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GENERAL INFORMATION

1. The combination of highest-precision electronic and mechanical technology heralds a new era in automatic transmission performance.
2. The gear shifting clutches use a hydraulic balancing mechanism to enable gear shifting at extra-high engine speeds.
3. The number of shafts has been decreased to two and increased use has been made of metal plates which all contributes to reduce the weight.
4. Increased meshing ratios and improved rigidity of the gear supports and casing result in less noise.
5. In addition, adoption of a newly-developed automatic transmission fluid (ATF) and an external oil filter increases the service life of the fluid.
6. The number of oil cooler feed tubes is increased to two.

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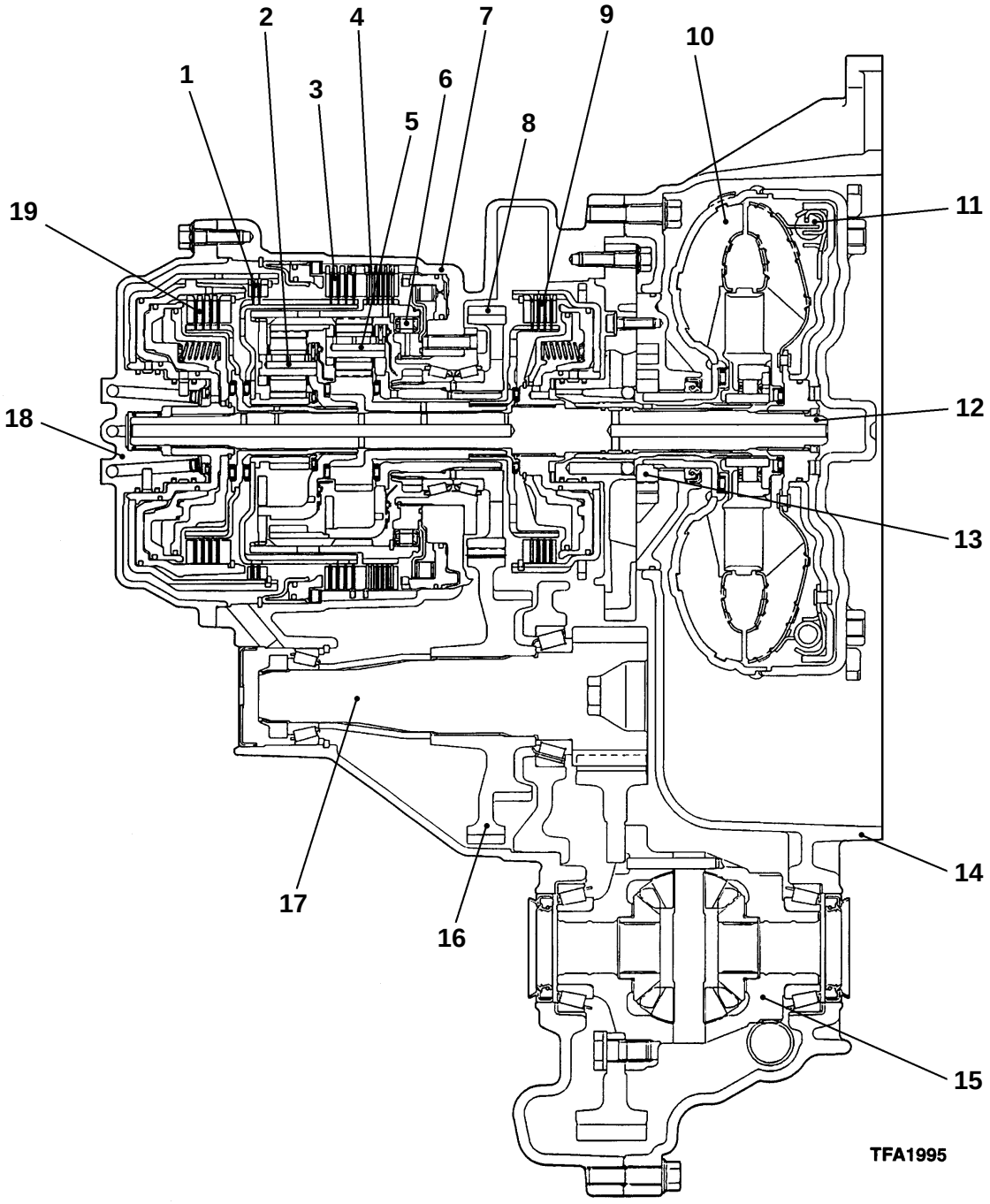
SECTIONAL VIEW

<F4A51>



1. Reverse clutch
2. Overdrive planetary carrier
3. Second brake
4. Low-reverse brake
5. Output planetary carrier
6. One-way clutch
7. Transmission case
8. Transfer drive gear
9. Underdrive clutch
10. Torque converter
11. Torque converter clutch
12. Input shaft
13. Oil pump
14. Converter housing
15. Differential
16. Transfer driven gear
17. Output shaft
18. Rear cover
19. Overdrive clutch

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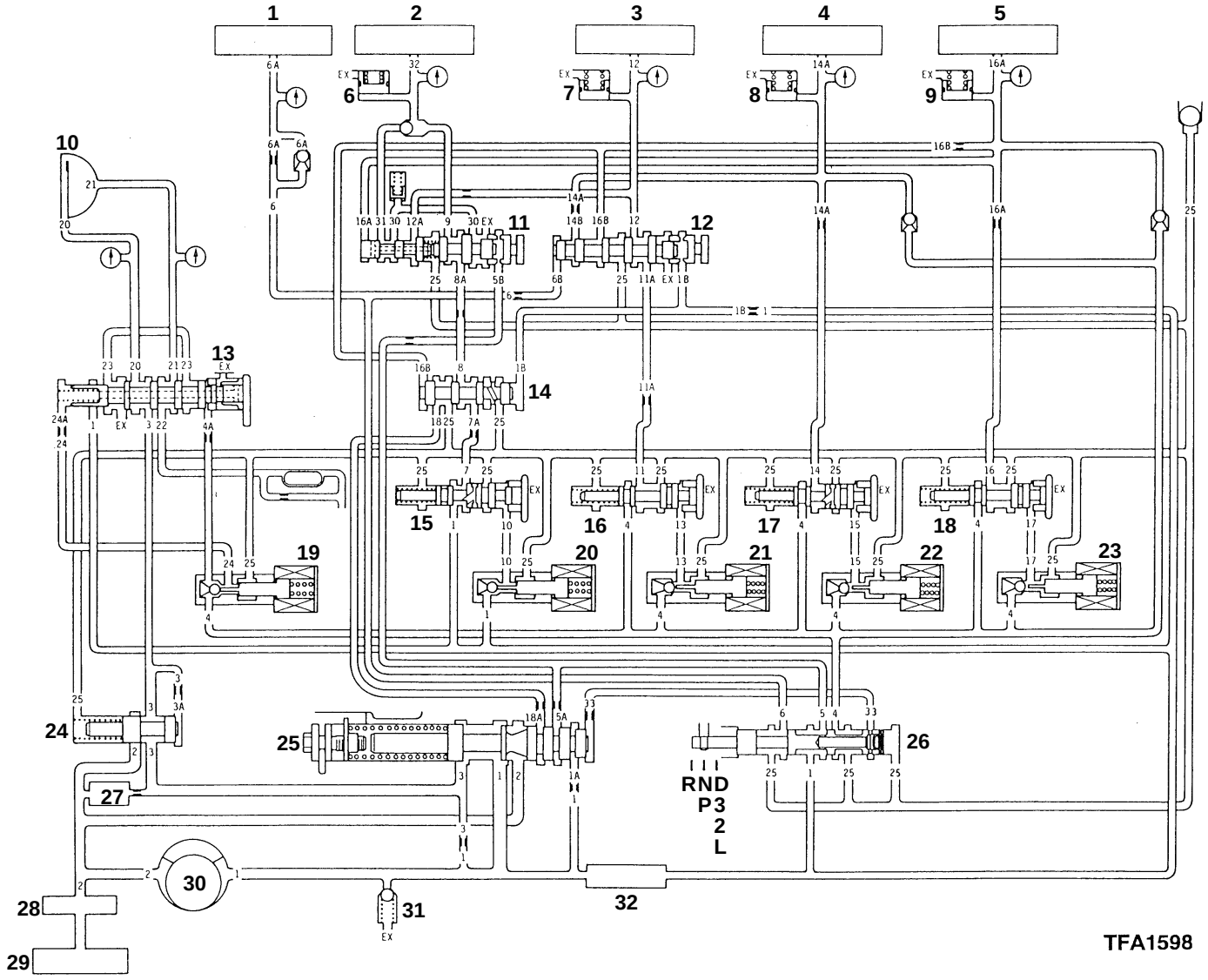
HYDRAULIC CIRCUIT



1. Reverse clutch
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. Switching valve
15. Low-reverse pressure control valve
16. Second pressure control valve
17. Underdrive pressure control valve
18. Overdrive pressure control valve
19. Torque converter clutch control solenoid valve
20. Low-reverse solenoid valve
21. Second solenoid valve
22. Underdrive solenoid valve
23. Overdrive solenoid valve
24. Torque converter pressure control valve
25. Regulator valve
26. Manual valve
27. Oil filter
28. Oil filter
29. Oil pan
30. Oil pump
31. Relief valve
32. Oil strainer

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SPECIFICATIONS

GENERAL SPECIFICATIONS

Items		Specifications	
Model		F4A51	
Type		Electronically controlled 4-speed full-automatic	
Torque converter	Type	3-element with torque converter clutch	
	Engine stall speed	2100 – 2600 r/min.	
	Stall torque ratio	2.0	
Gear ratio		3.0ℓ	3.5ℓ
	1st	2.849	3.036
	2nd	1.499	1.597
	3rd	1.002	1.068
	4th	0.733	0.781
	Reverse	2.726	2.906
Final gear ratio		3.735	3.274

SERVICE SPECIFICATIONS

Items	Standard value
Output shaft preload mm	0.01 – 0.09
Brake reaction plate end play mm	0 – 0.16
Low-reverse brake end play mm	1.65 – 2.11
Second brake end play mm	1.09 – 1.55
Underdrive sun gear end play mm	0.25 – 0.45
Input shaft end play mm	0.70 – 1.45
Differential case preload mm	0.045 – 0.105
Underdrive clutch end play mm	1.60 – 1.80
Reverse and overdrive clutch return spring end play mm	0 – 0.09
Overdrive clutch end play mm	1.6 – 1.8
Reverse clutch end play mm	1.5 – 1.6
Backlash between differential side gear and pinion mm	0.025 – 0.150

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VALVE BODY SPRING IDENTIFICATION TABLE

Spring	Wire diameter mm	Outside diameter mm	Free length mm	Number of loops
Regulator valve spring	1.8	15.7	86.7	24
Underdrive pressure control valve spring	0.7	7.6	37.7	25
Overdrive pressure control valve spring	0.7	7.6	37.7	25
Low-reverse pressure control valve spring	0.7	7.6	37.7	25
Second pressure control valve spring	0.7	7.6	37.7	25
Torque converter spring	1.6	11.2	34.4	12.5
Torque converter clutch control valve spring	0.7	5.9	28.1	19
Fail-safe valve A spring	0.7	8.9	21.9	9.5
Damping valve spring	1.0	7.7	35.8	17
Line relief valve spring	1.0	7.0	17.3	10
Orifice check ball spring	0.5	4.5	17.2	15

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SNAP RING, SPACER, THRUST WASHER, THRUST RACE AND PRESSURE PLATE FOR ADJUSTMENT

Thrust washer (For adjustment of input shaft end play)

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.8	18	MD754509	2.4	24	MD753793
2.0	20	MD754508	2.6	26	MD753794
2.2	22	MD754507	2.8	28	MD753795

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

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.6	None	MD759660	2.4	Brown	MD750845
1.7	Blue	MD759661	2.5	None	MD750846
1.8	Brown	MD759662	2.6	Blue	MD750847
1.9	None	MD758892	2.7	Brown	MD750848
2.0	Blue	MD750841	2.8	None	MD750849
2.1	Brown	MD750842	2.9	Blue	MD750850
2.2	None	MD750843	3.0	Brown	MD750851
2.3	Blue	MD750844			

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

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
2.2	Blue	MD756784	2.4	None	MD758552
2.3	Brown	MD756785	2.5	Blue	MD758553

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

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.6	F	MD759568	2.4	B	MD759428
1.8	E	MD759425	2.6	A	MD759429
2.0	D	MD759426	2.8	0	MD759430
2.2	C	MD759427	3.0	1	MD759431

Pressure plate (For adjustment of second brake end play)

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.8	E	MD759425	2.4	B	MD759428
2.0	D	MD759426	2.6	A	MD759429
2.2	C	MD759427	2.8	0	MD759430

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Snap ring (For adjustment of reverse clutch end play)

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.6	None	MD761088	2.3	Blue	MD756693
1.7	Blue	MD761089	2.4	Brown	MD756694
1.8	Brown	MD761090	2.5	None	MD756695
1.9	None	MD758947	2.6	Blue	MD756696
2.0	Blue	MD756690	2.7	Brown	MD756697
2.1	Brown	MD756691	2.8	None	MD756698
2.2	None	MD756692			

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

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.48	Brown	MD755600	1.58	Blue	MD755602
1.53	None	MD755601	1.63	Brown	MD755603

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

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.6	–	MD707267	2.2	–	MD723065
1.7	–	MD759681	2.3	–	MD754796
1.8	–	MD723064	2.4	–	MD724358
1.9	–	MD754794	2.5	–	MD754797
2.0	–	MD707268	2.6	–	MD754798
2.1	–	MD754795			

Spacer (For adjustment of output shaft preload)

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
1.88	88	MD756579	2.36	36	MD756591
1.92	92	MD756580	2.40	40	MD756592
1.96	96	MD756581	2.44	44	MD756593
2.00	00	MD756582	2.48	48	MD756594
2.04	04	MD756583	2.52	52	MD756595
2.08	08	MD756584	2.56	56	MD756596
2.12	12	MD756585	2.60	60	MD756597
2.16	16	MD756586	2.64	64	MD756598
2.20	20	MD756587	2.68	68	MD756599
2.24	24	MD756588	2.72	72	MD760685
2.28	28	MD756589	2.76	76	MD760686
2.32	32	MD756590			

Spacer (For adjustment of differential case preload)

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
0.71	71	MD754475	1.07	07	MD720945
0.74	74	MD727660	1.10	J	MD710454
0.77	77	MD754476	1.13	D	MD700270
0.80	80	MD727661	1.16	K	MD710455
0.83	83	MD720937	1.19	L	MD710456
0.86	86	MD720938	1.22	G	MD700271
0.89	89	MD720939	1.25	M	MD710457
0.92	92	MD720940	1.28	N	MD710458
0.95	95	MD720941	1.31	E	MD706574
0.98	98	MD720942	1.34	O	MD710459
1.01	01	MD720943	1.37	P	MD710460
1.04	04	MD720944			

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

Thickness mm	Identification symbol	Part No.	Thickness mm	Identification symbol	Part No.
0.75 – 0.82	–	MD722986	1.01 – 1.08	–	MD722982
0.83 – 0.92	–	MD722985	1.09 – 1.16	–	
0.93 – 1.00	–	MD722984			MD722983

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TORQUE SPECIFICATIONS

Items		Nm
Transmission	Roll stopper bracket	69
	Wiring harness bracket	23
	Control cable bracket	23
	Eye bolt	30
	Oil cooler feed tube	9.8
	Oil filter	12
	Input shaft speed sensor	11
	Output shaft speed sensor	11
	Manual control lever	22
	Park/neutral position switch (PNP switch)	11
	Speedometer gear	4.9
	Valve body cover	11
	Valve body mounting bolt	11
	Fluid temperature sensor	11
	Manual control shaft detent	5.9
	Rear cover	23
	Torque converter housing	47
	Oil pump	23
	Transfer drive gear	34
	Output shaft lock nut	167
	Output shaft bearing retainer	23
Components	Differential drive gear	132
	Valve body	11
	Solenoid valve support	5.9
	Plate	5.9

SEALANTS

Items	Specified sealant
Rear cover	Mitsubishi genuine sealant Part No. MD974421 or equivalent
Torque converter housing	Mitsubishi genuine sealant Part No. MD974421 or equivalent
Valve body cover	Mitsubishi genuine sealant Part No. MD974421 or equivalent

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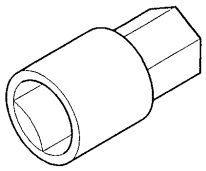
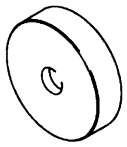
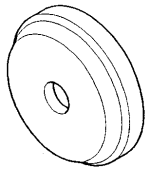
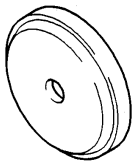
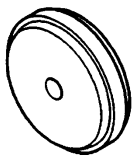
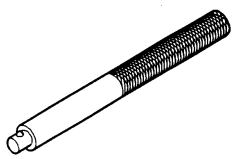
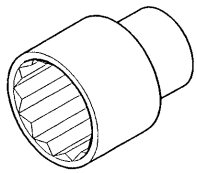
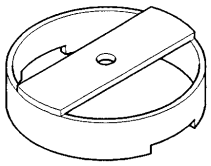
SPECIAL TOOLS

Tool	Tool number and name	Supersession	Application
	MB990607 Torque wrench socket	E19M50–6	Removal and installation of output shaft lock nut
	MB990930 Installer adaptor	–	Installation of output shaft bearing outer race
	MB990931 Installer adaptor	–	Installation of cap
	MB990936 Installer adaptor	–	Installation of differential taper roller bearing outer race
	MB990937 Installer adaptor	–	Installation of output shaft taper roller bearing outer race
	MB990938 Handle	–	• Installation of input shaft rear bearing • Use with installer adaptor
	MB991625 Special socket (41)	–	Removal and installation of output shaft lock nut
	MB991629 Spring compressor	EMB991629	Measurement of underdrive clutch and overdrive clutch end plays

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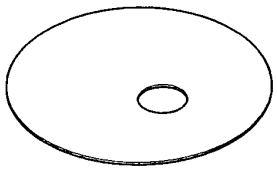
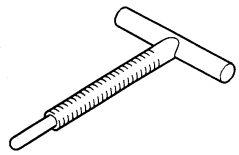
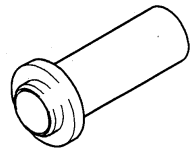
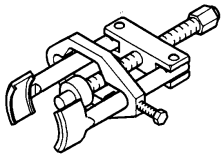
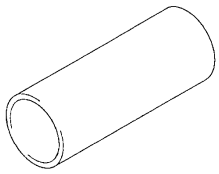
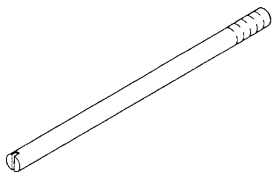
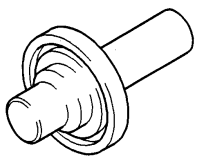
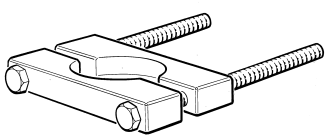
Tool	Tool number and name	Supersession	Application
	MB991632 Clearance dummy plate	–	Measurement of low-reverse brake and second brake end play
	MD998333 Oil pump remover	–	Removal of oil pump
	MD998334 Oil seal installer	E9055 (17-010A)	Installation of oil pump oil seal
	MD998338 Spring compressor	EMD998338	Removal and installation of low-reverse brake snap ring
	MD998348 Bearing and gear puller	E21M16D	Removal of transfer drive gear bearing
	MD998350 Bearing installer	E7513A	Installation of output shaft
	MD998412 Guide	–	Installation of oil pump and transfer drive gear
	MD998800 Oil seal installer	E21M14A	Installation of drive shaft oil seal
	MD998801 Bearing remover	–	Removal of each bearing

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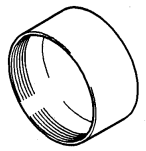
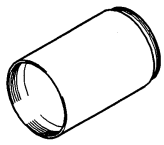
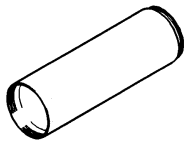
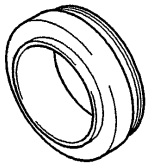
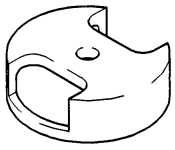
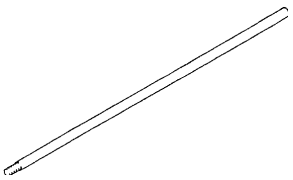
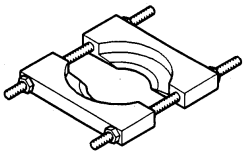
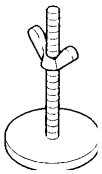
Tool	Tool number and name	Supersession	Application
	MD998812 Installer cap	–	Use with installer and installer adaptor
	MD998813 Installer – 100	–	Use with installer cap and installer adaptor
	MD998814 Installer – 200	–	Use with installer cap and installer adaptor
	MD998824 Installer adaptor (50)	–	• Installation of transfer drive gear • Installation of output shaft taper roller bearing
	MD998827 Installer adaptor	–	Installation of output shaft taper roller bearing
	MD998907 Spring compressor	E21M43	Removal and installation of underdrive clutch snap ring
	MD998913 Dial gauge extension	E21M44	Measurement of low-reverse brake and second brake end plays
	MD998917 Bearing remover	–	Removal of output shaft taper roller bearing
	MD998924 Spring compressor retainer	–	• Removal and installation of low-reverse brake snap ring • Measurement of underdrive clutch and overdrive clutch end plays

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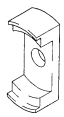
Tool	Tool number and name	Supersession	Application
	MD999590 Spring compressor	EMD999590	Removal and installation of overdrive clutch snap ring

FORM–IN–PLACE GASKET

The transmission has several areas where the form–in–place gasket (FIPG) is in use. To ensure that the gasket fully serves its purpose, it is necessary to observe some precautions when applying the gasket. Bead size, continuity and location are of paramount importance. Too thin a bead could cause leaks. Too thick a bead, on the other hand, could be squeezed out of location, causing blocking or narrowing of the fluid feed line. To eliminate the possibility of leaks from a joint, therefore, it is absolutely necessary to apply the gasket evenly without a break, while observing the correct bead size.

DISASSEMBLY

The parts assembled with the FIPG can be easily disassembled without use of a special method. In some cases, however, the sealant between the joined surfaces may have to be broken by lightly striking with a mallet or similar tool. A flat and thin gasket scraper may be lightly hammered in between the joined surfaces. In this case, however, care must be taken to prevent damage to the joined surfaces.

SURFACE PREPARATION

Thoroughly remove all substances deposited on the gasket application surfaces, using a gasket scraper or wire brush. Check to ensure that the surfaces to which the FIPG is to be applied is flat. Make sure that there are no oils, greases and foreign substances deposited on the application surfaces. Do not forget to remove the old sealant remaining in the bolt holes.

FORM–IN–PLACE GASKET APPLICATION (FIPG)

When assembling parts with the FIPG, you must observe some precautions, but the procedure is very simple as in the case of a conventional pre–cut gasket. Applied FIPG bead should be of the specified size and without breaks. Also be sure to encircle the bolt hole circumference with a completely continuous bead. The FIPG can be wiped away unless it is hardened. While the FIPG is still moist (in less than 15 minutes), mount the parts in position. When the parts are mounted, make sure that the gasket is applied to the required area only. In addition, do not apply any oil to the sealing locations or start the engine until a sufficient amount of time (about one hour) has passed after installation is completed. The FIPG application procedure may vary on different areas. Observe the procedure described in the text when applying the FIPG.

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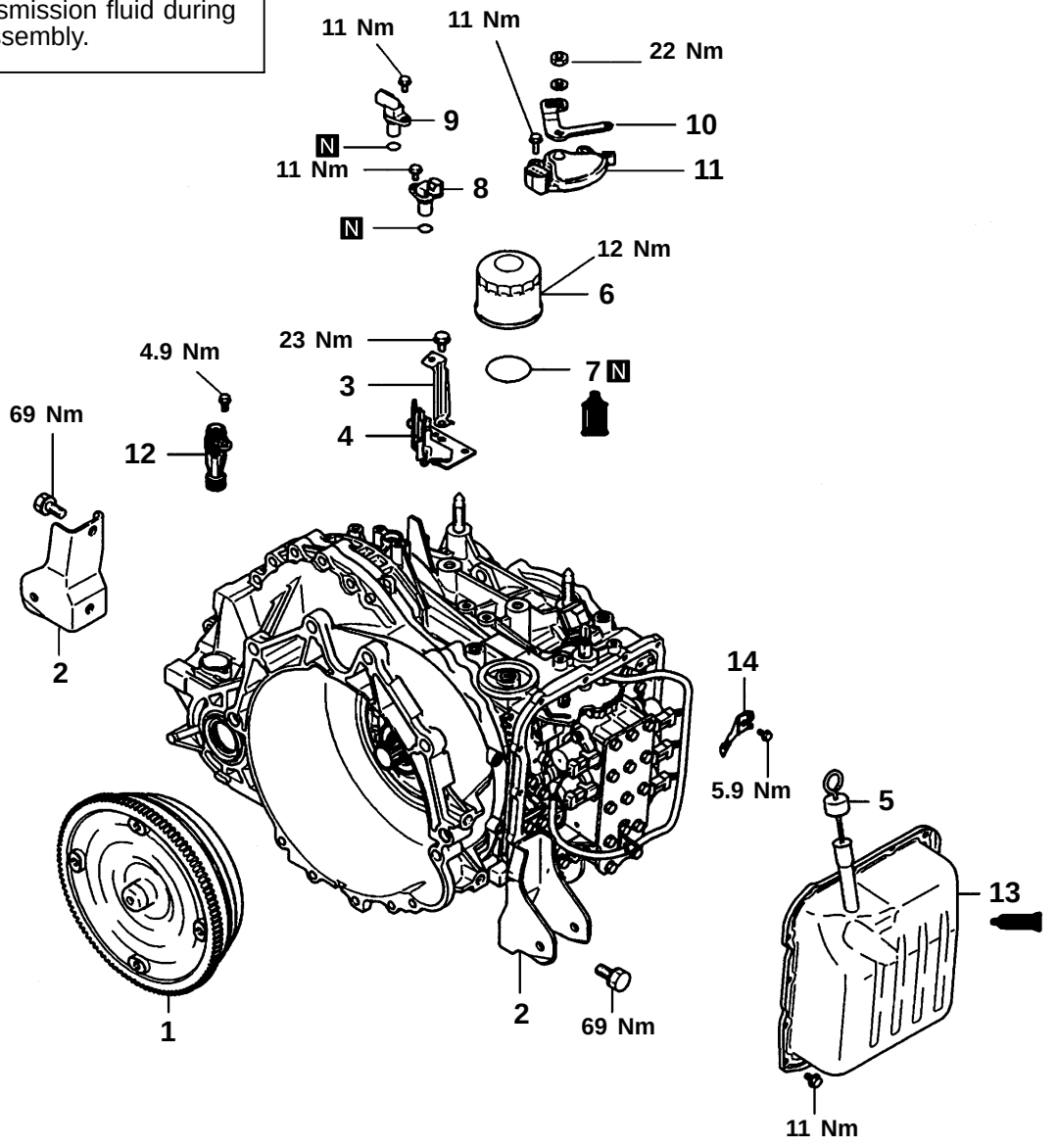
TRANSMISSION

DISASSEMBLY AND REASSEMBLY

Lubricate all internal parts with automatic transmission fluid during reassembly.



1. Torque converter
2. Roll stopper bracket
3. Harness bracket
4. Control cable support bracket
5. Oil level gauge
6. Oil filter
7. Oil filter gasket
8. Input shaft speed sensor
9. Output shaft speed sensor
10. Manual control lever
11. Park/neutral position switch
12. Speedometer gear
13. Valve body cover
14. Manual control shaft detent

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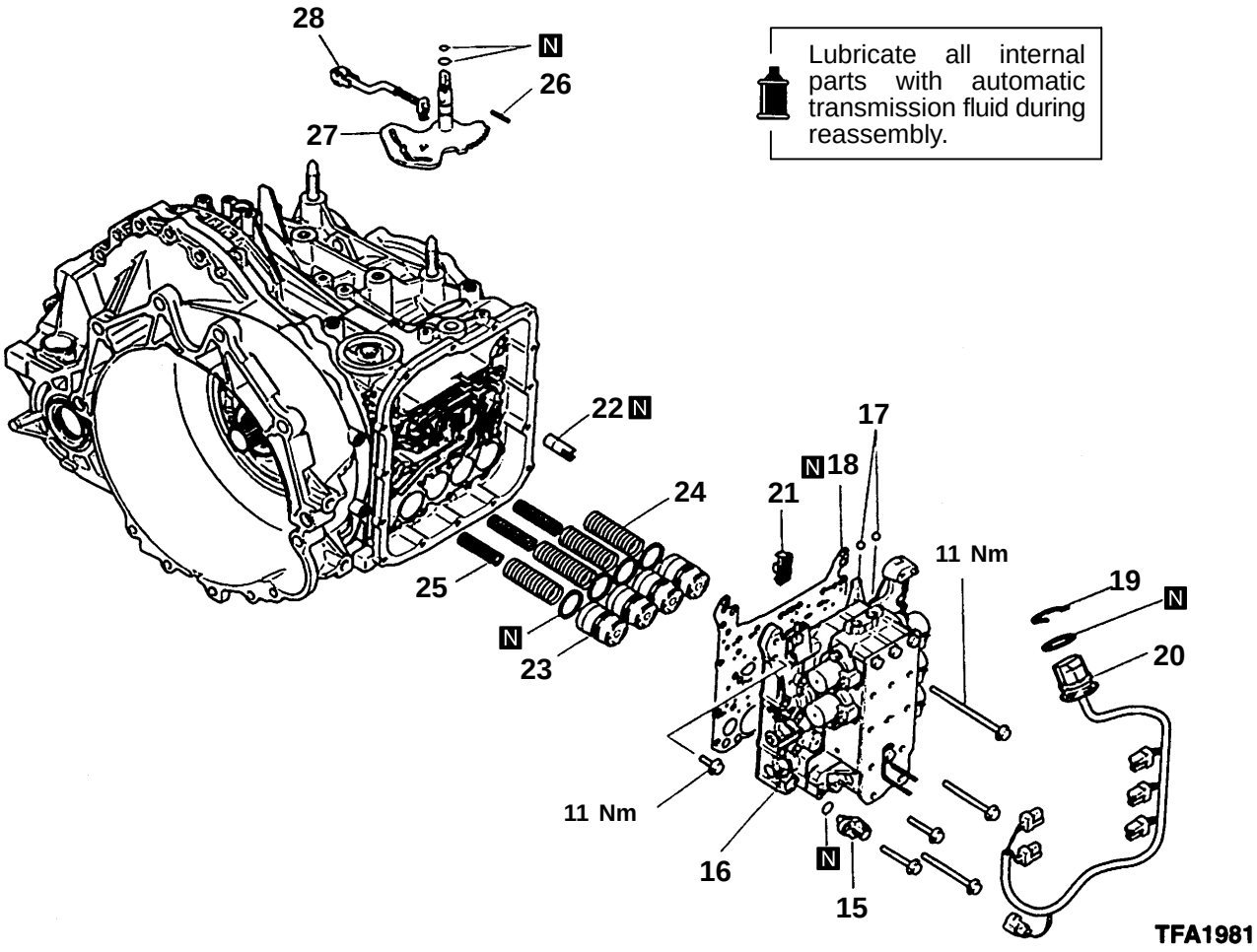

15. Fluid temperature sensor
16. Valve body
17. Steel ball
18. Gasket
19. Snap ring
20. Solenoid valve harness
21. Strainer
22. Second brake retainer oil seal
23. Accumulator piston
24. Accumulator spring
25. Accumulator spring
26. Manual control lever shaft roller
27. Manual control lever shaft
28. Parking pawl rod

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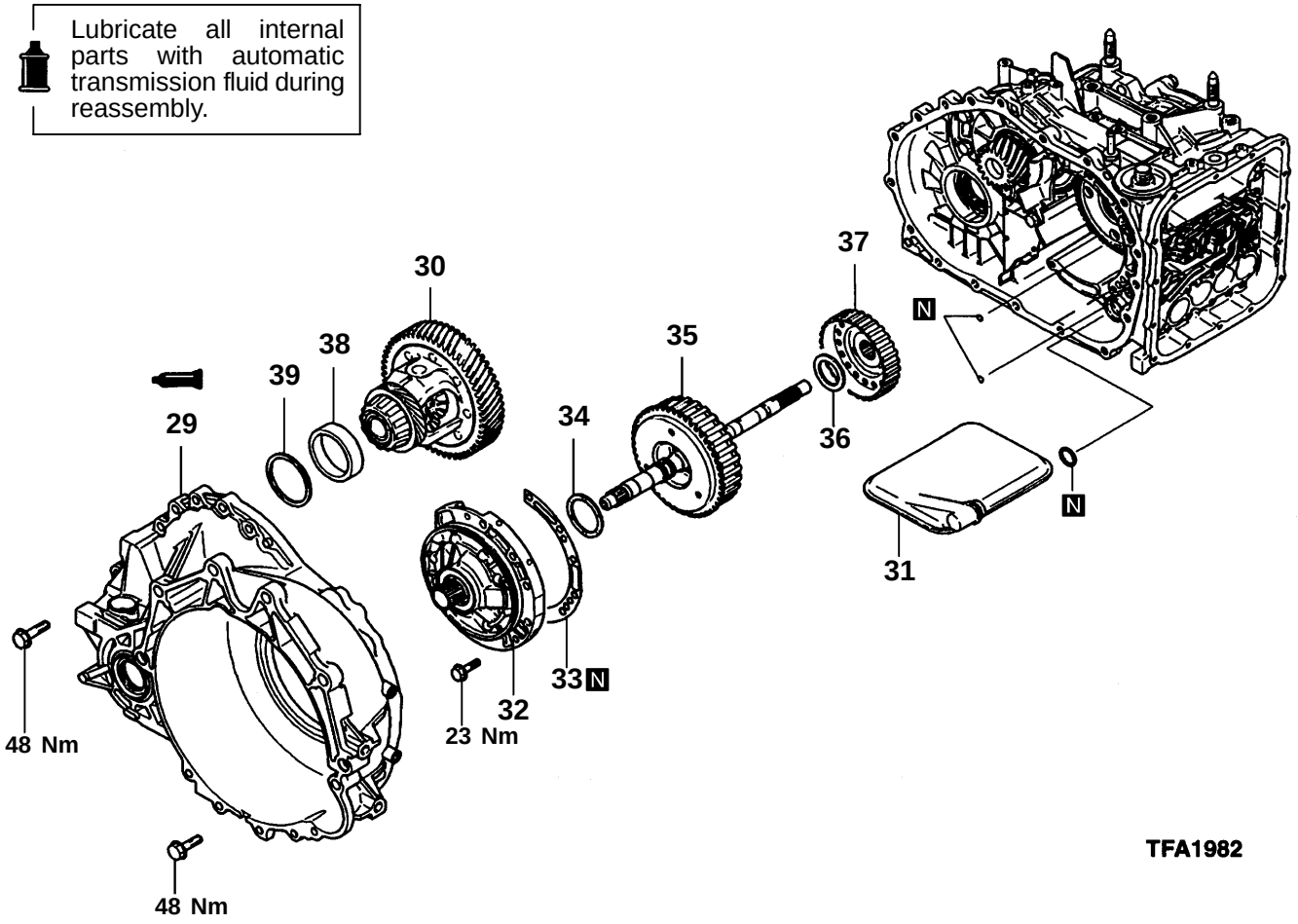
Lubricate all internal parts with automatic transmission fluid during reassembly.



29. Torque converter housing
30. Differential
31. Oil filter
32. Oil pump
33. Gasket
34. Thrust washer #1
35. Underdrive clutch and input shaft
36. Thrust bearing #2
37. Underdrive clutch hub
38. Outer race
39. Spacer

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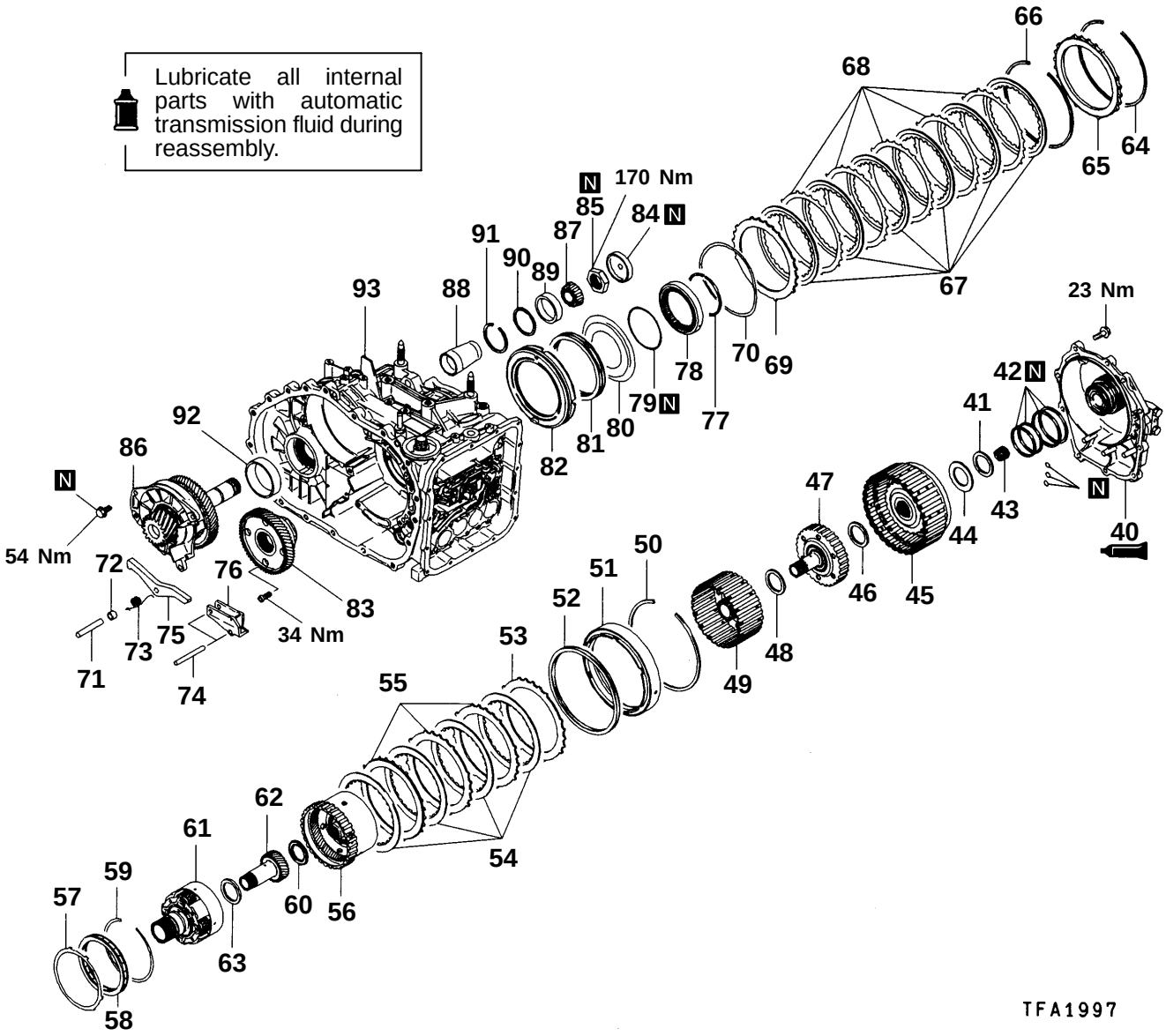
No. of Brake Discs and Plates

Brake	Brake Disc	Brake Plate
Low-reverse brake	6	5
Second brake	4	3



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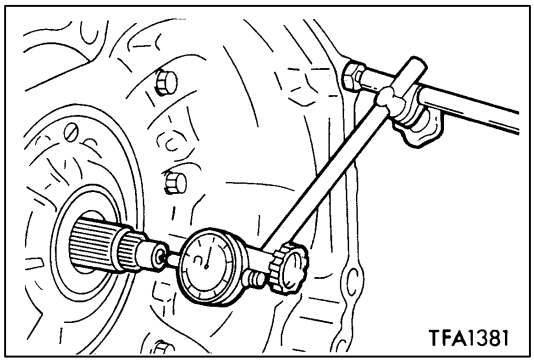
40. Rear cover
41. Thrust race #8
42. Seal ring
43. Input shaft rear bearing
44. Thrust bearing #7
45. Reverse and overdrive clutch
46. Thrust bearing #6
47. Overdrive clutch hub
48. Thrust bearing #5
49. Planetary reverse sun gear
50. Snap ring
51. Second brake piston
52. Return spring
53. Pressure plate
54. Second brake disc
55. Second brake plate
56. Overdrive planetary carrier
57. Stopper plate
58. One-way clutch
59. Snap ring
60. Thrust bearing #4
61. Output planetary carrier
62. Underdrive sun gear
63. Thrust bearing #3
64. Snap ring
65. Reaction plate
66. Snap ring
67. Low-reverse brake disc
68. Low-reverse brake plate
69. Pressure plate
70. Wave spring
71. Parking pawl shaft
72. Spacer
73. Parking pawl spring
74. Parking roller support shaft
75. Parking pawl
76. Parking roller support
77. Snap ring
78. One-way clutch inner race
79. O-ring
80. Spring retainer
81. Return spring
82. Low-reverse brake piston
83. Transfer drive gear
84. Cap
85. Lock nut
86. Output shaft
87. Taper roller bearing
88. Collar
89. Outer race
90. Spacer
91. Snap ring
92. Outer race
93. Transmission case

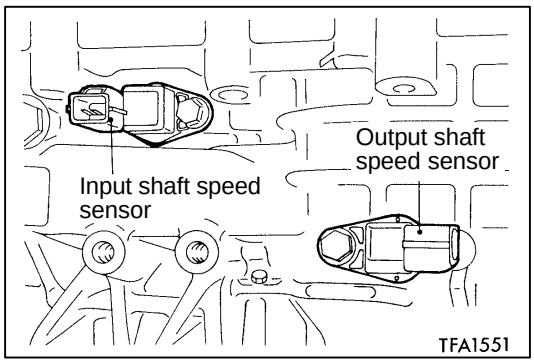
DISASSEMBLY

Caution

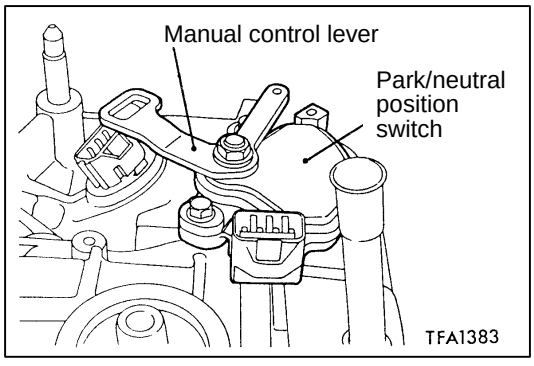
1. **Because the automatic transmission is manufactured from high-precision parts, sufficient care must be taken not to scratch or damage these parts during disassembly and reassembly.**
2. **The working area should be covered with a rubber mat to keep it clean at all times.**
3. **Do not wear any cloth gloves and do not use any rags during disassembly. Use nylon cloth if you need to use something.**
4. **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.**
5. **Clutch discs, plastic thrust plates and rubber parts should be cleaned with automatic transmission fluid (ATF) so that they do not become dirty.**
6. **If the transmission body has been damaged, disassemble and clean the cooler system also.**



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



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



8. Remove the manual control lever, and then remove the park/neutral position switch.

Caution
Make sure that the manual control lever installation nut is removed before removing the valve body.

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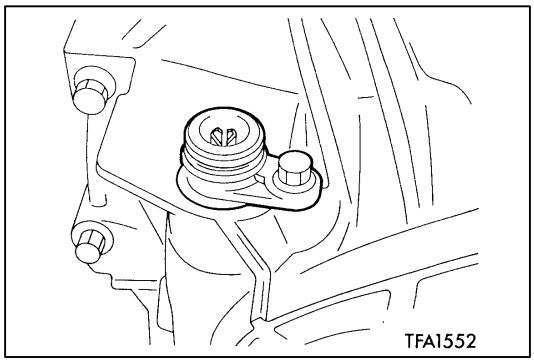
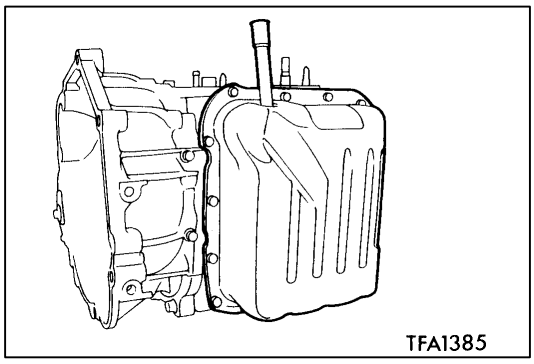
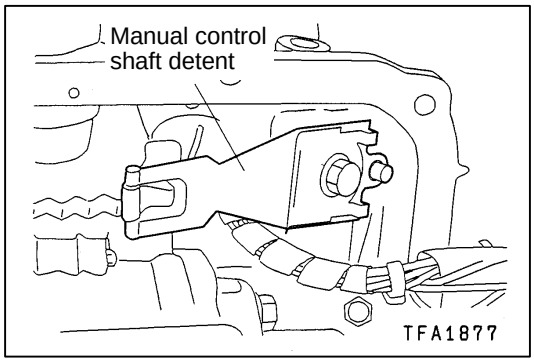


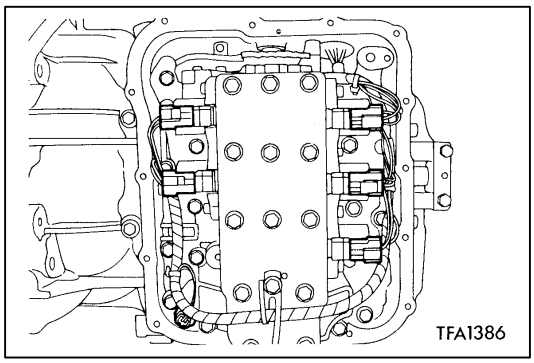
9. Remove the speedometer gear.



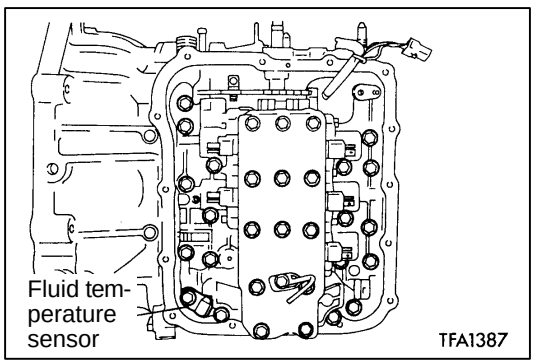
10. Remove the valve body cover.



11. Remove the manual control shaft detent.



12. Disconnect the harness connectors of the valve body.



13. Remove the valve body mounting bolts (28 pieces).
14. Remove the fluid temperature sensor.

Caution
Make sure that the manual control lever and the park/neutral position switch are removed.

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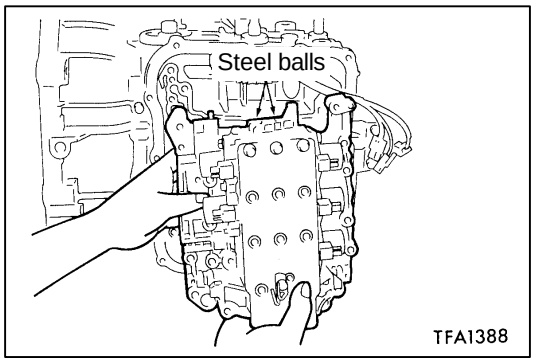
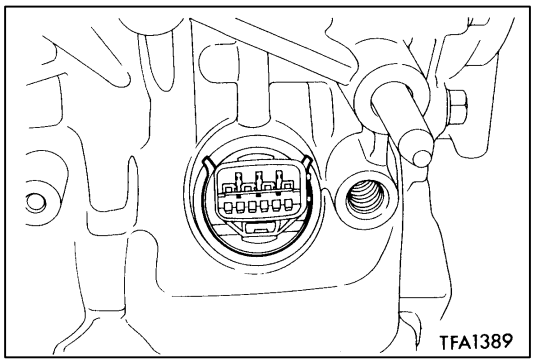
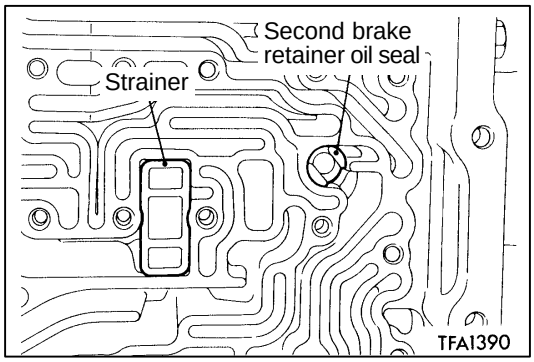


15. Remove the valve body, gasket and the steel balls (2 pieces).

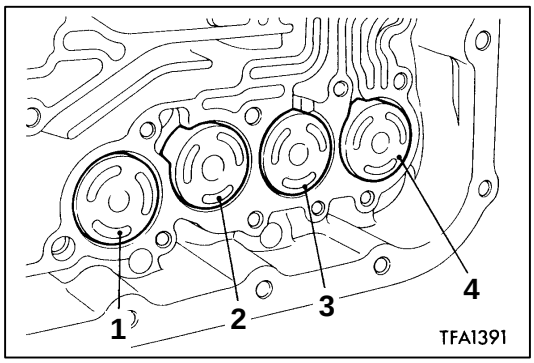
Caution
Do not lose the steel balls (2 pieces).



16. Remove the snap ring, and then remove the solenoid valve harness.

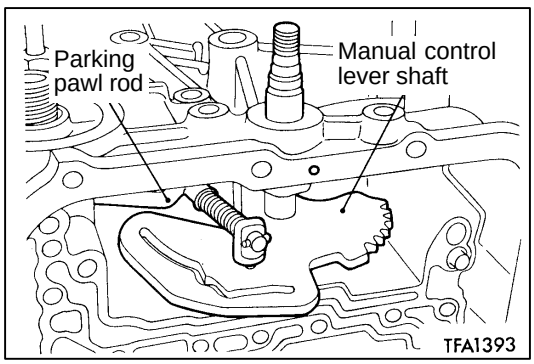


17. Remove the strainer and the second brake retainer oil seal.



18. Remove each accumulator piston and spring.

No.	Name
1	For low-reverse brake
2	For underdrive clutch
3	For second brake
4	For overdrive clutch



19. Remove the manual control lever shaft roller.
20. Remove the manual control lever shaft and the parking pawl rod.

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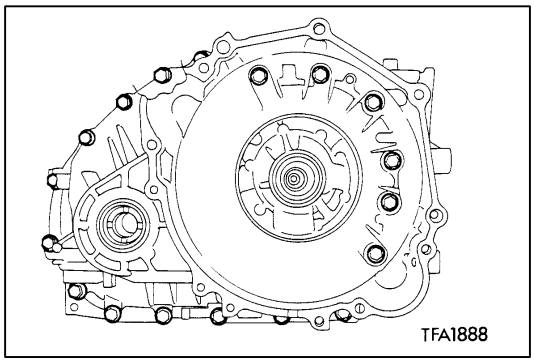
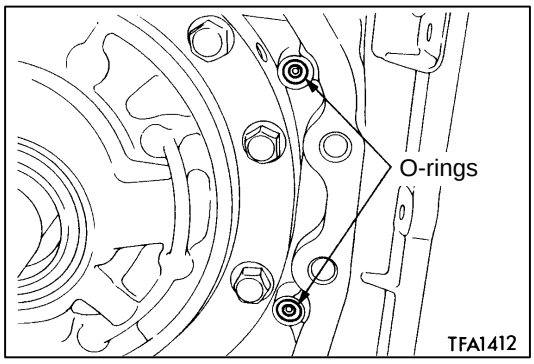
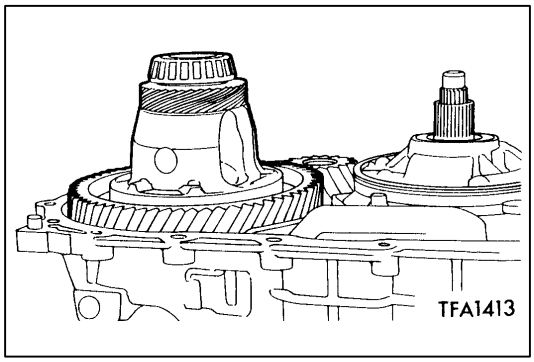


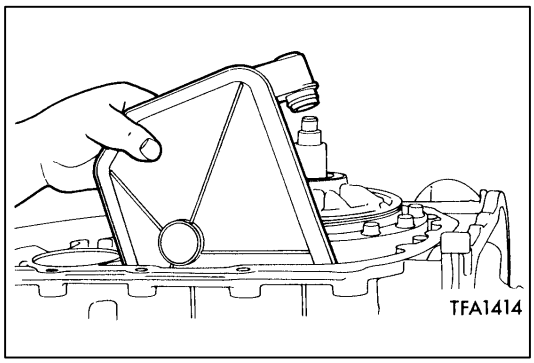
21. Remove the torque converter housing mounting bolts (18 pieces), and then remove the torque converter housing.



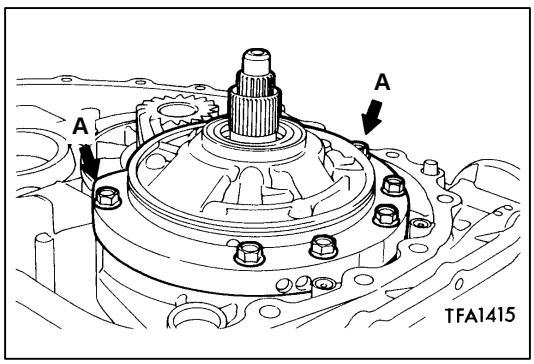
22. Remove the O-rings (2 pieces).



23. Remove the differential.



24. Remove the oil filter.



25. Remove the oil pump mounting bolts (6 pieces).
26. Install the special tool (MD998333) in the hole A.

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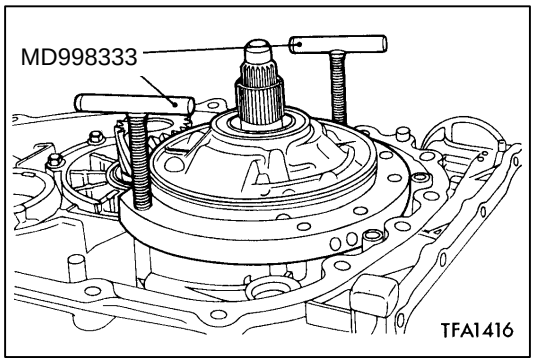
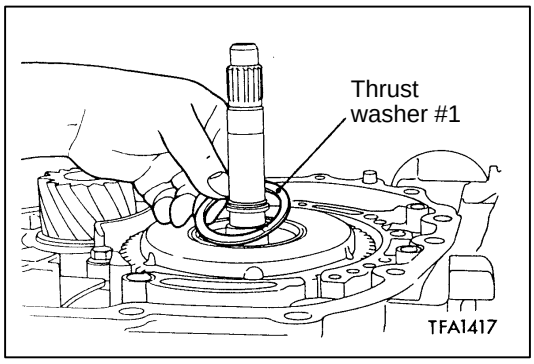
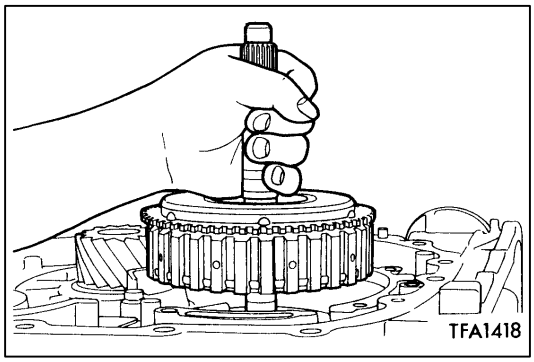


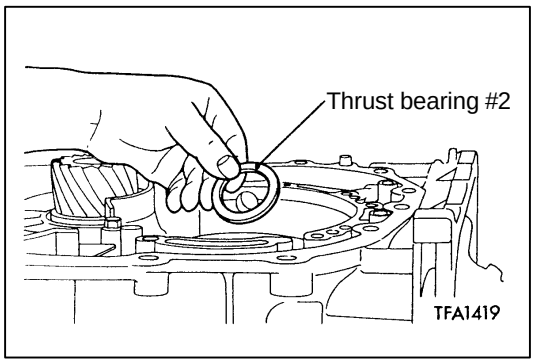
27. Screw the special tool to remove the oil pump.
28. Remove the oil pump gasket.



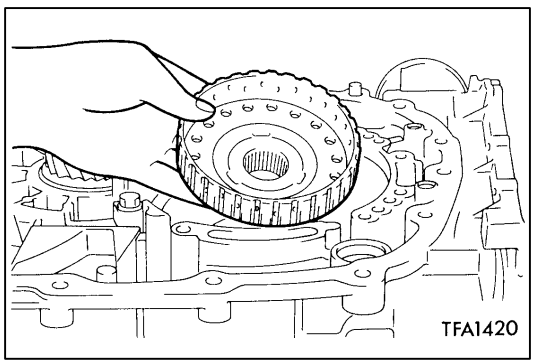
29. Remove thrust washer #1.



30. Hold the input shaft, and then remove the underdrive clutch.



31. Remove thrust bearing #2.



32. Remove the underdrive clutch hub.

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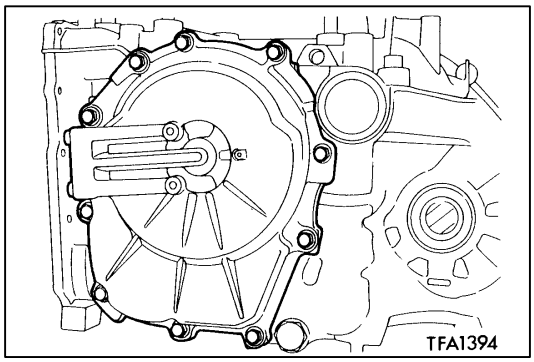
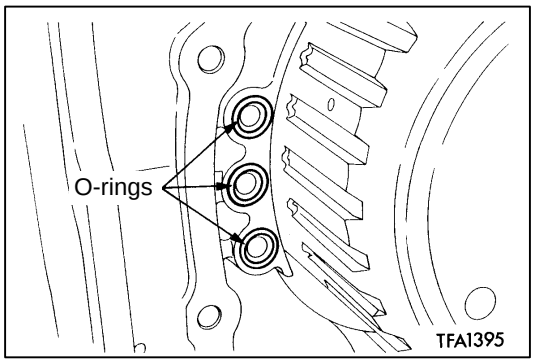
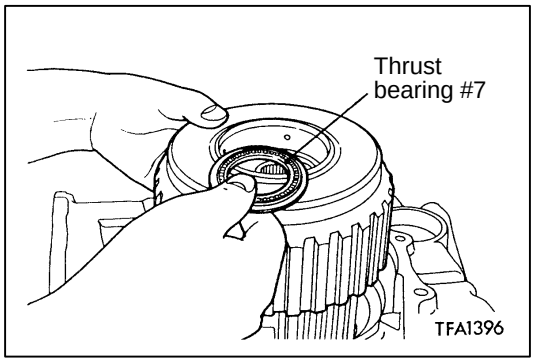


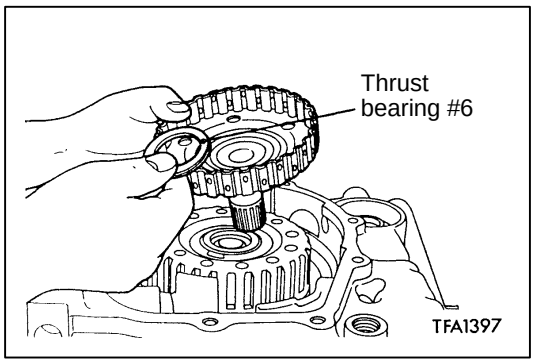
33. Remove the rear cover.
34. Remove the thrust race #8.
35. Remove the seal rings (4 pieces).
36. Remove the input shaft rear bearing.



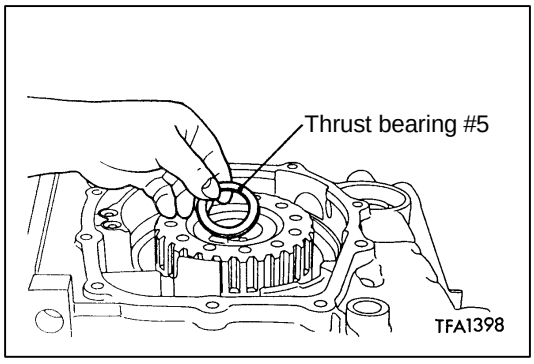
37. Remove the O-rings (3 pieces).



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



39. Remove the overdrive clutch hub and the thrust bearing #6.



40. Remove thrust bearing #5.

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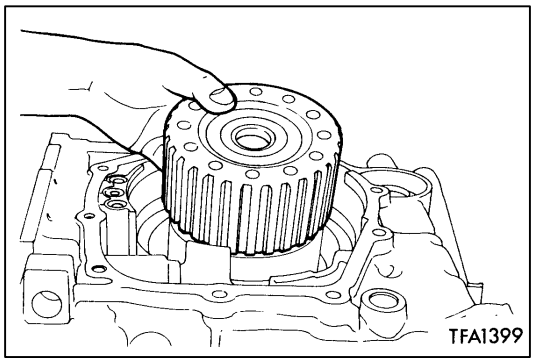
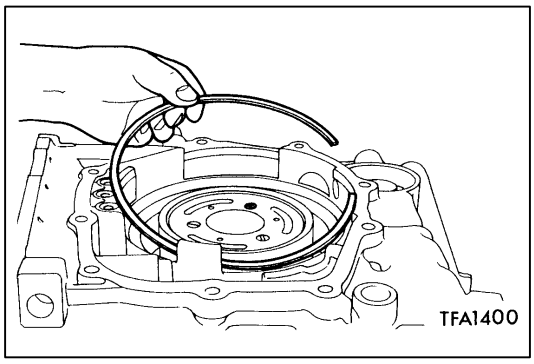
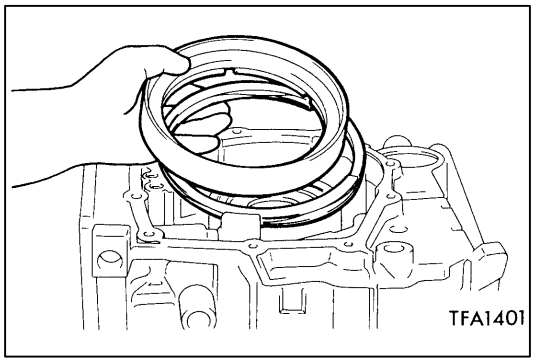


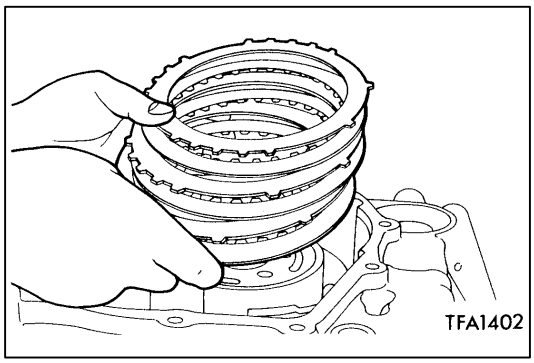
41. Remove the planetary reverse sun gear.



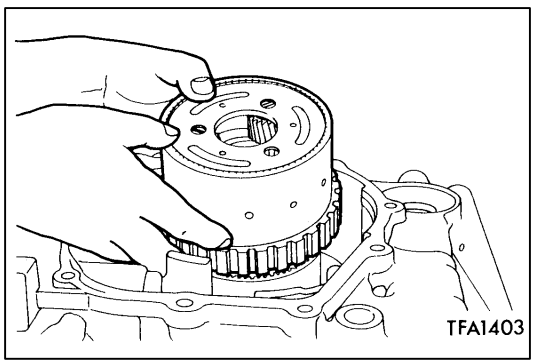
42. Remove the snap ring.



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



44. Remove the pressure plate, brake discs and brake plates.



45. Remove the overdrive planetary carrier.

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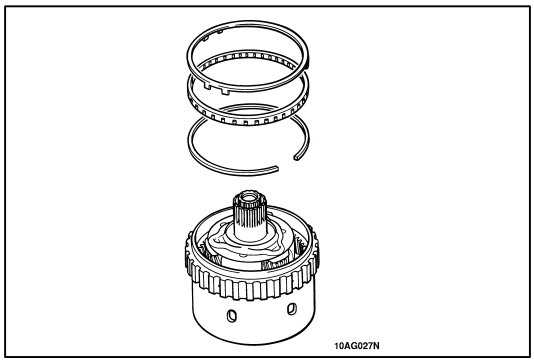
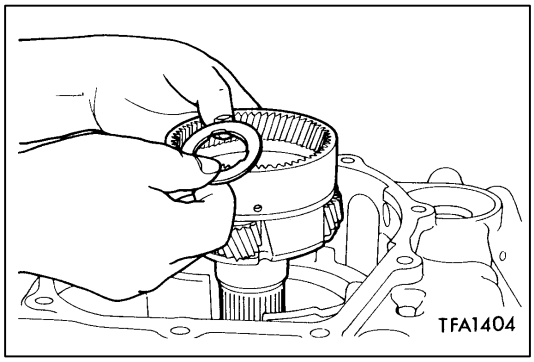
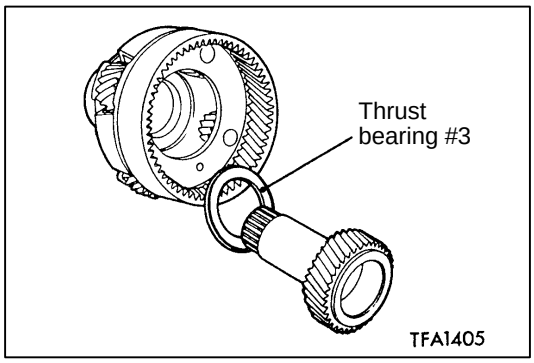


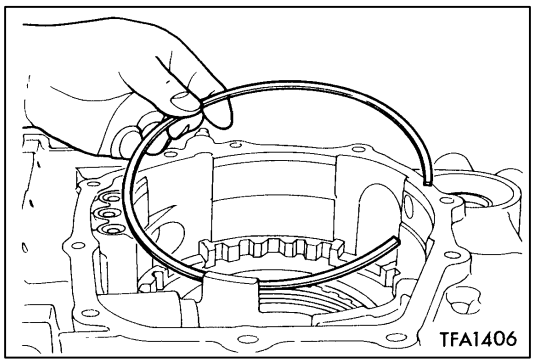
46. Remove the stopper plate, one-way clutch and snap ring.



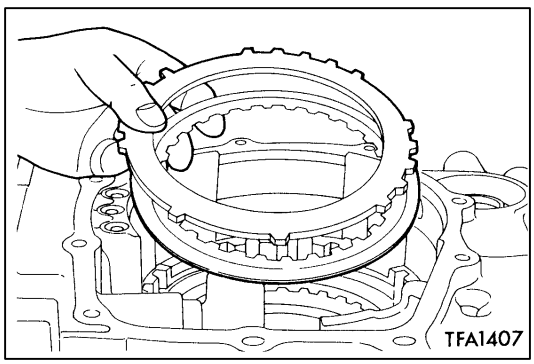
47. Remove the output planetary carrier and the thrust bearing #4.



48. Remove the underdrive sun gear and the thrust bearing #3 from the output planetary carrier.



49. Remove the snap ring.



50. Remove the reaction plate and the brake disc.

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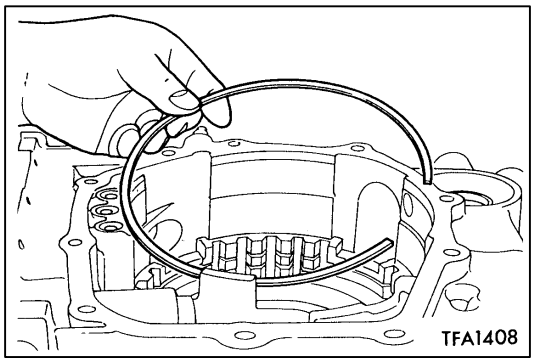
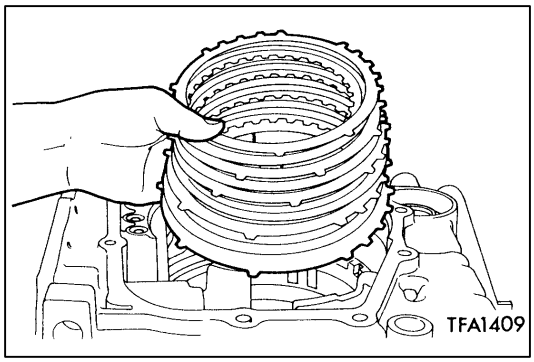
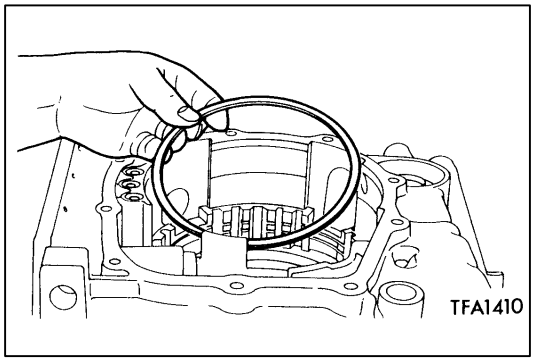


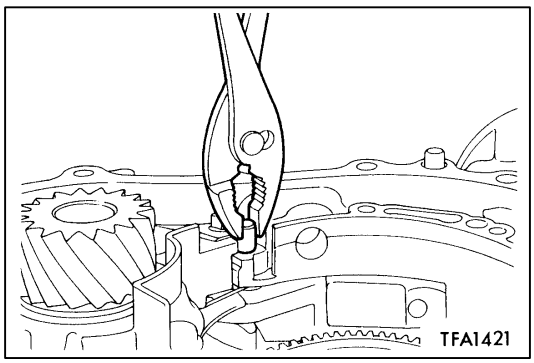
51. Remove the snap ring.



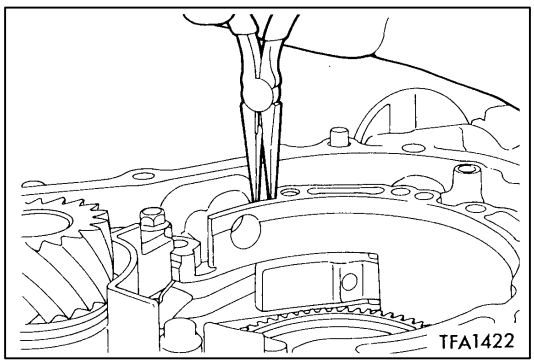
52. Remove the brake plates, brake discs and pressure plate.



53. Remove the wave spring.



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



55. Remove the two parking roller support shafts, and then remove the parking pawl case and parking roller support.

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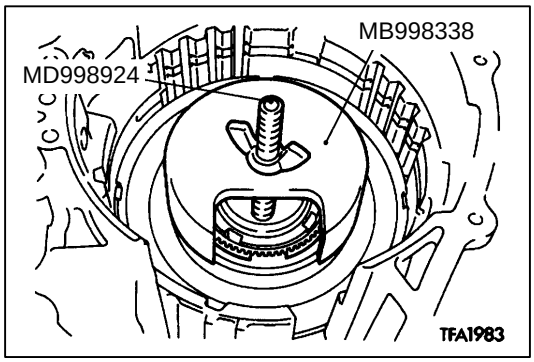
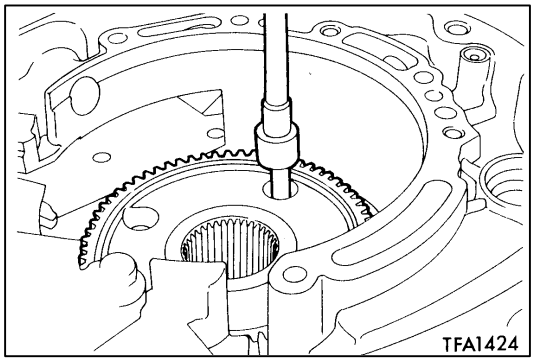
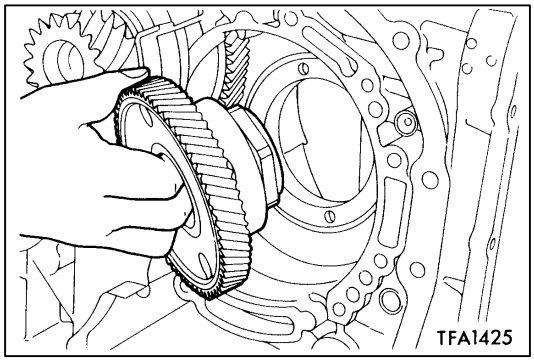


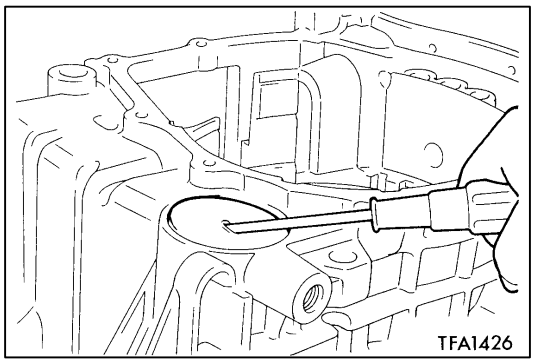
56. Use the special tool to remove the snap ring.
57. Remove the one-way clutch inner race and O-ring, spring retainer, return spring and the low-reverse brake piston.



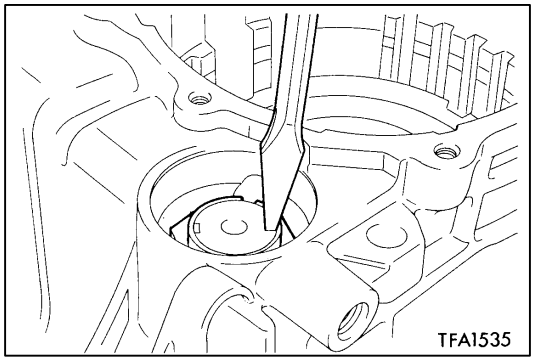
58. Remove the transfer drive gear mounting bolts (4 pieces).



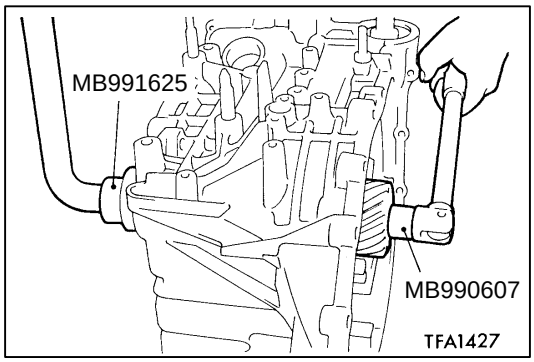
59. Remove the transfer drive gear.



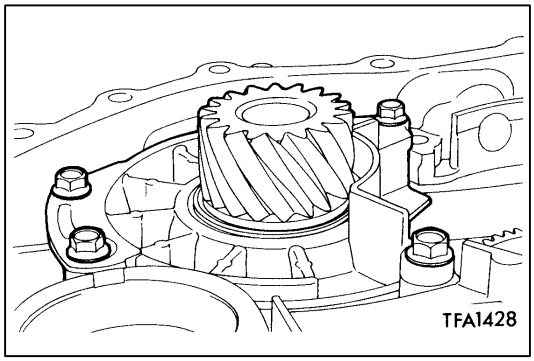
60. Remove the cap.



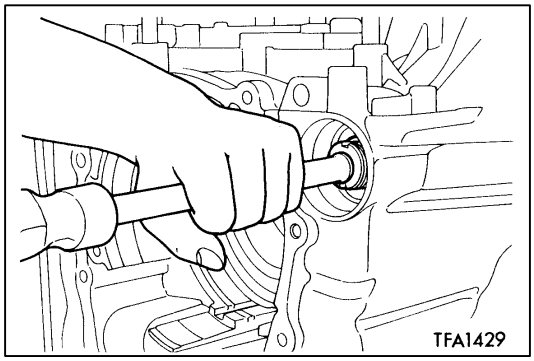
61. Straighten the locking tab of the output shaft lock nut.



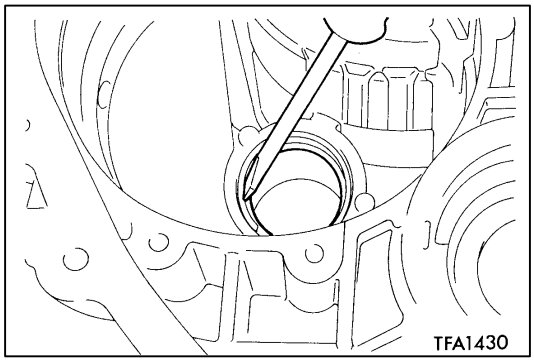
62. Use the special tool to remove the output shaft lock nut.
    Caution
    The lock has left-handed threads.



63. Remove the bearing retainer mounting bolt.



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



65. Remove the spacer and the outer race.
66. Remove the snap ring.
67. Remove the differential bearing outer race and spacer from the torque converter housing.
68. Remove the differential bearing outer race from the transmission case.

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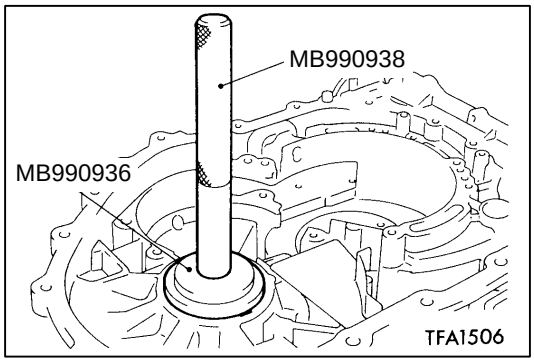
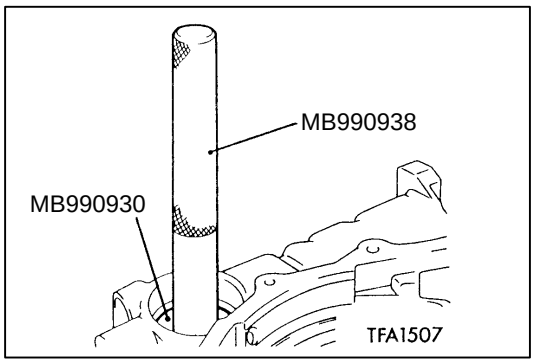
REASSEMBLY

Caution

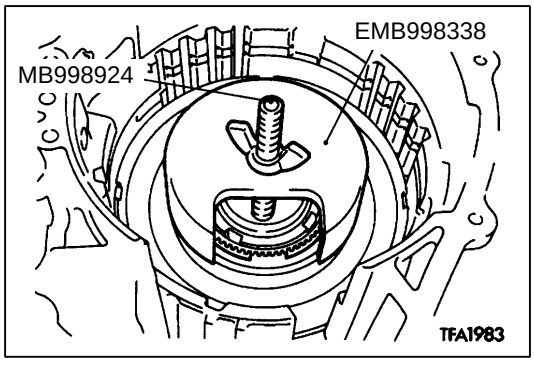
1. **Never reuse the gasket, O-ring, oil seal, etc. Always replace with a new one when reassembling.**
2. **Never use grease other than blue petrolatum jelly and white Vaseline.**
3. **Apply ATF to friction components, rotating parts, and sliding parts before installation. Immerse a new clutch disc or brake disc in ATF for at least two hours before assembling them.**
4. **Never apply sealant or adhesive to gaskets.**
5. **When replacing a bushing, replace the assembly which it belongs to.**
6. **Never use any cloth gloves or any rags during reassembly. Use nylon cloth or paper towels if you need to use something.**
7. **Change the oil in the cooler system.**



1. Use the special tools to tap the differential bearing outer race in the transmission case.



2. Use the special tools to tap the output shaft bearing outer race in the transmission case.
3. Install the used spacer and snap ring.



4. Install the transfer gear, low-reverse brake piston, return spring, and spring retainer, one-way clutch and O-ring.
5. Use the special tools to install the snap ring.

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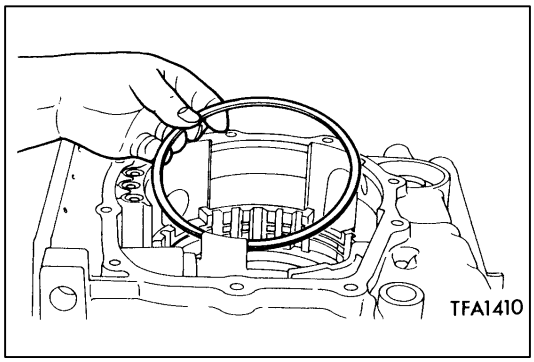
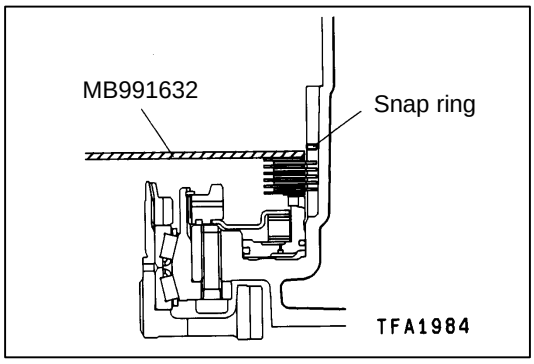
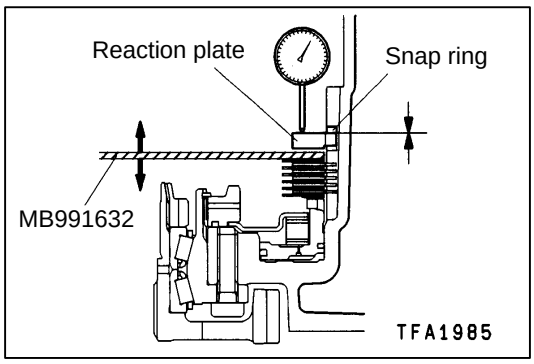


6. Install the wave spring.

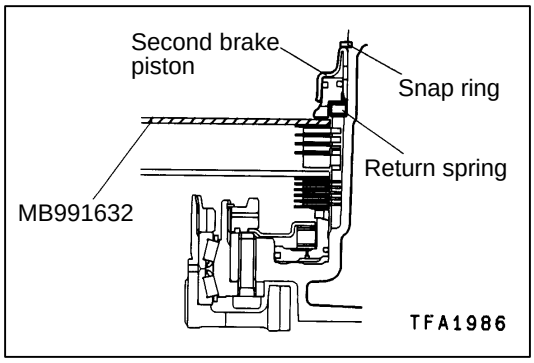


7. Replace the pressure plate of the low-reverse brake with the special tool, and then install the (6) brake discs, (5) brake plates and snap ring as shown in the figure.

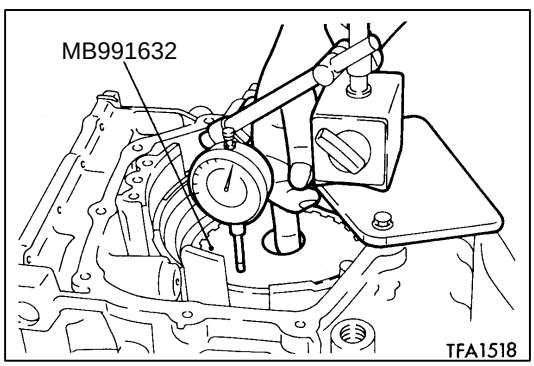


8. Install the reaction plate and the used snap ring.
9. Move the special tool to measure the end play, and then replace the snap ring installed in step (8) to adjust the end play to standard value.

   Standard value: 0 – 0.16 mm



10. Replace the pressure plate of the second brake with the special tool, and then install the brake disc and brake plate as shown in the figure.
11. Install the return spring, second brake piston and snap ring.



12. Move the special tool (MB991632) to measure the end play.

    Standard value:
    1.09 – 1.55 mm

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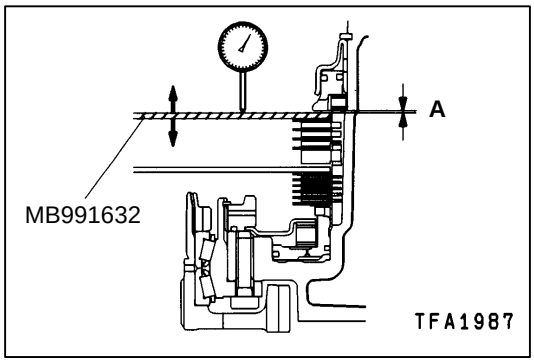


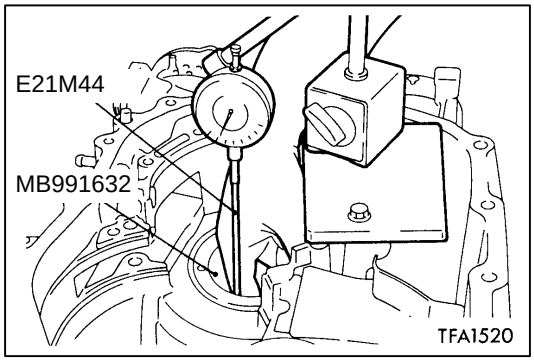
Remove the special tool. Use the following formula to determine the proper thickness range for the pressure plate. Install the correct size pressure plate based on your calculations.

Reference: Pressure Plate Thickness

A=Special tool end play measurement determined earlier in this step.

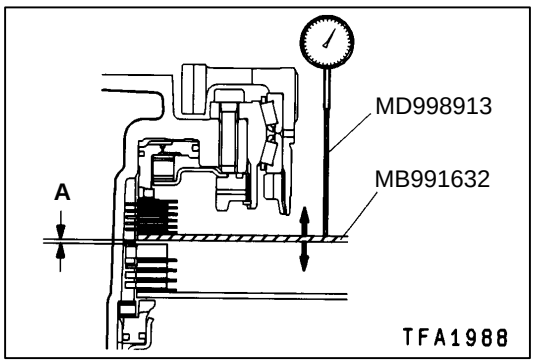
Metric values: [(A+2.0 mm) – 1.55 mm] to [(A+2.0 mm) – 1.09 mm]

13. Turn the transmission over.



14. Install the special tool (E21M44) in a dial gauge, and then move the special tool (MB991632) to measure the axial play.

Standard value:
1.65 – 2.11 mm

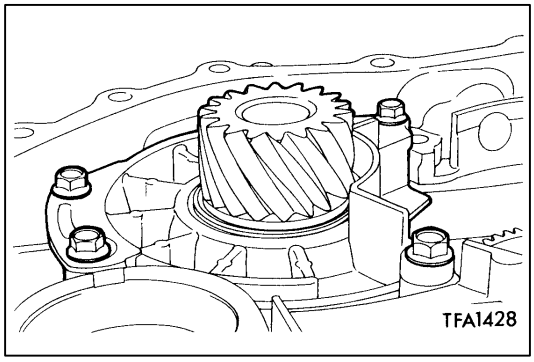


Reference: Pressure Plate Thickness

A=Special tool end play measurement determined earlier in this step.

Metric values: [(A+2.0 mm) – 2.11 mm] to [(A+2.0 mm) – 1.65 mm]

15. Remove the parts installed from steps (6) to (14).



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

Standard value: 23 Nm

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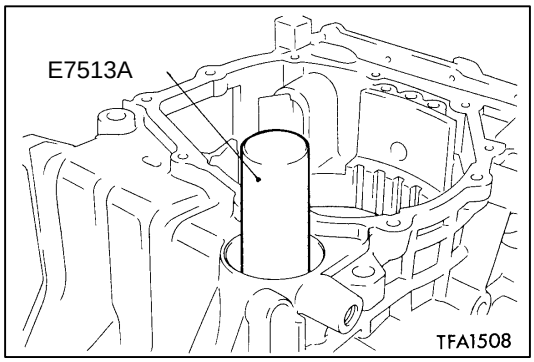
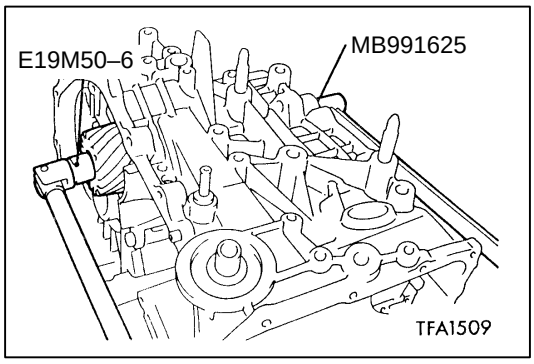


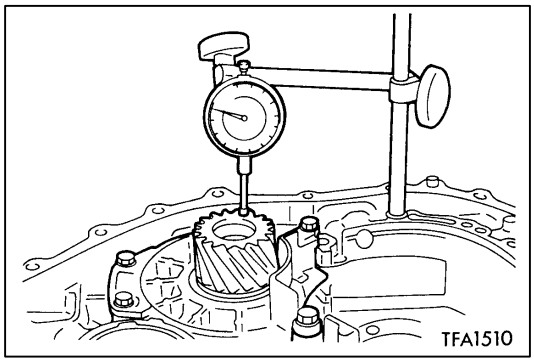
17. Install the output shaft in the transmission case, and then use the special tool to install the collar and taper roller bearing in the output shaft.



18. Apply ATF to a new lock nut, and use the special tool to tighten the lock nut to the specified torque. Then turn back one turn, and tighten to the specified torque again.

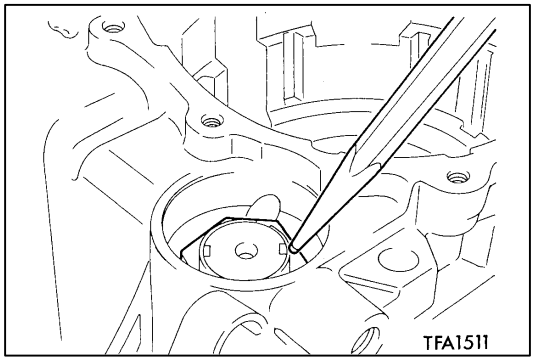
    Standard value: 167 Nm

    Caution
    The lock nut has left-handed threads.

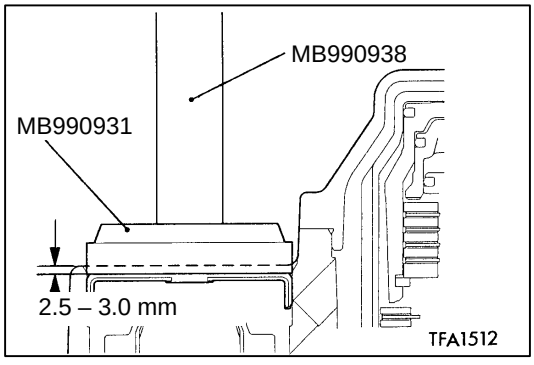


19. Move the output shaft to measure operating amount (A), and then replace the spacer installed in step (3) with a new one which thickness is within the following value.

    A=Operating amount
    B=Thickness of the old spacer
    Metric values: [A+B+0.015 mm] to [A+B+0.075 mm]



20. Prevent the lock nut from turning by staking it in two places.



21. Install the cap as shown in the figure.

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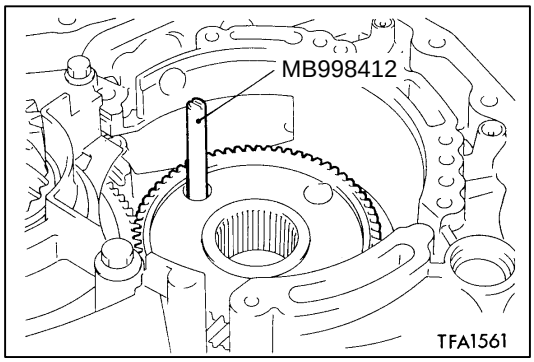
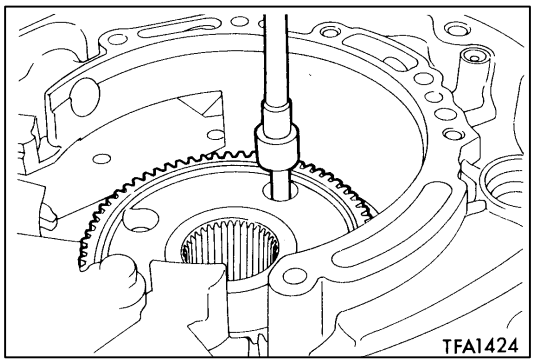
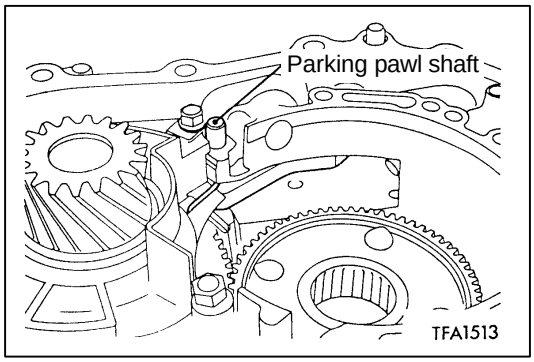


22. Use the special tool to install the transfer drive gear.

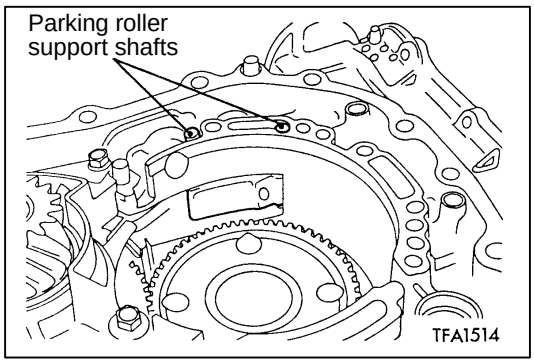


23. Tighten the four mounting bolts of the transfer drive gear to the specified torque.

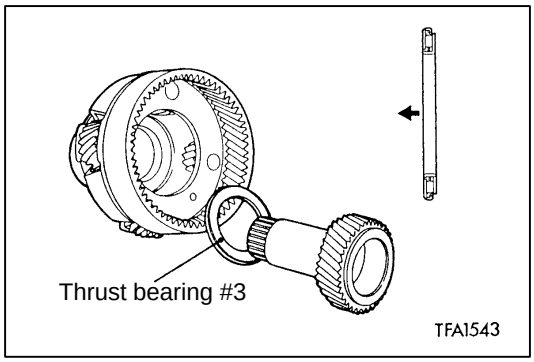
Standard value: 19 Nm



24. Install the parking pawl, spacer, and spring. Then install the parking pawl shaft.



25. Install the parking roller support, and then the two parking roller support shafts.



26. Install the underdrive sun gear and thrust bearing #3 to the output planetary carrier.

Caution
Be sure to install the thrust bearing in the correct direction.

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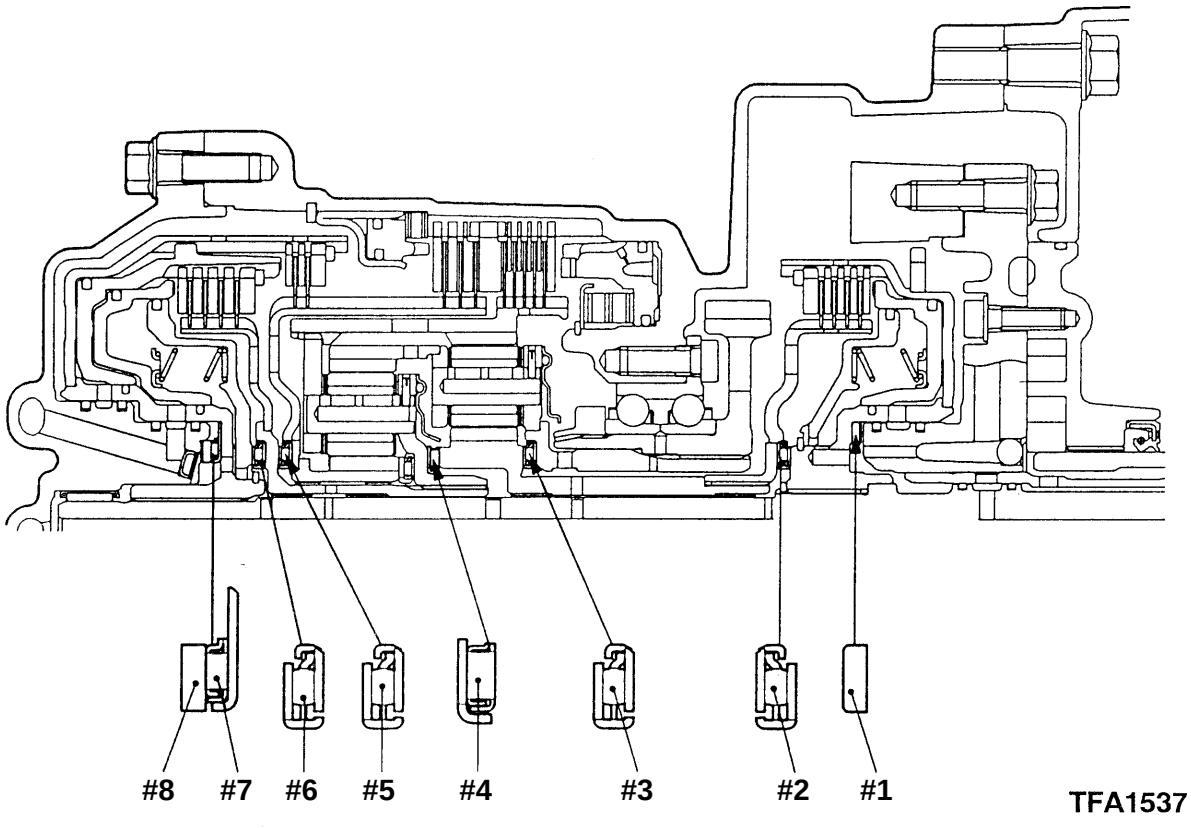

IDENTIFICATION OF THRUST BEARINGS, THRUST RACES, AND THRUST WASHERS

mm

Symbol	O.D.	I.D.	Thickness	Part number
#1	59	47	1.8	MD754509
#1	59	47	2.0	MD754508
#1	59	47	2.2	MD754507
#1	59	47	2.4	MD753793
#1	59	47	2.6	MD753794
#1	59	47	2.8	MD753795
#2	49	36	3.6	MD756846
#3	49	36	3.6	MD756846

Symbol	O.D.	I.D.	Thickness	Part number
#4	55.4	38.5	3.3	MD757847
#5	57	38.5	4.1	MD756846
#6	57	38.5	4.1	MD756846
#7	59	37	2.8	MD754595
#8	48.9	37	1.6	MD707267
#8	48.9	37	1.7	MD759681

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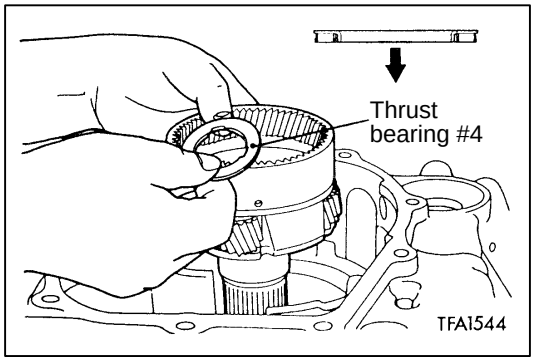
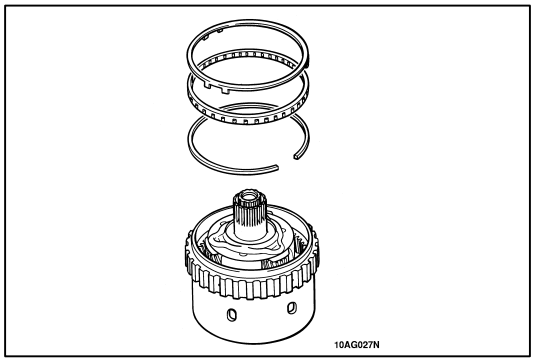
Symbol	O.D.	I.D.	Thickness	Part number
#8	48.9	37	1.8	MD723064
#8	48.9	37	1.9	MD754794
#8	48.9	37	2.0	MD707268
#8	48.9	37	2.1	MD754795
#8	48.9	37	2.2	MD723065
#8	48.9	37	2.3	MD754796
#8	48.9	37	2.4	MD724358
#8	48.9	37	2.5	MD754797
#8	48.9	37	2.6	MD754798

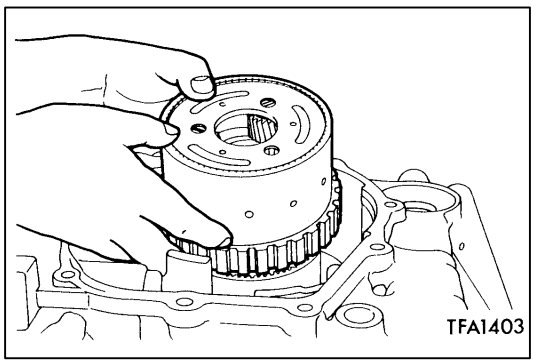


27. Install the output planetary carrier and thrust bearing #4.

Caution
Be sure to install the thrust bearing in the correct direction.



28. Install the snap ring, one-way clutch and stopper plate.



29. Install the overdrive planetary carrier.

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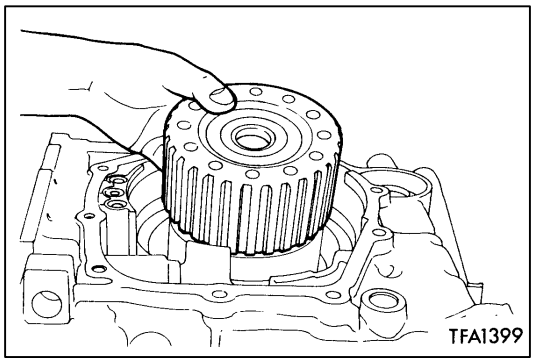
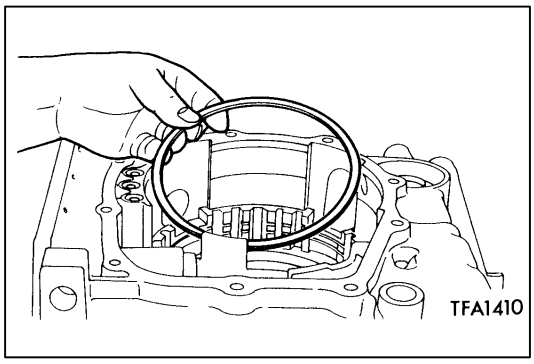
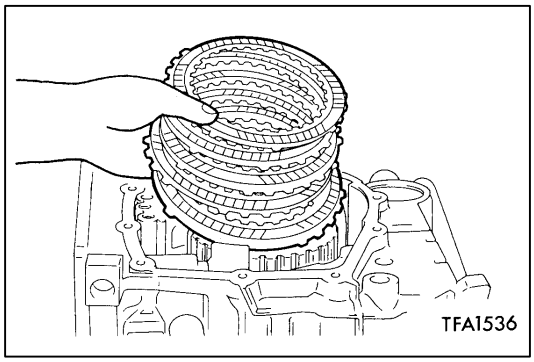


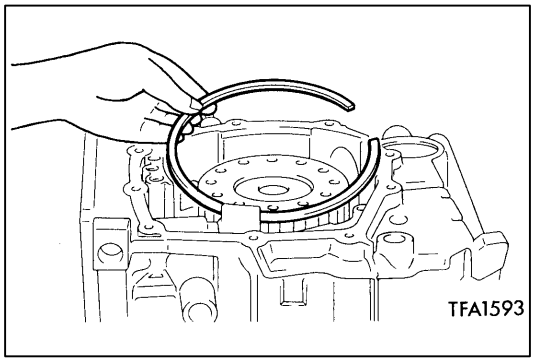
30. Install the planetary reverse sun gear.



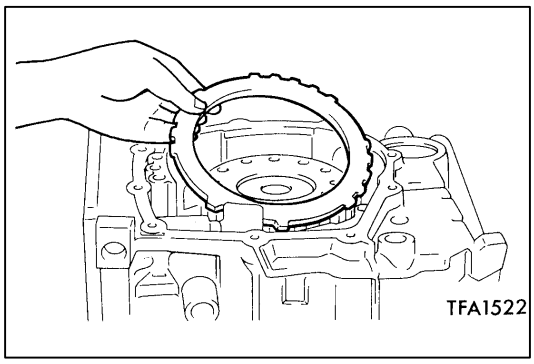
31. Install the wave spring.



32. Install the pressure plate, brake disc, and brake plate.



33. Install the snap ring.



34. Install the reaction plate.

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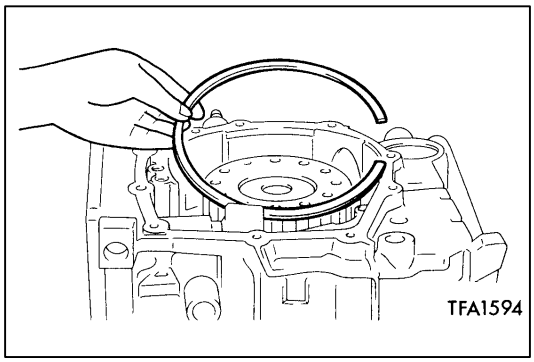
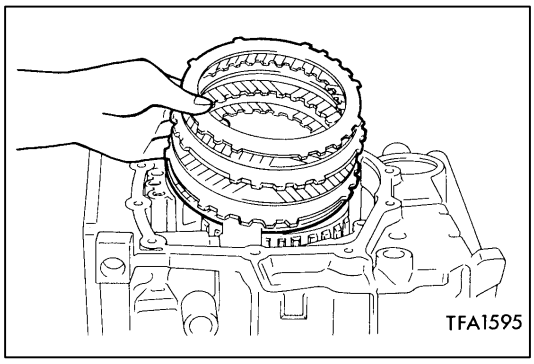
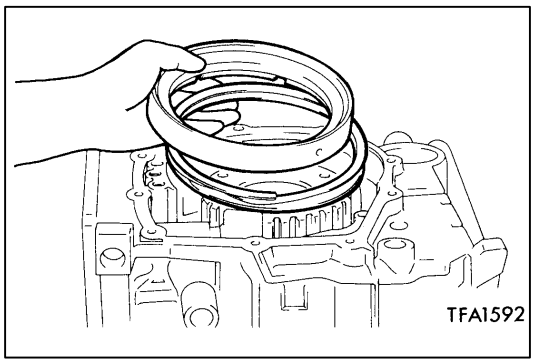


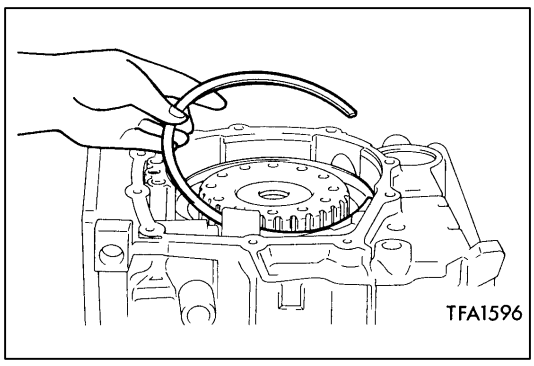
35. Install the snap ring.



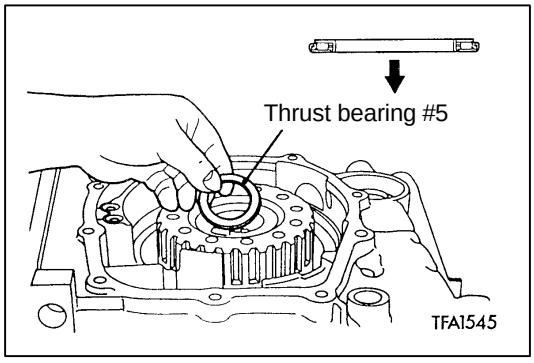
36. Install the brake disc, brake plate, and pressure plate.



37. Install the return spring and second brake piston.



38. Install the snap ring.



39. Install thrust bearing #5.

Caution
Be sure to install the thrust bearing in the correct direction.

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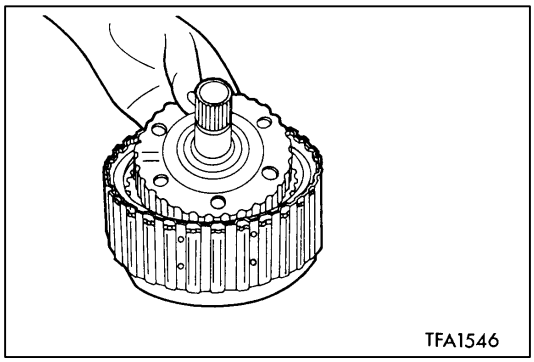
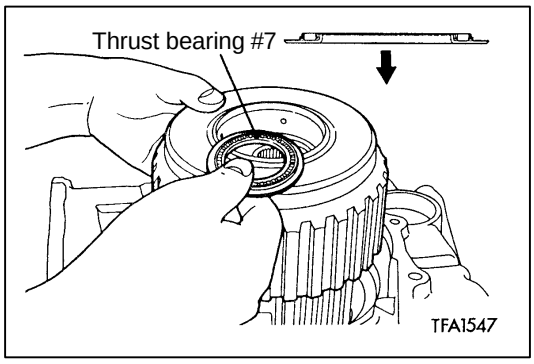


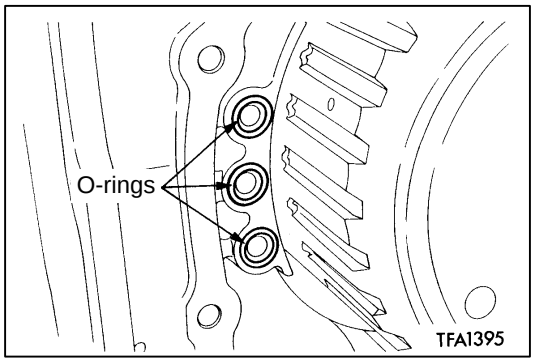
40. Install the overdrive clutch hub and thrust bearing #6 to the reverse and overdrive clutch.

Caution
Be careful about the installation direction of the thrust bearing.

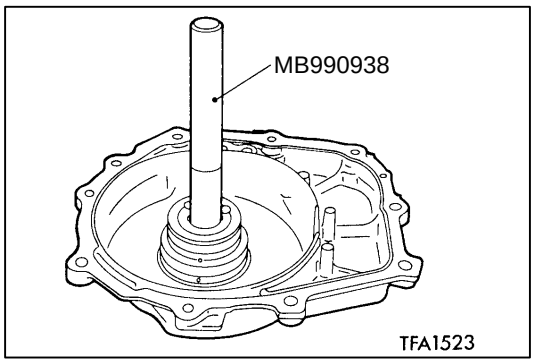


41. Install the reverse and overdrive clutch, and thrust bearing #7.

Caution
Be careful about the installation direction of the thrust bearing.



42. Install the three O-rings.



43. Install the input shaft bearing.
44. Install the four seal rings.

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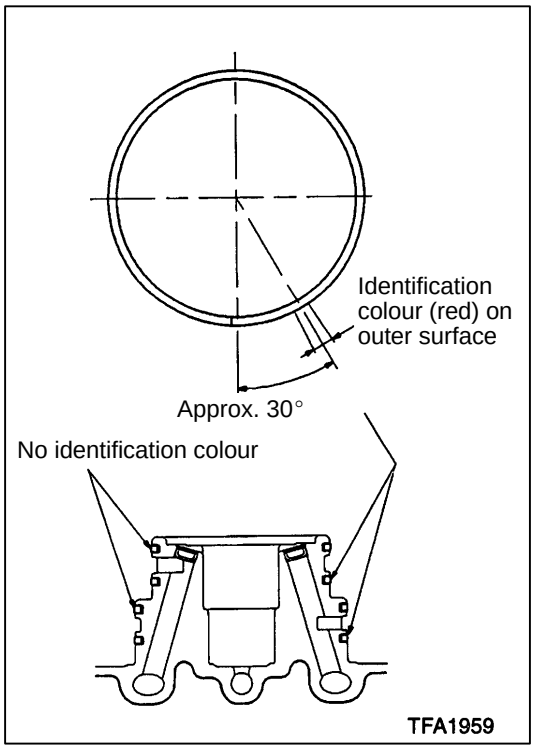
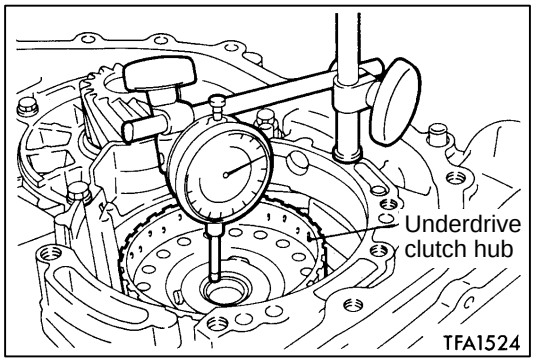


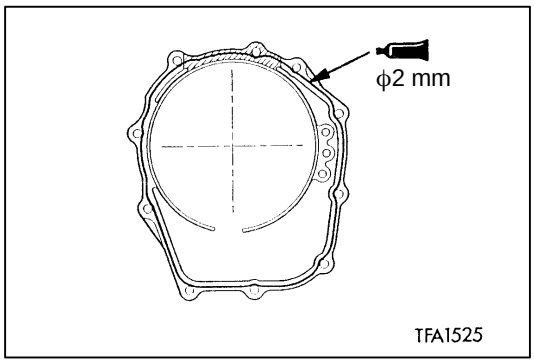
Caution
There are two types of seal rings, with and without identification colour. Be sure to install them to their correct positions.



45. Install used thrust race #8, and then the rear cover.
46. Measure end play of the underdrive sun gear. Replace the thrust race installed in step (44) to adjust the play to the standard value. Refer to the chart on P.23B-37 for the appropriate parts number.

    Standard value: 0.25 – 0.45 mm

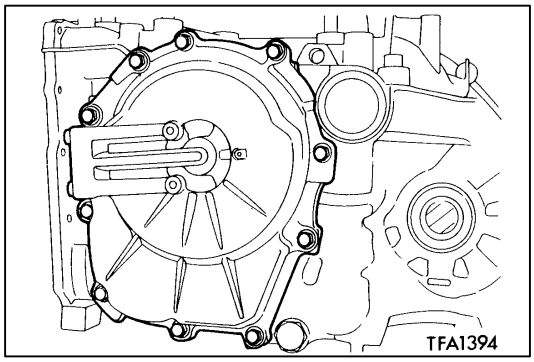
    NOTE
    Installing the underdrive clutch hub makes it easy to measure the end play of the underdrive sun gear.



47. Squeeze out the liquid gasket and apply it to the shown points of the rear cover.

    Liquid gasket:
    MITSUBISHI genuine sealant Part No. MD974421 or equivalent

    NOTE
    1. Be sure to install the case quickly while the sealant is wet (with 15 minutes).
    2. After installation, keep the sealed area away from the oil for approx. 1 hour.



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

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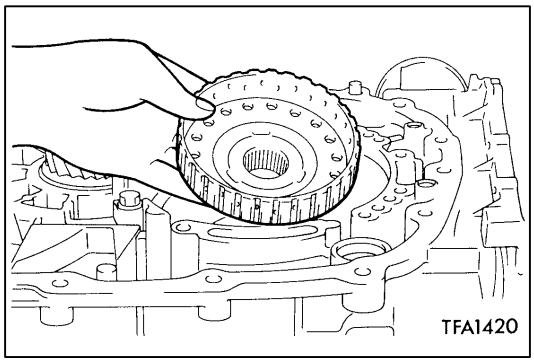
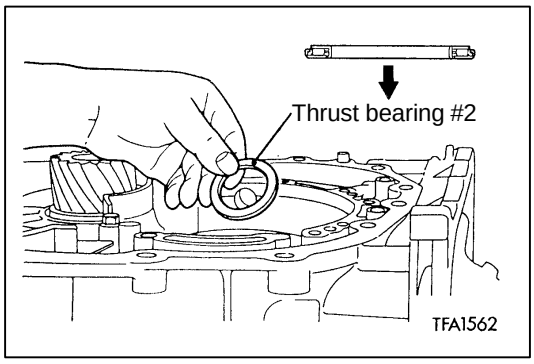
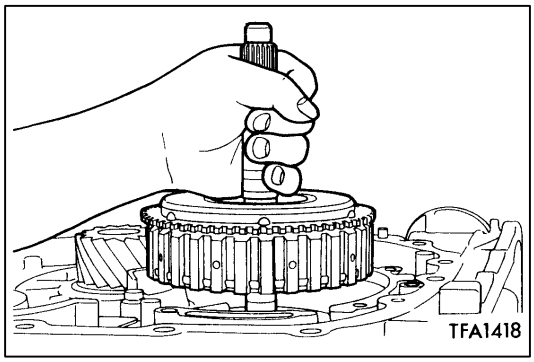


49. Install the underdrive clutch hub.

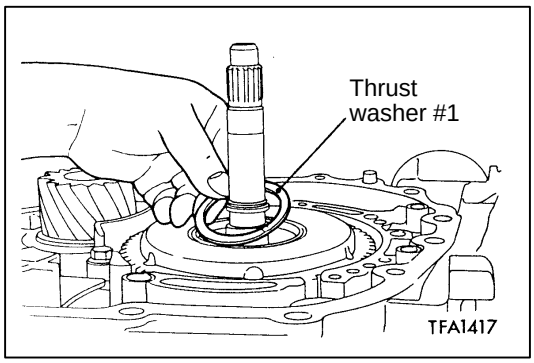


50. Install thrust bearing #2.

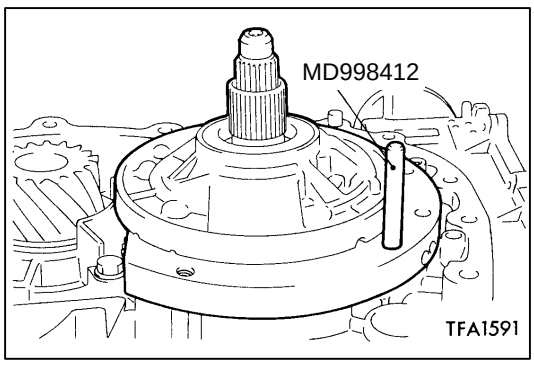
Caution
Be sure to install the thrust bearing in the correct direction.



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



52. Install the used thrust washer #1.



53. Use the special tool to install a new oil pump gasket and oil pump.

Caution
Never reuse the old gasket.

54. Tighten the oil pump mounting bolts to the specified torque.

Standard value: 23 Nm

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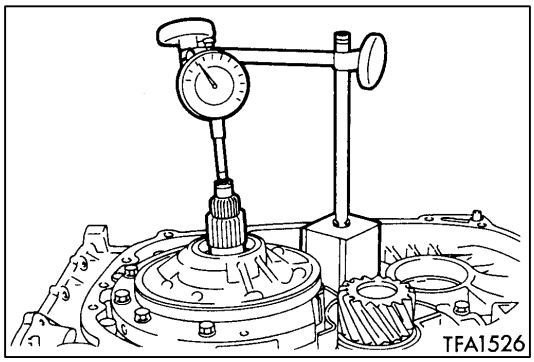
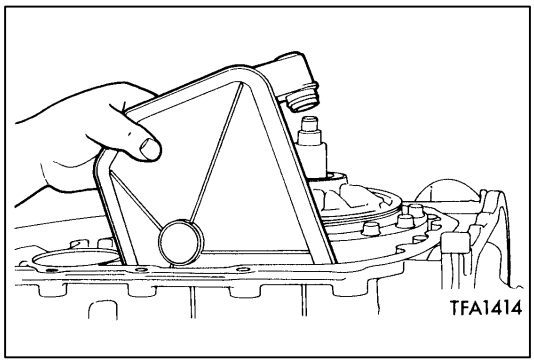
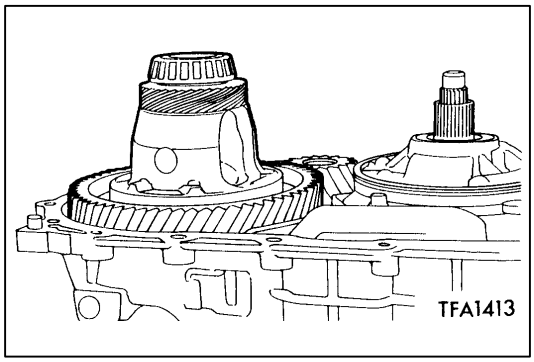


55. Measure end play of the input shaft. Replace the thrust washer installed in step (51) to adjust the play to the standard value. Refer to the chart on P.23B-37 for the appropriate parts number.

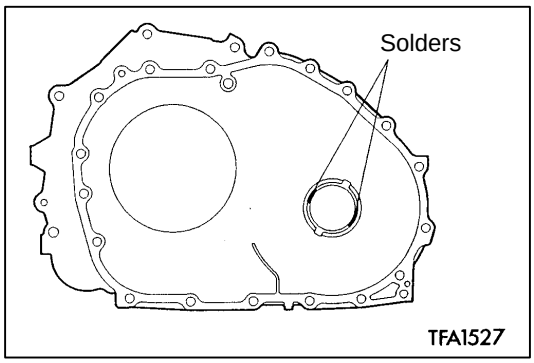
    Standard value: 0.70 – 1.45 mm



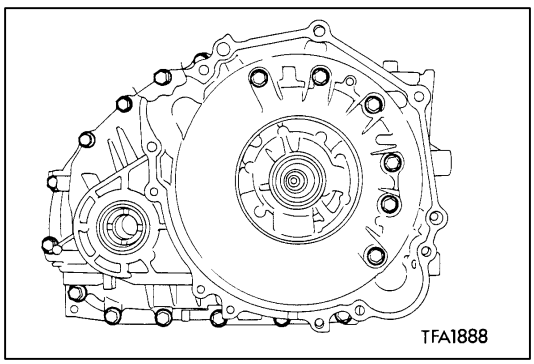
56. Install the oil filter.



57. Install the differential.



58. Place a solder (approx. 10 mm in length, 3 mm in diameter) on the torque converter housing as shown in the figure.



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

    Standard value: 47 Nm

60. Loosen the bolts, and remove the solder.

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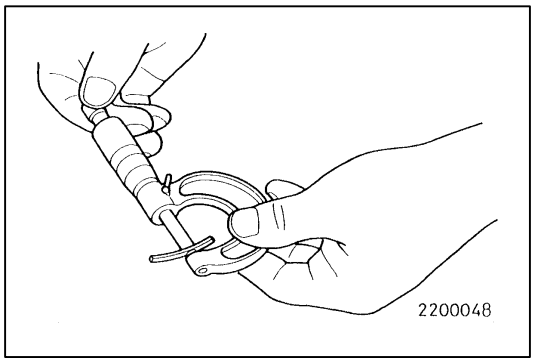
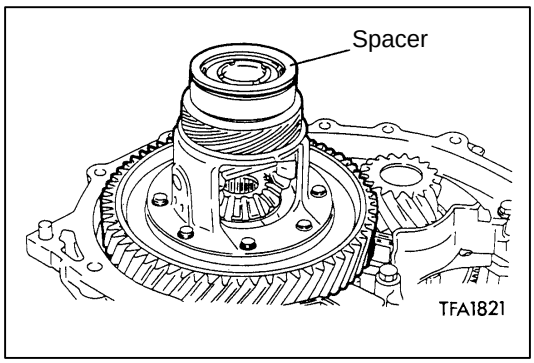
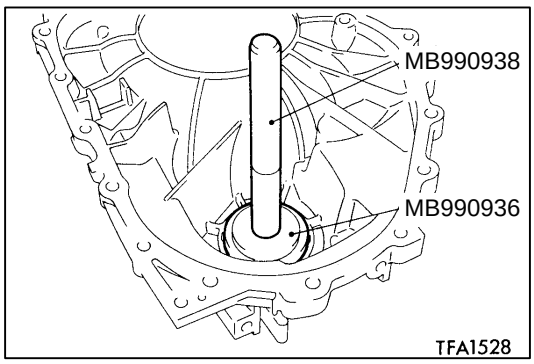


61. Use a micrometer to measure the thickness of the pressed solder. Select a spacer which thickness is within the following value. Refer to the chart on P.23A-37 for the appropriate parts number.

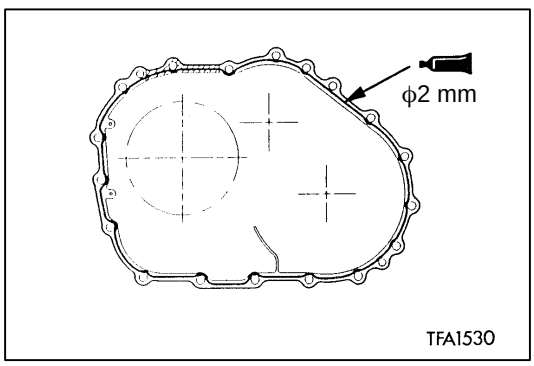
    [T + 0.045 mm] to [T + 0.105 mm]



62. Install the spacer selected in the above step.



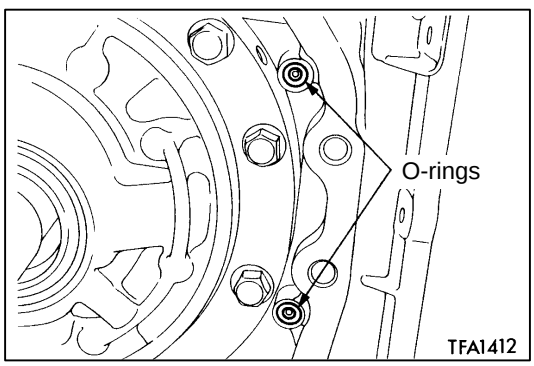
63. Assemble the spacer selected in step (60) to the torque converter housing. Use the special tool to press in the outer race.



64. Squeeze out the liquid gasket and apply it to the shown area of torque converter.

    Liquid gasket:
    MITSUBISHI genuine sealant Part No. MD974421 or equivalent

    NOTE
    1. Be sure to install the case quickly while the sealant is wet (with 15 minutes).
    2. After installation, keep the sealed area away from the oil for approx. 1 hour.



65. Install the two O-rings.

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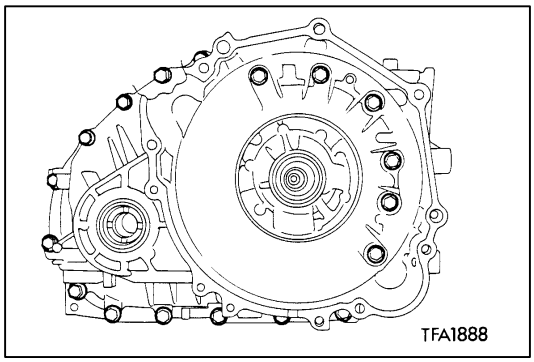
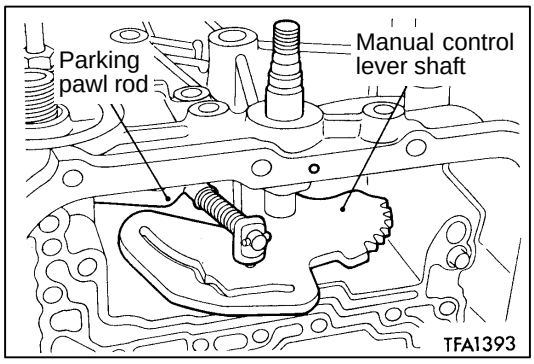
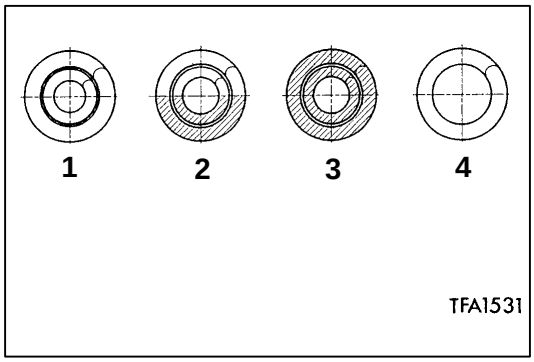


66. Install the torque converter, and then tighten its 18 mounting bolts to the specified torque.

    Standard value: 47 Nm



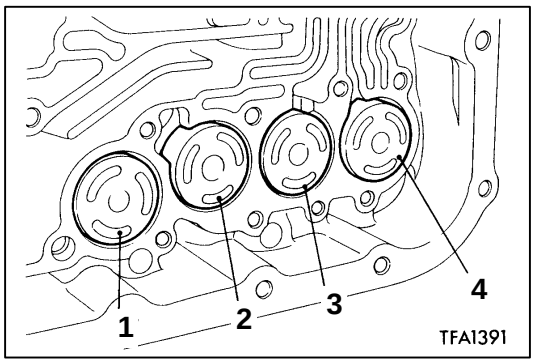
67. Install the manual control lever shaft and parking pawl rod.
68. Install the manual control lever shaft roller.

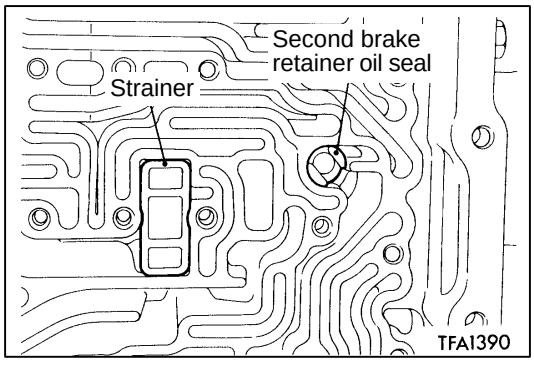


69. Install the accumulator pistons, new seal rings, and springs.

    NOTE
    The accumulator springs are identified as shown in the figure.

No.	Name
1	For low-reverse brake
2	For underdrive clutch
3	For second brake
4	For overdrive clutch





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

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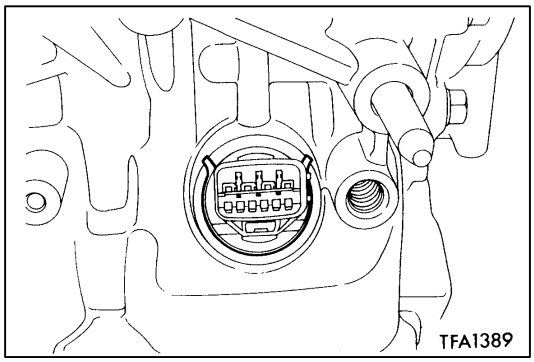
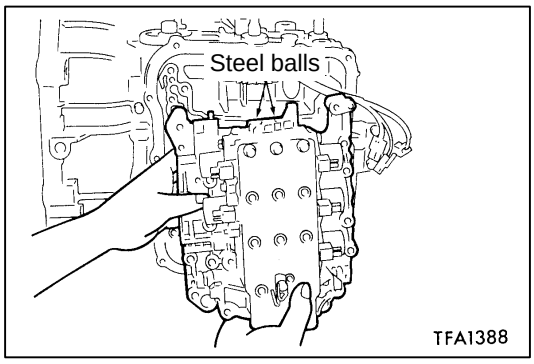
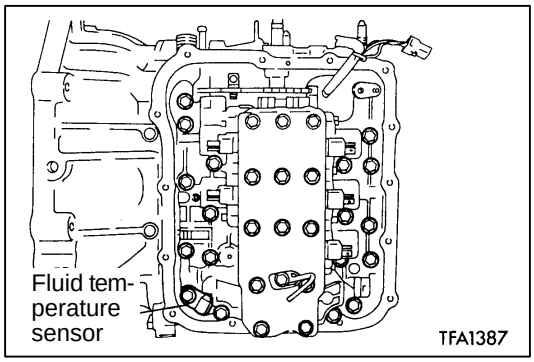


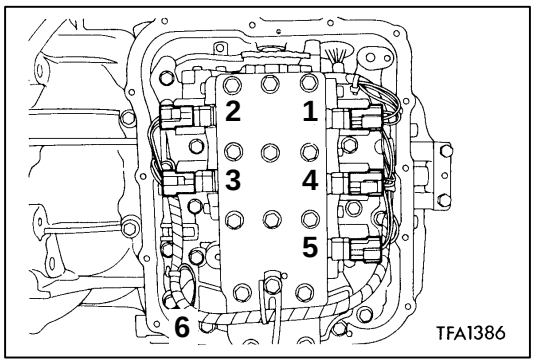
71. Install the solenoid valve harness, and then secure the snap ring to the connector groove.



72. Install the valve body, gasket, and two steel balls.



73. Install the fluid temperature sensor.
74. Install the 28 valve body mounting bolts.



75. Connect the valve body connectors.

No.	Parts to be connected	Cable colour	Connector housing colour
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	Green, red, red	Milky white
5	Damper clutch control solenoid valve	Blue, yellow, yellow	Black
6	Fluid temperature sensor	Black, red	Black

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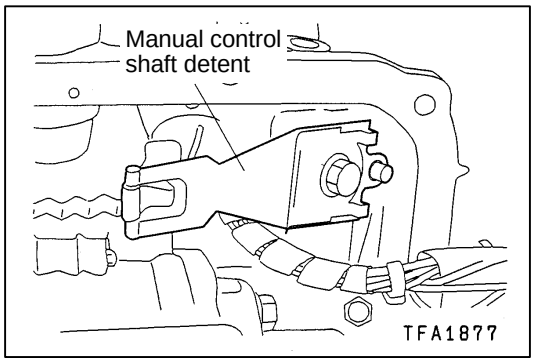
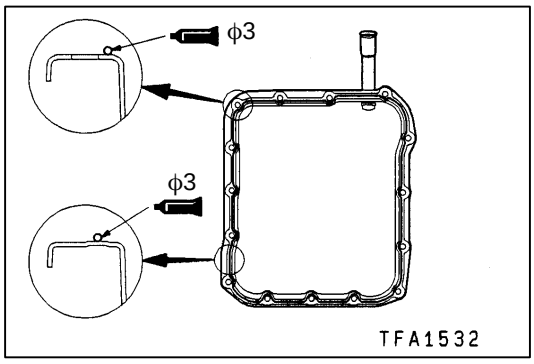


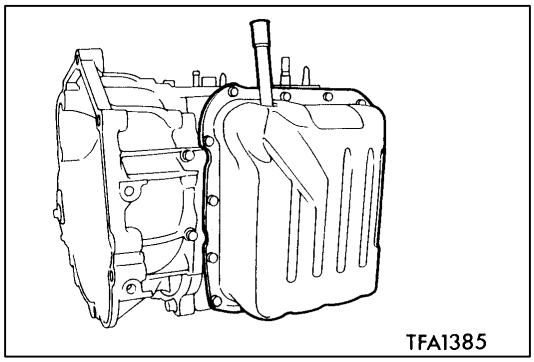
76. Install the manual control shaft detent.



77. Apply the liquid gasket to the valve body cover.

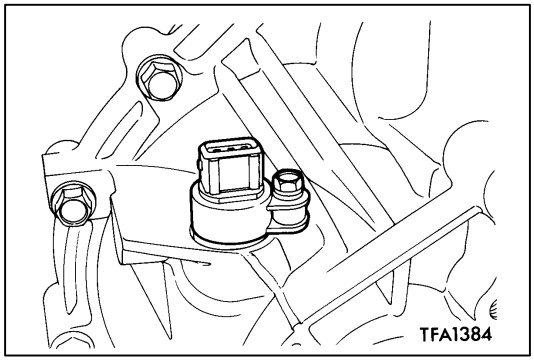
Liquid gasket:
MITSUBISHI genuine sealant Part No. MD974421 or equivalent

NOTE
1. Be sure to install the case quickly while the sealant is wet (with 15 minutes).
2. After installation, keep the sealed area away from the oil for approx. 1 hour.

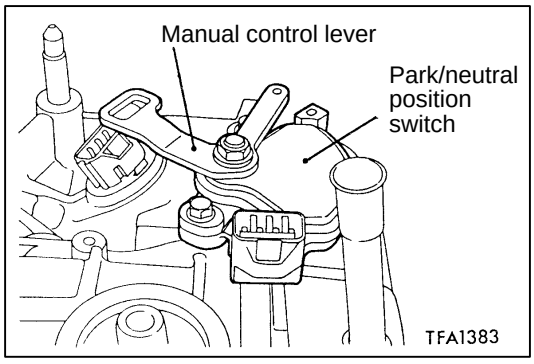


78. Install the valve body cover, and then tighten its mounting bolts to the specified torque.

Standard value: 11 Nm



79. Install the speedometer gear.



80. Install the park/neutral position switch and manual control lever.

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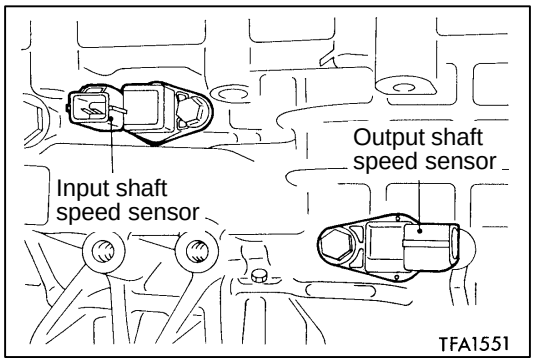
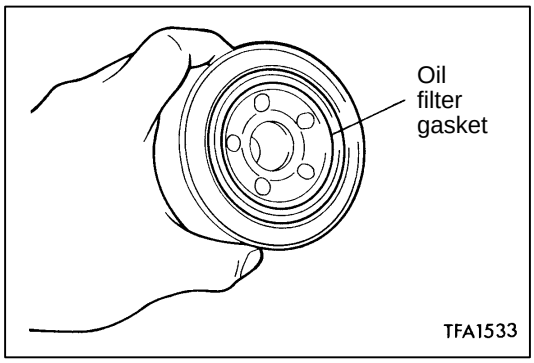
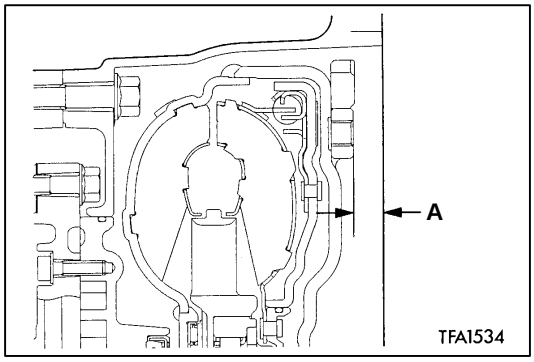


81. Install the input shaft speed sensor and output shaft speed sensor.



82. Apply a small amount of ATF to the oil filter gasket. Tighten the filter to the specified torque.

    Standard value: 12 Nm
83. Install the eye bolt, a new gasket, and the oil cooler feed tube.
84. Install the oil dipstick.
85. Install the brackets.



86. Install the torque converter, and secure it so that the shown dimension (A) meets the reference value.

    Reference value: approx. 9.4 mm

    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.

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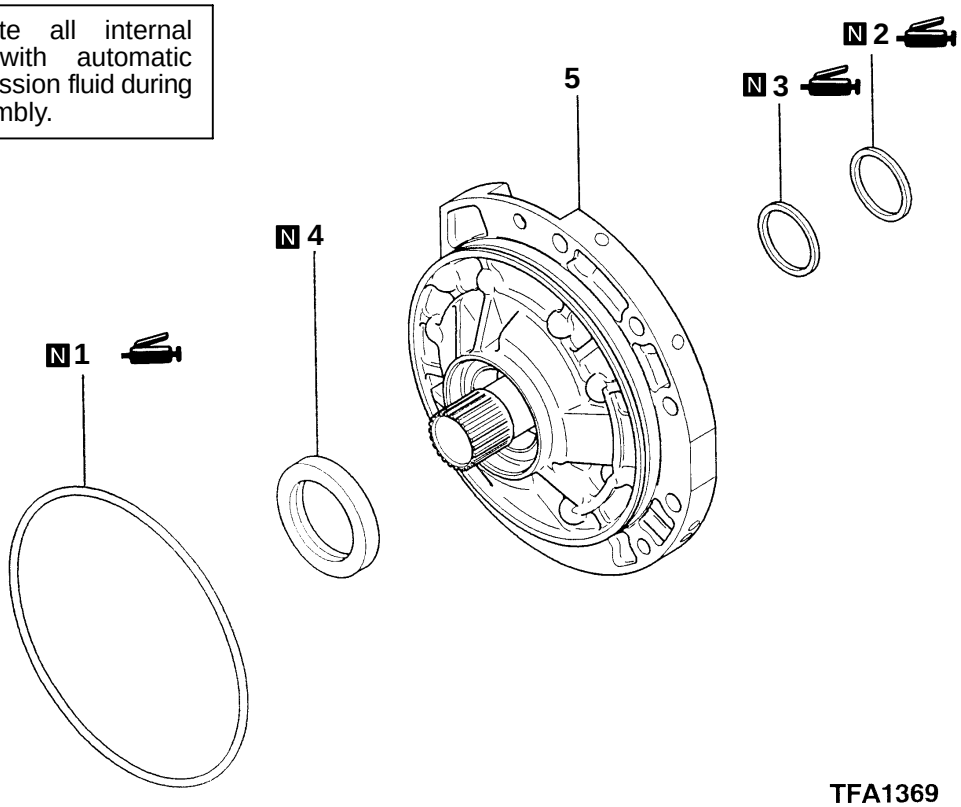
OIL PUMP

DISASSEMBLY AND REASSEMBLY

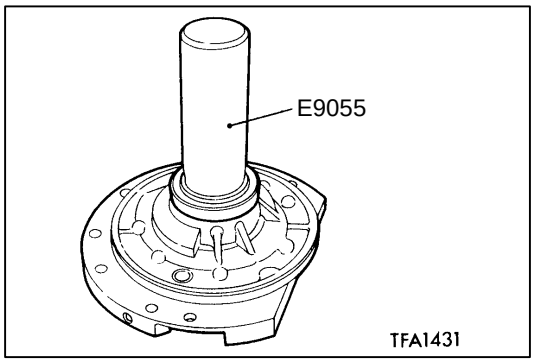
Lubricate all internal parts with automatic transmission fluid during reassembly.



TFA1369

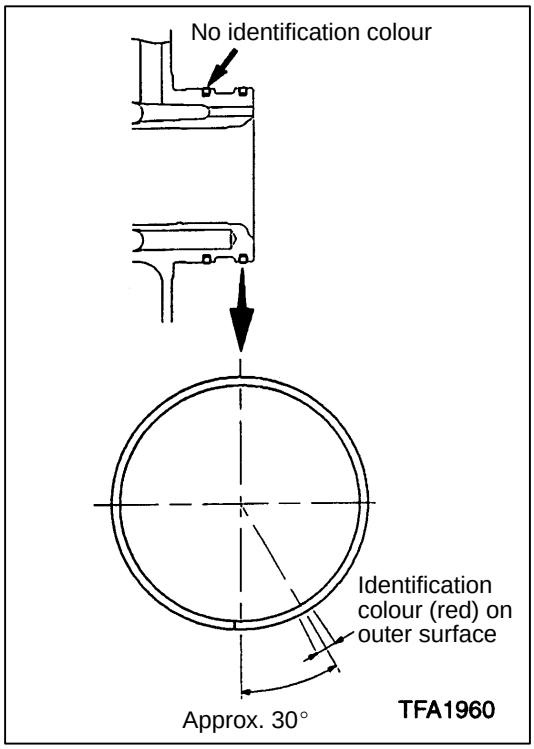
Disassembly steps

▶C◀ 1. O-ring
▶B◀ 2. Seal ring
▶B◀ 3. Seal ring
▶A◀ 4. Oil seal
5. Oil pump assembly



DISASSEMBLY SERVICE POINTS

▶A◀ OIL SEAL INSTALLATION



▶B◀ SEAL RING INSTALLATION

Caution
There are two types of seal rings, with and without identification colour. Be sure to install them to their correct positions.

▶C◀ O-RING INSTALLATION

Install a new O-ring to the outer groove of the oil pump, and apply ATF, blue petrolatum jelly or white Vaseline to the outer inside diameter of the O-ring.

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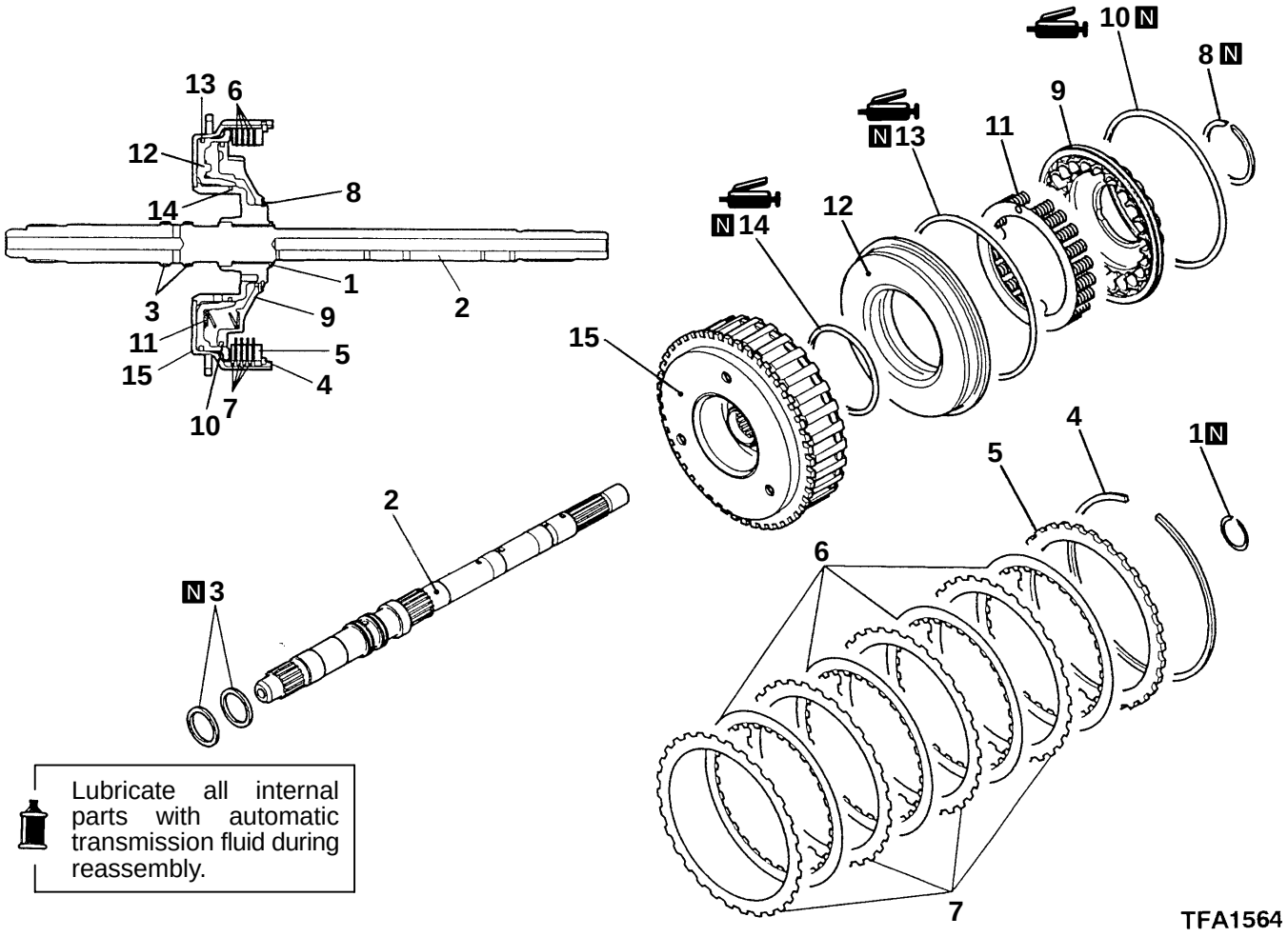
UNDERDRIVE CLUTCH AND INPUT SHAFT

DISASSEMBLY AND REASSEMBLY



Number of clutch discs and plates

Clutch disc	Clutch plate	Clutch reaction plate
4	4	1

Disassembly steps

1. Snap ring
2. Input shaft
3. Seal ring
▶D◀ 4. Snap ring
▶C◀ 5. Clutch reaction plate
▶C◀ 6. Clutch disc
▶C◀ 7. Clutch plate
◀A▶ ▶B◀ 8. Snap ring
9. Spring retainer
▶A◀ 10. D-ring
11. Return spring
12. Underdrive clutch piston
▶A◀ 13. D-ring
▶A◀ 14. D-ring
15. Underdrive clutch retainer

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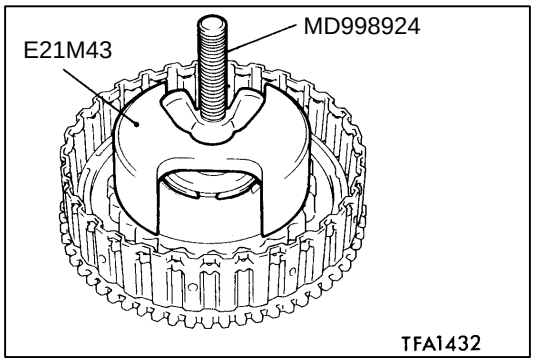


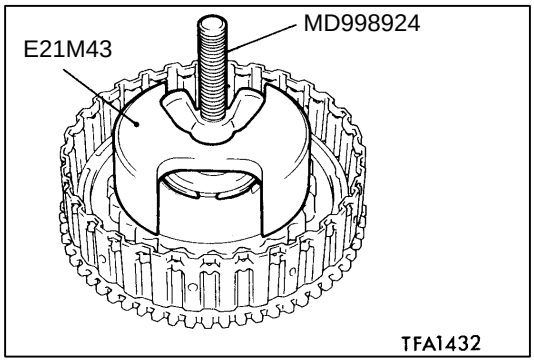
DISASSEMBLY SERVICE POINT

◀A▶ SNAP RING REMOVAL

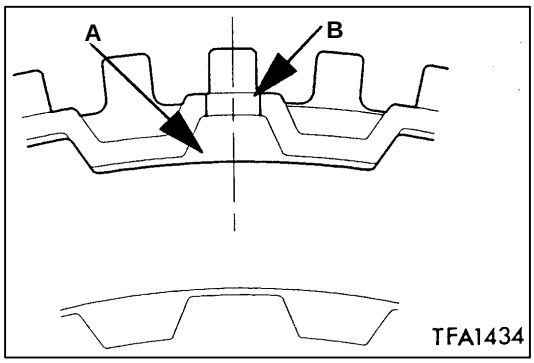
REASSEMBLY SERVICE POINTS

▶A◀ D-RING INSTALLATION

Apply ATF, blue petrolatum jelly or white Vaseline to the D-ring, and install it carefully.



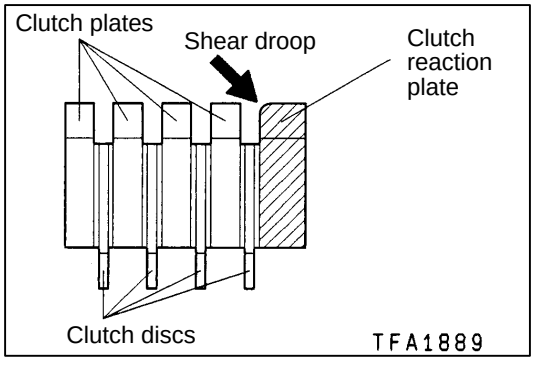
▶B◀ SNAP RING INSTALLATION



▶C◀ CLUTCH PLATE/CLUTCH DISC/CLUTCH REACTION PLATE INSTALLATION

1. Align the space between the teeth (part A) of the clutch plate, clutch disc and clutch reaction plate to the outer circumference hole (part B) of the underdrive clutch retainer.

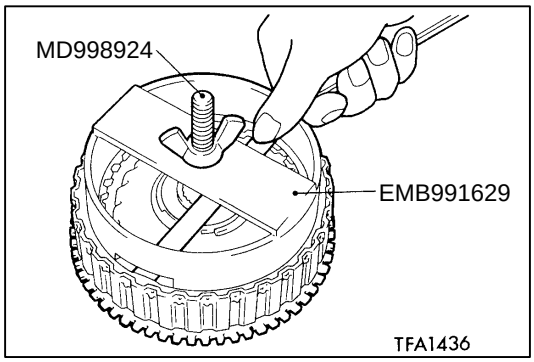
   Caution
   Immerse the clutch disc in ATF before assembling it.



2. Install the clutch reaction plate in the shown direction.

   Number of clutch discs and plates

Clutch disc	Clutch plate	Clutch reaction plate
4	4	1



▶D◀ SNAP RING INSTALLATION

Check that the clearance between the snap ring and the clutch reaction plate is within the standard value.

Standard value:
1.65 – 1.85 mm

When measuring the clearance, use the special tool to press the clutch reaction plate evenly. If not within the standard value, select a snap ring to adjust.

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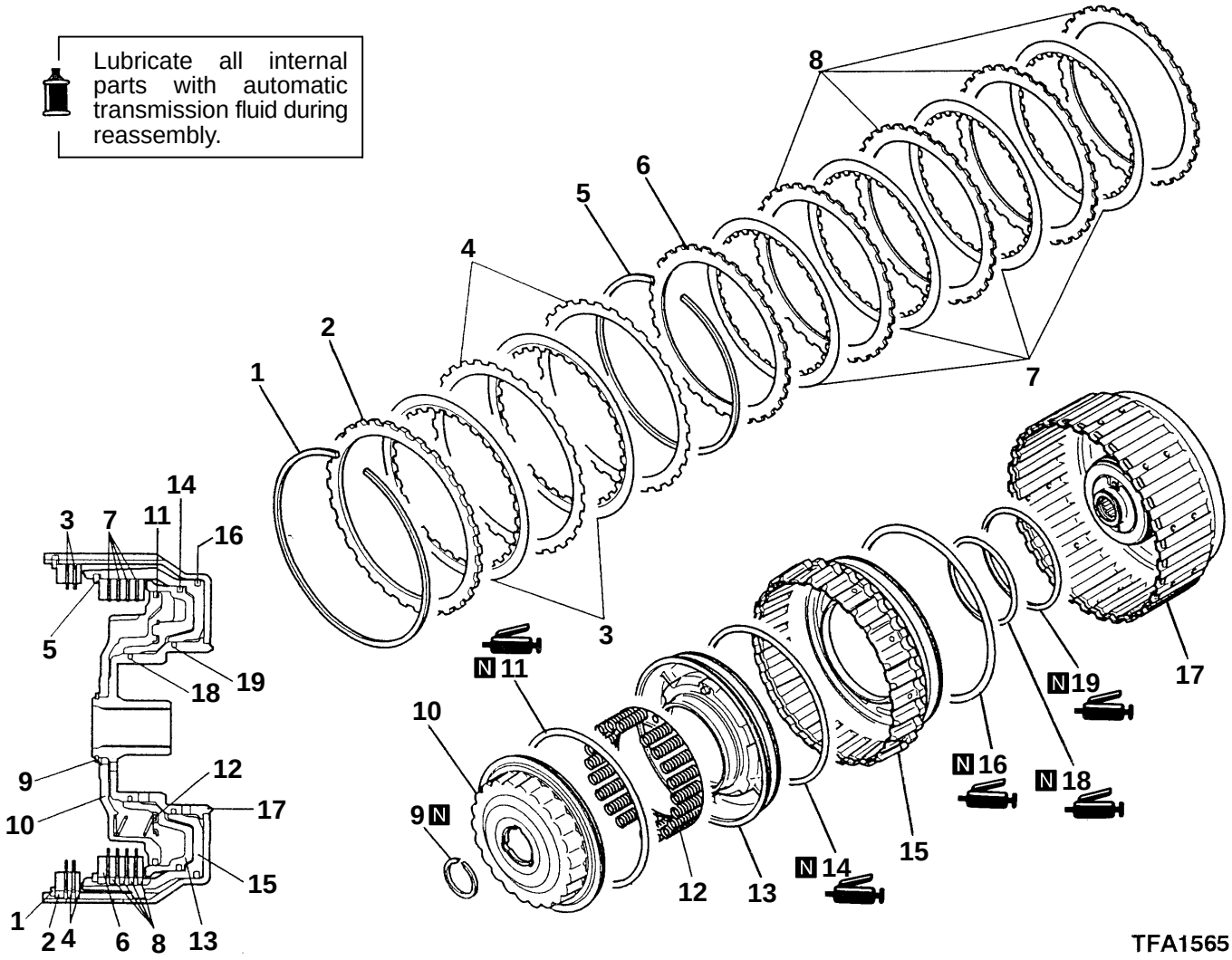
REVERSE AND OVERDRIVE CLUTCH

DISASSEMBLY AND REASSEMBLY

Lubricate all internal parts with automatic transmission fluid during reassembly.



Number of clutch discs and plates

Clutch disc	Clutch plate	Clutch reaction plate
4	4	1

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
- ▶A◀ 11. D-ring
- 12. Return spring
- 13. Overdrive clutch piston
- ▶A◀ 14. D-ring
- ▶B◀ 15. Reverse clutch piston
- ▶A◀ 16. D-ring
- 17. Reverse clutch retainer
- ▶A◀ 18. D-ring
- ▶A◀ 19. D-ring

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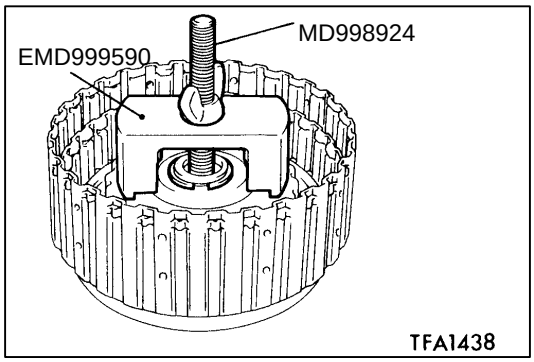


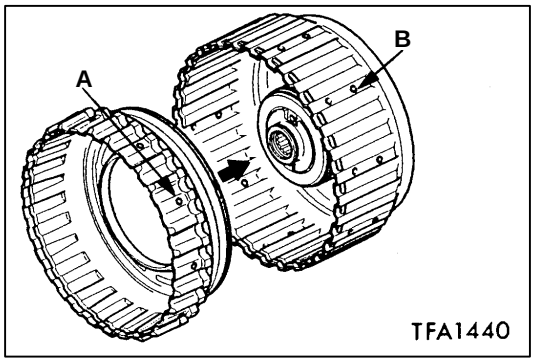
DISASSEMBLY SERVICE POINT

◀A▶ SNAP RING REMOVAL

REASSEMBLY SERVICE POINTS

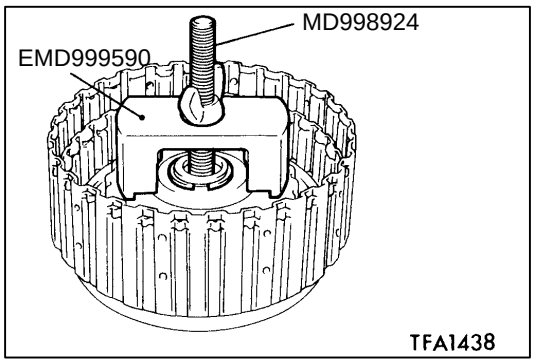
▶A◀ D-RING INSTALLATION

Apply ATF, blue petroleum jelly or white Vaseline to D-ring, and install carefully.



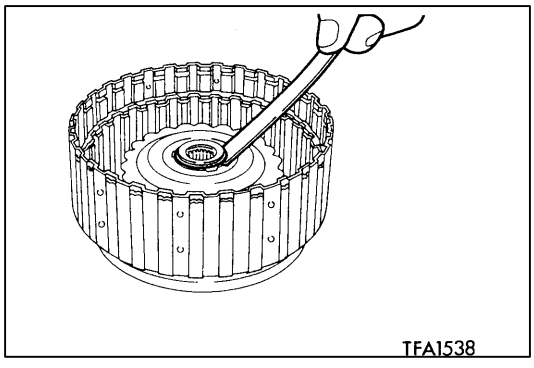
▶B◀ REVERSE CLUTCH PISTON INSTALLATION

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



▶C◀ SNAP RING INSTALLATION

1. Use the special tool to install the snap ring.



2. Check that the clearance between the snap ring and the return spring retainer is within the standard value. When measuring the clearance, press the return spring retainer by the weight of 49 N evenly. If not within the standard value, select a snap ring to adjust.

   Standard value: 0 – 0.09 mm

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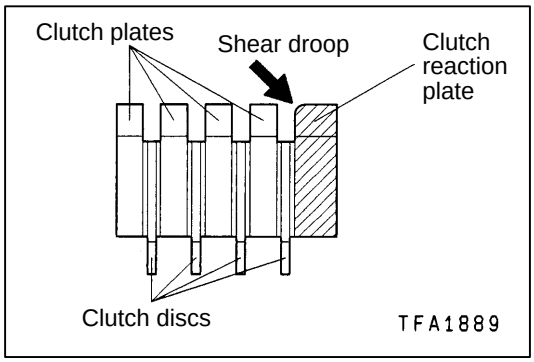


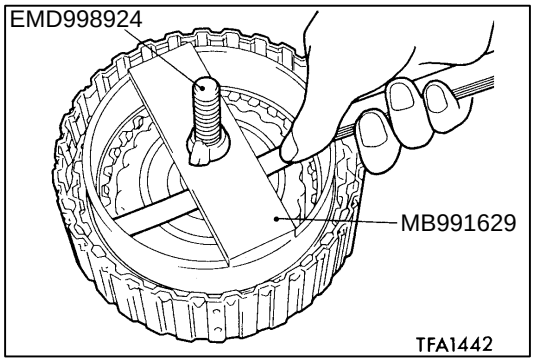
▶D◀ CLUTCH PLATE/CLUTCH DISC/CLUTCH REACTION PLATE INSTALLATION

Install the clutch reaction plate in the shown direction.

Caution
Immerse the clutch disc in ATF before assembling the clutch disc.

Number of clutch discs and plates

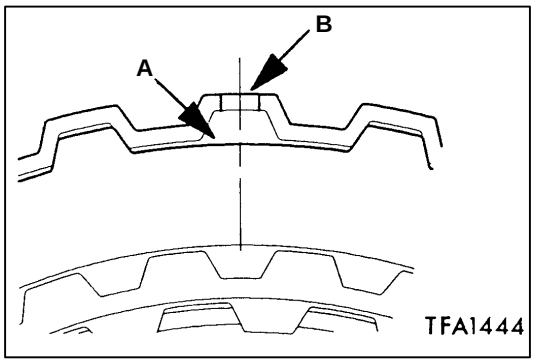
Clutch disc	Clutch plate	Clutch reaction plate
4	4	1



▶E◀ SNAP RING INSTALLATION

Check that the clearance between the snap ring and the clutch reaction plate is within the standard value. When measuring the clearance, use the special tool to press the clutch reaction plate evenly. If not within the standard value, select a snap ring to adjust.

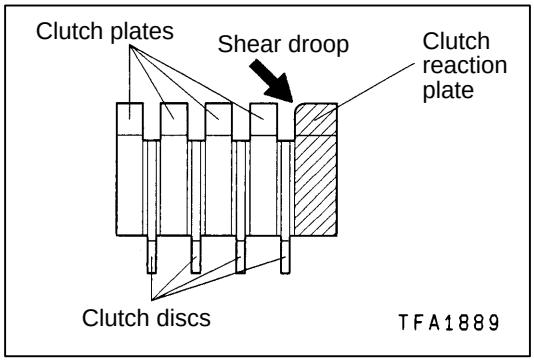
Standard value:
1.6 – 1.8 mm



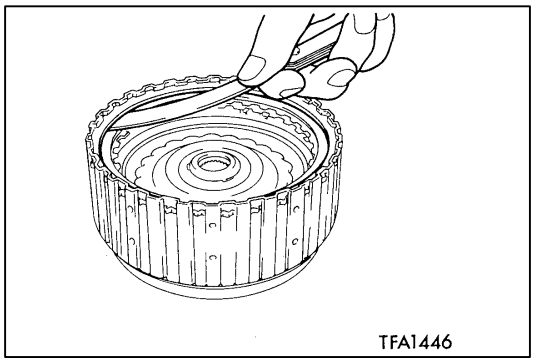
▶F◀ CLUTCH PLATE/CLUTCH DISC/CLUTCH REACTION PLATE INSTALLATION

1. Align the space between the teeth (part A) of the clutch plate, clutch disc and clutch reaction plate to the outer circumference hole (part B) of the reverse clutch retainer.

   Caution
   Immerse the clutch disc in ATF.



2. Install the clutch reaction plate in the shown direction.



▶G◀ SNAP RING INSTALLATION

Check that the clearance between the snap ring and the clutch reaction plate is within the standard value. When measuring the clearance, press the clutch reaction plate by the weight of 49 N evenly. If not within the standard value, select a snap ring to adjust.

Standard value: 1.5 – 1.6 mm

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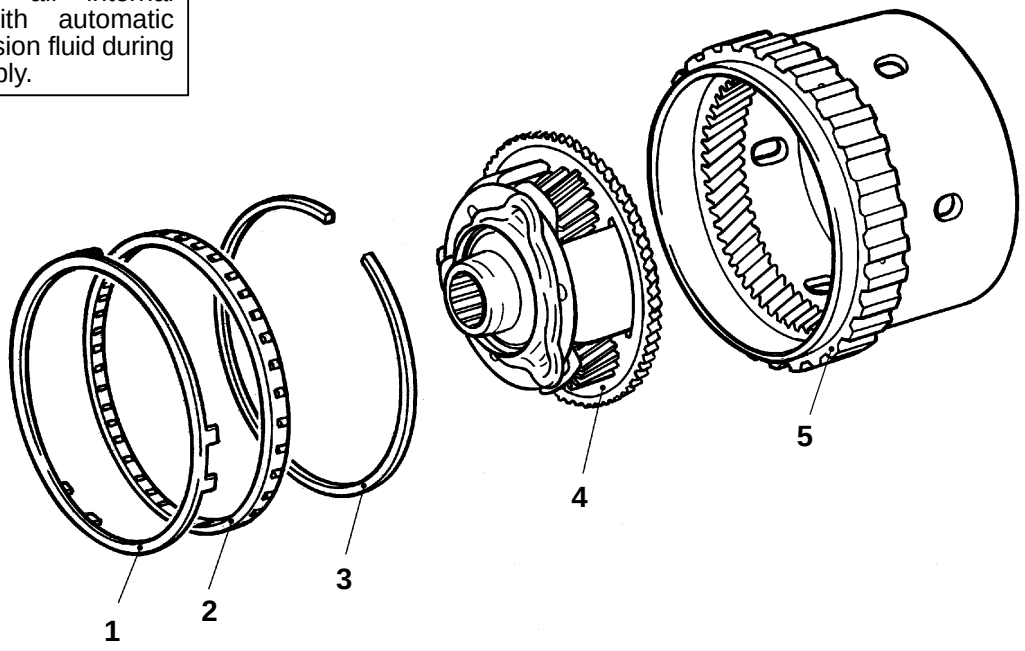
OVERDRIVE PLANETARY CARRIER

DISASSEMBLY AND REASSEMBLY

Lubricate all internal parts with automatic transmission fluid during reassembly.



10AG028N

Disassembly steps

1. Stopper plate
2. One-way clutch
3. Snap ring
4. Overdrive planetary carrier
5. Overdrive annulus gear

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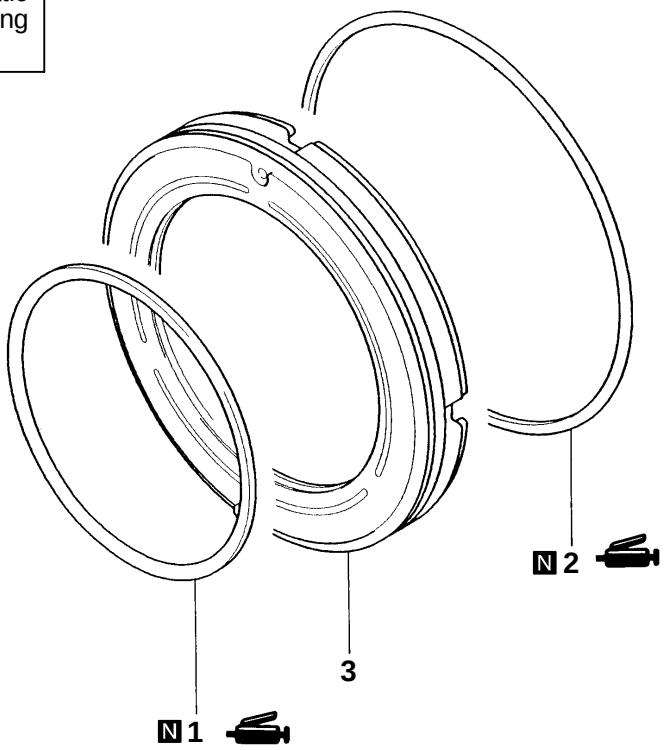
LOW-REVERSE BRAKE

DISASSEMBLY AND REASSEMBLY

Lubricate all internal parts with automatic transmission fluid during reassembly.



TFA1373

Disassembly steps

▶A◀ 1. D-ring
▶A◀ 2. D-ring
3. Low-reverse brake piston

REASSEMBLY SERVICE POINT

▶A◀ D-RING INSTALLATION

Apply ATF, blue petrolatum jelly or white Vaseline to D-ring, and install carefully.

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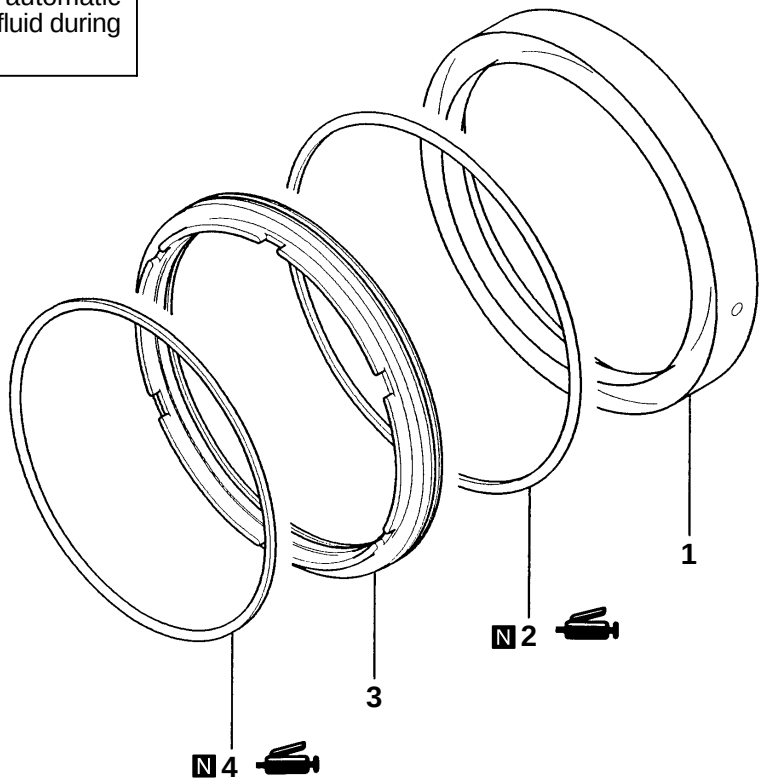
SECOND BRAKE

DISASSEMBLY AND REASSEMBLY

Lubricate all internal parts with automatic transmission fluid during reassembly.



TFA1374

Disassembly steps

▶A◀ 1. Second brake retainer
2. D-ring
3. Second brake piston
▶A◀ 4. D-ring

REASSEMBLY SERVICE POINT

▶A◀ D-RING INSTALLATION

Apply ATF, blue petrolatum jelly or white Vaseline to D-ring, and install carefully.

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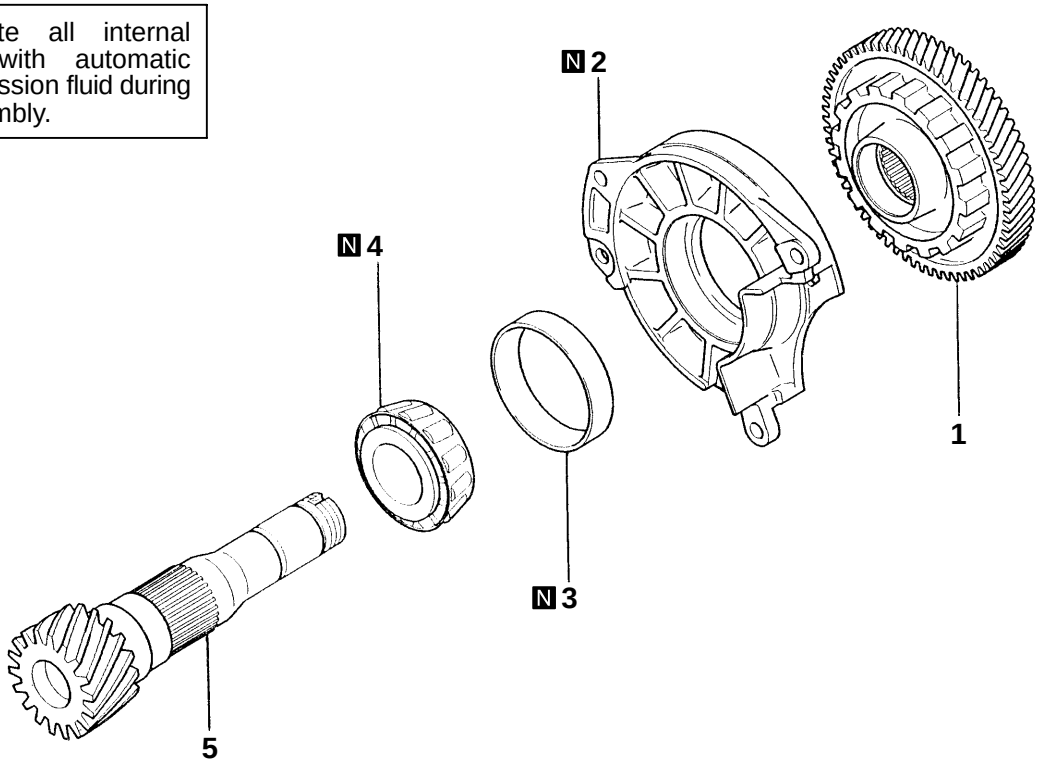
OUTPUT SHAFT

DISASSEMBLY AND REASSEMBLY

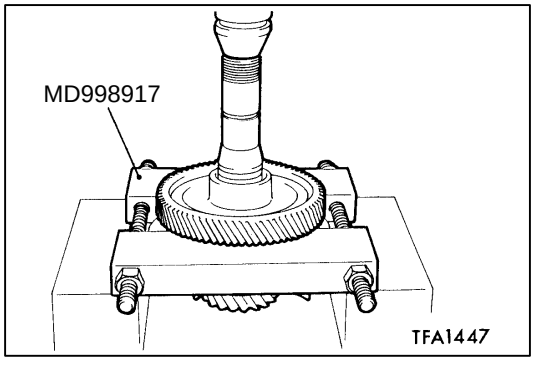
Lubricate all internal parts with automatic transmission fluid during reassembly.



TFA1375

Disassembly steps

◀A▶ ▶C◀ 1. Transfer driven gear
2. Bearing retainer
▶B◀ 3. Outer race
◀B▶ ▶A◀ 4. Taper roller bearing
5. Output shaft



DISASSEMBLY SERVICE POINTS

◀A▶ TRANSFER DRIVEN GEAR REMOVAL

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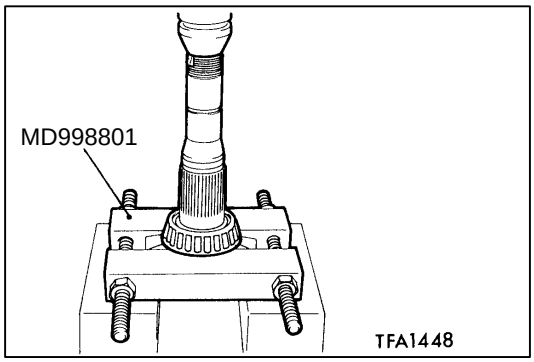
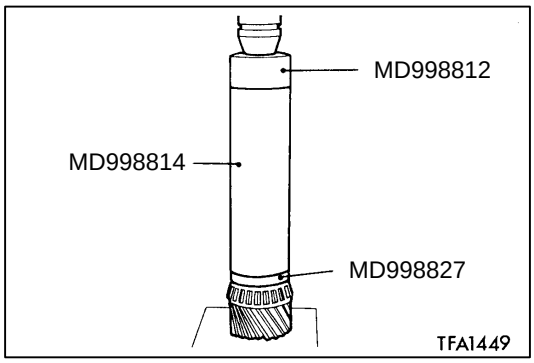
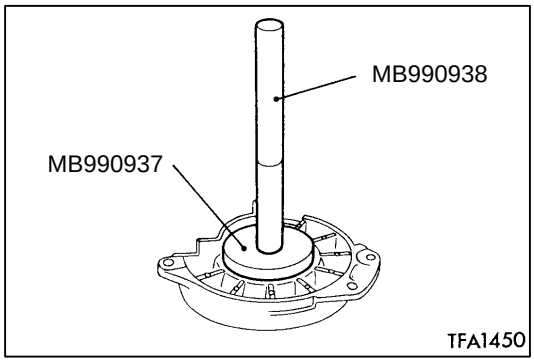


◀B▶ TAPER ROLLER BEARING REMOVAL

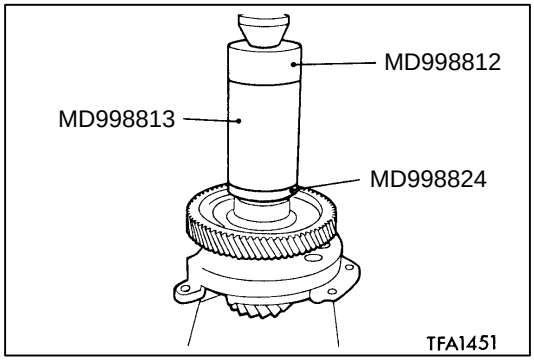
REASSEMBLY SERVICE POINTS



▶A◀ TAPER ROLLER BEARING INSTALLATION



▶B◀ OUTER RACE INSTALLATION



▶C◀ TRANSFER DRIVEN GEAR INSTALLATION

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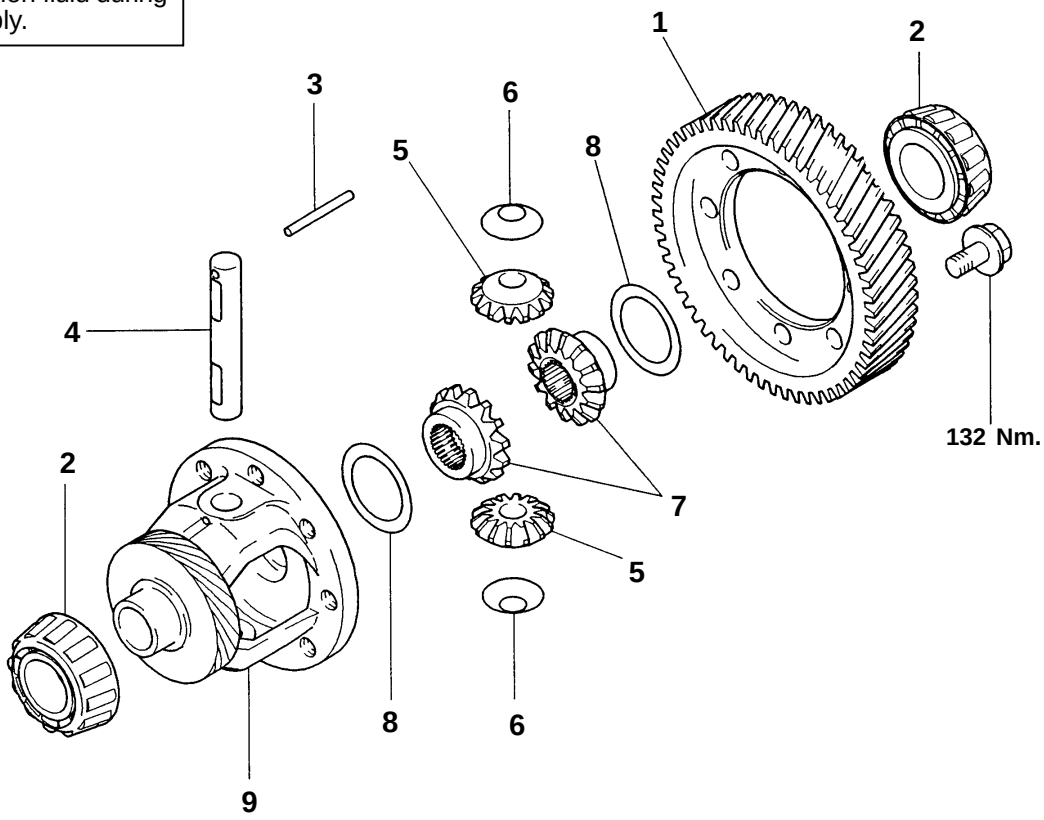
DIFFERENTIAL

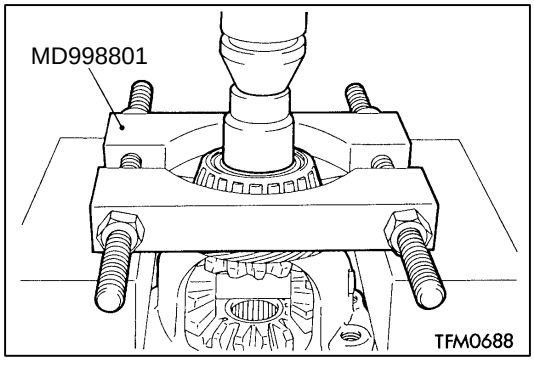
DISASSEMBLY AND REASSEMBLY

Lubricate all internal parts with automatic transmission fluid during reassembly.



Disassembly steps

◀A▶ ▶D◀ 1. Differential drive gear
◀A▶ ▶C◀ 2. Taper roller bearings
◀A▶ ▶B◀ 3. Lock pin
◀A▶ ▶A◀ 4. Pinion shaft
◀A▶ ▶A◀ 5. Pinions
◀A▶ ▶A◀ 6. Washers
◀A▶ ▶A◀ 7. Side gears
◀A▶ ▶A◀ 8. Spacers
9. Differential case



DISASSEMBLY SERVICE POINTS

◀A▶ TAPER ROLLER BEARING REMOVAL

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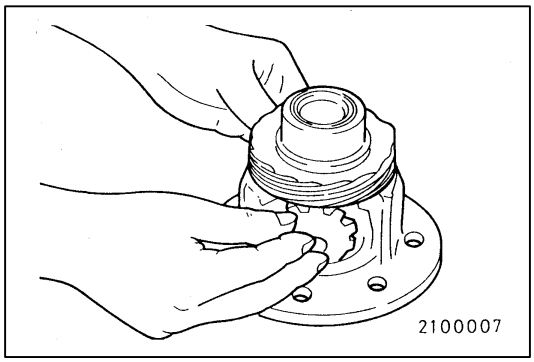


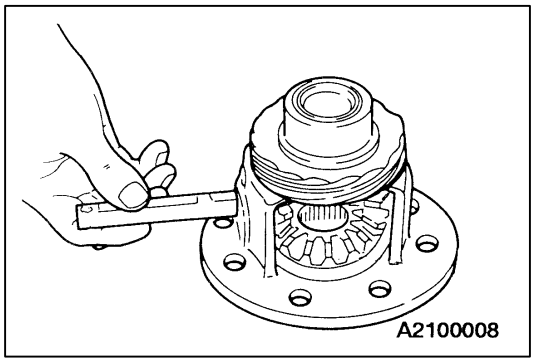
REASSEMBLY SERVICE POINTS

▶A◀ SPACER, SIDE GEAR, WASHER, PINION, PINION SHAFT INSTALLATION

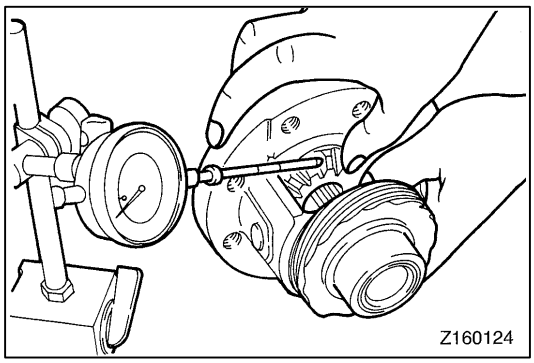
1. Install the spacers to the back side of the side gears, and then assemble the side gears into the differential case.

   NOTE
   Select the medium size spacer [0.93 – 1.00 mm] when assembling a new side gear.

2. Attach the washers to the back side of the pinions, engage the pinions simultaneously to the side gears, and settle the gears by turning.



3. Insert the pinion shaft.

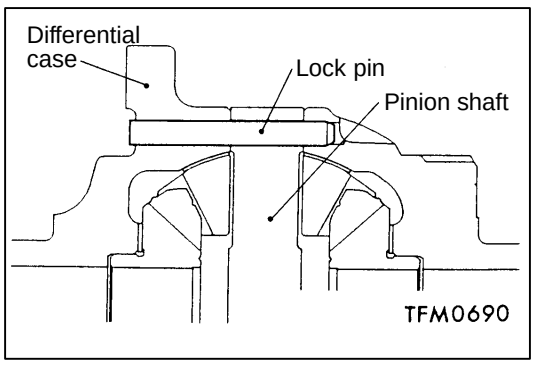


4. Measure the backlash between the side gears and pinions.

   Standard value:
   0.025 – 0.150 mm

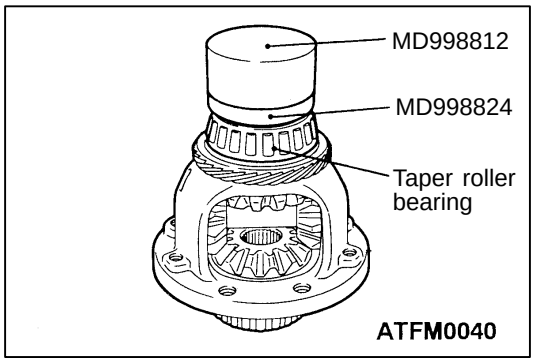
5. If not within the standard value, change a spacer and measure the backlash again.

   NOTE
   Adjust so that both backlashes are equal.

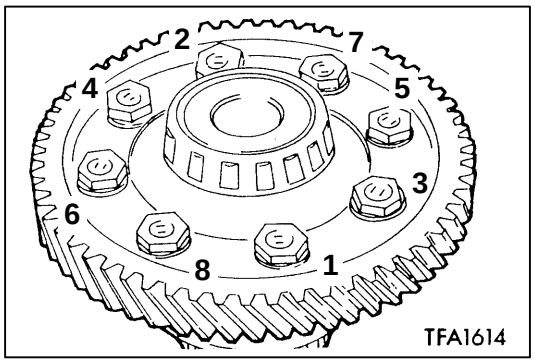


▶B◀ LOCK PIN INSTALLATION

1. Install the chamfered side of the lock pin first.



▶C◀ TAPER ROLLER BEARING INSTALLATION



▶D◀ DIFFERENTIAL DRIVE GEAR INSTALLATION

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

Standard value: 132 Nm

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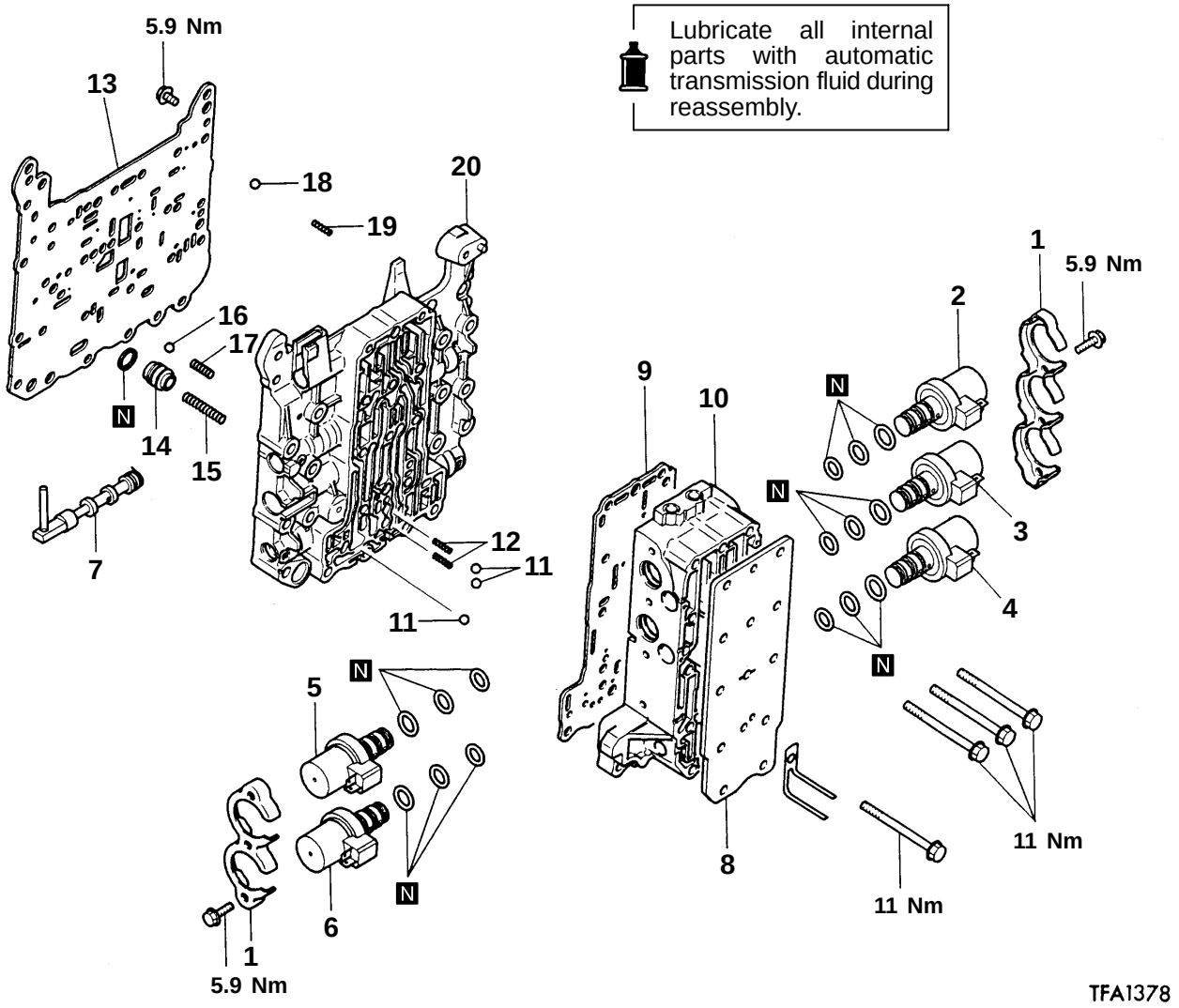
VALVE BODY

DISASSEMBLY AND REASSEMBLY



Disassembly steps

1. Solenoid valve support
2. ◀A▶ ▶C◀ Underdrive solenoid valve
3. ◀A▶ ▶C◀ Second solenoid valve
4. ◀A▶ ▶C◀ Torque converter clutch control solenoid valve
5. ◀A▶ ▶C◀ Overdrive solenoid valve
6. ◀A▶ ▶C◀ Low-reverse solenoid valve
7. Manual valve
8. Cover
9. Plate
10. Outside valve body assembly
11. ▶B◀ Steel ball (orifice check ball)
12. ▶B◀ Spring
13. Plate
14. ▶A◀ Damping valve
15. ▶A◀ Damping valve spring
16. ▶A◀ Steel ball (line relief)
17. ▶A◀ Spring
18. ▶A◀ Steel ball (orifice check ball)
19. ▶A◀ Spring
20. Inside valve body assembly

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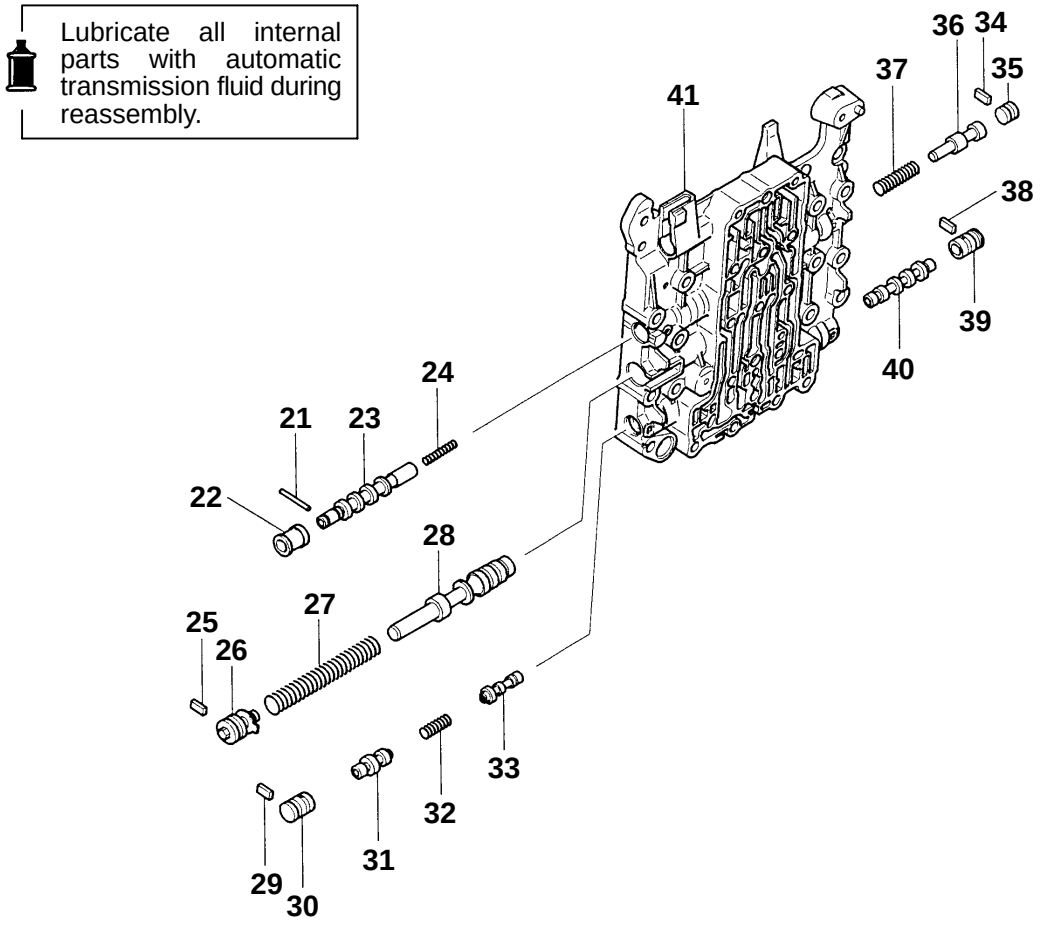

TFA1589

21. Roller
22. Torque converter clutch control valve sleeve
23. Torque converter clutch control valve
24. Torque converter clutch control valve spring
25. Plate
26. Screw
27. Regulator valve spring
28. Regulator valve
29. Plate
30. Fail-safe valve A sleeve
31. Fail-safe valve A2
32. Fail-safe valve A spring
33. Fail-safe valve A1
34. Plate
35. Plug
36. Torque converter valve
37. Torque converter valve spring
38. Plate
39. Fail-safe valve B sleeve
40. Fail-safe valve B
41. Inside valve body

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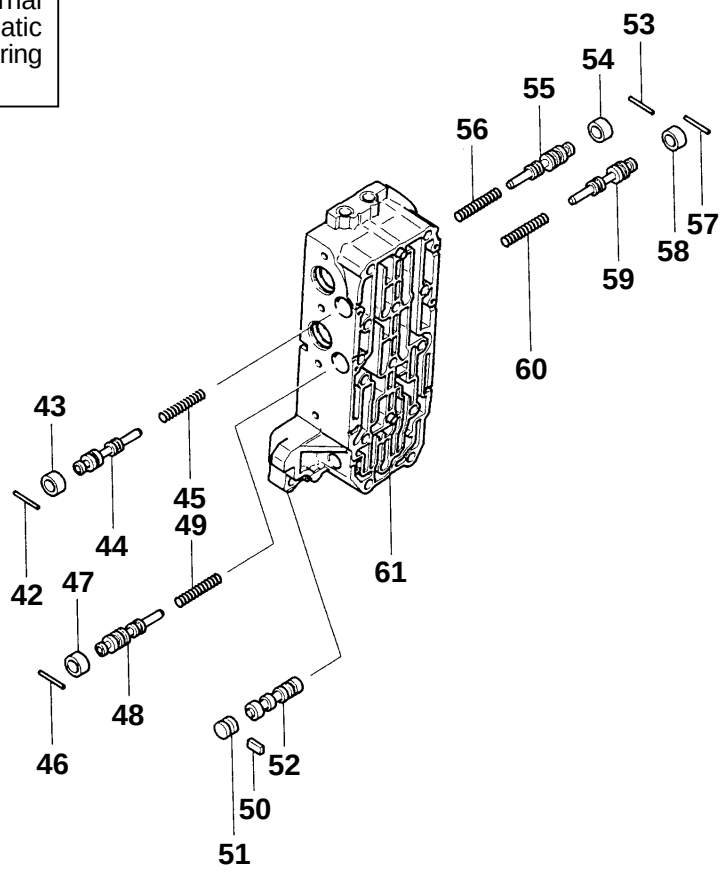
Lubricate all internal parts with automatic transmission fluid during reassembly.



TFA1590

42. Roller
43. Overdrive pressure control valve sleeve
44. Overdrive pressure control valve
45. Overdrive pressure control valve spring
46. Roller
47. Low-reverse pressure control valve sleeve
48. Low-reverse pressure control valve
49. Low-reverse pressure control valve spring
50. Plate
51. Plug
52. Switching valve
53. Roller
54. Underdrive pressure control valve sleeve
55. Underdrive pressure control valve
56. Underdrive pressure control valve spring
57. Roller
58. Second pressure control valve sleeve
59. Second pressure control valve
60. Second pressure control valve spring
61. Outside valve body

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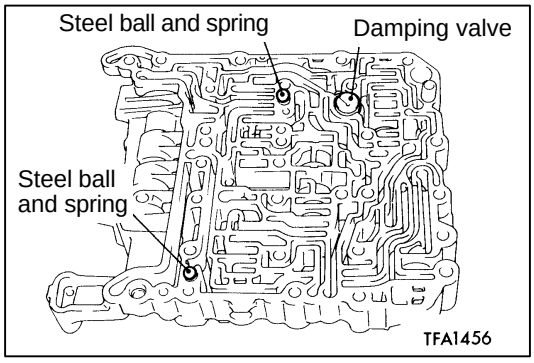
DISASSEMBLY SERVICE POINT

◀A▶ SOLENOID VALVES REMOVAL

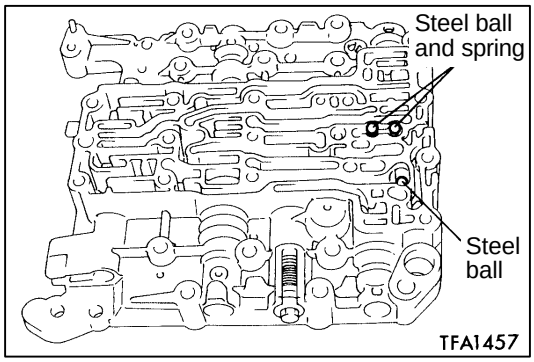
NOTE

1. Before removing the solenoid valves, identify each solenoid valve with white paint or similar to facilitate reassembly.
2. Store each solenoid valve separately, according to its location, to avoid incorrect reassembly.

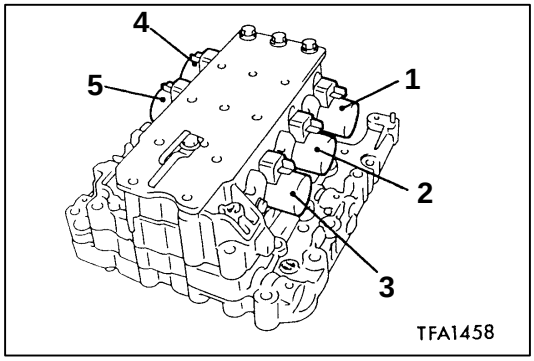


REASSEMBLY SERVICE POINTS

▶A◀ SPRING/STEEL BALL/DAMPING VALVE/DAMPING VALVE SPRING INSTALLATION



▶B◀ SPRING/STEEL BALL INSTALLATION



▶C◀ SOLENOID VALVES INSTALLATION

1. Apply ATF, blue petroleum jelly or white Vaseline to O-ring, and install carefully.
2. Install the solenoid valves by referring to the marks made 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

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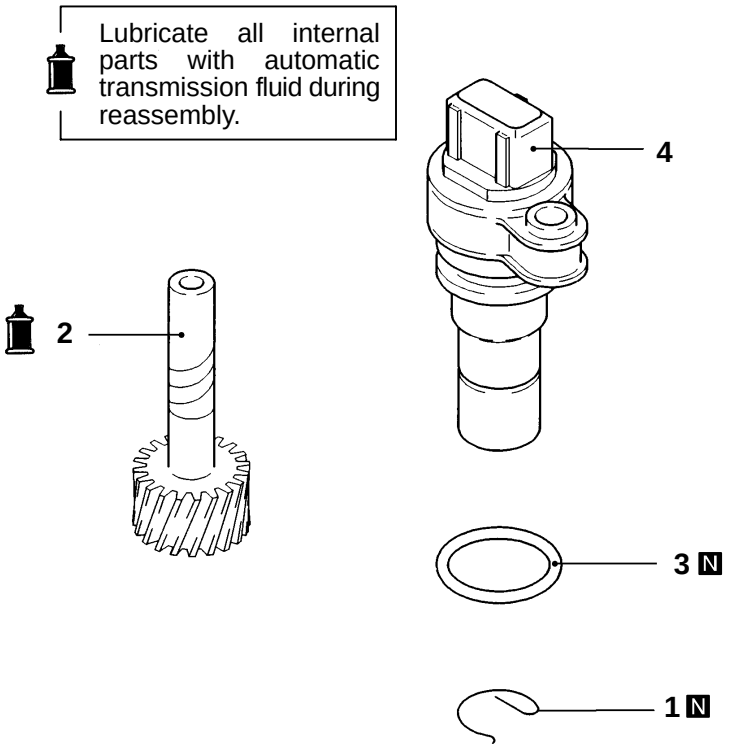
SPEEDOMETER GEAR

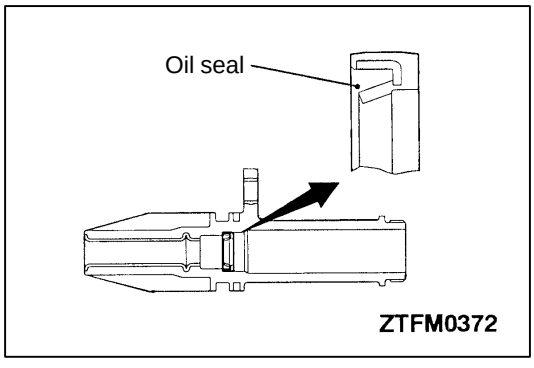
DISASSEMBLY AND REASSEMBLY



TFM0593

Disassembly steps

1. E-clip
2. Speedometer driven gear
3. ▶A◀ O-ring
4. Sleeve



REASSEMBLY SERVICE POINT

▶A◀ OIL SEAL INSTALLATION

Insert the oil seal in the position and direction shown in the figure.

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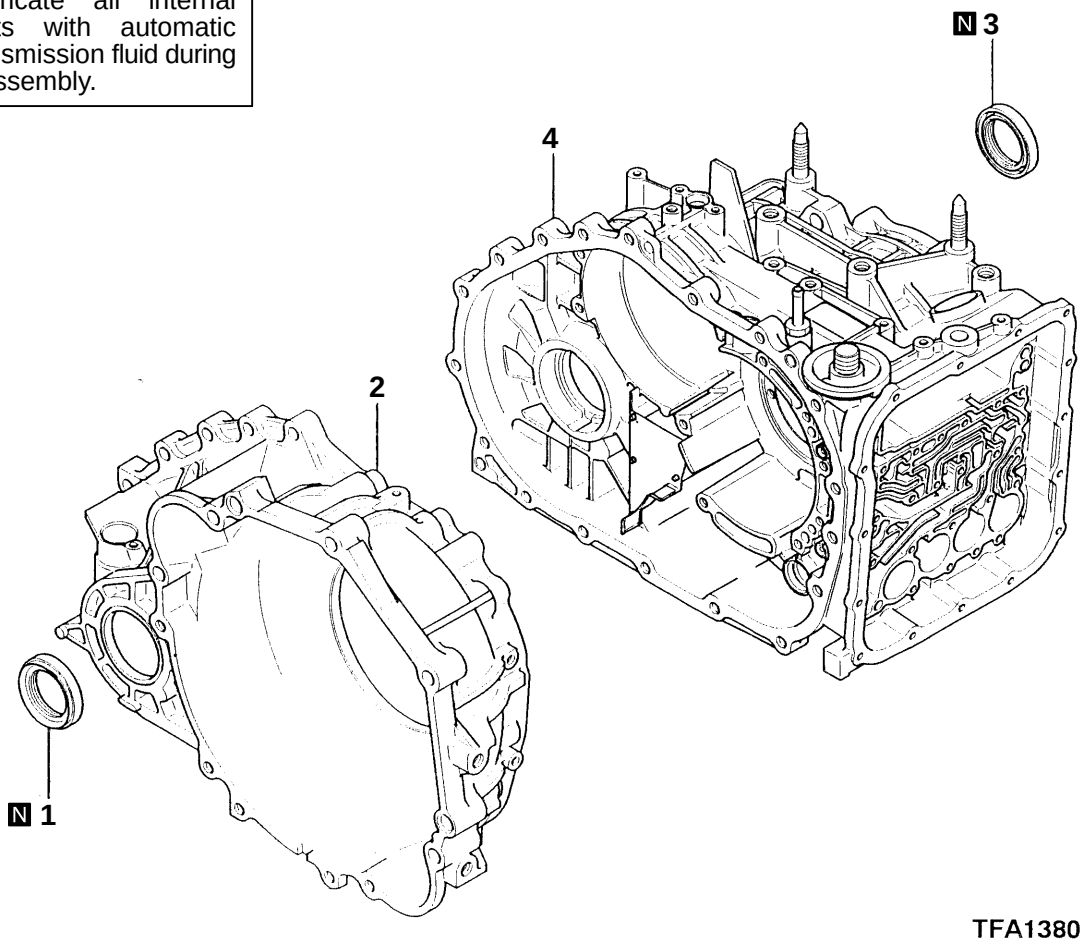
DRIVE SHAFT OIL SEAL

DISASSEMBLY AND REASSEMBLY

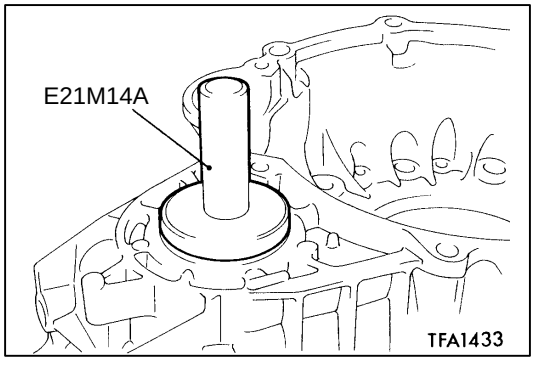
Lubricate all internal parts with automatic transmission fluid during reassembly.



TFA1380

Disassembly steps

▶A◀ 1. Oil seal
2. Torque converter housing
▶B◀ 3. Oil seal
4. Transmission case



REASSEMBLY SERVICE POINT

▶A◀ OIL SEAL INSTALLATION

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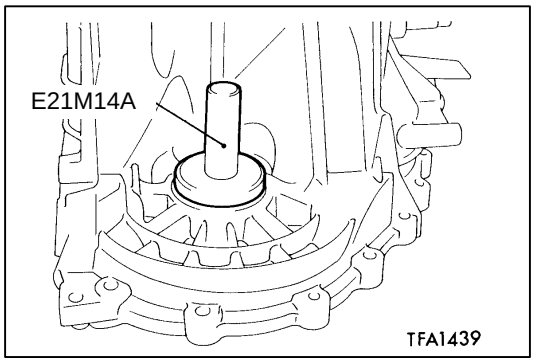

▶B◀ OIL SEAL INSTALLATION