

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

2002 AUTOMATIC TRANSMISSIONS

Ford 5R55W/S Overhaul

APPLICATION

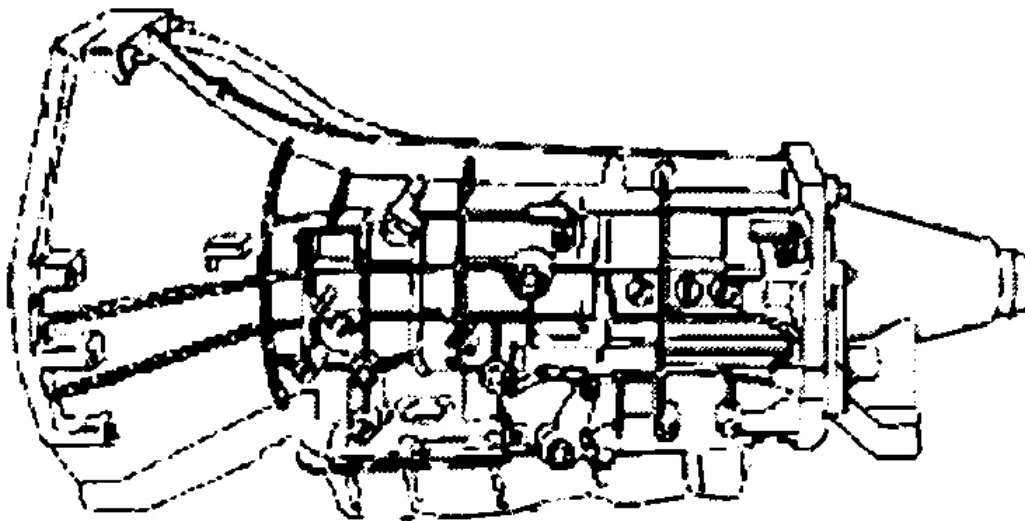
TRANSMISSION APPLICATION

Application	Transmission Model
Explorer & Mountaineer	
4.0L & 4.6L	5R55W/S

IDENTIFICATION

TRANSMISSION

NOTE: Refer to illustrations for transmission identification. See [Fig. 1](#) and [Fig. 2](#) .



G00119796

Fig. 1: Identifying Transmission Assembly (2WD Shown; 4WD Similar)
Courtesy of FORD MOTOR CO.

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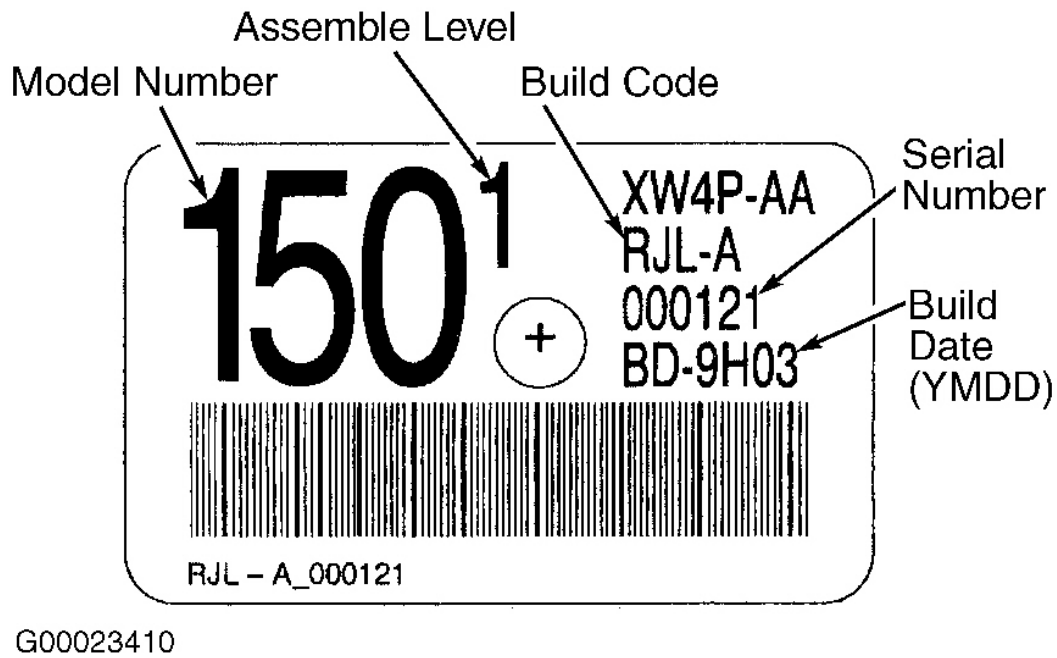
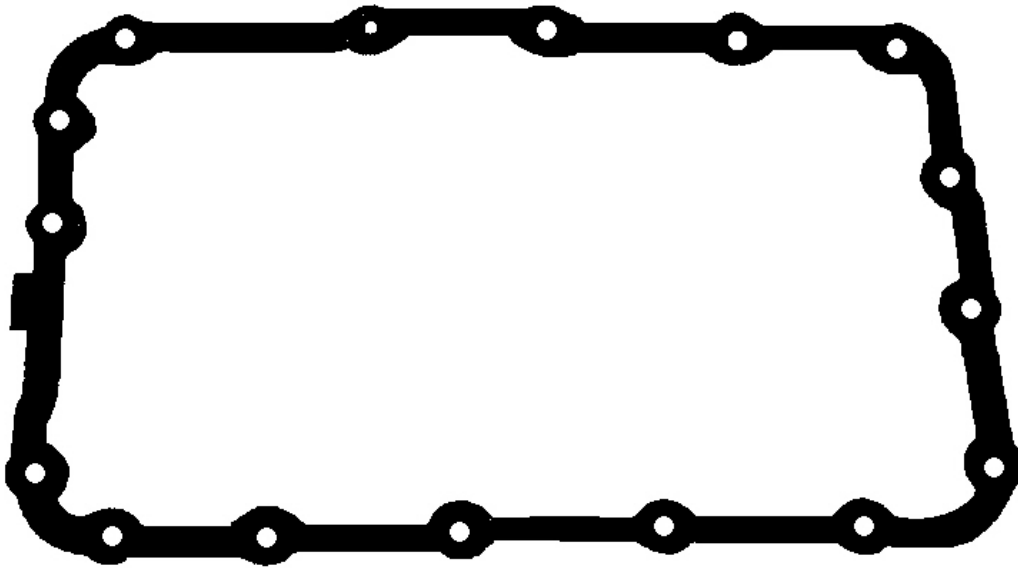


Fig. 2: Identifying Service Identification Tag
Courtesy of FORD MOTOR CO.

OIL PAN GASKET



G00031941

Fig. 3: Identifying Oil Pan Gasket (5R55W)

DESCRIPTION

The 5R55W/S is an electronically controlled 5-speed automatic transmission. Transmission has the following features: a 4-element torque converter with Torque Converter Clutch (TCC), 3 compound planetary gear sets, 3 bands, 3 multi-plate clutches and 2 one-way clutches. The letter "S" within transmission code describes a synchronous shift transmission. The letter "W" within transmission code describes a wide ratio transmission.

Powertrain Control Module (PCM) controls transmission operation through 4 On/Off solenoids for shifting, one Pulse-Width Modulated (PWM) solenoid for Torque Converter Clutch (TCC) control and 3 Pressure Control (PC) solenoids (PC-A, PC-B and PC-C) for line pressure control, band and clutch application pressure. PCM has built-in self-diagnosis, fail-safe operations mode, and warning code display for the main input sensors and solenoid valves.

Input signals from sensors are sent to PCM. PCM can determine when the time and conditions are right for a shift or converter clutch application.

LUBRICATION

For lubrication information, see **LUBRICATION** .

TESTING & DIAGNOSIS

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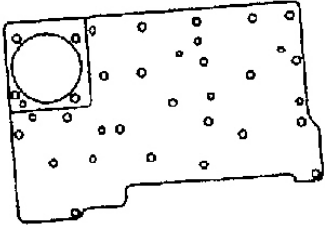
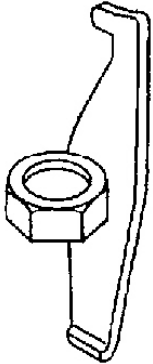
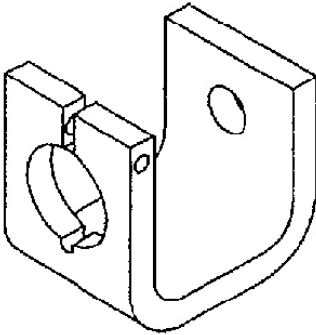
For testing and diagnosis, see **DIAGNOSIS - 5R55W/S** .

REMOVAL & INSTALLATION

For removal and installation, see **REMOVAL & INSTALLATION - A/T** .

DISASSEMBLY

TRANSMISSION

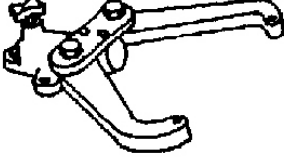
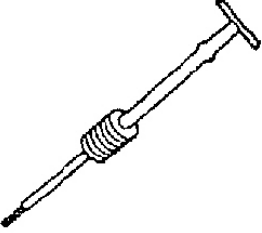
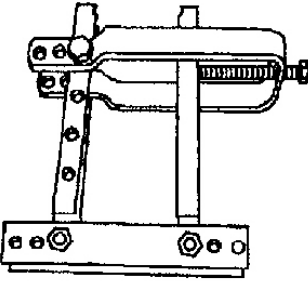
	Air Test Plate and Gaskets 307-433-1, 307-433-2, 307-433-3
	Remover, Input Shaft Oil Seal 308-375
	Remover, Transmission Fluid Pump 307-397

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Fig. 4: Special Tool(s) (1 Of 4)

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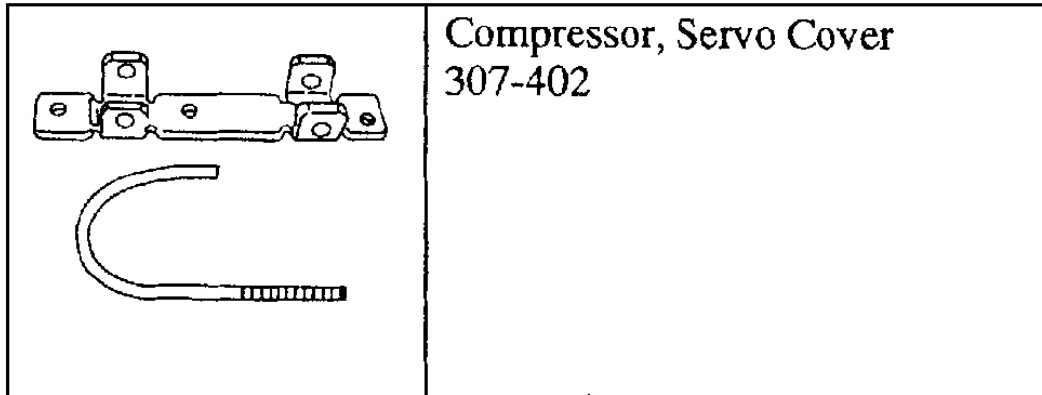
	Holding Fixture, Transmission 307-003 (T57L-500-B)
	Slide Hammer 100-001 (T50T-100-A)
	Remover, Torque Converter Fluid Seal 307-309 (T94P-77001-BH)

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Fig. 5: Special Tool(s) (2 Of 4)

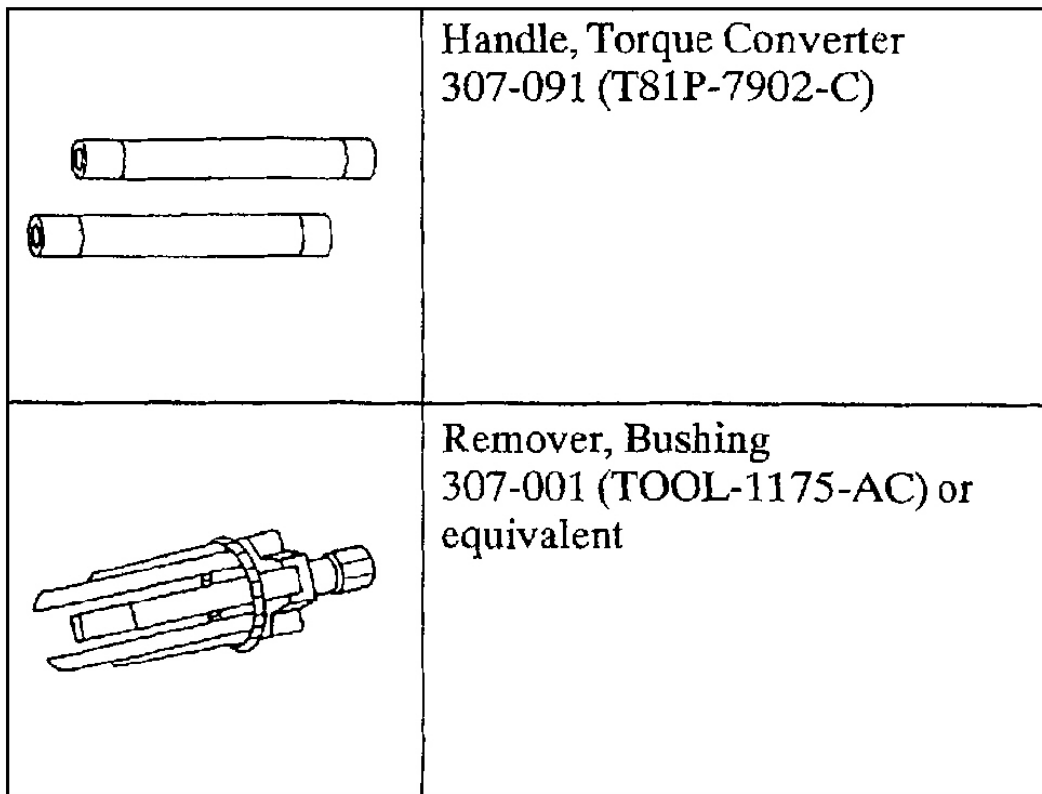
2002 Ford Explorer

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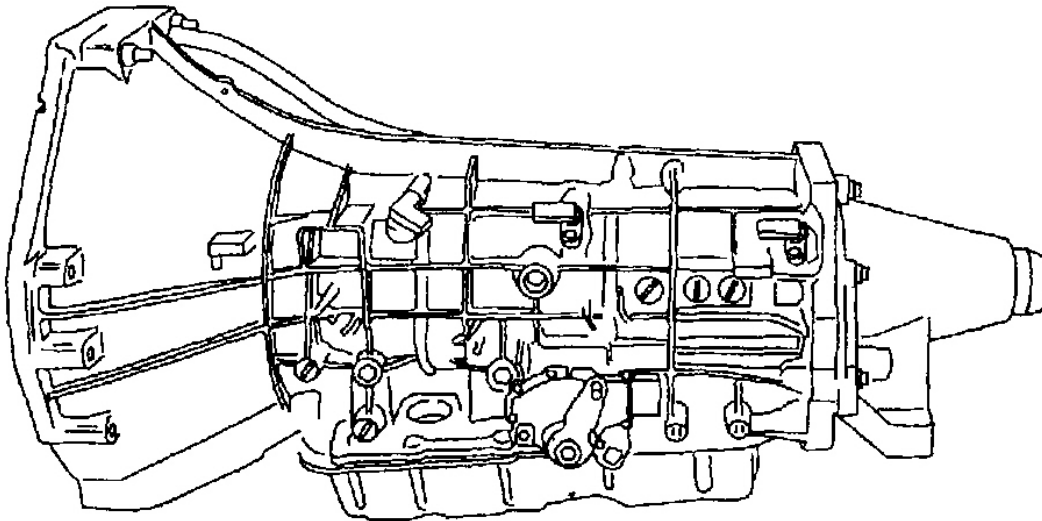
Fig. 6: Special Tool(s) (3 Of 4)



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Fig. 7: Special Tool(s) (4 Of 4)**All vehicles**

1. Place the transmission on a workbench.

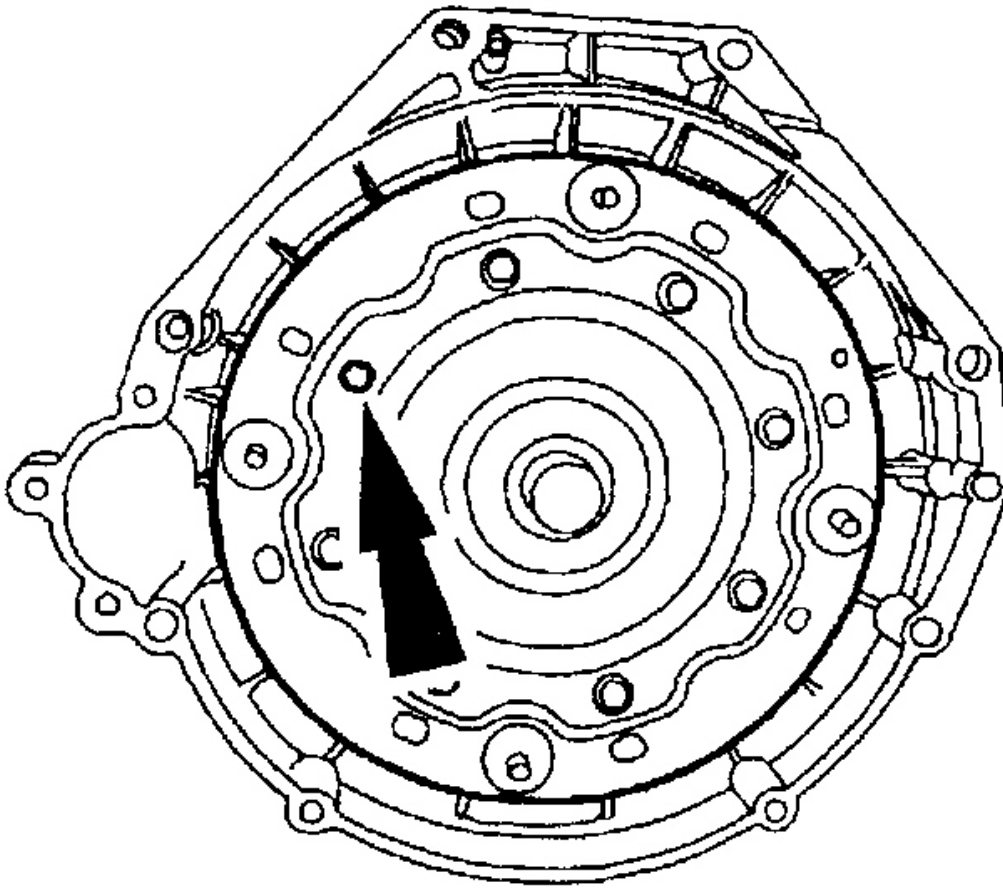


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Fig. 8: 5R55W/S Transmission

NOTE: Make an identifying mark on the nut, stud, and adapter plate to allow for correct installation.

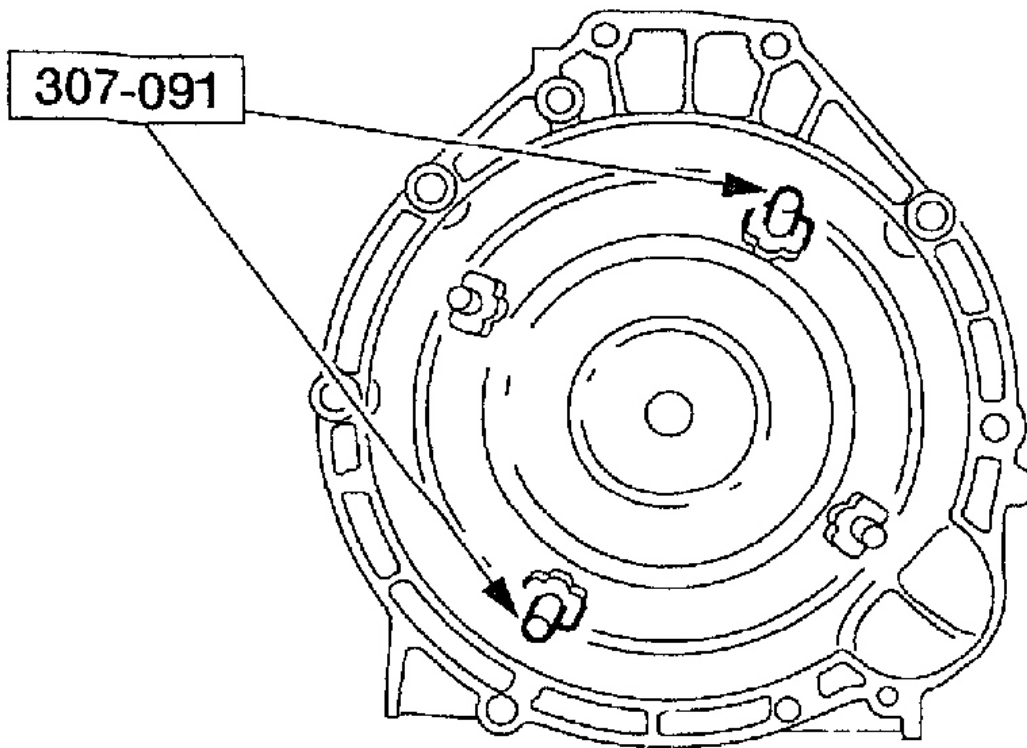
2. If vehicle is equipped, and installation of a new or remanufactured torque converter is necessary, remove the torque converter adapter plate.



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Fig. 9: Marking Torque Converter Stud

3. If the adapter plate has been removed use the special tools to remove the torque converter.



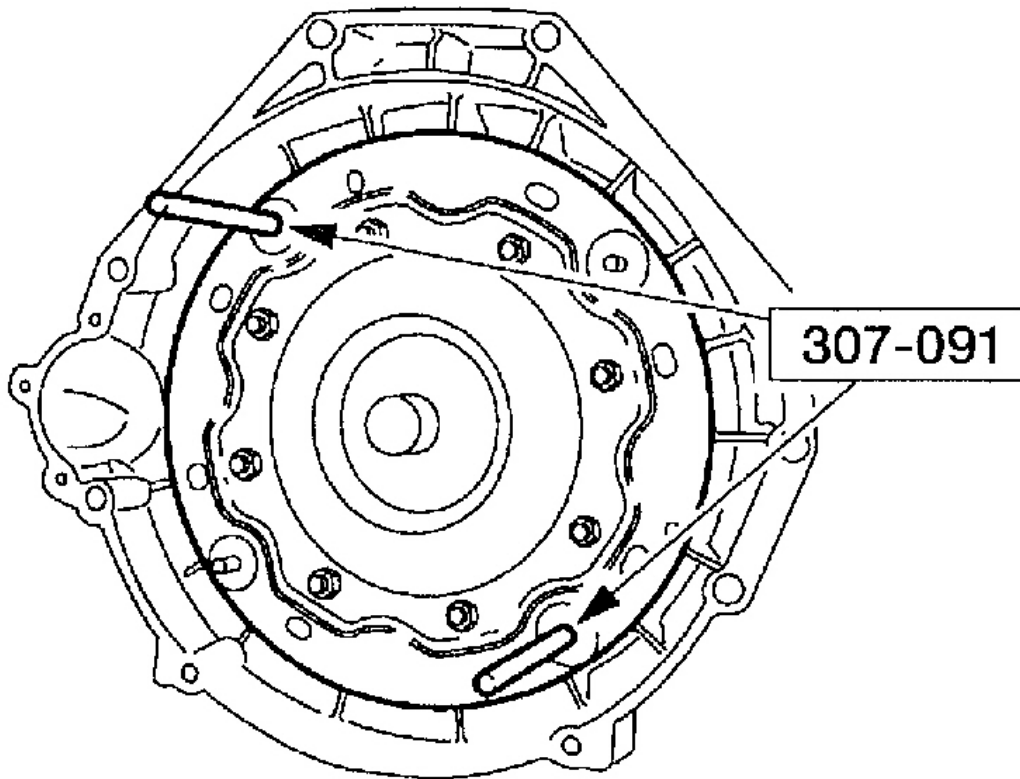
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Fig. 10: Using Torque Converter Handles Without Adapter Plate

WARNING: The torque converter is heavy, especially when full of fluid.

NOTE: If not installing a new torque converter leave the adapter plate bolted to the torque converter.

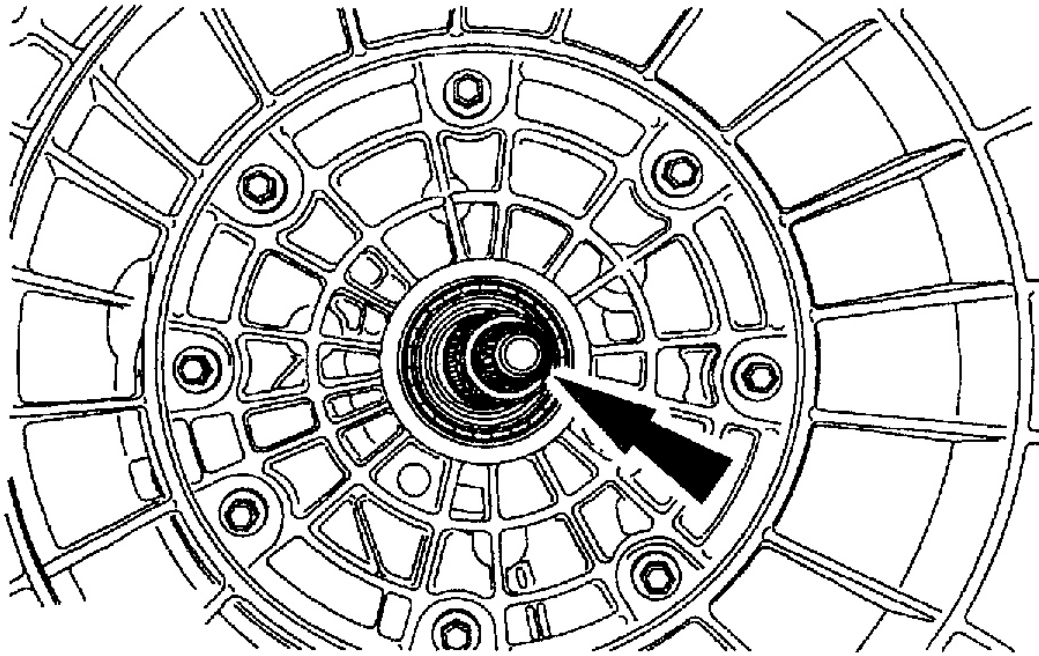
4. Using the special tools, remove the torque converter and adapter plate as an assembly.



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Fig. 11: Using Torque Converter Handles With Adapter Plate

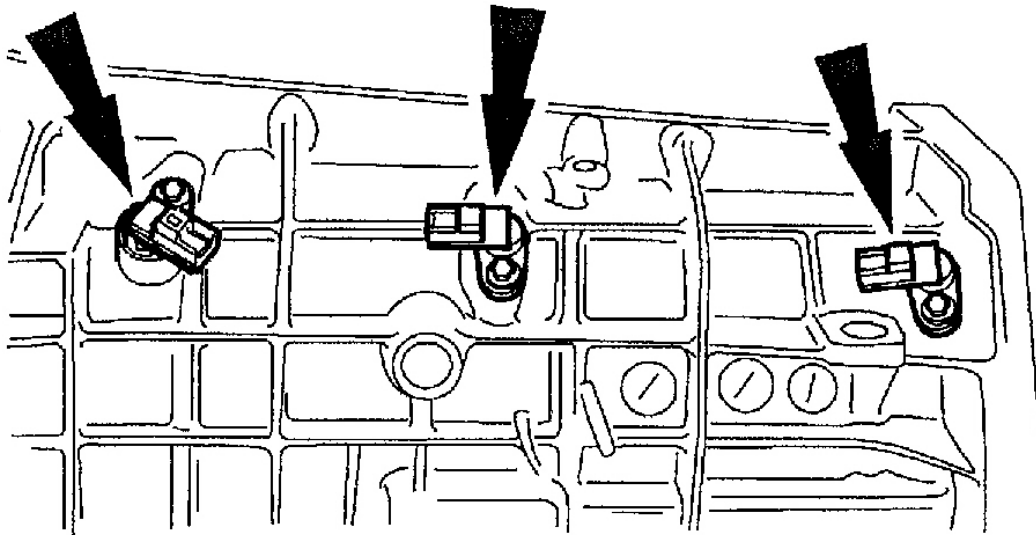
5. Remove the input shaft.



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Fig. 12: Removing Input Shaft

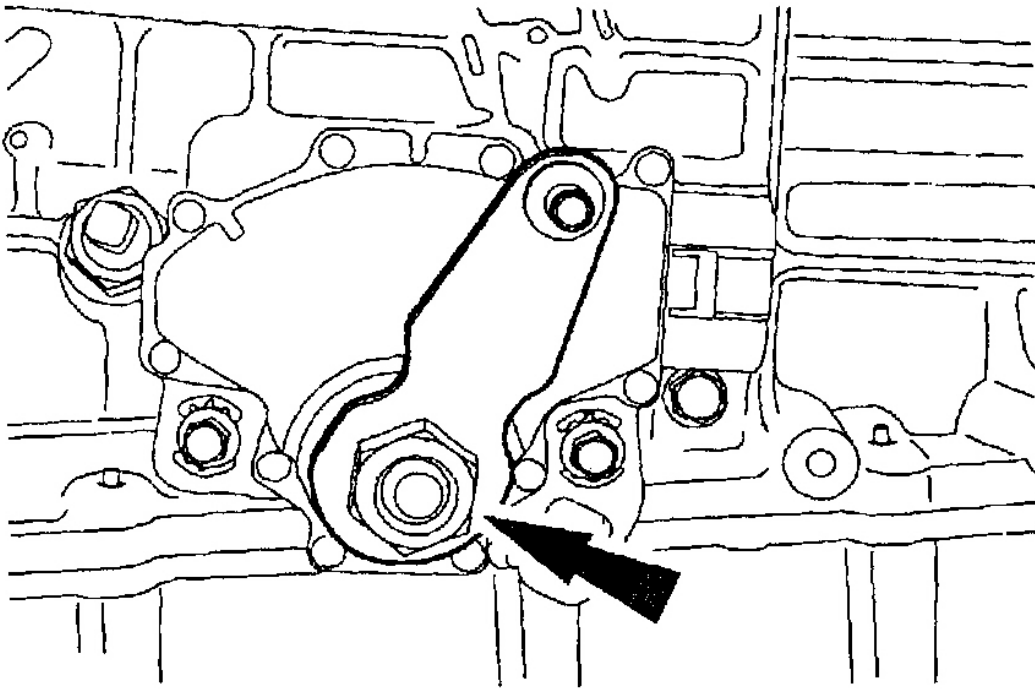
6. Remove the sensors.



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Fig. 13: Removing Sensors

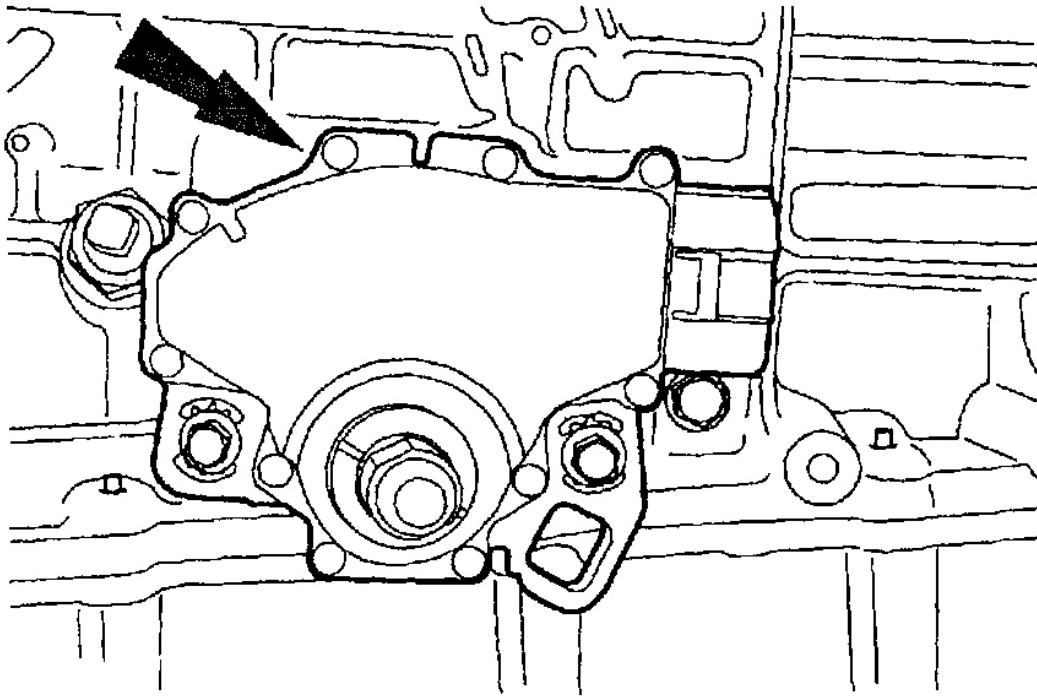
7. Remove the outer manual control lever.



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Fig. 14: Removing Manual Control Lever

8. Remove the digital transmission range (TR) sensor.

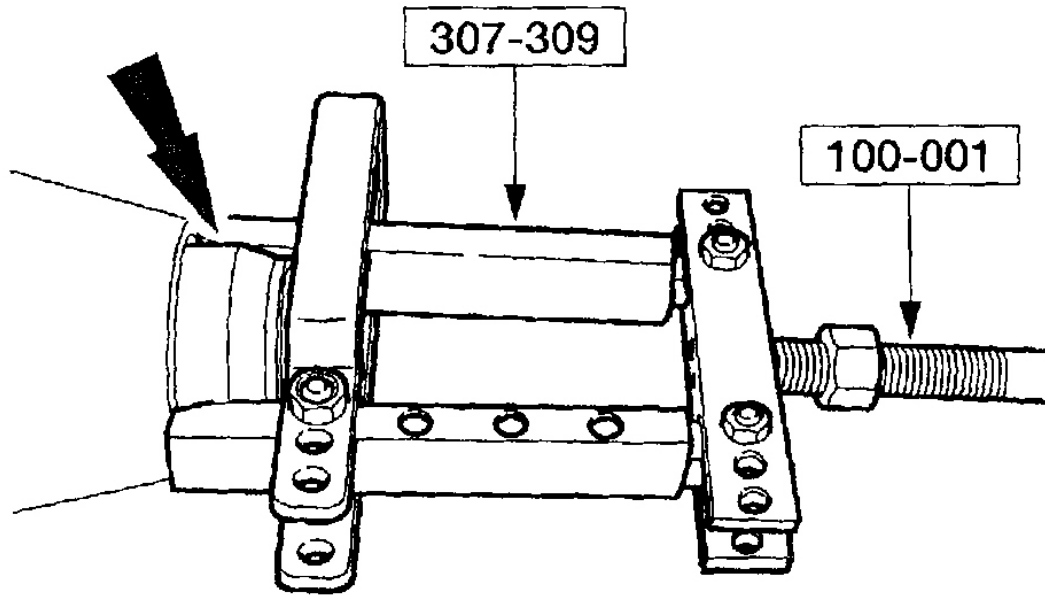


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Fig. 15: Removing Digital TR Sensor

4x2 applications

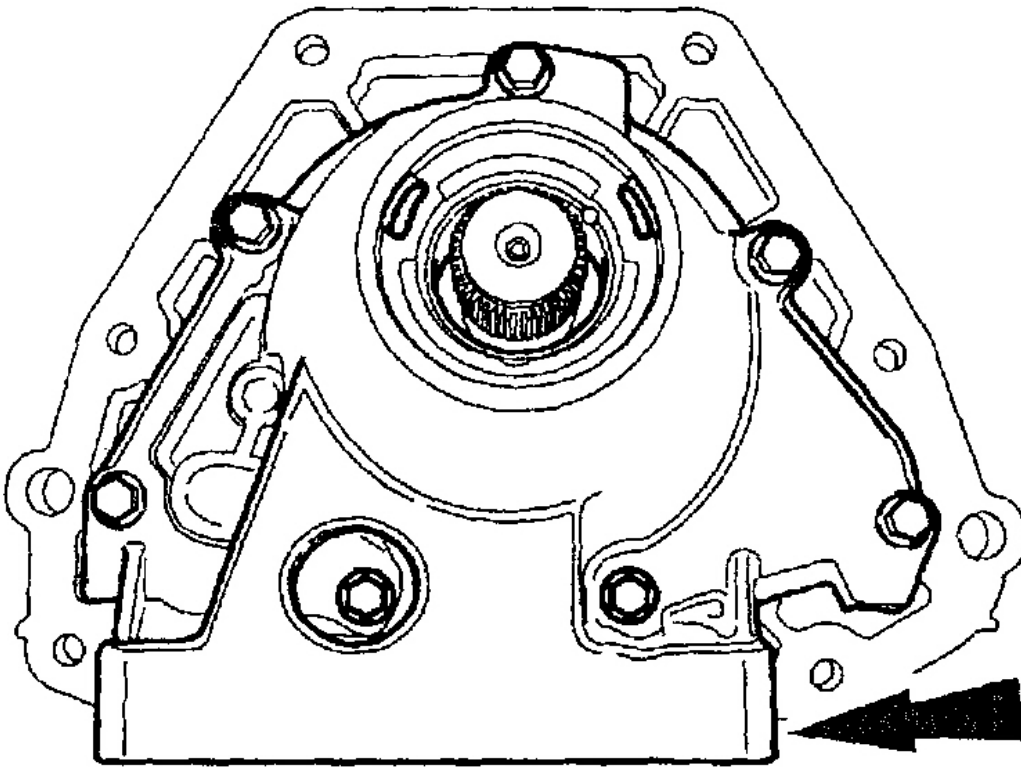
9. Using the special tools, remove the extension housing seal.



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Fig. 16: Removing Extension Housing Seal

CAUTION: The parking pawl, parking pawl return spring and parking pawl shaft could fall out during removal of the extension housing.



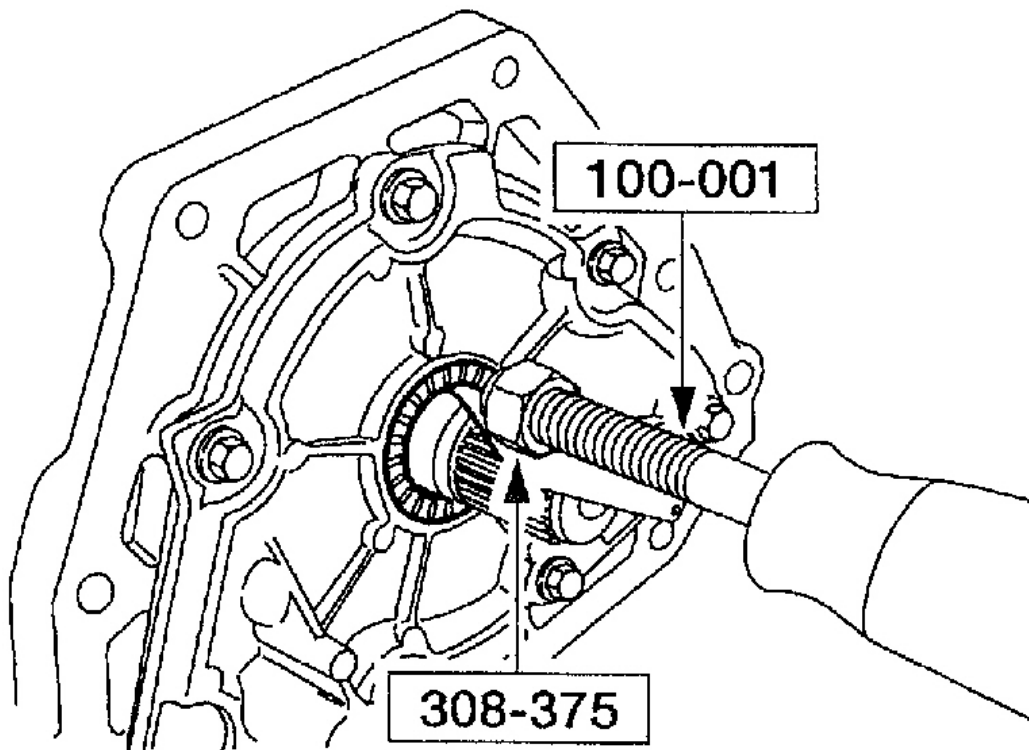
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Fig. 17: Removing Extension Housing

10. Remove the extension housing.

4x4 applications

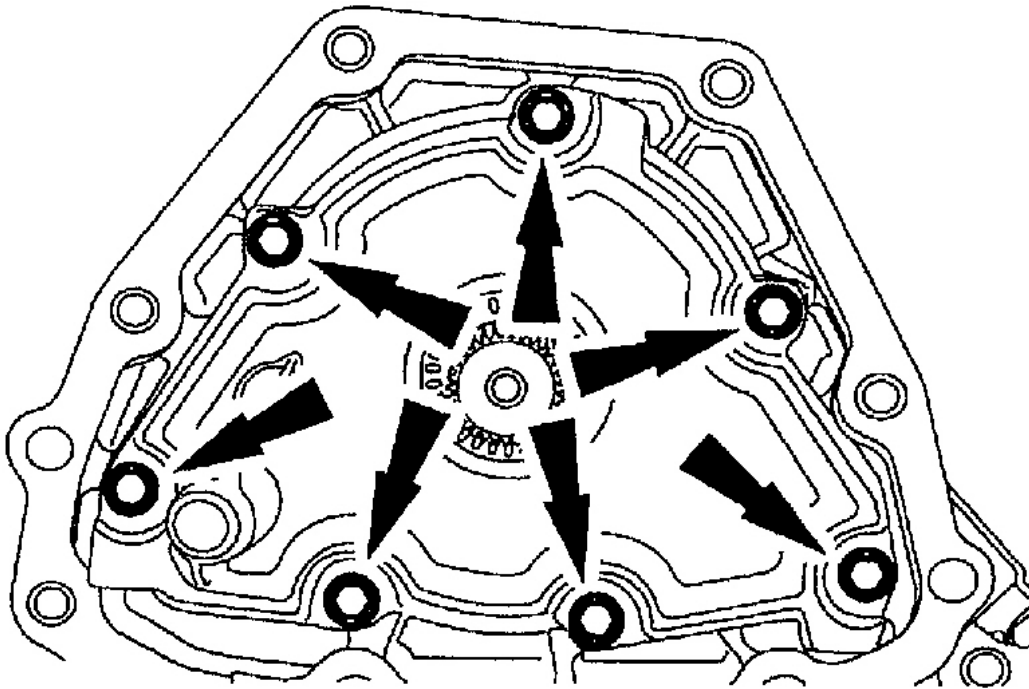
11. Using the special tools, remove the extension housing seal.



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Fig. 18: Removing Extension Housing Seal

CAUTION: The parking pawl, parking pawl return spring and parking pawl shaft could fall out during removal of the extension housing.



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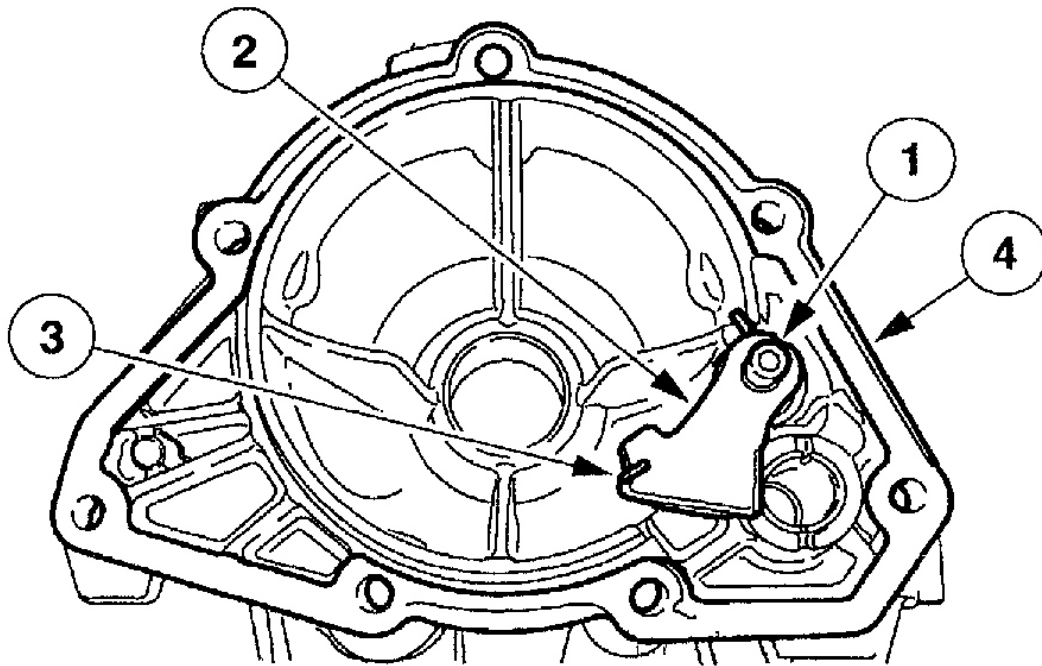
Fig. 19: Removing Extension Housing

12. Remove the extension housing.

All applications

NOTE: The 4x2 is shown, the 4x4 is similar.

13. Remove the parking pawl assembly and discard the gasket.
 1. Remove the parking pawl shaft.
 2. Remove the parking pawl.
 3. Remove the parking pawl return spring.
 4. Remove and discard the gasket.

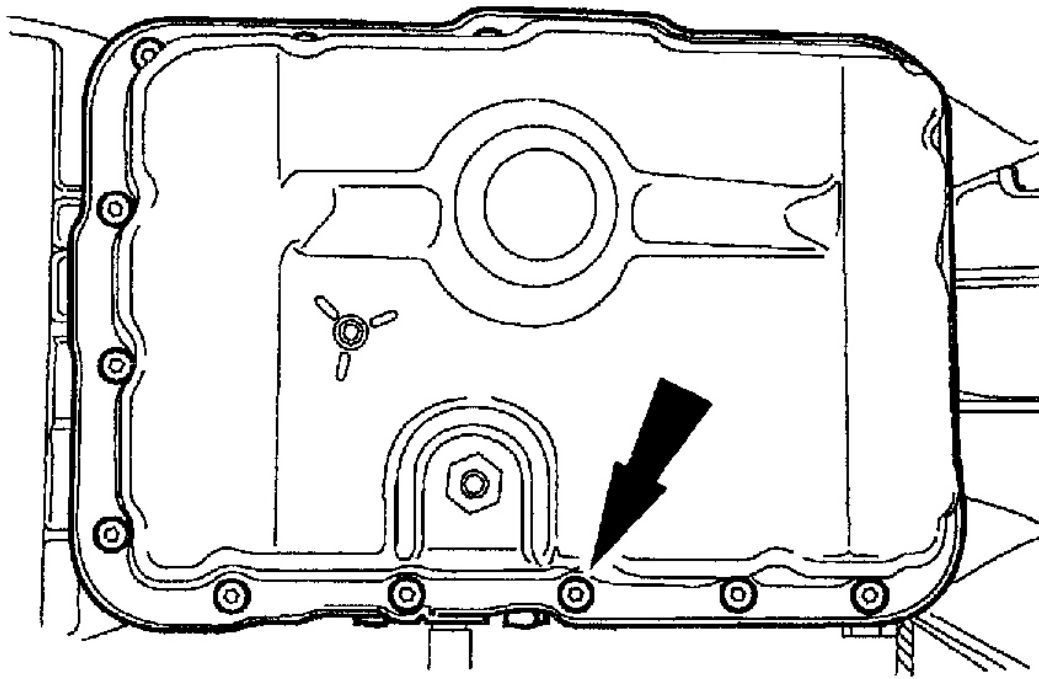


G01672152

Fig. 20: Removing Parking Pawl Assembly

NOTE: The transmission fluid pan gasket is reusable. Clean and inspect the gasket for damage. If not damaged, the gasket should be reused.

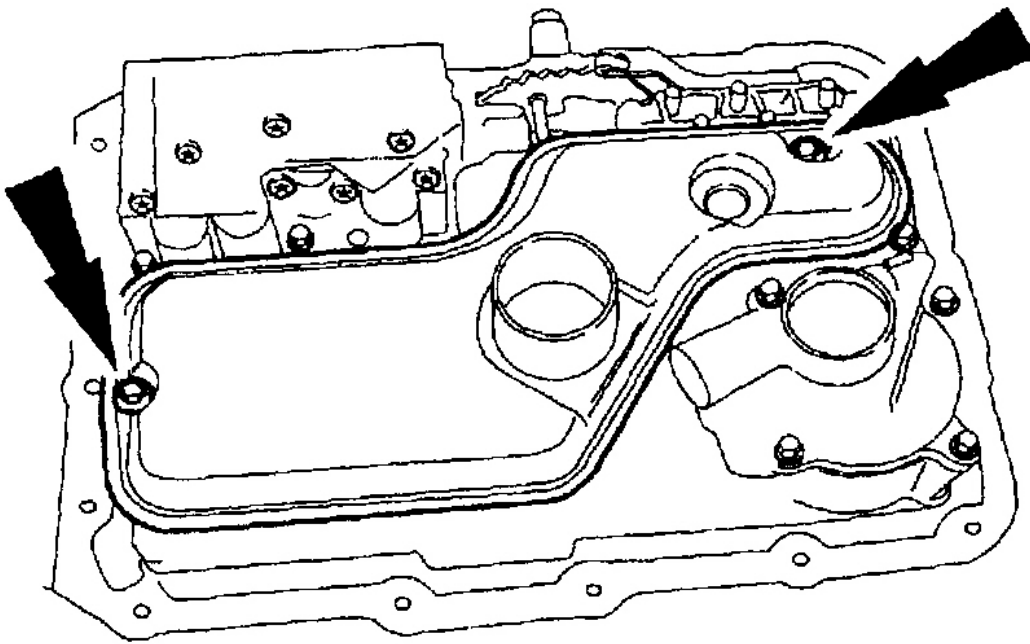
14. Remove the 16 transmission fluid pan screws, fluid pan, and gasket.



G01672153

Fig. 21: Removing Fluid Pan

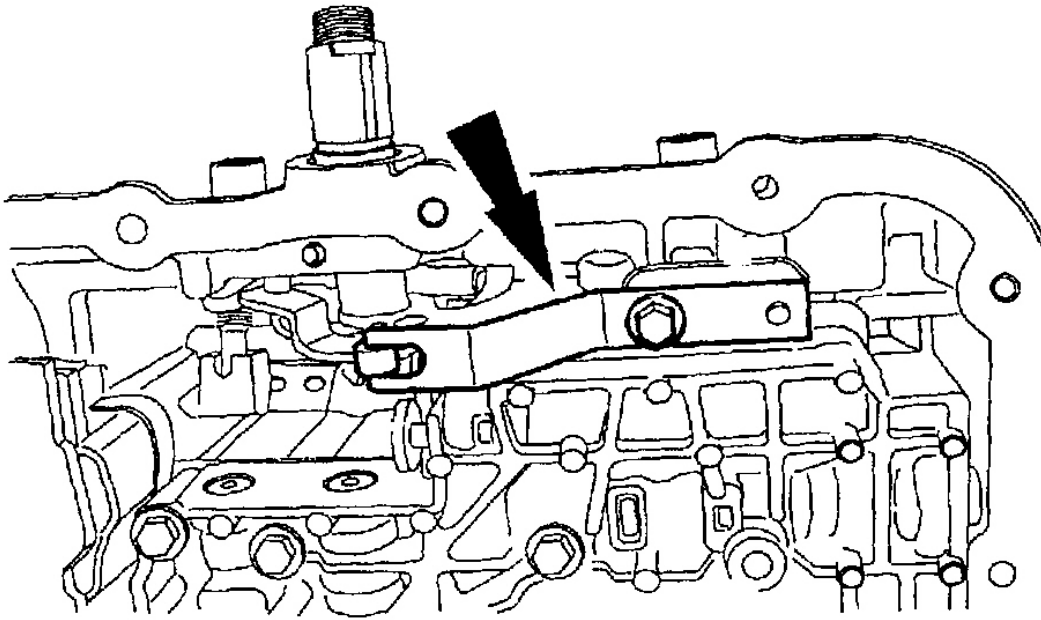
15. Remove the transmission fluid filter and seal assembly and discard.



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Fig. 22: Removing Transmission Fluid Filter

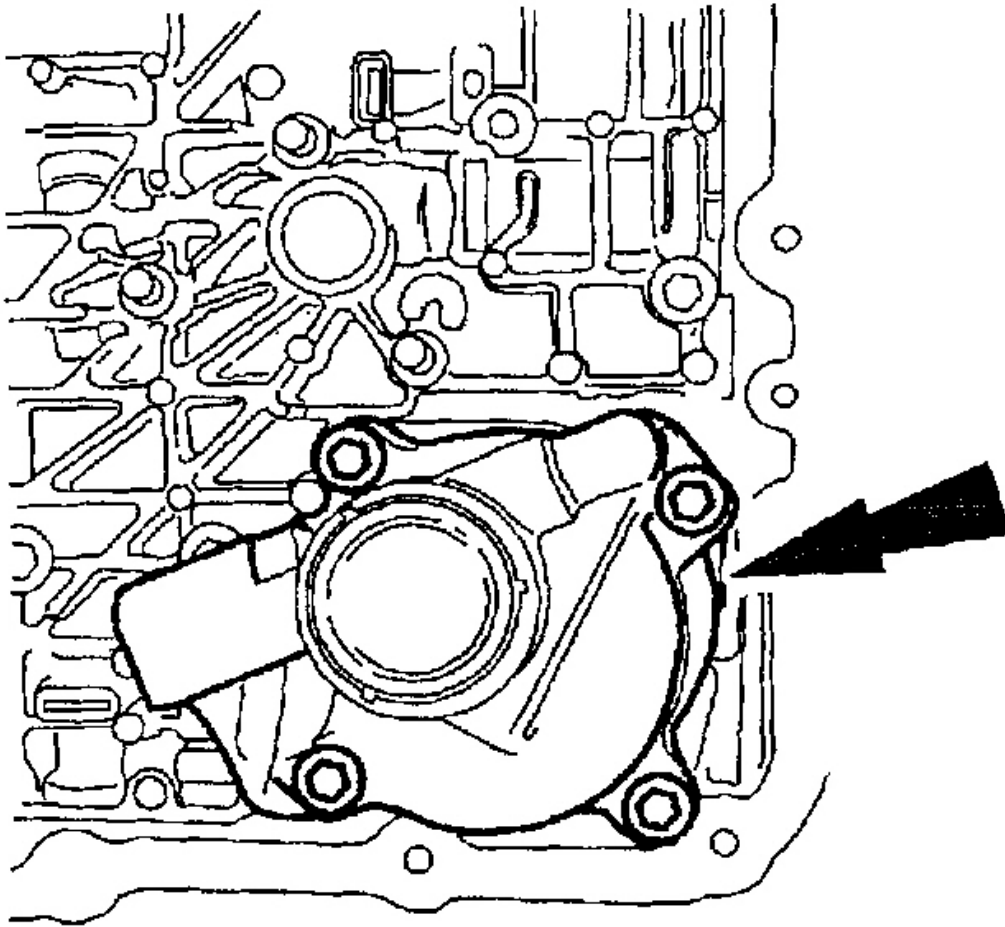
16. Remove the manual control valve detent spring.



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Fig. 23: Removing Manual Control Valve Detent Spring

17. Remove the reverse servo assembly.

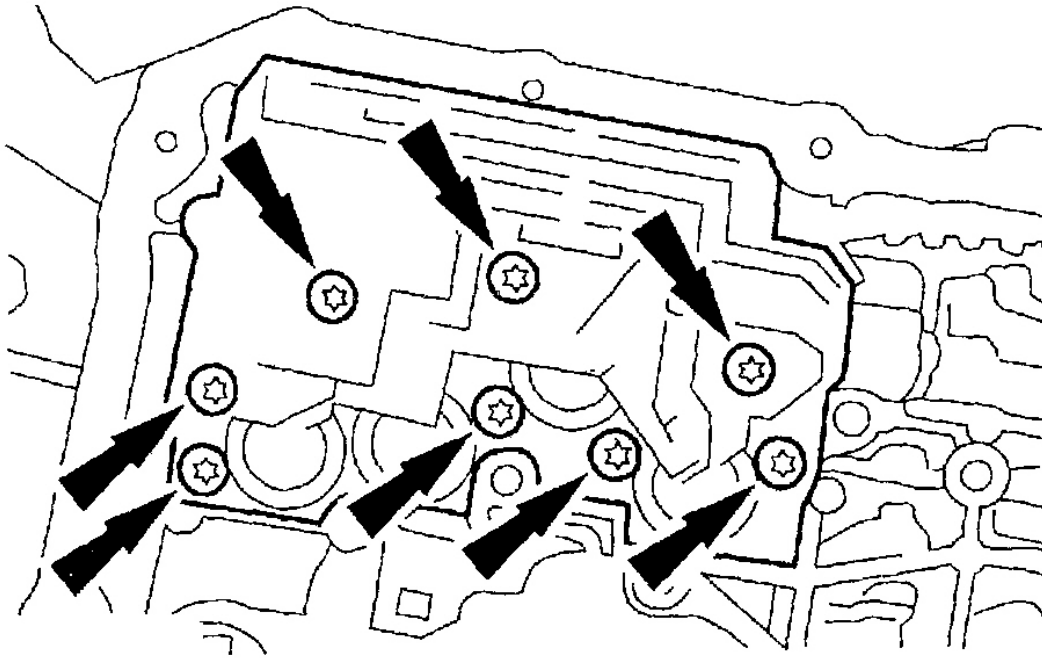


G01672156

Fig. 24: Removing Reverse Servo Assembly

CAUTION: Do not damage solenoid body connector pins.

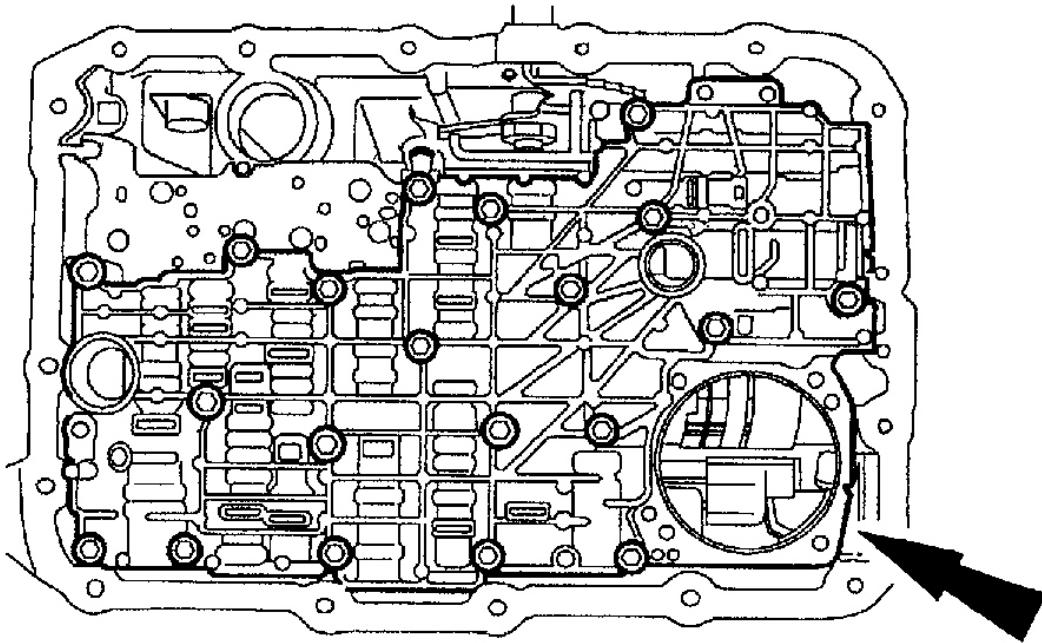
18. Remove the solenoid body assembly by lifting on the body and pushing the connector from the other side of the case.



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Fig. 25: Removing Solenoid Body

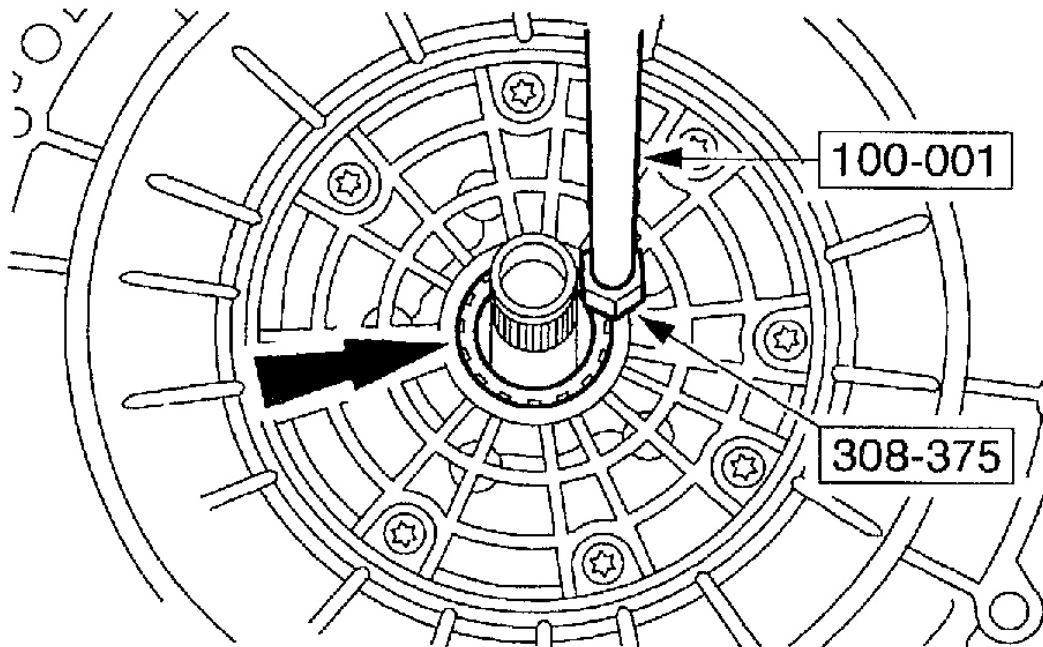
19. Remove the main control valve body, separator plate, and gasket.



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Fig. 26: Removing Main Control Valve Body

20. Using the special tools, remove the converter hub seal.



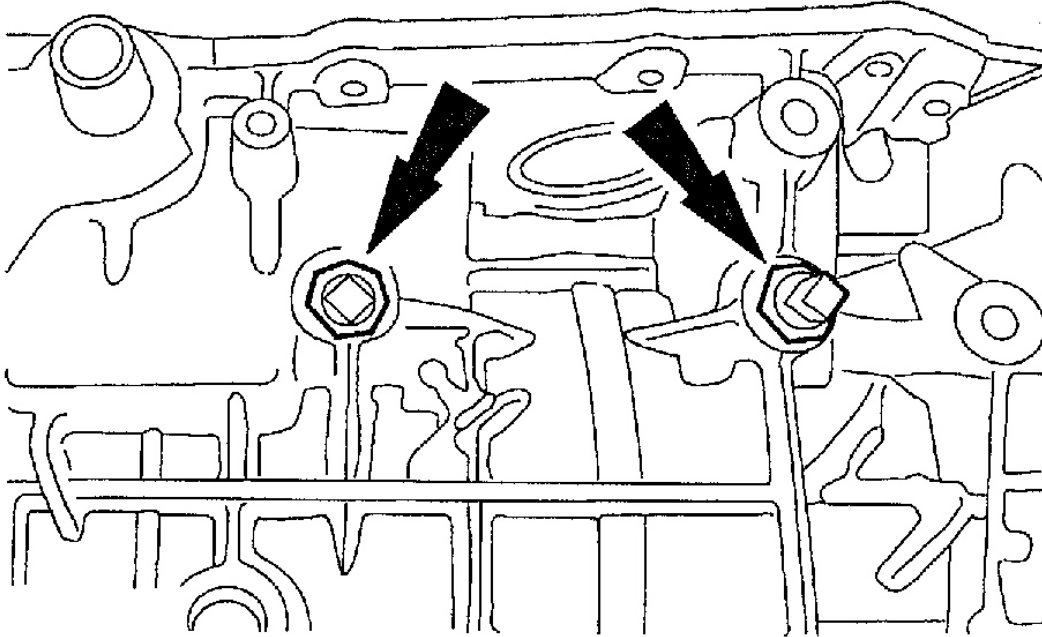
G01672159

Fig. 27: Removing Converter Hub Seal

CAUTION: Failure to loosen the OD band adjusting screw prior to pump removal may cause damage to the pump and OD band.

CAUTION: Throw the locknuts away. The locknuts are not reusable for assembly.

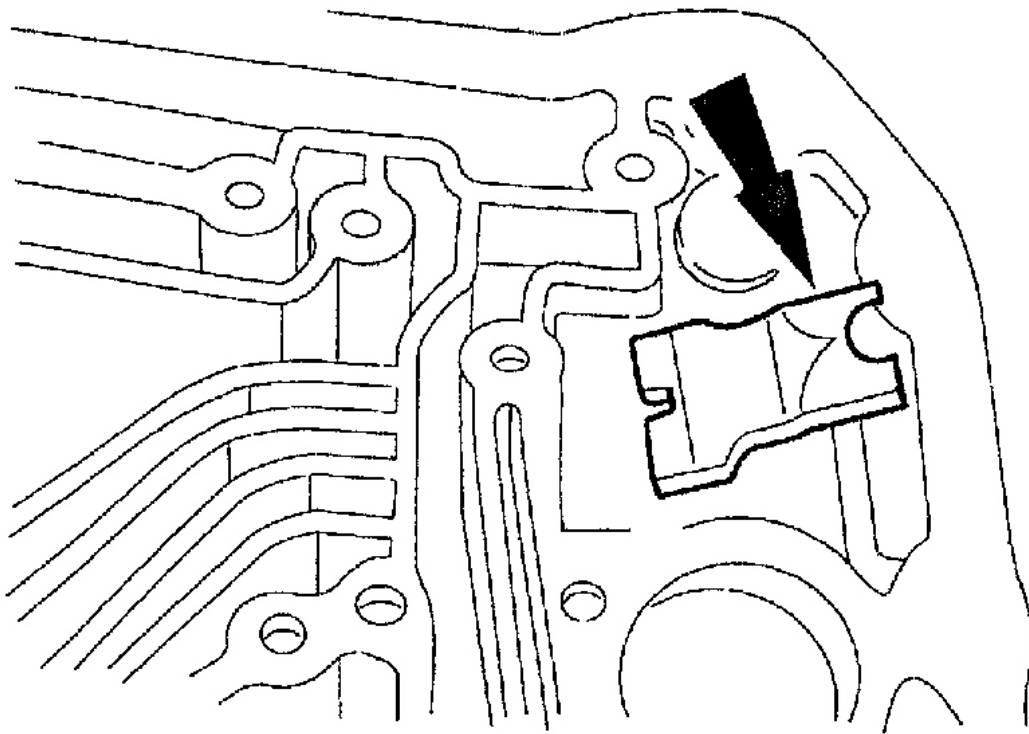
21. Remove the locknuts, and loosen the OD band adjusting screw.



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Fig. 28: Removing Band Adjusting Locknuts

22. Remove the overdrive anchor strut.

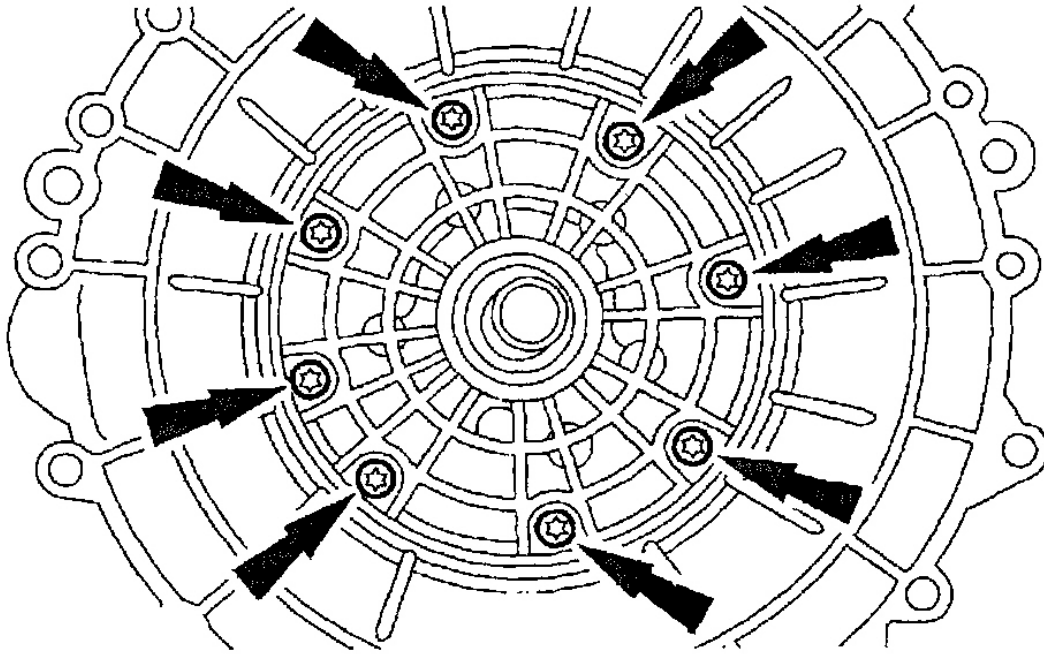


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Fig. 29: Removing Overdrive Anchor Strut

CAUTION: The screws are not reusable for assembly. Discard the screws. If the screws are reused, the housing may become separated from the transmission.

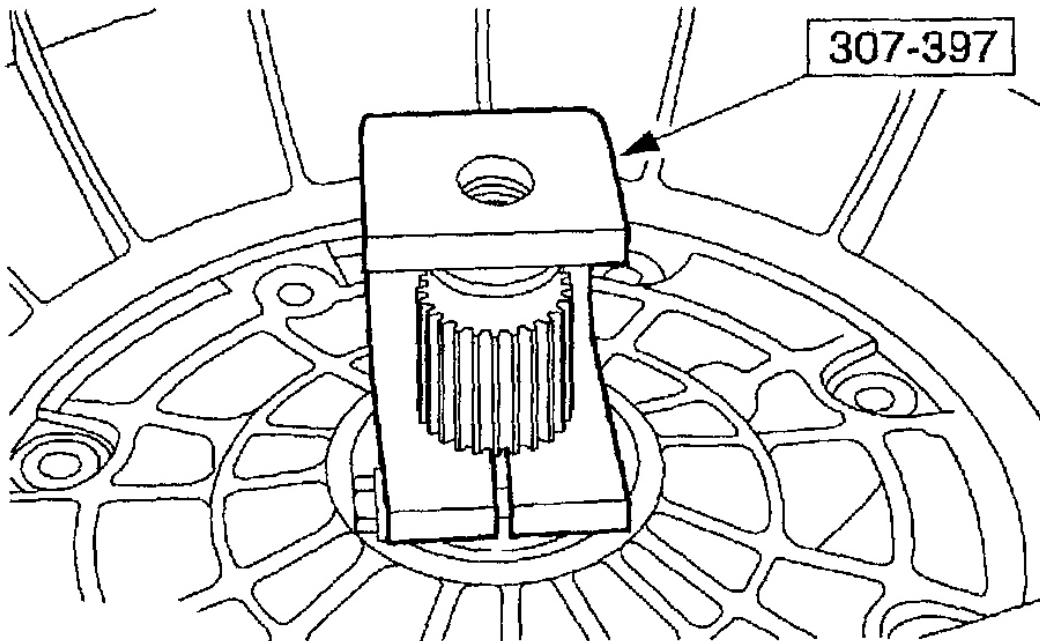
23. Remove and discard the screws.



G01672162

Fig. 30: Removing Pump Screws

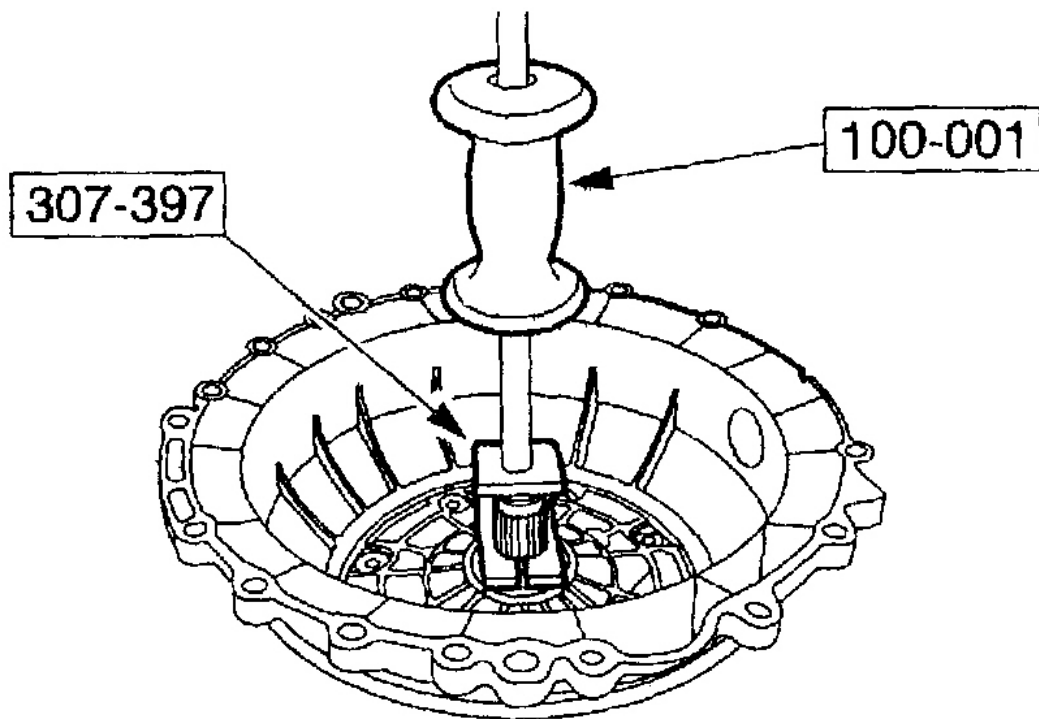
24. Install the special tool.



G01672163

Fig. 31: Installing Transmission Fluid Pump Remover

25. Using the special tools, remove the pump.

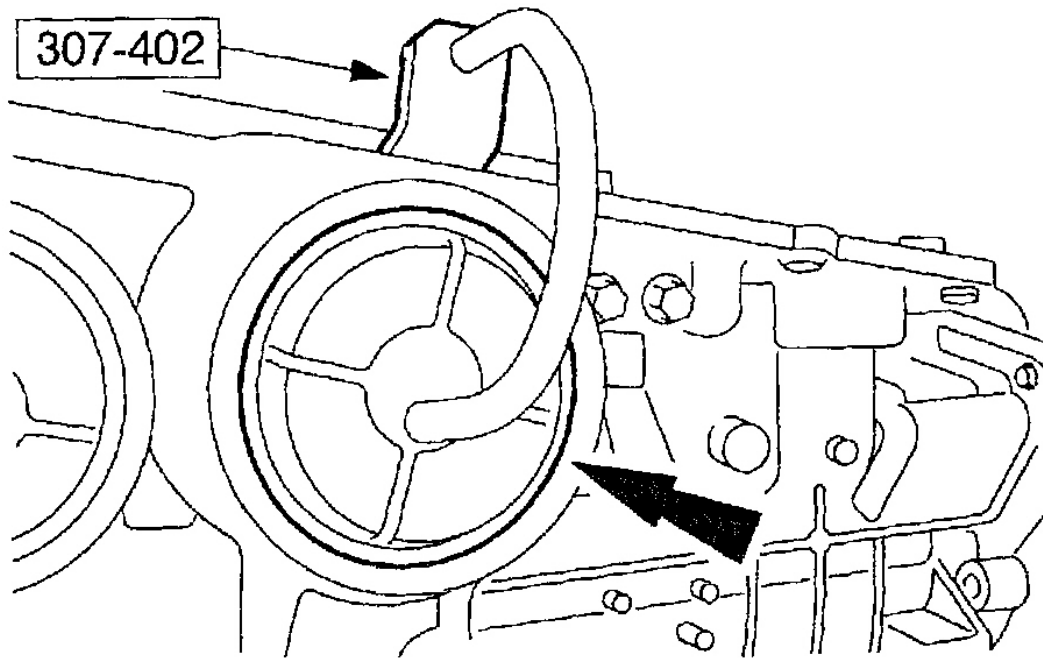


G01672164

Fig. 32: Removing Transmission Fluid Pump

CAUTION: Servo cover is under spring tension.

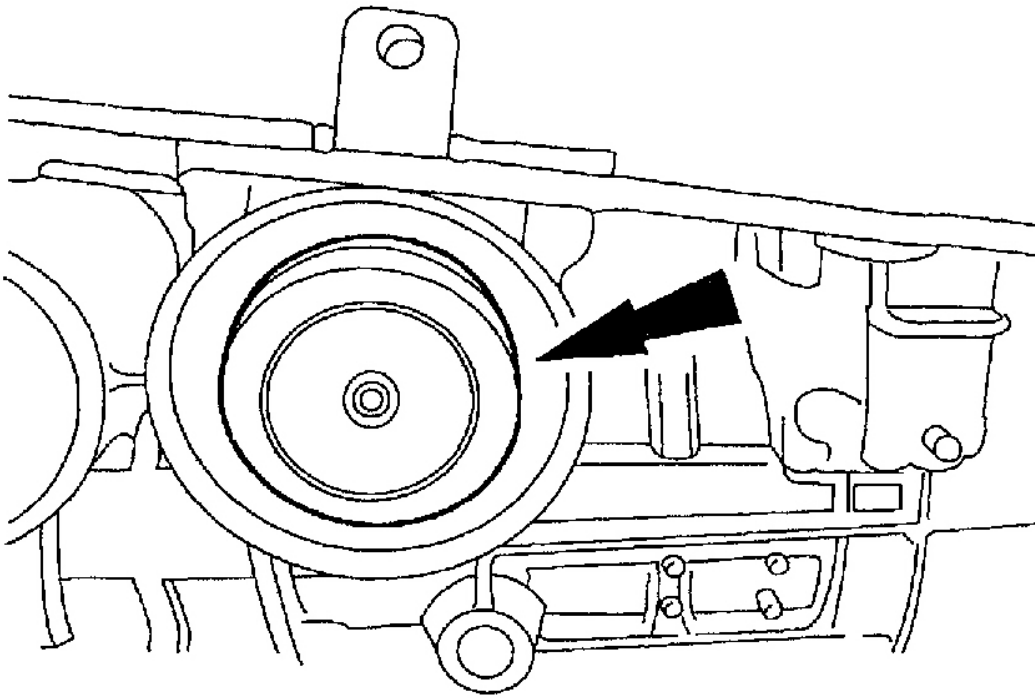
26. Using the special tool, remove the intermediate servo cover retaining ring and cover.



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Fig. 33: Removing Intermediate Servo Cover

27. Remove the intermediate band servo piston and spring.

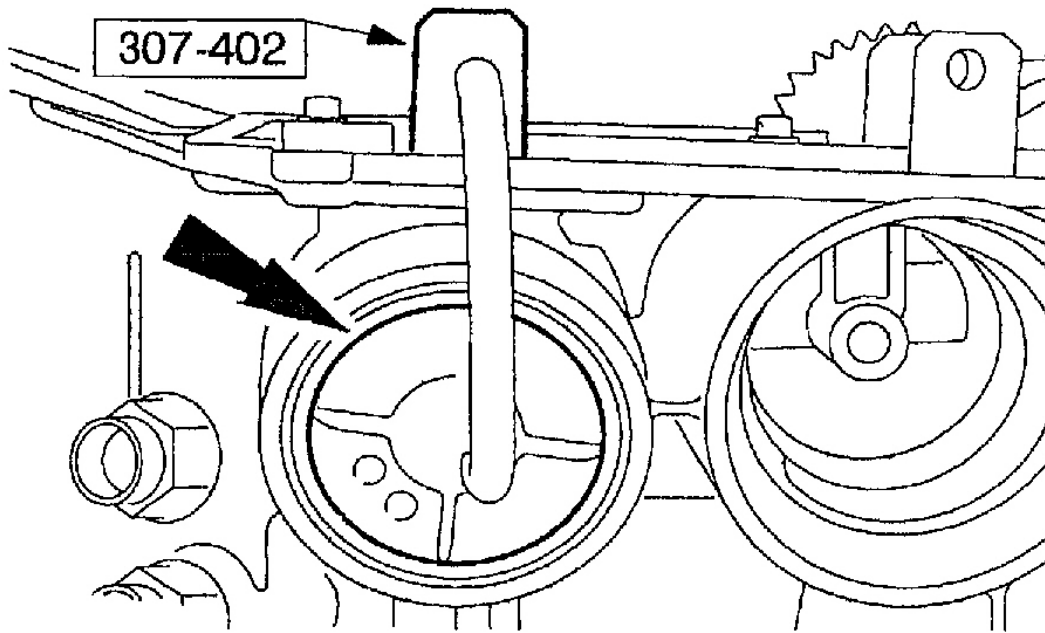


G01672166

Fig. 34: Removing Intermediate Band Servo Piston

CAUTION: Servo cover is under spring tension.

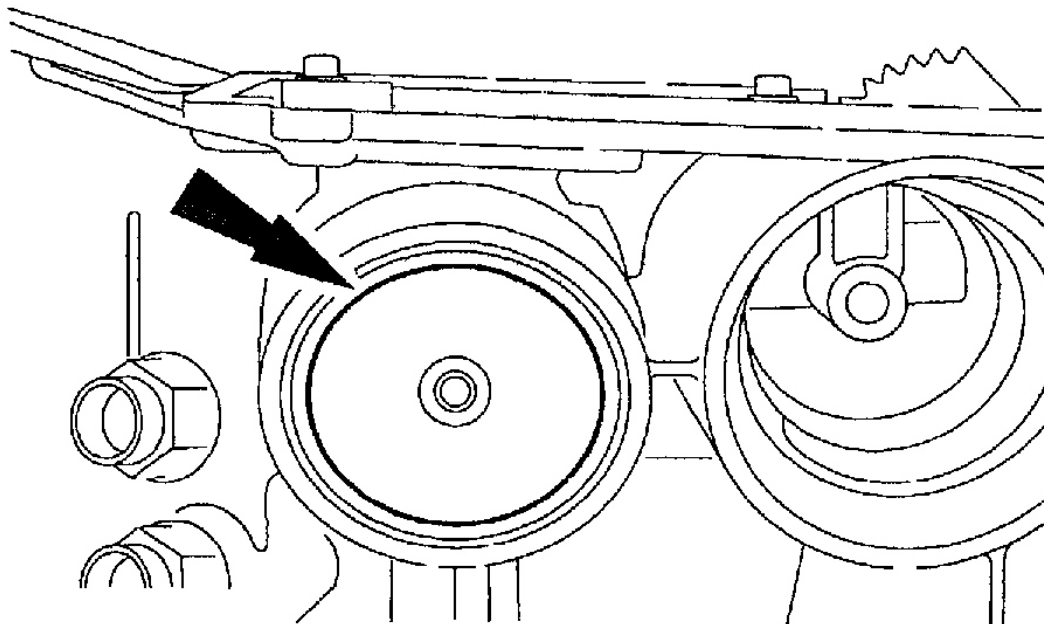
28. Using the special tool, remove the overdrive servo cover retaining ring and cover.



G01672167

Fig. 35: Removing Overdrive Servo Cover

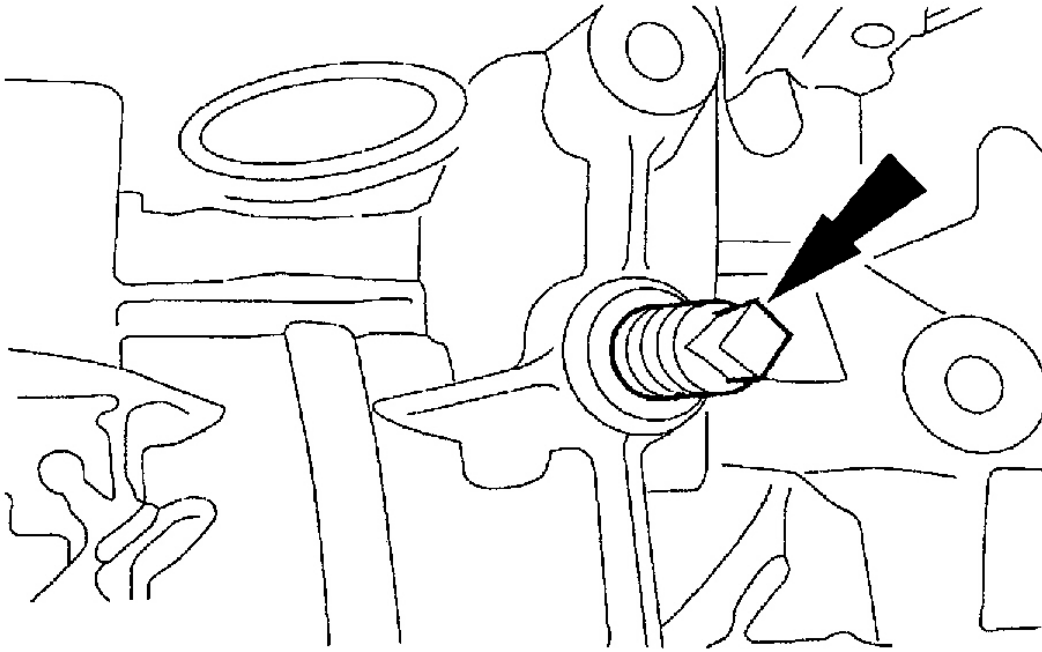
29. Remove the front band servo piston and spring.



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Fig. 36: Removing Front Band Servo Piston

30. Remove the screw.

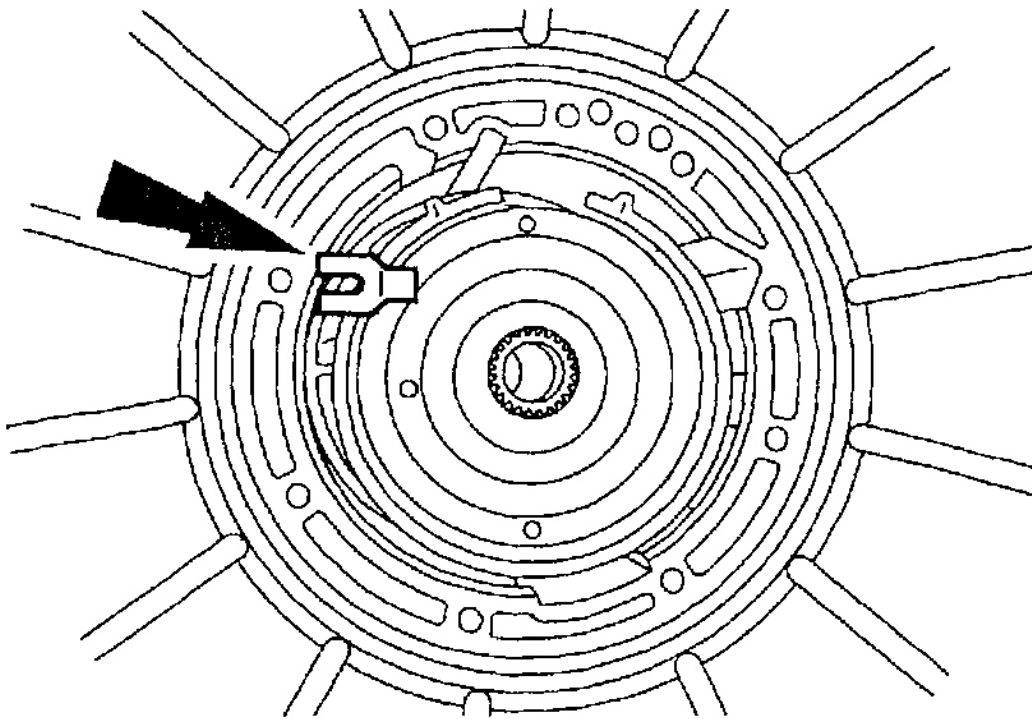


G01672169

Fig. 37: Removing Band Adjusting Screw

NOTE: Tag and identify parts for reassembly.

31. Compress the overdrive band and remove the apply strut.

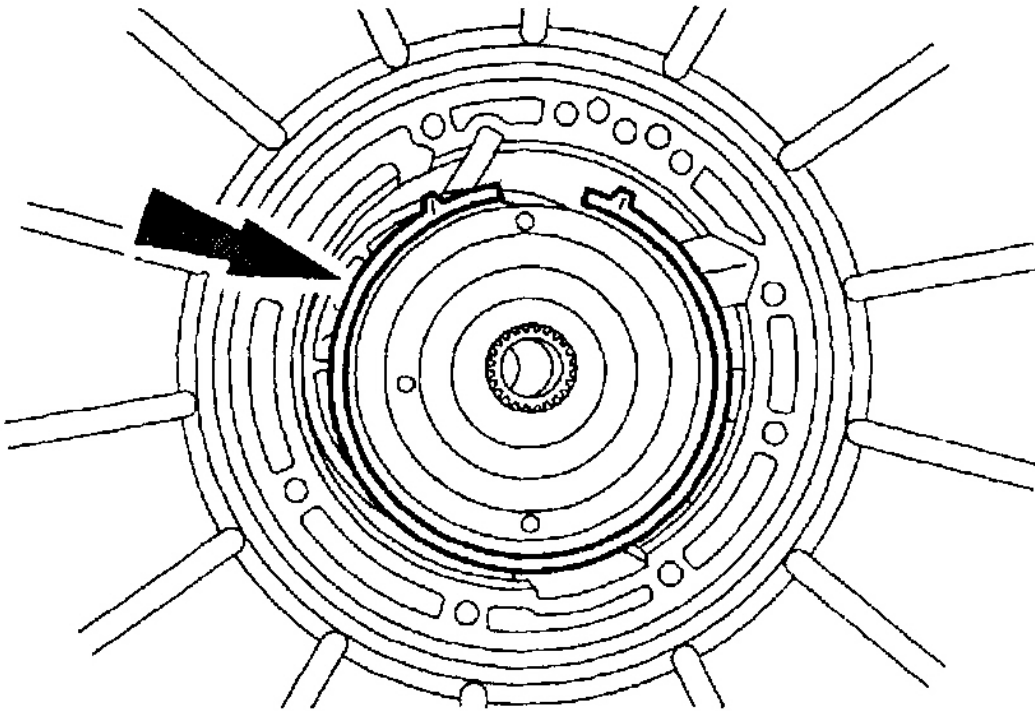


G01672170

Fig. 38: Removing Overdrive Apply Strut

CAUTION: Identify the anchor and apply ends of the overdrive band.

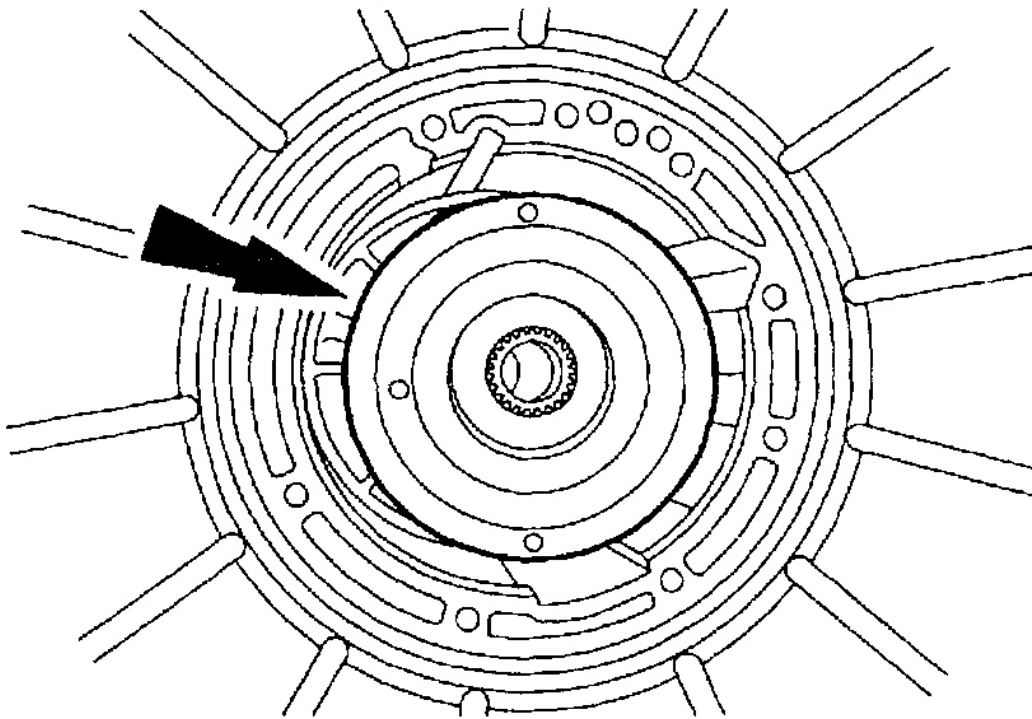
NOTE: The overdrive band is new, and dark in color. This is a normal condition of the band. Hairline cracks in the band are also considered normal. Do not install a new band based solely on the color.



G01672171

Fig. 39: Removing Overdrive Band

32. Remove and inspect the overdrive band. Check the following conditions for installing a new band:
 - Inspect for glazing.
 - Inspect for missing friction material.
 - Inspect for material flaking.
 - Inspect for damage to the anchor pins.
33. Remove the overdrive brake and coast clutch drum.



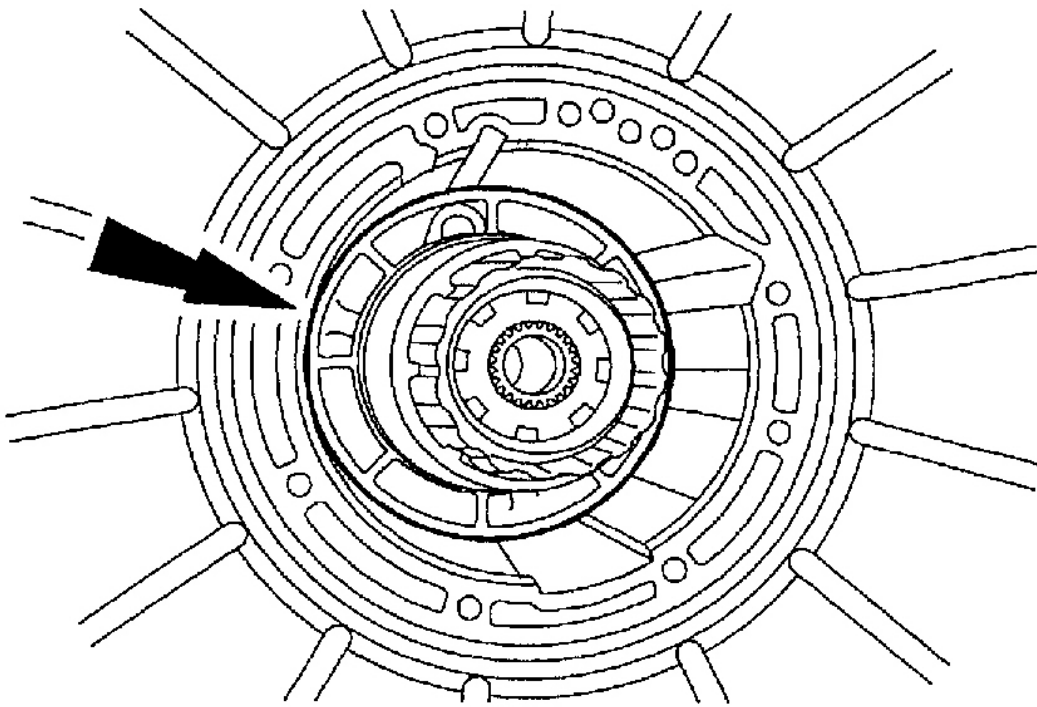
G01672172

Fig. 40: Removing Overdrive Brake & Coast Clutch Drum

CAUTION: Do not bend the trigger wheel.

NOTE: The No. 2 thrust bearing is in this assembly.

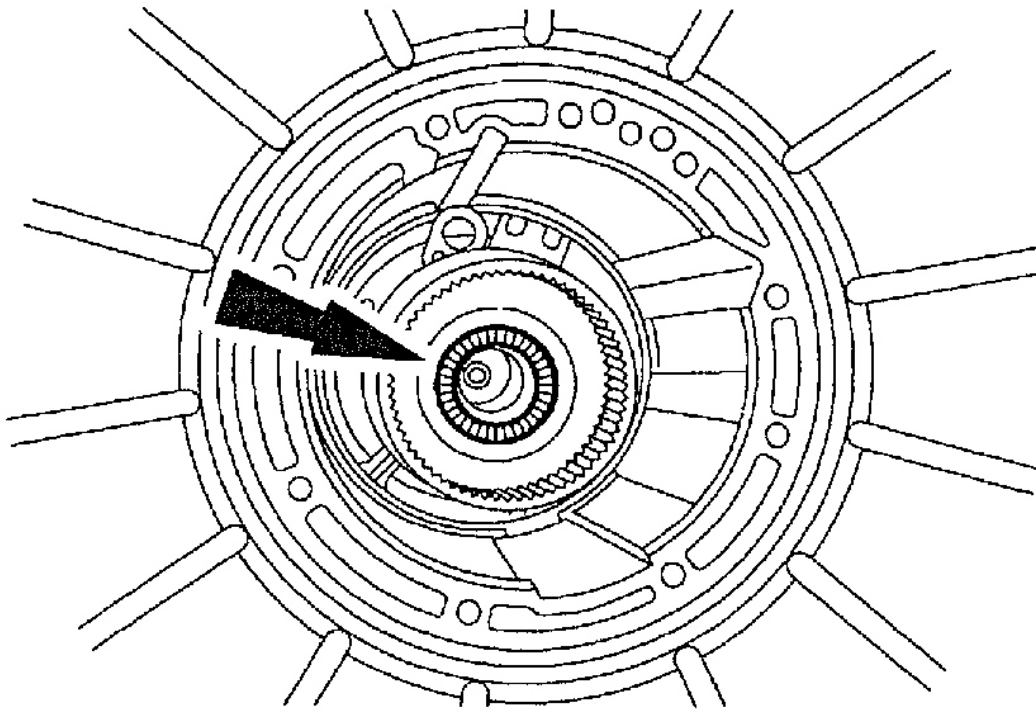
34. Remove the planetary gear overdrive carrier.



G01672173

Fig. 41: Removing Planetary Gear Overdrive Carrier

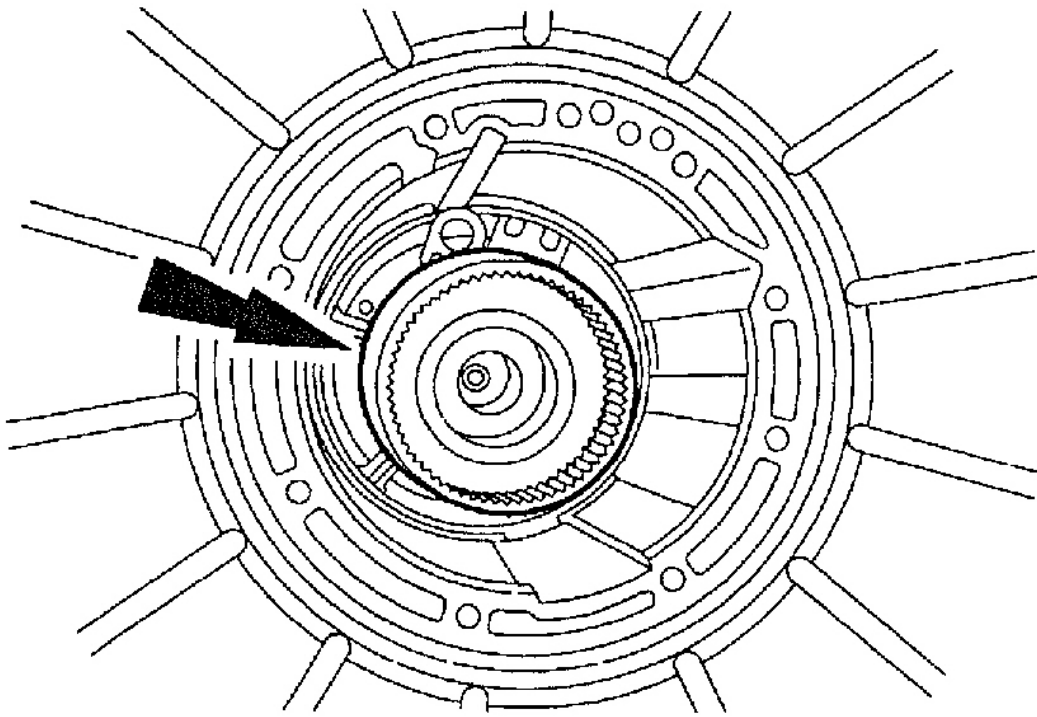
35. Remove the overdrive planet thrust bearing (No. 2).



G01672174

Fig. 42: Removing Overdrive Planet Thrust Bearing

36. Remove the overdrive ring gear, overdrive one-way clutch assembly, and center shaft as an assembly.

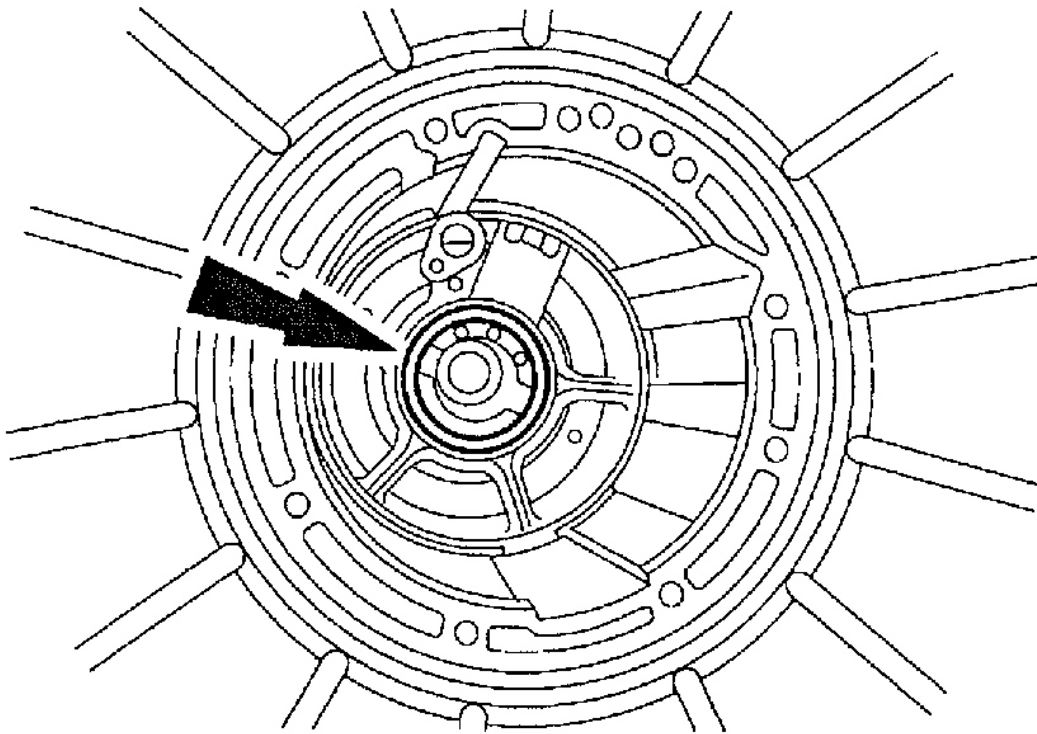


G01672175

Fig. 43: Removing Overdrive Ring Gear, Overdrive One-Way Clutch Assembly & Center Shaft

NOTE: Tag and identify the center shaft thrust bearing (No.3) for assembly.

37. Remove the No. 3 center shaft thrust bearing.

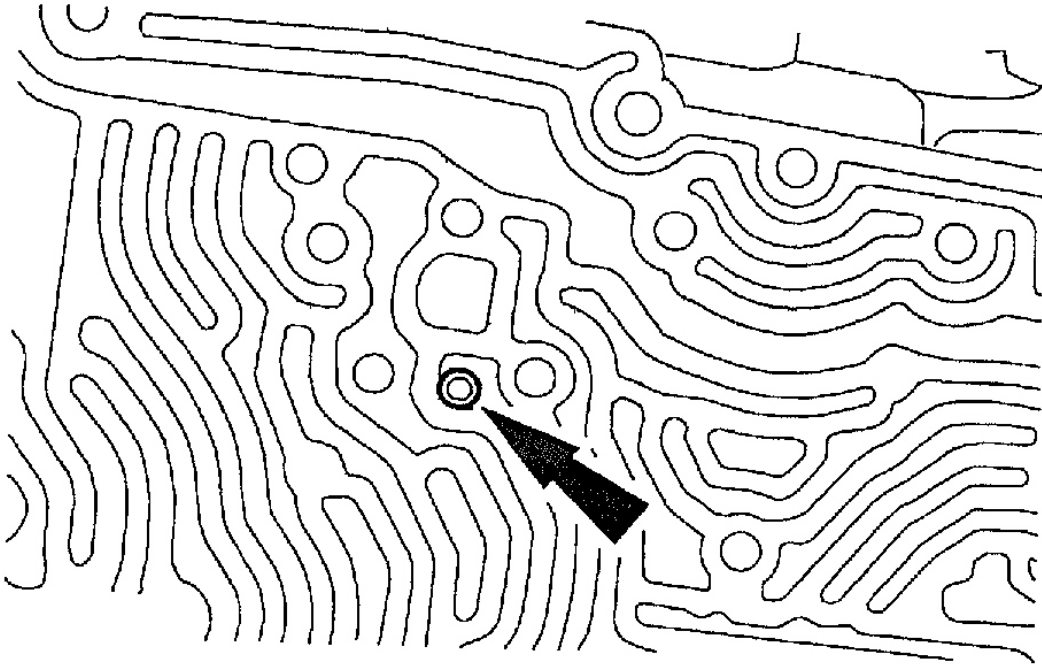


G01672176

Fig. 44: Removing Center Shaft Thrust Bearing

CAUTION: The center support locknut could fall into the remaining assembly if not removed.

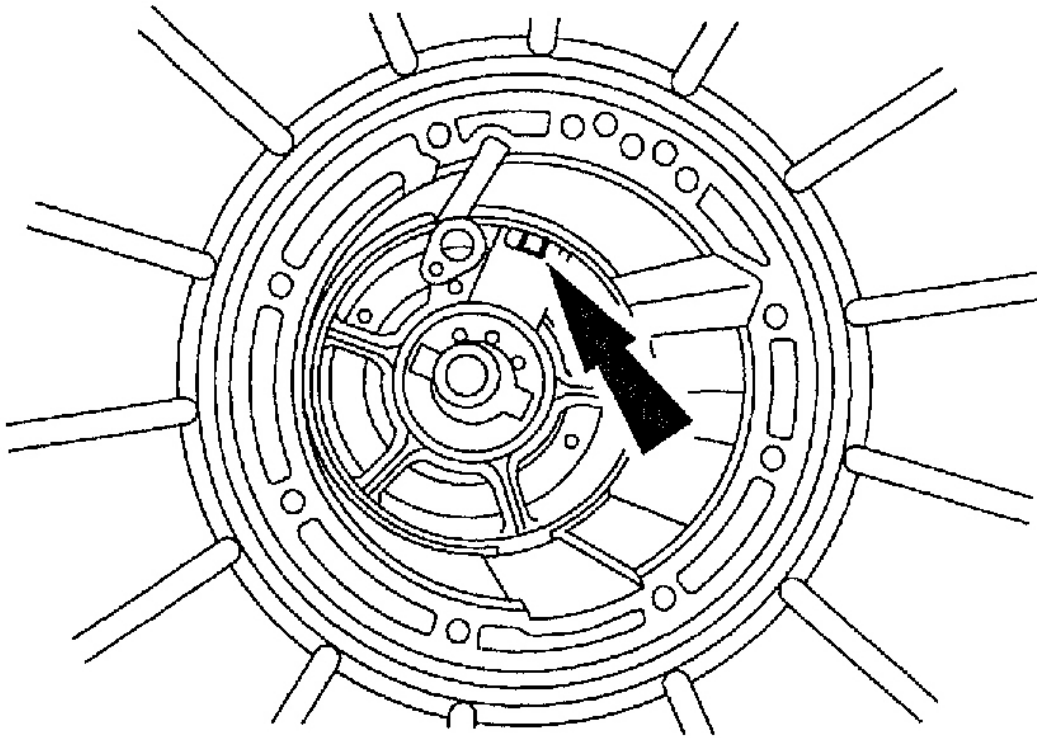
38. Remove the screw.



G01672177

Fig. 45: Removing Screw

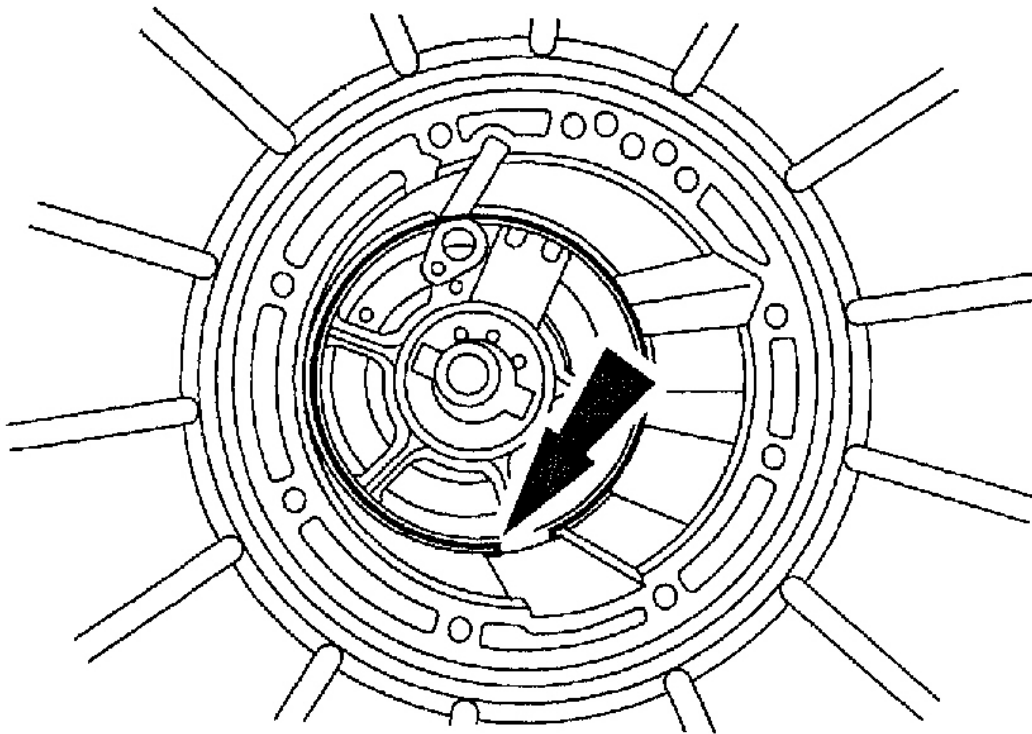
39. Remove the locknut and cage.



G01672178

Fig. 46: Removing Locknut & cage

40. Remove the center support retaining ring.

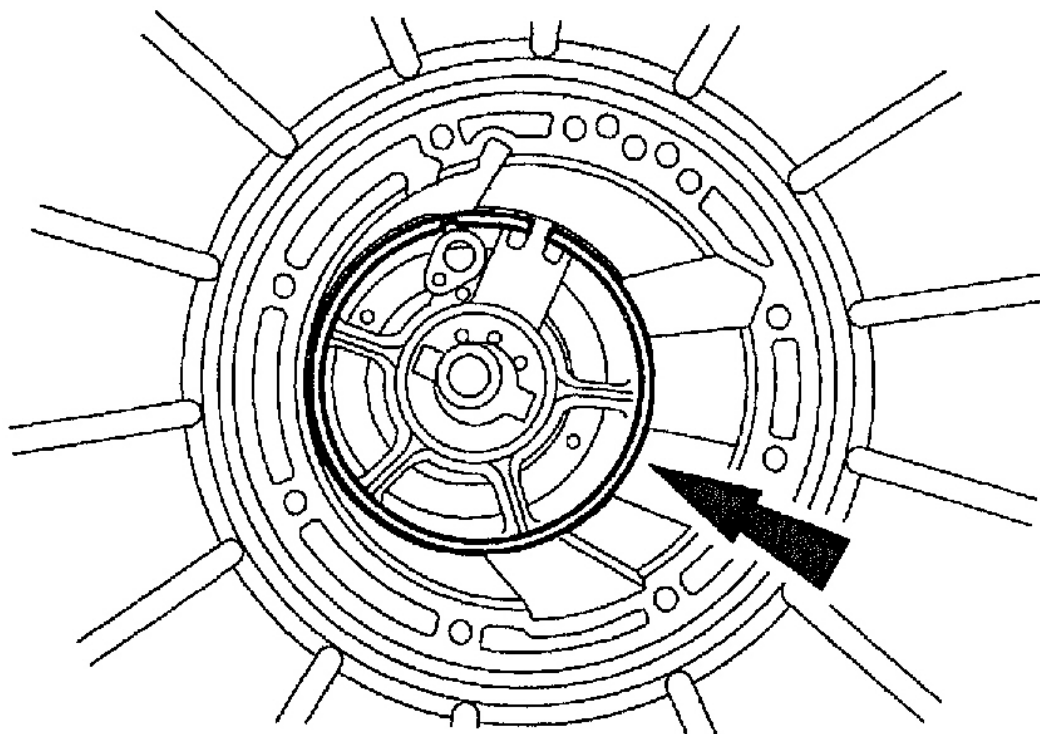


G01672179

Fig. 47: Removing Center Support Retaining Ring

NOTE: When removing the center support, pull evenly around the center support web.

41. Remove the center support.

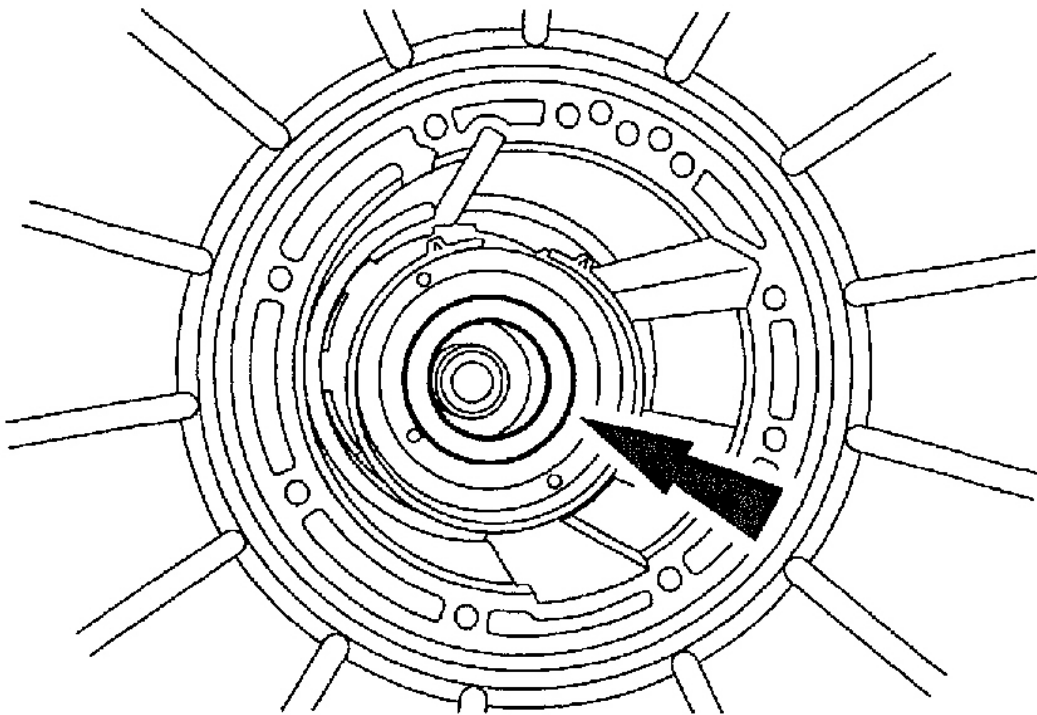


G01672180

Fig. 48: Removing Center Support

NOTE: Tag and identify the No.4 intermediate brake drum thrust bearing.

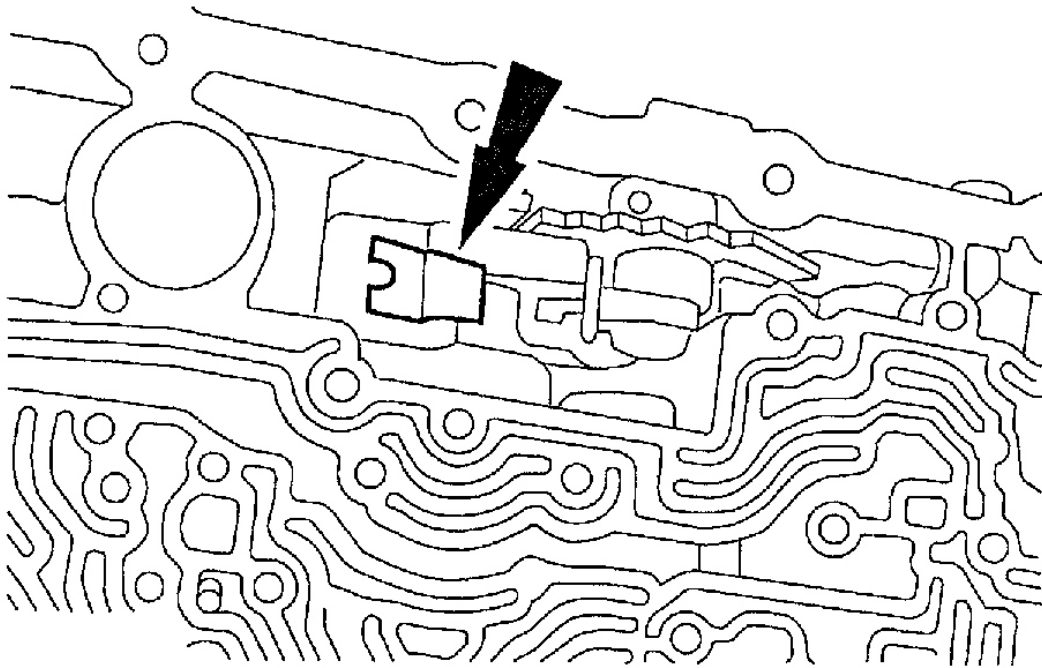
42. Remove the intermediate brake drum thrust bearing (No. 4).



G01672181

Fig. 49: Removing Intermediate Brake Drum Thrust Bearing

43. Remove the intermediate band anchor strut.



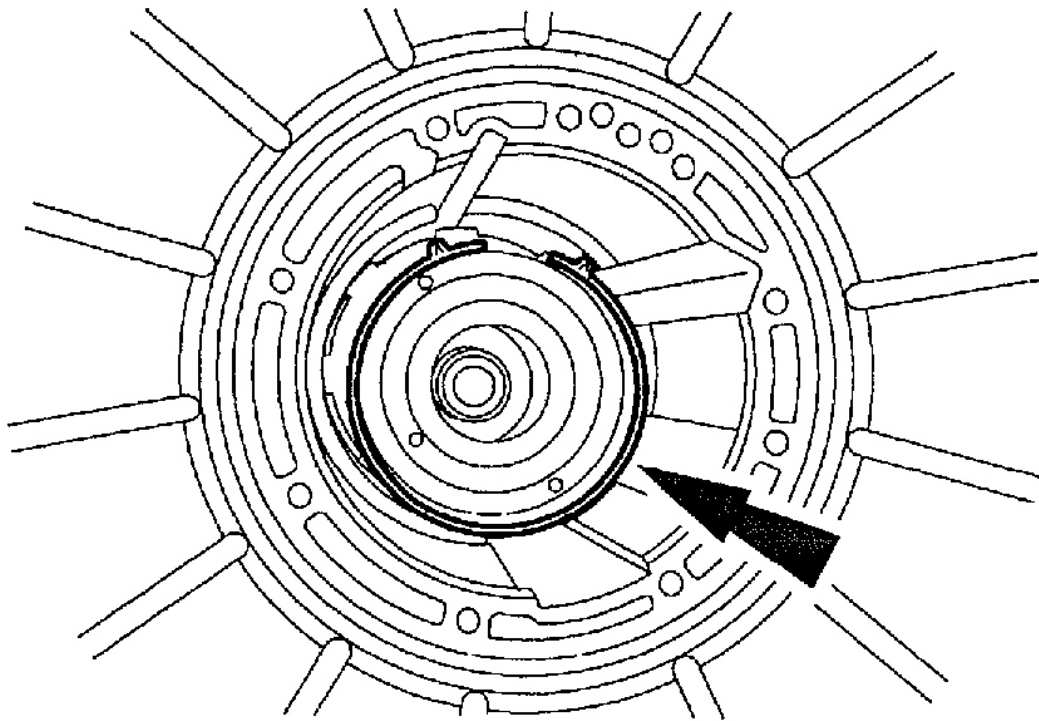
G01672182

Fig. 50: Removing Intermediate Band Anchor Strut

CAUTION: Identify the anchor and apply ends of the intermediate band.

NOTE: The intermediate band is new, and dark in color. This is a normal condition of the band. Hairline cracks in the band are also considered normal. Do not install a new band based solely on the color.

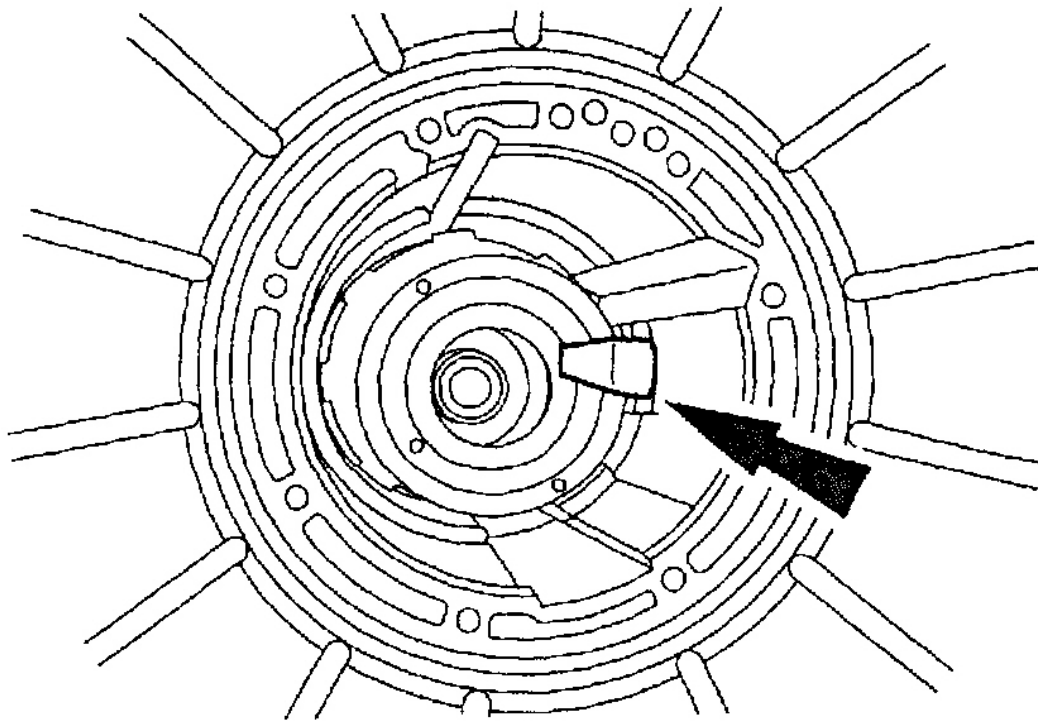
44. Remove and inspect the intermediate band. Check the following conditions for installing a new band:
- Inspect for glazing.
 - Inspect for missing friction material.
 - Inspect for material flaking.
 - Inspect for damage to the anchor pins.



G01672183

Fig. 51: Removing Intermediate Band

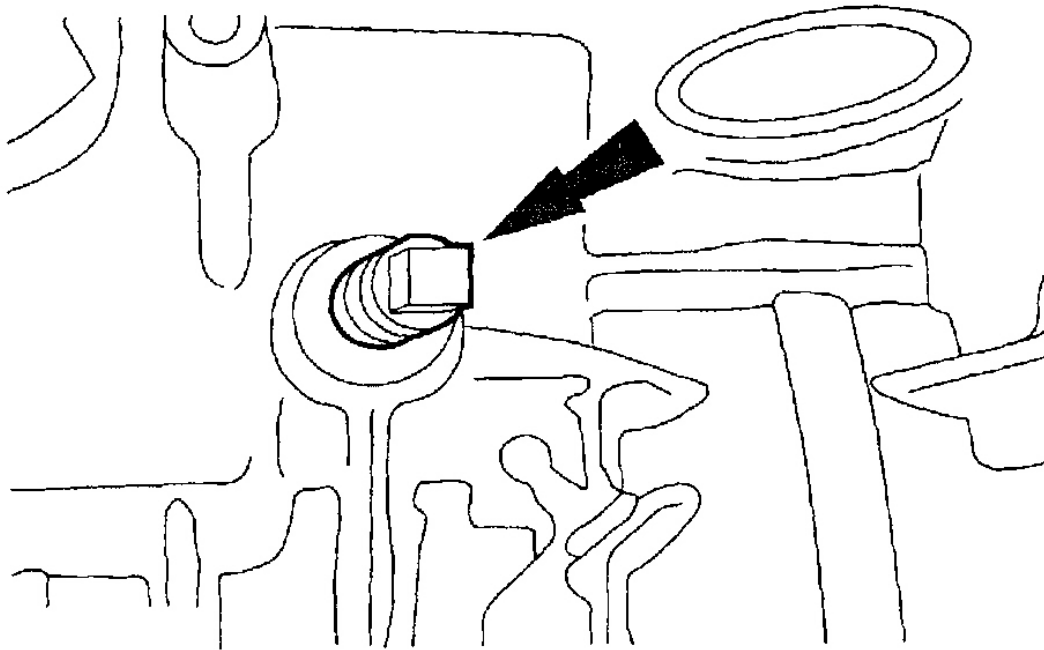
45. Remove the intermediate band apply strut.



G01672184

Fig. 52: Removing Intermediate Band Apply Strut

46. Remove the screw.

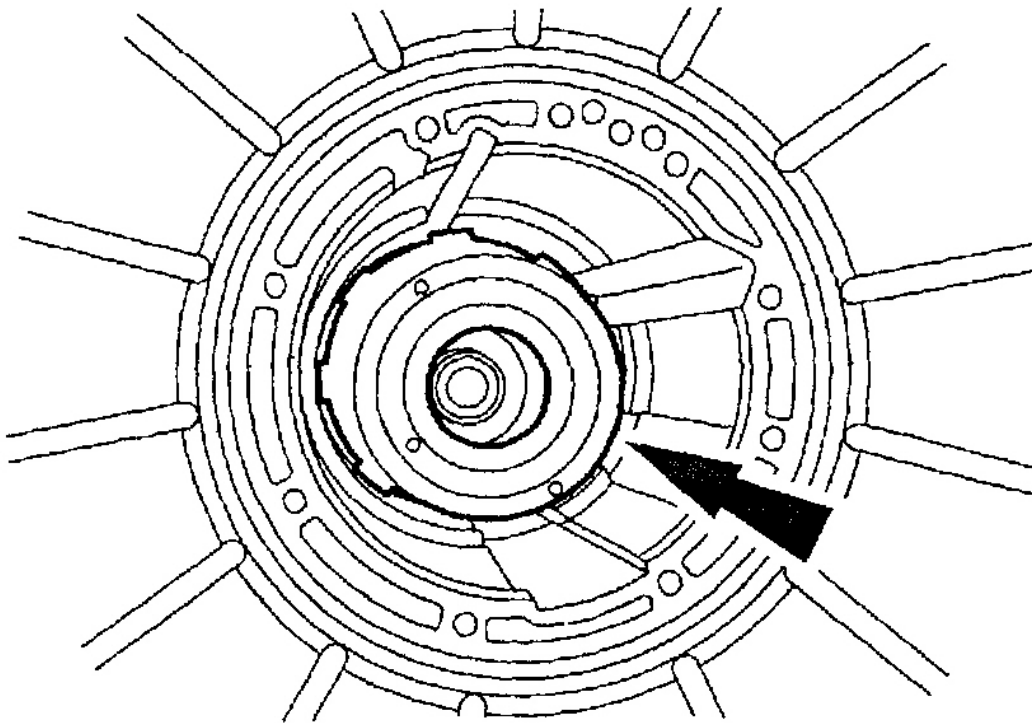


G01672185

Fig. 53: Removing Band Adjusting Screw

NOTE: The No. 5 forward clutch cylinder thrust bearing may come out with the intermediate brake and direct clutch drum.

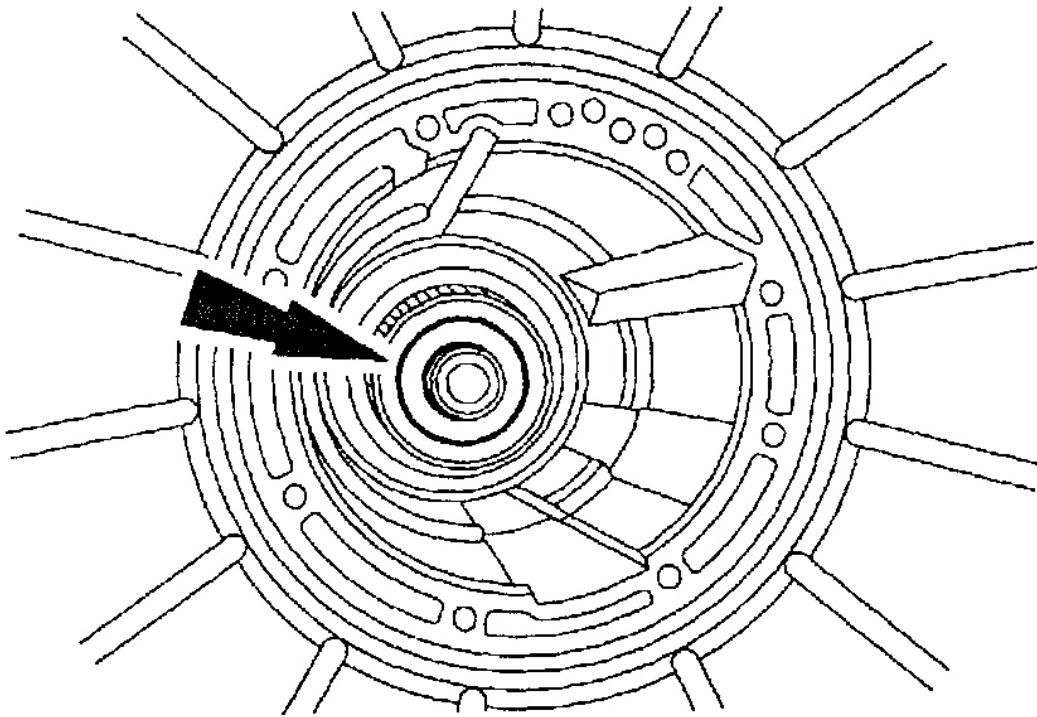
47. Remove the direct clutch drum.



G01672186

Fig. 54: Removing Direct Clutch Drum

48. Remove the No. 5 forward clutch cylinder thrust bearing, tag and identify.

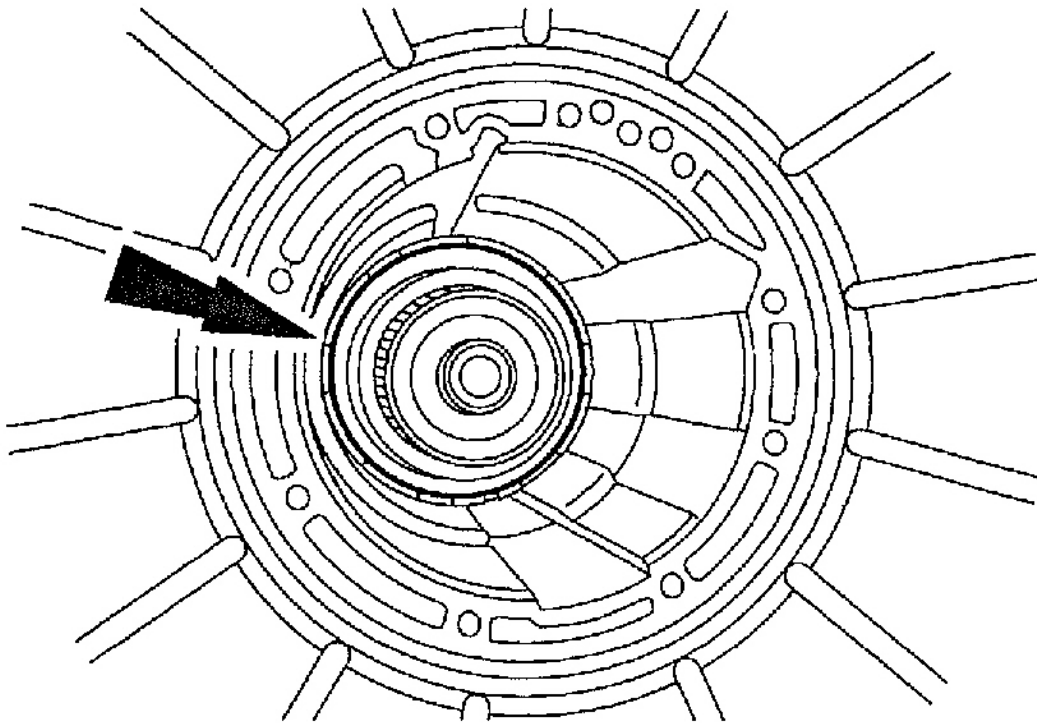


G01672187

Fig. 55: Removing Forward Clutch Cylinder Thrust Bearing

NOTE: The No. 6A thrust bearing may come out with the cylinder. Tag for reassembly.

49. Remove the forward clutch cylinder.

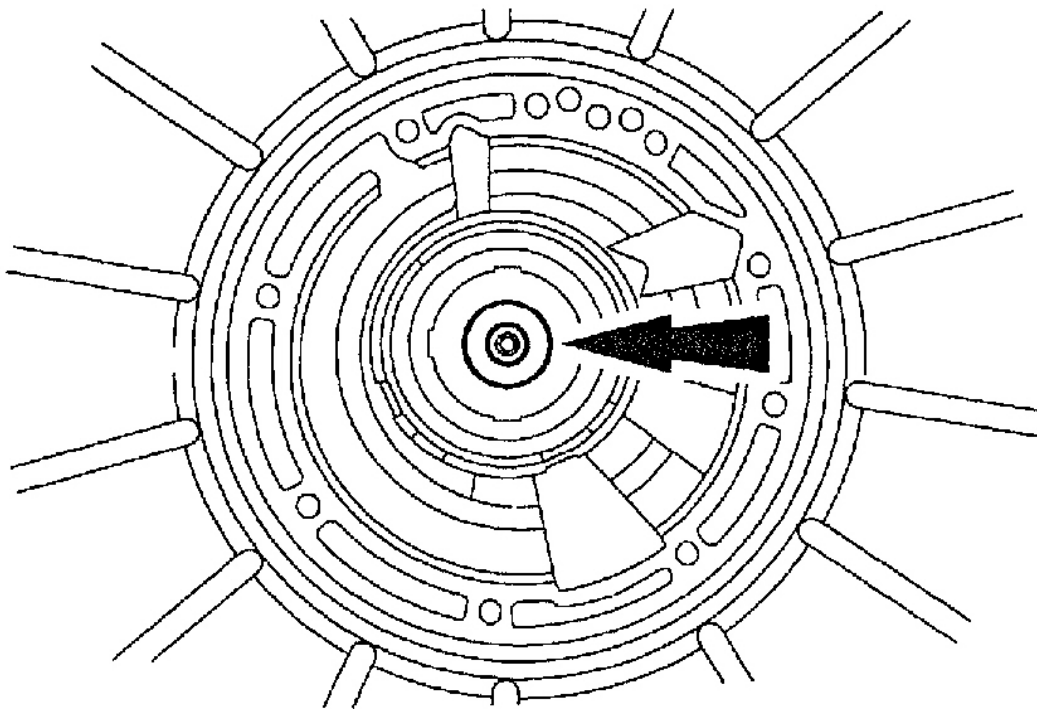


G01672188

Fig. 56: Removing Forward Clutch Cylinder

NOTE: The No. 6A forward ring gear hub thrust bearing may have come out with the forward clutch cylinder.

50. Remove the No. 6A forward ring gear hub thrust bearing.

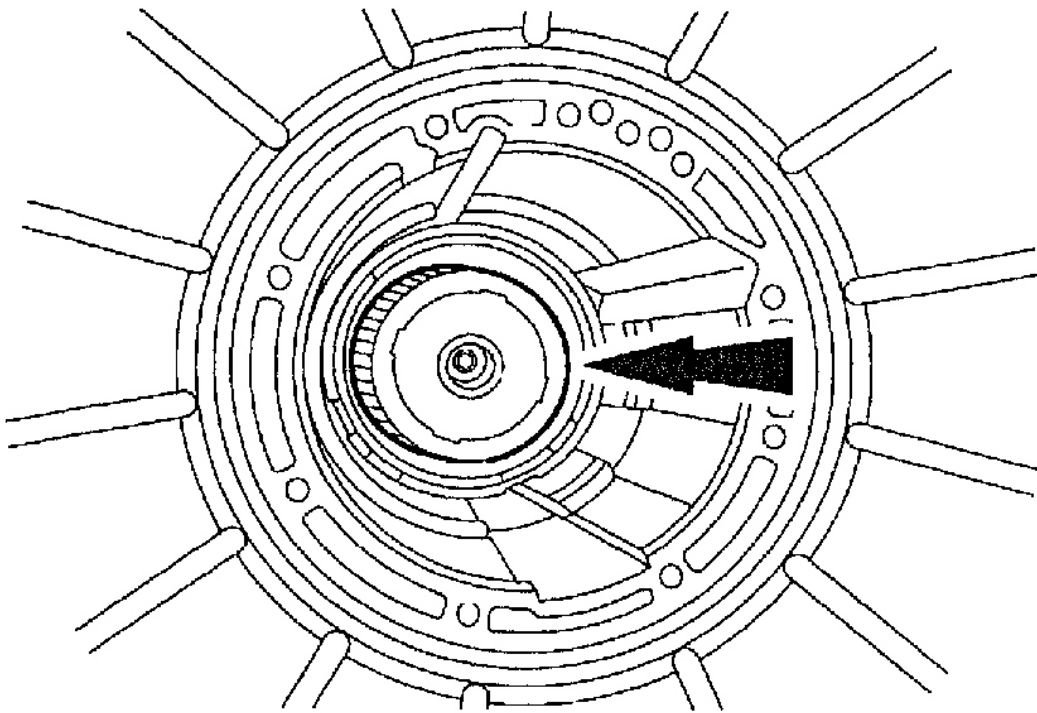


G01672189

Fig. 57: Removing Forward Ring Gear Hub Thrust Bearing

NOTE: The No. 7 forward planet thrust bearing may come out with the forward ring gear and hub assembly.

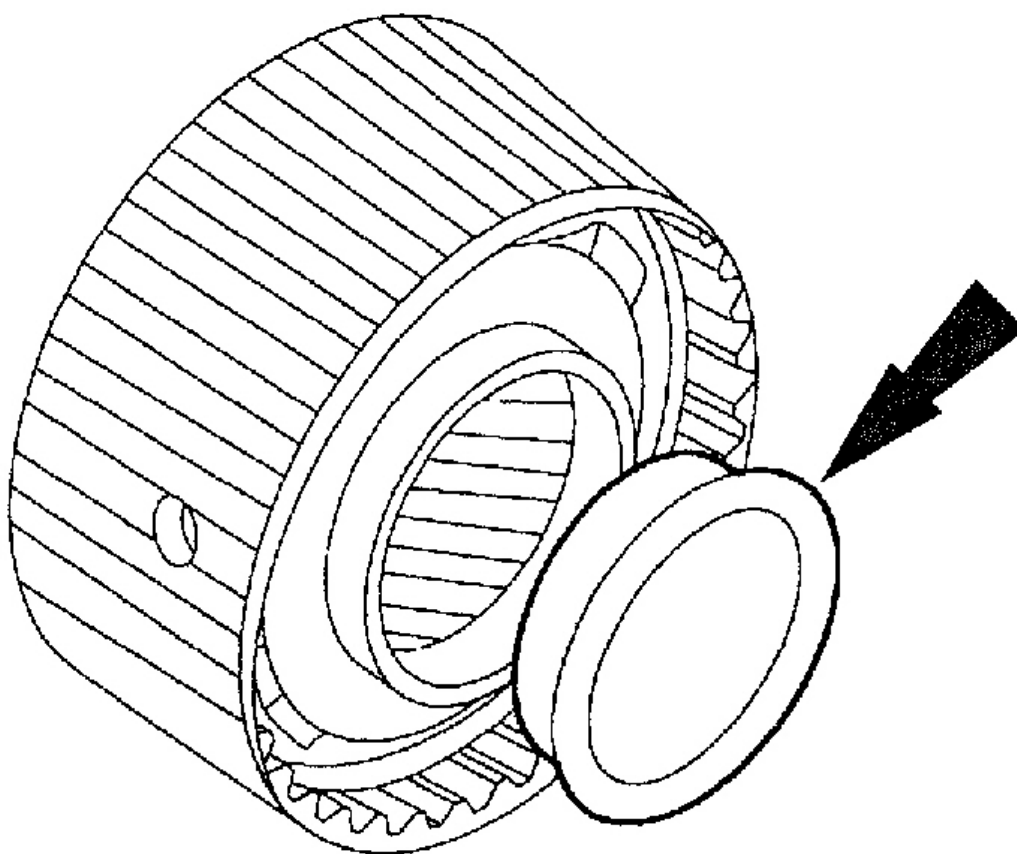
51. Remove the forward ring gear and hub as an assembly.



G01672190

Fig. 58: Removing Forward Ring Gear & Hub

52. Remove the No. 6B forward clutch thrust washer from the forward ring gear hub.

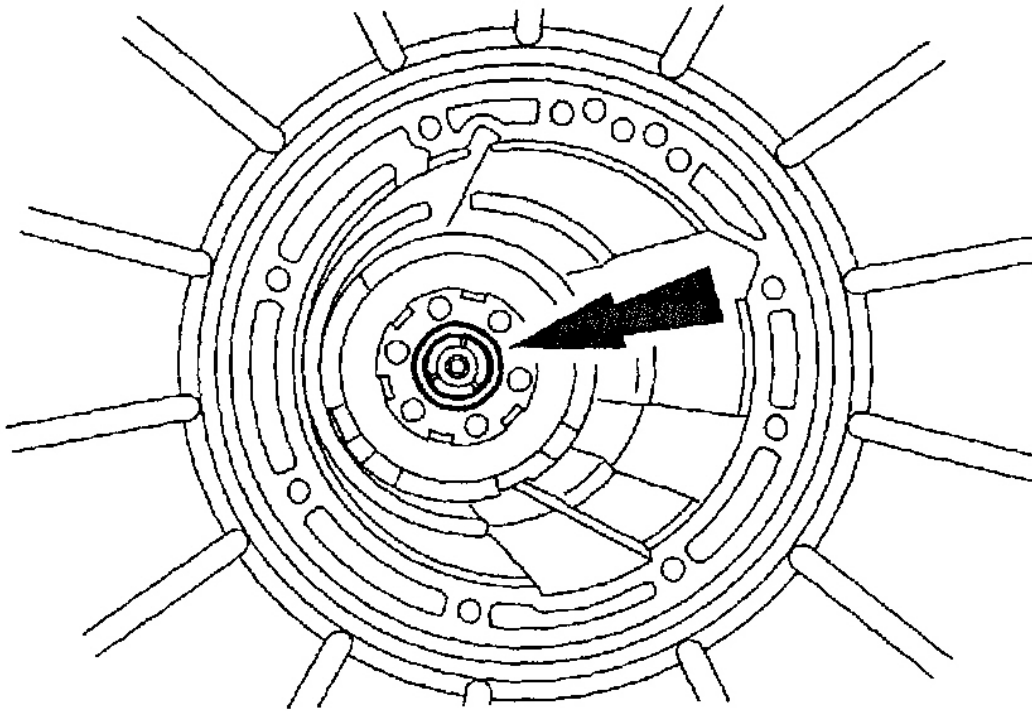


G01672191

Fig. 59: Removing Forward Clutch Thrust Washer

NOTE: The No. 7 forward planet thrust bearing may come out with the forward ring gear and hub assembly.

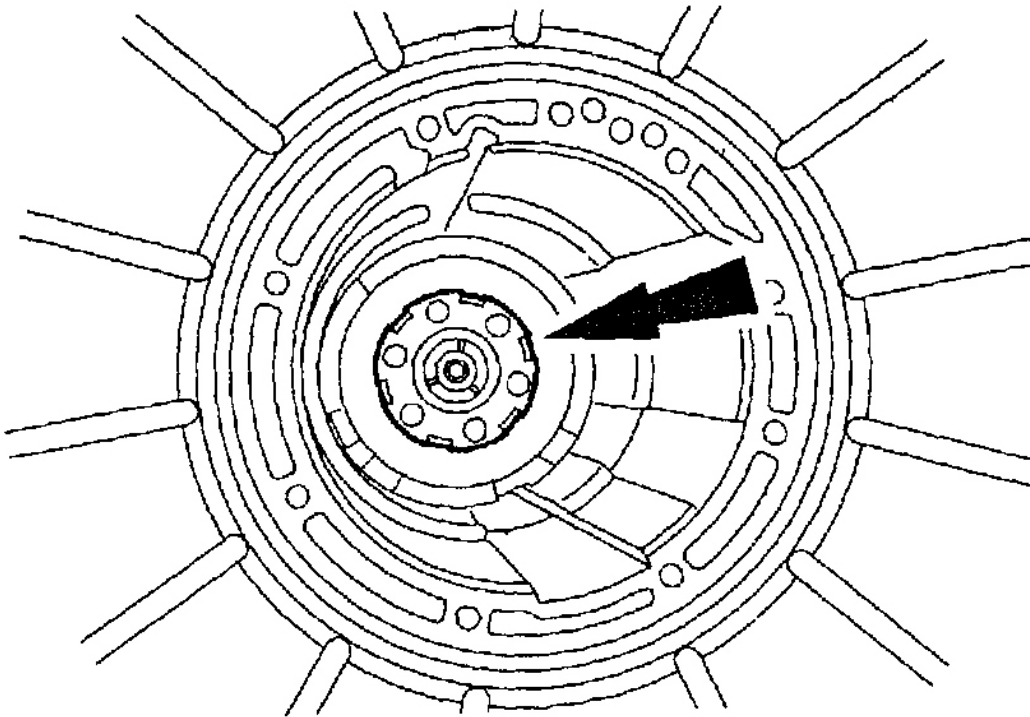
53. Remove the No. 7 forward planet thrust bearing.



G01672192

Fig. 60: Removing Forward Planet Thrust Bearing

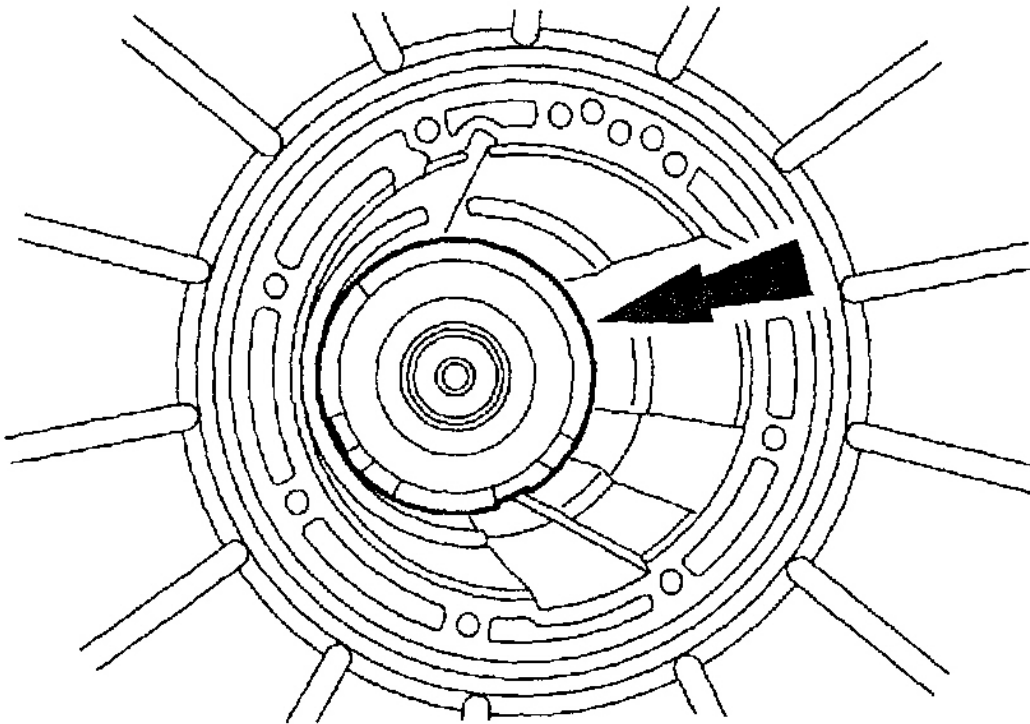
54. Remove the forward planetary assembly.



G01672193

Fig. 61: Removing Forward Planetary Assembly

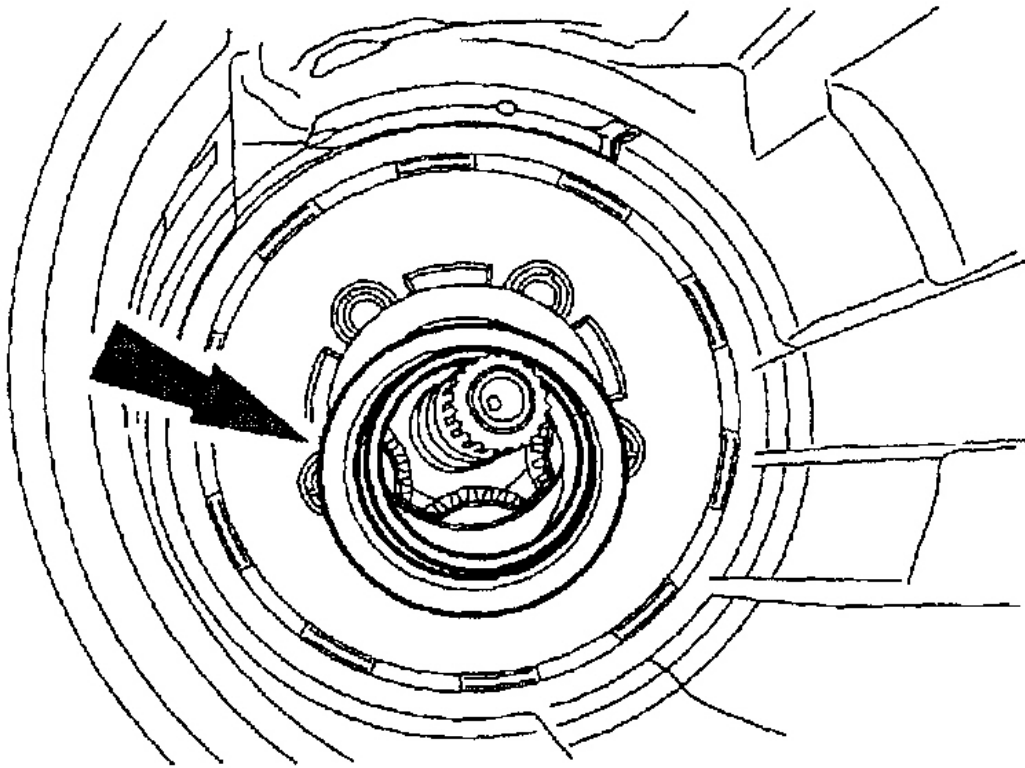
55. Remove the input shell and sun gear assembly.



G01672194

Fig. 62: Removing Input Shell & Sun Gear Assembly

56. Remove the spacer.

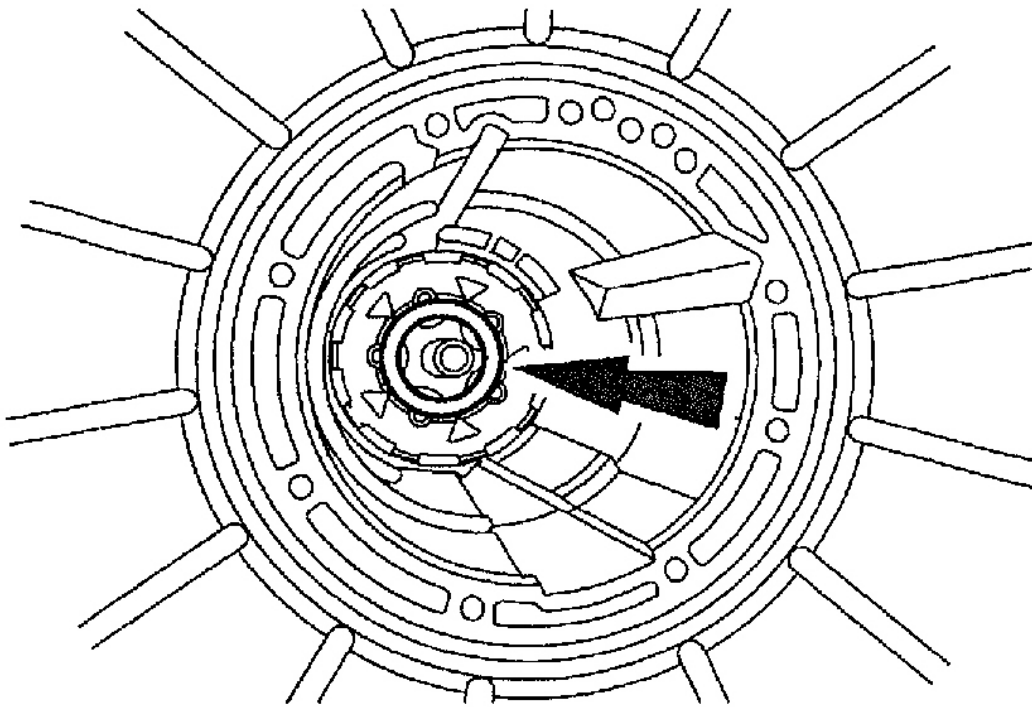


G01672195

Fig. 63: Removing Spacer

NOTE: Tag and identify the No. 8 low/reverse planetary carrier thrust bearing.

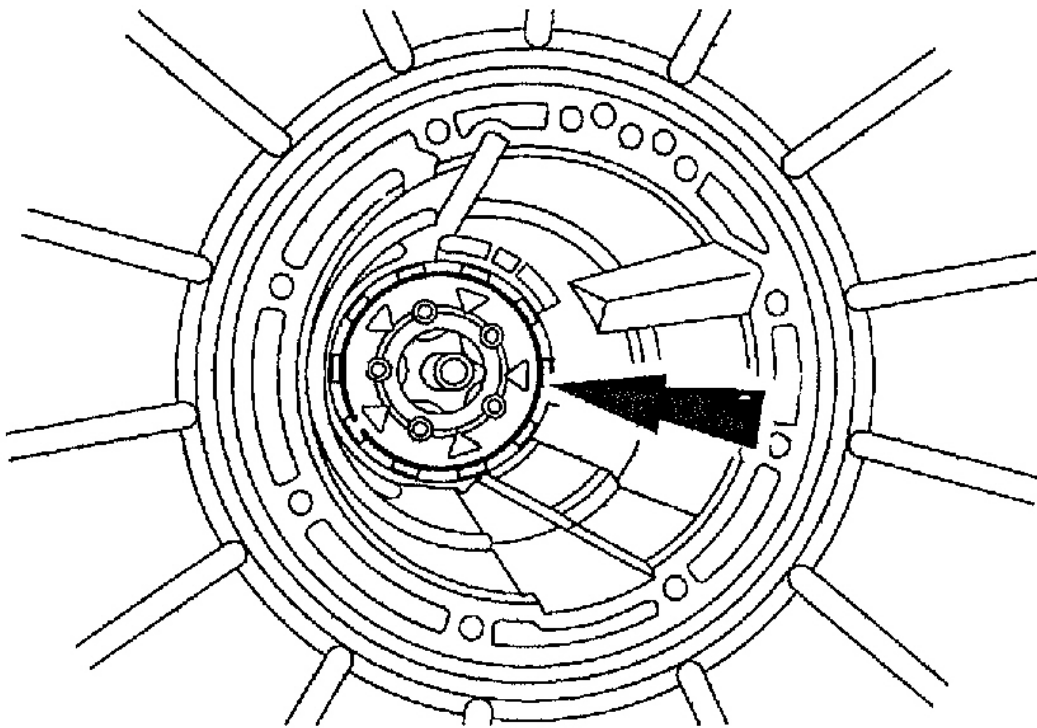
57. Remove the thrust bearing.



G01672196

Fig. 64: Removing Low/Reverse Planetary Carrier Thrust Bearing

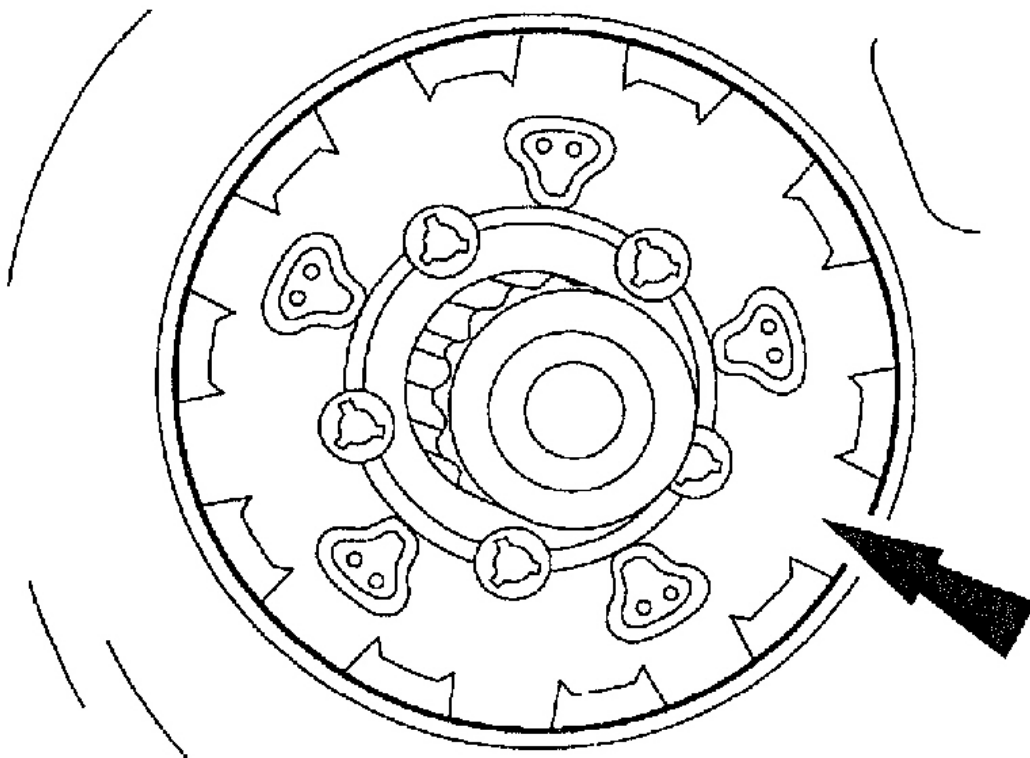
58. Remove the retaining ring.



G01672197

Fig. 65: Removing Retaining Ring

59. Remove low/reverse planetary assembly.

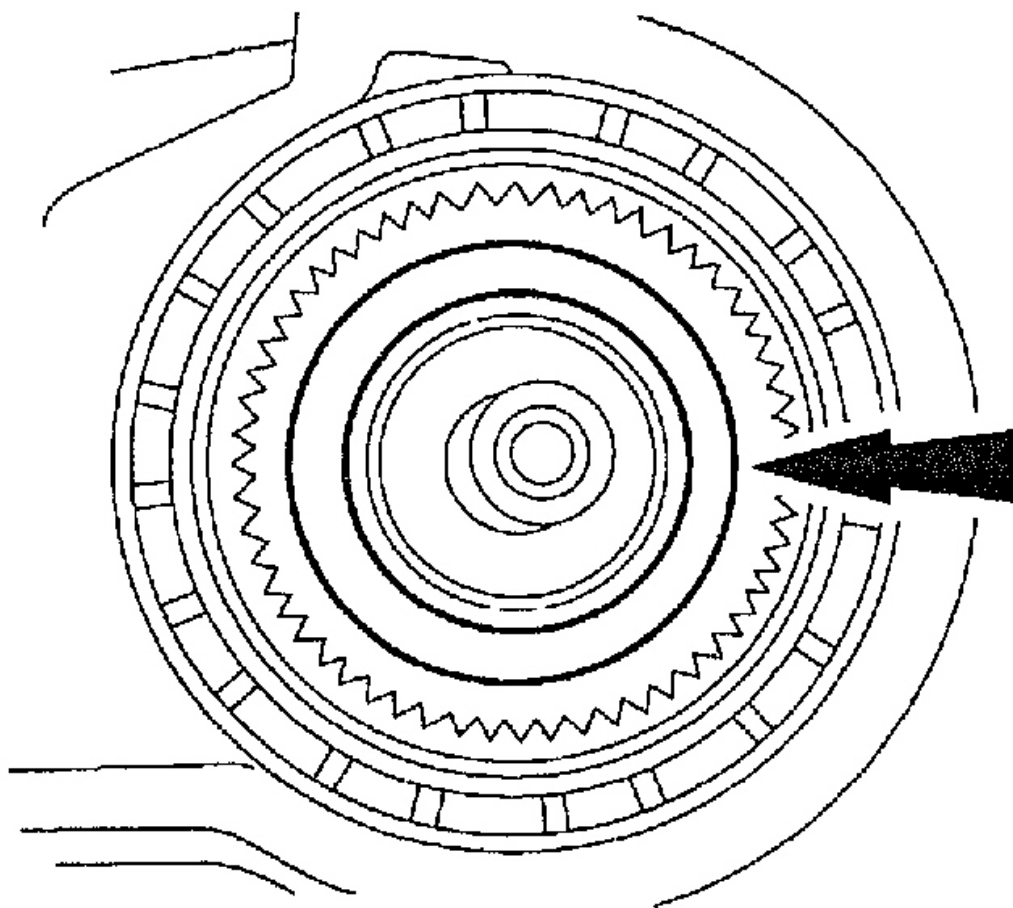


G01672198

Fig. 66: Removing Low/Reverse Planetary Assembly

NOTE: Tag and identify the No. 9 low/reverse planetary carrier thrust bearing.

60. Remove the thrust bearing.

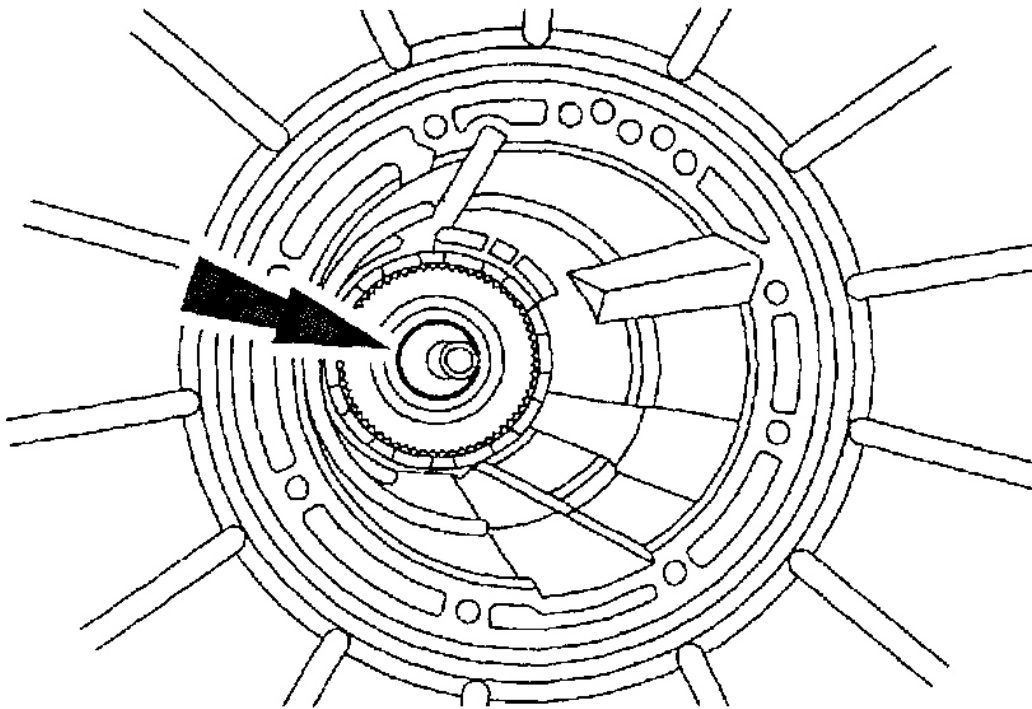


G01672199

Fig. 67: Removing Low/Reverse Planetary Carrier Thrust Bearing

NOTE: Use slots located around the outside of the sleeve.

61. Using a small pick, remove the output shaft sleeve.



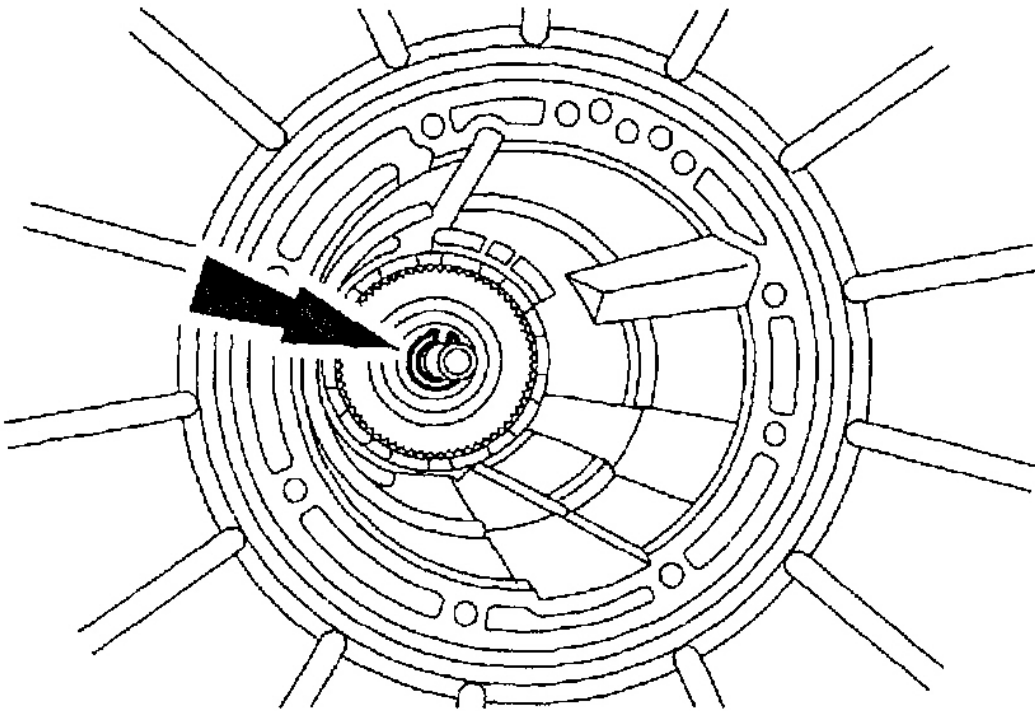
G01672200

Fig. 68: Removing Output Shaft Sleeve

WARNING: The output shaft may fall out after removing the snap ring. Failure to follow these instructions may result in personal injury.

CAUTION: Discard the output shaft retaining ring. A new retaining ring must be used for assembly.

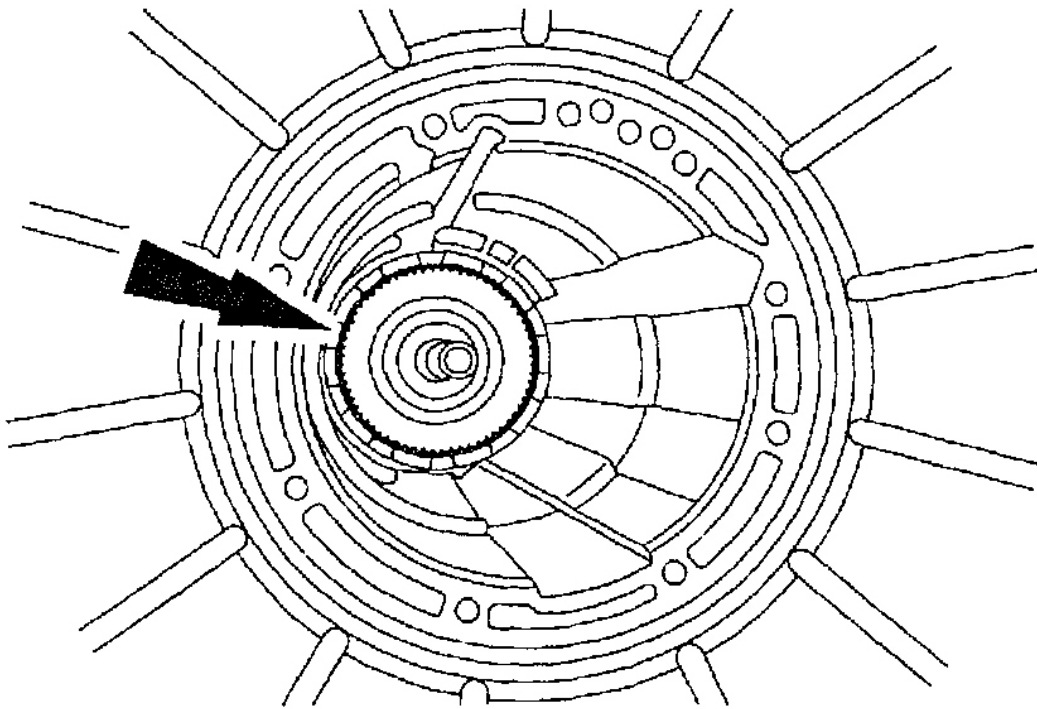
62. While holding the output shaft, remove and discard the output shaft retaining ring.



G01672201

Fig. 69: Removing Output Shaft Retaining Ring

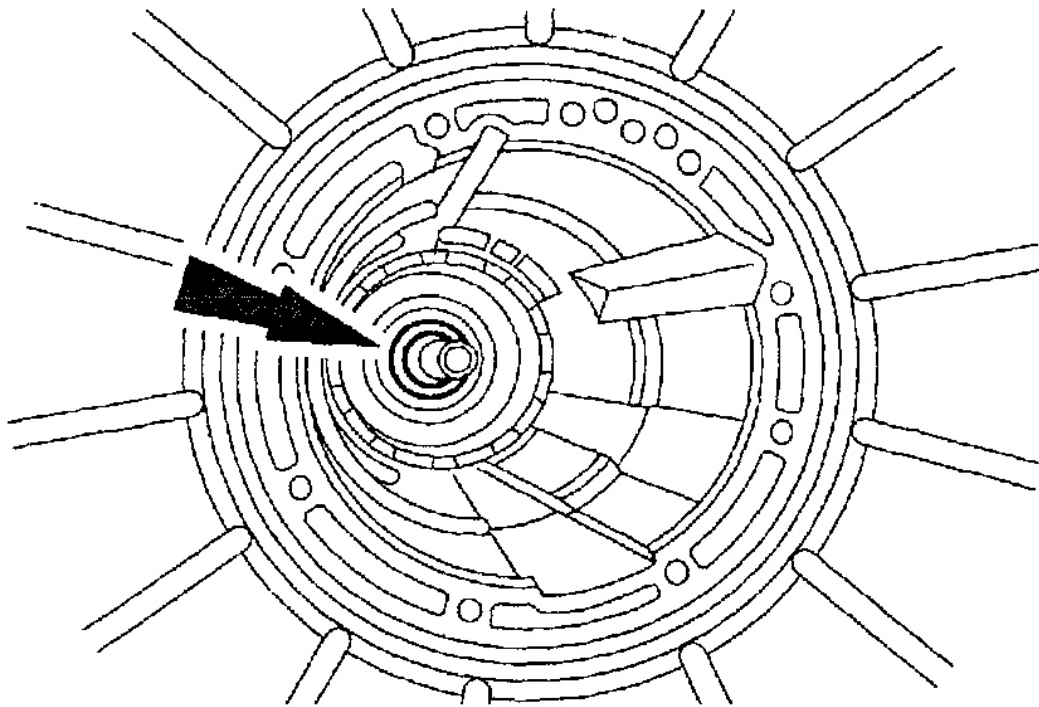
63. Remove the output shaft ring gear and hub.



G01672202

Fig. 70: Removing Output Shaft Ring Gear & Hub

64. Remove the No. 10 low intermediate sun gear bearing.



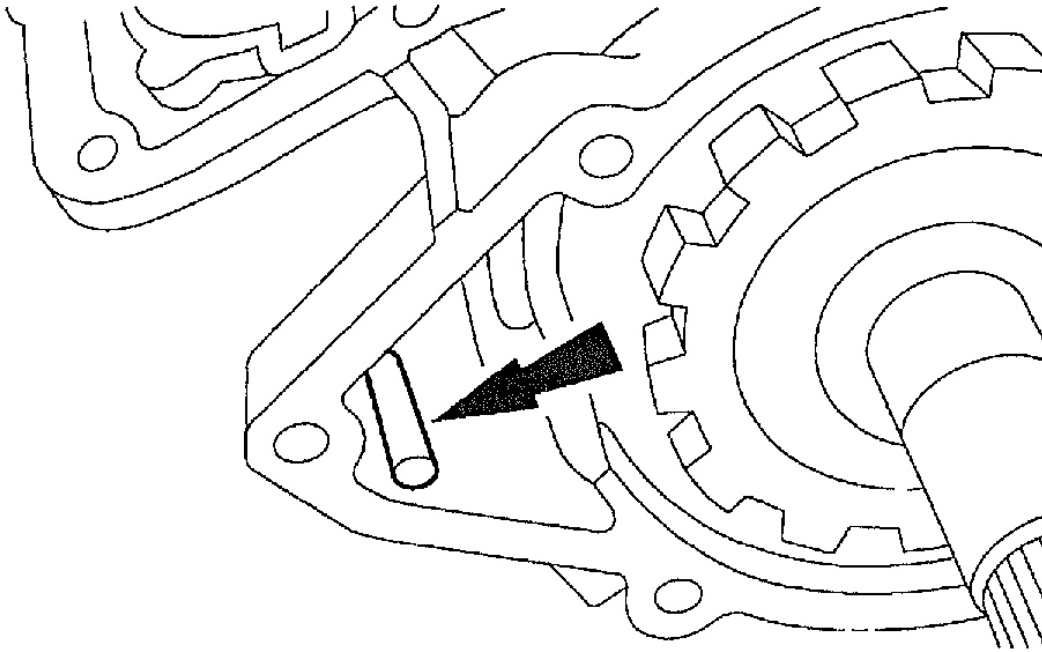
G01672203

Fig. 71: Removing Low/Intermediate Sun Gear Bearing

CAUTION: Do not pry on the outer edge of the case damage to the gasket sealing surface could occur.

NOTE: It may be necessary to grind flat spots on the edges of the reverse band actuating lever shaft in order to remove it.

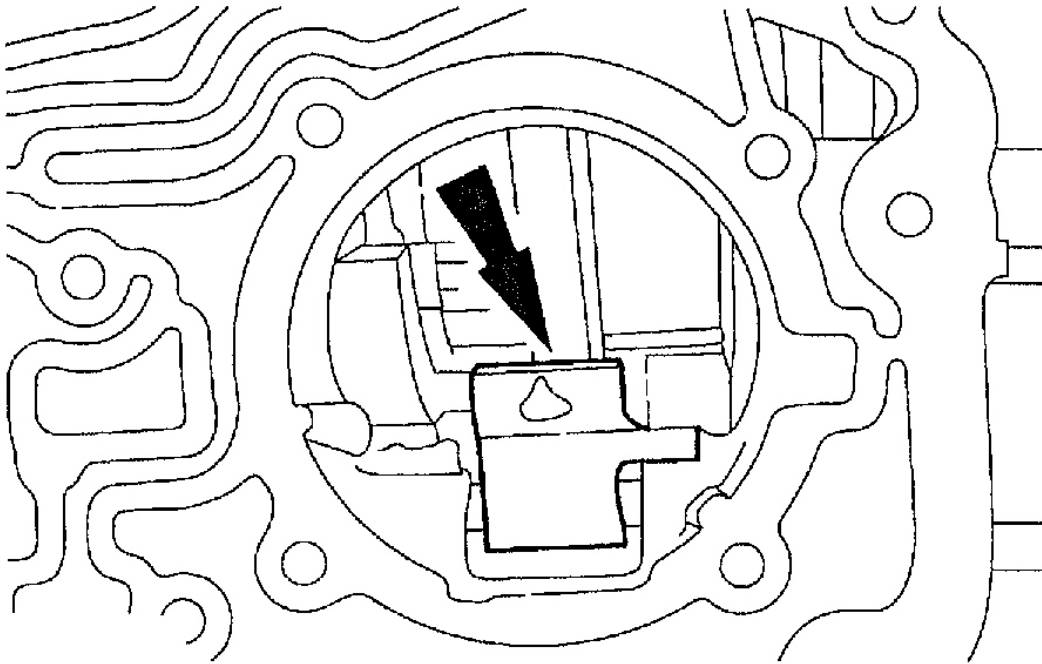
65. Using a pair of vice grips, hold the flat spots on the reverse band actuating lever shaft, wiggle it back and forth and remove the reverse band actuating lever shaft.



G01672204

Fig. 72: Removing Reverse Band Actuating Lever Shaft

66. Remove the reverse band actuating lever assembly.

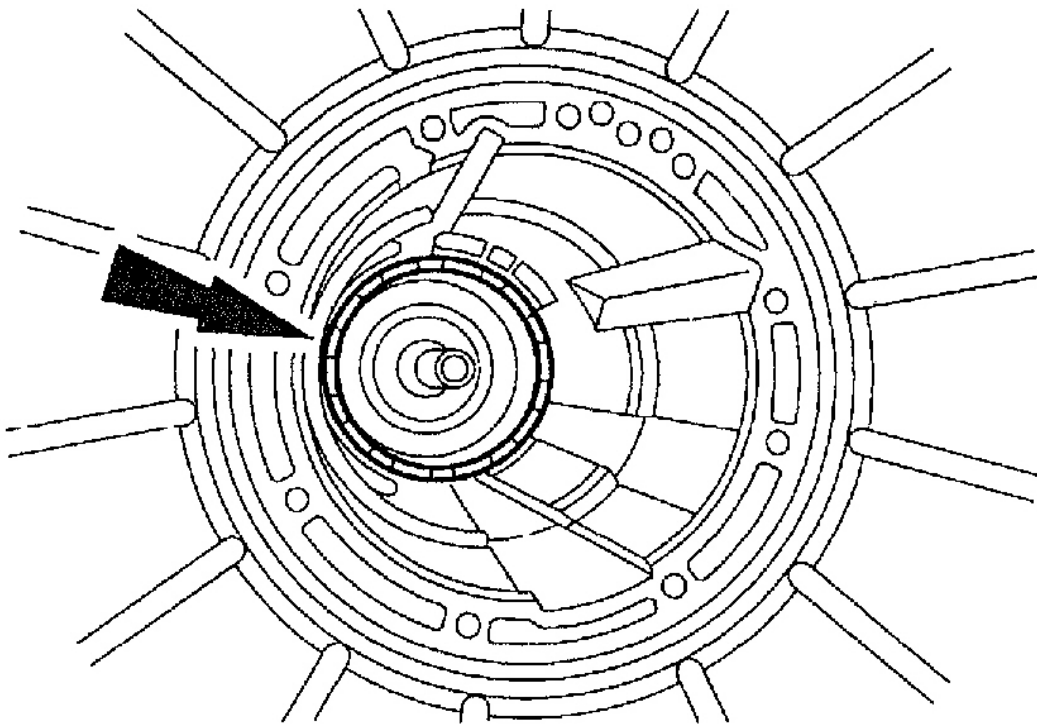


G01672205

Fig. 73: Removing Reverse Band Actuating Lever Assembly

NOTE: The inner race of the rear one-way clutch is not removable. It is repaired in the case.

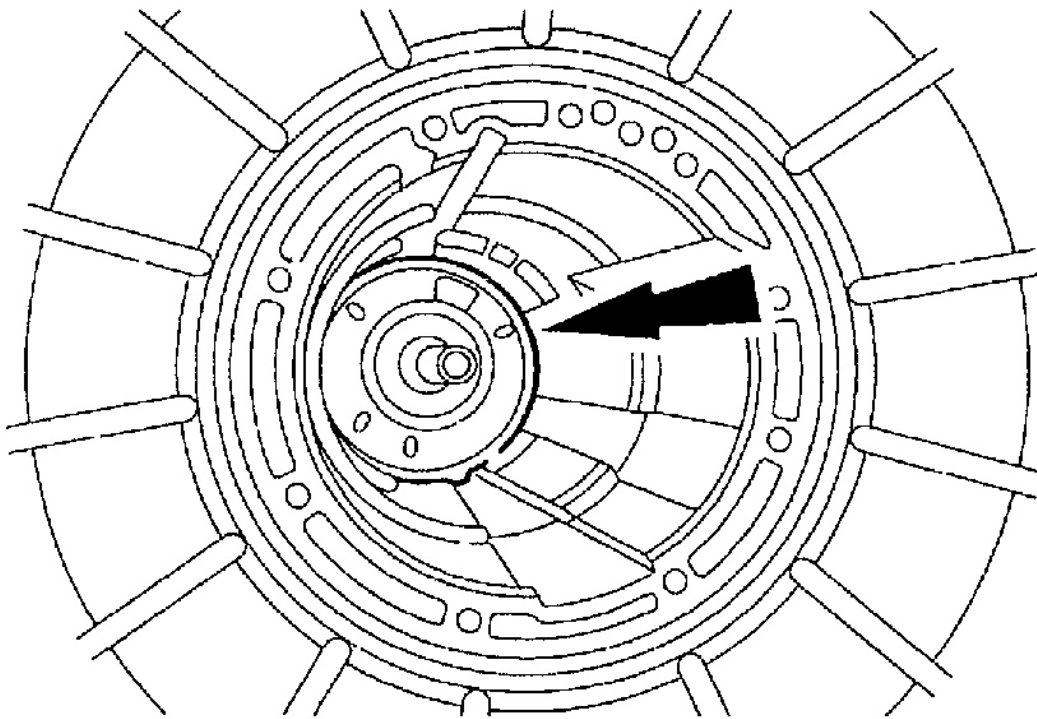
67. Remove the low/reverse brake drum and one-way clutch assembly by rotating it clockwise.



G01672206

Fig. 74: Removing Low/Reverse Brake Drum & One-Way Clutch Assembly

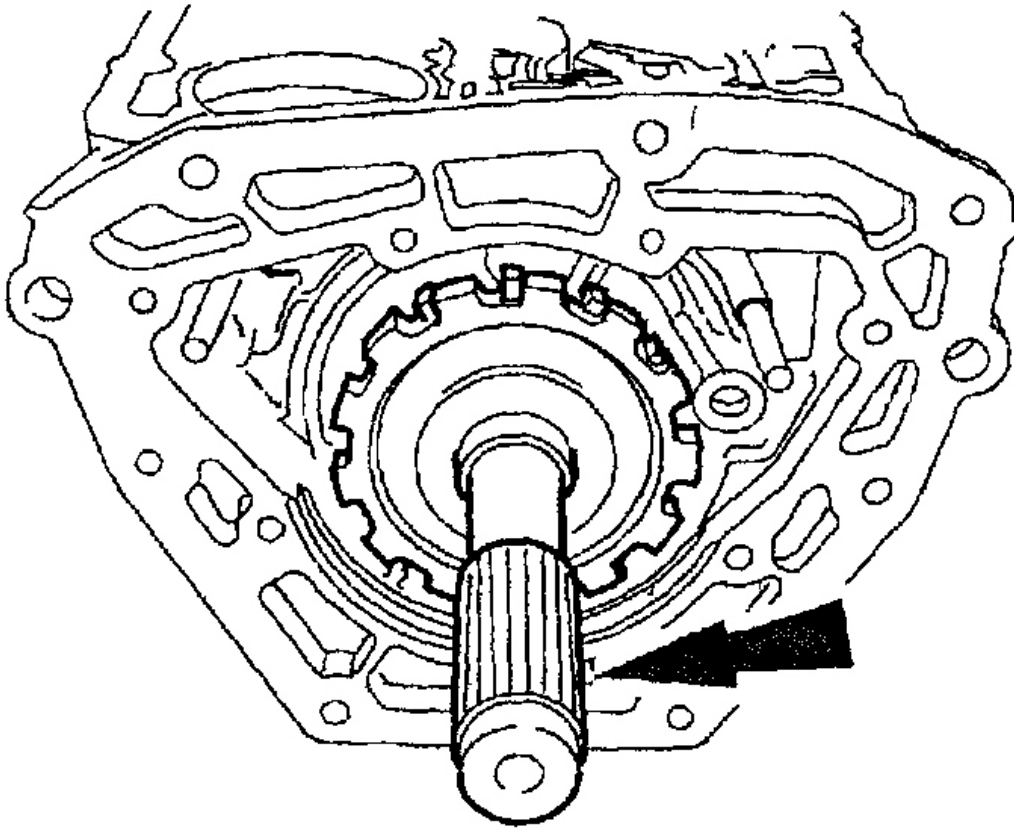
68. Remove the reverse band.



G01672207

Fig. 75: Removing Reverse Band

69. Remove the output shaft and park gear.

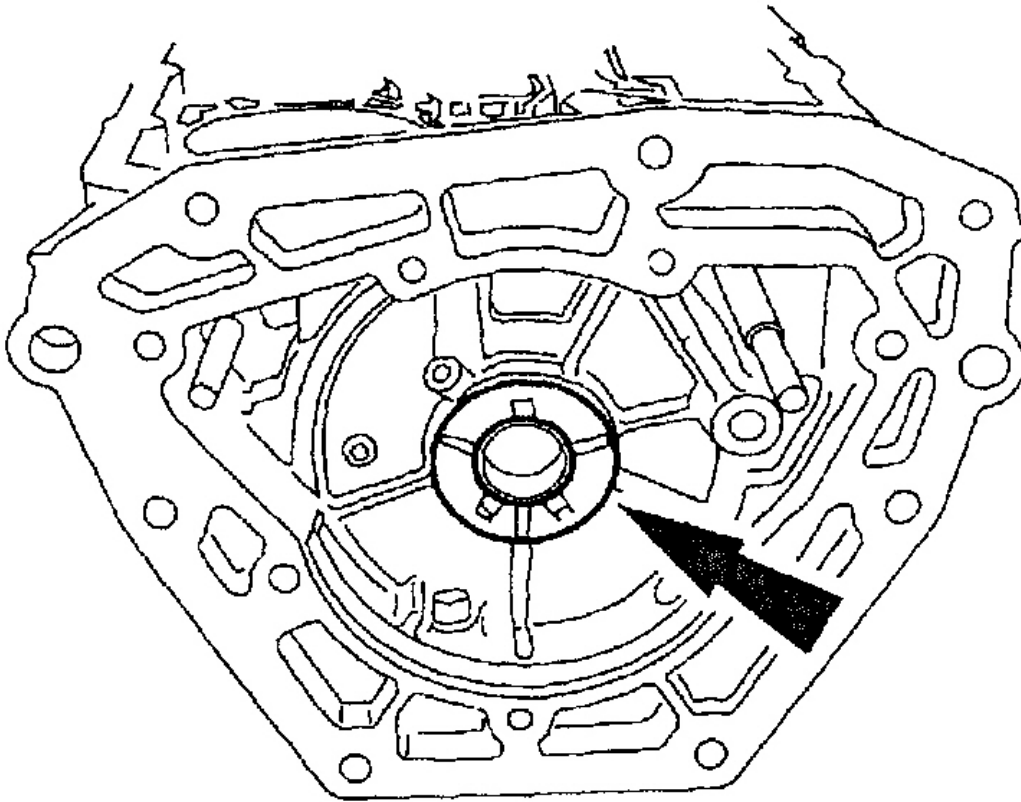


G01672208

Fig. 76: Removing Output Shaft

NOTE: Tag and identify the No. 11 output shaft thrust washer.

70. Remove the output shaft thrust washer.

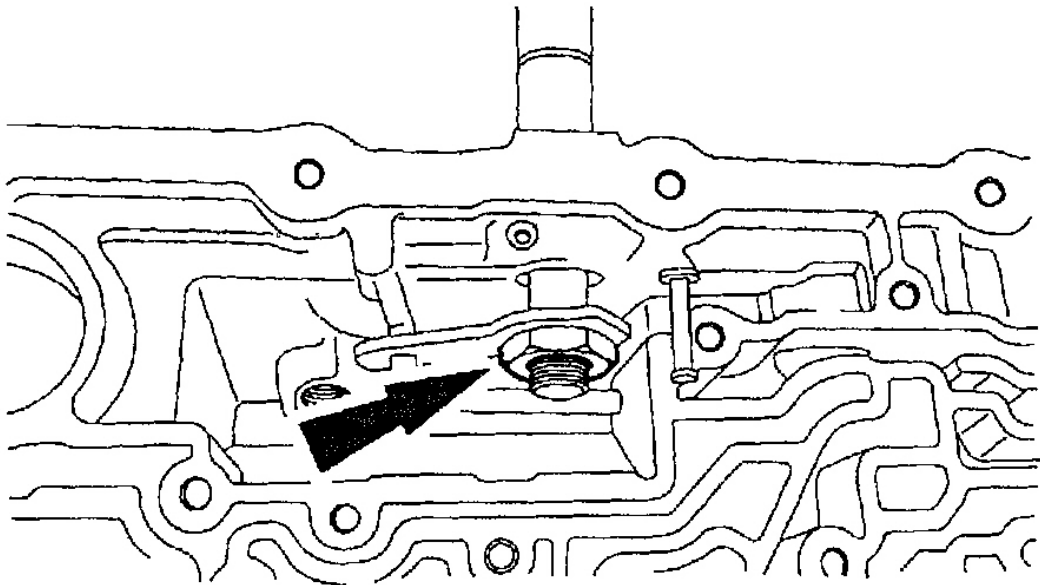


G01672209

Fig. 77: Removing Output Shaft Thrust Washer

CAUTION: To avoid damage, make sure the wrench does not strike the manual valve inner lever pin.

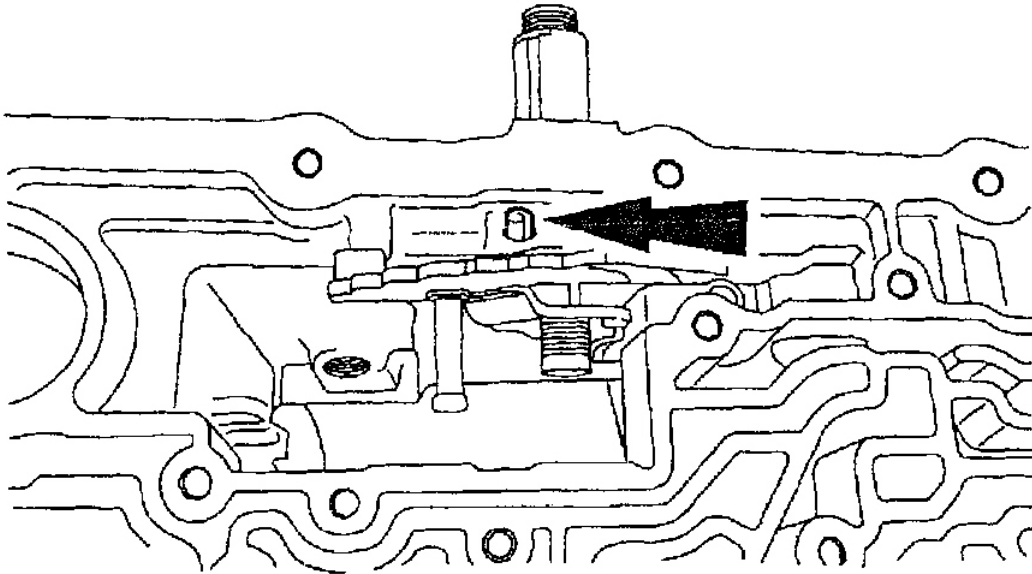
71. Remove the nut.



G01672210

Fig. 78: Removing Manual Lever Shaft Nut

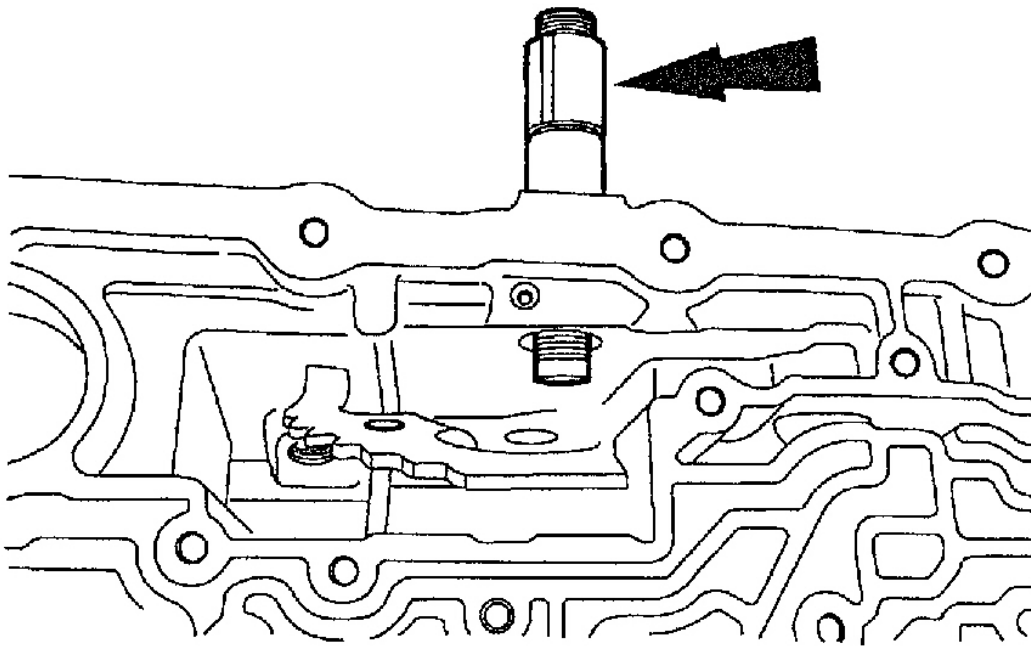
72. Remove the manual lever shaft retaining pin.



G01672211

Fig. 79: Removing Manual Lever Shaft Retaining Pin

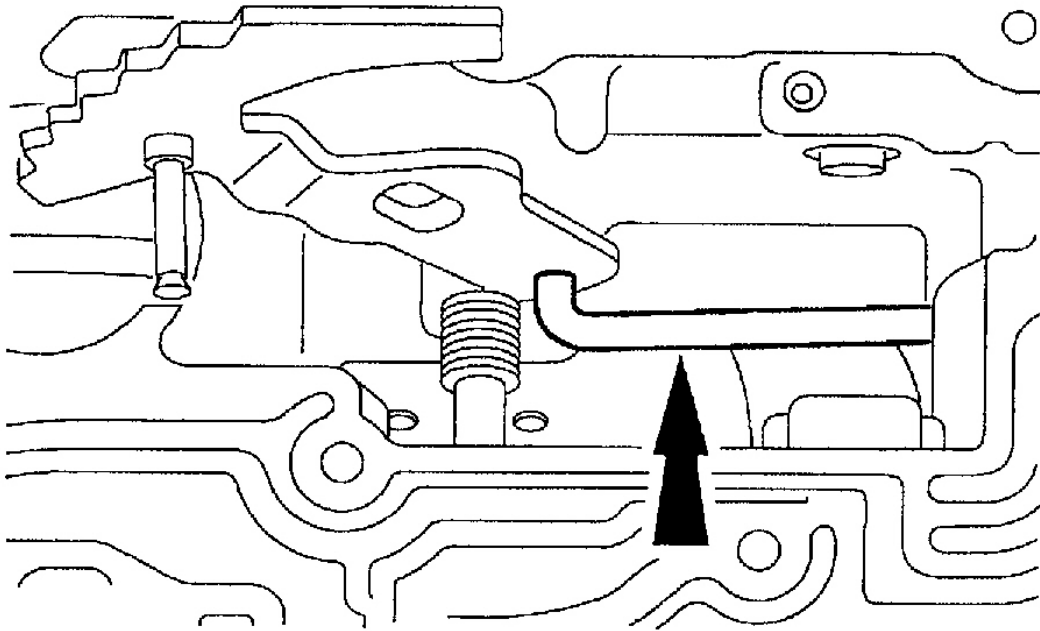
73. Remove the manual control lever shaft.



G01672212

Fig. 80: Removing Manual Control Lever Shaft

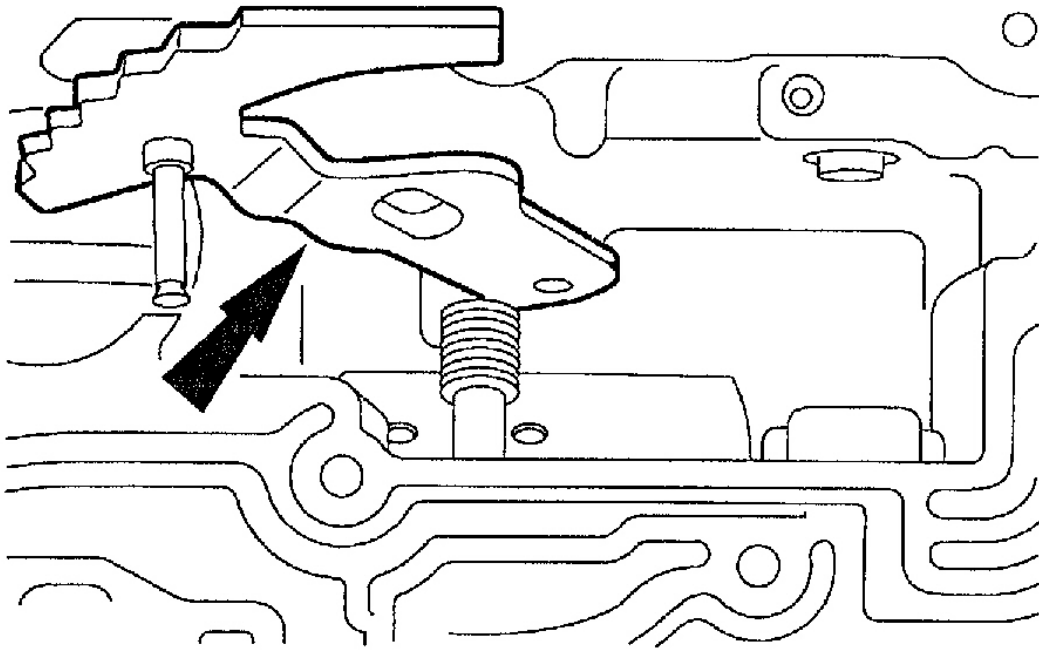
74. Disconnect the manual valve inner lever from the parking lever actuating rod.



G01672213

Fig. 81: Disconnecting Manual Valve Inner Lever

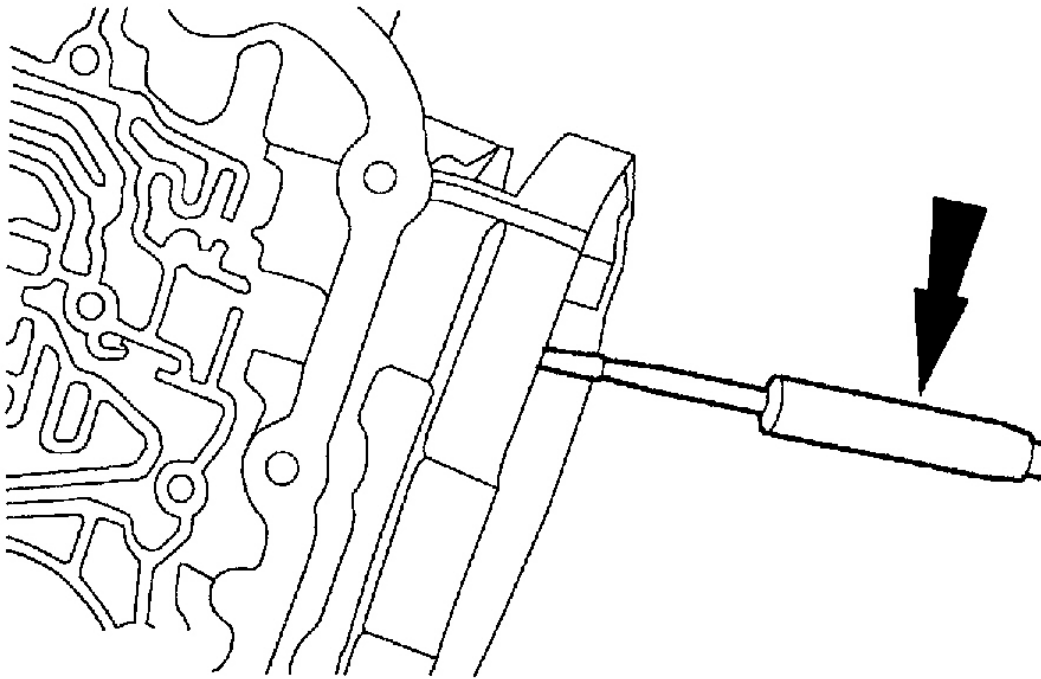
75. Remove the manual valve inner lever.



G01672214

Fig. 82: Removing Manual Valve Inner Lever

76. Remove the parking lever actuating rod.

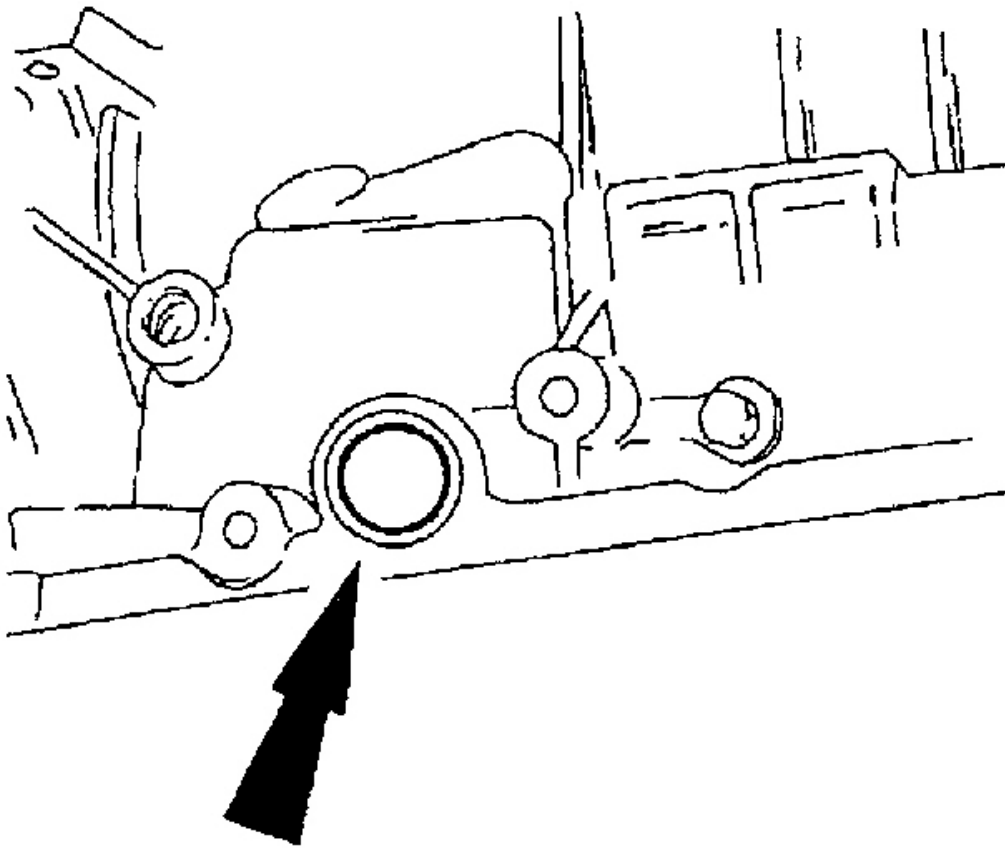


G01672215

Fig. 83: Removing Parking Lever Actuating Rod

CAUTION: Do not damage the bore.

77. Remove the manual control lever seal.

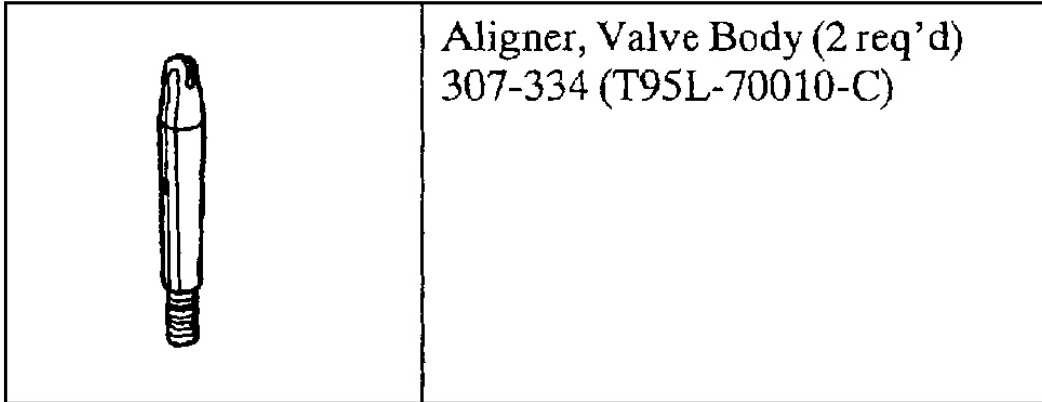


G01672216

Fig. 84: Removing Manual Control Lever Seal

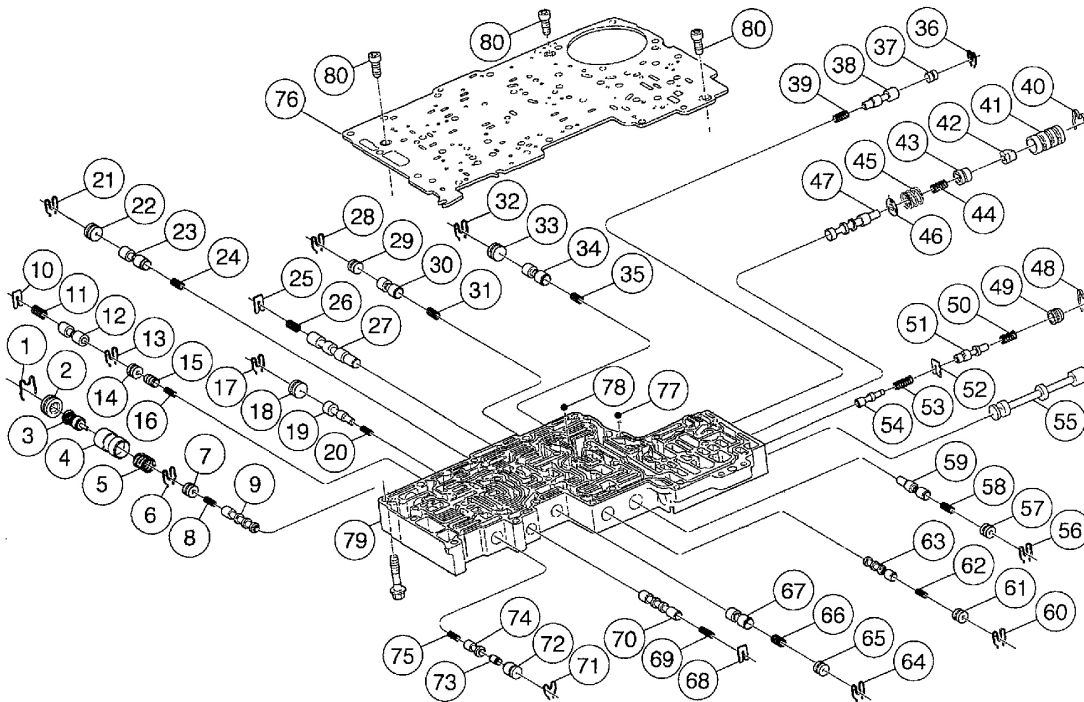
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

MAIN CONTROL VALVE BODY



G01672217

Fig. 85: Special Tool(s)



G01672218

Fig. 86: Component View Of Lower Valve Body

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

Item	Part Number	Description
1	—	Clip — retainer
2	—	Plug — retainer
3	—	Valve assembly — thermo
4	—	Valve — fluid cooler bypass
5	—	Spring — fluid cooler bypass
6	—	Clip — retainer
7	—	Plug — retainer
8	—	Spring — converter clutch control valve
9	—	Valve — converter clutch control
10	—	Plate
11	—	Spring — coast clutch control
12	—	Valve — coast clutch control
13	—	Clip — retainer
14	—	Plug — retainer
15	—	Valve — converter clutch back pressure
16	—	Spring — converter clutch back pressure
17	—	Clip — retainer
18	—	Plug — retainer

G01672219

Fig. 87: Component View Of Lower Valve Body Legend (Items 1-18)

Item	Part Number	Description
19	—	Valve — VFS2 modulator
20	—	Spring — VFS2 modulator valve
21	—	Clip — retainer
22	—	Plug — retainer
23	—	Valve — intermediate servo release
24	—	Spring — intermediate servo release valve
25	—	Plate
26	—	Spring — high clutch control
27	—	Valve — high clutch control
28	—	Plug — Retainer
29	—	Clip — Retainer
30	—	Valve — reverse modulator
31	—	Spring — reverse modulator valve
32	—	Clip — retainer
33	—	Plug — retainer
34	—	Valve — reverse engagement
35	—	Spring — reverse engagement valve

G01672220

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

Fig. 88: Component View Of Lower Valve Body Legend (Items 19-35)

Item	Part Number	Description
36	—	Clip — retainer
37	—	Plug — retainer
38	—	Valve — VFS1 modulator
39	—	Spring — VFS1 modulator valve
40	—	Clip — retainer
41	—	Sleeve
42	—	Valve — booster
43	—	Valve — booster
44	—	Spring — inner
45	—	Spring — outer
46	—	Spring — retainer
47	—	Valve — main regulator
48	—	Clip — retainer
49	—	Plug — retainer
50	—	Spring — converter limit
51	—	Valve — converter limit
52	—	Plate
53	—	Spring — solenoid regulator valve
54	—	Valve — solenoid regulator
55	—	Valve — manual
56	—	Clip — retainer
57	—	Plug — retainer
58	—	Spring — rear servo control valve
59	—	Valve — rear servo control

G01672221

Fig. 89: Component View Of Lower Valve Body Legend (Items 20-59)

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

Item	Part Number	Description
60	—	Clip — retainer
61	—	Plug — retainer
62	—	Spring — RS ISA select valve
63	—	Valve — RS ISA select
64	—	Clip — Retainer
65	—	Plug — Retainer
66	—	Spring — forward engagement control valve
67	—	Valve — forward engagement control
68	—	Plate
69	—	Spring — O.D. servo control
70	—	Valve — O.D. servo control
71	—	Retainer — clip
72	—	Sleeve — converter clutch modulator control
73	—	Valve — converter clutch modulator control
74	—	Valve — converter clutch modulator
75	—	Spring — converter clutch modulator control
76	7Z490	Plate assembly — main control valve body separator
77	7E195	Ball — lubrication check
78	7E195	Ball — shuttle valve
79	7A101	Body — control valve lower
80	W701099	Screw — separator plate

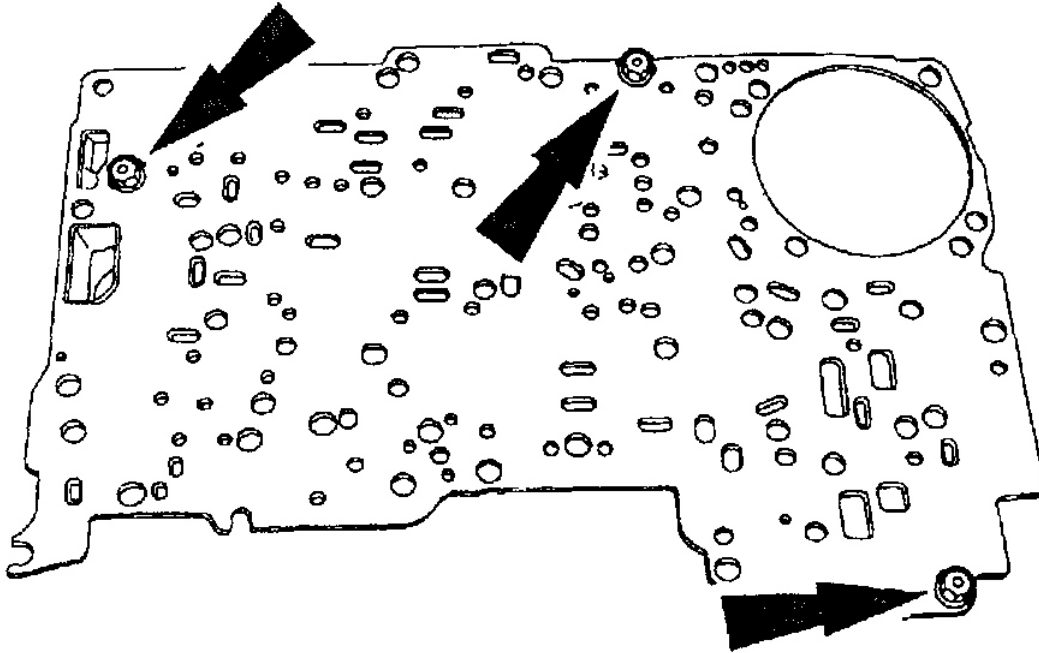
G01672222

Fig. 90: Component View Of Lower Valve Body Legend (Items 60-80)

Disassembly

NOTE: The valve body separator plate has a bonded gasket.

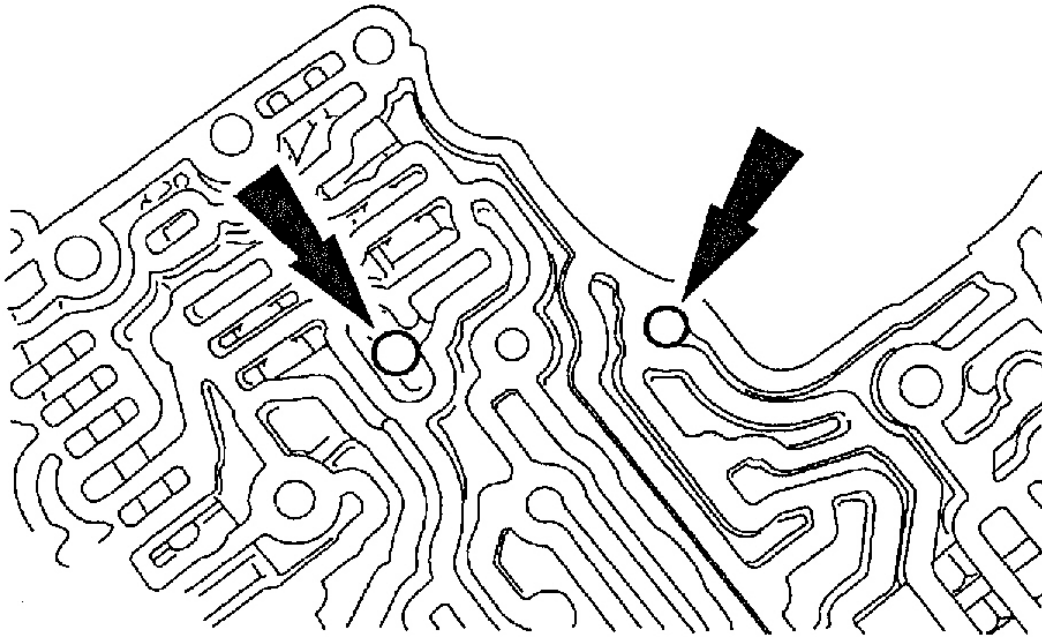
1. Remove the valve body separator plate.



G01672223

Fig. 91: Removing Valve Body Separator Plate

2. Remove the check balls.



G01672224

Fig. 92: Locating Check Balls

NOTE: Refer to the disassembled view. See **Fig. 86** .

3. Disassemble the main control valve body.

Assembly

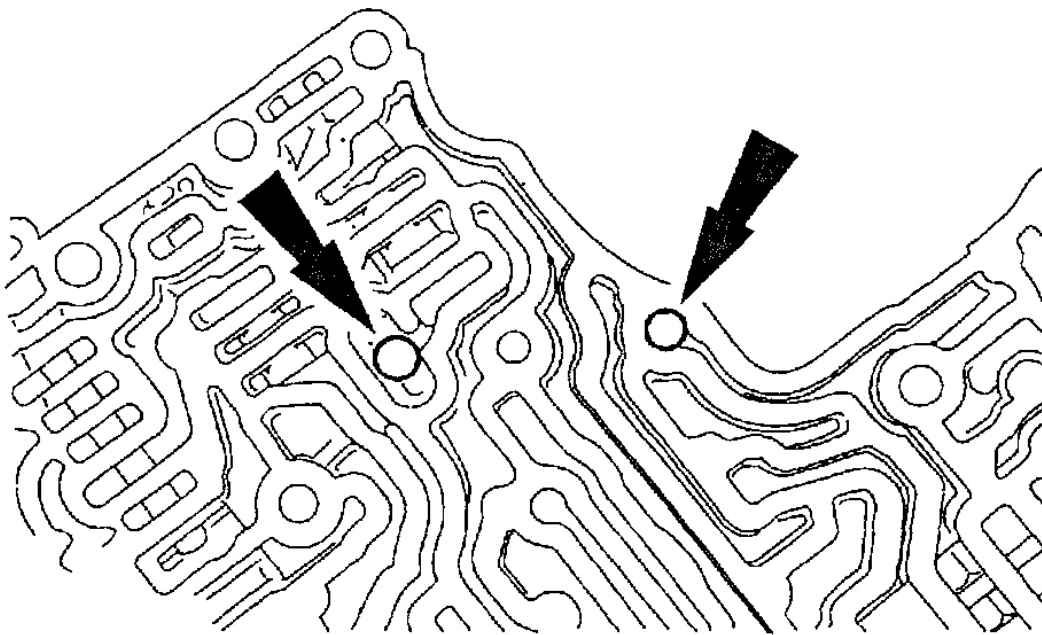
CAUTION: Do not lose parts when cleaning or repairing.

1. Thoroughly clean all parts in solvent and blow dry with moisture-free compressed air.

CAUTION: Do not stone, file, or sand the valves. This will remove the anodized finish and may result in further main control or transmission damage.

2. After cleaning the main control valve body, carry out the following.
 - Inspect all valve and plug bores for scoring or burrs.
 - Check all fluid passages for obstructions.
 - Inspect all valves and plugs for burrs.
 - Inspect all mating surfaces for burrs or distortion.

- Inspect all springs for distortion.
 - Check all valves and plugs for free movement in their respective bores.
 - Valves and plugs, when dry, must fall from their own weight into their respective bores.
 - Roll the manual valve on a flat surface to check for a bent condition.
3. Assemble the main control valve body.
 4. Install the main control valve body check balls.

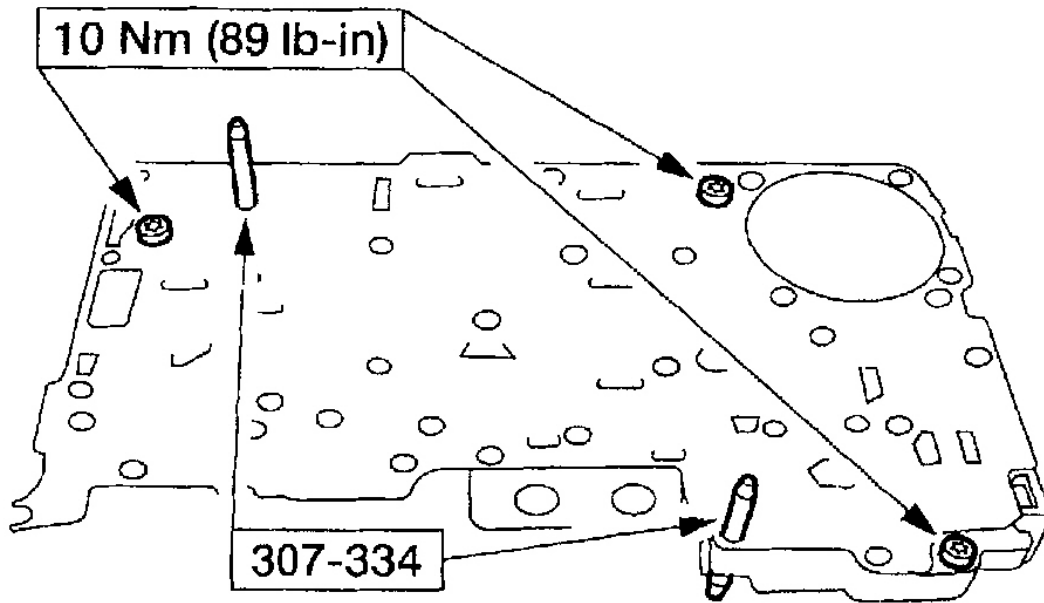


G01672225

Fig. 93: Locating Check Balls

NOTE: Use a new valve body separator plate for main control valve body installation.



5. Using the special tools, install the main control valve body separator plate.



G01672226

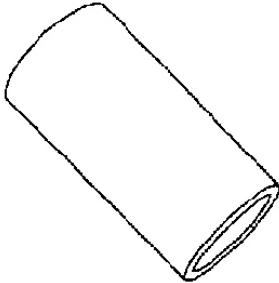
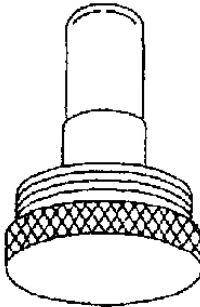
Fig. 94: Installing Separator Plate

FLUID PUMP

	Installer, Torque Converter Fluid Seal 307-349 (T97T-77000-A)
	Alignment Set, Fluid Pump 307-S039 (T74P-77103-X)

G01672227

Fig. 95: Special Tool(s) (1 Of 3)

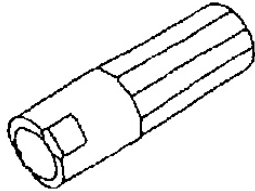
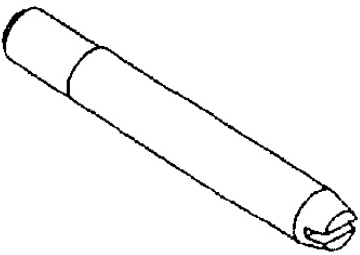
	Aligner, Fluid Pump Handle 307-431
	Aligner, Fluid Pump Pilot 307-432

G01672228

Fig. 96: Special Tool(s) (2 Of 3)

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

	Sizer, Piston Seal 307-338 (T95L-70010-G)
	Alignment Pins, Transmission Pump 307-398

G01672229

Fig. 97: Special Tool(s) (3 Of 3)

Item	Specification
Multi-Purpose Grease D0AZ-19584-AA	ESB-M1C93-B

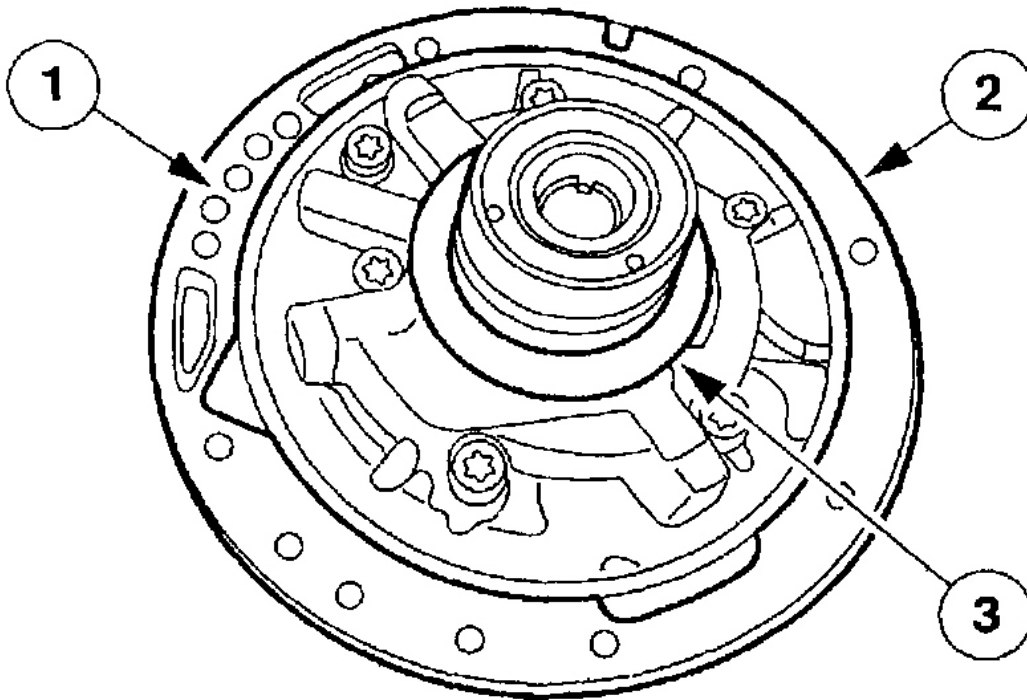
G01672230

Fig. 98: Materials

Disassembly

1. Remove the fluid pump gasket, fluid pump seal ring, and the No.1 thrust washer.
 1. Remove and discard the fluid pump gasket.

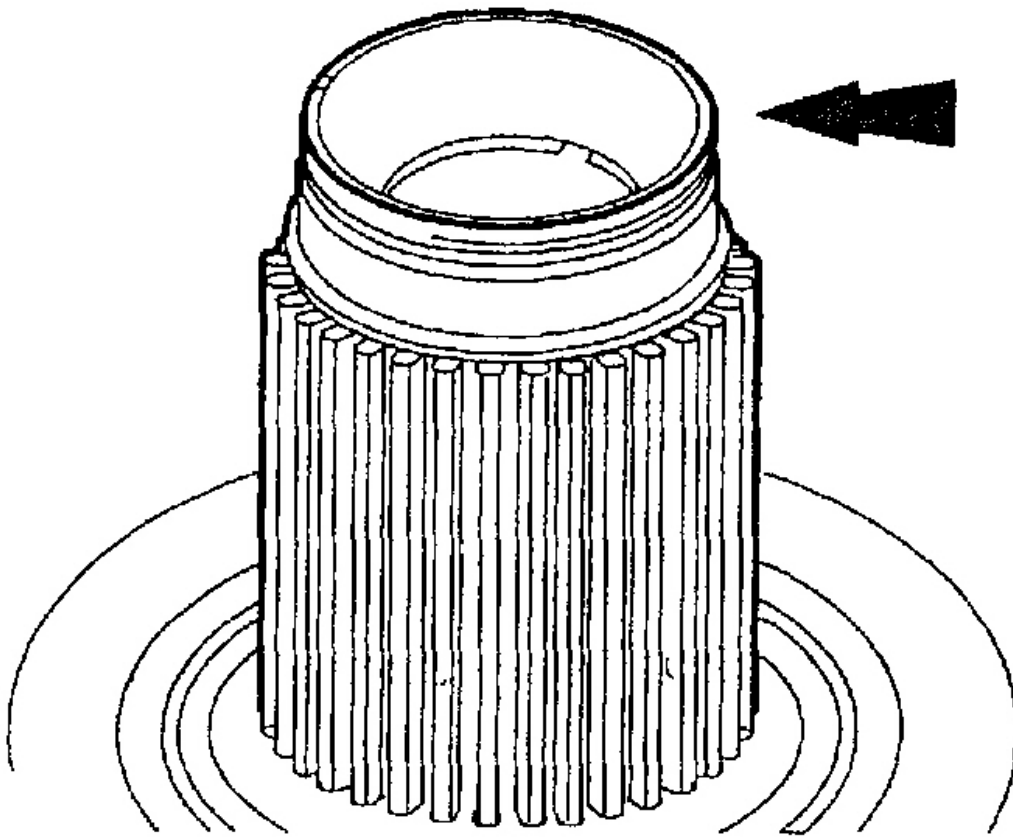
2. Remove and discard the fluid pump seal ring (square cut).
3. Remove and tag the No.1 thrust washer.



G01672231

Fig. 99: Removing Fluid Pump Gasket, Seal Ring & Thrust Washer

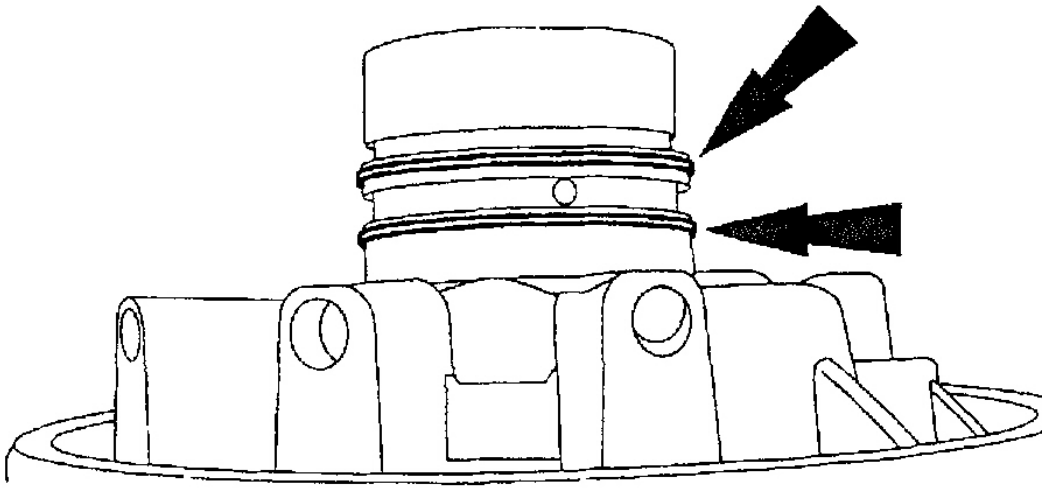
2. Remove the fluid pump support seal ring.



G01672232

Fig. 100: Removing Fluid Pump Support Seal Ring

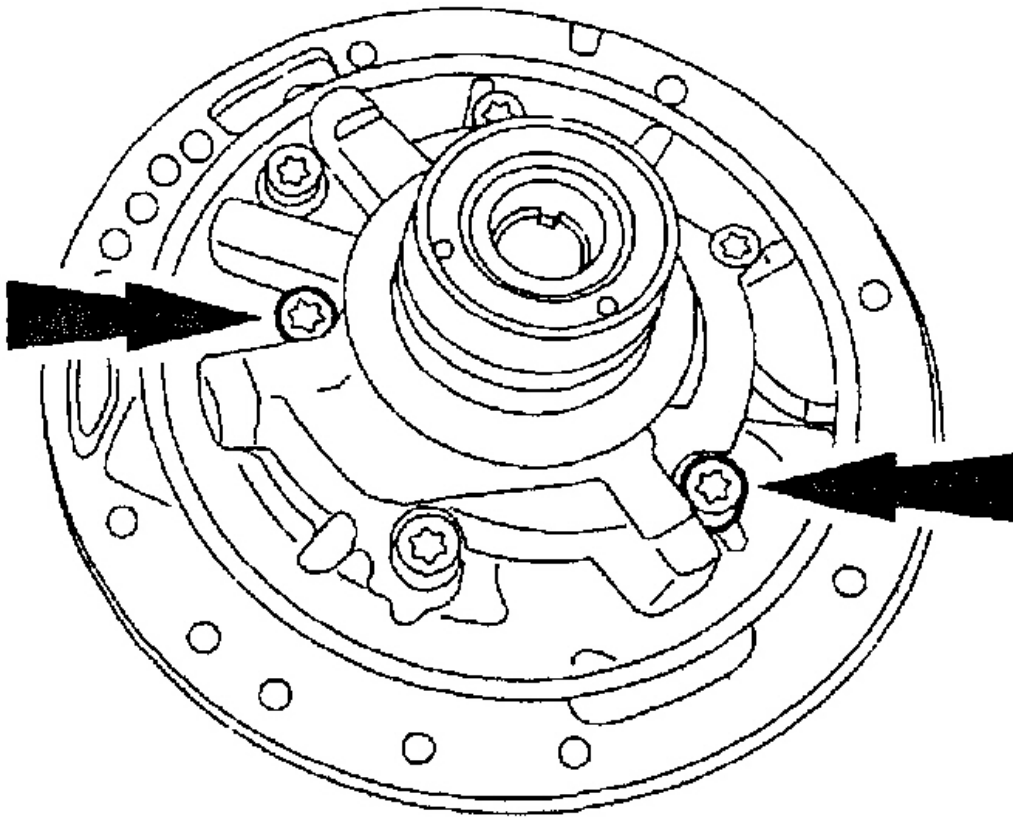
3. Remove the seal rings.



G01672233

Fig. 101: Removing Fluid Pump Seal Rings

4. Remove the fluid pump housing.



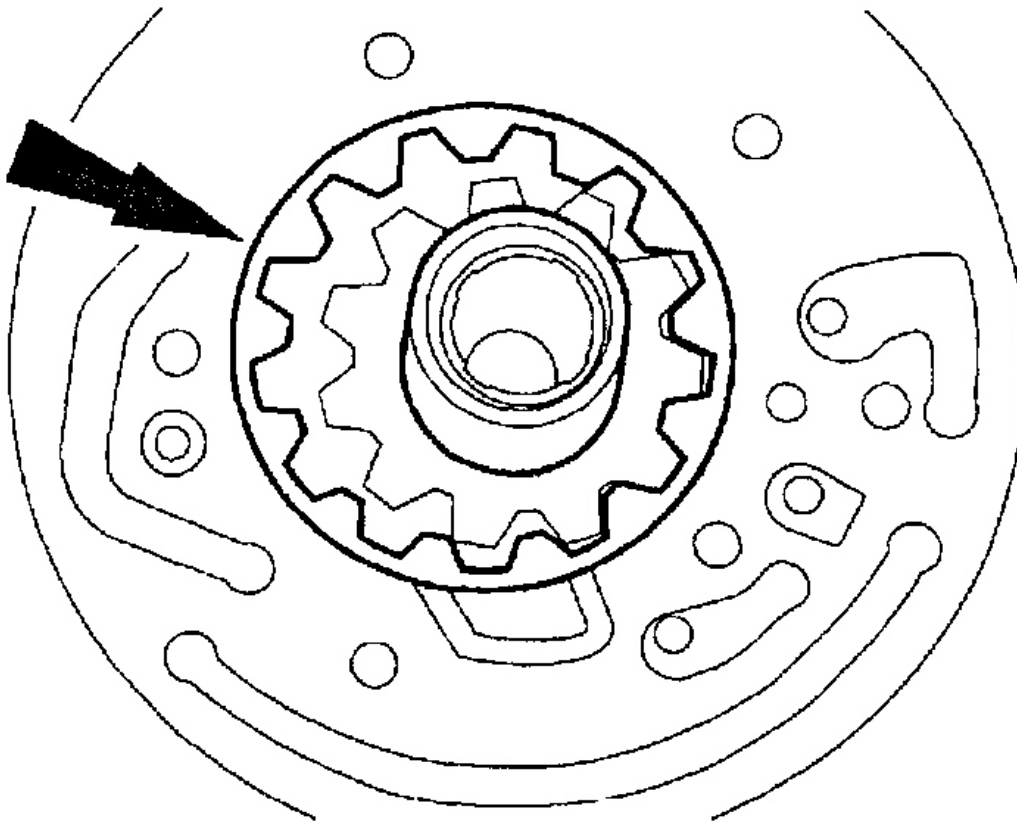
G01672234

Fig. 102: Removing Fluid Pump Housing

NOTE: A rough casting on the pump surface crescent is not a flaw.

NOTE: The fluid pump gears are part of the pump assembly and are not repaired separately.

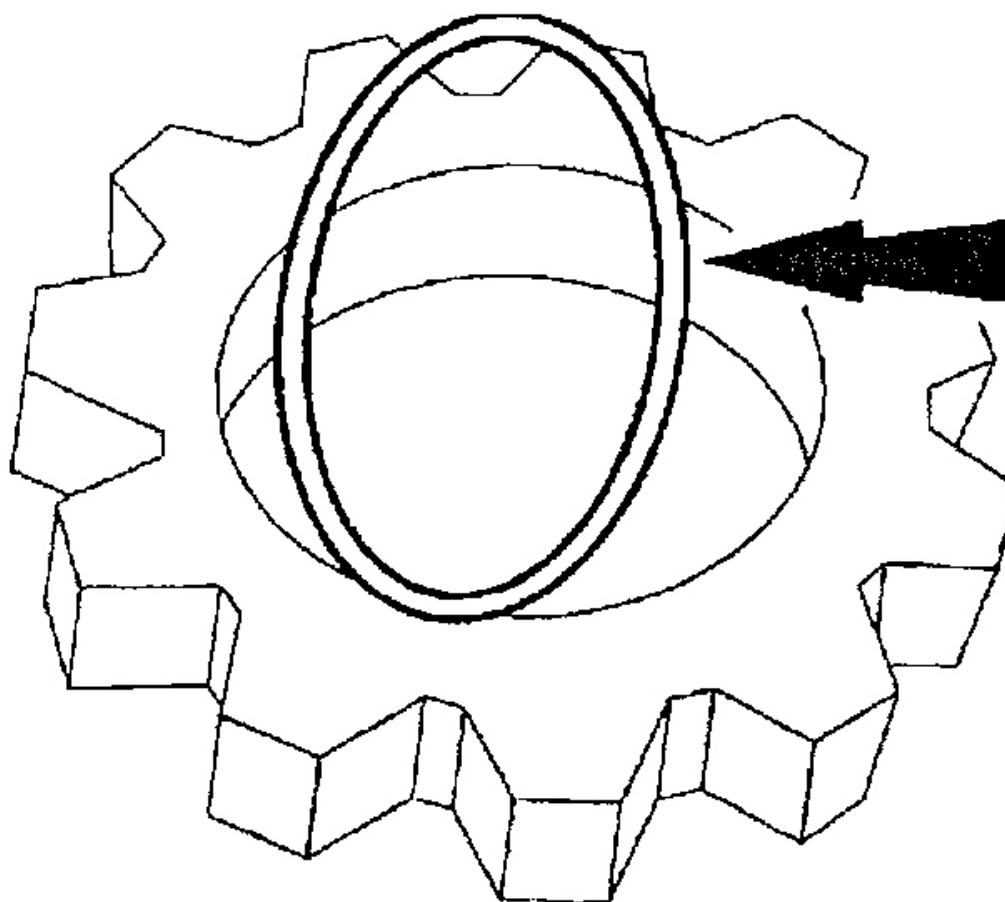
5. Remove the fluid pump gears.



G01672235

Fig. 103: Removing Fluid Pump Gears

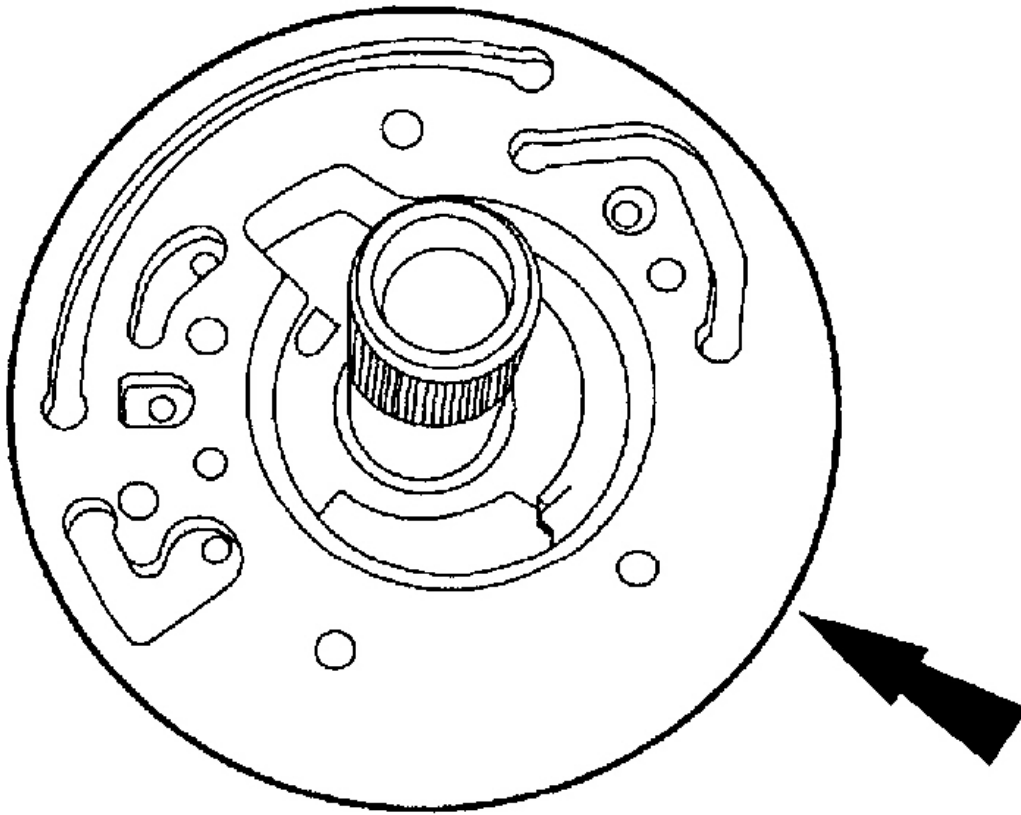
6. Remove the drive gear O-ring seal and discard. Inspect the fluid pump gears for cracks and scoring.



G01672236

Fig. 104: Removing Drive Gear O-Ring Seal

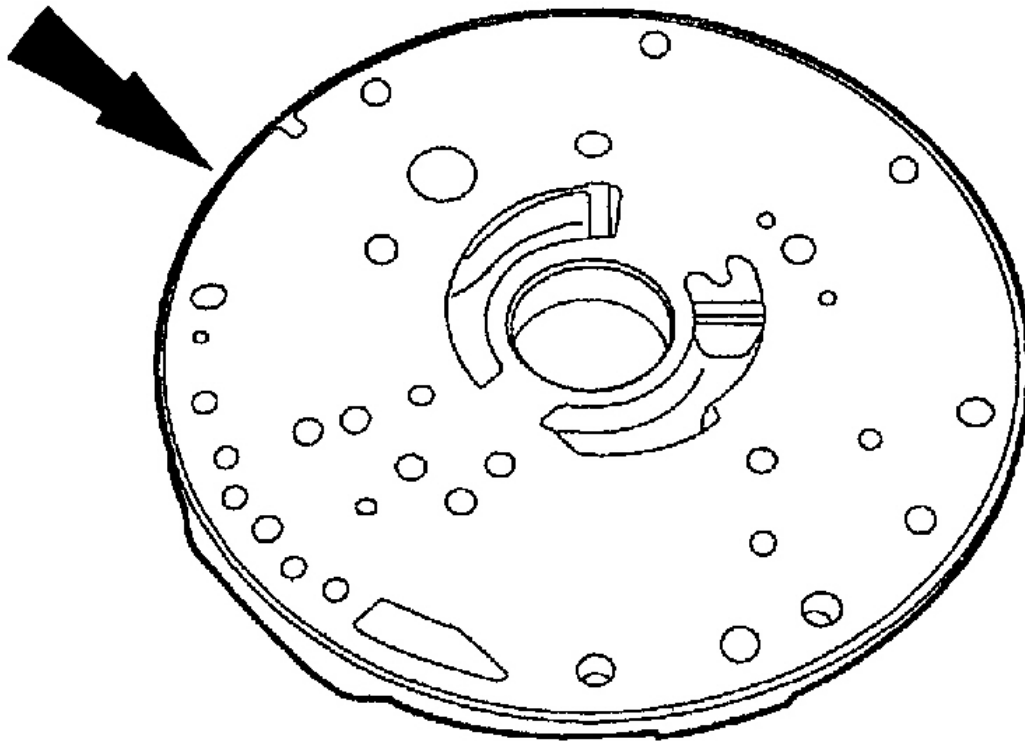
7. Inspect the overdrive pump.
 - Inspect the overdrive pump support gear pockets for scoring and wear.
 - Clean and inspect the overdrive and rear input shaft bushings.



G01672237

Fig. 105: Inspecting Overdrive Pump

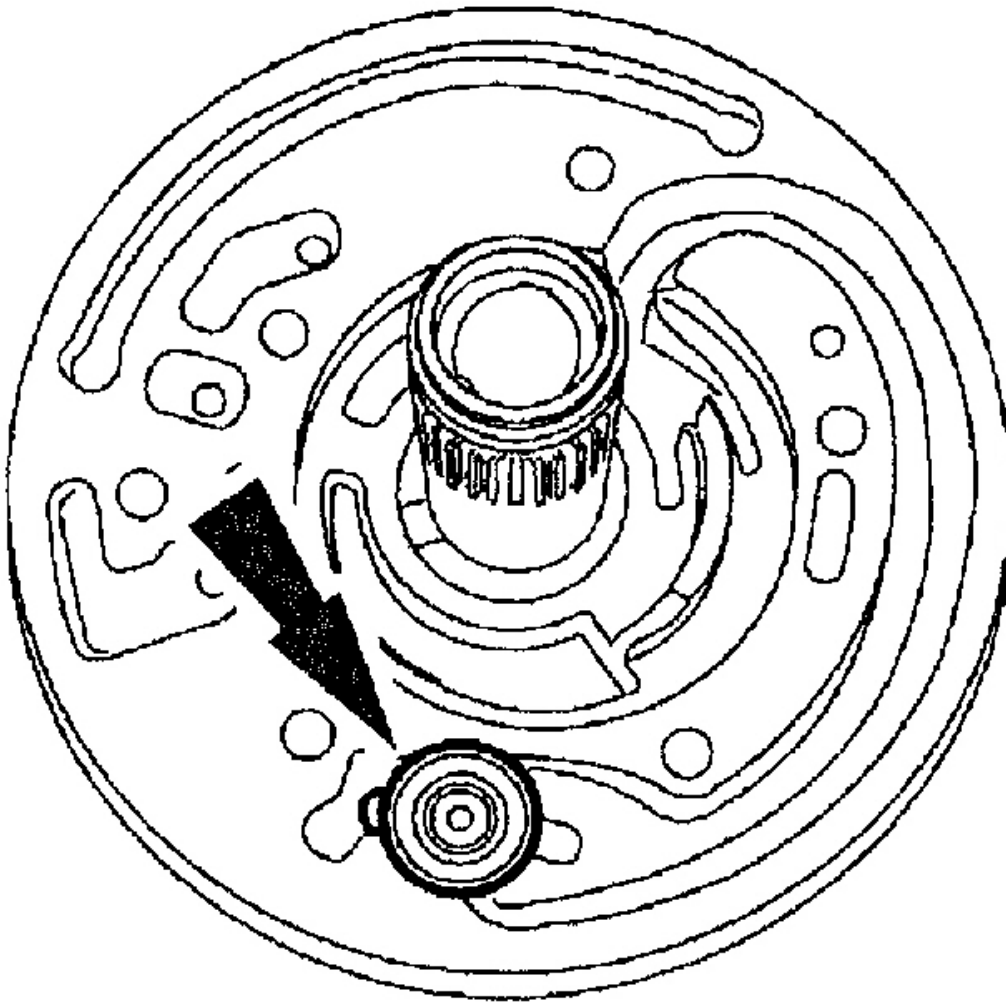
8. Inspect the fluid pump adapter plate for scoring and wear.



G01672238

Fig. 106: Inspecting Fluid Pump Adapter Plate

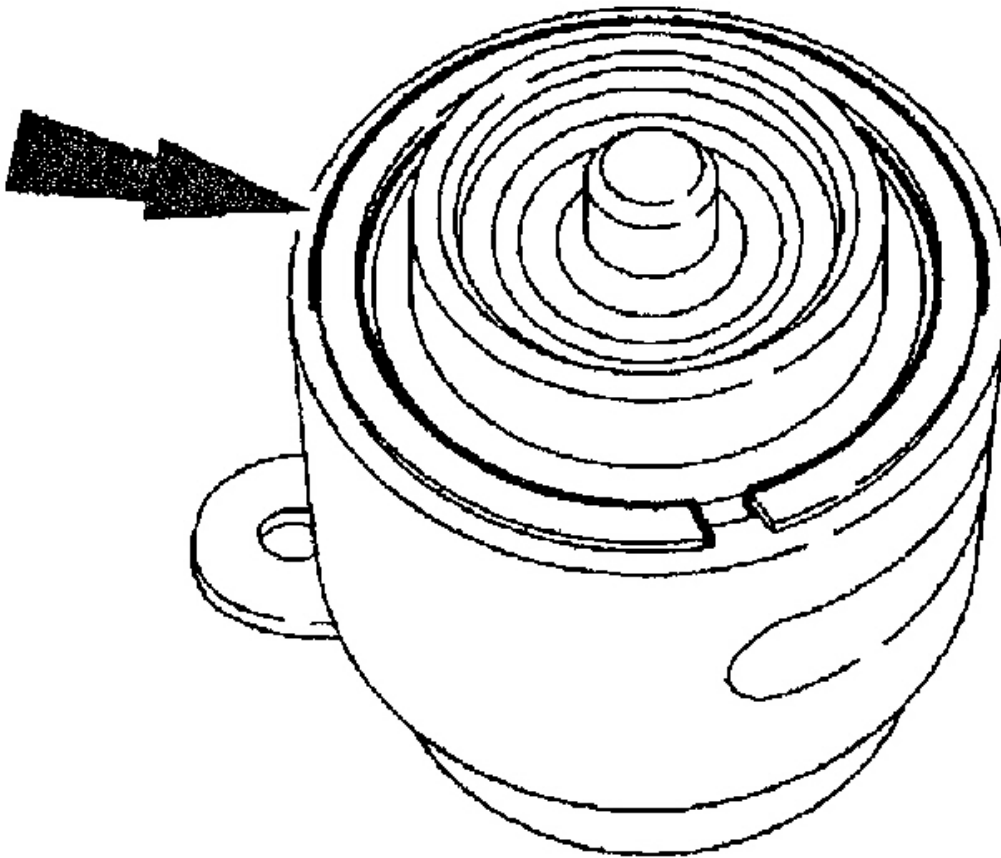
9. Remove the valve.



G01672239

Fig. 107: Remove Valve

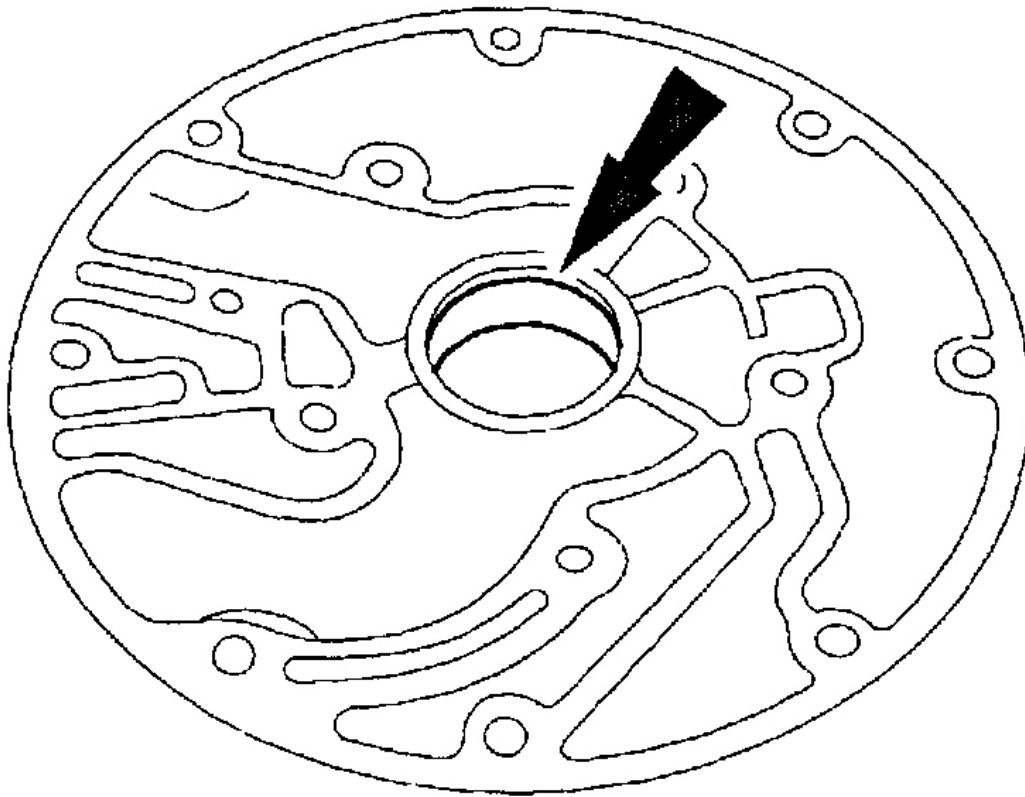
10. Remove and discard the seal.



G01672240

Fig. 108: Remove Seal

11. Inspect the fluid pump to converter housing bushing.



G01672241

Fig. 109: Inspecting Fluid Pump Bushing

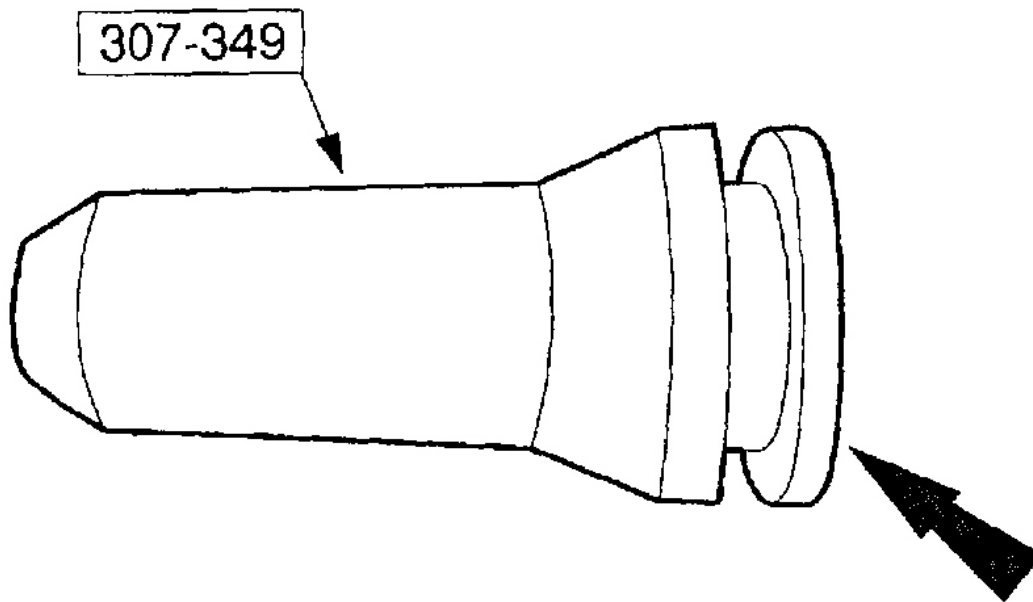
Assembly

NOTE: Minor burrs and scoring may be removed with crocus cloth. If damage is found, install a new assembly.

1. Inspect the fluid pump components for the following:
 - Pump body and case for burrs.
 - Fluid passages for obstructions.

NOTE: Check and make sure that the garter spring in the seal has not popped off of the converter hub seal.

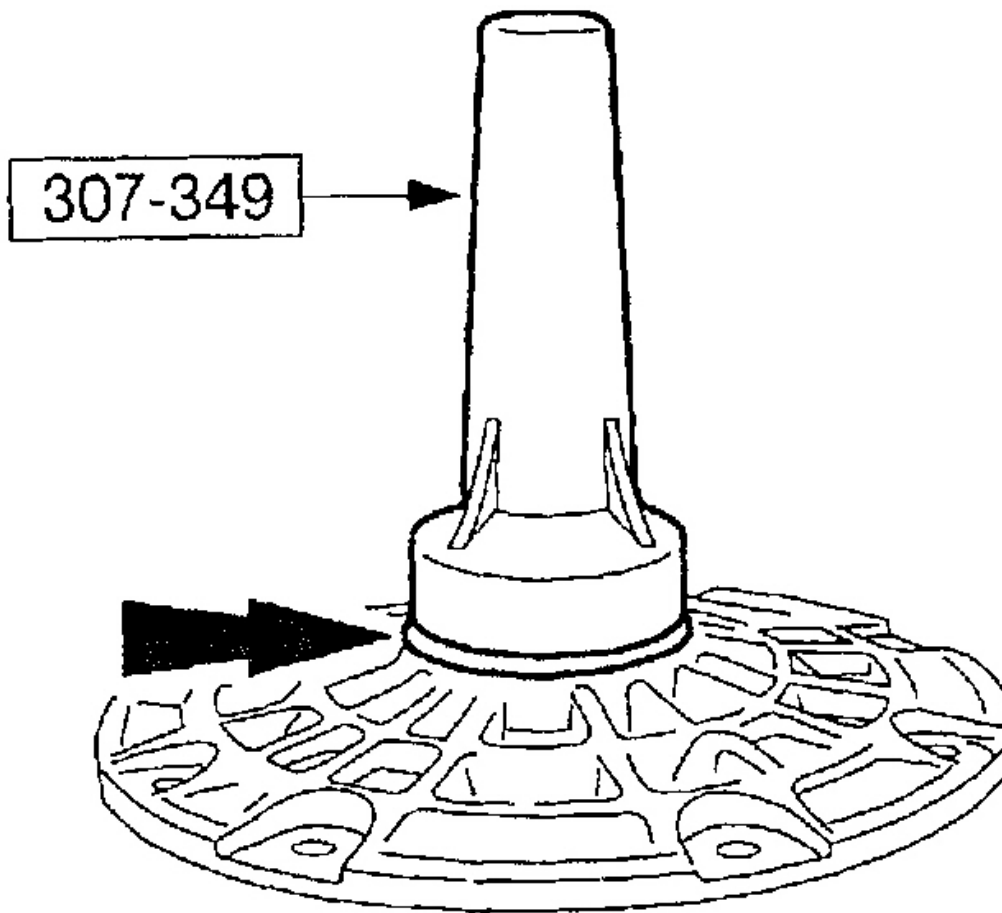
2. Install a new seal onto the special tool.



G01672242

Fig. 110: Installing Seal On Torque Converter Fluid Seal Installer

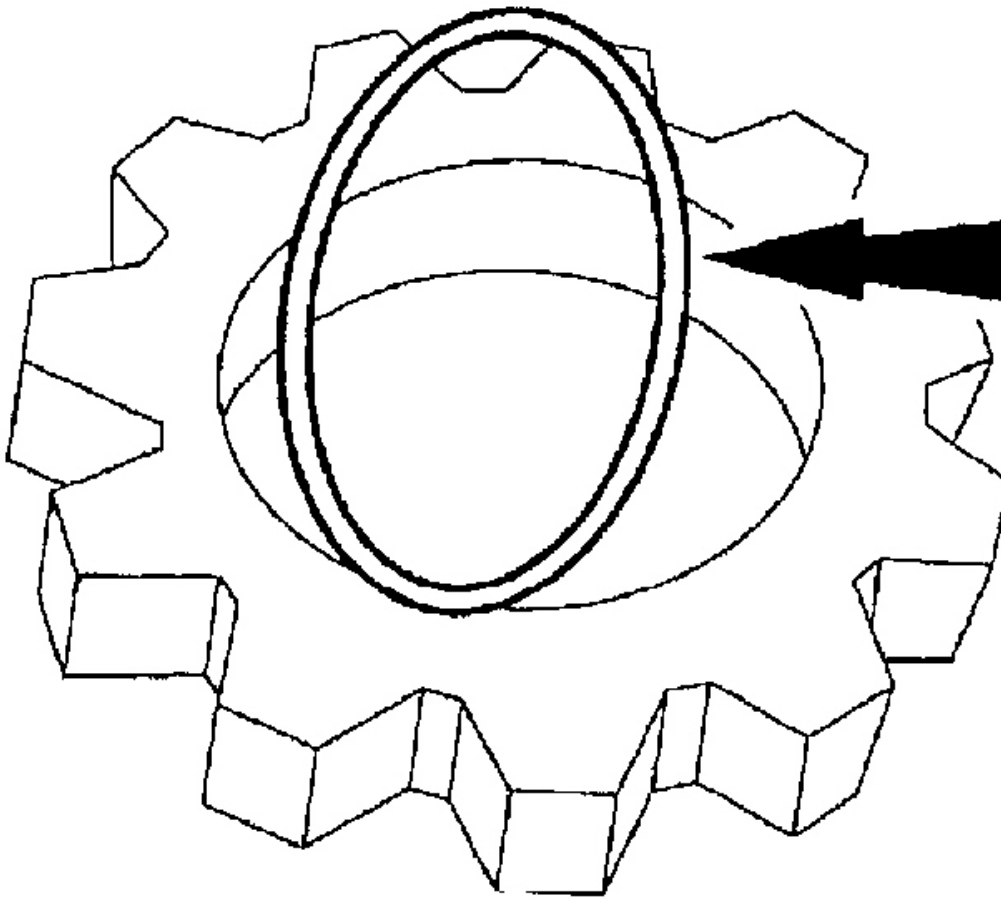
3. Using the special tool, install the converter hub seal.



G01672243

Fig. 111: Installing Converter Hub Seal

4. Install a new O-ring seal in fluid pump drive gear.



G01672244

Fig. 112: Installing O-Ring Seal In Fluid Pump Drive Gear

CAUTION: Lubricate the special tool with multi-purpose grease.

5. Using the special tool, seat the O-ring seal in the pump gear.

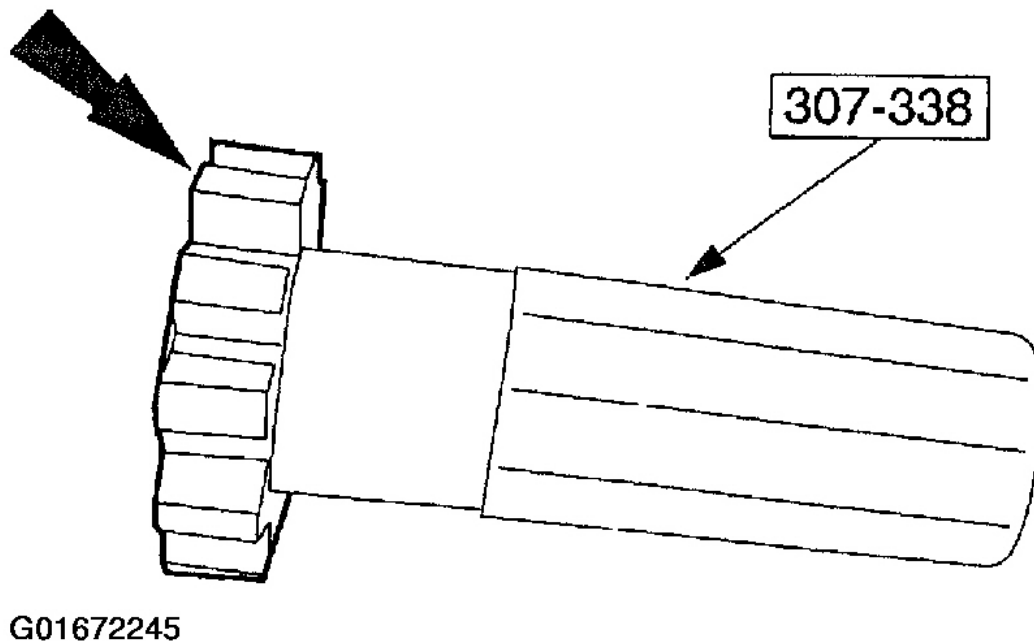
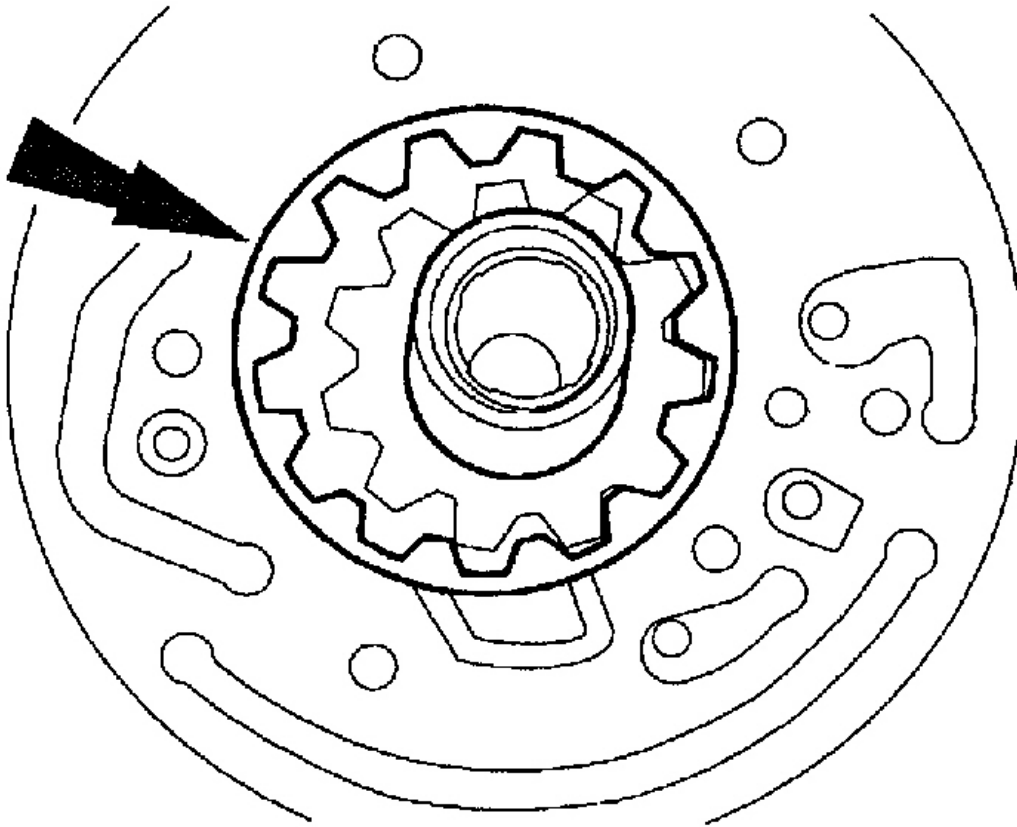


Fig. 113: Seating O-Ring Seal In Pump Gear

CAUTION: The chamber on the inside edge of the small gear must be up when in the pump housing gear pocket. The dimple on the larger gear must be down when in the pump housing gear pocket.

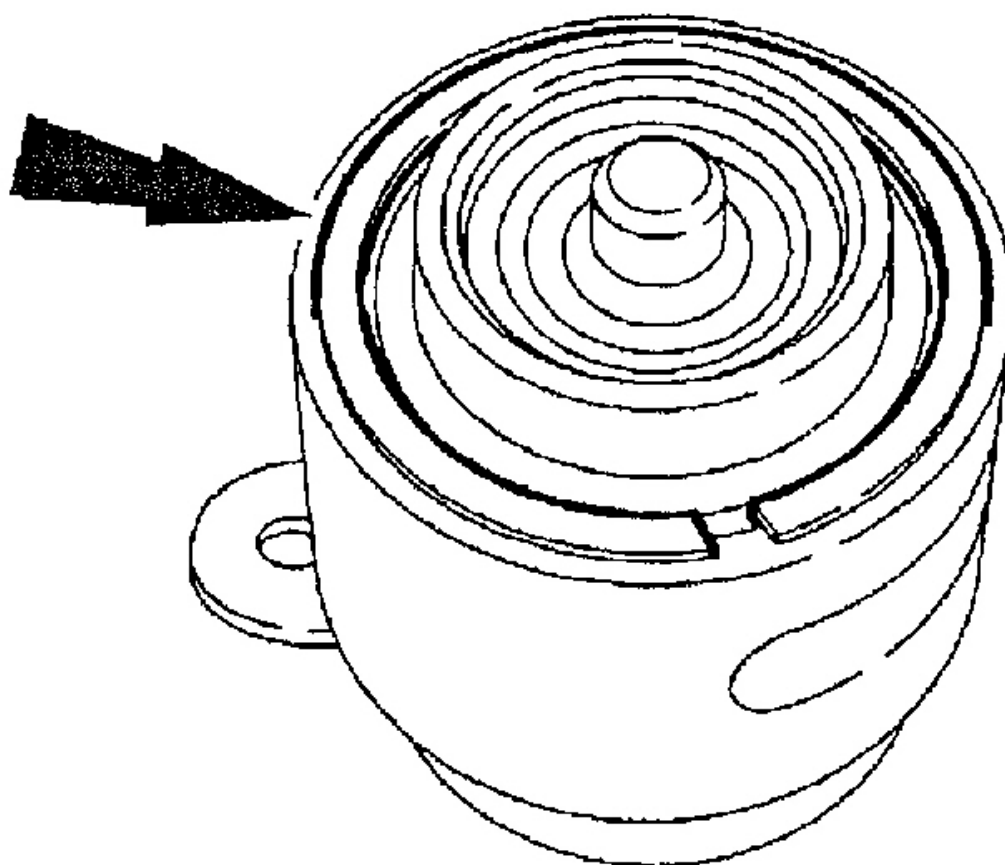
6. Install the pump gears into the fluid pump housing. Apply multi-purpose grease to pump gear to prevent scoring at start up.



G01672246

Fig. 114: Installing Pump Gears In Housing

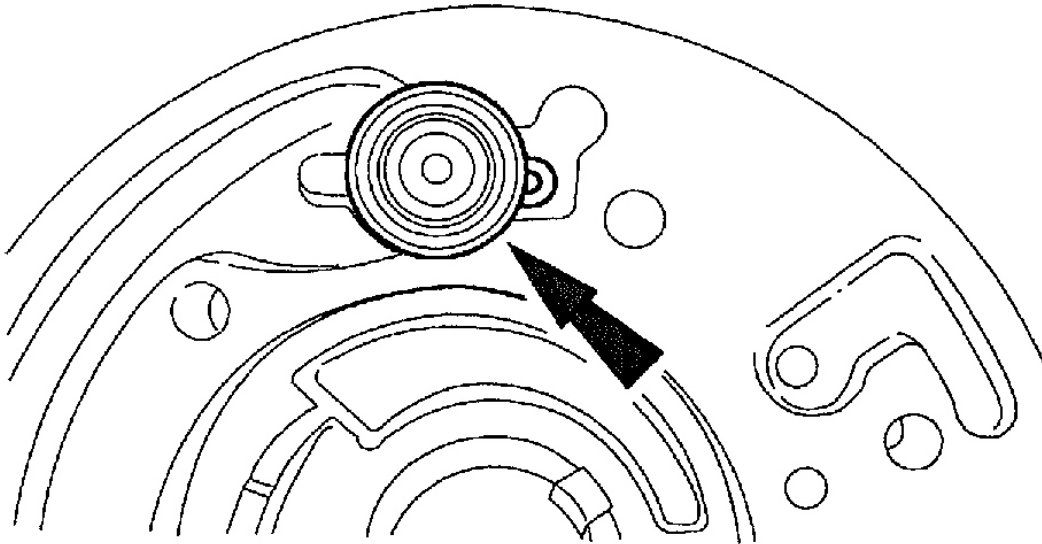
7. Install a new seal on the valve.



G01672247

Fig. 115: Installing Seal

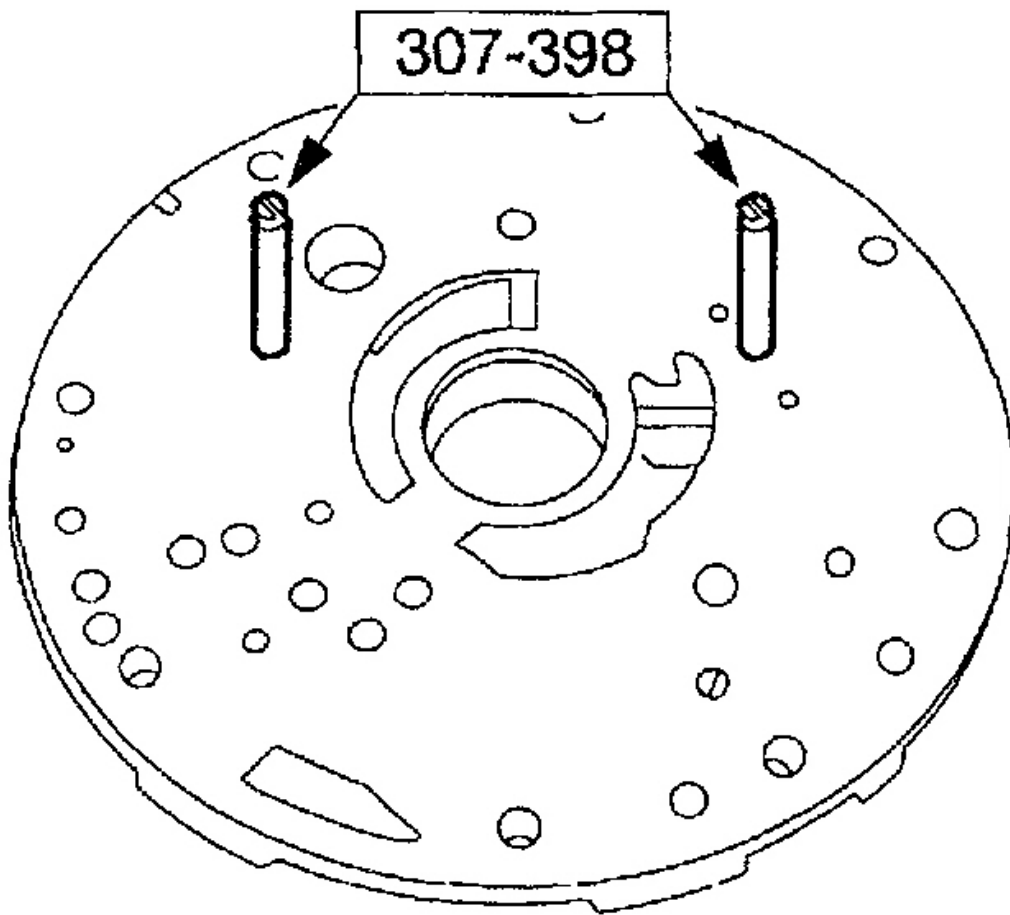
8. Install the valve with the tab facing down.



G01672248

Fig. 116: Installing Valve

9. First install the fluid pump adapter plate and then the alignment pins in their correct location.

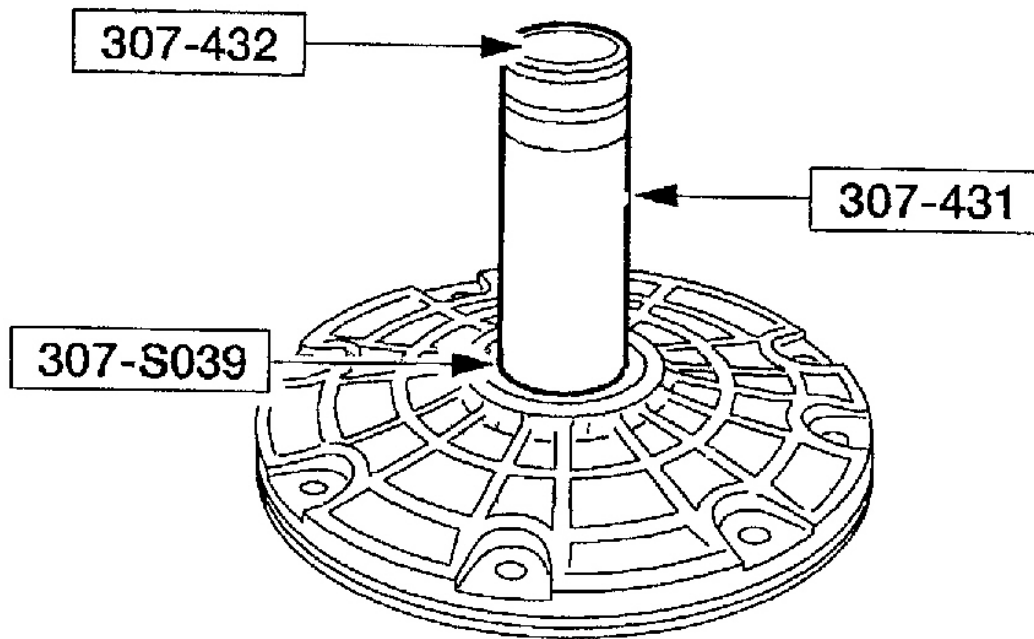


G01672249

Fig. 117: Installing Aligning Pins

CAUTION: The special tools must be used to correctly align the pump with the adapter plate to reduce gear noise, bushing failure, and leakage.

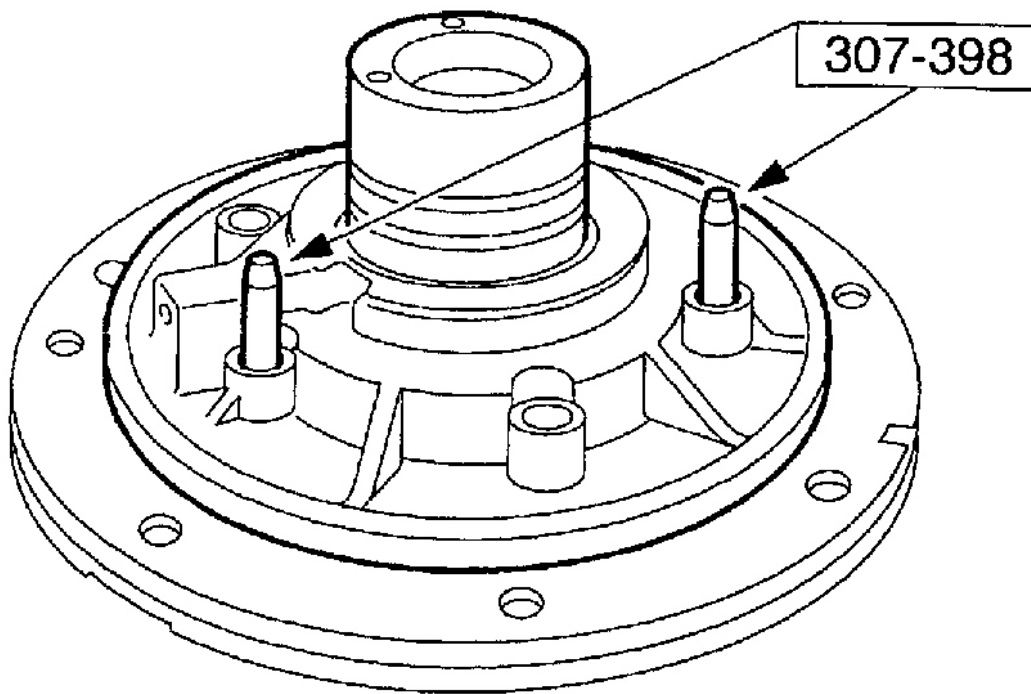
10. Using the special tool, align the fluid pump to the adapter plate.



G01672250

Fig. 118: Aligning Fluid Pump To Adapter Plate

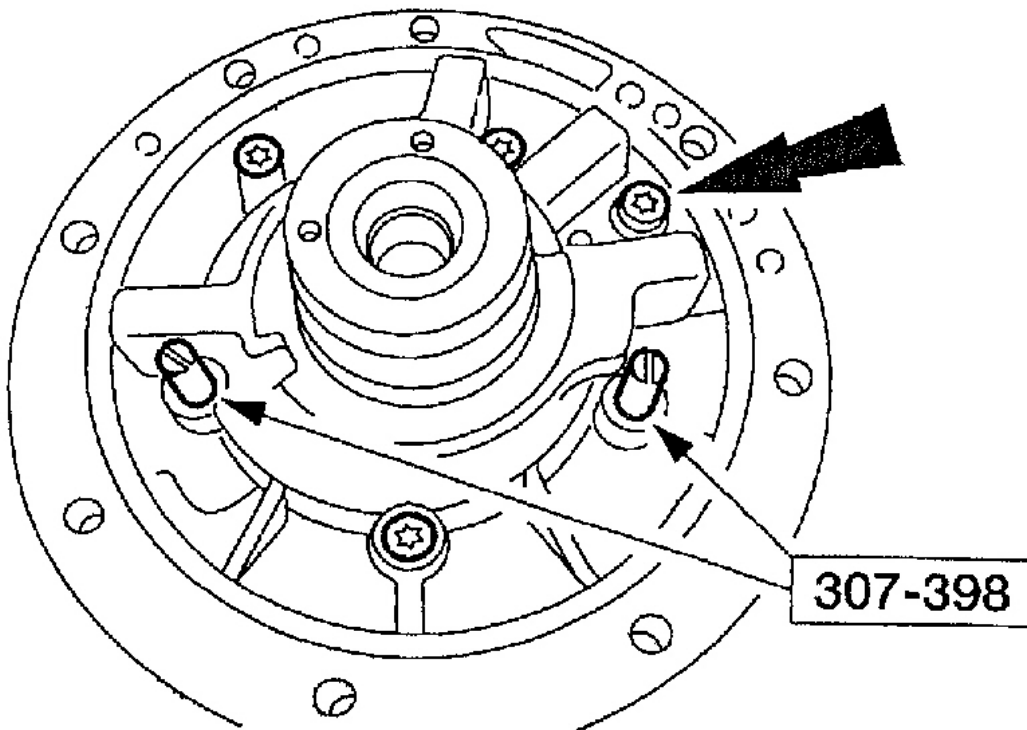
11. Using the special tools, assemble the pump.



G01672251

Fig. 119: Assembling Pump

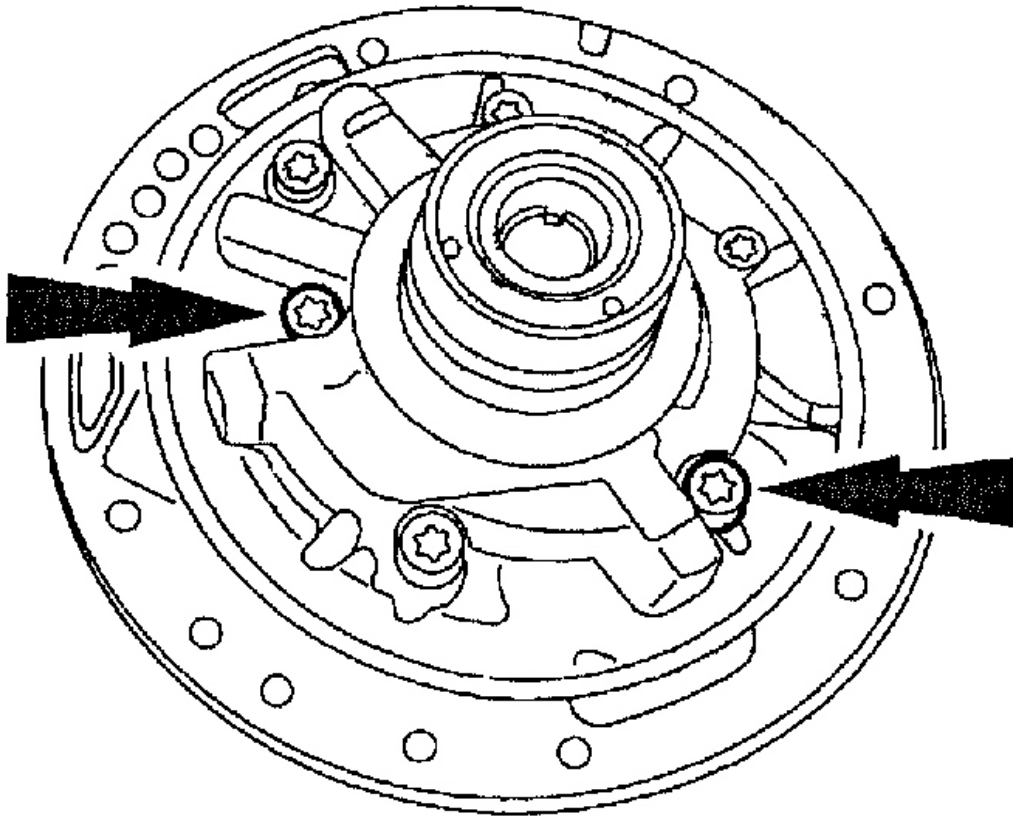
12. Loosely install the fluid pump housing screws in their correct location and remove the special tools.



G01672252

Fig. 120: Installing Fluid Pump Housing Screws

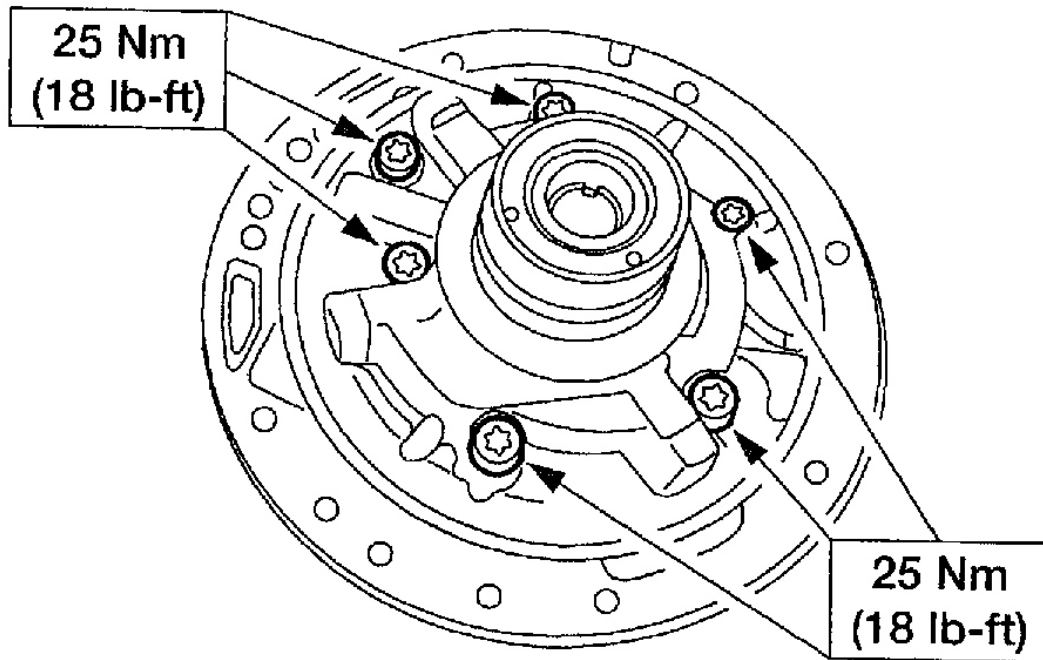
13. Install the two remaining screws.



G01672253

Fig. 121: Installing 2 Remaining Screws

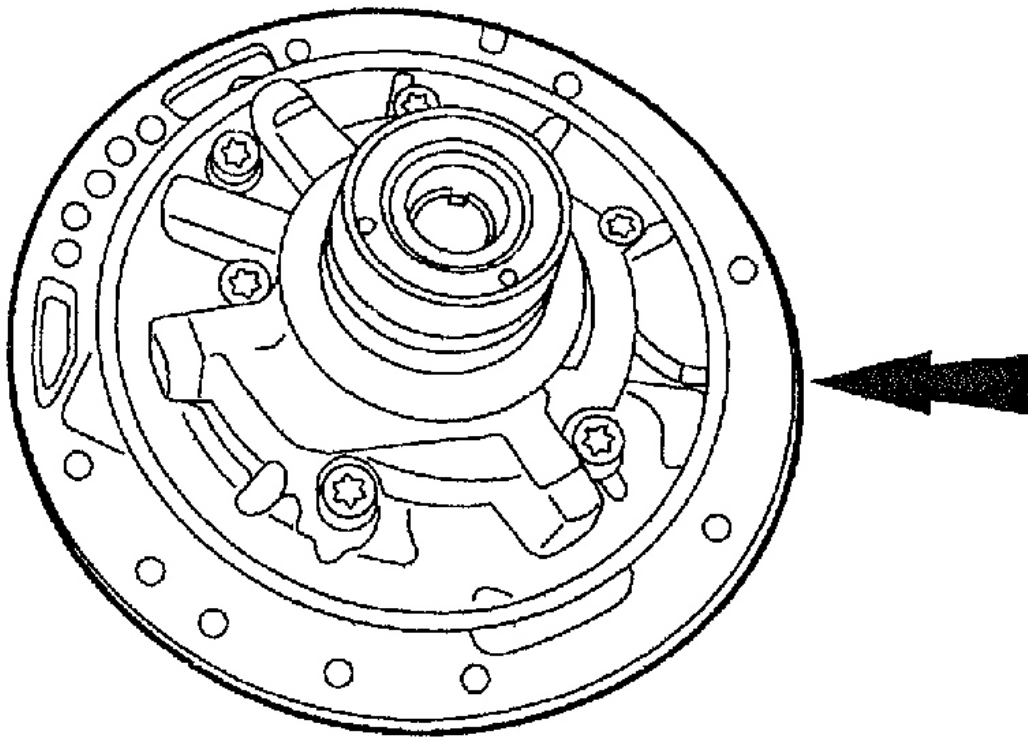
14. Tighten all of the fluid pump screws in a star pattern.



G01672254

Fig. 122: Tightening Fluid Pump Screws

15. Install a new fluid pump seal ring.

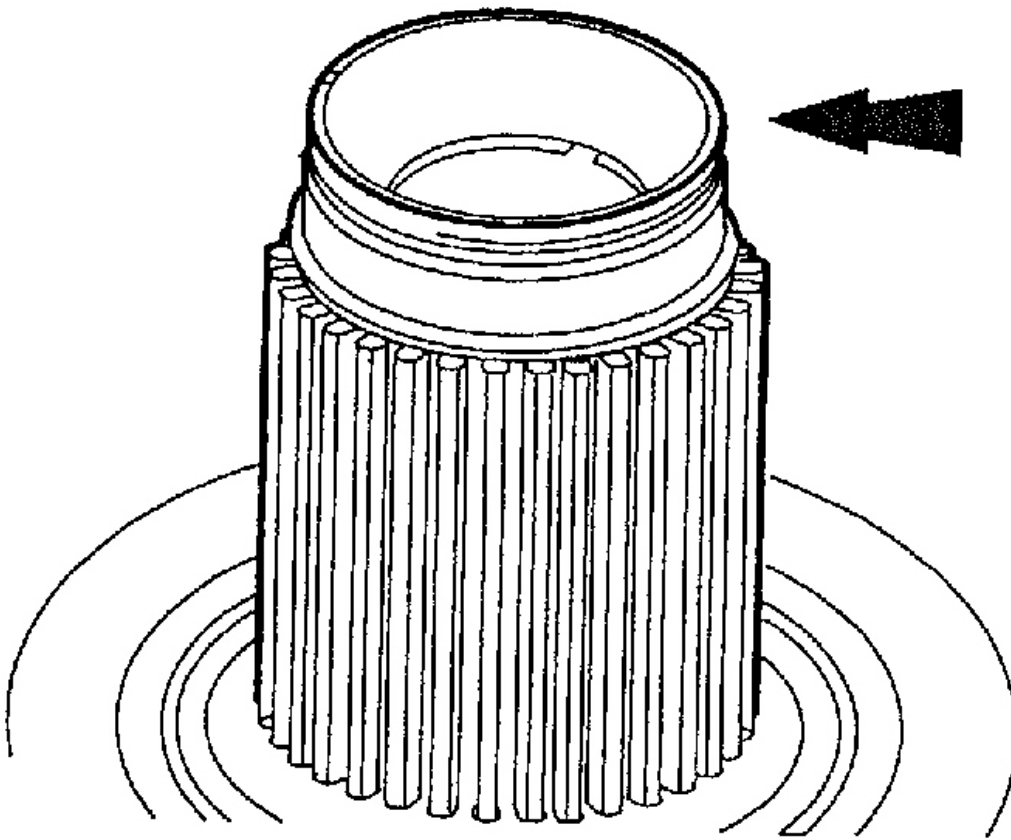


G01672255

Fig. 123: Installing Fluid Pump Sealing Ring

CAUTION: Verify correct seal installation. Make sure seal grooves are clean and free of burrs.

16. Install the seal.



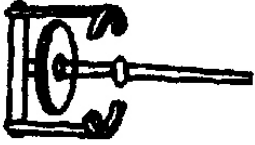
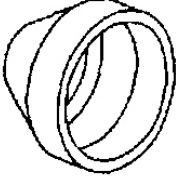
G01672256

Fig. 124: Install Seal

OVERDRIVE BRAKE AND COAST CLUTCH DRUM ASSEMBLY

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

	Compressor, Clutch Spring 307-015 (T65L-77515-A)
	Protector, Piston Seal 307-049 (T74P-77404-A)

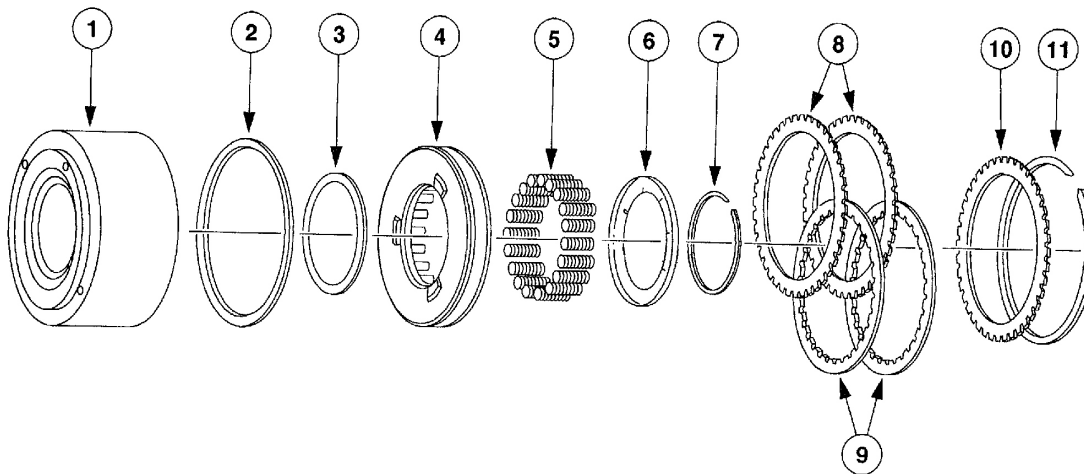
G01672257

Fig. 125: Special Tool(s)

Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM, XT-5-DM	MERCON® V

G01672258

Fig. 126: Materials



G01672259

Fig. 127: Component View Overdrive Brake and Coast Clutch Drum Assembly

Item	Part Number	Description
1	7L669	Overdrive brake and coast clutch drum
2	7A548	Direct and overdrive piston outer seal ring
3	7D404	Direct and overdrive piston inner seal ring
4	7A262	Direct and overdrive clutch piston
5	7A480	Direct and overdrive piston spring (20 req'd)

G01672260

Fig. 128: Component View Overdrive Brake and Coast Clutch Drum Assembly Legend (Items 1-5)

2002 Ford Explorer

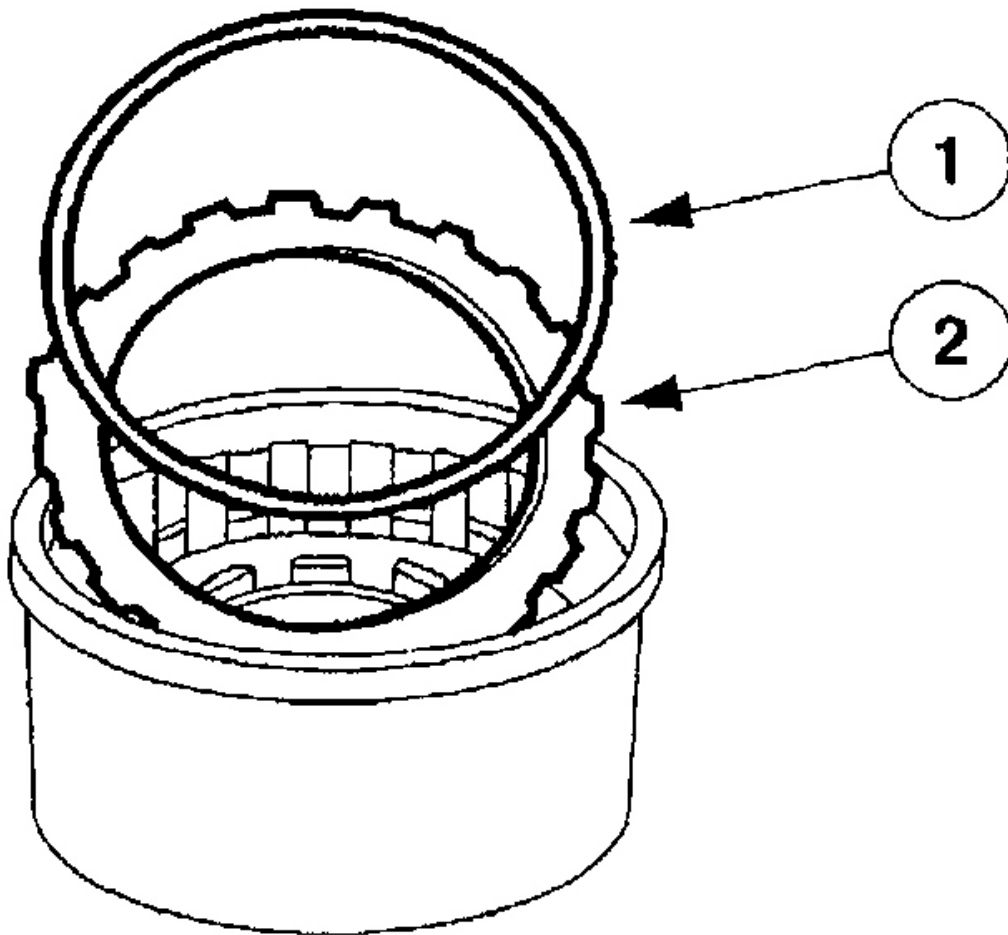
2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

Item	Part Number	Description
6	7A527	Direct/coast clutch piston spring retainer
7	E860125-S	Retaining ring
8	7B442	Coast clutch external plate — steel (2 req'd)
9	7B164	Coast clutch internal plate — friction (2 req'd)
10	7B066	Direct/coast clutch pressure plate
11	E860126S/129S	Retaining ring (select fit)

G01672261

Fig. 129: Component View Overdrive Brake and Coast Clutch Drum Assembly Legend (Items 6-11)**Disassembly**

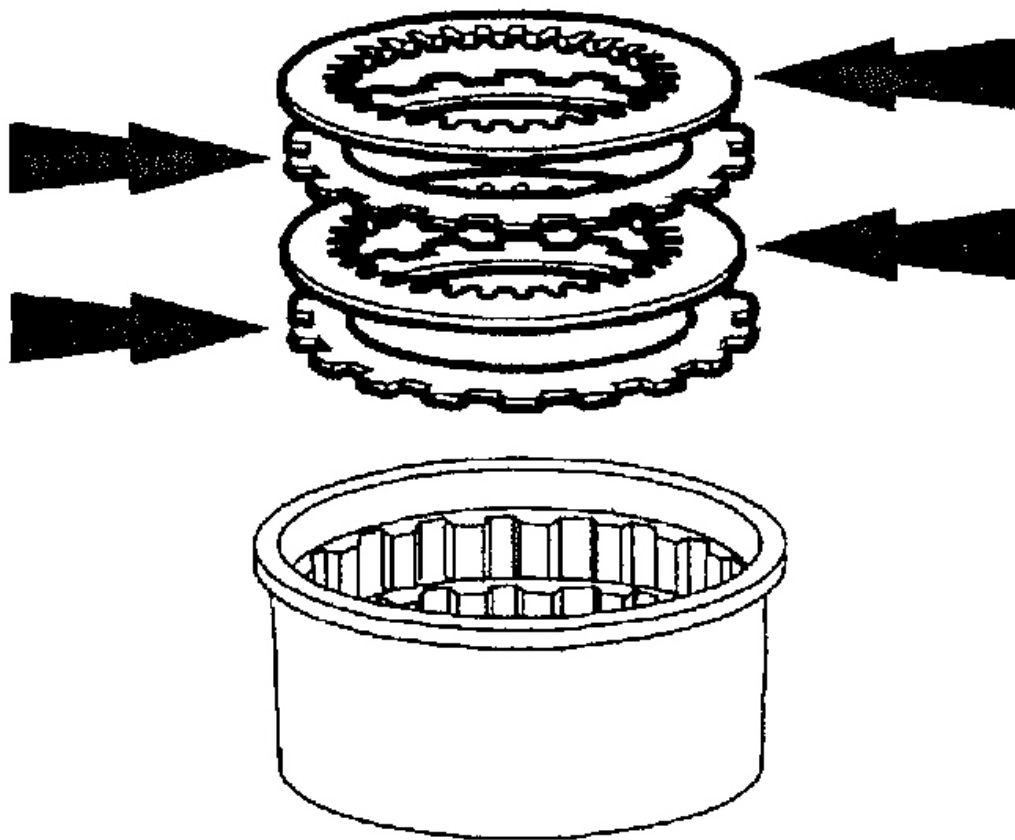
1. Remove the coast clutch pressure plate.
 1. Remove the coast clutch retaining ring.
 2. Remove the coast clutch pressure plate.



G01672262

Fig. 130: Removing Coast Clutch Pressure Plate

2. Remove the coast clutch disc pack.
 - Inspect for wear, install a new pack as necessary.



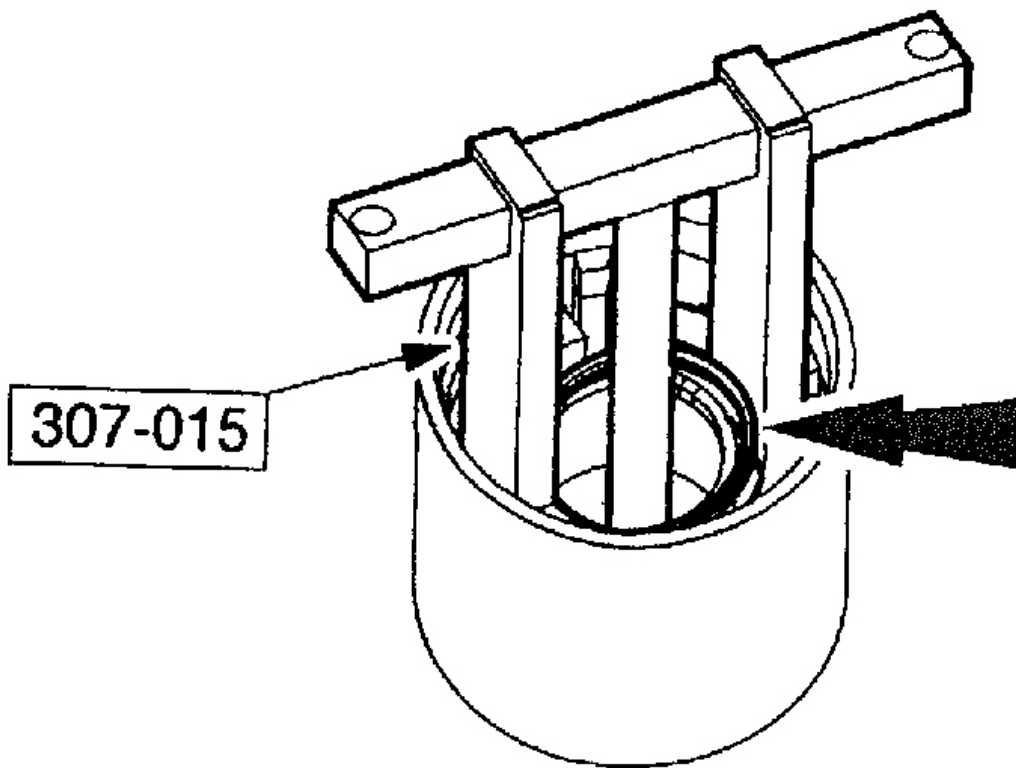
G01672263

Fig. 131: Removing Coast Clutch Disc Pack

WARNING: Use caution when releasing tool pressure on the rear clutch piston spring. Failure to follow these instructions may result in personal injury.

CAUTION: Do not fully compress the special tool or damage to the spring retainer may occur.

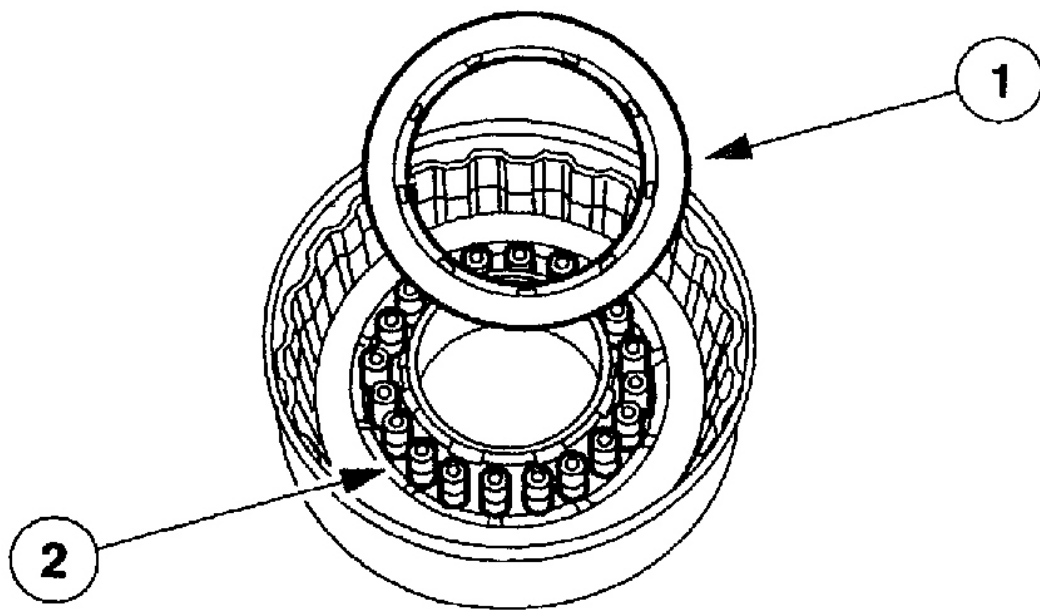
3. Using the special tool, remove the coast clutch piston retaining ring.



G01672264

Fig. 132: Removing Coast Clutch Piston Retaining Ring

4. Relieve the coast clutch spring tension and remove the special tool.
5. Remove the coast clutch piston springs.
 1. Remove the coast clutch piston retainer.
 2. Remove the clutch piston springs.

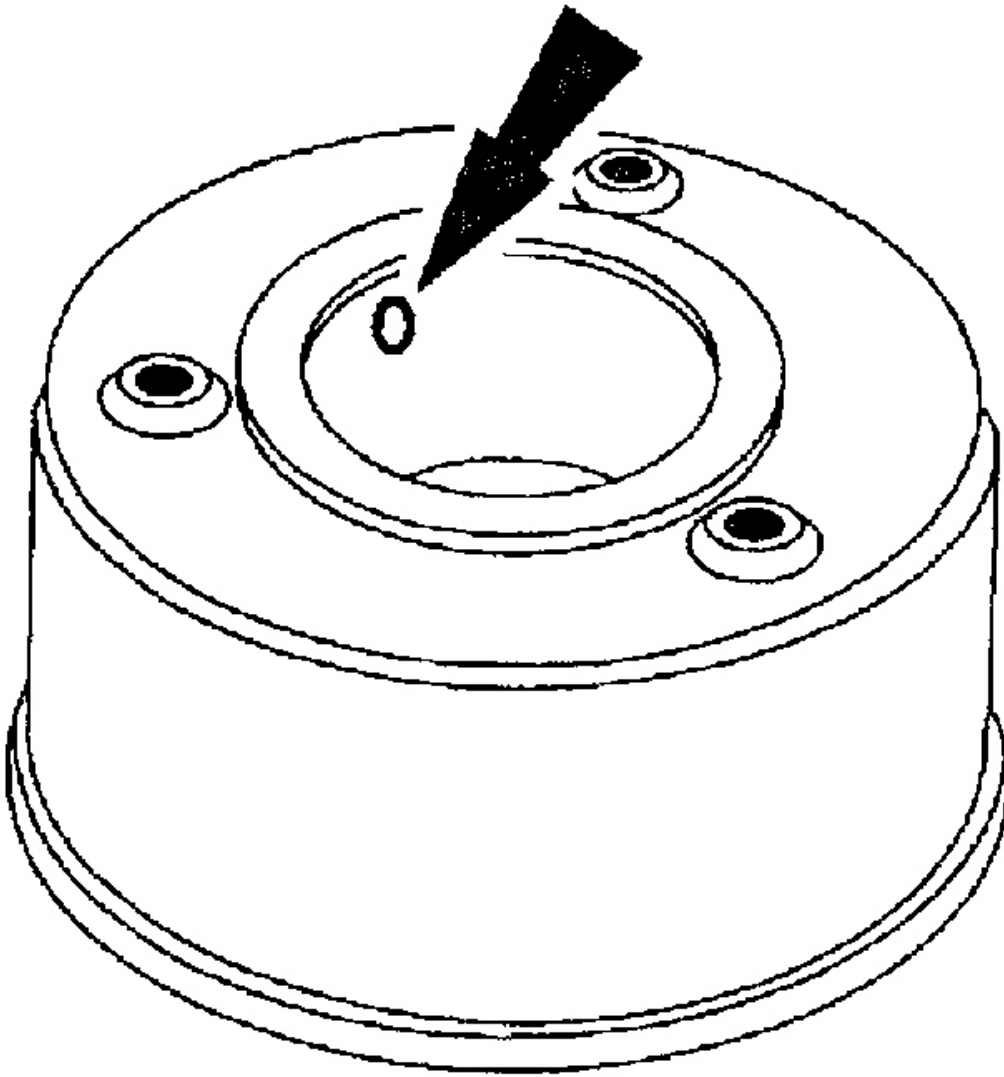


G01672265

Fig. 133: Removing Coast Clutch Piston Springs

WARNING: Air pressure must not exceed 138 kPa (20 psi). Wear safety glasses when using compressed air, and make sure the drum is facing down as shown. Failure to follow these instructions may result in personal injury.

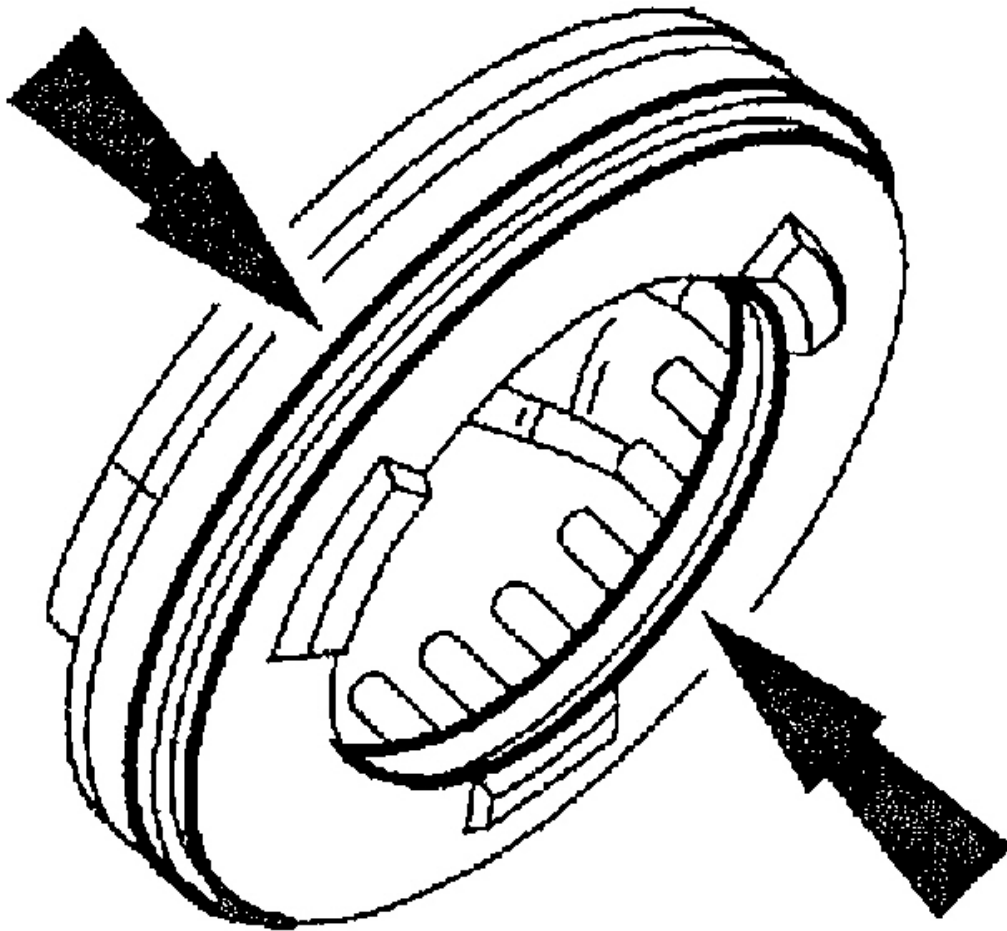
6. Remove the coast clutch piston.
 - Apply air pressure to the hole in the drum to remove the coast clutch piston while blocking the other hole with a finger.



G01672266

Fig. 134: Removing Coast Clutch Piston

7. Remove the coast clutch piston inner seal and the coast clutch piston outer seal.
 - Clean and install a new seal as necessary.



G01672267

Fig. 135: Removing Coast Clutch Piston Inner & Outer Seals**Assembly**

1. Inspect the coast clutch components for damage or wear. Install new components as necessary.
 - Inspect the drum band surface, bushing, and thrust surfaces for damage.
 - Inspect the clutch piston bore, and piston.
 - Check the fluid passages for obstructions. All fluid passages must be clean and free of obstructions.
 - Inspect the clutch plates for damage.
 - Inspect the clutch springs.

CAUTION: The lip seals must be positioned as shown. Care must be taken to prevent rollover of the lip seal.

2. Install the new coast clutch piston inner and outer seal.

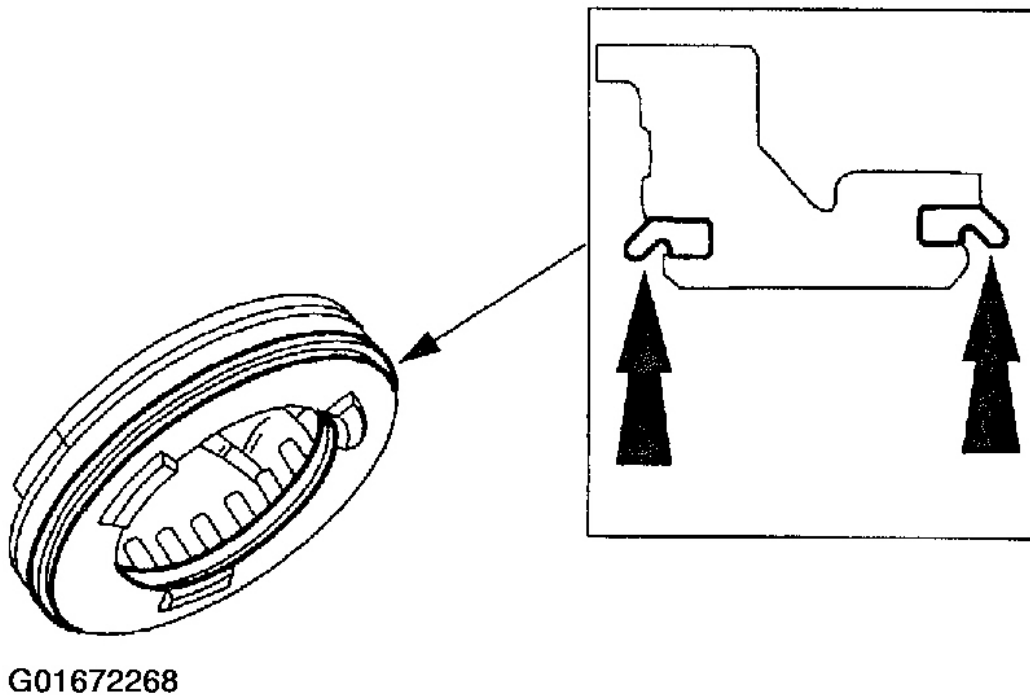
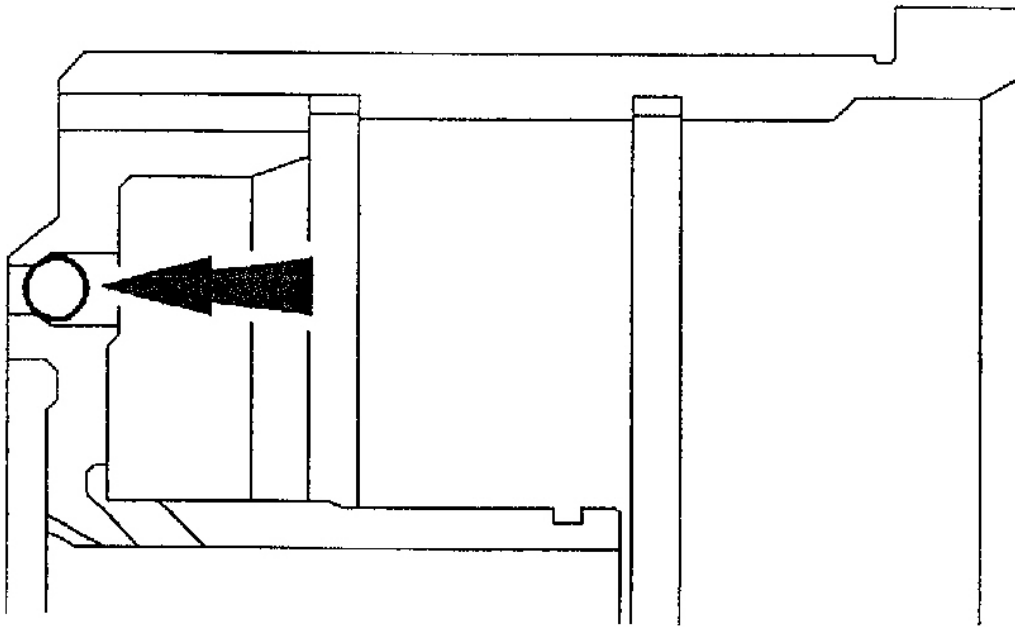


Fig. 136: Installing Coast Clutch Piston Inner & Outer Seals

3. Verify the check ball is free to move.

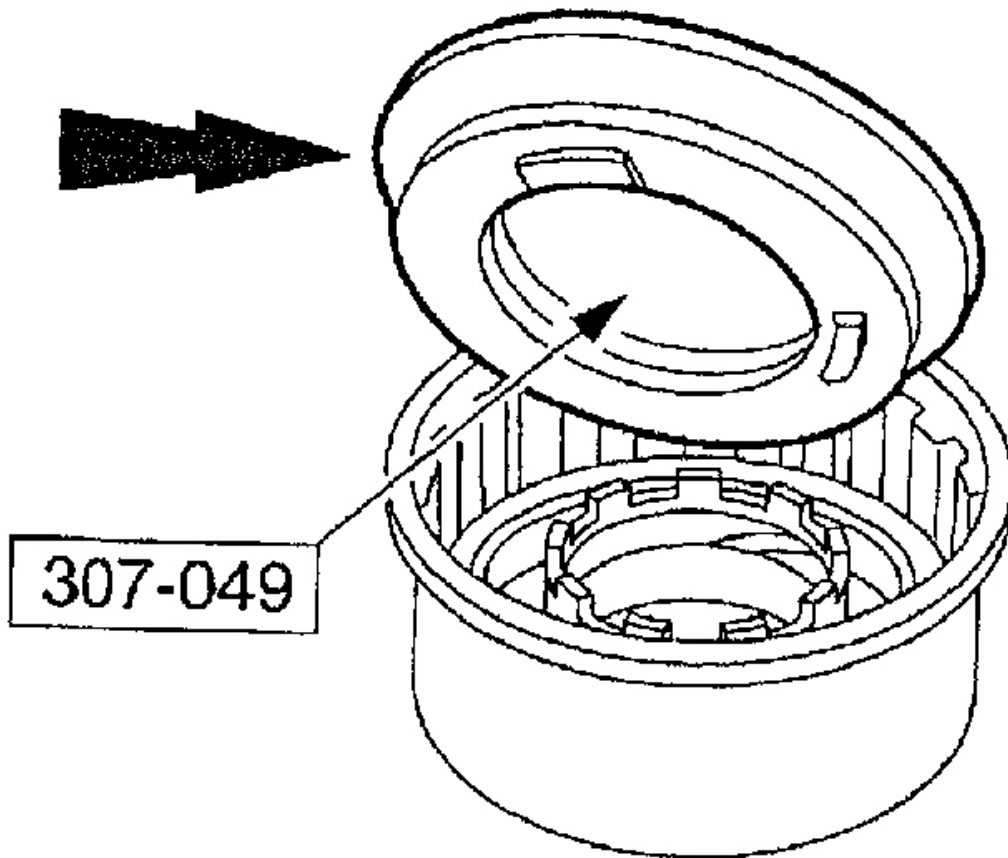


G01672269

Fig. 137: Verifying Check Ball

CAUTION: Care must be taken to prevent damage to the seals during installation.

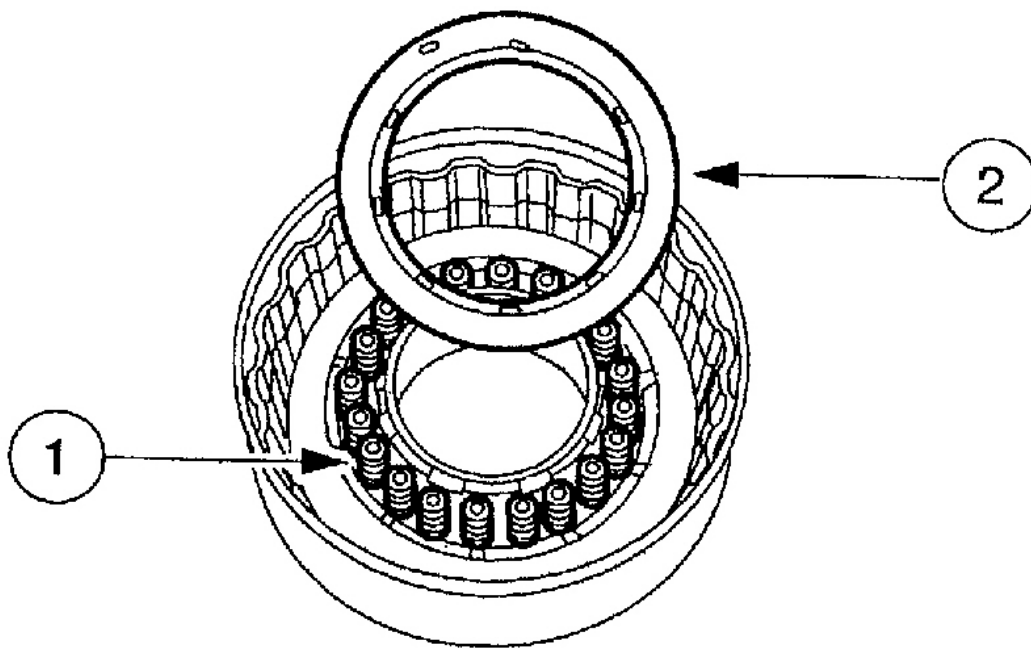
4. Using the special tool, install the coast clutch piston.



G01672270

Fig. 138: Installing Coast Clutch Piston

5. Install the coast clutch piston springs.
 1. Install the coast clutch piston springs.
 2. Install the coast clutch spring retainer.

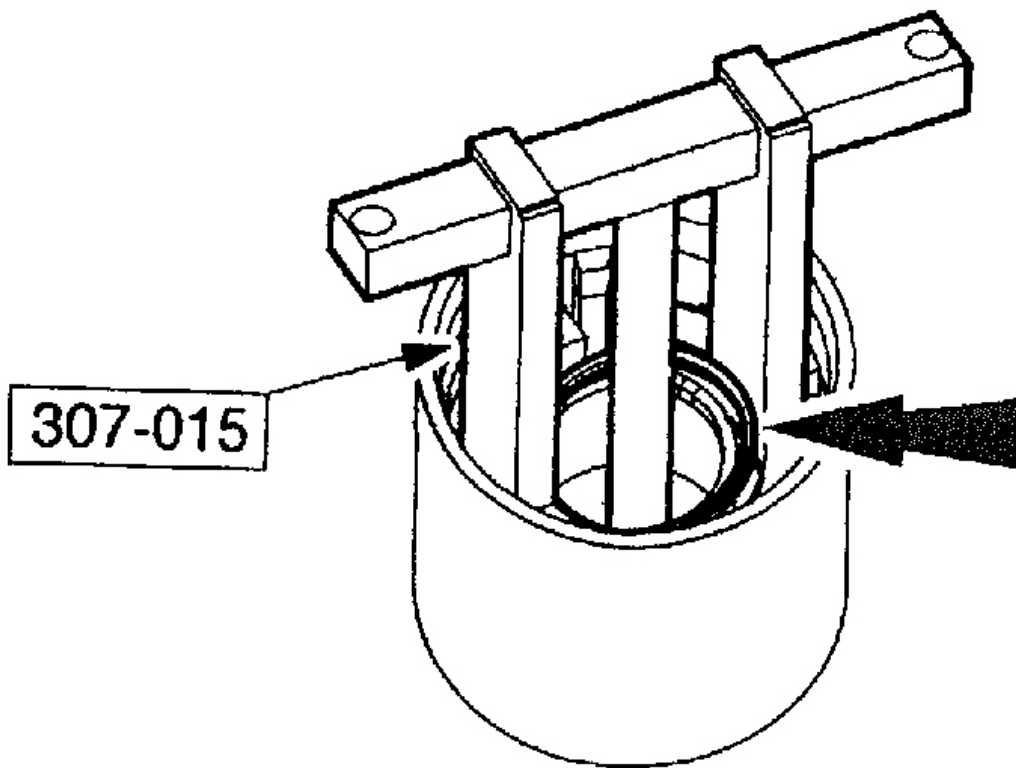


G01672271

Fig. 139: Installing Coast Clutch Piston Springs

CAUTION: Do not fully compress the special tool or damage to the coast clutch piston spring retainer may occur.

6. Using the special tool, install the coast clutch piston spring retainer ring.



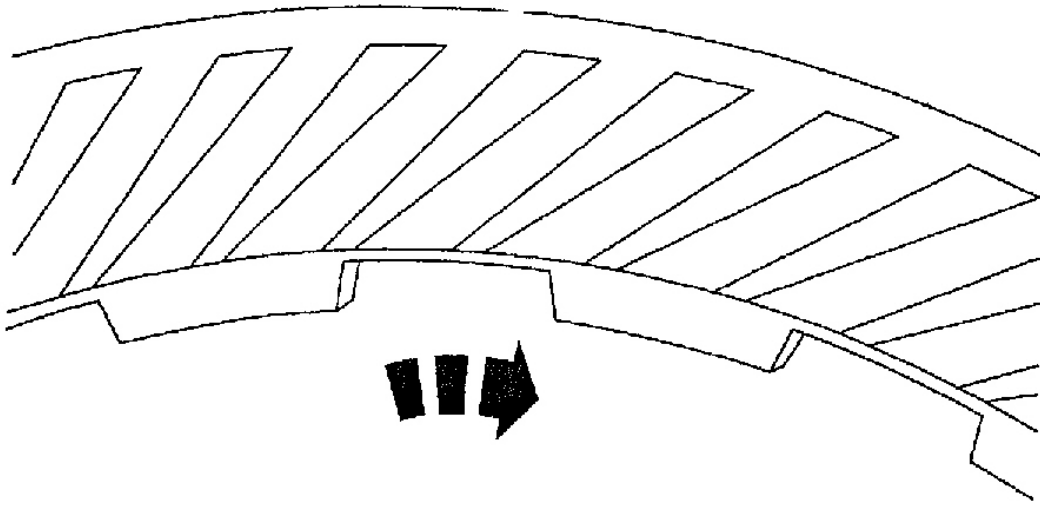
G01672272

Fig. 140: Installing Coast Clutch Piston Spring Retainer Ring

CAUTION: Coast clutch friction plates are directional and must be installed with grooves clockwise (I.D. to O.D.). The word "TOP" should face up.

CAUTION: If new clutch plates are being used, they should be soaked in clean automatic transmission fluid for at least 30 minutes before assembly.

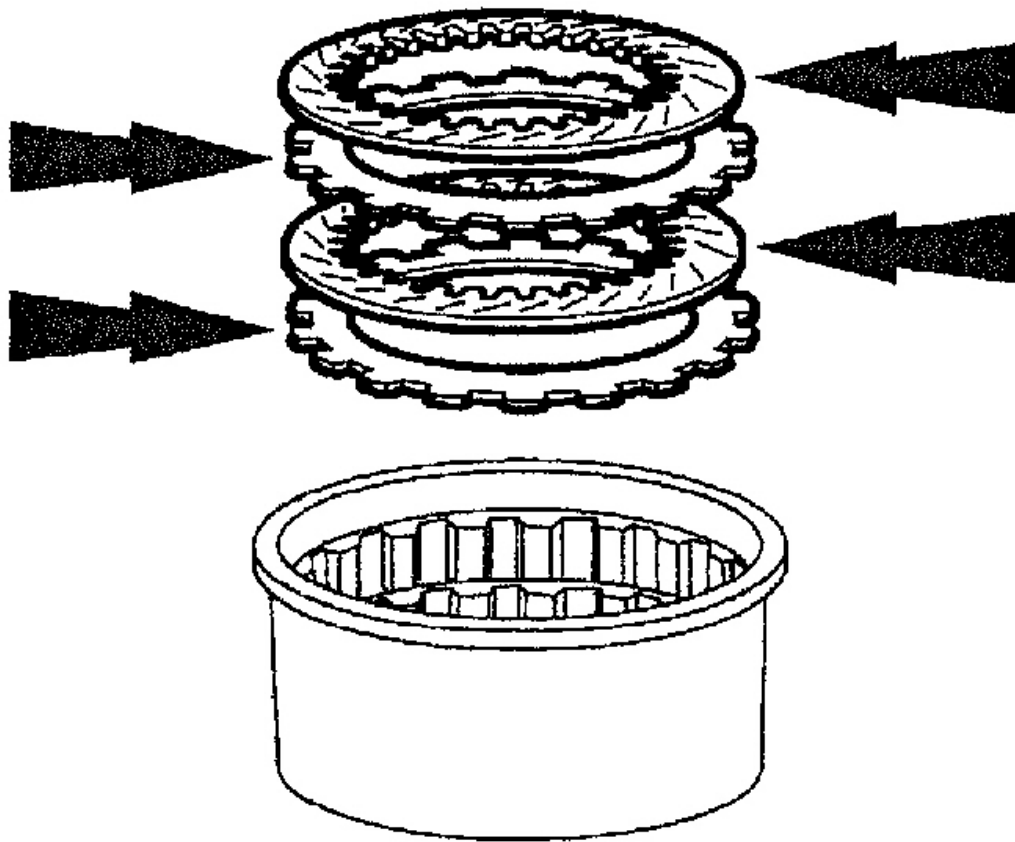
7. When installing friction plates, the word "TOP" should face up. If reusing plates, grooves must be installed clockwise. Install the coast clutch disc pack.



G01672273

Fig. 141: Installing Coast Clutch Disc Pack

8. Install the two steel clutch plates and two friction clutch plates in alternating order starting with a steel clutch plate.

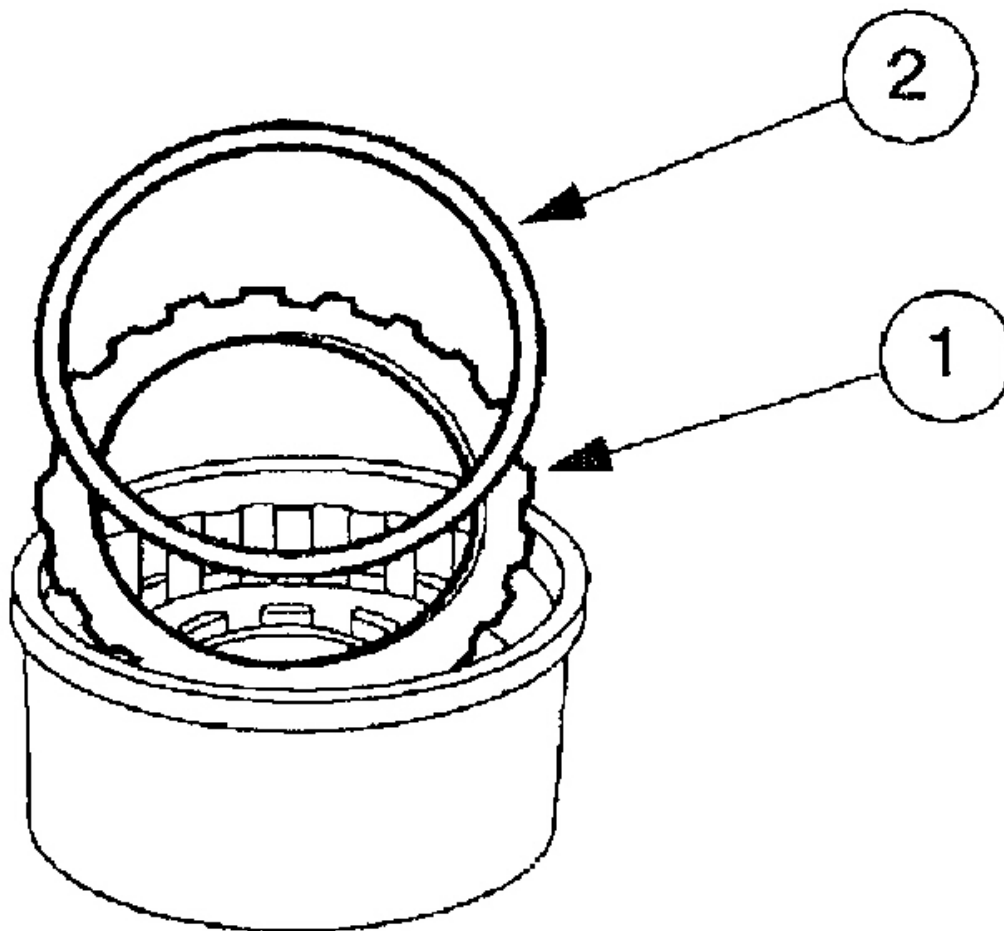


G01672274

Fig. 142: Clutch Disc Pack Sequence

CAUTION: The retaining ring is select fit.

9. Install the coast clutch pressure plate.
 1. Install the coast clutch pressure plate.
 2. Install the original coast clutch retaining ring.

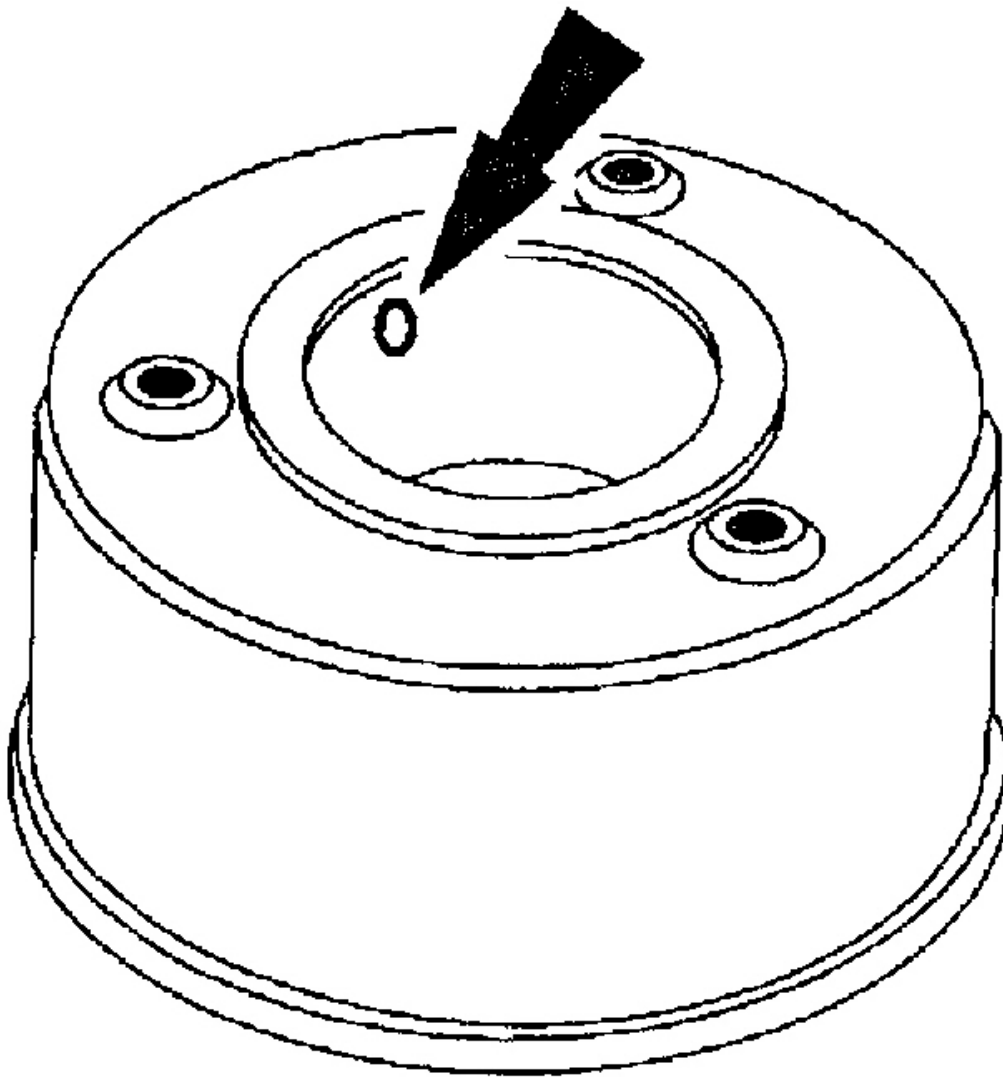


G01672275

Fig. 143: Installing Coast Clutch Pressure Plate

WARNING: Air pressure must not exceed 138 kPa (20 psi). Wear safety glasses when using compressed air, and make sure drum is facing down as shown. Failure to follow these instructions may result in personal injury.

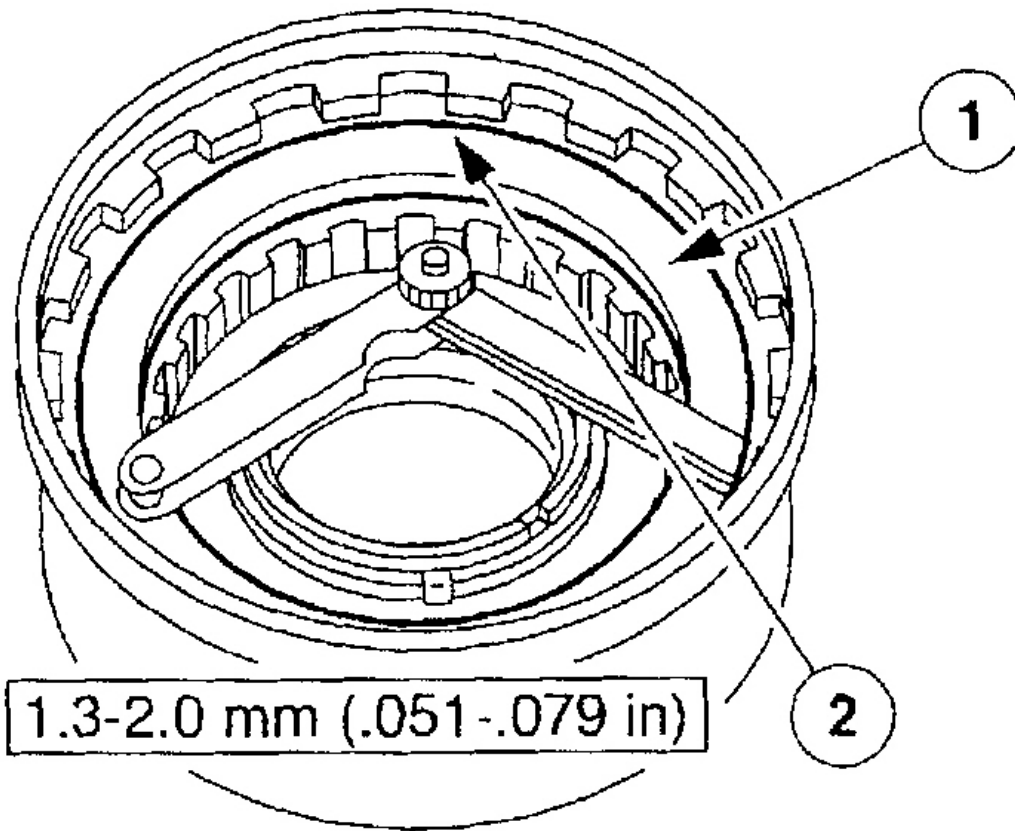
10. Air check the assembly.
 - Apply air pressure to the hole in the drum while blocking the other hole with a finger.



G01672276

Fig. 144: Air Checking Clutch Assembly

11. Check the coast clutch disc pack free play.
 1. Push down on the coast pressure plate.
 2. Check clearance between the coast clutch retaining ring and coast pressure plate. Clearance should be 1.3-2.0 mm (.051-.079 in). If clearance is not within the specification, install a correct coast clutch retaining ring that will provide the correct free play adjustment.



G01672277

Fig. 145: Checking Coast Clutch Disc Pack Free Play

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

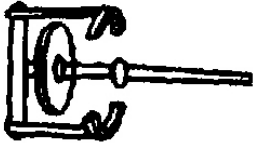
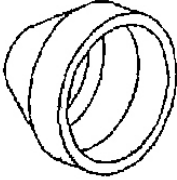
Part Number	Thickness		Diameter	
	mm	In	mm	In
E860126-S	1.37	.0539	130.1	5.122
E860127-S	1.73	.0681	130.1	5.122
E860128-S	2.08	.0819	130.1	5.122
E860129-S	2.44	.0961	130.1	5.122

G01672278

Fig. 146: Clutch Pack Retaining Ring Thickness Table**DIRECT CLUTCH DRUM ASSEMBLY**

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

	Compressor, Clutch Spring 307-015 (T65L-77515-A)
	Protector, Piston Seal 307-049 (T74P-77404-A)

G01672279

Fig. 147: Special Tool(s)

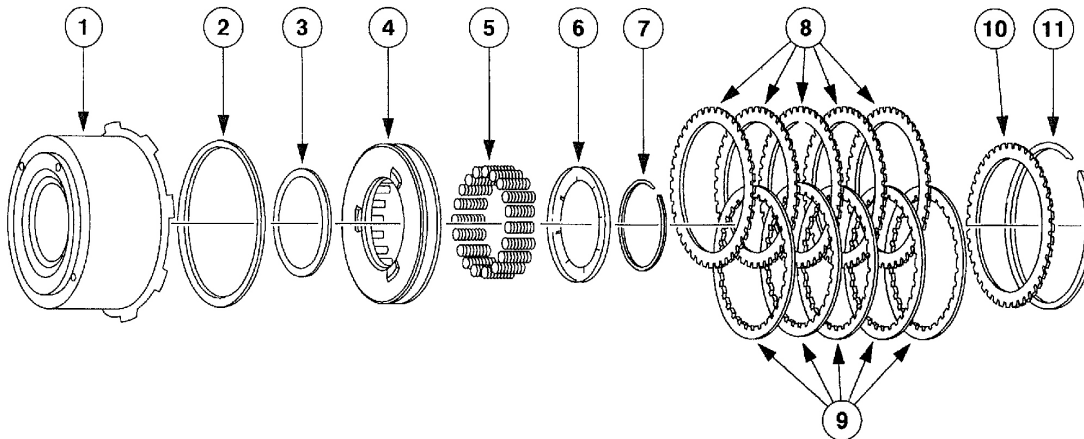
Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM, XT-5-DM	MERCON® V

G01672280

Fig. 148: Materials

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul



G01672281

Fig. 149: Direct Clutch Drum Assembly Component View

Item	Part Number	Description
1	7D044	Intermediate brake drum assembly
2	7A548	Direct and overdrive piston outer seal ring
3	7D404	Direct and overdrive piston inner seal ring
4	7A262	Direct and overdrive clutch piston
5	7A480	Direct and overdrive piston spring (20 req'd)

G01672282

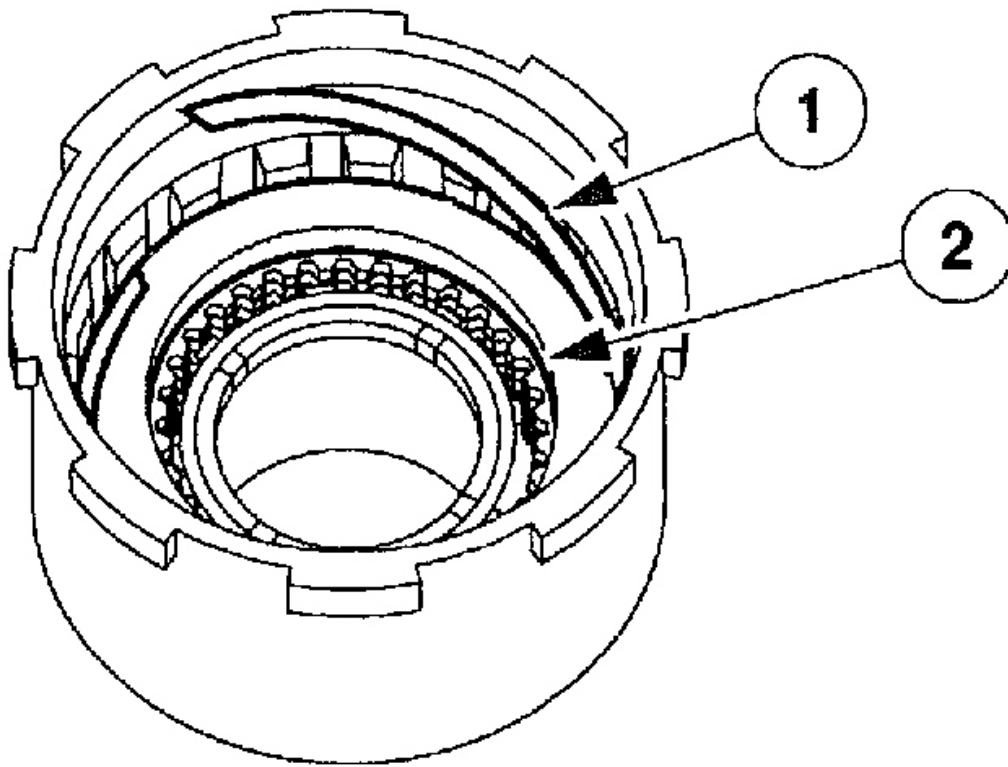
Fig. 150: Direct Clutch Drum Assembly Component View Legend (Items 1-5)

Item	Part Number	Description
6	7A527	Direct/coast clutch piston spring retainer
7	E860125-S	Retaining ring
8	7B442	Direct clutch external spline plate
9	7B164	Direct clutch internal spline plate
10	7B066	Direct/coast clutch pressure plate
11	E860126S/129S	Retaining ring (select fit)

G01672283

Fig. 151: Direct Clutch Drum Assembly Component View Legend (Items 6-11)**Disassembly**

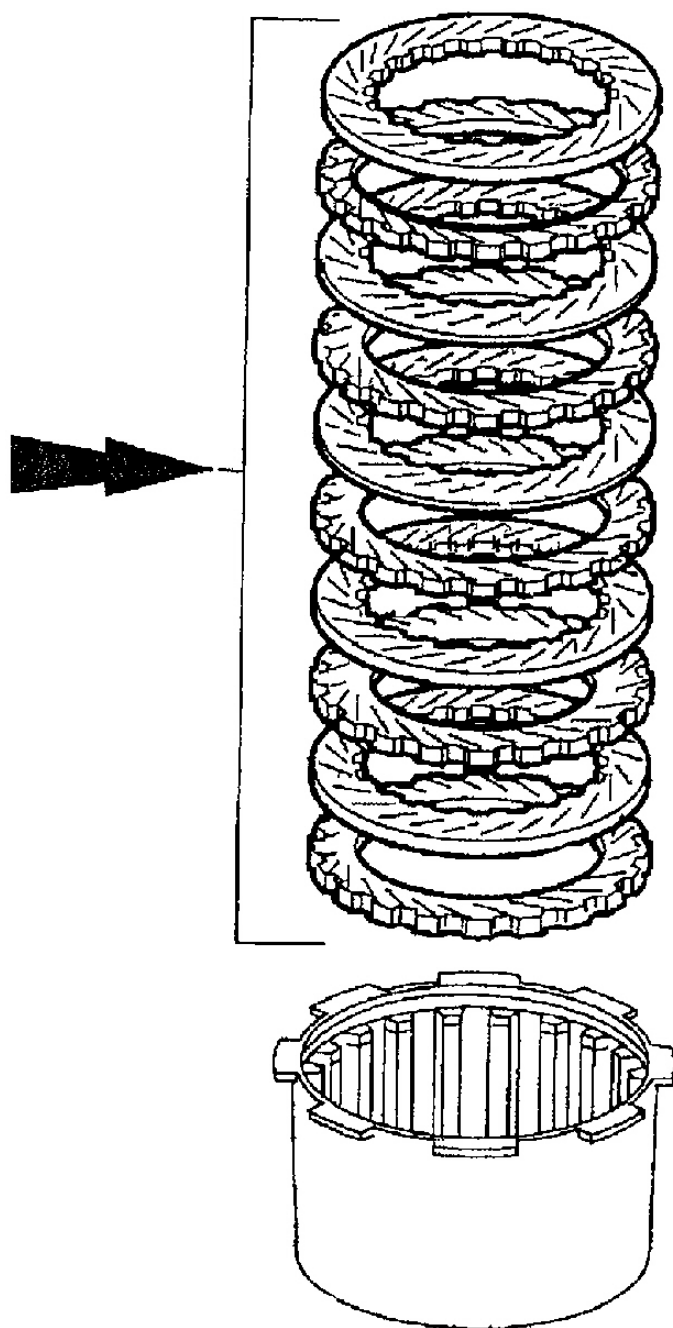
1. Remove the direct clutch retaining ring and the direct clutch pressure plate.
 1. Remove the direct clutch retaining ring.
 2. Remove the direct clutch pressure plate.



G01672284

Fig. 152: Removing Direct Clutch Retaining Ring

2. Remove the direct clutch disc pack.
 - Inspect and install new friction plates if worn, damaged, or overheated.



G01672285

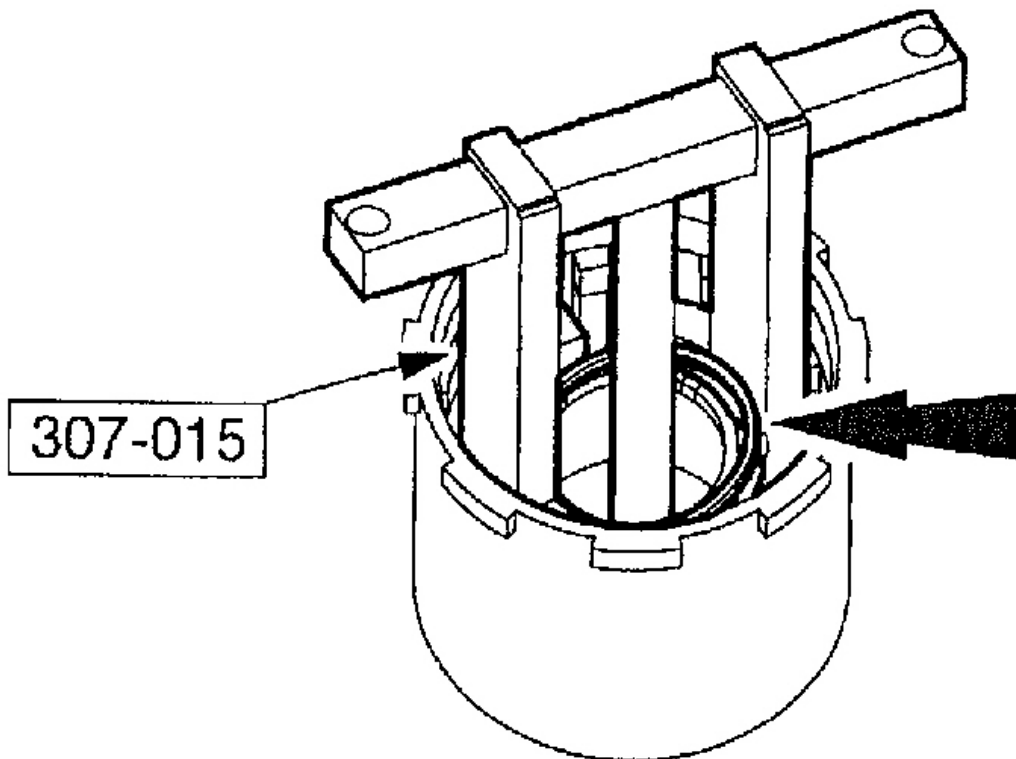
Fig. 153: Removing Direct Clutch Disc Pack

WARNING: After removing the retaining ring, use care when releasing the pressure on the springs. Failure to follow these instructions may

result in personal injury.

CAUTION: Do not fully compress the special tool or damage to the spring retainer may occur.

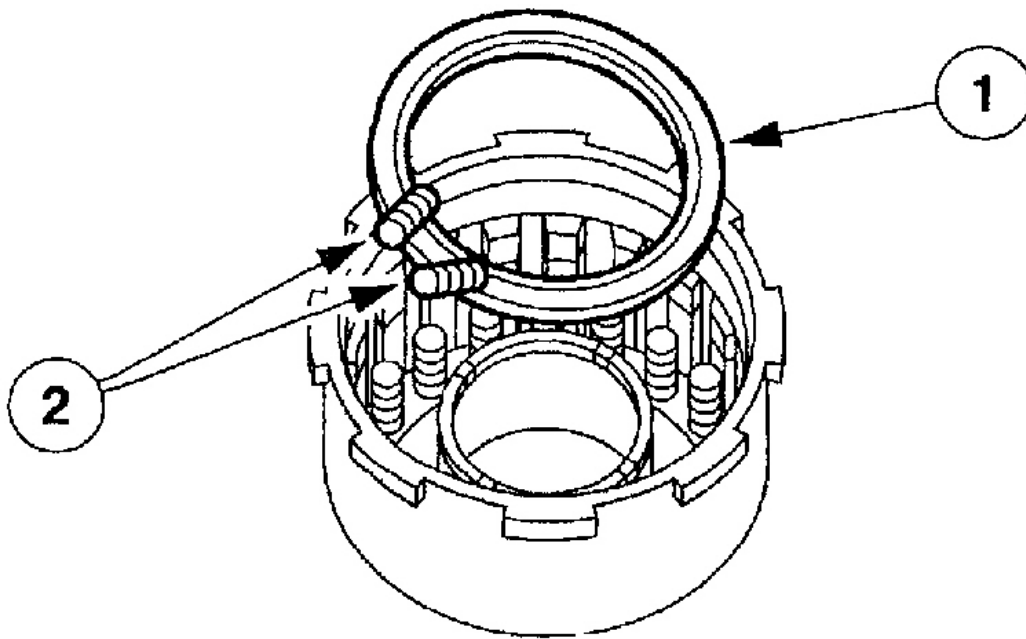
3. Using the special tool, remove the direct clutch piston retaining ring.



G01672286

Fig. 154: Removing Direct Clutch Piston Retaining Ring

4. Relieve the direct clutch spring tension and remove the special tool.
5. Remove the direct clutch piston spring retainer and the direct clutch piston springs.
 1. Remove the direct clutch piston spring retainer.
 2. Remove the direct clutch piston springs.

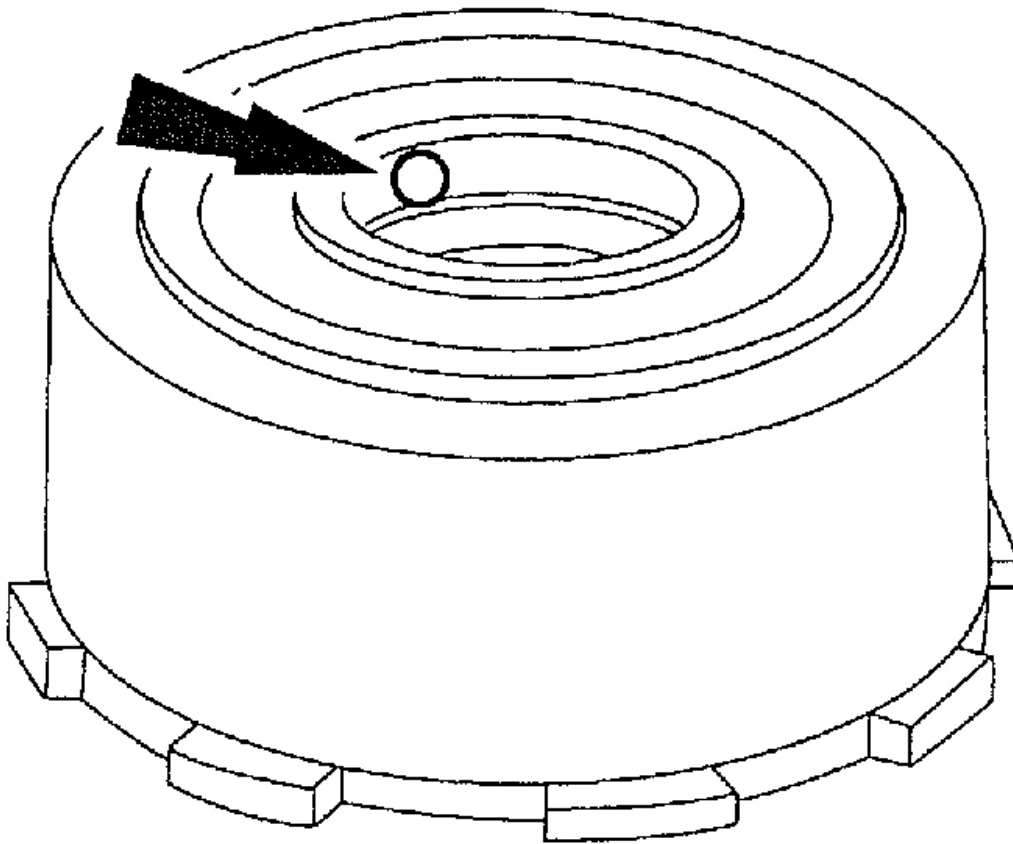


G01672287

Fig. 155: Removing Direct Clutch Piston Spring Retainer & Springs

WARNING: Air pressure must not exceed 138 kPa (20 psi). Wear safety glasses when using compressed air, and make sure the drum is facing down as shown. Failure to follow these instructions may result in personal injury.

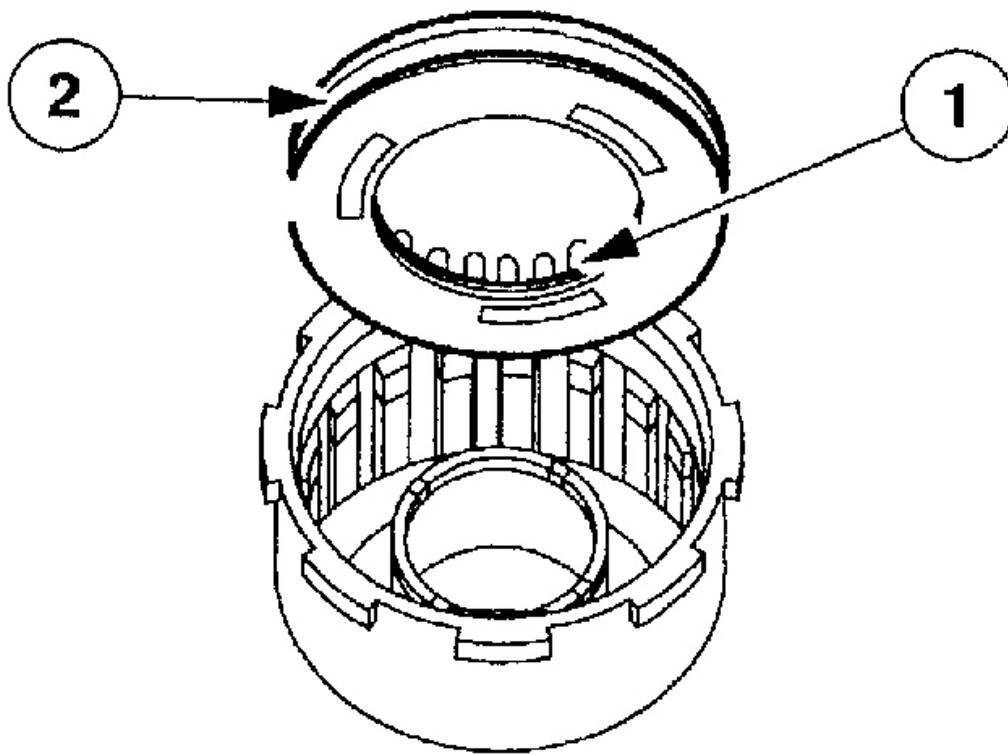
6. Using compressed air, remove the direct clutch piston from the direct clutch drum.
 - Apply air pressure to the hole in the drum while blocking the other hole with a finger.



G01672288

Fig. 156: Removing Direct Clutch Piston

7. Remove the direct clutch piston inner and outer seal.
 1. Remove the direct clutch piston inner seal.
 2. Remove the direct clutch piston outer seal.
 - Clean and install new components as necessary.



G01672289

Fig. 157: Removing Direct Clutch Piston Inner & Outer Seals**Assembly**

1. Inspect the clutch components for damage or wear. Install new components as necessary.
 - Inspect the drum surface for damage.
 - Inspect the clutch piston bore, and piston.
 - Check the fluid passages for obstructions. All fluid passages must be clean and free of obstructions.
 - Inspect the clutch plates for damage.
 - Inspect the clutch springs.

CAUTION: The lip seals must be positioned as shown. Care must be taken to prevent rollover of the lip seal.

NOTE: Use new seals to help prevent seal failures.

2. Install the new direct clutch piston inner seal and the direct clutch piston outer seal.

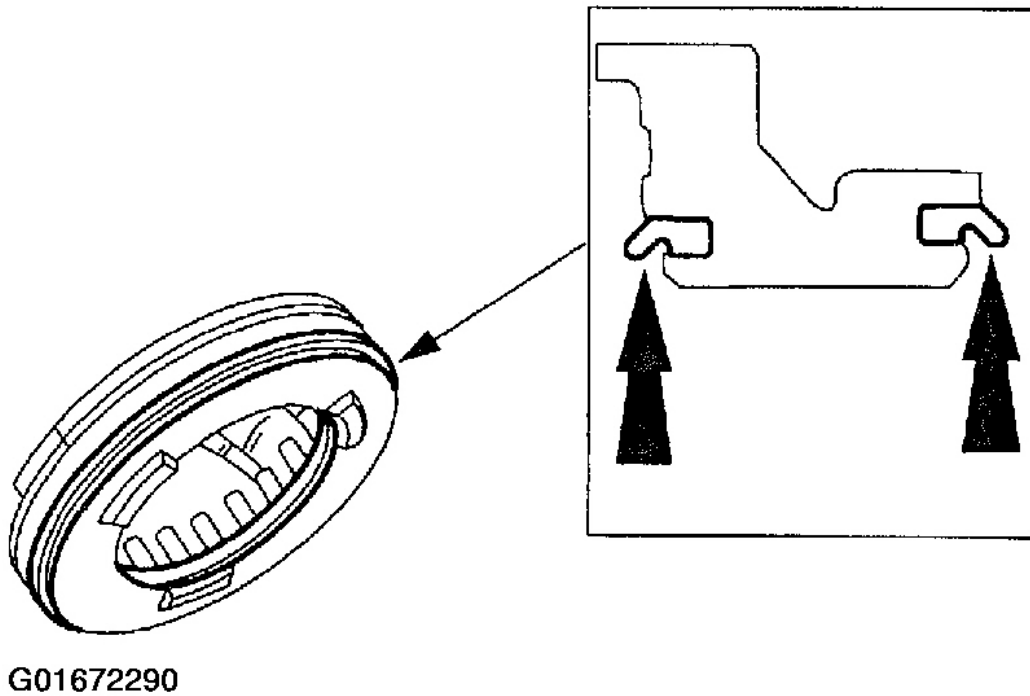
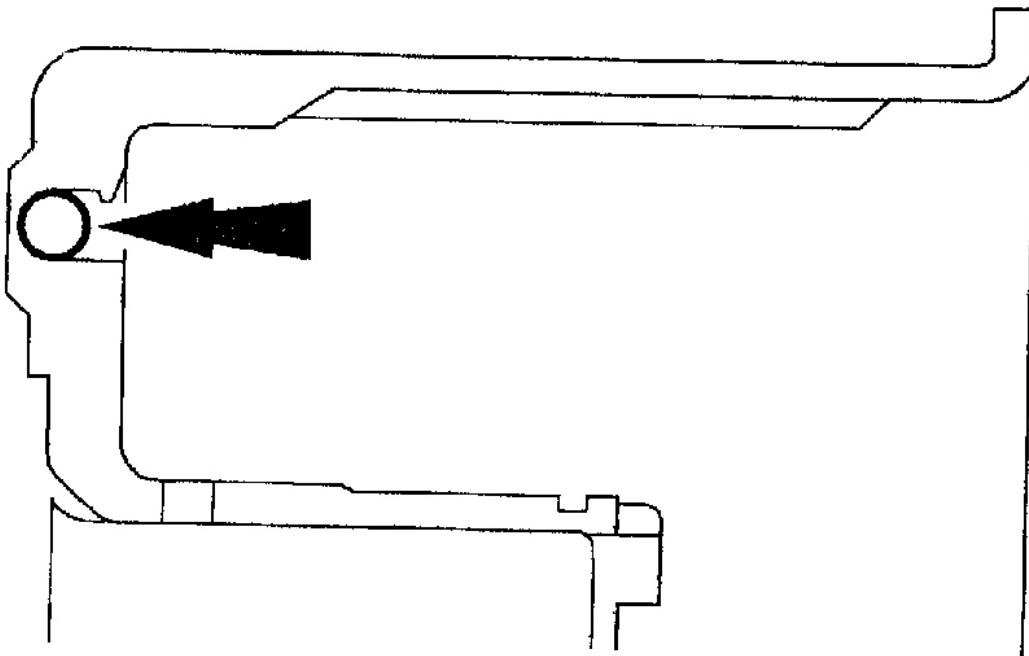


Fig. 158: Installing Direct Clutch Piston Inner & Outer Seals

3. Verify the check ball is free to move.

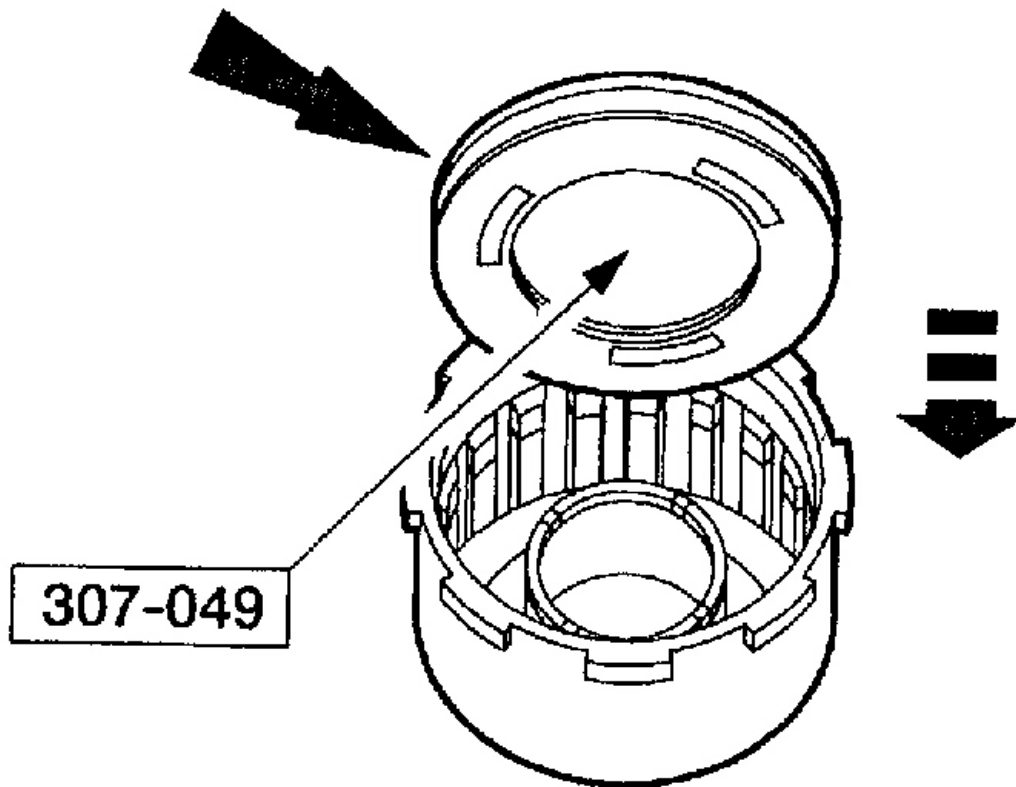


G01672291

Fig. 159: Verifying Check Ball

CAUTION: Care must be taken to prevent damage to the seals during installation.

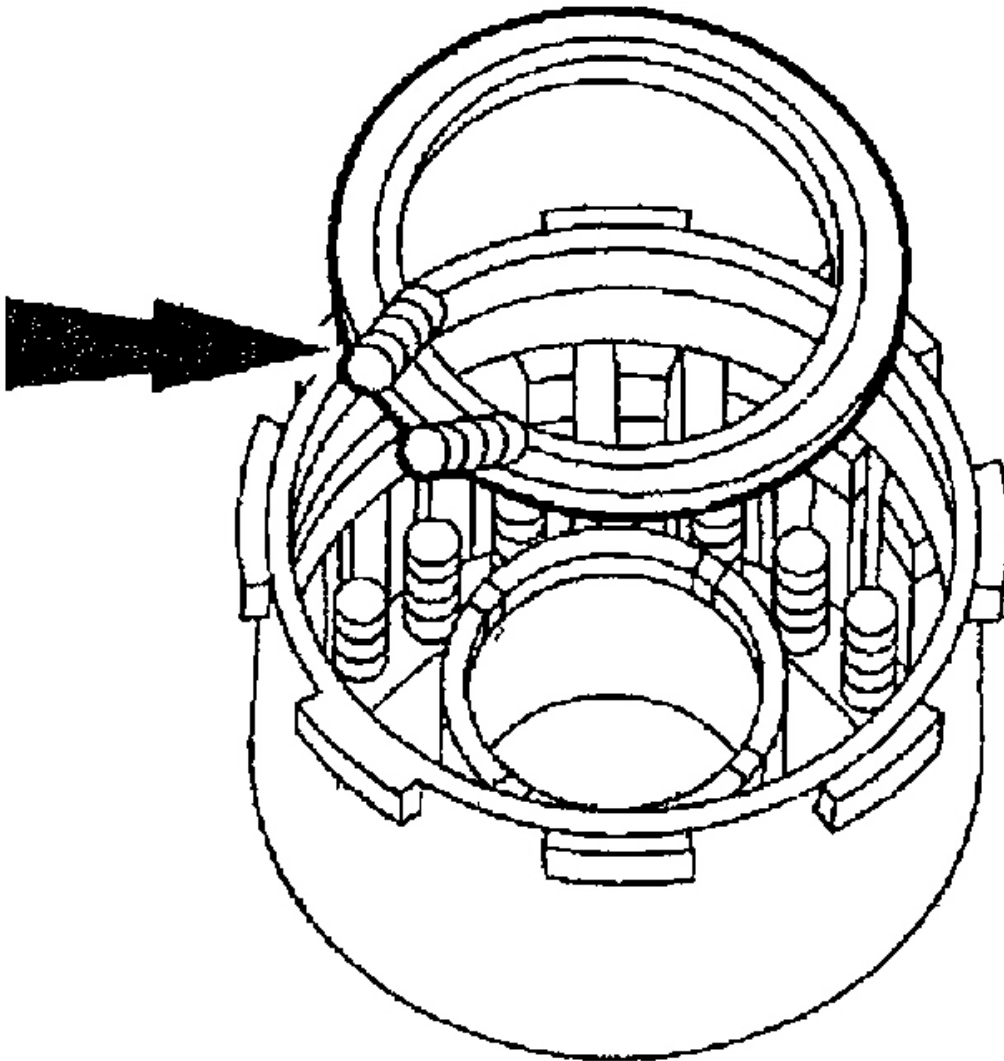
4. Using the special tool, install the direct clutch piston.



G01672292

Fig. 160: Installing Direct Clutch Piston

5. Install the direct clutch piston springs and the retainer.



G01672293

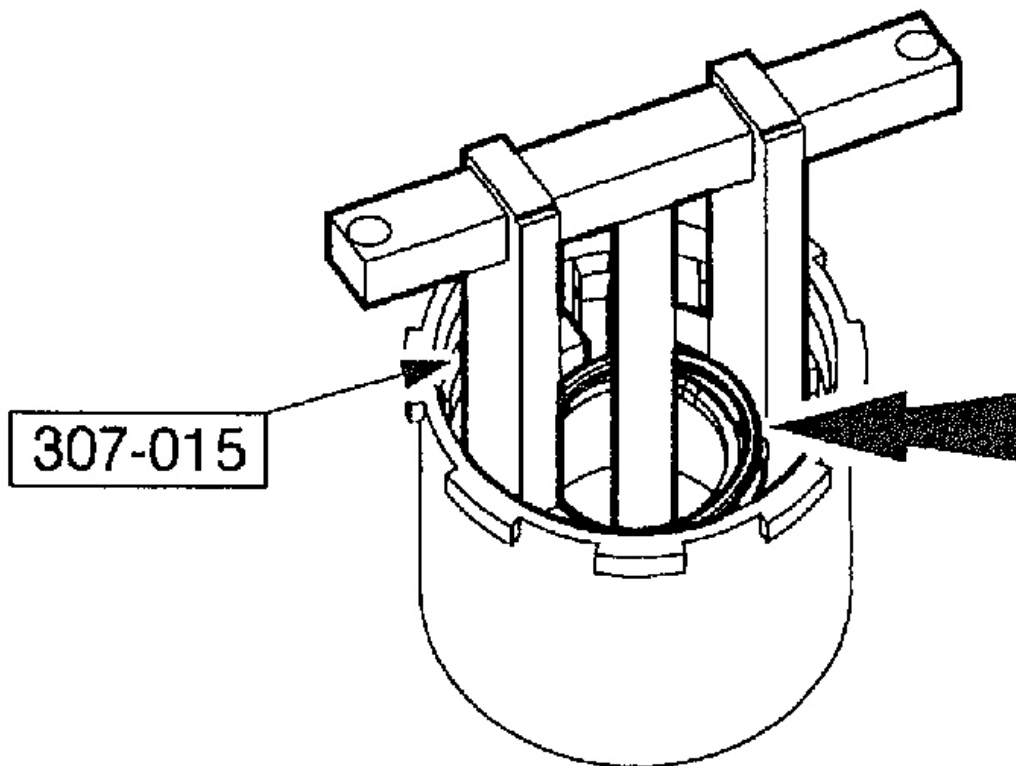
Fig. 161: Installing Direct Clutch Piston Springs & Retainer

6. Relieve the direct clutch spring tension and remove the special tool.

WARNING: After removing the retaining ring, use care when releasing the pressure on the springs. Failure to follow these instructions may result in personal injury.

CAUTION: Do not fully compress the special tool or damage to the spring retainer may occur.

7. Using the special tool, install the direct clutch piston retaining ring.



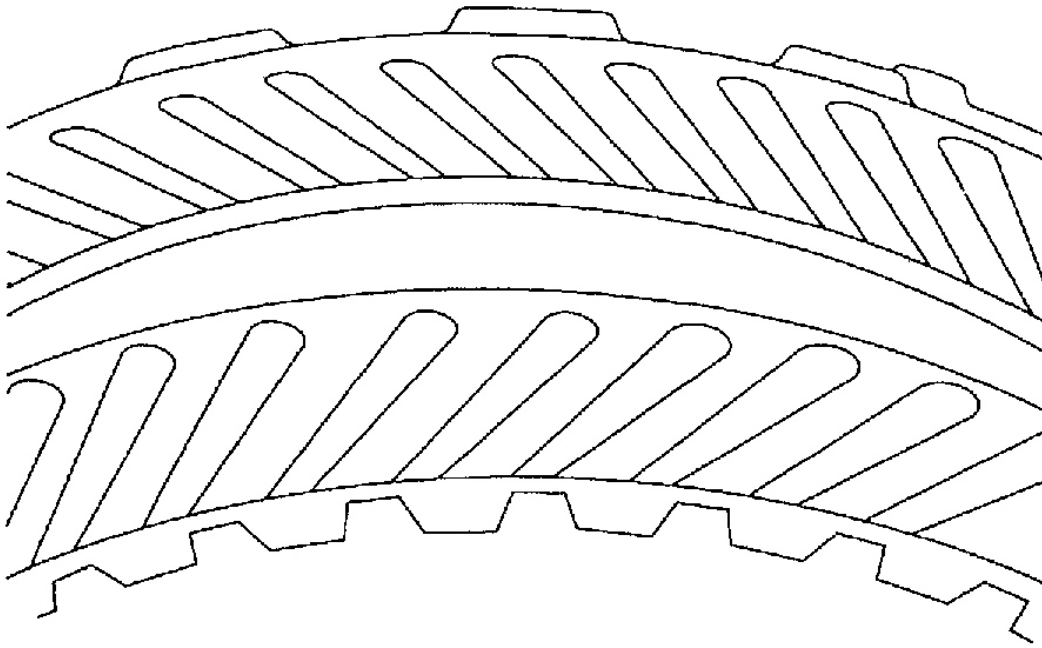
G01672294

Fig. 162: Installing Direct Clutch Piston Retaining Ring

CAUTION: The direct clutch friction plates are directional and must be installed correctly. Alternate the internally splined (clockwise) and the externally splined (counterclockwise) clutch plates.

CAUTION: If new plates are used, they should be soaked in clean automatic transmission fluid for at least 30 minutes before assembly.

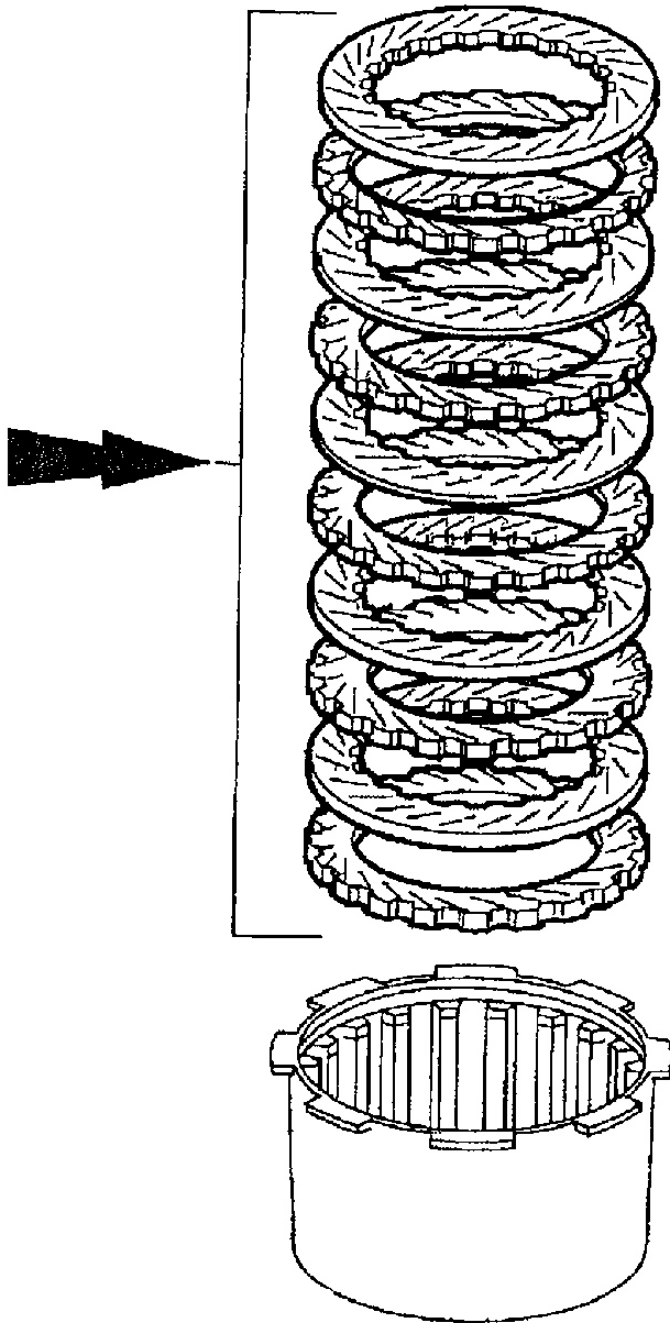
8. When installing friction plates, alternate the internally splined (clockwise) and the externally splined (counterclockwise) clutch plates. Install the direct clutch disc pack.



G01672295

Fig. 163: Identifying Direct Clutch Plate Direction

9. Install the friction plates alternating the internally splined (clockwise) and the externally splined (counterclockwise) clutch plates starting with an externally splined (counterclockwise) clutch plate.

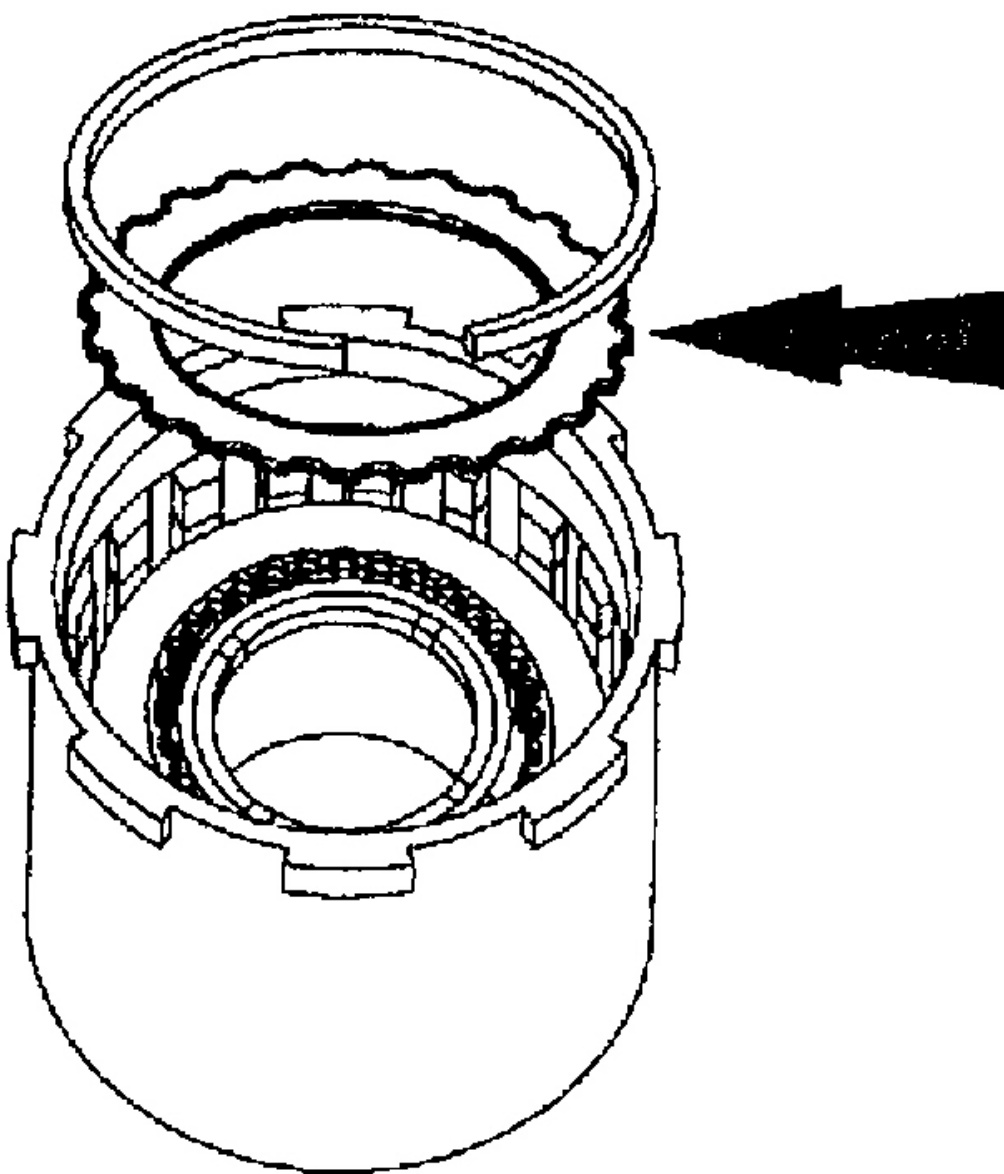


G01672296

Fig. 164: Installing Direct Clutch Pack

CAUTION: The retaining ring is a select fit.

10. Install the direct clutch pressure plate using the original direct clutch retaining ring.



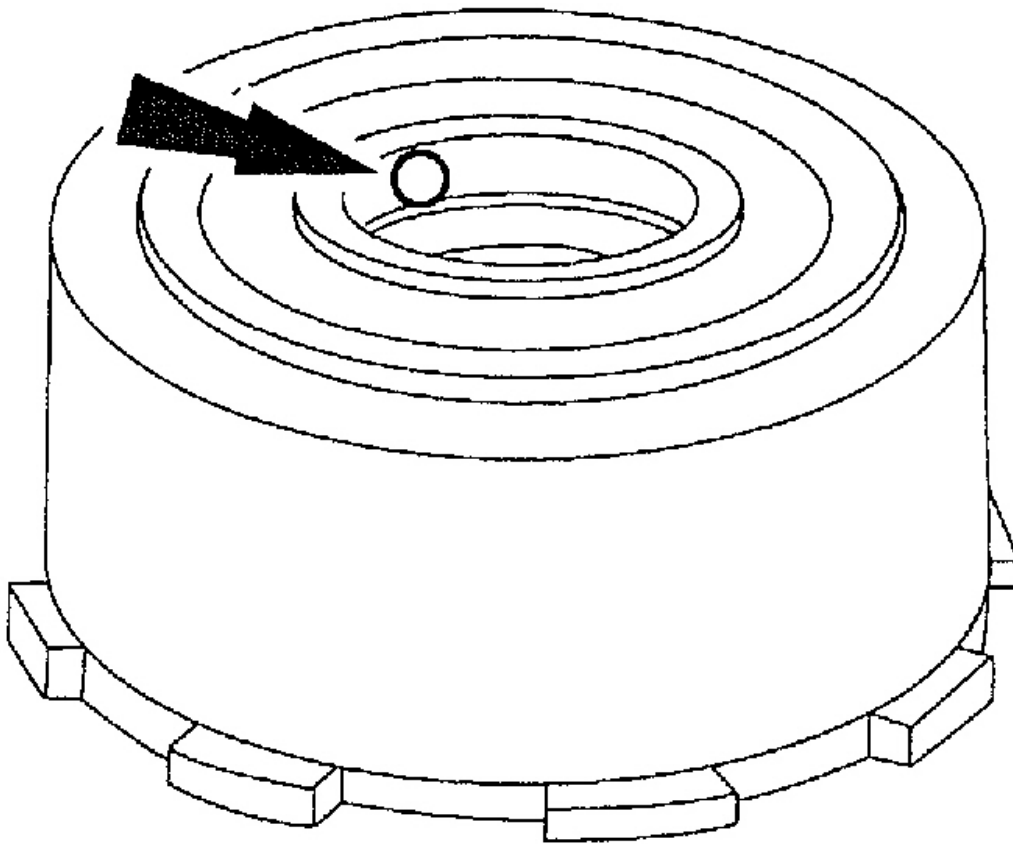
G01672297

Fig. 165: Installing Direct Clutch Pressure Plate & Retaining Ring

WARNING: Air pressure must not exceed 138 kPa (20 psi). Wear safety glasses

when using compressed air, and make sure drum is facing down as shown. Failure to follow these instructions may result in personal injury.

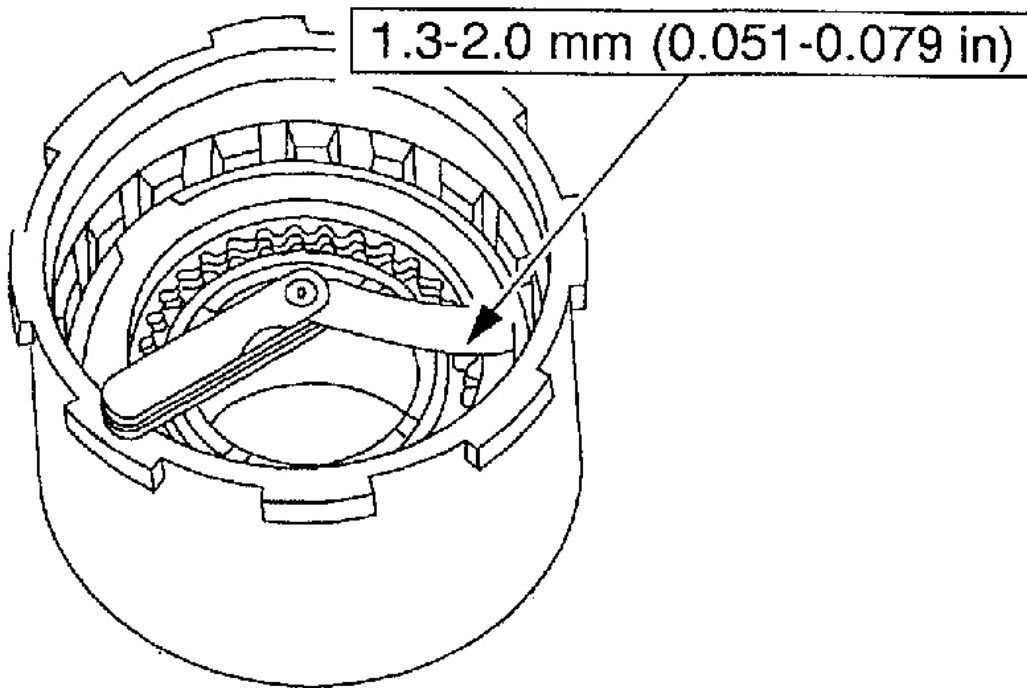
11. Air check the assembly.
 - Apply air pressure to the hole in the drum while blocking the other hole with a finger.



G01672298

Fig. 166: Air Checking Clutch Assembly

12. Push down on direct clutch disc pack and check gap between the direct clutch retaining ring and the direct clutch pressure plate with a feeler gauge.
 - If specifications do not match, use a select fit direct clutch retaining ring to match specifications and verify with a feeler gauge.



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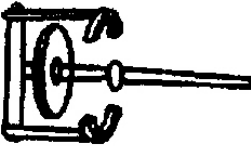
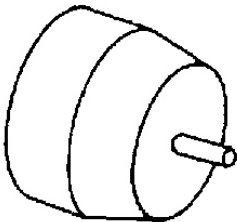
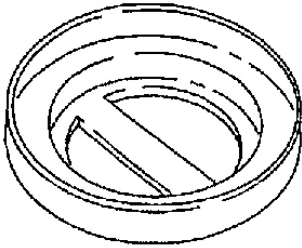
Fig. 167: Checking Direct Clutch Pack Clearance

Part Number	Thickness		Diameter	
	mm	In	mm	In
E860126-S	1.37	0.0539	130.1	5.122
E860127-S	1.73	0.0681	130.1	5.122
E860128-S	2.08	0.0819	130.1	5.122
E860129-S	2.44	0.0961	130.1	5.122

G01672300

Fig. 168: Clutch Pack Retaining Ring Thickness Table

FORWARD CLUTCH

	Compressor, Clutch Spring 307-015 (T65L-77515-A)
	Protector, Piston Seal 307-051 (T74P-77548-A)
	Bonded Piston Seal Sizer 307-434

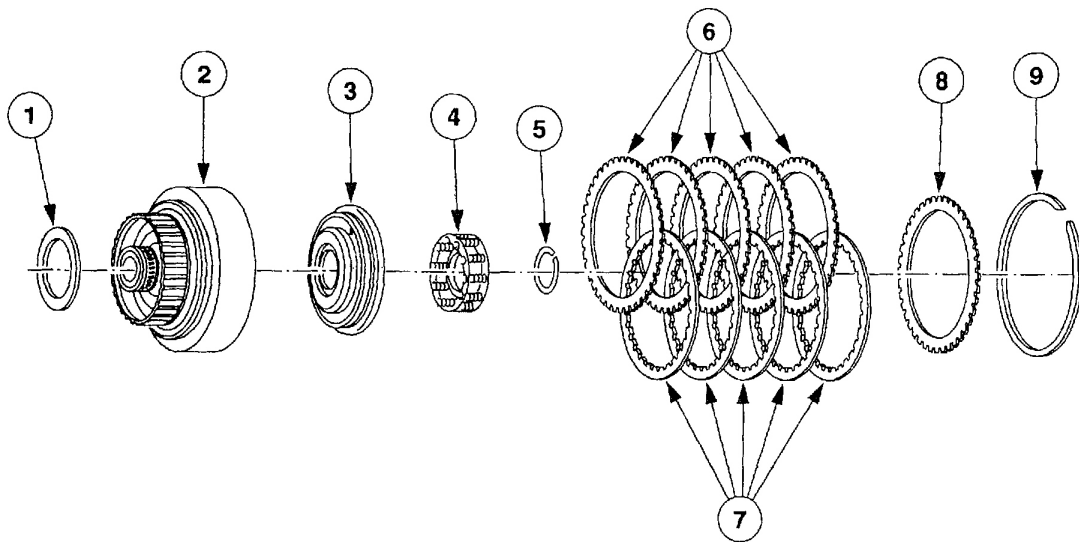
G01672301

Fig. 169: Special Tool(s)

Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM, XT-5-DM	MERCON® V

G01672302

Fig. 170: Materials



G01672303

Fig. 171: Forward Clutch Assembly Component View

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

Item	Part Number	Description
1	7M153	Forward clutch cylinder thrust bearing (No. 5)
2	7A360	Forward clutch cylinder assembly
3	7A262	Forward clutch piston
4	7G229	Forward clutch cushion spring
5	E860109-S	Forward clutch retaining ring

G01672304

Fig. 172: Forward Clutch Assembly Component View Legend (Items 1-5)

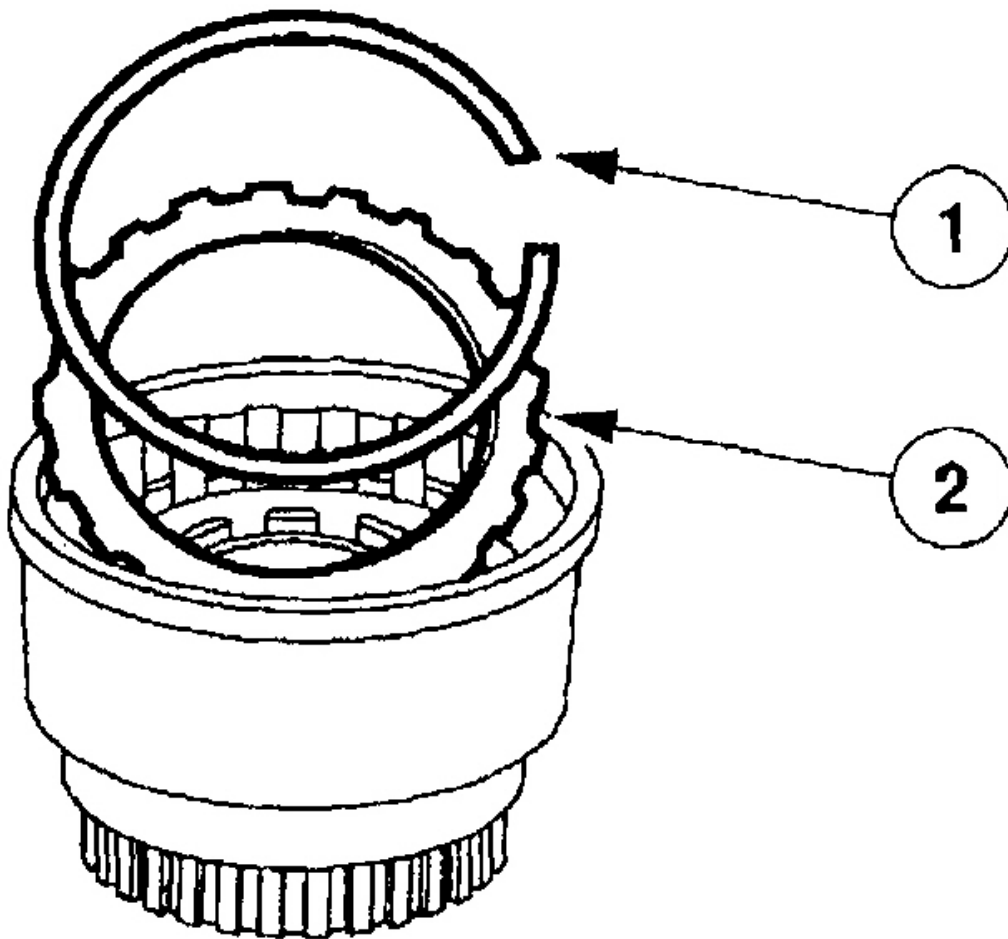
Item	Part Number	Description
6	7B442	Forward clutch external plate-steel (vehicle-dependent)
7	7B164	Forward clutch internal plate-friction (vehicle-dependent)
8	7B066	Forward clutch pressure plate
9	7D483	Forward clutch retaining ring (select fit)

G01672305

Fig. 173: Forward Clutch Assembly Component View Legend (Items 6-9)**Disassembly**

1. Remove the pressure plate.
 1. Remove the forward clutch retaining ring.

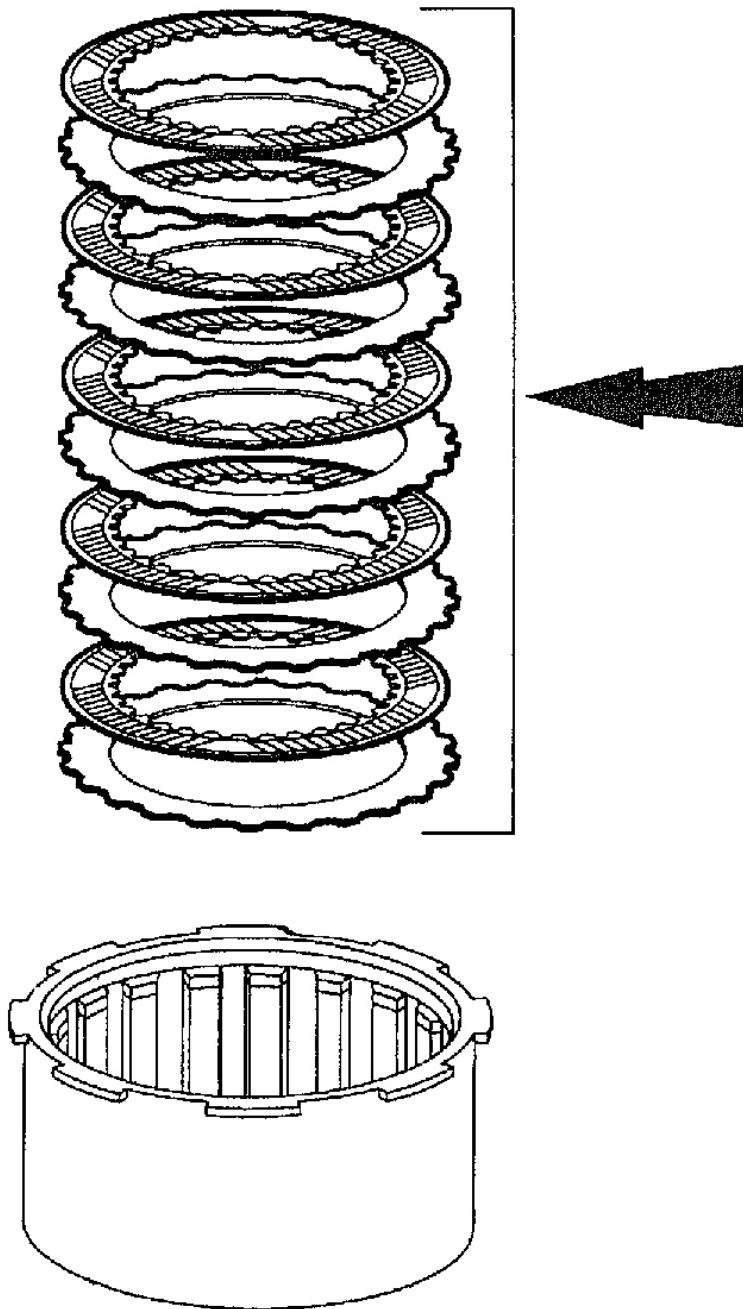
2. Remove the pressure plate.



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Fig. 174: Removing Forward Clutch Retaining Ring & Pressure Plate

2. Remove the forward clutch disc pack.
 - Inspect the forward clutch plates for wear, damage or overheating.



G01672307

Fig. 175: Removing Forward Clutch Disc Pack

WARNING: Use caution when releasing tool pressure on the clutch piston springs. Failure to follow these instructions may result in personal

injury.

CAUTION: Do not fully depress the special tool or damage to the spring retainer may occur.

3. Using the special tool, remove the forward clutch piston retaining ring.

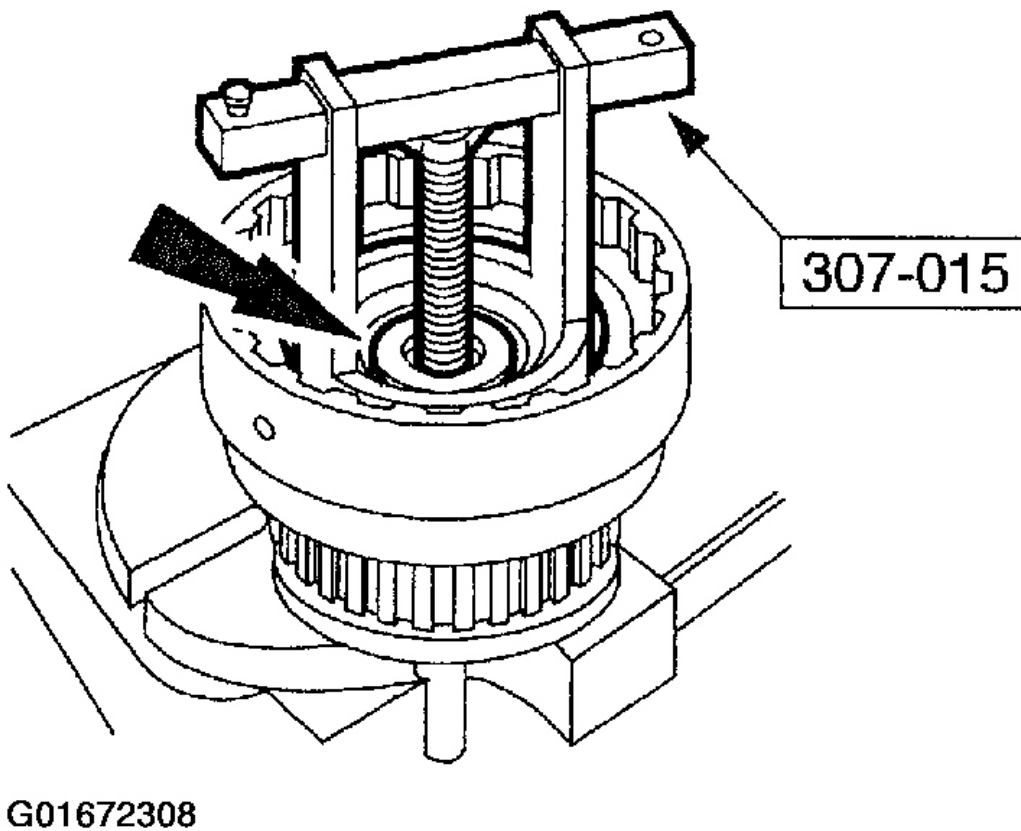
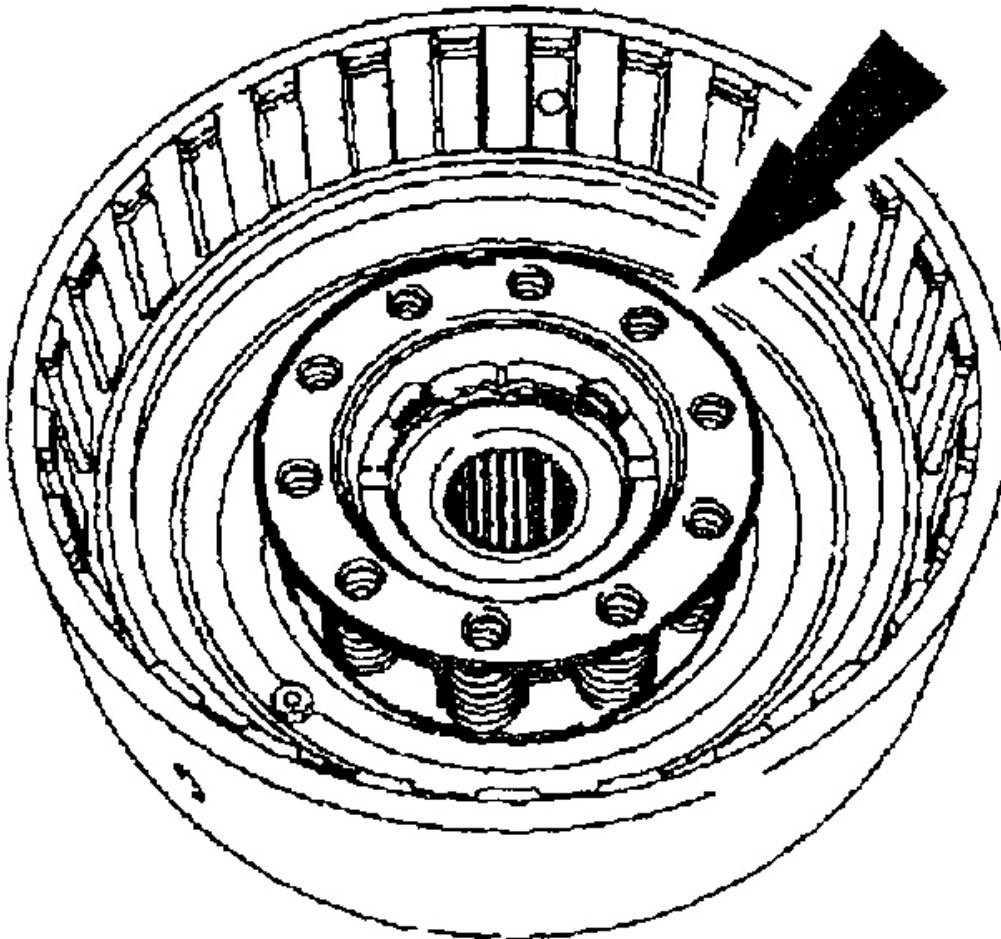


Fig. 176: Removing Forward Clutch Piston Retaining Ring

4. Relieve the forward clutch spring tension and remove the tool.
5. Remove the forward clutch piston spring assembly.

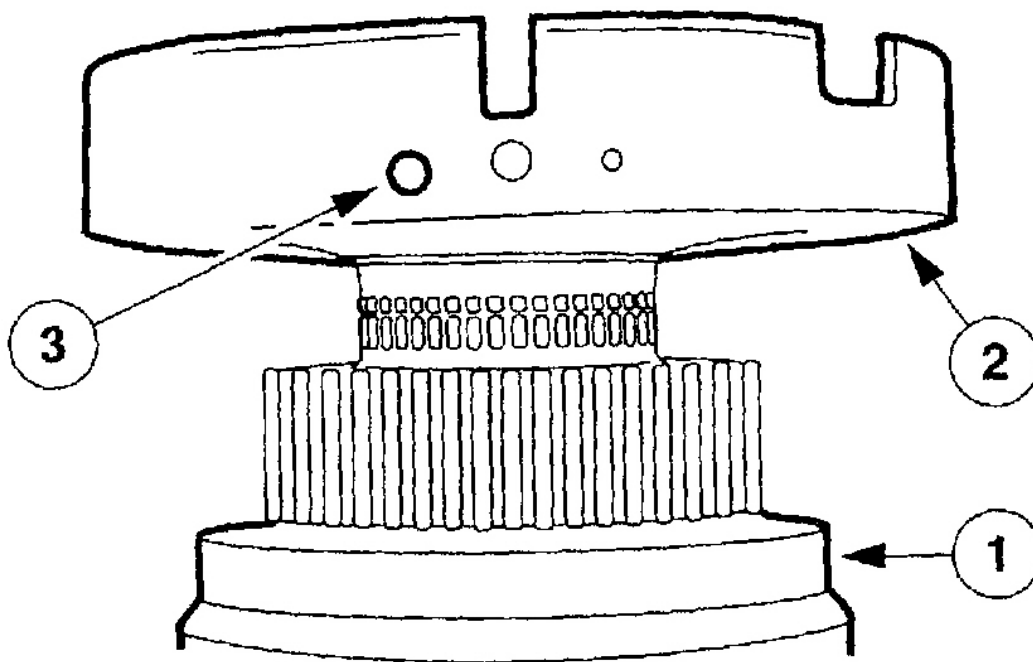


G01672309

Fig. 177: Removing Forward Clutch Piston Spring Assembly

WARNING: Air pressure must not exceed 138 kPa (20 psi). Wear safety glasses when using compressed air. Make sure the cylinder is facing down as shown. Failure to follow these instructions may result in personal injury.

6. Remove the forward clutch piston.
 1. Place the forward clutch cylinder with forward clutch piston facing down.
 2. Install the center support on the forward clutch cylinder.
 3. Apply air pressure to the left port of the center support.

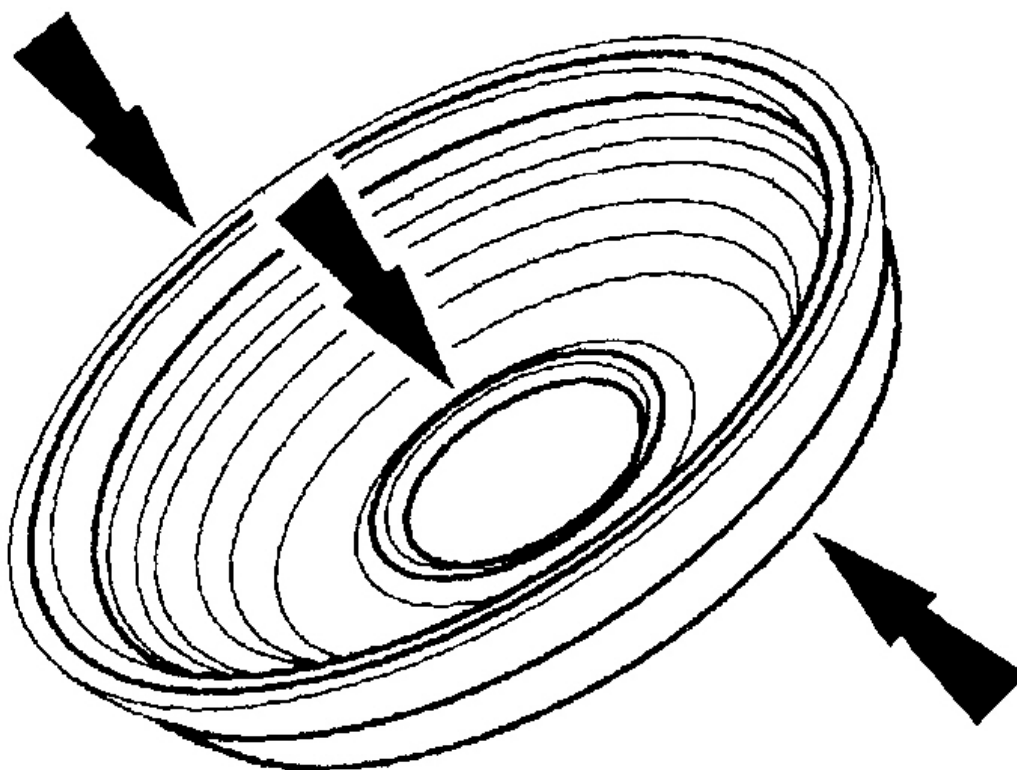


G01672310

Fig. 178: Removing Forward Clutch Piston

NOTE: If the seals on the forward clutch piston show any signs of damage, the forward clutch piston will need to be replaced.

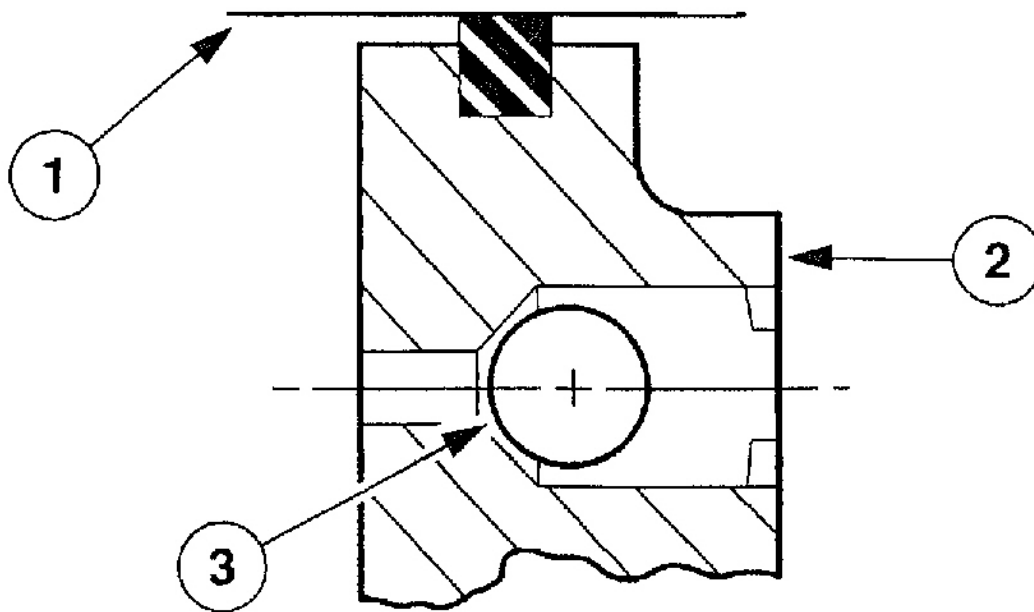
7. Inspect the forward clutch piston, and seals.



G01672311

Fig. 179: Inspecting Forward Clutch Piston & Seals

8. Inspect the forward clutch drum assembly.
 1. Inspect the forward clutch cylinder surfaces for scores or burrs.
 2. Inspect forward clutch piston for scores or burrs.
 3. Verify the check ball is free to move in the piston.



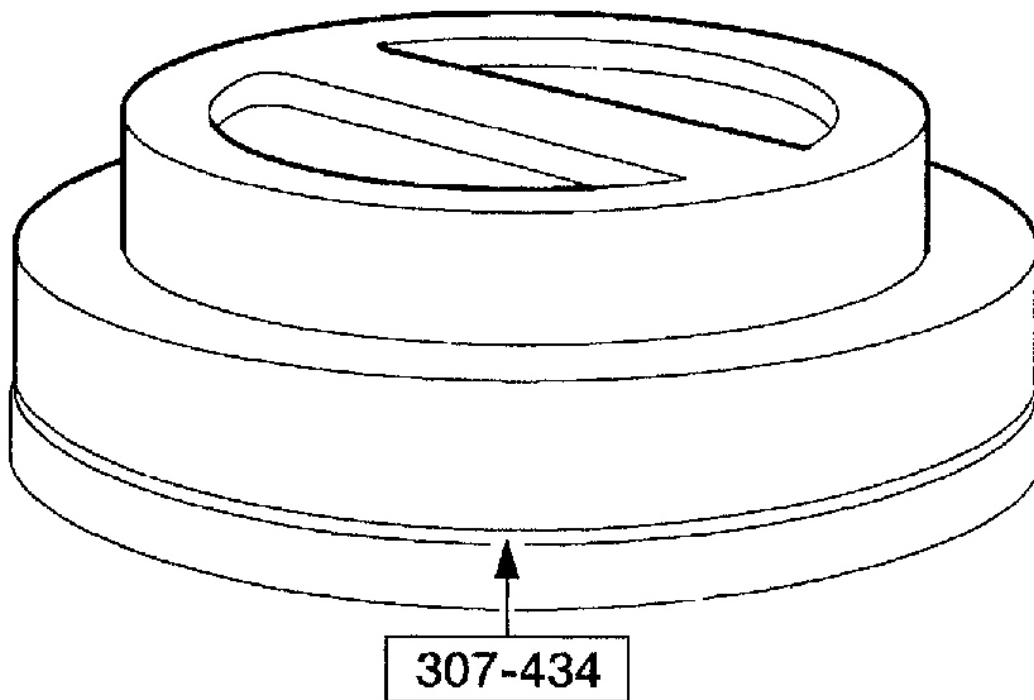
G01672312

Fig. 180: Inspecting Forward Clutch Drum**Assembly**

1. Inspect the clutch components for damage or wear. Install new components as necessary.
 - Check the fluid passages for obstructions. All fluid passages must be clean and free of obstructions.
 - Inspect the clutch plates for damage.
 - Inspect the clutch springs.
 - Inspect the needle bearing and seal rings for damage.
 - Check clutch hub thrust surfaces for damage.
 - Check clutch plates for flatness and fit on the clutch hub serrations.

NOTE: **The special tool must be installed on the forward clutch piston for a couple of minutes prior to installing it into the forward clutch cylinder.**

2. Install the special tool on the forward clutch piston.



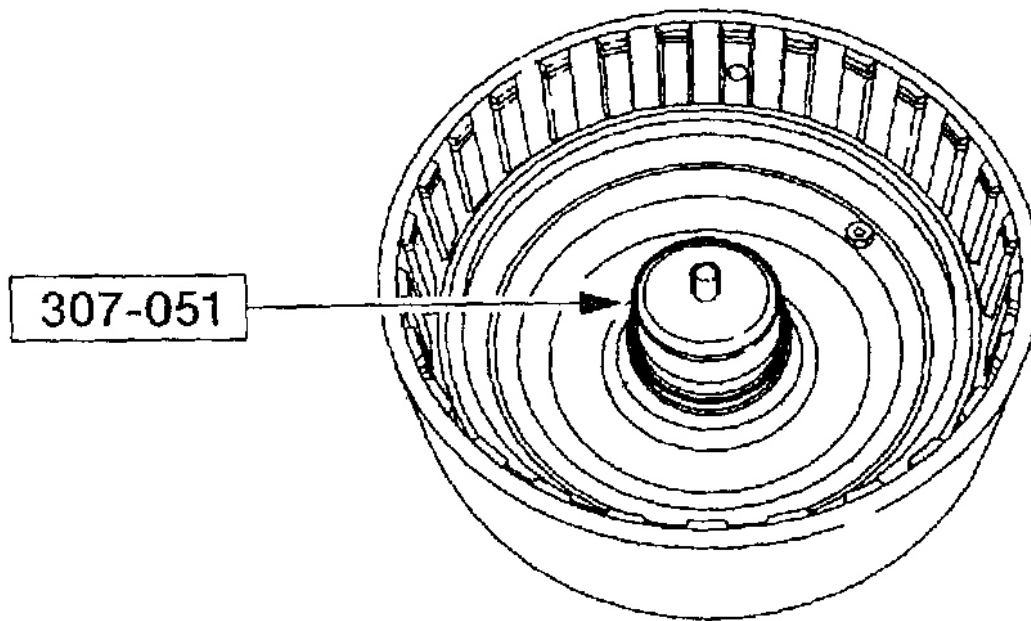
G01672313

Fig. 181: Installing Piston Seal Sizer On Forward Clutch Piston

CAUTION: Care must be taken to prevent damage to the seals.

NOTE: Lubricate the forward clutch piston inner and outer seal with clean automatic transmission fluid.

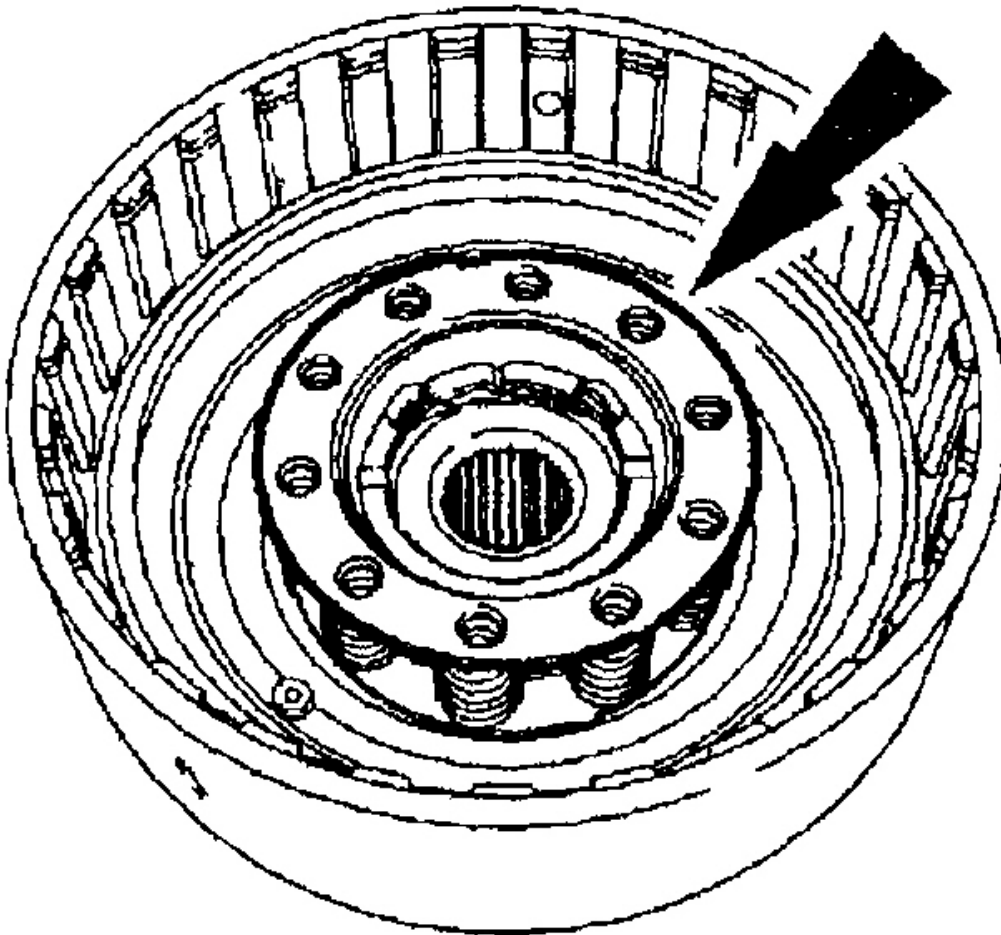
3. Using the special tool, install the forward clutch piston assembly into the forward clutch cylinder.



G01672314

Fig. 182: Installing Forward Clutch Piston

4. Install the forward clutch piston spring assembly.



G01672315

Fig. 183: Installing Forward Clutch Piston Spring Assembly

CAUTION: Do not fully depress the clutch spring compressor or damage to the spring retainer may occur.

5. Using the special tool, install the forward clutch piston spring retaining ring.

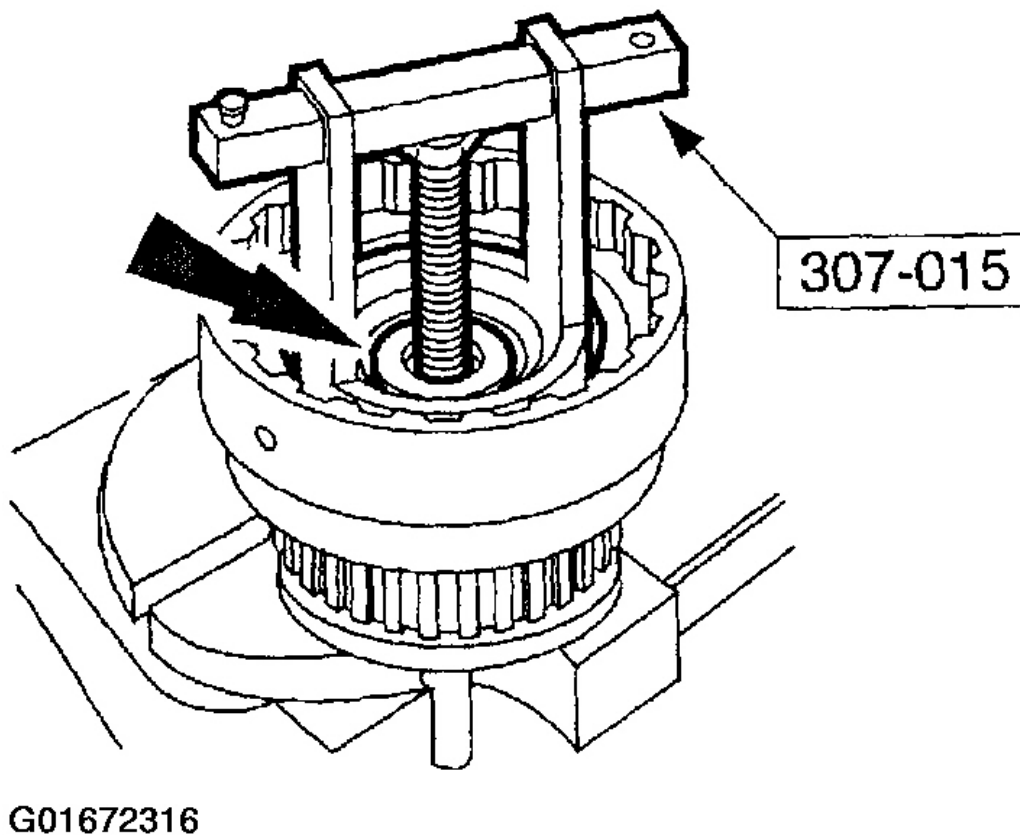
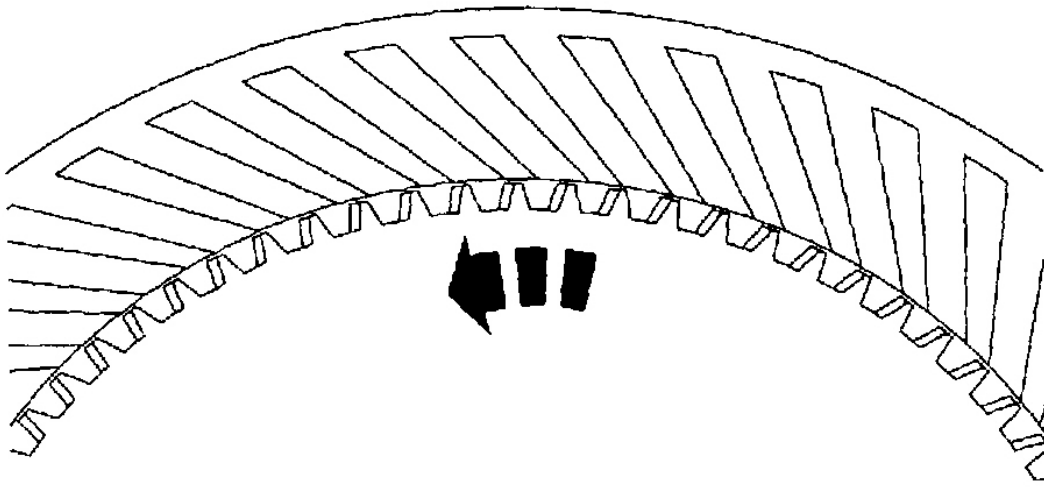


Fig. 184: Installing Forward Clutch Piston Spring Retaining Ring

CAUTION: The forward clutch friction plates are directional and must be installed with grooves pointing counterclockwise.

CAUTION: If new plates are used, they should be soaked in clean automatic transmission fluid for at least 30 minutes before assembly.

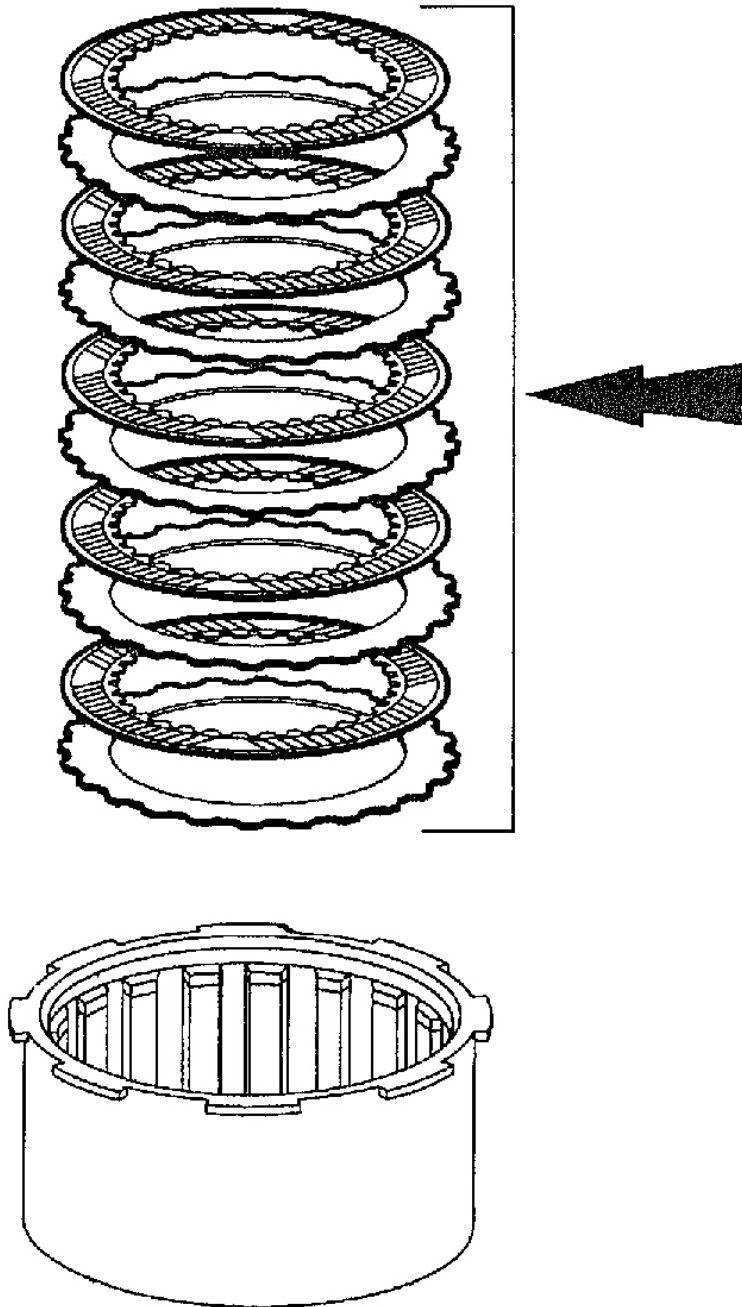
6. If reusing plates, grooves must be installed counterclockwise. Install the direct clutch disc pack.



G01672317

Fig. 185: Identifying Forward Clutch Plate Installation Direction

7. Install the steel clutch plates and friction clutch plates in alternating order starting with a steel clutch plate.

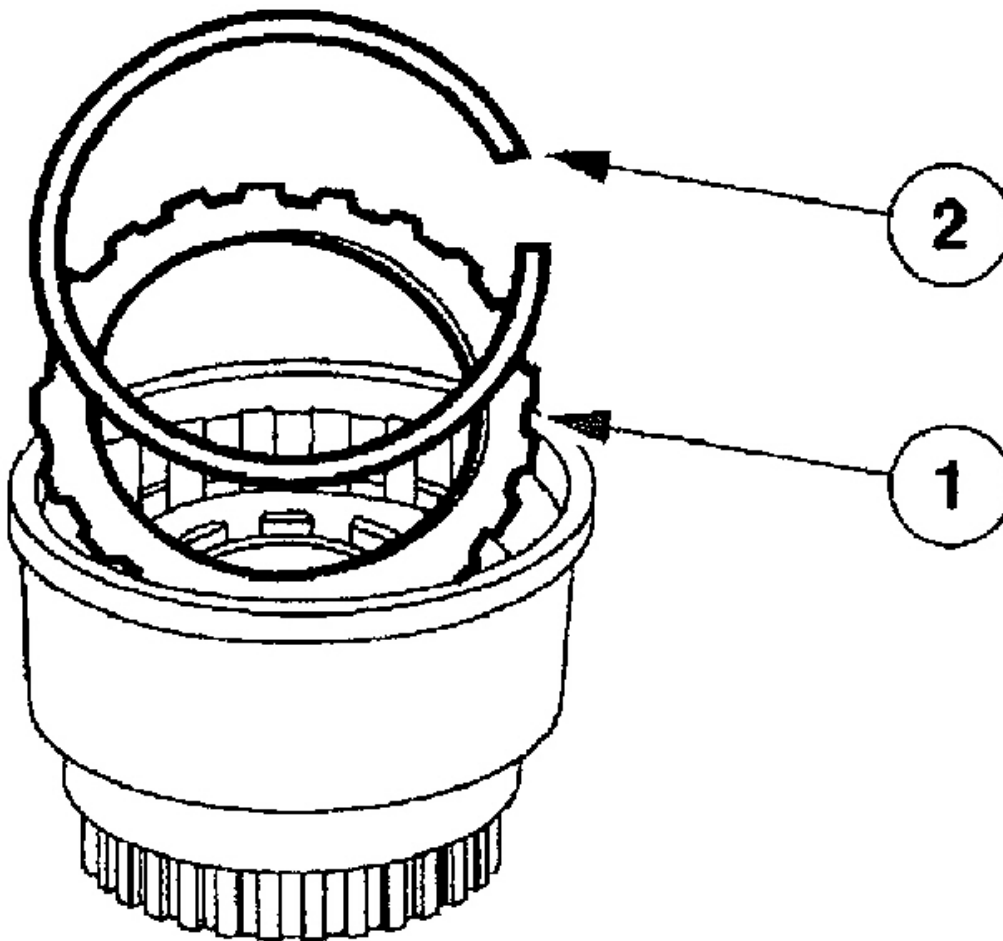


G01672318

Fig. 186: Installing Forward Clutch Plate Disc Pack

CAUTION: The retaining ring is a select fit.

8. Install the original selective retaining ring.
 1. Install the forward clutch pressure plate.
 2. Install the original selective retaining ring.

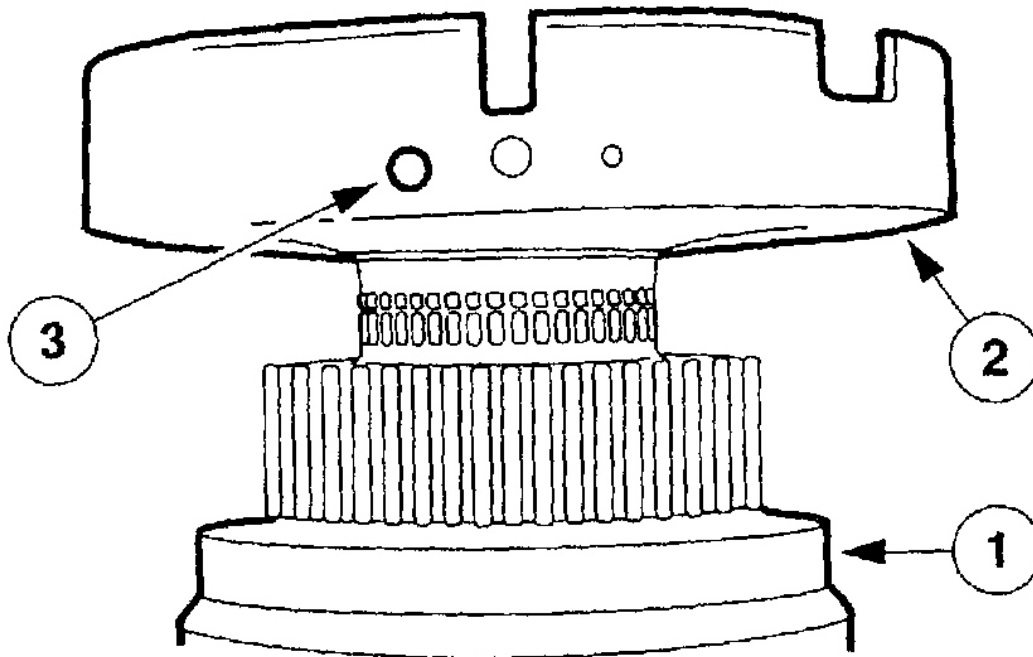


G01672319

Fig. 187: Installing Forward Clutch Pressure Plate & Retaining Ring

WARNING: Air pressure must not exceed 138 kPa (20 psi). Wear safety glasses when using compressed air. Make sure the cylinder is facing down as shown. Failure to follow these instructions may result in personal injury.

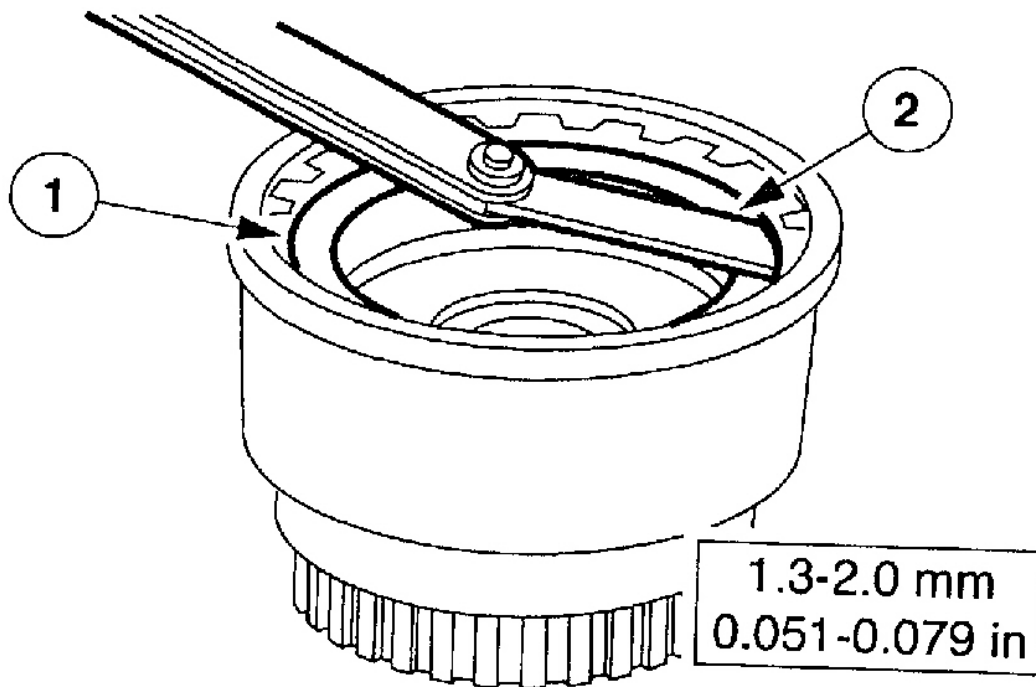
9. Air check the forward clutch piston.
 1. Place the forward clutch cylinder with forward clutch piston facing down.
 2. Install the transmission center support on the forward clutch cylinder.
 3. Apply air pressure to the left port of the center support.



G01672320

Fig. 188: Air Checking Clutch Assembly

10. Check forward clutch disc pack free play.
 1. Press down on forward clutch disc pack.
 2. Using a feeler gauge, check the gap between the forward clutch retaining ring and the forward clutch pressure plate.
 - If the clearance is not within specifications, install the correct size retaining ring.



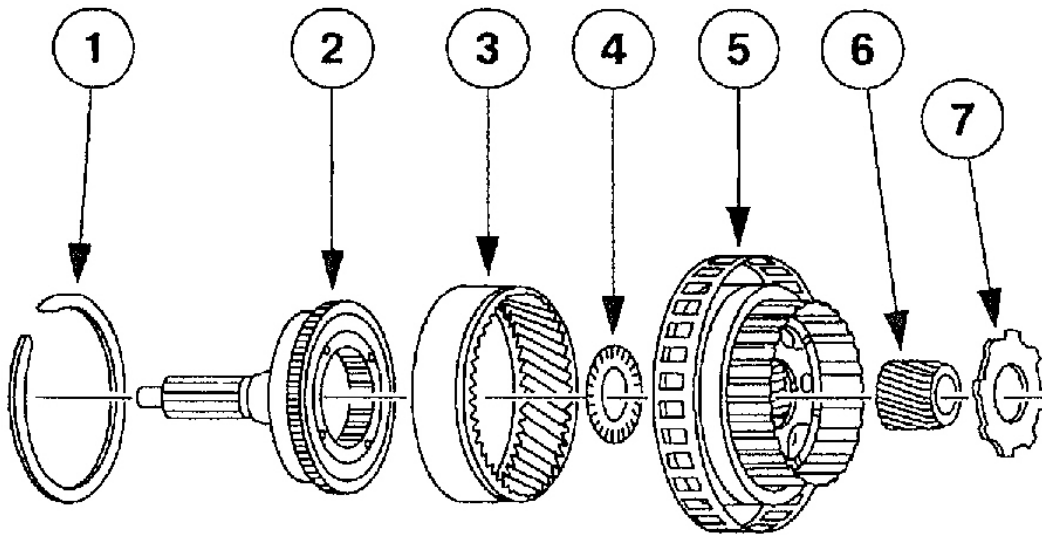
G01672321

Fig. 189: Measuring Forward Clutch Pack Clearance

Part Number	Thickness		Diameter	
	mm	In	mm	In
XW4Z-7D483-AB	1.73	.0681	141.45	5.65 in
XW4Z-7D483-AC	2.08	.0819	141.45	5.65 in
XW4Z-7D483-AD	2.44	.0961	141.45	5.65 in

G01672322

Fig. 190: Forward Clutch Pack Retaining Ring Thickness Table**OVERDRIVE PLANETARY AND ONE-WAY CLUTCH ASSEMBLY**



G01672323

Fig. 191: Overdrive Planetary and One-Way Clutch Assembly Component View

Item	Part Number	Description
1	W702037-S300	Retaining ring
2	7A658	Center shaft

G01672324

Fig. 192: Overdrive Planetary and One-Way Clutch Assembly Component View Legend (Items 1-2)

2002 Ford Explorer

2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

Item	Part Number	Description
3	7653	Overdrive ring gear
4	7L495	No. 2 overdrive planetary thrust bearing
5	7B446	Overdrive planetary gear carrier assembly
6	7D063	Overdrive sun gear
7	7660	Coast clutch adapter

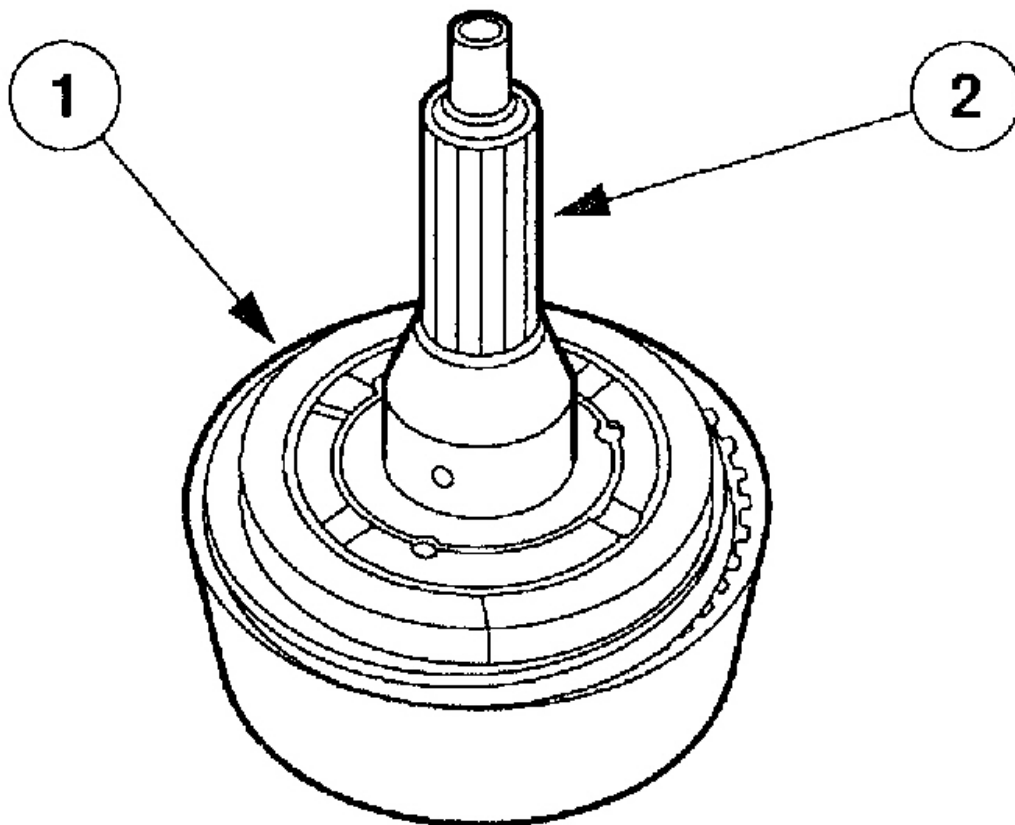
G01672325

Fig. 193: Overdrive Planetary and One-Way Clutch Assembly Component View Legend (Items 3-7)

Disassembly

NOTE: The overdrive one-way clutch is serviced with the center shaft assembly.

1. Remove the center shaft from the overdrive ring gear.
 1. Remove the overdrive center shaft retaining ring.
 2. While rotating counterclockwise remove the center shaft from the ring gear.

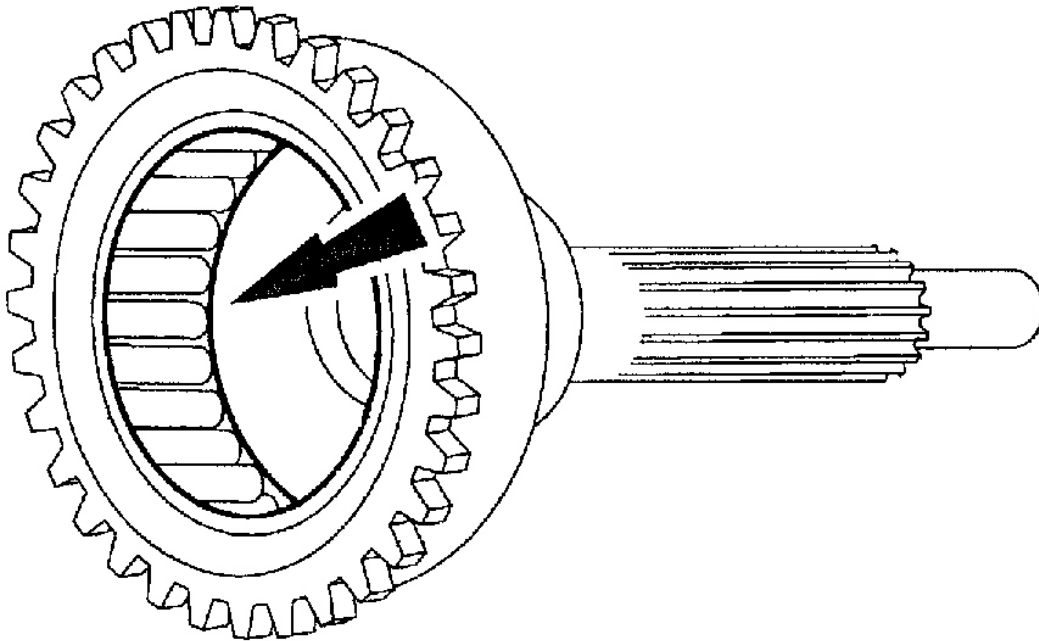


G01672326

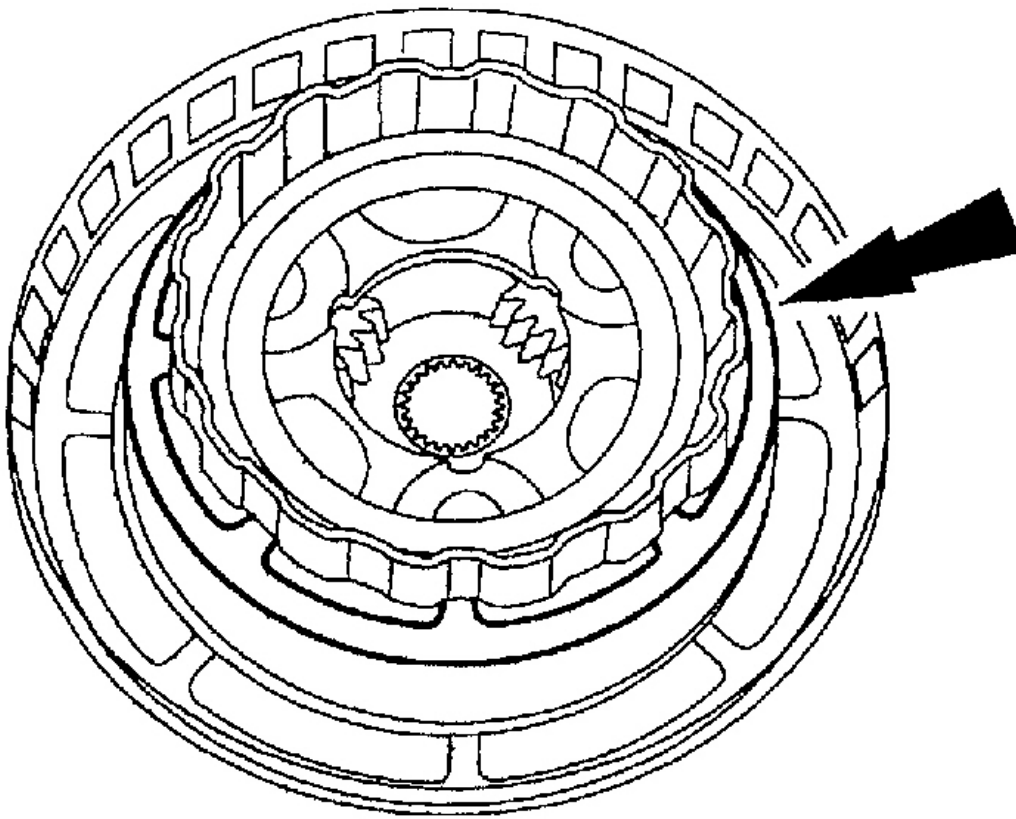
Fig. 194: Removing Center Shaft From Overdrive Ring Gear

CAUTION: Do not remove the overdrive one-way clutch. Damage to the clutch may occur if it is removed.

2. Clean and inspect the overdrive one-way clutch and center shaft.
 - Inspect for cracks in the roller cage and wear on the roller clutch, and the press fit of the one-way clutch to the center shaft.

**G01672327****Fig. 195: Inspecting Overdrive One-Way Clutch**

3. Inspect the one-way clutch.
 - Temporarily insert the overdrive planetary gear carrier assembly into the one-way clutch rollers for verification of the one-way clutch.
 - The planetary gear must rotate counterclockwise and hold when rotated clockwise.
 - Remove the planetary gear carrier assembly.

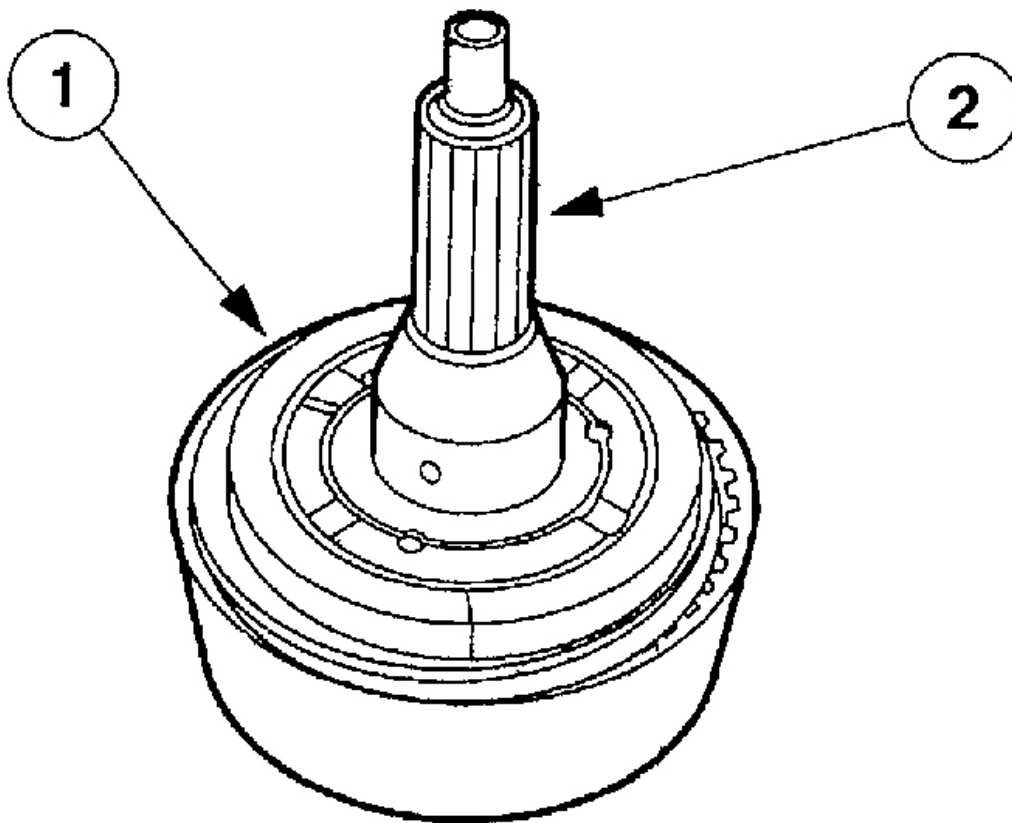


G01672328

Fig. 196: Inspecting Overdrive One-Way Clutch

Assembly

1. Install the center shaft and one-way clutch.
 1. Install the center shaft and one-way clutch.
 2. Install the center shaft retaining ring.



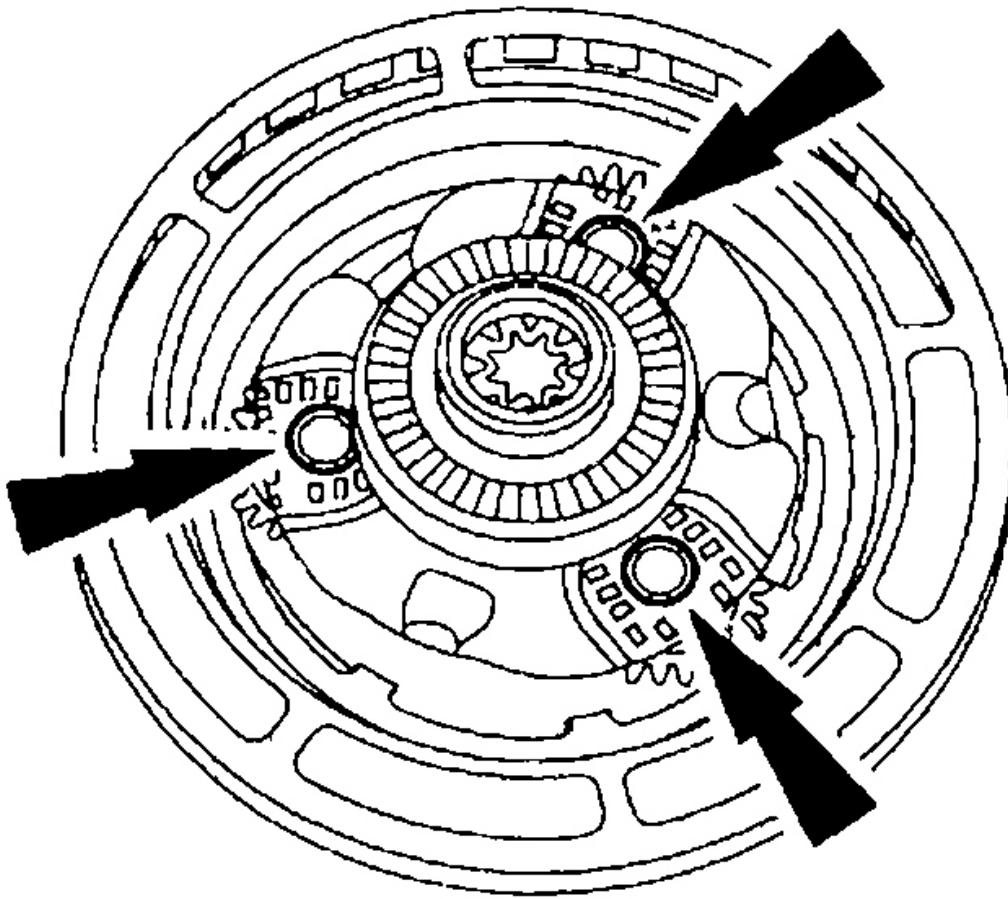
G01672329

Fig. 197: Installing Center Shaft & One-Way Clutch**OVERDRIVE PLANETARY GEARS****Disassembly**

CAUTION: New planetary gears must be installed. Do not restake the originals.

NOTE: Individual parts of the planetary carries are not serviceable.

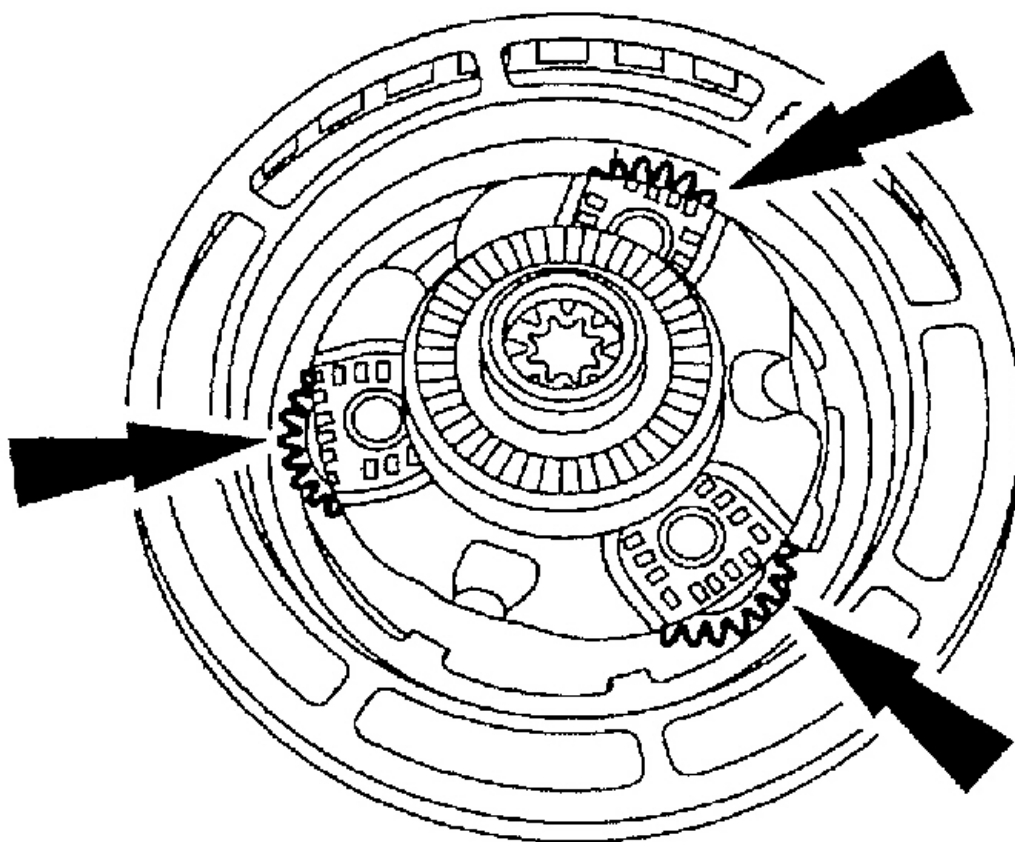
1. Before installing a planetary assembly, the shaft retaining pins should be checked for adequate staking. Check the pins and shafts in the planetary assemblies for loose fit and/or complete disengagement. Install a new planetary assembly if necessary.



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Fig. 198: Inspecting Pins & Shafts

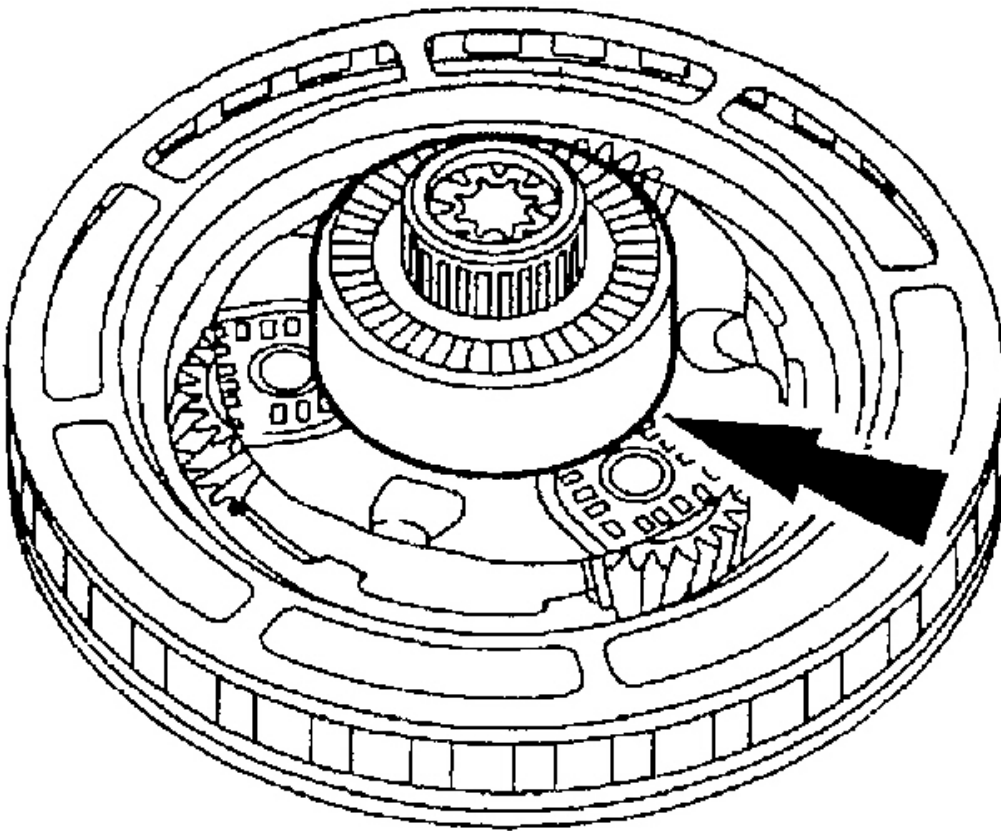
2. Inspect the pinion gears for damaged or excessively worn teeth, and for free rotation.



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Fig. 199: Inspecting Pinion Gears

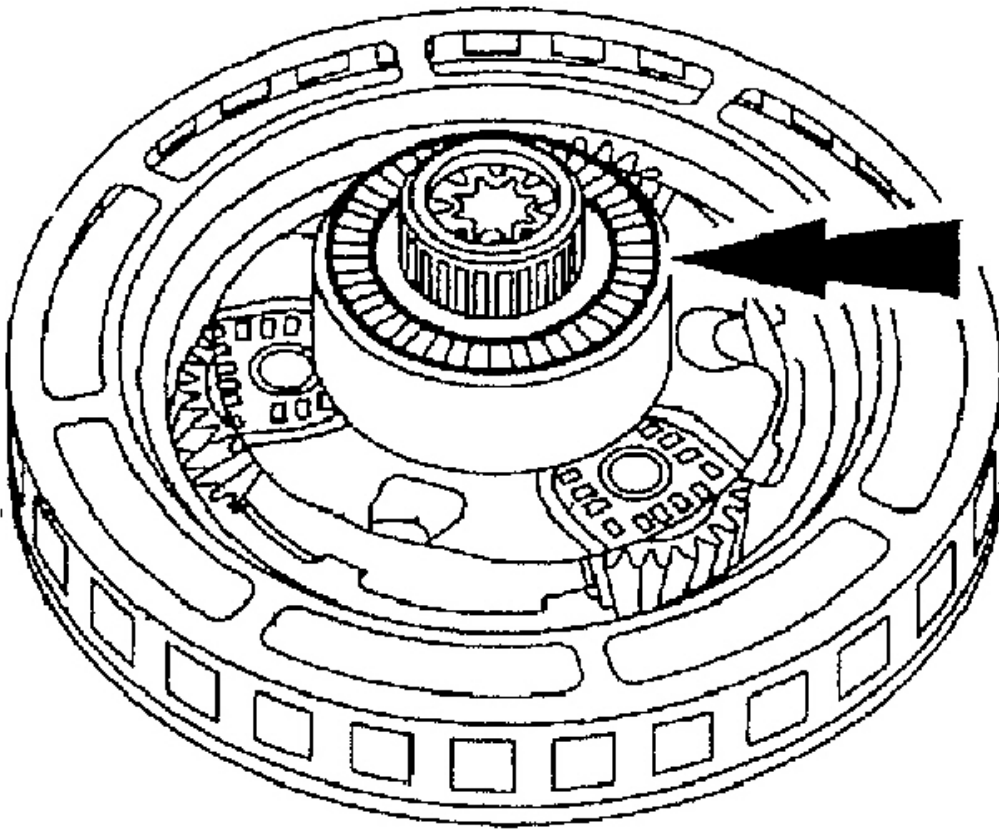
3. Inspect the overdrive one-way clutch inner race, and the inner and outer races for scored or damaged surface areas where the rollers contact the races.



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Fig. 200: Inspecting Overdrive One-Way Clutch Inner Race

4. Remove and inspect the No. 2 overdrive planetary thrust bearing on the nose of the overdrive planetary gear carrier assembly.

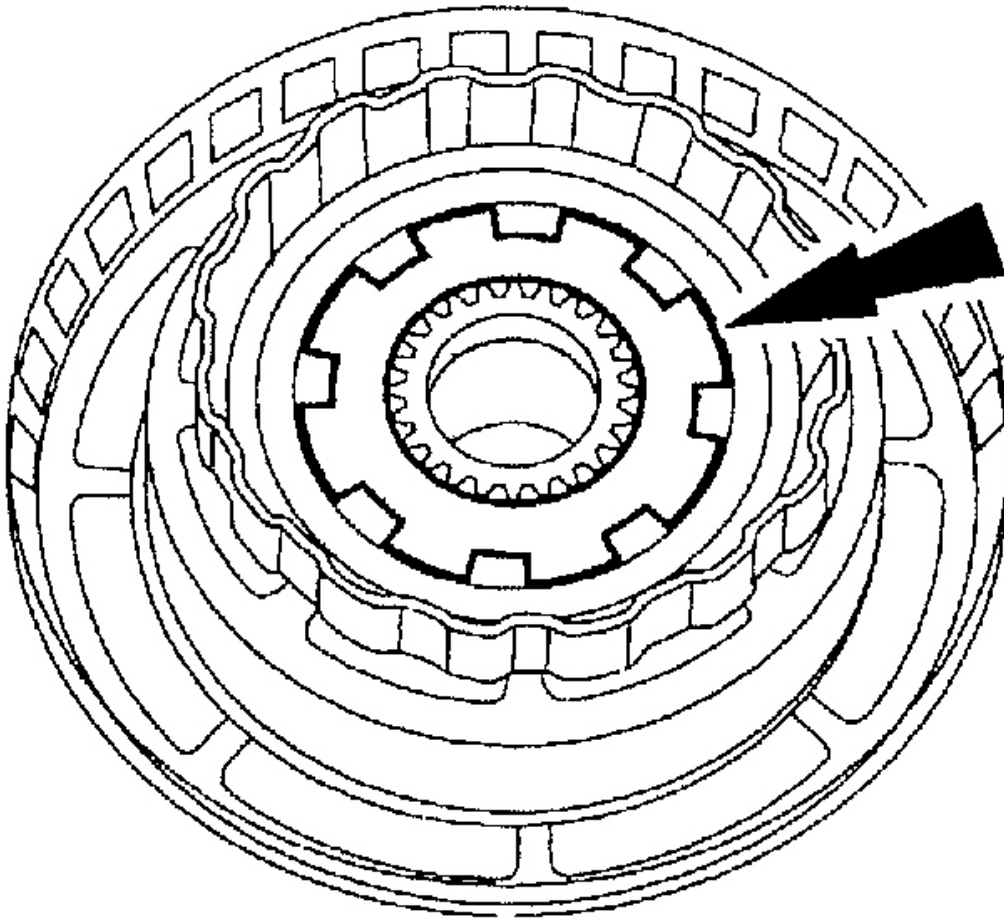


G01672333

Fig. 201: Inspecting Overdrive Planetary Thrust Bearing

NOTE: **Inspect the sun gear for damaged or worn teeth.**

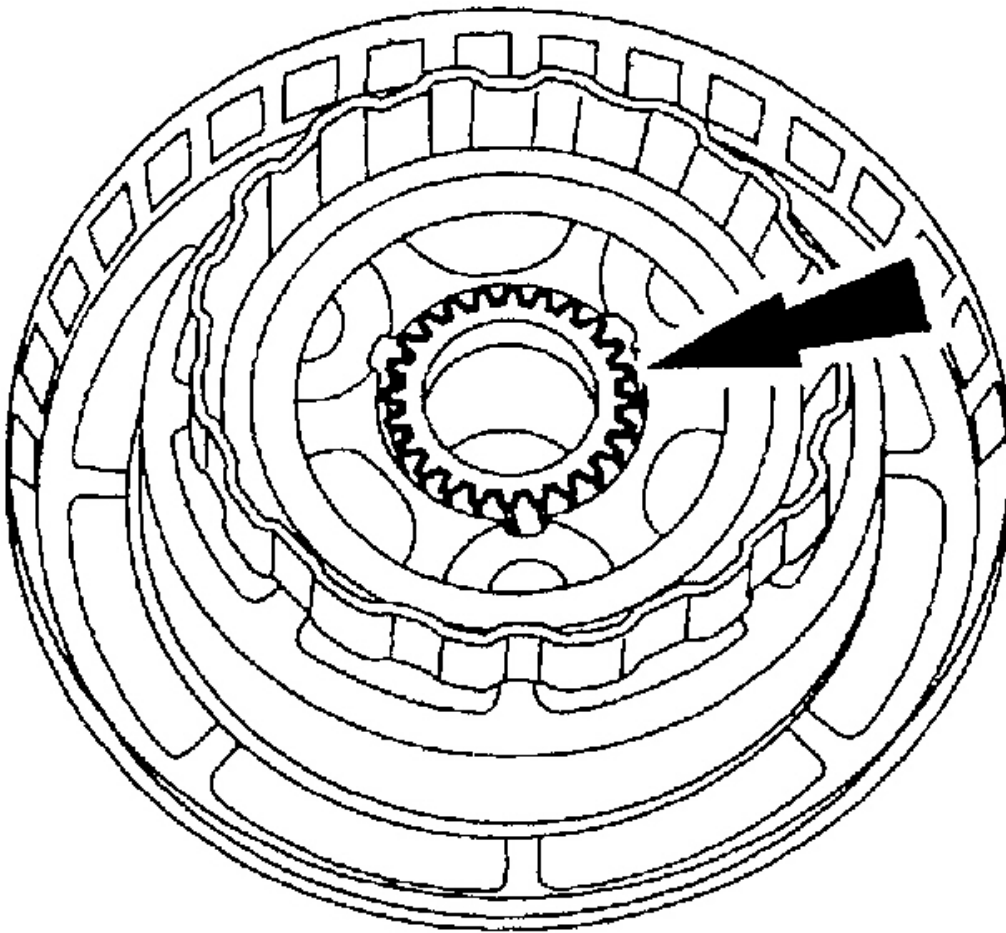
5. Remove the coast clutch-to-overdrive carrier adapter.



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Fig. 202: Removing Coast Clutch-To-Overdrive Carrier Adapter

6. Remove the overdrive sun gear.

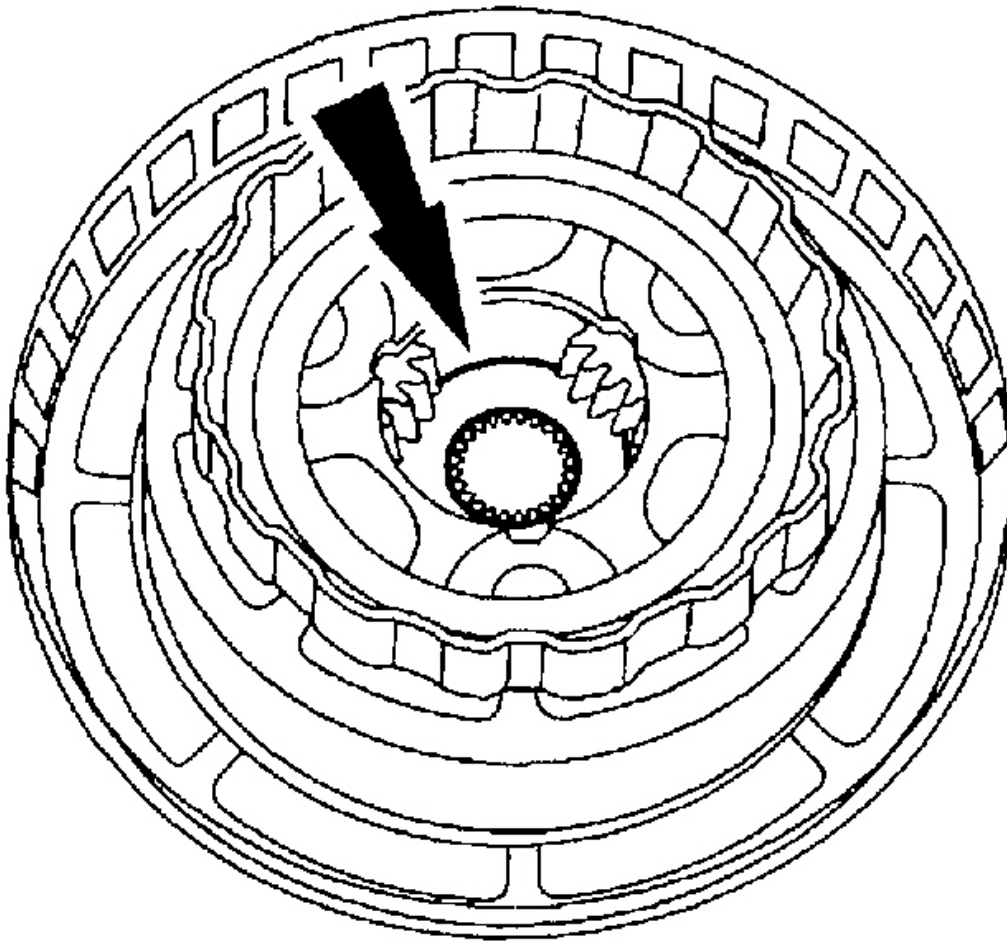


G01672335

Fig. 203: Removing Overdrive Sun Gear

CAUTION: Do not attempt to remove the No. 12 bearing from behind the pinion gears.

7. Inspect the No. 12 bearing for damage.



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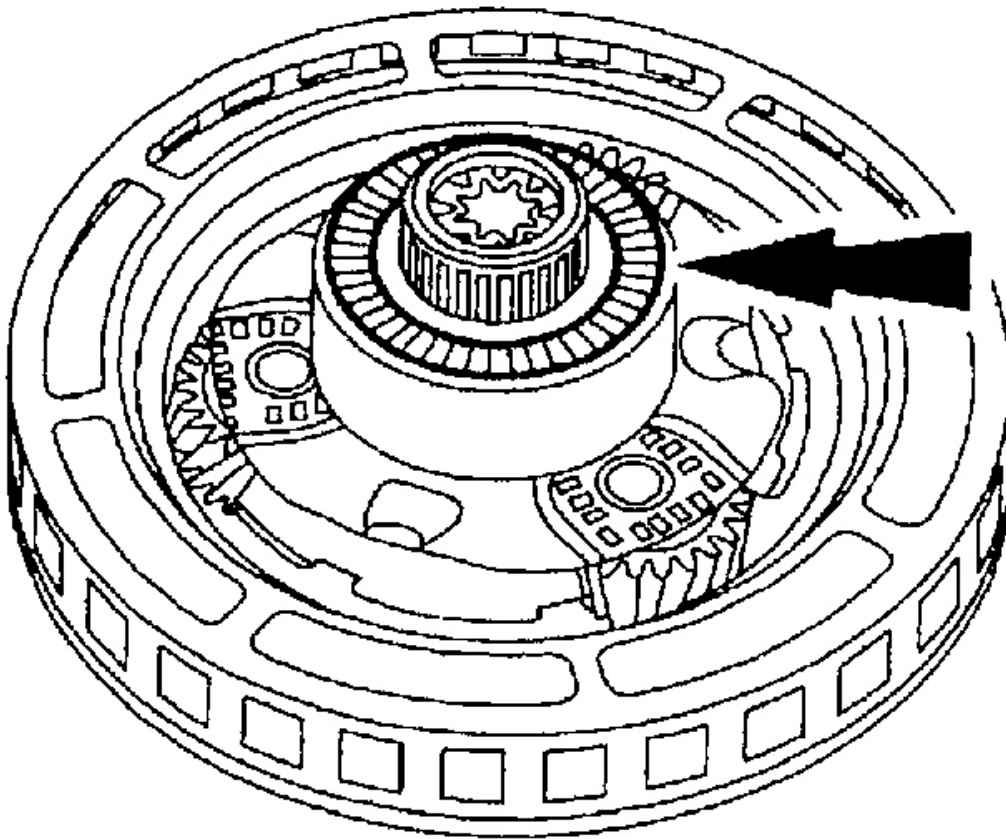
Fig. 204: Inspect Bearing For Damage

Assembly

NOTE: Thoroughly clean all parts and blow dry with moisture-free compressed air.

NOTE: Use petroleum jelly to hold the No. 2 overdrive planetary thrust bearing in place.

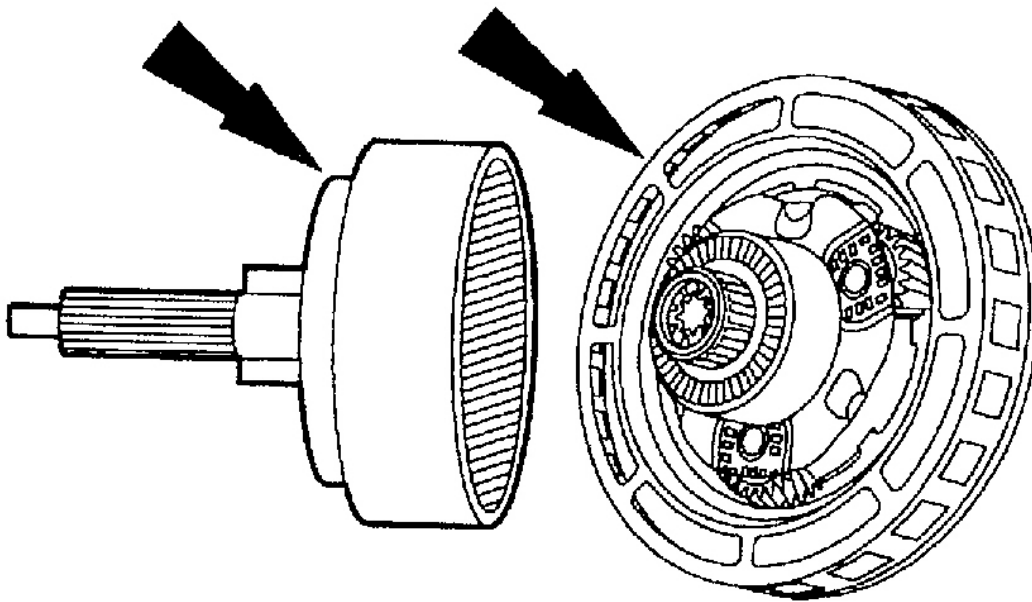
1. Install the No. 2 overdrive planetary thrust bearing.



G01672337

Fig. 205: Installing Overdrive Planetary Thrust Bearing

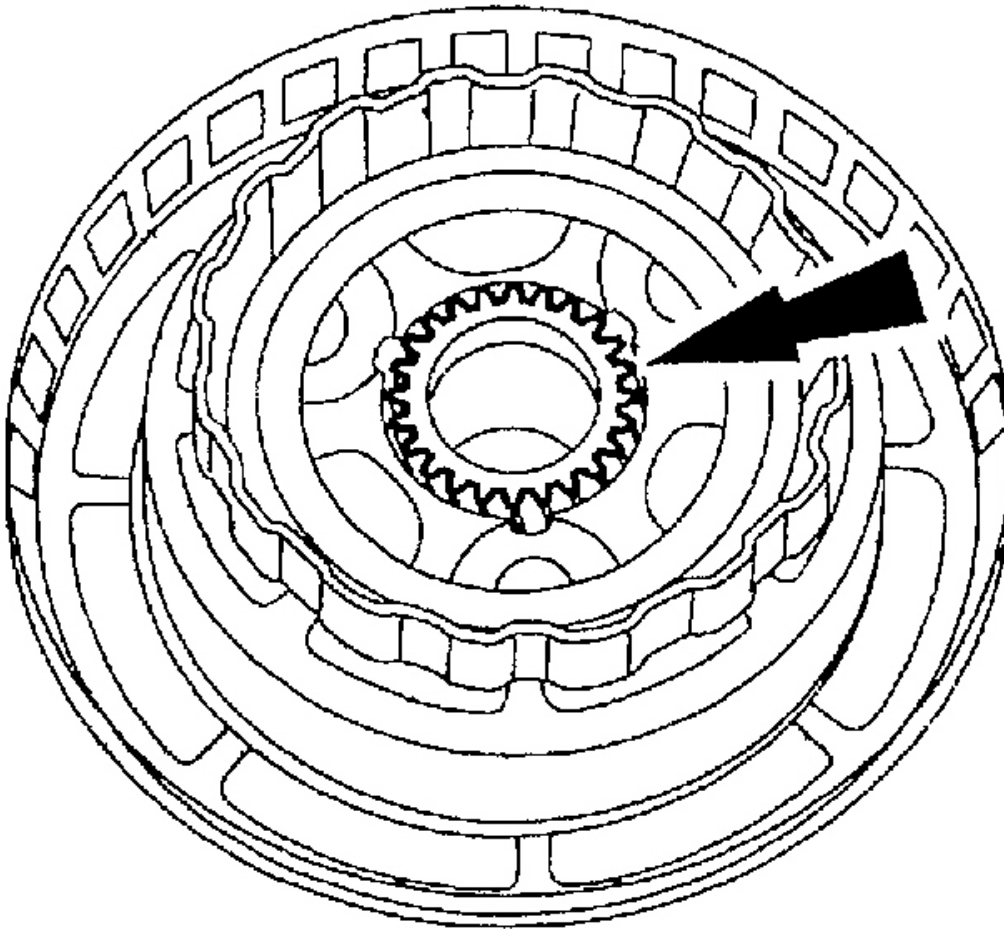
2. Install the overdrive planetary gear carrier into the center shaft and overdrive.



G01672338

Fig. 206: Installing Overdrive Planetary Gear Carrier

3. Install the overdrive sun gear with the recessed gear teeth facing toward the adapter.

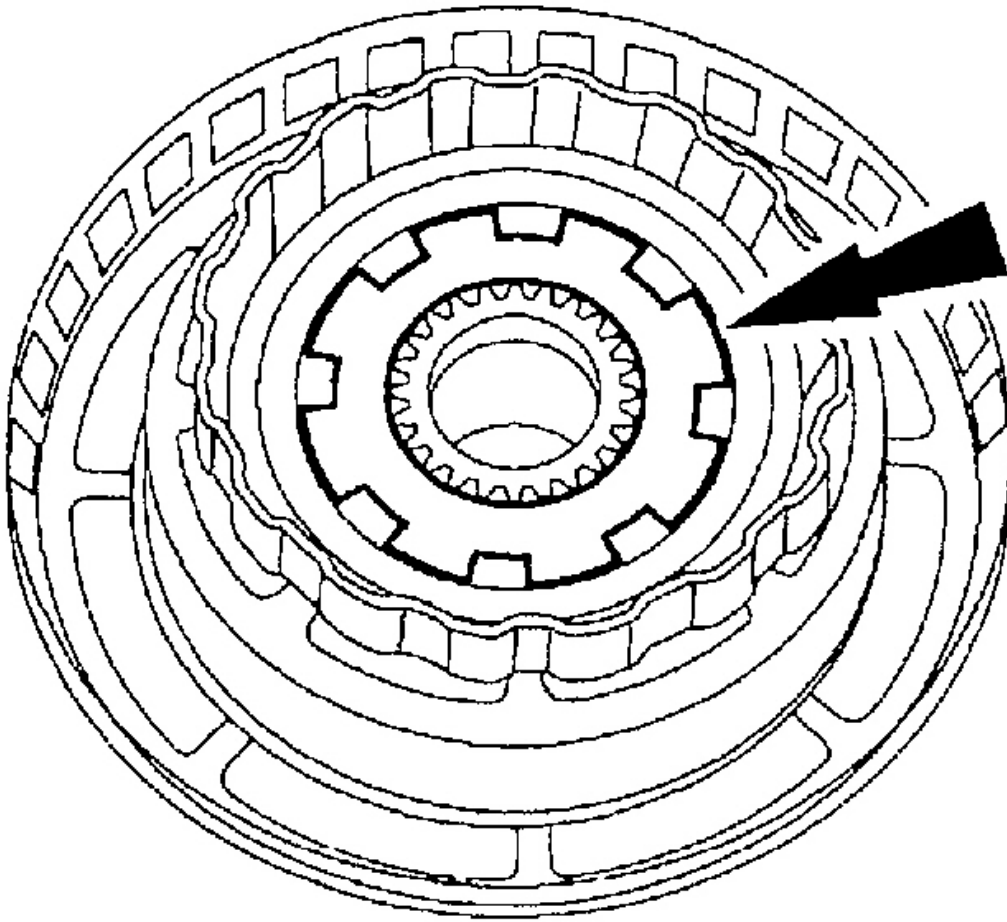


G01672339

Fig. 207: Installing Overdrive Sun Gear

NOTE: **Inspect the sun gear for damaged or worn teeth.**

4. Install the coast clutch-to-overdrive carrier adapter.

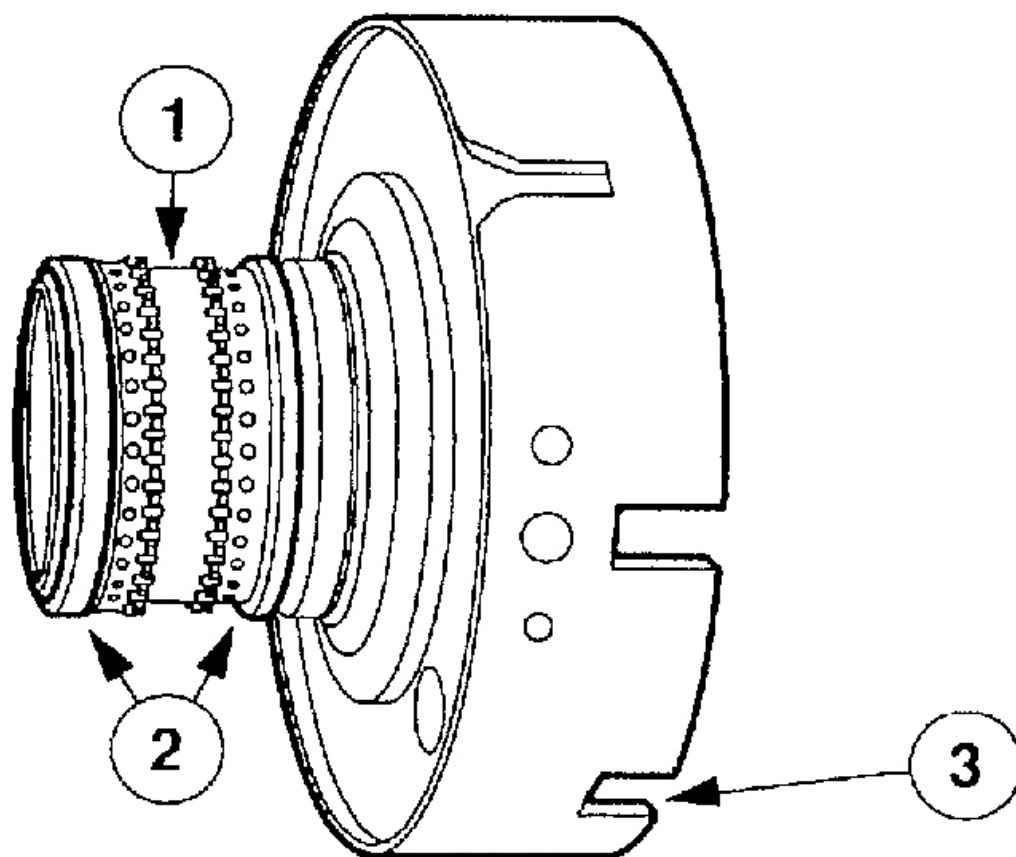


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Fig. 208: Installing Coast Clutch-To-Overdrive Carrier Adapter

CENTER SUPPORT

Disassembly and Assembly



G01672341

Fig. 209: Center Support Component View

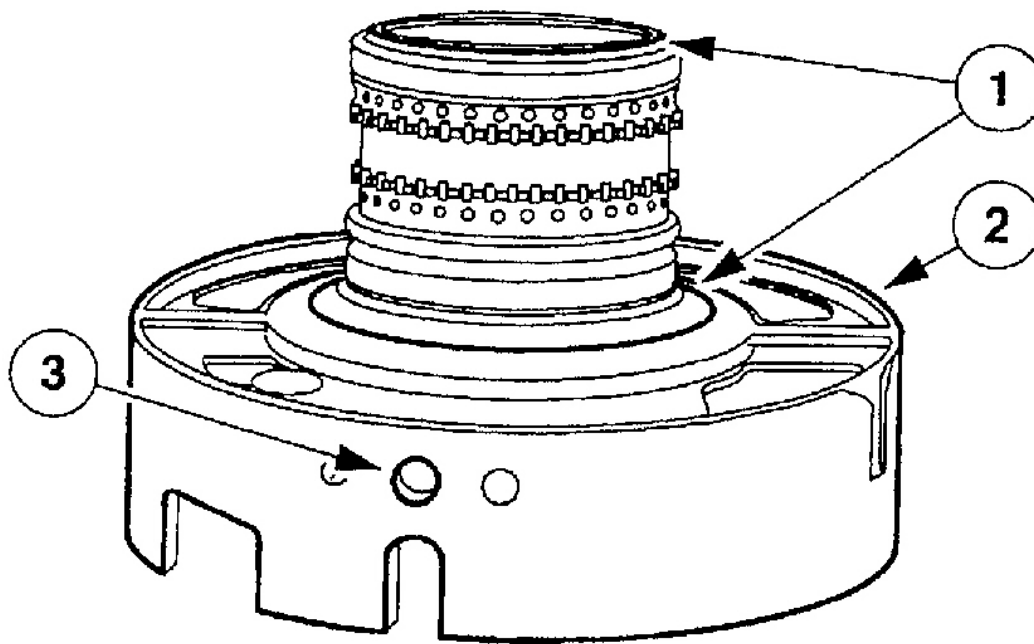
Item	Part Number	Description
1	—	Bearing
2	—	Seal rings
3	7A130	Center support

G01672342

Fig. 210: Center Support Component View Legend

- NOTE:** Thoroughly clean center support assembly and blow dry with compressed air.
- NOTE:** The center support is repaired as an assembly. Any damage requires installing a new component.

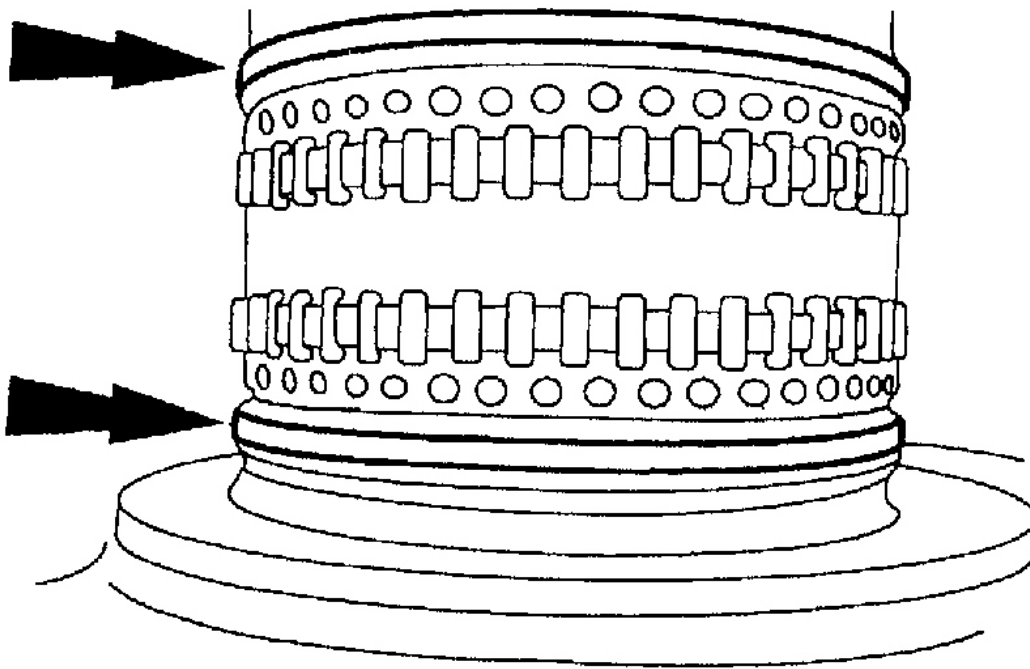
1. Inspect the center support assembly for wear or damage.
 1. Inspect the thrust surfaces for wear, scoring or damage.
 2. Inspect the center support sealing surface.
 3. Inspect the fluid passage for blockage or damage.



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Fig. 211: Inspecting Center Support

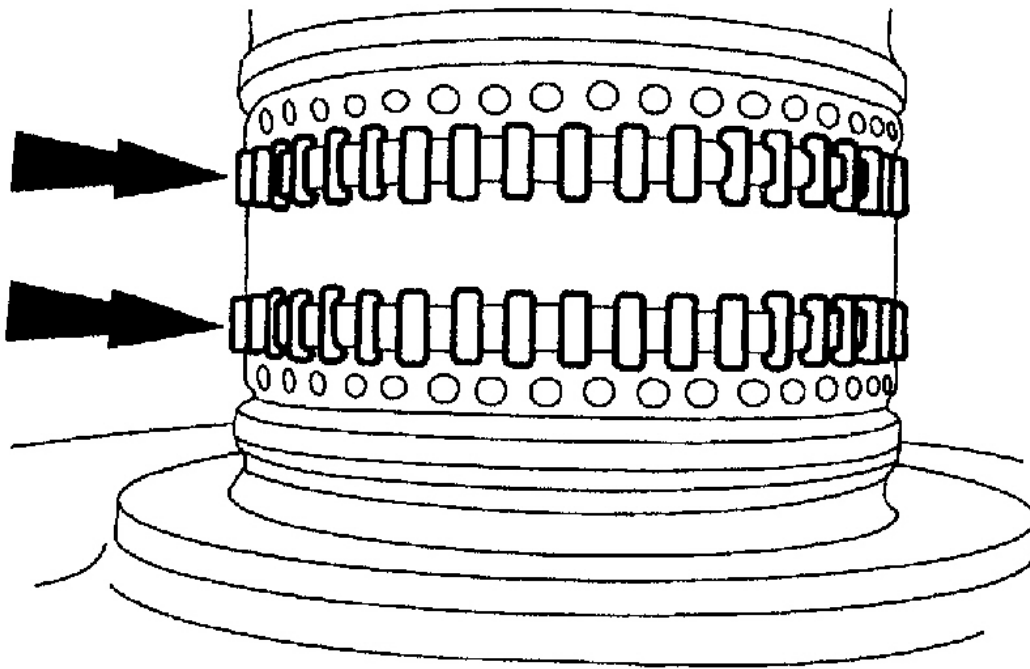
2. Inspect the seal rings for damage.



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Fig. 212: Inspecting Seal Rings

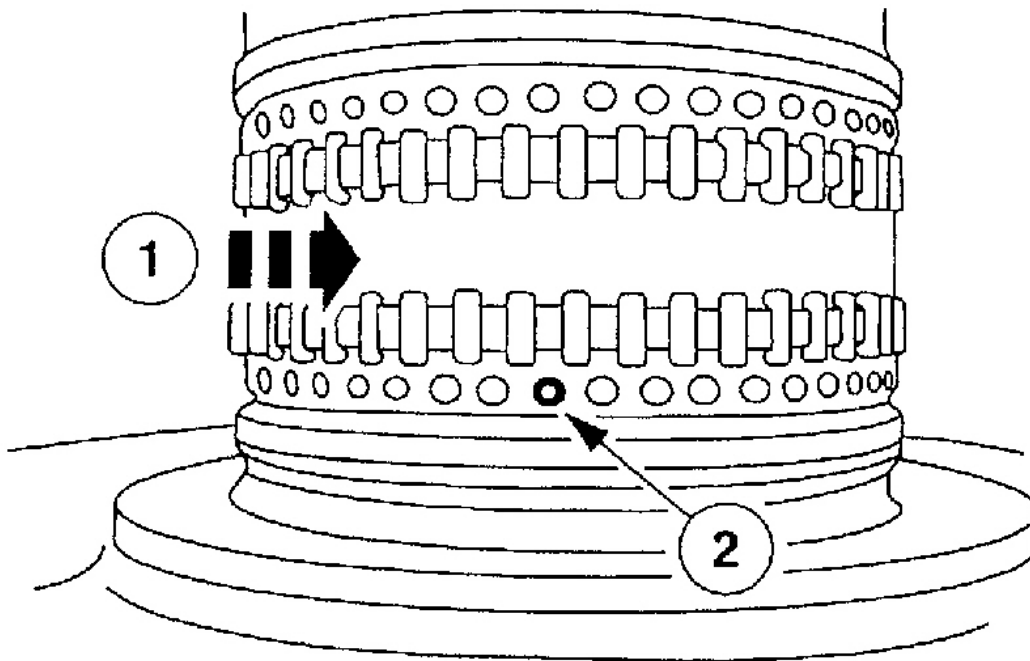
3. Inspect the bearing for missing rollers or damage.



G01672345

Fig. 213: Inspecting Bearing

4. Inspect the direct clutch feed hole for blockage or damage.
 1. Rotate center support bearing to locate the direct clutch feed hole.
 2. Inspect the direct clutch feed hole for blockage or damage.



G01672346

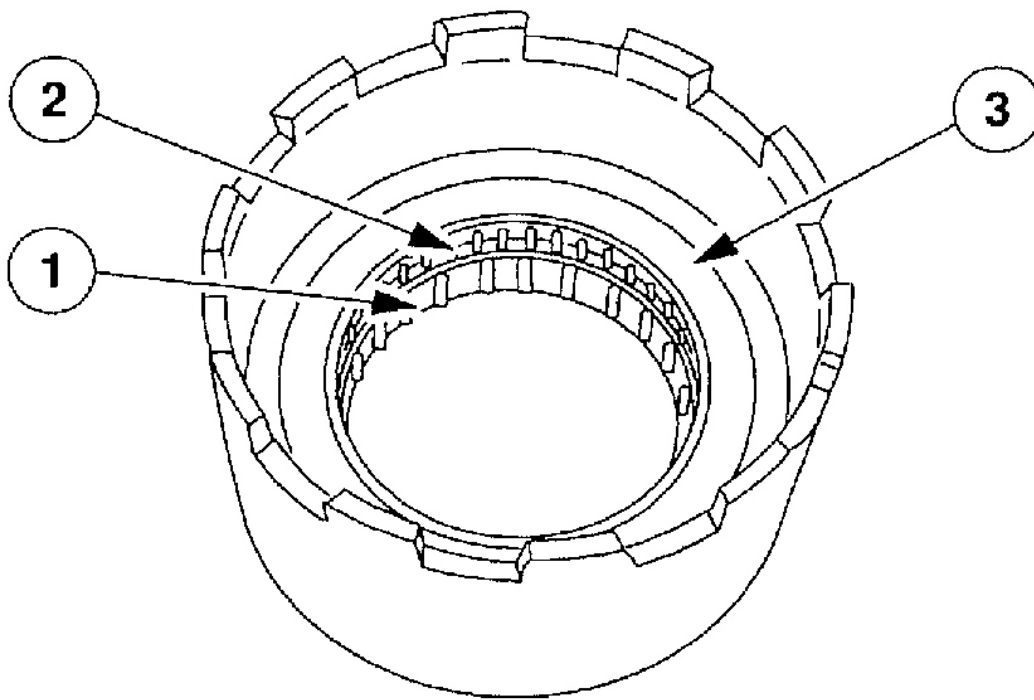
Fig. 214: Inspecting Direct Clutch Feed Hole

REVERSE BRAKE DRUM

Check

NOTE: The reverse one-way clutch is part of the reverse brake drum assembly. Install a new reverse brake drum as an assembly only.

1. Inspect the reverse brake drum assembly and install a new reverse brake drum assembly if damaged.
 1. Inspect the reverse brake drum sprags.
 2. Inspect the reverse brake drum rollers.
 3. Inspect the reverse brake drum.

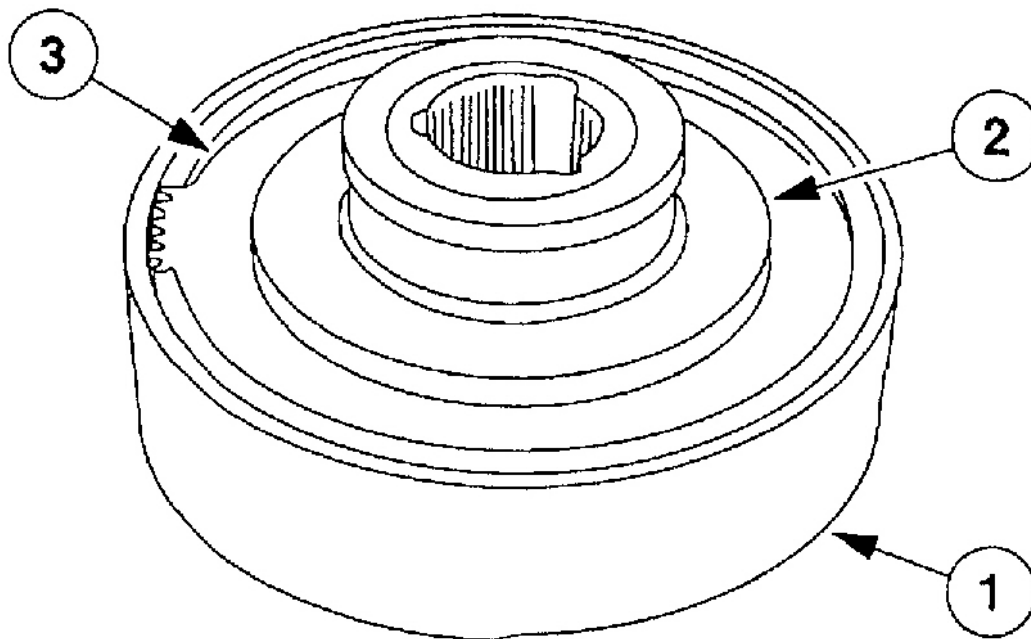


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Fig. 215: Inspecting Reverse Brake Drum

OUTPUT SHAFT RING GEAR AND HUB SHAFT ASSEMBLY

Disassembly



G01672348

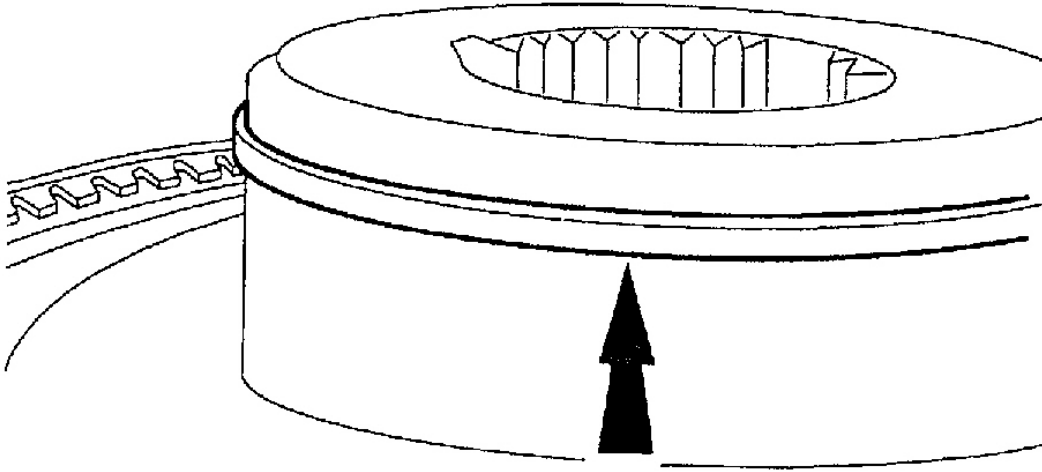
Fig. 216: Output Shaft Ring Gear & Hub Shaft Assembly Component View

Item	Part Number	Description
1	7A153	Output shaft ring gear
2	7D164	Output shaft hub
3	7C122	Retaining ring

G01672349

Fig. 217: Output Shaft Ring Gear & Hub Shaft Assembly Component View Legend

1. Inspect the output shaft ring gear and hub shaft assembly for damage. If repair is necessary, use the following procedure.
2. Remove the seal.



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Fig. 218: Removing Seal

3. Remove the output shaft ring gear from the output shaft hub.
 1. Remove the retaining ring.
 2. Remove the output shaft ring gear.

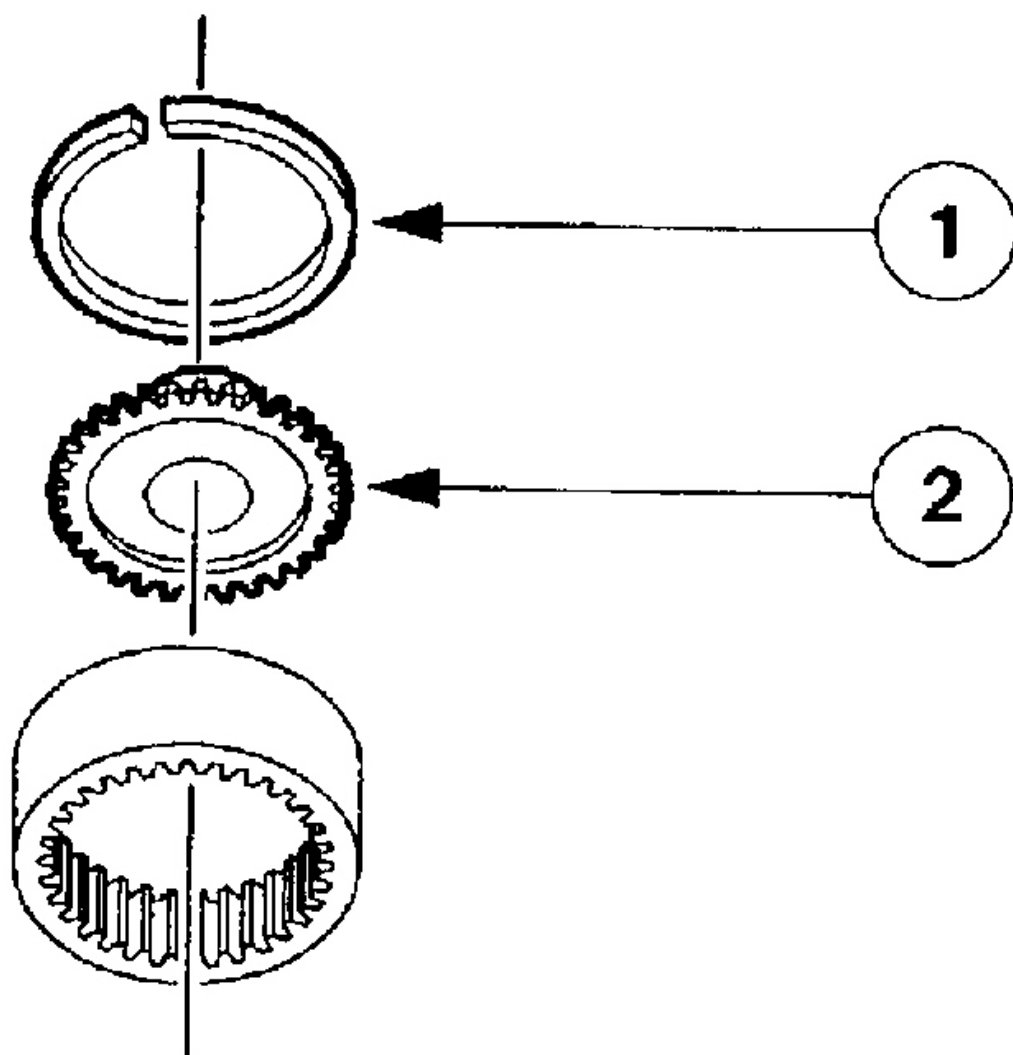
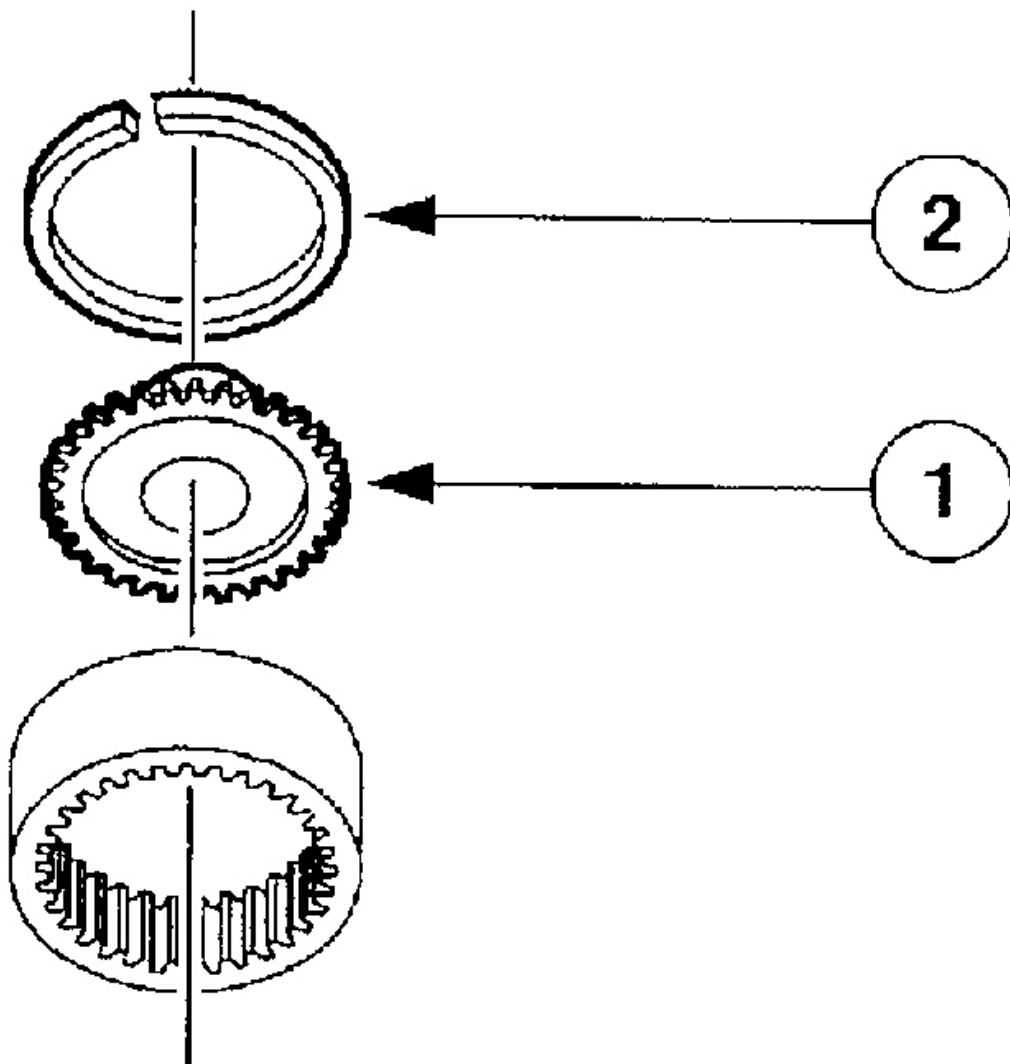
**G01672351**

Fig. 219: Removing Output Shaft Ring Gear

Assembly

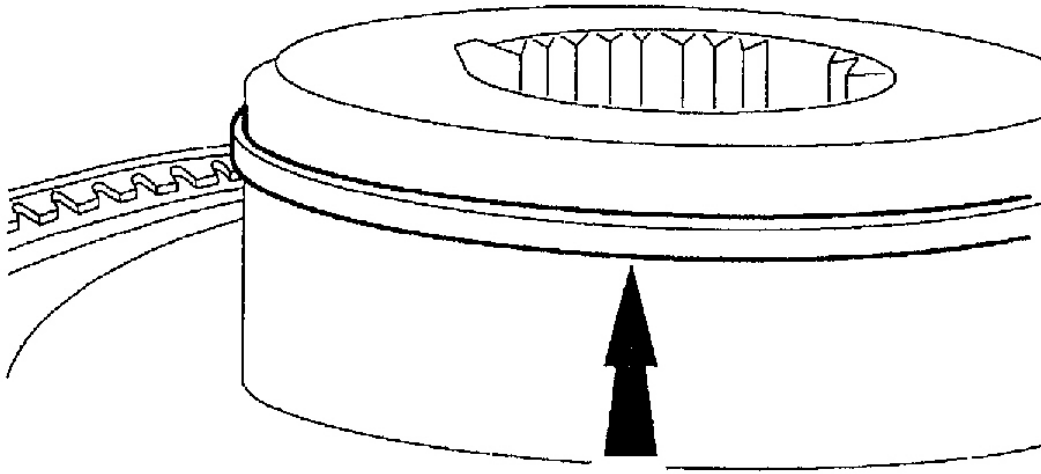
1. Install the output shaft ring gear onto the output shaft hub.
 1. Install the output shaft ring gear.
 2. Install the retaining ring.



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Fig. 220: Installing Output Shaft Ring Gear

2. Install the seal.



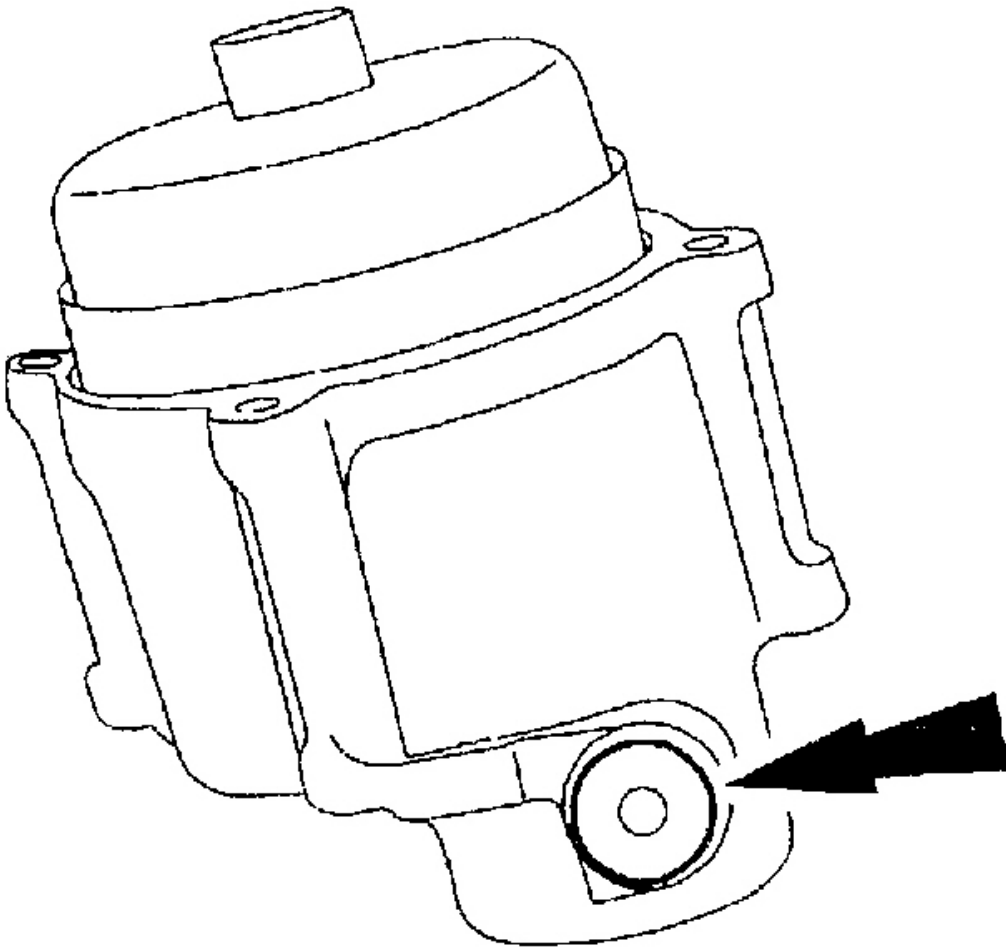
G01672353

Fig. 221: Installing Seal

REVERSE SERVO ASSEMBLY

Disassembly

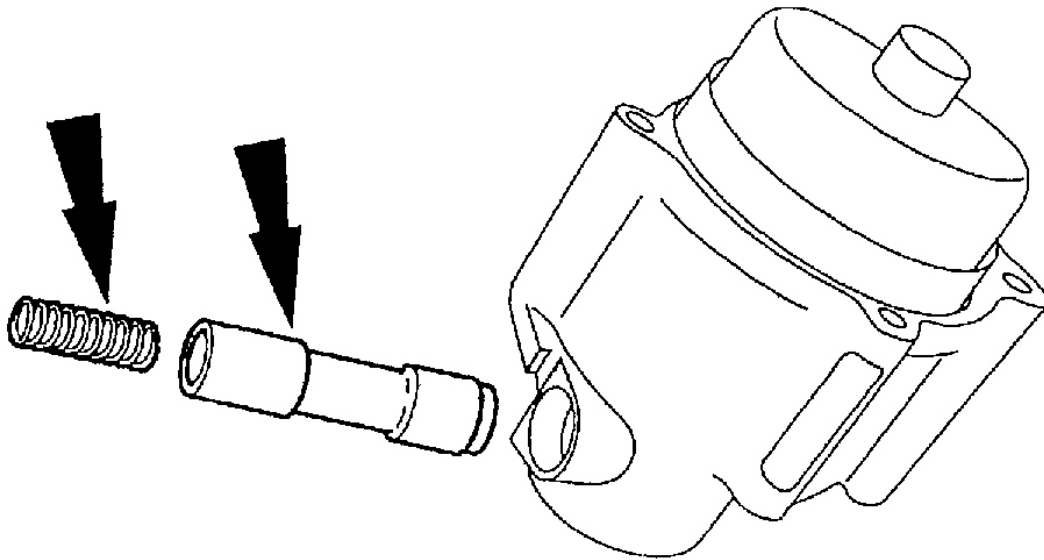
1. Remove the control valve spring retainer.



G01672354

Fig. 222: Removing Control Valve Spring Retainer

2. Remove the reverse servo spring and check valve.

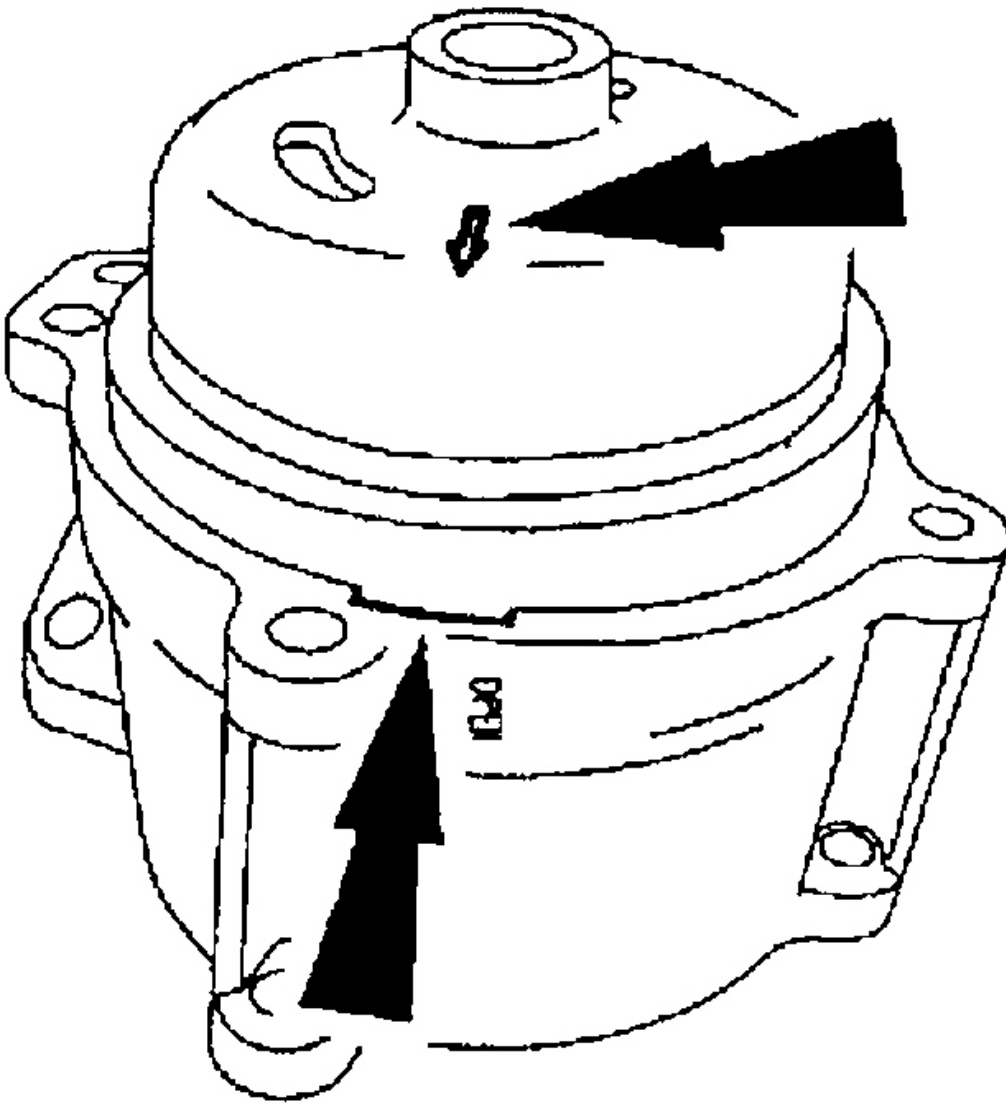


G01672355

Fig. 223: Removing Reverse Servo Spring & Check Valve

NOTE: **Tabs on servo plate mate with slots on cover every 120 degrees.**

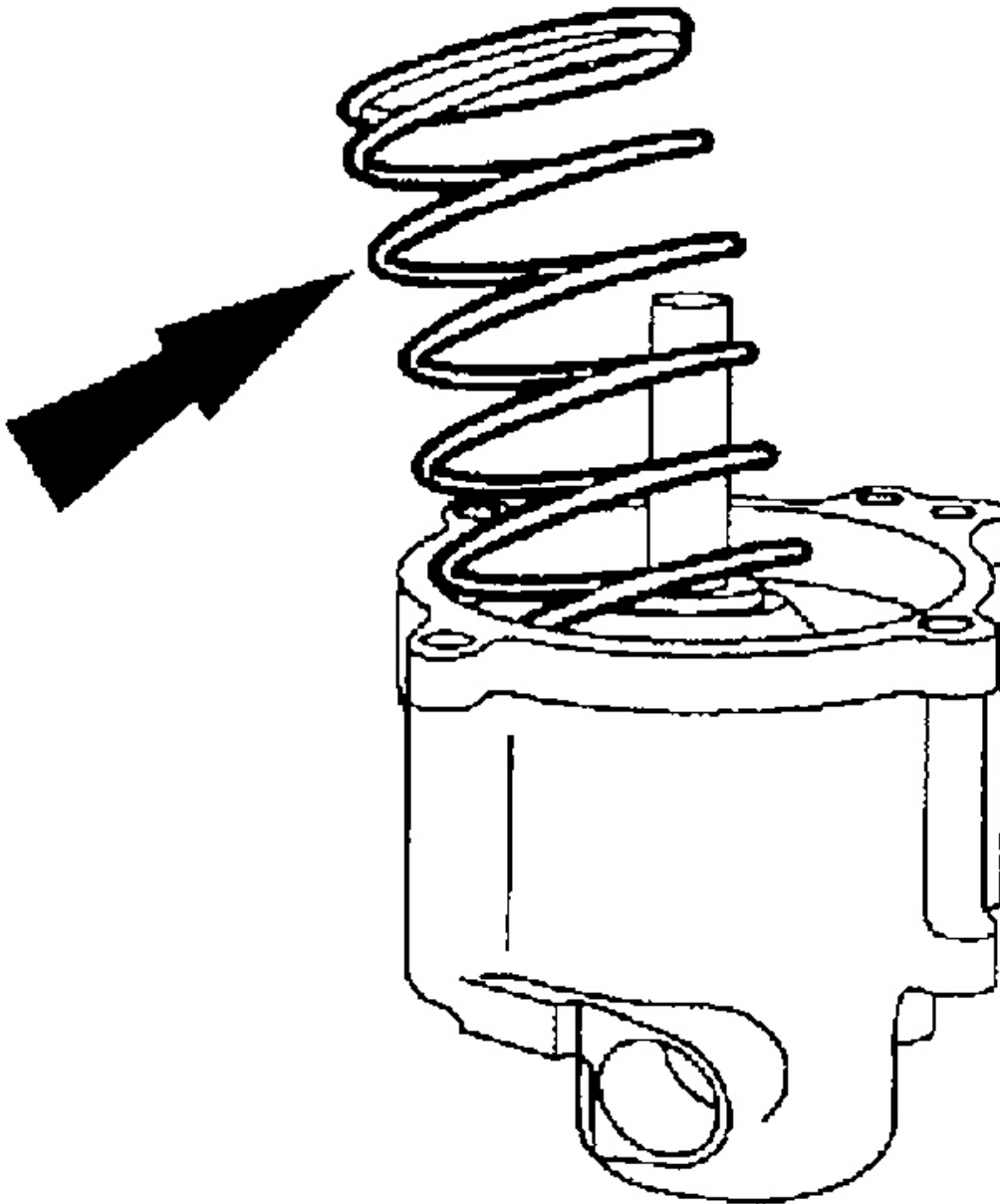
3. Remove the reverse servo plate by turning in either direction to release.
 - Align arrow on servo plate with any slot on cover.



G01672356

Fig. 224: Removing Reverse Servo Plate

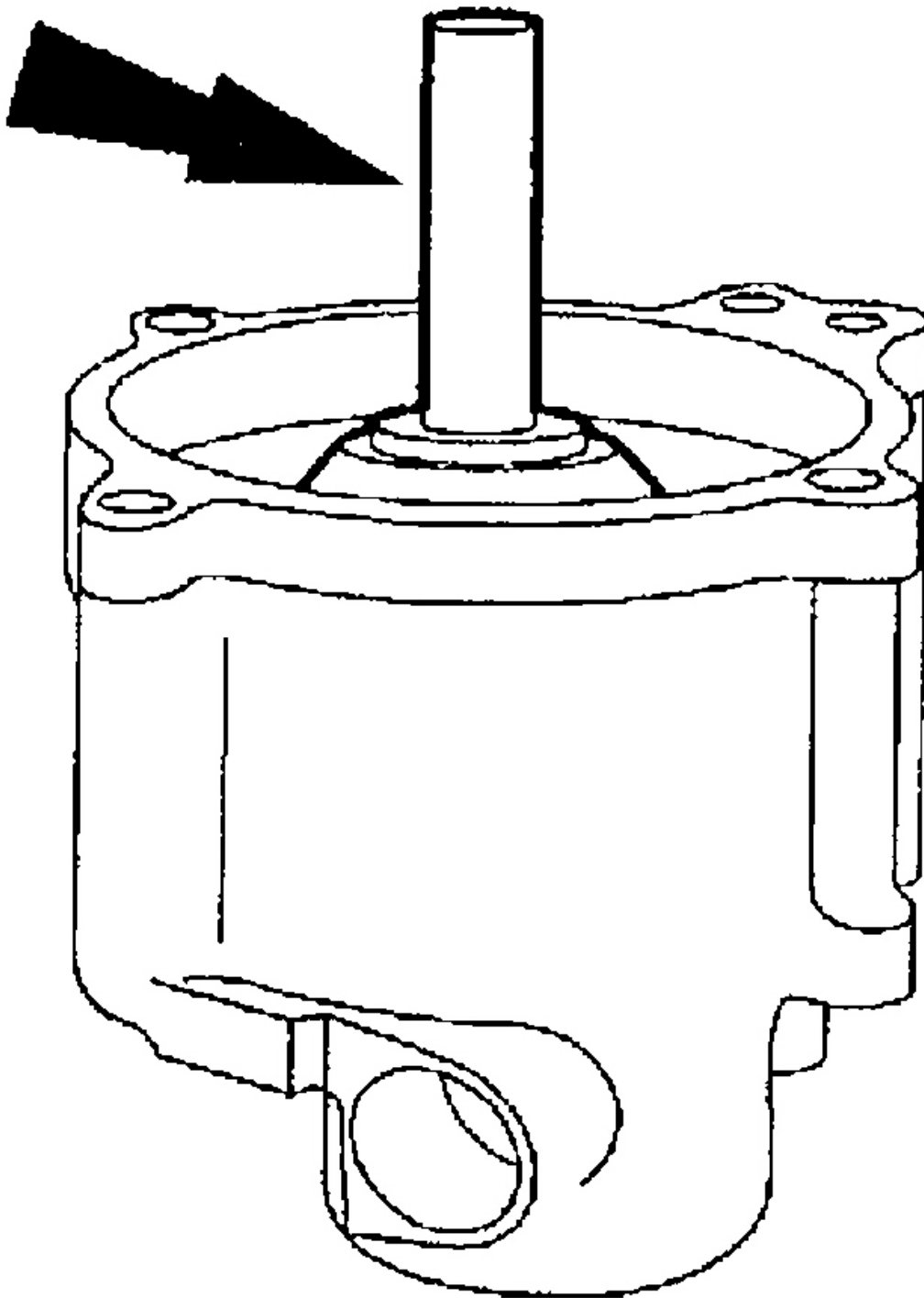
4. Remove the reverse servo spring.



G01672357

Fig. 225: Removing Reverse Servo Spring

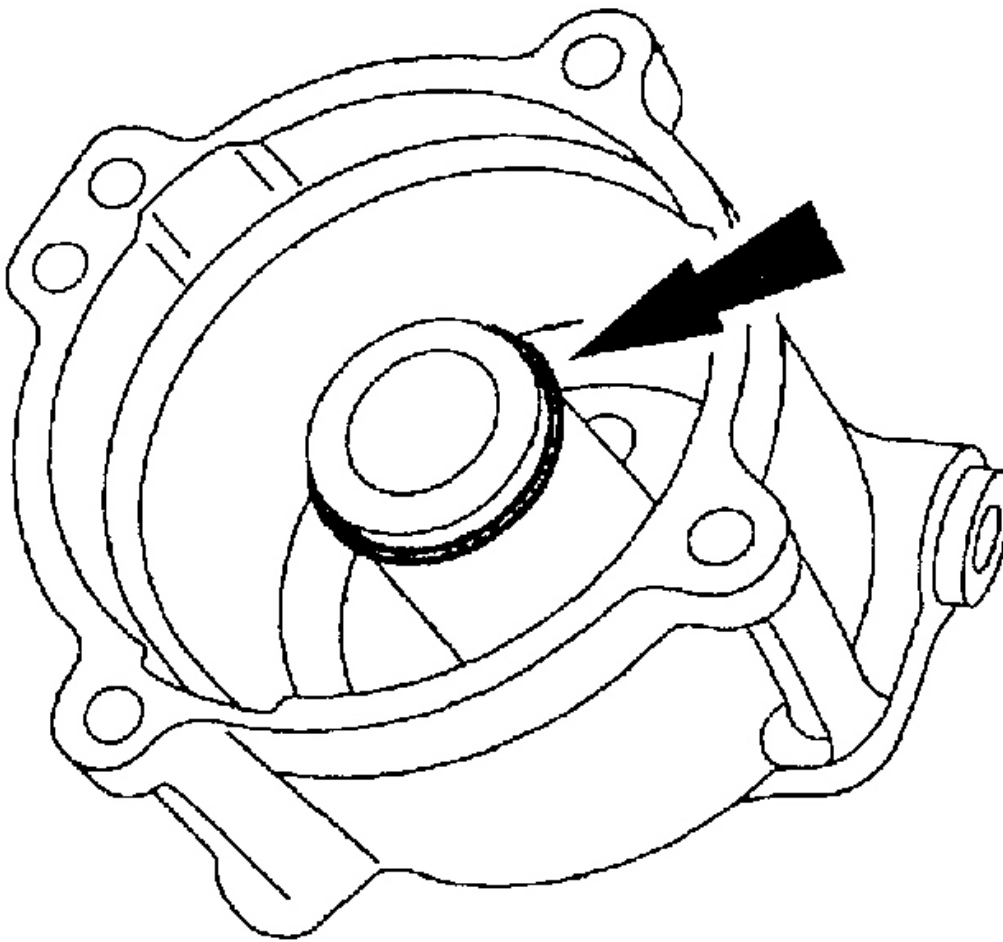
5. Remove the reverse servo piston and seal assembly.
 - Inspect the seal for damage, install new reverse servo piston if necessary.



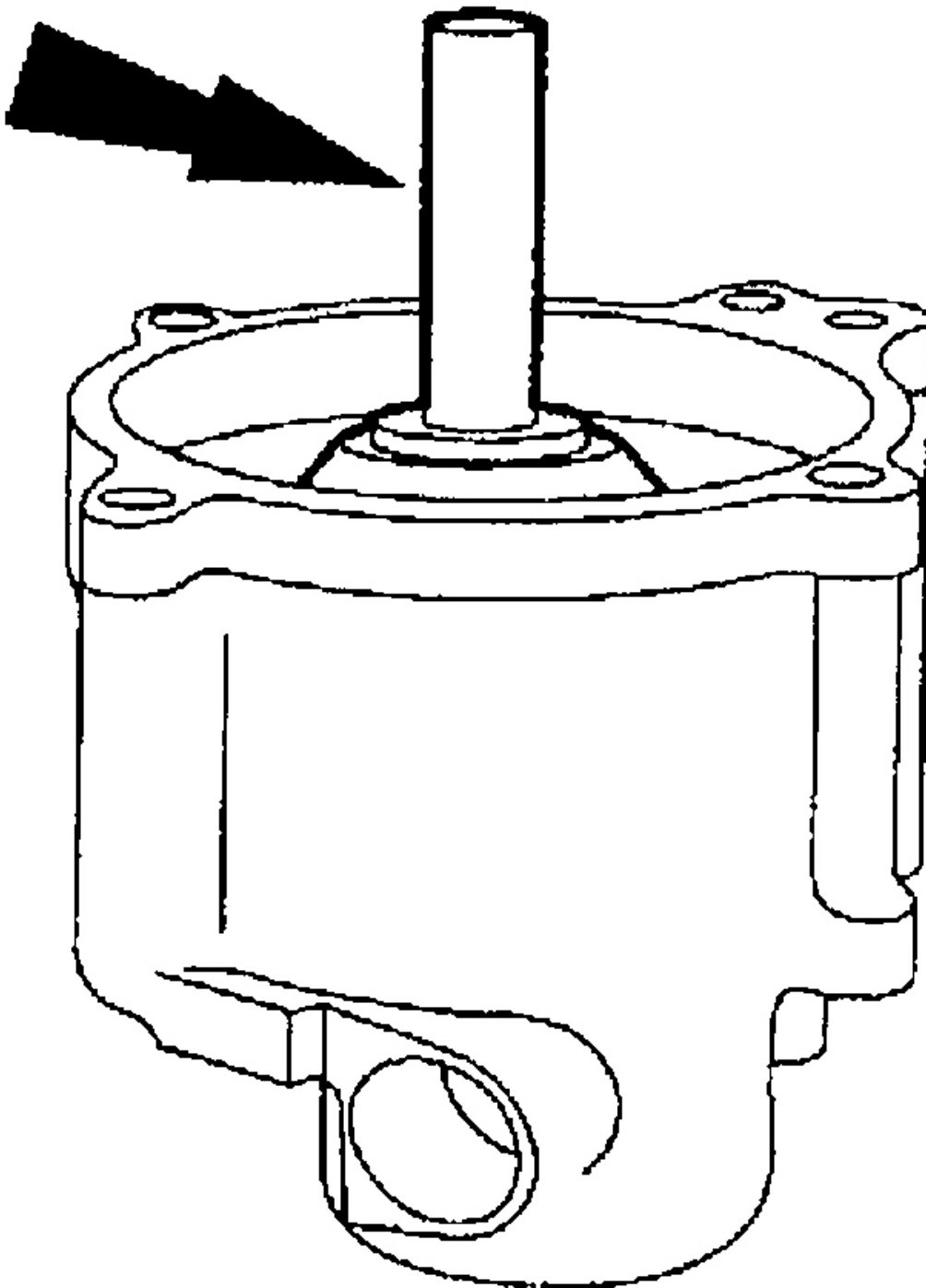
G01672358

Fig. 226: Removing Reverse Servo Piston & Seal Assembly

6. Inspect and install a new reverse servo piston seal if damaged.

**G01672359****Fig. 227: Inspecting Reverse Servo Piston Seal****Assembly**

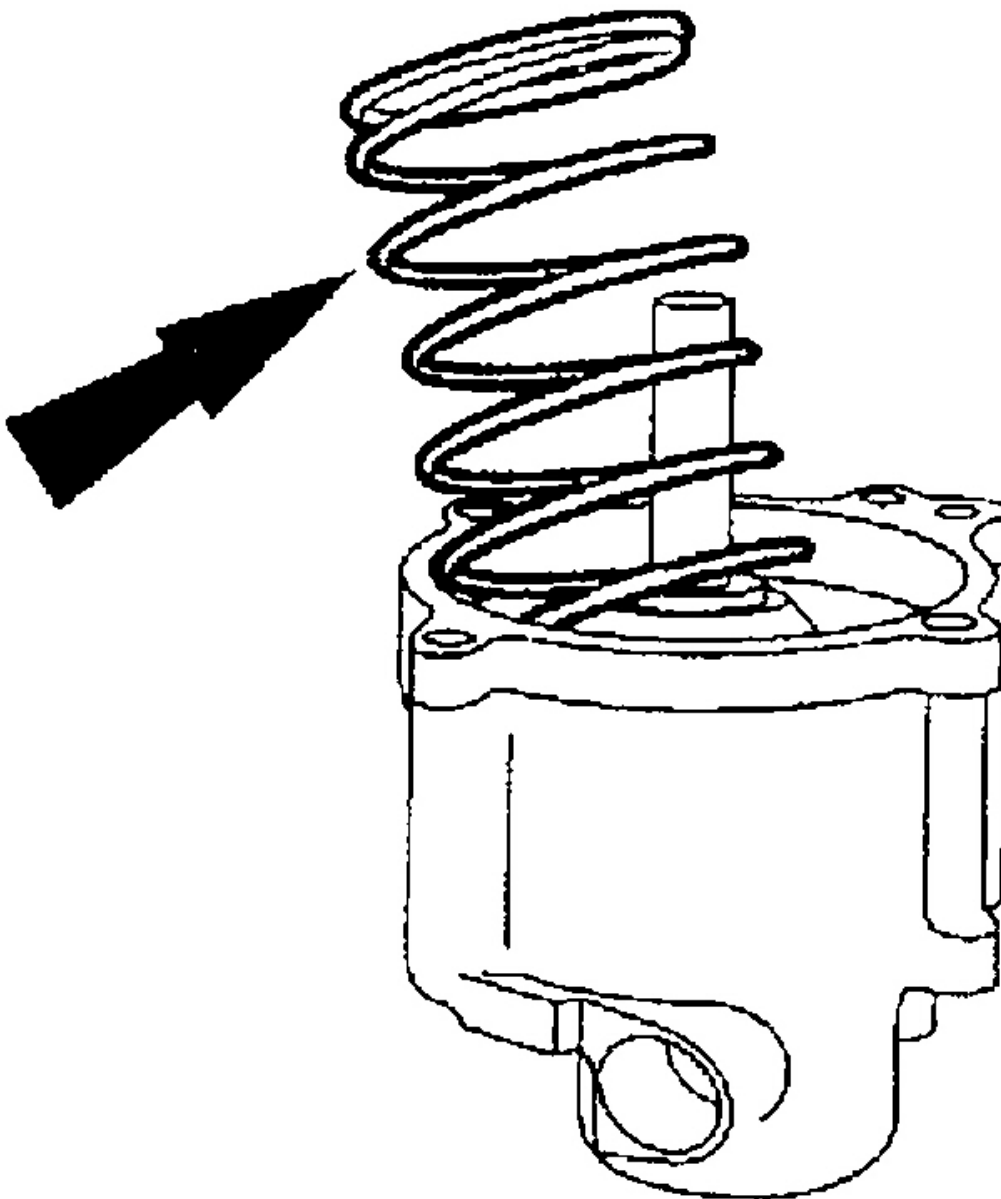
1. Install reverse servo piston and seal assembly.



G01672360

Fig. 228: Installing Reverse Servo Piston & Seal Assembly

2. Install the reverse servo spring.

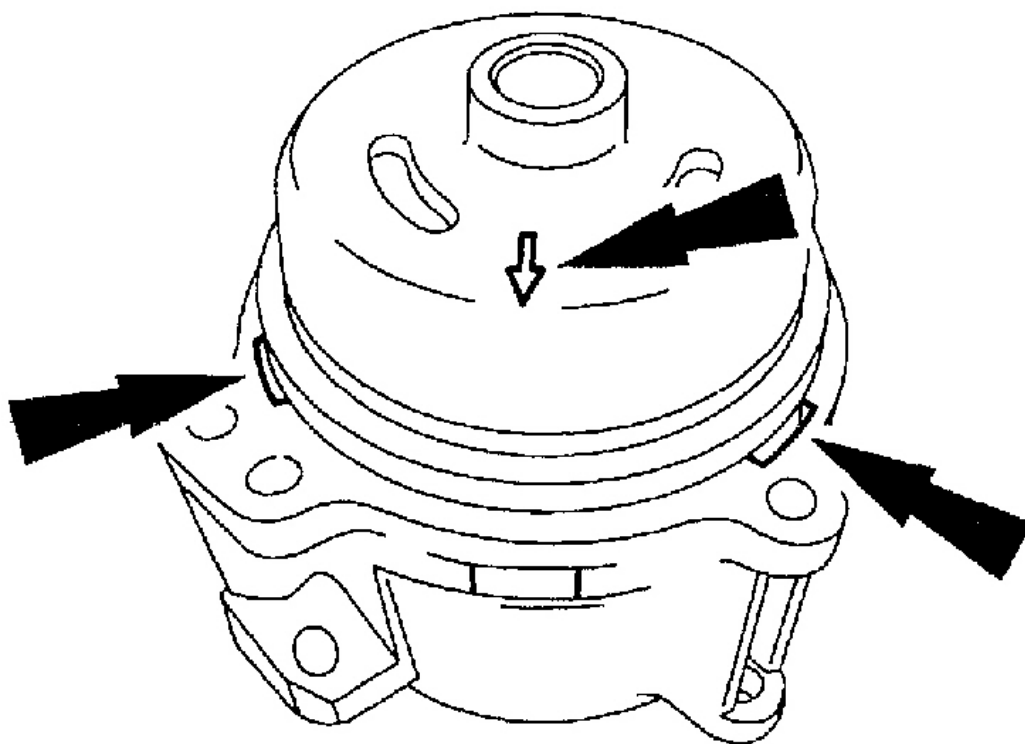


G01672361

Fig. 229: Installing Reverse Servo Spring

CAUTION: The arrow on the servo plate must be aligned evenly between any two slots on the cover.

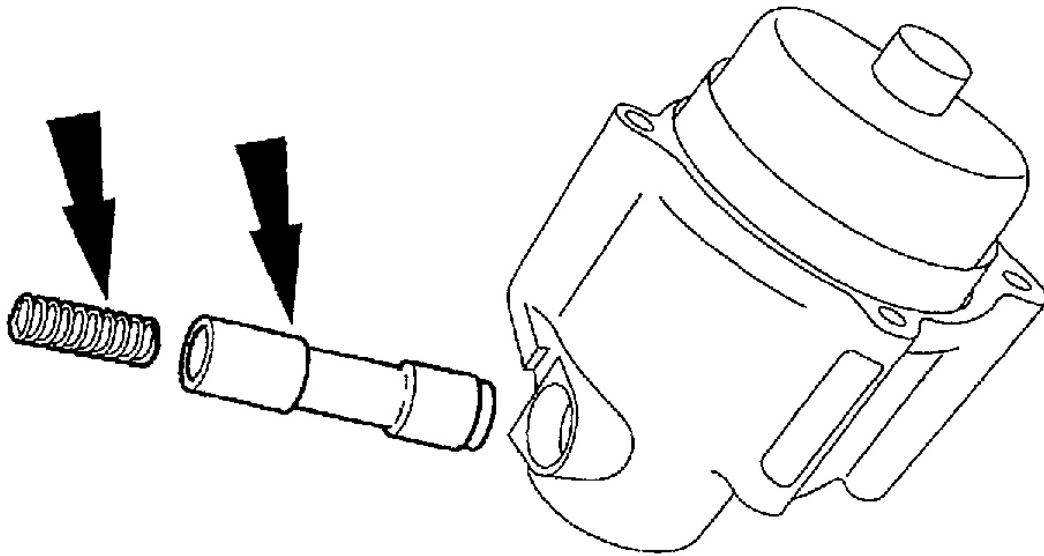
3. Install the reverse servo plate.



G01672362

Fig. 230: Installing Reverse Servo Plate

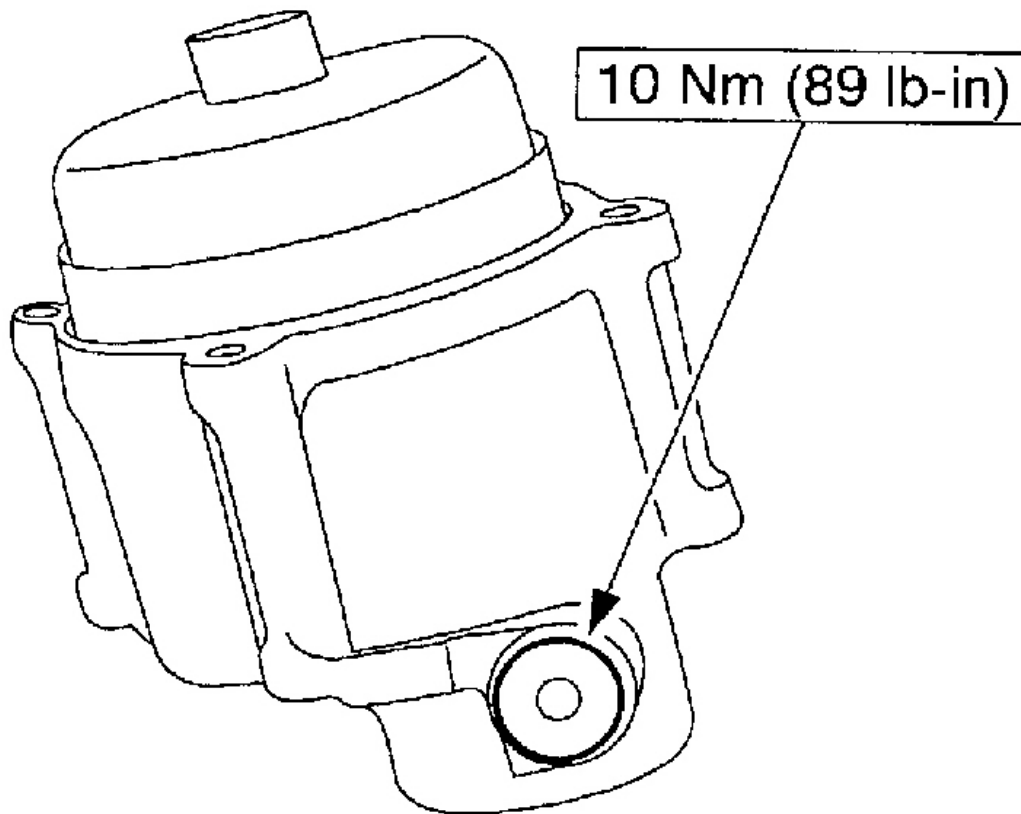
4. Install the reverse servo spring and check valve.



G01672363

Fig. 231: Installing Reverse Servo Spring & Check Valve

5. Install the control valve spring retainer.



G01672364

Fig. 232: Installing Control Valve Spring retainer**TORQUE CONVERTER**

1. A new torque converter must be installed if one or more of the following statements are true:
 - A torque converter failure has been determined based on complete diagnostic procedures.
 - Converter studs (s), impeller hub or bushing are damaged.
 - Discoloration of the torque converter (due to overheating).
 - The torque converter is found to be out of specification when carrying out one of the following torque converter checks:
 - Torque Converter One-Way Clutch Check
 - Torque Converter End Play Check
 - Torque Converter Turbine to Pump Stator Interference Check
 - Torque Converter Impeller to Pump Stator Interference Check
 - Torque Converter Leak Check

- Evidence of transmission assembly or fluid contamination due to the following transmission or converter failure modes:
 - major metallic failure
 - multiple clutches or clutch plate failures
 - sufficient component wear which results in metallic contamination

TORQUE CONVERTER CLEANING AND INSPECTION

1. If a new torque converter is being installed, continue with Substep 2 of Step 2.

CAUTION: The torque converter drain plug and seal are not reusable. Discard the drain plug and seal, install a new drain plug assembly.

2. If a new torque converter is not being installed, the following procedures must be carried out:
 1. The torque converter must be thoroughly cleaned.
 - Torque converter with drain plugs can be cleaned by using a suitable torque converter fluid cooler cleaner.

CAUTION: Do not use water based cleaners or transmission damage will occur.

- A torque converter without drain plugs can be cleaned by hand. Partially fill the torque converter using only recommended transmission fluid for the applicable transmission. Hand-agitate the torque converter and then thoroughly drain the fluid. Fill the torque converter with new fluid specified for the transmission, and install.
2. All in-tank and auxiliary coolers must be thoroughly cleaned by forward and backward flushing. For additional information, see **BACKFLUSHING AND CLEANING TRANSMISSION FLUID**.
 3. All cooler tubes must be thoroughly cleaned by backward and forward flushing. For additional information, see **BACKFLUSHING AND CLEANING TRANSMISSION FLUID**.
 4. All cooler bypass valves (CBV), if equipped, must be thoroughly cleaned.
 5. Carry out the Transmission Fluid Cooler Flow Test. For additional information, see **TRANSMISSION FLUID COOLER**.
 6. If the transmission cooling system fails the Transmission Fluid Cooler Flow Test, install new components as necessary. See **REMOVAL & INSTALLATION**.
 7. If new coolers are to be installed, use only factory-approved repair parts. For additional information, see ENGINE COOLING.

TORQUE CONVERTER FLUSHING

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Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM, XT-5-DM	MERCON® V

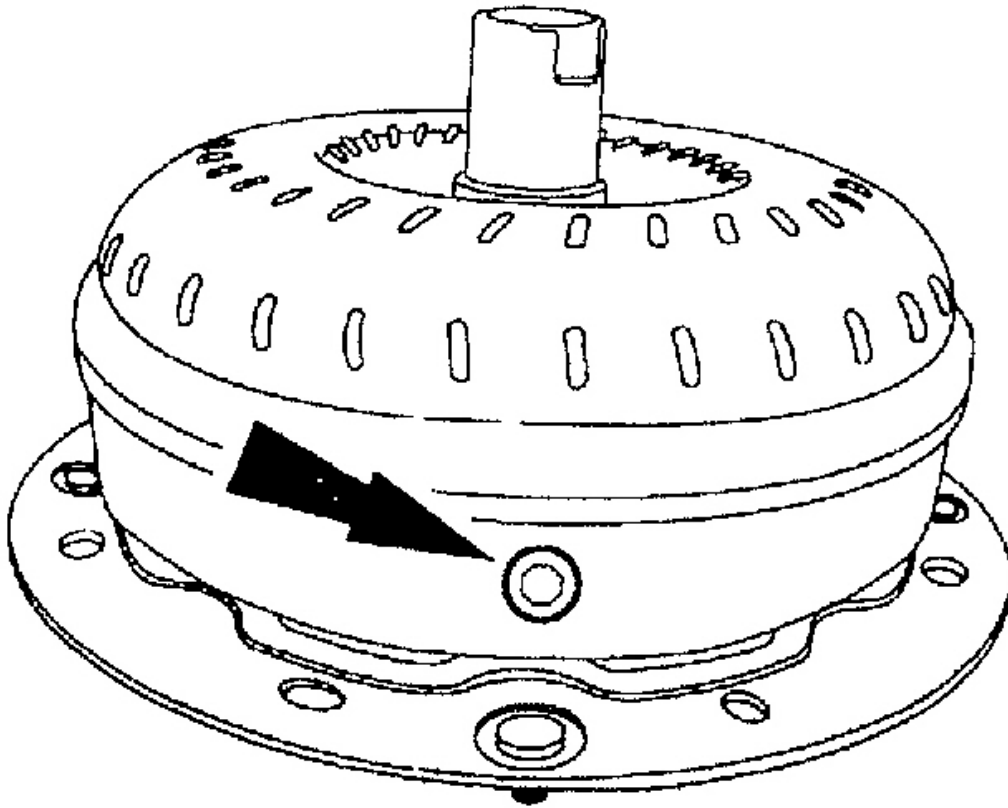
G01672365

Fig. 233: Materials

CAUTION: The torque converter drain plug and seal are not reusable. Discard the drain plug and seal, install a new drain plug and seal assembly.

CAUTION: Mineral spirits used to clean the torque converter must be fresh, non-water based, non-chlorinated and non-halogenated.

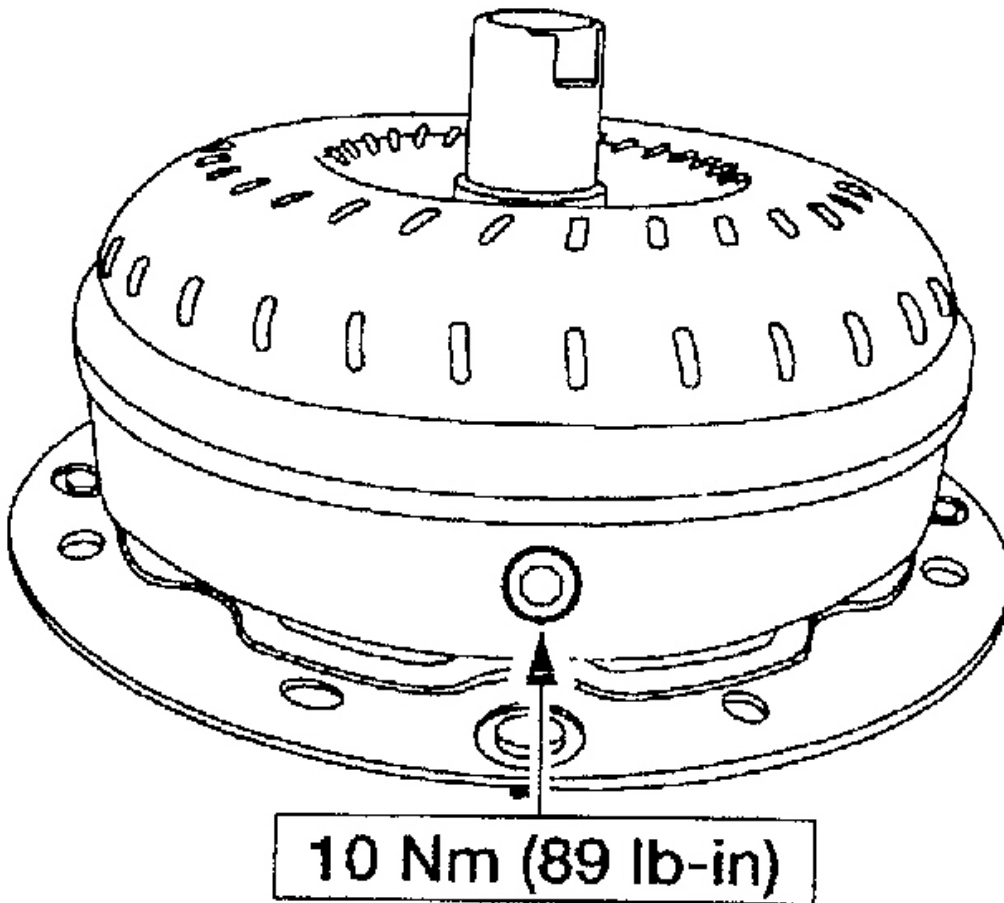
1. Using a suitable torque converter fluid cooler cleaner, flush the torque converter.
2. After Flushing, remove the drain plug and drain the remainder of the solvent.



G01672366

Fig. 234: Removing Drain Plug

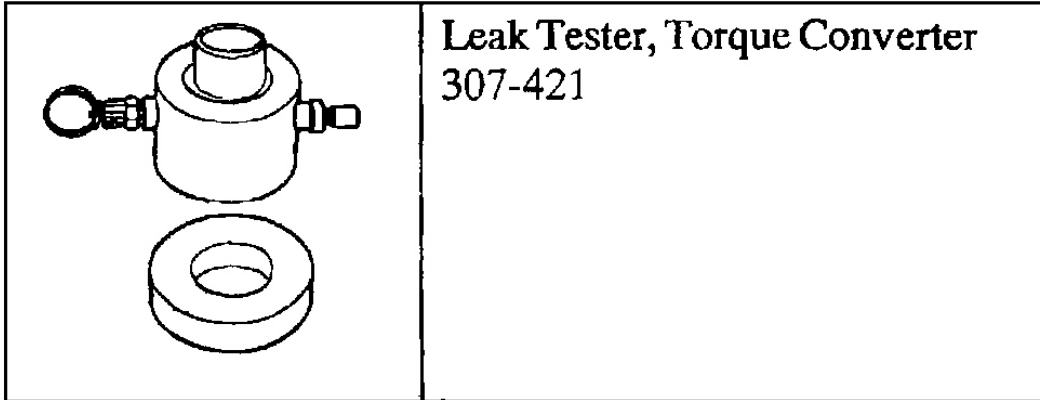
3. Add 1.9 liter (2 qt.) of clean automatic transmission fluid into the torque converter and agitate by hand.
4. Thoroughly drain the solution.
5. Install a new torque converter drain plug.



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Fig. 235: Installing Drain Plug

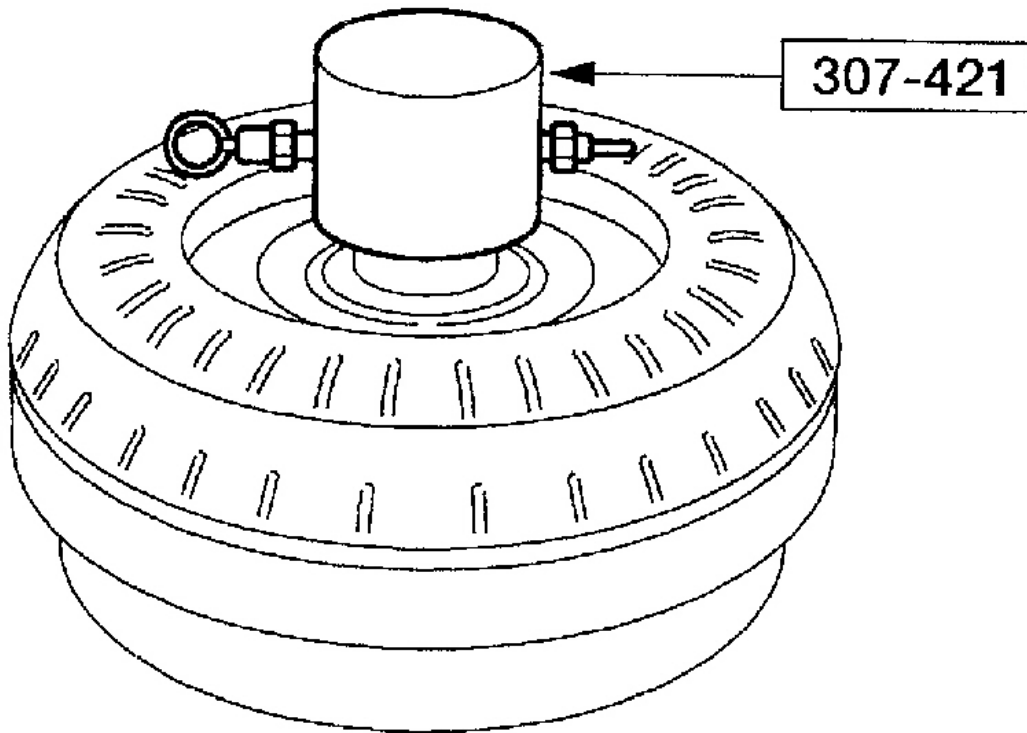
TORQUE CONVERTER LEAK CHECK



G01672368

Fig. 236: Special Tool(s)

1. Clean the outside surface of the torque converter.
2. Install the special tools into converter hub.



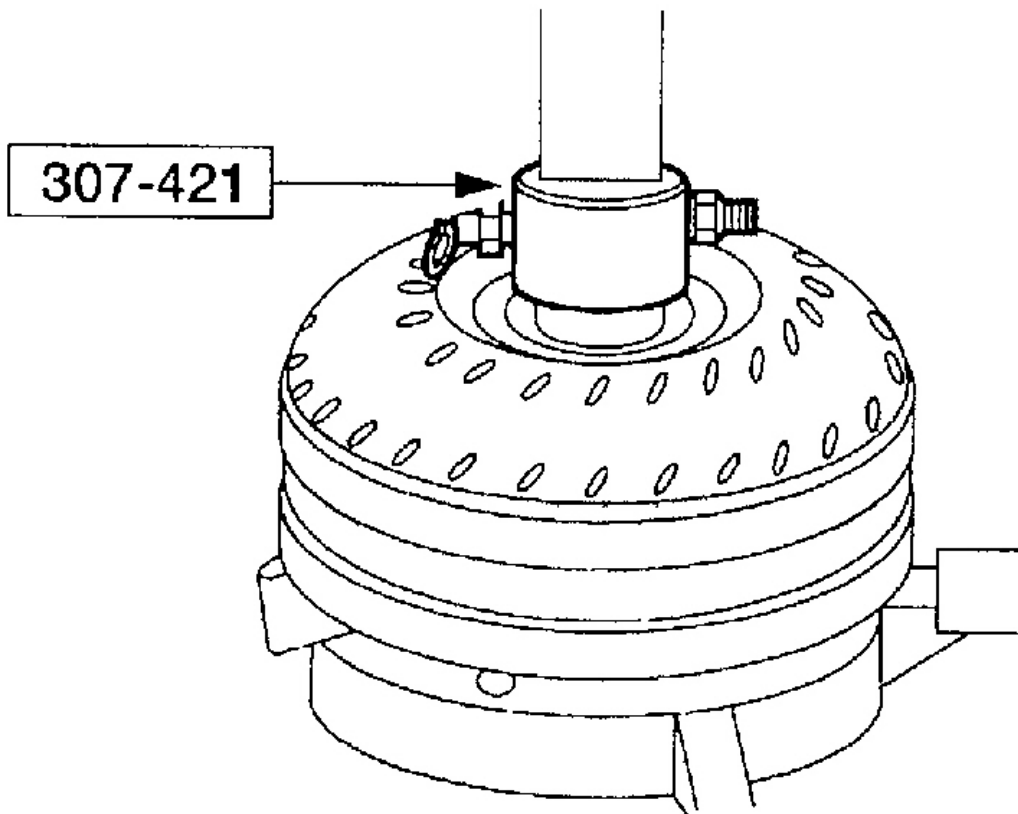
G01672369

Fig. 237: Installing Torque Converter Leak Tester

WARNING: Always follow correct safety procedures while using the press.
Failure to follow these instructions may result in personal injury.

3. Install the torque converter with the special tool installed into the arbor press.

Secure the press. Apply enough force from the press to seal the tool into the torque converter.

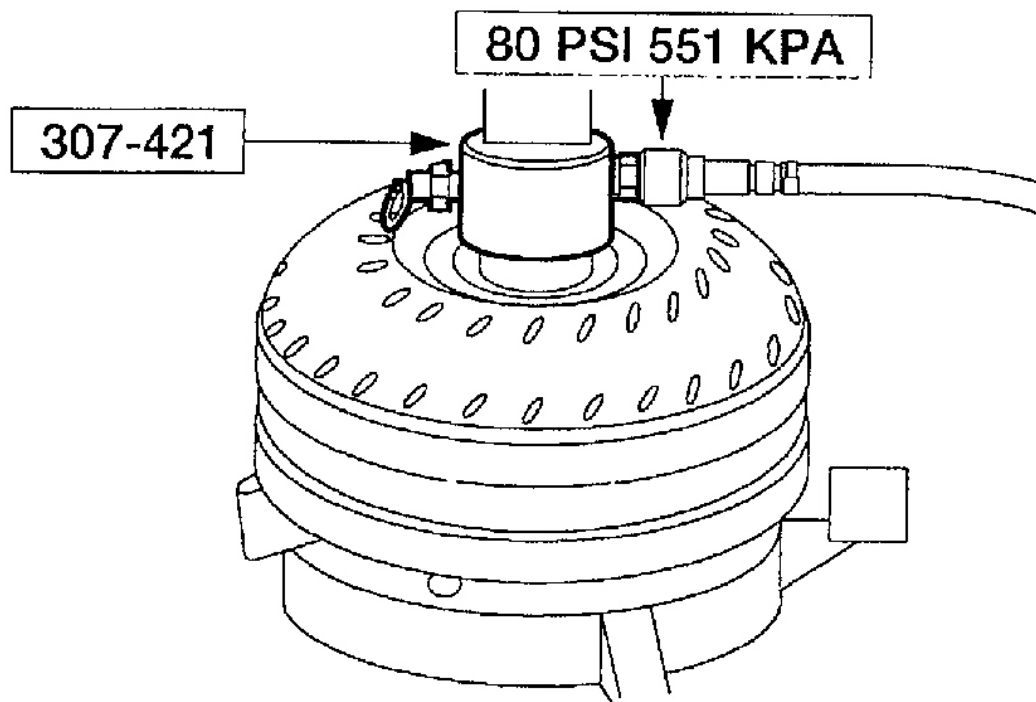


G01672370

Fig. 238: Installing Torque Converter In Arbor Press

NOTE: Use clean, dry shop air.

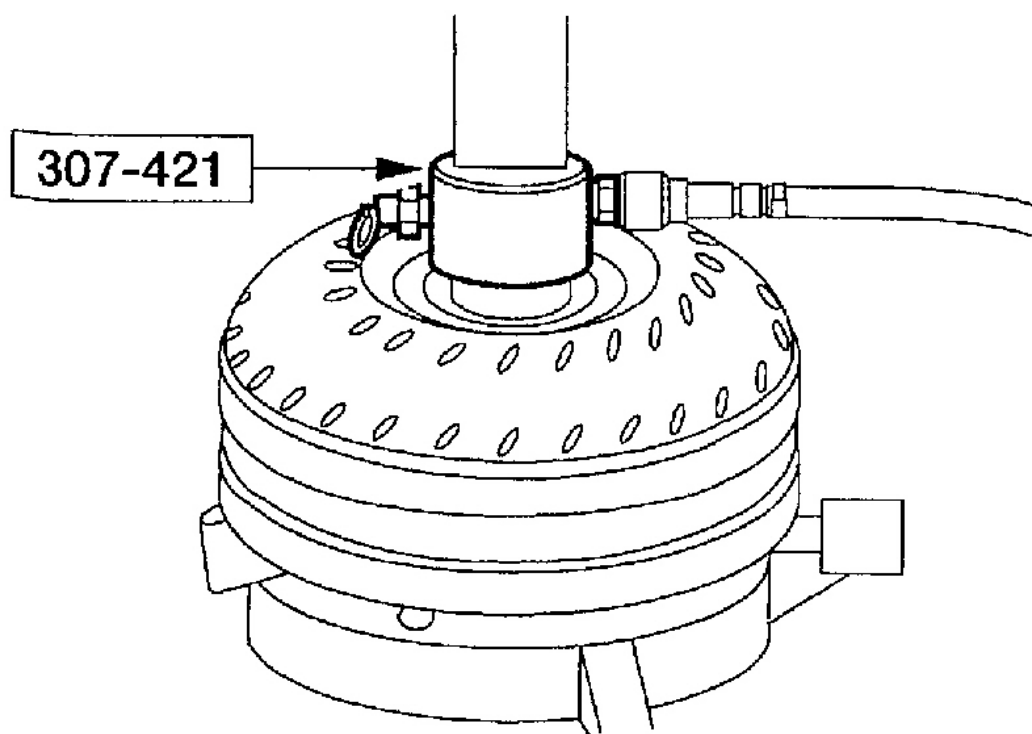
4. Apply air pressure to valve on the special tool.



G01672371

Fig. 239: Applying Air Pressure To Torque Converter

5. With air pressure applied to the valve, inspect for leaks at the converter hub, the seams, drain plug, and the studs. A soap bubble solution can be applied around those areas to aid in the diagnosis. If a leak is found around the drain plug install a new drain plug and recheck the torque converter. If any other leaks are present, install a new or remanufactured converter.



G01672372

Fig. 240: Inspecting For Torque Converter Leaks

6. Remove the air hose. Release the pressure, and then slowly release the press. Remove the converter. Remove the tool.

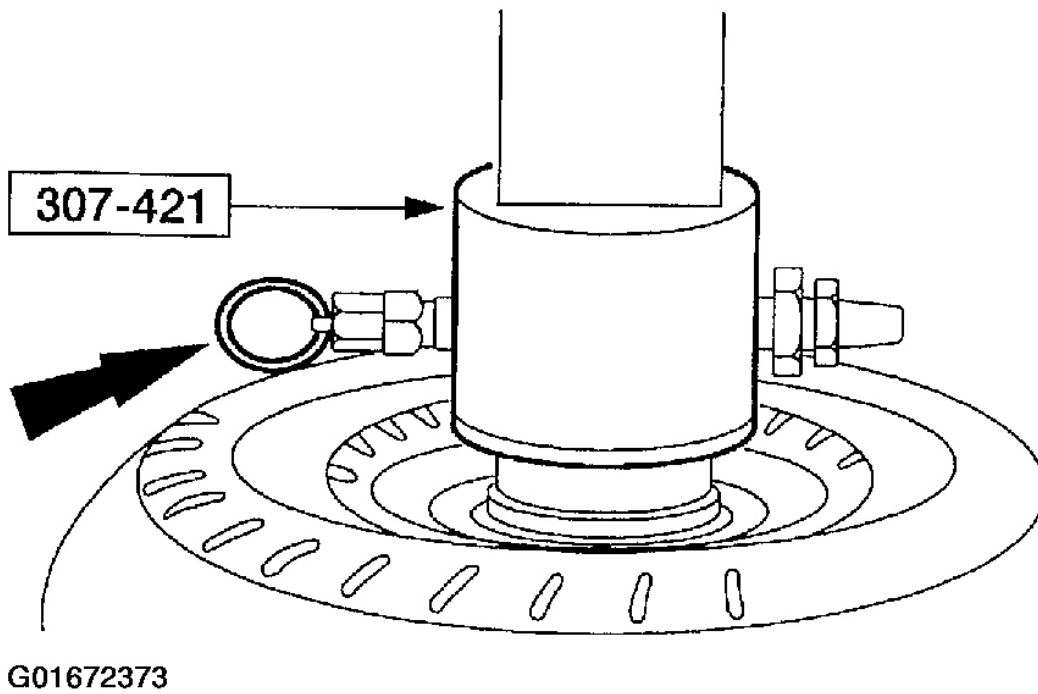
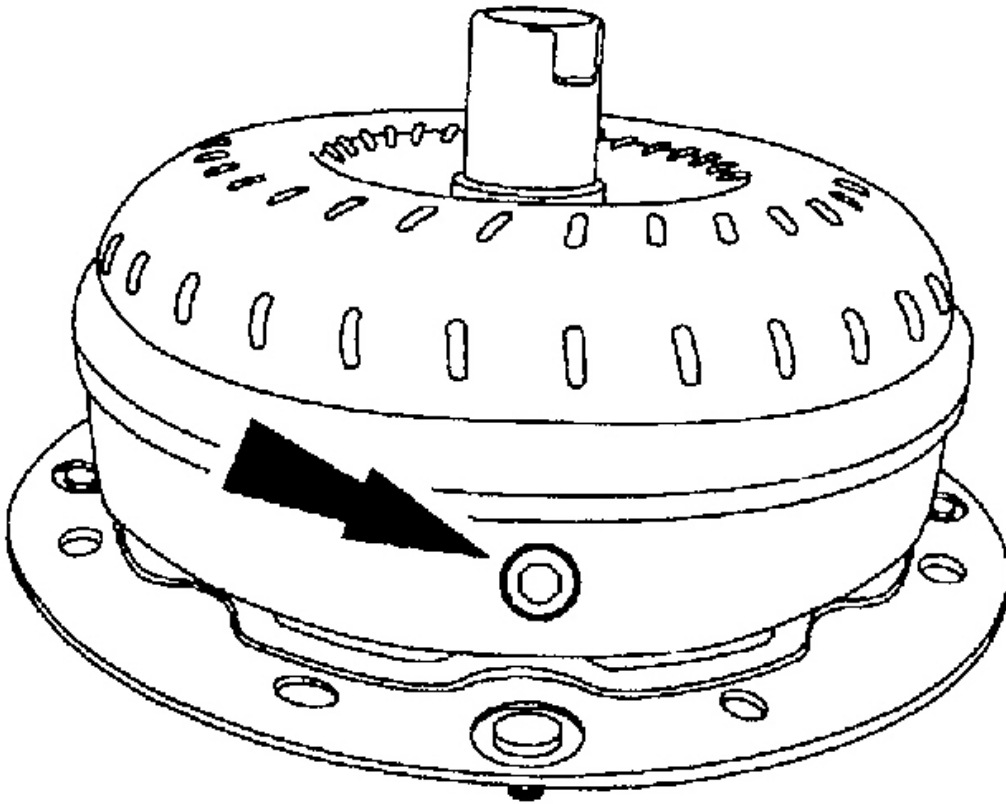


Fig. 241: Removing Torque Converter Leak Tester

TORQUE CONVERTER IMPELLER TO PUMP STATOR INTERFERENCE CHECK

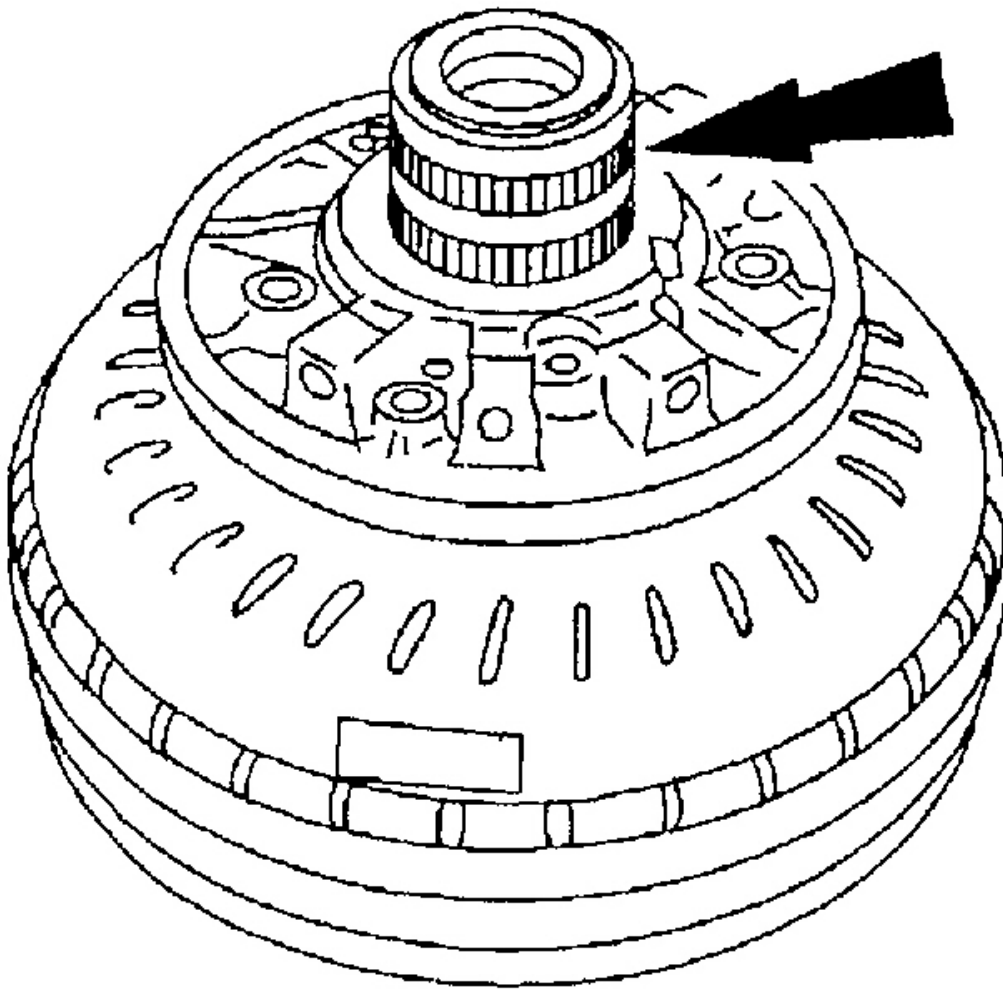
1. Remove the drain plug and drain the fluid from the torque converter.



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Fig. 242: Removing Drain Plug

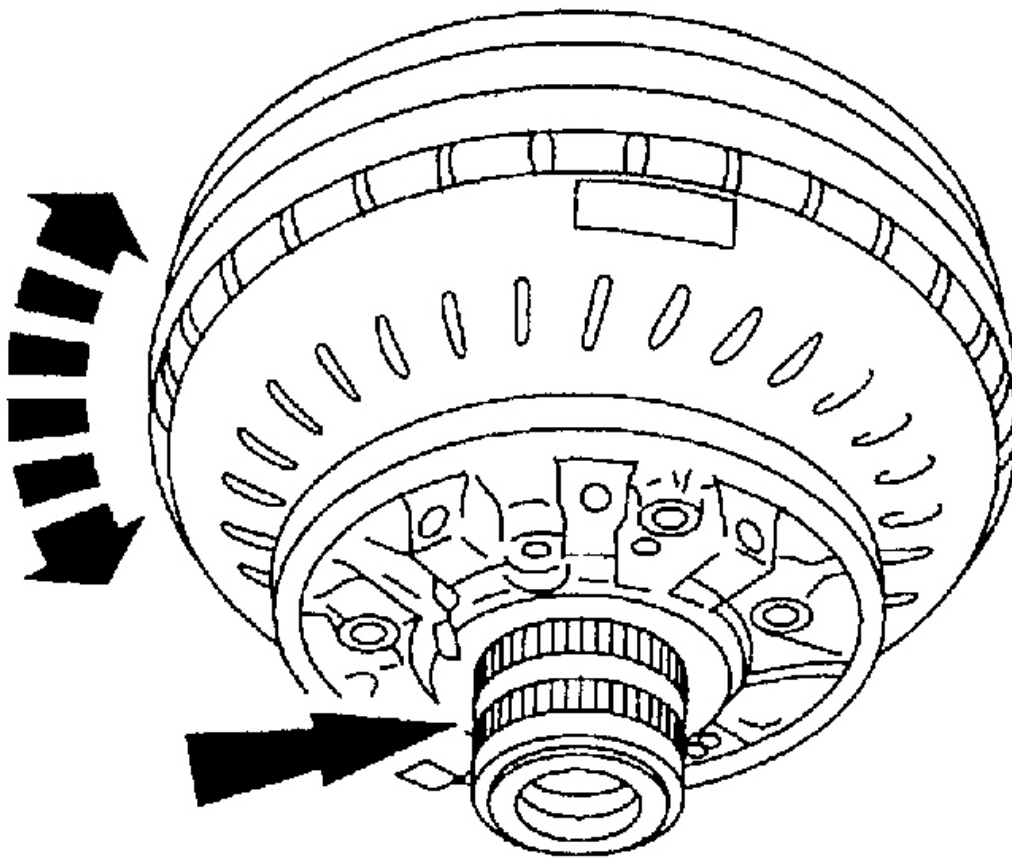
2. Install fluid pump support into torque converter. Engage splines of the one-way clutch inner race with the mating splines of the overdrive pump support.



G01672375

Fig. 243: Installing Fluid Pump Support

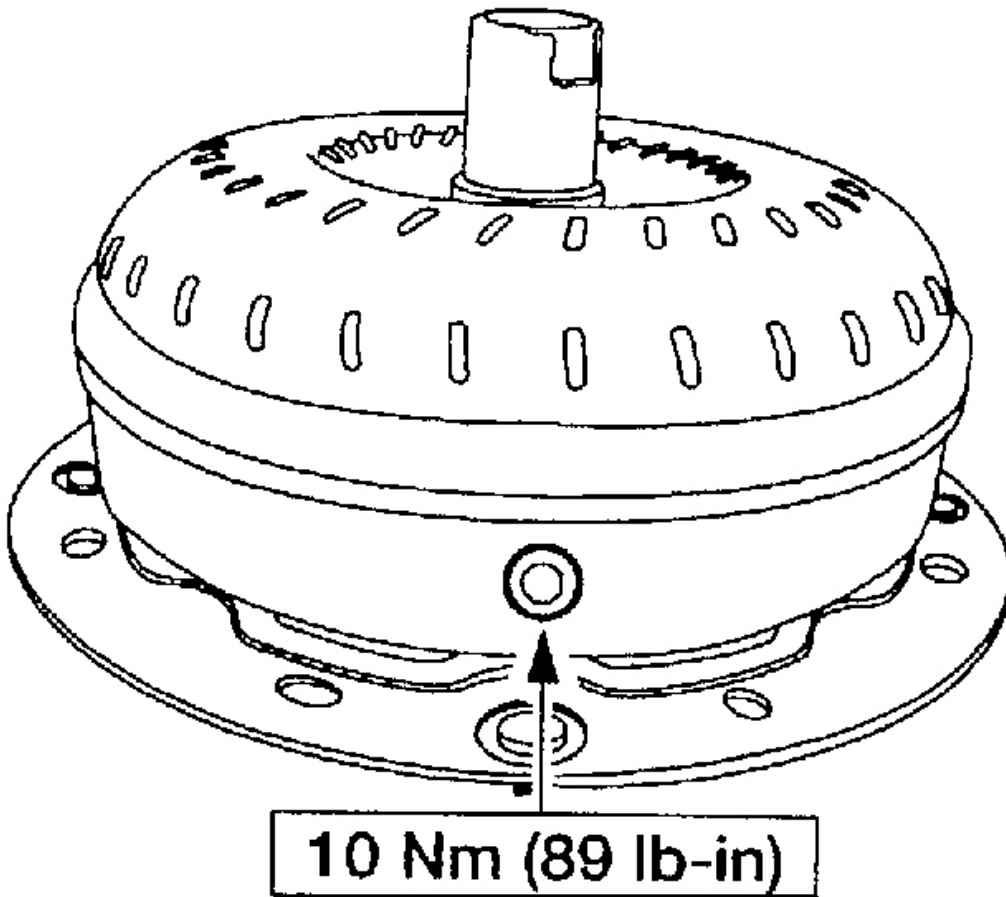
3. While holding the fluid pump support stationary, rotate the torque converter clockwise and counterclockwise. The torque converter should rotate freely with no signs of scraping. If there are signs of scraping, install a new or remanufactured torque converter.



G01672376

Fig. 244: Rotating Torque Converter On Fluid Pump Support

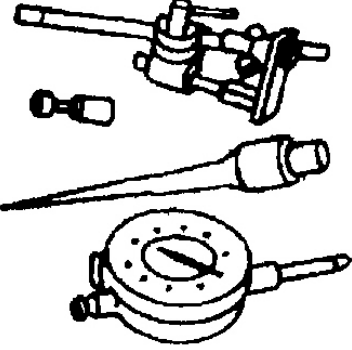
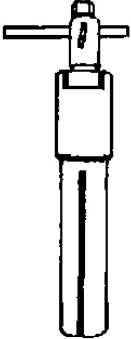
4. Install a new drain plug in the torque converter.



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Fig. 245: Installing Drain Plug

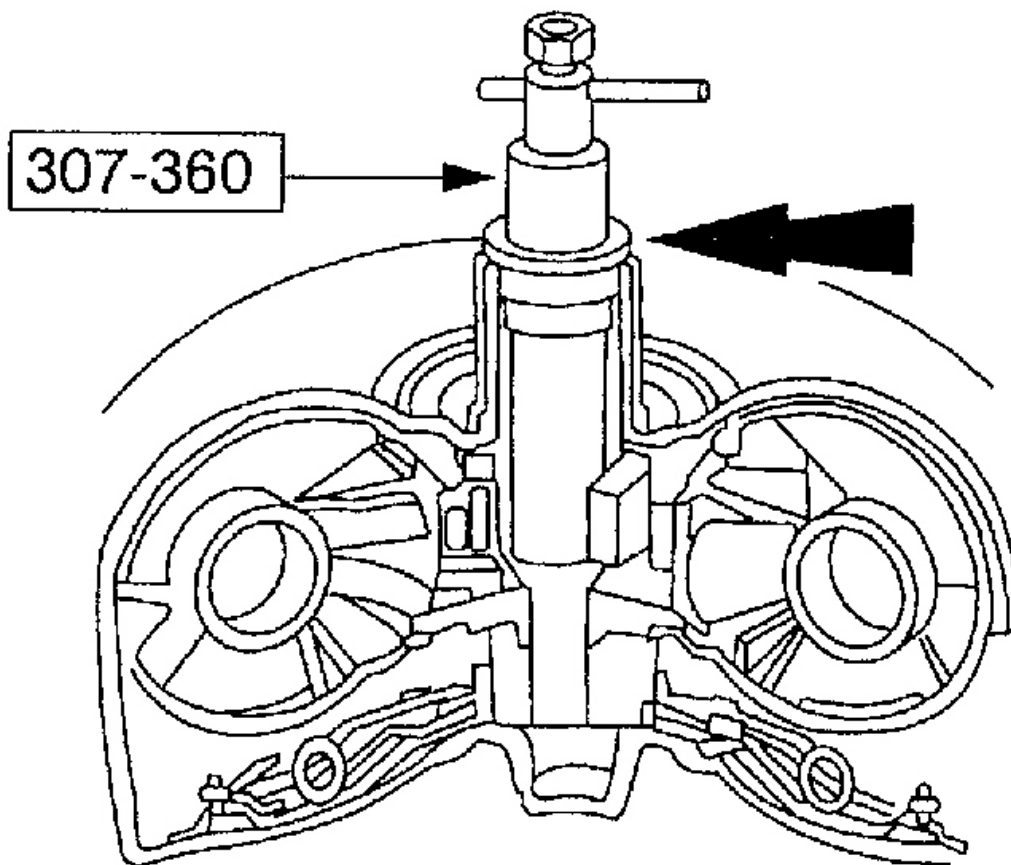
TORQUE CONVERTER END PLAY CHECK

	<p>Dial Indicator Gauge with Holding Fixture 100-002 (TOOL-4201-C) or equivalent</p>
	<p>End Play Gauge, Torque Converter 307-360</p>

G01672378

Fig. 246: Special Tool(s)

1. Install the special tool into the torque converter until it bottoms out.
 - Tighten the inner post until the tool is securely locked.



G01672379

Fig. 247: Installing Torque Converter End Play Gauge

2. Install the special tool on the converter impeller housing and zero the dial.

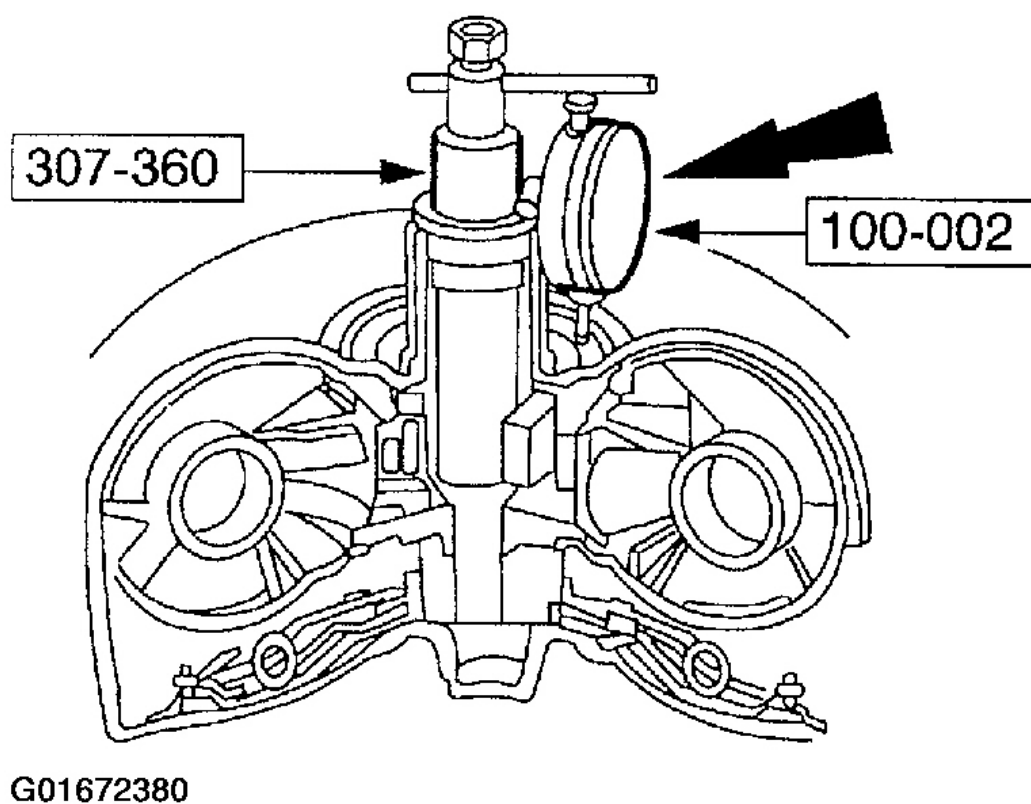
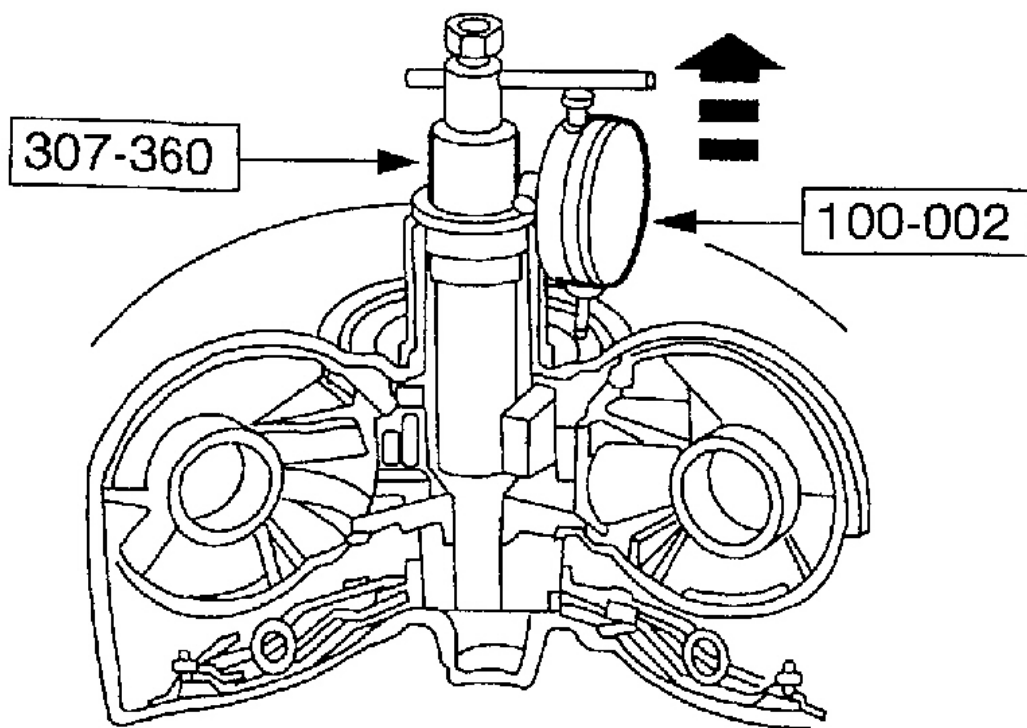


Fig. 248: Installing Dial Indicator

3. Lift up on the special tool and note the dial indicator reading. If the reading exceeds end play limits, install new or rebuilt torque converter.




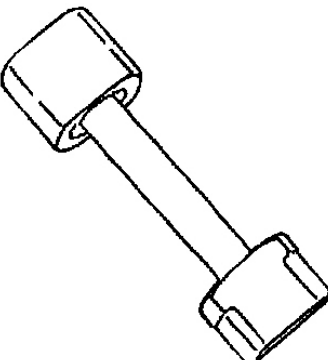
G01672381

Fig. 249: Measuring Torque Converter End Play

New or Rebuilt Torque Converter	Used Torque Converter
0.44 mm (0.017 in)	Max. 0.80 mm (0.031 in)

G01672382

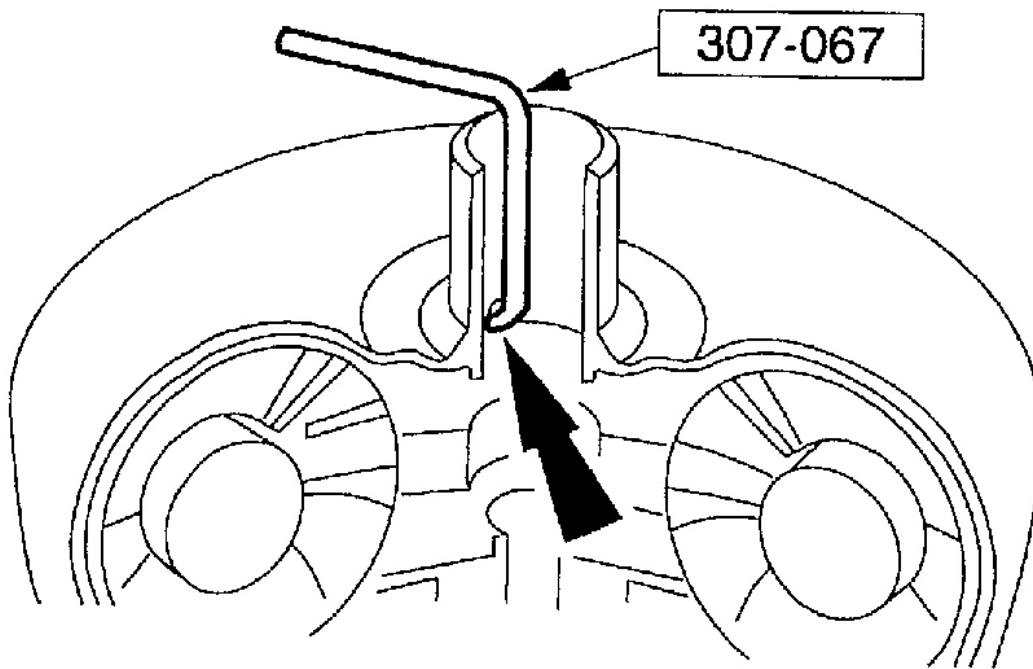
Fig. 250: Torque Converter End Play Specification**TORQUE CONVERTER ONE-WAY CLUTCH CHECK**

	Holding Tool, Torque Converter Clutch 307-067 (T77L-7902-R)
	Torque Adapter, Torque Converter Clutch 307-066 (T77L-7902-B)

G01672383

Fig. 251: Special Tool(s)

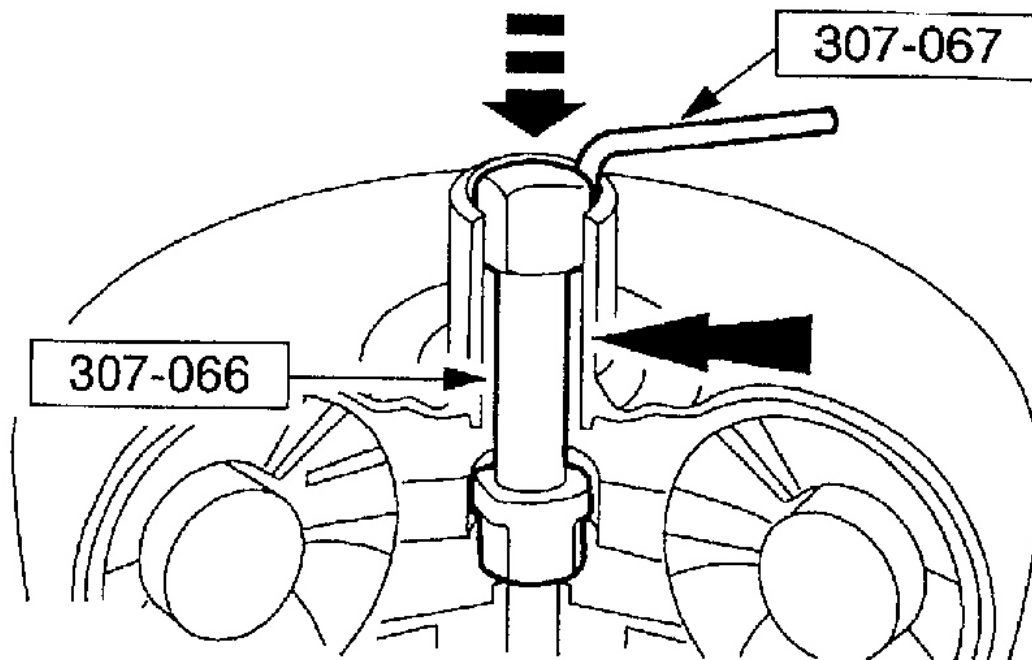
1. Insert the special tool in one of the grooves in the stator bearing retainer.



G01672384

Fig. 252: Installing Torque Converter Clutch Holding Tool

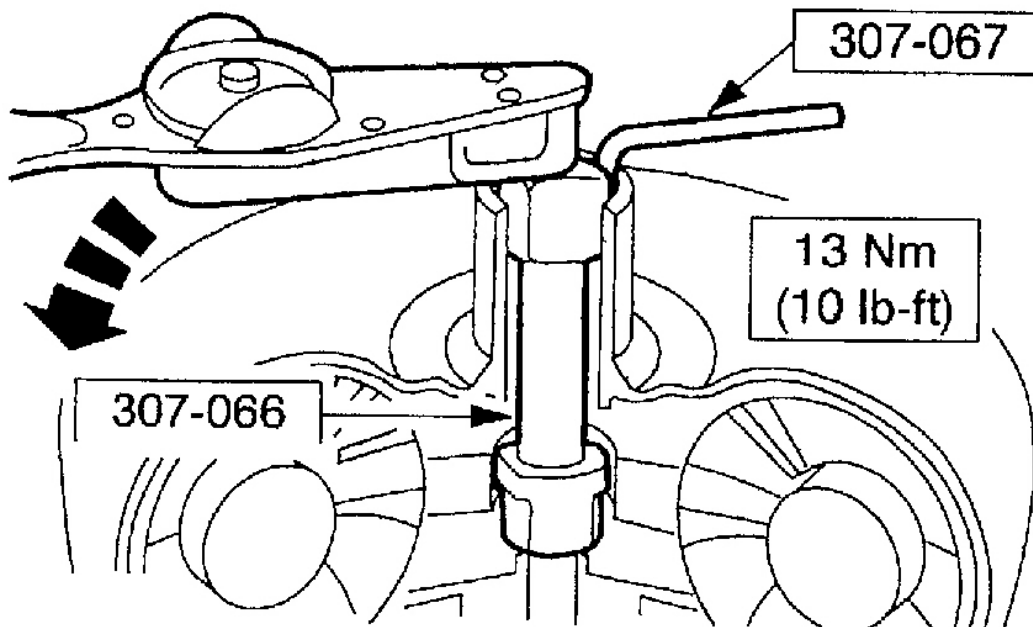
2. Install the special tools in the converter one-way clutch inner race spline.



G01672385

Fig. 253: Installing Torque Converter Clutch Torque Adapter

3. Use the special tool to hold the stator bearing retainer while using the special tool to turn the converter one-way clutch inner race spline.
 - The torque converter one-way clutch should lock up and hold torque in the counter clockwise direction.
 - The torque converter one-way clutch should rotate freely in the clockwise direction.
 - Try the clutch for lockup and hold in at least five positions.
 - If the converter fails the lockup test torque, install a new or rebuilt torque converter.

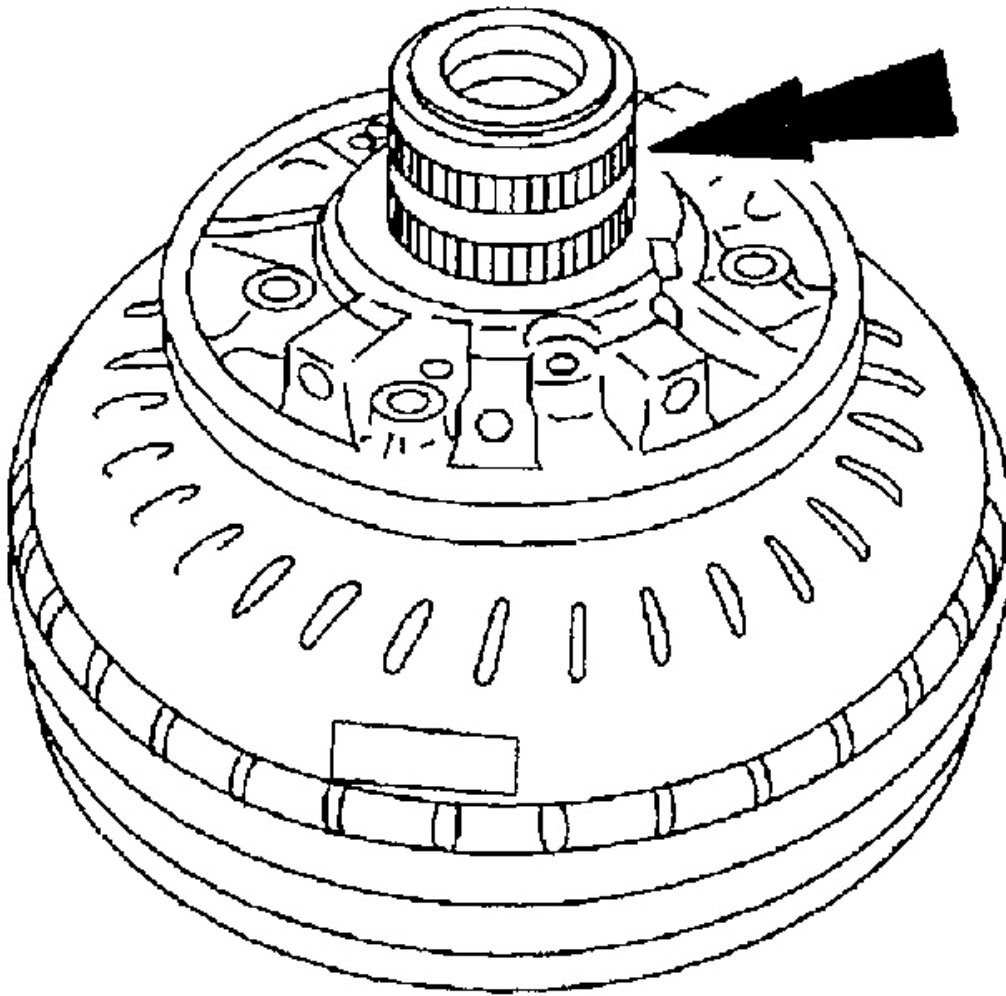


G01672386

Fig. 254: Checking Torque Converter One-Way Clutch**TORQUE CONVERTER TURBINE TO PUMP STATOR INTERFERENCE CHECK**

NOTE: The pump support may remain in the pump assembly during this test.

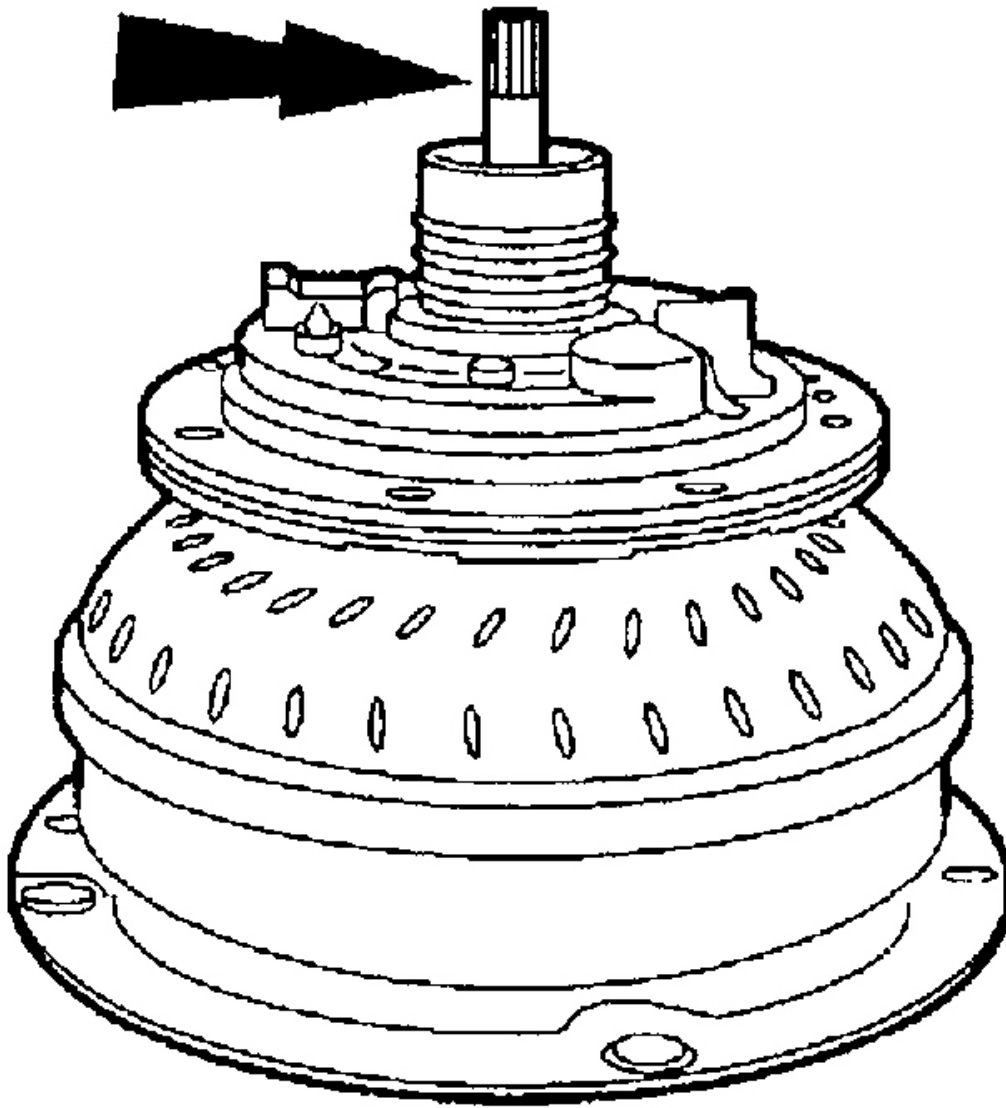
1. Position the torque converter with the pump drive up.



G01672387

Fig. 255: Installing Pump Support On Torque Converter

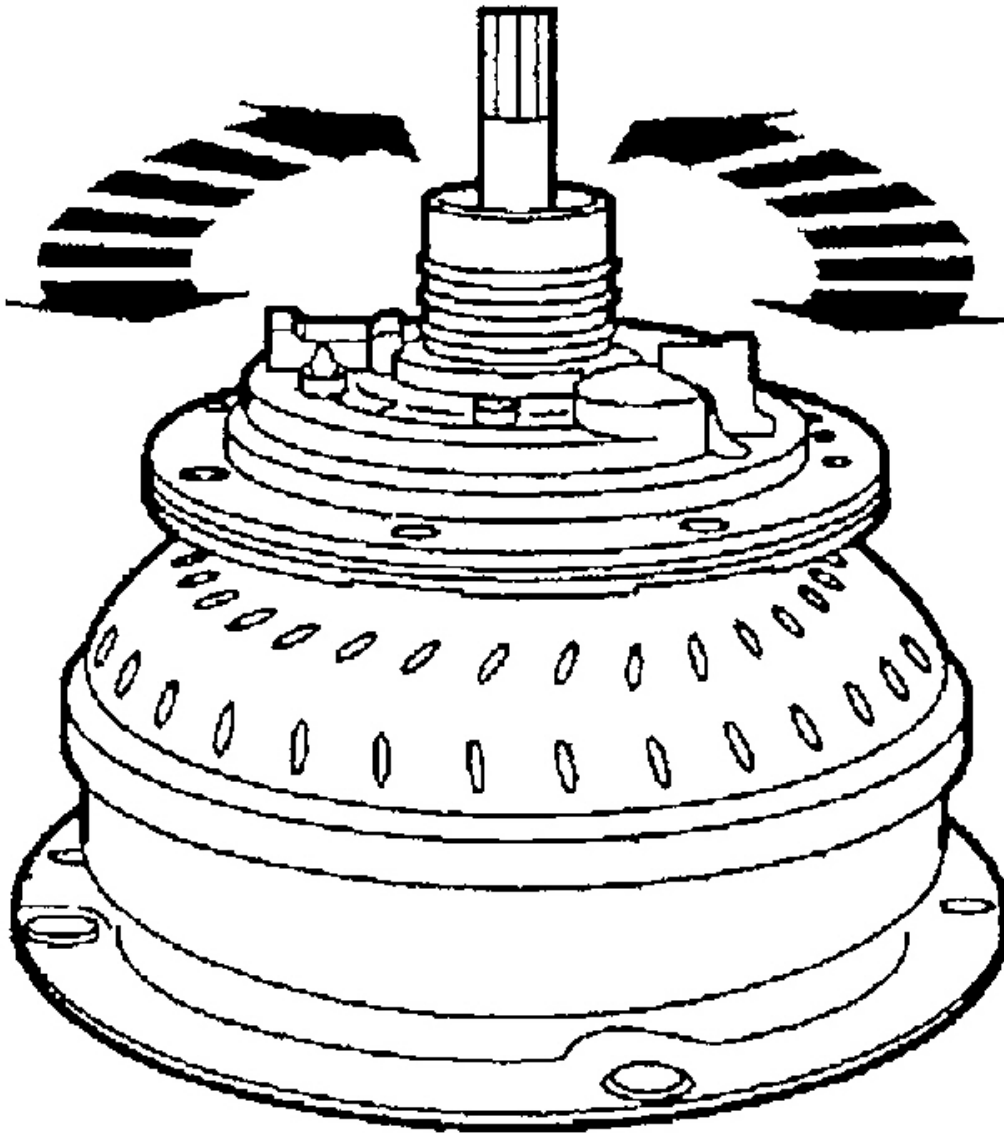
2. Install the pump support into the torque converter. Engage the splines of the one-way clutch inner race with the mating splines of the front pump support.
3. Install the input shaft, engaging the splines with the turbine hub.



G01672388

Fig. 256: Installing Input Shaft

4. Check for stator to turbine interference.
 1. Hold the front pump support stationary.
 2. Attempt to rotate the input shaft.



G01672389

Fig. 257: Checking For Stator To Turbine Interference

- The turbine and damper assemblies should rotate in both directions not exceeding maximum torque of 7 Nm (62 lb-in) without any signs of metallic interference or scraping noise.
5. If interference exists, the stator front thrust washer may be worn, allowing the stator to hit the turbine. In such cases, a new or remanufactured torque converter must be installed.
- The converter crankshaft pilot should be checked for nicks or damaged surfaces that could cause

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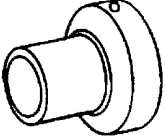
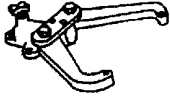
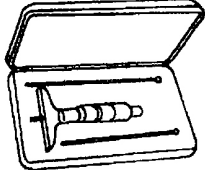
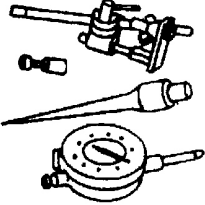
interference when installing the torque converter into the crankshaft. Check the converter front impeller hub for nicks or sharp edges that would damage the pump seal.

ASSEMBLY

TRANSMISSION

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2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

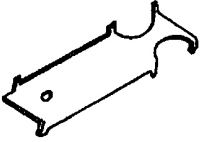

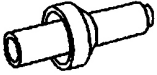
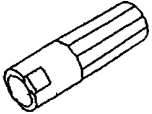

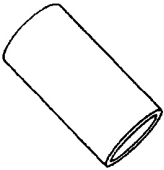
	Adjustment Set, Transmission Band 307-S022 (T71P-77370-A)
	Remover, Bearing Cup 308-047 (T77F-1102-A)
	Installer, Output Shaft Bearing 307-348 (T97T-77110-A)
	Holding Fixture, Transmission 307-003 (T57L-500-B)
	Depth Micrometer 303-D026 (D80P-4201-A)
	Dial Indicator with Holding Fixture 100-002 (TOOL-4201-C) or equivalent

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Fig. 258: Special Tool(s) (1 Of 4)

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2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

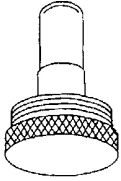
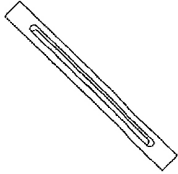

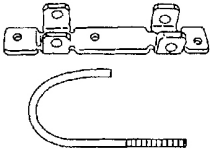


	Alignment Gauge, TR Sensor 307-351 (T97L-70010-A)
	Adapter for 303-224 (Handle) 205-153 (T80T-4000-W)
	Installer, Transmission Extension Housing Oil Seal (4x2) 308-002 (T61L-7657-A)
	Sizer, Piston Seal 307-338 (T95L-70010-G)
	Alignment Set, Fluid Pump 307-S039 (T74P-77103-X)
	Aligner, Fluid Pump Handle 307-431

G01672391

Fig. 259: Special Tool(s) (2 Of 4)

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2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul

	Aligner, Fluid Pump Pilot 307-432
	Gauge Bar 307-400
	Slide Hammer 100-001 (T50T-100-A)
	Compressor, Servo Cover 307-402
	Installer, Shift Shaft Fluid Seal 307-050 (T74P-77498-A)
	Handle, Torque Converter 307-091 (T81P-7902-C)

G01672392

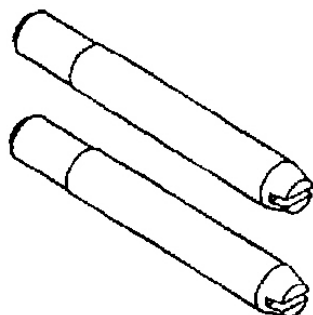
Fig. 260: Special Tool(s) (3 Of 4)

2002 Ford Explorer

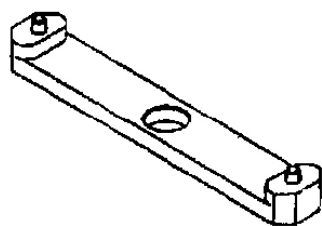
2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul



Aligner, Valve Body
307-334 (T95L-70010-C)



Alignment Pins, Transmission Pump
307-399



Aligner, Flex Plate
307-403



Installer, Transmission Extension Housing Fluid Seal (4x4)
307-435

G01672202

Fig. 261: Special Tool(s) (4 Of 4)

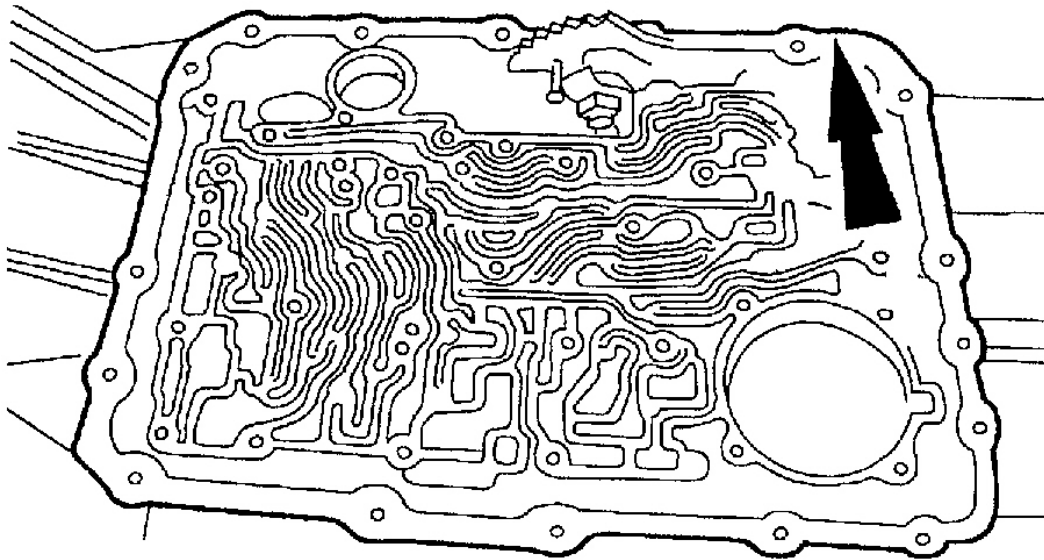
Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM, XT-5-DM	MERCON® V
Multi-Purpose Grease D0AZ-19584-AA	ESB-M1C93-B

G01672394

Fig. 262: Materials

All vehicles

1. Thoroughly clean the transmission case and extension housing in solvent and blow dry with compressed air.
2. Inspect the transmission case for the following:
 - stripped bolt hole threads
 - gasket and mating surfaces for burrs or nicks
 - obstructions to vent and fluid passages
 - cracks or warpage

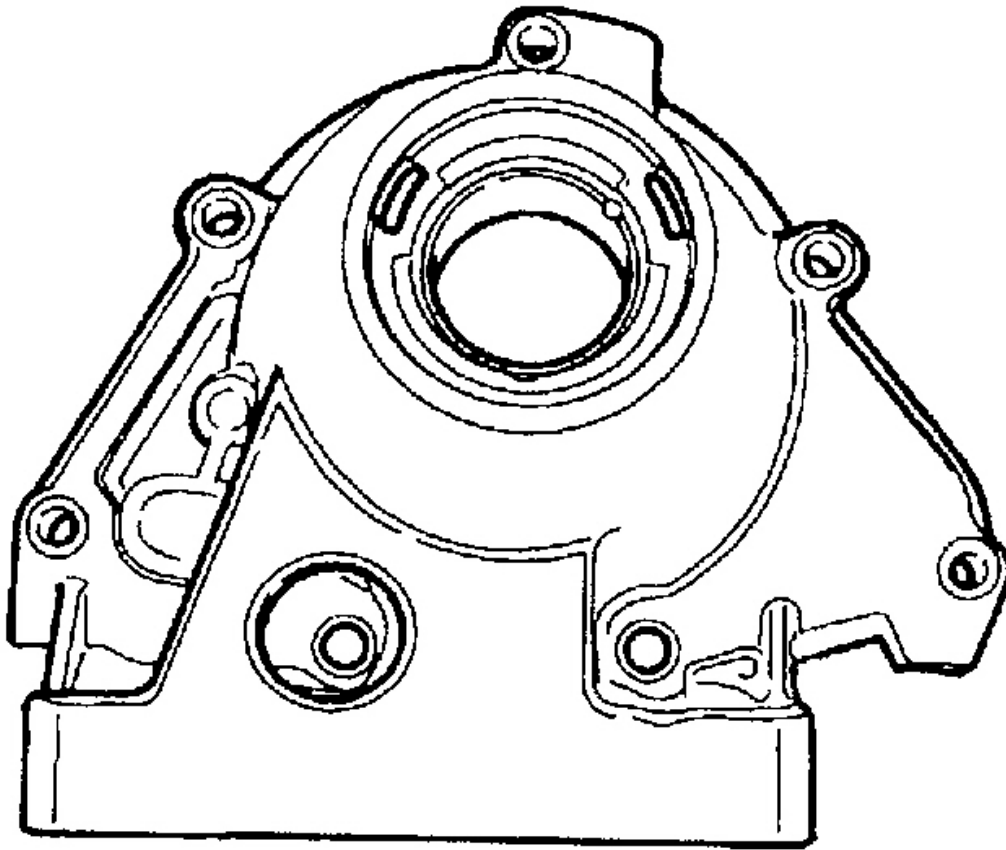


G01672395

Fig. 263: Inspecting Transmission Case

4x2 vehicles

3. Inspect the extension housing for cracks, burrs or warpage.

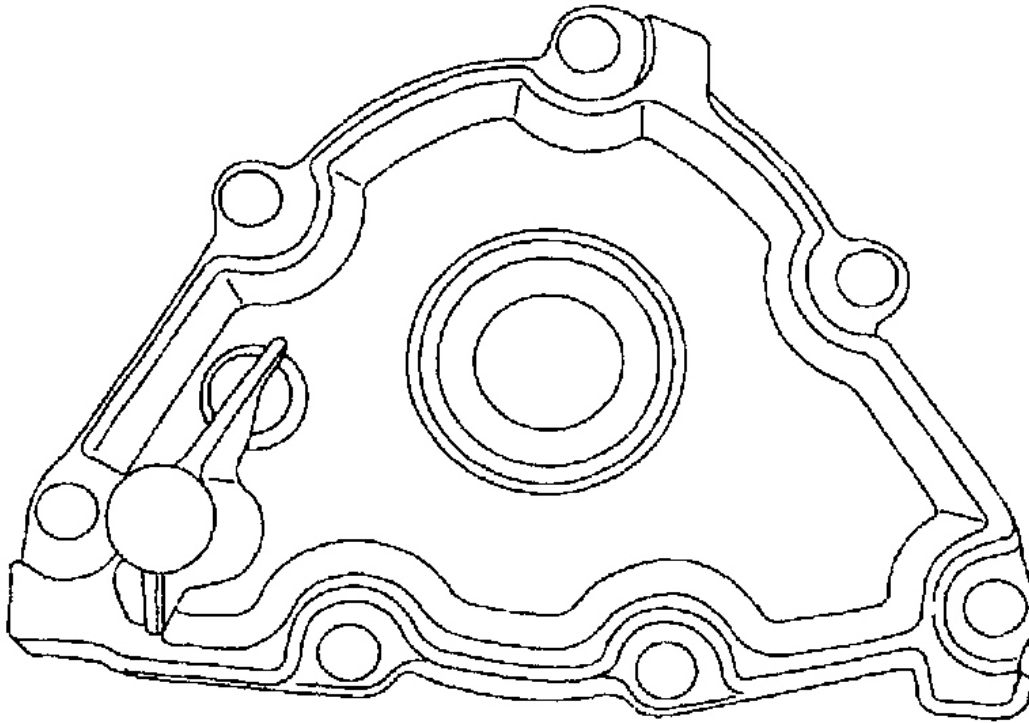


G01672396

Fig. 264: Inspecting Extension Housing

4x4 vehicles

4. Inspect the extension housing for cracks, burrs or warpage.

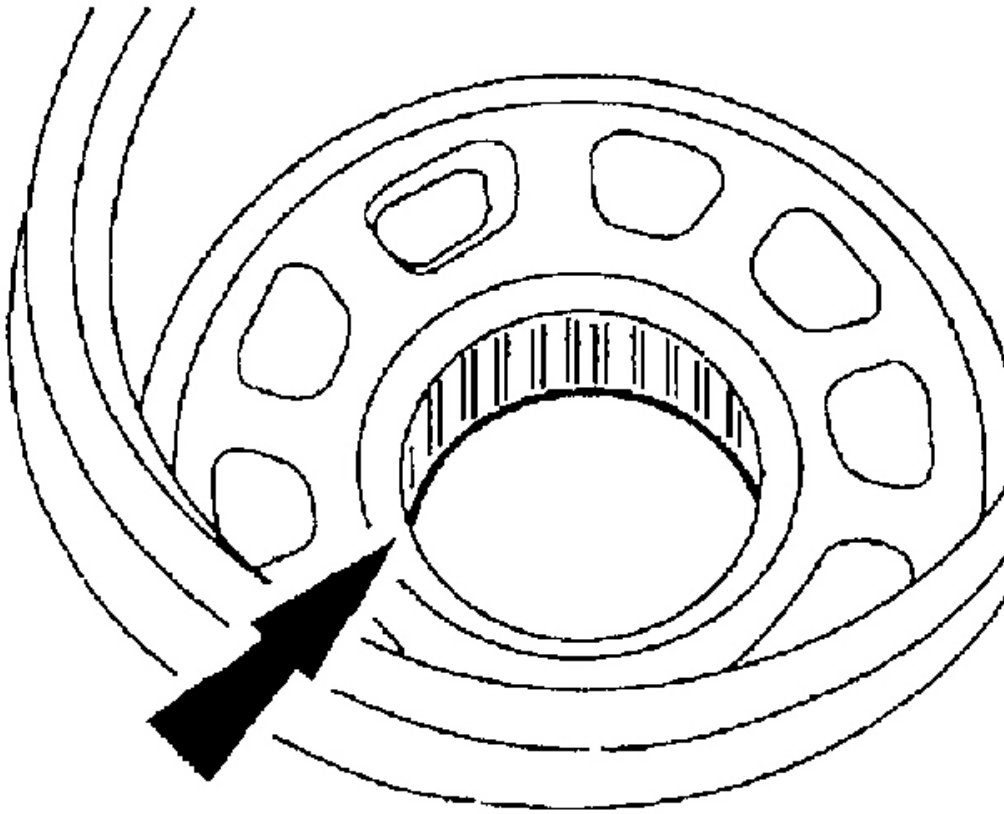


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Fig. 265: Inspecting Extension Housing

All vehicles

5. Inspect case bearing for damage. Install a new component as necessary. Follow Steps 5-8 if replacing the case bearing. If not replacing the case bearing, proceed to Step 9.



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Fig. 266: Inspecting Case Bearing

6. Using the special tool, remove the case bearing.
 - Use an oil stone to remove any nicks or burrs in the bearing case bore.

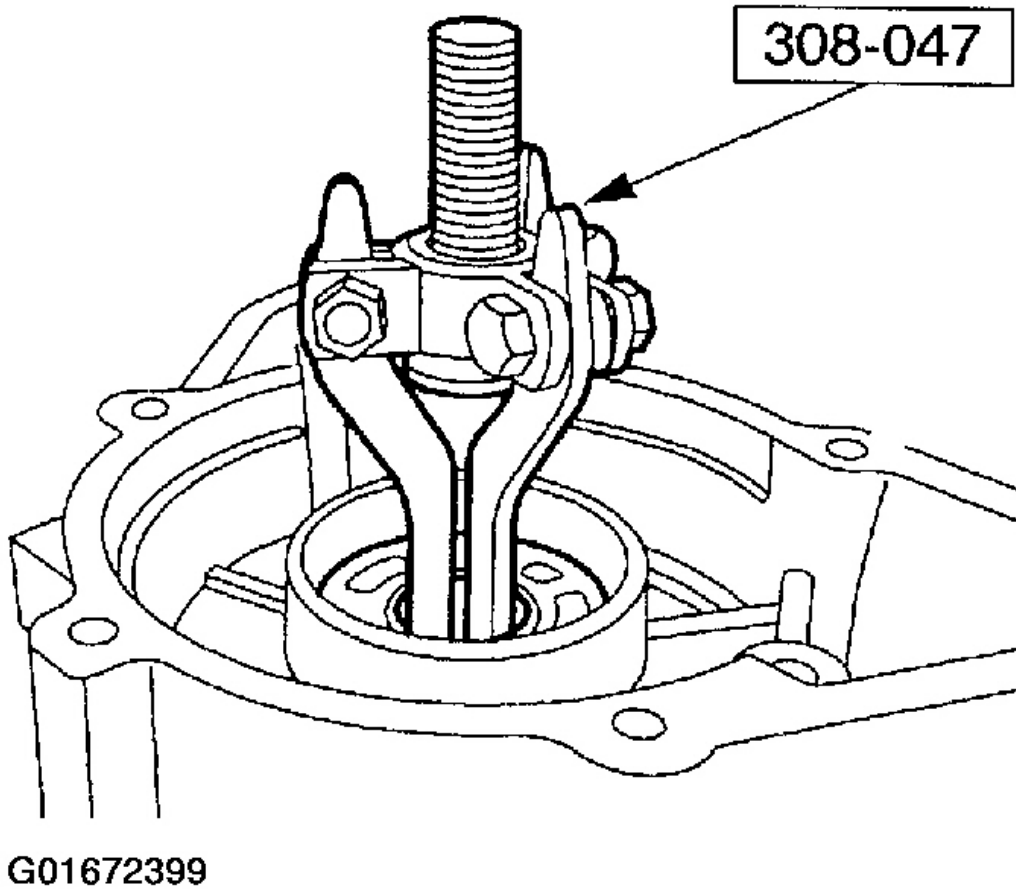


Fig. 267: Removing Case Bearing

7. Assemble the special tools.

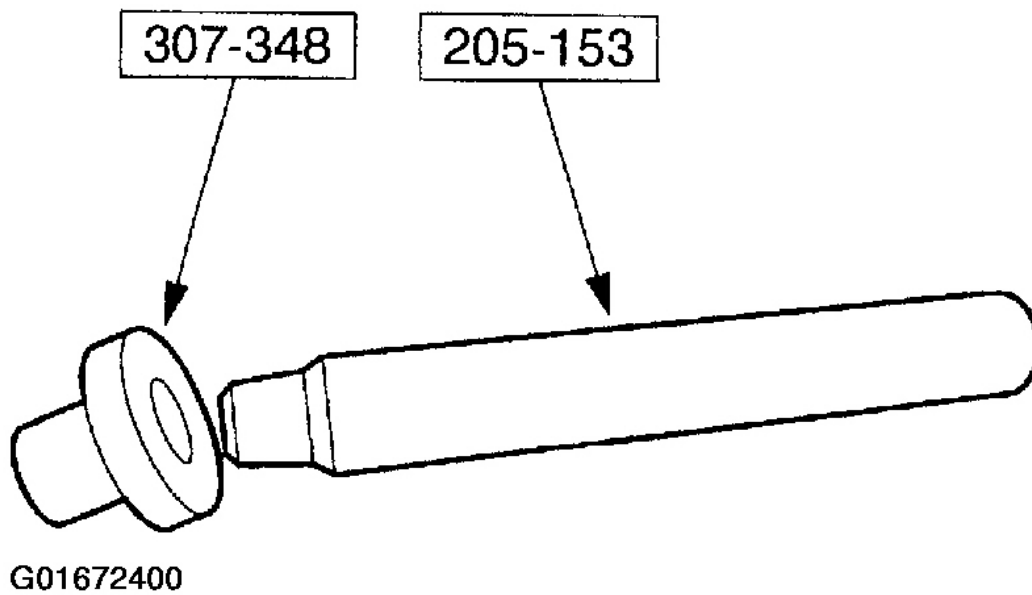


Fig. 268: Assembling Installation Tools

CAUTION: Make sure bearing seal ring is facing the drive handle.

8. Install the bearing on the special tools.

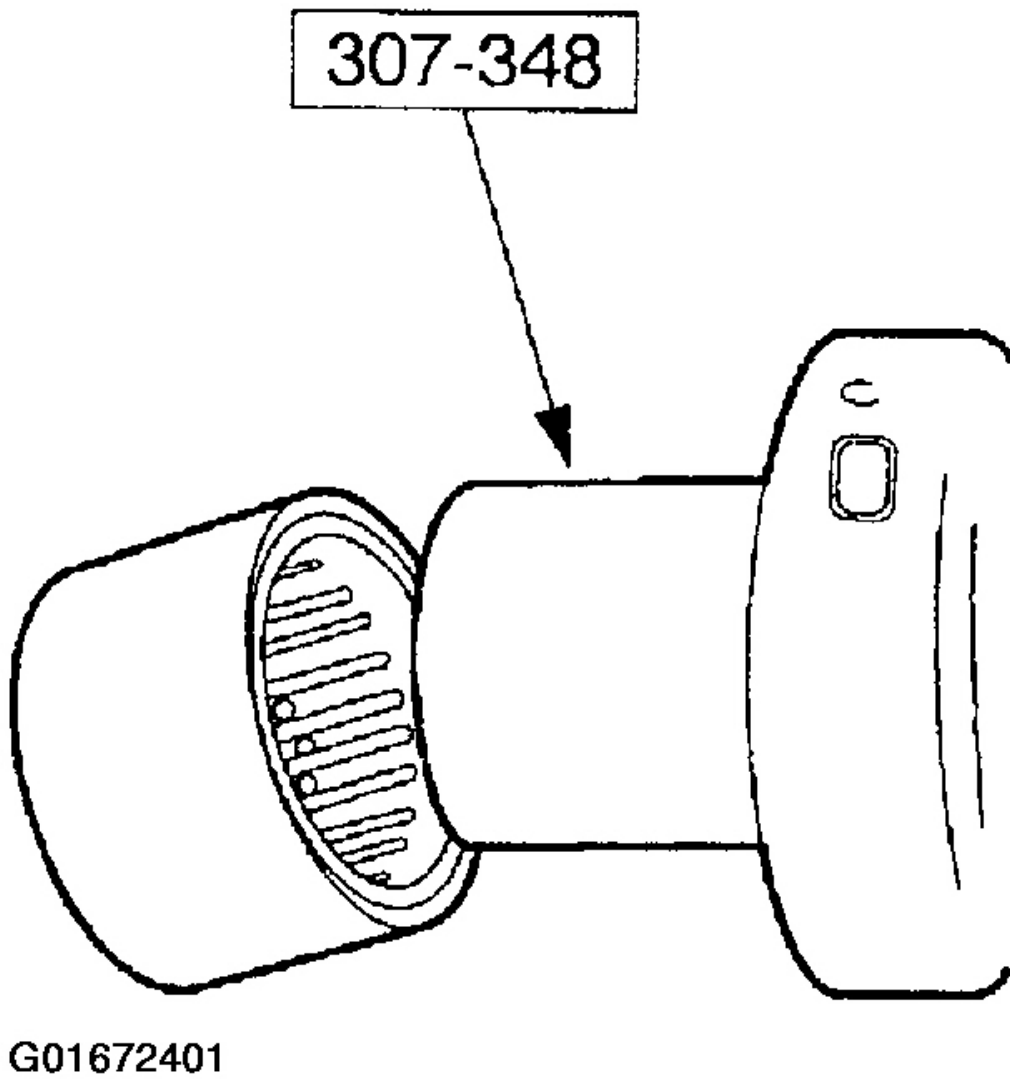
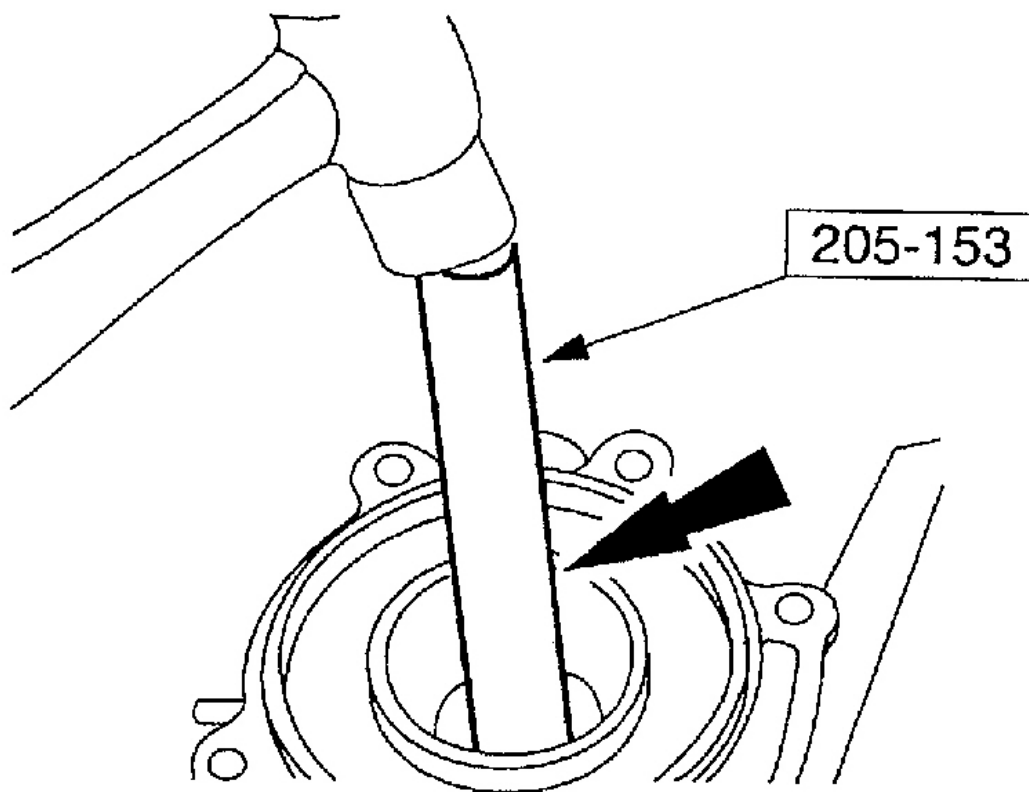


Fig. 269: Installing Case Bearing On Installation Tool

9. Using the special tool, tap case bearing into case bearing bore.

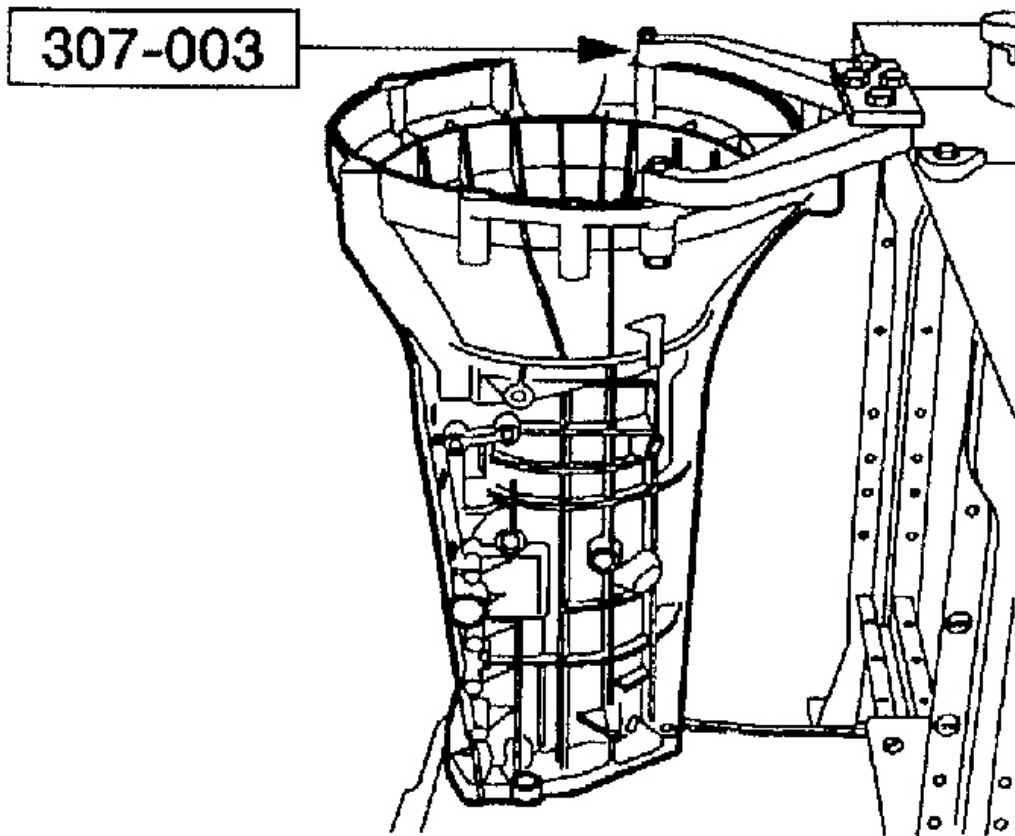


G01672402

Fig. 270: Installing Case Bearing

WARNING: Make sure the lock pin on bench-mounted holding fixture is secure. Failure to follow these instructions may result in personal injury.

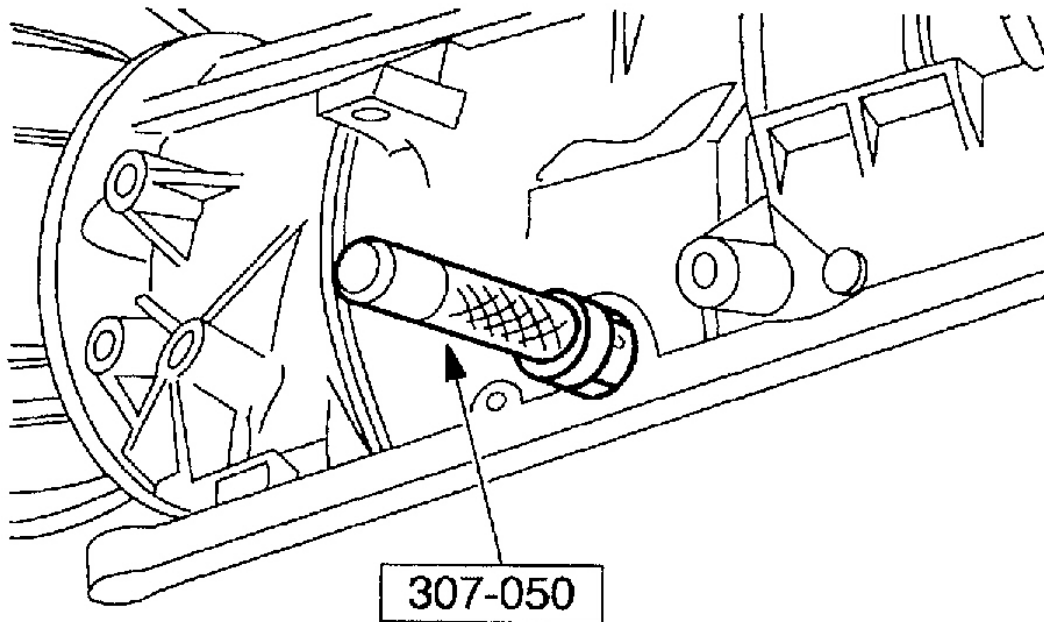
10. Using the special tool, install the transmission into the bench with the converter housing facing up.



G01672403

Fig. 271: Mounting Transmission Case To Bench

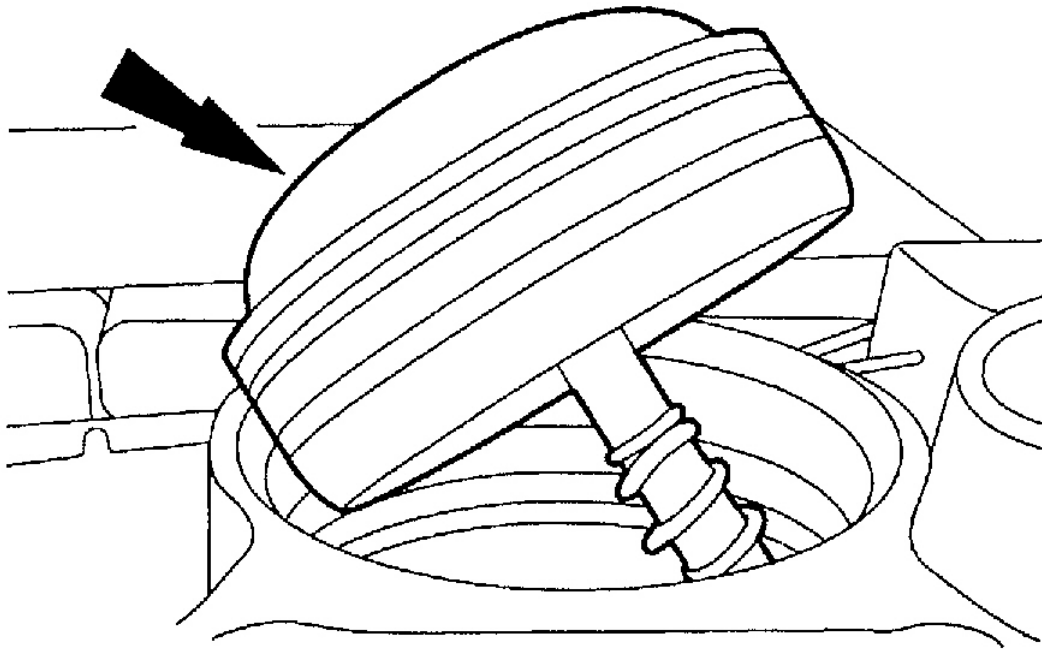
11. Using the special tool, install the manual control lever shaft seal and lubricate it with petroleum jelly.



G01672404

Fig. 272: Installing Manual Control Lever Shaft Seal

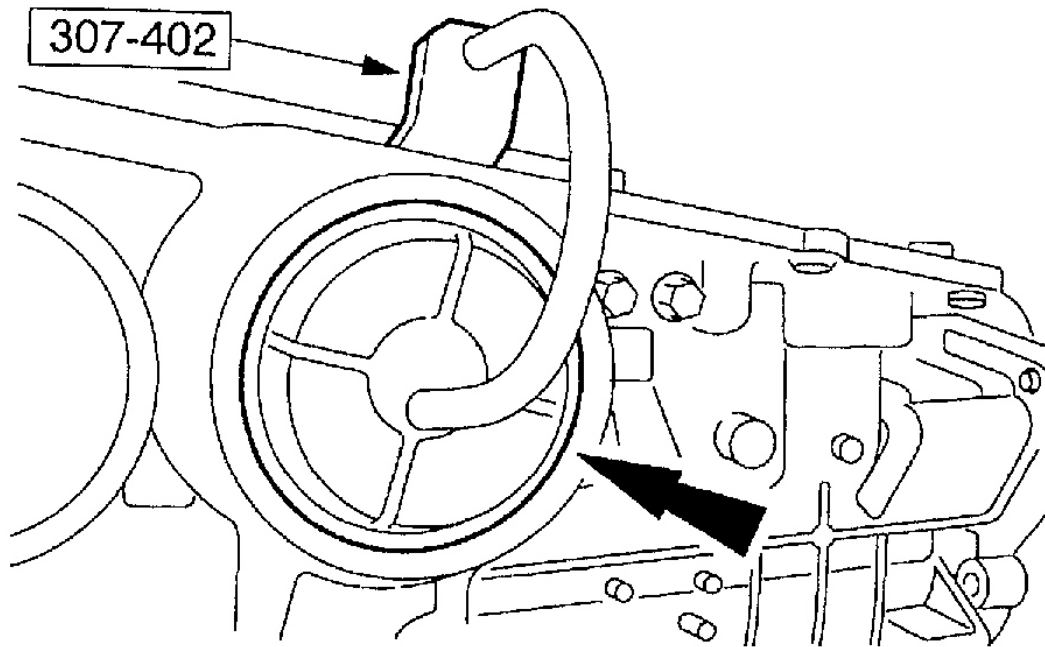
12. Install the intermediate servo piston and spring.
 - Lubricate the servo bore with clean automatic transmission fluid.



G01672405

Fig. 273: Installing Intermediate Servo Piston & Spring

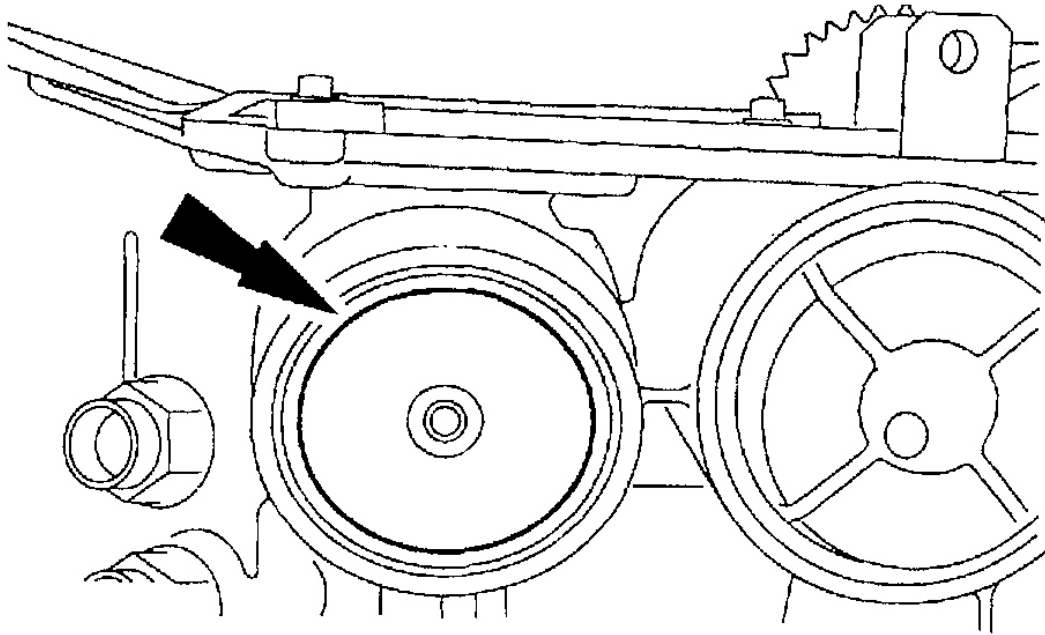
13. Using the special tool, install the retaining ring.



G01672406

Fig. 274: Installing Intermediate Servo Retaining Ring

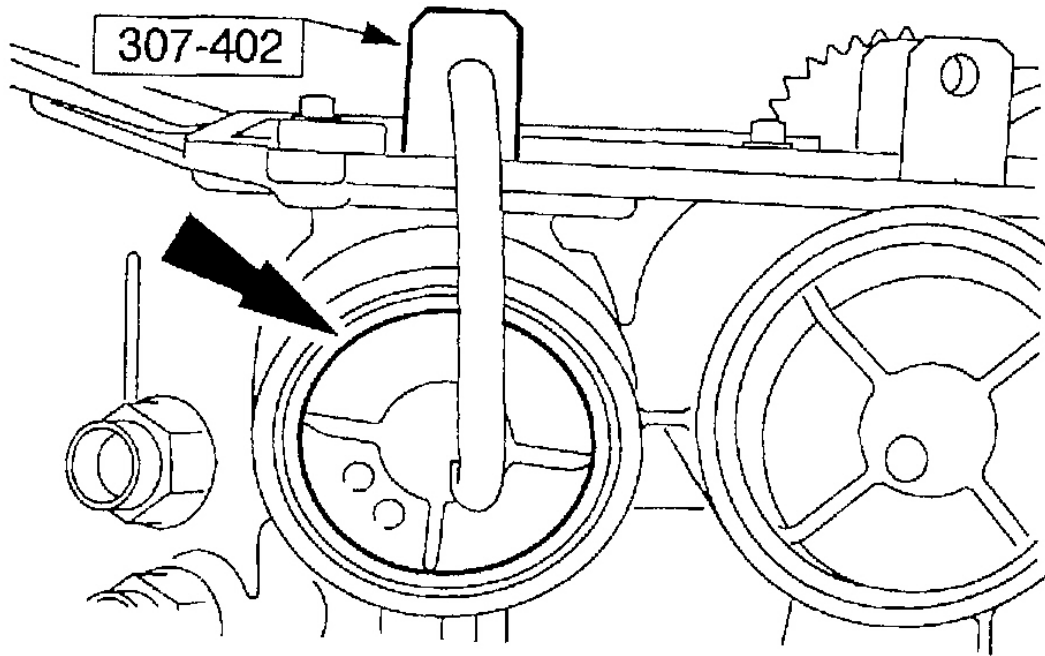
14. Install the overdrive band servo piston and spring.
 - Lubricate the servo bore with clean automatic transmission fluid.



G01672407

Fig. 275: Installing Overdrive Band Servo Piston & Spring

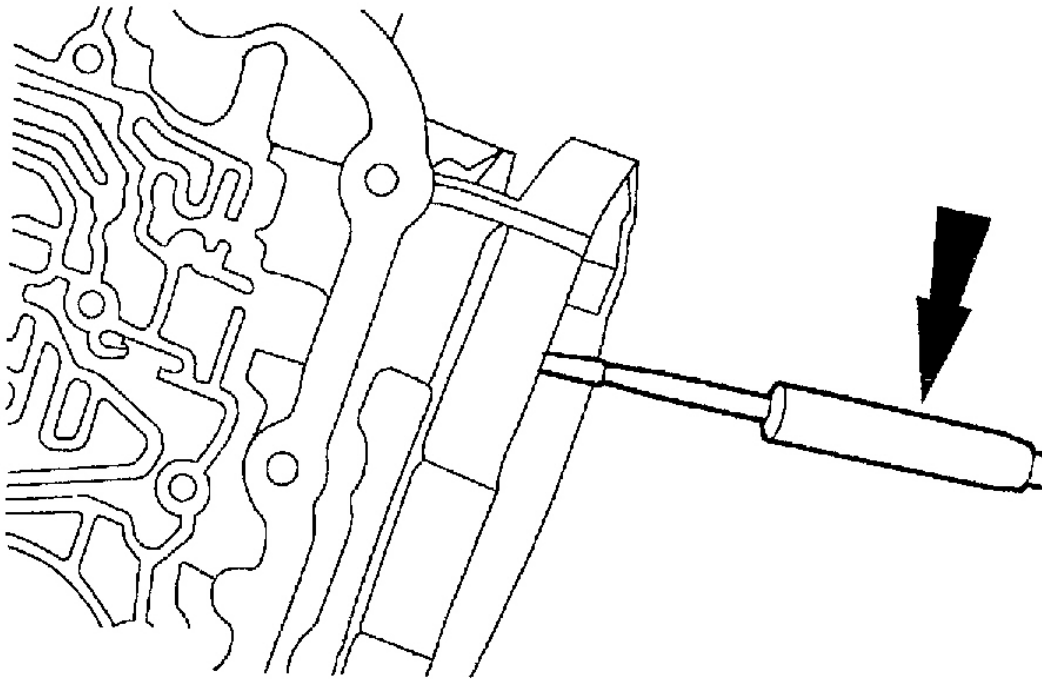
15. Using the special tools, install the retaining ring.



G01672408

Fig. 276: Installing Overdrive Band Servo Retaining Ring

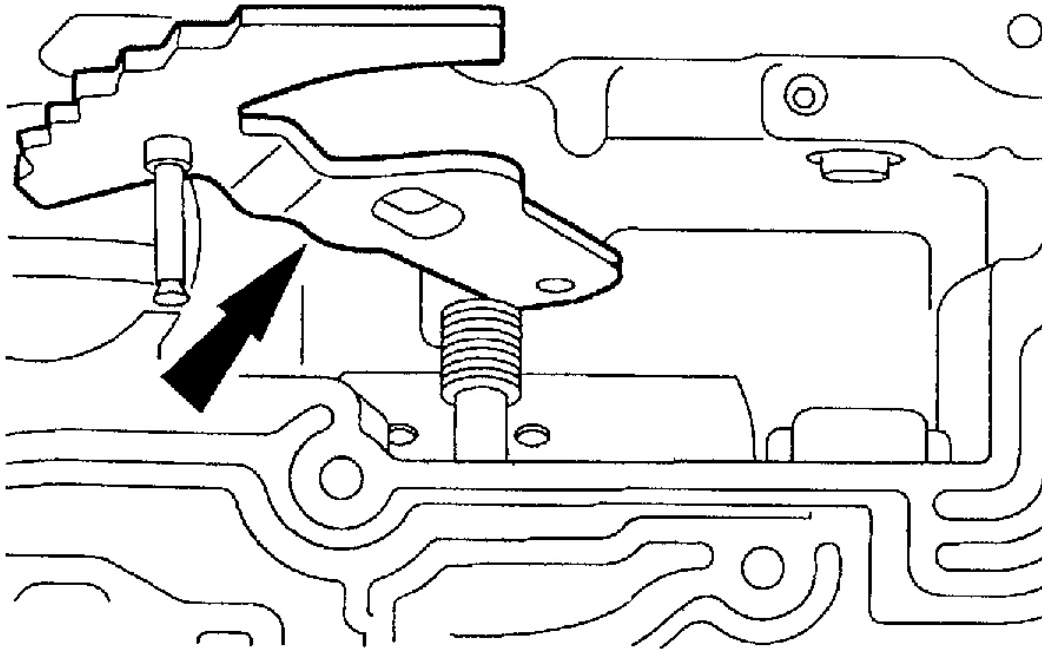
16. Install the parking lever rod.



G01672409

Fig. 277: Installing Parking Lever Rod

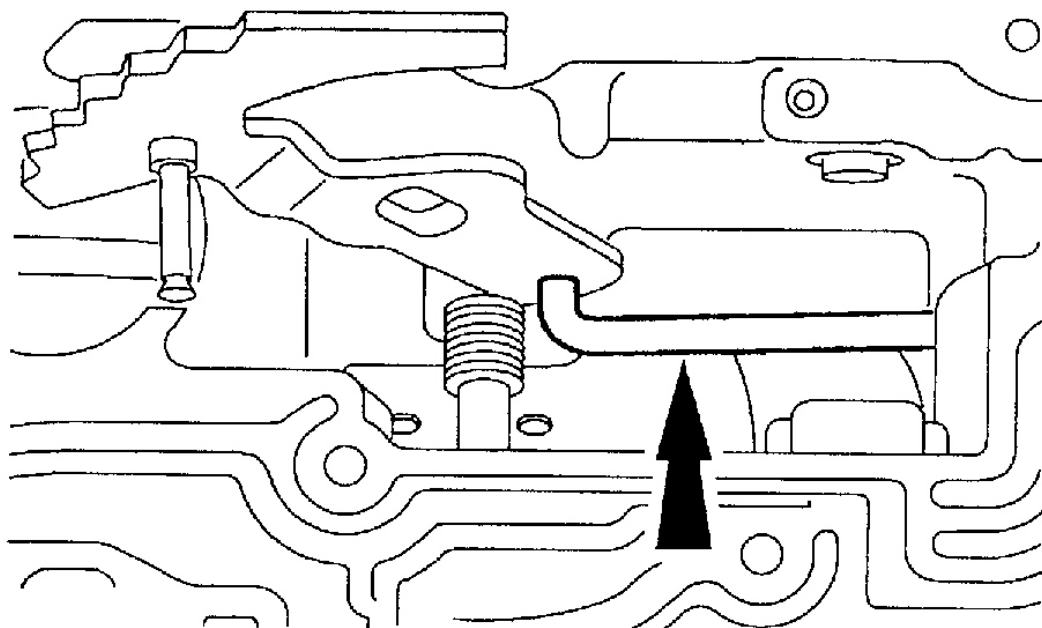
17. Install the manual control lever.



G01672410

Fig. 278: Installing Manual Control Lever

18. Assemble the manual valve inner lever and parking lever actuating rod as shown.

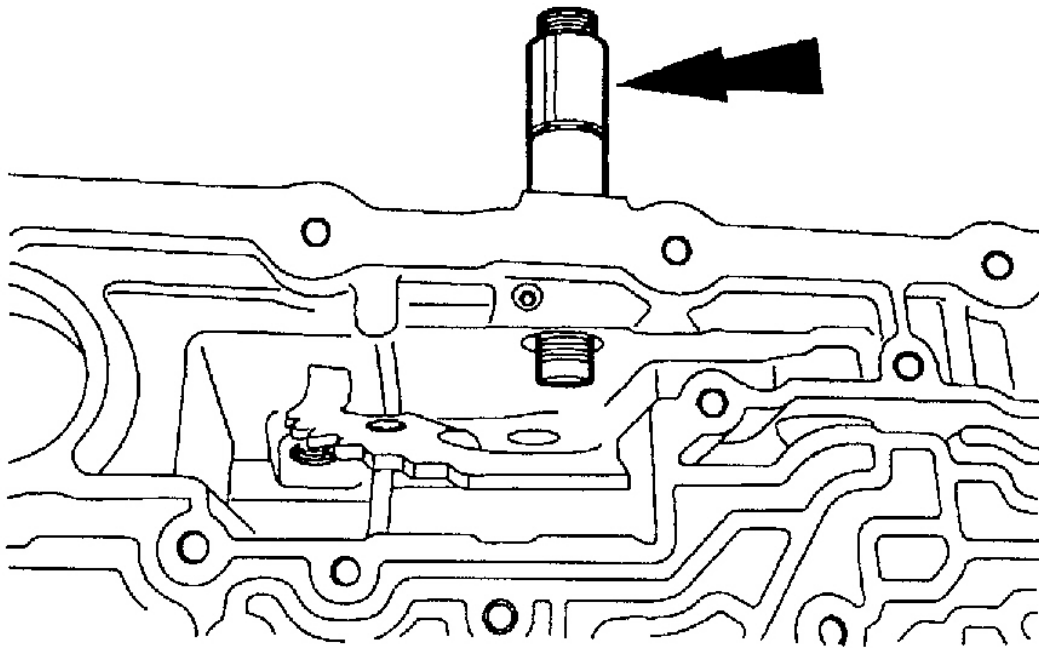


G01672411

Fig. 279: Assembling Manual Valve Inner Lever To Parking Lever Actuating Rod

CAUTION: Align the flats on the manual valve inner lever with the flats on the manual control lever shaft.

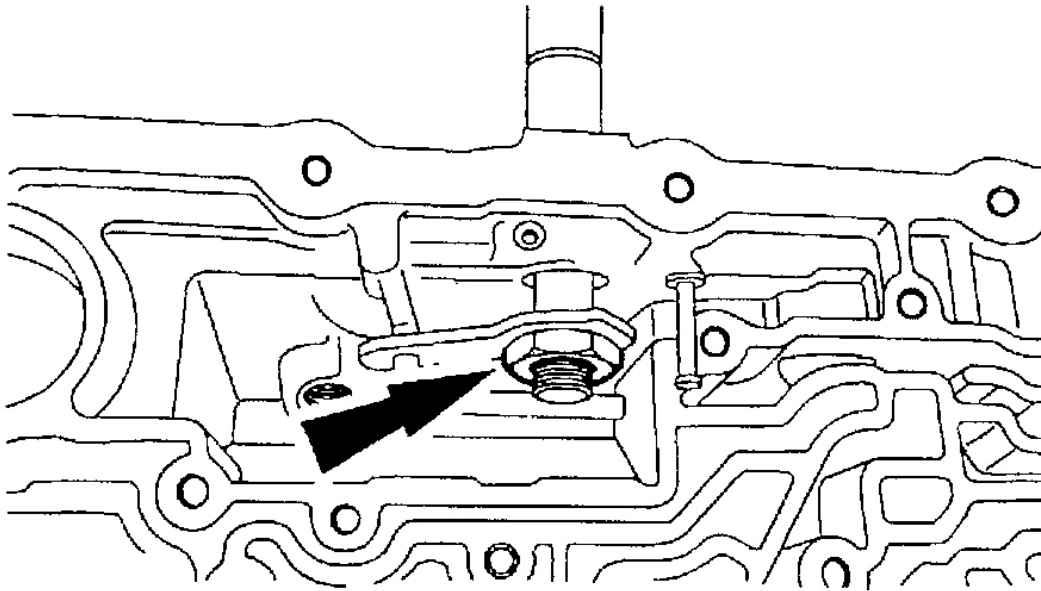
19. Install the manual control lever shaft.



G01672412

Fig. 280: Installing Manual Control Lever Shaft

20. Install the manual valve inner lever onto the manual shaft and loosely install the nut.



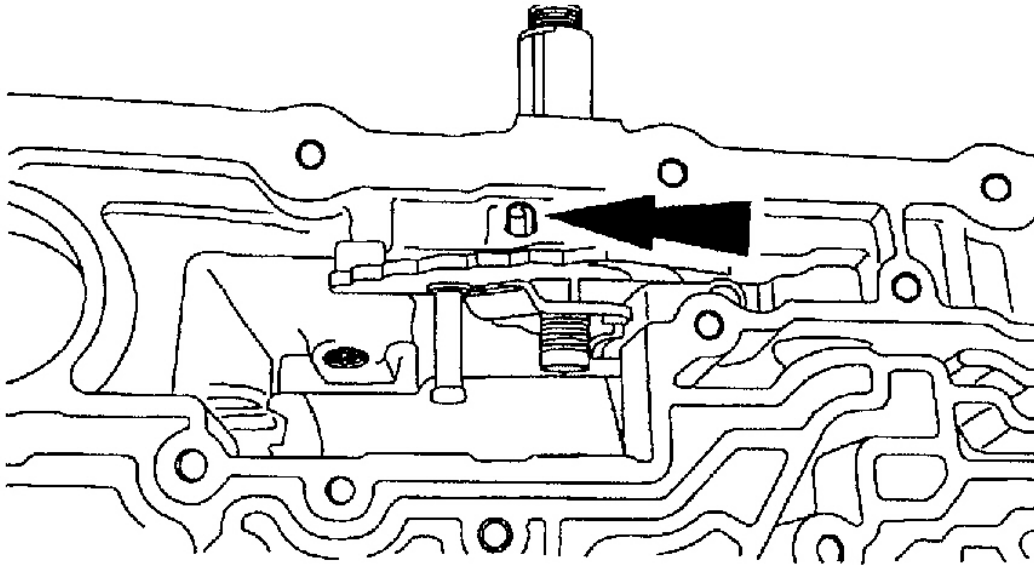
G01672413

Fig. 281: Installing Manual Valve Inner Lever Onto Manual Shaft

CAUTION: Use care not to damage the fluid pan rail surface when installing the retaining pin.

NOTE: Align the manual control lever shaft alignment groove with the manual control lever shaft spring pin bore in the transmission case.

21. Install the manual control lever shaft spring pin.
 - Tap the manual control lever shaft spring pin into the transmission case.

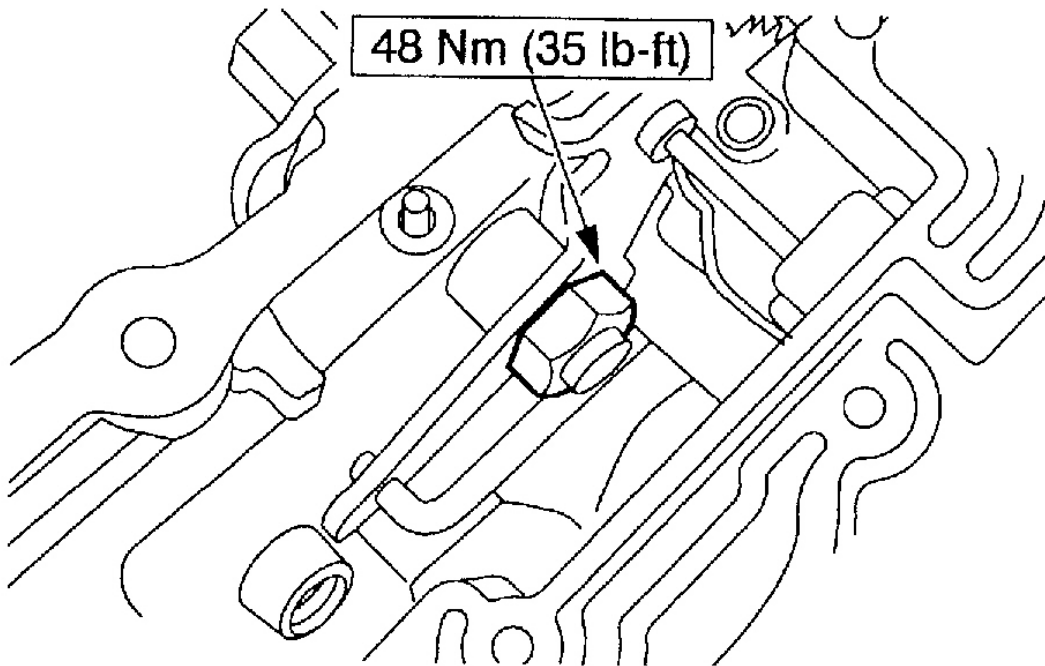


G01672414

Fig. 282: Installing Manual Control Lever Shaft Spring Pin

CAUTION: To avoid damage, do not allow the wrench to strike the manual valve inner lever pin.

22. Tighten the nut.

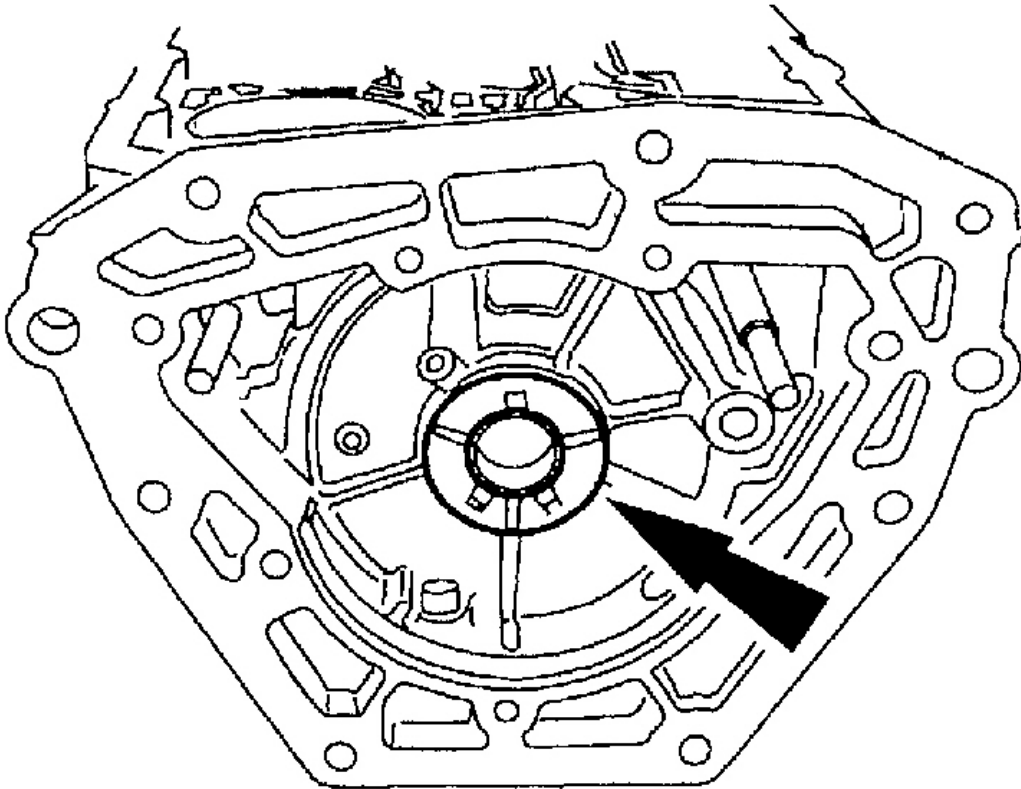


G01672415

Fig. 283: Tightening Manual Control Lever Shaft Nut

CAUTION: The tabs on the output shaft thrust washer (No. 11) point into the case. Make sure the thrust washer is correctly seated.

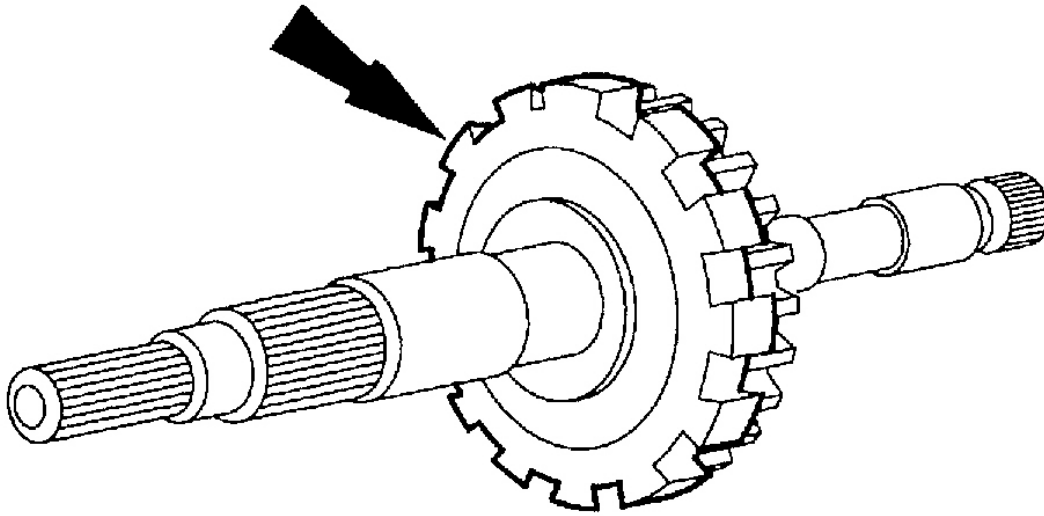
23. Install the output shaft thrust washer (No. 11).
 - Coat the output shaft thrust washer with petroleum jelly.



G01672416

Fig. 284: Installing Output Shaft Thrust Washer

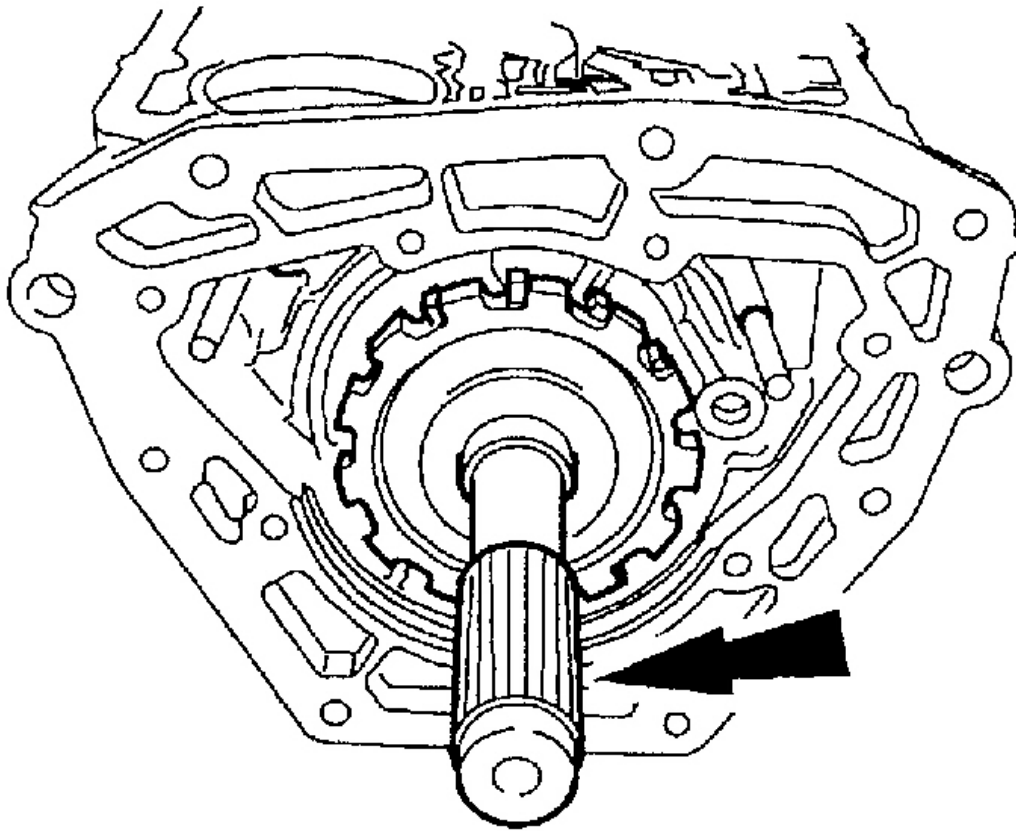
24. Install the park gear on the output shaft.



G01672417

Fig. 285: Installing Park Gear

25. Install the output shaft and park gear.

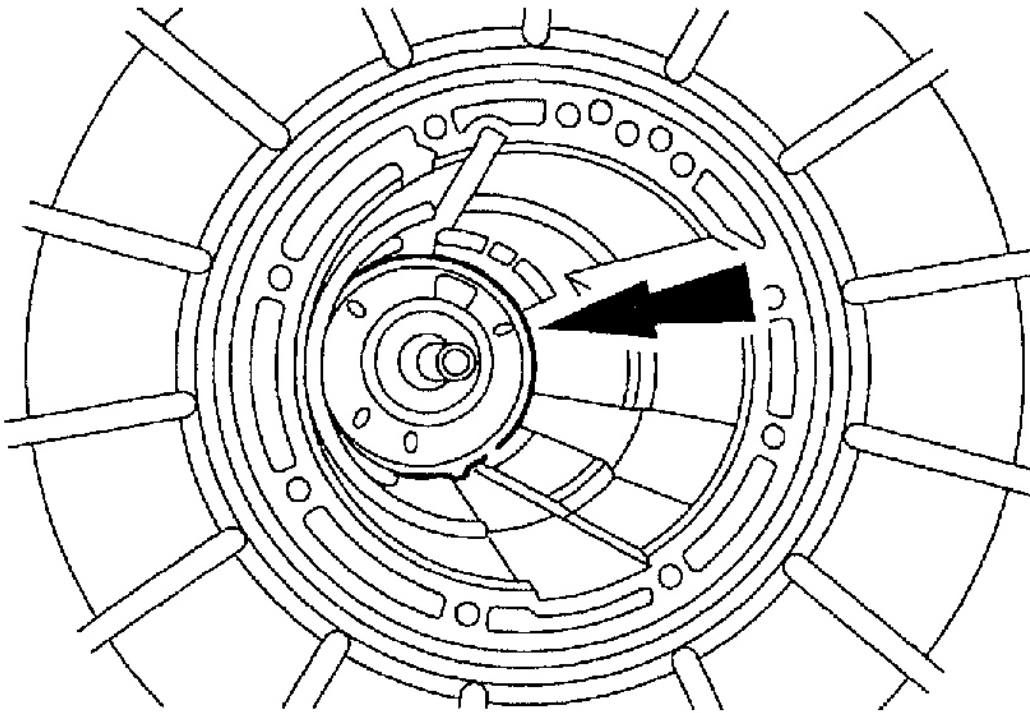


G01672418

Fig. 286: Installing Output Shaft

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

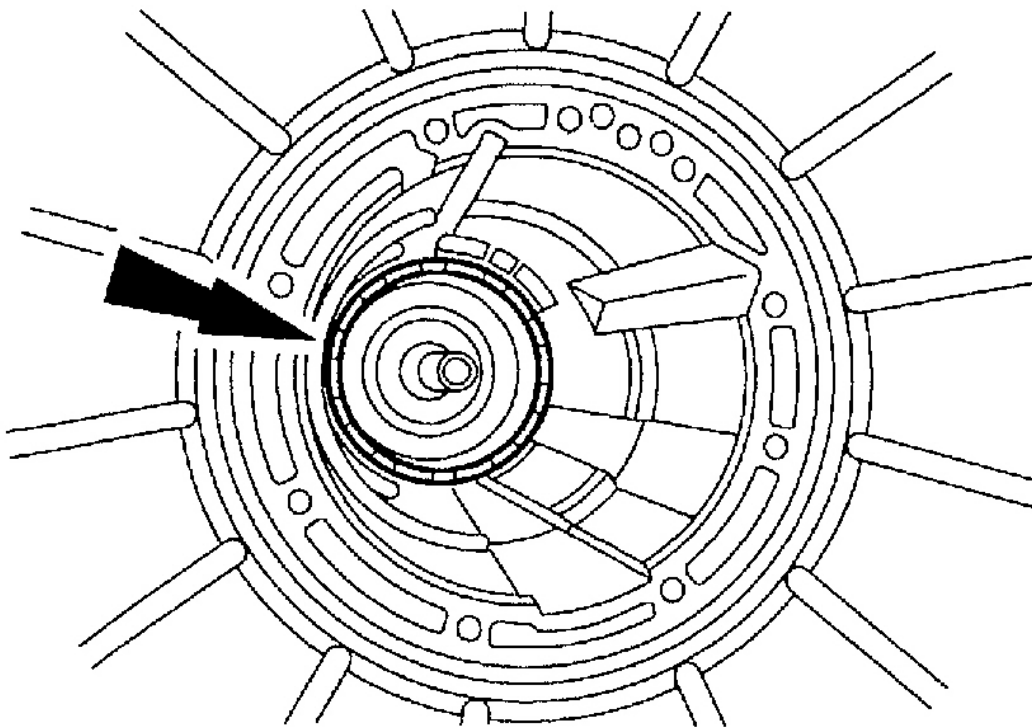
26. Install the low/reverse band over the low/reverse brake drum.



G01672419

Fig. 287: Installing Low/Reverse Band

27. Install the low/reverse brake drum.
 - Rotate the low/reverse brake drum clockwise to install.

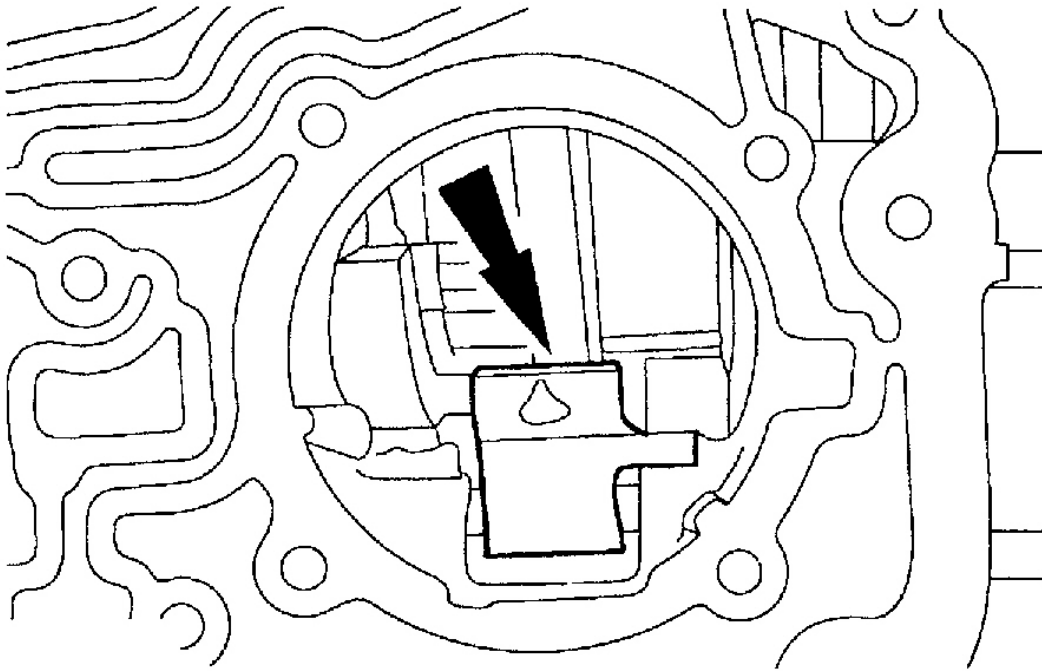


G01672420

Fig. 288: Installing Low/Reverse Brake Drum

NOTE: The reverse band actuating lever must fit into the notches in the band.

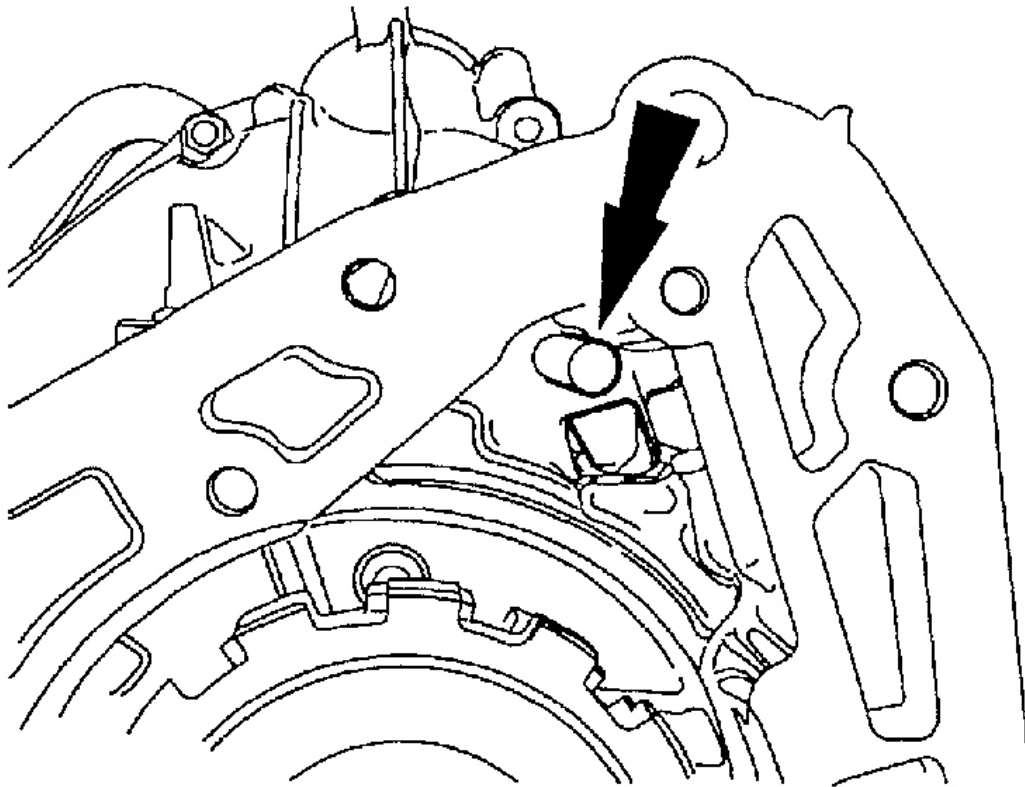
28. Install the reverse band actuating lever into the reverse band.



G01672421

Fig. 289: Installing Reverse Band Actuating Lever

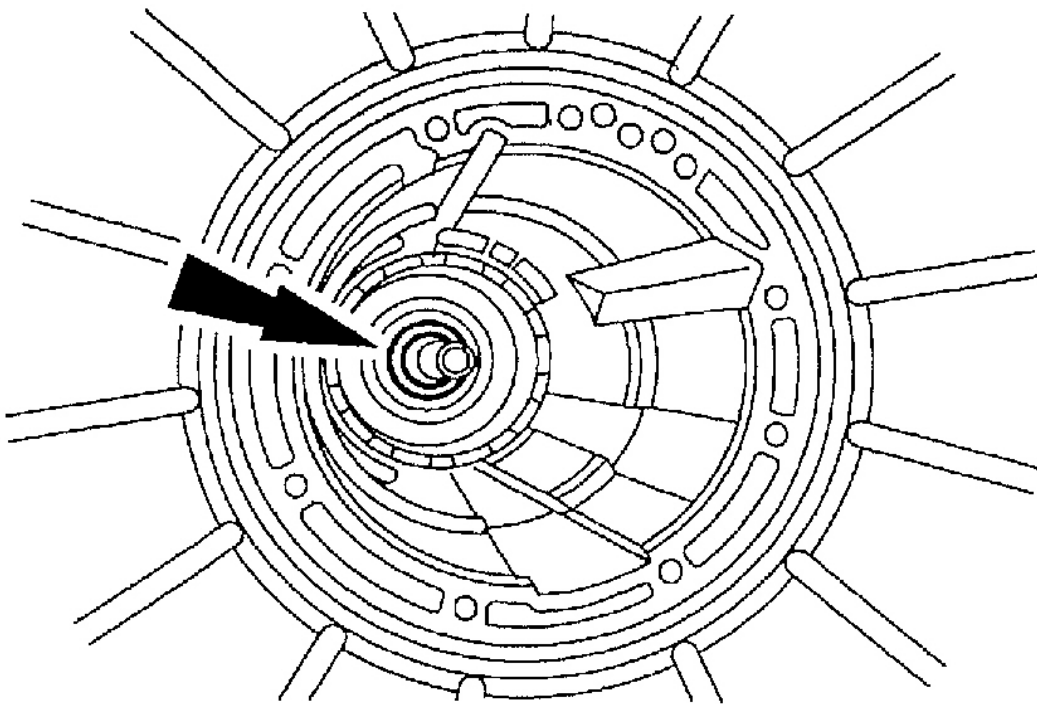
29. Install the reverse band actuating lever shaft into the case and into the reverse band actuating lever.



G01672422

Fig. 290: Installing Reverse Band Actuating Lever Shaft

30. Install the No.10 needle bearing into the case.

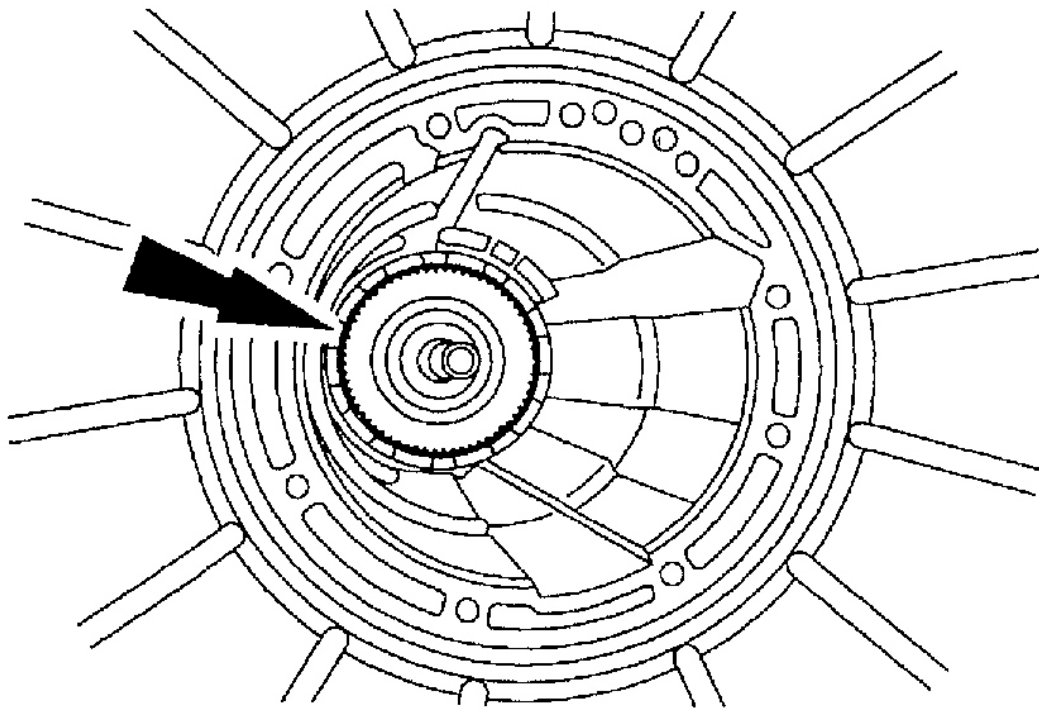


G01672423

Fig. 291: Installing Needle Bearing Into Case

CAUTION: Do not damage the seal against the case during assembly.

31. Install the output shaft ring gear, hub, and seal.

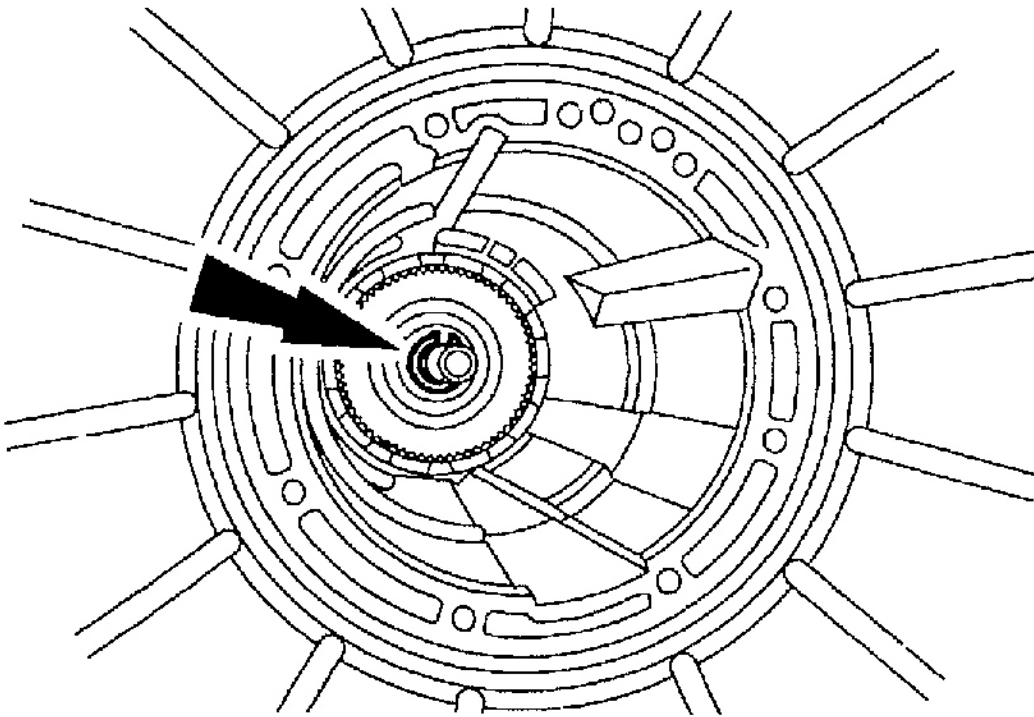


G01672424

Fig. 292: Installing Output Shaft Ring Gear, Hub & Seal

CAUTION: Always install a new output shaft retaining ring.

32. Install a new output shaft retaining ring.

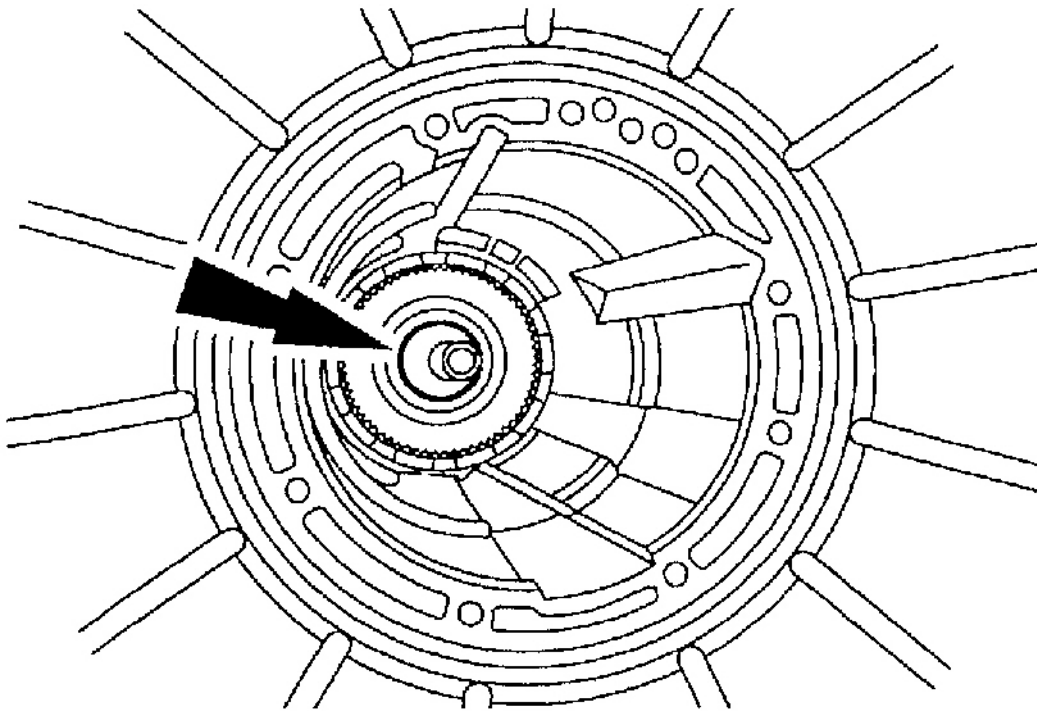


G01672425

Fig. 293: Installing Output Shaft Retaining Ring

NOTE: Install the output shaft sleeve with the cone facing up. This sleeve will snap into place when correctly installed.

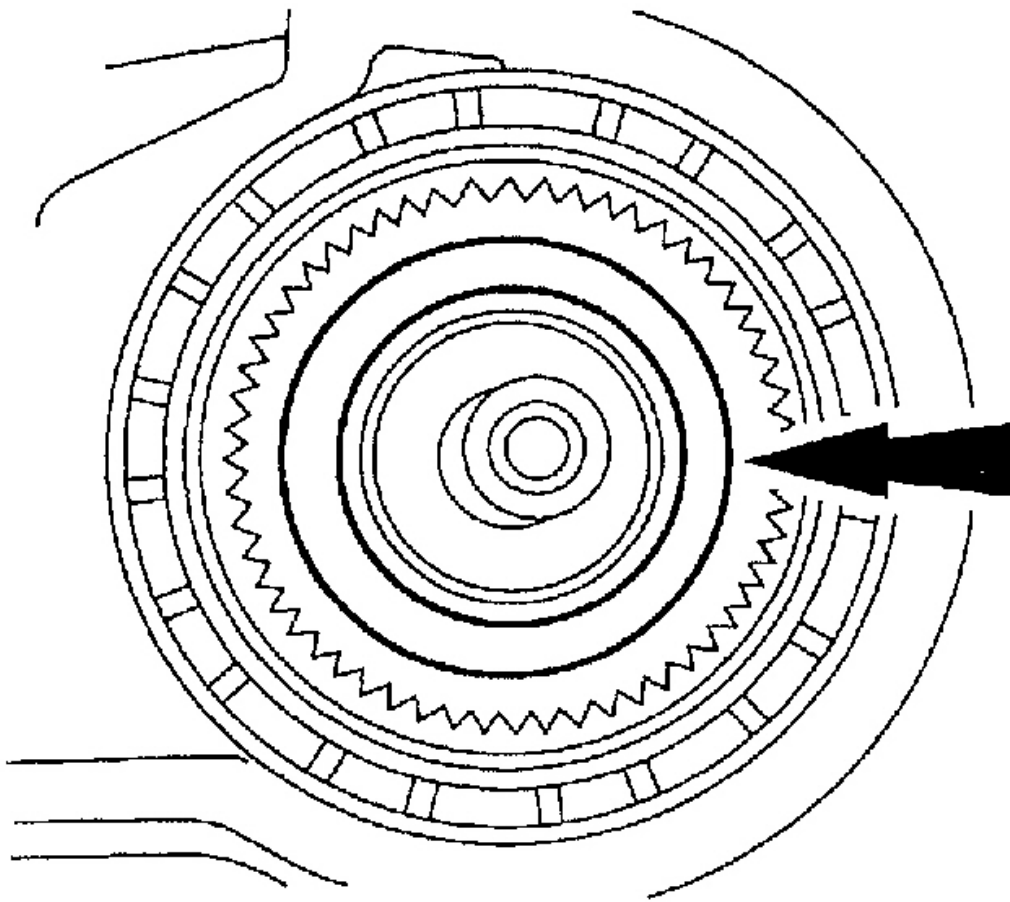
33. Install the output shaft sleeve.



G01672426

Fig. 294: Installing Output Shaft Sleeve

34. Install low/reverse planetary carrier needle bearing (No. 9) onto the output shaft ring gear and hub assembly.

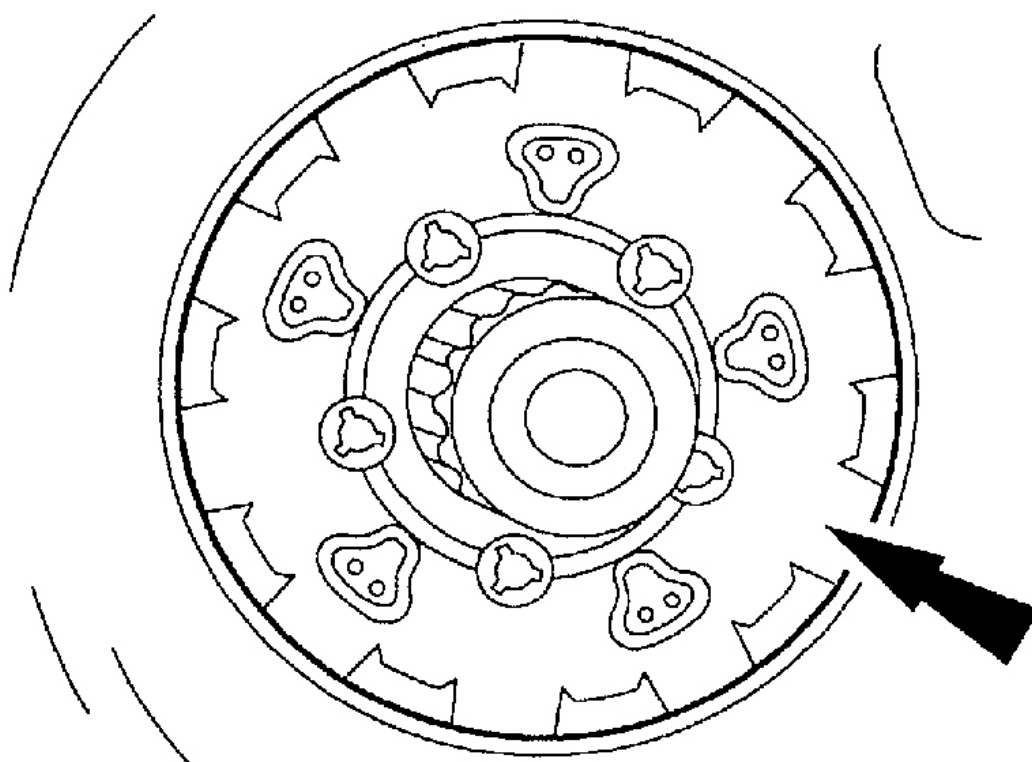


G01672427

Fig. 295: Installing Low/Reverse Planetary Carrier Needle Bearing

CAUTION: Make sure the needle bearings stay in place.

35. Install the low/reverse planetary assembly.

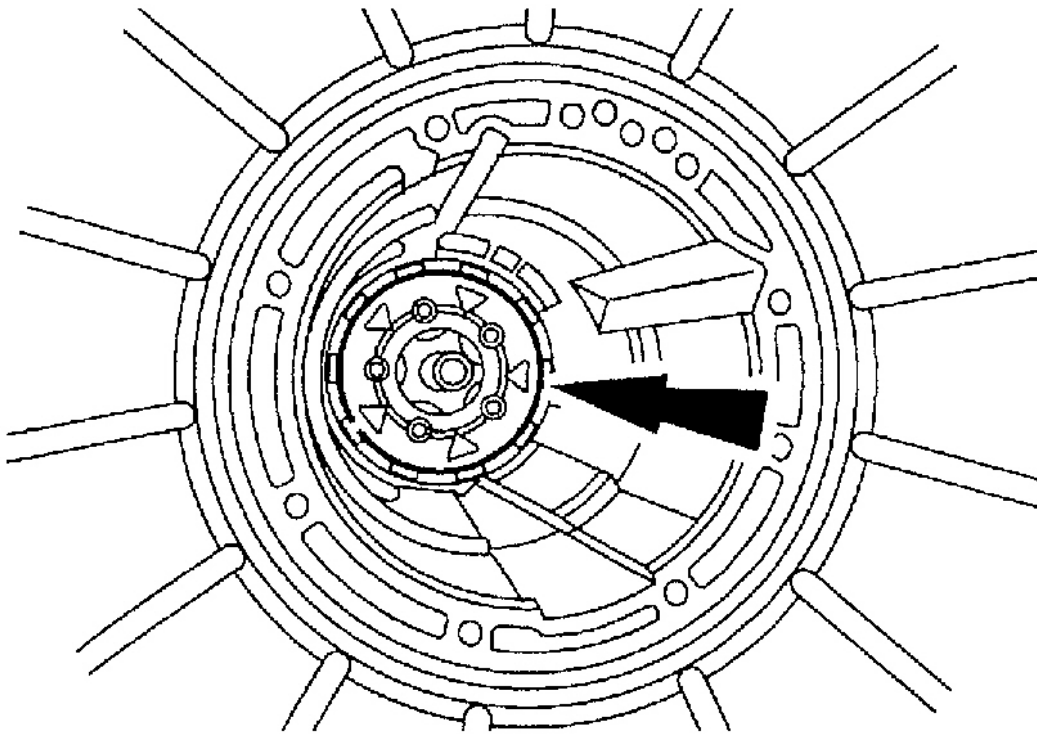


G01672428

Fig. 296: Installing Low/Reverse Planetary Assembly

CAUTION: The low/reverse brake drum must be pulled forward to install the low/reverse planet retaining ring.

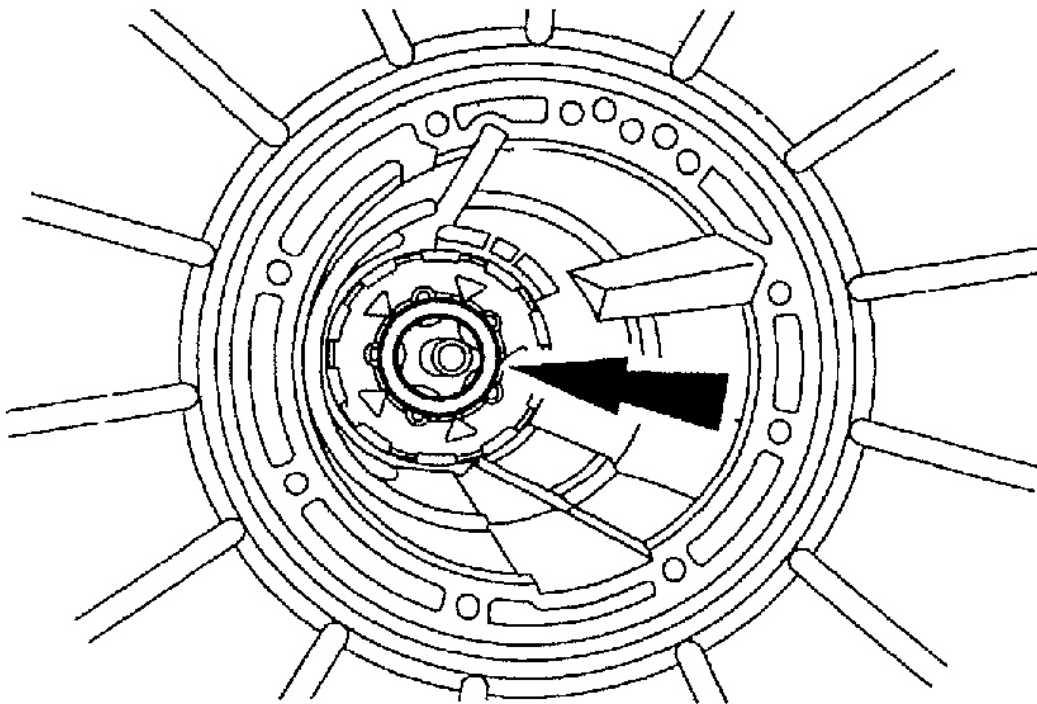
36. Install the retaining ring.



G01672429

Fig. 297: Installing Retaining Ring

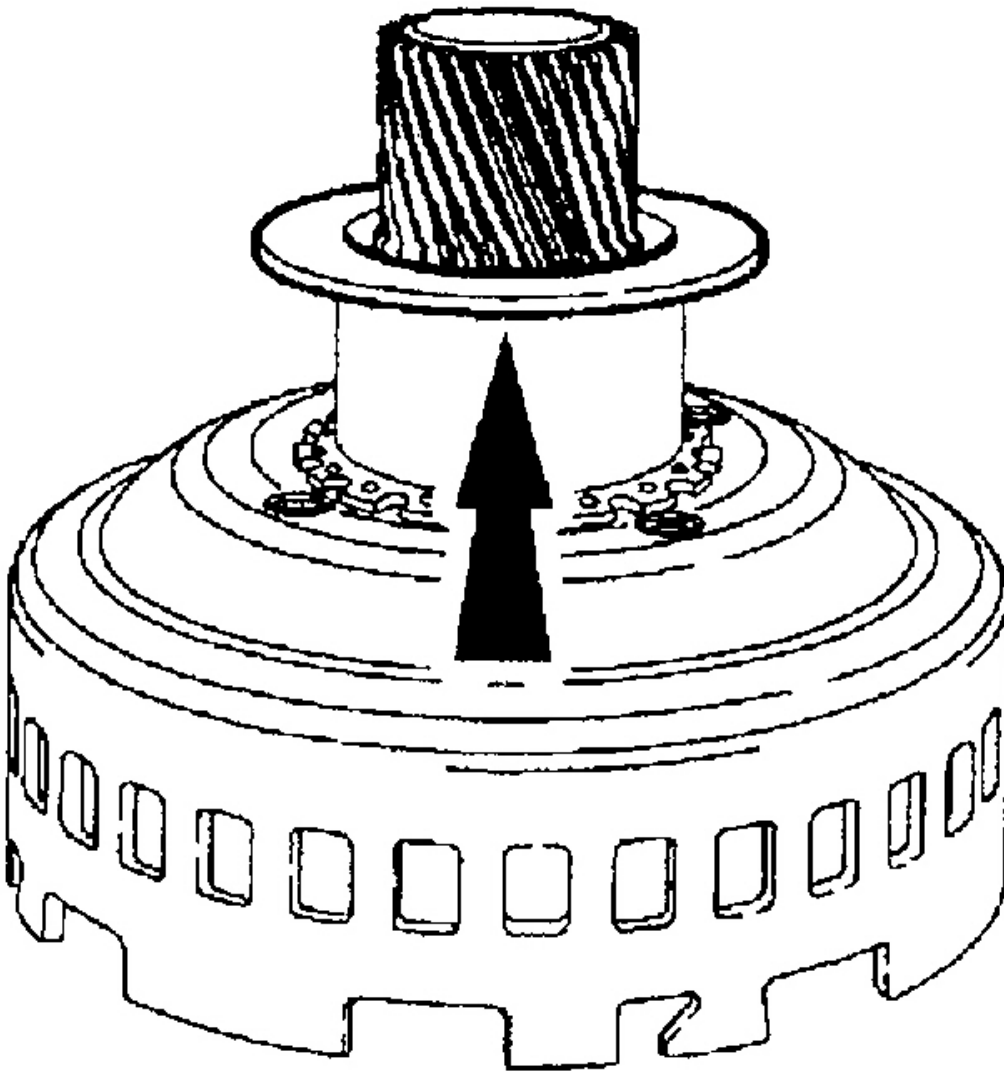
37. Install the No. 8 thrust bearing.



G01672430

Fig. 298: Installing Thrust Bearing

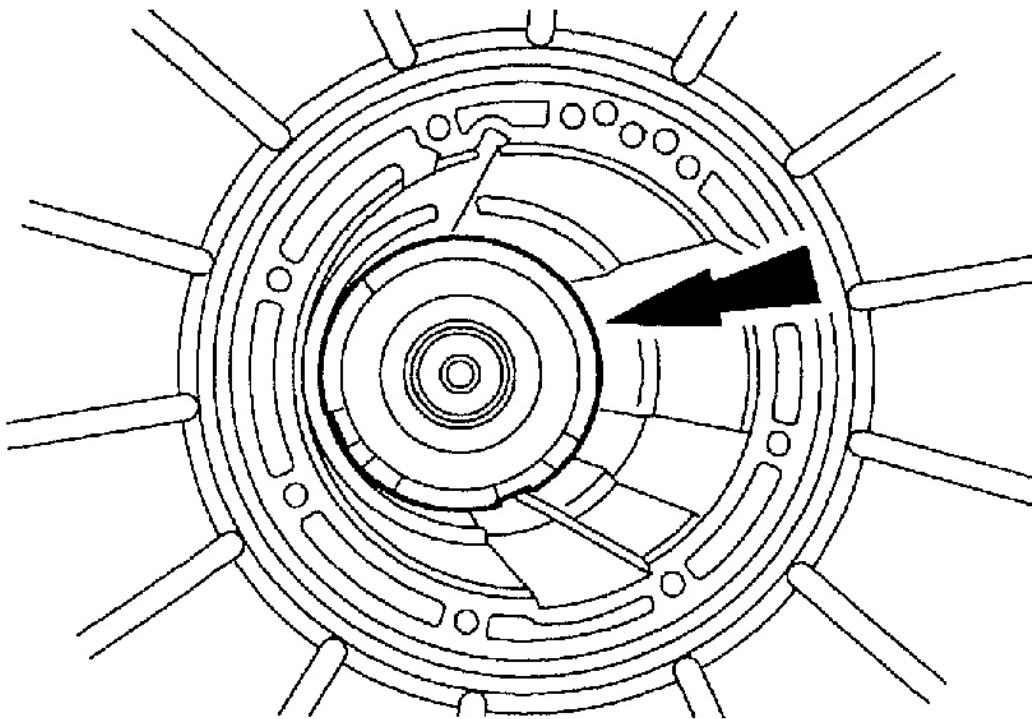
38. Install the spacer on the input shell, using petroleum jelly to hold it in place.



G01672431

Fig. 299: Installing Spacer On Input Shell

39. Install the input shell and sun gear assembly.

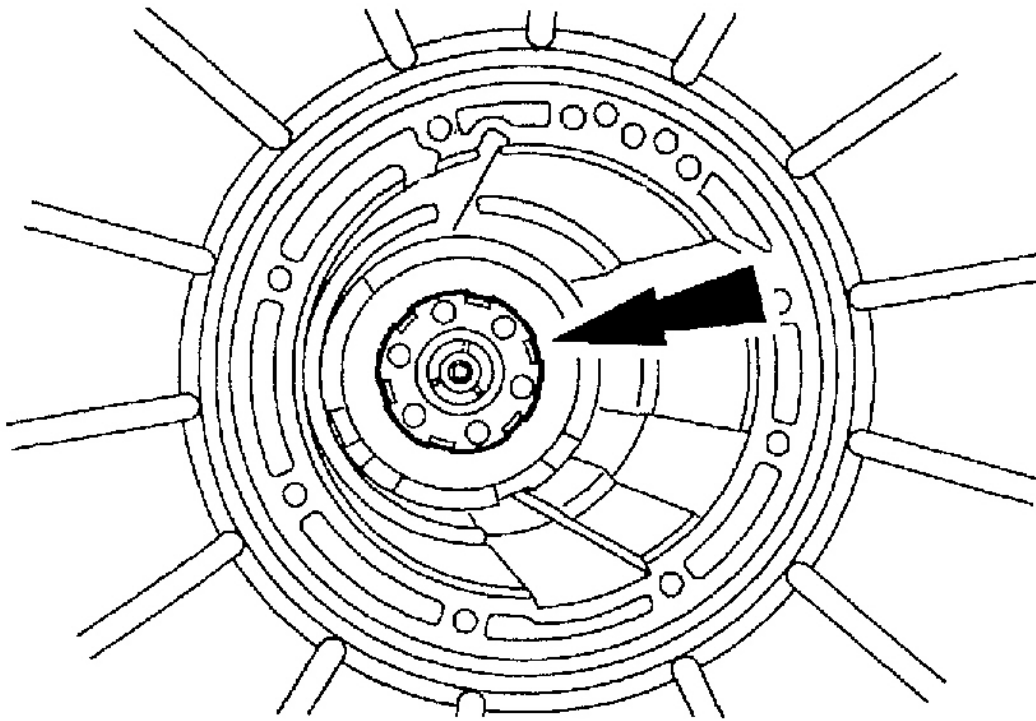


G01672432

Fig. 300: Installing Input Shell & Sun Gear Assembly

NOTE: The No. 13 bearing must be properly seated in the forward planet assembly so the sun gear can be installed correctly.

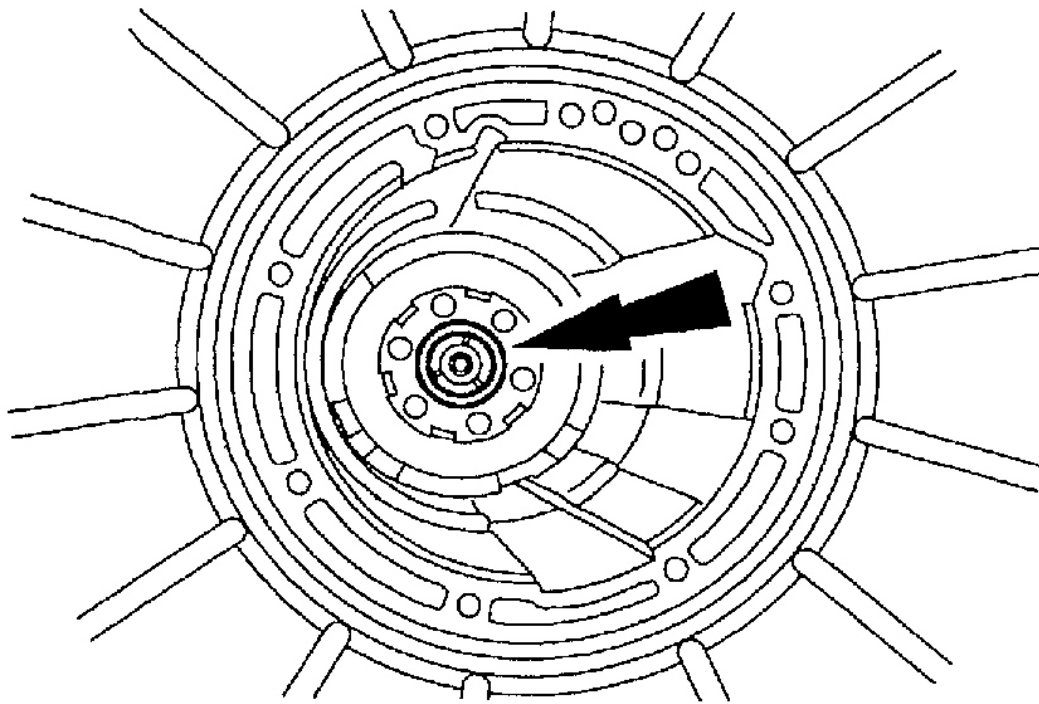
40. Install the forward planetary assembly.



G01672433

Fig. 301: Installing Forward Planetary Assembly

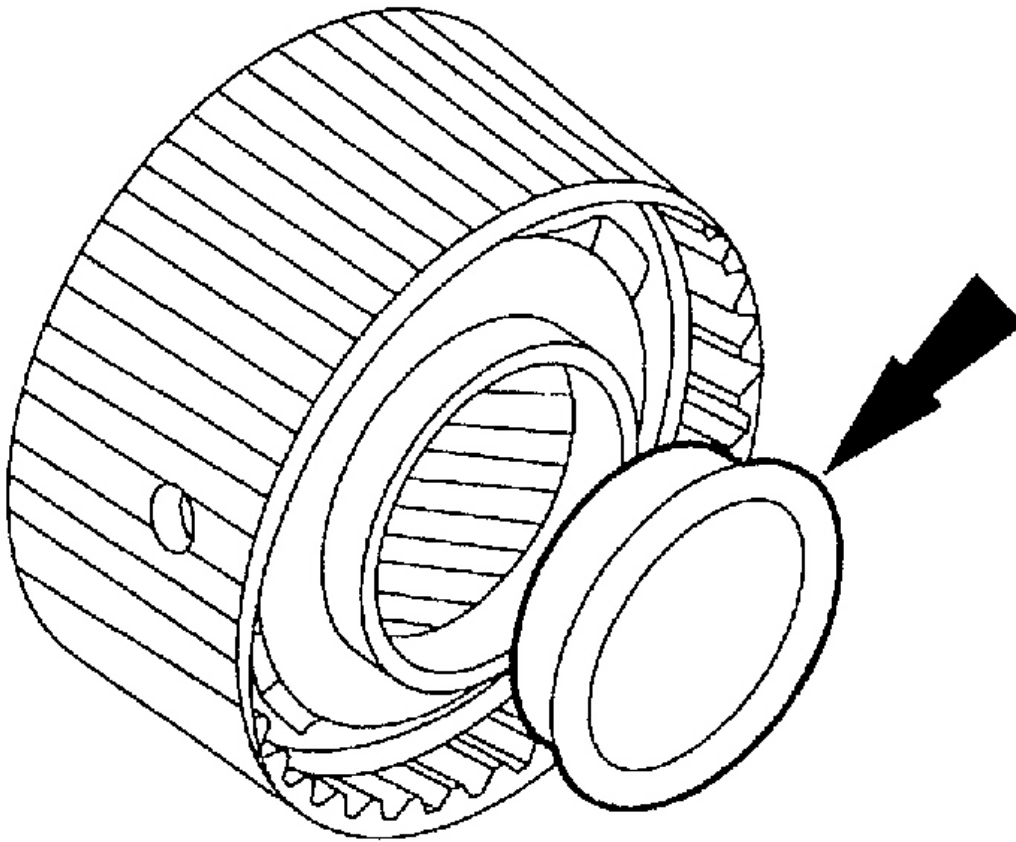
41. Install the No. 7 forward planet thrust bearing into the forward ring gear and hub assembly. Use petroleum jelly to hold the bearing in place.



G01672434

Fig. 302: Installing Forward Planet Thrust Bearing

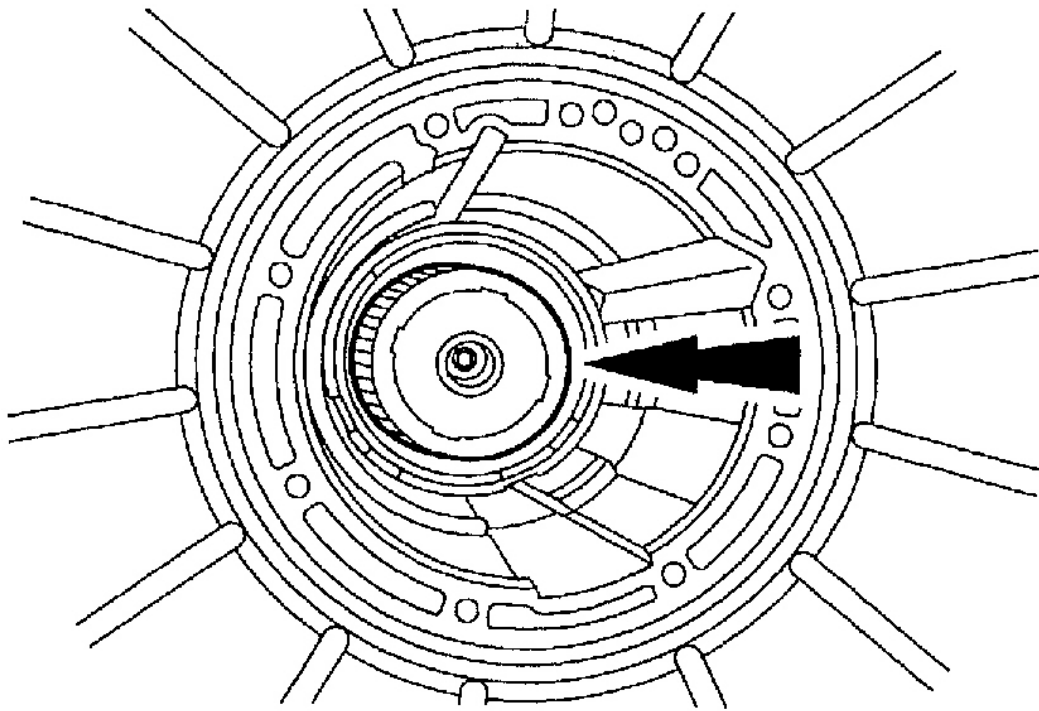
42. Install the No. 6B forward clutch thrust washer onto the forward ring gear hub.



G01672435

Fig. 303: Installing Forward Clutch Thrust Washer

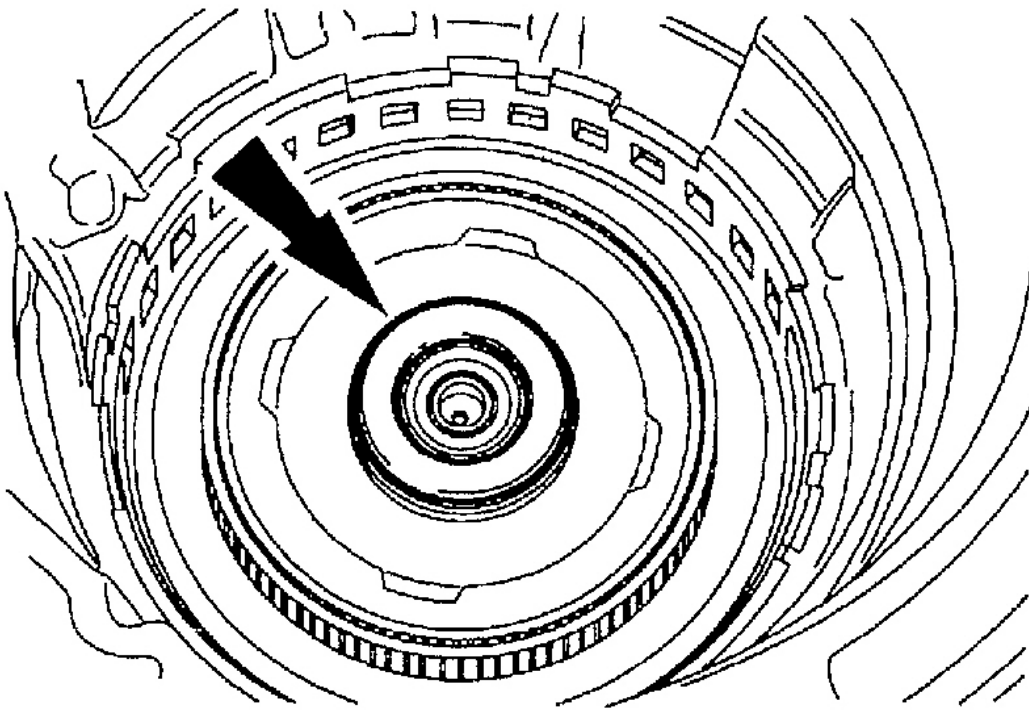
43. Install the forward ring gear and hub as an assembly.



G01672436

Fig. 304: Installing Forward Ring Gear & Hub Assembly

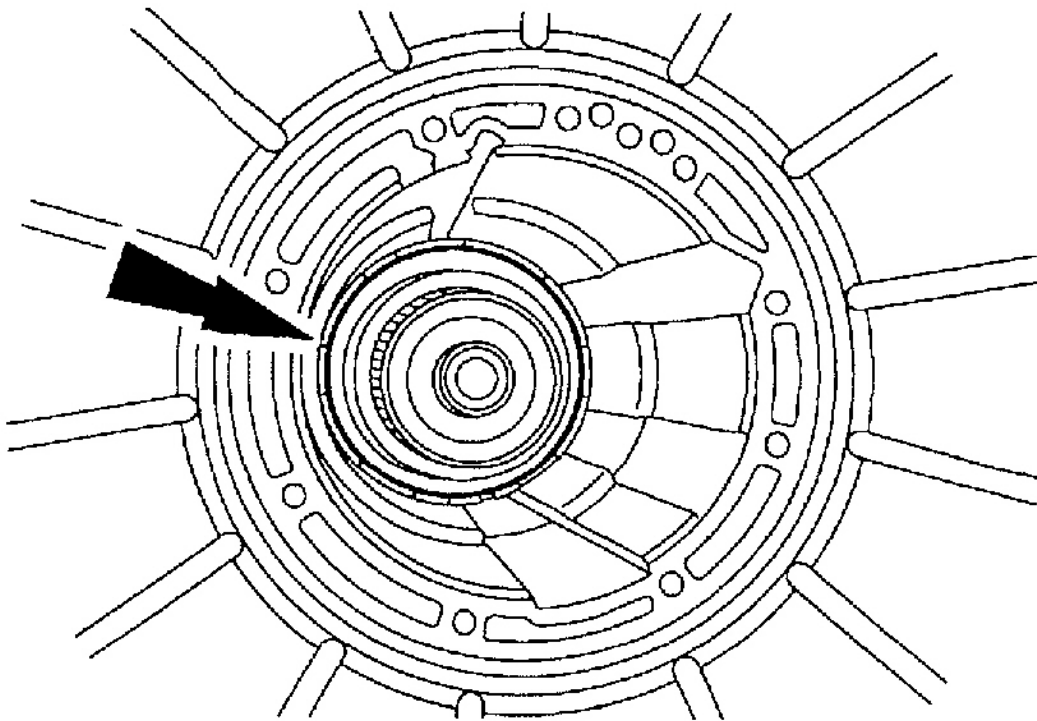
44. Install the No. 6A forward ring gear hub thrust bearing into the forward ring gear and hub.



G01672437

Fig. 305: Installing Forward Ring Gear Hub Thrust bearing

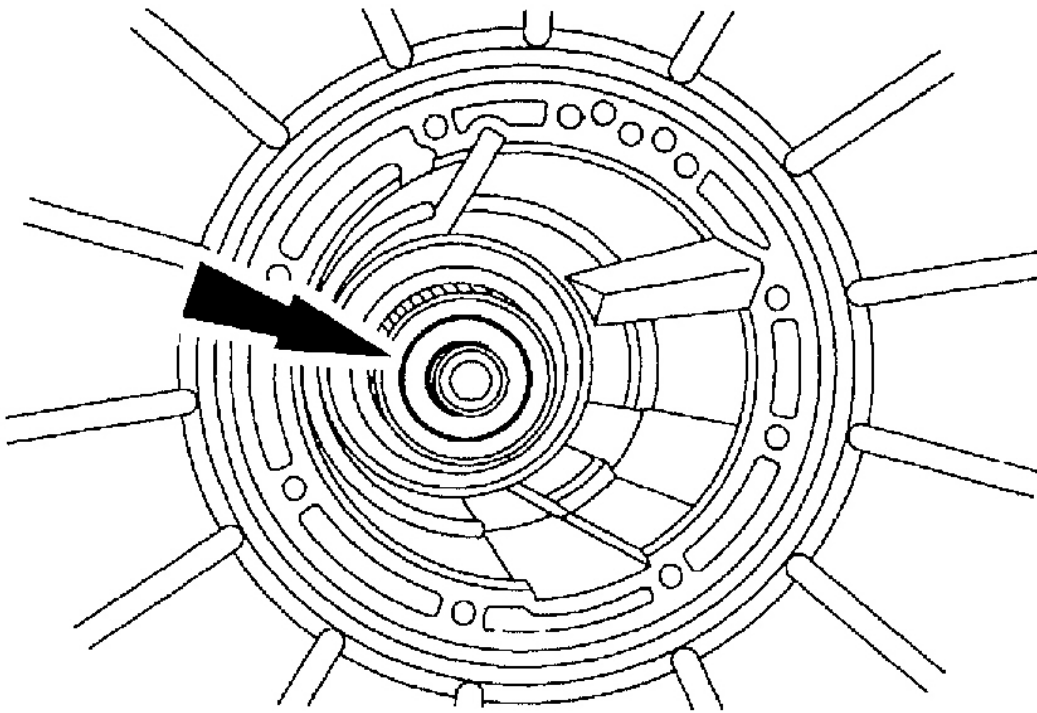
45. Install the forward clutch cylinder.



G01672438

Fig. 306: Installing Forward Clutch Cylinder

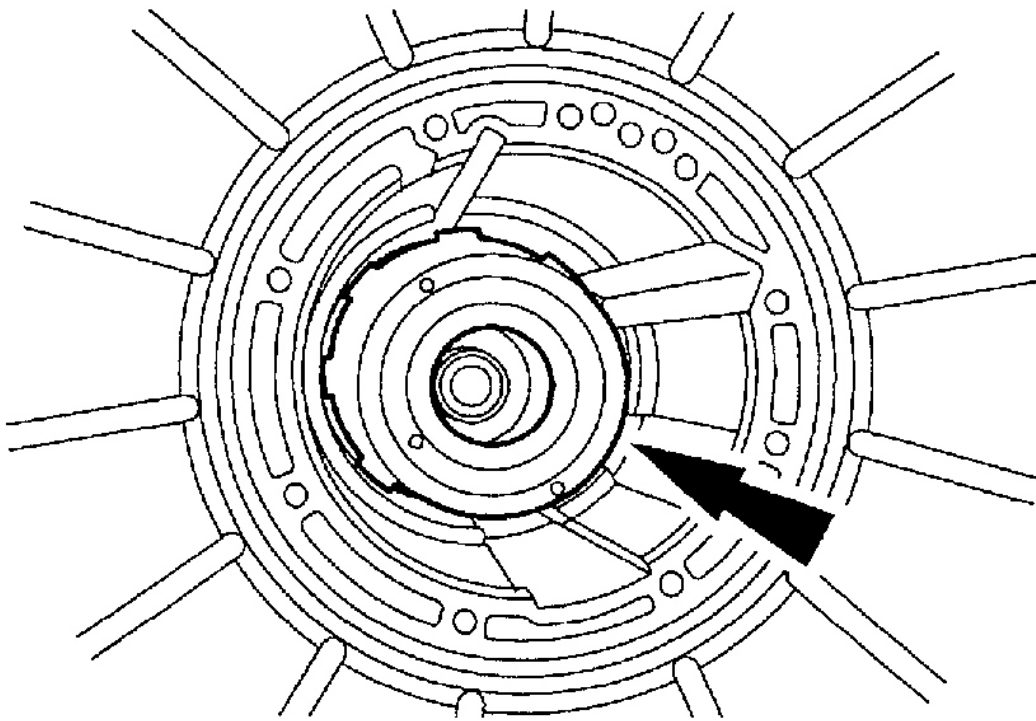
46. Install the No. 5 thrust bearing.



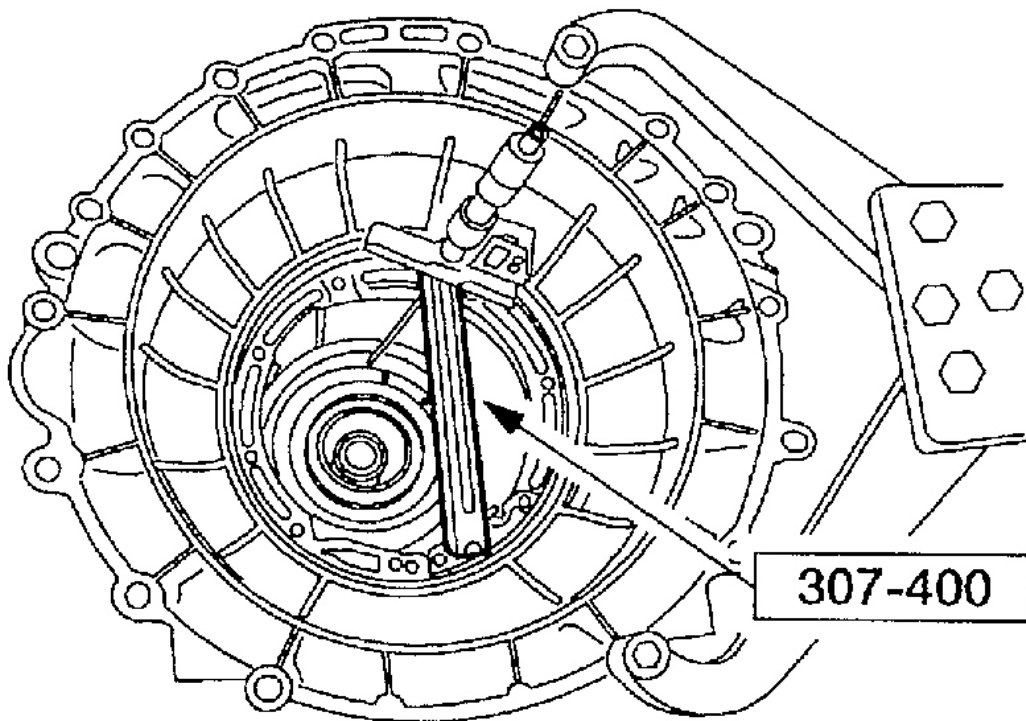
G01672439

Fig. 307: Installing Thrust Bearing

47. Install the direct clutch drum.

**G01672440****Fig. 308: Installing Direct Clutch Drum**

48. Using the special tool, measure from the top of the gauge bar to center support ledge in case at four places 90 degrees apart.
- Add the four measurements, divide by four, and record as dimension A.

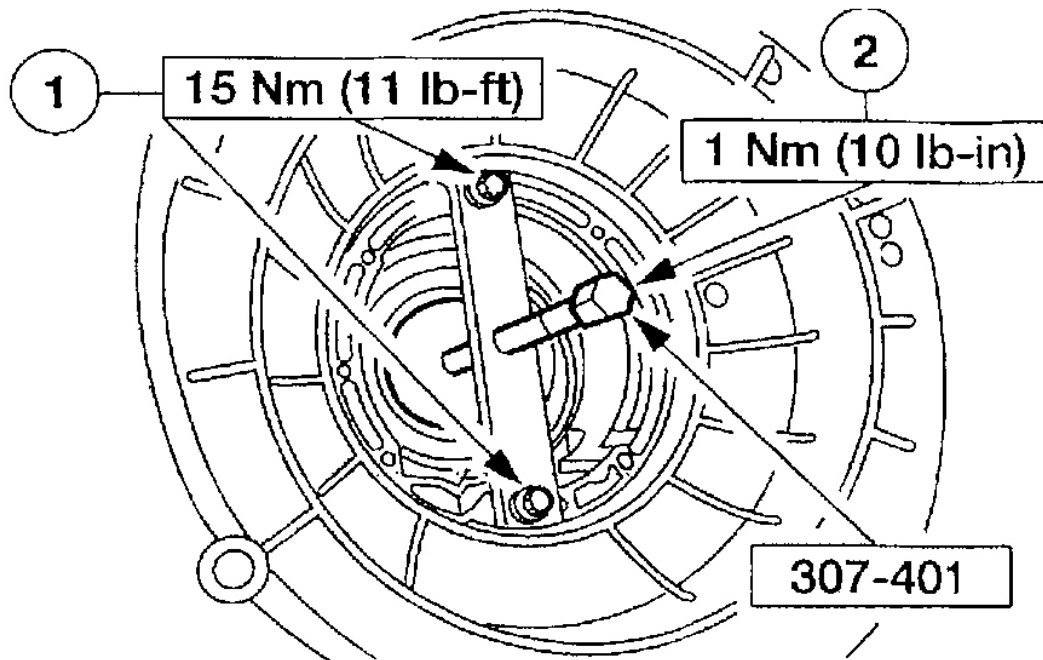


G01672441

Fig. 309: Measuring Center Support Height

CAUTION: The torque specifications are critical for this procedure. Failure to use the correct torque specifications may cause transmission damage.

49. Install the special tool.
 1. Install the special tool and the bolts using the two pump screw locations at approximately 6 and 12 o'clock positions.
 2. Tighten the center screw.

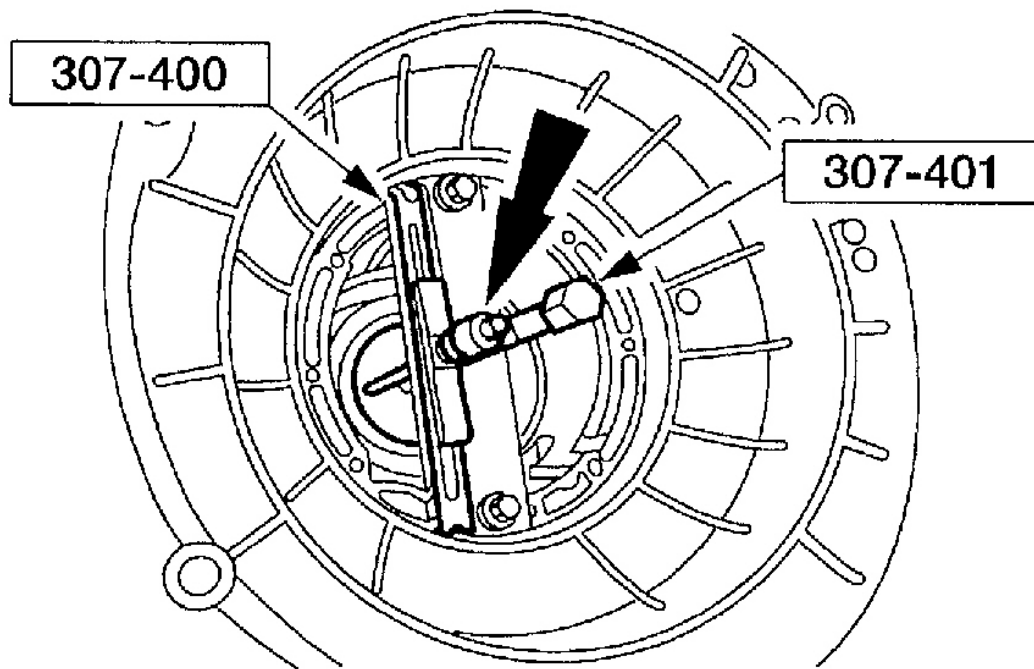


G01672442

Fig. 310: Installing Special Tool

NOTE: Align the disc holes on special tool with the slot in gauge bar for correct measurement.

50. Measure the distance from the top of the gauge bar to the drum bearing surface through the hole in the disc and record as dimension B. Repeat measurement 180 degrees opposite side of the special tool and record as dimension C.



G01672443

Fig. 311: Measuring Drum Bearing Surface Depth

51. Add dimension B to C, divide by two and record as dimension D.
52. Subtract A from D, and record as dimension E.
53. Select bearing from the following chart, using dimension E.

Dimension E	Service Part Number (7D014)	Bearing Thickness	Identification (Notches)
1.69-1.87 mm (0.066-0.074 in)	XW4Z-CA	2.65-2.80 mm (0.104-0.110 in)	None
1.88-2.04 mm (0.073-0.080 in)	XW4X-DA	2.83-2.98 mm (0.111-0.116 in)	One
2.05-2.22 mm (0.081-0.088 in)	XW4Z-EA	3.01-3.16 mm (0.118-0.124 in)	Two
2.23-2.43 mm (0.088-0.096 in)	XW4Z-FA	3.21-3.36 mm (0.126-0.132 in)	Three

G01672444

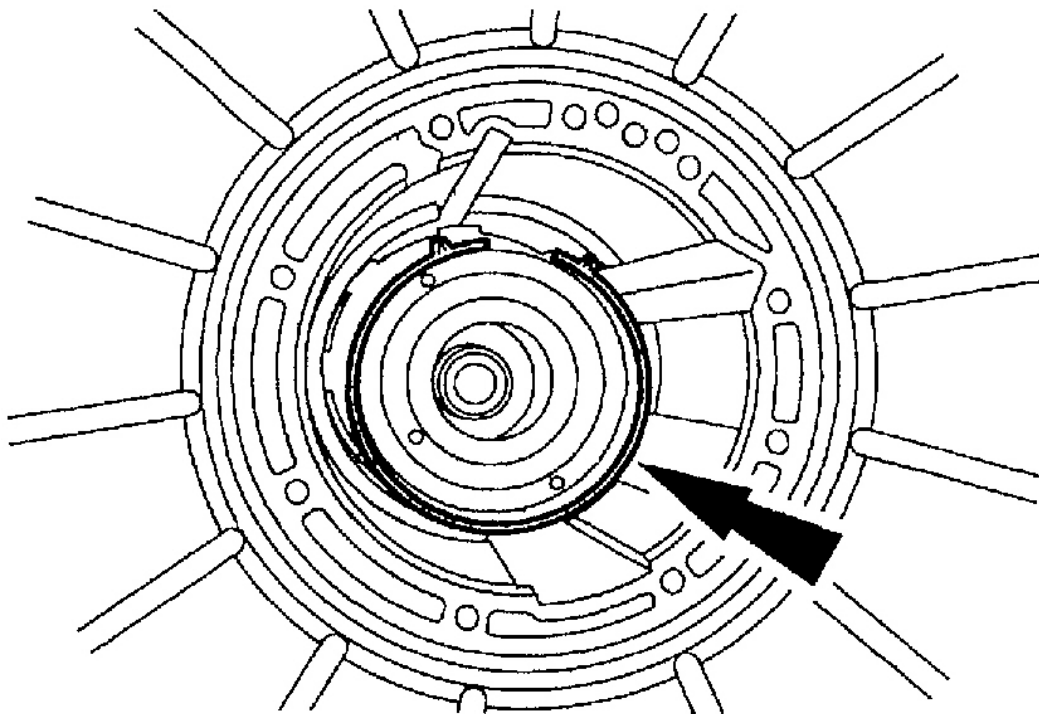
Fig. 312: Bearing Thickness Table

NOTE: Make sure that the intermediate band apply strut is aligned with the band notch.

NOTE: If the intermediate band is reused, it must be installed in the same position as when removed.

NOTE: The intermediate band is new, and dark in color. This is a normal condition of the band. Hairline cracks in the band are also considered normal. Do not install a new band based solely on the color.

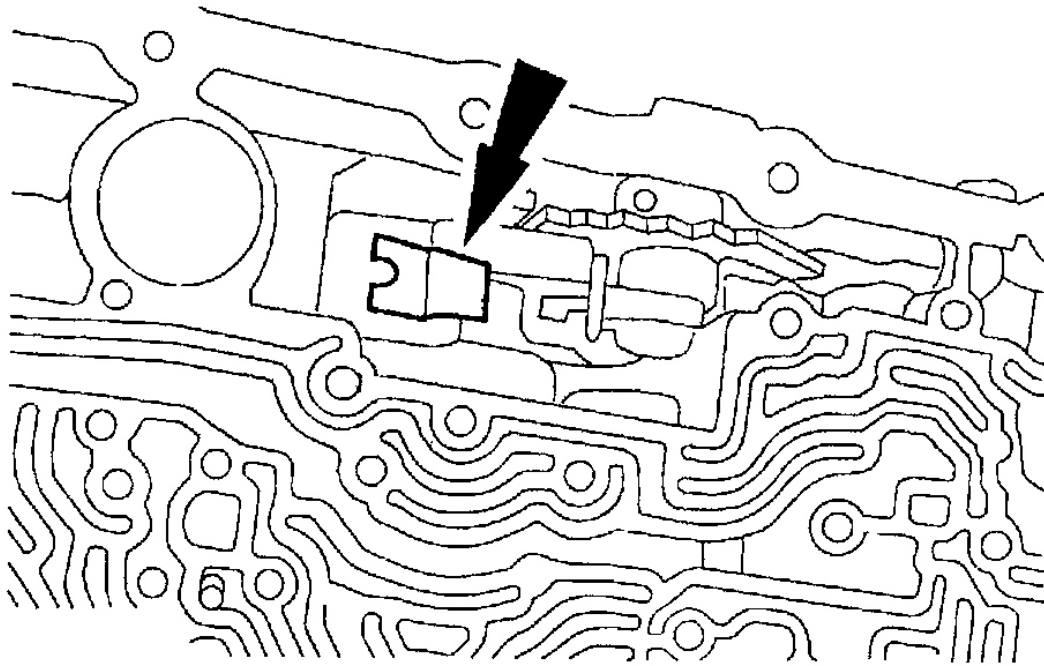
54. Install the intermediate band.



G01672445

Fig. 313: Installing Intermediate Band

55. Install the intermediate band anchor strut.

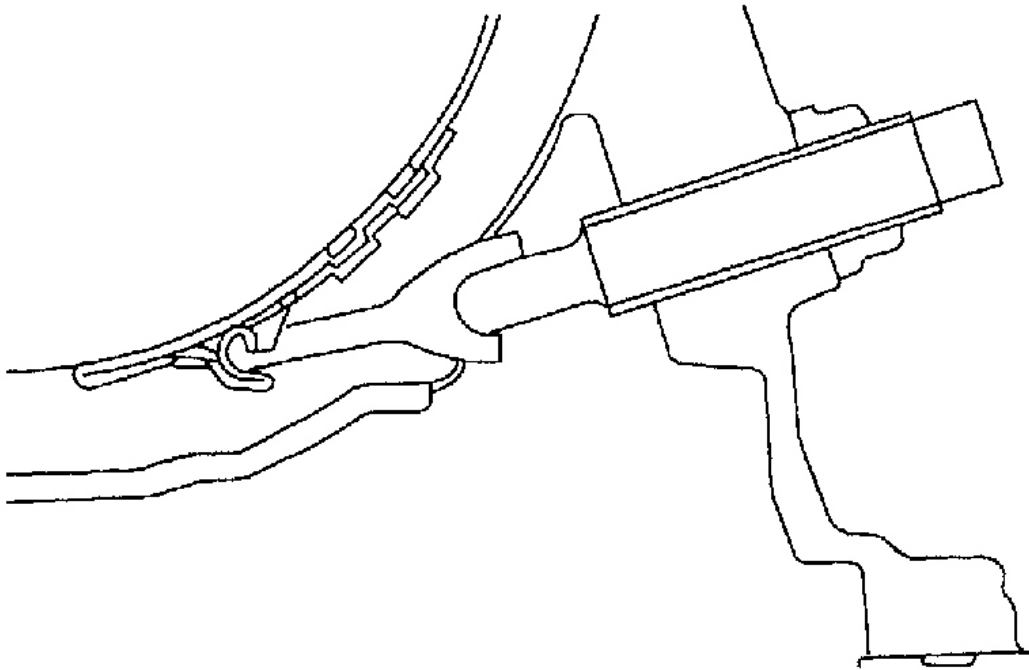


G01672446

Fig. 314: Installing Intermediate Band Anchor Strut

CAUTION: If the strut is installed incorrectly, transmission damage will occur.

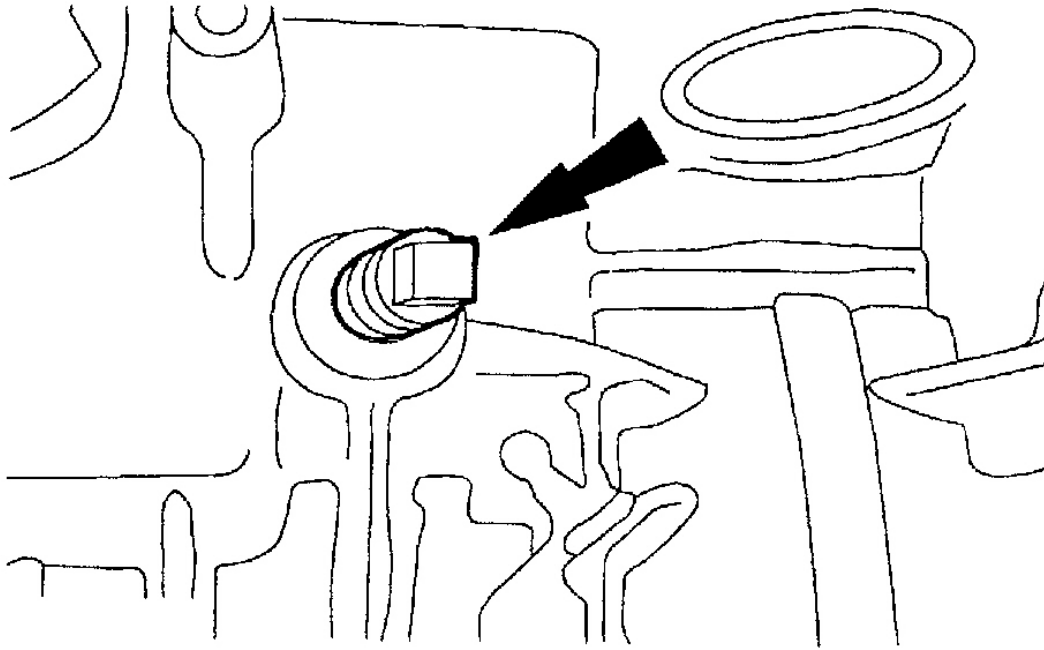
56. Check to make sure that the intermediate band anchor strut is installed in the correct orientation to the case and adjustment screw.



G01672447

Fig. 315: Checking Intermediate Band Anchor Strut For Correct Orientation

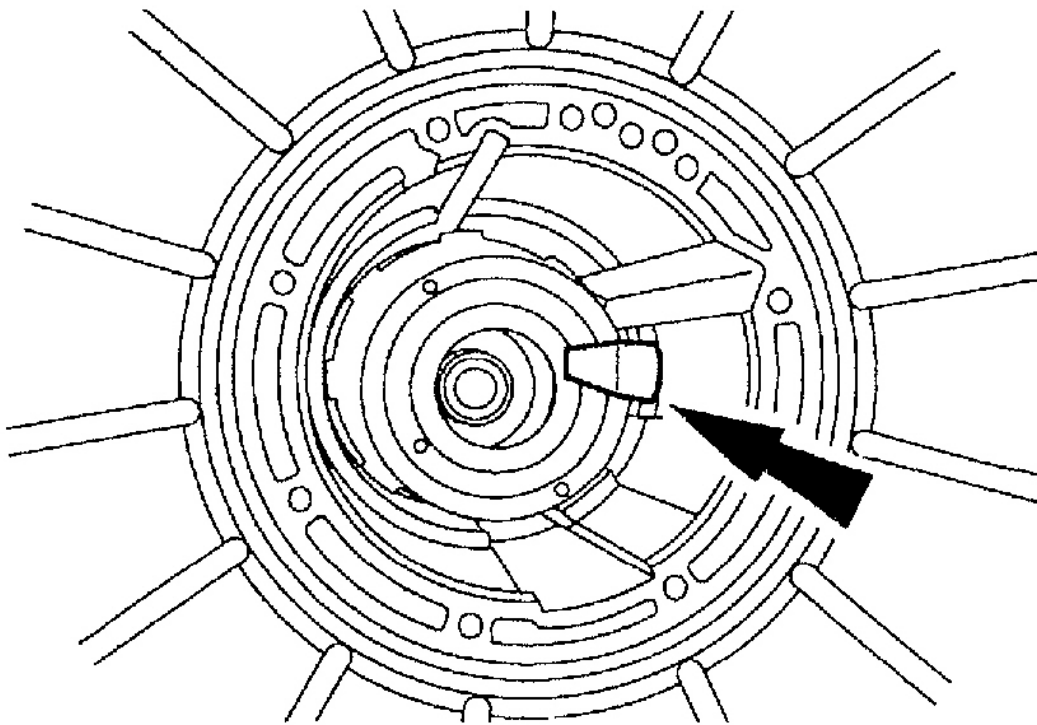
57. Loosely install the screw.



G01672448

Fig. 316: Installing Intermediate Band Anchor Screw

58. Install the intermediate band apply strut.

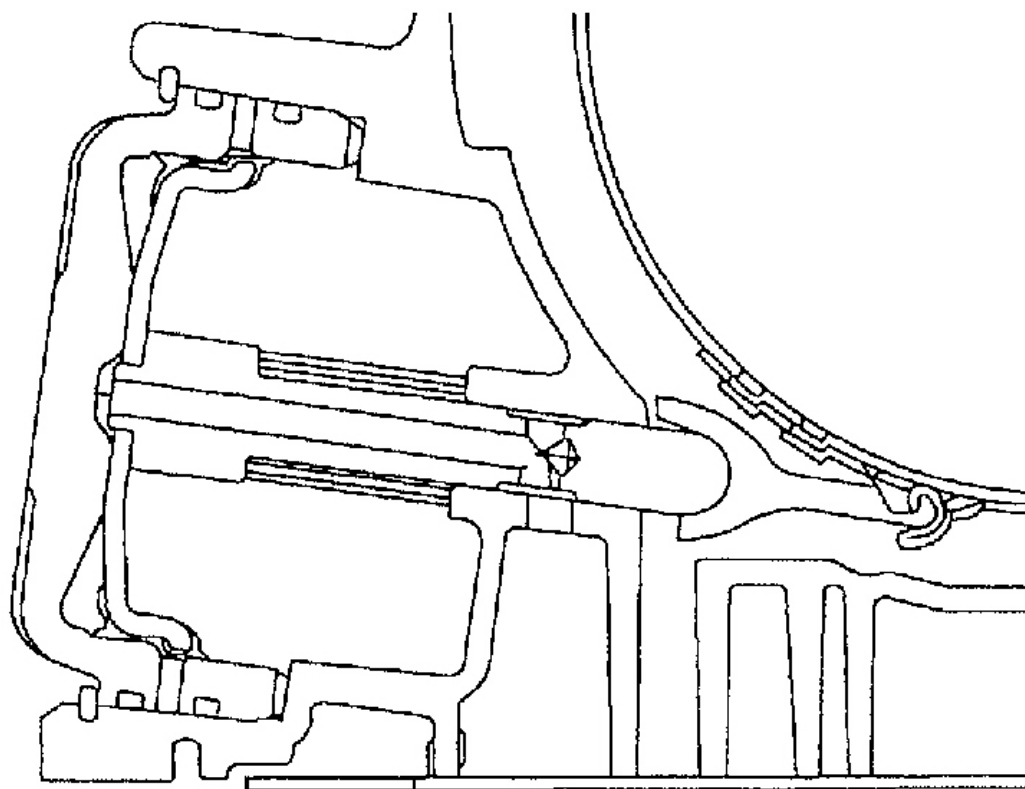


G01672449

Fig. 317: Installing Intermediate Band Apply Strut

CAUTION: If the strut is installed incorrectly, transmission damage will occur.

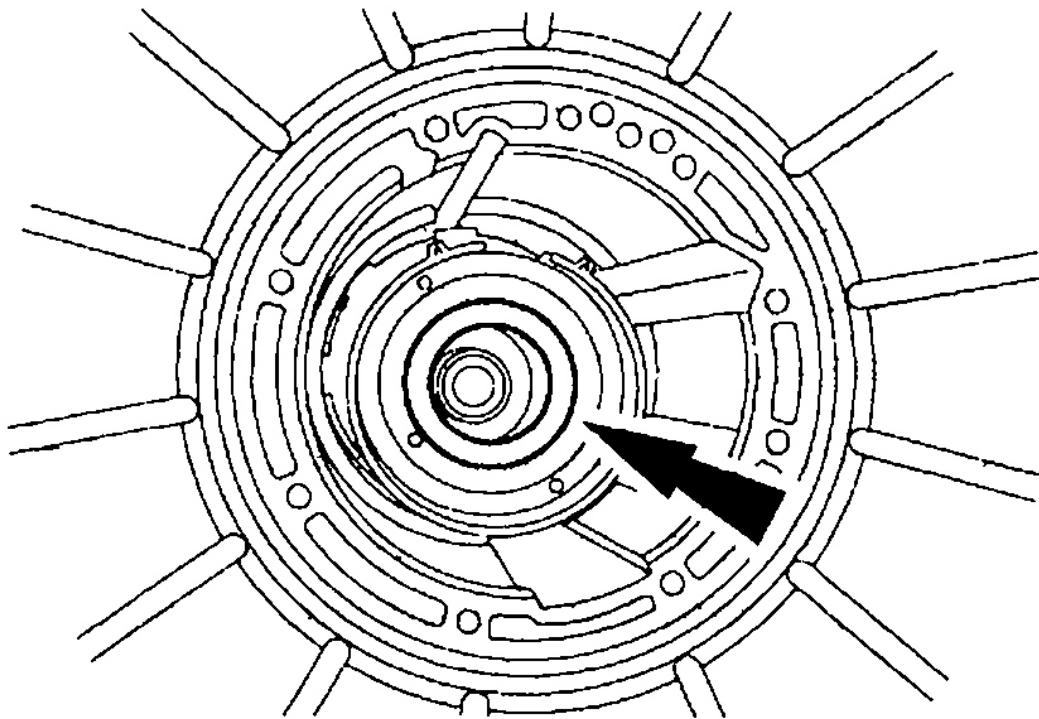
59. Check to make sure that the intermediate band apply strut is installed in the correct orientation to the case and piston rod.



G01672450

Fig. 318: Checking Intermediate Band Apply Strut For Correct Orientation

60. Install the selected No. 4 thrust washer on the direct clutch drum.
 - Coat the thrust washer with petroleum jelly.

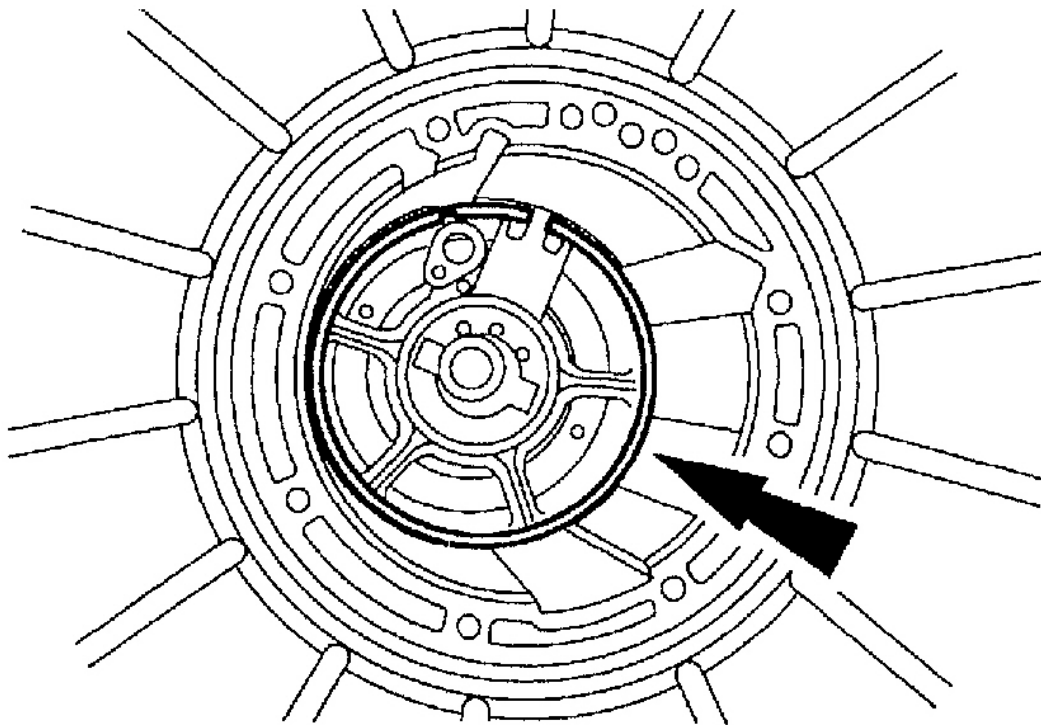


G01672451

Fig. 319: Installing Thrust Washer On Direct Clutch Drum

NOTE: Align the center support screw hole with correct case hole.

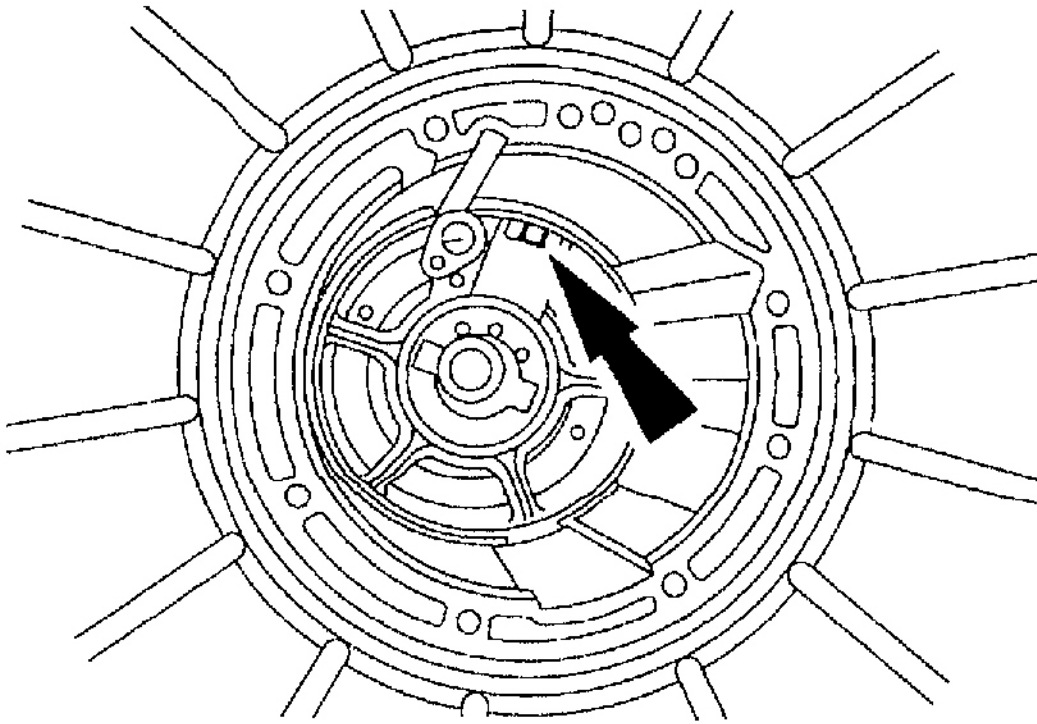
61. Install the center support.



G01672452

Fig. 320: Installing Center Support

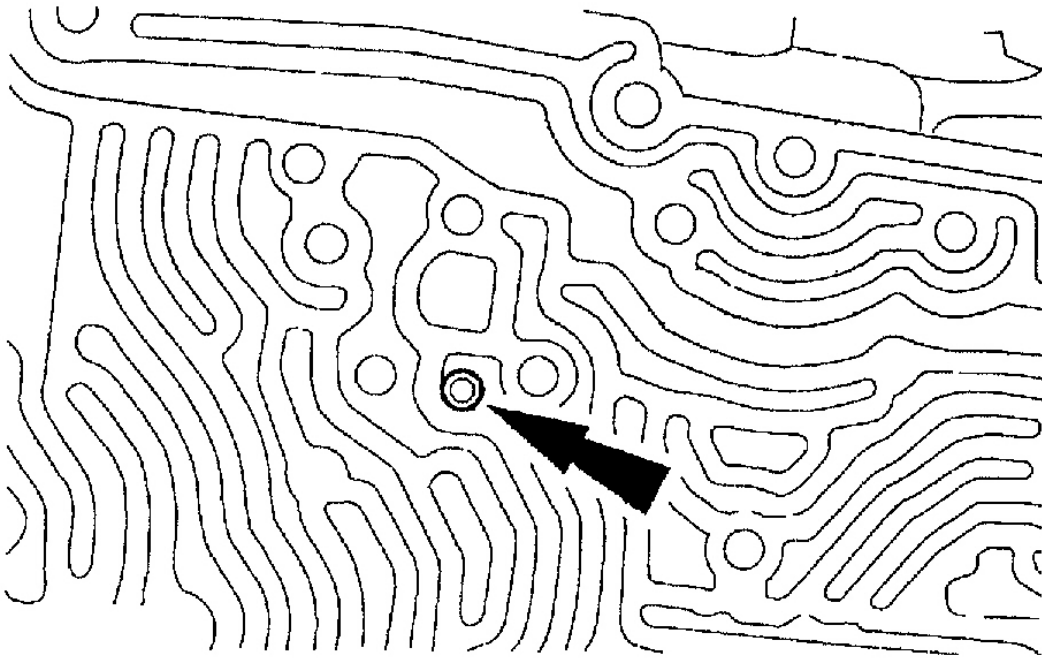
62. Install the center support locknut and cage.



G01672453

Fig. 321: Installing Center Support Lock Nut & Cage

63. Loosely install the screw.



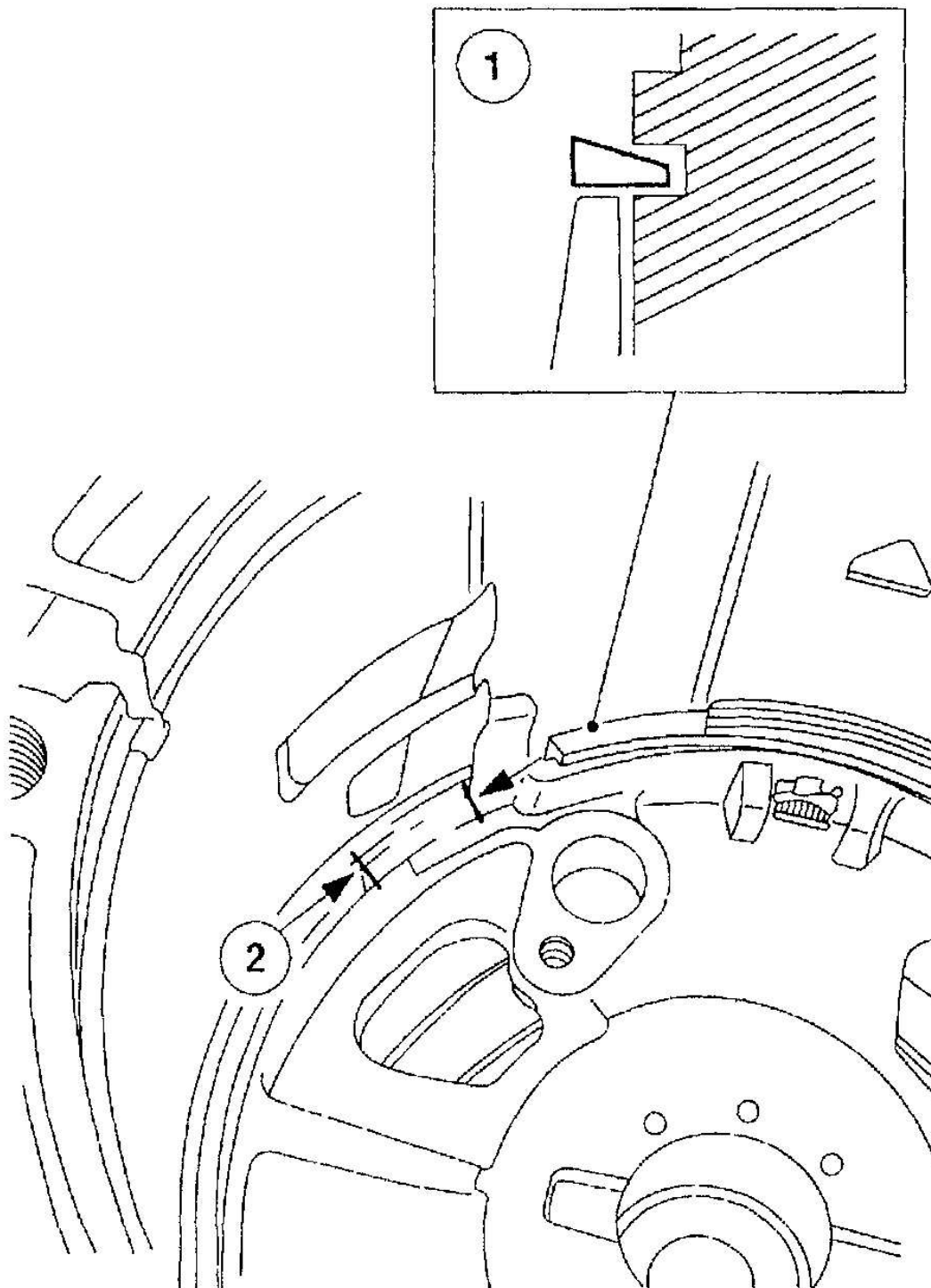
G01672454

Fig. 322: Installing Center Support Screw

CAUTION: Install the center support retaining ring with the tapered side facing up.

CAUTION: Make sure the notch opening is not obstructed by the center support retaining ring.

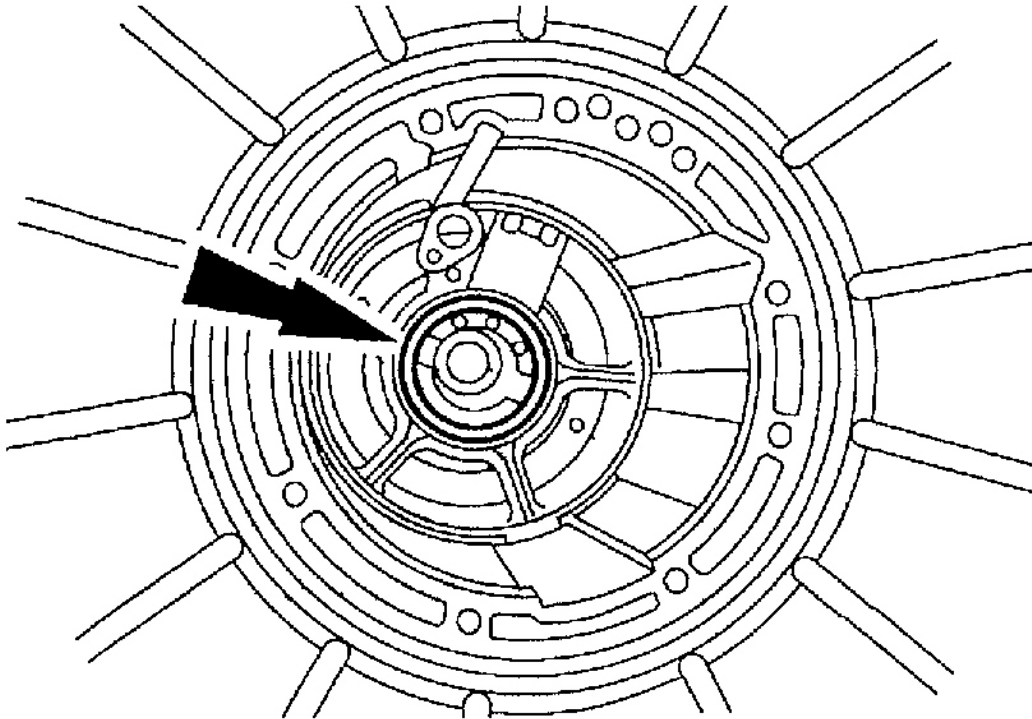
64. Install the center support retaining ring.
 1. Make sure the center support retaining ring is installed with the tapered side facing up.
 2. Make sure the opening of the center support retaining ring is positioned correctly.



G01672455

Fig. 323: Installing Center Support Retaining Ring

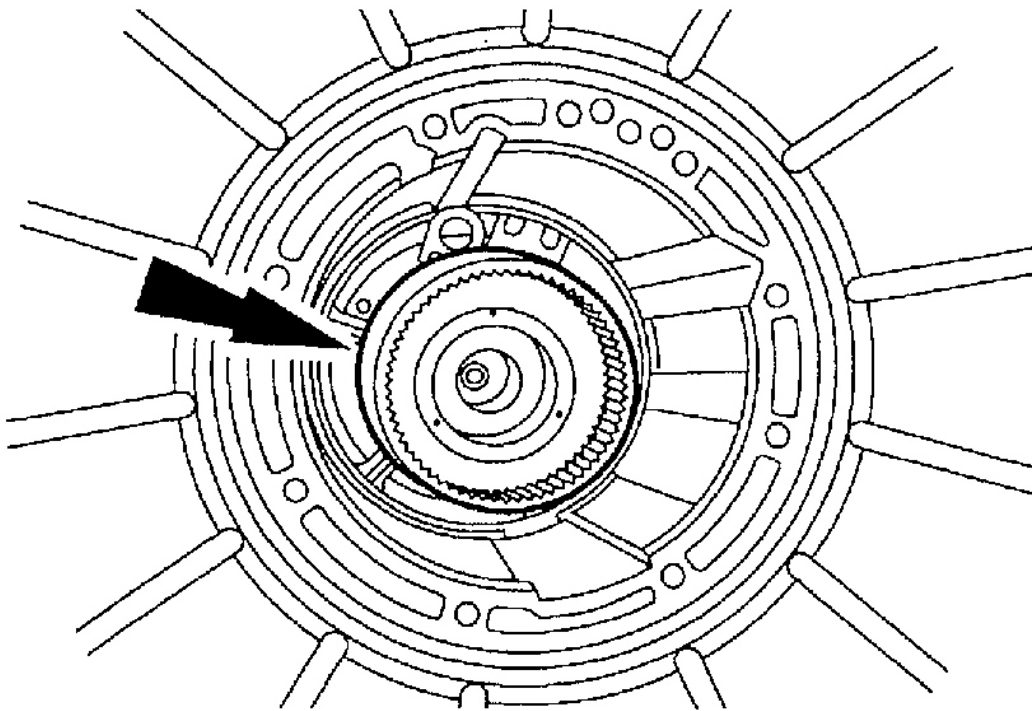
65. Install the center shaft thrust bearing (No. 3).



G01672456

Fig. 324: Installing Center Shaft Thrust Bearing

66. Install the overdrive ring gear, overdrive one-way clutch and center shaft assembly.

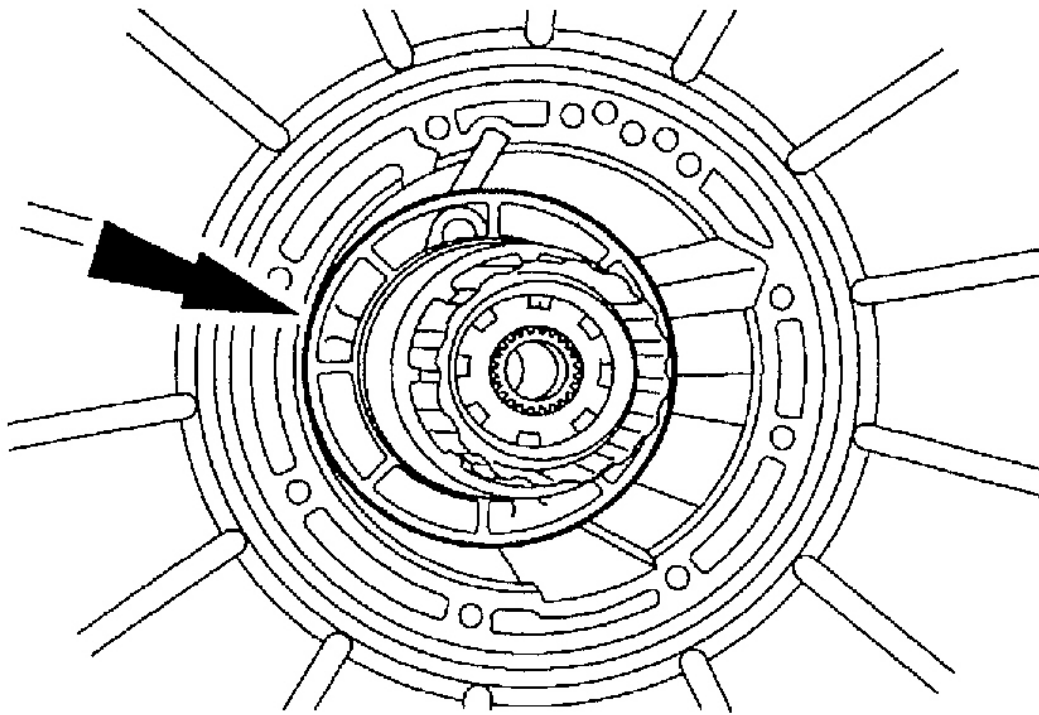


G01672457

Fig. 325: Installing Overdrive Ring Gear

CAUTION: Do not bend the trigger wheel. Make sure that the No. 2 thrust bearing is in this assembly.

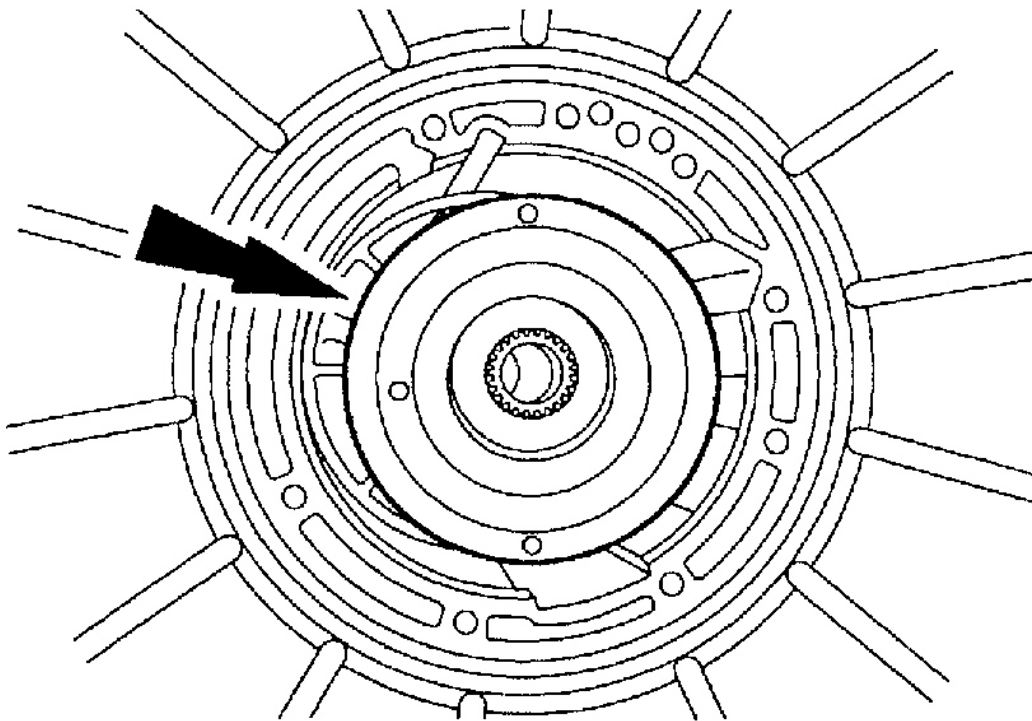
67. Install the planetary gear overdrive carrier.



G01672458

Fig. 326: Installing Planetary Gear Overdrive Carrier

68. Install the overdrive brake drum and coast clutch drum assembly.

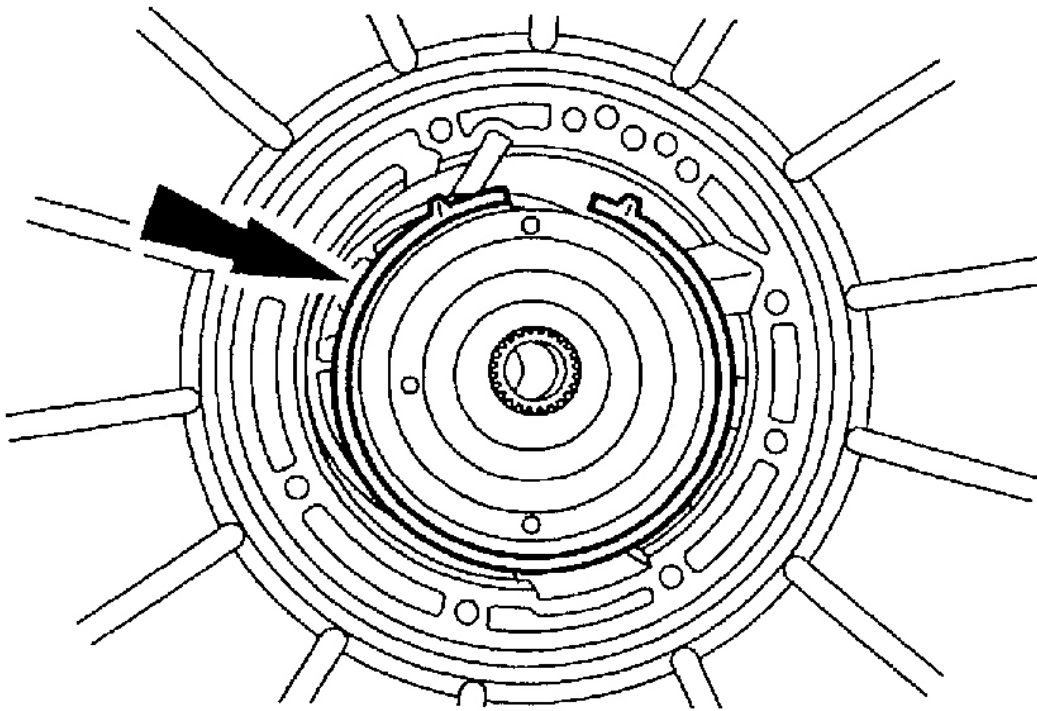


G01672459

Fig. 327: Installing Overdrive Brake Drum & Coast Clutch Drum Assembly

- NOTE:** If the overdrive band is reused, it must be installed in the same position as when removed.
- NOTE:** Make sure that the overdrive band apply strut is aligned with the band notch.
- NOTE:** The overdrive band is new, and dark in color. This is a normal condition of the band. Hairline cracks in the band are also considered normal. Do not install a new band based solely on the color.

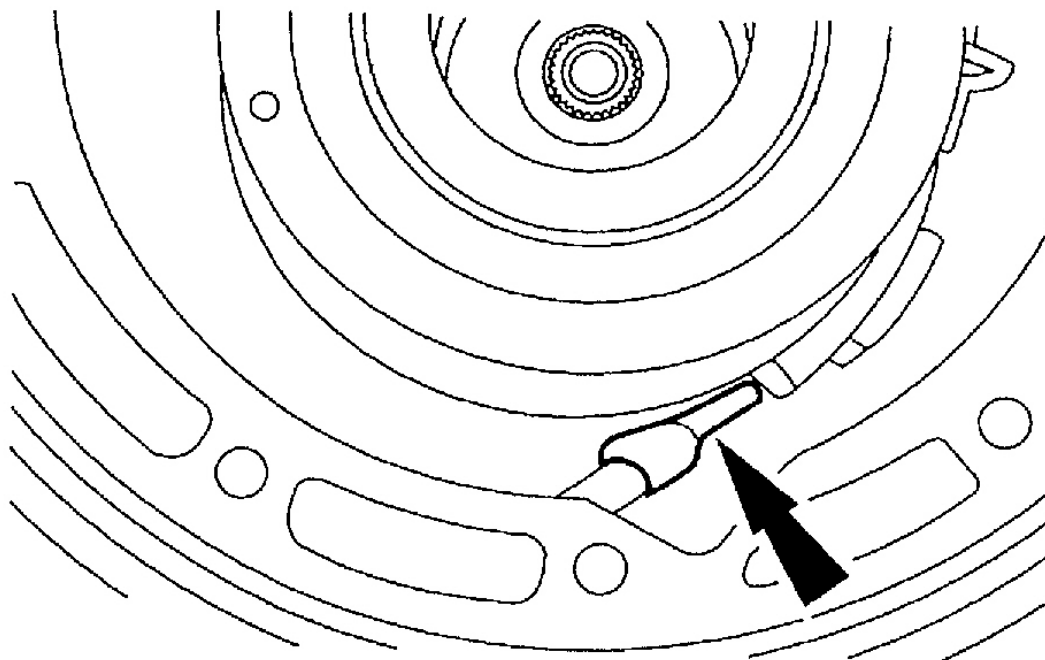
69. Install the overdrive band.



G01672460

Fig. 328: Installing Overdrive Band

70. Install the overdrive anchor strut.

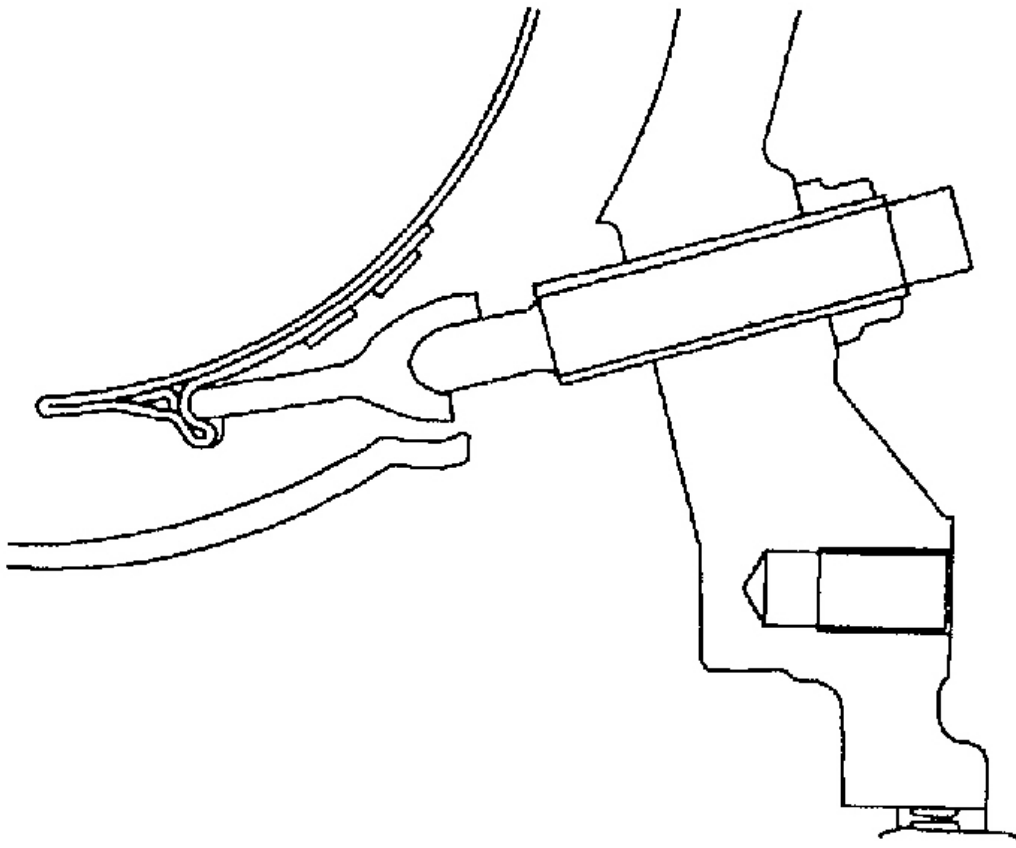


G01672461

Fig. 329: Installing Overdrive Anchor Strut

CAUTION: If the strut is installed incorrectly, transmission damage will occur.

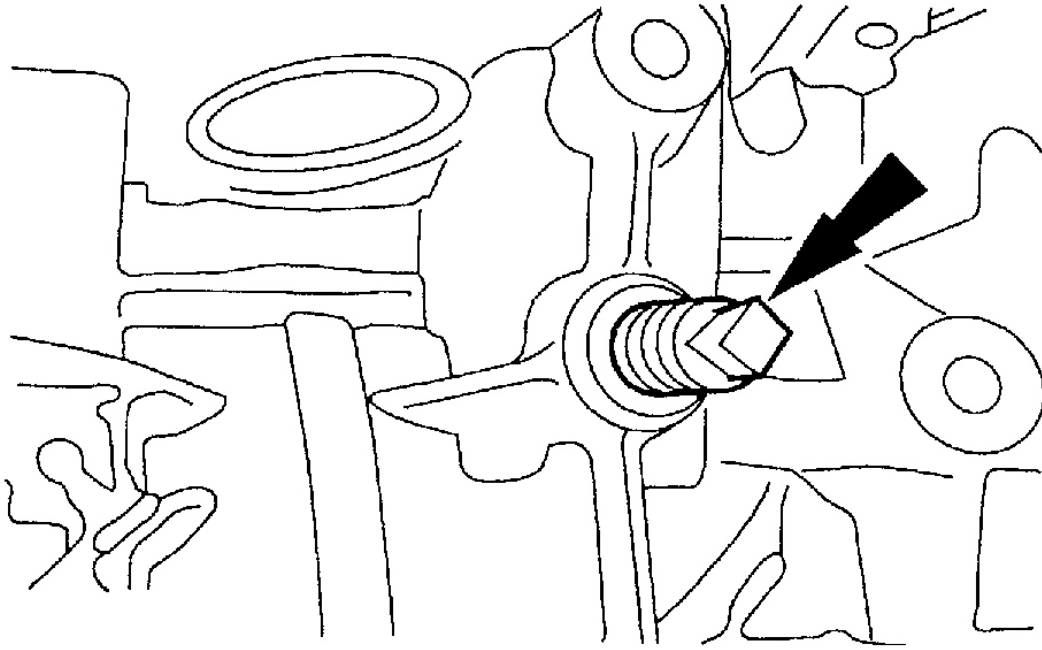
71. Check to make sure that the overdrive band anchor strut is installed in the correct orientation to the case and adjustment screw.



G01672462

Fig. 330: Checking Overdrive Band Anchor Strut For Correct Orientation

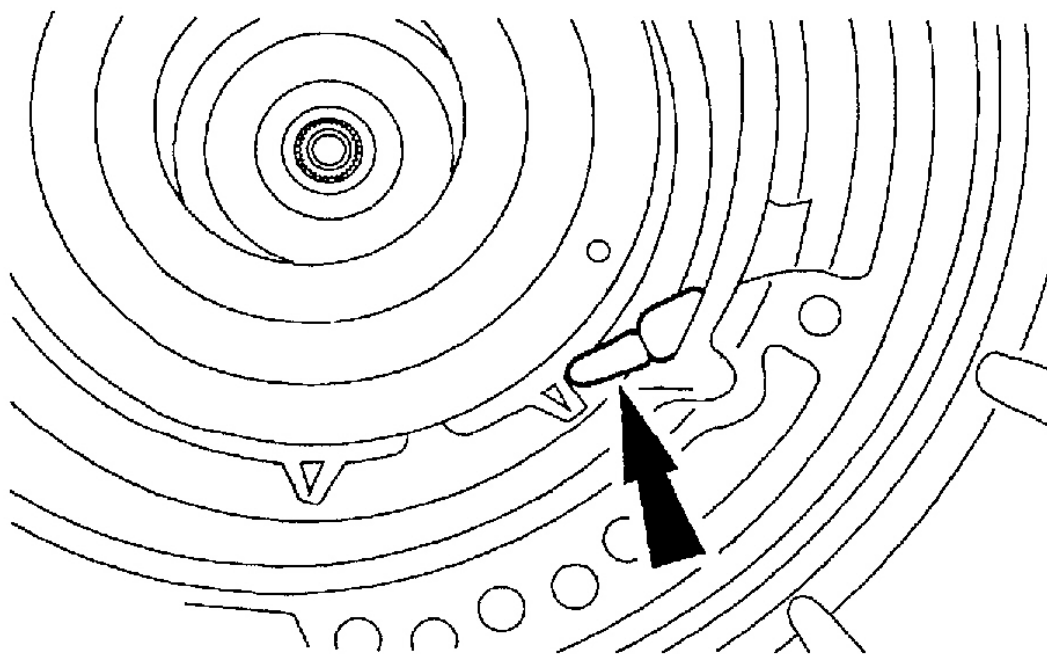
72. Loosely install the screw.



G01672463

Fig. 331: Installing Overdrive Band Anchor Screw

73. Install the overdrive apply strut.

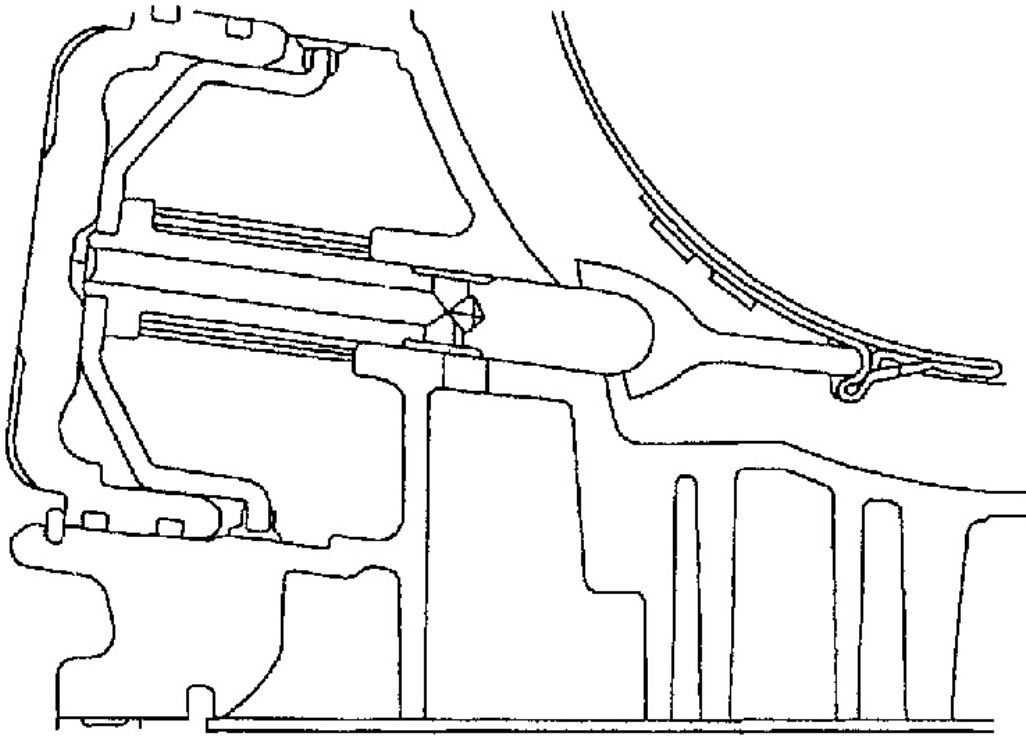


G01672464

Fig. 332: Installing Overdrive Apply Strut

CAUTION: If the strut is installed incorrectly, transmission damage will occur.

74. Check to make sure that the overdrive band apply strut is installed in the correct orientation to the case and piston rod.

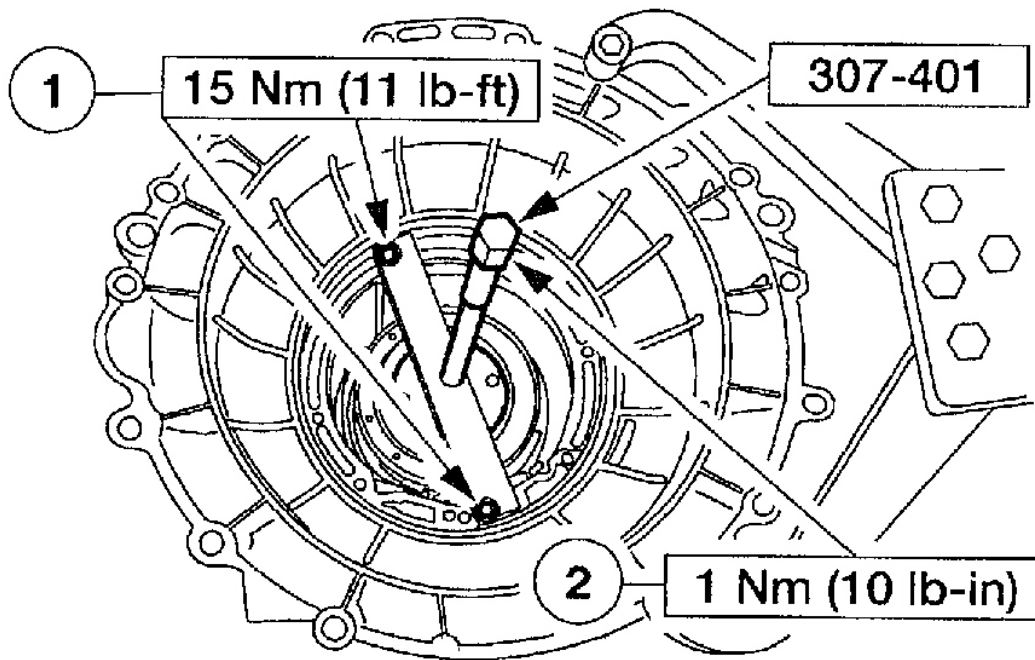


G01672465

Fig. 333: Checking Overdrive Band Apply Strut For Correct Orientation

CAUTION: The torque specifications are critical for this procedure. Failure to use the correct torque specifications may cause transmission damage.

75. Install the special tool.
 1. Install the special tool and the bolts using the two pump screw locations at approximately 6 and 12 o'clock positions.



G01672466

Fig. 334: Installing Special Tool

2. Tighten the center screw.

NOTE: Align the disc holes on special tool with the slot in gauge bar for correct measurement.

76. Measure the distance from the top of the gauge bar to the drum bearing surface through the hole in the disc and record as dimension A. Repeat measurement 180 degrees opposite side of the special tool and record as dimension B.

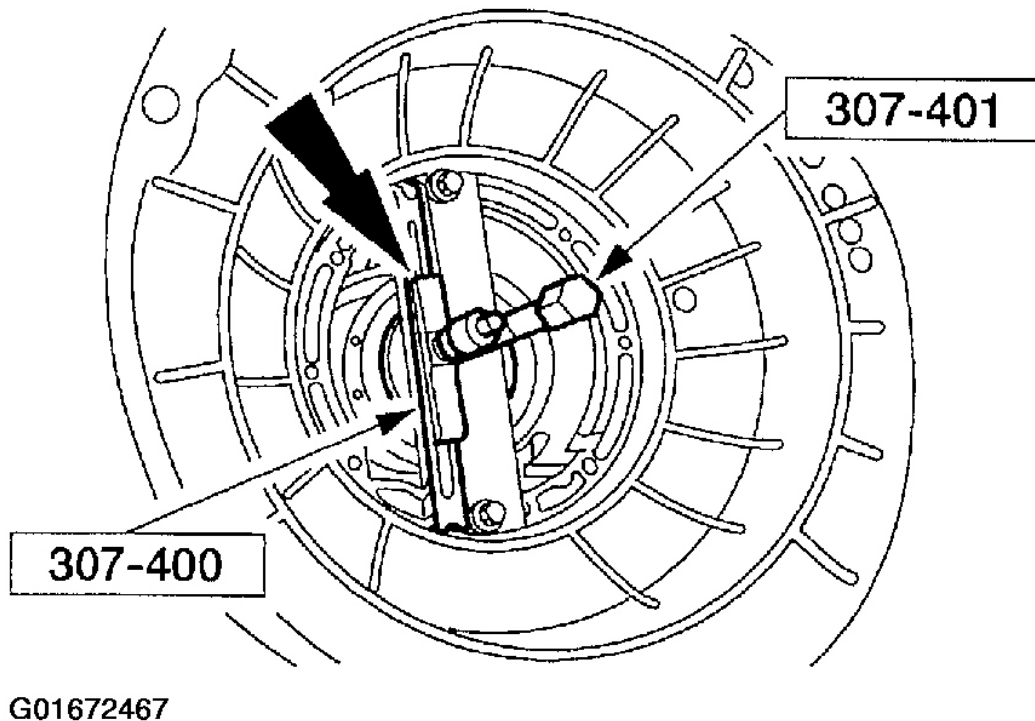


Fig. 335: Measuring Drum Bearing Surface Depth

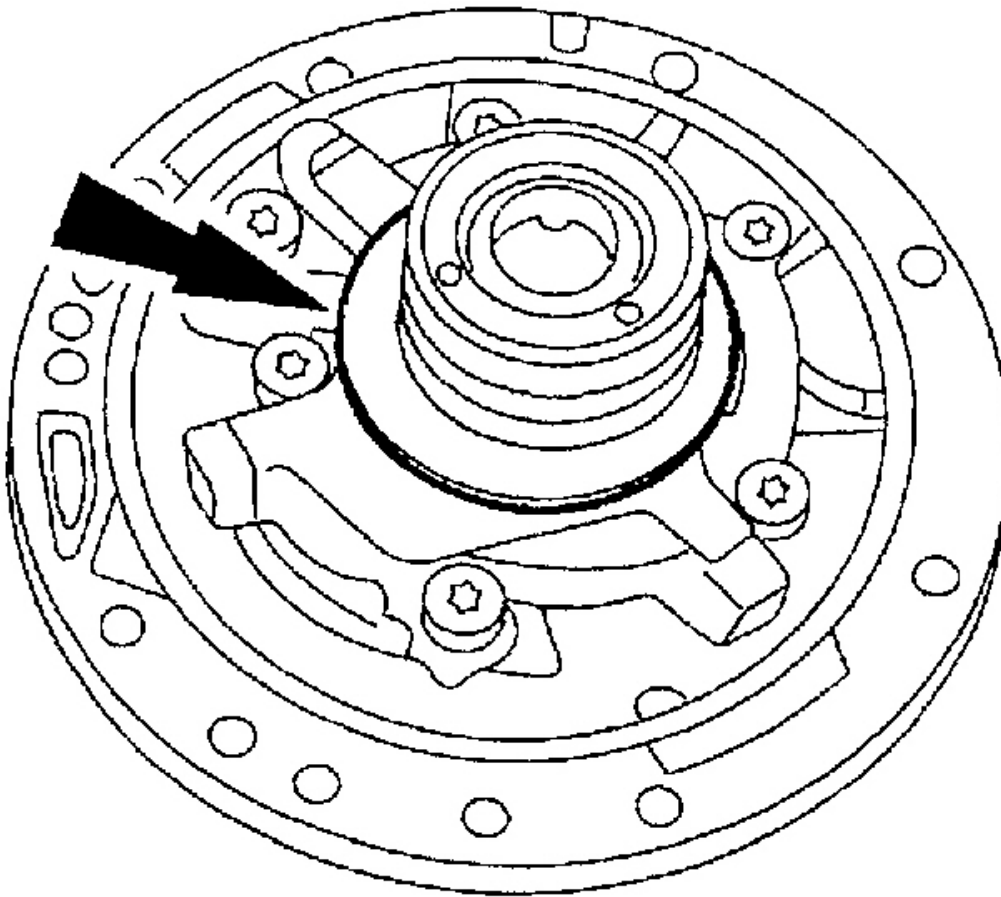
77. Add dimension A to B, divide by two and record as dimension C.
78. Subtract the thickness of the gauge bar 17.78 mm (0.71 in) from dimension C, and record as dimension D.
79. Select the No. 1 thrust bearing from the following chart using dimension D.

Dimension D	Service Part Number (7D014)	Bearing Thickness	Identification (Color/ID)
38.05-38.24 mm (1.50-1.51 in)	XW4Z-XA	1.70-1.75 mm (0.06 in)	Brown/8
38.25-38.40 mm (1.51 in)	XW4Z-NA	1.85-1.90 mm (0.07 in)	Red/4
38.44-38.59 mm (1.51-1.52 in)	XW4Z-RA	2.05-2.10 mm (0.08 in)	Black/6
38.60-38.76 mm (1.52-1.53 in)	XW4Z-YA	2.20-2.25 mm (0.09 in)	Orange/9
38.77-38.97 mm (1.53 in)	XW4Z-ZA	2.40-2.45 mm (0.10 in)	Purple/10

G01672468

Fig. 336: Thrust Bearing Thickness Table

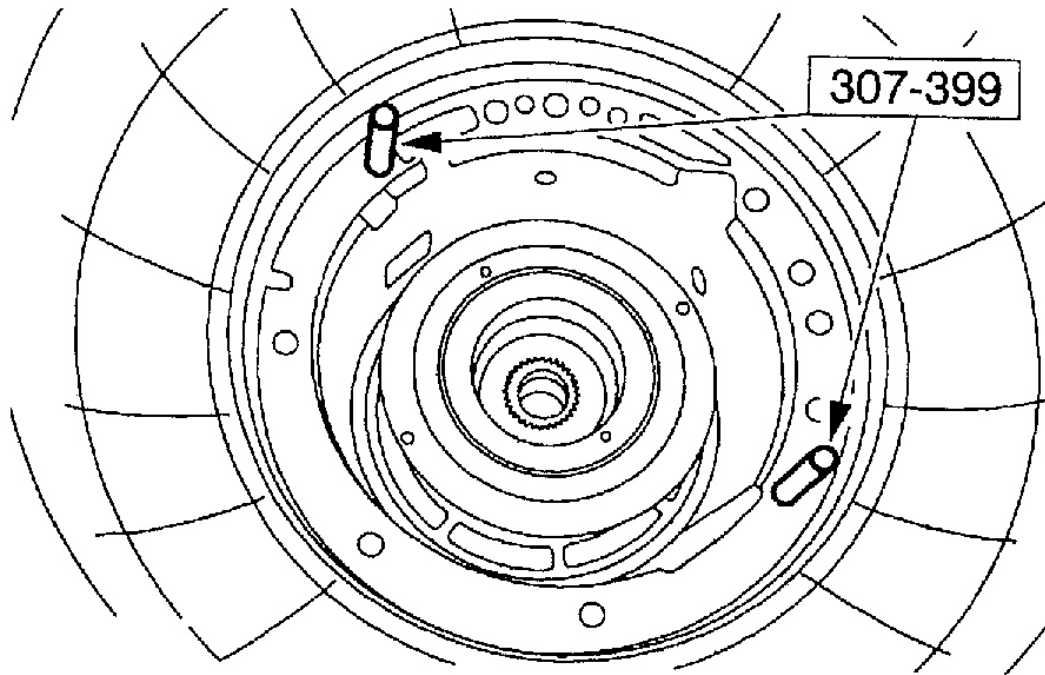
80. Install the selected No. 1 fluid pump input thrust washer.
 - Coat the fluid pump input thrust washer with petroleum jelly.



G01672469

Fig. 337: Installing Fluid Pump Input Thrust Washer

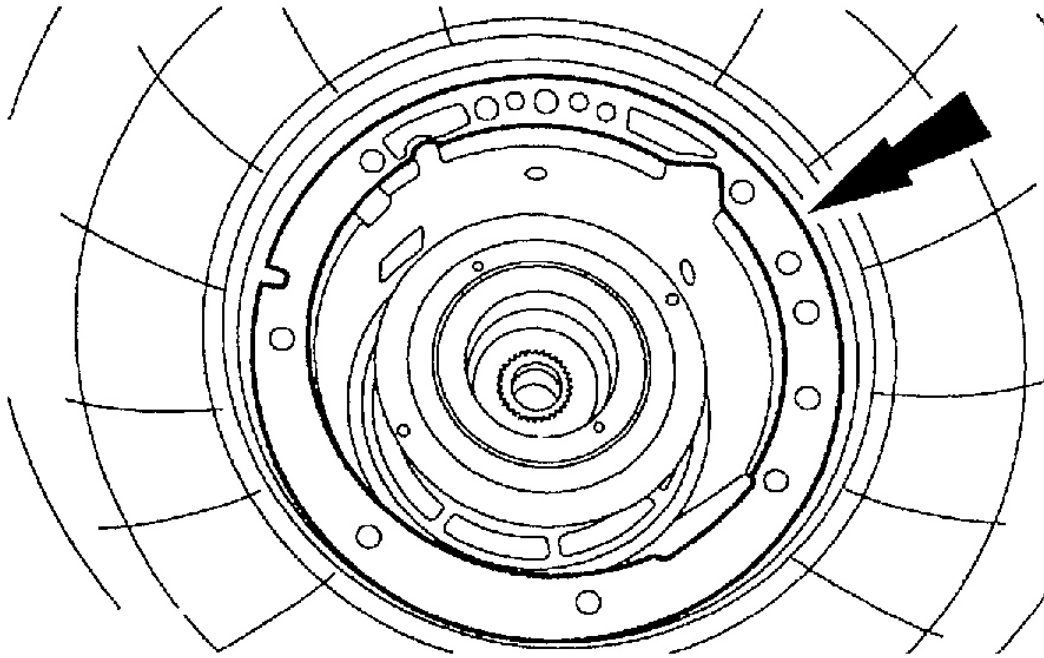
81. Install the special tools into the transmission case.



G01672470

Fig. 338: Installing Fluid Pump Guide Pins

82. Install the pump gasket.

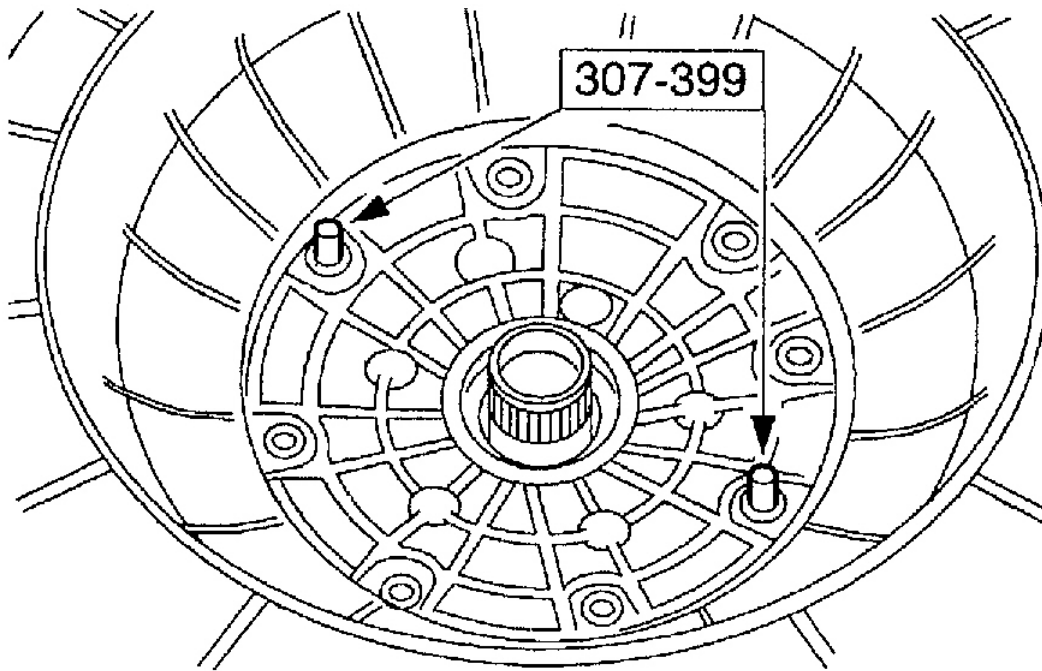


G01672471

Fig. 339: Installing Fluid Pump Gasket

CAUTION: Make sure that the fluid pump inlet thrust washer (No. 1), selective thrust washer, fluid pump gasket, and the fluid pump-to-case O-ring seal remain in the correct position throughout this step.

83. Install the fluid pump.

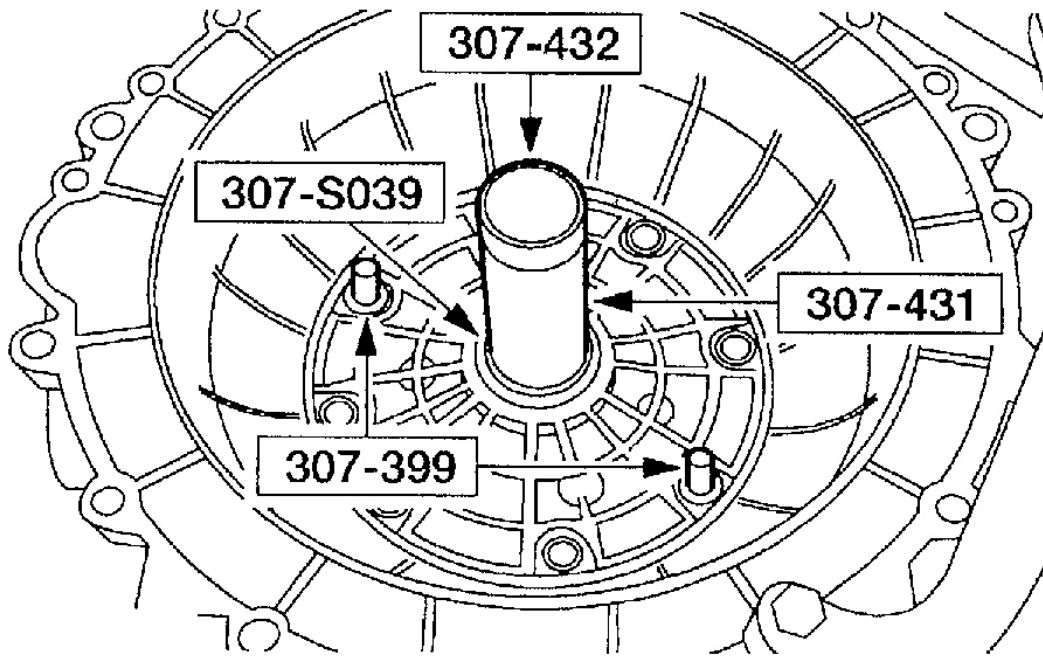


G01672472

Fig. 340: Installing Fluid Pump

CAUTION: The special tools must be used to correctly align the pump with the adapter plate to reduce gear noise, bushing failure, and leakage.

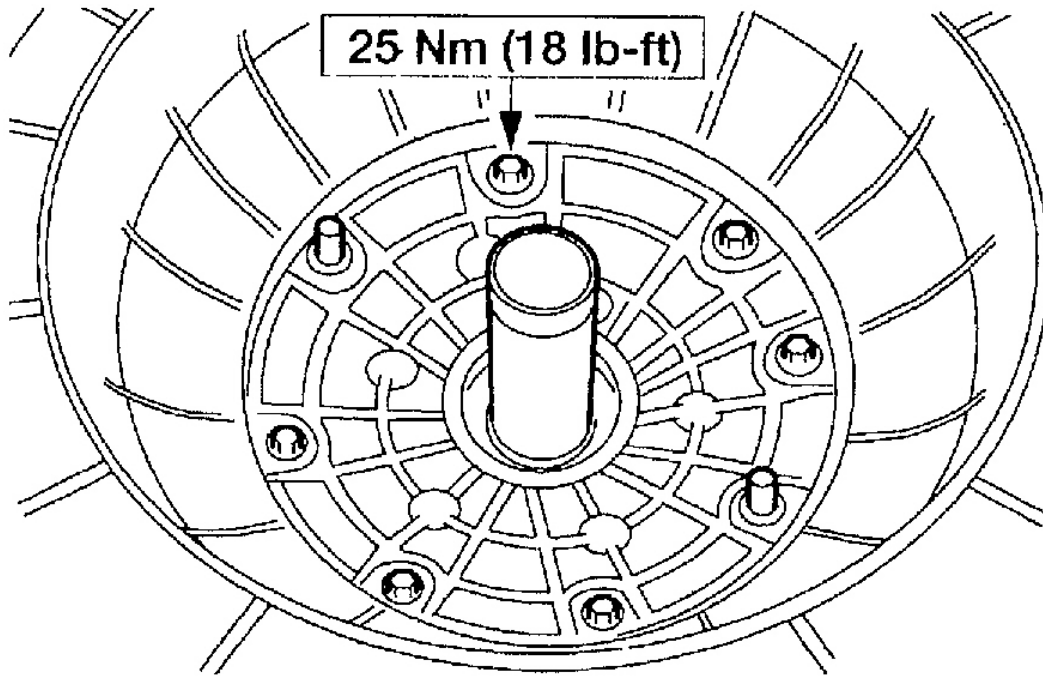
84. Using the special tool, align the fluid pump to the adapter plate.



G01672473

Fig. 341: Aligning Fluid Pump To Adapter Plate

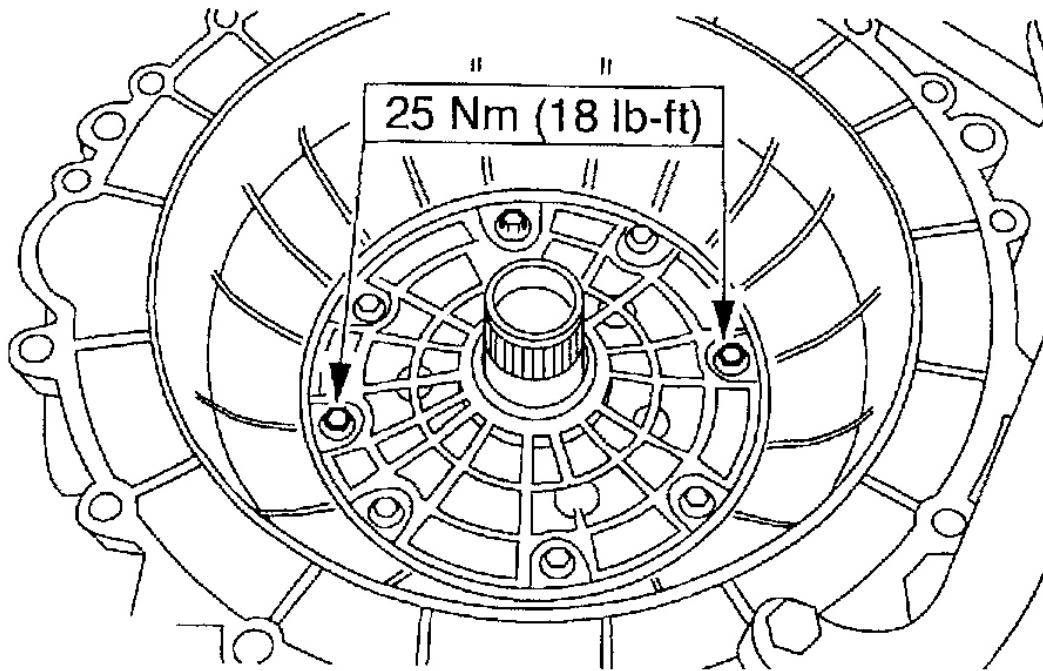
85. Install screws. Tighten the screws in a star pattern.



G01672474

Fig. 342: Installing Fluid Pump Screws

86. Remove the special tools and install the two remaining screws.



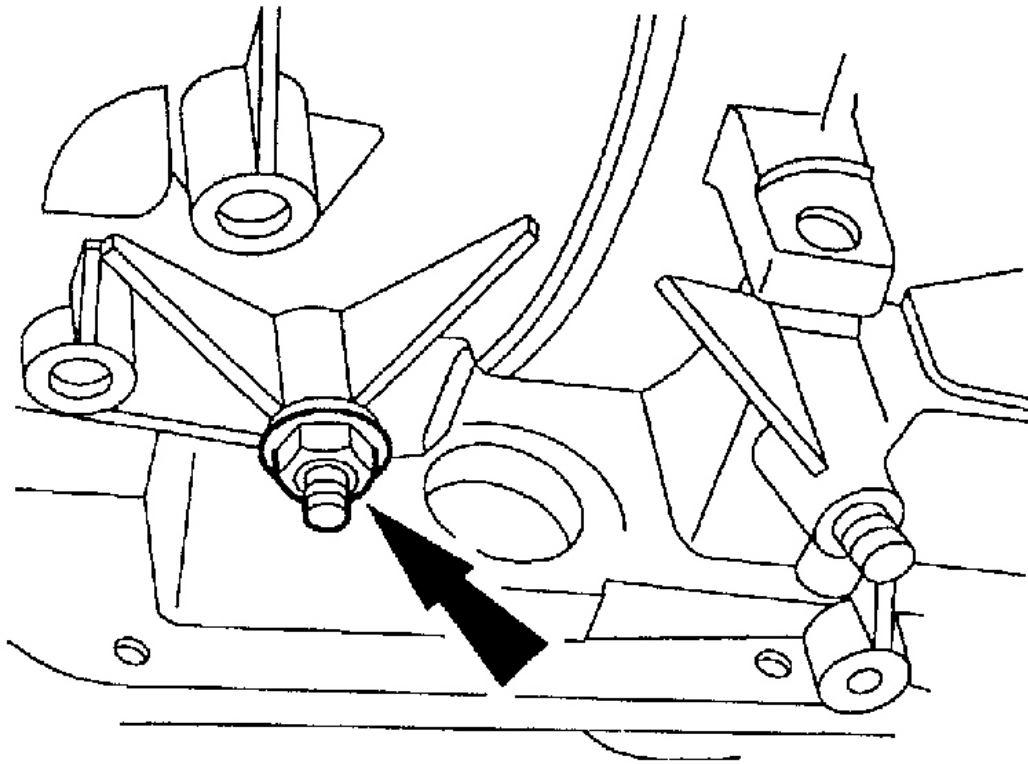
G01672475

Fig. 343: Installing 2 Remaining Screws

CAUTION: Do not allow overdrive band adjustment screw to back out. Band strut could fall out of position.

CAUTION: Install, but do not tighten, a new locknut on the band adjustment screw. Apply petroleum jelly to the locknut seal.

87. Install a new locknut on the band adjustment screw.

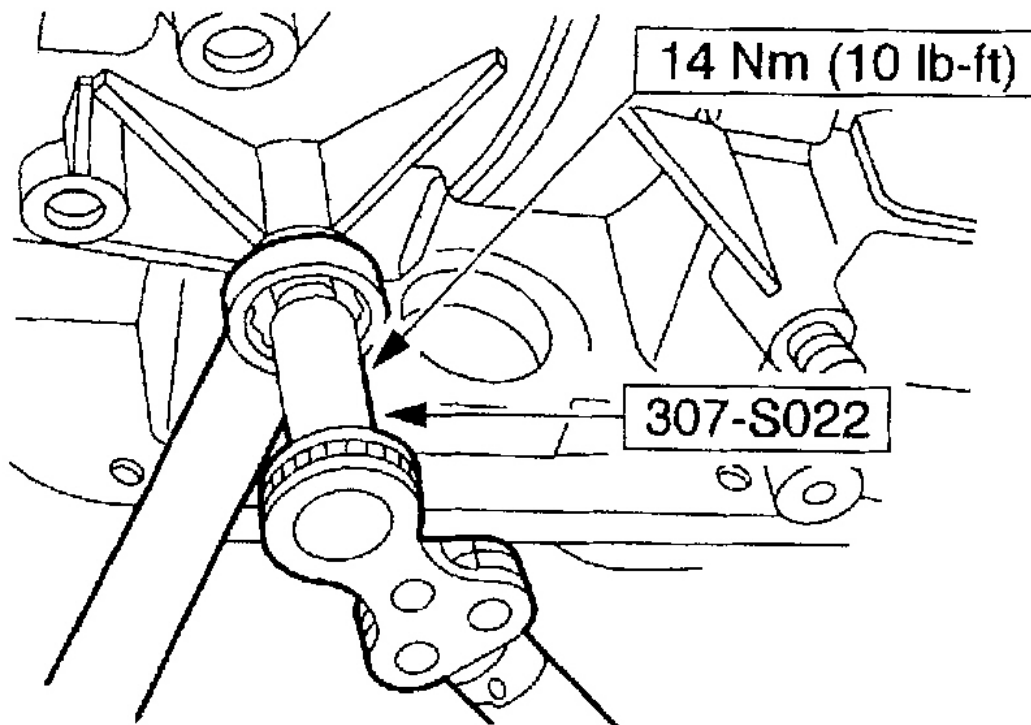


G01672476

Fig. 344: Installing Band Adjustment Locknut

CAUTION: The overdrive servo must be installed prior to band adjustment.

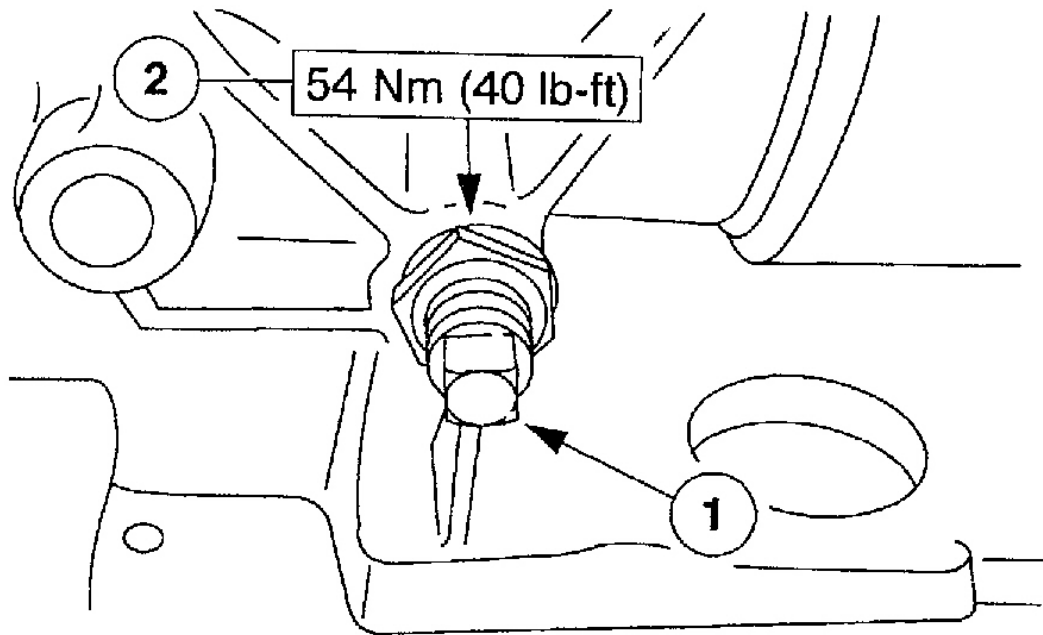
88. Using the special tool, tighten the overdrive band adjustment screw. Then back off the screw exactly (2) turns and hold that position.



G01672477

Fig. 345: Adjusting Overdrive Band

89. Tighten the overdrive band locknut.
 1. Hold the overdrive band adjustment screw stationary.
 2. Tighten the overdrive band locknut.



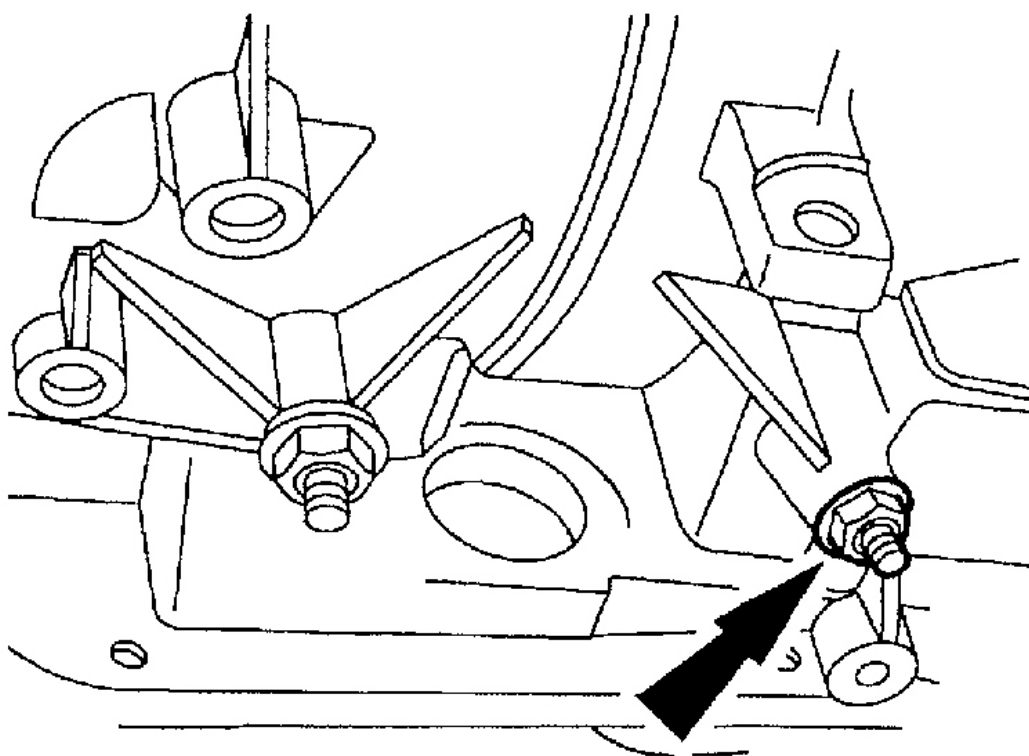
G01672478

Fig. 346: Tightening Overdrive Band Locknut

CAUTION: Do not allow the intermediate band adjusting screw to back out. Band strut could fall out of position.

CAUTION: Install, but do not tighten, a new locknut on the band adjustment screw. Apply petroleum jelly to the locknut seal.

90. Install new nut on the band adjustment screw.

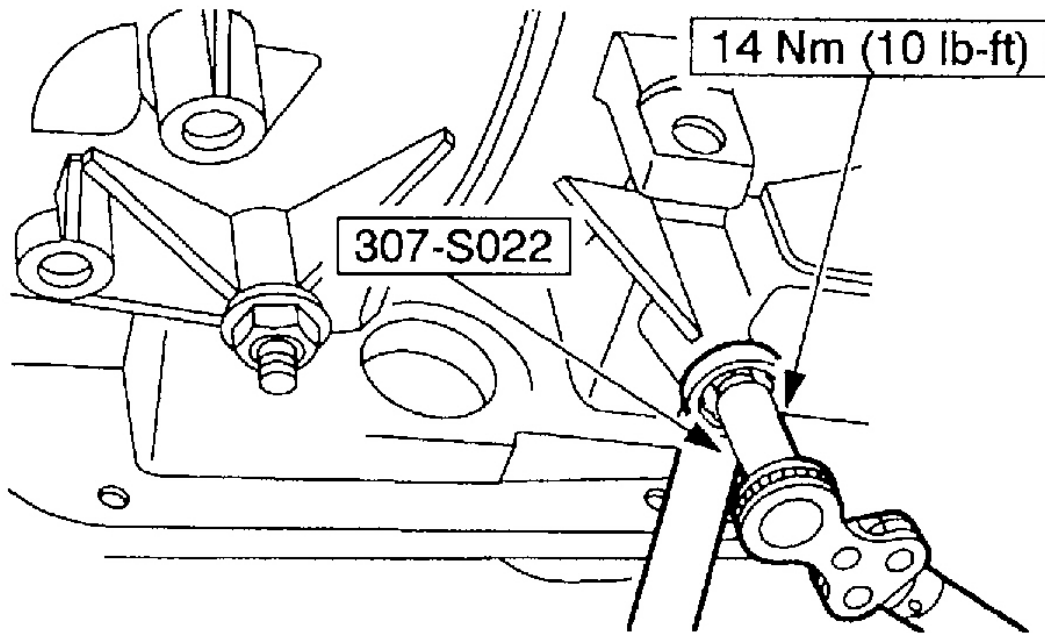


G01672479

Fig. 347: Installing Intermediate Band Locknut

CAUTION: The intermediate servo must be installed prior to band adjustment.

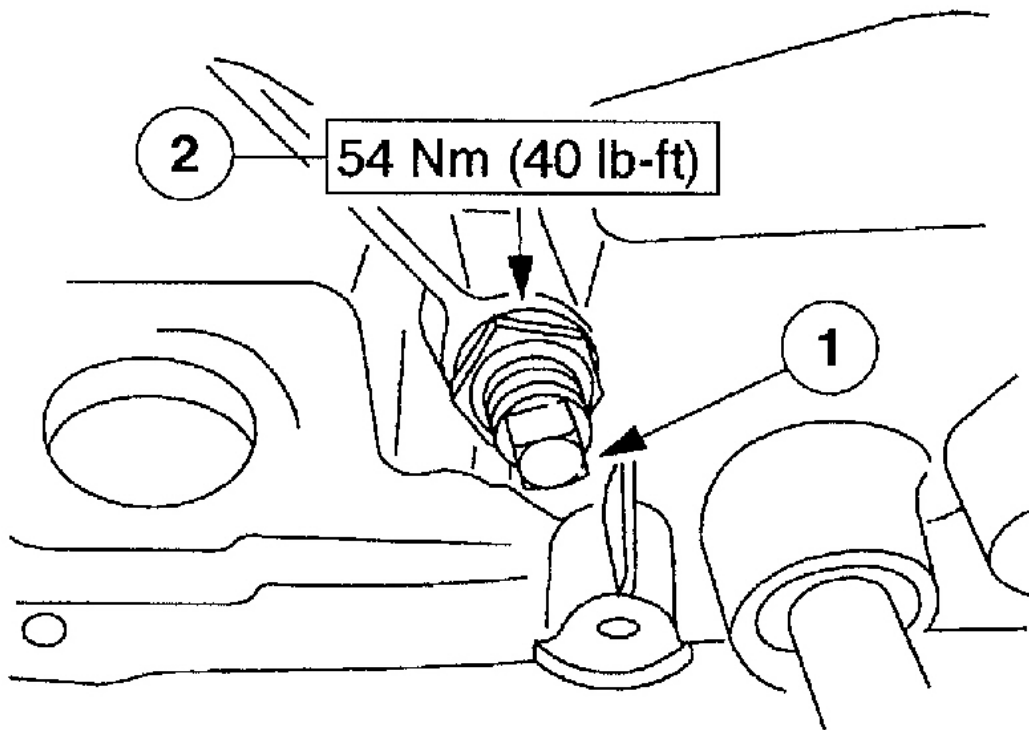
91. Tighten the intermediate band adjustment screw. Then back off the screw exactly (2) turns and hold that position.



G01672480

Fig. 348: Adjusting Intermediate Band

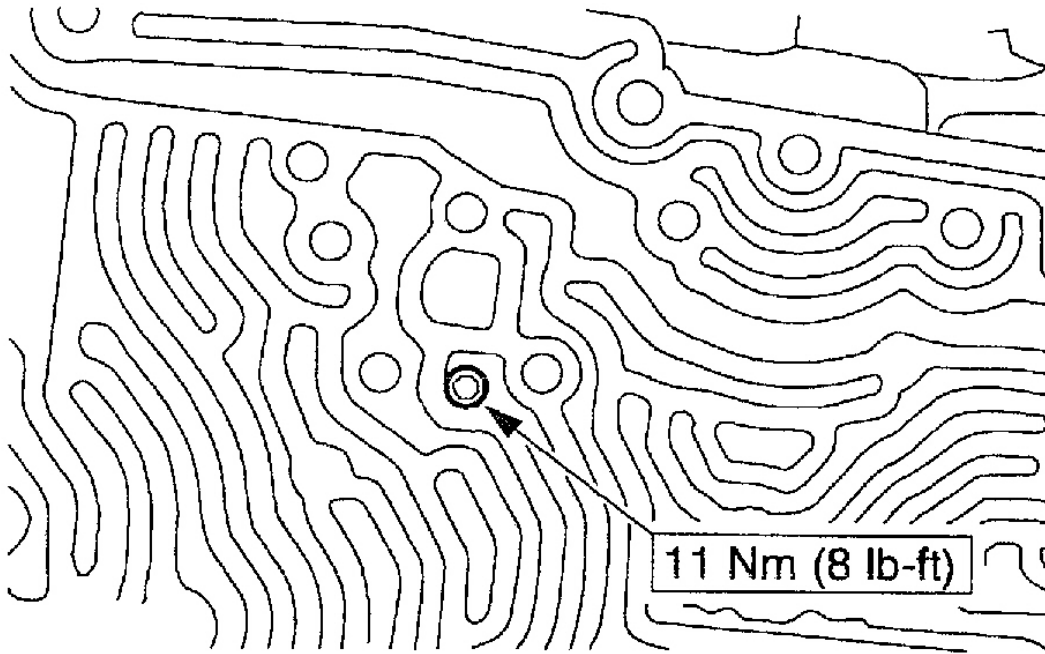
92. Tighten the intermediate band locknut.
 1. Hold the intermediate band adjustment screw stationary.
 2. Tighten the intermediate band locknut.



G01672481

Fig. 349: Tightening Intermediate Band Locknut

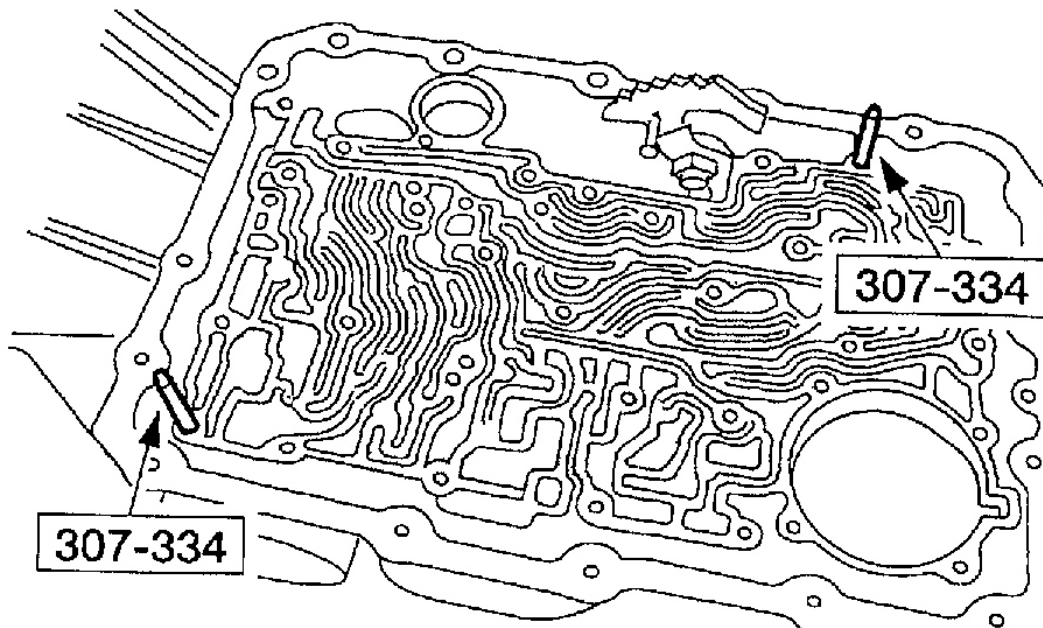
93. Tighten the center support screw.



G01672482

Fig. 350: Tightening Center Support Screw

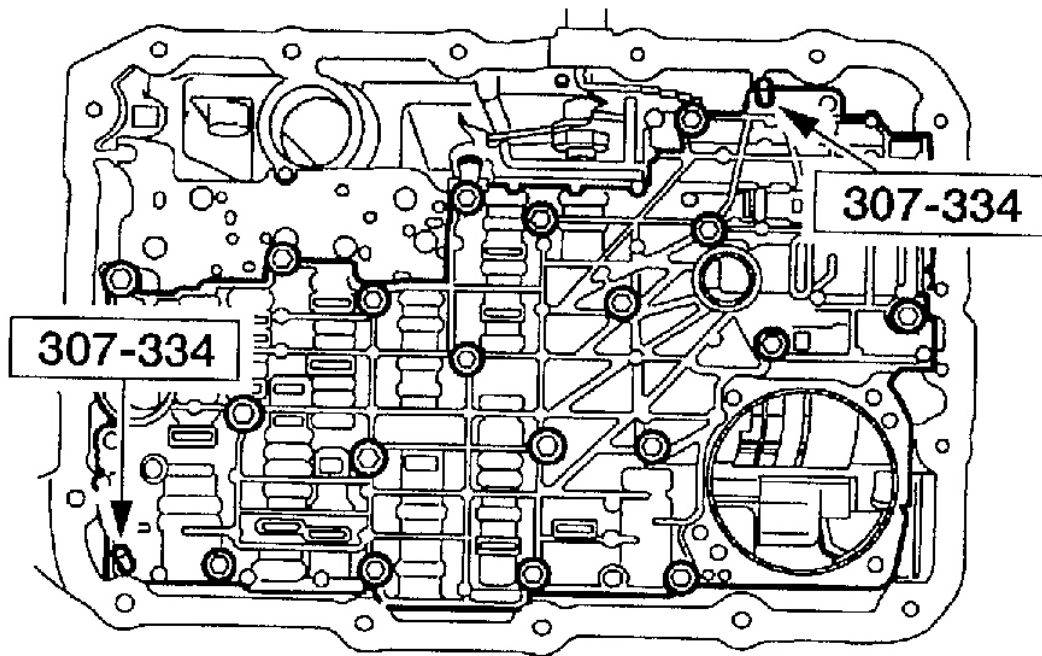
94. Install the special tools into the transmission case.



G01672483

Fig. 351: Installing Valve Body Aligning Tools

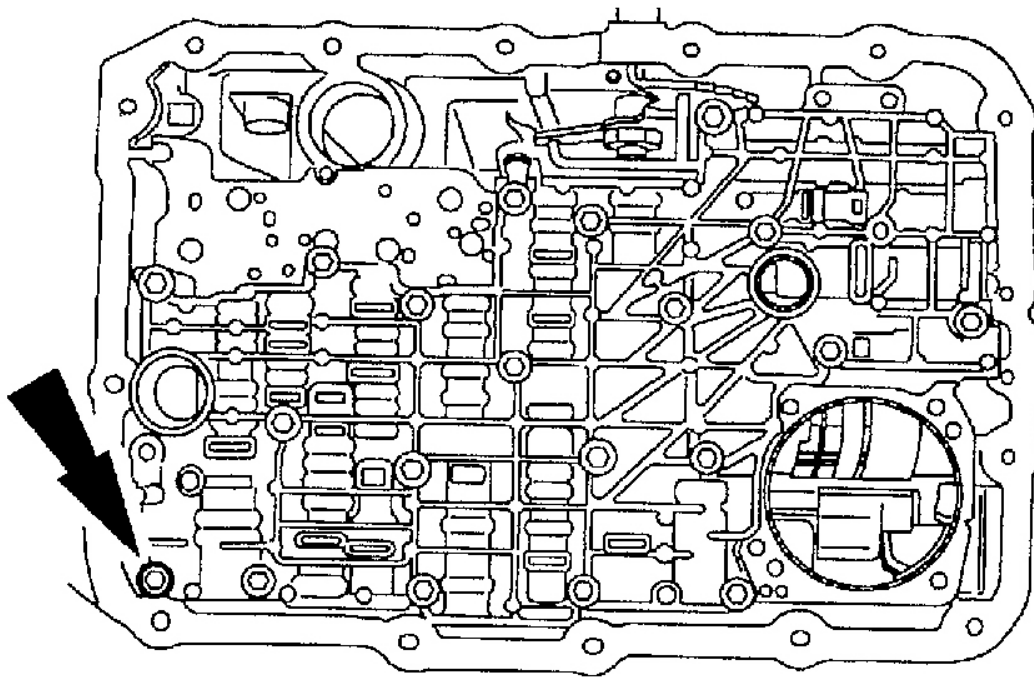
95. Install the main control valve body and loosely install the screws.



G01672484

Fig. 352: Installing Main Control Valve Body

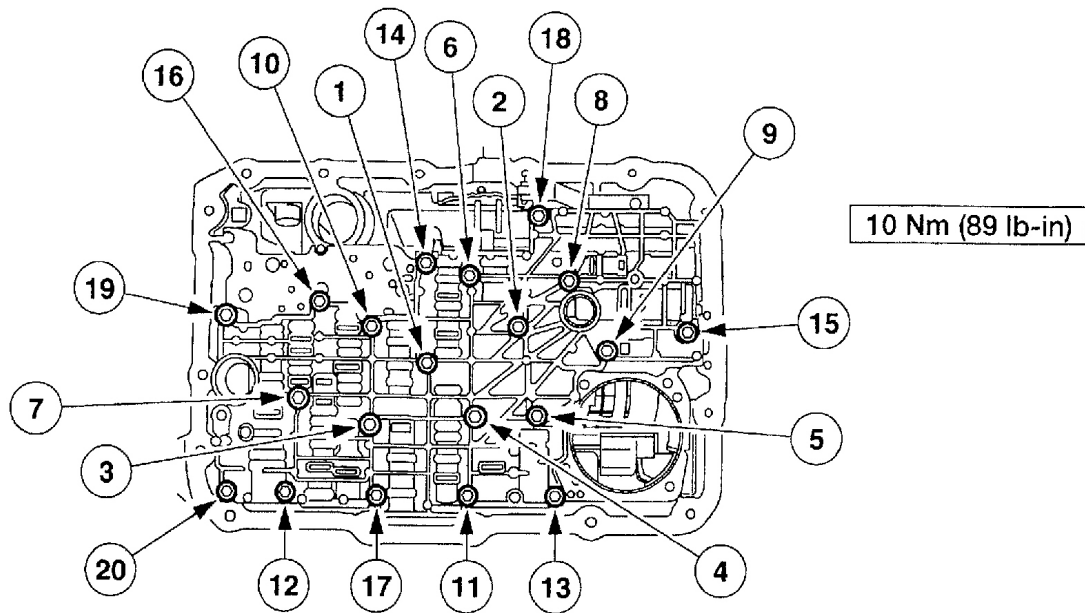
96. Remove the special tools, and loosely install the screw.



G01672485

Fig. 353: Installing Remaining Screws

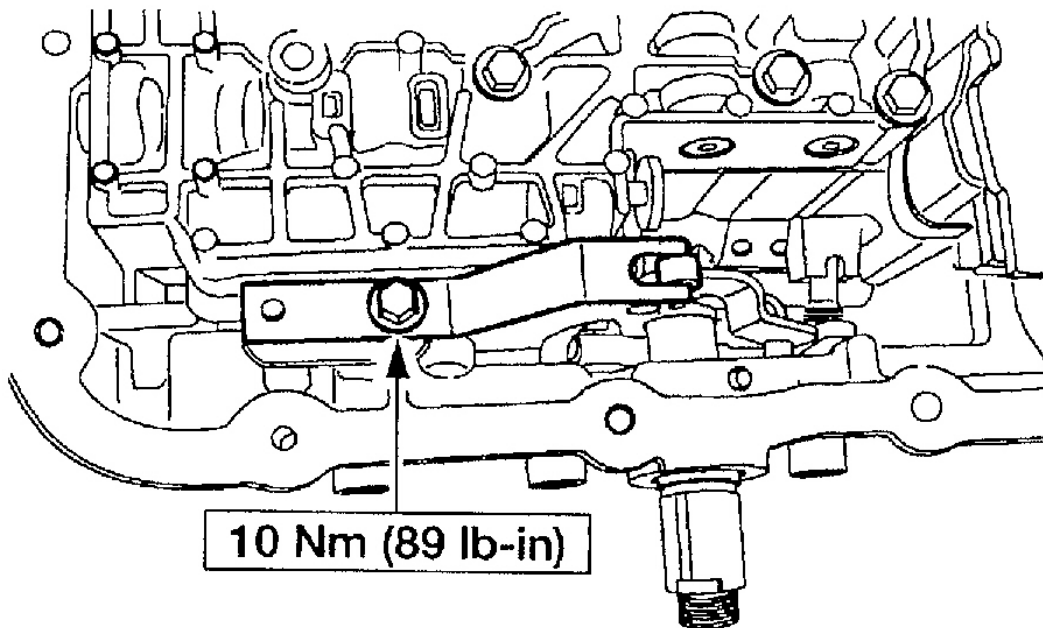
97. Tighten the screws in the sequence shown.



G01672486

Fig. 354: Main Control Valve Body Tightening Sequence

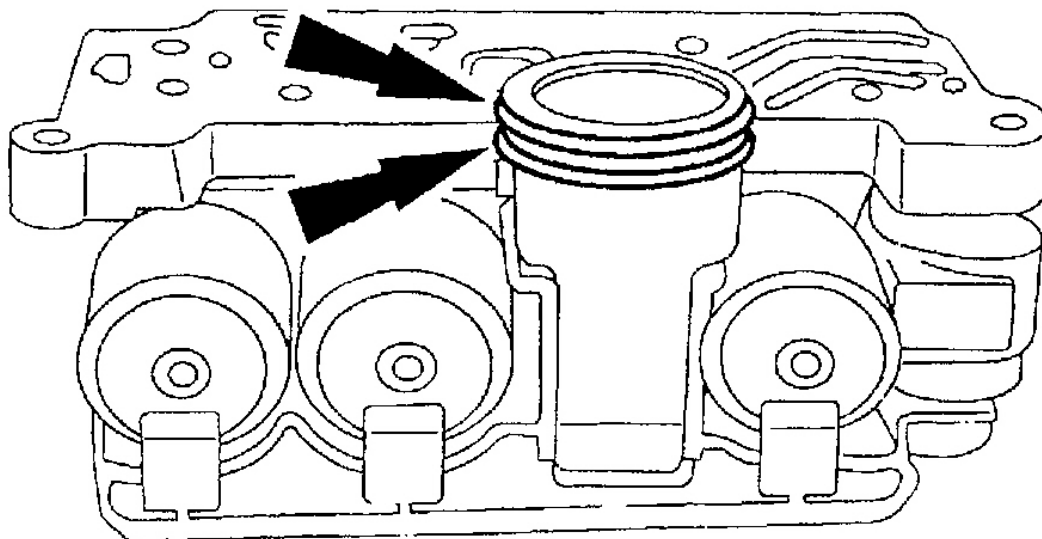
98. With the manual lever in the NEUTRAL position, install the manual valve detent spring.



G01672487

Fig. 355: Installing Manual Valve Detent Spring

99. Install new O-ring seals on the solenoid body connector. Lubricate the O-ring seals with clean automatic transmission fluid.

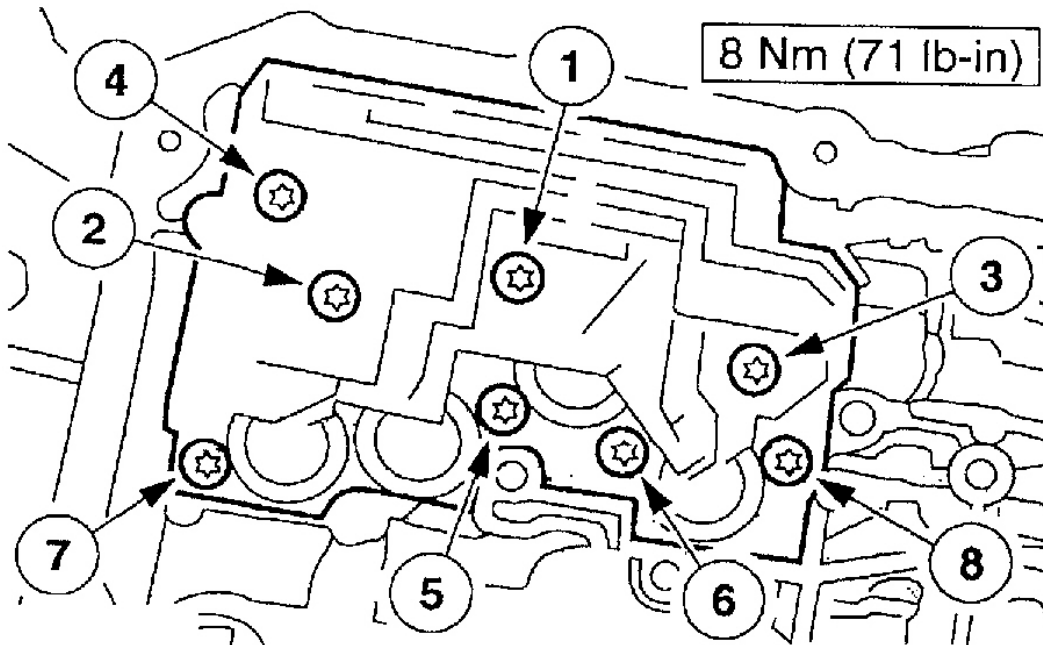


G01672488

Fig. 356: Installing Solenoid Body O-Ring Seals

CAUTION: Inspect the transmission case bore to make sure it is free of debris and not damaged. If damaged, transmission leak may occur.

100. Install the solenoid body. Tighten bolts in sequence shown.

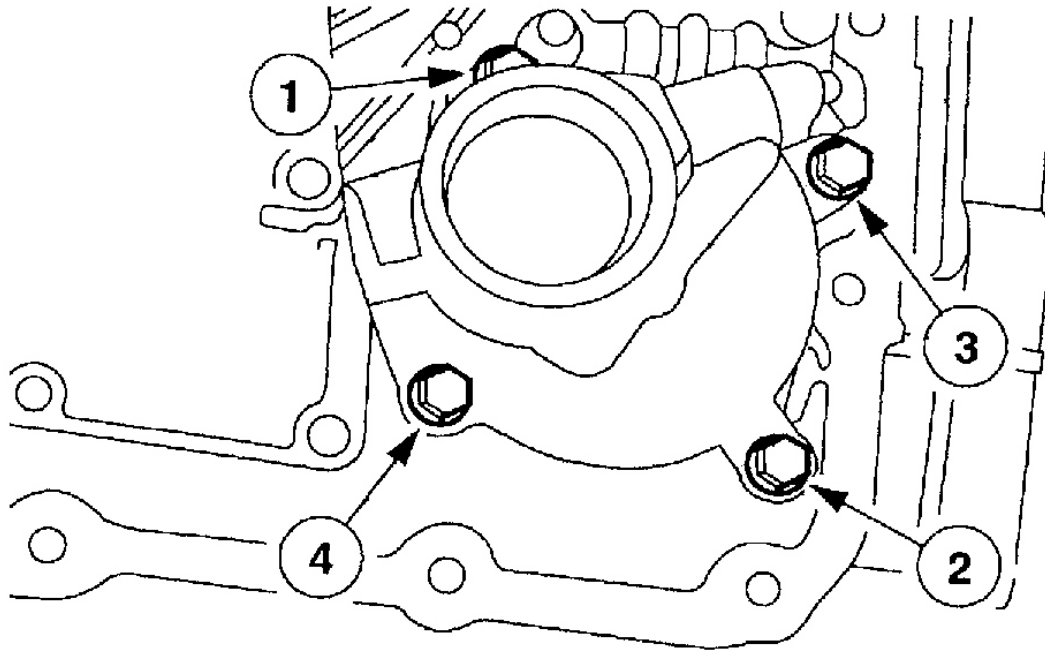


G01672489

Fig. 357: Installing Solenoid Body

101. Install the reverse servo. Tighten the bolts in the sequence shown in two stages.

- Stage 1: Tighten bolts to 5 Nm (44 lb-in).
- Stage 1: Tighten bolts to 11 Nm (8 lb-ft).



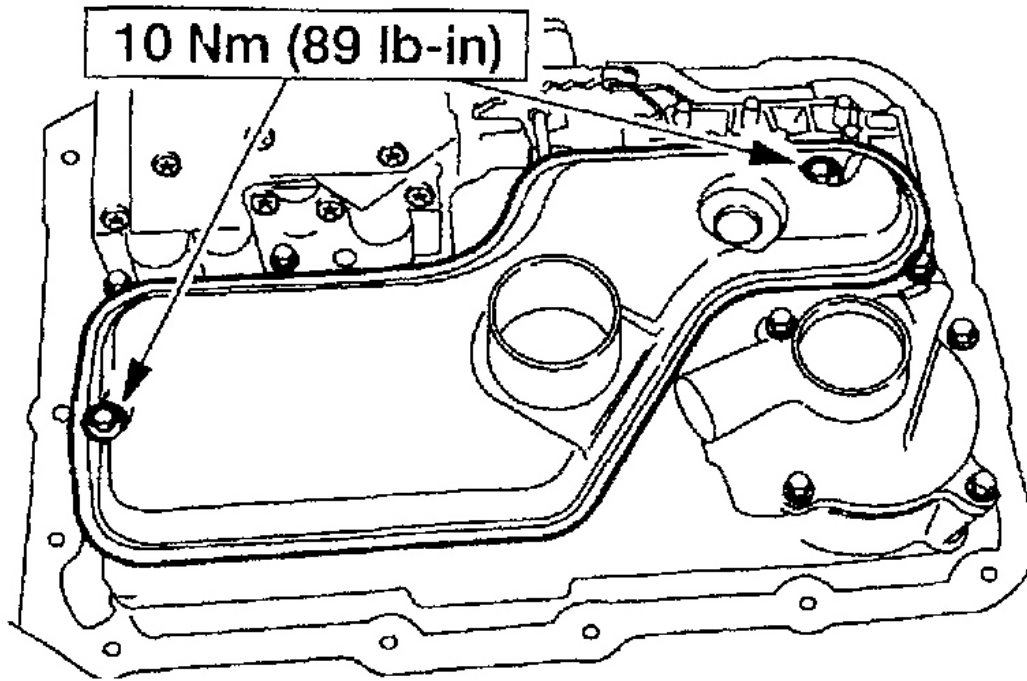
G01672490

Fig. 358: Installing Reverse Servo

CAUTION: Lubricate the fluid filter seals with clean automatic transmission fluid or they may be damaged.

NOTE: Make sure that the fluid filter seals are correctly seated on the filter.

102. Lubricate the seals and install the transmission fluid filter.

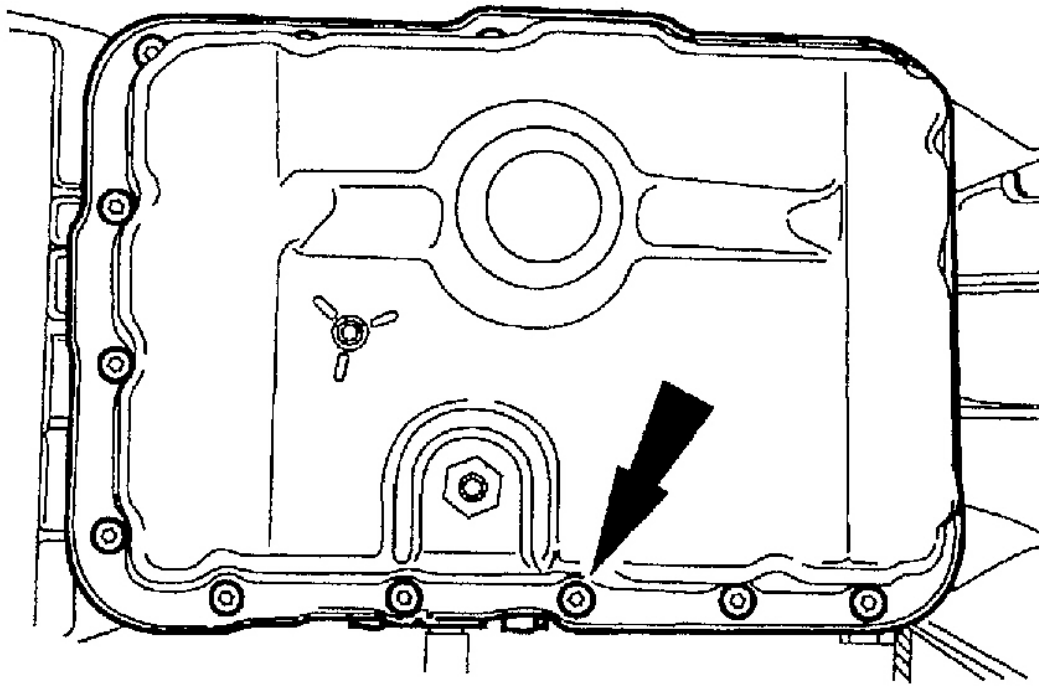


G01672491

Fig. 359: Installing Transmission Fluid Filter

NOTE: The transmission fluid pan gasket is reusable. Clean and inspect for damage. If not damaged, the gasket should be reused.

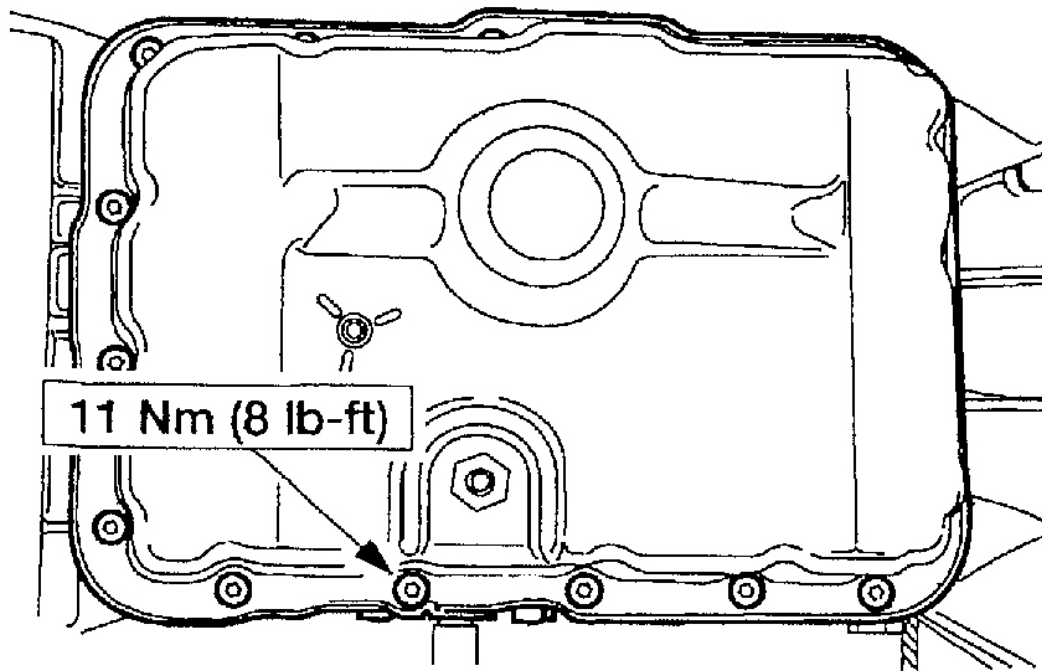
103. Install the transmission fluid pan and gasket and loosely install the screws.



G01672492

Fig. 360: Installing Transmission Fluid Pan

104. Tighten the 16 screws in a crisscross sequence.

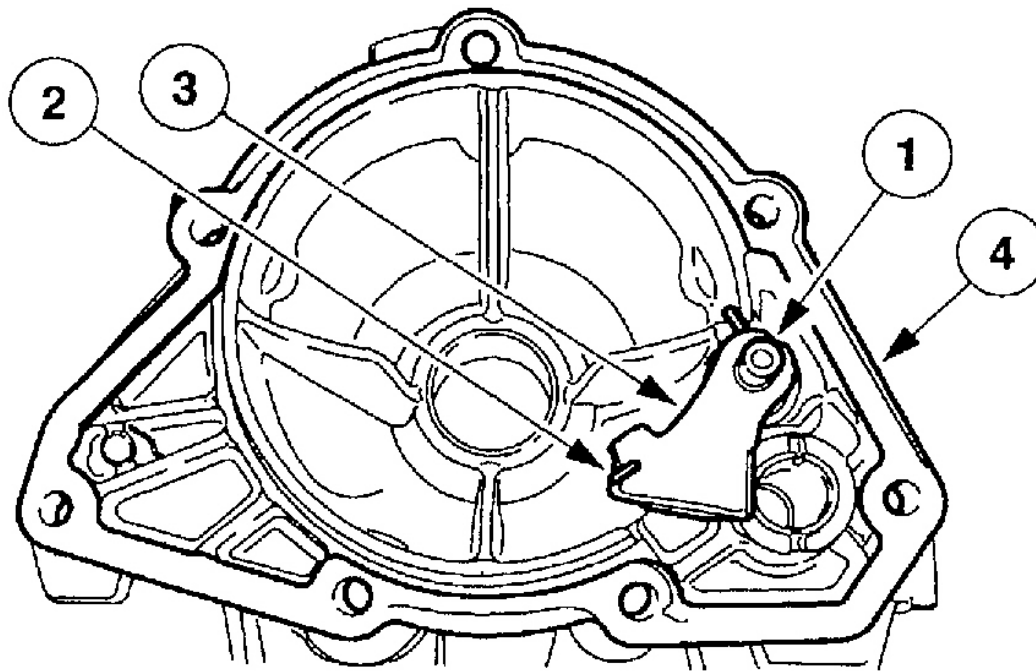


G01672493

Fig. 361: Tightening Transmission Fluid Pan

NOTE: The 4x2 is shown, the 4x4 is similar.

105. Install the parking pawl assembly and gasket.
 1. Install the parking pawl shaft.
 2. Install the parking pawl return spring.
 3. Install the parking pawl.
 4. Install a new gasket.

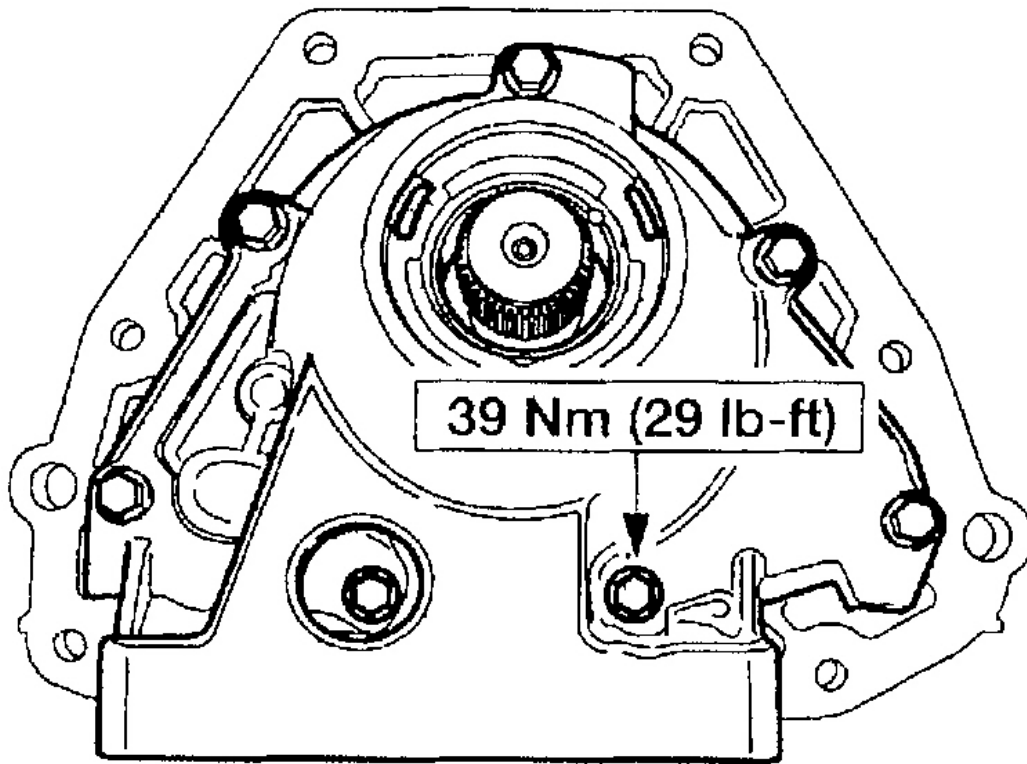


G01672494

Fig. 362: Installing Parking Pawl Assembly & Gasket

4x2 vehicles

106. Install the extension housing.



G01672495

Fig. 363: Installing Extension Housing

107. Using the special tool, install the extension housing seal.

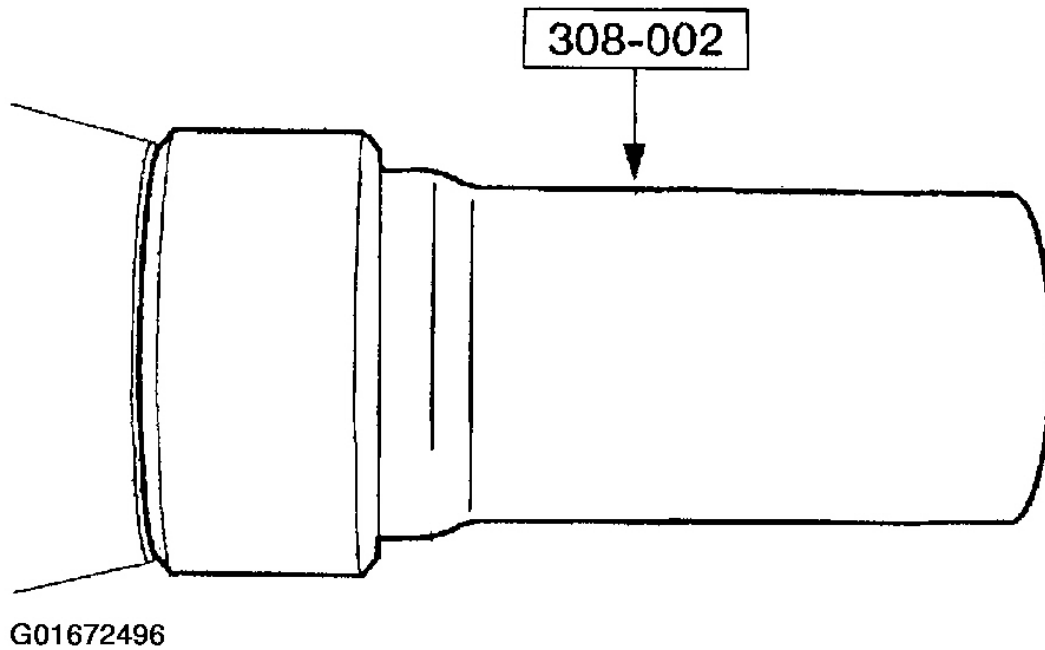
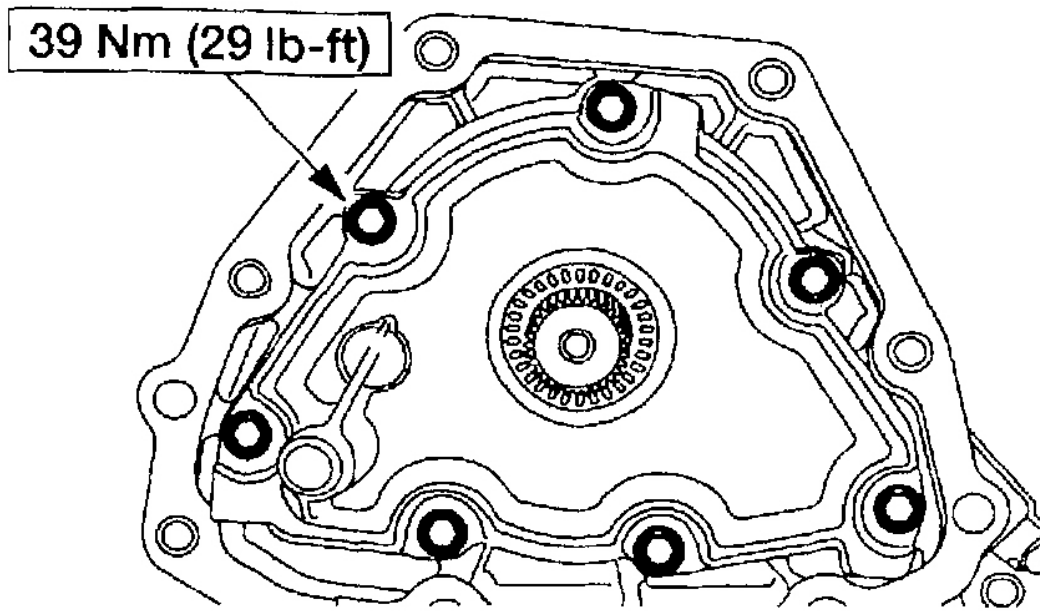


Fig. 364: Installing Extension Housing Seal

4x4 vehicles

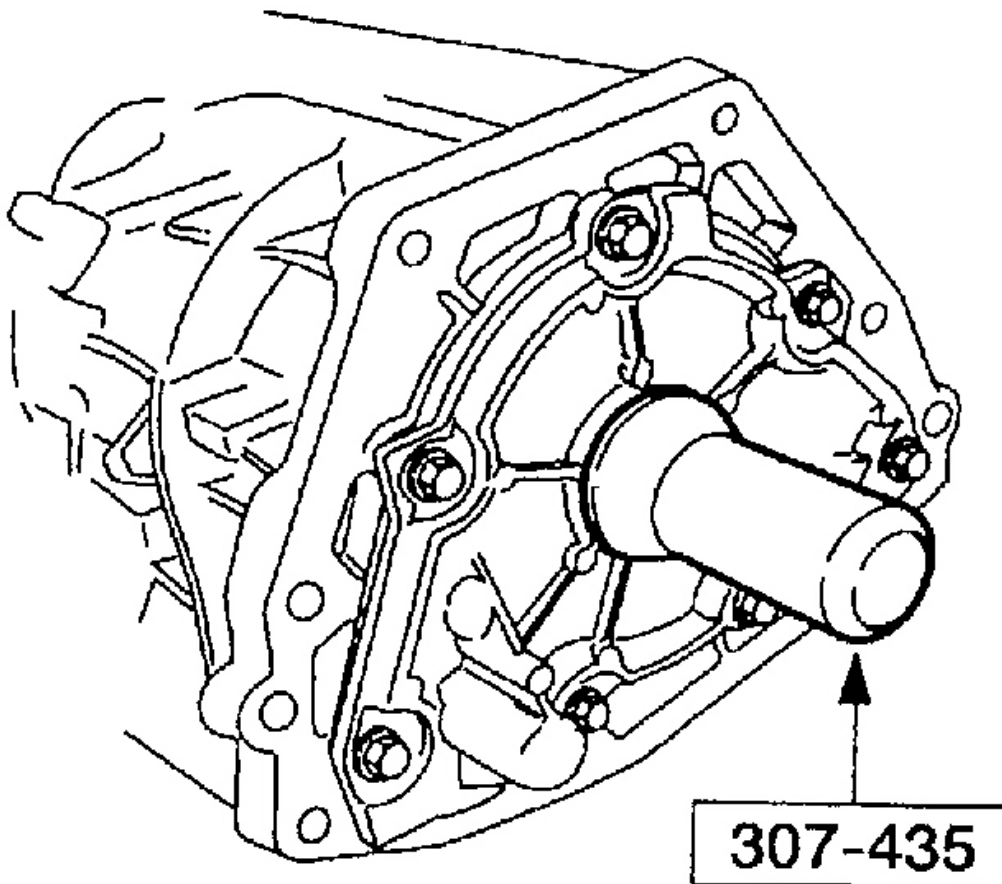
108. Install the extension housing.



G01672497

Fig. 365: Installing Extension Housing

109. Using the special tool, install the extension housing seal.



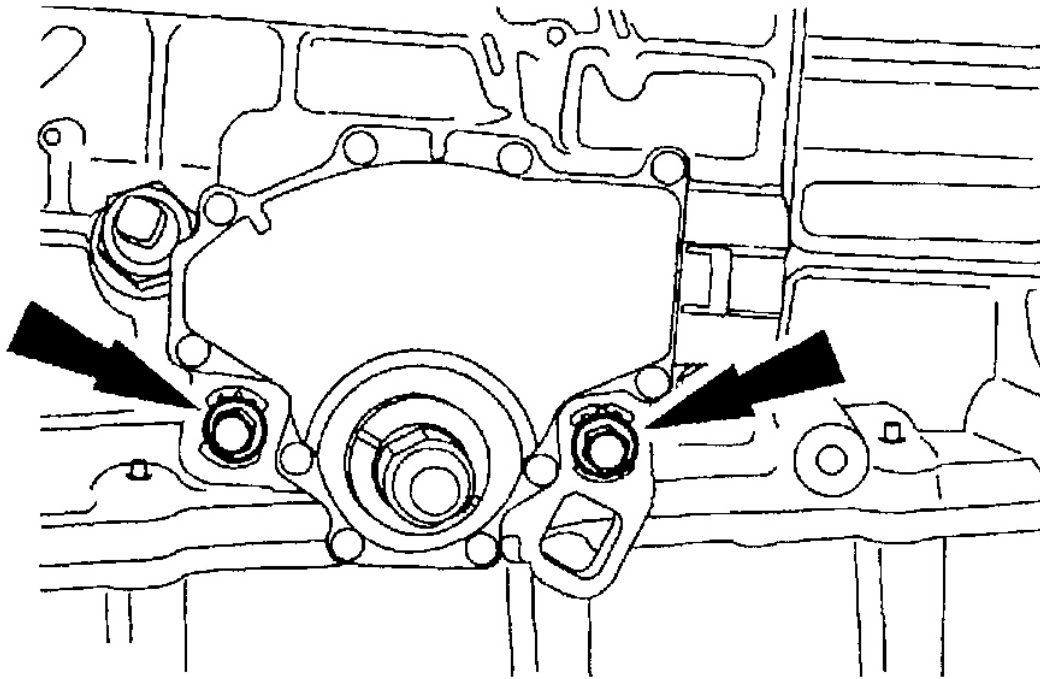
G01672498

Fig. 366: Installing Extension Housing Seal

All vehicles

CAUTION: The digital transmission range sensor must fit flush against the boss on the case to prevent damage to the sensor.

110. Install the digital transmission range (TR) sensor and loosely install the screws.



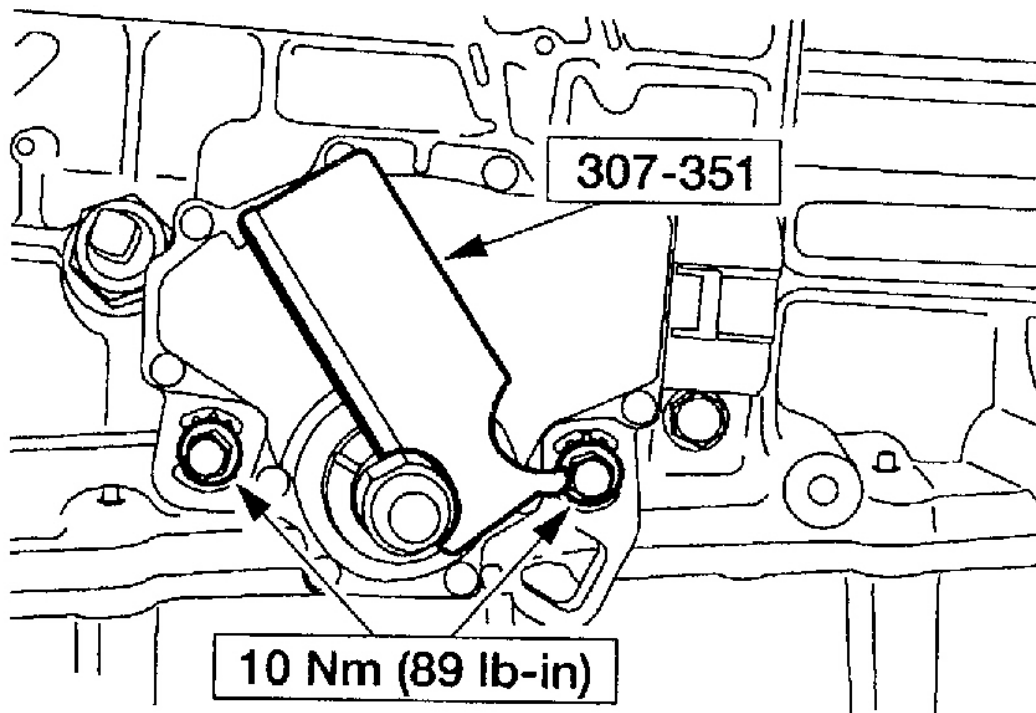
G01672499

Fig. 367: Installing Digital TR Sensor

CAUTION: Tightening one screw before tightening the other may cause the sensor to bind or become damaged.

NOTE: The manual lever must be in the **NEUTRAL** position.

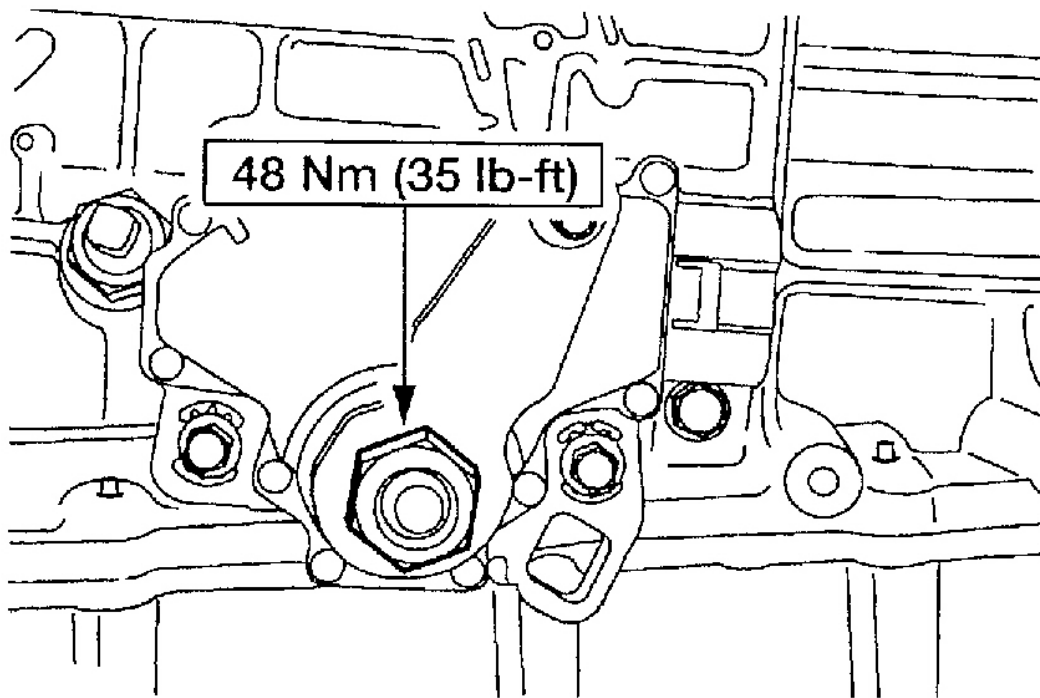
111. Using the special tool, align the digital TR sensor and tighten the screws in an alternating sequence.



G01672500

Fig. 368: Aligning Digital TR Sensor

112. Install the outer manual lever.

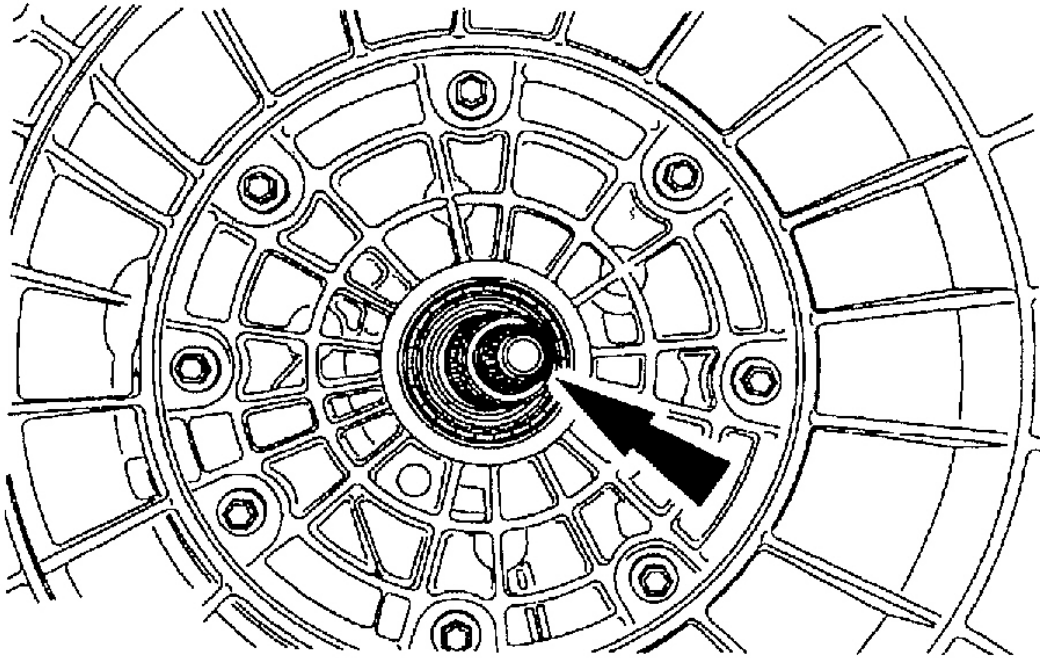


G01672501

Fig. 369: Installing Outer Manual Lever

CAUTION: The splines of the input shaft are not the same length on both ends.
The shaft end with the shorter splines goes into the fluid pump.

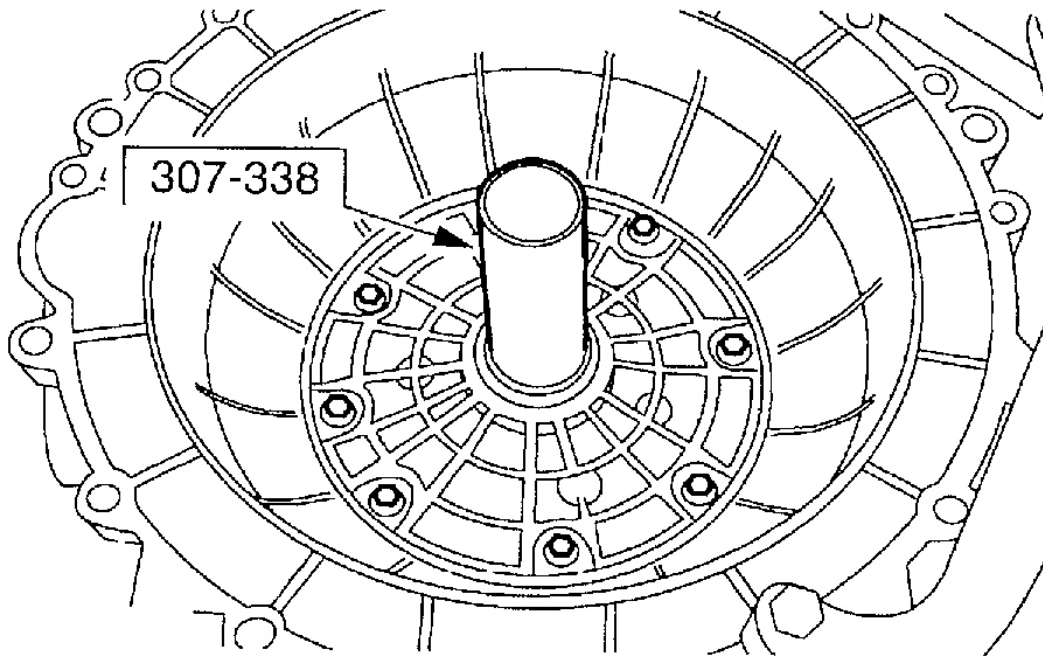
113. Install the input shaft.



G01672502

Fig. 370: Installing Input Shaft

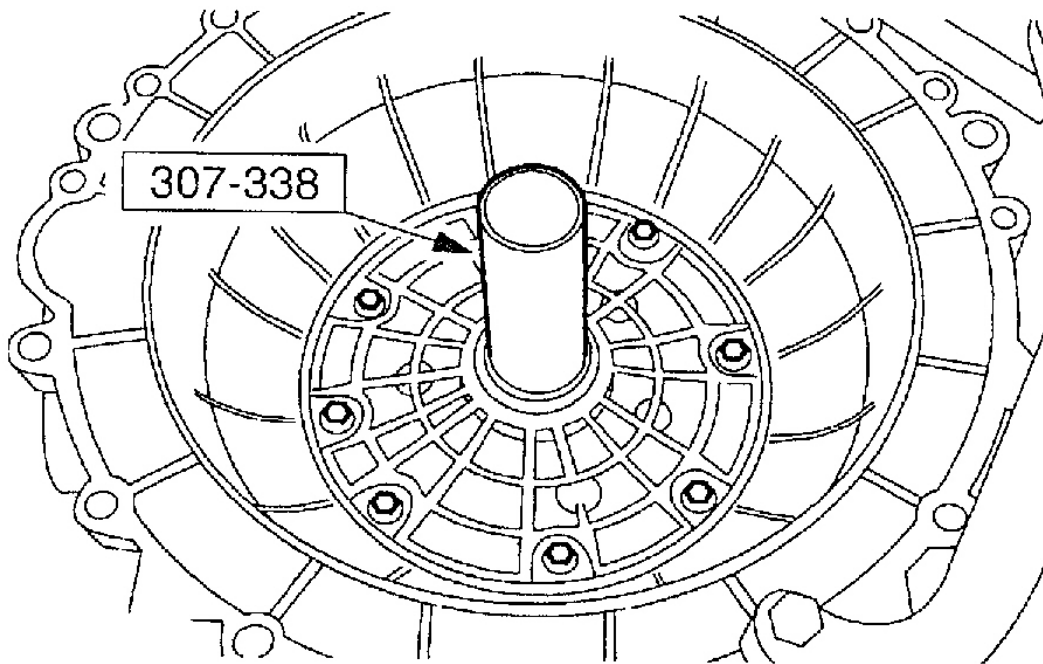
114. Using the special tool, make sure that the fluid pump gear seal ring is fully seated.



G01672503

Fig. 371: Ensuring Fluid Pump Gear Seal Ring Is Fully Seated

115. Remove the special tool.



G01672504

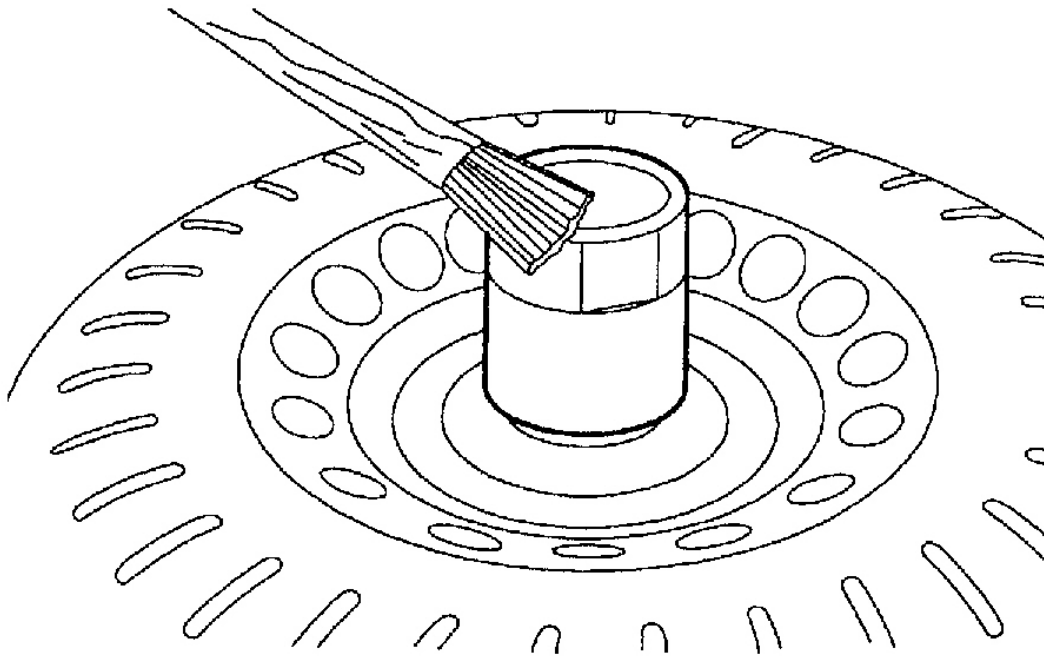
Fig. 372: Removing Fluid Pump Gear Seal Ring Installer Tool

CAUTION: Do not damage the fluid pump gear O-ring seal when installing torque converter.

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

CAUTION: If the torque converter slides out, the hub seal may be damaged.

116. Lubricate the converter hub with clean automatic transmission fluid.

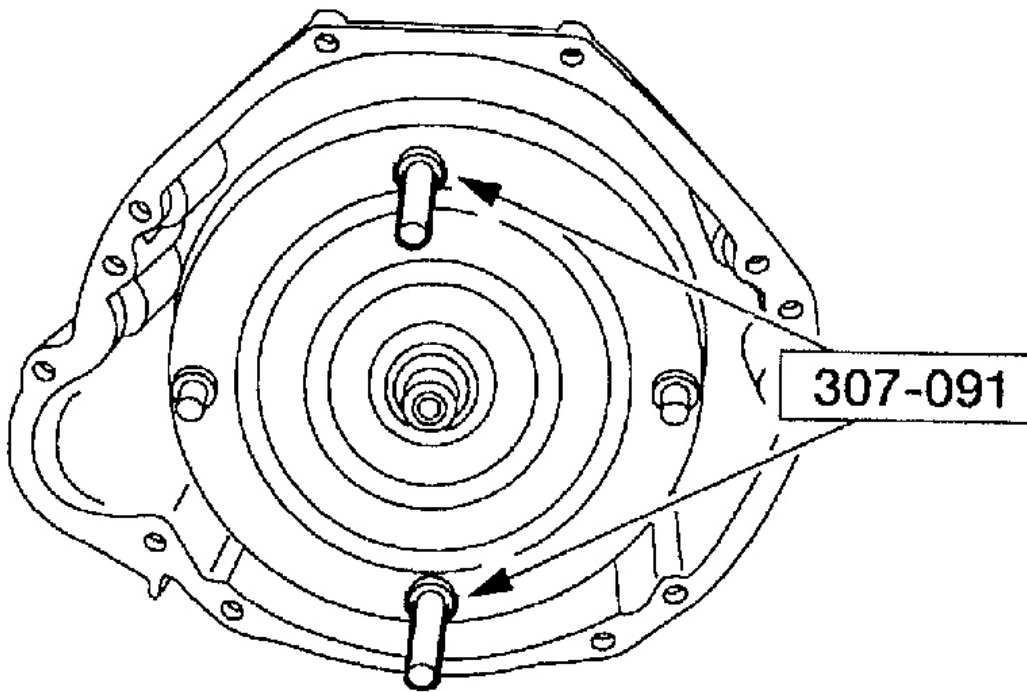


G01672505

Fig. 373: Lubricating Converter Hub

WARNING: The torque converter can fall out if the transmission is tipped. Failure to follow these instructions may cause personal injury.

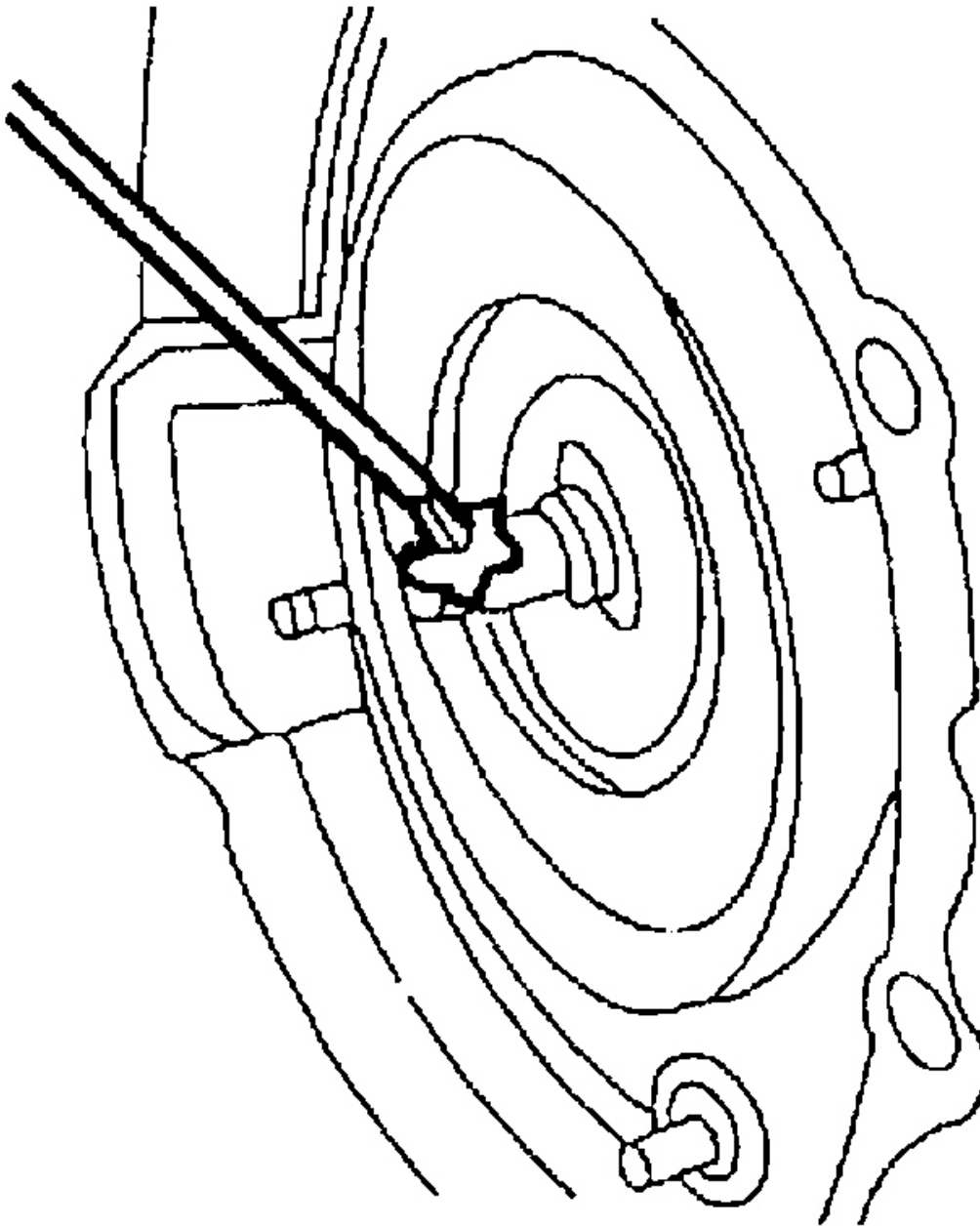
117. Using the special tools, install the torque converter by pushing and rotating.



G01672506

Fig. 374: Installing Torque Converter

118. Lubricate the torque converter pilot hub with multi-purpose grease.



G01672507

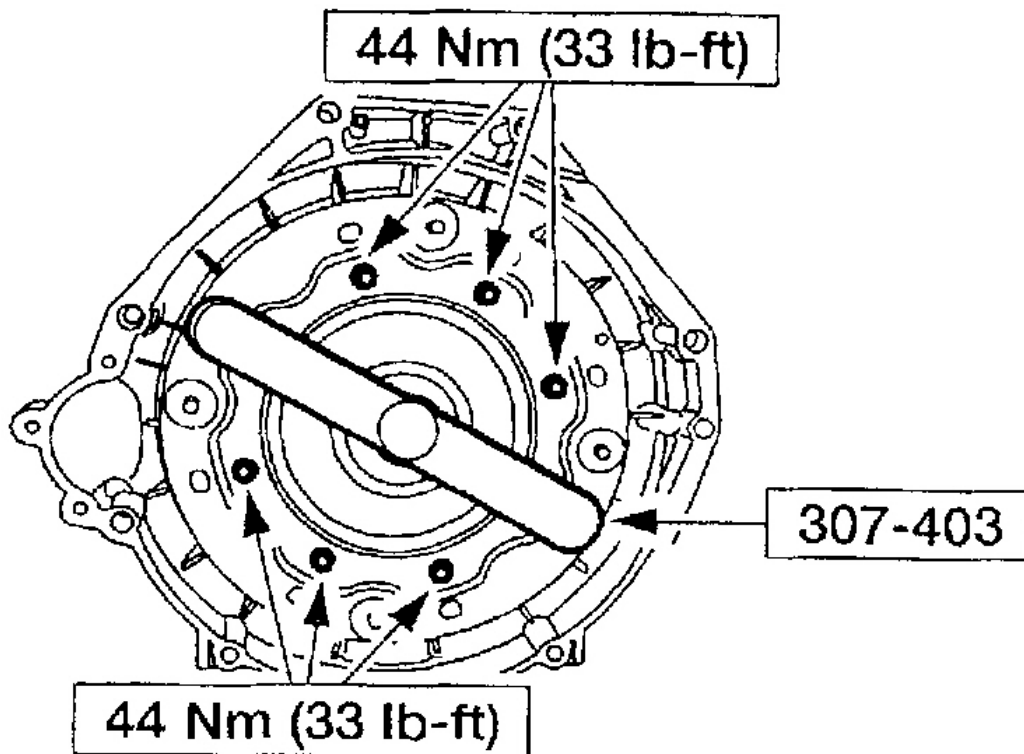
Fig. 375: Lubricating Torque Converter Pilot Hub

CAUTION: The special tool must be used to correctly align the adapter plate to

the converter or transmission damage could occur. In order to correctly install the special service tool, it must be installed using one round and one oblong hole. Using two oblong holes will cause damage to the transmission.

NOTE: Align the identifying mark made on the nut, stud, and adapter plate during disassembly for correct installation.

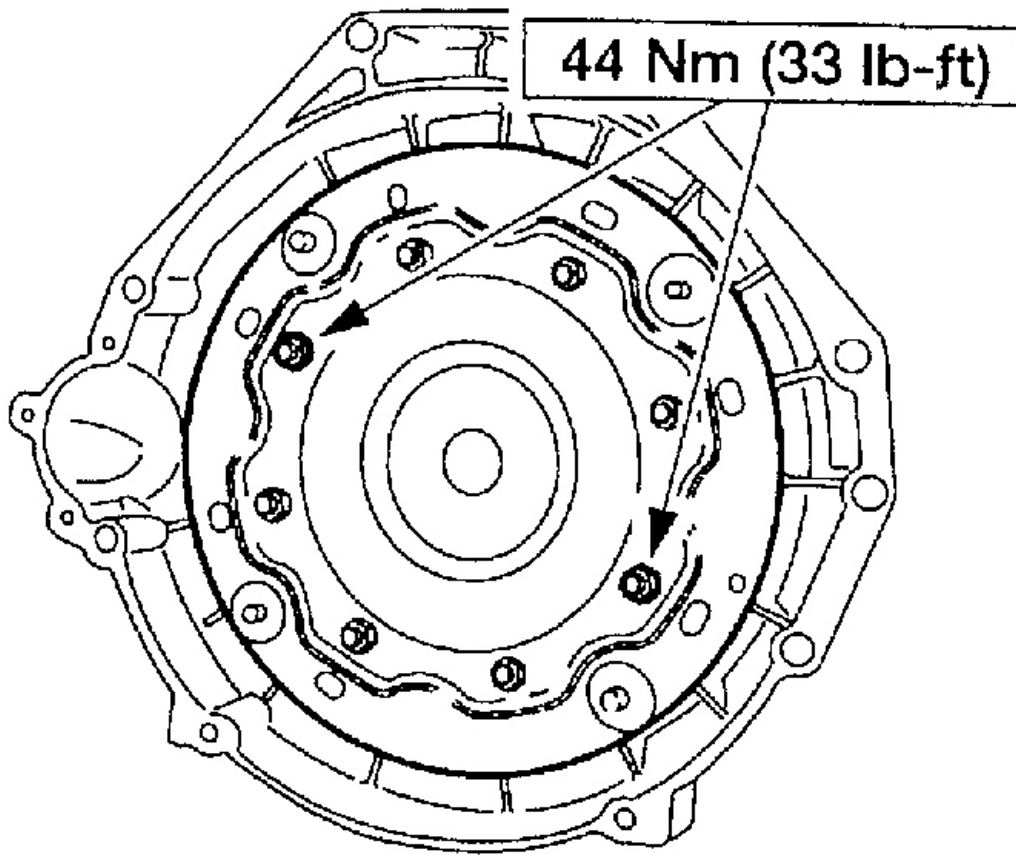
119. If the vehicle is equipped, use the special tool to install the torque converter flex plate adapter assembly and eight nuts.



G01672508

Fig. 376: Installing Torque Converter Flex Plate Adapter

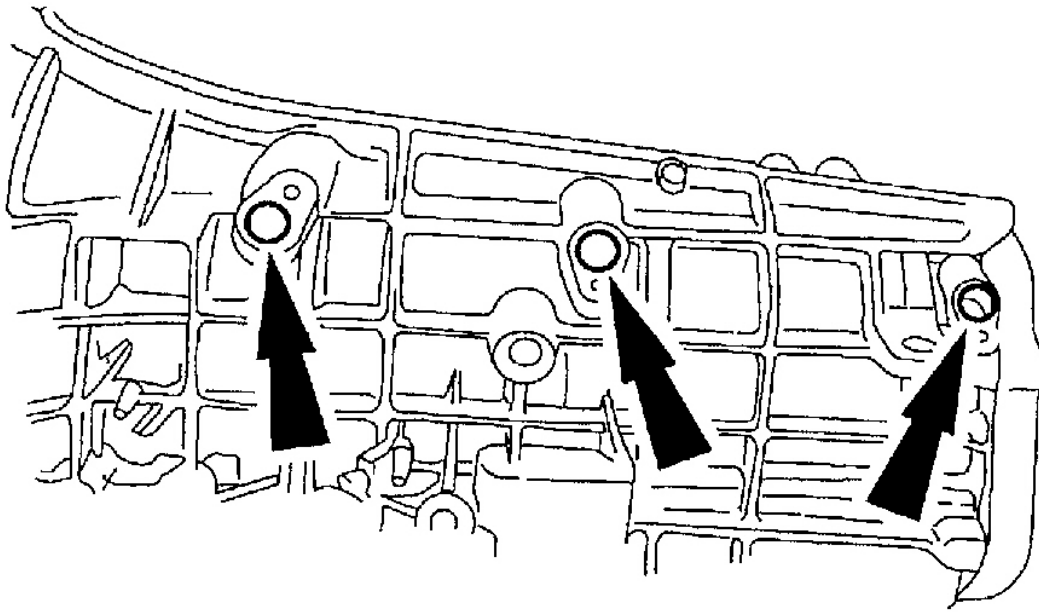
120. Install two torque converter flex plate adapter nuts.



G01672509

Fig. 377: Installing 2 Remaining Torque Converter Flex Plate Adapter Nuts

121. Using one of the speed sensor holes, fill the transmission with 8.5L (9 quarts) of automatic transmission fluid.

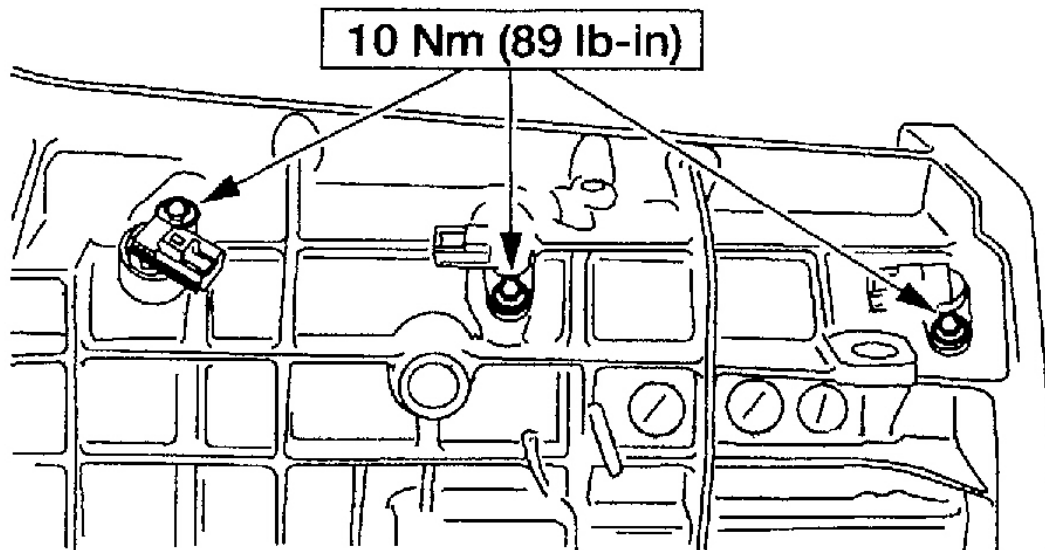


G01672510

Fig. 378: Filling Transmission

NOTE: Inspect O-ring seal for damage. Install new if damaged. Lubricate the O-ring seals with petroleum jelly to prevent damage to the O-ring seals.

122. Install the sensors.



G01672511

Fig. 379: Installing Sensors

123. Before installing transmission, make sure that the transmission cooling system (tube and cooler) have been thoroughly flushed. If contamination cannot be removed or correct flow cannot be obtained, install a new cooler and/or tubes. See **REMOVAL & INSTALLATION**.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Band Adjustment Screw Lock Nut	40 (54)
Drive Shaft Bolts & Nuts	76 (103)
Extension Housing Screws	18 (24)
Fill Plug	15 (20)
Fluid Pan Drain Plug	19 (26)
Fluid Pump Housing Screws	18 (25)
Manual Control Lever Shaft Nut	35 (48)
Shift Cable Bracket Bolts	30 (40)
Shift Cable Screws	35 (40)
Torque Converter Adapter Plate-To-Converter Nuts	28 (38)
Torque Converter Adapter Plate-To-Flexplate Nuts	28 (38)
Transmission Cooler Fitting-To-Case Retainer	35 (47)
Transmission Cooler Tube Nut-To-Case Fitting	22 (30)

2002 Ford Explorer**2002 AUTOMATIC TRANSMISSIONS' 'Ford 5R55W/S Overhaul**

Transmission Mount-To-Crossmember Nuts	66 (90)
Transmission Mount-To-Extension Housing Screws	66 (90)
Transmission-To-Engine Bolts	35 (48)
INCH Lbs. (N.m)	
Band Adjustment Screw	124 (14)
Case-To-Center Support Screw	97 (11)
Converter Drain Plug	89 (10)
Digital Transmission Range Sensor Screws	89 (10)
Fluid Level Indicator Plug-To-Drain Pipe Assembly Retainer	89 (10)
Main Control-To-Case Screws	89 (10)
Manual Control Valve Detent Spring Screw	89 (10)
Pressure Tap Plug-To-Case	124 (14)
Reverse Servo Assembly Bolts	97 (11)
Separator-To-Main Control Bolts	89 (10)
Solenoid Body Bolts	71 (8)
Speed Sensor Screws	124 (14)
Transmission Fluid Filter Bolts	89 (10)
Transmission Fluid Pan-To-Case Screws	97 (11)
Vehicle Harness-To-Solenoid Body Screw	44 (5)