AXLE SYSTEM

PROBLEM SYMPTOMS TABLE

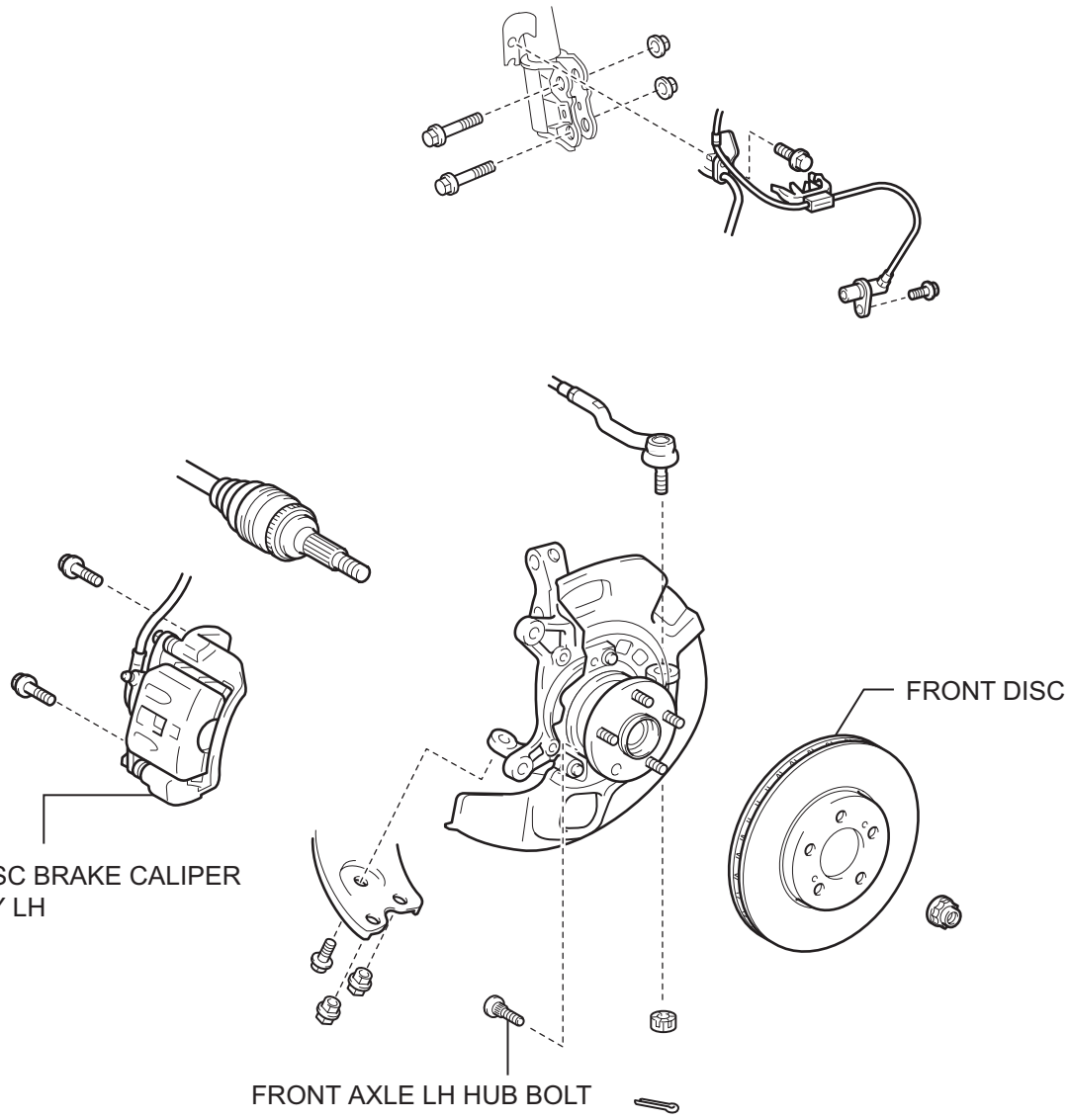
Use the table below to help find the cause of the problem.
The causes of the problem are listed in order of probability in the "Suspected Area" column.
Check each part in order. If necessary, replace these parts.

FRONT DRIVE SHAFT

Symptom	Suspected area	See page
Wander	1. Wheel alignment (Front)	SP-4
	2. Wheel alignment (Rear)	SP-11
	3. Steering linkage (Loosen or worm)	PS-28
	4. Hub bearing(Worn)	AH-5
	5. Stabilizer bar	SP-56
Front wheel shimmy	1. Wheel balance	TW-2
	2. Shock absorber	SP-15
	3. Ball joint (Worn)	SP-25
	4. Hub bearing (Worn)	AH-5

FRONT AXLE HUB BOLT

COMPONENTS



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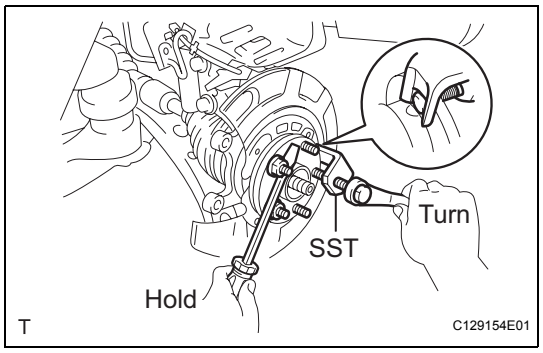
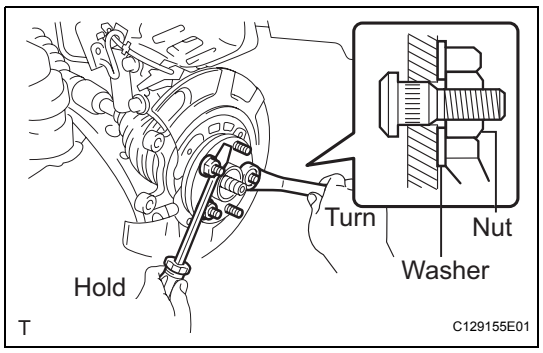
AH

REMOVAL

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

1. **REMOVE FRONT WHEEL**
2. **SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY LH (See page AH-6)**
3. **REMOVE FRONT DISC**
4. **REMOVE FRONT AXLE LH HUB BOLT**
   (a) Temporarily install the 2 nuts and 2 washers to the front axle LH hub bolts as shown in the illustration.
   (b) Using SST and a screwdriver or an equivalent to hold the front axle, remove the front axle LH hub bolt.
   SST 09628-10011



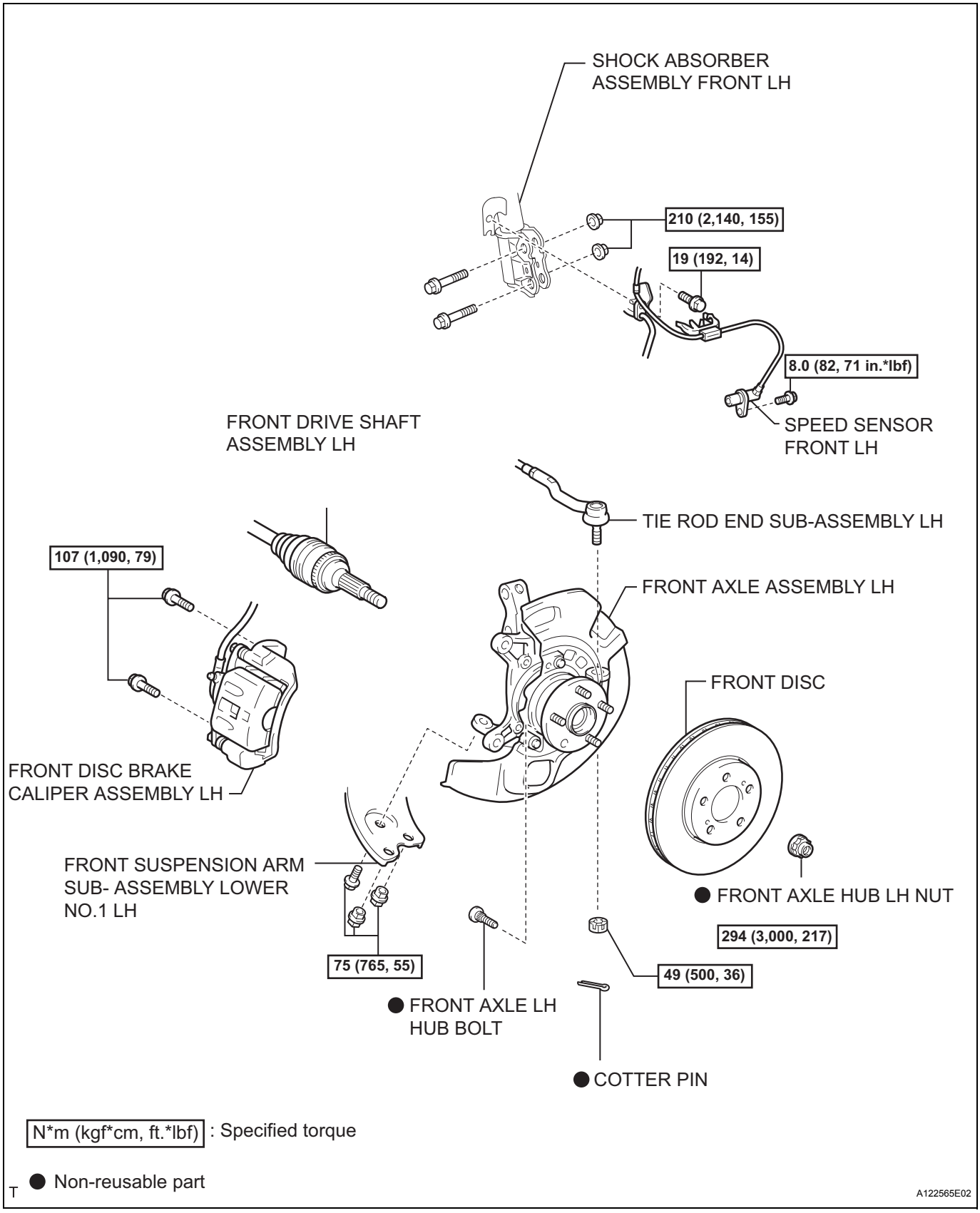


INSTALLATION

1. **INSTALL FRONT AXLE LH HUB BOLT**
   (a) Install a washer and nut to a new front axle LH hub bolt as shown in the illustration.
   (b) Using SST and a screwdriver or an equivalent hold the front axle, install a new hub bolt by tightening the nut.
2. **INSTALL FRONT DISC**
3. **INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY LH (See page AH-11)**
4. **INSTALL FRONT WHEEL**
   Torque: 103 N*m (1.050 kgf*cm, 76 ft.*lbf)

FRONT AXLE HUB

COMPONENTS



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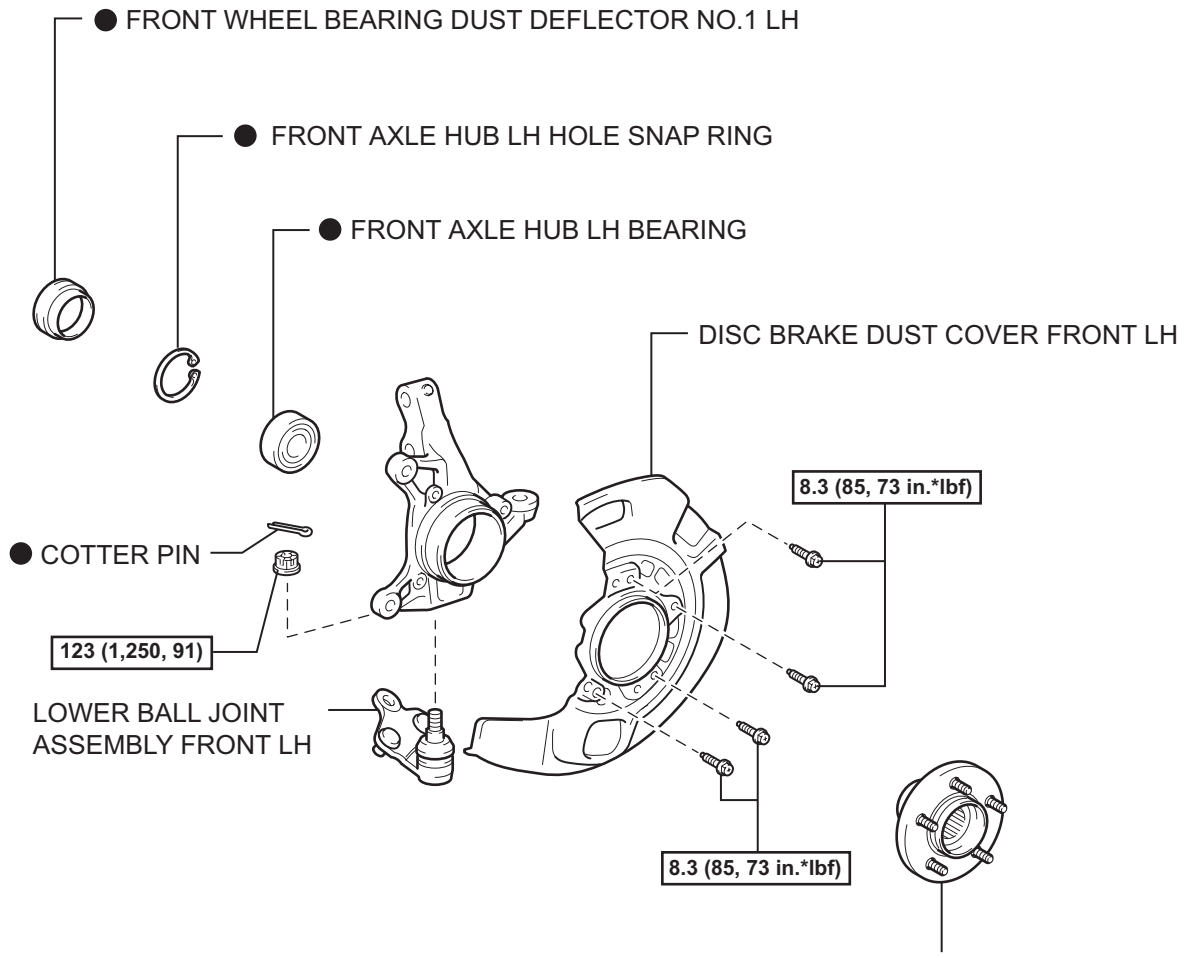

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N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

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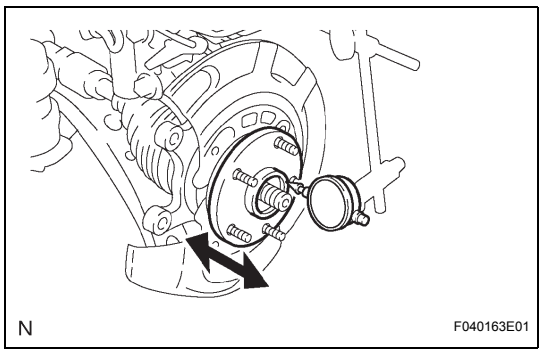
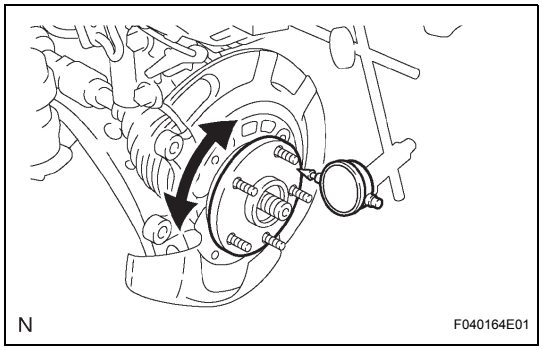
ON-VEHICLE INSPECTION

1. **REMOVE FRONT WHEEL**
2. **REMOVE FRONT DISC BRAKE CALIPER ASSEMBLY LH (See page AH-6)**
3. **REMOVE FRONT DISC**
4. **INSPECT FRONT AXLE HUB BEARING LOOSENESS**



(a) Using a dial indicator, check for looseness near the center of the axle hub.
Maximum:
0.05 mm (0.0020 in.)
NOTICE:
Ensure that the dial indicator is set at right angles to the measurement surface.
If looseness exceeds the maximum, replace the bearing.

5. **INSPECT FRONT AXLE HUB RUNOUT**



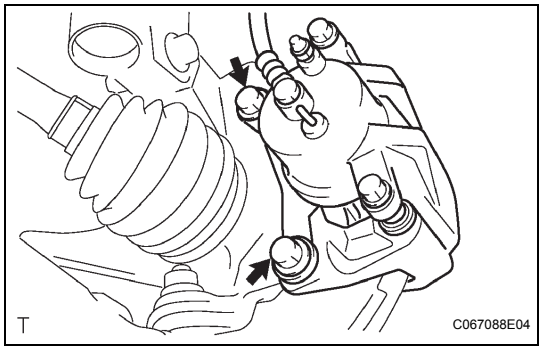
(a) Using a dial indicator, check for runout on the surface of the axle hub outside the hub bolt.
Maximum:
0.05 mm (0.0020 in.)
NOTICE:
Ensure that the dial indicator is set at right angles to the measurement surface.
If runout exceeds the maximum, replace the axle hub.

6. **INSTALL FRONT DISC**
7. **INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY LH (See page AH-11)**
8. **INSTALL FRONT WHEEL**
Torque: 103 N*m (1.050 kgf*cm, 76 ft.*lbf)

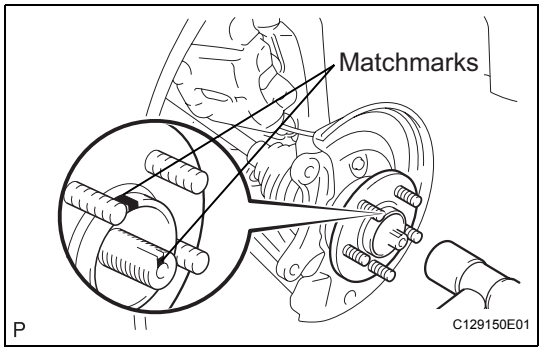
REMOVAL

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

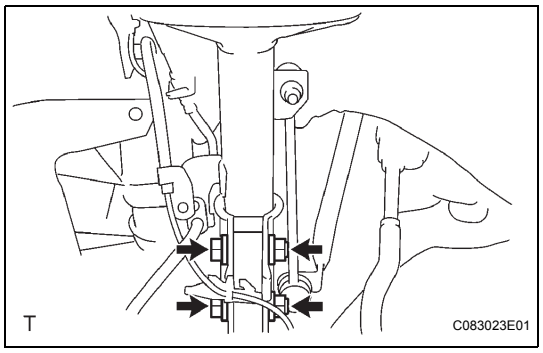
1. **REMOVE FRONT WHEEL**
2. **REMOVE FRONT AXLE HUB LH NUT (See page DS-5)**
3. **SEPARATE SPEED SENSOR FRONT LH (See page DS-5)**
4. **SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY LH**
   (a) Remove the 2 bolts and separate the front disc brake caliper assembly LH from the steering knuckle LH.
   NOTICE:
   Use a wire or an equivalent to keep the brake caliper from hanging down by the flexible hose.



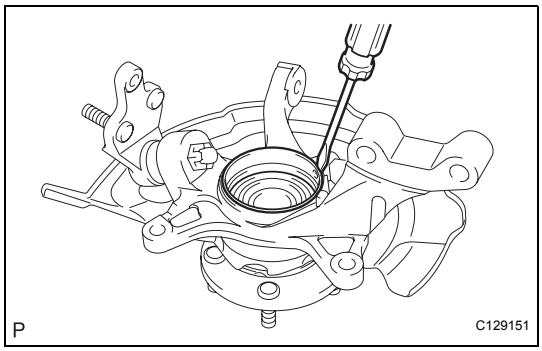
5. **REMOVE FRONT DISC**
6. **SEPARATE TIE ROD END SUB-ASSEMBLY LH (See page DS-6)**
7. **SEPARATE FRONT SUSPENSION ARM SUB-ASSEMBLY NO.1 LH (See page DS-6)**
8. **REMOVE FRONT AXLE ASSEMBLY LH**
   (a) Put matchmarks on the front drive shaft assembly LH and the front axle hub sub-assembly LH.
   (b) 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.



   (c) Remove the 2 bolts, nuts and steering knuckle LH with the front axle hub sub-assembly LH.



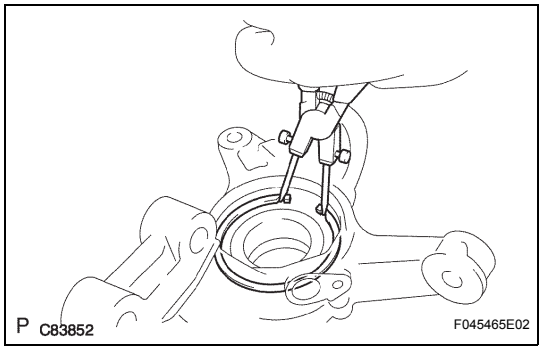
AH



DISASSEMBLY

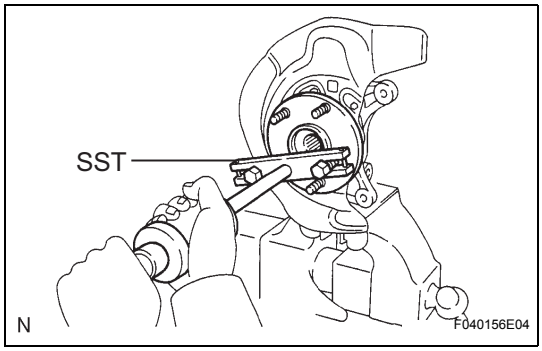
1. REMOVE FRONT WHEEL BEARING DUST DEFLECTOR NO.1 LH

(a) Using a screwdriver, remove the front wheel bearing dust deflector No.1 LH.



2. REMOVE FRONT AXLE HUB LH HOLE SNAP RING

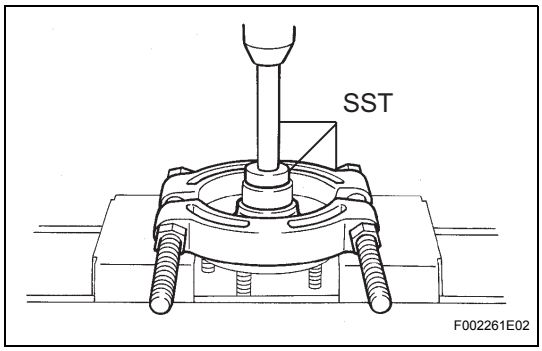
(a) Using snap ring pliers, remove the front axle hub LH hole snap ring.



3. REMOVE FRONT AXLE HUB SUB-ASSEMBLY LH

(a) Using SST, remove the front axle hub sub-assembly LH.

SST 09520-00031



(b) Using SST and a press, remove the bearing inner race (outside) from the front axle hub sub-assembly LH.

SST 09950-00020, 09950-60010 (09951-00430), 09950-70010 (09951-07100)

4. REMOVE DISC BRAKE DUST COVER FRONT LH

(a) Using a torx wrench (T30), remove the 4 bolts and disc brake dust cover front LH.

5. REMOVE LOWER BALL JOINT ASSEMBLY FRONT LH (See page SP-24)

6. REMOVE FRONT AXLE HUB LH BEARING

(a) Place the bearing inner race (outside) on the front axle hub LH bearing.

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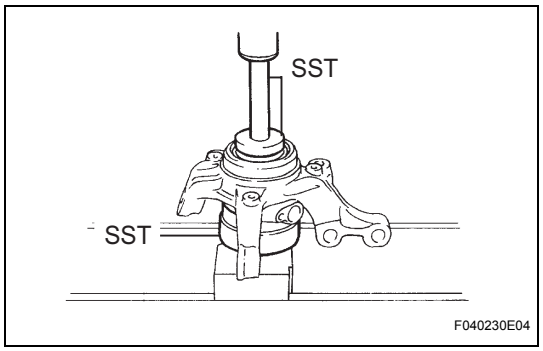
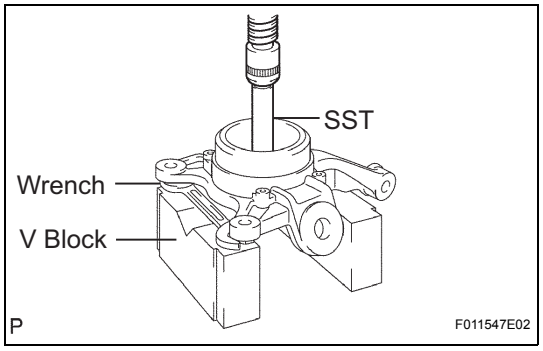
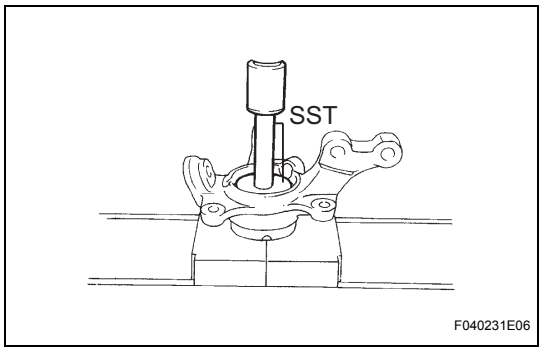


(b) Using SST and a press, press the front axle hub LH bearing until it comes into contact with the SST.
SST 09527-17011, 09950-60010 (09951-00600), 09950-70010 (09951-07100)



(c) Using a wrench to make the steering knuckle LH horizontal, fix it to the V block, as shown in the illustration.
NOTICE:
Be sure steering knuckle is horizontally positioned.

(d) Using SST and a press, remove the front axle hub LH bearing.
SST 09950-60010 (09951-00600), 09950-70010 (09951-07100)



REASSEMBLY

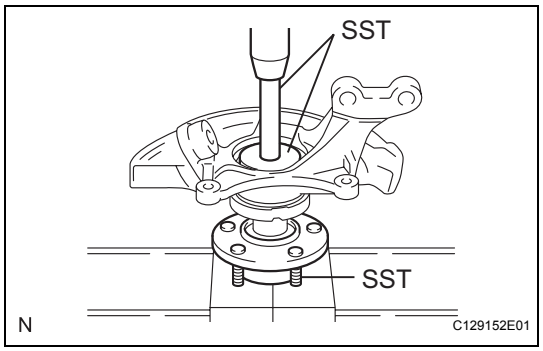
1. INSTALL FRONT AXLE HUB LH BEARING

(a) Using SST and a press, install a new front axle hub LH bearing to the steering knuckle LH.
SST 09950-60020 (09951-00810), 09950-70010 (09951-07100)

2. INSTALL LOWER BALL JOINT ASSEMBLY FRONT LH (See page SP-25)

3. INSTALL DISC BRAKE DUST COVER FRONT LH

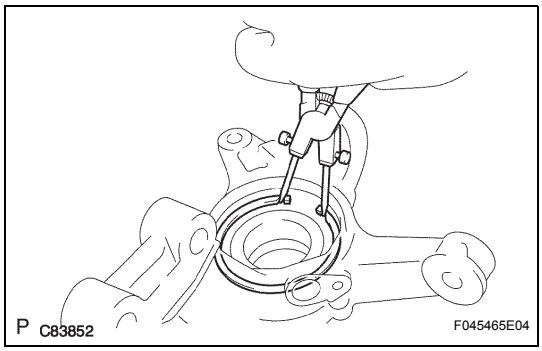
(a) Place the disc brake dust cover front LH and use a torx wrench (T30) to torque the 4 bolts.
Torque: 8.3 N*m (85 kgf*cm, 73 in.*lbf)



4. INSTALL FRONT AXLE HUB SUB-ASSEMBLY LH

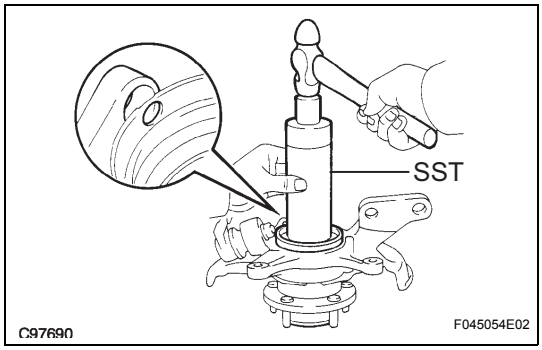
(a) Using SST and a press, install the front axle hub sub-assembly LH.
SST 09608-32010, 09950-60020 (09951-00810), 09950-70010 (09951-07100)

AH



5. INSTALL FRONT AXLE HUB LH HOLE SNAP RING

(a) Using snap ring pliers, install a new front axle hub LH hole snap ring.



6. INSTALL FRONT WHEEL BEARING DUST DEFLECTOR NO.1 LH

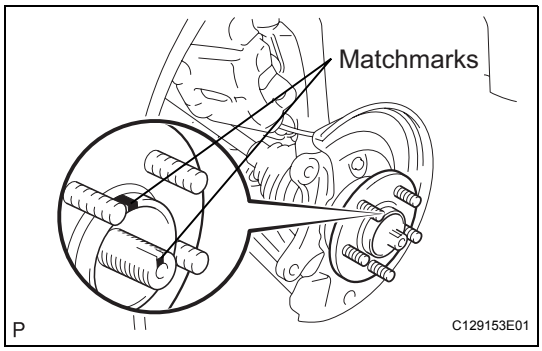
(a) Using SST and a hammer, install a new bearing dust deflector No.1 LH.

SST 09316-60011 (09316-00011, 09316-00031), 09608-32010

HINT:

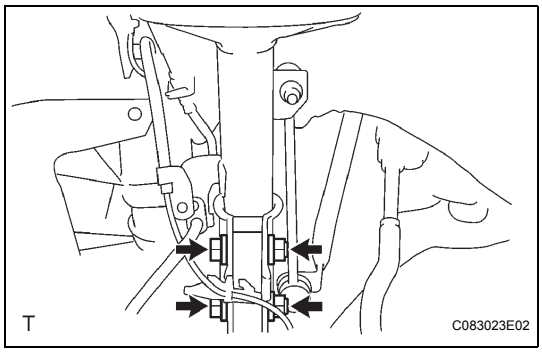
Align the hole for the speed sensor in the bearing dust deflector No.1 LH with the steering knuckle.

INSTALLATION



1. 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.



(b) Install the steering knuckle LH with the front axle hub sub-assembly LH to the shock absorber assembly front LH with the 2bolts and 2 nuts.

Torque: 210 N*m (2.140 kgf*cm, 155 ft.*lbf)

NOTICE:

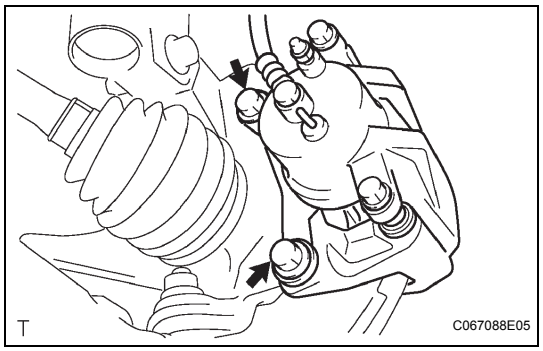
- **Only when reusing the bolts and nuts, apply a small amount of engine oil to the threads of the nuts.**
- **Be careful not to damage the drive shaft boot and speed sensor rotor.**

2. INSTALL FRONT SUSPENSION ARM SUB-ASSEMBLY LOWER NO.1 LH (See page DS-14)

3. INSTALL TIE ROD END SUB-ASSEMBLY LH (See page DS-14)

4. INSTALL FRONT DISC

AH



5. **INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY LH**
   (a) Install the front disc brake caliper assembly LH to the steering knuckle LH with the 2 bolts.
   Torque: 107 N*m (1.090 kgf*cm, 79 ft.*lbf)
   NOTICE:
   Do not twist the brake hose when installing the front disc brake caliper assembly LH.

6. **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)
   HINT:
   Stake the nut after inspecting for looseness and runout through the following steps.

7. **SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY LH**
   (a) Remove the 2 bolts and separate the front disc brake caliper assembly LH from the steering knuckle LH.
   NOTICE:
   Use a wire or an equivalent to keep the brake caliper from hanging down by the flexible hose.

8. **REMOVE FRONT DISC**

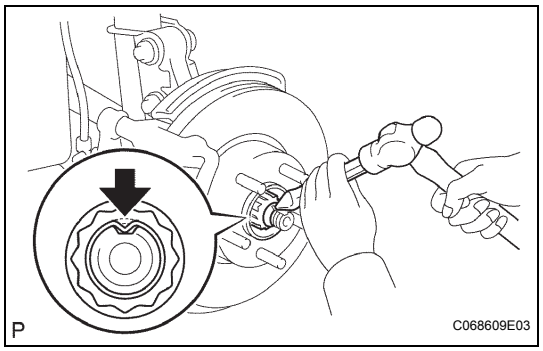
9. **INSPECT FRONT AXLE HUB BEARING LOOSENESS (See page AH-6)**

10. **INSPECT FRONT AXLE HUB RUNOUT (See page AH-6)**

11. **INSTALL FRONT DISC**

12. **INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY LH**
   (a) Install the front disc brake caliper assembly LH with the 2 bolts to the steering knuckle LH.
   Torque: 107 N*m (1.090 kgf*cm, 79 ft.*lbf)
   NOTICE:
   Do not twist the brake hose when installing the front disc brake caliper assembly LH.

13. **INSTALL SPEED SENSOR FRONT LH (See page DS-14)**



14. **INSTALL FRONT AXLE HUB LH NUT**
   (a) Using a chisel and hammer, stake the axle hub LH nut.

15. **INSTALL FRONT WHEEL**
   Torque: 103 N*m (1.050 kgf*cm, 76 ft.*lbf)

16. **INSPECT AND ADJUST FRONT WHEEL ALIGNMENT**
   (a) Inspect and adjust front wheel alignment (See page SP-4).

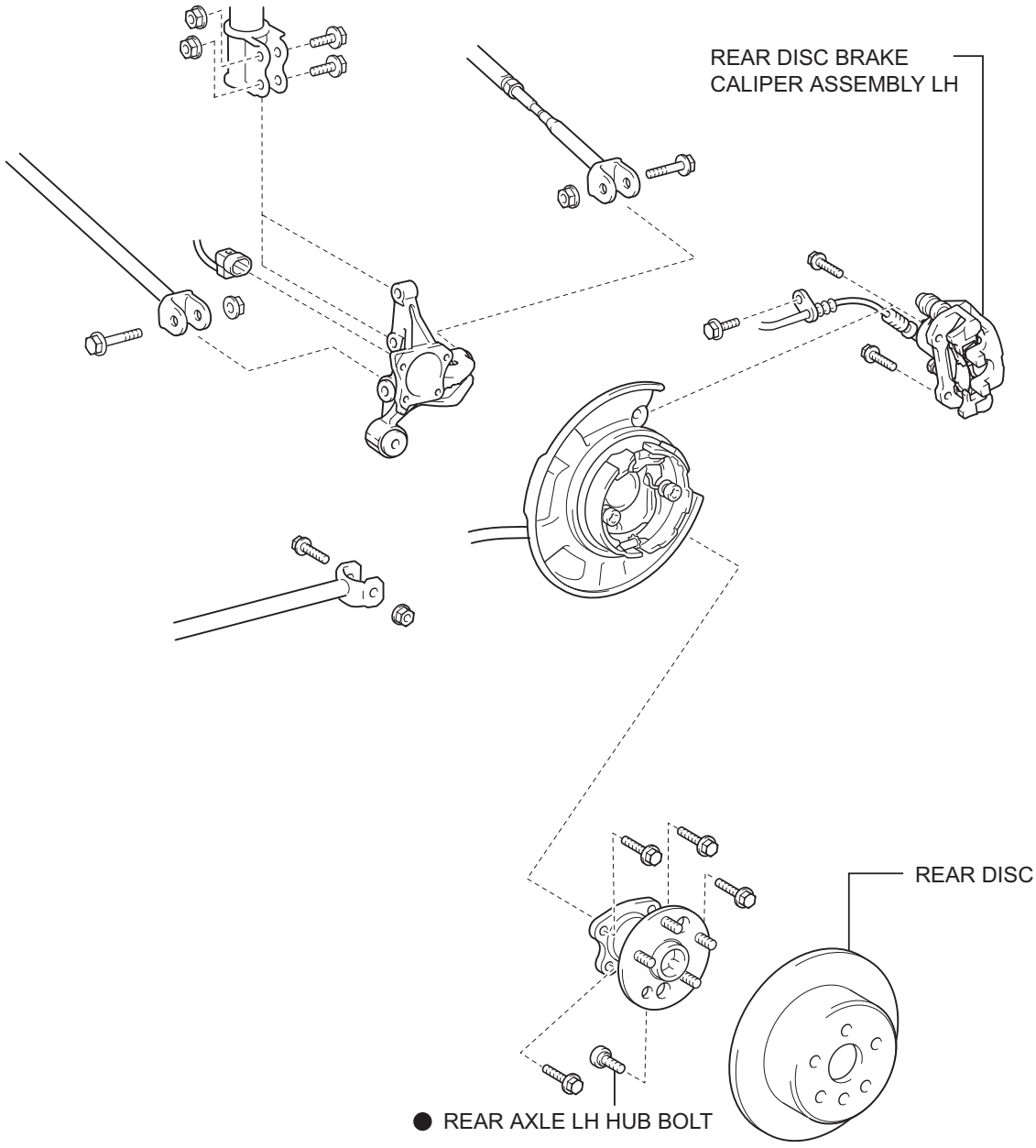
17. CHECK ABS SPEED SENSOR SIGNAL

(a) ABS WITH EBD & TRAC & VSC SYSTEM (See page BC-107)

(b) ABS WITH EBD SYSTEM (See page BC-11)

REAR AXLE HUB BOLT

COMPONENTS



● Non-reusable part

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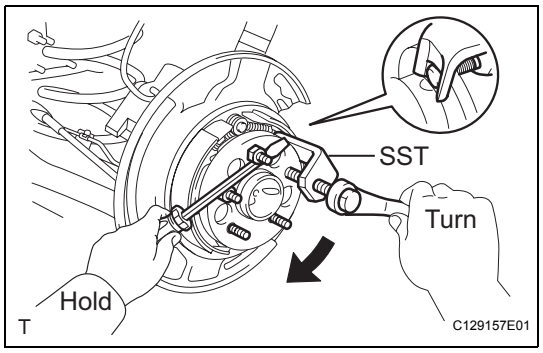
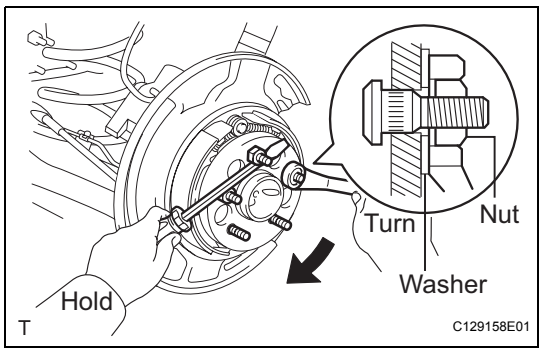
AH

REMOVAL

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

1. **REMOVE REAR WHEEL**
2. **SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY LH (See page AH-15)**
3. **REMOVE REAR DISC**
4. **REMOVE REAR AXLE LH HUB BOLT**
   (a) Temporarily install the 2 nuts and 2 washers to the rear axle LH hub bolts as shown in the illustration.
   (b) Using SST and a screwdriver or an equivalent to hold the hub & bearing assembly, remove the rear axle LH hub bolt.
   SST 09628-10011



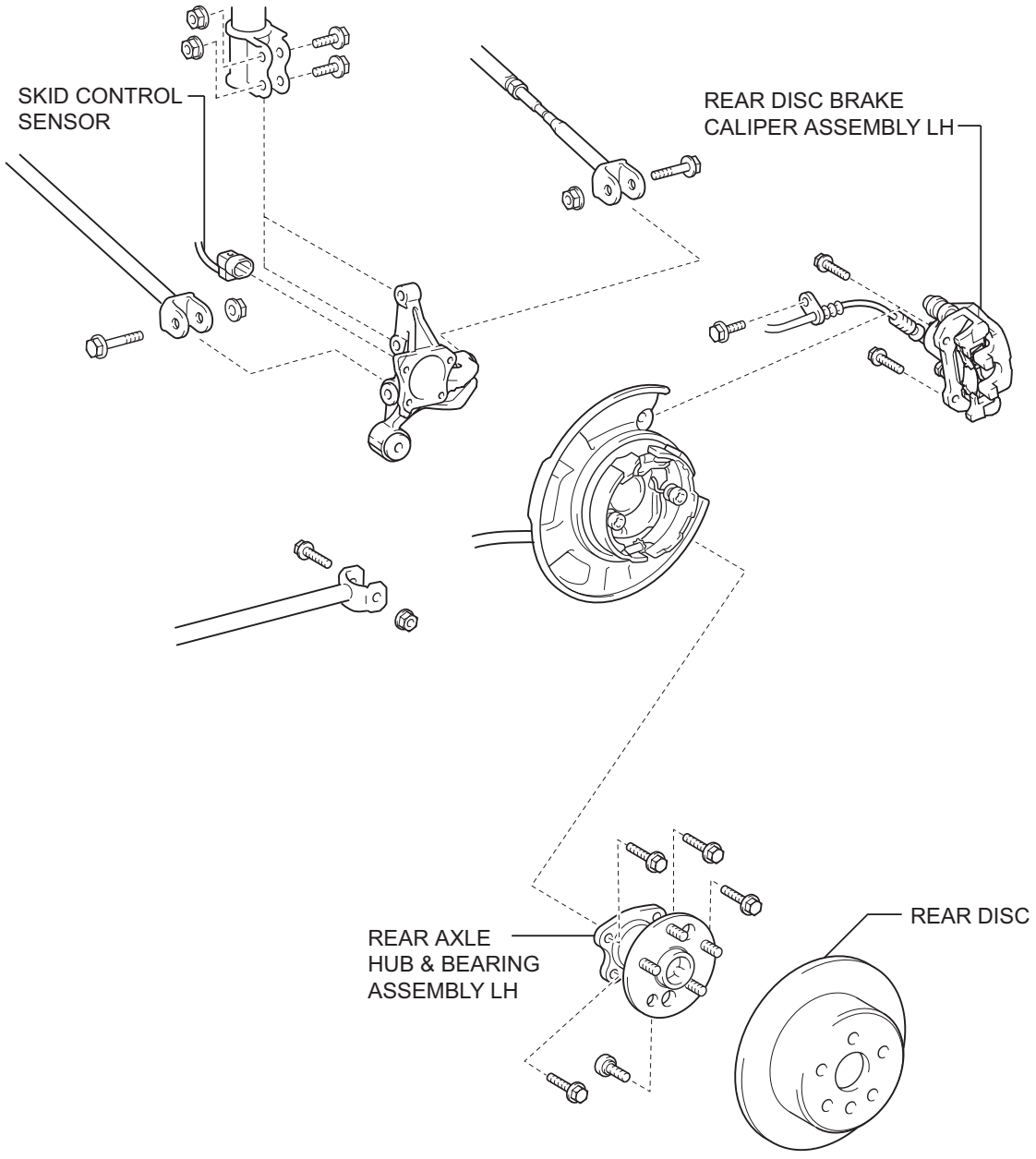


INSTALLATION

1. **INSTALL REAR AXLE LH HUB BOLT**
   (a) Install a washer and nut to a new bolt, as shown in the illustration.
   (b) Using a screwdriver or an equivalent to hold the hub & bearing assembly, install a new rear axle LH hub bolt by tightening the nut.
2. **INSTALL REAR DISC**
3. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY LH (See page AH-16)**
4. **INSTALL REAR WHEEL**

REAR AXLE HUB AND BEARING

COMPONENTS



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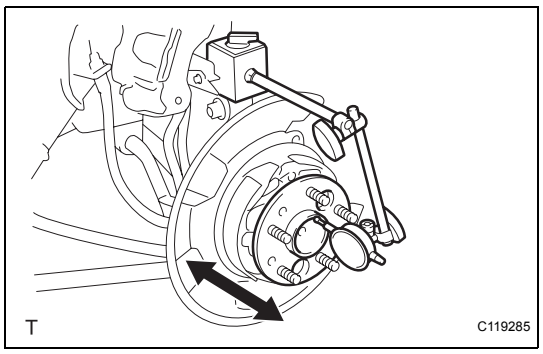
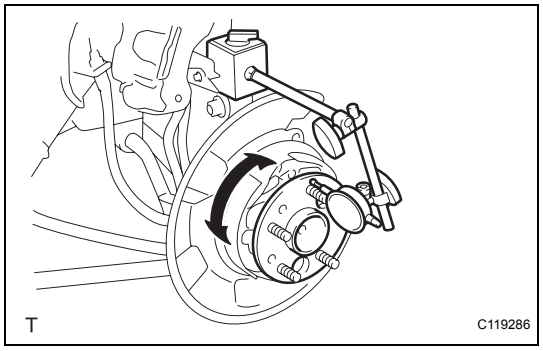
ON-VEHICLE INSPECTION

1. **REMOVE REAR WHEEL**
2. **SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY LH (See page AH-15)**
3. **REMOVE REAR DISC**
4. **INSPECT REAR AXLE HUB BEARING LOOSENESS**
   (a) Using a dial indicator, check for looseness near the center of the axle hub.
   Maximum:
   0.05 mm (0.0020 in.)
   NOTICE:
   Ensure that the dial indicator is set at right angles to the measurement surface.
   If looseness exceeds the maximum, replace the axle hub assembly.



5. **INSPECT REAR AXLE HUB RUNOUT**
   (a) Using a dial indicator, check for runout on the surface of the axle hub outside the hub bolt.
   Maximum:
   0.07 mm (0.0027 in.)
   NOTICE:
   Ensure that the dial indicator is set at right angles to the measurement surface.
   If runout exceeds the maximum, replace the axle hub assembly.



6. **INSTALL REAR DISC**
7. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY LH (See page AH-16)**
8. **INSTALL REAR WHEEL**
   Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)

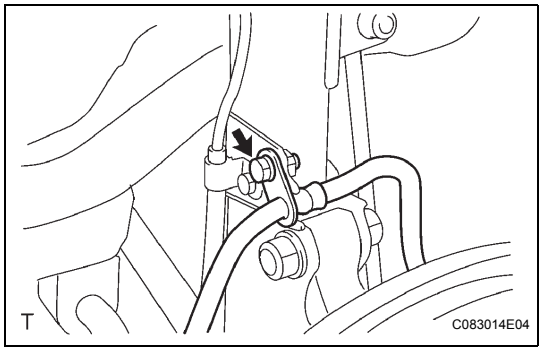
REMOVAL

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

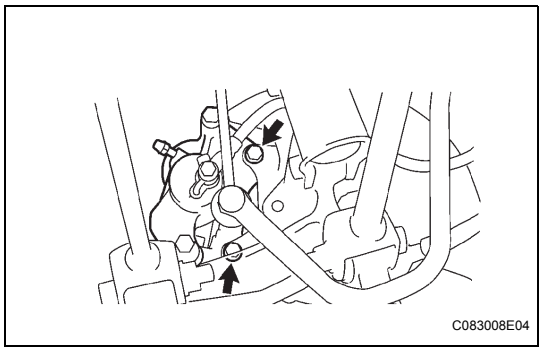
1. REMOVE REAR WHEEL

2. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY LH

(a) Remove the bolt and separate the flexible hose from the shock absorber.



(b) Remove the 2 bolts and separate the rear disc brake caliper assembly LH.
NOTICE:
Use a wire or an equivalent to keep the brake caliper from hanging down by the flexible hose.



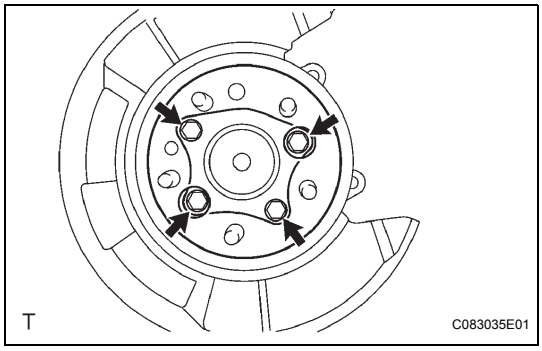
3. REMOVE REAR DISC

4. DISCONNECT SKID CONTROL SENSOR

(a) Disconnect the skid control sensor connector.

5. REMOVE REAR AXLE HUB & BEARING ASSEMBLY LH

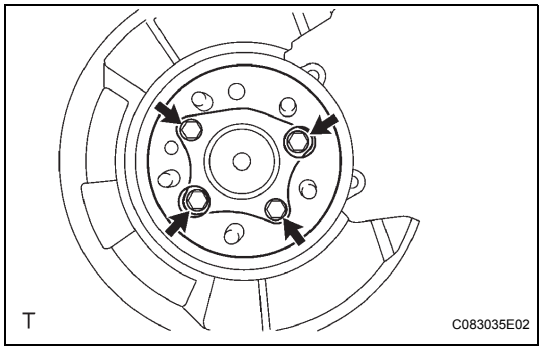
(a) Remove the 4 bolts and hub & bearing assembly LH.



INSTALLATION

1. INSTALL REAR AXLE HUB & BEARING ASSEMBLY LH

(a) Install the hub & bearing assembly LH with the 4 bolts.
Torque: 80 N*m (816 kgf*cm, 59 ft.*lbf)

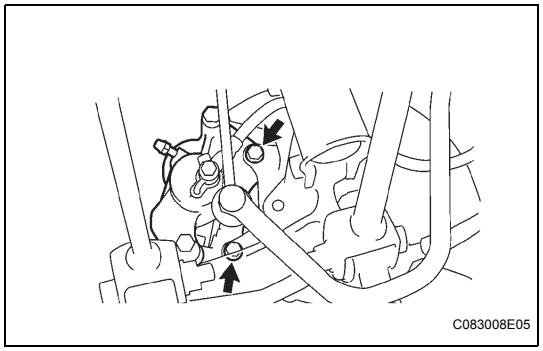


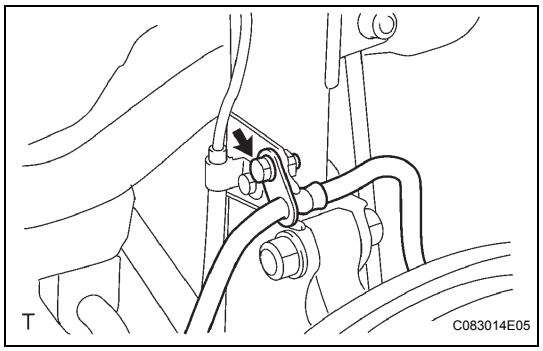
2. CONNECT SKID CONTROL SENSOR

(a) Connect the skid control sensor connector.
NOTICE:
Do not twist the sensor wire when connecting it.

3. INSPECT REAR AXLE HUB BEARING LOOSENESS (See page AH-15)

4. INSPECT REAR AXLE HUB RUNOUT (See page AH-15)





5. **INSTALL REAR DISC**

6. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY LH**
   (a) Install the rear disc brake caliper assembly LH with the 2 bolts.
   Torque: 62 N*m (632 kgf*cm, 46 ft.*lbf)
   NOTICE:
   Do not twist the brake hose when installing the rear disc brake caliper assembly LH.

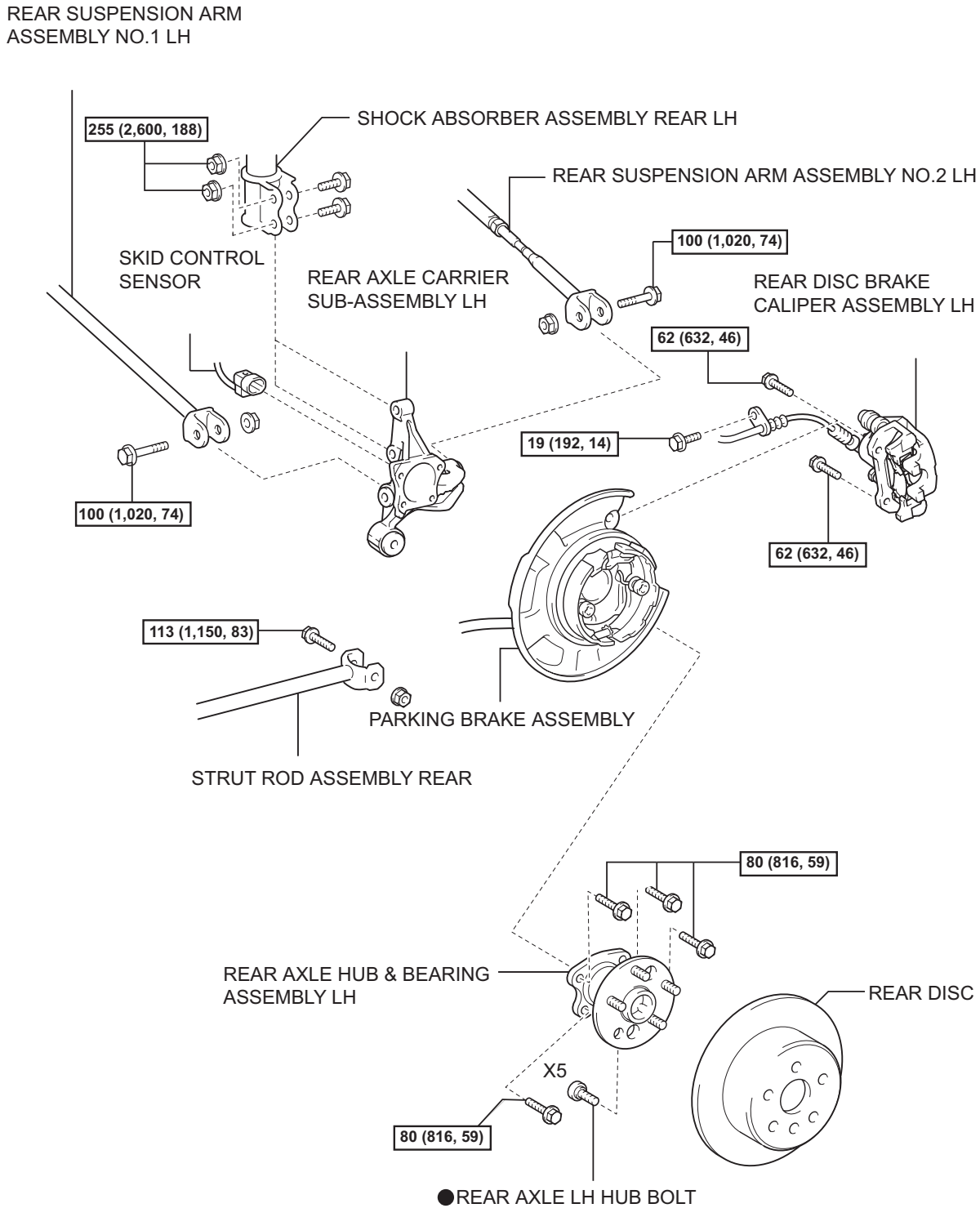
   (b) Install the rear flexible hose with the bolt.
   Torque: 19 N*m (192 kgf*cm, 14 ft.*lbf)

7. **INSTALL REAR WHEEL**
   Torque: 103 N*m (1.050 kgf*cm, 76 ft.*lbf)

8. **ABS SPEED SENSOR SIGNAL**
   (a) ABS WITH EBD & TRAC & VSC SYSTEM (See page BC-107)
   (b) ABS WITH EBD SYSTEM (See page BC-11)

REAR AXLE CARRIER

COMPONENTS



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

● Non-reusable part

P

C109661E05

AH

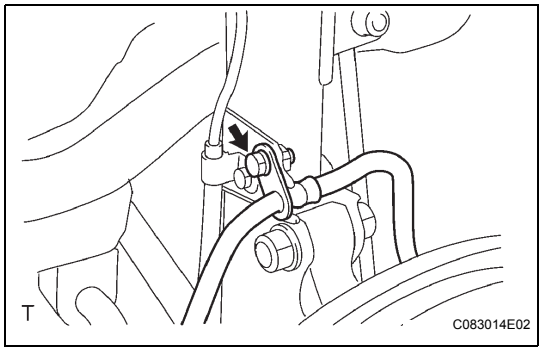
REMOVAL

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

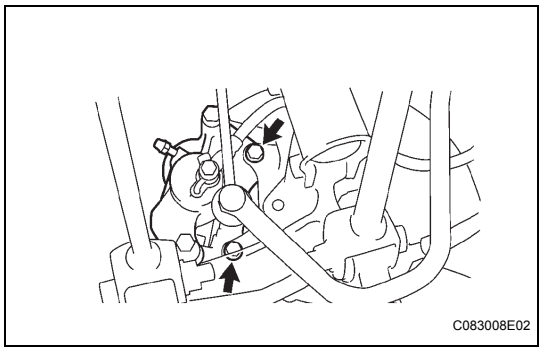
1. REMOVE REAR WHEEL

2. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY LH

(a) Remove the bolt, and separate the flexible hose from the shock absorber.



(b) Remove the 2 bolts and separate the rear disc brake caliper assembly LH.
NOTICE:
Use a wire or an equivalent to keep the brake caliper from hanging down by the flexible hose.



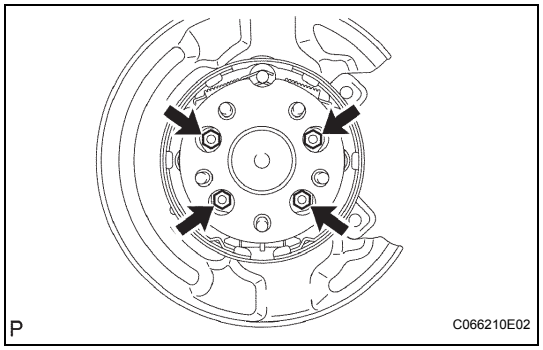
3. REMOVE REAR DISC

4. DISCONNECT SKID CONTROL SENSOR

(a) Disconnect the skid control sensor connector.

5. REMOVE REAR AXLE HUB & BEARING ASSEMBLY LH

(a) Remove the 4 bolts and rear axle hub & bearing assembly LH.

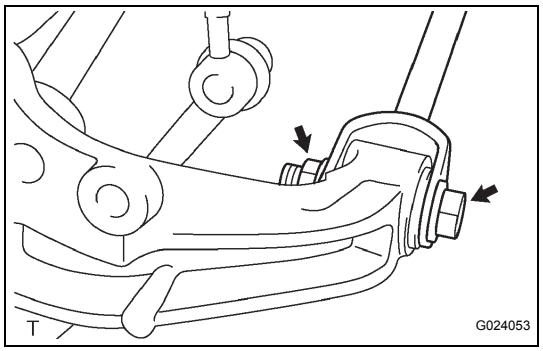


6. SEPARATE STRUT ROD ASSEMBLY REAR

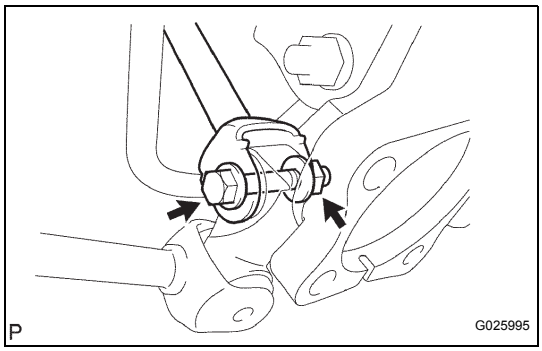
(a) Remove the bolt and nut, and the strut rod assembly rear (rear axle carrier side) from the rear axle carrier sub-assembly LH.
HINT:
When removing the bolt, keep the nut from rotating.

7. SEPARATE REAR SUSPENSION ARM ASSEMBLY NO.2 LH

(a) Remove the bolt and nut, and separate the rear suspension arm assembly No.2 LH (rear axle carrier side) from the rear axle carrier sub-assembly LH.
HINT:
When removing the bolt, keep the nut from rotating.

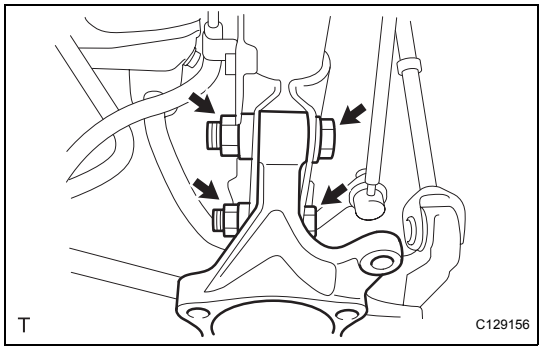


AH



8. SEPARATE REAR SUSPENSION ARM ASSEMBLY NO.1 LH

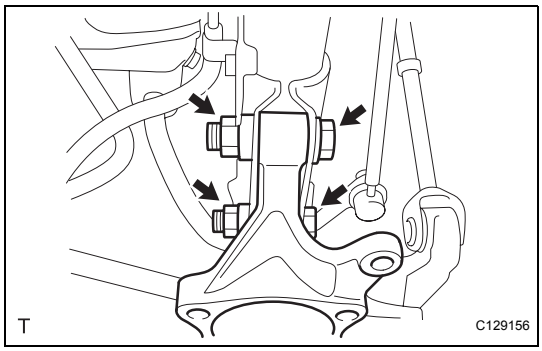
(a) Remove the bolt and nut, separate the rear suspension arm assembly No.1 LH (rear axle carrier side) from the rear axle carrier sub-assembly.
HINT:
When removing the bolt, keep the nut from rotating.



9. REMOVE REAR AXLE CARRIER SUB-ASSEMBLY LH

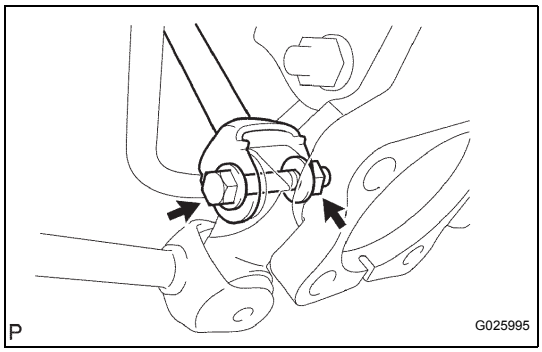
(a) Remove the 2 bolts and 2 nuts, and remove the rear axle carrier sub-assembly LH from the shock absorber.

INSTALLATION



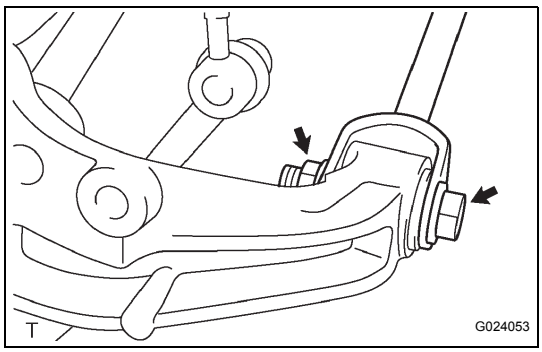
1. INSTALL REAR AXLE CARRIER SUB-ASSEMBLY LH

(a) Install the rear axle carrier sub-assembly LH with the 2 bolts and 2 nuts to the shock absorber.
Torque: 255 N*m (2.600 kgf*cm, 188 ft.*lbf)



2. TEMPORARILY TIGHTEN REAR SUSPENSION ARM ASSEMBLY NO.1 LH

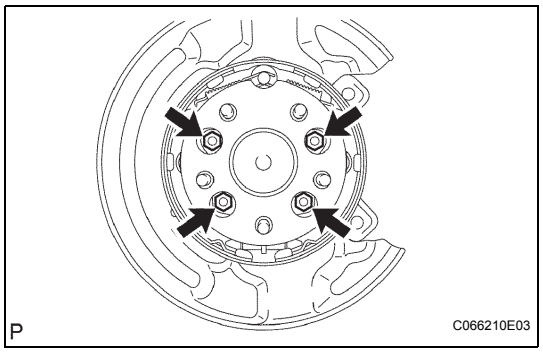
(a) Temporarily tighten the rear suspension arm assembly No.1 LH with the bolt and nut.
HINT:
Insert the bolt from the rear side of the vehicle and temporarily tighten the bolt.



3. TEMPORARILY TIGHTEN REAR SUSPENSION ARM ASSEMBLY NO.2 LH

(a) Temporarily tighten the rear suspension arm assembly No.2 LH with the bolt and nut.
HINT:
Insert the bolt from the rear side of the vehicle and temporarily tighten the bolt.

4. **TEMPORARILY TIGHTEN STRUT ROD ASSEMBLY REAR**
   (a) Temporarily tighten the strut assembly rear with the bolt and nut.
   HINT:
   Insert the bolt from the inside of the vehicle and temporarily tighten the bolt.



5. **INSTALL REAR AXLE HUB & BEARING ASSEMBLY LH**
   (a) Install the hub & bearing assembly LH with the 4 bolts.
   Torque: 80 N*m (816 kgf*cm, 59 ft.*lbf)

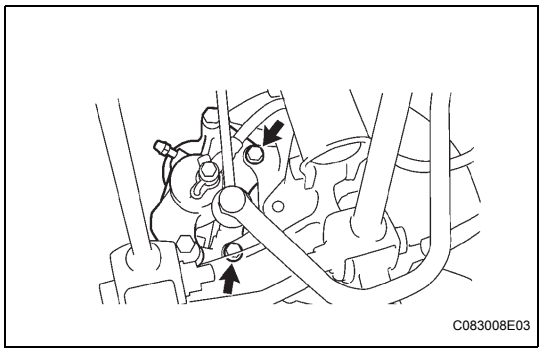
6. **INSPECT REAR AXLE HUB BEARING LOOSENESS (See page AH-15)**

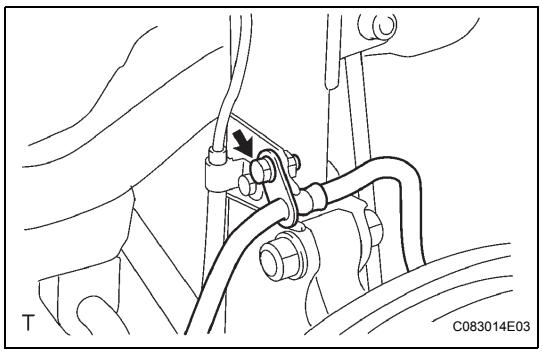
7. **INSPECT REAR AXLE HUB RUNOUT (See page AH-15)**

8. **CONNECT SKID CONTROL SENSOR**
   (a) Connect the skid control sensor connector.
   NOTICE:
   Do not twist the sensor wire when connecting it.

9. **INSTALL REAR DISC**

10. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY LH**
    (a) Install the rear disc brake caliper with the 2 bolts.
    Torque: 62 N*m (632 kgf*cm, 46 ft.*lbf)
    NOTICE:
    Do not twist the brake hose when installing the rear disc brake caliper assembly LH.





    (b) Install the rear flexible hose with the bolt.
    Torque: 19 N*m (192 kgf*cm, 14 ft.*lbf)

11. **INSTALL REAR WHEEL**
    Torque: 103 N*m (1.050 kgf*cm, 76 ft.*lbf)

12. **STABILIZE SUSPENSION (See page SP-47)**

13. **FULLY TIGHTEN REAR SUSPENSION ARM ASSEMBLY NO.1 LH (See page SP-47)**

14. **FULLY TIGHTEN REAR SUSPENSION ARM ASSEMBLY NO.2 LH (See page SP-48)**

15. **FULLY TIGHTEN STRUT ROD ASSEMBLY REAR (See page SP-41)**

16. **INSPECT AND ADJUST REAR WHEEL ALIGNMENT**
    (a) Inspect and adjust rear wheel alignment (See page SP-11).

17. **ABS SPEED SENSOR SIGNAL**
    (a) ABS WITH EBD & TRAC & VSC SYSTEM (See page BC-107)

(b) ABS WITH EBD SYSTEM (See page BC-11)