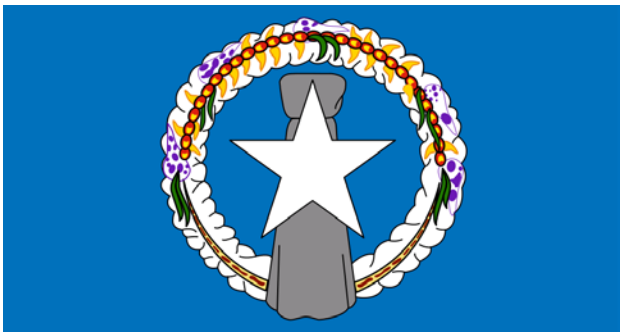
CAMPAIGN IS ONLY APPLICABLE IN GUAM AND SAIPAN



TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL E06

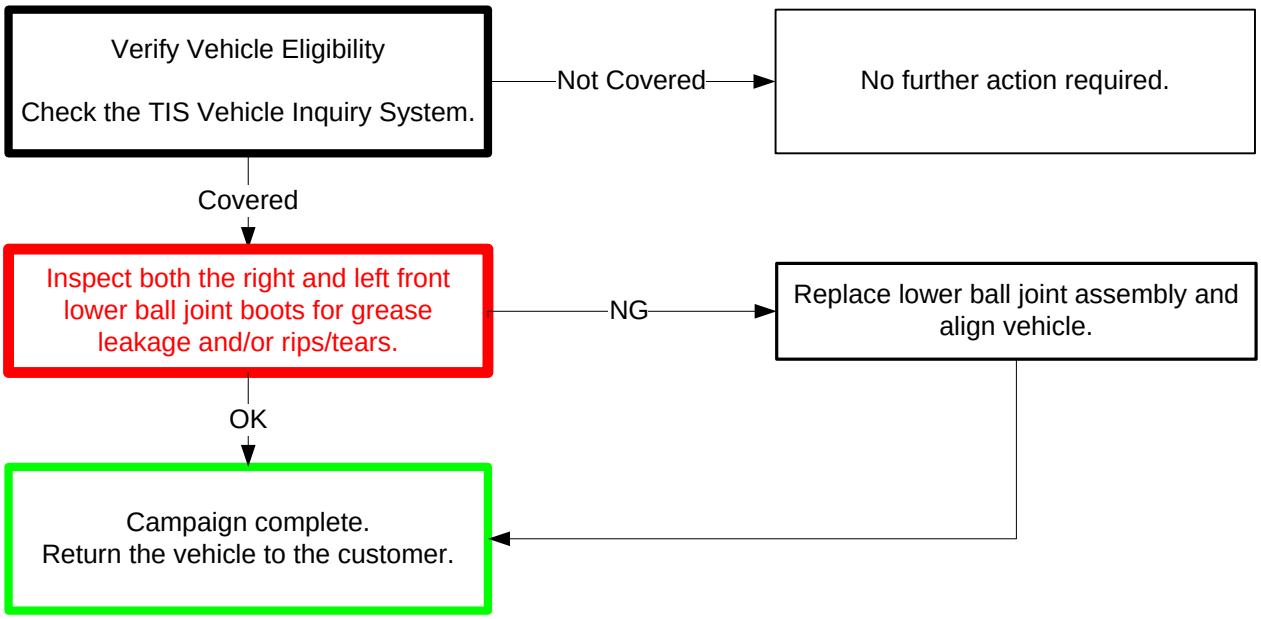
FRONT SUSPENSION LOWER BALL JOINT BOOT LEAK

CERTAIN 2011 - 2013 MODEL YEAR CAMRY

All dealership associates involved in the recall process are required to successfully complete E-Learning course SC13A. To ensure that all vehicles have the repair performed correctly; technicians performing this recall repair are required to currently hold at least one of the following certifications levels:

- **Toyota Certified (any classifications)**
- **Toyota Expert (any classifications)**
- **Master**
- **Master Diagnostic Technicians**

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

A. COVERED VIN RANGE

- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety (Noncompliance) Recall, and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

III. PREPARATION

A. PARTS

The following parts will not be required for every car and should only be ordered based on inspection results.

Part Number	Part Description	Quantity
04004-64133	Front Lower Ball Joint Assembly Kit, RH	1

Part Description	Quantity
Front Lower Ball Joint Assembly, RH	1
Castle Nut	1
Cotter Pin	1

Part Number	Part Description	Quantity
04004-64233	Front Lower Ball Joint Assembly Kit, LH	1

Part Description	Quantity
Front Lower Ball Joint Assembly, LH	1
Castle Nut	1
Cotter Pin	1

Part Number	Part Description	Quantity
90177-22001	Front Axle Shaft Nut	2

B. TOOLS & EQUIPMENT

- Standard hand tools
- Flashlight
- Torque wrench
- Deep socket wrench 30mm
- 19mm Ball Joint Lock Nut Wrench or Equivalent

SPECIAL SERVICE TOOLS – These are essential service tools your dealership should have.

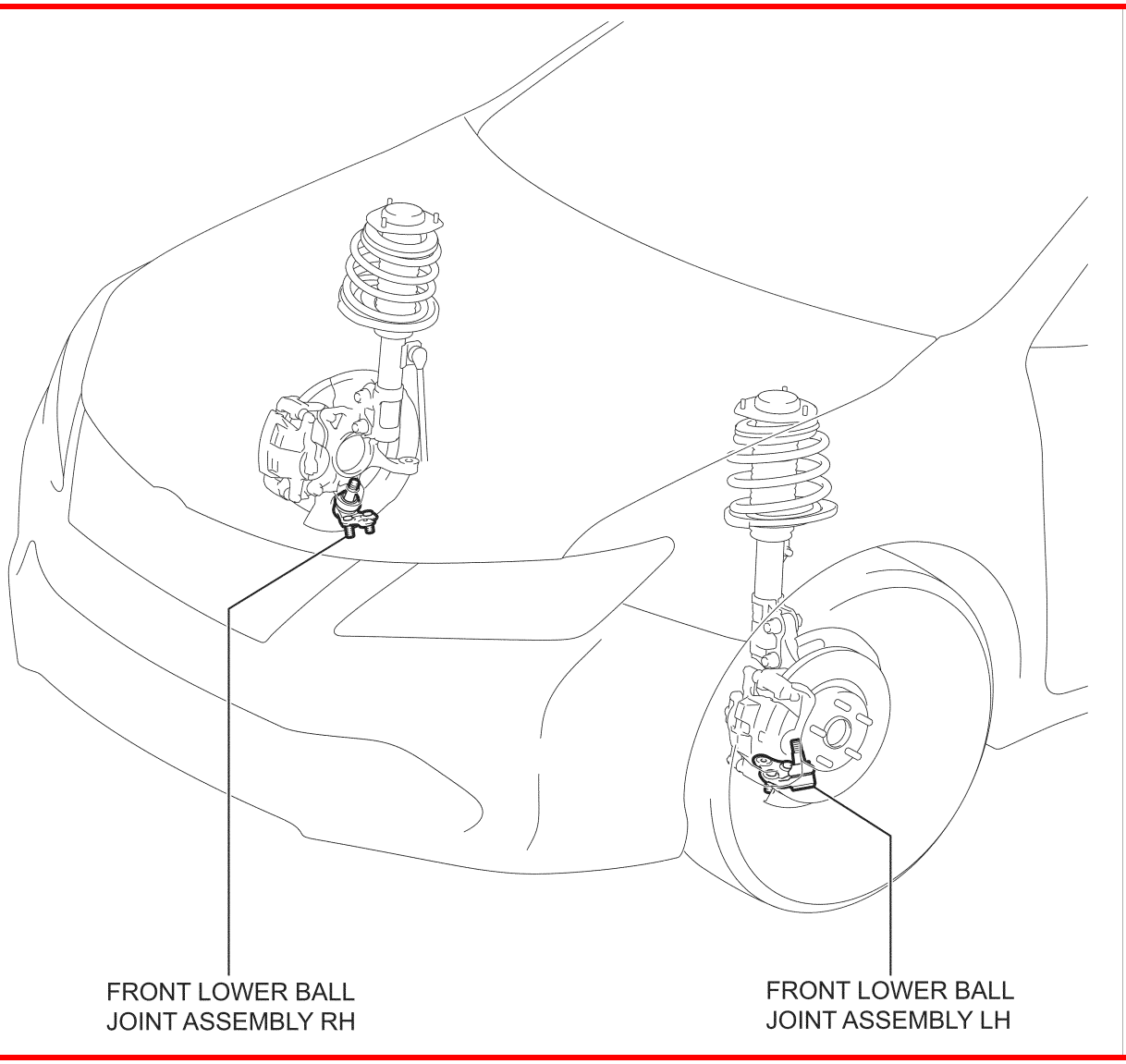
Part Number	Tool Description	Quantity
09930-00010	Drive Shaft Nut Chisel	1
09960-20010	Ball Joint Puller	1

C. MATERIALS

- Work Gloves
- Tape
- Shop Cloth
- String

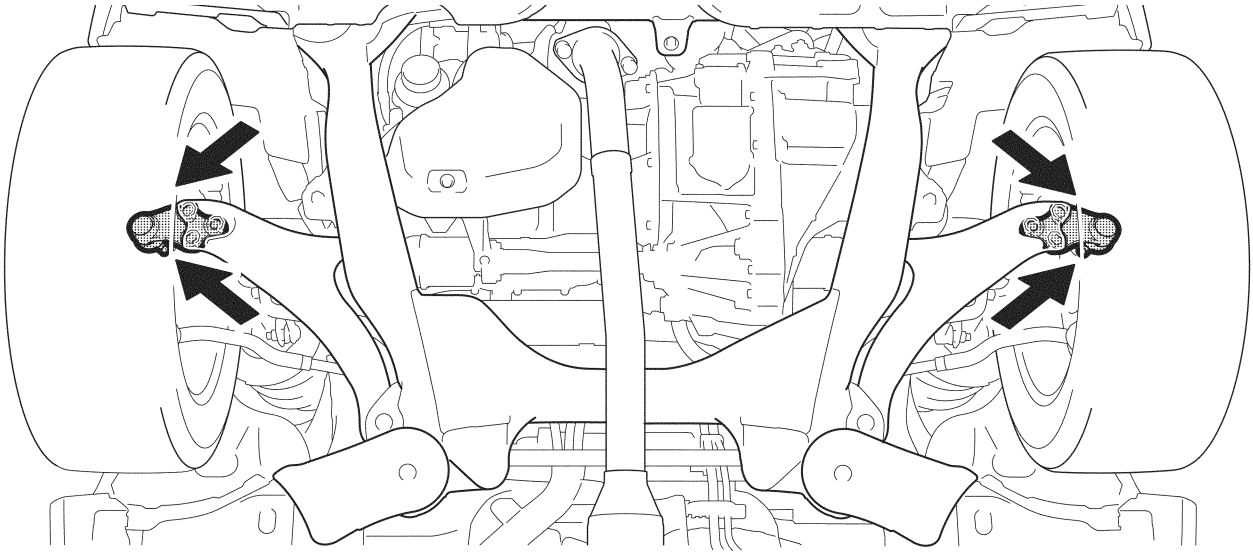
IV. BACKGROUND

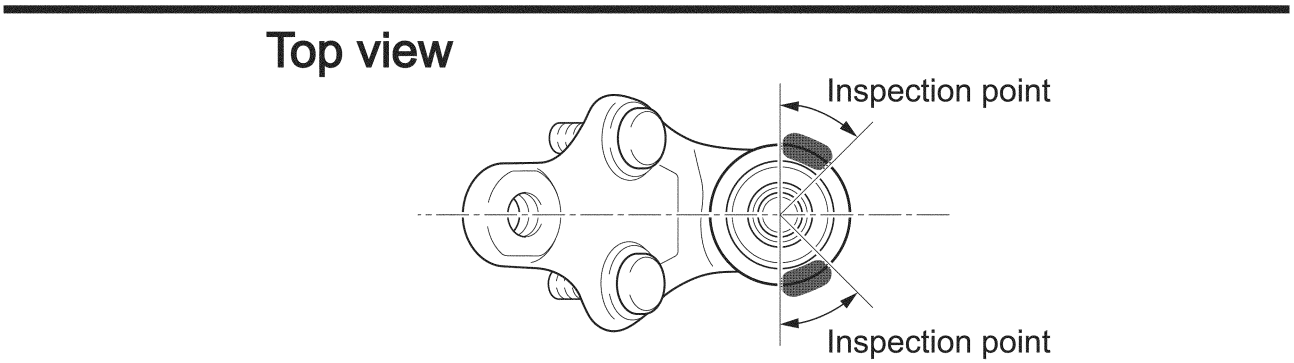
The front suspension system contains a lower ball joint which connects the front suspension lower arm to the knuckle arm. In the assembly process, the rubber boot on the ball joint could have been damaged by insufficiently maintained equipment. If the rubber boot is damaged, lubricant grease inside the ball joint could leak from the damaged boot, causing the ball joint to wear and loosen prematurely. If the vehicle is continuously operated in this condition, the lower ball joint may separate from the knuckle and could cause a loss of vehicle control, increasing the risk of a crash.

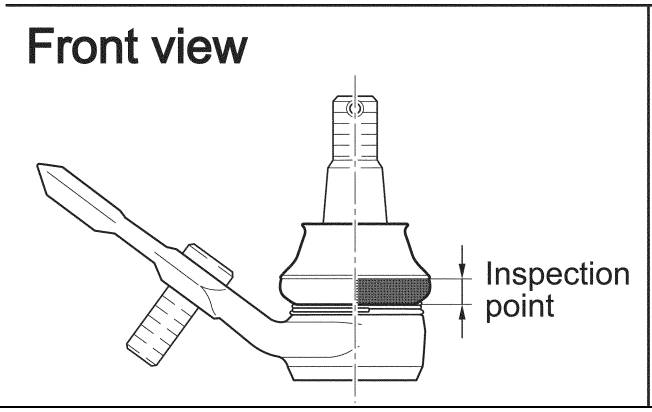


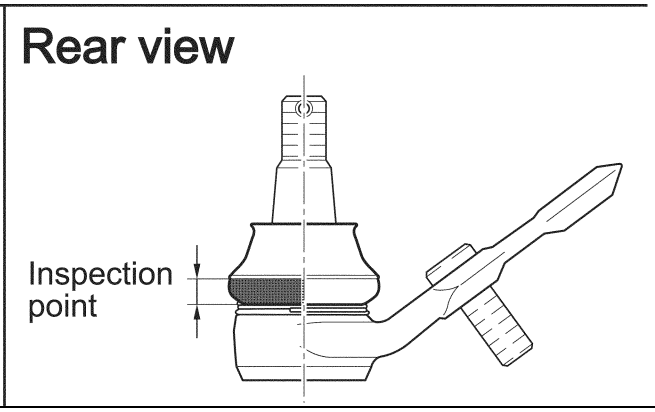
V. FRONT LOWER BALL JOINT INSPECTION PROCEDURE

1. INSPECT THE LEFT AND RIGHT BALL JOINTS AT THE POINTS IDENTIFIED BELOW









2. INSPECT THE BALL JOINT BOOTS FOR GREASE OOZING OR LEAKAGE

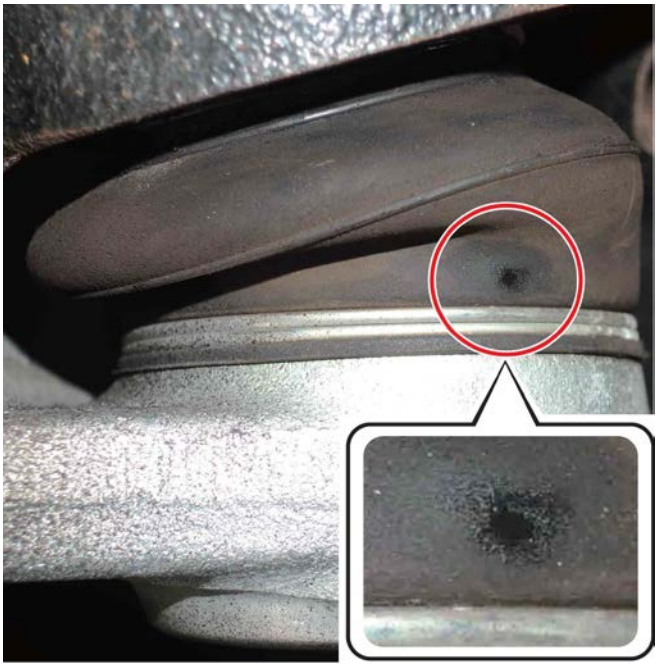
a) Turn the wheels left and right to gain access for the ball joint boot inspection.
b) Inspect the locations identified for grease oozing or leakage on the left and right ball joint.

NG: Proceed to section VI for ball joint assembly replacement.

OK: Continue with inspection below.

Note: If the inspection is too difficult due to dirt proceed to the next inspection step.

NG Condition



NG Condition

3. INSPECT THE BALL JOINT BOOTS FOR CRACKS OR TEARS

a) Remove the dirt from the boot using a shop cloth.
b) Carefully inspect the boot inspection point below for cracking.

NG: Proceed to section VI for ball joint assembly replacement.

OK: Continue with inspection below.

NG Condition

OK Condition

NO cracking on the boot

VI. BALL JOINT REPLACEMENT WORK PROCEDURE

1. REMOVE THE FRONT LOWER BALL JOINT ASSEMBLY

a) Remove the front wheel.

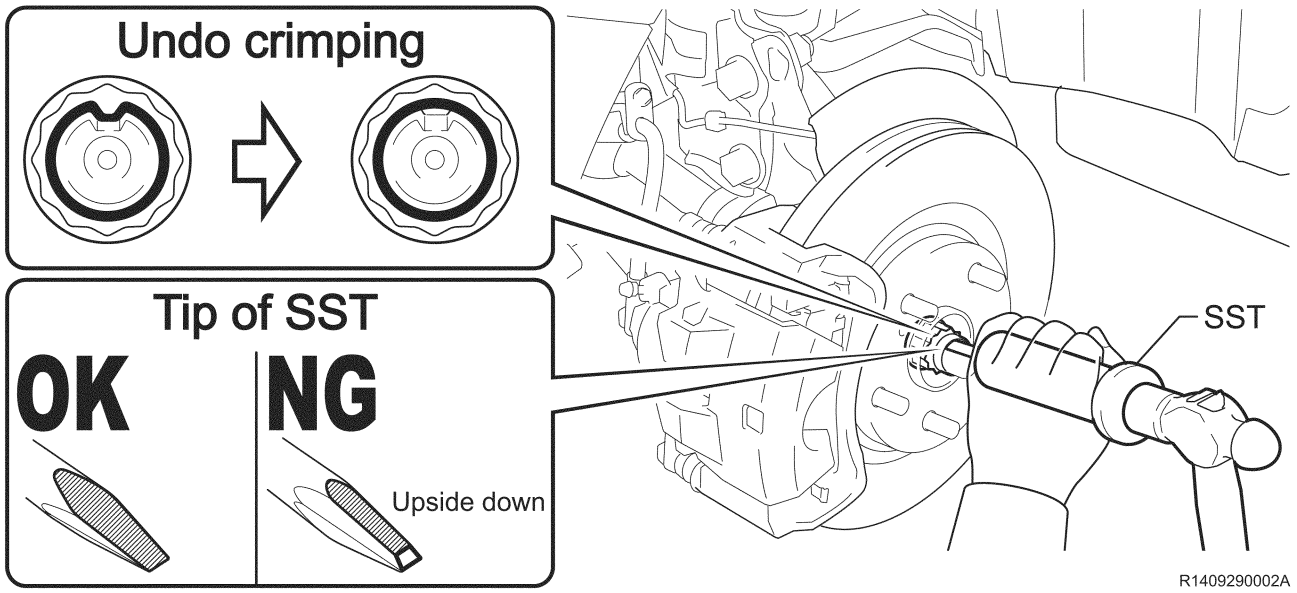
b) Remove the front axle nut (Work with assistant)

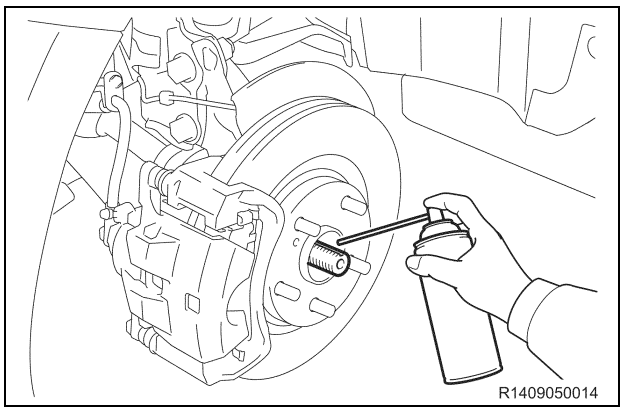
1. Insert the SST into the groove on the tip of drive shaft. Undo the crimping of the shaft nut.

   SST 09930-00010

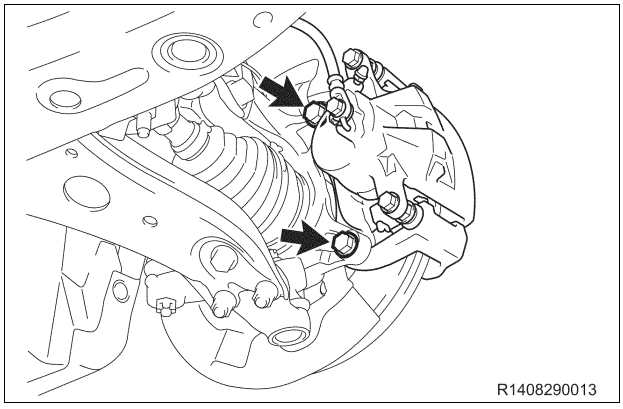
   Note:
   - **Do not grind down the tip of the SST, or strength of the SST decreases.**
   - **Note that the tip of the SST has directivity.**
   - **Undo the crimping completely, or threads may be broken during removal of the nut.**
   - **Do not use an impact wrench.**

2. While an assistant is holding the steering wheel and pressing the brake pedal, remove the nut using a deep socket wrench 30 mm.
3. Discard the removed axle nut to ensure it does not get reused.





c) Apply lubricant onto the axle as shown in the illustration to help with the removal of the drive shaft.

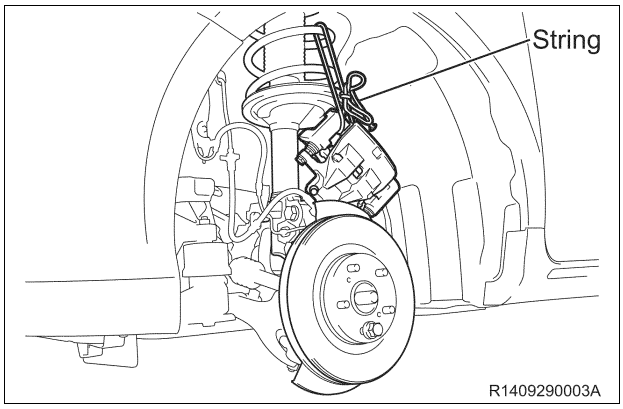


d) Remove the front brake caliper.

1. Temporarliy install the front hub nut.

Note: Install the hub nut to stop the rotor from falling off during this step.

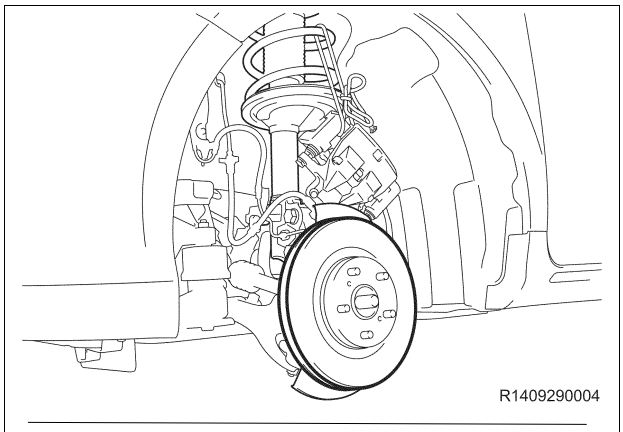
2. Remove the two bolts and disconnect the caliper.



e) Hang the removed caliper from the strut as shown.

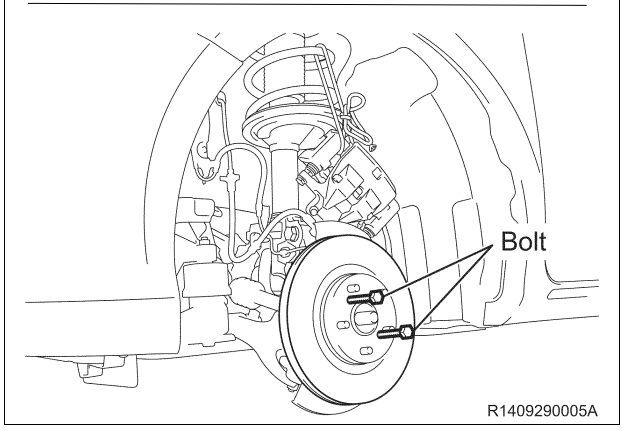
Note: Ensure not to place strain on the brake line.

f) Remove the hub nut.

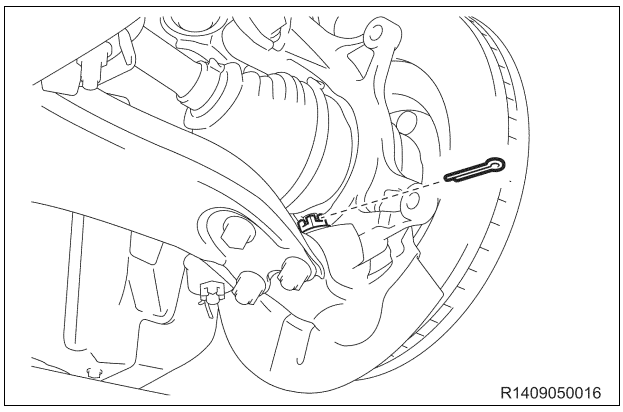


g) Remove the front brake rotor.

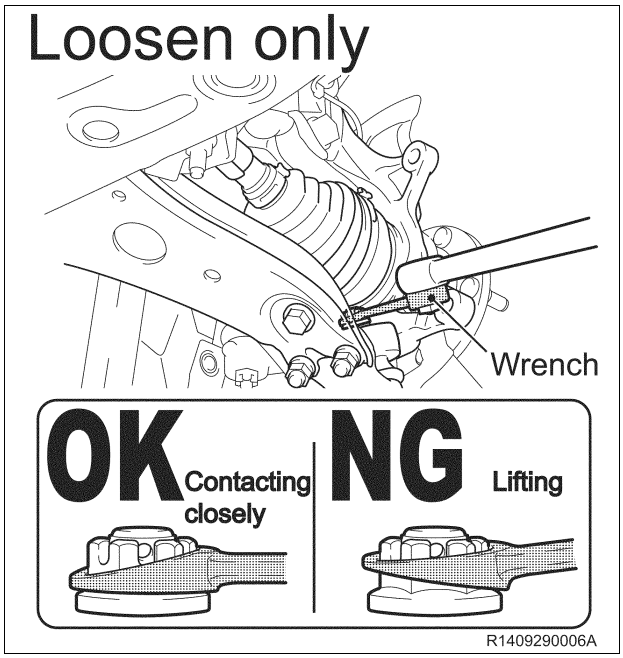
Note: DO NOT hit the rotor with a hammer during removal.



Note: If the rotor is stuck, use M8 x P1.25 mm bolts to apply pressure to the hub as shown

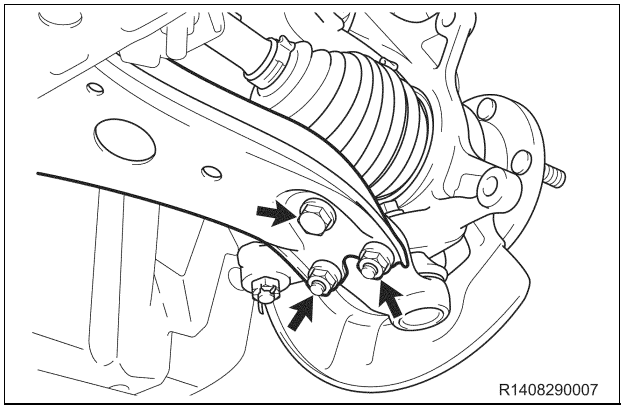


h) Remove the cotter pin and throw it away so it will not be reused.

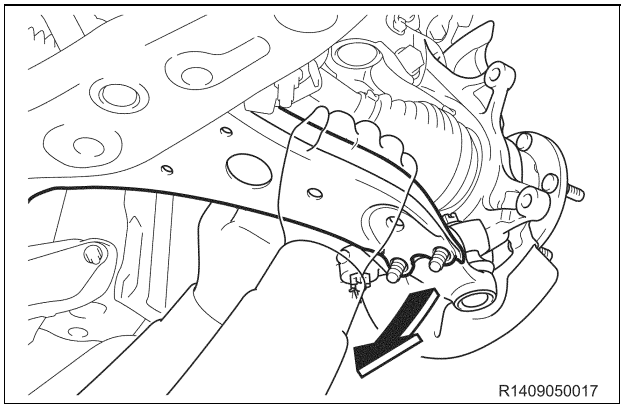


i) Using a 19mm ball joint nut wrench or equivalent loosen the ball joint castle nut.

Note: When using a ball joint nut wrench ensure that you use it in the correct direction, otherwise the wrench can break.

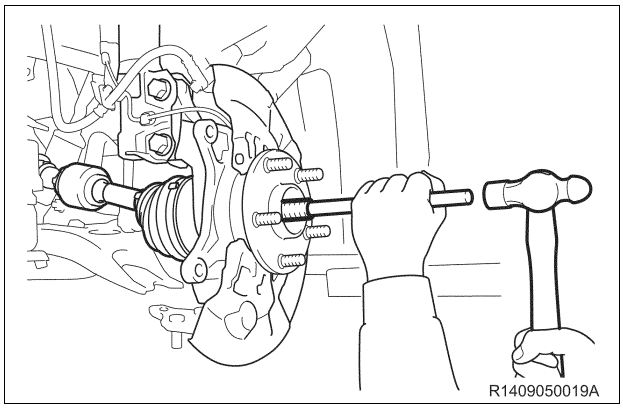


j) Remove the bolt and 2 nuts and disconnect the lower no.1 suspension arm sub-assembly (work with an assistant).



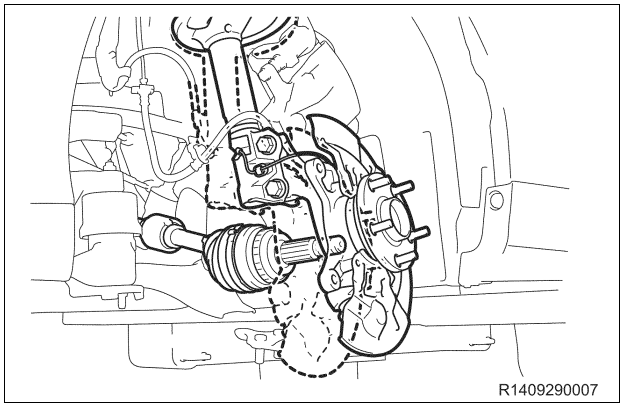
k) Using an assistant pull down on the lower no.1 suspension arm assembly and separate the ball joint from the suspension arm.

NOTE: Take care not to pinch your fingers.



l) Remove the drive shaft assembly from the hub using a brass bar and hammer.

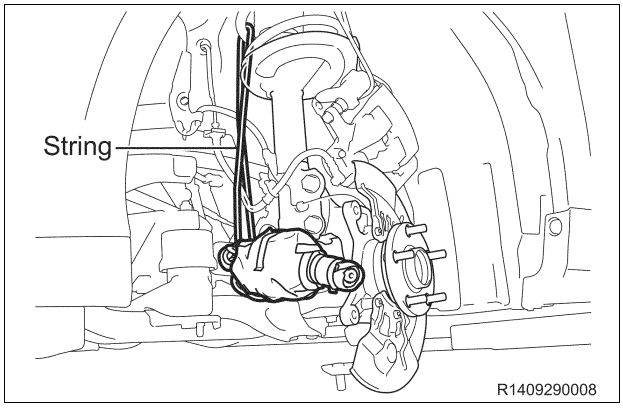
Note: Do not hit the axle directly with a hammer.



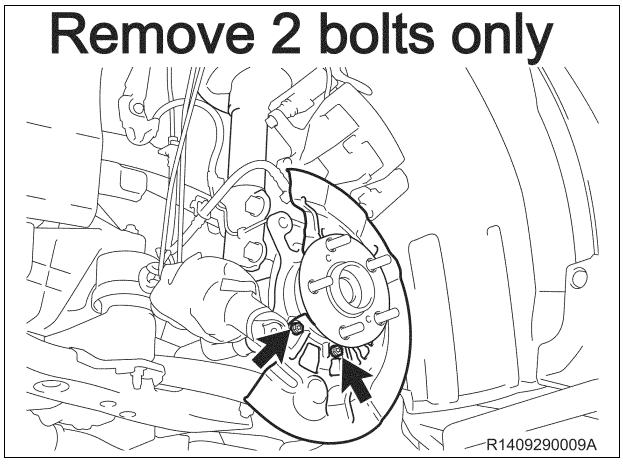
m) Working with an assistant pull the hub assembly outward to separate the shaft from the hub.

Note:

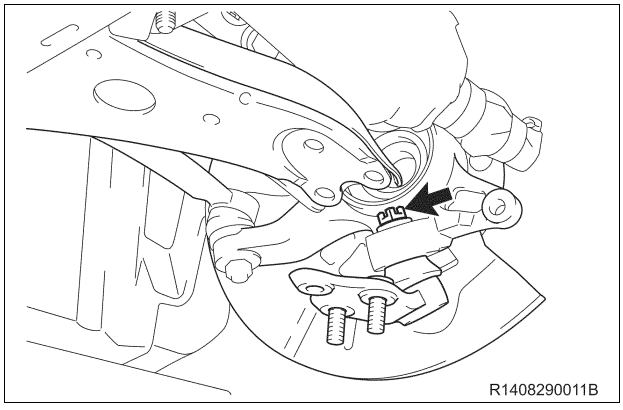
- **Do not pull the axle outward excessively**
- **Use care not to damage the drive shaft or speed sensor rotor**
- **Do not apply excessive force to the joint.**



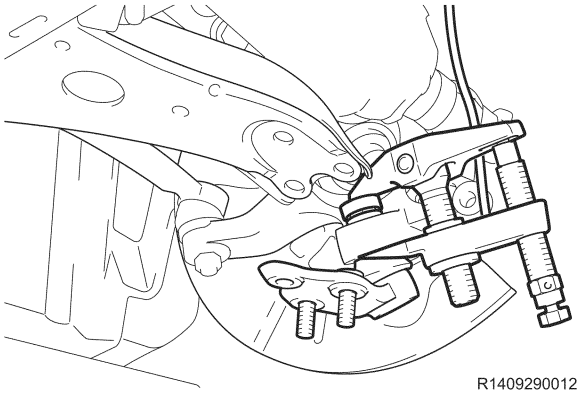
n) Cover the drive shaft with a shop cloth to prevent damage.
o) Hang the drive shaft out of the way with string as shown.



p) Remove the 2 bolts of the dust cover so it can be moved.



q) Remove the castle nut and dispose of it to ensure it is not reused.



R1409290012

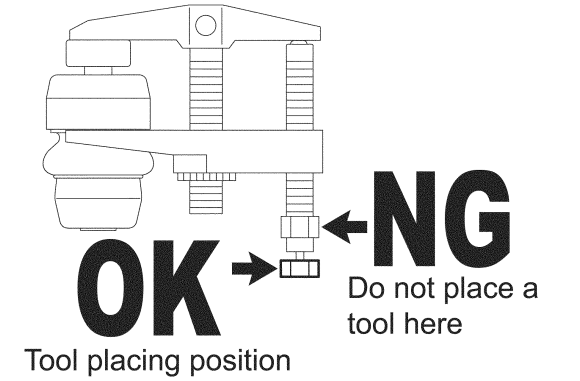
r) Using the ball joint puller, remove the ball joint from spindle.

SST 09930-00010

1. Apply grease to the ball joint puller threads.
2. Place the SST so that it is flush with the end of the bolt head.
3. Tie the SST to the vehicle with its supplied rope.

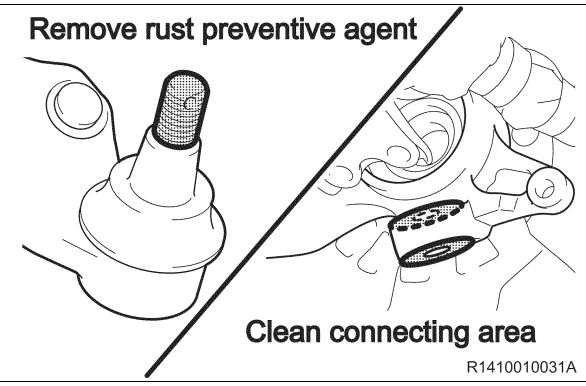
Note: DO NOT use an impact gun on the puller.

s) Dispose of the old ball joint to ensure that it is not reused.



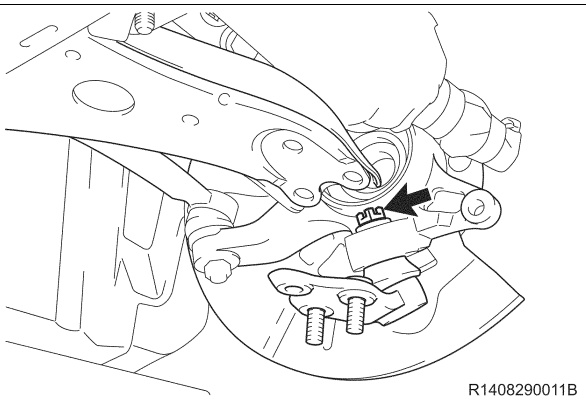
R1409170001A

2. BALL JOINT ASSEMBLY INSTALLATION WORK PROCEDURE



R1410010031A

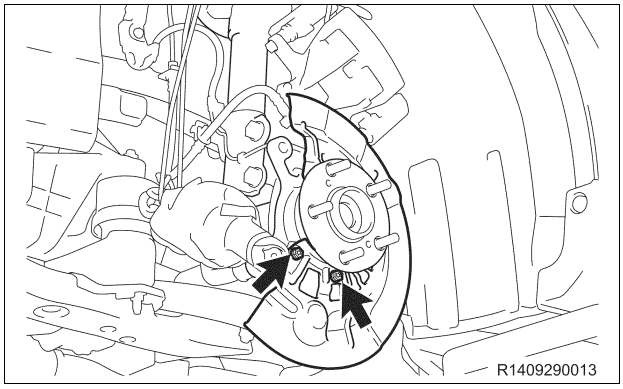
a) Clean the ball joint connecting area and remove the ***NEW*** ball joint assembly rust preventative agent with a shop cloth and brake clean.



R1408290011B

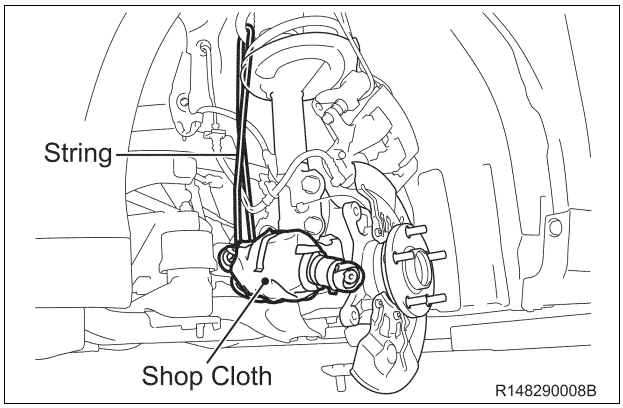
b) Temporarely install the ***NEW*** ball joint with the castle nut.

Note: The right and left ball joints differ in shape ensure you install the correct side.

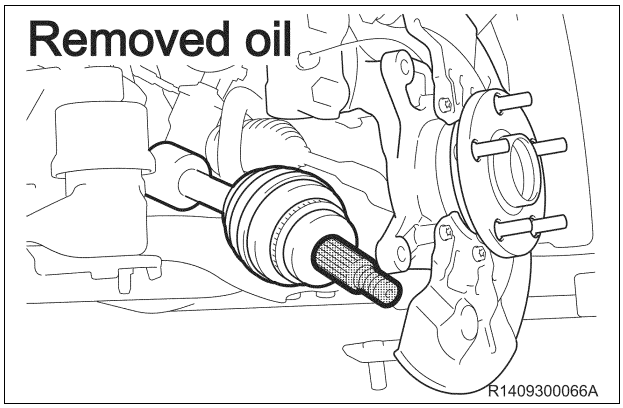


c) Install the 2 lower dust cover bolts and torque to spec.

Torque: 8.3 N*m (85 kgf*cm, 73 in.*lbf)

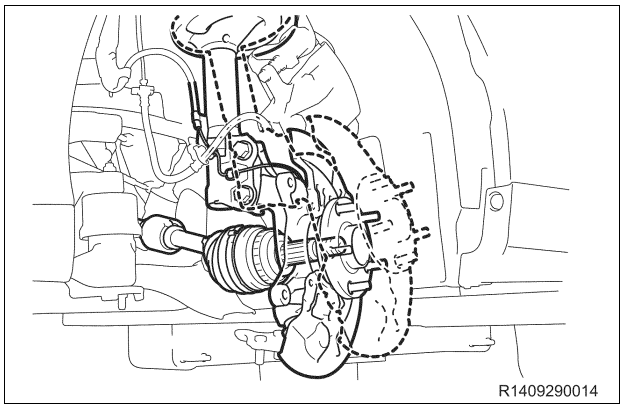


d) Remove the string and shop rag from the axle shaft.



e) Remove the oil from the axle shaft threads that was applied during the removal process.

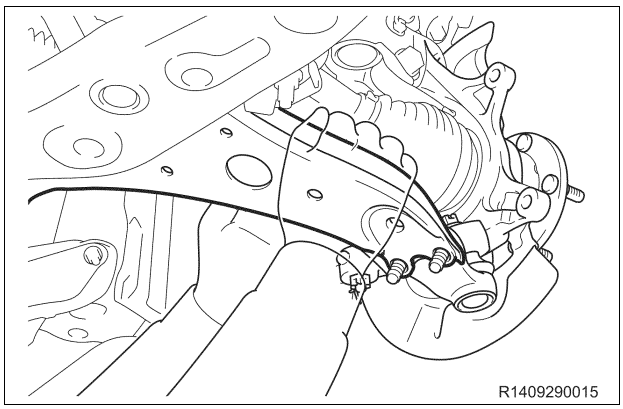
Note: This is crucial to ensure proper torqueing of the axle nut.



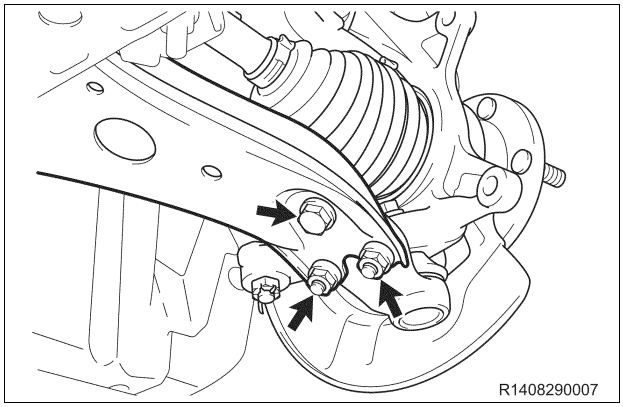
f) Using an assistant pull out the hub assembly and insert the drive shaft into the hub as shown ensuring to align the splines.

Note:

- **Do not excessively pull on the axle**
- **Use care not to damage the axle or speed sensor rotor**
- **Do not apply excessive force to the joint**

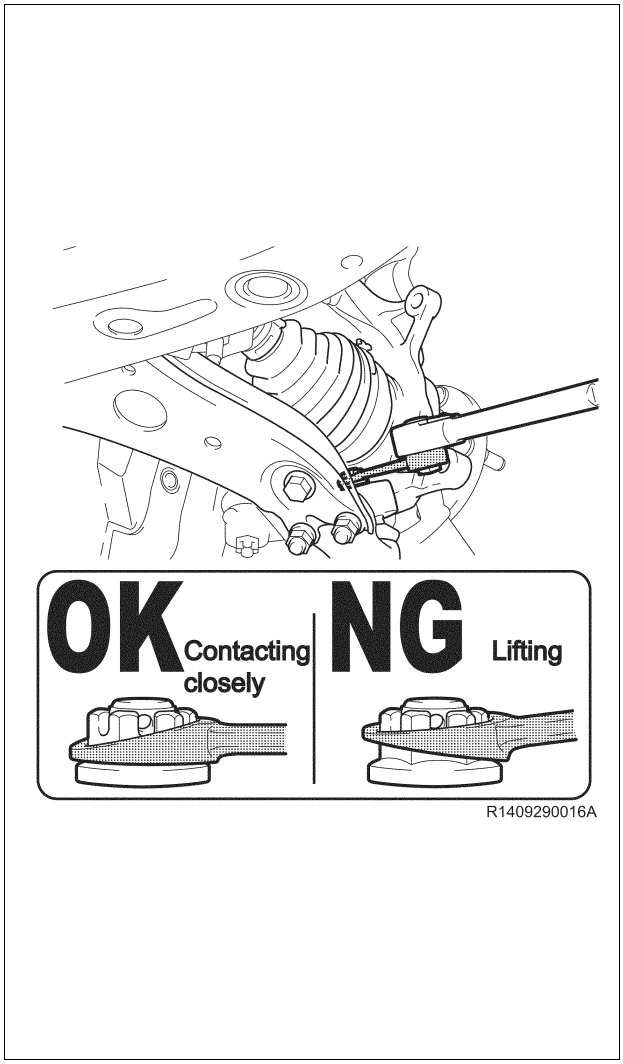


g) Working with an assistant pull down on the suspension arm and install the ball joint studs into the suspension arm.



h) Tigten the bolts and 2 nuts in several increments.

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



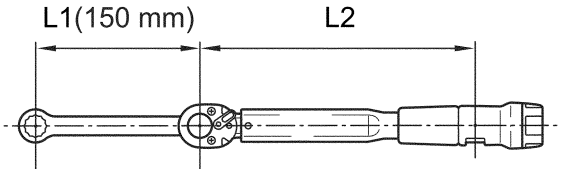
i) Using a ball joint lock nut wrench or equivalent tool, torque the castle nut to spec.

Torque: 123 N*m (1254 kgf*cm, 91 ft.*lbf)

Note: When using a ball joint nut wrench ensure that you use it in the correct direction, otherwise the wrench can break.

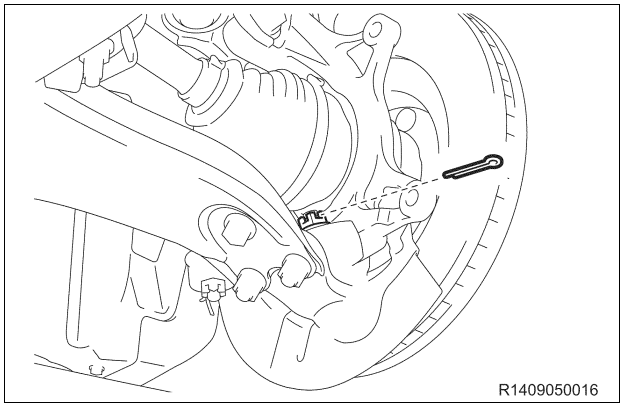
Use the following Formula when using an extension.

Connect straight



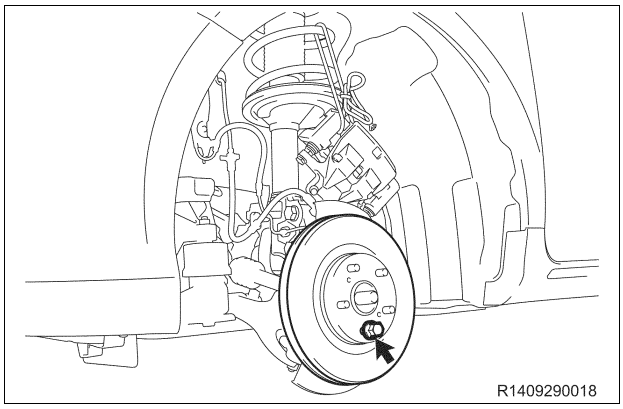
Computation expression T' = T × L2 / (L1 + L2)

T'	Reading value of torque wrench [N*m(kgf*cm, ft.*ldf)]
T	Specified torque [N*m(kgf*cm, ft.*ldf)] (123N·m)
Extension L1	Effective range of the extended tool [mm] (150mm)
L2	Effective range of the torque wrench [mm]

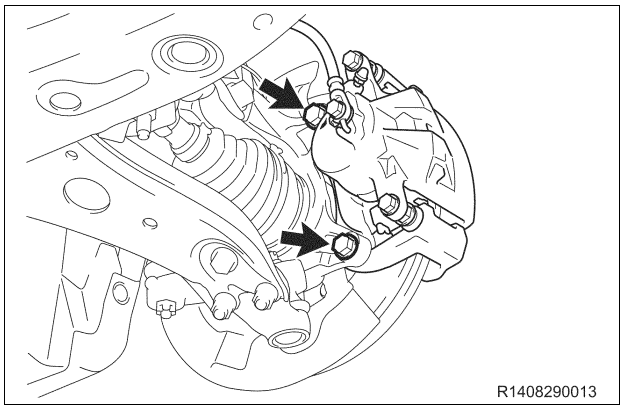


j) Install the ***NEW*** cotter pin.

Note: if the cotter pin holes do not line up, further tighten the nut up to 60° to align the holes.



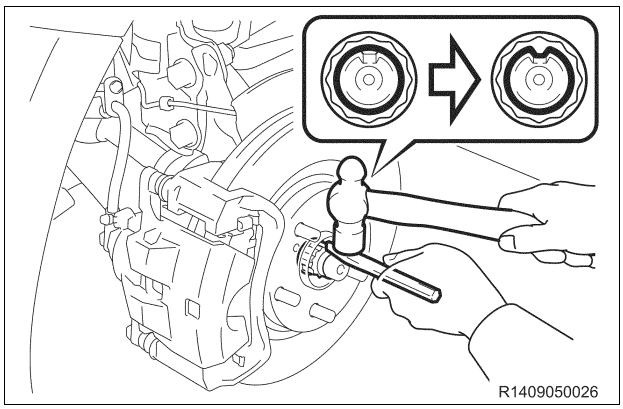
k) Install the from disc rotor and temporarily secure it with a hub nut.



l) Install the brake caliper and torque the 2 bolts to spec.

Torque: 107 N*m (1091 kgf*cm, 79 ft.*lbf)

m) Remove the hub nut.



n) Working with an assistant, have the assistant hold the steering wheel while pressing on the brake to hold the hub from spinning when torqueing the axle nut.

o) Install the axle nut and torque to spec.

Torque: 294 N*m (2998 kgf*cm, 217 ft.*lbf)

p) Crimp the axle nut using a chisel and hammer.

q) Install the front wheel and torque to spec.

Torque: 103 N*m (1049 kgf*cm, 76 ft.*lbf)

r) Inspect and adjust front wheel alignment.

◄ VERIFY REPAIR QUALITY ►

- **Confirm that the ball joint assembly was inspected properly**
- **Confirm that the correct side ball joint was installed**
- **Confirm all suspension components are torqued to spec**
- **Confirm that the axle nut is torqued and crimped properly**

If you have any questions regarding this Safety Recall, please contact your regional representative.

VII. APPENDIX

A. CAMPAIGN PARTS DISPOSAL

Make sure all campaign parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, ***unless requested for parts recovery return.***

B. CAMPAIGN DESIGNATION DECODER