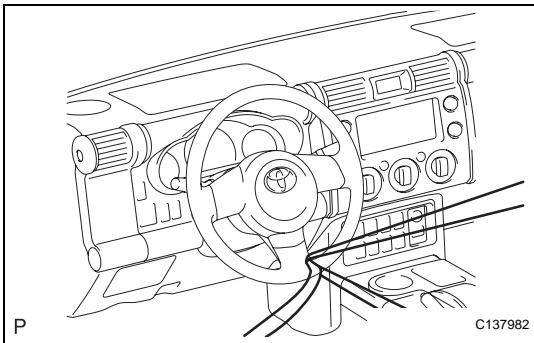
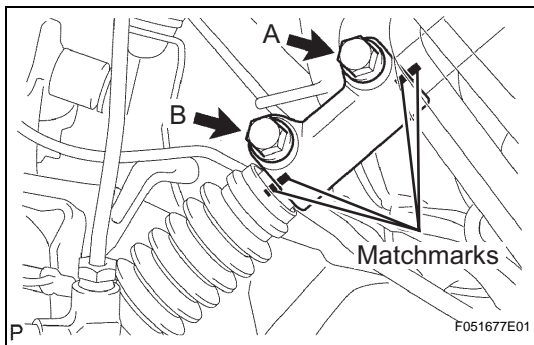


REMOVAL

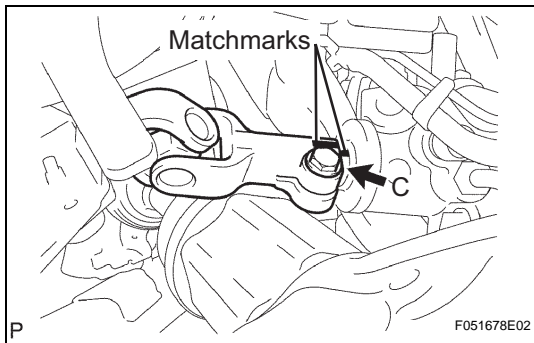
1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL
2. PLACE FRONT WHEELS FACING STRAIGHT AHEAD
3. REMOVE FRONT WHEELS
4. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY (See page [EM-6](#))
5. REMOVE REAR ENGINE UNDER COVER ASSEMBLY
 - (a) Remove the 4 bolts, then remove the rear engine under cover.
6. REMOVE NO. 2 EXHAUST FRONT PIPE ASSEMBLY (See page [EX-4](#))
7. REMOVE FRONT EXHAUST PIPE ASSEMBLY (See page [EX-4](#))
8. REMOVE PROPELLER SHAFT HEAT INSULATOR (See page [AT-178](#))
9. REMOVE FRONT PROPELLER SHAFT ASSEMBLY (See page [PR-2](#))
10. REMOVE PROPELLER SHAFT ASSEMBLY (See page [PR-9](#))
11. REMOVE AUTOMATIC TRANSMISSION WITH TRANSFER (See page [AT-180](#))
12. REMOVE FRONT SUSPENSION MEMBER BRACKET LH (See page [AT-180](#))
13. REMOVE FRONT SUSPENSION MEMBER BRACKET (See page [AT-180](#))
14. REMOVE NO. 3 FRAME CROSSMEMBER SUB-ASSEMBLY (See page [MT-11](#))
15. REMOVE NO.2 STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY
 - (a) Fix the steering wheel with the seat belt in order to prevent it from rotating.
HINT:
The operation is effective for preventing any damage to the spiral cable.

PS





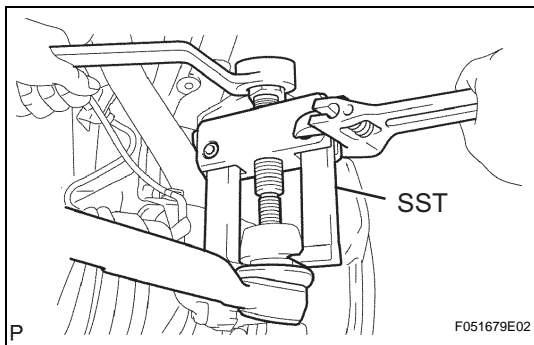
- (b) Place matchmarks on the steering sliding yoke, No. 2 steering intermediate shaft and steering intermediate shaft.
- (c) Remove bolts A and B from the steering sliding yoke.
- (d) Slide the steering sliding yoke up and separate it from the No. 2 steering intermediate shaft.
- (e) Pull down the steering sliding yoke from the steering intermediate shaft to remove it.



- (f) Place matchmarks on the No. 2 steering intermediate shaft and power steering link.
- (g) Remove bolt C from the No. 2 steering intermediate shaft.
- (h) Slide the No. 2 steering intermediate shaft up and remove it from the power steering link.

16. SEPARATE TIE ROD END SUB-ASSEMBLY LH

- (a) Remove the cotter pin and nut.

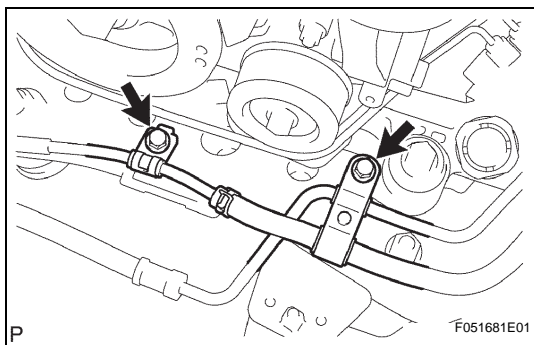


- (b) Using SST, separate the tie rod end from the steering knuckle arm.
SST 09628-62011

17. SEPARATE TIE ROD END SUB-ASSEMBLY RH

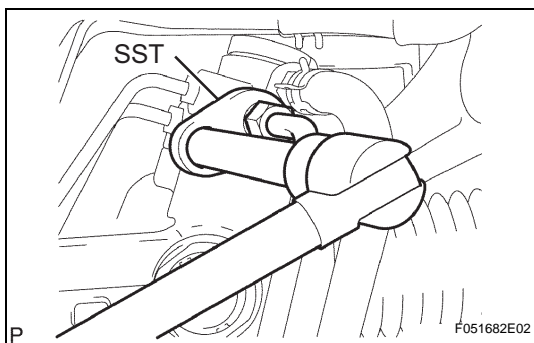
HINT:

The removal procedure for the RH side is the same as that for the LH side.

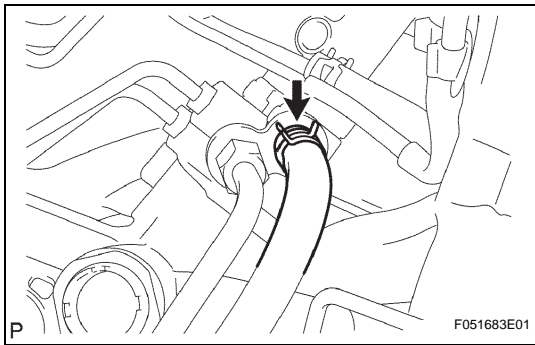


18. SEPARATE PRESSURE FEED TUBE ASSEMBLY

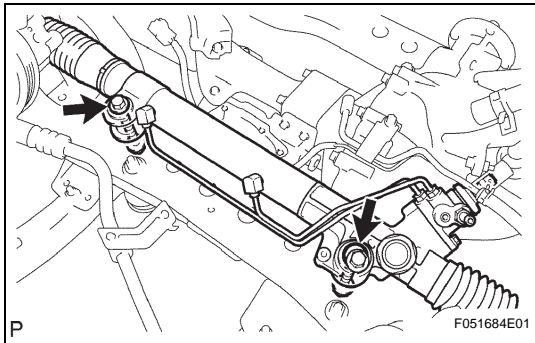
- (a) Remove the 2 bolts and separate the tube support brackets.



- (b) Using SST, loosen the flare nut and separate the pressure feed tube.
SST 09023-12701



(c) Disengage the clip and disconnect the return hose.



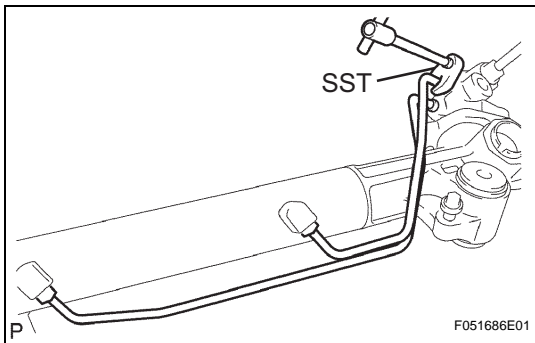
19. REMOVE POWER STEERING LINK

(a) Remove the 2 bolts and 2 nuts.

NOTICE:

The nut has a detent, so never turn the nut. Be sure to turn only the bolt.

(b) Tilt the transmission and remove the power steering link.

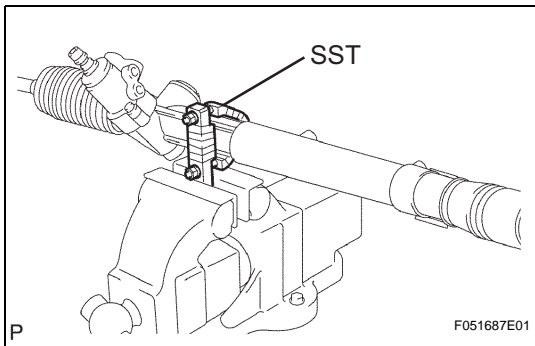


DISASSEMBLY

1. FIX POWER STEERING LINK

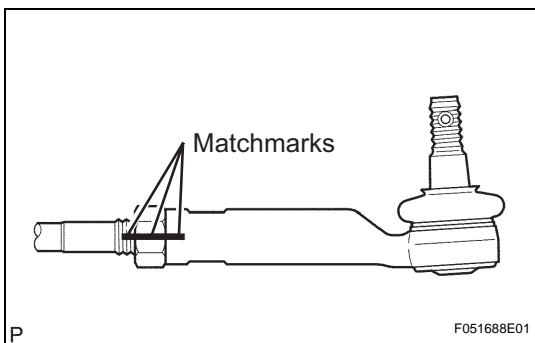
(a) Using SST, remove the 2 turn pressure tubes.

SST 09023-38201



(b) Using SST, fix the steering link between aluminum plates in a vise, as shown in the illustration.

SST 09612-00012



2. REMOVE TIE ROD END SUB-ASSEMBLY LH

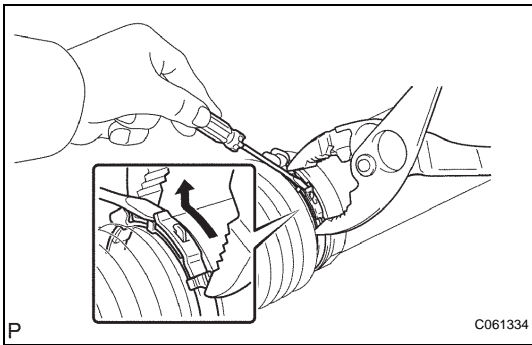
(a) Place matchmarks on the tie rod end, lock nut and rack end.

(b) Loosen the lock nut and remove the tie rod end and lock nut.

3. REMOVE TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.



- 4. REMOVE STEERING RACK BOOT CLAMP LH**
 (a) Using pliers and a screwdriver, loosen the clamp.
 HINT:
 Mark the RH and LH boots.
NOTICE:
Be careful not to damage the boot.

- 5. REMOVE STEERING RACK BOOT CLAMP RH**
 HINT:
 Use the same procedures described for the LH side.

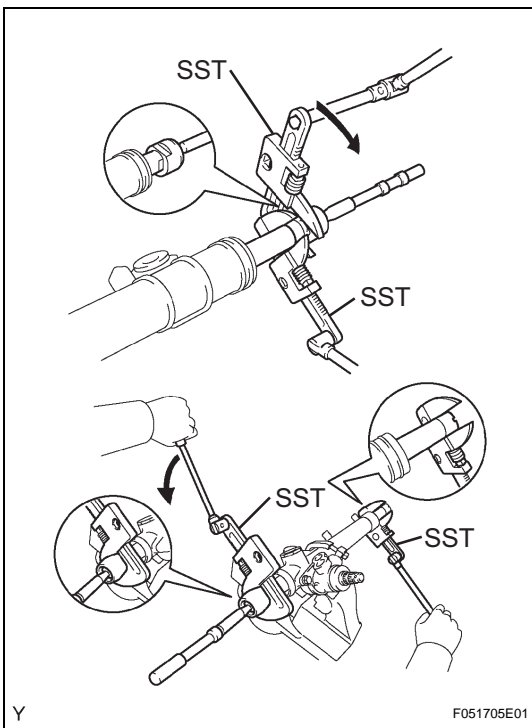
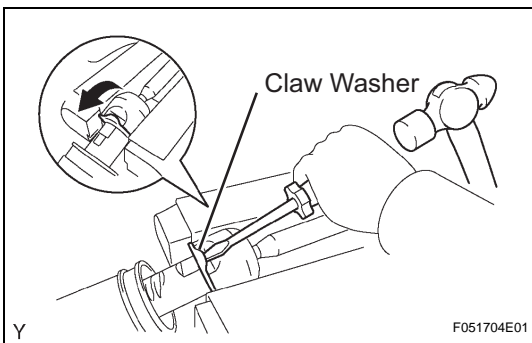
- 6. REMOVE STEERING RACK BOOT CLIP LH**
 (a) Using pliers, remove the clip.
NOTICE:
Be careful not to damage the boot.

- 7. REMOVE STEERING RACK BOOT CLIP RH**
 HINT:
 Use the same procedures described for the LH side.

8. REMOVE STEERING RACK BOOT LH

9. REMOVE STEERING RACK BOOT RH

- 10. REMOVE STEERING RACK END SUB-ASSEMBLY**
 (a) Using a screwdriver and hammer, stake back the 2 washers (LH and RH sides).
NOTICE:
Do not strike the steering rack.



- (b) Using a wrench, hold the steering rack (LH side).
 (c) Using SST, remove the steering rack end (LH side) from the power steering rack.

SST 09922-10010

NOTICE:

Rotate SST in the direction shown in the illustration.

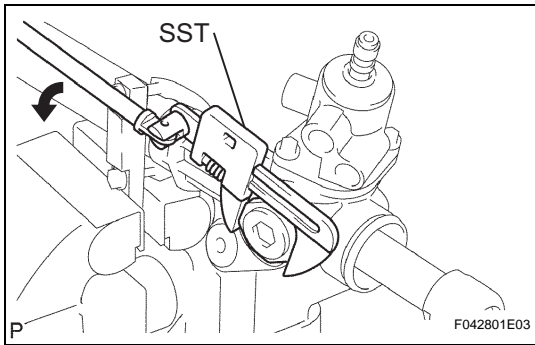
- (d) Using SST, remove the steering rack end (RH side) from the power steering rack.

SST 09922-10010

NOTICE:

Rotate SST in the direction shown in the illustration.

- (e) Remove the 2 claw washers.

**11. REMOVE RACK GUIDE**

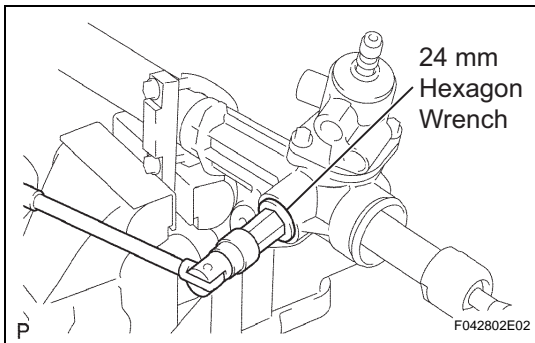
- (a) Using SST, remove the lock nut.

SST 09922-10010

- (b) Remove the claw washer.

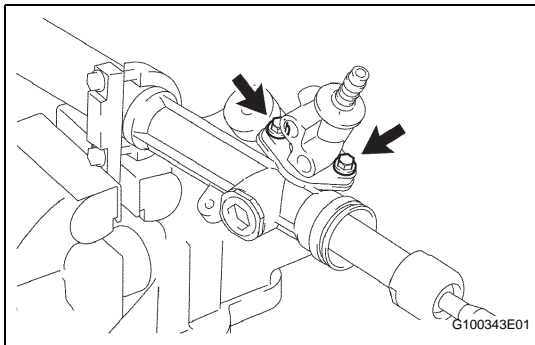
NOTICE:

Rotate SST in the direction shown in the illustration.



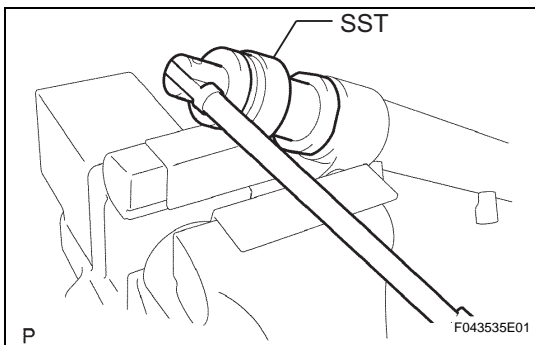
- (c) Using a 24 mm hexagon wrench, remove the rack guide spring cap.

- (d) Remove the spring and rack guide.

**12. REMOVE POWER STEERING CONTROL VALVE**

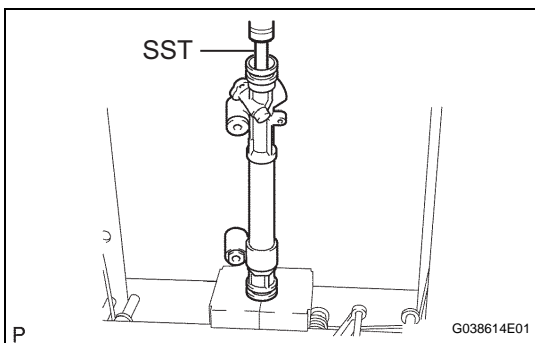
- (a) Remove the 2 bolts.

- (b) Pull out the control valve from the rack housing.

**13. REMOVE CYLINDER END STOPPER**

- (a) Using SST, remove the stopper.

SST 09631-20120

**14. REMOVE STEERING RACK AND OIL SEAL**

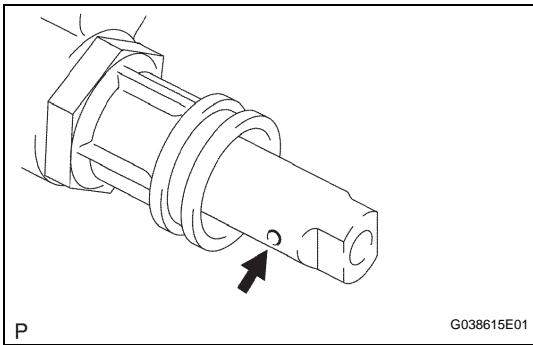
- (a) Using SST, press out the steering rack and oil seal.

SST 09950-70010 (09951-07200)

NOTICE:

Take care not to drop the steering rack.

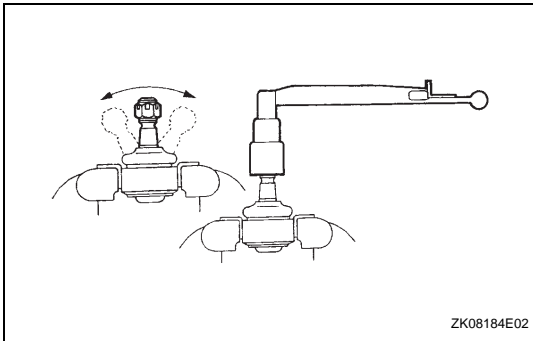
- (b) Remove the oil seal from the steering rack.

**15. INSPECT POWER STEERING RACK**

- (a) Insert a wire 20 mm (0.79 in.) into the vent hole of the steering rack and ensure that the vent hole is not clogged with grease.

NOTICE:

If the hole is clogged, the pressure inside the boot will change after it is assembled and the steering wheel is turned.

**16. INSPECT TIE ROD END SUB-ASSEMBLY LH**

- (a) Flip the ball joint stud back and forth 5 times as shown in the illustration, before installing the nut.
 (b) Using a torque wrench, turn the nut continuously at a rate of 2 to 4 seconds per turn and take the torque reading on the 5th turn.

Torque: (turning)

0.29 to 1.96 N*m (2.96 to 20 kgf*cm, 2.56 to 17.35 in.*lbf)

17. INSPECT TIE ROD END SUB-ASSEMBLY RH**HINT:**

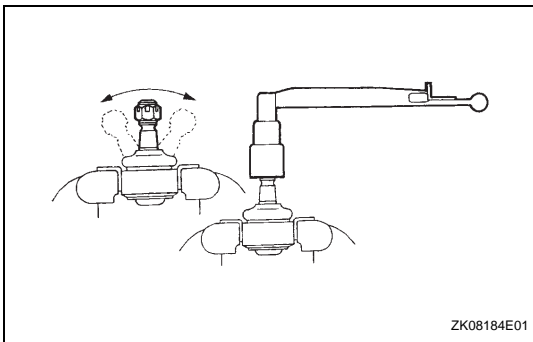
Use the same procedures described for the LH side.

18. REMOVE STEERING RACK PISTON RING

- (a) Using a screwdriver, remove the "Teflon" ring and O-ring from the steering rack.

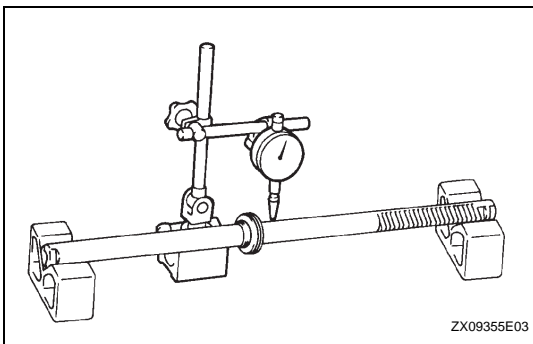
NOTICE:

Be careful not to damage the groove of the ring.

INSPECTION**1. INSPECT TIE ROD END SUB-ASSEMBLY**

- (a) Flip the ball joint stud back and forth 5 times as shown in the illustration before installing the nut.
 (b) Using a torque wrench, turn the nut continuously at a rate of 2 to 4 seconds per turn and check the torque reading on the 5th turn.

Torque: 0.29 to 1.96 N*m (2.96 to 20 kgf*cm, 2.56 to 17.35 in.*lbf)

**2. INSPECT POWER STEERING RACK**

- (a) Using a dial indicator, check the power steering rack for runout, teeth wear and damage.

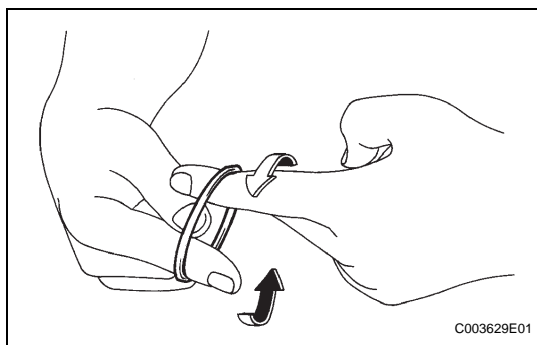
Maximum runout:

0.3 mm (0.012 in.)

If necessary, replace the power steering link assembly.

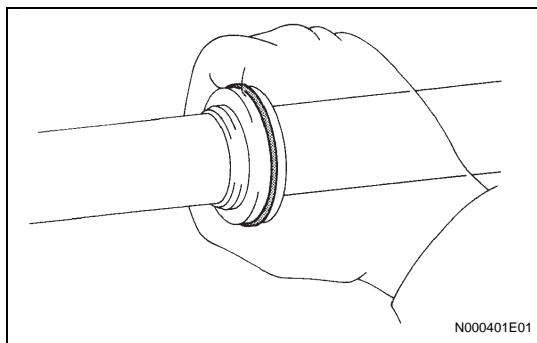
- (b) Check the back surface for wear and damage. If necessary, replace the power steering link assembly.

REASSEMBLY



1. INSTALL STEERING RACK PISTON RING

- (a) Coat a new O-ring with power steering fluid and install it onto the steering rack.
- (b) Stretch a new "Teflon" ring with your fingers.
 - NOTICE:**
 - Be careful not to overstretch the "Teflon" ring.**
- (c) Coat the "Teflon" ring with power steering fluid.



- (d) Install the "Teflon" ring onto the steering rack groove. Grip the ring to press it into the groove.

PS

2. INSTALL POWER STEERING RACK

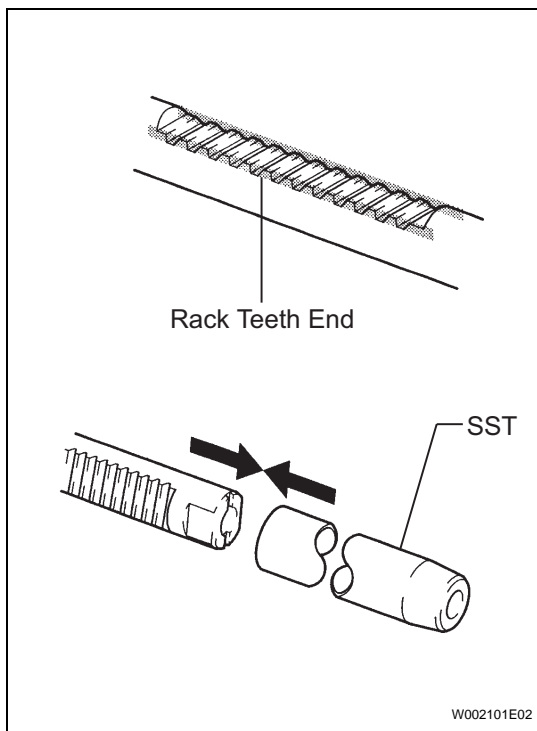
- (a) Apply grease onto the rack teeth ends.
- (b) Install SST onto the steering rack.

SST 09631-00350

HINT:

If necessary, scrape the burrs off the rack teeth end and burnish.

- (c) Coat SST and the power piston oil seal with power steering fluid.
- (d) Install the steering rack onto the rack housing.
- (e) Remove SST.



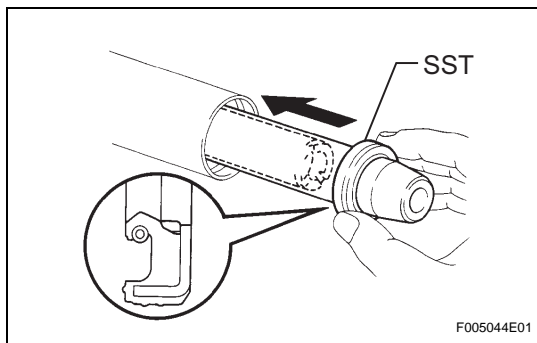
- (f) Coat SST with power steering fluid.

SST 09631-00350

- (g) Install SST onto the steering rack opposite end.
- (h) Coat the lip of a new oil seal with power steering fluid. Using SST, install the oil seal onto the steering rack.

NOTICE:

- Slide SST and the oil seal straight without tilting them.
- Install the oil seal facing in the correct direction.



- Be careful not to damage the lip of the oil seal.

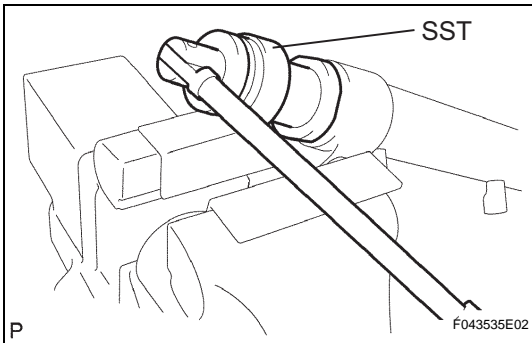
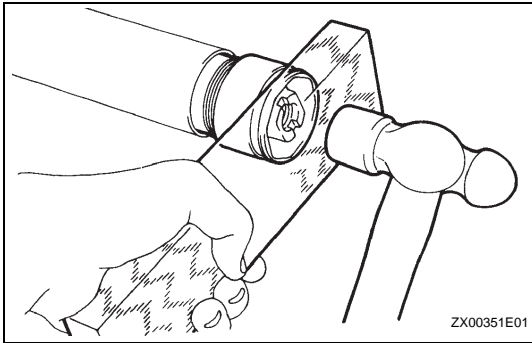
(i) Remove SST.

3. INSTALL CYLINDER END STOPPER

- Apply sealant to the stopper.
- Using a wooden block and hammer, tap in the stopper until it is tightly installed.

Sealant:

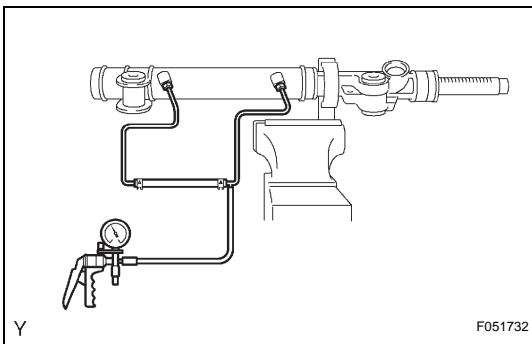
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or the equivalent



(c) Using SST, tighten the stopper.

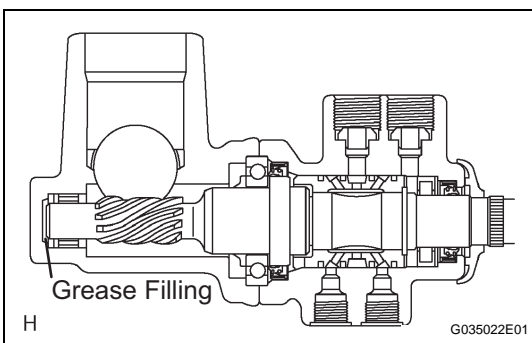
SST 09631-20120

Torque: 145 N*m (1,479 kgf*cm, 107 ft.*lbf)



4. TEST AIR TIGHTNESS

- Install SST to the unions of the rack housing.
SST 09631-12071 (09633-00010)
- Apply 53.33 kPa (400 mmHg, 15.75 in.Hg) of vacuum for about 30 seconds.
- Check that there is no change in the vacuum. If there is a change in the vacuum, check the installation of the oil seals.

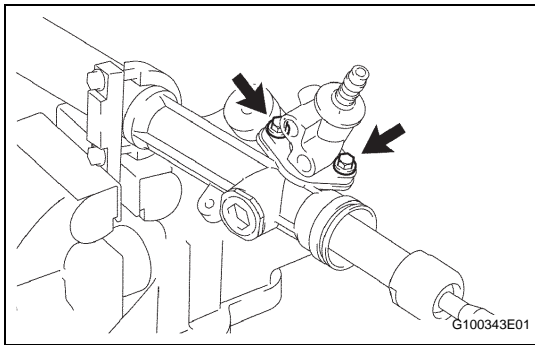


5. INSTALL POWER STEERING CONTROL VALVE

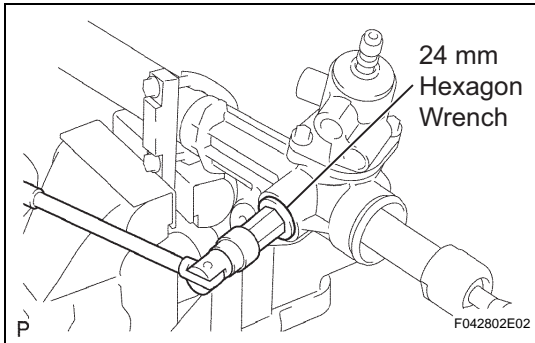
- Apply molybdenum disulfide base grease to the needle roller bearing inside the rack housing shown in the illustration.

Volume of grease applied:

Approximately 2 g (0.07 oz)



- (b) Install the control valve with the 2 bolts.
Torque: 18 N*m (185 kgf*cm, 13 ft.*lbf)



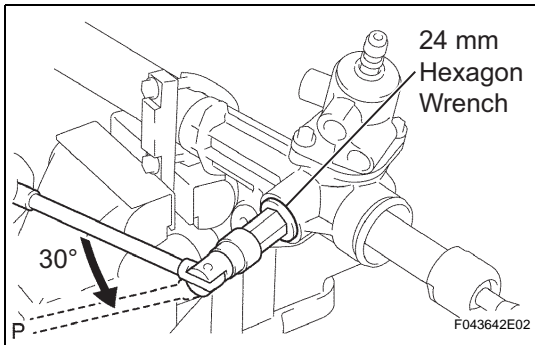
6. INSTALL RACK GUIDE

- (a) Install the rack guide and spring.
 (b) Apply sealant to 2 or 3 threads of the rack guide spring cap.

Sealant:

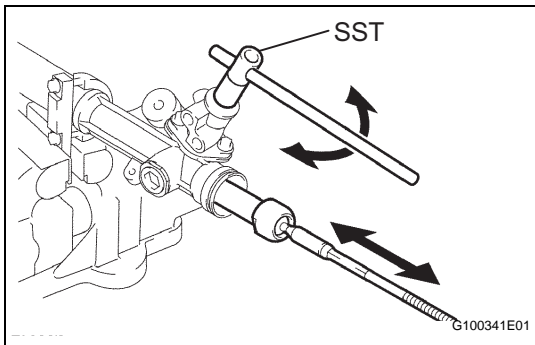
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or the equivalent

- (c) Using a 24 mm hexagon wrench, temporarily install the spring cap.

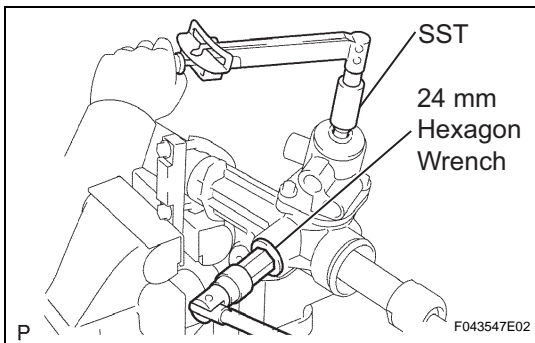


7. ADJUST TOTAL PRELOAD

- (a) To prevent the steering rack teeth from damaging the lip of the oil seal, temporarily install the RH and LH rack ends.
 (b) 2WD:
 Using a 24 mm hexagon wrench, tighten the rack guide spring cap.
Torque: 25 N*m (250 kgf*cm, 18 ft.*lbf)
 (c) Loosen the cap 30°.



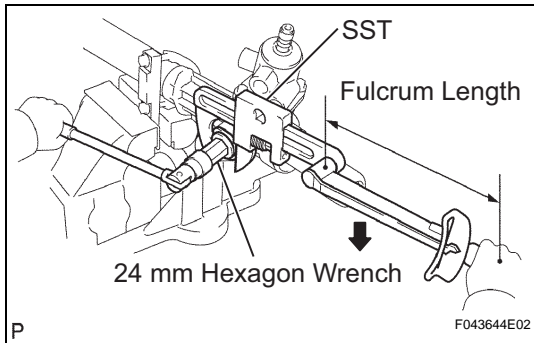
- (d) Using SST, turn the control valve shaft right and left 1 or 2 times. The rack end will move in and out.
SST 09616-00011
 (e) Using a 24 mm hexagon wrench, loosen the cap until the rack guide spring does not function.



- (f) Using SST, a torque wrench and 24 mm hexagon wrench, tighten the cap until the preload is within the specification.
SST 09616-00011
Torque: Preload (turning)
0.8 to 1.6 N*m (8.2 to 16.3 kgf*cm, 7.1 to 14.2 in.*lbf)

NOTICE:

Perform adjustments in the tightening direction of the spring cap.



- (g) Apply sealant to 2 or 3 threads of the lock nut.

Sealant:

Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or the equivalent.

- (h) Temporarily install the lock nut.

- (i) Using a 24 mm hexagon wrench, hold the rack guide spring cap. Using SST, torque the nut.

SST 09922-10010

**Torque: 69 N*m (704 kgf*cm, 51 ft.*lbf) for use without SST
65 N*m (660 kgf*cm, 48 ft.*lbf) for use with SST**

NOTICE:

Rotate SST in the direction shown in the illustration.

HINT:

Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).

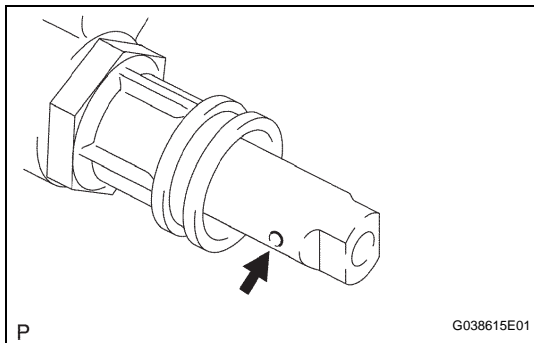
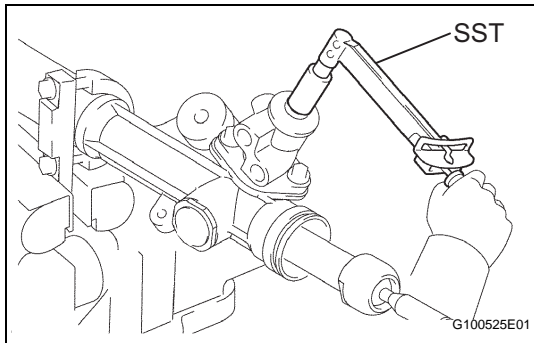
- (j) Using SST, recheck the total preload.

Torque: Preload for (turning)

0.8 to 1.6 N*m (8.2 to 16.3 kgf*cm, 1.1 to 14.2 in.*lbf)

SST 09616-00011

- (k) Remove the RH and LH rack ends.



8. INSPECT POWER STEERING RACK

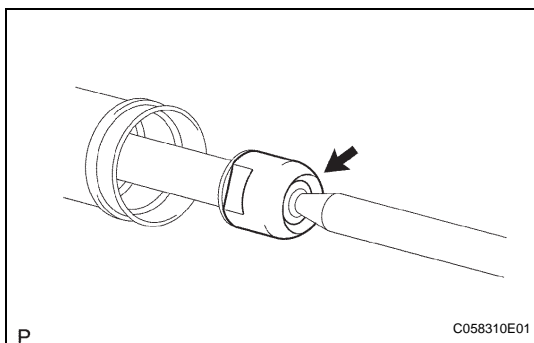
- (a) Insert a wire 20 mm (0.79 in.) into the vent hole of the steering rack, and ensure that the vent hole is not clogged with grease.

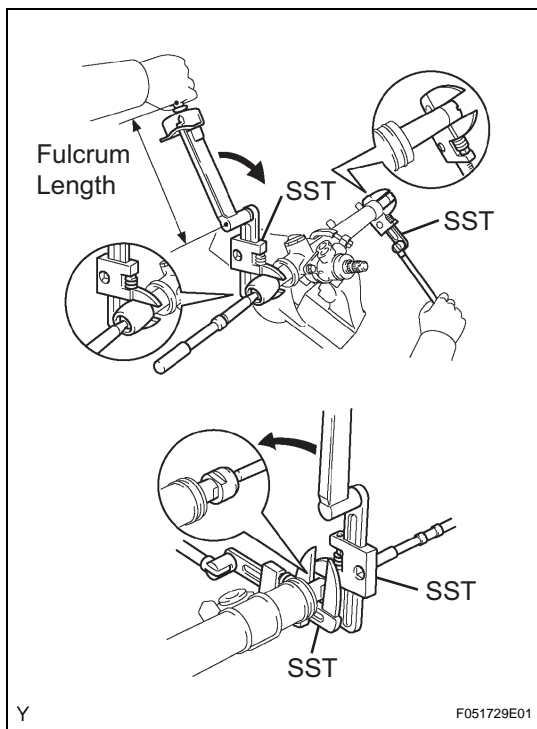
NOTICE:

If the hole is clogged, the pressure inside the boot will change after it is assembled and the steering wheel is turned.

9. INSTALL STEERING RACK END SUB-ASSEMBLY

- (a) Install 2 new claw washers onto the power steering rack while aligning the notch on the steering rack end with the claw.
- (b) Temporarily install the 2 steering rack ends onto the power steering rack.
- (c) Fill up the ball joint of the steering rack ends with MP grease.





- (d) Using SST, install the power steering rack end (LH side) onto the power steering rack.

SST 09922-10010

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf) for use without SST
98 N*m (1,000 kgf*cm, 72 ft.*lbf) for use with SST

NOTICE:

- Rotate SST in the direction shown in the illustration.
- Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).

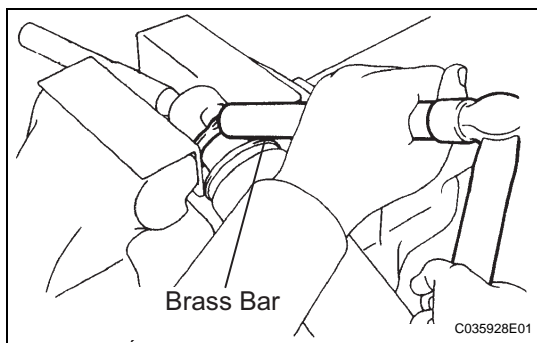
- (e) Using SST and a wrench, install the power steering rack (LH side).

SST 09922-10010

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf) for use without SST
98 N*m (1,000 kgf*cm, 72 ft.*lbf) for use with SST

NOTICE:

- Rotate SST in the direction shown in the illustration.
- Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).



- (f) Using a brass bar and hammer, stake the 2 claw washers (LH and RH sides).

NOTICE:

Do not strike the steering rack.

10. INSTALL STEERING RACK BOOT LH

- (a) Install the boot.

NOTICE:

Be careful not to damage or twist the boot.

11. INSTALL STEERING RACK BOOT RH

HINT:

Use the same procedures described for the LH side.

12. INSTALL STEERING RACK BOOT CLAMP LH

- (a) Using the pliers and a screwdriver, install the rack boot clamp, as shown in the illustration.

13. INSTALL STEERING RACK BOOT CLAMP RH

HINT:

Use the same procedures described for the LH side.

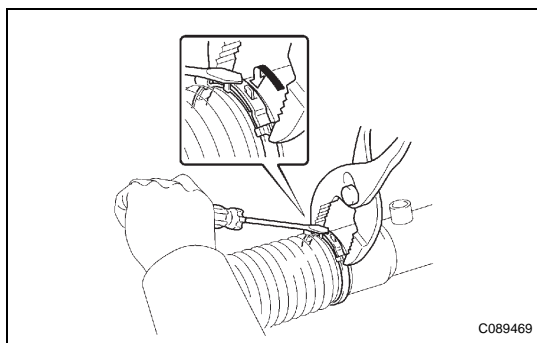
14. INSTALL STEERING RACK BOOT CLIP LH

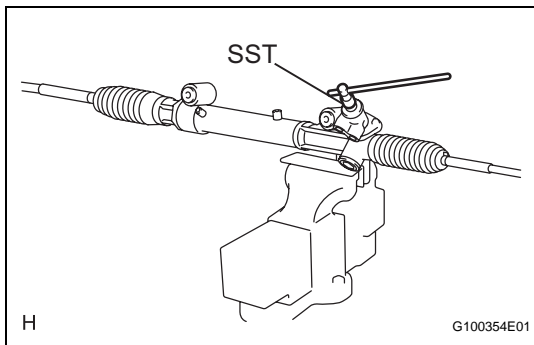
- (a) Using pliers, install the clip.

15. INSTALL STEERING RACK BOOT CLIP RH

HINT:

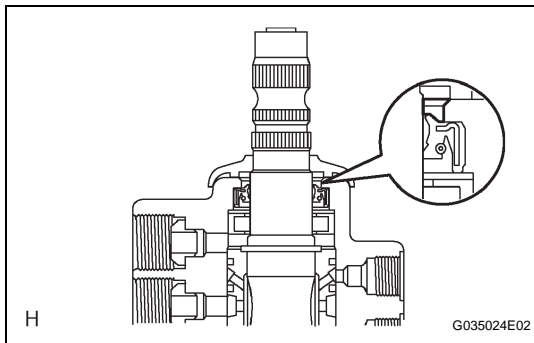
Use the same procedures described for the LH side.



**16. INSTALL POWER STEERING LINK**

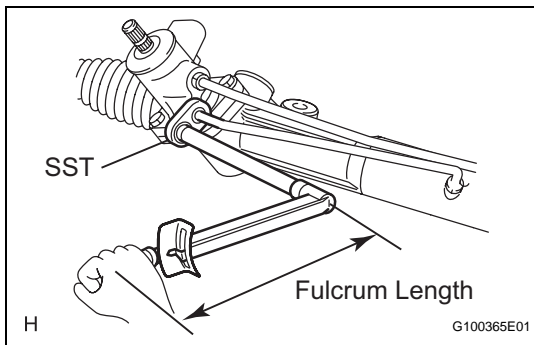
- (a) Using SST, check that the rack boot stretches smoothly when the control valve shaft is being rotated.

SST 09616-00011



- (b) Apply MP grease as shown in the illustration.
(c) Install the dust cover.

PS

**17. INSTALL STEERING TURN PRESSURE TUBE**

- (a) Apply power steering fluid to 2 new O-rings. Using SST, install the 2 O-rings and the LH turn pressure tube.

SST 09023-38201

Torque: 25 N*m (250 kgf*cm, 18 ft.*lbf) for use without SST
23 N*m (230 kgf*cm, 17 ft.*lbf) for use with SST

HINT:

- Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).
 - This torque value is effective when SST is parallel to the torque wrench.
- (b) Apply power steering fluid to 2 new O-rings. Using SST, install the 2 O-rings and the RH turn pressure tube.

SST 09023-38201

Torque: 25 N*m (250 kgf*cm, 18 ft.*lbf) for use without SST
23 N*m (230 kgf*cm, 17 ft.*lbf) for use with SST

HINT:

- Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).
- This torque value is effective when SST is parallel to the torque wrench.