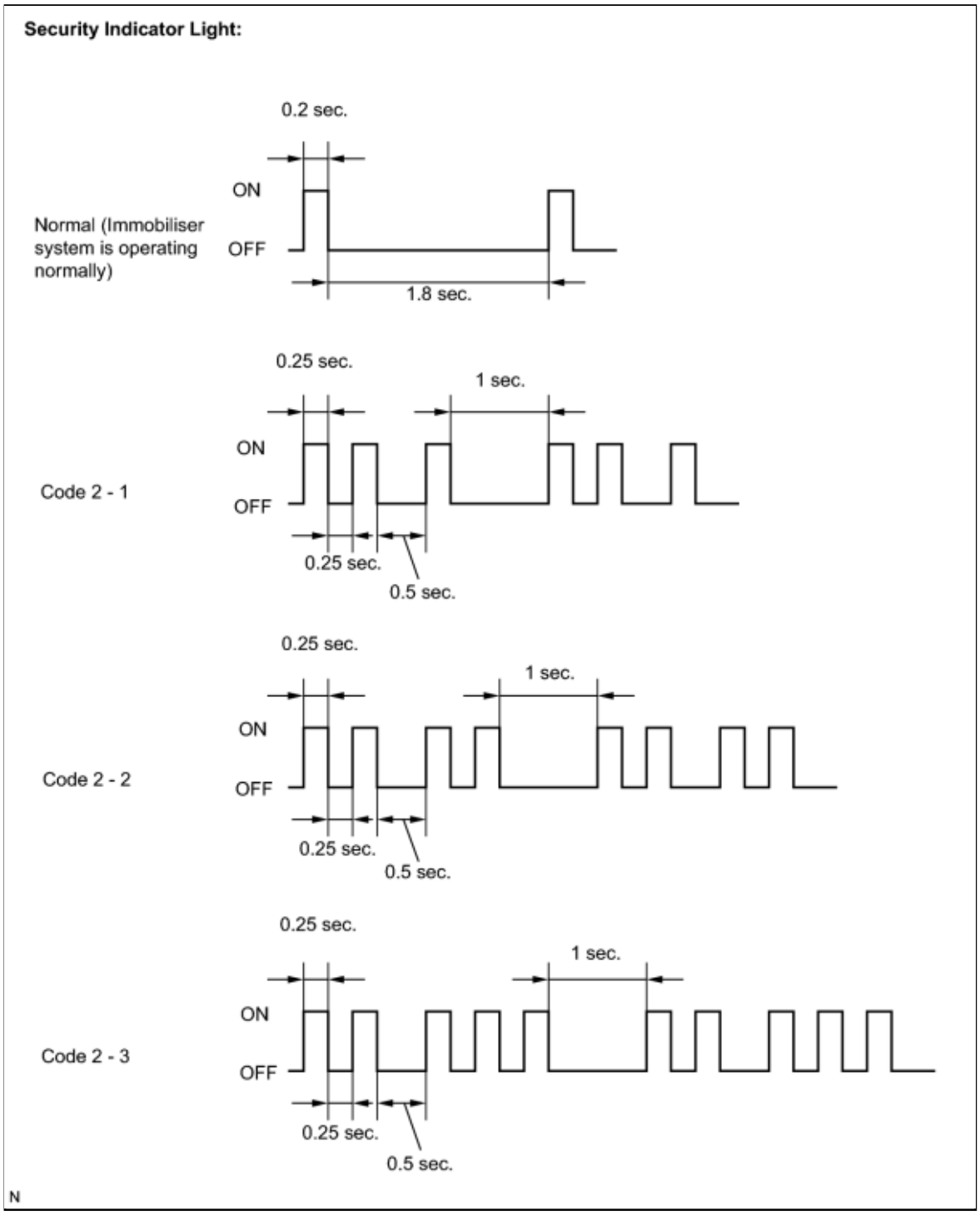
Last Modified: 3-10-2010	6.4 F	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010EX0QMX
Title: FOREWORD / CAUTION / SECTION: FOREWORD: CAUTION (2010 Corolla)		

CAUTION

This contents does not include all the necessary items about repair and service. This manual is made for the use of persons who have special techniques and certifications. If non-specialized or uncertified technicians perform repairs or service only using this manual or without proper equipment or tools, this may cause severe injury to you or other persons nearby and also cause damage to your customer's vehicle.
In order to prevent dangerous operation and damage to your customer's vehicle, be sure to follow the instructions shown below.

- This contents must be read thoroughly. It is especially important to have a good understanding of all the contents written in the PRECAUTION of "INTRODUCTION" section.
- The service method written in this manual is very effective to perform repair and service. When performing the operations following the procedures using this manual, be sure to use tools specified and recommended. If using non-specified or tools other than recommended tools and service methods, be sure to confirm the safety of the technicians and that there is no possibility of causing personal injury or damage to the customer's vehicle before starting the operation.
- If part replacement is necessary, the part must be replaced with the same part number or equivalent part. Do not replace it with an inferior quality part.
- It is important to note that this manual contains various "Cautions" and "Notices" that must be carefully observed in order to reduce the risk of personal injury during service or repair, or reduce the possibility that improper service or repair may damage the vehicle or render it unsafe. It is also important to understand that these "Cautions" and "Notices" are not exaggerations and are possible hazardous consequences that might result from failure to follow these instructions.



(b) Finish the automatic key code registration mode. The automatic key code registration mode can be forced to end when at least 1 key code (immobiliser code) for the master key has been registered.

HINT:

Follow the instruction on the Techstream screen to end new key code registration mode.

9. REGISTRATION OF ADDITIONAL KEY (Engine Immobiliser System (w/o Smart Key System))

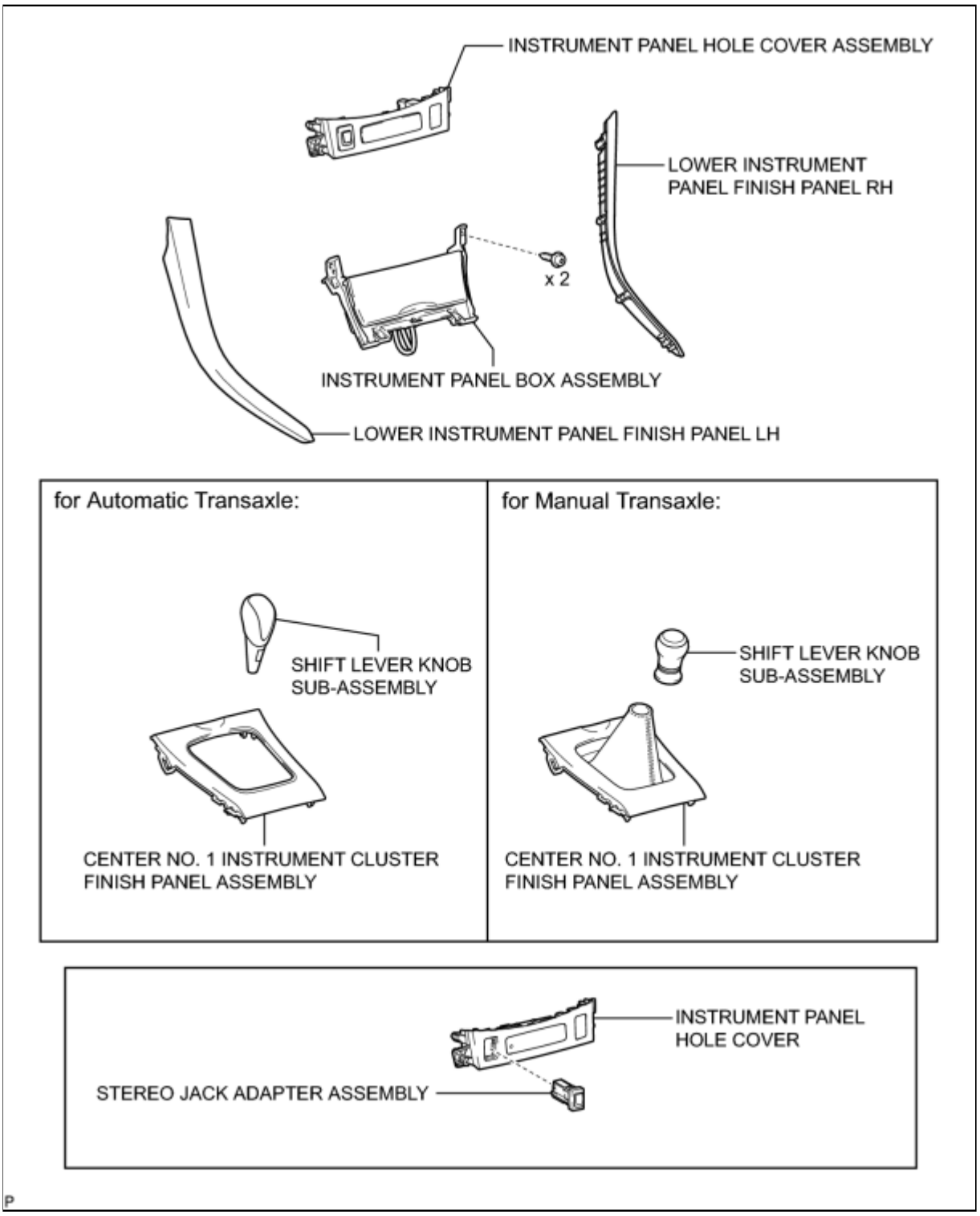
(a) Additional registration (Procedure "B"):

HINT:

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000003FUC001X
Title: AUDIO / VIDEO: STEREO JACK ADAPTER ASSEMBLY: COMPONENTS (2010 Corolla)		

COMPONENTS

ILLUSTRATION



Last Modified: 3-10-2010	6.4 C	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000035P600IX
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: VEHICLE STABILITY CONTROL SYSTEM: C1420: Acceleration Sensor Malfunction (2010 Corolla)		

DTC	**C1420**	**Acceleration Sensor Malfunction**

DESCRIPTION

The skid control ECU receives signals from the yaw rate and acceleration sensor via the CAN communication system.

The yaw rate sensor has a built-in acceleration sensor and detects the vehicle's condition using 2 circuits (GL1, GL2).

If there is trouble in the bus lines between the yaw rate and acceleration sensor and the CAN communication system, DTCs U0123 (Lost Communication with Yaw Rate Sensor Module) and U0124 (Lost Communication with Lateral Acceleration Sensor Module) are set.

These DTCs are also output when calibration has not been completed.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1420	After the difference between GL1 and GL2 becomes 0.6 G or more with the vehicle stationary, the difference remains 0.4 G or more for 60 seconds or more.	• Sensor installation • Yaw rate and acceleration sensor

INSPECTION PROCEDURE

NOTICE:

When replacing the yaw rate and acceleration sensor, perform zero point calibration INFO **.**

HINT:

When U0123, U0124 and/or U0126 is output together with C1420, inspect and repair the trouble areas indicated by U0123, U0124 and/or U0126 first INFO **.**

PROCEDURE

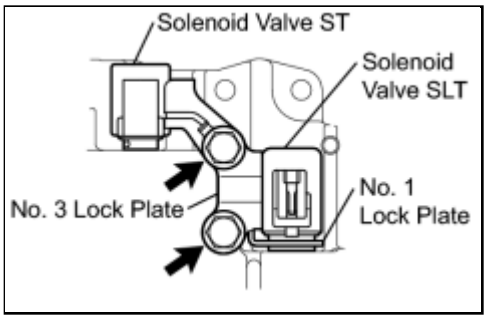
1.	**CHECK YAW RATE AND ACCELERATION SENSOR INSTALLATION**

(a) Check that the yaw rate and acceleration sensor has been installed properly INFO .

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000001932010X
Title: U341E AUTOMATIC TRANSMISSION / TRANSAXLE: VALVE BODY ASSEMBLY: REASSEMBLY (2010 Corolla)		

REASSEMBLY

1. INSTALL NO. 3 SOLENOID LOCK PLATE



(a) Install the shift solenoid valve SLT to the valve body.

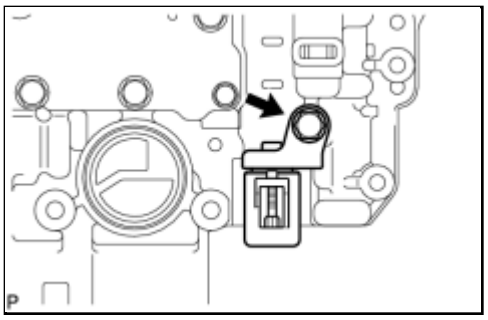
(b) Install the No. 1 solenoid lock plate to the shift solenoid valve SLT.

(c) Install the shift solenoid valve ST to the valve body.

(d) Install the No. 3 solenoid lock plate to the valve body with the 2 bolts.

Torque: 11 N·m (112 kgf·cm, 8ft·lbf)

2. INSTALL SHIFT SOLENOID VALVE SLU



(a) Install the shift solenoid valve SLU onto the valve body.

(b) Install the solenoid lock plate with the bolt.

Torque: 11 N·m (112 kgf·cm, 8ft·lbf)

3. INSTALL SHIFT SOLENOID VALVE S2

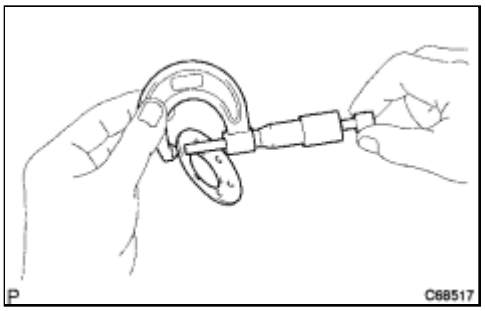
(a) Install the shift solenoid valve S2 to the valve body with the bolt.

Torque: 11 N·m (112 kgf·cm, 8ft·lbf)

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000001A0Z01XX
Title: C59 MANUAL TRANSMISSION / TRANSAXLE: DIFFERENTIAL CASE: INSPECTION (2010 Corolla)		

INSPECTION

1. INSPECT FRONT DIFFERENTIAL PINION THRUST WASHER

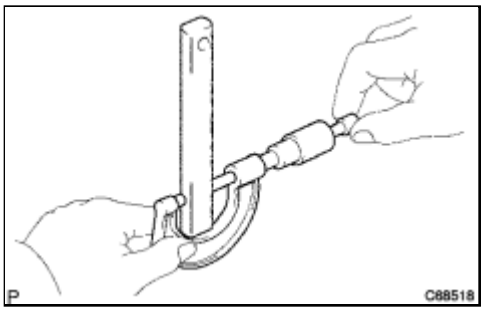


(a) Using a micrometer, measure the thickness of the front differential pinion thrust washer.

Minimum thickness:
0.92 mm (0.0362 in.)

If the thickness is less than the minimum, replace the front differential pinion thrust washer.

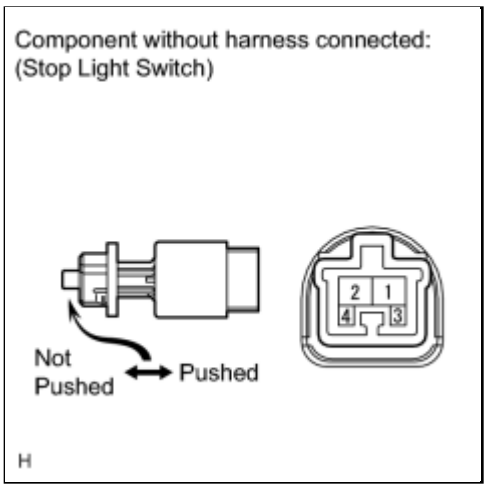
2. INSPECT FRONT NO. 1 DIFFERENTIAL PINION SHAFT



(a) Using a micrometer, measure the outer diameter of the front No. 1 differential pinion shaft.

Minimum outer diameter:
16.982 mm (0.6685 in.)

If the outer diameter is less than the minimum, replace the front No. 1 differential pinion shaft.



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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 2	Switch pin not pushed	Below 1 Ω
3 - 4	Switch pin not pushed	10 kΩ or higher
1 - 2	Switch pin pushed	10 kΩ or higher
3 - 4	Switch pin pushed	Below 1 Ω

(c) Install the stop light switch INFO .

NG ▶ **REPLACE STOP LIGHT SWITCH**

OK
▼

3.	**CHECK ECM**

(a) Disconnect the ECM connector.

HINT:

- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE or UNKNOWN, perform steps [E] through [G].

11. Drive the vehicle for 2 to 3 minutes [E].
12. Idle the engine for 5 minutes or more [F].
13. Check the DTC judgment result [G].
14. If the test result is UNKNOWN, enter the following menus: Powertrain / Engine / Trouble Codes / Pending.
15. Read Pending DTCs [G].

HINT:

If a pending DTC is output, the system is malfunctioning.

16. If the test result is INCOMPLETE or UNKNOWN and no pending DTC is output, perform a universal trip and check for permanent DTCs INFO .

HINT:

- If a permanent DTC is output, the system is malfunctioning.
- If no permanent DTC is output, the system is normal.

WIRING DIAGRAM

Refer to DTC P0335 INFO .

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the Techstream. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can be helpful in determining whether the vehicle was running or stopped, whether the engine was warmed up or not, whether the air fuel ratio was lean or rich, as well as other data recorded at the time of a malfunction.

PROCEDURE

1.	**CHECK ANY OTHER DTCS OUTPUT (IN ADDITION TO DTC P0016)**

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

(d) Enter the following menus: Powertrain / Engine and ECT / Trouble Codes.

(e) Read DTCs.

Result:

first depressed.

9. Enter the following menus: Powertrain / Engine / Utility / All Readiness.
10. Input the DTC: P2102 or P2103.
11. Check the DTC judgment result [C].

TECHSTREAM DISPLAY	DESCRIPTION
NORMAL	○ DTC judgment completed ○ System normal
ABNORMAL	○ DTC judgment completed ○ System abnormal
INCOMPLETE	○ DTC judgment not completed ○ Perform driving pattern after confirming DTC enabling conditions
UNKNOWN	○ Unable to perform DTC judgment ○ Number of DTCs which do not fulfill DTC preconditions has reached ECU memory limit

HINT:

- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE or UNKNOWN, perform steps [B] through [C] again.

12. If the test result is UNKNOWN, enter the following menus: Powertrain / Engine / Trouble Codes / Pending.
13. Read Pending DTCs.

HINT:

If a pending DTC is output, the system is malfunctioning.

14. If the test result is INCOMPLETE or UNKNOWN and no pending DTC is output, perform a universal trip and check for permanent DTCs INFO .

HINT:

- If a permanent DTC is output, the system is malfunctioning.
- If no permanent DTC is output, the system is normal.

FAIL-SAFE

When either of these DTCs, as well as other DTCs relating to electronic throttle control system malfunctions, is set, the ECM enters fail-safe mode. During fail-safe mode, the ECM cuts the current to the throttle actuator, and the throttle valve is returned to a 6.5° throttle angle by the return spring. The ECM then adjusts the engine output by controlling the fuel injection (intermittent fuel-cut) and ignition timing, in accordance with the accelerator pedal opening angle, to allow the vehicle to continue running at a minimal speed. If the accelerator pedal is depressed gently, the vehicle can be driven slowly.

TECHSTREAM DISPLAY	DESCRIPTION
ABNORMAL	○ DTC judgment completed ○ System abnormal
INCOMPLETE	○ DTC judgment not completed ○ Perform driving pattern after confirming DTC enabling conditions
UNKNOWN	○ Unable to perform DTC judgment ○ Number of DTCs which do not fulfill DTC preconditions has reached ECU's memory limit

HINT:

If the judgment result shows ABNORMAL, the system has a malfunction.

10. If the test result is UNKNOWN, enter the following menus: Powertrain / Engine / Trouble Codes / Pending.
11. Read Pending DTCs.

HINT:

If a pending DTC is output, the system is malfunctioning.

12. If the test result is INCOMPLETE or UNKNOWN and no pending DTC is output, perform a universal trip and check for permanent DTCs INFO .

HINT:

- If a permanent DTC is output, the system is malfunctioning.
- If no permanent DTC is output, the system is normal.

FAIL-SAFE

When either of these DTCs, as well as other DTCs relating to electronic throttle control system malfunctions, is set, the ECM enters fail-safe mode. During fail-safe mode, the ECM cuts the current to the throttle actuator, and the throttle valve is returned to a 6° throttle angle by the return spring. The ECM then adjusts the engine output by controlling the fuel injection (intermittent fuel-cut) and ignition timing, in accordance with the accelerator pedal opening angle, to allow the vehicle to continue running at a minimal speed. If the accelerator pedal is depressed gently, the vehicle can be driven slowly.

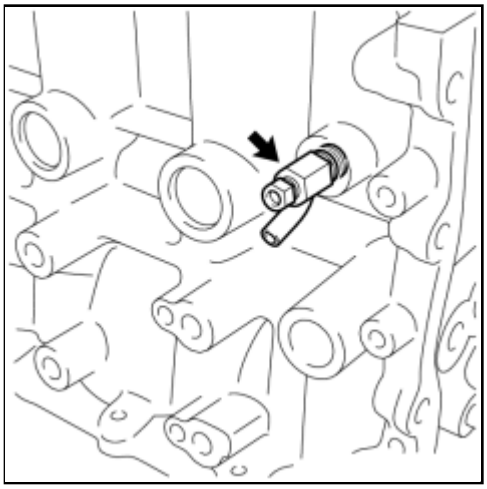
Fail-safe mode continues until a pass condition is detected, and the ignition switch is then turned off.

WIRING DIAGRAM

Refer to DTC P2102 INFO .

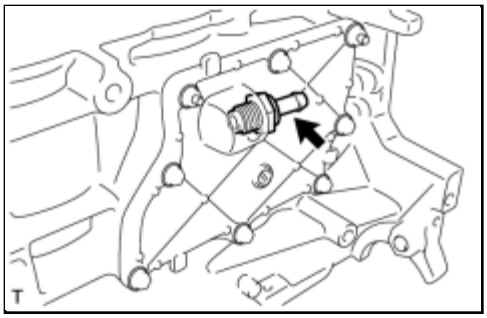
INSPECTION PROCEDURE

HINT:



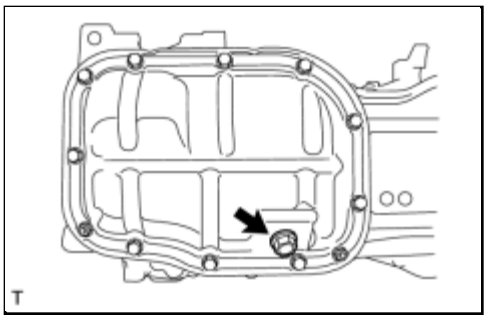
(b) Remove the cylinder block water drain cock sub-assembly from the cylinder block.

43. REMOVE VENTILATION VALVE SUB-ASSEMBLY



(a) Remove the ventilation valve.

44. REMOVE OIL PAN DRAIN PLUG



(a) Remove the oil pan drain plug and gasket.

45. REMOVE NO. 2 OIL PAN SUB-ASSEMBLY INFO

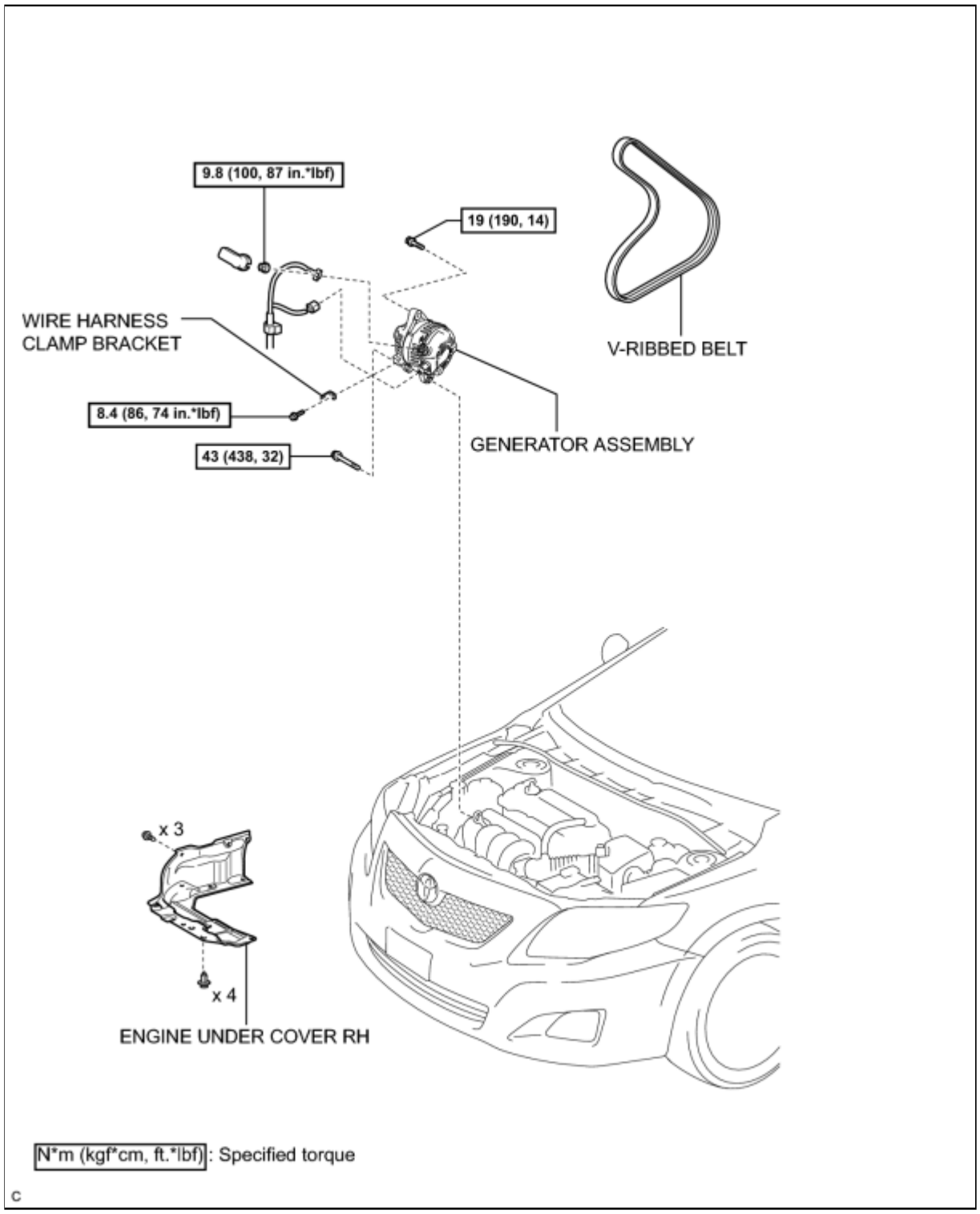
46. REMOVE OIL PUMP ASSEMBLY INFO

47. REMOVE REAR ENGINE OIL SEAL

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002196006X
Title: 2ZR-FE BATTERY / CHARGING: GENERATOR: COMPONENTS (2010 Corolla)		

COMPONENTS

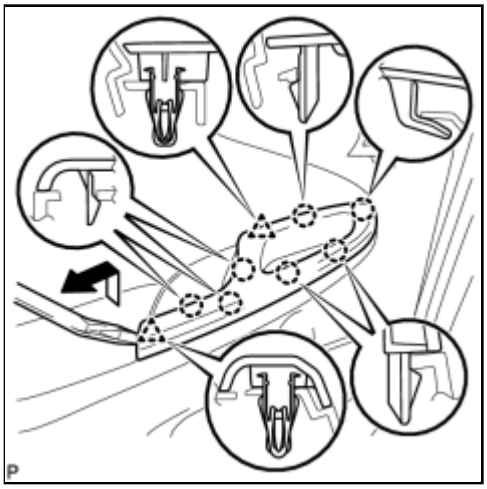
ILLUSTRATION



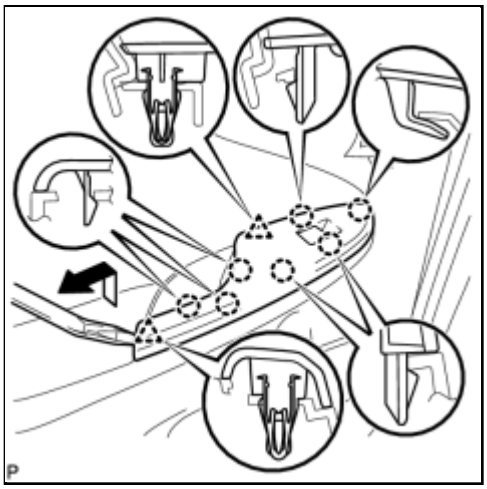
SYMPTOM	SUSPECTED AREA	SEE PAGE
	seconds. (If it displays NO, see "No steering lock" command in this table.)	
	Steering lock ECU power source circuit	INFO
	Check the input signal from the IGE terminal of the steering lock ECU.	INFO
	Replace the steering lock ECU.	INFO
Steering wheel cannot be locked (no steering lock command).	Courtesy light switch circuit	INFO
	Check that the S Code Chk item in the Data List of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	Check that the L Code Chk item in the Data List of the certification ECU displays OK. (If it displays NG, replace the ID code box.)	-
	Replace the certification ECU.	-

Smart Key System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Engine does not start.	Initialization	INFO
	Check for DTCs in the smart key system. (for Start Function)	INFO
	Check for DTCs in the engine immobiliser system. (for w/ smart key system)	INFO
	Check that the engine switch is turned on (IG).	-
	Check cranking operation. (If cranking operation is possible, see "Engine does not start due to the engine immobiliser" in this table.)	-
	Check Shift P Sig in the Data List of the main body ECU and confirm that the shift signal is normal.	-
	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.)	-
	Steering lock ECU power source circuit	INFO
	Check the output from the SLP terminal of the steering lock ECU.	INFO
	Check the output signal from the ST SW of the certification ECU (DTC B2275).	INFO
	Replace the main body ECU.	-



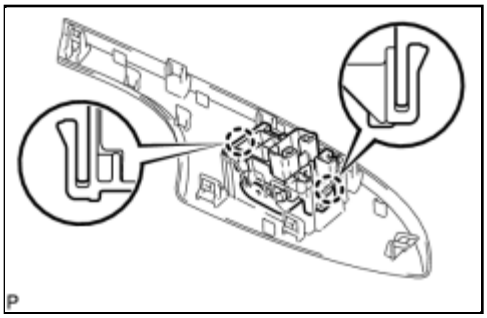
5. REMOVE REAR DOOR ARMREST UPPER BASE PANEL (w/ Power Window)



(a) Using a moulding remover, disengage the 2 clips and 7 claws.

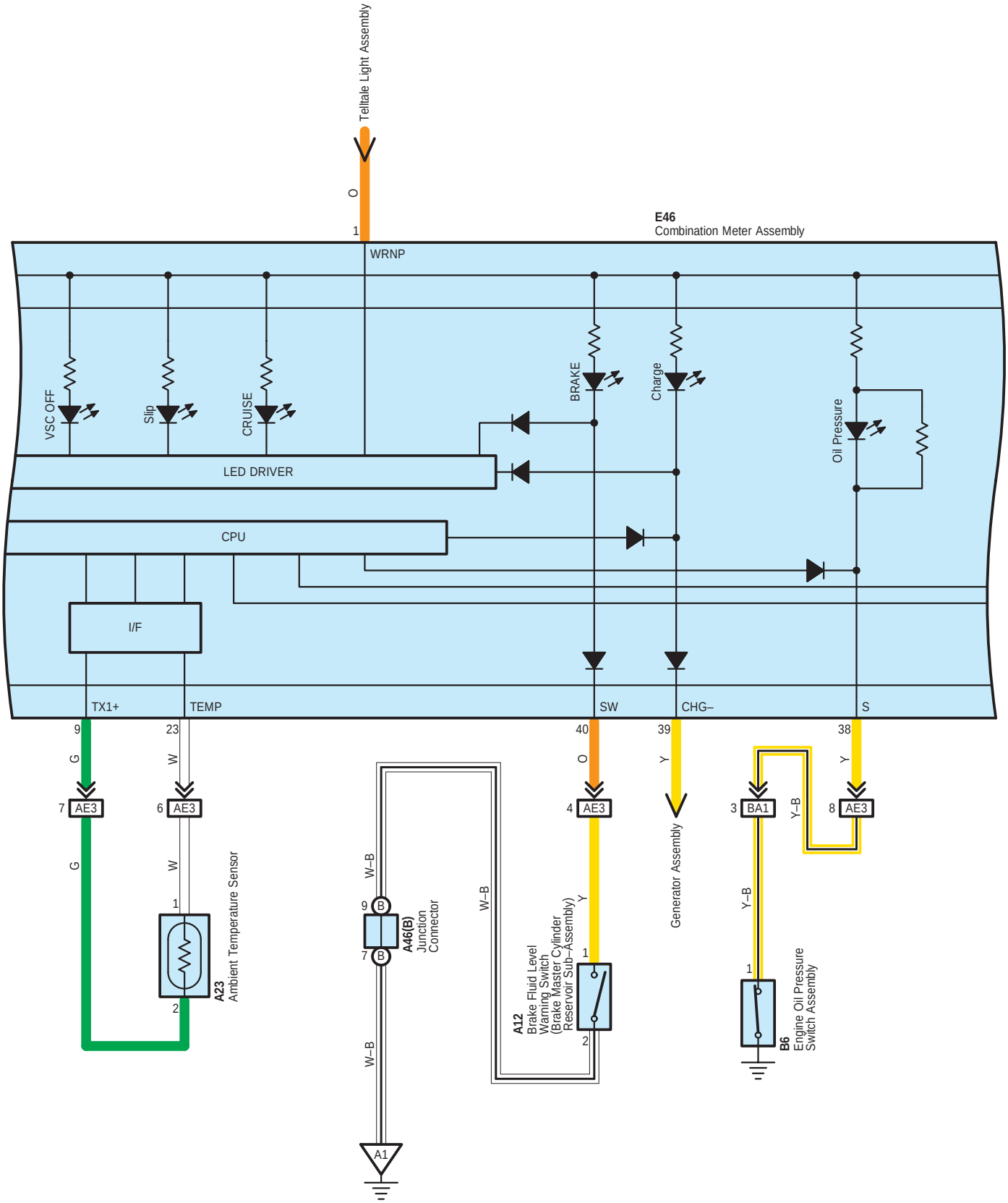
(b) Disconnect the connector and remove the rear door armrest upper base panel.

6. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY (w/ Power Window)



(a) Using a screwdriver with its tip wrapped with protective tape, disengage the 2 claws and remove the rear power window regulator switch assembly.

7. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY


Telltale Light Assembly
O
1
E46
Combination Meter Assembly
WRNP
VSC OFF
Slip
CRUISE
BRAKE
Charge
Oil Pressure
LED DRIVER
CPU
I/F
TX1+
TEMP
SW
CHG–
S
9
G
7
AE3
23
W
6
AE3
40
O
4
AE3
39
Y
38
Y
8
AE3
3
BA1
Y–B
1
2
A23
Ambient Temperature Sensor
W–B
9
B
7
B
A46(B)
Junction
Connector
A1
A12
Brake Fluid Level
Warning Switch
(Brake Master Cylinder
Reservoir Sub–Assembly)
Generator Assembly
B6
Engine Oil Pressure
Switch Assembly