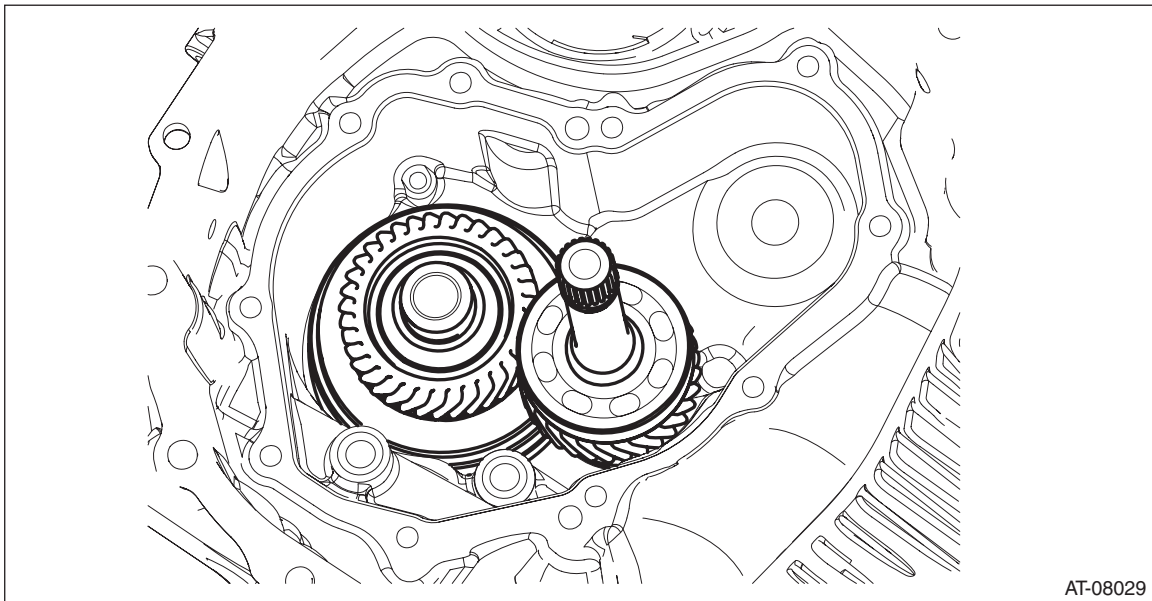


## 48.Front Reduction Drive Gear

### A: REMOVAL

- 1) Remove the transmission assembly from the vehicle. <Ref. to CVT(TR690)-55, REMOVAL, Automatic Transmission Assembly.>
- 2) Remove the air breather hose. <Ref. to CVT(TR690)-132, REMOVAL, Air Breather Hose.>
- 3) Remove the oil pan and control valve body. <Ref. to CVT(TR690)-108, REMOVAL, Control Valve Body.>
- 4) Remove the transmission harness. <Ref. to CVT(TR690)-118, REMOVAL, Transmission Harness.>
- 5) Remove the primary speed sensor. <Ref. to CVT(TR690)-101, REMOVAL, Primary Speed Sensor.>
- 6) Remove the extension case. <Ref. to CVT(TR690)-138, REMOVAL, Extension Case.>
- 7) Remove the rear drive shaft. <Ref. to CVT(TR690)-141, REMOVAL, Rear Drive Shaft.>
- 8) Remove the transfer clutch assembly. <Ref. to CVT(TR690)-146, REMOVAL, Transfer Clutch.>
- 9) Remove the transfer reduction driven gear assembly. <Ref. to CVT(TR690)-158, REMOVAL, Transfer Reduction Driven Gear.>
- 10) Remove the intermediate case. <Ref. to CVT(TR690)-165, REMOVAL, Intermediate Case.>
- 11) Remove the forward clutch assembly. <Ref. to CVT(TR690)-180, REMOVAL, Forward Clutch Assembly.>
- 12) Remove the transmission case. <Ref. to CVT(TR690)-211, REMOVAL, Transmission Case.>
- 13) Remove the primary pulley, secondary pulley and variator chain. <Ref. to CVT(TR690)-227, REMOVAL, Primary Pulley and Secondary Pulley.>
- 14) Remove the drive pinion shaft assembly. <Ref. to CVT(TR690)-243, REMOVAL, Drive Pinion Shaft Assembly.>
- 15) Remove the converter case cover. <Ref. to CVT(TR690)-291, REMOVAL, Converter Case Cover.>
- 16) Remove the front reduction drive gear and front reduction driven gear together.



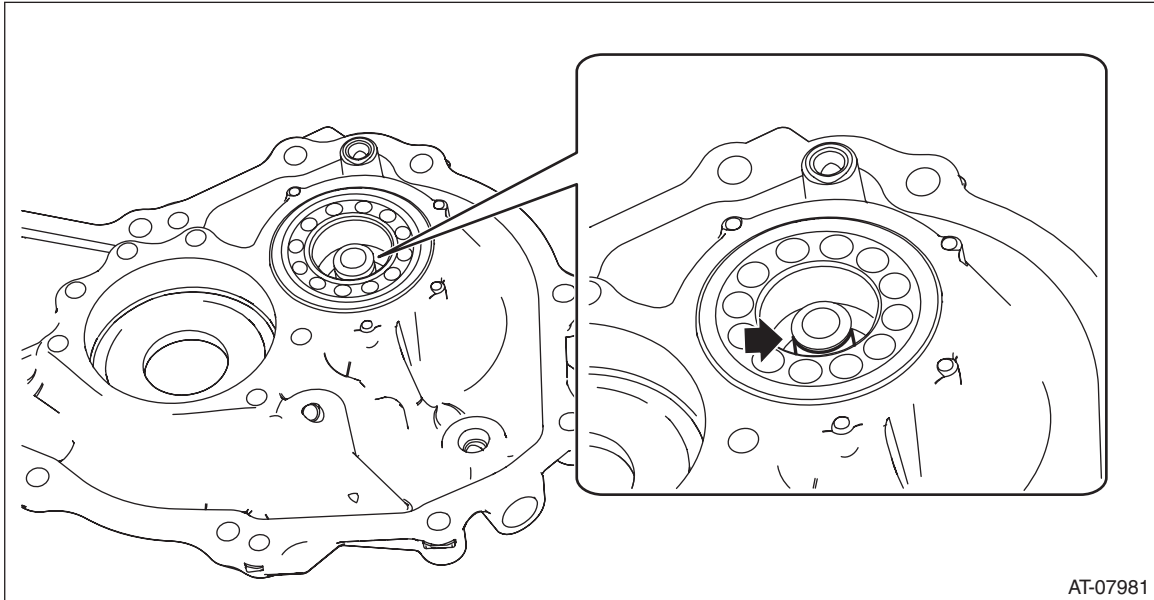
AT-08029

- 17) Remove the shims of the front reduction driven gear from the converter case.

## Front Reduction Drive Gear

### CONTINUOUSLY VARIABLE TRANSMISSION

18) Remove the seal ring.

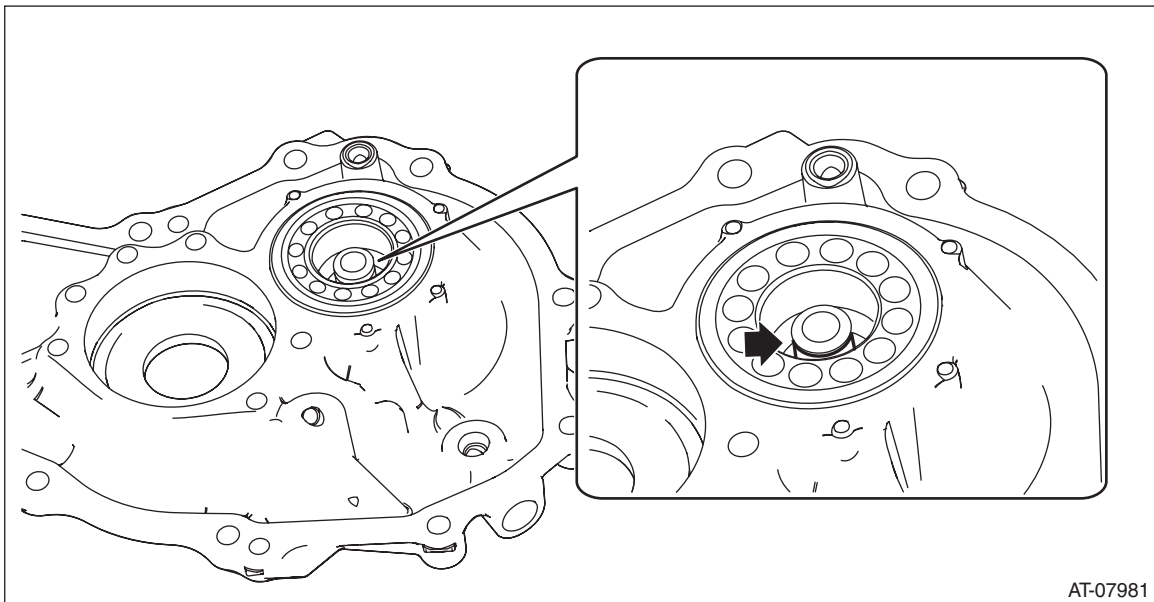


## B: INSTALLATION

- 1) Clean the mating surface of converter case cover and converter case.
- 2) Select the shim for front reduction drive gear. <Ref. to CVT(TR690)-307, ADJUSTMENT, Front Reduction Drive Gear.>
- 3) Apply CVTF to the shims and install on the bearing catch surface of the front reduction driven gear.
- 4) Install the seal ring to converter case cover.

### NOTE:

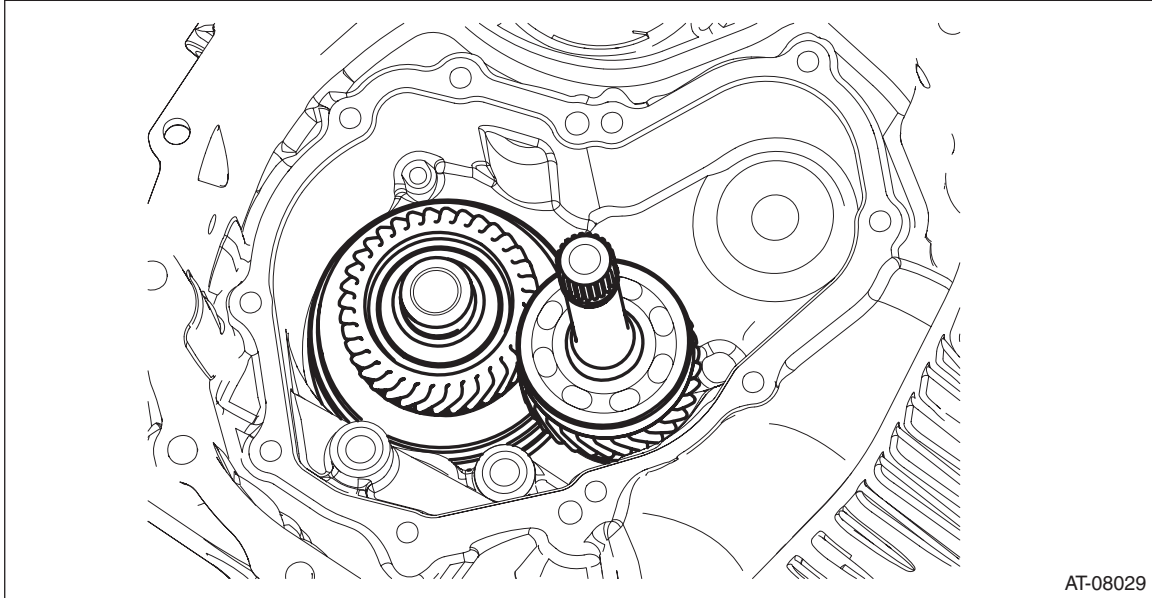
- Use a new seal ring.
- When installing the seal ring, do not expand the seal ring too much.



## Front Reduction Drive Gear

CONTINUOUSLY VARIABLE TRANSMISSION

- 5) Install the front reduction drive gear and front reduction driven gear together.



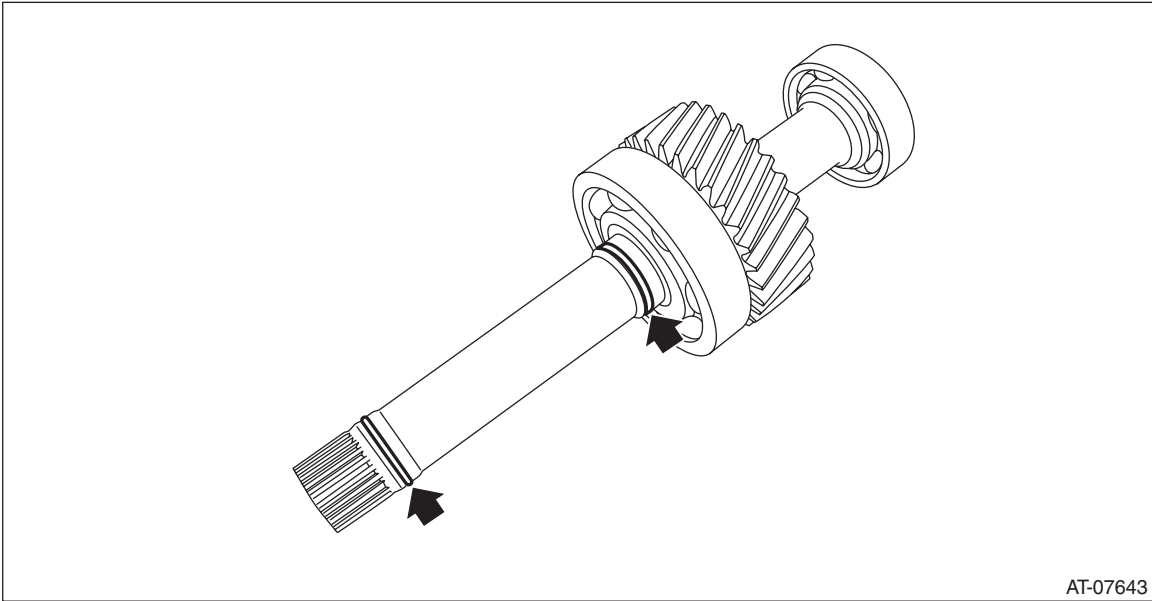
- 6) Install the converter case cover. <Ref. to CVT(TR690)-294, INSTALLATION, Converter Case Cover.>  
7) Install the drive pinion shaft assembly. <Ref. to CVT(TR690)-245, INSTALLATION, Drive Pinion Shaft Assembly.>  
8) Install the primary pulley, secondary pulley and variator chain. <Ref. to CVT(TR690)-231, INSTALLATION, Primary Pulley and Secondary Pulley.>  
9) Install the transmission case. <Ref. to CVT(TR690)-213, INSTALLATION, Transmission Case.>  
10) Install the forward clutch assembly. <Ref. to CVT(TR690)-181, INSTALLATION, Forward Clutch Assembly.>  
11) Install the intermediate case. <Ref. to CVT(TR690)-166, INSTALLATION, Intermediate Case.>  
12) Install the transfer reduction driven gear assembly. <Ref. to CVT(TR690)-158, INSTALLATION, Transfer Reduction Driven Gear.>  
13) Install the transfer clutch assembly. <Ref. to CVT(TR690)-147, INSTALLATION, Transfer Clutch.>  
14) Install the rear drive shaft. <Ref. to CVT(TR690)-141, INSTALLATION, Rear Drive Shaft.>  
15) Install the extension case. <Ref. to CVT(TR690)-139, INSTALLATION, Extension Case.>  
16) Install the primary speed sensor. <Ref. to CVT(TR690)-102, INSTALLATION, Primary Speed Sensor.>  
17) Install the transmission harness. <Ref. to CVT(TR690)-120, INSTALLATION, Transmission Harness.>  
18) Install the control valve body and oil pan. <Ref. to CVT(TR690)-112, INSTALLATION, Control Valve Body.>  
19) Install the air breather hose. <Ref. to CVT(TR690)-132, INSTALLATION, Air Breather Hose.>  
20) Install the transmission assembly to the vehicle. <Ref. to CVT(TR690)-68, INSTALLATION, Automatic Transmission Assembly.>

# Front Reduction Drive Gear

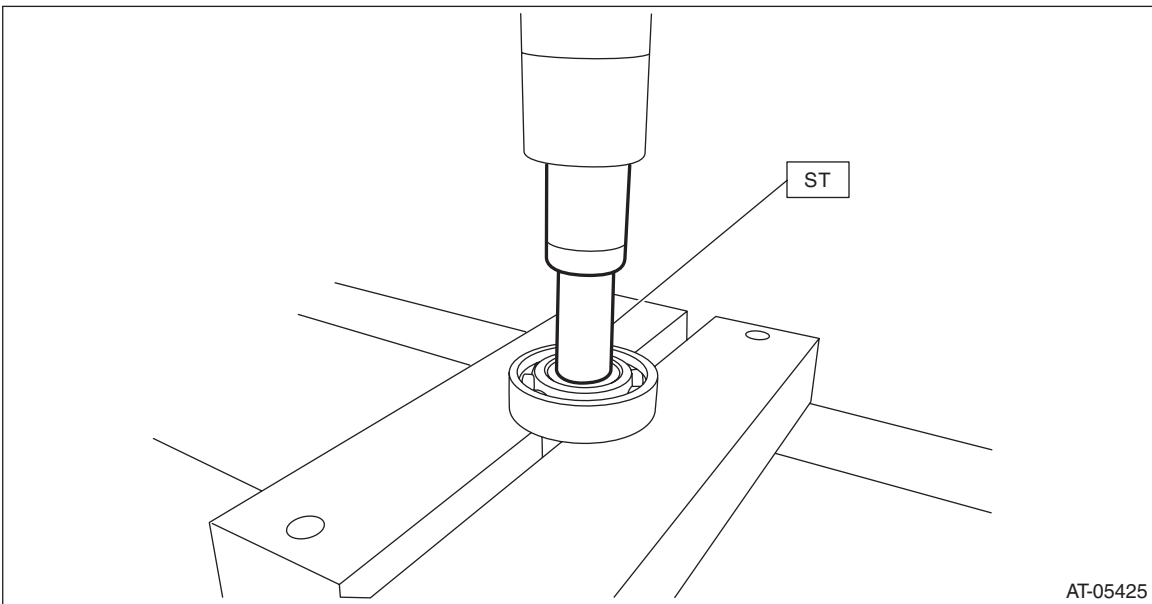
CONTINUOUSLY VARIABLE TRANSMISSION

## C: DISASSEMBLY

1) Remove the seal ring and O-ring.



2) Using the ST, remove the ball bearing from front reduction drive gear.  
ST 899864100 REMOVER

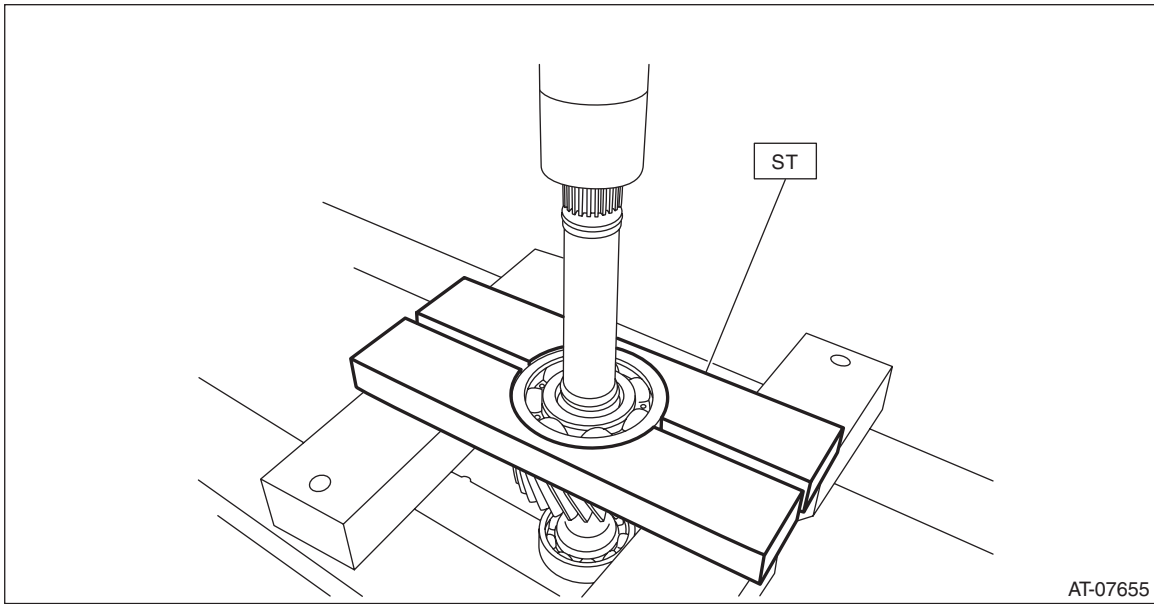


## Front Reduction Drive Gear

CONTINUOUSLY VARIABLE TRANSMISSION

3) Using the ST, remove the ball bearing from front reduction drive gear.

ST 498077000 REMOVER



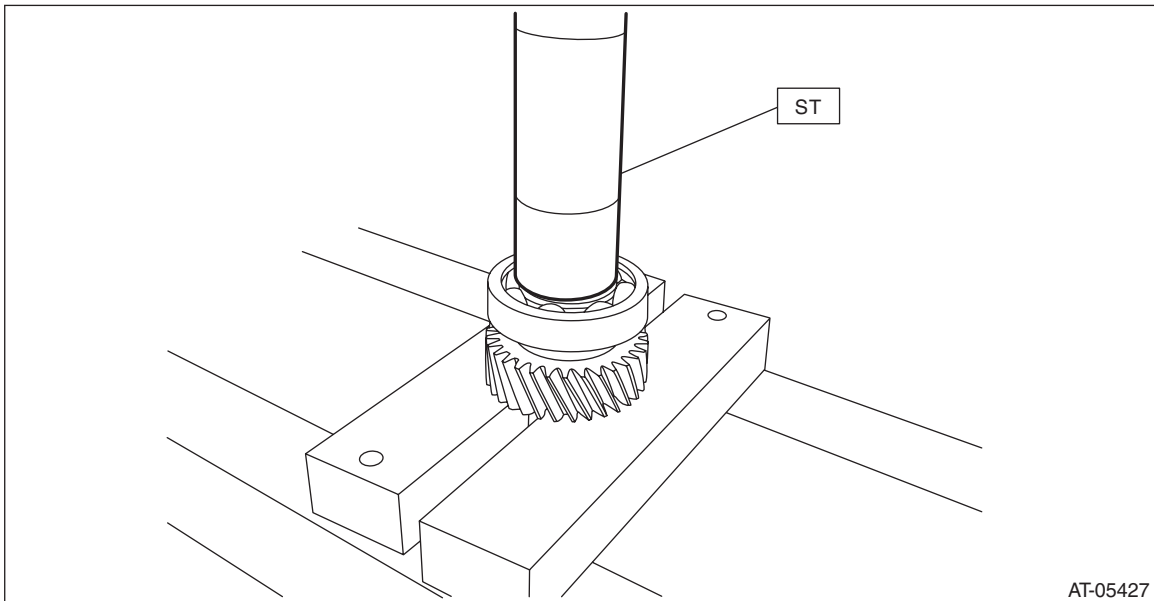
### D: ASSEMBLY

1) Using the ST, install the ball bearing to front reduction drive gear.

NOTE:

Use a new ball bearing.

ST 18651AA000 INSTALLER



## Front Reduction Drive Gear

### CONTINUOUSLY VARIABLE TRANSMISSION

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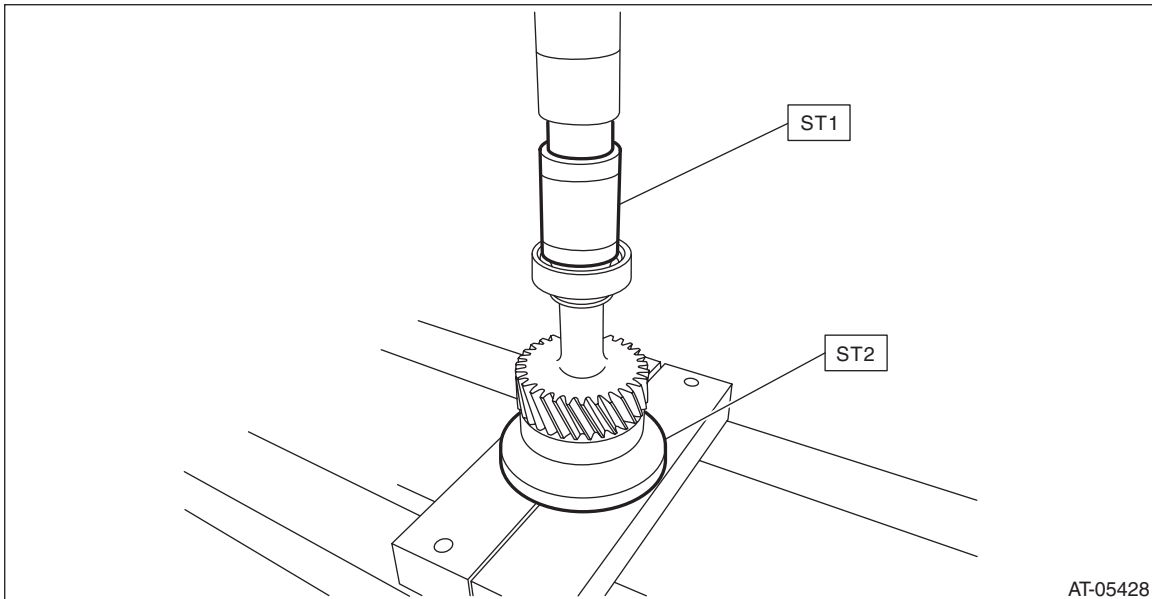
2) Using ST1 and ST2, install the ball bearing to front reduction drive gear.

**NOTE:**

Use a new ball bearing.

ST1 499757002 PRESS SNAP RING

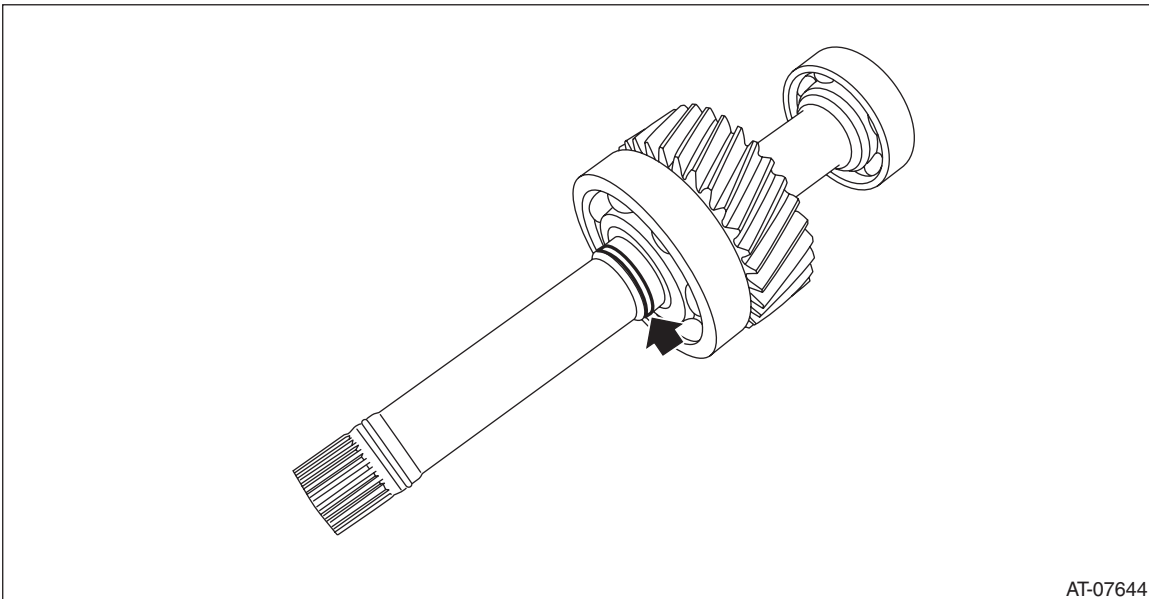
ST2 398177700 INSTALLER



3) Install the seal ring.

**NOTE:**

- Use a new seal ring.
- When installing the seal ring, do not expand the seal ring too much.
- Install the O-ring when installing the torque converter assembly.



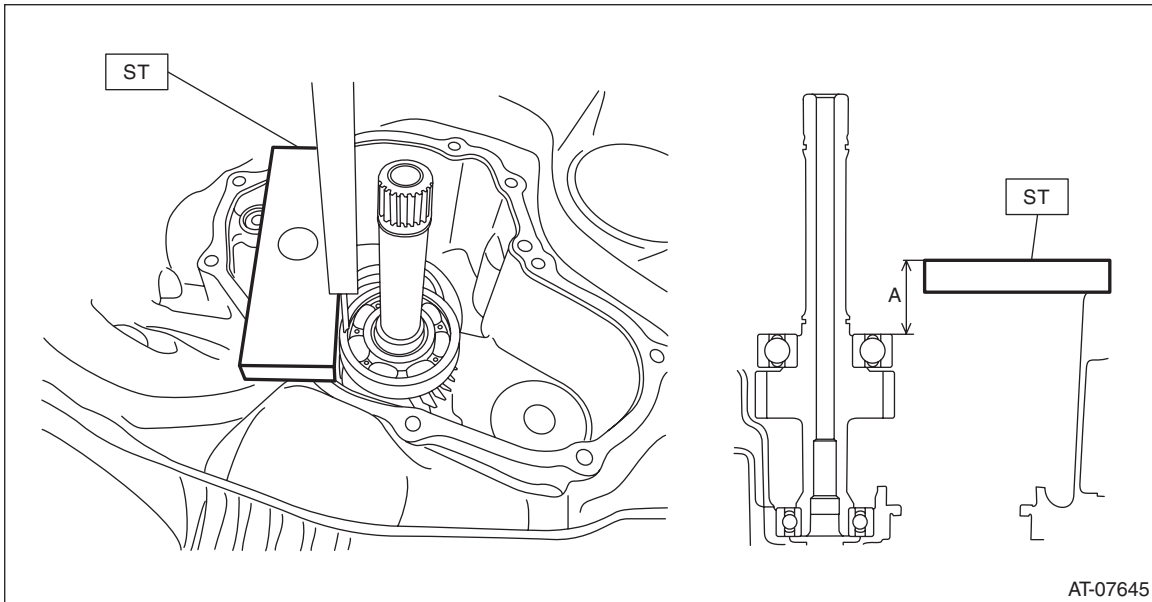
## E: INSPECTION

- Replace if its tooth surfaces are broken, damaged or excessively worn.
- Check the bearing for seizure or wear.
- Apply CVTF to bearing and rotate the bearing to check for noise or dragging etc.

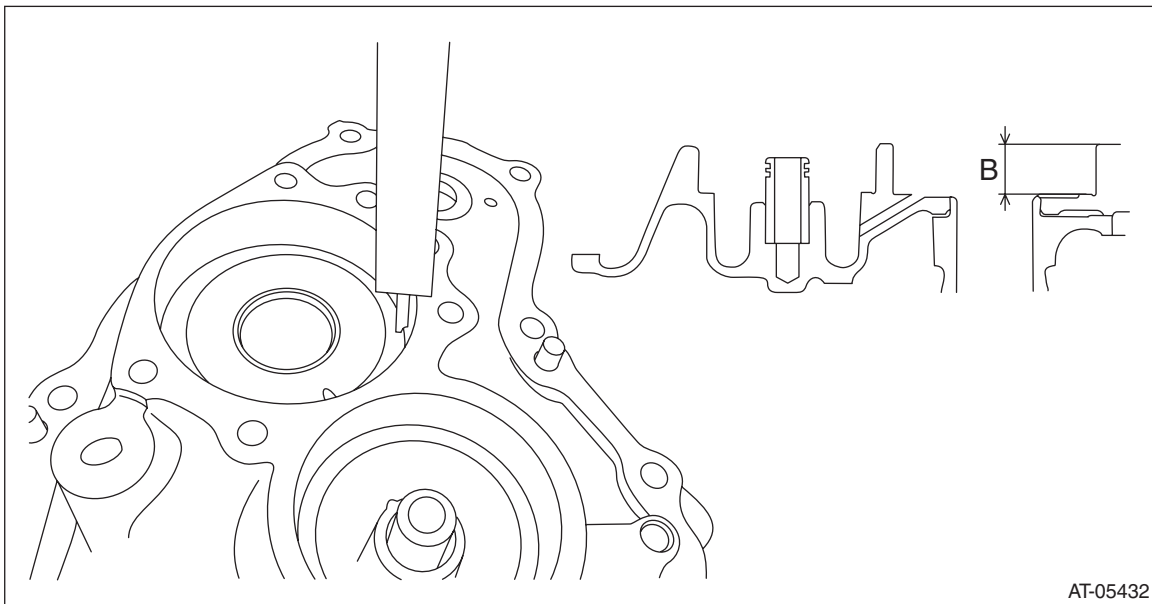
### F: ADJUSTMENT

1) Measure height "A" from the ST upper face to the bearing end face using the ST.

ST 398643600 GAUGE



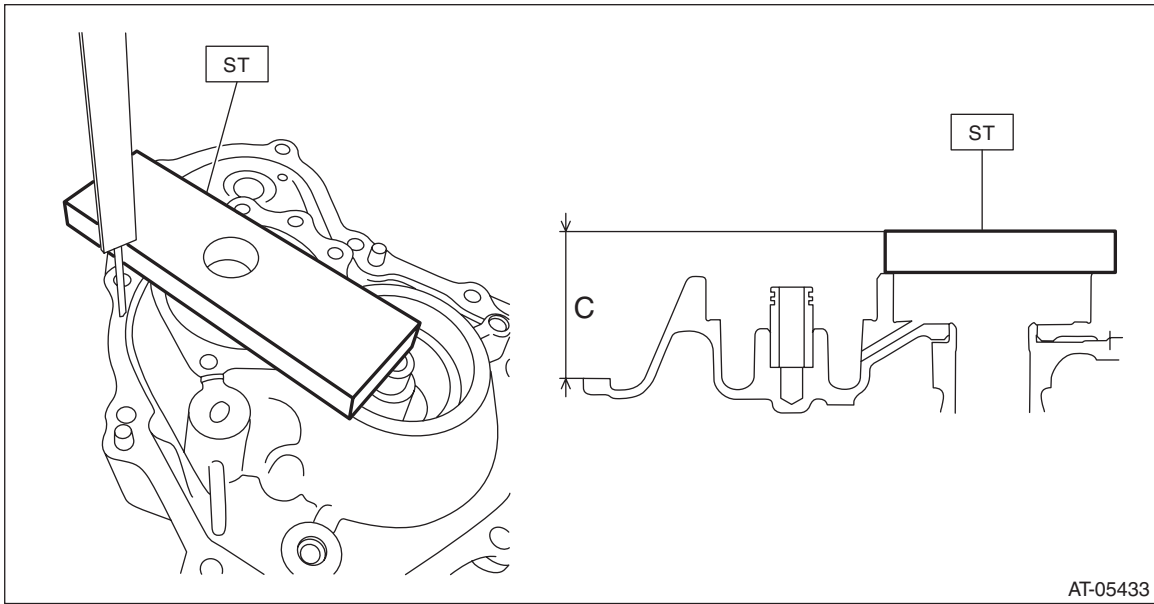
2) Measure depth "B" from the converter case cover upper face to the bearing catch surface.



## Front Reduction Drive Gear

### CONTINUOUSLY VARIABLE TRANSMISSION

3) Using the ST, measure height “C” from the ST upper face to the converter case cover mating surface.  
ST 398643600 GAUGE



4) Using the following formula, calculate clearance “T” to select shims.

Calculation formula:

$$T \text{ mm} = (A - 15) - ((C - 15) - B)$$

$$[T \text{ in} = (A - 0.591) - ((C - 0.591) - B)]$$

T: Clearance

A: Depth from the ST upper face to the bearing end surface

B: Depth from the converter case cover upper face to the bearing catch surface

C: Height from the ST upper face to the converter case cover mating surface

15 mm (0.591 in): Thickness of ST

Clearance “T” mm (in)	Thickness of shim mm (in)	Part No.
1.070 — 1.174 (0.042 — 0.045)	1.0 (0.039)	31288AA160
1.175 — 1.274 (0.046 — 0.049)	1.1 (0.043)	31288AA170
1.275 — 1.374 (0.050 — 0.053)	1.2 (0.047)	31288AA180
1.375 — 1.474 (0.054 — 0.057)	1.3 (0.051)	31288AA220
1.475 — 1.580 (0.058 — 0.062)	1.4 (0.055)	31288AA230