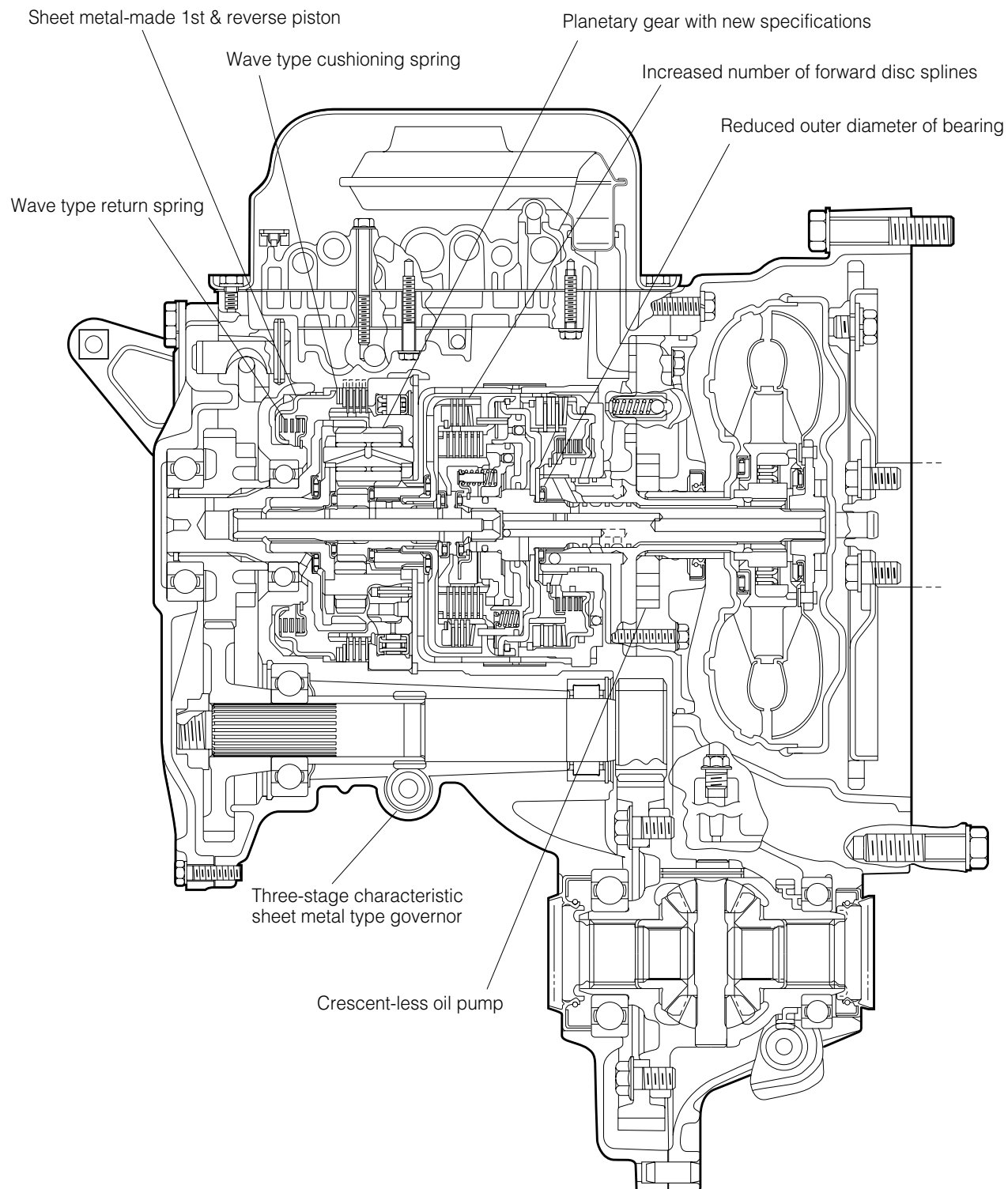


# **AUTOMATIC TRANSMISSION (TYPE A4L Series)**

## OUTLINE

## SECTIONAL VIEW OF AUTOMATIC TRANSAXLE

The following shows principal sections where Type A4L Series automatic transmission differs from Type A4LB automatic transmission.



## SPECIFICATIONS

| Item                       |                                           | Specifications                                                                         |
|----------------------------|-------------------------------------------|----------------------------------------------------------------------------------------|
| Torque converter           | Type                                      | Three-element, one-stage, two-phase type                                               |
|                            | Stall torque ratio/Stall revolution speed | 2.0/2300~2900 rpm                                                                      |
|                            | One-way clutch type                       | Sprag type                                                                             |
| Transmission specification | Model                                     | A4L-B1                                                                                 |
|                            | Type                                      | Four forward speeds, one reverse gear, ravingeau planetary gear type                   |
|                            | Control element                           | Wet type multiple clutch 3 sets                                                        |
|                            |                                           | Band type brake 1 set                                                                  |
|                            |                                           | Wet type multiple brake 1 set                                                          |
|                            |                                           | One-way clutch 1 piece                                                                 |
|                            | Gear ratio                                | 1st gear: 2.730 2nd gear: 1.526 3rd gear: 1.000<br>4th gear: 0.696 reverse gear: 2.290 |
|                            | Final gear ratio                          | 4.438                                                                                  |
|                            | Speedometer gear ratio (DRIVE/DRIVEN)     | 19/17                                                                                  |
|                            | Oil pump                                  | Internal gear type                                                                     |
|                            | Fluid to be used                          | ATF DEXRON® III (or II)                                                                |
|                            | Drain and Refill liter                    | 1.9                                                                                    |
|                            | Fluid capacity liter                      | 4.0                                                                                    |
|                            | Cooling method                            | Water-cooled (radiator built-in type)                                                  |
| Control system             | Gear shift control method                 | Governor and throttle pressure shift control method                                    |
|                            | Automatic gear shift                      | Four forward speeds, full automatic shift                                              |
|                            | Manual control pattern                    | P—R—N—D <sub>4</sub> —3—2                                                              |

LAT00003-00000

## PRELIMINARY CHECK

### 1. Check of transaxle fluid level

#### NOTE:

- Prior to the fluid level check, be sure to run the vehicle until the engine and transaxle have reached their normal operating temperature.  
(Fluid temperature: 70 - 90°C)

### 2. Check of engine idling speed. [when air conditioner is turned OFF]

Specified Value: 850 ± 50 rpm

- Park the vehicle on a level surface. Apply the parking brake.
- With the engine idling, smoothly move the shift lever all through the ranges from P to 2. Finally, return the shift lever to the P range.
- Pull out the transaxle fluid level gauge and wipe it clean.
- Push it back fully into the tube.
- Pull it out and check that the fluid level is in the HOT range.

If the fluid level is too low, add the fluid.

Fluid to Be Used: DEXRON® III (or II)

Full Capacity: Approx. 4.0 ℓ

Drain and Refill: Approx. 1.9 ℓ

#### CAUTION:

- Do not overfill the fluid.

#### NOTE:

- If it is necessary to check the fluid level at a low temperature (20 - 30°C), e.g. at the time of fluid change, first adjust the fluid level so that it may become within the COLD level. Then, recheck the fluid level under the hot conditions.
- If the fluid level fails to reach the cold level on the fluid level gauge, be sure to check the transaxle for fluid leakage. Also, pull out the fluid level gauge and check the fluid for contamination or smell of fluid burning.

### 3. Check of fluid condition

If the fluid smells burning or it presents a black appearance, change the fluid.

### 4. Change of transaxle fluid

- Remove the transaxle oil by removing the drain plug with the gasket. Drain the fluid.

#### NOTE:

- Never reuse the removed gasket.

#### • Transaxle warming-up method

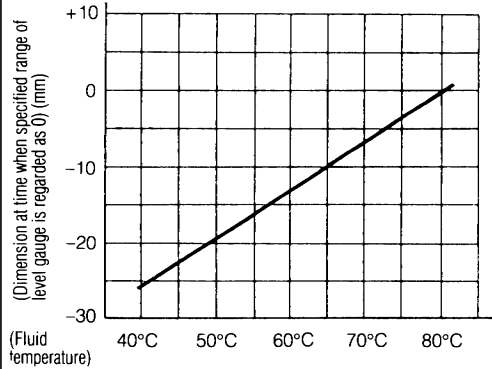
- Warm up the engine.
- If the vehicle runs for about 15 minutes at a speed of 60 km/h or for about 30 minutes at a speed of 40 km/h, the temperature of the fluid inside the transaxle becomes about 80 ± 10°C.

#### Reference

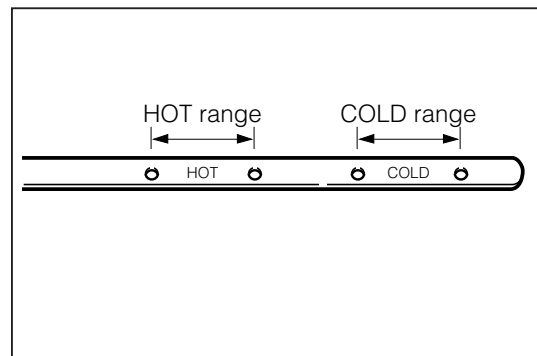
When the engine is cold, if the engine is operated for about 35 minutes at the idling speed after the engine has started, the temperature of the fluid inside the transaxle will rise to about 60 ± 10°C.

#### Reference

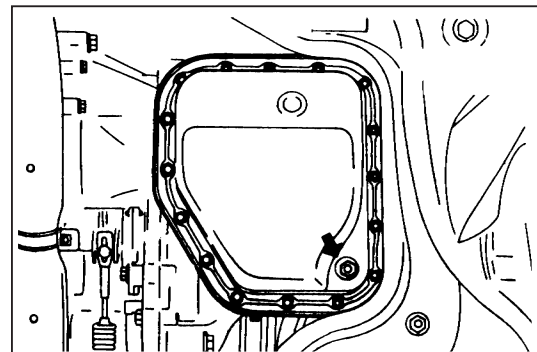
##### • Change of fluid level as a result of rise in fluid temperature



LAT00004-00002



LAT00005-00003



LAT00006-00004

## TESTING

### STALL TEST

The purpose of this test is to check the overall performance of the automatic transmission and engine by measuring the maximum engine speeds in the D<sub>4</sub> and R ranges.

#### CAUTION:

- Perform the stall test at the normal fluid operating temperature (70 - 90°C).
- Do not conduct this test continuously for more than five seconds.
- Wait at least one minute before the switching is made from the D<sub>4</sub> range to the R range.
- Be sure to turn OFF the air conditioner (if equipped so on).

#### Measurement of stall speed

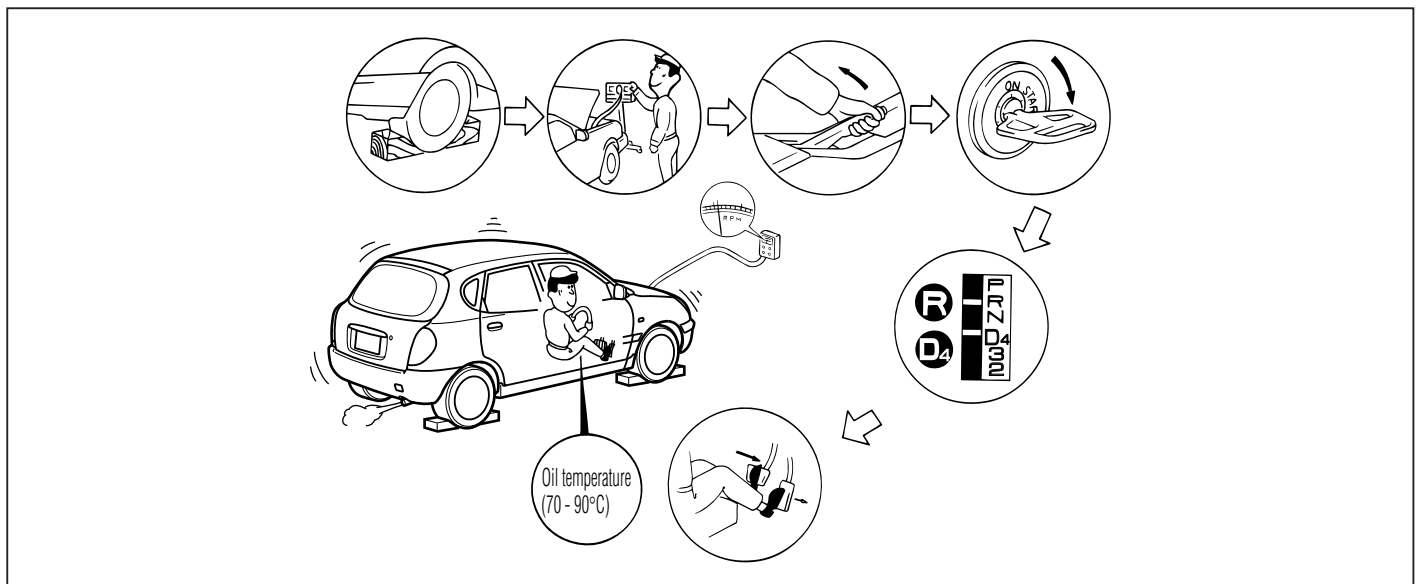
- Place chocks at the four wheels.
- Install an engine tachometer.
- Fully apply the parking brake.
- Keep depressing the brake pedal firmly by your left foot during the test.
- Start the engine.
- Move the shift lever to the D<sub>4</sub> range. Depress the accelerator pedal fully by your right foot. Quickly read the highest engine rpm at this time.

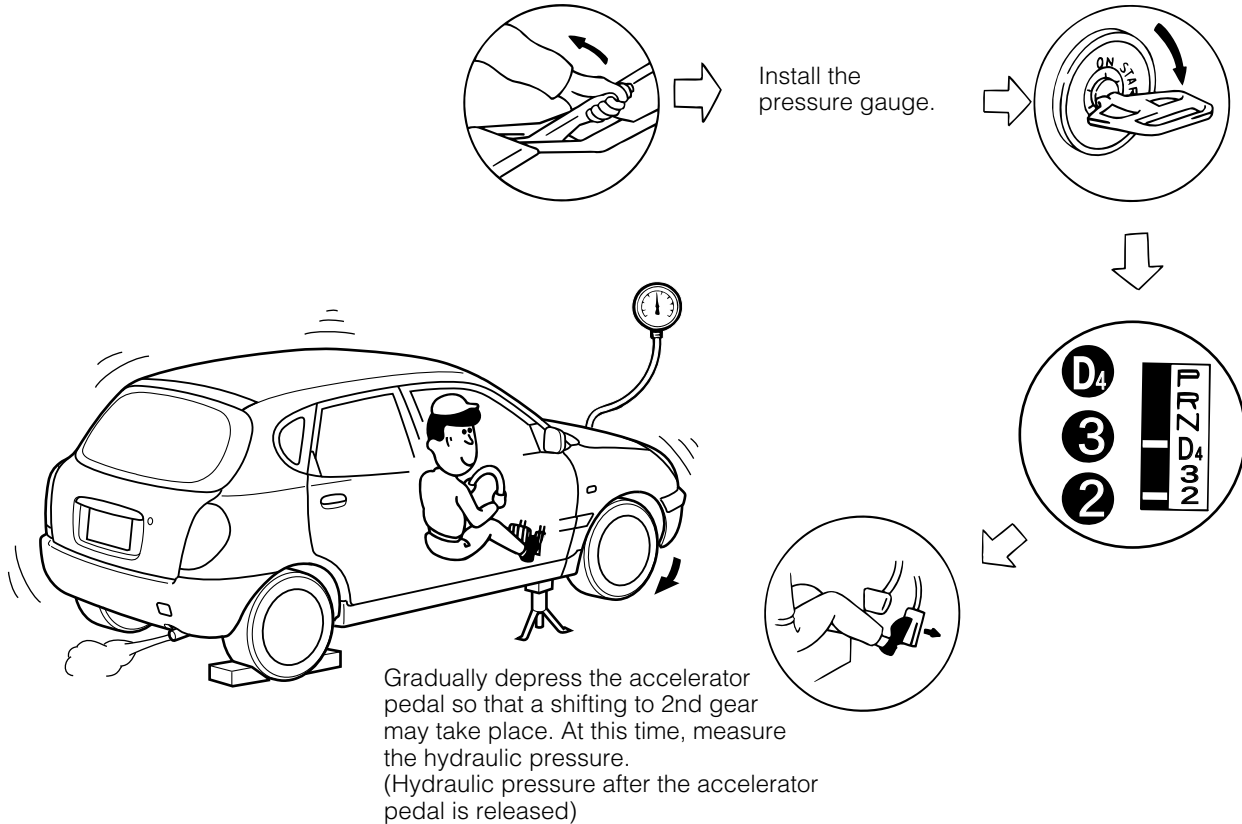
Stall Rpm: 2300 - 2900 rpm (EJ-DE)

- Perform the same test in the R range.

#### Evaluation

- If the engine speed is the same for both ranges (D<sub>4</sub>, R) but lower than specified value:
  - Engine output probably insufficient (e.g. throttle valve is not opened fully.)
  - Torque convertor malfunctioning
- If the stall speed at the D<sub>4</sub> range is higher than specified value:
  - Line pressure too low
  - Forward clutch slipping
  - Torque convertor malfunctioning
- If the stall speed in the R range is higher than specified value:
  - Line pressure too low
  - Direct clutch slipping
  - First & reverse brake slipping
- If the stall speed in the R and D<sub>4</sub> ranges is higher than specified value:
  - Line pressure too low
  - Fluid level improper



Inspection of line (B<sub>1</sub>) pressure

LAT00000-00006

## 4. Line pressure and throttle pressure specifications

Line pressure (C<sub>1</sub>, C<sub>2</sub> and B<sub>2</sub>), Throttle pressure specifications

Unit: kPa

| Engine RPM        |                                            | Idling       | Stall       |
|-------------------|--------------------------------------------|--------------|-------------|
|                   |                                            | EJ-DE        | EJ-DE       |
| Throttle pressure |                                            | Less than 29 | 735 - 833   |
| Line pressure     | D <sub>4</sub> range (C <sub>2</sub> )     | 539 - 637    | 843 - 941   |
|                   | R range (C <sub>1</sub> , B <sub>2</sub> ) |              | 1905 - 2101 |

Reference of lubricating pressure during idling condition at time of D<sub>4</sub> range:Line pressure (3 and B'<sub>1</sub>) ... (Hydraulic pressure after shifting to 3rd gear took place)

Unit: kPa

| Engine                           | EJ-DE     |
|----------------------------------|-----------|
| D <sub>4</sub> and 3 range (3rd) | 539 - 637 |

Line pressure (B<sub>1</sub>) ... (Hydraulic pressure after shifting to 2nd gear took place)

Unit: kPa

| Engine                           | EJ-DE     |
|----------------------------------|-----------|
| D <sub>4</sub> and 3 range (2nd) | 539 - 637 |
| 2 range (2nd)                    | 843 - 941 |

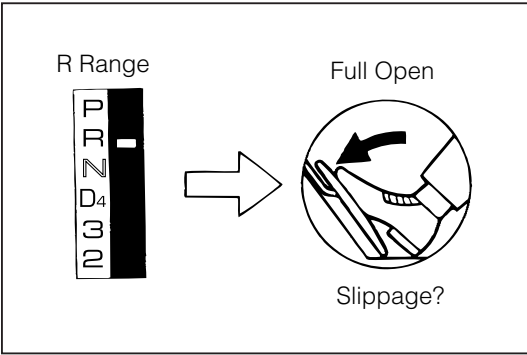
In the case of D<sub>4</sub> range (2nd gear) and 3 range (2nd gear), first depress the accelerator pedal so that a shifting to 2nd gear may take place. Then, release the accelerator pedal and take the reading at this time.

Reference of lubricating pressure during idling condition at time of D<sub>4</sub> range: More than 98 kPa

LAT00008-00000

- Line pressure incorrect
- Fluid leakage in the governor pressure circuit
- Governor valve malfunctioning

- 4. R range test  
Move the shift lever to the R range and, while running at full throttle, check to see if slippage is taking place.



- 5. P range test  
Stop the vehicle on a gradient (more than 5%). After moving the shift lever to the P range, release the parking brake. Then check to see if the parking lock pawl prevents the vehicle from moving.

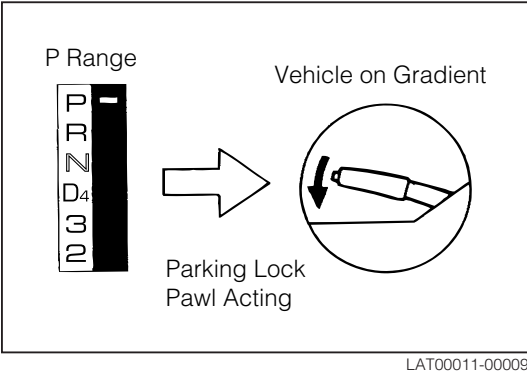
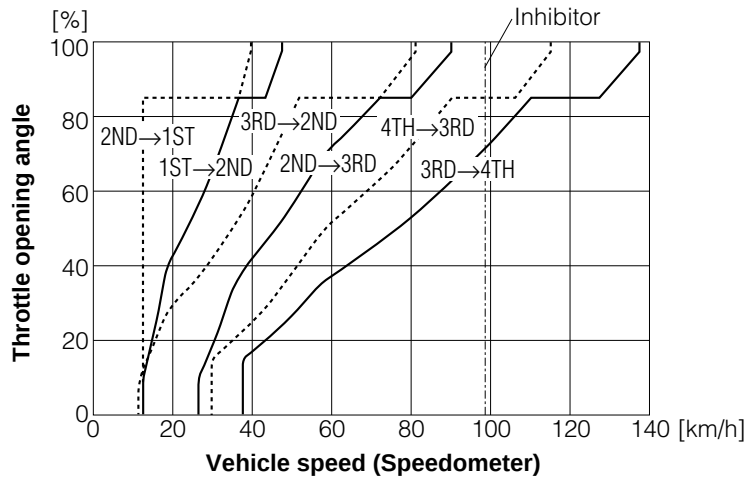
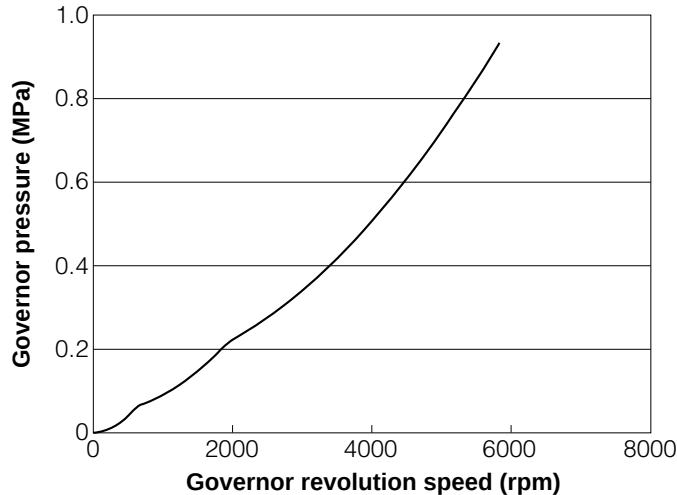


DIAGRAM SHOWING GEAR SHIFT CHARACTERISTICS



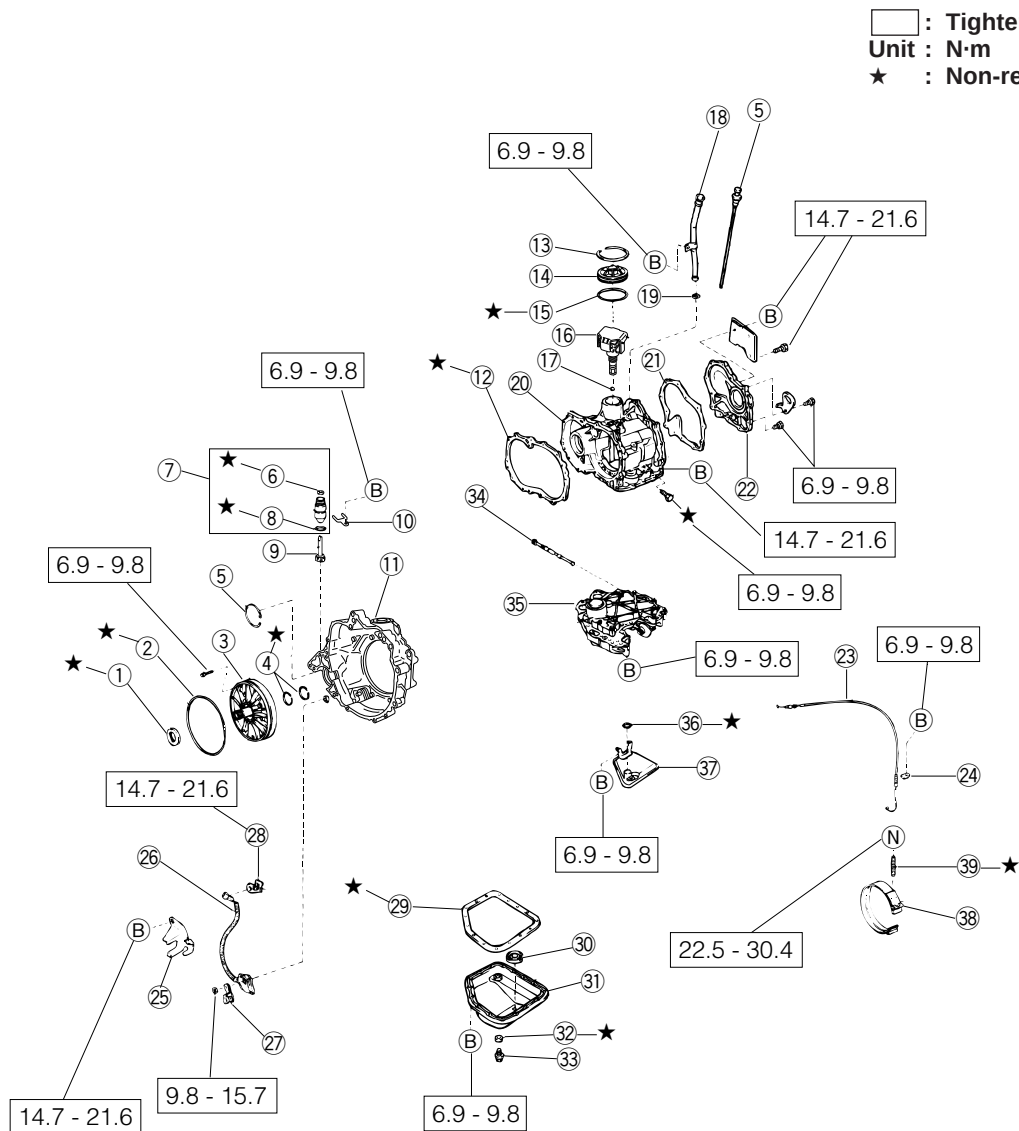
LAT00012-00000

DIAGRAM SHOWING THREE-STAGE GOVERNOR CHARACTERISTICS



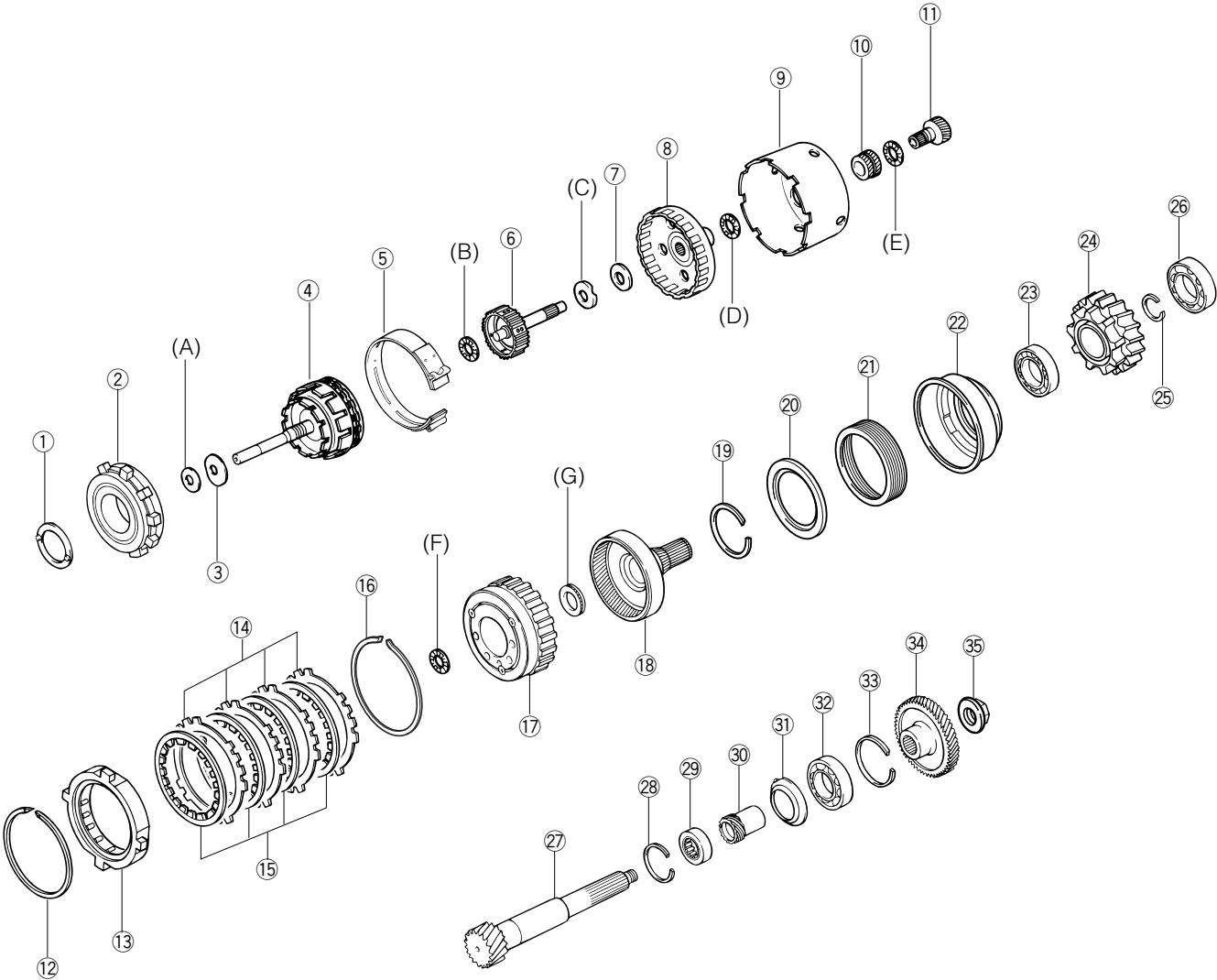
LAT00013-00000

## COMPONENTS



- |                                            |                                                  |
|--------------------------------------------|--------------------------------------------------|
| ① T-type oil seal                          | ②① Transaxle case rear cover gasket              |
| ② O-ring                                   | ②② Rear transmission case cover subassembly      |
| ③ Stator shaft & oil pump assembly         | ②③ Throttle cable                                |
| ④ Clutch drum oil seal ring                | ②④ Speedometer sleeve lock plate                 |
| ⑤ Oil level gauge subassembly              | ②⑤ Control cable bracket                         |
| ⑥ V-type oil seal                          | ②⑥ Neutral start switch assembly                 |
| ⑦ Speedometer shaft sleeve subassembly     | ②⑦ Transmission control shaft lever assembly     |
| ⑧ O-ring                                   | ②⑧ Clamp                                         |
| ⑨ Speedometer driven gear                  | ②⑨ Transaxle oil pan gasket                      |
| ⑩ Speedometer sleeve lock plate            | ③① Oil cleaner magnet                            |
| ⑪ Torque converter & differential case     | ③② Transaxle oil pan subassembly                 |
| ⑫ Transmission case gasket                 | ③③ Gasket                                        |
| ⑬ Hole snap ring                           | ③④ Drain plug                                    |
| ⑭ Governor cover                           | ③⑤ Manual valve                                  |
| ⑮ O-ring                                   | ③⑥ Valve body assembly                           |
| ⑯ Governor body assembly                   | ③⑦ O-ring (for oil strainer)                     |
| ⑰ Ball                                     | ③⑧ Oil strainer subassembly                      |
| ⑱ Transmission oil filler tube subassembly | ③⑨ 2nd brake band                                |
| ⑲ O-ring                                   | ③⑩ Transmission brake band adjusting anchor bolt |
| ⑳ Transaxle case                           |                                                  |

COMPONENTS (INNER PARTS)



- ① Clutch drum thrust washer

② Direct clutch subassembly

③ Thrust bearing race

④ Forward clutch subassembly

⑤ 2nd brake band

⑥ Intermediate shaft subassembly

⑦ Thrust bearing race

⑧ Forward clutch hub

⑨ 2nd brake drum

⑩ Front planetary sun gear subassembly

⑪ Rear planetary sun gear subassembly

⑫ Hole snap ring

⑬ One-way clutch

⑭ Brake plate

⑮ Brake disc

⑯ Clutch cushion plate

⑰ Planetary gear assembly

⑱ Planetary output shaft subassembly

⑲ Snap ring
- ⑳ Spring seat

㉑ Return spring

㉒ 1st & reverse piston

㉓ Radial ball bearing

㉔ Primary reduction drive gear subassembly

㉕ Shaft snap ring

㉖ Radial ball bearing

㉗ Output shaft

㉘ Hole snap ring

㉙ Cylindrical roller bearing

㉚ Governor drive gear subassembly

㉛ Oil reserve plate

㉜ Radial ball bearing

㉝ Hole snap ring

㉞ Primary reduction driven gear

㉟ Lock nut

Thrust bearing specifications (Unit: aprox. mm)

|                | A, E | B, C, F | D, G |
|----------------|------|---------|------|
| Outer diameter | 35.1 | 32      | 46.5 |
| Inner diameter | 22.0 | 16.5    | 25.0 |
| Thickness      | 2.8  | 4.1     | 5.0  |

## REMOVAL

1. Remove the bolt of the transmission oil filler tube sub-assembly.
2. Pull out the transmission oil filler tube subassembly toward upside.
3. Remove the O-ring from the transmission oil filler tube subassembly.

**NOTE:**

- Never reuse the removed O-ring.

- 4-1. Remove the unions (for oil cooler).

**NOTE:**

- Never reuse the removed union.

- 4-2. Remove the breather.

- (1) Pull up the breather cap (resin made).
- (2) Remove the breather, using a box wrench.

5. Remove the speedometer sleeve lock plate by removing a bolt.
6. Remove the speedometer shaft sleeve subassembly, using the flat driver.

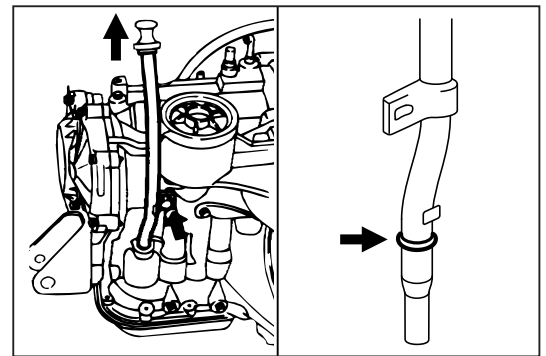
7. Removal of governor valve

- (1) Remove the hole snap ring, using snap ring pliers.
- (2) Remove the governor cover with the O-ring installed, using the pliers.
- (3) Remove the O-ring from the governor cover.

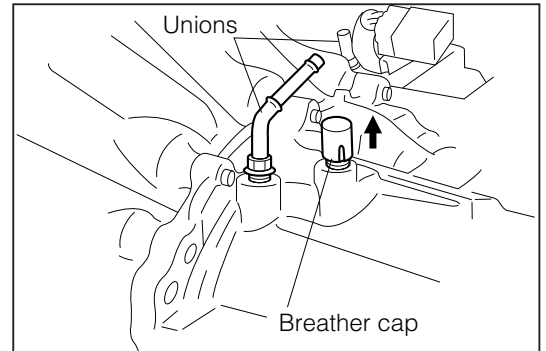
**NOTE:**

- Never reuse the removed O-ring.

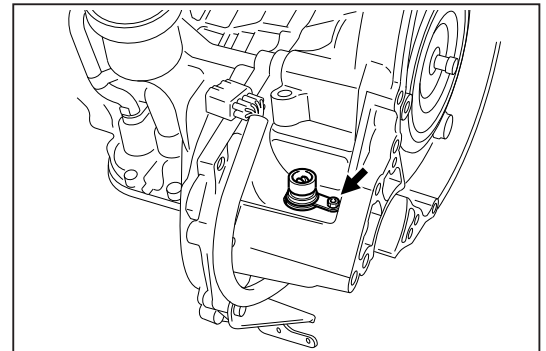
- (4) Remove the governor body assembly.
- (5) Remove the ball (A), using a magnet hand.



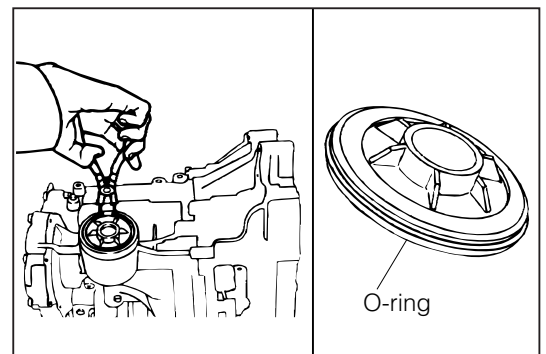
LAT00015-00011



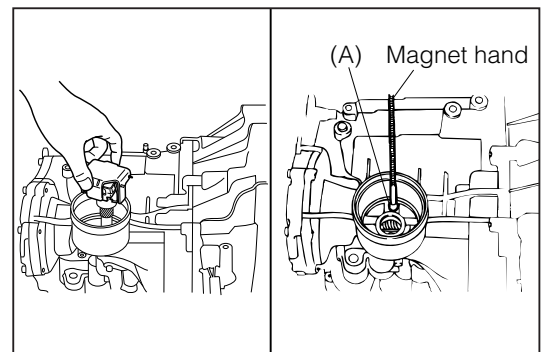
LAT00016-00012



LAT00017-00013



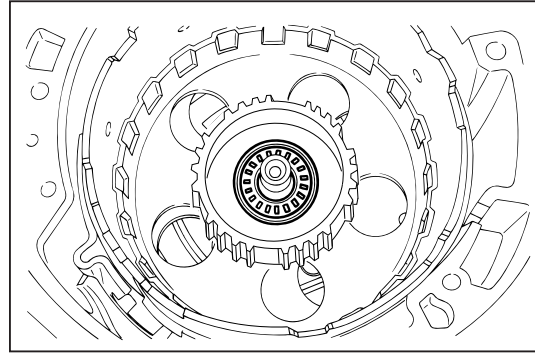
LAT00018-00014



LAT00019-00015

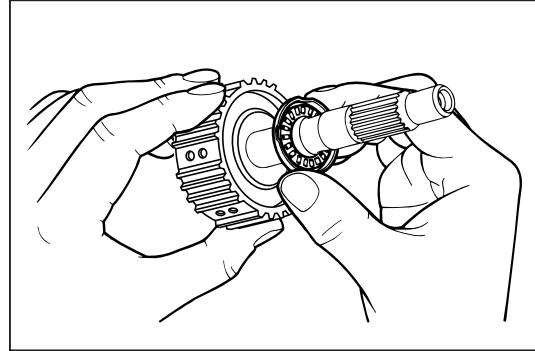
## 15. Removal of intermediate shaft subassembly

- (1) Remove the thrust needle bearing from the intermediate shaft subassembly.
- (2) Remove the intermediate shaft subassembly.



LAT00020-00016

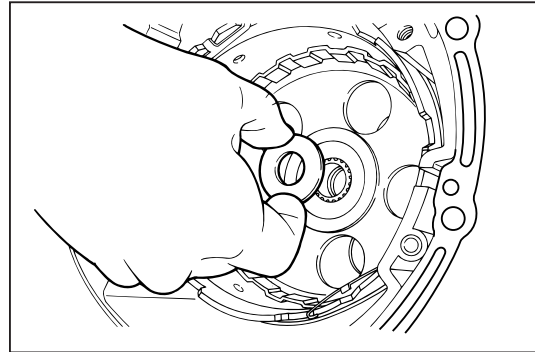
- (3) Remove the thrust needle bearing from the intermediate shaft subassembly.



LAT00021-00017

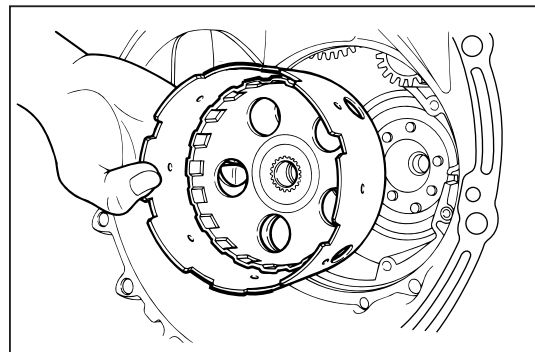
## 16. Removal of forward clutch hub and 2nd brake drum

- (1) Remove the thrust bearing race from the forward clutch hub.



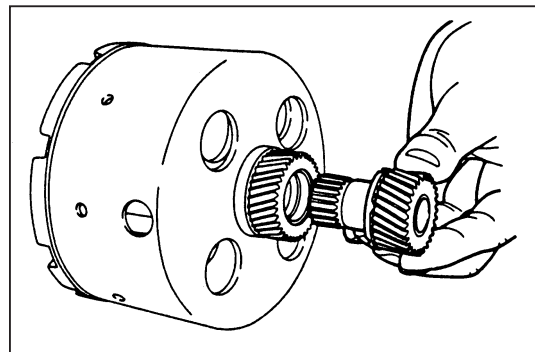
LAT00022-00018

- (2) Remove the 2nd brake drum (together with the forward clutch hub).



LAT00023-00019

- (3) Remove the rear planetary sun gear subassembly from the planetary sun gear subassembly.
- (4) Remove the thrust needle bearing from the rear planetary sun gear subassembly.
- (5) Remove the front planetary sun gear subassembly from 2nd brake drum.

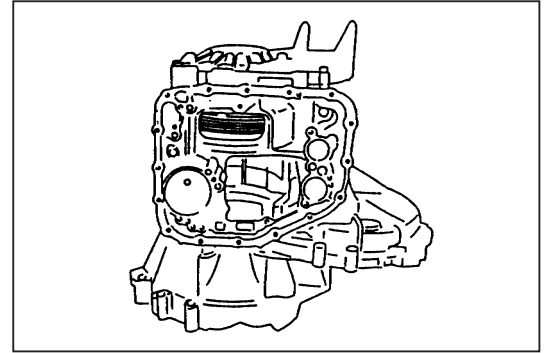


LAT00024-00020

## 16-1. Remove the transmission brake band subassembly.

## 17. Measurement of 1st &amp; reverse brake end play

(1) Turn over the transaxle case.



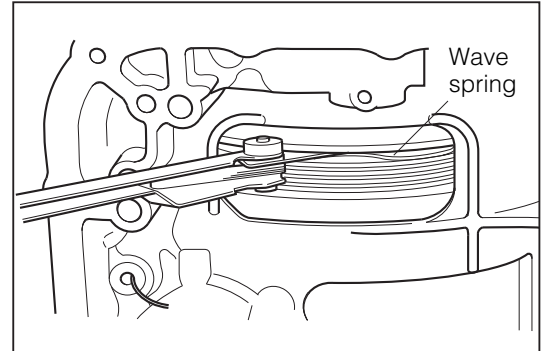
LAT00025-00021

(2) Measure the clearance between 1st &amp; reverse brake piston and the cushioning plate (wave spring), using a feeler gauge.

Specified Value: 0.71 - 1.41 mm

## NOTE:

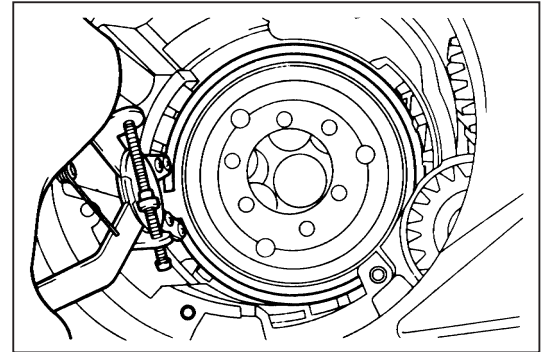
- Be sure to record the measured value for a guide during the assembly.
- The tightness which you encounter during this insertion/withdrawal of the feeler gauge should be virtually the same as the tightness which you would encounter during the thickness adjustment of the valve rocker arm. Furthermore, since the cushioning plate is of a wave type, the measurement should be performed at the narrowest point.



LAT00026-00022

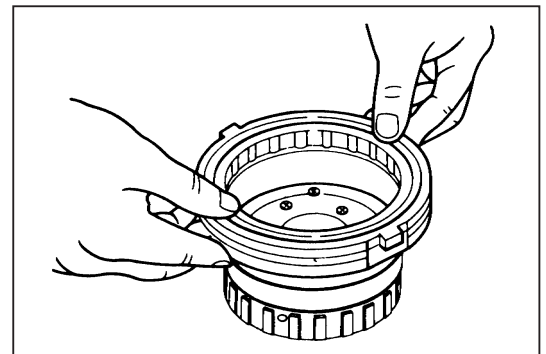
## 18. Remove the one-way clutch.

(1) Remove the hole snap ring, using snap ring pliers and remove the planetary gear assembly with the one-way clutch installed.



LAT00027-00023

(2) Remove the one-way clutch from the planetary gear assembly.



LAT00028-00024

## 19. Remove the brake plate and the brake disc.

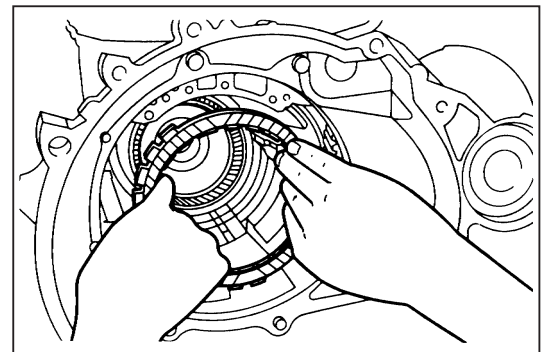
(1) Remove the brake discs, brake plates and brake cushion plate.

Stack the removed discs, plates and cushion plate in the same sequence in which they were assembled.

D = Brake disc, P = Brake plate

B = Brake cushion plate

D → P → D → P → D → P → D → P → B

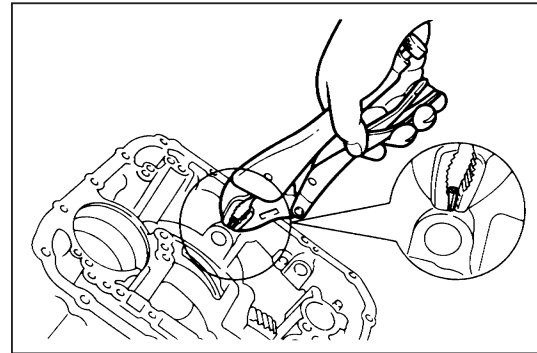


LAT00029-00025

(2) Remove the slotted spring pin, using a vice clip.

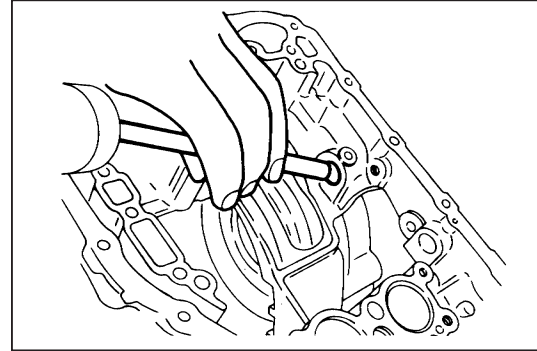
**NOTE:**

- Securely pinch the slotted spring pin by means of a vice clip. Turn the slotted spring pin clockwise and counter clockwise and pull the slotted spring pin.
- Never reuse the removed pin.



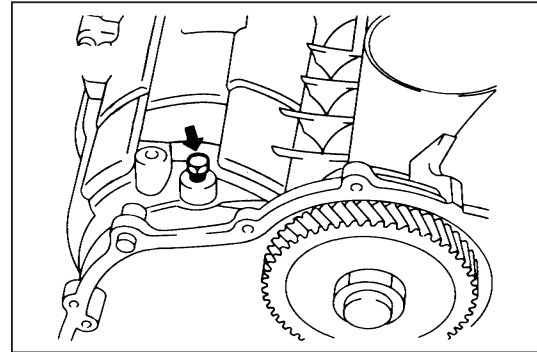
LAT00030-00026

(3) Remove the parking lock pawl cam support, using a brass bar and a hammer.



LAT00031-00027

(4) Temporarily install the removed B<sub>2</sub> inspection plug to the transaxle.



LAT00032-00028

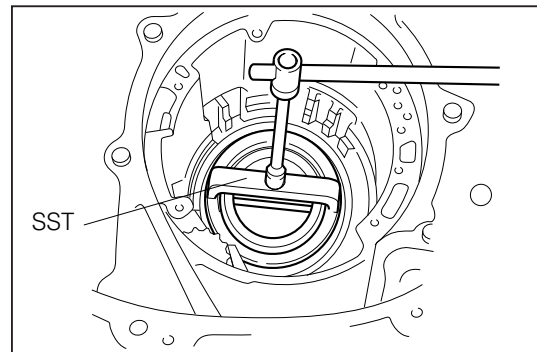
23. Remove the first & reserve brake piston.

(1) Move the first & reverse brake return spring seat by compressing the first & reverse brake return spring, using the following SST.

SST: 09350-87202-000 (09351-87201-000)

**NOTE:**

- To prevent the first & reverse return spring seat from being deformed, be sure to stop pressing when the spring seat has been lowered 1 to 2 mm from the shaft snap ring installation position.



LAT00033-00029

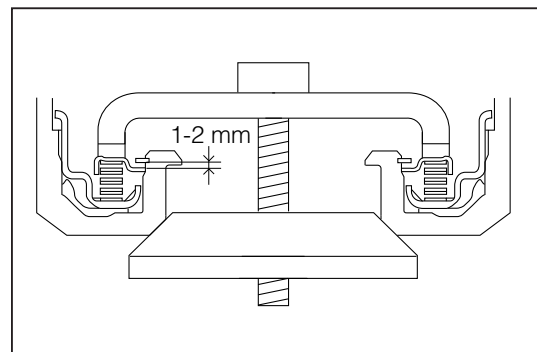
(2) Remove the shaft snap ring, using snap ring pliers.

**NOTE:**

- Be very careful not to deform the shaft snap ring by spreading it excessively.

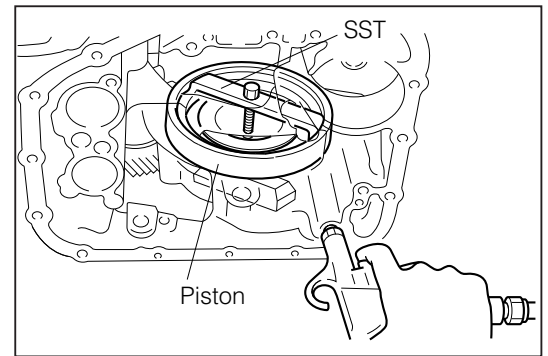
(3) Remove the SST.

(4) Remove the first & reverse brake return spring seat and the first & reverse brake return spring.



LAT00034-00030

- (5) Reset the SST.
- (6) Remove the first & reverse brake piston, by applying compressed air of 392 - 784 kPa from the oil hole indicated and gradually loosen the bolt of the SST in the right figure.



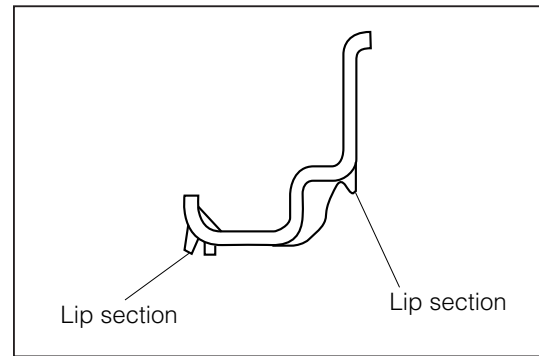
LAT00035-00031

## 6. 1st & reverse brake piston

Visually check to see if the lip section exhibits damage or abnormal wear.

### NOTE:

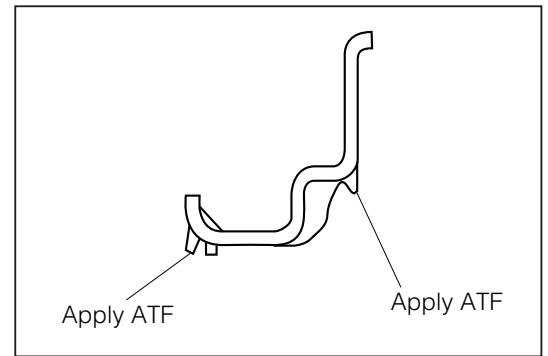
- If any abnormality is found, replace the 1st & reverse piston with a new one.



LAT00036-00032

**ASSEMBLY**

1. Assembly of 1st & reverse brake piston
  - (1) Apply ATF to the inner and outer peripheries of the lip section of the brake piston and to the inserted section of the brake piston of the transaxle case.
  - (2) Insert the brake piston into the transaxle case.



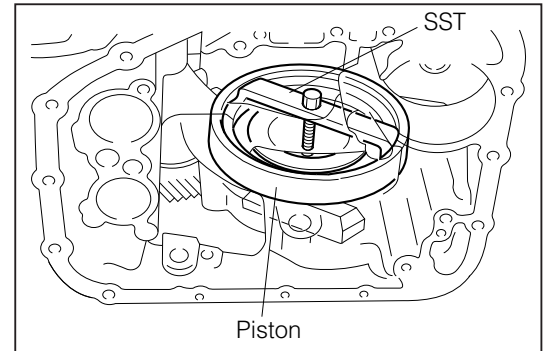
LAT00037-00033

- (3) Install the brake piston, using the following SST.
 

SST: 09350-87202-000 (09351-87201-000)

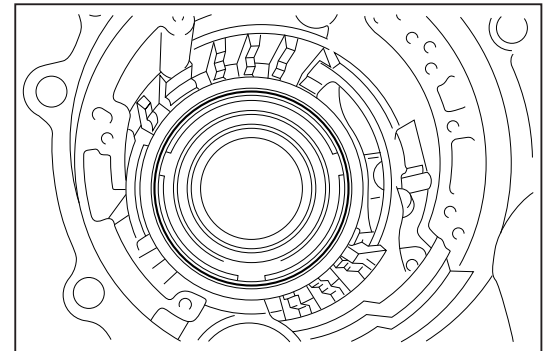
**NOTE:**

- When installing the piston, care must be exercised to ensure that the lip section of the brake piston may not be caught in the case or be damaged during the installation.



LAT00038-00034

- (4) Remove the aforesaid SST and place the brake return spring.



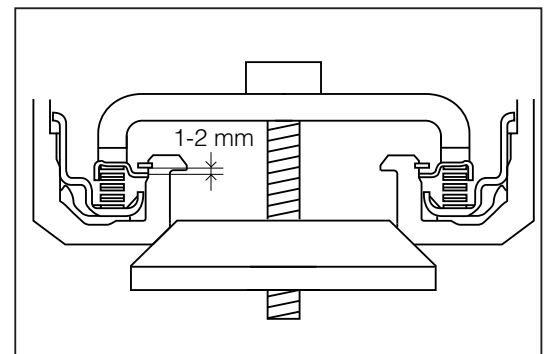
LAT00039-00035

- (5) Compress the brake return spring (seat section), using the following SST.
 

SST: 09350-87202-000 (09351-87201-000)

**NOTE:**

- To prevent deformation, be sure to stop tightening the SST when the spring has been lowered 1 to 2 mm from the snap ring installation groove.

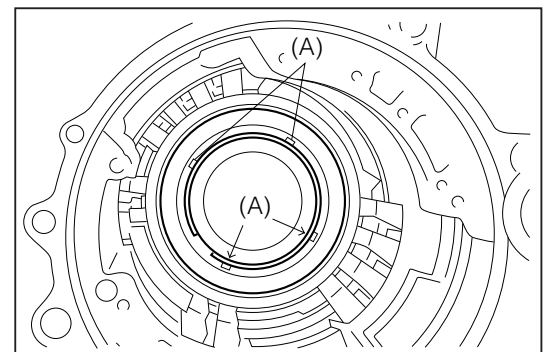


LAT00040-00036

- (6) Install the shaft snap ring, using snap ring pliers.

**NOTE:**

- Do not expand the ring excessively.
- Make sure that the end gap of the shaft snap ring is not aligned with the stopper section (A) of the spring retainer claw.



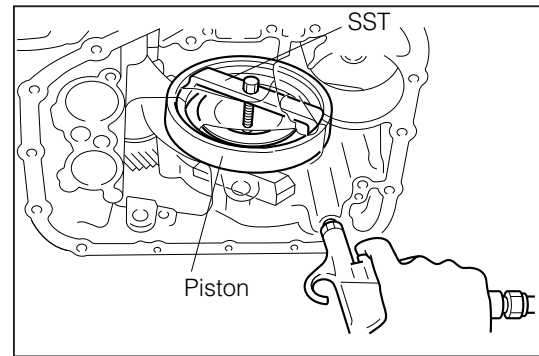
LAT00041-00037

(7) Confirmation of operation

When compressed air of 392 - 784 kPa is applied, ensure that the 1st & reverse piston operates smoothly without exhibiting air leakage.

NOTE:

- In cases where the operation is not smooth, perform the overhaul and check again.
- In cases where air leakage is present, check to see if the lip section of the piston is damaged, the piston inserted section of the case is damaged, or the piston is assembled slantingly.

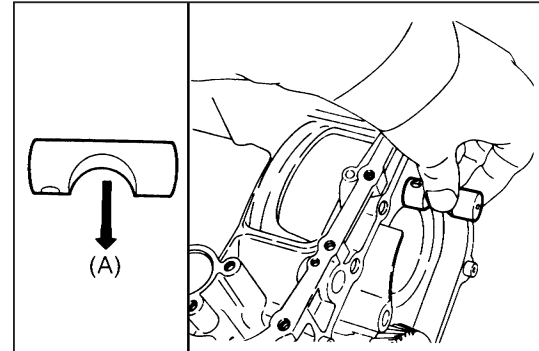


LAT00042-00038

(8) Face the recessed side of the parking lock pawl cam support toward the section (A) at the drive gear side.

(9) Align the parking lock pawl cam support hole with the slotted spring pin installation hole of the transaxle case.

(10) Install the parking lock pawl cam support to the transaxle case.

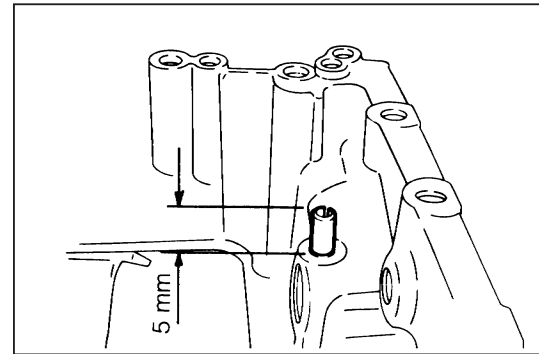


LAT00043-00039

(11) Drive a new slotted spring pin, using a pin punch and a hammer.

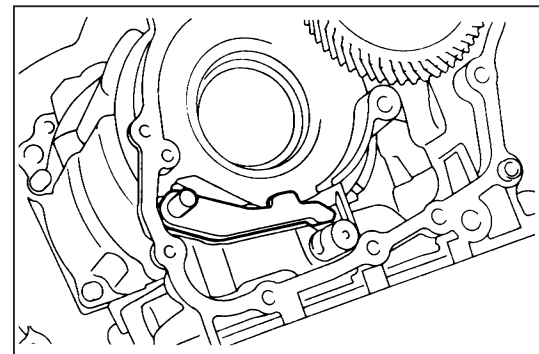
NOTE:

- After driving a new pin, make sure that its protruding length is approx. 5 mm.



LAT00044-00040

(12) Install the parking lock pawl shaft and the parking lock pawl to the transaxle case.



LAT00045-00041

- (9) With a new gasket interposed, tighten the 13 bolts of the rear transmission case cover subassembly provided with the engine hanger No. 2 and engine mounting lower left bracket.

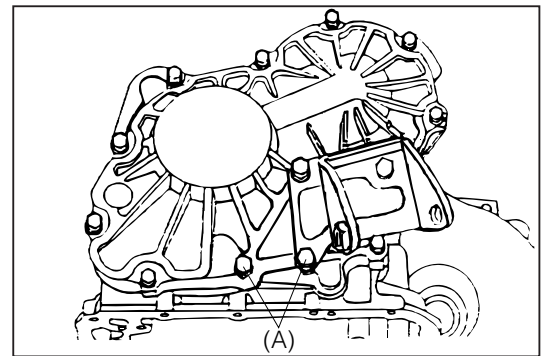
Tightening Torque:

M6: 6.9 - 9.8 N·m

M8: 14.7 - 21.6 N·m

NOTE:

- Be sure to tighten the bolts alternately and diagonally.
- Use two new bolts at the (A) sections.



LAT00046-00042

- (10) Install the thrust needle roller bearing to the planetary output shaft subassembly.

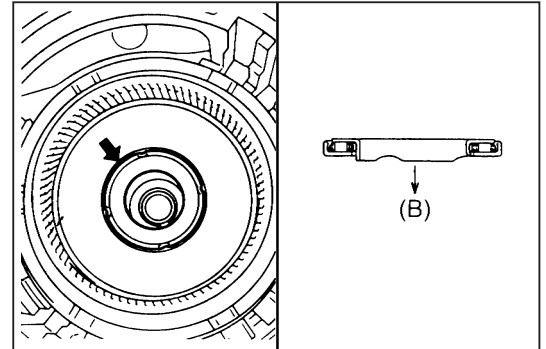
Reference Value:

Thrust needle roller bearing dimension:

Refer to page AT-29.

NOTE:

- Be sure to install the (B) section of the thrust needle bearing faces toward the reduction drive shaft side.

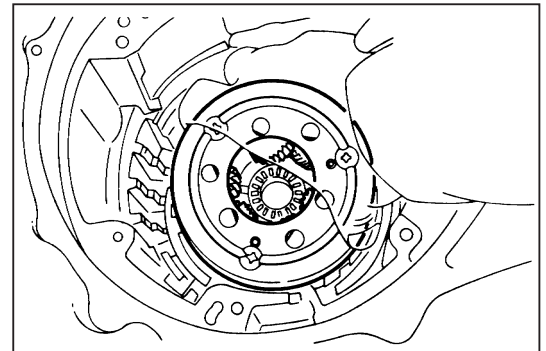


LAT00047-00043

4. Install the planetary gear assembly.

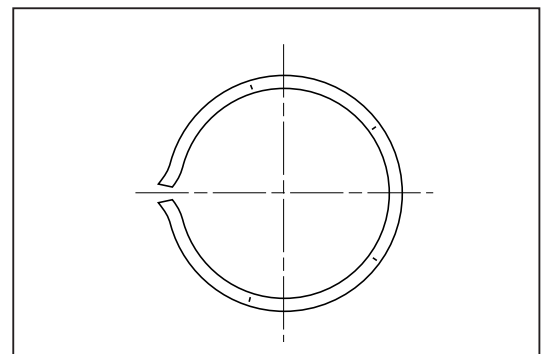
NOTE:

- Ensure that the planetary gear assembly rotates smoothly.



LAT00048-00044

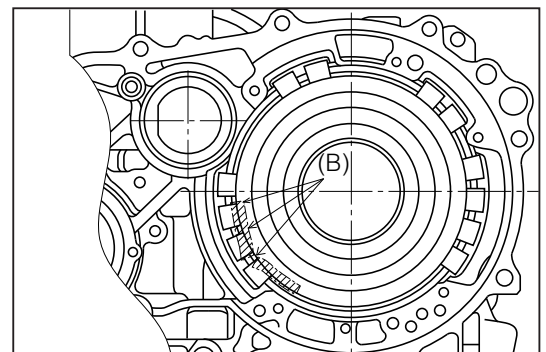
5. Installation of first & reverse brake  
(1) Install the brake cushion plate.



LAT00049-00045

NOTE:

- Be sure to align the cut-out section (B) of the brake cushion plate with the protruding section of the transaxle case, when installing the brake cushions plate. (Every cut-out section is available)



LAT00050-00046

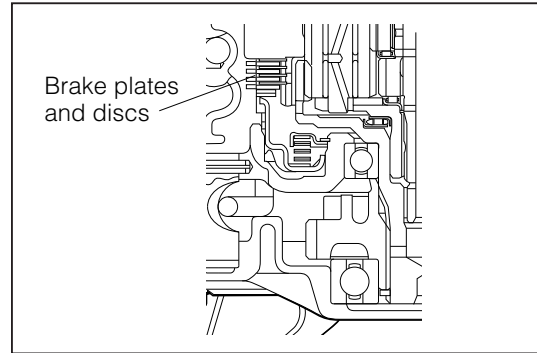
(2) Install the plates and discs in the following order.

P = Brake plate, D = Brake disc

P → D → P → D → P → D → P → D

**NOTE:**

- Before assembling new discs, soak them in the ATF for at least two hours.



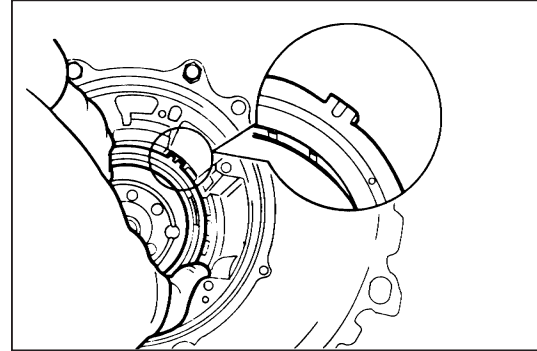
LAT00051-00047

(3) Coat the sliding section of the one-way clutch and planetary gear assembly with the ATF.

(4) Install the one-way clutch.

**NOTE:**

- Ensure that the one-way clutch with the snap ring faces toward the upside.
- Align the cut-out section at the inside of the transaxle case with the protruding section provided with the groove (O mark) of the one-way clutch.

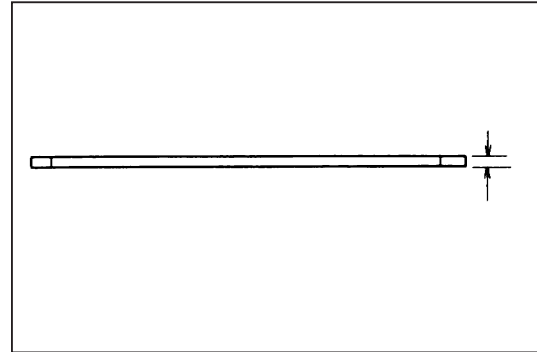


LAT00052-00048

(5) Measure and record the thickness of the hole snap ring.

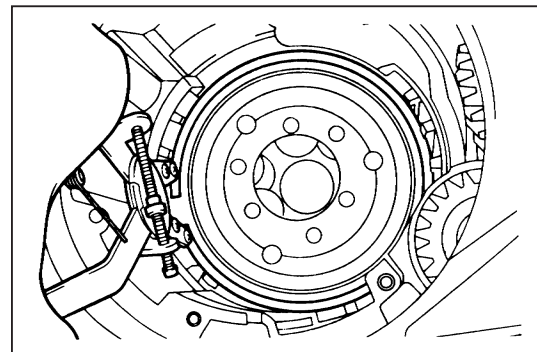
**NOTE:**

- Replace any scratched or deformed hole snap ring with a new part.



LAT00053-00049

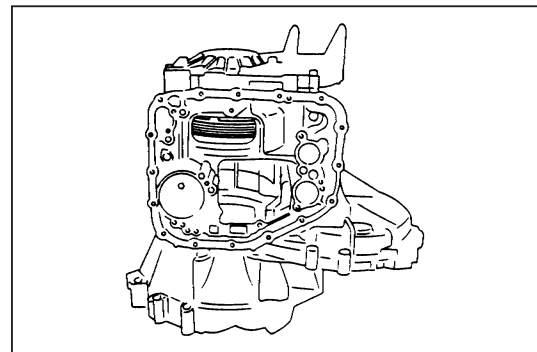
(6) Install the hole snap ring to the grooved section of the transaxle case.



LAT00054-00050

6. Measurement of first & reverse brake end play

(1) Turn over the transaxle case.



LAT00055-00051

- (2) Measure the first & reverse brake end play, using a flat thickness gauge.  
Specified Value: 0.71 - 1.41 mm

## NOTE:

- The tightness which you encounter during this insertion/withdrawal of the flat thickness gauge should be virtually the same as the tightness which you would encounter during the thickness adjustment of the valve rocker arm.
- If the measured end play fails to conform to the specified value above, select a snap ring from the right lower table, using the following calculation formula. Then, install it.

## Calculation formula

$$A = B - C + D$$

A = Thickness of new snap ring to be selected  
(Refer to the list.)

B = Measured value of end play

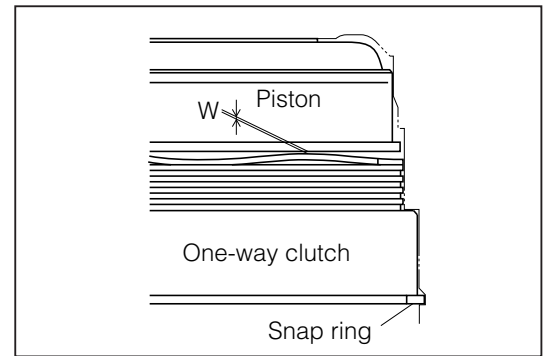
C = Specified value of end play

D = Thickness of snap ring that has been already installed

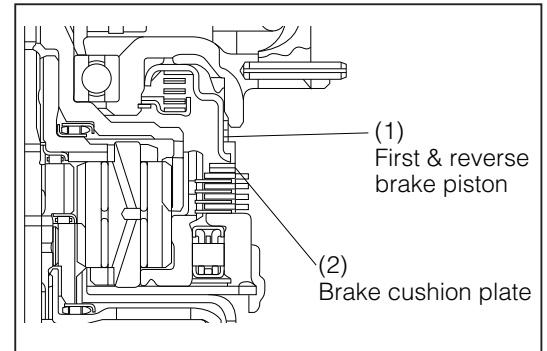
7. Installation of transmission brake band assembly-related parts

- Install the compression spring to the second brake piston assembly.
- Install the 2nd brake piston assembly to the transmission case together with the compression spring.
- While compressing the 2nd brake piston with the following SSTs, install the hole snap ring, using snap ring pliers.

SSTs: 09202-87002-000 ... (A)  
09202-87202-0A0 ... (B)



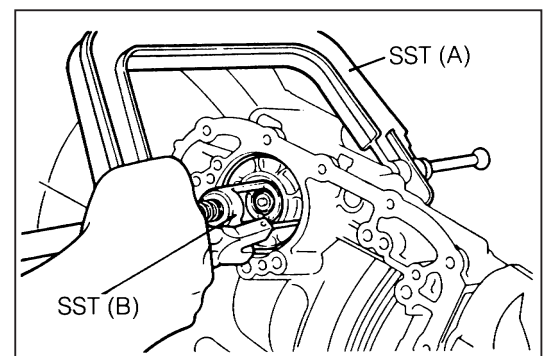
LAT00056-00052



LAT00057-00053

| Snap ring thickness<br>Unit: mm | Part No.        | Color  |
|---------------------------------|-----------------|--------|
| 2.00                            | 90045-21119-000 | Silver |
| 2.25                            | 90045-21120-000 | Blue   |
| 2.50                            | 90045-21121-000 | Brown  |
| 2.75                            | 90045-21123-000 | Black  |

LAT00058-00000



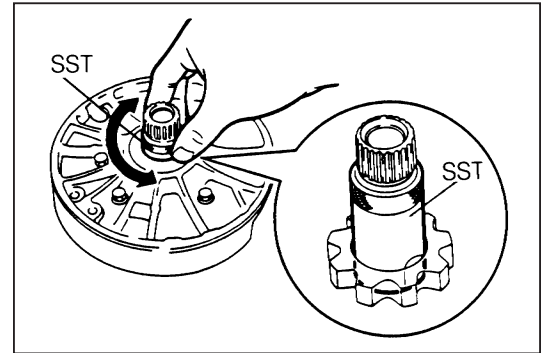
LAT00059-00054

## 15. Inspection of stator shaft & oil pump assembly

### (1) Inspection of oil pump operation

Ensure that the oil pump drive gear rotates smoothly, using the following SST.

SST: 09350-87202-000 (09351-87206-000)



LAT00060-00055

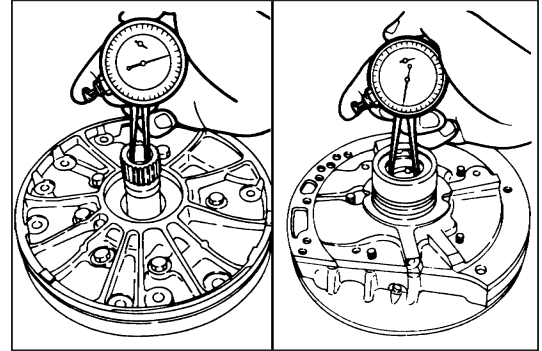
### NOTE:

- Be sure to insert the flat sections (2 points) of the SST into the flat sections of the oil pump drive gear.

### (2) Measure the inner diameter of the oil pump bush section, using an inner caliper gauge.

Unit: mm

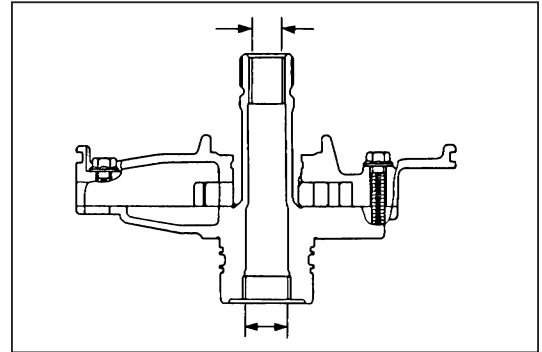
|            | Specified value | Allowable limit |
|------------|-----------------|-----------------|
| Front side | 15.50 - 15.52   | 15.57           |
| Rear side  | 21.10 - 21.12   | 21.17           |



LAT00061-00056

### NOTE:

- Perform the measurement at several points. Calculate the mean value.
- If the actually measured value exceeds the allowable limit, replace the stator shaft & oil pump assembly with a new one.
- When replacing it, be sure to check the bush contacting surface of the input shaft subassembly. If the surface is scratched or discolored, replace the shaft with a new one, too.



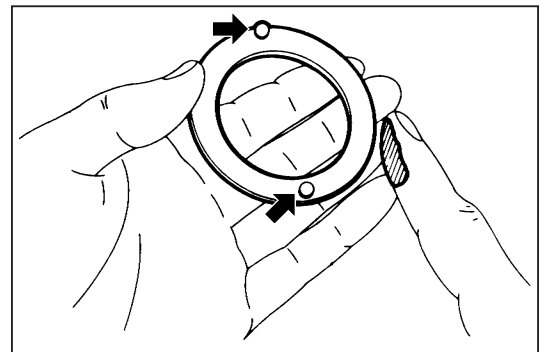
LAT00062-00057

## 16. Check of input shaft end play

### (1) Apply vaseline to the protruding sections (2 points) of the clutch drum thrust washer.

### NOTE:

- Be sure to apply vaseline properly.

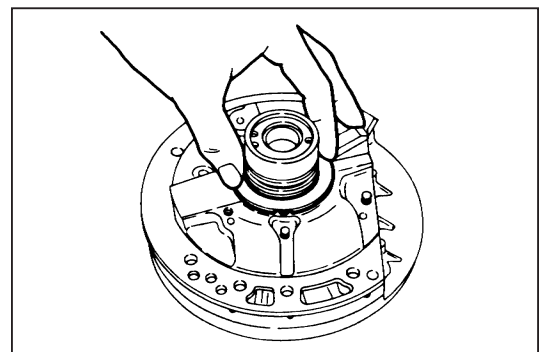


LAT00063-00058

### (2) Install the clutch drum thrust washer by aligning its protruding section with the recessed section of the oil pump assembly.

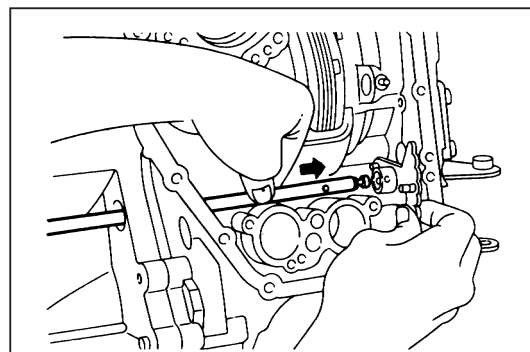
### NOTE:

- Be sure to apply vaseline enough to prevent the washer from dropping.



LAT00064-00059

- (2) Install the manual lever shaft subassembly from the engine side.

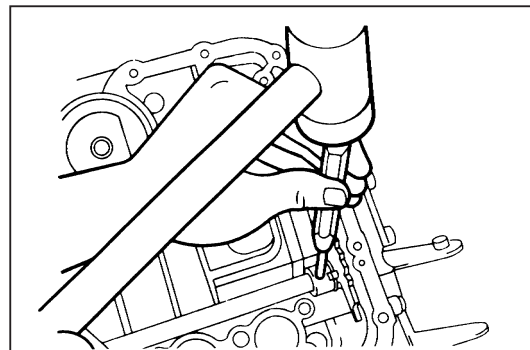


LAT00065-00060

- (3) Install a new slotted spring pin, using a pin punch and a hammer.

**NOTE:**

- Be sure to install the pin, until it reaches the edge surface of the manual valve lever.

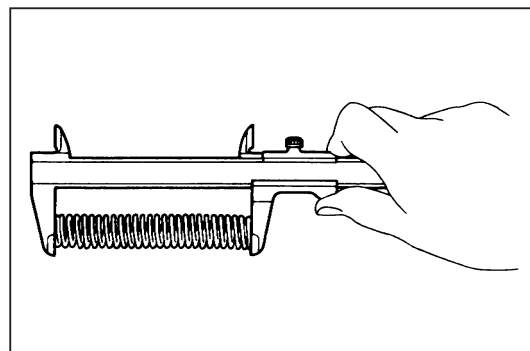


LAT00066-00061

## 20. Install the accumulators

- (1) Measure the free length and outer diameter of the accumulator compression springs.  
(Refer to the below list)

|                |      | Accumulator compression spring (approx.) |                |
|----------------|------|------------------------------------------|----------------|
|                |      | B <sub>1</sub>                           | C <sub>2</sub> |
| Free length    | (mm) | 53                                       | 117.2          |
| Outer diameter | (mm) | 14.5 and 20                              | 18             |

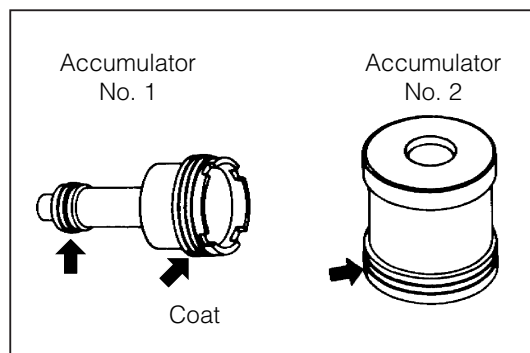


LAT00067-00062

- (2) Coat a new No. 1 and No. 2 accumulator piston seal rings on the section of right figure with ATF.

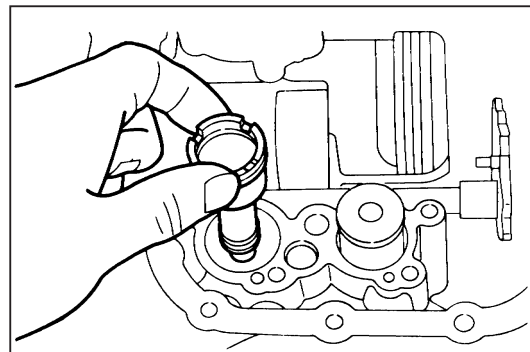
**NOTE:**

- Do not spread the seal ring end excessively.



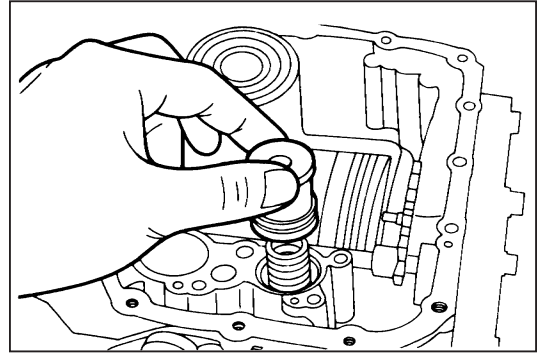
LAT00068-00063

- (3) Install the accumulator No. 1 piston and the compression spring to the transaxle case.



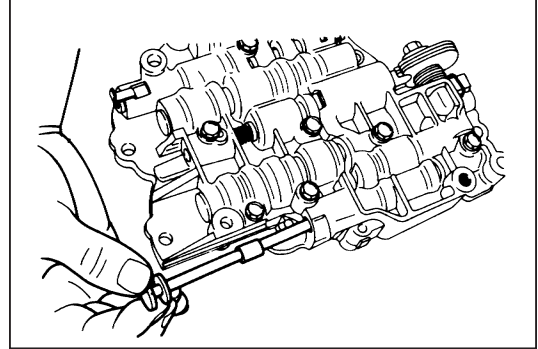
LAT00069-00064

- (4) Install the compression spring and accumulator No. 2 piston to the transaxle case.



LAT00070-00065

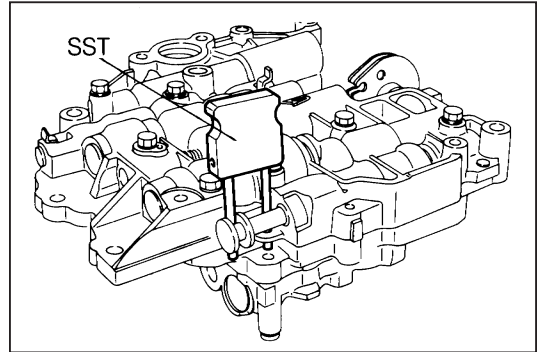
21. Install the valve body assembly and the throttle cable.
  - (1) Coat the outer periphery of the manual valve with the ATF and install it to the valve body assembly.



LAT00071-00066

- (2) Ensure that the manual valve operates smoothly and set it to the neutral position, using the following SST.
 

SST: 09350-87202-000 (09351-87211-000)

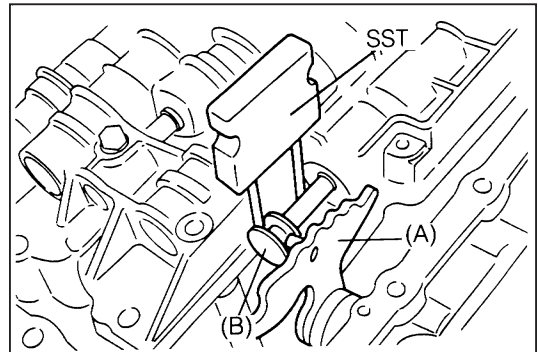


LAT00072-00067

- (3) Install the valve body assembly with the aforesaid SST to the transaxle case.

**NOTE:**

- Ensure that the protrusion of the manual valve lever (A) and grooved section of the manual valve (B) are matched securely.



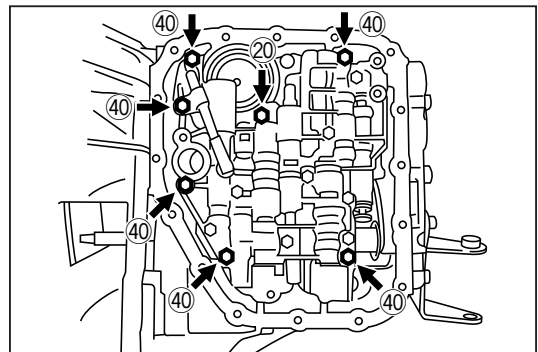
LAT00073-00068

- (4) Temporarily tighten the seven bolts of the valve body assembly.
- (5) Tighten the bolts.
 

Tightening Torque: 4.9 - 6.9 N·m

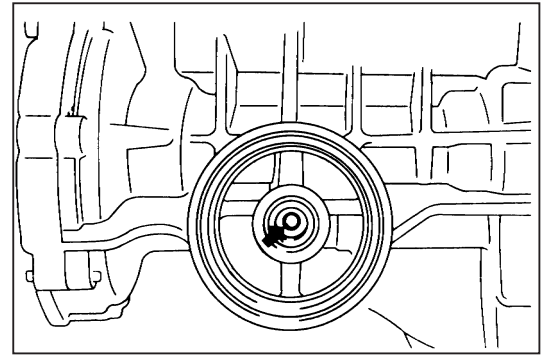
**NOTE:**

- The numeral in the right illustration indicates the nominal length of the bolt.
- If the bolt is tightened with any oil getting to the bolt's threaded portion, it may cause the bolt looseness. Therefore, be sure to clean the bolt threaded portion by applying compressed air.



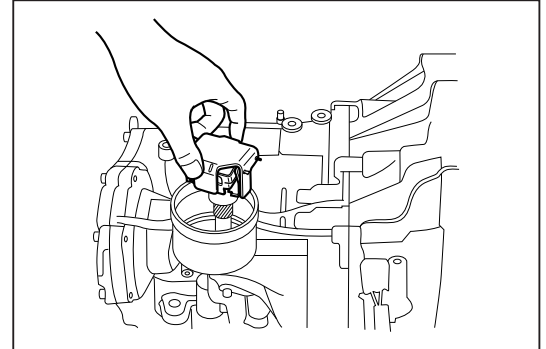
LAT00074-00069

26. Installation of governor valve.  
(1) Place the ball into the transaxle case.



LAT00075-00070

- (2) Coat the whole of governor body assembly with ATF and install it into the transaxle case.

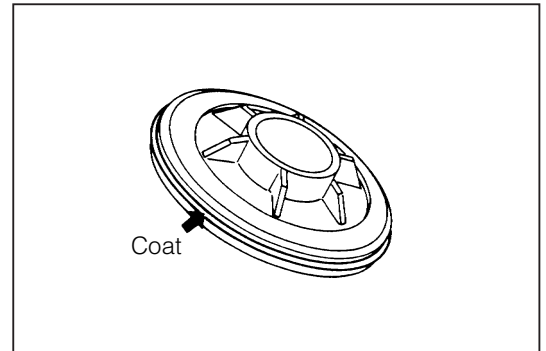


LAT00076-00071

- (3) Coat the new O-ring with ATF and install it to the governor cover.  
(4) Install the governor cover to the transaxle case.

**NOTE:**

- Be very careful not to damage the new O-ring during installation.

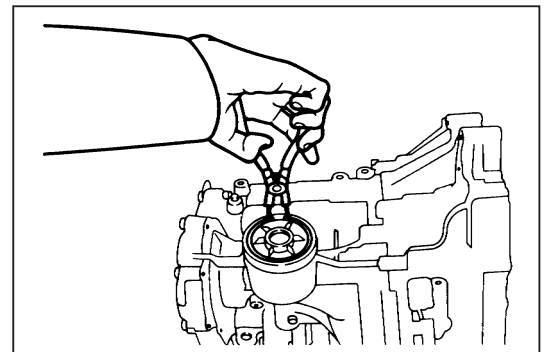


LAT00077-00072

- (5) Install the hole snap ring, using the standard plier.

**NOTE:**

- Ensure that the ring should be installed to the groove section of the transaxle case.

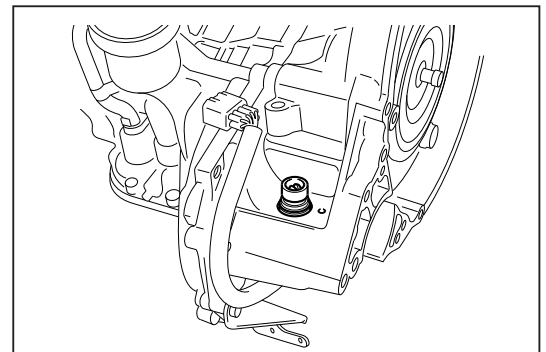


LAT00078-00073

27. Coat the new O-ring section of the speedometer shaft sleeve with the ATF and insert the speedometer driven gear subassembly into the transaxle case.

**NOTE:**

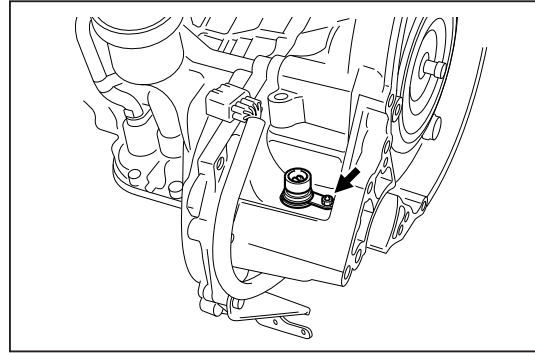
- It is recommended to hold the speedometer shaft sleeve during the installation of the speedometer driven gear subassembly.



LAT00079-00074

28. Place the speedometer sleeve lock plate and tighten it with the bolt.

Tightening Torque: 6.9 - 9.8 N·m



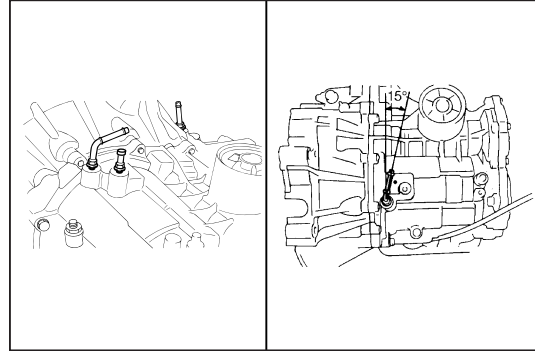
LAT00080-00075

29. Tighten the new unions (for the oil cooler).

Tightening Torque: 6.9 - 15.7 N·m

**NOTE:**

- Be sure to align the union installation position with the mating mark position (protruding section) provided on the transaxle.



LAT00081-00076

30. Tighten the breather union and install the cap of the union.

Tightening Torque: 2.9 - 6.9 N·m

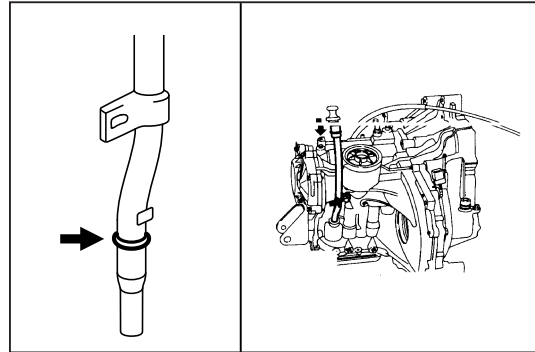
31. Coat a new O-ring with the ATF and install it to the transmission oil filler tube subassembly.

**NOTE:**

- Be very careful not to twist or damage of the O-ring during installation.

32. Insert the transmission oil filler tube subassembly to the transaxle case and tighten it with the bolt.

Tightening Torque: 6.9 - 9.8 N·m



LAT00082-00077

33. Install the transaxle case assembly to the vehicle.

34. Adjust the throttle cable.

35. Operation check of shift lever position.

36. Fill the new ATF: Refer to page AT-3.

**CAUTION:**

- Never overfill the new fluid.

LAT00083-00000

## TIGHTENING TORQUE

| Tightening components                                                     | Tightening torque |           |
|---------------------------------------------------------------------------|-------------------|-----------|
|                                                                           | N·m               | kgf-m     |
| Drive plate × Crank shaft                                                 | 39.0 - 49.0       | 4.0 - 5.0 |
| Transaxle × Engine direct-connecting bolt                                 | 49.0 - 69.0       | 5.0 - 7.0 |
| Torque convertor × Drive plate                                            | 29.0 - 44.0       | 3.0 - 4.5 |
| Rear transmission case cover × Transmission case (M6)                     | 6.9 - 9.8         | 0.7 - 1.0 |
| Engine mounting lower left bracket × Transmission case (M8)               | 14.7 - 21.6       | 1.5 - 2.2 |
| Starter shaft & oil pump × Transmission case                              | 6.9 - 9.8         | 0.7 - 1.0 |
| Nut (for brake band anchor bolt) × Transmission case                      | 22.5 - 30.4       | 2.3 - 3.1 |
| Valve body × Transmission case                                            | 6.9 - 9.8         | 0.7 - 1.0 |
| Manual detent spring × Transmission case                                  | 6.9 - 9.8         | 0.7 - 1.0 |
| Oil strainer × Transmission case                                          |                   |           |
| Inspection plugs × Transmission case, Throttle cable × Transmission case  |                   |           |
| Transaxle oil pan × Transmission case                                     |                   |           |
| Inspection plugs × Transmission case                                      |                   |           |
| Control cable bracket × Transmission case, Transaxle oil pan × Drain plug | 19.6 - 29.4       | 2.0 - 3.0 |
| Neutral start switch × Transmission case                                  | 14.7 - 21.6       | 1.5 - 2.2 |
| Transmission control shaft lever × Manual shaft lever                     | 9.8 - 15.7        | 1.0 - 1.6 |
| Breather union × Transmission case                                        | 2.9 - 6.9         | 0.3 - 0.7 |
| Control cable bracket × Transmission case                                 | 6.9 - 9.8         | 0.7 - 1.0 |
| Speedometer sleeve lock plate × Transmission case                         |                   |           |
| Transmission oil filler tube × Transmission case                          |                   |           |
| Lock nut × Primary reduction drive gear                                   | 19.6 - 29.4       | 2.0 - 3.0 |
| Torque convertor × Differential case                                      | 14.7 - 21.6       | 1.5 - 2.2 |
| Differential ring gear × Differential case                                | 59.0 - 69.0       | 6.0 - 7.0 |
| Control cable × Neutral start switch                                      | 6.9 - 9.8         | 0.7 - 1.0 |
| Union for oil cooler × Transaxle case                                     | 6.9 - 15.7        | 0.7 - 1.6 |