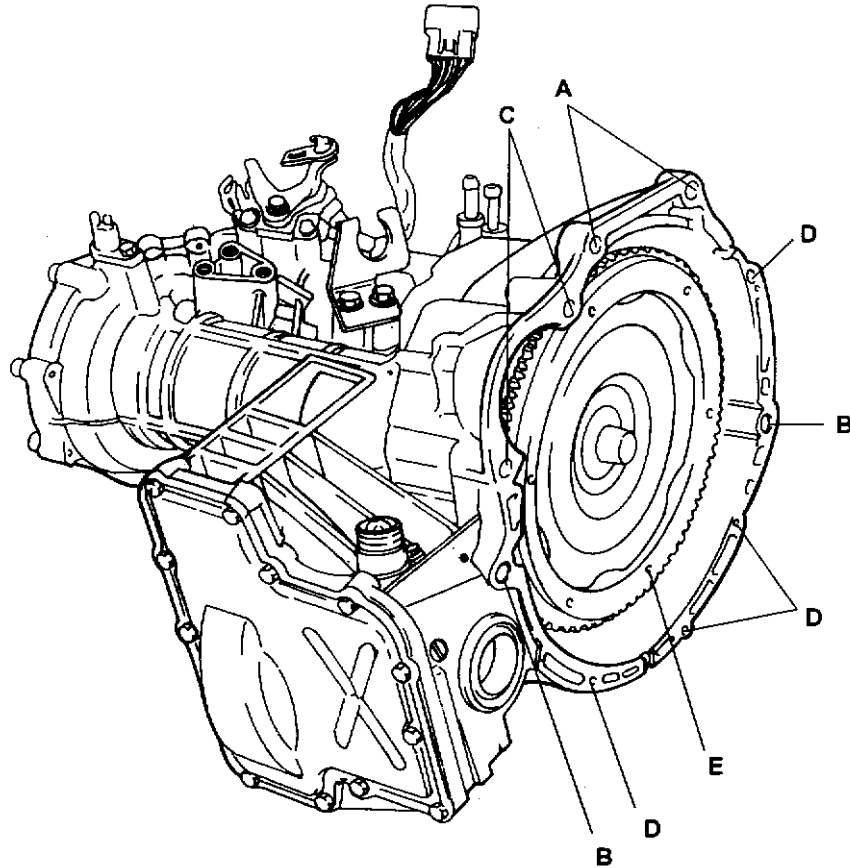


# A4BF1, A4AF2

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FRONT CLUTCH ASSEMBLY .....	45B-42
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## AUTOMATIC TRANSAXLE

## COMPONENTS



	Nm	Kg.cm	lb.ft	O.D. x Length mm (in.)	Bolt identification
A	60-80	600-800	43-58	12 x 40 (1.6)	A x B
B	43-55	430-550	31-40	10 x 70 (2.7)	
C	27-34	270-340	20-25	10 x 55 (2.2)	
D	8-10	80-100	6-7	6 x 10 (0.4)	
E	46-53	460-530	33-38	8 x 12 (0.5)	

## SERVICE SPECIFICATIONS

Item	Standard	
	A4AF2	A4BF1
Input shaft end play	0.3-1.0 mm (0.012-0.039 in.)	←
Transfer shaft end play (Without pre-load)	0.01-0.06 mm (0.0004-0.0024 in.)	←
Oil pump gear side clearance	0.02-0.048 mm (0.0008-0.0019 in.)	←
Front clutch snap ring clearance	0.4-0.6 mm (0.016-0.024 in.)	0.7-0.9 (0.028-0.035 in.)
Rear clutch snap ring clearance	0.3-0.5 mm (0.012-0.020 in.)	0.4-0.6 (0.016-0.024 in.)
End clutch snap ring clearance	0.4-0.65 mm (0.016-0.026 in.)	0.6-0.85 (0.024-0.034 in.)2.0L 0.4-0.65 (0.016-0.026 in.)1.6, 1.8L
Low reverse brake end play	0.675-0.987 mm (0.026-0.039 in.)	0.975-1.287 (0.038-0.051 in.)
Differential case end play	0-0.15 mm (0-0.006 in.)	←
Differential side gear and pinion backlash	0.025-0.150 mm (0.0010-0.0059 in.)	←
Transfer drive gear end play	0-0.06 mm (0-0.0024 in.)	←

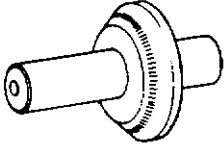



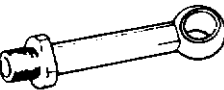

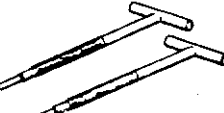
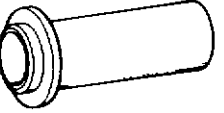
## TIGHTENING TORQUE

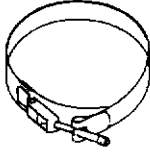
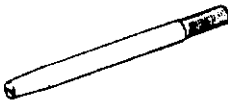
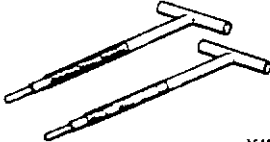
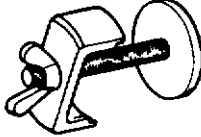


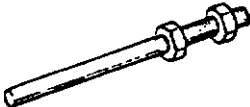
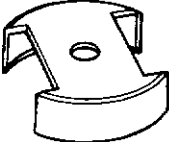
Items	Nm	kg.cm	lb.ft
Oil pan bolts	10-12	100-120	7-9
Selector lever assembly mounting bolts	12-15	120-150	9-11
Starter motor mounting bolt	27-34	270-340	20-24
Oil cooler hose connector	15-22	150-220	11-16
Hose bracket	3-5	30-50	2-4
Cover to selector knob	2.0 or more	20 or more	1.4 or more
Selector knob to lever assembly	2.0 or more	20 or more	1.4 or more
Bell housing cover to engine	8-10	80-100	6-7
Transaxle mounting bolt [10 mm (0.40 in.) diameter bolt]	43-55	430-550	31-40
Transaxle mounting bolt [12 mm (0.47 in.) diameter bolt]	60-80	600-800	43-58
Torque converter to drive plate	46-53	460-530	33-38
Control cable to body	5-7	50-70	4-5
Indicator panel	1.5 or more	15 or more	1.1 or more
Lever assembly to bracket assembly	14-22	140-220	10-14
Drain plug	35-45	350-450	25-32
Pressure check plug	8-10	80-100	6-7
Pulse generator mounting bolt	10-12	100-120	7-9
Bearing retainer screw	17-22	170-220	12-16
Transfer shaft lock nut	200-230	2000-2300	145-166
One-way clutch outer race bolt	35-45	350-450	25-32
Differential drive gear bolt	130-140	1300-1400	94-101
Differential bearing retainer	43-55	430-550	31-40
Differential bearing cap	60-80	600-800	43-58
Differential cover [10 mm (0.40 in) diameter bolt]	43-55	430-550	31-46
Differential cover [8 mm (0.31 in.) diameter bolt]	20-27	200-270	14-20
Manual control lever lock nut	17-21	170-210	12-15
manual control shaft set screw	8-10	80-100	6-7
Transaxle range switch attaching bolt	10-12	100-120	7-9
Sprag rod support bolt	20-27	200-270	15-19
Pump housing-to-reaction shaft support bolt	10-12	100-120	7-9
Oil pump assembly mounting bolt	19-23	190-230	13-16
Valve body bolt	4-6	40-60	3-4
Valve body assembly mounting bolt	10-12	100-120	7-9
Oil filter bolt	5-7	50-70	4-5
Speedometer sleeve locking plate bolt	3-5	30-50	2-4
End clutch cover	6-8	60-80	5-6
Kickdown lock nut	15-22	150-220	11-16
Rear cover	19-23	190-230	14-16

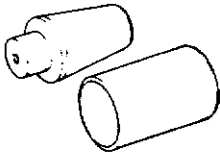


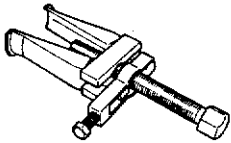
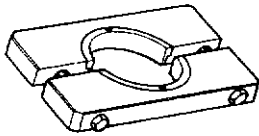



**LUBRICANTS**

Items	Specified lubricant	Quantity
Transaxle fluid lit. (U.S. qts., Imp.qts.)	GENUINE DIAMOND ATF SP-II M	6.7L
Drive shaft oil seal lip	Automatic transaxle fluid	As required
Sliding part of bushing	Chassis grease SAE J310, NLGI No.0	As required
Selector lever sliding portion	Multipurpose grease SAE J310, NLGI No.2	As required

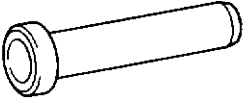
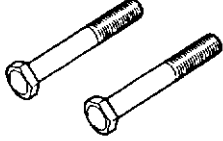
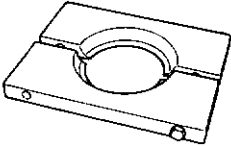
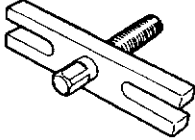
## SPECIAL TOOLS

Tool (Number and name)	Illustration	Use
09431-21200 Oil seal installer	 <p style="text-align: right; font-size: small;">Y45-005C</p>	Installation of differential oil seal.
09432-33800 Bearing and gear installer	 <p style="text-align: right; font-size: small;">Y45-008B</p>	Installation of the transfer shaft bearing and transfer driven gear.
09433-21000 Removing plate	 <p style="text-align: right; font-size: small;">Y45-005F</p>	Removal of transfer shaft taper roller bearing and differential ball bearing.
09452-21500 Oil pressure gauge	 <p style="text-align: right; font-size: small;">Y45-006E</p>	Measurement of the oil pressure (use with 09452-21001, 09452-21002)
09452-21001 Oil pressure gauge adapter	 <p style="text-align: right; font-size: small;">Y45-005G</p>	Measurement of the oil pressure (use with 09452-21500, 09452-21002)
09452-21002 Oil pressure gauge adapter	 <p style="text-align: right; font-size: small;">Y45-005H</p>	Measurement of the oil pressure. (use with 09452-21500 and 09452-21001)
09452-21100 Oil pump remover	 <p style="text-align: right; font-size: small;">Y45-006A</p>	Removal of the oil pump
09452-21200 Bearing and oil seal installer	 <p style="text-align: right; font-size: small;">Y45-006B</p>	Installation of oil pump oil seal and transfer drive gear bearing.

Tool (Number and name)	Illustration	Use
09452-21301 Oil pump band	 Y45-006C	Assembling the oil pump
09452-21401 Guide pin	 Y45-006D	Installation of the oil pump
09452-22000 Differential bearing retainer re- mover	 Y45-006A	Removal of the differential bearing retainer
09453-21000 Spring compressor	 Y45-010B	Removal and installation of the snap ring and return spring of the clutch
09453-21100 Spring compressor	 Y45-006F	Removal and installation of the rear clutch (use with 09453-21000)
09453-21310 Center support remover and installer	 Y45-006G	Removal and installation of the center support
09453-21400 Dial gauge support	 Y45-006H	Measurement of the input shaft, low and reverse brake and transfer shaft end play. (Use with dial gauge)
09453-24000 Spring compressor	 Y45-007A	Installation of snap ring and front clutch

Tool (Number and name)	Illustration	Use
09453-33000 Snap ring installer	 <p style="text-align: right;">Y45-007B</p>	Installation of end clutch snap ring
09453-33100 Dial gauge extension	 <p style="text-align: right;">Y45-007C</p>	Measurement fo the low and reverse brake end play (use with dial gauge)
09455-21100 Bearing installer	 <p style="text-align: right;">Y45-007G</p>	Installation of differential ball bearing
09455-32200 Bearing outer race remover	 <p style="text-align: right;">X45-007A</p>	Removal of the transfer driven gear bearing outer race
09455-33000 Removing plate	 <p style="text-align: right;">X45-007B</p>	Removal of the transfer driven gear taper roller bearing
09455-33200 Bearing installer	 <p style="text-align: right;">X45-007J</p>	Installation of transfer driven gear taper roller bearing
09456-21000 Guide pin	 <p style="text-align: right;">Y45-008C</p>	Assembly of the valve body
09457-22000 Removing plate	 <p style="text-align: right;">X45-007C</p>	Removal of the transfer drive gear rear bearing



Tool (Number and name)	Illustration	Use
09457-22100 Transfer shaft bearing outer race installer	 <p style="text-align: right;">X45-008A</p>	Installation of the transfer shaft bearing outer race
09457-22200 Transfer driven gear remover	 <p style="text-align: right;">X45-008B</p>	Removal of the transfer driven gear (use with 09526-11001)
09457-34000 Removing plate	 <p style="text-align: right;">X45-008C</p>	Removal of the transfer drive gear front bearing
09526-11001 Transfer driven gear remover	 <p style="text-align: right;">X45-008C</p>	Removal of the transfer driven gear (use with 09457-22200)

## DISASSEMBLY

### Caution:

Because the automatic transaxle is composed of component parts of an especially high degree of precision, these parts should be very carefully handled during disassembly and assembly so as not to scar or scratch them.

A rubber mat should be placed on the workbench, and it should always be kept clean.

During disassembly, cloth gloves or rags should not be used. If such items must be used, use articles made of nylon, or use paper towels.

All disassembled parts must be thoroughly cleaned. Metal parts may be cleaned with ordinary detergents, but must be thoroughly air dried.

Clean the clutch disc, resin thrust plate and rubber parts by using ATF (automatic transaxle fluid), being very careful that dust, dirt, etc. do not adhere.

If the transaxle main unit is damaged, also disassemble and clean the cooler system as well.

1. Clean away any sand, mud, etc. adhered around the transaxle.
2. Place the transaxle assembly on the workbench with the oil pan down.
3. Remove the torque converter.
4. Measuring input shaft end play before disassembly will usually indicate when a thrust washer change is required (except when major parts are replaced).

**Standard value : 0.3-1.0 mm (0.012-0.039 in.)**

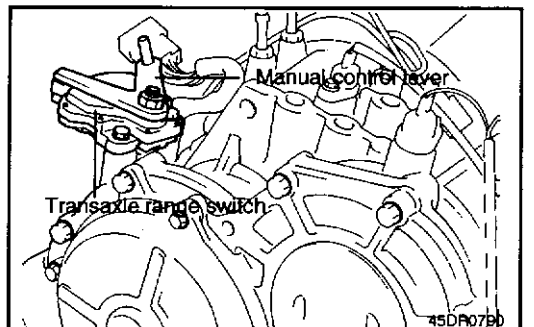
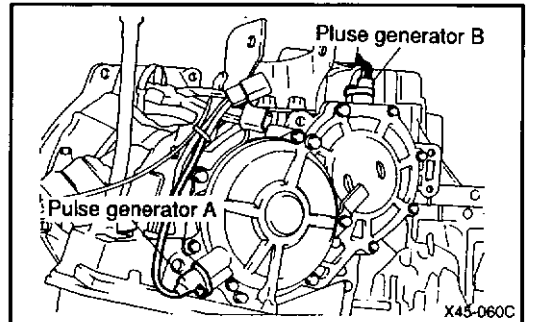
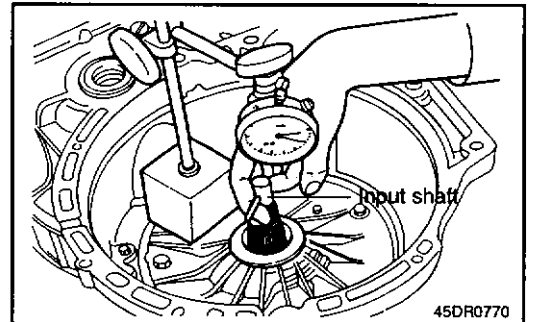
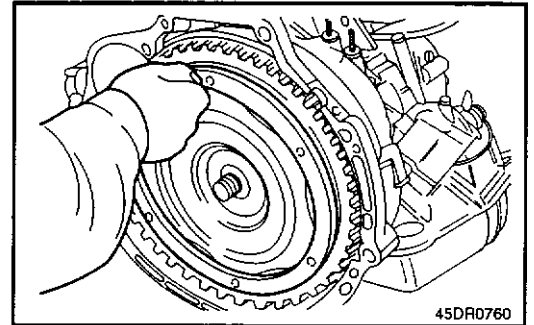
Thrust washers are located between the reaction shaft support and rear clutch retainer, and between the reaction shaft support and front clutch retainer.

Mount a dial indicator to the converter housing with the dial indicator support.

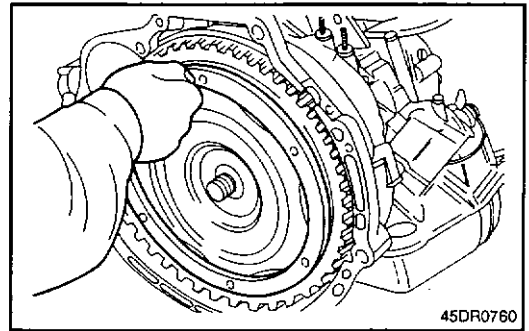
Make sure that the indicator plunger is seated against the end of the input shaft.

When checking end play, pull out or push in the input shaft with pliers. Be careful not to scratch the input shaft. Record indicator reading for reference when reassembling the transaxle.

5. Remove the pulse generators "A" and "B".
6. Remove manual control lever, then remove the transaxle range switch.



7. Remove the snap ring and kickdown servo switch.

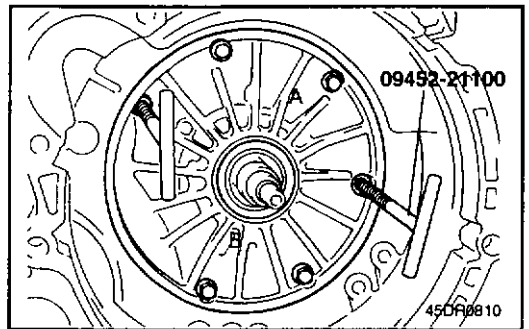


8. Remove 6 bolts, attach the special tools (09452-21100) and remove oil pump assembly

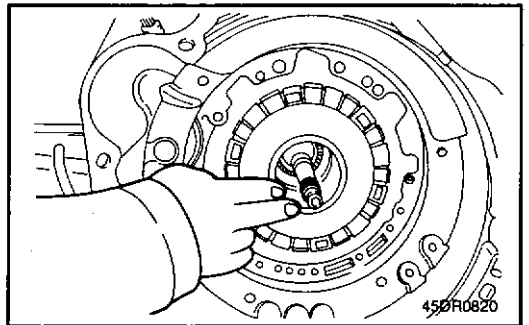
**NOTE**

When removing the oil pump assembly, be sure to follow to prevent the damage of onto transaxle case.

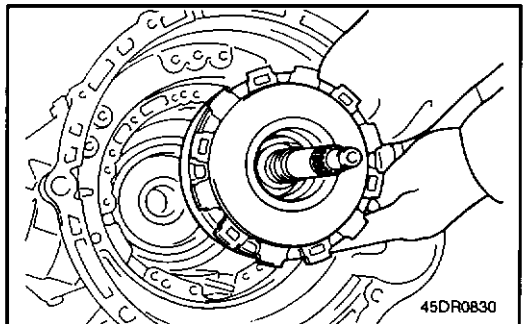
1. Turn the knob of both special service tools simultaneously and uniformly not to be inclined to "B" side.
2. While turning the special service tool, tap on the "A" side of the oil pump lightly with rubber or plastic hammer if necessary.



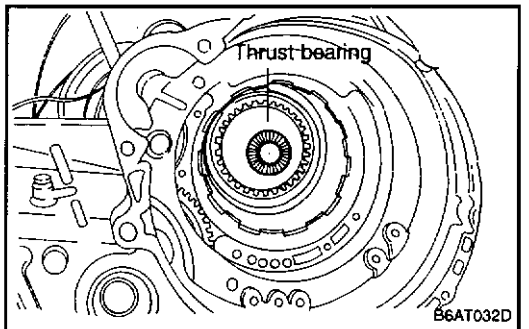
9. Remove the fiber thrust washer.



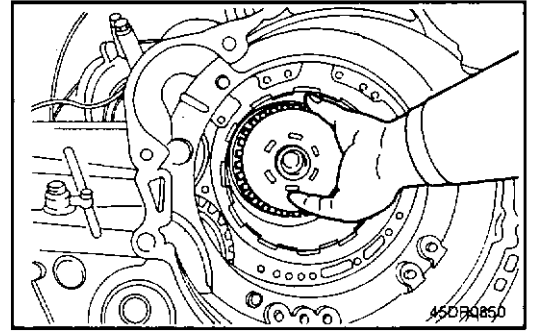
10. Pull up the input shaft, and remove the front clutch assembly and the rear clutch assembly together.



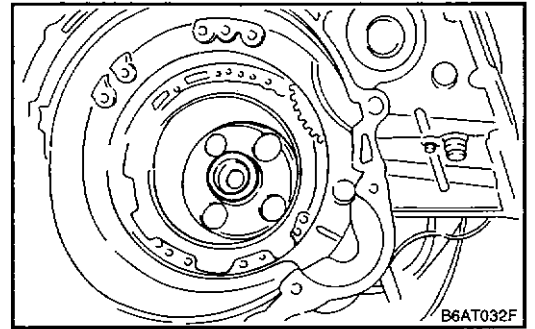
11. Remove the thrust bearing.



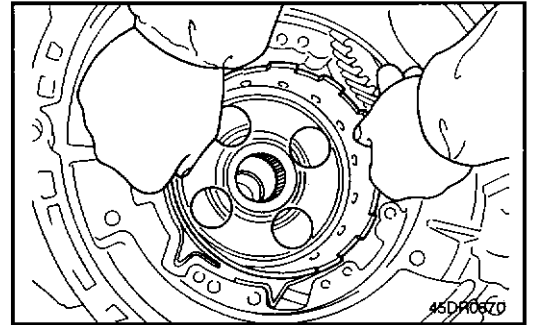
12. Remove the clutch hub.



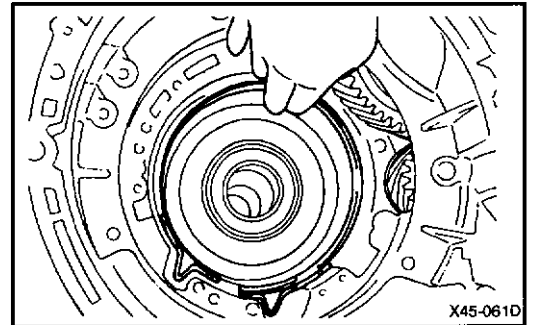
13. Remove the thrust race and bearing.



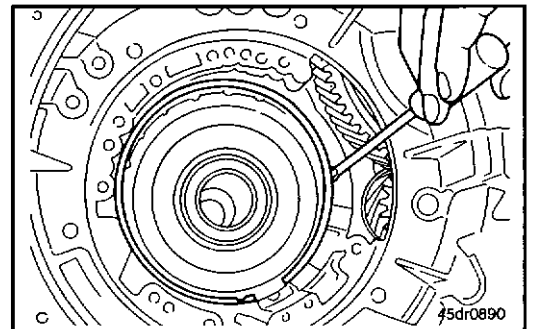
14. Remove the kickdown drum.



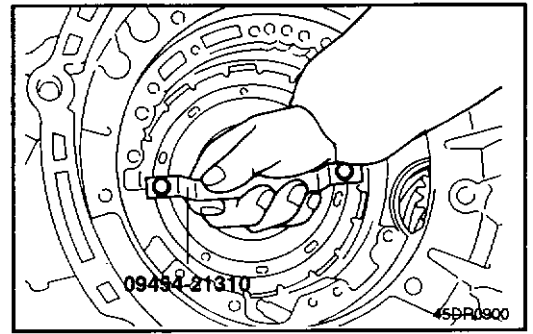
15. Remove the kickdown band.



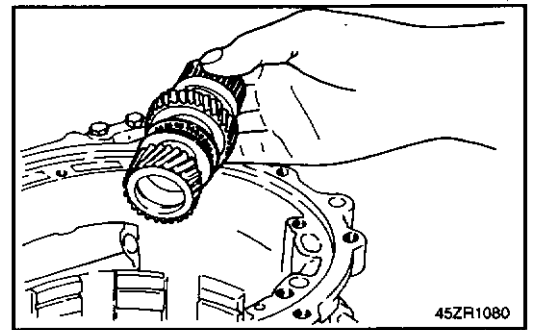
16. Remove the snap ring.



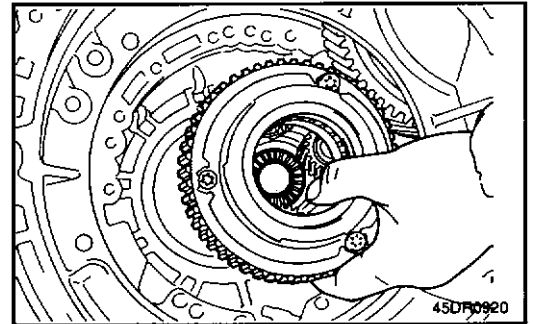
17. Attach the special tool (09453-21310) on the center support. Holding the handle of the tool, pull the center support straight upward.



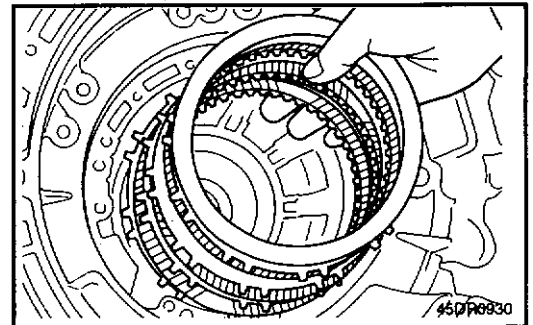
18. Remove the reverse sun gear and the forward sun gear together.



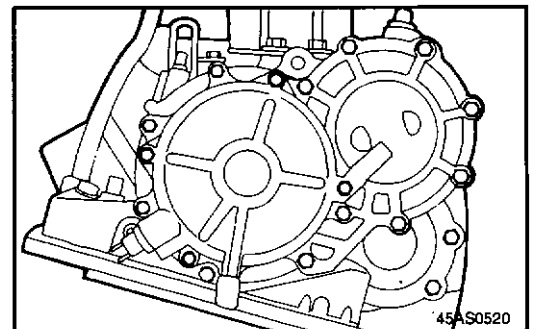
19. Remove the planet carrier assembly and thrust bearing.



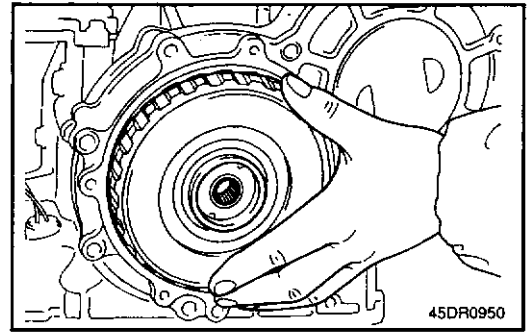
20. Remove the wave spring, return spring, reaction plate, brake disc, and brake plate.



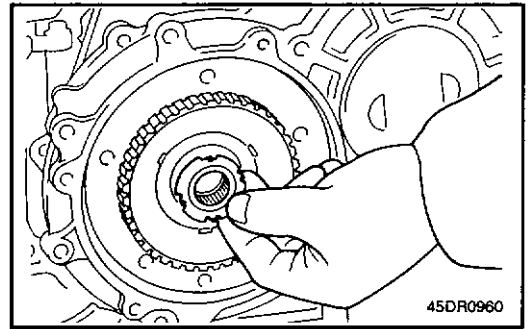
21. Remove the end clutch cover mounting bolts, the cover holder, and the end clutch cover.



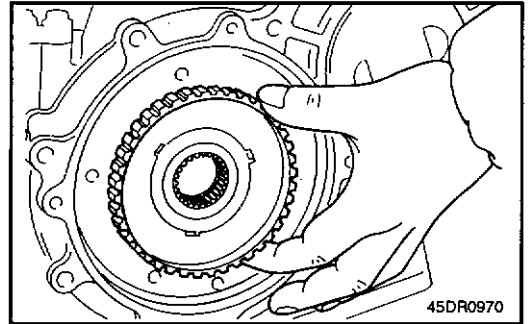
22. Remove the end clutch assembly.



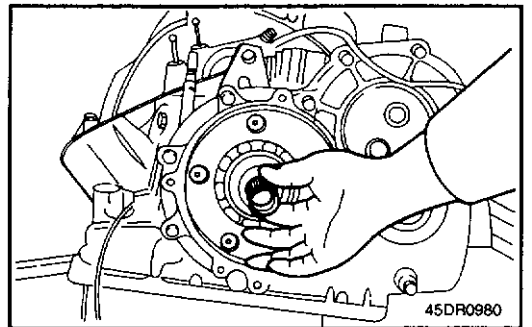
23. Remove the thrust plate.



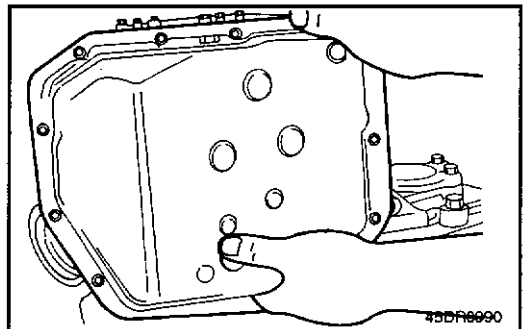
24. Remove the end clutch hub and thrust bearing.



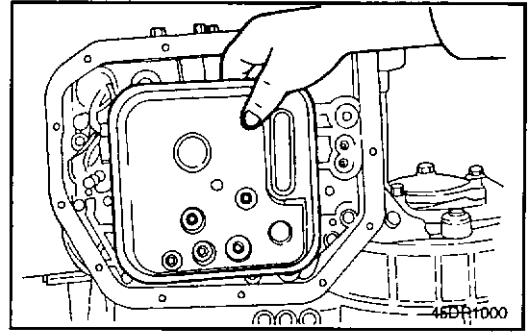
25. Pull out the end clutch shaft.



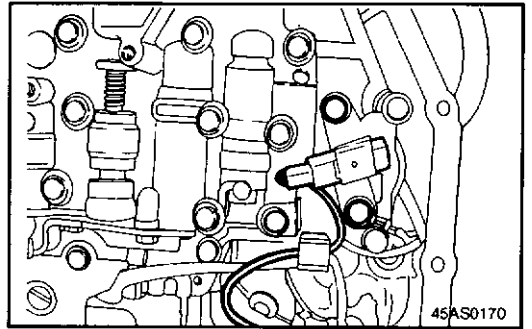
26. Remove the oil pan and gasket.



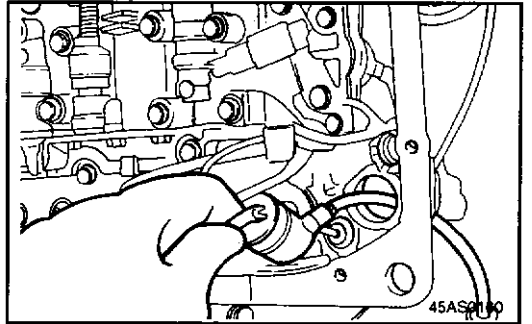
27. Remove the oil filter from the valve body.



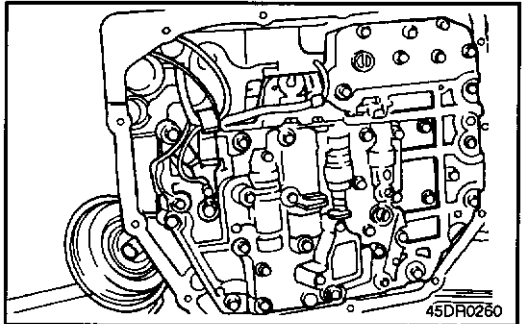
28. Remove the oil-temperature sensor installation bolt; then, after removal from the bracket, pull out from the connector.



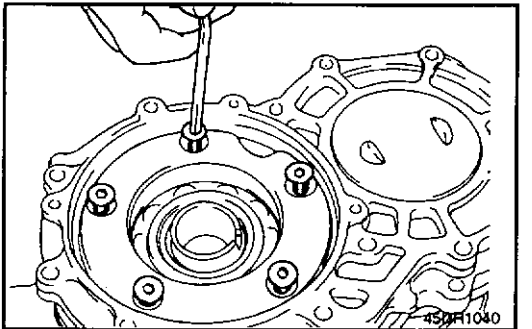
29. Remove the clip of the solenoid valve harness grommet and pull it.



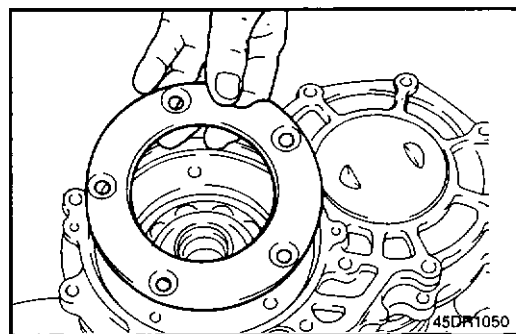
30. Remove the 9 valve body bolts. Remove the valve body.



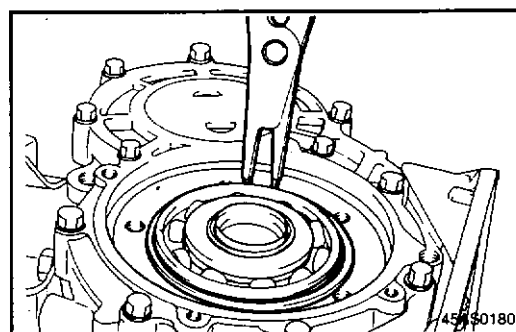
31. Using an impact driver, loosen the bolt.  
If an impact driver is not available, use a punch or something similar



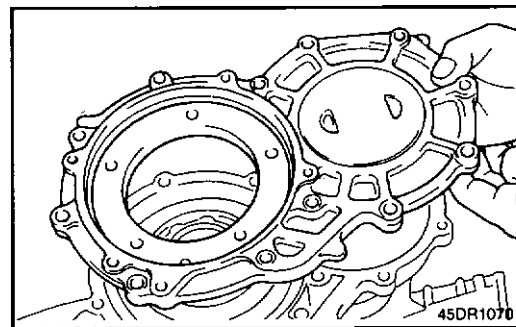
32. Remove the bearing retainer.



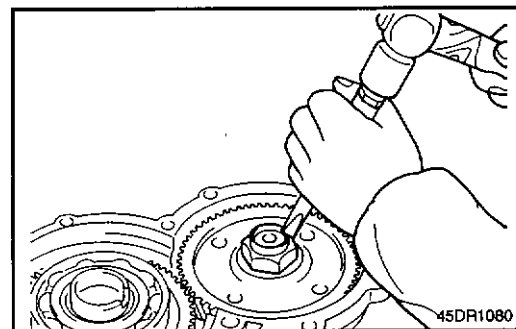
33. Remove the snap ring from the bearing.



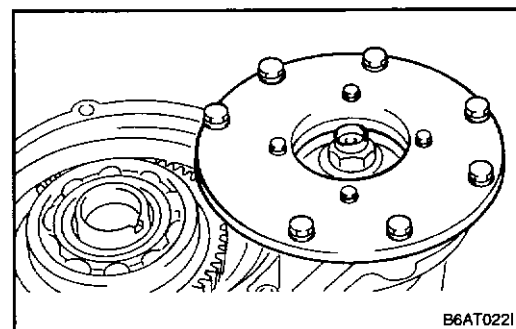
34. Loosen the rear cover mounting bolt and remove the rear cover.



35. Unstake the transfer shaft lock nut stopper.

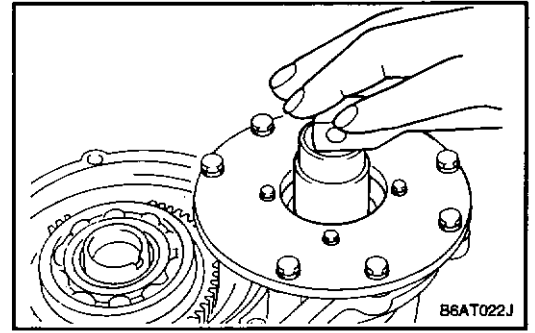


36. Install the special tool to the transaxle case.

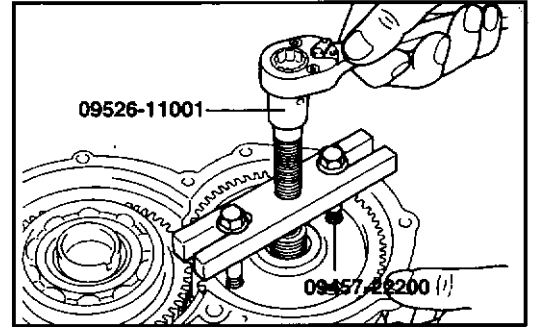




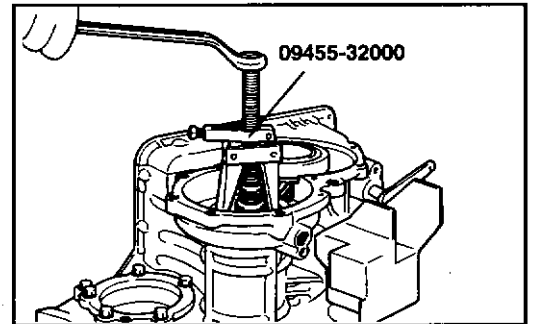
37. Remove the locking nut.



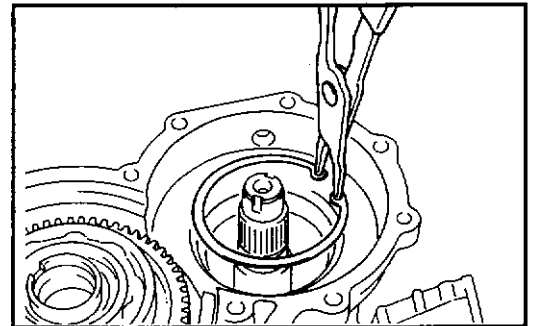
38. Using the special tool, remove the transfer driven gear.



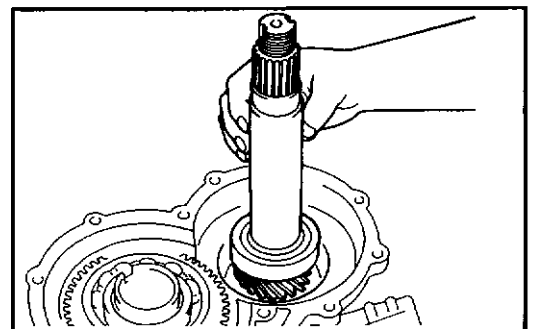
39. Remove the taper roller bearing outer race.



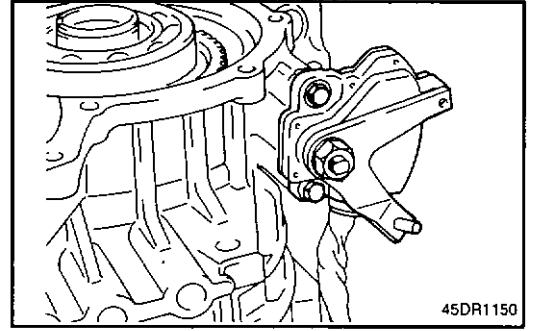
40. Remove the snap ring.



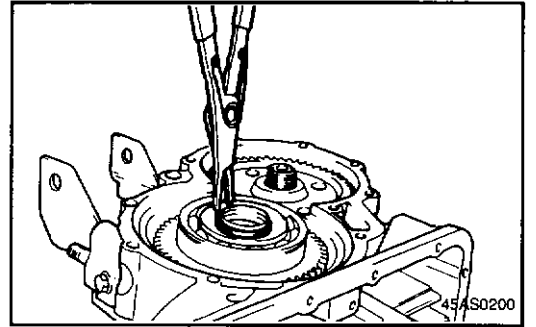
41. Remove the transfer shaft and taper roller bearing.



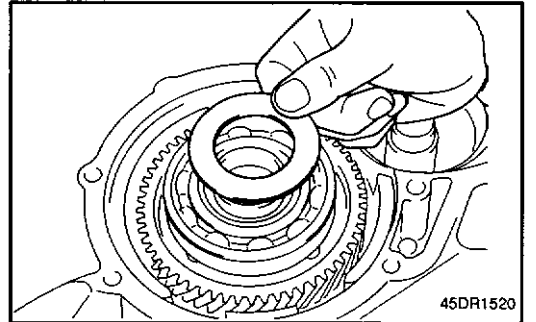
42. Move the manual control lever from the "P" position to "N" position.



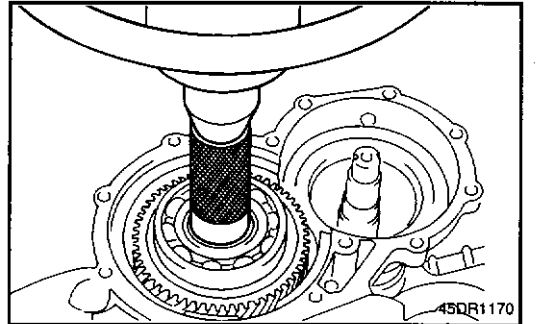
43. Remove the snap ring from the output flange assembly.



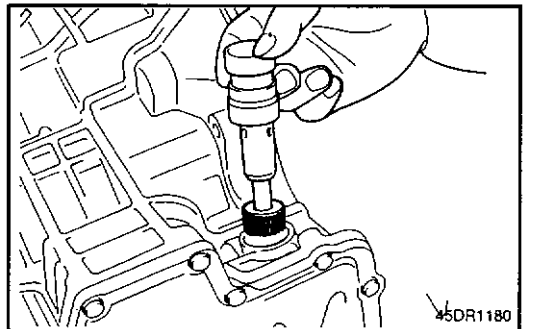
44. Remove the stopper plate.



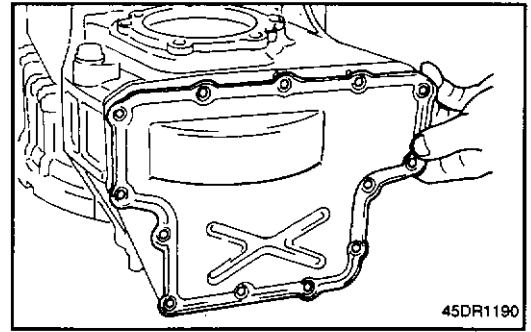
45. Using the special tool or presser, remove the output flange and drive gear.



46. Remove the speedometer sleeve.

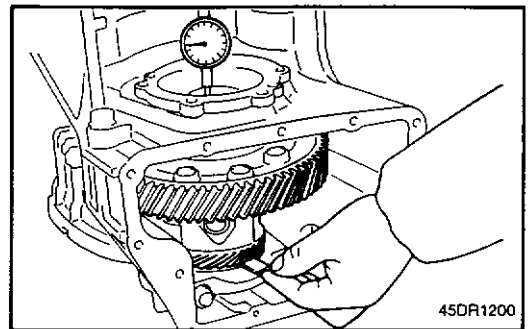


47. Remove the differential cover and the gasket.

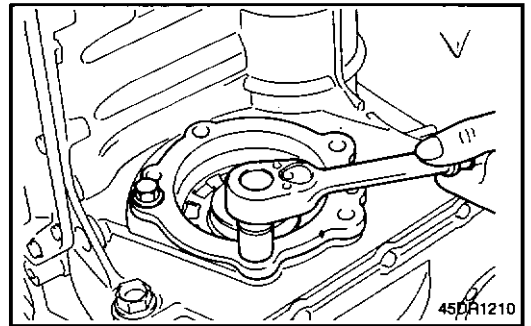


48. Before removal of the differential gear, measure the end play of the differential gear with a dial gauge.

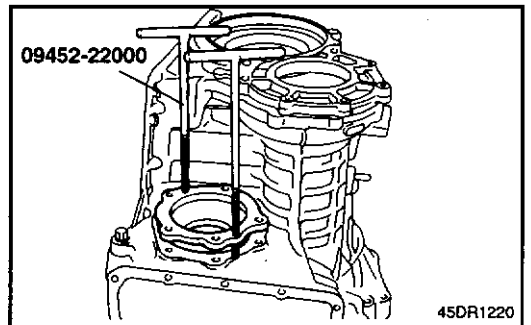
Standard value : 0-0.15 mm (0-0.006 in.)



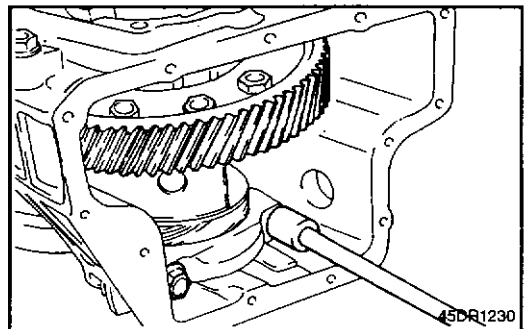
49. Remove the 5 differential bearing retainer mounting bolts.



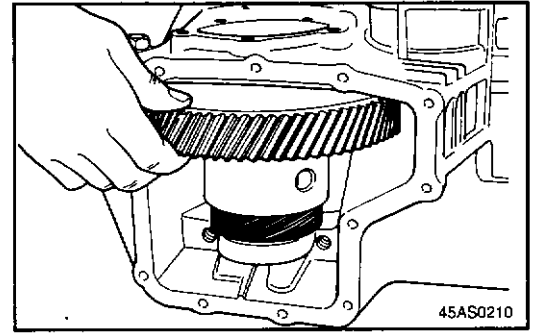
50. Using the special tool, remove the differential bearing retainer.



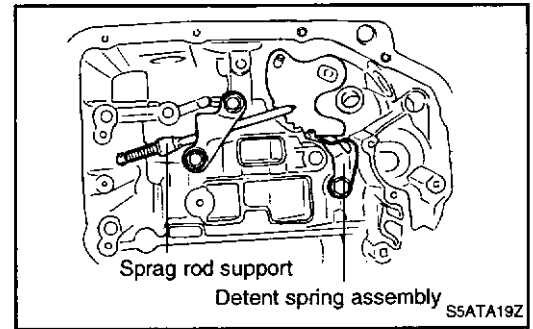
51. Loosen the mounting bolts and remove the bearing cap.



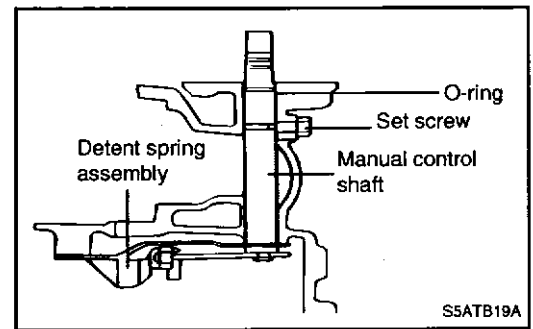
52. Remove the differential assembly.



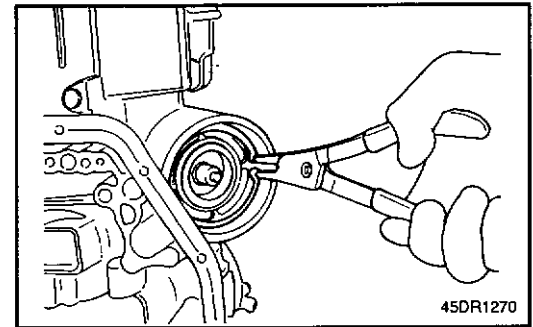
53. Remove two bolts of the sprag rod support and the bolt of the detent spring assembly.



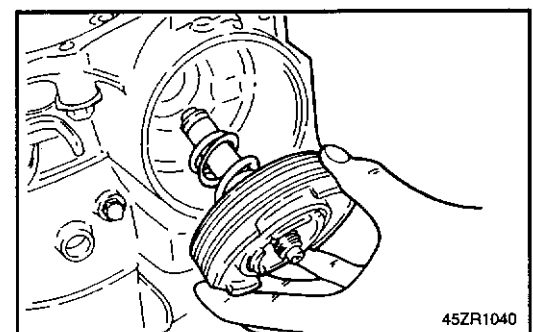
54. Remove the set screw, the manual control shaft assembly, the sprag rod and the detent spring assembly.



55. Remove the kickdown servo snap ring.



56. Remove the kickdown piston assembly.



## REASSEMBLY

**Caution**

Do not reuse gaskets, oil seals and rubber parts. Replace them with new ones at every reassembly. The O-ring of the oil level dipstick need not be replaced.

Do not use grease other than petrolatum or industrial vaseline. Apply automatic transaxle fluid to friction elements, rotating parts, and sliding parts before installation. Refer to page 10-4 concerning automatic transaxle fluid. New clutch discs should be immersed in automatic transaxle fluid for a minimum of two hours before installation.

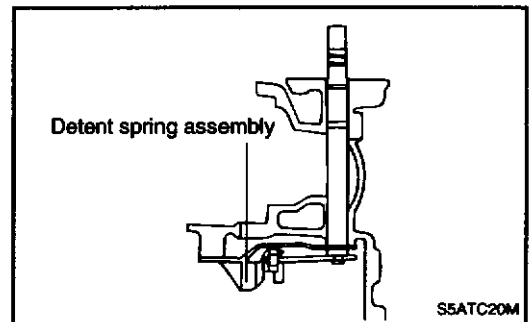
Do not apply sealer or adhesive to gaskets.

When bushings must be replaced, replace their complete assembly which.

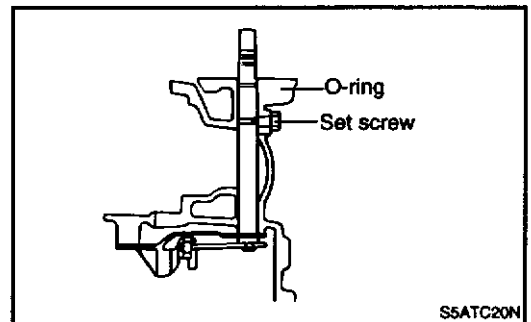
Do not use shop towels during disassembly and reassembly operation.

The oil in the cooler should also be replaced.

1. After installing the detent spring assembly and the sprag rod assembly on manual control shaft, insert manual control shaft into transaxle case and push it fully toward manual control lever. At this time, do not install the O-ring (large one of two O-rings) on manual control shaft.



2. After installing the new O-ring on manual control shaft, draw shaft back into case, then install set screw and gasket.



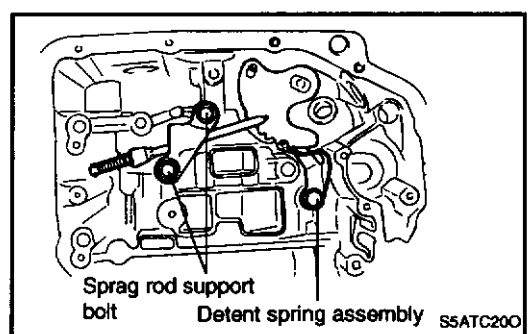
3. Install the sprag rod support and tighten two bolts. Install the washer and tighten the bolt of the detent spring assembly.

Sprag rod support bolts :

20-27 Nm (200-270 kg·cm, 15-19 lb·ft)

Detent sprag assembly bolt :

10-12 Nm (100-120 kg·cm, 7.5-8.4 lb·ft)



4. Before assembly of the transaxle, measure the end play of the low-reverse brake, and select a pressure plate to be used so that the end play will be the standard value.

- 1) Install the brake reaction plate, brake plate and brake disc to the transaxle case.

**Caution:**

**If new brake discs are used, be sure to immerse them in ATF for a minimum of two hours.**

- 2) Install the appropriate pressure plate and then install the return spring.

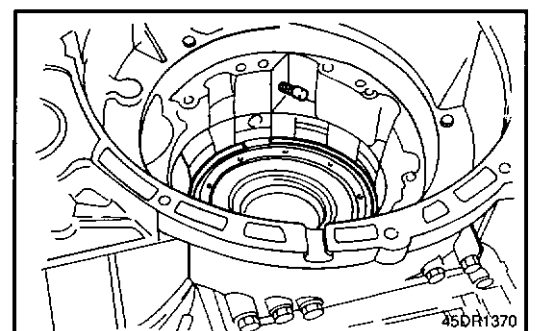
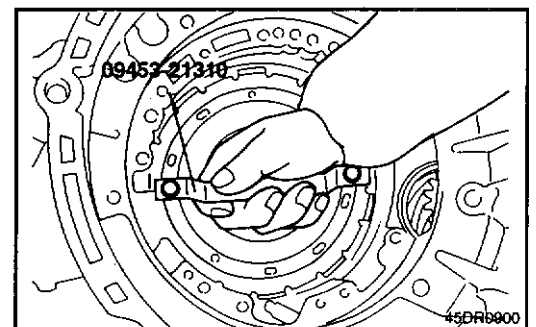
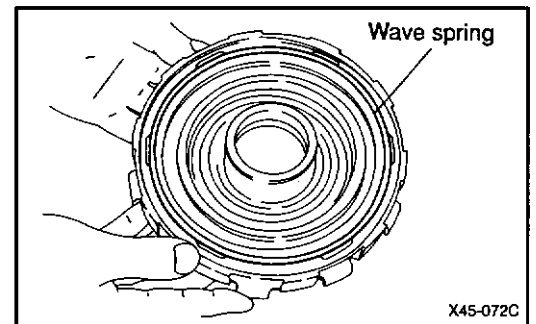
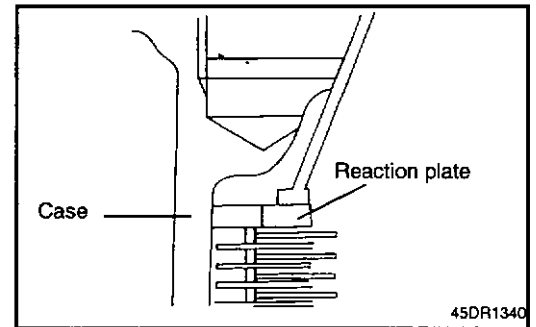
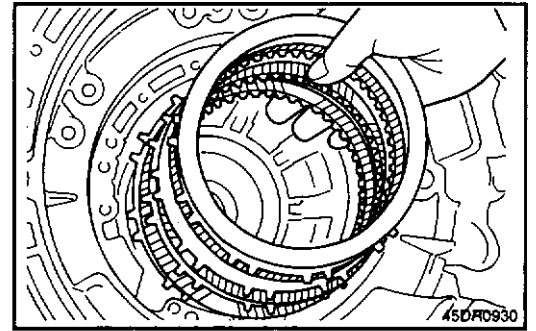
**Caution:**

**Be sure that the return spring is installed so that it faces in the correct direction.**

- 3) Apply a coating of petroleum jelly to the wave spring and attach it to the center support.

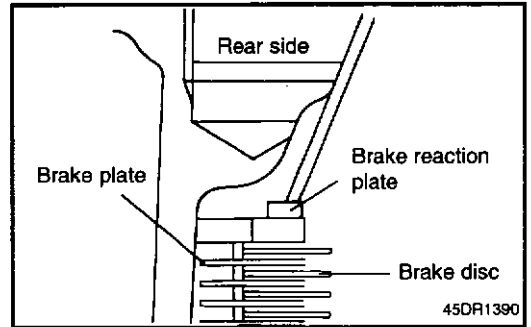
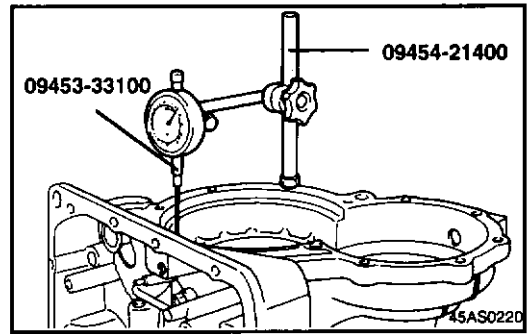
- 4) Install the special tool (09453-21310) to the center support.

- 5) Install the snap ring.



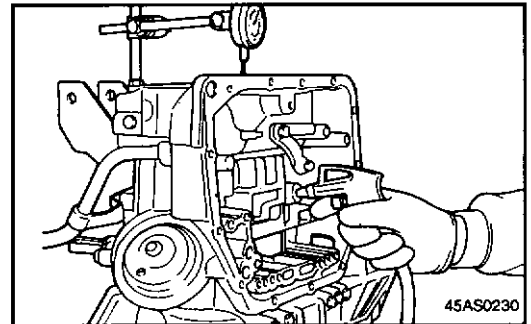
- 6) Install the special tools (09454-21400, 09453-33100) and a dial gauge at the rear side of the transaxle case.

**Caution:**  
Install the dial gauge so that it contacts the brake reaction plate at a right angle from the transfer idler shaft hole.

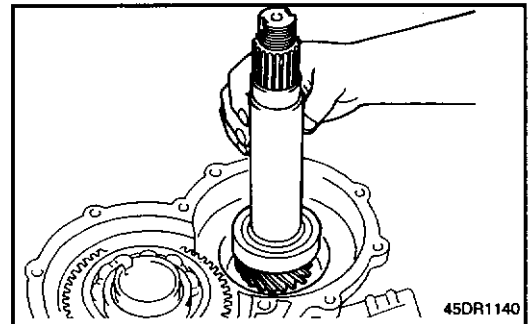


- 7) Using a manual pump, pump air ( 5 kg/cm<sup>2</sup>) in from the position shown in the illustration. Read the dial indicator gauge, and select the pressure plate that will provide the standard value.

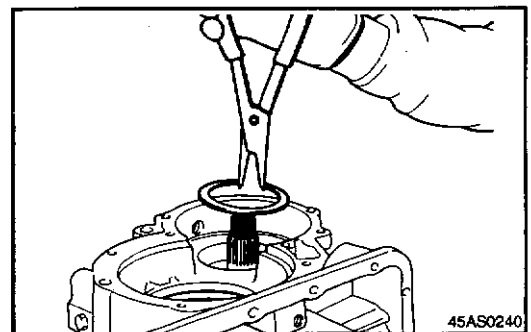
- 8) After selecting pressure plate, remove center support, brake plate, brake disc, brake reaction plate and pressure plate



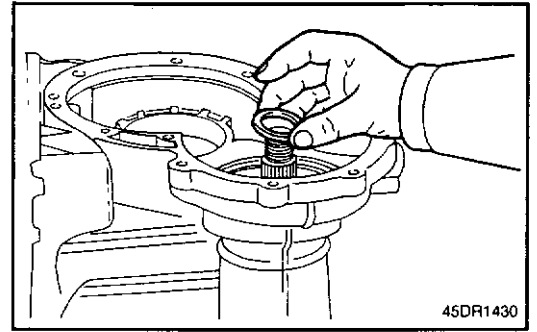
5. Install the transfer shaft, and press-fit the bearing outer race to the transaxle case.



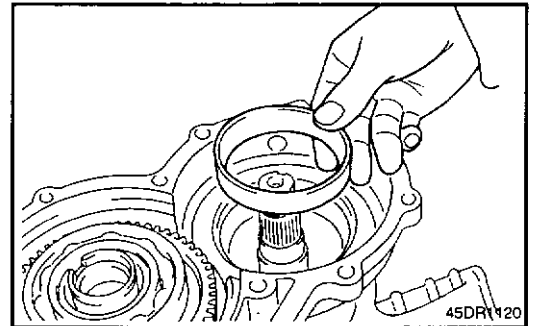
6. Install the transfer shaft snap ring.



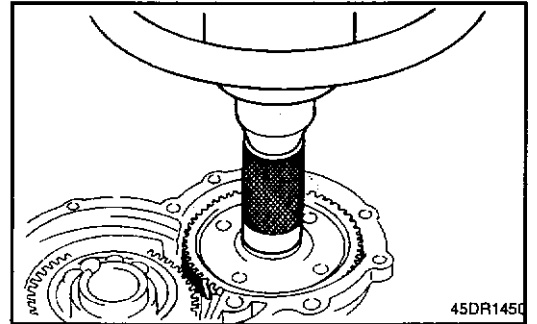
7. Insert the spacer on the transfer shaft.



8. Install the bearing cage on the case.

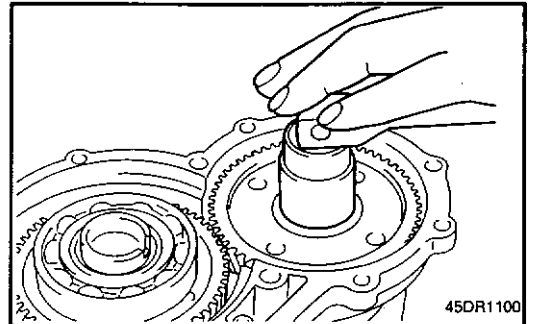


9. Press-fit the transfer driven gear to the transfer shaft.



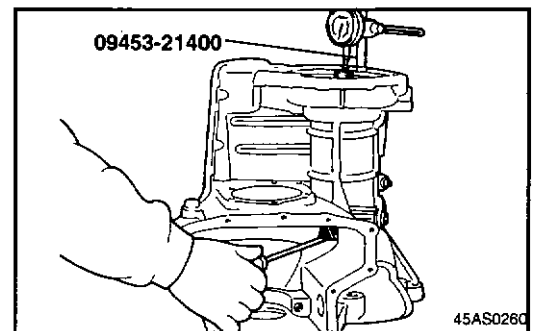
10. Tighten the lock nut to the specified torque.

**Transfer lock nut:**  
**200-230 Nm (2000-2300 kg.cm, 146-166 lb.ft)**



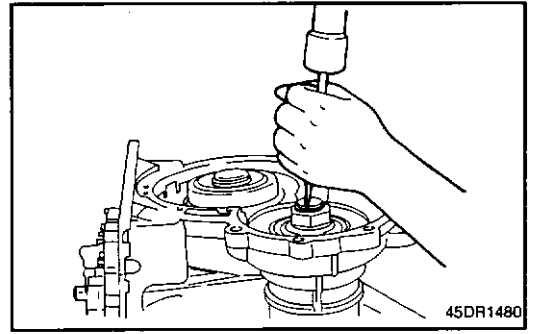
11. After installing the dial gauge, measure the end play of the transfer shaft: then select the spacer(s) needed to obtain the standard value, and refit.

**Transfer shaft end play: 0-0.06 mm (0-0.002 in.)**

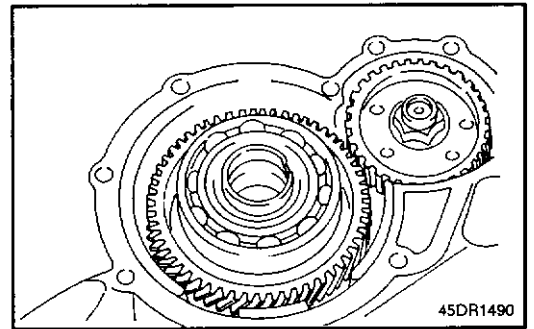




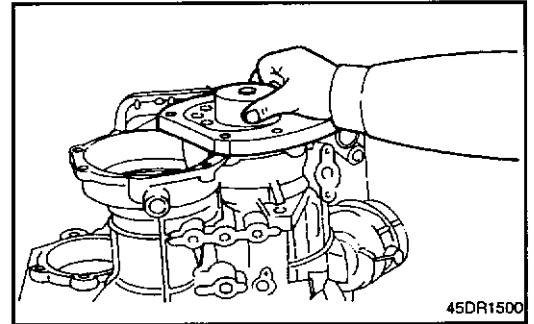
12. Using a punch, lock the lock nut to prevent rotation.



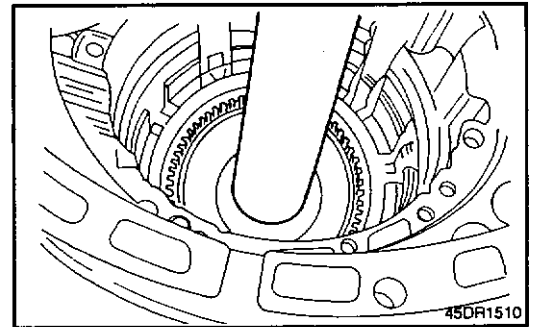
13. Install the transfer drive gear assembly.



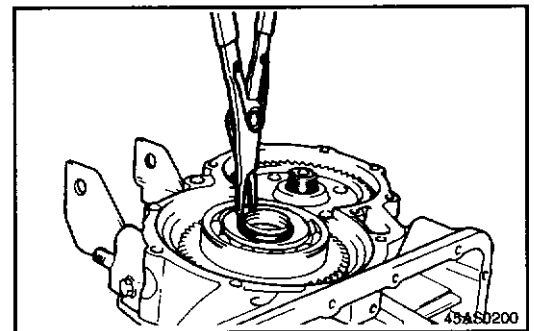
14. Install the special tool at the rear side of the transaxle case.



15. Using the special tool, insert an assembly of the annulars gear into the transfer drive gear.

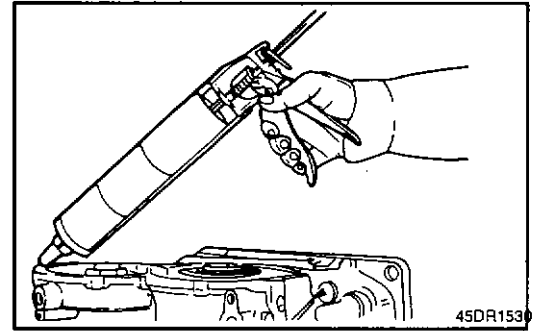


16. Install the stopper plate and snap ring.



17. Apply specified sealant to the rear cover.

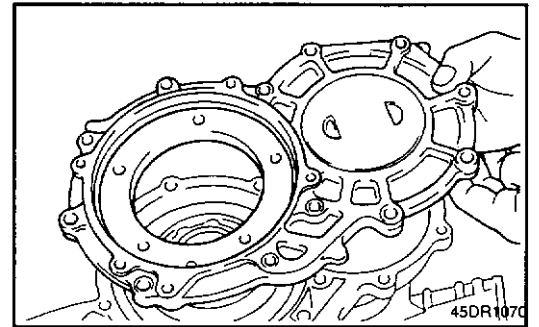
**Specified sealant : THREE BOND 1216**



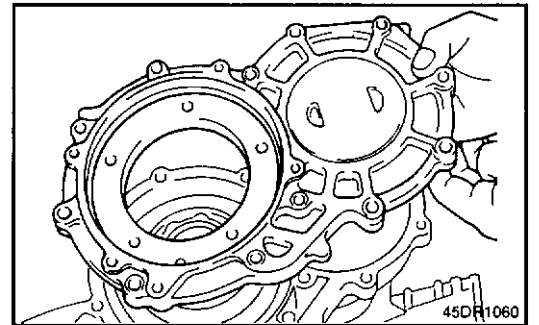
18. Install the rear cover assembly.

**Tightening torque :**

**17-22 Nm (170-220 kg.cm, 12.3-15.9 lb.ft)**

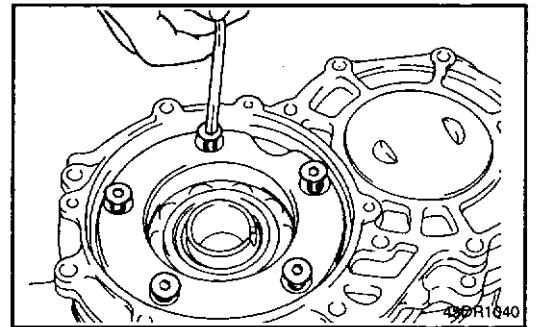


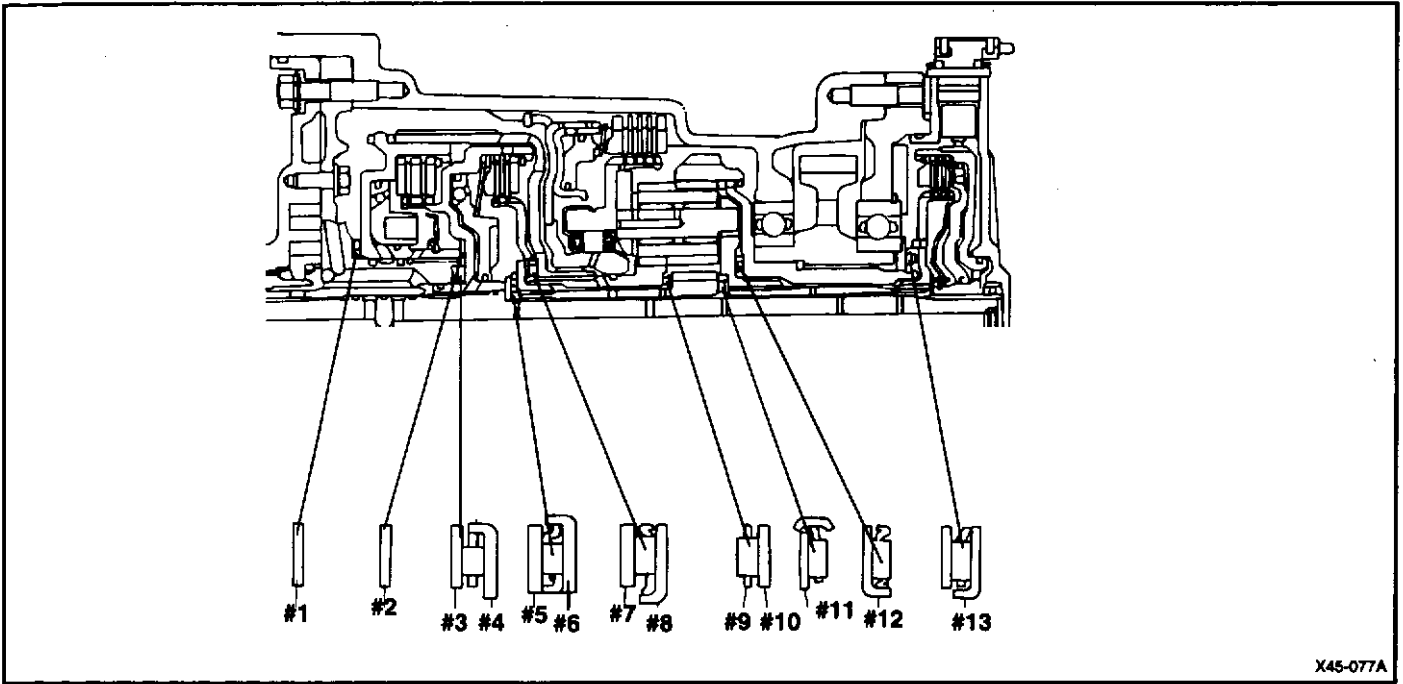
19. Install snap ring.



20. Install the bearing retainer. Tighten the screws to the specified torque. Apply a 5 mm (0.2 in.) width of sealant (3M Stud Locking No. 1303). Sealant should not stick out of screw head.

**Screw: 17-22 Nm (170-220 kg.cm, 13-15 lb.ft)**





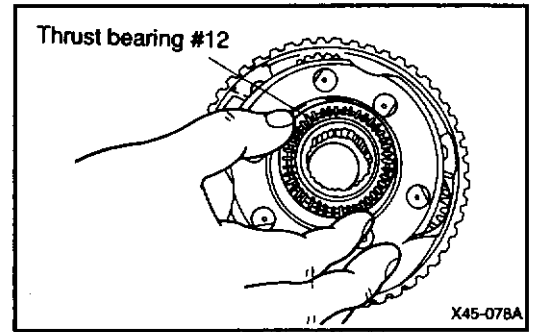
X45-077A

Identification of thrust bearings, thrust races and thrust washers

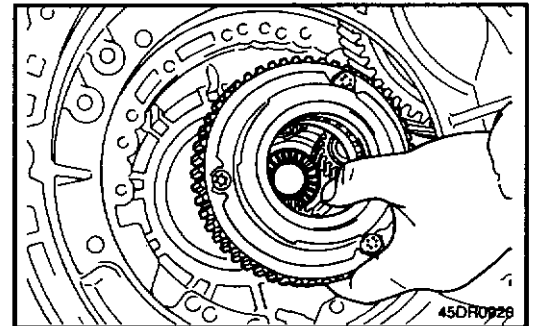
Unit: mm (in.)

Outer diameter	Inner diameter	Thickness	Code No.	Outer diameter	Inner diameter	Thickness	Code No.
70 (2.756)	55.7 (2.193)	1.4 (0.055)	#1	48.1 (1.906)	34.4 (1.354)	-	#4
70 (2.756)	55.7 (2.193)	1.8 (0.071)		40 (1.575)	21 (0.827)	2.4 (0.094)	#5
70 (2.756)	55.7 (2.193)	2.2 (0.087)		42.6 (1.677)	28 (1.102)	-	#6
70 (2.756)	55.7 (2.193)	2.6 (0.102)		54 (2.126)	38.7 (1.524)	1.6 (0.063)	#7
70 (2.756)	55.7 (2.193)	1.8 (0.071)	#2	52 (2.047)	36.4 (1.433)	-	#8
48.9 (1.925)	37 (1.457)	1.0 (0.039)	#3	41 (1.614)	28 (1.102)	-	#9
48.9 (1.925)	37 (1.457)	1.2 (0.047)		39 (1.535)	28 (1.102)	1.2 (0.047)	#10
48.9 (1.925)	37 (1.457)	1.4 (0.055)		38 (1.496)	22.2 (0.874)	-	#11
48.9 (1.925)	37 (1.457)	1.6 (0.063)		52 (2.047)	36.4 (1.433)	-	#12
48.9 (1.925)	37 (1.457)	1.8 (0.071)		58 (2.283)	44 (1.732)	-	#13
48.9 (1.925)	37 (1.457)	2.0 (0.079)					
48.9 (1.925)	37 (1.457)	2.2 (0.087)					
48.9 (1.925)	37 (1.457)	2.4 (0.094)					

21. Apply a coating of petroleum jelly to thrust bearing #12 and attach to the planetary carrier.

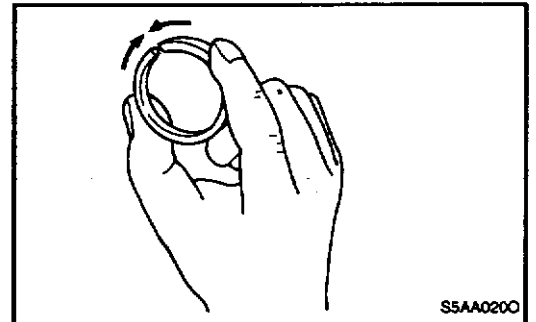


22. Install the planetary carrier to the case.

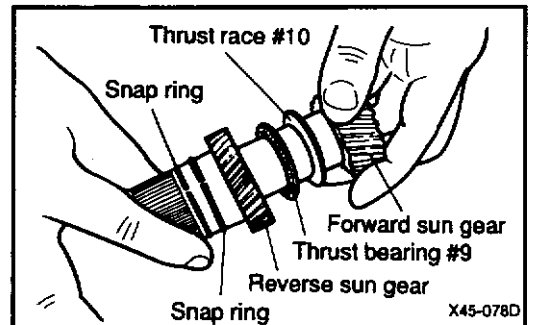


23. Assemble the reverse sun gear and the forward sun gear in the following order:

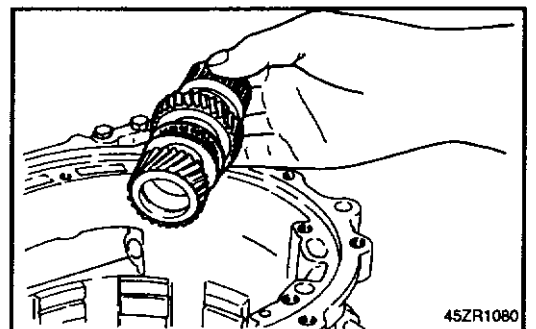
- 1) Attach the seal ring and the snap ring to the reverse sun gear. When attaching, squeeze the seal ring as shown in the figure.
- 2) Attach thrust race #10 to the forward sun gear.
- 3) Attach thrust bearing #9 to the forward sun gear.



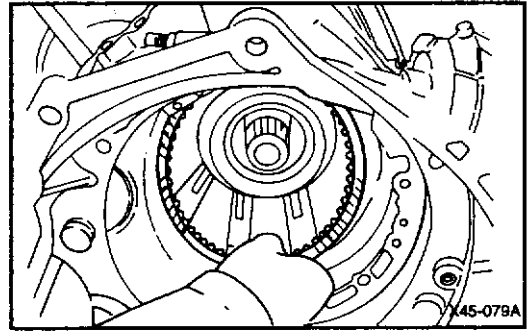
- 4) Assemble the reverse sun gear, and then the forward sun gear.



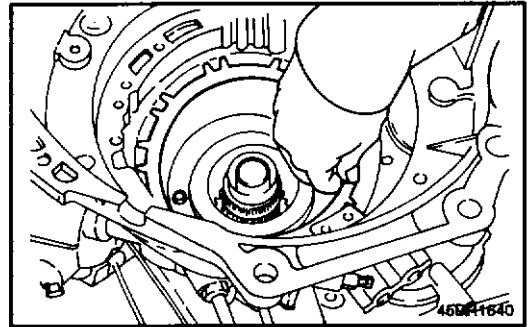
24. Install both of the previously assembled sun gears into the planetary carrier.



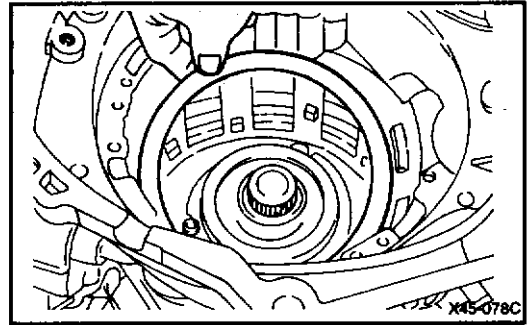
25. Install the brake disc and brake plate.



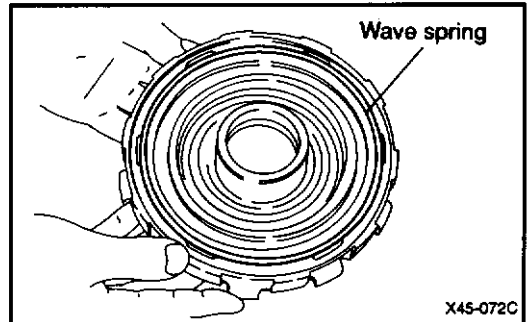
26. Install the selected brake pressure plate.



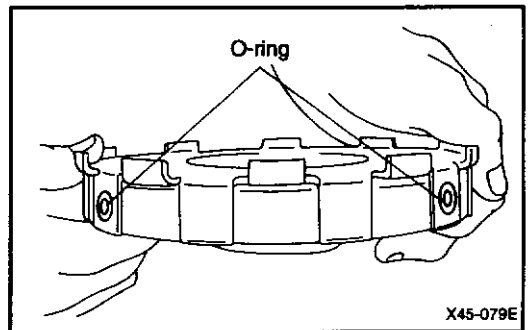
27. Install the return spring.



28. Apply a coating of petroleum jelly to the wave spring and attach it to the center support.



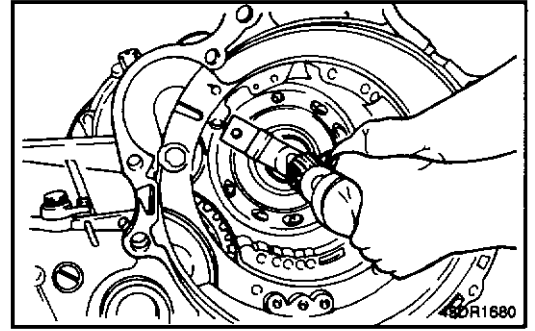
29. Install the two new O-rings to the center support.



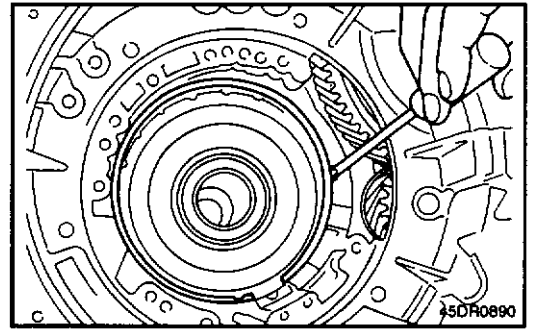
30. After applying a coating of ATF to the O-rings, install the special tool (09453-21310) to the center support, and install into the case.

**CAUTION**

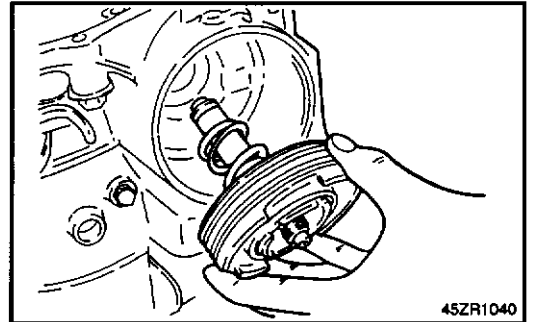
Be sure that the wave spring is not out of position



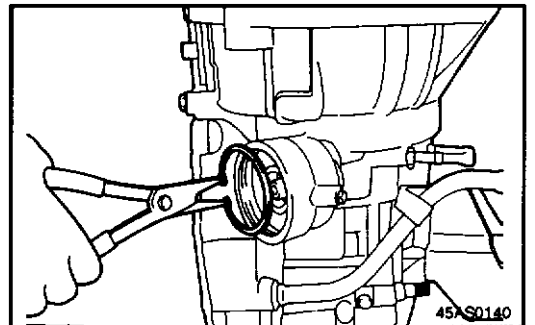
31. Install the snap ring.



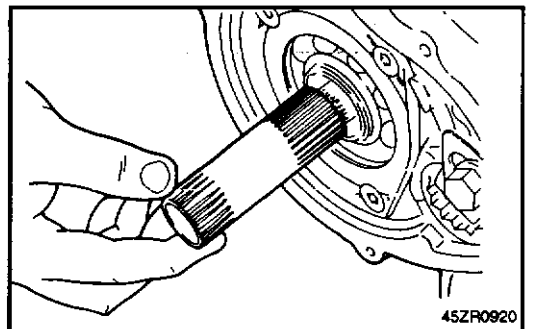
32. Assemble a new seal ring (large diameter) and D-ring (small diameter) to the kickdown servo piston, and install a new O-ring in the groove around the sleeve; then assemble the kickdown servo spring, piston and sleeve in the transaxle case.



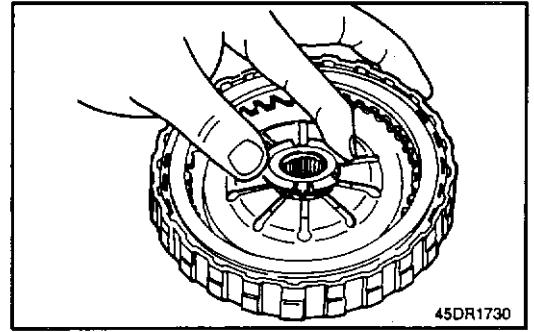
33. Press the kickdown servo and sleeve, and install the snap ring.



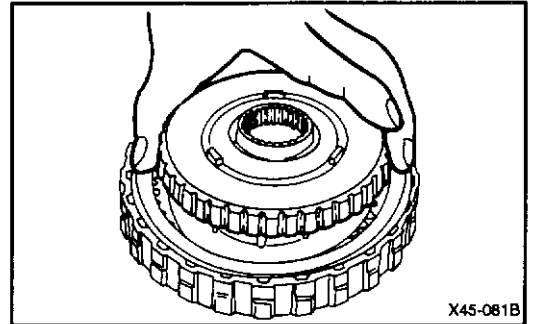
34. Install the end clutch shaft. Be sure to install the longer spline toward the front as shown.



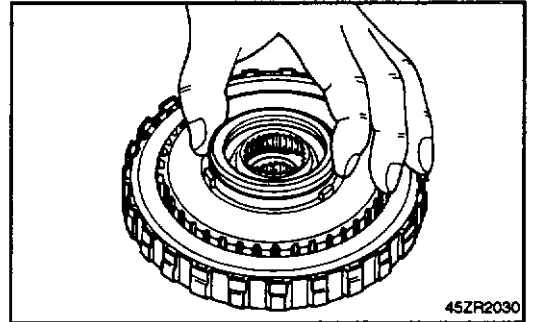
35. Fit the thrust washer toward the return spring at the end clutch side.



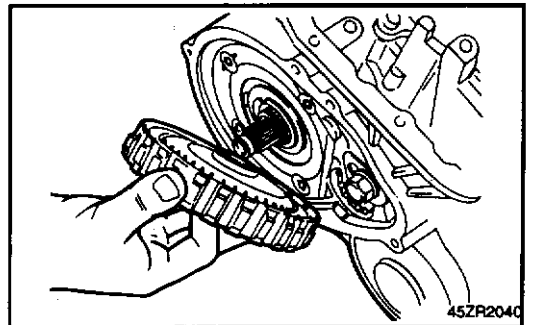
36. Install the end clutch hub to end clutch.



37. Attach, using petroleum, thrust bearing #13 to the end clutch hub.

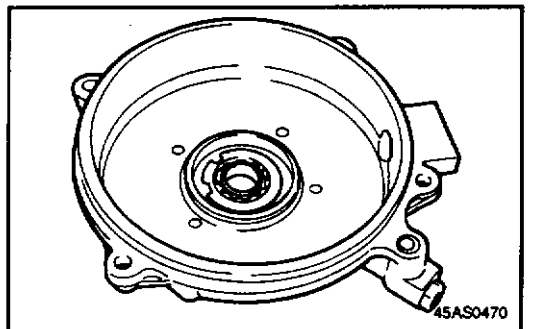


38. Install the end clutch assembly.



39. Attach a new O-ring and D-ring to the end clutch cover.

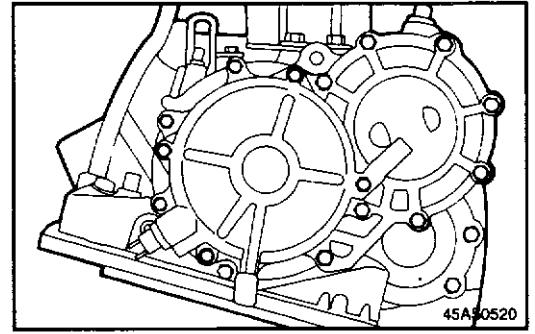
**CAUTION:**  
 Install so that the D-ring is not twisted.  
 Apply a sufficient amount of automatic transaxle fluid to the bearing.



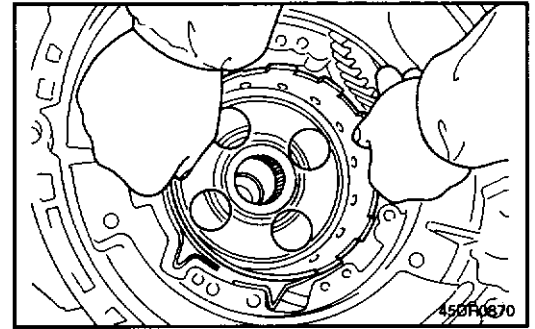
40. Attach the end cover and fasten it with four bolts.

**CAUTION:**

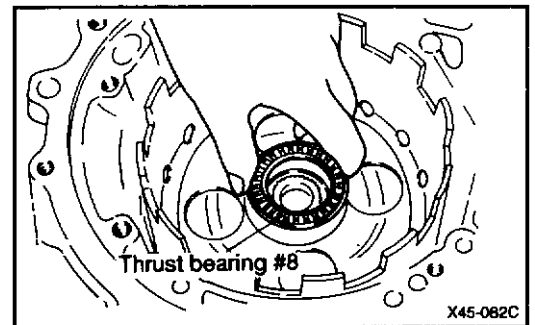
When installing the end cover, be sure the screw hole is correctly aligned. If the end cover is turned (after it is installed) in order to align with the screw hole, the O-ring and/or the D-ring may be twisted as result.



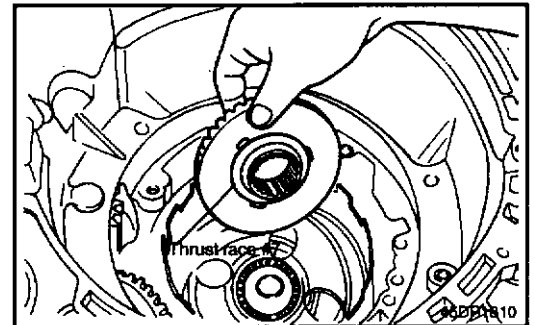
41. Install kickdown drum with its splines in mesh with the sun gear. Place the kickdown band on the kickdown drum and tighten the kickdown servo adjusting screw to keep the band in position.



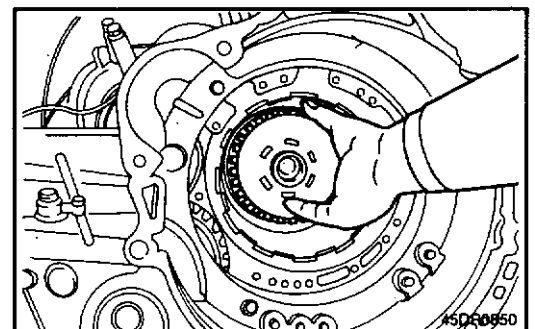
42. Apply a coating of petroleum jelly to thrust bearing #8, and then attach to the kickdown drum.



43. Apply a coating of petroleum jelly to thrust race #7, and then attach to the rear clutch hub.

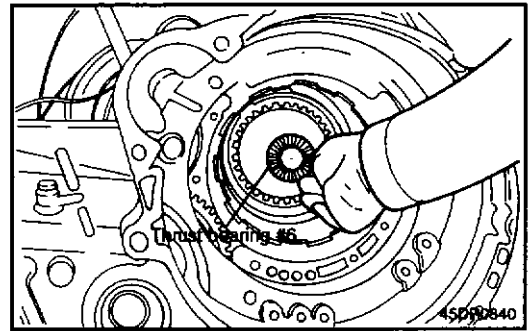


44. Install the clutch hub to the sun gear splines.

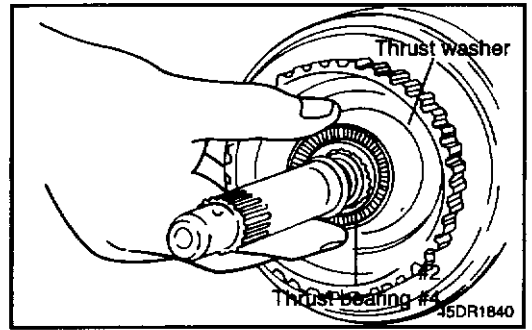




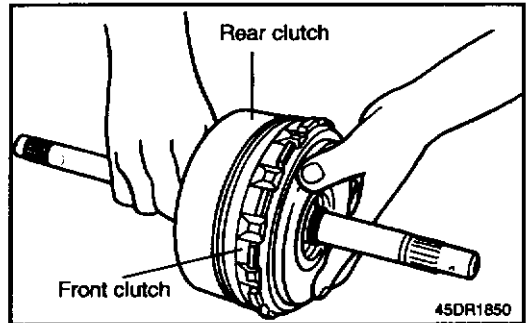
45. Attach thrust bearing #6 onto the hub using petroleum jelly.



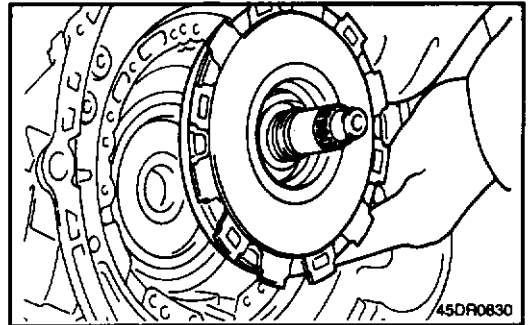
46. Apply a coating of petroleum jelly to thrust washer #2 and thrust bearing #4. Attach to the rear clutch assembly.



47. Combine the rear clutch and the front clutch assemblies.



48. Install the end clutch assembly.



49. If end play which was measured and recorded at disassembly is not within standard value, adjust to specification by selecting thrust race #3.

**Standard value: 0.3-1.0 mm (0.012-0.040 in.)**

When the thrust race is replaced with that of a different thickness, also replace thrust washer #1 located between the oil pump and front clutch. Use a washer of proper corresponding thickness corresponding to thrust race.

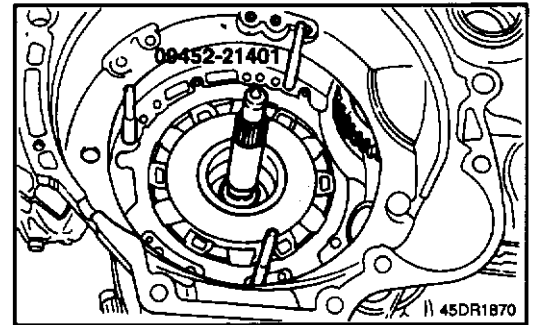
Find correct pair of thrust races (metal) and thrust washers (fiber) from following table.

Thrust washer #1 (fiber)	Thrust race #3 (metal)
Thickness mm (in.)	Thickness mm (in.)
1.4 (0.055)	1.0 (0.039)
1.4 (0.055)	1.2 (0.047)
1.8 (0.071)	1.4 (0.055)
1.8 (0.071)	1.6 (0.063)
2.2 (0.087)	1.8 (0.071)
2.2 (0.087)	2.0 (0.079)
2.6 (0.102)	2.2 (0.087)
2.6 (0.102)	2.4 (0.095)

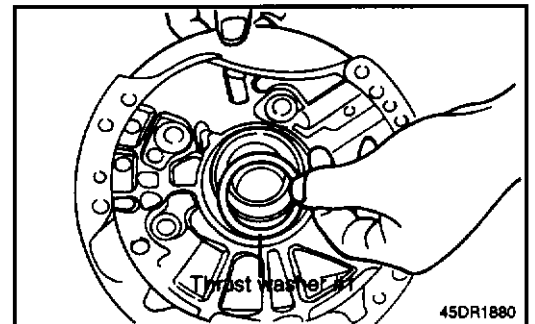
**Example:**

When a different thickness thick thrust race is selected, a corresponding thrust washer must be paired with it.

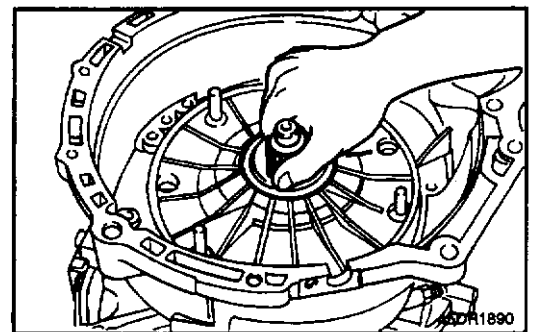
50. Attach the reused thrust washer #1, or the one selected in step 49 to the front clutch by using petroleum jelly.  
 51. Install the special tool (09452-21401) to the case.



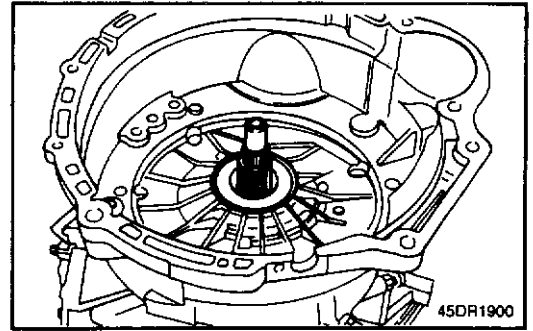
52. Attach the reused thrust race #3 or the one selected in step 50 to the oil pump by using petroleum jelly.



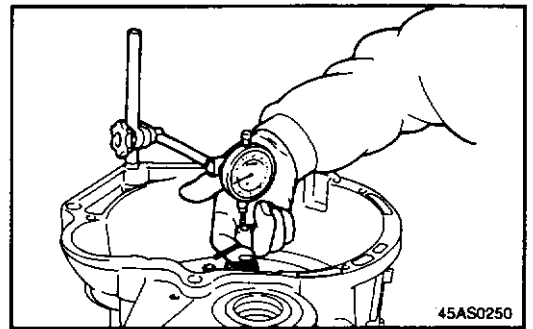
53. Install a new oil pump gasket and the oil pump assembly.



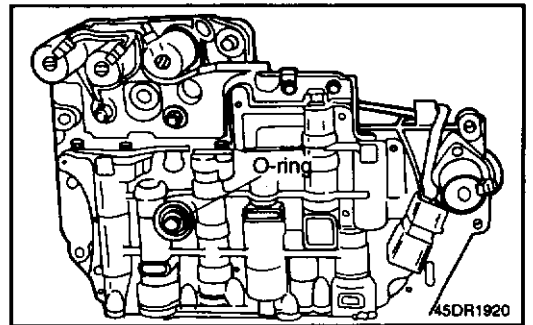
- 54. Install a new O-ring in the groove of the oil pump housing and lightly apply automatic transaxle fluid to the outside surface of the O-ring.
- 55. Install the oil pump assembly by tightening the six bolts evenly. When installing this oil pump assembly, be careful that the thrust washer remains in place.



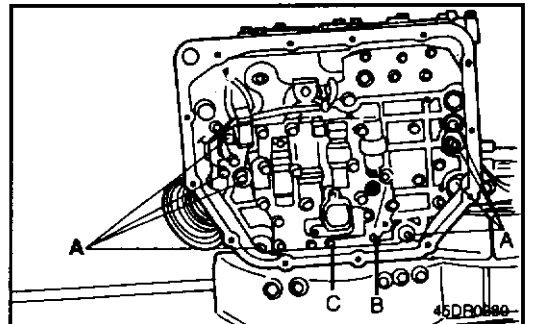
- 56. Check the input shaft end play. Readjust if necessary (see step 50).  
**Standard value: 0.3-1.0 mm (0.012-0.040 in.)**



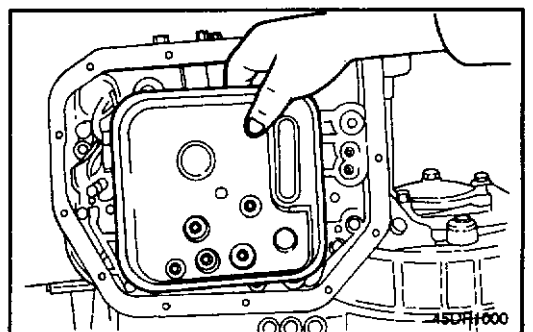
- 57. Install the O-ring at the center of the top of the valve body assembly (brake oil pressure passage). Install the valve body assembly to the case, fitting the detent plate (manual control shaft) pin in the slot of the manual valve.



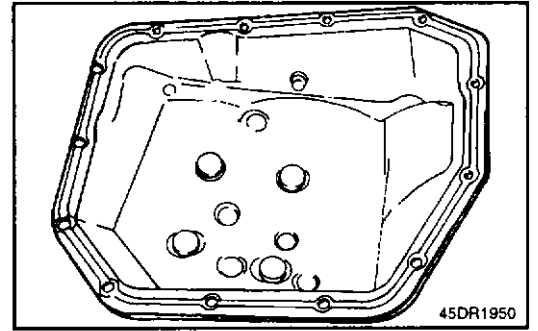
- 58. Replace the O-ring of the solenoid valve connector with a new one.
- 59. Tighten the valve body assembly mounting bolts to 10-12 Nm (100-120 kg.cm, 7-9 lb.ft)



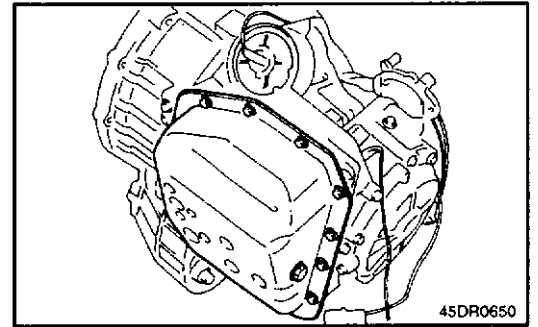
- 60. Install the oil filter. Tighten the four oil filter mounting bolts to 5-7 Nm (50-70 kg.cm, 4-5 lb.ft)



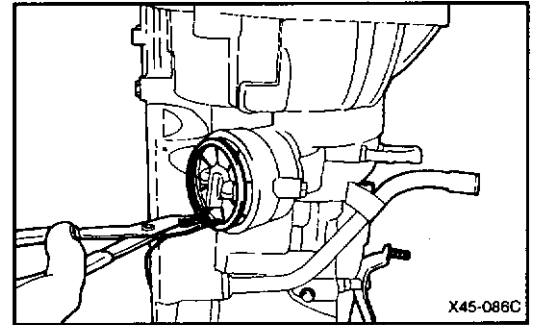
61. Install five magnets into the five depression provided in the oil pan.



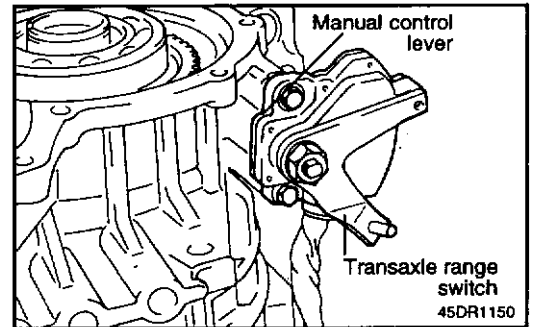
62. Install a new oil pan gasket and oil pan. Tightening 12 bolts to 10-12 Nm (100-120 kg.cm, 7-9 lb.ft)



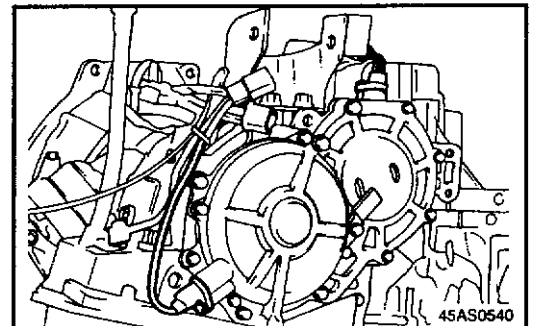
63. Install a new D-ring to the kickdown servo switch. Press into the case and secure using the proper snap ring.



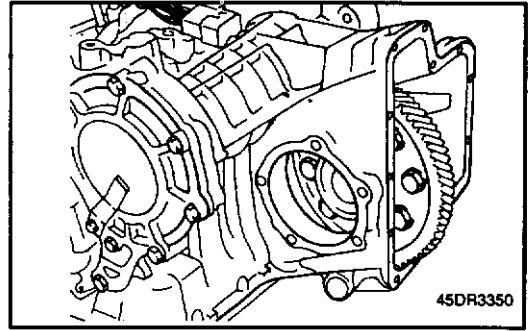
64. Install the transaxle range switch and manual lever. Adjust the transaxle range switch.



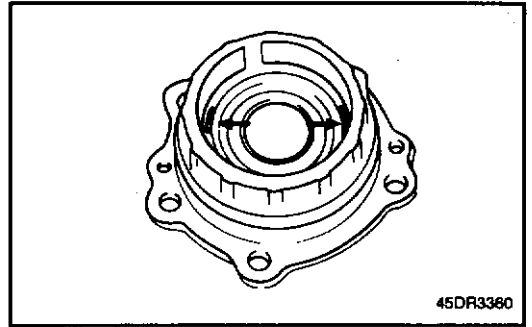
65. Install the pulse generator A and B



66. Install the differential assembly.

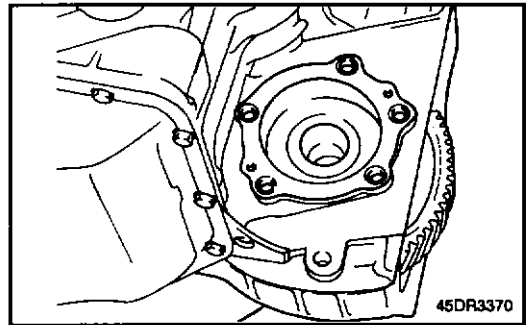


67. Place two pieces of solder, roughly 10 mm (0.4 in.) long and 3 mm (0.12 in.) in diameter, at the position shown on the differential bearing retainer outer race.



68. Install the differential bearing retainer and tighten the bolt to specified torque.

**Standard value : 43-55 Nm (430-550 kg.cm, 31-40 lb.ft)**



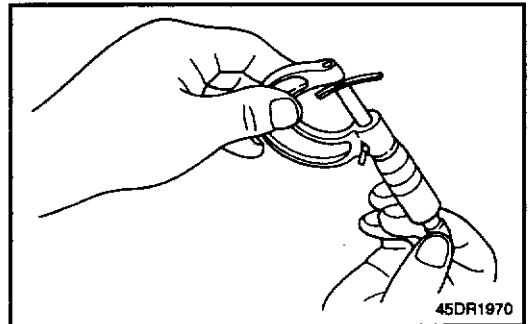
69. Remove the differential bearing retainer

70. Remove the crushed solder from the outer race of the differential bearing.

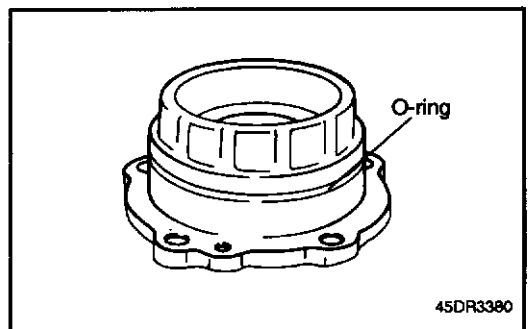
71. Using a micrometer, measure the thickness of the crushed solder.

Select and install a spacer so that the preload of the differential bearing will be the standard value.

**Standard : 0-0.15 mm (0-0.006 in.)**



72. Apply the ATF to the new installed O-ring and install the differential bearing retainer.



73. Install the differential bearing cap.

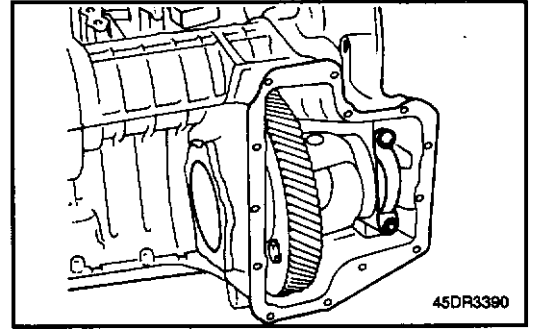
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**Tightening torque**

**Standard value :**

**60-80 Nm (600-800 kg.cm, 43-58 lb.ft)**

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74. Install the differential cover and the rear roll bracket with new gasket.

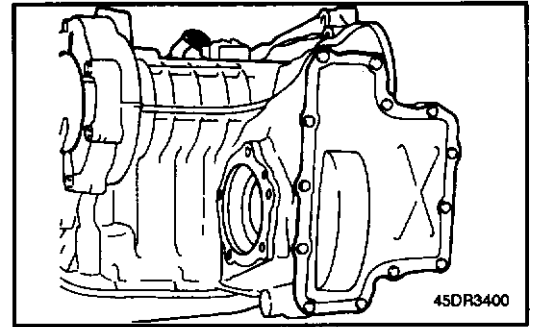
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**Tightening torque**

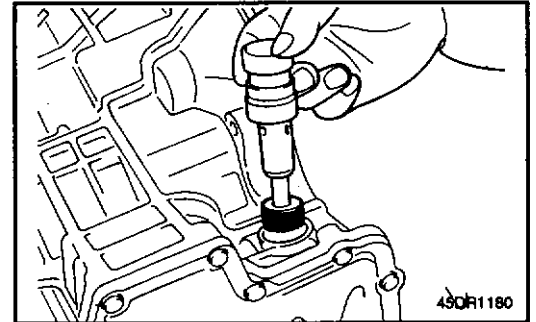
**Standard value :**

**10-12 Nm (100-120 kg.cm, 7-9 lb.ft)**

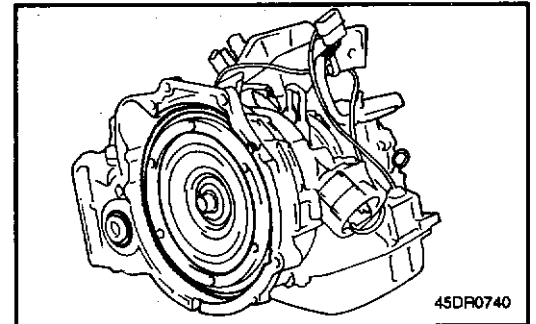
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75. Install the speedometer sleeve.

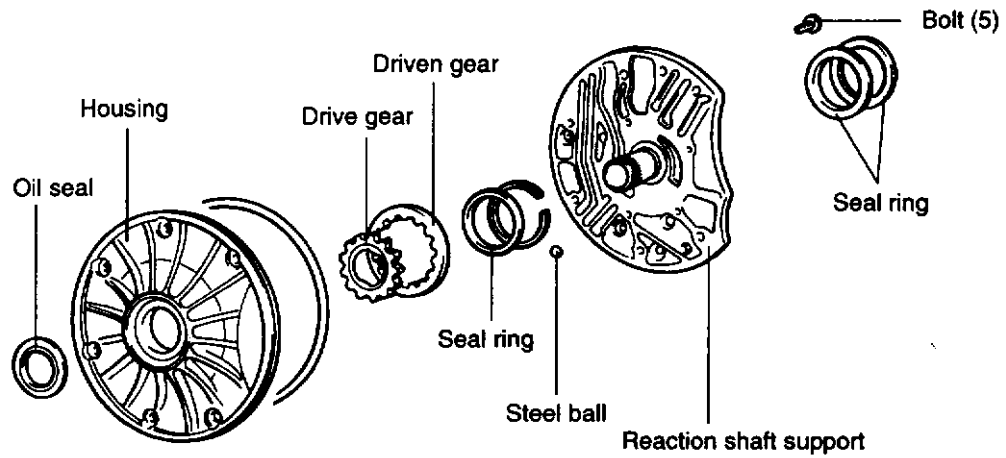


76. After applying automatic transaxle fluid to the outside surface of the oil pump-side cylindrical portion of the torque converter, install the torque converter carefully so as not to damage the seal lip. Make certain that the torque converter is in mesh with oil pump drive gear.
77. Measure the distance between the ring gear end and the converter housing end. The torque converter has been properly installed when measurement is approximately 12 mm (0.47 in.)



## OIL PUMP ASSEMBLY

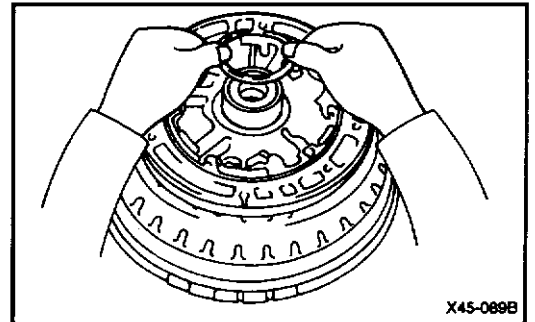
## COMPONENTS



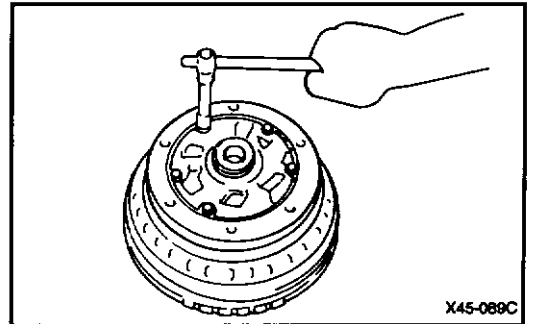
X45-089A

## DISASSEMBLY

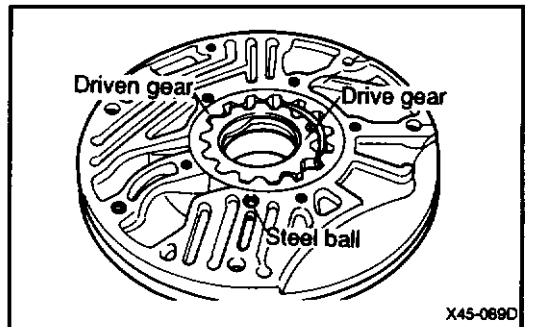
1. Place the oil pump body on the torque converter.
2. Remove the two seal rings and O-ring.
3. Remove five volts and remove reaction shaft support from housing.
4. Remove the oil pump body from the torque converter.
5. Make reassembly alignment marks on drive and driven gear.
6. Remove oil pump drive and driven gears from pump housing.
7. Remove the steel ball from housing.



X45-089B

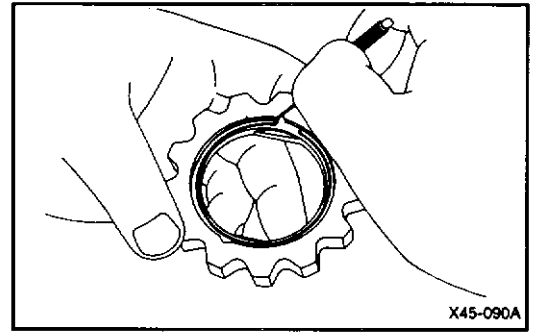


X45-089C



X45-089D

- Remove the snap ring and the oil seal from the oil pump drive gear.

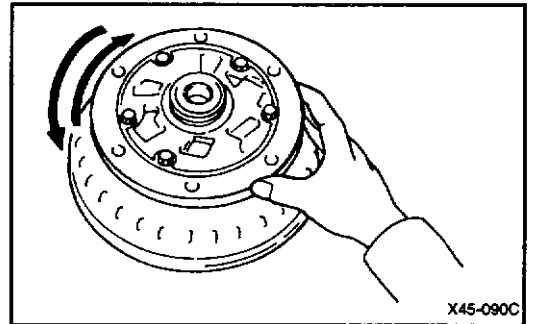
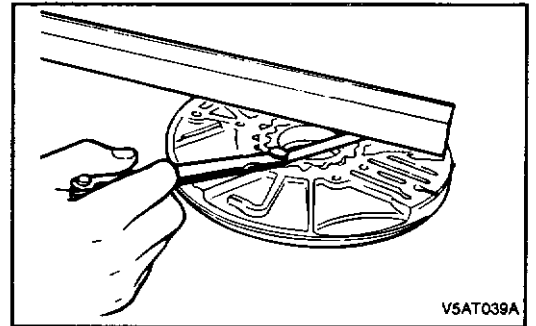


## INSPECTION

- Measure the side clearance of the oil pump gear. If the clearance exceeds the standard value, or if an inspection of the surface area (of the oil pump housing) that contacts the oil pump gear reveals indications of interference, replace the entire oil pump assembly.

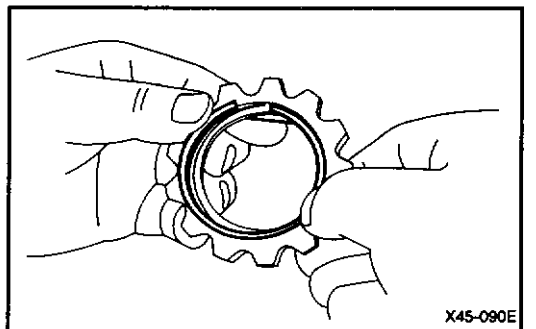
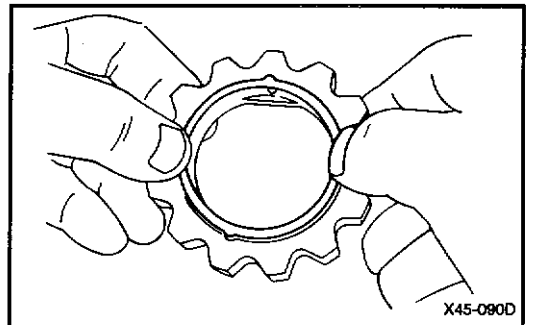
**Standard value: 0.02-0.048 mm (0.0008-0.0019 in.)**

- Check the surface of the reaction shaft support that contacts the oil pump gear. If there are indications of interference, replace the entire oil pump assembly.
- Check oil pump drive gear rotation.



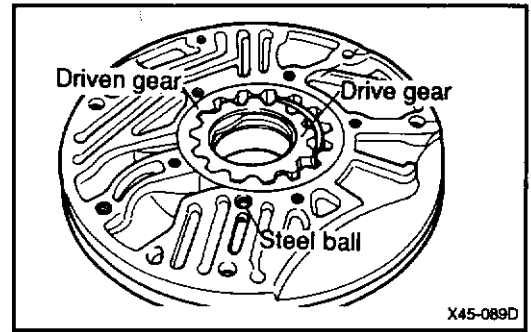
## ASSEMBLY

- Install the oil seal to the oil pump drive gear.
- Install the snap ring.

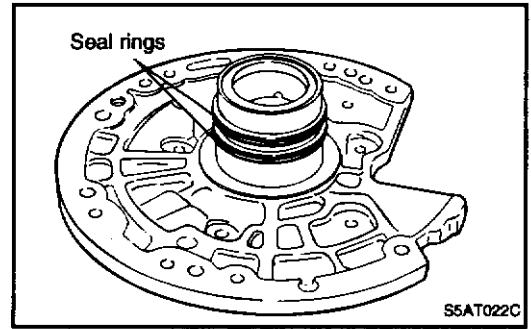




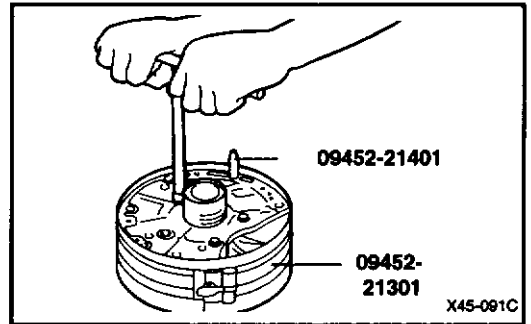
3. After immersing the drive and driven gears in automatic transaxle fluid, install them into pump housing. When reusing gears, install with mating marks properly aligned.
4. Fit a new O-ring into the groove at the inner circumference of the drive gear.
5. Install the steel ball in the hole as shown in the illustration.



6. Install the two seal rings, coated with automatic transaxle fluid, to the reaction shaft support.

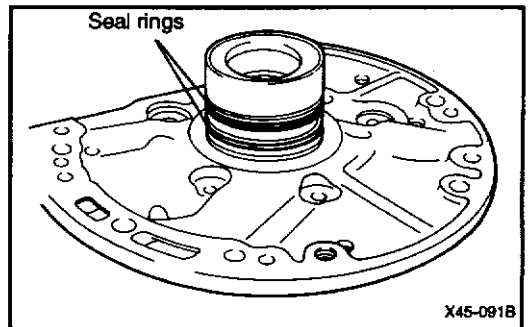


7. Make sure that oil pump gear turns freely.
8. Install a new O-ring in the groove provided in the circumference of the pump housing and apply petroleum jelly to the circumference of the O-ring.
9. Loosely install the reaction shaft support on the pump housing. Tighten the five bolts fingertight.
10. With the reaction shaft support properly positioned on the pump housing, using special tools (09452-21401 09452-21301) tighten the five bolts to 10-12 Nm (100-120 kg<sup>cm</sup>, 7-9 lb<sup>ft</sup>).

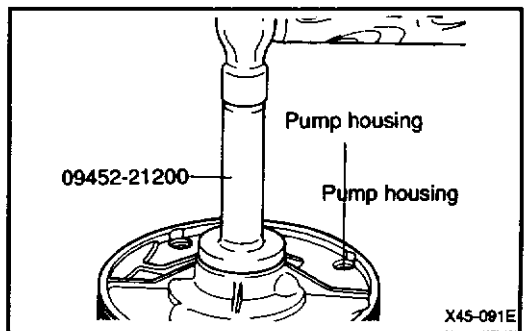


**OIL SEAL REPLACEMENT**

1. Pry off the pump housing oil seal using a screwdriver.

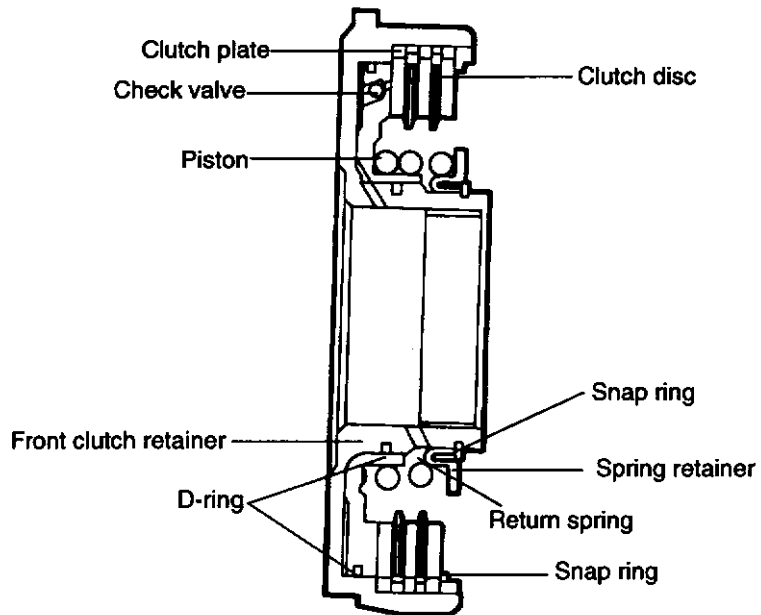
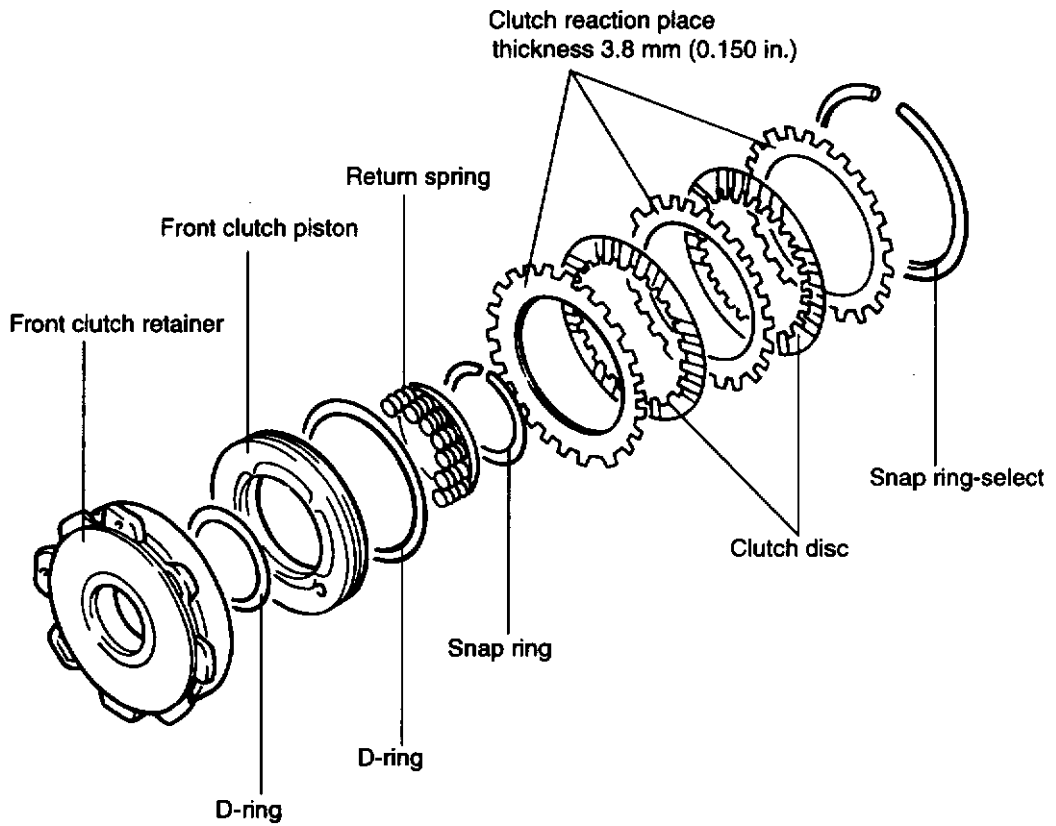


2. Using the special tool (09452-21200), install the oil seal to the pump housing. Apply a thin coat of automatic transaxle fluid to the lip of the oil seal before installation.



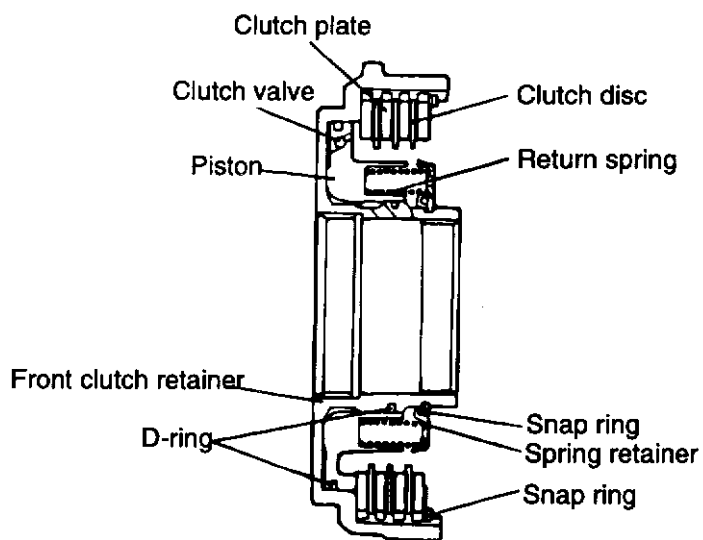
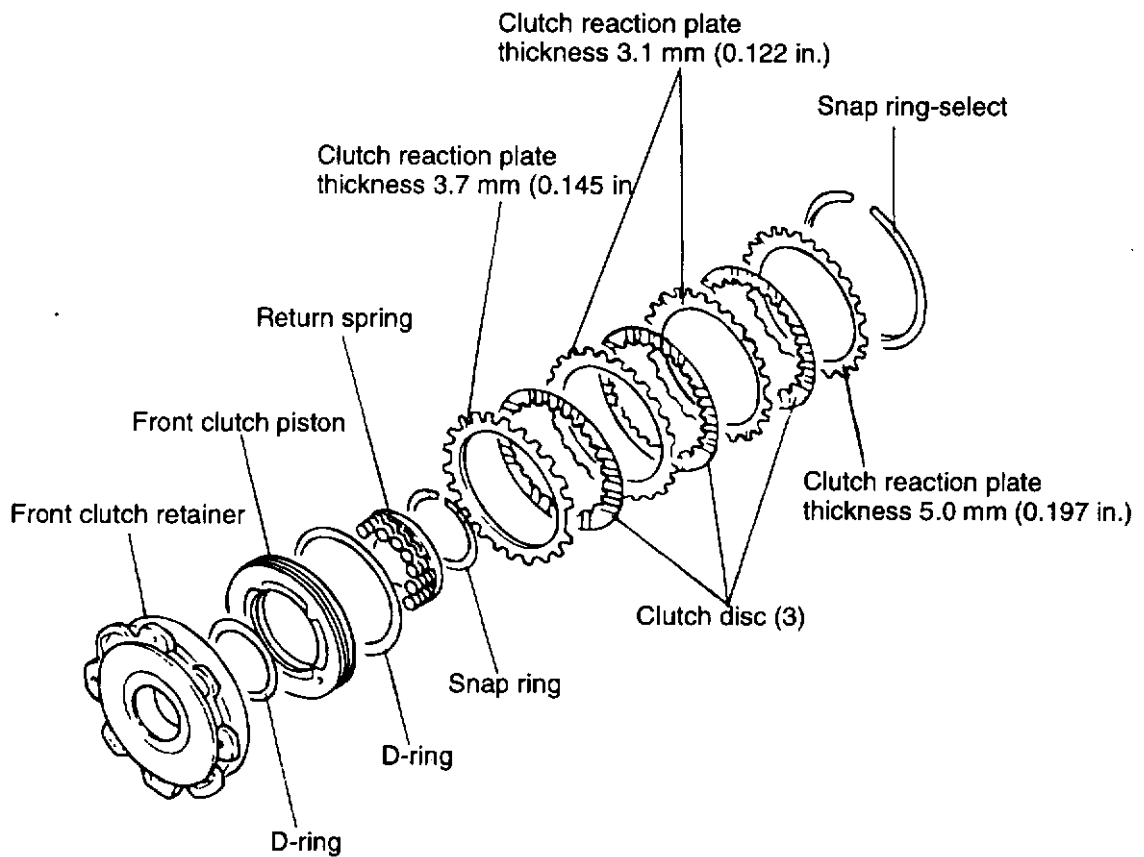
FRONT CLUTCH ASSEMBLY <A4AF2>

COMPONENTS



FRONT CLUTCH ASSEMBLY <A4BF1>

COMPONENTS



**DISASSEMBLY**

1. Remove the snap ring from the clutch retainer.
2. Take out the three clutch reaction plates and two clutch discs. If the clutch reaction plates and the clutch discs are to be reused, be sure not to change the installation order or direction.
3. With return spring compressed with the special tool (09453-24000), Spring Compressor, remove snap ring, then spring retainer and return spring.
4. Remove the piston from the retainer.
5. Remove the D-section rings from the inner and outer circumferences of the piston.

**INSPECTION**

1. Check to see if the sliding surface of the disc, plate are worn or burnt, if necessary, replace them.

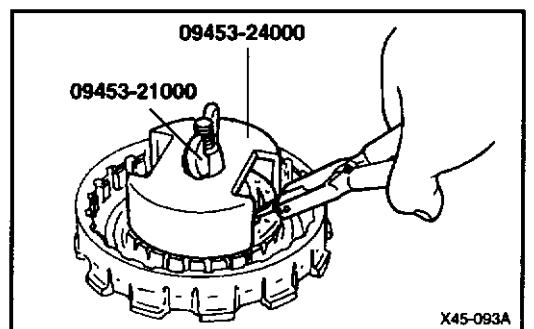
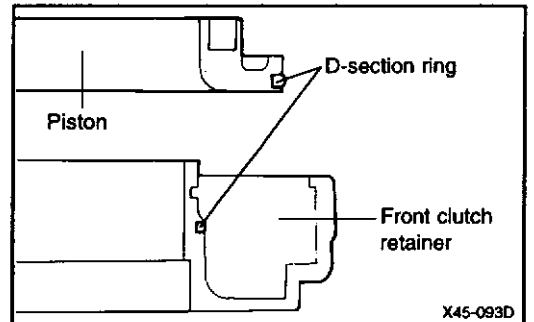
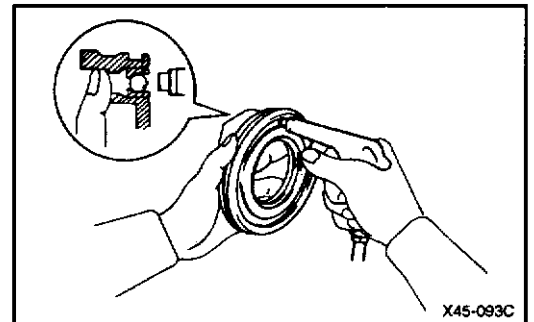
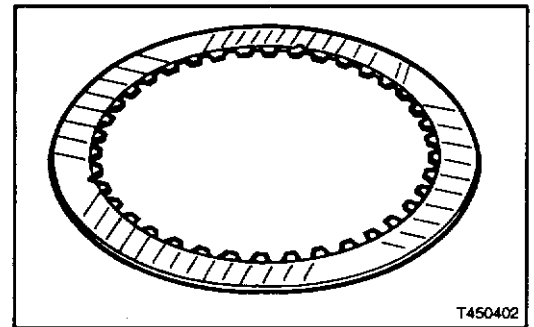
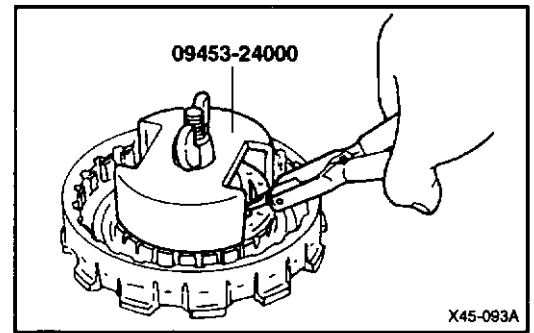
**NOTE:**

**If the lining of the disc is peeling off, replace all discs.**

2. Check that the check ball is free by shaking the piston.

**ASSEMBLY**

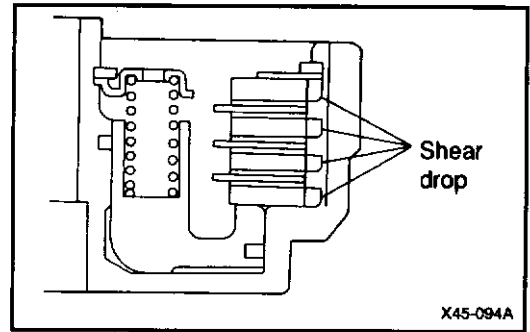
1. Install the D-section ring in the groove on the outside surface of the piston with its round side out. Install another D-section ring to the front clutch retainer.
2. Apply automatic transaxle fluid to the outside surface of the D-section rings. Then push the piston into front clutch retainer by hand.
3. Install the return spring and spring retainer.
4. Compress the return spring with the special tool and install the snap ring.



5. Install the three clutch reaction plates and two clutch discs. Prior to installation, apply automatic transaxle fluid to them.

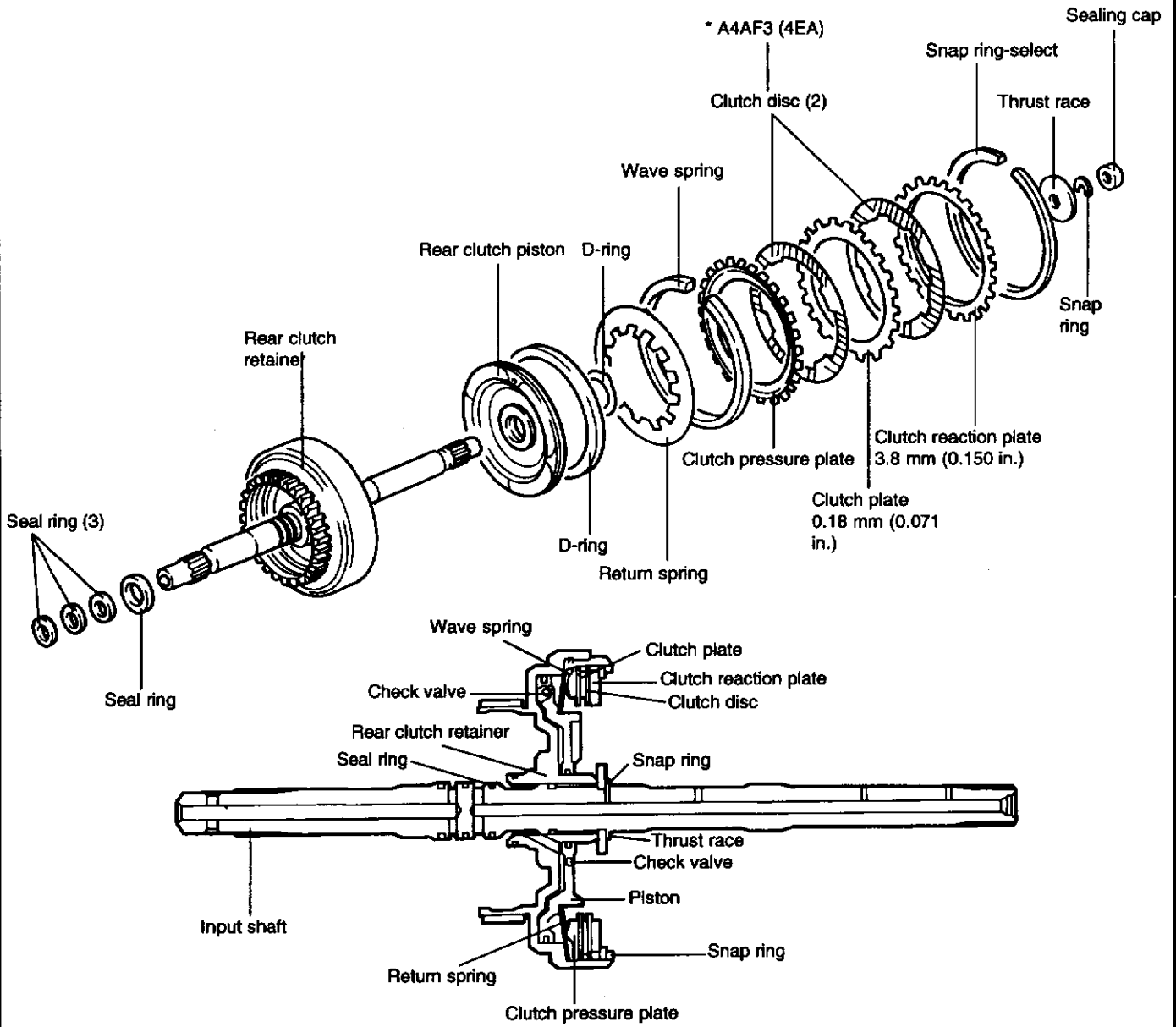
**Caution:**

1. When new clutch discs are used, they should be immersed in automatic transaxle fluid a minimum of two hours prior to installation.
  2. As you know, the color of current clutch disc turns to black when burnt. When the new clutch disc is immersed in ATF for two hours, its color also turns to black, which makes it difficult to identify if the clutch disc is normal or has been burnt. Therefore, care should be taken not to confuse or misuse the burnt clutch disc of current type and new type clutch discs immersed in ATF.
  3. The burnt clutch disc of new type should be identified by looking at the height difference of protruded section and base section.
6. After installing the snap ring, check to see if there is a 0.4-0.6 mm (0.0157-0.0236 in.) clearance between the snap ring and the clutch reaction plate.  
To check clearance, hold the entire circumference of the clutch reaction plate down with 50 N (11 lb.) force. If clearance is out of specification, adjust the clearance by selecting the proper snap ring.



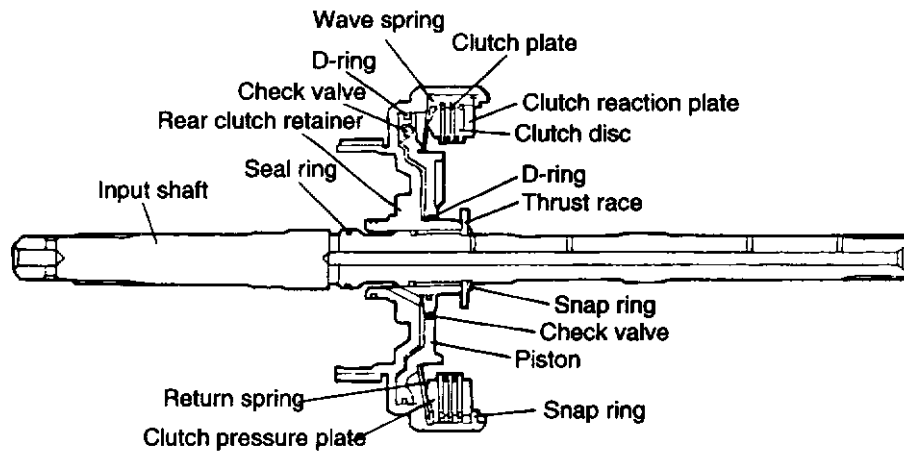
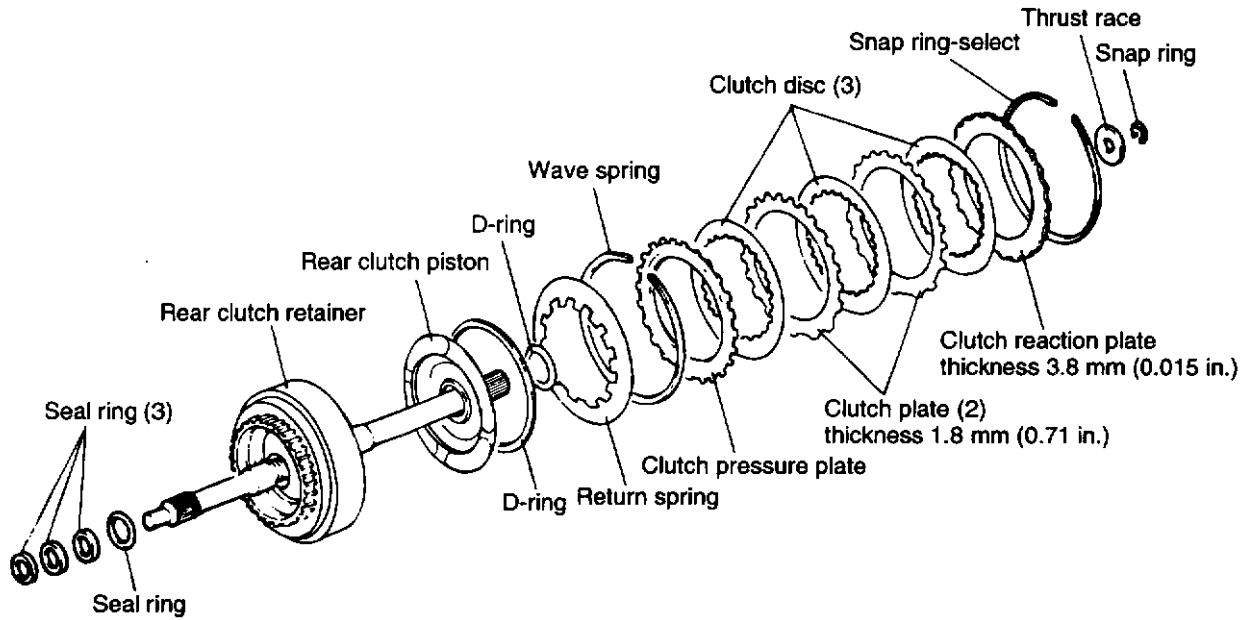
REAR CLUTCH ASSEMBLY <A4AF2>

COMPONENTS



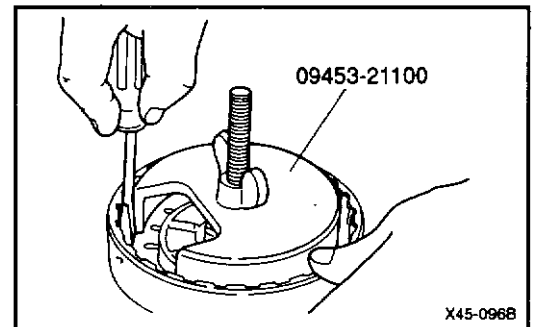
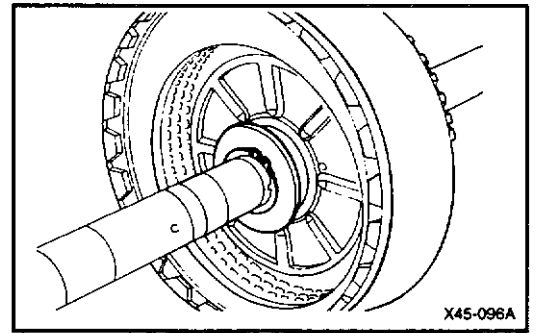
REAR CLUTCH ASSEMBLY <A4BF1>

COMPONENTS



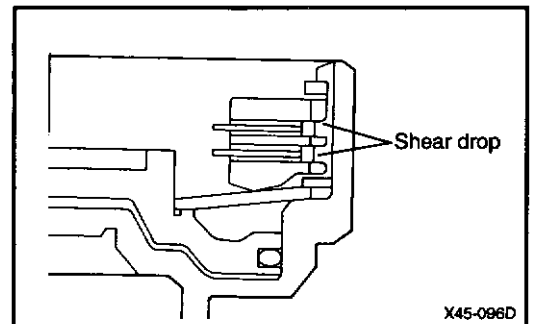
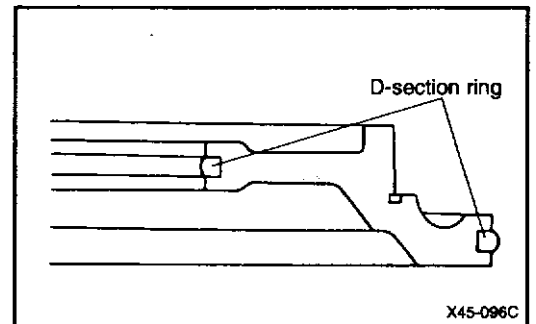
## DISASSEMBLY

1. Remove the snap ring and thrust race.
2. Remove the input shaft from the rear clutch retainer.
3. Remove the snap ring from the clutch retainer.
4. Remove the clutch reaction plate, three clutch plates, two clutch discs and clutch pressure plate from the retainer.
5. Compress the return spring by using the spring compressor.
6. Using a screwdriver, remove the wave spring.
7. Remove the return spring and piston.
8. Remove the two D-section rings from the piston.

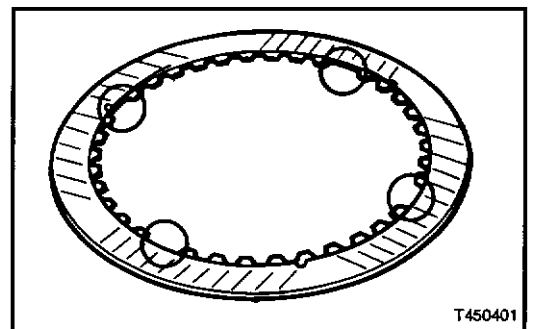


## ASSEMBLY

1. Install the D-section rings in the grooves in the outside and inside surfaces of the piston.
2. After applying automatic transaxle fluid to the outside surface of the D-section rings, push the piston into the rear clutch retainer by hand.
3. Install the return spring on the piston.
4. Compress the return spring with the snap ring, by pushing down with a screwdriver and setting the snap ring in its groove.
5. Install clutch pressure plate, two clutch discs, clutch plate and clutch reaction plate into the rear clutch retainer.  
When the reaction plate, clutch plate and clutch disc are removed, reinstall them by reversing the order of disassembly. Prior to installing, apply automatic transaxle fluid to the plates and discs.

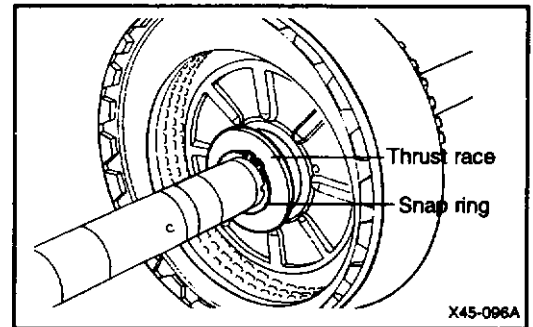
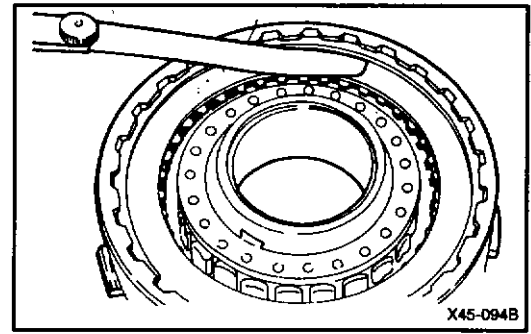
**Caution:**

1. **When new clutch discs are used, immerse them in automatic transaxle fluid for a minimum of two hours prior to installation**
2. **The four splines of disc are deleted to discriminate the rear clutch disc from front clutch disc.**
3. **If the lining of the disc is peeling off, replace all discs.**
4. **As you know, the color of current clutch disc turns to black when burnt. When the new clutch disc is immersed in ATF for two hours, its color also turns to disc is normal or has been burnt. Therefore, care should be taken not to confuse or misuse the burnt clutch disc of current type and new type clutch discs immersed in ATF.**
5. **The burnt clutch disc of new type should be identified by looking at the height difference of protruded section and base section.**



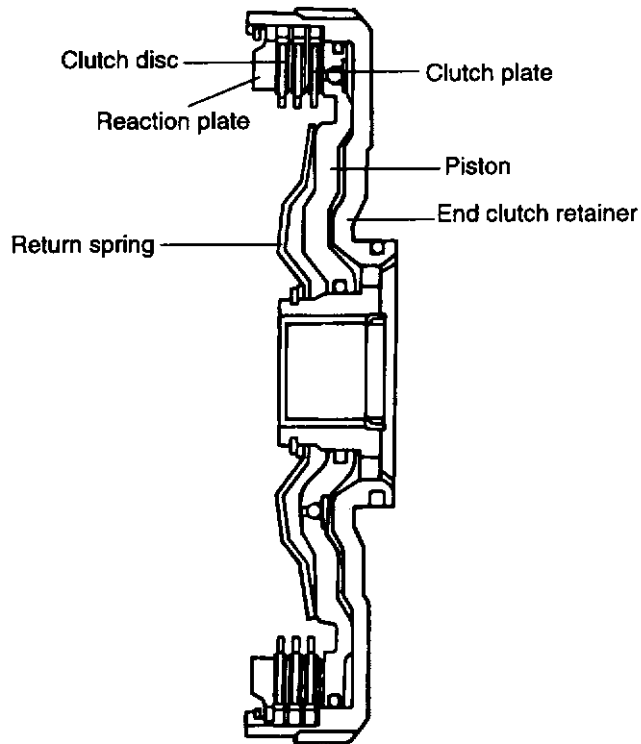
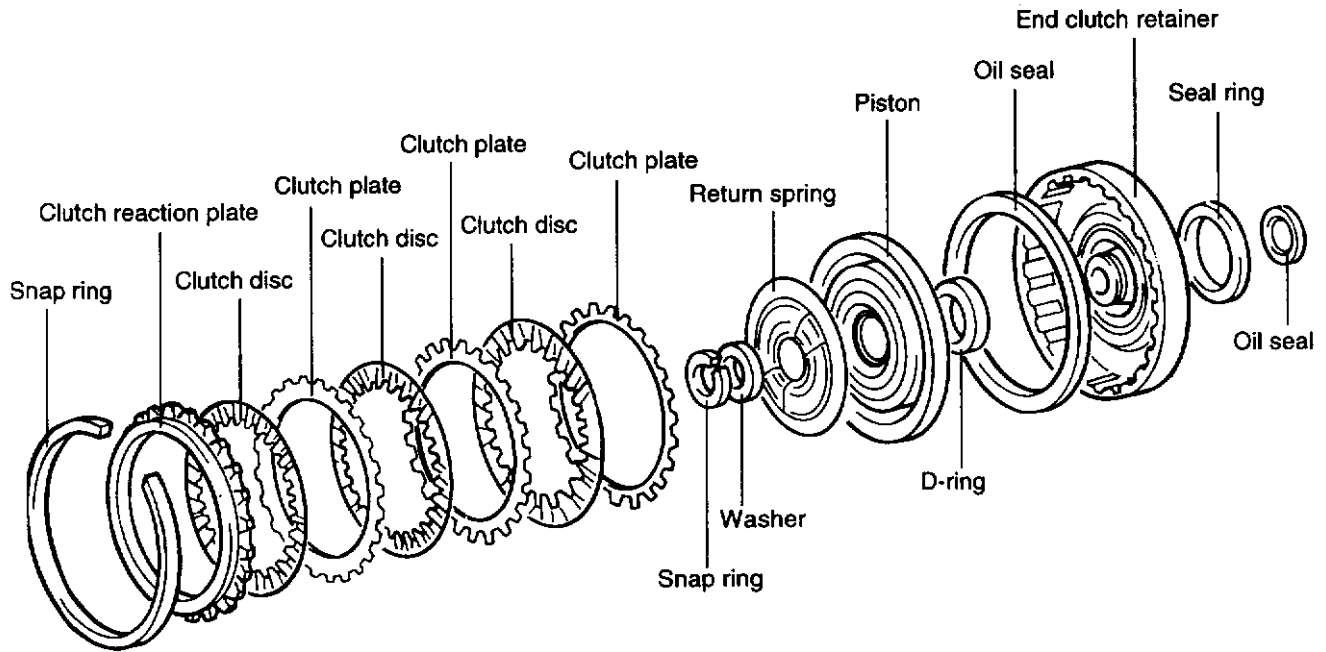


6. Install the snap ring. Check to see that the clearance between the snap ring and clutch reaction plate is 0.3-0.5 mm (0.0118-0.0197 in.). To check clearance, hold the entire circumference of the clutch reaction plate down with 50N (11 lbs.) force. If clearance is out of specification, adjust by selecting the proper snap ring. Snap rings are the same as those used for the front clutch.
7. Insert the input shaft into the clutch retainer.
8. Install the thrust race, and snap ring.
9. Install the three seal rings to the grooves in the input shaft.



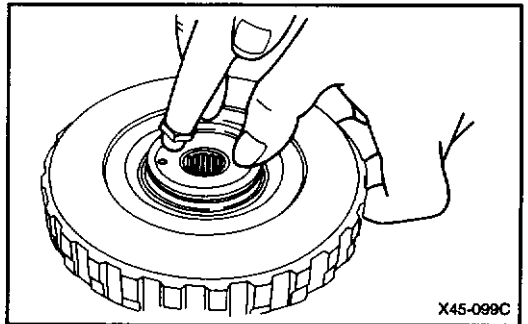
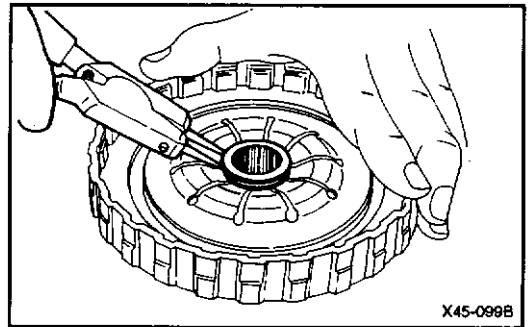
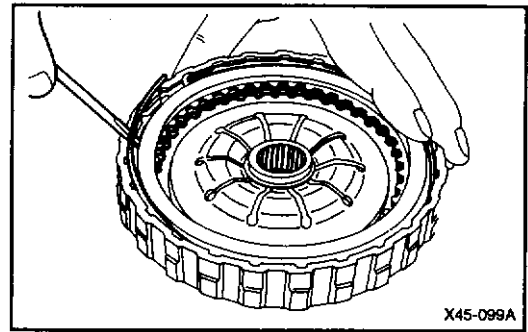
END CLUTCH ASSEMBLY

COMPONENTS



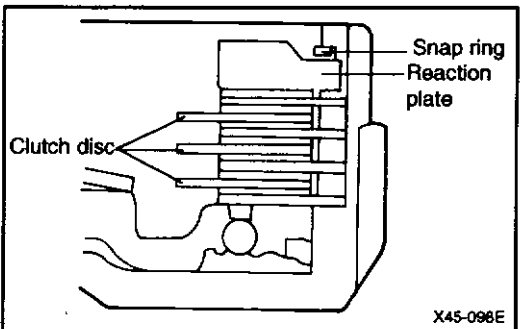
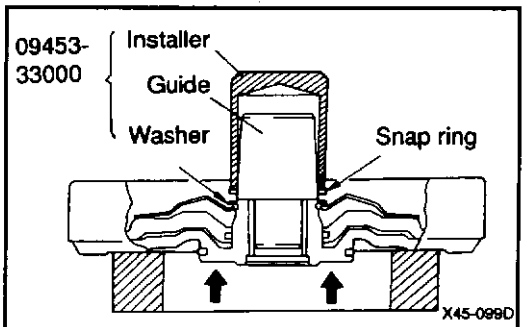
**DISASSEMBLY**

1. Remove the snap ring, clutch reaction plate, clutch disc, and the clutch plate. If the disc and plate are reused, note the installation order and direction when they are disassembled.
  
2. Remove the snap ring with snap-ring pliers, and then remove the washer and return spring.
  
3. Remove the piston. If it is difficult to remove, face the piston side downward, and, with the retainer on a base, blow air in through the oil passage on the rear surface.
4. Remove the seal ring from the retainer.
5. Remove the two D-section rings and oil seal from the piston.



**ASSEMBLY**

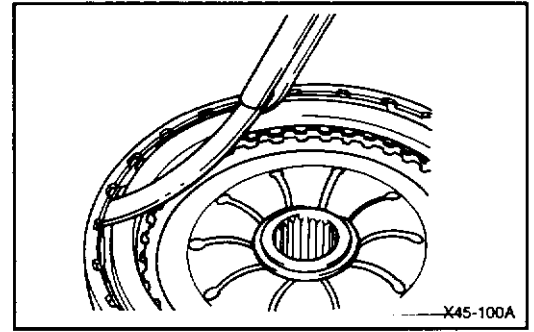
1. Install the D-section rings and oil seal in the piston inner and outer grooves.
2. After applying a coating of automatic transaxle fluid to the D-section rings outer circumference, manually press the piston into the end clutch retainer.
3. Install the return spring and washer.
4. After fitting a new snap ring into the guide of the special tool (09453-33000), install the retainer. Push the snap ring as far down on the guide as possible. Attach the installer and press until the snap ring enters the groove. Do not press more than necessary. The places indicated by arrows in the illustration (center projections) are not to be supported.
5. Install the clutch plate, clutch disc and reaction plate to the end clutch retainer. If the reaction plate, clutch plate and clutch disc are reused, install them in the same order they were disassembled. Apply a coating of automatic transaxle fluid.



**Caution**

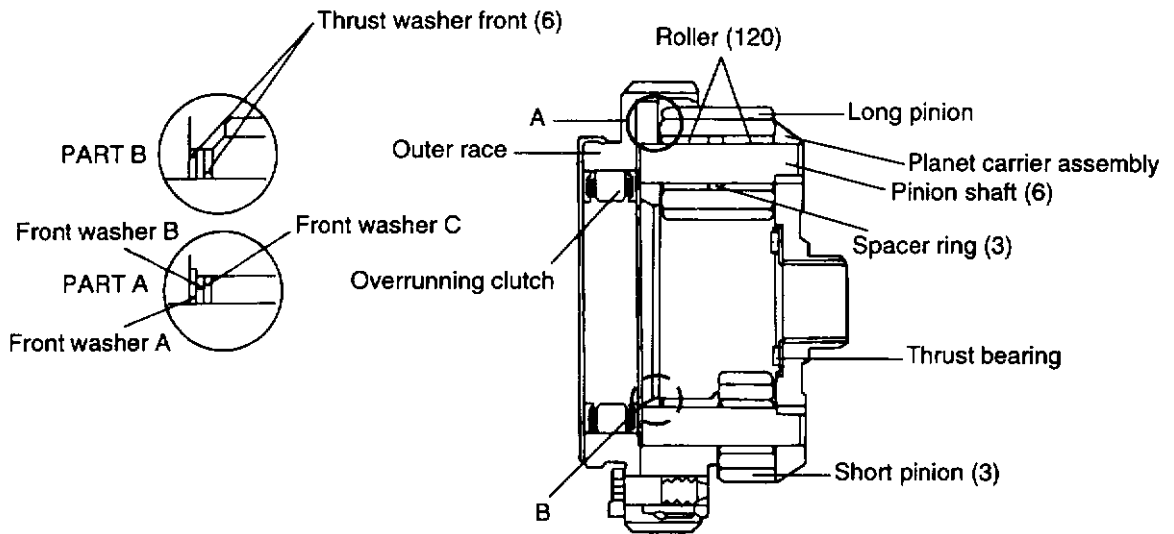
**When a new clutch disc is used, soak it in automatic transaxle fluid for 2 hours before using it.**

6. Install the snap ring. Check that the clearance between the snap ring and the clutch reaction plate is 0.4-0.65 mm (0.016- 0.026 in.).  
To check the clearance, hold the circumference of the clutch reaction plate down with 50N (11 lb.) force.  
If clearance is out of specifications, adjust the clearance by selecting the proper snap ring.



PLANETARY GEAR SET

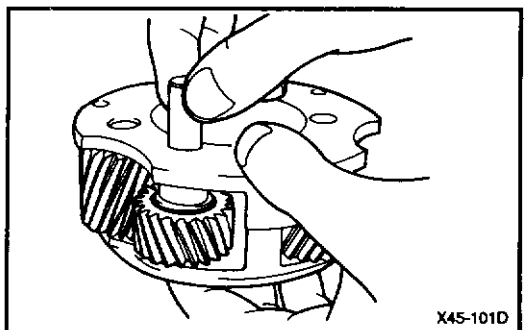
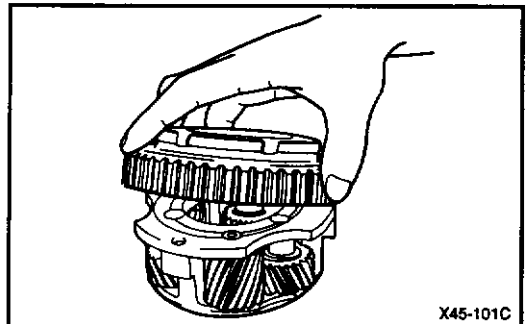
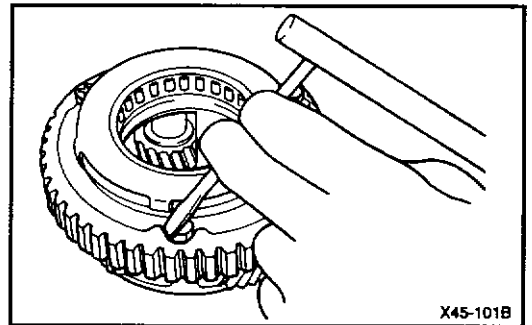
COMPONENTS



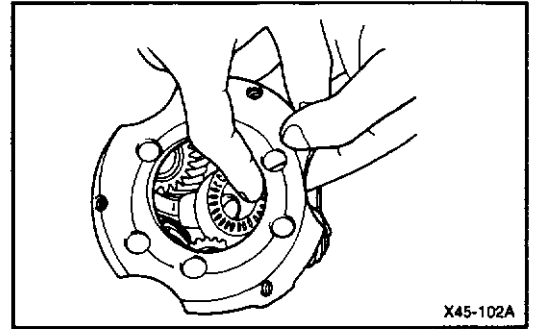
X45-101A

DISASSEMBLY

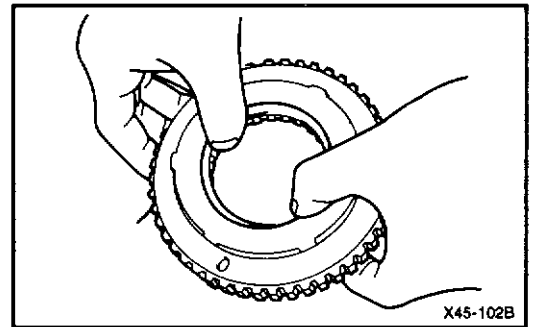
1. Remove three bolts.
2. Remove the overrunning clutch outer race assembly. Remove the overrunning clutch end plate.
3. Remove the shaft of only one short pinion.
4. Remove the spacer bushing and two front thrust washers.
5. Remove the pinion. Do not drop the 17 roller bearings in the pinion.



6. Remove the thrust bearing.

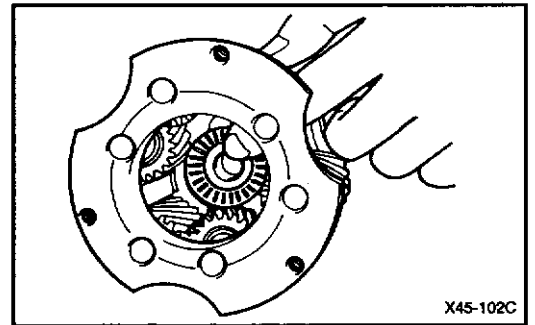


7. Push the overrunning clutch out of the outer race by hand.

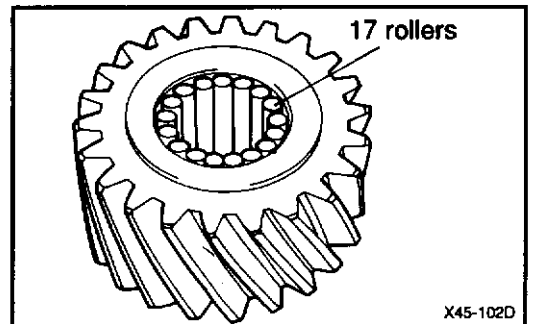


## REASSEMBLY

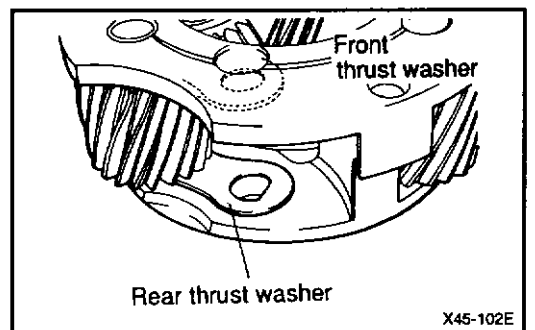
1. Install the thrust bearing in the carrier. Be sure that it fits correctly in the carrier.



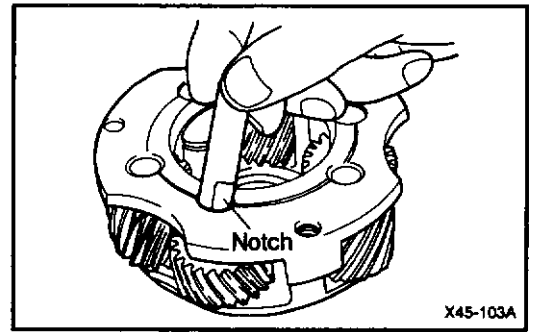
2. Apply a generous amount of petroleum jelly to the inside of the short pinion to hold the 17 rollers bearings in place.



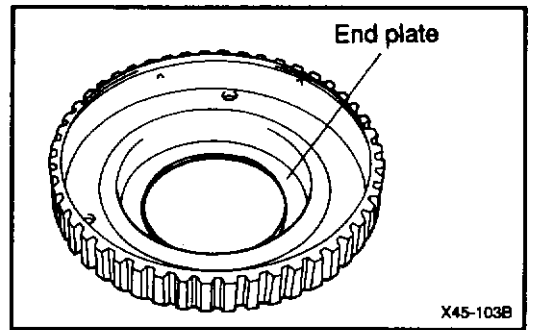
3. Line up the holes in the rear thrust washer and front thrust washer with the shaft of the carrier.  
4. Install the short pinion, spacer bushing and two front thrust washers and align the holes. Use care not to allow the rollers to move out of position.



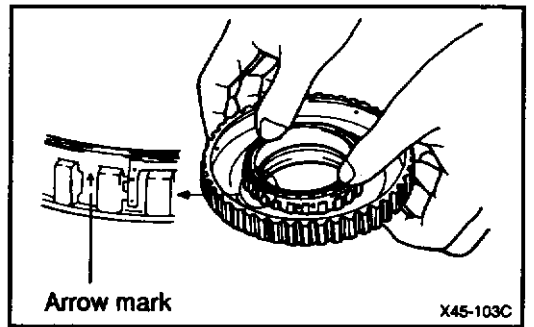
5. Insert the pinion shaft. Be sure that the flattened end of the pinion shaft fits properly into the hole in the rear thrust plate when the pinion shaft is inserted.



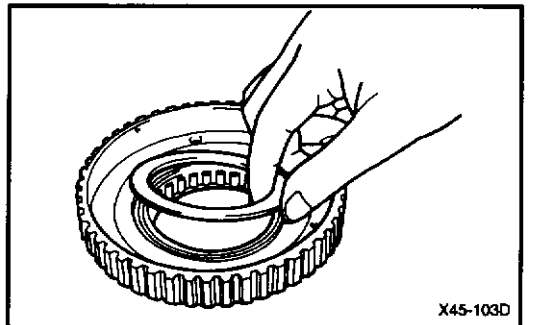
6. Install the end plate in the outer race.



7. Press the overrunning clutch into the outer race. Be sure that the arrow on the outside circumference of the cage is pointing upward as shown in the illustration when the overrunning clutch is installed.

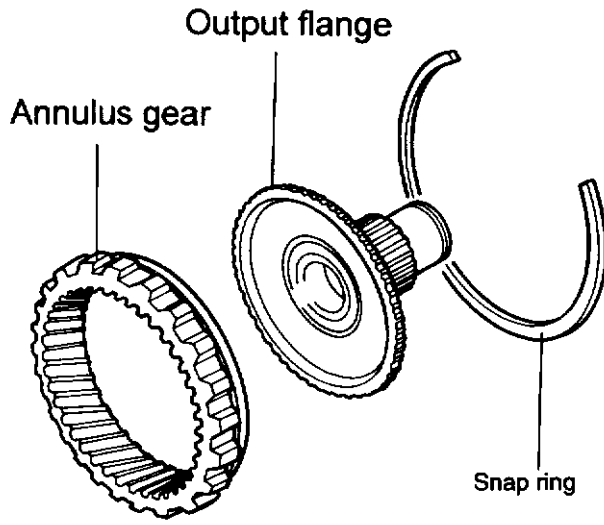


8. Apply petroleum jelly to the overrunning clutch end plate to retain it inside the overrunning clutch. Install the end plate in the clutch.



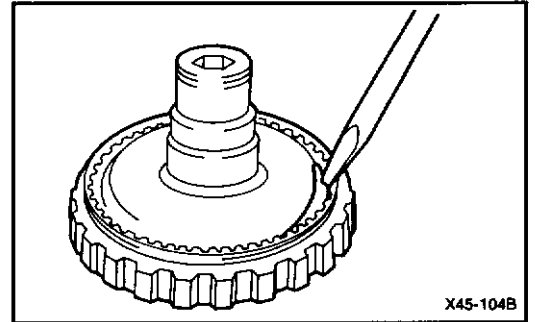
# ANNULUS GEAR AND OUTPUT FLANGE

## COMPONENTS



X45-104A

1. Remove the snap ring from the rear of the output flange.

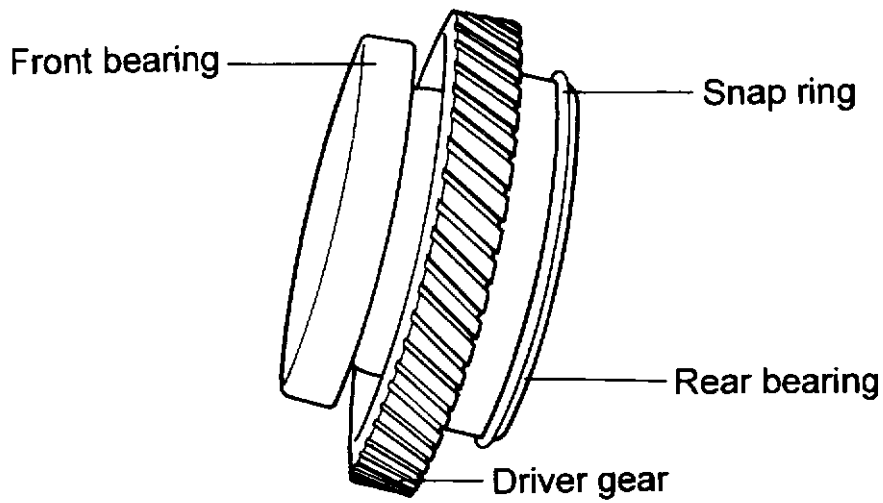


X45-104B



## TRANSFER DRIVE GEAR ASSEMBLY

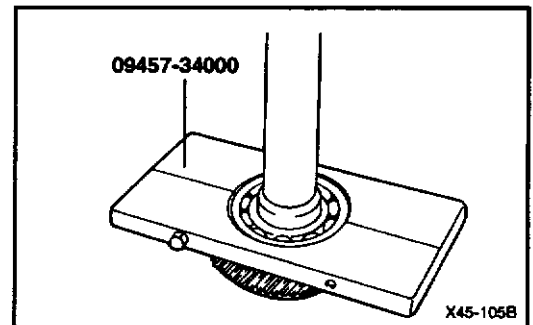
## COMPONENTS



X45-105A

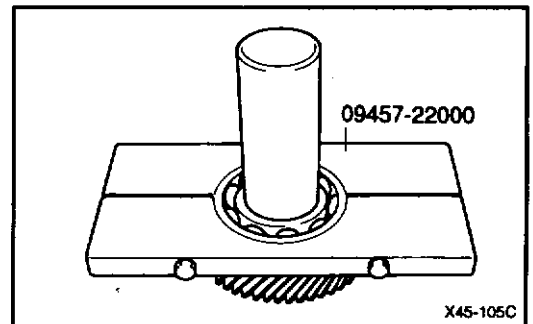
## DISASSEMBLY

1. Using special tool (09457-34000), pull off the front bearing from transfer drive gear.



X45-105B

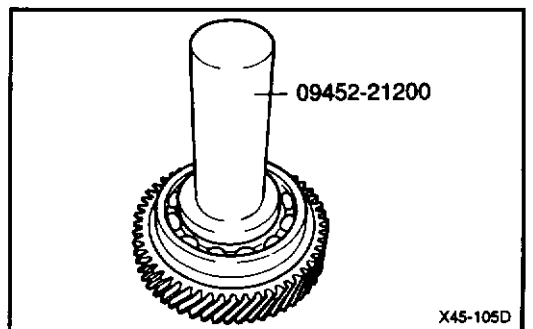
2. Using special tool (09457-22000), pull off the rear bearing from transfer drive gear.



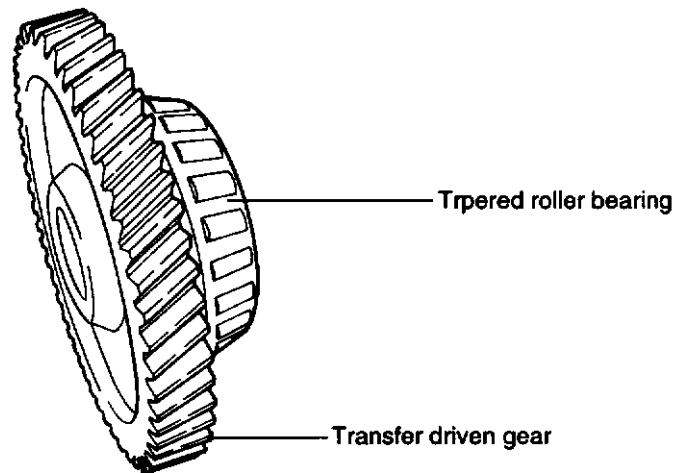
X45-105C

## REASSEMBLY

1. Using special tool (09452-21000), press the front bearing and the rear bearing onto the transfer drive gear.



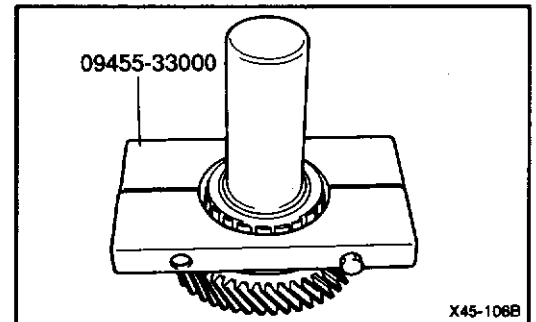
X45-105D

**TRANSFER DRIVEN GEAR ASSEMBLY****COMPONENTS**

X45-106A

**DISASSEMBLY.**

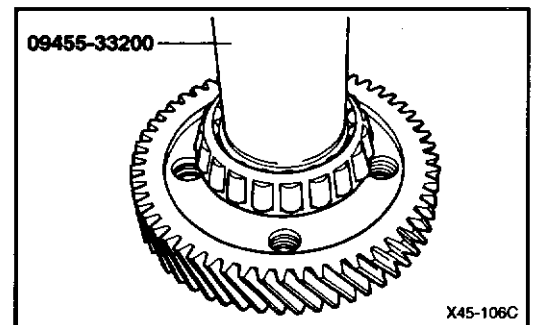
1. Using special tool (09455-33000), pull off tapered roller bearing from the transfer driven gear.



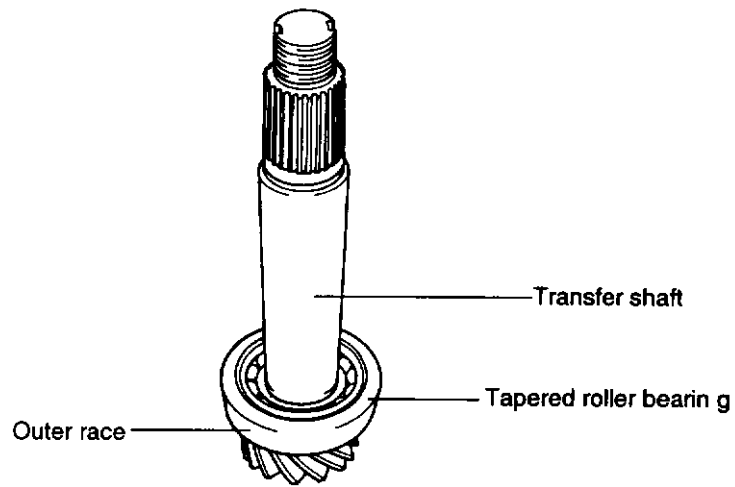
X45-106B

**REASSEMBLY**

1. Using special tool (09455-33200), press tapered roller bearing onto the transfer driven gear.



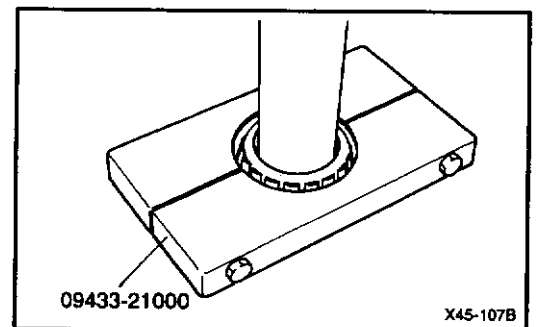
X45-106C

**TRANSFER SHAFT ASSEMBLY****COMPONENTS**

X45-107A

**DISASSEMBLY**

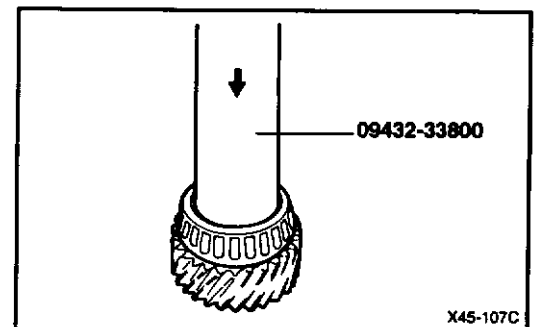
1. Using special tool (09433-21000), remove the bearing from the transfer shaft.



X45-107B

**REASSEMBLY**

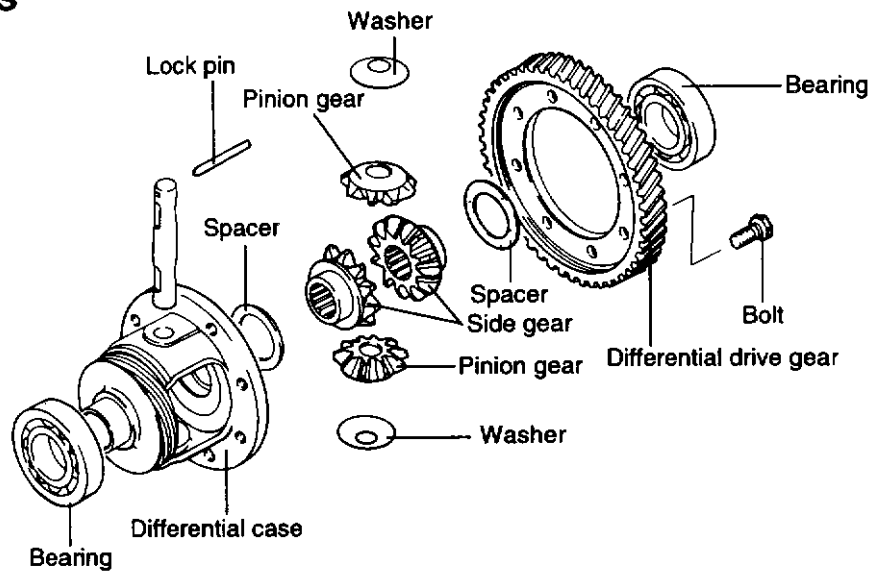
1. Press the bearing inner race on to the transfer shaft.



X45-107C

## DIFFERENTIAL

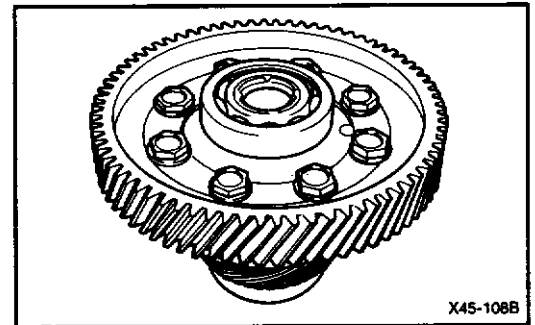
## COMPONENTS



X45-108A

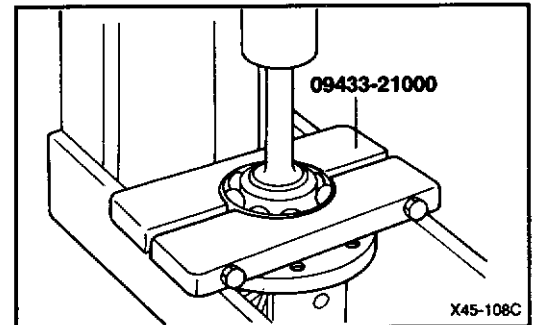
## DISASSEMBLY

1. Remove the drive gear retaining bolts and drive gear from the differential case.



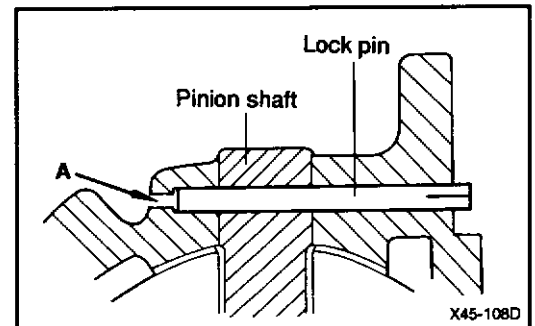
X45-108B

2. Remove the bearing with the special tool (09433-21000).



X45-108C

3. Drive out the lock pin with a punch inserted in hole "A".
4. Remove the pinion shaft, pinion gears and washers.
5. Remove the side gears and spacers.  
Do not mix the gears and spacers between the left and right sides.

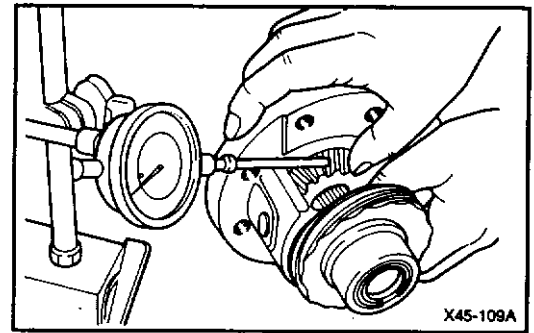


X45-108D

**REASSEMBLY**

1. With the spacers installed on the back of the differential side gears, install the gears into the differential case. If reusing parts, install them in their original positions noted during disassembly. If using new differential side gears, install medium thickness spacers 1.0mm (0.039in.).
2. Install the washers on the back of the pinion gears. Install gears into the differential case, then insert the pinion shaft.
3. Measure the backlash between the side gear and the pinion gear.  
Backlash should be 0.025-0.150 mm (.0010-.0059 in.) and the right and left hand gear pairs should have equal backlash. If the backlash is out of specification, disassemble and reassemble using different spacers for the correct backlash.

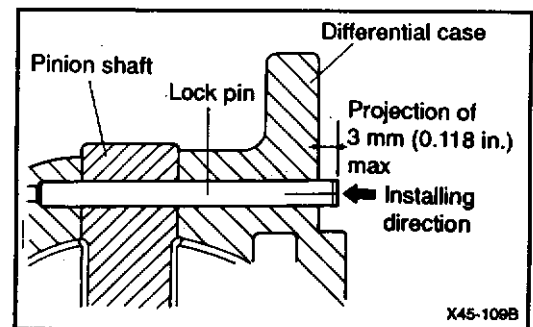
Standard value: 0.025-0.150 mm (.0010-.0059 in.)



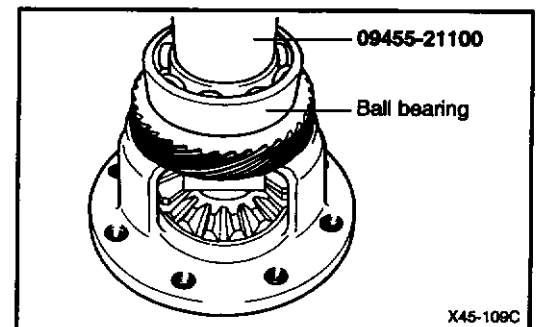
4. Install the pinion shaft lock pin in the direction specified in the illustration.

**Caution**

**The lock pin must not be reused.**



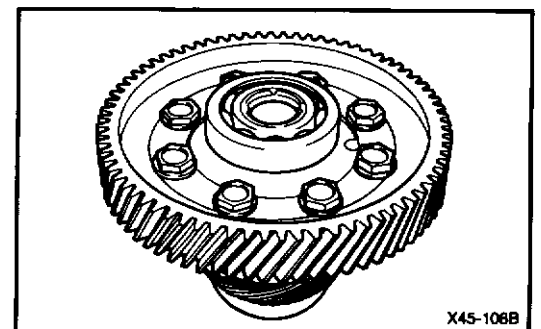
5. Press the bearings onto both ends of differential case. Press on the inner race when installing the bearings. Do not apply load to outer race.



6. Install the differential drive gear onto the case.
7. Apply ATF to the bolts and tighten the bolts to the specified torque in the sequence shown in the illustration.

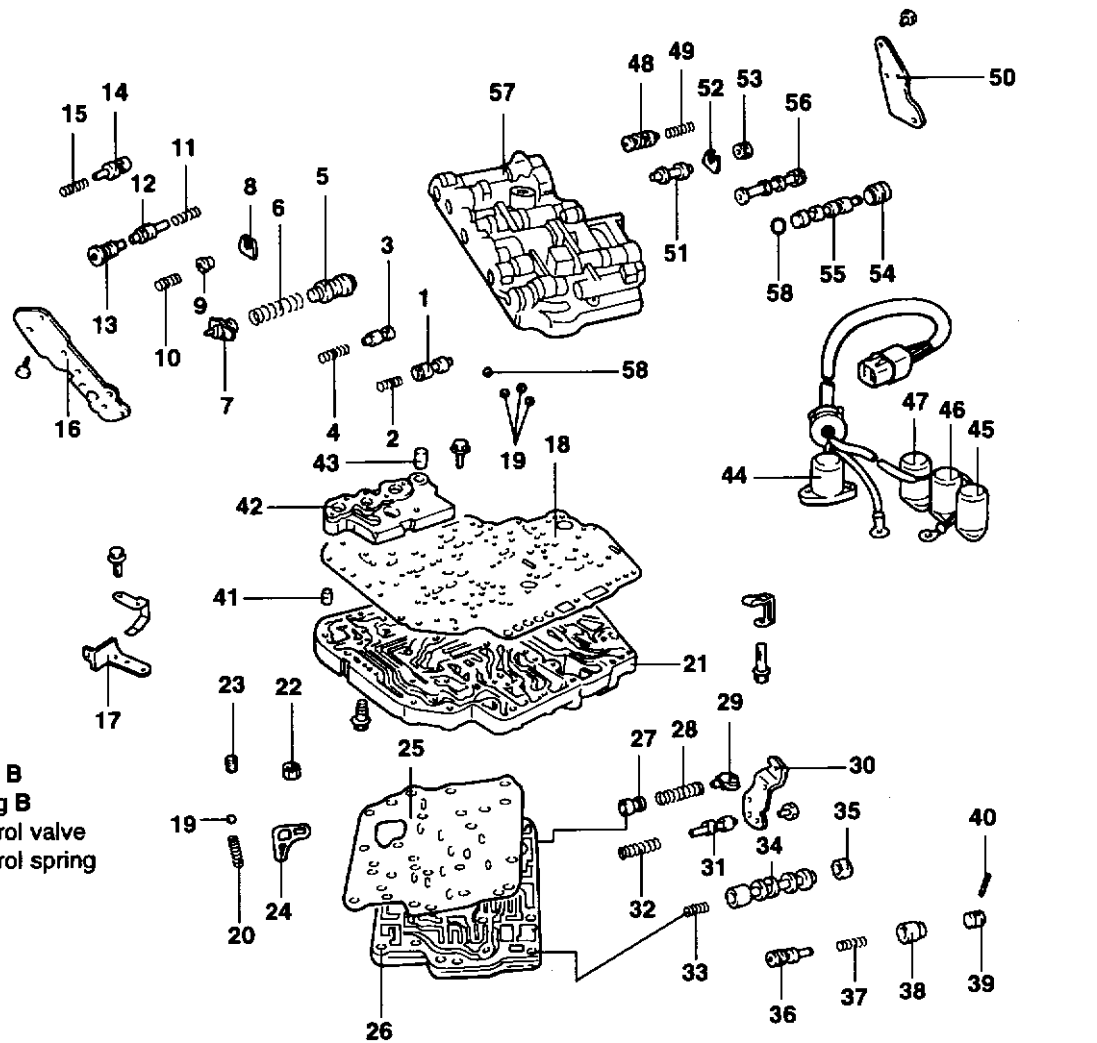
Tightening torque:

130-140 Nm (1300-1400 kg.cm, 94-101 lb.ft)



VALVE BODY

COMPONENTS



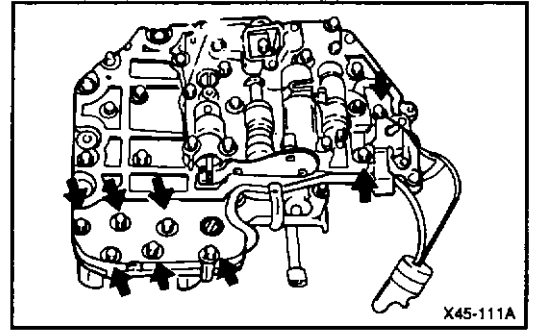
- 1. Pressure control valve B
- 2. Pressure control spring B
- 3. Torque converter control valve
- 4. Torque converter control spring
- 5. Regulator valve
- 6. Regulator spring
- 7. Adjusting screw
- 8. Stopper plate
- 9. Shift control plate
- 10. Shift control spring
- 11. Rear clutch exhaust spring
- 12. Rear clutch exhaust valve B
- 13. Rear clutch exhaust valve A
- 14. 2nd-3rd/4th-3rd shift valve
- 15. 2nd-3rd/4th-3rd shift spring
- 16. Front end cover
- 17. Valve stopper
- 18. Upper separating plate
- 19. Steel ball
- 20. Relief spring
- 21. Intermediate plate
- 22. Nut
- 23. Jet
- 24. Oil filter
- 25. Lower separating plate
- 26. Lower valve body
- 27. Reducing valve
- 28. Reducing spring
- 29. Adjusting screw
- 30. End cover
- 31. N-R control/accumulator valve
- 32. N-R control/accumulator spring
- 33. Damper clutch control spring
- 34. Damper clutch control valve
- 35. Damper clutch control sleeve
- 36. End clutch valve
- 37. End clutch spring
- 38. End clutch plug
- 39. Stopper
- 40. Pin
- 41. Dowel bushing
- 42. Block
- 43. Pipe
- 44. Pressure control solenoid valve (PCSV)
- 45. Shift control solenoid valve B (SCSV-B)
- 46. Shift control solenoid valve A (SCSV-A)
- 47. Damper clutch control solenoid valve (DCCSV)
- 48. 1-2 shift valve
- 49. 1-2 shift spring
- 50. Rear end cover
- 51. Shift control valve
- 52. Stopper plate
- 53. Shift control plug B
- 54. Pressure control sleeve A
- 55. Pressure control valve A
- 56. Manual valve
- 57. Upper valve body
- 58. Teflon ball

**DISASSEMBLY**

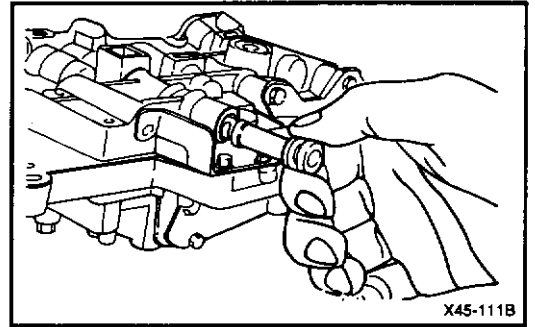
1. Remove the solenoid valves and the oil temperature sensor bracket.

**NOTE**

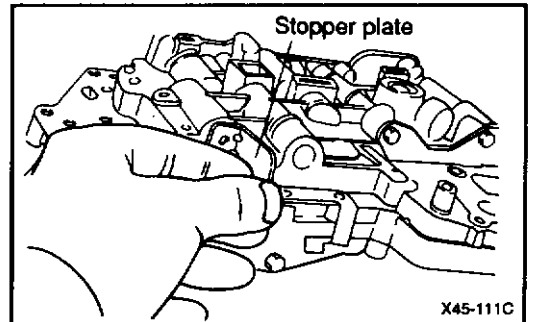
**A4AF2, A4BF1 : 4 solenoid valve**  
**A4AF3 : 6 solenoid valve**



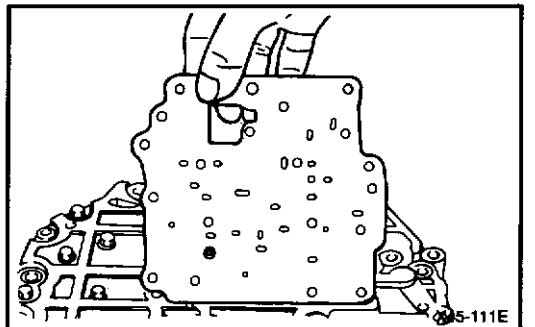
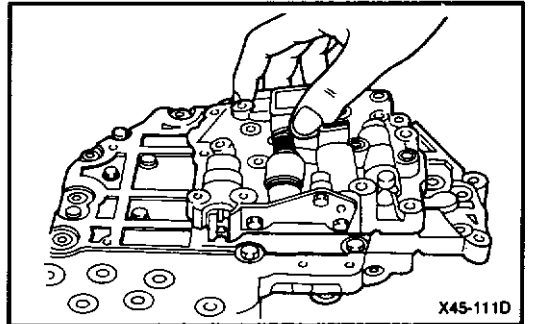
2. Remove the manual valve.



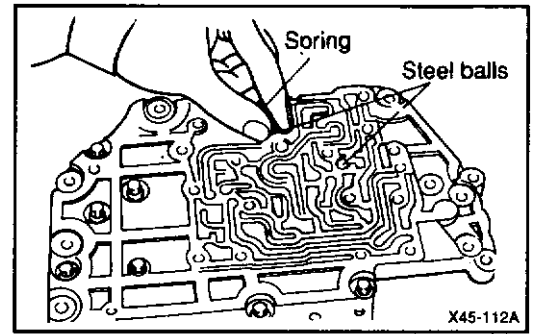
3. Remove the valve stopper and clamp.



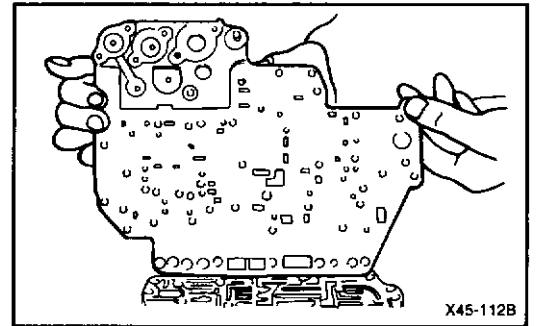
4. Remove the bolts (16), and then remove the lower valve body.
5. Remove the separating plate.



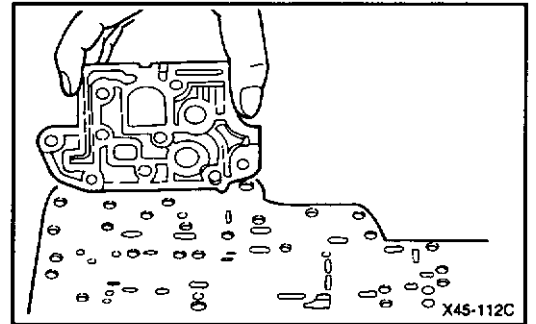
- Remove the relief spring, two steel balls and oil filter from the intermediate plate.



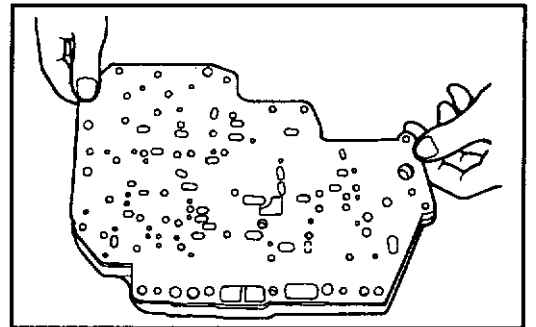
- Remove the bolts (6), and then remove the intermediate plate and upper separation plate.



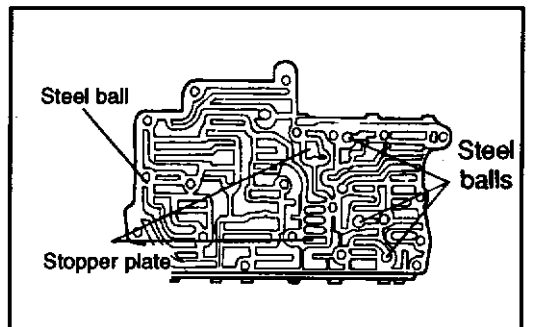
- Remove the block.



- Remove the upper separating plate.



- Remove, from the upper valve body, the steel balls, two stopper plates.

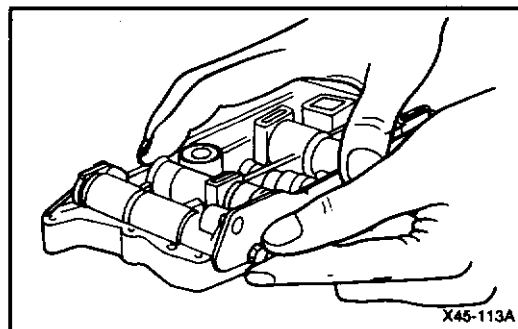




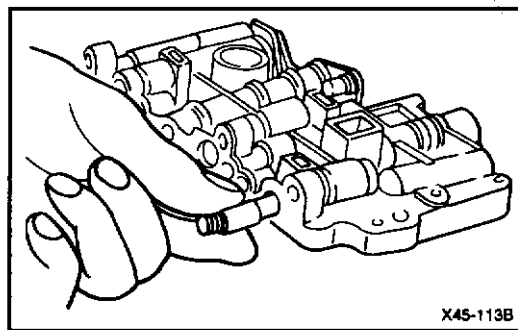
11. Remove, from the upper valve body, the seven bolts; then remove the front end cover and the adjustment screw.

**Caution**

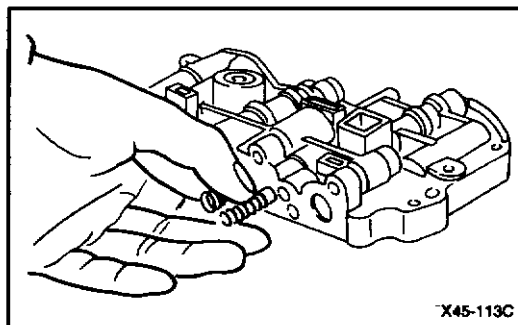
When removing the bolts, be sure to firmly press the front end cover (as shown in the illustration) so as to prevent the spring from causing the adjustment screw to pop out.



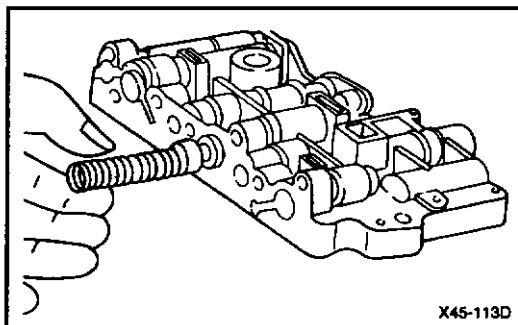
12. Remove the pressure control spring **B** and the pressure control valve **B**.



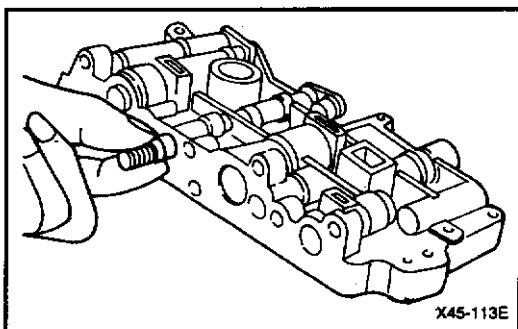
13. Remove the torque converter control spring and the torque converter control valve.



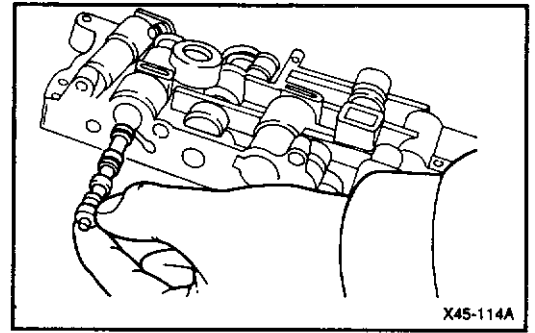
14. Remove the regulator spring and the regulator valve.



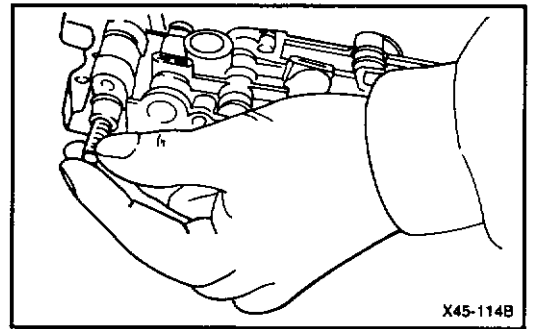
15. Remove the shift-control spring and shift-control plug **A**.



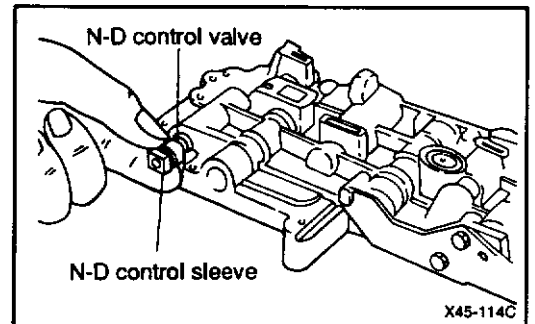
16. Remove rear clutch exhaust valves A and B as well as the rear clutch exhaust spring.



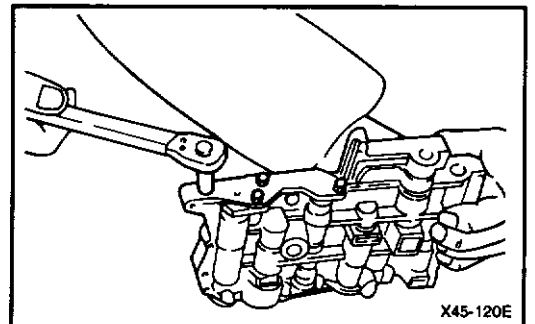
17. Remove the 2-3/4-3 shift spring and the shift valve.



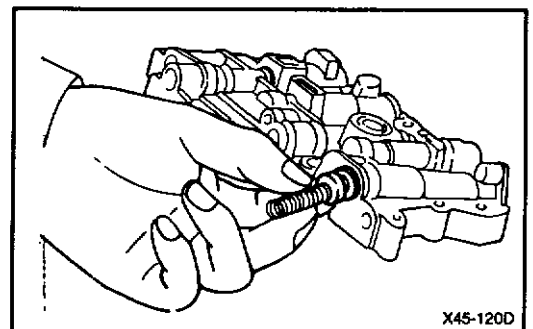
18. Remove, from the rear side of the upper valve body, the Pressure control sleeve A and the Pressure control valve A.



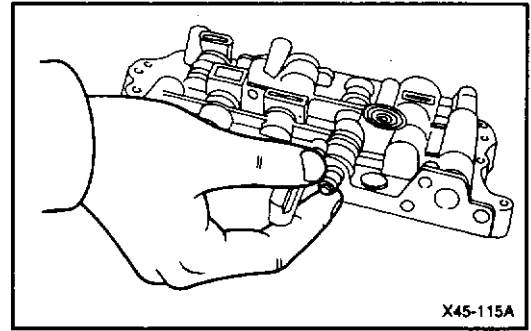
19. Remove the five bolts, and then remove the rear end cover.



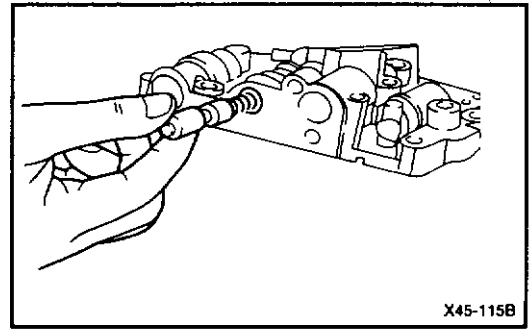
20. Remove the 1-2 shift spring and the 1-2 shift valve.



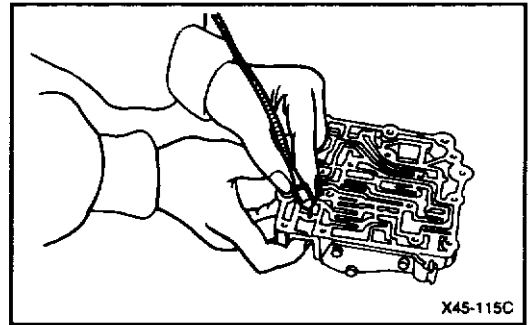
21. Remove shift-control plug B.



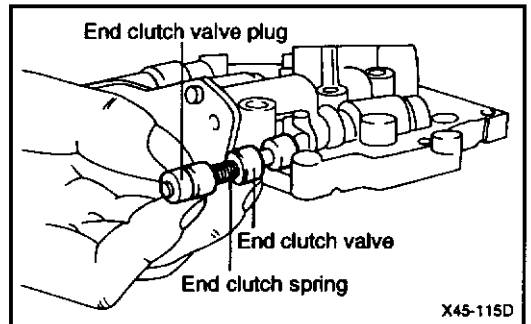
22. Remove the shift-control valve and the high-low pressure valve.



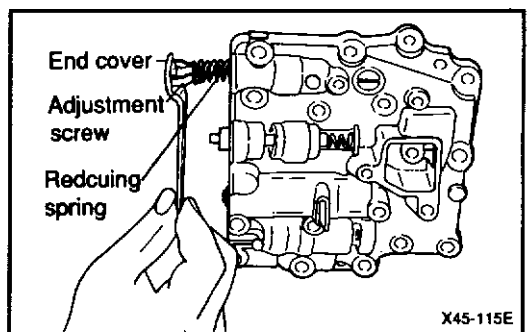
23. Using a magnet, extract the pin from the lower valve body, and then remove the stopper.



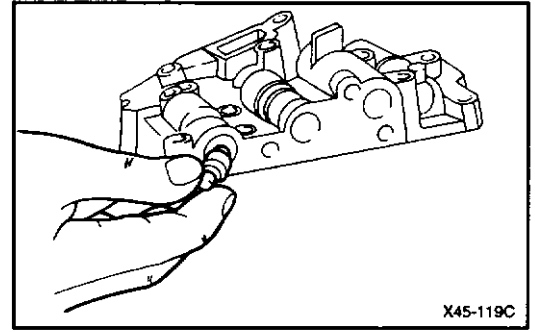
24. Remove the end clutch valve plug, end clutch spring, and end clutch valve. Then remove the control switch valve.



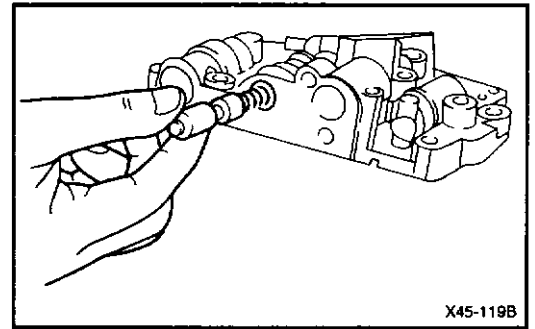
25. Remove the six bolts from the lower valve body, and then remove the end cover, adjustment screw, and reducing spring.



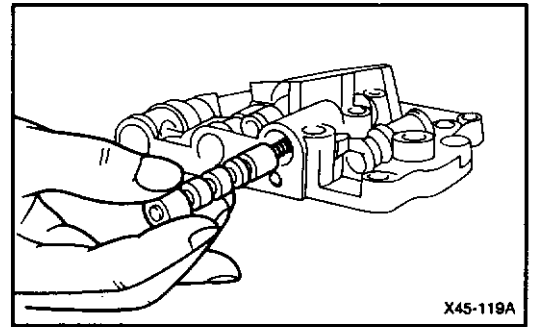
26. Remove the reducing valve.



27. Remove the N-R control valve and the N-R control spring.

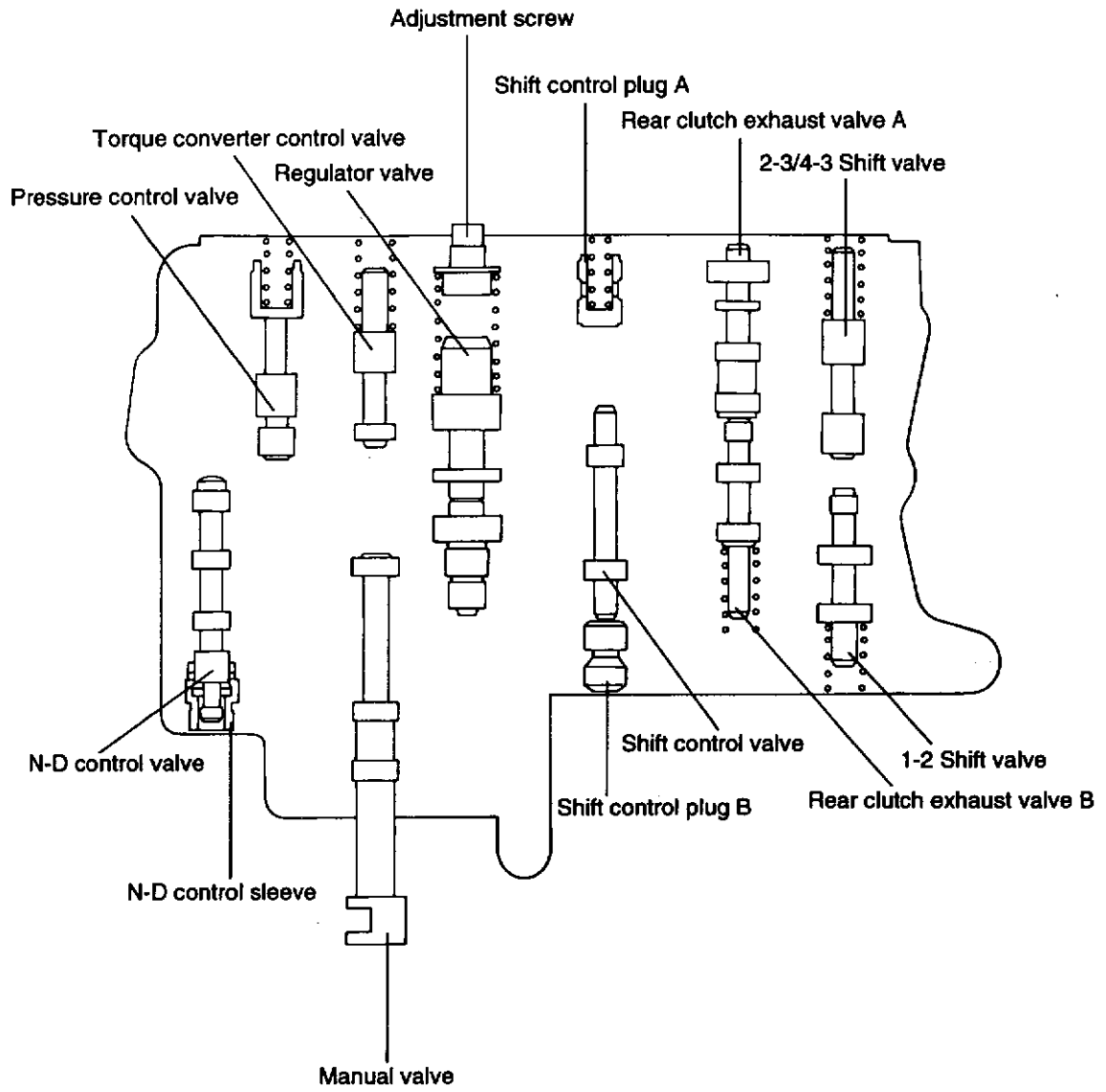


28. Remove the damper clutch control sleeve, damper clutch control valve, and the damper clutch control spring. And the remove the fail safe valve.

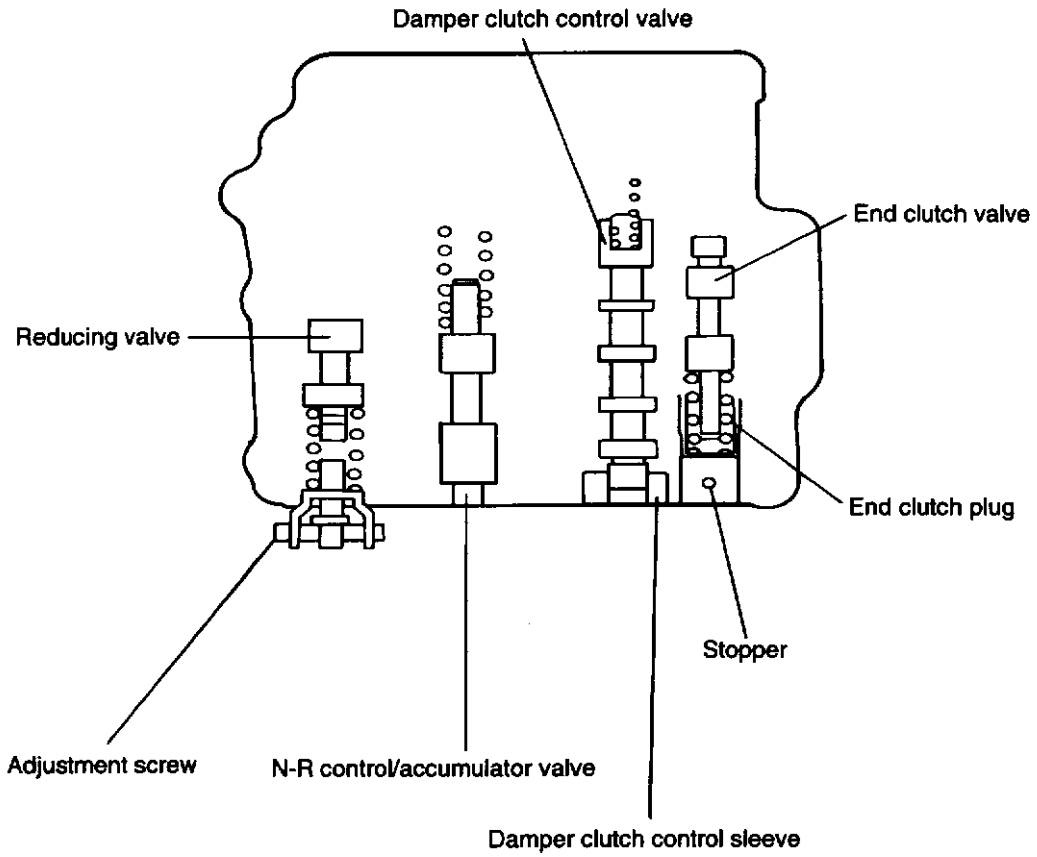


VALVE INSTALLATION POSITIONS

Upper Valve Body

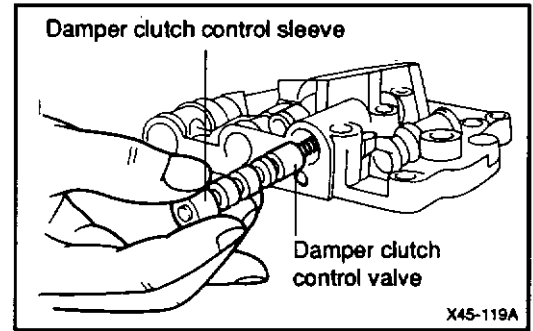


Lower Valve Body

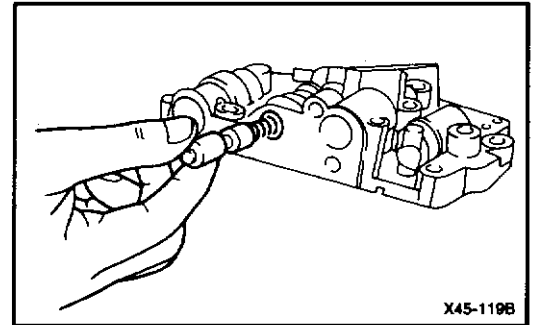


**REASSEMBLY**

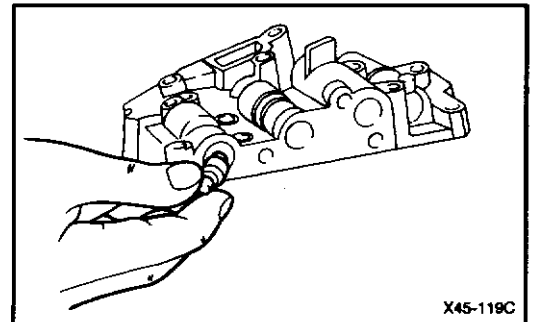
1. Install in the lower valve body, the damper clutch control spring, damper clutch control valve, and the damper clutch control sleeve. And then install the fail safe valve.



2. Install the N-R control spring and the N-R control valve.

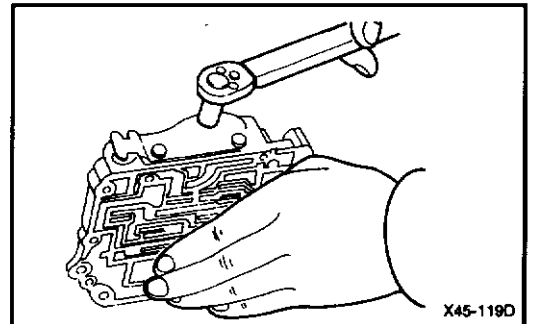


3. Install the reducing valve.

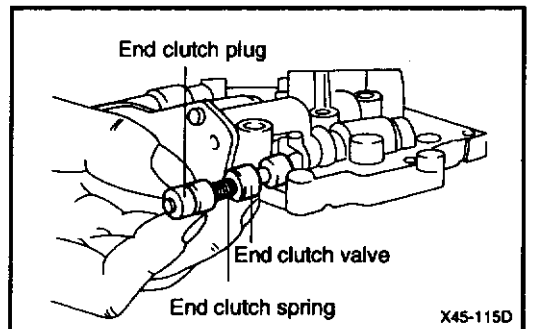


4. Install the reducing spring, adjustment screw, and end cover. Tighten the bolts to the specified torque.

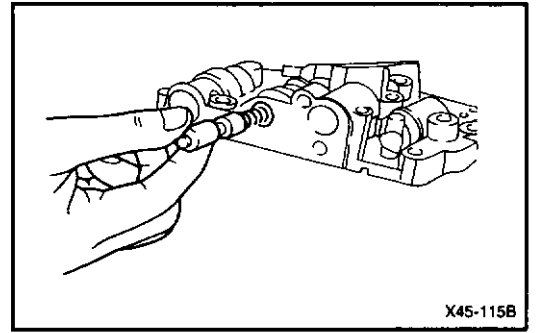
**Tightening torque: 4-6 Nm (40-60 kg.cm, 29-43 lb.ft)**



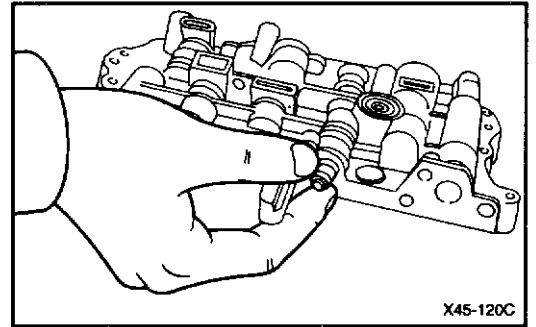
5. Install the end clutch valve, end clutch spring, and end clutch plug. And then install the control switch valve.



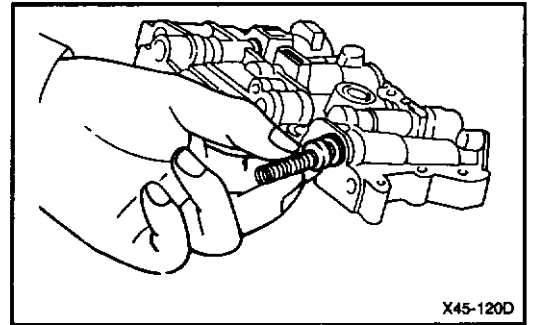
7. Install the shift-control valve and the high-low pressure valve to the upper valve body.



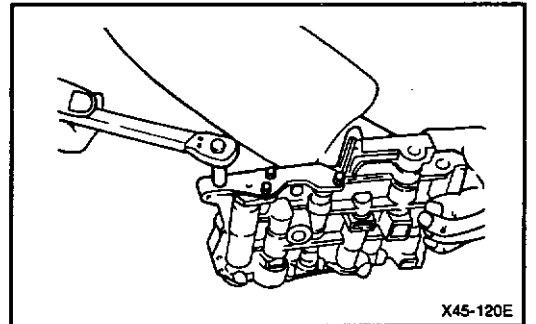
8. Install the shift-control plug B.



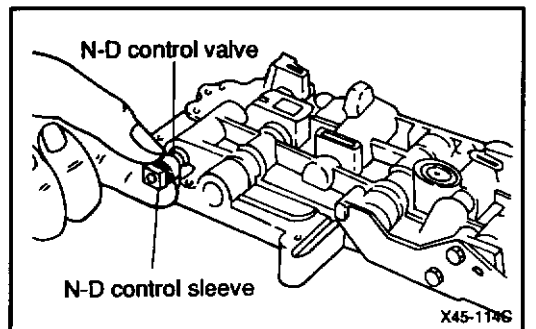
9. Install the 1-2 shift valve and 1-2 shift spring.



10. Install the rear end cover.

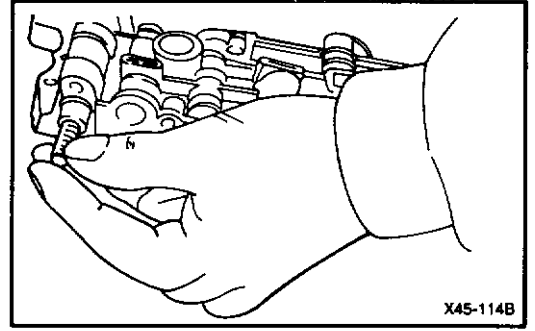


11. Install the pressure control valve **A** and the pressure control sleeve **A**.

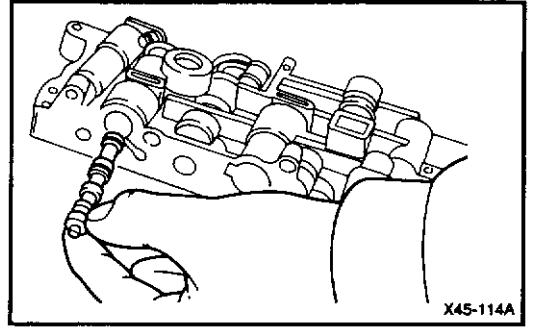




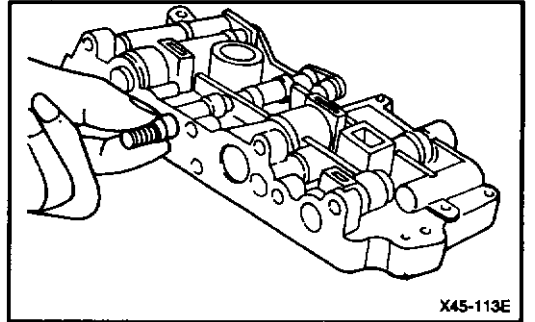
12. Install the 2-3/4-3 shift valve and the 2-3/4-3 shift spring.



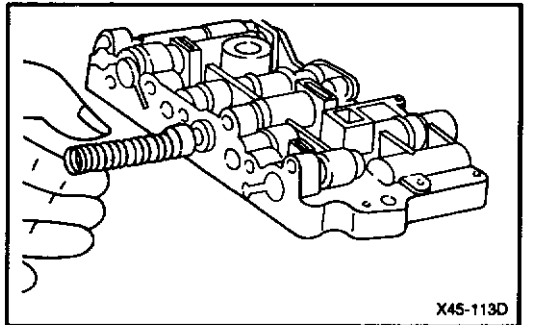
13. Install the rear clutch exhaust spring and rear clutch exhaust valves A and B.



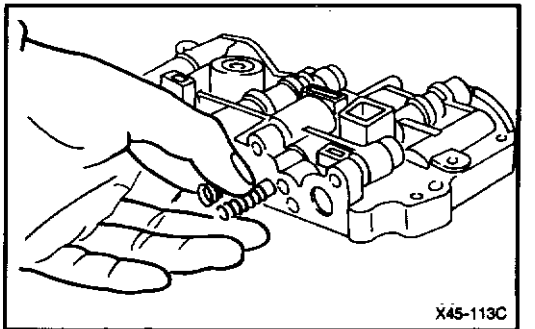
14. Install the shift-control plug A and shift control spring.



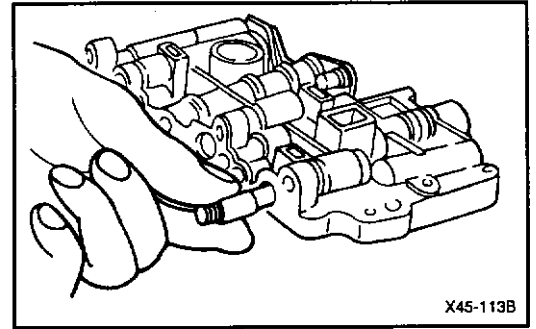
15. Install the regulator valve and regulator spring.



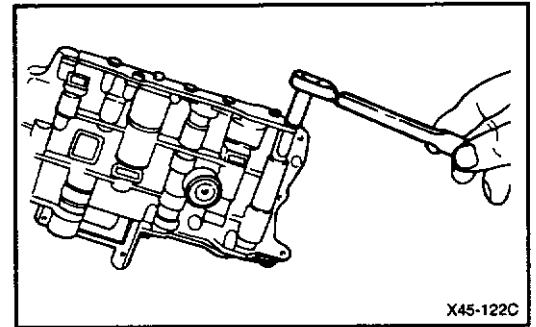
16. Install the torque converter control valve and torque converter control spring.



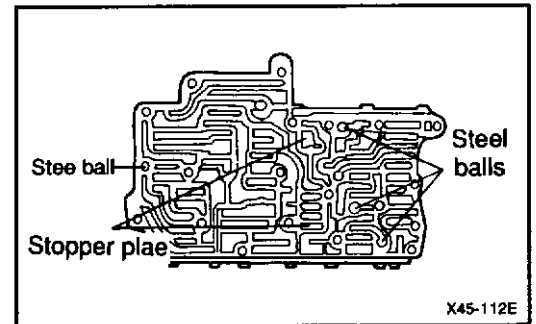
17. Install the pressure control valve and pressure control spring.



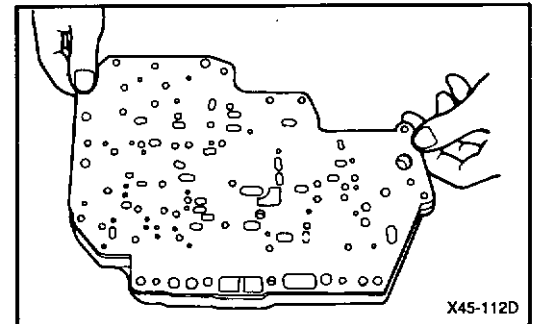
18. Install the adjustment screw and front end cover. Tighten the bolts to the specified torque.



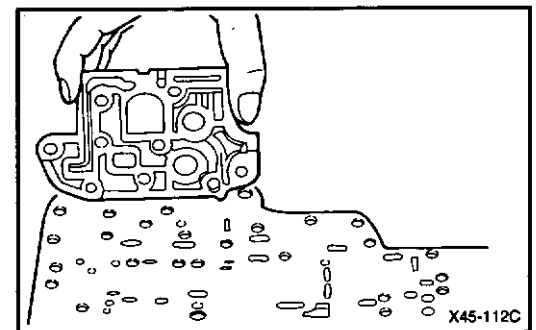
19. Install, in the upper valve body, the three steel balls, the teflon ball, two stopper plate and N-D plate.



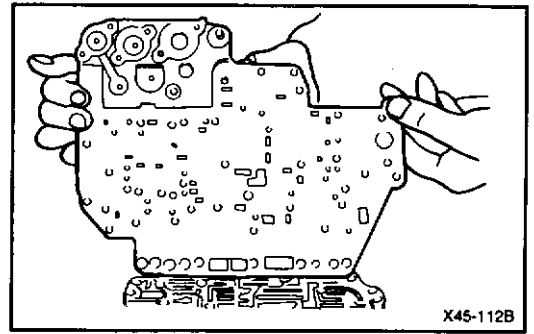
20. Install the upper separating plate.



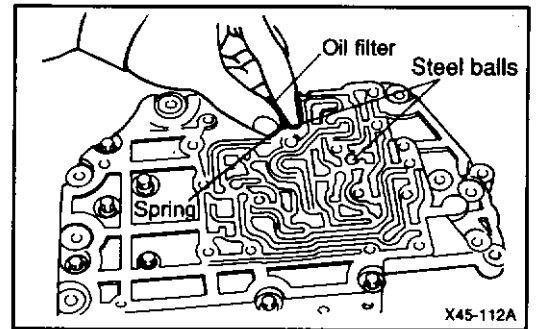
21. Install the block.



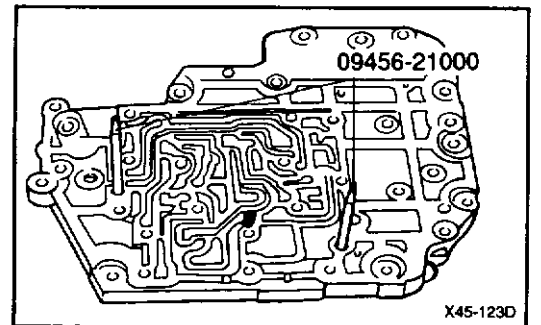
22. Install the special tool (09456-21000).  
Then, securing the upper separating plate and the intermediate plate with the eight installation bolts, remove the special tool.



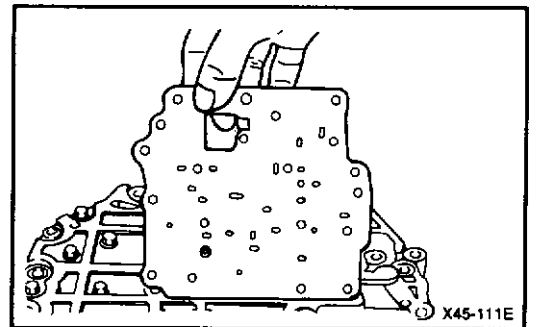
23. Install to the intermediate plate, the oil filter, the two steel balls, and the spring.



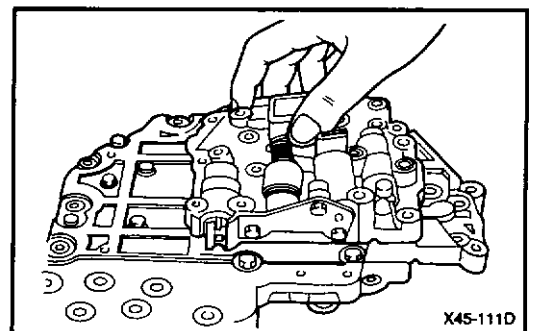
24. Install the special tool (09456-21000) to the intermediate plate.



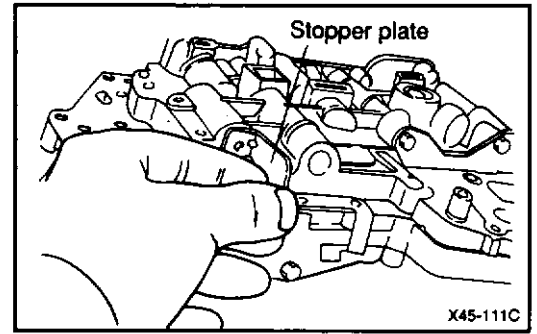
25. Install the separating plate.



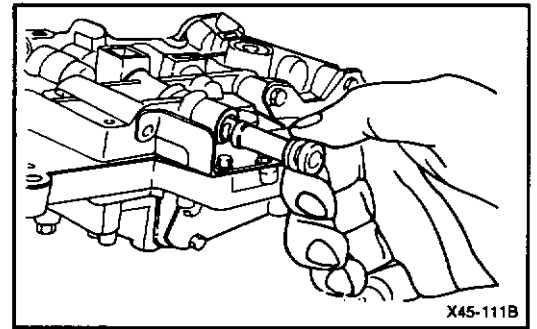
26. After securing the lower valve body using the 15 installation bolts, remove the special tool.



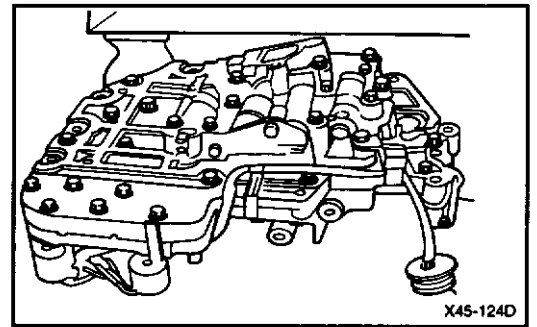
27. Install the valve stopper and clamp.

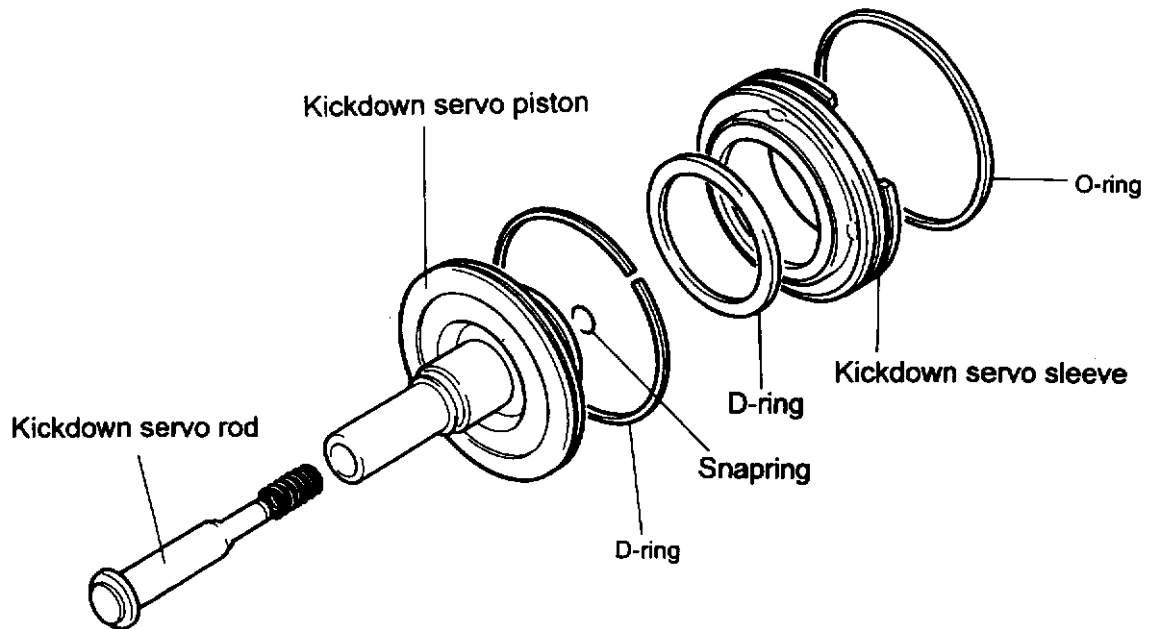


28. Install the manual valve.

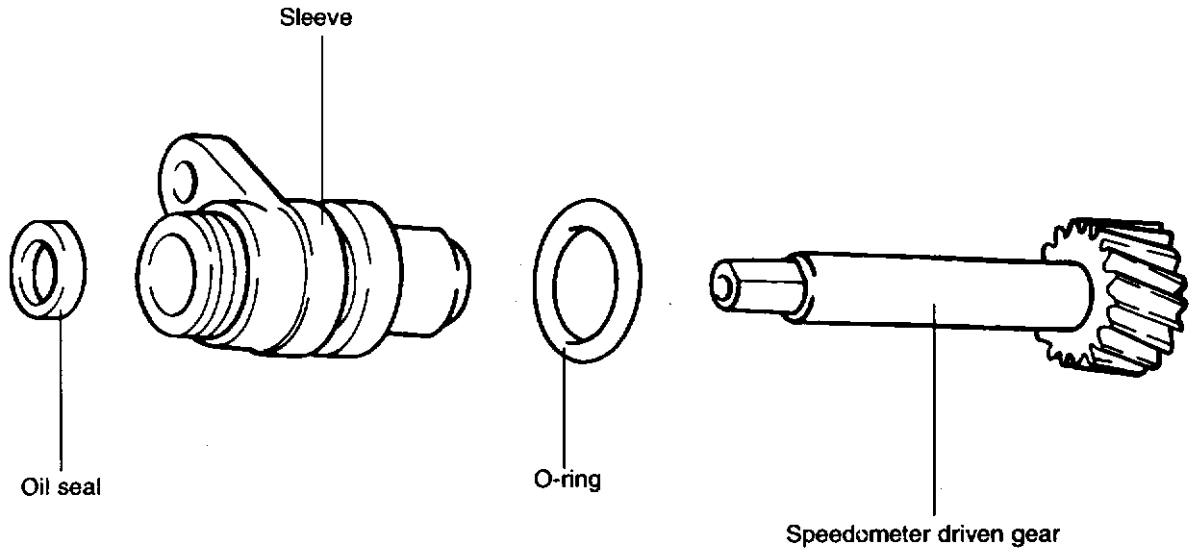


29. Secure the four solenoid valves using the installation bolts.



**KICKDOWN SERVO****COMPONENTS****ASSEMBLY**

1. Install the rod and nut to the kickdown servo piston.
2. Install two new D-rings (one large and one small) around the circumference of the piston, and then apply a coating of ATF to the D-rings.
3. Install the kickdown servo piston in the sleeve.
4. Install a new O-ring around the circumference of the sleeve, and apply a coating of ATF to the O-ring.

**SPEEDOMETER DRIVEN GEAR****COMPONENTS**

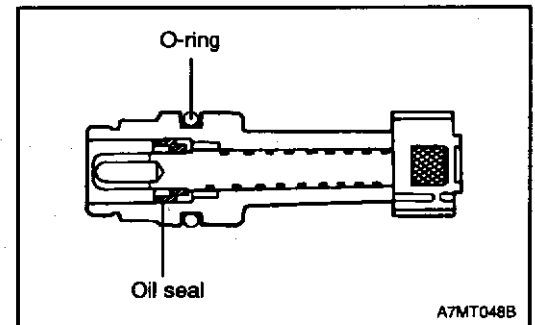
A7MT048A

**ASSEMBLY**

1. Install a new O-ring into the outer groove of the sleeve, and apply a coating of ATF to the outer circumference of the O-ring.

**CAUTION**

Insert carefully the speedometer driven gear into the transaxle housing not to disassemble the speedometer driven gear shaft.



A7MT048B