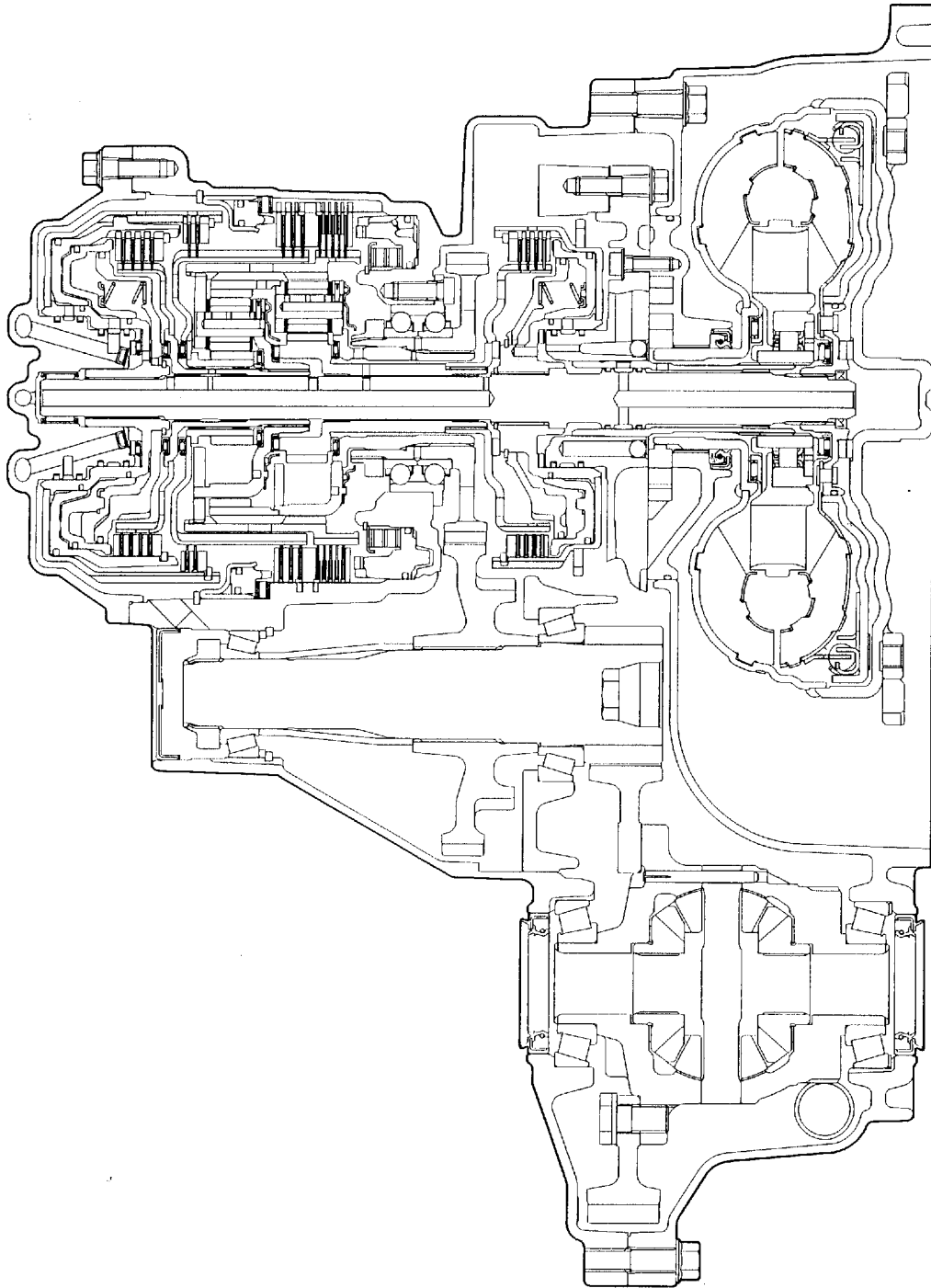


**23A-0-6 AUTOMATIC TRANSMISSION (E-W) - General Information**

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<F4A42-1 up to Dec. 1997>



TFA1503

# 1. SPECIFICATIONS

## TRANSMISSION MODEL TABLE

### MODEL 1996

Transmission model		Speedometer gear ratio	Final gear ratio	Vehicle model	Engine model
EUR	F4A41-1-MRA	31/36	4.042	DA1A	4G92
	F4A41-1-M8A1	31/36	4.042	CJ4A, CK4A	4G92
	F4A41-1-M8A2	31/36	4.042	CJ1A	4G13
	F4A42-1-MRA	31/36	4.042	DA2A	4G93
EXP	F4A41-1-M8A	31/36	4.042	CJ2A	4G15
	F4A41-1-M8A1	31/36	4.042	CJ4A	4G92
	F4A41-1-M8A4	31/36	4.042	CK2A	4G15
	F4A41-1-M8A5	31/36	4.042	CK1A	4G13

### MODEL 1997

Transmission model		Speedometer gear ratio	Final gear ratio	Vehicle model	Engine model
EUR	F4A42-1-M7A	30/36	4.042	EA2A, EA2W	4G63
	F4A42-2-E6A	29/36	3.770	EA5A, EA5W	6A13
EXP	F4A42-1-M6A	29/36	4.042	EA1A	4G93
	F4A42-1-M6A2	29/36	4.042	EA2A	4G63
	F4A42-1-M7A	30/36	4.042	EA2A	4G63
	F4A42-1-U6A1	29/36	4.407	EA4A	6A12
	F4A42-2-E6A	29/36	3.770	EA5A	6A13
	F4A51-2-E5B	28/36	3.735	F36A	6G72

### MODEL 1998

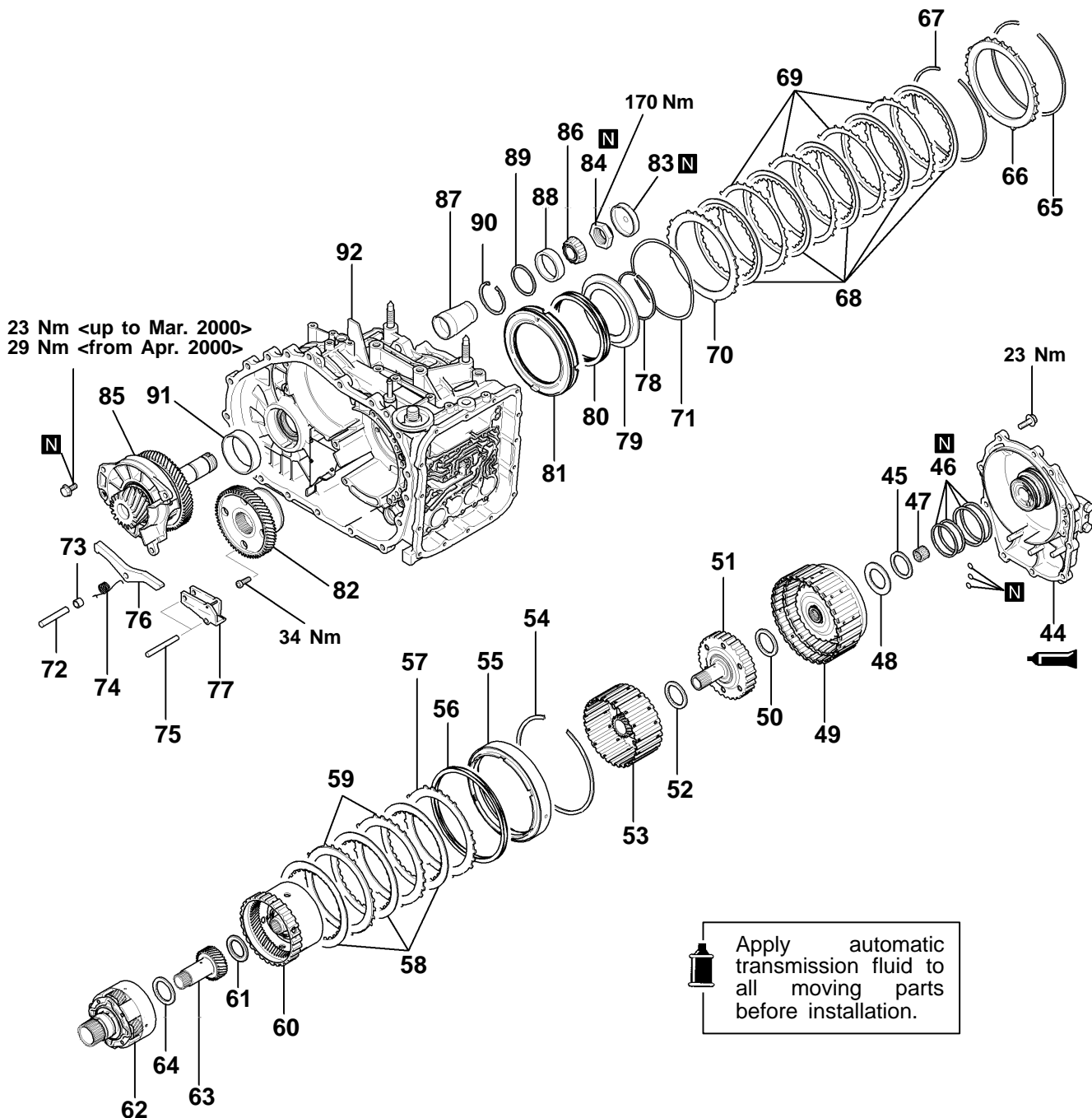
Transmission model		Speedometer gear ratio	Final gear ratio	Vehicle model	Engine model
EUR	F4A41-1-M8A1	31/36	4.042	CJ4A	4G92
	F4A41-1-M8A5	31/36	4.042	CJ1A, CK1A	4G13
	F4A41-1-M8A6	31/36	4.042	DA1A	4G92
	F4A42-1-E8A	31/36	3.770	DA2A	4G93-GDI
	F4A42-1-M7A	30/36	4.042	EA2A, EA2W	4G63
	F4A42-1-M8A3	31/36	4.042	DA2A	4G93
	F4A42-2-E6A	29/36	3.770	EA5A, EA5W	6A13

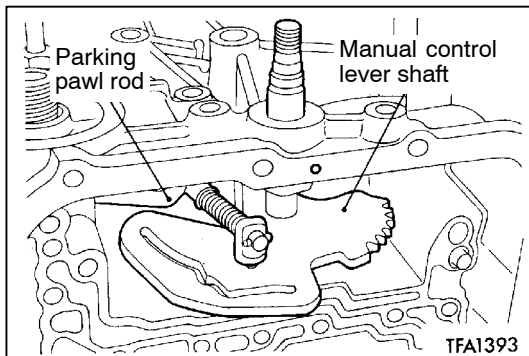
### SNAP RING, SPACER, THRUST WASHER, THRUST RACE AND PRESSURE PLATE FOR ADJUSTMENT

Part name	Thickness mm	Identification symbol	Part No.
Thrust washer (For adjustment of input shaft end play)	1.8	18	MD754509
	2.0	20	MD754508
	2.2	22	MD754507
	2.4	24	MD753793
	2.6	26	MD753794
	2.8	28	MD753795
Snap ring: F4A41, F4A42 (For adjustment of underdrive clutch and overdrive clutch end plays)	1.6	None	MD759666
	1.7	Blue	MD759667
	1.8	Brown	MD759668
	1.9	None	MD752124
	2.0	Blue	MD752125
	2.1	Brown	MD752126
	2.2	None	MD752127
	2.3	Blue	MD752128
	2.4	Brown	MD752129
	2.5	None	MD752130
	2.6	Blue	MD752131
	2.7	Brown	MD752132
	2.8	None	MD752133
	2.9	Blue	MD752134
3.0	Brown	MD754680	
Snap ring: F4A51 (For adjustment of underdrive clutch and overdrive clutch end plays)	1.6	Brown	MD759960
	1.7	None	MD759961
	1.8	Blue	MD759962
	1.9	Brown	MD759963
	2.0	None	MD750841
	2.1	Blue	MD750842
	2.2	Brown	MD750843
	2.3	None	MD750844
	2.4	Blue	MD750845
	2.5	Brown	MD750846
	2.6	None	MD750847
	2.7	Blue	MD750848
	2.8	Brown	MD750849
	2.9	None	MD750850
3.0	Blue	MD750851	
Snap ring: F4A41, F4A42 (For adjustment of low-reverse brake and second brake reaction plates end plays)	2.2	Blue	MD754786
	2.3	Brown	MD754787
	2.4	None	MD758240
	2.5	Blue	MD758241

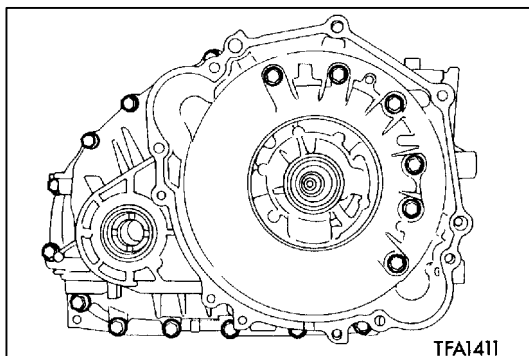
No. of Brake Discs and Plates

Brake	Model	Brake Disc	Brake Plate
Low-reverse brake	F4A41	4	3
	F4A42-1	5	4
Second brake	F4A41	2	1
	F4A42-1	3	2

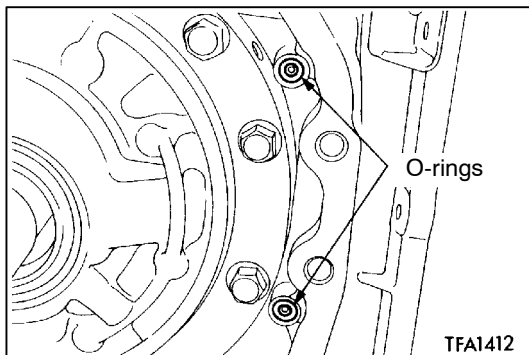




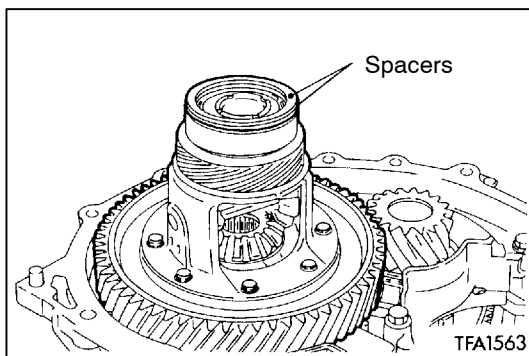
- (19) Remove the manual control lever shaft roller.
- (20) Remove the manual control lever shaft and the parking pawl rod.



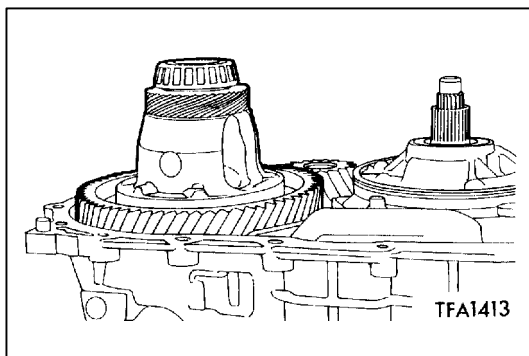
- (21) Remove the torque converter housing mounting bolts (18 pieces), and then remove the torque converter housing.



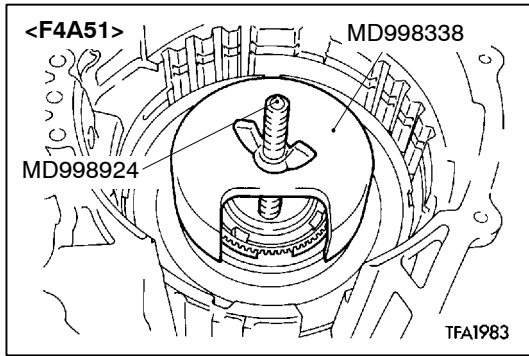
- (22) Remove the O-rings (2 pieces).



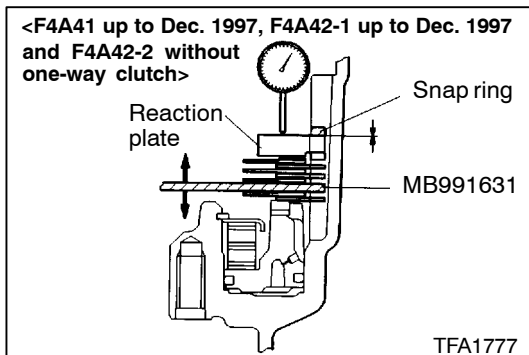
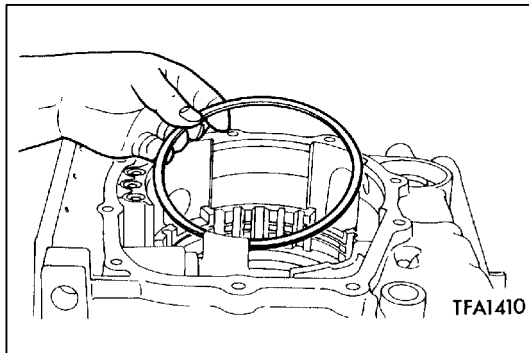
- (23) Remove the differential and the spacer(s) (3 pieces .... F4A41-1-MRA only). <F4A41>



- (24) Remove the differential. <F4A42, F4A51>



(6) Install the wave spring.



(7) Install the brake disc, brake plate and special tool and snap ring as shown in the figure.

**Caution**

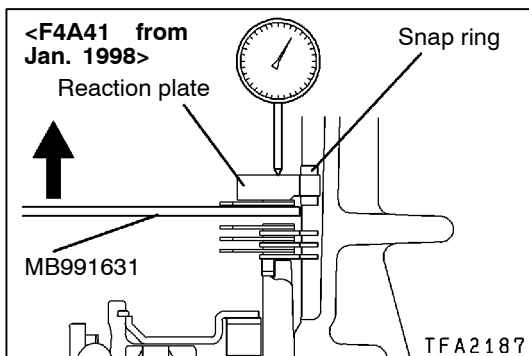
If necessary, take the measurements in steps 9 to 18 after replacing the pressure plate, brake plate and brake disc.

**NOTE**

Do not install the pressure plate at this time.

**Number of brake discs and plates**

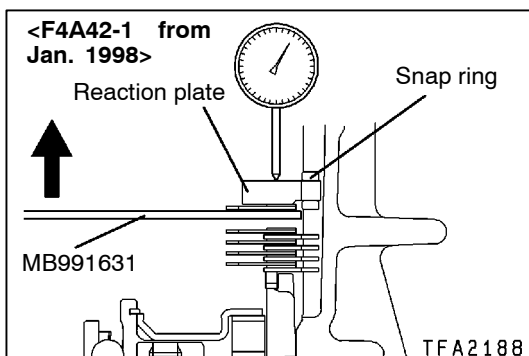
Model	Brake disc	Brake plate	Special tool
F4A41	4	3	1
F4A42-1	5	4	1
F4A42-2, F4A51	6	5	1

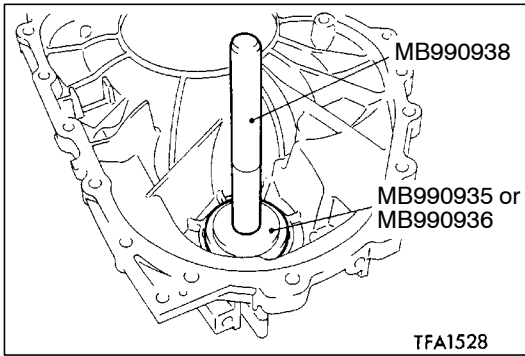


(8) Install the reaction plate and the used snap ring.

(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.

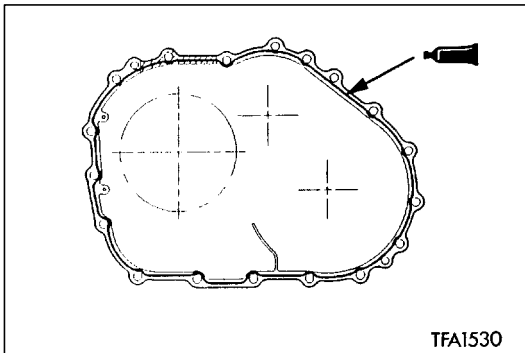
**Standard value: 0 - 0.16 mm**





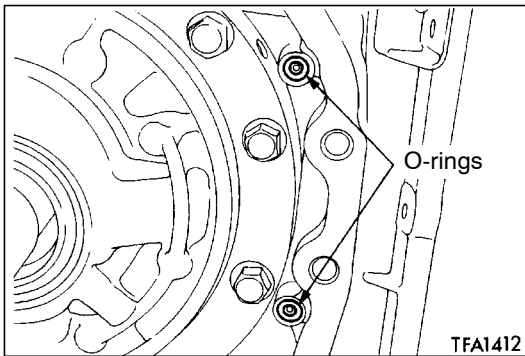
(65) Set the spacer selected in step (63) and install the outer race to the torque converter housing. Use the special tools to press in the outer race. <F4A42, F4A51>

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

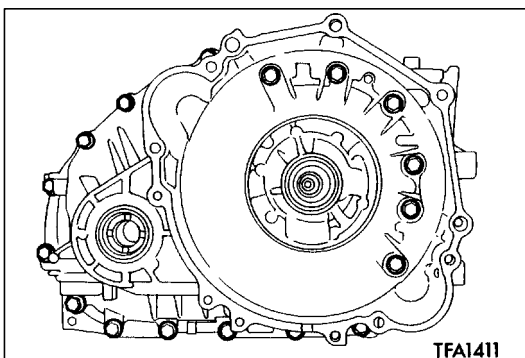


(66) Squeeze out the liquid gasket of 1.6 mm in diameter and apply it to the shown points of torque converter.

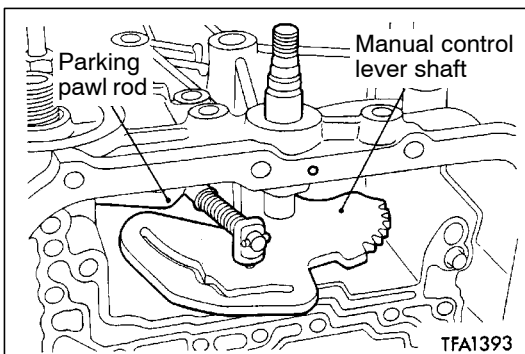
**Liquid gasket:**  
**MITSUBISHI genuine sealant Part No. MD974421**  
**or equivalent**



(67) Install the two O-rings.



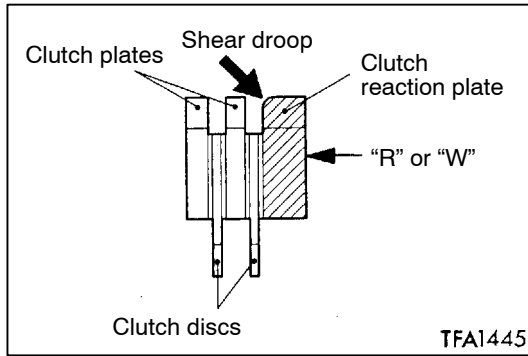
(68) Install the torque converter, and then tighten its 18 mounting bolts to the specified torque.



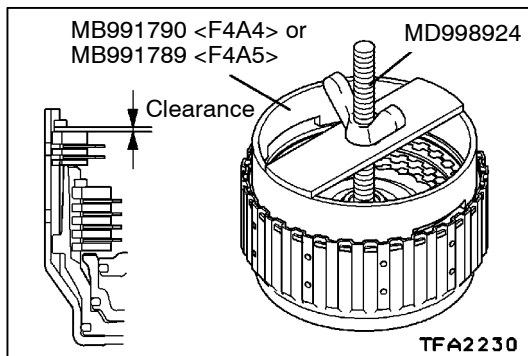
(69) Install the manual control lever shaft and parking pawl rod.

(70) Install the manual control lever shaft roller.

## 23A-6-4 AUTOMATIC TRANSMISSION (E-W) - Reverse and Overdrive Clutch



- (2) Install the clutch reaction plate in the shown direction.

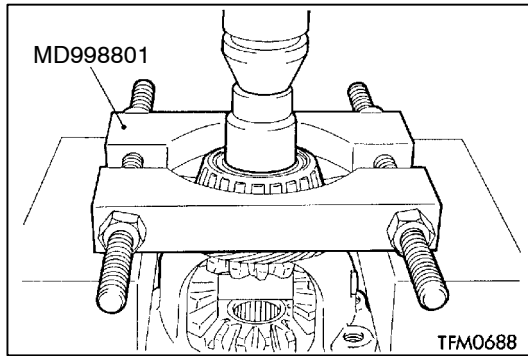


### ▶G◀ SNAP RING INSTALLATION

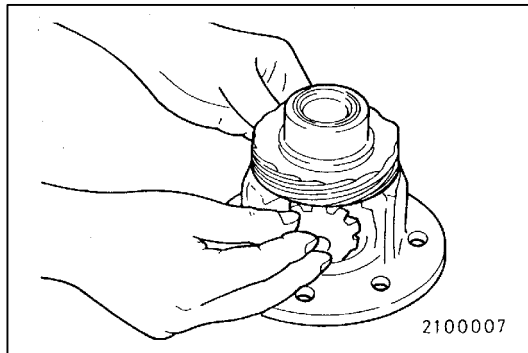
- (1) Install the snap ring into the groove of reverse clutch retainer.
- (2) Set special tools MB991790 <F4A4> or MB991789 <F4A5> and MD998924 as shown in the illustration, and compress the clutch element.
- (3) Check that the clearance between the snap ring and the clutch reaction plate is within the standard value. If not within the standard value, select a snap ring to adjust.

**Standard value: 1.5 - 1.7 mm**





### ◀B▶ TAPER ROLLER BEARING REMOVAL



### REASSEMBLY SERVICE POINTS

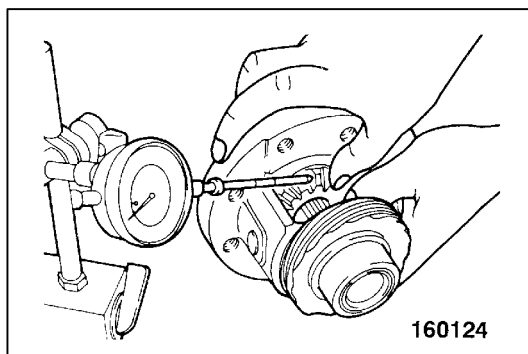
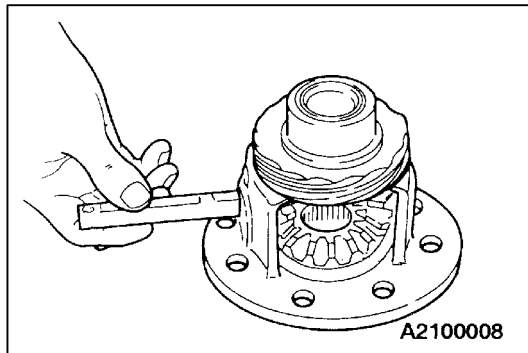
#### ▶A◀ SPACER, SIDE GEAR, WASHER, PINION, PINION SHAFT INSTALLATION

- (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.

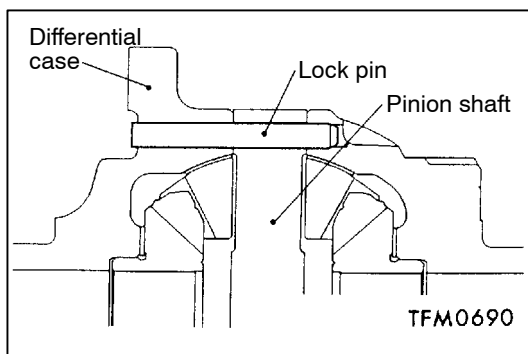
- (2) Attach the washers to the back side of the pinions, engage the pinions simultaneously to the side gears, and settle the gears by turning.
- (3) Insert the pinion shaft.



- (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.




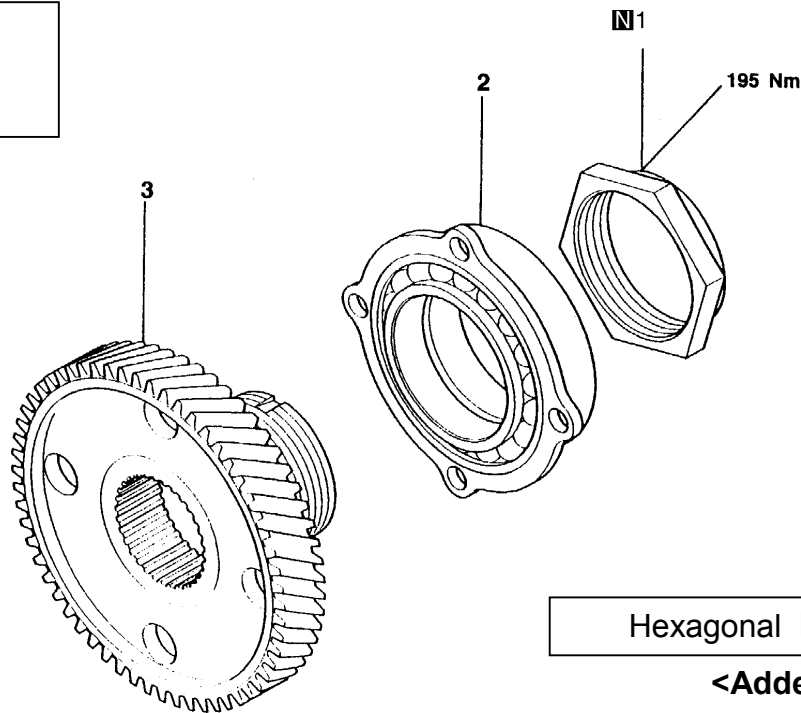
#### ▶B◀ LOCK PIN INSTALLATION

Install the lock pin in the shown direction.

11. TRANSFER DRIVE GEAR <F4A41, F4A42>

DISASSEMBLY AND REASSEMBLY

 Apply automatic transmission fluid to all moving parts before installation.



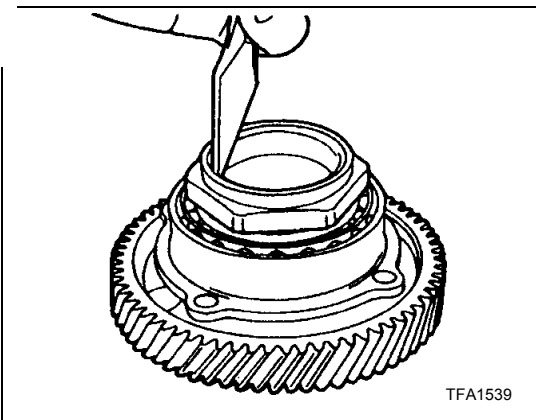
**Disassembly steps**

- |     |     |                                |
|-----|-----|--------------------------------|
| ◀A▶ | ▶B◀ | 1. Lock nut                    |
| ◀B▶ | ▶A◀ | 2. Transfer drive gear bearing |
|     |     | 3. Transfer drive gear         |

**DISSASSEMBLY SERVICE POINTS**

◀A▶ LOCK NUT REMOVAL

- (1) Pull up the turning stopper of the lock nut.



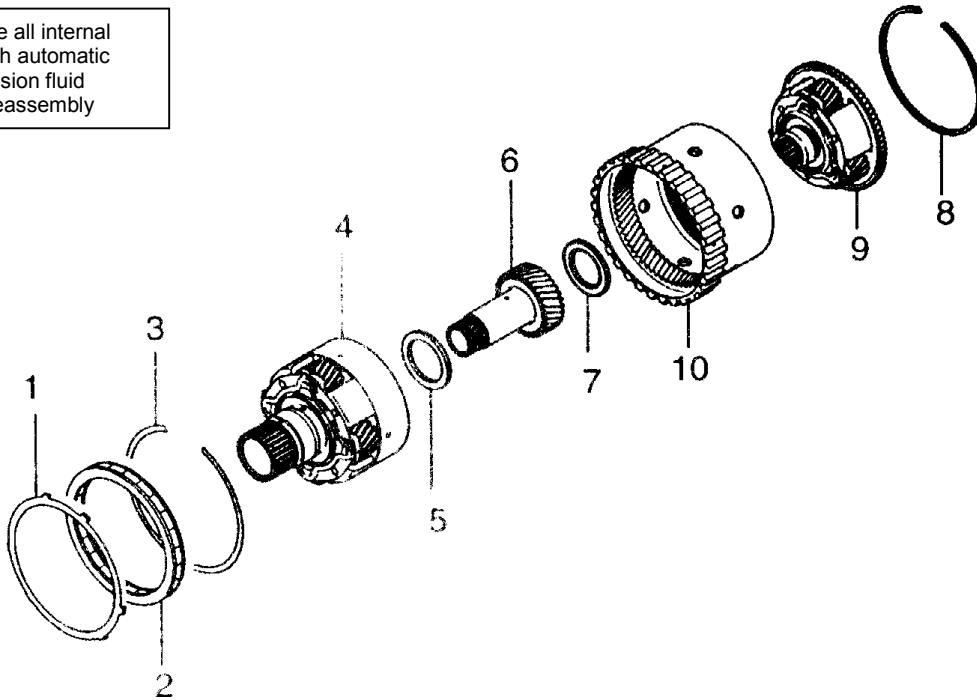
# AUTOMATIC TRANSMISSION (E-W) – Planetary carrier assembly

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



Lubricate all internal parts with automatic transmission fluid during reassembly

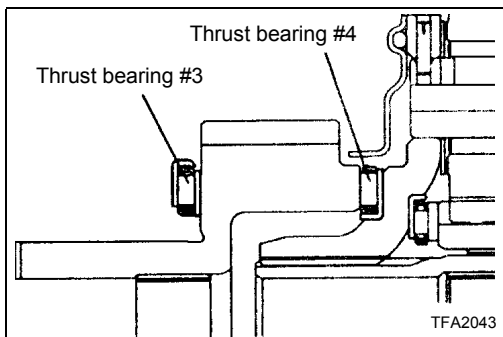


TFA2042

### Disassembly steps

- ▶B◀ 1. Stopper plate
- ▶B◀ 2. One-way clutch
- ▶B◀ 3. Snap ring
- ▶A◀ 4. Output planetary carrier
- ▶A◀ 5. Thrust bearing #3

- ▶A◀ 6. Under drive sun gear
- ▶A◀ 7. Thrust bearing #4
- ▶A◀ 8. Snap ring
- ▶A◀ 9. Over drive planetary carrier
- ▶A◀ 10. Over drive annulus gear



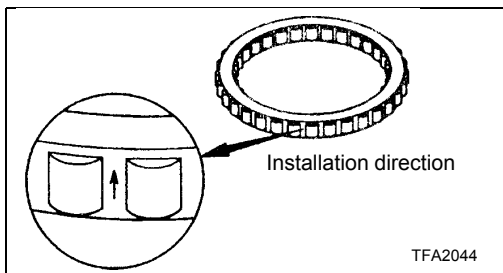
### REASSEMBLY SERVICE POINT

#### ▶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>

**SEALANTS**

Items	Specified sealant
Primary rear cover	Mitsubishi genuine sealant Part No. MD974421 or equivalent (Form-in-place gasket)
Secondary rear cover	
Torque converter housing	
Valve body cover	

**FORM-IN-PLACE GASKET (FIPG)**

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.

Since the FIPG used in the transmission hardens as it reacts with the moisture in the atmospheric air, it is normally used in the metallic flange areas.

**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.

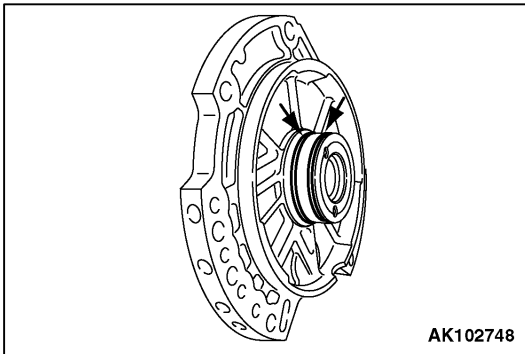
**Surface Preparation**

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 FIPG remaining in the bolt holes.

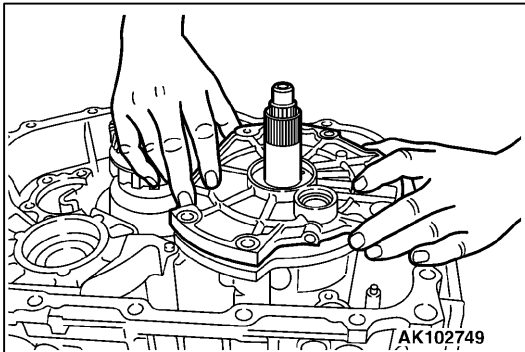
**FIPG Application**

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.

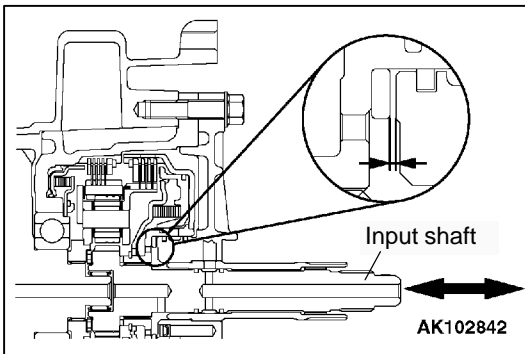
Applied FIPG bead should be of the specified size and without breaks. Also be sure to encircle the bolt hole circumference with a completely continuous bead. The FIPG can be wiped away unless it is hardened. While the FIPG is still moist (in less than 15 minutes), mount the parts in position. When the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



(17) Install new seal rings on the reaction shaft support.

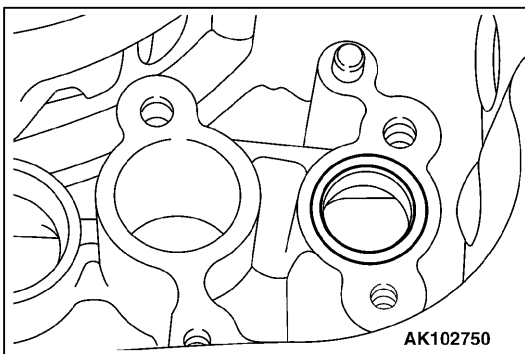


(18) Install the reaction shaft support in position in the transmission case.

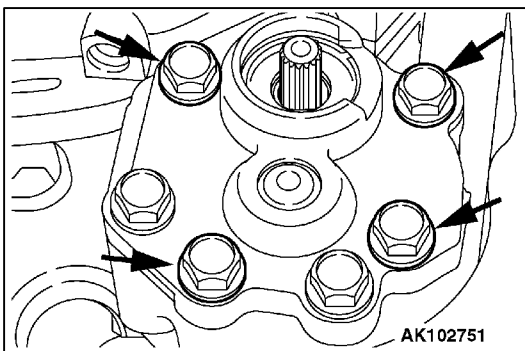


(19) Make sure the end play of the input shaft is within the standard value range.

**Standard value: 0.3 – 0.6 mm**



(20) Install a new O-ring in the shown position in the transmission case.

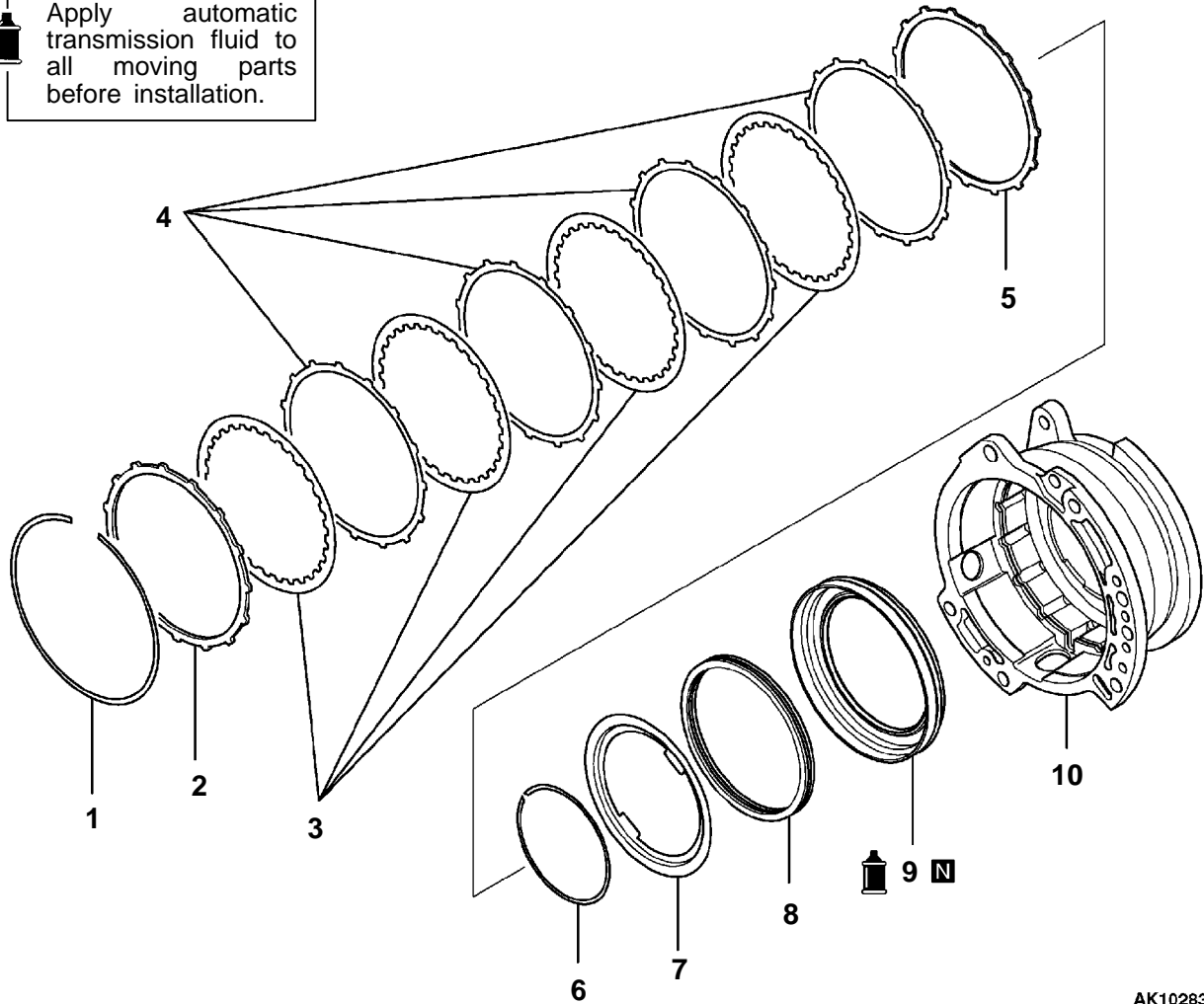


(21) Install the oil pump assembly in the transmission case.

# 5. REVERSE BRAKE

## DISASSEMBLY AND REASSEMBLY

Apply automatic transmission fluid to all moving parts before installation.



AK102835

Model	Brake disc	Brake plate	Brake pressure plate	Brake reaction plate
3-brake-disc type	3	2	1	1
4-brake-disc type	4	3	1	1

### Disassembly steps



1. Snap ring
2. Brake reaction plate
3. Brake disc
4. Brake plate
5. Brake pressure plate

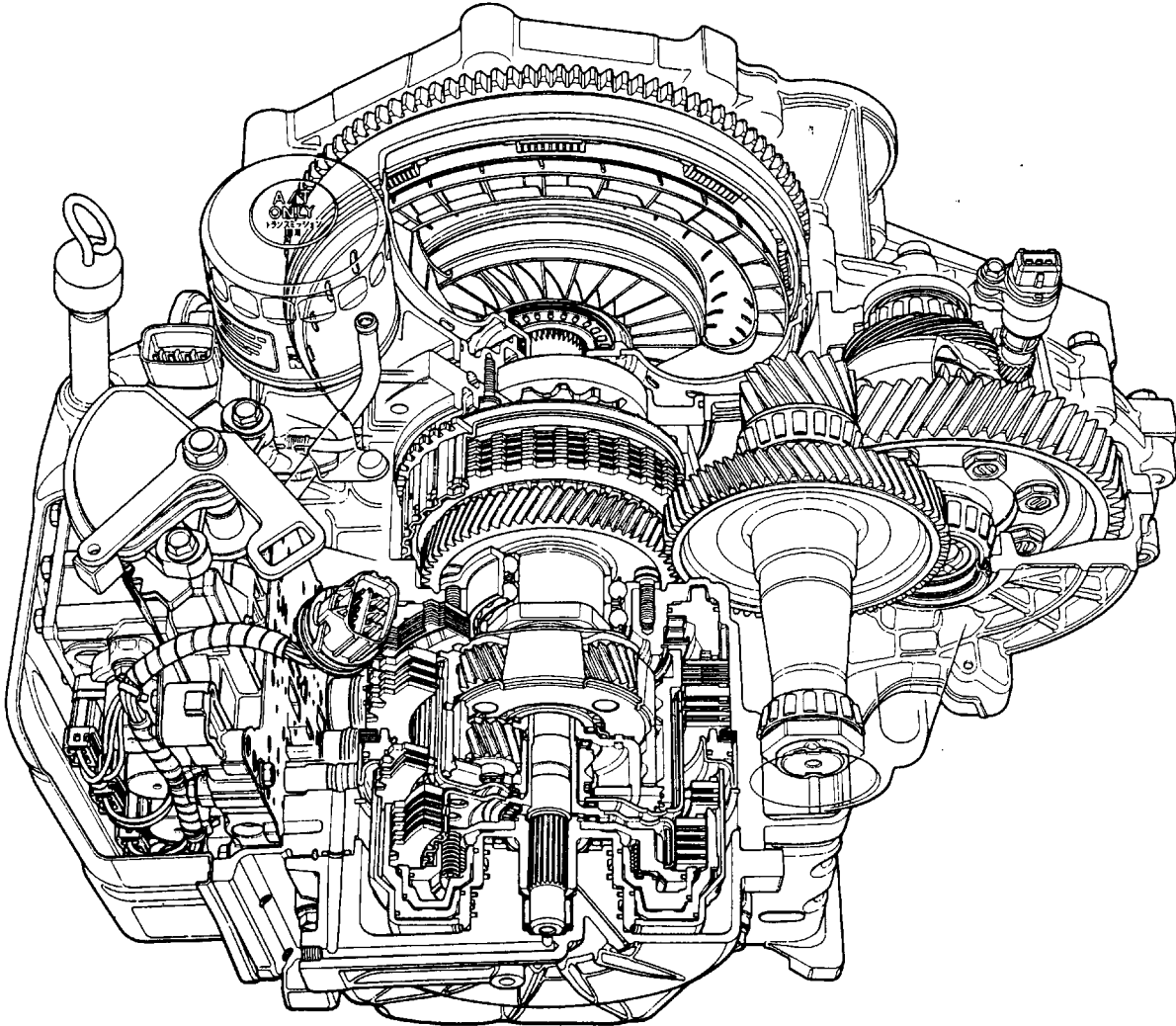


6. Snap ring
7. Spring retainer
8. Return spring
9. Brake piston
10. Brake retainer

## 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, increased use has been made of metal plates and the one-way clutch has been abolished, which all contribute to reduce the weight.
- (4) Increased meshing ratios and improved rigidity of the gear supports and casing result in less noise.
- (5) The number of oil cooler feed tubes is increased to two.

## 3-DIMENSIONAL CROSS-SECTION



TFA1502