SERVICE BULLETIN

QUALITY INFORMATION ANALYSIS
OVERSEAS SERVICE DEPT. MITSUBISHI MOTORS CORPORATION

SERVICE BULLETIN		**No.:** MSB-99E23-503	
		Date: 1999-12-15	**<Model>** / **<M/Y>**
Subject:	CHANGES IN AND CORRECTION TO FRONT WHEEL DRIVE A/T WORKSHOP MANUAL		(EC) SPACE WAGON (N84W) 99-10 (EC) GALANT (EA0) 99-10
Group:	AUTOMATIC TRANSAXLE	**Draft No.:** 99TA532317	
CORRECTION	**INTERNATIONAL CAR ADMINISTRATION OFFICE**	T.NITTA - PROJECT LEADER AFTER SALES SERVICE & CS PROMOTION	

1. Description:

On the cars equipped with automatic transmission with one-way clutch, the following modifications have been made.

Modification A: The 1999 transmission models (F4A42 with one way clutch for 2.4-liter and 2.5 liter engine equipped cars) have been added.

Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
(1) The special tool has been added.
(2) The transmission diasassembly/reassembly procedures have been changed.
(3) The overdrive planetary carrier disassembly/reassembly procedures have been changed to the planetary carrier assembly reassembly/disassembly procedures

Modification C: On all the models equipped with the F4A51 transmission, the service procedures for the low-reverse brake have been corrected due to addition of the one-way clutch.
(1) The transmission disassembly/ reassembly procedures have been corrected.
(2) The overdrive planetary carrier disassembly/reassembly procedures have been corrected to the planetary carrier assembly reassembly/disassembly procedures

Modification D: On some models equipped with the F4A42 transmission, the number of the transfer drive gear mounting bolts has been changed from 4 to 7.

Modification E: On all the models equipped with the F4A51 transmission, the four bolts for mounting the transfer drive gear have been corrected to the eight bolts.

Modification F: On some models equipped with the F4A42 transmission, the transfer drive gear tightening torque has been changed from 19 Nm to 34 Nm.

2. Applicable Manuals:

Manual	Pub. No.	Language	Page(s)
Front Wheel Drive Automatic Transmission (E-W) Workshop Manual	PWEE9514-D	(English)	23A-1-2, 23A-1-9,
	PWES9515-D	(Spanish)	23A-2-4, 23A-3-4,
	PWEF9516-D	(French)	23A-3-5d,23A-3-13,
	PWEG9517-D	(German)	23A-3-15, 23A-3-17,
	PWED9518-D	(Dutch)	23A-3-21, 23A-3-23,
	PWEW9519-D	(Swedish)	23A-7-1

3. Effective Date:

- All models of Space Wagon (N84W):
  From the first production car for Modifications B, D and F.

- From December 1, 1998 for Modifications B.
  Effective Model: JD2563
  From January 1, 1998 for Modifications D and F.
  Effective Model: GM6015

4. Details:

Front Wheel Drive Automatic Transmission (E-W) Workshop Manual, page 1-14

Transmission model		Speedometer gear ratio	Final gear ratio	Vehicle model	Engine model
EXP	F4A41-1-M8A1	31/36	4.042	CJ4A, CK4A	4G92
	F4A41-1-M8A4	31/36	4.042	CJ2A, CK2A	4G15
	F4A41-1-M8A5	31/36	4.042	CK1A	4G13
	F4A42-1-M6A	29/36	4.042	EA1A	4G93
	F4A42-1-M6A2	29/36	4.042	EA2A	4G63
	F4A42-1-E6A	29/36	3.770	EA5A	6A13
	F4A42-1-E5B	29/36	3.735	F36A	6G72

MODEL 1999

Transmission model		Speedometer gear ratio	Final gear ratio	Vehicle model	Engine model
EUR	F4A42-1-U5A1	28/36	4.407	N61W	4G93-GDI

GENERAL SPECIFICATIONS

Items		F4A41	F4A42-1	F4A42-2	F4A51
Torque converter type		3-element, 1-stage, 2 phase type	3-element, 1-stage, 2 phase type	3-element, 1-stage, 2 phase type	3-element, 1-stage, 2 phase type
Transmission type		4-speed forward, 1-speed reverse	4-speed forward, 1-speed reverse	4-speed forward, 1-speed reverse	4-speed forward, 1-speed reverse
EXP	1st	2.842	2.842	2.842	2.842
	2nd	1.529	1.529	1.529	1.529
	3rd	1.000	1.000	1.000	1.000
	4th	0.712	0.712	0.712	0.712
	Reverse	2.480	2.480	2.480	2.480
Number of underdrive clutch disc		3	4	4	4
Number of overdrive clutch disc		3	4	4	4
Number of reverse clutch disc		2	2	2	2
Number of low reverse clutch disc		4	5	6	6
Number of second brake disc		2	3	3	4

Modification A: The 1999 transmission models (F4A42 with one-way clutch for 2.4-liter and 2.5-liter engine equipped cars) have been added.

EUR	F4A42-2-E6B	29/36	3.770	EA3A, EA3W	4G64-GDI
	F4A42-2-E6B1	29/36	3.770	EA5A, EA5W	6A13
	F4A42-2-M5B1	28/36	4.042	N84W	4G64-GDI

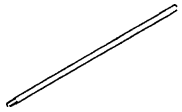
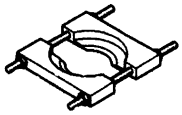
<Added>

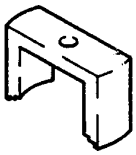
TORQUE SPECIFICATIONS

Items		Nm
Transmission	Roll stopper bracket	70
	Wiring harness bracket	23
	Control cable bracket	23
	Eye bolt	31
	Oil cooler feed tube (to transmission case)	10
	Oil cooler feed tube (to roll stopper bracket)	11
	Oil feeder	12
	Input shaft speed sensor	11
	Output shaft speed sensor	11
	Manual control lever	22
	Inhibitor switch	11
	Speedometer gear	5
	Valve body cover	11
	Valve body mounting bolt	11
	Fluid temperature sensor	11
	Manual control shaft detent	6
	Rear cover	23
	Torque converter housing	48
	Oil pump	23
<Deleted>	~~Transfer drive gear <F4A41>, <F4A42>~~	~~19~~
	Transfer drive gear ~~<F4A51>~~ **<Deleted>**	34
	Output shaft lock nut	170
	Output shaft bearing retainer <F4A41>, <F4A42>	23
	Output shaft bearing retainer <F4A51>	54
Components	Transfer drive gear lock nut	195
	Differential drive gear	135
	Valve body	11
	Solenoid valve support	6
	Plate	6

Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.

- The special tool has been added.

Tool	Number	Name	Use
	MD998823	Installer adapter (48)	Installation of output shaft tape roller bearing <F4A41, F4A42>, transfer drive gear <F4A41, F4A42>.
	MD998824	Installer adapter (50)	Installation of transfer drive gear <F4A51>, differential taper roller bearing <F4A51>.
	MD998827	Installer adapter (56)	Installation of output shaft tape roller bearing <F4A51>.
	MD998829	Installer adapter (60)	Installation of transfer drive gear <F4A41, F4A42>.
	MD998907	Spring compressor	Removal and installation of underdrive clutch snap ring.
	MD998913	Dial gauge extension	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.
	MD999590	Spring compressor	Removal and installation of overdrive clutch snap ring.

	MD998903	Spring compressor	Removal and installation of one-way clutch inner race snap ring <F4A42>.

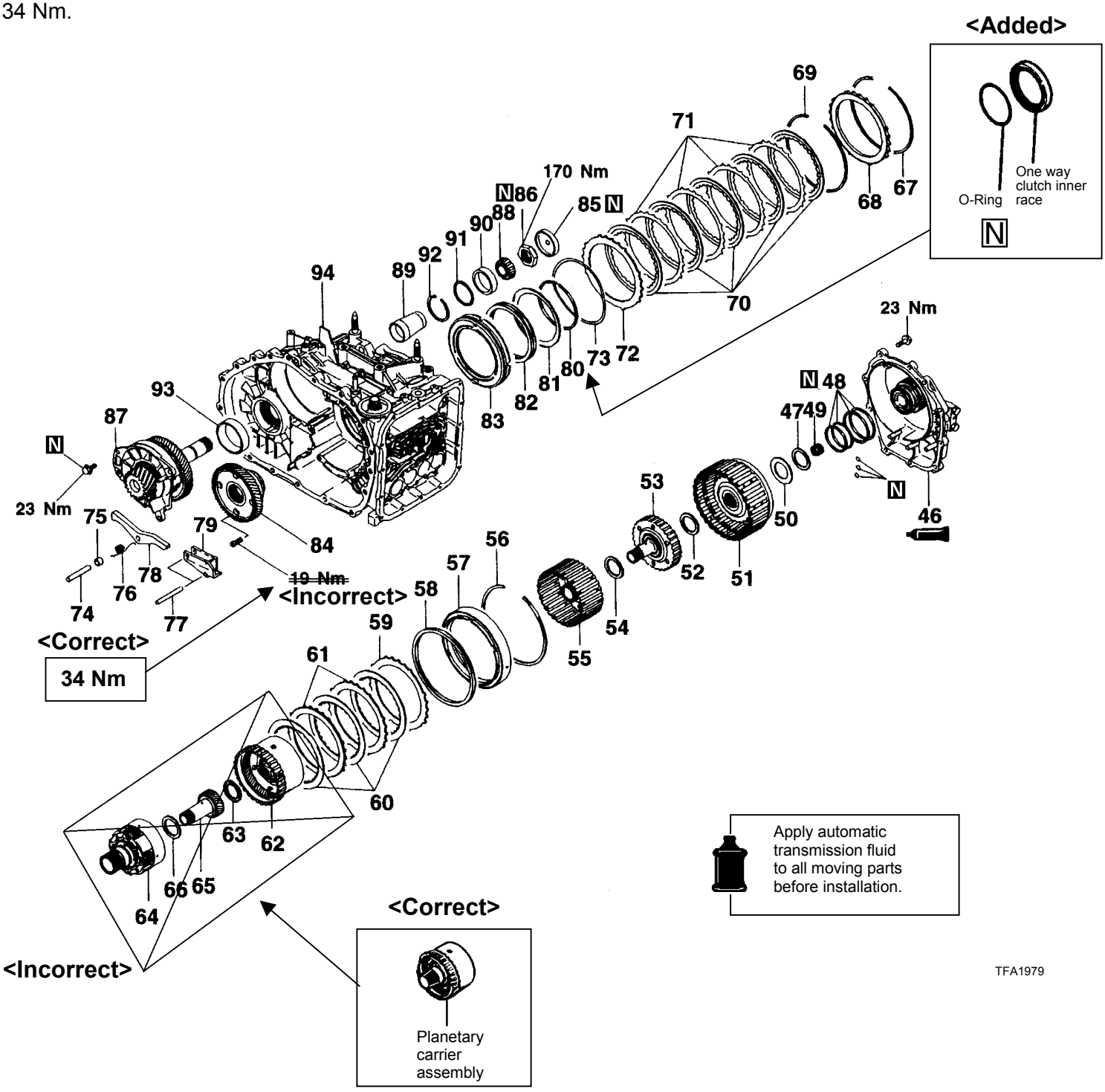
<Added>

Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.

Modification F: On some models equipped with the F4A42 transmission, the transfer drive gear tightening torque has been changed from 19 Nm to 34 Nm.

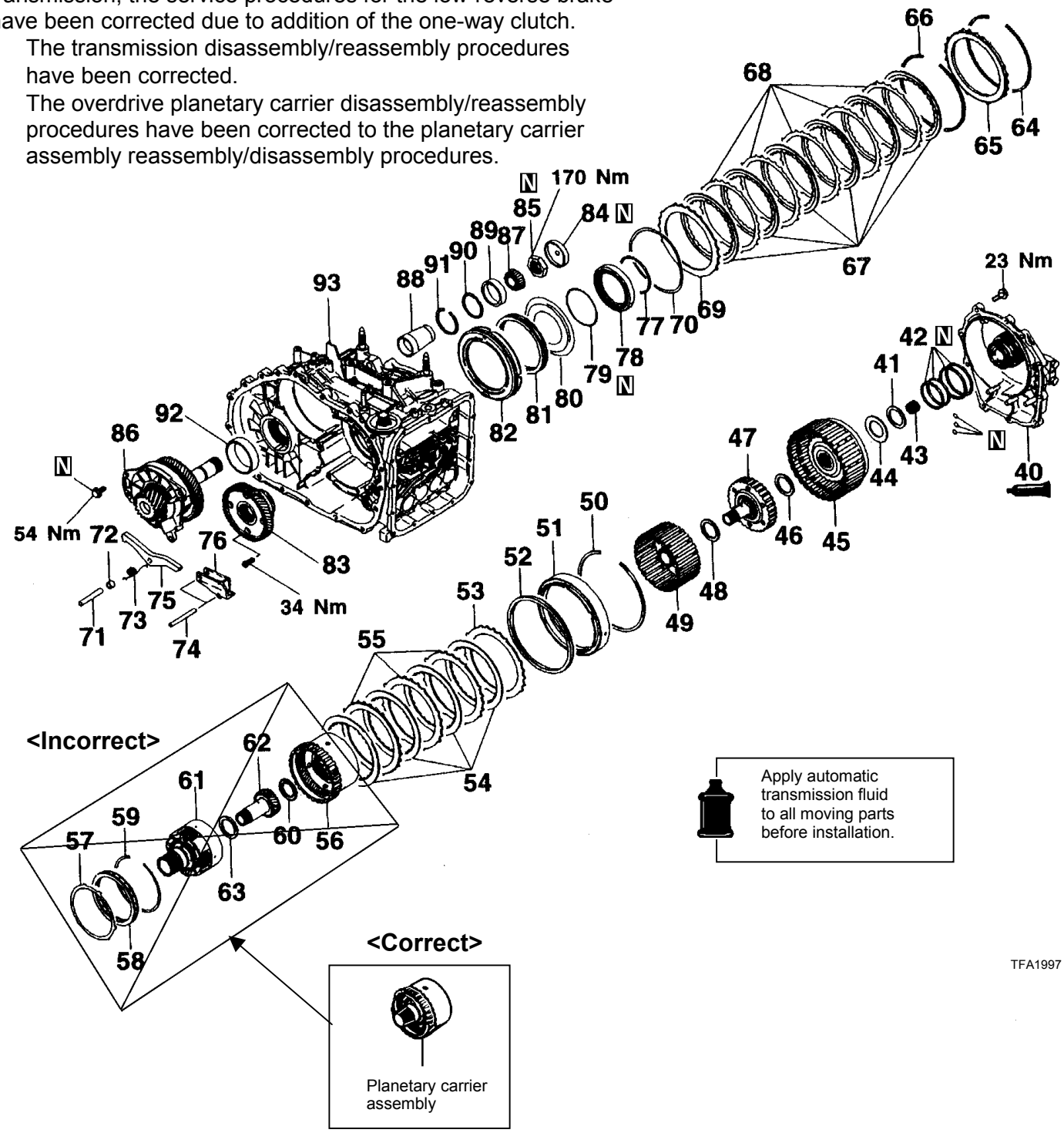
No. of Brake Discs and Plates

Brake	Model	Brake disc	Brake plate
Low-reverse	F4A41	4	3
	F4A42	5	4
Second brake	F4A41	2	1
	F4A42	3	2

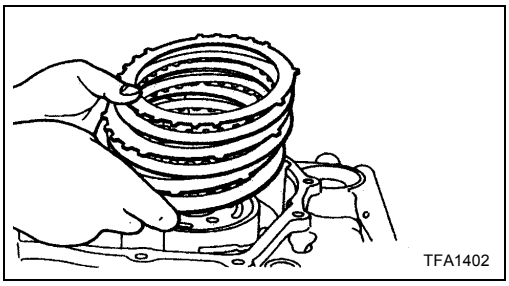


Modification C: On all the models equipped with the F4A51 transmission, the service procedures for the low-reverse brake have been corrected due to addition of the one-way clutch.

- The transmission disassembly/reassembly procedures
- have been corrected.
- The overdrive planetary carrier disassembly/reassembly procedures have been corrected to the planetary carrier assembly reassembly/disassembly procedures.



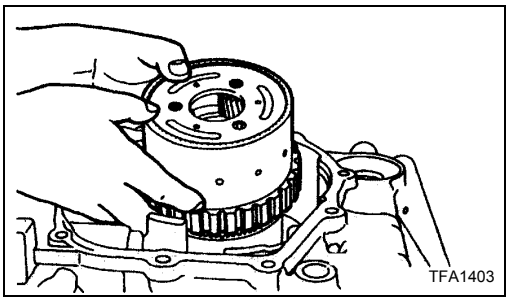
Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
Modification C: On some models equipped with the F4A51 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.


TFA1402

(45) Remove the pressure plate, brake discs and brake plate(s).

No. of brake discs and plates

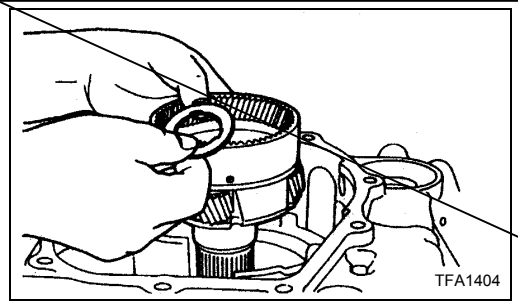
Model	Brake disc	Brake plate	Pressure plate
F4A41	2	1	1
F4A42	3	2	1
F4A51	4	3	1


TFA1403

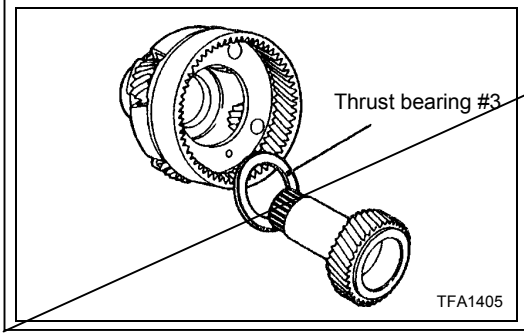
(46) Remove the ~~overdrive planetary carrier~~. **<Incorrect>**

Planetary carrier assembly

<Correct>

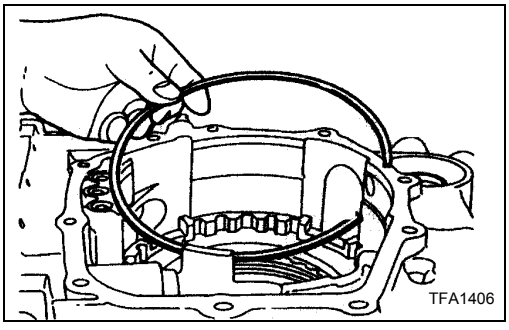

TFA1404

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



TFA1405

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


TFA1406

(49) Remove the snap ring.

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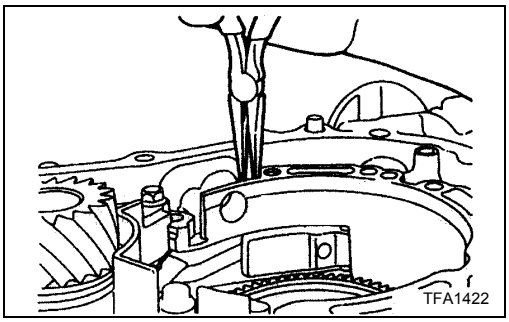
Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
Modification D: On some models equipped with the F4A42 transmission, the number of the transfer drive gear mounting bolts has been changed from 4 to 7.



(55) Remove the two parking roller support shaft, and then remove the parking pawl case and parking roller support.

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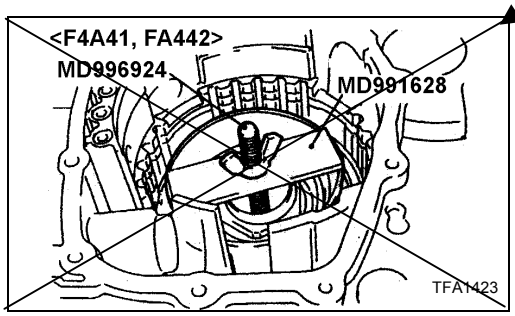
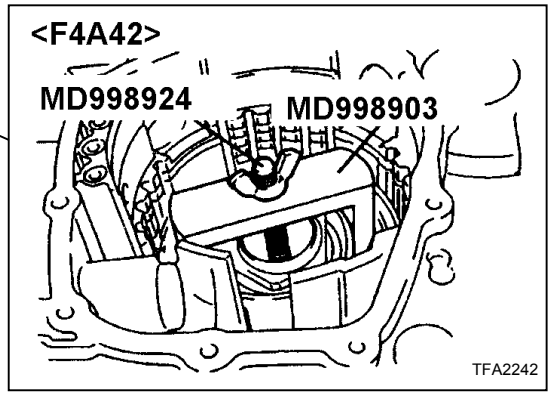
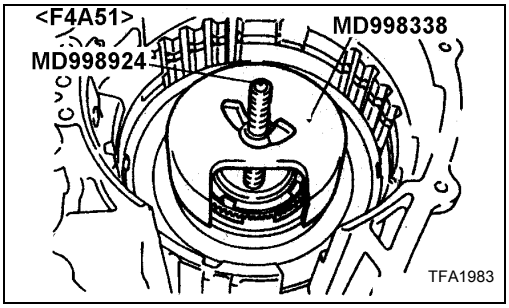


(56) Use the special tool to remove the snap ring.
(57) Remove the one-way clutch inner race ~~<F4A51>~~, O-ring ~~<F4A51>~~, spring retainer, return spring and the low-reverse brake piston.

<Correct>





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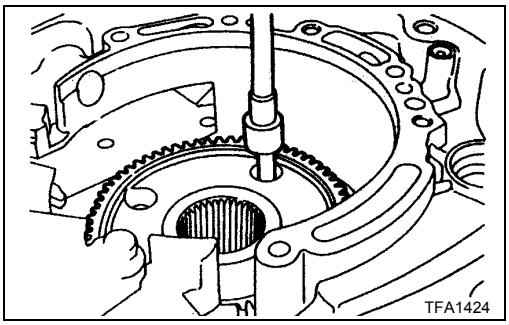
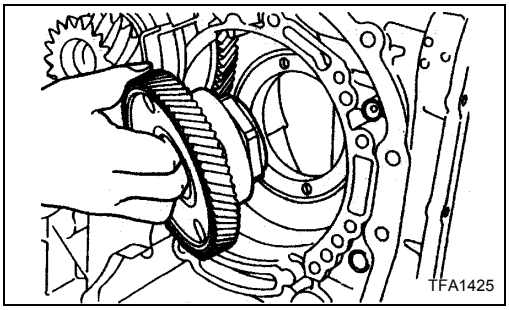


(58) Remove the transfer drive gear mounting bolts (~~4~~ pieces – F4A41 • F4A42, 8 pieces – F4A51). <Incorrect>

NOTE ~~<F4A51>~~<Deleted>
Remove ~~four~~ mounting bolts. Then, turn the gear 1/8 turn (45°) and remove the remaining ~~four~~ bolts.

<Incorrect> <Incorrect>

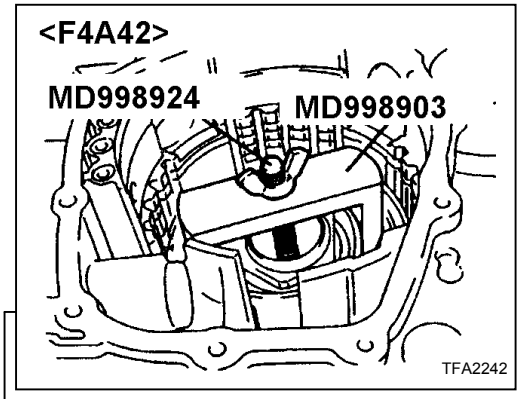
Four or three <Correct>



(59) Remove the transfer drive gear.

Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.

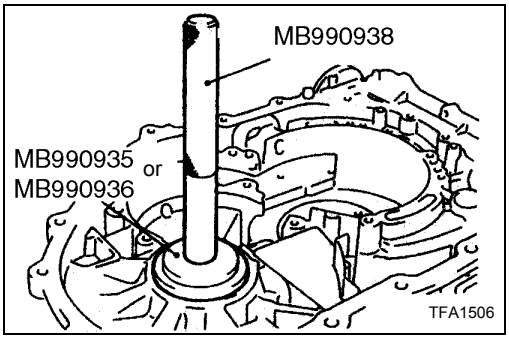
<Correct>



REASSEMBLY

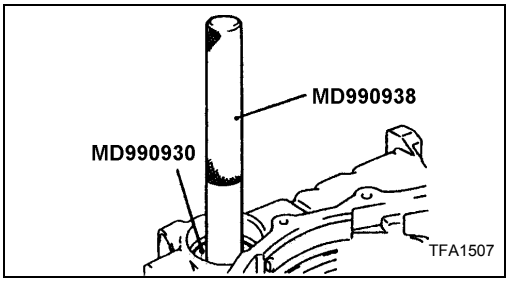
Caution

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.**

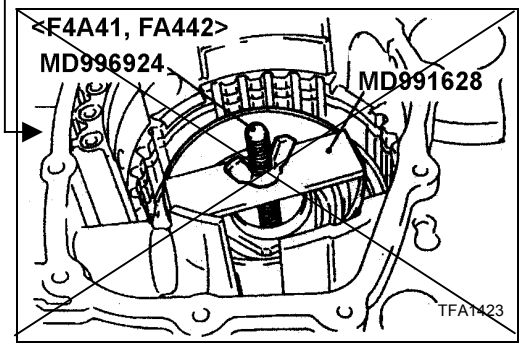


(1) Use the special tool to tap the differential bearing outer race in the transmission case. <F4A42, F4A51>

Model	Special tools No.
F4A42	MB990935, MB990938
F4A51	MB990936, MB990938



(2) Use the special tool to tap the differential bearing outer race in the transmission case.
(3) Install the used spacer and snap ring.



<Incorrect>

(4) Install the low-reverse brake piston, return spring and one-way clutch inner race ~~<F4A51>~~ transfer drive gear ~~<F4A51>~~ , O-ring ~~<F4A51>~~, spring retainer.
(5) Use the special tools to install the snap ring.

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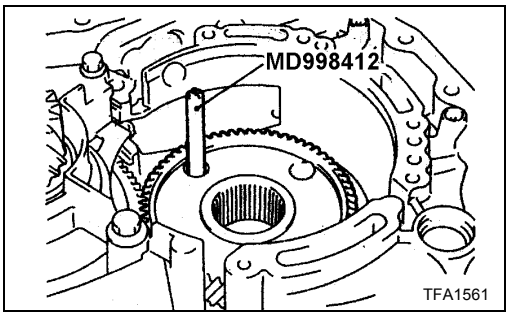
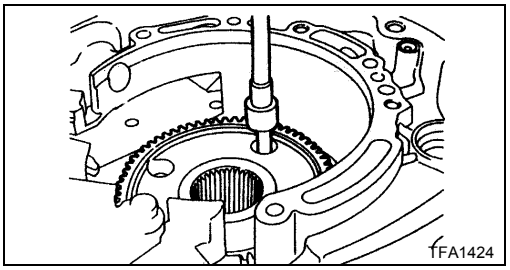
Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
Modification C: On all the models equipped with the F4A51 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
Modification D: On some models equipped with the F4A42 transmission, the number of the transfer drive gear mounting bolts has been changed from 4 to 7.
Modification E: On some models equipped with the F4A51 transmission, the four bolts for mounting the transfer drive gear have been corrected to the eight bolts.



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

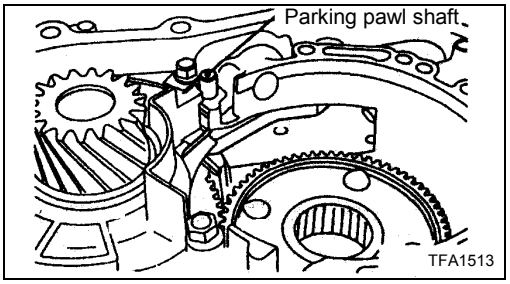
<Correct>

Seven mounting bolts (F4A42) and eight mounting bolts (F4A51)

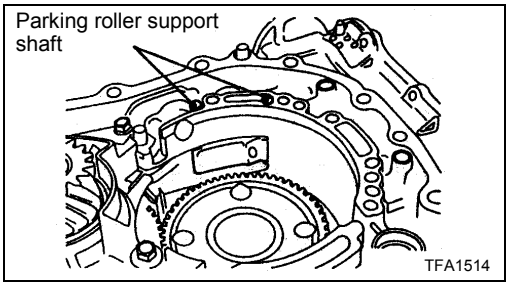


(23) Tighten the ~~four mounting bouts~~ of the transfer drive gear to the specified torque.

<Incorrect>



(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.

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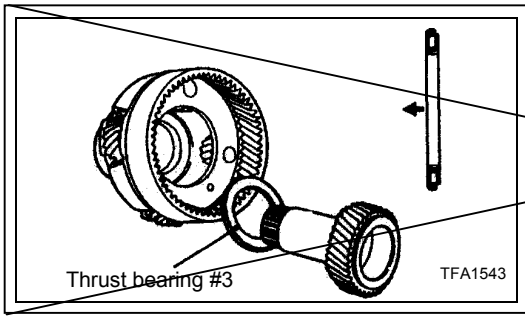
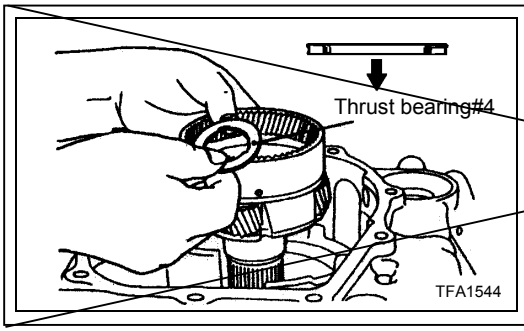


(26) Install the underdrive sun gear and thrust bearing #3 to the output planetary carrier.

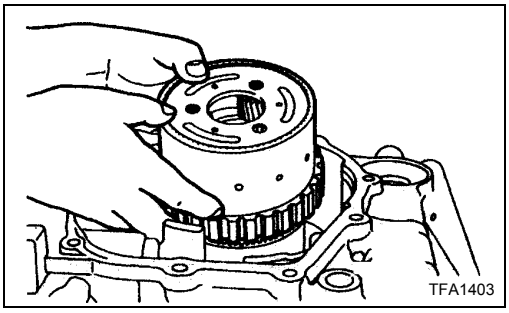
Caution
Be careful about the installation direction of the thrust bearing.

Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
Modification C: On all the models equipped with the F4A51 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.



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

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

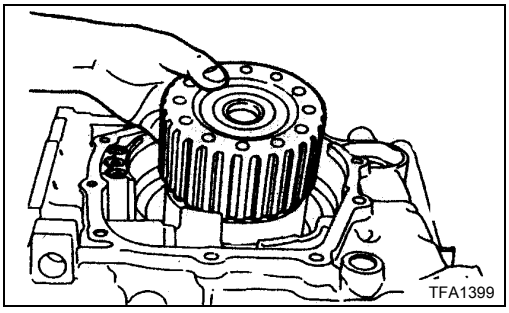


(28) Install the ~~overdrive planetary drive.~~ **<Deleted>**

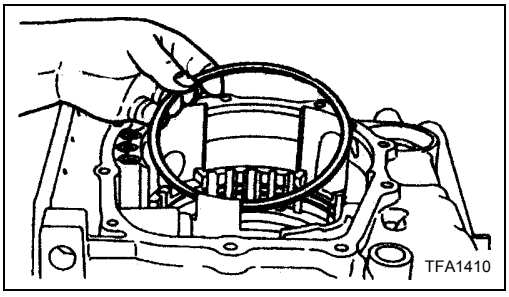
<Incorrect>

Planetary carrier assembly

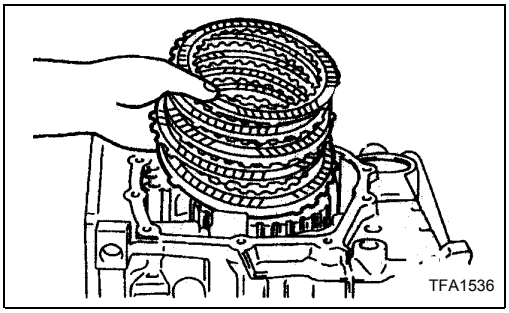
<Correct>



(29) Install the planetary reverse sun gear.



(30) Install the wave spring.



(31) Install the pressure plate, brake disc, and brake plate.

Number of brake discs and plates

Model	Brake disc	Brake plate	Pressure plate
F4A41	4	3	1
F4A42-1	5	4	1
F4A42-2, F4A51	6	5	1

Modification B: On some models equipped with the F4A42 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.
Modification C: On all the models equipped with the F4A51 transmission, the service procedures for the low-reverse brake have been changed due to addition of the one-way clutch.

7. OVERDRIVE PLANETARY CARRIER
DISASSEMBLY AND REASSEMBLY

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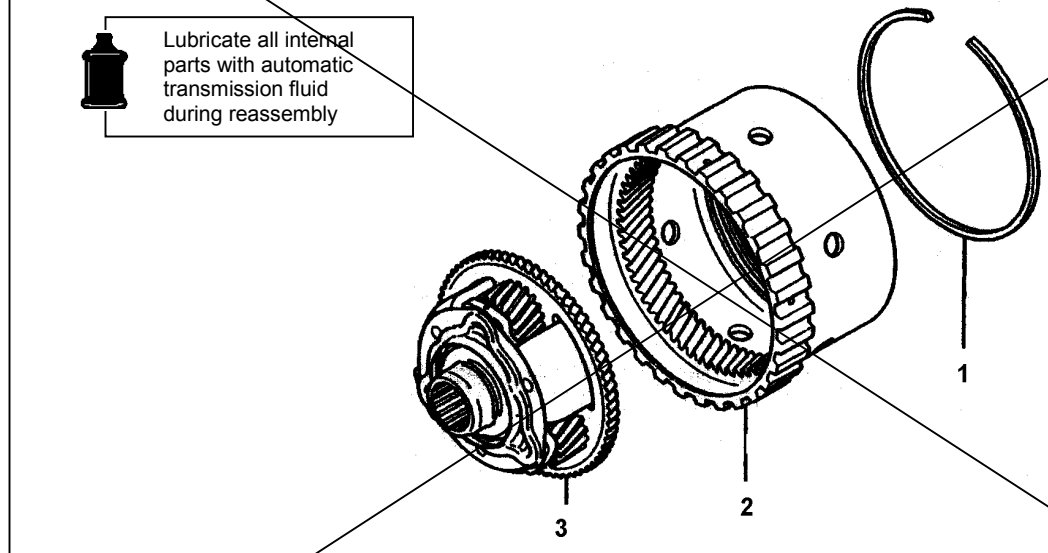
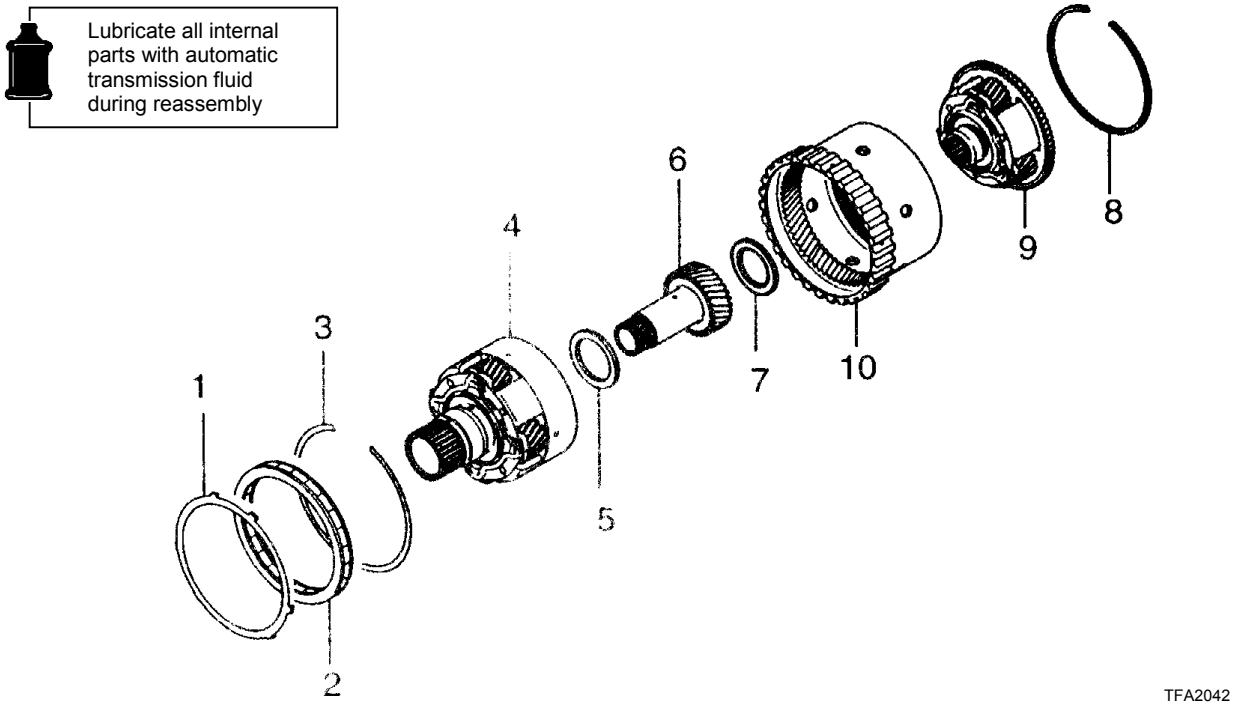


Disassembly steps
1. Snap ring
2. Overdrive planetary carrier
3. Overdrive annulus gear

<Replace by the following page>

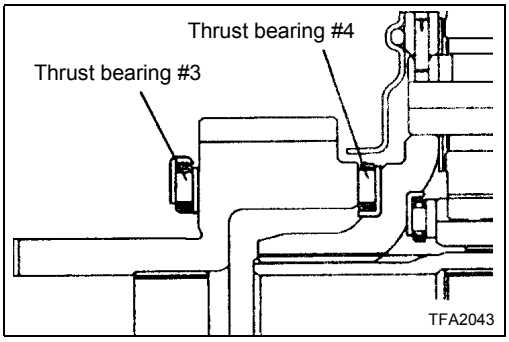
1999 transmission models (F4A42 with one-way clutch for 2.4-liter and 2.5-liter engine equipped cars) added.

7. PLANETARY CARRIER ASSEMBLY DISASSEMBLY AND REASSEMBLY



Disassembly steps

1. Stopper plate
- ▶B◀ 2. One-way clutch
3. Snap ring
4. Output planetary carrier
- ▶A◀ 5. Thrust bearing #3
6. Under drive sun gear
- ▶A◀ 7. Thrust bearing #4
8. Snap ring
9. Over drive planetary carrier
10. Over drive annulus gear



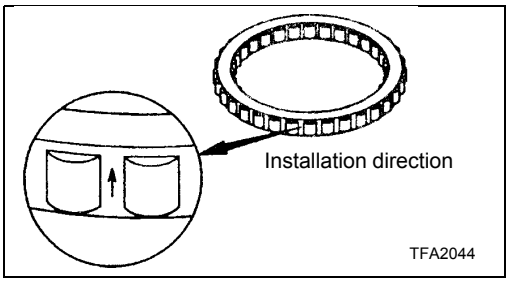
REASSEMBLY SERVICE POINT

▶A◀ THRUST BEARING #3 AND THRUST BEARING #4 INSTALLATION

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

Caution

Be careful about the installation direction of the thrust bearings



▶B◀ ONE-WAY CLUTCH INSTALLATION

Insert the one-way clutch into the over drive annulus gear so that the arrow points to the output planetary carrier side.

<Correct>