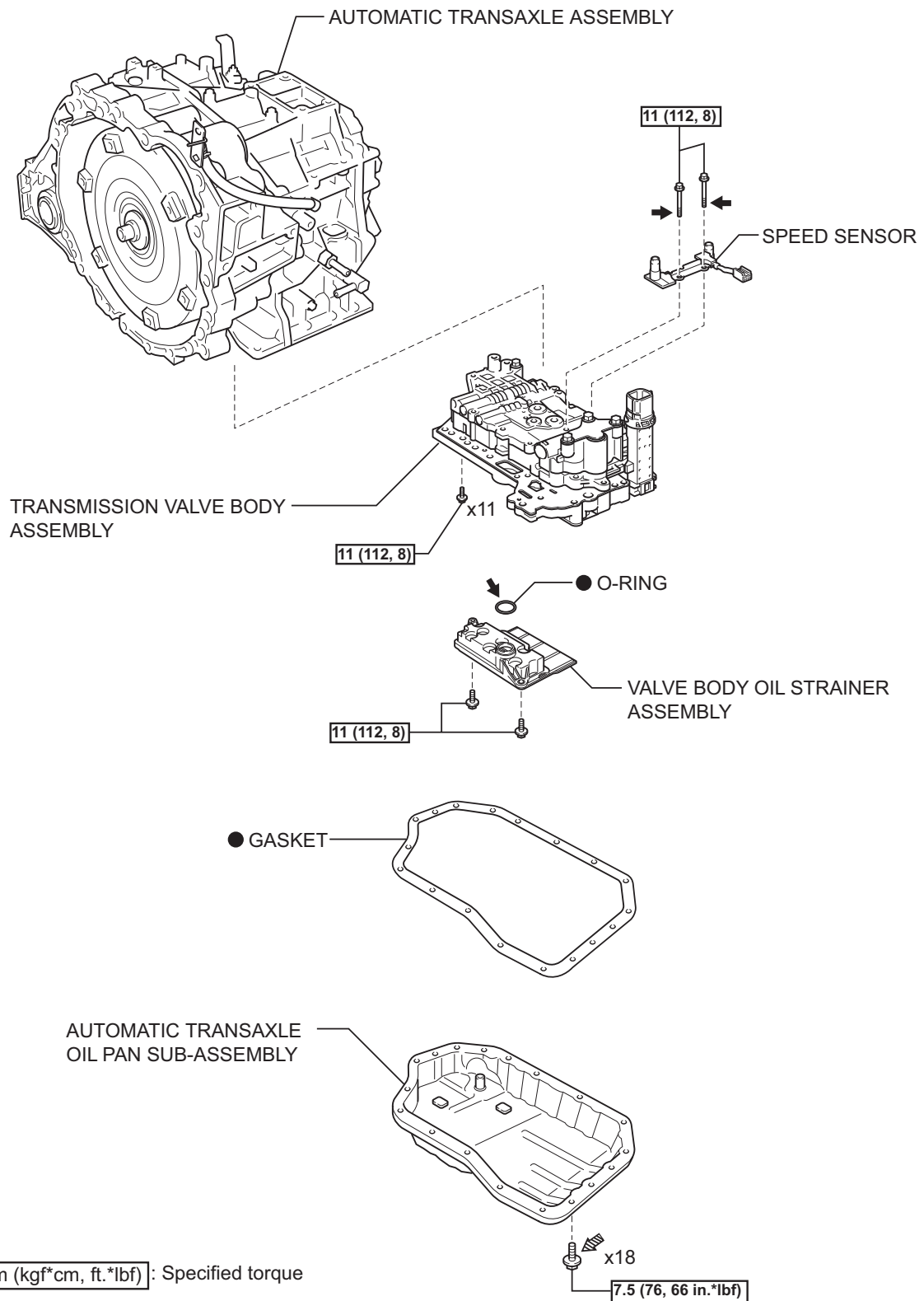


SPEED SENSOR

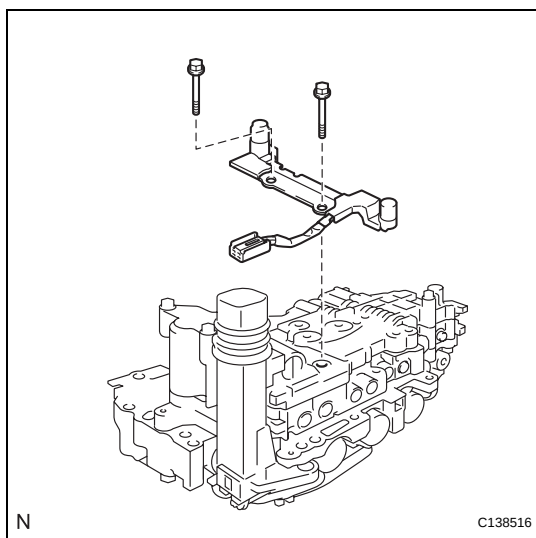
COMPONENTS



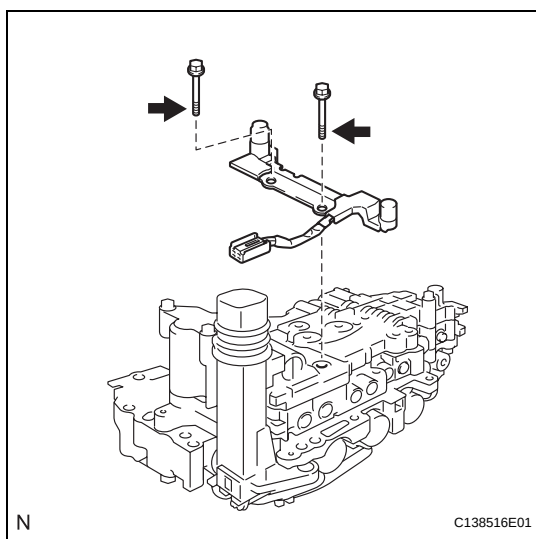
AX

REMOVAL

1. REMOVE AUTOMATIC TRANSAXLE ASSEMBLY
HINT:
(See page [AX-215](#))
2. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY (See page [AX-192](#))
3. REMOVE VALVE BODY OIL STRAINER ASSEMBLY (See page [AX-192](#))
4. REMOVE TRANSMISSION VALVE BODY ASSEMBLY (See page [AX-193](#))
5. REMOVE SPEED SENSOR
 - (a) Disconnect the connector.
 - (b) Remove the 2 bolts and speed sensor from the valve body.



AX

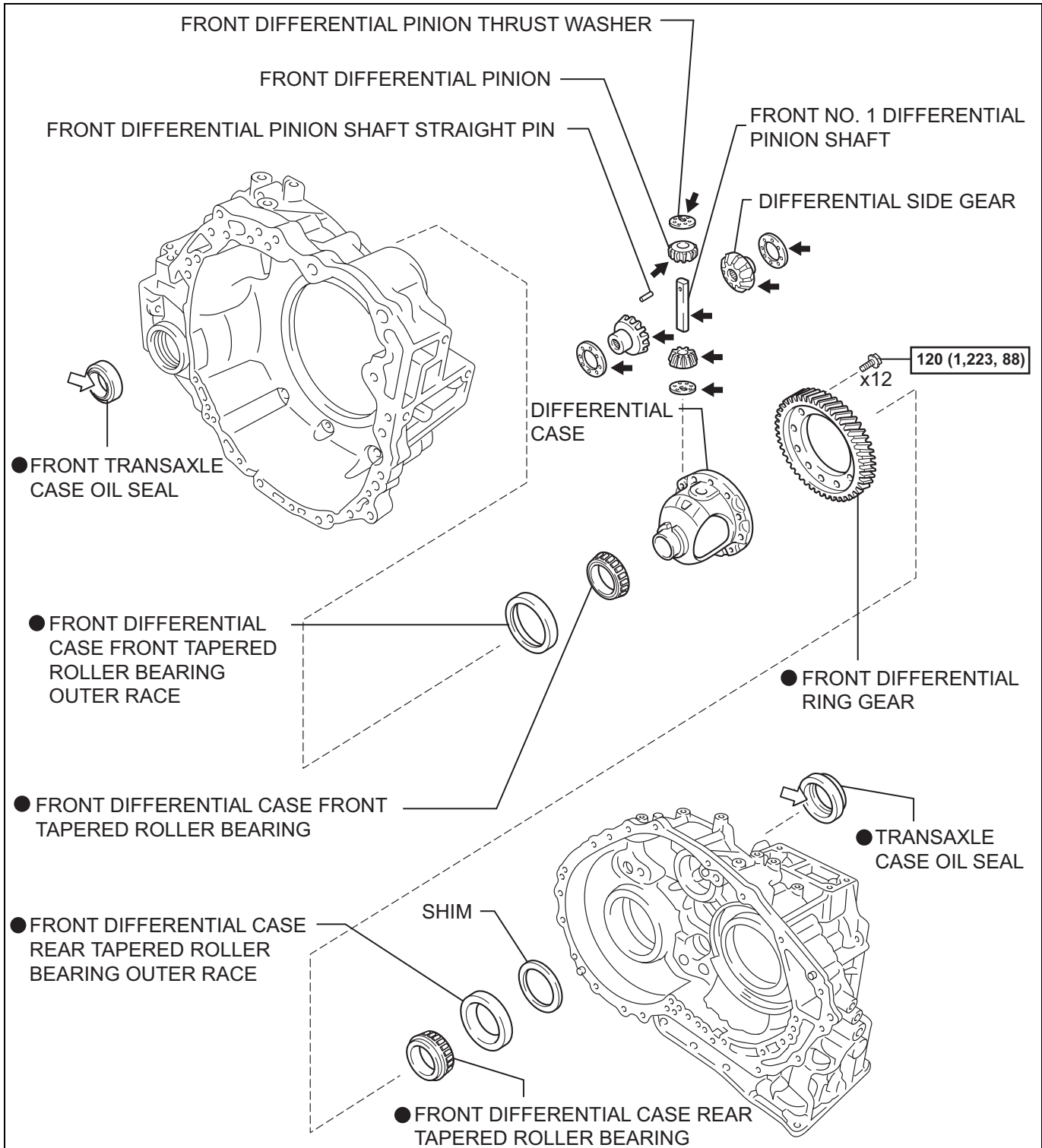


INSTALLATION

1. INSTALL SPEED SENSOR
 - (a) Coat the 2 bolts with ATF.
 - (b) Install the speed sensor to the valve body with the 2 bolts.
Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)
 - (c) Connect the connector.
2. INSTALL TRANSMISSION VALVE BODY ASSEMBLY (See page [AX-193](#))
3. INSTALL VALVE BODY OIL STRAINER ASSEMBLY (See page [AX-194](#))
4. INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY (See page [AX-195](#))
5. INSTALL AUTOMATIC TRANSAXLE ASSEMBLY
HINT:
(See page [AX-222](#))

DIFFERENTIAL CASE

COMPONENTS

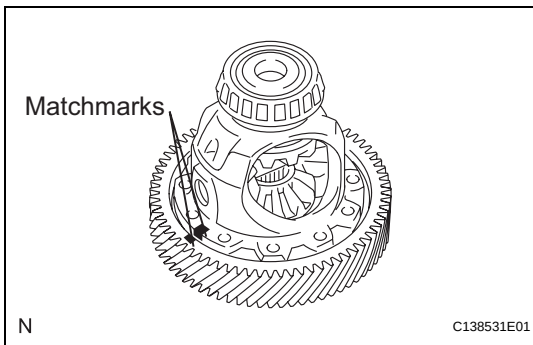


N*m (kgf*cm, ft.*lbf) : Specified torque

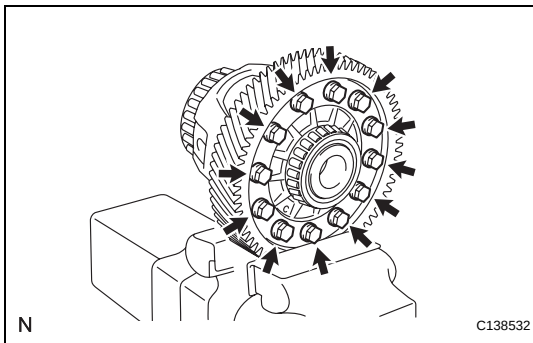
DISASSEMBLY

1. REMOVE FRONT DIFFERENTIAL RING GEAR

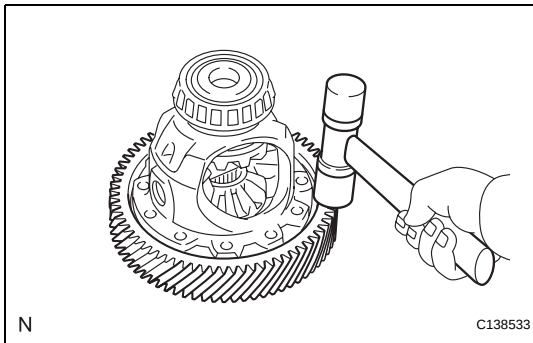
- (a) Put matchmarks on the front differential ring gear and differential case.



- (b) Remove the 12 bolts.



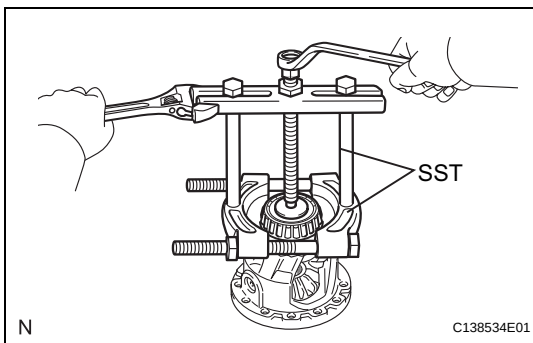
- (c) Using a plastic hammer, tap on the front differential ring gear to remove it from the case.



2. REMOVE FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

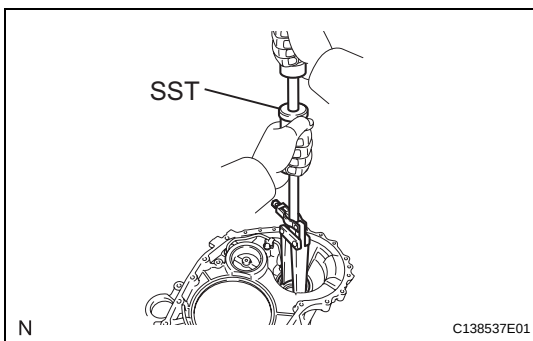
- (a) Using SST, remove the front differential case front tapered roller bearing from the differential case.

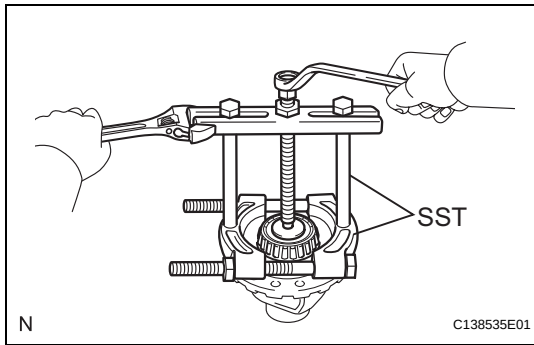
SST 09950-00020, 09950-00030, 09950-60010 (09951-00480)



- (b) Using SST, remove the front differential case front tapered roller bearing outer race and shim from the transaxle housing.

SST 09308-00010

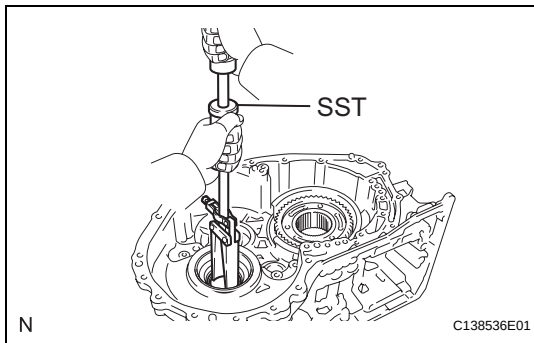




3. REMOVE FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

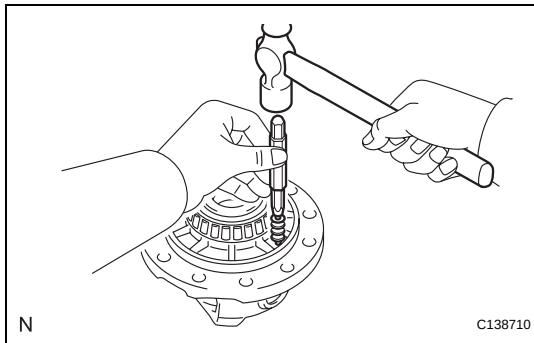
- (a) Using SST, remove the front differential case rear tapered roller bearing from the differential case.

SST 09950-00020, 09950-00030, 09950-60010 (09951-00480)



- (b) Using SST, remove the front differential case rear tapered roller bearing outer race from the transaxle case.

SST 09308-00010

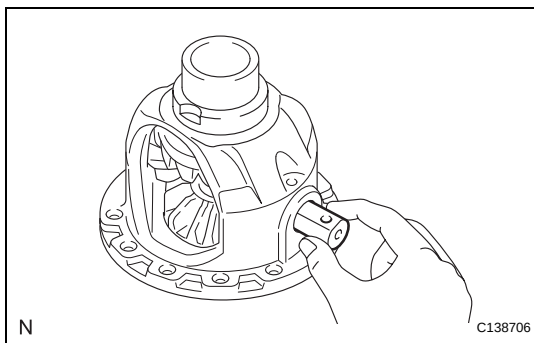


4. REMOVE FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

- (a) Using a pin punch (3 mm) and hammer, remove the straight pin.

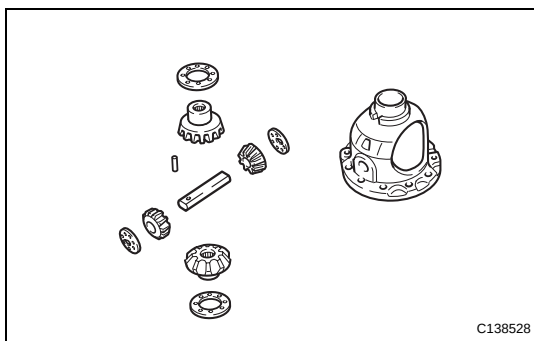
NOTICE:

Before removing the straight pin, unstake it with a pin punch.



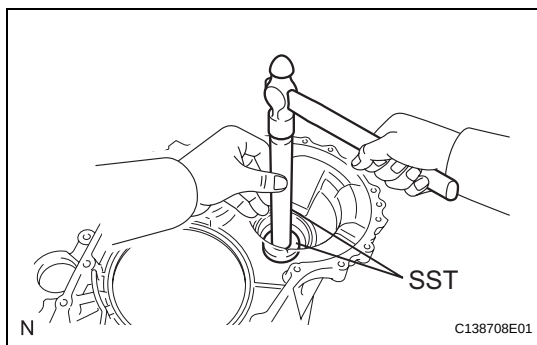
5. REMOVE FRONT NO. 1 DIFFERENTIAL PINION SHAFT

- (a) Remove the front No. 1 differential pinion shaft from the differential case.



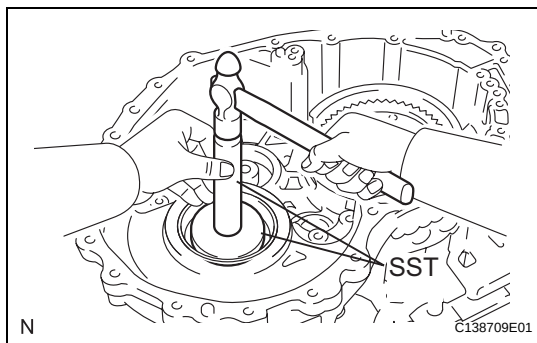
6. REMOVE DIFFERENTIAL SIDE GEAR

- (a) Remove the 2 front differential pinions, 2 pinion thrust washers, 2 front differential side gears, and 2 side gear thrust washers from the differential case.



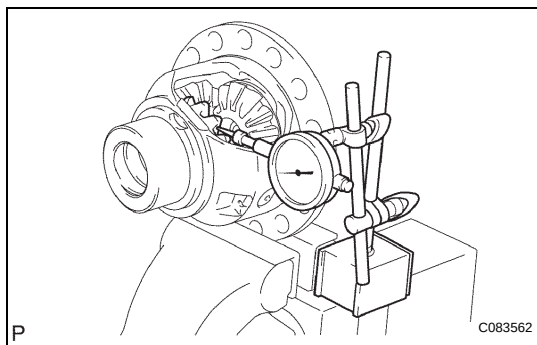
7. REMOVE FRONT TRANSAXLE CASE OIL SEAL

- (a) Using SST and a hammer, remove the front transaxle case oil seal from the transaxle housing.
SST 09950-60010 (09951-00540), 09950-70010 (09951-07200)



8. REMOVE TRANSAXLE CASE OIL SEAL

- (a) Using SST and a hammer, remove the transaxle case oil seal from transaxle case.
SST 09950-60010 (09951-00650), 09950-70010 (09951-07100)



INSPECTION

1. INSPECT DIFFERENTIAL SIDE GEAR BACKLASH

- (a) Hold the differential case in a vise between aluminum plates.

NOTICE:

Do not overtighten the vise.

- (b) Place a dial indicator on the tip of the side gear tooth at a right angle.
 (c) Hold the pinion gear in the differential case and measure the backlash of the side gear.

Standard backlash:

0 to 0.15 mm (0 to 0.0059 in.)

Thrust washer thickness

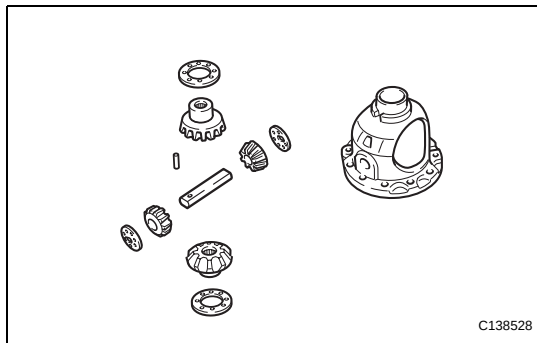
Thickness	Thickness
1.50 mm (0.0591 in.)	1.75 mm (0.0689 in.)
1.55 mm (0.0610 in.)	1.80 mm (0.0709 in.)
1.60 mm (0.0630 in.)	1.85 mm (0.07283 in.)
1.65 mm (0.0650 in.)	1.90 mm (0.07480 in.)
1.70 mm (0.0669 in.)	-

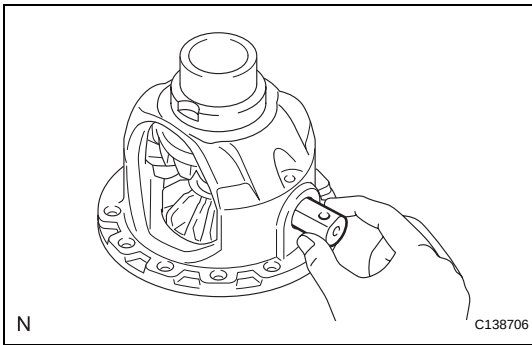
If the backlash is greater than the standard range, select another side gear thrust washer.

REASSEMBLY

1. INSTALL DIFFERENTIAL SIDE GEAR

- (a) Coat the 2 front differential side gears, 2 side gear thrust washers, 2 front differential pinions and 2 pinion thrust washers with ATF and install them to the differential case.

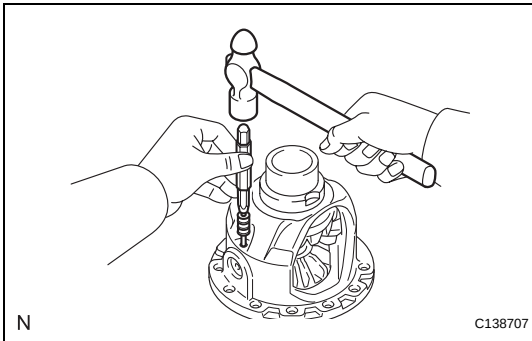




2. INSTALL FRONT NO. 1 DIFFERENTIAL PINION SHAFT

- (a) Coat the front No. 1 differential pinion shaft with ATF, and install it to the differential case.

3. INSPECT DIFFERENTIAL SIDE GEAR BACKLASH (See page AX-343)

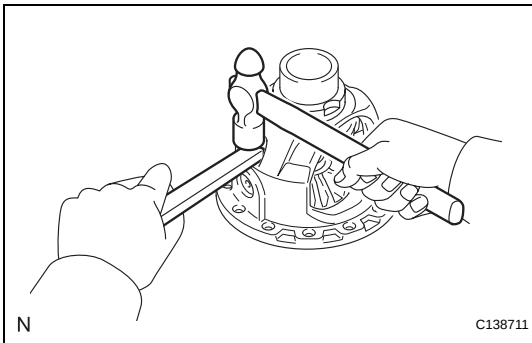


4. INSTALL FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

- (a) Using a pin punch (3 mm) and hammer, install the pinion shaft straight pin.

NOTICE:

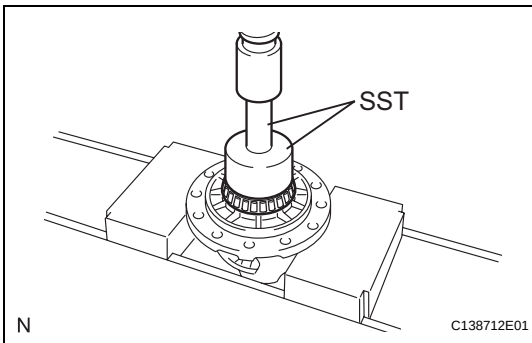
Align the holes, and install the pinion shaft straight pin.



- (b) Using a chisel and hammer, stake the differential case.

NOTICE:

Stake the differential case after adjusting the backlash.



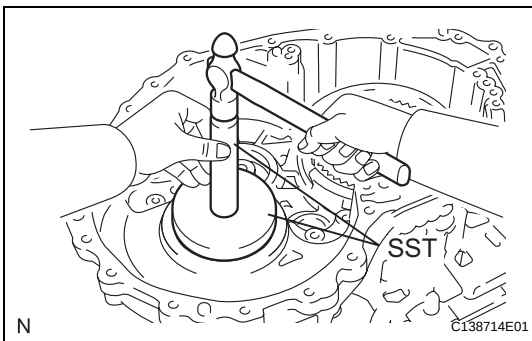
5. INSTALL FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

- (a) Using SST and a press, install the front differential case rear tapered roller bearing to the differential case.

SST 09710-04081, 09950-60010 (09951-00480), 09950-70010 (09951-07100)

NOTICE:

Do not damage the bearing cage during bearing inner race installation.

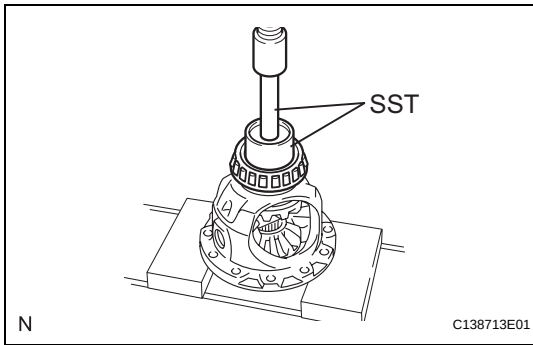


- (b) Using SST and a hammer, install the front differential case rear tapered roller bearing outer race to the transaxle case.

SST 09950-70010 (09951-07150), 09950-60020 (09951-00790)

NOTICE:

Ensure that there is no clearance between the bearing and transaxle case.



6. INSTALL FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

- (a) Using SST and a press, install the front differential case front tapered roller bearing to the differential case.

SST 09710-04081, 09950-60010 (09951-00480),
09950-70010 (09951-07100)

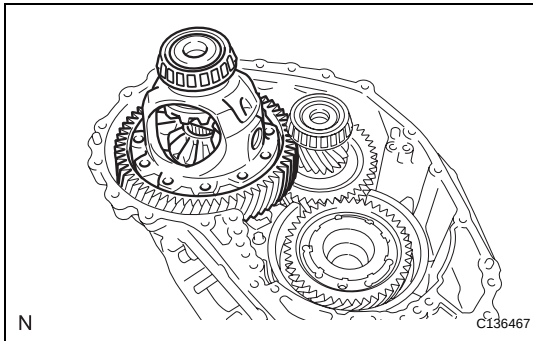
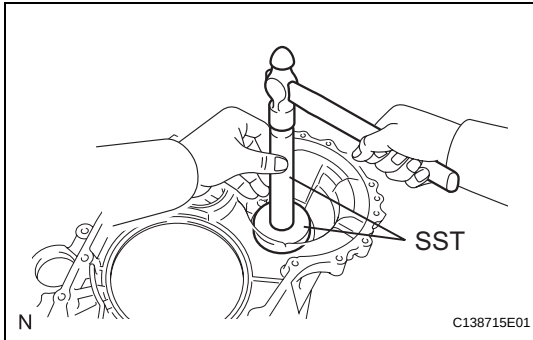
NOTICE:

Do not damage the bearing cage during bearing inner race installation.

- (b) Install the shim to the transaxle housing.
- (c) Using SST and a hammer, install the front differential case front tapered roller bearing outer race to the transaxle housing.

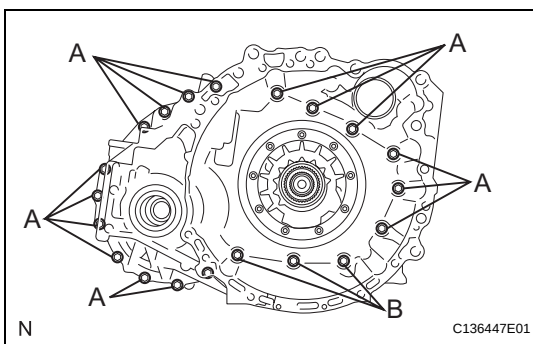
NOTICE:

Ensure that there is no clearance between the bearing and transaxle housing.



7. ADJUST DIFFERENTIAL SIDE BEARING PRELOAD

- (a) Install the differential assembly to the transaxle case.
- (b) Clean the contact surfaces of the transaxle case and transaxle housing.



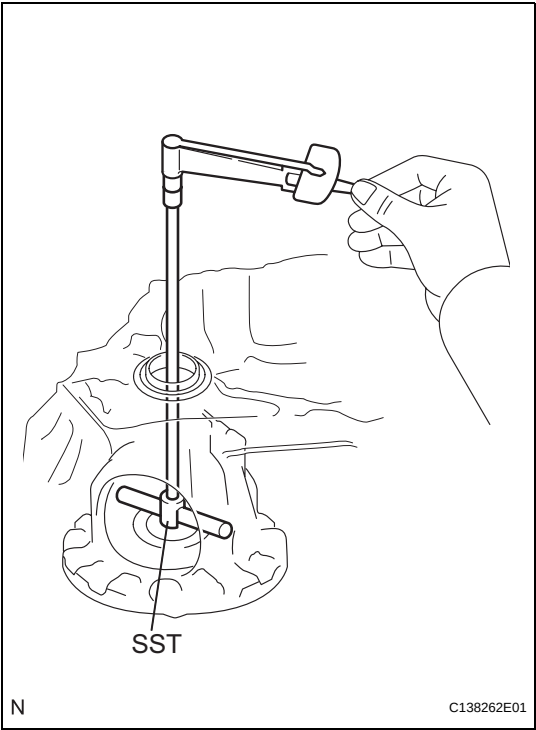
- (c) Install the transaxle housing to the transaxle case with the 20 bolts.

Torque: Bolt A

31 N*m (316 kgf*cm, 23 ft.*lbf)

Bolt B

23 N*m (234 kgf*cm, 17 ft.*lbf)



- (d) Using SST, turn the differential assembly right and left 2 or 3 times to settle the bearing.

SST 09564-33010

- (e) Using SST and a torque wrench, measure the turning torque of the differential side bearing while rotating SST at 10 rpm.

SST 09564-33010

Turning torque:

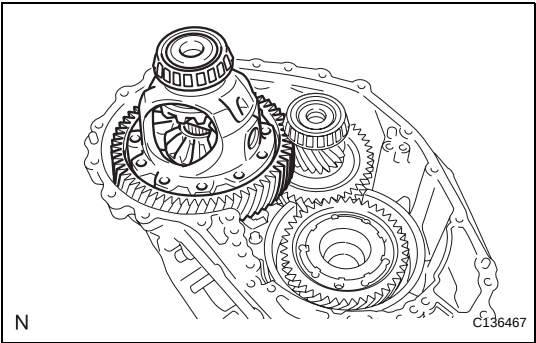
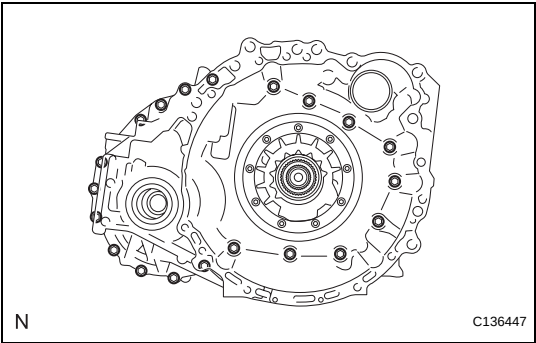
1.05 to 1.93 N*m (10.70 to 19.67 kgf*cm, 9.29 to 17.08 in.*lbf)

If the turning torque is not within the specified range, refer to the table below to select a shim so that the turning torque is within the specified range.

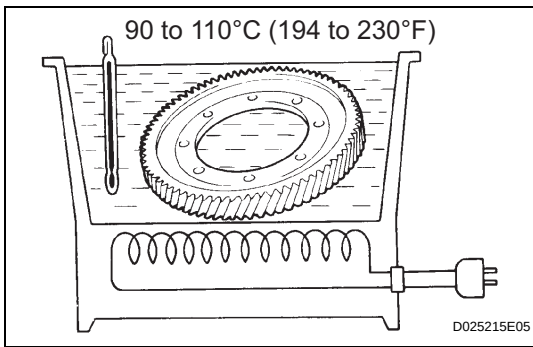
Shim thickness: mm (in.)

Thickness	Thickness	Thickness	Thickness
2.000 (0.0787)	2.225 (0.0876)	2.450 (0.0965)	2.675 (0.1054)
2.025 (0.0797)	2.250 (0.0886)	2.475 (0.0974)	2.700 (0.1063)
2.050 (0.0807)	2.275 (0.0896)	2.500 (0.0984)	2.725 (0.1073)
2.075 (0.0817)	2.300 (0.0906)	2.525 (0.0994)	2.750 (0.1083)
2.100 (0.0827)	2.325 (0.0915)	2.550 (0.1004)	2.775 (0.1093)
2.125 (0.0837)	2.350 (0.0925)	2.575 (0.1014)	2.800 (0.1102)
2.150 (0.0847)	2.375 (0.0935)	2.600 (0.1024)	2.825 (0.1112)
2.175 (0.0856)	2.400 (0.0945)	2.625 (0.1034)	2.850 (0.1122)
2.200 (0.0866)	2.425 (0.0955)	2.650 (0.1043)	2.875 (0.1132)

- (f) Remove the 20 bolts and the transaxle housing from the transaxle case.



- (g) Remove the differential assembly from the transaxle case.



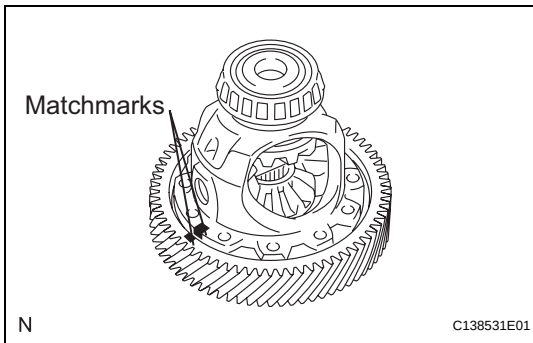
8. INSTALL FRONT DIFFERENTIAL RING GEAR

- (a) Using ATF and a heater, heat the front differential ring gear to 90 to 110°C (194.0 to 230.0°F).

NOTICE:

Do not heat the ring gear to more than 110°C (230.0°F).

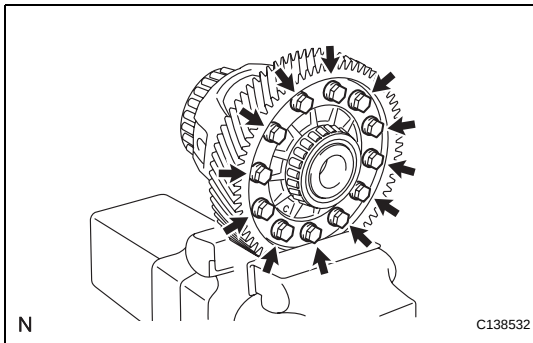
- (b) Clean the contact surface of the front differential case.



- (c) Align the matchmarks, and install the front differential ring gear case quickly.

NOTICE:

Do not install the bolts while the ring gear is hot.



- (d) Tighten the 12 bolts.

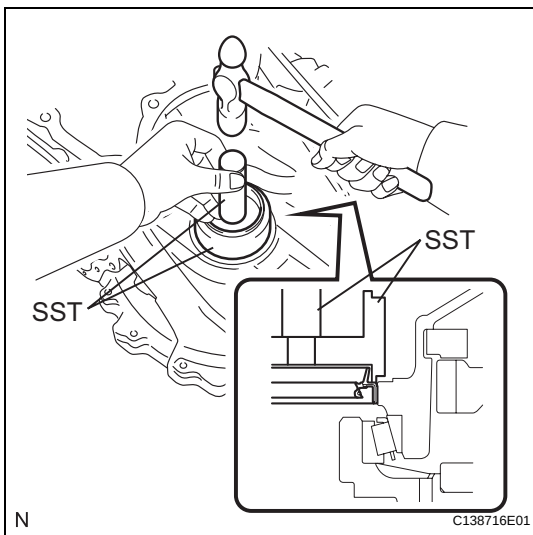
Torque: 120 N*m (1,223 kgf*cm, 88 ft.*lbf)

NOTICE:

Tighten the bolts a little at a time in diagonal order.

9. INSTALL TRANSAXLE CASE OIL SEAL

- (a) Coat the lip of a new oil seal with MP grease.



- (b) Using SST and a hammer, install the oil seal.

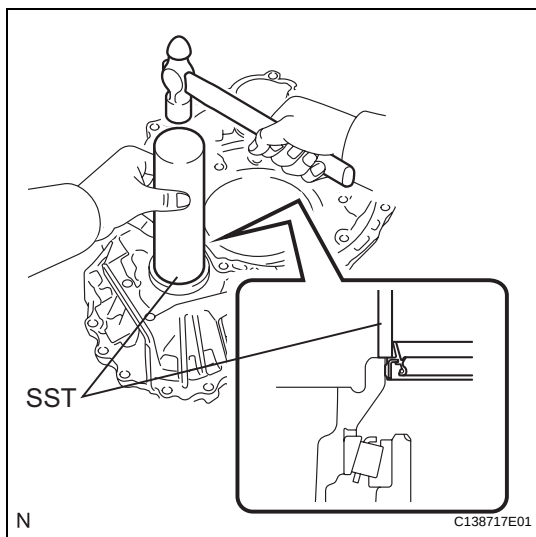
SST 09316-10010, 09950-70010 (09951-07100)

Oil seal drive in depth:

-0.5 to 0.5 mm (-0.0197 to 0.0197 in.)

10. INSTALL FRONT TRANSAXLE CASE OIL SEAL

- (a) Coat the lip of a new oil seal with MP grease.

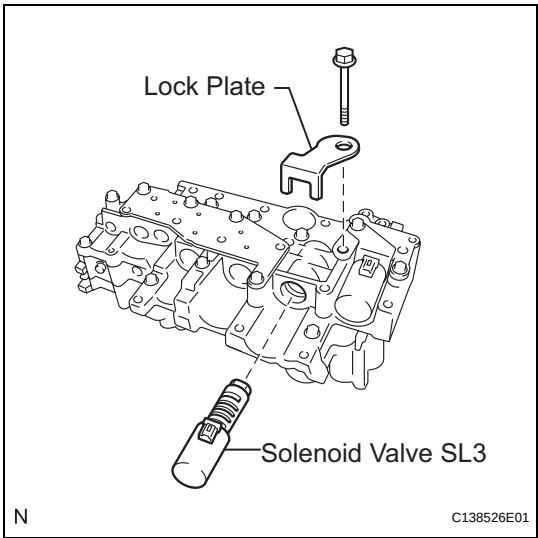


- (b) Using SST and a hammer, install the oil seal.

SST 09308-14010

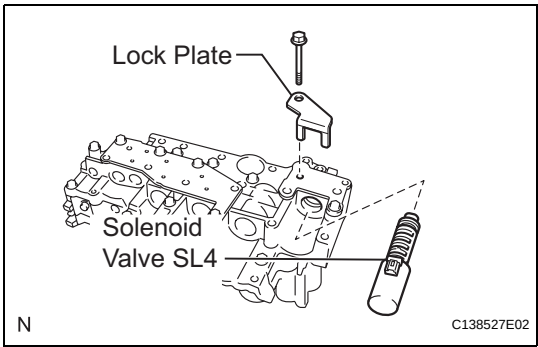
Oil seal drive in depth:

-0.5 to 0.5 mm (-0.0197 to 0.0197 in.)



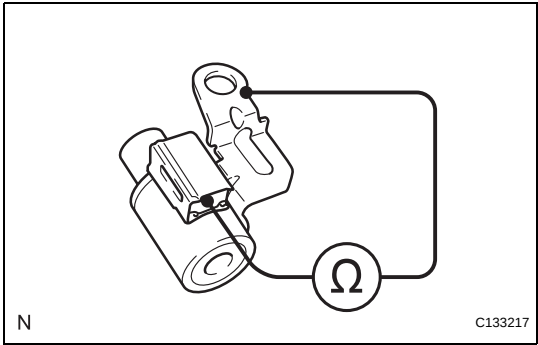
8. REMOVE SHIFT SOLENOID VALVE SL3

- (a) Remove the bolt, lock plate and shift solenoid valve SL3 from the valve body assembly.



9. REMOVE SHIFT SOLENOID VALVE SL4

- (a) Remove the bolt, lock plate and shift solenoid valve SL4 from the valve body assembly.



INSPECTION

1. INSPECT SHIFT SOLENOID VALVE SL

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
Solenoid Connector (SL) - Solenoid Body (SL)	11 to 15 Ω

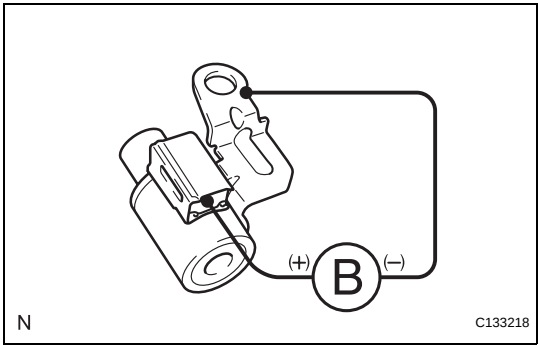
If the value is not as specified, replace the shift solenoid valve.

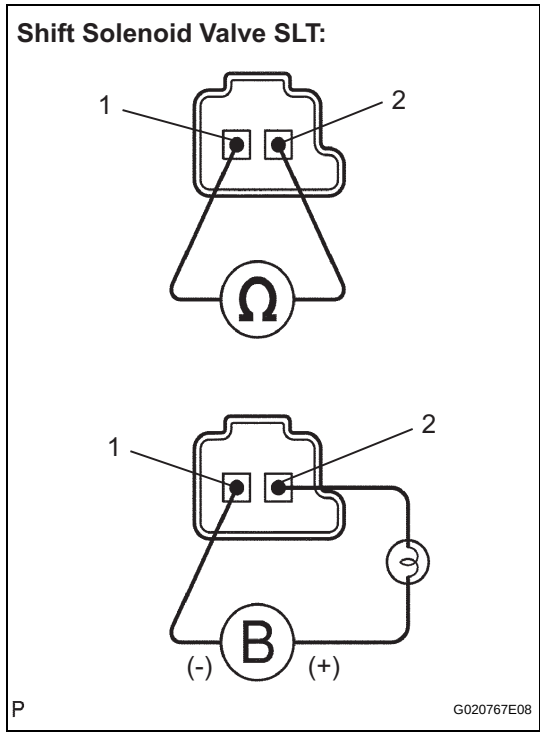
- (b) Connect the positive (+) lead to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

If the operation is not as specified, replace the shift solenoid valve.





2. INSPECT SHIFT SOLENOID VALVE SLT

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1 - 2	5.0 to 5.6 Ω

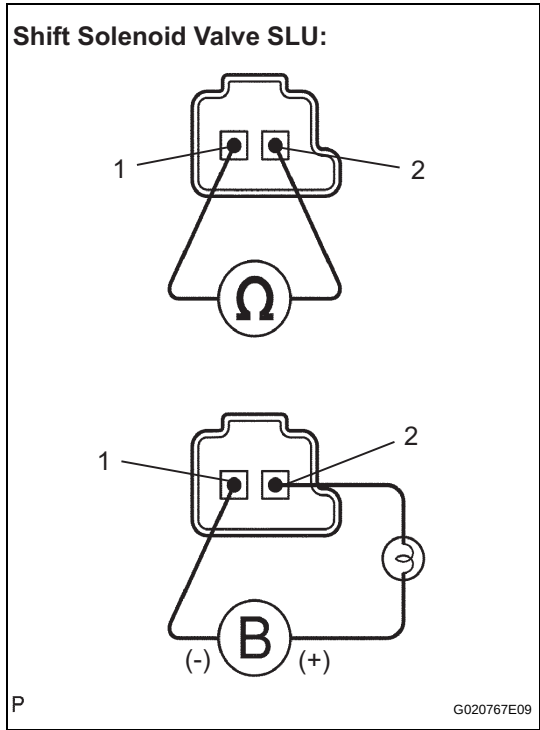
If the value is not as specified, replace the shift solenoid valve.

- (b) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

If the operation is not as specified, replace the shift solenoid valve.



3. INSPECT SHIFT SOLENOID VALVE SLU

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1 - 2	5.0 to 5.6 Ω

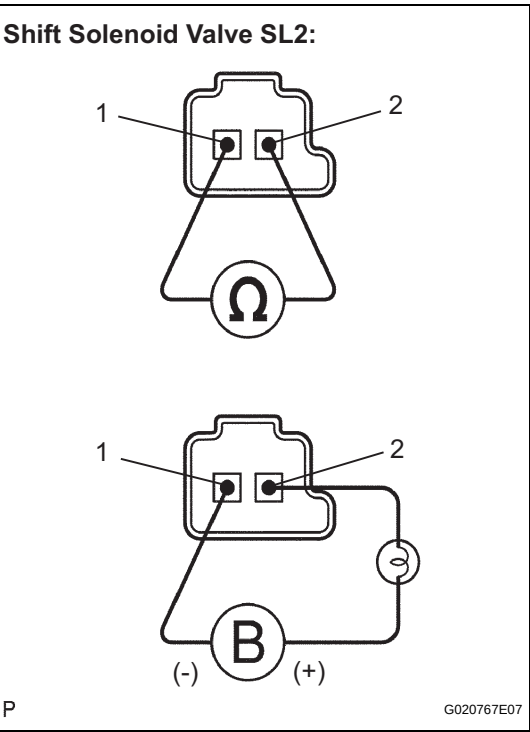
If the value is not as specified, replace the shift solenoid valve.

- (b) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

If the operation is not as specified, replace the shift solenoid valve.



4. INSPECT SHIFT SOLENOID VALVE SL2

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1 - 2	5.0 to 5.6 Ω

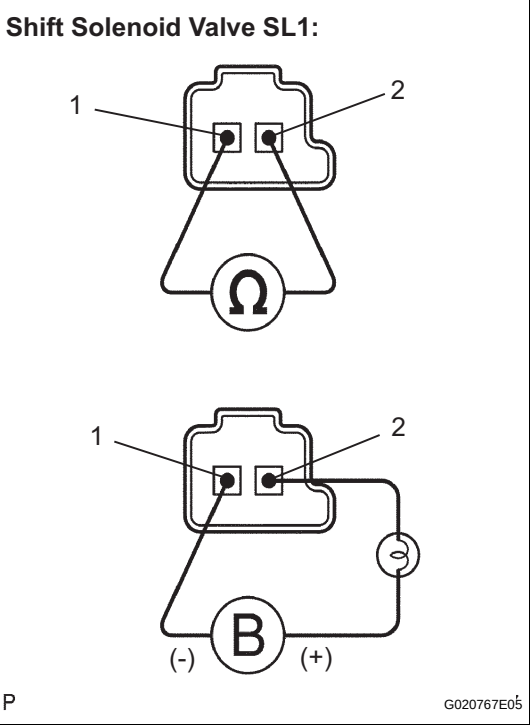
If the value is not as specified, replace the shift solenoid valve.

- (b) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

If the operation is not as specified, replace the shift solenoid valve.



5. INSPECT SHIFT SOLENOID VALVE SL1

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1 - 2	5.0 to 5.6 Ω

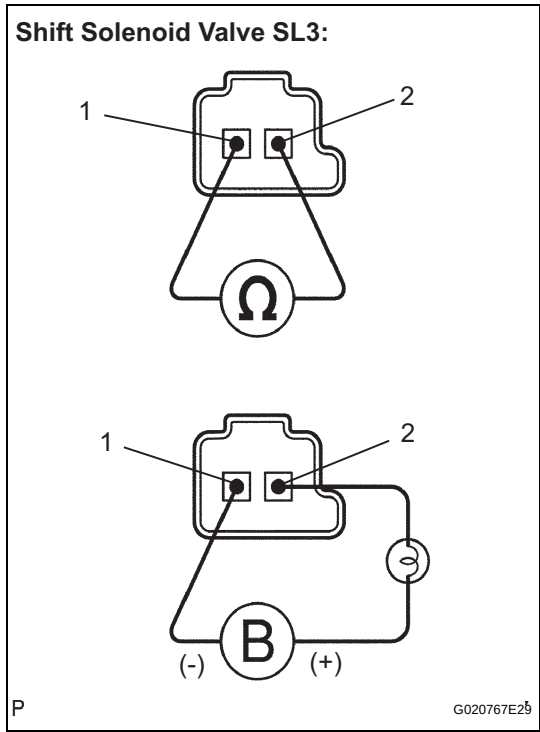
If the value is not as specified, replace the shift solenoid valve.

- (b) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

If the operation is not as specified, replace the shift solenoid valve.



6. INSPECT SHIFT SOLENOID VALVE SL3

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1 - 2	5.0 to 5.6 Ω

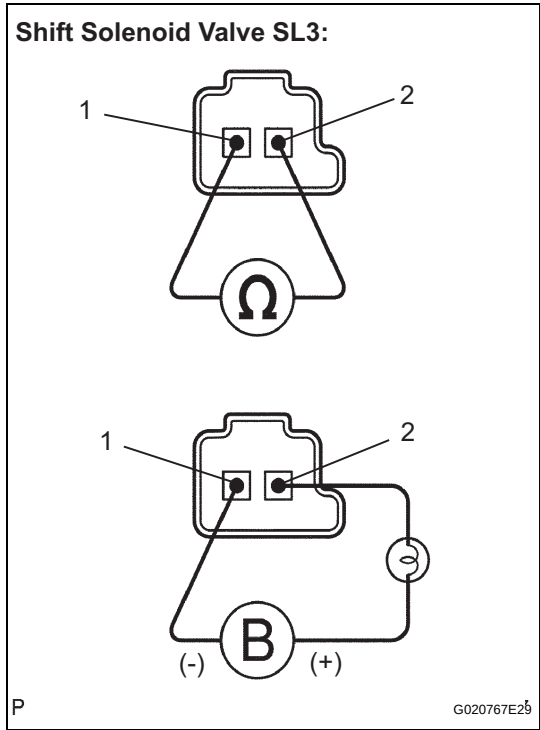
If the value is not as specified, replace the shift solenoid valve.

- (b) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

If the operation is not as specified, replace the shift solenoid valve.



7. INSPECT SHIFT SOLENOID VALVE SL4

- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1 - 2	5.0 to 5.6 Ω

If the value is not as specified, replace the shift solenoid valve.

- (b) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the shift solenoid valve.

OK:

The solenoid makes an operating noise.

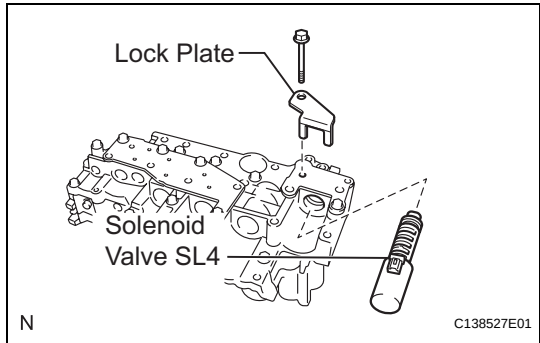
If the operation is not as specified, replace the shift solenoid valve.

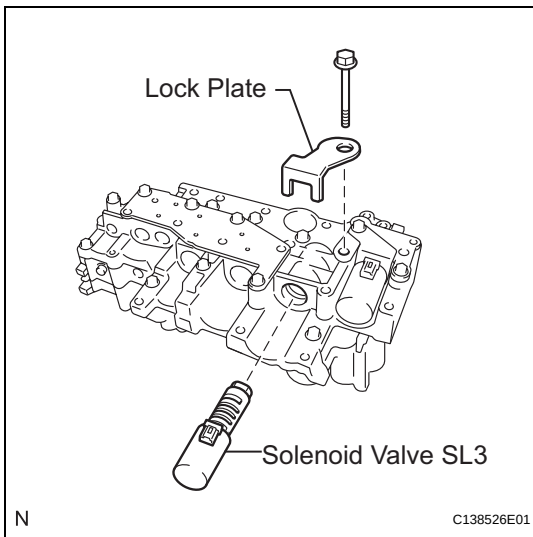
REASSEMBLY

1. INSTALL SHIFT SOLENOID VALVE SL4

- (a) Coat the shift solenoid valve SL4 and bolt with ATF.
(b) Install the shift solenoid valve SL4 and lock plate to the valve body assembly with the bolt.

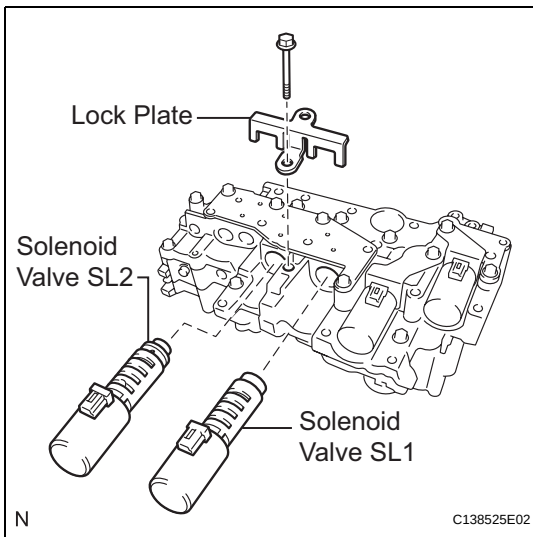
Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)



**2. INSTALL SHIFT SOLENOID VALVE SL3**

- (a) Coat the shift solenoid valve SL3 and bolt with ATF.
- (b) Install the shift solenoid valve SL3 and lock plate to the valve body assembly with the bolt.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

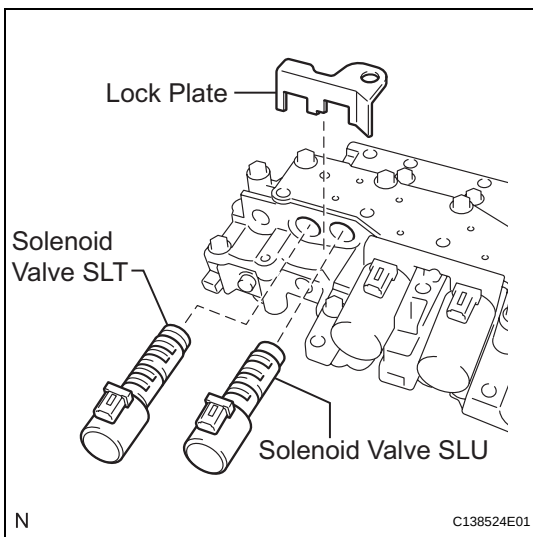
**3. INSTALL SHIFT SOLENOID VALVE SL1**

- (a) Coat the shift solenoid valve SL1 with ATF.
- (b) Install the shift solenoid valve SL1 to the valve body assembly.

4. INSTALL SHIFT SOLENOID VALVE SL2

- (a) Coat the shift solenoid valve SL2 and bolt with ATF.
- (b) Install the shift solenoid valve SL2 and lock plate to the valve body assembly with the bolt.

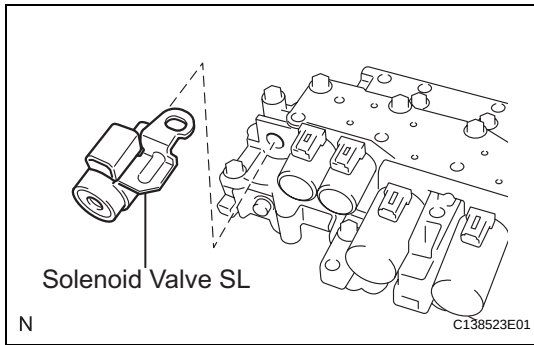
Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

**5. INSTALL SHIFT SOLENOID VALVE SLU**

- (a) Coat the shift solenoid valve SLU with ATF.
- (b) Install the shift solenoid valve SLU to the valve body assembly.

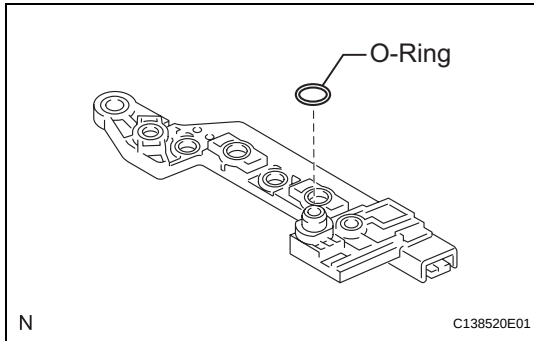
6. INSTALL SHIFT SOLENOID VALVE SLT

- (a) Coat the shift solenoid valve SLT with ATF.
- (b) Install the shift solenoid valve SLT and lock plate to the valve body assembly.



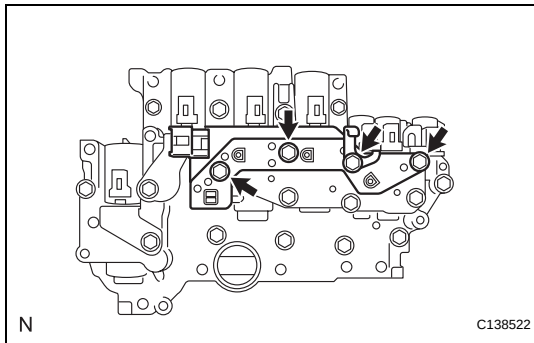
7. INSTALL SHIFT SOLENOID VALVE SL

- Coat the shift solenoid valve SL with ATF.
- Install the shift solenoid valve SL to the valve body assembly.

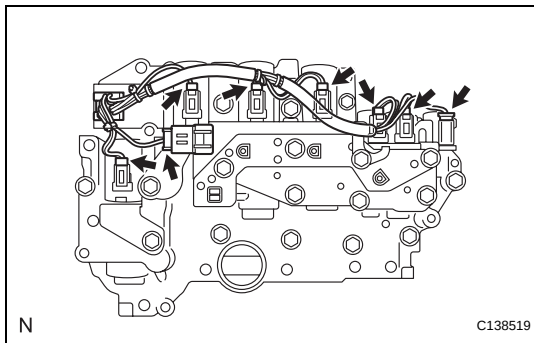


8. INSTALL ATF TEMPERATURE SENSOR ASSEMBLY

- Coat a new O-ring with ATF and install it to the ATF temperature sensor assembly.

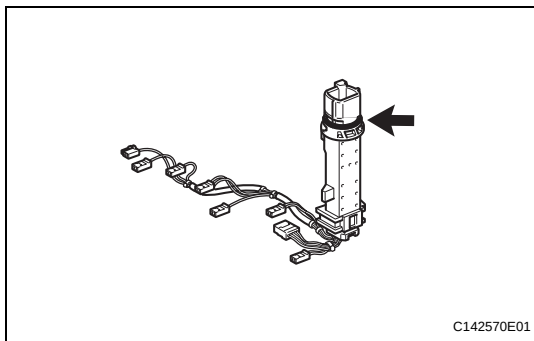


- Coat the 4 bolts with ATF.
 - Install the ATF temperature sensor assembly and clamp to the valve body assembly with the 4 bolts.
- Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)**

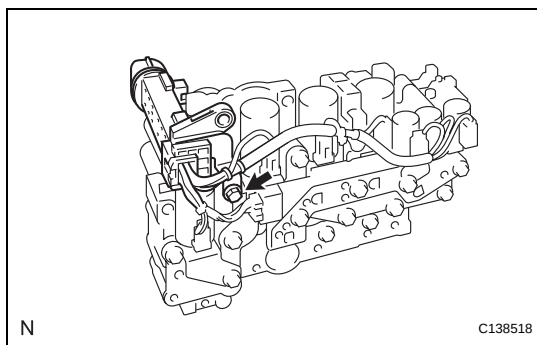


9. INSTALL TRANSMISSION WIRE

- Connect the 8 connectors to the valve body assembly.



- Coat the O-ring with ATF.



- (c) Coat the bolt with ATF.
- (d) Install the transmission wire and lock plate to the valve body assembly with the bolt.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

REMOVAL

1. REMOVE AUTOMATIC TRANSAXLE ASSEMBLY

HINT:

(See page [AX-215](#))

2. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY (See page [AX-192](#))

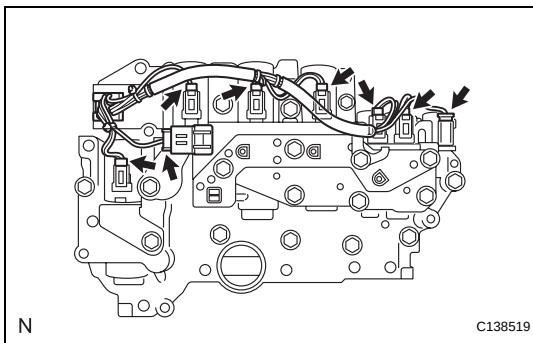
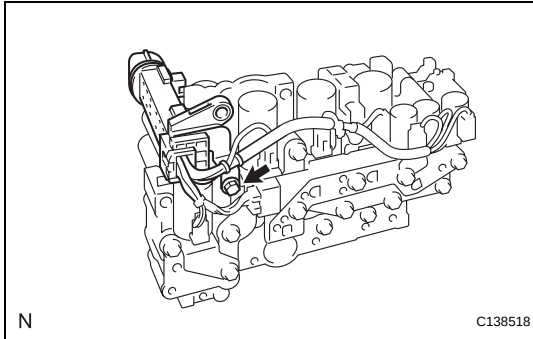
3. REMOVE VALVE BODY OIL STRAINER ASSEMBLY (See page [AX-192](#))

4. REMOVE TRANSMISSION VALVE BODY ASSEMBLY (See page [AX-193](#))

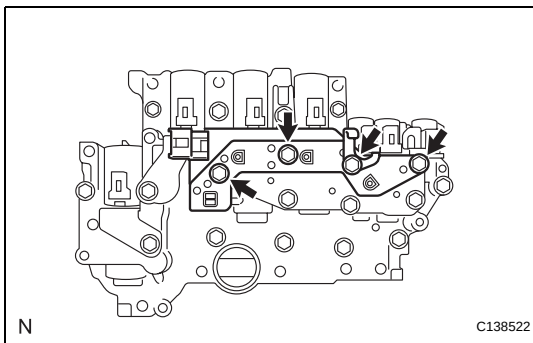
DISASSEMBLY

1. REMOVE TRANSMISSION WIRE

- Disconnect the connector from the transmission wire.
- Remove the bolt and lock plate from the valve body assembly.

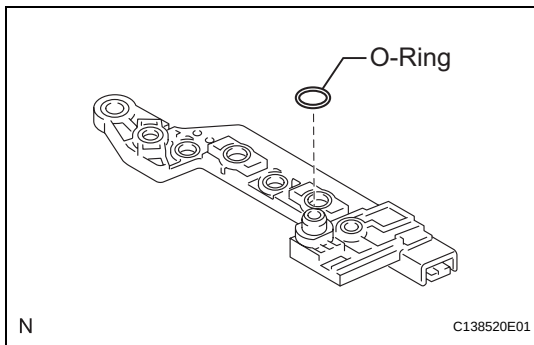


- Disconnect the 8 connectors and remove the transmission wire from the valve body assembly.

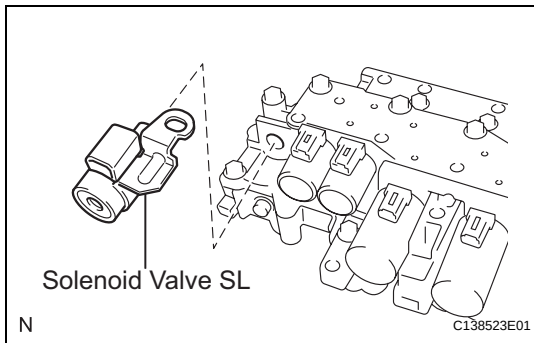


2. REMOVE ATF TEMPERATURE SENSOR ASSEMBLY

- Remove the 4 bolts, ATF temperature sensor assembly and clamp from the valve body assembly.

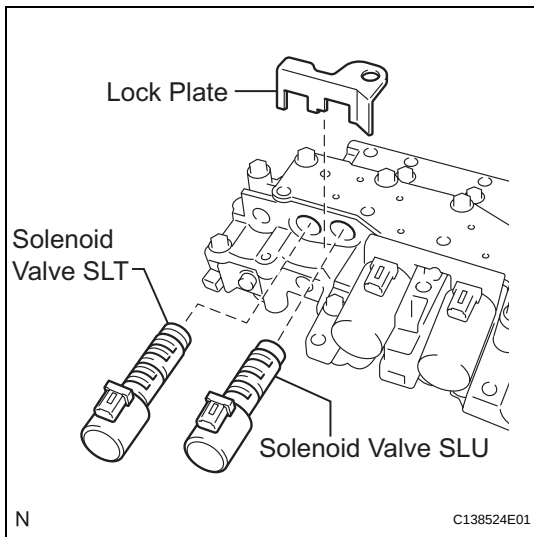


- (b) Remove the O-ring from the ATF temperature sensor assembly. O-ring



3. REMOVE SHIFT SOLENOID VALVE SL

- (a) Remove the shift solenoid valve SL from the valve body assembly.

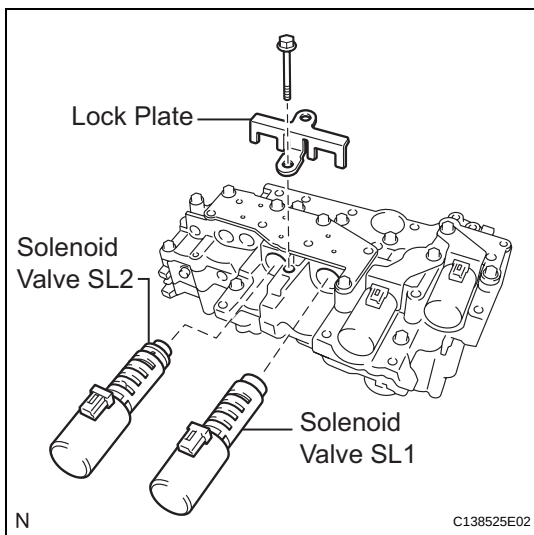


4. REMOVE SHIFT SOLENOID VALVE SLT

- (a) Remove the lock plate and shift solenoid valve SLT from the valve body assembly

5. REMOVE SHIFT SOLENOID VALVE SLU

- (a) Remove the shift solenoid valve SLU from the valve body assembly.



6. REMOVE SHIFT SOLENOID VALVE SL2

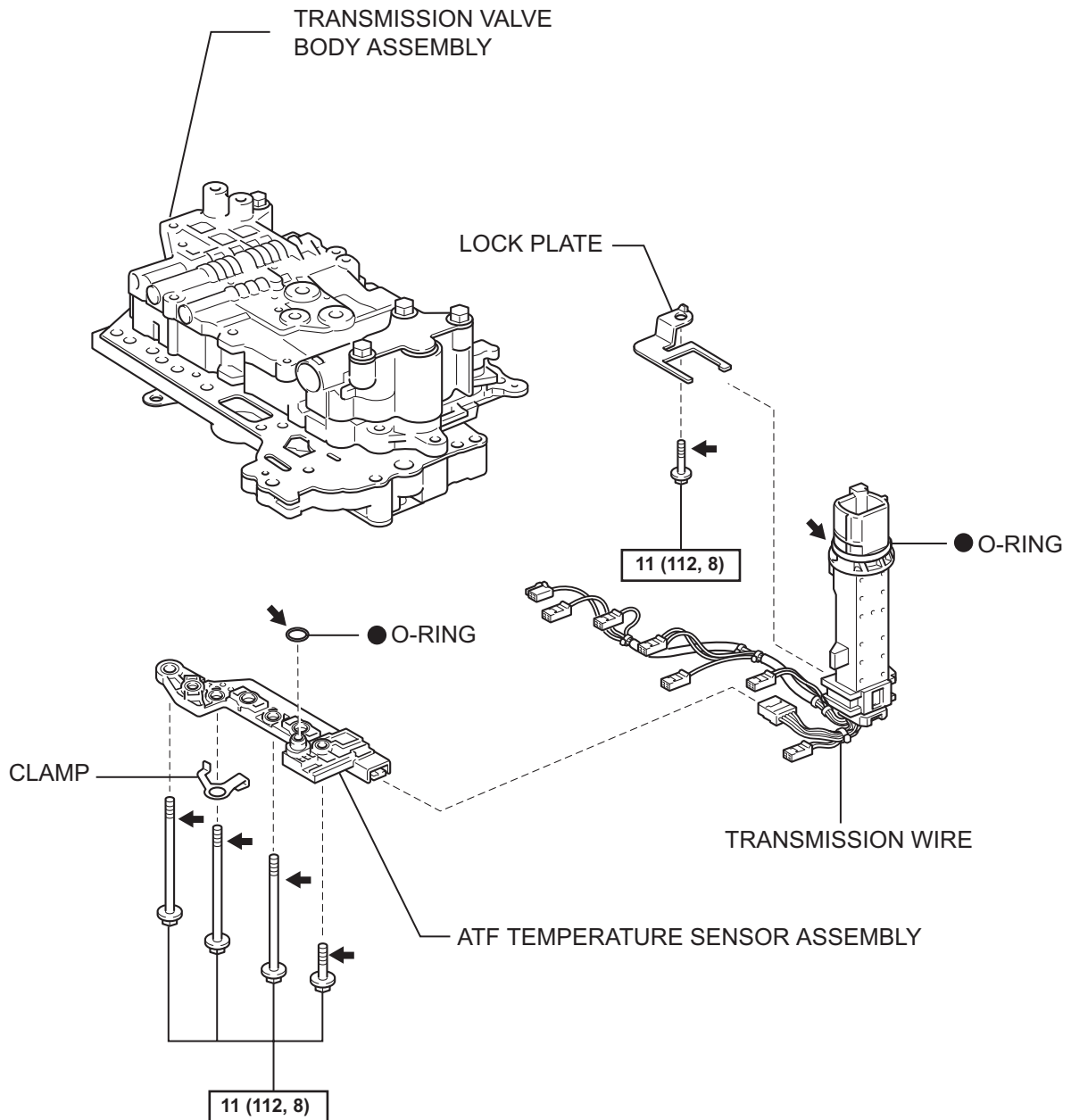
- (a) Remove the bolt, lock plate and shift solenoid valve SL2 from the valve body assembly.

7. REMOVE SHIFT SOLENOID VALVE SL1

- (a) Remove the shift solenoid valve SL1 from the valve body assembly.

SHIFT SOLENOID VALVE

COMPONENTS

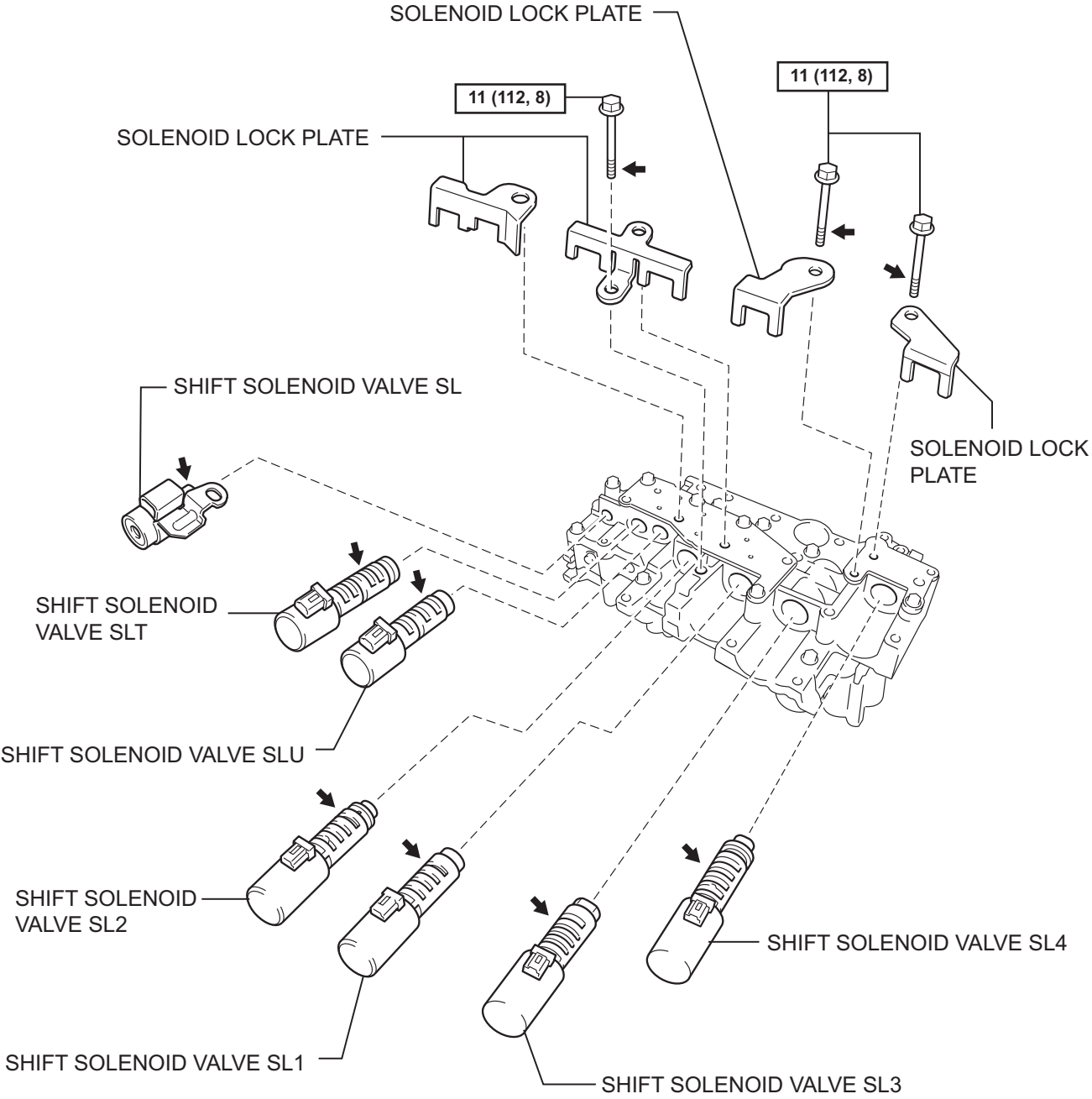


$\boxed{\text{N*m (kgf*cm, ft.*lbf)}}$: Specified torque

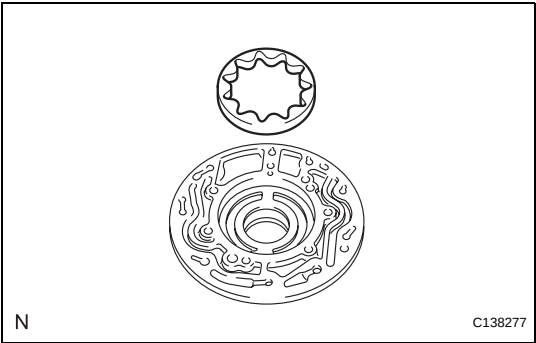
● Non-reusable part

← Apply ATF WS

AX

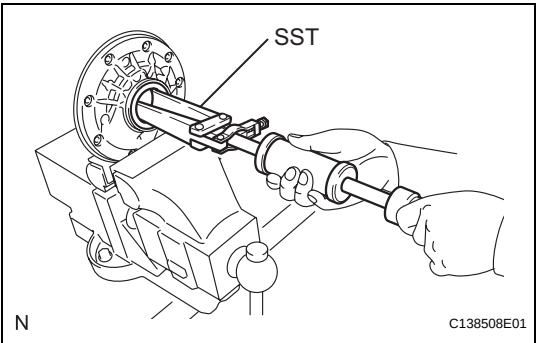


$\boxed{\text{N}\cdot\text{m (kgf}\cdot\text{cm, ft.}\cdot\text{lbf)}}$: Specified torque ← Apply ATF WS



6. REMOVE FRONT OIL PUMP DRIVEN GEAR

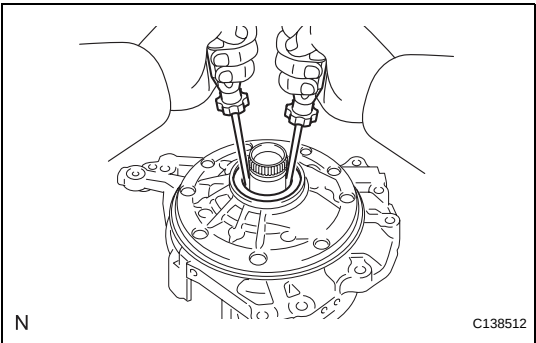
- (a) Remove the front oil pump driven gear from the oil pump body.



7. REMOVE FRONT OIL PUMP OIL SEAL

- (a) Mount the oil pump in a soft jaw vise.
(b) Using SST, remove the oil seal from the oil pump body.

SST 09308-00010



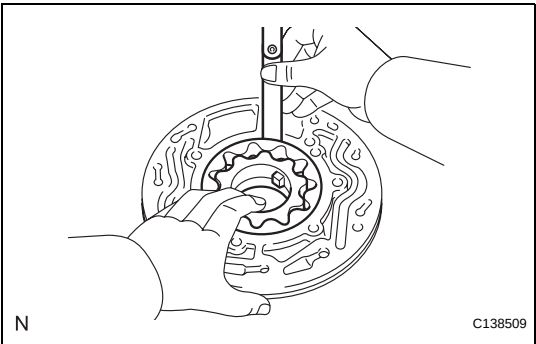
INSPECTION

1. INSPECT FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY

- (a) Turn the drive gear with 2 screwdrivers and make sure that it rotates smoothly.

NOTICE:

Be careful not to damage the oil seal lip.



2. INSPECT CLEARANCE OF FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY

- (a) Push the driven gear to one side of the body.
(b) Using a feeler gauge, measure the clearance.

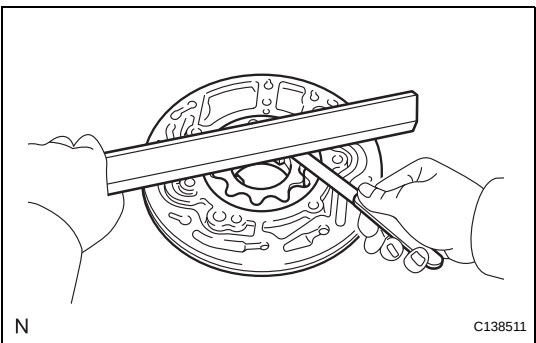
Standard clearance:

0.08 to 0.15 mm (0.0031 to 0.0059 in.)

Maximum clearance:

0.15 mm (0.0059 in.)

If the clearance is greater than the maximum, replace the oil pump body sub-assembly.



- (c) Using a straight edge and feeler gauge, measure the side clearance of both gears.

Standard side clearance:

0.025 to 0.04 mm (0.0010 to 0.0016 in.)

Maximum side clearance:

0.04 mm (0.0016 in.)

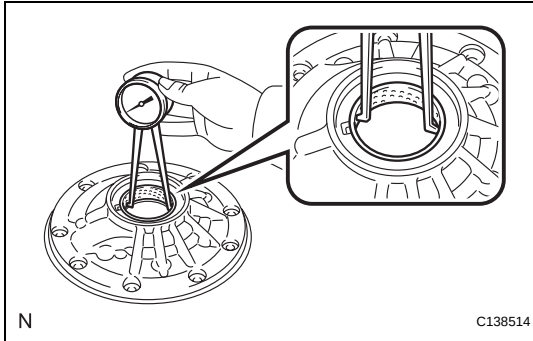
Drive gear thickness:

Mark	Thickness
-	11.547 to 11.555 mm (0.4546 to 0.4549 in.)
-	11.555 to 11.563 mm (0.4549 to 0.4552 in.)
-	11.564 to 11.571 mm (0.4553 to 0.4556 in.)

Mark	Thickness
-	11.572 to 11.579 mm (0.4556 to 0.4559 in.)
-	11.580 to 11.587 mm (0.4559 to 0.4562 in.)

Driven gear thickness:

Mark	Thickness
-	11.547 to 11.555 mm (0.4546 to 0.4549 in.)
-	11.555 to 11.563 mm (0.4549 to 0.4552 in.)
-	11.564 to 11.571 mm (0.4553 to 0.4556 in.)
-	11.572 to 11.579 mm (0.4556 to 0.4559 in.)
-	11.580 to 11.587 mm (0.4559 to 0.4562 in.)

**3. INSPECT FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY**

- (a) Using a dial indicator, measure the inside diameter of the oil pump body bushing.

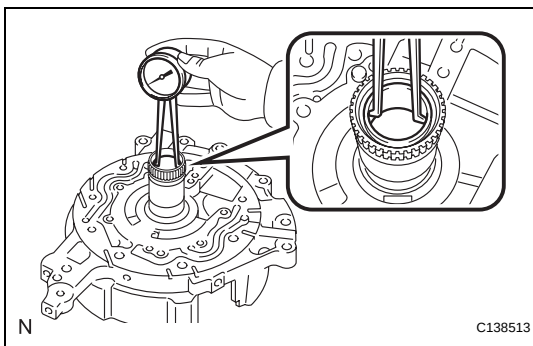
Standard inside diameter:

43.113 to 43.138 mm (1.6974 to 1.6983 in.)

Maximum inside diameter:

43.188 mm (1.7003 in.)

If the inside diameter is greater than the maximum, replace the oil pump body sub-assembly.

**4. INSPECT STATOR SHAFT ASSEMBLY**

- (a) Using a dial indicator, measure the inside diameter of the oil pump body bushing.

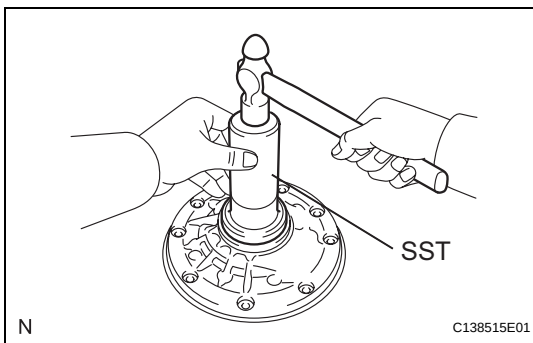
Standard inside diameter:

22.500 to 22.526 mm (0.8858 to 0.8868 in.)

Maximum inside diameter:

22.570 mm (0.8886 in.)

If the inside diameter is greater than the maximum, replace the oil pump body sub-assembly.

**REASSEMBLY****1. INSTALL FRONT OIL PUMP OIL SEAL**

- (a) Using SST and a hammer, install a new oil seal to the oil pump body.

SST 09350-32014 (09351-32140)

NOTICE:

The seal end should be level with the outer edge of the oil pump.

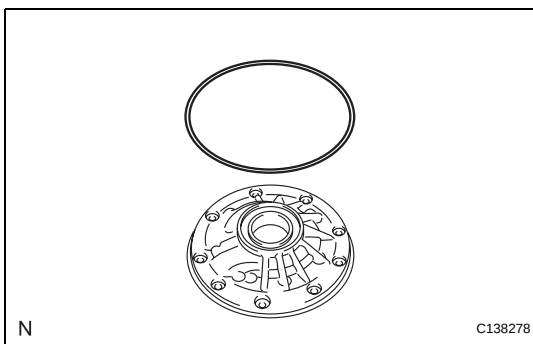
- (b) Coat the lip of the oil seal with MP grease.

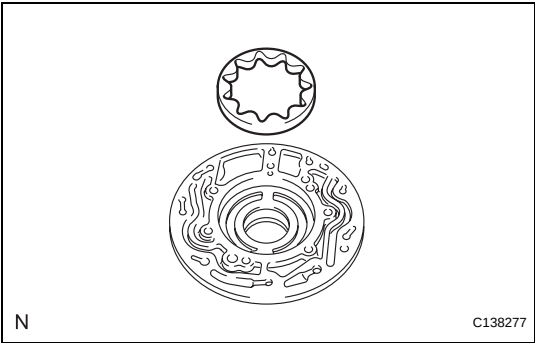
2. INSTALL FRONT OIL PUMP BODY O-RING

- (a) Coat a new O-ring with ATF and install it to the oil pump body.

NOTICE:

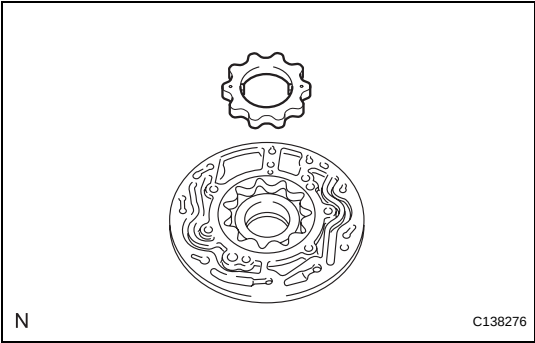
Ensure that the O-ring is not twisted.





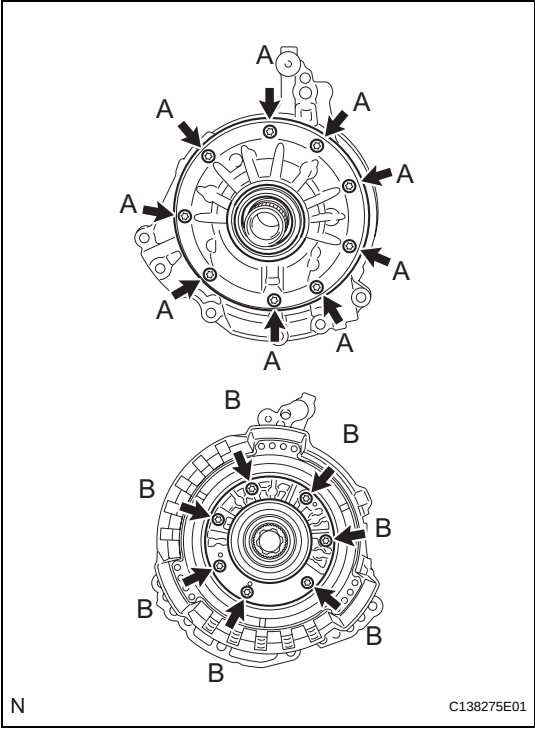
3. **INSTALL FRONT OIL PUMP DRIVEN GEAR**

- (a) Coat the front oil pump driven gear with ATF and install it to the oil pump body with the marked side up.



4. **INSTALL FRONT OIL PUMP DRIVE GEAR**

- (a) Coat the front oil pump drive gear with ATF, and install it to the oil pump body with the marked side up.



5. **INSTALL STATOR SHAFT ASSEMBLY**

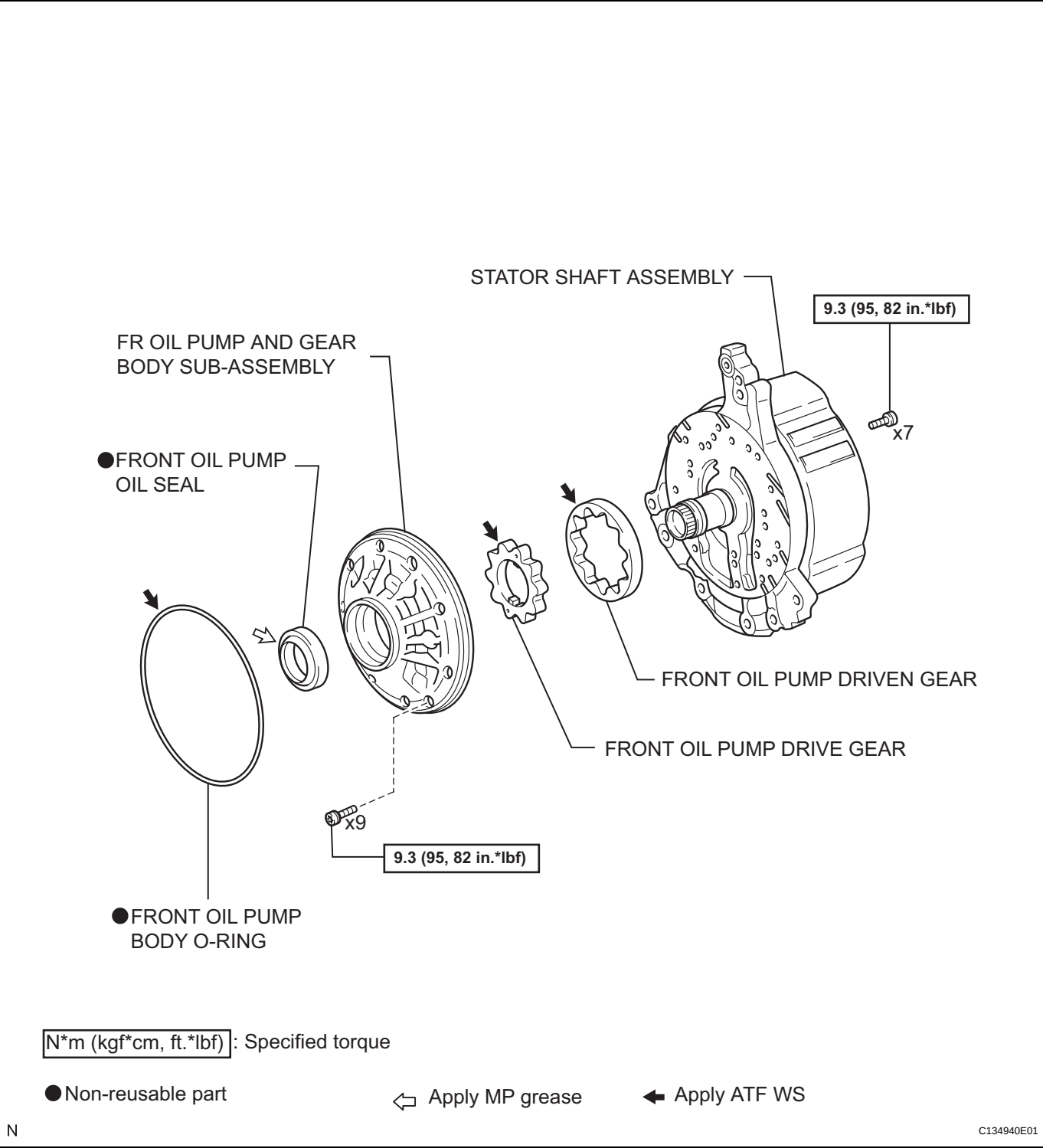
- (a) Align each knock pin of the stator shaft with the holes in the oil pump body and install the stator shaft to the oil pump body with the 16 bolts.
- (b) Using a "TORX" socket (T30), install the 11 bolts.
Torque: 9.3 N*m (95 kgf*cm, 82 in.*lbf)

-	Bolt length:
Bolt A	14 mm (0.55 in)
Bolt B	26 mm (1.02 in)

6. **INSPECT FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY (See page [AX-326](#))**

OIL PUMP

COMPONENTS



DISASSEMBLY

1. **INSPECT FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY** (See page [AX-326](#))

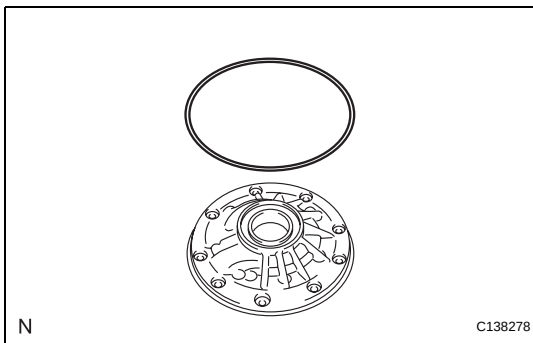
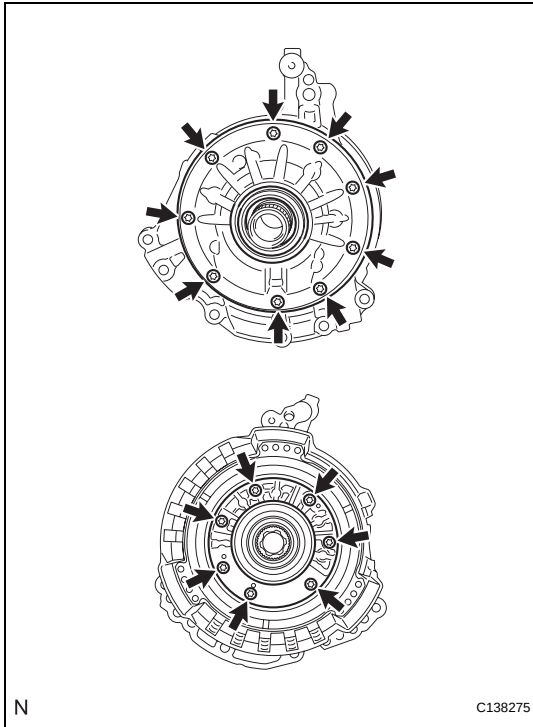
2. **REMOVE STATOR SHAFT ASSEMBLY**

(a) Using a "TORX" wrench (T30), remove the 16 bolts and stator shaft assembly from the oil pump body.

NOTICE:

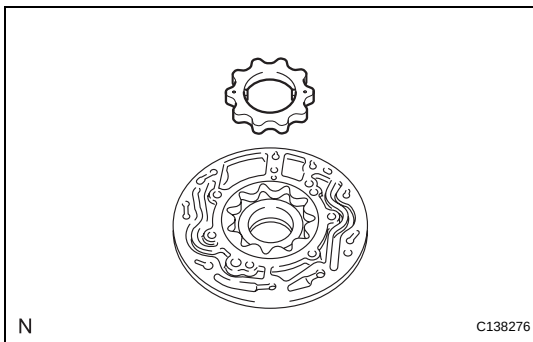
Keep the gears in the order of installation.

3. **INSPECT CLEARANCE OF FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY** (See page [AX-326](#))



4. **REMOVE FRONT OIL PUMP BODY O-RING**

(a) Remove the O-ring from the oil pump body.

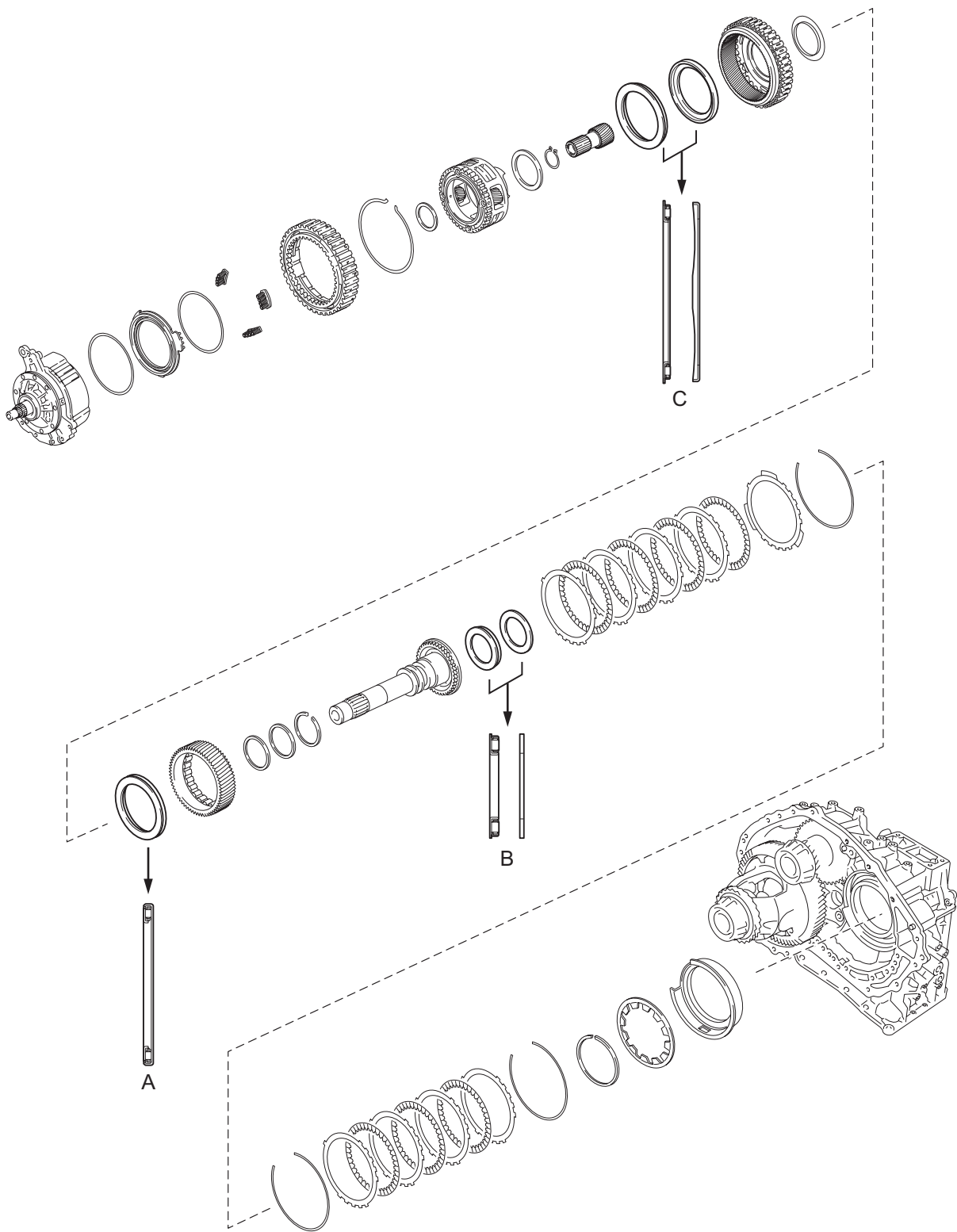


5. **REMOVE FRONT OIL PUMP DRIVE GEAR**

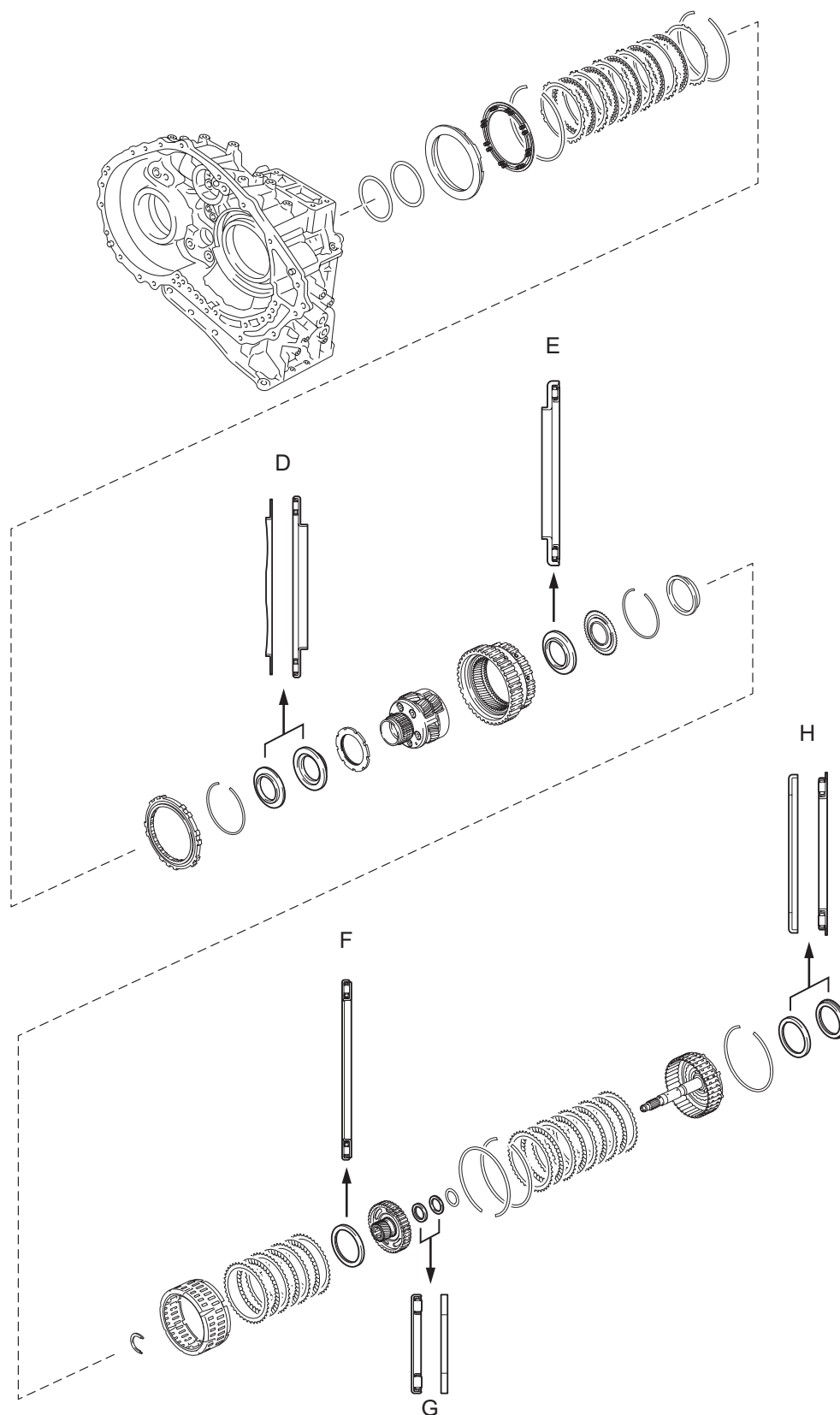
(a) Remove the front oil pump drive gear from the oil pump body.

REASSEMBLY

1. BEARING POSITION

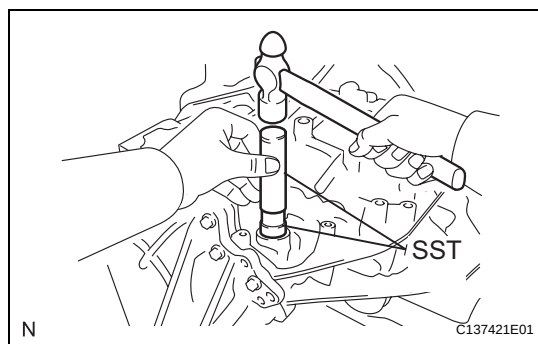


AX



AX

Mark	Front Race Diameter Inside / Outside mm (in.)	Thrust Bearing Diameter Inside / Outside mm (in.)	Rear Race Diameter Inside / Outside mm (in.)
A	-	57.7 (2.271) / 75.2 (2.961)	-
B	-	29.1 (1.146) / 48.6 (1.913)	30.7 (1.209) / 48.3 (1.902)
C	65.9 (2.594) / 80.3 (3.161)	62.6 (2.465) / 82.4 (3.244)	-
D	59.4 (2.339) / 77 (3.032)	53.1 (2.091) / 79 (3.110)	-
E	-	56.1 (2.209) / 80.9 (3.185)	-
F	-	61.2 (2.409) / 79 (3.110)	-
G	-	28 (1.102) / 47.1 (1.854)	26.1 (1.028) / 44 (1.732)
H	52.2 (2.055) / 70.4 (2.772)	48.9 (1.925) / 72.0 (2.835)	-



2. INSTALL MANUAL VALVE LEVER SHAFT OIL SEAL

- Coat the lip of a new manual valve lever shaft oil seal with MP grease.
- Using SST and a hammer, install the manual valve lever shaft oil seal to the transaxle case.

SST 09950-60010 (09951-00230), 09950-70010 (09951-07100)

Oil seal installation depth:

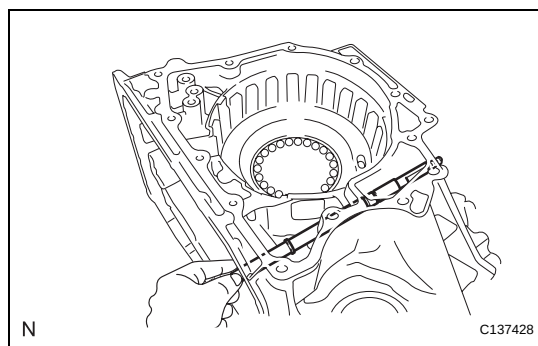
-0.5 to 0.5 mm (-0.0197 to 0.0197 in.)

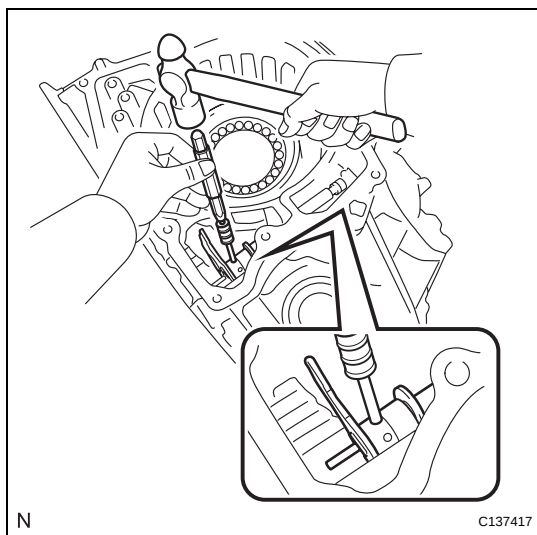
3. INSTALL MANUAL VALVE LEVER SHAFT

- Install a new spacer to the parking lock lever sub-assembly.
- Install the parking lock lever sub-assembly to the manual valve lever shaft.
- Install a new spacer to the manual valve lever sub-assembly.
- Install the manual valve lever sub-assembly to the manual valve lever shaft.
- Install the manual valve lever shaft to the transaxle case.

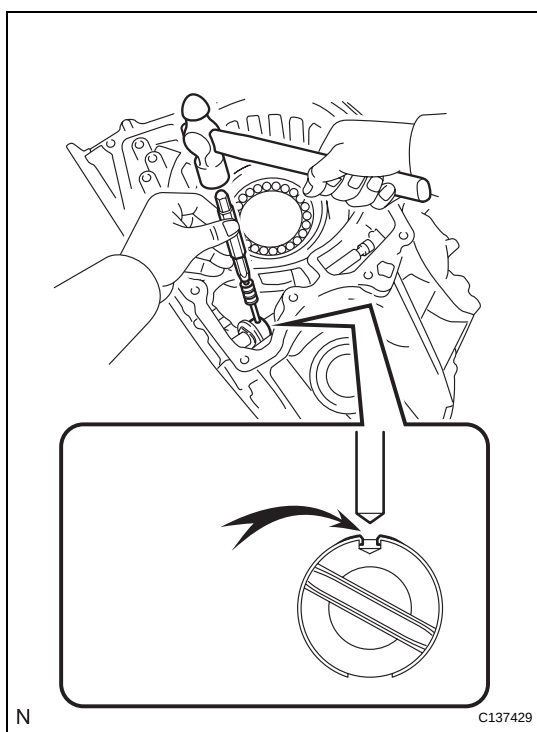
NOTICE:

Do not damage the manual valve lever shaft oil seal while installing the manual valve lever shaft to the transaxle case.

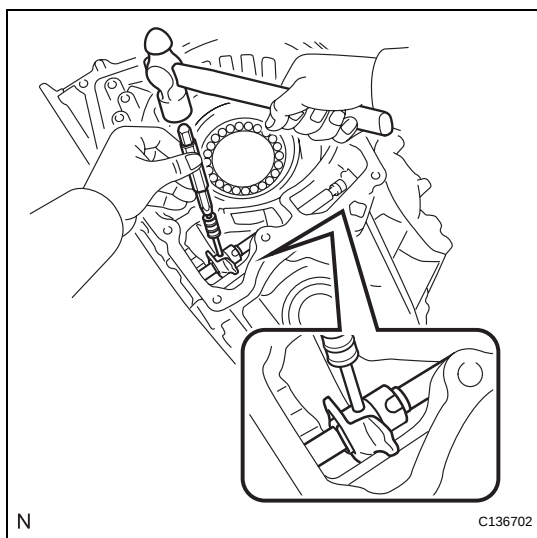




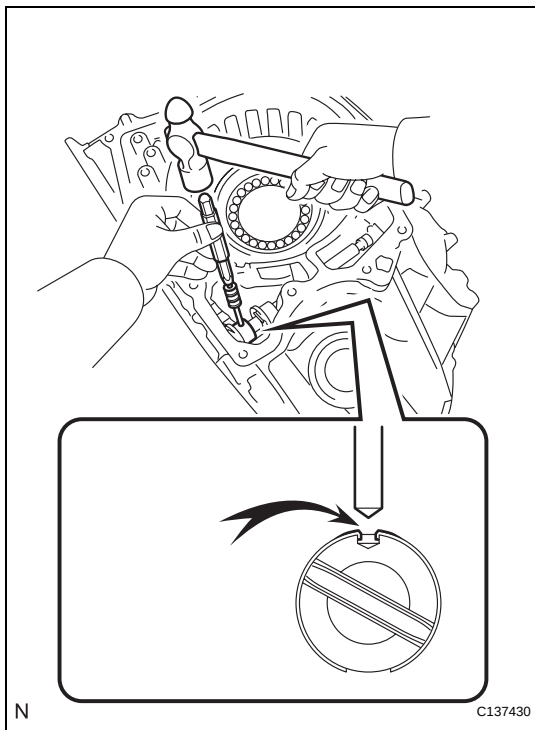
- (f) Using a pin punch (3 mm) and hammer, install a new slotted spring pin to the parking lock lever sub-assembly.



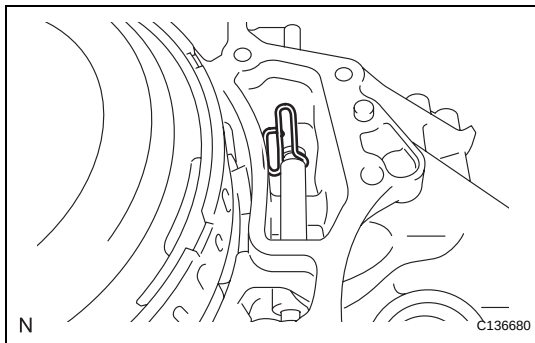
- (g) Turn the spacer and the lever shaft to align the smaller hole of the spacer with the staking position mark on the lever shaft.
- (h) Using a pin punch, stake the spacer through the small hole.
- (i) Check that the spacer does not turn.



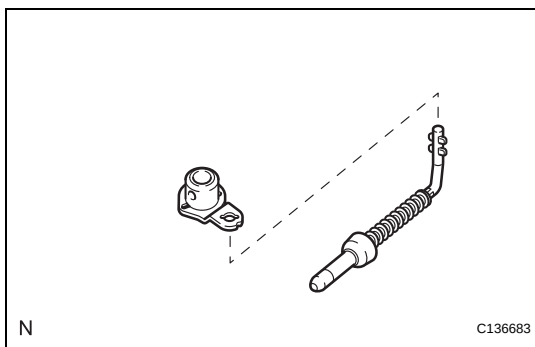
- (j) Using a pin punch (3 mm) and hammer, install a new slotted spring pin to the manual valve lever sub-assembly.



- (k) Turn the spacer and the lever shaft to align the smaller hole of the spacer with the staking position mark on the lever shaft.
- (l) Using a pin punch, stake the spacer through the small hole.
- (m) Check that the spacer does not turn.

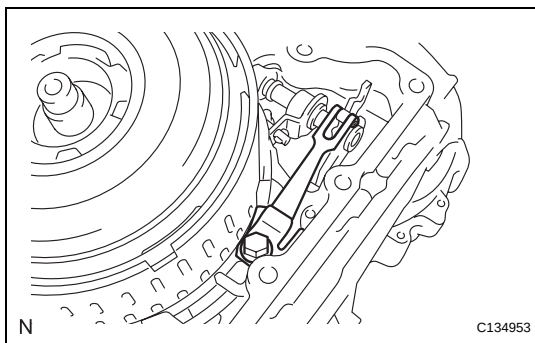


- (n) Using needle-nose pliers, install the manual valve shaft retainer spring to the transaxle case.



4. INSTALL PARKING LOCK ROD SUB-ASSEMBLY

- (a) Align the dial with the notches on the parking lock lever sub-assembly and install the parking lock rod sub-assembly.



5. INSTALL MANUAL DETENT SPRING SUB-ASSEMBLY

- (a) Install the manual detent spring sub-assembly and cover to the transaxle case with the bolt.

Torque: 23 N*m (234 kgf*cm, 17 ft.*lbf)

NOTICE:

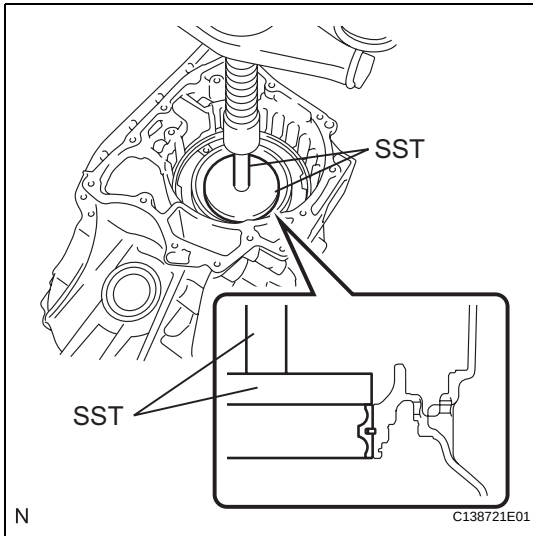
Make sure to install the manual detent spring first and then the cover.

6. INSTALL COUNTER DRIVE GEAR BEARING**NOTICE:**

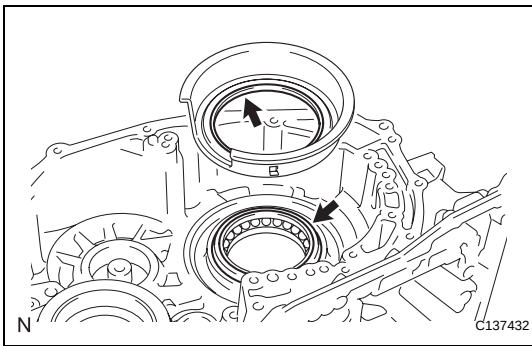
Perform this procedure only when the counter drive gear bearing or transaxle case is replaced.

- (a) Using SST and a press, install a new counter drive gear bearing and snap ring to the transaxle case.

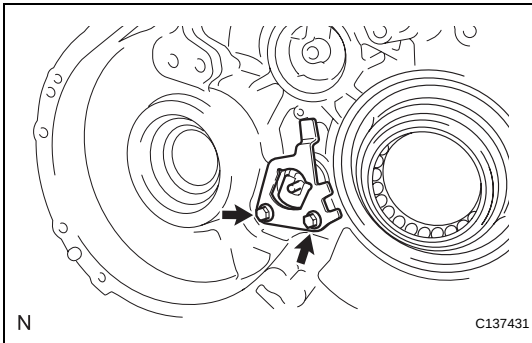
SST 09950-60020 (09951-01030), 09950-70010 (09951-07100)

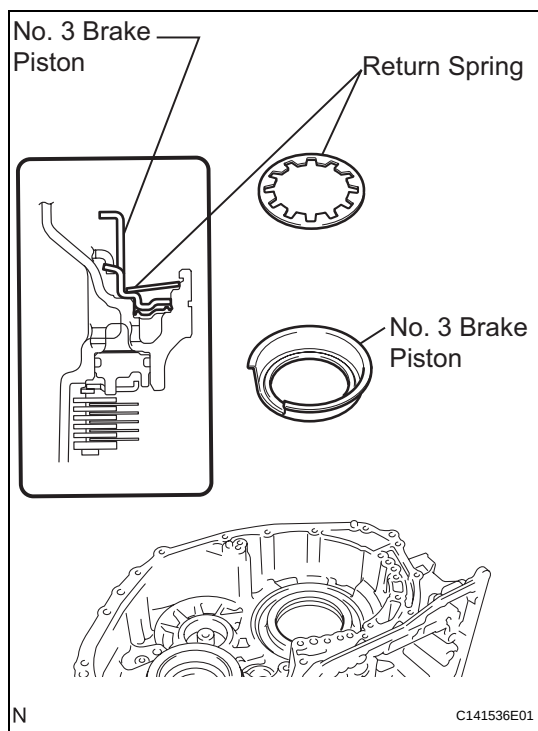
**7. INSTALL NO. 3 BRAKE PISTON**

- (a) Coat the contact surface of the transaxle case with ATF.
(b) Coat the lip seal of the No. 3 brake piston with ATF.



- (c) Temporarily install the pawl stopper plate to the transaxle case with the 2 bolts.

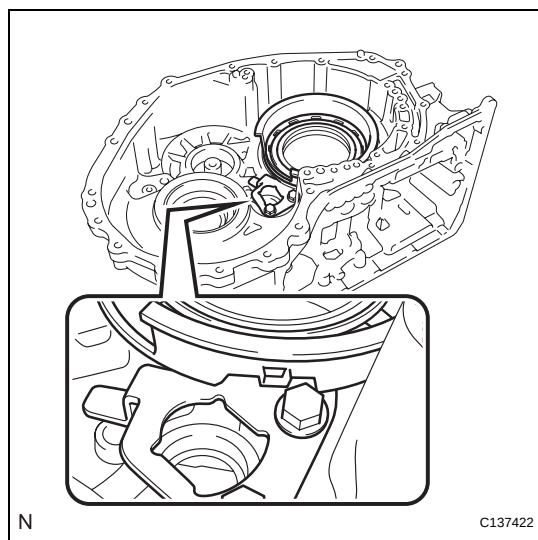




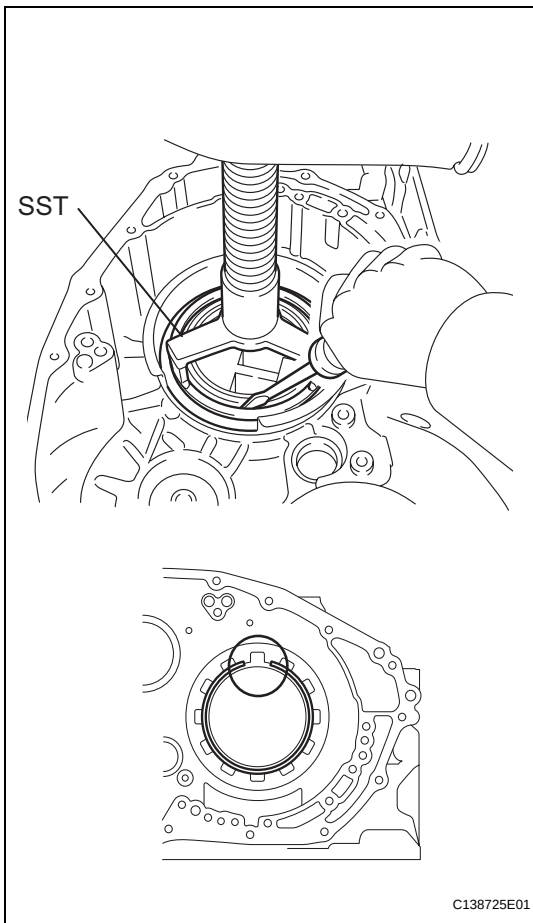
- (d) Press the return spring installation surface to install the No. 3 brake piston to the transaxle case.

NOTICE:

- Make sure that the lip of the No. 3 brake piston is not twisted and does not get caught in the transaxle case.
 - After installing, make sure that the protrusions on the No. 3 brake piston and the grooves on the pawl stopper plate are aligned.
- (e) Install the return spring to the transaxle case.



- (f) Remove the 2 bolts and pawl stopper plate from the transaxle case.



- (g) Place SST on the brake piston return spring and compress the brake piston return spring with a press.

SST 09387-00070

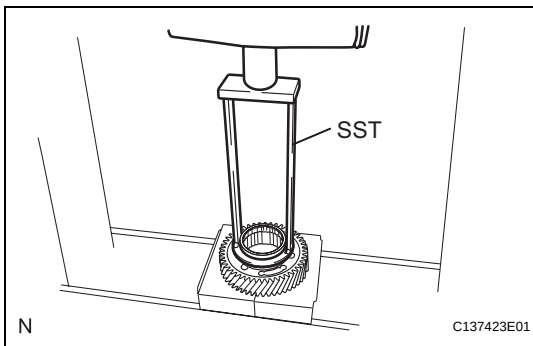
NOTICE:

Stop the press when the brake piston return spring is flush with the snap ring groove. This prevents the brake piston return spring from being deformed.

- (h) Using a screwdriver, install the snap ring to the transaxle case as shown in the illustration.

NOTICE:

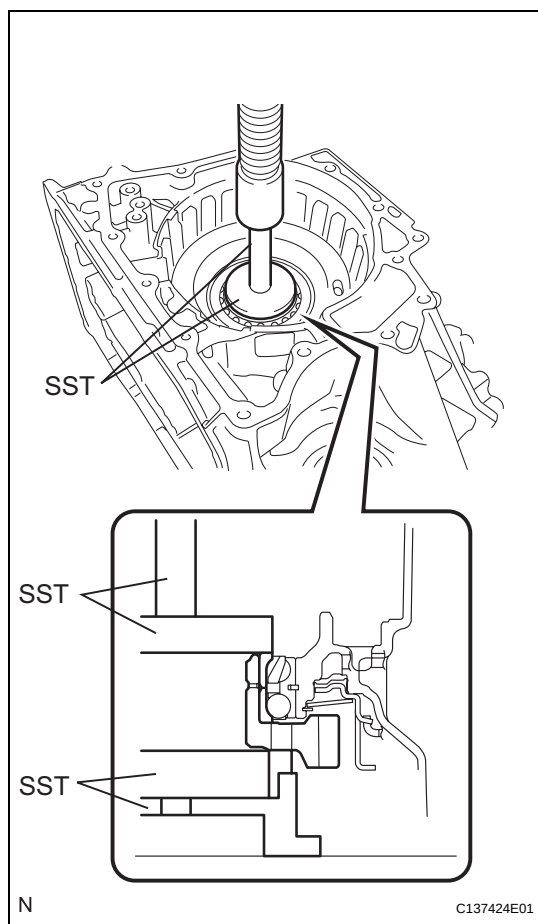
- **Confirm that the snap ring is secured in the groove of the transaxle case.**
- **Be sure to align the opening ends of the snap ring with the protrusions on the brake piston return spring as shown in the illustration.**



8. INSTALL COUNTER DRIVE GEAR

- (a) Using SST and a press, install the bearing inner race (front side) to the counter drive gear.

SST 09387-00020

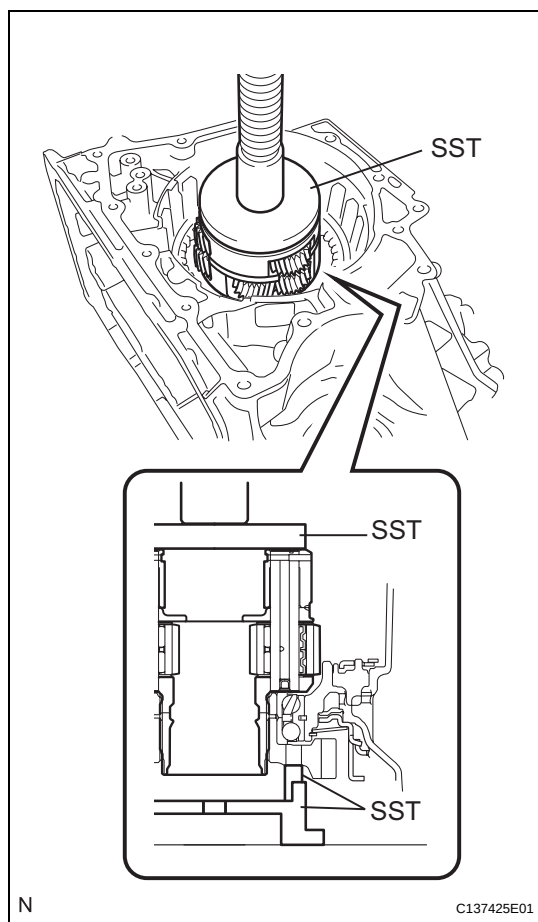


- (b) Install the bearing inner race (rear side) and counter drive gear to the transaxle case.

**SST 09223-15030, 09527-17011, 09950-60020
(09951-00810), 09950-70010 (09951-07100)**

NOTICE:

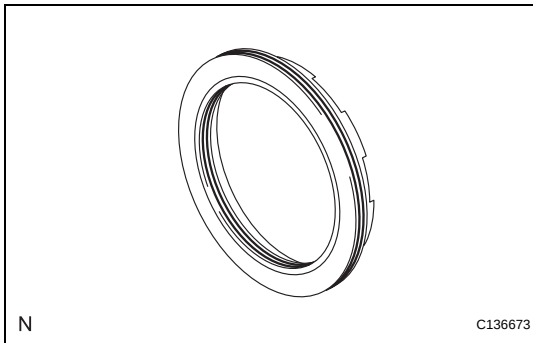
There should not be any clearance between the bearing inner race (front side) and counter drive gear.



9. INSTALL FRONT PLANETARY GEAR ASSEMBLY

- (a) Using SST and a press, press in the planetary gear assembly to the transaxle case.

SST 09223-15030, 09527-17011, 09951-01100

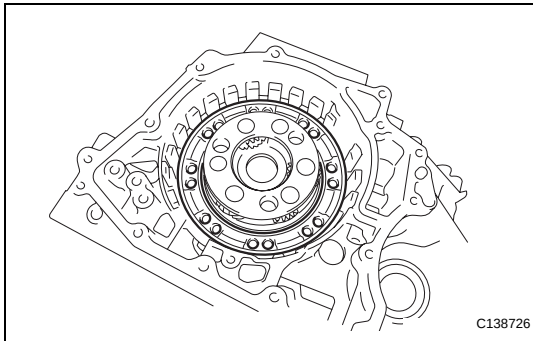


10. INSTALL NO. 2 BRAKE PISTON

- (a) Coat 2 new O-rings with ATF and install them to the No. 2 brake piston.

NOTICE:

Ensure that the 2 O-rings are not twisted.



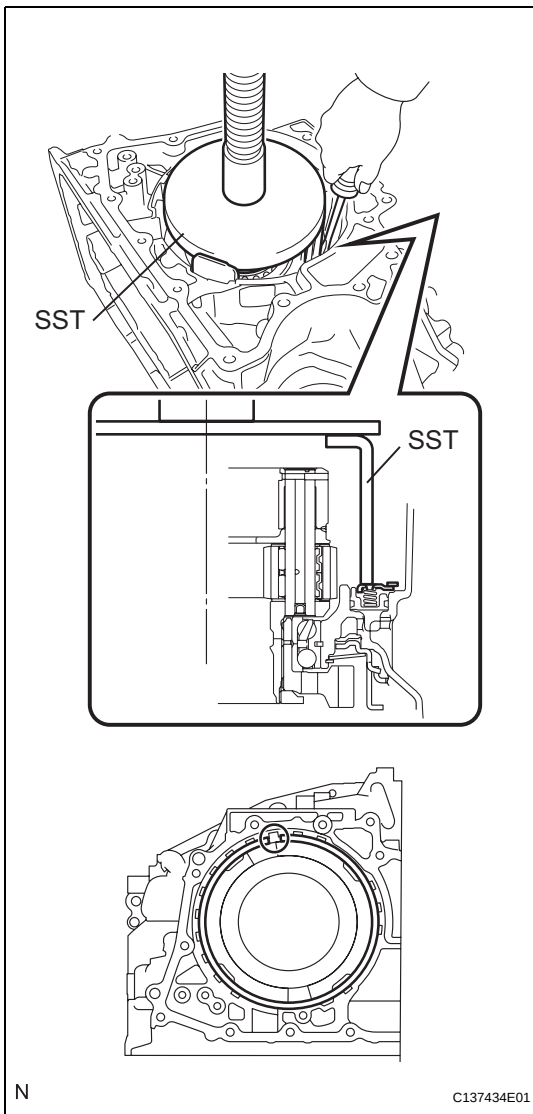
- (b) Install the No. 2 brake piston to the transaxle case.

NOTICE:

Be careful not to damage the O-rings.

11. INSTALL 1ST AND REVERSE BRAKE RETURN SPRING SUB-ASSEMBLY

- (a) Install the 1st and reverse brake return spring to the transaxle case.



- (b) Place SST on the 1st and reverse brake return spring and compress the 1st and reverse brake return spring with a press.

SST 09387-00060

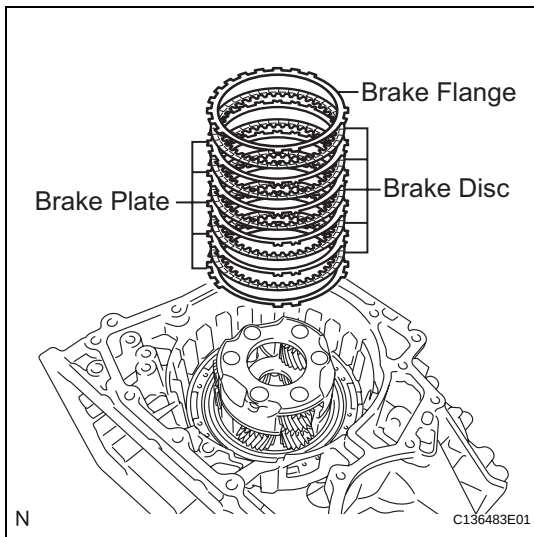
NOTICE:

Stop the press when the 1st and reverse brake return spring is flush with the snap ring groove. This prevents the 1st and reverse brake return spring from being deformed.

- (c) Using a screwdriver, install the snap ring to the transaxle case as shown in the illustration.

NOTICE:

- Confirm that the snap ring is secured in the groove of the transaxle case.
- Be sure to align the opening ends of the snap ring with the protrusions on the transaxle case as shown in the illustration.

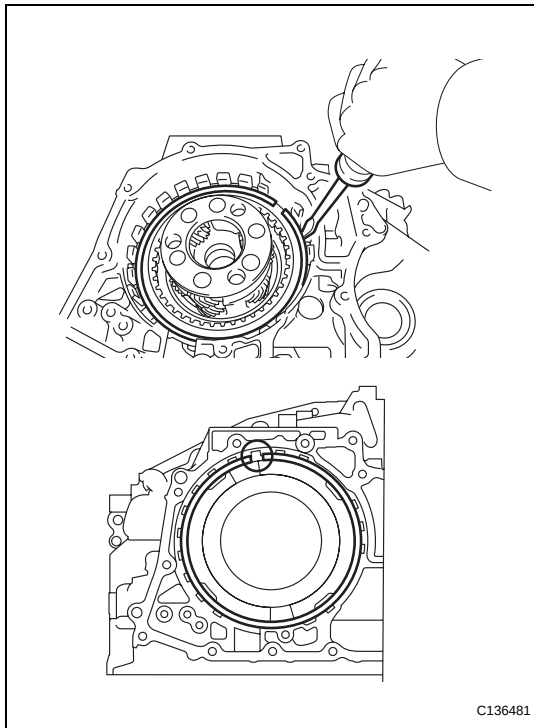


12. INSTALL NO. 2 BRAKE DISC

- (a) Install the 5 brake discs, 5 brake plates, and brake flange to the transaxle case.

NOTICE:

Make sure that the discs, plates, and flange are installed in the correct order.



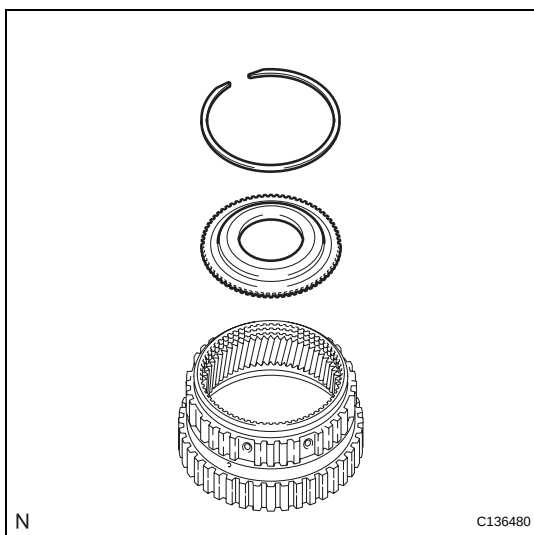
- (b) Using a screwdriver, install the snap ring to the transaxle case.

NOTICE:

- Confirm that the snap ring is secured in the groove of the transaxle case.
- Be sure to align the opening ends of the snap ring with the protrusions on the transaxle case as shown in the illustration.

13. INSPECT CLEARANCE OF NO. 2 BRAKE (See page [AX-287](#))

AX

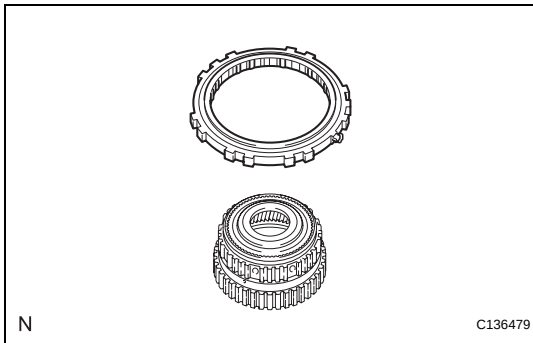


14. INSTALL PLANETARY RING GEAR FLANGE

- (a) Install the planetary ring gear flange to the planetary ring gear.
- (b) Using a screwdriver, install the snap ring to the planetary ring gear.

NOTICE:

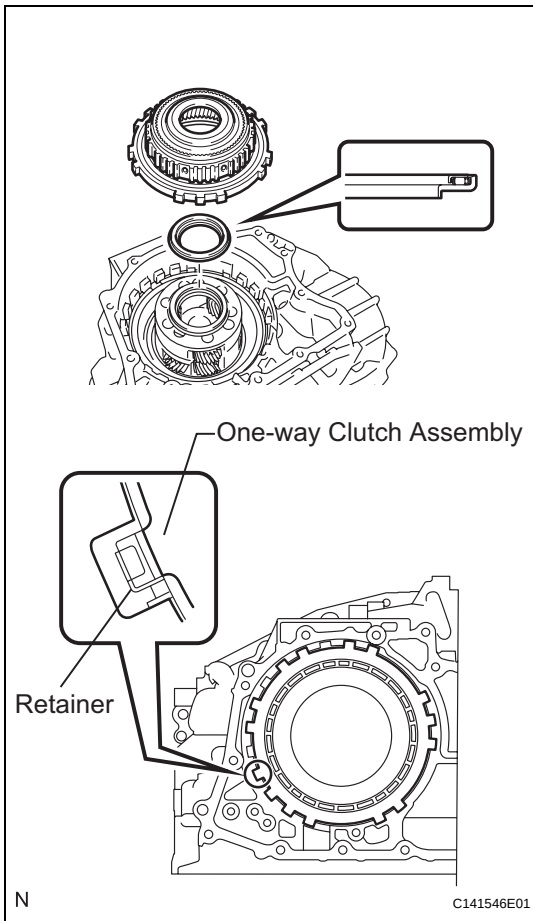
Confirm that the snap ring is secured in the groove of the planetary ring gear.

**15. INSTALL PLANETARY RING GEAR**

- (a) Install the planetary ring gear to the one-way clutch assembly.

NOTICE:

Make sure that the one-way clutch assembly is positioned in the correct direction as shown in the illustration.

**16. INSTALL ONE-WAY CLUTCH ASSEMBLY**

- (a) Coat the thrust needle roller bearing with ATF, and install it onto the planetary gear assembly.

Bearing diameter: mm (in.)

-	Inside	Outside
Bearing	56.1 (2.209)	80.9 (3.185)

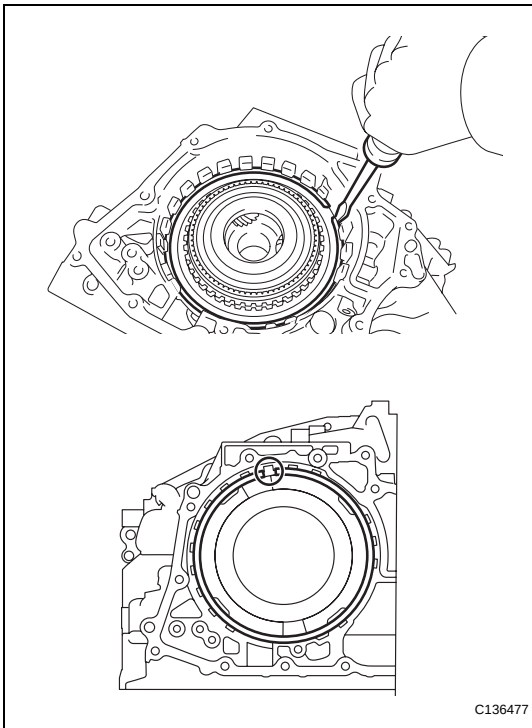
NOTICE:

Install the thrust needle roller bearing properly so that the temper colored side of the race will be visible.

- (b) Install the one-way clutch assembly to the transaxle case.

NOTICE:

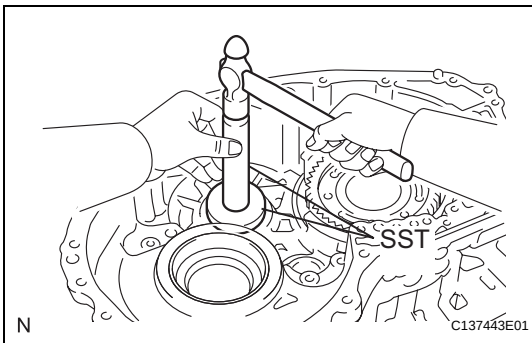
Make sure that there is no clearance between the retainer and the claw on the one-way clutch assembly. If there is any clearance, the spring of the retainer will be deformed.



- (c) Using a screwdriver, install the snap ring to the transaxle case.

NOTICE:

- Confirm that the snap ring is secured in the groove of the transaxle case.
- Be sure to align the opening ends of the snap ring with the protrusions on the transaxle case.



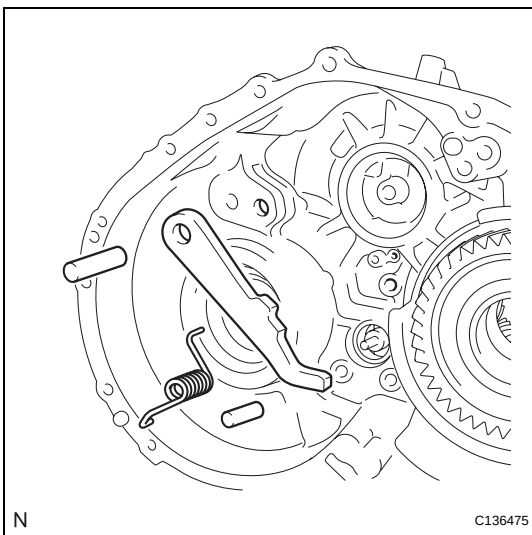
17. INSTALL COUNTER DRIVEN GEAR REAR TAPERED ROLLER BEARING OUTER RACE

- (a) Using SST and a hammer, install the counter driven gear rear tapered roller bearing outer race to the transaxle case.

SST 09950-60010 (09951-00650), 09950-70010 (09951-07100)

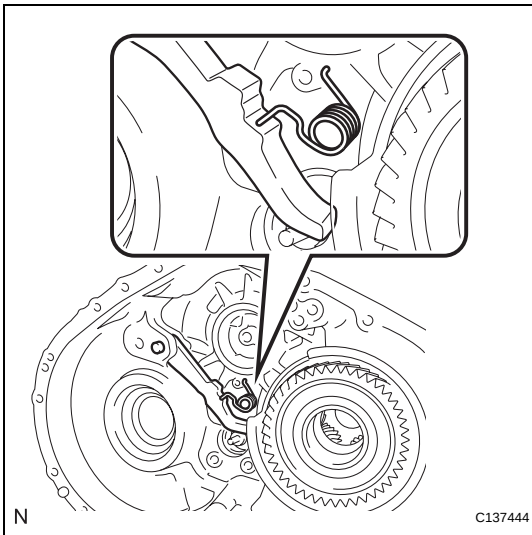
NOTICE:

Be sure to install the counter driven gear rear tapered roller bearing outer race so that there is no clearance between the bearing outer race and the transaxle case. If there is any clearance, the turning torque of the counter drive gear cannot be measured correctly.



18. INSTALL PARKING LOCK PAWL

- (a) Install the parking lock pawl to the transaxle case with the parking lock pawl shaft.
- (b) Install the parking lock pawl pin to the transaxle case.



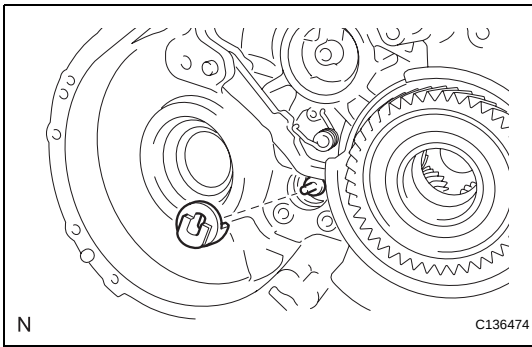
- (c) Install the torsion spring to the parking lock pawl.

NOTICE:

Make sure that one end of the spring is fixed in the hole of the transaxle case and the other end is positioned on the parking lock pawl as shown in the illustration.

19. INSTALL PARKING LOCK SLEEVE

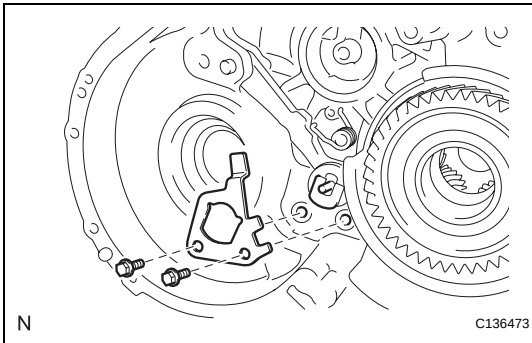
- (a) Install the parking lock sleeve to the transaxle case.



20. INSTALL PAWL STOPPER PLATE

- (a) Install the pawl stopper plate to the transaxle case with the 2 bolts.

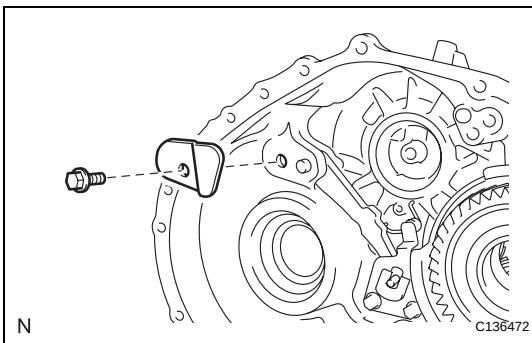
Torque: 23 N*m (234 kgf*cm, 17 ft.*lbf)

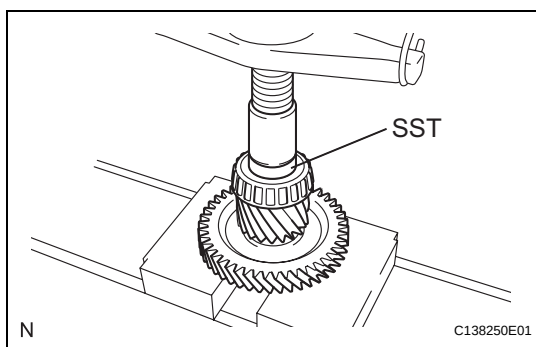


21. INSTALL PAWL SHAFT CLAMP

- (a) Install the pawl shaft clamp to the transaxle case with the bolt.

Torque: 23 N*m (234 kgf*cm, 17 ft.*lbf)





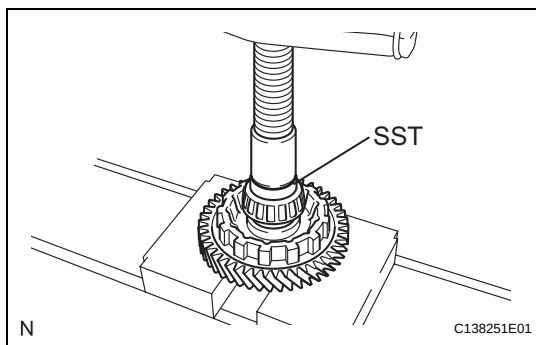
22. INSTALL COUNTER DRIVEN GEAR FRONT TAPERED ROLLER BEARING

- (a) Using SST and a press, install a new the counter driven gear front tapered roller bearing to the counter driven gear sub-assembly.

SST 09950-60010 (09951-00530)

NOTICE:

Be sure to install the counter driven gear front tapered roller bearing so that there is no clearance between the bearing and the counter driven gear. If there is any clearance, the turning torque of the counter drive gear cannot be measured correctly.



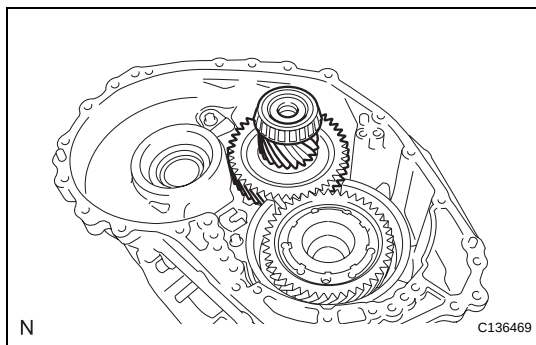
23. INSTALL COUNTER DRIVEN GEAR REAR TAPERED ROLLER BEARING

- (a) Using SST and a press, install a new the counter driven gear rear tapered roller bearing to the counter driven gear sub-assembly.

SST 09950-60010 (09951-00420)

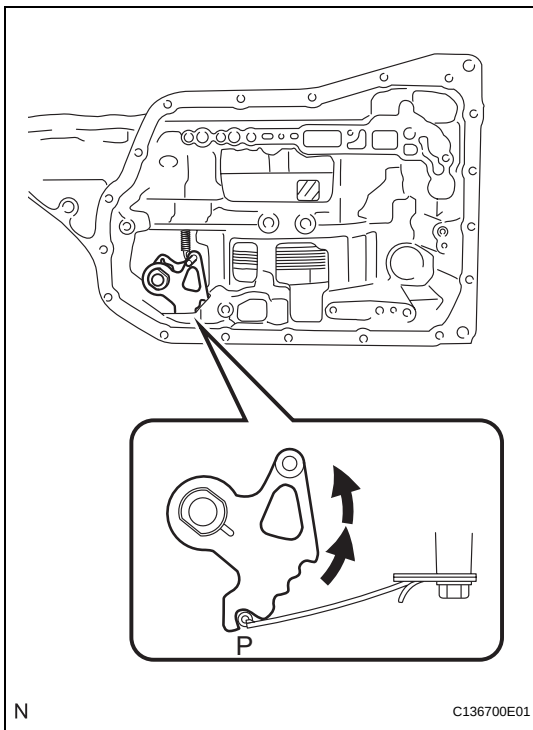
NOTICE:

Be sure to install the counter driven gear rear tapered roller bearing and the differential drive pinion so that there is no clearance between each of them and the counter driven gear.

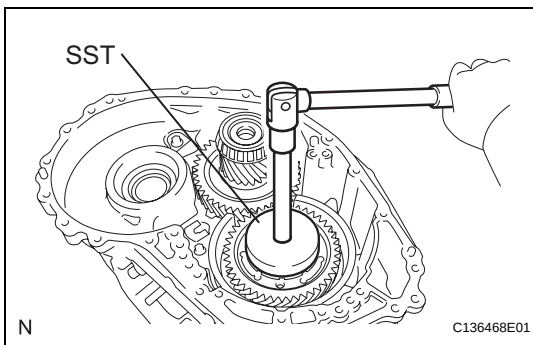


24. INSTALL COUNTER DRIVEN GEAR

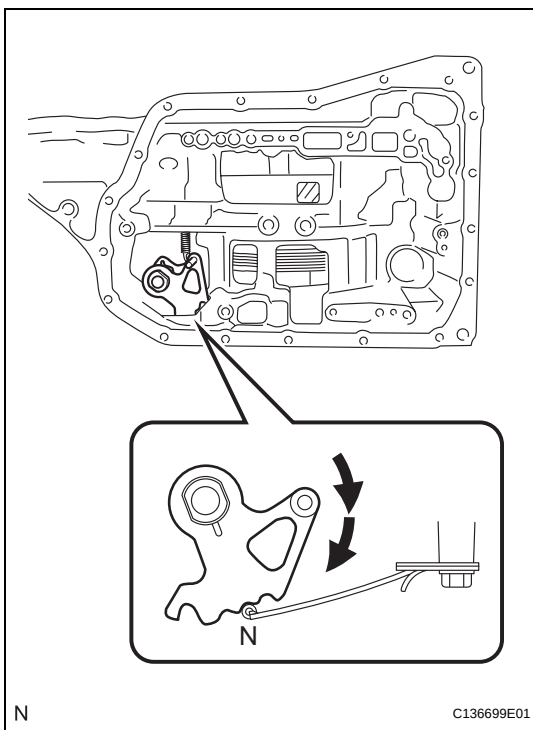
- (a) Install the counter driven gear sub-assembly to the transaxle case.

**25. INSTALL COUNTER DRIVE GEAR NUT**

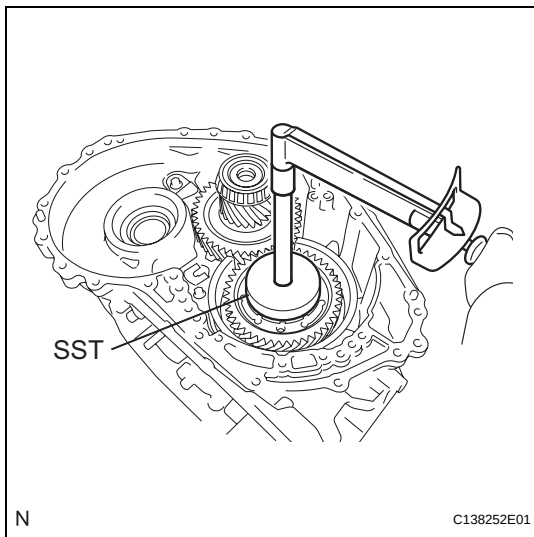
- (a) Turn the manual shaft lever 2 notches counterclockwise to set it in the P position as shown in the illustration.



- (b) Using SST, install a new nut.
SST 09387-00130
Torque: 120 N*m (1,223 kgf*cm, 88 ft.*lbf)



- (c) Turn the manual shaft lever 2 notches clockwise to set it in the N position as shown in the illustration.



- (d) Using SST and a torque wrench, measure the turning torque of the bearing while rotating SST at 60 rpm.

SST 09387-00130

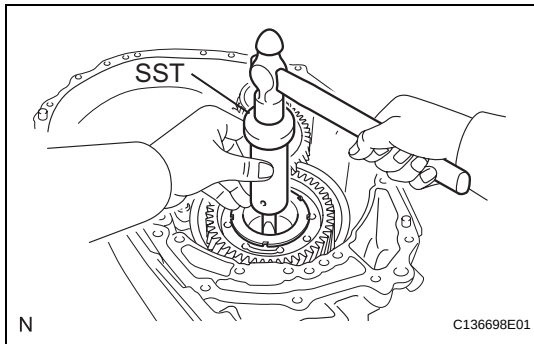
Turning torque:

0.10 to 0.22 N*m (1.02 to 2.24 kgf*cm, 0.89 to 1.94 in.*lbf)

When the measured value is not within the specified range, gradually tighten the nut until the turning torque falls within the specified range.

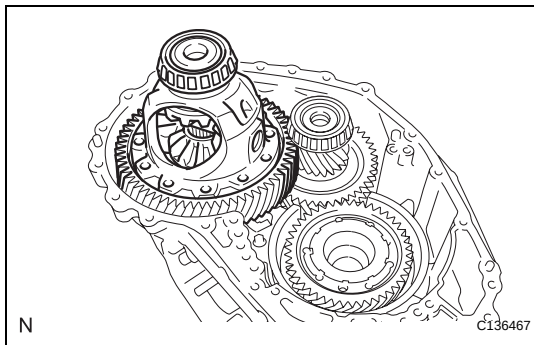
Maximum torque:

180 N*m (1,835 kgf*cm, 132 ft.*lbf)



- (e) Using SST and a hammer, stake the planetary gear assembly.

SST 09930-00010



26. INSTALL FRONT DIFFERENTIAL CASE

- (a) Install the differential case sub-assembly to the transaxle case.

27. INSPECT DIFFERENTIAL SIDE GEAR (See page [AX-343](#))

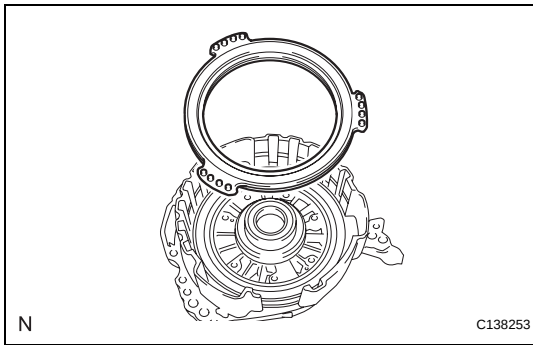


28. INSTALL NO. 1 BRAKE PISTON

- (a) Coat 2 new O-rings with ATF and install them to the No. 1 brake piston.

NOTICE:

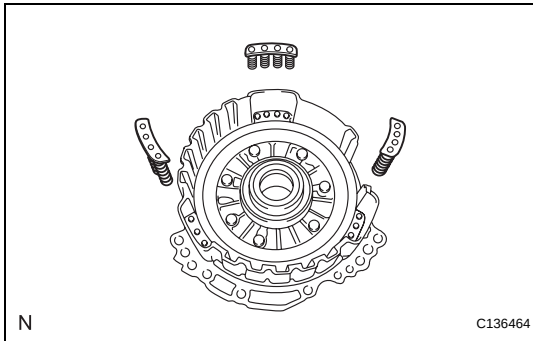
Ensure that the 2 O-rings are not twisted.



- (b) Install the No. 1 brake piston to the oil pump assembly.

NOTICE:

Be careful not to damage the O-rings.

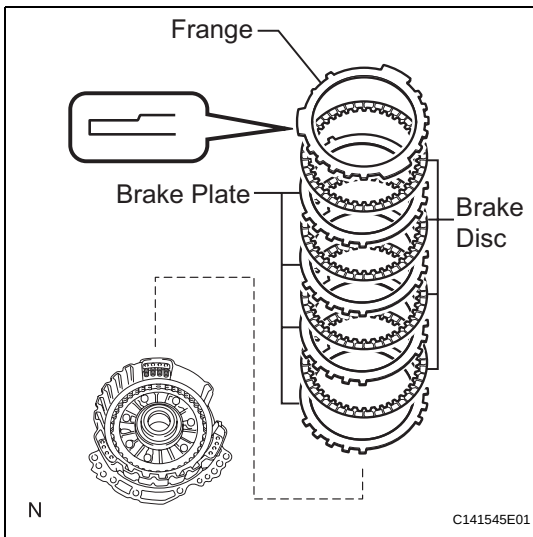


29. INSTALL 2ND BRAKE PISTON RETURN SPRING SUB-ASSEMBLY

- (a) Install the 3 2nd brake piston return springs to the oil pump assembly.

NOTICE:

Make sure that the 3 2nd brake piston return springs are installed straight through the protrusions on the oil pump assembly.

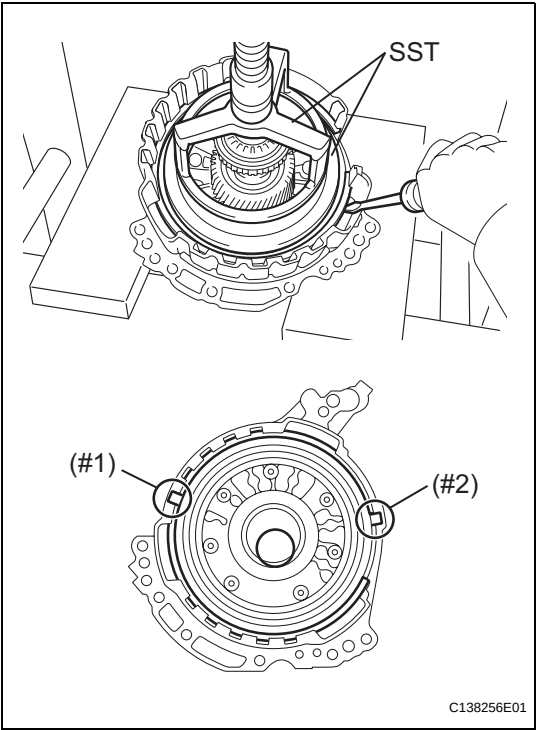


30. INSTALL NO. 1 BRAKE DISC

- (a) Install the 4 brake discs, 4 brake plates, and brake flange to the oil pump assembly.

NOTICE:

- **Make sure that the discs, plates, and flange are installed in the correct order.**
- **Be sure to install the flange in the correct direction.**



- (b) Place SST on the flange and compress the flange with a press.

SST 09387-00070, 09495-65040

NOTICE:

Stop the press when the brake piston return spring is flush with the snap ring groove. This prevents the brake piston return spring from being deformed.

- (c) Using a screwdriver, install the snap ring to the oil pump assembly as shown in the illustration (#1).

NOTICE:

- **Confirm the snap ring is fixed in the groove of the oil pump assembly.**
- **Be sure to align the opening ends of the snap ring with the protrusions on the oil pump assembly as shown in the illustration.**

- (d) Using a screwdriver, install the snap ring to the oil pump assembly as shown in the illustration (#2).

NOTICE:

- **Confirm that the snap ring is secured in the groove of the oil pump assembly.**
- **Be sure to align the opening ends of the snap ring with the protrusions on the oil pump assembly as shown in the illustration.**

31. INSPECT CLEARANCE OF NO. 1 BRAKE (See page [AX-288](#))

32. INSTALL UNDERDRIVE PLANETARY SUN GEAR

- (a) Coat the thrust needle roller bearing with ATF, and install it to the oil pump assembly.

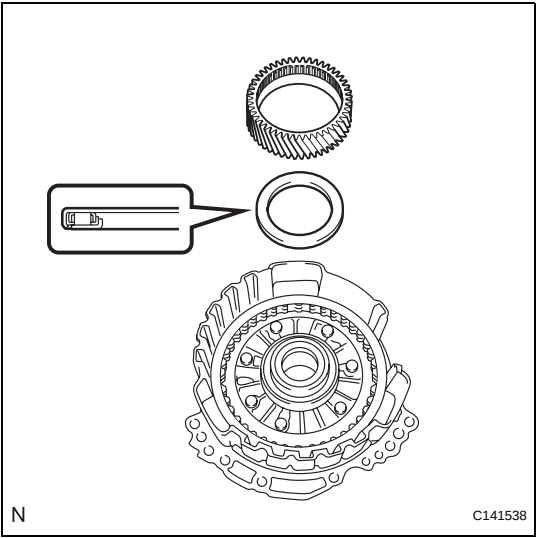
Bearing diameter: mm (in.)

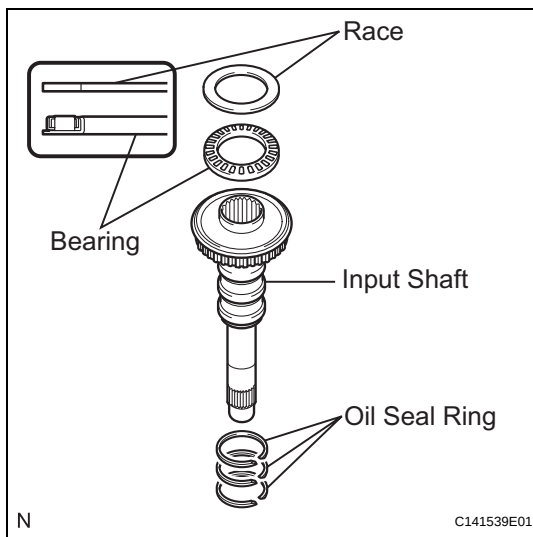
-	Inside	Outside
Bearing	57.7 (2.272)	75.2 (2.961)

NOTICE:

Install the thrust needle roller bearing properly so that the temper colored side of the race will be visible.

- (b) Install the underdrive planetary sun gear to the oil pump assembly.





33. INSTALL INPUT SHAFT SUB-ASSEMBLY

- (a) Coat the 3 input shaft oil seal rings with ATF and install them to the input shaft.

NOTICE:

Do not expand the gap of the oil seal ring too much.

- (b) Coat the thrust needle roller bearing and thrust needle roller race with ATF, and install them on the oil pump assembly.

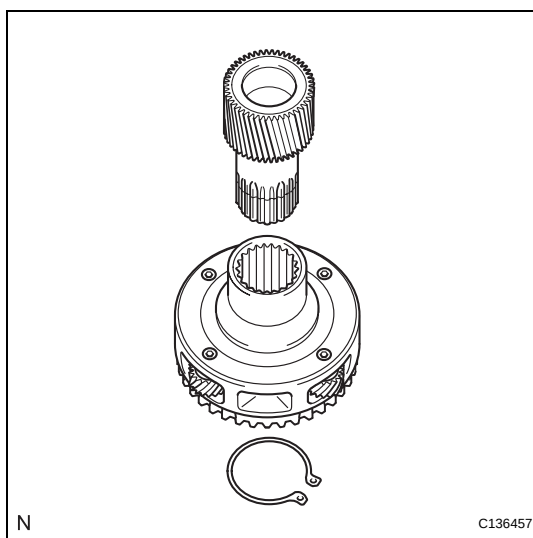
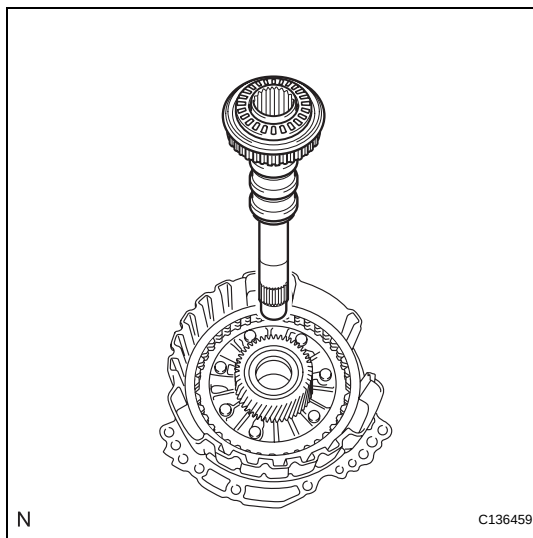
Bearing diameter: mm (in.)

-	Inside	Outside
Bearing	29.1 (1.146)	48.6 (1.913)
Race	30.7 (1.209)	48.3 (1.902)

NOTICE:

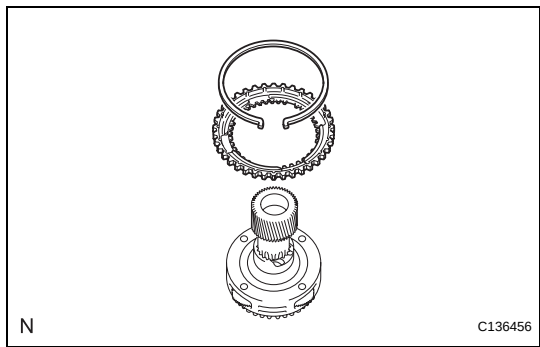
Be sure to install the thrust needle roller bearing in the correct direction.

- (c) Install the input shaft to the oil pump assembly.



34. INSTALL PLANETARY SUN GEAR SUB-ASSEMBLY

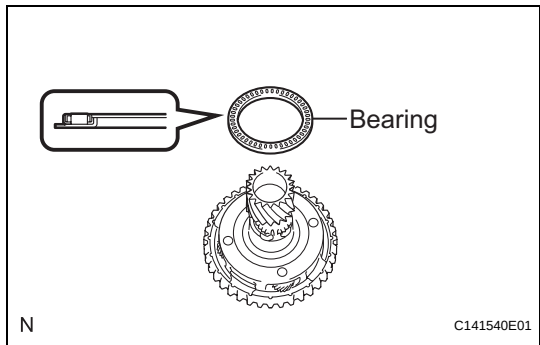
- (a) Using a snap ring expander, install the snap ring to the underdrive planetary gear assembly.
- (b) Using a snap ring expander, install the front planetary sun gear sub-assembly to the underdrive planetary gear assembly with the snap ring expanded.



35. INSTALL UNDERDRIVE PLANETARY RING GEAR

- (a) Install the underdrive planetary ring gear to the underdrive planetary gear assembly.
- (b) Using needle-nose pliers, install the snap ring to the underdrive planetary ring gear.

NOTICE:
Confirm that the snap ring is secured in the groove of the underdrive planetary ring gear.



36. INSTALL NO. 3 BRAKE HUB

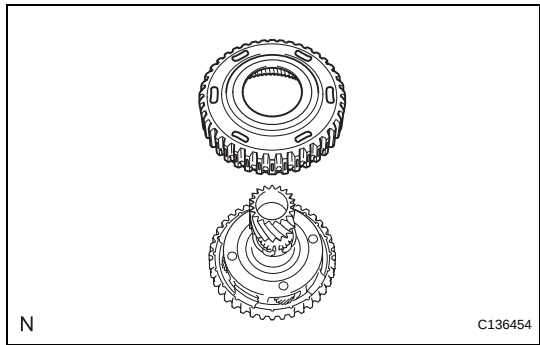
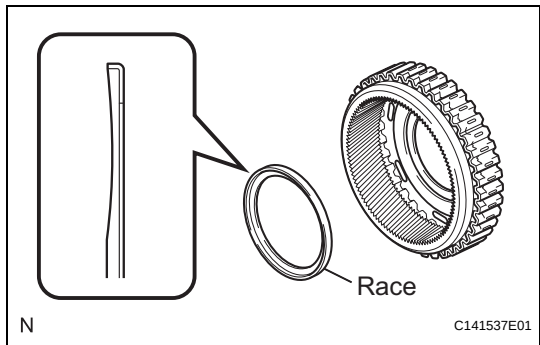
- (a) Coat the thrust needle roller bearing with ATF and install it on the underdrive planetary gear assembly.

Bearing diameter: mm (in.)

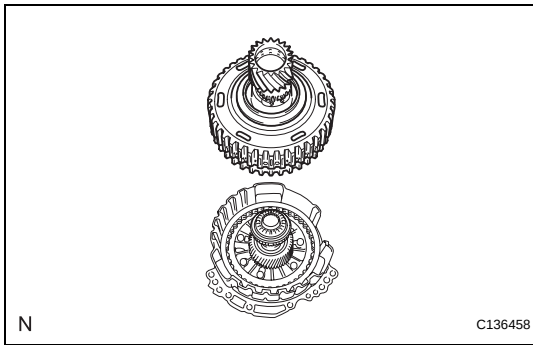
-	Inside	Outside
Bearing	62.6 (2.464)	82.9 (3.263)
Race	65.9 (2.594)	80.3 (3.161)

NOTICE:
Install the thrust needle roller bearing properly so that the temper colored side of the race will be visible.

- (b) Coat the race with MP grease and install it to the No. 3 brake hub.

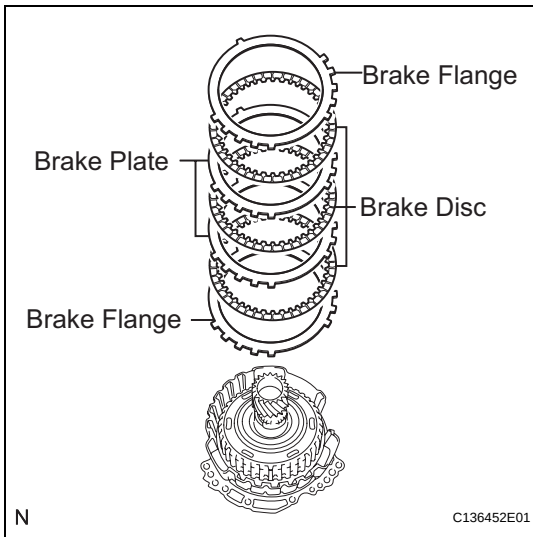


- (c) Install the No. 3 brake hub to the underdrive planetary gear assembly.



37. INSTALL UNDERDRIVE PLANETARY GEAR ASSEMBLY

- (a) Install the underdrive planetary gear assembly to the oil pump assembly.

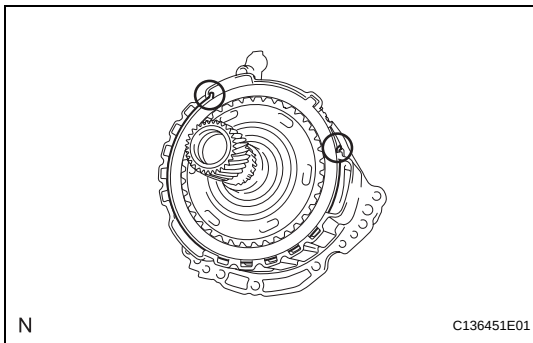


38. INSTALL NO. 3 BRAKE DISC

- (a) Install the 2 brake flanges, 3 brake discs, and 2 brake plates to the oil pump assembly.

NOTICE:

Make sure that the discs, plates, and flange are installed in the correct order.

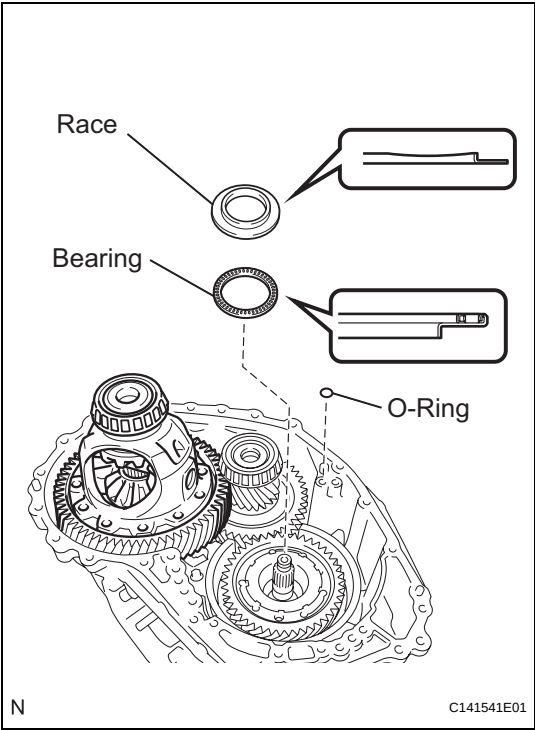


- (b) Using a screwdriver, install the snap ring to the oil pump assembly.

NOTICE:

- Confirm the snap ring is fixed in the groove of the oil pump.
- Be sure to align the opening ends of the snap ring with the protrusions on the brake piston return spring as shown in the illustration.

39. INSPECT CLEARANCE OF NO. 3 BRAKE



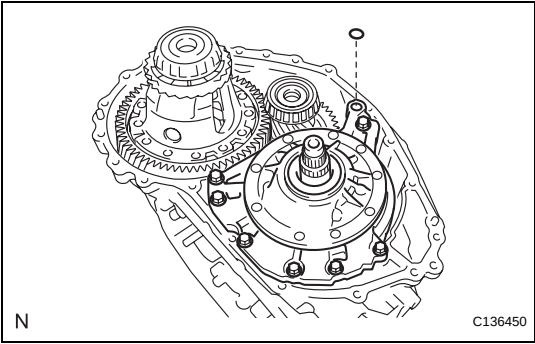
40. INSTALL FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY

- (a) Coat the O-ring with ATF and install it to the transaxle case.
- (b) Coat the thrust needle roller bearing and thrust needle roller race with ATF and install them on the underdrive planetary gear assembly.

Bearing and race diameter: mm (in.)

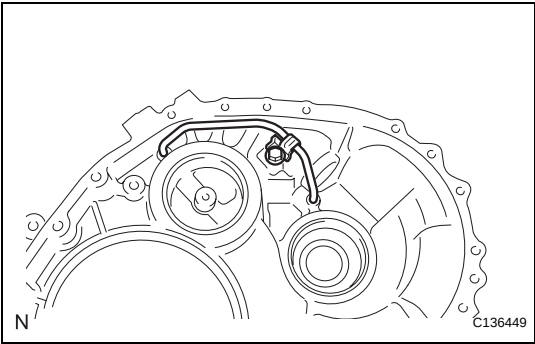
-	Inside	Outside
Bearing	53.1 (2.091)	79 (3.11)
Race	59.4 (2.339)	77 (3.03)

NOTICE:
Install the thrust needle roller bearing properly so that the temper colored side of the race will be visible.



- (c) Coat the O-ring with ATF and install it to the oil pump.
- (d) Install the oil pump assembly to the transaxle case with the 7 bolts.

Torque: 23 N*m (234 kgf*cm, 17 ft.*lbf)



41. INSTALL DIFFERENTIAL GEAR LUBE APPLY TUBE

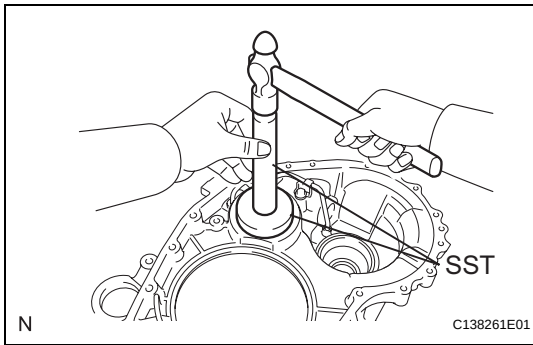
- (a) Install the differential gear lube apply tube to the transaxle housing.

NOTICE:
Insert the differential lube apply tube into the transaxle case until it makes contact with the stopper.

- (b) Install the apply tube clamp to the differential gear lube apply tube with the bolt.

Torque: 23 N*m (234 kgf*cm, 17 ft.*lbf)

NOTICE:
There should be clearance between the differential lube apply tube and apply tube clamp.



42. INSTALL COUNTER DRIVEN GEAR FRONT TAPERED ROLLER BEARING OUTER RACE

- Install the shim to the transaxle housing.
- Using SST, install a new counter driven gear front tapered roller bearing outer race to the transaxle housing.

SST 09950-60020 (09951-00810), 09950-70010 (09951-07100)

NOTICE:

Be sure to install the counter driven gear front tapered roller bearing outer race so that there is no clearance between the shim and the transaxle housing.

43. INSTALL TRANSAXLE HOUSING

- Remove packing material from the contact surface between the transaxle housing and case.

NOTICE:

Make sure that there is no ATF on the contact surface.

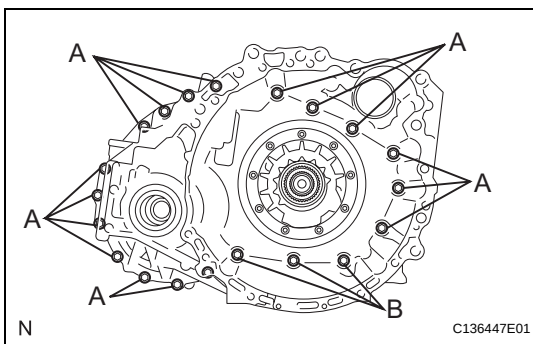
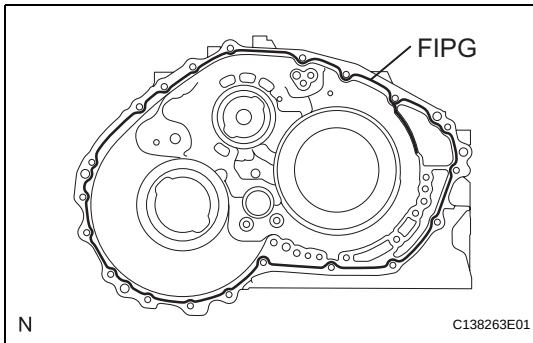
- Apply FIPG to the transaxle case.

FIPG:

Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent.

NOTICE:

Apply a bead of FIPG (width 1.2 mm (0.047 in.)) along the sealing surface.



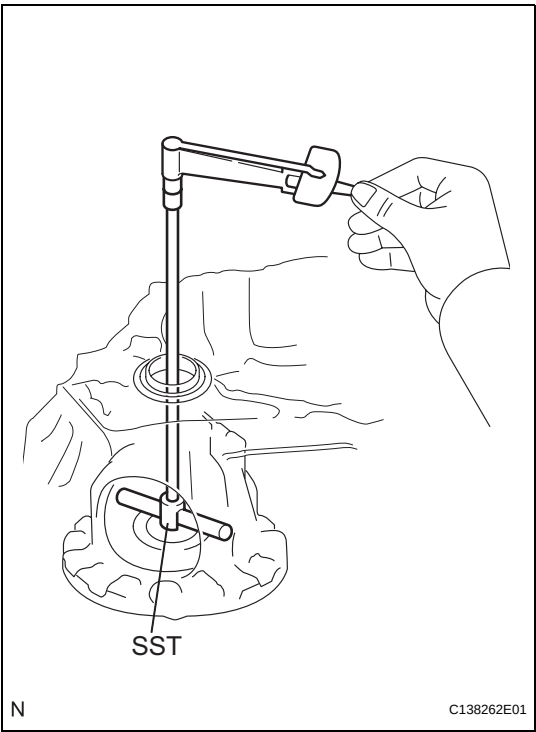
- Install the transaxle housing to the transaxle case with the 20 bolts.

Torque: Bolt A

31 N*m (316 kgf*cm, 23 ft.*lbf)

Bolt B

23 N*m (234 kgf*cm, 17 ft.*lbf)



44. ADJUST COUNTER DRIVEN GEAR PRELOAD

- (a) Using SST and a torque wrench, measure the turning torque of the counter driven gear while rotating SST at 10 rpm.

SST 09564-33010

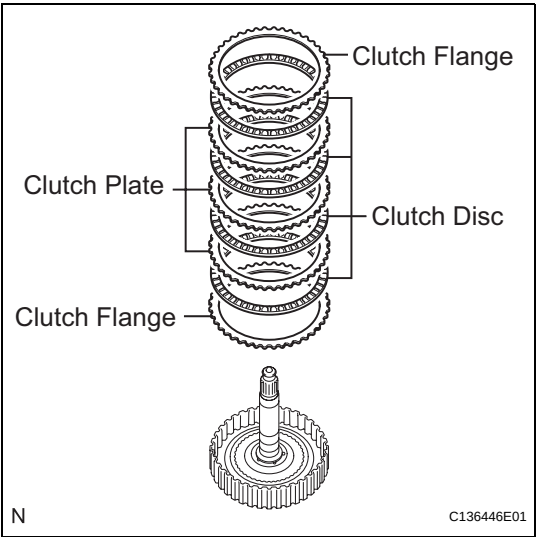
Turning torque:

Differential side bearing preload 3.29 to 6.07

N*m (33.53 to 61.86 kgf*cm, 2.42 to 4.46 ft.*lbf)

If the turning torque is not within the specified range, refer to the table below to select a shim of the counter driven gear front tapered roller bearing outer race so that the turning torque is within the specified range.

Thickness	Thickness	Thickness	Thickness
2.000 (0.0787)	2.275 (0.0896)	2.525 (0.0994)	2.775 (0.1093)
2.025 (0.0797)	2.300 (0.0906)	2.550 (0.1004)	2.800 (0.1102)
2.050 (0.0807)	2.325 (0.0915)	2.575 (0.1014)	2.825 (0.1112)
2.075 (0.0817)	2.350 (0.0925)	2.600 (0.1024)	2.850 (0.1122)
2.100 (0.0827)	2.375 (0.0935)	2.625 (0.1034)	2.875 (0.1132)
2.125 (0.0837)	2.400 (0.0945)	2.650 (0.1043)	2.900 (0.1142)
2.150 (0.0847)	2.425 (0.0955)	2.675 (0.1053)	2.925 (0.1152)
2.175 (0.0856)	2.450 (0.0965)	2.700 (0.1063)	2.950 (0.1161)
2.200 (0.0866)	2.475 (0.0974)	2.725 (0.1073)	2.975 (0.1171)
2.225 (0.0876)	2.500 (0.0984)	2.750 (0.1083)	3.000 (0.1181)
2.250 (0.0886)	-	-	-

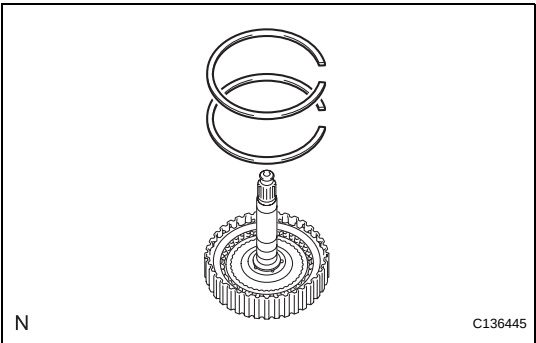


45. INSTALL NO. 1 CLUTCH DISC

- (a) Install the clutch flange, 4 clutch discs, and 4 clutch plates to the direct multiple disc clutch assembly.

NOTICE:

Make sure that the flange, discs, and plates are installed in the correct order.

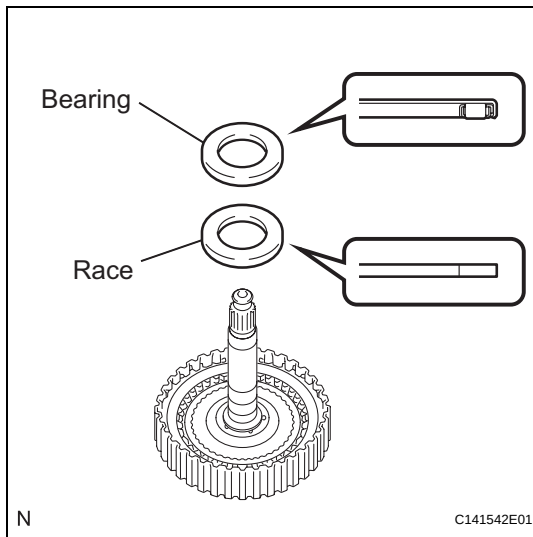


- (b) Using a screwdriver, install the 2 snap rings to the direct multiple disc clutch assembly.

NOTICE:

Confirm that the snap ring is secured in the groove of the direct multiple disc clutch assembly.

46. INSPECT CLEARANCE OF NO. 1 CLUTCH DISC (See page AX-289)

**47. INSTALL REAR PLANETARY SUN GEAR ASSEMBLY**

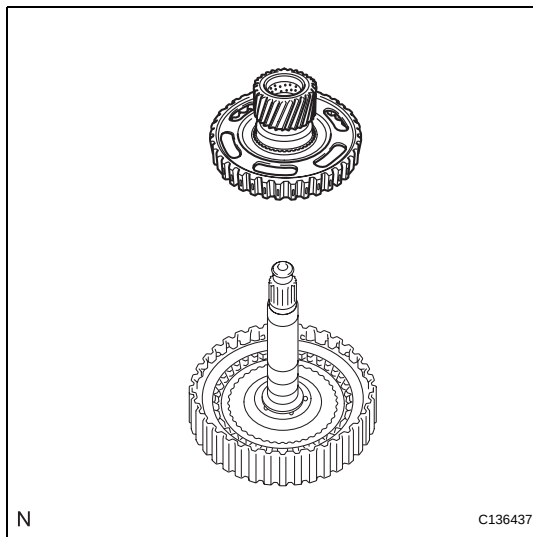
- (a) Coat the thrust needle roller bearing and thrust needle roller race with ATF, and install them to the direct multiple disc clutch assembly.

Bearing and race diameter: mm (in.)

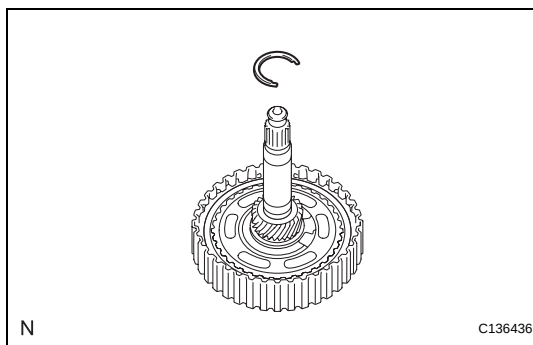
-	Inside	Outside
Bearing	28 (1.10)	47.1 (1.854)
Race	26.1 (1.028)	44 (1.73)

NOTICE:

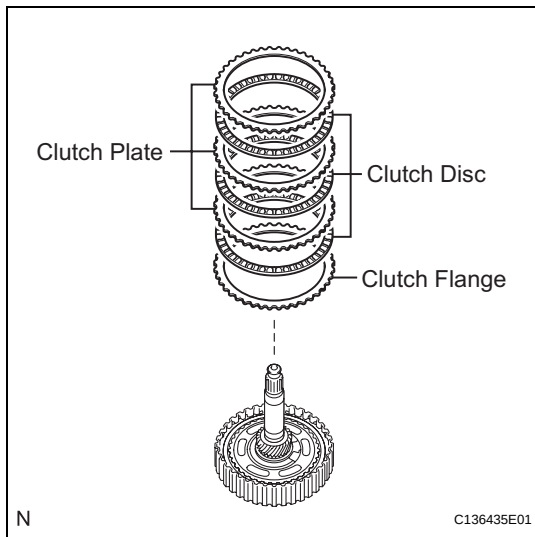
Install the thrust needle roller bearing properly so that the temper colored side of the race will be visible.



- (b) Install the rear planetary sun gear to the direct multiple disc clutch assembly.



- (c) Using a snap ring expander, install the snap ring to the direct multiple disc clutch assembly.

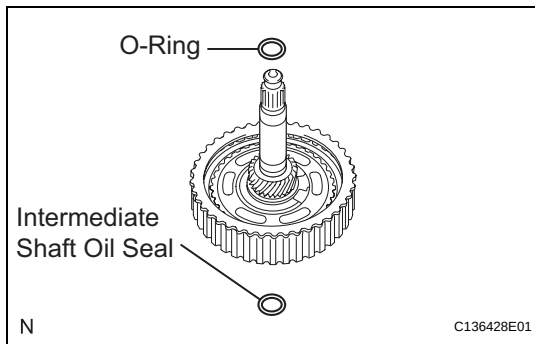


48. INSTALL NO. 2 CLUTCH DISC

- (a) Install the clutch flange, 3 clutch discs, and 3 clutch plates to the direct multiple disc clutch assembly.

NOTICE:

Make sure that the flange, discs, and plates are installed in the correct order.



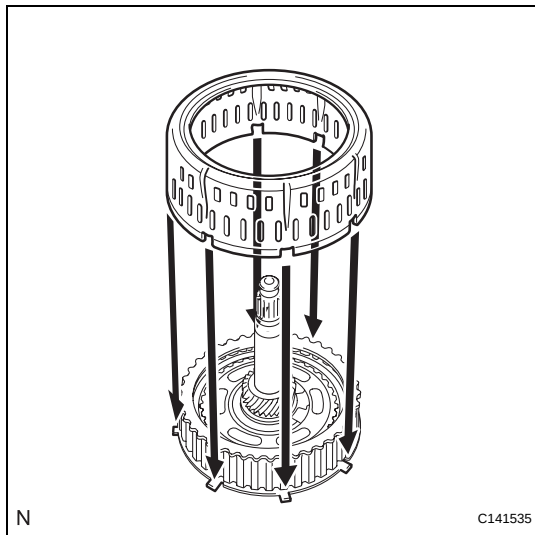
49. INSTALL DIRECT MULTIPLE DISC CLUTCH SNAP RING

- (a) Coat a new O-ring with ATF and install it to the direct multiple disc clutch assembly.
- (b) Coat a new intermediate shaft oil seal ring with ATF and install it to the intermediate shaft.

- (c) Install the No. 2 direct clutch piston to the direct multiple disc clutch assembly.

NOTICE:

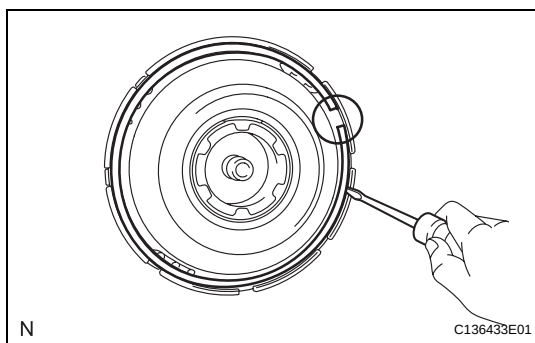
Be sure to engage the claws on the direct multiple disc clutch assembly to the grooves on the No. 2 direct clutch piston.



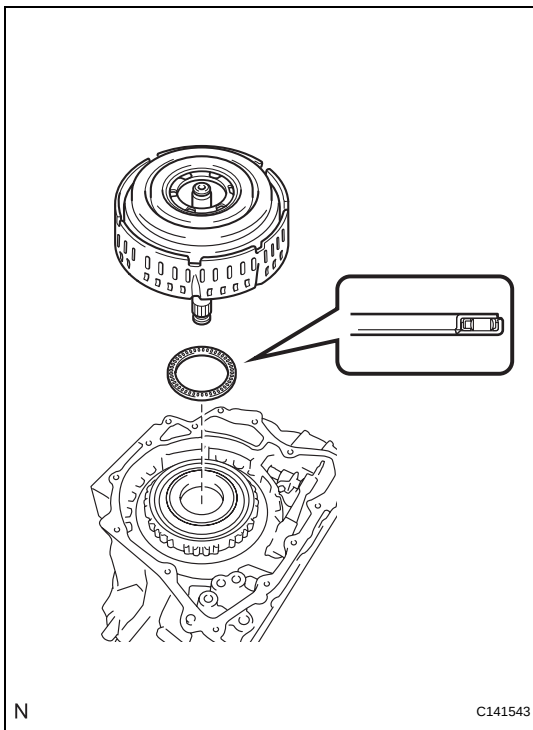
- (d) Using a screwdriver, install the snap ring to the direct multiple disc clutch assembly.

NOTICE:

Position the opening of the snap ring as shown in the illustration.



50. INSPECT CLEARANCE OF NO. 2 CLUTCH DISC (See page [AX-289](#))



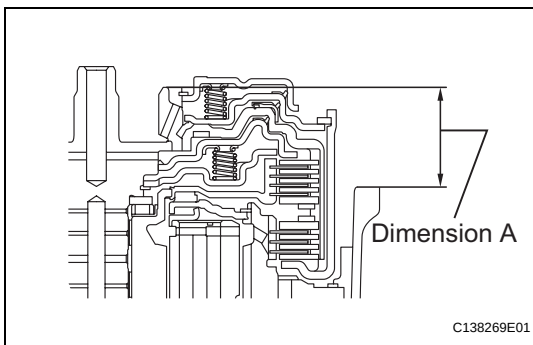
51. INSTALL REAR MULTIPLE DISC CLUTCH ASSEMBLY

- (a) Coat the thrust needle roller bearing with ATF and install it on the transaxle case.

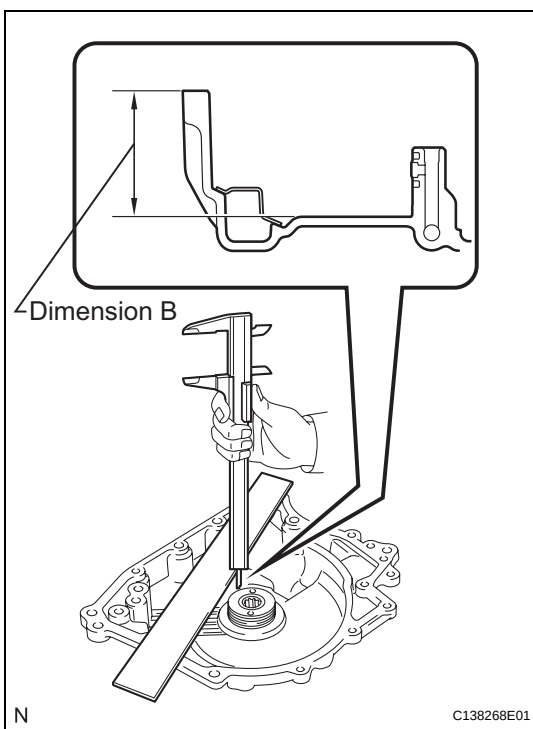
Bearing diameter: mm (in.)

-	Inside	Outside
Bearing	61.2 (2.409)	79 (3.11)

- (b) Install the direct multiple disc clutch assembly to the transaxle case.
- (c) Clean the contact surface of the transaxle case and transaxle rear cover.



- (d) As shown in the illustration, place a straight edge on the multiple direct clutch drum and measure the distance between the transaxle case and the straight edge using vernier calipers (Dimension A).

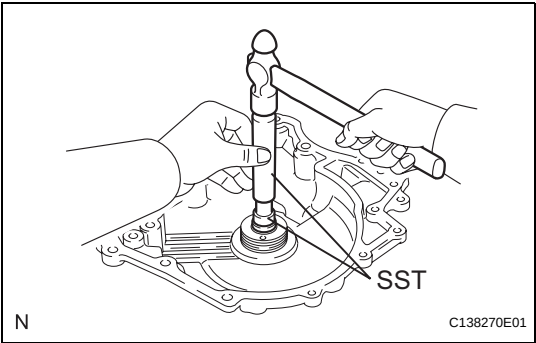


- (e) Using vernier calipers and a straight edge, measure the distance shown in the illustration. (Dimension B)
- (f) Calculate the end play value using the following formula:

End play = Dimension B - Dimension A

End play:

0.007 to 1.113 mm (0.0003 to 0.0438 in.)



52. INSTALL TRANSAXLE REAR COVER SUB-ASSEMBLY

- (a) Using SST and a hammer, install the needle roller bearing into the transaxle rear cover.

SST 09950-60010 (09951-00220), 09950-70010 (09951-07100)

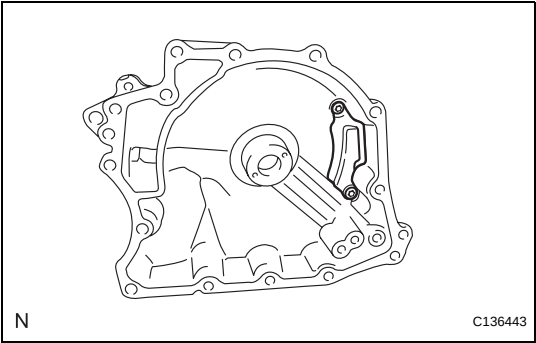
Press installation depth:
21.5 to 21.9 mm (0.8464 to 0.8622 in.)

- (b) Apply adhesive to the 2 "TORX" screws.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

- (c) Using a "TORX" wrench (T30), install the transaxle rear cover plate to the transaxle rear cover with the 2 "TORX" screws.

Torque: 7.5 N*m (76 kgf*cm, 66 in.*lbf)

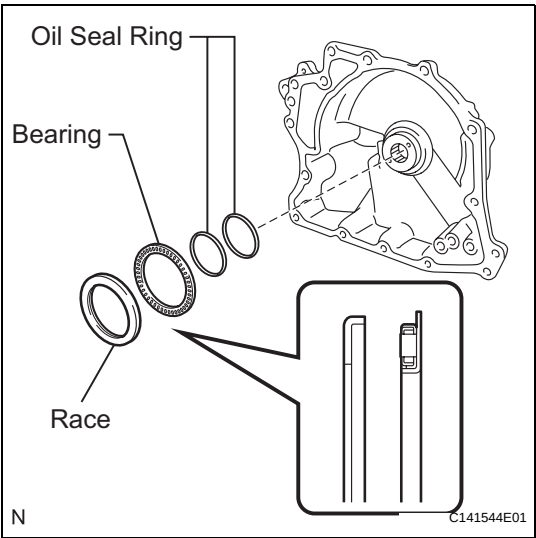


- (d) Coat the thrust needle roller bearing and thrust needle roller race with ATF and install it on the transaxle case.

Bearing diameter: mm (in.)

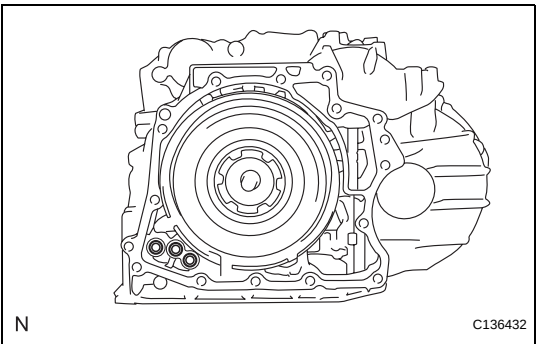
-	Inside	Outside
Bearing	48.9 (1.925)	72.0 (2.835)
Race	52.2 (2.055)	70.4 (2.772)

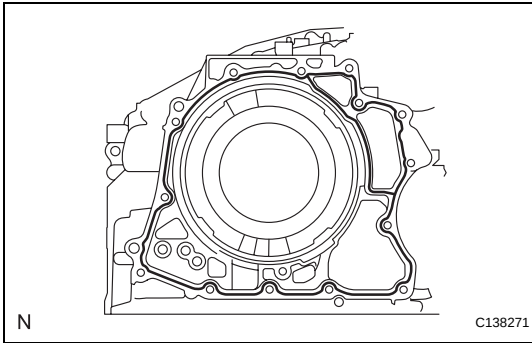
- (e) Coat the 2 new oil seals with ATF and install them to the transaxle rear cover.



- (f) Coat the 3 O-rings with ATF and install them to the transaxle case.

NOTICE:
Ensure that the 3 O-rings are not twisted.





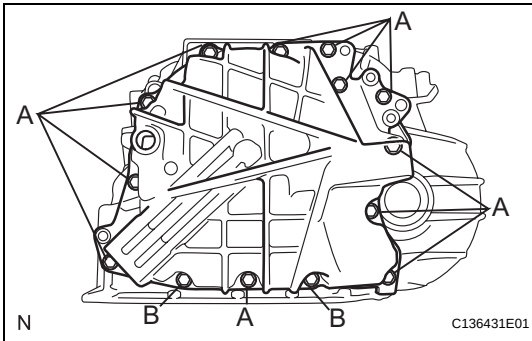
- (g) Remove packing material from the contact surfaces between the transaxle rear cover and transaxle case.

NOTICE:

Make sure that there is no ATF on the contact surface.

FIPG:

Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent.



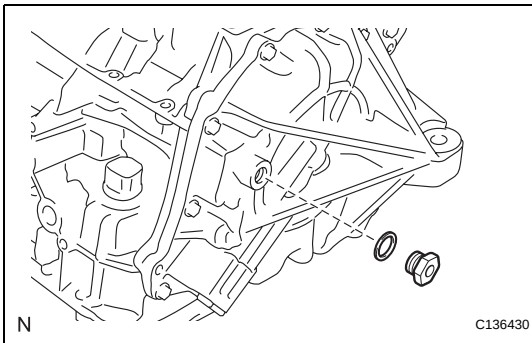
- (h) Install the transaxle rear cover to the transaxle case with the 14 bolts.

Torque: Bolt A

23 N*m (234 kgf*cm, 17 ft.*lbf)

Bolt B

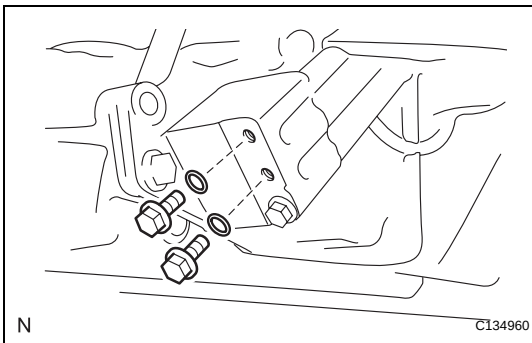
17 N*m (173 kgf*cm, 12 ft.*lbf)



- (i) Install a new gasket to the refill plug.

- (j) Install the refill plug to the transaxle rear cover.

Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

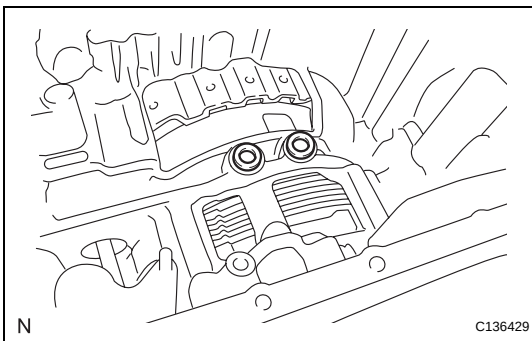


- (k) Coat 2 new O-rings with ATF and install them to the 2 No. 1 automatic transaxle case plugs.

- (l) Install the 2 No. 1 automatic transaxle case plugs to the transaxle rear cover.

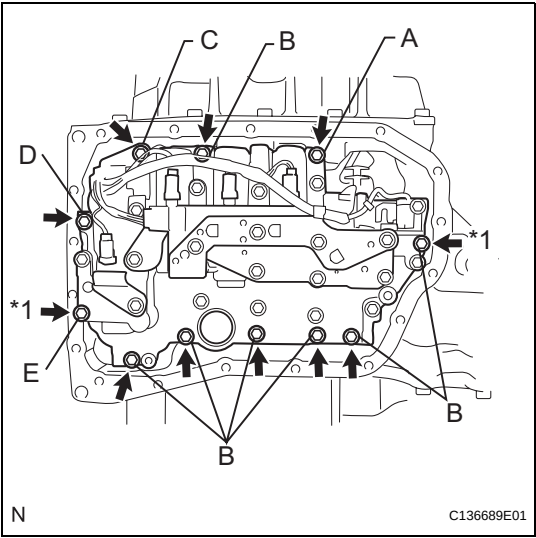
Torque: 7.4 N*m (75 kgf*cm, 65 in.*lbf)

53. INSPECT INPUT SHAFT END PLAY (See page [AX-284](#))



54. INSTALL TRANSAXLE CASE GASKET

- (a) Coat the 2 gaskets with ATF and install them to the transaxle case.



55. INSTALL TRANSMISSION VALVE BODY ASSEMBLY

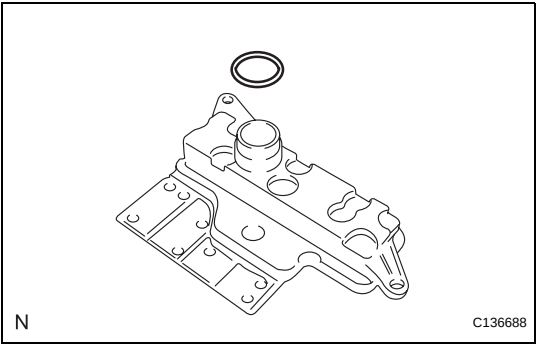
- (a) Install the valve body assembly to the transaxle case with the 11 bolts.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

-	Bolt length
Bolt A	25 mm (0.98 in.)
Bolt B	30 mm (1.18 in.)
Bolt C	35 mm (1.38 in.)
Bolt D	45 mm (1.77 in.)
Bolt E	55 mm (2.17 in.)

NOTICE:

- When installing the transmission valve body assembly, be careful not to allow the transmission revolution sensor and transaxle case to interfere each other.
- Be sure to insert the pin of the manual valve lever into the groove on the end of the manual valve.
- First, temporarily tighten the bolts marked by (*1) in the illustration because they are positioning bolts.

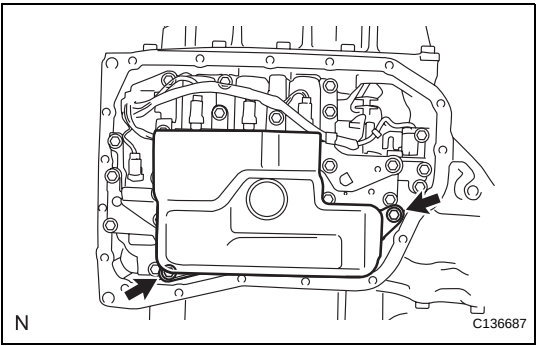


56. INSTALL VALVE BODY OIL STRAINER ASSEMBLY

- (a) Coat a new O-ring with ATF and install it to the oil strainer assembly.

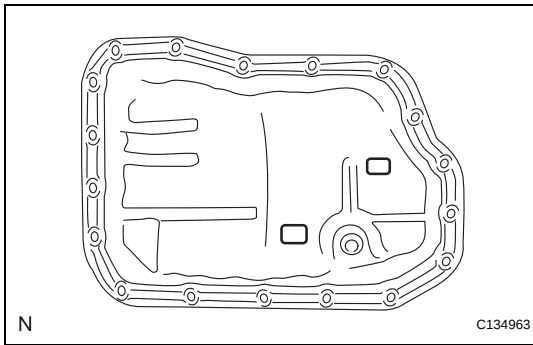
NOTICE:

Ensure that the O-ring is not twisted or pinched.



- (b) Install the oil strainer assembly to the valve body assembly with the 2 bolts.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

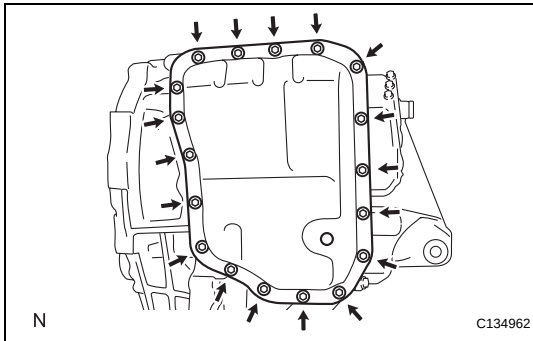


57. INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY

- Install the 2 magnets in the automatic transaxle oil pan sub-assembly.
- Apply adhesive to the 18 bolts.

Adhesive:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent.



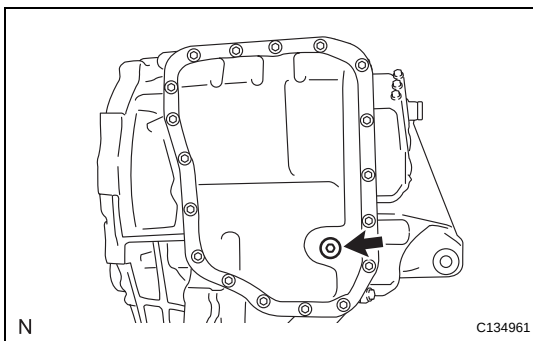
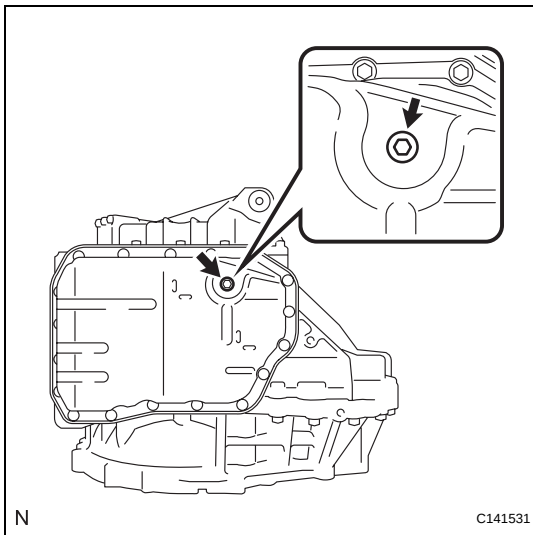
- Install the automatic transaxle oil pan sub-assembly and a new gasket to the transaxle case with the 18 bolts.

Torque: 7.5 N*m (76 kgf*cm, 66 in.*lbf)

NOTICE:

- In order to ensure proper sealing of the transmission pan bolts, apply adhesive to the bolts and install them within 10 minutes of adhesive application.
- Completely remove any oil or grease from the contact surface of the transaxle case and oil pan sub-assembly with the gasket before installation.

- Install the No. 1 oil filler tube from the automatic transaxle assembly.



- Install the overflow plug and a new gasket to the oil pan sub-assembly.

Torque: 40 N*m (408 kgf*cm, 30 ft.*lbf)

58. INSTALL NO. 1 TRANSAXLE CASE PLUG

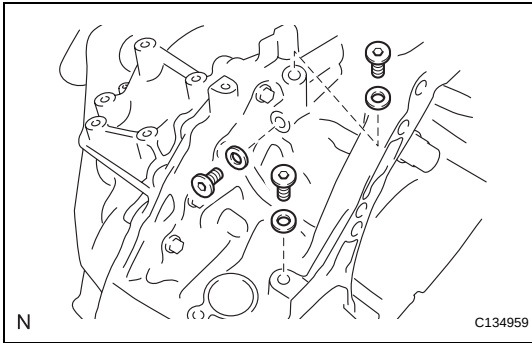
- Install the 3 gaskets to the 3 hexagon bolts.
- Apply adhesive to the 3 hexagon bolts.

Adhesive:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent.

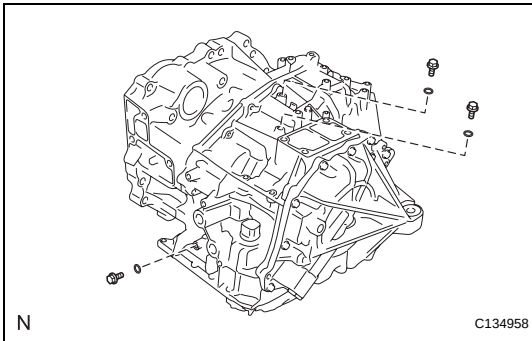
NOTICE:

In order to ensure proper sealing of the hexagon bolts, apply adhesive to the bolts and install them within 10 minutes of adhesive application.



- (c) Install the 3 hexagon bolts to the transaxle housing with the gaskets.

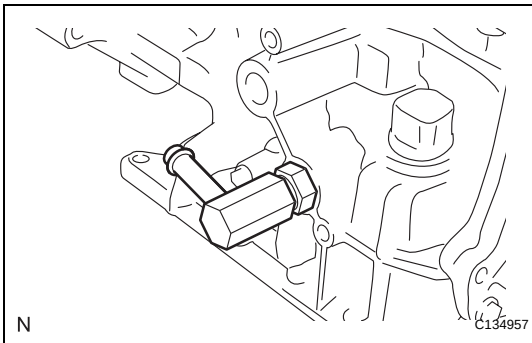
Torque: 29 N*m (296 kgf*cm, 21 ft.*lbf)



- (d) Coat 3 new O-rings with the ATF and install them to the 3 No. 1 transaxle case plugs.

- (e) Install the 3 No. 1 transaxle case plugs to the transaxle case.

Torque: 7.4 N*m (75 kgf*cm, 65 in.*lbf)

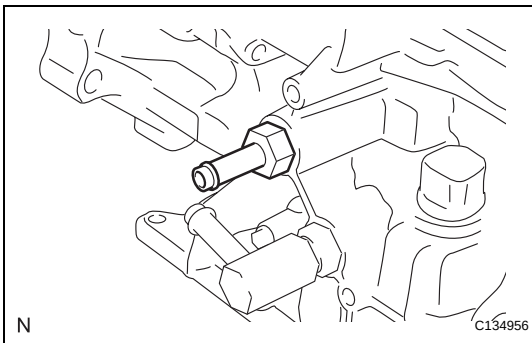


59. INSTALL OIL COOLER TUBE UNION (OUTLET OIL COOLER UNION)

- (a) Coat a new O-ring with ATF and install it to the oil cooler tube union (outlet oil cooler union).

- (b) Install the oil cooler tube union (outlet oil cooler union) to the transaxle case as shown in the illustration.

Torque: 27 N*m (275 kgf*cm, 20 ft.*lbf)

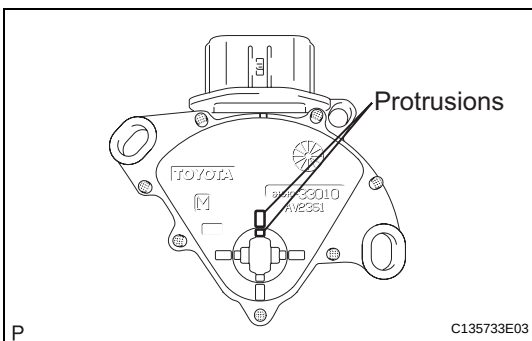


60. INSTALL OIL COOLER TUBE UNION (INLET OIL COOLER UNION)

- (a) Coat a new O-ring with ATF and install it to the oil cooler tube union (inlet oil cooler union).

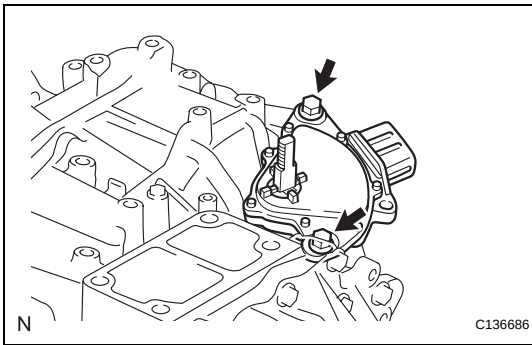
- (b) Install the oil cooler tube union (inlet oil cooler union) to the transaxle case.

Torque: 27 N*m (275 kgf*cm, 20 ft.*lbf)



61. INSTALL PARK/NEUTRAL POSITION SWITCH ASSEMBLY

- (a) Align the protrusions of the park/neutral position switch.

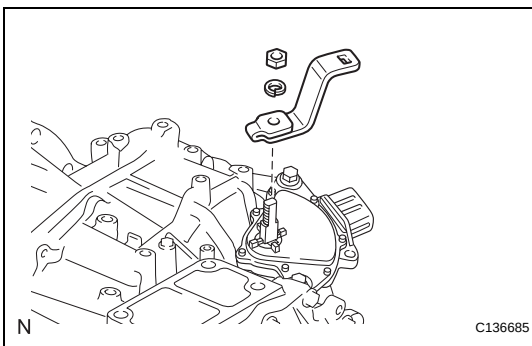


- (b) Install the park/neutral position switch to the control shaft with the 2 bolts.

Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

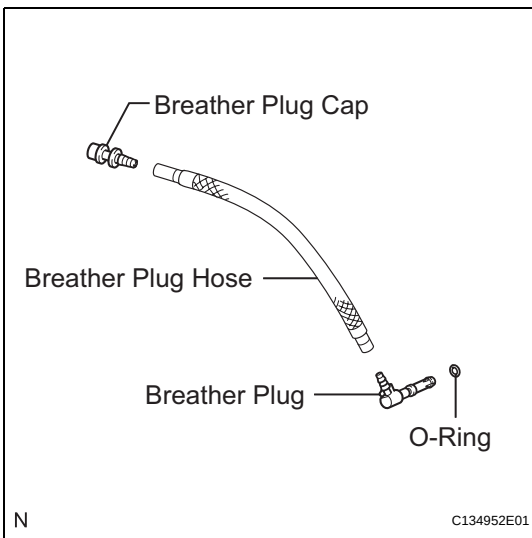
NOTICE:

- Before installing the park/neutral position switch, remove any dirt or rust on the installation portion of the control shaft. Be sure to install the switch straight along the shaft while being careful not to deform the plate spring that supports the shaft. If the plate spring is deformed, the park/neutral switch cannot be reinstalled correctly.
- After installing the park/neutral position switch, confirm that the 2 protrusions on the switch are aligned.



- (c) Install the control shaft lever to the control shaft with the washer and nut.

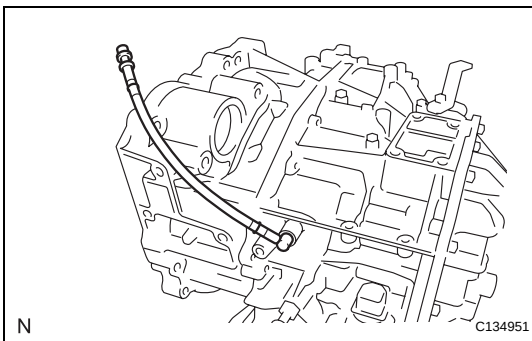
Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)



62. INSTALL BREATHER PLUG HOSE

- (a) Install a new O-ring to the breather plug.
 (b) Install the breather plug to the breather plug hose.
 (c) Install the breather plug cap to the breather plug hose.

AX

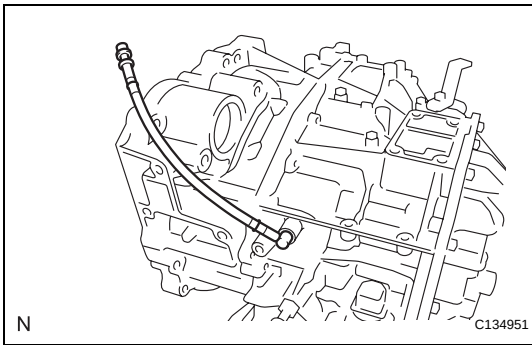


- (d) Install the breather plug hose to the transaxle case.

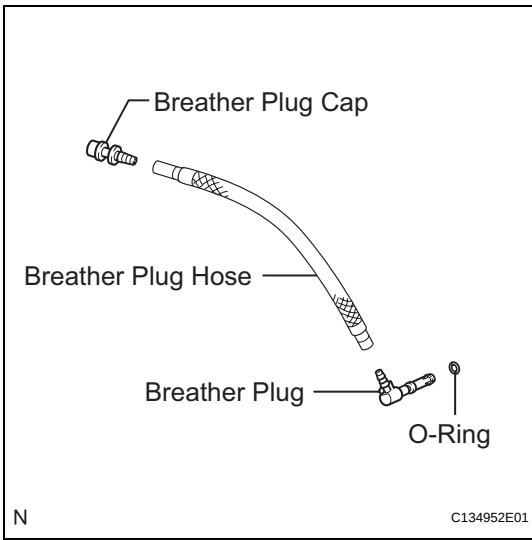
DISASSEMBLY

1. REMOVE NO. 2 BREATHER PLUG

- (a) Using a screwdriver, remove the breather plug hose from the transaxle case.

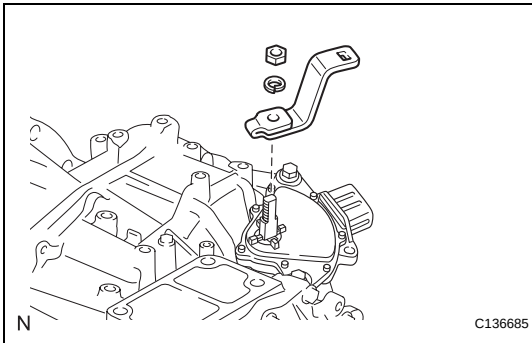


- (b) Using a screwdriver, remove the breather plug from the breather plug hose.
 (c) Using a screwdriver, remove the O-ring from the breather plug.
 (d) Using a screwdriver, remove the breather plug cap from the breather breather plug hose.



2. REMOVE PARK/NEUTRAL POSITION SWITCH ASSEMBLY

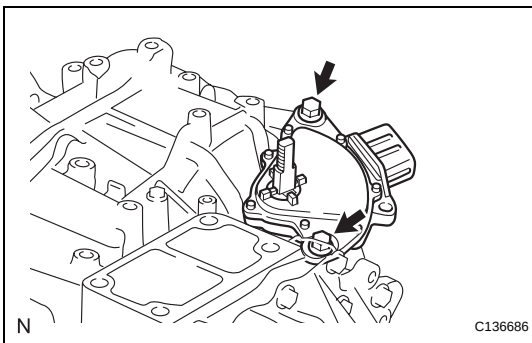
- (a) Remove the nut, washer, and control shaft lever from the control shaft.

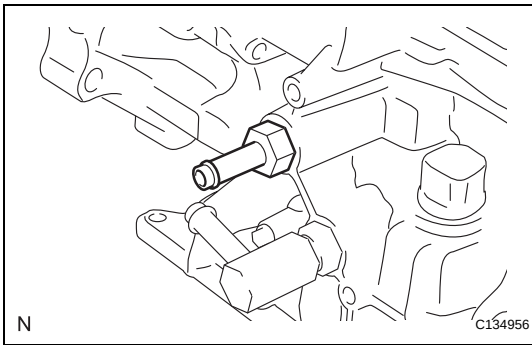


- (b) Remove the 2 bolts and the park/neutral position switch assembly from the transaxle case.

NOTICE:

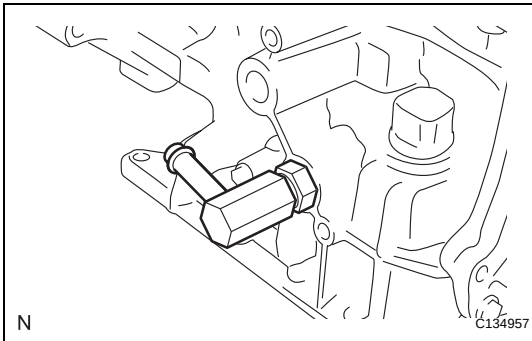
Before removing the park/neutral position switch, remove any dirt or rust on the installation portion of the control shaft. Be sure to remove the switch straight along the shaft while being careful not to deform the plate spring that supports the shaft. If the plate spring is deformed, the park/neutral switch cannot be reinstalled correctly.





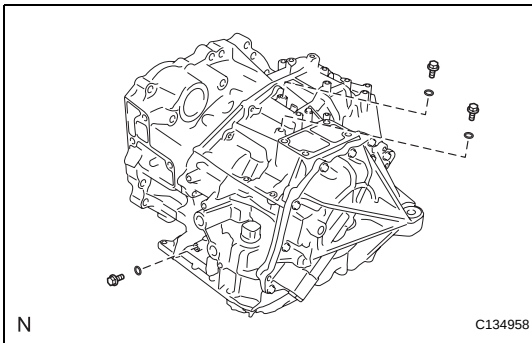
3. REMOVE OIL COOLER TUBE UNION (INLET OIL COOLER UNION)

- Loosen the nut while holding the oil cooler tube union (inlet oil cooler union).
- Remove the oil cooler tube union (inlet oil cooler union) from the transaxle case.
- Remove the O-ring from the oil cooler tube union (inlet oil cooler union).



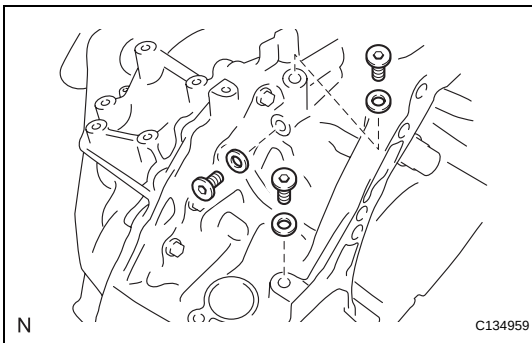
4. REMOVE OIL COOLER TUBE UNION (OUTLET OIL COOLER UNION)

- Loosen the nut while holding the oil cooler tube union (outlet oil cooler union).
- Remove the oil cooler tube union (outlet oil cooler union) from the transaxle case.
- Remove the O-ring from the oil cooler tube union (outlet oil cooler union).

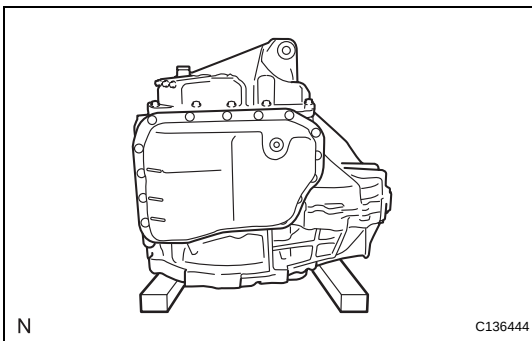


5. REMOVE NO. 1 TRANSAXLE CASE PLUG

- Remove the 3 No. 1 transaxle case plugs from the transaxle case.
- Using a screwdriver, remove the 3 O-rings from the 3 No. 1 transaxle case plugs.

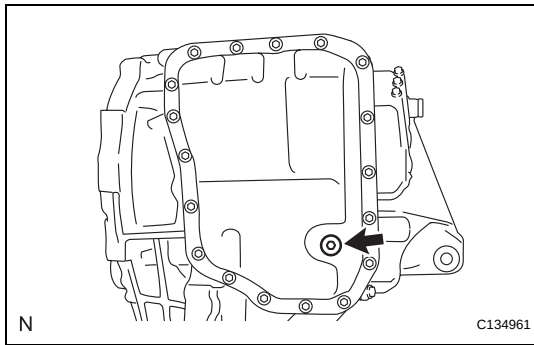


- Using a hexagon wrench (6 mm), remove the 3 hexagon bolts from the transaxle housing.
- Remove the 3 gaskets from the 3 hexagon bolts.



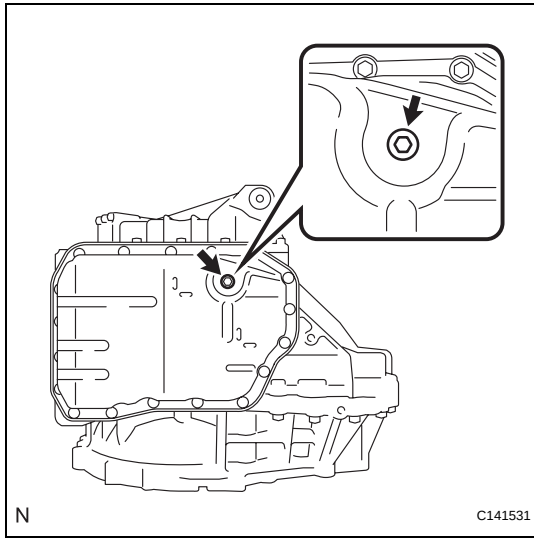
6. FIX AUTOMATIC TRANSAXLE ASSEMBLY

- Secure the transaxle assembly on wooden blocks.

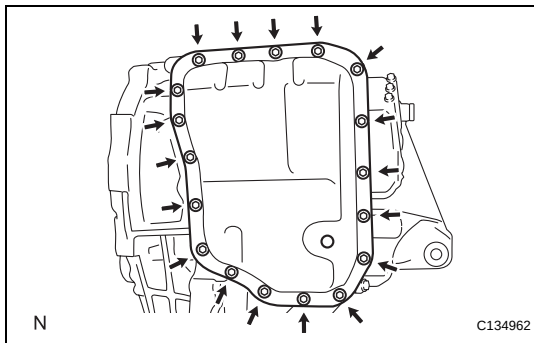


7. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY

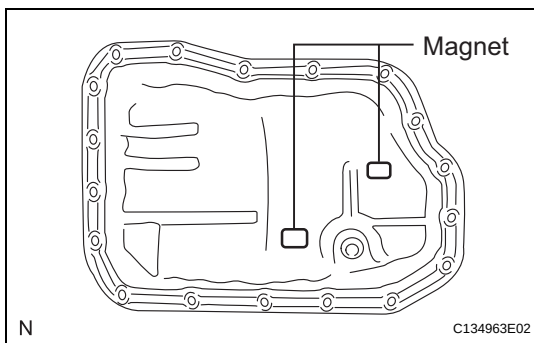
- (a) Using a hexagon wrench (6 mm), remove the overflow plug from the automatic transaxle oil pan sub-assembly.
- (b) Remove the gasket from the overflow plug.
- (c) Using a hexagon wrench (6 mm), remove the No. 1 oil filler tube from the automatic transaxle assembly.



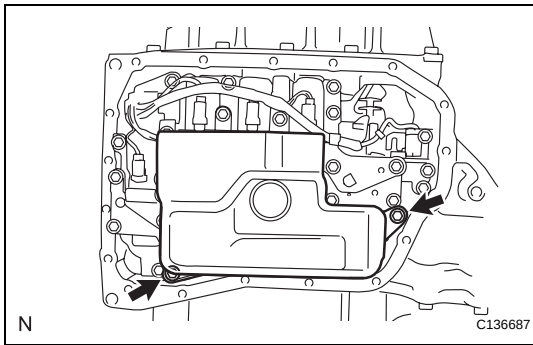
- (d) Remove the 18 bolts, automatic transaxle oil pan sub-assembly, and gasket from the automatic transaxle assembly.



- (e) Remove the 2 magnets from the automatic transaxle oil pan sub-assembly.

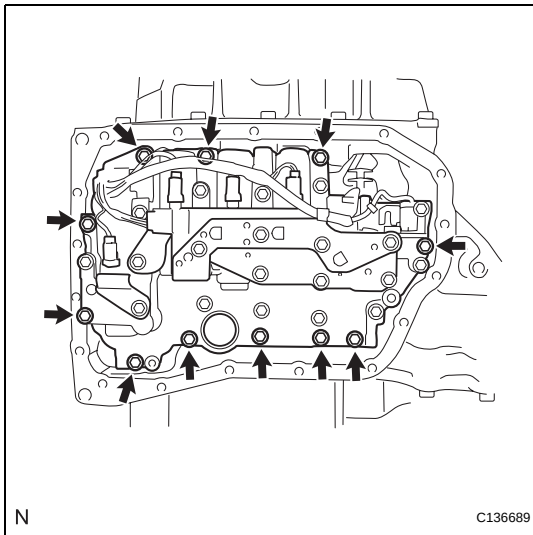
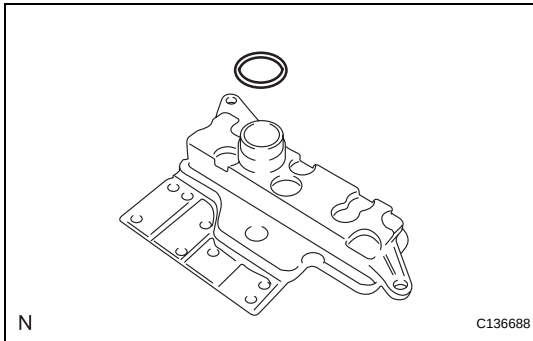


8. INSPECT TRANSMISSION OIL CLEANER MAGNET (See page [AX-283](#))

**9. REMOVE VALVE BODY OIL STRAINER ASSEMBLY**

- (a) Remove the 2 bolts and oil strainer assembly from the valve body assembly.

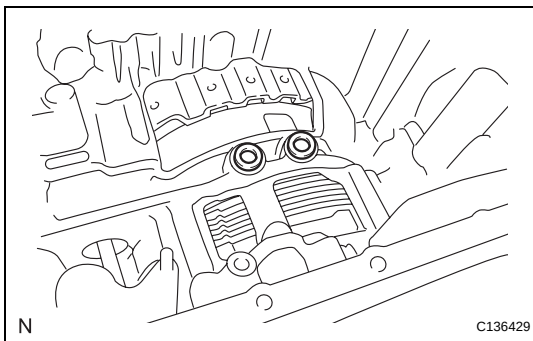
- (b) Remove the O-ring from the oil strainer assembly.

**10. REMOVE TRANSMISSION VALVE BODY ASSEMBLY**

- (a) Remove the 11 bolts and valve body assembly from the transaxle case.

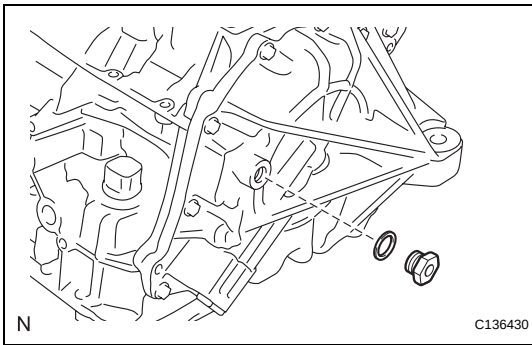
NOTICE:

When removing the transmission valve body assembly, be careful not to allow the transmission revolution sensor and the transaxle case to interfere each other.

**11. REMOVE TRANSAXLE CASE GASKET**

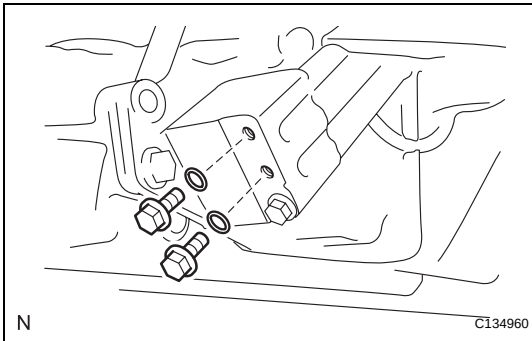
- (a) Remove the 2 gaskets from the transaxle case.

12. INSPECT INPUT SHAFT SUB-ASSEMBLY (See page [AX-284](#))

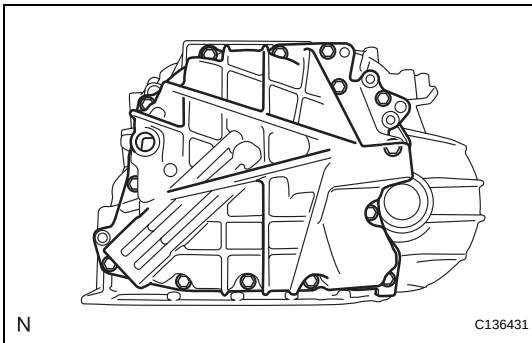


13. REMOVE TRANSAXLE REAR COVER SUB-ASSEMBLY

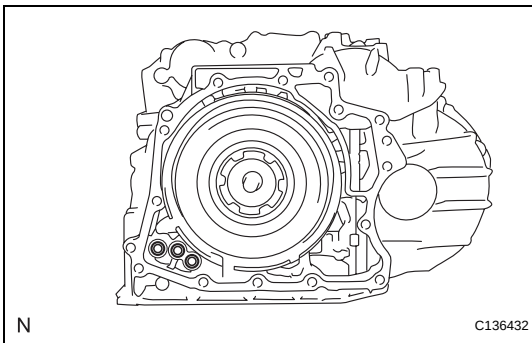
- (a) Remove the refill plug from the transaxle rear cover.
- (b) Remove the gasket from the refill plug.



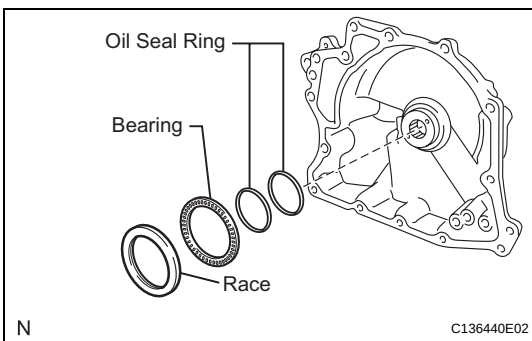
- (c) Remove the 2 No. 1 automatic transaxle case plugs from the transaxle rear cover.
- (d) Using a screwdriver, remove the 2 O-rings from the 2 No. 1 automatic transaxle case plugs.



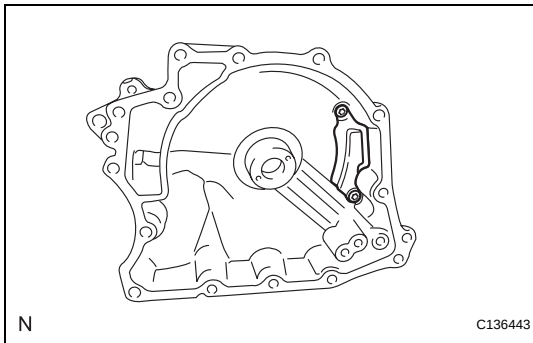
- (e) Remove the 14 bolts from the transaxle rear cover.
- (f) Using a brass bar and hammer, tap on the circumference of the rear transaxle cover, to remove the transaxle rear cover from the transaxle case.



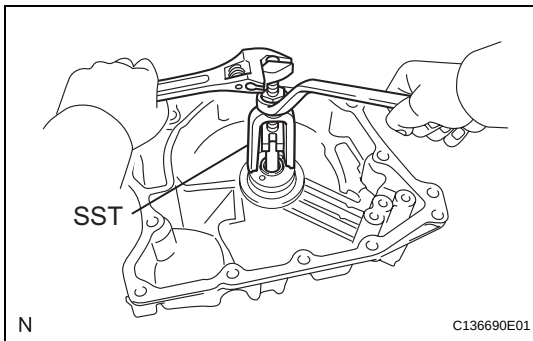
- (g) Using a screwdriver, remove the 3 O-rings from the transaxle case.



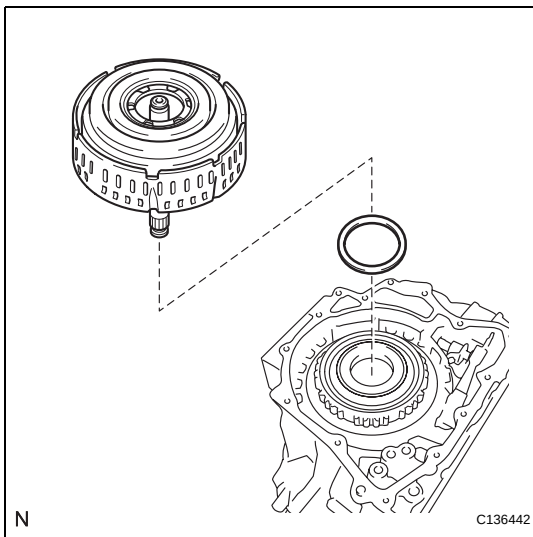
- (h) Using a screwdriver, remove the 2 oil seal rings from the transaxle rear cover.
- (i) Remove the thrust needle roller bearing and thrust needle roller race from the transaxle rear cover.



- (j) Using a "TORX" wrench (T30), remove the 2 "TORX" screws and transaxle rear cover plate from the transaxle rear cover.

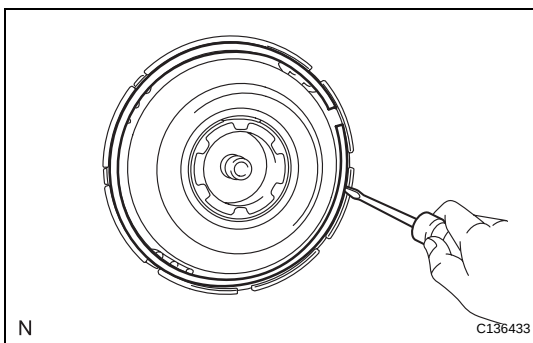


- (k) Using SST, remove the needle roller bearing from the transaxle rear cover.
SST 09319-60020



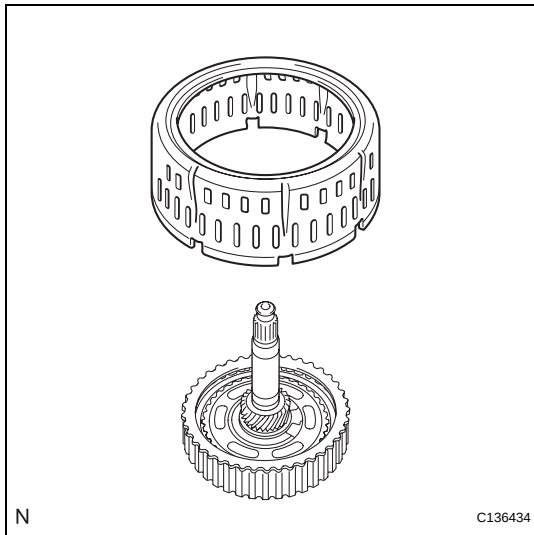
14. REMOVE DIRECT MULTIPLE DISC CLUTCH ASSEMBLY

- (a) Remove the direct multiple disc clutch assembly from the transaxle case.
(b) Remove the thrust needle roller bearing from the direct multiple disc clutch assembly.

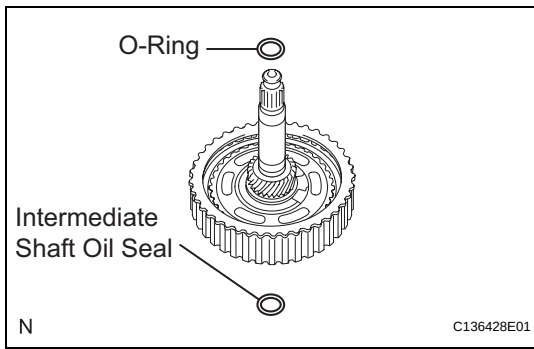


15. REMOVE DIRECT MULTIPLE DISC CLUTCH SNAP RING

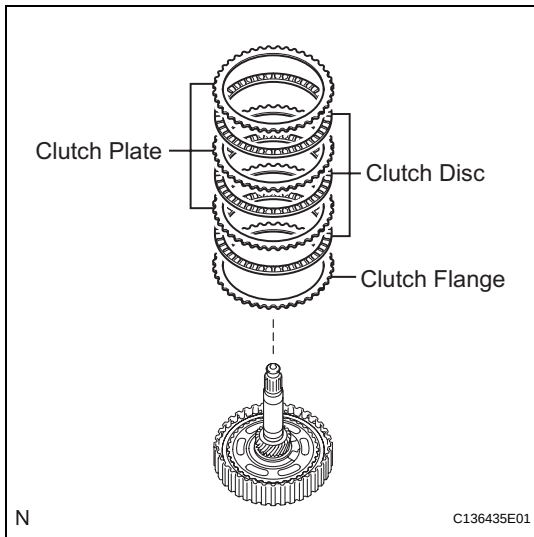
- (a) Using 2 screwdrivers, remove the snap ring from the direct multiple disc clutch assembly.



- (b) Remove the No. 2 direct clutch piston from the direct multiple disc clutch assembly.



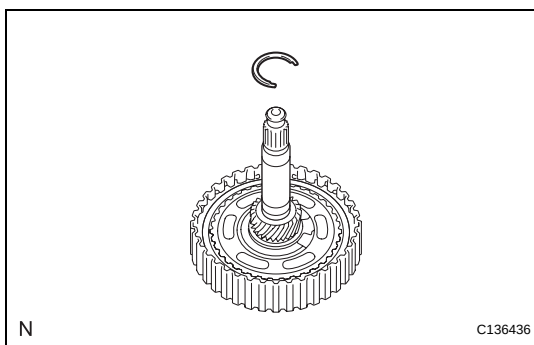
- (c) Using a screwdriver, remove the intermediate shaft oil seal ring from the direct No. 2 direct clutch piston.
 (d) Using a screwdriver, remove the O-ring from the direct multiple disc clutch assembly.



16. REMOVE NO. 2 DIRECT MULTIPLE DISC CLUTCH FLANGE

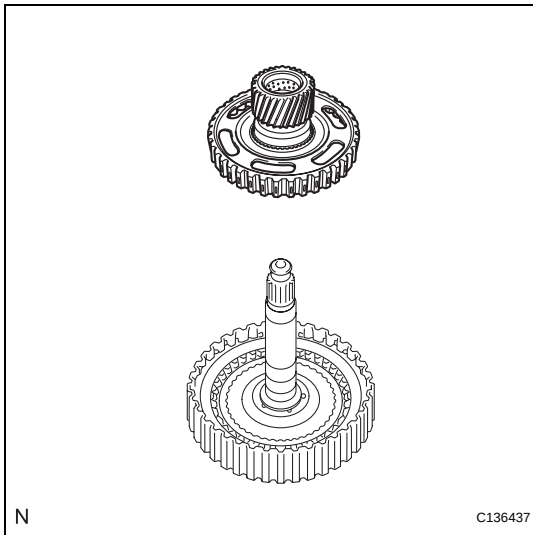
- (a) Remove the flange, 3 clutch discs and 3 clutch plates from the direct multiple disc clutch assembly.

17. INSPECT NO. 2 CLUTCH DISC (See page [AX-284](#))

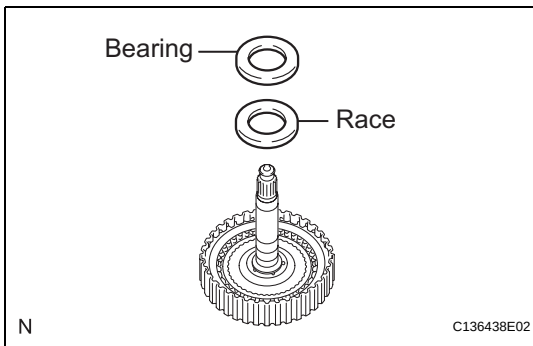


18. REMOVE REAR PLANETARY SUN GEAR ASSEMBLY

- (a) Using a snap ring expander, remove the snap ring from the direct multiple disc clutch assembly.

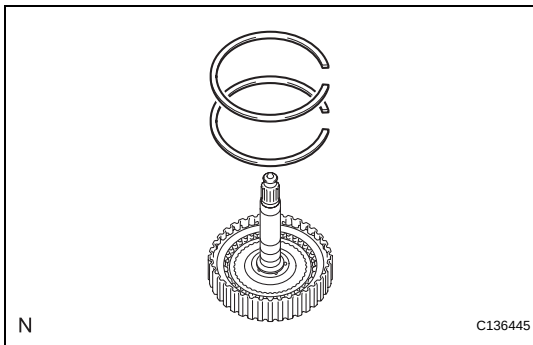


- (b) Remove the rear planetary sun gear from the direct multiple disc clutch assembly.



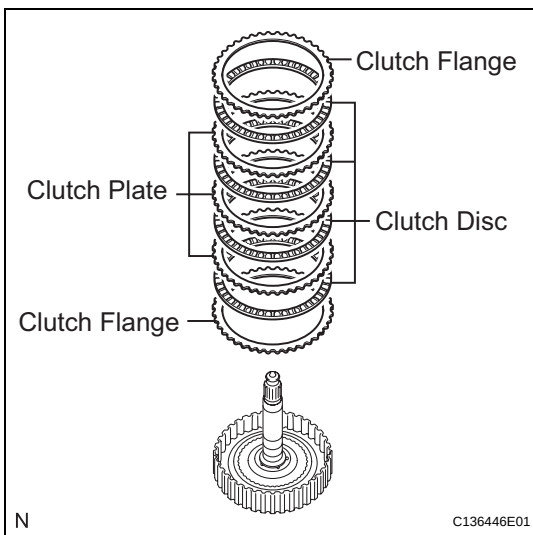
- (c) Remove the thrust needle roller bearing and thrust needle roller race from the direct multiple disc clutch assembly.

19. INSPECT REAR PLANETARY SUN GEAR ASSEMBLY (See page [AX-285](#))



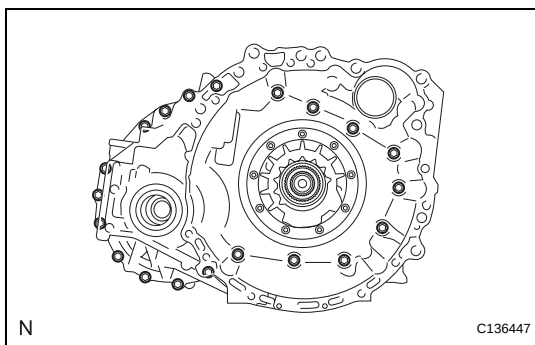
20. REMOVE NO. 1 DIRECT MULTIPLE DISC CLUTCH FLANGE

- (a) Using 2 screwdrivers, remove the 2 snap rings from the direct multiple disc clutch assembly.

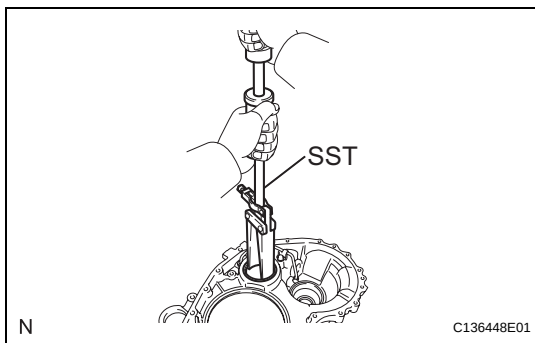


- (b) Remove the flange, 4 clutch discs, and 4 clutch plates from the direct multiple disc clutch assembly.

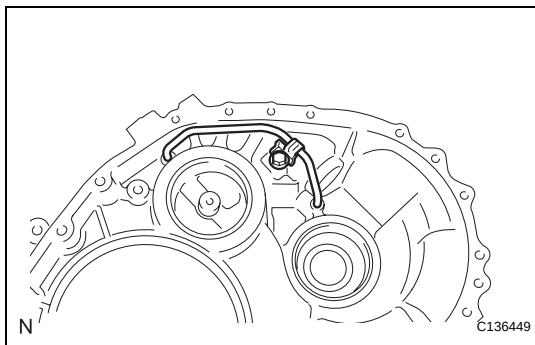
21. INSPECT NO. 1 CLUTCH DISC (See page [AX-284](#))

**22. REMOVE TRANSAXLE HOUSING**

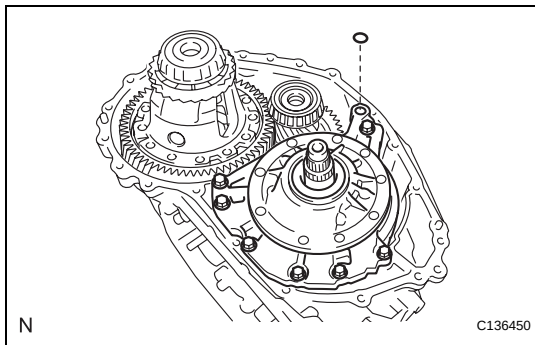
- (a) Remove the 20 bolts from the transaxle housing.
- (b) Using a brass bar and hammer, tap on the circumference of the transaxle housing to remove the transaxle housing from the transaxle case.

**23. REMOVE COUNTER DRIVEN GEAR FRONT TAPERED ROLLER BEARING OUTER RACE**

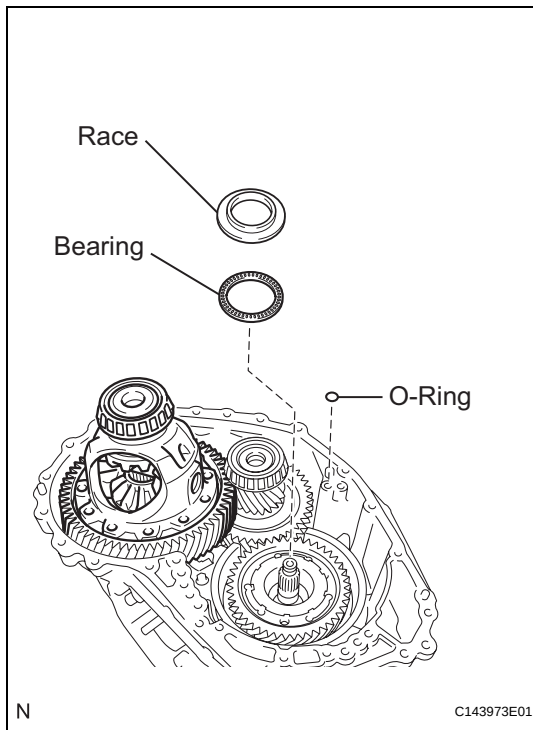
- (a) Using SST, remove the counter driven gear front tapered roller bearing outer race and shim from the transaxle housing.
SST 09308-00010

**24. REMOVE DIFFERENTIAL GEAR LUBE APPLY TUBE**

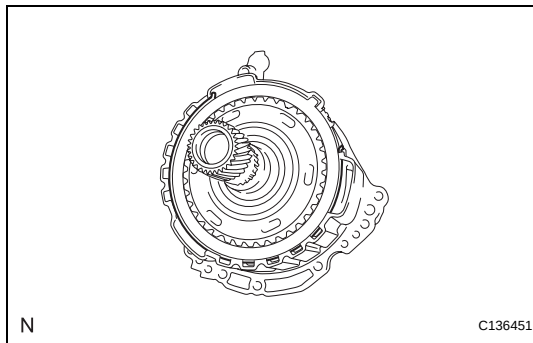
- (a) Remove the bolt, clamp, and differential gear lube apply tube from the transaxle housing.

**25. REMOVE FRONT OIL PUMP AND GEAR BODY SUB-ASSEMBLY**

- (a) Remove the 7 bolts and oil pump from the transaxle case.
- (b) Remove the O-ring from the oil pump assembly.

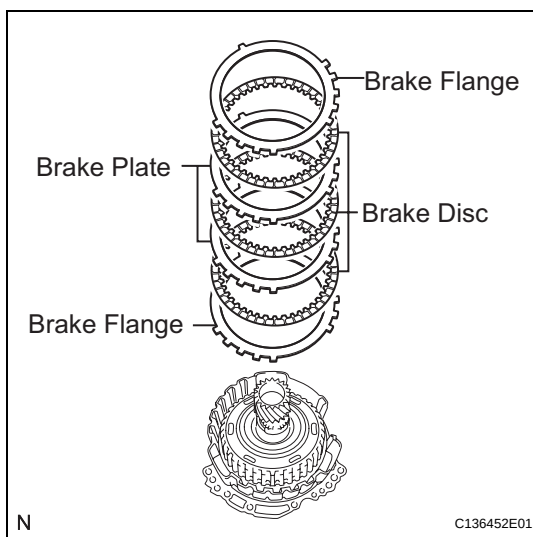


- (c) Remove the thrust needle roller bearing and thrust needle roller race from the carrier lock nut.
- (d) Remove the O-ring from the transaxle case.



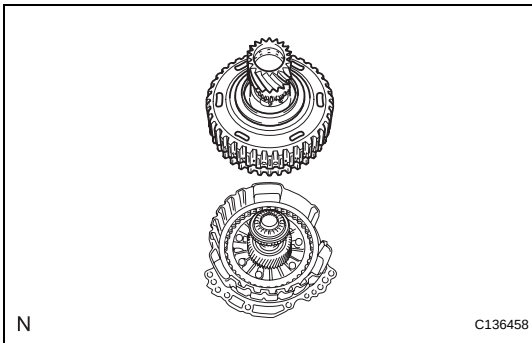
26. REMOVE NO. 3 BRAKE DISC

- (a) Using a screwdriver, remove the snap ring from the oil pump assembly.

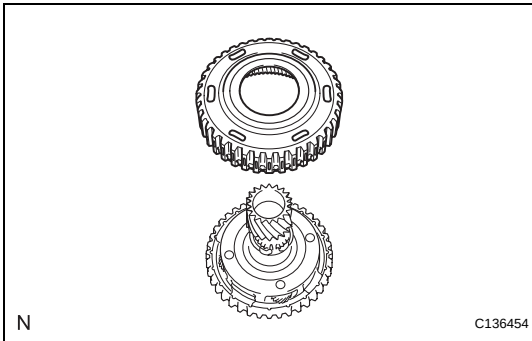


- (b) Remove the 2 brake flanges, 3 brake discs, and 2 brake plates from the oil pump assembly.

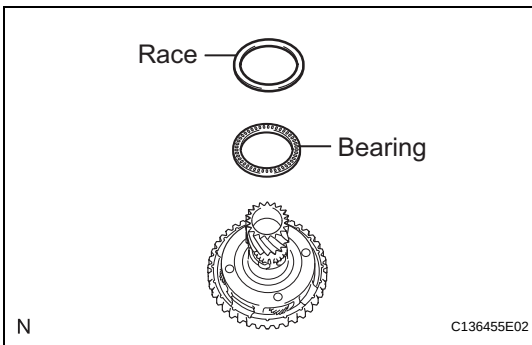
27. INSPECT NO. 3 BRAKE DISC (See page [AX-285](#))

**28. REMOVE UNDERDRIVE PLANETARY GEAR ASSEMBLY**

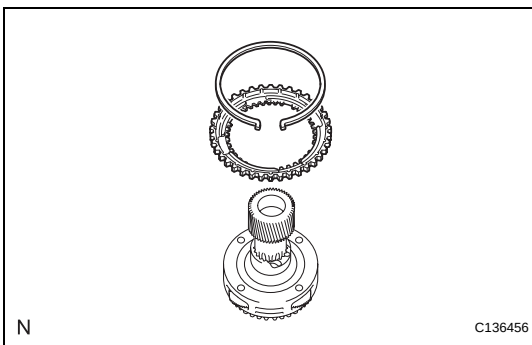
- (a) Remove the underdrive planetary gear assembly from the oil pump assembly.

**29. REMOVE NO. 3 BRAKE HUB**

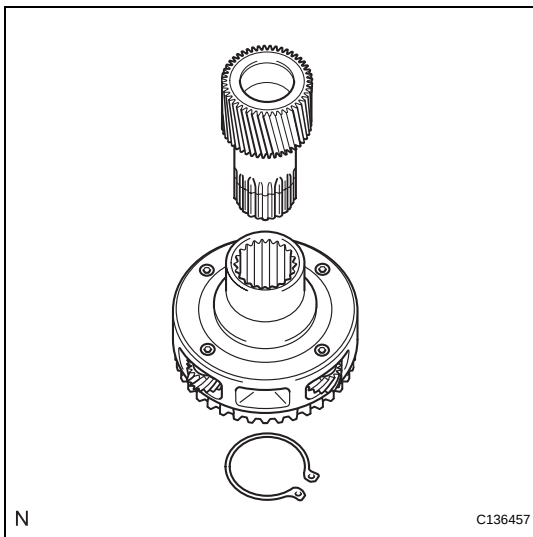
- (a) Remove the No. 3 brake hub from the underdrive planetary gear assembly.



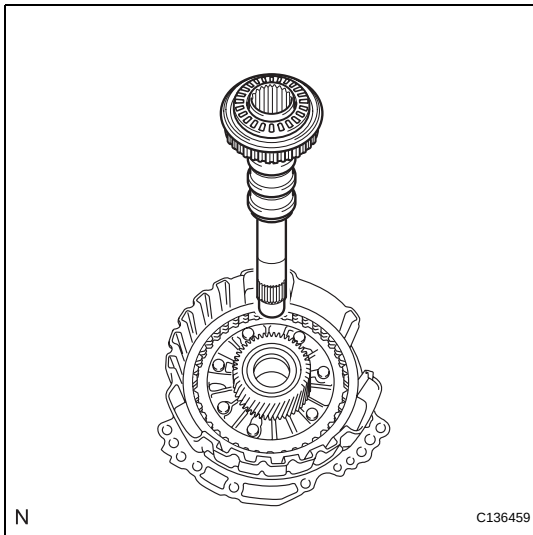
- (b) Remove the thrust needle roller bearing and thrust needle roller race from the underdrive planetary gear assembly.

**30. REMOVE UNDERDRIVE PLANETARY RING GEAR**

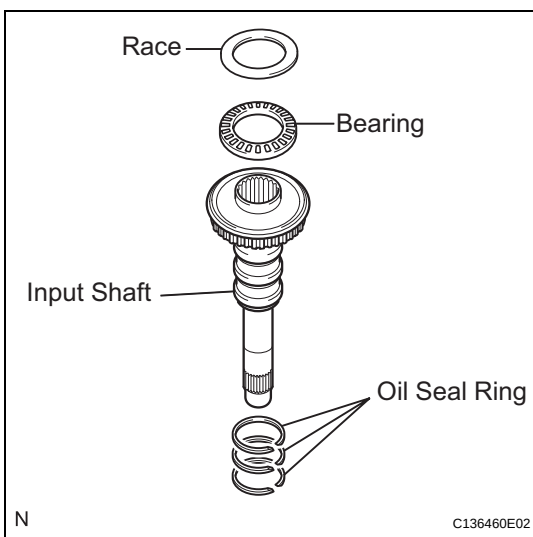
- (a) Using needle-nose pliers, remove the snap ring from the underdrive planetary ring gear.
- (b) Remove the underdrive planetary ring gear from the underdrive planetary gear assembly.



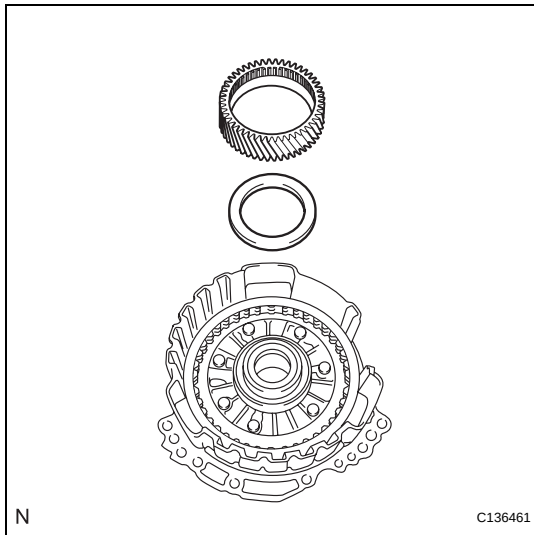
- 31. REMOVE PLANETARY SUN GEAR SUB-ASSEMBLY**
- (a) While expanding the snap ring with snap ring pliers, remove the front planetary sun gear from the underdrive planetary gear assembly.
 - (b) Remove the snap ring from the underdrive planetary gear assembly.
- 32. INSPECT UNDERDRIVE PLANETARY GEAR ASSEMBLY** (See page [AX-285](#))
- 33. INSPECT PLANETARY SUN GEAR SUB-ASSEMBLY** (See page [AX-284](#))



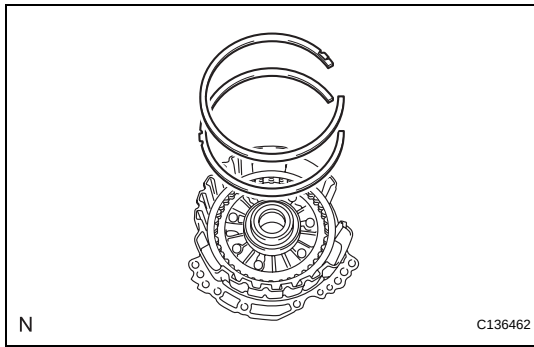
- 34. REMOVE INPUT SHAFT SUB-ASSEMBLY**
- (a) Remove the input shaft from the oil pump assembly.



- (b) Remove the thrust needle roller bearing and thrust needle roller race from the input shaft.
- (c) Using a screwdriver, remove the 3 input shaft oil seal rings from the input shaft.

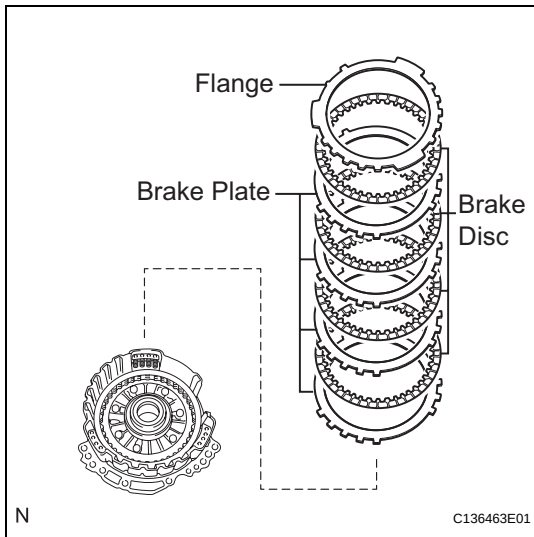
**35. REMOVE UNDERDRIVE PLANETARY SUN GEAR**

- (a) Remove the underdrive planetary sun gear from the oil pump assembly.
- (b) Remove the thrust needle roller bearing from the oil pump assembly.

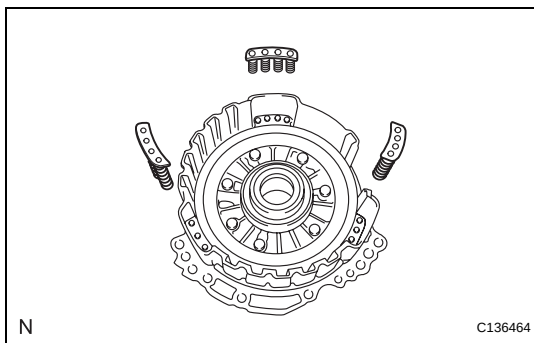
**36. REMOVE NO. 1 BRAKE DISC**

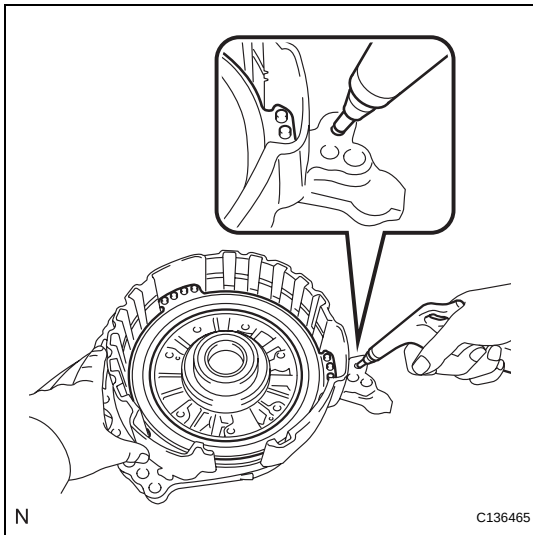
- (a) Using a screwdriver, remove the 2 snap rings from the oil pump assembly.

- (b) Remove the flange, 4 brake discs, and 4 brake plates from the oil pump assembly.

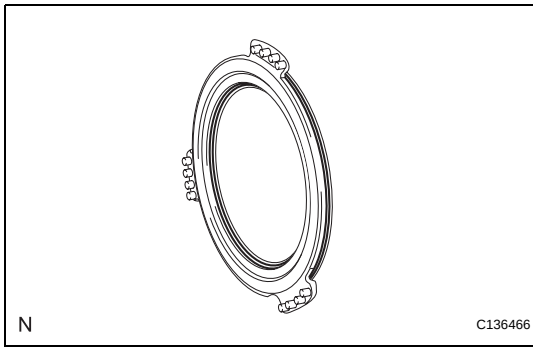
37. INSPECT NO. 1 BRAKE DISC (See page [AX-286](#))**38. REMOVE 2ND BRAKE PISTON RETURN SPRING SUB-ASSEMBLY**

- (a) Remove the 3 2nd brake piston return springs from the oil pump assembly.

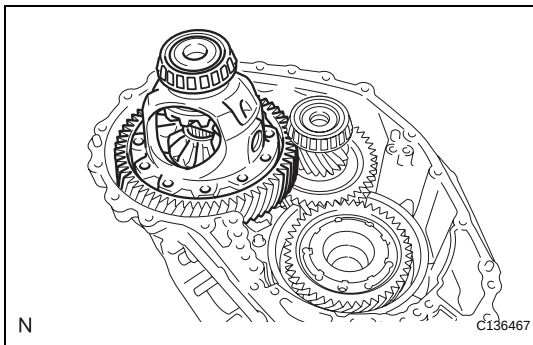
39. INSPECT 2ND BRAKE PISTON RETURN SPRING SUB-ASSEMBLY (See page [AX-286](#))

**40. REMOVE NO. 1 BRAKE PISTON**

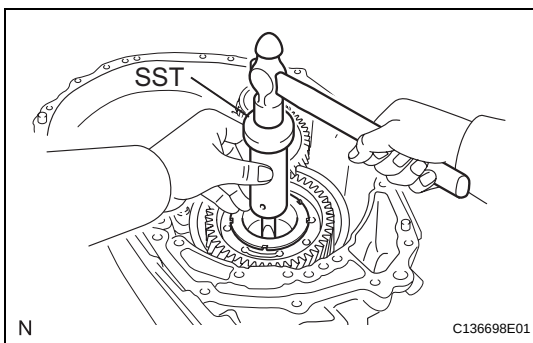
- (a) Holding the oil pump assembly by hand, apply compressed air (392 kPa, 4.0 kgf/cm², 57 psi) to the oil pump assembly to remove the No. 1 brake piston.



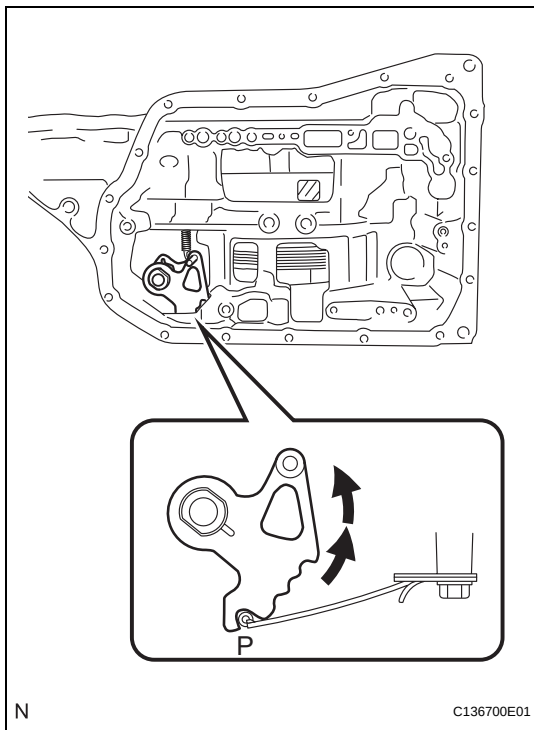
- (b) Using a screwdriver, remove the 2 O-rings from the No. 1 brake piston.

**41. REMOVE FRONT DIFFERENTIAL CASE**

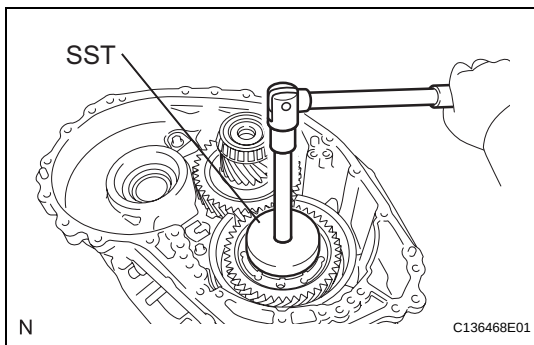
- (a) Remove the differential case sub-assembly from the transaxle case.

**42. REMOVE COUNTER DRIVE GEAR NUT**

- (a) Using a SST and hammer, unstake the nut.
SST 09930-00010

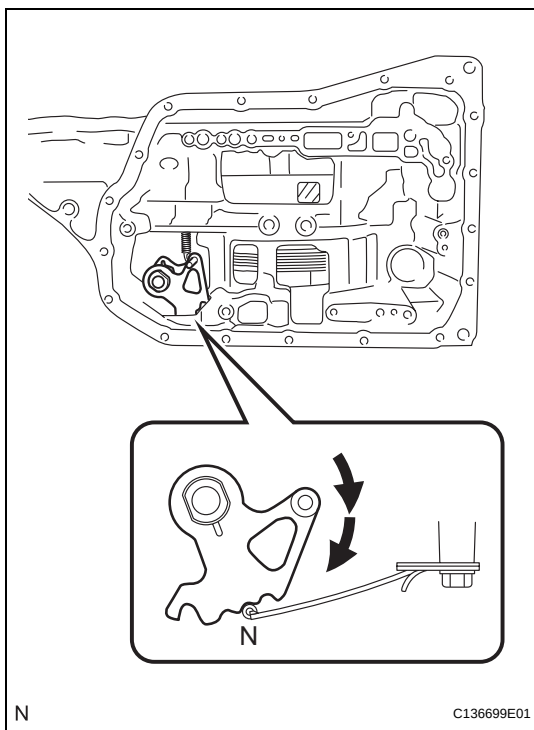


- (b) Turn the manual valve lever 2 notches counterclockwise to set it in the P position as shown in the illustration.



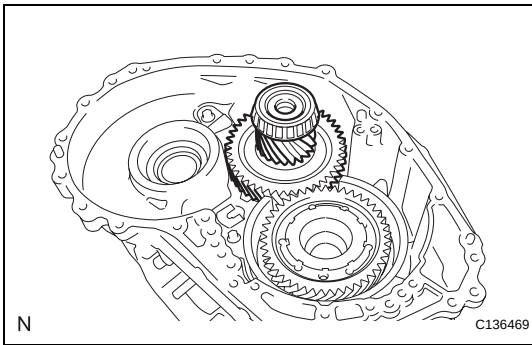
- (c) Using SST, remove the nut from the planetary gear assembly.
SST 09387-00130

AX

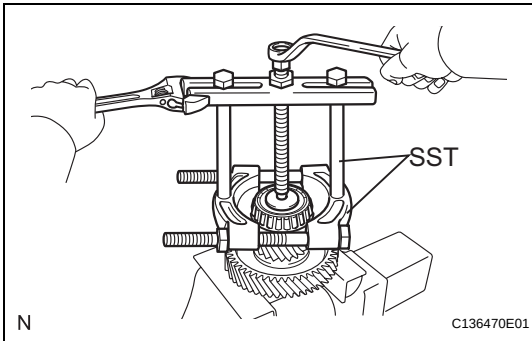


43. REMOVE COUNTER DRIVEN GEAR

- (a) Turn the manual valve lever 2 notches clockwise to set it in the N position as shown in the illustration.



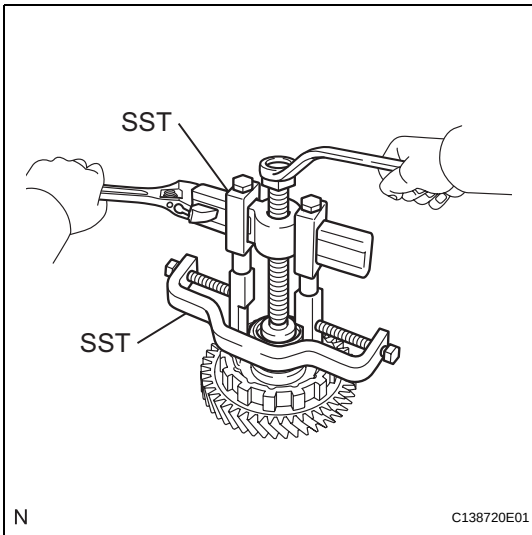
- (b) Remove the counter driven gear sub-assembly from the transaxle case.



44. REMOVE COUNTER DRIVEN GEAR FRONT TAPERED ROLLER BEARING

- (a) Using SST, remove the counter driven gear front tapered roller bearing from the counter driven gear sub-assembly.

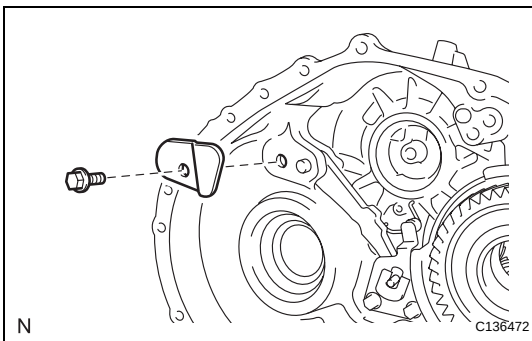
SST 09950-00020, 09950-00030, 09950-60010 (09951-00400)



45. REMOVE COUNTER DRIVEN GEAR REAR TAPERED ROLLER BEARING

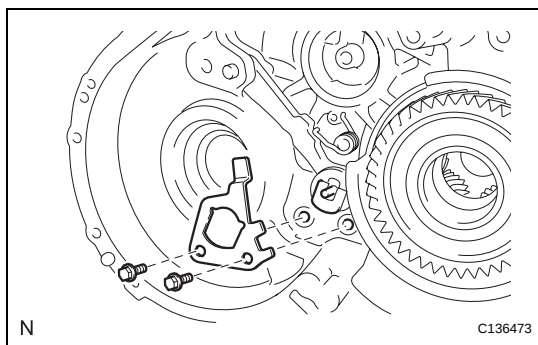
- (a) Using SST, remove the counter driven gear rear tapered roller bearing and differential drive pinion from the counter driven gear.

SST 09950-40011 (09951-04010, 09952-04010, 09954-04010, 09953-04020, 09955-04071, 09957-04010, 09958-04011), 09950-60010 (09951-00320)

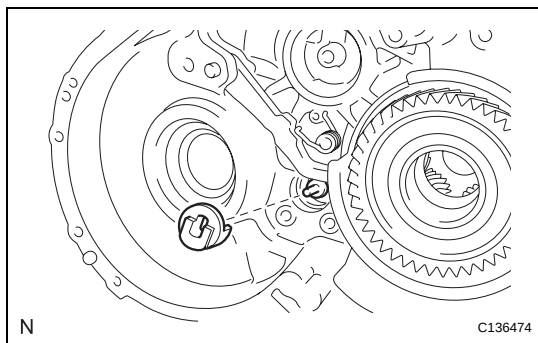


46. REMOVE PAWL SHAFT CLAMP

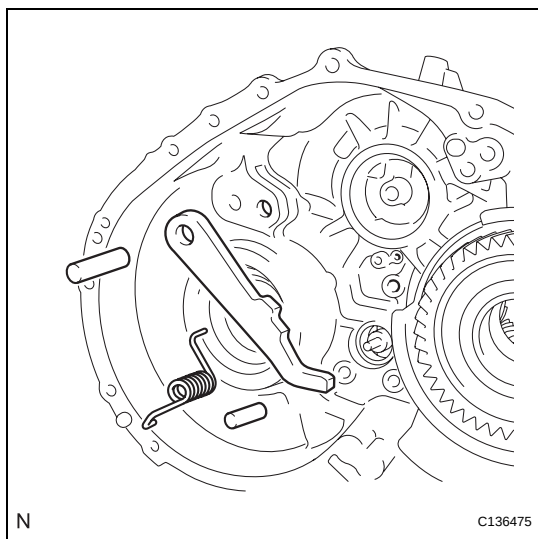
- (a) Remove the bolt and pawl shaft clamp from the transaxle case.

**47. REMOVE PAWL STOPPER PLATE**

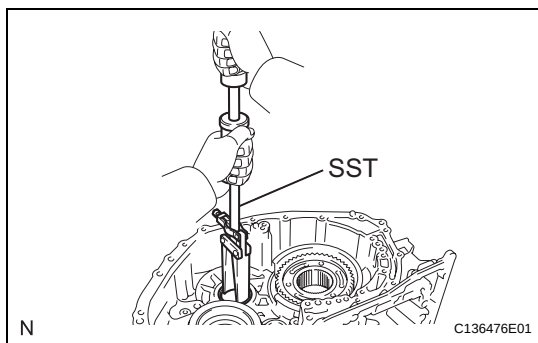
- (a) Remove the 2 bolts and pawl stopper plate from the transaxle case.

**48. REMOVE PARKING LOCK SLEEVE**

- (a) Remove the parking lock sleeve from the transaxle case.

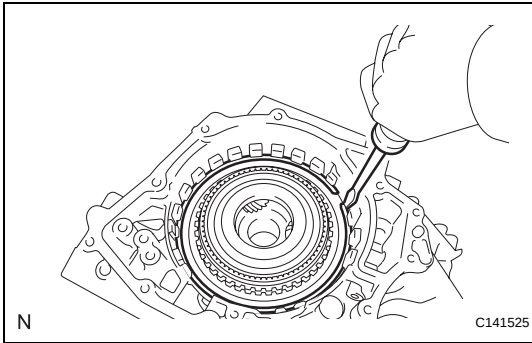
**49. REMOVE PARKING LOCK PAWL**

- (a) Remove the spring, parking lock pawl pin, parking lock pawl shaft, and parking lock pawl from the transaxle case.

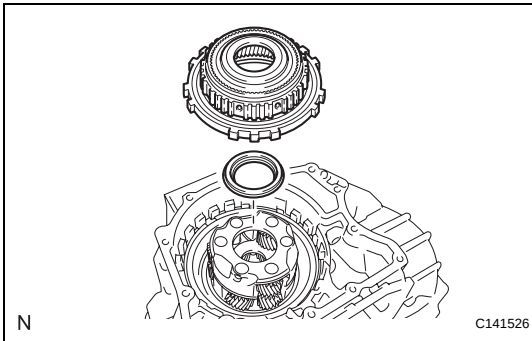
**50. REMOVE COUNTER DRIVEN GEAR REAR TAPERED ROLLER BEARING OUTER RACE**

- (a) Using SST, remove the counter driven gear rear tapered roller bearing outer race from the transaxle case.

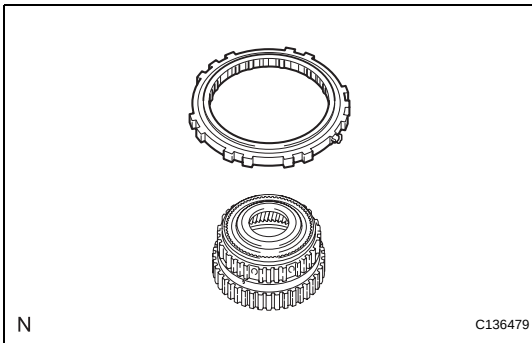
SST 09308-00010

**51. REMOVE ONE-WAY CLUTCH ASSEMBLY**

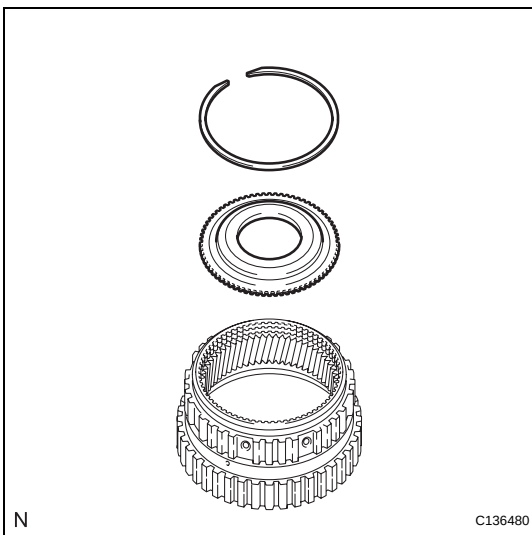
- (a) Using a screwdriver, remove the snap ring from the transaxle case.



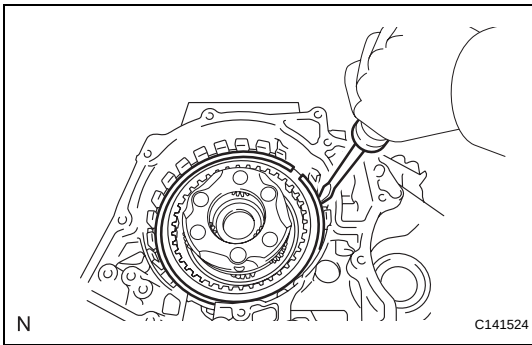
- (b) Remove the one-way clutch assembly with planetary ring gear from the transaxle case.
- (c) Remove the thrust needle roller bearing from the transaxle case.

52. INSPECT ONE-WAY CLUTCH ASSEMBLY (See page [AX-286](#))**53. REMOVE PLANETARY RING GEAR**

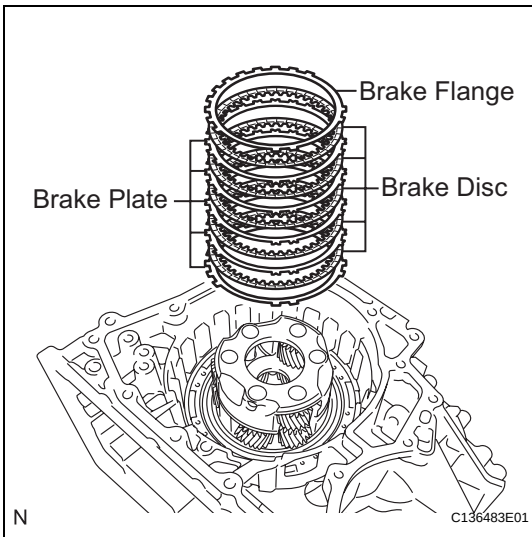
- (a) Remove the planetary ring gear from the one-way clutch assembly.

**54. REMOVE PLANETARY RING GEAR FLANGE**

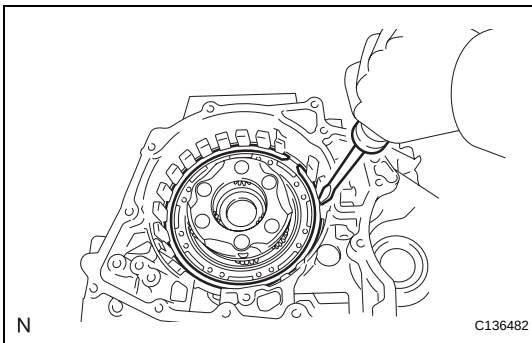
- (a) Using a screwdriver, remove the snap ring from the planetary ring gear.
- (b) Remove the planetary ring gear flange from the planetary ring gear.

**55. REMOVE NO. 2 BRAKE DISC**

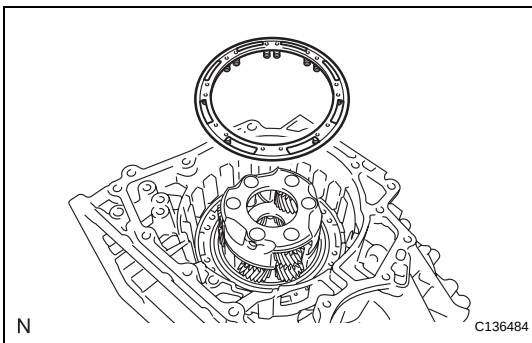
- (a) Using a screwdriver, remove the snap ring from the transaxle case.



- (b) Remove the brake flange, 5 brake discs, and 5 brake plates from the transaxle case.

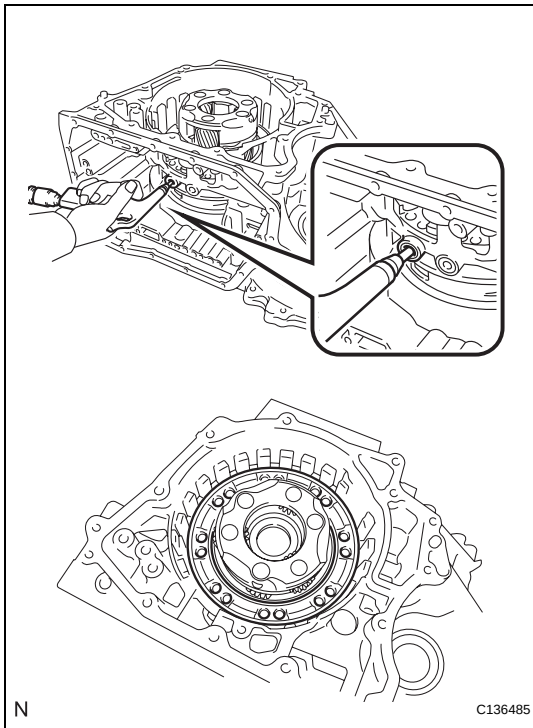
56. INSPECT NO. 2 BRAKE DISC (See page [AX-287](#))**57. REMOVE 1ST AND REVERSE BRAKE RETURN SPRING SUB-ASSEMBLY**

- (a) Using a screwdriver, remove the snap ring from the transaxle case.

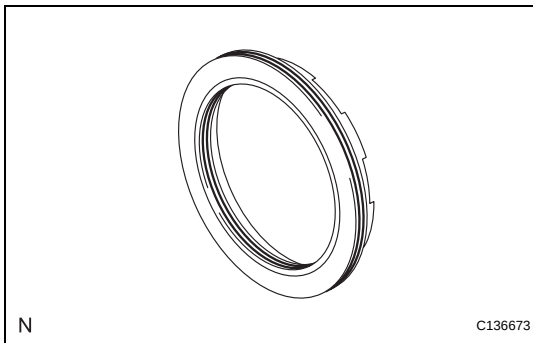


- (b) Remove the 1st and reverse brake return spring from the transaxle case.

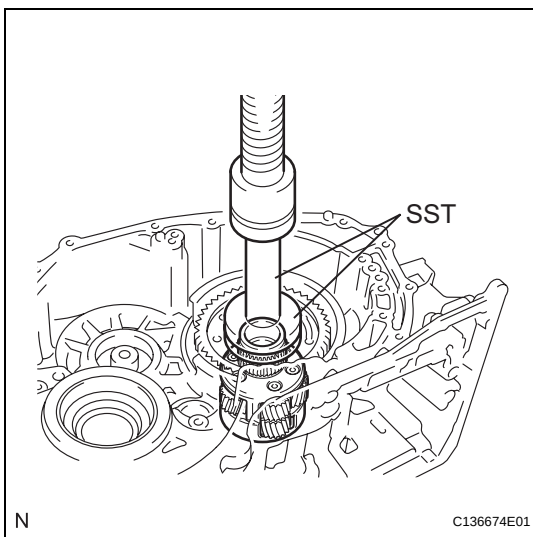
58. INSPECT 1ST AND REVERSE BRAKE RETURN SPRING SUB-ASSEMBLY (See page [AX-287](#))

**59. REMOVE NO. 2 BRAKE PISTON**

- (a) Apply compressed air (392 kPa, 4.0 kgf/cm², 57 psi) to the ATF hole indicated by the arrow to remove the No. 2 brake piston assembly from the transaxle case.

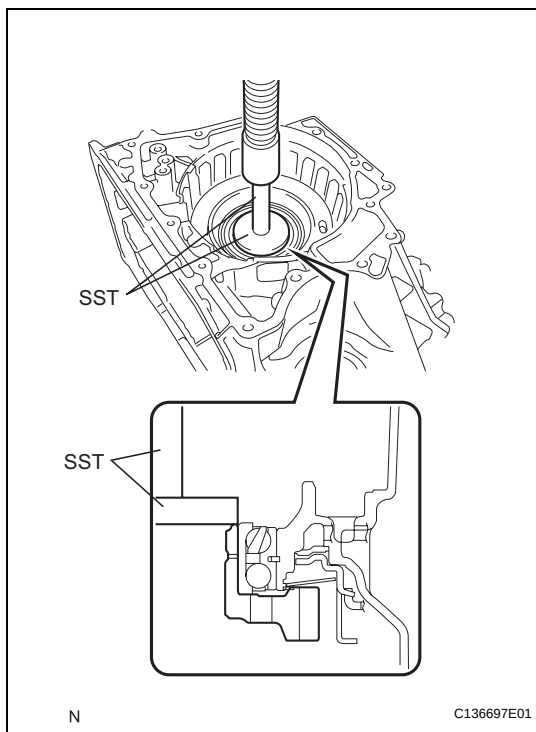


- (b) Using a screwdriver, remove the 2 O-rings from the No. 2 brake piston.

**60. REMOVE PLANETARY GEAR ASSEMBLY**

- (a) Using SST and a press, remove the planetary gear assembly from the transaxle case.

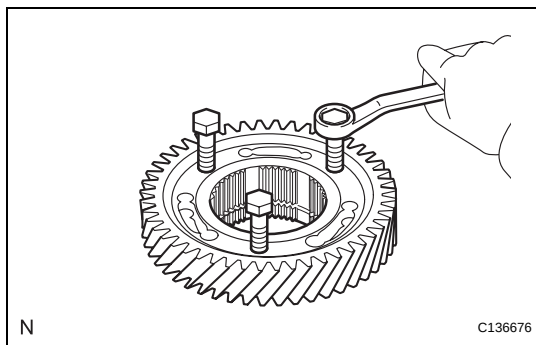
SST 09950-60010 (09951-00580), 09950-70010 (09951-07100)



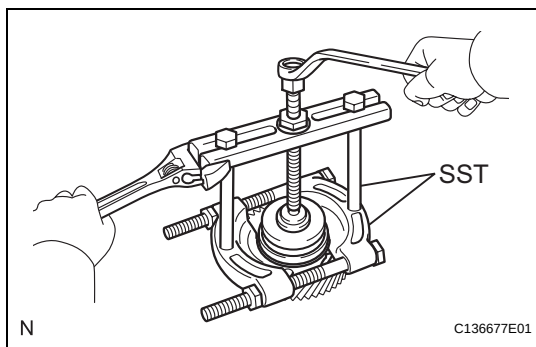
61. REMOVE COUNTER DRIVE GEAR

- (a) Using SST and a press, remove the counter drive gear and bearing inner race (rear side) from the transaxle case.

SST 09950-60020 (09951-00710), 09950-70010 (09951-07100)

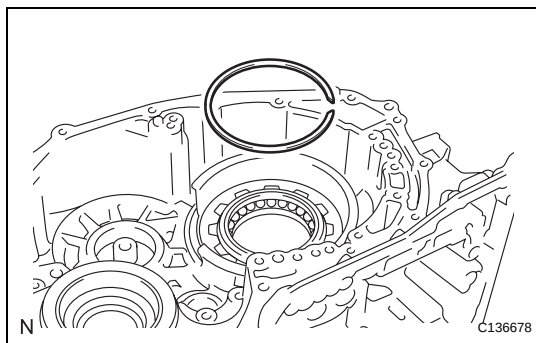


- (b) As shown in the illustration, tighten the 3 bolts evenly and leave a clearance of approximately 20.0 mm (0.797 in.) between the counter drive gear and inner race.



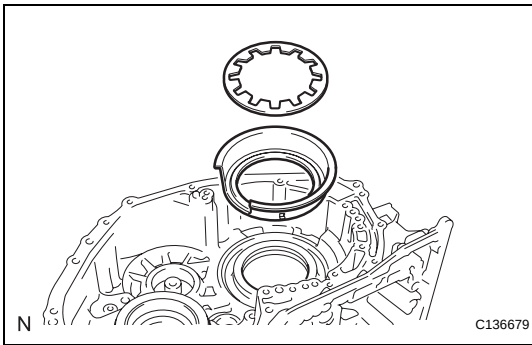
- (c) Using SST, remove the bearing inner race (front side) from the counter drive gear.

SST 09950-00020, 09950-00030, 09950-60020 (09951-00710)

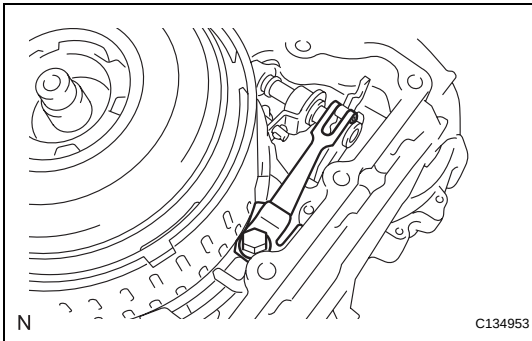


62. REMOVE NO. 3 BRAKE PISTON

- (a) Using a screwdriver, remove the snap ring from the transaxle case.

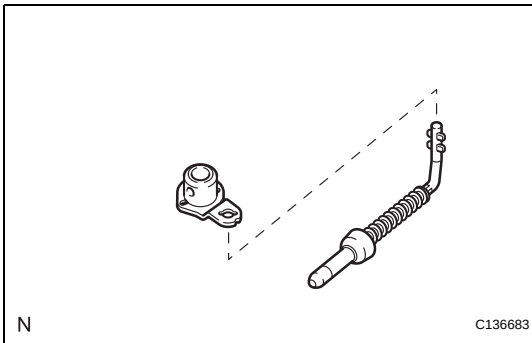


- (b) Remove the brake piston return spring from the transaxle case.
- (c) Remove the No. 3 brake piston from the transaxle case.



63. REMOVE MANUAL DETENT SPRING SUB-ASSEMBLY

- (a) Remove the bolt, cover, and manual detent spring sub-assembly from the transaxle case.

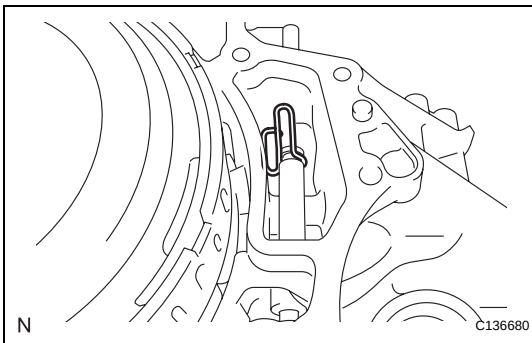


64. REMOVE PARKING LOCK ROD SUB-ASSEMBLY

- (a) Remove the parking lock rod sub-assembly from the parking lock lever sub-assembly.

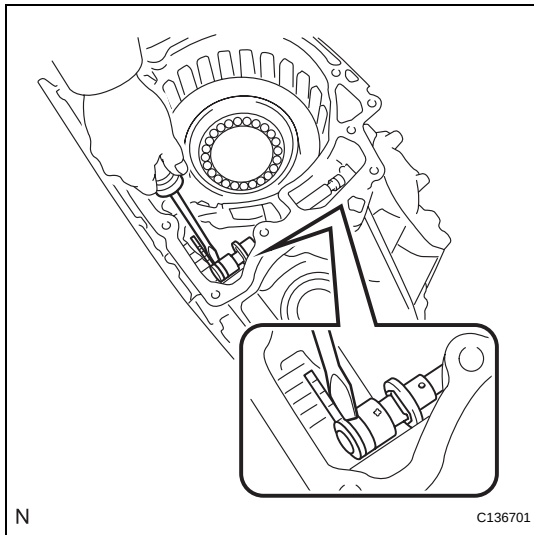
HINT:

Align the dial with the notches on the parking lock lever sub-assembly to remove the parking lock rod sub-assembly.

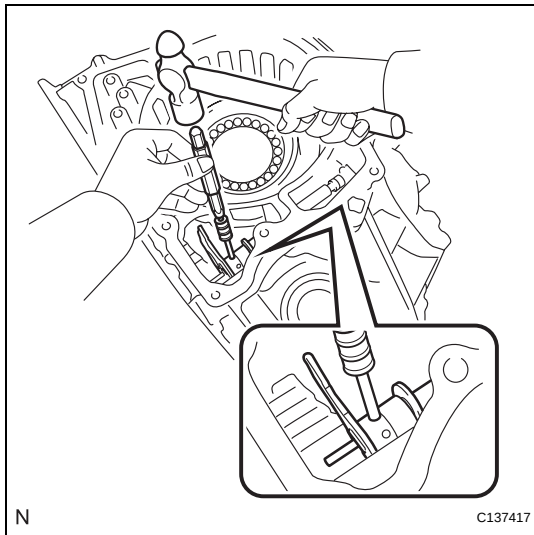


65. REMOVE MANUAL VALVE LEVER SHAFT

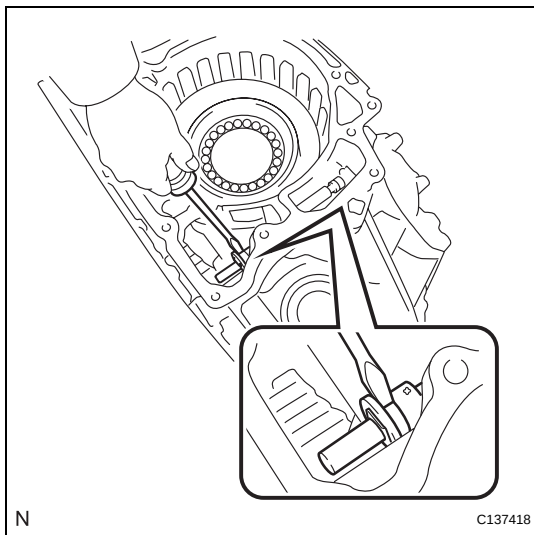
- (a) Using needle-nose pliers, remove the manual valve lever shaft retainer spring from the transaxle case.



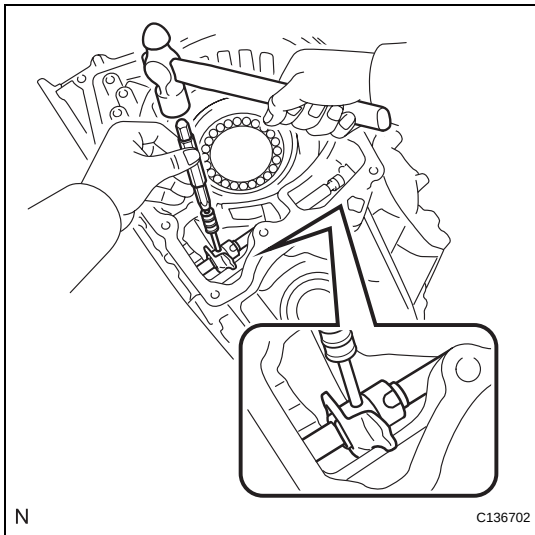
- (b) Using a screwdriver, slide the spacer of the manual valve lever sub-assembly.



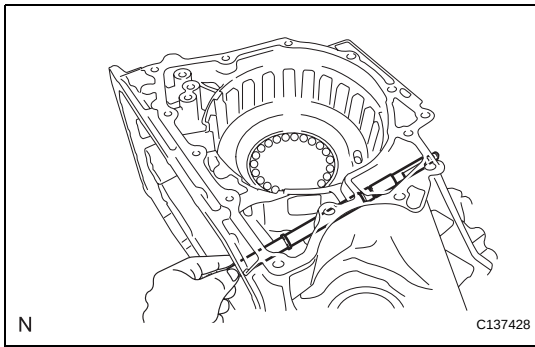
- (c) Using a pin punch (3 mm) and hammer, drive out the slotted spring pin from the manual valve lever sub-assembly.
HINT:
Slowly drive out the pin so that it will not fall into the transaxle case.



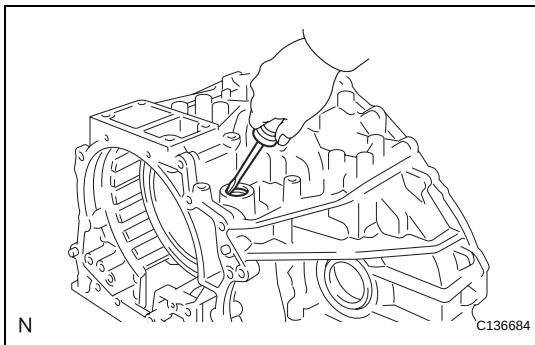
- (d) Using a screwdriver, slide the spacer of the parking lock lever sub-assembly.



- (e) Using a pin punch (3 mm) and hammer, drive out the slotted spring pin from the parking lock lever sub-assembly.
HINT:
 Slowly drive out the pin so that it will not fall into the transaxle case.

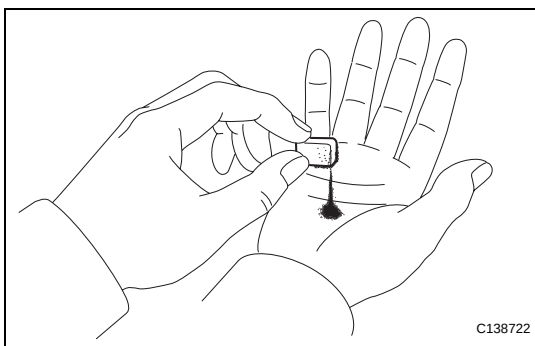


- (f) Remove the manual valve lever shaft, manual valve lever sub-assembly, parking lock lever sub-assembly and 2 spacers from the transaxle case.



66. REMOVE MANUAL VALVE LEVER SHAFT OIL SEAL

- (a) Using a screwdriver, remove the manual valve lever shaft oil seal from the transaxle case.



INSPECTION

1. INSPECT TRANSMISSION OIL CLEANER MAGNET

- (a) Use the removed magnets to collect any steel chips. Examine the chips and particles in the pan and on the magnets to determine what type of wear has occurred in the transaxle:

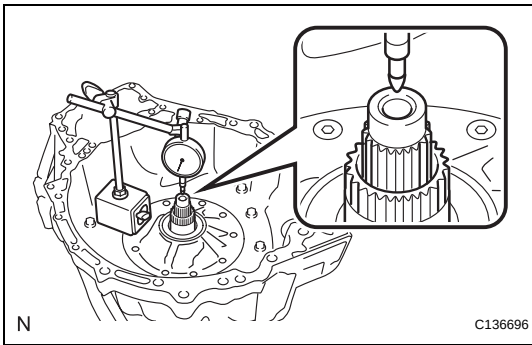
Result:

Steel (magnetic):

Bearing, gear and plate wear

Brass (non-magnetic):

Bearing wear

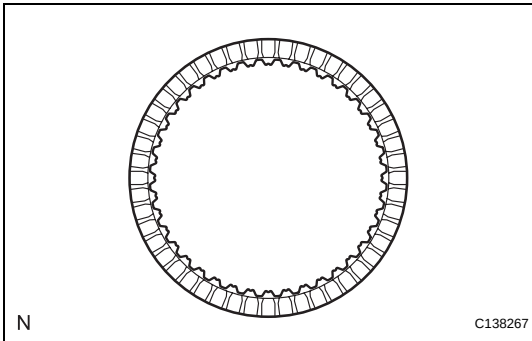


2. INSPECT INPUT SHAFT SUB-ASSEMBLY

- (a) Using a dial indicator, measure the input shaft end play.

End play:

0.012 to 1.250 mm (0.0005 to 0.0492 in.)

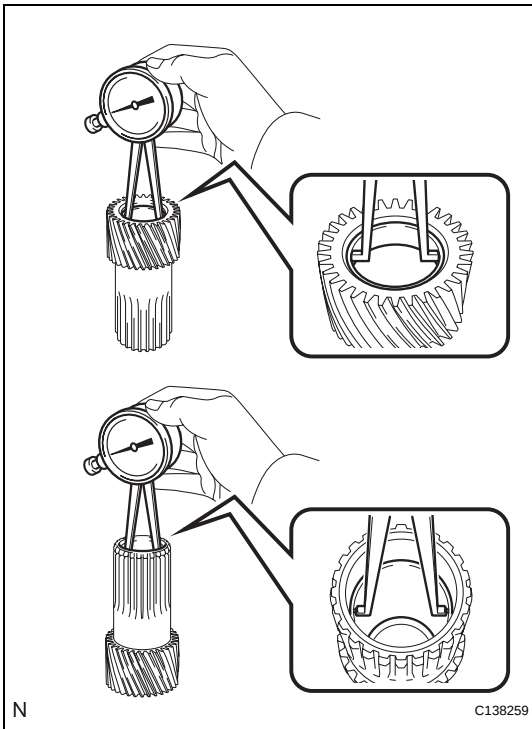


3. INSPECT NO. 2 CLUTCH DISC

- (a) Check if the sliding surfaces of the discs, plates, and flange are worn or burnt. If necessary, replace them.

NOTICE:

If the linings of the discs are peeled off or discolored, or even if a part of the groove is damaged, replace all discs.



4. INSPECT PLANETARY SUN GEAR SUB-ASSEMBLY

- (a) Using a dial indicator, measure the inside diameter of the bushings of the planetary sun gear.

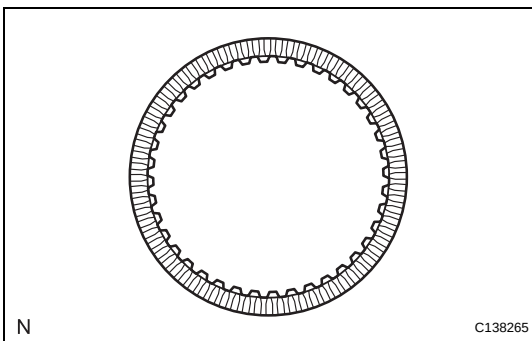
Standard inside diameter:

25.525 to 25.546 mm (1.0049 to 1.0057 in.)

Maximum inside diameter:

25.546 mm (1.0057 in.)

If the inside diameter is greater than the maximum, replace the planetary gear sun gear.

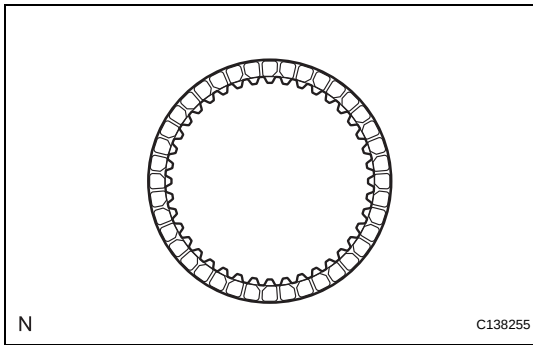


5. INSPECT NO. 1 CLUTCH DISC

- (a) Check if the sliding surfaces of the discs, plates, and flange are worn or burnt. If necessary, replace them.

NOTICE:

If the linings of the discs are peeled off or discolored, or even if a part of the groove is damaged, replace all discs.

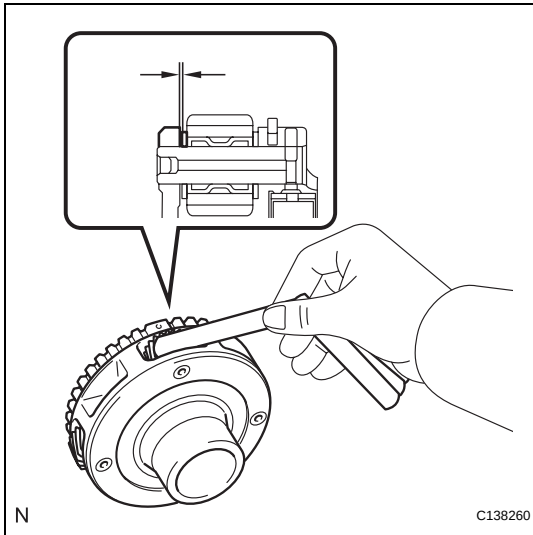


6. INSPECT NO. 3 BRAKE DISC

- (a) Check if the sliding surfaces of the discs, plates, and flange are worn or burnt. If necessary, replace them.

NOTICE:

If the linings of the discs are peeled off or discolored, or even if a part of the groove is damaged, replace all discs.



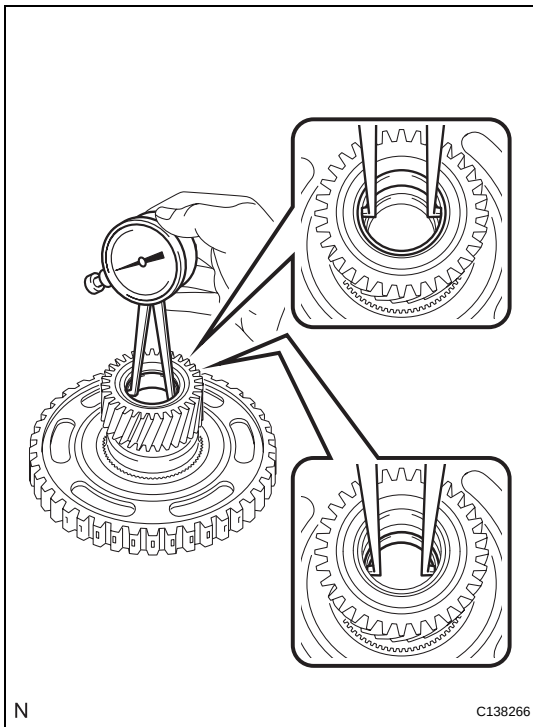
7. INSPECT UNDERDRIVE PLANETARY GEAR ASSEMBLY

- (a) Using a feeler gauge, measure the clearance between the underdrive planetary gear and the pinion gear at 4 points.

Standard clearance:

0.18 to 0.54 mm (0.0071 to 0.0213 in.)

If the clearance is greater than the standard clearance, replace the underdrive planetary gear sun gear.



8. INSPECT REAR PLANETARY SUN GEAR ASSEMBLY

- (a) Using a dial indicator, measure the inside diameter of the bushing of the rear planetary sun gear sub-assembly.

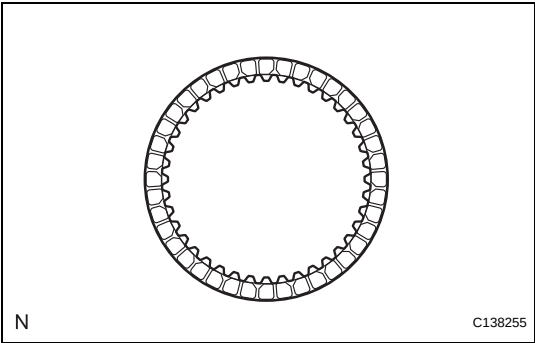
Standard inside diameter:

25.580 to 25.601 mm (1.0071 to 1.0079 in.)

Maximum inside diameter:

25.601 mm (1.0079 in.)

If the inside diameter is greater than the maximum, replace the rear planetary sun gear sub-assembly.

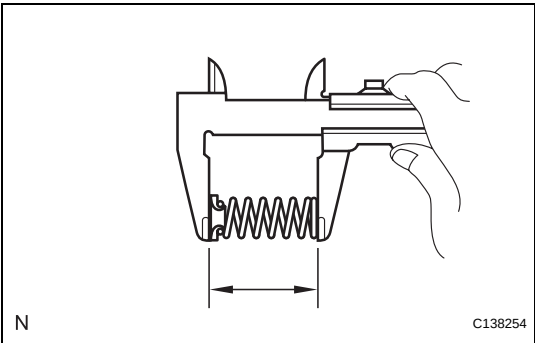


9. INSPECT NO. 1 BRAKE DISC

- (a) Check if the sliding surfaces of the discs, plates, and flange are worn or burnt. If necessary, replace them.

NOTICE:

If the linings of the discs are peeled off or discolored, or even if a part of the groove is damaged, replace all discs.



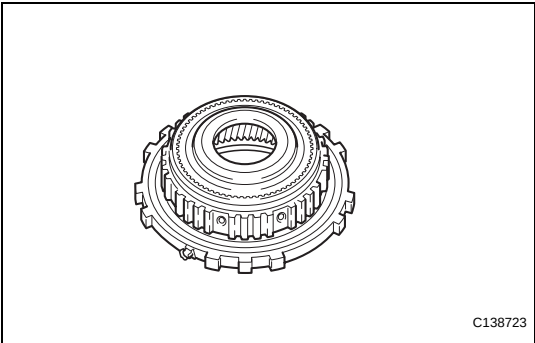
10. INSPECT 2ND BRAKE PISTON RETURN SPRING SUB-ASSEMBLY

- (a) Using vernier calipers, measure the free length of the 3 2nd brake piston return springs including the spring seats.

Standard free length:

23.85 mm (0.9390 in.)

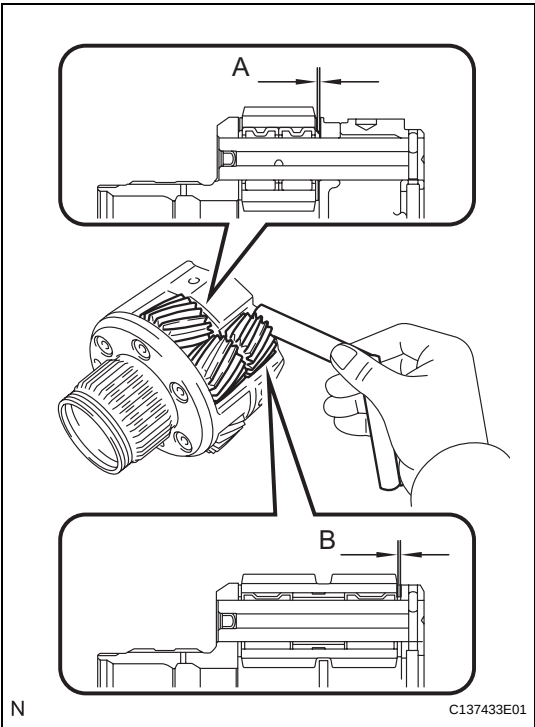
If the free length is shorter than the standard free length, replace the 2nd brake piston return spring.



11. INSPECT ONE-WAY CLUTCH ASSEMBLY

- (a) Temporarily install the one-way clutch assembly to the planetary ring gear.
- (b) Rotate the one-way clutch assembly to check the rotating direction for lock or free operation. If the one-way clutch assembly does not operate normally, replace it.

AX

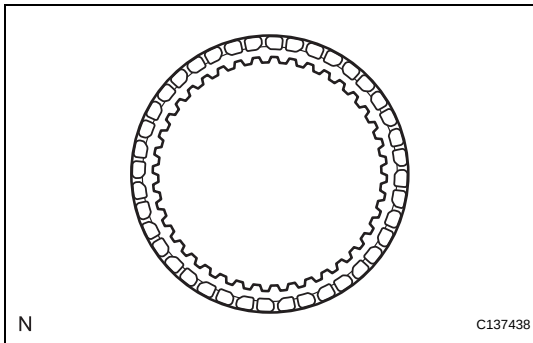


12. INSPECT PLANETARY GEAR ASSEMBLY

- (a) Using a feeler gauge, measure the clearance between the planetary gear case and each pinion gear at points A and B.

-	Standard Clearance
A point	0.23 to 0.59 mm (0.0091 to 0.0232 in.)
B point	0.16 to 0.66 mm (0.0063 to 0.02598 in.)

If the clearance is greater than the standard clearance, replace the planetary gear assembly.

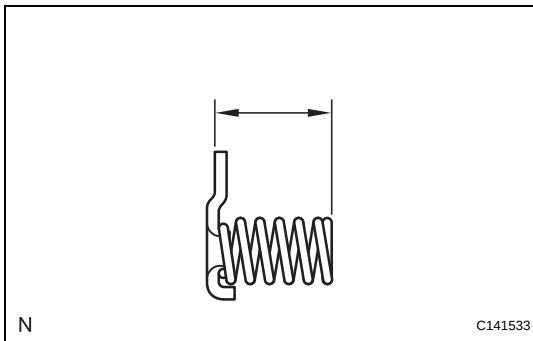


13. INSPECT NO. 2 BRAKE DISC

- (a) Check if the sliding surfaces of the discs, plates, and flange are worn or burnt. If necessary, replace them.

NOTICE:

If the linings of the discs are peeled off or discolored, or even if a part of the groove is damaged, replace all discs.



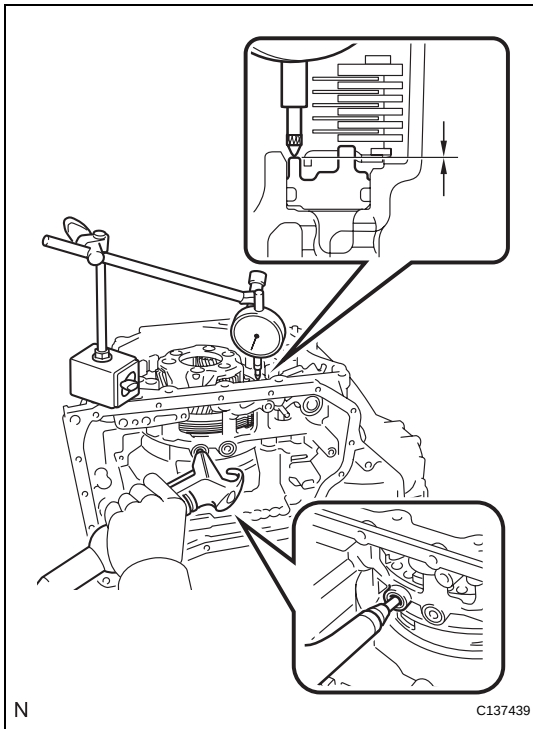
14. INSPECT 1ST AND REVERSE BRAKE RETURN SPRING SUB-ASSEMBLY

- (a) Using vernier calipers, measure the free length of the 1st and reverse brake return spring together with the spring seat.

Standard free length:

15.79 mm (0.6217 in.)

If the free length is shorter than the standard free length, replace the 1st and reverse brake return spring.



15. INSPECT CLEARANCE OF NO. 2 BRAKE

- (a) Using a dial indicator, measure the clearance of the No. 2 brake while applying compressed air (200 kPa, 2.0 kgf/cm², 29 psi).

Standard clearance:

0.884 to 1.196 mm (0.0348 to 0.0471 in.)

HINT:

Measure the clearance at 3 points where the brake piston diameter is approximately 140 mm (5.51 in.) and calculate the average.

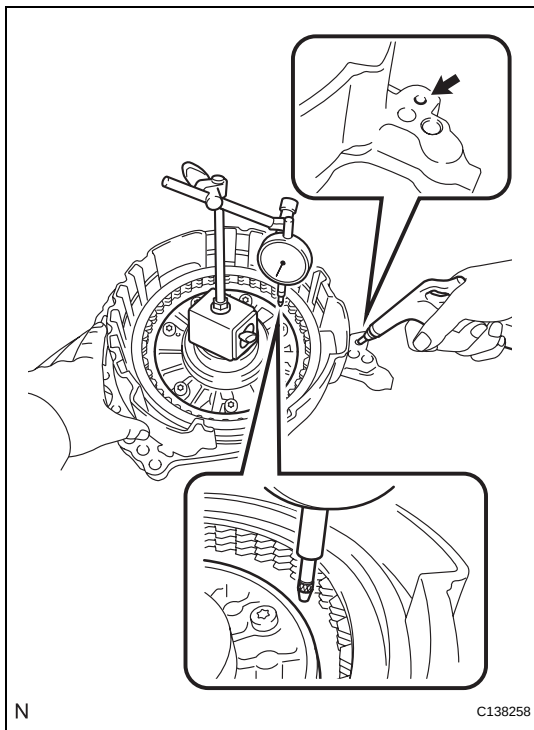
If the clearance is not as specified, select an appropriate No. 2 brake flange so that the clearance will be within the specified range.

HINT:

There are 5 different thicknesses of flanges available.

No. 2 brake flange thickness: mm (in)

Thickness	Thickness
4.0 (0.157)	4.3 (0.169)
4.1 (0.161)	4.4 (0.173)
4.2 (0.165)	-



16. INSPECT CLEARANCE OF NO. 1 BRAKE

- (a) Using a dial indicator, measure the clearance of the No. 1 brake while applying compressed air (200 kPa, 2.0 kgf/cm², 29 psi).

Standard clearance:

0.807 to 0.974 mm (0.0318 to 0.0383 in.)

HINT:

Measure the clearance at 3 points where the brake piston diameter is approximately 140 mm (5.51 in.) and calculate the average.

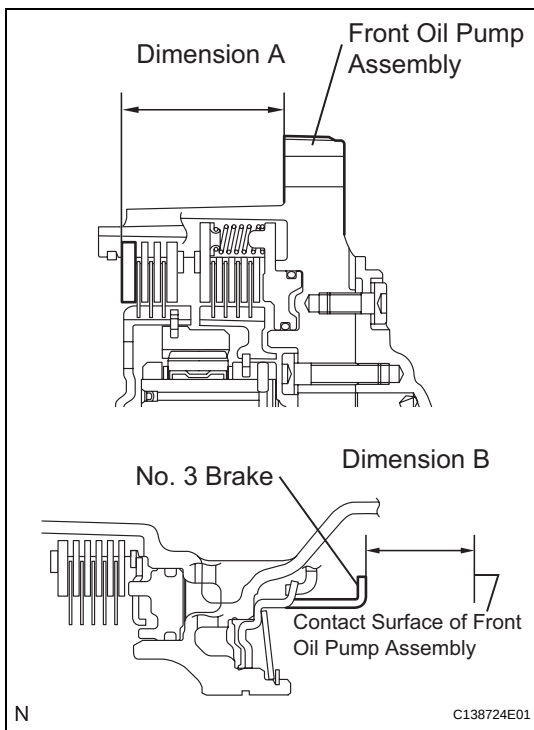
If the clearance is not as specified, select an appropriate No. 1 brake flange so that the clearance will be within the specified range.

HINT:

There are 6 different thicknesses of flanges available.

No. 1 brake flange thickness: mm (in.)

Thickness	Thickness
3.0 (0.118)	3.3 (0.130)
3.1 (0.122)	3.4 (0.134)
3.2 (0.126)	3.5 (0.138)



17. INSPECT CLEARANCE OF NO. 3 BRAKE

- (a) Using vernier calipers and a straight edge, measure the distance shown in the illustration (Dimension A) while a load of 500 N (51 kgf, 112 lbf) is being applied to the flange.

HINT:

Measure dimension A at 3 points where the flange diameter is approximately 166 mm (6.54 in.) and calculate the average.

- (b) Using vernier calipers and a straight edge, measure the distance shown in the illustration. (Dimension B).

HINT:

Measure dimension B at 3 points where the No. 3 brake diameter is approximately 166 mm (6.54 in.) and calculate the average.

- (c) Calculate the clearance value using the following formula:

clearance = Dimension B - Dimension A

Standard clearance:

0.599 to 0.761 mm (0.0236 to 0.0300 in.)

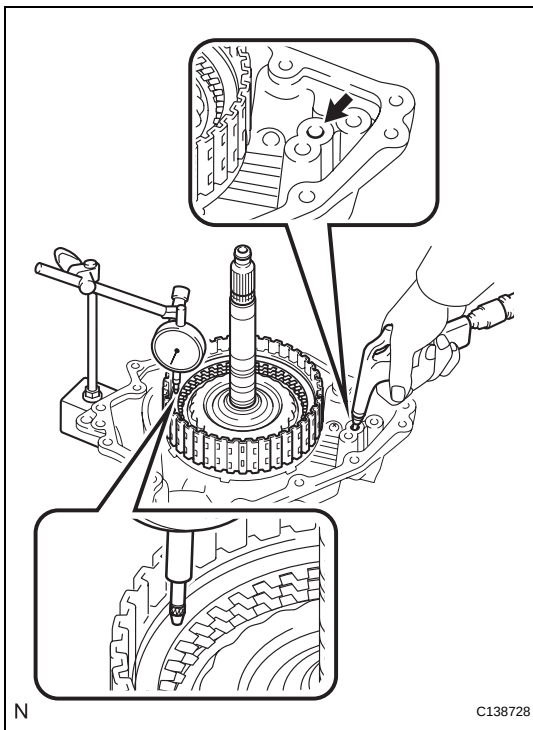
If the clearance is not as specified, select an appropriate brake flange so that the clearance will be within the specified range.

HINT:

There are 6 different thicknesses of flanges available.

No. 3 brake flange thickness: mm (in.)

Thickness	Thickness
3.80 (0.150)	4.10 (0.161)
3.90 (0.154)	4.20 (0.165)
4.00 (0.157)	4.30 (0.169)

**18. INSPECT CLEARANCE OF NO. 1 CLUTCH DISC**

- Install the direct multiple disc clutch assembly onto the transaxle rear cover.
- Using a dial indicator, measure the No. 1 clutch pack clearance while applying and releasing compressed air (200 kPa, 2.0 kgf/cm², 29 psi).

HINT:

Measure the clearance at 3 points where the flange diameter is approximately 152 mm (5.98 in.) and calculate the average.

Pack clearance:

0.806 to 0.974 mm (0.0317 to 0.0383 in.)

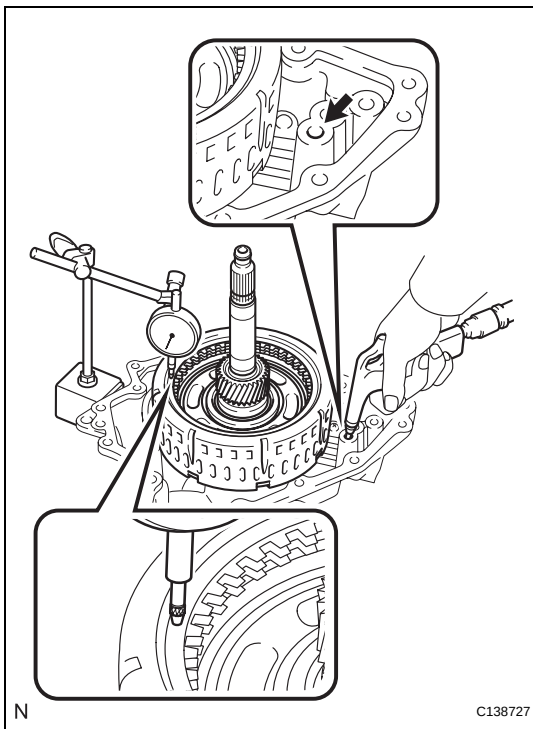
If the pack clearance is not as specified, inspect the discs, plates and flange.

HINT:

There are 6 different thicknesses of flanges available.

No. 1 clutch flange thickness: mm (in.)

Thickness	Thickness
3.0 (0.118)	3.3 (0.130)
3.1 (0.122)	3.4 (0.134)
3.2 (0.126)	3.5 (0.138)

**19. INSPECT CLEARANCE OF NO. 2 CLUTCH DISC**

- Install the direct multiple disc clutch assembly onto the transaxle rear cover.
- Using a dial indicator, measure the No. 2 clutch pack clearance while applying and releasing compressed air (200 kPa, 2.0 kgf/cm², 29 psi).

HINT:

Measure the clearance at 3 points where the diameter of the No. 2 direct multiple clutch piston is approximately 152 mm (5.98 in.) and calculate the average.

Pack clearance:

0.544 to 0.744 mm (0.0214 to 0.0293 in.)

If the pack clearance is not as specified, inspect the discs, plates and flange.

HINT:

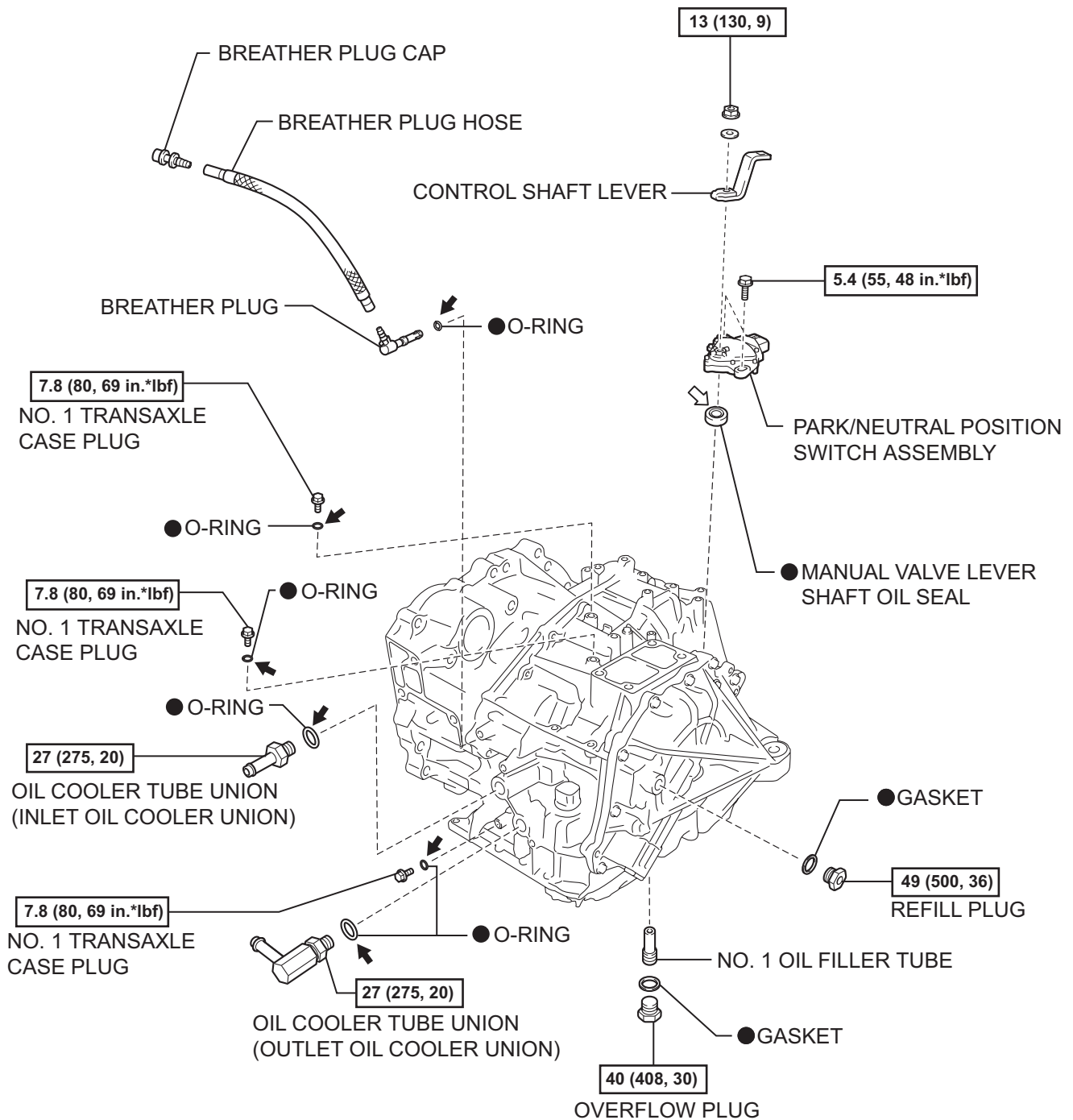
There are 6 different thicknesses of flanges available.

No. 2 clutch flange thickness: mm (in.)

Thickness	Thickness
3.0 (0.118)	3.3 (0.130)
3.1 (0.122)	3.4 (0.134)
3.2 (0.126)	3.5 (0.138)

AUTOMATIC TRANSAXLE UNIT

COMPONENTS



[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part

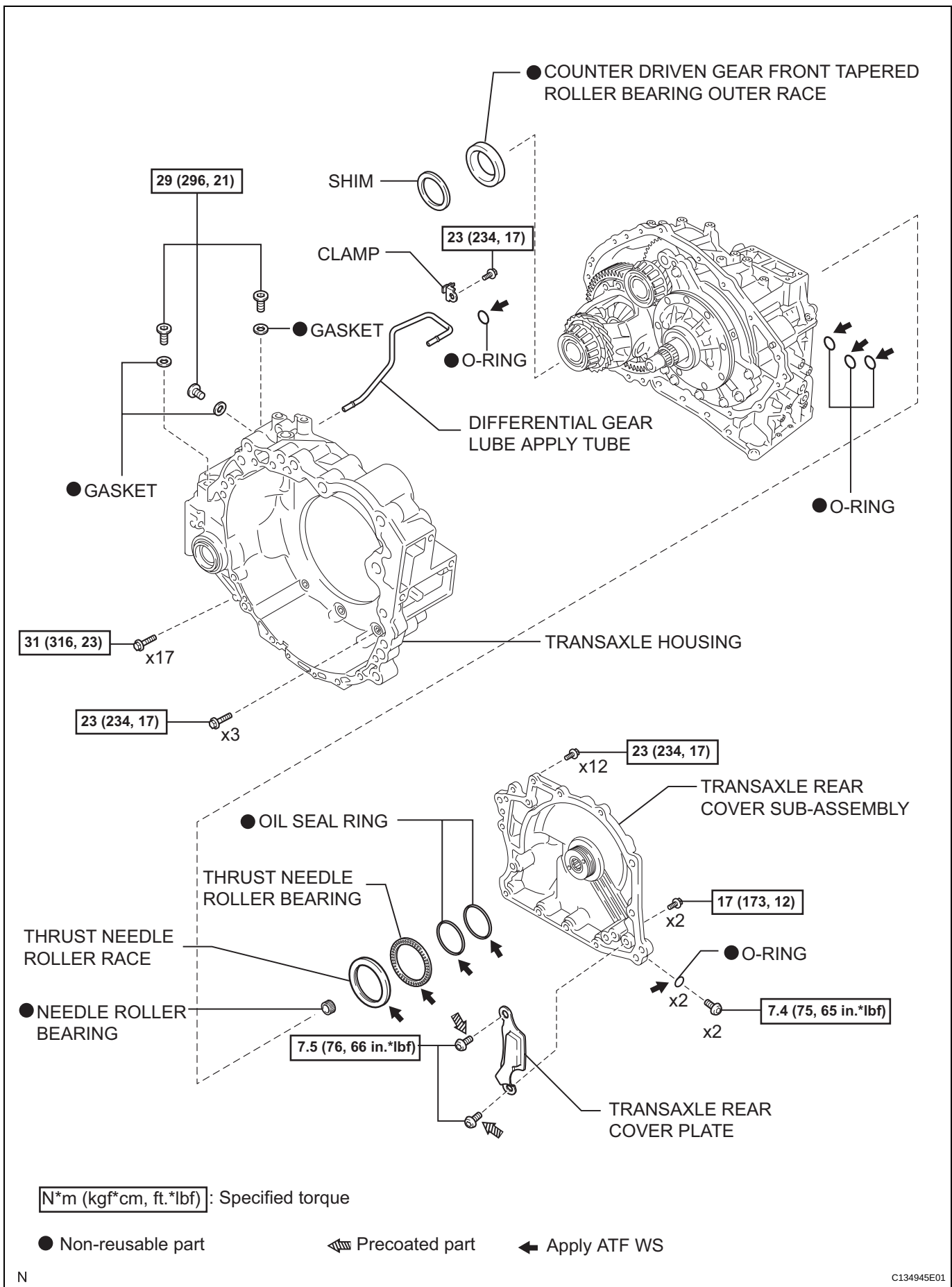
↔ Apply MP grease

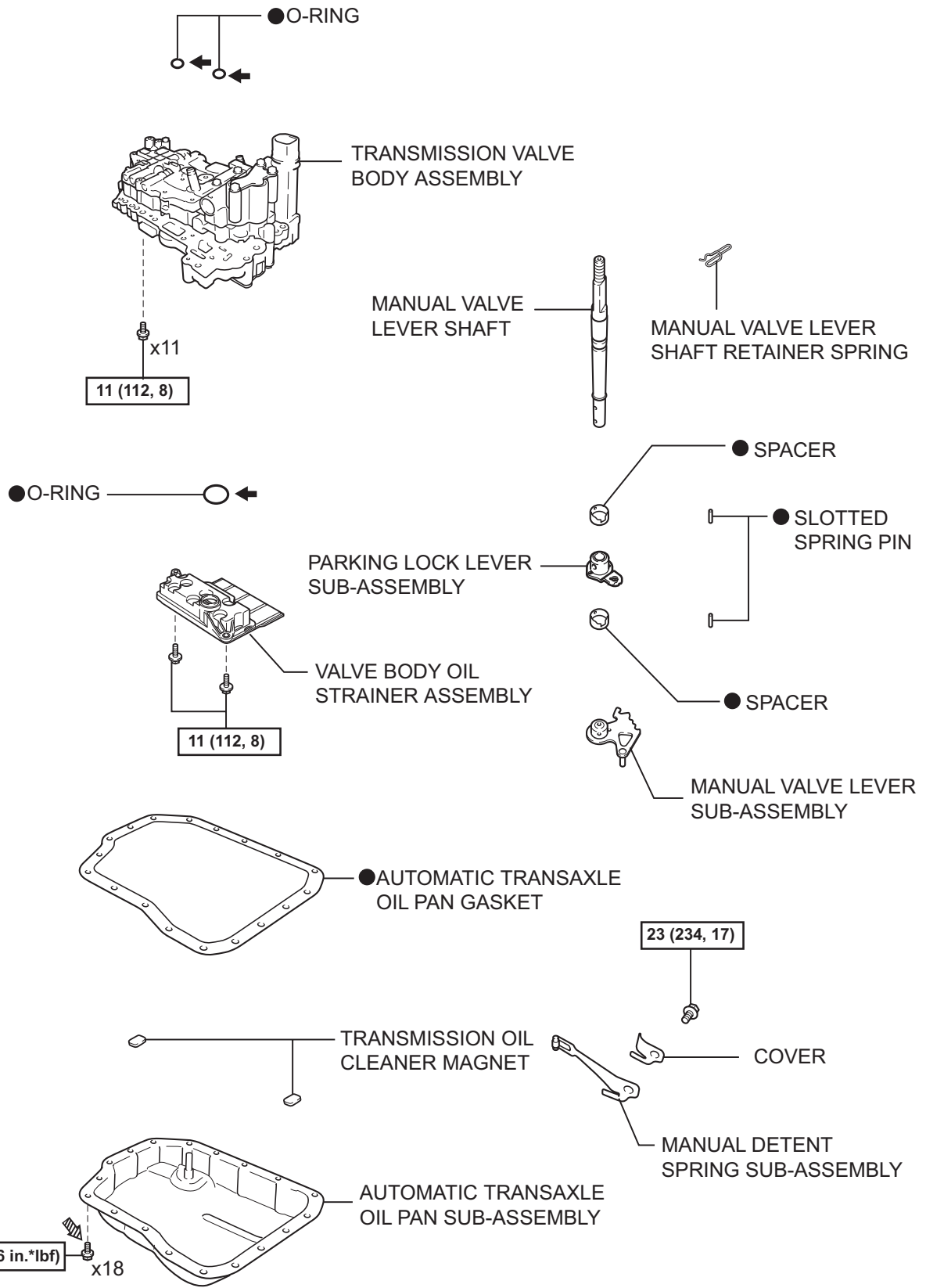
← Apply ATF WS

N

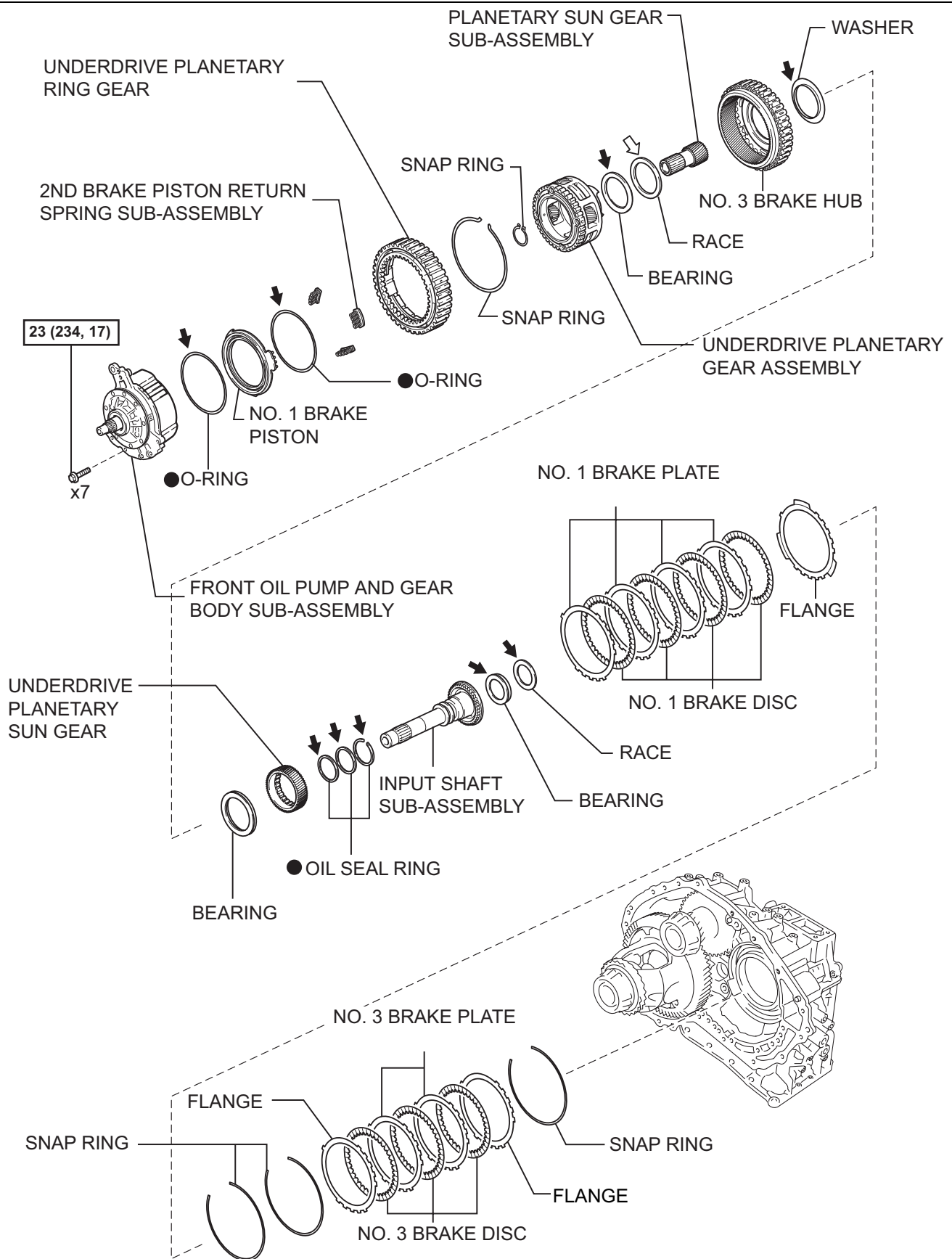
C134944E01

AX





AX

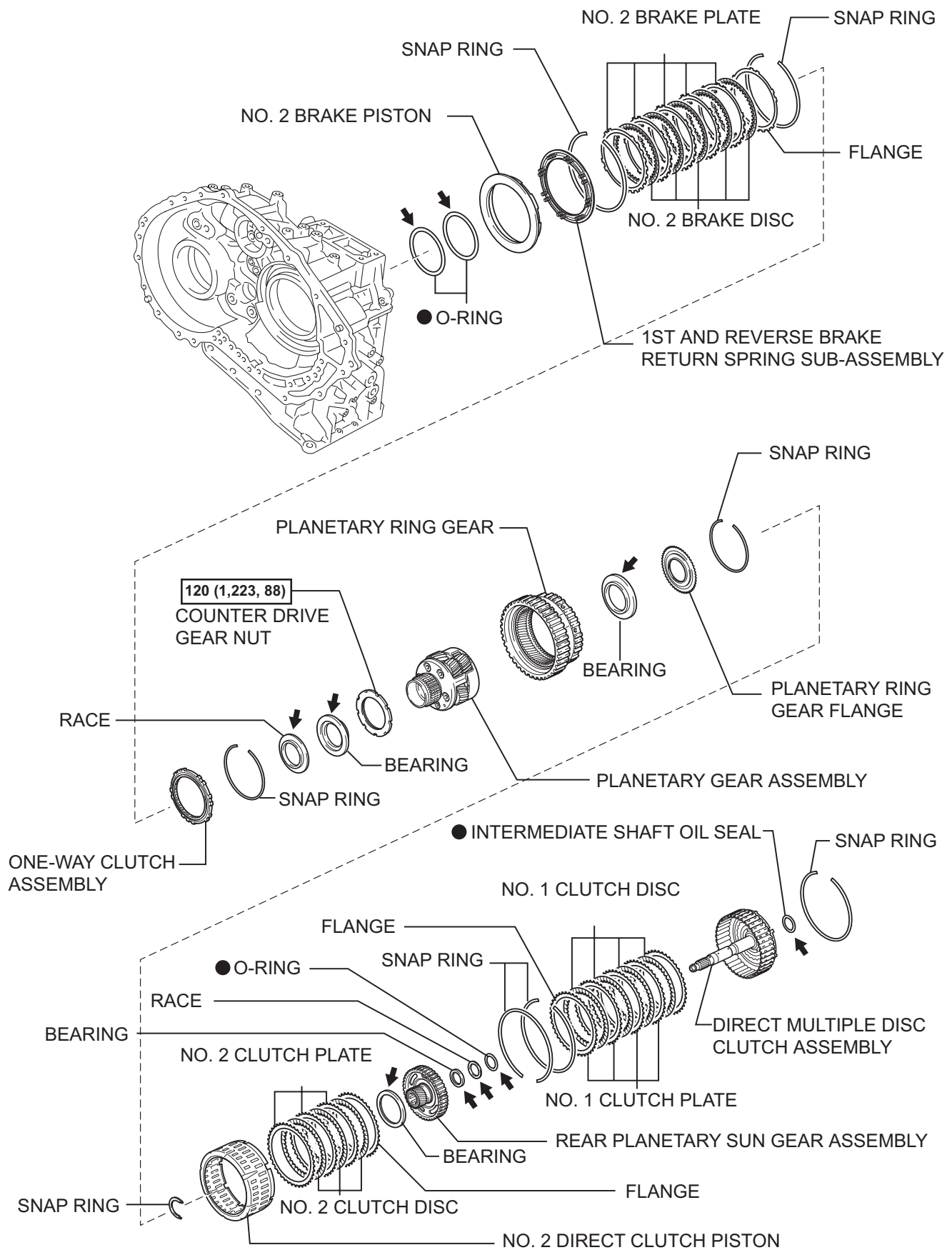


N*m (kgf*cm, ft.*lbf): Specified torque

● Non-reusable part

↔ Apply MP grease

← Apply ATF WS



N*m (kgf*cm, ft.*lbf) : Specified torque

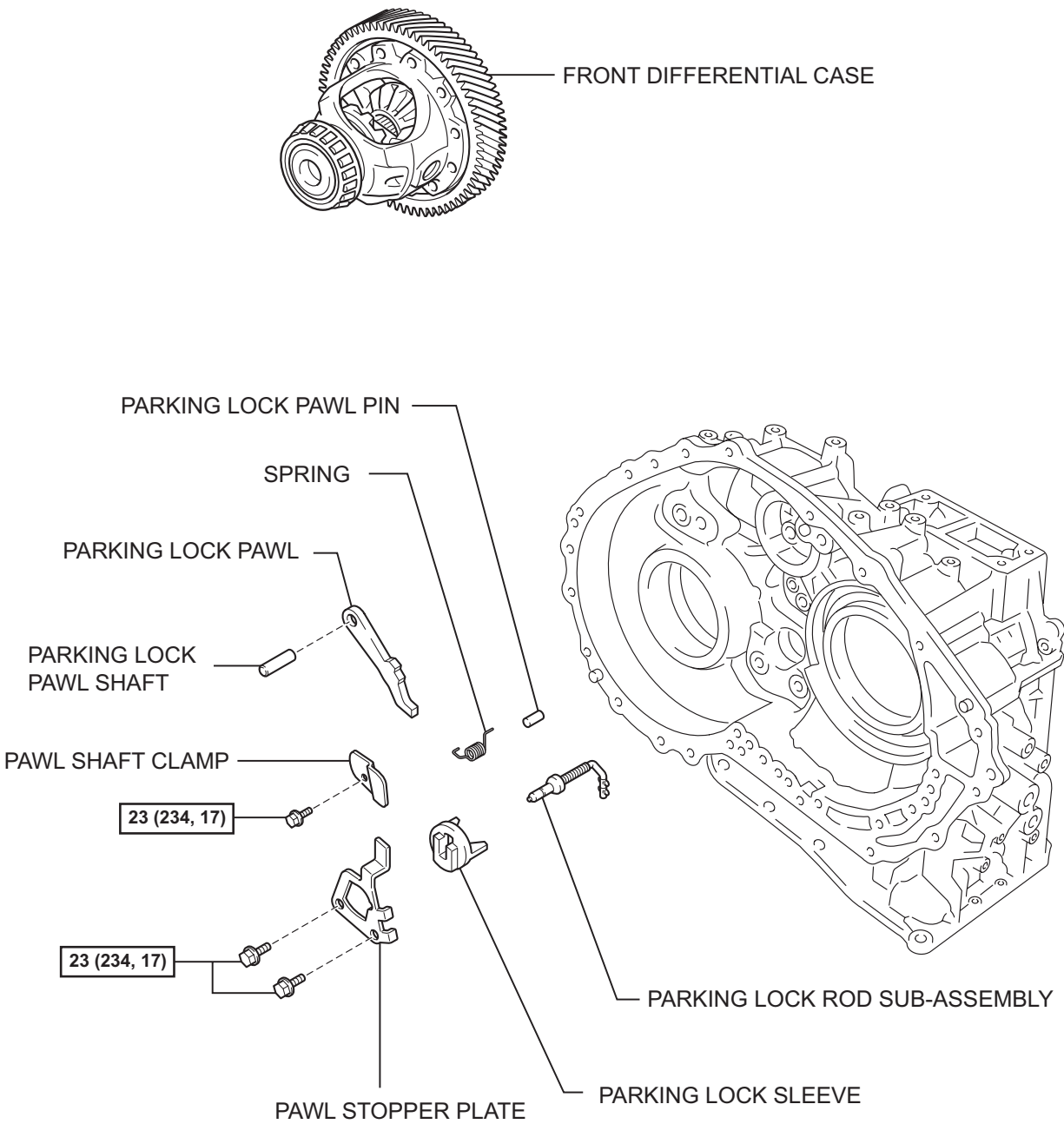
● Non-reusable part

← Apply ATF WS

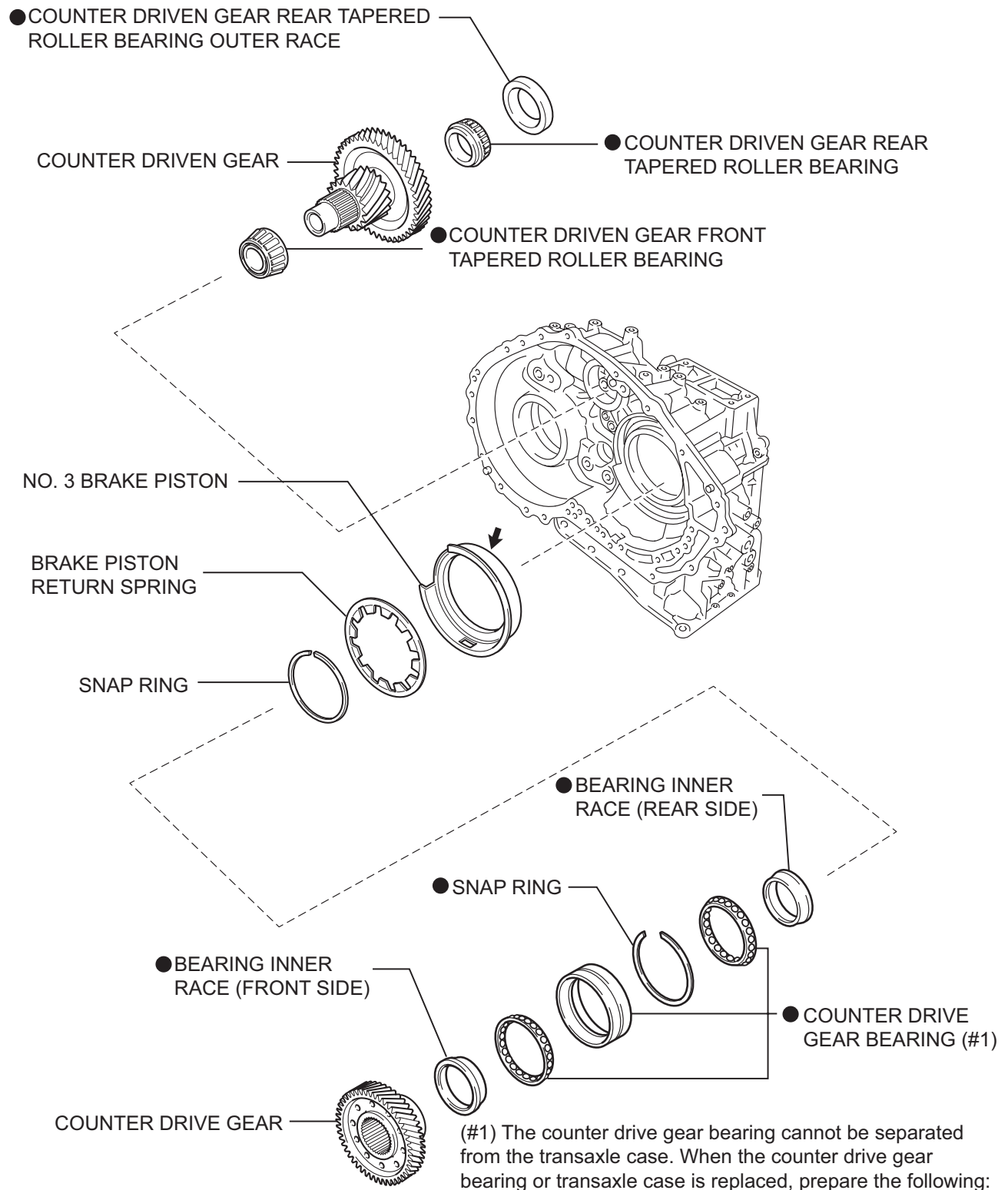
N

C134948E01

AX



N*m (kgf*cm, ft.*lbf) : Specified torque



● Non-reusable part

← Apply ATF WS

● COUNTER DRIVE GEAR BEARING

● SNAP

● TRANSAXLE CASE

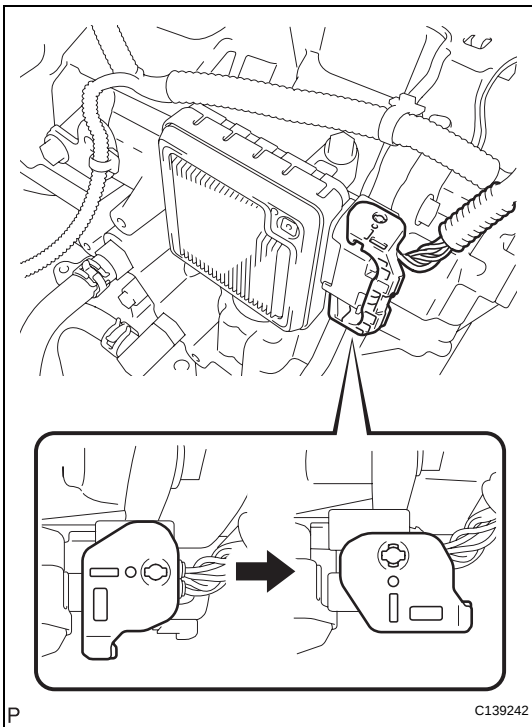
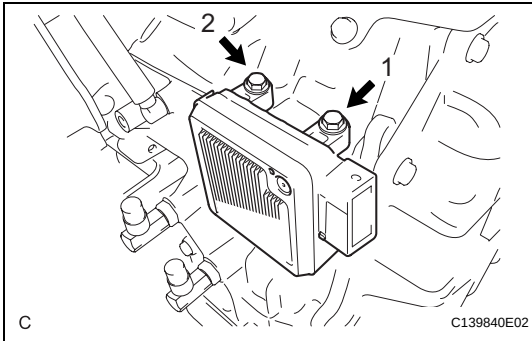
AX

INSTALLATION

1. INSTALL TCM

- (a) Install the TCM to the transaxle.
- (b) Install and tighten the 2 bolts in the order shown in the illustration.

Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)



- (c) Connect the connector to the TCM.
- (d) Turn the lock lever and secure the connector with the lock lever.

2. INSTALL INTAKE AIR RESONATOR SUB-ASSEMBLY (See page [EM-47](#))

3. INSTALL NO. 1 AIR CLEANER INLET (See page [EM-48](#))

4. INSTALL AIR CLEANER INLET ASSEMBLY (See page [EM-48](#))

5. INSTALL BATTERY (See page [EM-47](#))

6. INSTALL COOL AIR INTAKE DUCT SEAL (See page [EM-50](#))

7. PERFORM TCM REGISTRATION

HINT:
(See page [AX-18](#))

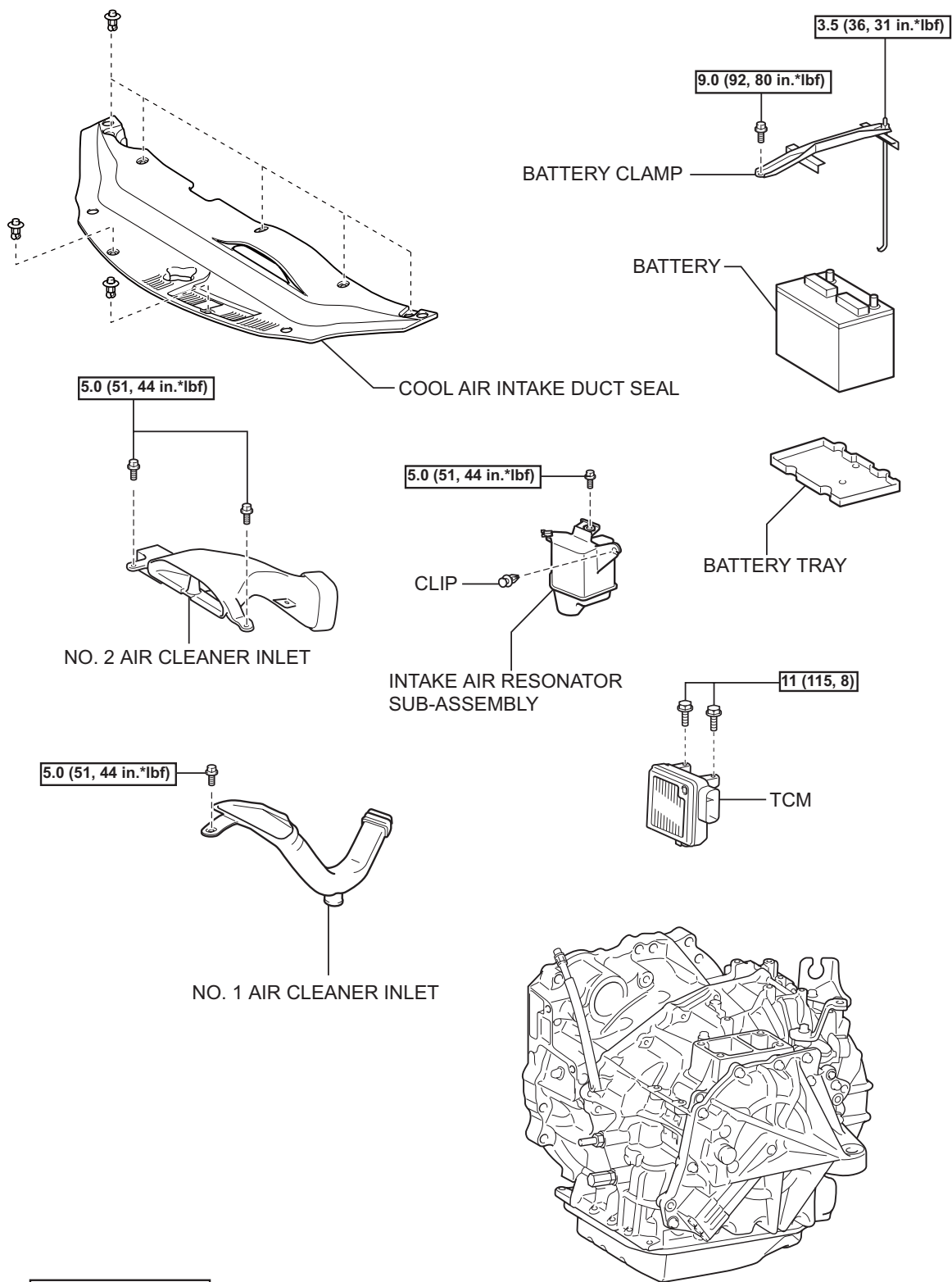
8. PERFORM INITIALIZATION

- (a) Perform initialization procedure (See page [IN-33](#)).

NOTICE:

Some systems need initialization after reconnecting the cable to the negative battery terminal.

TCM
COMPONENTS



AX

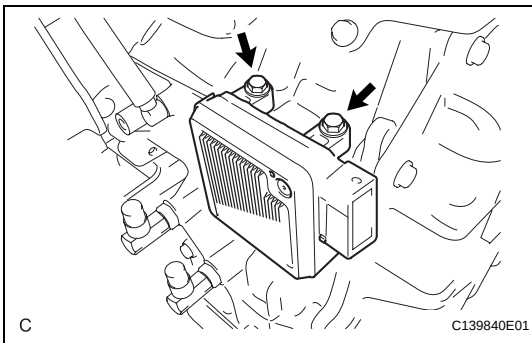
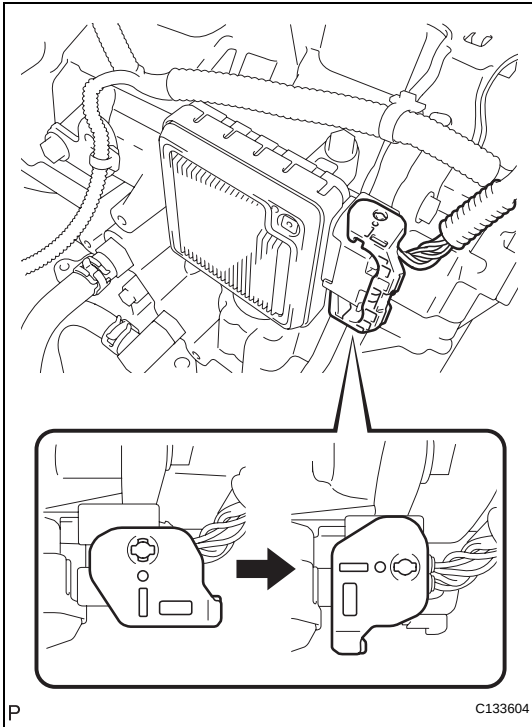
N*m (kgf*cm, ft.*lbf) : Specified torque

REMOVAL

NOTICE:

When the TCM is replaced, the existing transaxle compensation codes must be input into the new TCM (See page [AX-21](#)).

1. REMOVE COOL AIR INTAKE DUCT SEAL (See page [EM-22](#))
2. REMOVE BATTERY (See page [EM-24](#))
3. REMOVE AIR CLEANER INLET ASSEMBLY (See page [EM-23](#))
4. REMOVE NO. 1 AIR CLEANER INLET (See page [EM-23](#))
5. REMOVE INTAKE AIR RESONATOR SUB-ASSEMBLY (See page [EM-24](#))
6. REMOVE TCM
 - (a) Turn the lock lever and disconnect the connector from the TCM.



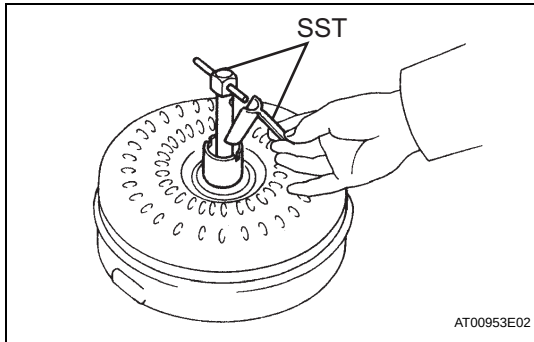
- (b) Remove the 2 bolts and TCM from the transaxle.

REMOVAL

1. REMOVE TORQUE CONVERTER CLUTCH ASSEMBLY

HINT:

(See page AX-215)



INSPECTION

1. INSPECT TORQUE CONVERTER CLUTCH ASSEMBLY

(a) Inspect the one-way clutch.

- (1) Set SST into the inner race of the one-way clutch.

SST 09350-32014 (09351-32010)

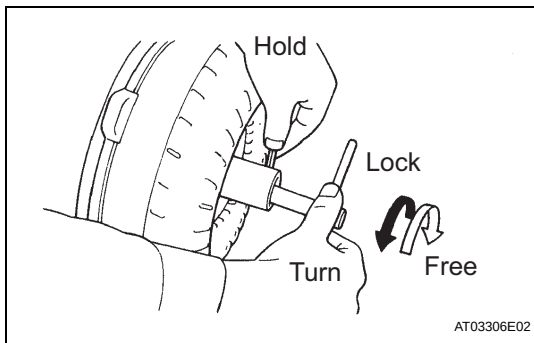
- (2) Install SST so that it fits in the notch of the converter hub and the outer race of the one-way clutch.

SST 09350-32014 (09351-32010, 09351-32020)

- (3) Stand the torque converter up and turn the SST.

Standard:

If the one-way clutch is turned clockwise, it rotates freely and if turned counterclockwise, it locks.



(b) Determine the condition of the torque converter clutch assembly.

- (1) If the inspection result of the torque converter clutch assembly satisfies the following conditions, replace the torque converter clutch assembly.

Malfunction item:

A metallic sound is emitted from the torque converter clutch assembly during the stall test or when the shift lever is moved to the N position.

The one-way clutch is free or locked in both directions.

The amount of powder in the ATF is greater than the sample shown in the illustration (see the sample).

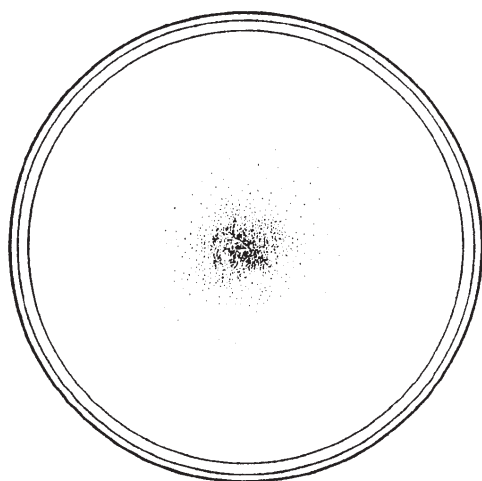
HINT:

The sample shows ATF of approximately 0.25 liters (0.26 US qts, 0.22 Imp. qts) that is taken out from the removed torque converter clutch.

(c) Exchange the ATF in the torque converter clutch.

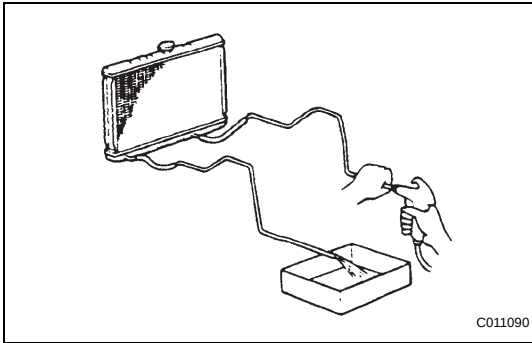
- (1) If the ATF is discolored and/or has a foul odor, completely stir the ATF in the torque converter clutch and drain it.

Sample showing minimum amount of powders in ATF



Actual Size

D025367E07



- (d) Clean and check the oil cooler and oil pipe line.
- (1) If the torque converter clutch is inspected or the ATF is exchanged, clean the oil cooler and oil pipe line.

HINT:

- Spray compressed air of 196 kPa (2 kgf/cm², 28 psi) from the inlet hose.
- If plenty of fine powders are identified in the ATF, add new ATF using a bucket pump and clean it again.

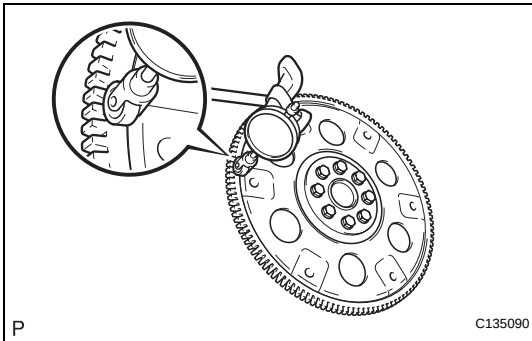
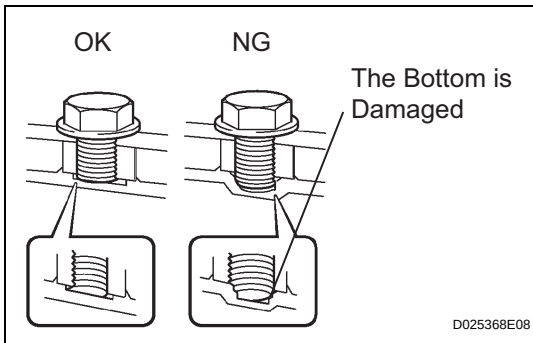
- (2) If the ATF is cloudy, inspect the oil cooler (radiator).

- (e) Prevent deformation of the torque converter clutch and damage to the oil pump gear.

- (1) When there is any damage to the end of the bolt for the torque converter clutch and to the bottom of the bolt hole, replace the bolt and the torque converter clutch.

- (2) All of the bolts must be the same length.

- (3) Bolts with washers must be used.



2. INSPECT DRIVE PLATE AND RING GEAR SUB-ASSEMBLY

- (a) Set up a dial indicator with a roller instrument and measure the drive plate runout.

Maximum runout:

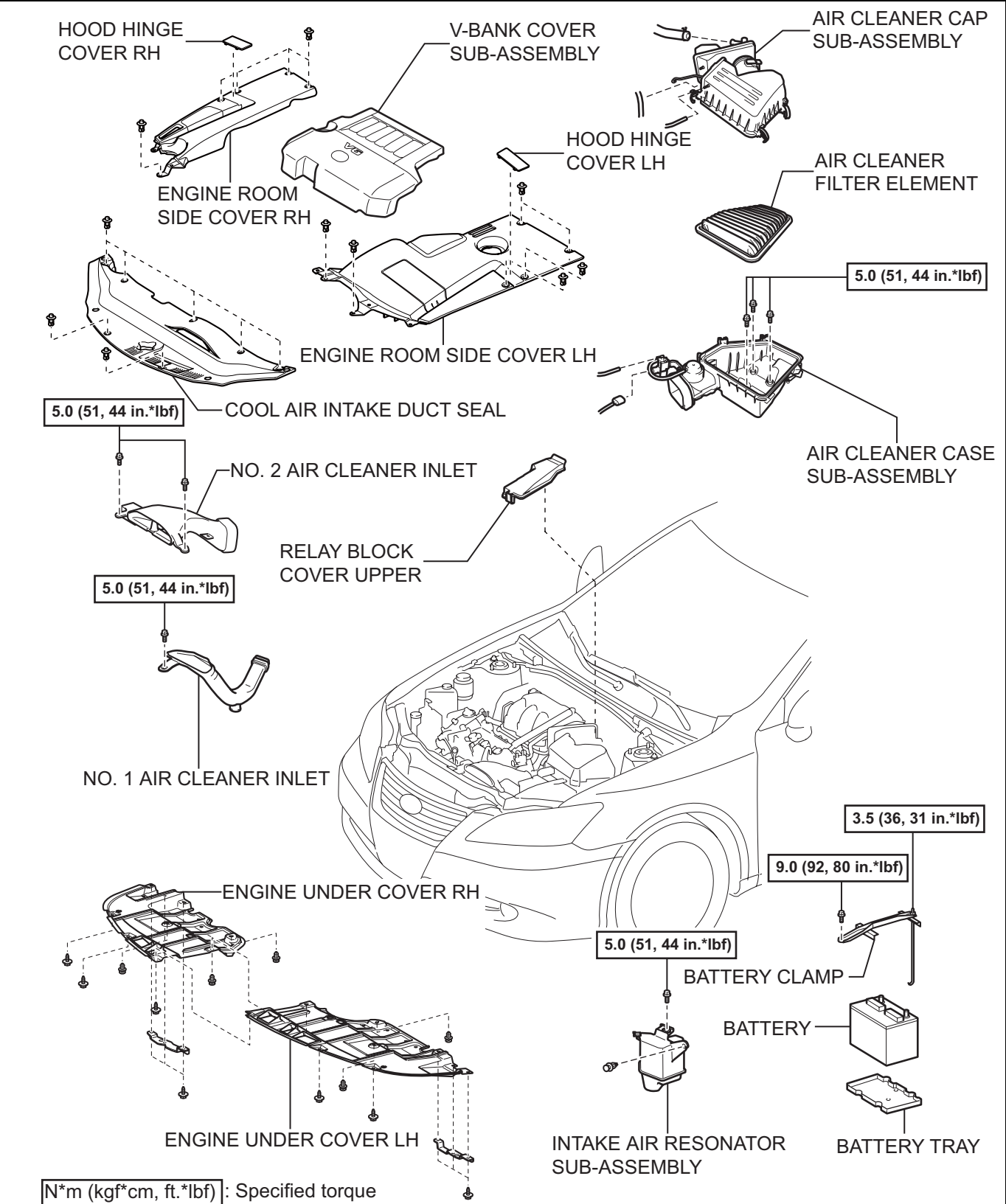
0.20 mm (0.0079 in.)

- (b) Check for damage of the ring gear.

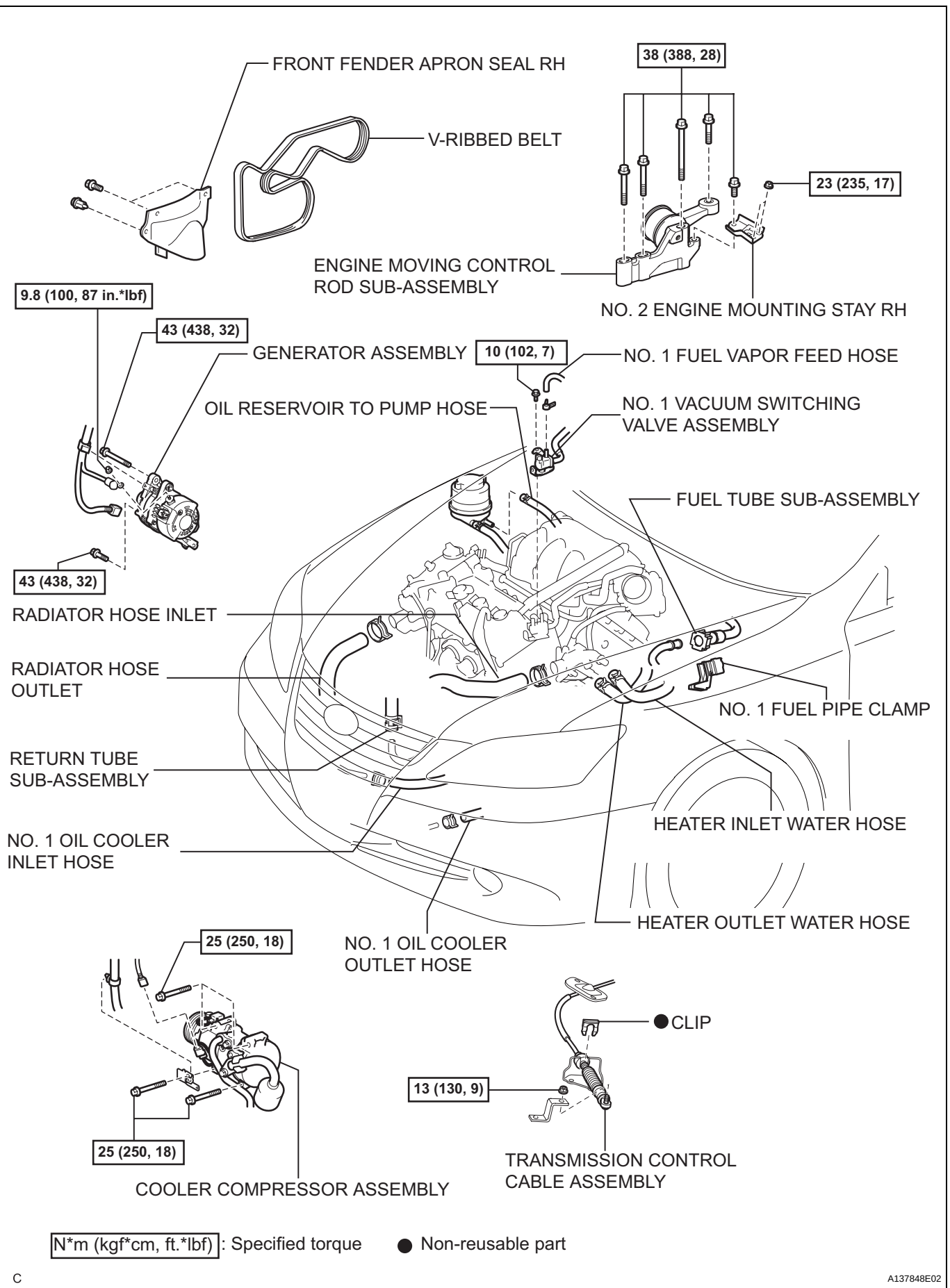
If runout is not within specification or the ring gear is damaged, replace the drive plate.

TORQUE CONVERTER CLUTCH AND DRIVE PLATE

COMPONENTS



AX



STEERING INTERMEDIATE
SHAFT ASSEMBLY

35 (360, 26)

FRONT STABILIZER LINK ASSEMBLY LH

TIE ROD ASSEMBLY LH

49 (500, 36)

● COTTER PIN

FRONT SPEED SENSOR LH

8.0 (85, 71 in.*lbf)

294 (3,000, 217)

FRONT AXLE HUB NUT LH

FRONT SUSPENSION
LOWER NO. 1 ARM LH

75 (765, 55)

● GASKET

62 (632, 46)

● GASKET

62 (632, 46)

NO. 1 EXHAUST PIPE SUPPORT BRACKET

EXHAUST PIPE ASSEMBLY FRONT

56 (571, 41)

33 (337, 24)

21 (214, 15)

EXHAUST PIPE NO. 1
SUPPORT BRACKET

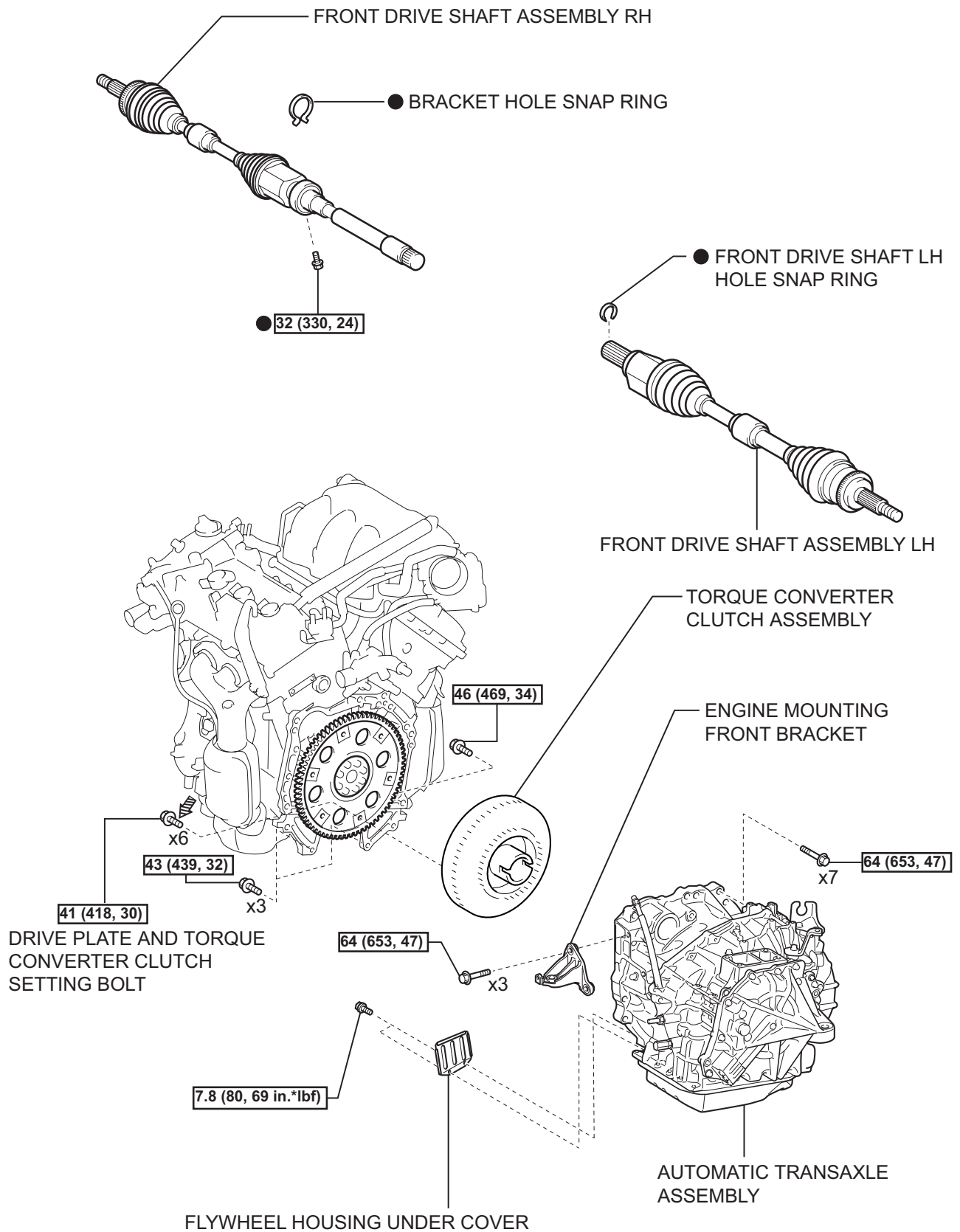
[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part

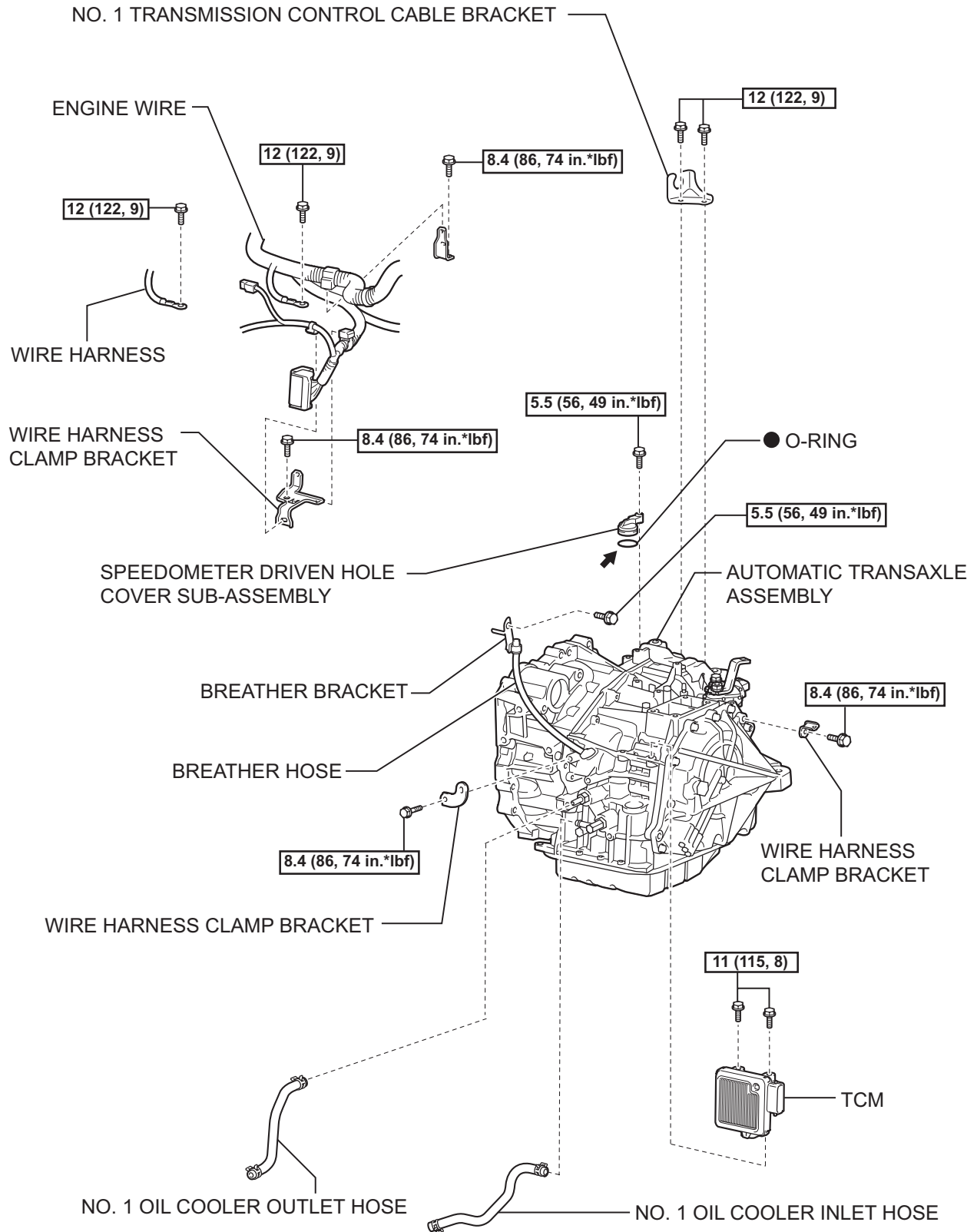
AX



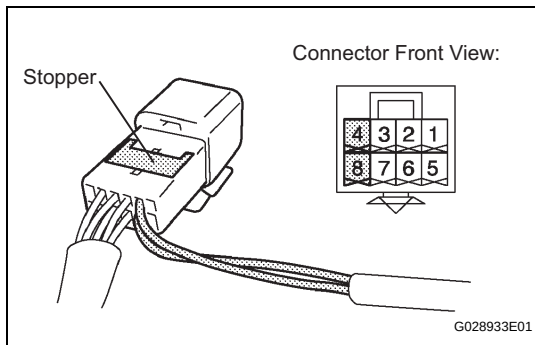
AX



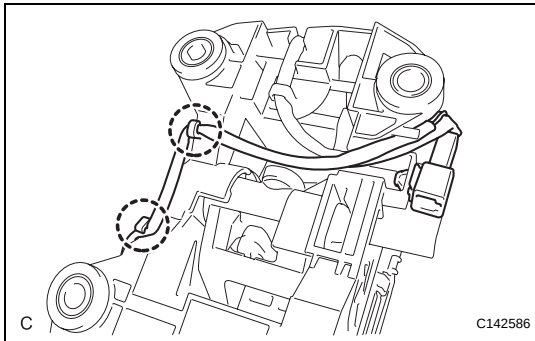
[N*m (kgf*cm, ft.*lbf)]: Specified torque ● Non-reusable part ◀ Precoated part



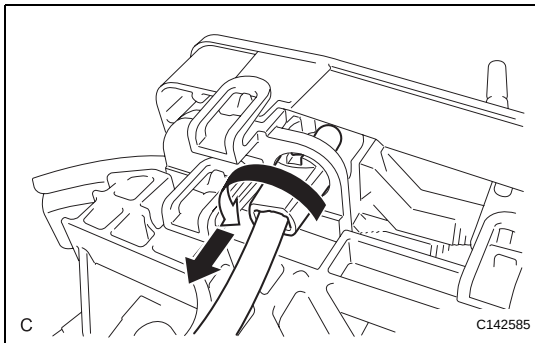
N*m (kgf*cm, ft.*lbf): Specified torque ● Non-reusable part ← Apply ATF WS



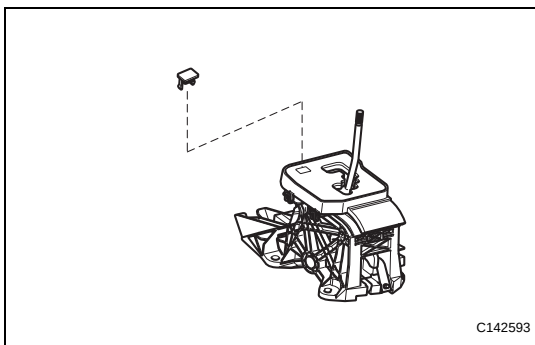
- (b) Connect terminals (4) and (8) of the indicator light wire.
- (c) Push the stopper.



- (d) Install the indicator light wire to the 2 clamps on the lower shift lever assembly.

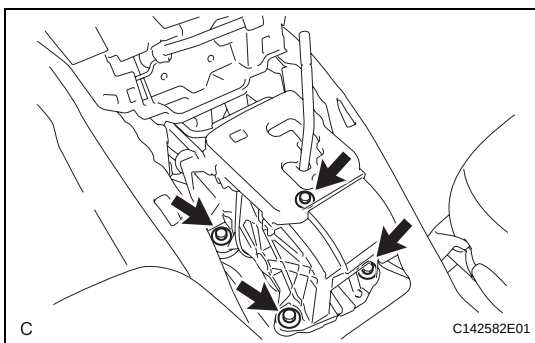


- (e) Install the indicator light wire into the shift lever assembly while aligning the groove on the unit with the indicator light guide key.
- (f) Install the indicator light guide by turning it clockwise until it securely locks.



6. INSTALL SHIFT LOCK RELEASE BUTTON COVER

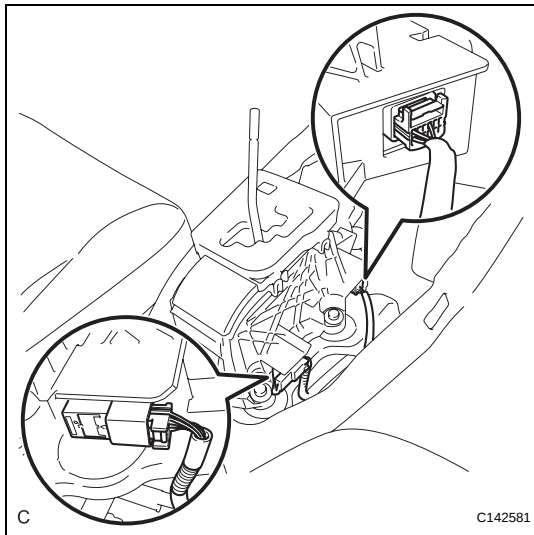
- (a) Install the shift lock release button cover to the position indicator housing assembly.



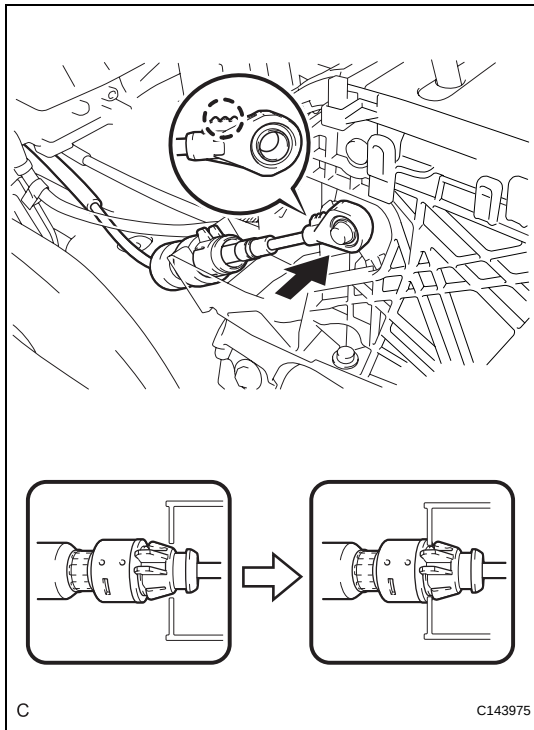
INSTALLATION

1. INSTALL SHIFT LEVER ASSEMBLY

- (a) Install the 4 bolts and shift lever assembly.
Torque: 12 N*m (122 kgf*cm, 9 ft.*lbf)



- (b) Connect the shift lock control ECU connector and transmission control switch wire connector.



2. INSTALL TRANSMISSION CONTROL CABLE ASSEMBLY

- (a) Install the transmission control cable assembly as shown in the illustration.

HINT:

- Install the floor shift cable with the uneven surface facing up.
- Securely engage the claws of the floor shift cable.

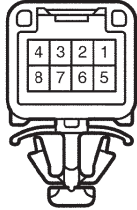
3. INSTALL NO. 3 CONSOLE BOX DUCT (See page [AC-163](#))
4. INSTALL NO. 2 CONSOLE BOX DUCT (See page [AC-163](#))
5. INSTALL REAR CONSOLE BOX ASSEMBLY (See page [IP-39](#))
6. INSTALL CONSOLE REAR END PANEL SUB-ASSEMBLY (See page [IP-40](#))
7. INSTALL CONSOLE BOX CARPET (See page [IP-41](#))
8. INSTALL CONSOLE BOX POCKET (See page [IP-41](#))
9. INSTALL HEATER SEAT SWITCH CONSOLE BASE (w/o Seat Heater System) (See page [IP-41](#))
10. INSTALL HEATER SEAT SWITCH CONSOLE BASE (w/ Seat Heater System) (See page [IP-41](#))
11. INSTALL UPPER CONSOLE PANEL ASSEMBLY WITH FRONT ASH RECEPTACLE (See page [IP-42](#))
12. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (See page [IP-42](#))
13. INSTALL INSTRUMENT PANEL FINISH PANEL END RH (See page [IP-44](#))
14. INSTALL INSTRUMENT PANEL FINISH PANEL END LH (See page [IP-46](#))
15. INSPECT SHIFT LEVER POSITION (See page [AX-200](#))

16. ADJUST SHIFT LEVER POSITION (See page [AX-200](#))

Switch Side:

(Connector Front View):

J43



C110341E15

INSPECTION

1. INSPECT TRANSMISSION CONTROL SWITCH

- (a) Measure the resistance between each terminal of the shift lever assembly when the shift lever is moved to each position.

Standard resistance

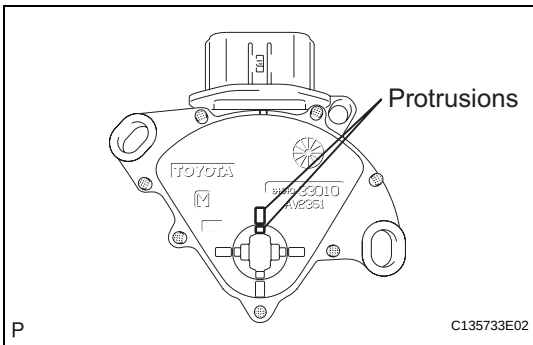
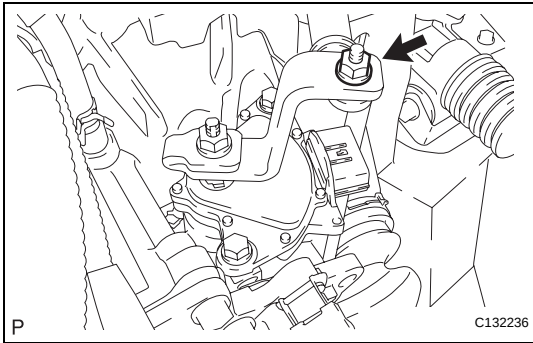
Shift Position	Tester Connection	Specified Condition
S, "+" and "-"	3 - 7	Below 1 Ω
Except S, "+" and "-"	3 - 7	10 kΩ or higher
Press continuously "+" (Upshift)	2 - 5	Below 1 Ω
S	2 - 5	10 kΩ or higher
Press continuously "-" (Downshift)	1 - 5	Below 1 Ω
S	1 - 5	10 kΩ or higher

If the resistance value is not as specified, replace the shift lock control ECU.

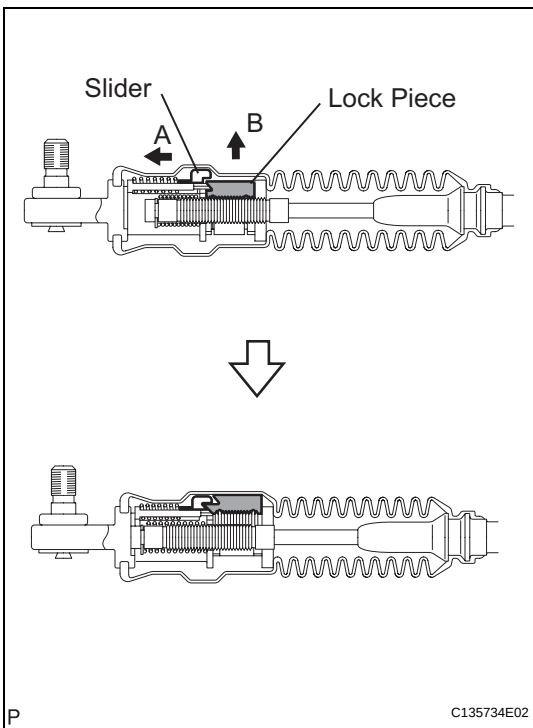
ADJUSTMENT

1. ADJUST SHIFT LEVER POSITION

- (a) Move the shift lever to the N position.
- (b) Remove the nut and transmission control cable from the control shaft lever.



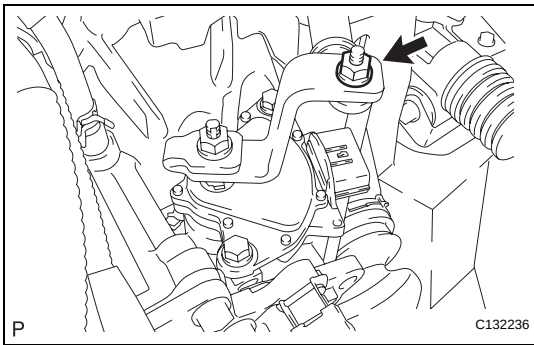
- (c) Align the protrusions of the park/neutral position switch.



- (d) Move the slider in the direction indicated by arrow A and pull up the lock piece in the direction indicated by arrow B.

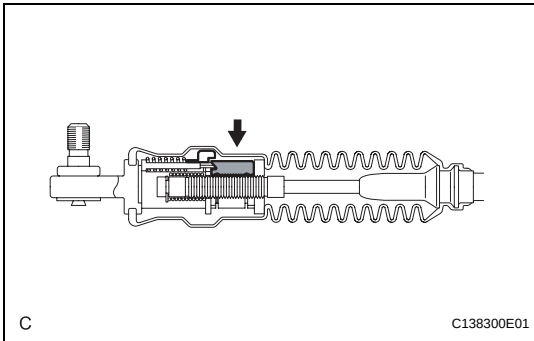
NOTICE:

Do not damage the boot.



- (e) Connect the transmission control cable assembly to the control shaft lever with the nut.

Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)



- (f) Push in the lock piece.

NOTICE:

Firmly push in the lock piece until the slider lock is engaged.

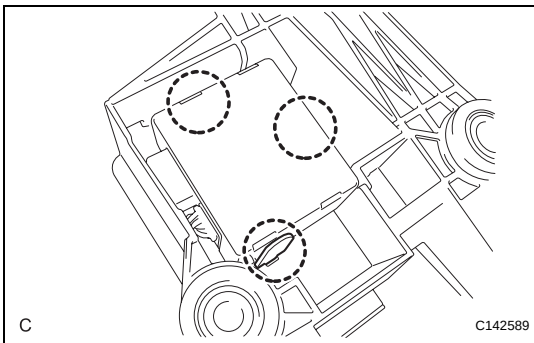
- (g) Start the engine and make sure that the vehicle moves forward when moving the lever from the N to the D position and moves rearward when moving it to the R position.

If it becomes hard to move the shift lever, readjust the shift lever position.

REASSEMBLY

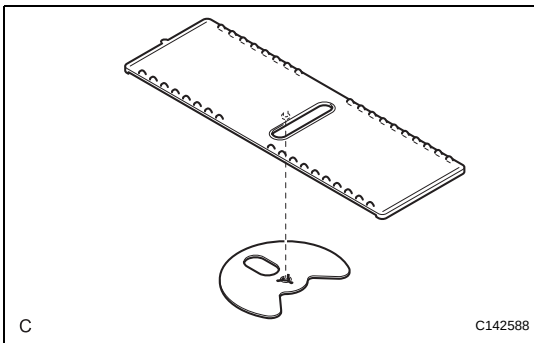
1. INSTALL SHIFT LOCK CONTROL ECU

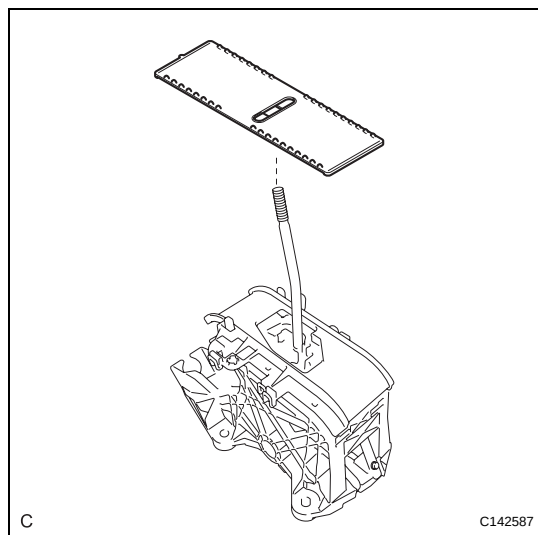
- (a) Connect the shift lock solenoid connector.
(b) Attach the shift lock control ECU to the lower shift lever assembly with the 3 claws.



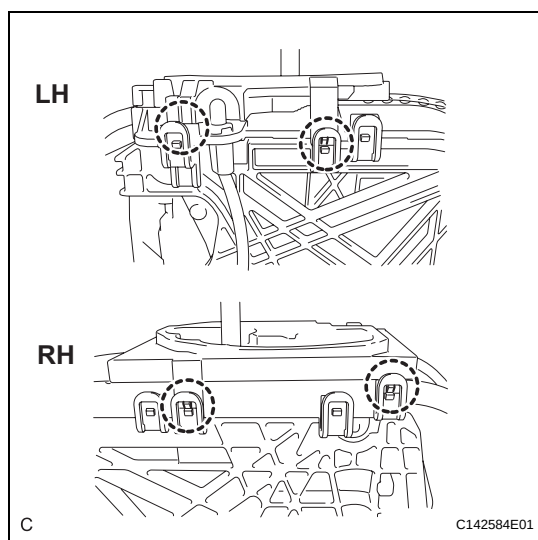
2. INSTALL POSITION INDICATOR SLIDE COVER

- (a) Connect the No. 2 position indicator slide cover to the position indicator slide cover.



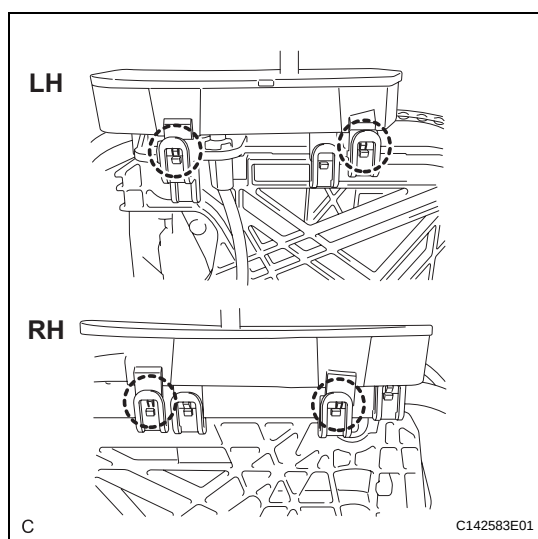


- (b) Install the position indicator slide cover to the lower shift lever assembly.



3. INSTALL POSITION INDICATOR LENS

- (a) Attach the position indicator lens to the lower shift lever assembly with the 4 claws.



4. INSTALL POSITION INDICATOR HOUSING ASSEMBLY

- (a) Attach the position indicator housing assembly to the lower shift lever assembly with the 4 claws.

5. INSTALL INDICATOR LIGHT WIRE SUB-ASSEMBLY

- (a) Install the bulb and cap.

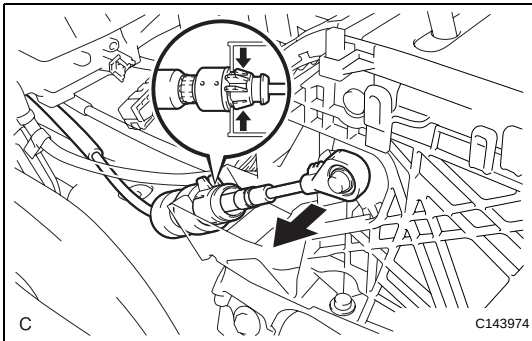
ON-VEHICLE INSPECTION

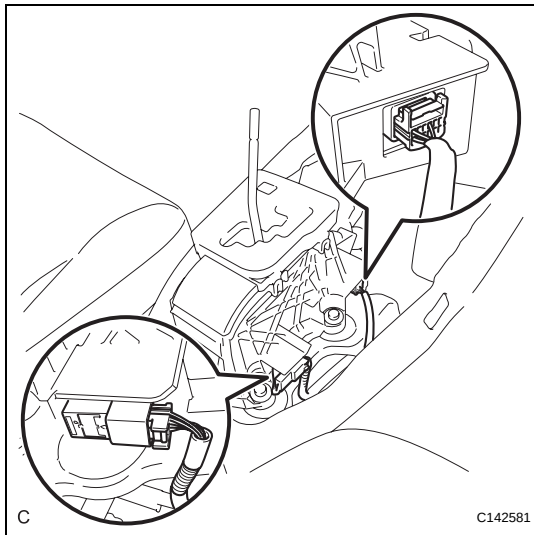
1. INSPECT SHIFT LEVER POSITION

- (a) When shifting from the P to the R position with the engine switch on (IG) and the brake pedal depressed, make sure that the shift lever moves smoothly and moves correctly into position.
- (b) Start the engine and make sure that the vehicle moves forward when shifting from the N to the D position and moves rearward when shifting to the R position. If operation cannot be done as specified, inspect the park/neutral position switch assembly and check the shift lever assembly installation condition.

REMOVAL

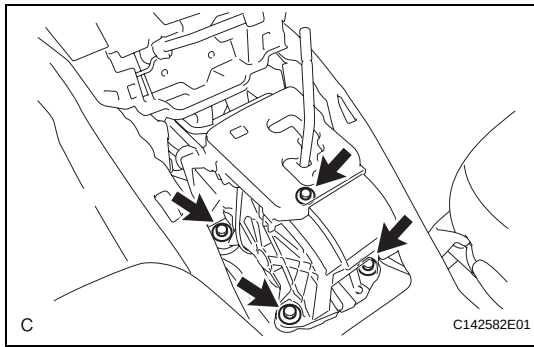
1. REMOVE INSTRUMENT PANEL FINISH PANEL END LH (See page [IP-13](#))
2. REMOVE INSTRUMENT PANEL FINISH PANEL END RH (See page [IP-15](#))
3. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (See page [IP-16](#))
4. REMOVE UPPER CONSOLE PANEL ASSEMBLY WITH FRONT ASH RECEPTACLE (See page [IP-16](#))
5. REMOVE HEATER SEAT SWITCH CONSOLE BASE (w/o Seat Heater System) (See page [IP-17](#))
6. REMOVE HEATER SEAT SWITCH CONSOLE BASE (w/ Seat Heater System) (See page [IP-18](#))
7. REMOVE CONSOLE BOX POCKET (See page [IP-18](#))
8. REMOVE CONSOLE BOX CARPET (See page [IP-18](#))
9. REMOVE CONSOLE REAR END PANEL SUB-ASSEMBLY (See page [IP-19](#))
10. REMOVE REAR CONSOLE BOX ASSEMBLY (See page [IP-19](#))
11. REMOVE NO. 2 CONSOLE BOX DUCT (See page [AC-149](#))
12. REMOVE NO. 3 CONSOLE BOX DUCT (See page [AC-149](#))
13. **DISCONNECT TRANSMISSION CONTROL CABLE ASSEMBLY**
 - (a) Disconnect the end of the transmission control cable from the shift lever assembly.
 - (b) Disconnect the transmission control cable assembly from the shift lever assembly while pushing the 2 claws of the floor shift cable.



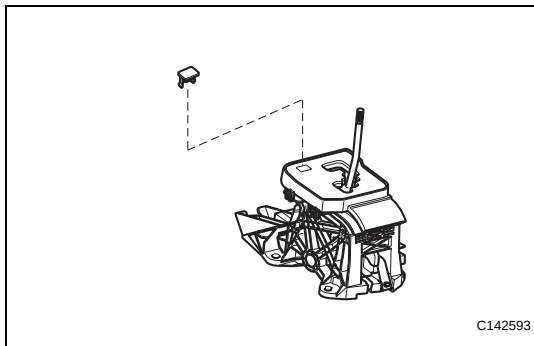


14. REMOVE SHIFT LEVER ASSEMBLY

- (a) Disconnect the shift lock control ECU connector and transmission control switch wire connector.



- (b) Remove the 4 bolts and shift lever assembly.



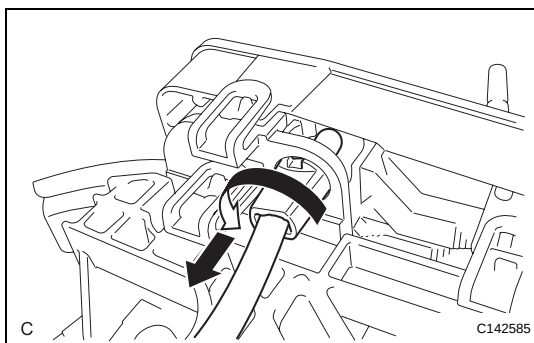
DISASSEMBLY

1. REMOVE SHIFT LOCK RELEASE BUTTON COVER

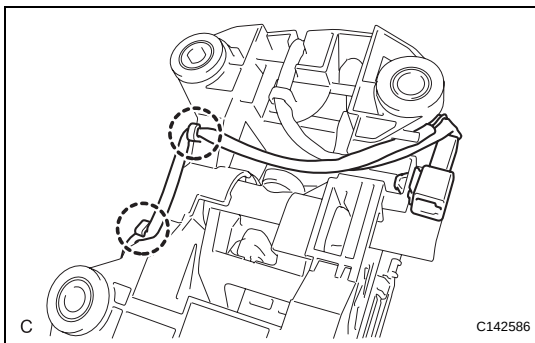
- (a) Using a screwdriver, remove the shift lock release button cover from the position indicator housing assembly.

2. REMOVE INDICATOR LIGHT WIRE SUB-ASSEMBLY

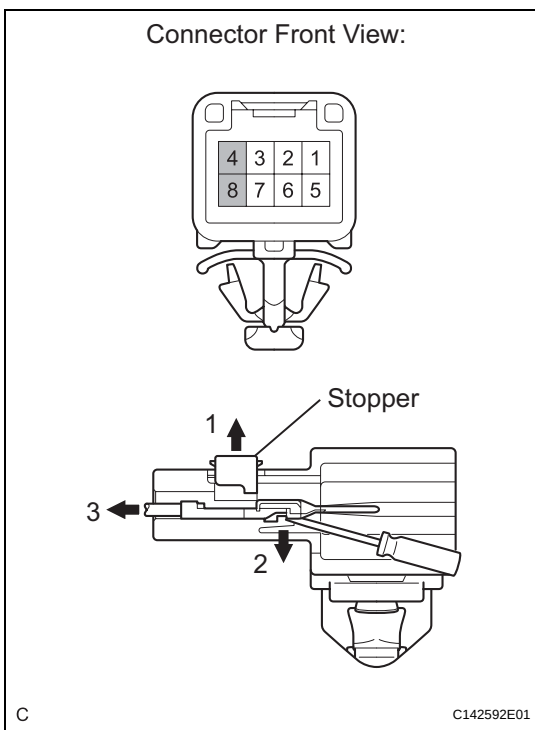
- (a) Turn the indicator light guide counterclockwise.



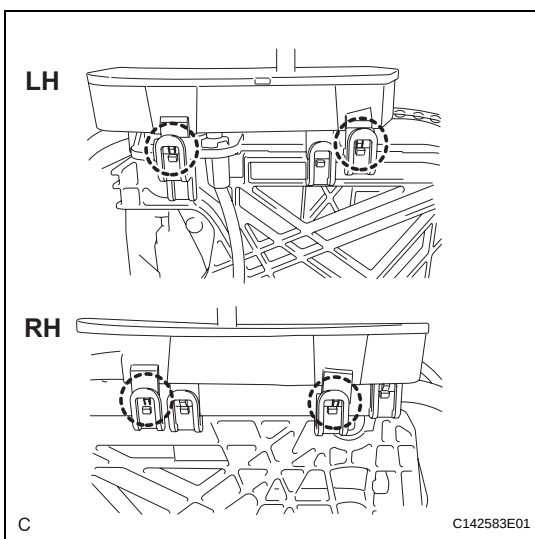
- (b) Align the indicator light guide key with the groove on the shift lever assembly to remove the indicator light wire.



- (c) Release the indicator light wire from the 2 clamps on the shift lever assembly.

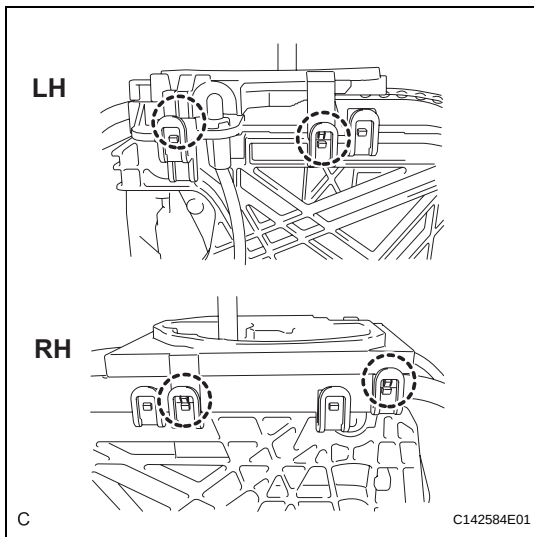


- (d) Using a screwdriver, release the stopper.
 (e) Using a screwdriver, disengage the locking lug of terminals (4) and (8), and pull the terminals out from the rear of the connector.
 (f) Remove the bulb and cap.



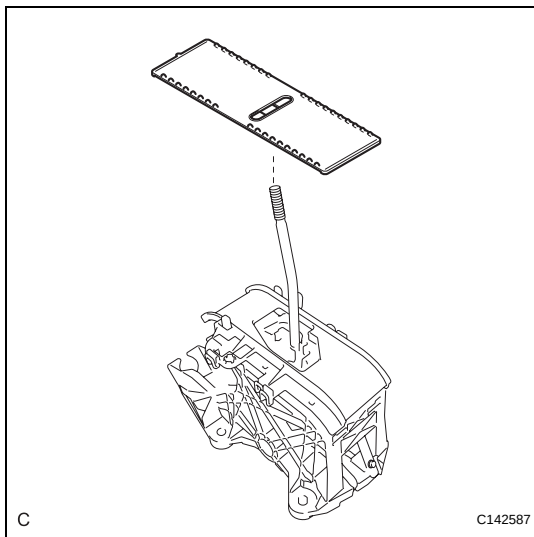
3. REMOVE POSITION INDICATOR HOUSING ASSEMBLY

- (a) Detach the 4 claws and remove the position indicator housing assembly from the lower shift lever assembly.



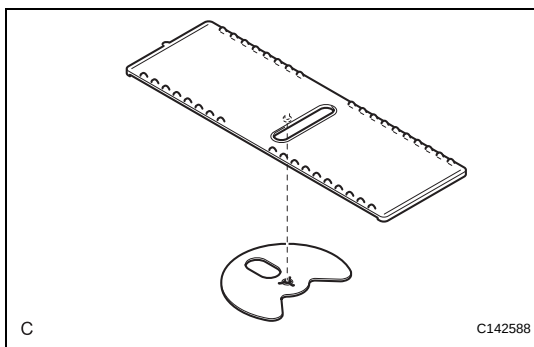
4. REMOVE POSITION INDICATOR LENS

- (a) Detach the 4 claws and remove the position indicator lens from the lower shift lever assembly.

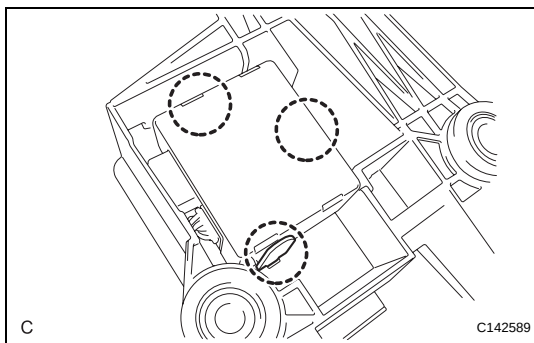


5. REMOVE POSITION INDICATOR SLIDE COVER

- (a) Remove the position indicator slide cover from the lower shift lever assembly.



- (b) Separate the No. 2 position indicator slide cover from the position indicator slide cover.

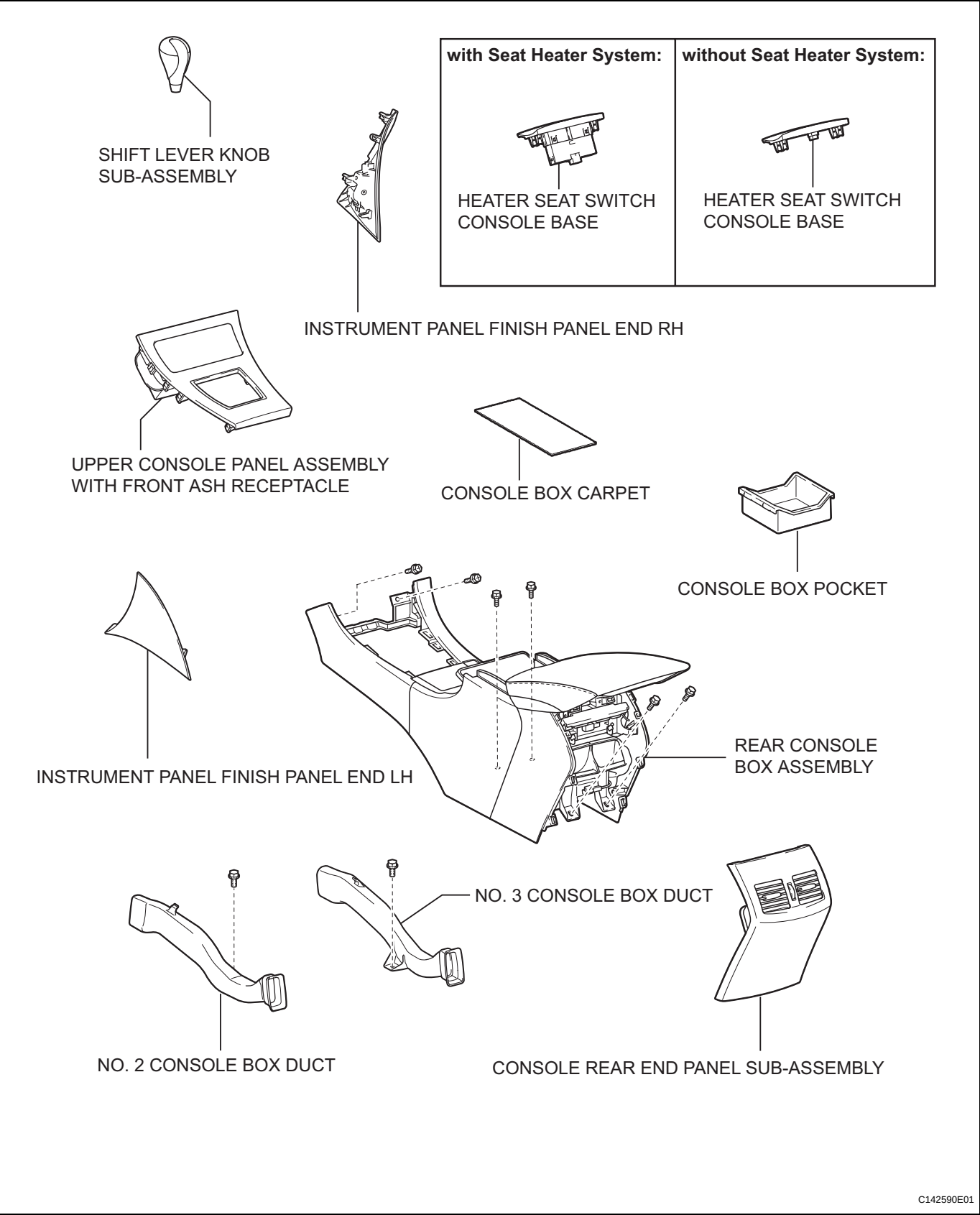


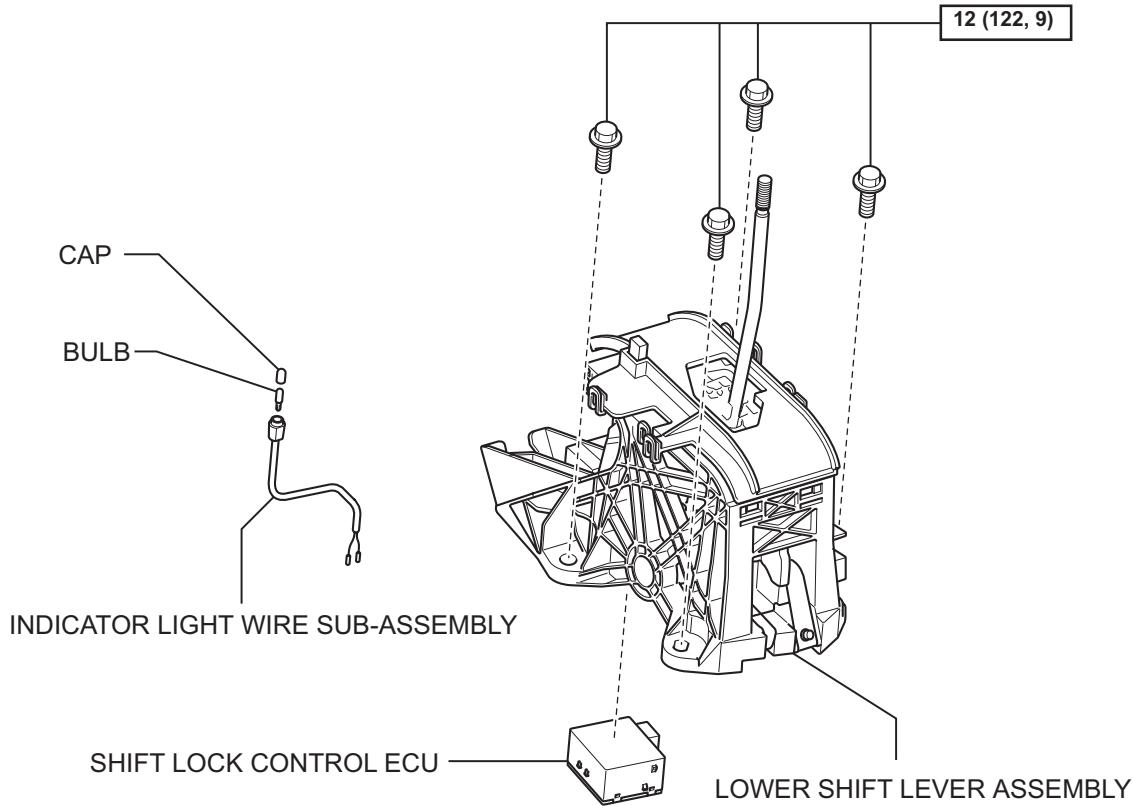
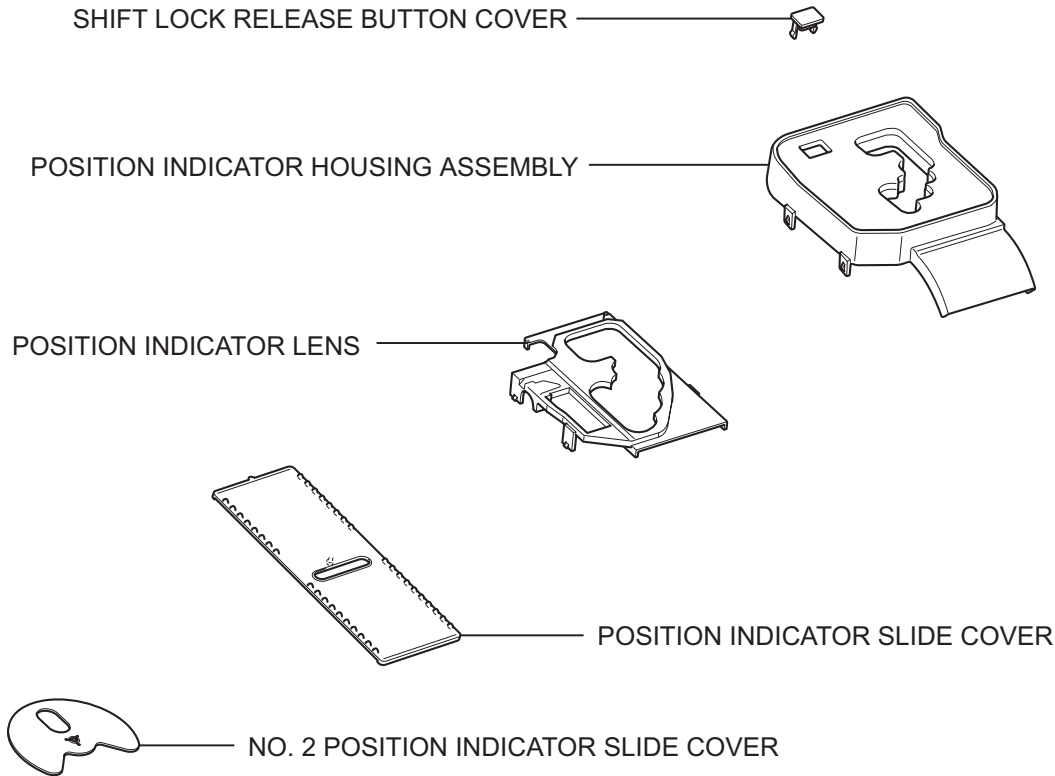
6. REMOVE SHIFT LOCK CONTROL ECU

- (a) Detach the 3 claws and remove the shift lock control ECU from the lower shift lever assembly.
- (b) Disconnect the shift lock solenoid connector.

SHIFT LEVER

COMPONENTS





$\text{N}\cdot\text{m}$ ($\text{kgf}\cdot\text{cm}$, $\text{ft}\cdot\text{lbf}$): Specified torque

INSTALLATION

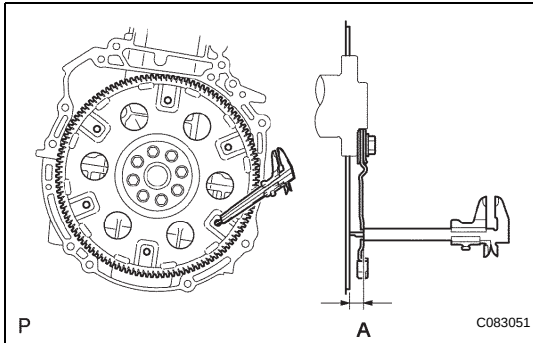
1. INSPECT TORQUE CONVERTER CLUTCH ASSEMBLY

HINT:

(See page [AX-248](#))

2. INSTALL TORQUE CONVERTER CLUTCH ASSEMBLY

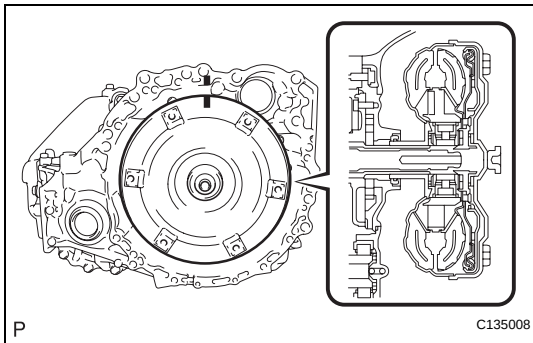
- (a) Using vernier calipers and a straightedge, measure dimension "A" between the transaxle fitting part of the engine and the converter fitting part of the drive plate (*1).



- (b) Aligning the matchmarks on the transaxle case and torque converter clutch assembly, engage the splines of the input shaft and turbine runner.

NOTICE:

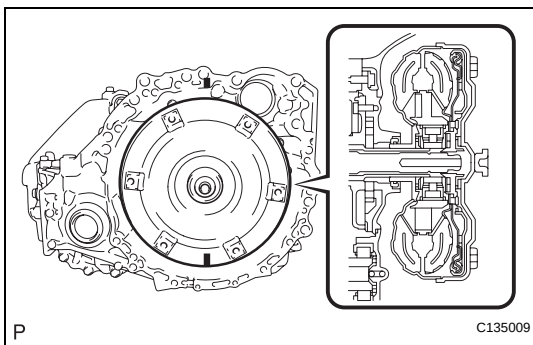
Do not push on the torque converter when aligning the matchmarks.



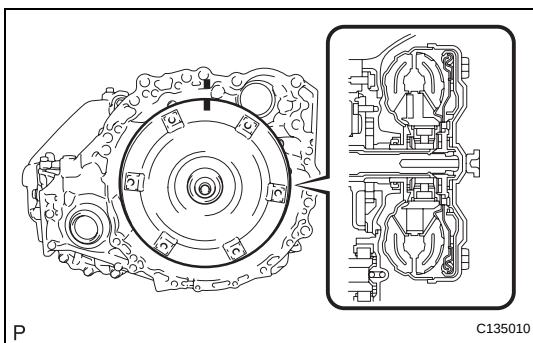
- (c) Engage the splines of the stator shaft and the stator while turning the torque converter clutch assembly.

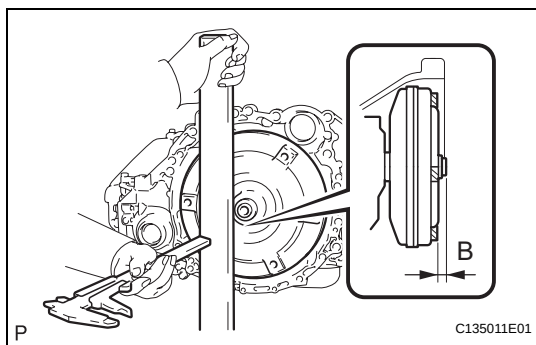
HINT:

Turn the torque converter clutch assembly approximately 180°.



- (d) Turn the torque converter clutch assembly and align the matchmarks on the torque converter clutch assembly and transaxle case to engage the key of the oil pump drive gear into the slot on the torque converter clutch assembly.





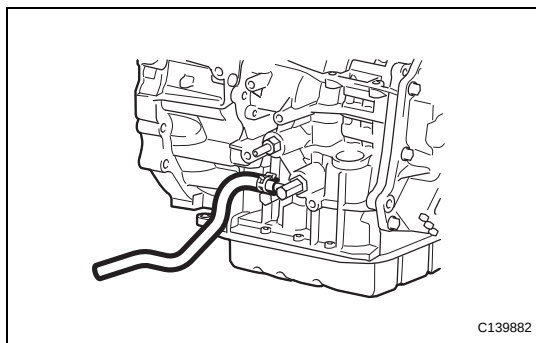
- (e) Using vernier calipers and a straightedge, measure dimension "B" shown in the illustration and check that "B" is greater than "A" (measured in step (*1)).

Standard:

A + 1 mm (0.04 in.) or more

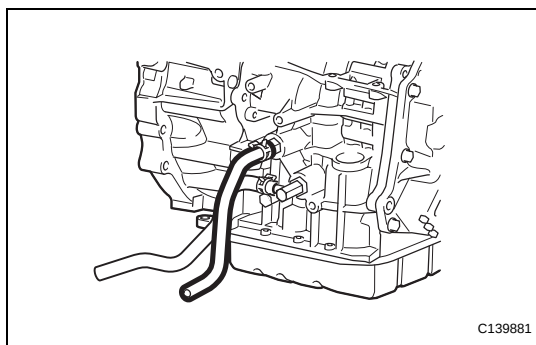
NOTICE:

Make sure to deduct the thickness of the straightedge.



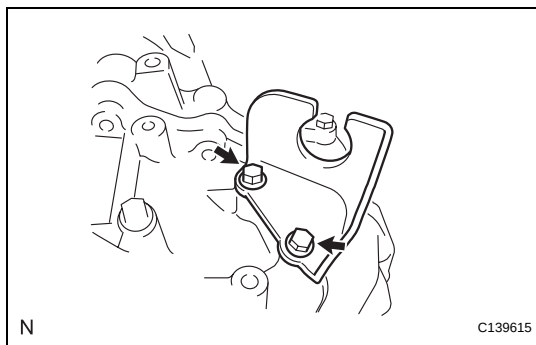
3. INSTALL NO. 1 OIL COOLER INLET HOSE

- (a) Install the No. 1 oil cooler inlet hose.



4. INSTALL NO. 1 OIL COOLER OUTLET HOSE

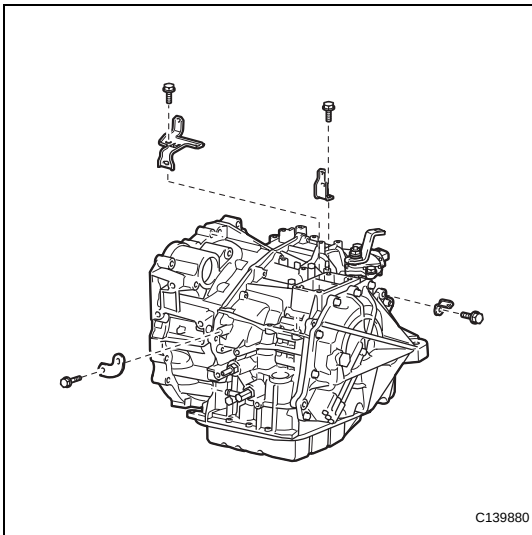
- (a) Install the No. 1 oil cooler outlet hose.



5. INSTALL NO. 1 TRANSMISSION CONTROL CABLE BRACKET

- (a) Install the No. 1 transmission control cable bracket with the 2 bolts.

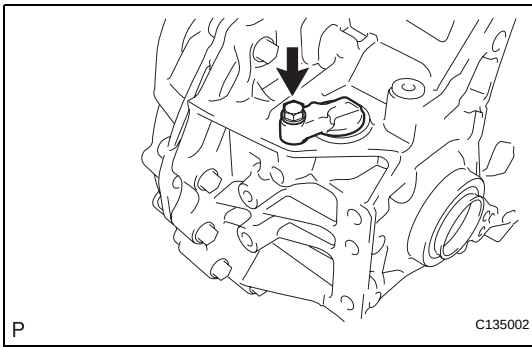
Torque: 12 N*m (122 kgf*cm, 9 ft.*lbf)

**6. INSTALL WIRE HARNESS CLAMP BRACKET**

- (a) Install the 4 clamp brackets and 4 bolts.
Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

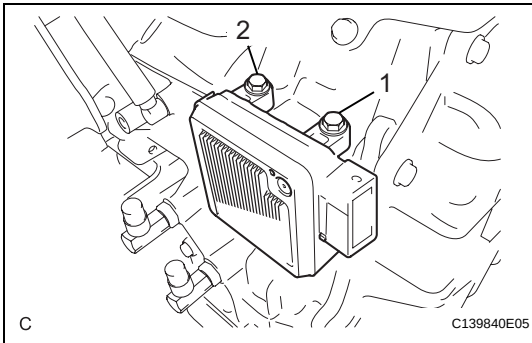
7. INSTALL SPEEDOMETER DRIVEN HOLE COVER SUB-ASSEMBLY

- (a) Coat a new O-ring with ATF, and install it to the hole cover.



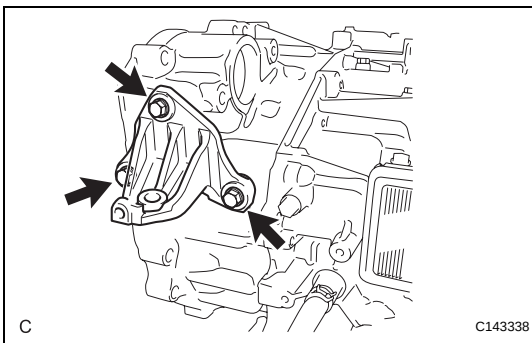
- (b) Install the hole cover to the transaxle case with the bolt.

Torque: 5.5 N*m (56 kgf*cm, 49 in.*lbf)

**8. INSTALL TCM**

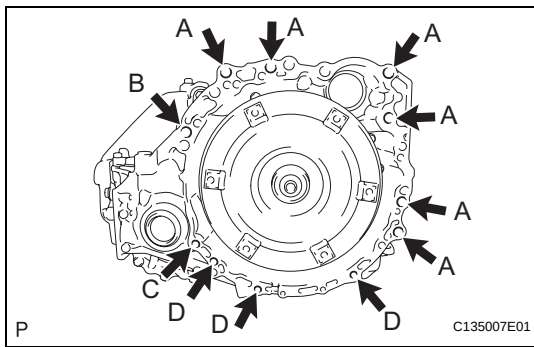
- (a) Install the TCM to the transaxle.
(b) Install and tighten the 2 bolts in the order shown in the illustration.

Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)

**9. INSTALL ENGINE MOUNTING FRONT BRACKET**

- (a) Install the engine mounting front bracket to the automatic transaxle with the 3 bolts.

Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf)



10. INSTALL AUTOMATIC TRANSAXLE ASSEMBLY

- (a) Install the automatic transaxle to the engine with the 11 bolts.

Torque: Bolt A

64 N*m (653 kgf*cm, 47 ft.*lbf)

Bolt B

64 N*m (653 kgf*cm, 47 ft.*lbf)

Bolt C

46 N*m (469 kgf*cm, 34 ft.*lbf)

Bolt D

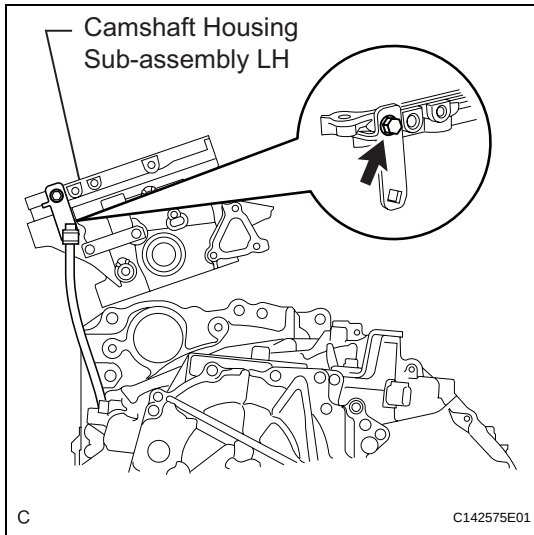
43 N*m (439 kgf*cm, 32 ft.*lbf)

- (b) Install the breather bracket to the camshaft housing sub-assembly LH with the bolt.

Torque: 5.5 N*m (56 kgf*cm, 49 in.*lbf)

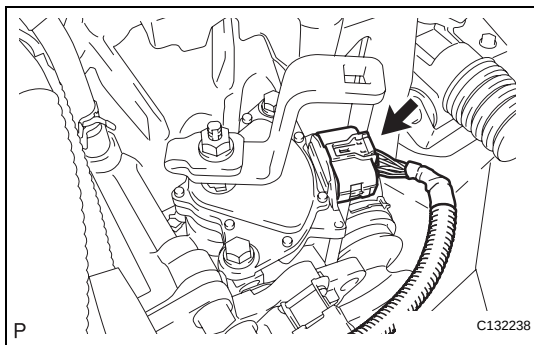
- (c) Install the breather hose to the breather bracket.

11. INSTALL STARTER ASSEMBLY (See page [ST-152](#))



12. CONNECT CONNECTOR

- (a) Connect the park/neutral position switch connector.



13. INSTALL WIRE HARNESS

- (a) Connect the wire harness with the bolt.

Torque: 12 N*m (122 kgf*cm, 9 ft.*lbf)

14. INSTALL ENGINE WIRE

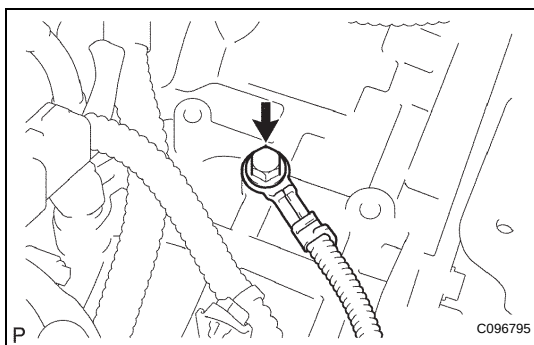
15. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-16](#))

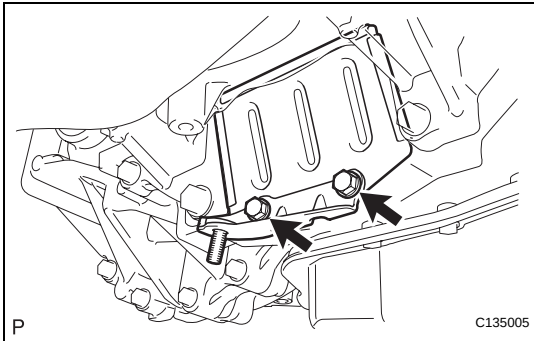
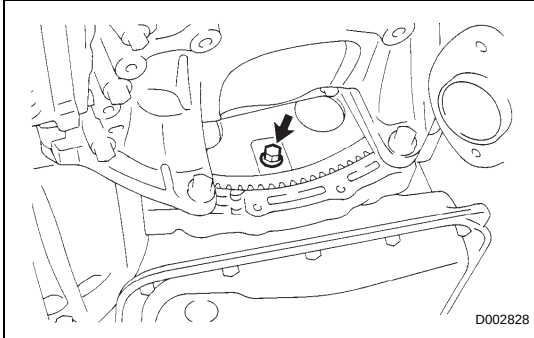
16. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-16](#))

17. INSTALL FRONT FRAME ASSEMBLY (See page [EM-42](#))

18. INSTALL VANE PUMP ASSEMBLY (See page [EM-42](#))

19. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE (See page [EM-43](#))





20. INSTALL COOLER COMPRESSOR ASSEMBLY (See page [EM-43](#))
21. INSTALL GENERATOR ASSEMBLY (See page [CH-22](#))
22. INSTALL STEERING INTERMEDIATE SHAFT ASSEMBLY (See page [PS-53](#))
23. INSTALL DRIVE PLATE AND TORQUE CONVERTER CLUTCH SETTING BOLT
 - (a) Apply a few drops of adhesive to 2 threads on the tip of the 6 torque converter clutch mounting bolts.
Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent
 - (b) Install the 6 torque converter clutch mounting bolts.
Torque: 41 N*m (418 kgf*cm, 30 ft.*lbf)
NOTICE:
First install the black colored bolt, and then the remaining 5 bolts.
 - (c) Install the flywheel housing under cover to the automatic transaxle with the 2 bolts.
Torque: 7.8 N*m (80 kgf*cm, 69 in.*lbf)
24. INSTALL NO. 1 EXHAUST PIPE SUPPORT BRACKET (See page [EM-43](#))
25. INSTALL FRONT AXLE ASSEMBLY LH (See page [DS-16](#))
26. INSTALL FRONT AXLE ASSEMBLY RH
HINT:
Use the same procedures described for the LH side.
27. INSTALL FRONT SUSPENSION LOWER NO. 1 ARM LH (See page [DS-16](#))
28. INSTALL FRONT SUSPENSION LOWER NO. 1 ARM RH
HINT:
Use the same procedures described for the LH side.
29. INSTALL TIE ROD ASSEMBLY LH (See page [DS-16](#))
30. INSTALL TIE ROD ASSEMBLY RH
HINT:
Use the same procedures described for the LH side.
31. INSTALL FRONT SPEED SENSOR LH (See page [DS-17](#))
32. INSTALL FRONT SPEED SENSOR RH
HINT:
Use the same procedures described for the LH side.
33. INSTALL FRONT STABILIZER LINK ASSEMBLY LH (See page [DS-17](#))
34. INSTALL FRONT STABILIZER LINK ASSEMBLY RH
HINT:
Use the same procedures described for the LH side.

35. INSTALL FRONT AXLE HUB NUT LH (See page [DS-17](#))
36. INSTALL FRONT AXLE HUB NUT RH
HINT:
Use the same procedures described for the LH side.
37. INSTALL EXHAUST PIPE ASSEMBLY FRONT (See page [EX-4](#))
38. INSTALL EXHAUST PIPE NO. 1 SUPPORT BRACKET (See page [EX-4](#))
39. CONNECT OIL RESERVOIR TO PUMP HOSE (See page [EM-44](#))
40. CONNECT RETURN TUBE SUB-ASSEMBLY (See page [EM-44](#))
41. CONNECT FUEL TUBE SUB-ASSEMBLY (See page [EM-44](#))
42. CONNECT TRANSMISSION CONTROL CABLE ASSEMBLY (See page [EM-45](#))
43. CONNECT ENGINE WIRE (See page [EM-45](#))
44. INSTALL RELAY BLOCK COVER UPPER
45. INSTALL ECM
(See page [ES-544](#))
46. CONNECT HEATER INLET WATER HOSE (See page [EM-46](#))
47. CONNECT HEATER OUTLET WATER HOSE (See page [EM-46](#))
48. CONNECT NO. 1 OIL COOLER INLET HOSE (See page [EM-46](#))
49. CONNECT NO. 1 OIL COOLER OUTLET HOSE (See page [EM-46](#))
50. INSTALL RADIATOR HOSE INLET (See page [EM-46](#))
51. INSTALL RADIATOR HOSE OUTLET (See page [EM-46](#))
52. CONNECT CHECK VALVE TO BRAKE BOOSTER HOSE (See page [EM-46](#))
53. CONNECT NO. 1 FUEL VAPOR FEED HOSE (See page [EM-47](#))
54. INSTALL ENGINE MOVING CONTROL ROD SUB-ASSEMBLY (See page [EM-47](#))
55. INSTALL NO. 2 ENGINE MOUNTING STAY RH (See page [EM-47](#))
56. INSTALL INTAKE AIR RESONATOR SUB-ASSEMBLY (See page [EM-47](#))
57. INSTALL BATTERY (See page [EM-47](#))

58. INSTALL NO. 1 AIR CLEANER INLET (See page [EM-48](#))
59. INSTALL AIR CLEANER CASE SUB-ASSEMBLY (See page [EM-48](#))
60. INSTALL AIR CLEANER CAP SUB-ASSEMBLY (See page [ES-522](#))
61. INSTALL AIR CLEANER INLET ASSEMBLY (See page [EM-48](#))
62. CONNECT VACUUM HOSES (See page [EM-49](#))
63. INSTALL V-RIBBED BELT (See page [EM-7](#))
64. INSTALL FRONT WHEELS (See page [EM-49](#))
65. ADD ENGINE OIL
66. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (See page [EM-49](#))
67. ADD ENGINE COOLANT (See page [CO-6](#))
68. ADD AUTOMATIC TRANSAXLE FLUID
HINT:
(See page [AX-176](#))
69. ADD POWER STEERING FLUID
70. BLEED POWER STEERING FLUID (See page [PS-8](#))
71. CHECK FOR FUEL LEAKS (See page [FU-7](#))
72. CHECK FOR ENGINE OIL LEAKS
73. CHECK FOR ENGINE COOLANT LEAKS (See page [CO-1](#))
74. CHECK FOR EXHAUST GAS LEAKS
75. CHECK SHIFT LEVER POSITION (See page [AX-232](#))
76. CHECK AND ADJUST FRONT WHEEL ALIGNMENT
HINT:
(See page [SP-4](#))
77. CHECK IGNITION TIMING (See page [EM-1](#))
78. CHECK ENGINE IDLE SPEED (See page [EM-2](#))
79. CHECK CO/HC (See page [EM-4](#))
80. CHECK FUNCTION OF THROTTLE BODY (See page [ES-519](#))
81. INSTALL FRONT FENDER APRON SEAL RH
82. INSTALL ENGINE UNDER COVER LH
83. INSTALL ENGINE UNDER COVER RH
84. INSTALL V-BANK COVER SUB-ASSEMBLY (See page [EM-49](#))
85. INSTALL ENGINE ROOM SIDE COVER LH (See page [EM-50](#))

86. **INSTALL ENGINE ROOM SIDE COVER RH** (See page [EM-50](#))
87. **INSTALL COOL AIR INTAKE DUCT SEAL** (See page [EM-50](#))
88. **CHECK ABS SPEED SENSOR SIGNAL**
HINT:
(See page [BC-24](#))
89. **PERFORM TCM REGISTRATION**
HINT:
(See page [AX-18](#))
90. **PERFORM INITIALIZATION**
 - (a) Perform initialization procedure (See page [IN-33](#)).
NOTICE:
Some systems need initialization after reconnecting the cable to the negative battery terminal.

REMOVAL

NOTICE:

- When the automatic transaxle is replaced, the transaxle's compensation code must be input into the TCM (See page [AX-18](#)).
- When the TCM is replaced, the existing transaxle compensation codes must be input into the new TCM (See page [AX-21](#)).
- If the following parts have been replaced, initialize the TCM and perform a road test to allow the TCM to learn (See page [AX-24](#)).
 - Valve body assembly
 - Shift solenoid SL3
 - Shift solenoid SL4
- If the following parts have been replaced, perform a road test to allow the TCM to learn (See page [AX-24](#)).
 - Shift solenoid SL1
 - Shift solenoid SL2
- If the TCM or transaxle has been replaced, register the transmission compensation code in the TCM (See page [AX-18](#)).
- Perform RESET MEMORY (AT initialization) when replacing the automatic transmission assembly, engine assembly or ECM (See page [AX-24](#)).

1. DISCHARGE FUEL SYSTEM PRESSURE

HINT:

(See page [FU-1](#))

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

3. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

4. REMOVE FRONT WHEELS

5. REMOVE ENGINE UNDER COVER LH

6. REMOVE ENGINE UNDER COVER RH

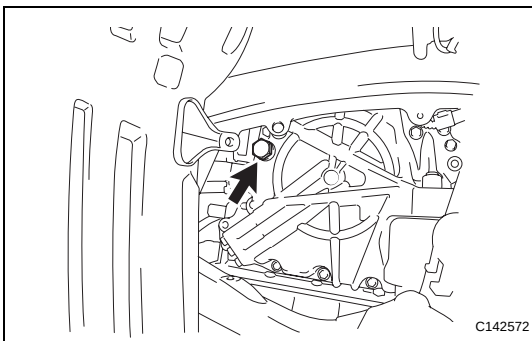
7. REMOVE FRONT FENDER APRON SEAL RH

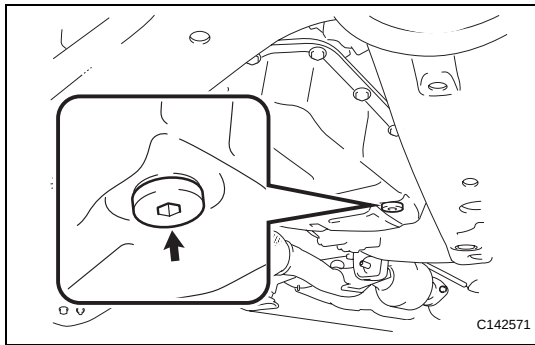
8. DRAIN ENGINE OIL

9. DRAIN ENGINE COOLANT (See page [CO-5](#))

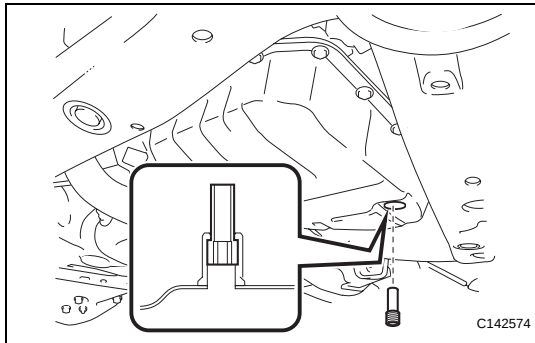
10. DRAIN AUTOMATIC TRANSAXLE FLUID

- (a) Remove the refill plug and gasket.



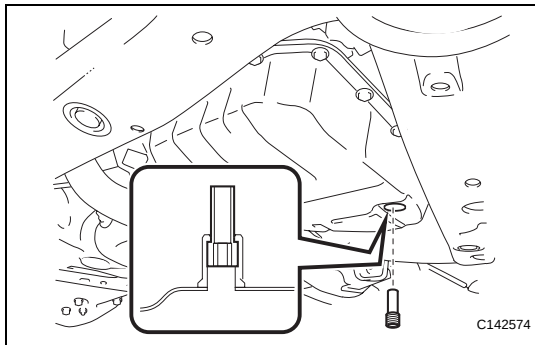


- (b) Using a 6 mm socket hexagon wrench, remove the overflow plug and gasket.



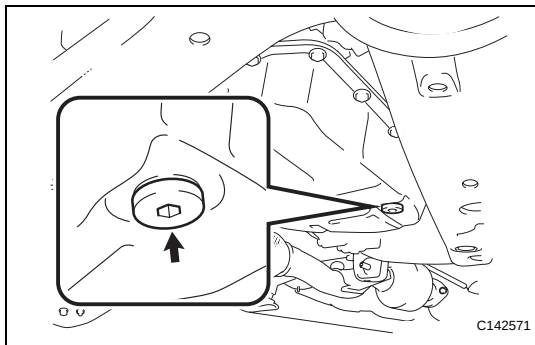
- (c) Using a 6 mm socket hexagon wrench, remove the No. 1 transmission oil filler tube.

- (d) Drain the automatic transaxle fluid.



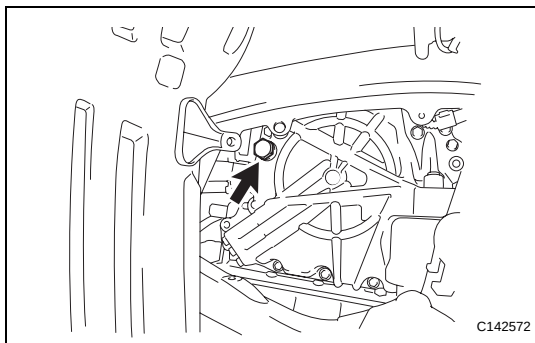
- (e) Using a 6 mm socket hexagon wrench, install the No. 1 transmission oil filler tube.

Torque: 1.7 N*m (17 kgf*cm, 15 in.*lbf)



- (f) Using a 6 mm socket hexagon wrench, install the overflow plug with a new gasket.

Torque: 40 N*m (408 kgf*cm, 30 ft.*lbf)



- (g) Install the refill plug with a new gasket.

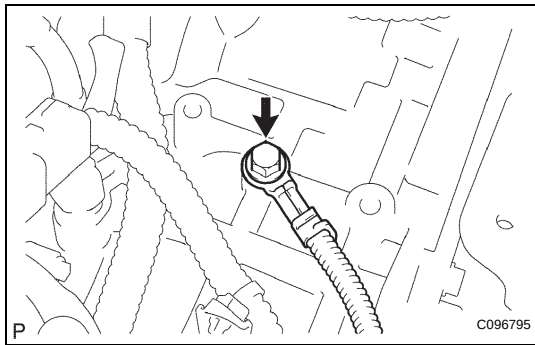
Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

11. REMOVE COOL AIR INTAKE DUCT SEAL (See page [EM-22](#))

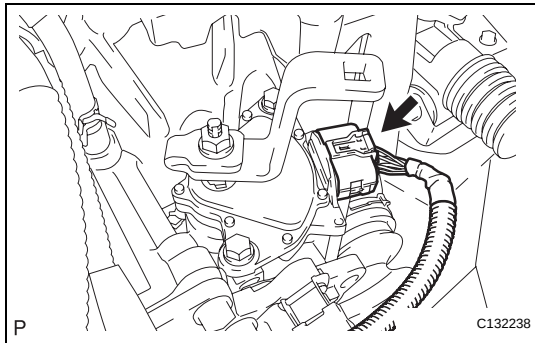
12. REMOVE ENGINE ROOM SIDE COVER LH (See page [EM-22](#))

13. REMOVE ENGINE ROOM SIDE COVER RH (See page [EM-22](#))

14. REMOVE V-BANK COVER SUB-ASSEMBLY (See page [EM-23](#))
15. REMOVE V-RIBBED BELT (See page [EM-6](#))
16. REMOVE AIR CLEANER INLET ASSEMBLY (See page [EM-23](#))
17. REMOVE AIR CLEANER CAP SUB-ASSEMBLY (See page [ES-519](#))
18. REMOVE AIR CLEANER CASE SUB-ASSEMBLY (See page [EM-23](#))
19. REMOVE NO. 1 AIR CLEANER INLET (See page [EM-23](#))
20. REMOVE BATTERY (See page [EM-24](#))
21. REMOVE INTAKE AIR RESONATOR SUB-ASSEMBLY (See page [EM-24](#))
22. REMOVE NO. 2 ENGINE MOUNTING STAY RH (See page [EM-24](#))
23. REMOVE ENGINE MOVING CONTROL ROD SUB-ASSEMBLY (See page [EM-24](#))
24. DISCONNECT NO. 1 FUEL VAPOR FEED HOSE (See page [EM-24](#))
25. DISCONNECT CHECK VALVE TO BRAKE BOOSTER HOSE (See page [EM-25](#))
26. REMOVE RADIATOR HOSE INLET (See page [EM-25](#))
27. REMOVE RADIATOR HOSE OUTLET (See page [EM-25](#))
28. DISCONNECT NO. 1 OIL COOLER INLET HOSE (See page [EM-25](#))
29. DISCONNECT NO. 1 OIL COOLER OUTLET HOSE (See page [EM-25](#))
30. DISCONNECT HEATER INLET WATER HOSE (See page [EM-25](#))
31. DISCONNECT HEATER OUTLET WATER HOSE (See page [EM-25](#))
32. REMOVE ECM (See page [ES-543](#))
33. REMOVE RELAY BLOCK COVER UPPER
34. DISCONNECT ENGINE WIRE (See page [EM-26](#))

**35. SEPARATE WIRE HARNESS**

- (a) Remove the bolt and disconnect the wire harness.

**36. DISCONNECT CONNECTOR**

- (a) Disconnect the park/neutral position switch connector.

37. DISCONNECT TRANSMISSION CONTROL CABLE ASSEMBLY (See page EM-26)**38. SEPARATE FUEL TUBE SUB-ASSEMBLY (See page EM-27)****39. DISCONNECT OIL RESERVOIR TO PUMP HOSE (See page EM-27)****40. DISCONNECT RETURN TUBE SUB-ASSEMBLY (See page EM-27)****41. REMOVE EXHAUST PIPE NO. 1 SUPPORT BRACKET (See page EX-3)****42. REMOVE EXHAUST PIPE ASSEMBLY FRONT (See page EX-3)****43. REMOVE FRONT AXLE HUB NUT LH (See page DS-5)****44. REMOVE FRONT AXLE HUB NUT RH**

HINT:

Use the same procedures described for the LH side.

45. DISCONNECT FRONT STABILIZER LINK ASSEMBLY LH (See page DS-5)**46. DISCONNECT FRONT STABILIZER LINK ASSEMBLY RH**

HINT:

Use the same procedures described for the LH side.

47. DISCONNECT FRONT SPEED SENSOR LH (See page DS-5)**48. DISCONNECT FRONT SPEED SENSOR RH**

HINT:

Use the same procedures described for the LH side.

49. DISCONNECT TIE ROD ASSEMBLY LH (See page DS-6)**50. DISCONNECT TIE ROD ASSEMBLY RH**

HINT:

Use the same procedures described for the LH side.

51. DISCONNECT FRONT SUSPENSION LOWER NO. 1 ARM LH (See page [DS-6](#))

52. DISCONNECT FRONT SUSPENSION LOWER NO. 1 ARM RH

HINT:

Use the same procedures described for the LH side.

53. SEPARATE FRONT AXLE ASSEMBLY LH (See page [DS-6](#))

54. SEPARATE FRONT AXLE ASSEMBLY RH

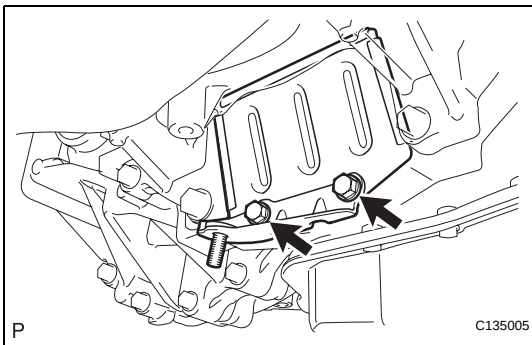
HINT:

Use the same procedures described for the LH side.

55. REMOVE NO. 1 EXHAUST PIPE SUPPORT BRACKET (See page [EM-28](#))

56. REMOVE DRIVE PLATE AND TORQUE CONVERTER CLUTCH SETTING BOLT

(a) Remove the 2 bolts and flywheel housing under cover.



(b) Turn the crankshaft to gain access and remove the 6 bolts while holding the crankshaft pulley bolt with a wrench.

57. DISCONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY (See page [PS-28](#))

58. REMOVE GENERATOR ASSEMBLY (See page [CH-14](#))

59. SEPARATE COOLER COMPRESSOR ASSEMBLY (See page [EM-28](#))

60. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE (See page [EM-28](#))

61. REMOVE VANE PUMP ASSEMBLY (See page [EM-29](#))

62. INSTALL ENGINE HANGER (See page [EM-29](#))

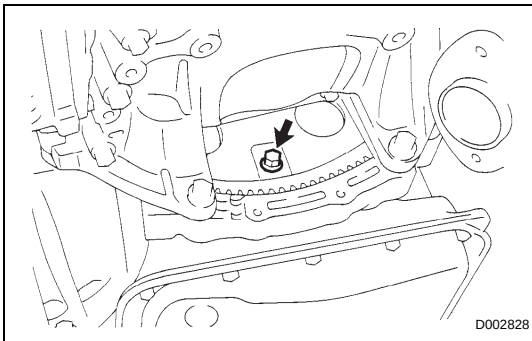
63. REMOVE FRONT FRAME ASSEMBLY (See page [EM-29](#))

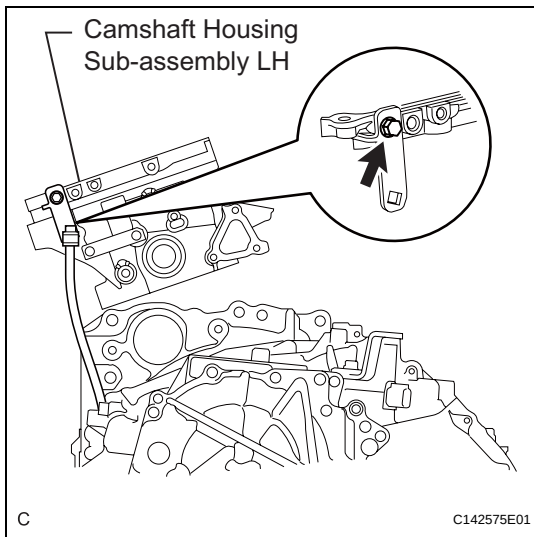
64. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-6](#))

65. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-7](#))

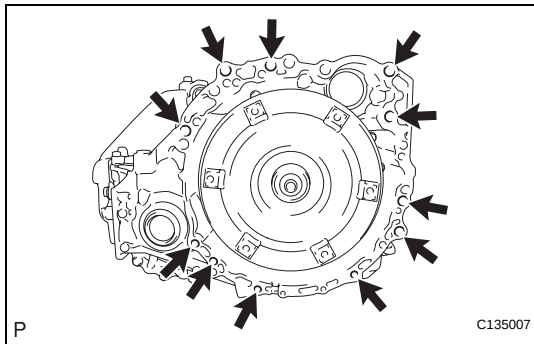
66. REMOVE ENGINE WIRE

67. REMOVE STARTER ASSEMBLY (See page [ST-145](#))

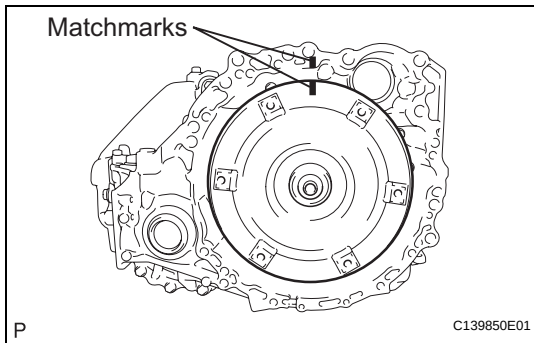


**68. REMOVE AUTOMATIC TRANSAXLE ASSEMBLY**

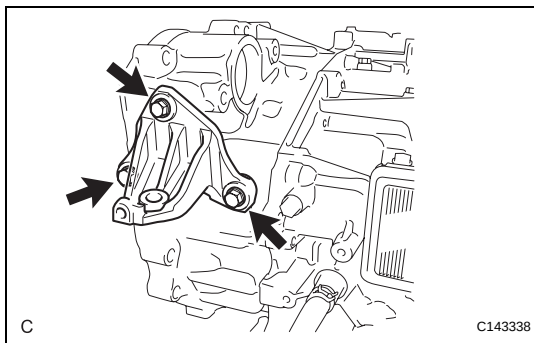
- (a) Remove the bolt and breather bracket from the camshaft housing sub-assembly LH.
- (b) Remove the breather hose from the breather bracket.



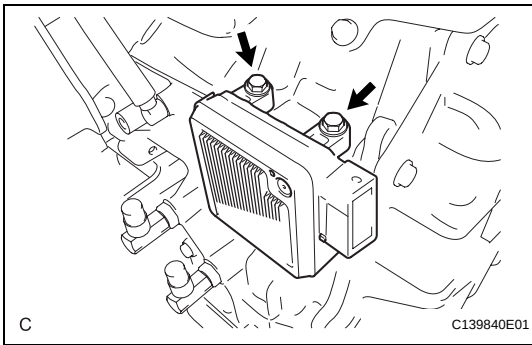
- (c) Remove the 11 bolts.
- (d) Separate and remove the automatic transaxle.

**69. REMOVE TORQUE CONVERTER CLUTCH ASSEMBLY**

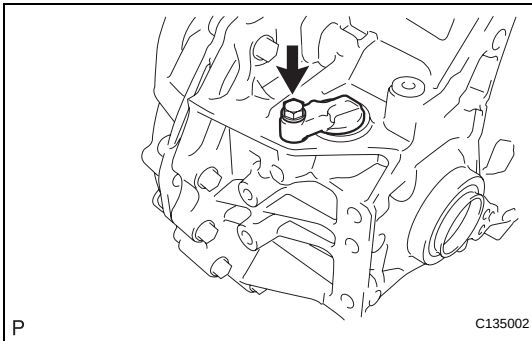
- (a) Put matchmarks on the transaxle housing and torque converter clutch assembly.
- (b) Remove the torque converter clutch assembly from the automatic transaxle assembly.

**70. REMOVE ENGINE MOUNTING FRONT BRACKET**

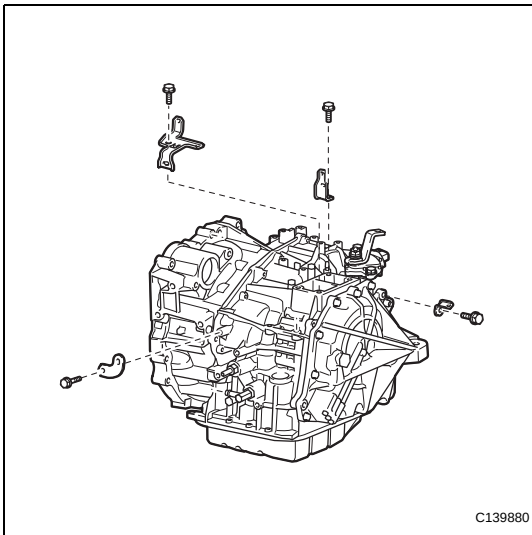
- (a) Remove the 3 bolts and engine mounting front bracket.

**71. REMOVE TCM**

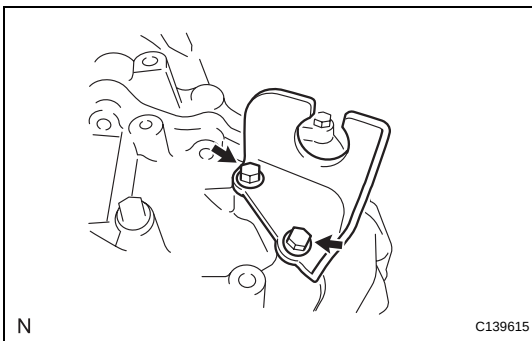
- (a) Remove the 2 bolts and TCM from the transaxle.

**72. REMOVE SPEEDOMETER DRIVEN HOLE COVER SUB-ASSEMBLY**

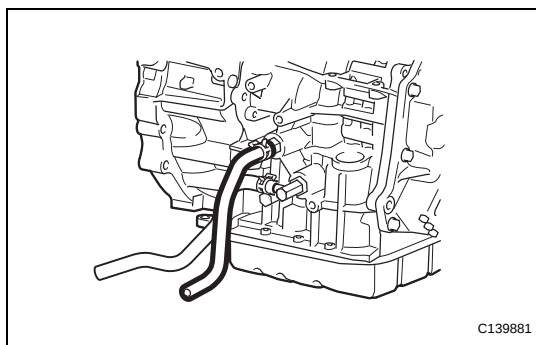
- (a) Remove the bolt and hole cover from the transaxle case.
- (b) Remove the O-ring from the hole cover.

**73. REMOVE WIRE HARNESS CLAMP BRACKET**

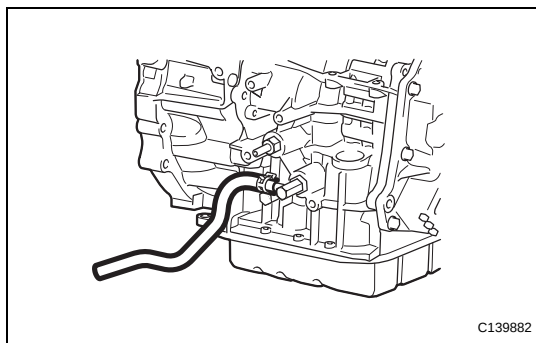
- (a) Remove the 4 bolts and 4 clamp brackets.

**74. REMOVE NO. 1 TRANSMISSION CONTROL CABLE BRACKET**

- (a) Remove the 2 bolts and No. 1 transmission control cable bracket.

**75. SEPARATE NO. 1 OIL COOLER OUTLET HOSE**

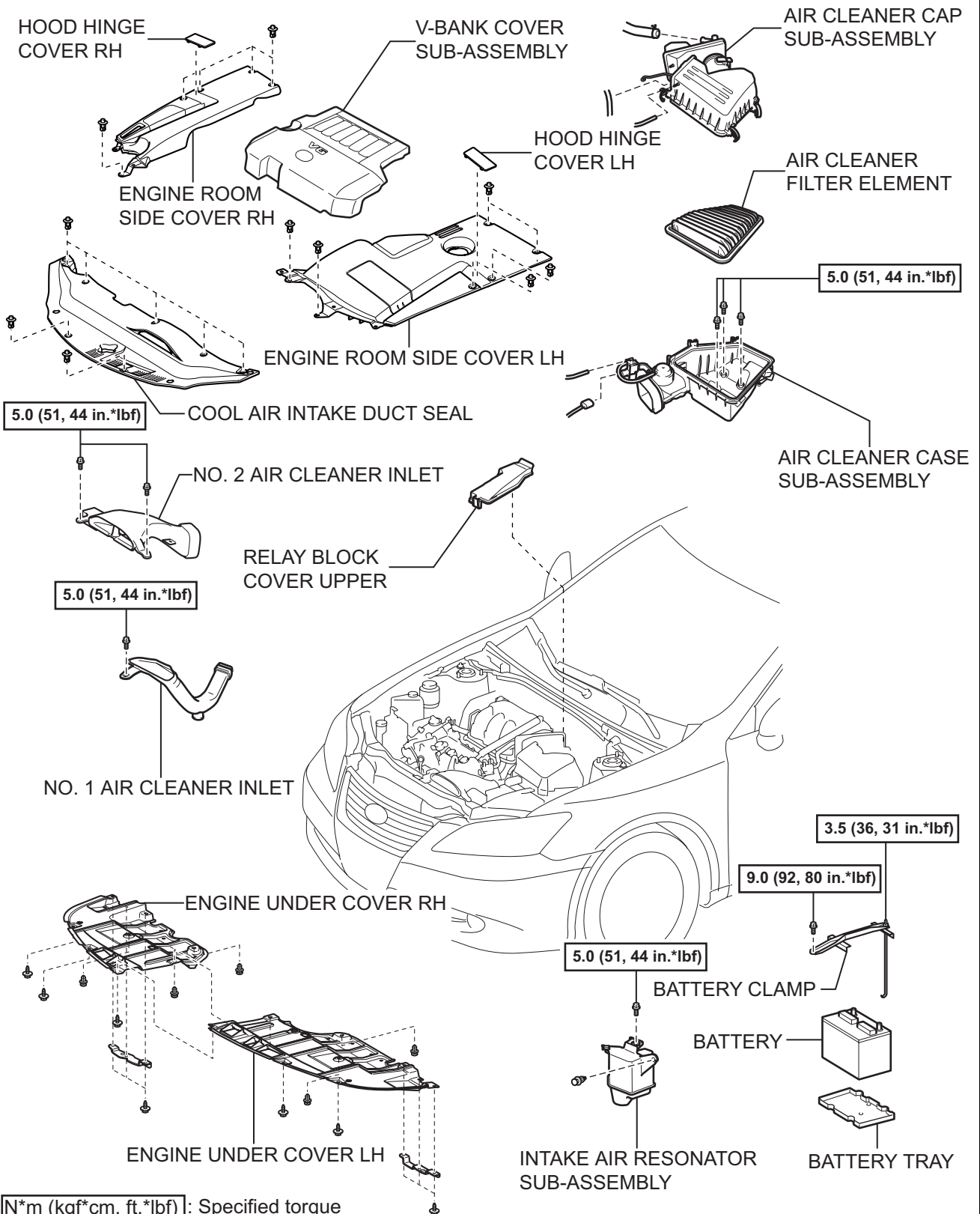
- (a) Separate the No. 1 oil cooler outlet hose.

**76. SEPARATE NO. 1 OIL COOLER INLET HOSE**

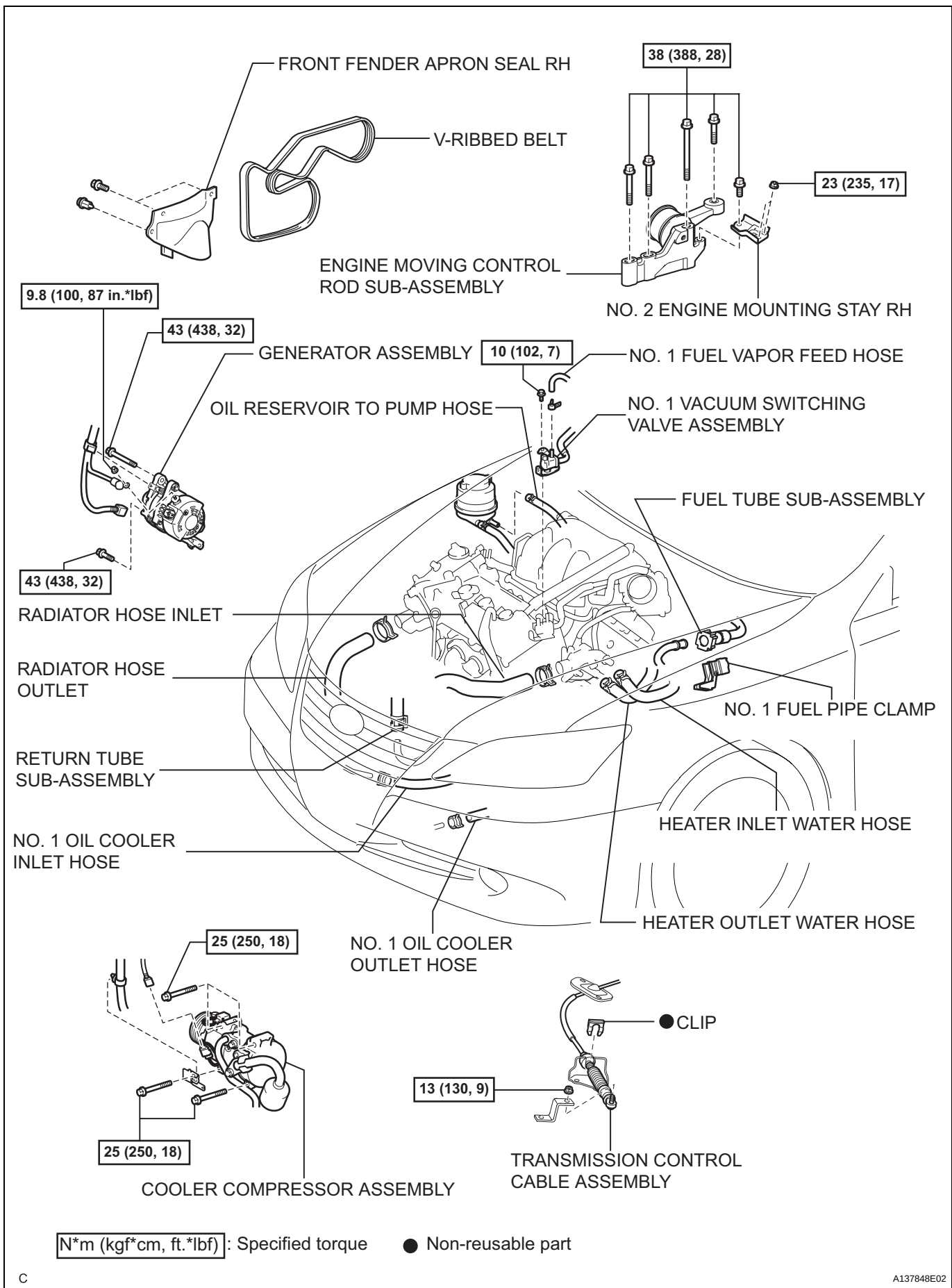
- (a) Separate the No. 1 oil cooler inlet hose.

AUTOMATIC TRANSAXLE ASSEMBLY

COMPONENTS



AX



STEERING INTERMEDIATE
SHAFT ASSEMBLY

35 (360, 26)

FRONT STABILIZER LINK ASSEMBLY LH

TIE ROD ASSEMBLY LH

49 (500, 36)

● COTTER PIN

FRONT SPEED SENSOR LH

8.0 (85, 71 in.*lbf)

FRONT SUSPENSION
LOWER NO. 1 ARM LH

294 (3,000, 217)
FRONT AXLE HUB NUT LH

75 (765, 55)

● GASKET

62 (632, 46)

● GASKET

62 (632, 46)

● GASKET

56 (571, 41)

NO. 1 EXHAUST PIPE SUPPORT BRACKET

EXHAUST PIPE ASSEMBLY FRONT

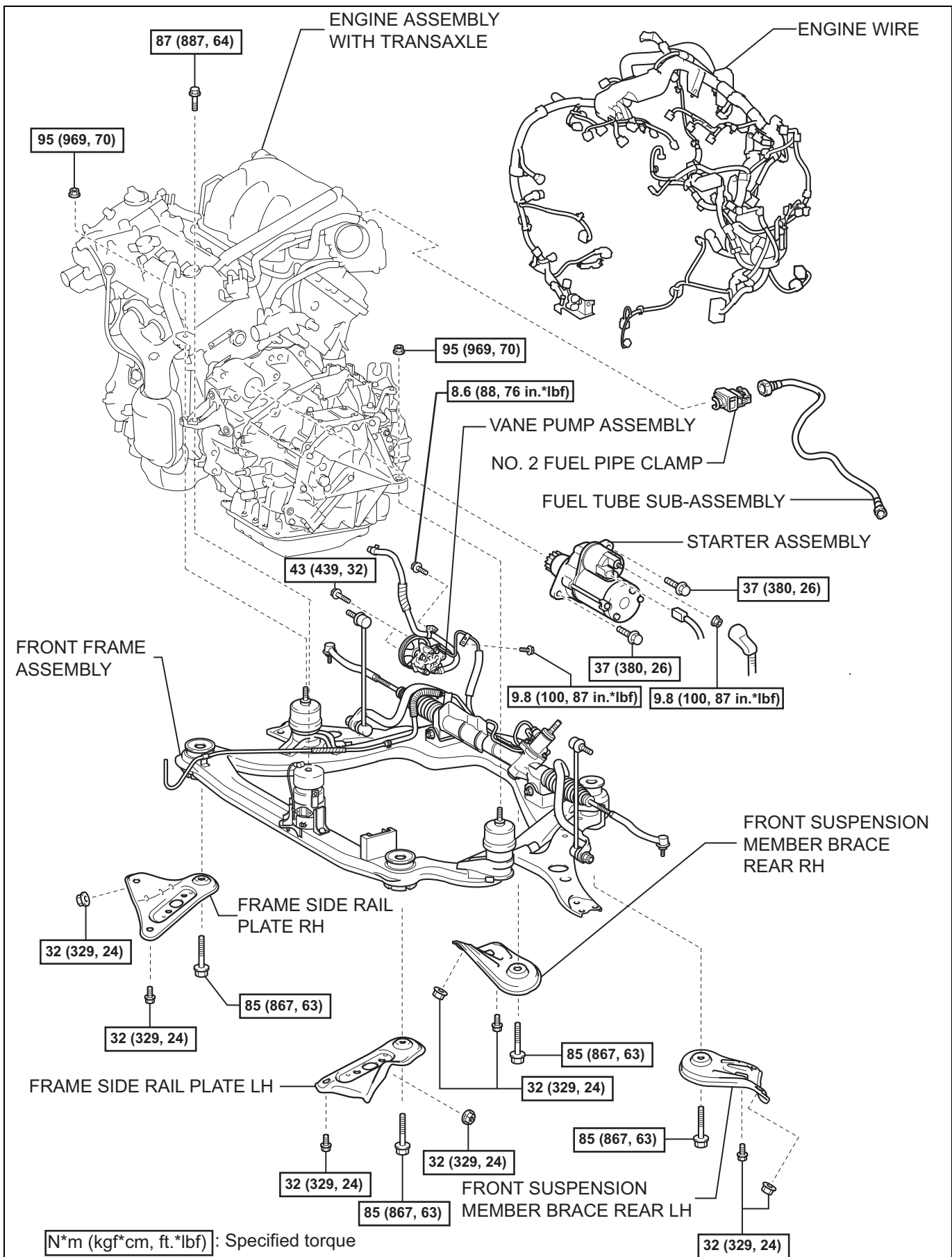
33 (337, 24)

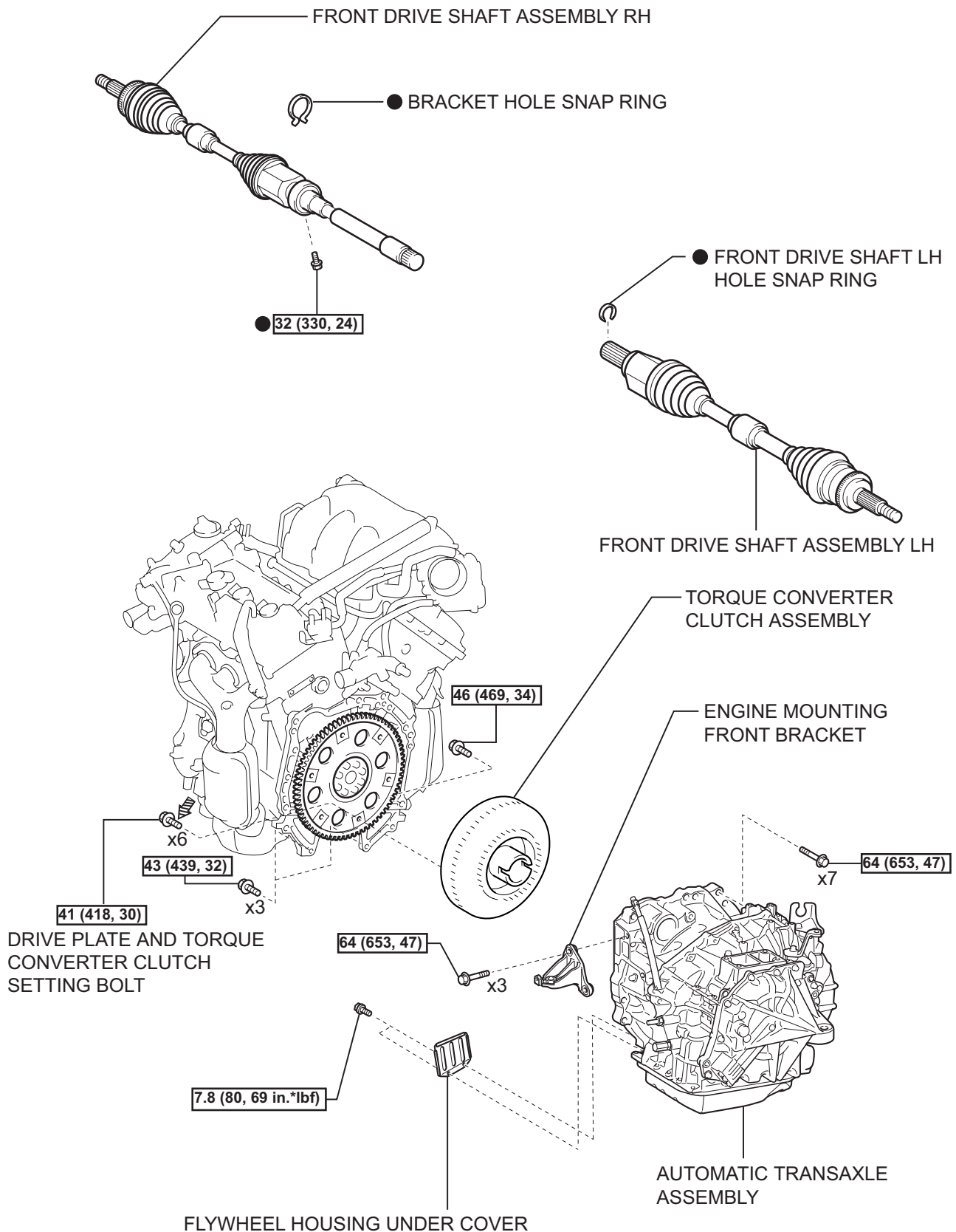
21 (214, 15)

EXHAUST PIPE NO. 1
SUPPORT BRACKET

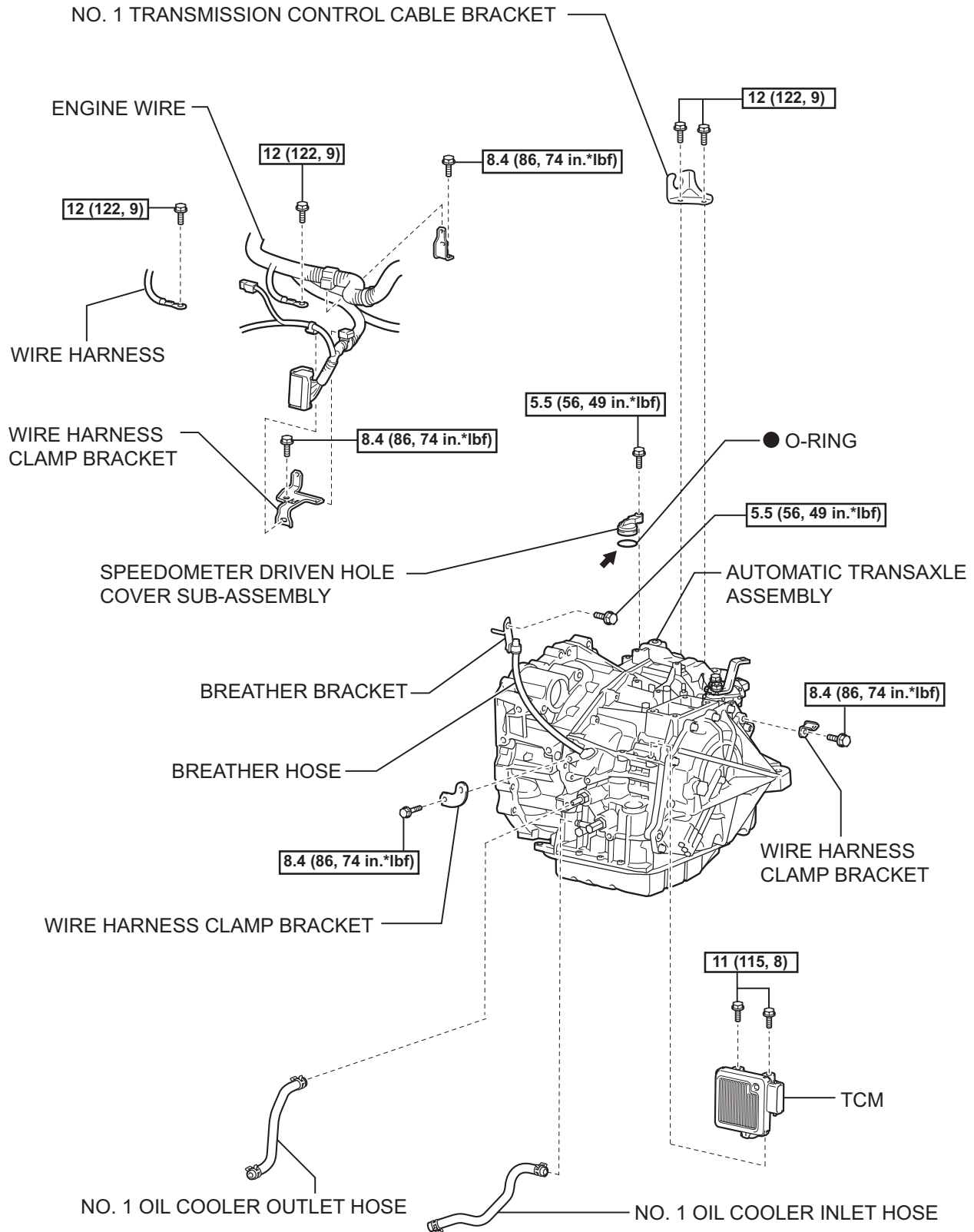
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part





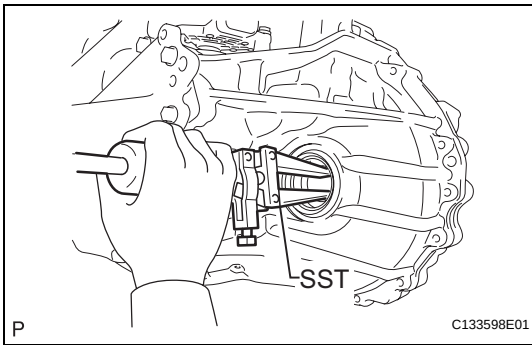
[N*m (kgf*cm, ft.*lbf)]: Specified torque ● Non-reusable part ◀ Precoated part



N*m (kgf*cm, ft.*lbf) : Specified torque ● Non-reusable part ← Apply ATF WS

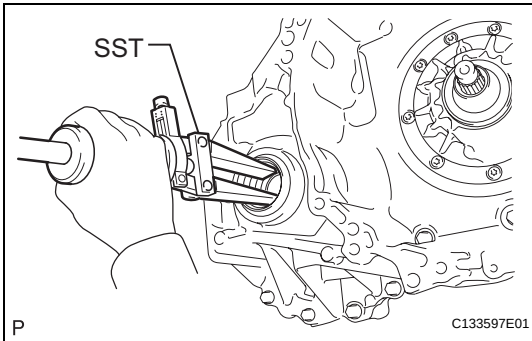
REMOVAL

1. DRAIN AUTOMATIC TRANSAXLE FLUID (See page [AX-215](#))
2. REMOVE FRONT WHEELS
3. REMOVE FRONT AXLE HUB NUT LH (See page [DS-5](#))
4. REMOVE FRONT AXLE HUB NUT RH
HINT:
Use the same procedures described for the LH side.
5. SEPARATE FRONT STABILIZER LINK ASSEMBLY LH (See page [DS-5](#))
6. SEPARATE FRONT STABILIZER LINK ASSEMBLY RH
HINT:
Use the same procedures described for the LH side.
7. SEPARATE FRONT SPEED SENSOR LH (See page [DS-5](#))
8. SEPARATE FRONT SPEED SENSOR RH
HINT:
Use the same procedures described for the LH side.
9. SEPARATE TIE ROD ASSEMBLY LH (See page [DS-6](#))
10. SEPARATE TIE ROD ASSEMBLY RH
HINT:
Use the same procedures described for the LH side.
11. SEPARATE FRONT SUSPENSION LOWER NO. 1 ARM LH (See page [DS-6](#))
12. SEPARATE FRONT SUSPENSION LOWER NO. 1 ARM RH
13. SEPARATE FRONT AXLE ASSEMBLY LH (See page [DS-6](#))
14. SEPARATE FRONT AXLE ASSEMBLY RH
HINT:
Use the same procedures described for the LH side.
15. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-6](#))
16. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-7](#))
17. SECURE FRONT AXLE HUB SUB-ASSEMBLY (See page [DS-7](#))

**18. REMOVE TRANSAXLE CASE OIL SEAL**

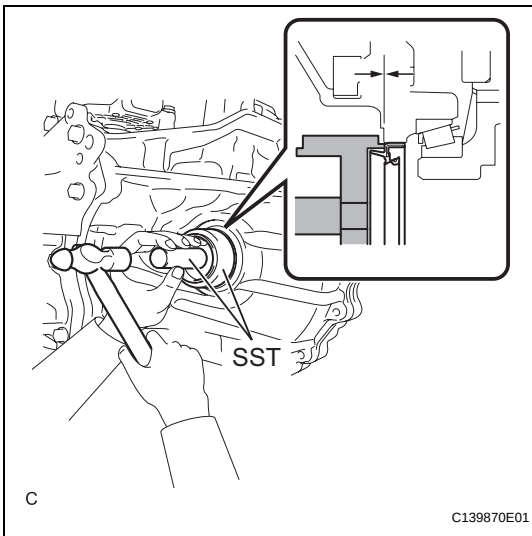
- (a) Using SST, remove the oil seal from the transaxle case.

SST 09308-00010

**19. REMOVE FRONT TRANSAXLE CASE OIL SEAL**

- (a) Using SST, remove the oil seal from the transaxle housing.

SST 09308-00010

**INSTALLATION****1. INSTALL TRANSAXLE CASE OIL SEAL**

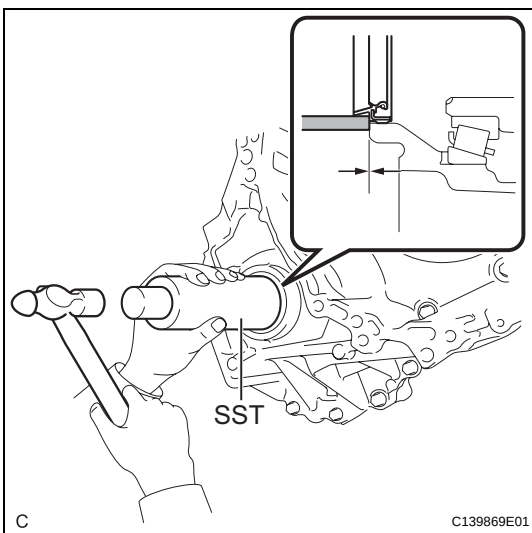
- (a) Using SST and a hammer, install a new oil seal to the transaxle case.

SST 09316-10010, 09950-70010 (09951-07100)

Oil seal installation depth:

-0.5 to 0.5 mm (-0.020 to 0.020 in.)

- (b) Coat the lip of the oil seal with MP grease.

**2. INSTALL FRONT TRANSAXLE CASE OIL SEAL**

- (a) Using SST and a hammer, install a new oil seal to the transaxle housing.

SST 09308-14010

Oil seal installation depth:

-0.5 to 0.5 mm (-0.020 to 0.020 in.)

- (b) Coat the lip of the oil seal with MP grease.

3. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH (See page DS-16)**4. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH (See page DS-16)****5. INSTALL FRONT AXLE ASSEMBLY LH (See page DS-16)**

6. INSTALL FRONT AXLE ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

7. INSTALL FRONT SUSPENSION LOWER NO. 1 ARM LH (See page [DS-16](#))**8. INSTALL FRONT SUSPENSION LOWER NO. 1 ARM RH**

HINT:

Use the same procedures described for the LH side.

9. INSTALL TIE ROD ASSEMBLY LH (See page [DS-16](#))**10. INSTALL TIE ROD ASSEMBLY RH**

HINT:

Use the same procedures described for the LH side.

11. INSTALL FRONT SPEED SENSOR LH (See page [DS-17](#))**12. INSTALL FRONT SPEED SENSOR RH****13. INSTALL FRONT STABILIZER LINK ASSEMBLY LH (See page [DS-17](#))****14. INSTALL FRONT STABILIZER LINK ASSEMBLY RH**

HINT:

Use the same procedures described for the LH side.

15. INSTALL FRONT AXLE HUB NUT LH (See page [DS-17](#))**16. INSTALL FRONT AXLE HUB NUT RH**

HINT:

Use the same procedures described for the LH side.

17. INSTALL FRONT WHEELS (See page [DS-17](#))**18. ADD AUTOMATIC TRANSAXLE FLUID**

HINT:

(See page [AX-176](#))**19. ADJUST FRONT WHEEL ALIGNMENT**

HINT:

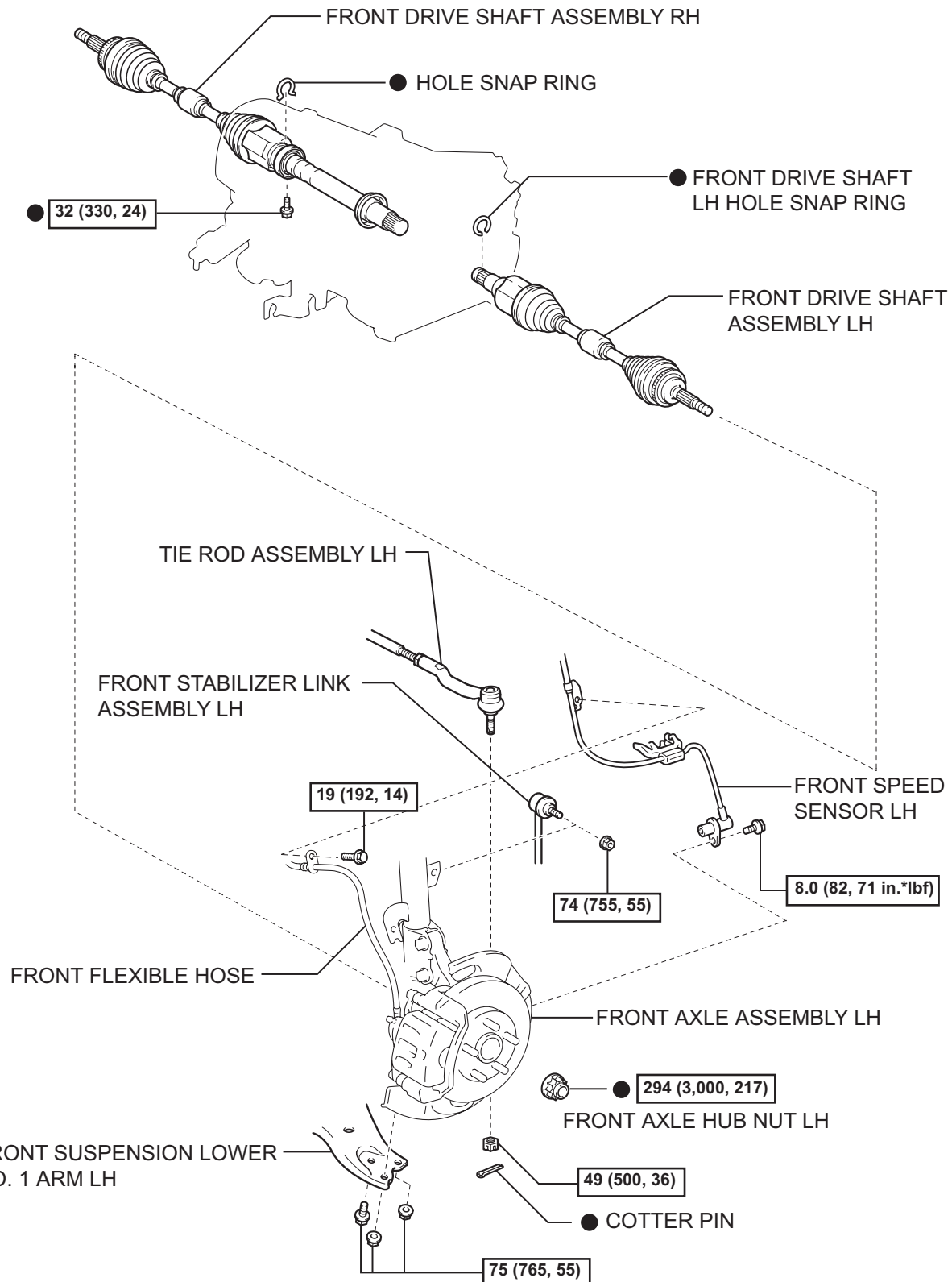
(See page [SP-4](#))**20. CHECK ABS SPEED SENSOR SIGNAL**

HINT:

(See page [BC-24](#))

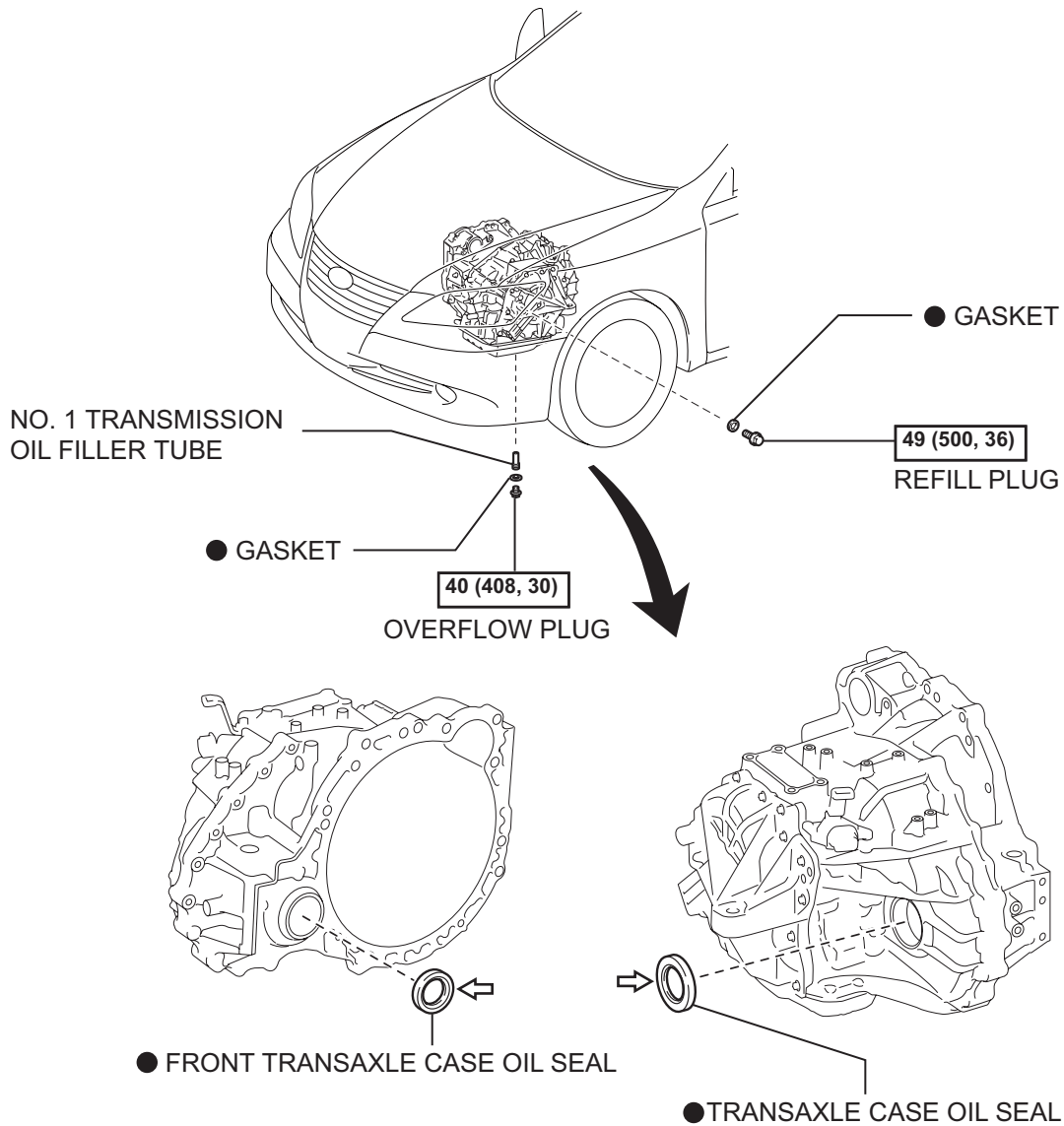
DIFFERENTIAL OIL SEAL

COMPONENTS



[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part



[N*m (kgf*cm, ft.*lbf)] : Specified torque ⇐ Apply MP grease ● Non-reusable part

AX

INSTALLATION

1. INSTALL NO. 2 SHIFT CABLE GROMMET RETAINER

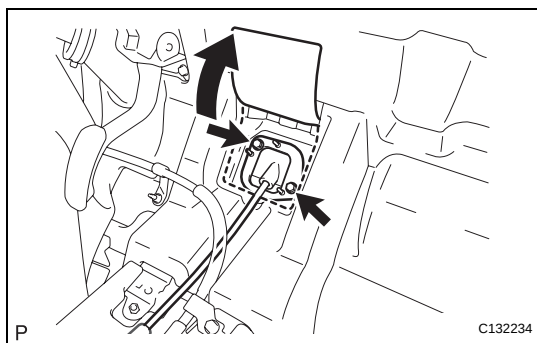
(a) Pass the control cable from the cabin to the engine compartment.

(b) Install the No. 2 shift cable grommet retainer with the 2 bolts.

Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

2. INSTALL TRANSMISSION CONTROL CABLE ASSEMBLY

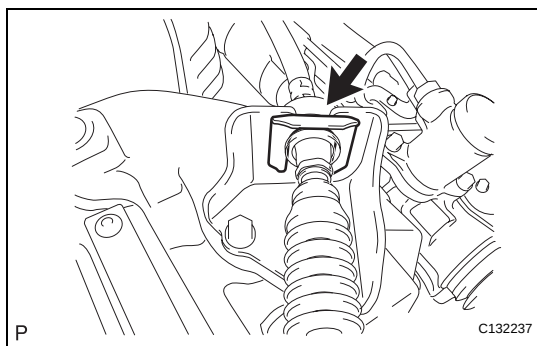
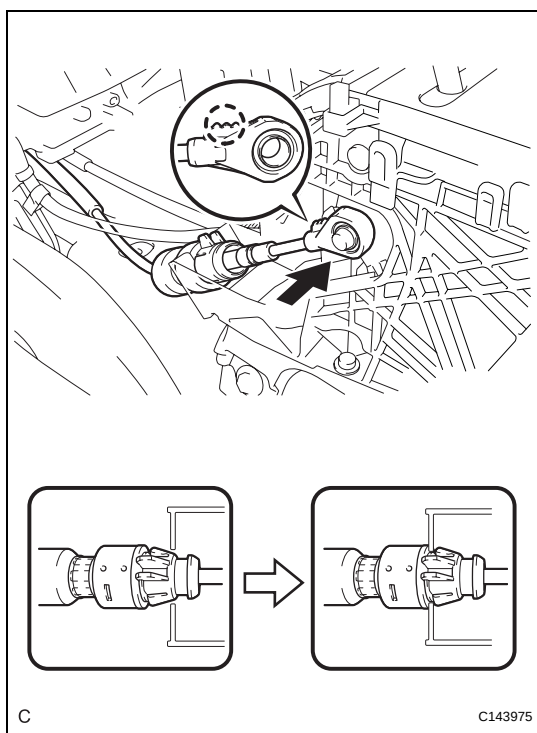
(a) Move the shift lever to the N position.



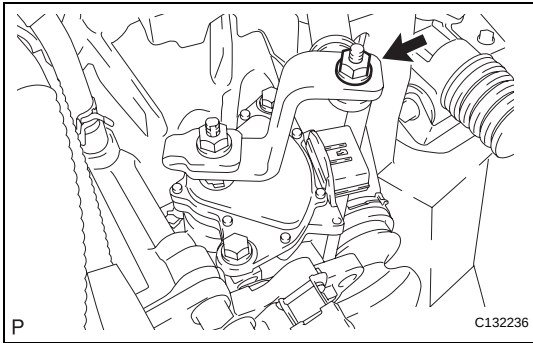
(b) Install the transmission control cable assembly as shown in the illustration.

HINT:

- Install the floor shift cable with the uneven surface facing up.
- Securely engage the claws of the floor shift cable.

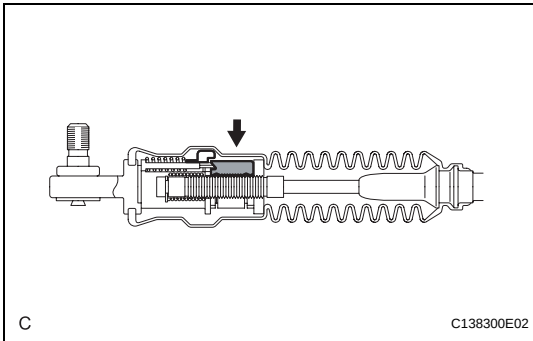


(c) Connect the control cable to the bracket with a new clip.



- (d) Install the control cable to the control shaft lever with the nut.

Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)



- (e) Push in the lock piece of the transmission control cable.

NOTICE:

Firmly push in the lock piece until the slider lock is engaged.

HINT:

After pushing in the lock piece, make sure that the boot is not deformed.

**3. INSTALL CENTER AIRBAG SENSOR ASSEMBLY
(See page [RS-469](#))**

4. INSTALL NO. 1 AIR CLEANER INLET (See page [EM-48](#))

5. INSTALL AIR CLEANER CASE SUB-ASSEMBLY (See page [EM-48](#))

6. INSTALL AIR CLEANER CAP SUB-ASSEMBLY

7. INSTALL AIR CLEANER INLET ASSEMBLY (See page [EM-48](#))

8. INSTALL AIR CONDITIONING UNIT

HINT:

(See page [AC-159](#))

9. INSTALL ENGINE ROOM SIDE COVER LH

10. INSTALL COOL AIR INTAKE DUCT SEAL (See page [EM-50](#))

11. INSPECT SHIFT LEVER POSITION (See page [AX-200](#))

12. ADJUST SHIFT LEVER POSITION (See page [AX-200](#))

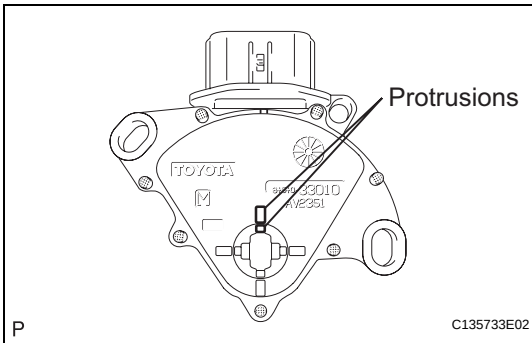
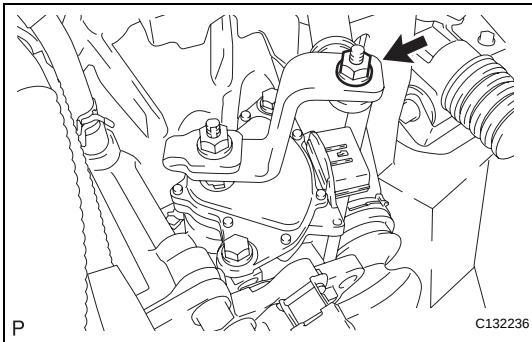
ADJUSTMENT

1. INSPECT SHIFT LEVER POSITION

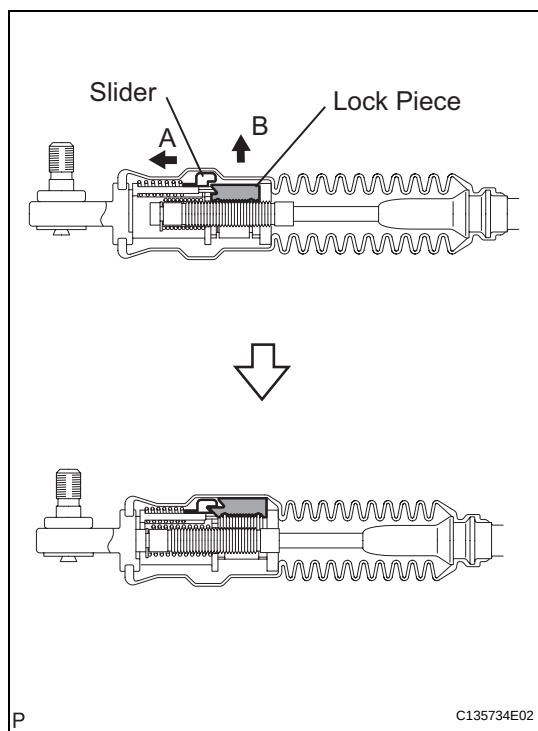
- (a) When shifting from the P to the R position with the engine switch on (IG) and the brake pedal depressed, make sure that the shift lever moves smoothly and moves correctly into position.
- (b) Start the engine and make sure that the vehicle moves forward when shifting from the N to the D position and moves rearward when shifting to the R position.
If operation cannot be done as specified, inspect the park/neutral position switch assembly and check the shift lever assembly installation condition.

2. ADJUST SHIFT LEVER POSITION

- (a) Move the shift lever to the N position.
- (b) Remove the nut and transmission control cable from the control shaft lever.



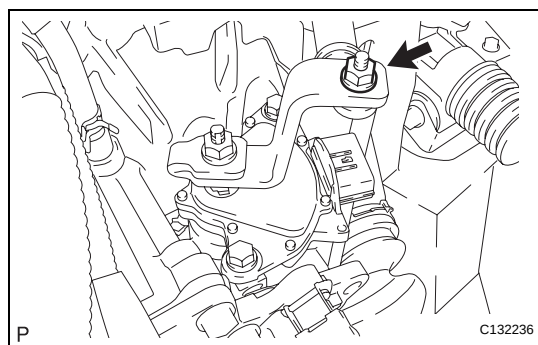
- (c) Align the protrusions of the park/neutral position switch.



- (d) Move the slider in the direction indicated by arrow A and pull up the lock piece in the direction indicated by arrow B.

NOTICE:

Do not damage the boot.

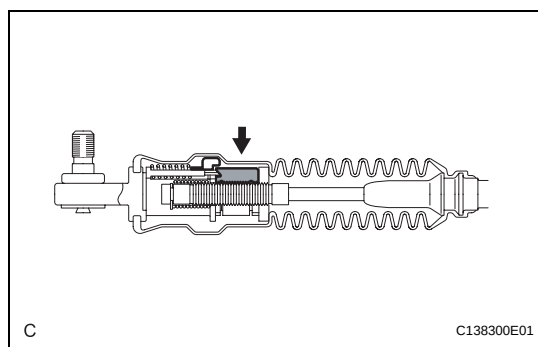


- (e) Install the control cable to the control shaft with the nut.

Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)

NOTICE:

- If the control cable end is excessively pushed up, the shift lever cannot be adjusted.
- When tightening the nut, confirm that the control cable is properly stretched.



- (f) Push in the lock piece.

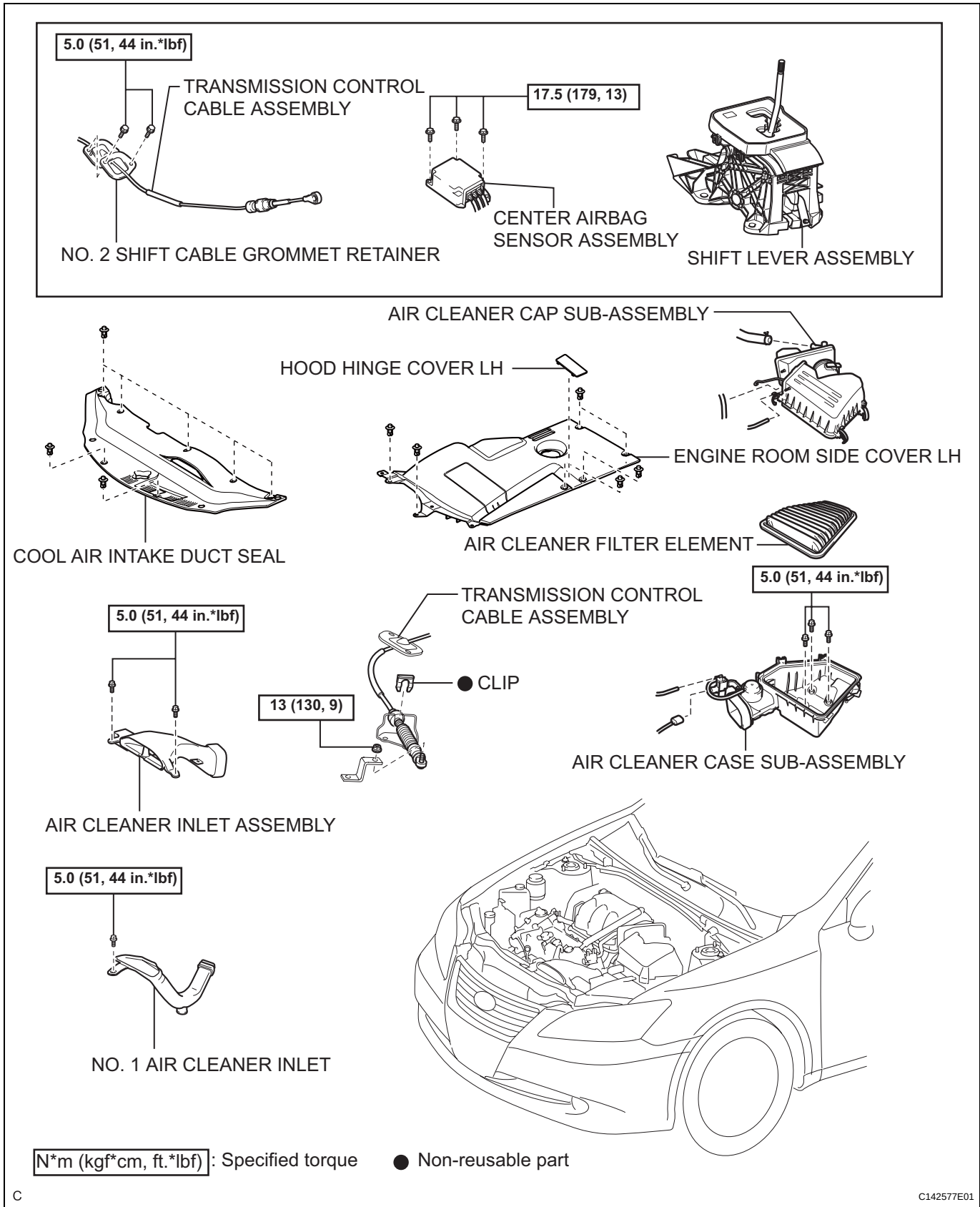
NOTICE:

Firmly push in the lock piece until the slider lock is engaged.

- (g) Start the engine and make sure that the vehicle moves forward when moving the lever from the N to the D position and moves rearward when moving it to the R position. If it becomes hard to move the shift lever, readjust the shift lever position.

TRANSMISSION CONTROL CABLE ASSEMBLY

COMPONENTS



REMOVAL

1. REMOVE AIR CONDITIONING UNIT

HINT:

(See page [AC-144](#))

2. REMOVE CENTER AIRBAG SENSOR ASSEMBLY (See page [RS-469](#))

3. REMOVE COOL AIR INTAKE DUCT SEAL (See page [EM-22](#))

4. REMOVE ENGINE ROOM SIDE COVER LH (See page [EM-22](#))

5. REMOVE AIR CLEANER INLET ASSEMBLY (See page [EM-23](#))

6. REMOVE AIR CLEANER CAP SUB-ASSEMBLY

7. REMOVE AIR CLEANER CASE SUB-ASSEMBLY (See page [EM-23](#))

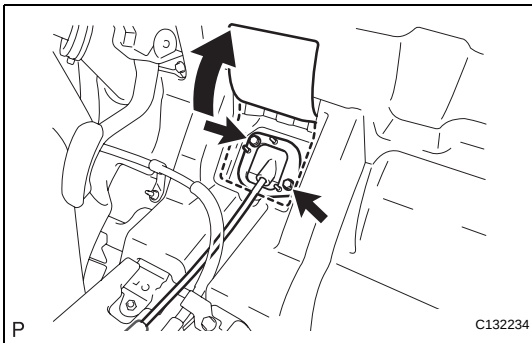
8. REMOVE NO. 1 AIR CLEANER INLET (See page [EM-23](#))

9. DISCONNECT NO. 2 SHIFT CABLE GROMMET RETAINER

(a) Turn back the carpet.

(b) Remove the 2 bolts and disconnect the No. 2 shift cable grommet retainer.

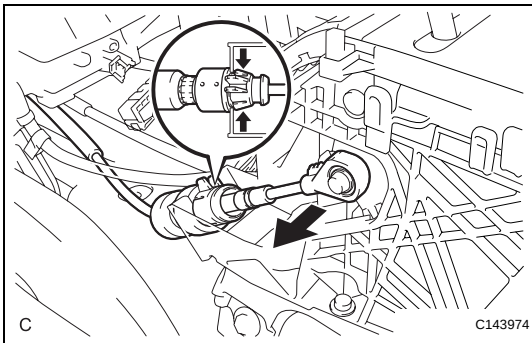
(c) Remove the No. 2 shift cable grommet retainer.



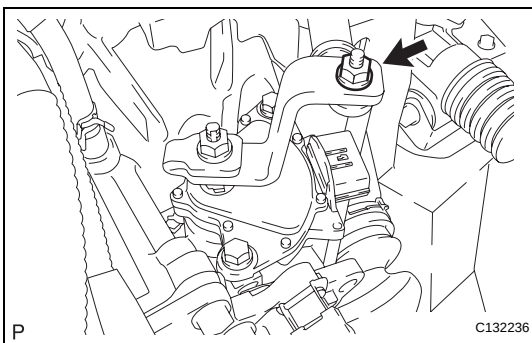
10. REMOVE TRANSMISSION CONTROL CABLE ASSEMBLY

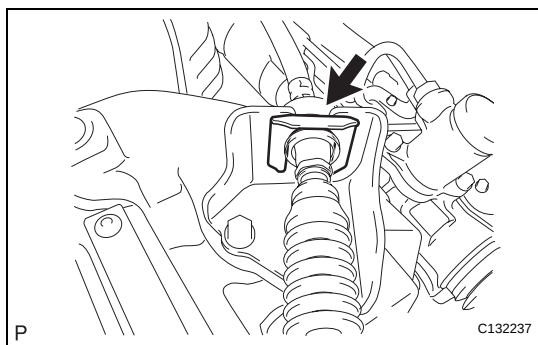
(a) Disconnect the end of the transmission control cable assembly from the shift lever assembly.

(b) Disconnect the transmission control cable assembly from the shift lever assembly while pushing the 2 claws of the floor shift cable.



(c) Remove the nut and transmission control cable from the control shaft lever.





- (d) Remove the clip and disconnect the transmission control cable assembly from the No. 1 control cable bracket.
- (e) Pull out the transmission control cable assembly from the body.

SHIFT LOCK SYSTEM

ON-VEHICLE INSPECTION

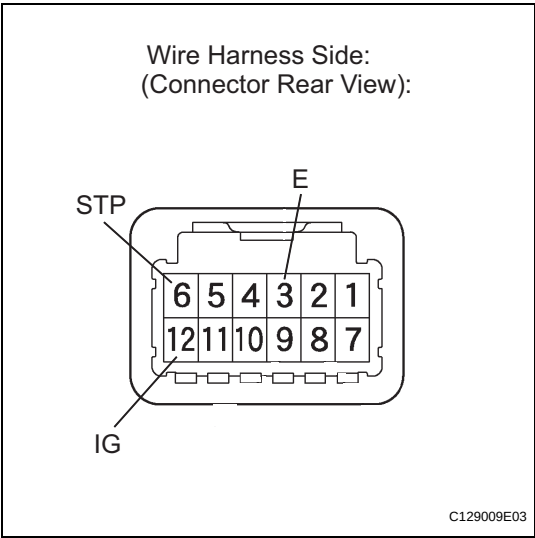
1. CHECK SHIFT LOCK OPERATION
- (a) Move the shift lever to the P position.

(b) Turn the engine switch off.

(c) Check that the shift lever cannot be moved to any position other than P.

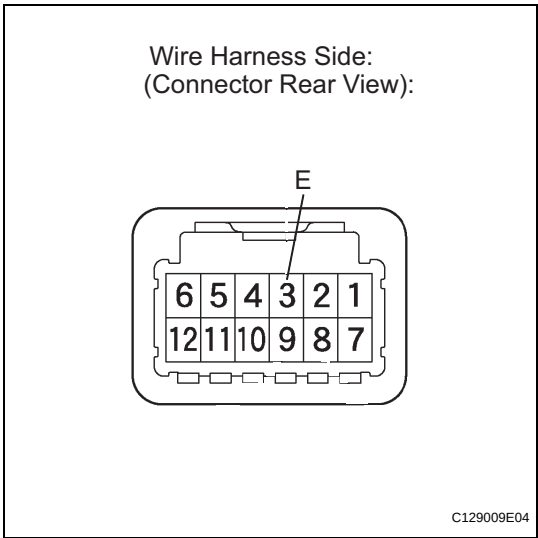
(d) Turn the engine switch on (IG), depress the brake pedal and check that the shift lever can be moved to another position.
- If operation cannot be done as specified, inspect the shift lock control unit.
2. CHECK SHIFT LOCK RELEASE BUTTON OPERATION
- (a) Using a screwdriver, remove the shift lock release cover.

(b) When operating the shift lever with the shift lock release button pressed, check that the lever can be moved to any position other than P.
- If operation cannot be done as specified, check the shift lever assembly installation condition.
3. INSPECT SHIFT LOCK CONTROL UNIT ASSEMBLY
- (a) Measure the voltage according to the value(s) in the table below.
- HINT:
- Do not disconnect the shift lock control unit assembly connector.



Standard voltage

Terminal	Measuring Condition	Voltage (V)
12 (IG) - 3 (E)	Engine switch on (IG)	10 to 14
12 (IG) - 3 (E)	Engine switch off	Below 1
6 (STP) - 3 (E)	Brake pedal depressed	10 to 14
6 (STP) - 3 (E)	Brake pedal released	Below 1



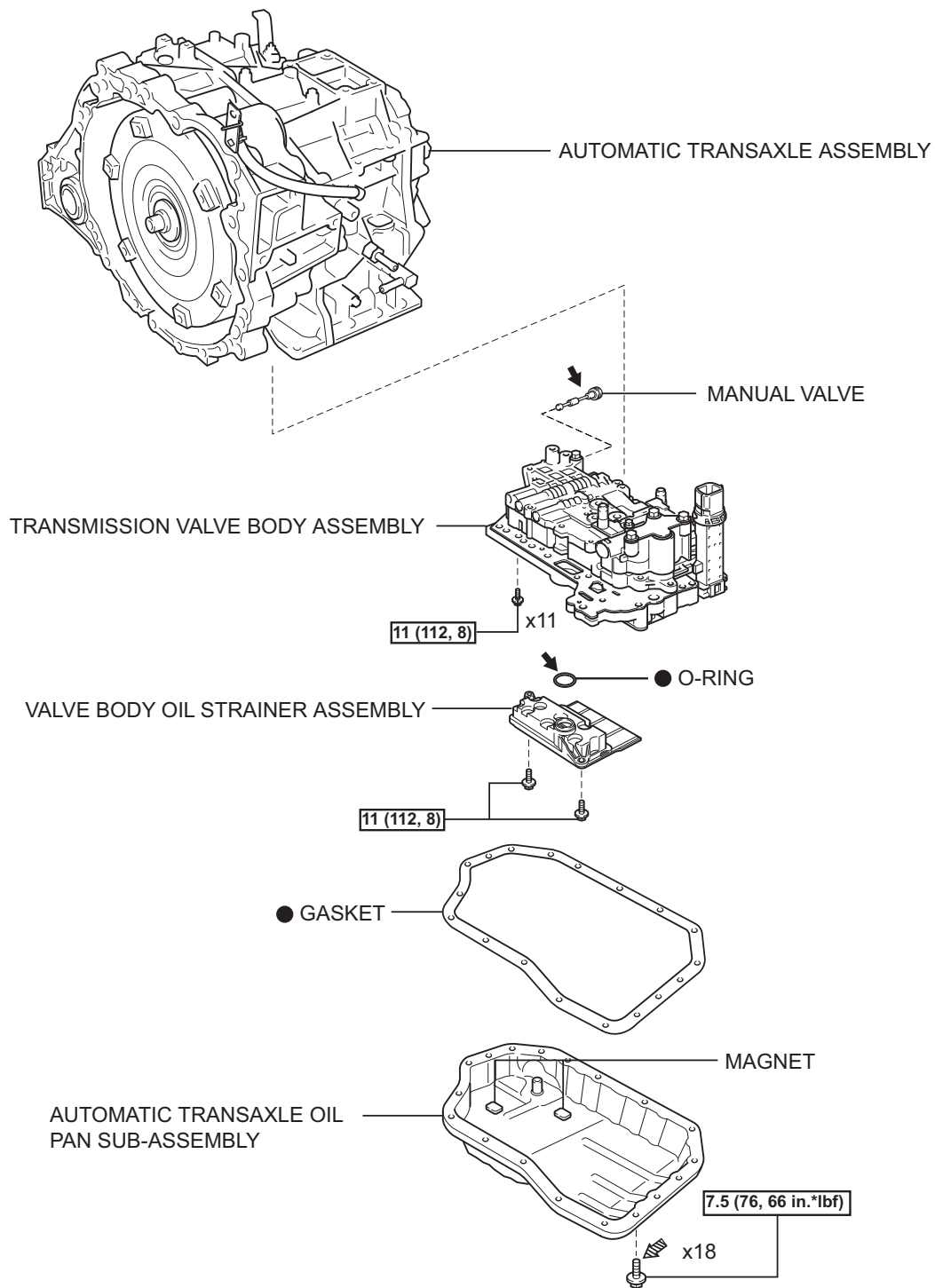
- (b) Measure the resistance according to the value(s) in the table below.
- HINT:
Do not disconnect the shift lock control unit assembly connector.
If the result is not as specified, replace the shift lever assembly.

Standard resistance

Terminal	Measuring Condition	Specified Value
3 (E) - Body ground	Always	Below 1 Ω

VALVE BODY ASSEMBLY

COMPONENTS



N*m (kgf*cm, ft.*lbf): Specified torque ● Non-reusable part ← Apply ATF WS ≡ Precoated part

REMOVAL

1. REMOVE AUTOMATIC TRANSAXLE ASSEMBLY

HINT:

(See page [AX-215](#))

2. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY

- (a) Remove the 18 bolts and oil pan from the transaxle.

NOTICE:

Some fluid will remain in the oil pan. Remove all the pan bolts, and carefully remove the oil pan assembly.

- (b) Remove the gasket from the oil pan.

- (c) Remove the 2 magnets from the oil pan.

- (d) Examine particles in the oil pan.

- (1) Collect any steel chips with the removed magnets. Look carefully at the chips and particles in the oil pan and on the magnets to see the type of wear which might be found in the transaxle.

Result:

Steel (magnetic):

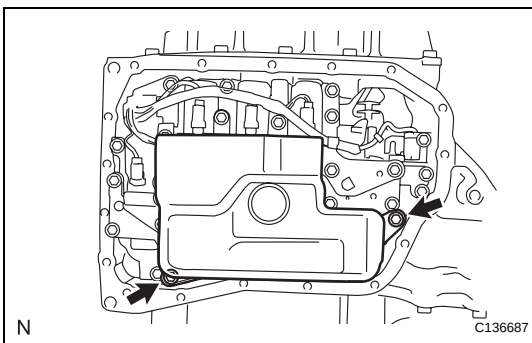
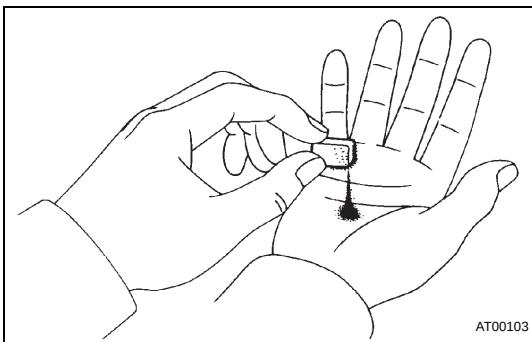
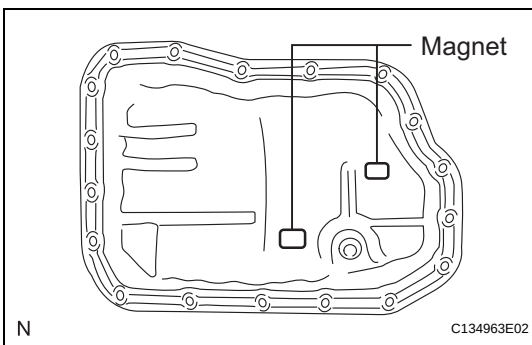
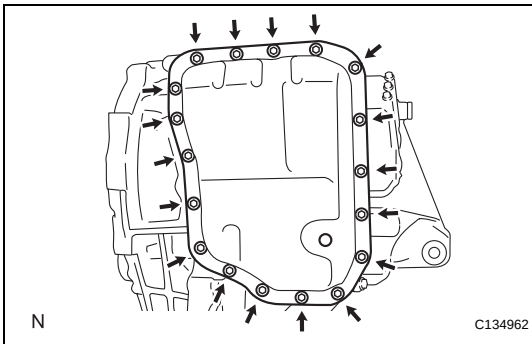
Bearing, gear and plate wear

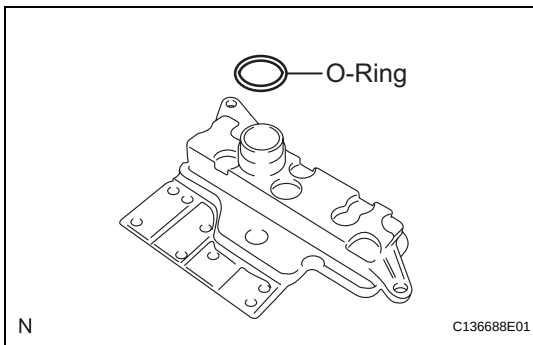
Brass (non-magnetic):

Bearing wear

3. REMOVE VALVE BODY OIL STRAINER ASSEMBLY

- (a) Remove the 2 bolts and oil strainer from the valve body.





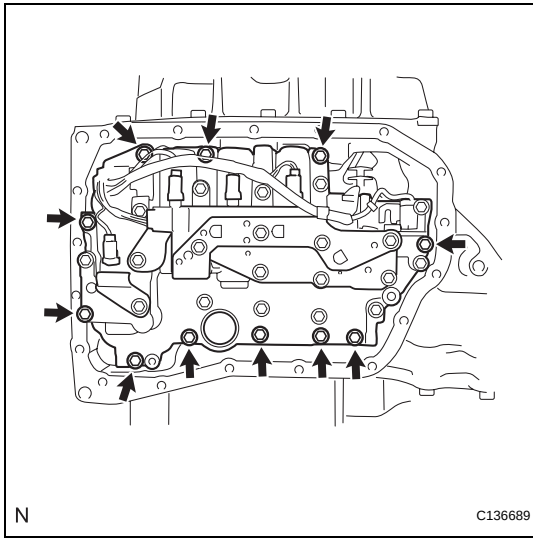
(b) Remove the O-ring from the oil strainer.

4. REMOVE TRANSMISSION VALVE BODY ASSEMBLY

(a) Remove the 11 bolts and valve body from the transaxle.

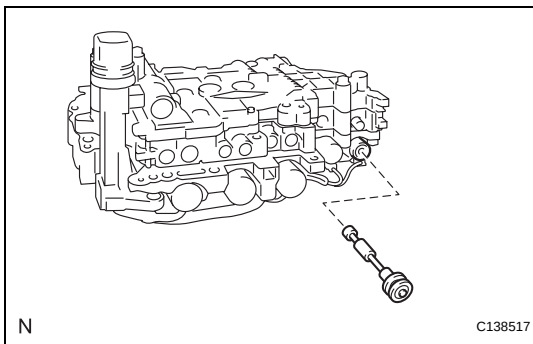
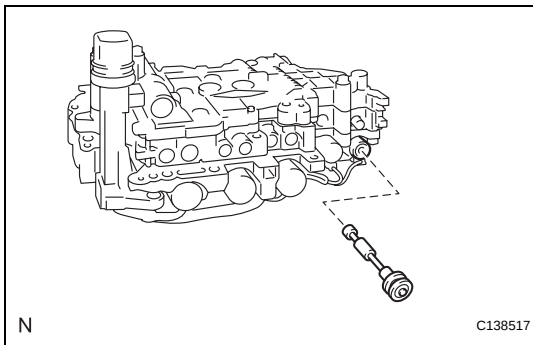
NOTICE:

When removing the transmission valve body assembly, be careful not to allow the transmission revolution sensor and the transaxle case to interfere with each other.



5. REMOVE MANUAL VALVE

(a) Remove the manual valve from the valve body.



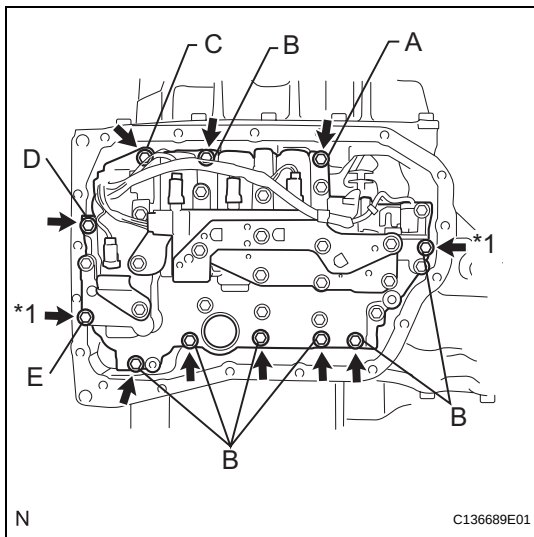
INSTALLATION

1. INSTALL MANUAL VALVE

(a) Coat the manual valve with ATF and install it to the valve body.

2. INSTALL TRANSMISSION VALVE BODY ASSEMBLY

(a) Coat the O-ring of the transmission wire with ATF.



- (b) Confirm that the manual valve lever is positioned as shown in the illustration and install the valve body assembly to the transaxle case with the 11 bolts.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

Bolt length:

Bolt A:

25 mm (0.98 in.)

Bolt B:

30 mm (1.18 in.)

Bolt C:

35 mm (1.38 in.)

Bolt D:

45 mm (1.77 in.)

Bolt E:

55 mm (2.17 in.)

NOTICE:

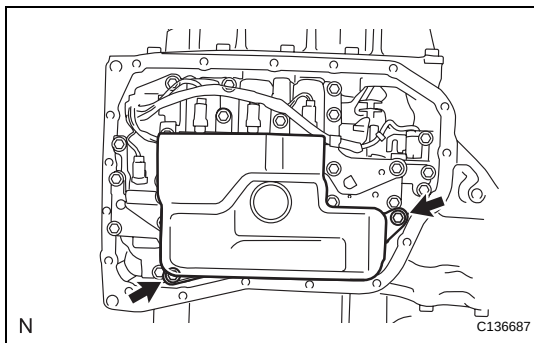
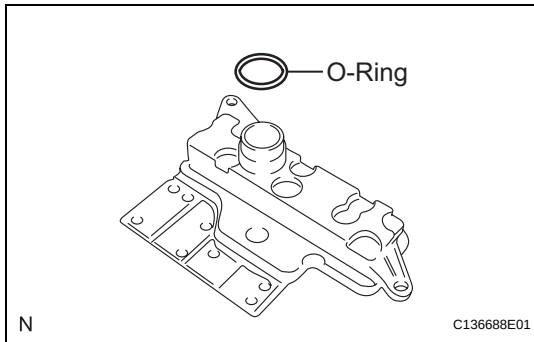
- When installing the transmission valve body assembly, be careful not to allow the transmission revolution sensor and transaxle case to interfere with each other.
- Be sure to insert the pin of the manual valve lever into the groove on the end of the manual valve.
- First, temporarily tighten the bolts marked by (*1) in the illustration because they are positioning bolts.

3. INSTALL VALVE BODY OIL STRAINER ASSEMBLY

- (a) Coat a new O-ring with ATF and install it to the oil strainer.

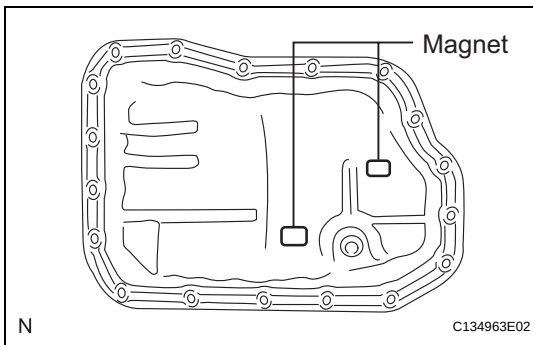
NOTICE:

Ensure that the O-ring is not twisted or pinched.



- (b) Install the oil strainer to the valve body with the 2 bolts.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)

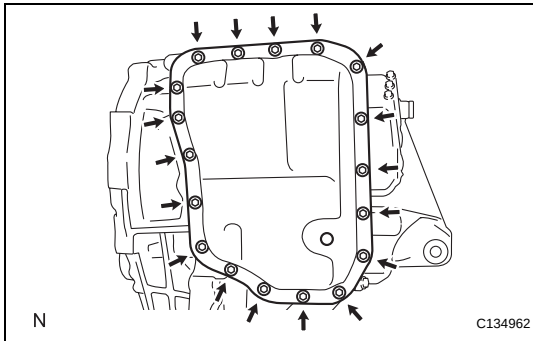


4. INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY

- (a) Install the 2 magnets to the oil pan.
- (b) Install a new gasket to the oil pan.
- (c) Apply adhesive to the 18 bolts.

Adhesive:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent.



- (d) Install the oil pan to the automatic transaxle with the 18 bolts.

Torque: 7.5 N*m (76 kgf*cm, 66 in.*lbf)

NOTICE:

- In order to ensure proper sealing of the transmission oil pan bolts, apply sealant to the bolts and install them within 10 minutes of sealant application.
- Completely remove any oil or grease from the contact surface of the transaxle case and oil pan sub-assembly with the gasket before installation.

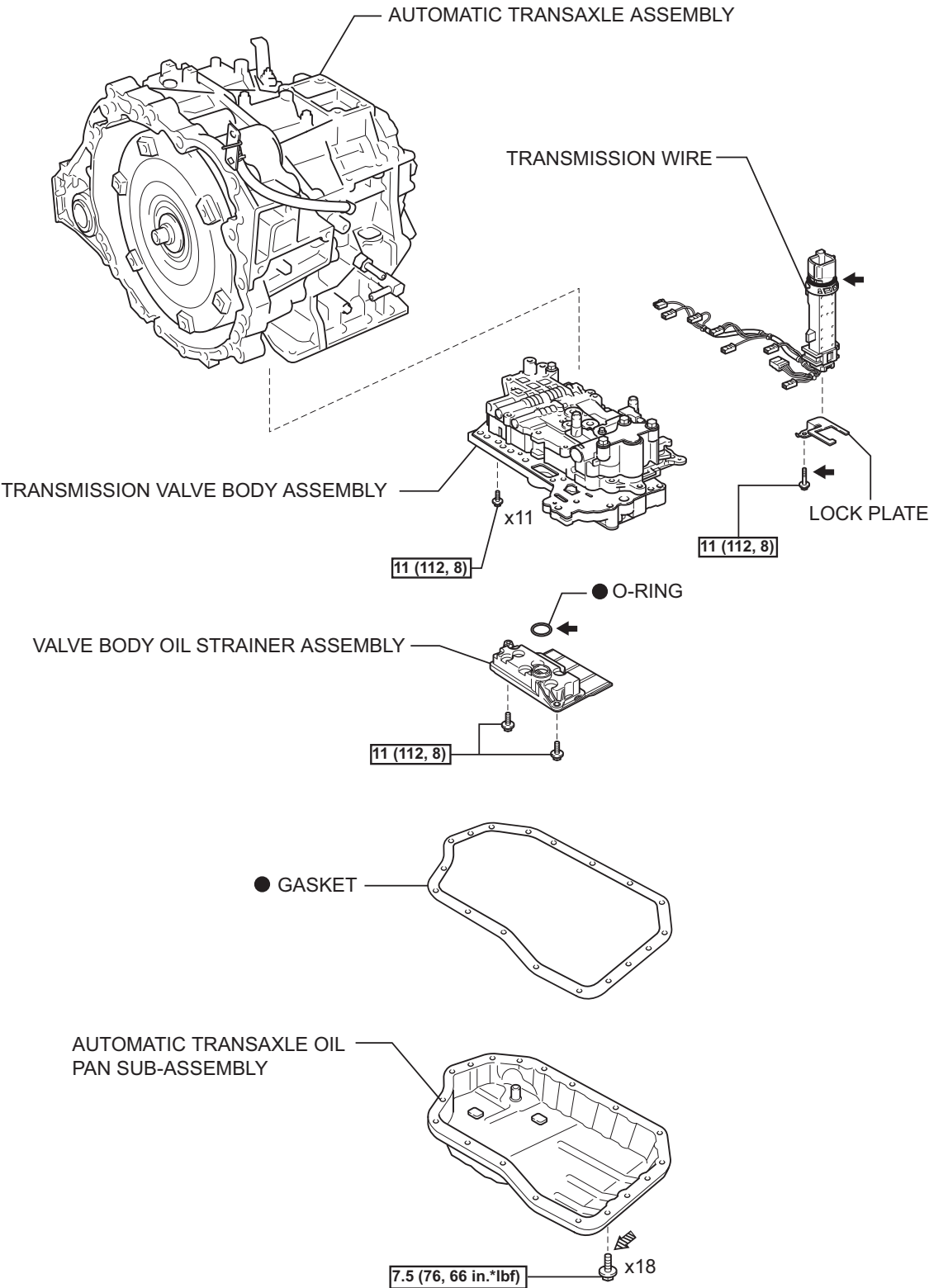
5. INSTALL AUTOMATIC TRANSAXLE ASSEMBLY

HINT:

(See page [AX-222](#))

TRANSMISSION WIRE

COMPONENTS



N*m (kgf*cm, ft.*lbf): Specified torque ● Non-reusable part ◀ Apply ATF WS ◀◀ Precoated part

REMOVAL

1. REMOVE AUTOMATIC TRANSAXLE ASSEMBLY

HINT:

(See page [AX-215](#))

2. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY (See page [AX-192](#))

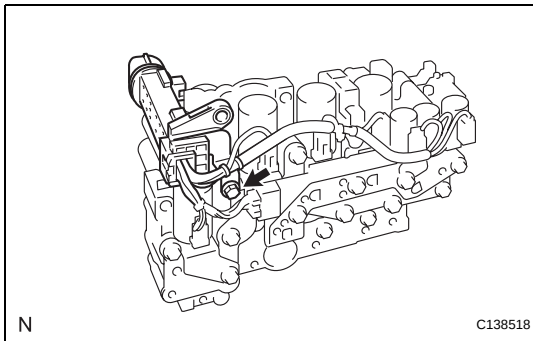
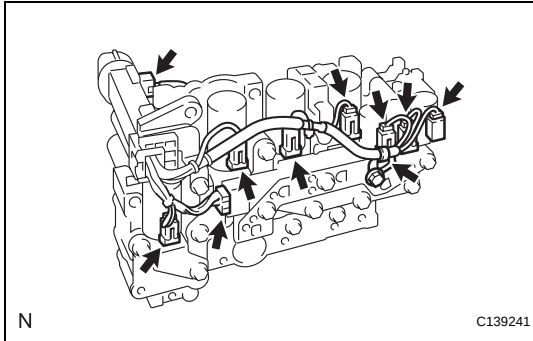
3. REMOVE VALVE BODY OIL STRAINER ASSEMBLY (See page [AX-192](#))

4. REMOVE TRANSMISSION VALVE BODY ASSEMBLY (See page [AX-193](#))

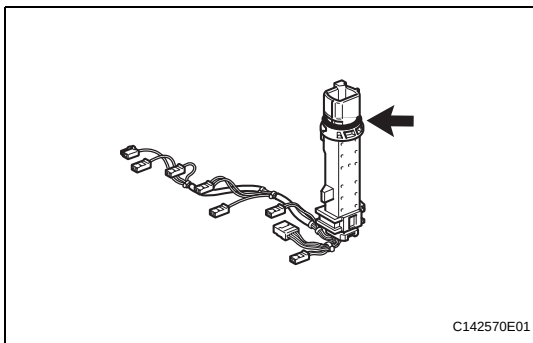
5. REMOVE TRANSMISSION WIRE

(a) Disconnect the 9 connectors.

(b) Remove the transmission wire from the clamp.



(c) Remove the bolt, lock plate and transmission wire from the valve body.

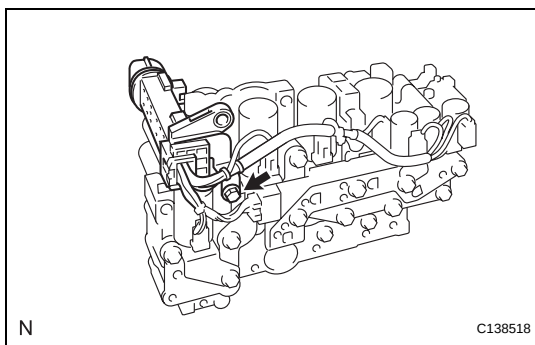


INSTALLATION

1. INSTALL TRANSMISSION WIRE

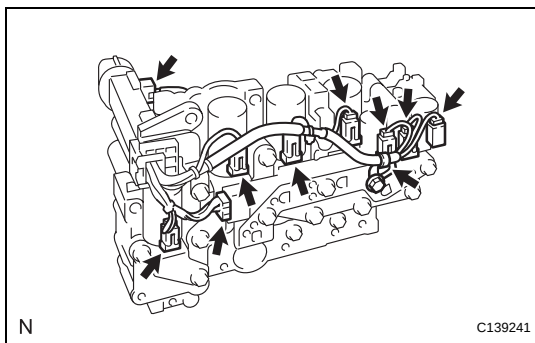
(a) Coat the O-ring with ATF.

(b) Coat the bolt with ATF.



- (c) Install the transmission wire and lock plate to the valve body with the bolt.

Torque: 11 N*m (112 kgf*cm, 8 ft.*lbf)



- (d) Install the transmission wire to the clamp.

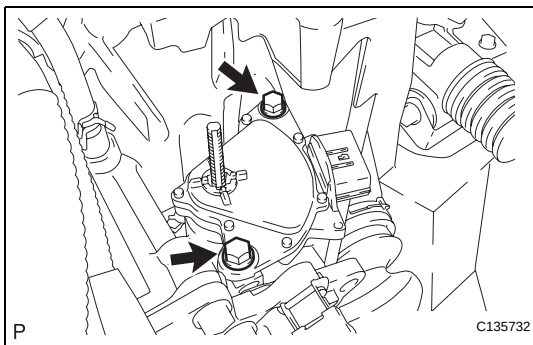
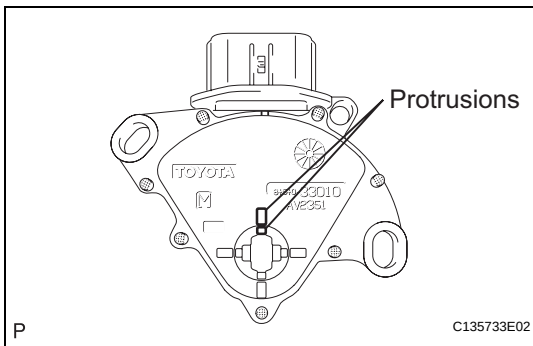
- (e) Connect the 9 connectors.

2. **INSTALL TRANSMISSION VALVE BODY ASSEMBLY**
(See page [AX-193](#))
3. **INSTALL VALVE BODY OIL STRAINER ASSEMBLY**
(See page [AX-194](#))
4. **INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB-ASSEMBLY** (See page [AX-195](#))
5. **INSTALL AUTOMATIC TRANSAXLE ASSEMBLY**
HINT:
(See page [AX-222](#))

INSTALLATION

1. INSTALL PARK/NEUTRAL POSITION SWITCH ASSEMBLY

- (a) Move the shift lever to the N position.
- (b) Align the protrusions of the park/neutral position switch.

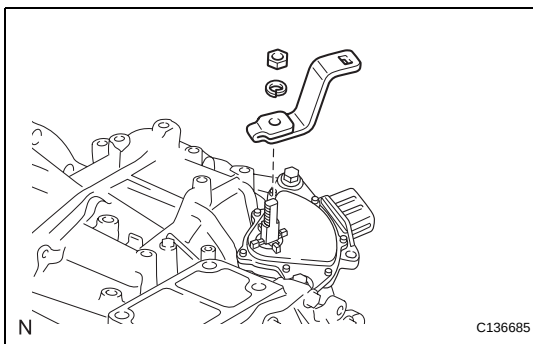


- (c) Install the park/neutral position switch to the control shaft with the 2 bolts.

Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

NOTICE:

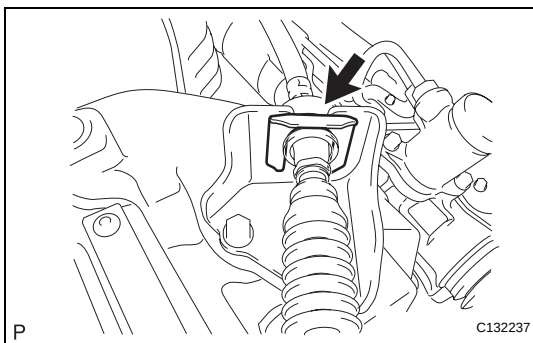
- Before installing the park/neutral position switch, remove any dirt or rust on the installation portion of the control shaft. Be sure to install the switch straight along the shaft while being careful not to deform the plate spring that supports the shaft. If the plate spring is deformed, the park/neutral switch cannot be reinstalled correctly.
- After installing the park/neutral position switch, confirm that the 2 protrusions on the switch are aligned.



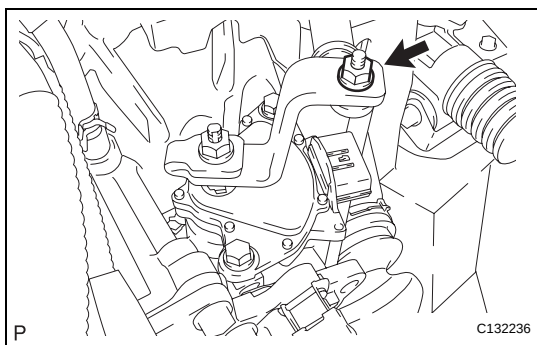
- (d) Install the control shaft lever to the control shaft with the nut and washer.

Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)

- (e) Connect the connector to the park/neutral position switch.

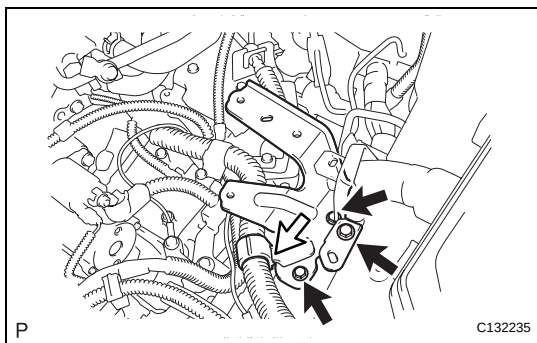


- (f) Connect the transmission control cable to the transmission control cable bracket with a new clip.



- (g) Connect the transmission control cable to the control shaft lever with the nut.

Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)



2. INSTALL AIR CLEANER BRACKET

- (a) Install the air cleaner bracket with the 3 bolts.

Torque: 7.8 N*m (80 kgf*cm, 69 in.*lbf)

- (b) Install the wire harness clamp.

3. INSTALL NO. 1 AIR CLEANER INLET (See page [EM-48](#))

4. INSTALL AIR CLEANER CASE SUB-ASSEMBLY (See page [EM-48](#))

5. INSTALL AIR CLEANER CAP SUB-ASSEMBLY

6. INSTALL AIR CLEANER INLET ASSEMBLY (See page [EM-48](#))

7. INSTALL ENGINE ROOM SIDE COVER LH (See page [EM-50](#))

8. INSTALL COOL AIR INTAKE DUCT SEAL (See page [EM-50](#))

9. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (See page [EM-49](#))

10. INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY OPERATION (See page [AX-184](#))

11. INSPECT SHIFT LEVER POSITION (See page [AX-200](#))

12. ADJUST SHIFT LEVER POSITION (See page [AX-200](#))

13. PERFORM INITIALIZATION

- (a) Perform initialization procedure (See page [IN-33](#)).

NOTICE:

Some systems need initialization after reconnecting the cable to the negative battery terminal.