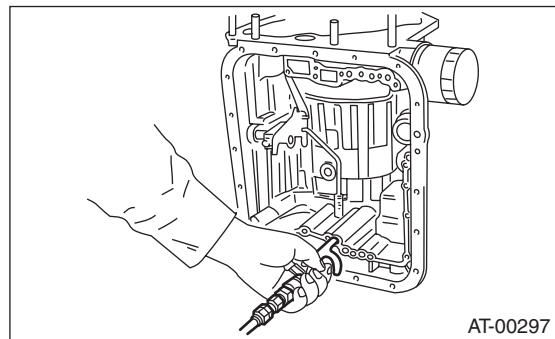


### 42.Low and Reverse Brake

#### 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) Disconnect the air breather hose. <Ref. to AT-76, REMOVAL, Air Breather Hose.>
- 5) Lift-up lever behind the transmission harness connector and disconnect it from stay.
- 6) Disconnect inhibitor switch connector from stay.
- 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) Separate torque converter clutch case and transmission case. <Ref. to AT-101, REMOVAL, Torque Converter Clutch Case.>
- 10) Separate transmission case and extension case sections. <Ref. to AT-79, REMOVAL, Extension Case.>
- 11) Remove the reduction drive gear. <Ref. to AT-96, REMOVAL, Reduction Drive Gear.>
- 12) Remove the center differential carrier. (VTD model) <Ref. to AT-98, REMOVAL, Center Differential Carrier.>
- 13) Remove the reduction driven gear. <Ref. to AT-93, REMOVAL, Reduction Driven Gear.>
- 14) Remove the oil pump housing. <Ref. to AT-104, REMOVAL, Oil Pump.>
- 15) Remove control valve assembly. <Ref. to AT-58, REMOVAL, Control Valve Body.>
- 16) Take out the high clutch and reverse clutch assembly. <Ref. to AT-122, REMOVAL, High Clutch and Reverse Clutch.>
- 17) Take out the thrust needle bearing, planetary gear assembly. <Ref. to AT-128, REMOVAL, Planetary Gear and Low Clutch.>
- 18) Take out 2-4 brake return spring, piston and piston retainer. <Ref. to AT-136, REMOVAL, 2-4 brake.>
- 19) Remove one-way clutch inner race. <Ref. to AT-140, REMOVAL, One-way Clutch.>

- 20) Take out the low & reverse piston by applying compressed air.



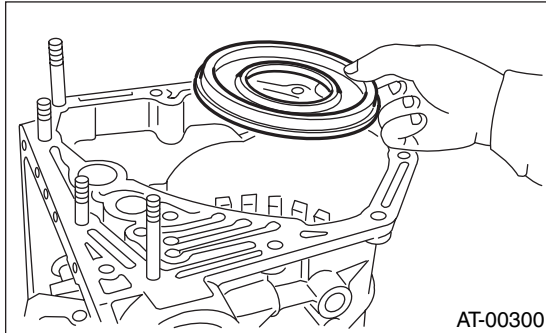
- 21) Take out the spring retainer, return spring and low & reverse piston.

### B: INSTALLATION

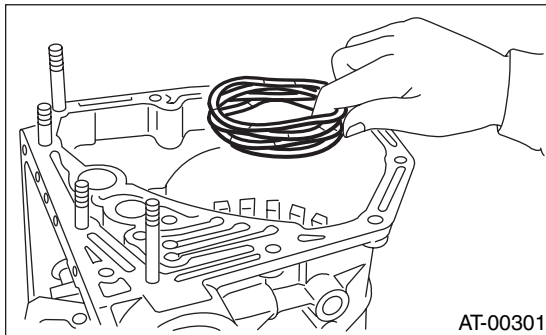
1) Install the low and reverse piston without tilting.

#### NOTE:

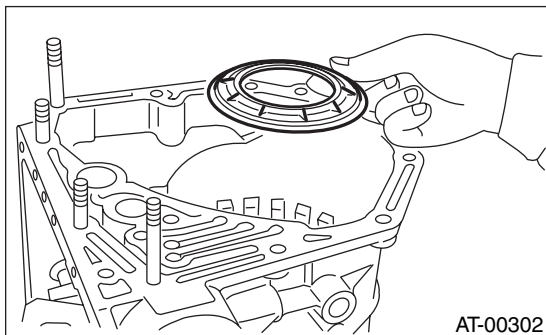
Be careful not to damage the lip seal.



2) Install return spring.



3) Install spring retainer.



4) Install the one-way clutch inner race. <Ref. to AT-141, INSTALLATION, One-way Clutch.>

5) Install thrust needle bearing.

#### NOTE:

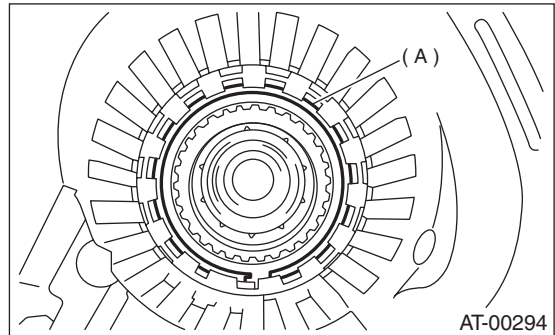
Place transmission case with the front facing up.

6) Installation of the low & reverse brake:

Install dish plate, driven plates, drive plates, and a retaining plate, and secure with a snap ring.

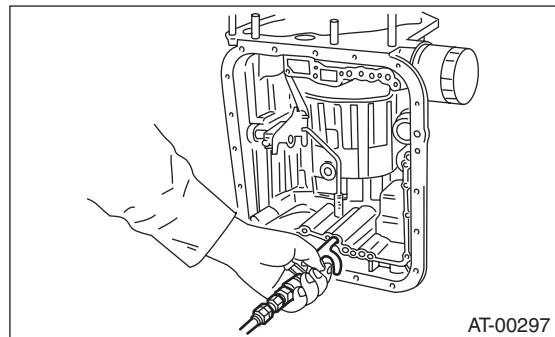
#### NOTE:

Pay attention to the orientation of the dish plate.



(A) Snap ring

7) Apply compressed air intermittently to check for operation.



8) Check the clearance and select retaining plate. <Ref. to AT-146, INSPECTION, Low and Reverse Brake.>

9) Install 2-4 brake piston, retainer and return spring to transmission case. <Ref. to AT-137, INSTALLATION, 2-4 brake.>

10) Install 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. <Ref. to AT-129, INSTALLATION, Planetary Gear and Low Clutch.>

11) Install the high clutch assembly. <Ref. to AT-123, INSTALLATION, High Clutch and Reverse Clutch.>

12) Install the oil pump housing assembly. <Ref. to AT-105, INSTALLATION, Oil Pump.>

13) Install the control assembly and oil pan. <Ref. to AT-59, INSTALLATION, Control Valve Body.>

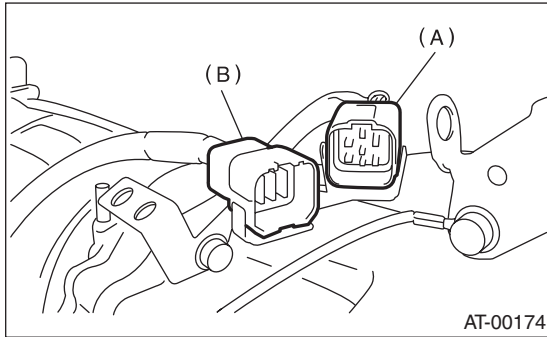
14) Install the torque converter clutch case assembly to the transmission case assembly. <Ref. to AT-102, INSTALLATION, Torque Converter Clutch Case.>

15) Install reduction driven gear. <Ref. to AT-94, INSTALLATION, Reduction Driven Gear.>

## LOW AND REVERSE BRAKE

### AUTOMATIC TRANSMISSION

- 16) Install reduction drive gear. (MPT model) <Ref. to AT-96, INSTALLATION, Reduction Drive Gear.>
- 17) Install the center differential carrier. (VTD model) <Ref. to AT-98, INSTALLATION, Center Differential Carrier.>
- 18) Install the extension case and rear vehicle speed sensor to the transmission case. <Ref. to AT-79, INSTALLATION, Extension Case.>
- 19) Insert inhibitor switch and transmission connector into stay.

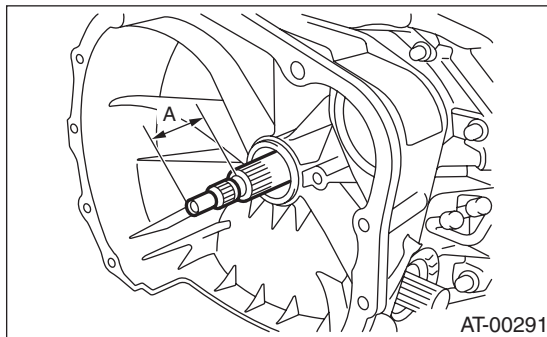


- (A) Transmission harness  
(B) Inhibitor switch harness

- 20) Install air breather hose. <Ref. to AT-76, INSTALLATION, Air Breather Hose.>
- 21) Install the oil cooler pipes. <Ref. to AT-74, INSTALLATION, ATF Cooler Pipe and Hose.>
- 22) Install the oil charger pipe with O-ring. <Ref. to AT-77, INSTALLATION, Oil Charger Pipe.>
- 23) 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)**



- 24) Install the torque converter clutch assembly. <Ref. to AT-78, INSTALLATION, Torque Converter Clutch Assembly.>
- 25) Install the transmission assembly to the vehicle. <Ref. to AT-41, INSTALLATION, Automatic Transmission Assembly.>

## C: INSPECTION

Check for the following.

- Drive plate facing for wear or damage

- Snap ring for wear and spring retainer for deformation

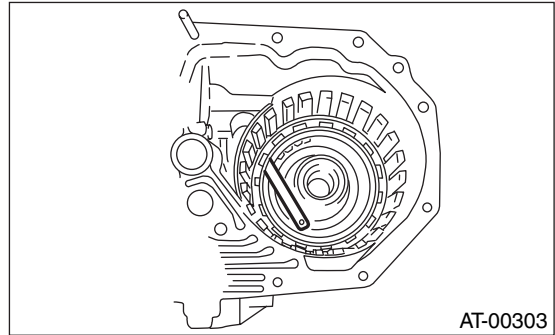
- 1) Place the same thickness of shim on both sides to prevent retaining plate from tilting.
- 2) Inspect clearance and select retaining plate.

#### **Standard:**

**0.7 — 1.2 mm (0.028 — 0.047 in)**

#### **Service limit:**

**2.2 mm (0.087 in)**



Available 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)