

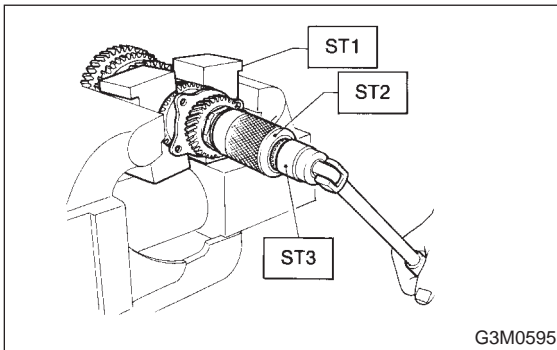
### 3. Drive Pinion Assembly

#### A: DISASSEMBLY

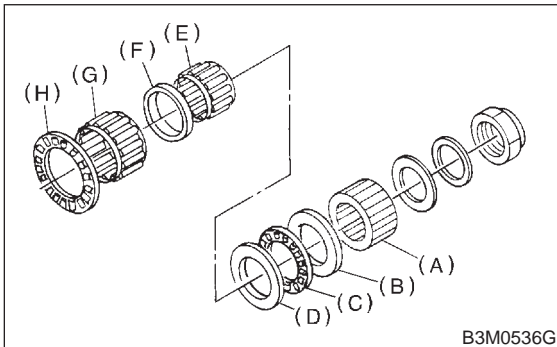
##### 1. DRIVE PINION SHAFT

1) Straighten lock nut at staked portion. Remove the lock nut using ST1, ST2 and ST3.

ST1 899884100 HOLDER  
ST2 498427100 STOPPER  
ST3 899988608 SOCKET WRENCH



2) Withdraw drive pinion from driven shaft. Remove differential bevel gear sleeve, adjusting washer No. 1, adjusting washer No. 2, thrust bearing, needle bearing, drive pinion collar, needle bearing and thrust bearing.



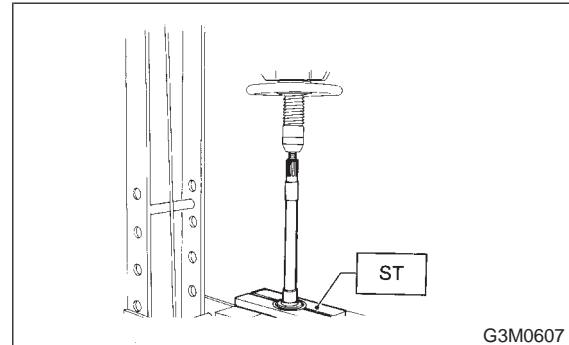
- (A) Differential bevel gear sleeve
- (B) Washer No. 1 (25 × 37.5 × t)
- (C) Thrust bearing (25 × 37.5 × 3)
- (D) Washer No. 2 (25 × 37.5 × 4)
- (E) Needle bearing (25 × 30 × 20)
- (F) Drive pinion collar
- (G) Needle bearing (30 × 37 × 23)
- (H) Thrust bearing (33 × 50 × 3)

3) Remove roller bearing and washer (33 × 50 × 5) using ST and press.

#### CAUTION:

**Do not reuse roller bearing.**

ST 498077000 REMOVER



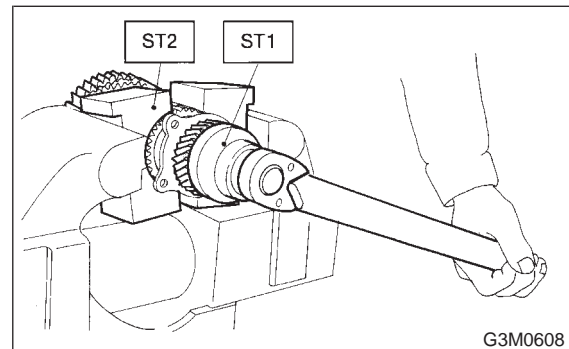
##### 2. DRIVEN GEAR ASSEMBLY

#### CAUTION:

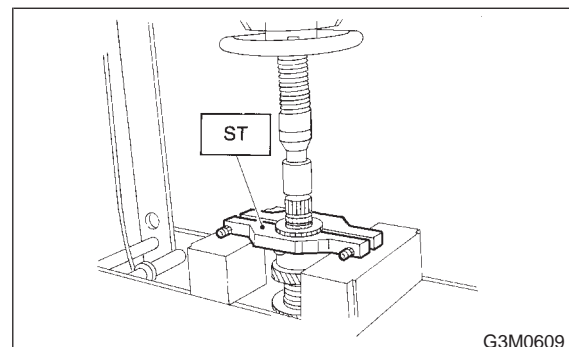
**Attach a cloth to the end of driven shaft (on the frictional side of thrust needle bearing) during disassembly or reassembly to prevent damage.**

1) Straighten lock nut at staked portion. Remove the lock nut using ST1 and ST2.

ST1 499987300 SOCKET WRENCH (50)  
ST2 899884100 HOLDER

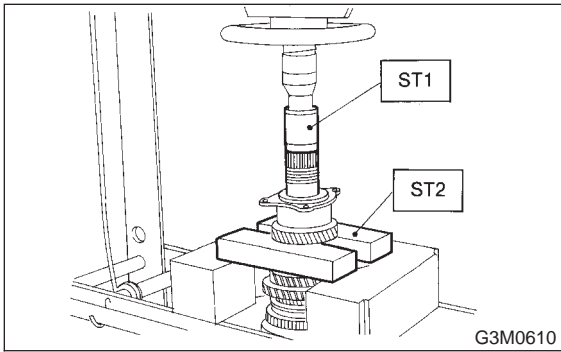


2) Remove 5th driven gear using ST.  
ST 499857000 5TH DRIVEN GEAR  
REMOVER

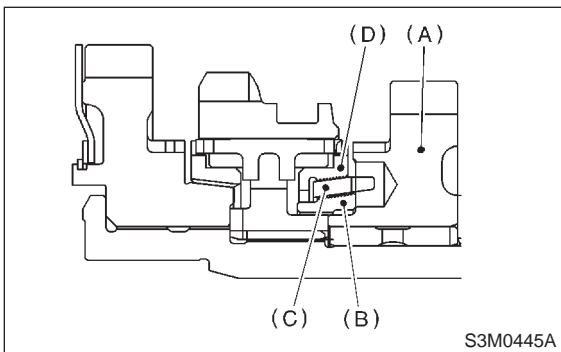


3) Remove woodruff key.

- 4) Remove roller bearing (42 × 74 × 40), 3rd-4th driven gear using ST1 and ST2.  
ST1 499757002 SNAP RING PRESS  
ST2 899714110 REMOVER



- 5) Remove the key.  
6) Remove 2nd driven gear, inner baulk ring, synchro cone and outer baulk ring.

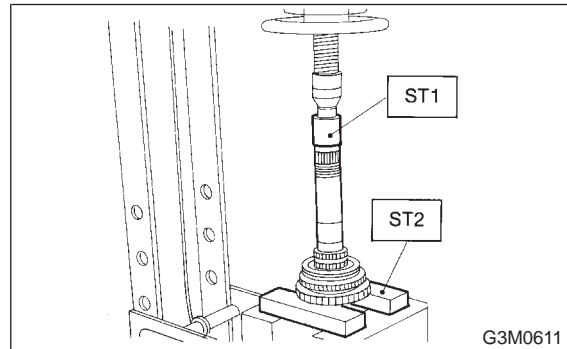


- (A) 2nd driven gear
- (B) Inner baulk ring
- (C) Synchro cone
- (D) Outer baulk ring

- 7) Remove 1st driven gear, 2nd gear bushing, gear and hub using ST1 and ST2.

**NOTE:**  
Replace gear and hub if necessary. Do not attempt to disassemble if at all possible because they must engage at a specified point. If they have to be disassembled, mark the engaging point beforehand.

- ST1 499757002 SNAP RING PRESS  
ST2 899714110 REMOVER



- 8) Remove sub gear for 1st driven gear.

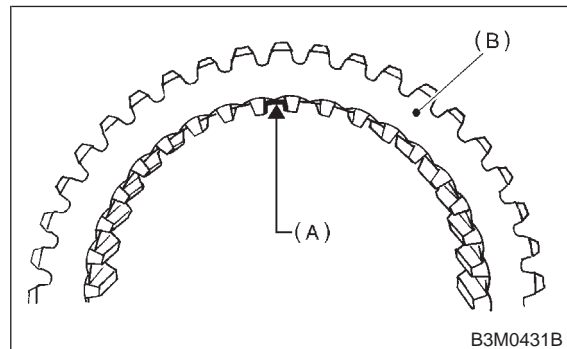
**B: ASSEMBLY**

**1. GEAR AND HUB ASSEMBLY**

Assemble gear and hub assembly.

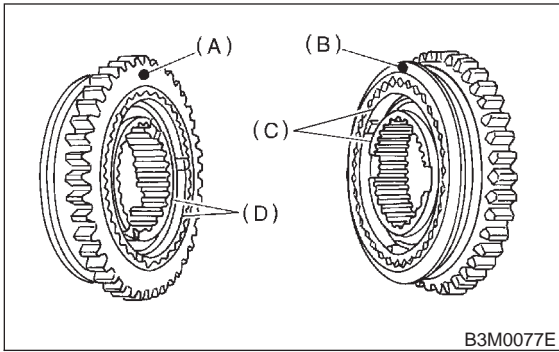
**NOTE:**

- Use new gear and hub assembly, if gear or hub have been replaced.
- Be sure the insert keys are correctly located in the insert key grooves inside the reverse driven gear.



- (A) Key grooves
- (B) Reverse driven gear

3. Drive Pinion Assembly



- (A) 1st gear side
- (B) 2nd gear side
- (C) Flush surface
- (D) Stepped surface

2. DRIVEN GEAR ASSEMBLY

- 1) Install sub gear to 1st driven gear.
- 2) Install 1st driven gear, 1st baulk ring, gear and hub assembly onto driven shaft.

NOTE:

- Take care to install gear and hub assembly in proper direction.
- Align baulk ring and gear & hub assembly with key groove.

- 3) Install 2nd driven gear bushing onto driven shaft using ST1, ST2 and press.

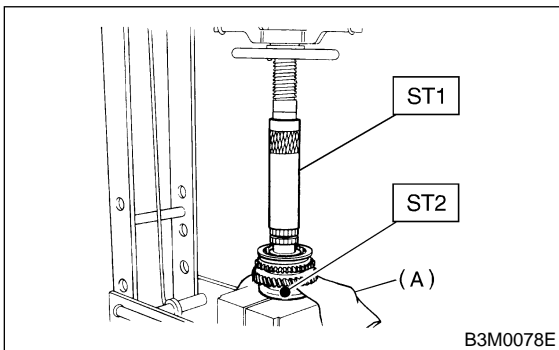
CAUTION:

- Attach a cloth to the end of driven shaft to prevent damage.
- Do not apply pressure in excess of 10 kN (1 ton, 1.1 US ton, 1.0 Imp ton).

NOTE:

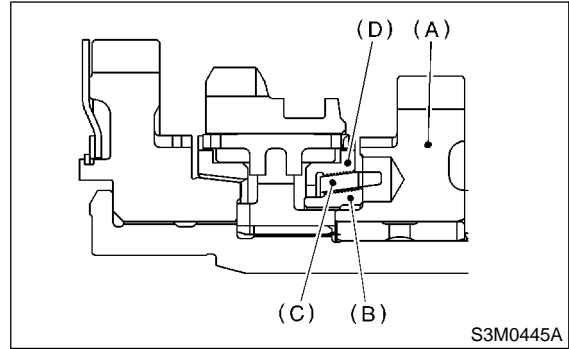
When press fitting, align oil holes of shaft and bush.

- ST1 499277200 INSTALLER
- ST2 499587000 INSTALLER



- (A) Cloth

- 4) Install 2nd driven gear, inner baulk ring, synchro cone, outer baulk ring and insert onto driven shaft.



- (A) 2nd driven gear
- (B) Inner baulk ring
- (C) Synchro cone
- (D) Outer baulk ring

- 5) After installing key on driven shaft, install 3rd-4th driven gear using ST and press.

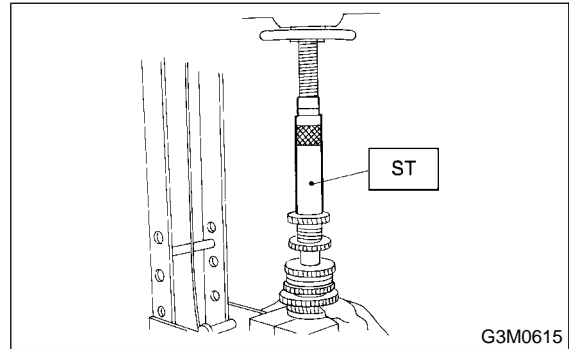
CAUTION:

Do not apply pressure in excess of 10 kN (1 ton, 1.1 US ton, 1.0 Imp ton).

NOTE:

Align groove in baulk ring with insert.

ST 499277200 INSTALLER

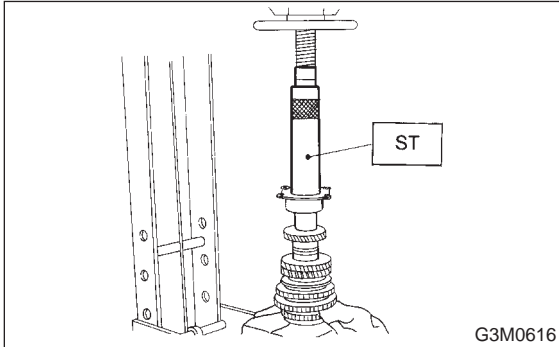


6) Install a set of roller bearings (42 × 74 × 40) onto the driven shaft using ST and press.

**CAUTION:**

**Do not apply pressure in excess of 10 kN (1 ton, 1.1 US ton, 1.0 Imp ton).**

ST 499277200 INSTALLER

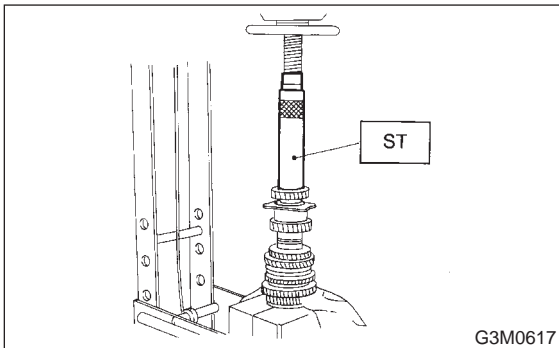


7) Position woodruff key in groove on the rear of driven shaft. Install 5th driven gear onto drive shaft using ST and press.

**CAUTION:**

**Do not apply pressure in excess of 10 kN (1 ton, 1.1 US ton, 1.0 Imp ton).**

ST 499277200 INSTALLER

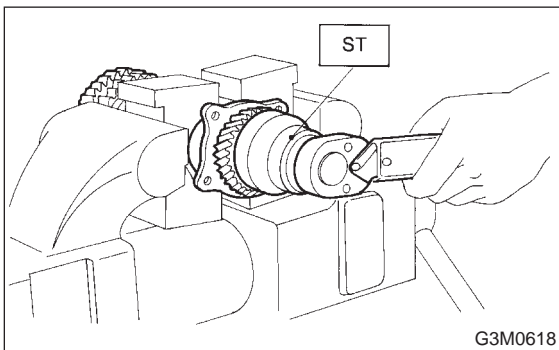


8) Install lock washer (42 × 53 × 2). Install lock nut (42 × 13) and tighten to the specified torque using ST.

ST 499987300 SOCKET WRENCH (50)

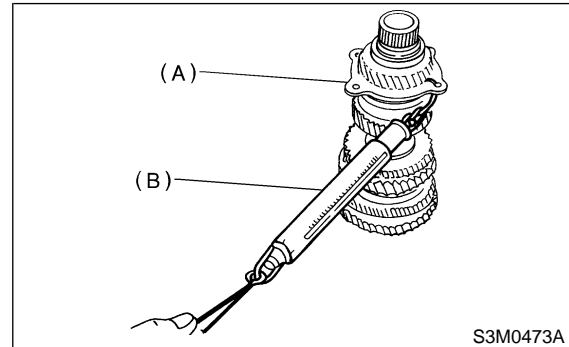
**Tightening torque:**

**265±10 N-m (27±1 kg-m, 195±7 ft-lb)**



**NOTE:**

- Stake lock nut at two points.
- Using spring balancer, check that starting torque of roller bearing is 0.1 to 1.5 N-m (0.01 to 0.15 kg-m, 0.07 to 1.1 ft-lb).



- (A) Roller bearing
- (B) Spring balancer

### 3. DRIVE PINION SHAFT

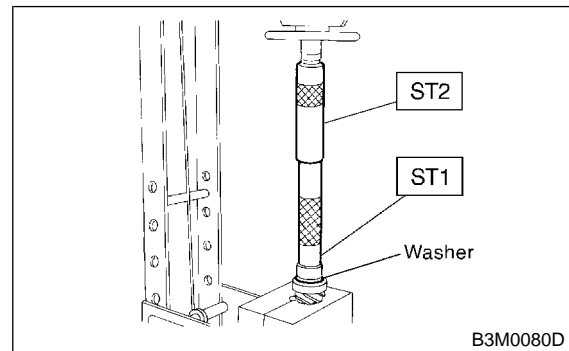
1) Install roller bearing and washer (33 × 50 × 5) onto drive pinion, using ST1, ST2 and press.

**CAUTION:**

**Do not apply pressure in excess of 10 kN (1 ton, 1.1 US ton, 1.0 Imp ton).**

ST1 499277100 BUSH 1-2 INSTALLER

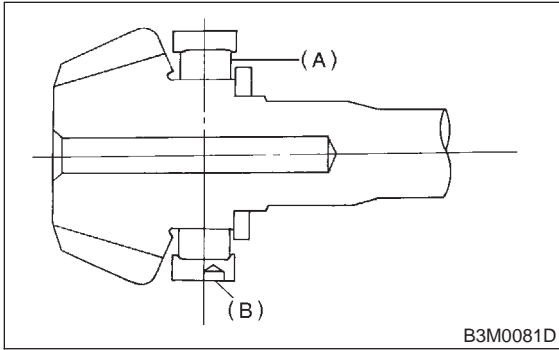
ST2 499277200 INSTALLER



**3. Drive Pinion Assembly**

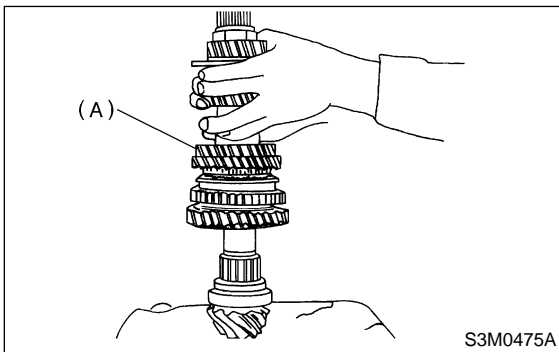
**NOTE:**

When installing roller bearing, note its directions (front and rear) because knock pin hole in outer race is offset.



- (A) Roller bearing
- (B) Knock pin hole

2) Install thrust bearing (33 × 50 × 3) and needle bearing (30 × 37 × 23). Install driven shaft assembly.

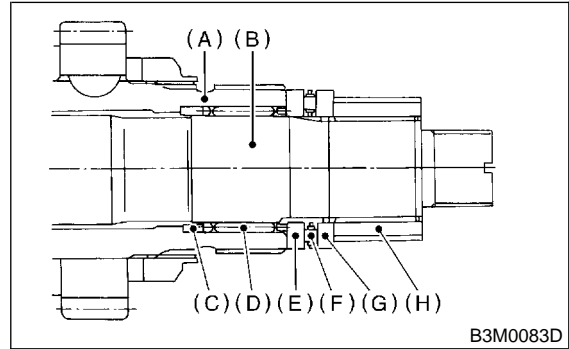


- (A) Driven shaft ASSY

3) Install drive pinion collar, needle bearing, adjusting washer No. 2, thrust bearing, adjusting washer No. 1 and differential bevel gear sleeve in that order.

**NOTE:**

Be careful because spacer must be installed in proper direction.

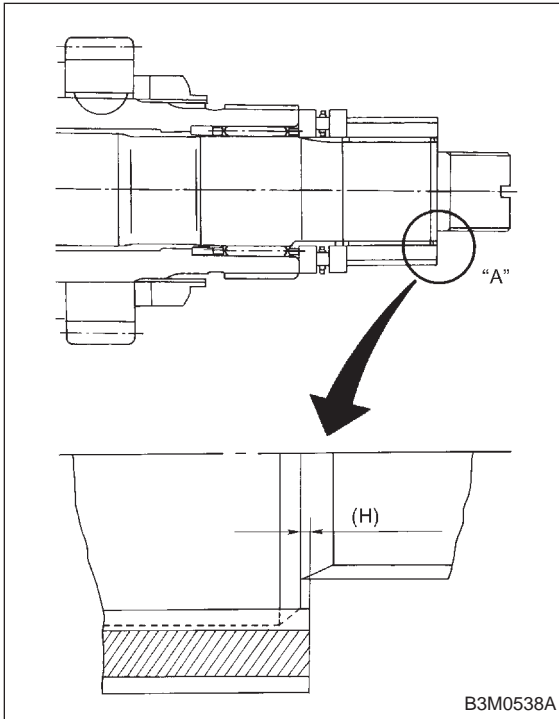


- (A) Driven shaft
- (B) Drive shaft
- (C) Drive pinion collar
- (D) Needle bearing (25 × 30 × 20)
- (E) Washer No. 2 (25 × 36 × 4)
- (F) Thrust bearing (25 × 37.5 × 3)
- (G) Washer No. 1 (25 × 36 × t)
- (H) Differential bevel gear sleeve

**C: ADJUSTMENT**

**1. THRUST BEARING PRELOAD**

1) After completing the preceding steps 1) through 3), select adjusting washer No. 1 so that dimension (H) is zero through visual check. Position washer (18.3 × 30 × 4) and lock washer (18 × 30 × 2) and install lock nut (18 × 13.5).

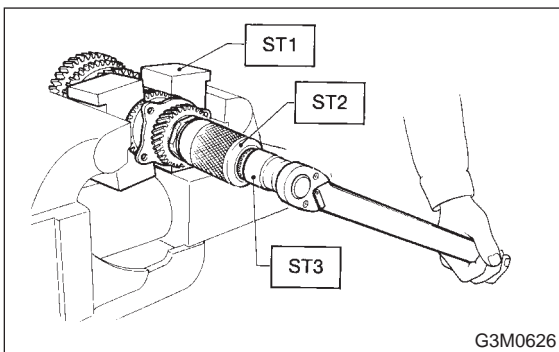


2) Using ST1, ST2 and ST3, tighten lock nut to the specified torque.

- ST1 899884100 HOLDER
- ST2 498427100 STOPPER
- ST3 899988608 SOCKET WRENCH (27)

**Tightening torque:**

**118±8 N·m (12±0.8 kg·m, 86.8±5.8 ft·lb)**

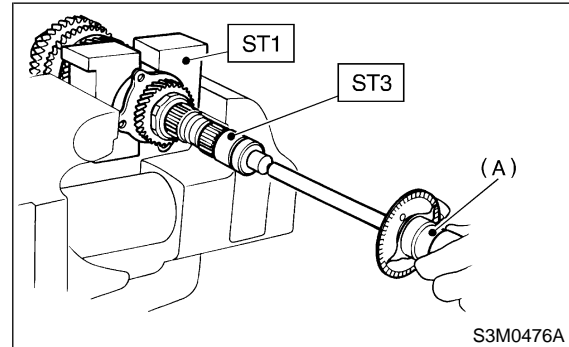


3) After removing ST2, measure starting torque using torque driver.

- ST1 899884100 HOLDER
- ST3 899988608 SOCKET WRENCH (27)

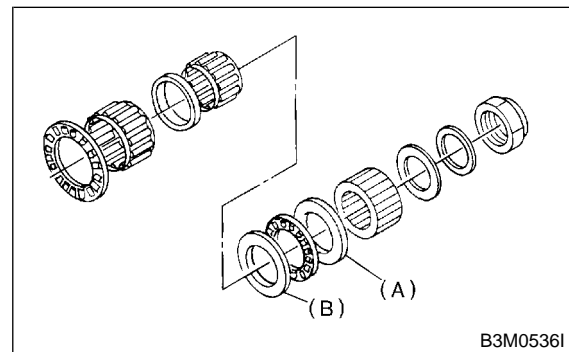
**Starting torque:**

**54±25 N·m (5.5±2.5 kg·m, 40±18 ft·lb)**



(A) Torque driver

4) If starting torque is not within specified limit, select new adjusting washer No. 1 and recheck starting torque.

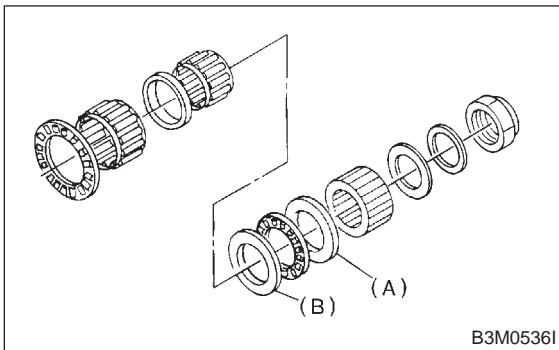


(A) Adjusting washer No. 1  
(B) Adjusting washer No. 2

Adjusting washer No. 1	
Part No.	Thickness mm (in)
803025051	3.925 (0.1545)
803025052	3.950 (0.1555)
803025053	3.975 (0.1565)
803025054	4.000 (0.1575)
803025055	4.025 (0.1585)
803025056	4.050 (0.1594)
803025057	4.075 (0.1604)

4. Main Shaft Assembly

5) If specified starting torque range cannot be obtained when a No. 1 adjusting washer is used, then select a suitable No. 2 adjusting washer from those listed in the following table. Repeat steps 1) through 4) to adjust starting torque.



- (A) Adjusting washer No. 1
- (B) Adjusting washer No. 2

Starting torque	Dimension H	Washer No. 2
Low	Small	Select thicker one.
High	Large	Select thinner one.

Adjusting washer No. 2	
Part No.	Thickness mm (in)
803025059	3.850 (0.1516)
803025054	4.000 (0.1575)
803025058	4.150 (0.1634)

6) Recheck that starting torque is within specified range, then clinch lock nut at four positions.

## 4. Main Shaft Assembly

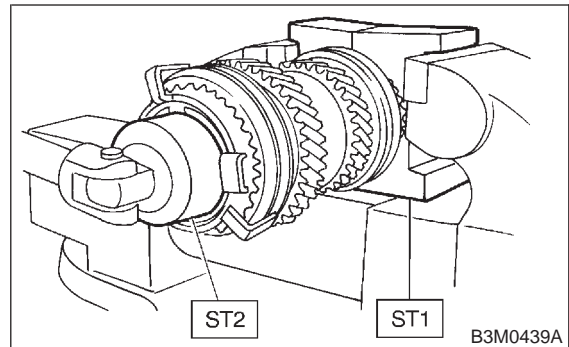
### A: DISASSEMBLY

- 1) Put vinyl tape around main shaft splines to protect oil seal from damage. Then pull out oil seal and needle bearing by hand.
- 2) Remove lock nut from transmission main shaft assembly.

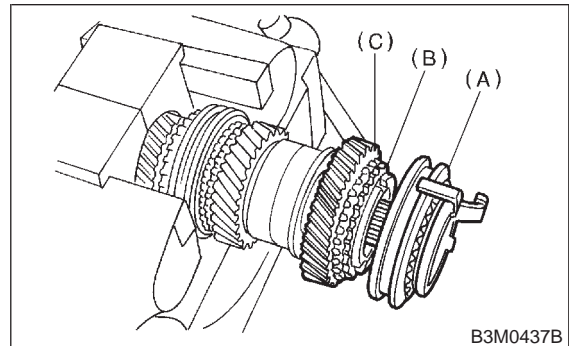
**NOTE:**

Remove caulking before taking off lock nut.

- ST1 498937000 TRANSMISSION HOLDER
- ST2 499987003 SOCKET WRENCH (35)



3) Remove 5th-Rev sleeve and hub assembly, baulk ring, 5th drive gear and needle bearing (32 × 36 × 25.7).



- (A) 5th-Rev sleeve and hub ASSY
- (B) Baulk ring
- (C) 5th drive gear