HOW TO USE THIS MANUAL

RANGE OF TOPICS

A6E201000001A01

- This manual indicates only changes/additions, as it is the supplemental for the related materials. Therefore it may not contain the necessary reference service procedures to perform the services indicated in this manual.

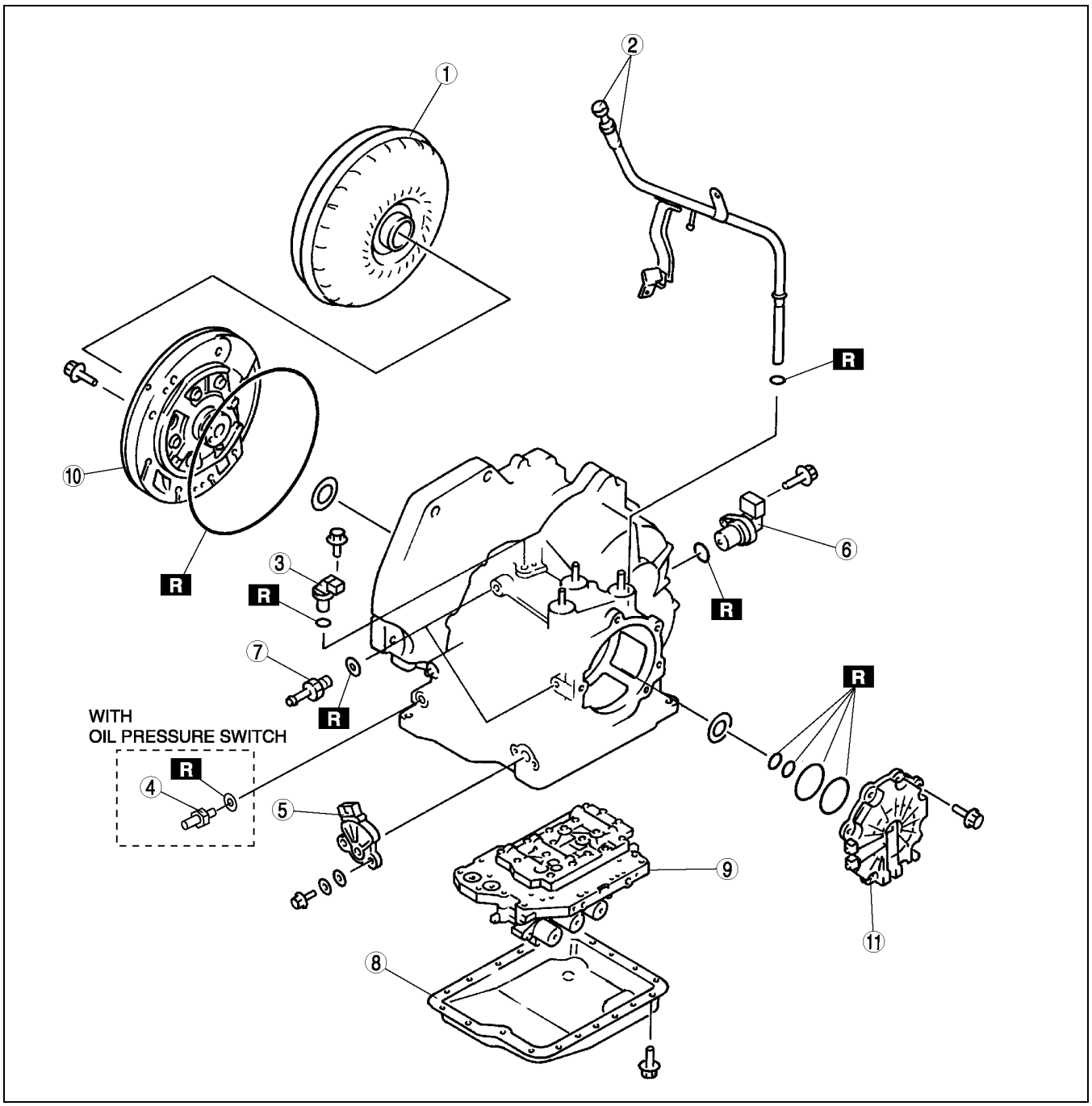
ABBREVIATIONS

ABBREVIATIONS TABLE

A6E203000011A01

ATF	Automatic transaxle fluid
SST	Special service tool
1st GR	First gear
2nd GR	Second gear
3rd GR	Third gear
4th GR	Forth gear

Disassembly
Components



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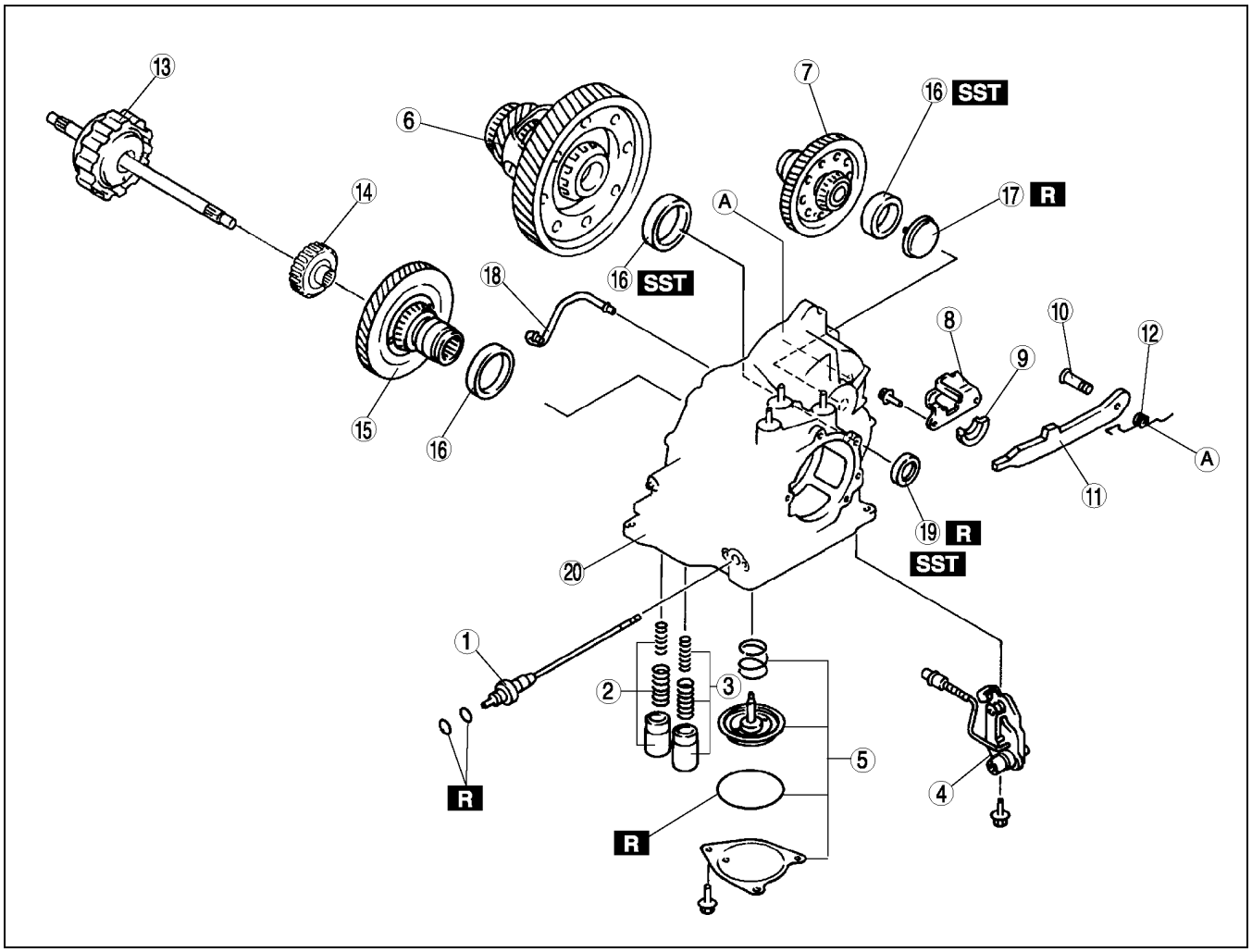
1	Torque converter
2	Oil dipstick and oil filler tube
3	Input/turbine speed sensor
4	Oil pressure switch
5	Transaxle range switch
6	Vehicle speed sensor

7	Connector pipe
8	Oil pan
9	Control valve body component
10	Oil pump
11	End cover



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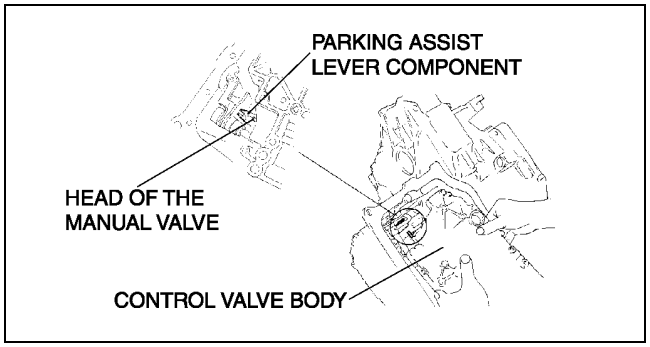
1	Manual shaft
2	Servo apply accumulator
3	Forward accumulator
4	Parking rod lever component
5	Band servo
6	Differential
7	Secondary gear and output gear
8	Actuator plate
9	Support actuator
10	Parking pawl shaft

11	Parking pawl
12	Pawl return spring
13	Forward clutch
14	Forward clutch hub
15	Primary gear
16	Bearing race
17	Funnel
18	Oil pipe
19	Oil seal
20	Transaxle case

19. Remove the control valve body.



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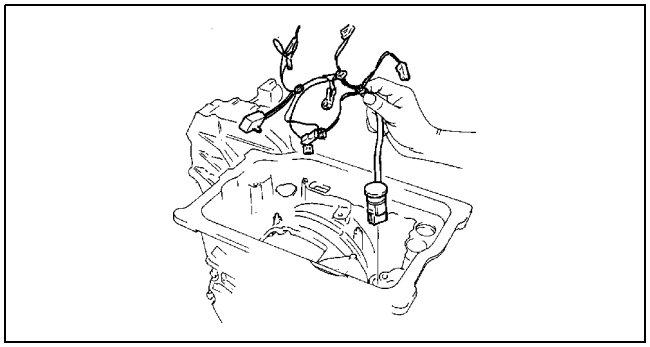
20. Remove the coupler component.



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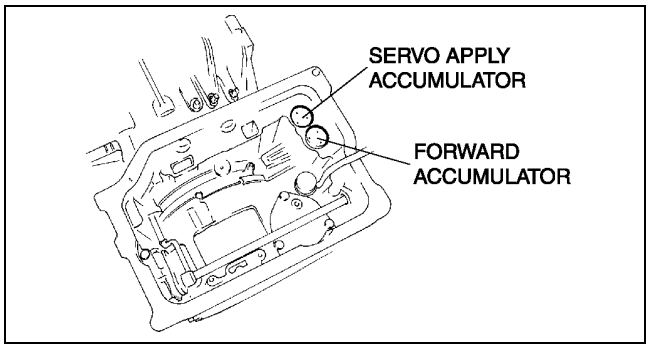
21. Remove the accumulator component.
22. Remove the manual shaft.



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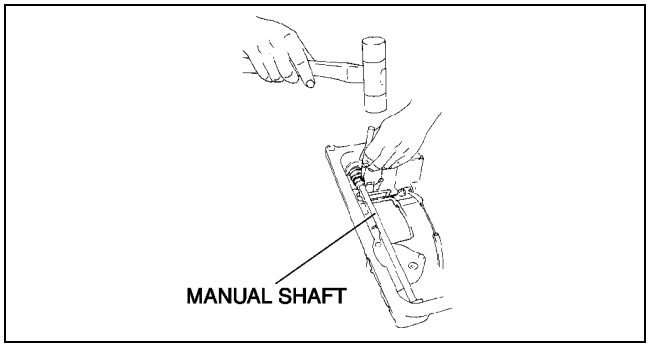
(1) Remove the roll pin using a pin punch.
(2) Remove the manual shaft.



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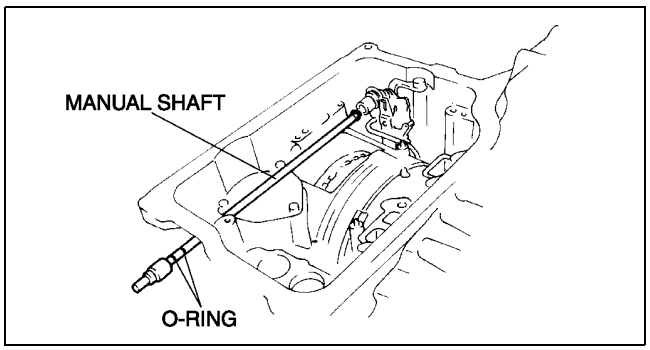
(3) Remove the O-ring from the manual shaft.



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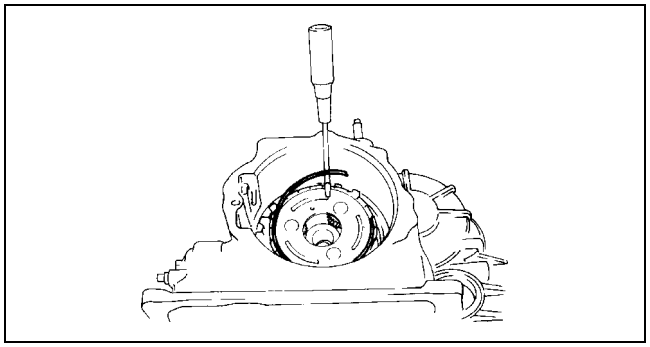
40. Remove the snap ring.



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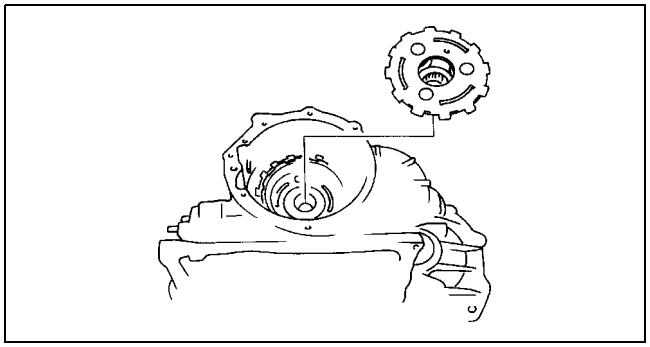
41. Remove the rear planetary gear component.



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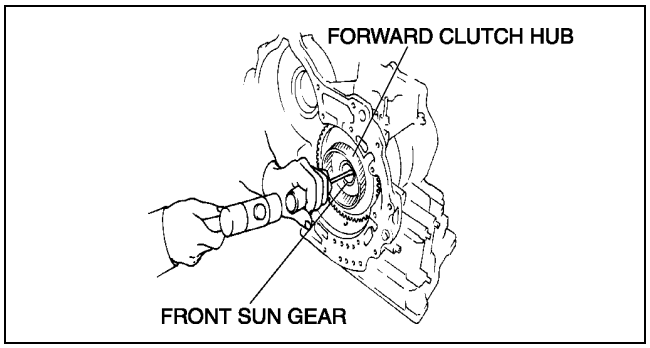
42. Remove the front sun gear by tapping its end with a flathead screwdriver, etc. as shown in the figure.
43. Remove the forward clutch hub.



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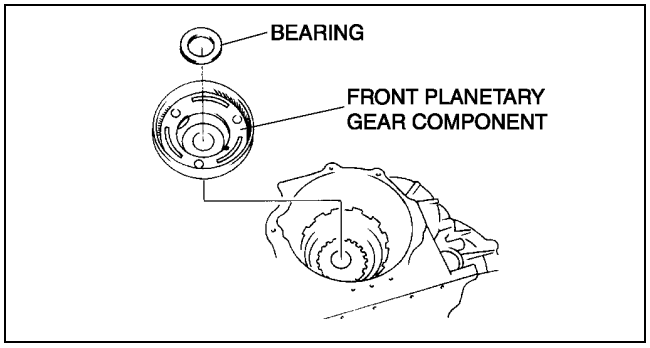
44. Remove the front planetary gear component.



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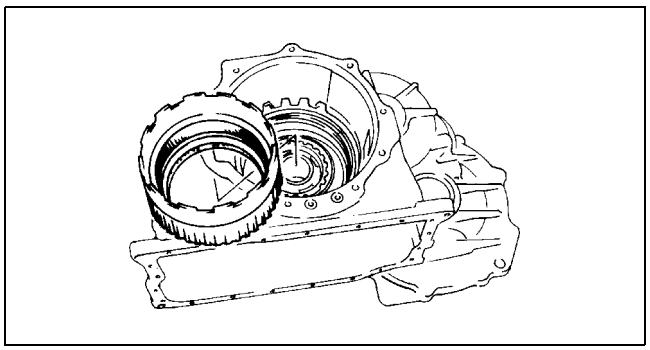
45. Remove the front internal gear and one-way clutch component.
46. Remove the locknut.



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CLUTCH COMPONENT DISASSEMBLY/ASSEMBLY

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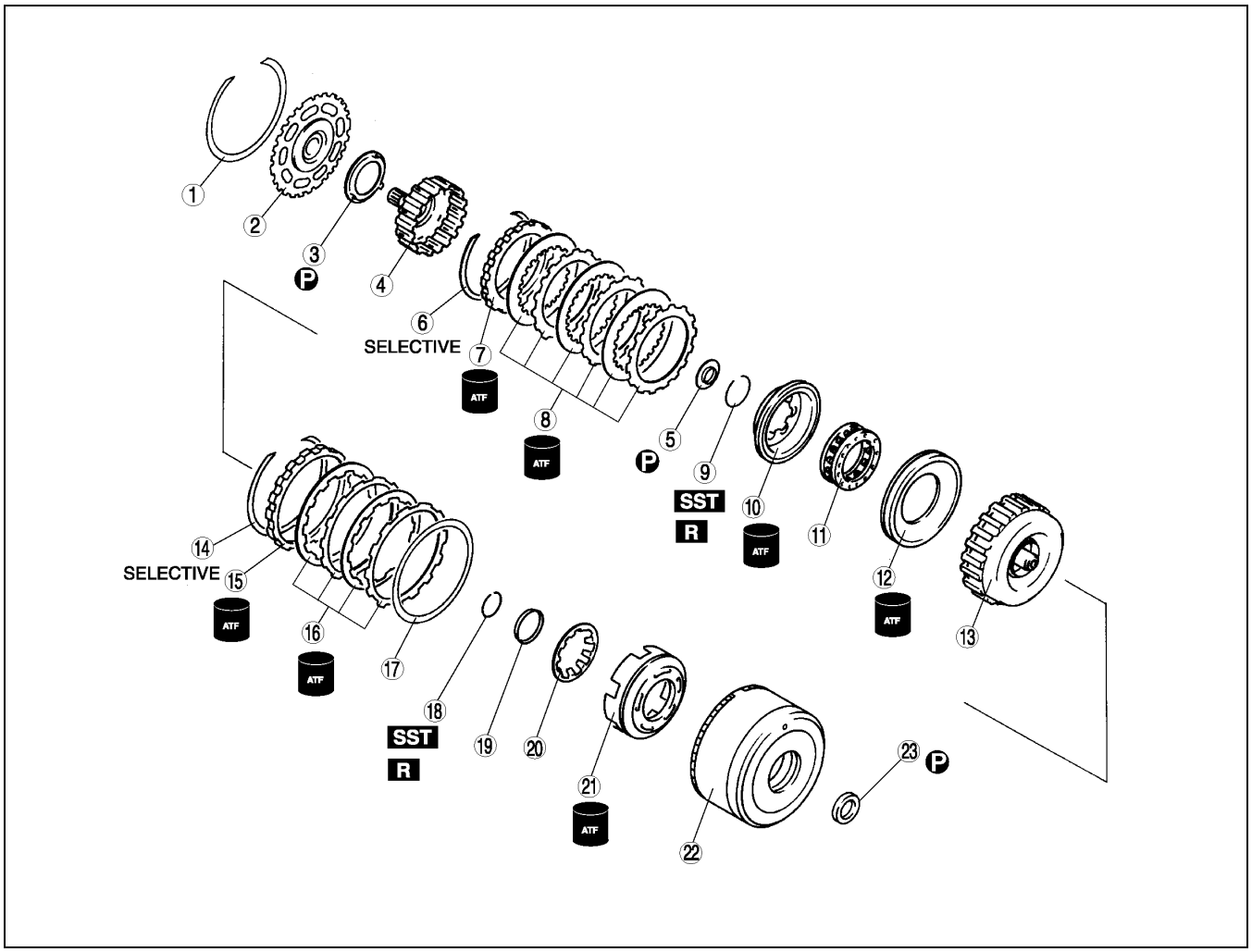
1. Carry out the preinspection before disassembly. (See K1–50 Clutch Component Preinspection.)
2. Disassemble in the order indicated in the table.
3. Assemble in the reverse order of disassembly.



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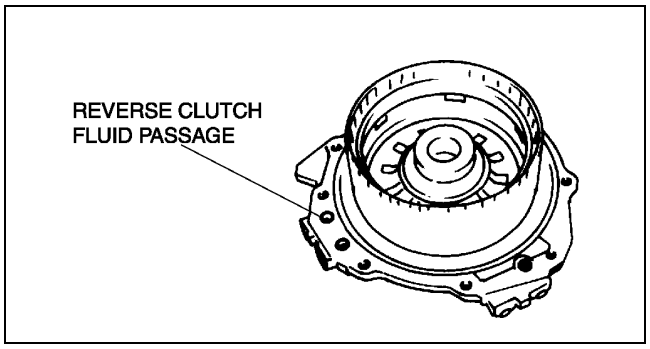
1	Snap ring
2	Rear sun gear plate
3	Bearing
4	3-4 clutch hub
5	Bearing
6	Snap ring
7	Retaining plate
8	Drive and driven plate
9	Snap ring (See K1–19 Snap Ring (3-4 clutch) Disassembly Note)
10	Seal plate
11	Spring and retainer component
12	3-4 clutch piston (See K1–19 3-4 Clutch Piston Disassembly Note)

13	3-4 clutch drum
14	Snap ring
15	Retaining plate
16	Drive and driven plate
17	Dish plate
18	Snap ring (See K1–19 Snap Ring (Reverse clutch) Disassembly Note)
19	Reverse return stopper
20	Piston return spring
21	Reverse piston (See K1–20 Reverse Piston Disassembly Note)
22	2-4 brake drum
23	Bearing

(10)Install the selected snap ring and perform steps (2) to (7) again. Verify that the calculated value satisfies the clearance specification.

13. Inspect the reverse clutch operation.
    (1) Install the 2-4 brake drum to the end cover.
    (2) Inspect the reverse clutch operation by applying compressed air as shown.

Air pressure
392—441 kPa {4.0—4.5 kgf/cm^2, 57—63 psi}



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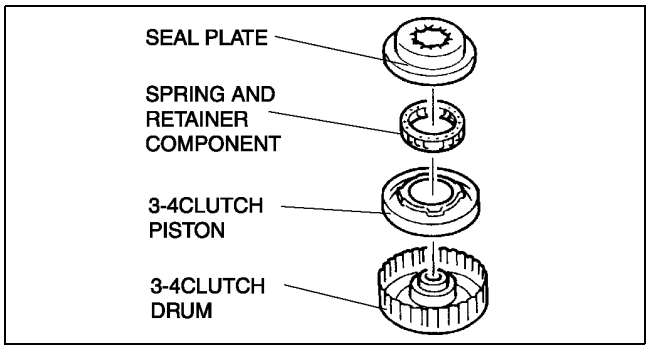
14. Install the 3-4 clutch.

Caution
- **Installing the 3-4 clutch piston may damage its seal. Carefully install the 3-4 clutch piston by pushing evenly around the circumference.**

(1) Apply ATF to the circumference of the 3-4 clutch piston seal, and install the piston in to the 3-4 clutch drum.
(2) Install the spring and retainer.
(3) Apply ATF to the 3-4 seal plate, and install it onto the 3-4 clutch drum.



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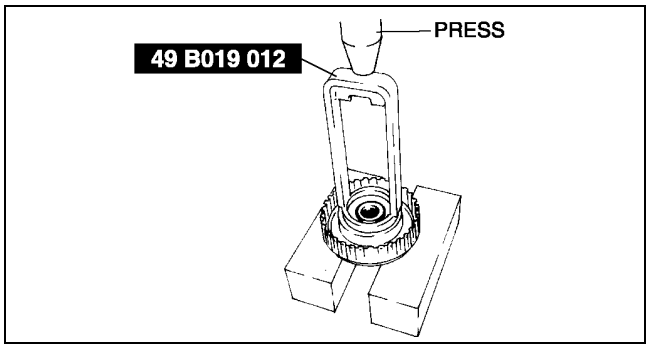
(4) Install the **SST** as shown.

Caution
- **Depress the 3-4 seal plate only enough to install the snap ring. Overpressing will damage the 3-4 seal plate assembly edges.**



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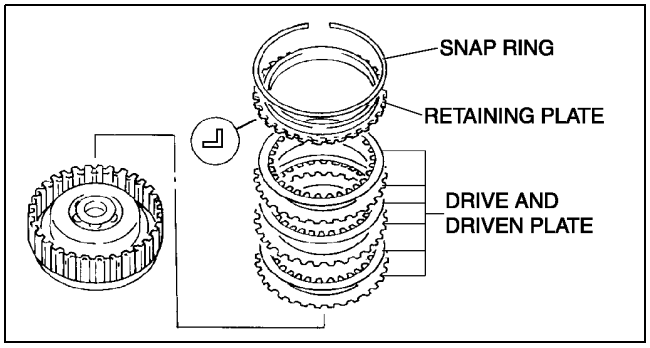
(5) Compress the spring and retainer component and 3-4 seal plate.
(6) Install the snap ring.
(7) Remove the **SST**.
(8) Install the drive and driven plates in the following order.
Driven-Drive-Driven-Drive-Driven-Drive
(9) Install the retaining plate.

DRIVE PLATE PART NUMBER:FN11 19 370



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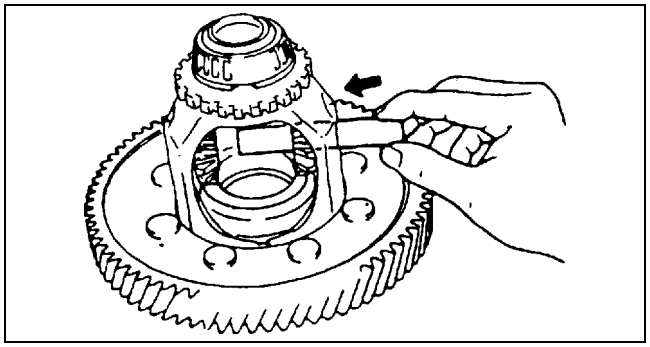
7. Install the pinion shaft.



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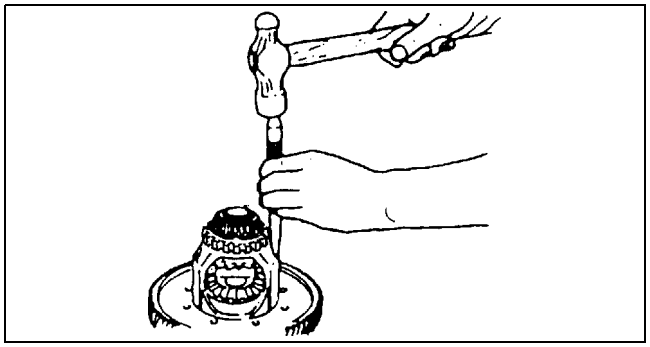
8. Install the roll pin, and crimp it to prevent it from coming out of the gear case.
9. Apply ATF to the thrust washers.
10. Install the thrust washers and side gears into the gear case, then turn the side gears and align them with the drive shaft holes.
11. Measure the backlash of the side gears as follows:
    (1) Install the left and right drive shafts in the differential.
    (2) Support the drive shafts on V-blocks.



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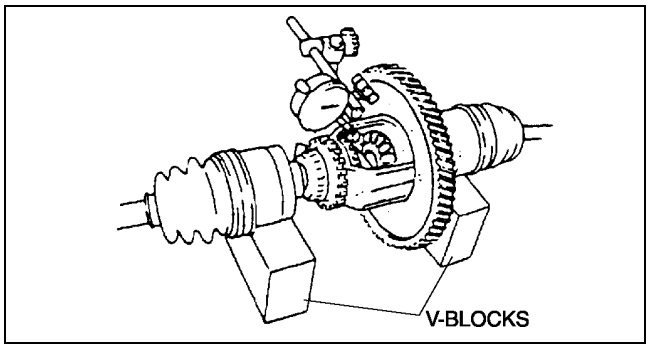
    (3) Measure the backlash of both side gears.

    Backlash
    Standard: 0.05—0.15 mm {0.002—0.005 in}
    Maximum: 0.5 mm {0.020 in}

12. If the backlash is not within the specification, replace the differential.



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AUTOMATIC TRANSAXLE ASSEMBLY

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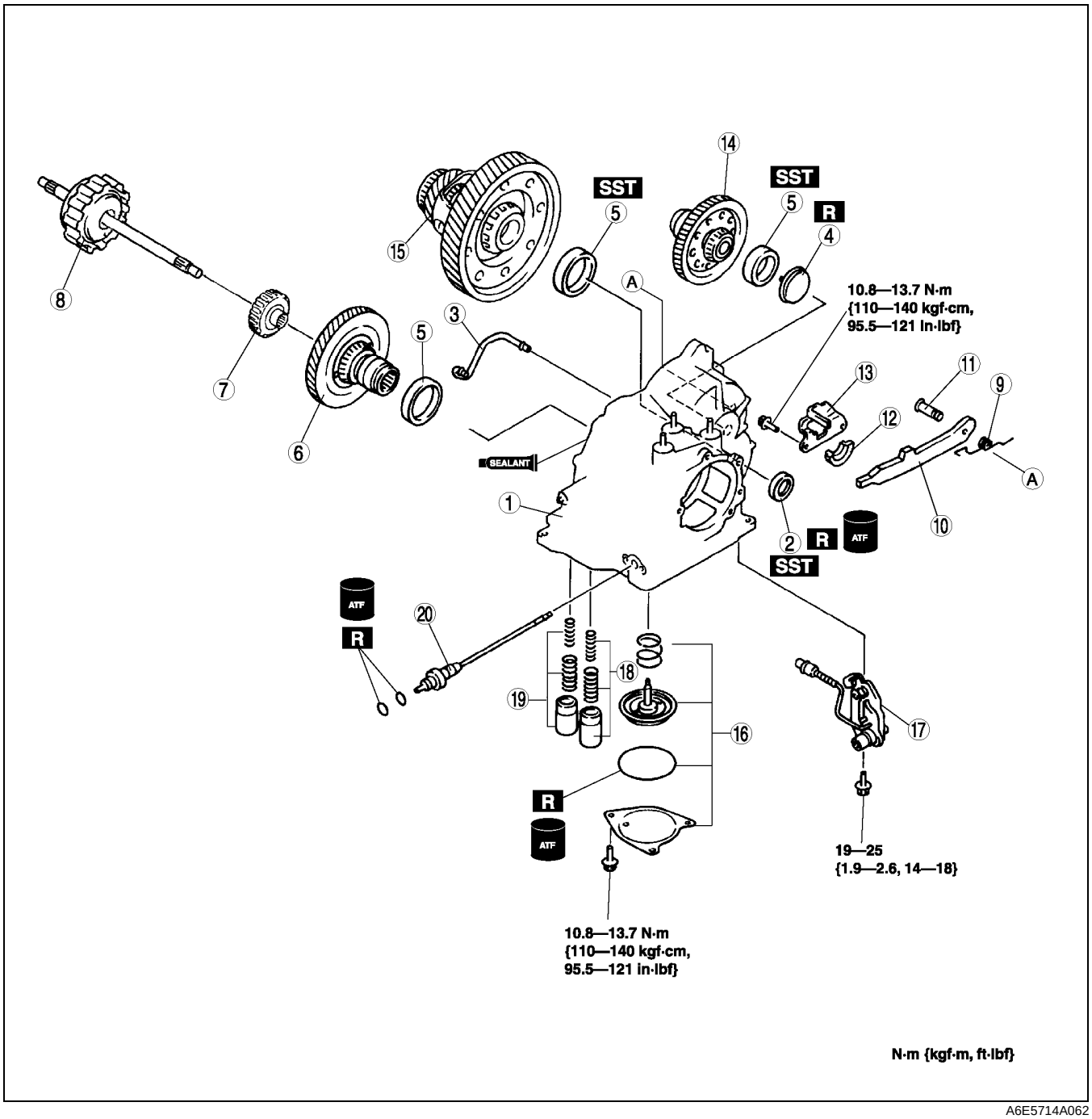
Precaution

General notes

1. Select the adjustment shims, referring to **Bearing Preload**.
2. If the drive plates or 2-4 brake band are replaced with new ones, soak the new part in ATF for at least two hours before installation.
3. Before assembly, apply ATF to all seal rings, rotating parts, O-rings, and sliding parts.
4. All O-rings, seals, and gaskets must be replaced with the new ones included in the overhaul kit.
5. Use petroleum jelly, not grease, when assembling again.
6. When it is necessary to replace a bushing, replace the subassembly that includes that bushing.
7. Assemble the housing within 10 minutes after applying sealant, and allow it to cure for at least 30 minutes after assembly before filling the transaxle with ATF.

Warning

- **Although the stand has a self-locking brake system, there is a possibility that the brake may not hold when the transaxle is held in a lopsided position on the stand. This would cause the transaxle to turn suddenly, causing serious injury. Never keep the transaxle tilted to one side. Always hold the rotating handle firmly when turning the transaxle.**



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1	Transaxle case
2	Oil seal
3	Oil pipe
4	Funnel
5	Bearing race
6	Primary gear
7	Forward clutch hub
8	Forward clutch
9	Pawl return spring
10	Parking pawl

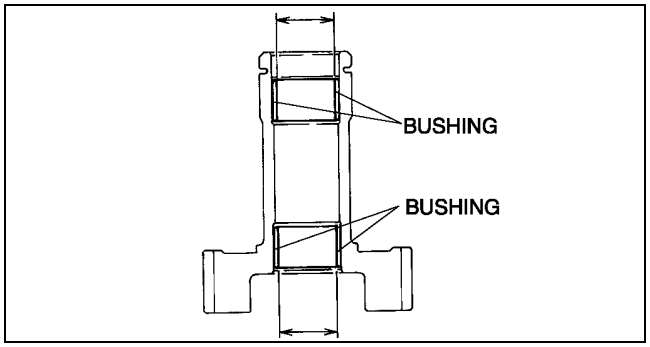
11	Parking pawl shaft
12	Support actuator
13	Actuator plate
14	Secondary gear and output gear
15	Differential
16	Band servo
17	Parking rod lever component
18	Forward accumulator
19	Servo apply accumulator
20	Manual shaft

Assembly procedure

1. Measure the bushing of the front sun gear.

   Bushing inner diameter
   Standard: 18.000—18.018 mm {0.70866—0.70936 in}
   Maximum: 18.038 mm {0.71016 in}

2. If not as specified, replace the front sun gear.



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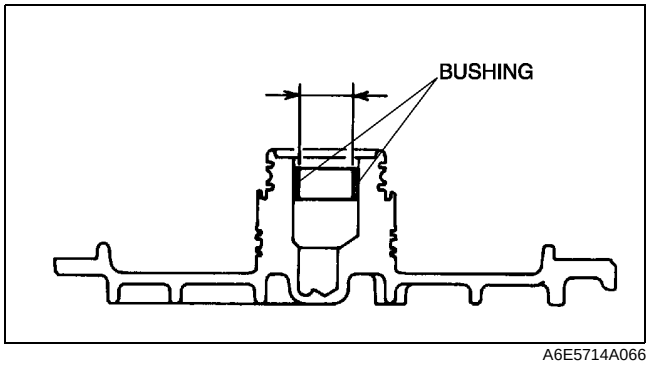
3. Measure the bushing of the end cover.

   Bushing inner diameter
   Standard: 23.600—23.621 mm {0.92913—0.92995 in}
   Maximum: 23.641 mm {0.93075 in}

4. If not as specified, replace the end cover.



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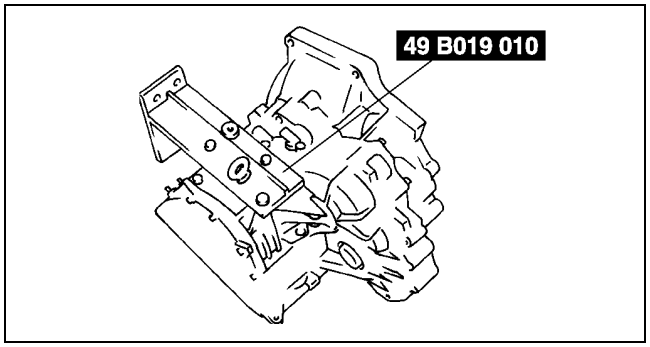
5. Assemble the **SST**.



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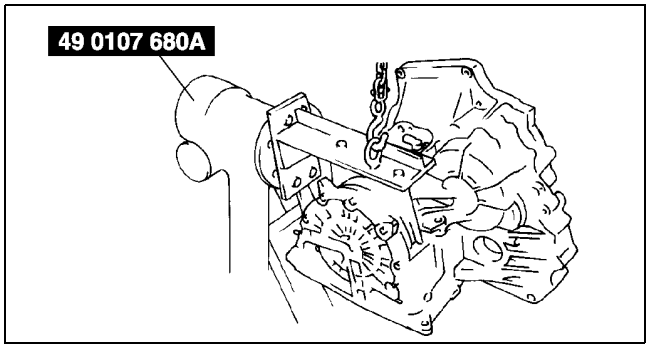
6. Lift the transaxle case and mount it on the **SST**.
7. Install the oil pipe.



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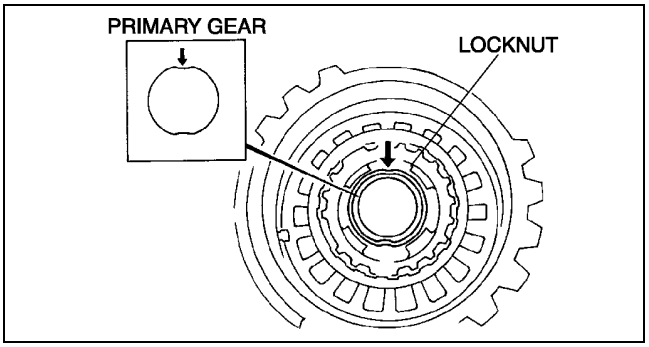
(6) Stake the locknut.
(7) Remove the **SST**



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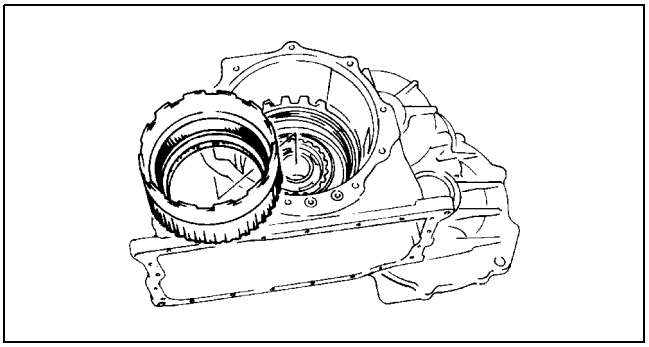
12. Install the front internal gear and one-way clutch.
13. Apply petroleum jelly to the bearing, and secure it to the front planerary gear component.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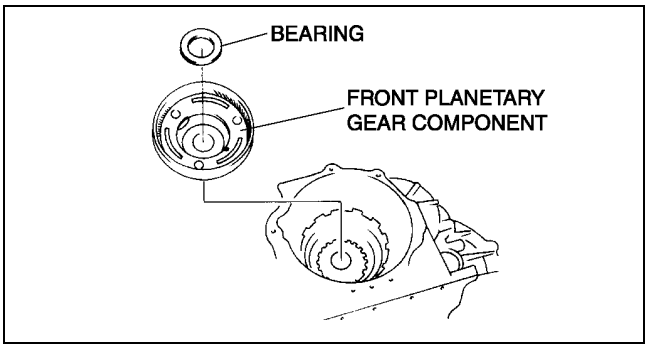
14. Install the front planetary gear component.
15. Apply petroleum jelly to the bearing, and secure it to the front sun gear.



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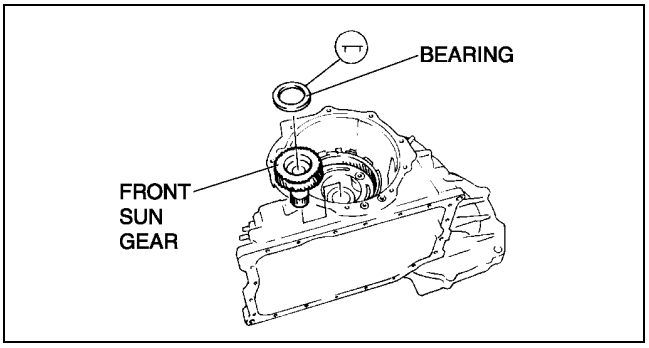
16. Install the front sun gear.



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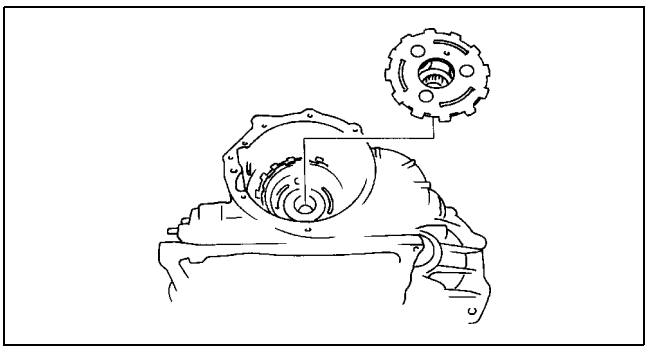
17. Install the rear planetary gear.

Note
- Rotate the engine stand so that the oil pan faces downward. Pull the front internal gear and one-way clutch component a little until the groove for the snap ring appears, then install the snap ring.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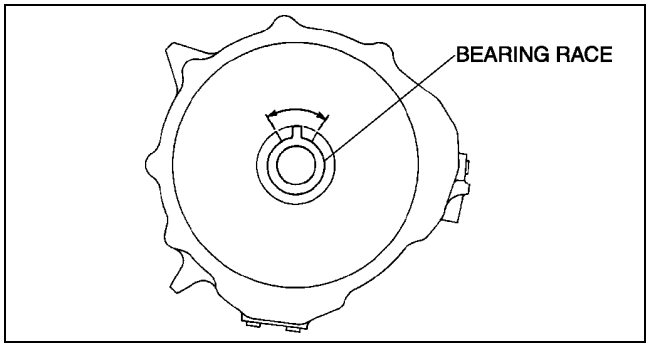
(5) Select a bearing race whose thickness is between D mm {in} and C mm {in}.



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Bearing race sizes

mm {in}

1.8 {0.071}	2.0 {0.079}	2.2 {0.087}
2.4 {0.094}	2.6 {0.102}	–

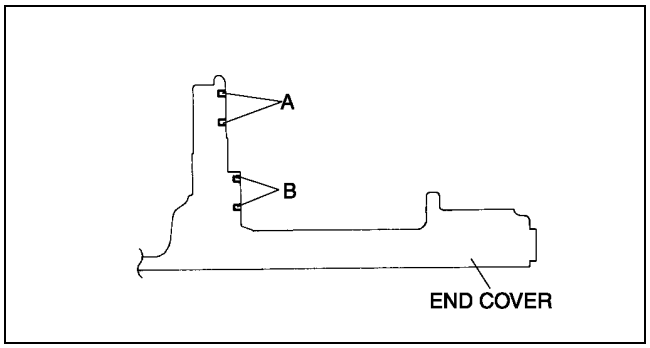
Caution

- **The bearing race and end cover may be damaged if the end cover is not installed correctly to the transaxle case. Align the projection of the bearing race within the area of the arrows shown in the figure, and then install the end cover to the transaxle case.**

(6) Remove the end cover, apply petroleum jelly to the selected bearnig race, then install it to the end cover.

26. Apply ATF to new seal ring, and install it to the end cover.

Seal ring inner diameter
A: 47.1 mm {1.854 in}
B: 55.8 mm {2.197 in}



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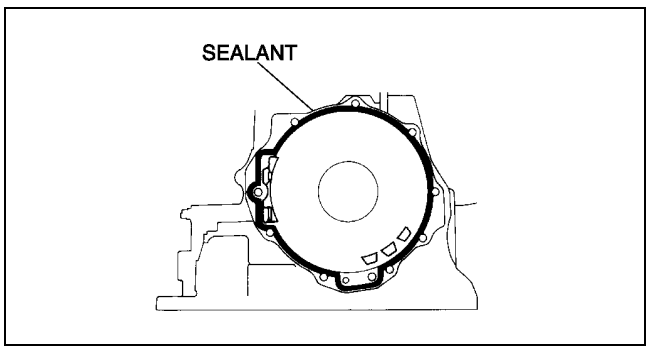
27. Apply a light coat of silicone sealant to the contact surfaces of the transalxe case and the end cover.
28. Apply ATF to the O-ring and install it to the transaxle case.



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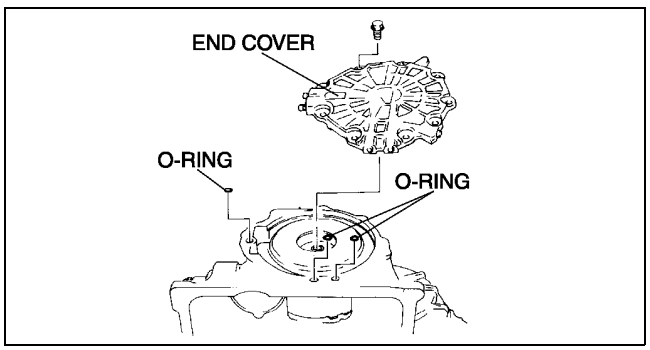
29. Install the end cover to the transaxle case.

Tightening torque
19—25 N·m {1.9—2.6 kgf·m, 14—18 ft·lbf}



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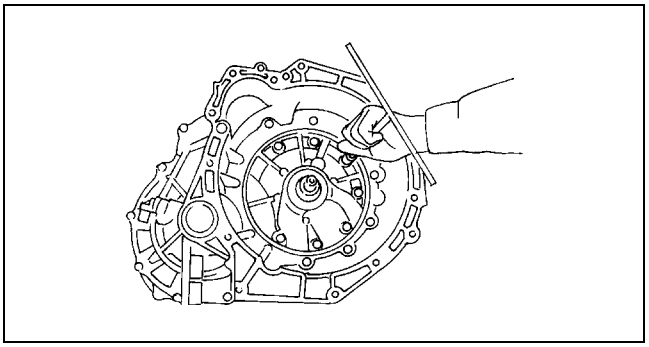
42. Install the oil pump.

Tightening torque
19—25 N·m {1.9—2.6 kgf·m, 14—18 ft·lbf}



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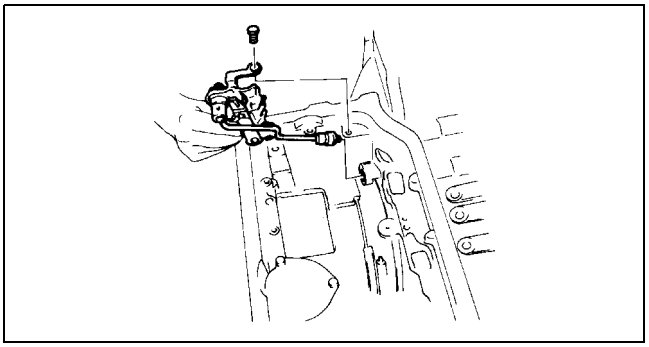
43. Install the parking rod lever component.

Tightening torque
19—25 N·m {1.9—2.6 kgf·m, 14—18 ft·lbf}

44. Apply ATF to the new O-ring and install it to the manual shaft.
45. Install the manual shaft.



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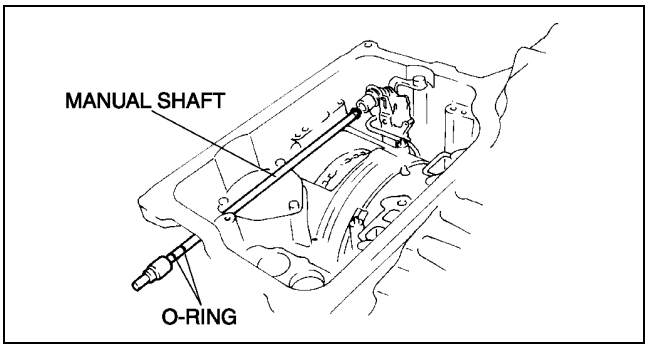
(1) Install the manual shaft to the manual plate and detent bracket component.



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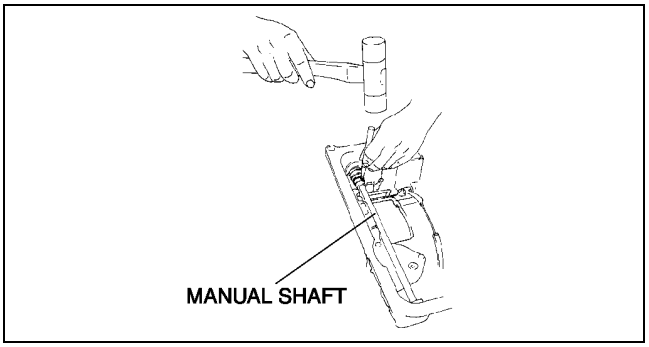
(2) Install the knock pin.



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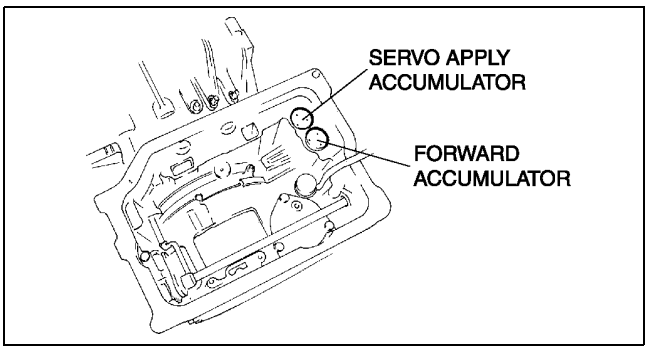
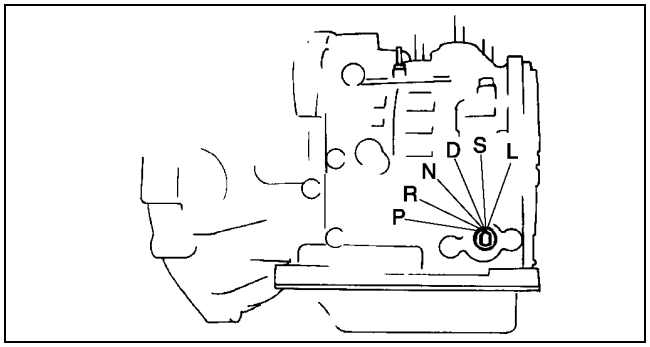
46. Install the accumulator component.



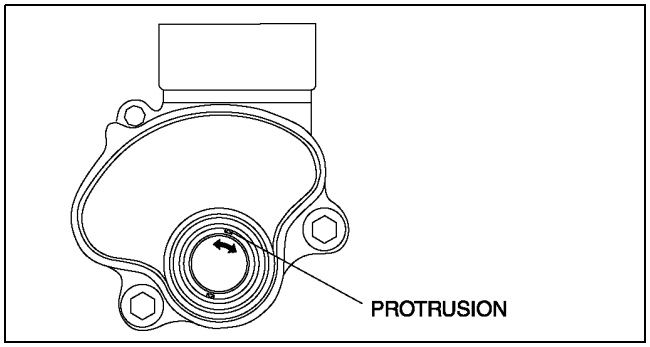
A6E5714A010

(1) Rotate the manual shaft to the N position.

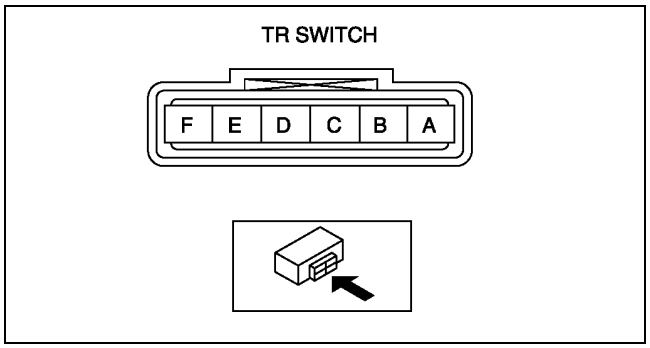


A6E5714A094

(2) Turn the protrusion a resistance between the terminals B and C become **750 ohms**.

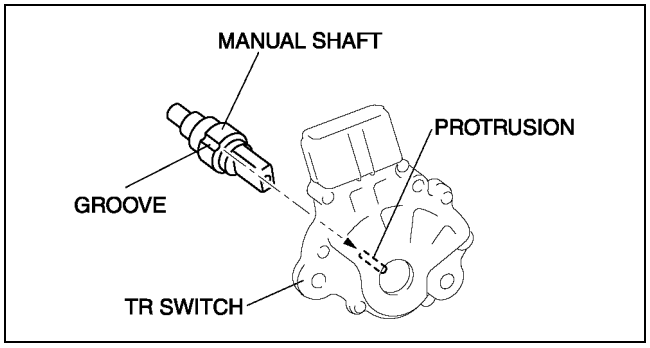


A6E5614W014



A6E5614W010

(3) Install the TR switch while aligning the protrusion and groove as shown.
(4) hand- tighten the TR switch mounting bolts.



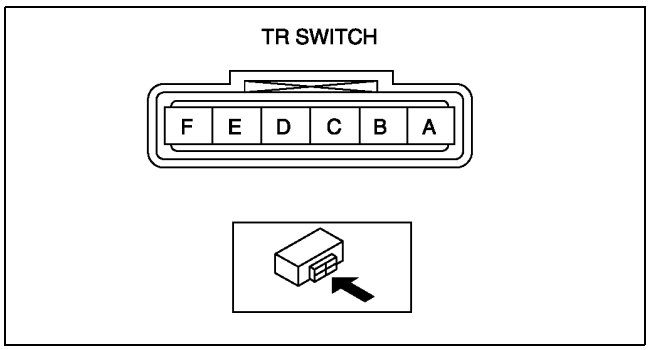
A6E5614W016

(5) Inspect the resistance between the terminals B and C.
- If not as specified, readjust the TR switch.

Resistance
750 ohms

(6) Tighten the TR switch mounting bolts

Tightening torque
8—11 N·m
{82—112 kgf·cm, 71—97 in·lbf}

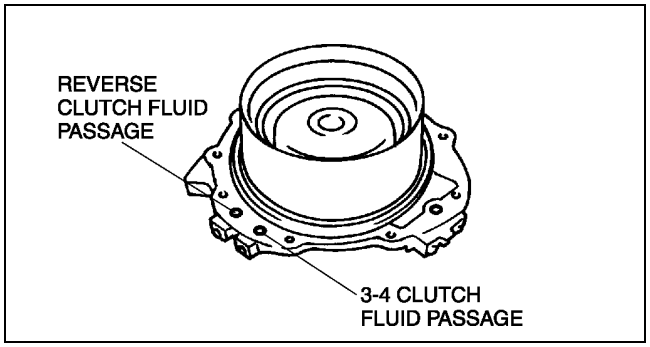


A6E5614W010

2. Inspect the clutch operation by applying compressed air as shown.

   Air Pressure
   392 kPa {4.0 kgf/cm^2, 57 psi} max.

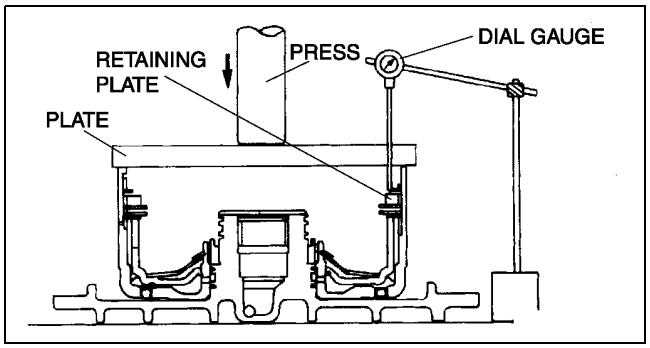
3. If not as specified, replace parts as necessary.(See K1–18 CLUTCH COMPONENT DISASSEMBLY/ASSEMBLY.)



A6E5714A101

Reverse clutch clearance

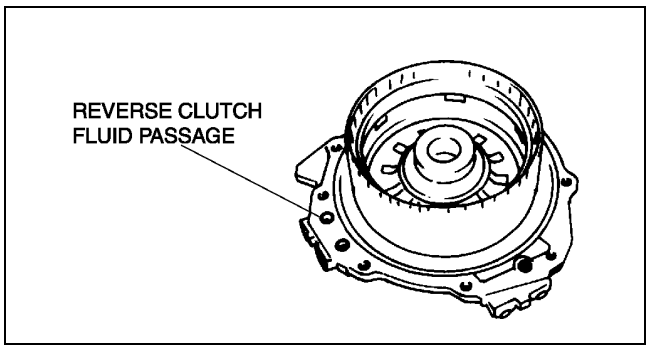
1. Measure the reverse clutch clearance.
   (1) Install the reverse clutch into the end cover, and set the dial gauge.
   (2) Secure the reverse clutch by lightly pressing down with a press, etc.



A6E5714A041

   (3) Apply compressed air to the part indicated in the figure and let the reverse clutch piston stroke three times.

   Air Pressure
   392—441 kPa {4.0—4.5 kgf/cm^2, 57—63 psi}

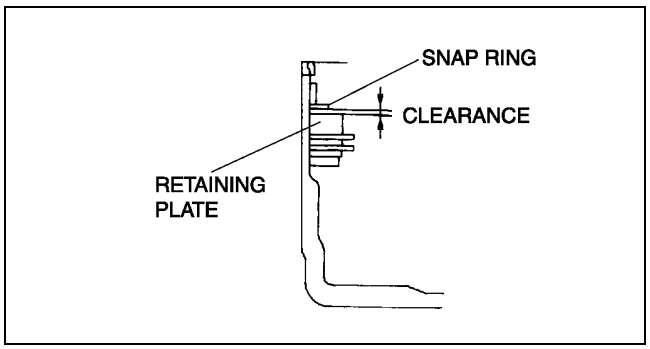


A6E5714A042

   (4) Apply compressed air and operate the reverse clutch piston. Read the value when the indicator of the dial gauge stops.
   (5) Release the compressed air and read the dial gauge when the reverse clutch piston is not operating.
   (6) Calculate the reverse clutch clearance according to the following formula: Step (4) value – Step (5) value = Reverse clutch clearance.
   (7) Measure the clearances at four locations (90° apart) by following the steps from (3) to (6). Verify that the average value is within the specificatin below.

   Reverse clutch clearance
   1.00—1.30 mm {0.039—0.051 in}

2. If not as specified, replace parts as necessary.(See K1–18 CLUTCH COMPONENT DISASSEMBLY/ASSEMBLY.)



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