TOYOTA SERVICE BULLETIN
Group: 07 No.: 01 Date: Sep, 12

Rav 4 ACA33/38, GSA33

Correction to repair manual RM01N3E

Please ensure these pages are distributed to all relevant staff for their information; and a copy made available for future reference, with the above repair manual.

Section	Title	Paragraph
PREPARATION	POWER STEERING	SST
POWER STEERING	POWER STEERING	COMPONENTS
		REMOVAL
		INSTALLATION

The revised pages listed above are attached.
(The corrected parts are indicated by arrows.)

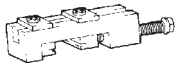
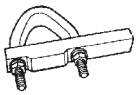
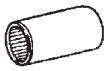
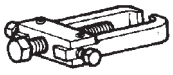
This Bulletin does not cause the Flat Rate Manual to be changed.

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POWER STEERING

SST

[Added]

	09521-24010	Drive Shaft Boot Clamping Tool	-
	09612-00012	Rack & Pinion Steering Rack Housing Stand	-
	09616-00011	Steering Worm Bearing Adjusting Socket	-
	09628-62011	Ball Joint Puller	-

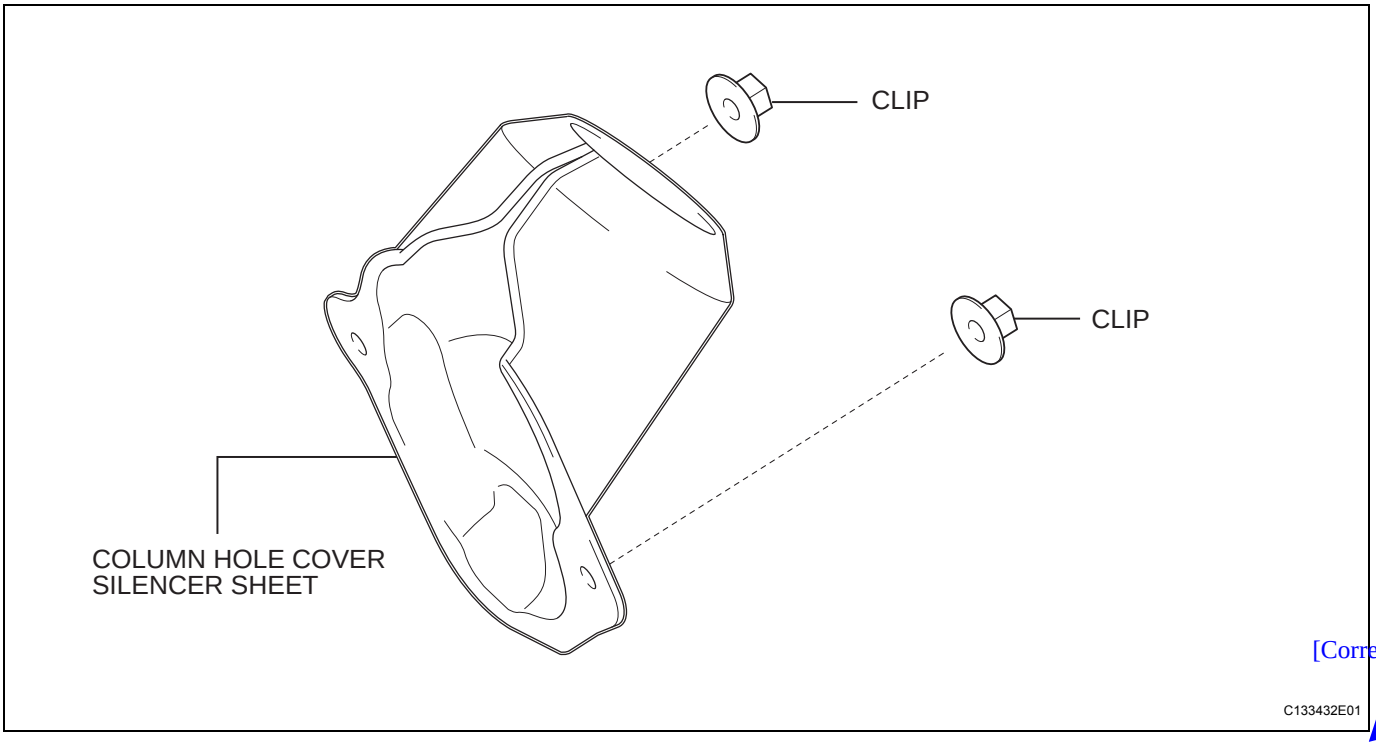
RECOMMENDED TOOLS

	09082-00040	TOYOTA Electrical Tester	-
	(09083-00150)	Test Lead Set	-

EQUIPMENT

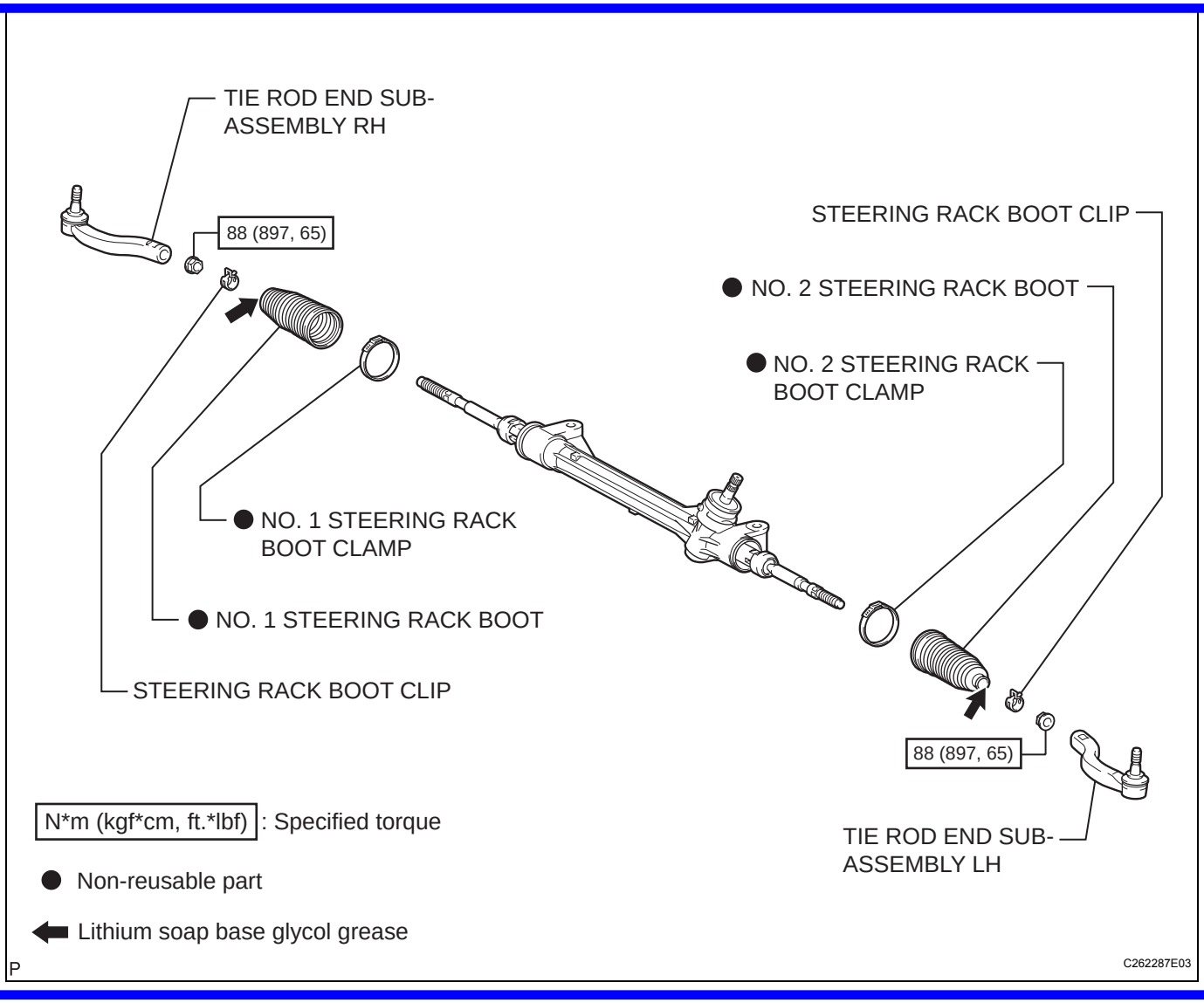
Torque wrench	-

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[Corrected]

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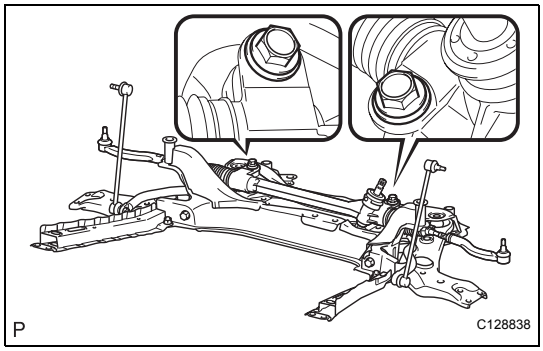


PS

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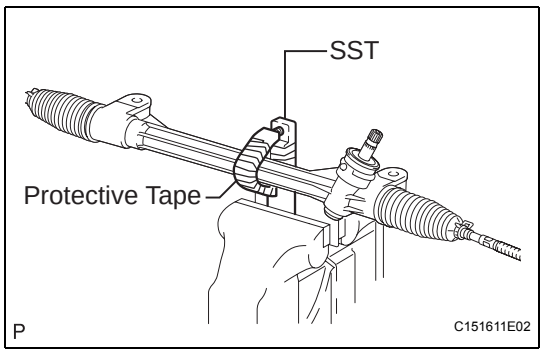


12. REMOVE STEERING GEAR ASSEMBLY

(a) Remove the 2 bolts, 2 nuts and steering gear from the suspension crossmember.

NOTICE:

Keep the nut from rotating while turning the bolt.



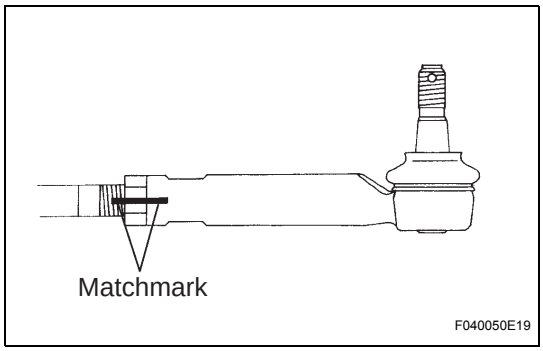
13. SECURE STEERING GEAR ASSEMBLY

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

SST 09612-00012

HINT:

Remove and reinstall SST as needed.



14. REMOVE TIE ROD END SUB-ASSEMBLY LH

(a) Put matchmarks on the tie rod end sub-assembly LH and rack end.

(b) Remove the tie rod end sub-assembly LH and lock nut.

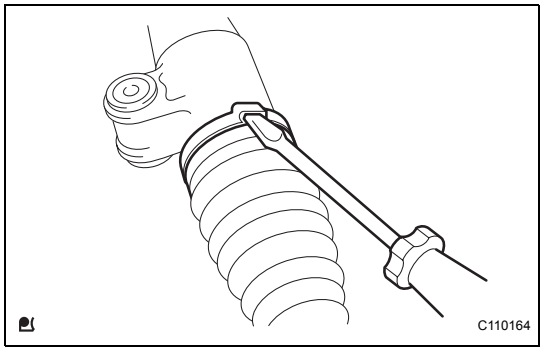
15. REMOVE TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the tie rod end sub-assembly LH.

16. REMOVE STEERING RACK BOOT CLIP

(a) Using pliers, remove the 2 steering rack boot clips.



17. REMOVE NO. 2 STEERING RACK BOOT CLAMP

(a) Using a screwdriver, remove the No. 2 steering rack boot clamp.

NOTICE:

Be careful not to damage the steering rack boot.

18. REMOVE NO. 1 STEERING RACK BOOT CLAMP

HINT:

Use the same procedure as for the No. 2 steering rack boot clamp.

19. REMOVE NO. 2 STEERING RACK BOOT

(a) Remove the No. 2 steering rack boot.

20. REMOVE NO. 1 STEERING RACK BOOT

(a) Remove the No. 1 steering rack boot.

PS

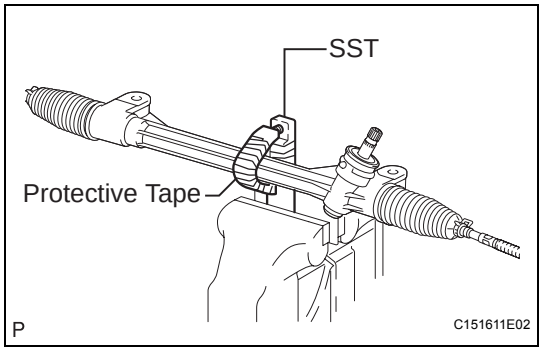
[Added]

REMOVAL

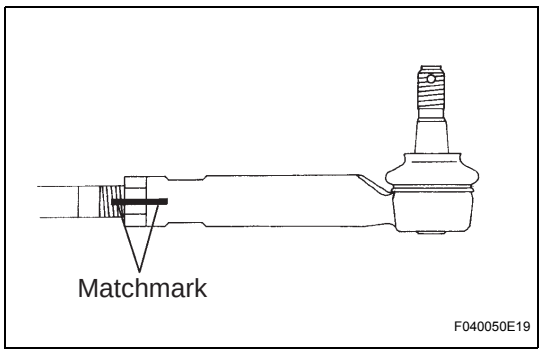
(2007/01-2007/08)

1. POSITION FRONT WHEELS FACING STRAIGHT AHEAD

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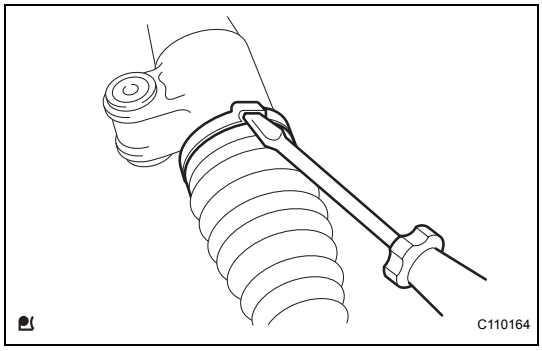


13. **SECURE STEERING GEAR ASSEMBLY**
    (a) Using SST wrapped with protective tape, secure the steering gear in a vise.
    SST 09612-00012
    HINT:
    Remove and reinstall SST as needed.



14. **REMOVE TIE ROD END SUB-ASSEMBLY LH**
    (a) Put matchmarks on the tie rod end sub-assembly LH and rack end.
    (b) Remove the tie rod end sub-assembly LH and lock nut.

15. **REMOVE TIE ROD END SUB-ASSEMBLY RH**
    HINT:
    Use the same procedure described for the tie rod end sub-assembly LH.



16. **REMOVE STEERING RACK BOOT CLIP**
    (a) Using pliers, remove the 2 steering rack boot clips.

17. **REMOVE NO. 2 STEERING RACK BOOT CLAMP**
    (a) Using a screwdriver, remove the No. 2 steering rack boot clamp.
    NOTICE:
    Be careful not to damage the steering rack boot.

18. **REMOVE NO. 1 STEERING RACK BOOT CLAMP**
    HINT:
    Use the same procedure as for the No. 2 steering rack boot clamp.

19. **REMOVE NO. 2 STEERING RACK BOOT**
    (a) Remove the No. 2 steering rack boot.

20. **REMOVE NO. 1 STEERING RACK BOOT**
    (a) Remove the No. 1 steering rack boot.

PS

[Added]

REMOVAL

(2007/08-)

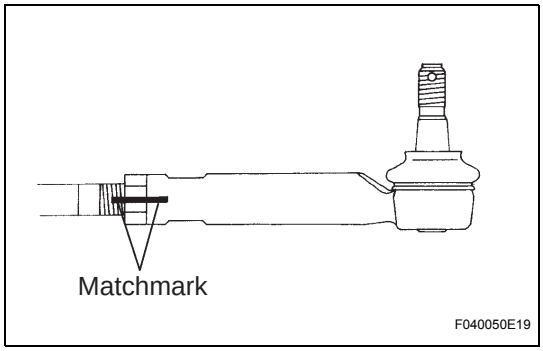
1. **POSITION FRONT WHEELS FACING STRAIGHT AHEAD**

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 FRONT WHEELS**

4. **DISCONNECT TIE ROD END SUB-ASSEMBLY LH**
   (a) Remove the cotter pin and castle nut.

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14. REMOVE TIE ROD END SUB-ASSEMBLY LH

(a) Put matchmarks on the tie rod end subassembly LH and rack end.

(b) Remove the tie rod end sub-assembly LH and lock nut.

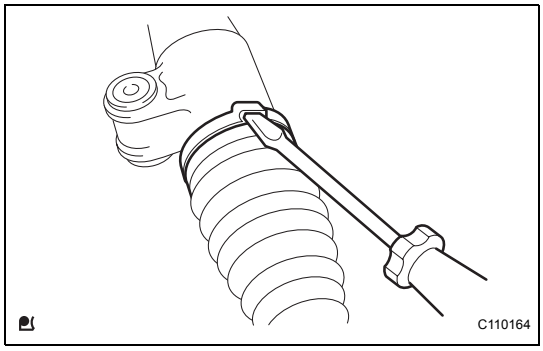
15. REMOVE TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the tie rod end sub-assembly LH.

16. REMOVE STEERING RACK BOOT CLIP

(a) Using pliers, remove the 2 steering rack boot clips.



[Added]

17. REMOVE NO. 2 STEERING RACK BOOT CLAMP

(a) Using a screwdriver, remove the No. 2 steering rack boot clamp.

NOTICE:

Be careful not to damage the steering rack boot.

18. REMOVE NO. 1 STEERING RACK BOOT CLAMP

HINT:

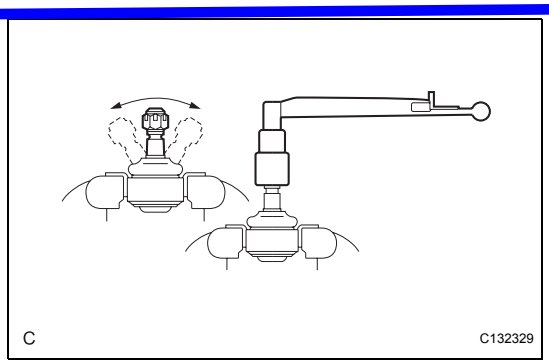
Use the same procedure as for the No. 2 steering rack boot clamp.

19. REMOVE NO. 2 STEERING RACK BOOT

(a) Remove the No. 2 steering rack boot.

20. REMOVE NO. 1 STEERING RACK BOOT

(a) Remove the No. 1 steering rack boot.



INSPECTION

1. INSPECT TIE ROD END SUB-ASSEMBLY LH

(a) Secure the tie rod end sub-assembly 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.

(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:

0.98 to 3.92 N*m (10.0 to 39.9 kgf*cm, 9 to 34 in.*lbf)

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

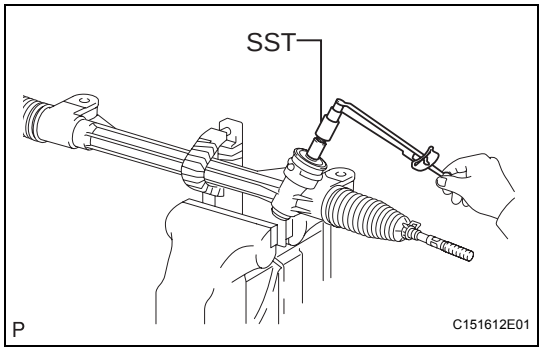
2. INSPECT TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the tie rod end sub-assembly LH.

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3. INSPECT TOTAL PRELOAD

(a) Using SST, inspect the total preload.

SST 09616-00011

Standard total preload (turning):

0.7 to 1.3 N*m (7.1 to 13.2 kgf*cm, 6 to 11 in.*lbf)

NOTICE:

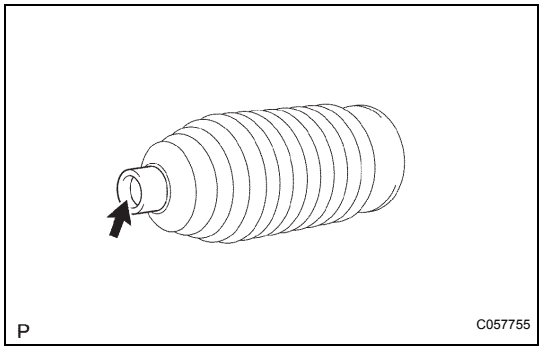
Inspect around the steering rack center position.

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

[Added]

INSTALLATION

(2005/11-2007/01)



1. INSTALL NO. 2 STEERING RACK BOOT

(a) Apply lithium soap base glycol grease to the inside of the small opening of a new No. 2 steering rack boot.

(b) Install the No. 2 steering rack boot to the groove on the rack housing.

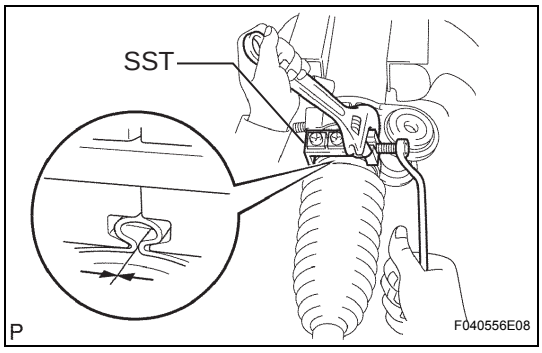
NOTICE:

- **Be careful not to damage or twist the boot.**
- **Make sure that the boot is free of rust and foreign matter.**

2. INSTALL NO. 1 STEERING RACK BOOT

HINT:

Perform the same procedure as for the No. 2 steering rack boot.



3. INSTALL NO. 2 STEERING RACK BOOT CLAMP

(a) Using SST, install a new No. 2 steering rack boot clamp as shown in the illustration.

SST 09521-24010

Clearance:

3.0 mm (0.118 in.) or less

NOTICE:

Be careful not to damage or twist the boot.

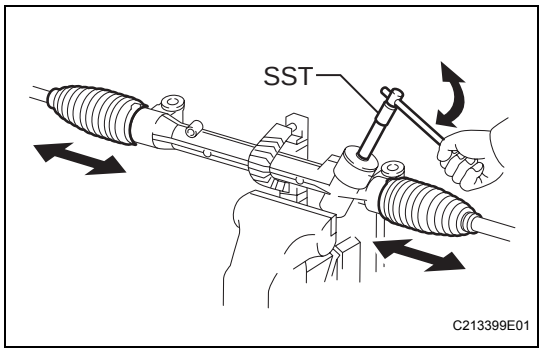
4. INSTALL NO. 1 STEERING RACK BOOT CLAMP

HINT:

Perform the same procedure as for the No. 2 steering rack boot clamp.

5. INSTALL STEERING RACK BOOT CLIP

(a) Using pliers, install the 2 steering rack boot clips.



6. INSPECT STEERING GEAR ASSEMBLY

(a) Using SST, rotate the pinion shaft to see if both the left and the right steering rack boots expand and contract smoothly.

SST 09616-00011

HINT:

If the operation cannot be done as specified, use a new steering rack boot clamp and reinstall the steering rack boots.

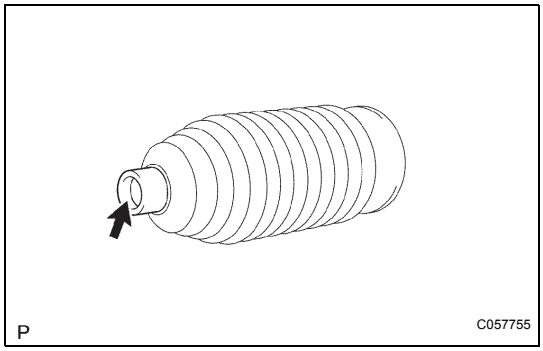
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INSTALLATION

[Added]

(2007/01-2007/08)



1. INSTALL NO. 2 STEERING RACK BOOT

(a) Apply lithium soap base glycol grease to the inside of the small opening of a new No. 2 steering rack boot.

(b) Install the No. 2 steering rack boot to the groove on the rack housing.

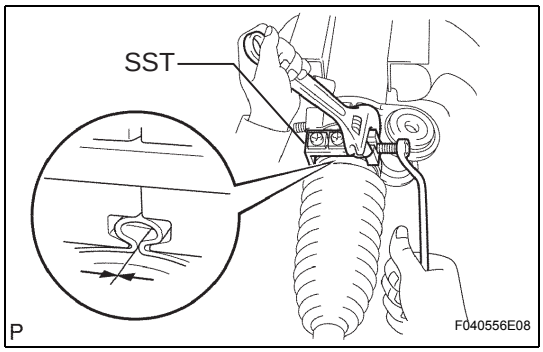
NOTICE:

- **Be careful not to damage or twist the boot.**
- **Make sure that the boot is free of rust and foreign matter.**

2. INSTALL NO. 1 STEERING RACK BOOT

HINT:

Perform the same procedure as for the No. 2 steering rack boot.



3. INSTALL NO. 2 STEERING RACK BOOT CLAMP

(a) Using SST, install a new No. 2 steering rack boot clamp as shown in the illustration.

SST 09521-24010

Clearance:

3.0 mm (0.118 in.) or less

NOTICE:

Be careful not to damage or twist the boot.

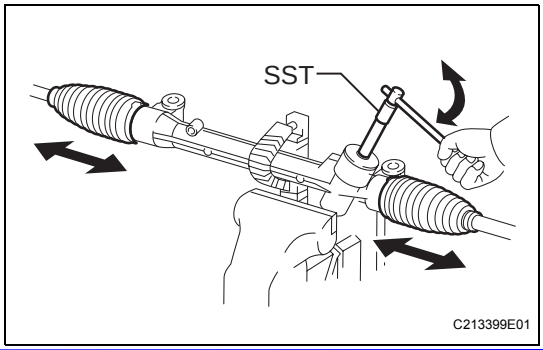
4. INSTALL NO. 1 STEERING RACK BOOT CLAMP

HINT:

Perform the same procedure as for the No. 2 steering rack boot clamp.

5. INSTALL STEERING RACK BOOT CLIP

(a) Using pliers, install the 2 steering rack boot clips.



6. INSPECT STEERING GEAR ASSEMBLY

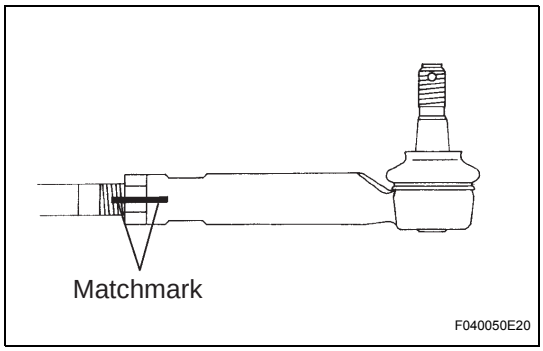
(a) Using SST, rotate the pinion shaft to see if both the left and the right steering rack boots expand and contract smoothly.

SST 09616-00011

HINT:

If the operation cannot be done as specified, use a new steering rack boot clamp and reinstall the steering rack boots.

PS



7. INSTALL TIE ROD END SUB-ASSEMBLY LH

(a) Screw the lock nut and tie rod end sub-assembly LH on the rack end until the matchmarks are aligned and temporarily tighten the lock nut.

HINT:

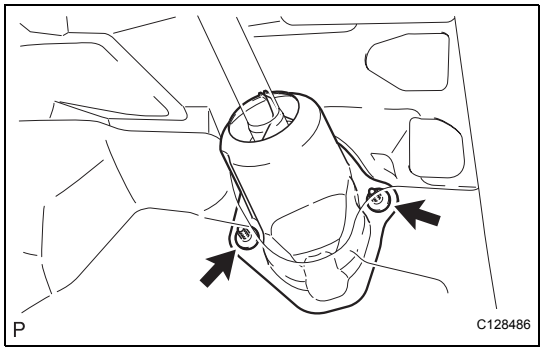
Fully tighten the lock nut after adjusting toe-in.

8. INSTALL TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the tie rod end sub-assembly LH.

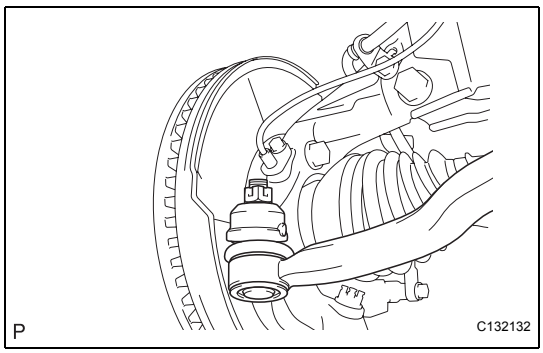
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15. INSTALL COLUMN HOLE COVER SILENCER SHEET

(a) Install the column hole cover silencer sheet with the 2 clips.

(b) Install the floor carpet.



16. CONNECT TIE ROD END SUB-ASSEMBLY LH

(a) Connect the tie rod end onto the steering knuckle with the castle nut.

Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

NOTICE:

If the holes for the clip are not aligned, tighten the nut up to 60° further.

(b) Install a new cotter pin.

17. CONNECT TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedure for the RH side as for the LH side.

18. INSTALL FRONT WHEELS

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

19. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

20. POSITION FRONT WHEELS FACING STRAIGHT AHEAD

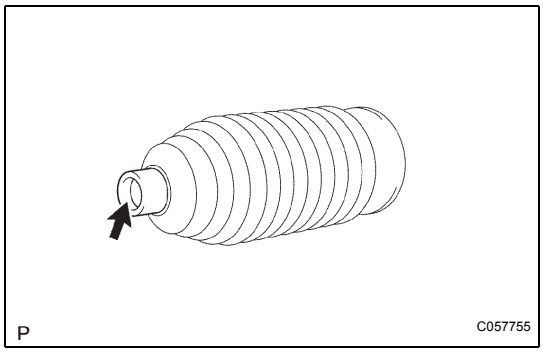
21. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

(a) Inspect and adjust the wheel alignment (See page ○○-○○).

See SUSPENSION - FRONT WHEEL ALIGNMENT - ADJUSTMENT (2005 11-2007 08)

INSTALLATION

(2007/08-)



1. INSTALL NO. 2 STEERING RACK BOOT

(a) Apply lithium soap base glycol grease to the inside of the small opening of a new No. 2 steering rack boot.

(b) Install the No. 2 steering rack boot to the groove on the rack housing.

NOTICE:

- **Be careful not to damage or twist the boot.**
- **Make sure that the boot is free of rust and foreign matter.**

2. INSTALL NO. 1 STEERING RACK BOOT

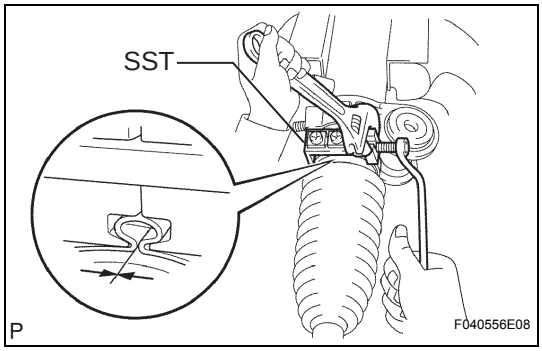
HINT:

Perform the same procedure as for the No. 2 steering rack boot.

PS

[Added]

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3. INSTALL NO. 2 STEERING RACK BOOT CLAMP

(a) Using SST, install a new No. 2 steering rack boot clamp as shown in the illustration.

SST 09521-24010

Clearance:

3.0 mm (0.118 in.) or less

NOTICE:

Be careful not to damage or twist the boot.

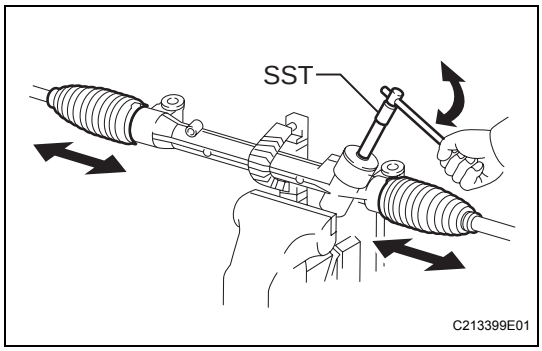
4. INSTALL NO. 1 STEERING RACK BOOT CLAMP

HINT:

Perform the same procedure as for the No. 2 steering rack boot clamp.

5. INSTALL STEERING RACK BOOT CLIP

(a) Using pliers, install the 2 steering rack boot clips.



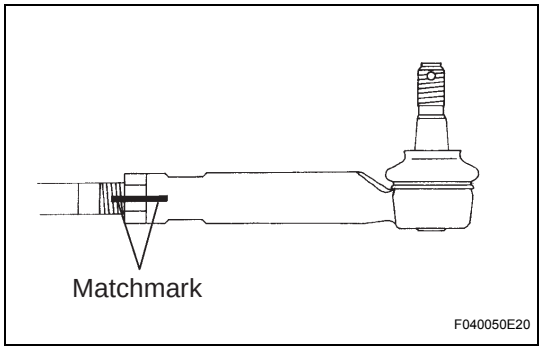
6. INSPECT STEERING GEAR ASSEMBLY

(a) Using SST, rotate the pinion shaft to see if both the left and the right steering rack boots expand and contract smoothly.

SST 09616-00011

HINT:

If the operation cannot be done as specified, use a new steering rack boot clamp and reinstall the steering rack boots.



7. INSTALL TIE ROD END SUB-ASSEMBLY LH

(a) Screw the lock nut and tie rod end sub-assembly LH on the rack end until the matchmarks are aligned and temporarily tighten the lock nut.

HINT:

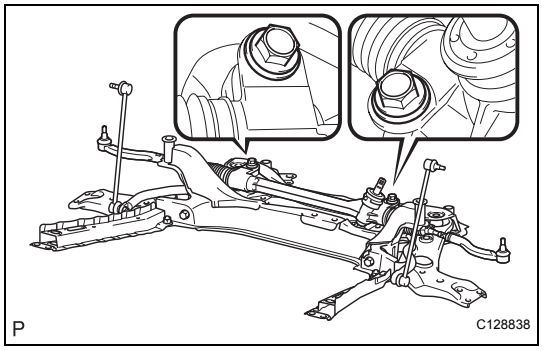
Fully tighten the lock nut after adjusting toe-in.

8. INSTALL TIE ROD END SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the tie rod end sub-assembly LH.

PS



9. INSTALL STEERING GEAR ASSEMBLY

(a) Install the steering gear onto the front suspension crossmember with the 2 bolts and 2 nuts.

Torque: 138 N*m (1407 kgf*cm, 102 ft.*lbf)

NOTICE:

Keep the nut from rotating while turning the bolt.

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