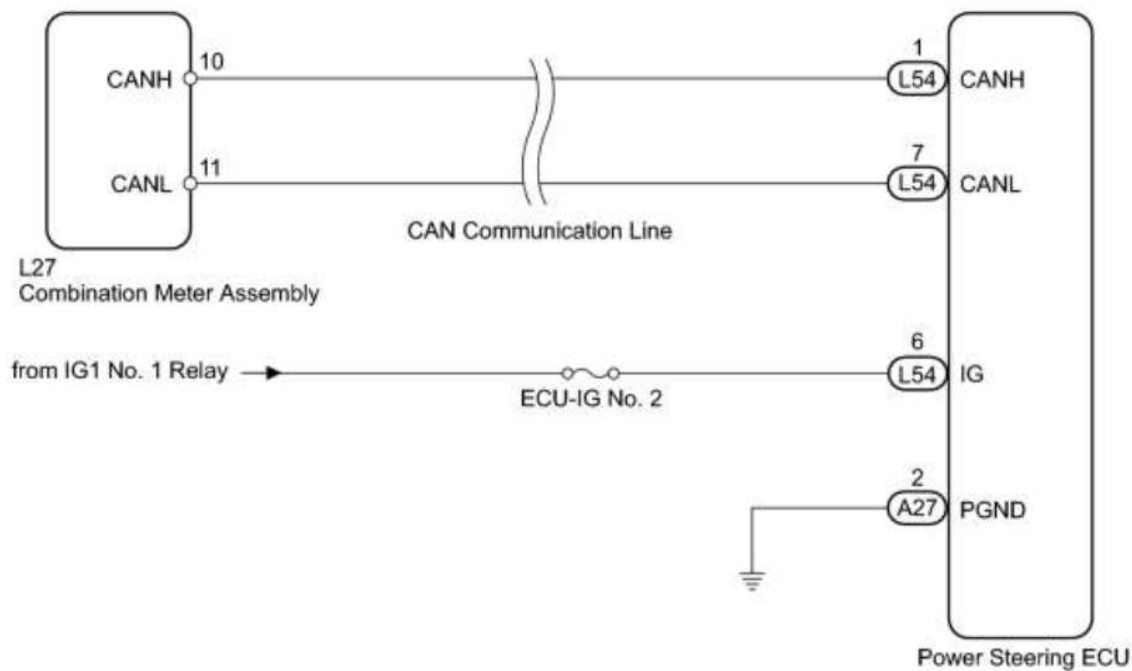


EPS Warning Light Circuit

DESCRIPTION

If the power steering ECU detects a malfunction, the P/S warning light comes on. At this time, the power steering ECU stores a DTC in its memory.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

If the steering column assembly or power steering ECU has been replaced, perform the rotation angle sensor initialization and torque sensor zero point calibration INFO.

PROCEDURE

1. CHECK FOR DTC (CAN COMMUNICATION SYSTEM)

(a) Check for DTCs INFO.

OK:

DTC is not output.

NG  GO TO CAN COMMUNICATION SYSTEM

OK



2.	CHECK HARNESS AND CONNECTOR (POWER STEERING ECU - BODY GROUND)
----	--

(a) Disconnect the connectors from the power steering ECU.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
L54-6 (IG) - A27-2 (PGND)	Power switch on (IG)	11 to 14 V

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A27-2 (PGND) - Body ground	Always	Below 1 Ω

NG  REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



3.	PERFORM ACTIVE TEST USING TECHSTREAM
----	--------------------------------------

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Body Electrical / Combination Meter / Active Test.

(f) Perform the Active Test of the combination meter using the Techstream.

Combination Meter

Tester Display	Test Part	Control Range	Diagnostic Note
Indicat. EPS	EPS warning light	OFF or ON	Confirm that the vehicle is stopped with the engine idling

(g) Check that the EPS warning light operates in accordance with the Active Test.

HINT:

Reconnect the connectors and restore the vehicle to its previous condition before checking the combination meter.

NG  REPLACE MATER CIRCUIT PLATE NO.3

OK  REPLACE POWER STEERING ECU

REMOVAL

CAUTION:

Some of these service operations affect the SRS airbag system. Read the precautionary notices concerning the SRS airbag system before servicing .

1. PRECAUTION

NOTICE:

Be sure to read Precaution thoroughly before servicing .

2. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected .

4. REMOVE STEERING PAD

HINT:

Refer to the instructions for Removal of the steering pad .

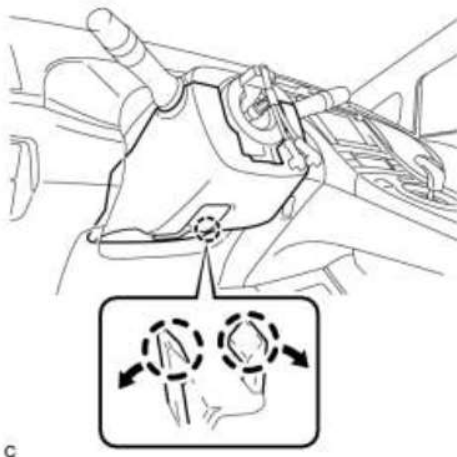
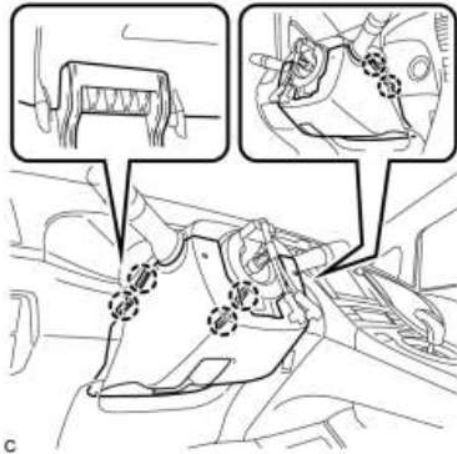
5. REMOVE STEERING WHEEL ASSEMBLY

6. REMOVE LOWER STEERING COLUMN COVER

NOTICE:

Removing the lower steering column cover in the incorrect order will cause the parts to break.

(a) Push the right and left sides of the lower steering column cover to disengage the 4 claws.

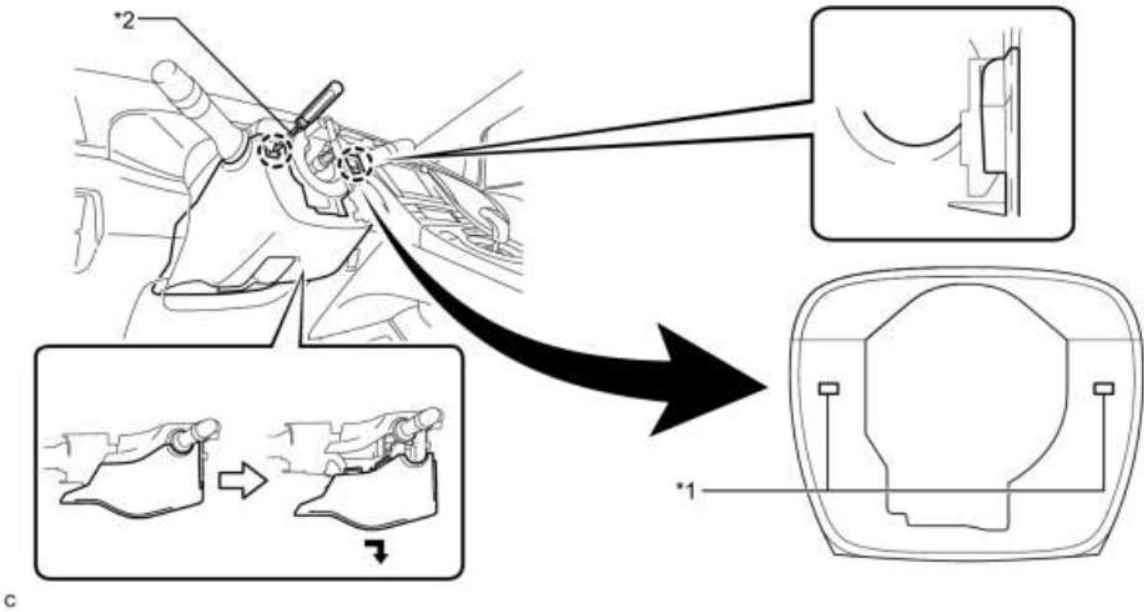


(b) Insert fingers into the opening of the tilt lever of the lower steering column cover to disengage the 2 claws.

HINT:

Spread the claws to disengage them.

(c) Using a screwdriver, insert the tip into each service hole to disengage the 2 claws to remove the lower steering column cover as shown in the illustration.



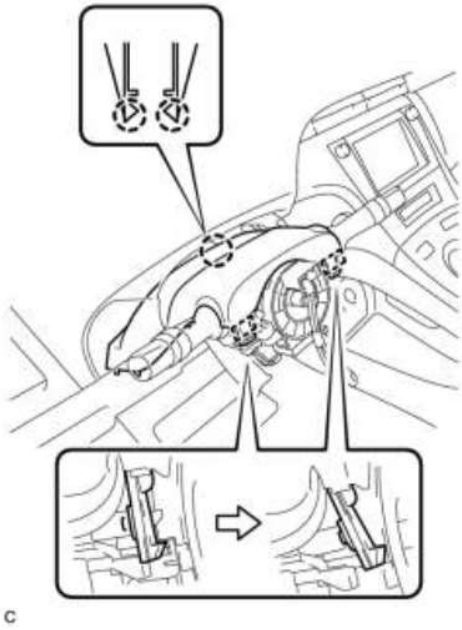
Text in Illustration

*1	Service Hole	*2	Protective Tape
----	--------------	----	-----------------

HINT:

Tape the screwdriver tip before use.

7. REMOVE UPPER STEERING COLUMN COVER



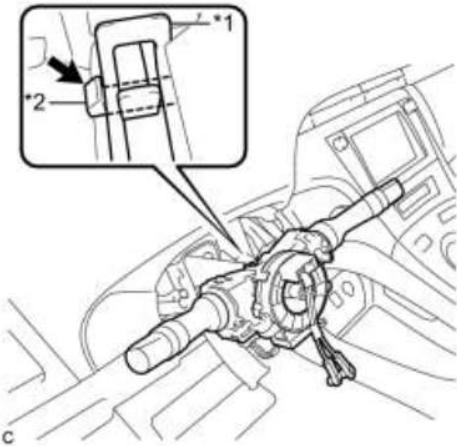
(a) Disengage the 2 claws and 2 pins to remove the upper steering column cover.

8. REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY

2010 Toyota Prius

Repair Manual

(a) Disconnect the connectors from the turn signal switch assembly with spiral cable sub-assembly.



(b) Using pliers, expand the clamp.

Text in Illustration

*1	Clamp
*2	Claw

(c) While holding the clamp expanded, raise the claw using a screwdriver to disengage it, and then remove the turn signal switch assembly with spiral cable sub-assembly from the steering column assembly.

9. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY

HINT:

Refer to the instructions for Removal of the driver side knee airbag assembly [INFO](#).

10. REMOVE UPPER INSTRUMENT PANEL

HINT:

Refer to the instructions for Removal of the upper instrument panel [INFO](#).

11. REMOVE BRAKE PEDAL SUPPORT ASSEMBLY

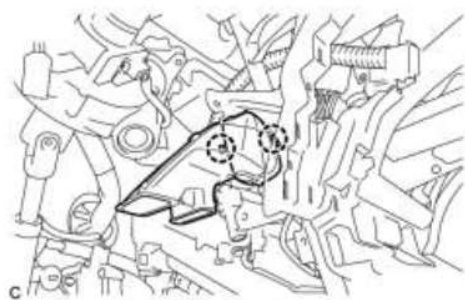
HINT:

Refer to the instructions for Removal of the brake pedal support assembly [INFO](#).

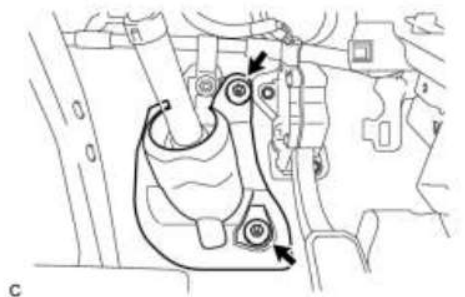
12. REMOVE NO. 1 HEATER TO REGISTER DUCT_ [INFO](#)

13. REMOVE NO. 2 AIR DUCT SUB-ASSEMBLY

(a) Disengage the 2 claws to remove the No. 2 air duct sub-assembly.



14. REMOVE COLUMN HOLE COVER SILENCER SHEET

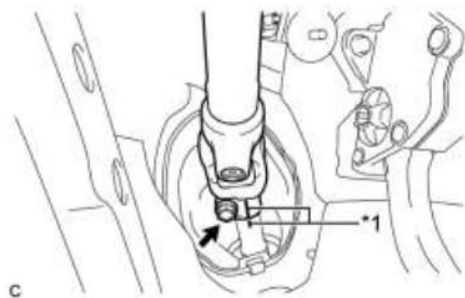


(a) Turn back the floor carpet.

(b) Remove the 2 clips and column hole cover silencer sheet.

15. SEPARATE NO. 2 STEERING INTERMEDIATE SHAFT ASSEMBLY

(a) Put matchmarks on the No. 2 steering intermediate shaft assembly and steering intermediate shaft.



Text in Illustration

*1	Matchmark
----	-----------

NOTICE:

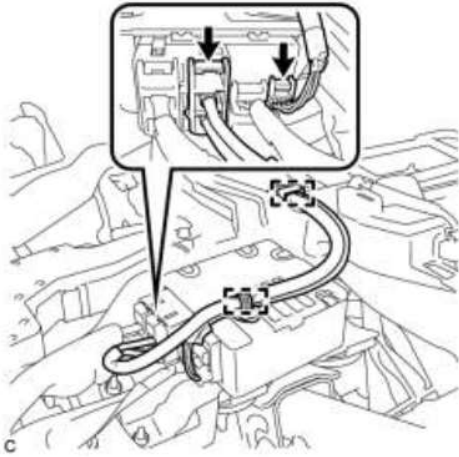
Do not separate the No. 2 steering intermediate shaft assembly from the steering intermediate shaft.

(b) Remove the bolt.

(c) Separate the No. 2 steering intermediate shaft assembly from the steering intermediate shaft.

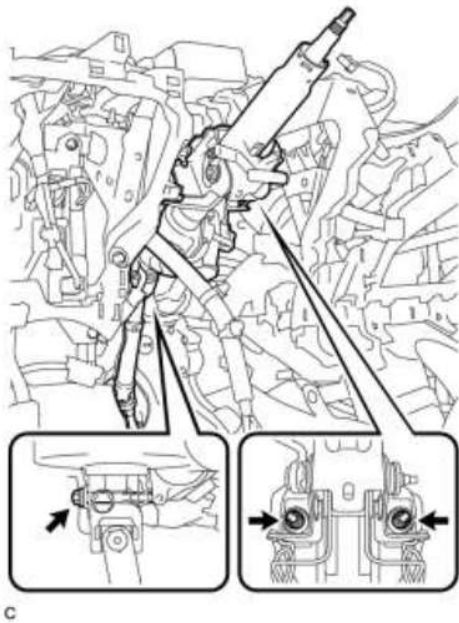
16. REMOVE STEERING POST ASSEMBLY (for Brush Type Motor)

(a) Disengage the 2 wire harness clamps.



(b) Disconnect the 2 connectors from the power steering ECU assembly.

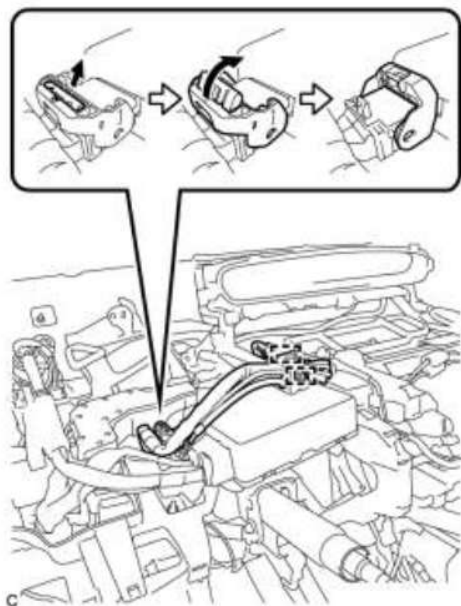
(c) Disconnect the connectors and disengage the wire harness clamps from the steering post assembly.



(d) Remove the bolt, 2 nuts and steering post assembly.

17. REMOVE STEERING POST ASSEMBLY (for Brushless Type Motor)

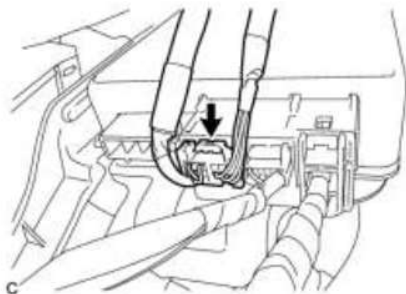
(a) Disengage the 2 wire harness clamps.



(b) Disconnect the connector from the power steering ECU assembly.

HINT:

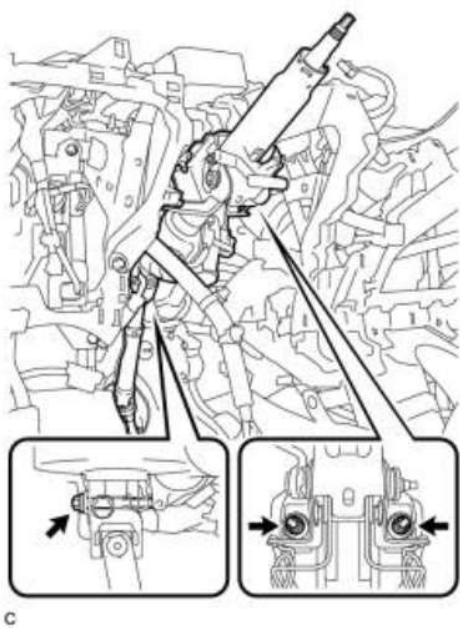
As shown in the illustration, turn the lock lever to disconnect the connector.



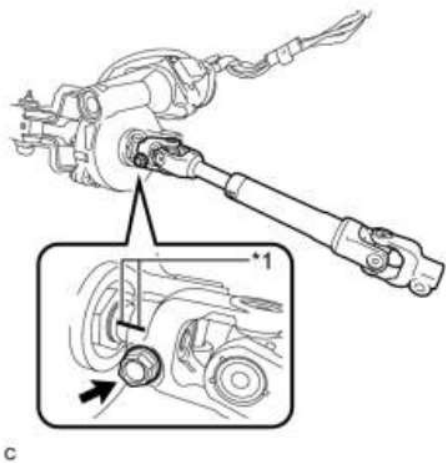
(c) Disconnect the connector from the power steering ECU assembly.

(d) Disconnect the connectors and disengage the wire harness clamps from the steering post assembly.

(e) Remove the bolt, 2 nuts and steering post assembly.



18. REMOVE NO. 2 STEERING INTERMEDIATE SHAFT ASSEMBLY



(a) Put matchmarks on the No. 2 steering intermediate shaft assembly and steering column assembly.

Text in Illustration

*1	Matchmark
----	-----------

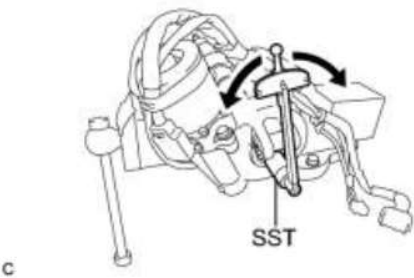
(b) Remove the bolt and No. 2 steering intermediate shaft assembly from the steering column assembly.

INSPECTION

NOTICE:

When using a vise, do not overtighten it.

1. INSPECT PRELOAD



(a) Secure the steering column assembly in a vise.

(b) Using SST, turn the main shaft and measure the preload.

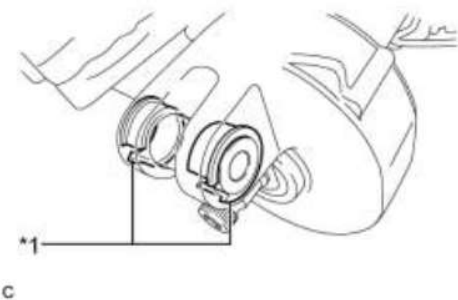
SST: 09616-00011

Preload (for Brush Type Motor) - Torque: **1.1 N·m (11 kgf·cm, 10in·lbf)** or less

Preload (for Brushless Type Motor) - Torque: **0.9 to 1.5 N·m (10 to 15 kgf·cm, 8 to 12in·lbf)**

If the preload is not as specified, replace the steering column assembly with a new one.

2. INSPECT BUSHING



(a) Check that the 2 bushings are securely installed to the steering column assembly.

Text in Illustration

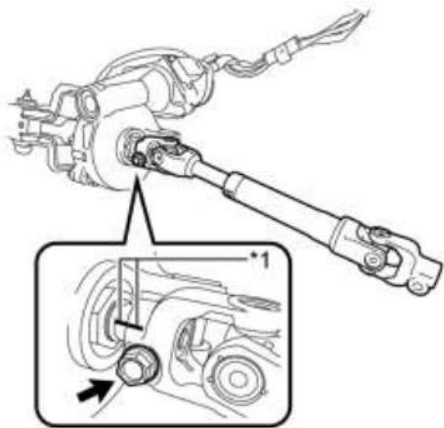
*1	Bushing
----	---------

If the bushings are missing or damaged, replace the steering column assembly with a new one.

INSTALLATION

1. INSPECT BUSHING_ INFO

2. INSTALL NO. 2 STEERING INTERMEDIATE SHAFT ASSEMBLY



(a) Align the matchmarks on the No. 2 steering intermediate shaft assembly and steering column assembly to install the No. 2 steering intermediate shaft assembly.

Text in Illustration

*1	Matchmark
----	-----------

c

(b) Install the bolt.

Torque: 35 N·m (359 kgf·cm, 26ft·lbf)

3. INSTALL STEERING POST ASSEMBLY (for Brush Type Motor)



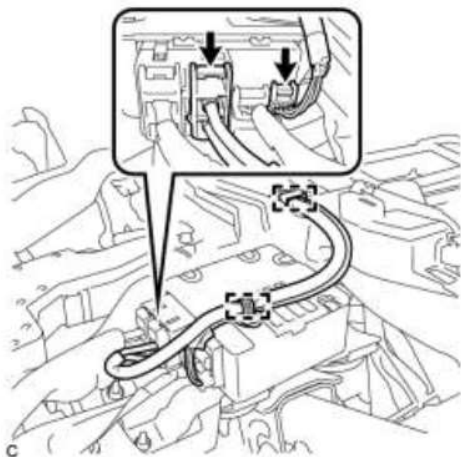
c

(a) Install the steering post assembly with the bolt and 2 nuts.

Torque: 25 N·m (255 kgf·cm, 18ft·lbf)

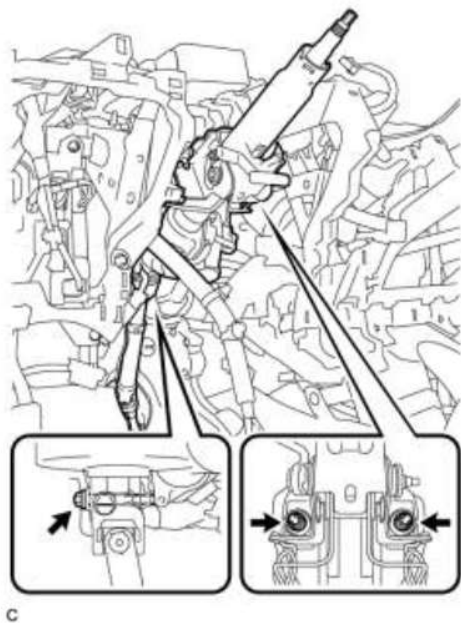
(b) Connect the connectors and engage the wire harness clamps to the steering post assembly.

(c) Connect the 2 connectors to the power steering ECU assembly.



(d) Engage the 2 wire harness clamps.

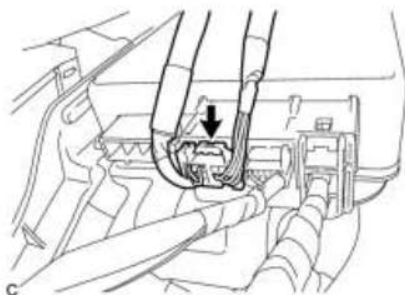
4. INSTALL STEERING POST ASSEMBLY (for Brushless Type Motor)



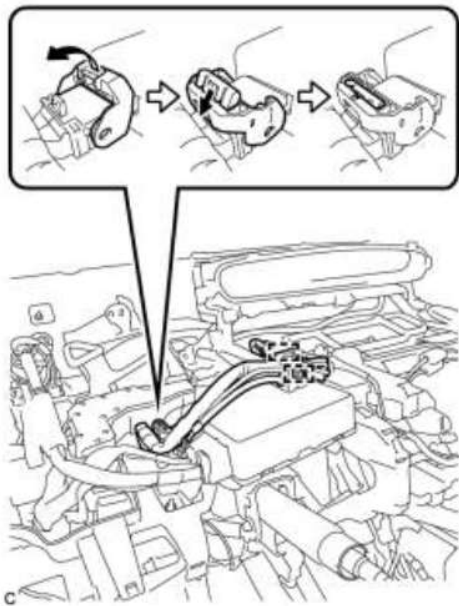
(a) Install the steering post assembly with the bolt and 2 nuts.

Torque: **25 N·m (255 kgf·cm, 18ft·lbf)**

(b) Connect the connectors and engage the wire harness clamps to the steering post assembly.



(c) Connect the connector to the power steering ECU assembly.



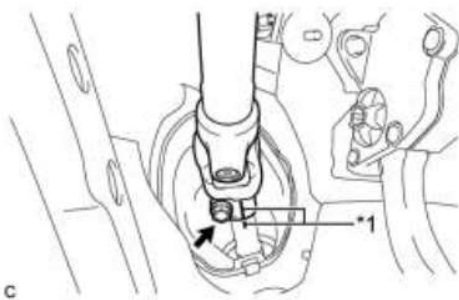
(d) Connect the connector to the power steering ECU assembly.

HINT:

As shown in the illustration, securely return the lock lever to its original position to connect the connector.

(e) Engage the 2 wire harness clamps.

5. CONNECT NO. 2 STEERING INTERMEDIATE SHAFT ASSEMBLY



(a) Align the matchmarks on the No. 2 steering intermediate shaft assembly and steering intermediate shaft to connect the No. 2 steering intermediate shaft assembly to the steering intermediate shaft.

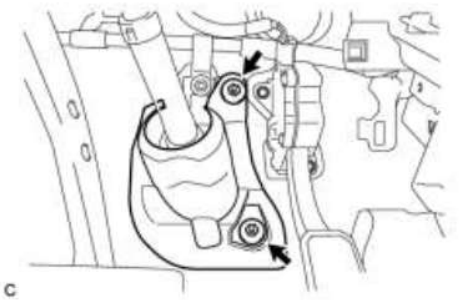
Text in Illustration

*1	Matchmark
----	-----------

(b) Install the bolt.

Torque: 35 N·m (357 kgf·cm, 26ft·lbf)

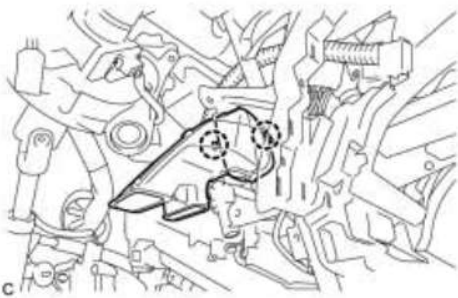
6. INSTALL COLUMN HOLE COVER SILENCER SHEET



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

(b) Install the floor carpet.

7. INSTALL NO. 2 AIR DUCT SUB-ASSEMBLY



(a) Engage the 2 claws to install the No. 2 air duct sub-assembly.

8. INSTALL NO. 1 HEATER TO REGISTER DUCT_

9. INSTALL BRAKE PEDAL SUPPORT ASSEMBLY

HINT:

Refer to the instructions for Installation of the brake pedal support assembly

10. INSTALL UPPER INSTRUMENT PANEL

HINT:

Refer to the instructions for Installation of the upper instrument panel

11. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY

HINT:

Refer to the instructions for Installation of the driver side knee airbag assembly

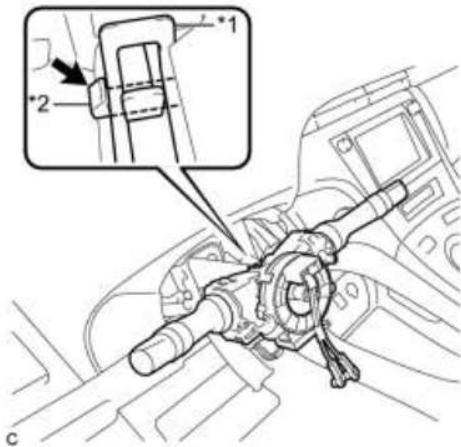
12. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

13. INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY

(a) Using pliers, expand the clamp.

Text in Illustration

*1	Clamp
*2	Claw

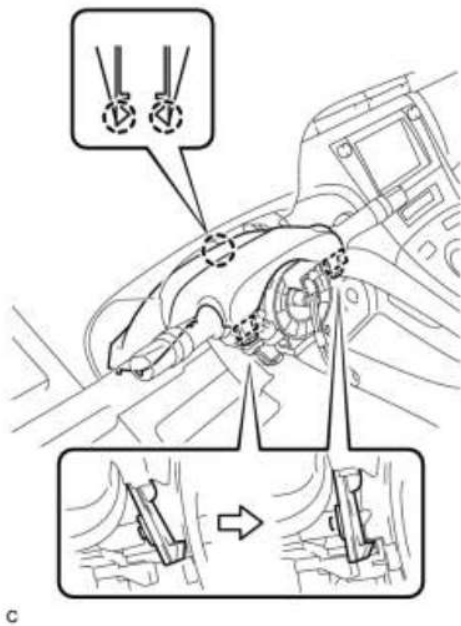


(b) While holding the clamp expanded, install the turn signal switch assembly with spiral cable sub-assembly to the steering column assembly and engage the claw.

(c) Return the clamp to its original position.

(d) Connect the connectors to the turn signal switch assembly with spiral cable sub-assembly.

14. INSTALL UPPER STEERING COLUMN COVER

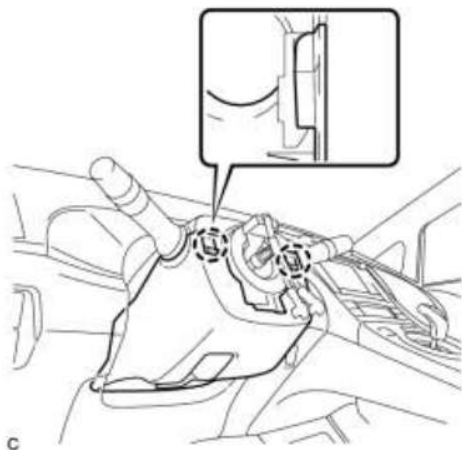


(a) Engage the 2 claws and 2 pins to install the upper steering column cover.

15. INSTALL LOWER STEERING COLUMN COVER

NOTICE:

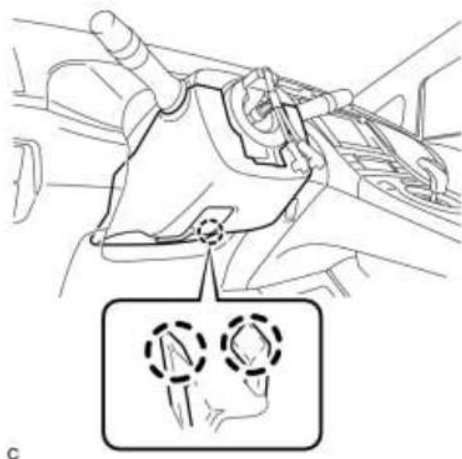
If the lower steering column cover is installed in the incorrect order, it will not be possible to assemble the lower steering column cover.



(a) Engage the 2 claws to install the lower steering column cover.



(b) Engage the 4 claws.



(c) Engage the 2 claws.

HINT:

Press the area around the claws to engage them.

16. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

17. ADJUST SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY_ [INFO](#)

18. INSTALL STEERING WHEEL ASSEMBLY_ [INFO](#)

19. INSTALL STEERING PAD

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HINT:

Refer to the instructions for Installation of the steering pad **INFO**.

20. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD**21. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL****NOTICE:**

- Connect the cable to the negative (-) battery terminal with the front wheels facing straight ahead.
- When disconnecting the cable, some systems need to be initialized after the cable is reconnected **INFO**.

22. INSPECT STEERING PAD **INFO****23. TORQUE SENSOR ZERO POINT CALIBRATION (for Brush Type Motor)**

- (a) Perform the torque sensor zero point calibration **INFO**.

24. ROTATION ANGLE SENSOR INITIALIZATION AND TORQUE SENSOR ZERO POINT CALIBRATION (for Brushless Type Motor)

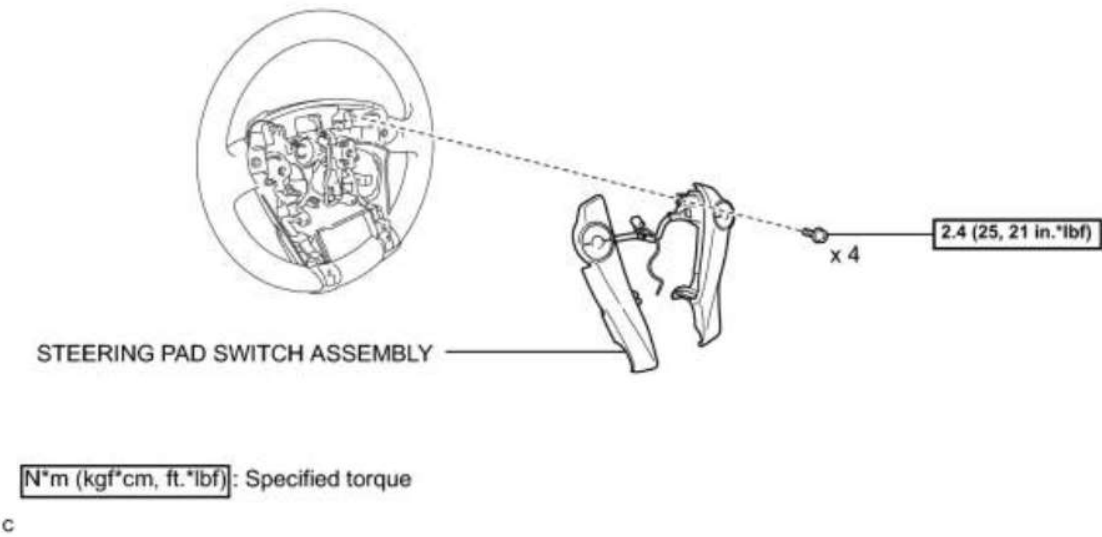
- (a) Clear the rotation angle sensor calibration value, initialize the rotation angle sensor, and calibrate the torque sensor zero point **INFO**.

25. INSPECT SRS WARNING LIGHT

- (a) Inspect the SRS warning light **INFO**.

COMPONENTS

ILLUSTRATION



cardiagn.com

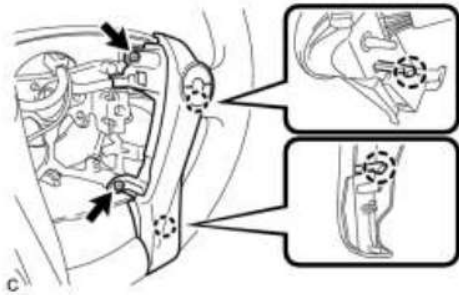
REMOVAL

1. REMOVE STEERING PAD

HINT:

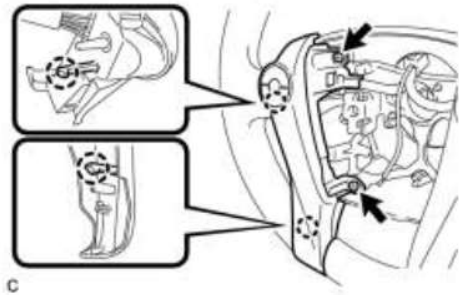
Refer to the instructions for Removal of the steering pad .

2. REMOVE STEERING PAD SWITCH ASSEMBLY



(a) Remove the 2 screws.

(b) Disengage the 2 claws to remove the steering pad switch assembly (RH side) from the steering wheel sub-assembly.



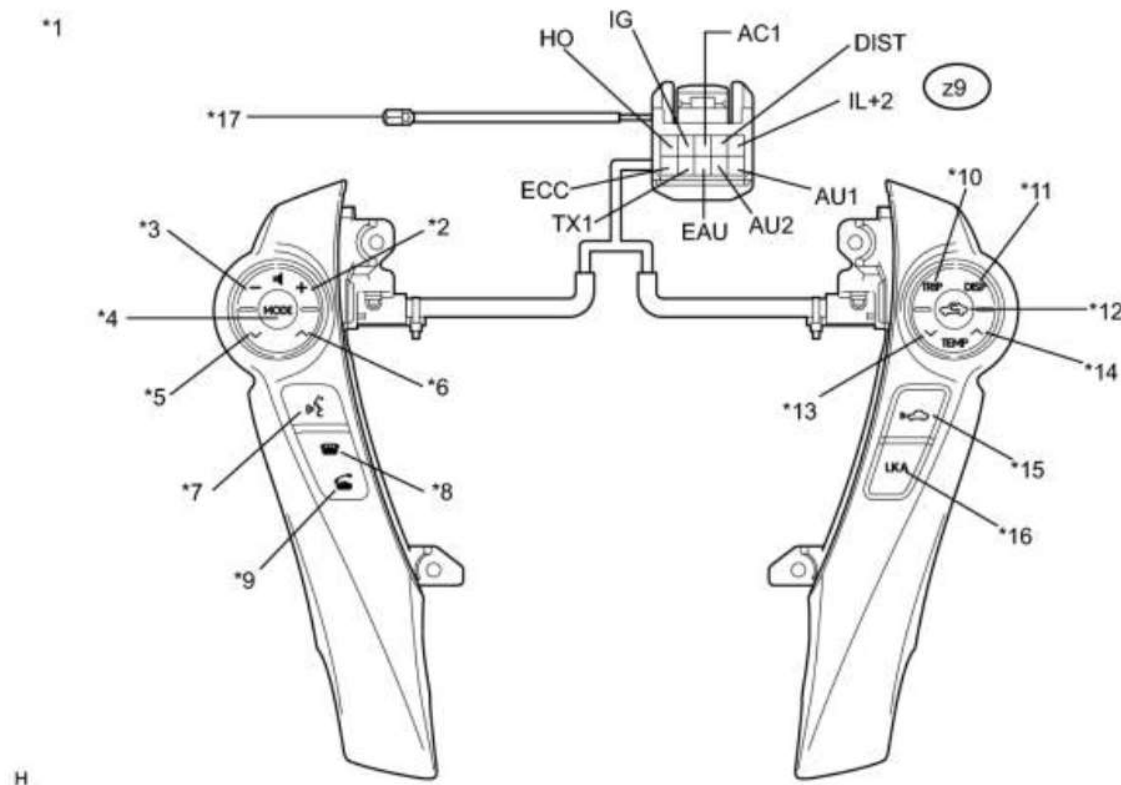
(c) Remove the 2 screws.

(d) Disengage the 2 claws to remove the steering pad switch assembly (LH side) from the steering wheel sub-assembly.

INSPECTION

1. INSPECT STEERING PAD SWITCH ASSEMBLY

(a) Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
z9-1 (HO) - Terminal A	Always	Below 1 Ω
z9-3 (AC1) - z9-8 (EAU)	No switch pushed	95 to 105 k Ω
z9-3 (AC1) - z9-8 (EAU)	R/F switch: ON	323 to 335 Ω
z9-3 (AC1) - z9-8 (EAU)	TEMP+ switch: pushed	980 to 1020 Ω
z9-3 (AC1) - z9-8 (EAU)	TEMP- switch: pushed	3048 to 3172 Ω
z9-4 (DIST) - z9-6 (ECC)	Distance control switch: ON	Below 2.5 Ω
z9-4 (DIST) - z9-6 (ECC)	No switch pushed	10 k Ω or higher
z9-4 (DIST) - z9-6 (ECC)	Lane keeping assist switch: ON	236 to 244 Ω
z9-9 (AU2) - z9-8 (EAU)	No switch pushed	95 to 105 k Ω
z9-9 (AU2) - z9-8 (EAU)	MODE switch: pushed	Below 2.5 Ω
z9-9 (AU2) - z9-8 (EAU)	Voice switch: pushed	3048 to 3172 Ω

Tester Connection	Switch Condition	Specified Condition
z9-9 (AU2) - z9-8 (EAU)	On Hook switch: pushed	323 to 335 Ω
z9-9 (AU2) - z9-8 (EAU)	Off Hook switch: pushed	980 to 1020 Ω
z9-10 (AU1) - z9-8 (EAU)	No switch pushed	95 to 105 k Ω
z9-10 (AU1) - z9-8 (EAU)	Seek+ switch: pushed	Below 2.5 Ω
z9-10 (AU1) - z9-8 (EAU)	Seek- switch: pushed	323 to 335 Ω
z9-10 (AU1) - z9-8 (EAU)	Volume+ switch: pushed	980 to 1020 Ω
z9-10 (AU1) - z9-8 (EAU)	Volume- switch: pushed	3048 to 3172 Ω

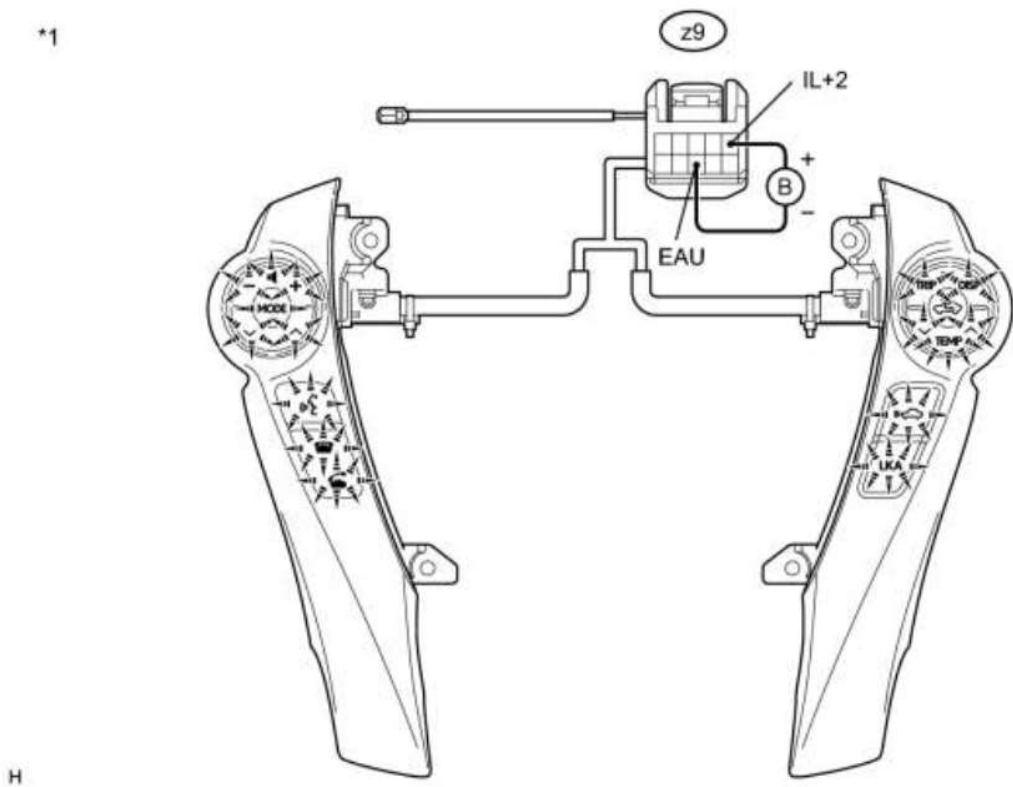
HINT:

If the result is not as specified, replace the steering pad switch assembly.

Text in Illustration

*1	Component without harness connected (Steering Pad Switch Assembly)	*2	Volume+
*3	Volume-	*4	MODE
*5	Seek-	*6	Seek+
*7	Voice switch	*8	On Hook
*9	Off Hook	*10	TRIP switch
*11	DISP switch	*12	R/F switch
*13	TEMP-	*14	TEMP+
*15	Distance control switch	*16	Lane keeping assist switch
*17	Terminal-A	-	-

(b) Check the illumination



(1) Connect a positive (+) lead to terminal IL+2 and a negative (-) lead to terminal EAU of the steering pad switch assembly connector.

(2) Check that the switch illumination comes on.

OK:

Steering pad switch illumination comes on.

HINT:

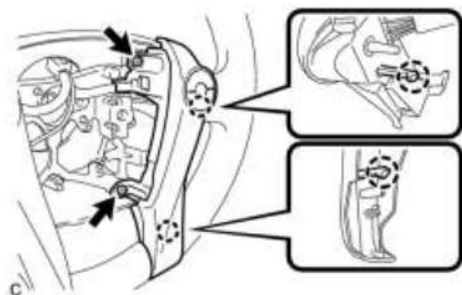
If the result is not as specified, replace the steering pad switch assembly.

Text in Illustration

*1	Component without harness connected (Steering Pad Switch Assembly)
----	---

INSTALLATION

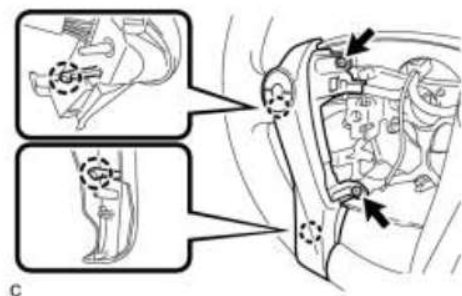
1. INSTALL STEERING PAD SWITCH ASSEMBLY



(a) Engage the 2 claws to install the steering pad switch assembly (RH side) to the steering wheel sub-assembly.

(b) Install the 2 screws.

Torque: **2.4 N·m (25 kgf·cm, 21in·lbf)**



(c) Engage the 2 claws to install the steering pad switch assembly (LH side) to the steering wheel sub-assembly.

(d) Install the 2 screws.

Torque: **2.4 N·m (25 kgf·cm, 21in·lbf)**

2. INSTALL STEERING PAD

HINT:

Refer to the instructions for Installation of the steering pad .

PRECAUTION

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected .

1. HANDLING PRECAUTIONS FOR STEERING SYSTEM

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

2. HANDLING PRECAUTIONS FOR SRS AIRBAG SYSTEM

(a) The vehicle is equipped with a Supplemental Restraint System (SRS). Failure to carry out service operations in the correct sequence could cause the SRS to unexpectedly deploy during servicing. This may cause a serious accident. Before servicing (including inspection, replacement, removal, and installation of parts), be sure to read the precautionary notices for the Supplemental Restraint System .

3. HANDLING PRECAUTIONS FOR STEERING COLUMN (for Brushless Type Motor)

(a) When handling the steering column assembly:

(1) Avoid any impact to the steering column assembly, especially to the motor or the torque sensor. Replace the steering column assembly with a new one if it is dropped or subjected to any severe impacts.

(2) Do not pull the wire harness when moving the steering column assembly.

(3) When the steering column assembly has been replaced, perform the rotation angle sensor value initialization and the torque sensor zero point calibration after initializing the torque sensor zero point. .

(4) Do not release the tilt lever when the steering column assembly is not installed on the vehicle.

(b) When disconnecting or reconnecting the connectors:

(1) Before disconnecting the connectors related to the power steering system, turn the power switch on (IG), center the steering wheel, turn the power switch off, and then disconnect the connectors.

(2) Before reconnecting the connectors related to the power steering system, ensure that the power switch is off. Then center the steering wheel and turn the power switch on (IG).

NOTICE:

Do not turn the power switch on (IG) when the steering wheel is not centered.

(3) If the above operations are not carried out properly, the steering center point (zero point) will deviate, which may lead to a difference in steering effort between turning right and left. If there is a difference in steering effort between turning right and left, perform the rotation angle sensor value initialization and the torque sensor zero point calibration after initializing the torque sensor zero point .

4. HANDLING PRECAUTIONS FOR STEERING COLUMN (for Brush Type Motor)

(a) When handling the steering column assembly:

(1) Avoid any impact to the steering column assembly, especially to the motor or the torque sensor. Replace the steering column assembly with a new one if it is dropped or subjected to any severe impacts.

(2) Do not pull the wire harness when moving the steering column assembly.

(3) When the steering column assembly has been replaced, perform the torque sensor zero point calibration after initializing the torque sensor zero point **INFO**.

(4) Do not release the tilt lever when the steering column assembly is not installed on the vehicle.

(b) When disconnecting or reconnecting the connectors:

(1) Before disconnecting the connectors related to the power steering system, turn the power switch on (IG), center the steering wheel, turn the power switch off, and then disconnect the connectors.

(2) Before reconnecting the connectors related to the power steering system, ensure that the power switch is off. Then center the steering wheel and turn the power switch on (IG).

NOTICE:

Do not turn the power switch on (IG) when the steering wheel is not centered.

(3) If the above operations are not carried out properly, the steering center point (zero point) will deviate, which may lead to a difference in steering effort between turning right and left. If there is a difference in steering effort between turning right and left, perform the torque sensor zero point calibration after initializing the torque sensor zero point **INFO**.

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, 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.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Steering System

Symptom	Suspected Area	See page
Heavy steering	Front tires (improperly inflated, unevenly worn)	INFO
	Front wheel alignment (Incorrect)	INFO
	Steering system joints (Worn)	-
	Steering column	INFO
	Torque sensor (built into steering column)	-
	Power steering motor	-
	Speed sensor	INFO
	Battery and power source system	-
	Power steering ECU power source voltage and relay (for Brushless Type Motor)	INFO
	Power steering ECU power source voltage and relay (for Brush Type Motor)	INFO
	Power steering gear	INFO
	Power steering ECU	INFO
	Skid control ECU	-
Poor return	Front tires (improperly inflated, unevenly worn)	INFO
	Front wheel alignment (Incorrect)	INFO
	Steering column	INFO
	Power steering gear	INFO
	Power steering ECU	INFO
Excessive free play	Steering system joints (Worn)	-
	Front suspension (lower ball joint)	INFO
	Intermediate shaft, universal joint, sliding yoke (Worn)	-
	Front axle hub (Hub bearing)	INFO
	Power steering gear	INFO

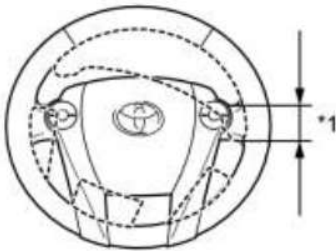
Symptom	Suspected Area	See page
A knocking (or clunking) sound occurs when turning the steering wheel back and forth while power steering is operating.	Front suspension (lower ball joint)	INFO
	Steering intermediate shaft	-
	Power steering ECU	INFO
Friction occurs when turning the steering wheel during low-speed driving	Power steering motor	-
	Steering column	INFO
A high-pitched sound (squeaking) occurs when turning the steering wheel slowly with the vehicle stopped.	Power steering motor	-
	Steering column	INFO
Steering wheel vibrates and noise occurs when steering wheel turned while vehicle stopped	Power steering motor	-
	Steering column	INFO

ON-VEHICLE INSPECTION

1. INSPECT STEERING WHEEL FREE PLAY

- (a) Stop the vehicle and position the front wheels straight ahead.
- (b) Gently turn the steering wheel right and left, and check steering wheel free play.

Text in Illustration



*1	Maximum Free Play
----	-------------------

Maximum free play:
30 mm (1.18 in.)

HINT:

If the free play exceeds the maximum, check the steering system [INFO](#).

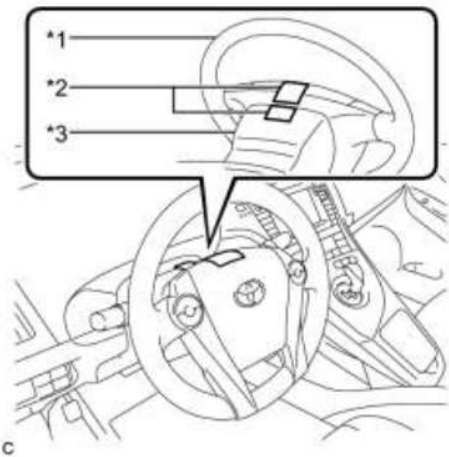
ADJUSTMENT

1. STEERING OFF CENTER ADJUSTMENT PROCEDURE

HINT:

This is the steering wheel off center adjustment procedure.

(a) Inspect steering wheel off center.

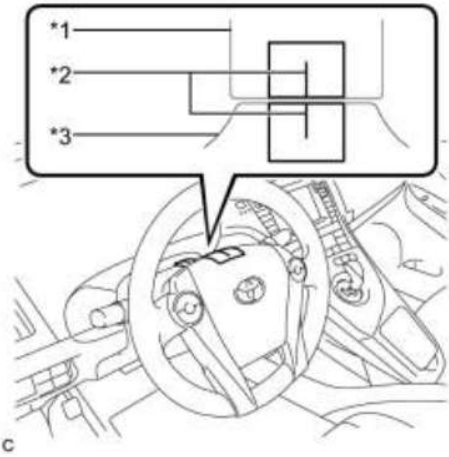


(1) Apply masking tape to the top center of the steering wheel and steering column upper cover.

Text in Illustration

*1	Steering Wheel
*2	Masking Tape
*3	Upper Steering Column Cover

(2) Drive the vehicle in a straight line for 100 meters at a constant speed of 35 mph (56 km/h), while holding the steering wheel to maintain the course.



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

Text in Illustration

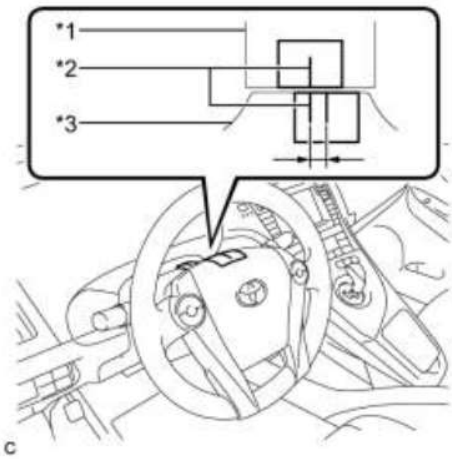
*1	Upper Steering Column Cover
*2	Marked Line
*3	Steering Wheel

(4) Turn the steering wheel to the center position.

HINT:

Look at the upper surface of the steering wheel, steering spoke and SRS airbag line to find the center position.

(5) Draw a new line on the masking tape on the steering wheel as shown



in the illustration.

Text in Illustration

*1	Upper Steering Column Cover
*2	Marked Line
*3	Steering Wheel

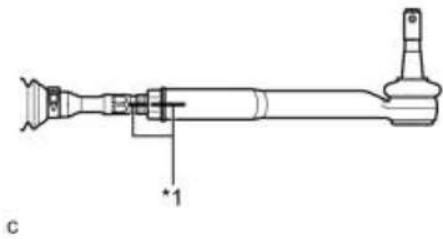
- (6) Measure the distance between the 2 lines on the masking tape on the steering wheel.
- (7) Convert the measured distance to steering angle.

HINT:

- Measured distance 1 mm (0.0394 in.) = Steering angle of approximately 1 degree.
- Make a note of the steering angle.

(b) Adjust steering angle.

(1) Put matchmarks on the RH and LH tie rod ends and rack ends respectively where it can be easily seen.



Text in Illustration

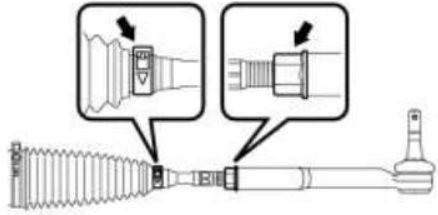
*1	Matchmark
----	-----------

(2) Using a paper gauge, measure the distance from the RH and LH tie rod ends to the rack end screws.

HINT:

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

(3) Remove the RH and LH boot clips from the rack boots.



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(4) Loosen the RH and LH lock nuts.

(5) Turn the RH and LH rack ends by the same amount (but in different directions) according to the steering angle.

HINT:

One 360 degree turn of rack end (1.5 mm (0.0591 in.) horizontal movement) equals to 12 degrees of steering angle.

(6) Tighten the RH and LH lock nuts to the specified torque.

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

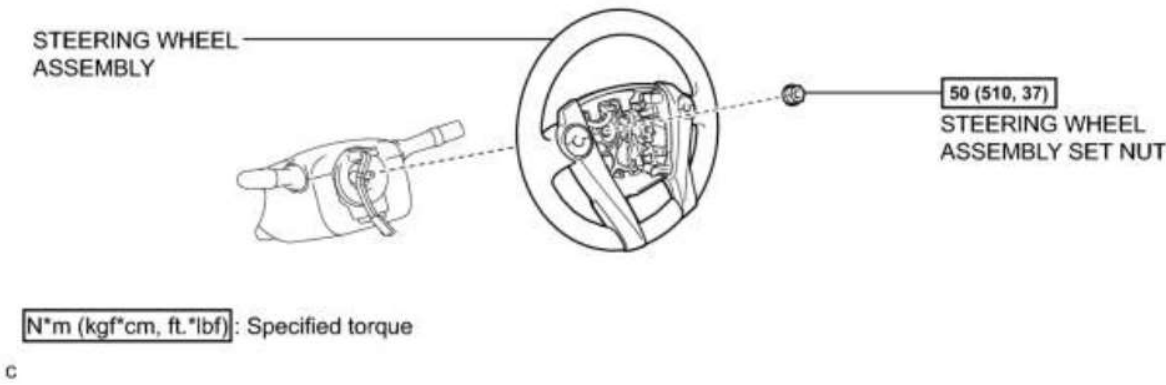
NOTICE:

Make sure that the difference in length between the RH and LH tie rod ends and rack end screws is within 1.5 mm (0.0591 in.).

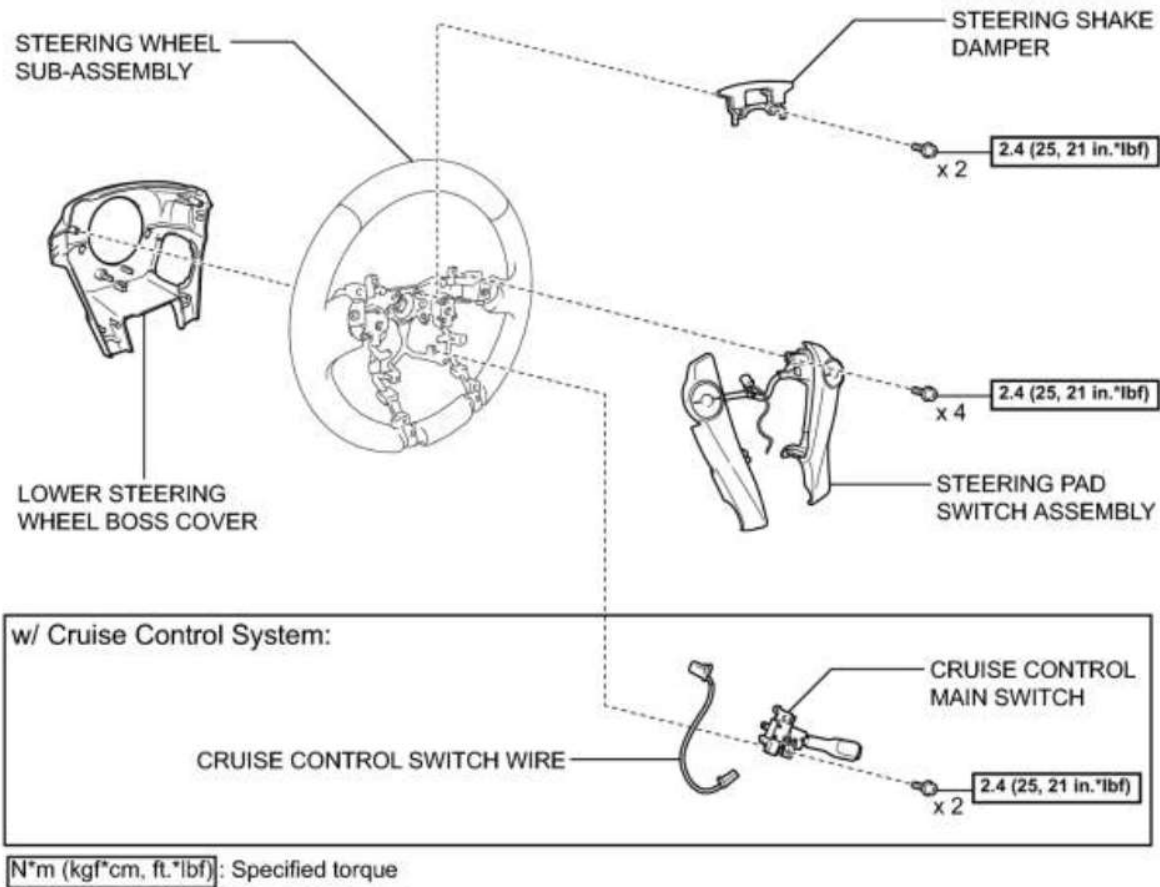
(7) Install the RH and LH boot clips.

COMPONENTS

ILLUSTRATION



ILLUSTRATION



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REMOVAL

CAUTION:

Some of these service operations affect the SRS airbag system. Read the precautionary notices concerning the SRS airbag system before servicing INFO.

1. PRECAUTION

NOTICE:

Be sure to read Precaution thoroughly before servicing INFO.

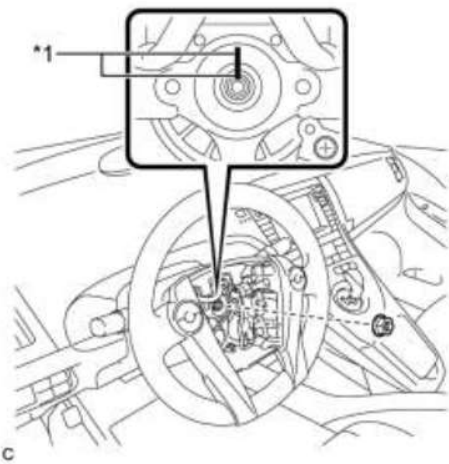
2. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

3. REMOVE STEERING PAD

HINT:

Refer to the instructions for Removal of the steering pad INFO.

4. REMOVE STEERING WHEEL ASSEMBLY



(a) Remove the steering wheel assembly set nut.

Text in Illustration

*1	Matchmark
----	-----------

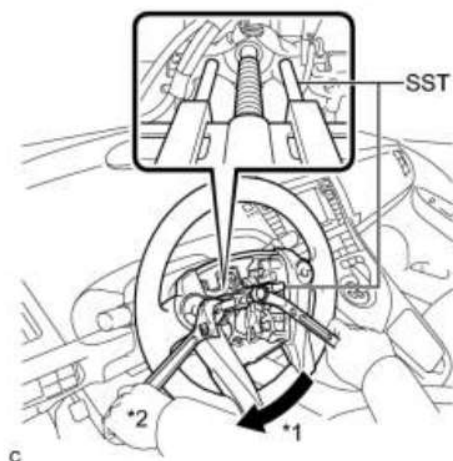
(b) Put matchmarks on the steering wheel assembly and steering main shaft.

(c) Disconnect the connectors from the spiral cable.

(d) Using SST, remove the steering wheel assembly.

Text in Illustration

*1	Turn
----	------



*2	Hold
----	------

SST: 09950-50013

09951-05010

09952-05010

09953-05020

09955-04071

NOTICE:

Apply a small amount of grease to the threads and tip of SST (09953-05020) before use.

5. REMOVE STEERING SHAKE DAMPER



(a) Remove the 2 screws and steering shake damper from the steering wheel assembly.

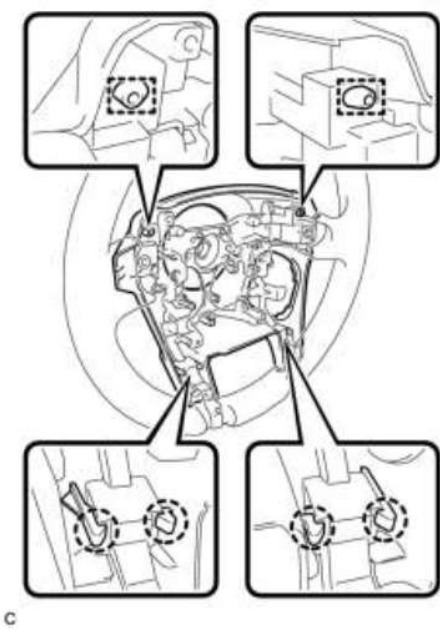
6. REMOVE STEERING PAD SWITCH ASSEMBLY_ INFO

7. REMOVE CRUISE CONTROL MAIN SWITCH (w/ Cruise Control System)_ INFO

8. REMOVE CRUISE CONTROL SWITCH WIRE (w/ Cruise Control System)

9. REMOVE LOWER STEERING WHEEL BOSS COVER

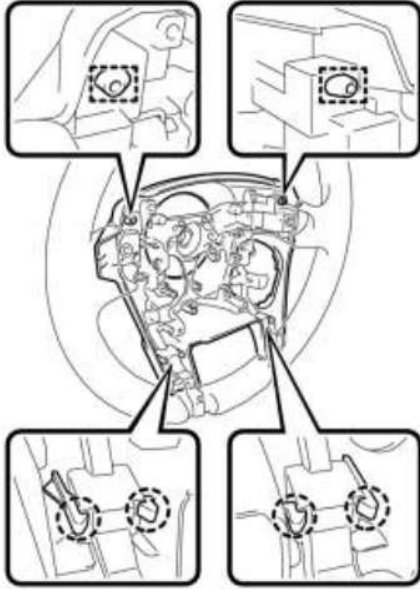
(a) Disengage the 2 pins and 4 claws to remove the lower steering wheel boss cover from the steering wheel sub-assembly.



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INSTALLATION

1. INSTALL LOWER STEERING WHEEL BOSS COVER



(a) Engage the 2 pins and 4 claws to install the lower steering wheel boss cover to the steering wheel sub-assembly.

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2. INSTALL CRUISE CONTROL SWITCH WIRE (w/ Cruise Control System)

3. INSTALL CRUISE CONTROL MAIN SWITCH (w/ Cruise Control System) INFO

4. INSTALL STEERING PAD SWITCH ASSEMBLY INFO

5. INSTALL STEERING SHAKE DAMPER



(a) Install the steering shake damper to the steering wheel assembly with the 2 screws.

Torque: **2.4 N·m (25 kgf·cm, 21in·lbf)**

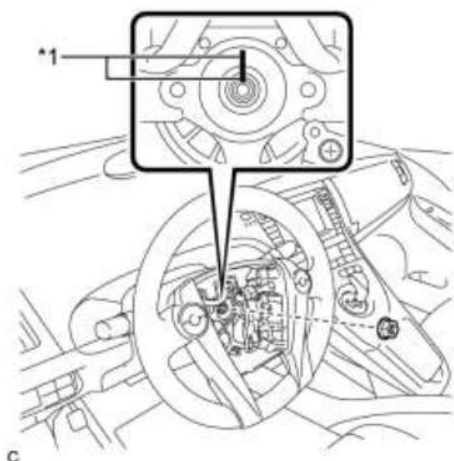
c

6. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

7. ADJUST SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY INFO

8. INSTALL STEERING WHEEL ASSEMBLY

(a) Align the matchmarks on the steering wheel assembly and steering



main shaft.

Text in Illustration

*1	Matchmark
----	-----------

(b) Install the steering wheel assembly set nut.

Torque: **50 N·m (510 kgf·cm, 37ft·lbf)**

(c) Connect the connectors to the spiral cable sub-assembly.

9. INSTALL STEERING PAD

HINT:

Refer to the instructions for Installation of the steering pad INFO.

10. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

- Connect the cable to the negative (-) battery terminal with the front wheels facing straight ahead.
- When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

12. INSPECT STEERING PAD INFO

13. INSPECT SRS WARNING LIGHT

(a) Inspect the SRS warning light INFO.