

DS-4

DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

REMOVAL

HINT:

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

1. **DRAIN MANUAL TRANSAXLE OIL (for Manual Transaxle)**

Torque: 39 N*m (398 kgf*cm, 29 ft.*lbf)

2. **DRAIN AUTOMATIC TRANSAXLE FLUID (for Automatic Transaxle)**

Torque: 25 N*m (255 kgf*cm, 18 ft.*lbf)

3. **REMOVE FRONT WHEEL**

4. **REMOVE ENGINE UNDER COVER LH**

5. **REMOVE FRONT AXLE HUB NUT**

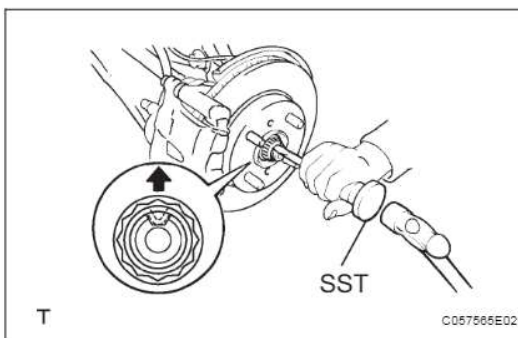
- (a) Using SST and a hammer, pry up the retaining tab(s) of the hub nut.

SST 09930-00010

NOTICE:

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

- (b) While applying the brakes, remove the hub nut.

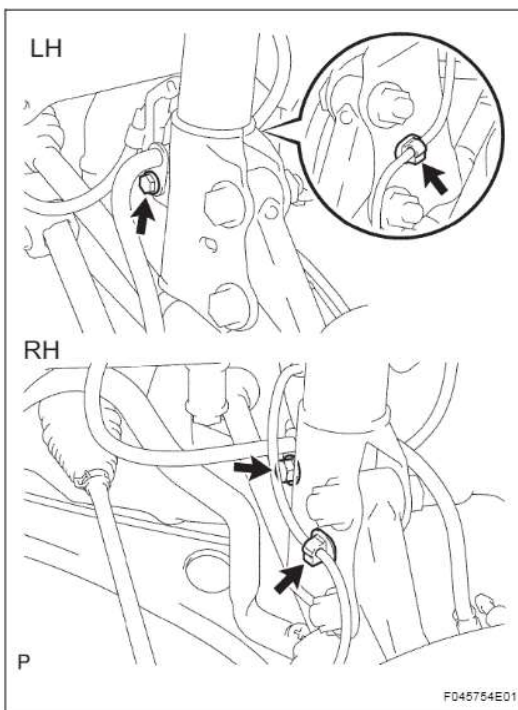


6. **DISCONNECT FRONT SPEED SENSOR**

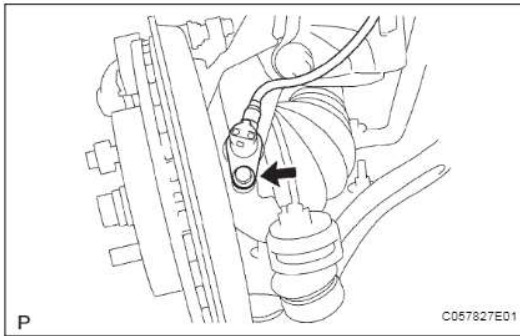
- (a) Remove the bolt and clip, and disconnect the front speed sensor and flexible hose from the front shock absorber.

HINT:

The positions of the bolt and clip on the right side differ from those on the left side.



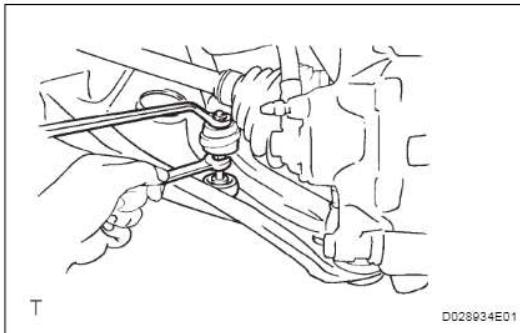
DS

DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY**DS-5**

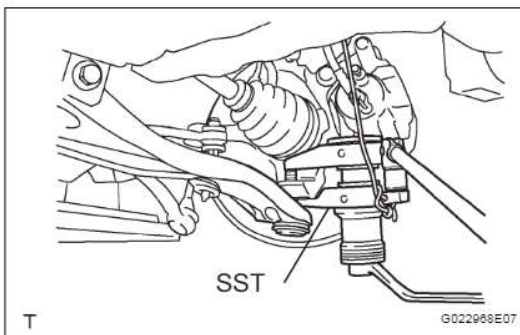
- (b) Remove the bolt and disconnect the front speed sensor from the steering knuckle.

NOTICE:

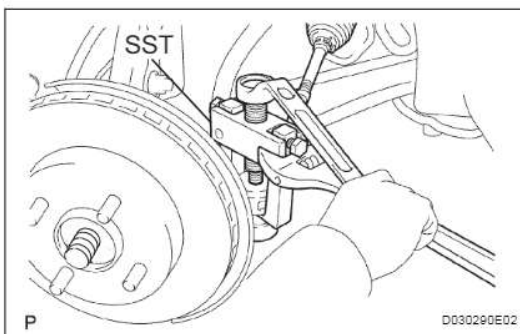
- Be careful not to damage the speed sensor.
- Prevent foreign matter from adhering to the speed sensor.

**7. DISCONNECT FRONT STABILIZER BAR**

- (a) Hold the bolt with a wrench and remove the nut.
 (b) Remove the 2 cushion retainers and 2 cushions, and disconnect the front stabilizer bar.

**8. DISCONNECT FRONT NO. 1 SUSPENSION LOWER ARM SUB-ASSEMBLY**

- (a) Remove the clip and nut.
 (b) Using SST, disconnect the front suspension lower arm from the steering knuckle.

SST 09628-00011**9. DISCONNECT TIE ROD END SUB-ASSEMBLY**

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

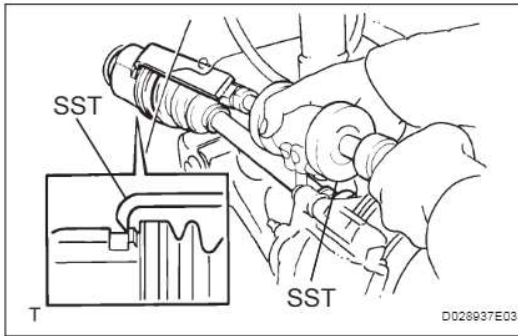
SST 09628-62011**10. DISCONNECT FRONT DRIVE SHAFT ASSEMBLY**

- (a) Using a plastic-faced hammer, tap the drive shaft and disconnect it.

NOTICE:

- Be careful not to damage the boot.
- Be careful not to damage the speed sensor rotor.

DS

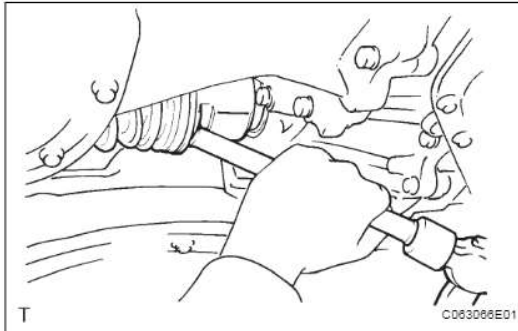
DS-6**DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY****11. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH**

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

SST 09520-01010, 09520-24010 (09520-32040)

NOTICE:

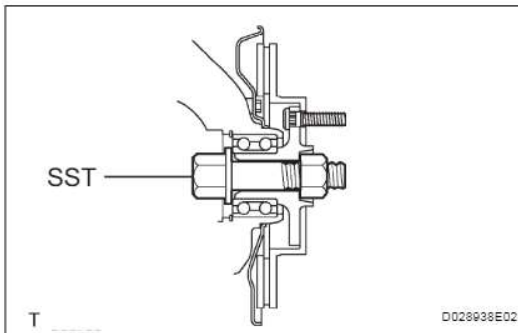
- Be careful not to damage the oil seal and boot.
- Be careful not to drop the drive shaft assembly.

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

- (a) Using a brass bar and hammer, tap out the front drive shaft.

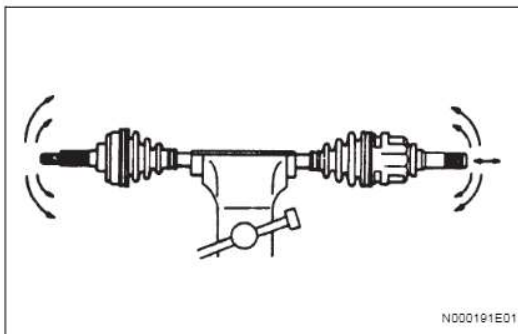
NOTICE:

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

**13. FIX FRONT AXLE ASSEMBLY LH****NOTICE:**

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

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

**14. INSPECT FRONT DRIVE SHAFT ASSEMBLY****NOTICE:**

Keep the drive shaft assembly level during inspection.

- Check that there is no remarkable play in the radial direction of the outboard joint.
- Check that the inboard joint slides smoothly in the thrust direction.
- Check that there is no remarkable play in the radial direction of the inboard joint.
- Check the boots for damage.

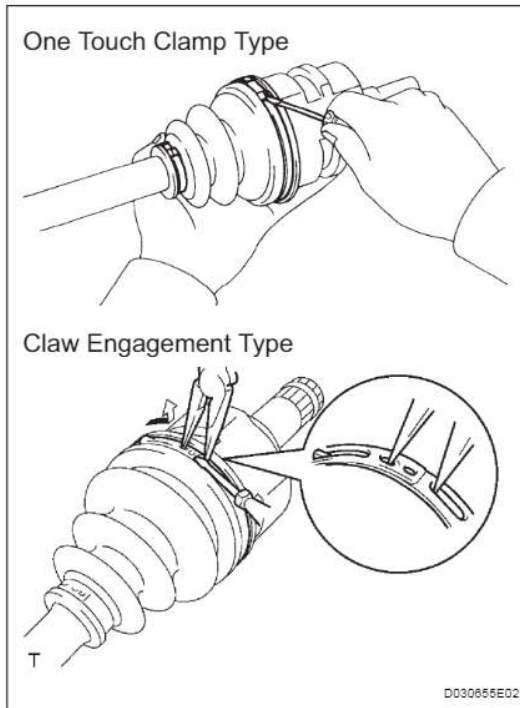
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DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY**DS-7****DISASSEMBLY****HINT:**

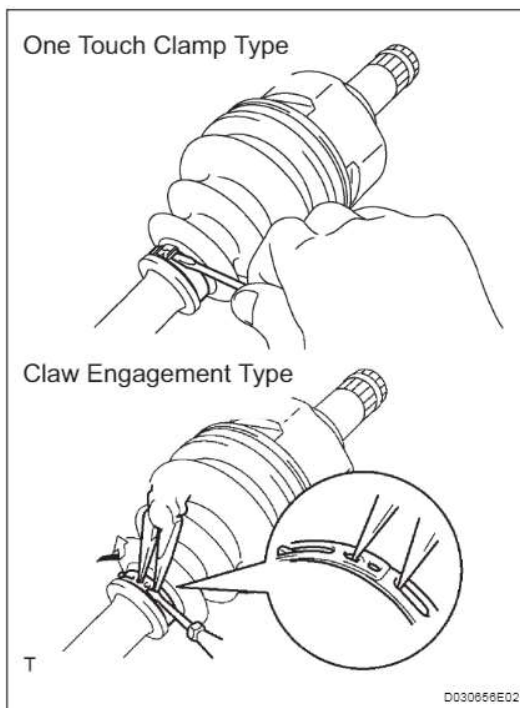
- Use the same procedures for the RH side and LH side.
- The procedures listed below are for the LH side.

1. REMOVE FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP

- One touch clamp type:
Using a screwdriver, remove the inboard joint boot clamp as shown in the illustration.
- Claw engagement type:
Using needle nose pliers, remove the inboard joint boot clamp as shown in the illustration.

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

- One touch clamp type:
Using a screwdriver, remove the inboard joint boot clamp as shown in the illustration.
- Claw engagement type:
Using needle nose pliers, remove the inboard joint boot clamp as shown in the illustration.

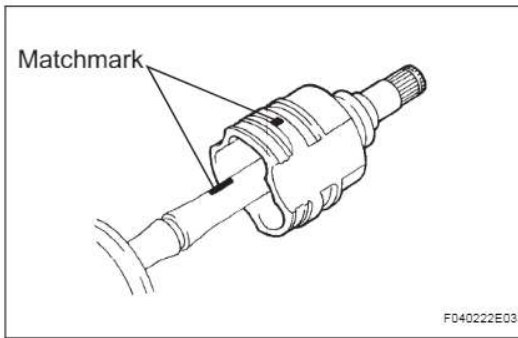
**3. REMOVE FRONT DRIVE SHAFT INBOARD JOINT BOOT**

- Disconnect the inboard joint boot from the inboard joint.

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DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY



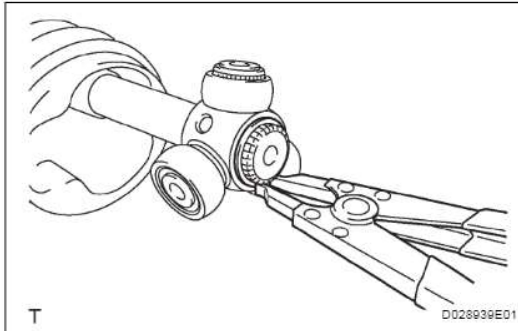
4. REMOVE FRONT DRIVE INBOARD JOINT ASSEMBLY

- (a) Remove the old grease from the inboard joint.
- (b) Put matchmarks on the inboard joint and outboard joint shaft.

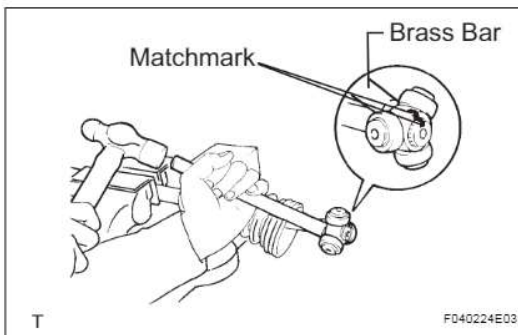
NOTICE:

Do not use a punch for marking.

- (c) Remove the inboard joint from the outboard joint shaft.



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



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

NOTICE:

Do not use a punch for marking.

- (f) Using a brass bar and hammer, tap out the tripod joint from the outboard joint shaft.

NOTICE:

Do not tap the roller.

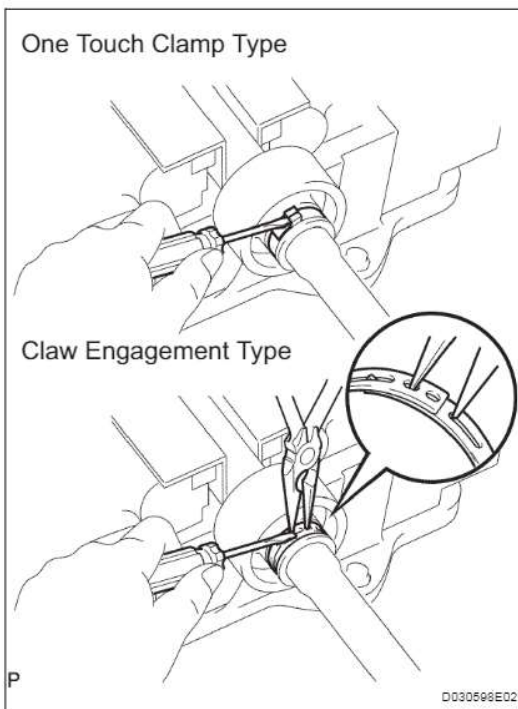
- (g) Remove the No. 2 inboard joint boot clamp, inboard joint boot and inboard joint boot clamp.

5. REMOVE DRIVE SHAFT DAMPER SETTING CLAMP (RH DRIVE SHAFT)

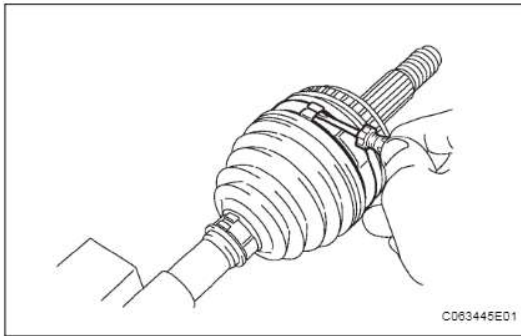
- (a) One touch clamp type:
Using a screwdriver, remove the damper setting clamp as shown in the illustration.
- (b) Claw engagement type:
Using needle nose pliers, remove the damper setting clamp as shown in the illustration.

6. REMOVE FRONT DRIVE SHAFT DAMPER RH (RH DRIVE SHAFT)

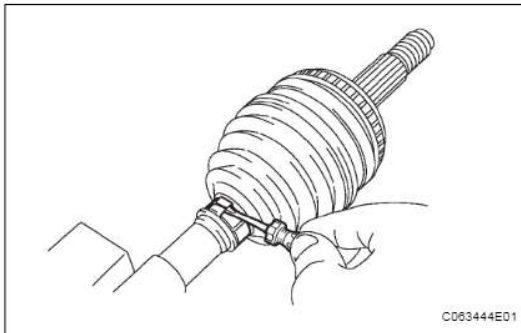
- (a) Remove the drive shaft damper RH.



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DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY**DS-9****7. REMOVE FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP**

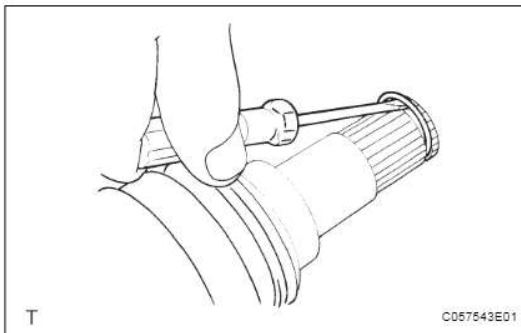
- (a) Using a screwdriver, remove the outboard joint boot clamp.

**8. REMOVE FRONT AXLE OUTBOARD JOINT BOOT CLAMP**

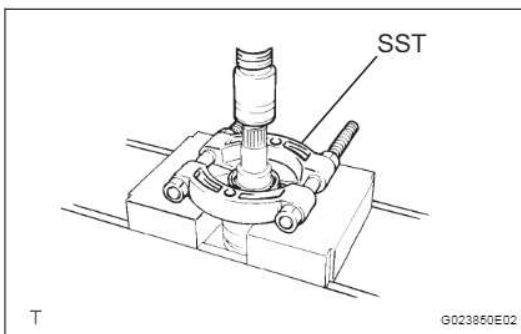
- (a) Using a screwdriver, remove the outboard joint boot clamp.

9. REMOVE FRONT AXLE OUTBOARD JOINT BOOT

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

**10. REMOVE FRONT DRIVE INBOARD JOINT HOLE SNAP RING**

- (a) Using a screwdriver, pry off the hole snap ring.

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

- (a) Using SST and a press, press out the dust cover.
SST 09950-00020

NOTICE:

Be careful not to drop the inboard joint assembly.

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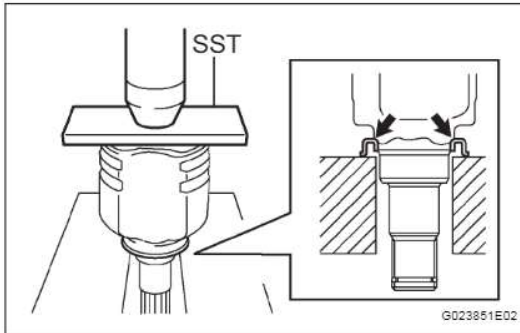
DS-10

DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

REASSEMBLY

HINT:

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



1. INSTALL FRONT DRIVE SHAFT DUST COVER LH

- (a) Using SST and a press, press in the dust cover.
SST 09527-10011

NOTICE:

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

2. INSTALL FRONT DRIVE INBOARD JOINT HOLE SNAP RING

- (a) Install a new hole snap ring.

3. INSTALL FRONT DRIVE SHAFT OUTBOARD BOOT

- (a) Wrap the spline of the outboard joint shaft with vinyl tape to prevent the boot from being damaged.
- (b) Install the new parts on the inboard joint shaft in the following order.
- (1) No. 2 outboard joint boot clamp.
 - (2) Outboard joint boot
 - (3) Outboard joint boot clamp.
- (c) Pack the outboard joint with grease.

Standard grease capacity:

155 to 170 g (5.5 to 6.1 oz.)

- (d) Install the outboard joint boot on the outboard joint shaft.

4. INSTALL FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP

- (a) Secure the No. 2 outboard joint boot clamp onto the outboard joint boot.
- (b) Place SST onto the No. 2 outboard joint boot clamp.
SST 09521-24010
- (c) Tighten the SST so that the No. 2 outboard joint boot clamp is pinched.

NOTICE:

Do not overtighten the SST.

- (d) Using SST, measure the clearance of the No. 2 outboard joint boot clamp.

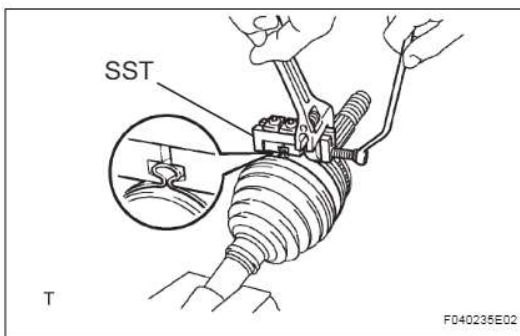
SST 09240-00020 (09242-00080)

Standard clearance:

0.8 mm (0.031 in.) or less

NOTICE:

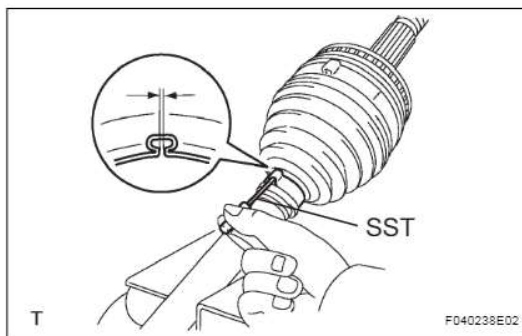
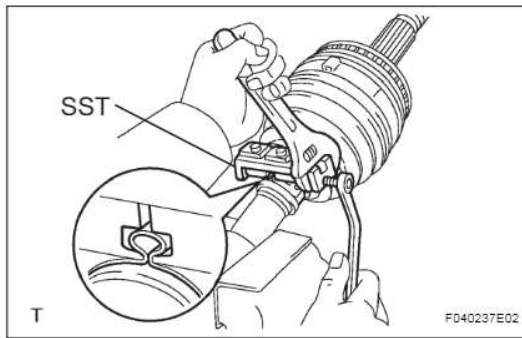
When the measured value exceeds the specified value, retighten the clamp.



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DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

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5. INSTALL FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- Mount drive shaft in a soft vise.
- Secure the outboard joint boot clamp onto the outboard joint boot.
- Place SST onto the outboard joint boot clamp.
- Tighten the SST so that the outboard joint boot clamp is pinched.

NOTICE:**Do not overtighten the SST.**

- Using SST, measure the clearance of the outboard joint boot clamp.

SST 09240-00020 (09242-00080)**NOTICE:****When the measured value exceeds the specified value, retighten the clamp.**

6. INSTALL FRONT DRIVE SHAFT DAMPER RH (RH DRIVE SHAFT)

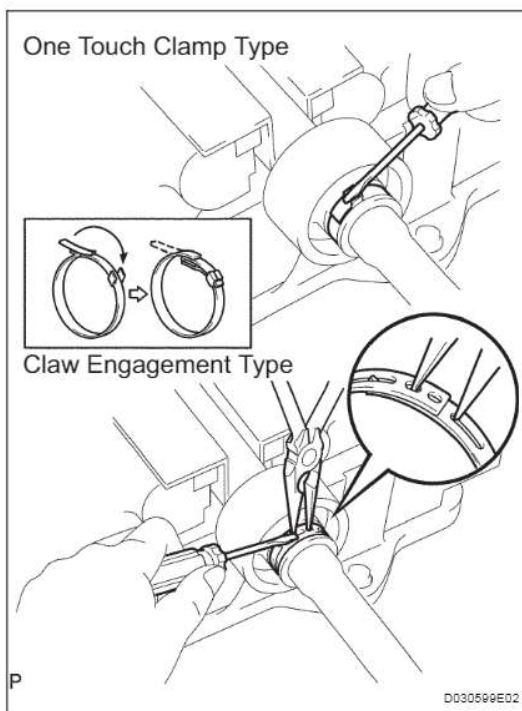
- Install the drive shaft damper RH on the outboard joint shaft.

7. INSTALL DRIVE SHAFT DAMPER SETTING CLAMP (RH DRIVE SHAFT)

- Install the damper setting clamp to the shaft.

NOTICE:**Be sure to install the clamp in the correct position.**

- One touch clamp type:
Using a screwdriver, install the damper setting clamp as shown in the illustration.
- Claw engagement type:
Using needle nose pliers, install the damper setting clamp as shown in the illustration.



8. INSTALL FRONT DRIVE INBOARD JOINT ASSEMBLY

HINT:

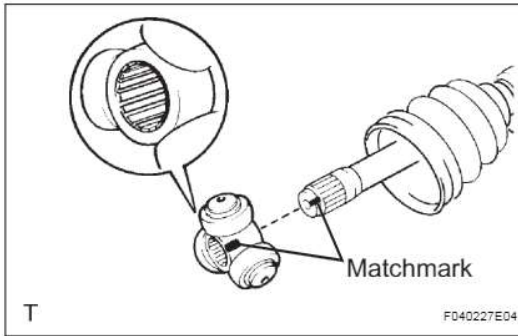
Before installing the boot, wrap the spline of the drive shaft with vinyl tape to prevent the boot from being damaged.

- Install the new parts on the outboard joint shaft in the following order.
 - Inboard joint boot clamp
 - Inboard joint boot
 - No. 2 inboard joint boot clamp

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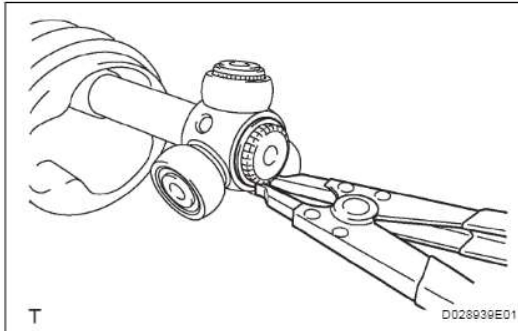
DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY



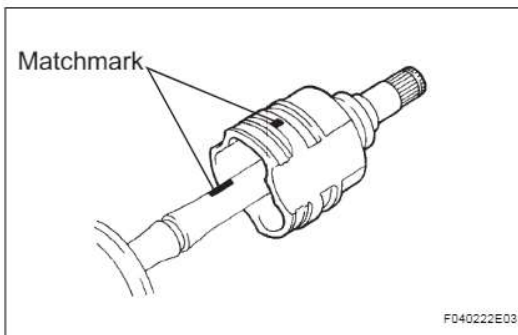
- (b) Align the matchmarks and tap in the tripod joint to the outboard joint.
- (c) Using a brass bar and hammer, install the tripod joint.

NOTICE:

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



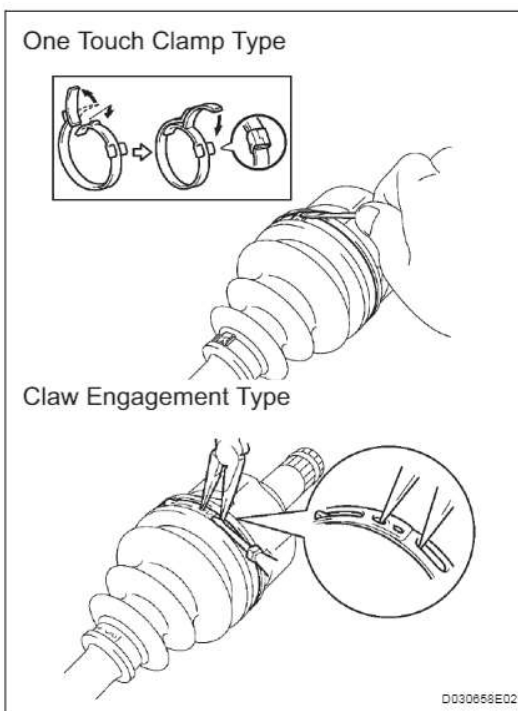
- (d) Using a snap ring expander, install a new inner shaft snap ring.
- (e) Apply grease to the inboard joint.
Standard grease capacity:
125 to 135 g (4.5 to 4.8 oz.)



- (f) Align the matchmarks and install the inboard joint on the outboard joint shaft.

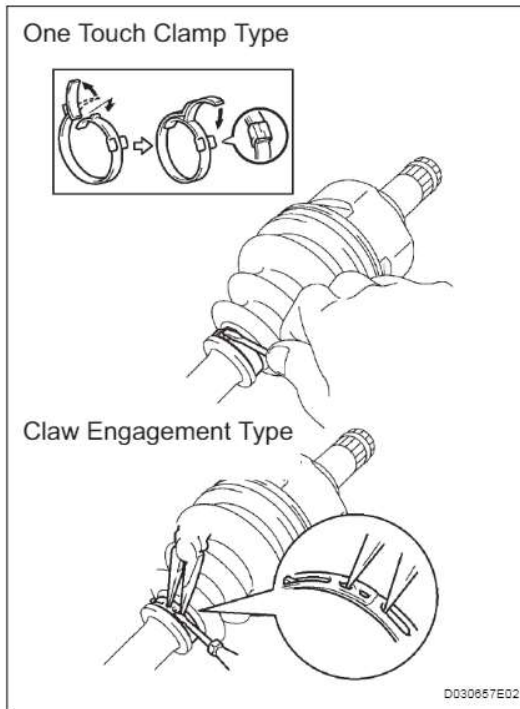
9. INSTALL FRONT DRIVE SHAFT INBOARD JOINT BOOT

- (a) Install the inboard joint boot on the inboard joint and outboard joint shaft.

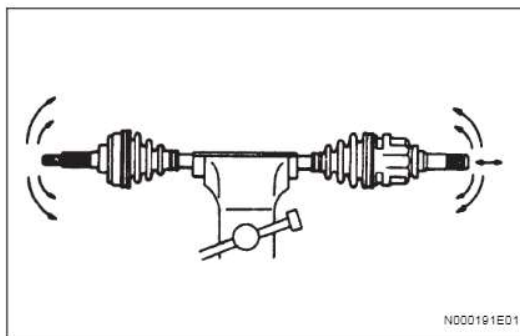
**10. INSTALL FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP**

- (a) One touch clamp type:
Using a screwdriver, install the inboard joint boot clamp as shown in the illustration.
- (b) Claw engagement type:
Using needle nose pliers, install the inboard joint boot clamp as shown in the illustration.

DS

DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY**DS-13****11. INSTALL FRONT AXLE INBOARD JOINT BOOT CLAMP**

- (a) One touch clamp type:
Using a screwdriver, install the inboard joint boot clamp as shown in the illustration.
- (b) Claw engagement type:
Using needle nose pliers, install the inboard joint boot clamp as shown in the illustration.

**12. INSPECT FRONT DRIVE SHAFT**

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

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DRIVE SHAFT SYSTEM
PROBLEM SYMPTOMS TABLE

Drive shaft system

Symptom	Suspected area	See page
Front wheel shimmy	Front drive shaft (worn)	DS-12

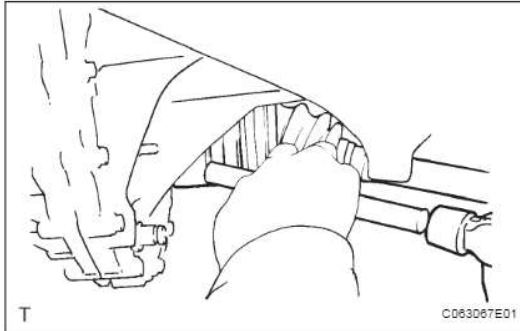
DS-14

DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

INSTALLATION

HINT:

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



1. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH

- (a) Manual transaxle:
Coat the spline of the inboard joint shaft with gear oil.
- (b) Automatic transaxle:
Coat the spline of the inboard joint shaft with ATF.
- (c) Align the shaft splines and tap in the drive shaft with a brass bar and hammer.

HINT:

Whether the inboard joint shaft is in contact with the pinion shaft or not can be known from the sound or feeling when driving it in.

NOTICE:

- Set the hole snap ring with the opening side facing downward.
- Be careful not to damage the boot and oil seal.

2. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

Use the same procedure for the LH side.

3. CONNECT FRONT DRIVE SHAFT ASSEMBLY

- (a) Connect the drive shaft to the front axle.

NOTICE:

- Be careful not to damage the outboard joint boot.
- Be careful not to damage the speed sensor rotor.
- Do not excessively push the front axle assembly.

4. CONNECT TIE ROD END SUB-ASSEMBLY

- (a) Connect the tie rod end 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 an additional 60°.

5. CONNECT FRONT NO. 1 SUSPENSION LOWER ARM SUB-ASSEMBLY

- (a) Connect the front suspension lower arm to the steering knuckle with the nut.

Torque: 98 N*m (999 kgf*cm, 72 ft.*lbf)

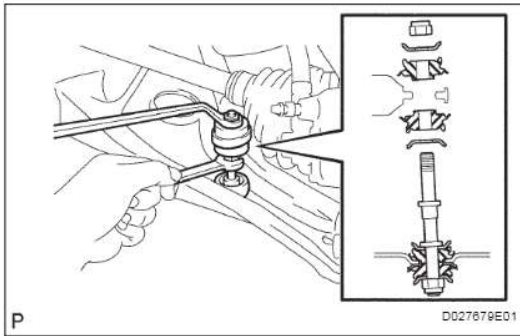
- (b) Install a new clip.

NOTICE:

If the holes for the clip are not aligned, tighten the nut an additional 60°.

DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

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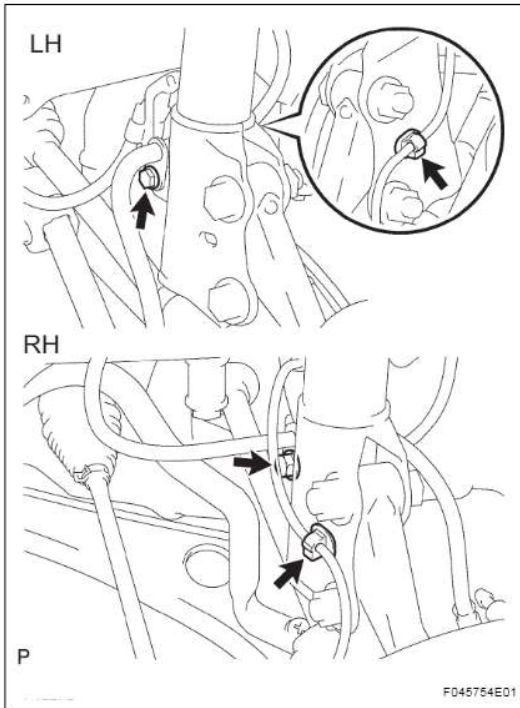
**6. CONNECT FRONT STABILIZER BAR**

- (a) Connect the front stabilizer bar with the 2 cushion retainers, 2 cushions and nut, as shown in the illustration.

NOTICE:

Be sure to install the cushion and retainer in the correct direction.

- (b) Hold the bolt with a wrench and install the nut.
Torque: 18 N*m (184 kgf*cm, 13 ft.*lbf)

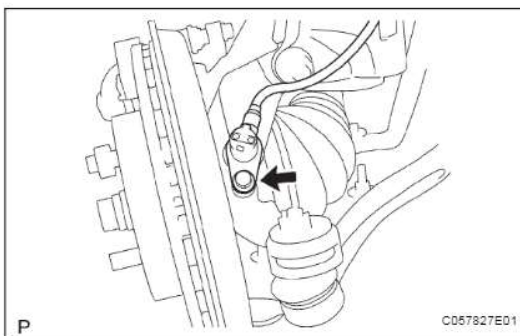
**7. INSTALL FRONT SPEED SENSOR**

- (a) Install the speed sensor and flexible hose on the shock absorber with the bolt and clip.

Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)

HINT:

The positions of the bolt and clip on the right side differ from those of the left side.

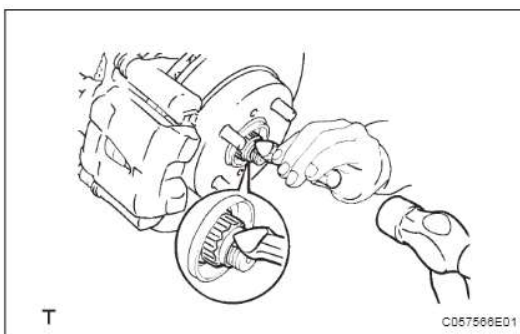


- (b) Install the speed sensor on the steering knuckle with the bolt.

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

NOTICE:

- Be careful not to damage the speed sensor.
- Keep the speed sensor clean.
- Do not twist the sensor wire when installing the speed sensor.

**8. INSTALL FRONT AXLE HUB NUT**

- (a) Install a new hub nut.

Torque: 216 N*m (2,200 kgf*cm, 159 ft.*lbf)

- (b) Using a chisel and hammer, stake the hub nut.

9. INSTALL ENGINE UNDER COVER LH**10. INSTALL FRONT WHEEL**

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

11. ADD MANUAL TRANSAXLE OIL (for Manual Transaxle)**DS**

DS-16**DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY**

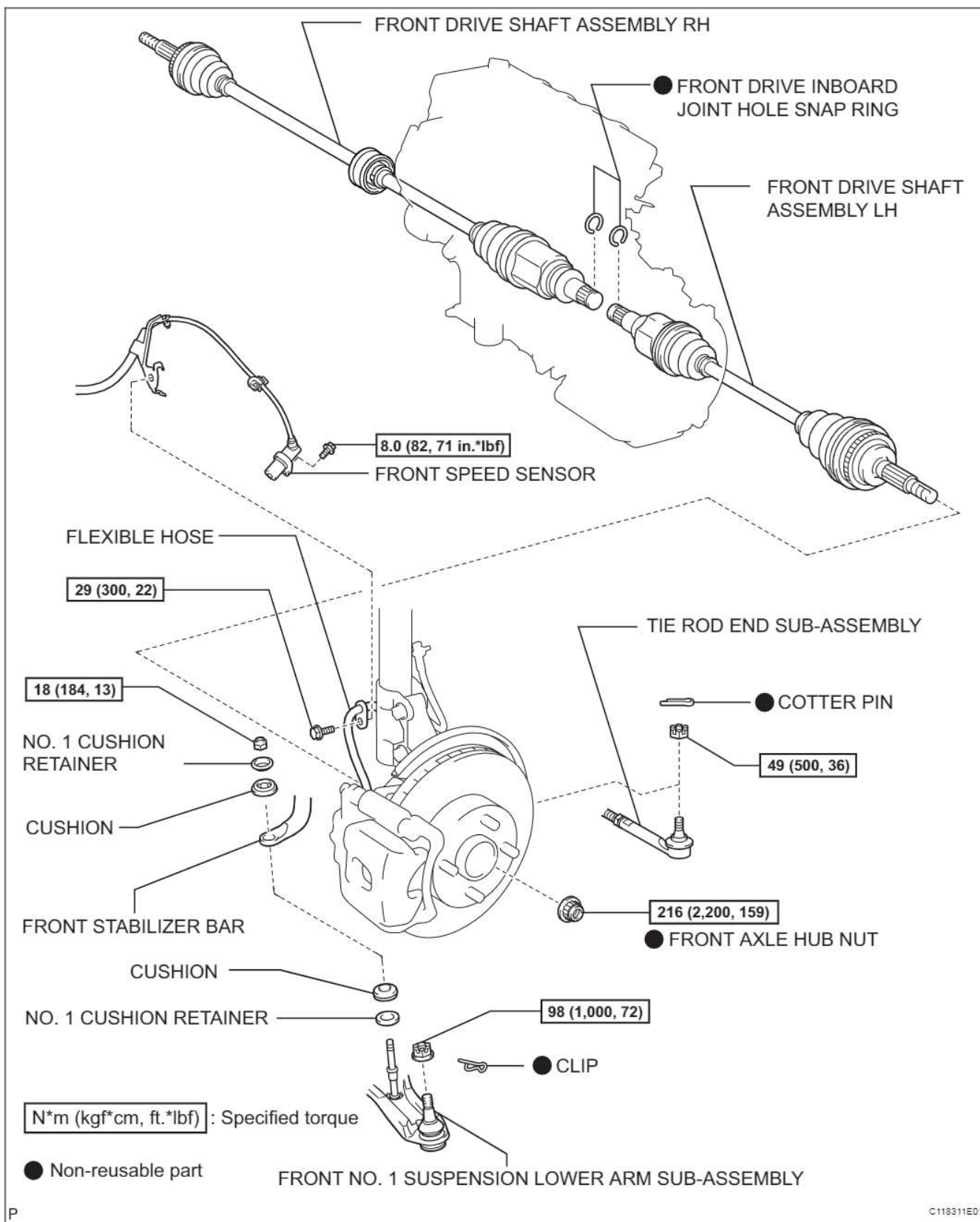
- 12. INSPECT AND ADJUST MANUAL TRANSAXLE OIL LEVEL (for Manual Transaxle)**
 - (a) Inspect and adjust the manual transaxle oil level (see page [MX-2](#)).
- 13. ADD AUTOMATIC TRANSAXLE FLUID (for Automatic Transaxle)**
- 14. INSPECT AND ADJUST AUTOMATIC TRANSAXLE FLUID (for Automatic Transaxle)**
 - (a) Inspect and adjust the automatic transaxle fluid (see page [AX-83](#)).
- 15. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT**
 - (a) Inspect and adjust the front wheel alignment (see page [SP-2](#)).
- 16. CHECK ABS SPEED SENSOR SIGNAL**
 - (a) Check the ABS speed sensor signal (see page [BC-7](#)).

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DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

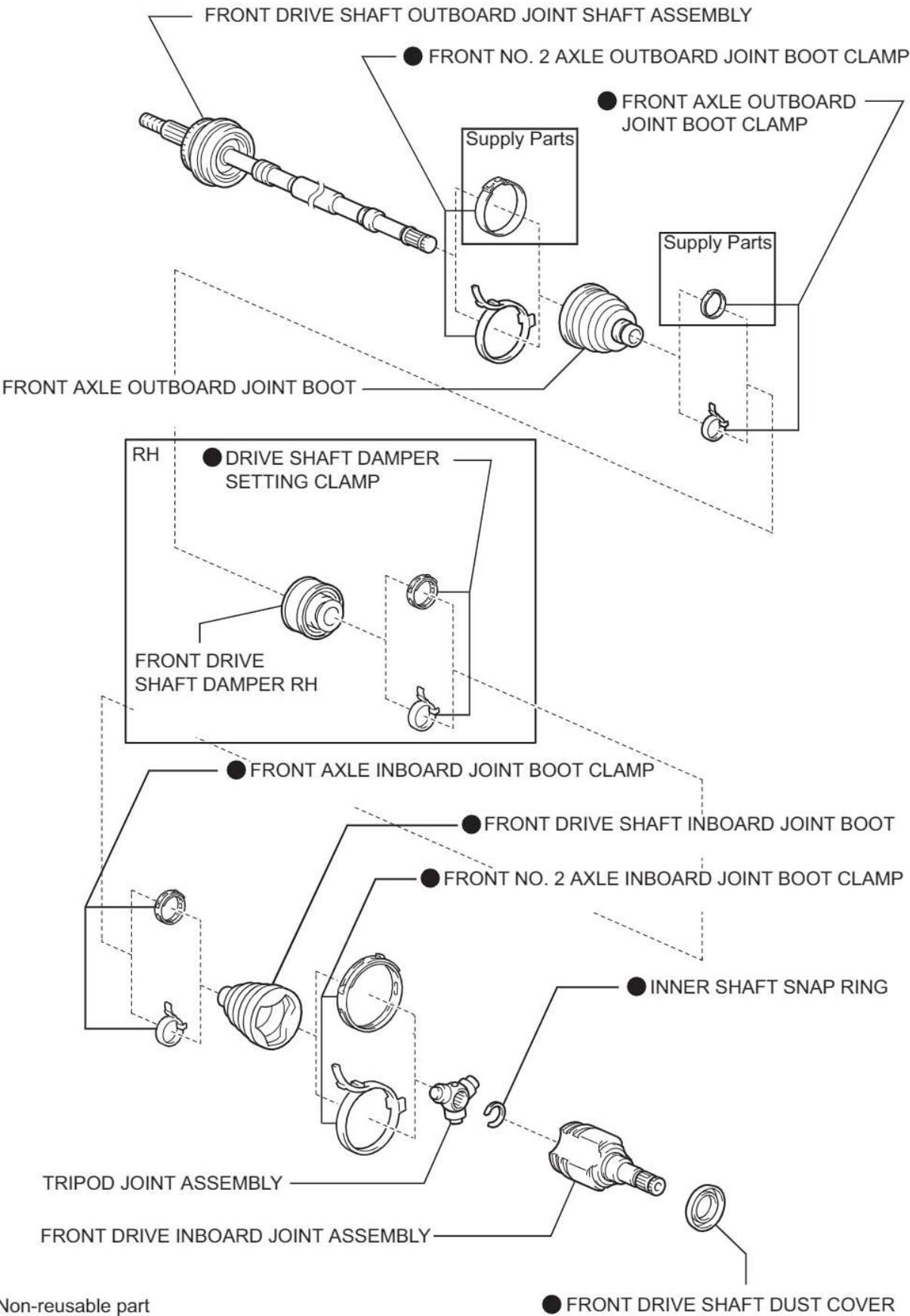
FRONT DRIVE SHAFT ASSEMBLY

COMPONENTS



DRIVE SHAFT – FRONT DRIVE SHAFT ASSEMBLY

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DS