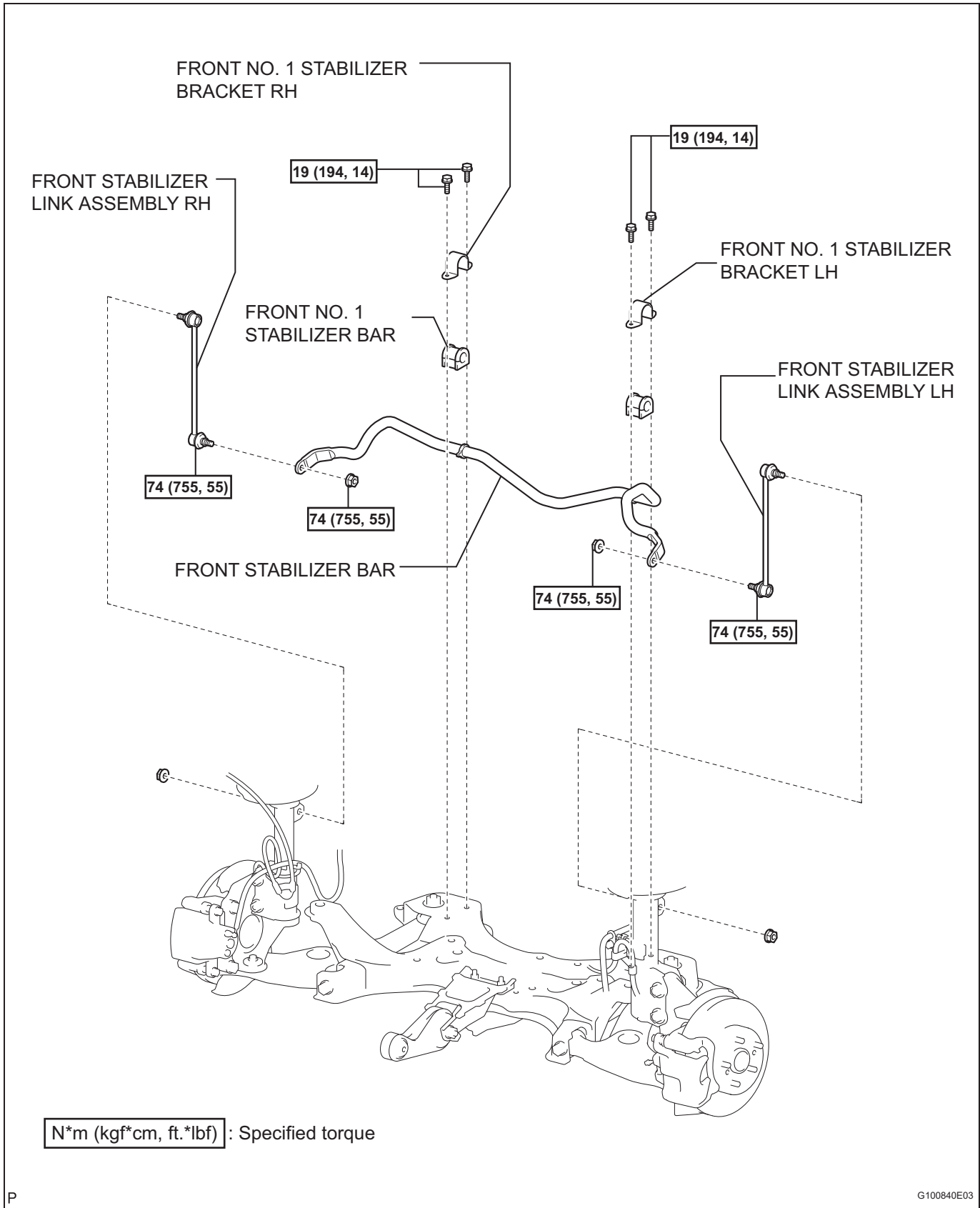
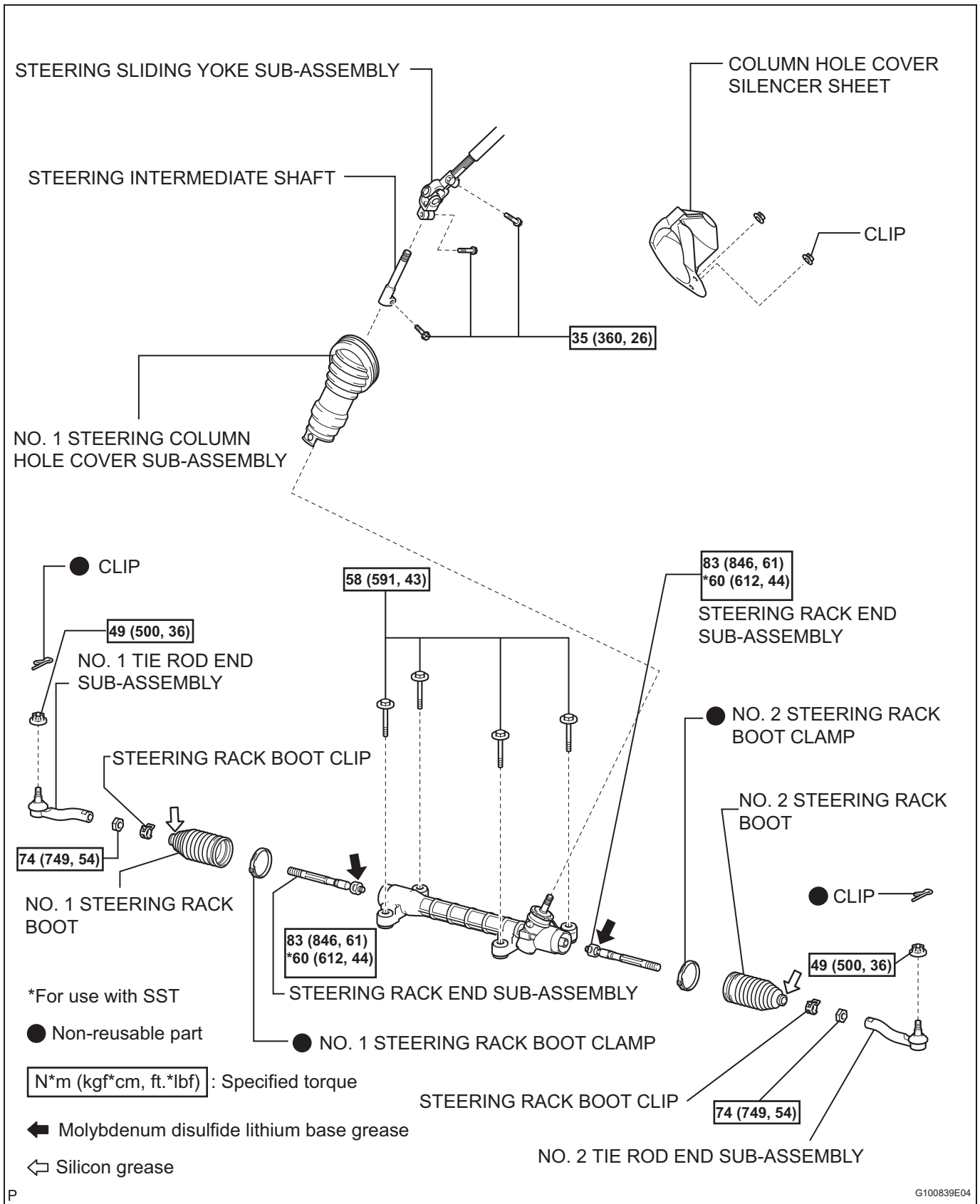


# STEERING GEAR

## COMPONENTS



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



P

G100839E04

## REMOVAL

1. PLACE FRONT WHEELS FACING STRAIGHT AHEAD
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

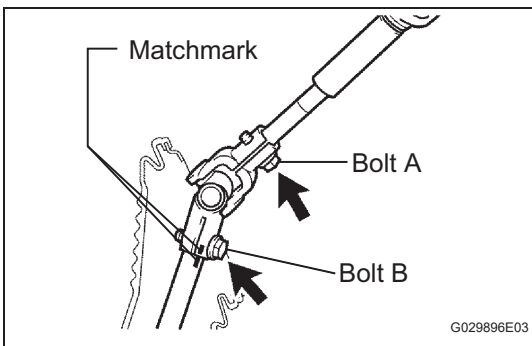
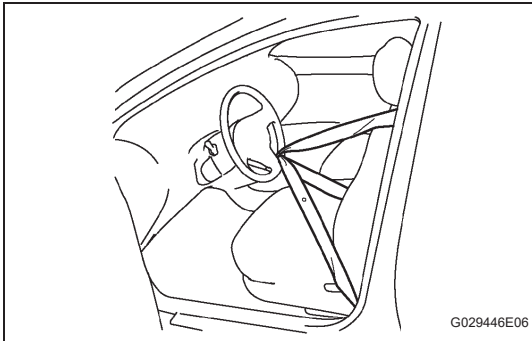
### CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

3. REMOVE COLUMN HOLE COVER SILENCER SHEET (See page [SR-10](#))

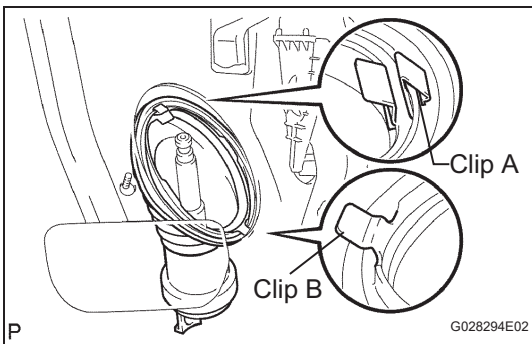
4. SEPARATE STEERING SLIDING YOKE SUB-ASSEMBLY

(a) Fix the steering wheel with the seat belt in order to prevent rotation and damage to the spiral cable.



(b) Put matchmarks in the sliding yoke and intermediate shaft.

(c) Loosen the bolt labeled A and remove the bolt labeled B to separate the sliding yoke.



5. DISCONNECT NO. 1 STEERING COLUMN HOLE COVER SUB-ASSEMBLY

(a) Remove the clip labeled A and disconnect the hole cover from the body.

### NOTICE:

Do not damage the clip labeled B.

6. REMOVE FRONT WHEELS

7. DISCONNECT NO. 2 TIE ROD END SUB-ASSEMBLY (See page [DS-6](#))

8. DISCONNECT NO. 1 TIE ROD END SUB-ASSEMBLY

### HINT:

Use the same procedure described for the No. 2 tie rod end.

9. REMOVE FRONT STABILIZER LINK ASSEMBLY LH (See page [SP-28](#))

10. REMOVE FRONT STABILIZER LINK ASSEMBLY RH

### HINT:

Use the same procedure described for the LH.

11. REMOVE FRONT NO. 1 STABILIZER BRACKET LH  
(See page SP-28)

12. REMOVE FRONT NO. 1 STABILIZER BRACKET RH  
HINT:

Use the same procedure described for the LH.

13. REMOVE STEERING INTERMEDIATE SHAFT

- (a) Move the No. 1 column hole cover to the upper side of the vehicle and put matchmarks on the intermediate shaft and steering gear.

**NOTICE:**

**Do not damage the No. 1 hole cover when moving it.**

- (b) Remove the bolt and remove the intermediate shaft from the inside of the vehicle.

- (c) Remove the No. 1 column hole cover from the steering gear.

**NOTICE:**

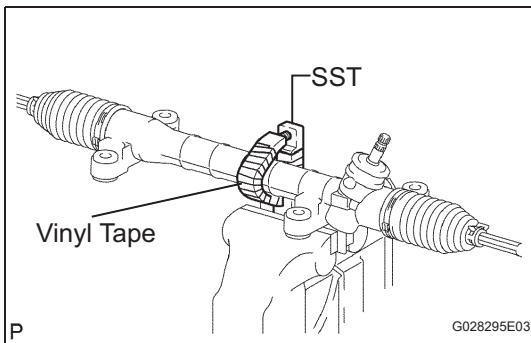
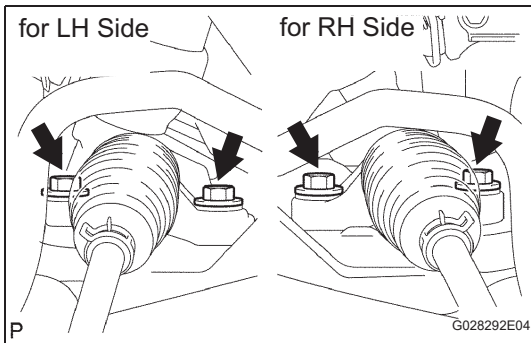
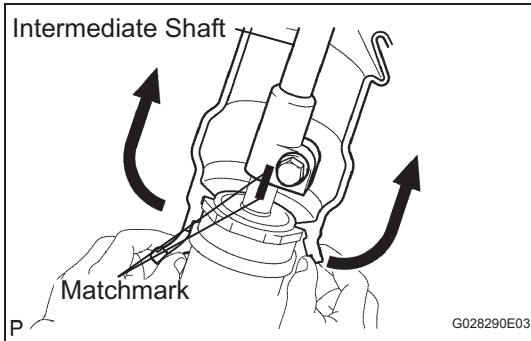
**Do not damage the No. 1 hole cover clip.**

14. REMOVE STEERING GEAR ASSEMBLY

- (a) Remove the 4 bolts and steering gear from the left side of the vehicle.

**HINT:**

Be careful not to hit the stabilizer bar when removing the steering gear.



## DISASSEMBLY

1. FIX STEERING GEAR ASSEMBLY

- (a) Using SST wrapped with protective tape, secure the steering gear in a vise.

**SST 09612-00012**

**HINT:**

Remove and reinstall the SST as needed.

2. REMOVE TIE ROD END SUB-ASSEMBLY LH

- (a) Put matchmarks on the tie rod end LH and rack end.
- (b) Remove the tie rod end LH and lock nut.

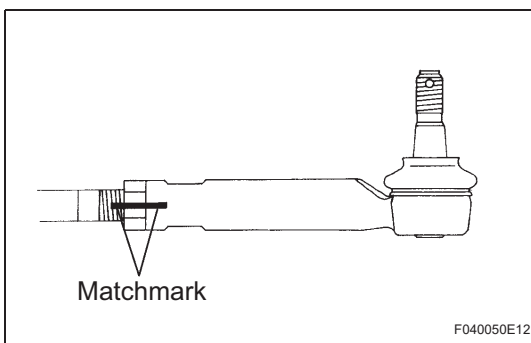
3. REMOVE TIE ROD END SUB-ASSEMBLY RH

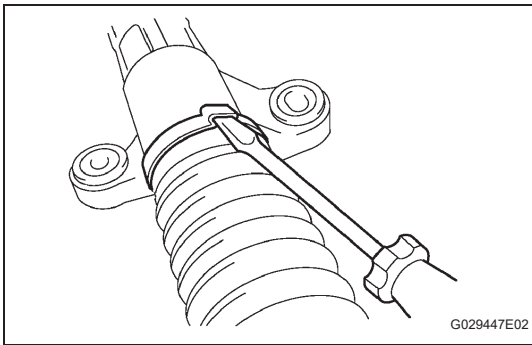
**HINT:**

Use the same procedure described for the LH.

4. REMOVE STEERING RACK BOOT CLIP

- (a) Using pliers, remove the 2 rack boot clips (for RH and LH).





**5. REMOVE NO. 2 STEERING RACK BOOT CLAMP**

- (a) Using a screwdriver, unstake and remove the clamp.

**NOTICE:**

**Do not damage the boot.**

**6. REMOVE NO. 1 STEERING RACK BOOT CLAMP**

**HINT:**

Use the same procedures described for the No. 2 rack boot clamp.

**7. REMOVE NO. 2 STEERING RACK BOOT**

**8. REMOVE NO. 1 STEERING RACK BOOT**

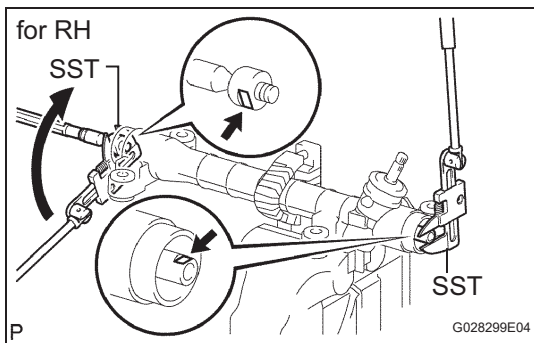
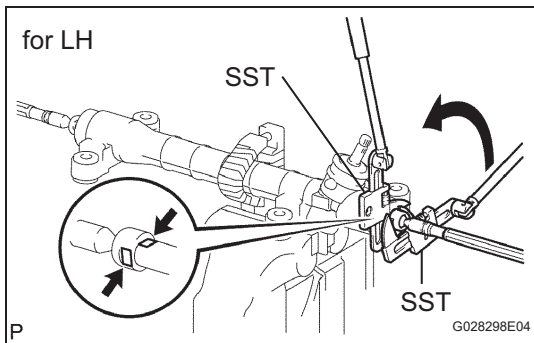
**9. REMOVE STEERING RACK END SUB-ASSEMBLY**

- (a) Using 2 SST, remove the rack end (for LH side).

**SST 09922-10010**

**NOTICE:**

- Use SST in the correct direction as shown in the illustration.
- Securely hold the steering rack.



- (b) Using 2 SST, hold the steering rack LH side and remove the rack end (for RH side).

**SST 09922-10010**

**NOTICE:**

- Use SST in the correct direction as shown in the illustration.
- Securely hold the steering rack.

## INSPECTION

### 1. INSPECT TIE ROD END SUB-ASSEMBLY LH

- (a) Secure the tie rod end LH ball joint in a vise through aluminum plates.

**NOTICE:**

**Do not overtighten the vise.**

- (b) Install the castle nut to the stud bolt.  
 (c) Flip the ball joint back and forth 5 times or more.  
 (d) Set a torque wrench to the nut, turn the ball joint continuously at a rate of 3 to 5 seconds per turn, and check the turning torque on the 5th turn.

**Standard turning torque:**

**2.0 N\*m (20.4 kgf\*cm, 18 in. lbf) or less**

If turning torque is out of specification, replace the tie rod end LH with a new one.

### 2. INSPECT TIE ROD END SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

### 3. INSPECT TOTAL PRELOAD

- (a) Using SST, inspect the total preload.

**SST 09616-00011**

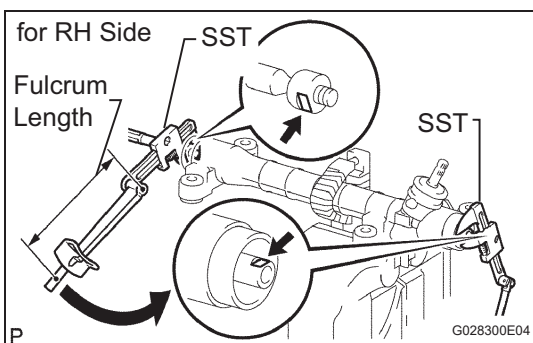
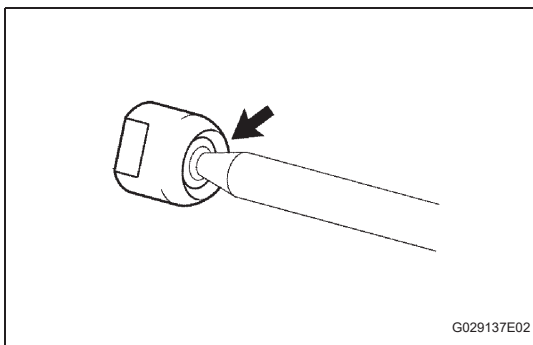
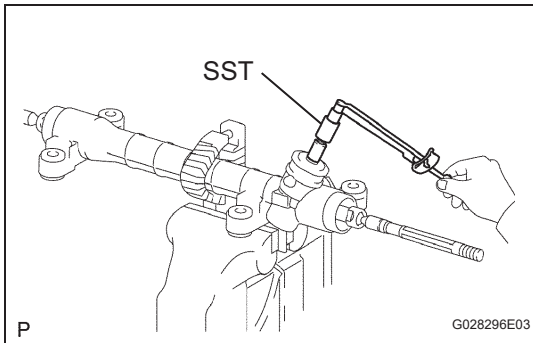
**Standard total preload (turning):**

**0.6 to 1.2 N\*m (6.2 to 12.2 kgf\*cm, 5 to 11 in.\*lbf)**

**NOTICE:**

**Inspect around the steering rack center position.**

If the total preload is out of specification, replace the steering gear with a new one.



## REASSEMBLY

### 1. INSTALL STEERING RACK END SUB-ASSEMBLY

- (a) Fill up the ball joints of the RH and LH rack ends with molybdenum disulfide lithium base grease.

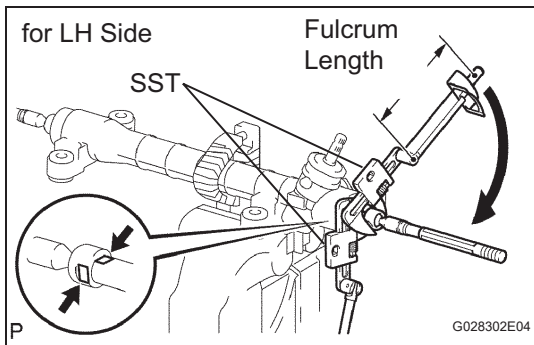
- (b) Using 2 SST, hold the steering rack LH side and install the rack end (for RH side).

**SST 09922-10010**

**Torque: 60 N\*m (612 kgf\*cm, 44 ft.\*lbf)**

**NOTICE:**

- Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).
- Use SST in the correct direction as shown in the illustration.
- Securely hold the steering rack.



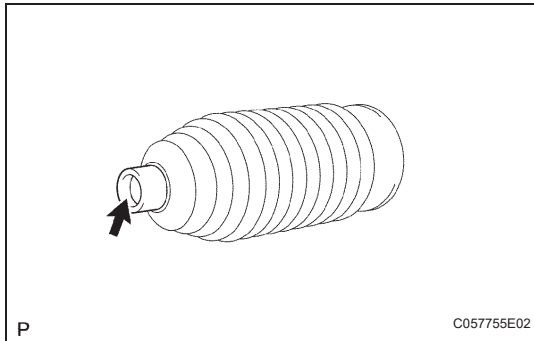
- (c) Using 2 SST, install the rack end (for LH side).

**SST 09922-10010**

**Torque: 60 N\*m (612 kgf\*cm, 44 ft.\*lbf)**

**NOTICE:**

- Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).
- Use SST in the correct direction as shown in the illustration.
- Securely hold the steering rack.



## 2. INSTALL NO. 2 STEERING RACK BOOT

- (a) Apply silicon grease to the inside of the small opening of the boot.
- (b) Install the boot in the groove on the rack housing.

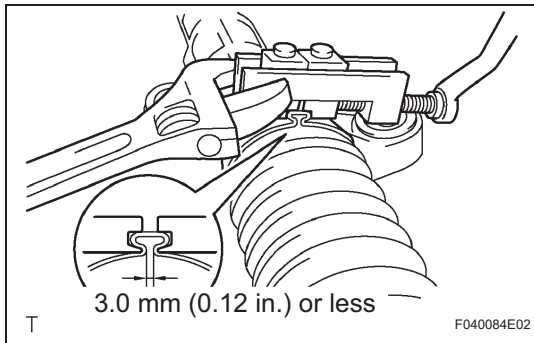
**NOTICE:**

**Make sure that the boot is not twisted.**

## 3. INSTALL NO. 1 STEERING RACK BOOT

**HINT:**

Use the same procedures described for the No. 2 boot.



## 4. INSTALL NO. 2 STEERING RACK BOOT CLAMP

- (a) Install a new clamp to the boot.

**NOTICE:**

**Do not damage the boot.**

- (b) While pushing SST to the rack housing, pinch the clamp so that the clearance is within specification.

**SST 09521-24010**

**Standard clearance:**

**3.0 mm (0.12 in.) or less**

**NOTICE:**

**Make sure that the boot is not twisted.**

## 5. INSTALL NO. 1 STEERING RACK BOOT CLAMP

**HINT:**

Use the same procedures described for the No. 2 rack boot clamp.

## 6. INSTALL STEERING RACK BOOT CLIP

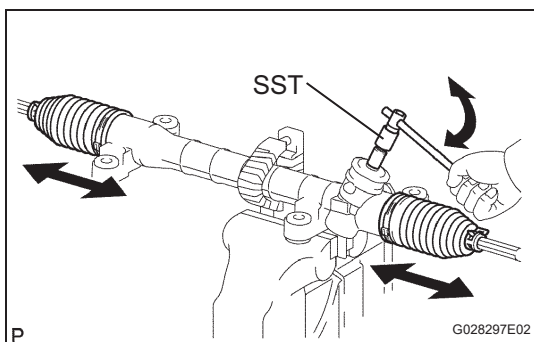
- (a) Using pliers, install the 2 rack boot clips to the RH and LH rack boots.

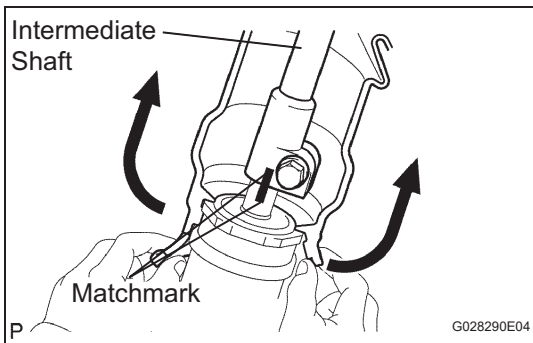
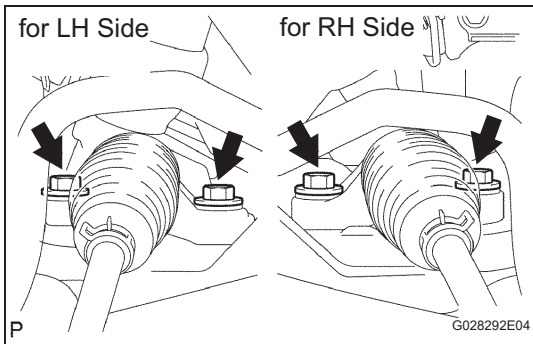
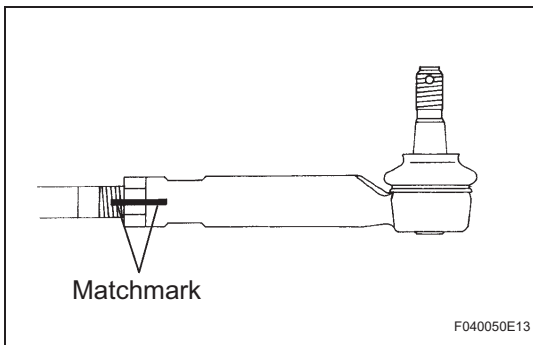
## 7. INSPECT STEERING GEAR ASSEMBLY

- (a) Using SST, turn the pinion shaft and check that the RH and LH rack boots expand and contract smoothly, reinstall it with a new rack boot clamp.

**SST 09616-00011**

If the rack boot does not expand and contract smoothly, reinstall it with a new rack boot clamp.



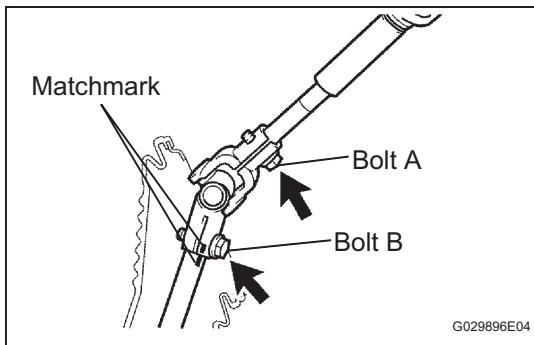
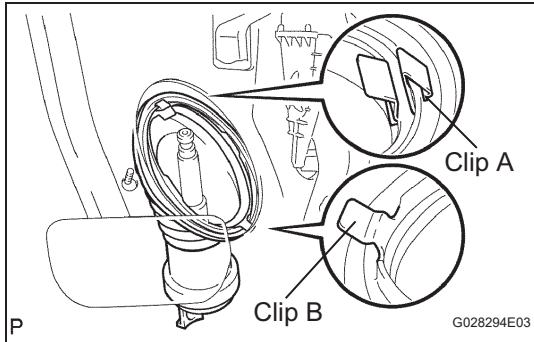


8. **INSTALL TIE ROD END SUB-ASSEMBLY LH**
  - (a) Screw the lock nut and tie rod end LH on the rack end unit the matchmarks are aligned and temporarily tighten the lock nut.  
HINT:  
Fully tighten the lock nut after adjusting toe-in.
9. **REMOVE TIE ROD END SUB-ASSEMBLY RH**  
HINT:  
Use the same procedures described for the LH side.

## INSTALLATION

1. **INSTALL STEERING GEAR ASSEMBLY**
  - (a) Install the steering gear from the left side of the vehicle.  
HINT:  
Be careful not to hit the stabilizer bar when installing the steering gear.
  - (b) Install the No. 1 column hole cover to the steering gear.
  - (c) Install the steering gear to the crossmember with the 4 bolts.  
**Torque: 58 N\*m (591 kgf\*cm, 43 ft.\*lbf)**
2. **INSTALL STEERING INTERMEDIATE SHAFT**
  - (a) Move the No. 1 column hole cover to the upper side of the vehicle, align the matchmarks, and install the intermediate shaft from the inside of the vehicle.  
**NOTICE:**  
**Do not damage the No. 1 hole cover when moving it.**
  - (b) Install the bolt.  
**Torque: 35 N\*m (360 kgf\*cm, 26 ft.\*lbf)**
  - (c) Fit the recessed part on the No. 1 column hole cover to the steering gear.  
**NOTICE:**  
**Make sure that the No. 1 hole cover is securely installed.**
3. **INSTALL FRONT NO. 1 STABILIZER BRACKET LH**  
(See page [SP-29](#))
4. **INSTALL FRONT NO. 1 STABILIZER BRACKET RH**  
HINT:  
Use the same procedures described for the LH side.
5. **INSTALL FRONT STABILIZER LINK ASSEMBLY LH**  
(See page [SP-30](#))
6. **INSTALL FRONT STABILIZER LINK ASSEMBLY RH**  
HINT:  
Use the same procedures described for the LH side.
7. **CONNECT NO. 1 TIE ROD END SUB-ASSEMBLY** (See page [DS-16](#))





## 8. CONNECT NO. 2 TIE ROD END SUB-ASSEMBLY

### HINT:

Use the same procedures described for the No. 1 tie rod end.

## 9. INSTALL FRONT WHEEL

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

## 10. INSTALL NO. 1 STEERING COLUMN HOLE COVER SUB-ASSEMBLY

- (a) Install the clip labeled B to the vehicle body and install the No. 1 column hole cover to the vehicle body with the clip labeled A.

### NOTICE:

**Make sure that the lip of the No. 1 hole cover fits on the dash panel correctly.**

## 11. INSTALL STEERING SLIDING YOKE SUB-ASSEMBLY

- (a) Align the matchmarks and install the sliding yoke to the intermediate shaft with the bolt labeled B.

**Torque: 35 N\*m (360 kgf\*cm, 26 ft.\*lbf)**

- (b) Tighten the bolt labeled A.

**Torque: 35 N\*m (360 kgf\*cm, 26 ft.\*lbf)**

## 12. INSTALL COLUMN HOLE COVER SILENCER SHEET

## 13. REPLACE FRONT WHEELS FACING STRAIGHT AHEAD

## 14. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

- (a) Inspect and adjust the front wheel alignment (see page [SP-2](#)).

## 15. PERFORM STEERING ANGLE SENSOR ZERO POINT CALIBRATION

- (a) Perform initialization (see page [IN-32](#)).

### NOTICE:

**Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.**