

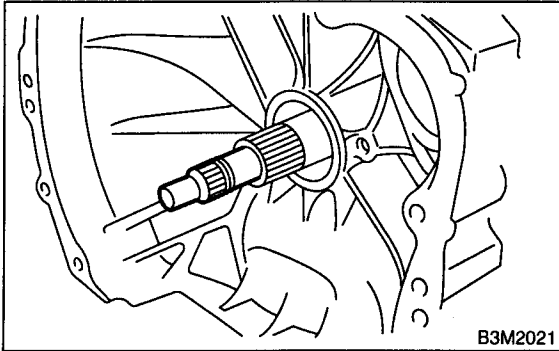
23. High Clutch and Reverse Clutch

S510213

A: REMOVAL

S510213A18

- 1) Extract the torque converter clutch assembly.
<Ref. to AT-34 REMOVAL, Torque Converter Clutch Assembly.>
- 2) Remove the input shaft.



B3M2021

- 3) Disconnect transmission harness connector from stay.

NOTE:

Lift-up lever behind the connector and disconnect it from stay.

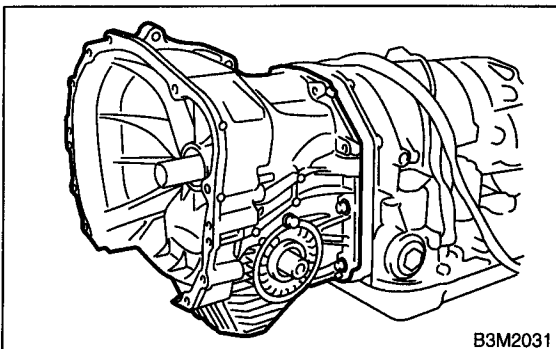
- 4) Disconnect inhibitor switch connector from stay.
- 5) Disconnect the air breather hose.
- 6) Remove the oil charger pipe. <Ref. to AT-28 REMOVAL, Oil Charger Pipe.>
- 7) Remove the oil cooler inlet and outlet pipes. <Ref. to AT-29 REMOVAL, Oil Cooler Pipes.>
- 8) Separation of torque converter clutch case and transmission case sections

CAUTION:

- Be careful not to damage the oil seal and bushing inside the torque converter clutch case by the oil pump cover.
- Be careful not to lose the rubber seal.

NOTE:

Separate these cases while tapping lightly on the housing.



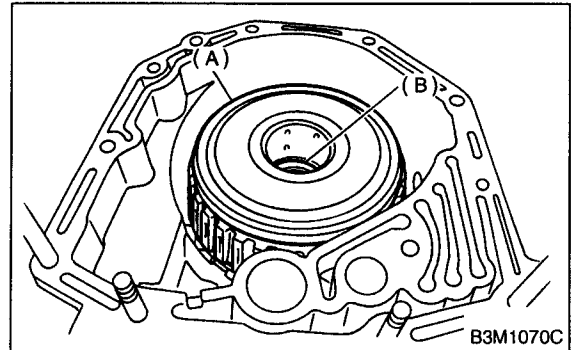
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- 9) Remove the oil pump housing.
<Ref. to AT-63 REMOVAL, Oil Pump.>

- 10) Take out the high clutch and reverse clutch assembly.

CAUTION:

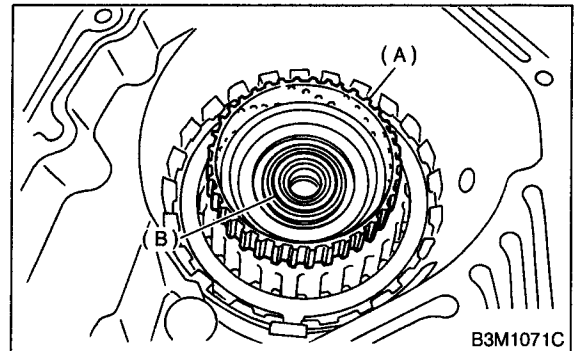
Be careful not to lose thrust needle bearing.



B3M1070C

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

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



B3M1071C

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

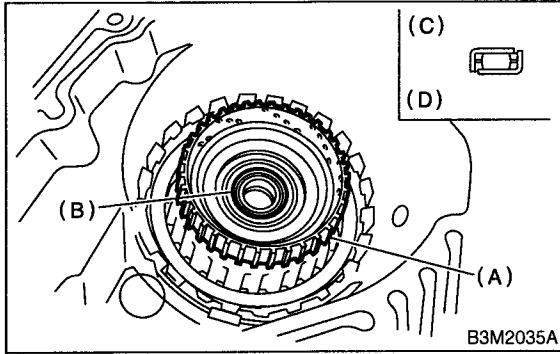
HIGH CLUTCH AND REVERSE CLUTCH

Automatic Transmission

B: INSTALLATION SS10213A11

1) Install the high clutch hub and thrust needle bearing.

Attach the thrust needle bearing to the hub with vaseline and install the hub by correctly engaging the splines of the front planetary carrier.

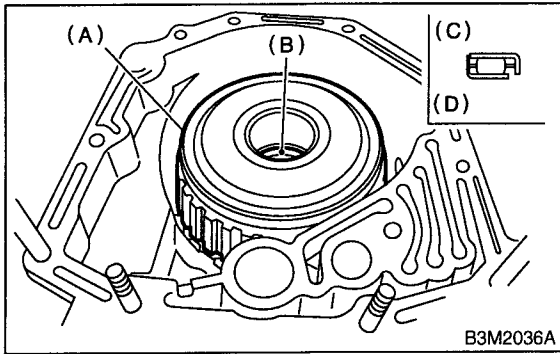


- (A) High clutch hub
- (B) Thrust needle bearing
- (C) Up side
- (D) Down side

2) Install the high clutch assembly.

NOTE:

Correctly engage the high clutch hub and clutch splines.



- (A) High clutch and reverse clutch assembly
- (B) Thrust needle bearing
- (C) Up side
- (D) Down side

3) Adjust total end play. <Ref. to AT-68 ADJUSTMENT, Oil Pump.>

4) Install the oil pump housing assembly.

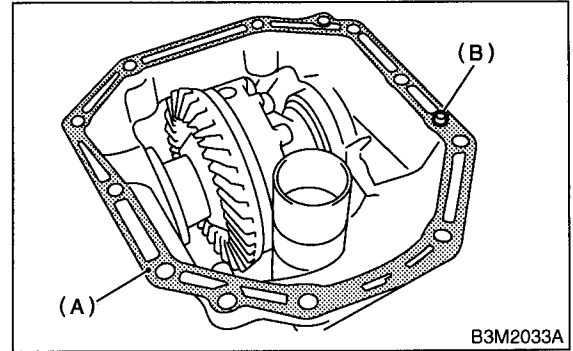
5) Apply proper amount of liquid gasket to the entire torque converter clutch case mating surface.

Liquid gasket:

THREE BOND 1215

NOTE:

Make sure that the rubber seal and seal pipe are fitted in position.



- (A) THREE BOND (Part No. 1215)
- (B) Rubber seal

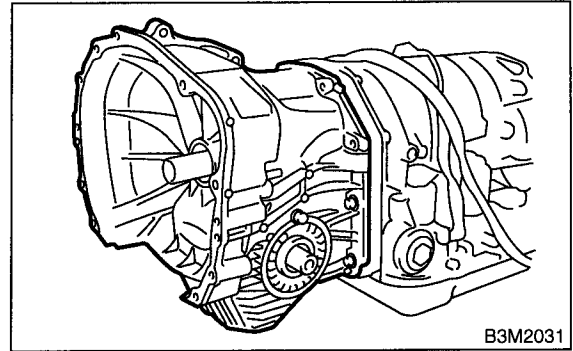
6) Install the torque converter clutch case assembly to the transmission case assembly, and secure with six bolts and four nuts.

CAUTION:

When installing, be careful not to damage the torque converter clutch case bushing and oil seal.

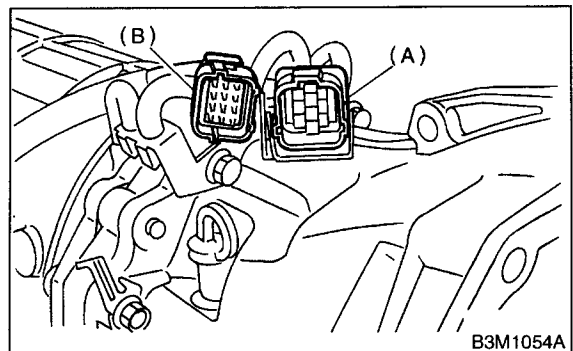
Tightening torque:

41 N·m (4.2 kgf-m, 30.4 ft-lb)



7) Install air breather hose.

8) Insert inhibitor switch and transmission connector into stay.



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

HIGH CLUTCH AND REVERSE CLUTCH

Automatic Transmission

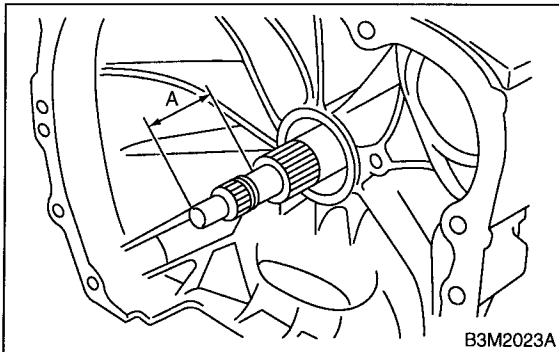
- 9) Install oil cooler pipes. <Ref. to AT-29 INSTALLATION, Oil Cooler Pipes.>
- 10) Install the oil charger pipe with O-ring. <Ref. to AT-28 INSTALLATION, Oil Charger Pipe.>
- 11) Insert the input shaft while turning lightly by hand.

CAUTION:

Be careful not to damage the bushing.

Normal protrusion A:

50 — 55 mm (1.97 — 2.17 in)

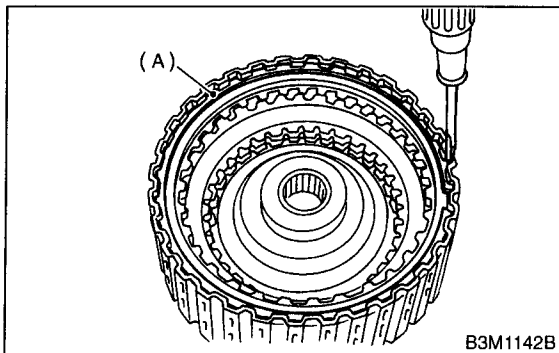


- 12) Install the torque converter clutch assembly. <Ref. to AT-34 INSTALLATION, Torque Converter Clutch Assembly.>

C: DISASSEMBLY

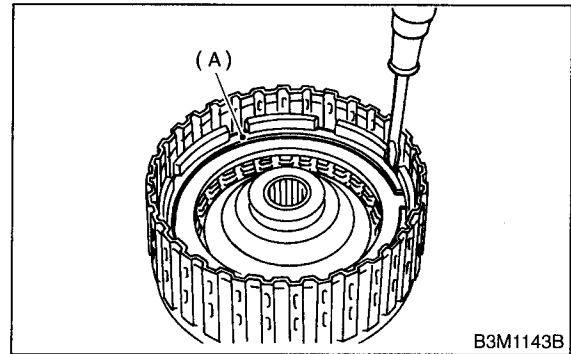
S510213A06

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



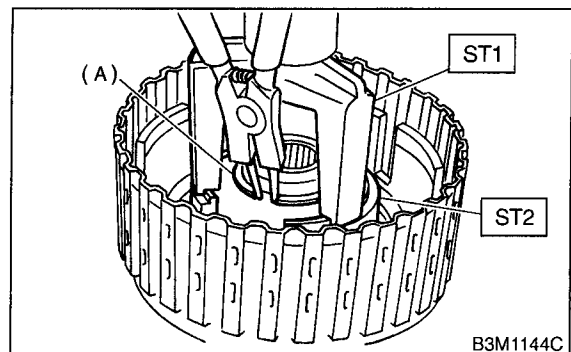
(A) Snap ring

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



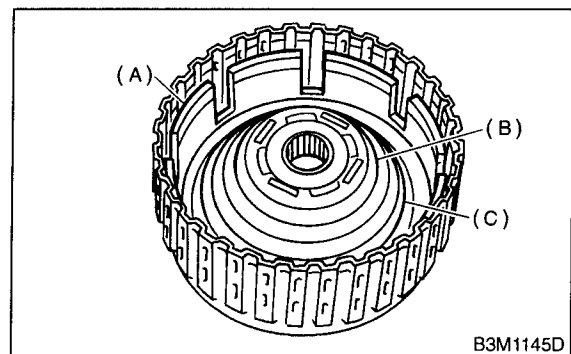
(A) Snap ring

- 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.

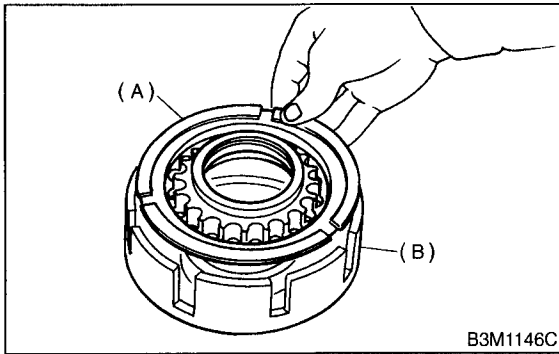


- (A) Reverse clutch piston
- (B) Cover
- (C) Return spring

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

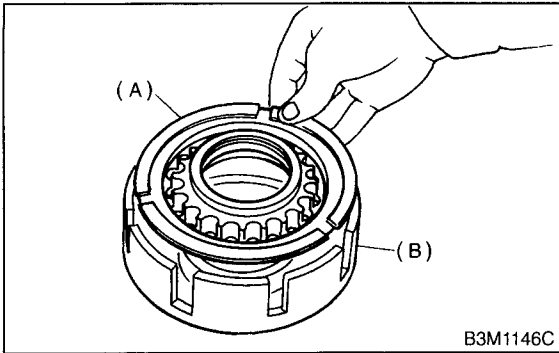


(A) High clutch piston
(B) Reverse clutch piston

D: ASSEMBLY SS10213A02

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

2) Install high clutch piston to reverse clutch piston.

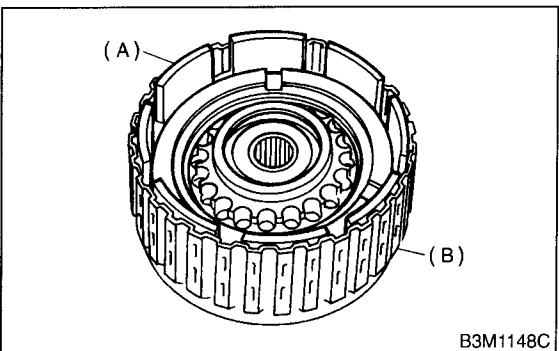


(A) High clutch piston
(B) Reverse clutch piston

3) Install reverse clutch to high clutch drum.

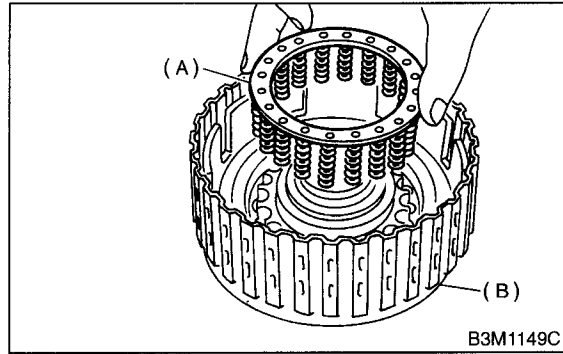
NOTE:

Align the groove on the reverse clutch piston with the groove on the high clutch drum during installation.



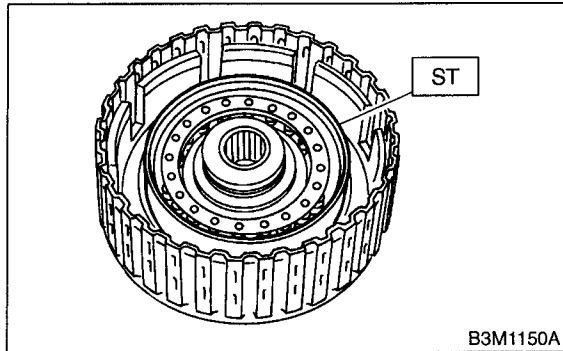
(A) Reverse clutch piston
(B) High clutch drum

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 GAUGE



6) Install cover to high clutch piston.

CAUTION:

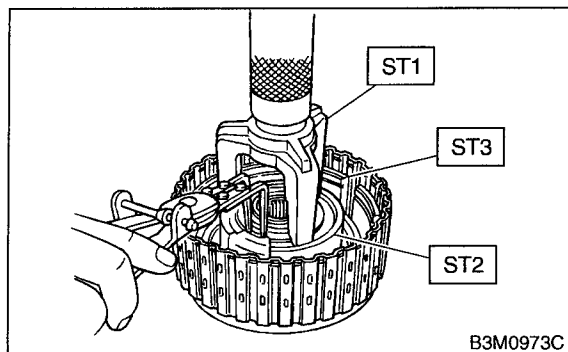
Be careful not to fold over the high clutch piston seal during installation.

7) Using ST1 and ST2, install snap ring.

NOTE:

After installing snap ring, remove STs.

ST1 398673600 COMPRESSOR
ST2 498627100 SEAT
ST3 498437000 HIGH CLUTCH PISTON GAUGE



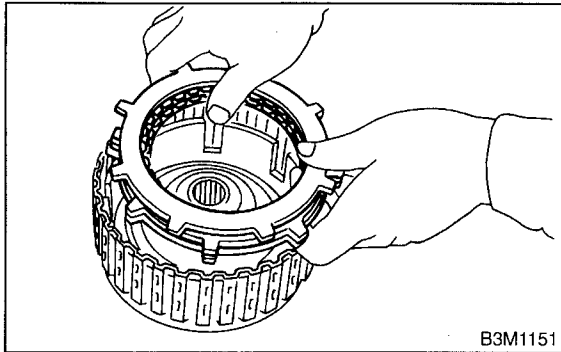
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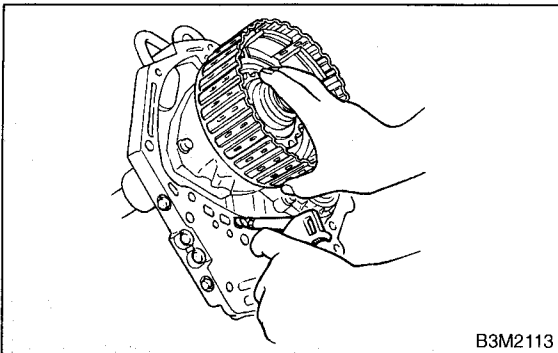
8) Install driven plate, drive plate and retaining plate to high clutch drum.

NOTE:

Install thicker driven plate on the piston side.



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.

NOTE:

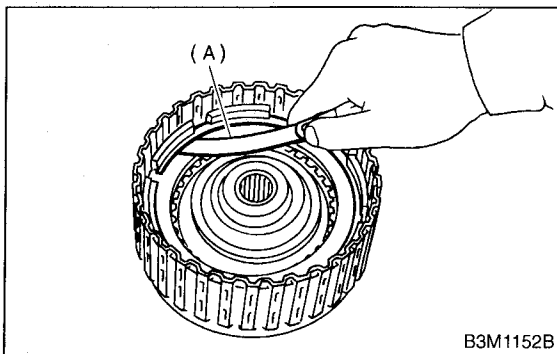
Do not press down retaining plate during clearance measurements.

Standard value:

0.8 — 1.1 mm (0.031 — 0.043 in)

Allowable limit:

1.5 mm (0.059 in)

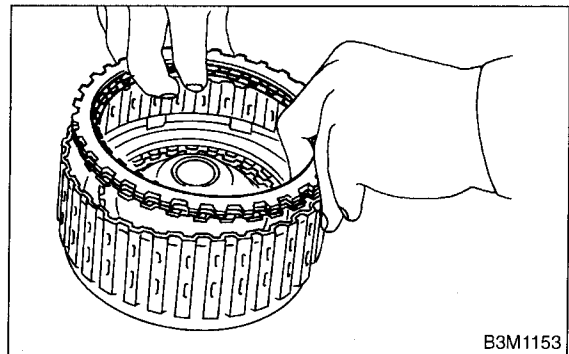


(A) Thickness gauge

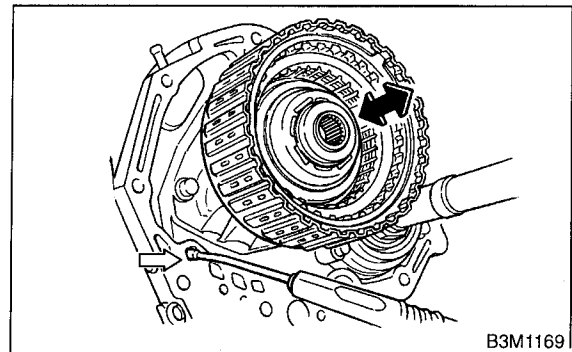
12) If specified tolerance limits are exceeded, select a suitable high clutch retaining plate.

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)

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



14) Apply compressed air intermittently to check for operation.



HIGH CLUTCH AND REVERSE CLUTCH

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15) Measure the clearance between the retaining plate and snap ring.

NOTE:

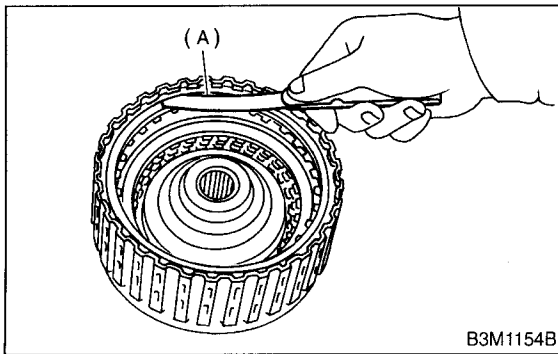
Do not press down retaining plate during clearance measurements.

Standard value:

0.5 — 0.8 mm (0.020 — 0.031 in)

Allowable limit:

1.2 mm (0.047 in)



(A) Thickness gauge

16) 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)

E: INSPECTION S510213A10

- 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 lathe cut ring for damage
- Piston and drum check ball for operation
- Adjust total end play. <Ref. to AT-68 ADJUSTMENT, Oil Pump.>