

TRANSFER SYSTEM

PRECAUTION

NOTICE:

When disconnecting the negative (-) battery terminal, initialize the following systems after the terminal is reconnected.

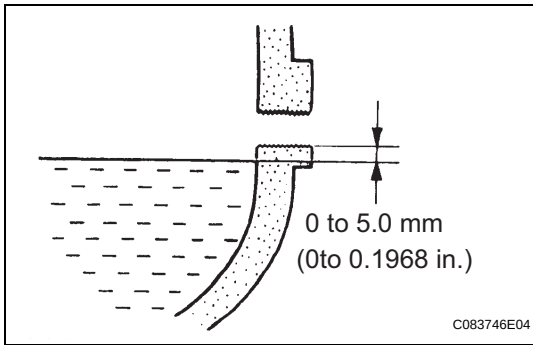
System Name	See procedure
Lighting System adaptive Front-Lighting System)	LI-17
Power Window Control System	WS-12
Power Back Door System	DL-8
Sliding Roof System	RF-22

1. Before disassembly, clean the transfer assembly of any sand or mud to prevent it from entering inside the transfer during disassembly and assembly.
2. When removing any light alloy part such as a transfer cover, do not pry it off with a tool like a screwdriver, but tap it out with a plastic hammer instead.
3. Always arrange the removed parts properly and protect them from dust.
4. Before installation, clean and dry all parts completely, and then apply hypoid gear oil to each part. Do not use alkaline chemicals when cleaning aluminum, rubber parts, or ring gear set bolts. Also do not use any cleaning oil (ex. white gasoline) to clean the rubber parts such as O-rings and oil seals.
5. Apply hypoid gear oil to any sliding surface or rotating part.
6. Do not directly hold a part in a vise. Make sure to put an aluminum sheet between them.
7. Replace any damaged or deformed snap ring with a new one.
8. If there is a scratch on the contact surface of the case, it may cause oil leakage. Therefore, be careful not to damage the contact surface when handling it.
9. Before applying a sealant, completely remove any old sealant stuck on the parts and clean with white gasoline.
10. Do not add oil immediately after installing sealed parts. Leave for 1 hour or more.
11. Scratches on a contact surface of an oil seal, O-ring or gasket may cause oil leakage. Be careful not to damage the contact surface when handling the seals.
12. When press-fitting an oil seal, be careful not to damage the oil seal lip and around it.
13. When replacing a bearing, replace the inner and outer races as a set.

PROBLEM SYMPTOMS TABLE

Transfer system

Symptom	Suspected area	See page
Noise	1. Oil (level low)	TF-3
	2. Backlash adjustment	TF-26
	3. Preload adjustment	TF-26
	4. Tooth contact adjustment	TF-26
	5. Transfer driven pinion bearing (worn)	TF-17
	6. Ring gear mounting case bearing (worn)	TF-26
Oil leakage	1. Oil (level too high)	TF-3
	2. Oil seal (worn or damaged) Right bearing retainer	TF-17
	3. Oil seal (worn or damaged) Transfer case	TF-17
	4. Oil seal (worn or damaged) Extension housing	TF-17
	5. Gasket (damaged)	TF-17
	6. Seal (damaged)	TF-17



TRANSFER OIL

ON-VEHICLE INSPECTION

1. INSPECT TRANSFER OIL

- (a) Remove the transfer case No. 1 plug and gasket No. 1.
- (b) Check that the oil level is 0 to 5 mm (0 to 0.1968 in.) below the lower side of the transfer case No. 1 plug hole.

NOTICE:

- When changing oil, recheck the oil level after driving.
 - Excessively large or small amounts of oil may cause some trouble.
- (c) When the oil level is too low, check for oil leakage.
 - (d) Tighten the transfer case No. 1 plug with a new gasket No. 1.

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

2. ADD TRANSFER OIL

- (a) remove the transfer case No. 1 plug and gasket No. 1 and add the oil.

NOTICE:

- When checking oil, make sure the vehicle is level.
- When adding oil, pour it slowly.
- Add oil several times in interval.

HINT:

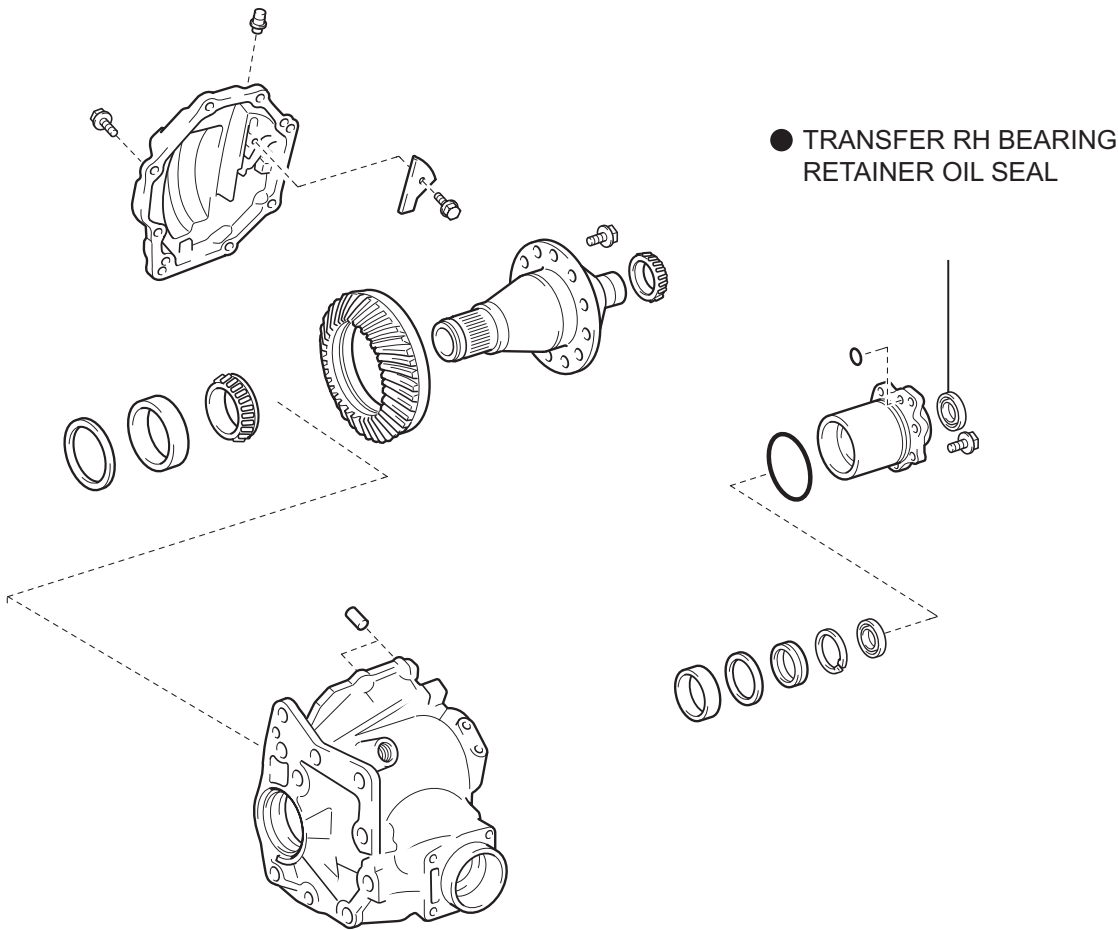
within 0 to 5 mm (0 to 0.1968 in.) below the lower side of the transfer case No. 1 plug hole.

- (b) After leaving it alone for 5 minutes, recheck the oil level.
- (c) Tighten the transfer case No. 1 plug with a new gasket No. 1.

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

BEARING RETAINER OIL SEAL

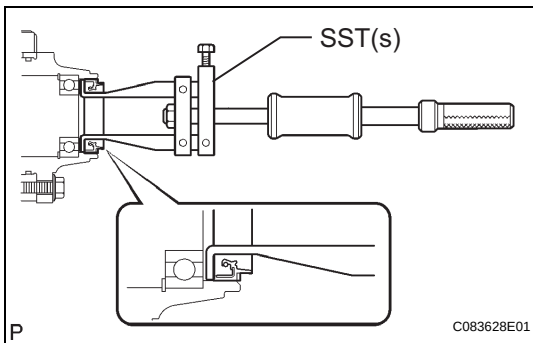
COMPONENTS



TF

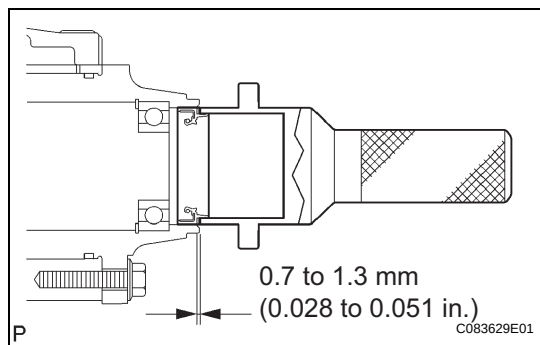
REMOVAL

1. **DRAIN AUTOMATIC TRANSAXLE FLUID**
(a) Remove the automatic drain plug, gasket and bleed the drain automatic transaxle fluid.
2. **REMOVE NO. 1 TRANSFER CASE PLUG** (See page [TF-14](#))
3. **REMOVE TRANSFER DRAIN PLUG**
(a) Remove the transfer drain plug, gasket and bleed the drain transfer oil.
4. **REMOVE FRONT WHEEL**
5. **REMOVE FRONT DRIVE SHAFT ASSEMBLY RH**
HINT:
(See page [DS-5](#))



6. **REMOVE TRANSFER RH BEARING RETAINER OIL SEAL**
(a) Using SST(s), remove the transfer RH bearing retainer oil seal.
SST 09308-00010
NOTICE:
Do not damage the oil-seal-fitted surface of the case.

INSTALLATION



1. INSTALL TRANSFER RH BEARING RETAINER OIL SEAL

SST 09223-46011

- (a) Using SST(s), install a new transfer RH bearing retainer oil seal to the transfer case at the position as show in the illustration.

NOTICE:

Do not install the oil seal obliquely.

- (b) Apply small amount of MP grease to the oil seal lip.

2. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

(See page [DS-15](#))

3. INSTALL FRONT WHEEL

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)

4. ADD AUTOMATIC TRANSAXLE FLUID

HINT:

(See page [AX-130](#))

5. INSTALL TRANSFER DRAIN PLUG

- (a) Install the transfer drain plug with a new drain gasket.

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

6. INSTALL NO. 1 TRANSFER CASE PLUG

- (a) Add oil up 0 to 5 mm (0 to 0.20 in.) below the lower side of the plug hole.

Oil amount :

0.9 L (0.95 US qts, 0.71 Imp.qts)

HINT:

When adding oil, pour it slowly.

- (b) Install the No. 1 transfer case plug with a new No. 1 gasket.

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

7. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

HINT:

(See page [SP-2](#))

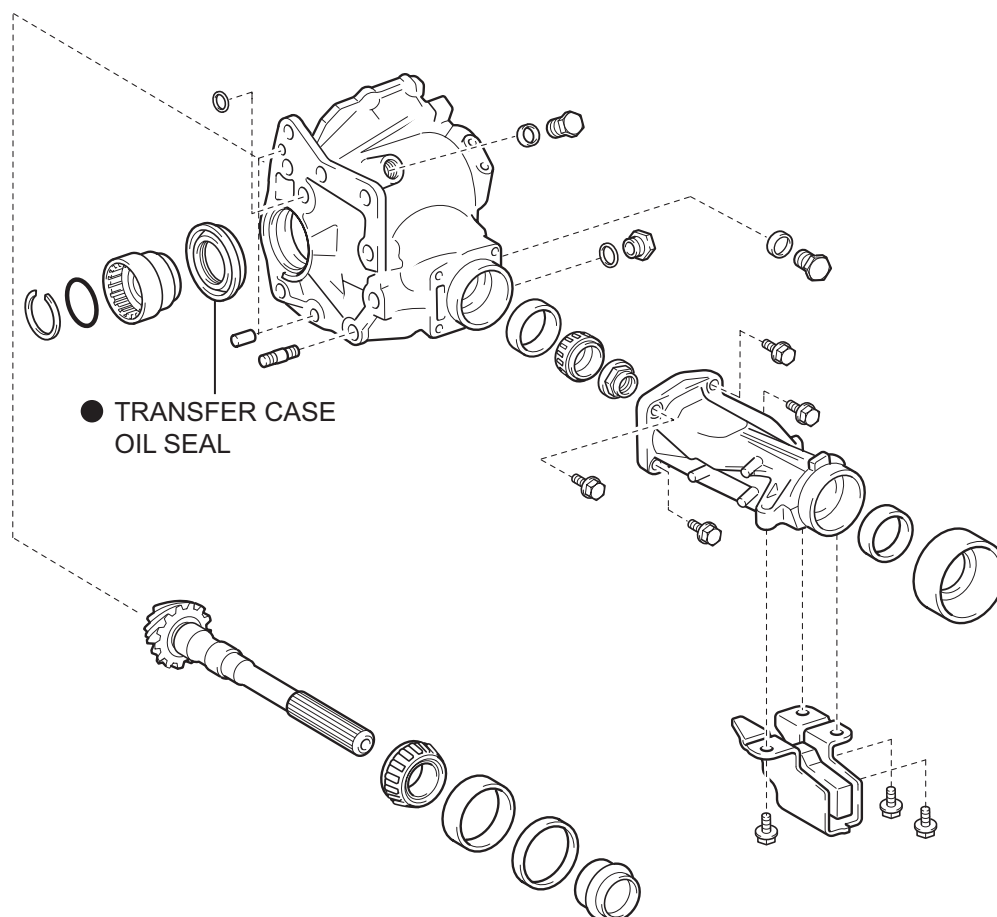
8. CHECK ABS SPEED SENSOR SIGNAL

HINT:

(See page [BC-21](#))

TRANSFER CASE OIL SEAL

COMPONENTS



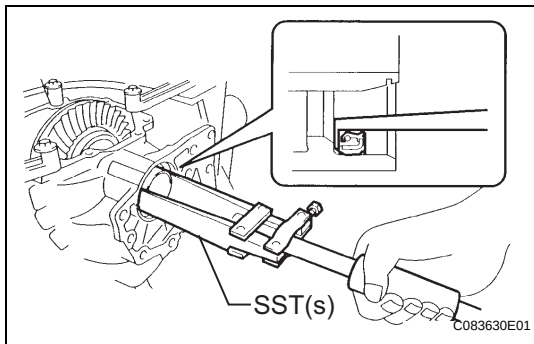
● TRANSFER CASE
OIL SEAL

● Non-reusable part

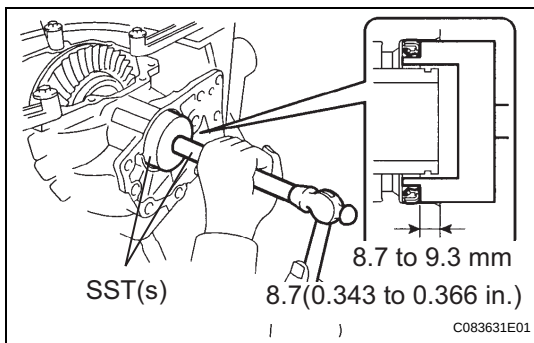
TF

REMOVAL

1. **REMOVE ENGINE AND TRANSAXLE**
(a) (See page [EM-113](#))
2. **REMOVE TRANSFER STIFFENER PLATE RH** (See page [AX-173](#))
3. **REMOVE AUTOMATIC TRANSMISSION W/ TRANSFER**
HINT:
(See page [AX-171](#))
4. **REMOVE TRANSFER ASSEMBLY**
HINT:
(See page [TF-14](#))
5. **REMOVE CTR DIFFERENTIAL LOCK SLEEVE**
HINT:
(See page [TF-19](#))



6. **REMOVE TRANSFER CASE OIL SEAL**
(a) Using SST(s), remove the transfer case oil seal from the transfer case.
SST 09308-00010
NOTICE:
Do not damage the oil-seal-fitted surface of the case.



INSTALLATION

1. **INSTALL TRANSFER CASE OIL SEAL**
(a) Using SST(s), install anew transfer case oil seal to the transfer case at the position shown in the illustration.
SST 09387-00010, 09950-70010 (09951-07150)
NOTICE:
Do not install it obliquely.
(b) Apply small amount of MP grease to the oil seal lip.
2. **INSTALL CTR DIFFERENTIAL LOCK SLEEVE**
HINT:
(See page [TF-27](#))
3. **INSTALL TRANSFER ASSEMBLY**
HINT:
(See page [TF-15](#))
4. **INSTALL AUTOMATIC TRANSMISSION W/ TRANSFER**
HINT:
See page [AX-174](#)
5. **REMOVE AND INSTALL TRANSFER STIFFENER PLATE RH** (See page [AX-175](#))

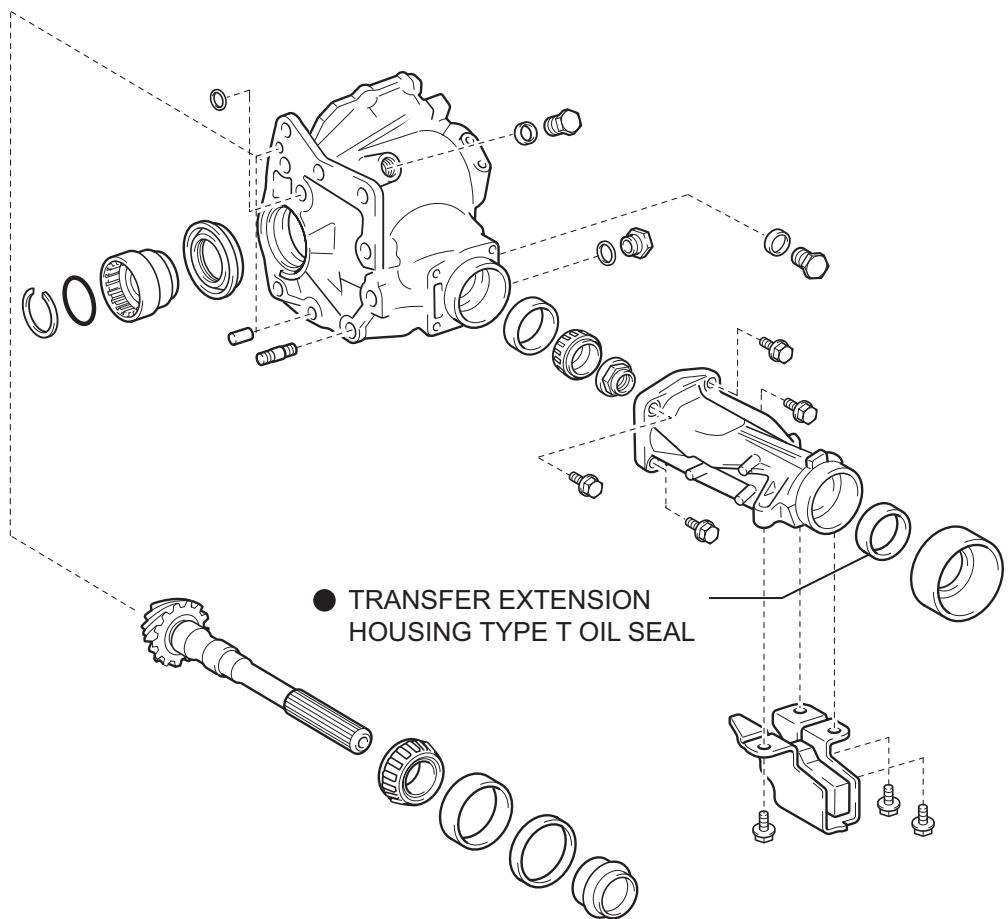
6. INSTALL ENGINE AND TRANSAXLE

HINT:

(See page [EM-120](#))

EXTENSION HOUSING OIL SEAL

COMPONENTS



● Non-reusable part

REMOVAL

1. **REMOVE TRANSFER CASE NO.1 PLUG** (See page [TF-14](#))
2. **REMOVE TRANSFER DRAIN PLUG**
 - (a) Remove the transfer drain plug, drain gasket and bleed transfer oil.
3. **REMOVE EXHAUST PIPE ASSEMBLY**

HINT:
(See page [EX-3](#))
4. **REMOVE PROPELLER W/CENTER BEARING SHAFT ASSEMBLY**

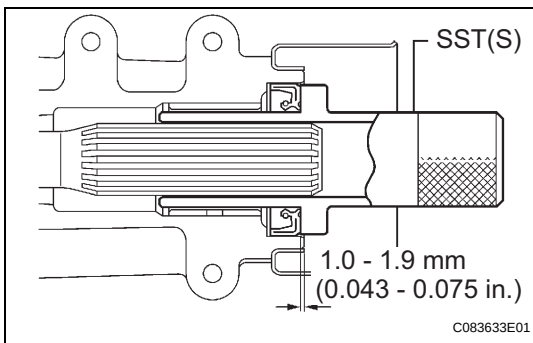
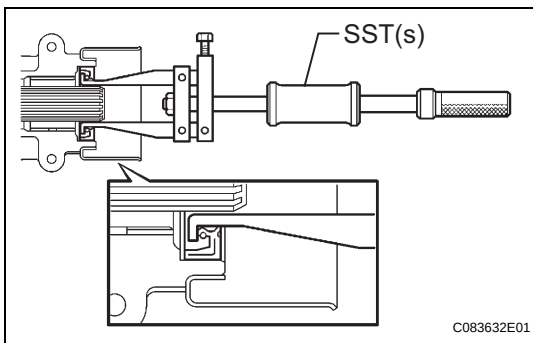
HINT:
(See page [PR-3](#))
5. **REMOVE TRANSFER EXTENSION HOUSING TYPE T OIL SEAL**

- (a) Using SST(S), remove the transfer extension housing type T oil seal from the transfer extension housing sub- assembly.

SST 09308-00010

NOTICE:

Be careful not to damage the oil-seal-fitted surface and the inside surface of the bush.



INSTALLATION

1. **INSTALL TRANSFER EXTENSION HOUSING TYPE T OIL SEAL**

- (a) Using SST(s), install anew transfer extension housing type T oil seal to he transfer extension housing sub-assembly at the position show in the illustration.

SST 09325-20010

NOTICE:

Do not install the oil seal obliquely.

- (b) Apply small amount of MP grease to the oil seal lip.

2. **TEMPORARILY TIGHTEN PROPELLER W/CENTER BEARING SHAFT ASSEMBLY**

HINT:

(See page [PR-9](#))

3. **FULLY TIGHTEN PROPELLER W/CENTER BEARING SHAFT ASSEMBLY**

HINT:

(See page [PR-9](#))

4. **INSTALL EXHAUST PIPE ASSEMBLY**

HINT:

(See page [EX-6](#))

5. **CHECK FOR EXHAUST GAS LEAKAGE**

HINT:

(See page [EX-6](#))

6. INSTALL TRANSFER DRAIN PLUG

- (a) Install the transfer drain plug with a new drain gasket.

Torque: 49 N*m (50 kgf*cm, 36 ft.*lbf)

7. INSTALL TRANSFER CASE NO.1 PLUG

- (a) Add oil up to 0 to 5 mm (0 to 0.20 in.) below the lower side of the plug hole.

Oil amount:

0.9 L (0.95 US qts, 0.71 Imp.qts)

NOTICE:

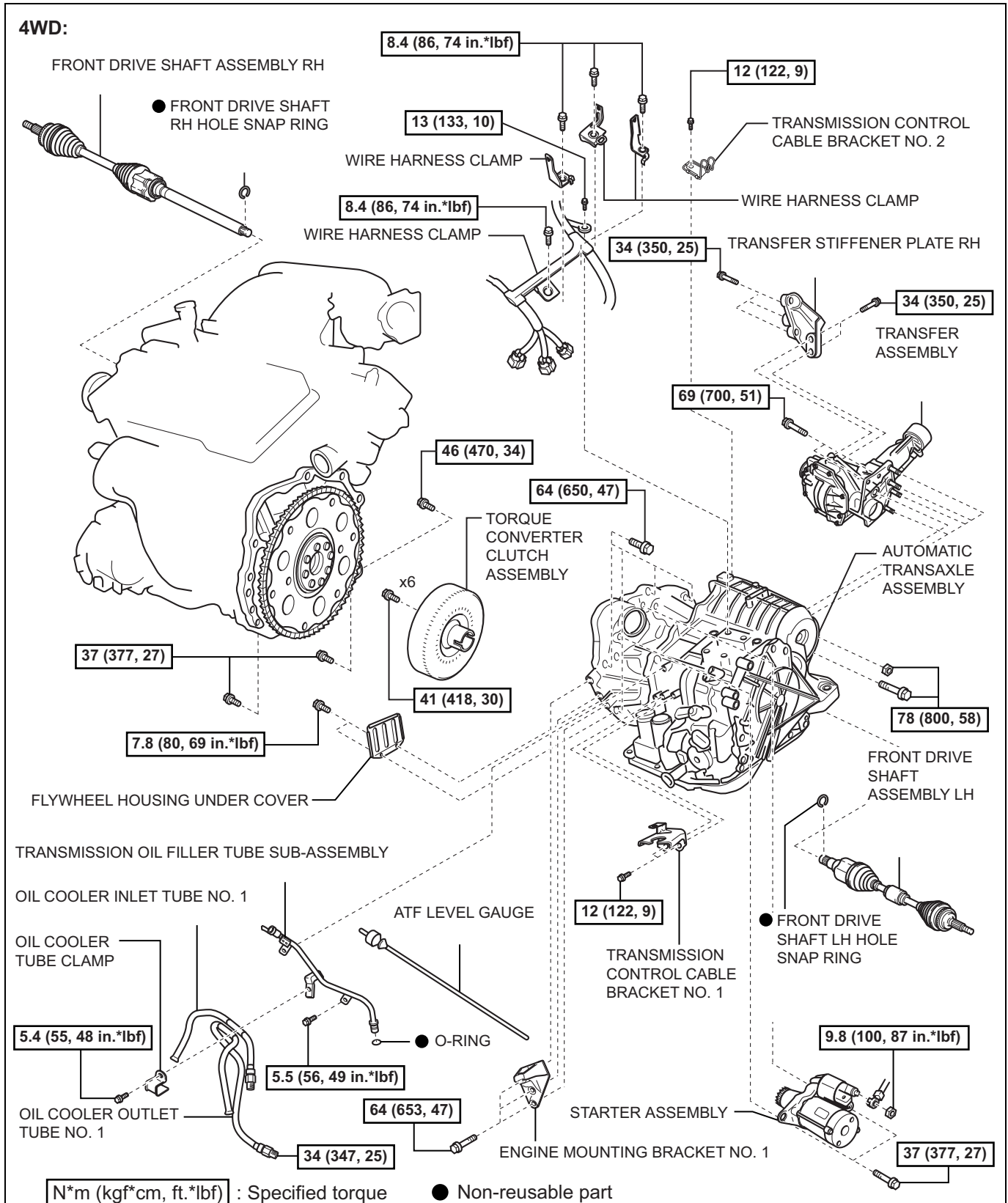
When supplying oil, pour do it slowly.

- (b) Install the transfer case No. 1 plug with a new gasket No. 1.

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

TRANSFER ASSEMBLY

COMPONENTS



TF

REMOVAL

1. REMOVE ENGINE AND TRANSAXLE

HINT:

(See page [EM-113](#))

2. REMOVE TRANSFER STIFFENER PLATE RH (See page [AX-173](#))

3. REMOVE AUTOMATIC TRANSMISSION W/ TRANSFER

HINT:

(See page [AX-171](#))

4. REMOVE TRANSFER CASE NO. 1 PLUG

- Remove the transfer case No. 1 plug.
- Remove the gasket No. 1 from the transfer case No. 1 plug.

5. REMOVE TRANSFER CASE NO. 2 PLUG

- Remove the transfer case No. 2 plug.
- Remove the gasket No. 2 from the transfer case No. 2 plug.

6. REMOVE TRANSFER DRAIN PLUG

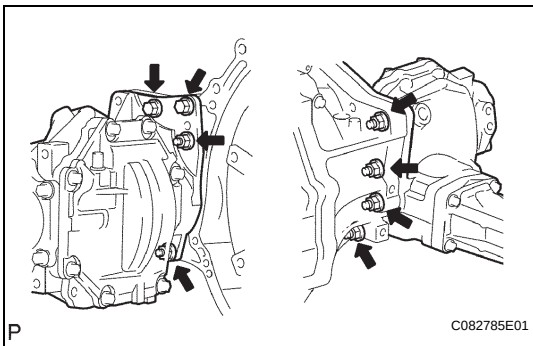
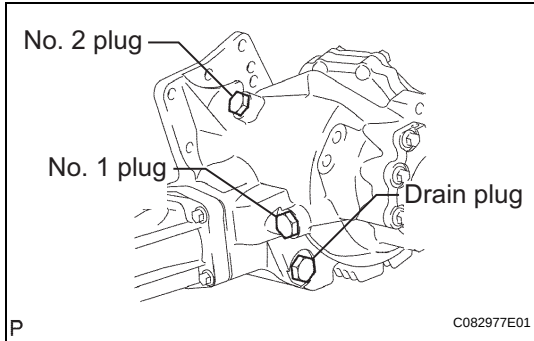
- Remove the transfer drain plug and bleed the oil.
- Remove the drain gasket from the transfer drain plug.

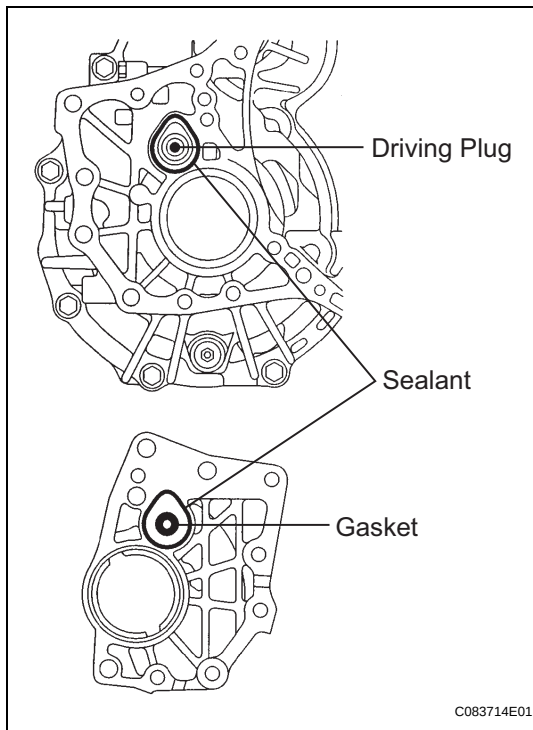
7. REMOVE TRANSFER ASSEMBLY

- Remove the 2 bolts and 6 bolts.
- Using a plastic hammer, remove the transfer assembly from the transaxle assembly.

NOTICE:

- Remove the transfer assembly from the transaxle assembly without tilting it.
- When removing the transfer assembly, do not hold onto the oil seal parts on both sides of the assembly.





INSTALLATION

1. INSTALL TRANSFER ASSEMBLY

- (a) Apply sealant 1281 to the transaxle assembly and transfer assembly in continuous beaded form of 1.2 mm diameter as shown in the illustration.

NOTICE:

- Wipe any grease off from the attaching surfaces.
- Install it within 10 minutes after applying the sealant.
- Sealant stuck on the gasket, case oil seal and driving plug may cause oil leakage and seizure due to oil shortage. Care must be taken.

- (b) Install the transfer assembly to the transaxle assembly with the 2 bolts and 6 nuts.

Torque: 69 N*m (700 kgf*cm, 51 ft.*lbf)

NOTICE:

- Check that the gasket is installed to the transfer assembly before installing them to the transaxle assembly.
- Install the transfer assembly to the transaxle assembly without tilting.
- When moving the transfer assembly, do not hold the oil seal on the both sides.

2. INSTALL AUTOMATIC TRANSMISSION W/ TRANSFER

HINT:

(See page [AX-174](#))

3. INSTALL TRANSFER STIFFENER PLATE RH (See page [AX-175](#))

4. INSTALL ENGINE AND TRANSAXLE

HINT:

(See page [EM-120](#))

5. INSTALL TRANSFER DRAIN PLUG

- (a) Install the transfer drain plug with a new drain gasket.

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

6. INSTALL TRANSFER CASE NO. 2 PLUG

- (a) Install the transfer case No. 2 plug with a new gasket No. 2.

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

7. INSTALL TRANSFER CASE NO. 1 PLUG

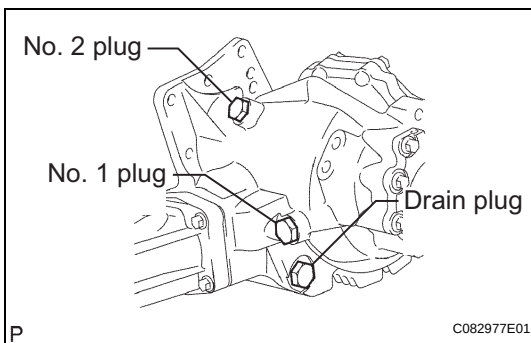
- (a) Add oil up to 0 to 5 mm below the lower side of the plug hole.

Oil quantity:

0.9 L (0.95 US qts, 0.71 Imp. qts)

HINT:

When adding oil, pour it slowly.



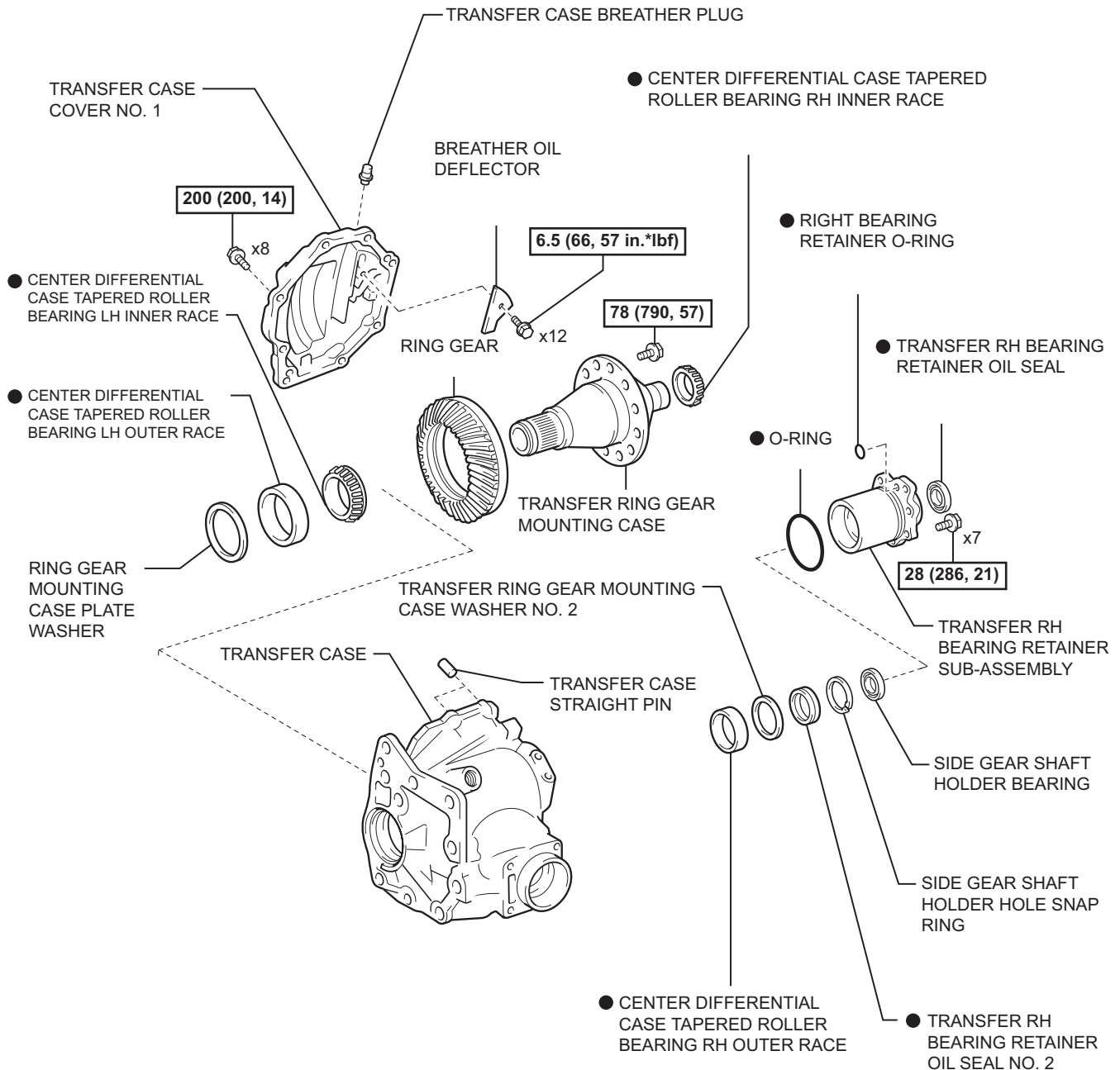
TF

- (b) Install the transfer case No. 1 plug with a new gasket No. 1.

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

TRANSFER UNIT

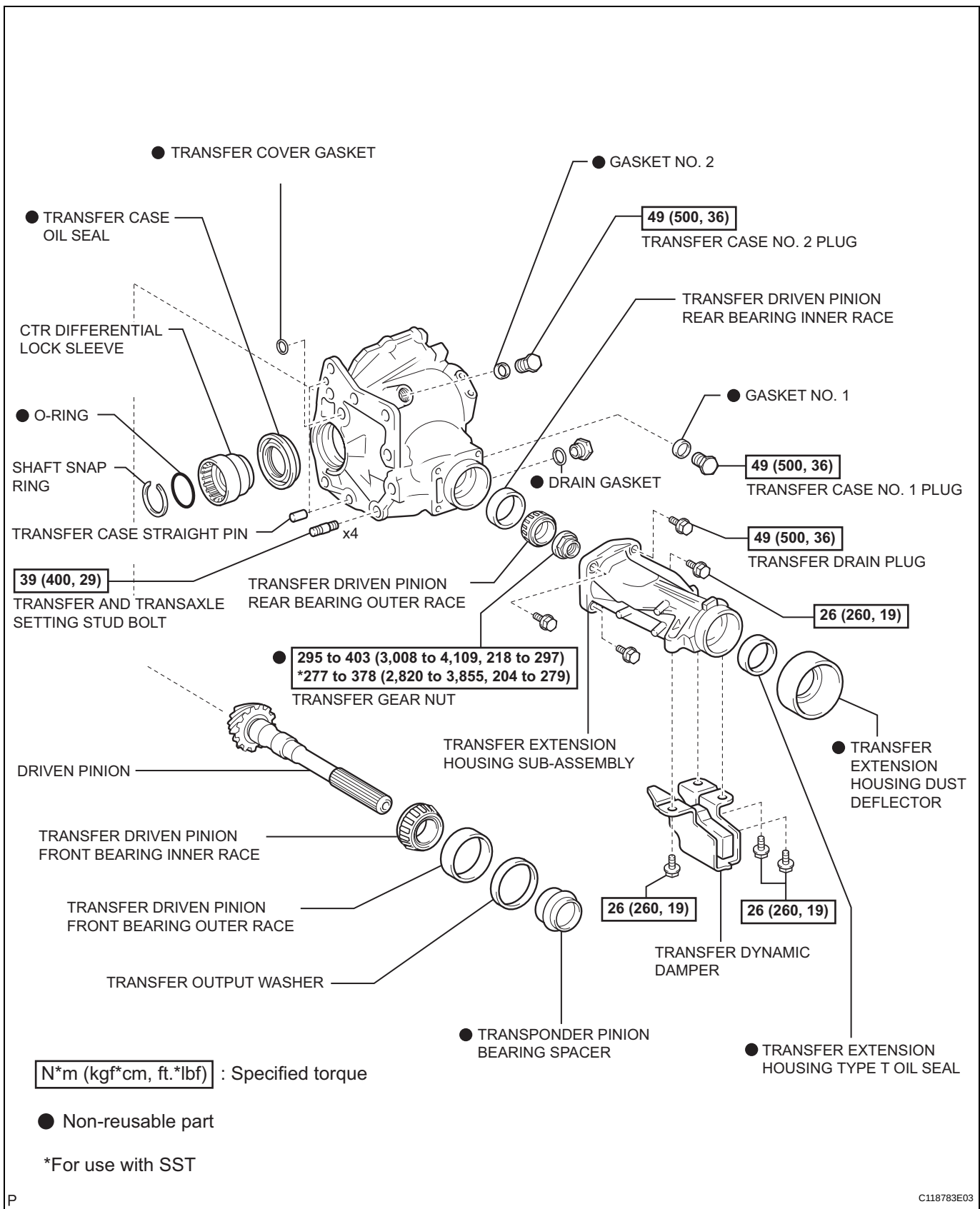
COMPONENTS



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

● Non-reusable part

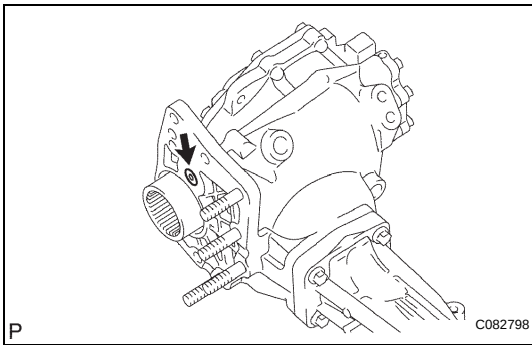
*For use with SST



DISASSEMBLY

1. REMOVE TRANSFER COVER GASKET

- (a) Remove the transfer gasket from the transfer assembly.

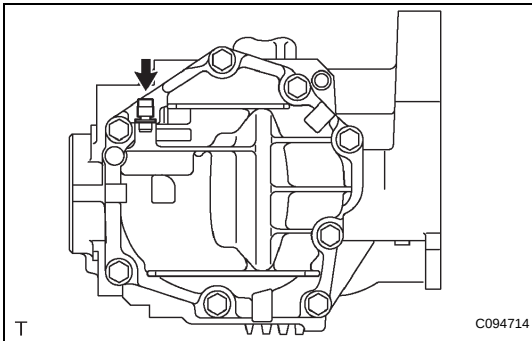


2. REMOVE TRANSFER CASE BREATHER PLUG

- (a) Using a screwdriver and a hammer, remove the transfer case breather plug from the No. 1 transfer case cover.

NOTICE:

Be careful not to damage the contact surface of No. 1 case cover.

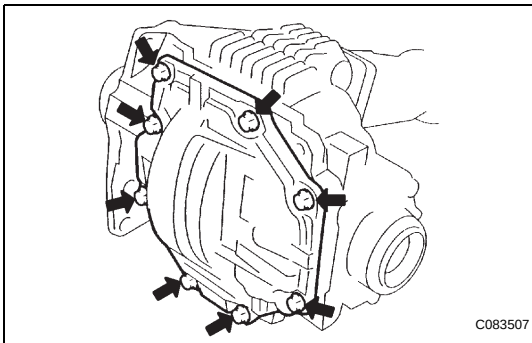


3. REMOVE NO. 1 TRANSFER CASE COVER

- (a) Remove the 8 bolts.
- (b) Using a brass bar and a hammer, remove the No. 1 transfer case cover from the transfer case.

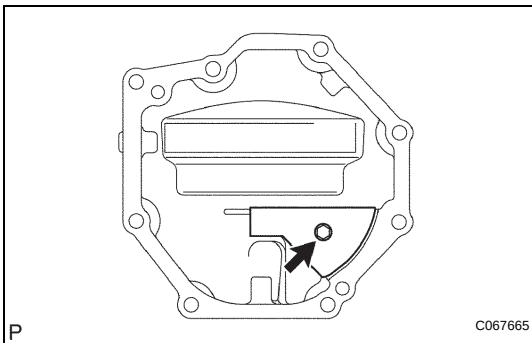
NOTICE:

Be careful not to damage the contact surfaces of the case and cover.



4. REMOVE BREATHER OIL DEFLECTOR

- (a) Remove the bolt and breather oil deflector from the No. 1 transfer case cover.

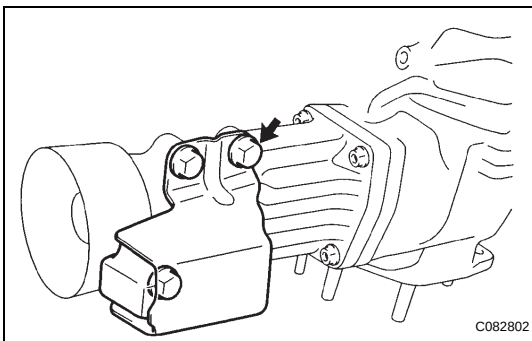


5. REMOVE TRANSFER DYNAMIC DAMPER

- (a) Remove the 3 bolts and the transfer dynamic damper from the transfer extension housing sub-assembly.

6. REMOVE TRANSFER CASE STRAIGHT PIN

- (a) Remove the 4 transfer case straight pins from the transfer case.

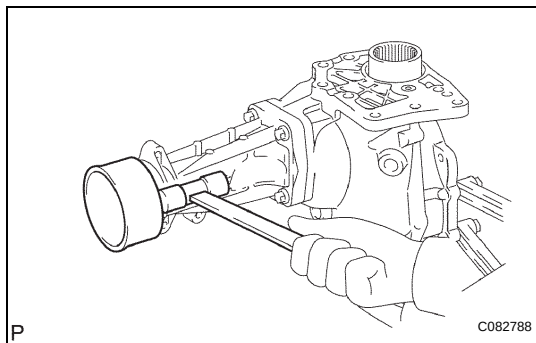


7. REMOVE TRANSFER AND TRANSAXLE SETTING STUD BOLT

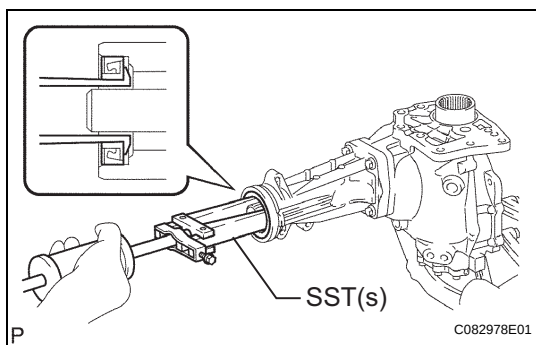
- (a) Remove the 4 transfer and transaxle setting stud bolts.

8. FIX TRANSFER ASSEMBLY

- (a) Fix the transfer assembly to the overhaul attachment.

**9. REMOVE TRANSFER EXTENSION HOUSING DUST DEFLECTOR**

- (a) Using a plastic hammer, remove the transfer extension housing dust deflector from the transfer extension housing sub-assembly.

**10. REMOVE TRANSFER EXTENSION HOUSING TYPE T OIL SEAL**

- (a) Using SST(s), remove the transfer extension housing type T oil seal from the transfer extension housing.

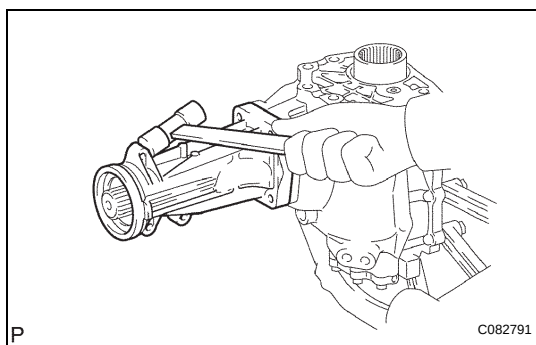
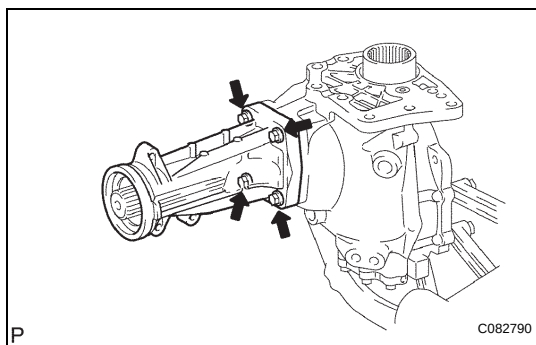
SST 09308-00010

NOTICE:

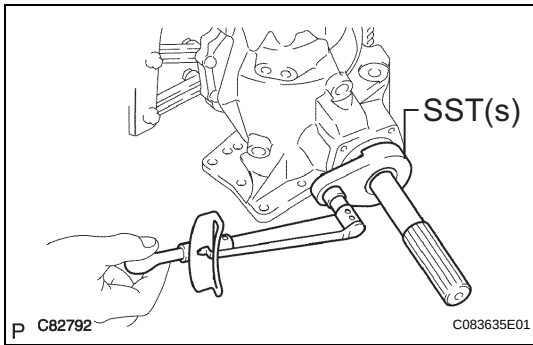
Be careful not to damage the oil-seal-fitted surface of the housing and the inside surface of the bush.

11. REMOVE TRANSFER EXTENSION HOUSING SUB-ASSEMBLY

- (a) Remove the 4 bolts.



- (b) Using a plastic hammer, remove the transfer extension housing sub- assembly from the transfer case.

**12. INSPECT PRELOAD**

- (a) Using SST(s) and a torque wrench, check the initial torque with the backlash range.

SST 09326-20011

Torque:

0.9 to 1.4 N.m (9 to 14 kgf.cm, 8.0 to 12.4 in. lbf)

HINT:

Use a torque wrench with a fulcrum length of 160 mm (6.30 in.)

- (b) Using SST(s) and a torque wrench, check the initial torque while the driven pinion is in contact with the ring gear face.

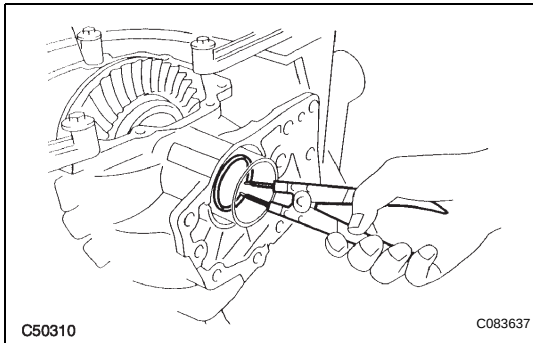
SST 09326-20011

Torque:

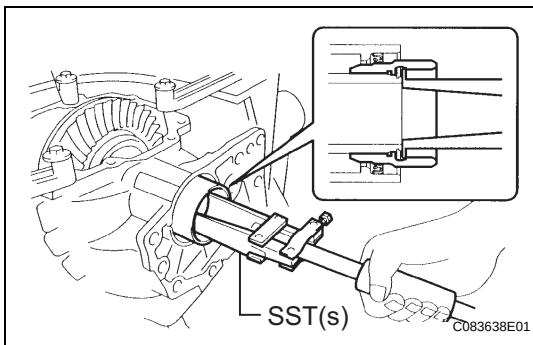
Preload + 0.15 to 0.30 N.m (+ 1.6 to 3.1 kgf.cm, + 1.3 to 2.7 in. lbf)

HINT:

Use a torque wrench with a fulcrum length of 160 mm (6.30 in.)

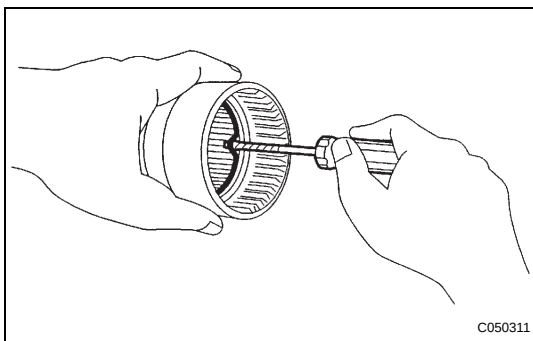
**13. REMOVE CTR DIFFERENTIAL LOCK SLEEVE**

- (a) Using snap ring pliers, remove the shaft snap ring.



- (b) Using SST(s), remove the CTR differential lock sleeve.

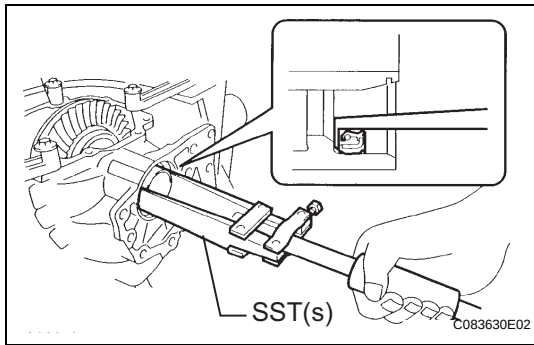
SST 09308-00010

**14. REMOVE O-RING**

- (a) Using a screwdriver with the tip protected by vinyl tape, remove the O-ring from the CTR differential lock sleeve.

NOTICE:

Be careful not to damage the lock sleeve's groove for the O-ring.



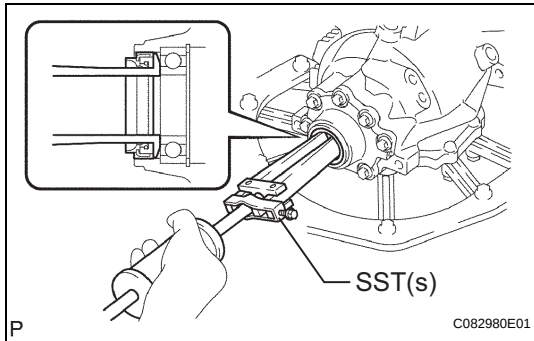
15. REMOVE TRANSFER CASE OIL SEAL

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

SST 09308-00010

NOTICE:

Be careful not to damage the oil-seal-fitted surface of the case.



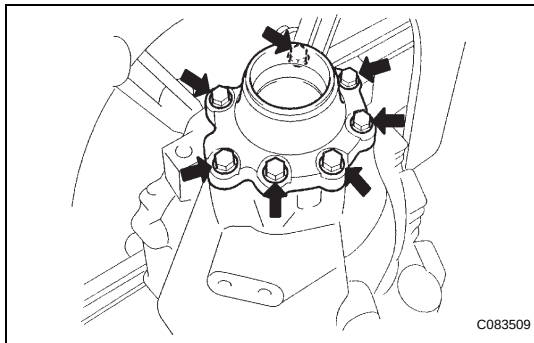
16. REMOVE TRANSFER RH BEARING RETAINER OIL SEAL

- (a) Using SST(s), remove the transfer RH bearing retainer oil seal from the transfer RH bearing retainer sub-assembly.

SST 09308-00010

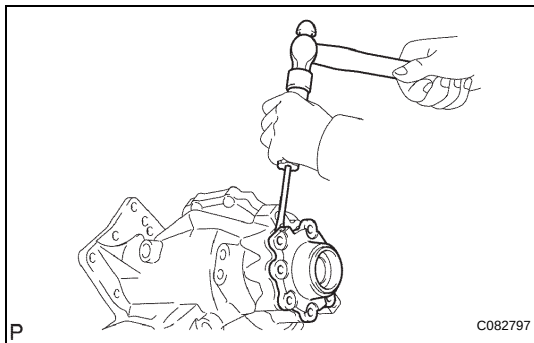
NOTICE:

Be careful not to damage the oil-seal-fitted surface of the retainer.



17. REMOVE TRANSFER RH BEARING RETAINER SUB-ASSEMBLY

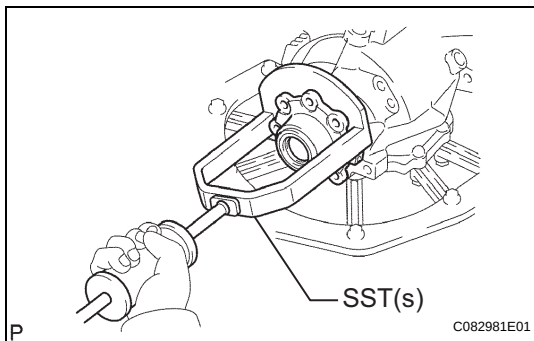
- (a) Remove the 7 bolts from the transfer RH bearing retainer sub-assembly.



- (b) Using a screwdriver and a hammer, create a clearance between the transfer RH bearing retainer sub-assembly and the transfer case.

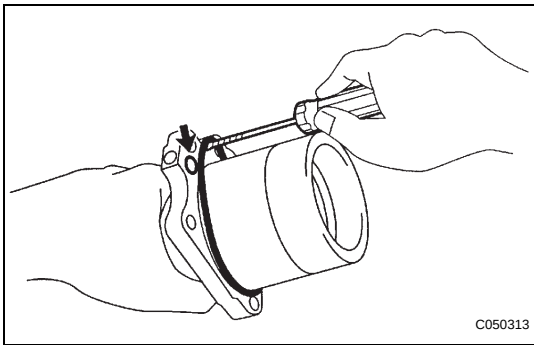
NOTICE:

Be careful not to damage the transfer RH bearing retainer sub-assembly and the transfer case.



- (c) Using SST(s), remove the transfer RH bearing retainer sub-assembly from the transfer case.

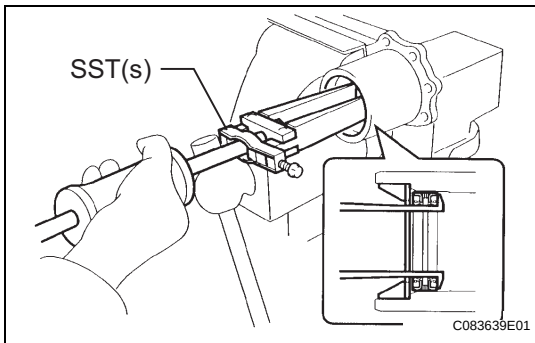
SST 09520-10021

**18. REMOVE O-RING**

- (a) Using a screwdriver with the tip protected by vinyl tape, remove the 2 O-rings from the transfer RH bearing retainer sub-assembly.

NOTICE:

Be careful not to damage the retainer's grooves for the O-rings.

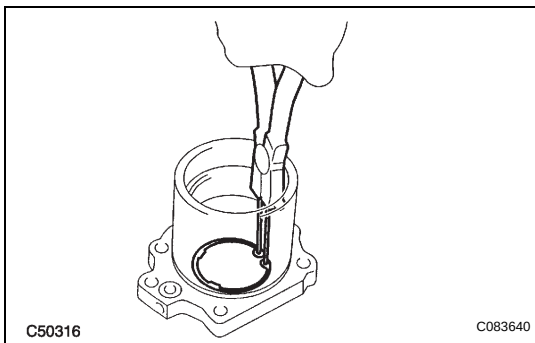
**19. REMOVE CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING**

- (a) Fix the transfer RH bearing retainer sub-assembly in a vise.
- (b) Using SST(s), remove the center differential case tapered roller bearing RH outer race, transfer ring gear mounting case washer No. 2 and right bearing retainer oil seal No. 2 from the transfer RH bearing retainer sub-assembly.

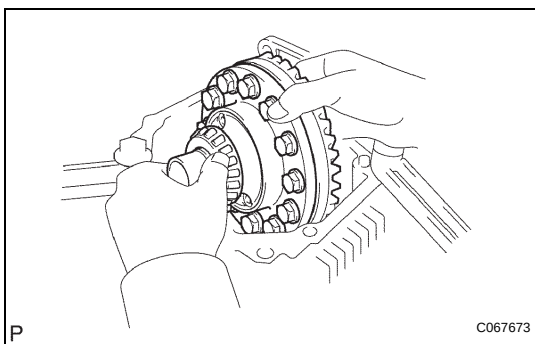
SST 09308-00010

NOTICE:

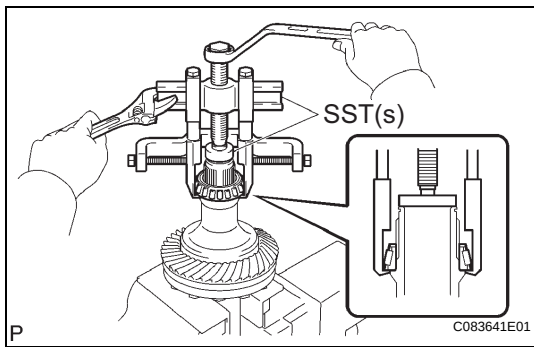
Be careful not to damage the oil-seal-fitted surface of the transfer RH bearing retainer sub-assembly.

**20. REMOVE SIDE GEAR SHAFT HOLDER BEARING**

- (a) Using snap ring pliers, remove the side gear shaft holder hole snap ring.
- (b) Remove the side gear shaft holder bearing from the transfer RH bearing retainer sub-assembly.

**21. REMOVE TRANSFER RING GEAR MOUNTING CASE**

- (a) Remove the transfer ring gear mounting case from the transfer case.

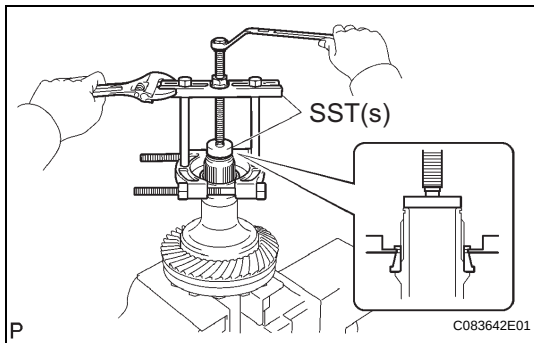


22. REMOVE CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

- (a) Using SST(s), remove the inner race of the center differential case tapered roller bearing from the transfer ring gear mounting case.

NOTICE:

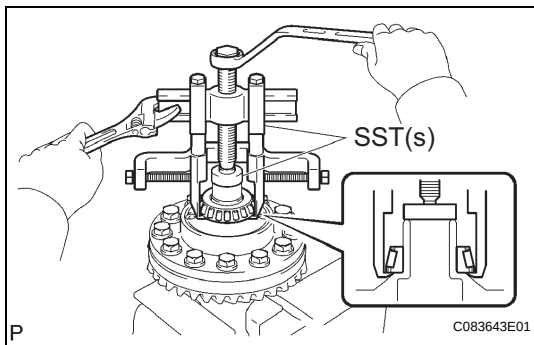
Apply grease to the screw thread and tip of the SST(s) before use.



- (b) When the roller comes off due to deformation of the gauge, completely remove the roller and remaining inner races of the center differential case tapered roller bearing from the transfer ring gear mounting case.

NOTICE:

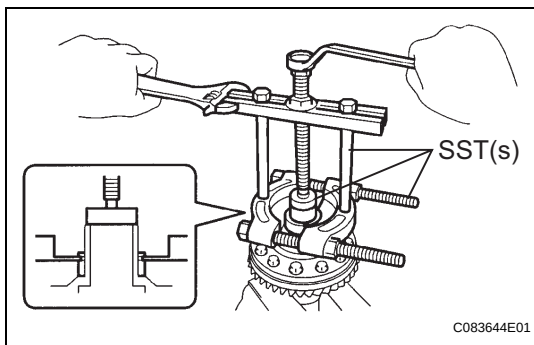
Apply grease to the screw thread and tip of the SST(s) before use.



- (c) Using SST(s), remove the inner race of the center differential case tapered roller bearing from the transfer ring gear mounting case.

NOTICE:

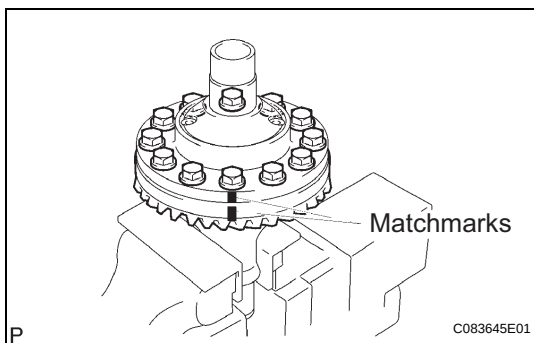
Apply grease to the screw thread and tip of the SST(s) before use.



- (d) When the roller comes off due to deformation of the gauge, completely remove the roller and remaining inner races of the center differential case tapered roller bearing from the transfer ring gear mounting case.

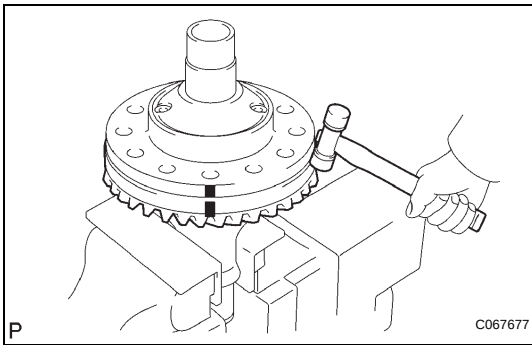
NOTICE:

Apply grease to the screw thread and tip of the SST(s) before use.



23. REMOVE RING GEAR

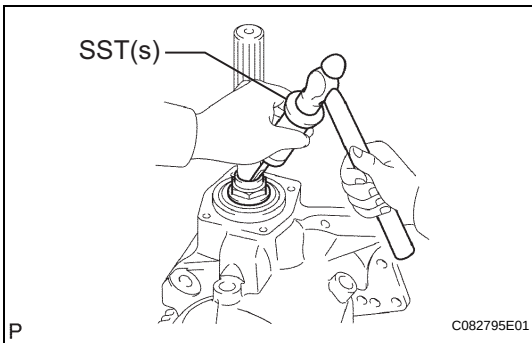
- (a) Put matchmarks on the transfer ring gear mounting case and the ring gear.
(b) Remove the 12 bolts.



- (c) Using a plastic hammer, remove the ring gear by tapping around its periphery.

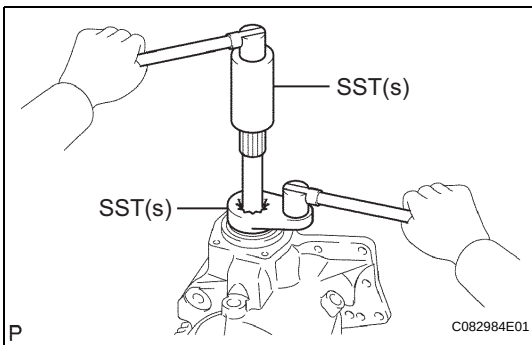
NOTICE:

Do not damage the teeth of the ring gear.

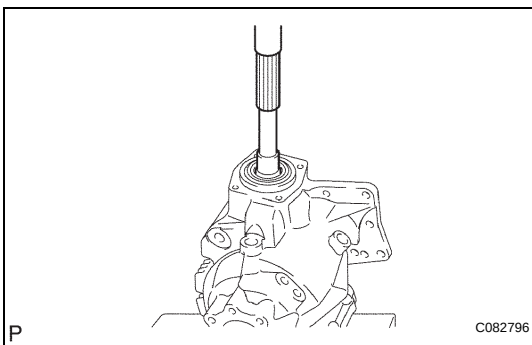
**24. REMOVE TRANSFER GEAR NUT**

- (a) Using SST(s) and a hammer, unstake the transfer gear nut.

SST 09930-00010



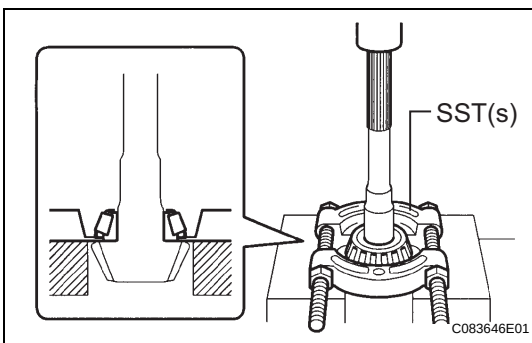
- (b) Using SST(s), remove the transfer gear nut.



- (c) Using a press, remove the driven pinion, transfer driven pinion rear bearing inner race and transfer pinion bearing spacer.

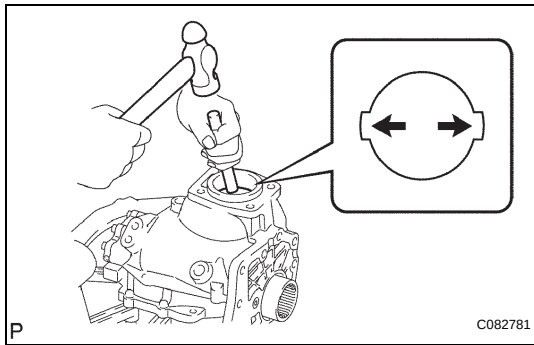
NOTICE:

- Put shop cloths around to help prevent the driven pinion from bearing dropped.
- Place something like wood blocks under the case to keep it level.

**25. REMOVE TRANSFER DRIVEN PINION FRONT BEARING**

- (a) Using SST(s) and a press, remove the transfer driven pinion front bearing inner race from the driven pinion.

SST 09950-00020

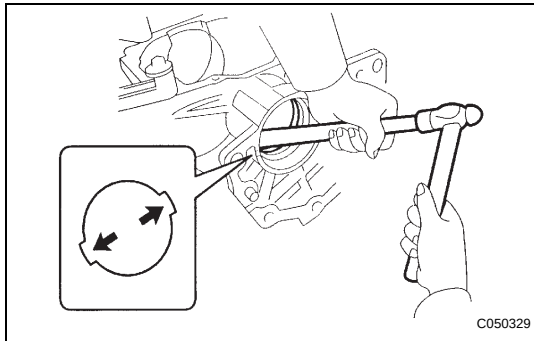


26. REMOVE CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

- (a) Using brass bar and a hammer, lightly strike the transfer driven pinion front bearing outer race at 2 points to remove it from the transfer case.

27. REMOVE RING GEAR MOUNTING CASE PLATE WASHER

- (a) Remove the transfer output washer from the transfer case.

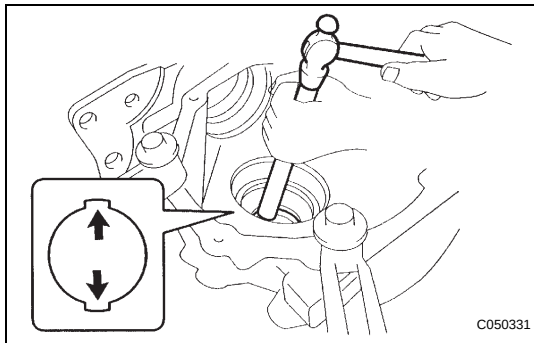


28. REMOVE CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

- (a) Using a brass bar and a hammer, lightly strike the center differential case tapered roller bearing LH outer race at 2 positions to remove it from the transfer case.

29. REMOVE RING GEAR MOUNTING CASE PLATE WASHER

- (a) Remove the ring gear mounting case plate washer from the transfer case.



30. REMOVE TRANSFER DRIVEN PINION REAR BEARING

- (a) Using a brass bar and a hammer, lightly strike the transfer driven pinion rear bearing outer race at 2 points to remove it from the transfer case.

INSPECTION

1. INSPECT PRELOAD

- (a) Using SST(s) and a torque wrench, check the initial torque within the backlash range.

SST 09326-20011

Torque:

0.9 to 1.4 N*m (9 to 14 kgf*cm, 8.0 to 12.4 in.*lbf)

HINT:

Use a torque wrench with a fulcrum length of 160 mm (6.30 in.).

- (b) Using SST(s) and a torque wrench, check the initial torque while the driven pinion is in contact with the ring gear face.

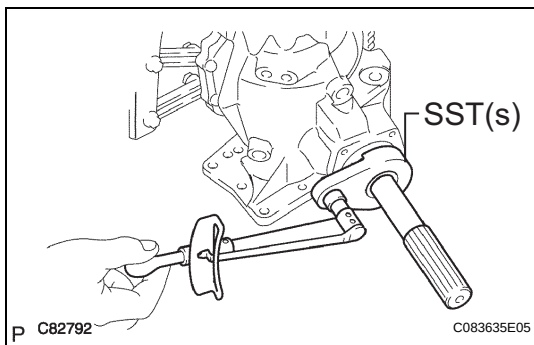
SST 09326-20011

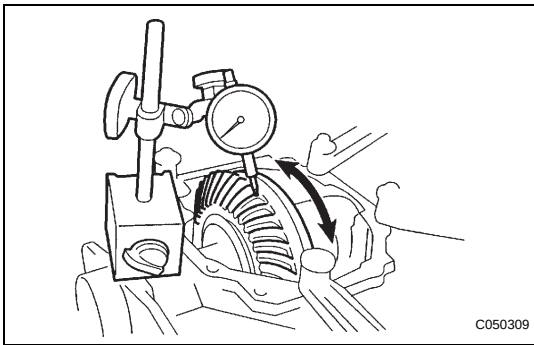
Torque :

Preload + 0.15 to 0.30 N*m (+1.6 to 3.1 kgf*cm, +1.3 to 2.7 in.*lbf)

HINT:

Use a torque wrench with a fulcrum length of 160 mm (6.30 in.).





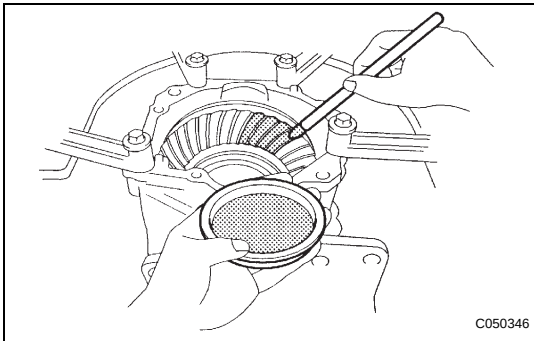
- 2. INSPECT DIFFERENTIAL RING GEAR BACKLASH**
 (a) Set the dial gauge perpendicular to the tooth face of the ring gear, fix the driven pinion and inspect the backlash while moving the gear.

Backlash:

0.10 to 0.15 mm (0.0039 to 0.0059 in.)

NOTICE:

Inspect it at 3 points or more on the gear's periphery.

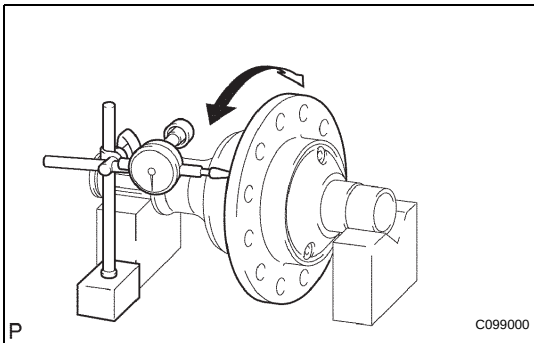


- 3. INSPECT TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION**

- (a) Apply red lead primer thinly and uniformly to both faces of the ring gear and rotate several times.

NOTICE:

Inspect the tooth contact on the ring gear at 4 places or more.

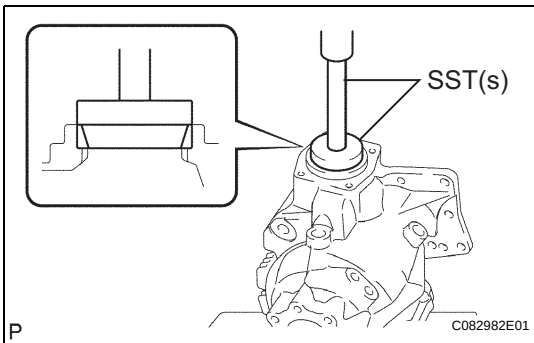


- 4. INSPECT RUNOUT OF TRANSFER RING GEAR MOUNTING CASE**

- (a) Using a dial gauge check the transfer ring gear mounting case runout.

Maximum runout:

0.03 mm (0.0012 in.)



REASSEMBLY

- 1. INSTALL TRANSFER DRIVEN PINION REAR BEARING**

- (a) Using SST(s) and a press, install the transfer driven pinion rear bearing outer race to the transfer case.

SST 09950-60010 (09951-00620), 09950-70010 (09951-07150)

NOTICE:

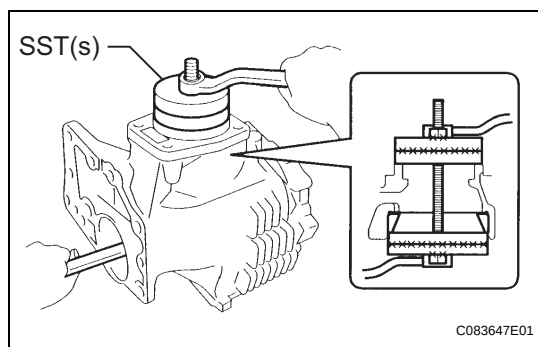
Place something like wood blocks under the case to keep its level.

- 2. INSTALL TRANSFER OUTPUT WASHER**

- (a) Install the transfer output washer to the transfer case.

HINT:

Reuse the washer.

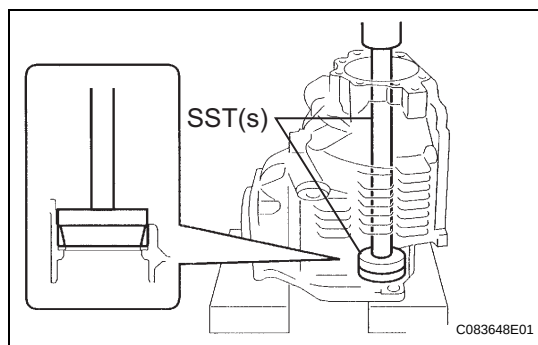


3. INSTALL TRANSFER DRIVEN PINION FRONT BEARING

- (a) Install the transfer driven pinion front bearing outer race to the transfer case with SST(s), bolt and nut.
SST 09950-60020 (09951-00750, 09951-00770, 09951-00810), 09316-60011 (09316-00061)

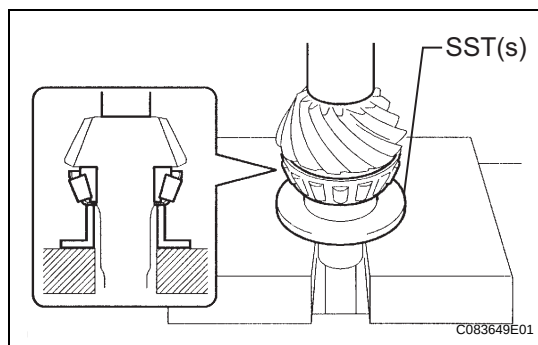
4. INSTALL RING GEAR MOUNTING CASE PLATE WASHER

- (a) Install the ring gear mounting case plate washer to the transfer case.
HINT:
 Reuse the washer.



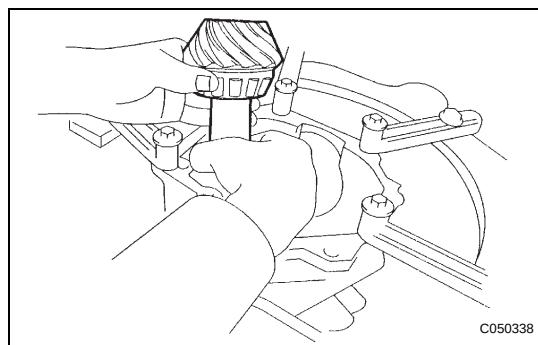
5. INSTALL CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

- (a) Using SST(s) and a press, install the center differential case tapered roller bearing LH outer race to the transfer case.
SST 09950-70010 (09951-07200), 09316-60011 (09316-00021)



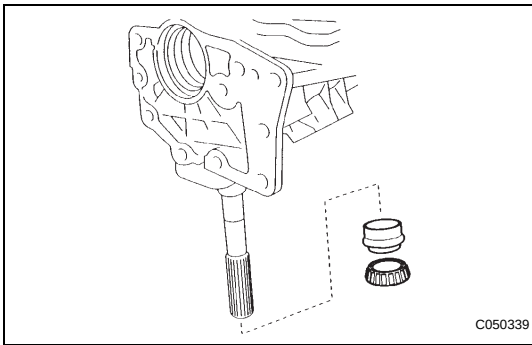
6. INSTALL TRANSFER DRIVEN PINION FRONT BEARING

- (a) Using SST(s) and a press, install the transfer driven pinion front bearing inner race to the driven pinion.

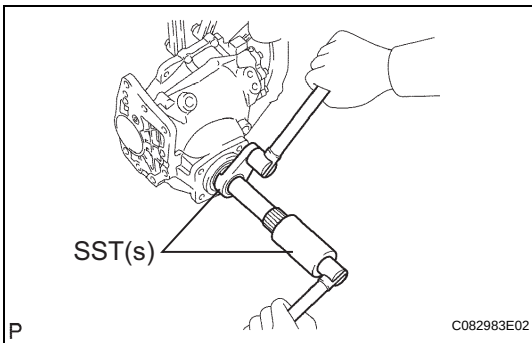


7. INSTALL DRIVEN PINION

- (a) Install the driven pinion to the transfer case.



- (b) Install a new transfer pinion bearing spacer and anew transfer driven pinion rear bearing inner race to the driven pinion.



- (c) Using SST(s), tighten a new transfer gear nut (at a standard torque.)

SST 09326-20011, 09556-16030

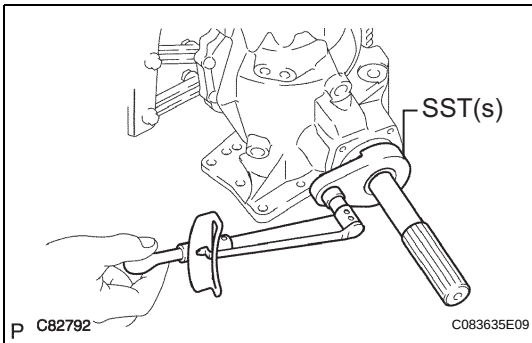
Torque: 277 to 378 N*m (2,820 to 3,855 kgf*cm, 204 to 279 ft.*lbf)

NOTICE:

Do not stake the transfer gear nut.

HINT:

Use a torque wrench with a fulcrum length of 750 mm (29.53 in.)



8. INSPECT AND ADJUST DRIVEN PINION PRELOAD

- (a) Using SST(s) and a torque wrench, measure the initial torque of the driven pinion.

SST 09326-20011, 09556-16030

Torque: New bearing

1.1 to 1.6 N*m (10 to 16 kgf*cm, 9.7 to 14.2 in.*lbf)

Used bearing

0.9 to 1.4 N*m (9 to 14 kgf*cm, 8.0 to 12.4 in.*lbf)

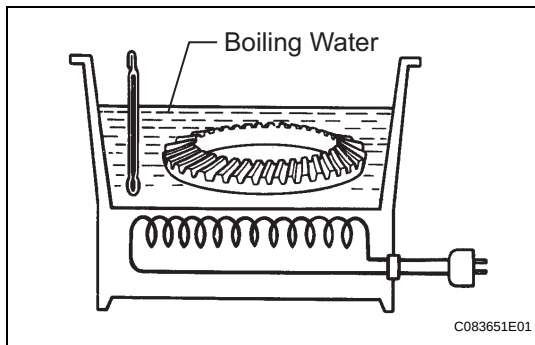
HINT:

Use a torque wrench with a fulcrum length of 160 mm (6.30in.)

NOTICE:

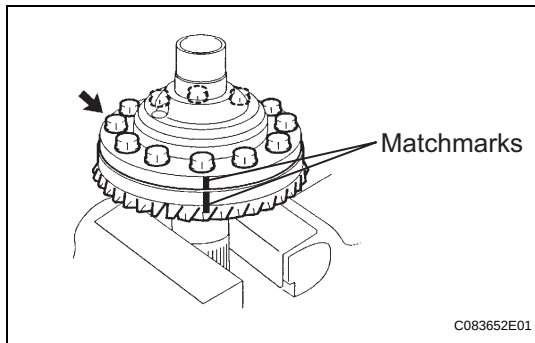
Measure preload after rotating the bearing both clockwise and counterclockwise to make it fit.

- (b) If the preload is too large, replace the transfer pinion bearing spacer with a new one.
- (c) If the preload is too small, repeatedly adjust the preload by tightening the transfer gear nut 5 to 10 degrees at a time until the standard value is obtained.
- (d) If the preload is insufficient, even though the tightening torque of the transfer gear nut exceeds the maximum of the standard value., loosen the transfer gear nut and apply gear oil SAE 90 (GL-5) to the transfer gear nut and the screw thread and the base of driven pinion. And then repeat the preceding operation . If the tightening torque is bearing spacer with anew one and adjust it.
- Torque: 378 N*m (3.855 kgf*cm, 279 ft.*lbf)**



9. INSTALL RING GEAR

- Heat the ring gear in boiling water from 90 to 100 °C (194 to 212 °F).
- Completely remove grease and moisture on the contact surfaces of the ring gear and the transfer ring gear mounting case.



- Align the matchmarks on the ring gear and transfer ring gear mounting case and quickly assemble them.
- Tighten the 12 bolts.

Torque: 78 N*m (790 kgf*cm, 57 ft.*lbf)

NOTICE:

- Tighten the bolts in diagonal order in splitting several times.
- After the ring gear has well cooled down, fully tighten the bolts.
- Make the bolt heads in order to check if they are retightened or not.

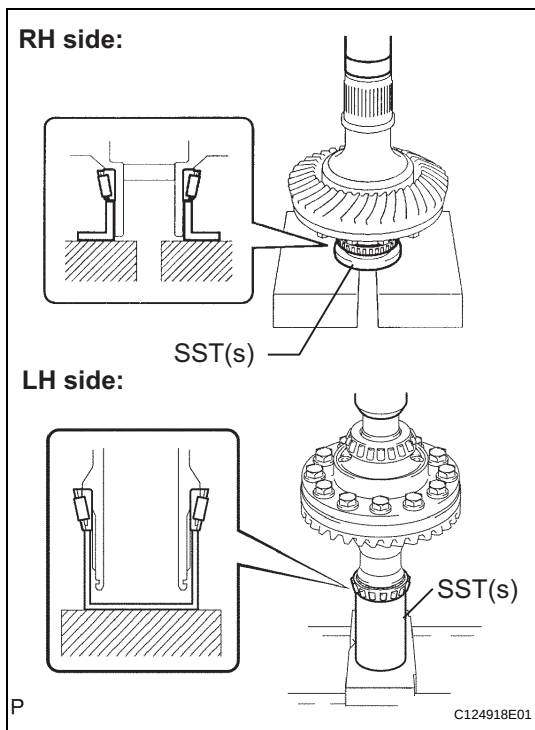
10. INSTALL CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

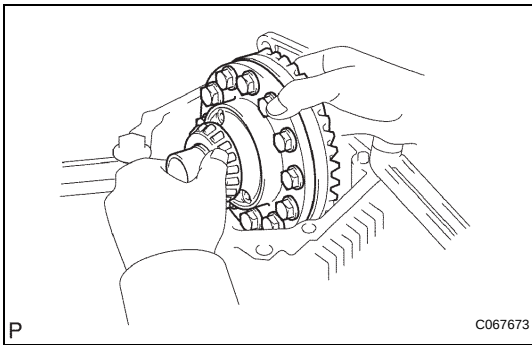
- Using SST(s) and a press, install the inner race of the center differential case tapered roller bearing to the transfer ring gear mounting case.

SST 09506-35010, 09950-60010 (09951-00430), 09223-00010

NOTICE:

When replacing the inner race, replace it together with the outer race.



**11. INSTALL TRANSFER RING GEAR MOUNTING CASE**

- (a) Install the transfer ring gear mounting case to the transfer case.

NOTICE:

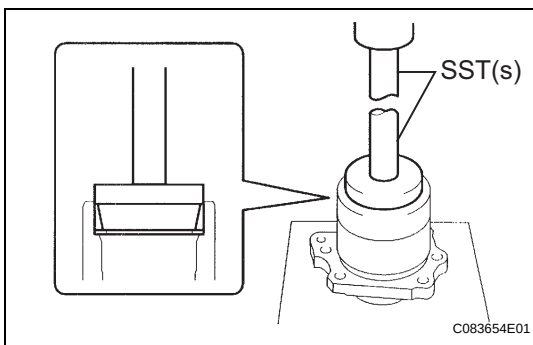
Damage to the spline, the bearing's rotating surface and gear face may cause a decrease in their strength. Care should be taken when installing them.

12. INSTALL NO. 2 TRANSFER RING GEAR MOUNTING CASE WASHER

- (a) Install the No. 2 transfer ring gear mounting case washer to the transfer RH bearing retainer sub-assembly.

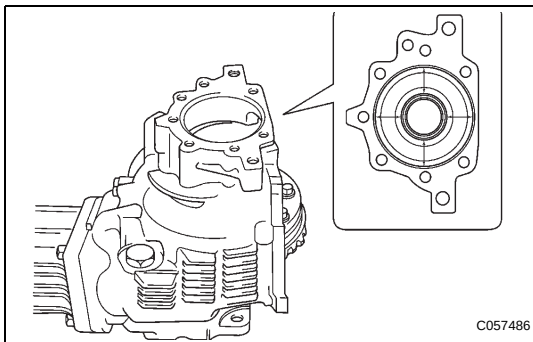
HINT:

Reuse the washer.

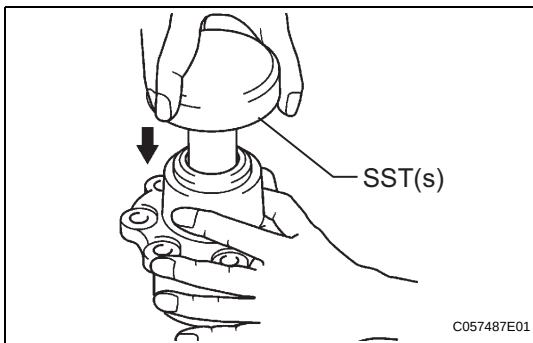
**13. INSTALL CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING**

- (a) Using SST(s) and a press, install the center differential case tapered roller bearing RH outer race to the transfer RH bearing retainer sub-assembly.

SST 09950-60010 (09951-00620), 09950-70010 (09951-07150)

**14. INSTALL TRANSFER RH BEARING RETAINER SUB-ASSEMBLY**

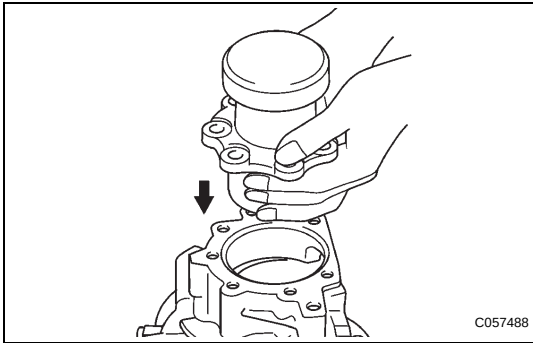
- (a) Place the transfer the face where the transfer RH bearing retainer sub-assembly is to be installed facing up.
- (b) Center-align the transfer ring gear mounting case and the transfer case.



- (c) Install the SST(s) into the transfer RH bearing retainer sub-assembly.

NOTICE:

Insert SST(s) straight in order not to damage the oil seal lip.



- (d) Insert the transfer RH bearing retainer sub-assembly together with the SST(s) into the transfer case.

NOTICE:

Interference between the case and retainer, and between the transfer ring gear mounting case and SST(s) should be carefully avoided.

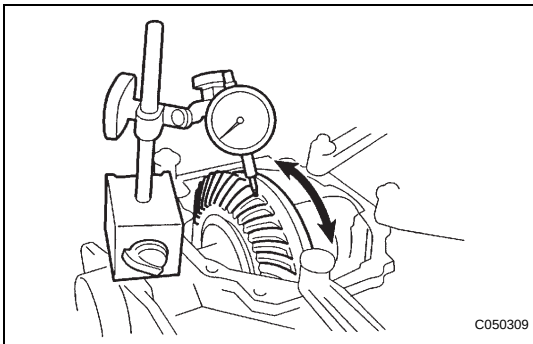
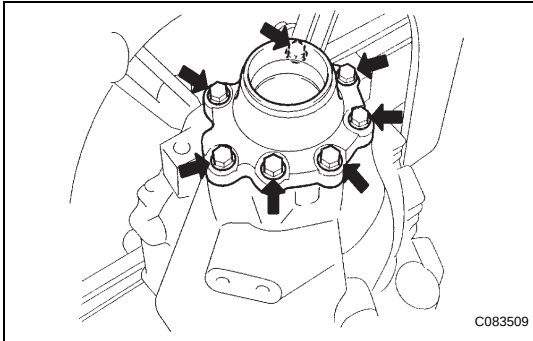
HINT:

If the retainer cannot be inserted, tap it in with a plastic hammer.

- (e) After inserting the transfer RH bearing retainer sub-assembly into the transfer case, remove the SST(s).

- (f) Tighten the 7 bolts.

Torque: 28 N*m (286 kgf*cm, 21 ft.*lbf)

**15. INSPECT DIFFERENTIAL RING GEAR BACKLASH**

- (a) Set the dial gauge perpendicular to the ring gear face, fix the driven pinion, and check backlash by moving the ring gear.

Backlash:

0.10 to 0.15 mm (0.0039 to 0.0059 in.)

NOTICE:

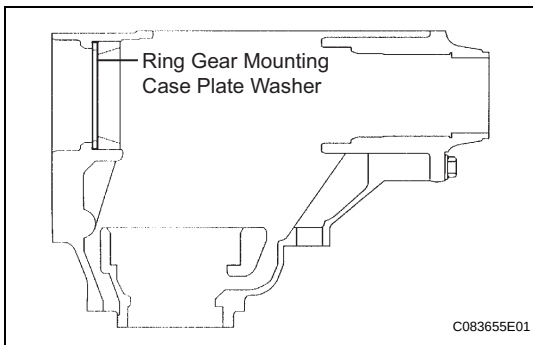
Measure it at 3 points or more on the ring gear periphery.

- (b) If the measured value is out of standard, select a proper washer for the center differential case tapered roller bearing on the LH side from the table below and install it to obtain the standard value.

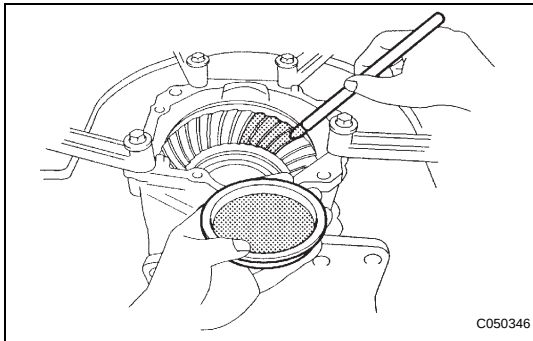
Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)
AA	2.07 (0.0814)	AB	2.10 (0.0826)	AC	2.13 (0.0838)
BA	2.16 (0.0850)	BB	2.19 (0.0862)	BC	2.22 (0.0874)
CA	2.25 (0.0885)	CB	2.28 (0.0897)	CC	2.31 (0.0909)
DA	2.34 (0.0921)	DB	2.37 (0.0933)	DC	2.40 (0.0944)
EA	2.43 (0.0956)	EB	2.46 (0.0968)	EC	2.49 (0.0980)
FA	2.52 (0.0992)	FB	2.55 (0.1003)	FC	2.58 (0.1015)
GA	2.61 (0.1027)	GB	2.64 (0.1039)	GC	2.67 (0.1051)
HA	2.70 (0.1062)	HB	2.73 (0.1074)	HC	2.76 (0.1086)
JA	2.79 (0.1098)	JB	2.82 (0.1110)	JC	2.85 (0.1122)
KA	2.88 (0.1133)	KB	2.91 (0.1145)	KC	2.94 (0.1157)
LA	2.97 (0.1169)	LB	3.00 (0.1181)		

HINT:

When the backlash is larger or smaller than the standard, select a thinner or thicker washer respectively.



- (c) Ring gear mounting case plate washer location is shown in the illustration.



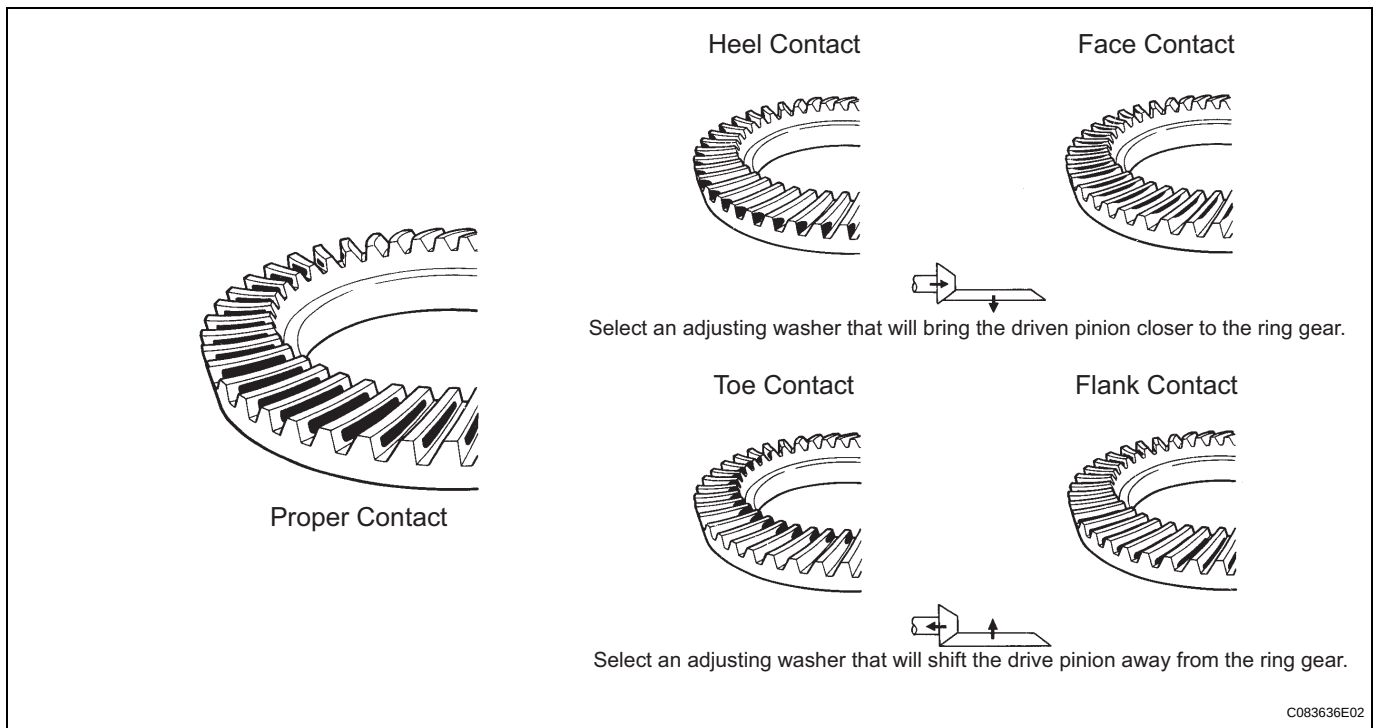
16. INSPECT TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION

- (a) Apply red lead primer thinly and uniformly to both faces of the ring gear and rotate it several times.

NOTICE:

Check the tooth contact on the ring gear at 4 places or more.

- (b) Observe the pattern shown by red lead primer.



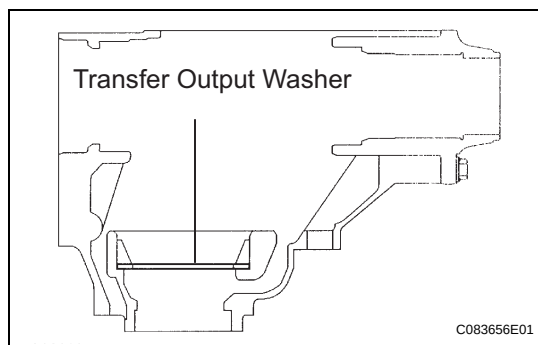
- (c) In case of poor tooth contact, select a washer for the driven pinion bearing front side from the following table and replace it.

NOTICE:

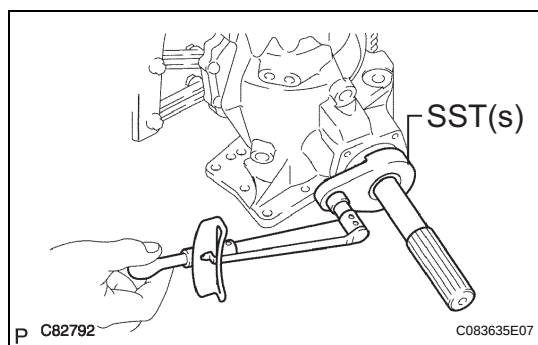
If the washer thickness is changed, the backlash will be also changed.

Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)
AA	1.20 (0.0472)	AC	1.22 (0.0480)	BB	1.24 (0.0488)
CA	1.26 (0.0496)	CC	1.28 (0.0503)	DB	1.30 (0.0511)
EA	1.32 (0.0519)	EC	1.34 (0.0527)	FB	1.36 (0.0535)

Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)
GA	1.38 (0.0543)	GC	1.40 (0.0551)	HB	1.42 (0.0559)
JA	1.44 (0.0566)	JC	1.46 (0.0574)	KB	1.48 (0.0582)
LA	1.50 (0.0590)	LC	1.52 (0.0598)	MB	1.54 (0.0606)
NA	1.56 (0.0614)	NC	1.58 (0.0622)	PB	1.60 (0.0629)
QA	1.62 (0.0637)	QC	1.64 (0.0645)		



- (d) The location of the transfer output washer for tooth contact adjustment is shown in the illustration.



17. ADJUST TOTAL PRELOAD

- (a) Using SST(s) and a torque wrench, measure the initial torque with the driven pinion bearing contact with the ring gear face.

SST 09326-20011

Torque: New bearing

+0.2 to 0.4 N*m (+2.3 to 3.9 kgf*cm, 1.8 to 3.5 in.*lbf)

Used bearing

+0.15 to 0.30 N*m (+1.6 to 3.1 kgf*cm, 1.3 to 2.7 in.*lbf)

NOTICE:

Before measurement, rotate the bearing in both directions several times to make it fit.

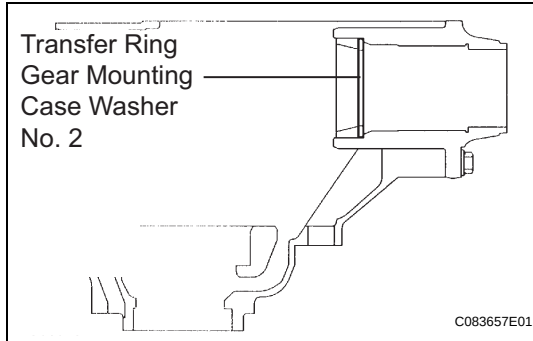
HINT:

Use a torque wrench with a fulcrum length of 160 mm (6.30 in.)

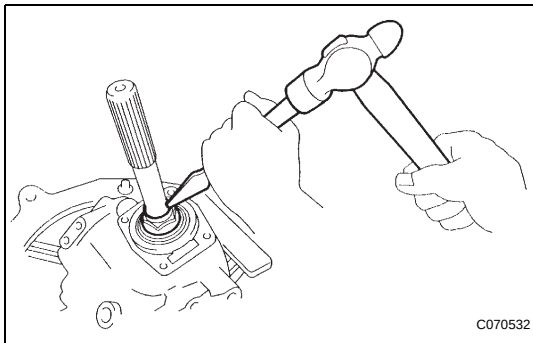
- (b) If the value is out of standard range, select the washer for the center differential case tapered roller bearing RH side from the following table and replace it.

Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)
AA	1.47 (0.0578)	AB	1.50 (0.0590)	AC	1.53 (0.0602)
BA	1.56 (0.0614)	BB	1.59 (0.0625)	BC	1.62 (0.0637)
CA	1.65 (0.0649)	CB	1.68 (0.0661)	CC	1.71 (0.0673)
DA	1.74 (0.0685)	DB	1.77 (0.0696)	DC	1.80 (0.0708)
EA	1.83 (0.0720)	EB	1.86 (0.0732)	EC	1.89 (0.0744)
FA	1.92 (0.0755)	FB	1.95 (0.0767)	FC	1.98 (0.0779)
GA	2.01 (0.0790)	GB	2.04 (0.0803)	GC	2.07 (0.0814)
HA	2.10 (0.0826)	HB	2.13 (0.0838)	HC	2.16 (0.0850)
JA	2.19 (0.0862)	JB	2.22 (0.0874)	JC	2.25 (0.0885)
KA	2.28 (0.0897)	KB	2.31 (0.0909)	KC	2.34 (0.0921)
LA	2.37 (0.0933)	LB	2.40 (0.0944)	LC	2.43 (0.0956)
MA	2.46 (0.0968)	MB	2.49 (0.0980)	MC	2.52 (0.0992)

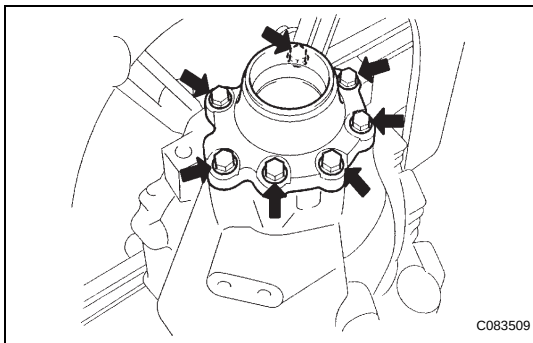
Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)	Mark	Washer Thickness mm (in.)
NA	2.55 (0.1003)	NB	2.58 (0.1015)		



- (c) The location of the transfer ring gear mounting case washer No. 2 for preload adjustment is show in the illustration.

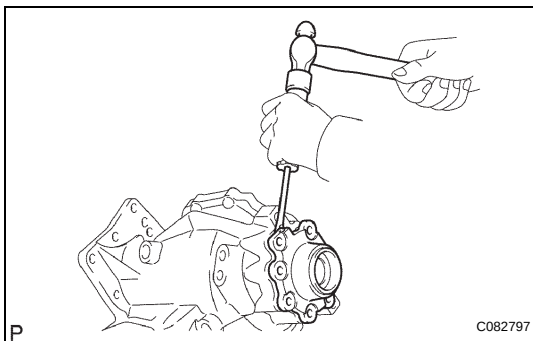


- (d) Using a chisel, stake the transfer gear nut.



18. REMOVE TRANSFER RH BEARING RETAINER SUB-ASSEMBLY

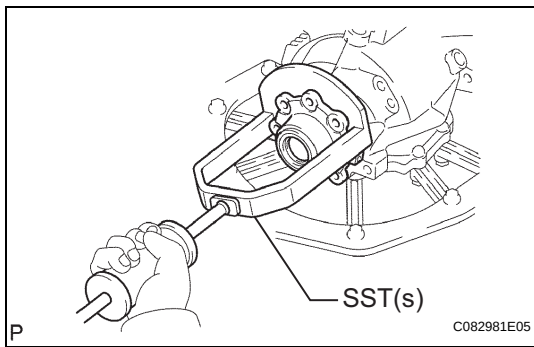
- (a) remove the 7 bolts from the transfer RH bearing retainer sub-assembly.



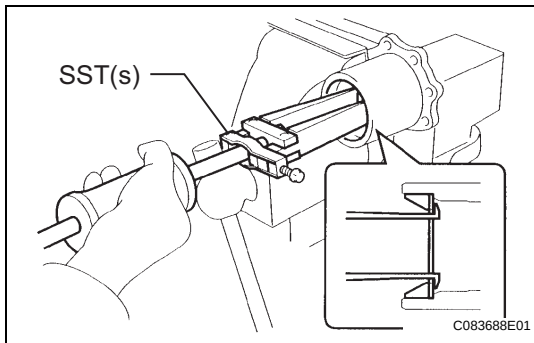
- (b) Using a screwdriver and a hammer, make a opening between the transfer RH bearing retainer sub-assembly

NOTICE:

Be careful not to damage the transfer RH bearing retainer sub-assembly and the transfer case.



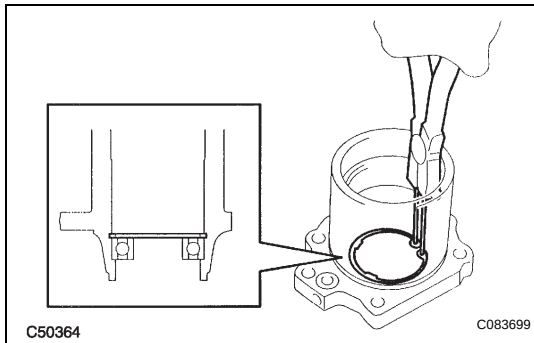
- (c) Using SST(s), remove the transfer RH bearing retainer sub-assembly from the transfer case.
SST 09520-10021



19. REMOVE CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

- (a) Fix the transfer RH bearing retainer sub-assembly in a vise.
 (b) Using SST(s), remove the center differential case tapered roller bearing RH outer race and transfer ring gear mounting case washer No. 2 from the transfer RH bearing retainer sub-assembly.

SST 09308-00010

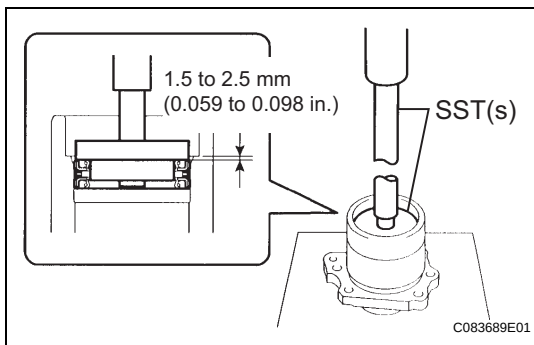


20. INSTALL SIDE GEAR SHAFT HOLDER BEARING

- (a) Install the side gear shaft holder bearing to the transfer RH bearing retainer sub-assembly.
 (b) Using snap ring pliers, install the side gear shaft holder hole snap ring.

HINT:

Check that the side gear shaft holder hole snap ring fits in the groove of the transfer RH bearing retainer sub-assembly.



21. INSTALL TRANSFER RH BEARING RETAINER OIL SEAL

- (a) Using SST(s) and a press, install the transfer RH bearing retainer oil seal No. 2 to the transfer RH bearing retainer sub-assembly.
SST 09950-60010 (09951-00350, 09951-00560, 09952-06010), 09950-70010 (09951-07150)

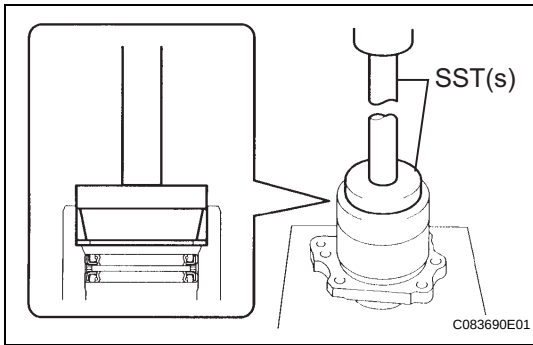
NOTICE:

Carefully press-fit so that the oil seal will not be tilted.

- (b) Apply small amount of MP grease No. 2 to the oil seal lip.

22. INSTALL NO. 2 TRANSFER RING GEAR MOUNTING CASE WASHER

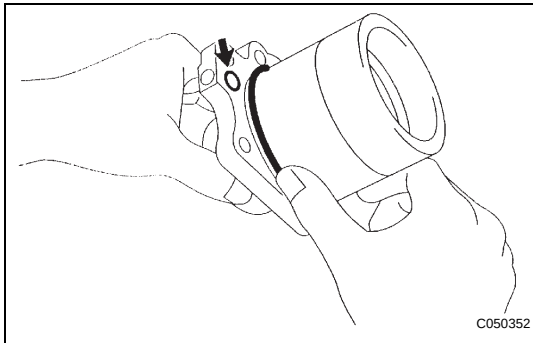
- (a) Install the No. 2 selected transfer ring gear mounting washer to the transfer RH bearing retainer sub-assembly.



23. INSTALL CENTER DIFFERENTIAL CASE TAPERED ROLLER BEARING

- (a) Using SST(s) and a press, install the center differential case tapered roller bearing RH outer race to the transfer RH bearing retainer sub-assembly.

SST 09950-60010 (09951-00620), 09950-70010 (09951-07150)

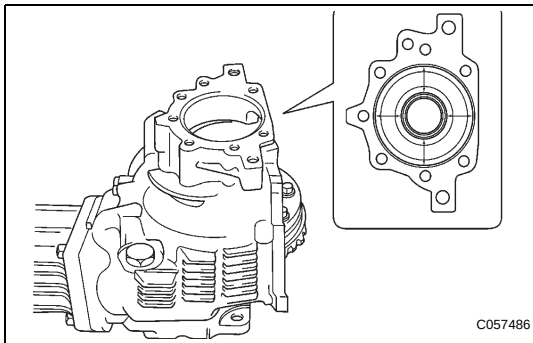


24. INSTALL O-RING

- (a) Coat the 2 O-rings with hypoid gear oil.
(b) Install the 2 O-rings to the transfer RH bearing retainer sub-assembly.

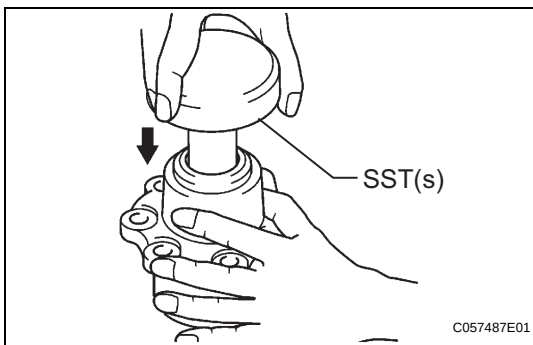
NOTICE:

Be careful not to twist the O-ring and fit it properly in the retainer's groove.



25. INSTALL TRANSFER RH BEARING RETAINER SUB-ASSEMBLY

- (a) Place the transfer with the surface where the transfer RH bearing retainer sub-assembly is facing up.
(b) Align the centers of the transfer ring gear mounting case and the transfer case.

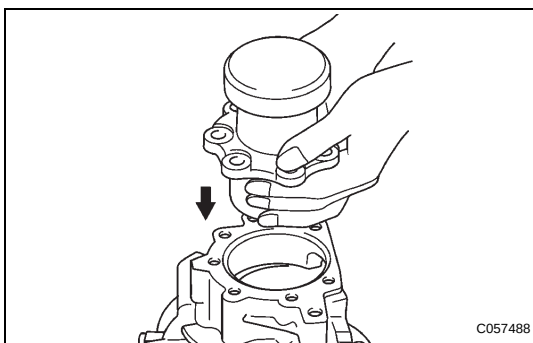


- (c) Insert SST(s) into the transfer RH bearing retainer sub-assembly.

SST 09387-00090

NOTICE:

Insert SST(s) straight in order not to damage the oil seal.



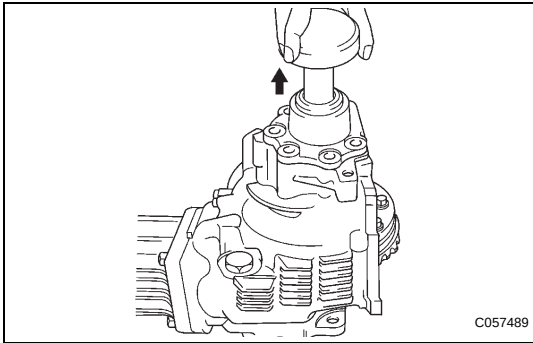
- (d) Insert transfer RH bearing retainer sub-assembly together with SST(s) into the transfer case.

NOTICE:

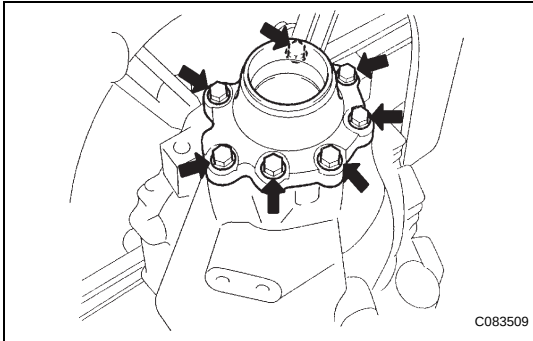
- **Avoid interference between the case and the retainer, and between the SST(s) and the transfer ring gear mounting case.**
- **Carefully check the retainer's O-ring for damage and incorrect fitting.**

HINT:

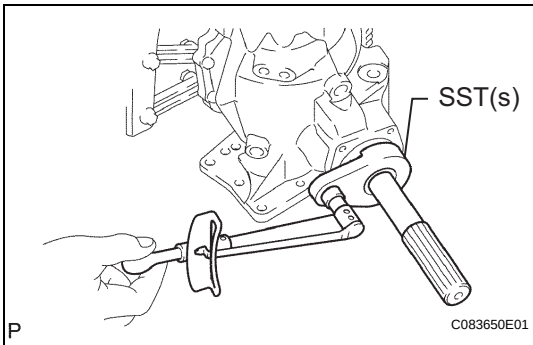
If the retainer be inserted into the case, tap it in with a plastic hammer.



- (e) After inserting transfer RH bearing retainer sub-assembly into the transfer case, remove the SST(s).



- (f) Tighten the 7 bolts.
Torque: 28 N*m (286 kgf*cm, 21 ft.*lbf)



26. INSPECT TOTAL PRELOAD

- (a) Using SST(s) and a torque wrench, measure the initial torque with the driven pinion being in contact with the ring gear face.

SST 09326-20011

Torque: New bearing

+0.2 to 0.4 N*m (+2.3 to 3.9 kgf*cm, 1.8 to 3.5 in.*lbf)

Used bearing

+0.15 to 0.30 N*m (+1.6 to 3.1 kgf*cm, 1.3 to 2.7 in.*lbf)

HINT:

Use a torque wrench with a fulcrum length of 160mm (6.30 in.)

27. INSTALL TRANSFER RH BEARING RETAINER OIL SEAL

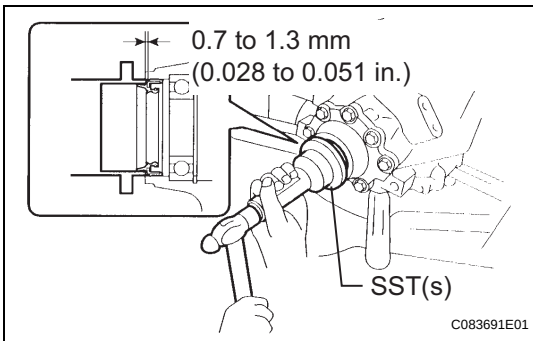
- (a) Using SST(s), install the transfer RH bearing retainer oil seal to the transfer RH bearing retainer sub-assembly to the position as shown in the illustration.

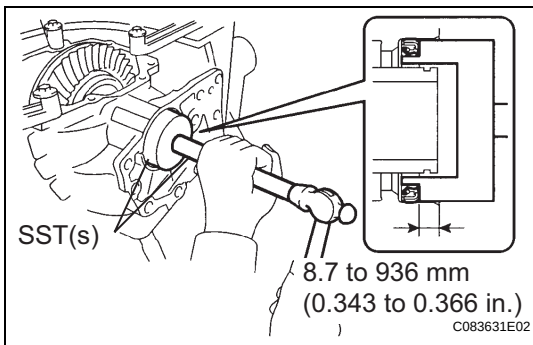
SST 09223-46011

NOTICE:

Install the oil seal carefully so that it will not be tilted.

- (b) Apply MP grease to the oil seal lip.



**28. INSTALL TRANSFER CASE OIL SEAL**

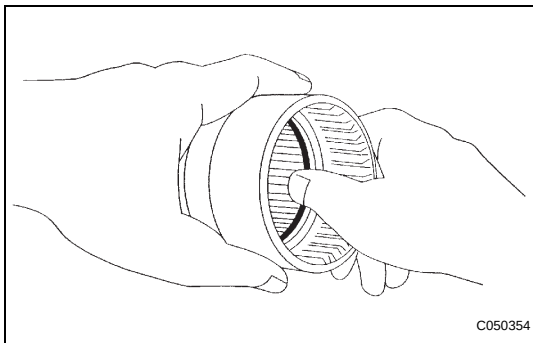
- (a) Using(s), install the transfer case oil seal to the transfer case at the position as shown in the illustration.

SST 09387-00010, 09950-70010 (09951-07150)

NOTICE:

Install the oil seal carefully so that it will not be tilted.

- (b) Apply small amount of MP grease to the oil seal lip.

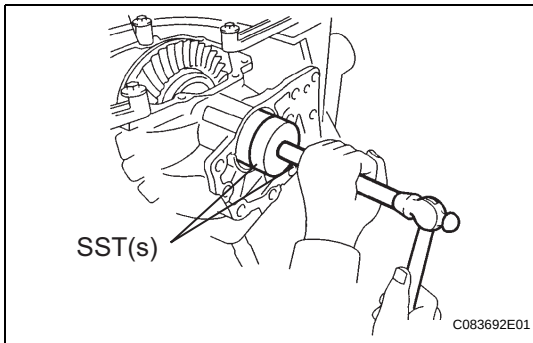
**29. INSTALL CTR DIFFERENTIAL LOCK SLEEVE**

- (a) Coat a new O-ring with hypoid gear oil.

- (b) Install the O-ring to the CTR differential lock sleeve.

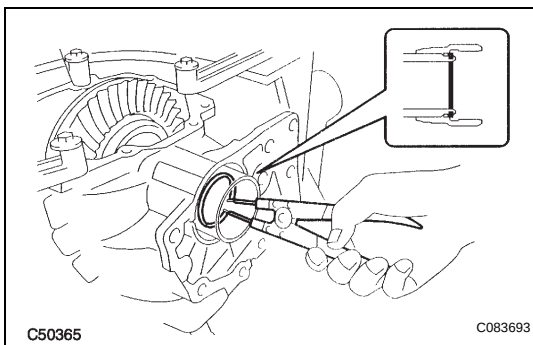
NOTICE:

Be careful not to twist the O-ring and fit it properly in the retainer's groove.



- (c) Using SST(s), install the CTR differential lock sleeve to the transfer case.

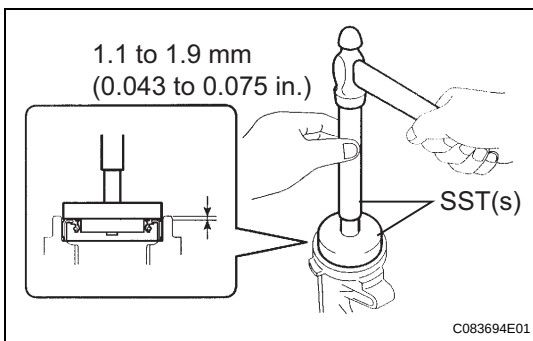
SST 09950-60010 (09951-00610), 09950-70010 (09951-07150)



- (d) Using snap ring pliers, install the shaft snap ring.

NOTICE:

Check that the snap ring is fitted in the groove of the ring gear mounting case.

**30. INSTALL TRANSFER EXTENSION HOUSING TYPE T OIL SEAL**

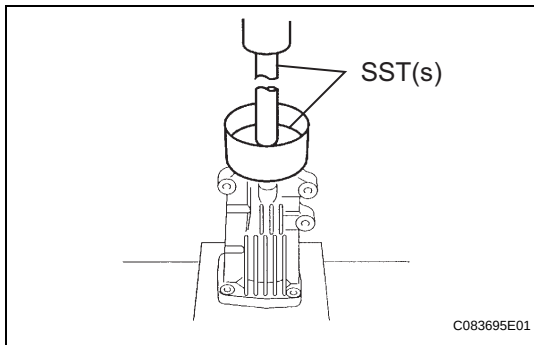
- (a) Using SST(s), install the transfer extension housing type T oil seal to the transfer extension housing at the position as shown in the illustration.

SST 09950-60010 (09951-00380, 09951-00580, 09951-07150, 09952-06010), 09950-70010

NOTICE:

Install the oil seal carefully so that it will not be tilted.

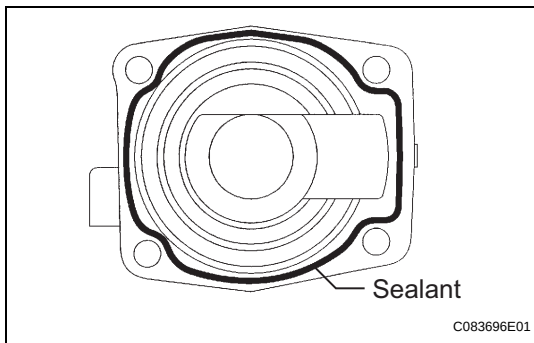
- (b) Apply small amount of MP grease No. 2 to the oil seal lip.



31. INSTALL TRANSFER EXTENSION HOUSING DUST DEFLECTOR

- (a) Using SST(s) and press, install a new transfer extension housing dust deflector to the transfer extension housing sub-assembly.

SST 09950-60020 (09951-00710), 09950-70010 (09951-07150)



32. INSTALL TRANSFER EXTENSION HOUSING SUB-ASSEMBLY

- (a) Apply sealant 1281 to the transfer extension housing sub-assembly in continuous beaded form of 1.2 mm diameter as show in the illustration.

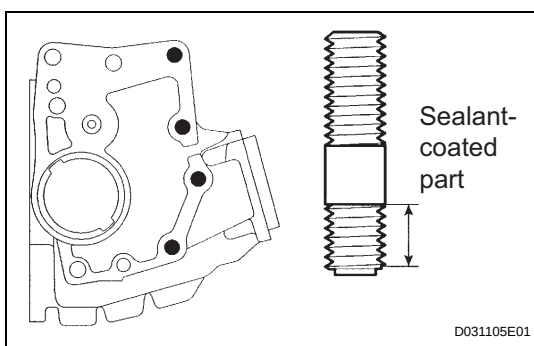
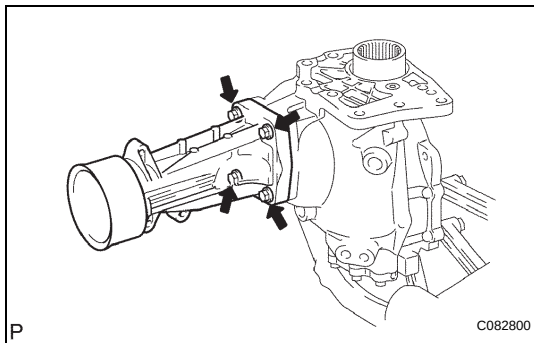
NOTICE:

- **Wipe any grease off from the attaching surfaces.**
- **Install the transfer extension housing sub-assembly within 10 minutes after applying the sealant.**

- (b) Install the transfer extension housing sub-assembly to the transfer case with the 4 bolts.

Torque: 26 N*m (260 kgf*cm, 19 ft.*lbf)

- (c) Remove the transfer assembly from the overhaul attachment.



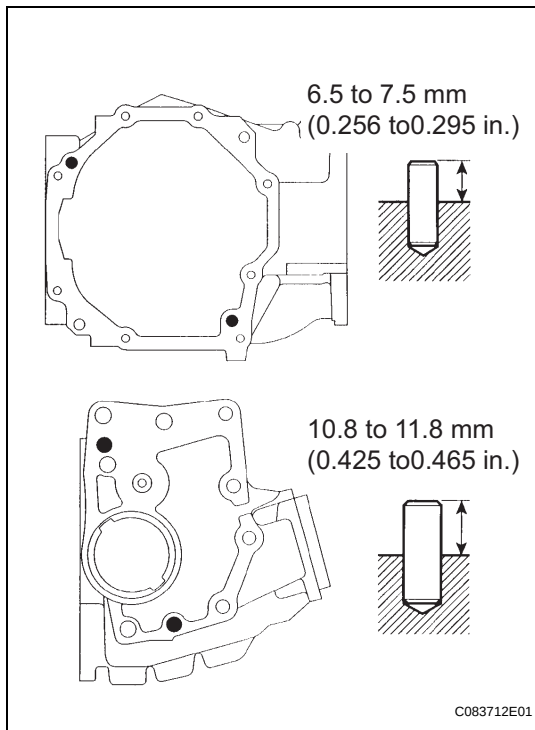
33. INSTALL TRANSFER AND TRANSAXLE SETTING STUD BOLT

- (a) Install the transfer and transaxle setting stud bolts to the parts of the transfer case as show in the illustration.

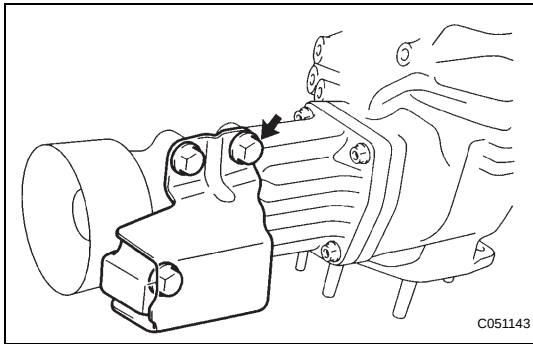
Torque: 39 N*m (400 kgf*cm, 30 ft.*lbf)

NOTICE:

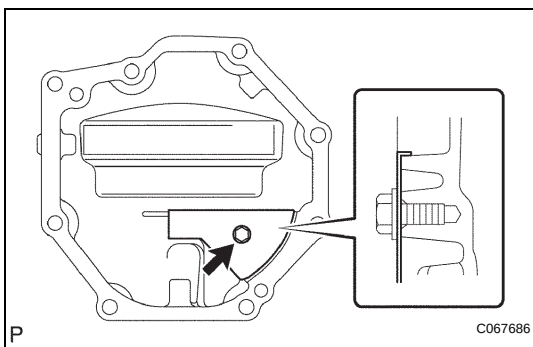
Install the sealant-coated side of the transfer and transaxle stud bolt to the transfer case.

**34. INSTALL TRANSFER CASE STRAIGHT PIN**

- (a) Using a plastic hammer, install the transfer case straight pins to the transfer case as shown in the illustration.

**35. INSTALL TRANSFER DYNAMIC DAMPER**

- (a) Install the transfer dynamic damper to the transfer extension housing sub-assembly with the 3 bolts.
Torque: 26 N*m (260 kgf*cm, 19 ft.*lbf)

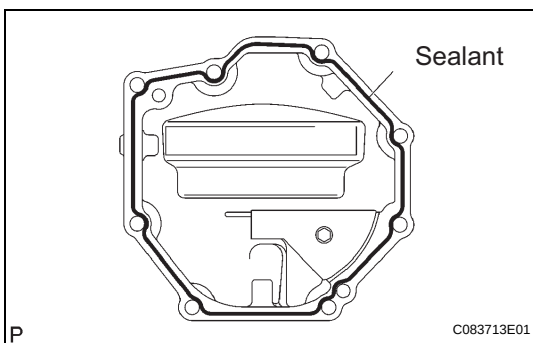
**36. INSTALL BREATHER OIL DEFLECTOR**

- (a) Install the breather oil deflector to the transfer case cover No. 1 with the bolt.

Torque: 6.5 N*m (66 kgf*cm, 57 in.*lbf)

NOTICE:

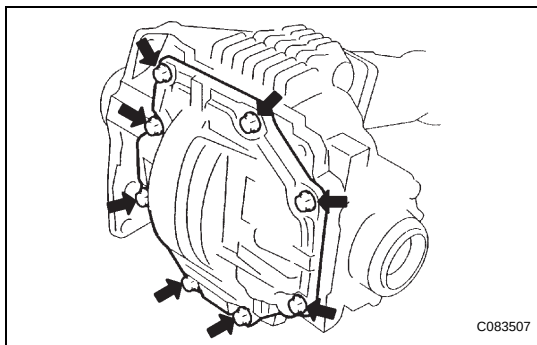
Be careful about the direction of the deflector's fold.

**37. INSTALL NO. 1 TRANSFER CASE COVER**

- (a) Apply sealant 1281 to the transfer case cover No. 1 in a continuous bead of 1.2 mm diameter as shown in the illustration.

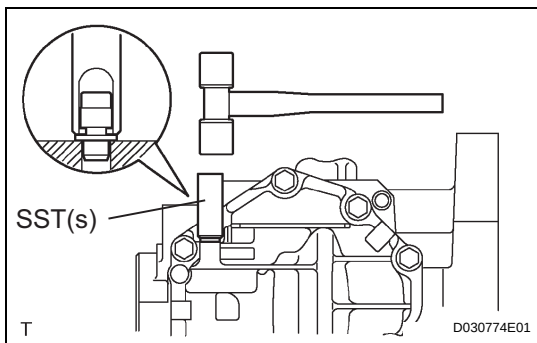
NOTICE:

- Wipe any grease off from the attaching surfaces.
- Install the transfer case cover No. 1 within 10 minutes after application of the sealant.



- (b) Install the transfer case cover No. 1 to the transfer case with 8 bolts.

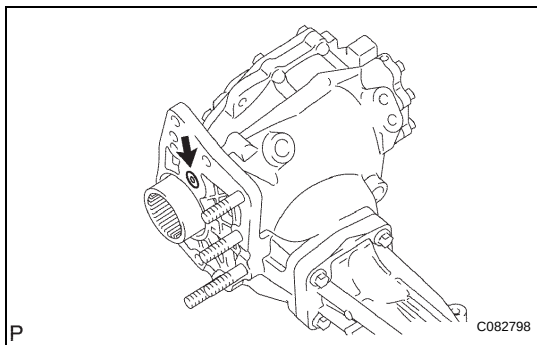
Torque: 20 N*m (200 kgf*cm, 14 ft.*lbf)



38. INSTALL TRANSFER CASE BREATHER PLUG

- (a) Using SST(s) and a hammer, install the transfer case breather plug to the transfer case cover No. 1.

SST 09612-10093 (09612-10061)



39. INSTALL TRANSFER COVER GASKET

- (a) Install a new transfer cover gasket to the transfer case.