

GROUP 23B

AUTOMATIC TRANSAXLE OVERHAUL

<F4A4B>

CONTENTS

GENERAL DESCRIPTION	23B-2	SECOND BRAKE	23B-61
SPECIAL TOOLS	23B-4	DISASSEMBLY AND ASSEMBLY	23B-61
TRANSAXLE	23B-8	OUTPUT SHAFT	23B-62
DISASSEMBLY AND ASSEMBLY	23B-8	DISASSEMBLY AND ASSEMBLY	23B-62
ADJUSTMENT OF TRANSAXLE	23B-45	DIFFERENTIAL	23B-64
OIL PUMP	23B-50	DISASSEMBLY AND ASSEMBLY	23B-64
DISASSEMBLY AND ASSEMBLY	23B-50	VALVE BODY	23B-67
UNDERDRIVE CLUTCH AND INPUT SHAFT	23B-51	DISASSEMBLY AND ASSEMBLY	23B-67
DISASSEMBLY AND ASSEMBLY	23B-51	DRIVE SHAFT OIL SEAL	23B-71
DISASSEMBLY AND ASSEMBLY	23B-51	DISASSEMBLY AND ASSEMBLY	23B-71
REVERSE AND OVERDRIVE CLUTCH	23B-53	SPECIFICATION(S)	23B-73
DISASSEMBLY AND ASSEMBLY	23B-53	FASTENER TIGHTENING SPECIFICATIONS	23B-73
PLANETARY GEAR	23B-58	GENERAL SPECIFICATIONS	23B-73
DISASSEMBLY AND ASSEMBLY	23B-58	SERVICE SPECIFICATIONS	23B-74
LOW-REVERSE BRAKE	23B-60	VALVE BODY SPRING IDENTIFICATION TABLE	23B-74
DISASSEMBLY AND ASSEMBLY	23B-60	ADJUSTING PLATE, SNAP RING AND SPACERS	23B-74
		SEALANTS	23B-76

GENERAL DESCRIPTION

M1233000100577

This automatic transaxle is made up of the following main parts.

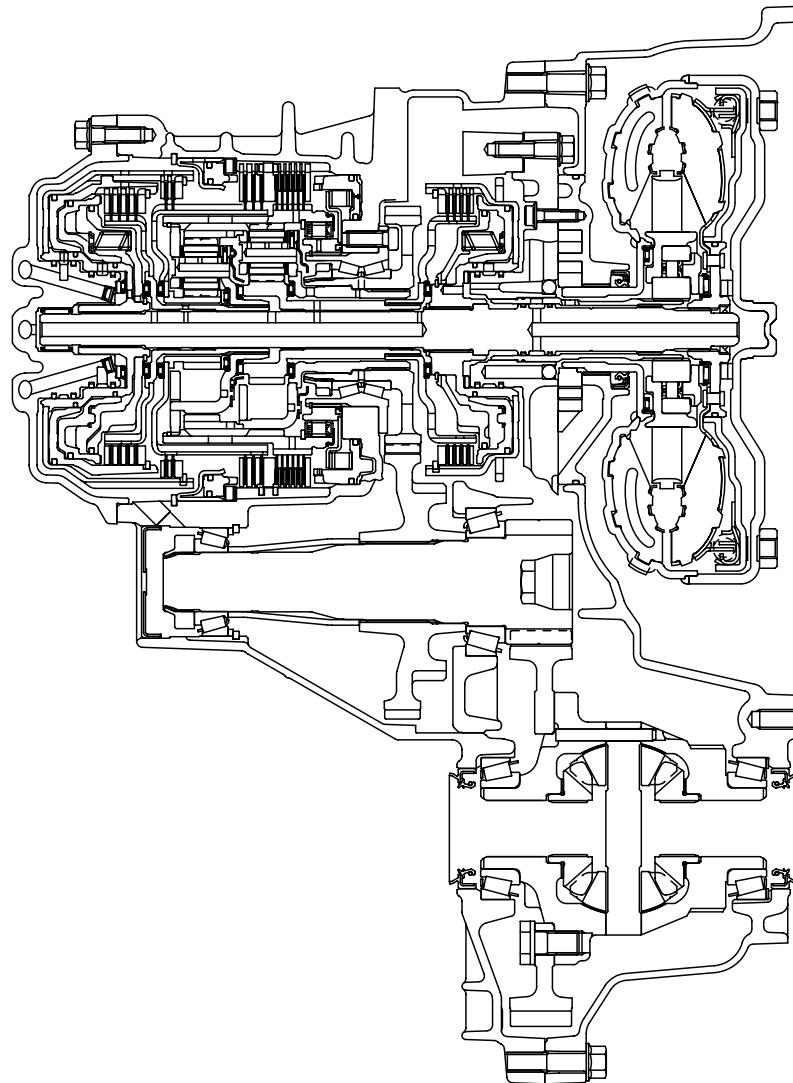
The torque converter employs a 3 element, 1 step, 2 phase lock-up clutch.

The gear train is made up of 3 multi-plate clutches, 2 multi-plate brakes and 2 planetary gears made up of a sun gear, carrier, pinion gear and annulus gear.

The cases consist of a converter housing, transaxle case, rear cover and a valve body cover.

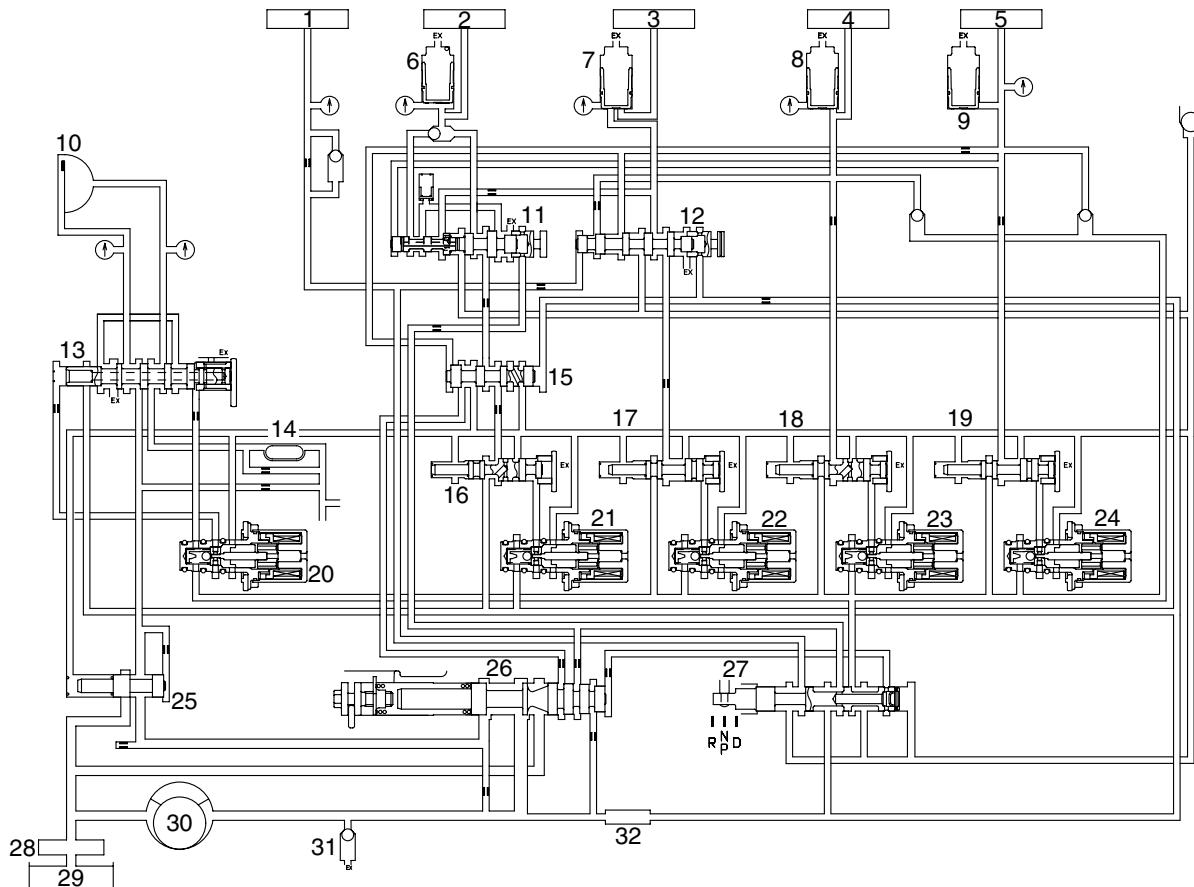
Parts related to oil pressure regulation are the oil pump, which pressurizes the oil; the regulator, which controls the pressure setting; the solenoid valves, which change the oil pressure with electrical signals; the pressure control valve, which controls the oil pressure coming from the solenoid valve that affects each clutch and brake; valves, which retain the oil pressure through the lines; and finally the valve body, which houses all the valves.

SECTIONAL VIEW



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HYDRAULIC CIRCUIT

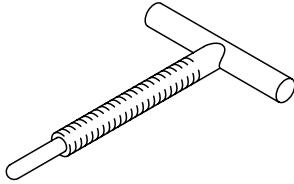
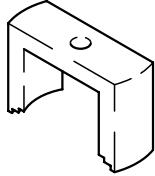
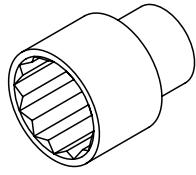
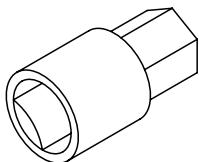
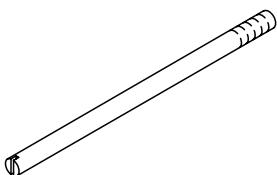
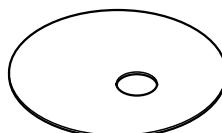


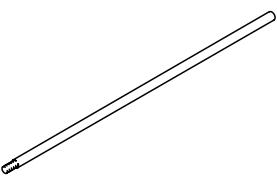
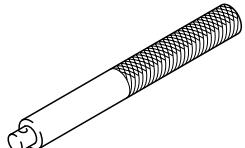
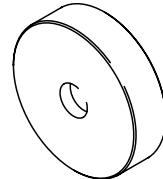
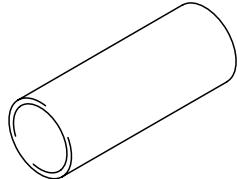
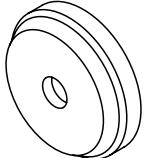
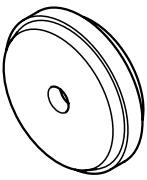
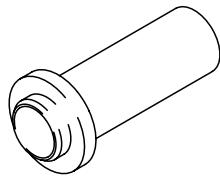
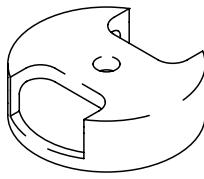
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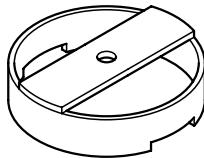
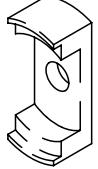
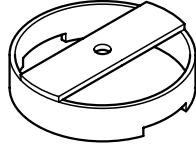
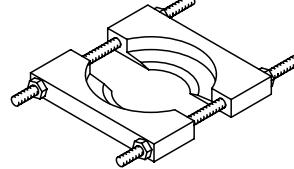
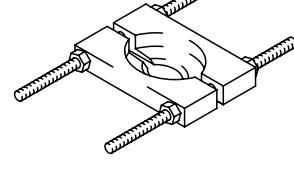
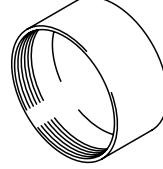
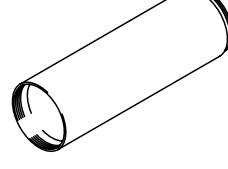
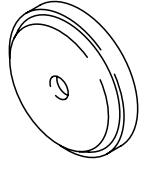
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2. LOW-REVERSE BRAKE
3. SECOND BRAKE
4. UNDERDRIVE CLUTCH
5. OVERDRIVE CLUTCH
6. LOW-REVERSE ACCUMULATOR
7. SECOND ACCUMULATOR
8. UNDERDRIVE ACCUMULATOR
9. OVERDRIVE ACCUMULATOR
10. TORQUE CONVERTER CLUTCH
11. FAIL-SAFE VALVE A
12. FAIL-SAFE VALVE B
13. TORQUE CONVERTER CLUTCH CONTROL VALVE
14. COOLER
15. SWITCHING VALVE
16. LOW-REVERSE PRESSURE CONTROL VALVE
17. SECOND PRESSURE CONTROL VALVE
18. UNDERDRIVE PRESSURE CONTROL VALVE
19. OVERDRIVE PRESSURE CONTROL VALVE
20. TORQUE CONVERTER CLUTCH CONTROL SOLENOID VALVE
21. LOW-REVERSE SOLENOID VALVE
22. SECOND SOLENOID VALVE
23. UNDERDRIVE SOLENOID VALVE
24. OVERDRIVE SOLENOID VALVE
25. TORQUE CONVERTER PRESSURE CONTROL VALVE
26. REGULATOR VALVE
27. MANUAL VALVE
28. OIL FILTER
29. OIL PAN
30. OIL PUMP
31. RELIEF VALVE
32. OIL STRAINER

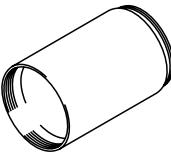
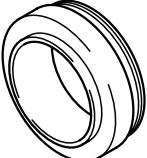
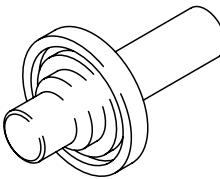
SPECIAL TOOLS

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TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
	MD998333 Oil pump remover	MD998333-01	Removal of oil pump
	MD998903 Spring compressor	MD998903-01	Removal and installation of one-way clutch inner race snap ring
	MD998924 Spring compressor retainer	MD998924-01	Use with spring compressor
	MB991625 Socket (41)	MB991625-01 or General service tool	Removal and installation of output shaft jam nut
	MB990607 Torque wrench socket	MB990607-01	Removal and installation of output shaft jam nut
	MD998412 Guide	MD998412	Installation of oil pump and transfer drive gear
	MB991631 Clearance dummy plate	MB991631-01	Measurement of reaction plate low-reverse brake and second brake end play

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
	MD998913 Dial gauge extension	MD998913-01	Measurement of low-reverse brake end play
	MB990938 Handle	MB990938-01	<ul style="list-style-type: none"> • Installation of input shaft rear bearing • Use with installer adapter
	MB990930 Installer adapter	MB990930-01 or General service tool	Installation of output shaft taper roller bearing outer race
	MD998350 Bearing installer	MD998350-01	Installation of output shaft collar and taper roller bearing
	MB990931 Installer adapter	MB990931-01 or General service tool	Installation of cap
	MB990935 Installer adapter	MB990935-01 or General service tool	Installation of differential taper roller bearing outer race
	MD998334 Oil seal installer	MD998334-01	Installation of oil pump oil seal
	MD998907 Spring compressor	MD998907-01	Removal and installation of underdrive clutch snap ring

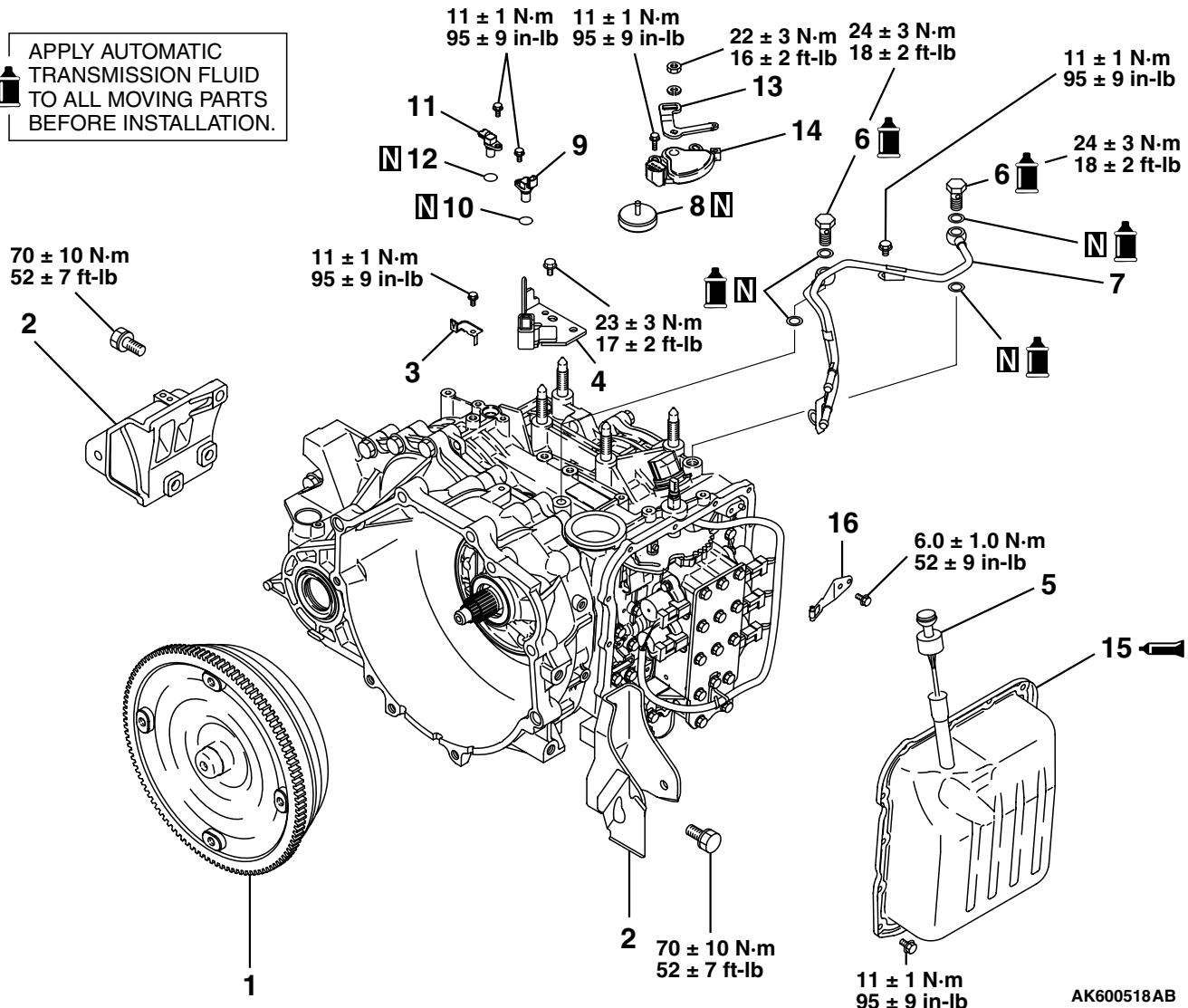
TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
	MB991628 Spring compressor	MB991628-01	Measurement of underdrive clutch and overdrive clutch end play
	MD999590 Spring compressor	MIT305039	Removal and installation of overdrive clutch snap ring
	MB991790 Spring compressor	MB991790-01	Measurement of reverse clutch end play
	MD998917 Bearing remover	General service tool or MD998348-01	Removal of transfer driven gear
	MD998801 Bearing remover	MD998348-01	Removal of each bearing
	MD998812 Installer cap	General service tool	Use with installer and installer adapter
	MD998814 Installer 200	MIT304180-A	Use with installer cap and installer adapter
	MB990936 Installer adapter	MB990936-01 or General service tool	Installation of output shaft taper roller bearing outer race

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
	MD998813 Installer 100	General service tool	Use with installer cap and installer adapter
	MD998823 Installer adapter (48)	General service tool	Installation of output shaft taper roller bearing, transfer driven gear, differential taper roller bearing
	MD998800 Oil seal installer	General service tool	Installation of driveshaft oil seal

TRANSAXLE
DISASSEMBLY AND ASSEMBLY

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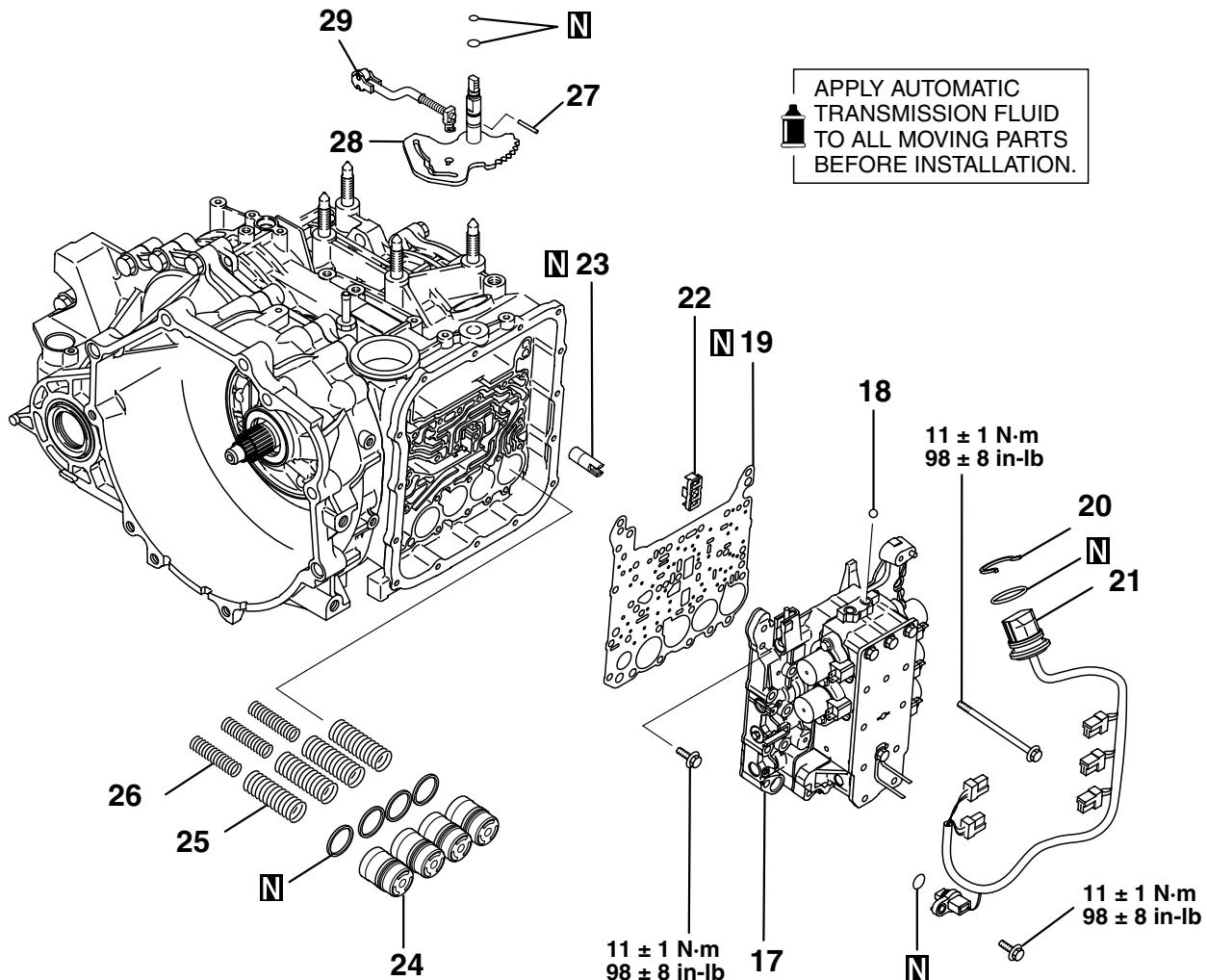
APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK600518AB

1. TORQUE CONVERTER
2. ROLL STOPPER BRACKET
3. HARNESS BRACKET
4. CONTROL CABLE SUPPORT BRACKET
5. OIL DIPSTICK
6. EYE BOLT
7. OIL COOLER FEED TUBE
8. AIR BREATHER

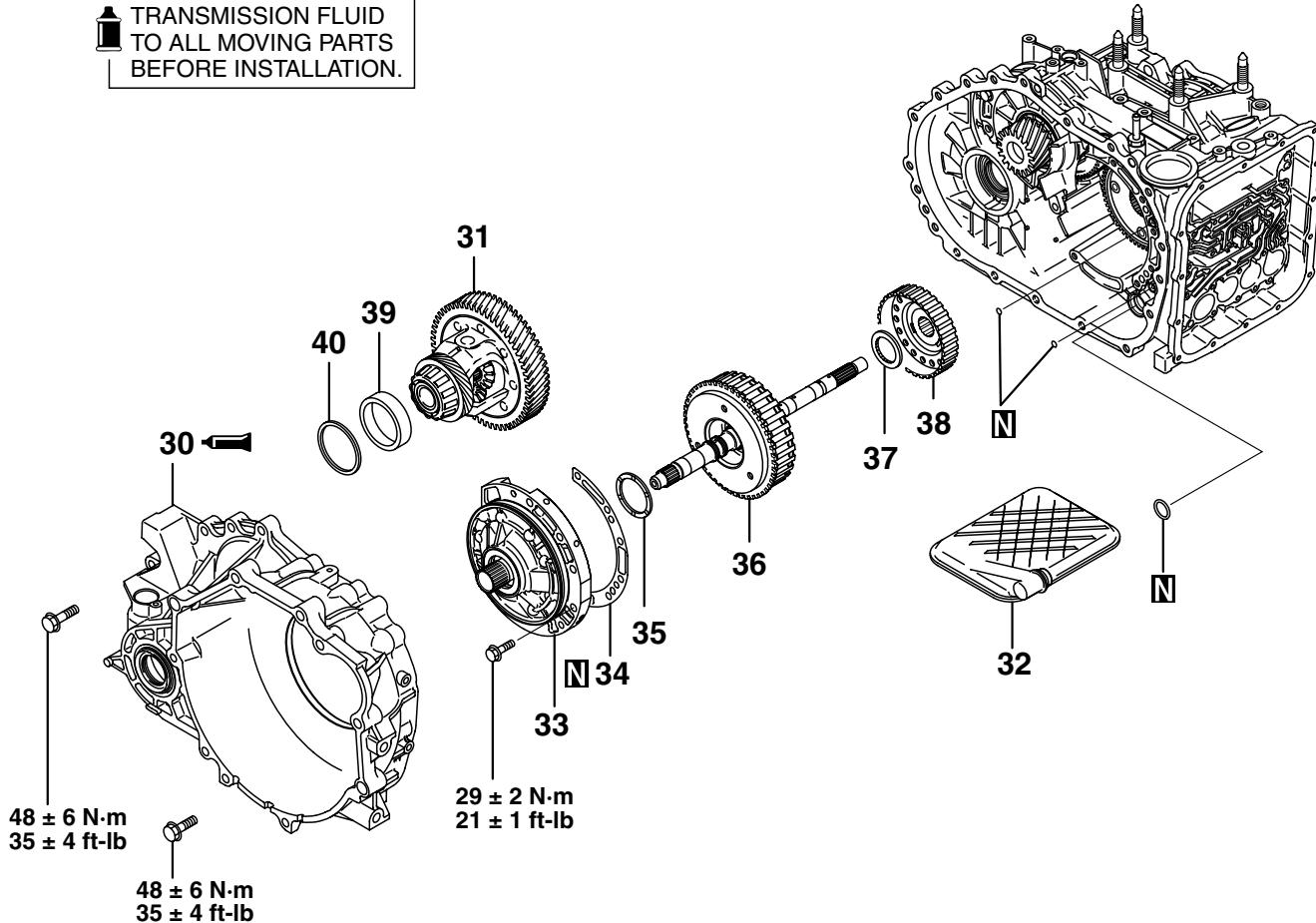
9. INPUT SHAFT SPEED SENSOR
10. O-RING
11. OUTPUT SHAFT SPEED SENSOR
12. O-RING
13. MANUAL CONTROL LEVER
14. PARK/NEUTRAL POSITION SWITCH
15. VALVE BODY COVER
16. MANUAL CONTROL SHAFT DETENT



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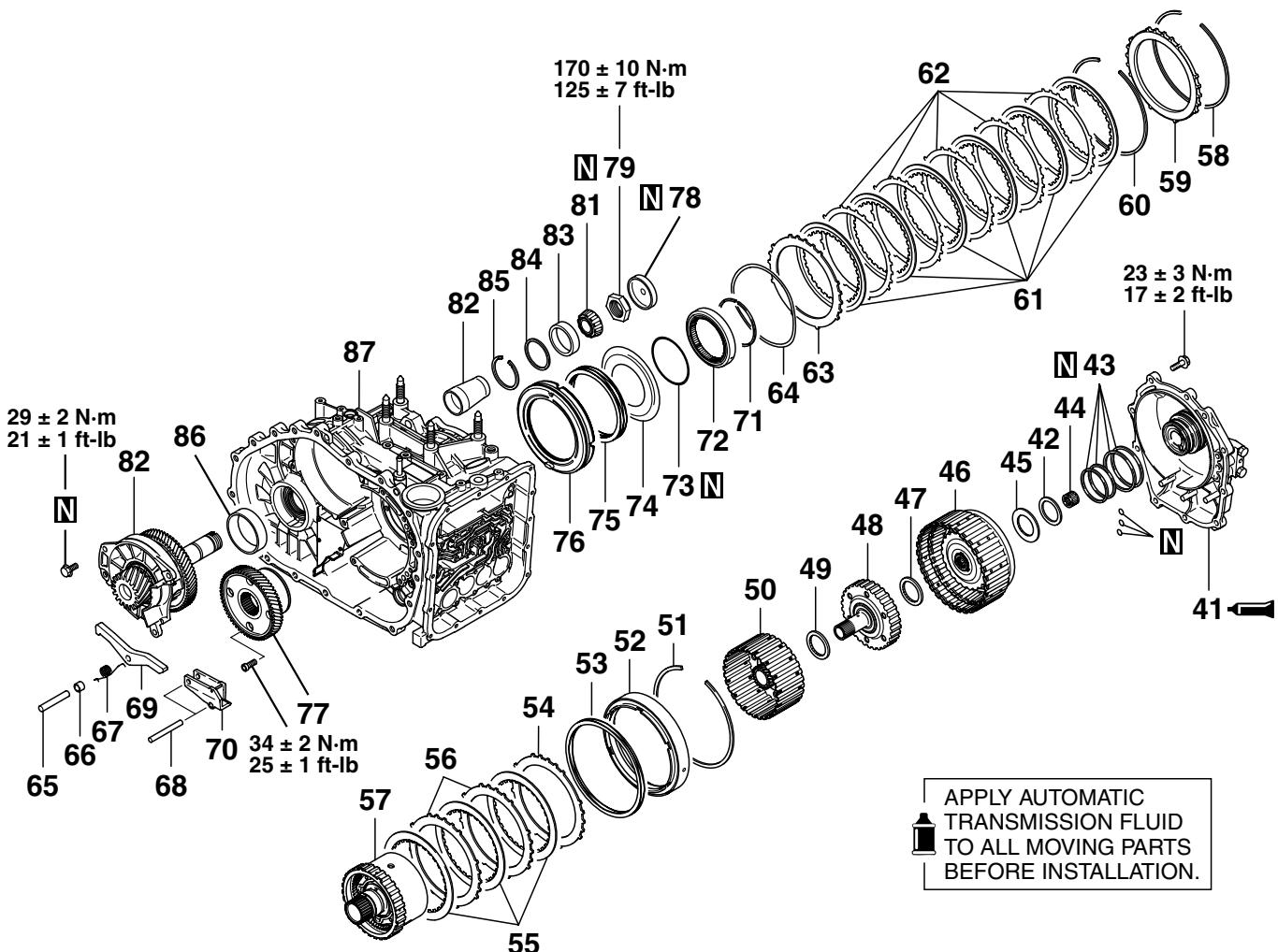
17. VALVE BODY	24. ACCUMULATOR PISTON
18. STEEL BALL	25. ACCUMULATOR SPRING
19. GASKET	26. ACCUMULATOR SPRING
20. SNAP RING	27. MANUAL CONTROL LEVER SHAFT ROLLER
21. SOLENOID VALVE HARNESS	28. MANUAL CONTROL LEVER SHAFT
22. STRAINER	29. PARKING PAWL ROD
23. SECOND BRAKE RETAINER OIL SEAL	

 APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK501415AC

30. TORQUE CONVERTER HOUSING	36. UNDERDRIVE CLUTCH AND INPUT SHAFT
31. DIFFERENTIAL	37. THRUST BEARING NO.2
32. OIL FILTER	38. UNDERDRIVE CLUTCH HUB
33. OIL PUMP	39. OUTER RACE
34. GASKET	40. SPACER
35. THRUST WASHER NO.1	



41. REAR COVER	64. WAVE SPRING
42. THRUST RACE NO.8	65. PARKING PAWL SHAFT
43. SEAL RING	66. SPACER
44. INPUT SHAFT REAR BEARING	67. PARKING PAWL SPRING
45. THRUST BEARING NO.7	68. PARKING ROLLER SUPPORT SHAFT
46. REVERSE AND OVERDRIVE CLUTCH	69. PARKING PAWL
47. THRUST BEARING NO.6	70. PARKING ROLLER SUPPORT
48. OVERDRIVE CLUTCH HUB	71. SNAP RING
49. THRUST BEARING NO.5	72. ONE-WAY CLUTCH INNER RACE
50. PLANETARY REVERSE SUN GEAR	73. O-RING
51. SNAP RING	74. SPRING RETAINER
52. SECOND BRAKE PISTON	75. RETURN SPRING
53. RETURN SPRING	76. LOW-REVERSE BRAKE PISTON
54. PRESSURE PLATE	77. TRANSFER DRIVE GEAR
55. SECOND BRAKE DISCS	78. CAP
56. SECOND BRAKE PLATES	79. LOCK NUT
57. PLANETARY CARRIER ASSEMBLY	80. OUTPUT SHAFT
58. SNAP RING	81. TAPER ROLLER BEARING
59. REACTION PLATE	82. COLLAR
60. SNAP RING	83. OUTER RACE
61. LOW-REVERSE BRAKE DISCS	84. SPACER
62. LOW-REVERSE BRAKE PLATES	85. SNAP RING
63. PRESSURE PLATE	

- 86. OUTER RACE
- 87. TRANSAXLE CASE

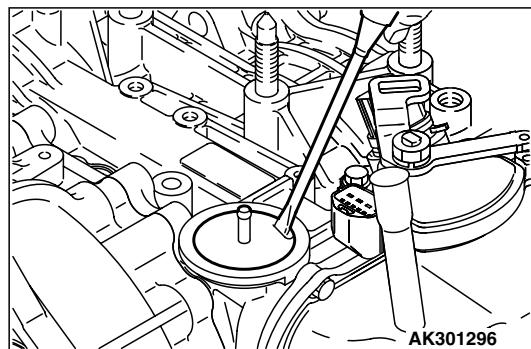
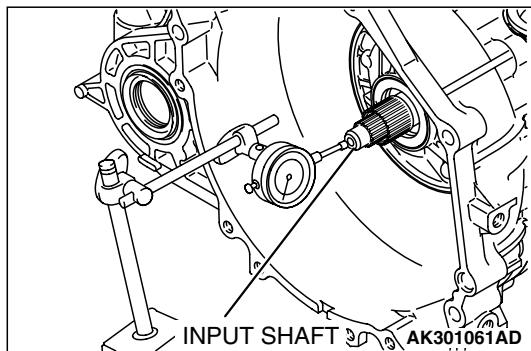
Required Special Tools:

- MB990607: Torque Wrench Socket
- MB990930: Installer Adapter
- MB990931: Installer Adapter
- MB990935: Installer Adapter
- MB990938: Handle
- MB991625: Special Socket (41)
- MB991631: Clearance Dummy Plate
- MD998333: Oil Pump Remover
- MD998350: Bearing Installer
- MD998412: Guide
- MD998903: Spring Compressor
- MD998913: Dial Gauge Extension
- MD998924: Spring Compressor Retainer

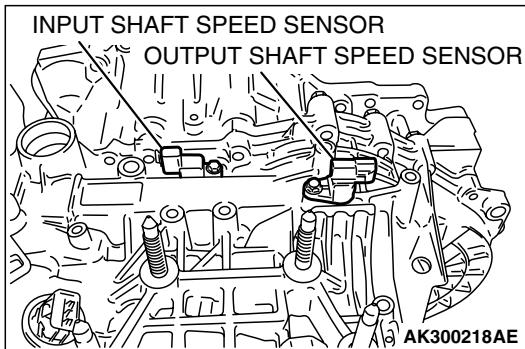
DISASSEMBLY
CAUTION

- Because the automatic transaxle is manufactured from high-precision parts, care must be taken not to scratch or damage these parts during disassembly and assembly.
- Work on a rubber mat and keep it clean at all times.
- Do not wear any cloth gloves and do not use any shop towels during disassembly. Use only nylon cloth, paper towels or any other lint-free material.
- Parts which have been disassembled should all be cleaned. Metal parts can be cleaned with normal detergent, but they should be dried completely using compressed air.
- Clutch discs, plastic thrust plates and rubber parts should be cleaned with automatic transmission fluid (ATF).
- If the transaxle body has been damaged, disassemble and clean the cooler system.

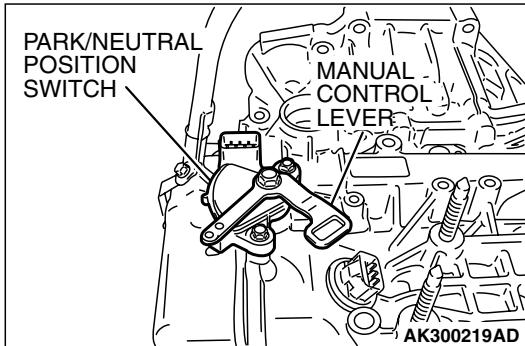
1. Remove the torque converter.
2. Use a dial gauge to measure the input shaft end play.
3. Remove each bracket.
4. Remove the dipstick.
5. Remove the eye bolt, gaskets and the oil cooler feed tube.



6. Remove the air breather by inserting a screwdriver into the air breather and prying it up.



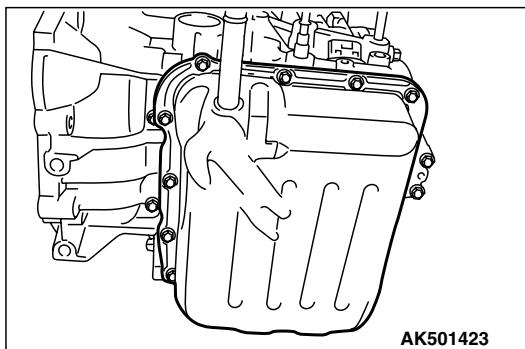
7. Remove the input shaft speed sensor and output shaft speed sensor.



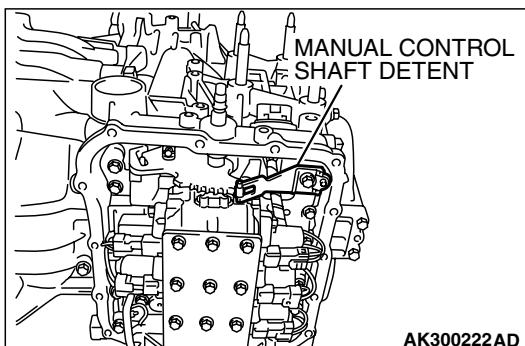
CAUTION

The manual control lever tightening nut must be removed before removing the valve body. If the valve body is removed before the nut, the park/neutral position switch will be damaged.

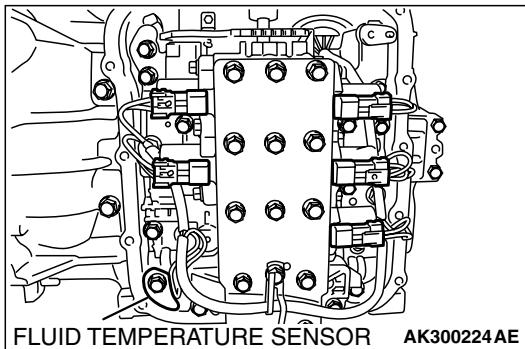
8. Loosen the manual control lever tightening nut, and then remove the manual control lever and the park/neutral position switch.



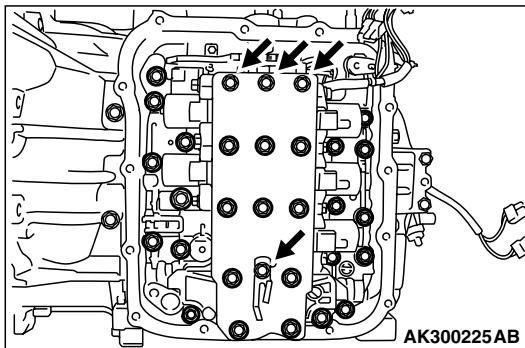
9. Remove the valve body cover.



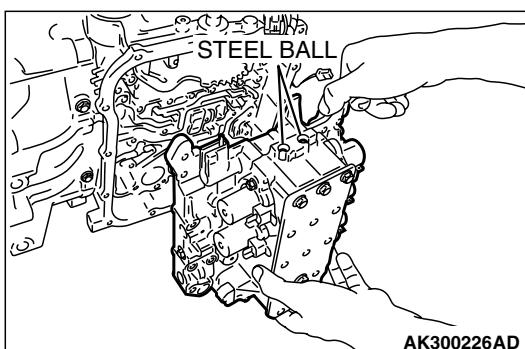
10. Remove the manual control shaft detent.



11. Disconnect the solenoid valve harness from the valve body by disconnecting the fluid temperature sensor and all the connectors.

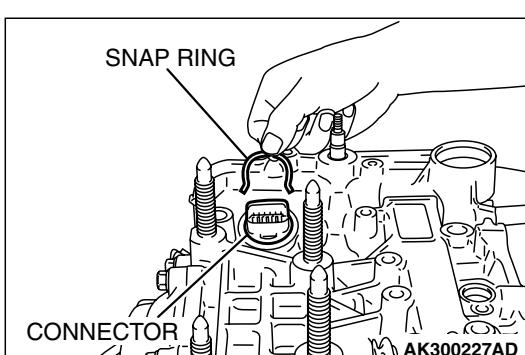


12. Remove the valve body mounting bolts (twenty seven pieces).

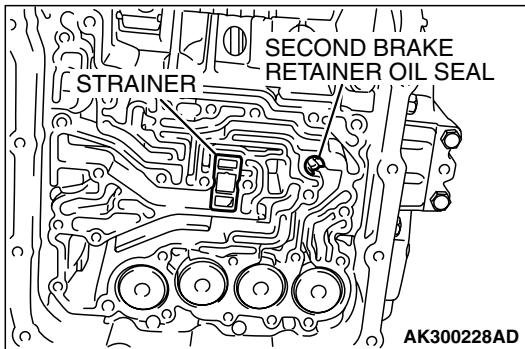


CAUTION
Do not lose the two steel balls.

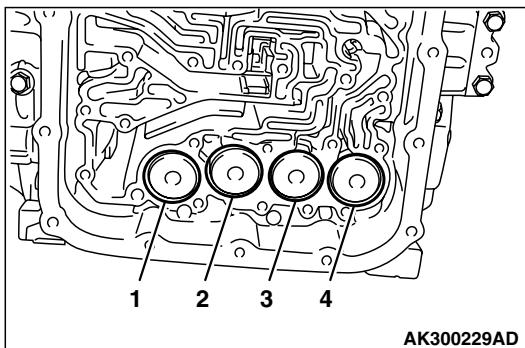
13. Remove the valve body, gasket, and the steel balls (two pieces).



14. Remove the snap ring from the connector. Push the connector into the transaxle case and remove the solenoid valve harness.

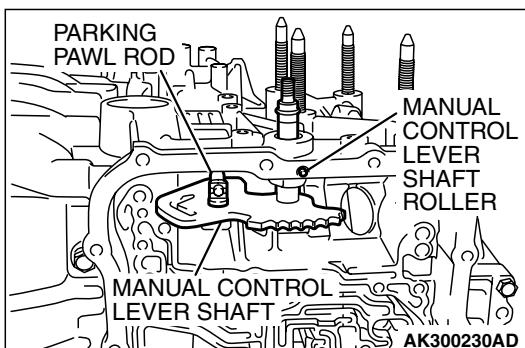


15. Remove the strainer and the second brake retainer oil seal.



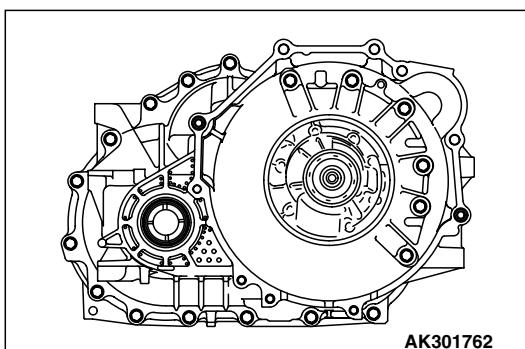
16. Remove each accumulator piston and spring.

NUMBER	NAME
1	For low-reverse brake
2	For underdrive clutch
3	For second brake
4	For overdrive clutch



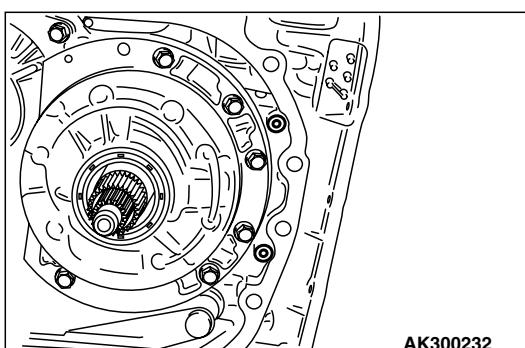
17. Remove the manual control lever shaft roller.

18. Remove the manual control lever shaft and the parking pawl rod.

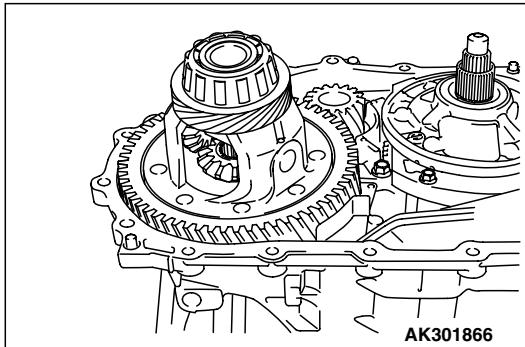


19. Remove the torque converter housing mounting bolts (eighteen pieces), and then remove the torque converter housing.

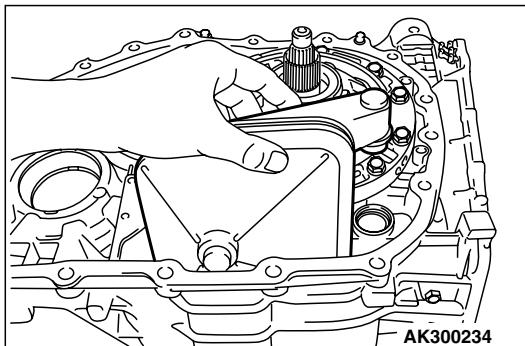
20. Remove the differential bearing outer race and spacer from the torque converter housing.



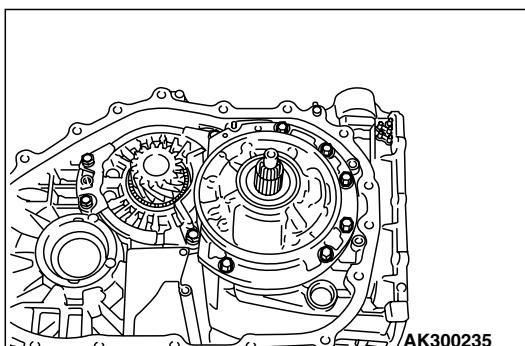
21. Remove the O-rings (two pieces).



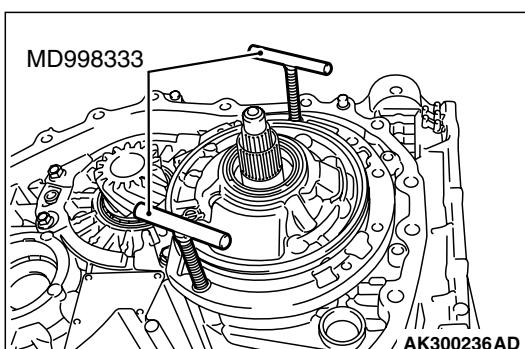
22. Remove the differential.



23. Remove the oil filter.



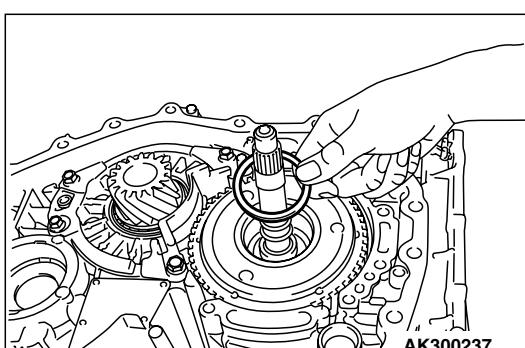
24. Remove the oil pump mounting bolts (six pieces).



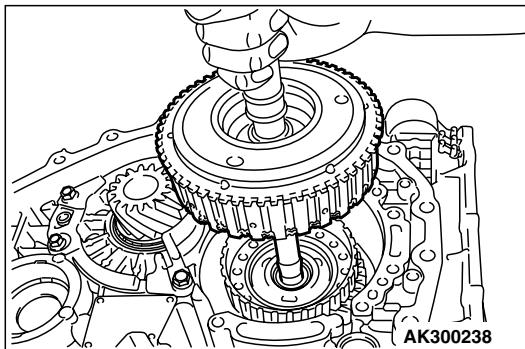
25. Install special tool MD998333 in the position shown in the illustration.

26. Turn special tool MD998333 to remove the oil pump.

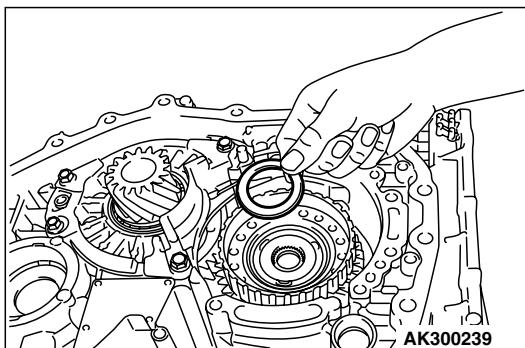
27. Remove the oil pump gasket.



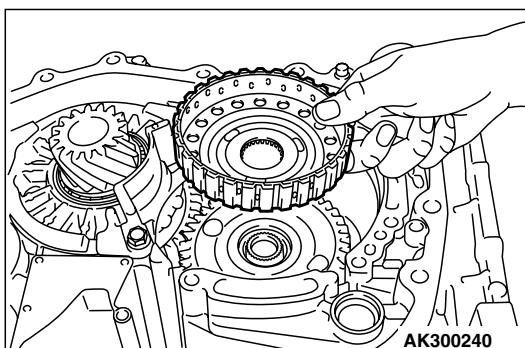
28. Remove thrust washer number 1.



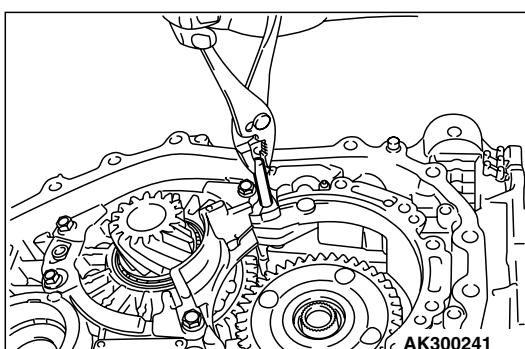
29. Holding the input shaft, remove the underdrive clutch and input shaft.



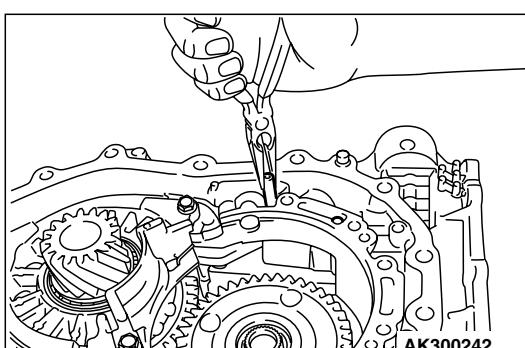
30. Remove thrust bearing number 2.



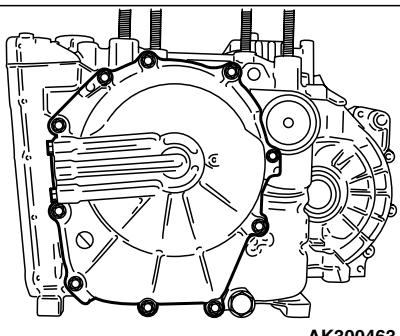
31. Remove the underdrive clutch hub.



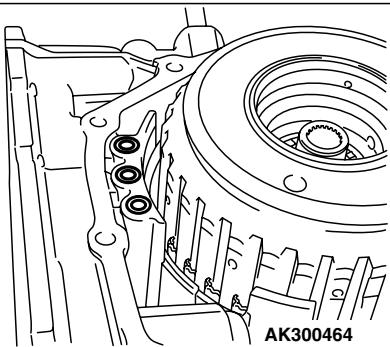
32. Remove the parking pawl shaft, and then remove the spacer and spring.



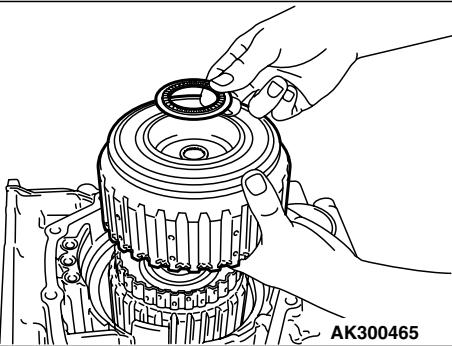
33. Remove the parking roller support shafts (two pieces), and then remove the parking pawl and parking roller support.



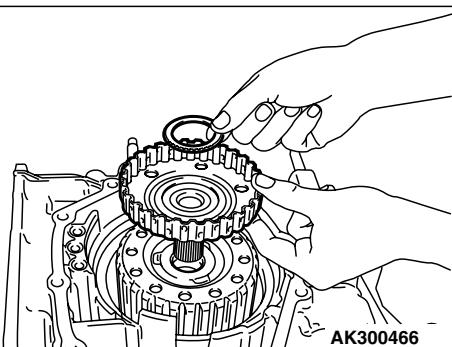
34. Remove the rear cover and input shaft rear bearing.
35. Remove thrust race number 8.
36. Remove the seal rings (four pieces).



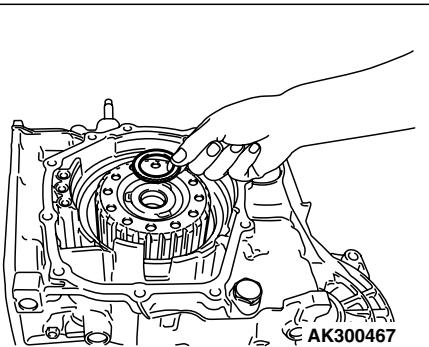
37. Remove the O-rings (three pieces).



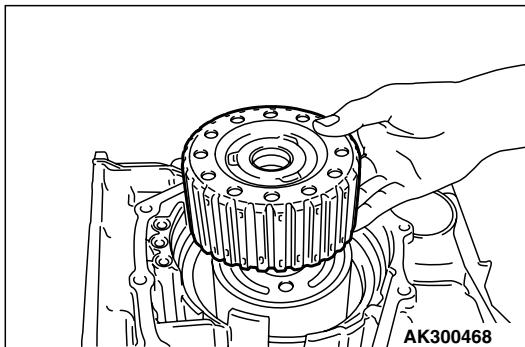
38. Remove the reverse and overdrive clutch and thrust bearing number 7.



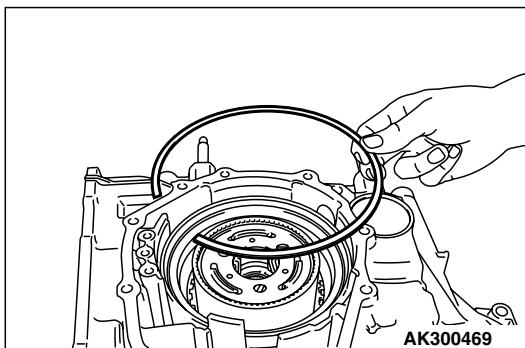
39. Remove overdrive clutch hub and thrust bearing number 6.



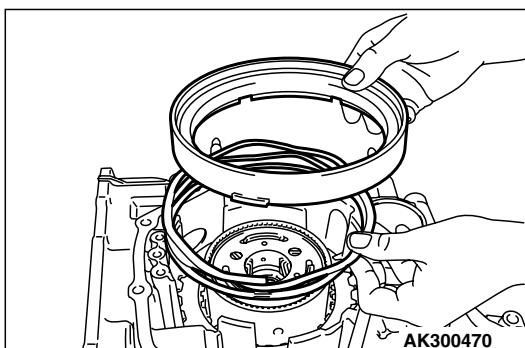
40. Remove thrust bearing number 5.



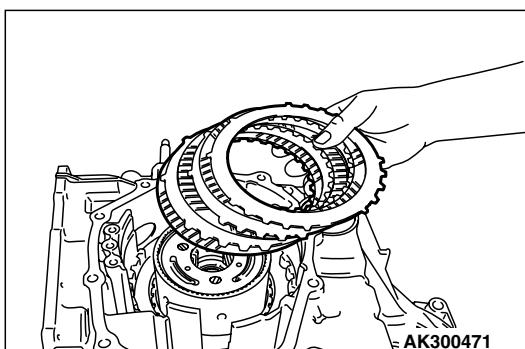
41. Remove the planetary reverse sun gear.



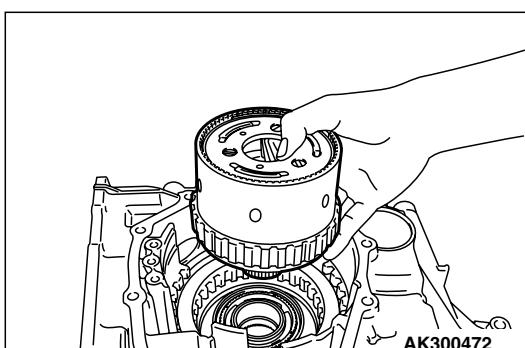
42. Remove the snap ring.



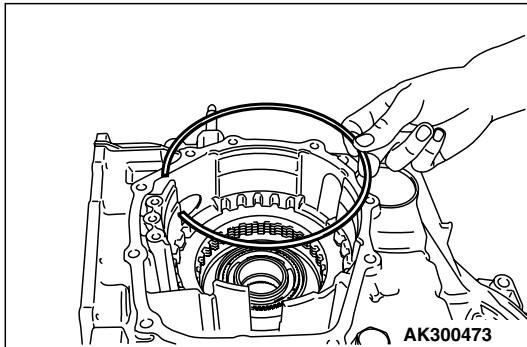
43. Remove the second brake piston and the return spring.



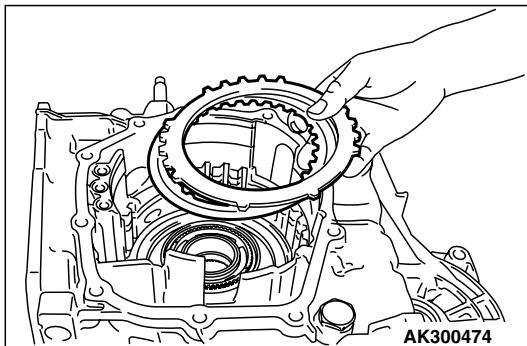
44. Remove the pressure plate, second brake discs (three pieces) and second brake plates (two pieces).



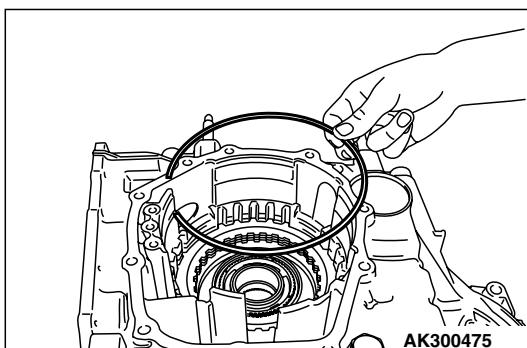
45. Remove the planetary carrier assembly.



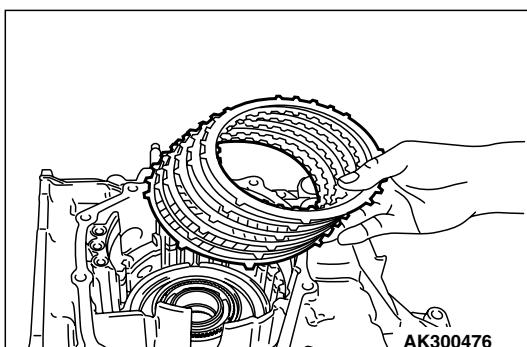
46. Remove the snap ring.



47. Remove the reaction plate and the brake disc.

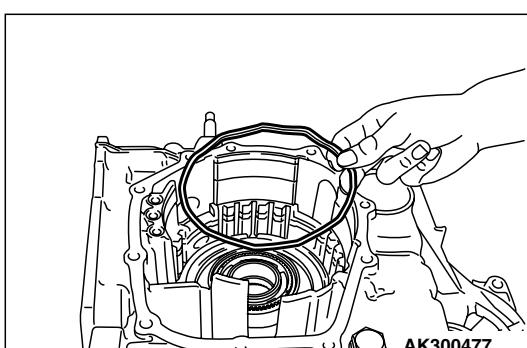


48. Remove the snap ring.

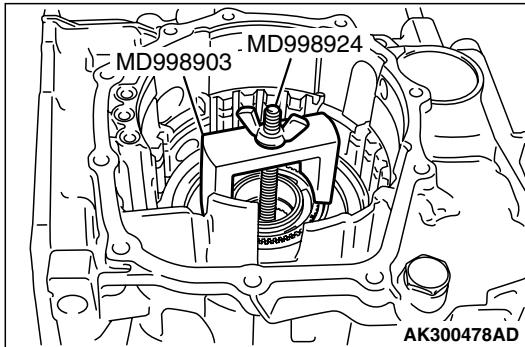


49. Remove the brake plates (five pieces), brake discs (six pieces) and pressure plate.

*NOTE: *Includes the brake discs removed in step 48.*

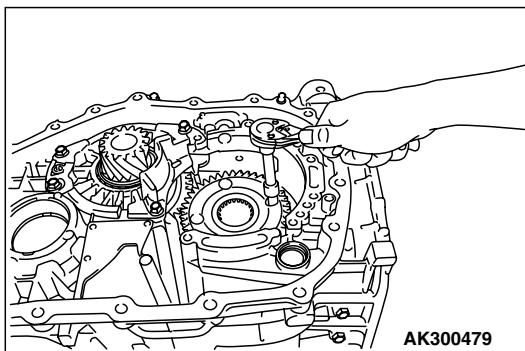


50. Remove the wave spring.



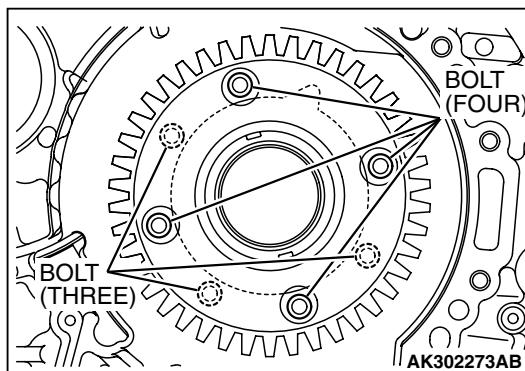
51. Remove the one-way clutch inner race and low-reverse brake piston as follows:

- (1) Using special tools MD998903 and MD998924, compress the one-way clutch inner race.
- (2) Remove the snap ring.
- (3) Remove the special tools.
- (4) Remove the one-way clutch inner race, O-ring, spring retainer, return spring and low-reverse brake piston.

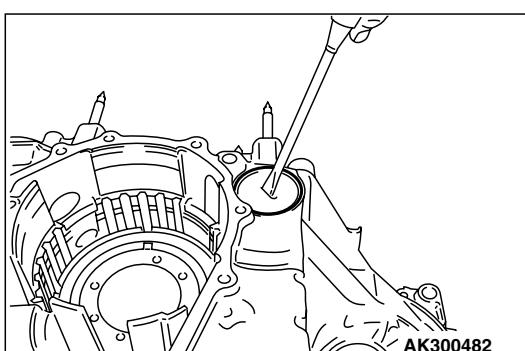
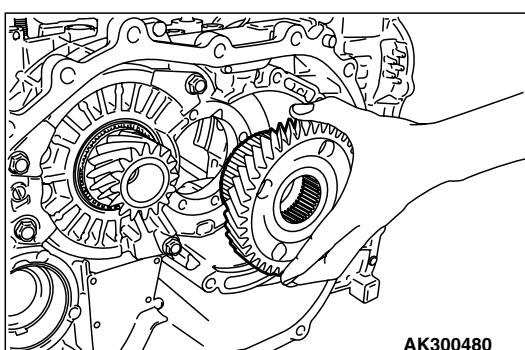


52. Remove the transfer drive gear bearing mounting bolts (three or four pieces).

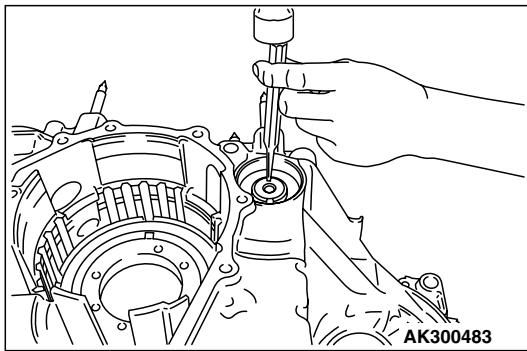
Then, turn the gear 1/8 turn (45 degrees) and remove the remaining bolts.



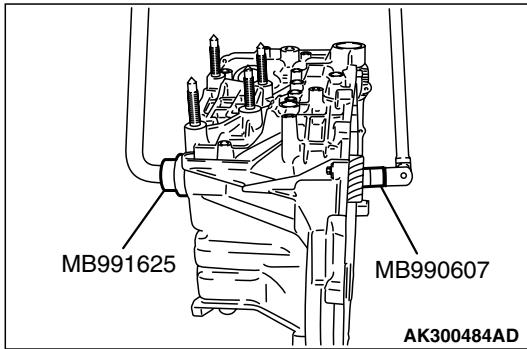
53. Remove the transfer drive gear.



54. Remove the cap by inserting a screwdriver into the center of the cap and prying it up.



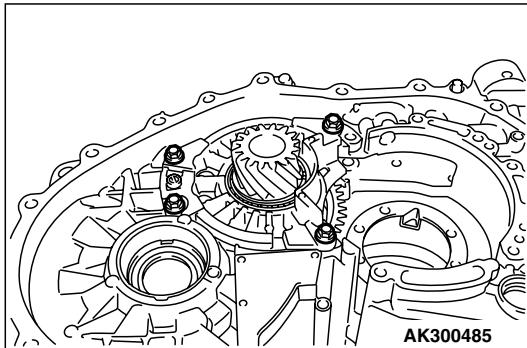
55. Using a chisel, straighten the staked portions from the output shaft lock nut.



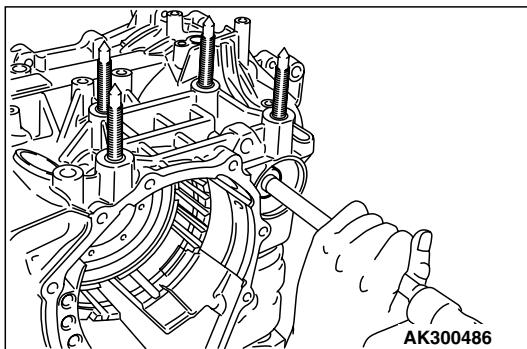
CAUTION

The lock nut is reverse threaded.

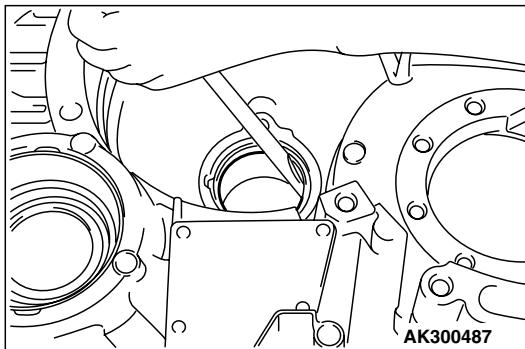
56. Use special tools MB991625 and MB990607 to remove the output shaft lock nut.



57. Remove the bearing retainer mounting bolts.



58. Tap on the rear end of the output shaft to remove the output shaft, taper roller bearing and collar.



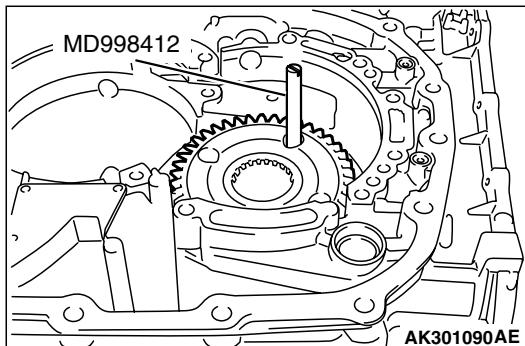
59. Tap out the outer race and the spacer.
60. Remove the snap ring.
61. Remove the differential bearing outer race from the transaxle case.

ASSEMBLY

CAUTION

- Do not reuse the gasket, O-ring, oil seal. Always replace with a new one when assembling.
- Do not use grease. Use petroleum jelly (i.e. Vaseline).
- Apply ATF to friction components, rotating parts, and sliding parts before installation. Immerse new clutch discs or brake discs in ATF for at least two hours before assembling them.
- When replacing a bushing, replace the assembly which it belongs to.
- Do not use cloth gloves or shop towels during assembly. Use nylon cloth or other lint-free material.

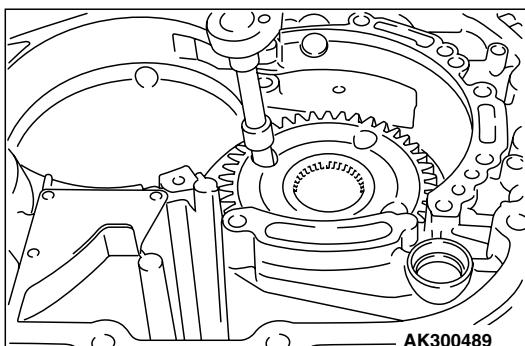
1. Install special tool MD998412 in the installation screw hole of the transfer drive gear bearing located in the transaxle case. Using this as a guide, install the transfer drive gear bearing and gear in the transaxle case.

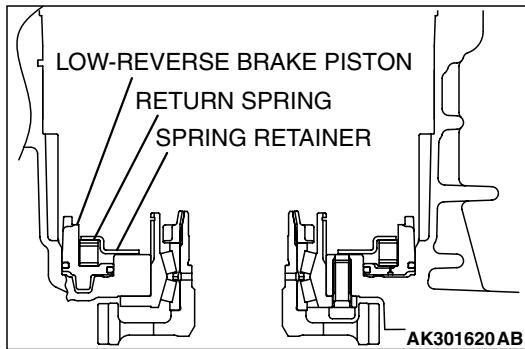


2. Tighten the mounting bolts (seven pieces) of the transfer drive gear bearing to the specified torque.

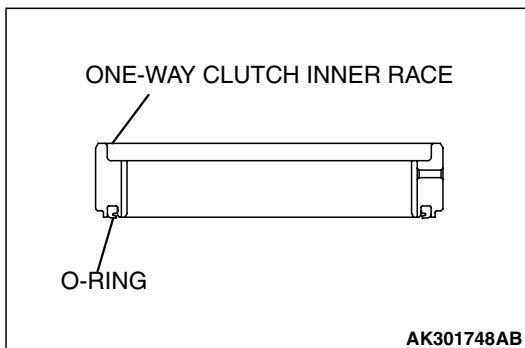
Tightening torque:

$34 \pm 2 \text{ N}\cdot\text{m}$ ($25 \pm 1 \text{ ft-lb}$)

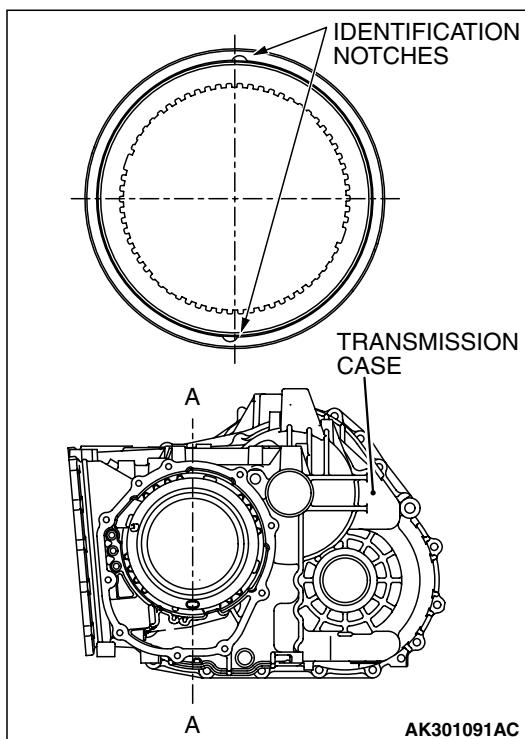




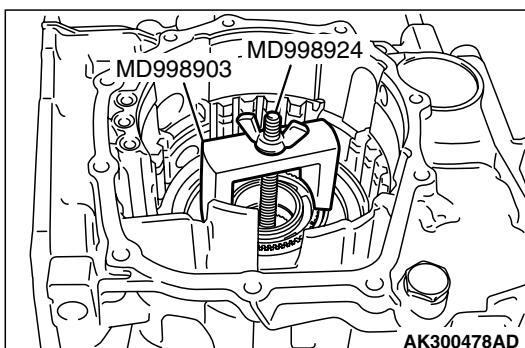
3. Install the low-reverse brake piston, return spring, and spring retainer into the transaxle case.



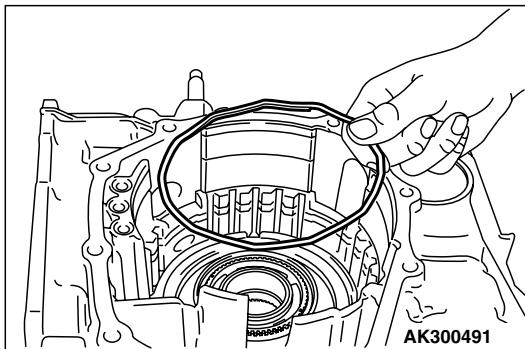
4. Install a new O-ring into the groove of one-way clutch inner race.



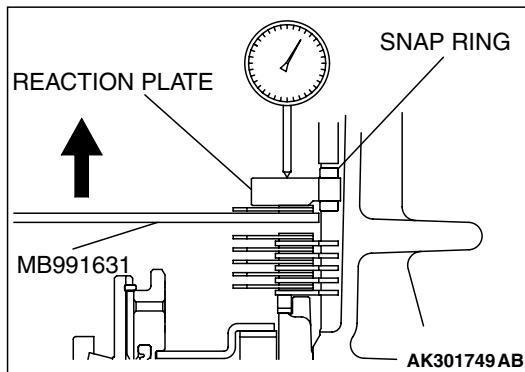
5. Check the placement of the identification notches in the one-way clutch inner race. Install the one-way clutch inner race to the transfer drive gear bearing so that the notches fall along the A - A line.



6. Put the snap ring on the inner race.
7. Set special tools MD998903 and MD998924 as shown, and then compress the one-way clutch inner race and install the snap ring.



8. Install the wave spring onto the low-reverse brake piston.



9. Install the brake discs (six pieces), brake plates (five pieces) and snap ring as shown in the illustration.

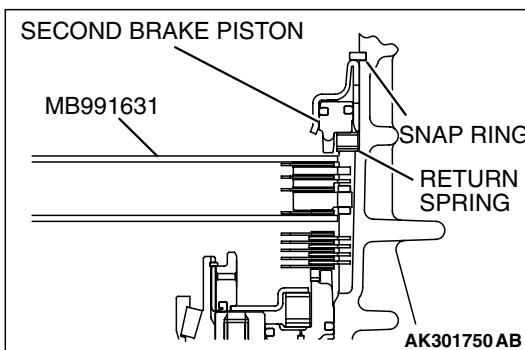
NOTE: Do not install the pressure plate at this time.

10. Install special tool MB991631 on the brake disc.

11. Install the reaction plate and the used snap ring.

12. Move special tool MB991631 to measure the end play of reaction plate. Then replace the snap ring installed in step 11 to adjust the end play to standard value.

Standard value: 0 – 0.16 mm (0 – 0.0063 inch)

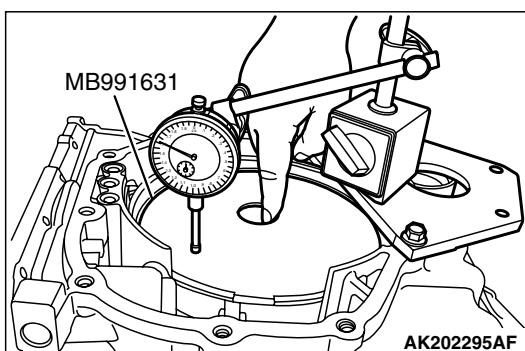


13. Install the brake discs (three pieces) and brake plates (two pieces) as shown in the illustration.

NOTE: Do not install the pressure plate at this time.

14. Place special tool MB991631 on top of the brake disc in place of the pressure plate.

15. Install the return spring, second brake piston and snap ring.



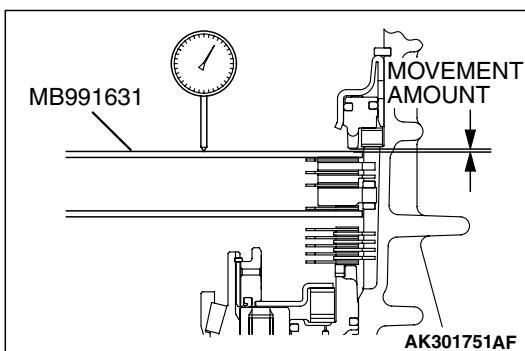
16. Move special tool MB991631 and measure its movement.

Standard value of end play (Reference):

0.79 – 1.25 mm (0.0311 – 0.0492 inch)

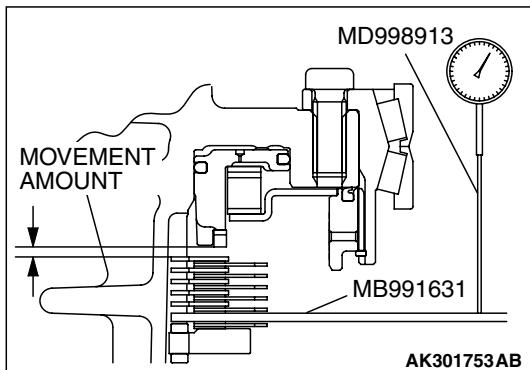
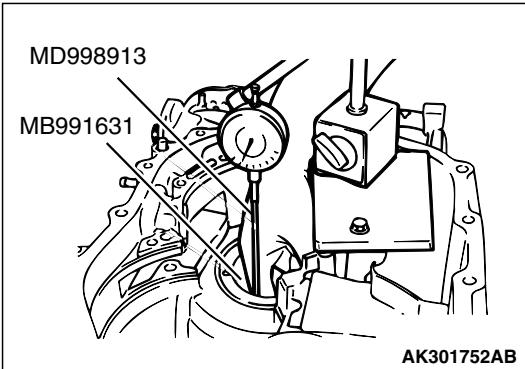
17. Select a pressure plate whose thickness corresponds to the measured amount of movement from the following table.

PRESSURE PLATE FOR SECOND BRAKE



MOVEMENT AMOUNT mm (in)	THICKNESS mm (in)	ID SYMBOL
0.6 – 0.8 (0.024 – 0.031)	1.6 (0.063)	L
0.8 – 1.0 (0.031 – 0.039)	1.8 (0.071)	1
1.0 – 1.2 (0.039 – 0.047)	2.0 (0.079)	0

MOVEMENT AMOUNT mm (in)	THICKNESS mm (in)	ID SYMBOL
1.2 – 1.4 (0.047 – 0.055)	2.2 (0.087)	2
1.4 – 1.6 (0.055 – 0.063)	2.4 (0.094)	4
1.6 – 1.8 (0.063 – 0.071)	2.6 (0.102)	6



18. Turn the transaxle over so that the installation surface of the torque converter housing is facing up.

Install special tool MD998913 in a dial gauge, and then move special tool MB991631 and measure its movement.

Standard value of end play (Reference):
1.65 – 2.11 mm (0.0649 – 0.0831 inch)

19. Select a pressure plate whose thickness corresponds to the measured amount of movement from the table below.

PRESSURE PLATE FOR LOW-REVERSE BRAKE

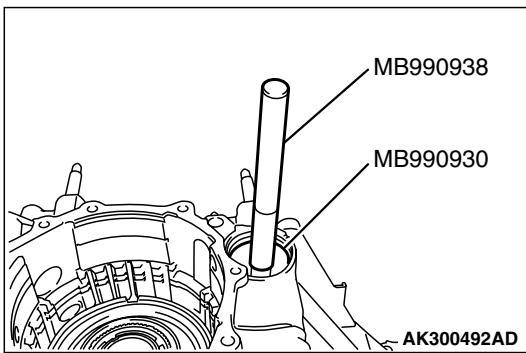
MOVEMENT AMOUNT mm (in)	THICKNESS mm (in)	ID SYMBOL
1.3 – 1.5 (0.051 – 0.059)	1.6 (0.063)	L
1.5 – 1.7 (0.059 – 0.067)	1.8 (0.071)	1
1.7 – 1.9 (0.067 – 0.075)	2.0 (0.079)	0
1.9 – 2.1 (0.075 – 0.083)	2.2 (0.087)	2
2.1 – 2.3 (0.083 – 0.091)	2.4 (0.094)	4
2.3 – 2.5 (0.091 – 0.098)	2.6 (0.102)	6
2.5 – 2.7 (0.098 – 0.106)	2.8 (0.110)	8
2.7 – 2.9 (0.106 – 0.114)	3.0 (0.118)	D

CAUTION

If necessary, take the measurements in steps 9 to 18 after replacing the pressure plate, brake plate and brake disc.

20. Remove all parts and special tools that were installed to take the measurements in steps 9 to 18. Remove and separate the pressure plate and snap ring chosen in steps 12, 16 and 18.

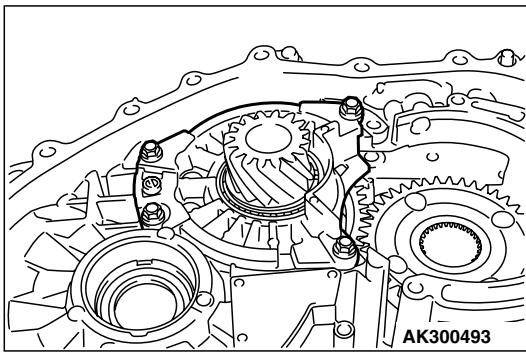
21. Install the snap ring into the groove of transaxle case output shaft bore.
22. Use special tools MB990930 and MB990938 to tap the output shaft bearing outer race in the transaxle case.



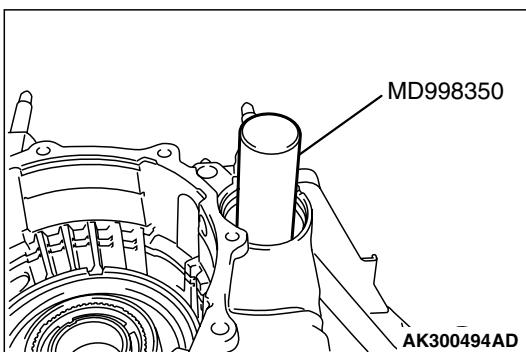
CAUTION
Do not reuse the bolt, as it has had sealant applied.

23. Tighten the mounting bolts of the output shaft bearing retainer to the specified torque.

Tightening torque:
 $29 \pm 2 \text{ N}\cdot\text{m} (21 \pm 1 \text{ ft-lb})$



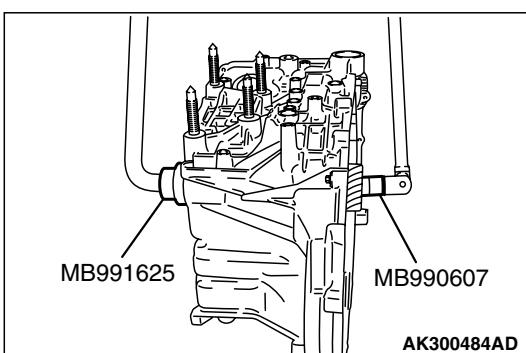
24. Use special tool MD998350 to install the collar and taper roller bearing on the output shaft.

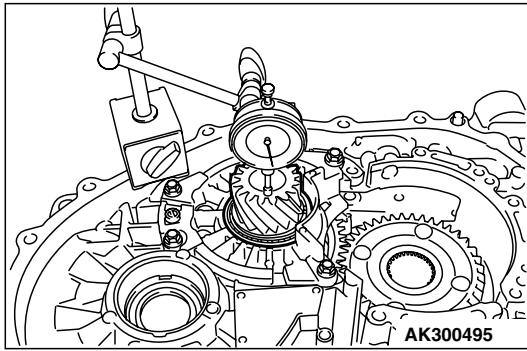


25. Apply ATF to a new lock nut, and use special tools MB990607 and MB991625 to tighten the lock nut to the specified torque. Then turn back one turn, and tighten to the specified torque again.

Tightening torque: $170 \pm 10 \text{ N}\cdot\text{m} (125 \pm 7 \text{ ft-lb})$

NOTE: The lock nut is reverse threaded.





26. Move the output shaft to measure the end play and record the measurement value.

**Standard value of output shaft end play (reference):
0.01 – 0.09 mm (0.0004 – 0.0035 inch)**

27. Remove the parts that were installed in steps 22 to 25.

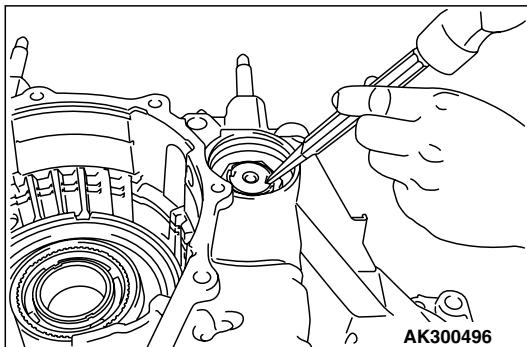
28. Select a spacer whose thickness corresponds to the measured amount of movement from the following table.

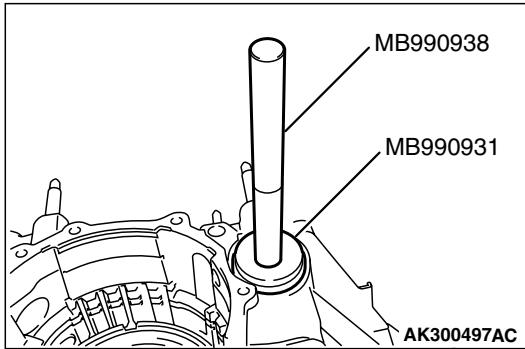
SPACER FOR OUTPUT SHAFT

MOVEMENT AMOUNT mm (in)	THICKNESS mm (in)	ID SYMBOL
1.81 – 1.85 (0.0713 – 0.0728)	1.88 (0.0740)	88
1.85 – 1.89 (0.0728 – 0.0744)	1.92 (0.0756)	92
1.89 – 1.93 (0.0744 – 0.0760)	1.96 (0.0772)	96
1.93 – 1.97 (0.0760 – 0.0776)	2.00 (0.0787)	00
1.97 – 2.01 (0.0776 – 0.0791)	2.04 (0.0803)	04
2.01 – 2.05 (0.0791 – 0.0807)	2.08 (0.0819)	08
2.05 – 2.09 (0.0807 – 0.0823)	2.12 (0.0835)	12
2.09 – 2.13 (0.0823 – 0.0839)	2.16 (0.0850)	16
2.13 – 2.17 (0.0839 – 0.0854)	2.20 (0.0866)	20
2.17 – 2.21 (0.0854 – 0.0870)	2.24 (0.0882)	24
2.21 – 2.25 (0.0870 – 0.0886)	2.28 (0.0898)	28
2.25 – 2.29 (0.0886 – 0.0902)	2.32 (0.0913)	32
2.29 – 2.33 (0.0902 – 0.0917)	2.36 (0.0929)	36
2.33 – 2.37 (0.0917 – 0.0933)	2.40 (0.0945)	40
2.37 – 2.41 (0.0933 – 0.0949)	2.44 (0.0961)	44
2.41 – 2.45 (0.0949 – 0.0965)	2.48 (0.0976)	48

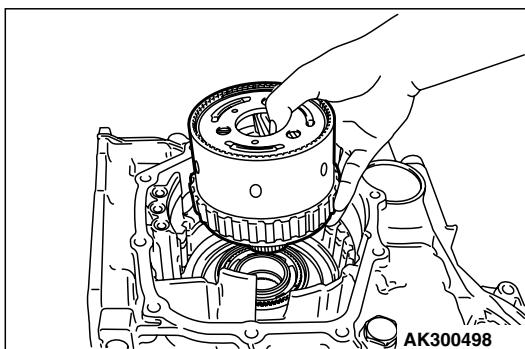
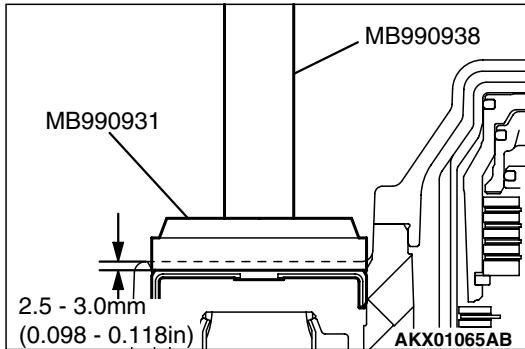
MOVEMENT AMOUNT mm (in)	THICKNESS mm (in)	ID SYMBOL
2.45 – 2.49 (0.0965 – 0.0980)	2.52 (0.0992)	52
2.49 – 2.53 (0.0980 – 0.0996)	2.56 (0.1008)	56
2.53 – 2.57 (0.0996 – 0.1012)	2.60 (0.1024)	60
2.57 – 2.61 (0.1012 – 0.1028)	2.64 (0.1039)	64
2.61 – 2.65 (0.1028 – 0.1043)	2.68 (0.1055)	68
2.65 – 2.69 (0.1043 – 0.1059)	2.72 (0.1071)	72
2.69 – 2.73 (0.1059 – 0.1075)	2.76 (0.1087)	76

29. Repeat steps 22 to 25 again, installing each part and using the appropriate adjustment spacer determined in step 28.
30. Stake the lock nut with a punch (two places).

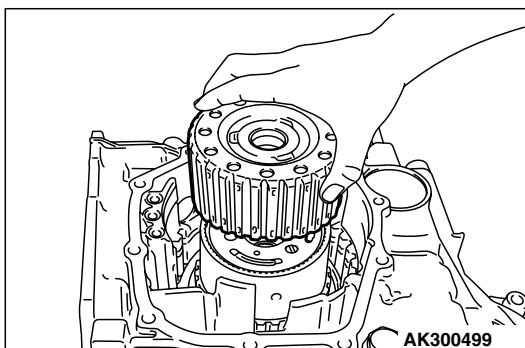




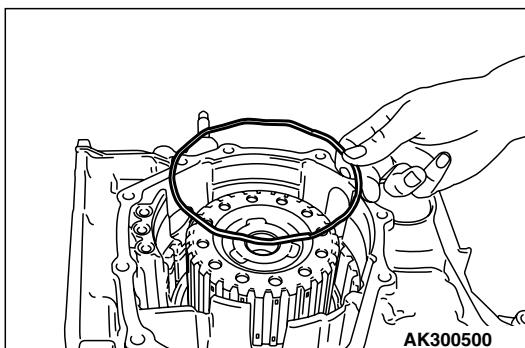
31. Use special tools MB990931 and MB990938 to install the cap as shown in the illustration.



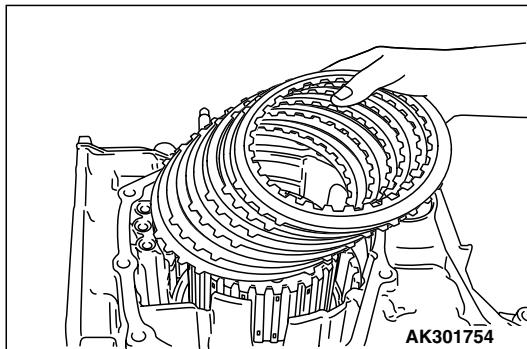
32. Install the planetary carrier assembly.



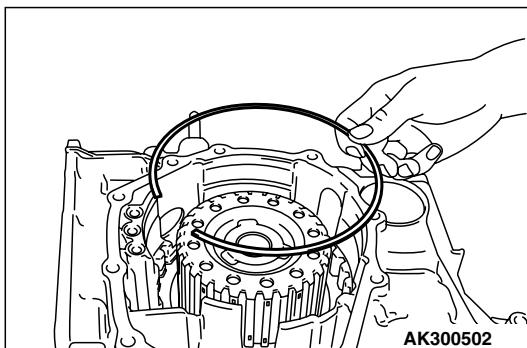
33. Install the planetary reverse sun gear.



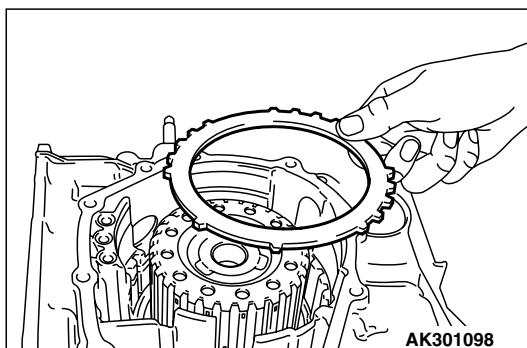
34. Install the wave spring on the low-reverse brake piston.



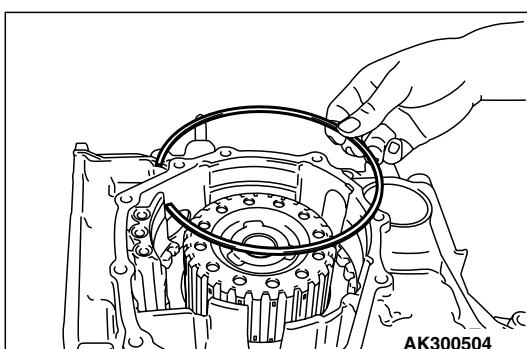
35. Install the pressure plate that was selected in step 19. Next, install brake discs (six pieces) and brake plates (five pieces), one on top of the other.



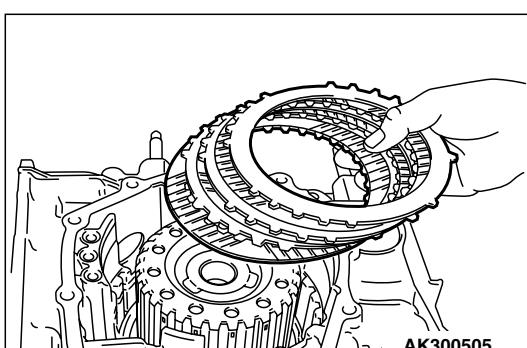
36. Install the snap ring.



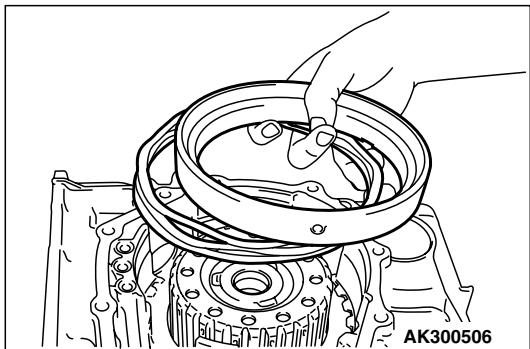
37. Install the reaction plate.



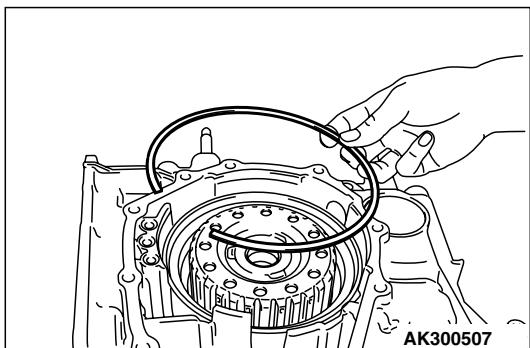
38. Install the snap ring that was selected in step 12.



39. Install second brake discs (three pieces) and second brake plates (two pieces), one on top of the other. Next, install the pressure plate that was selected in step 17.

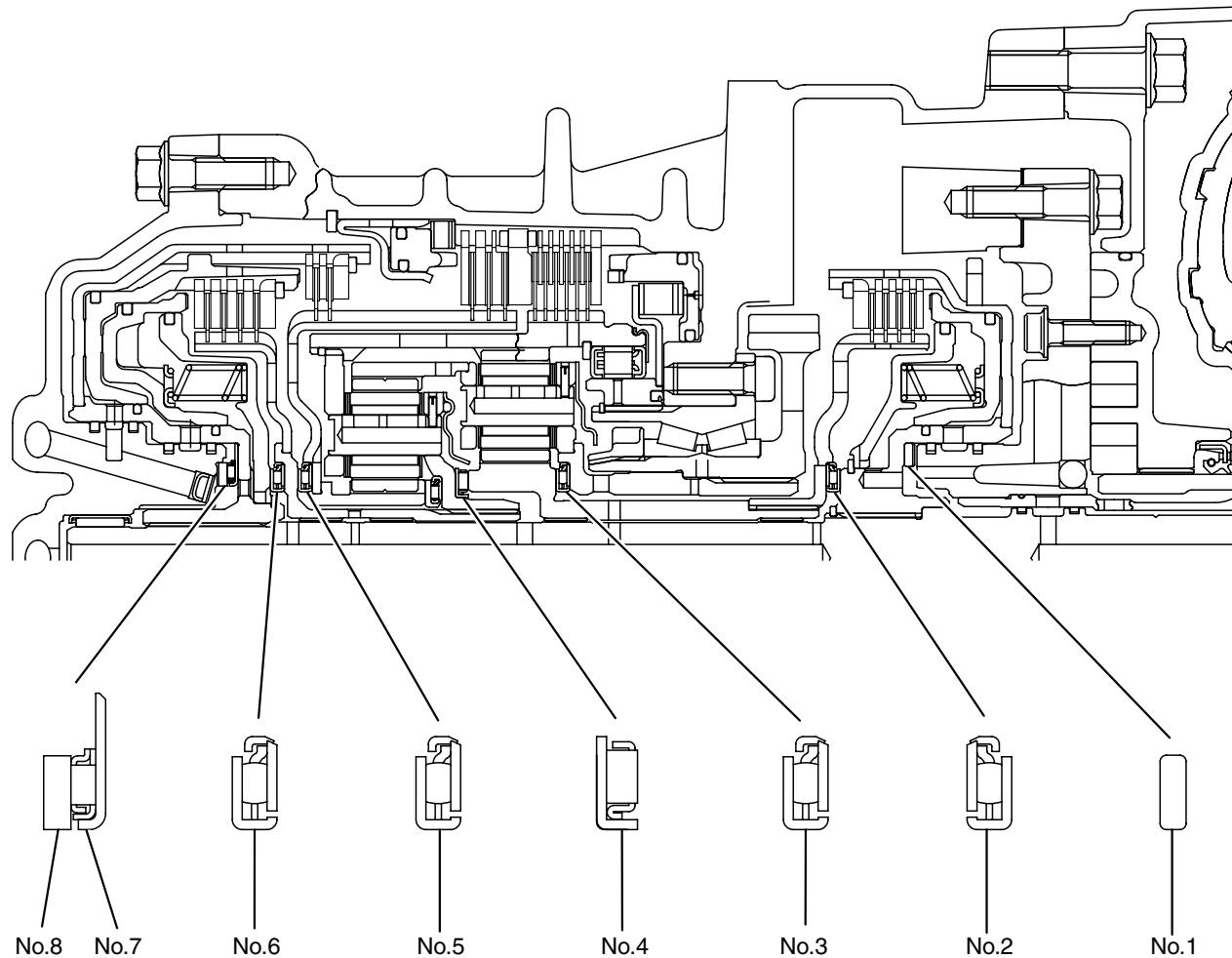


40. Install the return spring and second brake piston.



41. Install the snap ring.

IDENTIFICATION OF THRUST BEARING, THRUST RACES, AND THRUST WASHERS



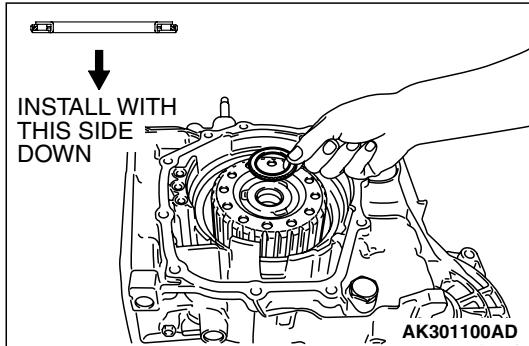
AK301755 AB

SYMBOL	OD mm (in)	ID mm (in)	THICKNESS mm (in)	SYMBOL	OD mm (in)	ID mm (in)	THICKNESS mm (in)
No. 1	59 (2.32)	47 (1.85)	1.8 (0.071)	No. 8	48.9 (1.925)	37 (1.46)	1.6 (0.063)
	59 (2.32)	47 (1.85)	2.0 (0.079)		48.9 (1.925)	37 (1.46)	1.7 (0.067)
	59 (2.32)	47 (1.85)	2.2 (0.087)		48.9 (1.925)	37 (1.46)	1.8 (0.071)
	59 (2.32)	47 (1.85)	2.4 (0.094)		48.9 (1.925)	37 (1.46)	1.9 (0.075)
	59 (2.32)	47 (1.85)	2.6 (0.102)		48.9 (1.925)	37 (1.46)	2.0 (0.079)
	59 (2.32)	47 (1.85)	2.8 (0.110)		48.9 (1.925)	37 (1.46)	2.1 (0.083)
No. 2	49 (1.93)	34 (1.34)	3.6 (0.142)		48.9 (1.925)	37 (1.46)	2.2 (0.087)
No. 3	49 (1.93)	34 (1.34)	3.6 (0.142)		48.9 (1.925)	37 (1.46)	2.3 (0.091)
No. 4	46 (1.81)	31 (1.22)	3.3 (0.130)		48.9 (1.925)	37 (1.46)	2.4 (0.094)

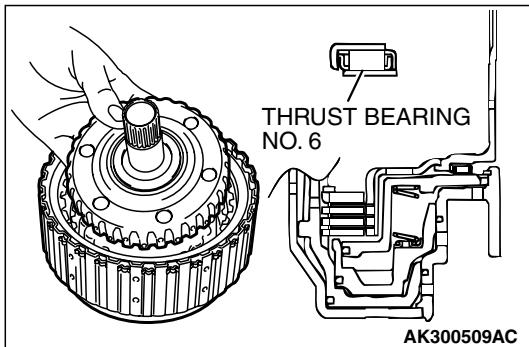
SYMBOL	OD mm (in)	ID mm (in)	THICKNESS mm (in)	SYMBOL	OD mm (in)	ID mm (in)	THICKNESS mm (in)
No. 5	49 (1.93)	34 (1.34)	3.6 (0.142)		48.9 (1.925)	37 (1.46)	2.5 (0.098)
No. 6	49 (1.93)	34 (1.34)	3.6 (0.142)		48.9 (1.925)	37 (1.46)	2.6 (0.102)
No. 7	59 (2.32)	37 (1.46)	2.8 (0.110)				

⚠ CAUTION

Be sure to install the thrust bearing in the correct direction as shown.

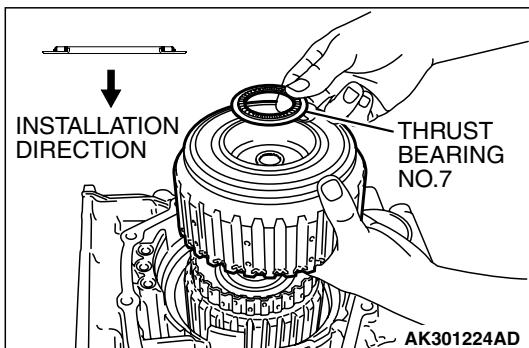


42. Check the installation direction of the thrust bearing number 5, and install it on the hub of the planetary reverse sun gear.

**⚠ CAUTION**

Use care to install the thrust bearing in the proper direction.

43. Attach thrust bearing number 6 to the inside of the overdrive clutch hub using petroleum jelly (Vaseline). Then install the assembly in the reverse and overdrive clutch.

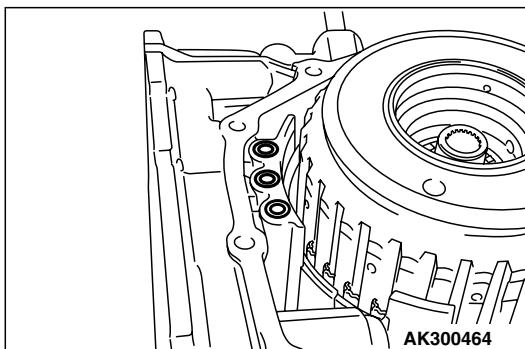
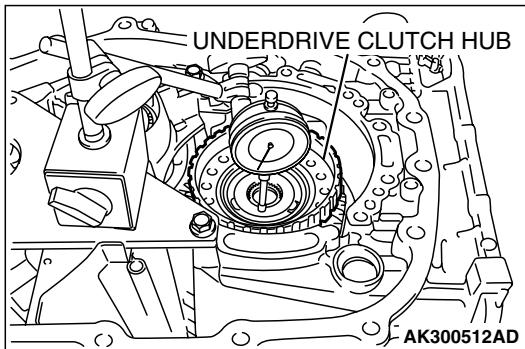
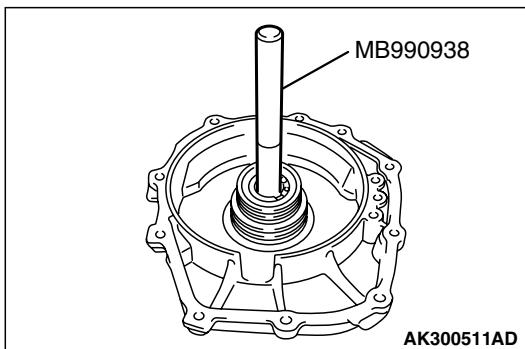


44. Install the reverse and overdrive clutch.

⚠ CAUTION

Be sure to install the thrust bearing in the correct direction as shown.

45. Check the installation direction of thrust bearing number 7, and install it on the reverse clutch retainer.



46. Use special tool MB990938 to tap the input shaft rear bearing in the rear cover.
47. Install the seal rings (four pieces) in the grooves of the rear cover.

48. Measure the end play of the under drive sun gear by the following procedures:

- (1) Install the thinnest thrust race number 8 [thickness 1.6 mm (0.063 inch); part number MD707267] on thrust bearing number 7.
- (2) Install the rear cover on the transaxle case and tighten the bolts to the specified torque.

Tightening torque: $23 \pm 3 \text{ N}\cdot\text{m} (17 \pm 2 \text{ ft-lb})$

- (3) Turn over the transaxle case so that the installation surface of the torque converter housing is facing up.
- (4) Install the underdrive clutch hub on the underdrive sun gear.
- (5) Measure end play of the underdrive sun gear and record the measurement value.

Standard value (Reference):

0.25 – 0.45 mm (0.0098 – 0.0177 inch)

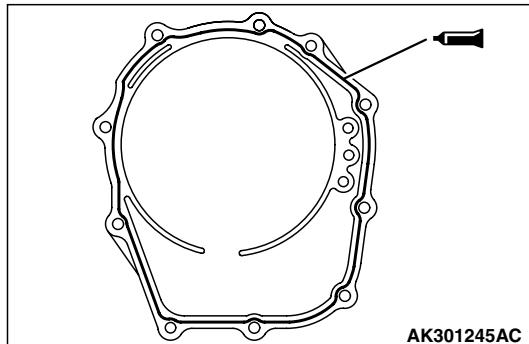
- (6) After taking the measurement in steps (5), take out the installed parts in steps (1) through (4).

49. Install the O-rings (three pieces).

50. Select a thrust race number 8 whose thickness corresponds to the measured values taken in step 47 from the table below. Install it on thrust bearing number 7.

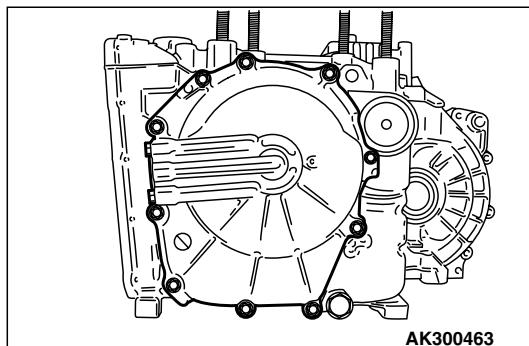
MEASUREMENT VALUE mm (in)	THICKNESS mm (in)
0.3 – 0.4 (0.012 – 0.016)	1.6 (0.063)
0.4 – 0.5 (0.016 – 0.020)	1.7 (0.067)
0.5 – 0.6 (0.020 – 0.024)	1.8 (0.071)
0.6 – 0.7 (0.024 – 0.028)	1.9 (0.075)

MEASUREMENT VALUE mm (in)	THICKNESS mm (in)
0.7 – 0.8 (0.028 – 0.031)	2.0 (0.079)
0.8 – 0.9 (0.031 – 0.035)	2.1 (0.083)
0.9 – 1.0 (0.035 – 0.039)	2.2 (0.087)
1.0 – 1.1 (0.039 – 0.043)	2.3 (0.091)
1.1 – 1.2 (0.043 – 0.047)	2.4 (0.094)
1.2 – 1.3 (0.047 – 0.051)	2.5 (0.098)
1.3 – 1.4 (0.051 – 0.055)	2.6 (0.102)



51. Apply a 2 mm (0.08 inch) diameter bead of sealant (Mitsubishi Genuine Part number MD974421 or equivalent) to the illustrated position of the rear cover.

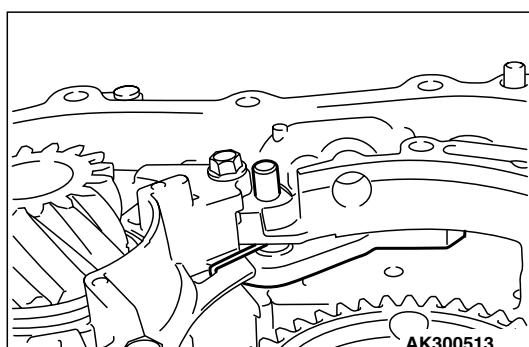
NOTE: Be sure to install the case quickly while the sealant is wet (within 15 minutes). Leaks will occur if the rear cover is installed after the sealant dries.



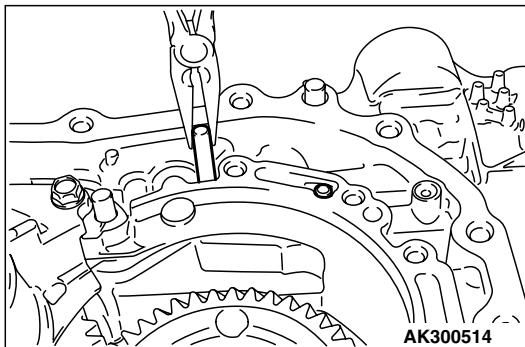
52. Install the rear cover, and tighten its mounting bolts to the specified torque.

Tightening torque: $23 \pm 3 \text{ N}\cdot\text{m}$ ($17 \pm 2 \text{ ft-lb}$)

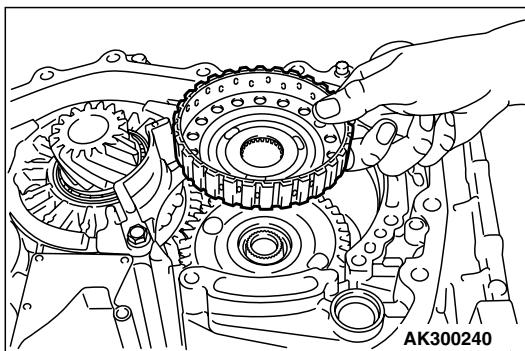
NOTE: After installation, keep the sealed area away from ATF for approximately one hour.



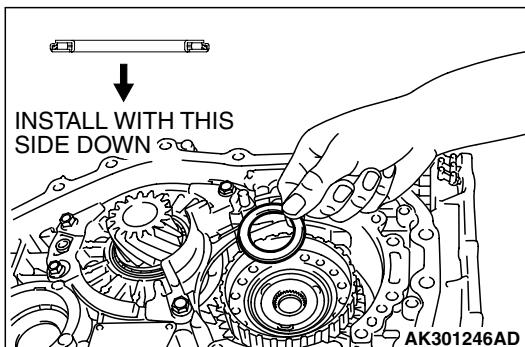
53. Install the parking pawl, spacer, and spring. Then insert the parking pawl shaft.



54. Install the parking roller support, and then insert the parking roller support shafts (two pieces).



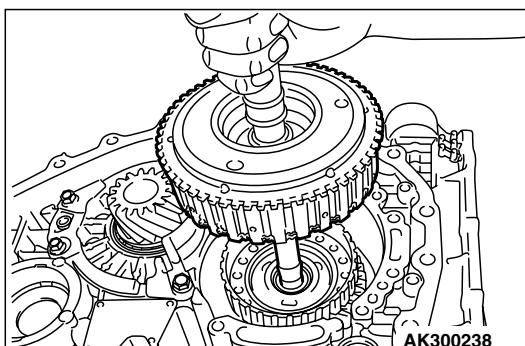
55. Install the underdrive clutch hub to the underdrive sun gear.



CAUTION

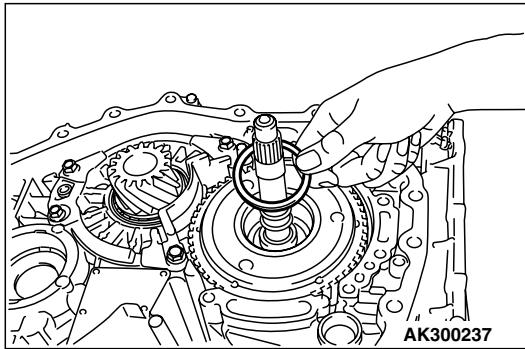
Be sure to install the thrust bearing in the correct direction as shown.

56. Check the installation direction of thrust bearing number 2, and install it on the underdrive clutch hub.

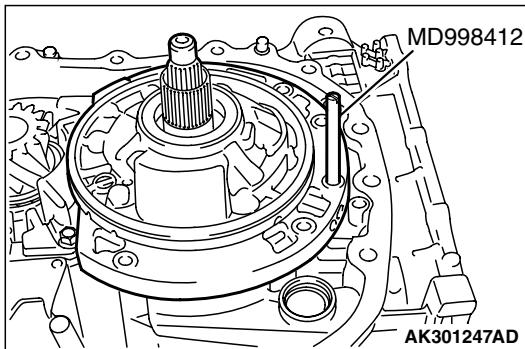


57. Hold the input shaft, and install the underdrive clutch.

58. Adjustment of input shaft end play and select the thrust washer number 1. (Refer to adjustment of transaxle - thrust washer selection for adjustment of input shaft end play P.23B-45.)



59. Install thrust washer number 1 that was selected in step (58) on the underdrive clutch retainer.



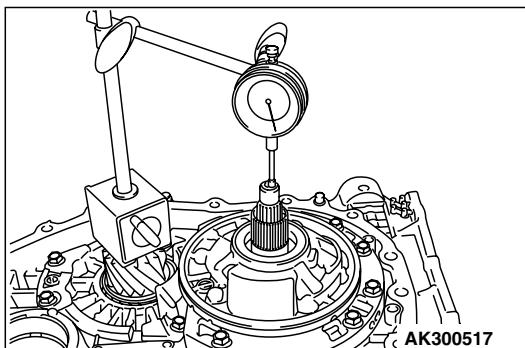
60. Install special tool MD998412 as shown.

61. Install the oil pump to the transaxle case.

NOTE: Do not install the oil pump gasket at this time.

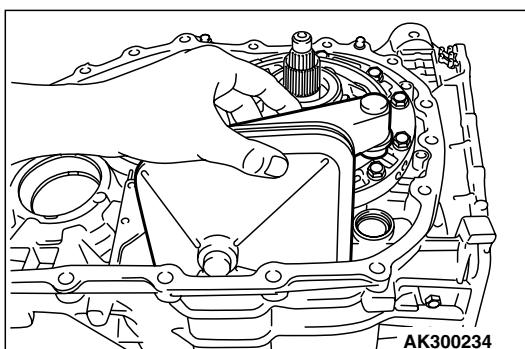
62. Tighten the six oil pump mounting bolts to the specified torque.

Tightening torque: $29 \pm 2 \text{ N}\cdot\text{m} (21 \pm 1 \text{ ft-lb})$

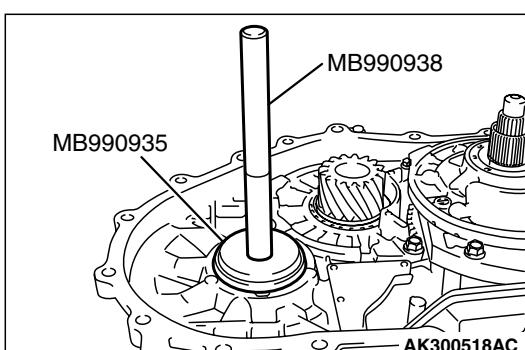


63. Make sure that the input shaft end play meets the standard value.

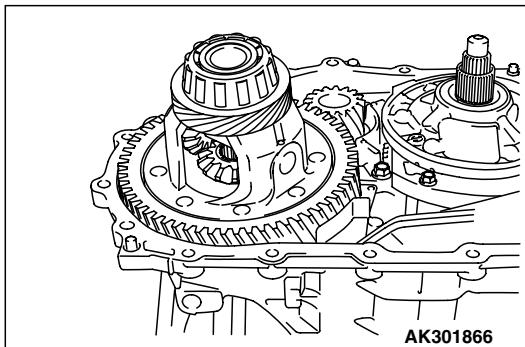
Standard value: $0.70 - 1.45 \text{ mm (0.028 - 0.057 inch)}$



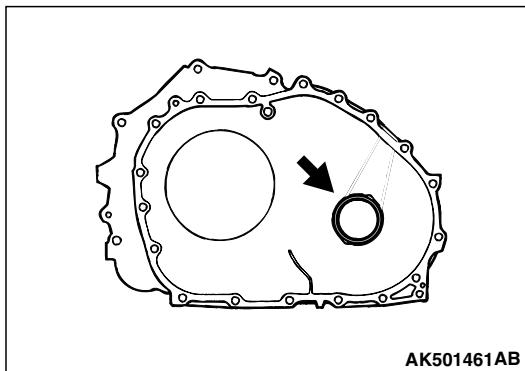
64. Install the oil filter.



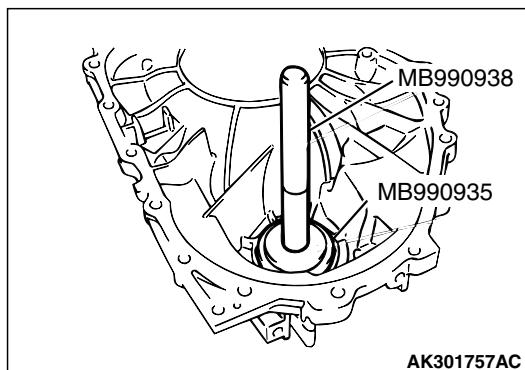
65. Use special tools MB990935 and MB990938 to tap the differential bearing outer race in the transaxle case.



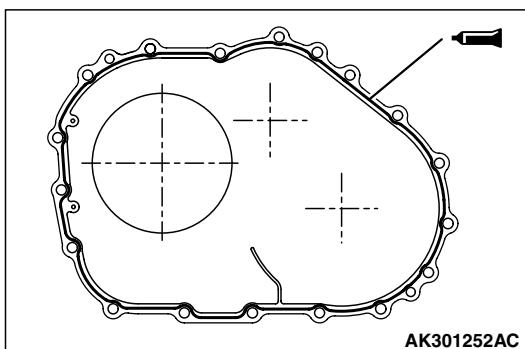
66. Install the differential.



67. Adjustment of differential case preload and select the spacer. (Refer to adjustment of transaxle - spacer selection for adjustment of differential case preload [P.23B-45](#).)
68. Install the selected spacer to the torque converter housing.



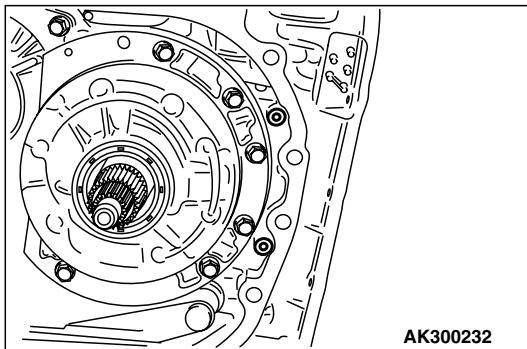
69. Use special tools MB990935 and MB990938 to press the differential bearing outer race into the torque converter housing.



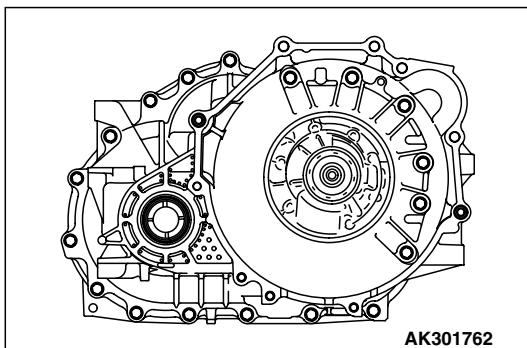
70. Apply a 2 mm (0.08 inch) diameter bead of sealant (Mitsubishi Genuine Part number MD974421 or equivalent) to the torque converter housing in the area shown.

NOTE: Be sure to install the case quickly while the sealant is wet (with 15 minutes). Leaks will occur if the rear cover is installed after the sealant dries.

NOTE: After installation, keep the sealed area away from ATF for approximately one hour.



71. Install the O-rings (two pieces).

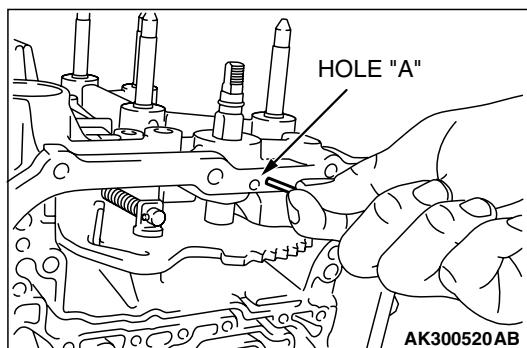


72. Install the torque converter housing and then tighten its mounting bolts (eighteen pieces) to the specified torque.

Tightening torque: $48 \pm 6 \text{ N}\cdot\text{m} (36 \pm 4 \text{ ft-lb})$

73. Insert the O-rings (two pieces) into the grooves of the manual control lever shaft.

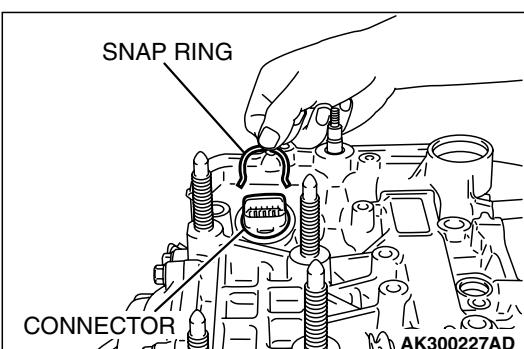
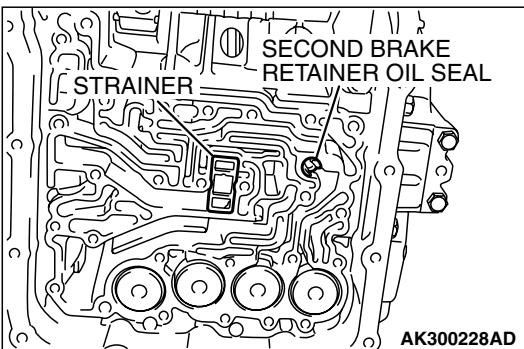
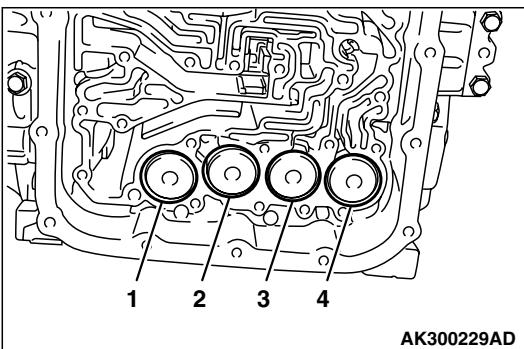
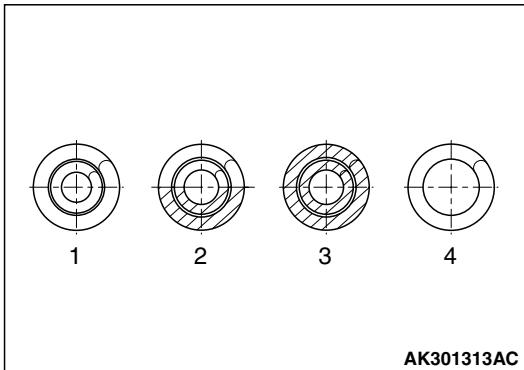
74. Install the manual control lever shaft and parking pawl rod.



75. Align hole "A" with the groove in the manual control lever shaft. Insert the manual control lever shaft roller into hole "A."

76. Insert the new seal rings in the grooves of the accumulator pistons.

NOTE: The piston and seal ring are common parts.



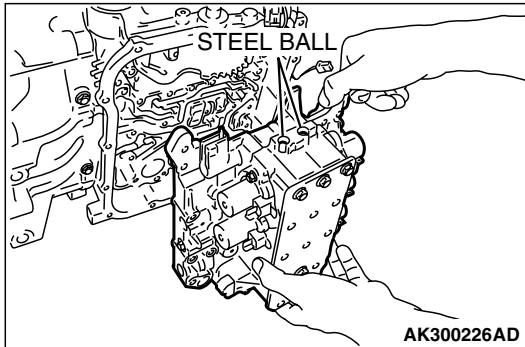
77. Identify the accumulator spring and insert it and the accumulator piston into each hole of the transaxle case.
 NOTE: Accumulator springs are identified as shown in the illustration.

NO.	NAME	IDENTIFICATION "BLUEING"
1	For low-reverse brake	None
2	For underdrive clutch	Half
3	For second brake	Whole surface
4	For overdrive clutch	None

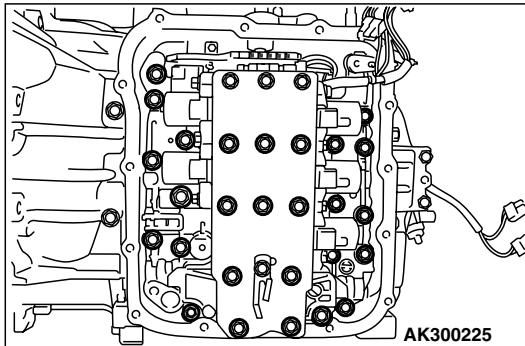
78. Install the strainer and second brake retainer oil seal.

79. Insert a new O-ring to the groove of the solenoid valve harness connector.

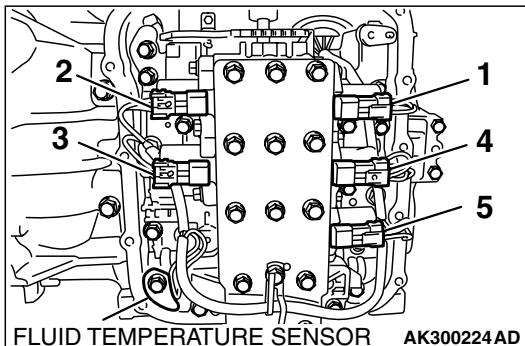
80. Insert the solenoid valve harness connector into the hole from the inside of the transaxle case so it is oriented as shown in the illustration. Then secure the snap ring to the connector groove.



81. Install the steel balls into each of the two holes in the top face of the valve body (outside valve body).
 82. Install the valve body and gasket to the transaxle case. Make sure that the manual valve's pin is in the groove in the detent plate of the manual control lever.



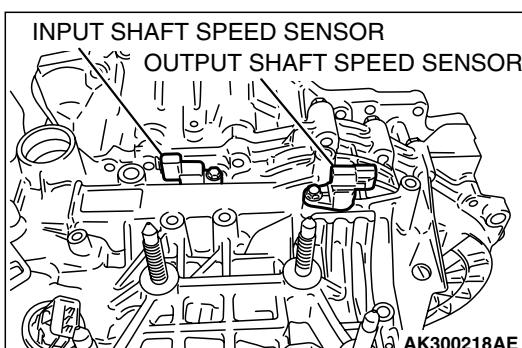
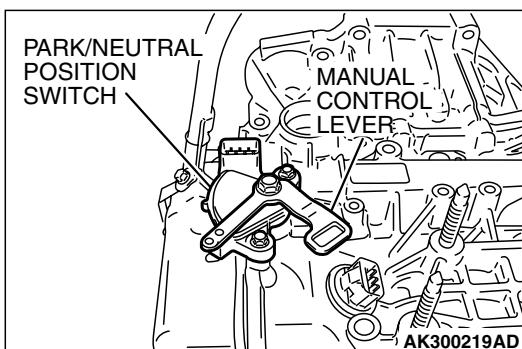
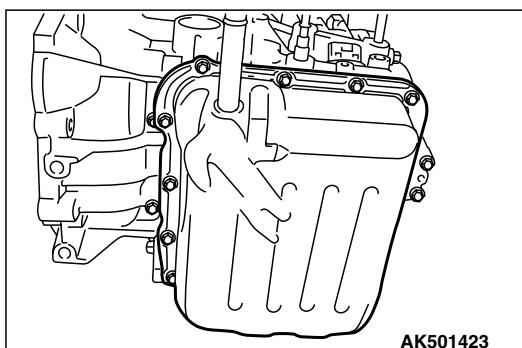
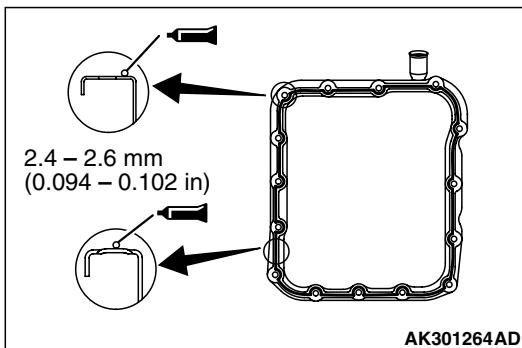
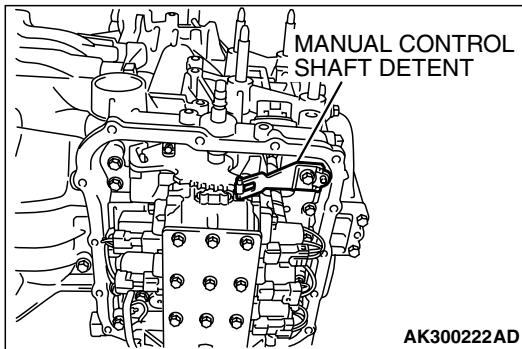
83. Install the valve body mounting bolts (twenty seven pieces), and tighten to the specified torque.
Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$



84. Attach the solenoid valve harness to valve body by connecting the all the connectors.

NO.	PARTS TO BE CONNECTED	SOLENOID VALVE HARNESS	
		CABLE COLOR	CONNECTOR HOUSING COLOR
1	Underdrive solenoid valve	White, red, red	Black
2	Overdrive solenoid valve	Orange, red	Black
3	Low-reverse solenoid valve	Brown, yellow	Milky white
4	Second solenoid valve	Blue, red, red	Milky white
5	Torque converter clutch control solenoid valve	Blue, yellow, yellow	Black

85. Install the fluid temperature sensor to the specified torque.
Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$



86. Install the manual control shaft detent and tighten the bolt to the specified torque.

Tightening torque: $6.0 \pm 1.0 \text{ N}\cdot\text{m} (53 \pm 9 \text{ in-lb})$

87. Apply a 2 mm (0.08 inch) diameter bead of sealant (Mitsubishi Genuine Part number MD974421 or equivalent) to the valve body cover in the area shown.

NOTE: Be sure to install the case quickly while the sealant is wet (with 15 minutes) or leaks will occur if the rear cover is installed after the sealant dries.

NOTE: After installation, keep the sealed area away from ATF for approximately one hour.

88. Install the valve body cover, and then tighten its mounting bolts to the specified torque.

Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$

89. Install the park/neutral position switch and tighten the bolt to the specified torque.

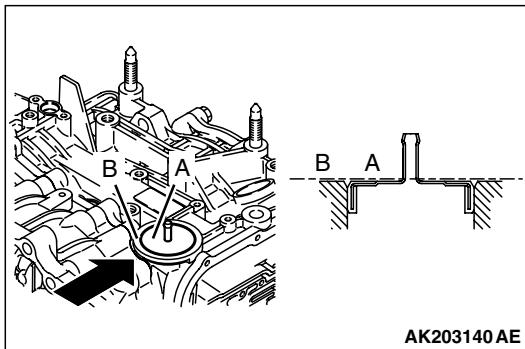
Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$

90. Install the manual control lever and tighten the nut to the specified torque.

Tightening torque: $22 \pm 3 \text{ N}\cdot\text{m} (16 \pm 2 \text{ ft-lb})$

91. Install the input shaft speed sensor and output shaft speed sensor and tighten the bolt to the specified torque.

Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$



92. Press Face "A" of the air breather to be on the same plane as the Face "B" of the transaxle case as shown in the illustration.

93. Apply ATF on the both sides of the new gasket and threads of the eyebolts, and then tighten to the specified torque.

Tightening torque: $24 \pm 3 \text{ N}\cdot\text{m} (18 \pm 2 \text{ ft-lb})$

94. Tighten the oil cooler feed pipe clamp bolt to the specified torque.

Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$

95. Install the oil dipstick.

96. Install the cable support brackets to the specified torque.

Tightening torque: $23 \pm 3 \text{ N}\cdot\text{m} (17 \pm 2 \text{ ft-lb})$

97. Install the harness bracket to the specified torque.

Tightening torque: $11 \pm 1 \text{ N}\cdot\text{m} (97 \pm 9 \text{ in-lb})$

98. Install the roll stopper brackets.

Tightening torque: $90 \pm 10 \text{ N}\cdot\text{m} (66 \pm 7 \text{ ft-lb})$

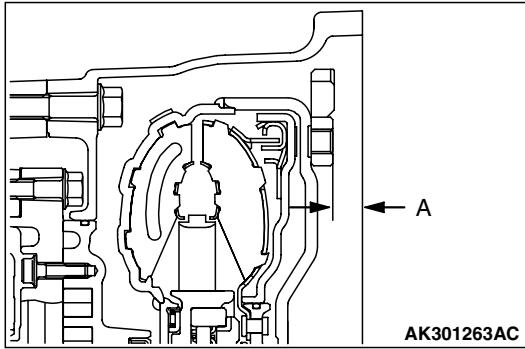
⚠ CAUTION

Apply ATF to the oil pump drive hub before installing the torque converter. Be careful not to damage the oil seal lip when installing the torque converter.

99. Install the torque converter, and align it with the oil pump so that the shown dimension "A" meets the reference value.

Reference value:

Approximately 12.2 mm (0.48 inch)



ADJUSTMENT OF TRANSAXLE

M1233030400214

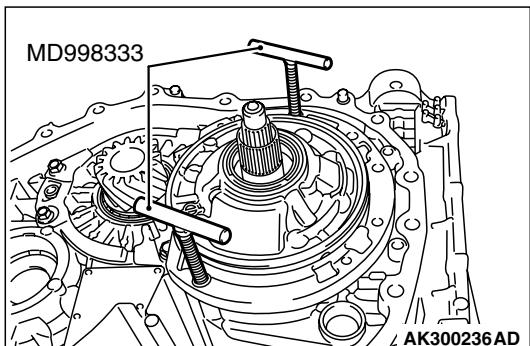
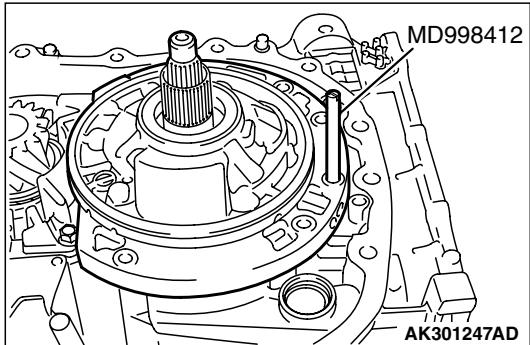
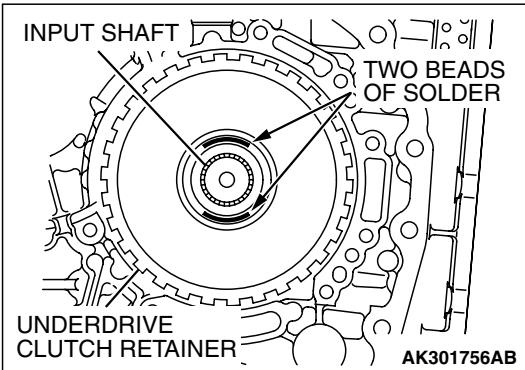
THRUST WASHER SELECTION FOR
ADJUSTMENT OF INPUT SHAFT END PLAY

<Measurement using a Solder>

CAUTION

- If solder is not available, select the thrust washer in accordance with Plastigage method.
- If the thrust washer appropriate for the standard value cannot be selected using solder, select the thrust washer in accordance with Plastigage method.

1. Put solders (1.0 mm (0.039 inch) diameter, about 10 mm (0.39 inch) long) in the illustrated positions of the underdrive clutch retainer.
2. Install the adjusting thrust washer having minimum thickness.

**CAUTION****Never use a gasket that has been tightened.**

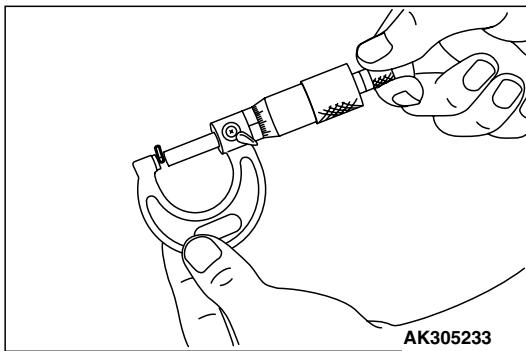
3. Use the special tool Guide (MD998412) to install a new oil pump gasket and the oil pump. Tighten the oil pump mounting bolts to the specified torque.

Tightening torque: $29 \pm 2 \text{ N}\cdot\text{m}$ ($21 \pm 2 \text{ in-lb}$)

4. Remove the oil pump mounting bolts.

5. Using special tools MD998333, remove the oil pump and then take out crushed solders.

6. If the solders have not crushed, use thicker thrust washer and repeat steps 3 to 5.



7. Use a micrometer to measure the thickness of the crushed solder beads and record the measured value.
8. Select the thrust washer, calculated by the following formula, in the table.

$$T = T_1 + T_2$$

T: Clearance mm

T₁: The crushed solder thickness mm

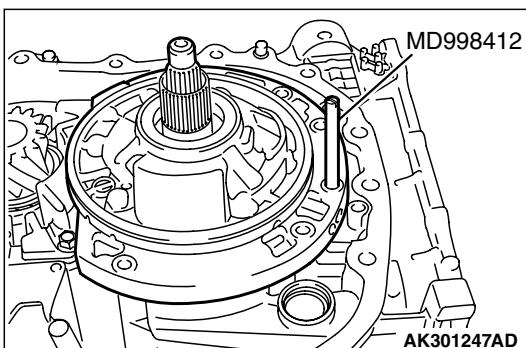
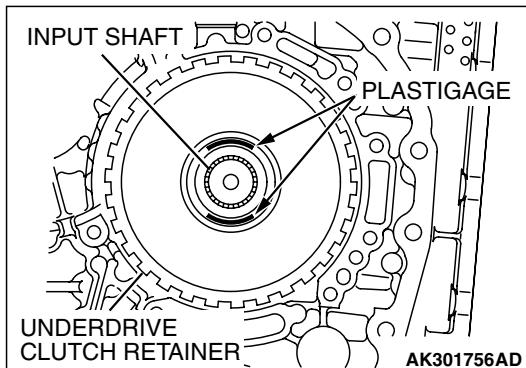
T₂: The thrust washer thickness used for measurement mm

Available thrust washer

MEASUREMENT VALUE mm (in)	THICKNESS mm (in)	ID SYMBOL
2.25 – 2.45 (0.089 – 0.096)	1.8 (0.071)	18
2.45 – 2.65 (0.096 – 0.104)	2.0 (0.079)	20
2.65 – 2.85 (0.104 – 0.112)	2.2 (0.087)	22
2.85 – 3.05 (0.112 – 0.120)	2.4 (0.094)	24
3.05 – 3.25 (0.120 – 0.128)	2.6 (0.102)	26
3.25 – 3.45 (0.128 – 0.136)	2.8 (0.110)	28

<Measurement using Plastigage>

1. Put plastigage (about 10 mm (0.039 inch) long) in the illustrated positions of the underdrive clutch retainer.
2. Install the adjusting thrust washer having the minimum thickness.



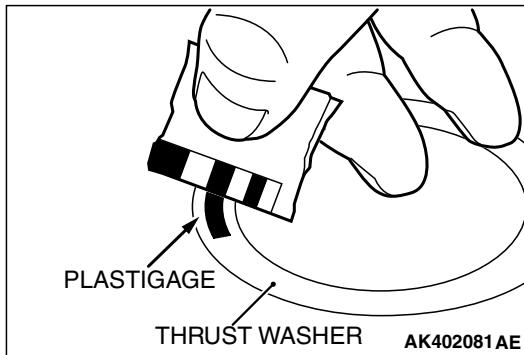
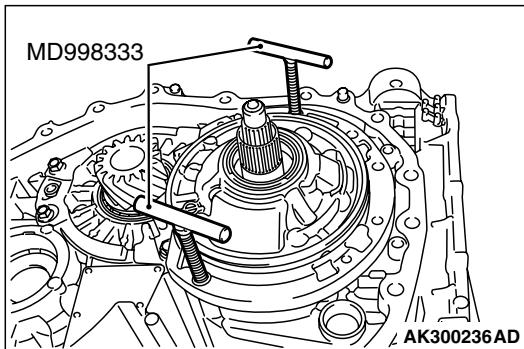
⚠ CAUTION

Never use a gasket that has been tightened.

3. Use the special tool Guide (MD998412) to install a new oil pump gasket and the oil pump. Tighten the oil pump mounting bolts to the specified torque.

Tightening torque: $29 \pm 2 \text{ N}\cdot\text{m} (21 \pm 1 \text{ ft-lb})$

4. Remove the oil pump mounting bolts.



- Using special tools MD998333, remove the oil pump and then take out crushed Plastigages.
- If the plastigages have not crushed, use thicker adjusting thrust washer and repeat steps 3 to 5.

- Measure the width of the crushed plastigage at its widest part using a scale printed on the plastigage package.
- Select the thrust washer, calculated by the following formula, in the table.

$$T = T3 + T2$$

T: Clearance mm

T3: The crushed plastigage thickness mm

T2: The thrust washer thickness used for measurement mm

Available thrust washer

MEASUREMENT VALUE mm (in)	THICKNESS mm (in)	ID SYMBOL
2.25 – 2.45 (0.089 – 0.096)	1.8 (0.071)	18
2.45 – 2.65 (0.096 – 0.104)	2.0 (0.079)	20
2.65 – 2.85 (0.104 – 0.112)	2.2 (0.087)	22
2.85 – 3.05 (0.112 – 0.120)	2.4 (0.094)	24
3.05 – 3.25 (0.120 – 0.128)	2.6 (0.102)	26
3.25 – 3.45 (0.128 – 0.136)	2.8 (0.110)	28

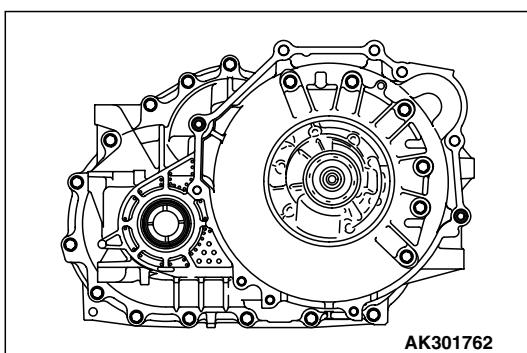
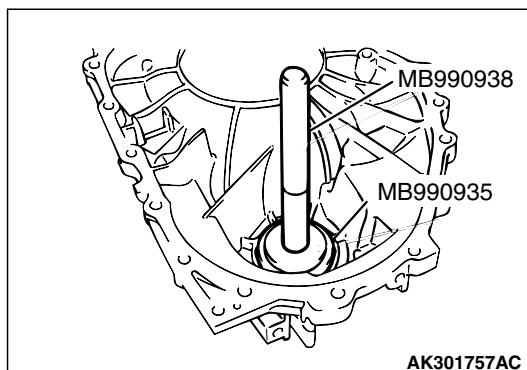
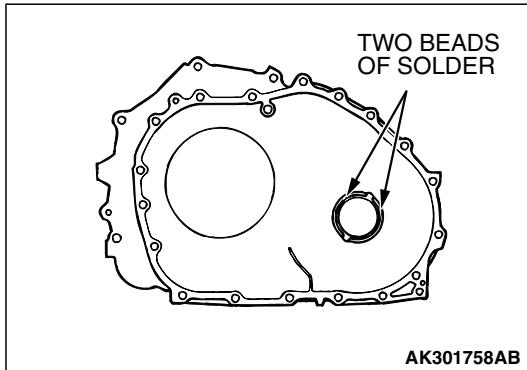
SPACER SELECTION FOR ADJUSTMENT OF
DIFFERENTIAL CASE PRELOAD

<Measurement using a Solder>

CAUTION

- If solder is not available, select the spacer in accordance with Plastigage method.
- If the spacer appropriate for the standard value cannot be selected using solder, select the spacer in accordance with Plastigage method.

1. Put solders (1.0 mm (0.039 inch) diameter, about 10 mm (0.39 inch) long) in the illustrated positions of the converter housing.

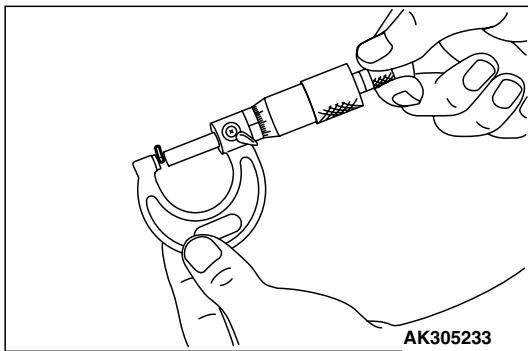


2. Use special tools MB990935 and MB990938 to press the outer race into housing.

3. Install the torque converter housing to the transaxle case without applying sealant. Tighten its mounting bolts to the specified torque.

Tightening torque: $48 \pm 6 \text{ N}\cdot\text{m}$ ($35 \pm 4 \text{ ft-lb}$)

4. Remove the bolts and converter housing, and take out the solder pieces.
5. If the solders have not crushed, use thicker solders (1.6 mm (0.063 inch) diameter, about 10 mm (0.39 inch) long) and repeat steps 2 to 4.

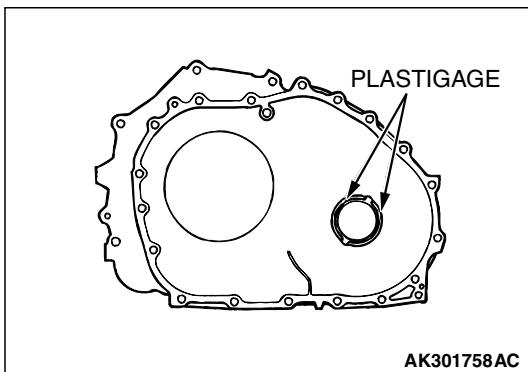


6. Measure the thickness of the crushed solder with a micrometer, and then select a spacer that will provide the standard value.

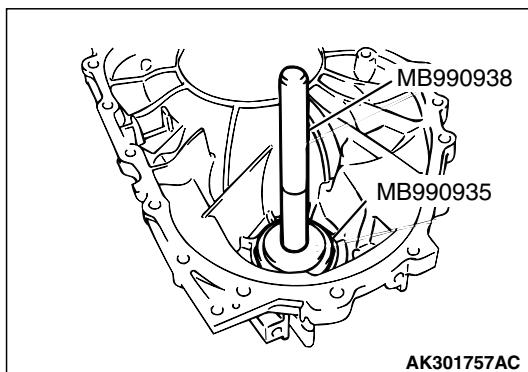
Spacer thickness: (T1 – 0.045 mm (0.0018 inch) to (T1 – 0.105mm (0.0041 inch))
T1: The crushed solder thickness mm (inch)

Standard value: 0.045 – 0.105 mm (0.0018 – 0.0041 inch)

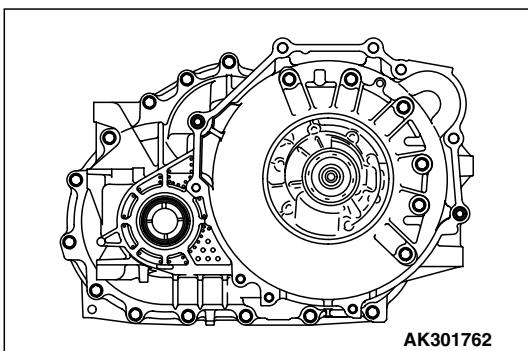
<Measurement using Plastigage>



1. Put plastigage (about 10 mm (0.39 inch) long) in the illustrated positions of the converter housing.
2. Install the adjusting spacer having the minimum thickness.



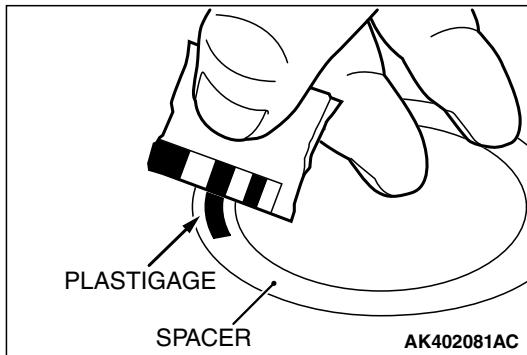
3. Use special tools MB990935 <F4A4B> or MB990936 <F4A5A> and MB990938 to press the differential bearing outer race into the torque converter housing.



4. Install the torque converter housing to the transaxle case without applying sealant. Tighten its mounting bolts to the specified torque.

Tightening torque: $48 \pm 6 \text{ N}\cdot\text{m} (35 \pm 4 \text{ ft-lb})$

5. Remove the bolts and converter housing, and take out crushed plastigage.
6. If the plastigages have not crushed, replace the spacer with a thicker one and repeat steps 3 to 5.



7. Measure the width of the crushed plastigage at its widest part using a scale printed on the plastigage package, and then select a spacer that will provide the standard value.

Spacer thickness: (T3 – 0.045 mm (0.0018 inch) to (T3 – 0.105mm (0.0041 inch))

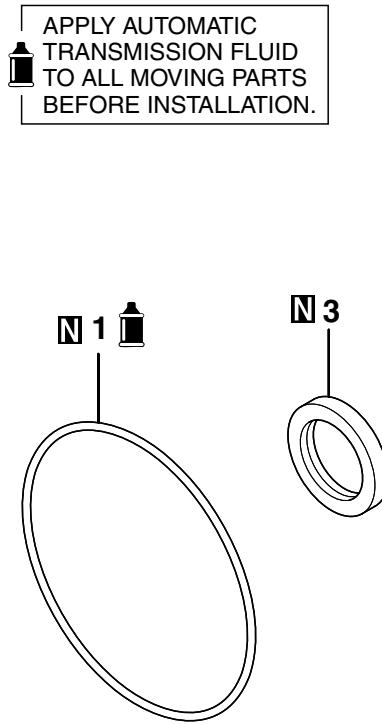
T3: The crushed plastigage thickness mm (inch)

Standard value: 0.045 – 0.105 mm (0.0018 – 0.0041 inch)

OIL PUMP

DISASSEMBLY AND ASSEMBLY

M1233001300198



AK301599AB

DISASSEMBLY STEPS

>>B<< 1. O-RING
2. SEAL RING

DISASSEMBLY STEPS

>>A<< 3. OIL SEAL
4. OIL PUMP ASSEMBLY

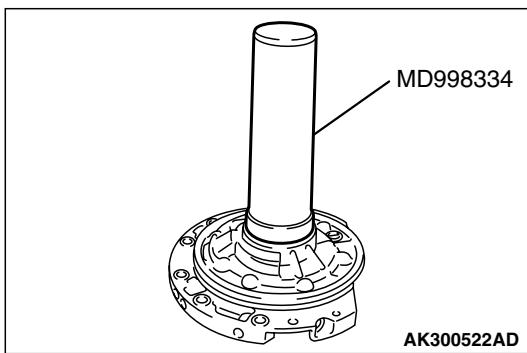
Required Special Tool:

- MD998334: Oil Seal Installer

ASSEMBLY SERVICE POINTS

>>A<< OIL SEAL INSTALLATION

1. Apply a small amount of ATF to the oil seal lip.
2. Use special tool MD998334 to tap the oil seal in the oil pump body.

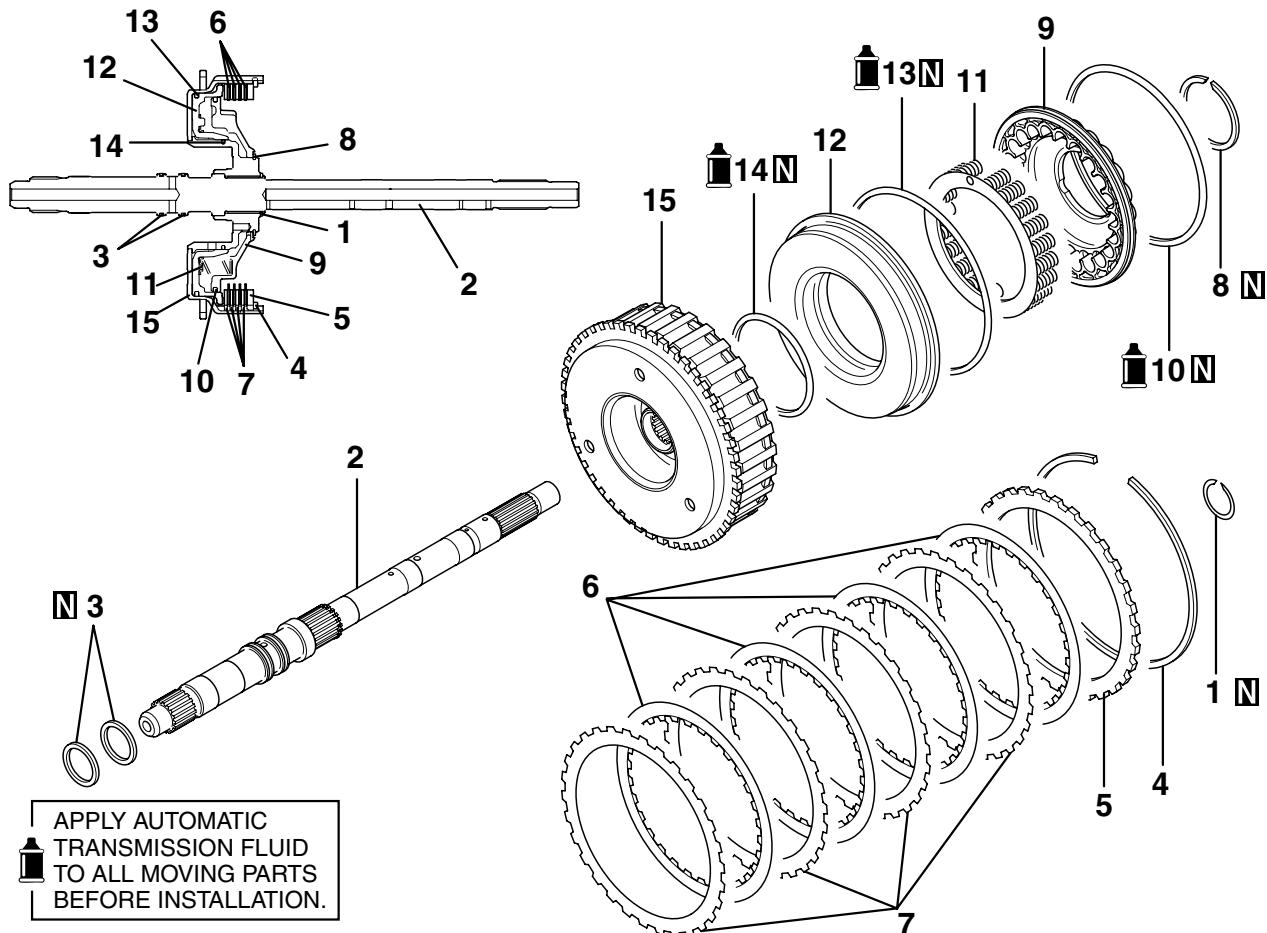


>>B<< O-RING INSTALLATION

Install a new O-ring to the outer groove of the oil pump, and apply ATF or petroleum jelly (Vaseline) to the O-ring.

UNDERDRIVE CLUTCH AND INPUT SHAFT
DISASSEMBLY AND ASSEMBLY

M1233024500160



AK301600 AB

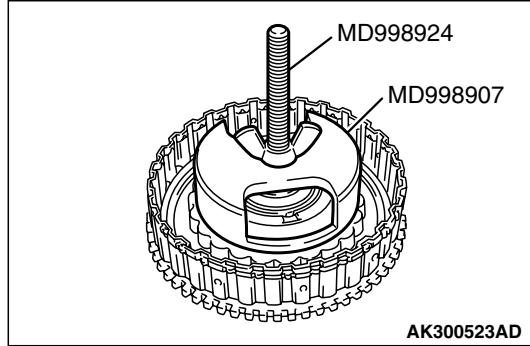
DISASSEMBLY STEPS		DISASSEMBLY STEPS	
1.	SNAP RING	9.	SPRING RETAINER
2.	INPUT SHAFT	>>A<<	10. D-RING
3.	SEAL RING		11. RETURN SPRING
>>D<<	4. SNAP RING		12. UNDERDRIVE CLUTCH PISTON
>>C<<	5. CLUTCH REACTION PLATE	>>A<<	13. D-RING
>>C<<	6. CLUTCH DISC	>>A<<	14. D-RING
>>C<<	7. CLUTCH PLATE		15. UNDERDRIVE CLUTCH RETAINER
<<A>>	>>B<<	8. SNAP RING	

Required Special Tools:

- MB991628: Spring Compressor
- MD998907: Spring Compressor
- MD998924: Spring Compressor Retainer

DISASSEMBLY SERVICE POINT**<<A>> SNAP RING REMOVAL**

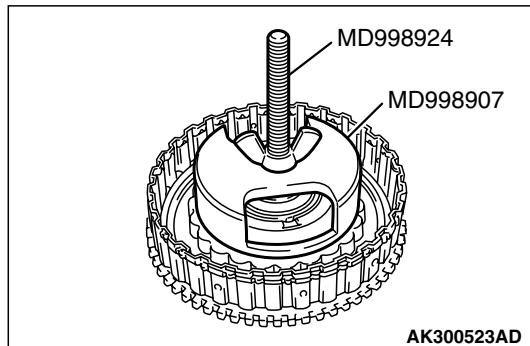
1. Set special tools MD998907 and MD998924 as shown in the illustration.
2. Compress the return spring and remove the snap ring.

**ASSEMBLY SERVICE POINTS****>>A<< D-RING INSTALLATION**

1. Install a D-ring in the groove in the underdrive clutch retainer and piston, and in the groove in the outside of the spring retainer. Be careful not to twist or damage the D-rings.
2. Apply ATF or petroleum jelly (Vaseline) to the D-rings.

>>B<< SNAP RING INSTALLATION

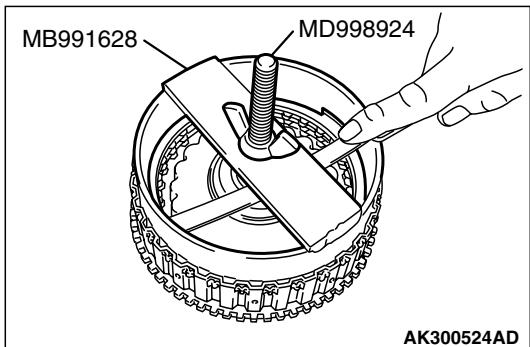
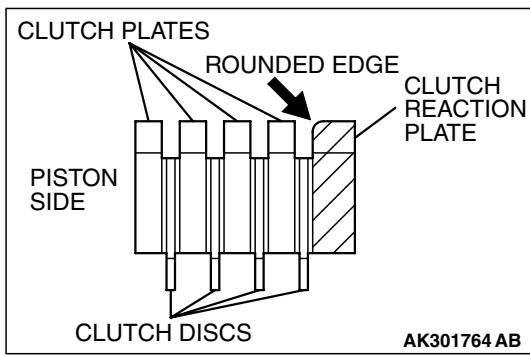
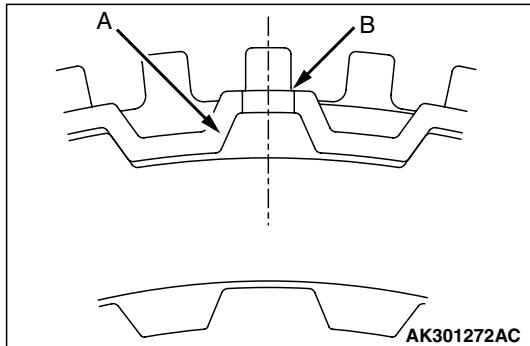
1. Place the snap ring on top of the spring retainer, and then set special tool MD998907 and MD998924 as shown in the illustration.
2. Compress the return spring and install the snap ring.



>>C<< CLUTCH PLATE/CLUTCH DISC/CLUTCH REACTION PLATE INSTALLATION

CAUTION

Immerse the clutch disc in ATF before assembling it. If the clutch disc is new, soak it in ATF for at least two hours.



>>D<< SNAP RING INSTALLATION

1. Install the snap ring into the groove of clutch retainer.
2. Set special tools MB991628 and MD998924 as shown in the illustration, and then compress the clutch element.
3. Check that the clearance between the snap ring and the clutch reaction plate is within the standard value. If not within the standard value, select a snap ring so that it is.

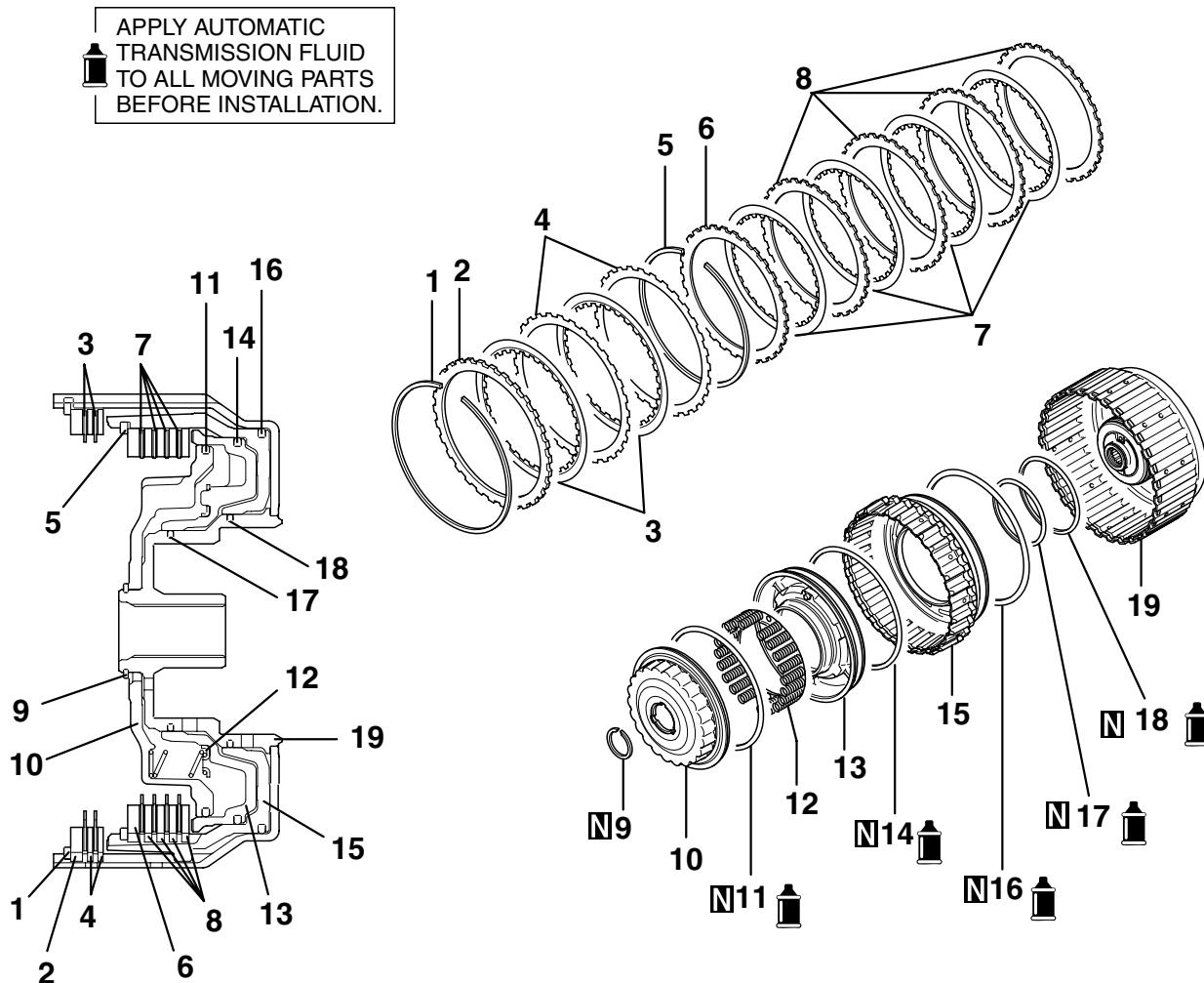
Standard value: 1.6 – 1.8 mm (0.0630 – 0.0709 inch)

REVERSE AND OVERDRIVE CLUTCH DISASSEMBLY AND ASSEMBLY

NUMBER OF CLUTCH DISCS AND PLATES

M1233024800105

	CLUTCH DISC	CLUTCH PLATE	CLUTCH REACTION PLATE
Over drive clutch	4	4	1
Reverse clutch	2	2	1



AK301601 AB

DISASSEMBLY STEPS

- >>G<< 1. SNAP RING
- >>F<< 2. CLUTCH REACTION PLATE
- >>F<< 3. CLUTCH DISC
- >>F<< 4. CLUTCH PLATE
- >>E<< 5. SNAP RING
- >>D<< 6. CLUTCH REACTION PLATE
- >>D<< 7. CLUTCH DISC
- >>D<< 8. CLUTCH PLATE
- <<A>> >>C<< 9. SNAP RING
- 10. SPRING RETAINER

DISASSEMBLY STEPS

- >>A<< 11. D-RING
- 12. RETURN SPRING
- 13. OVERDRIVE CLUTCH PISTON
- >>A<< 14. D-RING
- >>B<< 15. REVERSE CLUTCH PISTON
- >>A<< 16. D-RING
- >>A<< 17. D-RING
- >>A<< 18. D-RING
- 19. REVERSE CLUTCH RETAINER

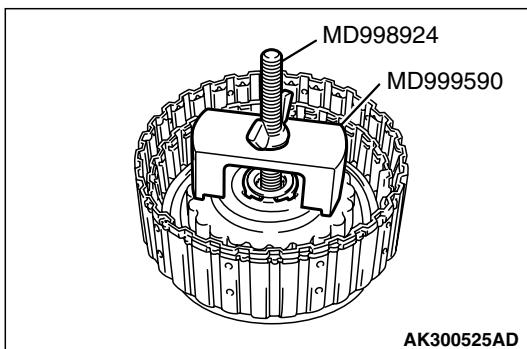
Required Special Tools:

- MB991628: Spring Compressor Retainer
- MB991790: Spring Compressor
- MD998924: Spring Compressor Retainer
- MD999590: Spring Compressor

DISASSEMBLY SERVICE POINT

<<A>> SNAP RING REMOVAL

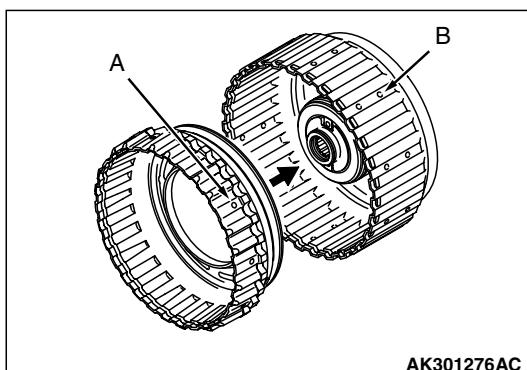
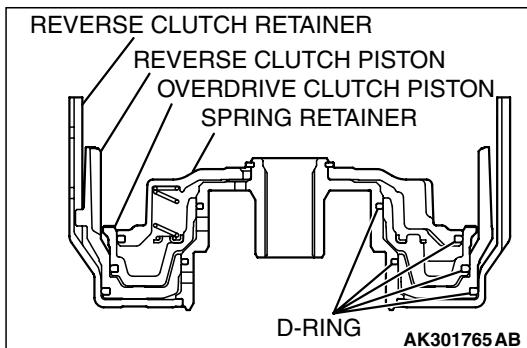
1. Set special tools MD999590 and MD998924 as shown in the illustration.
2. Compress the return spring and remove the snap ring.



ASSEMBLY SERVICE POINTS

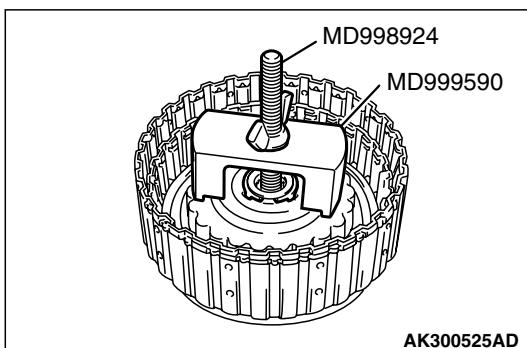
>>A<< D-RING INSTALLATION

1. Install D-rings in the grooves on the reverse clutch retainer, piston, overdrive clutch piston and spring retainer. Be careful not to twist or damage the D-rings.
2. Apply ATF or petroleum jelly (Vaseline) to D-rings.



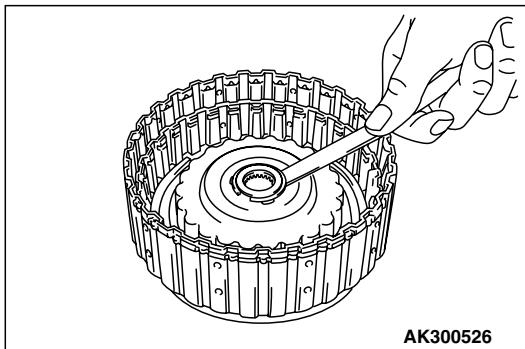
>>B<< REVERSE CLUTCH PISTON INSTALLATION

Align the outer circumference holes ("A" and "B") of the reverse clutch piston and the reverse clutch retainer to assemble them.



>>C<< SNAP RING INSTALLATION

1. Set special tools MD999590 and MD998924 as shown in the illustration.
2. Tighten the nut on the special tool to press down on the spring retainer and reverse clutch retainer, and then install the snap ring.



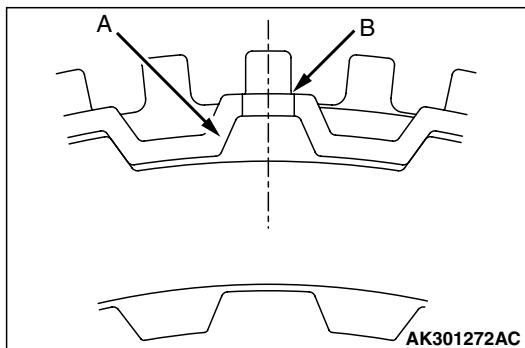
- Check that the clearance between the snap ring and the return spring retainer is within the standard value. If not within the standard value, select a snap ring so that it is.

Standard value: 0 – 0.09 mm (0 – 0.0035 inch)

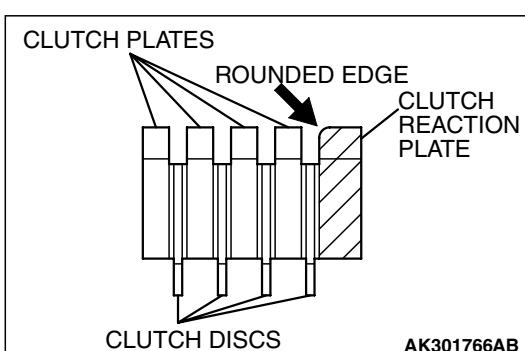
>>D<< PRESSURE PLATE/CLUTCH PLATE/CLUTCH DISC/CLUTCH REACTION PLATE INSTALLATION

CAUTION

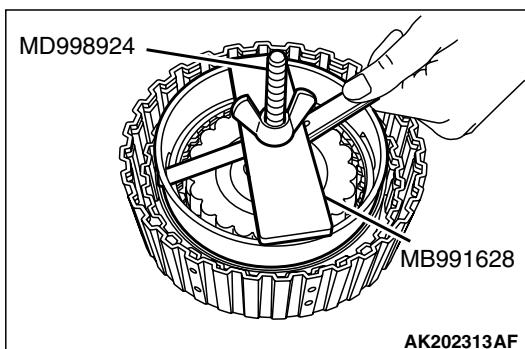
Immerse the clutch disc in ATF before assembling it. If the clutch disc is new, soak it in ATF for more than two hours.



- Assemble the clutch discs (four pieces) and clutch plates (four pieces), one on top of the other, inside the reverse clutch piston. Assemble both clutch plates so that the places with no teeth (marked "A") are aligned with the holes in the retainer (marked "B").



- Install the clutch reaction plate in the direction shown.



>>E<< SNAP RING INSTALLATION

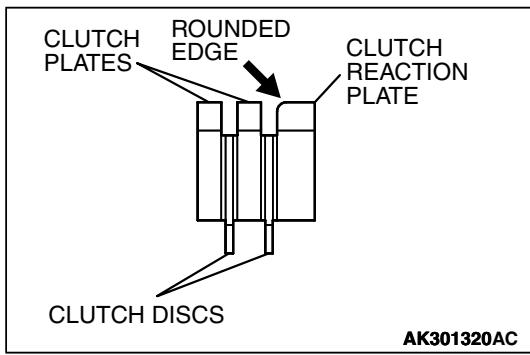
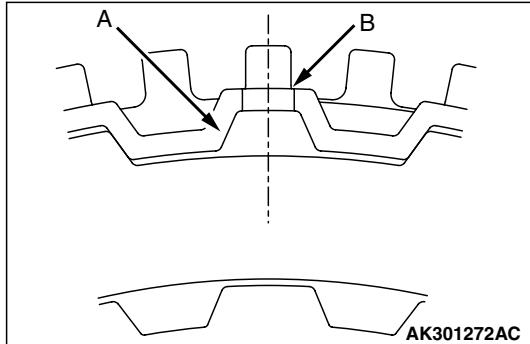
- Install the snap ring into the groove in the reverse clutch piston.
- Set special tools MB991628 and MD998924 as shown in the illustration, and compress the clutch element.
- Check that the clearance between the snap ring and the clutch reaction plate is within the standard value. If not within the standard value, select a snap ring so that it is.

Standard value: 1.6 – 1.8 mm (0.0630 – 0.0709 inch)

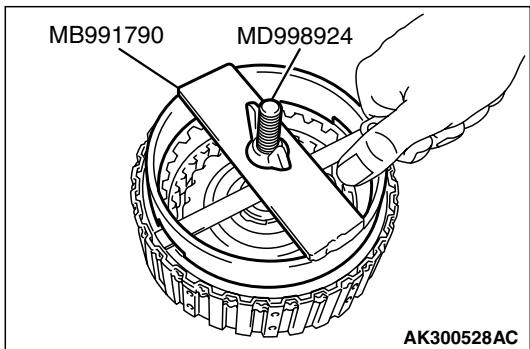
>>F<< CLUTCH PLATE/CLUTCH DISC/CLUTCH REACTION PLATE INSTALLATION

CAUTION

Immerse the clutch disc in ATF before assembling it. If the clutch disc is new, soak it in ATF for at least two hours.



1. Assemble two clutch discs and two clutch plates, one on top of the other, inside the reverse clutch retainer. Assemble both clutch plates so that the places with no teeth (marked "A") are aligned with the holes in the retainer (marked "B").



>>G<< SNAP RING INSTALLATION

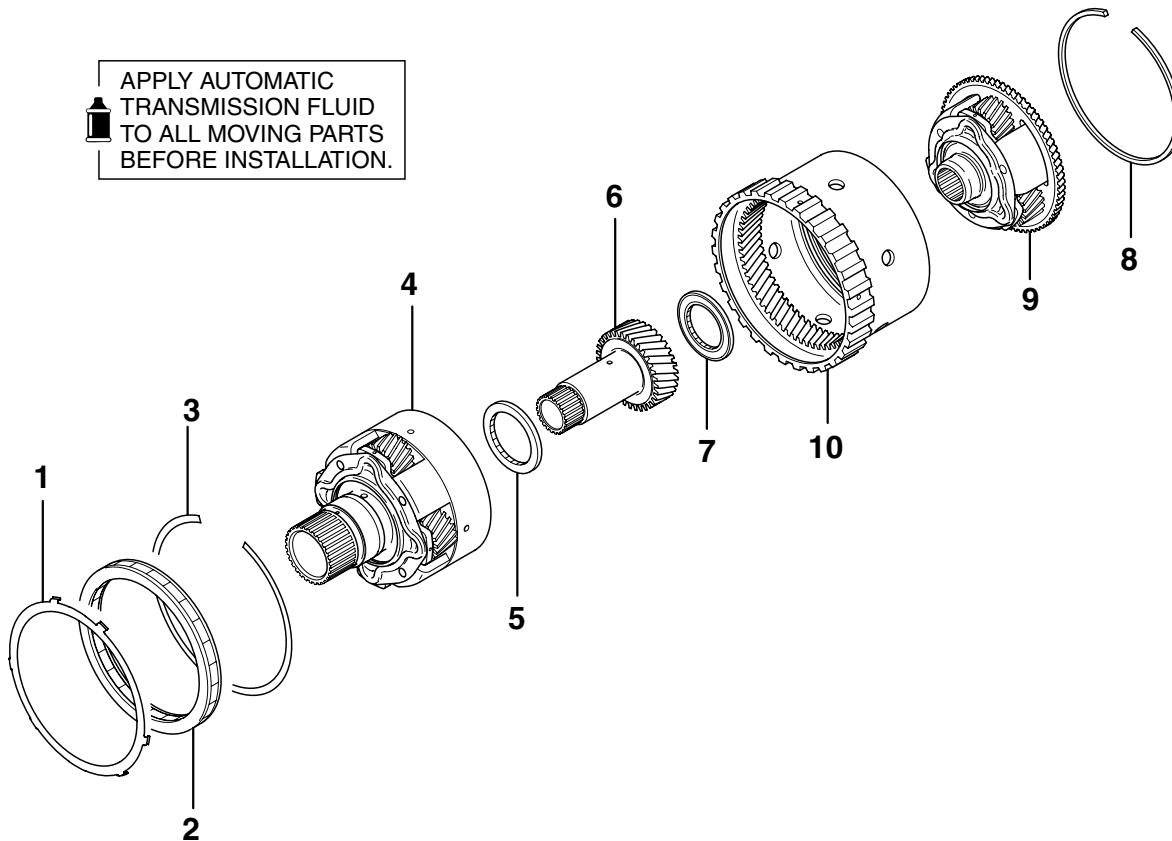
1. Install the snap ring into the groove of reverse clutch retainer.
2. Set special tools MB991790 and MD998924 as shown in the illustration, and compress the clutch element.
3. Check that the clearance between the snap ring and the clutch reaction plate is within the standard value. If not within the standard value, select a snap ring so that it is.

Standard value: 1.5 – 1.7 mm (0.0591 – 0.0669 inch)

PLANETARY GEAR

DISASSEMBLY AND ASSEMBLY

M1233002500173



AK301602AB

DISASSEMBLY STEPS

>>B<< 1. STOPPER PLATE
 2. ONE-WAY CLUTCH
 3. SNAP RING
 4. OUTPUT PLANETARY CARRIER
 >>A<< 5. THRUST BEARING NUMBER 3
 6. UNDERDRIVE SUN GEAR

DISASSEMBLY STEPS

>>A<< 7. THRUST BEARING NUMBER 4
 8. SNAP RING
 9. OVERDRIVE PLANETARY CARRIER
 10. OVERDRIVE ANNULUS GEAR

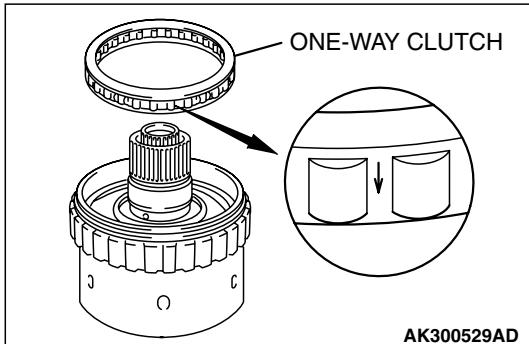
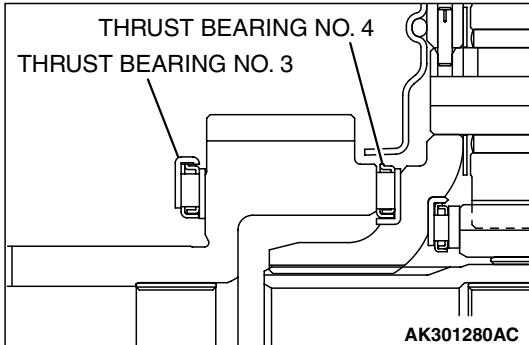
ASSEMBLY SERVICE POINTS

>>A<< THRUST BEARING NUMBER 3 AND THRUST BEARING NUMBER 4 INSTALLATION

CAUTION

Use care to install the thrust bearings in the correct direction.

Check the installation direction of thrust bearings number 3 and 4, and install them as shown.



>>B<< ONE-WAY CLUTCH INSTALLATION

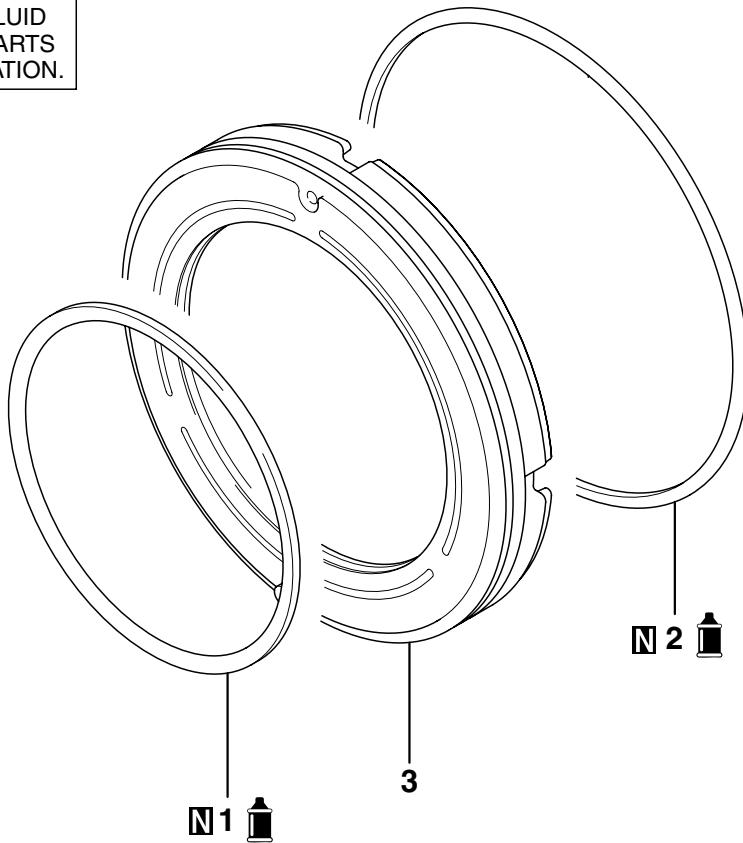
Insert the one-way clutch into the overdrive annulus gear so that the arrow points towards the output planetary carrier.

LOW-REVERSE BRAKE

DISASSEMBLY AND ASSEMBLY

M1233003700181

APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK301603AB

DISASSEMBLY STEPS

>>A<< 1. D-RING

DISASSEMBLY STEPS

>>A<< 2. D-RING
3. LOW-REVERSE BRAKE PISTON

ASSEMBLY SERVICE POINT

>>A<< D-RING INSTALLATION

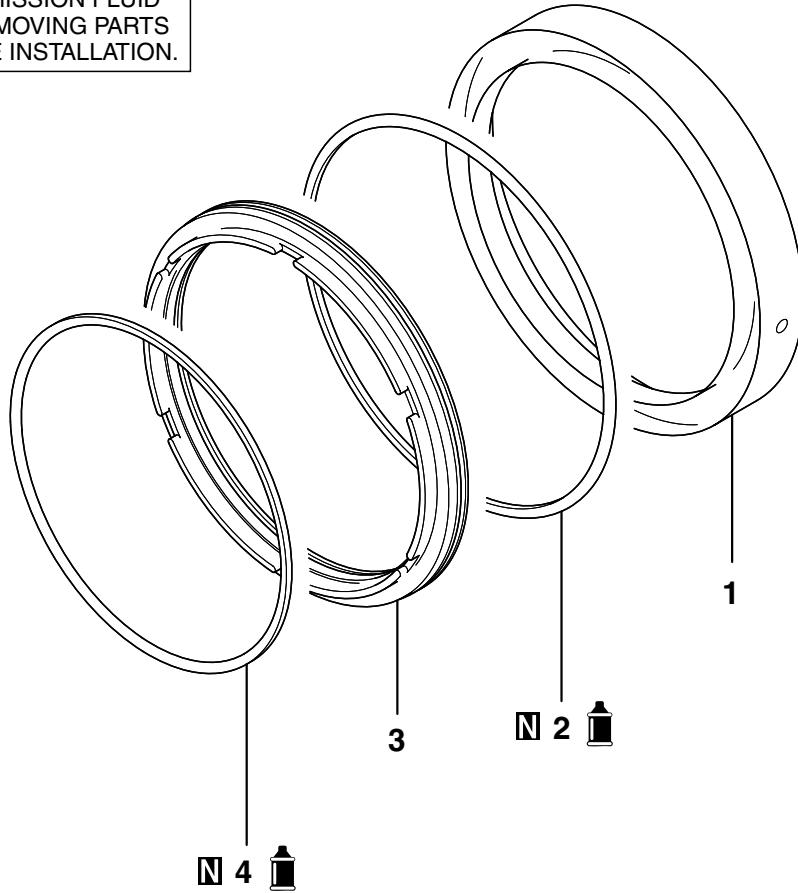
Apply ATF or petroleum jelly (Vaseline) to the D-ring, and install carefully.

SECOND BRAKE

DISASSEMBLY AND ASSEMBLY

M1233025400070

APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK301604 AB

DISASSEMBLY STEPS

>>A<< 1. SECOND BRAKE RETAINER
2. D-RING

DISASSEMBLY STEPS

>>A<< 3. SECOND BRAKE PISTON
4. D-RING

ASSEMBLY SERVICE POINT

>>A<< D-RING INSTALLATION

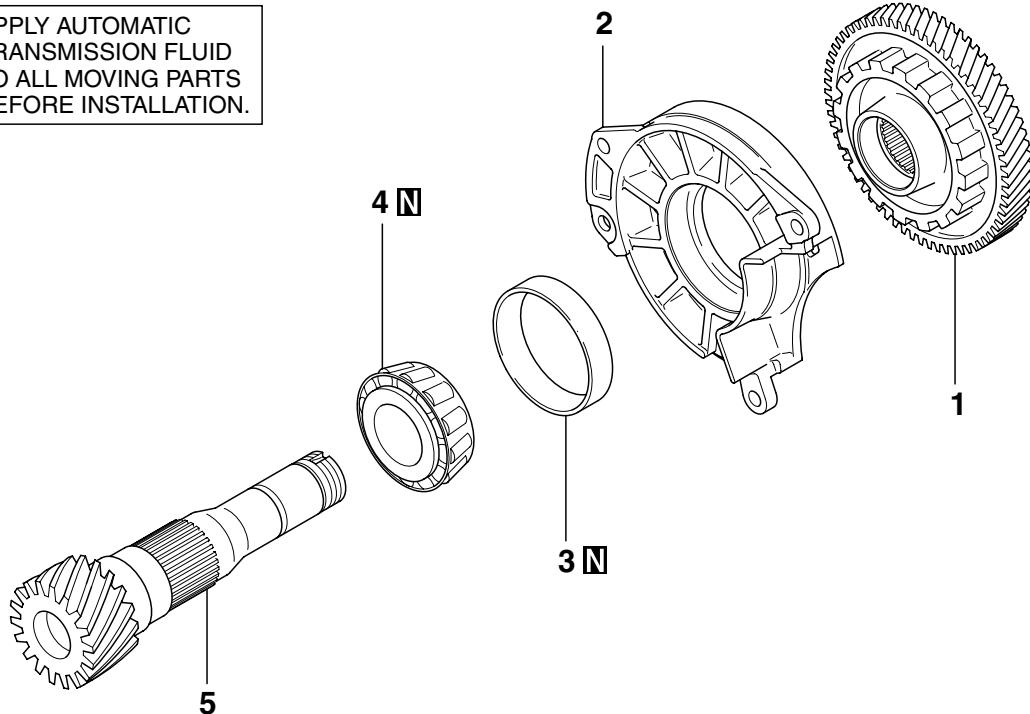
Apply ATF or petroleum jelly (Vaseline) to the D-ring, and install carefully.

OUTPUT SHAFT

DISASSEMBLY AND ASSEMBLY

M1233025700145

 APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK301605 AB

<<A>> >>C<< 1. TRANSFER DRIVEN GEAR
2. BEARING RETAINER
>>B<< 3. OUTER RACE

<> >>A<< 4. TAPER ROLLER BEARING
5. OUTPUT SHAFT

Required Special Tools:

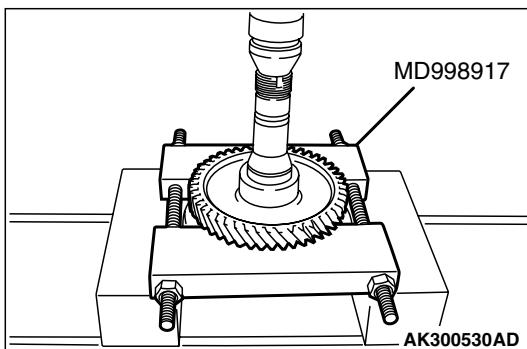
- MB990936: Installer Adapter
- MB990938: Handle
- MD998801: Bearing Remover
- MD998812: Installer Cap

- MD998813: Installer 100
- MD998814: Installer 200
- MD998823: Installer Adapter (48)
- MD998917: Bearing Remover

DISASSEMBLY SERVICE POINTS

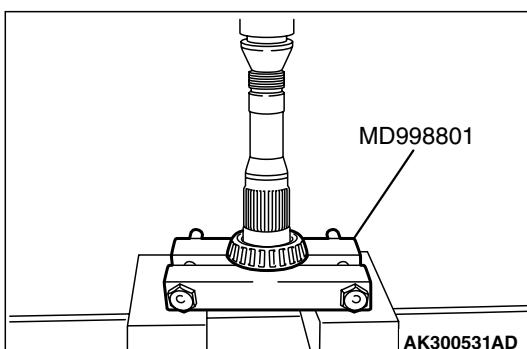
<<A>> TRANSFER DRIVEN GEAR REMOVAL

1. Support the transfer driven gear with general service tool or special tool MD998917, and then set them on the press.
2. Push down on the output shaft with the press to remove the transfer driven gear.



<> TAPER ROLLER BEARING REMOVAL

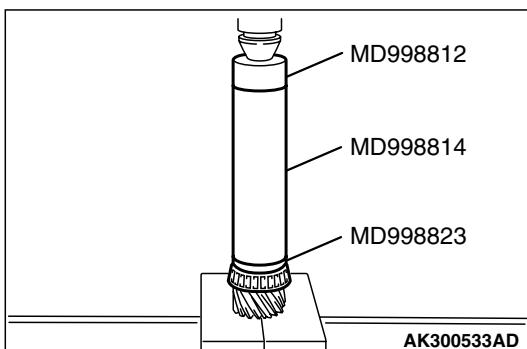
1. Support the taper roller bearing with the special tool MD998801, and then set them on the press.
2. Push down on the output shaft with the press to remove the taper roller bearing.



ASSEMBLY SERVICE POINTS

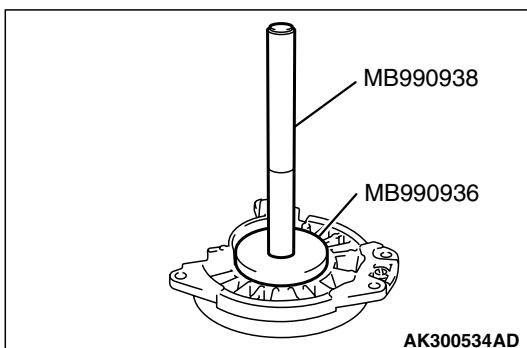
>>A<< TAPER ROLLER BEARING INSTALLATION

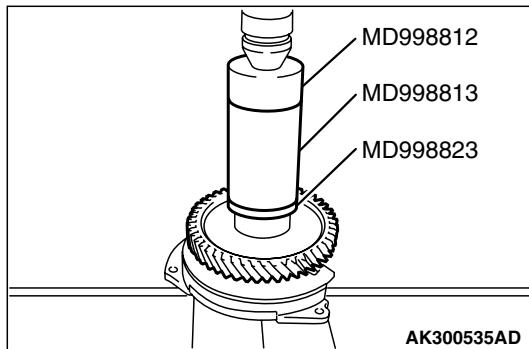
1. Set the output shaft on the press support stand.
2. Using special tools MD998823, MD998812 and MD998814, press in the taper roller bearing.



>>B<< OUTER RACE INSTALLATION

Use the special tools MB990936 and MB990938 to tap the outer race in the bearing retainer.





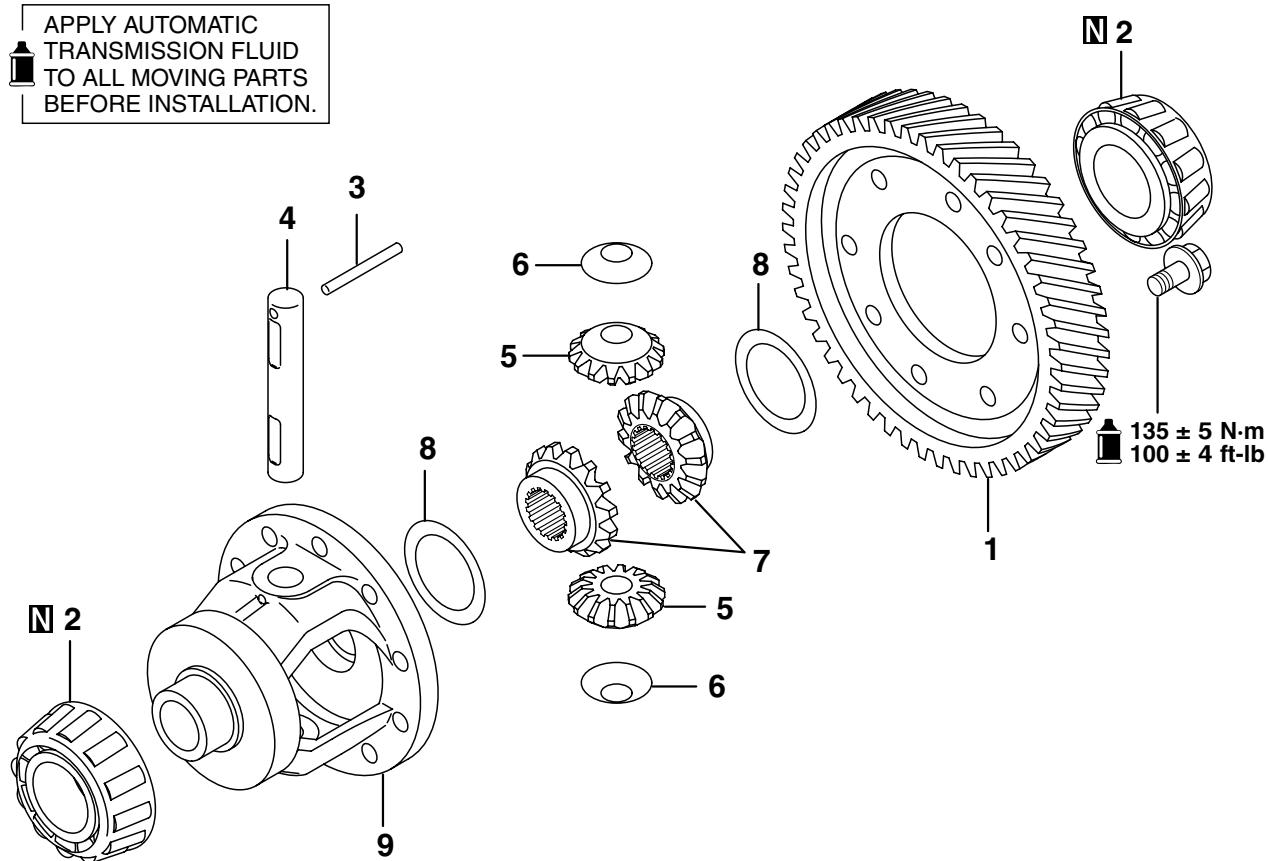
>>C<< TRANSFER DRIVEN GEAR INSTALLATION

1. Set the output shaft on the press support stand.
2. Using special tools MD998823, MD998812 and MD998813, press in the transfer driven gear.

DIFFERENTIAL DISASSEMBLY AND ASSEMBLY

M1233003100350

APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK503664AB

DISASSEMBLY STEPS

>>D<< 1. DIFFERENTIAL DRIVE GEAR
<<A>> >>C<< 2. TAPER ROLLER BEARINGS
>>B<< 3. LOCK PIN

DISASSEMBLY STEPS

>>A<< 4. PINION SHAFT
>>A<< 5. PINIONS
>>A<< 6. WASHERS

DISASSEMBLY STEPS

- >>A<< 7. SIDE GEARS
- >>A<< 8. SPACERS
- 9. DIFFERENTIAL CASE

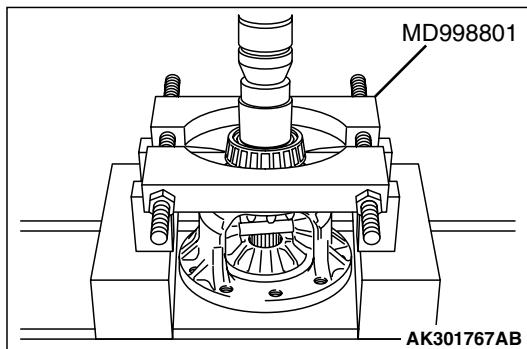
Required Special Tools:

- MD998801: Bearing Remover
- MD998812: Installer Cap
- MD998823: Installer Adapter (48)

DISASSEMBLY SERVICE POINT

<<A>> TAPER ROLLER BEARING REMOVAL

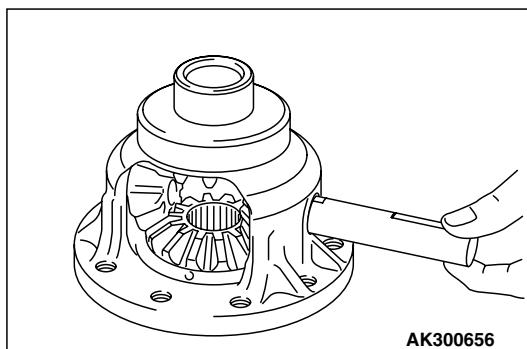
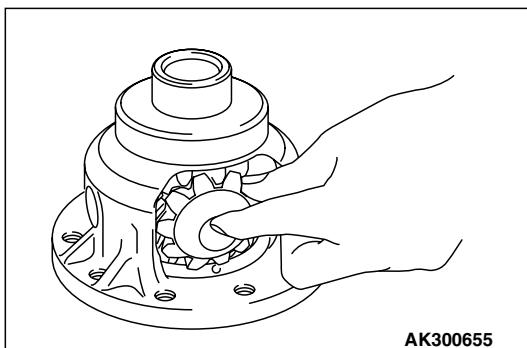
1. Support the taper roller bearing with special tool MD998801, and then set them on the press.
2. Push down on the differential case with the press to remove the bearing.

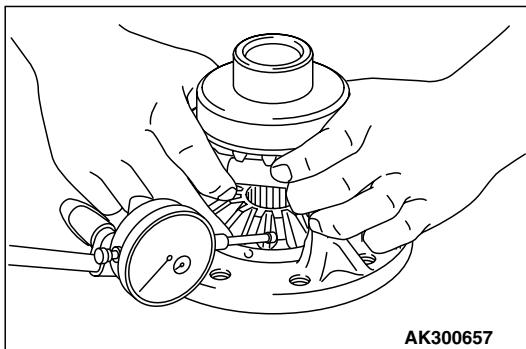


ASSEMBLY SERVICE POINTS

>>A<< SPACER, SIDE GEAR, WASHER, PINION AND PINION SHAFT INSTALLATION

1. Mount a spacer on the back surface of the side gear, and then install the side gear in the differential case.
NOTE: When a new side gear is to be installed, use a medium thickness spacer [0.93 to 1.00 mm (0.0366 to 0.0394 inch)].
2. Set the washer on the back of each pinion, and put both pinions simultaneously in mesh with the side gears. While rotating them, install them into position.
3. Insert the pinion shaft.





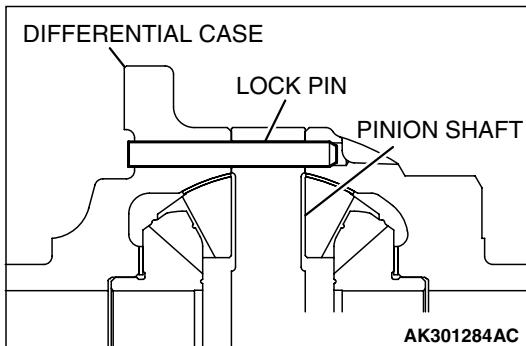
4. Measure the backlash between the side gear and pinion.

Standard value:

0.025 – 0.150 mm (0.0010 – 0.0059 inch)

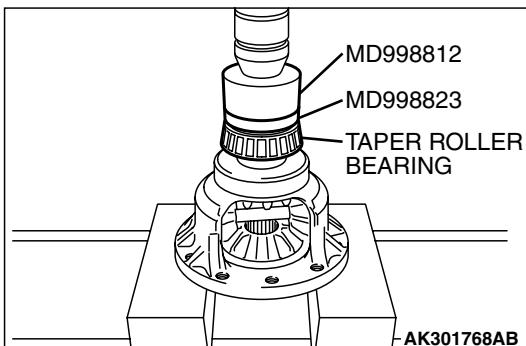
5. If the backlash is out of the standard value, select a spacer and re-measure the backlash.

NOTE: Adjust until the backlash on both sides are equal.



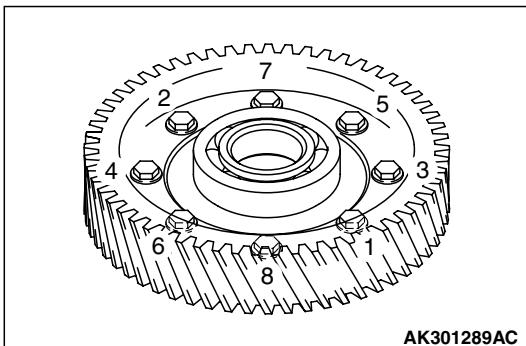
>>B<<LOCK PIN INSTALLATION

Install the lock pin so that it will be oriented in the direction shown.



>>C<< TAPER ROLLER BEARING INSTALLATION

Using special tools MD998812 and MD998823, press in the taper roller bearing.



>>D<< DIFFERENTIAL DRIVE GEAR INSTALLATION

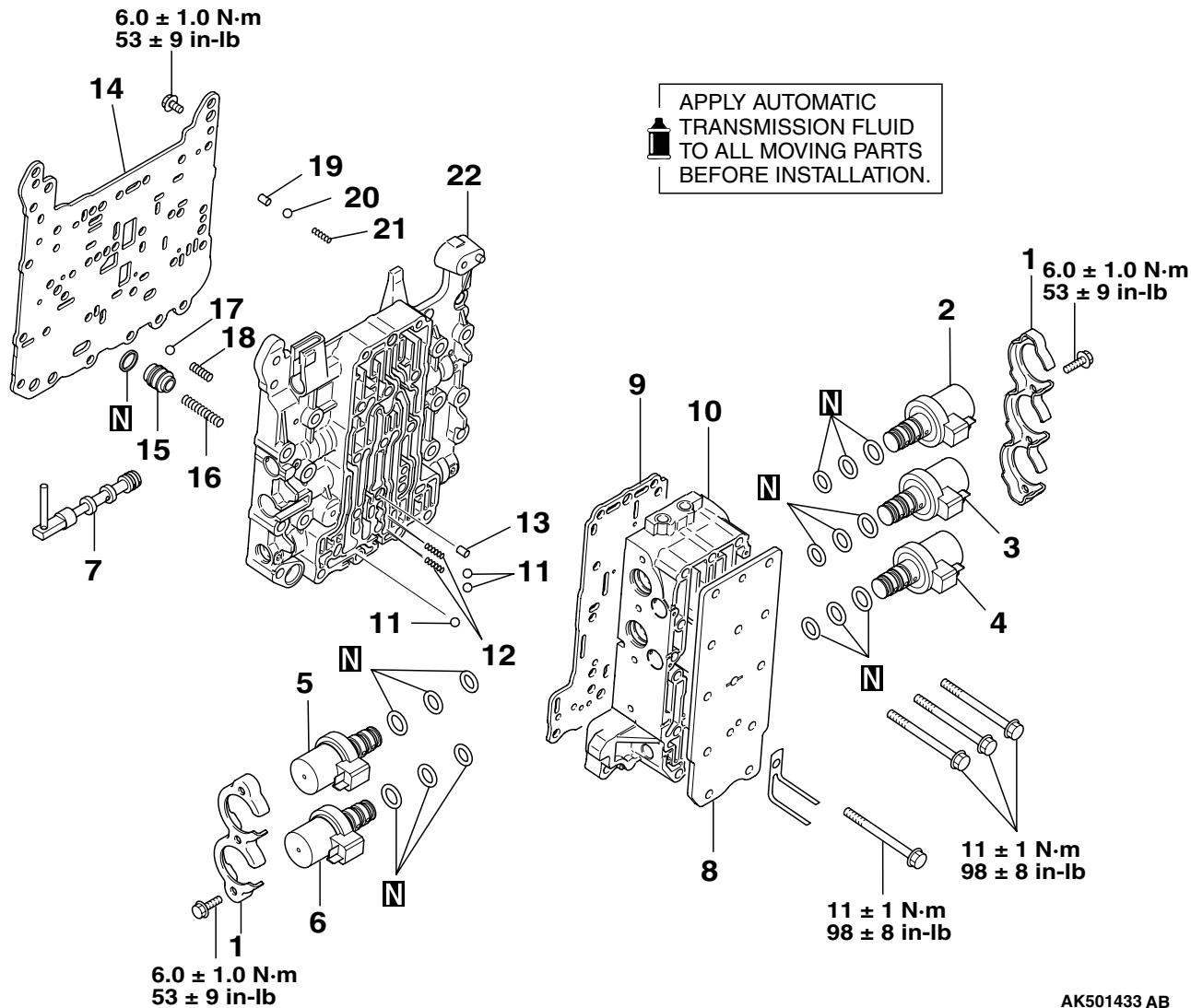
Apply ATF to the bolt, and then tighten the bolts to the specified torque in the sequence shown.

Tightening torque: $135 \pm 5 \text{ N}\cdot\text{m} (100 \pm 3 \text{ ft-lb})$

VALVE BODY

DISASSEMBLY AND ASSEMBLY

M1233005500354



AK501433 AB

DISASSEMBLY STEPS

- 1. SOLENOID VALVE SUPPORT
- 2. UNDERDRIVE SOLENOID VALVE
- 3. SECOND SOLENOID VALVE
- 4. TORQUE CONVERTER CLUTCH CONTROL SOLENOID VALVE
- 5. OVERDRIVE SOLENOID VALVE
- 6. LOW-REVERSE SOLENOID VALVE
- 7. MANUAL VALVE
- 8. COVER
- 9. PLATE
- 10. OUTSIDE VALVE BODY ASSEMBLY

<<A>> >>C<< 1. SOLENOID VALVE SUPPORT

<<A>> >>C<< 2. UNDERDRIVE SOLENOID VALVE

<<A>> >>C<< 3. SECOND SOLENOID VALVE

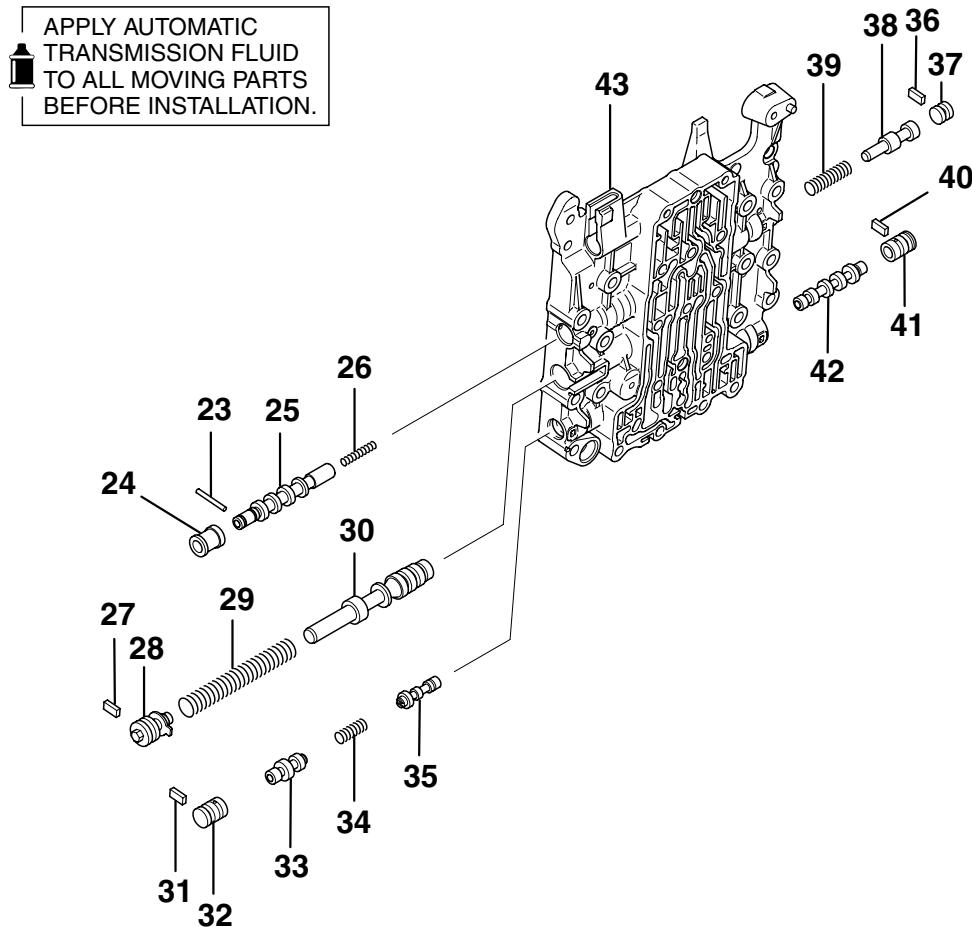
<<A>> >>C<< 4. TORQUE CONVERTER CLUTCH CONTROL SOLENOID VALVE

<<A>> >>C<< 5. OVERDRIVE SOLENOID VALVE

<<A>> >>C<< 6. LOW-REVERSE SOLENOID VALVE

DISASSEMBLY STEPS

- >>B<< 11. STEEL BALL (ORIFICE CHECK BALL)
- >>B<< 12. SPRING
- >>B<< 13. KNOCK BUSHING
- >>B<< 14. PLATE
- >>A<< 15. DAMPING VALVE
- >>A<< 16. DAMPING VALVE SPRING
- >>A<< 17. STEEL BALL (LINE RELIEF)
- >>A<< 18. SPRING
- >>A<< 19. KNOCK BUSHING
- >>A<< 20. STEEL BALL (ORIFICE CHECK BALL)
- >>A<< 21. SPRING
- 22. INSIDE VALVE BODY ASSEMBLY



AK301609AD

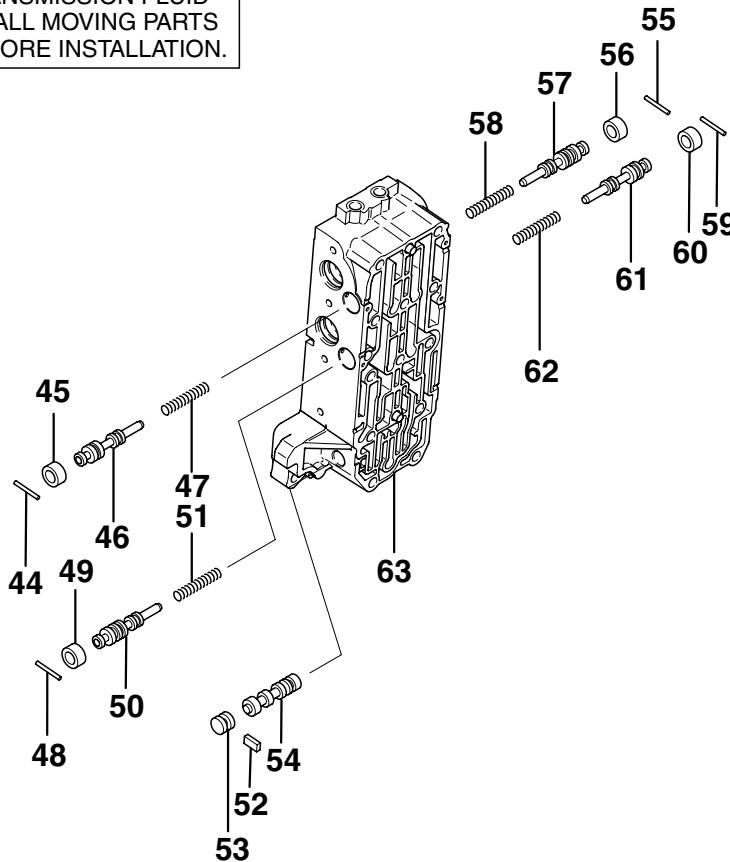
DISASSEMBLY STEPS

- 23. ROLLER
- 24. TORQUE CONVERTER CLUTCH CONTROL VALVE SLEEVE
- 25. TORQUE CONVERTER CLUTCH CONTROL VALVE
- 26. TORQUE CONVERTER CLUTCH CONTROL VALVE SPRING
- 27. PLATE
- 28. SCREW
- 29. REGULATOR VALVE SPRING
- 30. REGULATOR VALVE
- 31. PLATE
- 32. FAIL-SAFE VALVE A SLEEVE

DISASSEMBLY STEPS

- 33. FAIL-SAFE VALVE A2
- 34. FAIL-SAFE VALVE A SPRING
- 35. FAIL-SAFE VALVE A1
- 36. PLATE
- 37. PLUG
- 38. TORQUE CONVERTER VALVE
- 39. TORQUE CONVERTER VALVE SPRING
- 40. PLATE
- 41. FAIL-SAFE VALVE B SLEEVE
- 42. FAIL-SAFE VALVE B
- 43. INSIDE VALVE BODY

APPLY AUTOMATIC
TRANSMISSION FLUID
TO ALL MOVING PARTS
BEFORE INSTALLATION.



AK301610 AD

DISASSEMBLY STEPS

44. ROLLER
45. OVERDRIVE PRESSURE CONTROL VALVE SLEEVE
46. OVERDRIVE PRESSURE CONTROL VALVE
47. OVERDRIVE PRESSURE CONTROL VALVE SPRING
48. ROLLER
49. LOW-REVERSE PRESSURE CONTROL VALVE SLEEVE
50. LOW-REVERSE PRESSURE CONTROL VALVE
51. LOW-REVERSE PRESSURE CONTROL VALVE SPRING
52. PLATE
53. PLUG

DISASSEMBLY STEPS

54. SWITCHING VALVE
55. ROLLER
56. UNDERDRIVE PRESSURE CONTROL VALVE SLEEVE
57. UNDERDRIVE PRESSURE CONTROL VALVE
58. UNDERDRIVE PRESSURE CONTROL VALVE SPRING
59. ROLLER
60. SECOND PRESSURE CONTROL VALVE SLEEVE
61. SECOND PRESSURE CONTROL VALVE
62. SECOND PRESSURE CONTROL VALVE SPRING
63. OUTSIDE VALVE BODY

DISASSEMBLY SERVICE POINT

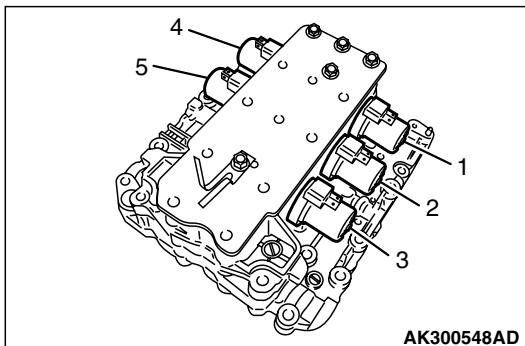
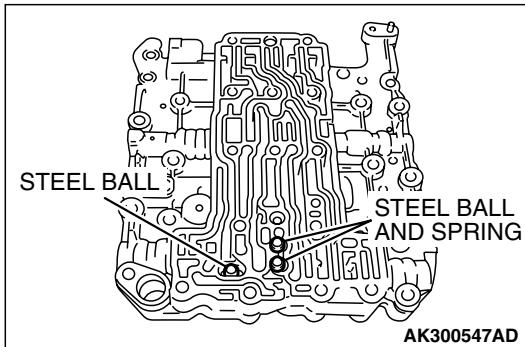
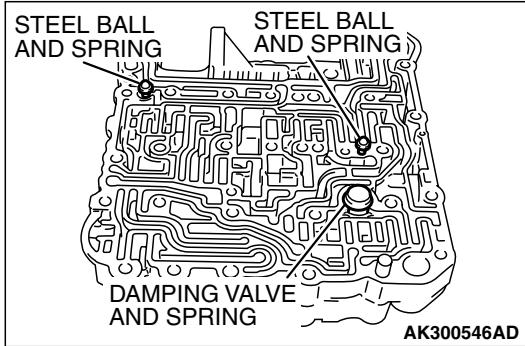
<<A>> SOLENOID VALVES REMOVAL

Mark the solenoid valves with white paint to make assembly easier.

ASSEMBLY SERVICE POINTS

>>A<< SPRING, STEEL BALL, DAMPING VALVE AND DAMPING VALVE SPRING INSTALLATION

1. Install the steel balls (two pieces) and springs (two pieces) to the inside valve body as shown.
2. Install the damping valve and spring to the inside valve body as shown.



>>B<< SPRING AND STEEL BALL INSTALLATION

Install the steel balls (three pieces) and springs (two pieces) to the inside valve body as shown.

>>C<< SOLENOID VALVES INSTALLATION

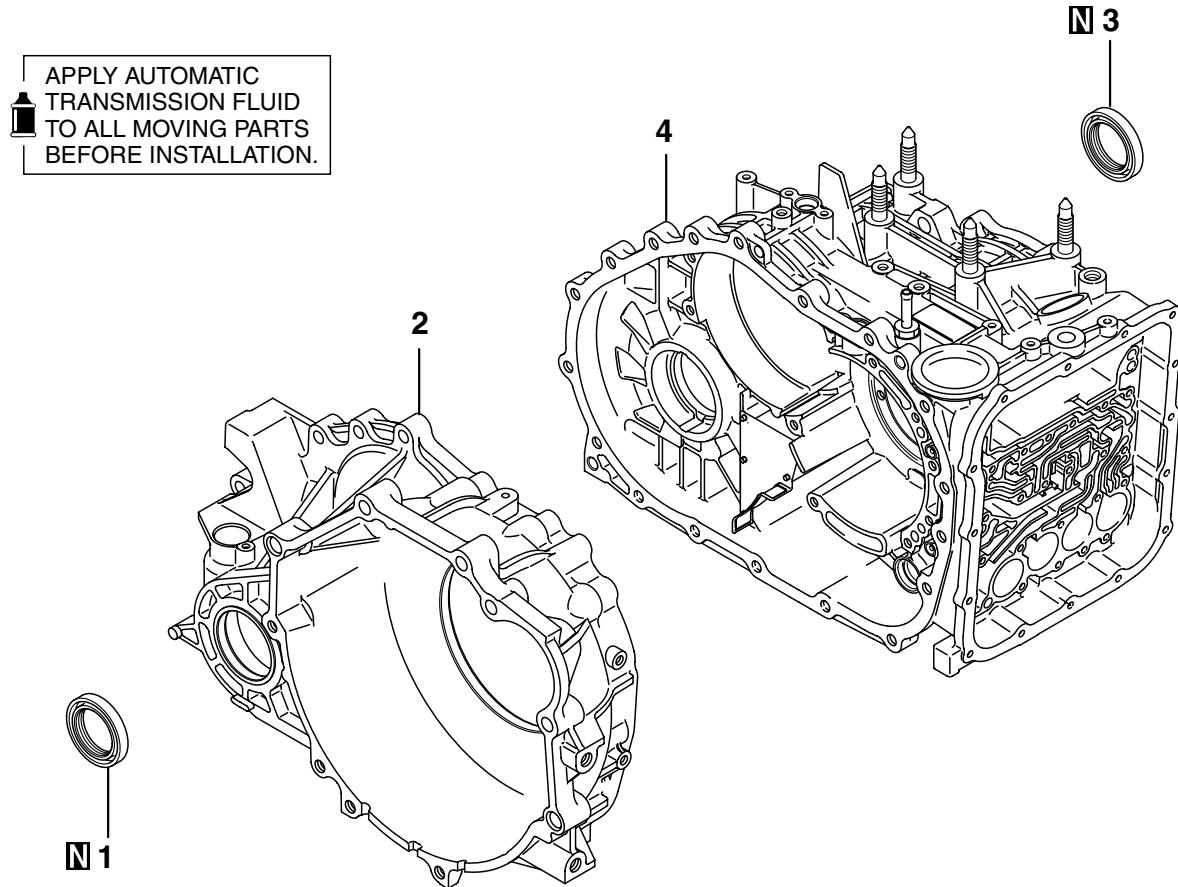
1. Apply ATF or petroleum jelly (Vaseline) to the O-ring and install carefully.
2. Install the solenoid valves by referring to the marks applied during disassembly.

NO.	NAME
1	Underdrive solenoid valve
2	Second solenoid valve
3	Torque converter clutch control solenoid valve
4	Overdrive solenoid valve
5	Low-reverse solenoid valve

DRIVE SHAFT OIL SEAL

DISASSEMBLY AND ASSEMBLY

M1233004300153



AK301611 AB

DISASSEMBLY STEPS

>>A<< 1. OIL SEAL
2. TORQUE CONVERTER HOUSING

DISASSEMBLY STEPS

>>B<< 3. OIL SEAL
4. TRANSAXLE CASE

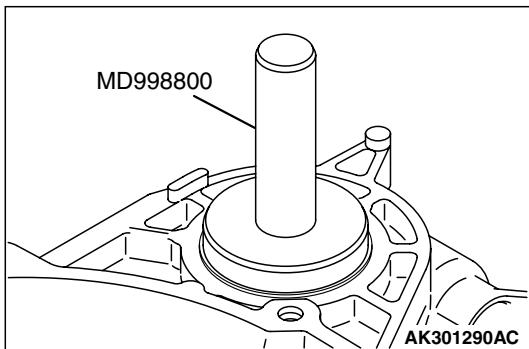
Required Special Tool:

- MD998800: Oil Seal Installer

ASSEMBLY SERVICE POINTS

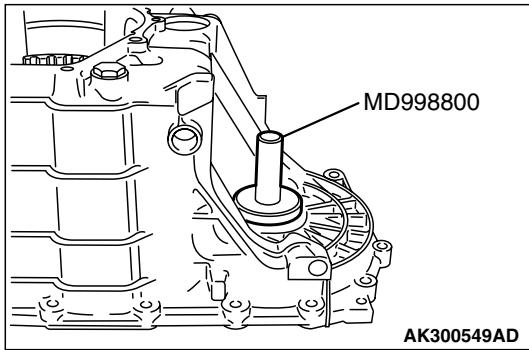
>>A<< OIL SEAL INSTALLATION

Use special tool MD998800 to tap the oil seal into the torque converter housing.



>>B<< OIL SEAL INSTALLATION

Use special tool MD998800 to tap the oil seal in the transaxle case.



SPECIFICATION(S)**FASTENER TIGHTENING SPECIFICATIONS**

M1233023100813

ITEM	SPECIFICATIONS	
Transaxle	Roll stopper bracket	70 ± 10 N·m (52 ± 7 ft-lb)
	Harness bracket	11 ± 1 N·m (95 ± 9 in-lb)
	Control cable support bracket	23 ± 3 N·m (17 ± 2 ft-lb)
	Eye bolt	24 ± 3 N·m (18 ± 2 ft-lb)
	Oil cooler feed tube	11 ± 1 N·m (95 ± 9 in-lb)
	Input shaft speed sensor	11 ± 1 N·m (95 ± 9 in-lb)
	Output shaft speed sensor	11 ± 1 N·m (95 ± 9 in-lb)
	Manual control lever	22 ± 3 N·m (16 ± 2 ft-lb)
	Park/neutral position switch (PNP switch)	11 ± 1 N·m (95 ± 9 in-lb)
	Valve body cover	11 ± 1 N·m (95 ± 9 in-lb)
	Manual control shaft detente	6.0 ± 1.0 N·m (52 ± 9 in-lb)
	Valve body mounting bolt	11 ± 1 N·m (95 ± 9 in-lb)
	Fluid temperature sensor mounting bolt	11 ± 1 N·m (95 ± 9 in-lb)
	Torque converter housing	48 ± 6 N·m (35 ± 4 ft-lb)
	Oil pump	29 ± 2 N·m (21 ± 1 ft-lb)
	Rear cover	23 ± 3 N·m (17 ± 2 ft-lb)
	Transfer drive gear	34 ± 2 N·m (25 ± 1 ft-lb)
	Output shaft jam nut	170 ± 10 N·m (125 ± 7 ft-lb)
	Output shaft bearing retainer	29 ± 2 N·m (21 ± 2 ft-lb)
Components	Differential drive gear	135 ± 5 N·m (100 ± 3 ft-lb)
	Solenoid valve support	6.0 ± 1.0 N·m (53 ± 9 in-lb)
	Valve body	11 ± 1 N·m (98 ± 8 in-lb)
	Plate	6.0 ± 1.0 N·m (53 ± 9 in-lb)

GENERAL SPECIFICATIONS

M1233000200585

ITEM	SPECIFICATION	
Model	F4A4B	
Type	Electronically controlled 4-speed full-automatic	
Torque converter	Type	3-element with torque converter clutch
	Stall torque ratio	1.93
Gear ratio	1st	2.842
	2nd	1.573
	3rd	1.000
	4th	0.688
	Reverse	2.214
Final gear ratio	4.212	

SERVICE SPECIFICATIONS

M1233000300270

ITEM	STANDARD VALUE
Brake reaction plate end play mm (in)	0 – 0.16 (0 – 0.0063)
Second brake end play mm (in)	0.79 – 1.25 (0.0311 – 0.0492)
Low-reverse brake end play mm (in)	1.65 – 2.11 (0.0649 – 0.0831)
Output shaft preload mm (in)	0.01 – 0.09 (0.0004 – 0.0035)
Underdrive sun gear end play mm (in)	0.25 – 0.45 (0.0098 – 0.0177)
Input shaft end play mm (in)	0.70 – 1.45 (0.028 – 0.057)
Differential case preload mm (in)	0.045 – 0.105 (0.0018 – 0.0041)
Underdrive clutch end play mm (in)	1.6 – 1.8 (0.0630 – 0.0709)
Reverse and overdrive clutch return spring retainer end play mm (in)	0 – 0.09 (0 – 0.0035)
Overdrive clutch end play mm (in)	1.6 – 1.8 (0.0630 – 0.0709)
Reverse clutch end play mm (in)	1.5 – 1.7 (0.0591 – 0.0669)
Backlash between differential side gear and pinion mm (in)	0.025 – 0.150 (0.0010 – 0.0059)

VALVE BODY SPRING IDENTIFICATION TABLE

M1233022900128

SPRING	WIRE DIAMETER mm (in)	OUTSIDE DIAMETER mm (in)	FREE LENGTH mm (in)	NUMBER OF LOOPS
Regulator valve spring	1.8 (0.071)	15.7 (0.618)	86.7 (3.413)	24
Underdrive pressure control valve spring	0.7 (0.028)	7.6 (0.299)	37.7 (1.484)	25
Overdrive pressure control valve spring	0.7 (0.028)	7.6 (0.299)	37.7 (1.484)	25
Low-reverse pressure control valve spring	0.7 (0.028)	7.6 (0.299)	37.7 (1.484)	25
Second pressure control valve spring	0.7 (0.028)	7.6 (0.299)	37.7 (1.484)	25
Torque converter spring	1.6 (0.063)	11.2 (0.441)	34.4 (1.354)	12.5
Torque converter clutch control valve spring	0.7 (0.028)	5.9 (0.232)	28.1 (1.106)	19
Fail-safe valve spring	0.7 (0.028)	8.9 (0.350)	21.9 (0.862)	9.5
Damping valve spring	1.0 (0.039)	7.7 (0.303)	35.8 (1.409)	17
Line relief valve spring	1.0 (0.039)	7.0 (0.276)	17.3 (0.681)	10
Orifice check ball spring	0.5 (0.020)	4.5 (0.177)	17.2 (0.677)	15

ADJUSTING PLATE, SNAP RING AND SPACERS

M1233023000429

Thrust washer (For adjustment of input shaft end play)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.8 (0.071)	18	2.4 (0.094)	24
2.0 (0.079)	20	2.6 (0.102)	26
2.2 (0.087)	22	2.8 (0.110)	28

Snap ring (For adjustment of underdrive clutch and overdrive clutch end play)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.6 (0.063)	None	2.4 (0.094)	Brown
1.7 (0.067)	Blue	2.5 (0.098)	None
1.8 (0.071)	Brown	2.6 (0.102)	Blue

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.9 (0.075)	None	2.7 (0.106)	Brown
2.0 (0.079)	Blue	2.8 (0.110)	None
2.1 (0.083)	Brown	2.9 (0.114)	Blue
2.2 (0.087)	None	3.0 (0.118)	Brown
2.3 (0.091)	Blue		

Snap ring (For adjustment of low-reverse brake and second brake reaction plates end play)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.2 (0.087)	Blue	2.4 (0.094)	None
2.3 (0.091)	Brown	2.5 (0.098)	Blue

Pressure plate (For adjustment of low-reverse brake and second brake end play)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.6 (0.063)	L	2.4 (0.094)	4
1.8 (0.071)	1	2.6 (0.102)	6
2.0 (0.079)	0	2.8 (0.110)	8
2.2 (0.087)	2	3.0 (0.118)	D

Snap ring (For adjustment of reverse clutch end play)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.6 (0.063)	None	2.3 (0.091)	Blue
1.7 (0.067)	Blue	2.4 (0.094)	Brown
1.8 (0.071)	Brown	2.5 (0.098)	None
1.9 (0.075)	None	2.6 (0.102)	Blue
2.0 (0.079)	Blue	2.7 (0.106)	Brown
2.1 (0.083)	Brown	2.8 (0.110)	None
2.2 (0.087)	None		

Snap ring (For adjustment of reverse clutch and overdrive clutch spring retainer end plays)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.48 (0.0583)	Brown	1.58 (0.0622)	Blue
1.53 (0.0602)	None	1.63 (0.0642)	Brown

Thrust race (For adjustment of underdrive sun gear end play)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.6 (0.063)	–	2.2 (0.087)	–
1.7 (0.067)	–	2.3 (0.091)	–
1.8 (0.071)	–	2.4 (0.094)	–
1.9 (0.075)	–	2.5 (0.098)	–
2.0 (0.079)	–	2.6 (0.102)	–
2.1 (0.083)	–		

Spacer (For adjustment of output shaft preload)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.88 (0.0740)	88	2.36 (0.0929)	36
1.92 (0.0756)	92	2.40 (0.0945)	40
1.96 (0.0772)	96	2.44 (0.0961)	44
2.00 (0.0787)	00	2.48 (0.0976)	48
2.04 (0.0803)	04	2.52 (0.0992)	52
2.08 (0.0819)	08	2.56 (0.1008)	56
2.12 (0.0835)	12	2.60 (0.1024)	60
2.16 (0.0850)	16	2.64 (0.1039)	64
2.20 (0.0866)	20	2.68 (0.1055)	68
2.24 (0.0882)	24	2.72 (0.1071)	72
2.28 (0.0898)	28	2.76 (0.1087)	76
2.32 (0.0913)	32		

Spacer (For adjustment of differential case preload)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
0.71 (0.0280)	71	1.07 (0.0421)	07
0.74 (0.0291)	74	1.10 (0.0433)	J
0.77 (0.0303)	77	1.13 (0.0445)	D
0.80 (0.0315)	80	1.16 (0.0457)	K
0.83 (0.0327)	83	1.19 (0.0469)	L
0.86 (0.0339)	86	1.22 (0.0480)	G
0.89 (0.0350)	89	1.25 (0.0492)	M
0.92 (0.0362)	92	1.28 (0.0504)	N
0.95 (0.0374)	95	1.31 (0.0516)	E
0.98 (0.0386)	98	1.34 (0.0528)	O
1.01 (0.0398)	01	1.37 (0.0539)	P
1.04 (0.0409)	04		

Spacer (For adjustment of backlash between differential side gear and pinion)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
0.75 – 0.82 (0.0295 – 0.0323)	–	1.01 – 1.08 (0.0398 – 0.0425)	–
0.83 – 0.92 (0.0327 – 0.0362)	–	1.09 – 1.16 (0.0429 – 0.0457)	–
0.93 – 1.00 (0.0366 – 0.0394)	–		

SEALANTS

M1233000500229

ITEM	SPECIFIED SEALANT
Rear cover	Mitsubishi Part No. MD974421 or equivalent
Torque converter housing	Mitsubishi Part No. MD974421 or equivalent
Valve body cover	Mitsubishi Part No. MD974421 or equivalent