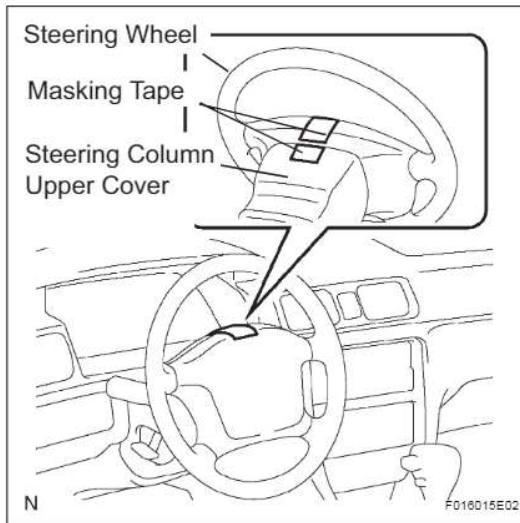


STEERING COLUMN – STEERING SYSTEM

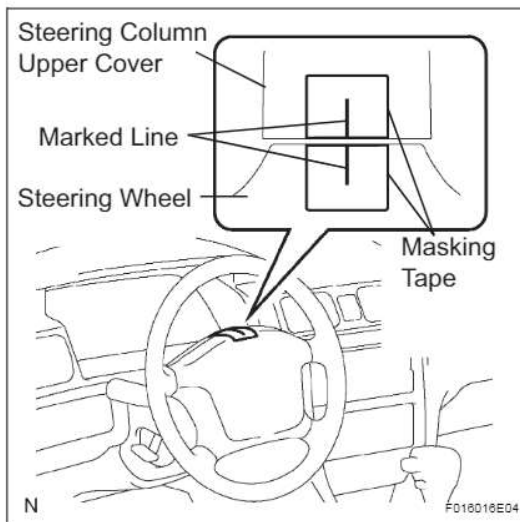
SR-3



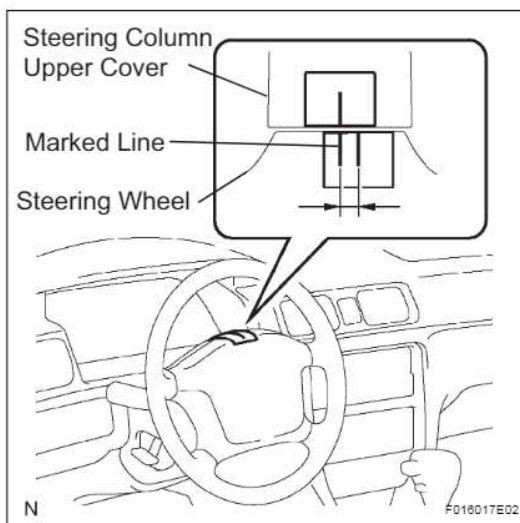
REPAIR

1. INSPECT STEERING POSITION

- (a) Apply masking tape on the top center of the steering wheel and steering column cover upper.
- (b) Drive the vehicle in a straight line for 100 m (3.28 ft.) at a constant speed of 56 km/h (35 mph), and hold the steering wheel to maintain the course.



- (c) Draw a line on the masking tape as shown in the illustration.



- (d) Rotate the steering wheel to the center position.
HINT:
Locate the center position by looking at: 1) the upper surface of the steering wheel, 2) the cover upper, and 3) the horizontal line of the "SRS Airbag" symbol imprinted on the steering pad.
- (e) Draw a new line on the masking tape of the steering wheel as shown in the illustration.
- (f) Measure the distance between the 2 lines on the masking tape of the steering wheel.
- (g) Calculate the measured distance in terms of steering angle.

Reference:

1 mm (0.004 in.) = 1°

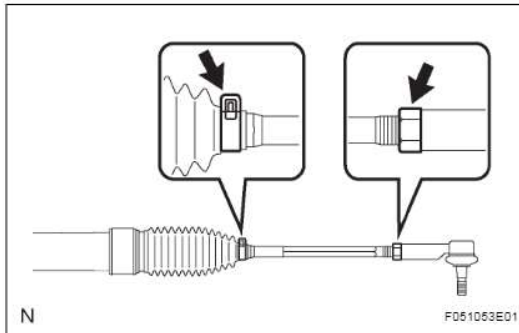
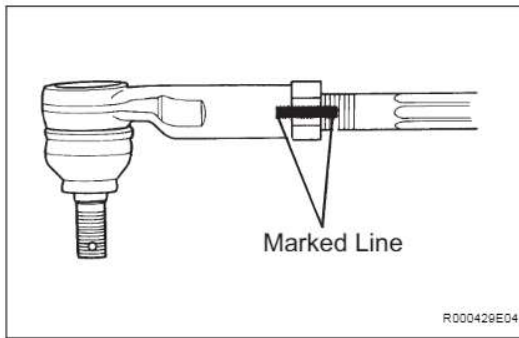
HINT:

Make a note of the steering angle.

SR

SR-4

STEERING COLUMN – STEERING SYSTEM

**2. ADJUST STEERING ANGLE**

- (a) Draw a line on the RH and LH tie rod and rack ends respectively, where it can be easily seen.
- (b) Using a paper gauge, measure the distance from the RH and LH tie rod ends to the rack end screws.

HINT:

- Measure both the RH and LH sides.
- Make a note of the measured values.

- (c) Remove the RH and LH boot clips from the rack boots.
- (d) Loosen the RH and LH lock nuts.
- (e) Turn the RH and LH rack ends equally in different directions according to the steering angle.

Reference:

One 360° turn of rack end (1.5 mm (0.059 in.) horizontal movement) is equal to 12° of steering angle.

- (f) Tighten the RH and LH lock nuts.

Torque: 74 N*m (755 kgf*cm, 55 ft.*lbf)

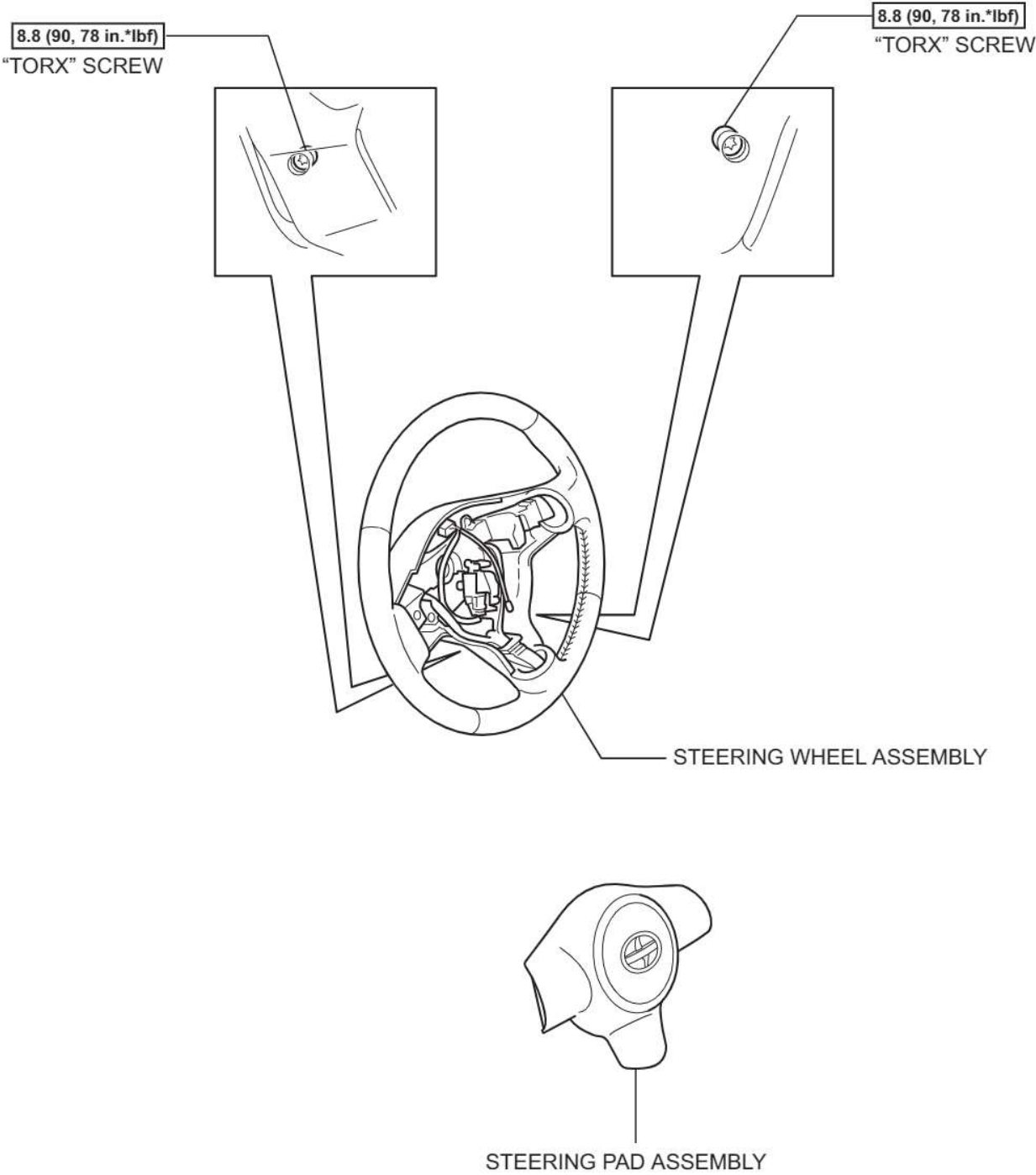
NOTICE:

Make sure that the difference in length between the RH and LH tie rod ends and rack end screws is within 1.5 mm (0.059 in.).

- (g) Install the RH and LH boot clips.

COMPONENTS

(2005/12-)



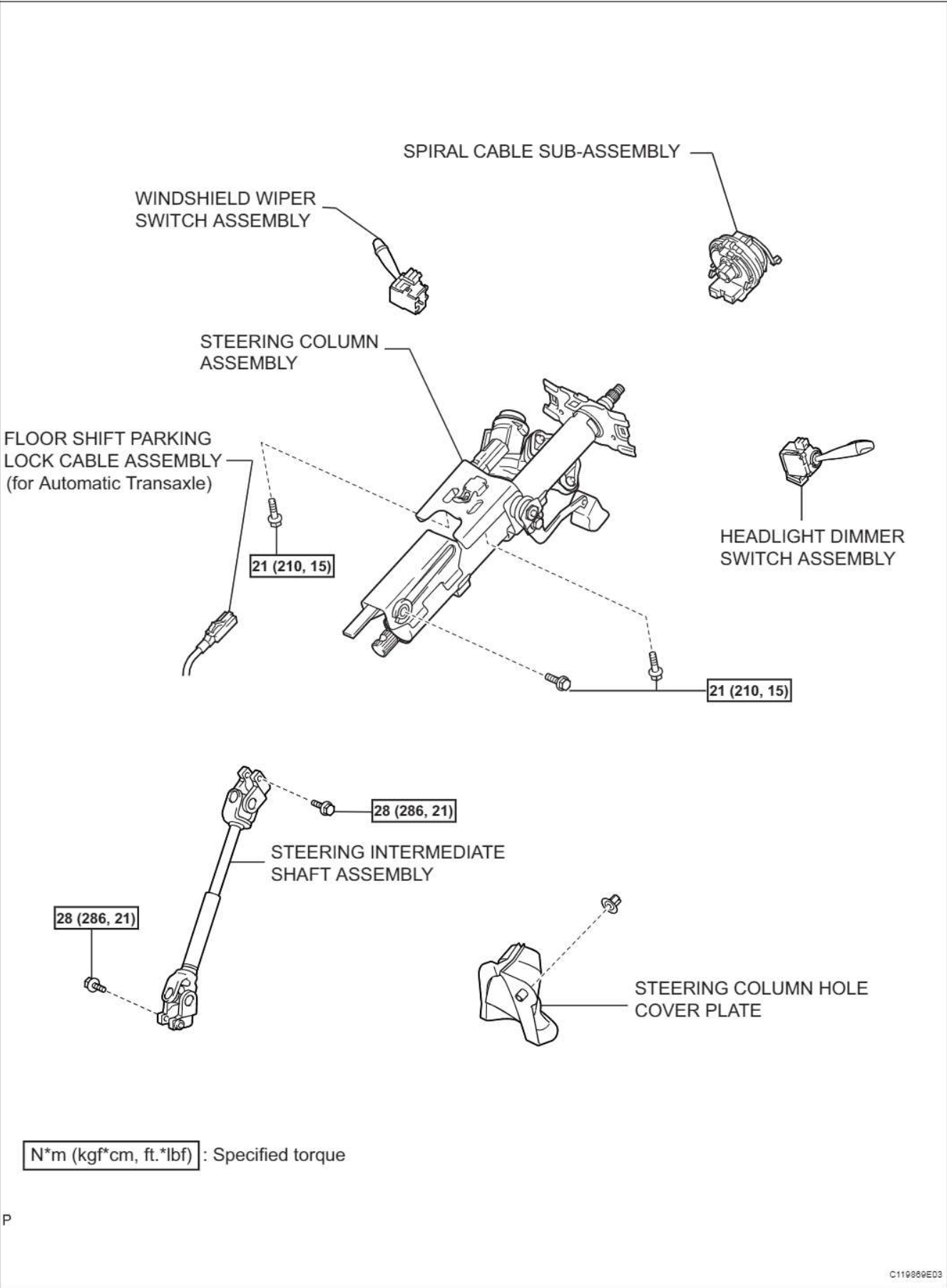
SR

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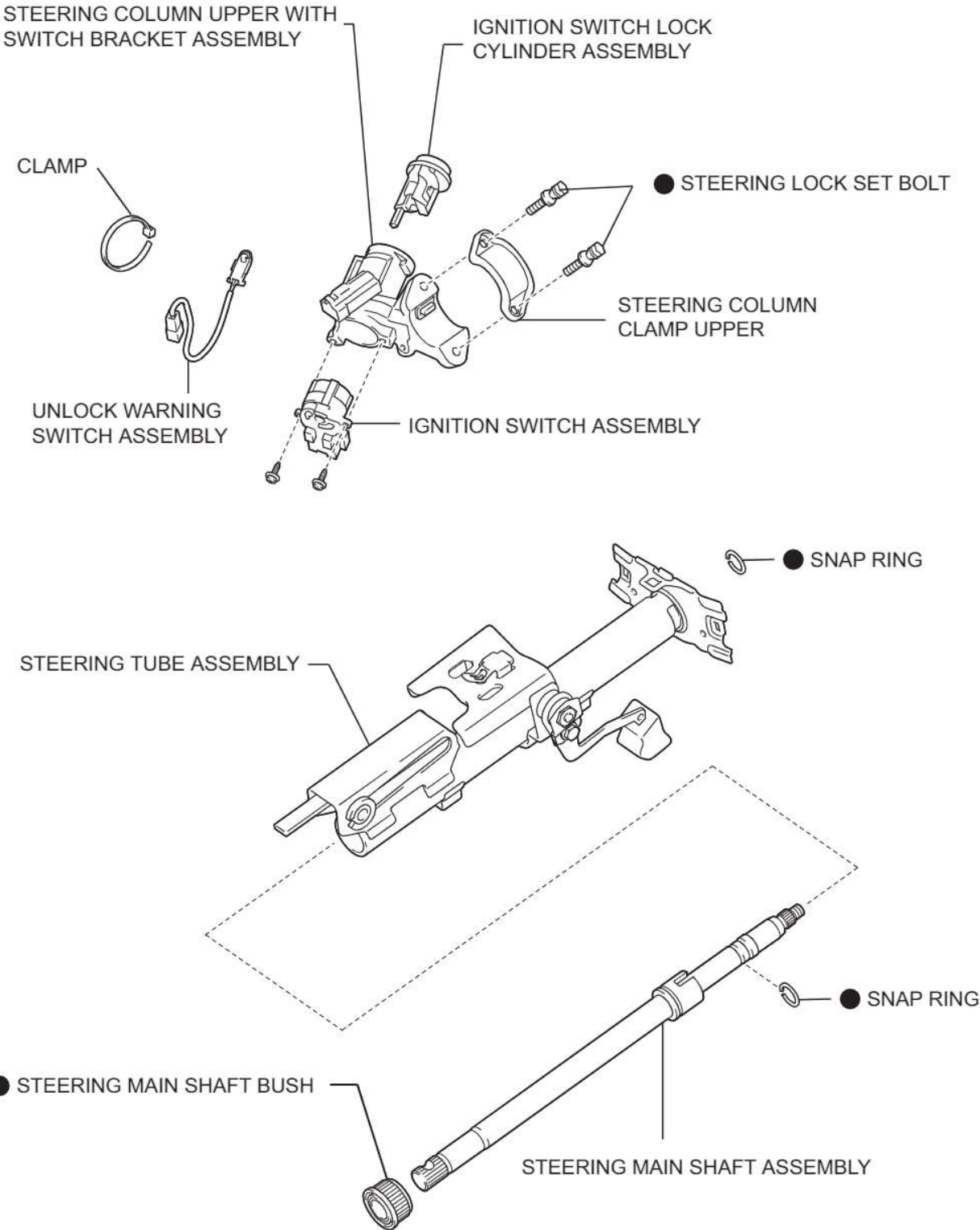
SR-8

STEERING COLUMN – STEERING COLUMN ASSEMBLY



STEERING COLUMN – STEERING COLUMN ASSEMBLY

SR-9



● Non-reusable part

SR

SR-10

STEERING COLUMN – STEERING COLUMN ASSEMBLY

REMOVAL

(2005/07-2005/12)

1. PRECAUTION

- (a) Precaution (see page
- [RS-1](#)
-).

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.

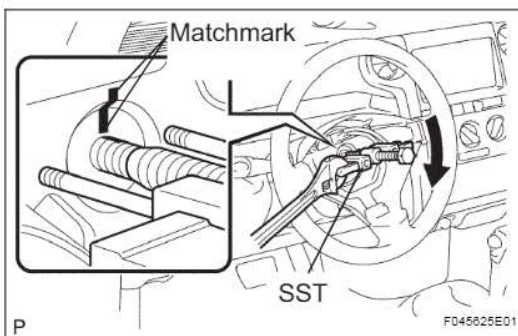
3. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

4. REMOVE STEERING PAD ASSEMBLY (See page [RS-404](#))

5. REMOVE STEERING WHEEL ASSEMBLY

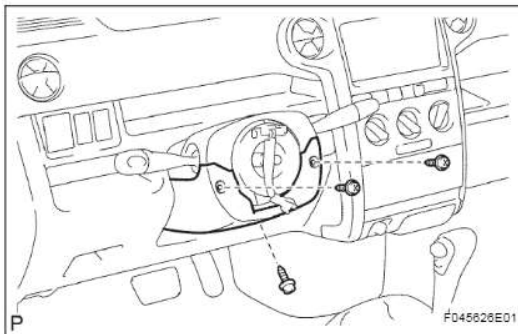
- (a) Disconnect the connector.
- (b) Remove the steering wheel set nut.
- (c) Put matchmarks on the steering wheel and main shaft.
- (d) Using SST, remove the steering wheel.

SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05021)

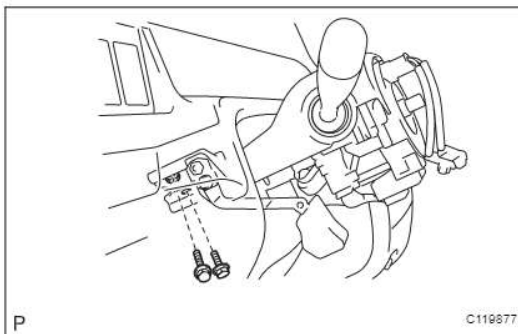


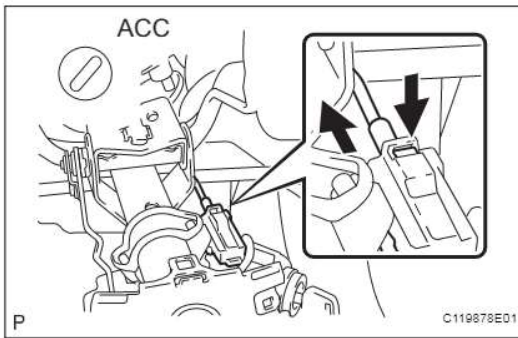
6. REMOVE STEERING COLUMN COVER

- (a) Remove the 3 screws and column cover lower.

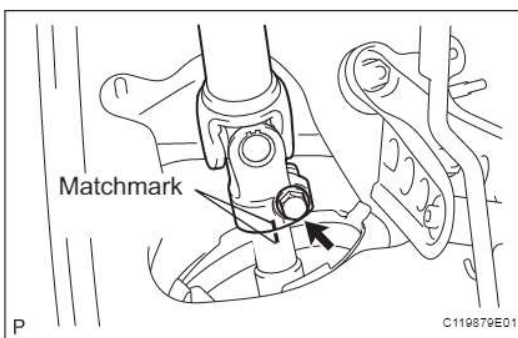


- (b) Remove the 2 bolts and column cover upper.

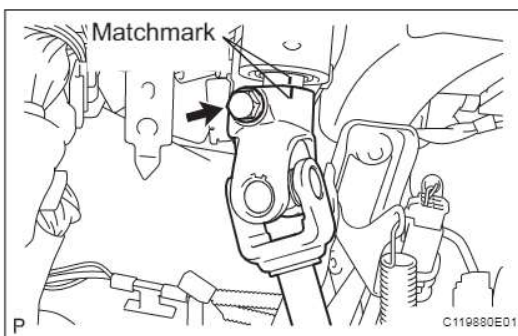


STEERING COLUMN – STEERING COLUMN ASSEMBLY**SR-11**

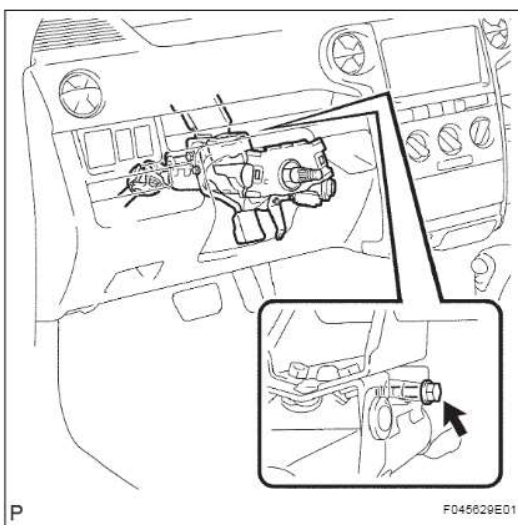
7. **DISCONNECT FLOOR SHIFT PARKING LOCK CABLE ASSEMBLY (for Automatic Transaxle)**
 - (a) With the key in the ACC position, detach the claw and pull out the floor shift parking lock cable.
8. **REMOVE SPIRAL CABLE SUB-ASSEMBLY** (See page [RS-422](#))
9. **REMOVE HEADLIGHT DIMMER SWITCH ASSEMBLY** (See page [LI-24](#))
10. **REMOVE WINDSHIELD WIPER SWITCH ASSEMBLY** (See page [WW-22](#))
11. **REMOVE STEERING COLUMN HOLE COVER PLATE**
 - (a) Remove the clip and column hole cover plate.
12. **DISCONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY**
 - (a) Put matchmarks on the sliding yoke and intermediate shaft.
 - (b) Remove the bolt and intermediate shaft.



13. **REMOVE STEERING INTERMEDIATE SHAFT ASSEMBLY**
 - (a) Put matchmarks on the main shaft and intermediate shaft.
 - (b) Remove the bolt and intermediate shaft.



14. **REMOVE STEERING COLUMN ASSEMBLY**
 - (a) Disconnect the connectors and wire harness clamps from the steering column.
 - (b) Remove the bolt and steering column.

**SR**

STEERING SYSTEM

PRECAUTION

1. HANDLING PRECAUTIONS FOR STEERING SYSTEM

- (a) Care must be taken when replacing parts. Incorrect replacement could affect the performance of the steering system and result in a driving hazard.

2. HANDLING PRECAUTIONS FOR SRS

- (a) The vehicle is equipped with a Supplemental Restraint System (SRS) which includes a driver side airbag. Failure to carry out service procedures in the correct sequence may unexpectedly deploy the SRS and cause serious injuries. Furthermore, if a mistake is made in servicing the SRS, it may fail to operate when required.

Before servicing (including installation, removal, inspection or replacement of parts), read the SRS section's "Precaution" (see page [RS-1](#)).

SR-2

STEERING COLUMN – STEERING SYSTEM

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Steering system:

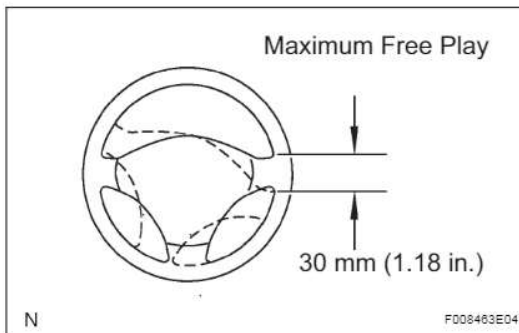
Symptom	Suspected area	See page
Hard steering	1. Tires (improperly inflated)	TW-3
	2. Power steering fluid level (low)	PS-2
	3. Drive belt (loose)	EM-6
	4. Front wheel alignment (incorrect)	SP-2
	5. Steering system joints (worn)	-
	6. Suspension arm ball joints (worn) ATM	SP-17
	7. Suspension arm ball joints (worn) MTM	SP-21
	8. Steering column (binding)	-
	9. Power steering vane pump	PS-14
	10. Power steering gear	PS-29
Poor return	1. Tires (improperly inflated)	TW-3
	2. Front wheel alignment (incorrect)	SP-2
	3. Steering column (binding)	-
	4. Power steering gear	PS-29
Excessive play	1. Steering system joints (worn)	-
	2. Suspension arm ball joints (worn) ATM	SP-17
	3. Suspension arm ball joints (worn) MTM	SP-21
	4. Front wheel bearing (worn)	AH-6
	5. Power steering gear	PS-29
Abnormal noise	1. Power steering fluid level (low)	PS-2
	2. Steering system joints	-
	3. Power steering vane pump	PS-14
	4. Power steering gear	PS-29

ON-VEHICLE INSPECTION

1. CHECK STEERING WHEEL FREE PLAY

- Stop the vehicle with the tires pointing straight ahead. Position the steering wheel in the center position.
- Turn the steering wheel gently right and left, and check the steering wheel free play.

Maximum free play:
30 mm (1.18 in.)



SR-12

STEERING COLUMN – STEERING COLUMN ASSEMBLY

REMOVAL

(2005/12-)

1. PRECAUTION

(a) Precaution (see page [RS-11](#)).

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. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

4. REMOVE STEERING PAD ASSEMBLY (See page [RS-405](#))

5. REMOVE STEERING WHEEL ASSEMBLY

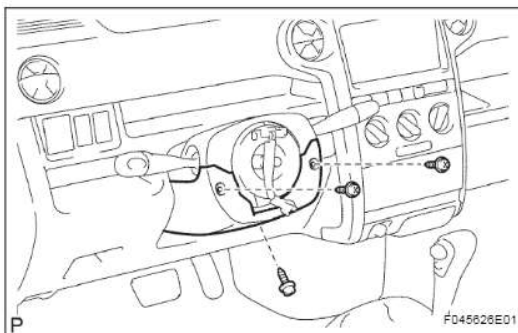
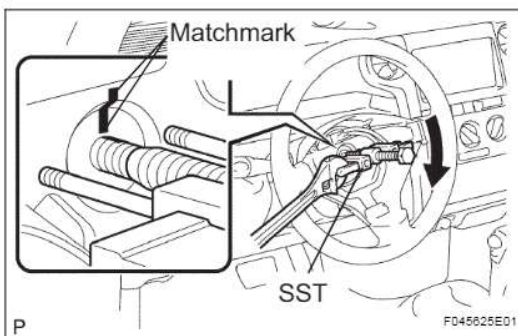
(a) Disconnect the connector.

(b) Remove the steering wheel set nut.

(c) Put matchmarks on the steering wheel and main shaft.

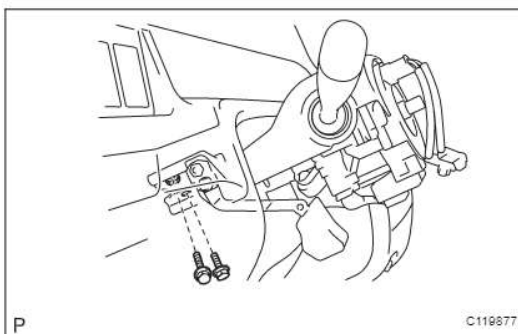
(d) Using SST, remove the steering wheel.

SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05021)



6. REMOVE STEERING COLUMN COVER

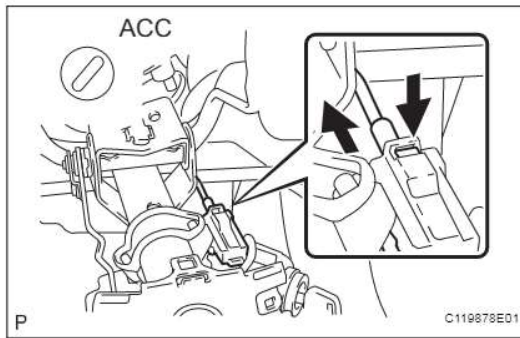
(a) Remove the 3 screws and column cover lower.



(b) Remove the 2 bolts and column cover upper.

STEERING COLUMN – STEERING COLUMN ASSEMBLY

SR-13



7. DISCONNECT FLOOR SHIFT PARKING LOCK CABLE ASSEMBLY (for Automatic Transaxle)

- (a) With the key in the ACC position, detach the claw and pull out the floor shift parking lock cable.

8. REMOVE SPIRAL CABLE SUB-ASSEMBLY (See page RS-422)

9. REMOVE HEADLIGHT DIMMER SWITCH ASSEMBLY (See page LI-24)

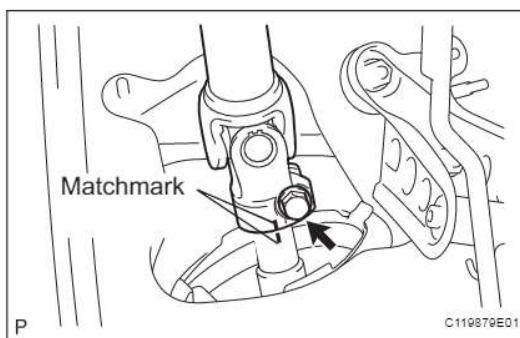
10. REMOVE WINDSHIELD WIPER SWITCH ASSEMBLY (See page WW-22)

11. REMOVE STEERING COLUMN HOLE COVER PLATE

- (a) Remove the clip and column hole cover plate.

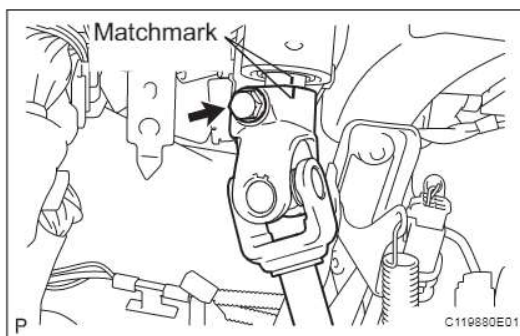
12. DISCONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY

- (a) Put matchmarks on the sliding yoke and intermediate shaft.
(b) Remove the bolt and intermediate shaft.



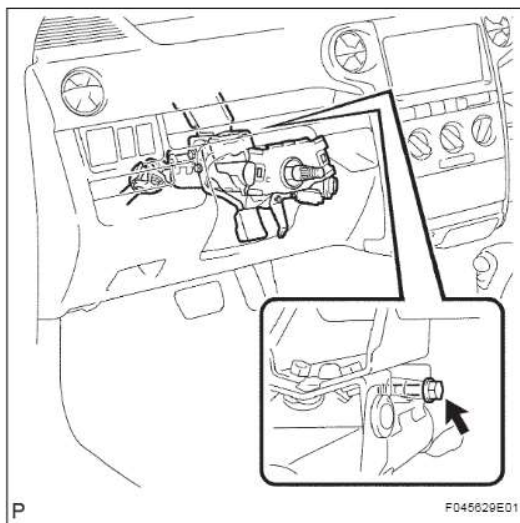
13. REMOVE STEERING INTERMEDIATE SHAFT ASSEMBLY

- (a) Put matchmarks on the main shaft and intermediate shaft.
(b) Remove the bolt and intermediate shaft.



14. REMOVE STEERING COLUMN ASSEMBLY

- (a) Disconnect the connectors and wire harness clamps from the steering column.
(b) Remove the bolt and steering column.



SR

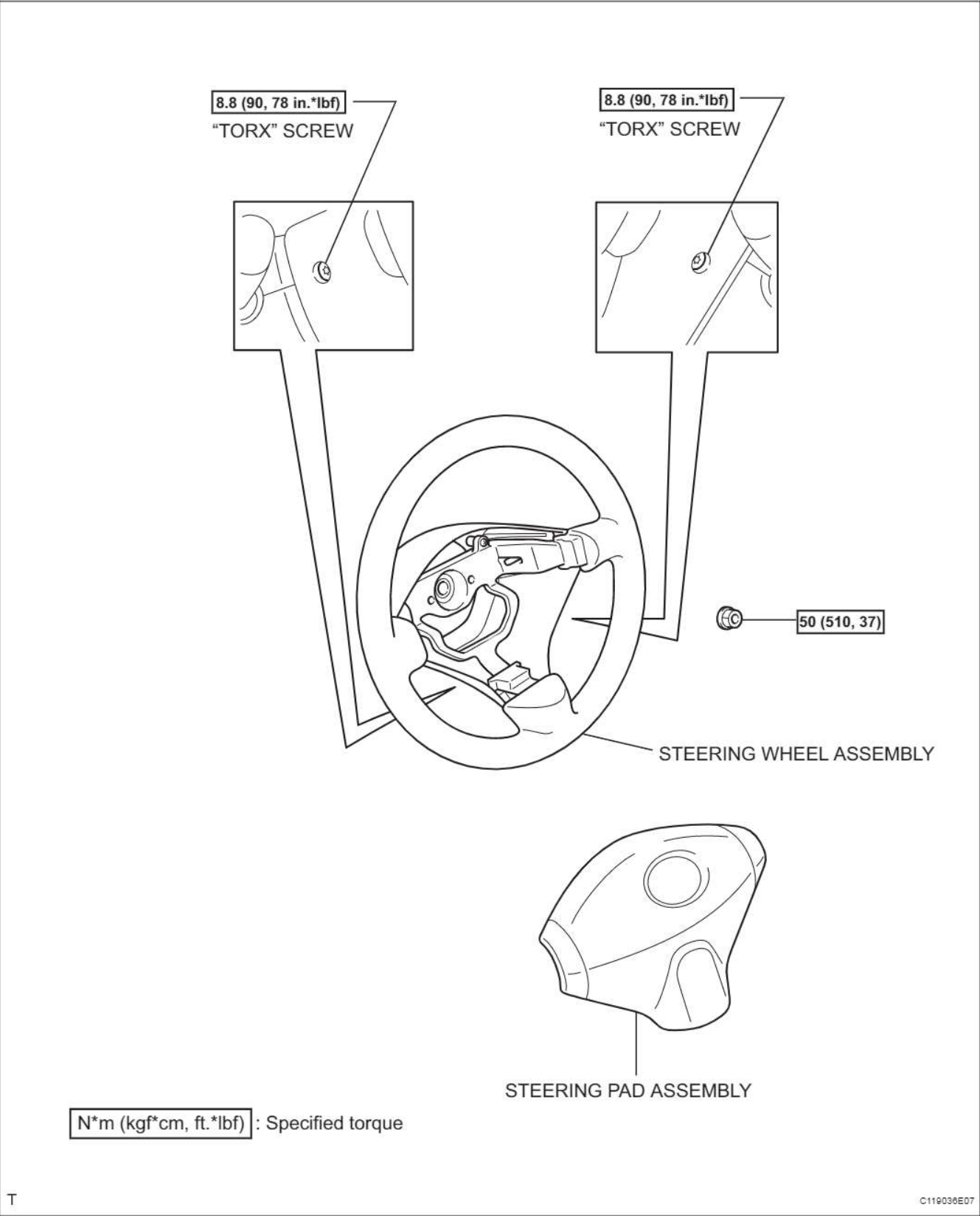
SR-4

STEERING COLUMN – STEERING COLUMN ASSEMBLY

STEERING COLUMN ASSEMBLY

COMPONENTS

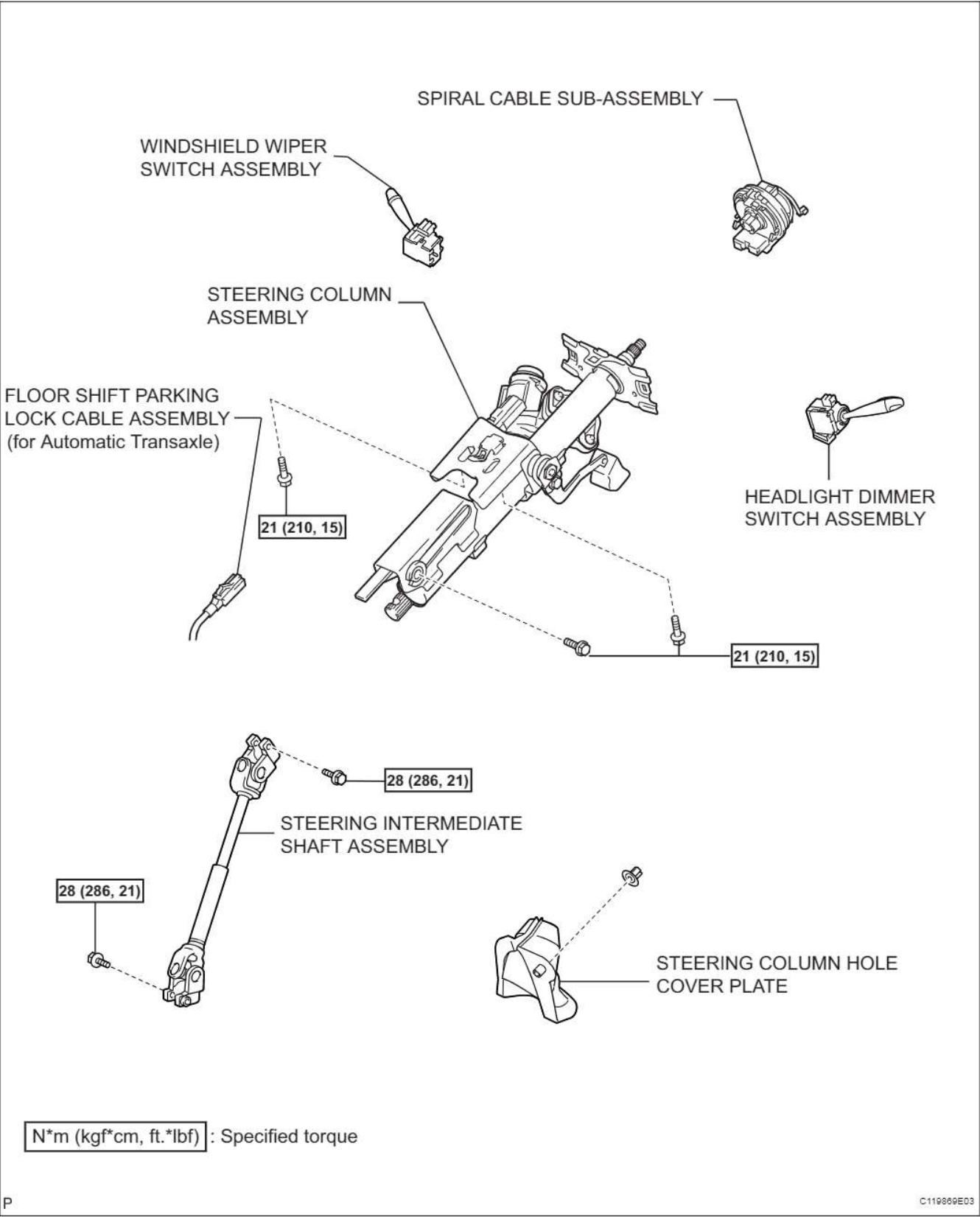
(2005/07-2005/12)



SR

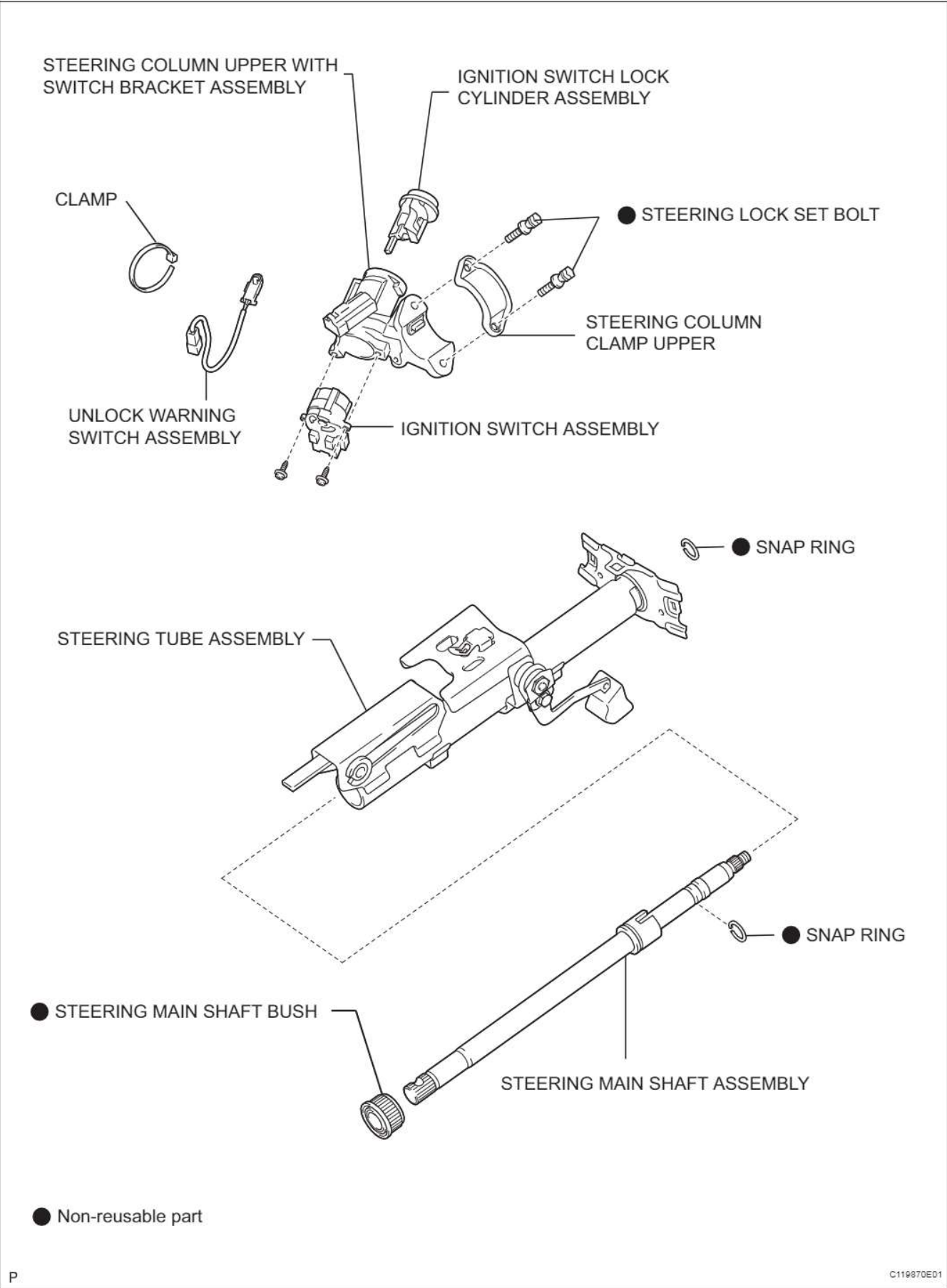
STEERING COLUMN – STEERING COLUMN ASSEMBLY

SR-5



SR-6

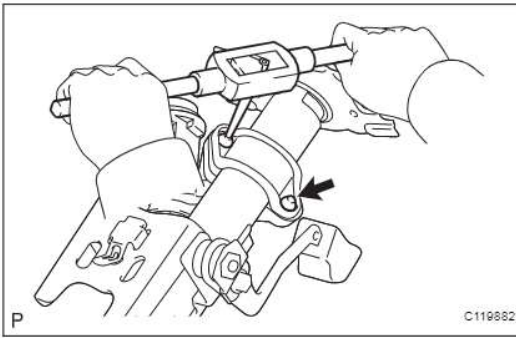
STEERING COLUMN – STEERING COLUMN ASSEMBLY



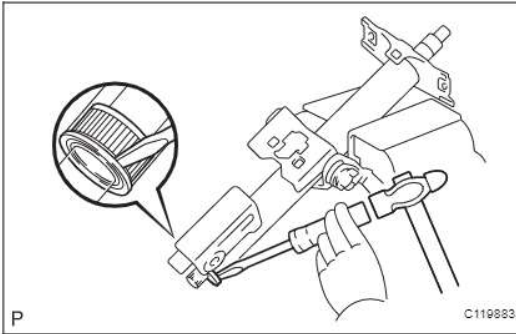
SR

SR-14**STEERING COLUMN – STEERING COLUMN ASSEMBLY****DISASSEMBLY****1. REMOVE STEERING COLUMN UPPER WITH SWITCH BRACKET ASSEMBLY**

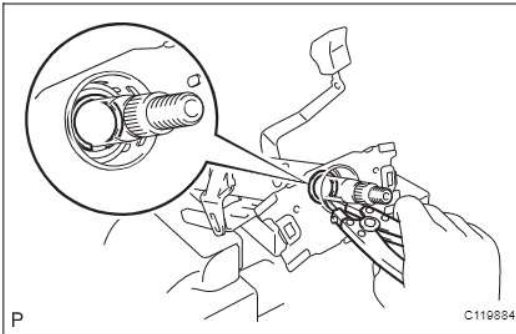
- Using a centering punch, mark the center of the 2 tapered-head bolts.
- Using a 3 to 4 mm (0.12 to 0.16 in.) drill, drill a hole in the 2 bolt heads.
- Using a screw extractor, remove the 2 bolts, steering column clamp and steering column upper with switch bracket.

**2. REMOVE STEERING MAIN SHAFT BUSH**

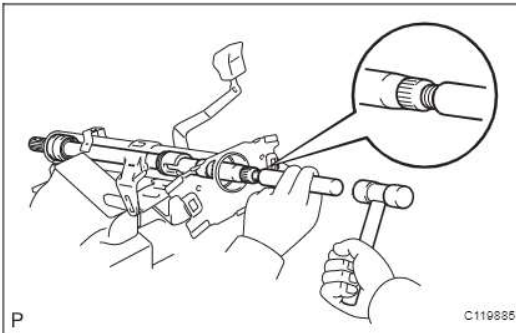
Using a screwdriver and hammer, tap out the steering main shaft bush.

**3. REMOVE STEERING MAIN SHAFT ASSEMBLY**

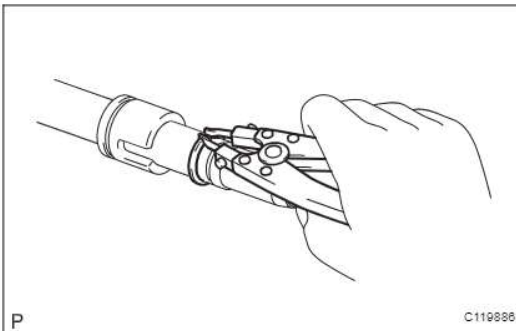
- Using a snap ring expander, remove the snap ring on the upper side.

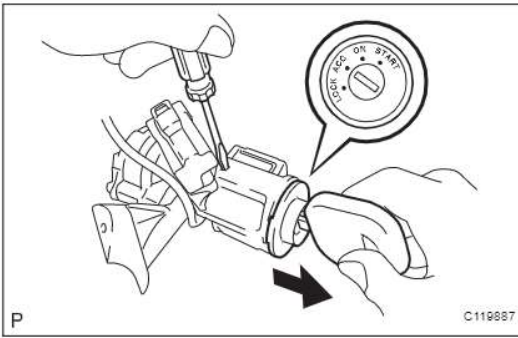


- Using an extension bar and hammer, tap out the steering main shaft.

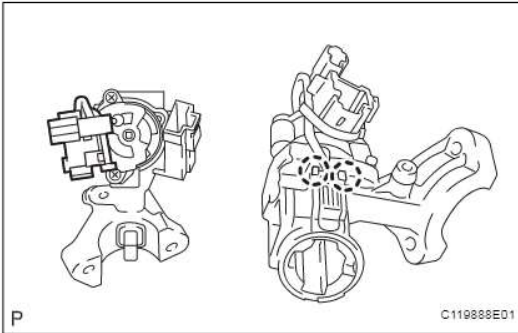


- Using a snap ring expander, remove the snap ring on the lower side.

**SR**

STEERING COLUMN – STEERING COLUMN ASSEMBLY**SR-15****4. REMOVE IGNITION SWITCH LOCK CYLINDER ASSEMBLY**

- (a) Place the ignition switch lock cylinder in the ACC position.
- (b) Push down the stop pin with a screwdriver, and pull out the cylinder.

**5. REMOVE UNLOCK WARNING SWITCH ASSEMBLY**

- (a) Disconnect the unlock warning switch connector from the ignition switch.
- (b) Remove the unlock warning switch.

6. REMOVE IGNITION SWITCH ASSEMBLY

- (a) Remove the 2 screws and ignition or starter switch from the steering column bracket.

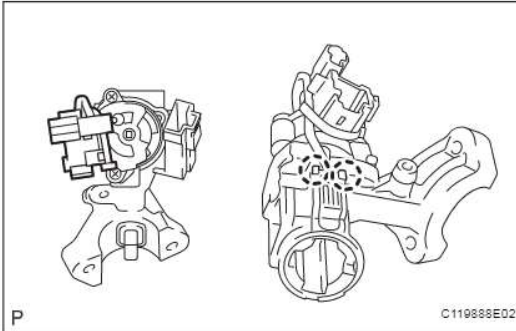
SR

SR-16

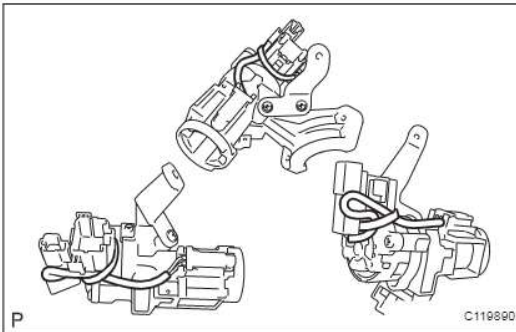
STEERING COLUMN – STEERING COLUMN ASSEMBLY

REASSEMBLY**1. INSTALL IGNITION SWITCH ASSEMBLY**

- (a) Install the ignition switch to the steering column bracket with the 2 screws.

**2. INSTALL UNLOCK WARNING SWITCH ASSEMBLY**

- (a) Install the unlock warning switch.
- (b) Connect the unlock warning switch connector to the ignition switch.



- (c) Using a new clamp, fix the wire harness of the unlock warning switch to the steering column bracket upper as shown in the illustration.

NOTICE:

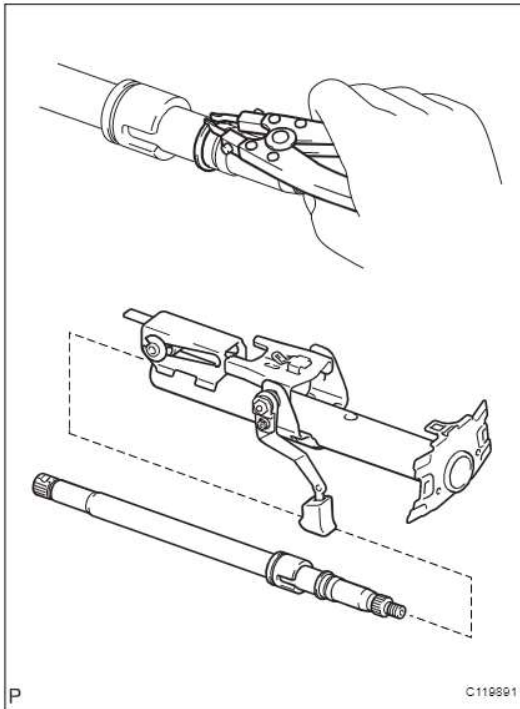
When fixing the wire harness, do not tighten the clamp too hard. It could damage the wire harness inside.

3. INSTALL IGNITION SWITCH LOCK CYLINDER ASSEMBLY

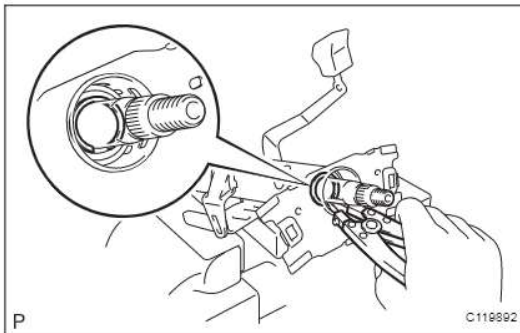
- (a) Make sure that the ignition switch lock cylinder is in the ACC position.
- (b) Install the ignition switch lock cylinder.

4. INSPECT STEERING LOCK OPERATION

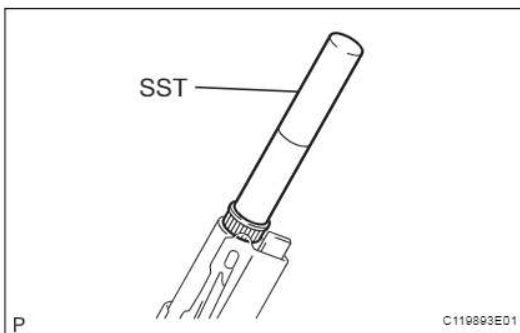
- (a) Check that the steering lock mechanism is activated when the key is removed.
- (b) Check that the steering lock mechanism is deactivated when the key is inserted and turned to the ACC position.

STEERING COLUMN – STEERING COLUMN ASSEMBLY**SR-17****5. INSTALL STEERING MAIN SHAFT ASSEMBLY**

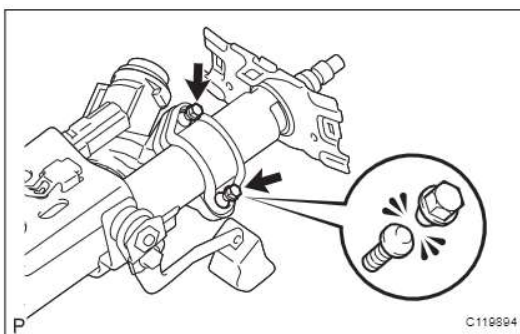
- (a) Using a snap ring expander, install a new snap ring to the lower side.
- (b) Install the steering main shaft.



- (c) Using a snap ring expander, install a new snap ring to the upper side.

**6. INSTALL STEERING MAIN SHAFT BUSH**

- (a) Coat a new steering main shaft bush with molybdenum disulfide lithium base grease.
- (b) Using SST and a hammer, tap in the steering main shaft bush.

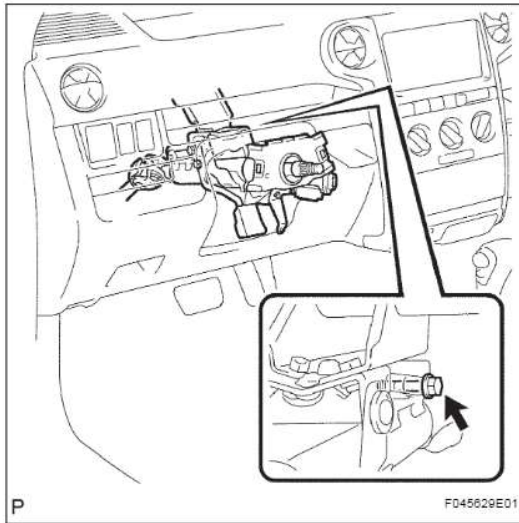
SST 09612-22011**7. INSTALL STEERING COLUMN UPPER WITH SWITCH BRACKET ASSEMBLY**

- (a) Temporarily install the steering column upper with switch bracket and steering column clamp upper with 2 new steering lock set bolts.
- (b) Tighten the 2 steering lock set bolts until the bolt heads break off.

SR

SR-18

STEERING COLUMN – STEERING COLUMN ASSEMBLY

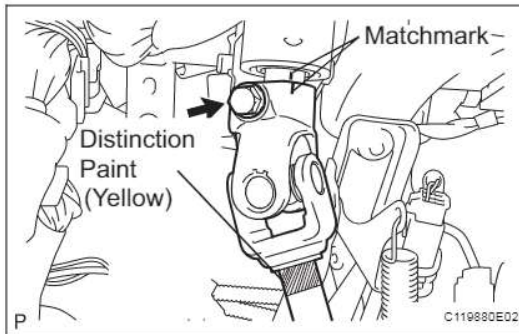


INSTALLATION

(2005/07-2005/12)

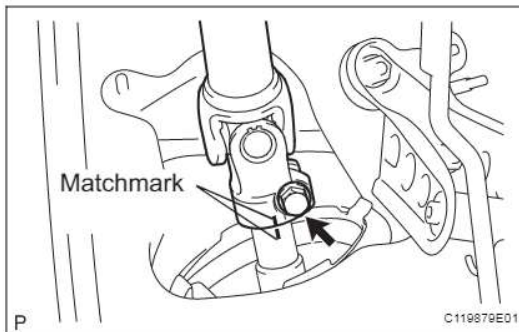
1. INSTALL STEERING COLUMN ASSEMBLY

- (a) Install the steering column from the front side, and install the steering column clamp to the instrumental reinforcement.
- (b) Install the steering column with the bolt.
Torque: 21 N*m (210 kgf*cm, 15 ft.*lbf)
- (c) Connect the connectors and wire harness clamps.



2. INSTALL STEERING INTERMEDIATE SHAFT ASSEMBLY

- (a) Align the matchmarks on the main shaft and steering intermediate shaft.
- (b) Install the steering intermediate shaft with the bolt.
NOTICE:
Install the intermediate shaft with the distinction paint facing the steering column side.



3. CONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY

- (a) Align the matchmarks on the sliding yoke and intermediate shaft.
- (b) Connect the intermediate shaft with the bolt.
Torque: 28 N*m (286 kgf*cm, 21 ft.*lbf)

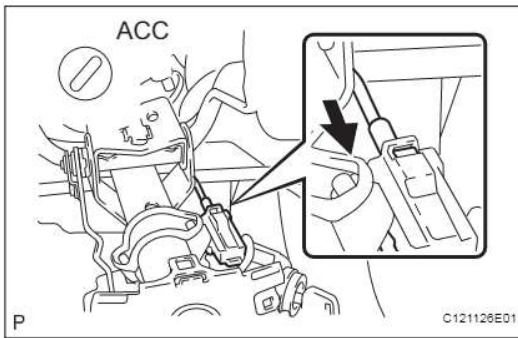
4. INSTALL STEERING COLUMN HOLE COVER PLATE

- (a) Install the column hole cover plate with the clip.

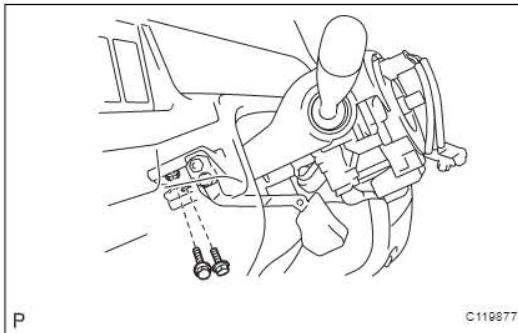
5. INSTALL WINDSHIELD WIPER SWITCH ASSEMBLY (See page [WW-24](#))6. INSTALL HEADLIGHT DIMMER SWITCH ASSEMBLY (See page [LI-25](#))

7. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

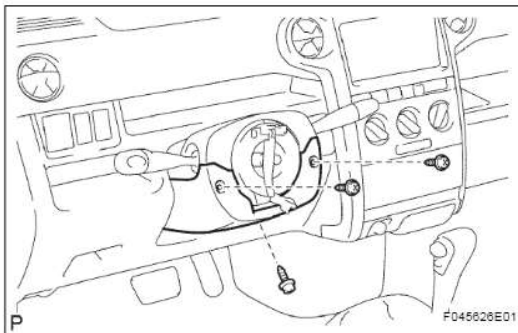
8. INSTALL SPIRAL CABLE SUB-ASSEMBLY (See page [RS-422](#))

STEERING COLUMN – STEERING COLUMN ASSEMBLY**SR-19**

- 9. CONNECT FLOOR SHIFT PARKING LOCK CABLE ASSEMBLY (for Automatic Transaxle)**
 (a) With the key in the ACC position, connect the floor shift parking lock cable.

10. CHECK KEY INTERLOCK OPERATION

- 11. INSTALL STEERING COLUMN COVER**
 (a) Install the column cover upper.
 (b) Install the 2 bolts.
Torque: 21 N*m (210 kgf*cm, 15 ft.*lbf)

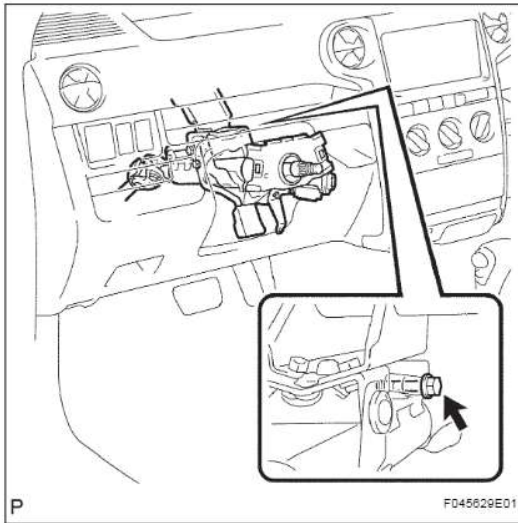


- (c) Install the column cover lower with the 3 screws.
- 12. INSTALL SPIRAL CABLE SUB-ASSEMBLY (See page RS-422)**
- 13. INSTALL STEERING WHEEL ASSEMBLY**
 (a) Align the matchmarks on the steering wheel and steering main shaft.
 (b) Install the steering wheel with the set nut.
Torque: 50 N*m (510 kgf*cm, 37 ft.*lbf)
 (c) Connect the connector.
- 14. INSTALL STEERING PAD ASSEMBLY (See page RS-405)**
- 15. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
- 16. INSPECT STEERING PAD ASSEMBLY**
 (a) Inspect the steering pad (see page RS-405).
- 17. PERFORM VSC SYSTEM CALIBRATION**
 (a) Perform VSC system calibration (see page BC-15).
- 18. INSPECT SRS WARNING LIGHT**
 (a) Inspect the SRS warning light (see page RS-37).

SR

SR-20

STEERING COLUMN – STEERING COLUMN ASSEMBLY

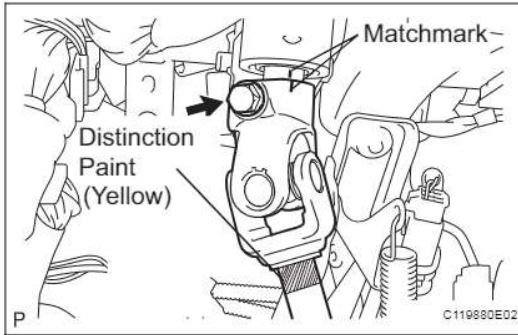


INSTALLATION

(2005/12-)

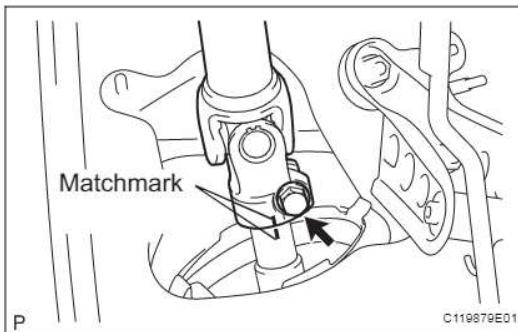
1. INSTALL STEERING COLUMN ASSEMBLY

- (a) Install the steering column from the front side, and install the steering column clamp to the instrumental reinforcement.
- (b) Install the steering column with the bolt.
Torque: 21 N*m (210 kgf*cm, 15 ft.*lbf)
- (c) Connect the connectors and wire harness clamps.



2. INSTALL STEERING INTERMEDIATE SHAFT ASSEMBLY

- (a) Align the matchmarks on the main shaft and steering intermediate shaft.
- (b) Install the steering intermediate shaft with the bolt.
NOTICE:
Install the intermediate shaft with the distinction paint facing the steering column side.



3. CONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY

- (a) Align the matchmarks on the sliding yoke and intermediate shaft.
- (b) Connect the intermediate shaft with the bolt.
Torque: 28 N*m (286 kgf*cm, 21 ft.*lbf)

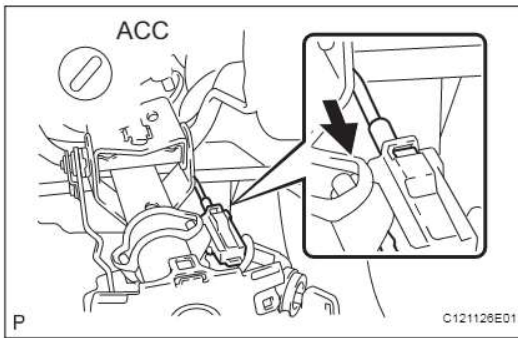
4. INSTALL STEERING COLUMN HOLE COVER PLATE

- (a) Install the column hole cover plate with the clip.

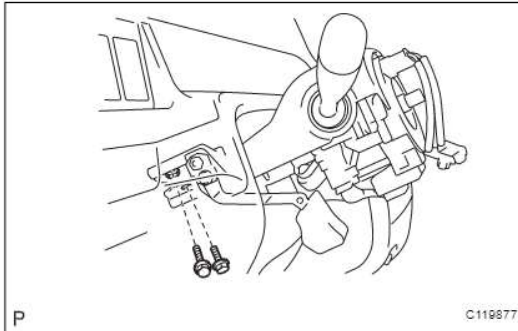
5. INSTALL WINDSHIELD WIPER SWITCH ASSEMBLY (See page [WW-24](#))6. INSTALL HEADLIGHT DIMMER SWITCH ASSEMBLY (See page [LI-25](#))

7. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

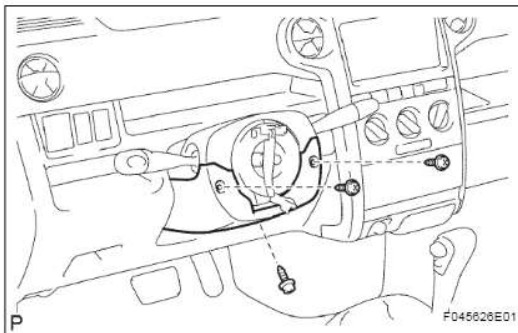
8. INSTALL SPIRAL CABLE SUB-ASSEMBLY (See page [RS-422](#))

STEERING COLUMN – STEERING COLUMN ASSEMBLY**SR-21**

- 9. CONNECT FLOOR SHIFT PARKING LOCK CABLE ASSEMBLY (for Automatic Transaxle)**
 - (a) With the key in the ACC position, connect the floor shift parking lock cable.

10. CHECK KEY INTERLOCK OPERATION**11. INSTALL STEERING COLUMN COVER**

- (a) Install the column cover upper.
- (b) Install the 2 bolts.
Torque: 21 N*m (210 kgf*cm, 15 ft.*lbf)



- (c) Install the column cover lower with the 3 screws.

12. INSTALL SPIRAL CABLE SUB-ASSEMBLY (See page [RS-422](#))**13. INSTALL STEERING WHEEL ASSEMBLY**

- (a) Align the matchmarks on the steering wheel and steering main shaft.
- (b) Install the steering wheel with the set nut.
Torque: 50 N*m (510 kgf*cm, 37 ft.*lbf)
- (c) Connect the connector.

14. INSTALL STEERING PAD ASSEMBLY (See page [RS-406](#))**15. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL****16. INSPECT STEERING PAD ASSEMBLY**

- (a) Inspect the steering pad (see page [RS-406](#)).

17. PERFORM VSC SYSTEM CALIBRATION

- (a) Perform VSC system calibration (see page [BC-15](#)).

18. INSPECT SRS WARNING LIGHT

- (a) Inspect the SRS warning light (see page [RS-39](#)).

SR