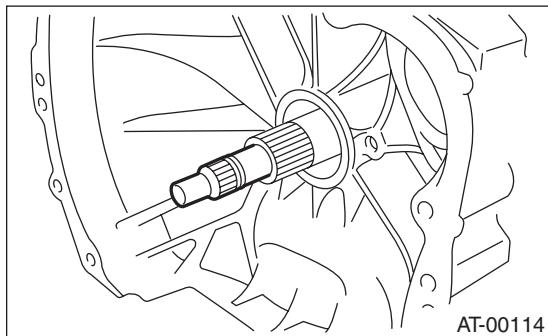


38. High Clutch and Reverse Clutch

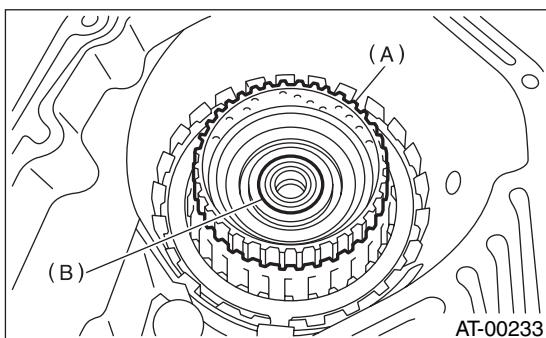
A: REMOVAL

- 1) Remove the transmission assembly from the vehicle. <Ref. to AT-39, REMOVAL, Automatic Transmission Assembly.>
- 2) Extract the torque converter clutch assembly. <Ref. to AT-78, REMOVAL, Torque Converter Clutch Assembly.>
- 3) Remove the input shaft.

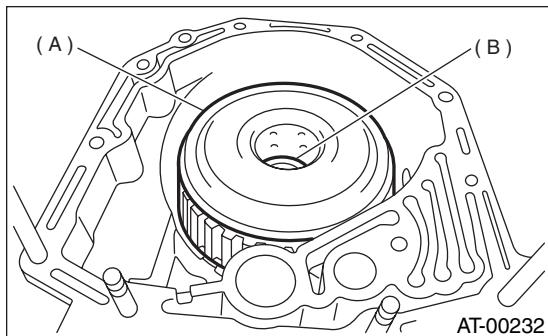


- 4) Lift-up lever behind the transmission harness connector and disconnect it from stay.
- 5) Disconnect inhibitor switch connector from stay.
- 6) Disconnect the air breather hose.
- 7) Remove the oil charger pipe. <Ref. to AT-77, REMOVAL, Oil Charger Pipe.>
- 8) Remove the oil cooler inlet and outlet pipes. <Ref. to AT-73, REMOVAL, ATF Cooler Pipe and Hose.>
- 9) Separation of torque converter clutch case and transmission case. <Ref. to AT-101, REMOVAL, Torque Converter Clutch Case.>
- 10) Remove the oil pump housing. <Ref. to AT-104, REMOVAL, Oil Pump.>
- 11) Take out the high clutch, thrust needle bearing and reverse clutch assembly.

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



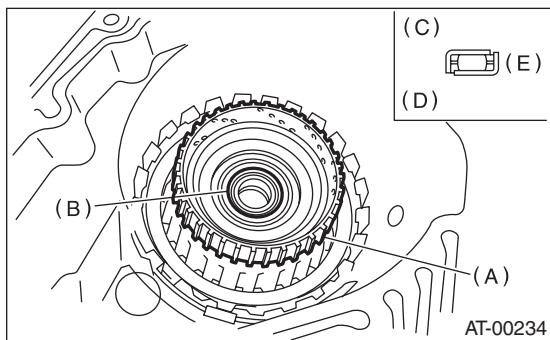
(A) High clutch hub
(B) Thrust needle bearing



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

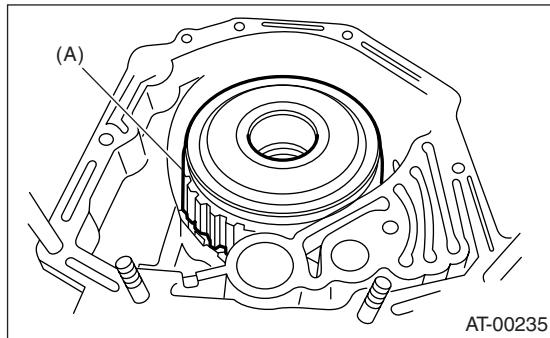
B: INSTALLATION

- 1) Apply petrolatum to thrust needle bearing.
- 2) Install the high clutch hub and thrust needle bearing.
- 3) Attach the thrust needle bearing to the hub with petrolatum and install the hub by correctly engaging the splines of the front planetary carrier.



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

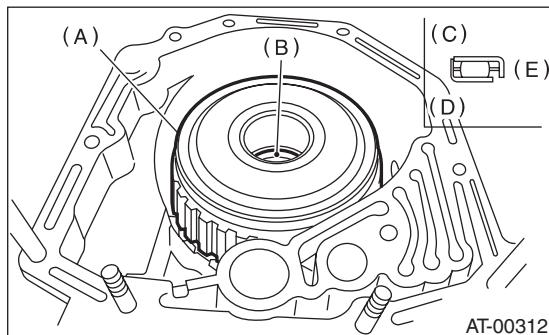
- 3) Install the high clutch assembly.



- (A) High clutch and reverse clutch assembly

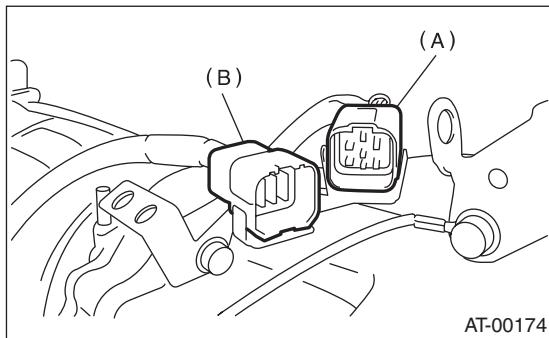
- 4) Adjust total end play. <Ref. to AT-109, ADJUSTMENT, Oil Pump.>

- 5) Install the thrust needle bearing in proper direction.



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

- 6) Install the oil pump housing assembly with a new gasket.
- 7) Install the torque converter clutch case assembly to the transmission case assembly. <Ref. to AT-102, INSTALLATION, Torque Converter Clutch Case.>
- 8) Insert inhibitor switch and transmission connector into stay.
- 9) Install air breather hose. <Ref. to AT-76, INSTALLATION, Air Breather Hose.>



- (A) Transmission harness
- (B) Inhibitor switch harness

- 10) Install the oil cooler pipes. <Ref. to AT-74, INSTALLATION, ATF Cooler Pipe and Hose.>
- 11) Install the oil charger pipe with O-ring. <Ref. to AT-77, INSTALLATION, Oil Charger Pipe.>

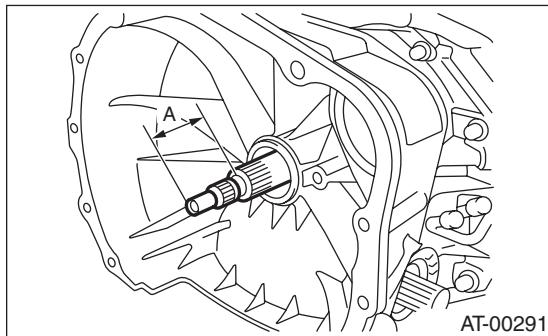
HIGH CLUTCH AND REVERSE CLUTCH

AUTOMATIC TRANSMISSION

12) 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)

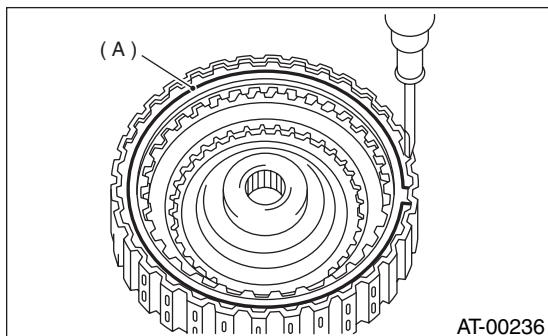


13) Install the torque converter clutch assembly.
<Ref. to AT-78, INSTALLATION, Torque Converter Clutch Assembly.>

14) Install the transmission assembly to the vehicle. <Ref. to AT-41, INSTALLATION, Automatic Transmission Assembly.>

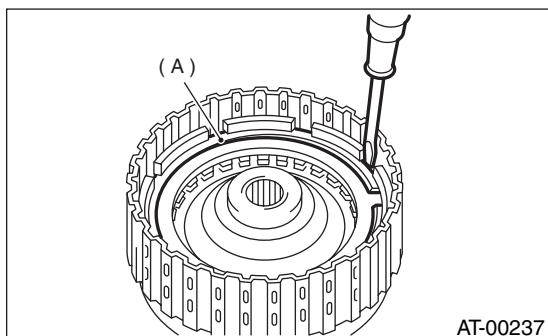
C: DISASSEMBLY

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



(A) Snap ring

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

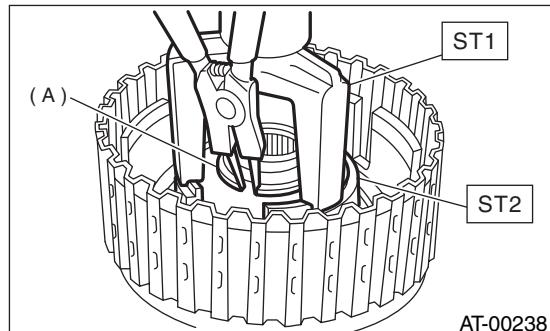


(A) Snap ring

3) Using ST1 and ST2, remove snap ring.

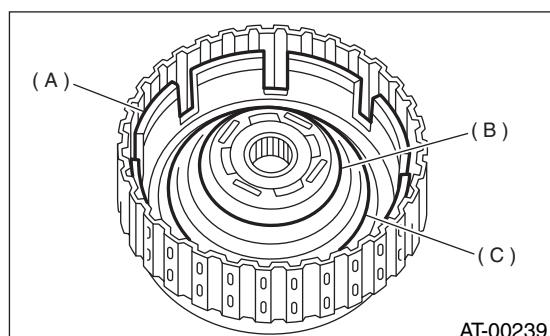
ST1 398673600 COMPRESSOR

ST2 498627100 Seat



(A) Snap ring

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

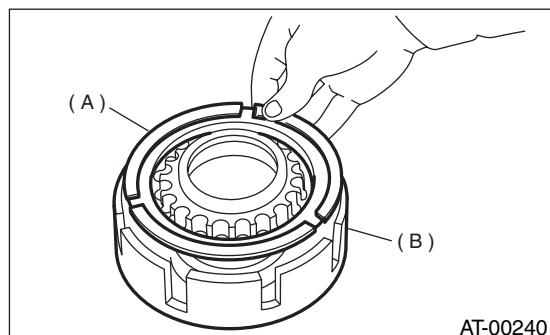


(A) Reverse clutch piston

(B) Cover

(C) Return spring

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

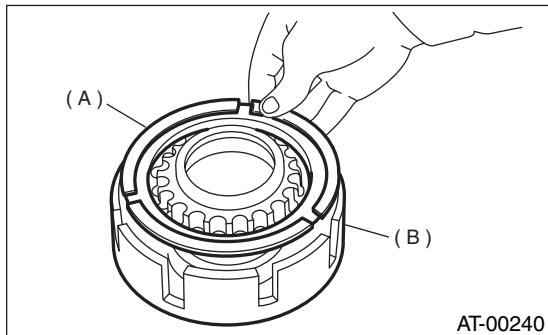


(A) High clutch piston

(B) Reverse clutch piston

D: ASSEMBLY

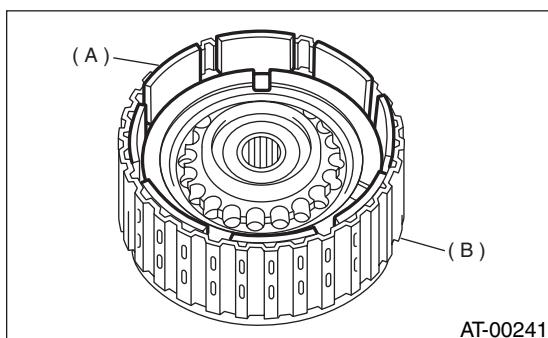
- 1) Install seal rings and lip seal to high clutch piston and reverse clutch piston.
- 2) Install high clutch piston to reverse clutch piston.



AT-00240

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

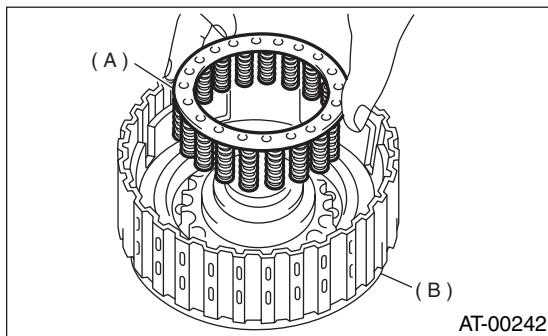
- 3) Install reverse clutch to high clutch drum. Align the groove on the reverse clutch piston with the groove on the high clutch drum during installation.



AT-00241

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

- 4) Install spring retainer to high clutch piston.

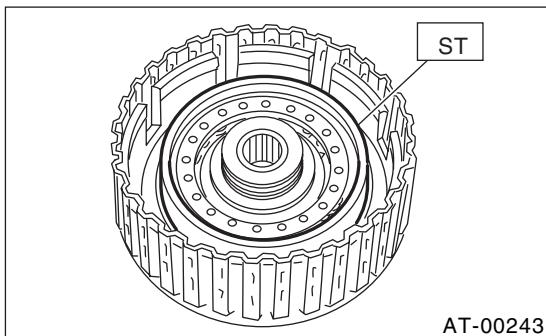


AT-00242

(A) Return spring
 (B) High clutch drum

- 5) Install ST to high clutch piston.

ST 498437000 HIGH CLUTCH PISTON GAUGE



AT-00243

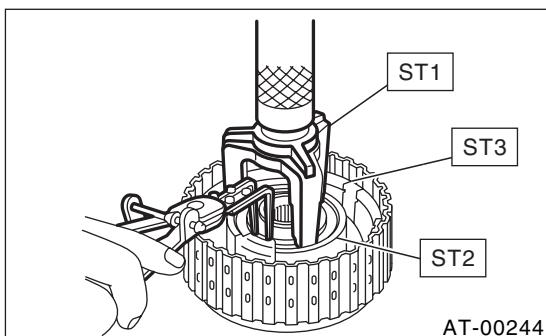
- 6) Avoid folding the high clutch piston seal, when installing the cover to high clutch piston.

- 7) Using ST1 and ST2, install snap ring.

ST1 398673600 COMPRESSOR

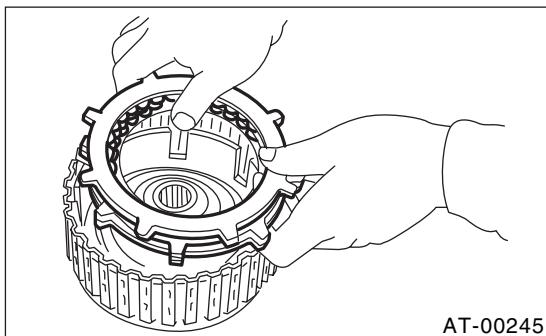
ST2 498627100 Seat

ST3 498437000 HIGH CLUTCH PISTON GAUGE



AT-00244

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



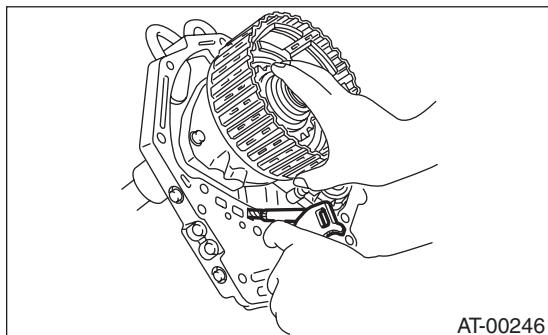
AT-00245

- 9) Install snap ring to high clutch drum.

HIGH CLUTCH AND REVERSE CLUTCH

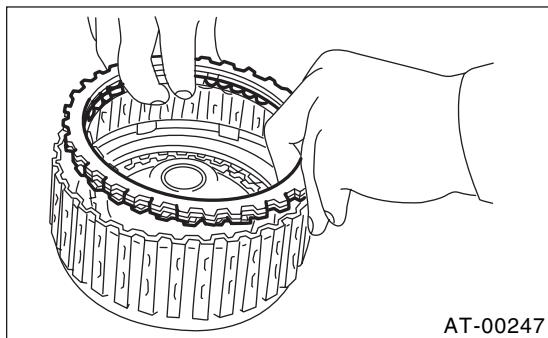
AUTOMATIC TRANSMISSION

10) Apply compressed air intermittently to check for operation.

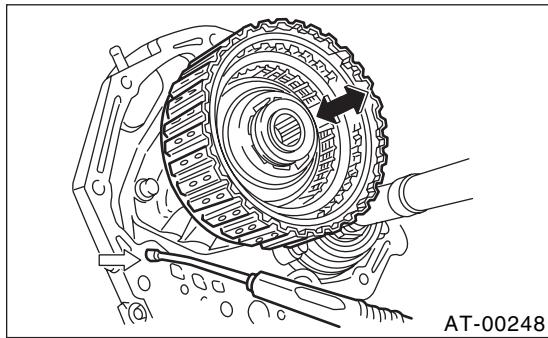


11) Measure the clearance between the retaining plate and snap ring. <Ref. to AT-126, INSPECTION, High Clutch and Reverse Clutch.>

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. <Ref. to AT-126, INSPECTION, High Clutch and Reverse Clutch.>

E: INSPECTION

1) Check the following items.

- Drive plate facing for wear or 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 AT-109, ADJUSTMENT, Oil Pump.>

2) Inspect clearance between the retaining plate and snap ring. (High clutch)

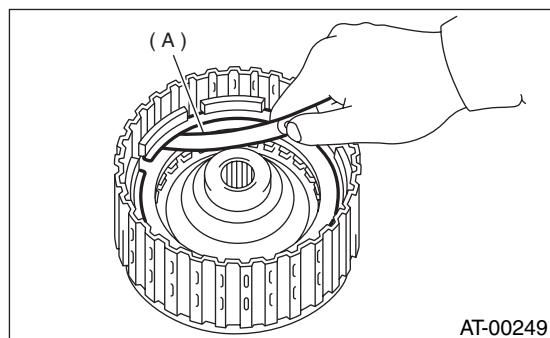
Do not push the retaining plate downwards at this time.

Standard:

0.8 — 1.1 mm (0.031 — 0.043 in)

Service limit:

1.5 mm (0.059 in)



(A) Thickness gauge

3) If specified tolerance limits are exceeded, select a suitable high clutch retaining plate.

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)

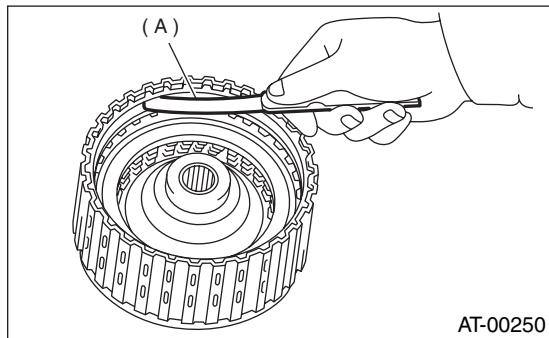
4) Inspect clearance between the retaining plate and snap ring. (Reverse clutch)
Do not push the retaining plate downwards at this time.

Standard:

0.5 — 0.8 mm (0.020 — 0.031 in)

Service limit:

1.2 mm (0.047 in)



(A) Thickness gauge

5) If specified tolerance limits are exceeded, select a suitable high clutch retaining plate.

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)