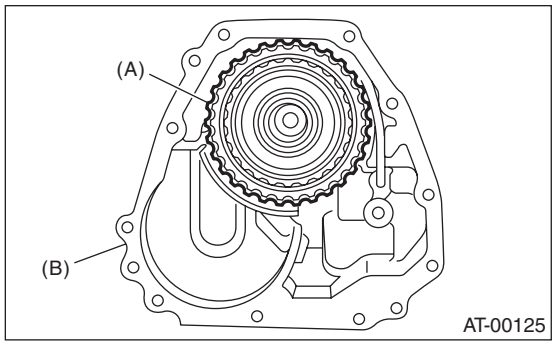
27.Transfer Clutch

A: REMOVAL

1) Remove the transmission assembly from vehicle body. <Ref. to 4AT-35, REMOVAL, Automatic Transmission Assembly.>
2) Remove the extension case, and then remove the transfer clutch. <Ref. to 4AT-69, REMOVAL, Extension Case.> <Ref. to 4AT-70, DISASSEMBLY, Extension Case.>

B: INSTALLATION

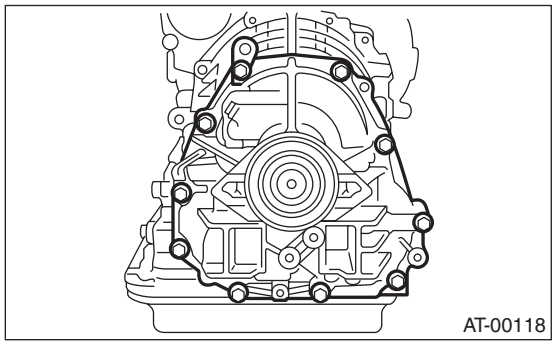
1) Select the thrust needle bearing. <Ref. to 4AT-75, ADJUSTMENT, Transfer Clutch.>
2) Install the transfer clutch assembly to the case.



(A) Transfer clutch
(B) Extension case

3) Tighten the bolts to secure the case.

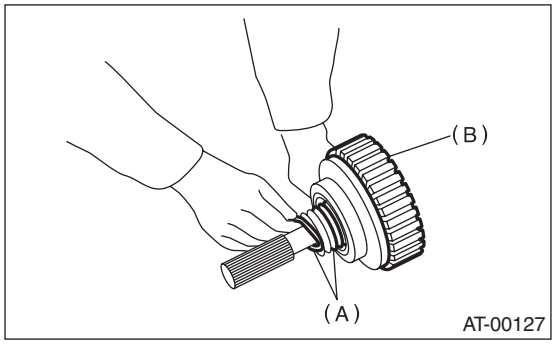
Tightening torque:
25 N·m (2.5 kgf-m, 18 ft-lb)



4) Install the transmission assembly to the vehicle. <Ref. to 4AT-38, INSTALLATION, Automatic Transmission Assembly.>

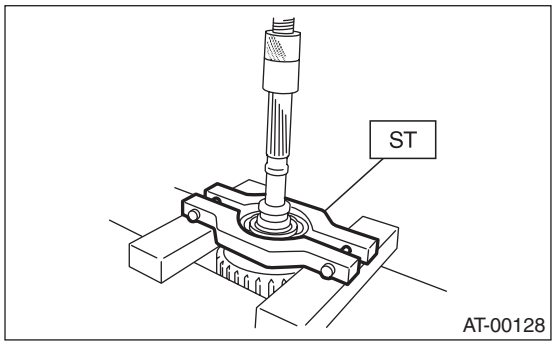
C: DISASSEMBLY

1) Remove the seal ring.

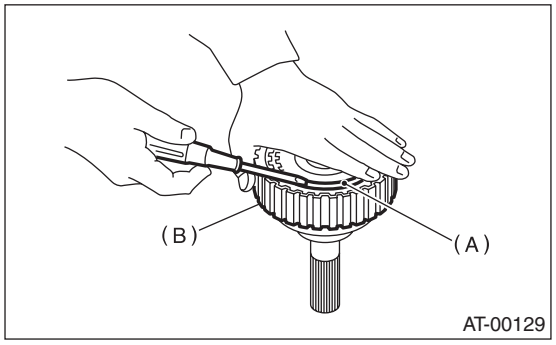


(A) Seal ring
(B) Transfer clutch

2) Remove the ball bearing using the ST and the press.
ST 498077600 REMOVER

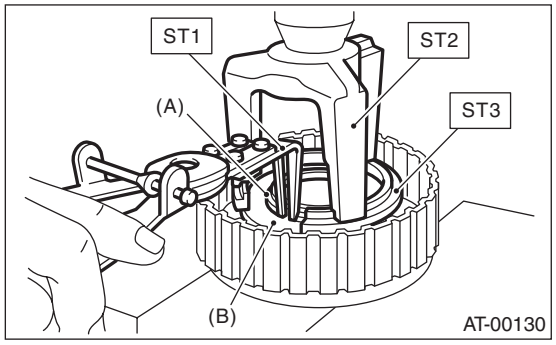


3) Remove the snap ring, and then take out the pressure plate, drive plate and driven plate.



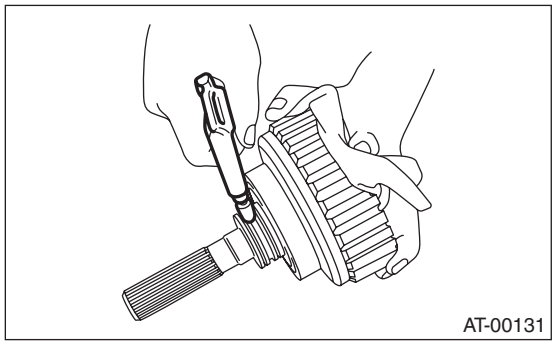
(A) Snap ring
(B) Transfer clutch

4) Using the ST1, ST2 and ST3, remove the snap ring, then take out the return spring and transfer clutch piston seal.
ST1 399893600 PLIERS
ST2 398673600 COMPRESSOR
ST3 398623600 SEAT



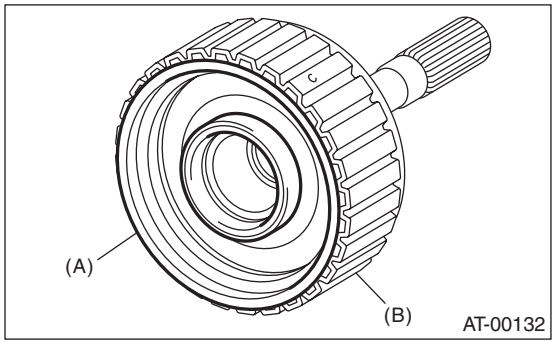
(A) Snap ring
(B) Transfer piston seal

5) Apply compressed air to the rear drive shaft, to remove the transfer clutch piston.



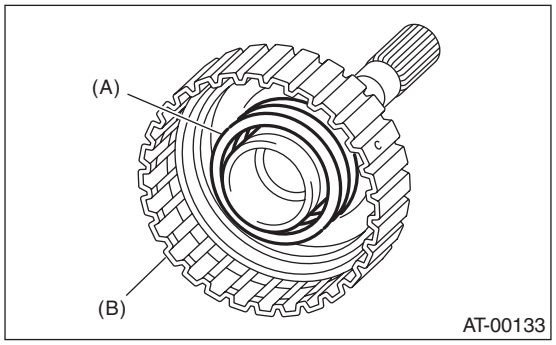
D: ASSEMBLY

1) Install the transfer clutch piston.



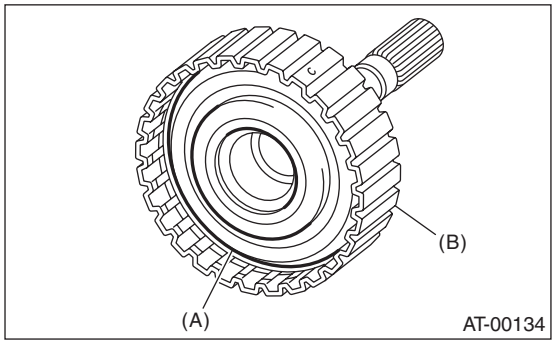
(A) Transfer clutch piston
(B) Rear drive shaft

2) Install the return spring to transfer clutch piston.



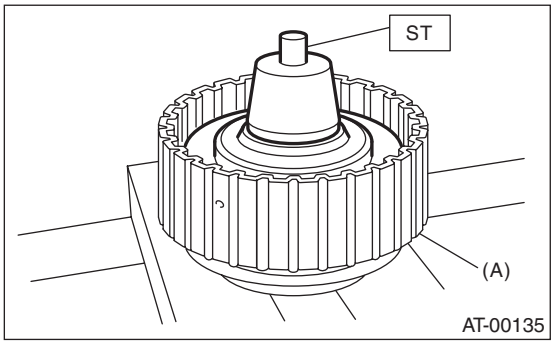
(A) Return spring
(B) Rear drive shaft

3) Apply ATF to the lip of transfer clutch piston seal, then install.



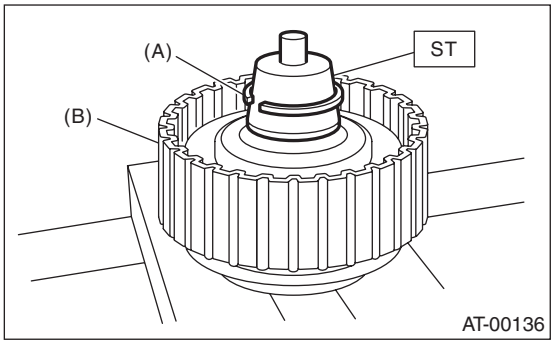
(A) Transfer clutch piston seal
(B) Rear drive shaft

4) Attach the ST to the rear drive shaft.
ST 499257300 SNAP RING OUTER GUIDE



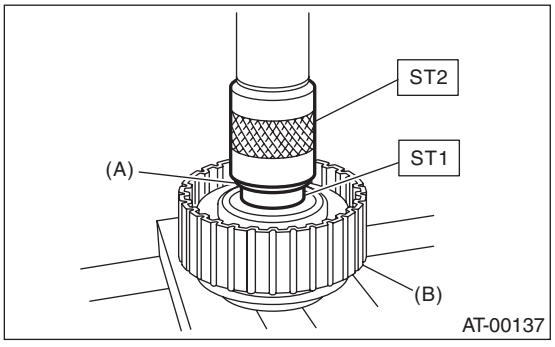
(A) Transfer clutch

5) Install the snap ring to the ST.
ST 499257300 SNAP RING OUTER GUIDE



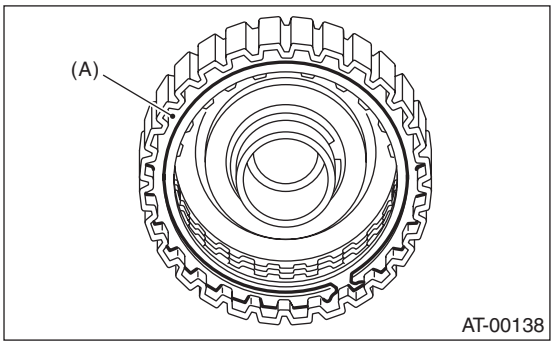
(A) Snap ring
(B) Transfer clutch

6) Install the snap ring to the rear drive shaft using ST1 and ST2.
ST1 499257300 SNAP RING OUTER GUIDE
ST2 499247400 INSTALLER



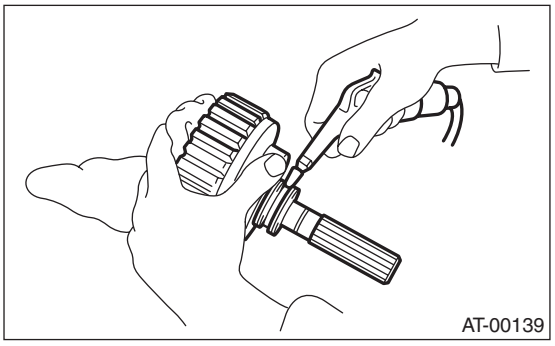
(A) Snap ring
(B) Transfer clutch

7) Install the driven plate, drive plate, pressure plate and snap ring.

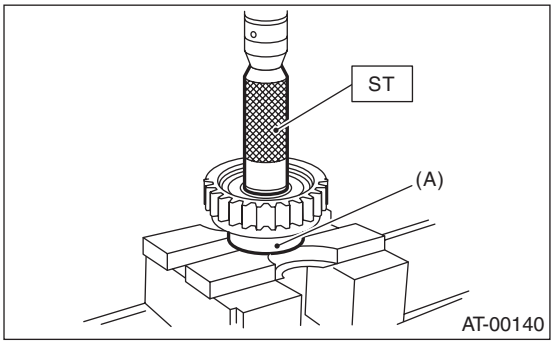


(A) Snap ring

8) Apply compressed air to see if the assembled parts move smoothly.



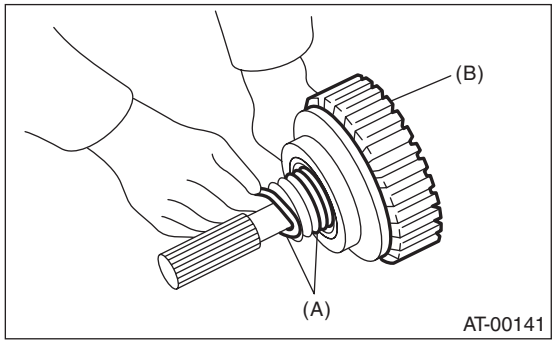
9) Check clearance between the snap ring and pressure gauge. <Ref. to 4AT-74, INSPECTION, Transfer Clutch.>
10) Press-fit new ball bearing using ST.
ST 899580100 INSTALLER



(A) Ball bearing

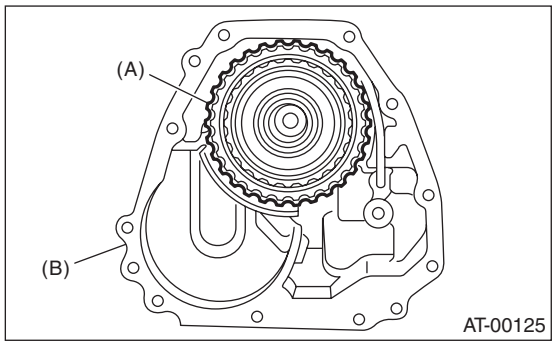
11) Apply vaseline to a new seal ring and attach to the seal ring groove of the shaft.

NOTE:
While installing the seal ring, not to stretch the seal ring excessively.



(A) Seal ring
(B) Transfer clutch

12) Install the transfer clutch assembly while taking care not to damage the seal ring.



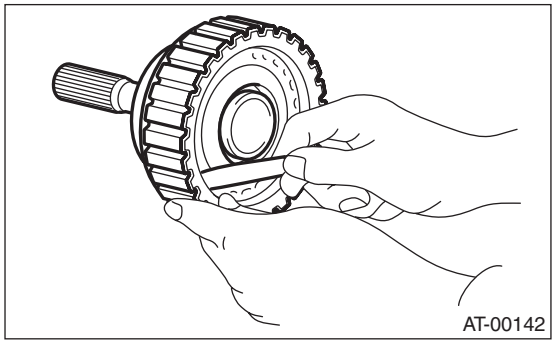
(A) Transfer clutch
(B) Extension case

E: INSPECTION

• Inspect the drive plate facing for wear and damage.
• Make sure the snap ring is not worn and the return spring has no permanent distortion, damage, or deformation.
• Inspect the D-ring for damage.
• Inspect the extension end play, and adjust it to within the standard value. <Ref. to 4AT-75, ADJUSTMENT, Transfer Clutch.>
1) Check clearance between the snap ring and pressure gauge.
2) Before measuring clearance, place same thickness shims on both sides to prevent the pressure plate from tilting.
3) If the clearance exceeds the service limits, replace the plate set (drive plate and driven plate), and select and adjust a pressure plate to be within the initial standard value.

Initial standard:
0.7 — 1.1 mm (0.028 — 0.043 in)

Limit thickness:
1.6 mm (0.063 in)

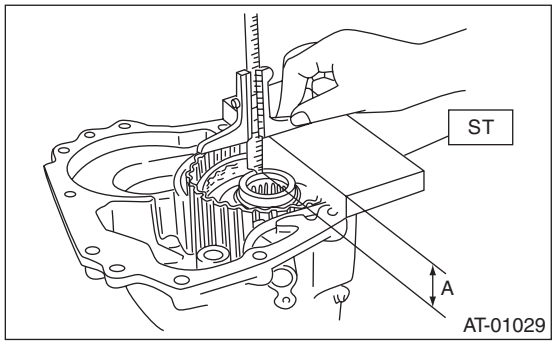


Pressure plate	
Part number	Thickness mm (in)
31593AA151	3.3 (0.130)
31593AA161	3.7 (0.146)
31593AA171	4.1 (0.161)
31593AA181	4.5 (0.177)

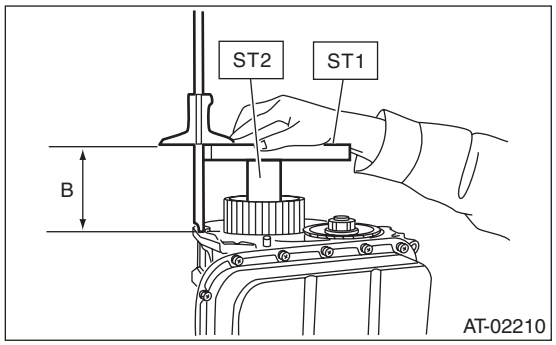
4) Check for tight corner braking phenomenon when the vehicle is moved forward with the steering fully turned. If tight corner braking occurs, perform the following procedures.
(1) With the steering wheel held at fully turned position, drive the vehicle in “D” range and with vehicle speed at approx. 5 km/h (3 MPH) in both clockwise and counterclockwise directions for approx. ten times each, while repeating acceleration and braking intermittently.
(2) If the tight corner braking phenomenon still persists, drive the vehicle again in a circle for several laps.

F: ADJUSTMENT

1) Measure the distance “A” from the end of ST to the rear drive shaft using the ST.
ST 398643600 GAUGE



2) Measure distance “B” from the transmission case mating surface to the end of ST using ST1 and ST2.
ST1 398643600 GAUGE
ST2 499577000 GAUGE



3) Calculation formula:

NOTE:
Calculate “T”:
T = A – B + 35.4 mm
[T = A – B + 1.3937 in]
T: Thrust needle bearing thickness
A: Distance from the end of the ST to end of rear drive shaft
B: Distance from the mating surface of the transmission case to the end of the ST
Example:
When, A = 33.6 mm (1.3228 in), B = 65.05 mm (2.5610 in)
T = 33.6 – 65.05 + 35.4 = 3.95
[T = 1.3228 – 2.5610 + 1.3937 = 0.1555]
After calculation, the value of “T” becomes 3.95. Select a bearing thickness of 3.8 mm (0.150 in).

NOTE:
Calculation formula for “T” is applied when measuring using ST (398643600 GAUGE, 499577000 GAUGE). When not using the ST,
T = (A – α + 0.45 mm) – (B – β) – H
[T = (A – α + 0.0177 in) – (B – β) – H]
is applied.
T: Thrust needle bearing thickness
A: Distance from the end of collar that was used as the substitute of the ST, to the end of reduction drive shaft
B: Distance from the matching surface of transmission case, to the end of collar that was used as the substitute of the ST
α: Thickness of collar used when measuring “A”
β: Thickness of collar used when measuring “B”
0.45: Gasket thickness (mm)
0.0177: Gasket thickness (in)
H: Shim clearance

Thrust needle bearing	
Part number	Thickness mm (in)
806536020	3.8 (0.150)
806535030	4.0 (0.157)
806535040	4.2 (0.165)
806535050	4.4 (0.173)
806535060	4.6 (0.181)
806535070	4.8 (0.189)
806535090	5.0 (0.197)