Intermediate Servo Rod Tool T86P-70023-A. Install test spring into transaxle case.

## DISASSEMBLY AND ASSEMBLY (Continued)

92. If not done prior, remove seal from low/intermediate servo piston. Install piston and rod into case.

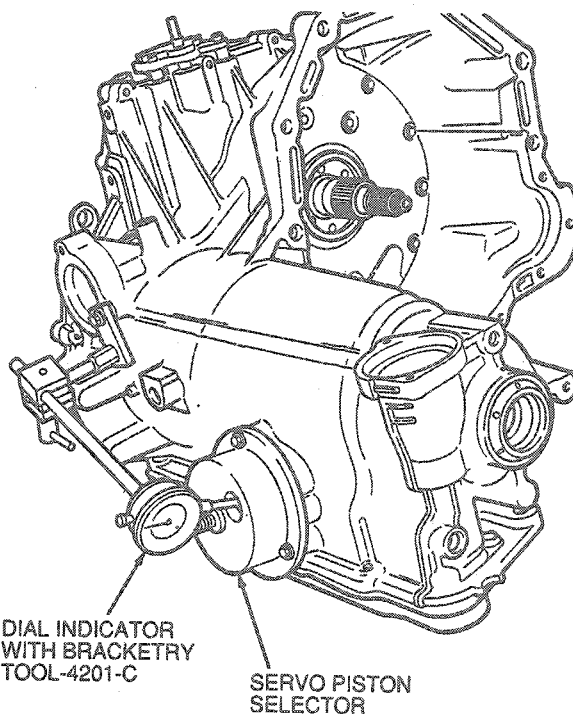
OVERDRIVE  
SERVO PISTON  
AND TEST  
SPRING  
T86P-70023-B



LOW/INTERMEDIATE  
SERVO PISTON AND TEST  
SPRING T86P-70023-A

D6244-D

93. Install Low/Intermediate Servo Rod Tool T86P-70023-A and secure using servo cover bolts. Tighten bolts to 9-12 N·m (7-9 lb-ft).
94. Tighten center screw on tool to 3.4 N·m (30 lb-in).
95. Mount Dial Indicator with Bracketry TOOL-4201-C or equivalent and position stylus through hole in Low/Intermediate Servo Rod Tool. Make certain indicator stylus has contacted servo piston on a flat surface. **Do not** contact step on piston. Zero dial indicator.



DIAL INDICATOR  
WITH BRACKETRY  
TOOL-4201-C

SERVO PISTON  
SELECTOR

D5926-C

96. Back off center screw until piston movement stops and read dial indicator. The reading should be 5.5-6.5mm (0.216-0.255 inch). If measurement does not meet specifications, refer to low/intermediate piston rod selection chart to determine which rod to install.

**NOTE:** If a new low/intermediate band is installed, reading should be 5-6mm (0.197-0.236 inch).

Low/Intermediate Servo Rod		Number of Grooves (grooves are at the tip)
mm	In	
114.26	4.50	0
113.72	4.48	1
113.18	4.46	2
112.64	4.43	3
112.10	4.41	4

97. Install new piston rod and repeat Steps 92 through 97 to verify amount of piston travel. If within specifications, remove tool and test spring. Remove retainer from test spring.

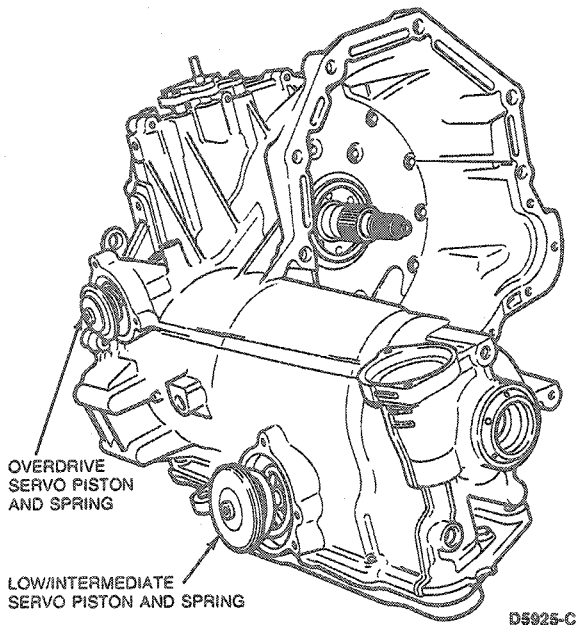
**CAUTION:** The test spring from the Low/Intermediate Servo Tool is plain in color and has a thinner wire diameter than the operational spring. Extreme care must be used not to assemble the transaxle using the test spring.

## DISASSEMBLY AND ASSEMBLY (Continued)

98. Install seal on low / intermediate servo piston. Install retainer on low / intermediate operating spring.

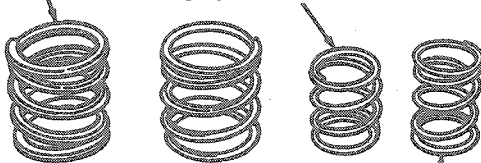
**CAUTION:** The test spring from the Overdrive Servo Tool is plain in color and has a higher free height than the operational spring. Extreme care must be used not to assemble the transaxle using the test spring.

99. Install servo springs and piston assemblies. Make sure that they are fully seated.



LOW/INTERMEDIATE SERVO OPERATING SPRING

OVERDRIVE SERVO TEST SPRING FROM OVERDRIVE SERVO ROD TOOL T86P-70023-B. NOTE SHORTER FREE HEIGHT.



LOW/INTERMEDIATE SERVO TEST SPRING FROM LOW/INTERMEDIATE SERVO ROD TOOL T86P-70023-A NOTE SMALLER WIRE DIAMETER

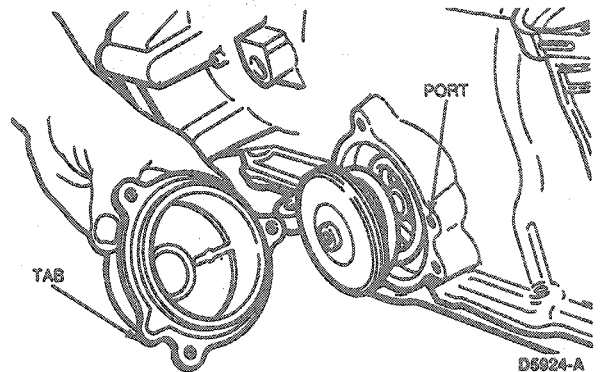
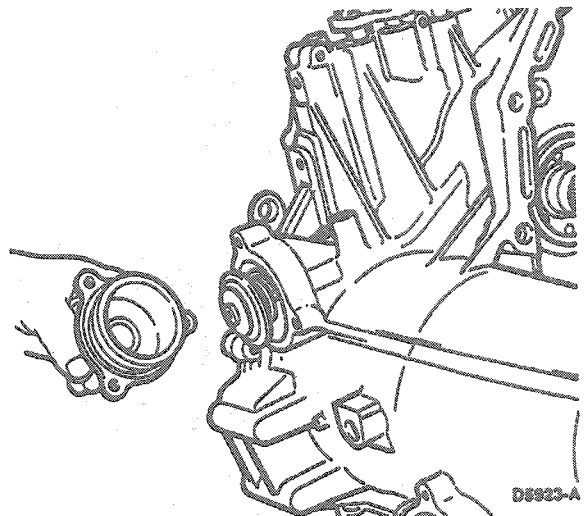
OVERDRIVE SERVO OPERATING SPRING

D10341-A

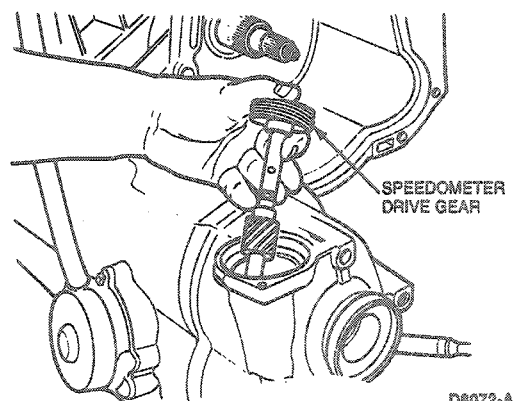
**NOTE:** Be sure to align tab on low / intermediate servo cover with port on case.

**CAUTION:** Tighten bolts two or three turns at a time to prevent cocking servo covers.

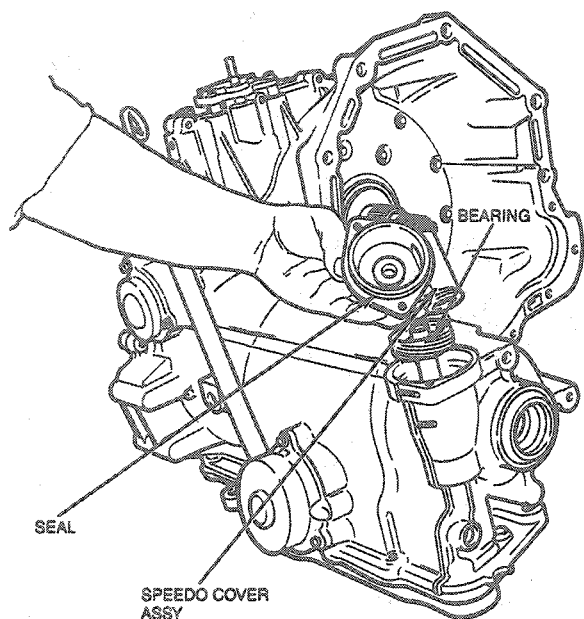
100. Install servo covers for overdrive and low / intermediate servo using new gaskets and seals. Tighten bolts evenly to 9-12 N·m (7-9 lb-ft).



101. Install speedometer driven gear and shaft. Install speedometer drive gear making sure that slots in gear align with roll pin in shaft. Install needle bearing with black side up.
102. Install speedometer cover with new seal. Tighten bolts to 9-12 N·m (7-9 lb-ft).

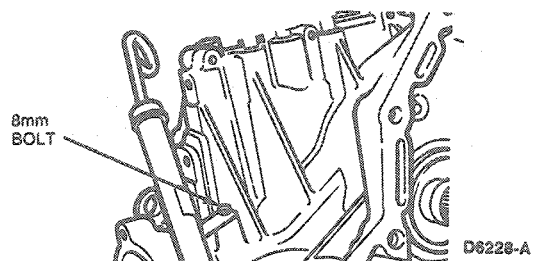


## DISASSEMBLY AND ASSEMBLY (Continued)



D5983-C

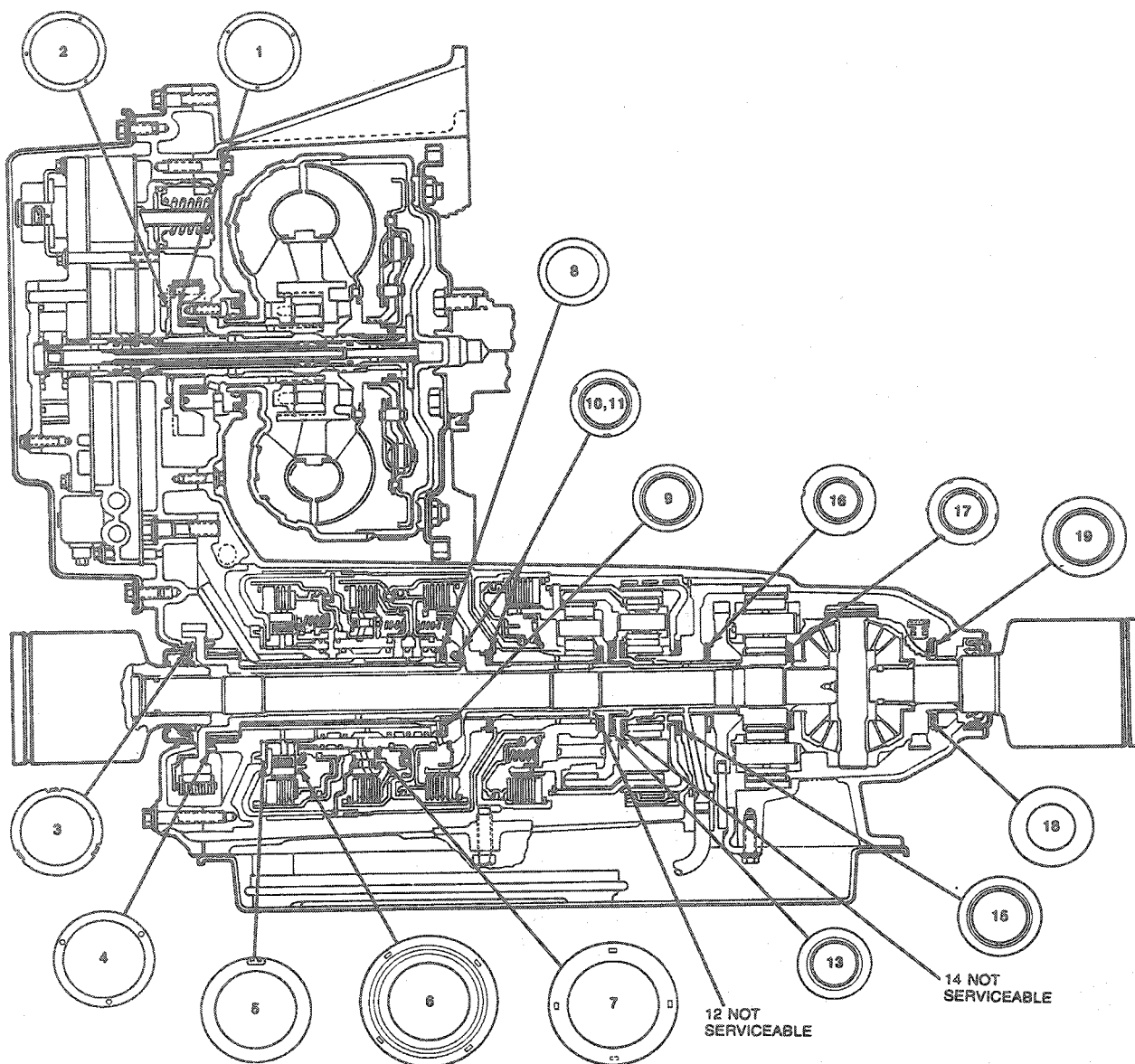
103. Install dipstick seal onto dipstick, then install dipstick into case. Tighten bolt to 9-12 N·m (7-9 lb-ft)



D6228-A

## DISASSEMBLY AND ASSEMBLY (Continued)

## Thrust Washer and Needle Bearing Location



ITEM	PART NUMBER	DESCRIPTION			
1.	7G019	WASHER THRUST (NYLON) (DRIVE SPROCKET/STATOR SUPPORT)	8.	7G273	WASHER THRUST (PHENOLIC) (SELECTIVE) (DRIVEN SPROCKET SUPPORT—REAR)
2.	7G019	WASHER THRUST (NYLON) (DRIVE SPROCKET/STATOR SUPPORT)	9.	7G128	BEARING ASSEMBLY (DIRECT CLUTCH HUB)
3.	7G086	WASHER THRUST (STEEL BACKED BRONZE) CASE COVER/DRIVEN SPROCKET)	10.	7G239	BEARING ASSEMBLY (FRONT SUN GEAR)
4.	7G115	WASHER THRUST (NYLON) (DRIVEN SPROCKET/SUPPORT)	11.	7G239	BEARING ASSEMBLY (FRONT SUN GEAR)
5.	7D014	WASHER THRUST (NYLON) (SELECTIVE) (SUPPORT/FORWARD CLUTCH)	12.	7G104	NOT SERVICEABLE
6.	7D076	WASHER THRUST (NYLON) (FORWARD CLUTCH O.W.C. RACE)	13.	7G177	BEARING ASSEMBLY (PLANETARY THRUST—CENTER)
7.	7G116	WASHER THRUST (NYLON) (DIRECT CLUTCH/DIRECT O.W.C.)	14.	7G105	NOT SERVICEABLE
			15.	7G178	BEARING ASSEMBLY (REAR SUN GEAR)
			16.	7G106	BEARING ASSEMBLY (FINAL DRIVE GEAR—FRONT)
			17.	7G107	BEARING ASSEMBLY (FINAL DRIVE GEAR—REAR)
			18.	7G103	WASHER THRUST (STEEL) (SELECTIVE) (DIFFERENTIAL CARRIER)
			19.	7G112	BEARING ASSEMBLY (DIFFERENTIAL CARRIER)

D5899-D



## INSTALLATION

### Oil Pump and Main Control Assembly

#### Installation

#### Tools Required:

#### ● Valve Body Guide Pin T86P-70100-C

1. Install new pump and valve body-to-chain cover gasket.
2. Slide pump and valve body assembly onto oil pump shaft.
3. Rotate pump and valve body assembly toward dash panel and engage manual valve link with manual valve.
4. Slightly rotate or jiggle pump and valve body assembly to engage splines on oil pump shaft with splines in oil pump rotor. Valve body should slide flush onto chain cover without force.

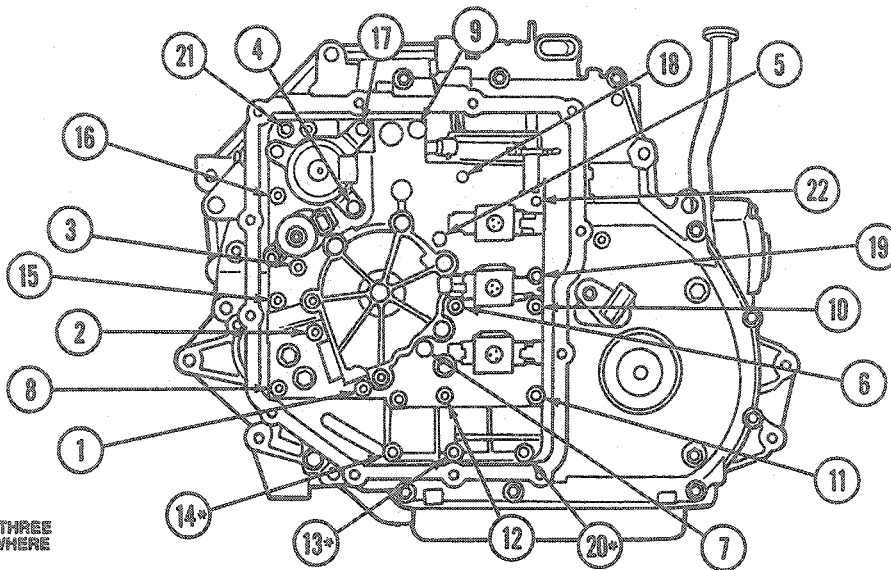
NOTE: It may be necessary to rotate engine using 7/8-inch deep well socket on crankshaft pulley to complete engagement of pump shaft to pump.

NOTE: On vehicles without anti-skid, if full engagement of the pump and valve body assembly is not obtained using the above procedure, the following alternate method may be used:

- Remove manual valve from valve body.
- Rotate assembly as necessary to allow full engagement (360 degree rotation possible).
- After full engagement, return assembly to installed position and install manual valve.

**CAUTION: Do not use retaining bolts to draw pump and valve body into position or damage to components may result.**

5. Use Valve Body Guide Pin T86P-70100-C to position valve body and install pump and valve body retaining bolts. Tighten bolts to 9-12 N·m (7-9 lb-ft) in sequence shown.



NOTE: INSTALL THREE SHORT BOLTS WHERE INDICATED BY\*

D8823-B

6. Install a new gasket.
7. Connect upper bulkhead connector wiring to valve body.
8. Carefully install side pan.
9. Loosely install two upper pan bolts.
10. Verify proper gasket position.
11. Install remaining pan bolts and tighten to 14-16 N·m (10-12 lb-ft).
12. Install LH engine mounts and supports. Refer to Transaxle Installation.
13. Tighten two LH subframe retaining bolts to specification.
14. Install inner fender cover.

15. Install LH wheel and tire assembly.
16. Remove support from engine and transaxle assembly and lower vehicle.
17. Install radiator sight shield.
18. Remove engine support equipment.
19. Install brake reservoir hose.
20. Position supply hoses, vacuum lines and wiring in position.
21. Install manual lever position sensor.
22. Install remote air cleaner.
23. Install battery tray and battery.
24. Fill transaxle with specified quantity and quality of oil.

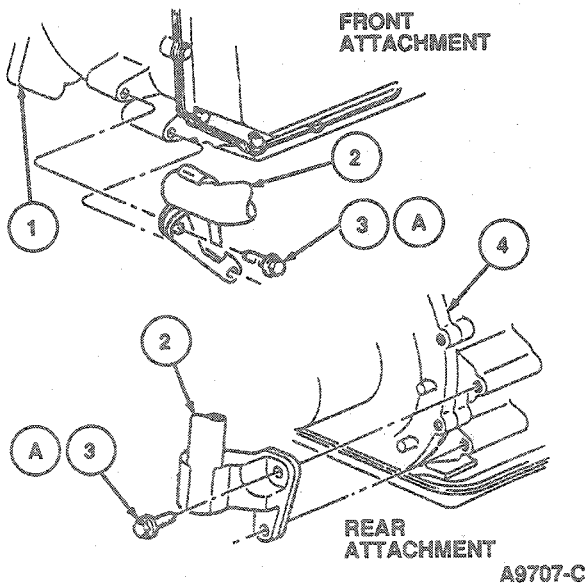


**INSTALLATION (Continued)**

25. Start engine, move transaxle selector lever through all ranges. Check pump and valve body cover for leaks.

**Transaxle**

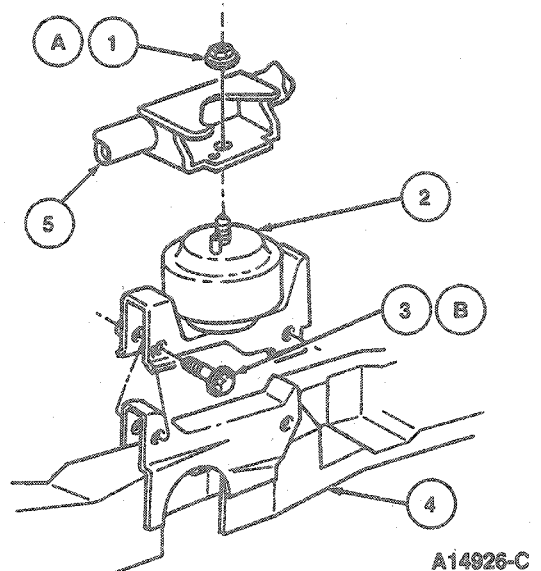
1. Place transaxle assembly on jack and raise to engine.
2. Position transaxle to engine and align torque converter bolts to flywheel.
3. Install transaxle housing bolts. Tighten to 55-68 N·m (41-50 lb-ft).
4. Install four torque converter bolts through starter drive hole by rotating engine at the crankshaft pulley bolt with a 7/8 deep well socket and 1/2 drive ratchet. Tighten to 31-53 N·m (23-39 lb-ft).
5. Remove transaxle jack.
6. Install halfshaft assemblies.
7. Tighten vehicle speed sensor. Tighten retaining bolt to 3.4-4.5 N·m (31-39 lb-in).
8. Install transaxle cooler lines. At transaxle, tighten to 24-31 N·m (18-23 lb-ft). At oil cooler, tighten to 11-16 N·m (8-12 lb-ft).
9. Install dust cover. Tighten to 9-12 N·m (7-9 lb-ft).
10. Install starter. Tighten to 41-54 N·m (30-40 lb-ft).
11. Raise subframe and install retaining bolts. Tighten to 75-102 N·m (55-75 lb-ft).
12. Remove subframe removal kit.
13. Install LH engine support. Tighten four bolts to 54-75 N·m (40-55 lb-ft).



Item	Part Number	Description
1	—	Transaxle
2	6F065	Support Assy
3A	N605922-S102	Bolt (2 Req'd)
4	07002	Transaxle
A		Tighten to 54-75 N·m (40-55 Lb-Ft)

TA9707C

14. Install engine mount and tighten to 81-116 N·m (60-85 lb-ft).



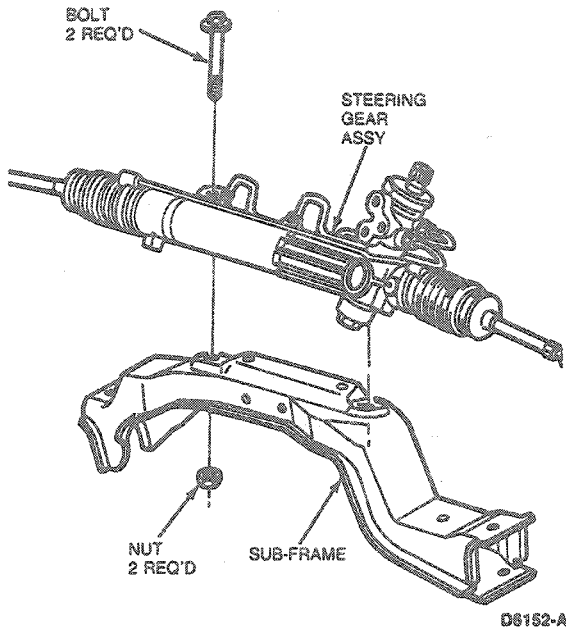
Item	Part Number	Description
1A	N800937-S102	Nut
2	6F063(LH)	Engine Mount Assy
3B	N804749-S100	Bolt (2 Req'd)
4	—	Frame
5	6F065	Support Assy
A		Tighten to 74-102 N·m (55-75 Lb-Ft)
B		Tighten to 81-116 N·m (60-85 Lb-Ft)

TA14926C

15. Install front exhaust pipe, converter assembly and mounting bracket. Refer to Section 09-00.
16. Reconnect heated oxygen sensor (HO2S) 9F472.

**INSTALLATION (Continued)**

17. Install power steering gear assembly and retaining nuts. Tighten to 115-135 N·m (85-100 lb·ft).



18. Install LH and RH lower arm assembly. Insert a new pinch bolt and nut. Tighten to 53-72 N·m (40-53 lb·ft).
19. Install stabilizer bar retaining bolts. Tighten to 30-40 N·m (23-29 lb·ft).
20. Install brake line support brackets. Tighten to 11 N·m (8 lb·ft).
21. Install RH and LH tie rod retaining nuts. Tighten to 31-47 N·m (23-35 lb·ft). Tighten to minimum specified torque, continue tightening to nearest cotter pin slot and insert cotter pin.
22. Install front wheel and tire assemblies. Tighten lug nuts to 115-142 N·m (85-105 lb·ft).
23. Lower vehicle.
24. Install power steering pump pressure and return line bracket. Tighten to 4.5-5.7 N·m (40-50 lb·in).
25. Remove Three Bar Engine Support D88L-6000-A or equivalent.
26. Install radiator sight shield.
27. Remove engine support equipment.
28. Install shift lever.
29. Install main wiring harness bracket.
30. Install electrical connectors to engine.
31. Install battery tray.
32. Install and connect battery.
33. Install air cleaner assembly, hoses and tubes.
34. Fill transaxle with specified quantity and quality of oil.

35. Start engine, move transaxle selector lever through all ranges. Check for leaks.

**CLEANING AND INSPECTION****Transaxle**

Clean the parts with suitable solvent and use moisture-free air to dry off all parts and clean out fluid passages.

The composition clutch plates, control valve body-to-screen gasket, bands and synthetic seals should not be cleaned in a vapor degreaser or with any type of detergent solution. To clean these parts, wipe them off with a lint-free cloth. New clutch plates or bands should be soaked in the specified transmission fluid for 15 minutes before being assembled.

**Servo**

1. Inspect servo body for cracks and piston bore for scores.
2. Check fluid passages for obstructions.
3. Inspect band and struts for distortion. Inspect band ends for cracks.
4. Inspect servo spring for distortion.
5. Inspect band lining for excessive wear and bonding to metal band.
6. Replace damaged seals.

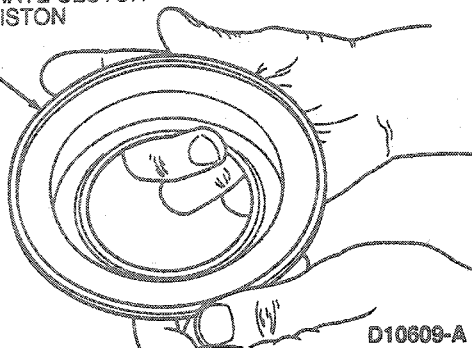
**Forward, Direct, Intermediate and Reverse Clutches**

1. Inspect clutch cylinder thrust surfaces, piston bore, and clutch plate serrations for scores or burrs. Minor scores or burrs may be removed with crocus cloth. Replace the clutch cylinder if it is badly scored or damaged.
2. Check fluid passage in clutch cylinder for obstructions. Clean out all fluid passages. Inspect clutch piston for scores and replace if necessary. Inspect check balls for freedom of movement and proper seating.
3. Check clutch release spring for distortion and cracks. Replace spring (including wave spring) if it is distorted or cracked.
4. Inspect composition clutch plates, steel clutch plates, and clutch pressure plate for worn or scored bearing surfaces. Replace all parts that are deeply scored or burned.
5. Check clutch plates for flatness and fit on clutch hub serrations. Discard any plate that does not slide freely on the serrations or that is not flat.
6. Check clutch hub thrust surfaces for scores and clutch hub splines for wear.

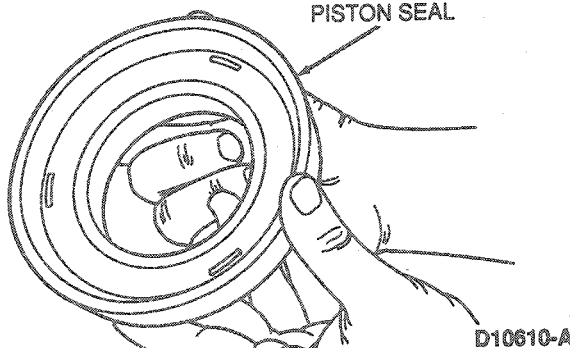
## CLEANING AND INSPECTION (Continued)

- On 3.2L SHO inspect intermediate and direct clutch pistons as well as return piston for damage of integral sealing surface. Replace piston assemblies if any damage is observed.

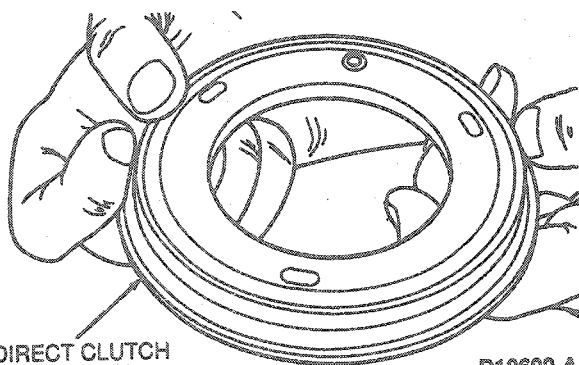
INTERMEDIATE CLUTH  
RETURN PISTON  
SEAL



INTERMEDIATE CLUTH  
PISTON SEAL



DIRECT CLUTH  
PISTON SEAL



### Output Shaft

- Inspect output shaft bearing surfaces for scores. If excessive clearance or scores are found, replace shaft and inspect components.
- Check splines on output shaft for wear and replace shaft if splines are excessively worn. Inspect all bushings.

### One-Way Clutches

- Inspect outer and inner races for scores or damaged surface areas where rollers or sprags contact races.

- Inspect rollers, sprags and springs for excessive wear or damage.
- Inspect spring and case for bent or damaged spring retainers.

### Speedometer Drive Assembly

Inspect drive and driven gears. Replace if teeth are broken, chipped or excessively worn.

### Case

Inspect the case for cracks and stripped threads. Inspect the gasket surfaces and mating surfaces for burrs. Check the vent for obstructions and check all fluid passages for obstructions and leakage.

Inspect the case bushing for scores. Check all parking linkage parts for wear or damage.

If the transaxle case thread is damaged, service kits may be purchased from local jobbers. To service a damaged thread, the following procedures should be carefully followed.

- Drill out damaged threads, using the same drill size as the thread O.D. For example, use a 5/16-inch drill for a 5/16 x 18 thread.
- Select proper special tap and tap the drilled hole. Tap is marked for size of thread being repaired. Thus, the special tap marked 5/16 x 18 will not cut the same thread as a standard 5/16 x 18 tap. It does cut a thread large enough to accommodate the insert, and after the insert is installed the original thread size (5/16 x 18) is restored.
- Place insert on tool and adjust sleeve to length of insert being used. Press insert against face of tapped hole. Turn tool clockwise and wind insert into hole until insert is one-half turn below face.
- Working through insert, bend insert tang straight up and down until it breaks off at notch.
- Improperly installed inserts can be removed with extractor tool. Place extractor tool in insert so that blade rests against top coil one-quarter to one-half turn away from end of coil. Tap tool sharply with a hammer so that blade cuts into insert. Exert downward pressure on tool and turn it counterclockwise until insert is removed.

### Planetary Carriers

Individual parts of the planet carriers are not serviceable except for the differential components.

- Check pins and shafts in planet assemblies for loose fit and/or complete disengagement. Use a new planet assembly if either condition exists. Before installing a planet assembly, check shaft welds.
- Inspect pinion gears for damaged or excessively worn teeth.
- Check for free rotation of pinion gears.

### Thrust Bearings

Wash thrust bearings thoroughly in cleaning solvent. Blow bearings dry with compressed air.

## CLEANING AND INSPECTION (Continued)

Ensure that bearings are clean and then lubricate with transmission fluid. Replace any bearings and races which show signs of pitting or roughness.

### Stator to Impeller Interference Check

1. Position stator support assembly on a bench with spline end pointing up.
2. Mount a converter on stator support with splines on one-way clutch inner race engaging mating splines of stator support.
3. Hold stator support stationary, and try to rotate torque converter both clockwise and counterclockwise. Converter should rotate freely without any signs of interference or scraping within converter assembly.
4. If there is an indication of scraping, trailing edges of stator blades may be interfering with leading edges of impeller blades. In such cases, replace converter.

### Converter and Oil Cooler

#### Tools Required:

- Rotunda Torque Converter and Oil Cooler Cleaner 014-00028

When internal wear or damage has occurred in the transaxle, metal particles, clutch plate material, or band material may have been carried into the converter and oil cooler. These contaminants are a major cause of recurring transaxle troubles and **MUST** be removed from the system before the transaxle is put back into service.

Whenever a transaxle has been disassembled to replace worn or damaged parts or because the valve body sticks due to foreign material, the converter and oil cooler **MUST** be cleaned by using a mechanically agitated cleaner, such as Rotunda Torque Converter and Oil Cooler Cleaner 014-00028 or equivalent.

The lack of a drain plug in the AXODE (AX4S) converter increases the amount of residual flushing solvent retained in the converter after cleaning. This retained solvent is not acceptable and a method of diluting it is required. The following procedure is to be used after removal of the AXODE (AX4S) torque converter from the cleaning equipment.

1. **Thoroughly drain** remaining solvent through hub.
2. Add 1.9 L (2.0 qt) of clean transmission fluid to converter. Agitate by hand.
3. **Thoroughly drain** solution through converter hub.

## SPECIFICATIONS

CLUTCH AND BAND APPLICATION CHART

Gear	Lo-Int Band	Overdrive Band	Forward Clutch	Intermediate Clutch	Direct Clutch	Reverse Clutch	Low One-Way Clutch	Direct One-Way Clutch
1st Gear Manual Low	Applied		Applied		Applied		Applied	Applied
1st Gear (Drive)	Applied		Applied				Applied	
2nd Gear (Drive)	Applied		Applied	Applied			Holding	
3rd Gear (Drive)				Applied	Applied			
4th Gear (Overdrive)		Applied		Applied	Applied			Holding
Reverse (R)			Applied			Applied	Applied	
Neutral (N)			Applied					
Park (P)			Applied					

FLUID CAPACITY

Type	Liters	Quarts
MERCON® Ford Specification E4AZ-19582-B	12.2	12.8

TORQUE SPECIFICATIONS

Description	N·m	Lb·Ft
Separator Plate to Main Control	9-12	7-9
Separator Plate to Pump Body	9-12	7-9

(Continued)

TORQUE SPECIFICATIONS (Cont'd)

Description	N·m	Lb·Ft
Detent Spring to Chain Cover	9-12	7-9
Solenoid to Main Control	9-12	7-9
Low-Intermediate Servo Cover to Case	9-12	7-9
Overdrive Servo Cover to Case	9-12	7-9
Pump Cover to Pump Body	9-12	7-9
Filler Tube to Case	9-12	7-9

(Continued)

## SPECIFICATIONS (Continued)

## TORQUE SPECIFICATIONS (Cont'd)

Description	N-m	Lb-Ft
Governor Cover to Case	9-12	7-9
Case to Stator Support	7-9	7-9
Oil Pump Assy. to Main Control	9-12	7-9
Park/Neutral Position Switch to Case	9-12	7-9
Valve Body/Solenoid to Chain Cover	9-12	7-9
Bracket Tubes to Case	9-12	7-9
Dust Cover to Case	9-12	7-9
Chain Cover to Case (10 mm) Socket Size	27-30	20-22
Pump Body to Chain Cover	9-12	7-9
Main Control Cover to Chain Cover (Upper Reservoir)	21-25	15-18
Manual Lever to Manual Shaft	18-22	12-16
Park Abutment to Case	27-30	20-22
Chain Cover to Case (10mm) Socket Size	27-30	20-22
Chain Cover to Front Support (10mm) Socket Size	27-30	20-22
Chain Cover to Front Support (13mm) Socket Size	34-48	25-35
Differential Brace to Case	34-48	25-35
Case to Reverse Clutch Screw	10-12	7-9
Case to Reverse Clutch Nut	34-47	25-35
Pressure Tap Plug for Chain Cover and Pump Body	8-12	6-9
Pressure Switch to Pump Body	8-12	6-9
Hose Screws	2.2-3.4	20-30 (Lb-in)
Oil Pan to Case (Lower Reservoir)	13-15	8-11
Speedometer Cover to Case	9-12	7-9
Chain Cover to Case (8mm) Socket Size	9-12	7-9
Case to Chain Cover (10mm) Socket Size	25-28	18-21
Case to Chain Cover (8mm) Socket Size	9-12	7-9
Transaxle to Engine Bolt	55-68	41-50
Stabilizer U-Clamp to Bracket Bolt	30-40	23-29
Brake Hose Routing Clip Bolt	11	8
Tie Rod to Knuckle Bolt <sup>1</sup>	31-47	23-35
Manual Cable Bracket Bolt	14-27	10-20
Starter Bolt	41-54	30-40
Dust Cover Bolt	9-12	7-9
Torque Converter to Flywheel Bolt	31-53	23-39
Vehicle Speed Sensor Bolt	3.4-4.5	31-39 (Lb-in)
Subframe Bolt	75-102	55-75
Lower Control Arm Pinch Bolt Bolt	53-72	40-53
Lug Nuts	115-142	85-105

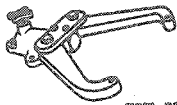





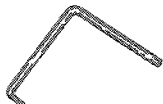
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## TORQUE SPECIFICATIONS (Cont'd)

Description	N-m	Lb-Ft
Power Steering Line Bracket Bolts	4.5-5.7	40-50 (Lb-in)
Steering Gear Bolts	115-135	85-100
Engine Mount Bolts	81-118	60-85
LH Engine Support Bolts	54-75	40-55
Cooler Line Fitting at Radiator Transaxle	11-16 <sup>2</sup> 24-31 <sup>2</sup>	8-12 18-23
Cooler Line Nut	16-24	12-18
Tube Nut to Connector	16-24	12-18
Threaded Connector to Oil Cooler	11-16	8-12

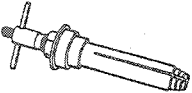
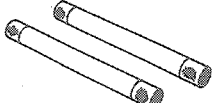
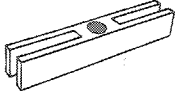




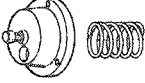
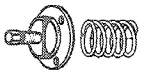
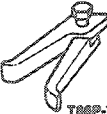
- 1 Tighten to minimum specified torque, continue tightening to nearest cotter pin slot.
- 2 1/4 inch x 18 Straight Pipe Fitting

## SPECIAL SERVICE TOOLS







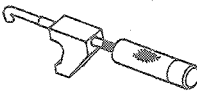




Tool Number/ Description	Illustration
T57L-500-B Bench Mounted Holding Fixture	 T57L-500-B
T58L-101-B Puller	 T58L-101-B
T59L-100-B Impact Slide Hammer	 T59L-100-B
T65L-77515-A Clutch Spring Compressor	 T65L-77515-A
T74P-6700-A Front Cover Seal Remover	 T74P-6700-A
T76L-7902-C One-Way Clutch Torque Tool	 T76L-7902-C
T77L-7902-R Holding Connector Clutch Holding Tool	 T77L-7902-R

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**SPECIAL SERVICE TOOLS (Continued)**







Tool Number/ Description	Illustration
T80L-7902-A End Play Checking Tool	 T80L-7902-A
T81P-7902-C Torque Converter Handles	 T81P-7902-C
T81P-78103-A Slide Hammer Adapter	 T81P-78103-A
T86P-1177-B Output Shaft Seal Replacer	 T86P-1177-B
T86P-3514-A1 C.V. Joint Puller T86P-3514-A2 Screw Extension	 T86P-3514-A
T86P-7902-A Converter Guide Sleeve Tool	 T86P-7902-A
T86P-70001-A Lube Tube Remover Tool	 T86P-70001-A
T86P-70023-A Low/Intermediate Servo Rod Tool	 T86P-70023-A
T86P-70023-B Overdrive Servo Rod Tool	 T86P-70023-B
T86P-70043-A Stator and Driven Sprocket Bearing Remover	 T86P-70043-A

(Continued)

Tool Number/ Description	Illustration
T86P-70043-B Stator and Driven Sprocket Bearing Replacer	 T86P-70043-B
T86P-70100-A Valve Body Guide Pin Set	 T86P-70100-A
T86P-70100-B Valve Body Guide Pin	 T86P-70100-B
T86P-70100-C Valve Body Guide Pin	 T86P-70100-C
T86P-70234-A Direct Clutch Lip Seal Protector	 T86P-70234-A
T86P-70370-A Pump Body Guide Pin	 T86P-70370-A
T86P-70389-A Front Clutch Loading Tool	 T86P-70389-A
T86P-70403-A Reverse Clutch Outer Lip Seal Protector	 T86P-70403-A
T86P-70422-AR Bimetal Height Gauge	 T86P-70422-AR
T86P-70548-A Forward Clutch Seal Lip Protector	 T86P-70548-A
T86P-77265-AH Cooler Line Disconnect Tool	 T86P-77265-AH

(Continued)

**SPECIAL SERVICE TOOLS (Continued)**

Tool Number/ Description	Illustration
T87P-70014-AH End Play Tool	 T87P-70014-AH
T87L-77837-AH Front Pump Seal Installer	 T87L-77837-AH
T89P-1177-AH Output Shaft Seal Installation	 T89P-1177-AH
T89T-70010-J Manual Lever Position Sensor Tool	 T89T-70010-J
T91P-70010-A Gear Position Sensor Adjuster	 T91P-70010-A
T91P-76085-A Rear Lube Seal Installer	 T91P-76085-A

Tool Number	Description
D79P-100-A	Impact Slide Hammer
D80L-516-S	Puller Screw

(Continued)

Tool Number	Description
D80L-522-A	Gear and Pulley Support Bar
D80L-625-A	Shaft Protector
D80L-630-3	Step Plate Adapter
D81P-3504-N	Locknut Pin Remover
D81L-6001-D	Engine Lifting Eyes
D88L-6000-A	Engine Support Bar
D89T-70100-A	Manual Lever Position Sensor Tester
TOOL-1175-AC	Seal Remover
TOOL-4201-C	Dial Indicator with Bracketry

**ROTUNDA EQUIPMENT**

Model	Description
007-0041A	SUPER STAR II Tester
007-00085	Transmission Tester
014-00028	Torque Converter and Oil Cooler Cleaner
014-00373	Automatic Transmission Tester Kit
014-00407	Digital Volt Ohmmeter
014-00751	Subframe Removal Kit
021-00054	Torque Converter Leak Test Kit

**PARTS CROSS-REFERENCE**

Base Part #	Part Name	Old Part Name
9E731	Vehicle Speed Sensor	Speed Sensor