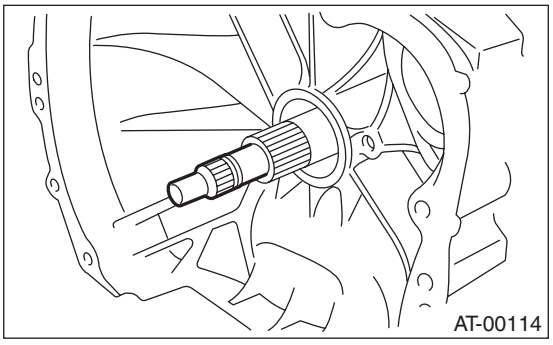
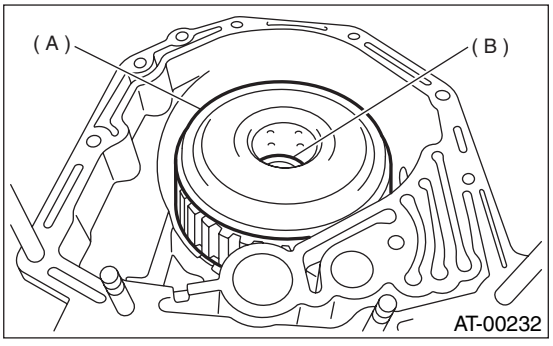
# 40.AT Main Case

## A: REMOVAL

1) Remove the transmission assembly from the vehicle. <Ref. to 4AT-39, REMOVAL.>
2) Extract the torque converter clutch assembly. <Ref. to 4AT-84, REMOVAL.>
3) Remove the input shaft.

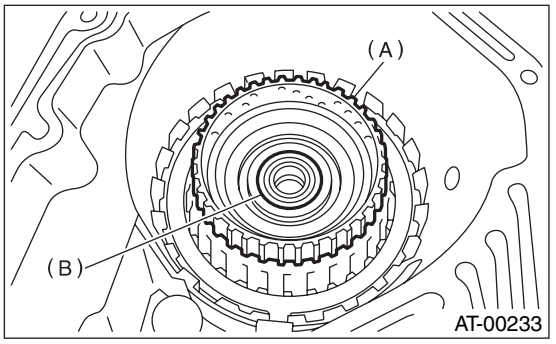



4) Lift-up the lever behind the transmission harness connector and disconnect it from stay.
5) Disconnect the inhibitor switch connector from stay.
6) Disconnect the air breather hose.
7) Remove the oil charger pipe. <Ref. to 4AT-83, REMOVAL.>
8) Remove the oil cooler inlet and outlet pipes. <Ref. to 4AT-80, REMOVAL.>
9) Separate the torque converter clutch case and transmission case.<Ref. to 4AT-104, REMOVAL.>
10) Remove the oil pump housing.
<Ref. to 4AT-106, REMOVAL, Oil Pump Housing.>
11) Take out the high clutch, thrust needle bearing and reverse clutch assembly.



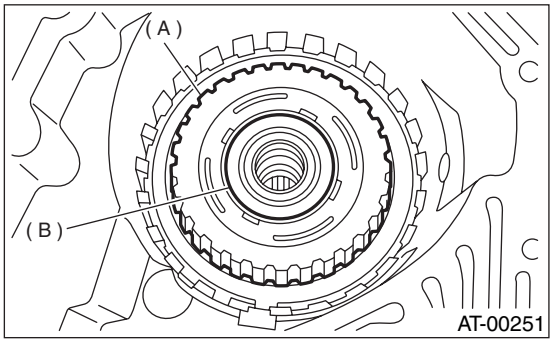

(A) High clutch and reverse clutch assembly
(B) Thrust needle bearing

12) Take out the high clutch hub and the thrust bearing.




(A) High clutch hub
(B) Thrust needle bearing

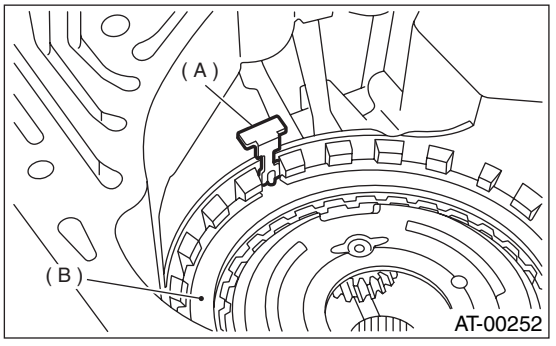
13) Take out the front sun gear and the thrust bearing.




(A) Front sun gear
(B) Thrust needle bearing

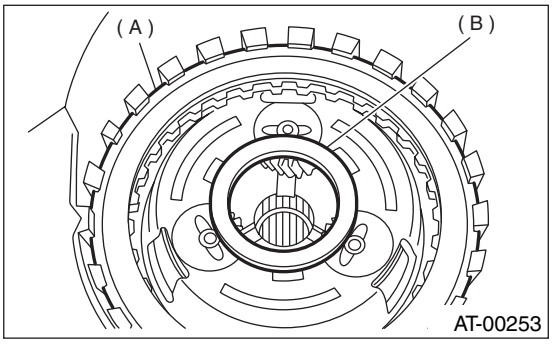
14) Pull out the leaf spring without folding.

NOTE:
Remove it while pressing the lower leaf spring down.



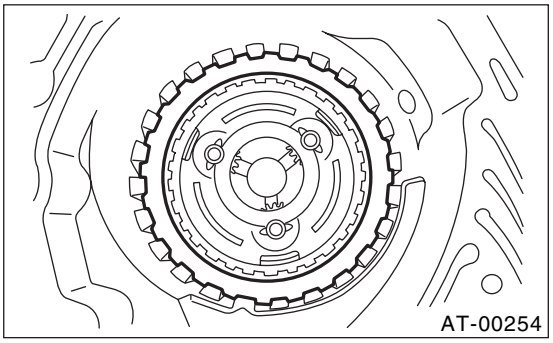

(A) Leaf spring
(B) Retaining plate

15) Remove the snap ring and thrust needle bearing.

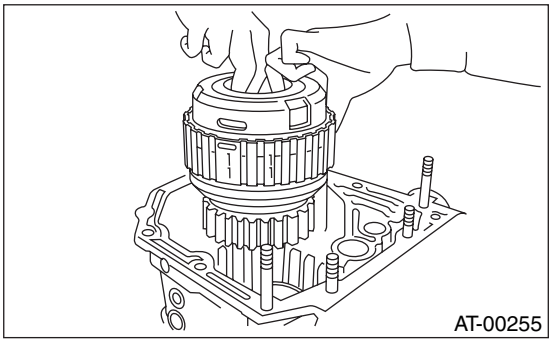



(A) Snap ring
(B) Thrust needle bearing

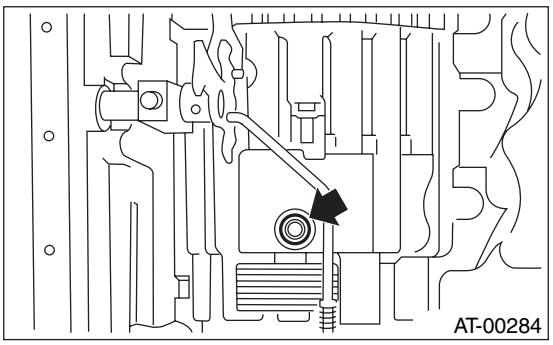
16) Take out the retaining plate, drive plate and driven plate of 2-4 brake.



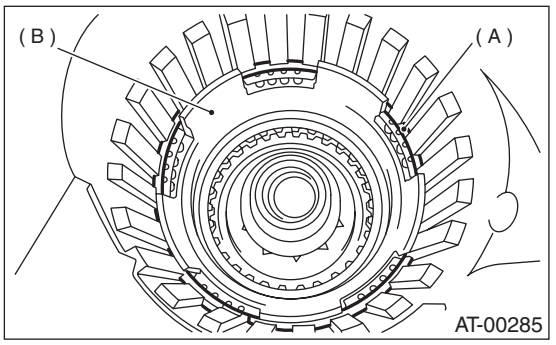

17) Take out the thrust needle bearing, planetary gear assembly and the low clutch assembly.




18) Remove the 2-4 brake seal.

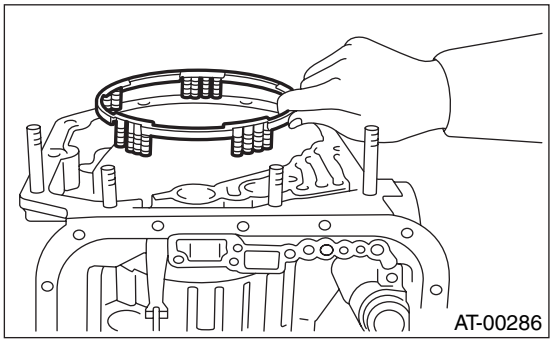



19) Remove the snap ring.

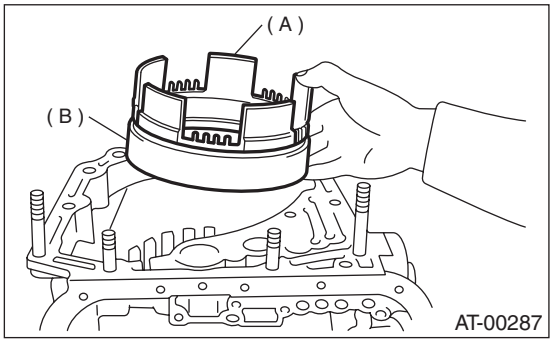



(A) Snap ring
(B) 2-4 brake piston

20) Take out the 2-4 brake return spring.

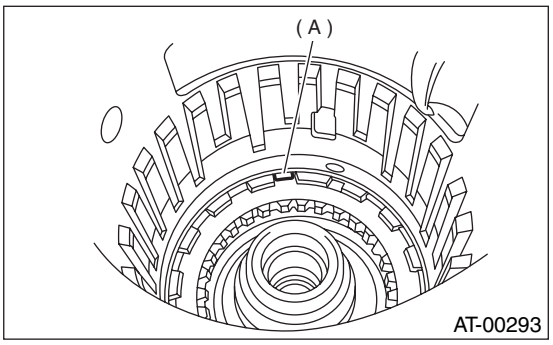



21) Remove the 2-4 brake piston and piston retainer without damaging.



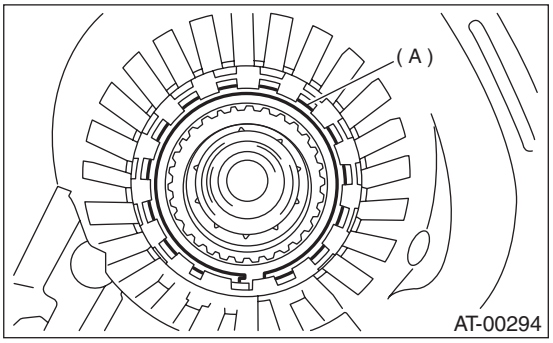

(A) 2-4 brake piston
(B) 2-4 brake piston retainer

22) Pull out the leaf spring without folding.



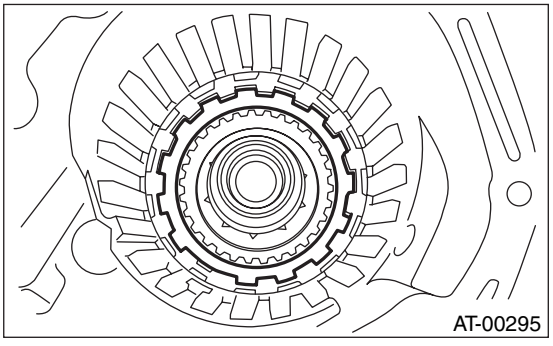

(A) Leaf spring

23) Remove the snap ring.

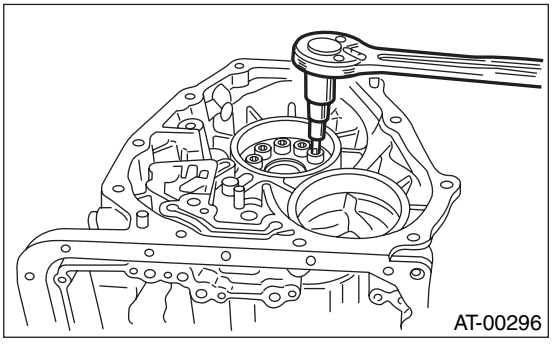



(A) Snap ring

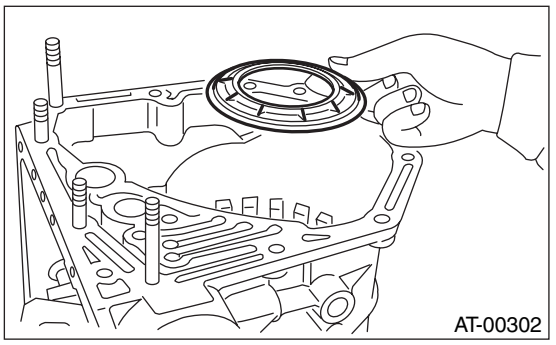
24) Take out the retaining plate, drive plate, driven plate and dish plate.



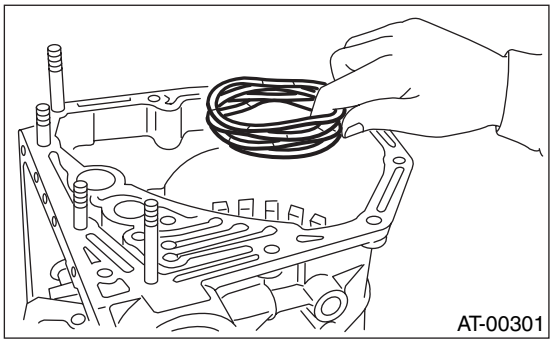

25) Turn the transmission case upside down, and then take out the socket bolts while holding the one-way clutch inner race with hand.



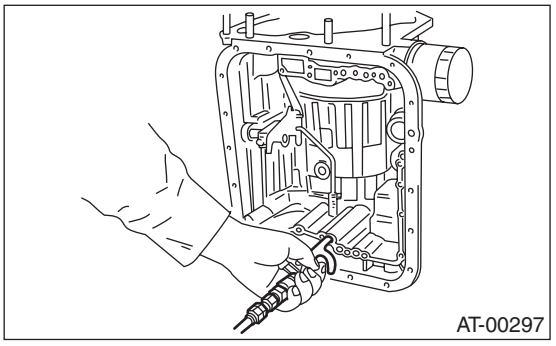

26) Take out the spring retainer.



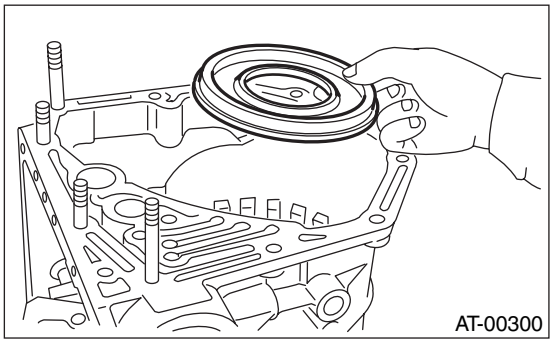

27) Take out the return spring.




28) Apply compressed air.



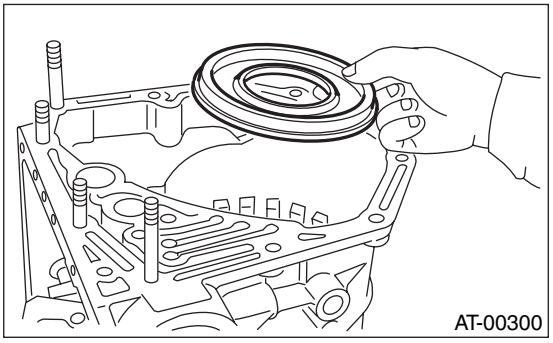

29) Take out the low & reverse piston.



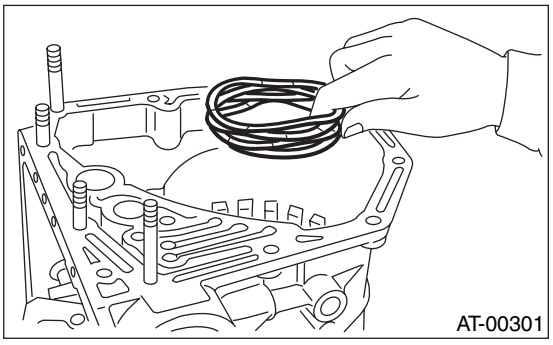
## B: INSTALLATION

1) Install the low and reverse piston without tilting.

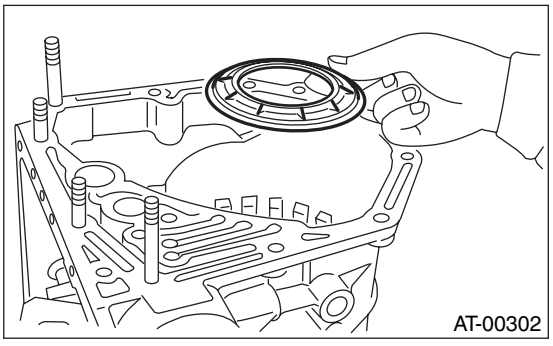
NOTE:
Be careful not to damage the lip seal.




2) Install the return spring.



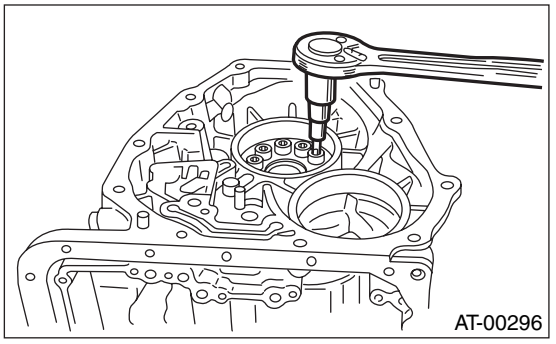

3) Install the spring retainer.




4) Install the one-way clutch inner race, spring retainer and return spring.

5) Tighten the socket head bolts evenly from the rear side of transmission case.

***Tightening torque:***
***25 N·m (2.5 kgf-m, 18.1 ft-lb)***



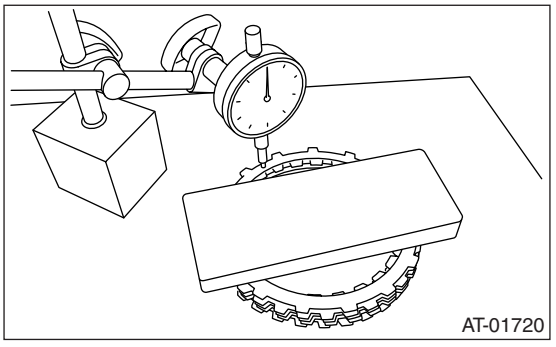

6) Place the front side of transmission body upward.
7) Install thrust needle bearing.
8) Place dish plate, driven plate, and retaining plate on a surface plate in order.
9) Set the micro gauge to clutch, and read its scale.

NOTE:
The value, which is read in the gauge at this time, is zero point.

10) Scale and record the weight “Z” of a flat board which will be put on plates.

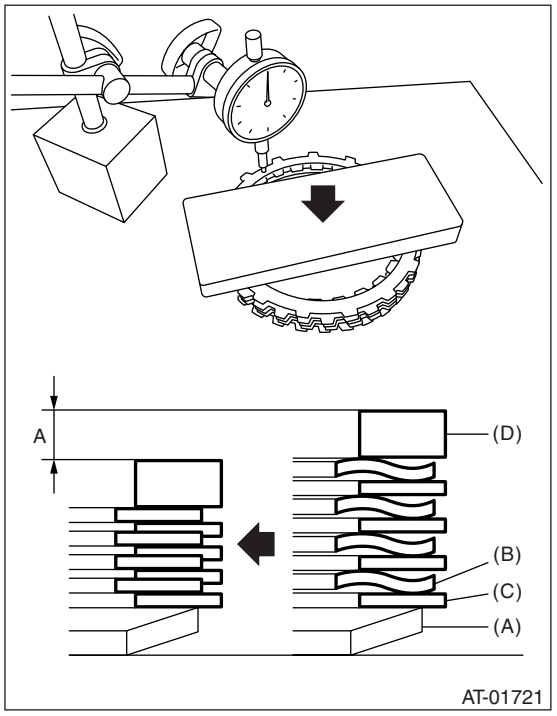
NOTE:
• Use a stiff flat board which does not bend against load.
• Use a flat board of its weight less than 83 N (8.5 kgf, 18.7 lb).

11) Put the flat board on retaining plate.




12) Using the following formula, calculate “N” indicated on the push/pull gauge.
N = 83 N (8.5 kgf, 18.7 lb) − Z
N: Value indicated on push/pull gauge
83 N (8.5 kgf, 18.7 lb): Load applied to clutch plate
Z: Flat board weight
13) Press the center of retaining plate applying force of N with push/pull gauge, and then measure and record the height A. Make more than three measurements at even distance and take the average value.

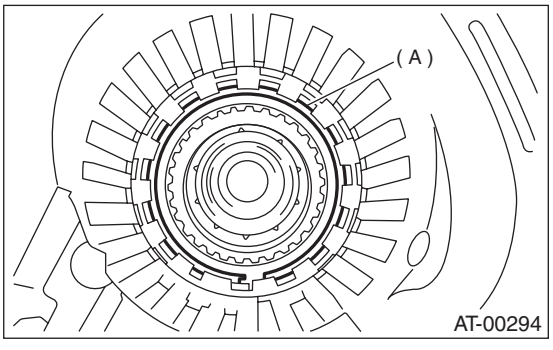
NOTE:
If three points, measure the height every 120°. If four points, measure the height every 90°.




(A) Dish plate
(B) Driven plate
(C) Drive plate
(D) Retaining plate

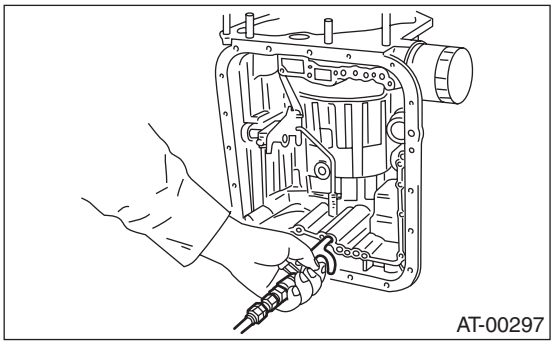
14) Installation of the low & reverse brake:
Install dish plate, driven plates, drive plates, and a retaining plate, and secure with a snap ring.

NOTE:
Pay attention to the orientation of the dish plate.

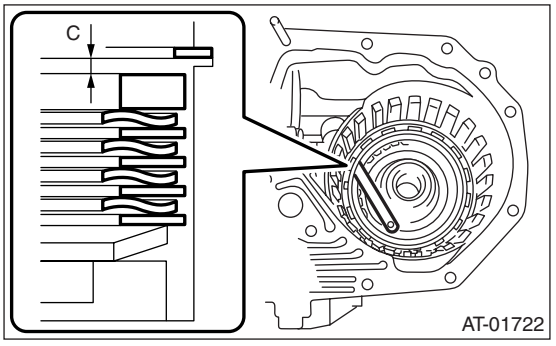



(A) Snap ring

15) Apply compressed air intermittently to check for operation.




16) Measure the clearance. Place the same thickness of shim on both sides to prevent the retaining plate from tilting.



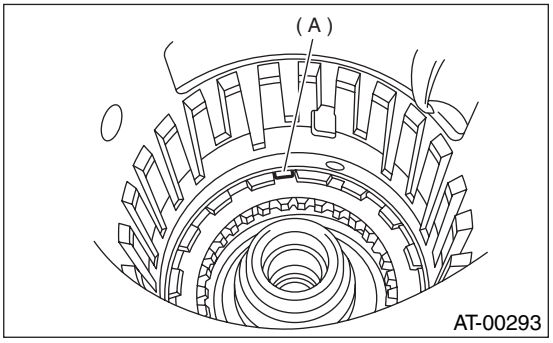

17) Calculation of piston stroke
Calculate piston stroke from the recorded measurement A and B, and select the retaining plate so that the piston stroke is within the standard value.
If the value from the equation exceeds the service limit, replace the drive plate with new one and adjust it to be within the standard.
T = A + C
T: Piston stroke
A: Amount of the flattened drive plate
B: Clearance between the retaining plate and the snap ring

***TURBO model***
***Standard value:***
***2.7 — 3.2 mm (0.106 — 0.126 in)***
***Limit value:***
***3.9 mm (0.154 in)***

***NON-TURBO model***
***Standard value:***
***2.4 — 2.9 mm (0.094 — 0.114 in)***
***Limit value:***
***3.6 mm (0.142 in)***

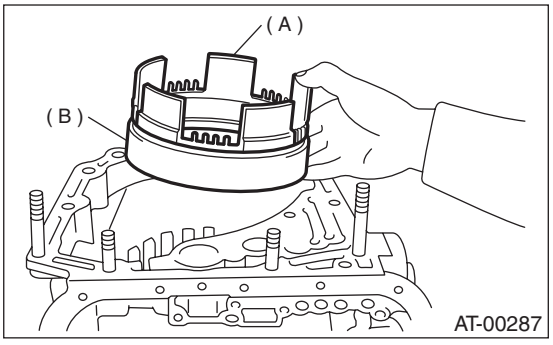
| Retaining plates | |
|---|---|
| Part No. | Thickness mm (in) |
| 31667AA320 | 4.1 (0.161) |
| 31667AA330 | 4.4 (0.173) |
| 31667AA340 | 4.7 (0.185) |
| 31667AA350 | 5.0 (0.197) |
| 31667AA360 | 5.3 (0.209) |
| 31667AA370 | 5.6 (0.220) |
| 31667AA380 | 5.9 (0.232) |

18) Install the low & reverse brake leaf spring.



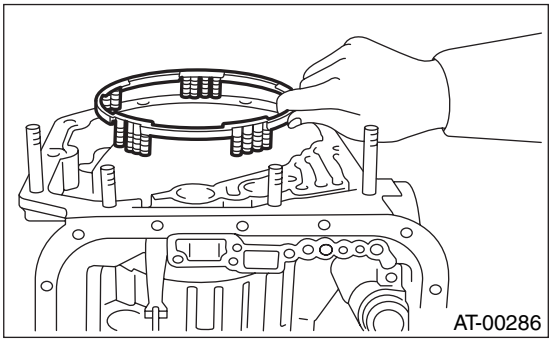

(A) Leaf spring

19) Install the 2-4 brake piston and 2-4 brake retainer by aligning the hole of 2-4 brake retainer and the hole of transmission case.

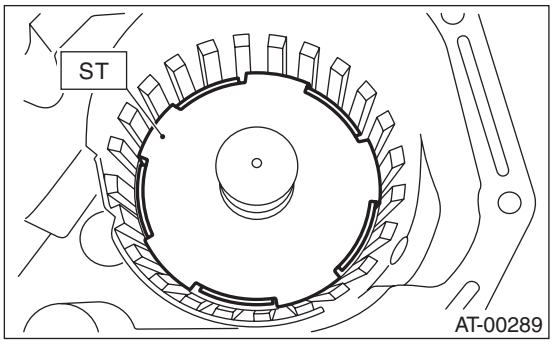



(A) 2-4 brake piston
(B) 2-4 brake piston retainer

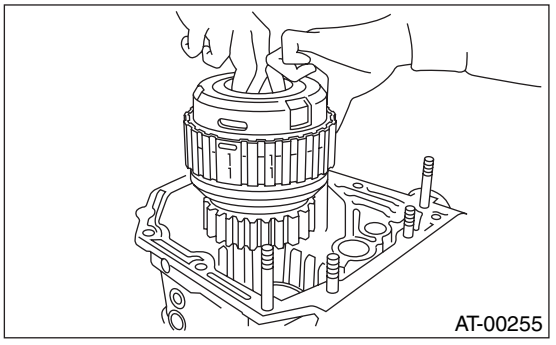
20) Install the 2-4 brake piston return spring to transmission case.



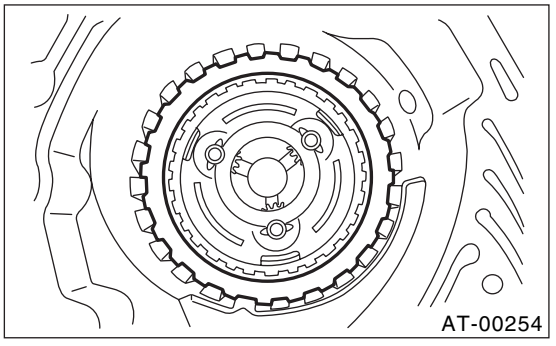

21) Position the snap ring in transmission. Using ST, press the snap ring into place.
ST 498677100 COMPRESSOR



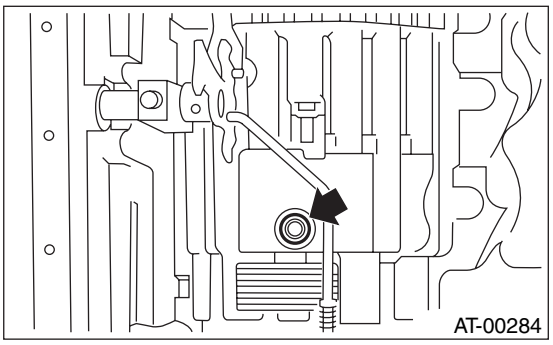

22) Install the planetary gear and low clutch assembly to transmission case.
Install carefully while rotating the low clutch and planetary gear assembly slowly paying special attention not to damage the seal ring.



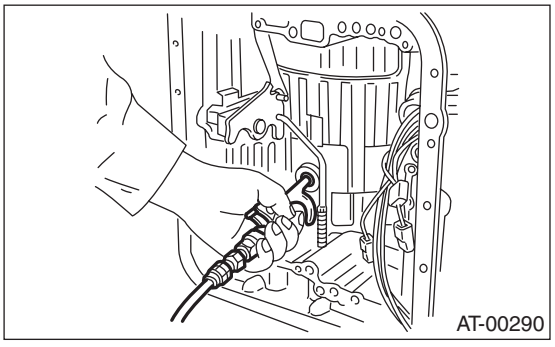

23) Install pressure plate, drive plate, driven plate, retaining plate and snap ring.



24) Install a new 2-4 brake oil seal to transmission case.




25) After all 2-4 brake component parts have been installed, blow in air intermittently and confirm the operation of the brake.



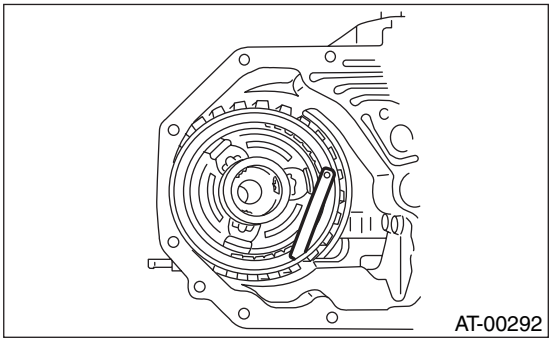

26) Check the clearance between the retaining plate and the snap ring.

NOTE:
Select a retaining plate with a suitable value from the following table, so that the clearance becomes the standard value.

If the clearance is above the limit, replace the drive plate with new one and adjust so that the clearance becomes the standard value.

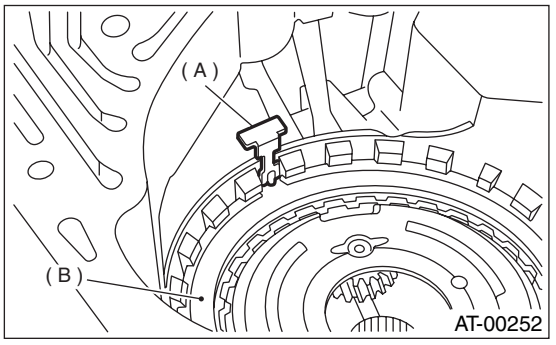
***Standard value:***
***0.8 — 1.2 mm (0.031 — 0.047 in)***

***Allowable limit:***
***1.5 mm (0.059 in)***



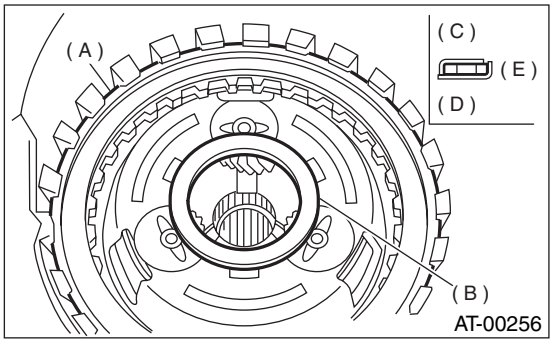

| Retaining plates | |
|---|---|
| Part No. | Thickness mm (in) |
| 31567AA991 | 5.6 (0.220) |
| 31567AB001 | 5.8 (0.228) |
| 31567AB011 | 6.0 (0.236) |
| 31567AB021 | 6.2 (0.244) |
| 31567AB031 | 6.4 (0.252) |
| 31567AB041 | 6.6 (0.260) |

27) Be careful not to mistake the location of the leaf spring to be inserted.



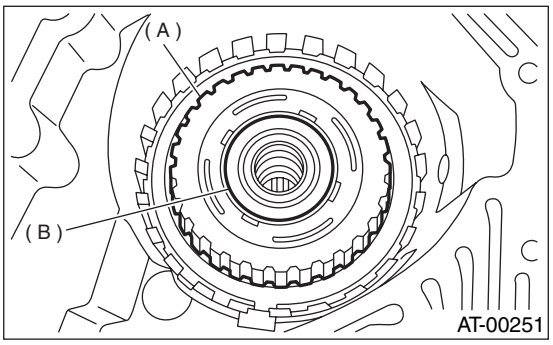

(A) Leaf spring
(B) Retaining plate

28) Install thrust needle bearing in the correct direction.



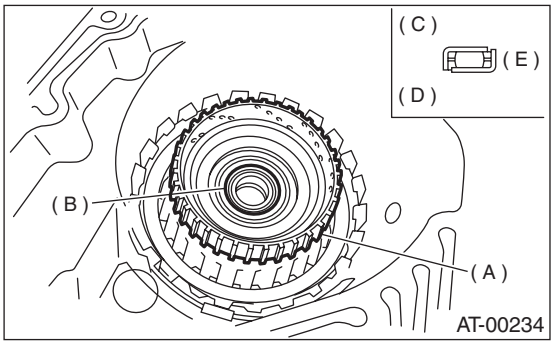

(A) Snap ring
(B) Thrust needle bearing
(C) Upside
(D) Downside
(E) Outside

29) Install front sun gear and thrust needle bearing.



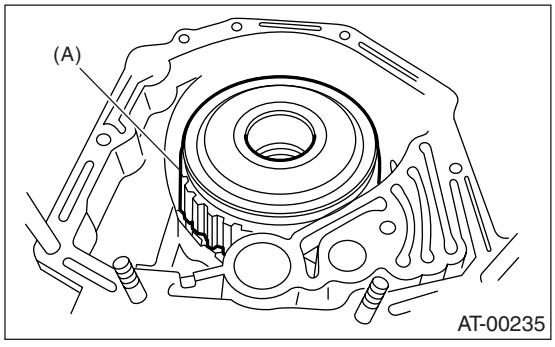

(A) Front sun gear
(B) Thrust needle bearing

30) Install the high clutch hub.
Attach the thrust needle bearing to the hub with vaseline and install the hub by correctly engaging the splines of the front planetary carrier.
31) Install the thrust needle bearing in proper direction.




(A) High clutch hub
(B) Thrust needle bearing
(C) Upside
(D) Downside
(E) Outside

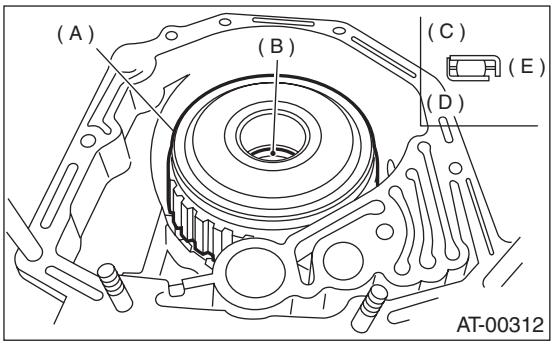
32) Install the high clutch assembly.




(A) High clutch and reverse clutch assembly

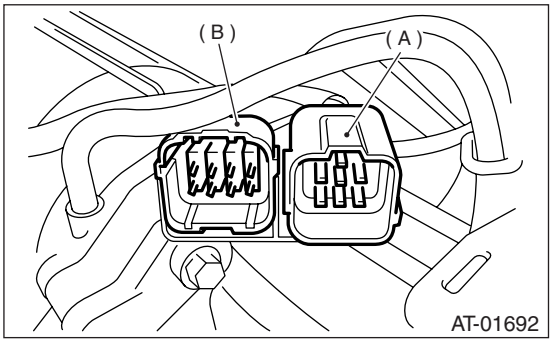
33) Adjust total end play. <Ref. to 4AT-110, ADJUSTMENT, Oil Pump Housing.>

34) Install the thrust needle bearing in proper direction.




(A) High clutch and reverse clutch ASSY
(B) Thrust needle bearing
(C) Upside
(D) Downside
(E) Outside

35) Install the oil pump housing assembly.
36) Install the torque converter clutch case assembly to the transmission case assembly. <Ref. to 4AT-104, INSTALLATION.>
37) Insert inhibitor switch and transmission connector into stay.
38) Install air breather hose. <Ref. to 4AT-82, INSTALLATION.>

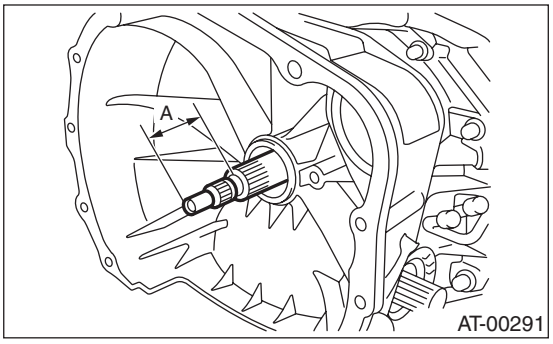



(A) Transmission harness
(B) Inhibitor switch harness

39) Install oil cooler pipes. <Ref. to 4AT-81, INSTALLATION.>
40) Install the oil charger pipe with O-ring. <Ref. to 4AT-83, INSTALLATION.>

41) Insert the input shaft while turning lightly by hand. At this time, not to damage the bushing.

***Normal protrusion A:***
***50 — 55 mm (1.97 — 2.17 in)***

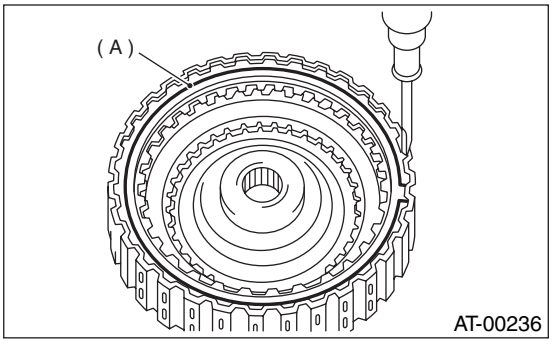



42) Install the torque converter clutch assembly. <Ref. to 4AT-84, INSTALLATION.>
43) Install the transmission assembly to the vehicle. <Ref. to 4AT-42, INSTALLATION.>

## C: DISASSEMBLY

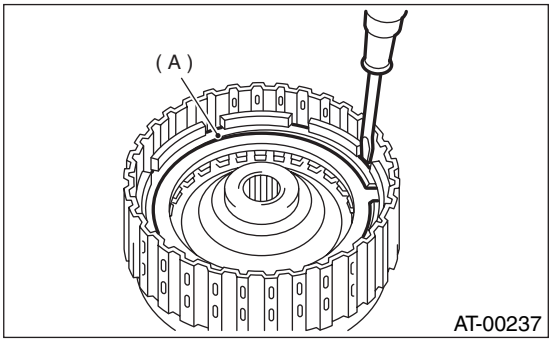
### 1. HIGH CLUTCH, REVERSE CLUTCH

1) Remove the snap ring, and take out the retaining plate, drive plates, driven plates.



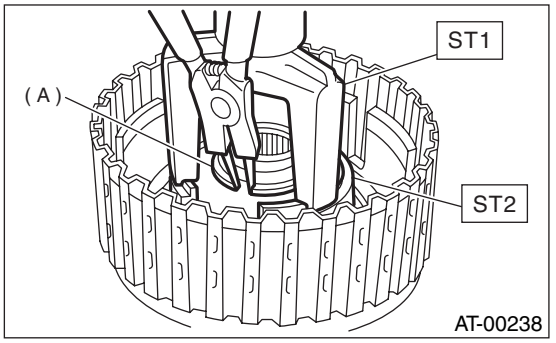

(A) Snap ring

2) Remove snap ring, and take out the retaining plate, drive plates and driven plates.



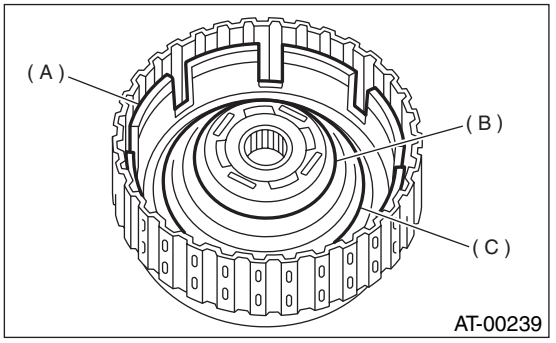

(A) Snap ring

3) Using ST1 and ST2, remove snap ring.
ST1 398673600 COMPRESSOR
ST2 498627100 SEAT



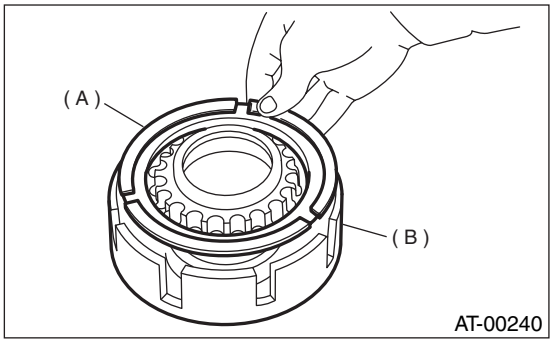

(A) Snap ring

4) Take out clutch cover, spring retainer, high clutch piston and reverse clutch piston.




(A) Reverse clutch piston
(B) Cover
(C) Return spring

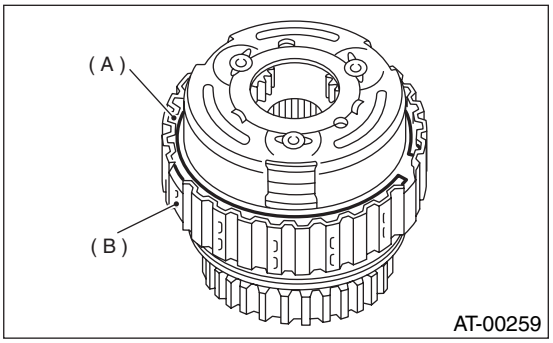
5) Remove seal rings and lip seal from high clutch piston and reverse clutch piston.




(A) High clutch piston
(B) Reverse clutch piston

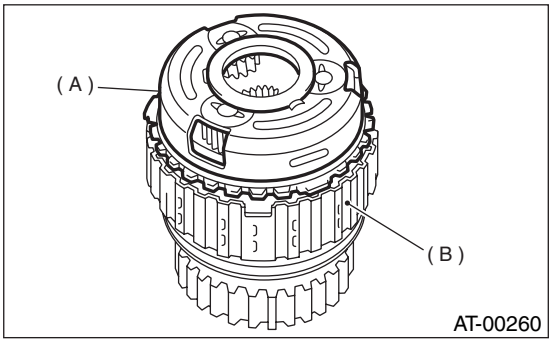
## 2. PLANETARY GEAR, LOW CLUTCH

1) Remove snap ring from the low clutch drum.



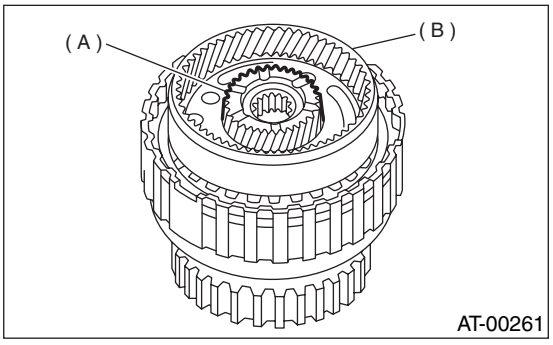

(A) Snap ring
(B) Low clutch drum

2) Take out front planetary carrier.



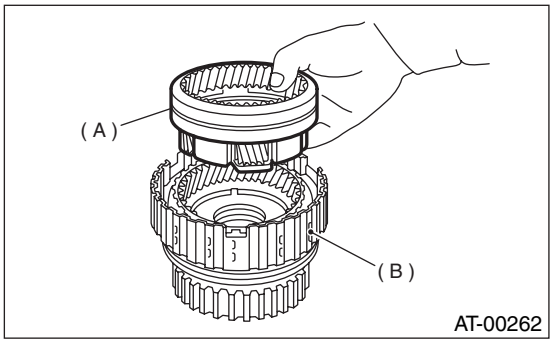

(A) Front planetary carrier
(B) Low clutch drum

3) Take out rear sun gear.



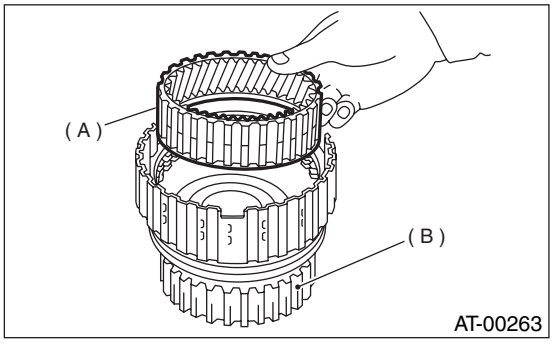

(A) Rear sun gear
(B) Rear planetary carrier

4) Take out rear planetary carrier, washer and thrust needle bearing.



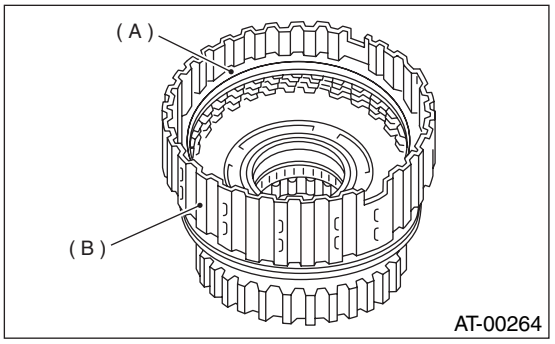

(A) Rear planetary carrier
(B) Low clutch drum

5) Take out rear internal gear.



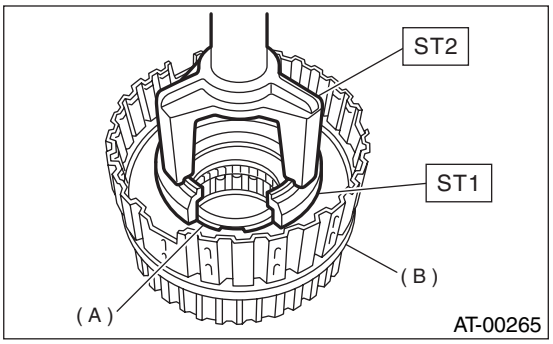

(A) Rear internal gear
(B) Low clutch drum

6) Remove the snap ring from the low clutch drum.



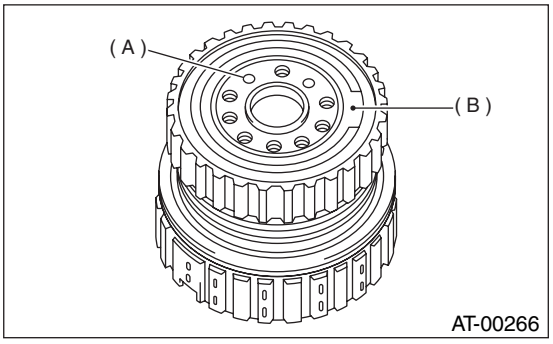

(A) Snap ring
(B) Low clutch drum

7) Compress the spring retainer, and remove the snap ring from the low clutch drum, by using ST1 and ST2.
ST1 498627100 SEAT
ST2 398673600 COMPRESSOR




(A) Snap ring
(B) Low clutch drum

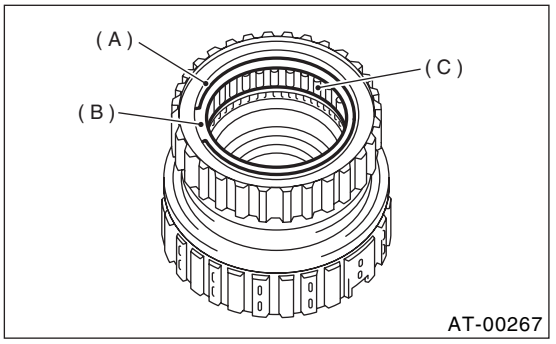
8) Remove one-way clutch. <Ref. to 4AT-122, REMOVAL, AT Main Case.>
9) Install the one-way clutch inner race to the low clutch drum, and apply compressed air to remove the low clutch piston.




(A) Apply compressed air
(B) One-way clutch inner race

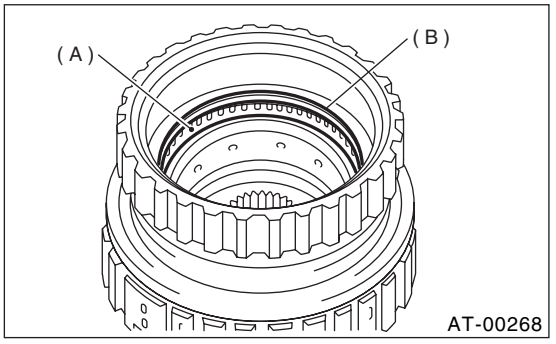
10) Remove the one-way clutch inner race.

11) Remove the one-way clutch after taking out the snap ring.




(A) Snap ring
(B) Plate
(C) One-way clutch

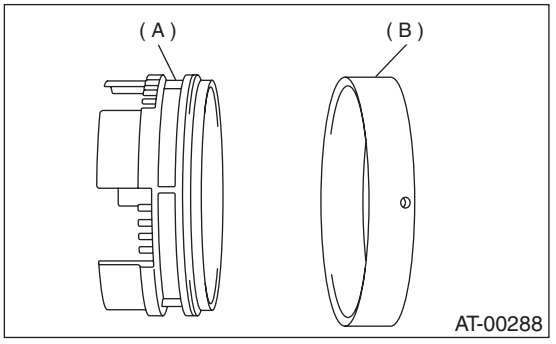
12) Remove the needle bearing after taking out the snap ring.




(A) Needle bearing
(B) Snap ring

### 3. 2-4 BRAKE

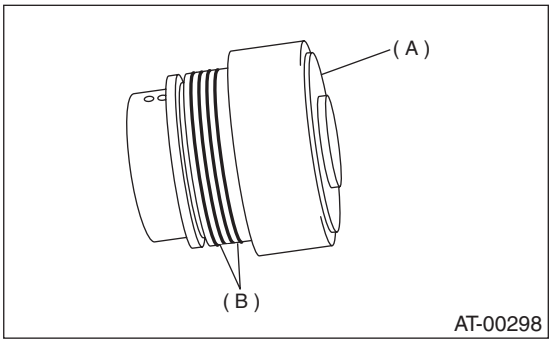
1) Separate 2-4 brake piston and piston retainer.




(A) 2-4 brake piston
(B) 2-4 brake piston retainer

### 4. ONE-WAY CLUTCH INNER RACE

1) Remove seal rings.

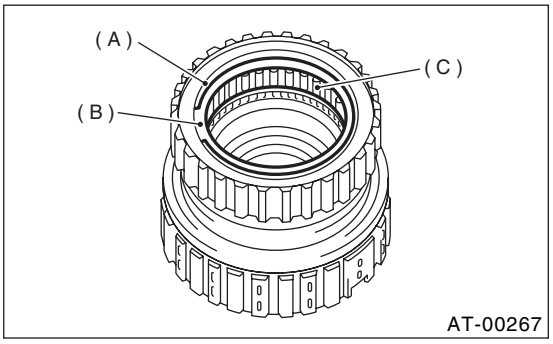



(A) One way clutch inner race
(B) Seal rings

2) Using ST, remove needle bearing.
ST 398527700 PULLER ASSY

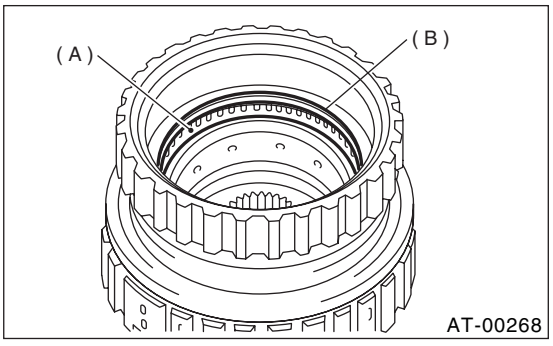
### 5. ONE-WAY CLUTCH OUTER RACE

1) Remove the one-way clutch after taking out the snap ring.




(A) Snap ring
(B) Plate
(C) One-way clutch

2) Remove the needle bearing after taking out the snap ring.



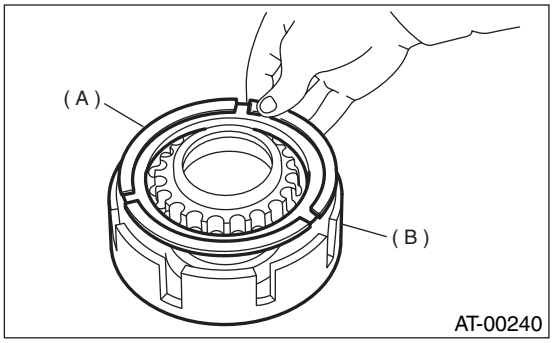

(A) Needle bearing
(B) Snap ring

## D: ASSEMBLY

### 1. HIGH CLUTCH, REVERSE CLUTCH

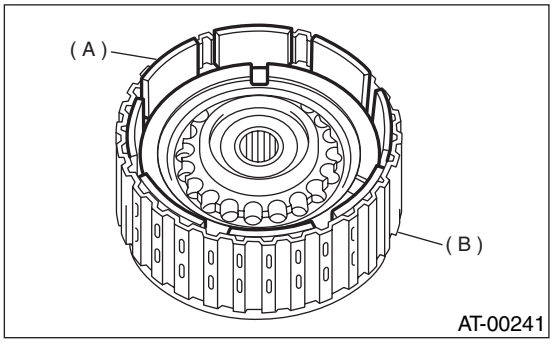
**• NON-TURBO MODEL**

1) Install seal rings and lip seal to high clutch piston and reverse clutch piston.
2) Install high clutch piston to reverse clutch piston.



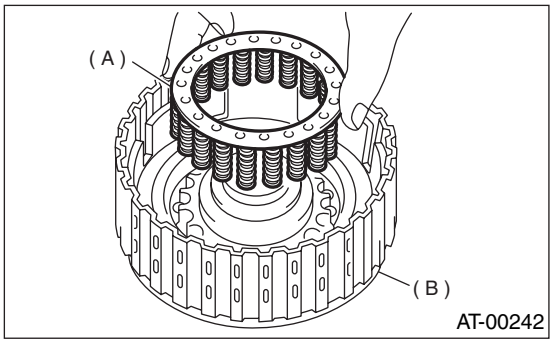

(A) High clutch piston
(B) Reverse clutch piston

3) Install reverse clutch to high clutch drum.
Align the groove on the reverse clutch piston with the groove on the high clutch drum during installation.



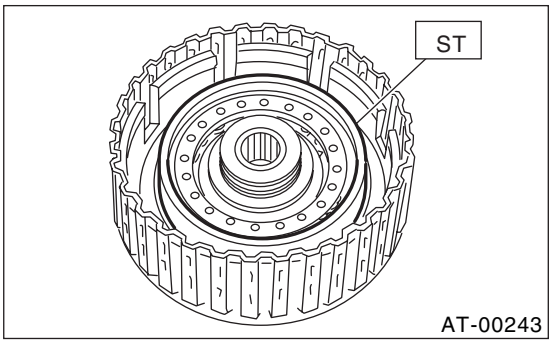

(A) Reverse clutch piston
(B) High clutch drum

4) Install spring retainer to high clutch piston.

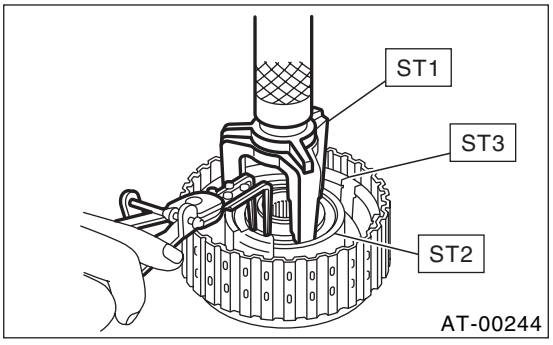



(A) Return spring
(B) High clutch drum

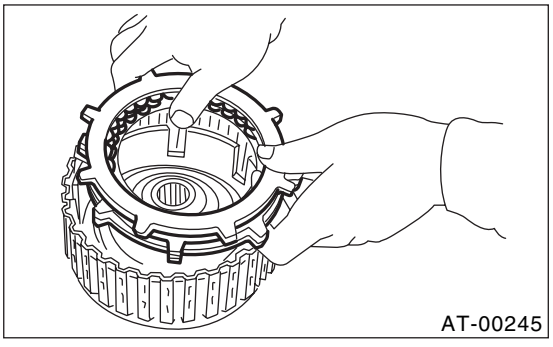
5) Install ST to high clutch piston.
ST 498437000 HIGH CLUTCH PISTON GUIDE




6) Avoid folding the high clutch piston seal, when installing the cover to high clutch piston.
7) Using ST1 and ST2, install snap ring.
ST1 398673600 COMPRESSOR
ST2 498627100 SEAT
ST3 498437000 HIGH CLUTCH PISTON GUIDE

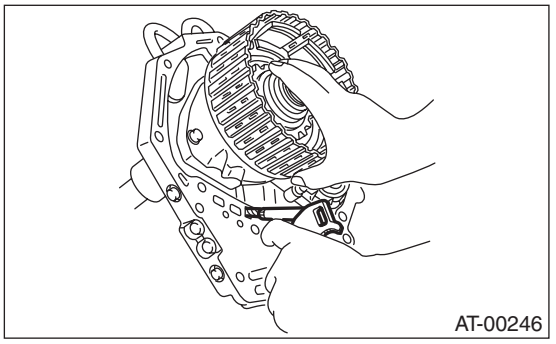



8) Install the thickest driven plate to piston side, and then install the driven plate, drive plate, retaining plate to high clutch drum.




9) Install snap ring to high clutch drum.

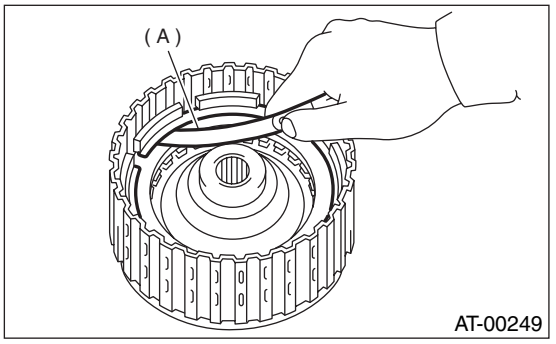
10) Apply compressed air intermittently to check for operation.




11) Measure the clearance between the retaining plate and snap ring (High clutch). At this time, do not press down retaining plate.

***Standard value:***
***0.8 — 1.1 mm (0.031 — 0.043 in)***

***Allowable limit:***
***1.5 mm (0.059 in)***

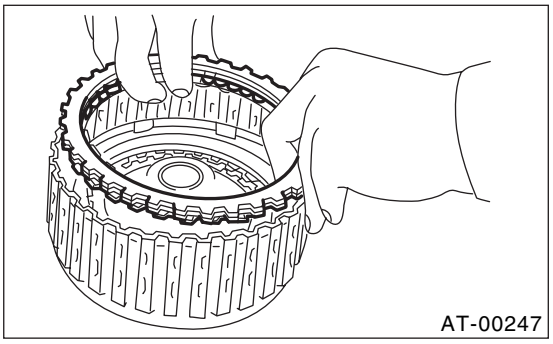



(A) Thickness gauge

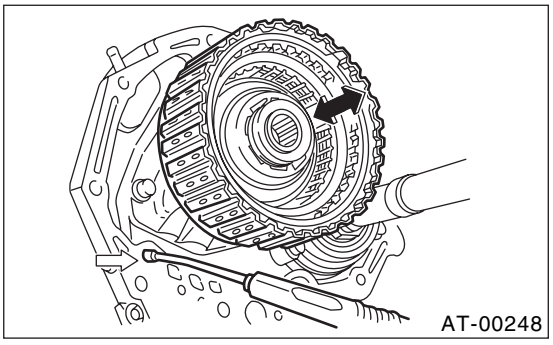
If specified tolerance limits are exceeded, select a suitable high clutch retaining plate.
If the clearance is above the limit, replace the drive plate with new one and adjust so that the clearance becomes within the specified value.

| High clutch retaining plate | |
|---|---|
| Part No. | Thickness mm (in) |
| 31567AA710 | 4.7 (0.185) |
| 31567AA720 | 4.8 (0.189) |
| 31567AA730 | 4.9 (0.193) |
| 31567AA740 | 5.0 (0.197) |
| 31567AA670 | 5.1 (0.201) |
| 31567AA680 | 5.2 (0.205) |
| 31567AA690 | 5.3 (0.209) |
| 31567AA700 | 5.4 (0.213) |

12) Install driven plate, drive plate, retaining plate and snap ring.



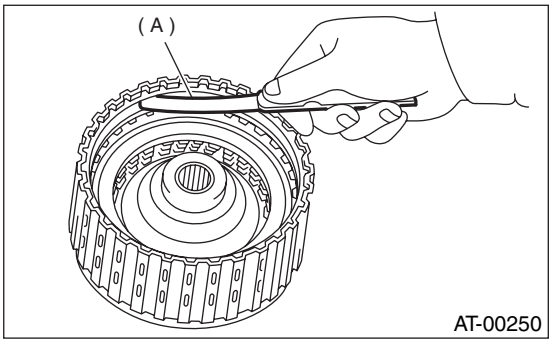

13) Apply compressed air intermittently to check for operation.




14) Measure the clearance between the retaining plate and snap ring (Reverse clutch). At this time, do not press down retaining plate.

***Standard value:***
***0.5 — 0.8 mm (0.020 — 0.031 in)***

***Allowable limit:***
***1.2 mm (0.047 in)***



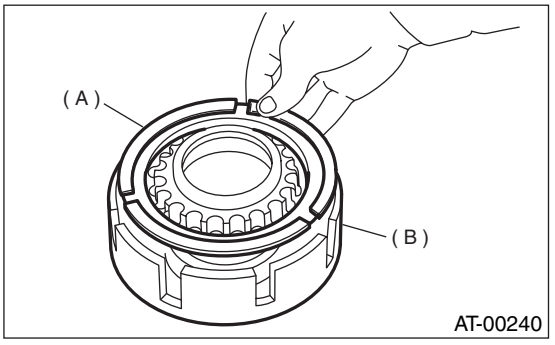

(A) Thickness gauge

If specified tolerance limits are exceeded, select a suitable reverse clutch retaining plate.
If the clearance is above the limit, replace the retaining plate with new one, so that the clearance becomes within the specified value.

| Reverse clutch retaining plates | |
|---|---|
| Part No. | Thickness mm (in) |
| 31567AA910 | 4.0 (0.157) |
| 31567AA920 | 4.2 (0.165) |
| 31567AA930 | 4.4 (0.173) |
| 31567AA940 | 4.6 (0.181) |
| 31567AA950 | 4.8 (0.189) |
| 31567AA960 | 5.0 (0.197) |
| 31567AA970 | 5.2 (0.205) |
| 31567AA980 | 5.4 (0.213) |

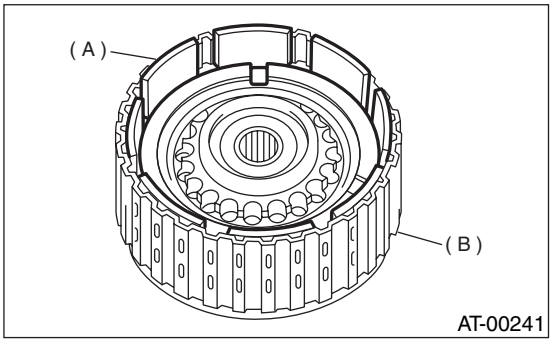
**• TURBO MODEL**

1) Install the seal ring and lip seal to the high clutch-piston and reverse clutch piston.
2) Install the high clutch piston to reverse clutch piston.



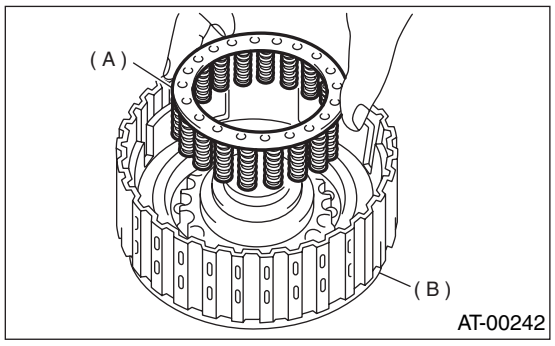

(A) High clutch piston
(B) Reverse clutch piston

3) Install the reverse clutch piston to high clutch drum. Align the groove on reverse clutch piston with the groove on high clutch drum during installation.




(A) Reverse clutch piston
(B) High clutch drum

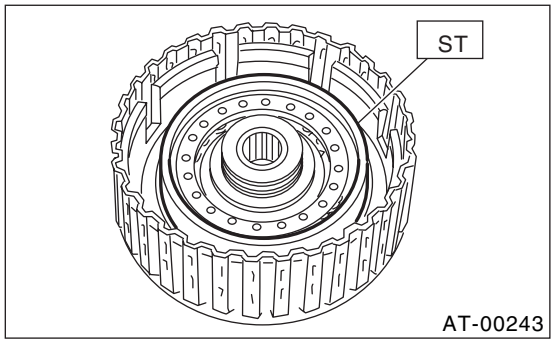
4) Install the spring retainer to high clutch piston.




(A) Spring retainer
(B) High clutch drum

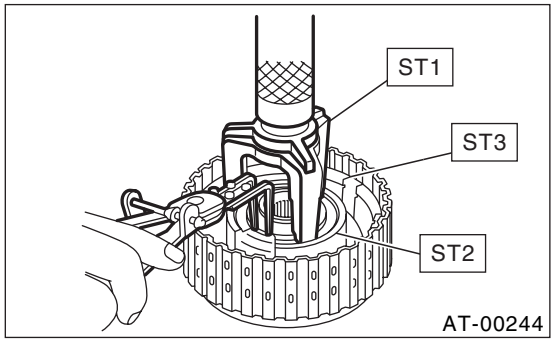
5) Install the ST to high clutch piston.

| | |
|---|---|
| ST 498437000 | HIGH CLUTCH PISTON GUIDE |




6) Install the cover to high clutch piston without folding the high clutch piston seal.
7) Install the snap ring using ST1 and ST2.

| | |
|---|---|
| ST1 398673600 | COMPRESSOR |
| ST2 498627100 | SEAT |
| ST3 498437000 | HIGH CLUTCH PISTON GUIDE |



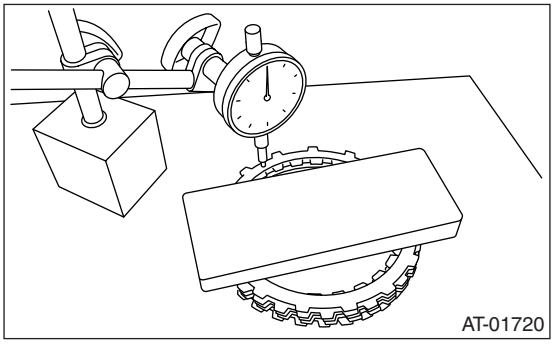

8) Place the dish plate, driven plate, drive plate and retaining plate neatly in this order on surface table.
9) Set the micro gauge to clutch, and read its scale.

NOTE:
The value, which is read in the gauge at this time, is zero point.

10) Scale and record the weight “Z” of a flat board which will be put on plates.

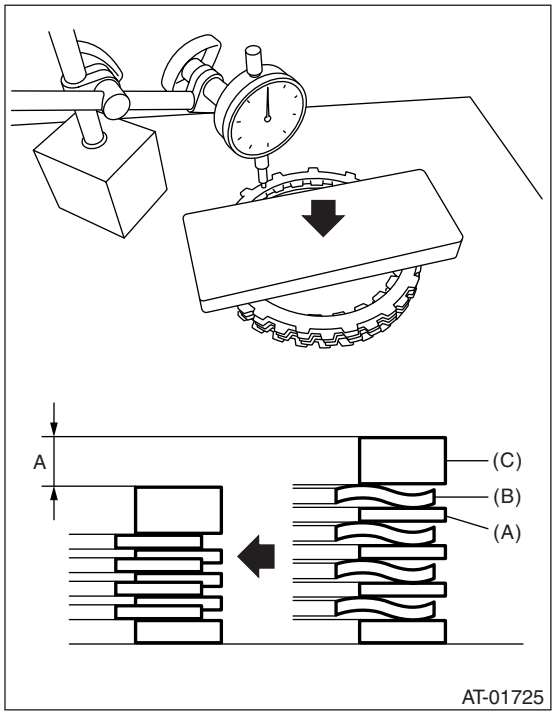
NOTE:
• Use a stiff flat board which does not bend against load.
• Use a flat board of its weight less than 250 N (25.5 kgf, 56.2 lb).

11) Put the flat board on retaining plate.



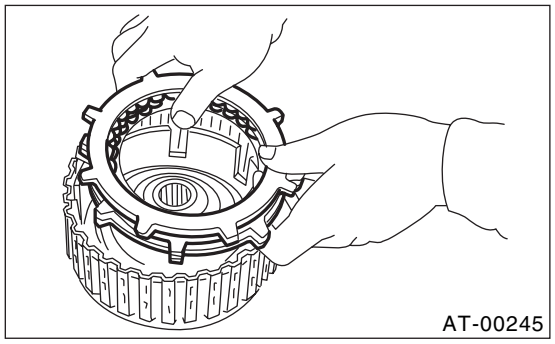

12) Using the following formula, calculate “N” indicated on the push/pull gauge.
N = 250 N (25.5 kgf, 56.2 lb) – Z
N: Value indicated on push/pull gauge
250 N (25.5 kgf, 56.2 lb): Load applied to clutch plate
Z: Flat board weight
13) Press the center of retaining plate applying force of N with push/pull gauge, and then measure and record the height A. Make more than three measurements at even distance and take the average value.

NOTE:
If three points, measure the height every 120°. If four points, measure the height every 90°.



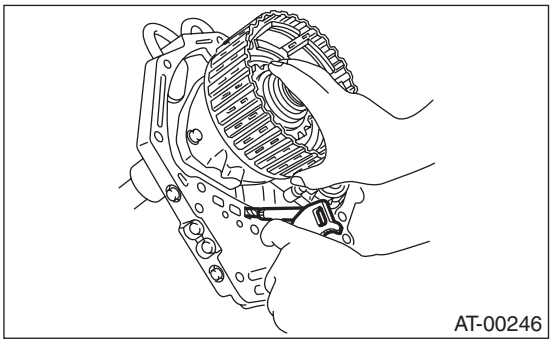

(A) Driven plate
(B) Drive plate
(C) Retaining plate

14) Install the thickest driven plate to piston side, and then install the driven plate, drive plate, retaining plate to high clutch drum.

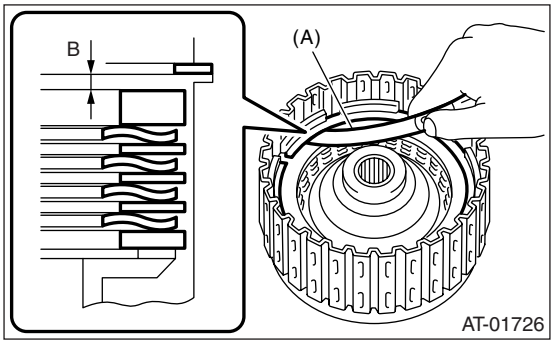



15) Install the snap ring to high clutch drum.

16) Apply compressed air intermittently to check for operation.




17) Measure and record the clearance B between the retaining plate and snap ring. (High clutch)
At this time, do not press down the retaining plate.




(A) Thickness gauge

18) Piston stroke calculation
Select the retaining plate within the specification by calculating with A and B dimensions which have been recorded before. If the calculated value exceeds the usage limit, replace the drive plate with a new one and adjust it within the specitication.
T = A + B
T: Piston stroke
A: Collapse amount of drive plate
B: Clearance between retaining plate and snap ring

***Initial standard:***
***2.0 — 2.3 mm (0.079 — 0.091 in)***

***Limit thickness:***
***2.6 mm (0.102 in)***

| High clutch retaining plate | |
|---|---|
| Part number | Thickness mm (in) |
| 31567AA670 | 5.1 (0.201) |
| 31567AA680 | 5.2 (0.205) |
| 31567AA690 | 5.3 (0.209) |
| 31567AA700 | 5.4 (0.213) |
| 31567AA710 | 5.5 (0.217) |
| 31567AA720 | 5.6 (0.220) |
| 31567AA730 | 5.7 (0.224) |
| 31567AA740 | 5.8 (0.228) |

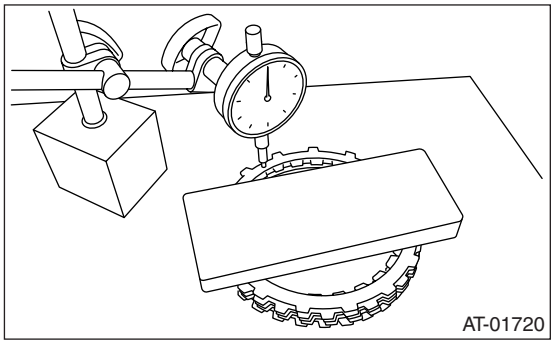
19) Place the dish plate, driven plate, drive plate and retaining plate neatly in this order on surface table.
20) Set the micro gauge to clutch, and read its scale.

NOTE:
The value, which is read in the gauge at this time, is zero point.

21) Scale and record the weight "Z" of a flat board which will be put on plates.

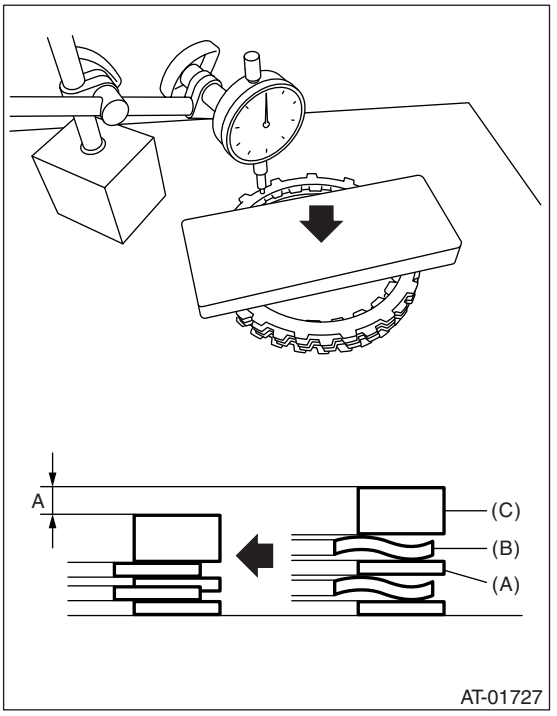
NOTE:
• Use a stiff flat board which does not bend against load.
• Use a flat board of its weight less than 150 N (15.3 kgf, 33.7 lb).

22) Put the flat board on retaining plate.



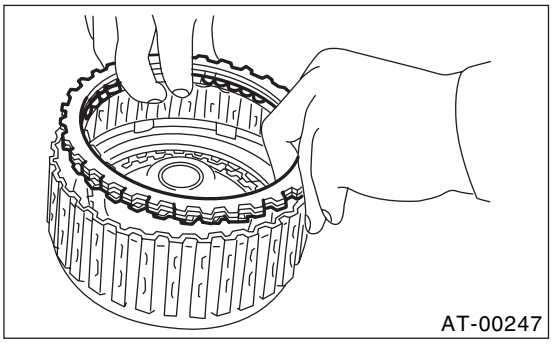

23) Using the following formula, calculate "N" indicated on the push/pull gauge.
N = 150 N (15.3 kgf, 33.7 lb) – Z
N: Value indicated on push/pull gauge
150 N (15.3 kgf, 33.7 lb): Load applied to clutch plate
Z: Flat board weight
24) Press the center of retaining plate applying force of N with push/pull gauge, and then measure and record the height A. Make more than three measurements at even distance and take the average value.

NOTE:
If three points, measure the height every 120°. If four points, measure the height every 90°.

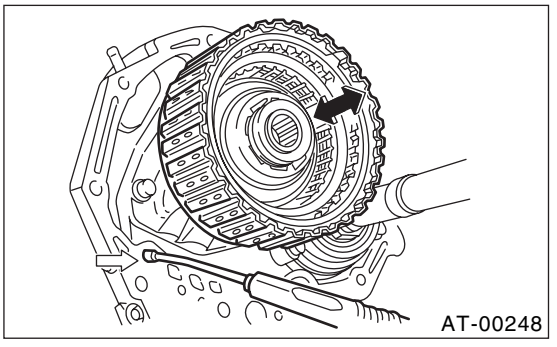



(A) Driven plate
(B) Drive plate
(C) Retaining plate

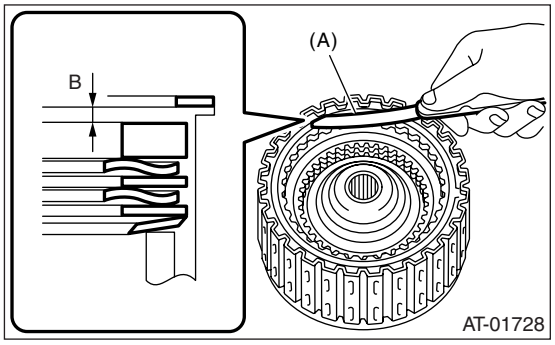
25) Install the driven plate, drive plate, retaining plate and snap ring.




26) Apply compressed air intermittently to check for operation.



27) Measure and record the clearance B between the retaining plate and snap ring. (Reverse clutch) At this time, do not press down the retaining plate.




(A) Thickness gauge

28) Piston stroke calculation
Select the retaining plate within the specification by calculating with A and B dimensions which have been recorded before. If the calculated value exceeds the usage limit, replace the drive plate with a new one and adjust it within the specitication.
T = A + B
T: Piston stroke
A: Collapse amount of drive plate
B: Clearance between retaining plate and snap ring

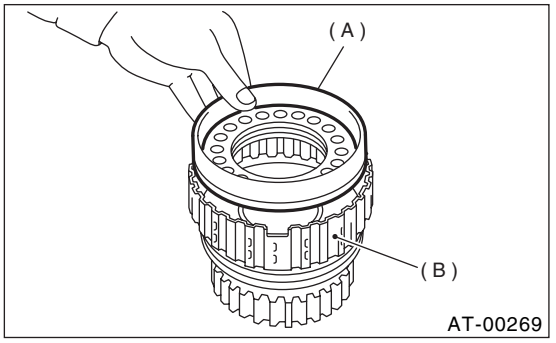
***Initial standard:***
***1.1 — 1.4 mm (0.043 — 0.055 in)***

***Limit thickness:***
***1.6 mm (0.063 in)***

| Reverse clutch retaining plate | |
|---|---|
| Part number | Thickness mm (in) |
| 31567AA910 | 4.0 (0.157) |
| 31567AA920 | 4.2 (0.165) |
| 31567AA930 | 4.4 (0.173) |
| 31567AA940 | 4.6 (0.181) |
| 31567AA950 | 4.8 (0.189) |
| 31567AA960 | 5.0 (0.197) |
| 31567AA970 | 5.2 (0.205) |
| 31567AA980 | 5.4 (0.213) |

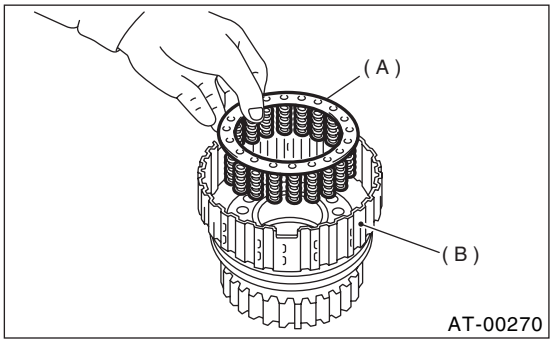
## 2. PLANETARY GEAR, LOW CLUTCH

1) Install new D-ring to low clutch piston.
2) Fit the low clutch piston to the low clutch drum.



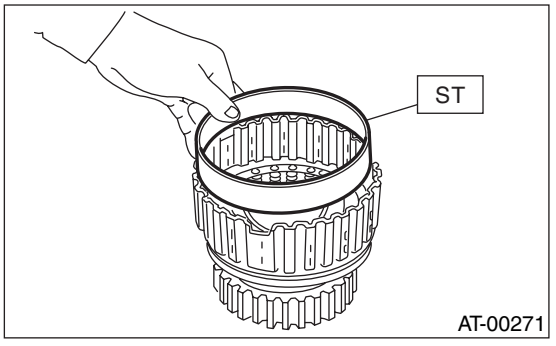

(A) Low clutch piston
(B) Low clutch drum

3) Install spring retainer to low clutch piston.



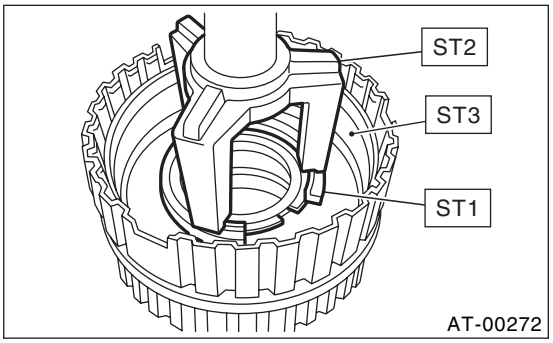

(A) Spring retainer
(B) Low clutch drum

4) Install ST to low clutch drum.
ST 498437100 LOW CLUTCH PISTON GUIDE

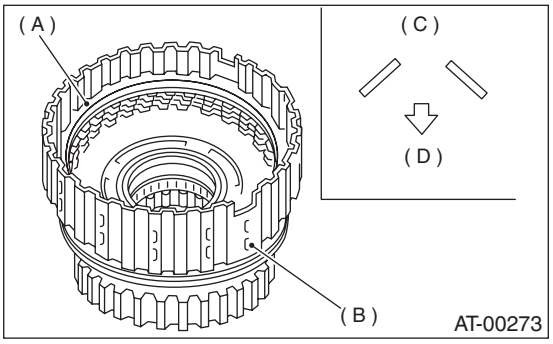


5) Set the cover on the piston with a press using ST1 and ST2, and attach the snap ring. At this time, be careful not to fold cover seal during installation.

| | | |
|---|---|---|
| ST1 | 498627100 | SEAT |
| ST2 | 398673600 | COMPRESSOR |
| ST3 | 498437100 | LOW CLUTCH PISTON GUIDE |

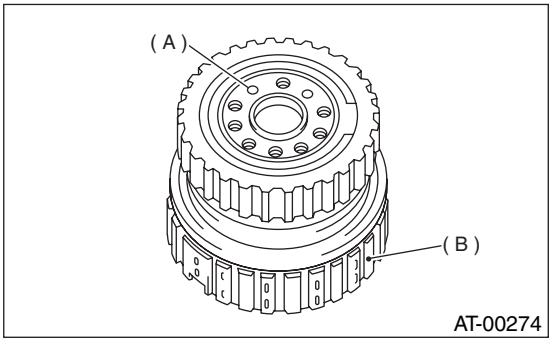



6) Install the dish plate, driven plates, drive plates, and retaining plate, and secure with the snap ring.




(A) Snap ring
(B) Low clutch drum
(C) Dish plate
(D) Low clutch piston side

7) Check the low clutch for operation.
(1) Remove one-way clutch. <Ref. to 4AT-122, REMOVAL, AT Main Case.>
(2) Set the one-way clutch inner race, and apply compressed air for checking.

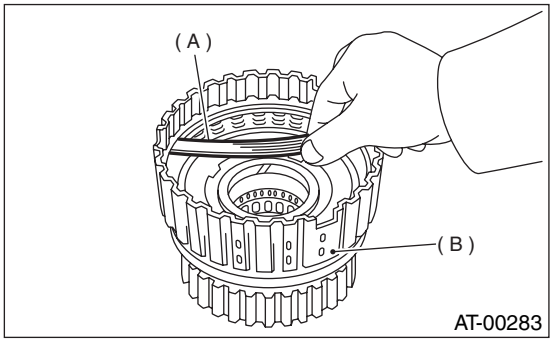



(A) Apply compressed air
(B) Low clutch drum

8) Checking low clutch clearance.
(1) Place the same thickness of shim on both sides to prevent retaining plate from tilting.
(2) Inspect clearance between retaining plate and operation of the low clutch.

***Standard value:***
***0.7 — 1.1 mm (0.028 — 0.043 in)***

***Allowable limit:***
***1.6 mm (0.063 in)***

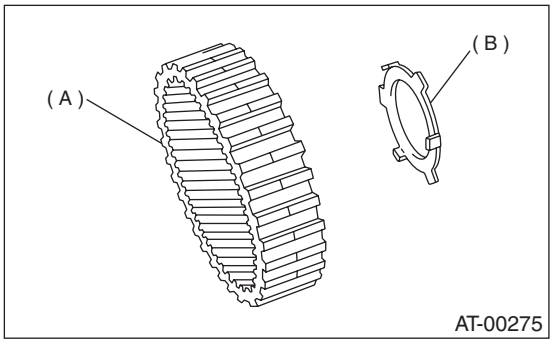



(A) Thickness gauge
(B) Low clutch drum

If the clearance is out of the specified range, select a proper retaining plate so that the standard clearance can be obtained.
If the clearance is above the limit, replace the drive plate with new one, so that the clearance becomes within the specified value.

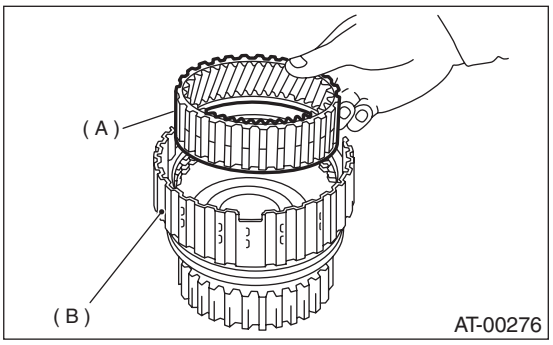
| Available retaining plates | |
|---|---|
| Part No. | Thickness mm (in) |
| 31567AA830 | 3.8 (0.150) |
| 31567AA840 | 4.0 (0.157) |
| 31567AA850 | 4.2 (0.165) |
| 31567AA860 | 4.4 (0.173) |
| 31567AA870 | 4.6 (0.181) |

9) Install washer to rear internal gear.



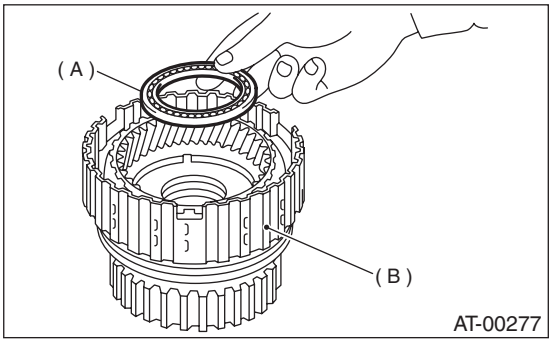

(A) Rear internal gear
(B) Washer

10) Install rear internal gear.



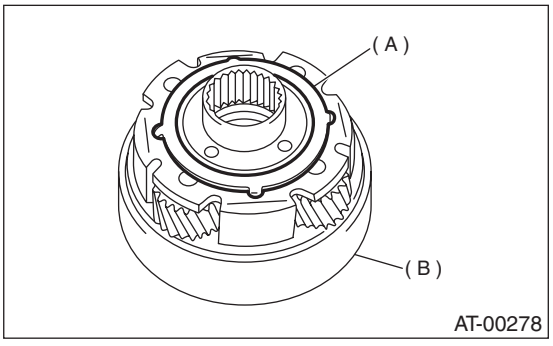

(A) Rear internal gear
(B) Low clutch drum

11) Install thrust needle bearing in the correct direction.



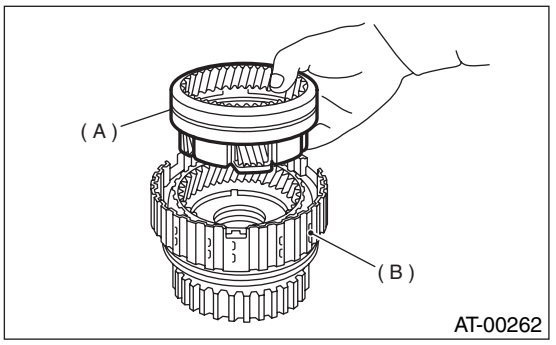

(A) Thrust needle bearing
(B) Low clutch drum

12) Install the washer by aligning protrusion of washer and hole of rear planetary carrier.



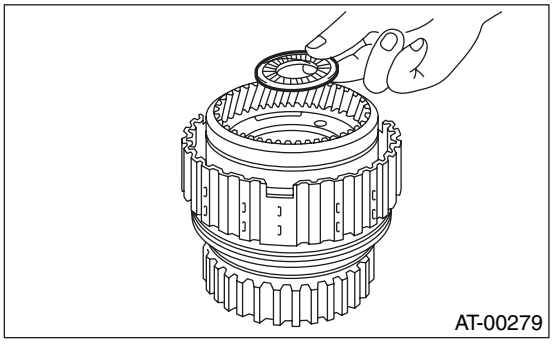

(A) Washer
(B) Rear planetary carrier

13) Install rear planetary carrier to low clutch drum.

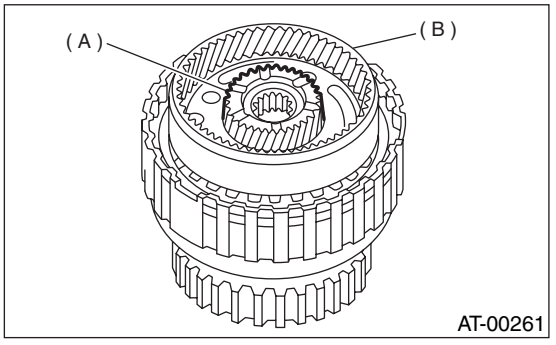



(A) Rear planetary carrier
(B) Low clutch drum

14) Install thrust needle bearing in the correct direction.

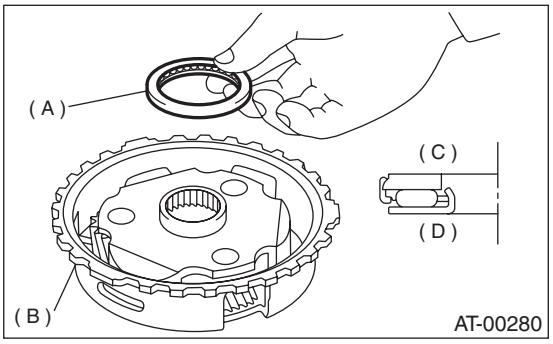



15) Install the rear sun gear in proper direction.



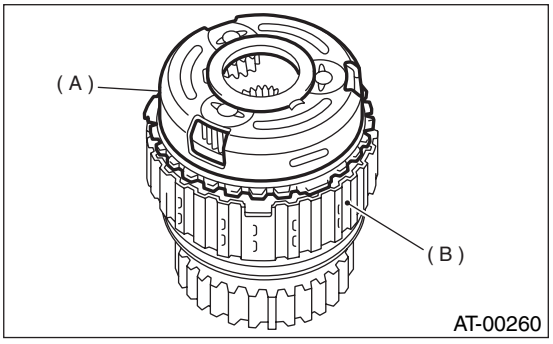

(A) Rear sun gear
(B) Rear planetary carrier

16) Install the thrust needle bearing in proper direction.



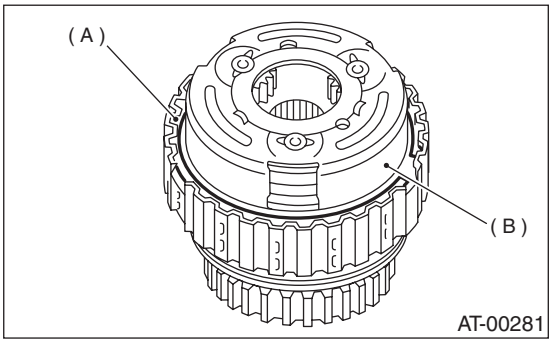

(A) Thrust needle bearing
(B) Front planetary carrier
(C) Rear sun gear side
(D) Front planetary carrier side

17) Install front planetary carrier to low clutch drum.



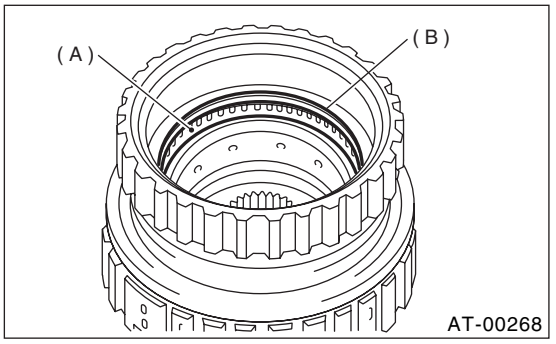

(A) Front planetary carrier
(B) Low clutch drum

18) Install snap ring to low clutch drum.



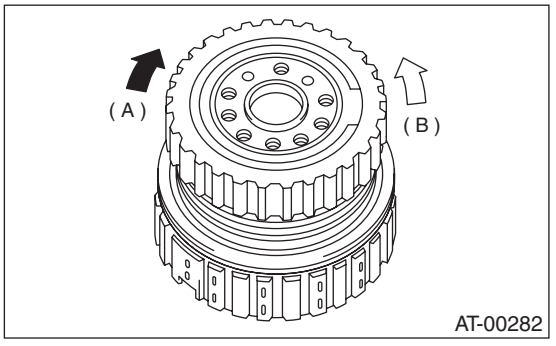

(A) Snap ring
(B) Front planetary carrier

19) Install the needle bearing, and secure with the snap ring.




(A) Needle bearing
(B) Snap ring

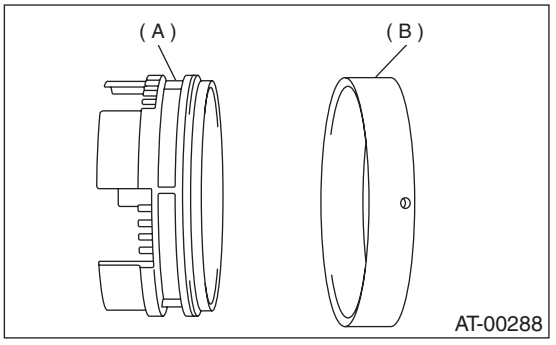
20) Install the one-way clutch, one-way clutch inner race and plate, and secure with the snap ring.
21) Set the inner race. Make sure that the forward clutch is free in the clockwise direction and locked in the counterclockwise direction, as viewed from the front of the vehicle.




(A) Locked
(B) Free

### 3. 2-4 BRAKE

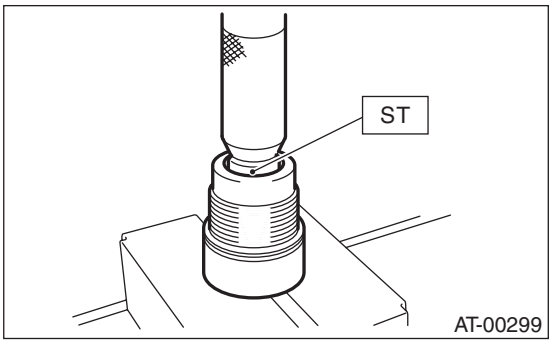
1) Install 2-4 brake piston to 2-4 brake piston retainer.



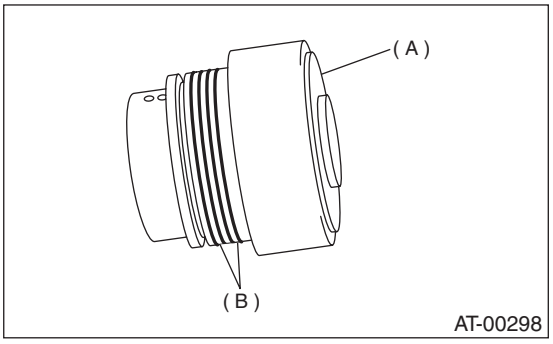

(A) 2-4 brake piston
(B) 2-4 brake piston retainer

### 4. ONE-WAY CLUTCH INNER RACE

1) Using a press and ST, install the needle bearing to the inner race.
ST 398497701 SEAT



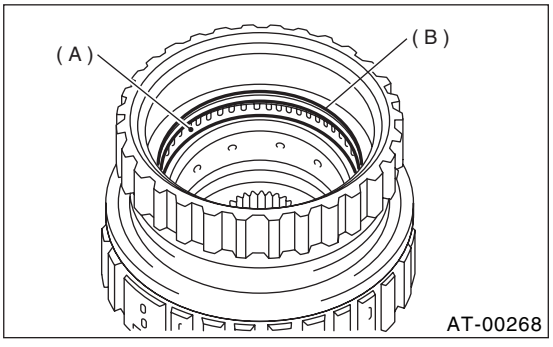

2) Apply vaseline to the groove of the inner race and to the seal ring.
3) Install two seal rings to one-way clutch inner race.




(A) One way clutch inner race
(B) Seal rings

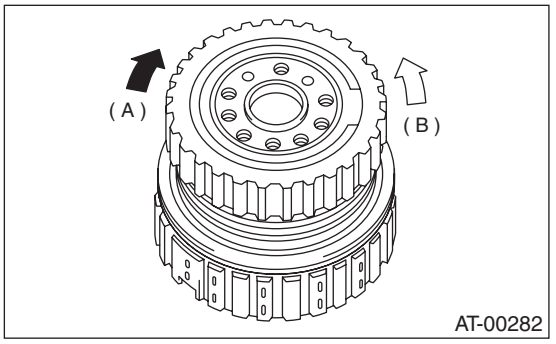
### 5. ONE-WAY CLUTCH OUTER RACE

1) Install the needle bearing, and secure with the snap ring.




(A) Needle bearing
(B) Snap ring

2) Install the one-way clutch, one-way clutch inner race and plate, and secure with the snap ring.
3) Set the inner race. Make sure that the forward clutch is free in the clockwise direction and locked in the counterclockwise direction, as viewed from the front of the vehicle.




(A) Locked
(B) Free

## E: INSPECTION

### 1. HIGH CLUTCH AND REVERSE CLUTCH

Inspect the following items.
- Drive plate facing for wear and damage
- Snap ring for wear, return spring for setting and breakage, and snap ring retainer for deformation
- Lip seal and D-ring for damage
- Piston and drum check ball for operation
- Adjust total end play. <Ref. to 4AT-110, ADJUSTMENT, Oil Pump Housing.>

### 2. PLANETARY GEAR AND LOW CLUTCH

Inspect the following items.
- Drive plate facing for wear and damage
- Snap ring for wear, return spring for breakage or setting, and spring retainer for deformation
- Lip seal and D-ring for damage
- Piston check ball for operation
- Measure the total end play and adjust to within specifications.

<Ref. to 4AT-110, ADJUSTMENT, Oil Pump Housing.>

### 3. 2-4 BRAKE

Inspect the following items.
- Drive plate facing for wear and damage
- Snap ring for wear and spring retainer for deformation
- Lip seal and D-ring for damage
- Measure the total end play and adjust to within specifications.<Ref. to 4AT-110, ADJUSTMENT, Oil Pump Housing.>

### 4. ONE-WAY CLUTCH

- Make sure the snap ring is not worn and the seal rings are not damaged.
- Measure the total end play and adjust to within specifications. <Ref. to 4AT-110, ADJUSTMENT, Oil Pump Housing.>

### 5. LOW AND REVERSE BRAKE

Check for the following.
- Drive plate facing for wear or damage
- Snap ring for wear and spring retainer for deformation