STEERING SYSTEM

PRECAUTION

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 driving hazards.

2. HANDLING PRECAUTIONS FOR SRS AIRBAG SYSTEM

(a) The vehicle is equipped with SRS (Supplemental Restraint System) such as airbags. 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 (See page RS-1).

PROBLEM SYMPTOMS TABLE

HINT:
Use the table below to help determine the cause of the problem. The numbers indicate likely causes of the problem in descending order. Check each part in order. If necessary, repair or replace the faulty parts.

STEERING SYSTEM

Symptom	Suspected area	See page
Hard steering	1. Tires (Improperly inflated)	TW-3
	2. Front wheel alignment (Incorrect)	SP-4
	3. Steering system joints (Worn)	-
	4. Suspension arm ball joints (Worn)	SP-28
	5. Steering column (Binding)	SR-38
	6. Power steering gear	PS-40
Poor return	1. Tires (Improperly inflated)	TW-3
	2. Front wheel alignment (Incorrect)	SP-4
	3. Steering column (Binding)	SR-38
	4. Power steering gear	PS-40
Excessive free play	1. Steering system joints (Worn)	-
	2. Suspension arm ball joints (Worn)	SP-28
	3. Intermediate shaft, universal joint, sliding yoke (Worn)	-
	4. Front wheel bearing (Worn)	AH-5
	5. Power steering gear	PS-40
Abnormal noise	1. Steering system joints (Worn)	-
	2. Power steering gear	PS-40

ON-VEHICLE INSPECTION

1. INSPECT STEERING WHEEL FREE PLAY

(a) Stop the vehicle and align the tires facing straight ahead.

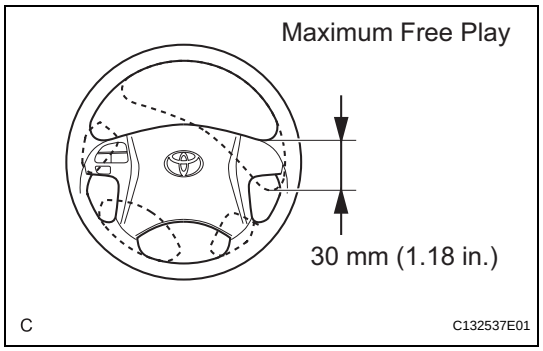
(b) Gently turn the steering wheel right and left by hand, and check the steering wheel free play.

Maximum free play:

30 mm (1.18 in.)

HINT:

If the free play exceeds the maximum, check the steering column, steering intermediate shaft, steering sliding yoke, or steering gear.

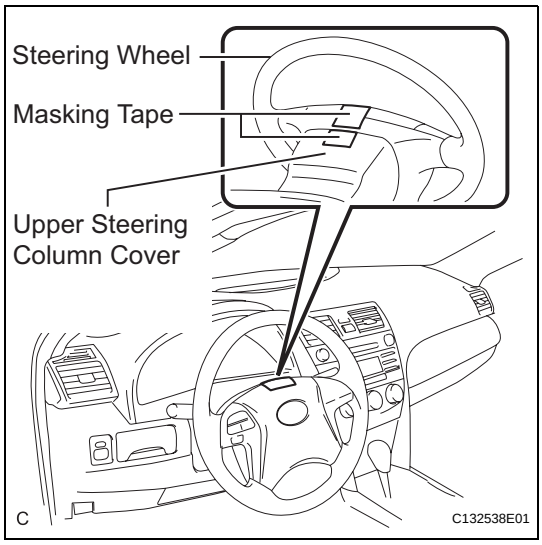


ADJUSTMENT

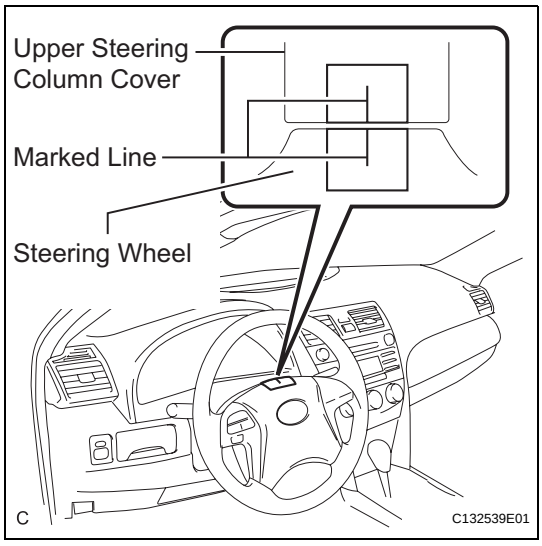
1. STEERING OFF CENTER ADJUSTMENT PROCEDURE

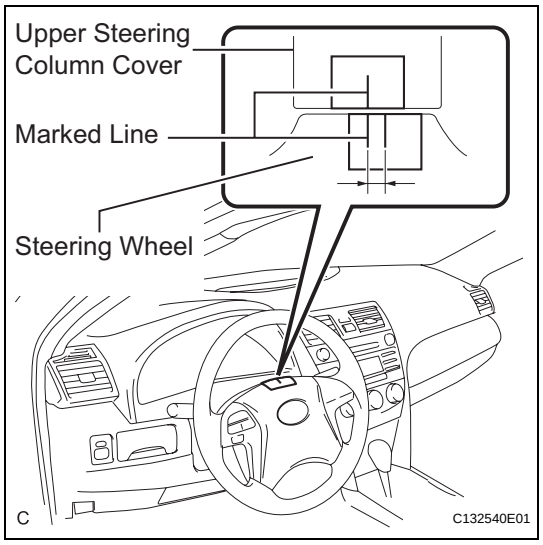
HINT:
This is the adjustment procedure for steering off center.

(a) Inspect steering wheel off center.
  (1) Apply masking tape on the top center of the steering wheel and steering column upper cover.
  (2) Drive the vehicle in a straight line for 100 meters at a constant speed of 35 mph (56 km/h), and hold the steering wheel to maintain the course.

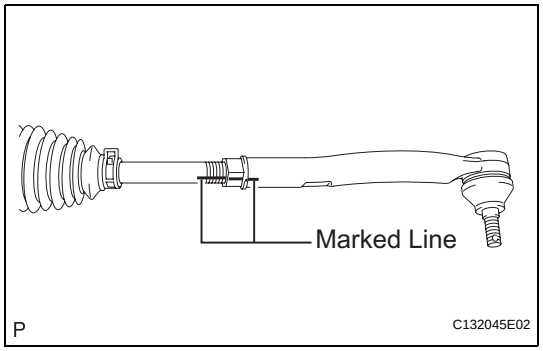


  (3) Draw a line on the masking tape as shown in the illustration.
  (4) Turn the steering wheel to the center position.
  HINT:
  Look at the upper surface of the steering wheel, steering spoke, and SRS airbag line to find the center position.

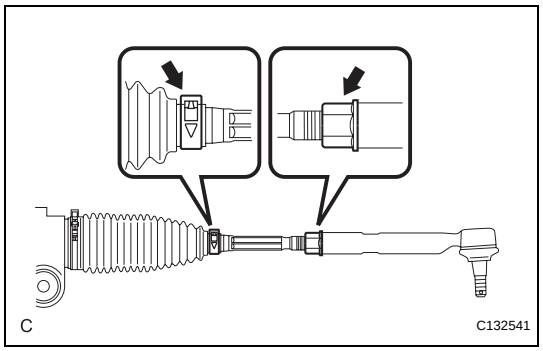




(5) Draw a new line on the masking tape on the steering wheel as shown in the illustration.
(6) Measure the distance between the 2 lines on the masking tape on the steering wheel.
(7) Convert the measured distance to steering angle.
HINT:
- Measured distance 1 mm (0.04 in.) = Steering angle of approximately 1 degree.
- Make a note of the steering angle.



(b) Adjust steering angle.
(1) Draw a line on the RH and LH tie rod ends and rack ends respectively where it can be easily seen.
(2) 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.



(3) Remove the RH and LH boot clips from the rack boots.
(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 the rack end (1.5 mm (0.059 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, 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.).
(7) Install the RH and LH boot clips.

SR

ELECTRIC STEERING LOCK

PRECAUTION

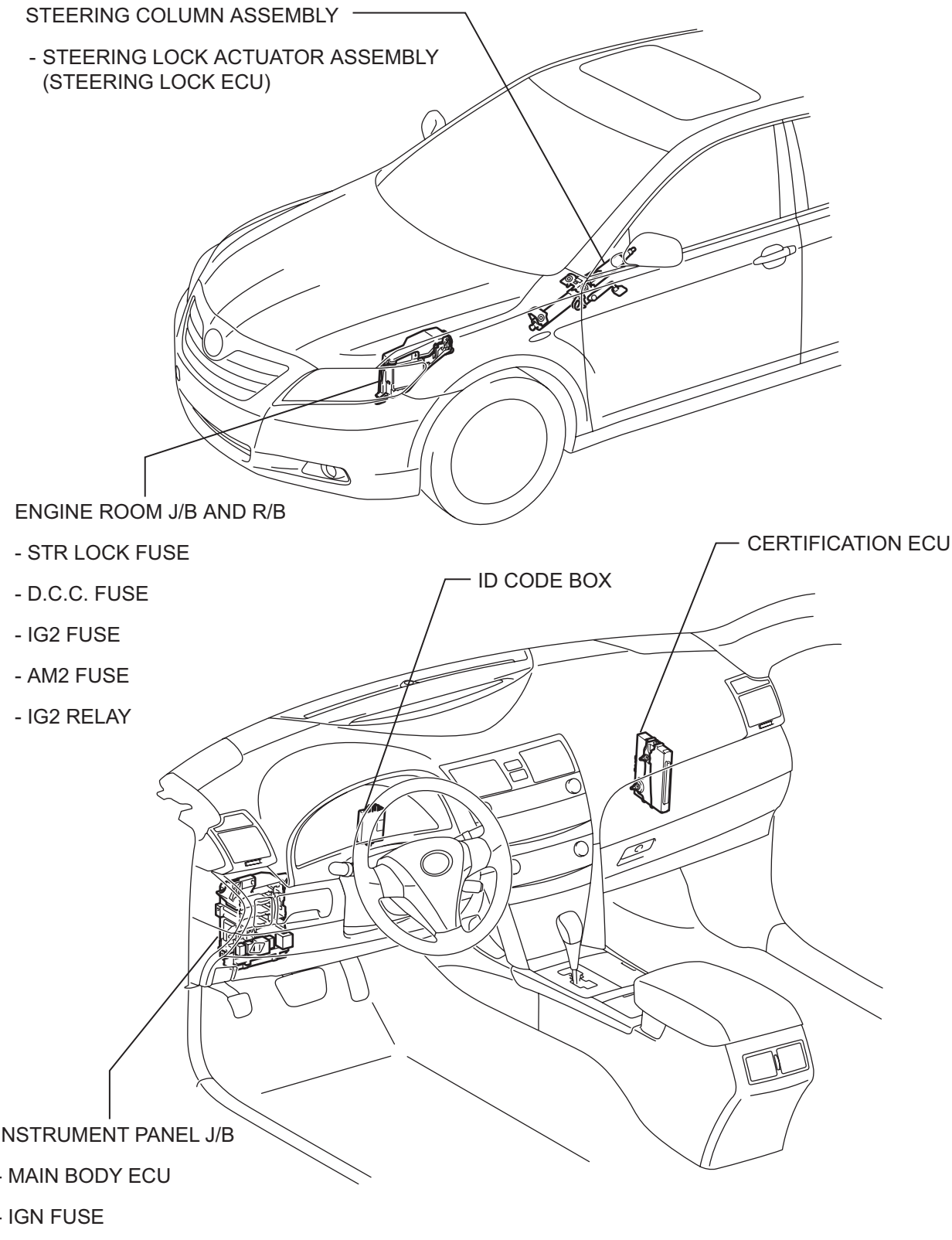
1. PRECAUTIONS WHEN WORKING ON ELECTRIC STEERING LOCK

(a) After replacing the steering lock actuator assembly (steering lock ECU), perform the key ID code registration.

(b) If the steering lock actuator assembly is replaced, open and close the driver's door. The engine may not start until the driver's door is opened or closed.
HINT:
Opening and closing the driver's door causes the steering lock actuator assembly (steering lock ECU) to memorize the correct steering lock bar position.

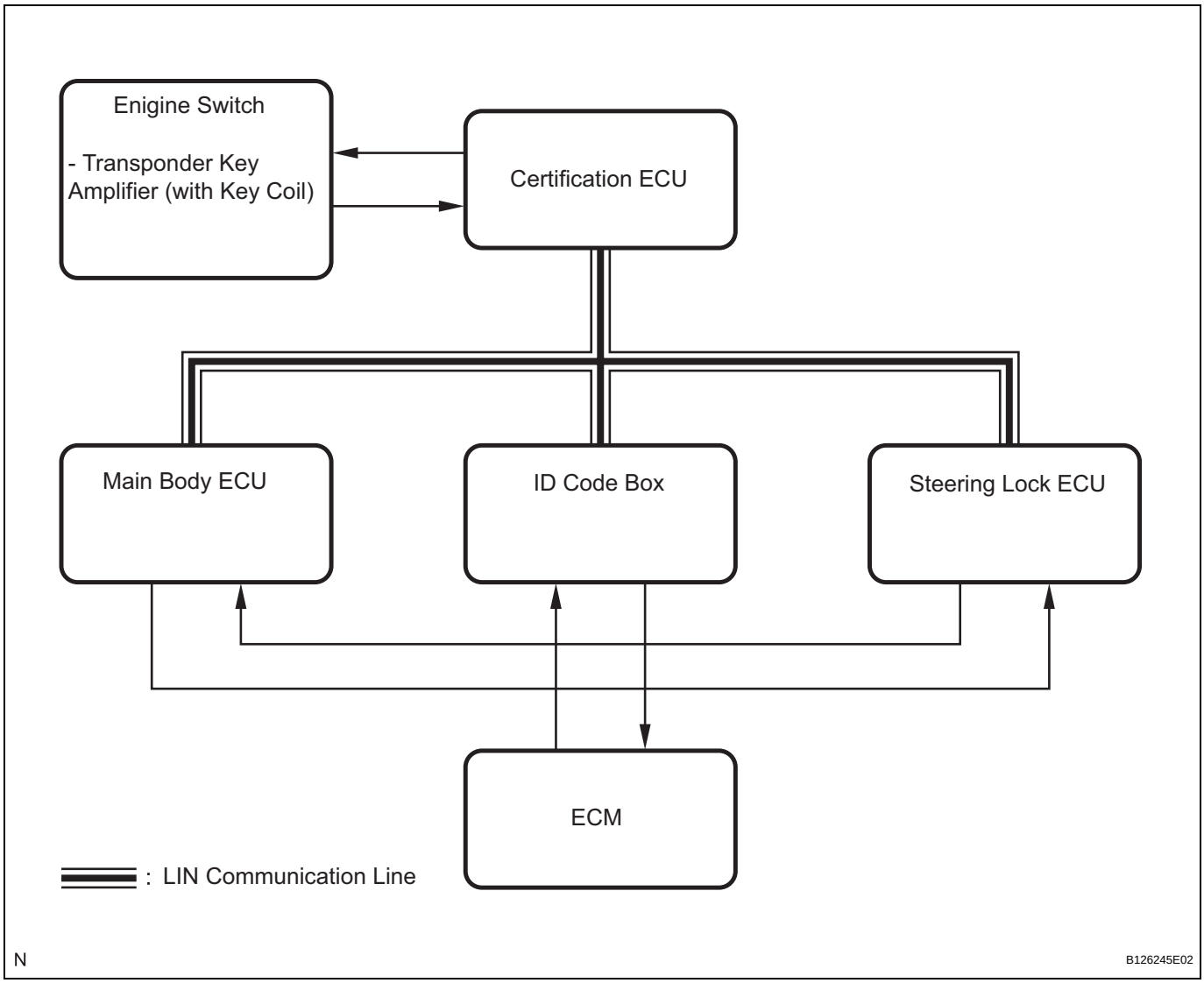
(c) If checking for DTCs of the smart access system with push-button start function or if checking the DATA LIST with the engine switch off, make sure that the driver's door is open.
HINT:
When the engine switch is off, the main body ECU may be in a sleep mode. If the main body ECU is in this sleep mode, it will not be possible for the intelligent tester to communicate with it. Opening and closing the driver's door will cause the ECU to exit the sleep mode.

PARTS LOCATION



SR

SYSTEM DIAGRAM



Input and output signals of each ECU:

Transmitting ECU (transmitter)	Receiving ECU	Signals	Communication Method
Main Body ECU	Steering Lock ECU	Power supply status (to steering lock motor)	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Sleep available status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Lock / Unlock sensor status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Steering lock status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Motor control status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Diagnostic response status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Lock / Unlock sensor malfunction	LIN

Transmitting ECU (transmitter)	Receiving ECU	Signals	Communication Method
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Power supply malfunction (to steering lock motor)	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Motor driver malfunction	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Lock bar (stuck) status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Push start status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Lock / Unlock relay drive status	LIN
Steering Lock ECU	• Certification ECU • Main Body ECU • ID Code Box	Engine start control status	LIN

SYSTEM DESCRIPTION

1. DESCRIPTION

(a) The steering lock system locks or unlocks the steering lock by activating the steering lock bar with a motor. The steering lock ECU activates the motor based on signals from the certification ECU and main body ECU.

(b) A LIN (Local Interconnect Network) is used for communication between different ECUs in this system.

2. FUNCTIONS OF COMPONENTS

(a) The steering lock ECU controls the system based on information from the following components.

Item	Function
Steering lock actuator assembly	Consists of a motor, lock bar, lock and unlock position sensors, etc. Activated by the steering lock ECU.
Steering lock ECU	Included in the steering lock actuator assembly. This ECU activates the steering lock motor based on permission signals from the main body ECU and certification ECU. Detects steering lock or unlock state and transmits this status to other ECUs.
Main body ECU	Permits the steering lock ECU to supply power to activate the motor. The main body ECU and certification ECU permit engine start after receiving an unlock signal from the steering lock ECU.
Certification ECU	Orders the steering lock ECU to lock / unlock the steering. The main body ECU and certification ECU permit engine start after receiving an unlock signal from the steering lock ECU.
IG2 relay	Controlled by the main body ECU. This ECU sends IG signals to the steering lock ECU.

HOW TO PROCEED WITH TROUBLESHOOTING

The intelligent tester can be used at steps 2, 6, 9 and 12.

1	VEHICLE BROUGHT TO WORKSHOP

NEXT

2	CHECK AND CLEAR DTCS

NEXT

3	PROBLEM SYMPTOM CONFIRMATION

- SYMPTOM DOES NOT OCCUR (Go to step 4)
- SYMPTOM OCCURS (Go to step 5)

4	SYMPTOM SIMULATION

NEXT

5	CHECK CAN COMMUNICATION SYSTEM

HINT:
Check that there are no problems in the CAN communication system before troubleshooting the steering lock system.

NEXT

6	DTC CHECK

- DTC IS NOT OUTPUT (Go to step 7)
- DTC IS OUTPUT (Go to step 8)

7	PROBLEM SYMPTOMS TABLE

- Go to step 9

SR

8	DTC CHART

NEXT

9	CIRCUIT INSPECTION

NEXT

10	PROBLEM IDENTIFICATION

NEXT

11	REPAIR OR REPLACEMENT

NEXT

SR

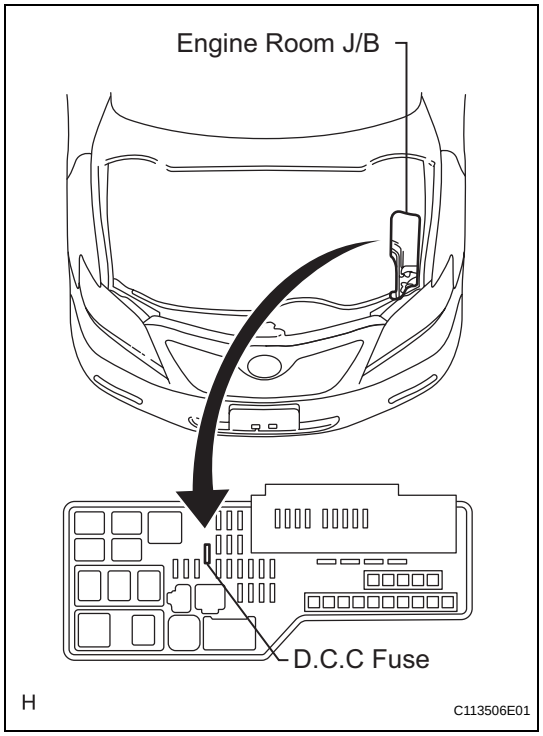
12	CONFIRMATION TEST

NEXT

END

INITIALIZATION

HINT:
In vehicles equipped with the smart access system with push-button start function, the starting function may not operate after recharging or while jump-starting a discharged battery. This condition is most common if the battery voltage drops below 9 V. The following procedure has been developed to address this condition.



1. INITIALIZATION PROCEDURE

(a) Confirm that the D.C.C. fuse is installed.
HINT:
If the D.C.C. fuse is not installed, install it at this time.
(b) Move the shift lever to the P position.
(c) Turn the engine switch off.
(d) Open the driver's door.
HINT:
Opening the driver's door will start an initialization process between the steering lock ECU and the engine room J/B.
(e) Depress the brake pedal.
(f) Press the "START STOP" switch.

SR

PROBLEM SYMPTOMS TABLE

Inspect the suspected areas in numerical order by referring to the corresponding pages when any of the following symptoms occurs:

ELECTRIC STEERING LOCK FUNCTION:

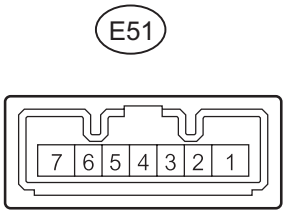
Symptom	Suspected area	See page
Steering wheel cannot be unlocked (the engine cannot be started).	1. Initialization	SR-9
	2. Check for DTCs in the smart access system with push-button start.	ST-26
	3. Check for DTCs in the engine immobiliser system.	EI-24
	4. Check that the LCK/UNLCK REC item in the DATA LIST of the certification ECU displays YES within 10 seconds after starting the engine. (If it displays NO, see "No steering unlock" command in this table.)	SR-14
	5. Check the input signal from the IGE terminal of the steering lock ECU.	SR-24
	6. Steering lock ECU power source circuit.	SR-30
	7. Replace the steering lock ECU.	SR-42
Steering wheel cannot be unlocked (no steering unlock command).	1. Check that the S CODE MACH item in the DATA LIST of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	2. Check that the L CODE MACH item in the DATA LIST of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	3. Replace the certification ECU.	-
Steering wheel cannot be locked.	1. Check for DTCs in the smart access system with push-button start.	ST-26
	2. Check for DTCs in the engine immobiliser system.	EI-24
	3. With the engine switch off and the shift in the P position, open and close the driver's door. After that, check that the LCK/UNLCK REC item in the DATA LIST of the certification ECU displays YES within 10 seconds. (If it displays NO, see "No steering lock" command in this table.)	SR-14
	4. Check the input signal from the IGE terminal of the steering lock ECU.	SR-24
	5. Steering lock ECU power source circuit.	SR-30
	6. Replace the steering lock ECU.	SR-42
Steering wheel cannot be locked (no steering lock command).	1. Courtesy light switch circuit	LI-52
	2. Check that the S CODE MACH item in the DATA LIST of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	3. Check that the L CODE MACH item in the DATA LIST of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	4. Replace the certification ECU.	-

SR

SMART ACCESS SYSTEM WITH PUSH-BUTTON START FUNCTION:

Symptom	Suspected area	See page
Engine does not start.	1. Initialization	SR-9
	2. Check for DTCs in the smart access system with push-button start.	ST-26
	3. Check for DTCs in the engine immobiliser system.	EI-24
	4. Check that the engine switch is turned on (IG).	-
	5. Check cranking operation. (If cranking operation is possible, see "Engine does not start due to the engine immobiliser" in this table.)	-
	6. Check SHIFT P SIG in the DATA LIST of the power source control ECU and confirm that the shift signal is normal.	-
	7. Check whether the steering wheel is locked or unlocked. (If it is locked, see "Steering wheel cannot be unlocked" in the steering lock function table.)	-
	8. Check the output from the SLP terminal of the steering lock ECU.	SR-28
	9. Check the output signal from the ST SW of the certification ECU (DTC B2275).	ST-48
	10. Replace the main body ECU.	-
Engine does not start due to the engine immobiliser.	1. Check that the L CODE MACH item in the DATA LIST of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	2. Check that the ENG START REQ item in the DATA LIST of the certification ECU displays YES. (If it displays NO, replace the certification ECU.)	-
	3. Check that the S CODE MACH item in the DATA LIST of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	4. Replace the ID code box.	-

TERMINALS OF ECU



H

C106482E05

1. STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

Terminal No. (Symbols)	Wiring Color	Terminal Description	Condition	Specified Condition
E51-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
E51-2 (SGND) - Body ground	W-B - Body ground	Signal ground	Always	Below 1 V
E51-3 (IGE) - E51-1 (GND)	BR - W-B	Power source for driving motor	• Motor is in operation • Motor is not in operation	• Below 1 V • 10 to 12 V
E51-4 (SLP1) - E51-2 (SGND)	P - W-B	Unlock position sensor output signal	• Steering is locked • Steering lock is released	• 10 to 14 V • Below 1 V
E51-5 (LIN) - E51-2 (SGND)	O - W-B	LIN communication bus	Engine switch on (IG)	Pulse generation
E51-6 (IG2) - E51-1 (GND)	B - W-B	IG signal input	Engine switch on (IG)	10 to 14 V
E51-7 (B) - E51-1 (GND)	P - W-B	Power source	Always	10 to 14 V

SR

DIAGNOSIS SYSTEM

1. DESCRIPTION

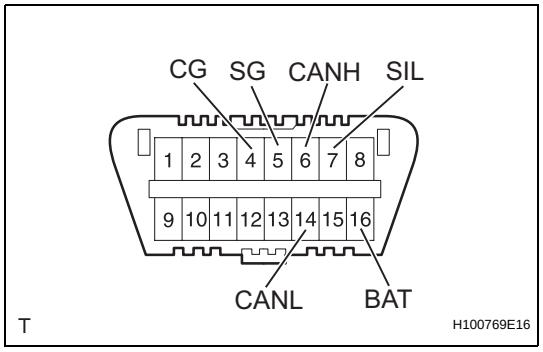
(a) DIAGNOSTIC SYSTEM

When troubleshooting a vehicle with a diagnostic system, the only difference from the usual troubleshooting procedure is connecting the intelligent tester to the vehicle and reading various data output from the vehicle's steering lock ECU. The steering lock ECU records DTCs when the computer detects a malfunction in the computer itself or in system circuits.

To check the DTCs, connect the intelligent tester to the DLC3 on the vehicle. The intelligent tester enables the DTCs to be cleared, the indicators to be activated, and the DATA LIST to be checked.

(b) The steering lock ECU diagnosis information cannot be read directly from the steering lock ECU by the tester. The diagnosis information from the steering lock ECU is transmitted to the tester via the certification ECU to the tester using the controller area network (CAN).

2. CHECK DLC3



(a) The certification ECU uses ISO 15765-4 for communication. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 15765-4 format.

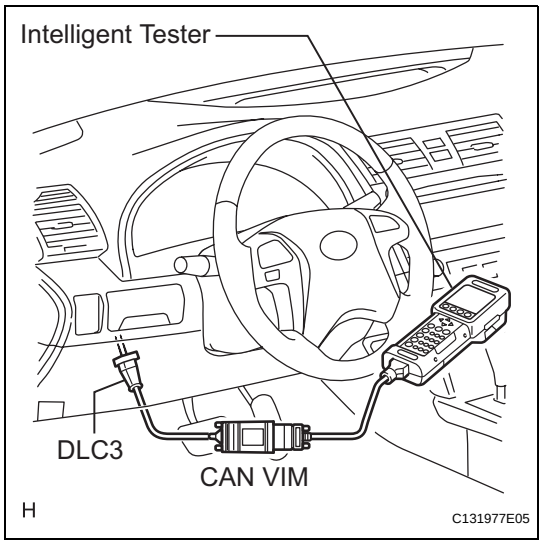
SR

Symbols (Terminal No.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	11 to 14 V
CANH (6) - CANL (14)	CAN bus line	Engine Switch off*	54 to 69 Ω
CANH (6) - CG (4)	HIGH-level CAN bus line	Engine Switch off*	200 Ω or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Engine Switch off*	200 Ω or higher
CANH (6) - BAT (16)	HIGH-level CAN bus line	Engine Switch off*	6 kΩ or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Engine Switch off*	6 kΩ or higher

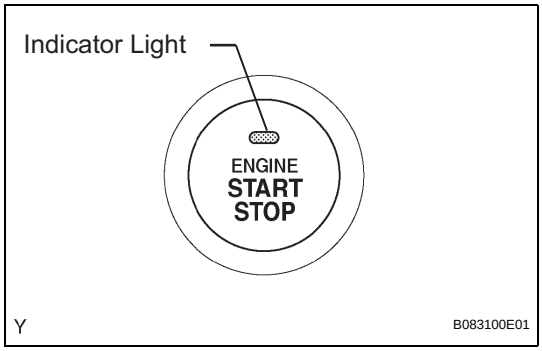
NOTICE:

***: Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the engine switch, and other switches or the doors.**

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.



(b) Connect the cable of the intelligent tester to the DLC3, turn the engine switch on (IG) and attempt to use the tester. If the display indicates that a communication error has occurred, there is a problem either with the vehicle or with the tester.
- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 of the original vehicle.
- If communication is still not possible when the tester is connected to another vehicle, the problem may be in the tester itself. Consult the Service Department listed in the tester's instruction manual.



3. WARNING FUNCTION OF ENGINE SWITCH INDICATOR

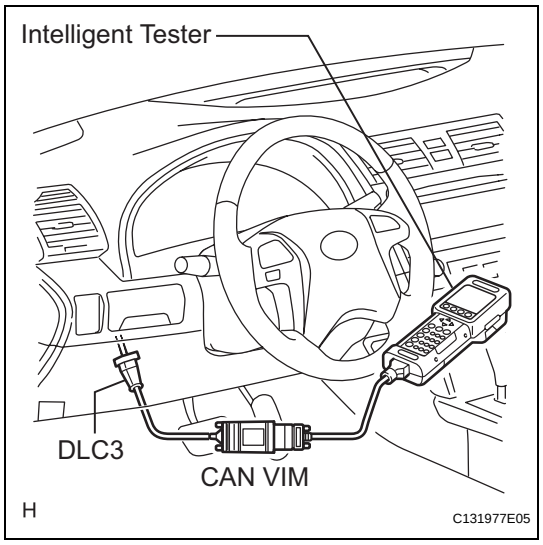
(a) The steering lock ECU blinks the LED indicator of the engine switch when any of the following problems occurs in the system:

Detection Item	Indicator Light Blink Pattern	Indication Status	Countermeasure
Steering lock is still not released	• Blinks green at 1-second intervals • Goes off 15 seconds after blinking starts	The motor operates to release the steering lock, but the steering lock cannot be released (e.g. the lock bar is stuck in the steering column).	Push the engine switch while turning the steering wheel left or right.
Malfunction in smart access system with push-button start	• Blinks amber at 2-second intervals • Goes off 15 seconds after the engine switch is turned off while blinking	• There is a short in the devices activating the motor. • There is a problem in the steering lock ECU or power source control ECU.	Troubleshoot by following "HOW TO PROCEED WITH TROUBLESHOOTING" (See page SR-7).

4. WARNING FUNCTION OF COMBINATION METER

(a) The steering lock ECU displays a warning on the combination meter when any of the following problems occurs in the system.

Detection Item	Display	Indication Status	Countermeasure
Steering lock is still not released	"S/T is not Unlocked" • Goes off 15 seconds after blinking starts	The motor operates to release the steering lock, but the steering lock cannot be released (e.g. the lock bar is stuck in the steering column).	Push the engine switch while turning the steering wheel left or right.
Malfunction in push start system	"Check S/T Lock" • Goes off 15 seconds after the engine switch is turned off while blinking	• There is a short in the devices activating the motor. • There is a problem in the steering lock ECU or power source control ECU.	Troubleshoot by following "HOW TO PROCEED WITH TROUBLESHOOTING" (See page SR-7).



DTC CHECK / CLEAR

1. CHECK FOR DTCS

(a) Prepare the intelligent tester.

(b) Connect the intelligent tester to the DLC3 at the lower part of the instrument panel.

(c) Turn the engine switch on (IG) and turn the intelligent tester on.

(d) Use the intelligent tester to check for DTCs, and note or print the result (see the operator's manual for operating instructions).

(e) Confirm the details of the DTCs (See page SR-15).

2. CLEAR DTCS

(a) Operate the intelligent tester to clear the DTCs (see the operator's manual for operating instructions).

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

By accessing the DATA LIST displayed on the intelligent tester, it is possible to perform such functions as reading the values of switches and sensors without removing any parts. Reading the DATA LIST is the first step in troubleshooting and is one method to save labor time.

(a) Connect the intelligent tester to the DLC3.

(b) Turn the engine switch on (IG) and turn the intelligent tester on.

(c) Operate the intelligent tester according to the steps on the display and select DATA LIST.

SMART ACCESS:

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
SLCK SLEEP COND	Steering lock ECU sleep condition / YES or NO	YES: Steering lock ECU sleep mode can be entered NO: Steering lock ECU sleep mode cannot be entered	-
SLCK START COND	Steering lock ECU start signal / YES or NO	YES: Steering lock ECU sent a start signal NO: Steering lock ECU did not send a start signal	-
ENG START COND	Engine start condition / OK or NG	OK: Engine is allowed to start NG: Engine is not allowed to start	-
SENSOR VALUE	Sensor malfunction / NG (PAST) or OK	NG (PAST): Sensor malfunction OK: No malfunction	-
PWR SUPPLY SHRT	Short in ECU / NG (PAST) or OK	NG (PAST): Short in ECU OK: No malfunction	-
PWR SUPPLY OPEN	Open in ECU / NG (PAST) or OK	NG (PAST): Open in ECU OK: No malfunction	-
MTR DRIVER SHRT	Short in driver ECU / NG (PAST) or OK	NG (PAST): Short in driver ECU OK: No malfunction	-
MTR DRIVER OPEN	Open in driver ECU / NG (PAST) or OK	NG (PAST): Open in driver ECU OK: No malfunction	-
LCK/UNLCK REC	Steering lock command reception record / YES or NO	YES: Steering lock / unlock signal received NO: Steering lock / unlock signal no received	-
LCK BAR STUCK	Lock bar stuck malfunction / NG (PAST) or OK	NG (PAST): Lock bar stuck malfunction OK: No malfunction	-
PUSH START ERR	Push button start function malfunction / NG (PAST) or OK	NG (PAST): Malfunction in push button start OK: No malfunction	-
IG2	IG2 voltage / ON or OFF	ON: 10 to 14 V OFF: Below 1 V	-
IG (LIN)	LIN bus IG status / ON or OFF	ON: LIN bus IG ON status OFF: LIN bus IG OFF status	-
STEERING LOCK	Steering lock condition / Set or Unset	Set: Steering lock is set Unset: Steering lock is not set	This status changes depending on the state of some sensors.
STEERING UNLOCK	Steering unlock condition / Set or Unset	Set: Steering unlock is set Unset: Steering unlock is not set	This status changes depending on the state of some sensors.

2. ACTIVE TEST

HINT:

Performing the ACTIVE TEST is one of the methods to save labor time. It is possible to display the DATA LIST during the ACTIVE TEST.

(a) Connect the intelligent tester to the DLC3.

(b) Turn the engine switch on (IG) and turn the intelligent tester on.

(c) Following the display on the intelligent tester, perform the ACTIVE TEST.

BODY:

Item	Test Details	Diagnostic Note
SECURITY INDIC	Security Indicator / ON or OFF	-

DIAGNOSTIC TROUBLE CODE CHART

If a trouble code is displayed during the DTC check, check the parts listed for that code in the table below and proceed to the appropriate page.
HINT:
The steering lock ECU does not store DTCs regarding the past problems.

ELECTRIC STEERING LOCK:

DTC No.	Detection Item	Trouble Area	See page
B2781	Open / Short in Steering Lock ECU	Steering lock actuator assembly (Steering lock ECU)	SR-17
B2782	Power Source Control ECU Malfunction	1. Wire harness 2. Steering lock actuator assembly (Steering lock ECU) 3. Main body ECU	SR-18
B2788	IG2 Signal Malfunction	1. IG2 relay 2. Wire harness 3. Main body ECU 4. Steering lock actuator assembly (Steering lock ECU)	SR-21

DTC	B2781	Open / Short in Steering Lock ECU

DESCRIPTION

If the steering lock ECU determines that there is a malfunction inside the ECU, it outputs this DTC. The steering lock ECU diagnosis information cannot be read directly from the steering lock ECU by the tester. The diagnosis information from the steering lock ECU is transmitted to the tester via the certification ECU to the tester using the controller area network (CAN).

DTC No.	DTC Detecting Condition	Trouble Area
B2781	• Steering lock motor drive circuit is defective. • Both lock and unlock position sensors detect "ON".	Steering lock actuator assembly (Steering lock ECU)

INSPECTION PROCEDURE

1	REPLACE STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

HINT:
The steering lock ECU and steering lock actuator assembly are supplied as a unit.

(a) Replace the steering lock actuator assembly (See page SR-42).

NEXT

SR

END

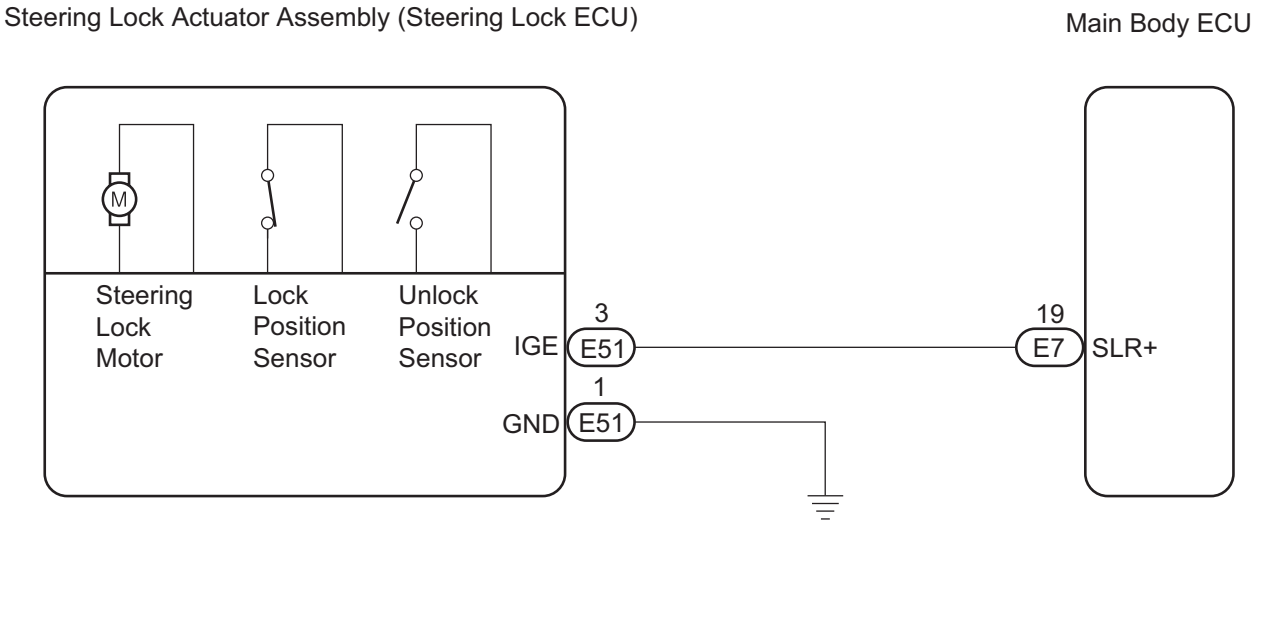
DTC	B2782	Power Source Control ECU Malfunction

DESCRIPTION

The main body ECU (*) controls the power supply to activate the steering lock motor. This prevents the steering from being locked while the vehicle is moving.
HINT:
*: The power source control ECU is not a physical part. This code refers to the power source control function performed by the main body ECU.

DTC No.	DTC Detecting Condition	Trouble Area
B2782	Steering lock motor drive control circuit is defective.	• Wire harness • Steering lock actuator assembly (Steering lock ECU) • Main body ECU

WIRING DIAGRAM

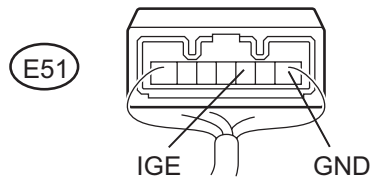


SR

INSPECTION PROCEDURE

1	INSPECT STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

Steering Lock Actuator Assembly:



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

Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E51-1 (GND)	The specified condition should be checked after performing the following: 1. Engine switch off 2. Turn the engine switch on (ACC or IG)	• Motor activated: Below 1 V • Motor not activated: 10 to 12 V

Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E51-1 (GND)	The specified condition should be checked after performing the following: 1. Move the shift lever to the P position 2. Turn the engine switch off 3. Open the driver's door	• Motor activated: Below 1 V • Motor not activated: 10 to 12 V

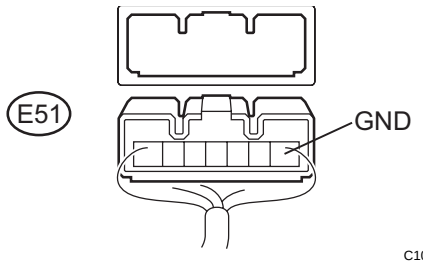
HINT:
The steering lock ECU and steering lock actuator assembly are supplied as a unit.

OK → **REPLACE STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)**

NG

2 CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BODY GROUND)

Steering Lock Actuator Assembly:



(a) Disconnect the E51 connector from the steering lock actuator assembly.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
E51-1 (GND) - Body ground	Always	Below 1 Ω

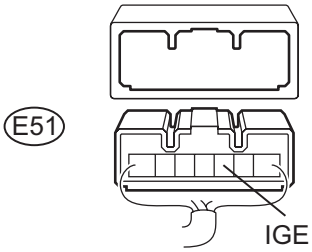
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

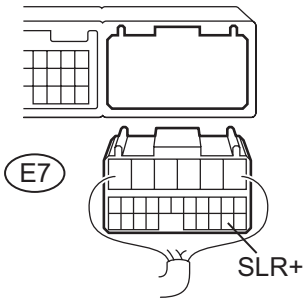
SR

3	CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - MAIN BODY ECU)

Steering Lock Actuator Assembly:



Main Body ECU:



H C113502E01

(a) Disconnect the E7 connector from the main body ECU.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E7-19 (SLR+)	Always	Below 1 Ω
E51-3 (IGE) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE MAIN BODY ECU

SR

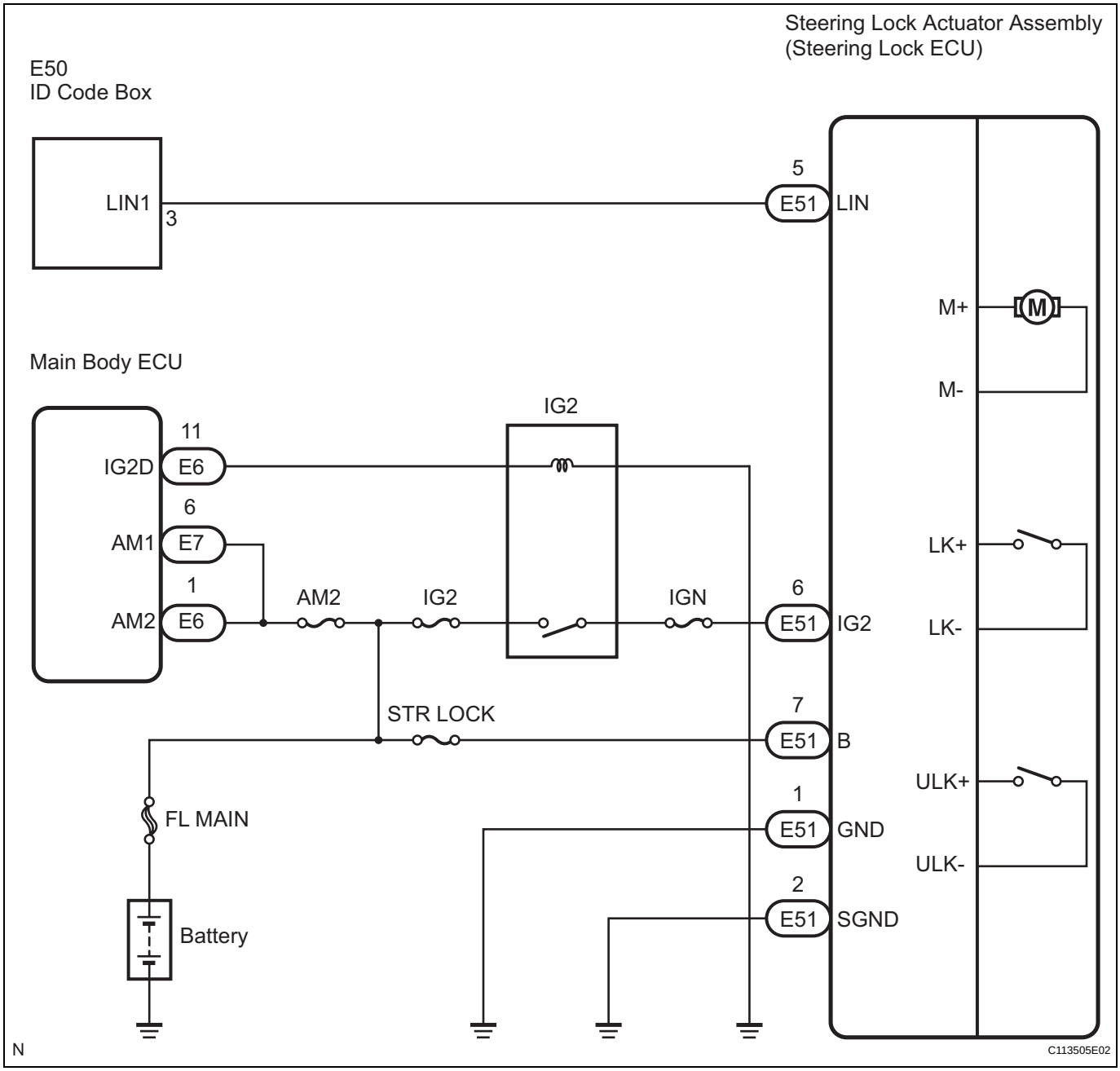
DTC	B2788	IG2 Signal Malfunction

DESCRIPTION

The steering lock ECU receives power from the IG2 relay. When the digital signal from the certification ECU and the voltage from the IG2 relay are received by the steering lock ECU, the steering will be unlocked. The steering lock ECU will not lock the steering when power from the IG2 relay is present (this prevents the steering from being locked while the vehicle is moving).

DTC No.	DTC Detecting Condition	Trouble Area
B2788	Different information is obtained from IG2 signals received directly from the IG2 circuit, and from IG2 signals sent via LIN communication for a period of 1 second.	• IG2 relay • Wire harness • Main body ECU • Steering lock actuator assembly (Steering lock ECU)

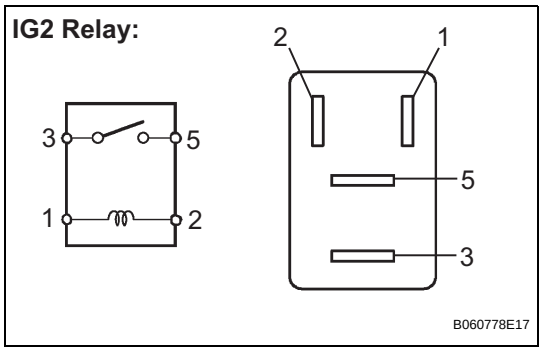
WIRING DIAGRAM



SR

INSPECTION PROCEDURE

1 **INSPECT IG2 RELAY**



(a) Remove the IG2 relay from the engine room R/B.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

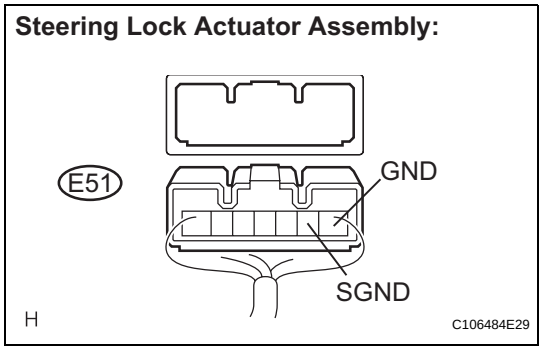
Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)

NG → **REPLACE IG2 RELAY**

OK

2 **CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BODY GROUND)**

SR



(a) Disconnect the E51 connector from the steering lock actuator assembly.
(b) Measure the resistance according to the value(s) in the table below.

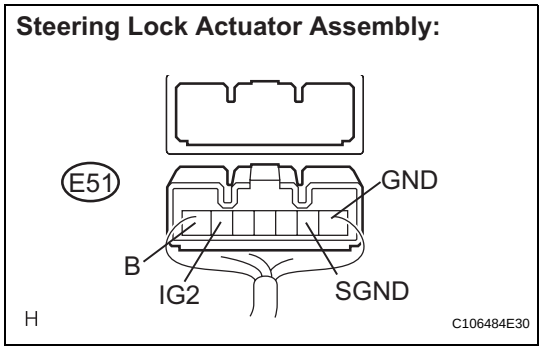
Standard resistance

Tester connection (Symbols)	Condition	Specified condition
E51-1 (GND) - Body ground	Always	Below 1 Ω
E51-2 (SGND) - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3 **CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BATTERY)**



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

Standard voltage

Tester connection (Symbols)	Condition	Specified condition
E51-6 (IG2) - E51-1 (GND)	Engine switch on (IG)	10 to 14 V
E51-6 (IG2) - E51-2 (SGND)	Engine switch on (IG)	10 to 14 V

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

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
*E51-6 (IG2) - E51-7 (B)	Engine switch off	10 kΩ or higher

*: This measurement is performed with the engine switch off to check for a short between IG2 and battery voltage.

OK → **REPLACE STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)**

NG

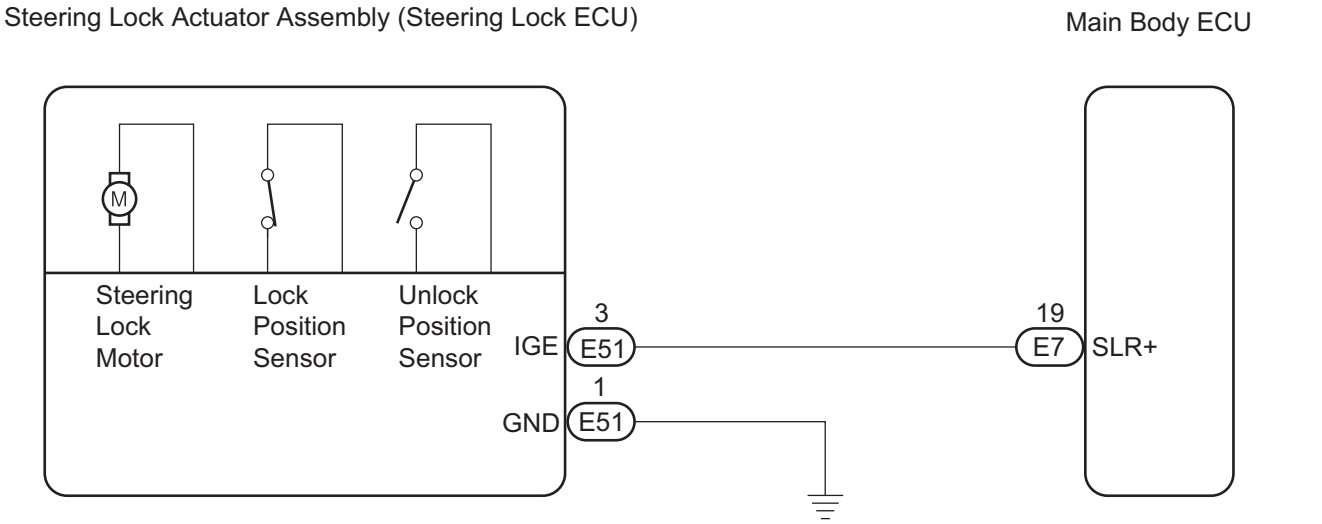
REPAIR OR REPLACE HARNESS OR CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BATTERY)

Steering Lock Motor Drive Power Circuit

DESCRIPTION

The steering lock ECU is connected to the main body ECU and certification ECU. The steering lock ECU cannot activate the motor unless it receives permission signals from both ECUs. (The main body ECU permits the steering lock ECU to supply power to activate the motor.)

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK VEHICLE CONDITION

(a) Check the problem symptom of the steering lock system.

Result

Condition	Proceed to
Steering lock cannot be released	A
Steering cannot be locked	B

B → Go to step 6

A

2	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the engine switch on (IG), and turn the intelligent tester on.

(c) Select the item below in the DATA LIST, and read its value displayed on the intelligent tester.

SMART ACCESS

Item	Measurement Item / Range (Display)	Normal Condition
LCK/UNLCK REC	Steering lock command reception record / YES or NO	YES: Steering lock / unlock signal received NO: Steering lock / unlock signal not received

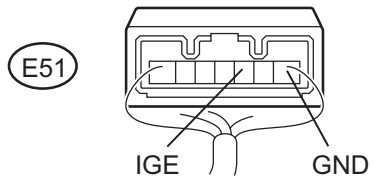
(d) Check if steering unlock command signal has been received.
OK:
"YES" is displayed on the tester display.

NG → **CHECK SMART ACCESS SYSTEM WITH PUSH-BUTTON START**

OK

3 INSPECT STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

Steering Lock Actuator Assembly:



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

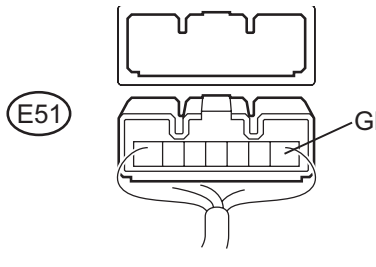
Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E51-1 (GND)	1. Engine switch off 2. Turn the engine switch on (ACC or IG)	• Motor activated: Below 1 V • Motor not activated: 10 to 12 V

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

4 CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BODY GROUND)

Steering Lock Actuator Assembly:



(a) Disconnect the E51 connector from the steering lock actuator assembly.
(b) Measure the resistance according to the value(s) in the table below.
Standard resistance

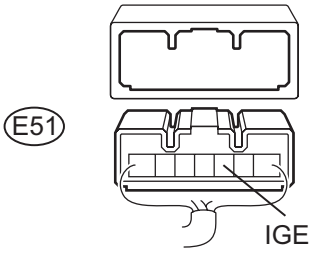
Tester connection (Symbols)	Condition	Specified condition
E51-1 (GND) - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

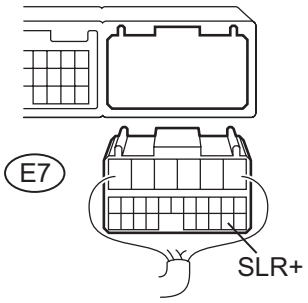
OK

5	CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - MAIN BODY ECU)

Steering Lock Actuator Assembly:



Main Body ECU:



H C113502E01

(a) Disconnect the E7 connector from the main body ECU.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E7-19 (SLR+)	Always	Below 1 Ω
E51-3 (IGE) - Body ground	Always	10 kΩ or higher

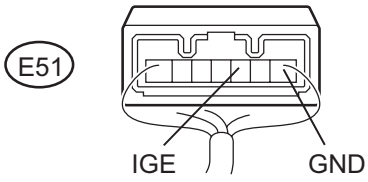
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE MAIN BODY ECU

6	INSPECT STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

Steering Lock Actuator Assembly:



H C106483E22

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

Standard voltage

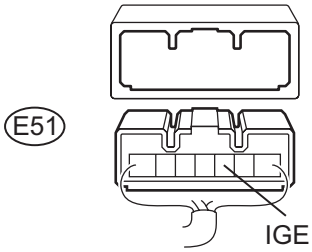
Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E51-1 (GND)	The specified condition should be checked after performing the following: 1. Move the shift lever to the P position 2. Turn the engine switch off 3. Open the driver's door	• Motor activated: Below 1 V • Motor not activated: 10 to 12 V

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

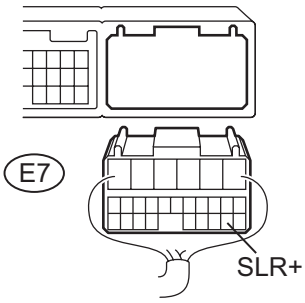
NG

7	CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - MAIN BODY ECU)

Steering Lock Actuator Assembly:



Main Body ECU:



H C113502E01

(a) Disconnect the E51 connector from the steering lock actuator assembly.
(b) Disconnect the E7 connector from the main body ECU.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
E51-3 (IGE) - E7-19 (SLR+)	Always	Below 1 Ω
E51-3 (IGE) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE MAIN BODY ECU

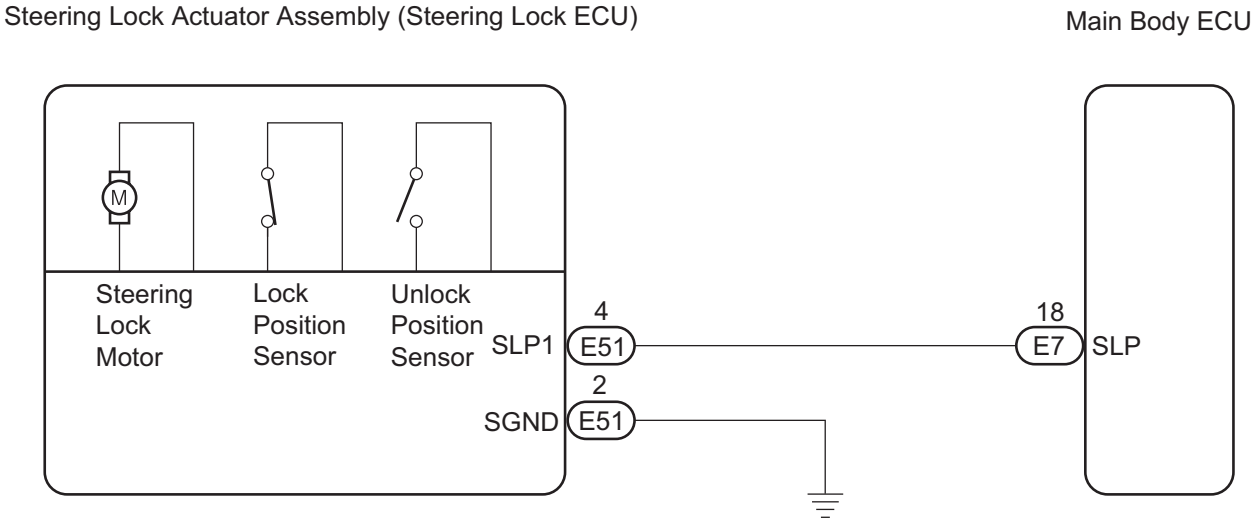
SR

Unlock Position Sensor Signal Circuit

DESCRIPTION

The unlock position sensor is one of the components in the steering lock actuator. The sensor switch contact closes when the steering lock is released. The steering lock release signal is then sent to the main body ECU. Receiving the signal, the ECU permits engine start. (This prevents the engine from being started with the steering locked.)

WIRING DIAGRAM

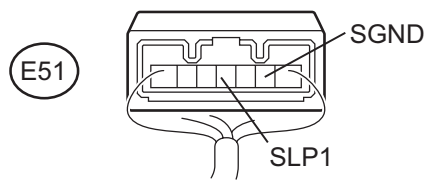


SR

INSPECTION PROCEDURE

1	INSPECT STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

Steering Lock Actuator Assembly:



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

Standard voltage

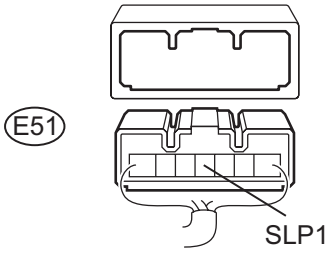
Tester connection (Symbols)	Condition	Specified condition
E51-4 (SLP1) - E51-2 (SGND)	1. Engine switch off 2. Turn the engine switch on (ACC or IG)	Below 1 V

OK → **CHECK PUSH BUTTON START FUNCTION**

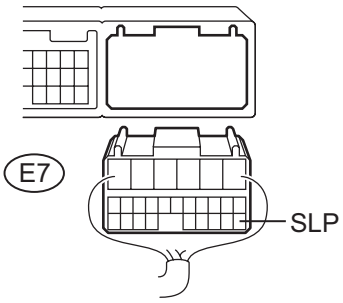
NG

2	CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - MAIN BODY ECU)

Steering Lock Actuator Assembly:



Main Body ECU:



H C113502E02

(a) Disconnect the E51 connector from the steering lock actuator assembly.
(b) Disconnect the E7 connector from the main body ECU.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
E51-4 (SLP1) - E7-18 (SLP)	Always	Below 1 Ω
E51-4 (SLP1) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

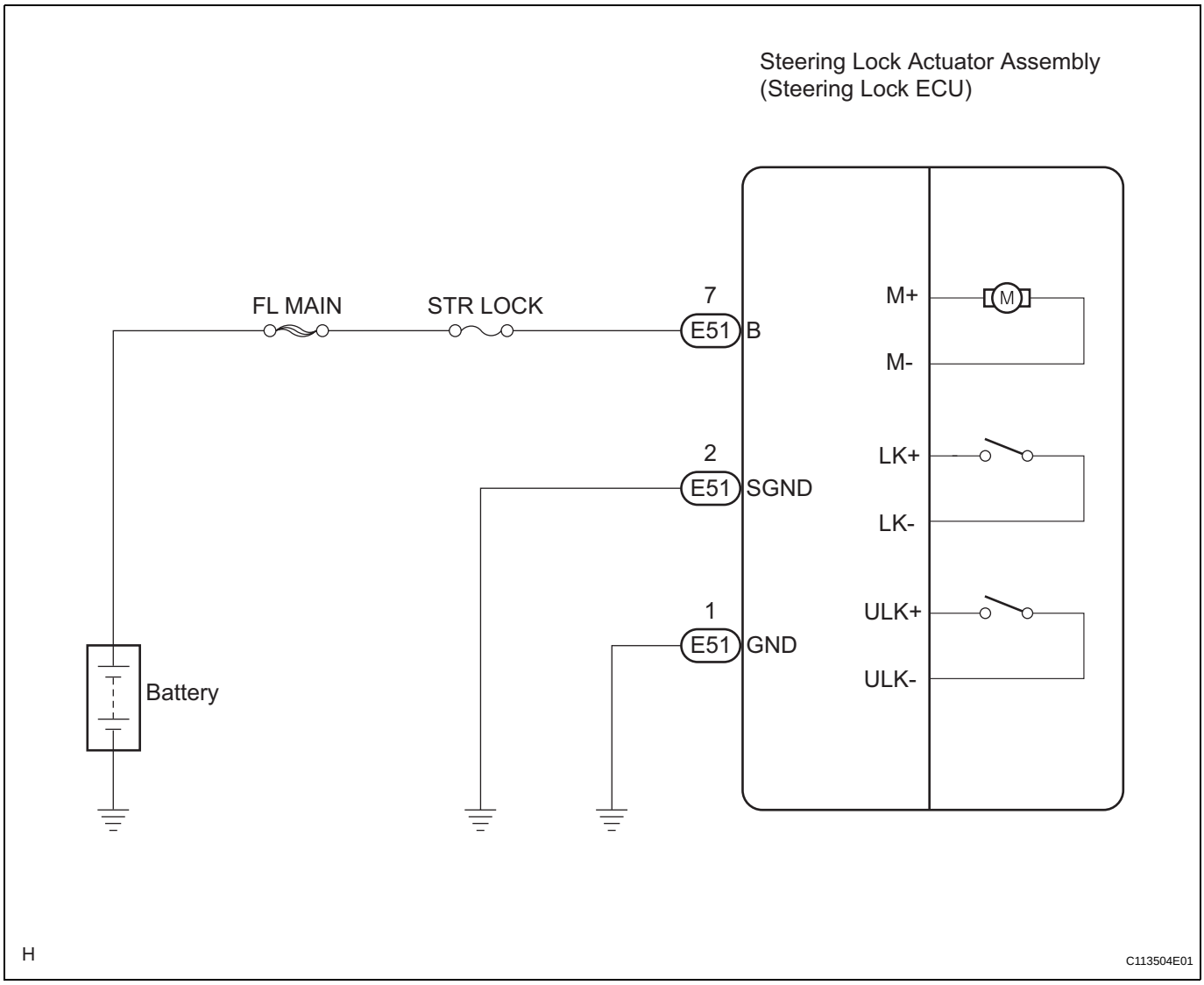
SR

Power Source Circuit

DESCRIPTION

This circuit supplies voltage from the battery to terminal B of the steering lock ECU. This circuit is used as power source for the steering lock CPU, motor, communication, and peripheral circuits.

WIRING DIAGRAM

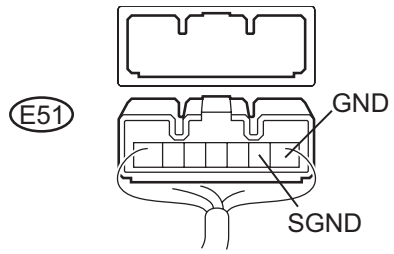


SR

INSPECTION PROCEDURE

1	CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BODY GROUND)

Steering Lock Actuator Assembly:



(a) Disconnect the E51 connector from the steering lock actuator assembly.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

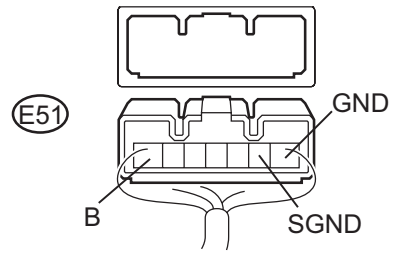
Tester connection (Symbols)	Condition	Specified condition
E51-1 (GND) - Body ground	Always	Below 1 Ω
E51-2 (SGND) - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

2	CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BATTERY)

Steering Lock Actuator Assembly:



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

Standard voltage

Tester connection (Symbols)	Condition	Specified condition
E51-7 (B) - E51-1 (GND)	Always	10 to 14 V
E51-7 (B) - E51-2 (SGND)	Always	10 to 14 V

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

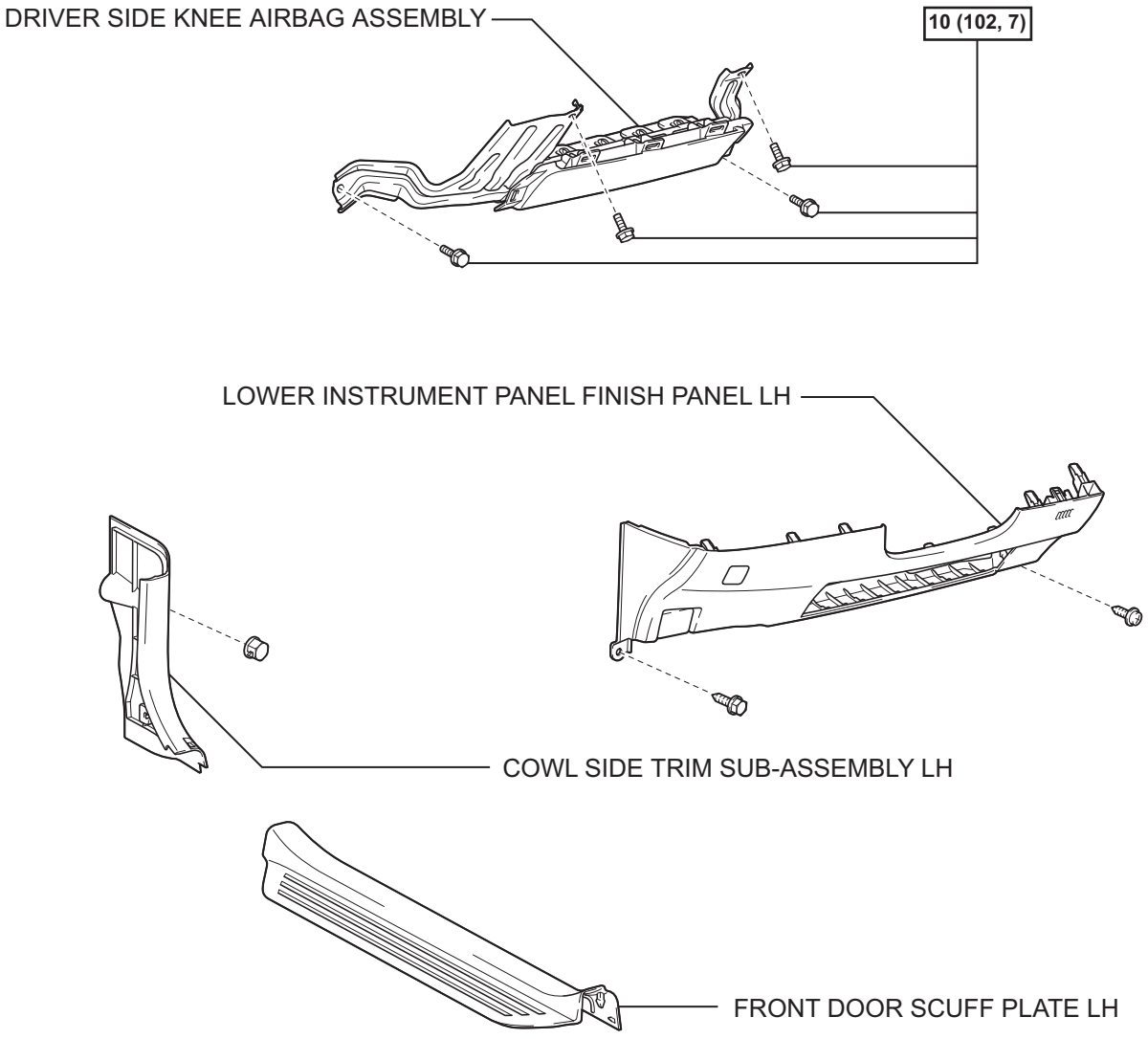
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY - BATTERY)

SR

STEERING COLUMN ASSEMBLY

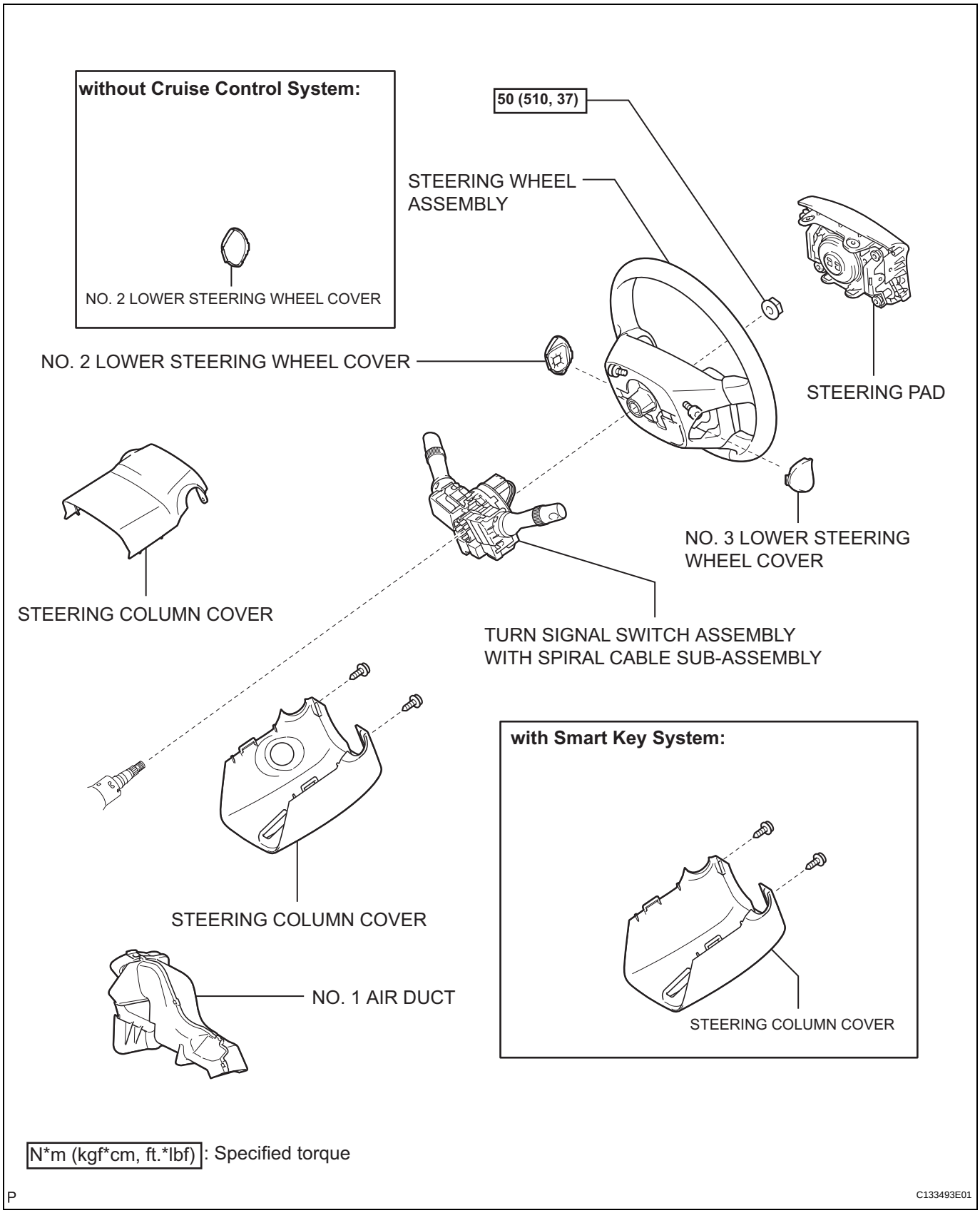
COMPONENTS



N*m (kgf*cm, ft.*lbf) : Specified torque

P

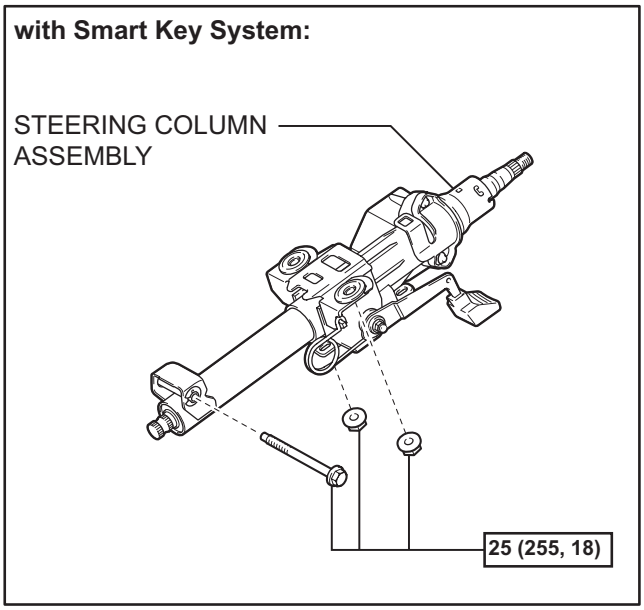
C133871E03

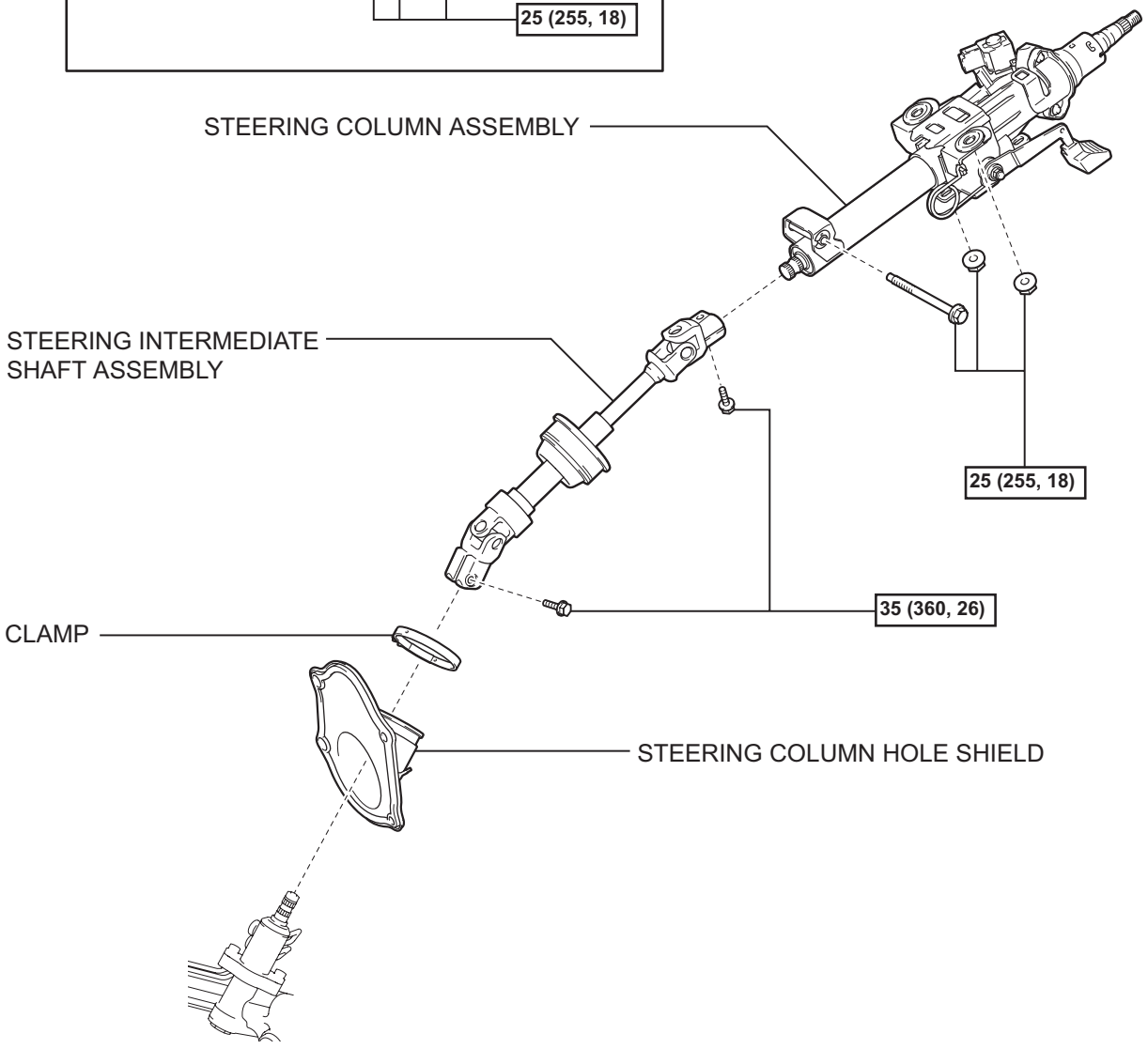

without Cruise Control System:
NO. 2 LOWER STEERING WHEEL COVER
50 (510, 37)
STEERING WHEEL ASSEMBLY
STEERING PAD
NO. 2 LOWER STEERING WHEEL COVER
NO. 3 LOWER STEERING WHEEL COVER
STEERING COLUMN COVER
TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY
with Smart Key System:
STEERING COLUMN COVER
STEERING COLUMN COVER
NO. 1 AIR DUCT
N*m (kgf*cm, ft.*lbf) : Specified torque
P
C133493E01

SR

TMC Made:

with Smart Key System:





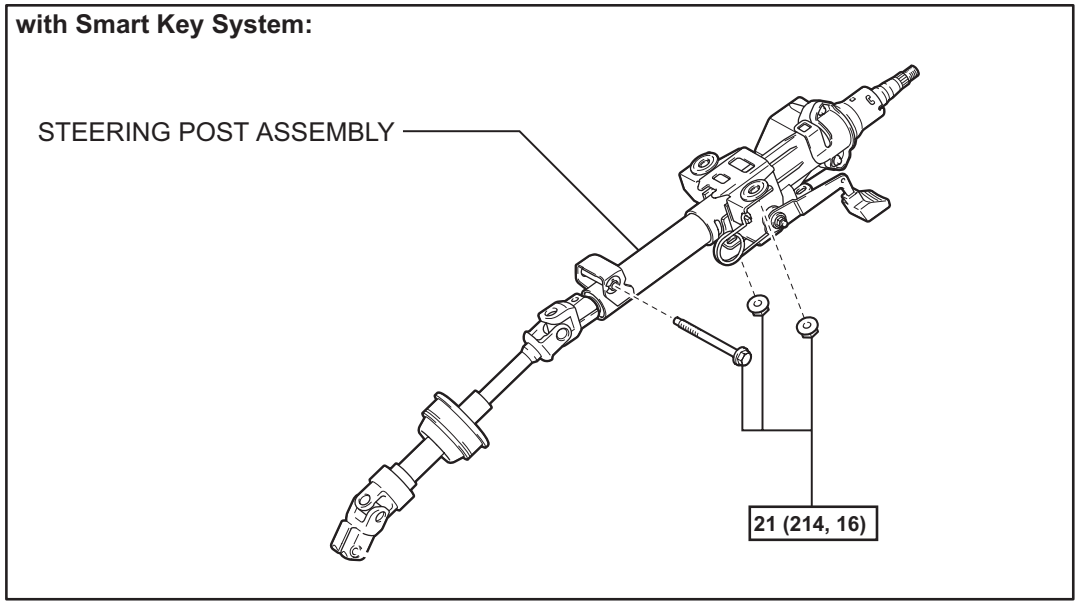
N*m (kgf*cm, ft.*lbf): Specified torque

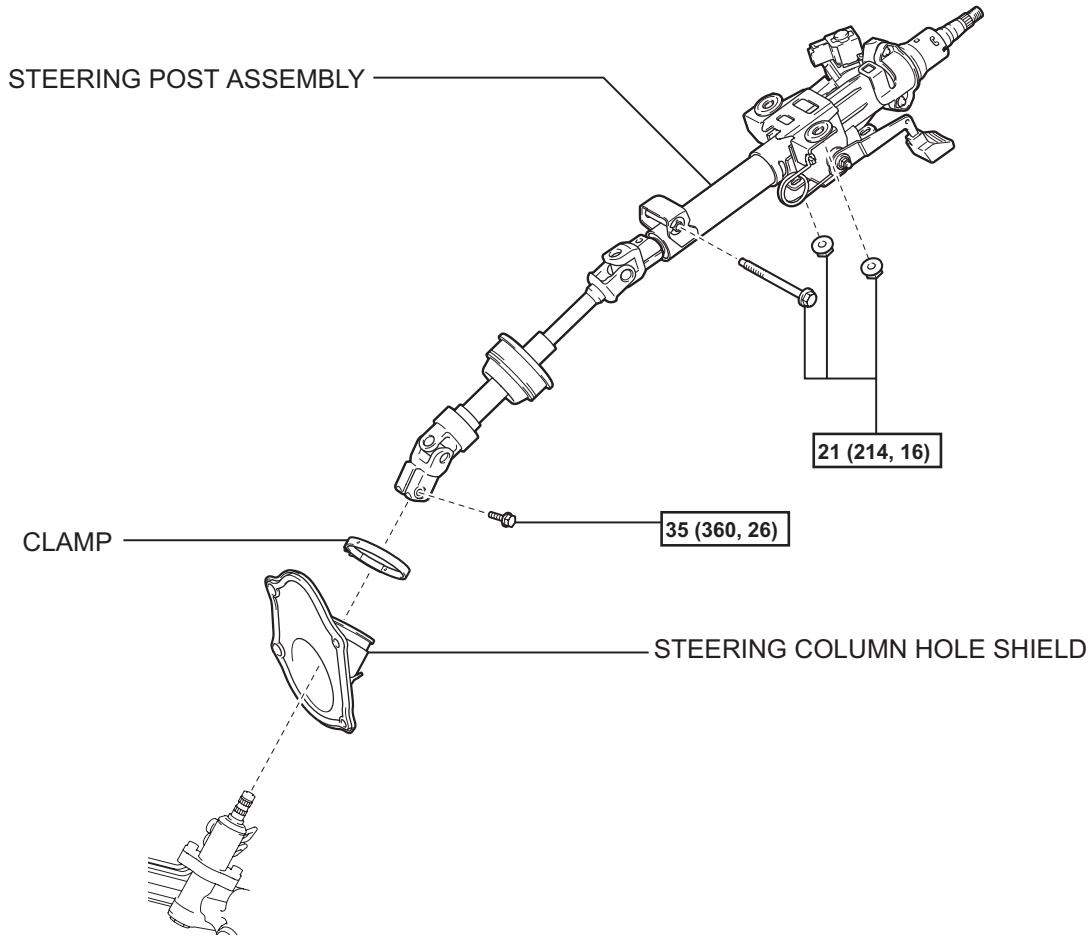
P

C133496E01

TMMK Made:

with Smart Key System:





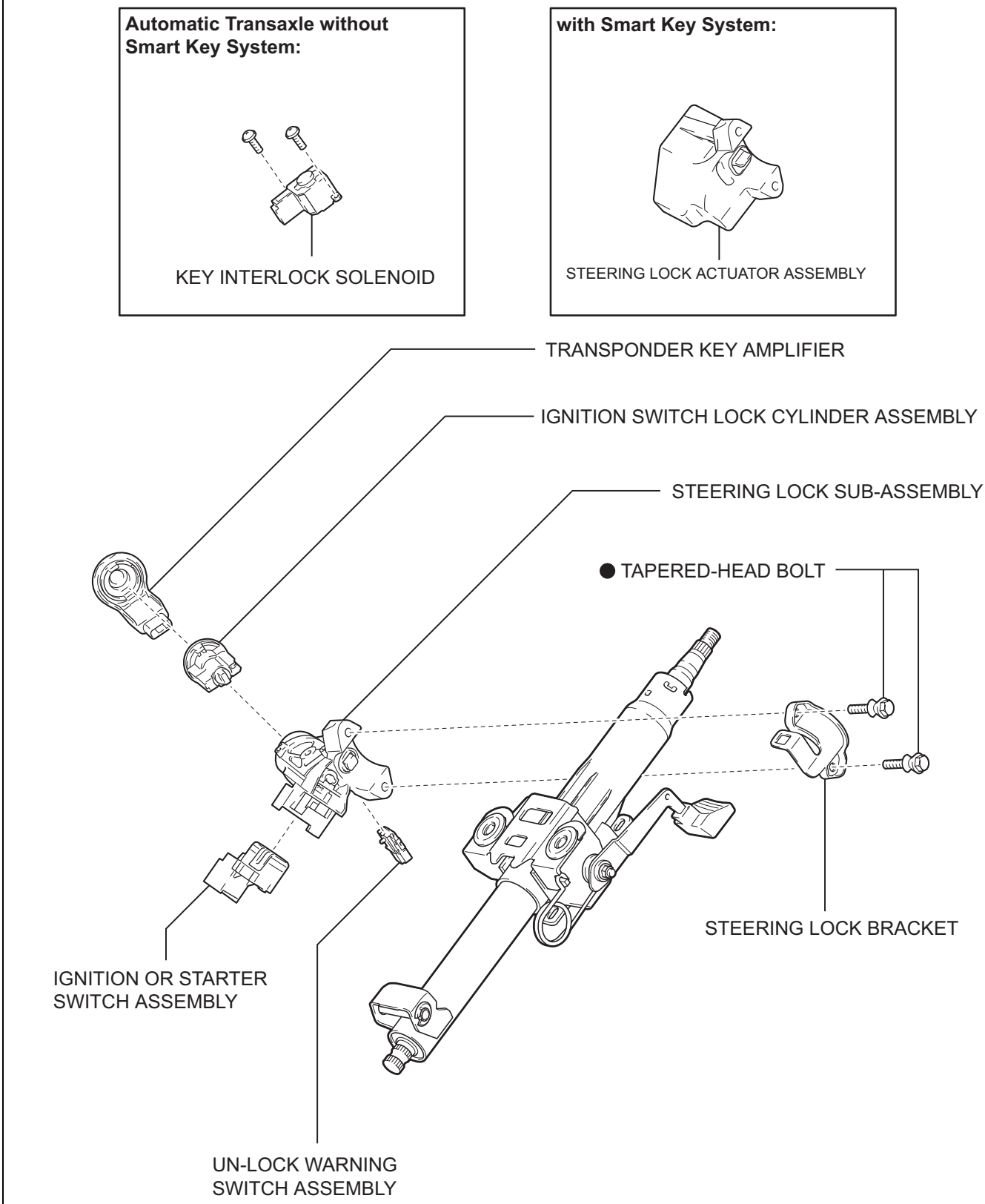
SR

N*m (kgf*cm, ft.*lbf): Specified torque

P

C133497E01

TMC Made:



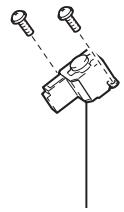
● Non-reusable part

P

C133494E01

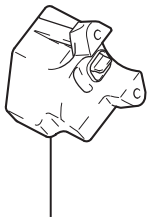
TMMK Made:

Automatic Transaxle without Smart Key System:

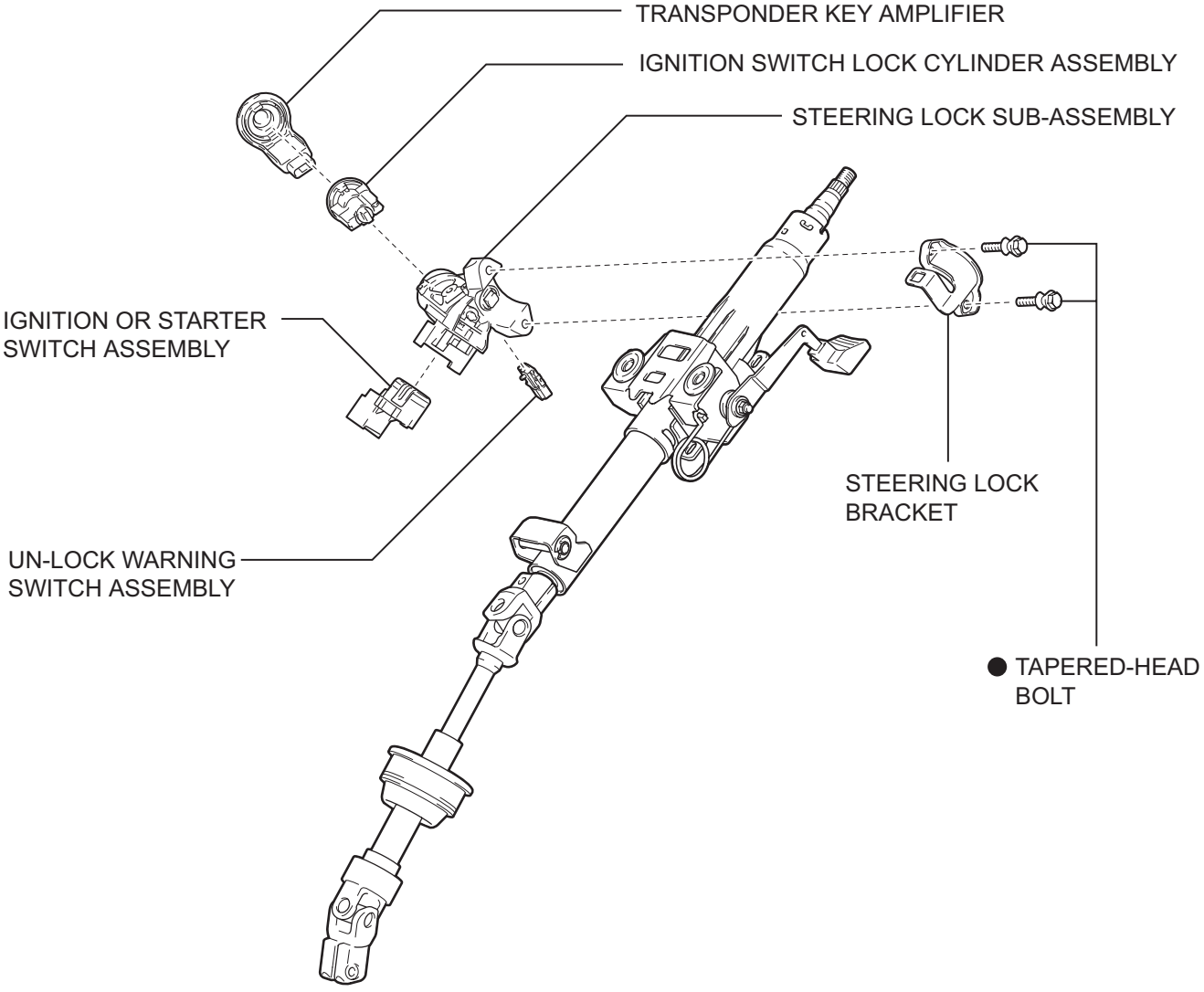


KEY INTERLOCK SOLENOID

with Smart Key System:



STEERING LOCK ACTUATOR ASSEMBLY



● Non-reusable part

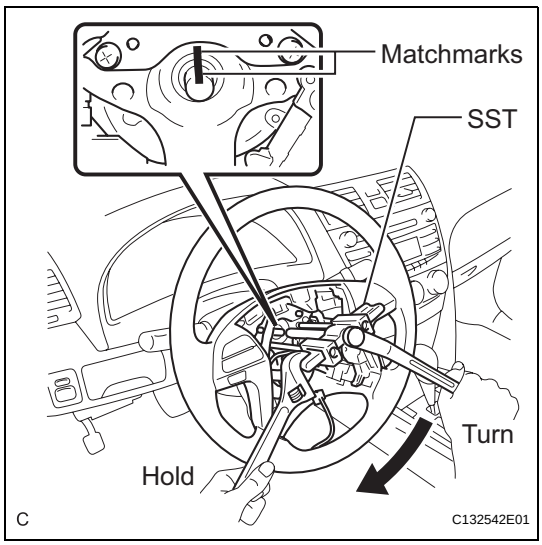
P

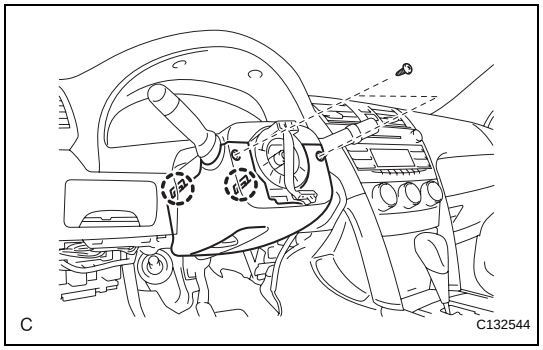
C133495E01

SR

REMOVAL

1. **PRECAUTION**
   HINT:
   (See page RS-1)
2. **PLACE FRONT WHEELS FACING STRAIGHT AHEAD**
3. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
   HINT:
   (See page RS-1)
4. **REMOVE FRONT WHEEL LH**
5. **REMOVE FRONT DOOR SCUFF PLATE LH (See page IR-24)**
6. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page IR-25)**
7. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMC Made) (See page IP-20)**
8. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMMK Made) (See page IP-21)**
9. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY (See page RS-370)**
10. **REMOVE NO. 2 LOWER STEERING WHEEL COVER (See page RS-349)**
11. **REMOVE NO. 3 LOWER STEERING WHEEL COVER (See page RS-349)**
12. **REMOVE STEERING PAD (See page RS-350)**
13. **REMOVE STEERING WHEEL ASSEMBLY**
    (a) Remove the steering wheel assembly set nut.
    (b) Put matchmarks on the steering wheel assembly and the steering main shaft.
    (c) Disconnect the connectors from the spiral cable.
    (d) Using SST, remove the steering wheel assembly.
    SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05031)

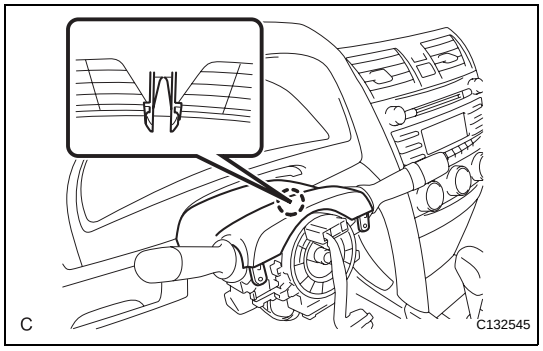




14. REMOVE STEERING COLUMN COVER

(a) Remove the 2 screws.

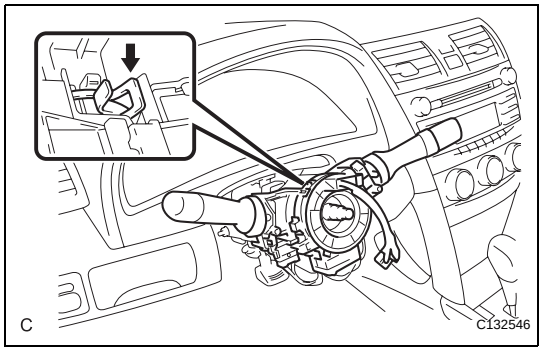
(b) Disengage the 2 claws to remove the steering column cover lower.



(c) Disengage the claw to remove the steering column cover upper.

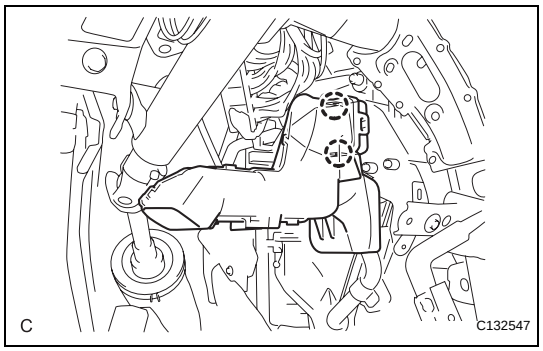
15. REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY

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



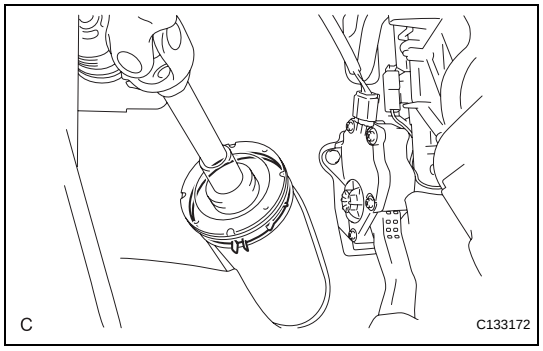
(b) Using pliers, grip the claws of the clip and remove the turn signal switch assembly with spiral cable sub-assembly.

SR



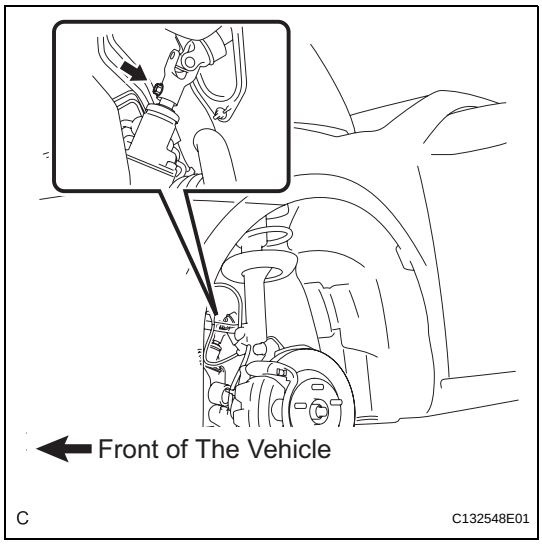
16. REMOVE NO. 1 AIR DUCT

(a) Disengage the 2 claws and remove the No. 1 air duct.

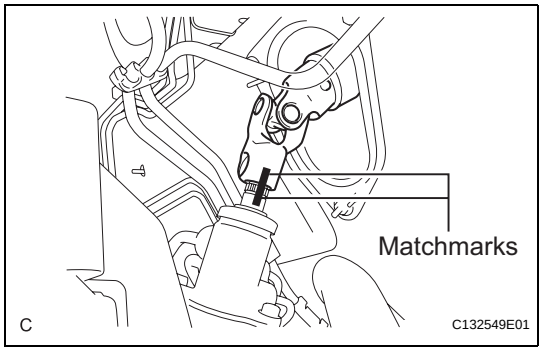


17. REMOVE STEERING COLUMN ASSEMBLY (for TMC Made)

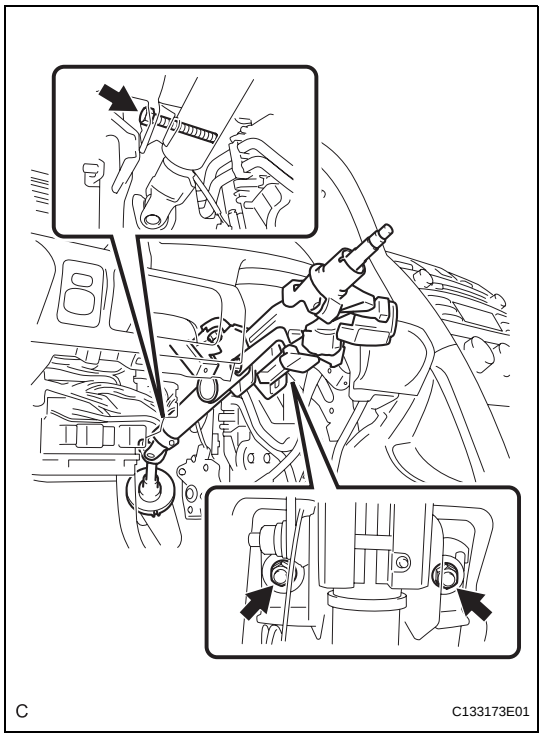
(a) Remove the clamp from the steering column hole shield.



(b) Remove the bolt and slide the steering intermediate shaft assembly.
NOTICE:
Do not separate the steering intermediate shaft assembly from the power steering link assembly.

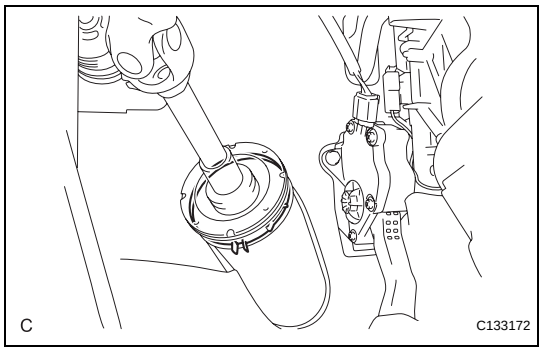


(c) Put matchmarks on the steering intermediate shaft assembly and the power steering link assembly.
(d) Separate the steering intermediate shaft assembly from the power steering link assembly.
(e) Disconnect the connectors and wire harness clamps from the steering column assembly.



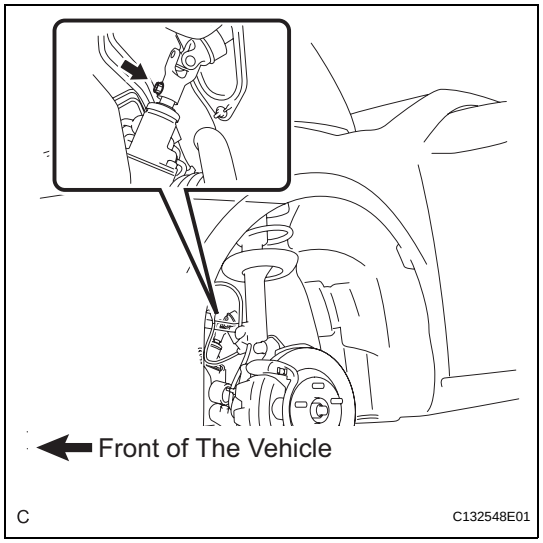
(f) Remove the bolt, 2 nuts, and the steering column assembly.

SR

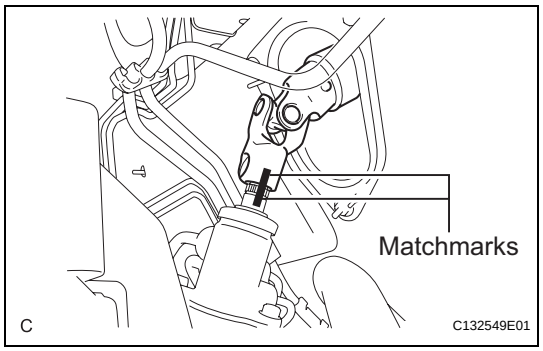


18. REMOVE STEERING POST ASSEMBLY (for TMMK Made)

(a) Remove the clamp from the steering column hole shield.

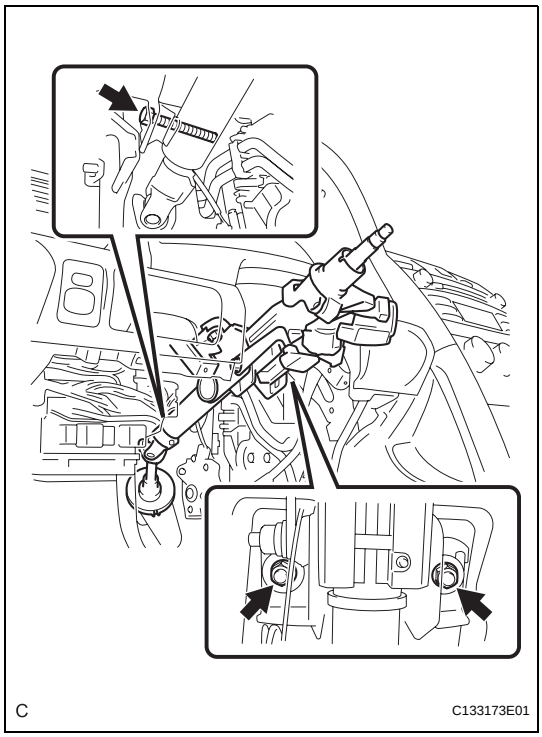


(b) Remove the bolt and slide the steering sliding yoke.
NOTICE:
Do not separate the steering sliding yoke from the power steering link assembly.

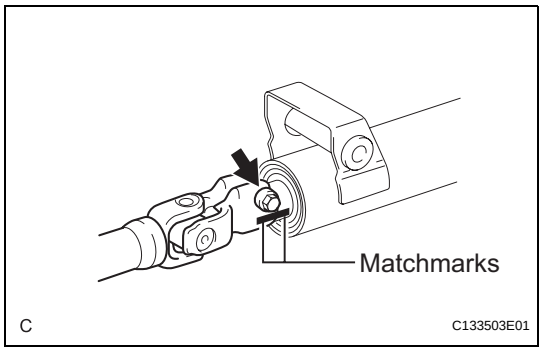


(c) Put matchmarks on the steering sliding yoke and the power steering link assembly.
(d) Separate the steering sliding yoke from the power steering link assembly.
(e) Disconnect the connectors and wire harness clamps from the steering column assembly.

SR



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



19. REMOVE STEERING INTERMEDIATE SHAFT ASSEMBLY (for TMC Made)

(a) Put matchmarks on the steering intermediate shaft assembly and the steering column assembly.

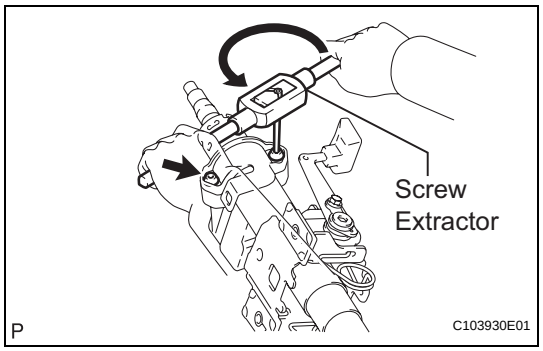
(b) Remove the bolt and the steering intermediate shaft assembly from the steering column assembly.

DISASSEMBLY

NOTICE:
When using a vise, do not overtighten it.

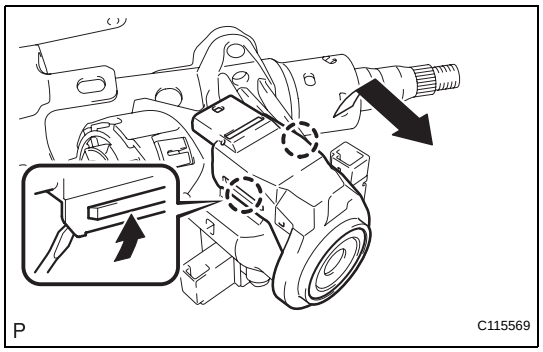
1. REMOVE STEERING LOCK ACTUATOR ASSEMBLY (w/ Smart Key System)

(a) Secure the steering column assembly in a vise.
(b) Using a center punch, mark the center of the 2 tapered-head bolts.
(c) Using a 3 to 4 mm (0.12 to 0.16 in.) drill, drill a hole in the 2 tapered-head bolts.
(d) Using a screw extractor, remove the 2 tapered-head bolts, and then remove the steering lock actuator assembly and the steering lock bracket from the steering column assembly.



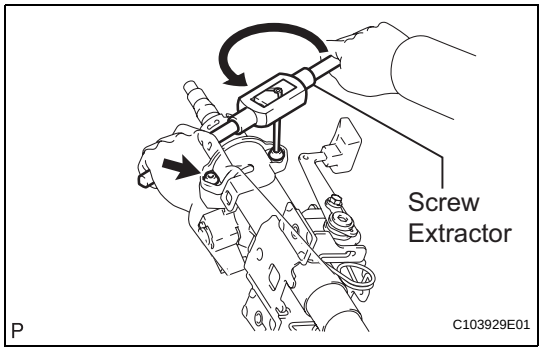
2. REMOVE TRANSPONDER KEY AMPLIFIER (w/o Smart Key System)

(a) Using a screwdriver, widen the claws hanging onto the upper bracket by approximately 1.0 mm (0.039 in.).
(b) Pull out the transponder key amplifier with the claw open.
NOTICE:
Using excessive force may damage the case.



3. REMOVE STEERING COLUMN UPPER WITH SWITCH BRACKET ASSEMBLY (w/o Smart Key System)

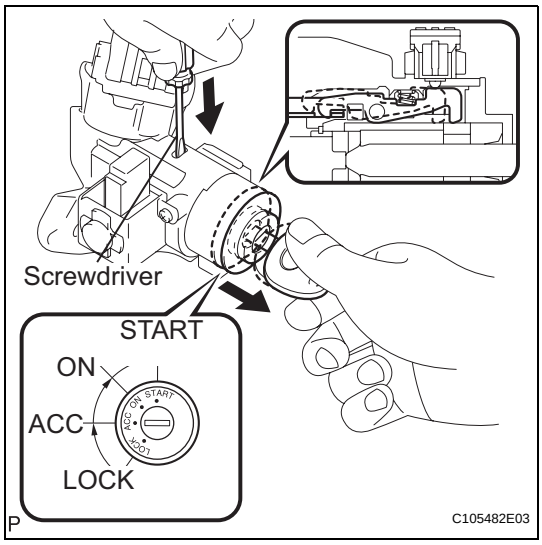
(a) Secure the steering column assembly in a vise.
(b) Using a center punch, mark the center of the 2 tapered-head bolts.
(c) Using a 3 to 4 mm (0.12 to 0.16 in.) drill, drill a hole in the 2 tapered-head bolts.
(d) Using a screw extractor, remove the 2 tapered-head bolts, and then remove the steering column upper with switch bracket assembly and the steering lock bracket from the steering column assembly.



4. REMOVE IGNITION SWITCH LOCK CYLINDER ASSEMBLY (w/o Smart Key System)

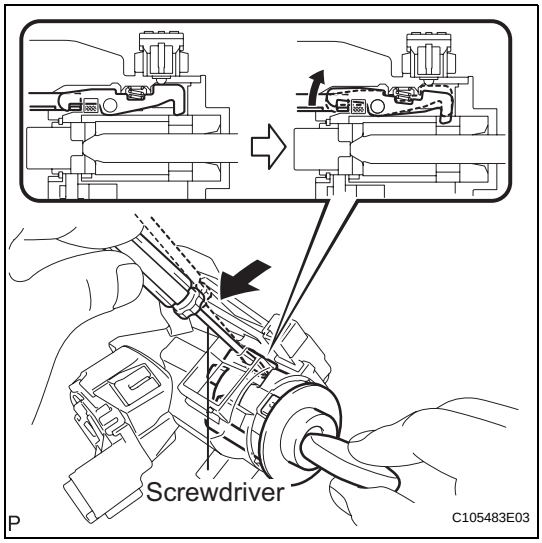
(a) Turn the ignition switch lock cylinder assembly to the ACC position.

SR



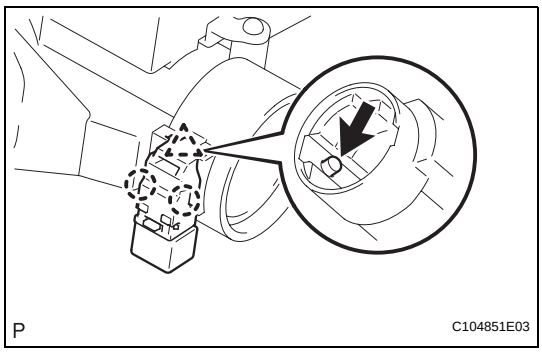
(b) Push a screwdriver into the hole of the steering column upper with switch bracket assembly shown in the illustration and pull the ignition switch lock cylinder assembly until its claw contacts the stopper of the steering column upper with switch bracket assembly.

NOTICE:
Make sure to pull the ignition switch lock cylinder assembly until its claw contacts the stopper of the steering column bracket assembly upper. Failure to do so will affect later work operations.



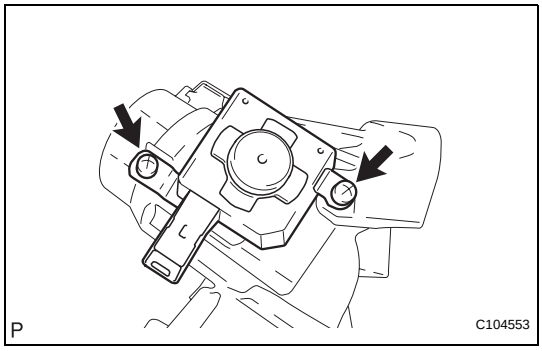
(c) Insert a screwdriver into the hole of the steering column upper with switch bracket assembly. Push the screwdriver downward as shown in the illustration to disengage the claw of the ignition switch lock cylinder assembly. Pull out the ignition switch lock cylinder assembly.

SR



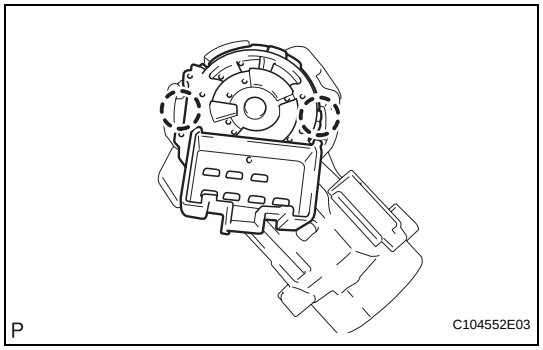
5. REMOVE UN-LOCK WARNING SWITCH ASSEMBLY (w/o Smart Key System)

(a) Remove the un-lock warning switch assembly by pushing up the center part and releasing the 2 claws.



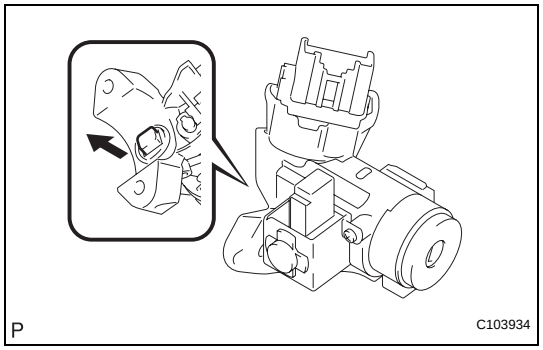
6. REMOVE KEY INTERLOCK SOLENOID (for Automatic Transaxle without Smart Key System)

(a) Remove the 2 screws and the key interlock solenoid from the steering lock sub-assembly.



7. REMOVE IGNITION OR STARTER SWITCH ASSEMBLY (w/o Smart Key System)

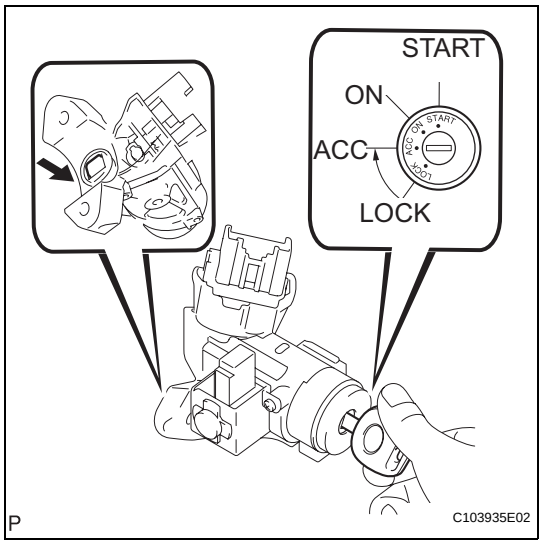
(a) Disengage the 2 claws and remove the ignition or starter switch assembly from the steering lock sub-assembly.



INSPECTION

1. INSPECT STEERING LOCK OPERATION (w/o Smart Key System)

(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.
HINT:
If there is any abnormality, replace the ignition switch lock cylinder assembly.

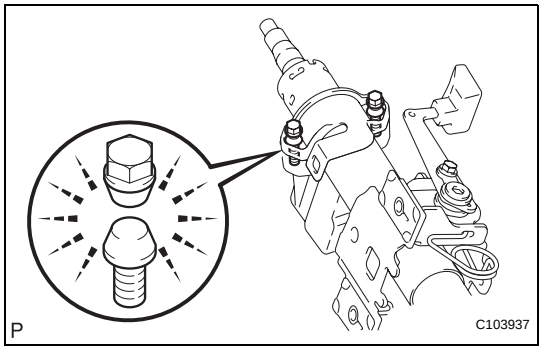
SR

REASSEMBLY

1. INSTALL STEERING LOCK ACTUATOR ASSEMBLY (w/ Smart Key System)

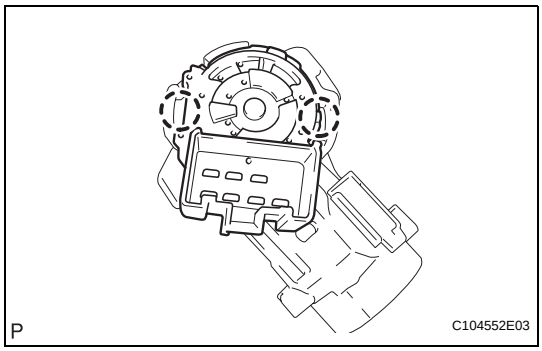
(a) Temporarily install the steering lock actuator assembly and the steering lock bracket with 2 new tapered-head bolts.

(b) Tighten the 2 tapered-head bolts until the bolt heads break off.



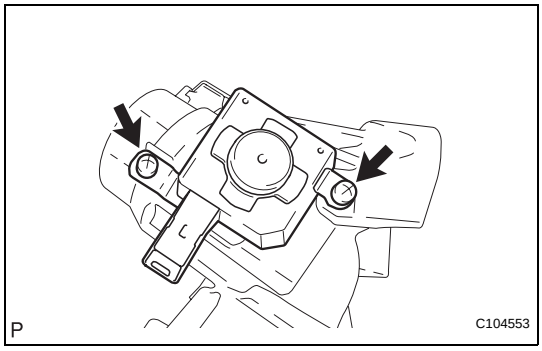
2. INSTALL IGNITION OR STARTER SWITCH ASSEMBLY (w/o Smart Key System)

(a) Engage the 2 claws to install the ignition or starter switch assembly to the steering lock sub-assembly.



3. INSTALL KEY INTERLOCK SOLENOID (for Automatic Transaxle without Smart Key System)

(a) Install the key interlock solenoid to the steering lock sub-assembly with the 2 screws.

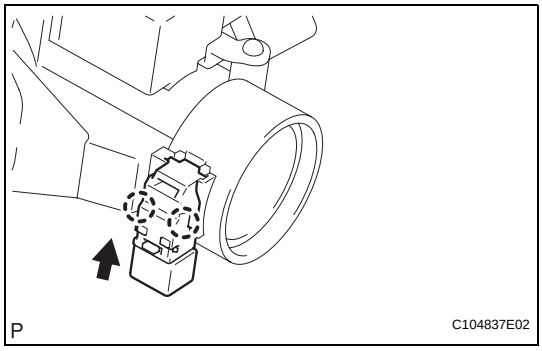


4. INSTALL UN-LOCK WARNING SWITCH ASSEMBLY (w/o Smart Key System)

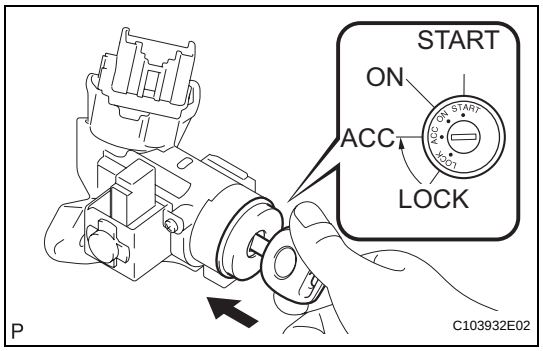
(a) Engage the 2 claws to install the un-lock warning switch assembly to the steering lock sub-assembly.

5. INSTALL IGNITION SWITCH LOCK CYLINDER ASSEMBLY (w/o Smart Key System)

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



SR



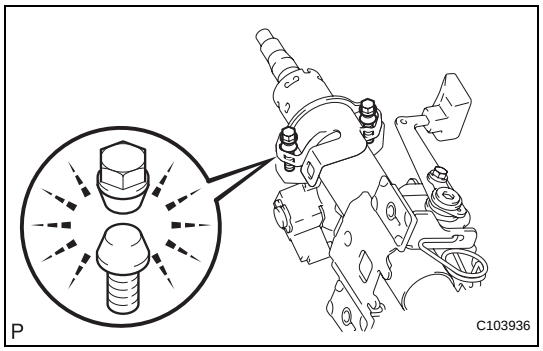
(b) Install the ignition switch lock cylinder assembly to the steering lock sub-assembly.
(c) Make sure that the ignition switch lock cylinder assembly is securely installed.

6. INSPECT STEERING LOCK OPERATION (w/o Smart Key System)

7. INSTALL STEERING COLUMN UPPER WITH SWITCH BRACKET ASSEMBLY (w/o Smart Key System)

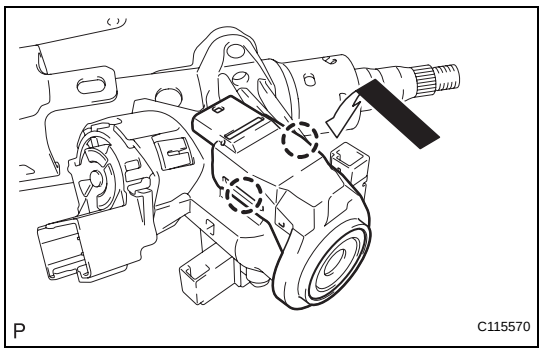
(a) Temporarily install the steering column upper with switch bracket assembly and the steering lock bracket with 2 new tapered-head bolts.

(b) Tighten the 2 tapered-head bolts until the bolt heads break off.



8. INSTALL TRANSPONDER KEY AMPLIFIER (w/o Smart Key System)

(a) Align the transponder key amplifier with the installation position of the upper bracket with the amplifier inclined.



(b) Push the transponder key amplifier up and install it to the upper bracket.
NOTICE:
Do not push the amplifier up with excessive force.

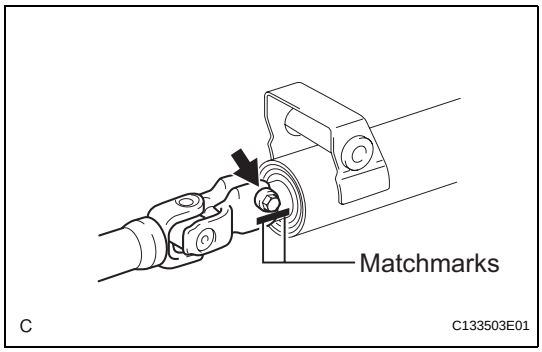
SR

INSTALLATION

1. INSTALL STEERING INTERMEDIATE SHAFT ASSEMBLY (for TMC Made)

(a) Align the matchmarks on the steering intermediate shaft assembly and the steering column assembly.

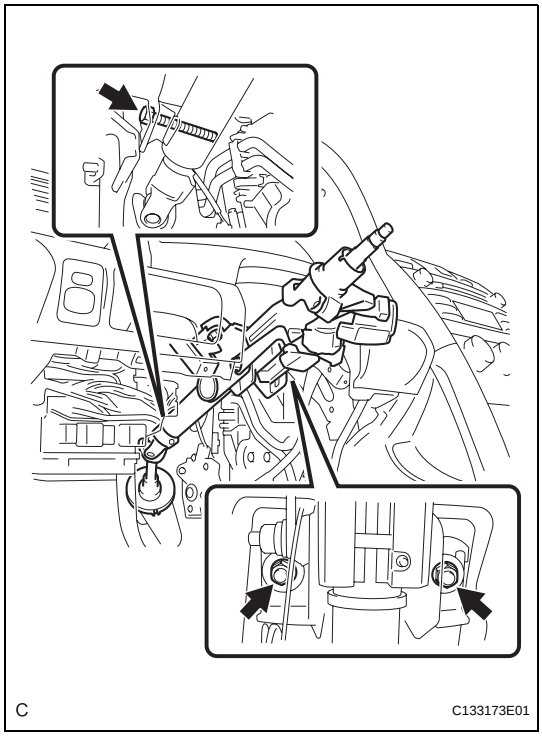
(b) Install the bolt.
Torque: 35 N*m (360 kgf*cm, 26 ft.*lbf)



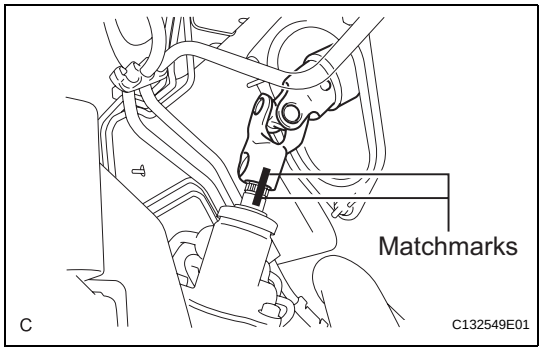
2. INSTALL STEERING COLUMN ASSEMBLY (for TMC Made)

(a) Install the steering column assembly with the bolt and 2 nuts.
Torque: 25 N*m (255 kgf*cm, 18 ft.*lbf)

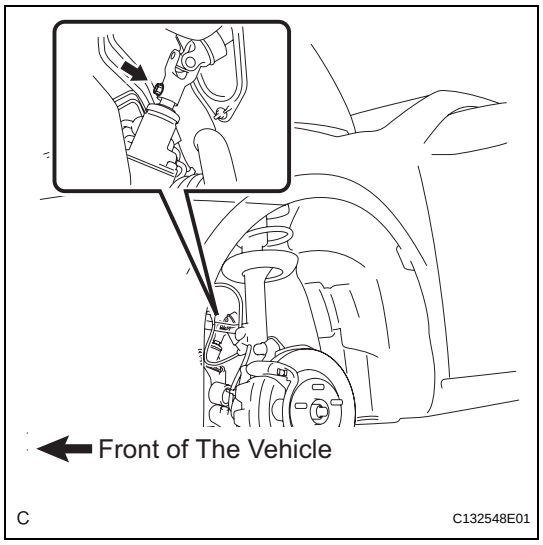
(b) Connect the connectors and wire harness clamps to the steering column assembly.



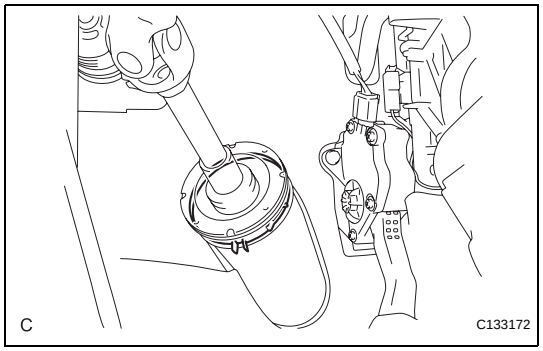
(c) Align the matchmarks on the steering intermediate shaft assembly and the power steering link assembly.



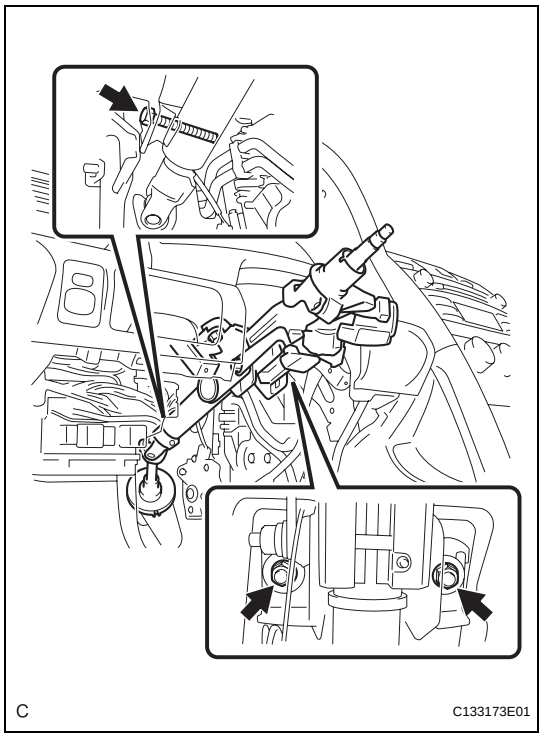
SR



(d) Install the bolt.
Torque: 35 N*m (360 kgf*cm, 26 ft.*lbf)



(e) Install the clamp to the steering column hole shield.

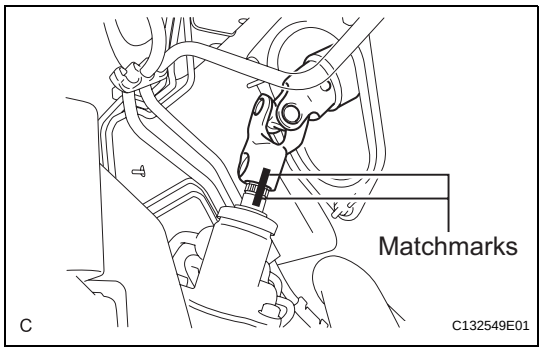


3. INSTALL STEERING POST ASSEMBLY (for TMMK Made)

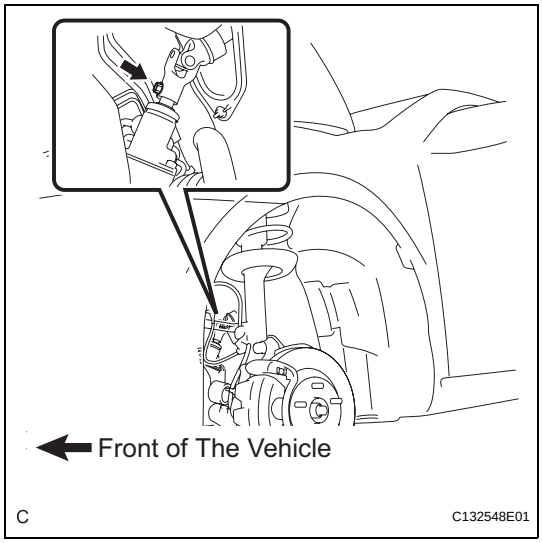
(a) Install the steering post assembly with the bolt and 2 nuts.
Torque: 21 N*m (214 kgf*cm, 16 ft.*lbf)

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

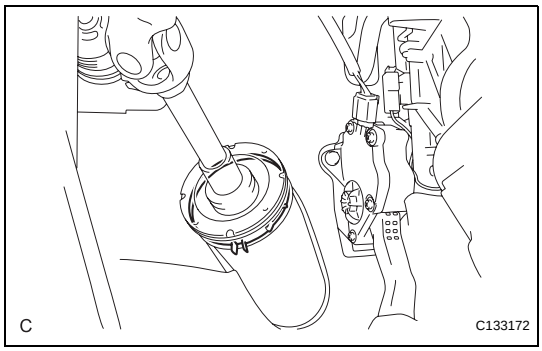
SR



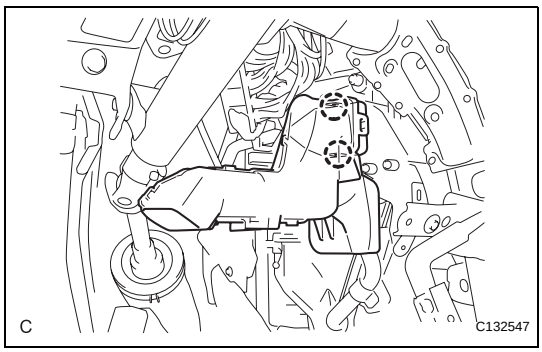
(c) Align the matchmarks on the steering sliding yoke and the power steering link assembly.



(d) Install the bolt.
Torque: 35 N*m (360 kgf*cm, 26 ft.*lbf)



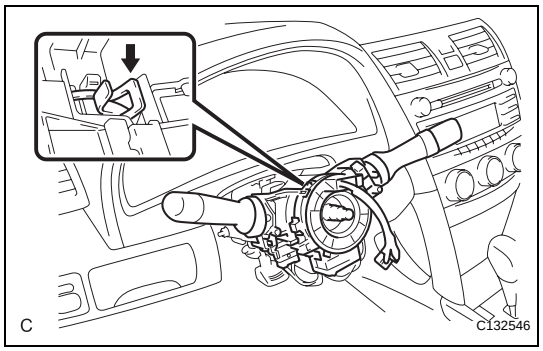
(e) Install the clamp to the steering column hole shield.



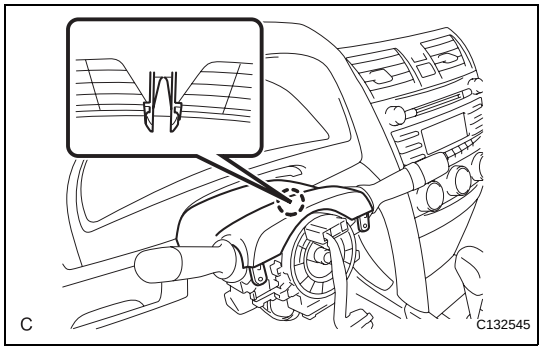
4. INSTALL NO. 1 AIR DUCT

(a) Engage the 2 claws to install the No. 1 air duct.

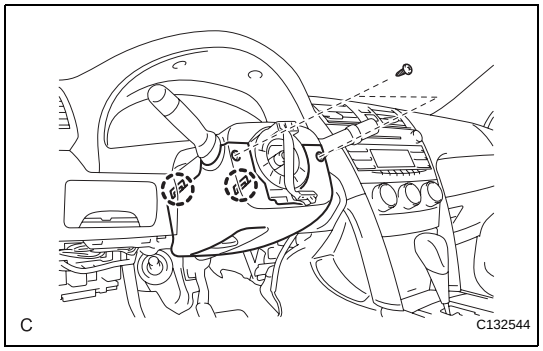
5. PLACE FRONT WHEELS FACING STRAIGHT AHEAD



6. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY**
   (a) Install the turn signal switch assembly with spiral cable sub-assembly to the steering column assembly with the clamp.
   (b) Connect the connectors to the turn signal switch assembly with spiral cable sub-assembly.

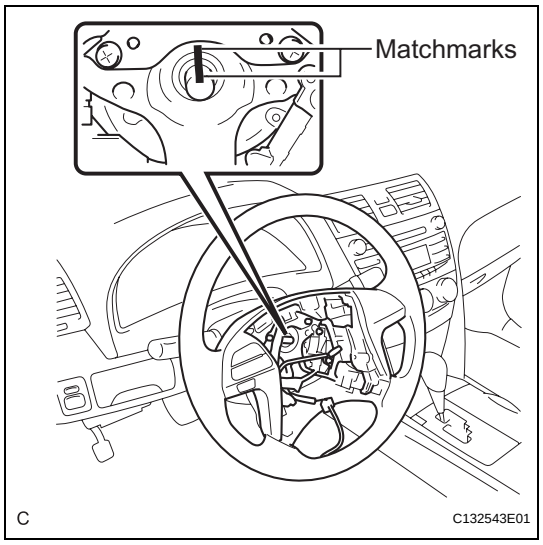


7. **INSTALL STEERING COLUMN COVER**
   (a) Engage the claw to install the steering column cover upper.



   (b) Engage the 2 claws to install the steering column cover lower.
   (c) Install the 2 screws.

8. **ADJUST SPIRAL CABLE SUB- ASSEMBLY (See page RS-367)**



9. **INSTALL STEERING WHEEL ASSEMBLY**
   (a) Align the matchmarks on the steering wheel assembly and steering main shaft.
   (b) Install the steering wheel assembly set nut.
   Torque: 50 N*m (510 kgf*cm, 37 ft.*lbf)
   (c) Connect the connectors to the spiral cable sub-assembly.

10. **INSPECT STEERING WHEEL CENTER POINT**

11. **INSTALL STEERING PAD (See page RS-350)**

12. **INSPECT STEERING PAD (See page RS-352)**

13. **INSTALL NO. 2 LOWER STEERING WHEEL COVER (See page RS-352)**

14. **INSTALL NO. 3 LOWER STEERING WHEEL COVER (See page RS-351)**

15. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY (See page RS-370)**

16. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMC Made) (See page IP-58)**

SR

17. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMMK Made) (See page IP-59)**
18. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page IR-54)**
19. **INSTALL FRONT DOOR SCUFF PLATE LH (See page IR-54)**
20. **INSTALL FRONT WHEEL LH**
    Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)
21. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
22. **INSPECT SRS WARNING LIGHT**
    HINT:
    (See page RS-32)