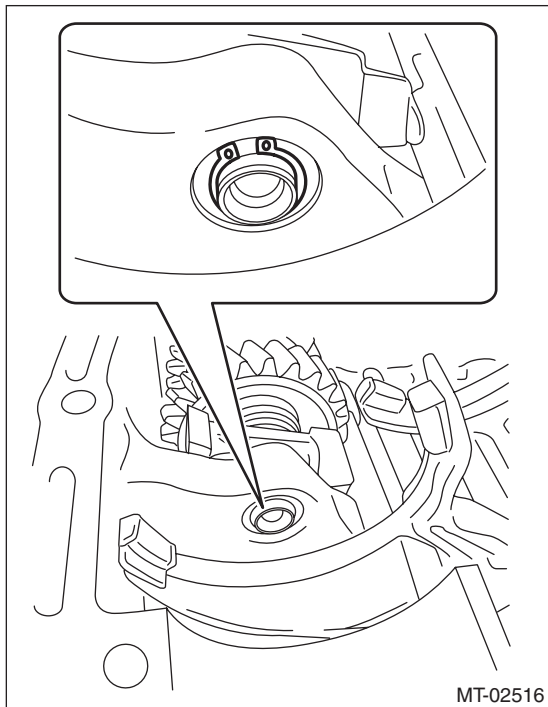


## 19.Reverse Idler Gear

### A: REMOVAL

- 1) Remove the manual transmission assembly from the vehicle. <Ref. to 6MT(TY75)-25, REMOVAL, Manual Transmission Assembly.>
- 2) Remove the back-up light switch and the neutral position switch. <Ref. to 6MT(TY75)-45, REMOVAL, Switches and Harness.>
- 3) Remove the transfer case together with the extension case assembly. <Ref. to 6MT(TY75)-51, REMOVAL, Transfer Case and Extension Case Assembly.>
- 4) Remove the transmission case. <Ref. to 6MT(TY75)-79, REMOVAL, Transmission Case.>
- 5) Remove the drive pinion shaft assembly. <Ref. to 6MT(TY75)-92, REMOVAL, Drive Pinion Shaft Assembly.>
- 6) Remove the main shaft assembly. <Ref. to 6MT(TY75)-83, REMOVAL, Main Shaft Assembly for Single-Range.>
- 7) Remove the front differential assembly. <Ref. to 6MT(TY75)-111, REMOVAL, Front Differential Assembly.>
- 8) Shift into 4th.
- 9) Remove the snap ring.

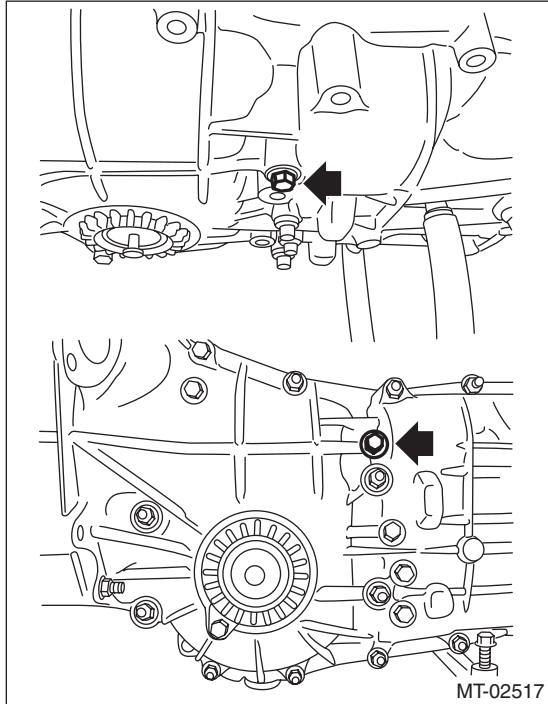


## Reverse Idler Gear

### MANUAL TRANSMISSION AND DIFFERENTIAL

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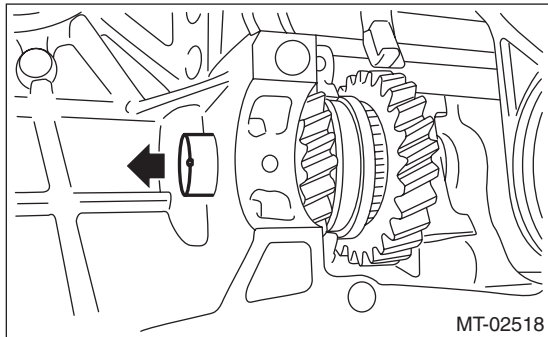
10) Remove the reverse idler gear shaft securing bolt.



11) Remove the reverse idler gear shaft by pushing it out.

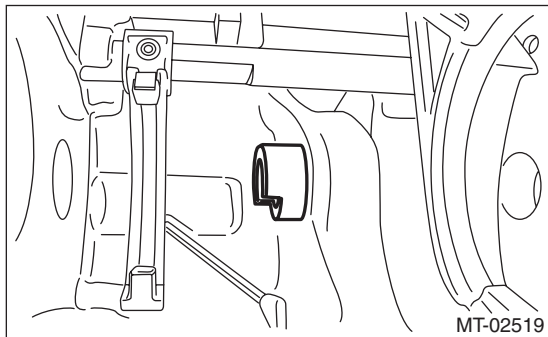
**NOTE:**

Support the reverse idler gear assembly with hands to avoid collapsing.



12) Remove the reverse idler gear.

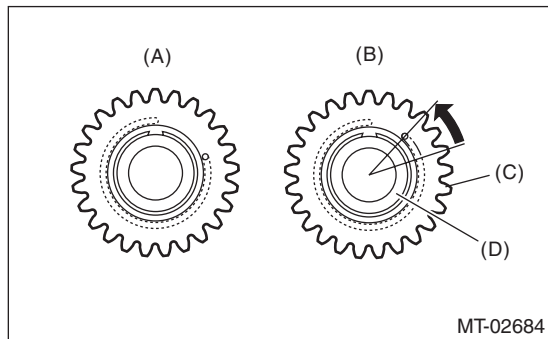
13) Remove the reverse idler gear bushing.



## B: INSTALLATION

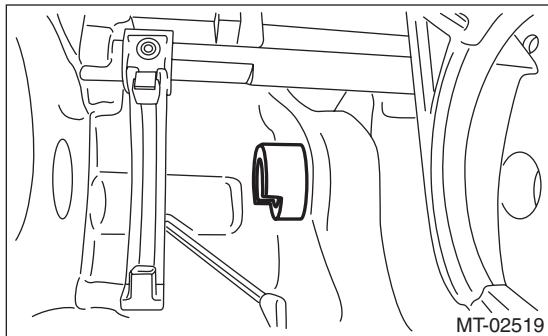
### NOTE:

Rotate the reverse idler sub gear by two teeth from free status in the direction of the arrow to make it engage with the reverse gear of the main shaft and install the main shaft assembly.



- (A) Free status
- (B) Set status
- (C) Reverse idler sub gear
- (D) Reverse idler gear

1) Install the reverse idler gear bushing with the cutout portion of the reverse idler gear bushing facing the front of the transmission.



## Reverse Idler Gear

### MANUAL TRANSMISSION AND DIFFERENTIAL

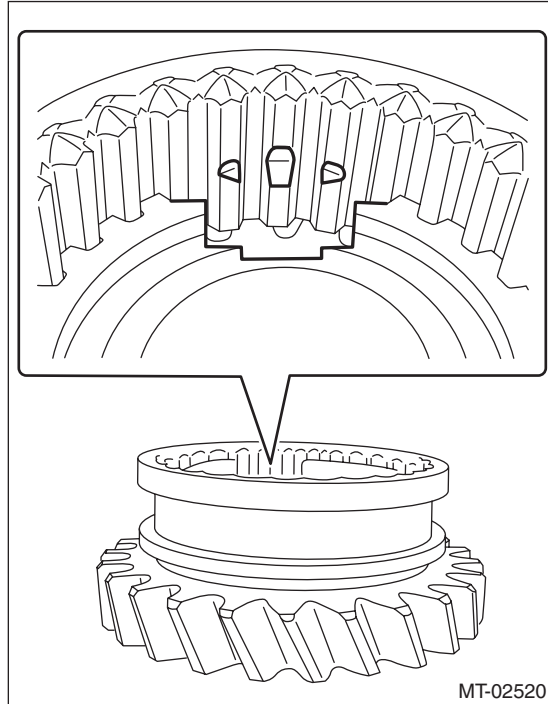
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#### 2) Assembling reverse idler gear assembly

(1) Install the reverse coupling sleeve to the reverse idler gear No. 2.

##### NOTE:

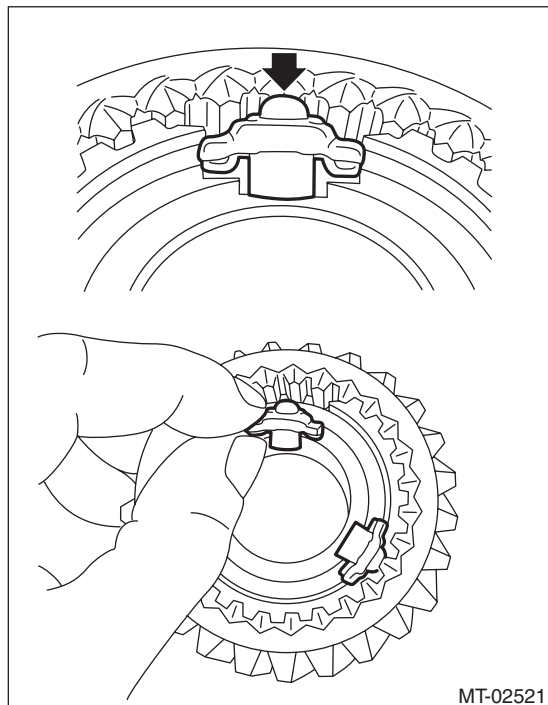
- Install the reverse coupling sleeve in the correct direction.
- Make sure that the oval-shaped cutout portion inside the reverse coupling sleeve matches the center of the reverse idler gear No. 2 groove.



(2) Install the reverse shifting insert.

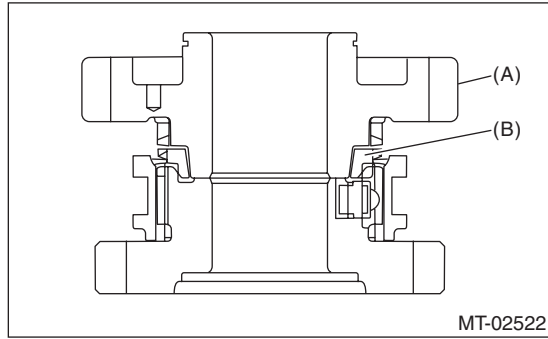
##### NOTE:

Press in the ball part to install.



## Reverse Idler Gear

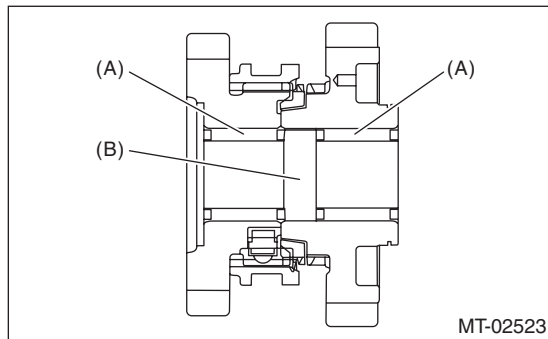
(3) Install the reverse baulk ring and reverse idler gear.



(A) Reverse idler gear

(B) Reverse baulk ring

(4) Install the needle bearing and reverse idler gear collar.



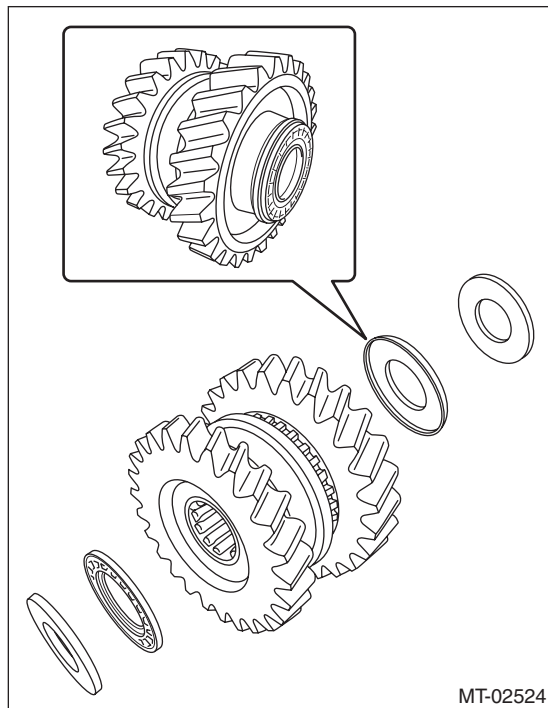
(A) Needle bearing

(B) Reverse idler gear collar

(5) Install the thrust bearing and reverse idler gear washer.

### NOTE:

Install the thrust bearing in the correct direction.



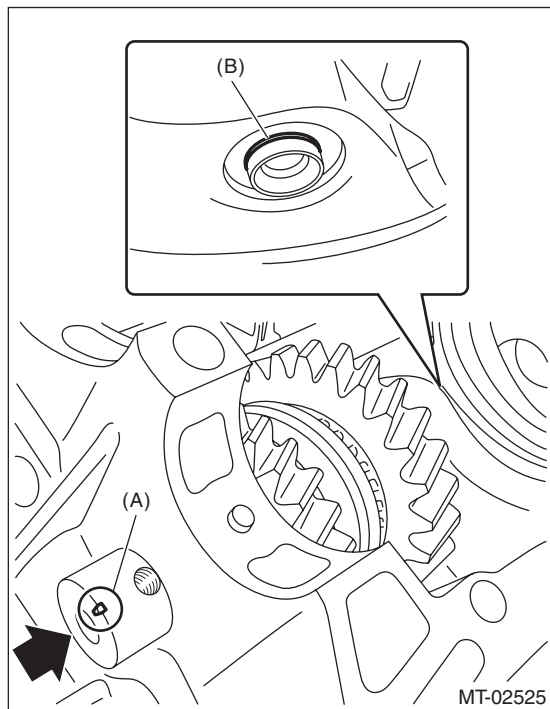
## Reverse Idler Gear

### MANUAL TRANSMISSION AND DIFFERENTIAL

- 3) Install the assembled reverse idler gear assembly to the transmission case and hold it with hands.
- 4) Install the reverse idler gear shaft.

#### NOTE:

- Install with the cutout portion of the reverse idler gear shaft facing the RH side of the transmission case.
- Make sure that the groove of the reverse idler gear shaft comes out of the reverse idler gear bushing.

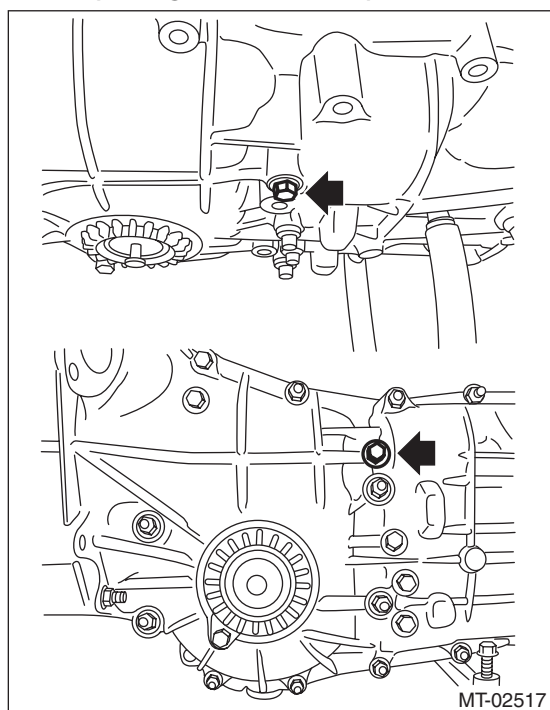


- (A) Cutout portion of the reverse idler gear shaft  
(B) Snap ring installation groove

- 5) Install the reverse idler gear shaft securing bolt.

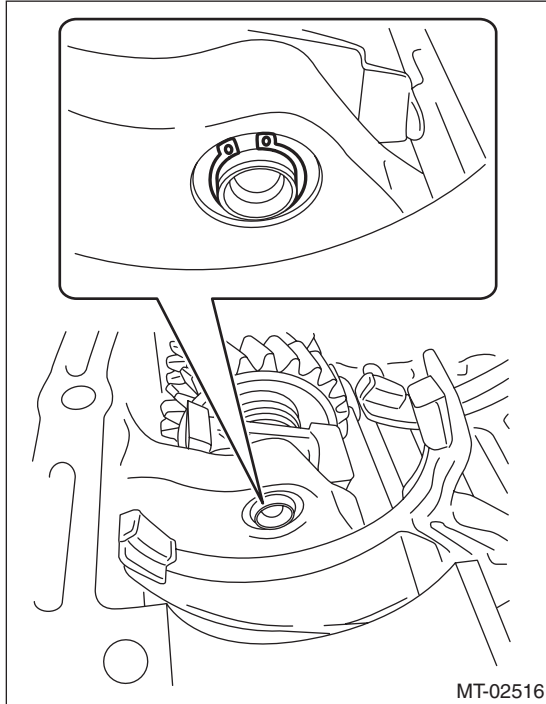
#### **Tightening torque:**

**25 N·m (2.5 kgf-m, 18.4 ft-lb)**



## Reverse Idler Gear

6) Install the snap ring.



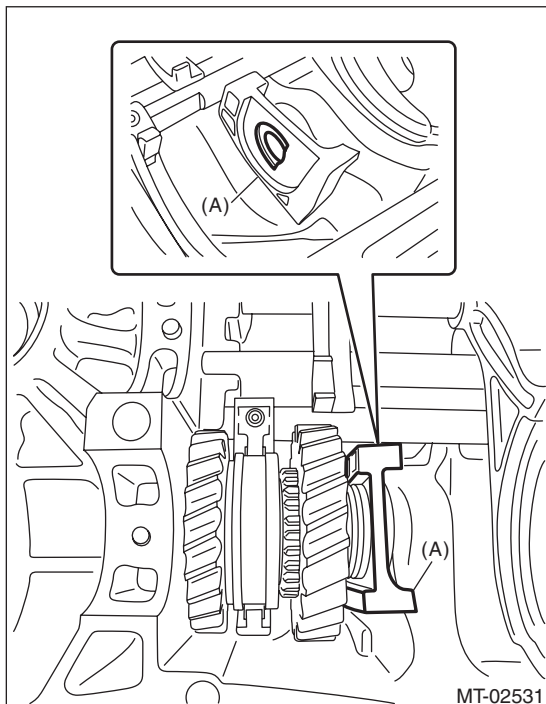
7) Select the reverse idler gear bushing. <Ref. to 6MT(TY75)-134, ADJUSTMENT, Reverse Idler Gear.>

8) Remove the reverse idler gear assembly and replace with the selected bushing. <Ref. to 6MT(TY75)-123, REMOVAL, Reverse Idler Gear.>

9) Install the reverse idler gear assembly, oil case guide and reverse idler gear shaft.

### NOTE:

- Install with the cutout portion of the reverse idler gear shaft facing the RH side of the transmission case.
- Make sure that the groove of the reverse idler gear shaft comes out of the reverse idler gear bushing.
- Insert the cutout portion of the reverse idler gear bushing into the oil case guide.



(A) Oil case guide

## Reverse Idler Gear

### MANUAL TRANSMISSION AND DIFFERENTIAL

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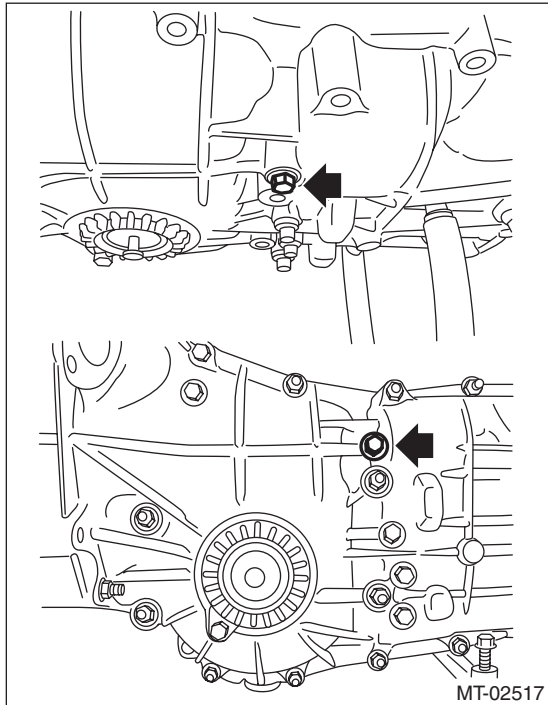
10) Install the reverse idler gear shaft securing bolt.

NOTE:

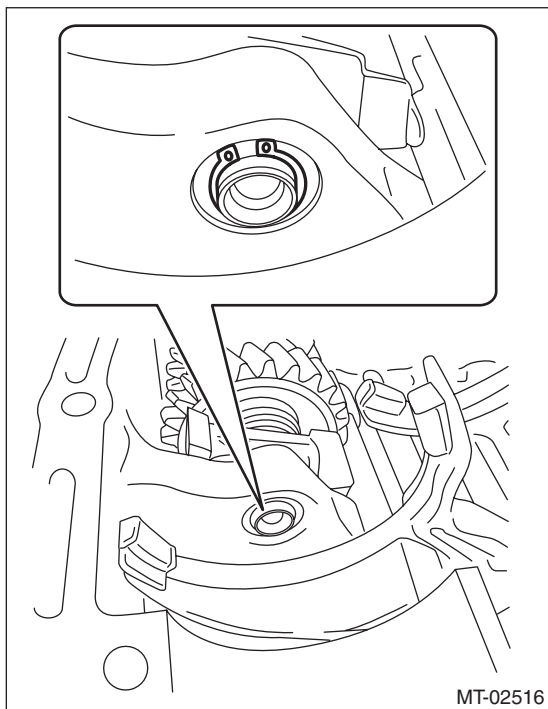
Use a new gasket.

**Tightening torque:**

**25 N·m (2.5 kgf·m, 18.4 ft-lb)**



11) Install the snap ring.



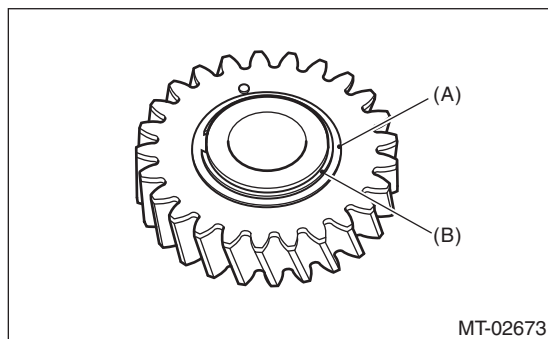


- 12) Check the reverse shifter fork. <Ref. to 6MT(TY75)-140, INSPECTION, Shifter Fork and Rod.>
- 13) Install the front differential assembly. <Ref. to 6MT(TY75)-112, INSTALLATION, Front Differential Assembly.>
- 14) Install the main shaft assembly. <Ref. to 6MT(TY75)-83, INSTALLATION, Main Shaft Assembly for Single-Range.>
- 15) Install the drive pinion shaft assembly. <Ref. to 6MT(TY75)-92, INSTALLATION, Drive Pinion Shaft Assembly.>
- 16) Install the transmission case. <Ref. to 6MT(TY75)-80, INSTALLATION, Transmission Case.>
- 17) Install the transfer case together with the extension case assembly. <Ref. to 6MT(TY75)-53, INSTALLATION, Transfer Case and Extension Case Assembly.>
- 18) Install the back-up light switch and the neutral position switch. <Ref. to 6MT(TY75)-46, INSTALLATION, Switches and Harness.>
- 19) Install the manual transmission assembly to the vehicle. <Ref. to 6MT(TY75)-30, INSTALLATION, Manual Transmission Assembly.>

## C: DISASSEMBLY

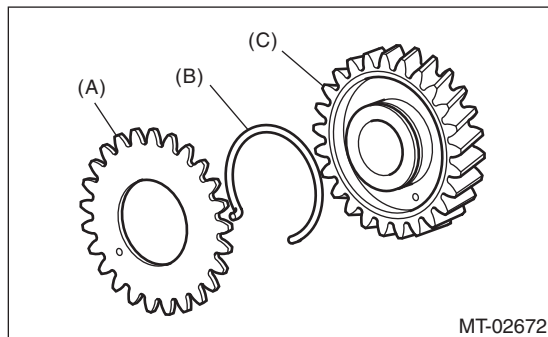
### 1. REVERSE IDLER GEAR ASSY

- 1) Remove the snap ring and friction plate.



- (A) Friction plate
- (B) Snap ring

- 2) Remove the reverse idler sub gear and reverse idler spring.



- (A) Reverse idler sub gear
- (B) Reverse idler spring
- (C) Reverse idler gear

# Reverse Idler Gear

## MANUAL TRANSMISSION AND DIFFERENTIAL

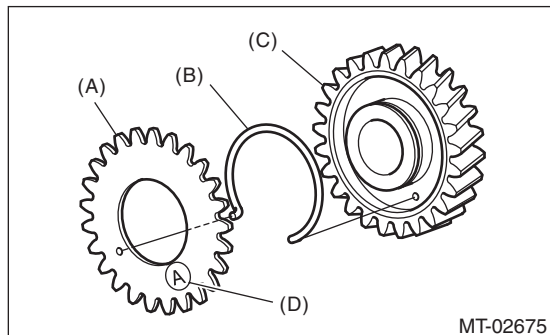
### D: ASSEMBLY

#### 1. REVERSE IDLER GEAR ASSY

1) Attach the reverse idler sub gear and reverse idler spring.

**NOTE:**

Point the stamp (marking A) towards the outside, and install the reverse idler sub gear.

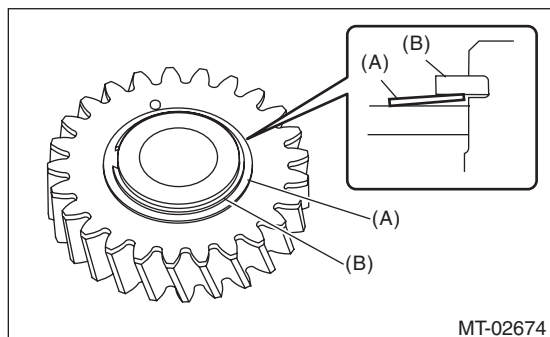


- (A) Reverse idler sub gear
- (B) Reverse idler spring
- (C) Reverse idler gear
- (D) Stamp (marking A)

2) Install the friction plate and snap ring.

**NOTE:**

Make sure the friction plate is installed in the proper direction.



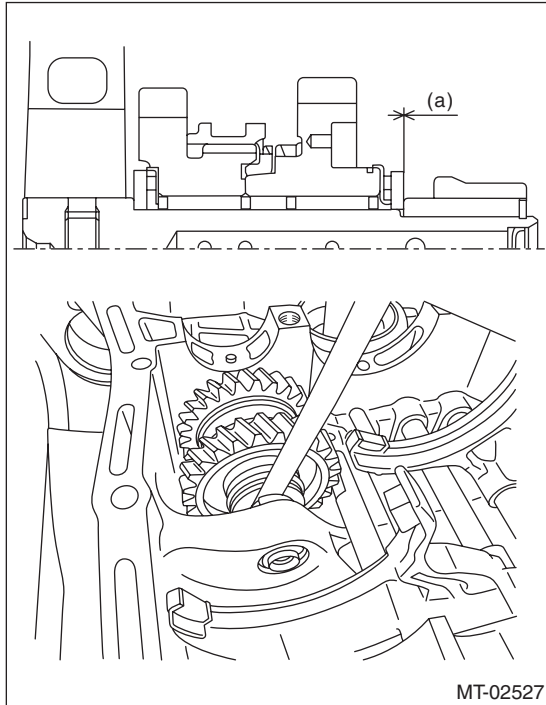
- (A) Friction plate
- (B) Snap ring

### E: INSPECTION

1) Check the clearance between the reverse idler gear bushing and reverse idler gear washer. If the value is out of specification, select the appropriate reverse idler gear bushing and adjust.

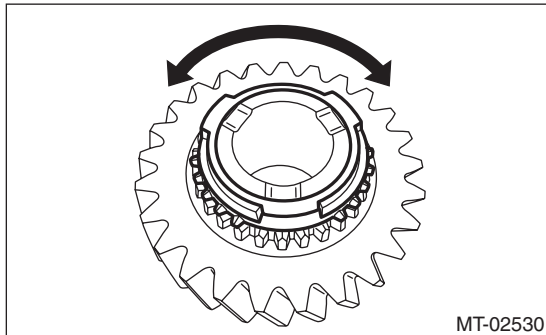
**Clearance (a):**

**0.1 — 0.3 mm (0.004 — 0.012 in)**



2) Check the reverse idler gear and reverse idler gear shaft for damage. Replace if it is damaged.

3) Apply gear oil to the cone of the reverse idler gear and while press-fitting the reverse baulk ring, check there is no rotation in the circumferential direction.



## Reverse Idler Gear

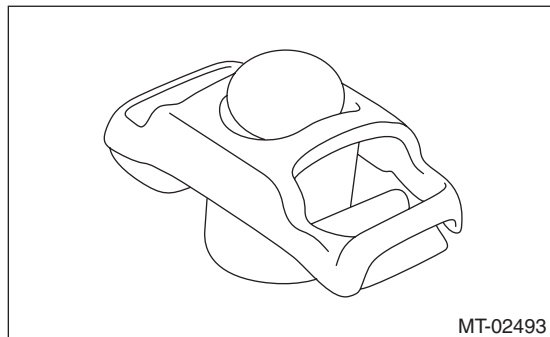
### MANUAL TRANSMISSION AND DIFFERENTIAL

#### 4) Reverse coupling sleeve

- Check the sliding condition of the reverse coupling sleeve.
- Check the splines on the reverse coupling sleeve and reverse idler gear for wear.

#### 5) Reverse shifting insert

Replace the reverse shifting insert if there is deformation, excessive wear on the ball section or any defectiveness.

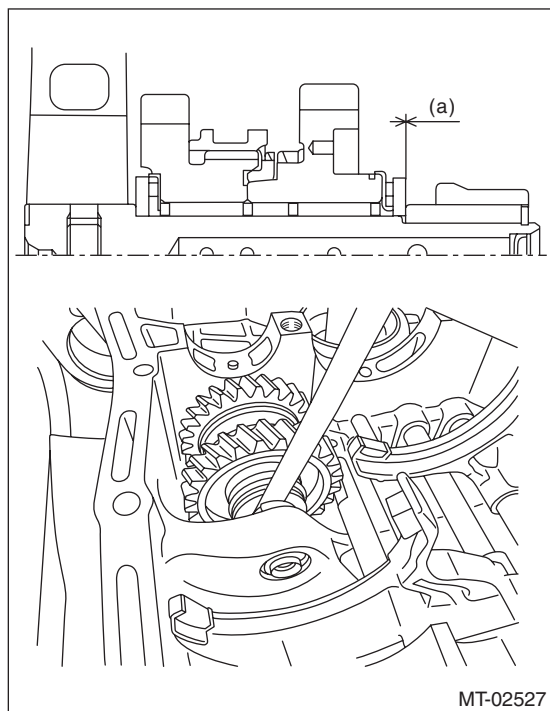


## F: ADJUSTMENT

1) Select the appropriate reverse idler gear bushing from the table below, and adjust until the clearance between the reverse idler gear and reverse idler gear washer is within specification.

#### **Clearance (a):**

**0.1 — 0.3 mm (0.004 — 0.012 in)**



Reverse idler gear bushing		
Part No.	Length mm (in)	Groove for identification
32289AA080	27.75 (1.093)	None
32289AA090	27.90 (1.098)	1
32289AA100	28.05 (1.104)	2
32289AA110	28.20 (1.110)	3
32289AA120	28.35 (1.116)	4