**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:**

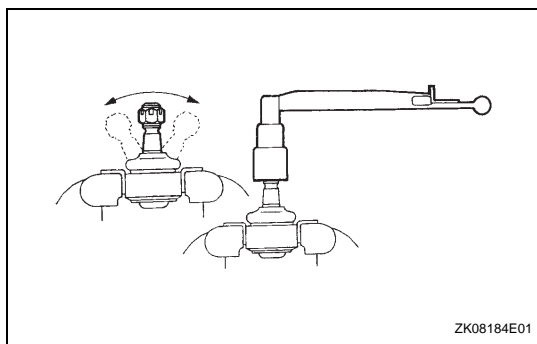
Use the same procedures described for the LH side.

18. REMOVE STEERING RACK PISTON RING

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

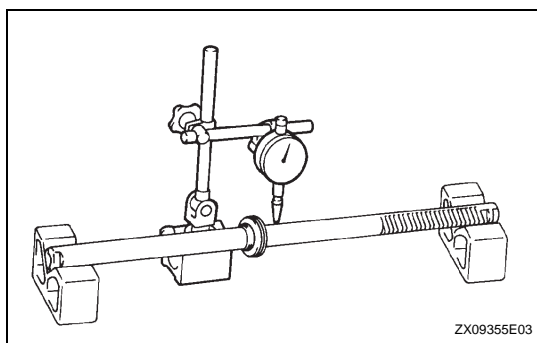
NOTICE:

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**

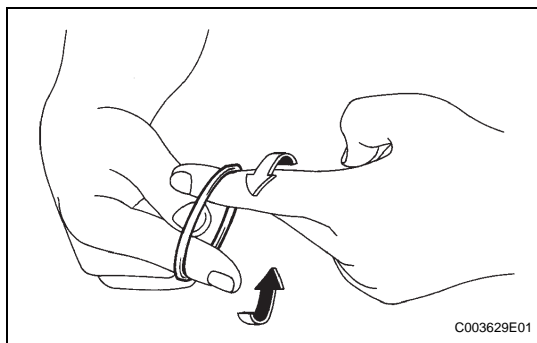
- (a) Using a dial indicator, check the power steering rack for runout, teeth wear and damage.

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**

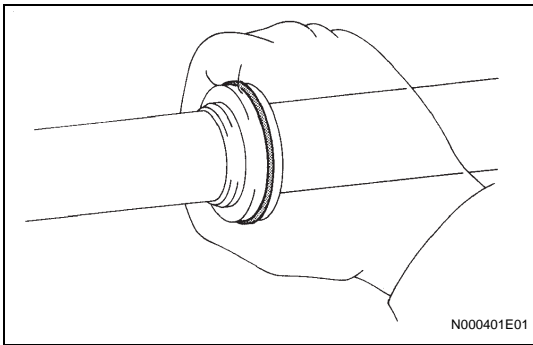
- (a) Coat a new O-ring with power steering fluid and install it on the steering rack.

- (b) Stretch a new "Teflon" ring with your fingers.

NOTICE:

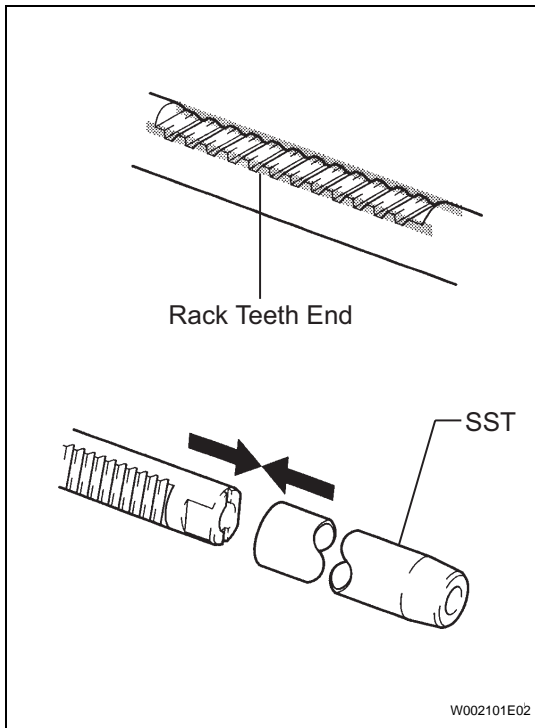
Be careful not to overstretch the teflon ring.

- (c) Coat the "Teflon" ring with power steering fluid.



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

PS



2. INSTALL POWER STEERING RACK

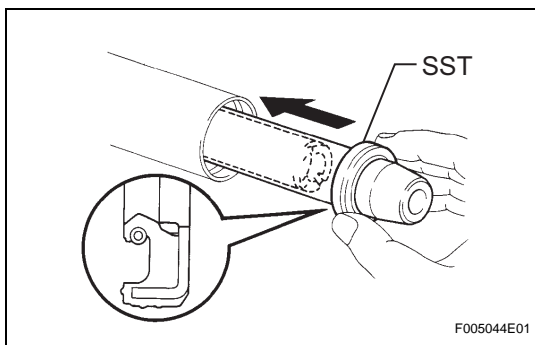
- (a) Apply grease onto the rack teeth ends.
 (b) Install SST onto the steering rack.

SST 09631-00350

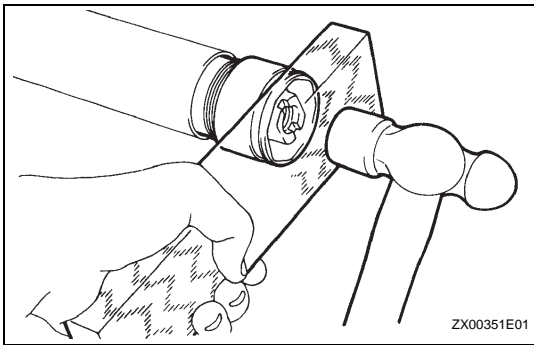
HINT:

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.

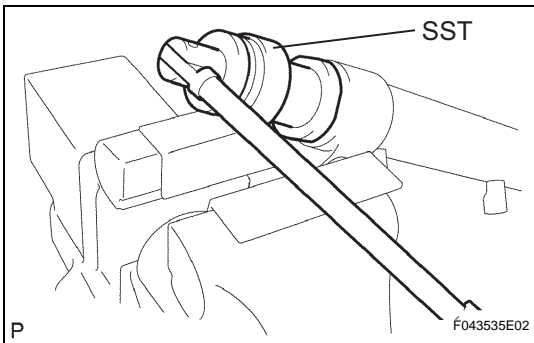


3. INSTALL CYLINDER END STOPPER

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

Sealant:

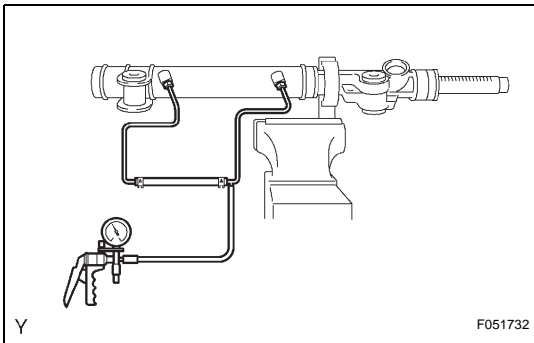
**Part No. 08833-00080, THREE BOND 1344,
LOCTITE 242 or the equivalent**



- (c) Using SST, tighten the stopper.

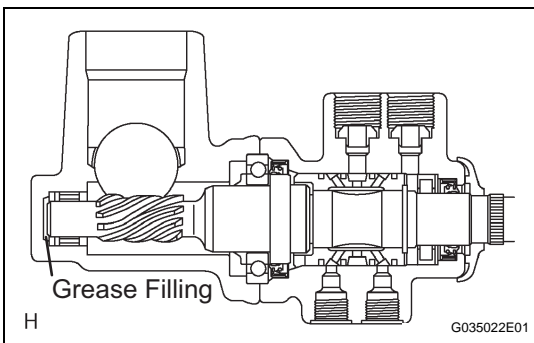
SST 09631-20120

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



4. TEST AIR TIGHTNESS

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

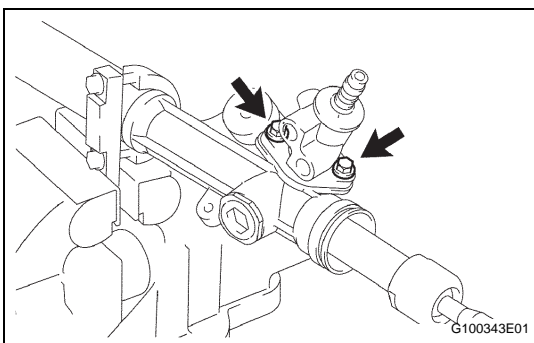


5. INSTALL POWER STEERING CONTROL VALVE

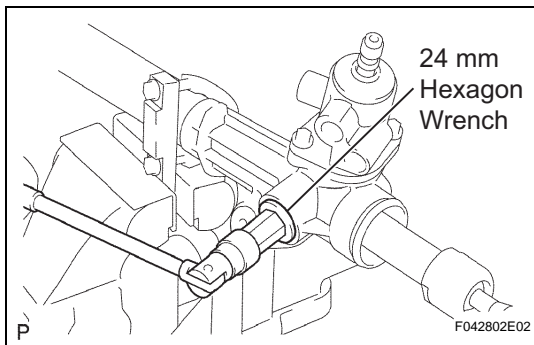
- (a) Apply molybdenum disulfide base grease to the needle roller bearing inside the rack housing shown in the illustration.

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)



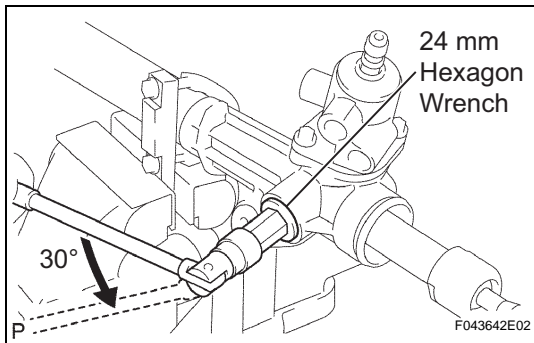
6. INSTALL RACK GUIDE

- (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.



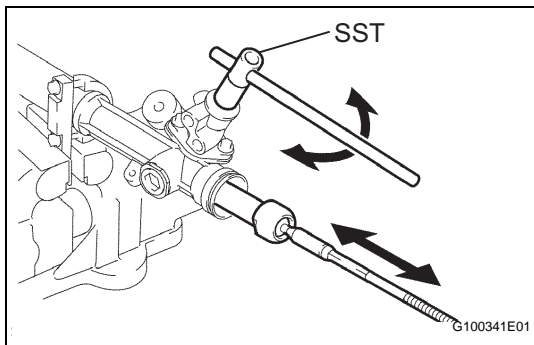
7. ADJUST TOTAL PRELOAD

- (a) To prevent the steering rack teeth from damaging the lip of the oil seal, temporarily install the RH and LH rack ends.

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

Torque: 25 N*m (250 kgf*cm, 18 ft.*lbf)

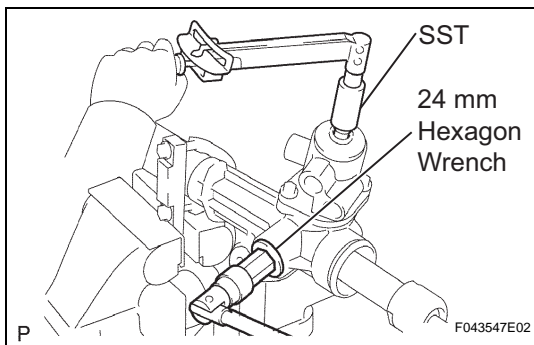
- (c) Loosen the cap 30°.



- (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:

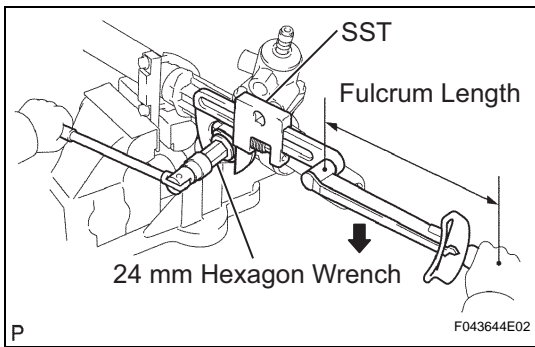
Perform adjustments in the tightening direction of the spring cap.

- (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.

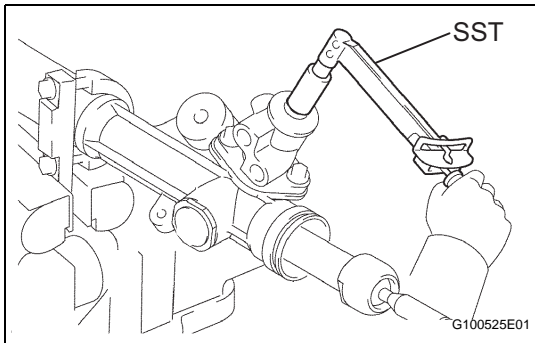
- (h) Temporarily install the lock nut.



- (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.

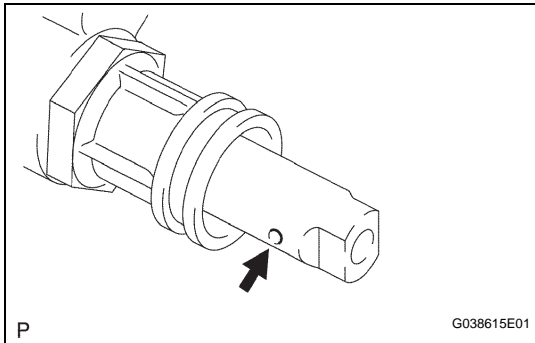
HINT:
 Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).



- (j) Using SST, recheck the total preload.
Torque: Preload (turning)
0.8 to 1.6 N*m (8.2 to 1.6 kgf*cm, 1.1 to 14.2 in.*lbf)

SST 09616-00011

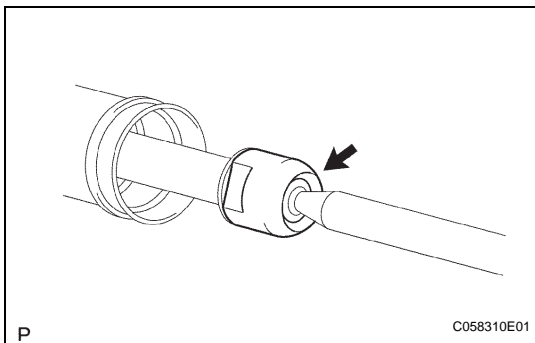
- (k) Remove the RH and LH rack ends.



8. INSPECT POWER STEERING RACK

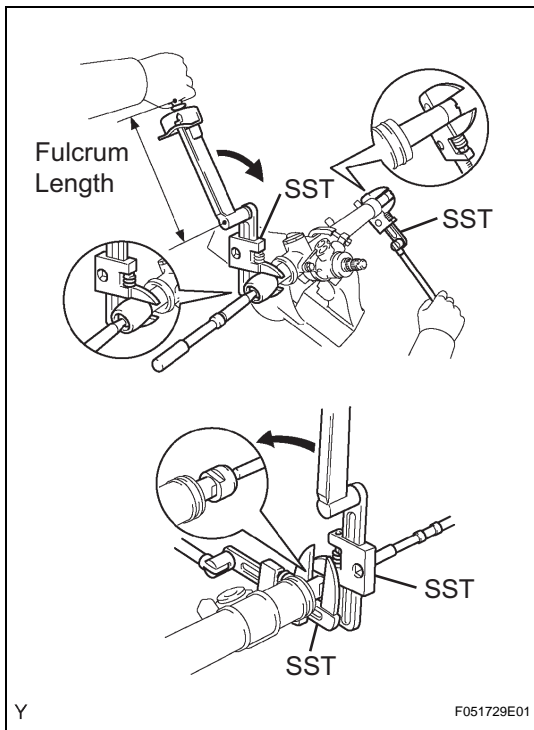
- (a) Insert a wire 20 mm (0.79 in.) into the vent hole of the steering rack, and ensure that the vent hole is not clogged with grease.

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.).

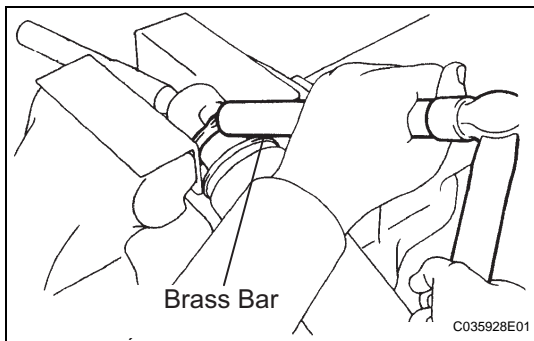
- (e) Using SST and a wrench, install the power steering rack (LH side).

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 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.

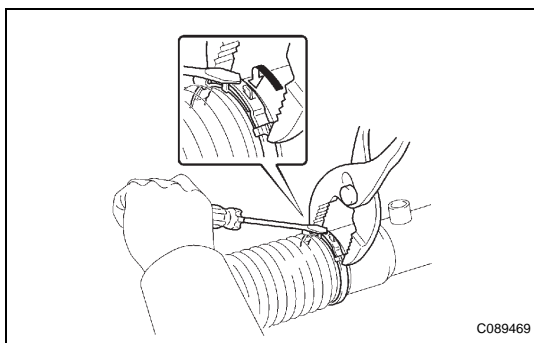
14. INSTALL STEERING RACK BOOT CLIP LH

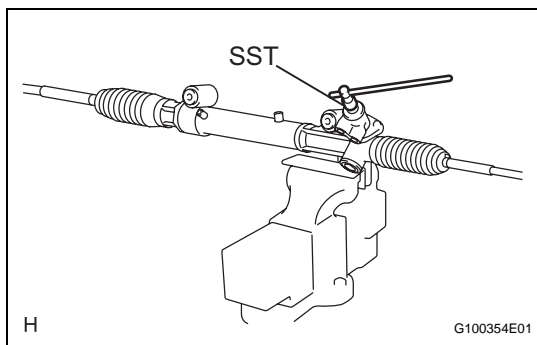
- (a) Using pliers, install the clip.

15. INSTALL STEERING RACK BOOT CLIP RH

HINT:

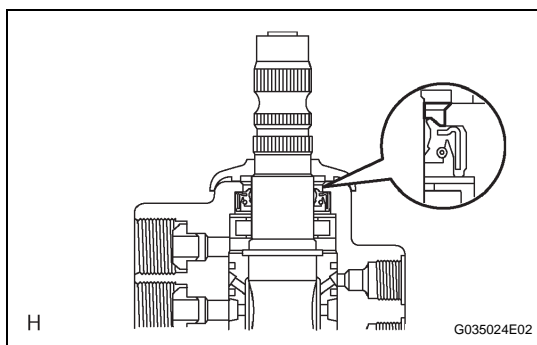
Use the same procedures described for the LH side.



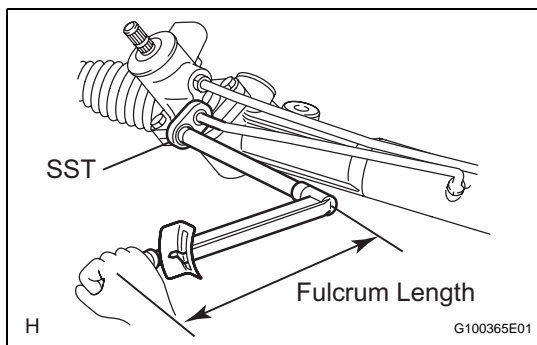
**16. INSTALL POWER STEERING LINK**

- (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.

**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 steering 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 steering turn pressure tube.

SST 09023-38201

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

23 N*m (235 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.