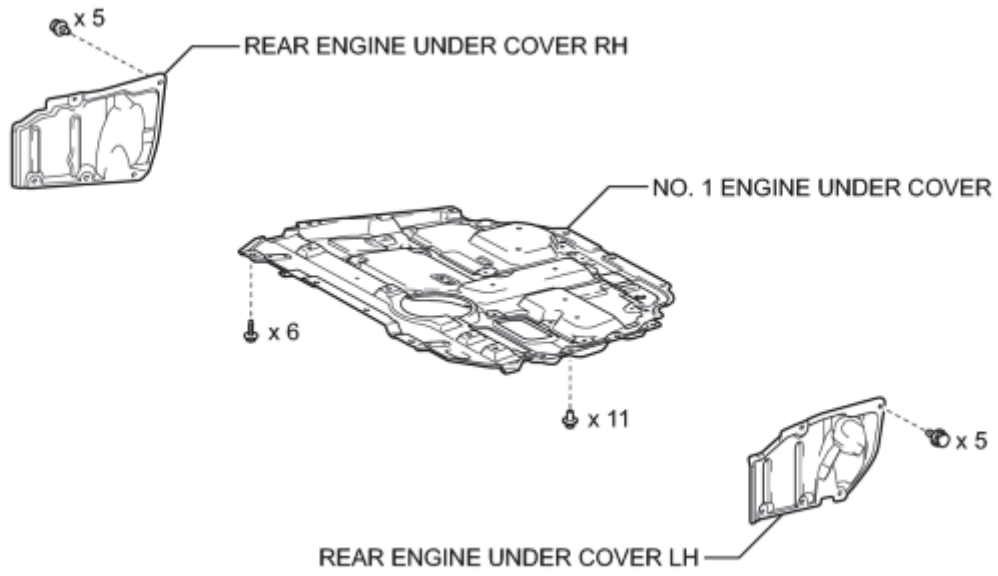
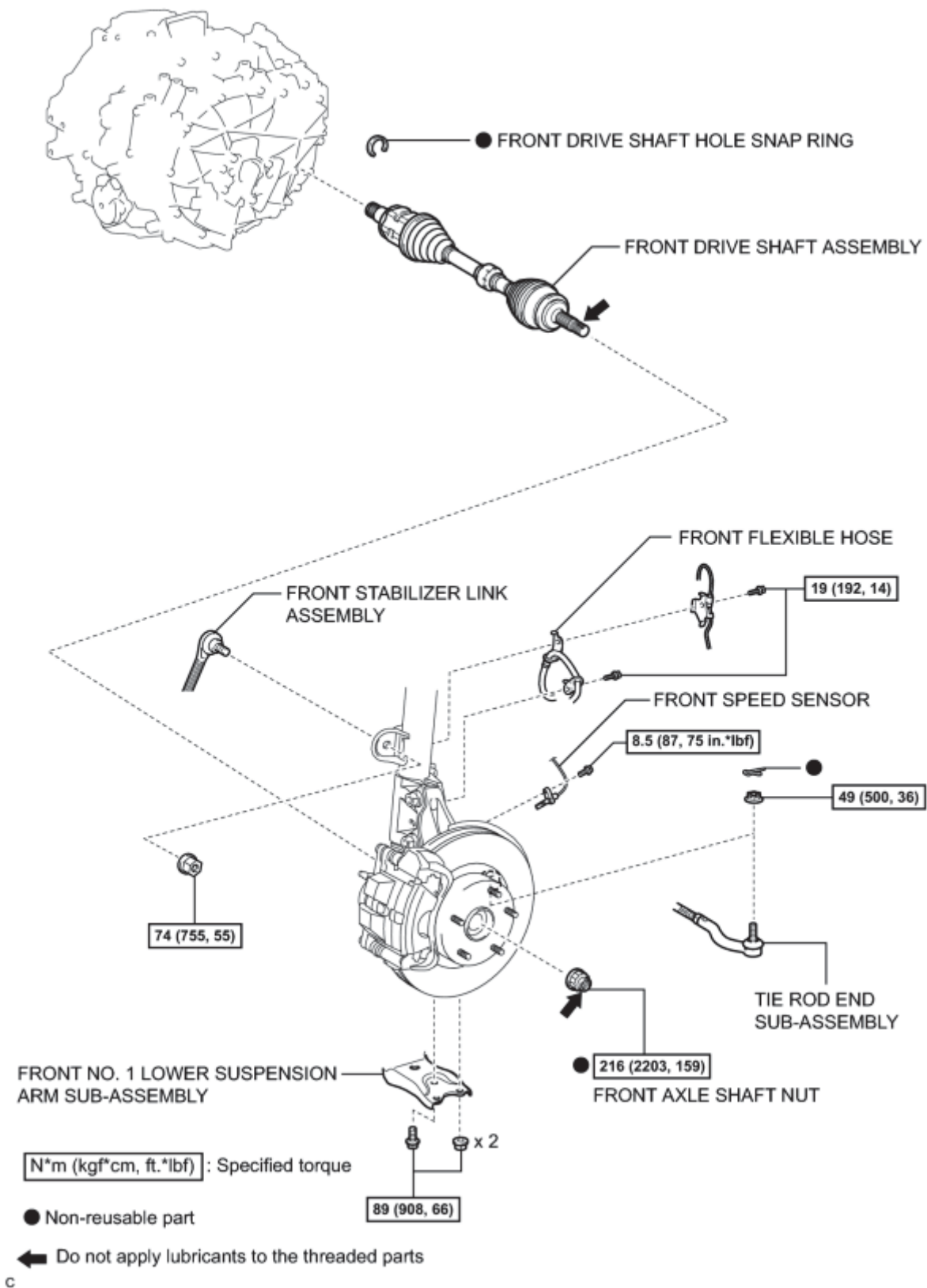


COMPONENTS

ILLUSTRATION

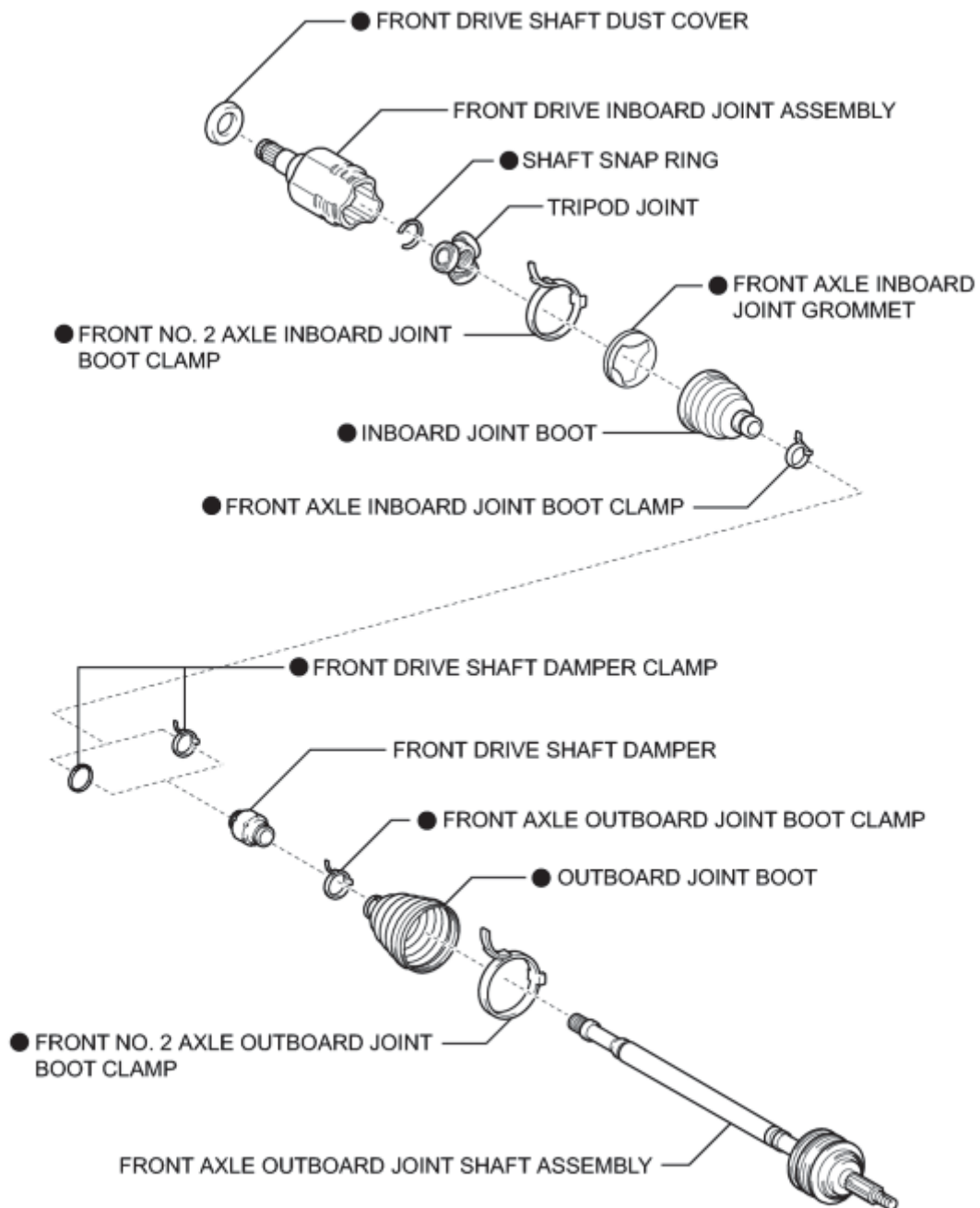


ILLUSTRATION



ILLUSTRATION

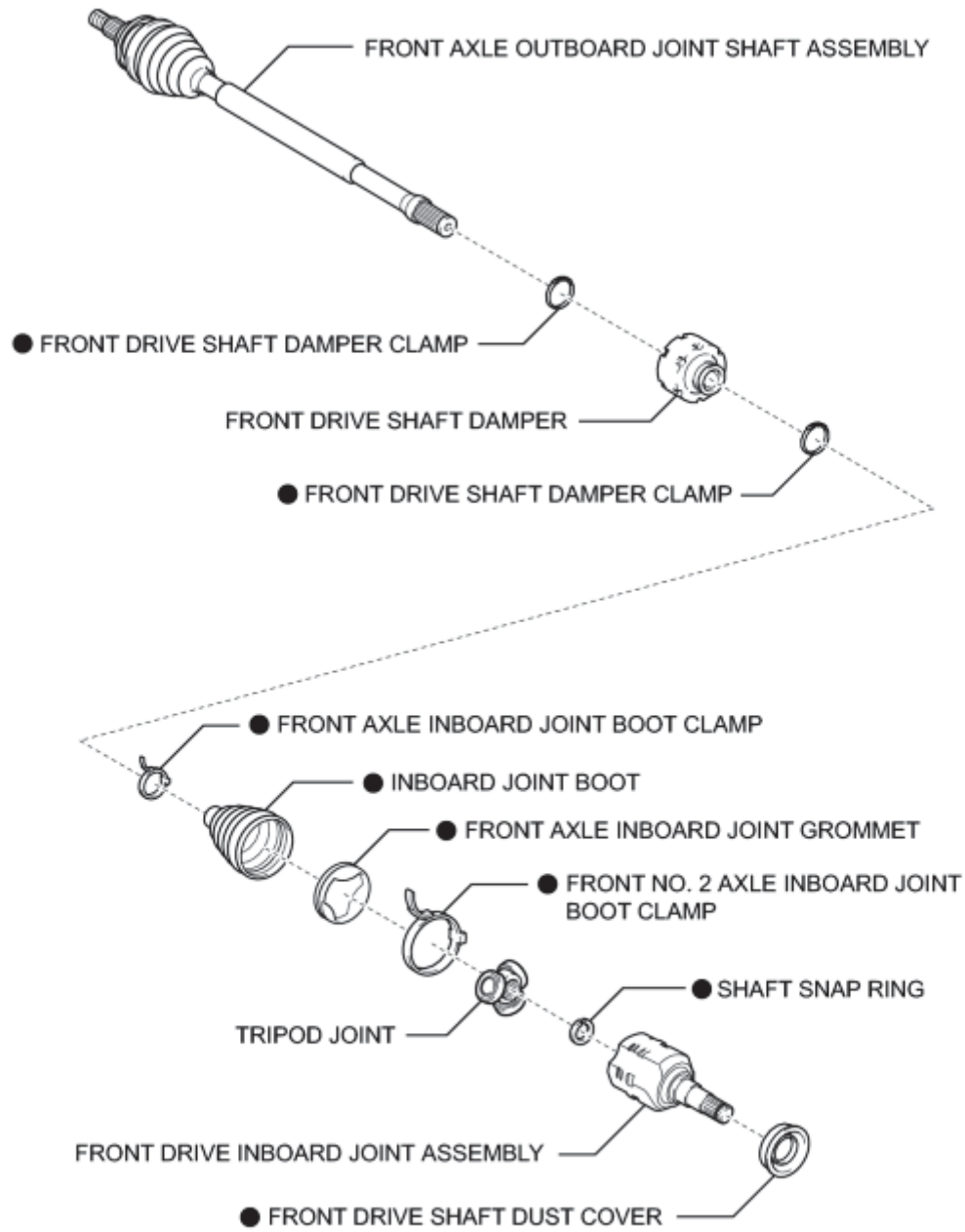
for LH Side:



● Non-reusable part

ILLUSTRATION

for RH Side:



● Non-reusable part

c

REMOVAL

HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. REMOVE FRONT WHEELS

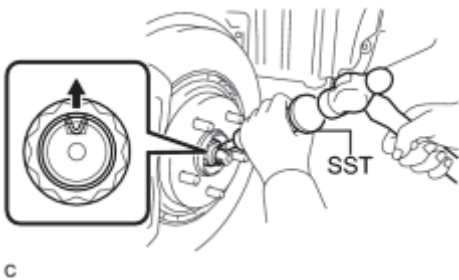
2. REMOVE NO. 1 ENGINE UNDER COVER

3. REMOVE REAR ENGINE UNDER COVER LH

4. REMOVE REAR ENGINE UNDER COVER RH

5. DRAIN HYBRID TRANSAXLE FLUID [INFO](#)

6. REMOVE FRONT AXLE SHAFT NUT



(a) Using SST and a hammer, release the staked part of the front axle shaft nut.

SST: 09930-00010

NOTICE:

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

(b) While applying the brakes, remove the front axle shaft nut.

7. SEPARATE FRONT SPEED SENSOR [INFO](#)

8. SEPARATE FRONT FLEXIBLE HOSE [INFO](#)

9. SEPARATE TIE ROD END SUB-ASSEMBLY [INFO](#)

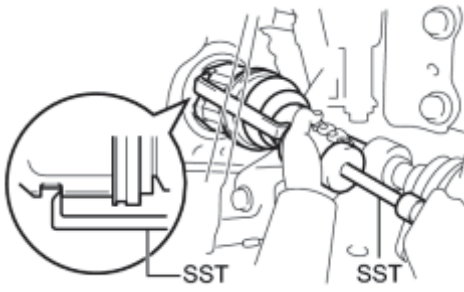
10. SEPARATE FRONT STABILIZER LINK ASSEMBLY [INFO](#)

11. SEPARATE FRONT NO. 1 LOWER SUSPENSION ARM SUB-ASSEMBLY [INFO](#)

12. SEPARATE FRONT DRIVE SHAFT ASSEMBLY [INFO](#)

13. REMOVE FRONT DRIVE SHAFT ASSEMBLY

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



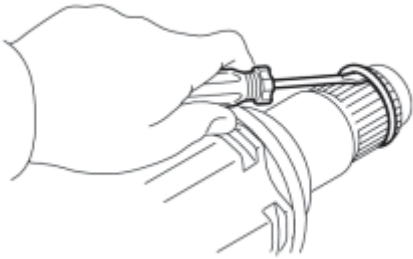
SST: 09520-00031

SST: 09520-01010

SST: 09521-00020

- Do not damage the transaxle case oil seal.
- Do not damage the inboard joint boot.
- Do not drop the front drive shaft assembly.

14. REMOVE FRONT DRIVE SHAFT HOLE SNAP RING

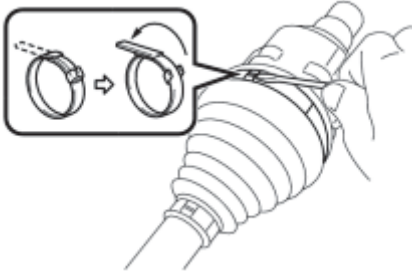


(a) Using a screwdriver, remove the front drive shaft hole snap ring.

T

DISASSEMBLY

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



(a) Using a screwdriver, release the staked part of the front No. 2 axle inboard joint boot clamp and separate the front No. 2 axle inboard joint boot clamp as shown in the illustration.

c

2. SEPARATE FRONT AXLE INBOARD JOINT BOOT CLAMP

HINT:

Perform the same procedure as for the front No. 2 axle inboard joint boot clamp.

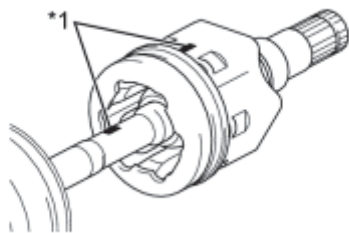
3. SEPARATE INBOARD JOINT BOOT

(a) Separate the inboard joint boot from the front drive inboard joint assembly.

4. REMOVE FRONT DRIVE INBOARD JOINT ASSEMBLY

(a) Remove the old grease from the front drive inboard joint assembly.

(b) Put matchmarks on the front drive inboard joint assembly and front axle outboard joint shaft assembly.



Text in Illustration

*1	Matchmark
----	-----------

NOTICE:

Do not punch the marks.

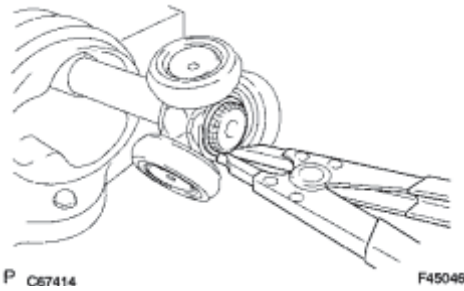
(c) Remove the front drive inboard joint assembly from the front axle outboard joint shaft assembly.

(d) Secure the front axle outboard joint shaft assembly in a vise using aluminum plates.

NOTICE:

Do not overtighten the vise.

(e) Using a snap ring expander, remove the shaft snap ring from the front

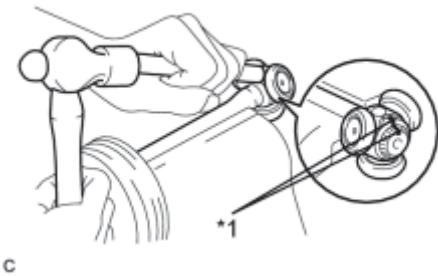


axle outboard joint shaft assembly.

(f) Put matchmarks on the front axle outboard joint shaft assembly and tripod joint.

Text in Illustration

*1	Matchmark
----	-----------



NOTICE:

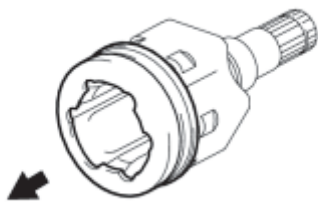
Do not punch the marks.

(g) Using a brass bar and a hammer, tap out the tripod joint from the front axle outboard joint shaft assembly.

NOTICE:

- Do not tap the rollers.
- Do not drop the tripod joint.

(h) Remove the front No. 2 axle inboard joint boot clamp, inboard joint boot and front axle inboard joint boot clamp.



(i) Remove the front axle inboard joint grommet from the front drive inboard joint assembly.

5. SEPARATE FRONT DRIVE SHAFT DAMPER CLAMP (for LH Side)

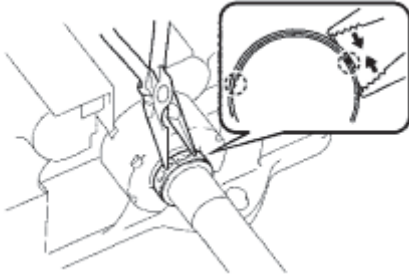
(a) for one touch type:

(1) Using a screwdriver, release the staked part of the front drive shaft damper clamp and separate the front drive shaft damper clamp as shown in the illustration.

for One Touch Type:



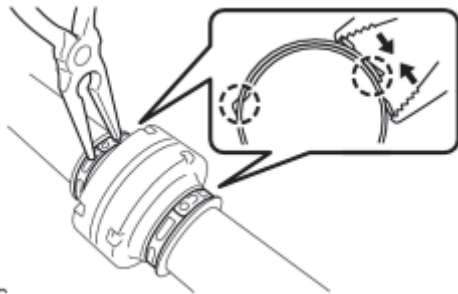
for Claw Engagement Type:



(b) for claw engagement type:

(1) Using needle-nose pliers, disengage the 2 claws and remove the front drive shaft damper clamp as shown in the illustration.

6. SEPARATE FRONT DRIVE SHAFT DAMPER CLAMP (for RH Side)



(a) Using needle-nose pliers, disengage the 2 claws on each front drive shaft damper clamp, and then remove each clamp as shown in the illustration.

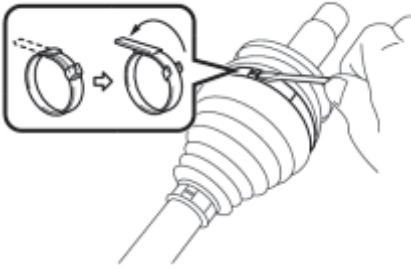
c

7. REMOVE FRONT DRIVE SHAFT DAMPER

(a) Remove the front drive shaft damper from the front axle outboard joint shaft assembly.

8. SEPARATE FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP (for LH Side)

(a) Using a screwdriver, release the staked part of the front No. 2 axle outboard joint boot clamp and separate the front No. 2 axle outboard joint boot clamp as shown in the illustration.



c

9. SEPARATE FRONT AXLE OUTBOARD JOINT BOOT CLAMP (for LH Side)

HINT:

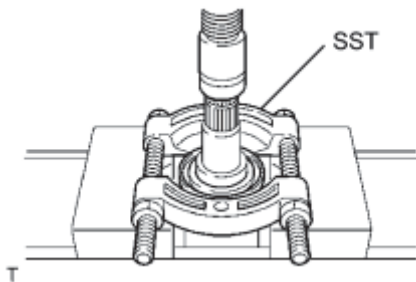
Perform the same procedure as for the front No. 2 axle outboard joint boot clamp.

10. REMOVE OUTBOARD JOINT BOOT (for LH Side)

(a) Remove the front axle outboard joint boot clamp, outboard joint boot and front No. 2 axle outboard joint boot clamp from the front axle outboard joint shaft assembly.

(b) Remove the old grease from the outboard joint.

11. REMOVE FRONT DRIVE SHAFT DUST COVER



(a) Using SST and a press, remove the front drive shaft dust cover from the front drive inboard joint assembly.

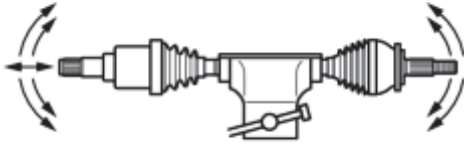
SST: 09950-00020

NOTICE:

Do not drop the front drive 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.

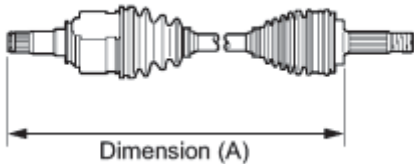
(d) Check the boots for damage.

NOTICE:

Keep the drive shaft assembly level during inspection.

HINT:

For dimensions (A), refer to the following values.

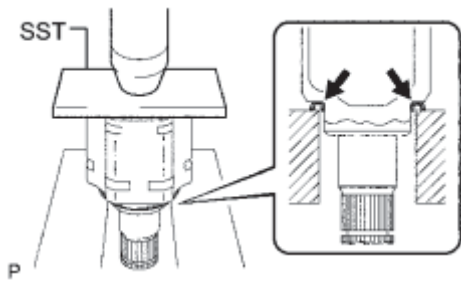


Dimension (A)

LH Side	RH Side
556.2 mm (1.82 ft.)	905.2 mm (2.96 ft.)

REASSEMBLY

1. INSTALL FRONT DRIVE SHAFT DUST COVER (for LH Side)

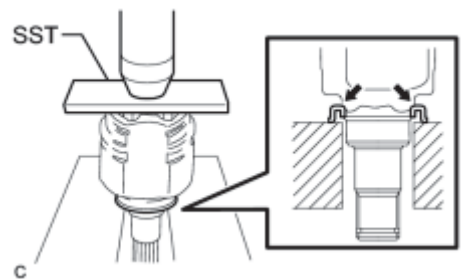


(a) Using SST and a press, install a new front drive shaft dust cover into the front drive inboard joint assembly until it is flush with the end.

SST: 09527-10011

- Install the front drive shaft dust cover in the correct direction.
- Do not deform the front drive shaft dust cover.

2. INSTALL FRONT DRIVE SHAFT DUST COVER (for RH Side)

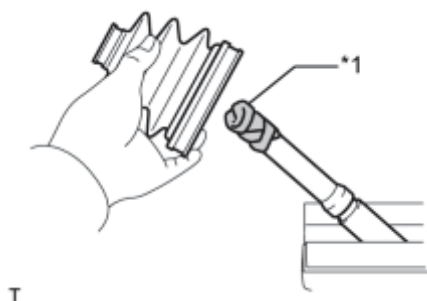


(a) Using SST and a press, install a new front drive shaft dust cover into the front drive inboard joint assembly until it is flush with the end.

SST: 09527-10011

- Install the front drive shaft dust cover in the correct direction.
- Do not deform the front drive shaft dust cover.

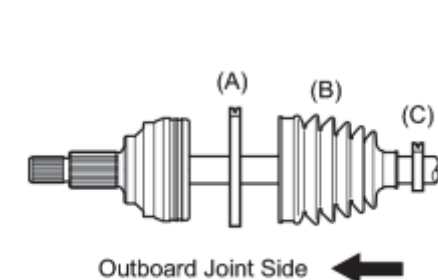
3. INSTALL OUTBOARD JOINT BOOT (for LH Side)



(a) Wrap the splines of the front axle outboard joint shaft assembly with protective tape to prevent the boot from being damaged.

Text in Illustration

*1	Protective Tape
----	-----------------



(b) Install new parts onto the front axle outboard joint shaft assembly in the following order:

- (1) Front No. 2 axle outboard joint boot clamp (A)
- (2) Outboard joint boot (B)
- (3) Front axle outboard joint boot clamp (C)

(c) Pack the joint portion of the front axle outboard joint shaft assembly and outboard joint boot with grease.

Standard grease capacity:

135 to 145 g (4.8 to 5.1 oz.)

(d) Install the outboard joint boot onto the front axle outboard joint shaft assembly groove.

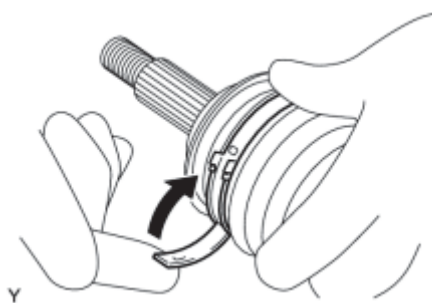
NOTICE:

- Do not allow grease to adhere to the boot clamp track of the outboard joint boot.
- Keep the inside of the outboard joint boot free of foreign matter.

4. INSTALL FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP (for LH Side)

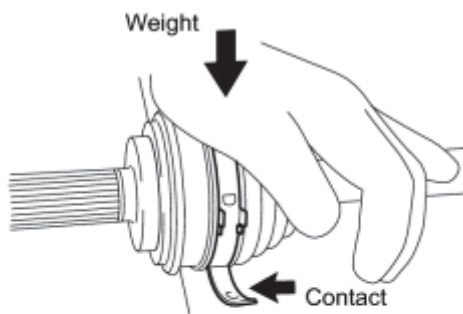
CAUTION:

Wear protective gloves. Sharp areas on the parts may injure your hands.



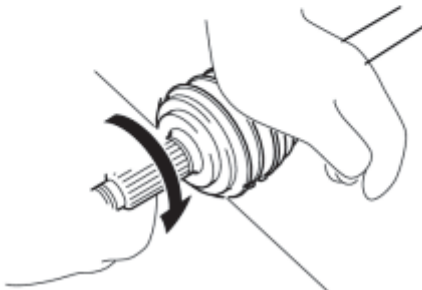
(a) Install the front No. 2 axle outboard joint boot clamp onto the outboard joint boot and temporarily fold back the lever.

- Set the lever into the guide groove correctly and install the clamp as far into the inside of the vehicle as possible.
- Check the band and the lever for any deformation before folding back the lever.



(b) Lean your weight on your hand and roll the outboard joint forward while pressing the outboard joint against the work plane. Roll the outboard joint and fold the lever until a click sound can be heard.

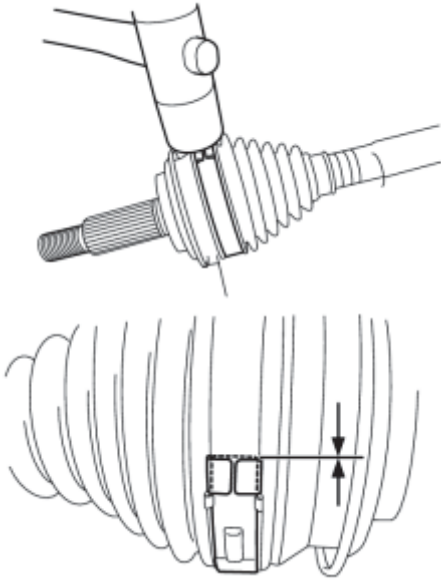
- Do not damage the deflector.
- Make sure that the outboard joint is in direct contact with the work plane.



(c) Using a plastic hammer, tap the buckle to secure it while adjusting the clearance between the lever and the groove to make the clearance between the buckle edge and the lever end even.

NOTICE:

Do not damage the outboard joint boot.



5. INSTALL FRONT AXLE OUTBOARD JOINT BOOT CLAMP (for LH Side)

CAUTION:

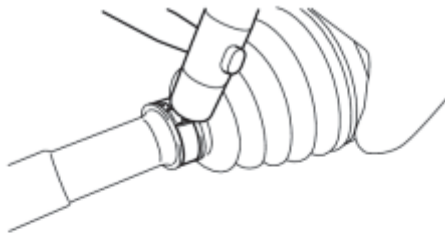
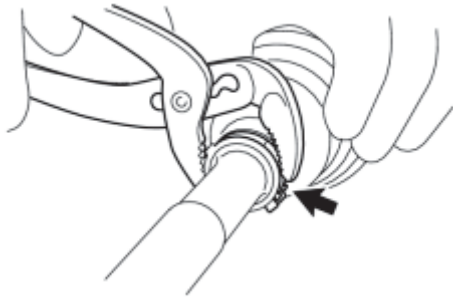
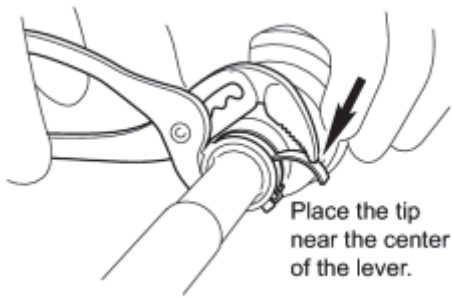
Wear protective gloves. Sharp areas on the parts may injure your hands.



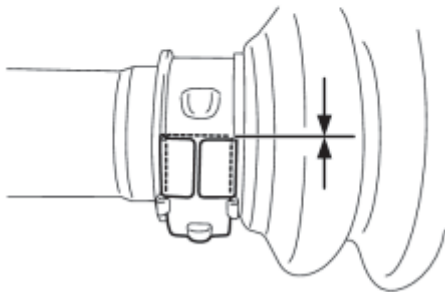
(a) Install the front axle outboard joint boot clamp onto the outboard joint boot and temporarily fold back the lever.

- Set the lever into the guide groove correctly.
- Check the band and the lever for any deformation before folding back the lever.

(b) Using water pump pliers, pinch the front axle outboard joint boot clamp to temporarily secure it.



(c) Using a plastic hammer, tap the buckle to secure it while adjusting the clearance between the lever and the groove to make the clearance between the buckle edge and the lever end even.

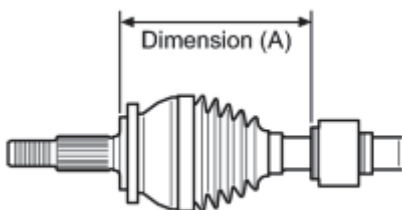


NOTICE:

Do not damage the outboard joint boot.

6. INSTALL FRONT DRIVE SHAFT DAMPER (for LH Side)

(a) Install the front drive shaft damper onto the front axle outboard joint shaft assembly as shown in the illustration.



HINT:

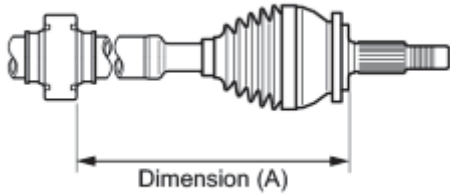
Make sure that the front drive shaft damper is on the shaft groove.

Dimension (A):

163 to 165 mm (6.42 to 6.49 in.)

7. INSTALL FRONT DRIVE SHAFT DAMPER (for RH Side)

(a) Install the front drive shaft damper onto the front axle outboard joint shaft assembly as shown in the illustration.



HINT:

Make sure that the front drive shaft damper is on the shaft groove.

Dimension (A):

460 to 462 mm (1.50 to 1.51 ft.)

8. INSTALL FRONT DRIVE SHAFT DAMPER CLAMP (for LH Side)

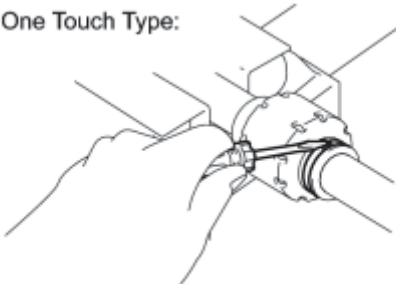
(a) Secure the front axle outboard joint shaft assembly in a vise using aluminum plates.

NOTICE:

Do not overtighten the vise.

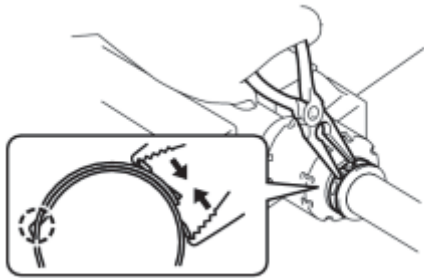
(b) for one touch type:

for One Touch Type:



(1) Using a screwdriver, install a new front drive shaft damper clamp, as shown in the illustration.

for Claw Engagement Type:



NOTICE:

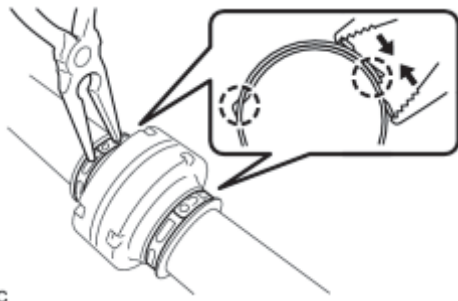
Do not damage the outboard joint boot.

(c) for claw engagement type:

(1) Using needle-nose pliers, install a new front drive shaft damper clamp, as shown in the illustration.

9. INSTALL FRONT DRIVE SHAFT DAMPER CLAMP (for RH Side)

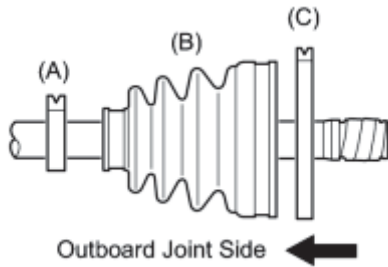
(a) Using needle-nose pliers, install 2 new front drive shaft damper



clamps, as shown in the illustration.

c

10. INSTALL FRONT DRIVE INBOARD JOINT ASSEMBLY



T

(a) Install new parts onto the front axle outboard joint shaft assembly in the following order:

- (1) Front axle inboard joint boot clamp (A)
- (2) Inboard joint boot (B)
- (3) Front No. 2 axle inboard joint boot clamp (C)

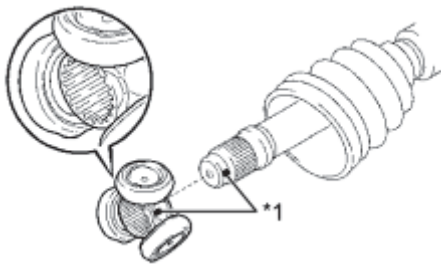
(b) Secure the front axle outboard joint shaft assembly in a vise using aluminum plates.

NOTICE:

Do not overtighten the vise.

(c) Remove the protective tape.

(d) Align the matchmarks and install the tripod joint onto the front axle outboard joint shaft assembly as shown in the illustration.



P

Text in Illustration

*1	Matchmark
----	-----------

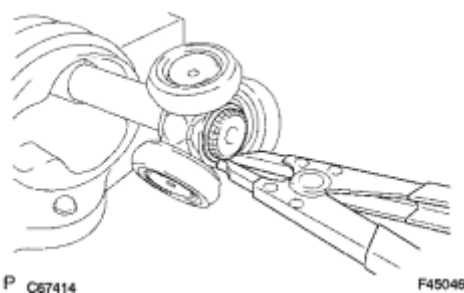
NOTICE:

Face the serrated side of the tripod joint outward and install it onto the outboard joint end.

(e) Using a brass bar and a hammer, install the tripod joint to the front axle outboard joint shaft assembly.

NOTICE:

- Do not tap the rollers.
- Keep the tripod joint free of foreign matter.



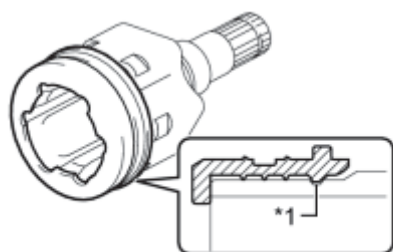
(f) Using a snap ring expander, install a new shaft snap ring to the front axle outboard joint shaft assembly.

(g) Pack the front drive inboard joint assembly and inboard joint boot with grease.

Standard grease capacity:

168 to 178 g (5.9 to 6.2 oz.)

(h) Install a new front axle inboard joint grommet onto the inboard joint groove.



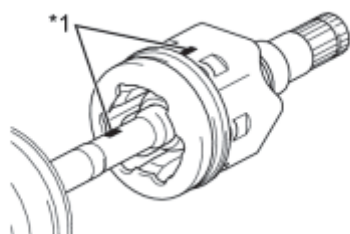
Text in Illustration

*1	Groove
----	--------

NOTICE:

Securely fit the protrusion on the inboard joint grommet into the inboard joint groove.

(i) Align the matchmarks and install the front drive inboard joint assembly onto the front axle outboard joint shaft assembly.



Text in Illustration

*1	Matchmark
----	-----------

11. INSTALL INBOARD JOINT BOOT

(a) Install the inboard joint boot into the grooves of the inboard joint grommet and inboard joint boot.

NOTICE:

Keep the grooves free of grease.

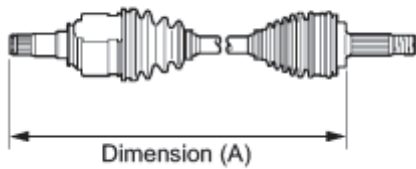
12. INSTALL FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP

CAUTION:

Wear protective gloves. Sharp areas on the parts may injure your hands.

(a) Install the boot clamp onto the inboard joint boot.

(b) Adjust dimension (A) until it is within the specified length.



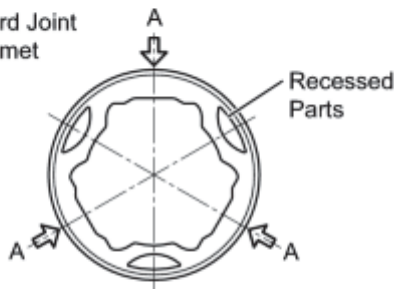
Dimension (A)

LH Side	RH Side
556.2 mm (1.82 ft.)	905.2 mm (2.96 ft.)

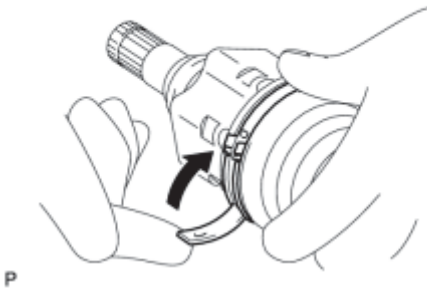
Boot Clamp



Inboard Joint Grommet



(c) While keeping dimension (A) within the specified length, put the inside of the inboard joint under atmospheric pressure by pulling the recessed parts on the inboard joint grommet out.

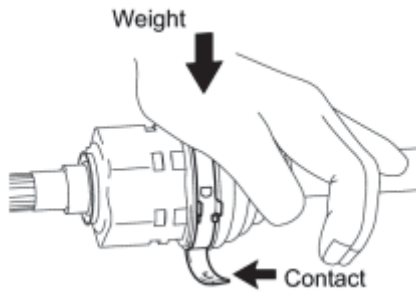


(d) Set the lever fulcrum point at any point A indicated in the illustration and temporarily bend the lever.

NOTICE:

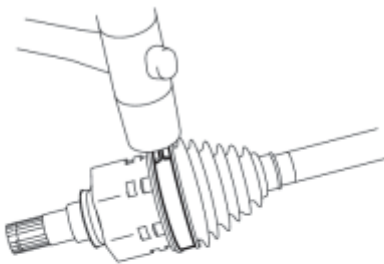
- Perform this work with the inside of the inboard joint kept at atmospheric pressure.
- Set the lever into the guide groove correctly and install the clamp as far into the inside of the vehicle as possible.
- Check the band and the lever for any deformation before folding back the lever.

(e) Lean your weight on your hand and roll the inboard joint forward while pressing the inboard joint against the work plane. Roll the inboard joint and fold the lever until a click sound can be heard.



NOTICE:

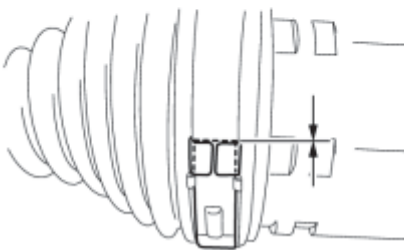
Make sure that the outboard joint is in direct contact with the work plane.



(f) Using a plastic hammer, tap the buckle to secure it while adjusting the clearance between the lever and the groove to make the clearance between the buckle edge and the lever end even.

NOTICE:

Do not damage the inboard joint boot.



13. INSTALL FRONT AXLE INBOARD JOINT BOOT CLAMP

CAUTION:

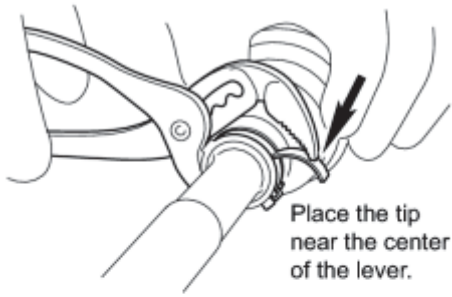
Wear protective gloves. Sharp areas on the parts may injure your hands.

(a) Install the front axle inboard joint boot clamp onto the inboard joint boot and temporarily fold back the lever.

- Set the lever into the guide groove correctly.
- Check the band and the lever for any deformation before folding back the lever.

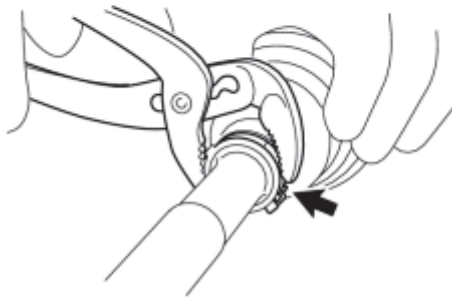


Y

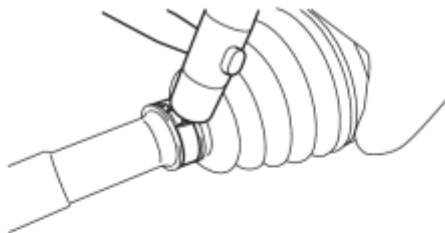


Place the tip near the center of the lever.

(b) Using water pump pliers, pinch the front axle outboard joint boot clamp to temporarily secure it.

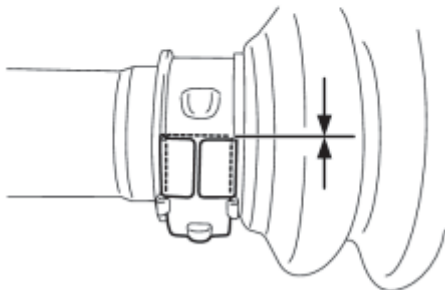


(c) Using a plastic hammer, tap the buckle to secure it while adjusting the clearance between the lever and the groove to make the clearance between the buckle edge and the lever end even.



NOTICE:

Do not damage the inboard joint boot.



14. INSPECT FRONT DRIVE SHAFT ASSEMBLY INFO

INSTALLATION

1. INSTALL FRONT DRIVE SHAFT HOLE SNAP RING

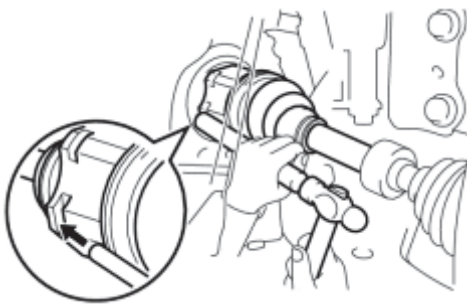
(a) Install a new front drive shaft hole snap ring to the front drive inboard joint assembly.

HINT:

Face the end gap of the front drive inboard joint hole snap ring downward.

2. INSTALL FRONT DRIVE SHAFT ASSEMBLY

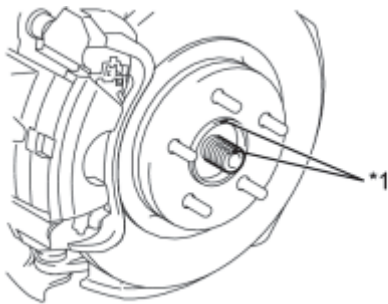
(a) Align the inboard joint splines, and using a brass bar and a hammer, install the front drive shaft assembly.



- Face the end gap of the front drive shaft hole snap ring downward.
- Do not damage the transaxle case oil seal.
- Do not damage the inboard joint boot.
- Make sure to center the front drive shaft assembly during installation to prevent damage to the front drive shaft hole snap ring.

HINT:

Confirm whether the drive shaft is securely driven in by checking the reaction force and sound.



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

Text in Illustration

*1	Matchmark
----	-----------

3. CONNECT FRONT NO. 1 LOWER SUSPENSION ARM SUB-ASSEMBLY INFO

4. CONNECT FRONT STABILIZER LINK ASSEMBLY INFO

5. CONNECT TIE ROD END SUB-ASSEMBLY INFO

6. INSTALL FRONT FLEXIBLE HOSE INFO

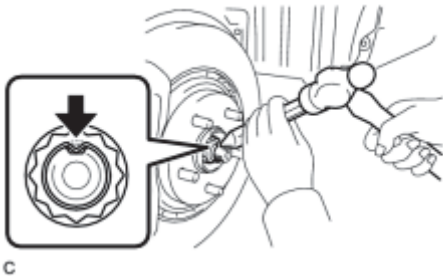
7. CONNECT FRONT SPEED SENSOR INFO

8. INSTALL FRONT AXLE SHAFT NUT

(a) Clean the threaded parts on the drive shaft and a new axle shaft nut using a non-residue solvent.

HINT:

- Be sure to perform this work even when using a new drive shaft.
- Keep the threaded parts free of oil and foreign matter.



(b) Using a socket wrench (30 mm), install the axle shaft nut.

Torque: **216 N·m (2203 kgf·cm, 159ft·lbf)**

(c) Using a chisel and hammer, stake the front axle shaft nut.

9. ADD HYBRID TRANSAXLE FLUID INFO

10. INSPECT HYBRID TRANSAXLE FLUID INFO

11. INSTALL FRONT WHEELS

Torque: **103 N·m (1050 kgf·cm, 76ft·lbf)**

12. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

HINT: INFO.

13. INSTALL REAR ENGINE UNDER COVER LH

14. INSTALL REAR ENGINE UNDER COVER RH

15. INSTALL NO. 1 ENGINE UNDER COVER

16. INSPECT SPEED SENSOR SIGNAL

HINT: INFO.

PRECAUTION

1. PRECAUTION FOR DISCONNECTING THE CABLE FROM THE NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable from the negative (-) battery terminal, initialize the following system after the cable is reconnected:

System	See Procedure
Advanced Parking Guidance System	

2. NOTICE FOR HYBRID SYSTEM ACTIVATION

(a) When the warning light is illuminated or the battery has been disconnected and reconnected, pressing the power switch may not start the system on the first try. If so, press the power switch again.

3. CAN COMMUNICATION SYSTEM PRECAUTIONS

(a) The CAN communication system is used for data communication between the transmission control ECU assembly, the power management control ECU and other ECUs. If there are any problems in the CAN communication lines, corresponding DTCs for the communication lines are output.

(b) If any CAN communication line DTCs are output, repair the malfunction in the communication lines and troubleshoot the electronic shift lever system after data communication becomes normal.

4. LIN COMMUNICATION SYSTEM PRECAUTIONS

(a) The LIN communication system is used for data communication between the transmission control ECU assembly, the certification ECU and other ECUs. If there are any problems in the LIN communication lines, the P position cannot be disengaged.

(b) If any LIN communication line DTCs are output, repair the malfunction in the communication lines and troubleshoot the electric shift lever system after data communication becomes normal.

5. DTC PRECAUTION

(a) It is not possible to clear the following DTCs using the Techstream: DTC C2300 (Actuator System Malfunction), C2301 (Shift Changing Time Malfunction), C2303 (Short in Power Source Relay Circuit), C2304 (Open or Short Circuit in U Phase), C2305 (Open or Short Circuit in V Phase), C2306 (Open or Short Circuit in W Phase), C2307 (Power Supply) and C2309 (Open in B+ Circuit). After the repair, it is necessary to disconnect the P CON MAIN fuse and wait for at least 60 seconds to clear the DTCs.