

DRIVE SHAFT SYSTEM

PROBLEM SYMPTOMS TABLE

Use the table below to help find the cause of the problem.
The causes of the problem are listed in order of probability in the "Suspected Area" column.

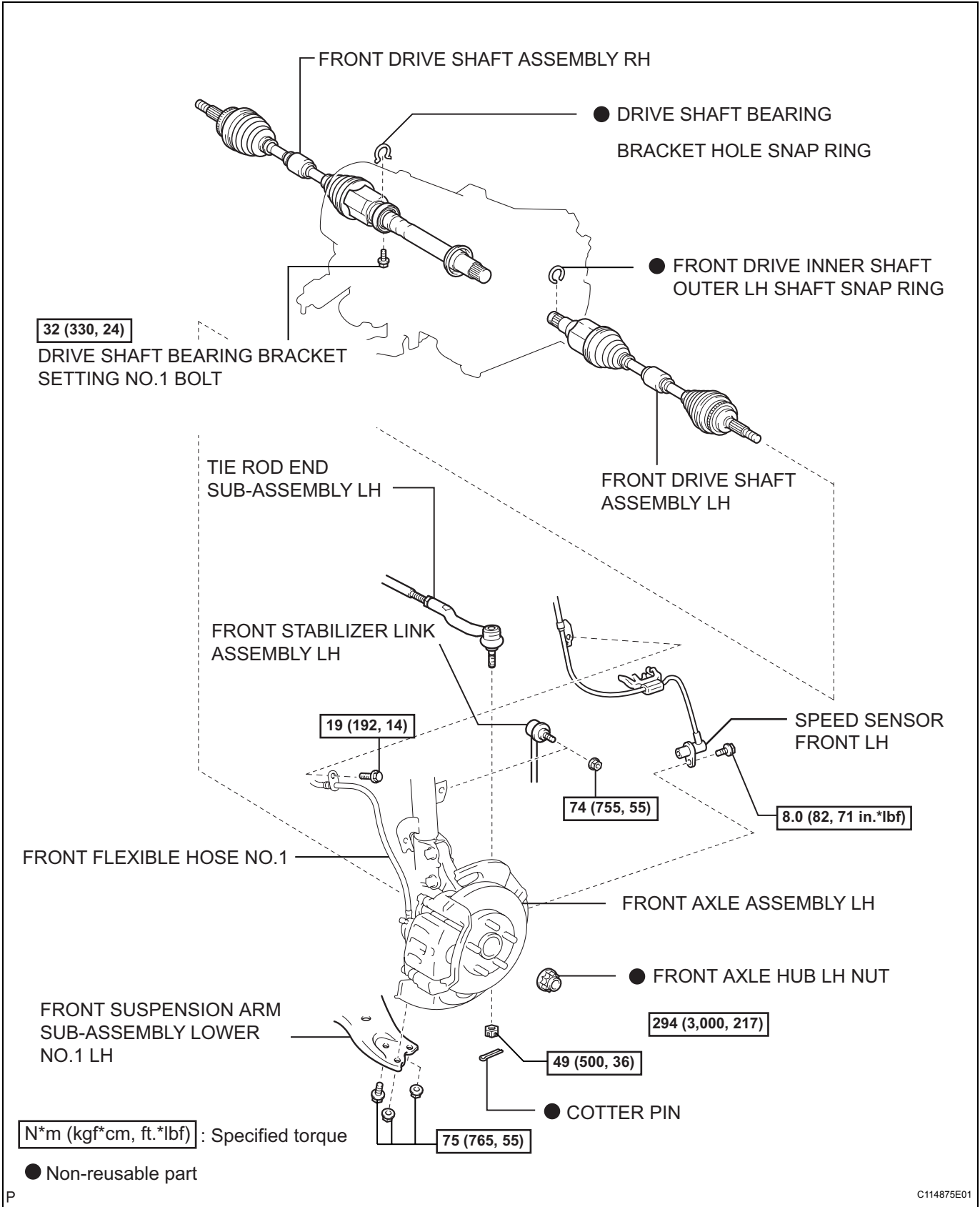
Check each part in order. If necessary, replace these parts.

DRIVE SHAFT SYSTEM

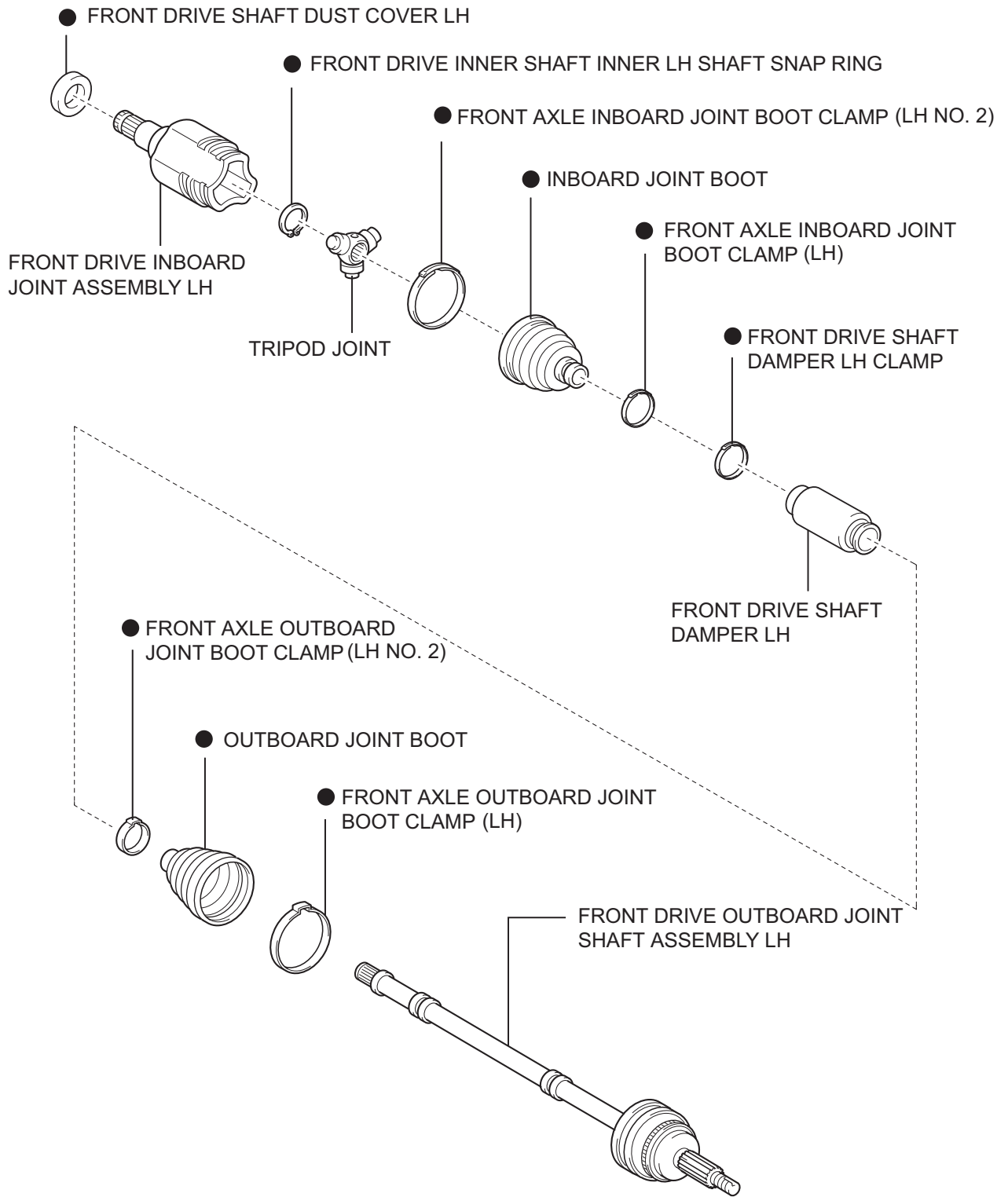
Symptom	Suspected area	See page
Noise (Front drive shaft)	Inboard or outboard joint (Worm)	DS-9

FRONT DRIVE SHAFT

COMPONENTS

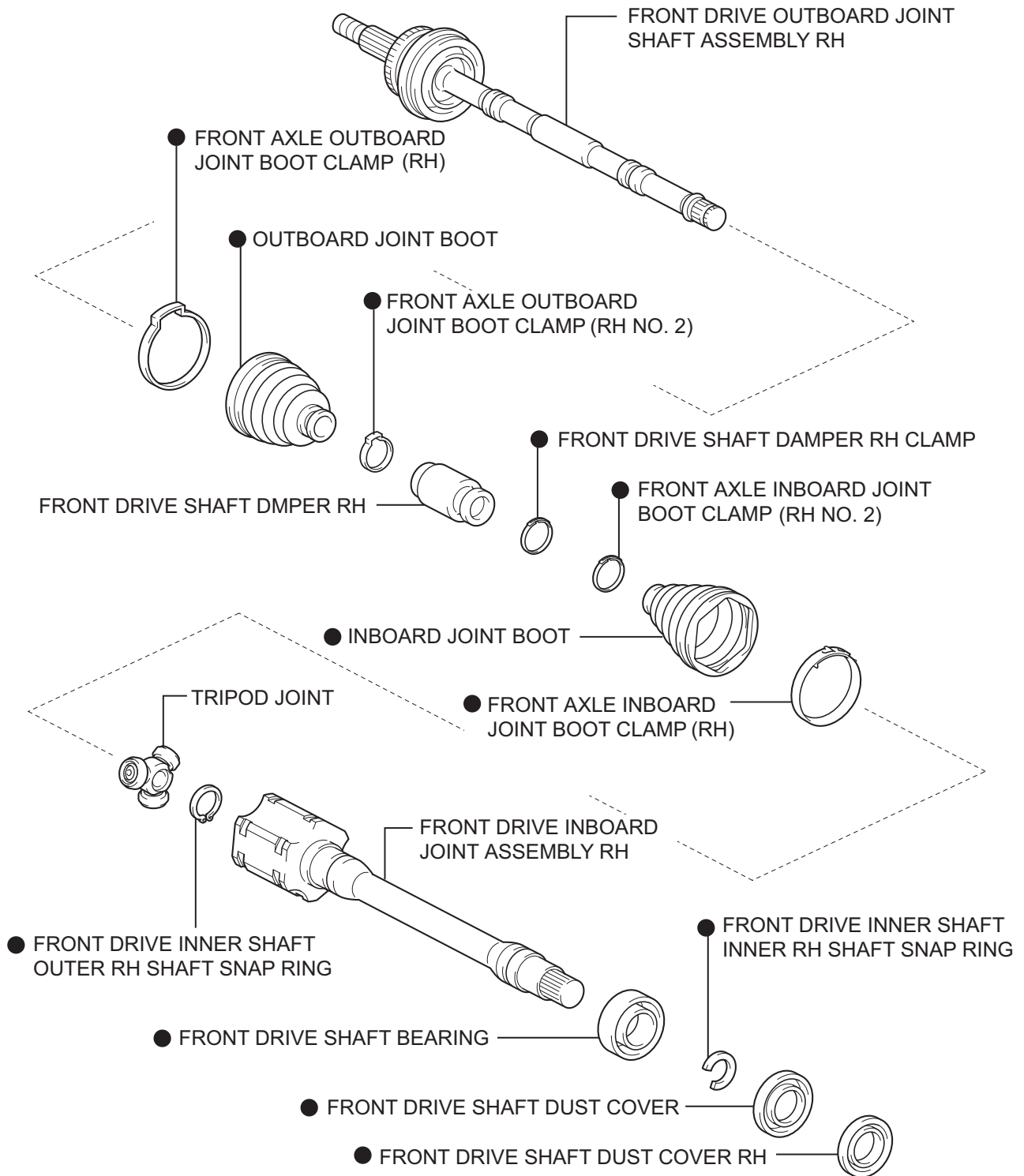


DS



DS

● Non-reusable part



● Non-reusable part

REMOVAL

HINT:

- Use the same procedures for the RH side and LH side.
- The procedures listed below are for the LH side.

1. REMOVE ENGINE UNDER COVER LH

2. DRAIN AUTOMATIC TRANSAXLE FLUID

- Remove the drain plug and gasket, and then drain the ATF.
- Install a new gasket and drain plug.
Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

3. REMOVE FRONT WHEEL

4. REMOVE FRONT AXLE HUB LH NUT

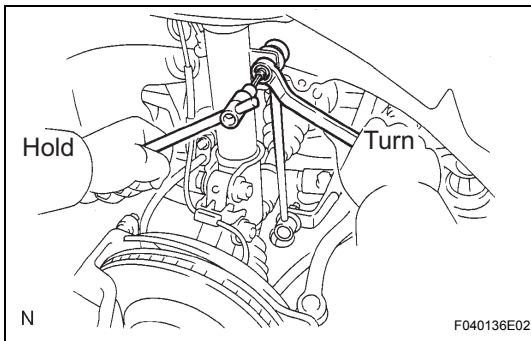
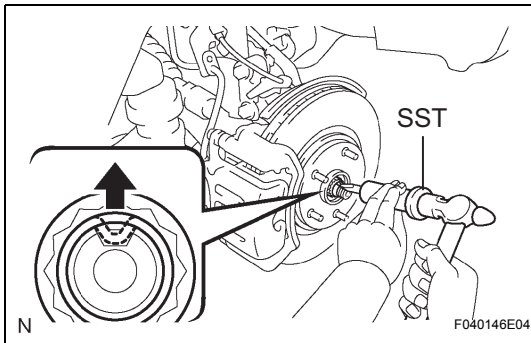
- Using SST and hammer, release the staked part of the front axle hub LH nut.

SST 09930-00010

NOTICE:

Loosen the staked part of the nut completely, otherwise the screw of the drive shaft may be damaged.

- While applying the brakes, remove the front axle hub LH nut.

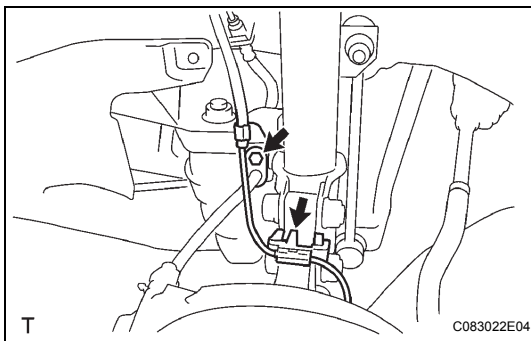


5. SEPARATE FRONT STABILIZER LINK ASSEMBLY LH

- Remove the nut and separate the front stabilizer link assembly LH.

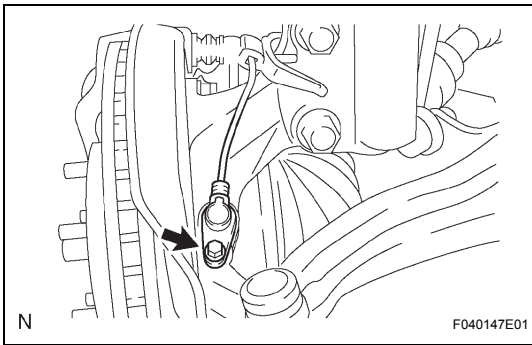
HINT:

If the ball joint turns together with the nut, use a hexagon wrench (6mm) to hold the stud.



6. SEPARATE SPEED SENSOR FRONT LH

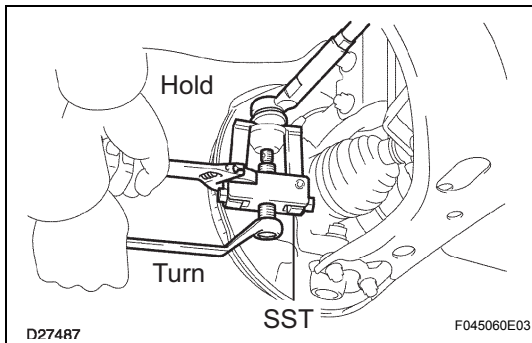
- Remove the bolt and clip, and separate the speed sensor wire and flexible hose from the shock absorber.



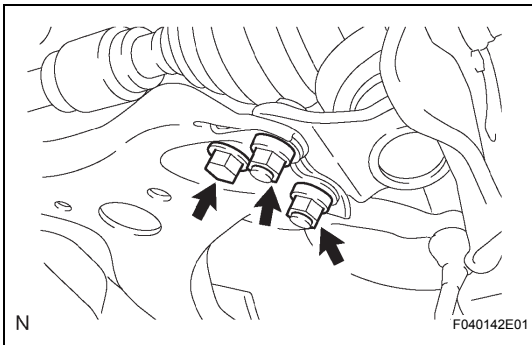
- (b) Remove the bolt and separate the speed sensor front LH from the steering knuckle.

NOTICE:

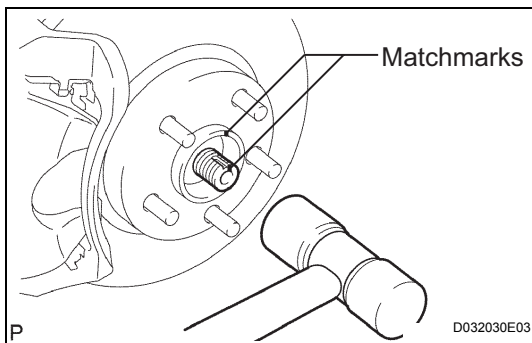
- Prevent foreign matter from adhering to the speed sensor.
- Be careful not to damage the speed sensor.

**7. SEPARATE TIE ROD END SUB-ASSEMBLY LH**

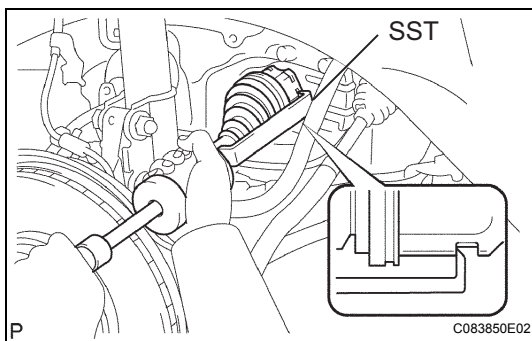
- (a) Remove the cotter pin and nut.
 (b) Using SST, separate the tie rod end sub-assembly LH from the steering knuckle.

SST 09628-62011**NOTICE:****Do not damage the ball joint dust cover.****8. SEPARATE FRONT SUSPENSION ARM SUB-ASSEMBLY LOWER NO.1 LH**

- (a) Remove the bolt and 2 nuts, and separate the front suspension arm sub-assembly lower No.1 LH from the lower ball joint.

**9. SEPARATE FRONT AXLE ASSEMBLY LH**

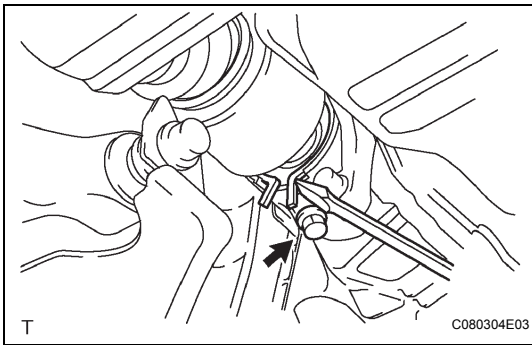
- (a) Put matchmarks on the front drive shaft assembly LH and the axle hub.
 (b) Using a plastic hammer, separate the front drive shaft assembly LH from the front axle hub sub-assembly LH.

NOTICE:**Be careful not to damage the drive shaft boot and speed sensor rotor.****10. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH**

- (a) Using SST, remove the front drive shaft assembly LH.

SST 09520-01010, 09520-24010 (09520-32040)**NOTICE:**

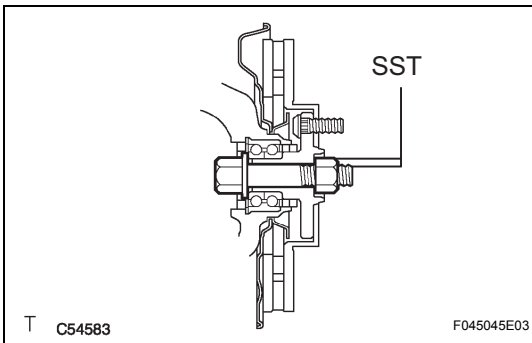
- Be careful not to damage the drive shaft dust cover, boot and oil seal.
- Be careful not to drop the drive shaft assembly.

**11. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH**

- (a) Using a screwdriver, remove the bearing bracket hole snap ring.
- (b) Remove the bolt and front drive shaft assembly RH from the drive shaft bearing bracket.

NOTICE:

Do not damage the boot and oil seal.

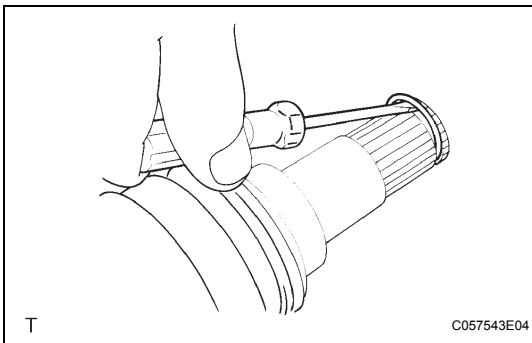
**12. FIX FRONT AXLE HUB SUB-ASSEMBLY LH**

- (a) Fix front axle hub bearing.

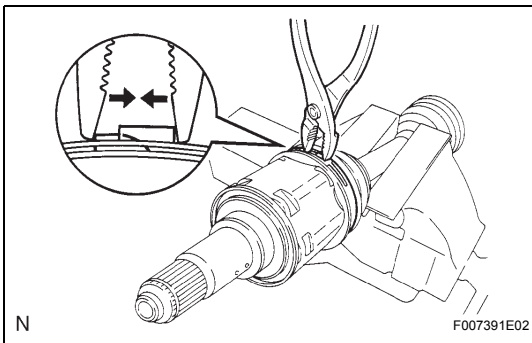
SST 09608-16042 (09608-02021, 09608-02041)

NOTICE:

The hub bearing could be damaged if it is subjected to the vehicle's full weight, such as moving the vehicle with the drive shaft removed. If it is necessary to place the vehicle's weight on the hub bearing, first support it with SST.

**DISASSEMBLY****1. REMOVE FRONT DRIVE INNER SHAFT OUTER LH SHAFT SNAP RING**

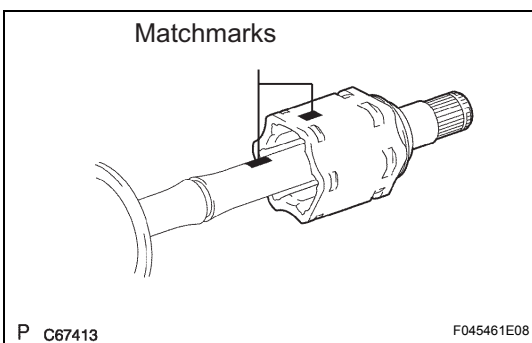
- (a) Using a screwdriver, remove the front drive inner shaft outer LH shaft snap ring.

**2. REMOVE FRONT AXLE INBOARD JOINT BOOT CLAMP**

- (a) Using pliers, remove the inboard joint boot LH No.2 clamp and inboard joint boot LH clamp, as shown in the illustration.

3. SEPARATE FRONT AXLE INBOARD JOINT BOOT

- (a) Separate the inboard joint boot from the inboard joint assembly.

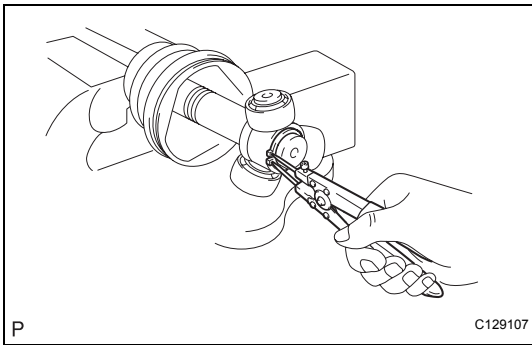
**4. REMOVE FRONT DRIVE INBOARD JOINT ASSEMBLY LH**

- (a) Put matchmarks on the inboard joint assembly and outboard joint shaft.

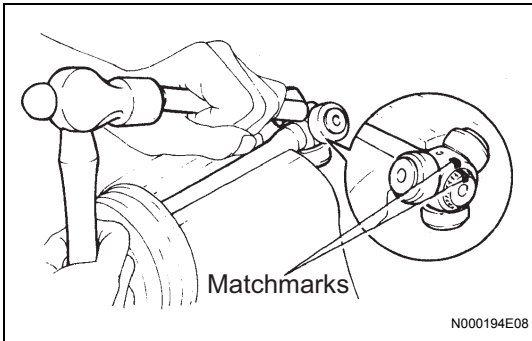
NOTICE:

Do not use a punch for the marks.

- (b) Remove the inboard joint assembly from the outboard joint shaft.



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



- (d) Put matchmarks on the outboard joint shaft and tripod joint.

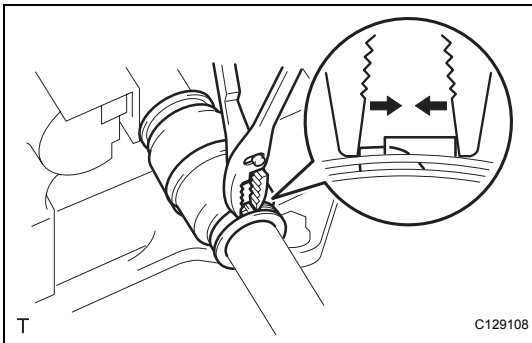
NOTICE:

Do not use a punch for the marks.

- (e) Using a brass bar and a hammer, remove the tripod joint from the outboard joint shaft.

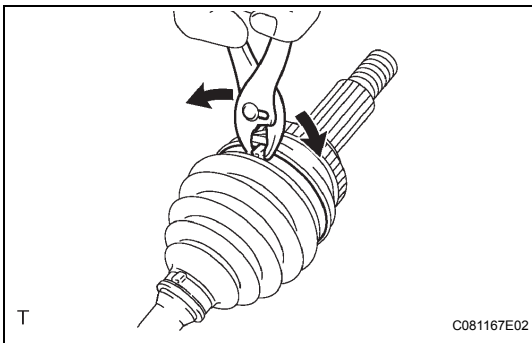
NOTICE:

Do not tap the roller.



5. REMOVE FRONT DRIVE SHAFT DAMPER LH

- (a) Using pliers, remove the drive shaft damper clamp, as shown in the illustration.
- (b) Remove the drive shaft damper.

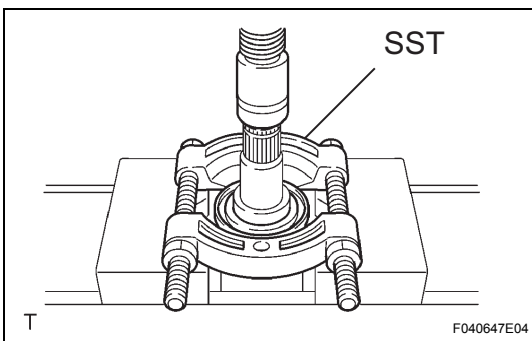


6. REMOVE FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- (a) Using pliers, remove the outboard joint boot LH No.2 clamp and outboard joint boot LH clamp, as shown in the illustration.

7. REMOVE OUTBOARD JOINT BOOT

- (a) Remove the outboard joint boot from the outboard joint shaft.
- (b) Remove the grease from the outboard joint.



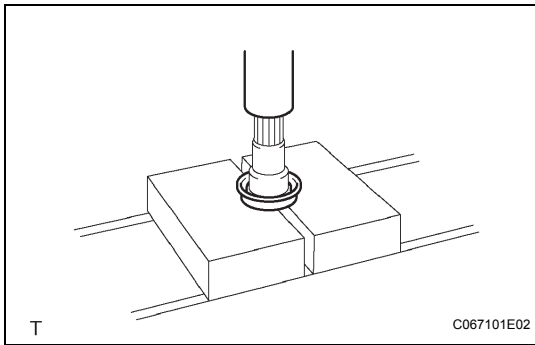
8. REMOVE FRONT DRIVE SHAFT DUST COVER LH

- (a) Using SST and a press, remove the drive shaft dust cover LH.

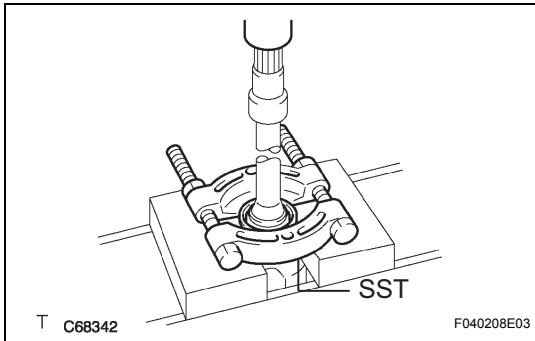
SST 09950-00020

NOTICE:

Be careful not to drop the inboard joint assembly.

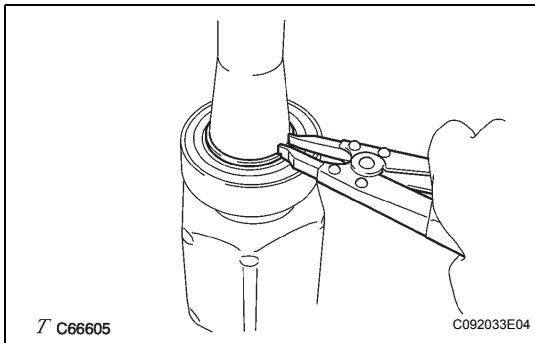
**9. REMOVE FRONT DRIVE SHAFT DUST COVER RH**

- (a) Using a press, remove the drive shaft dust cover RH.

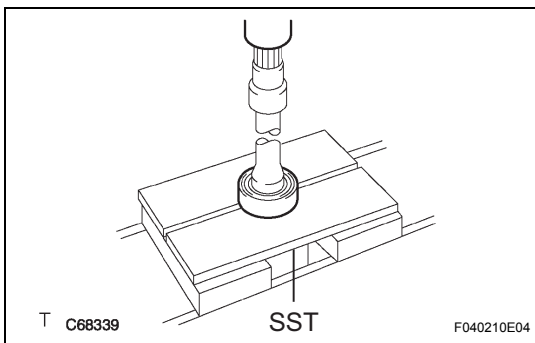
**10. REMOVE FRONT DRIVE SHAFT DUST COVER**

- (a) Using SST and a press, remove the drive shaft dust cover.

SST 09950-00020

**11. REMOVE FRONT DRIVE SHAFT BEARING**

- (a) Using a snap ring expander, remove the drive shaft hole snap ring.



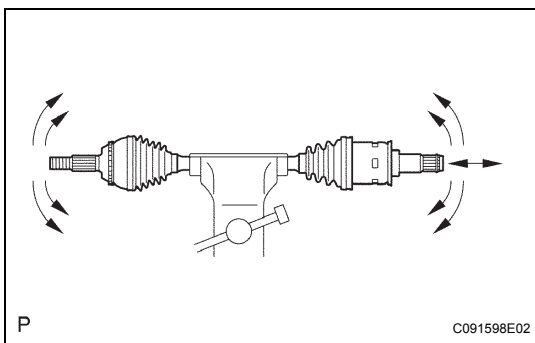
- (b) Using SST and a press, remove the bearing.

SST 09527-10011

- (c) Remove the bearing bracket hole snap ring.

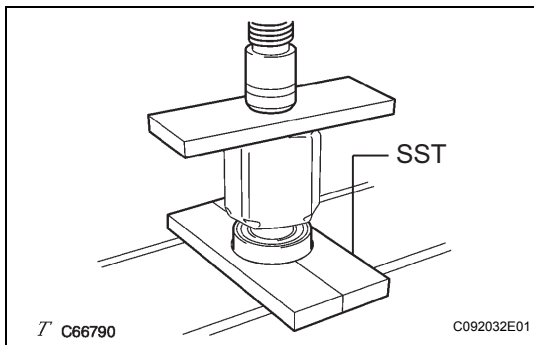
NOTICE:

Be careful not to drop the inboard joint assembly.

**INSPECTION****1. INSPECT FRONT DRIVE SHAFT ASSEMBLY**

- (a) Check that there is no excessive play in the outboard joint.
- (b) Check that the inboard joint slides smoothly in the thrust direction.
- (c) Check that there is no excessive play in the radial directions of the inboard joint.
- (d) Check the boots for damage.

REASSEMBLY



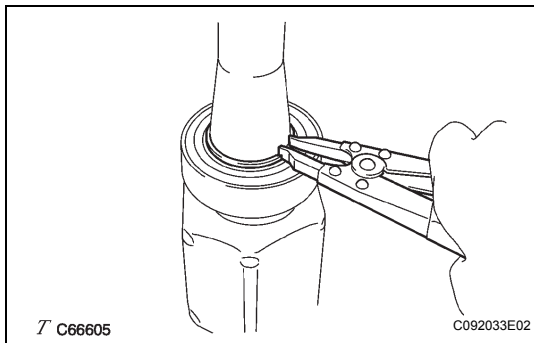
1. INSTALL FRONT DRIVE SHAFT BEARING

- Install a new bearing bracket hole snap ring to the front driver shaft assembly RH.
- Using SST and a steel plate, install a new front drive shaft bearing.

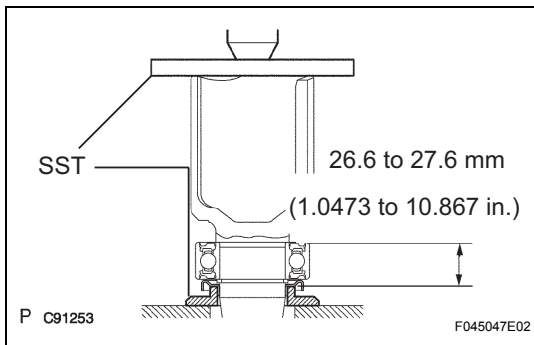
SST 09527-30010, 09527-10011

NOTICE:

Bearing should be completely installed.



- Using a snap ring expander, install a new drive shaft hole snap ring.



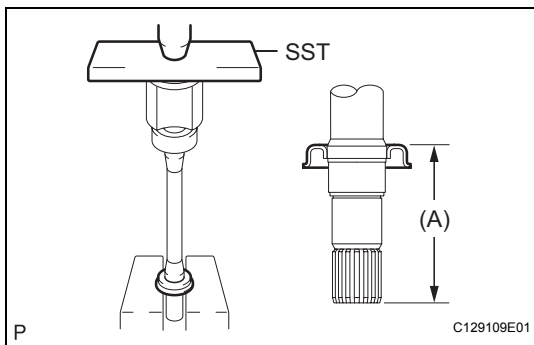
2. INSTALL FRONT DRIVE SHAFT DUST COVER

- Using SST and a press, install a new drive shaft dust cover.

SST 09726-40010, 09527-10011

NOTICE:

- Dust cover should be completely installed.
- Be careful not to damage the dust cover.



3. INSTALL FRONT DRIVE SHAFT DUST COVER RH

- Using SST and a press, install a new drive shaft dust cover RH until the distance from the tip of the center drive shaft to the drive shaft dust cover RH meets the specification, as shown in the illustration.

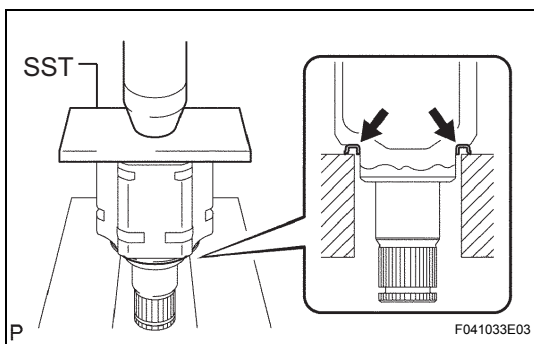
SST 09527-10011

Distance (A) :

110.0 to 111.0 mm (4.3307 to 4.3701 in.)

NOTICE:

- Dust cover should be completely installed.
- Be careful not to damage the dust cover.



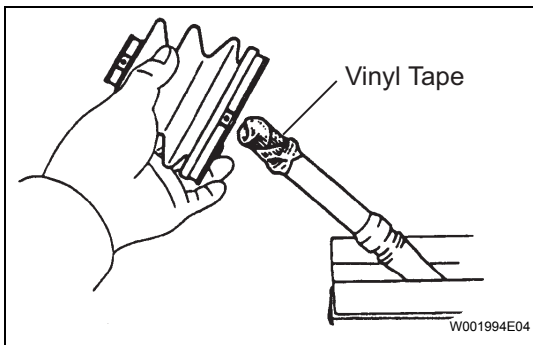
4. INSTALL FRONT DRIVE SHAFT DUST COVER LH

- Using SST and a press, install a new drive shaft dust cover LH.

SST 09527-10011

NOTICE:

- Dust cover should be completely installed.
- Be careful not to damage the dust cover.



5. INSTALL OUTBOARD JOINT BOOT

- (a) Hold the drive shaft lightly in a vise between aluminium plates.

HINT:
Before installing the boots, wrap the spline of the drive shaft with vinyl tape to prevent the boots from being damaged.
- (b) Temporarily install a new outboard joint boot to the drive shaft with 2 clamps.
- (c) Pack the outboard joint shaft and boot with grease.

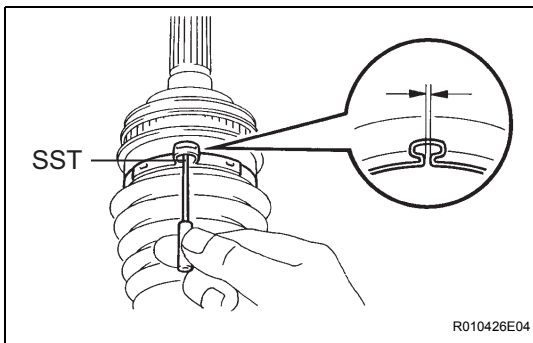
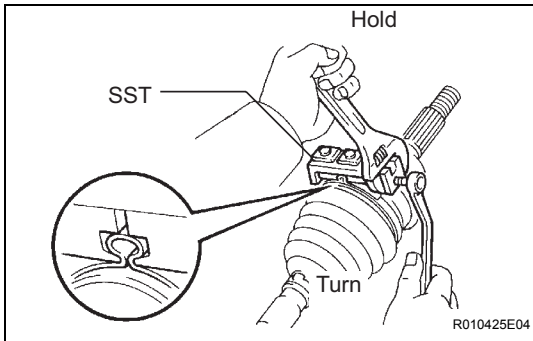
Grease capacity:
120 to 140 g (4.2 to 4.9 oz.)

6. INSTALL FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- (a) Hold the drive shaft lightly in a vise between aluminium plates.
- (b) Install the 2 outboard joint boot clamps onto the boot.
- (c) Place SST onto the outboard joint large boot clamp.

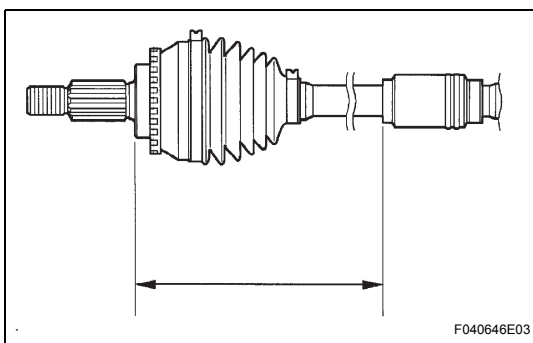
SST 09521-24010
- (d) Tighten the SST so that the outboard joint large boot clamp is pinched.

NOTICE:
Do not overtighten the SST.



- (e) Using SST, measure the clearance of the outboard joint large boot clamp.

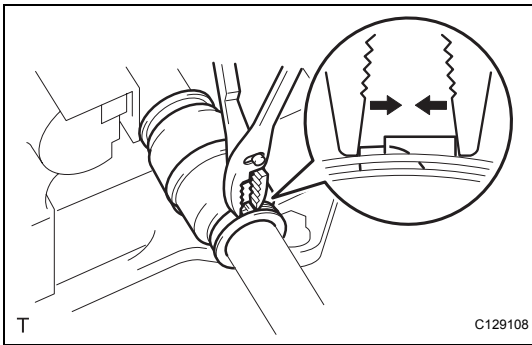
SST 09240-00020
Clearance:
1.2 to 4.0 mm (0.0472 to 0.1575 in.)
NOTICE:
When the measured value is greater than the specified value, retighten the clamp.
- (f) Install the outboard joint small boot clamp using the same procedures.



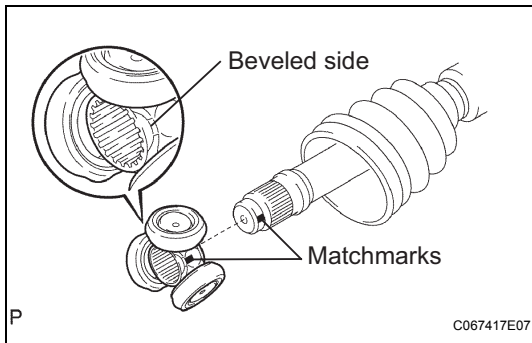
7. INSTALL FRONT DRIVE SHAFT DAMPER LH

- (a) Install the drive shaft damper LH to the drive shaft.
- (b) Make sure that the damper is on the shaft groove.
- (c) Set the distance, as specified below.

Distance:
204.5 to 208.5 mm (8.051 to 8.209 in.)



- (d) Using pliers, install a new drive shaft damper clamp, as shown in the illustration.

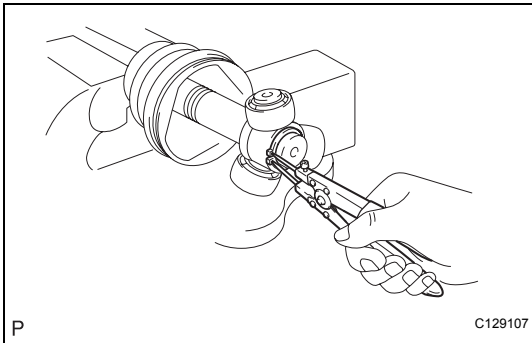


8. INSTALL FRONT DRIVE INBOARD JOINT ASSEMBLY LH

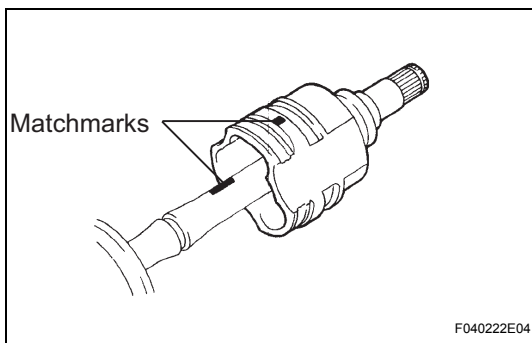
- (a) Temporarily install a new inboard joint boot with 2 clamps to the drive shaft.
- (b) Place the beveled side of the tripod joint axial spline toward the outboard joint shaft.
- (c) Align the matchmarks.
- (d) Using a brass bar and hammer, tap in the tripod joint to the outboard joint shaft.

NOTICE:

- Do not tap the roller.
- Be sure to install the tripod joint assembly in the correct direction.



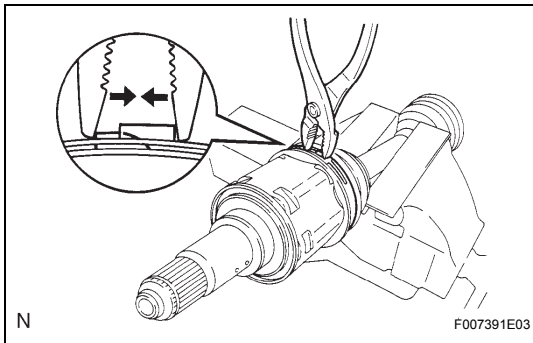
- (e) Using a snap ring expander, install a new shaft snap ring.
- (f) Pack the outboard joint shaft and boot with grease.
Grease capacity:
190 to 210 g (6.7 to 7.4 oz.)



- (g) Align the matchmarks and install the inboard joint assembly to the outboard joint shaft assembly.

9. INSTALL FRONT AXLE INBOARD JOINT BOOT

- (a) Install the inboard joint boot to the inboard joint assembly.

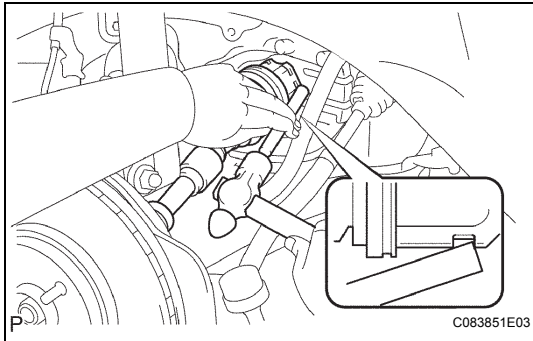


10. INSTALL FRONT AXLE INBOARD JOINT BOOT CLAMP

- (a) Using pliers, install the new inboard joint boot LH No.2 clamp and inboard joint boot LH clamp, as shown in the illustration.

11. INSTALL FRONT DRIVE INNER SHAFT OUTER LH SHAFT SNAP RING

- (a) Install a new hole snap ring.



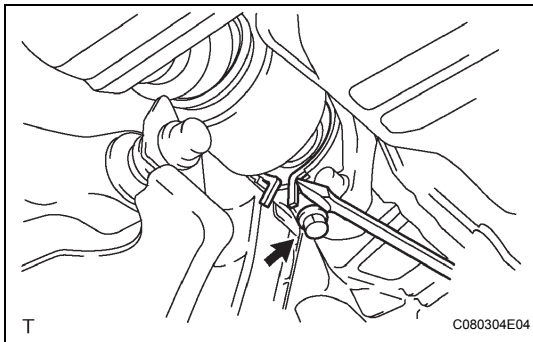
INSTALLATION

1. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH

- (a) Coat the spline of the inboard joint shaft assembly with ATF.
 (b) Align the shaft splines and install the drive shaft assembly LH with a brass bar and hammer.

NOTICE:

- Set the shaft snap ring with the opening side facing down.
- Be careful not to damage the drive shaft dust cover, boot and oil seal.
- Move the drive shaft assembly while keeping it level.



2. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH

- (a) Coat the spline of the inboard joint shaft assembly with ATF.
 (b) Install the front drive shaft the assembly RH.
 (c) Using a screwdriver, install a new bearing bracket hole snap ring.

NOTICE:

- Do not damage the boot and oil seal.
- Move the drive shaft assembly while keeping it level.

- (d) Install a new bolt.

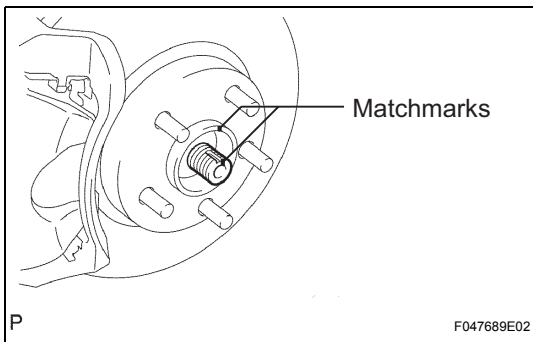
Torque: 32 N*m (330 kgf*cm, 24 ft.*lbf)

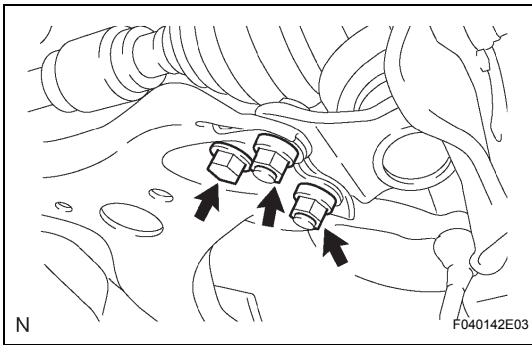
3. INSTALL FRONT AXLE ASSEMBLY LH

- (a) Align the matchmarks and install the front drive shaft assembly LH to the front axle hub sub-assembly LH.

NOTICE:

- Be careful not to damage the drive shaft boot and speed sensor rotor.**





4. INSTALL FRONT SUSPENSION ARM SUB-ASSEMBLY NO.1 LH

- (a) Install the lower ball joint to the front suspension arm sub-assembly lower No.1 LH with the bolt and 2 nuts.

Torque: 75 N*m (765 kgf*cm, 55 ft.*lbf)

5. INSTALL TIE ROD END SUB-ASSEMBLY LH

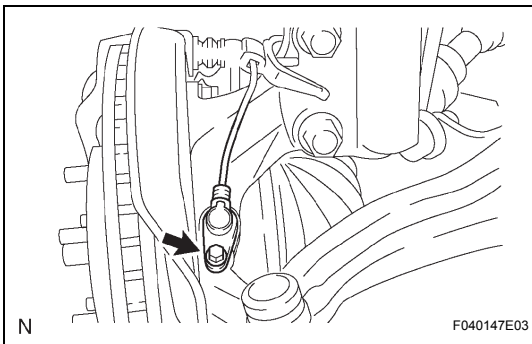
- (a) Install the tie rod end sub-assembly LH to the steering knuckle with the nut.

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

- (b) Install a new cotter pin.

NOTICE:

If the holes for the cotter pin are not aligned, tighten the nut up to 60° further.



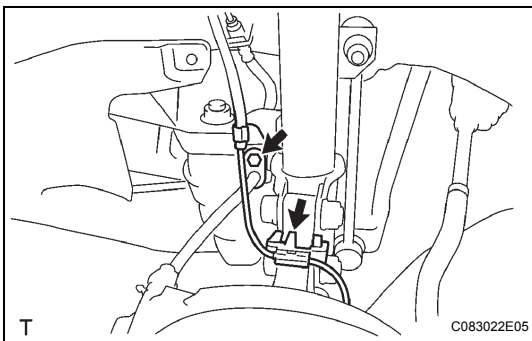
6. INSTALL SPEED SENSOR FRONT LH

- (a) Install the speed sensor front LH to the steering knuckle with the bolt.

Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

NOTICE:

- Prevent foreign matter from adhering to the speed sensor.
- Be careful not to damage the speed sensor.

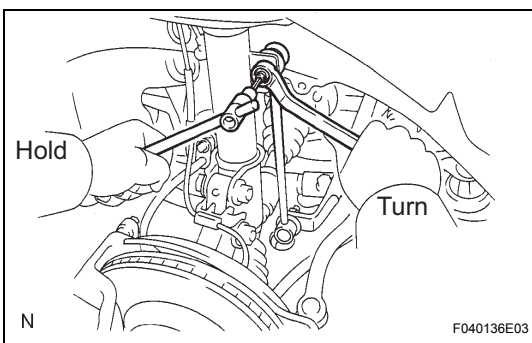


- (b) Install the flexible hose and the speed sensor to the shock absorber with the bolt and set the sensor clip on the knuckle.

Torque: 19 N*m (192 kgf*cm, 14 ft.*lbf)

NOTICE:

- Be careful not to damage the speed sensor.
- Prevent foreign matter from adhering to the speed sensor.
- Do not twist the sensor wire when installing the speed sensor.



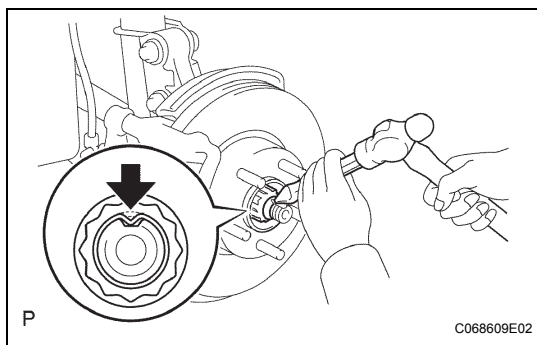
7. INSTALL FRONT STABILIZER LINK ASSEMBLY LH

- (a) Install the stabilizer link assembly LH with the nut.

Torque: 74 N*m (755 kgf*cm, 55 ft.*lbf)

HINT:

If the ball joint turns together with the nut, use a hexagon wrench (6 mm) to hold the stud.



8. **INSTALL FRONT AXLE HUB LH NUT**
 - (a) Using a socket wrench (30 mm), install a new axle hub LH nut.
Torque: 294 N*m (3,000 kgf*cm, 217 ft.*lbf)
 - (b) Using a chisel and hammer, stake the front axle hub LH nut.
9. **INSTALL FRONT WHEEL**
Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)
10. **ADD AUTOMATIC TRANSAXLE FLUID**
11. **INSPECT AUTOMATIC TRANSAXLE FLUID** (See page [AX-120](#))
12. **INSPECT AND ADJUST FRONT WHEEL ALIGNMENT**
 - (a) Inspect and adjust front wheel alignment (See page [SP-4](#)).
13. **INSTALL ENGINE UNDER COVER LH**
14. **CHECK ABS SPEED SENSOR SIGNAL**
 - (a) ABS WITH EBD & TRAC & VSC SYSTEM (See page [BC-107](#))
 - (b) ABS WITH EBD SYSTEM (See page [BC-11](#))