

CRUISE CONTROL SYSTEM

PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following systems after the cable is reconnected.

System	See procedure
Power window control system (with Jam protection function)	IN-23
Sliding roof system	

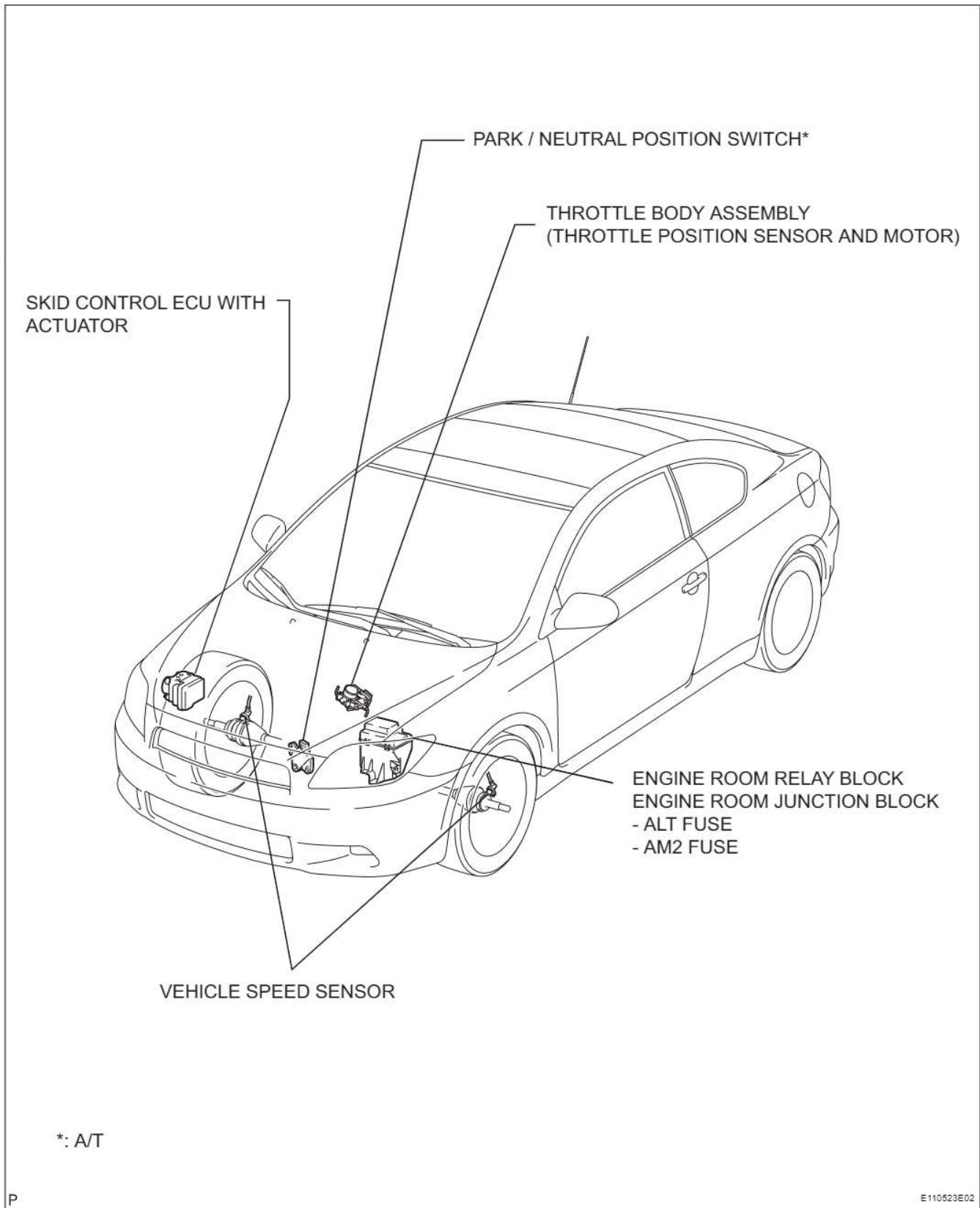


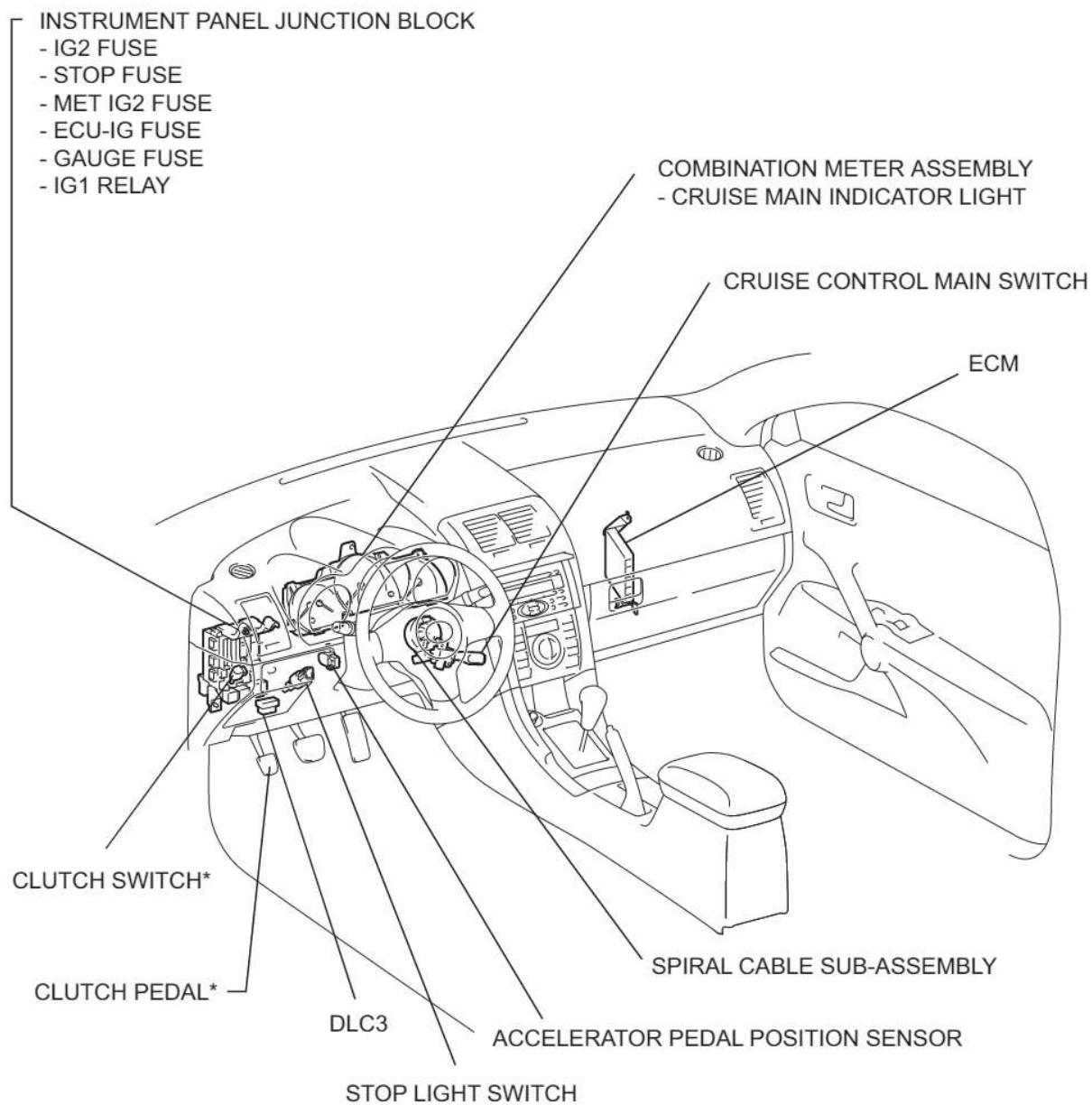
1. Pay attention to the following points when inspecting the cruise control system.
- (a) Push the cruise control main switch ON-OFF button off when not using the cruise control.
 - (b) Be careful of vehicle speed increase when driving downhill with the cruise control on.
 - (c) "RES/+" operation, after canceling the cruise control, works as RESUME, and works as "+" (ACCEL) while the cruise control system is operating.
 - (d) Push the cruise control main switch ON-OFF button off and reset the cruise control if the CRUISE main indicator light blinks while the cruise control system is operating. When the cruise control can not be set by this procedure or canceled immediately after setting, there may be a malfunction in the system.
 - (e) Do not use the cruise control system where the road conditions are as follows:
 - Heavy traffic
 - Steep downhill
 - Sharp turns
 - Icy or snowy roads
 - Slippery roads

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CRUISE CONTROL – CRUISE CONTROL SYSTEM

PARTS LOCATION



CRUISE CONTROL – CRUISE CONTROL SYSTEM**CC-3**

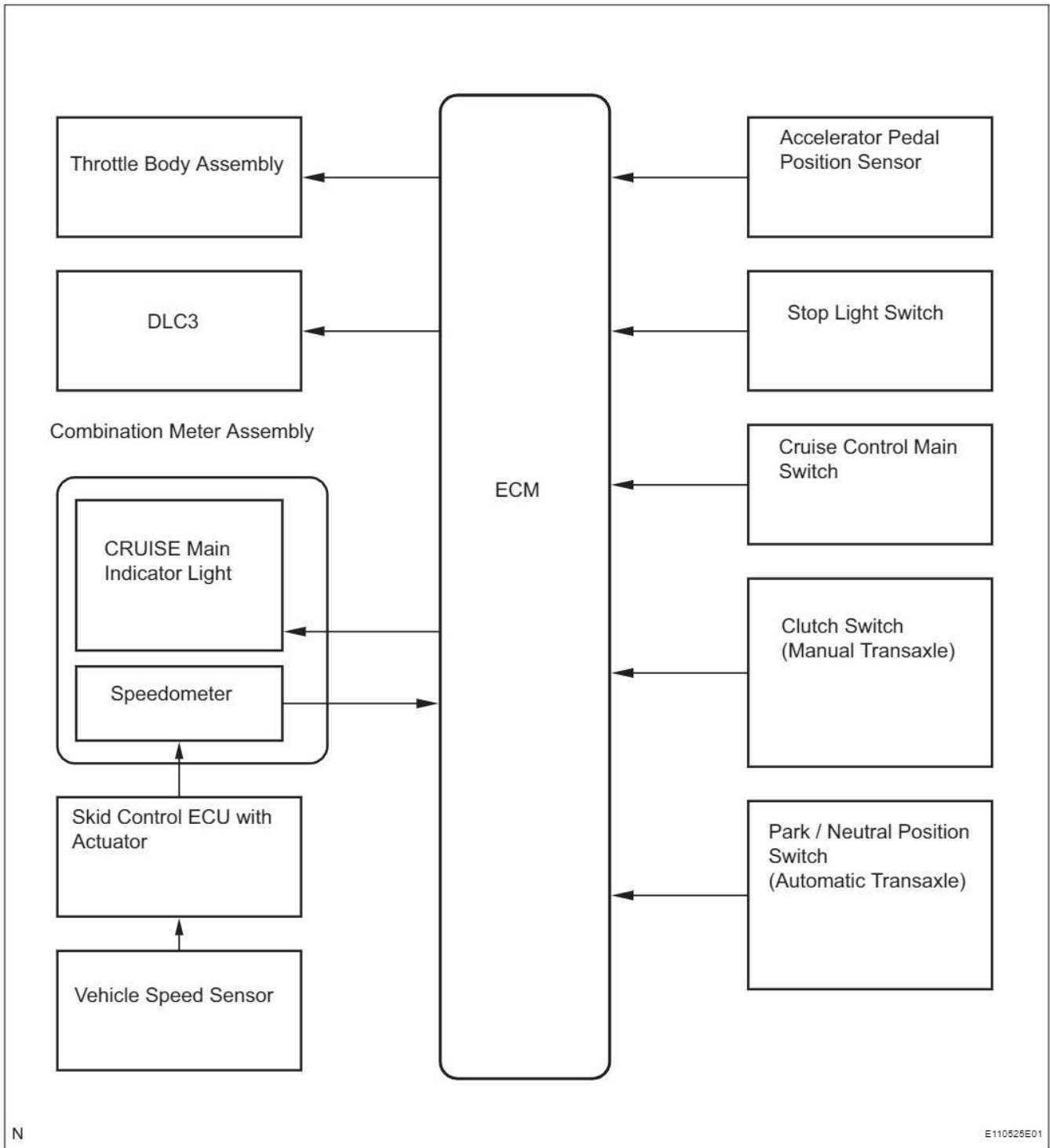
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CRUISE CONTROL – CRUISE CONTROL SYSTEM

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SYSTEM DESCRIPTION

1. CRUISE CONTROL SYSTEM

The cruise control system makes it possible to drive at a desired speed without using the accelerator pedal. The ECM controls the throttle opening angle based on signals from switches and sensors.

A microcomputer which controls the cruise control system is built into the ECM, and the actuator is the throttle body assembly.

Constant speed control is possible when the cruise control main switch ON-OFF button is pushed (the CRUISE main indicator light comes on).

Operating the cruise control main switch, the driver can control the following functions.

2. LIMIT CONTROL

(a) Low speed limit

The lowest possible limit of the speed setting range is set at approximately 40 km/h (25 mph). The cruise control system cannot be set when the driving vehicle speed is below the low speed limit. Cruise control operation will be automatically canceled when the vehicle speed goes below the low speed limit while the cruise control is operating.

(b) High speed limit

The highest possible limit of the speed setting range is set at approximately 200 km/h (125 mph). The cruise control system cannot be set when the driving vehicle speed is over the high speed limit. When accelerating using "RES/+" with the cruise control main switch assembly, the speed cannot be set beyond the high speed limit.

3. OPERATION OF CRUISE CONTROL

The cruise control main switch operates seven functions: SET, '-' (COAST), TAP-DOWN, '+' (ACCEL), TAP-UP, RESUME and CANCEL. The SET, TAP-DOWN and '-' (COAST) functions, and the RESUME, TAP-UP and '+' (ACCEL) function are operated with the same switch. The cruise control main switch assembly is an automatic return type switch which turns on only while operating it in each arrow direction and turns off after releasing it.

(a) SET CONTROL

When pushing down the cruise control main switch to "SET / -", the ECM stores the set speed and compares it to actual vehicle speed. If the actual driving speed is greater than the set speed, the ECM sends a signal to the throttle body assembly to close the throttle valve. If lower, it opens the throttle valve. The cruise control operative speed range is between the low and high speed limits.

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CRUISE CONTROL – CRUISE CONTROL SYSTEM

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(b) '-' (COAST) CONTROL

A cruise set speed decreases while pushing down on the cruise control main switch to "SET / -". The vehicle cruises at the newly set speed when releasing the cruise control main switch.

(c) TAP-DOWN CONTROL

When tapping down on the cruise control main switch to "SET / -" (approximately 0.6 seconds), the ECM decreases the stored set speed by 1.6 km/h (1 mph) at a time. However, when the difference between the driving and the stored vehicle speed is more than 5 km/h (approximately 3.1 mph), if the cruise control main switch is released from "SET / -", vehicle speed will be stored and constant speed control is maintained.

(d) '+' (ACCEL) CONTROL

The cruise set speed increases while pushing up on the cruise control main switch to "RES / +". The vehicle cruises at the newly set speed when releasing the cruise control main switch.

(e) TAP-UP CONTROL

When tapping up on the cruise control main switch to "RES / +" (approximately 0.6 seconds), the ECM increases the stored set speed by 1.6 km/h (1 mph) at a time. However, when the difference between the driving and the stored vehicle speed is more than 5 km/h (approximately 3.1 mph), the stored vehicle speed will not be changed.

(f) RESUME CONTROL

If cruise control operation was canceled under the manual cancel conditions (other than pushing the cruise control main switch ON-OFF button off) and if driving speed is within the limit range, pushing up the cruise control main switch "RES / +" restores vehicle speed memorized at the time of cancellation, and maintains constant speed control.

(g) MANUAL CANCEL CONTROL

The ECM cancels the cruise control under the following conditions while driving:

- The cruise control main switch is pulled to CANCEL.
- The brake pedal is depressed.
- The clutch pedal is depressed (Manual Transaxle).
- Moving the shift lever the D position to the N, 2 or L position.
- The cruise control main switch ON-OFF button is pushed off.

(h) AUTO CANCEL CONTROL

If any of the following malfunctions occur in the system, the ECM stops the cruise control until the cruise control main switch ON-OFF button is pushed off.

- Stop light switch assembly malfunction

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- Vehicle speed signal circuit malfunction
 - Throttle position sensor and motor malfunction
- If any of the following malfunctions occur in the system, the ECM stops the cruise control until the ignition switch is turned off.
- Stop light switch input circuit malfunction
 - CANCEL function circuit malfunction
- Under these conditions, the cruise main indicator light blinks until the cruise control main switch ON-OFF button is pushed off.
- AUTO CANCEL also works when actual vehicle speed either drops below 40 km/h (25 mph) or is 16 km/h (10 mph) lower than the set speed.

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HOW TO PROCEED WITH TROUBLESHOOTING

- HINT:
- Use these procedures to troubleshoot the cruise control system.
 - *: Use the intelligent tester.

1

VEHICLE BROUGHT TO WORKSHOP

CC

NEXT

2

INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V
If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3

CHECK INDICATOR LIGHT

NEXT

4

CHECK DTC*

- (a) Check for DTCs and note any codes that are output.
(b) Delete the DTC.
(c) Recheck for DTCs, and try to prompt the DTC by simulating the original activity that the DTC suggests.

Result

Result	Proceed to
DTC does not reoccur	A
DTC reoccurs	B

A

B

Go to step 7

5

PROBLEM SYMPTOMS TABLE

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B

Go to step 7

A

6 OVERALL ANALYSIS AND TROUBLESHOOTING

- (a) Terminals of ECM (see page [CC-11](#))
- (b) Data List/Active Test (see page [CC-15](#))

NEXT

7 ADJUST, REPAIR OR REPLACE

CC

NEXT

8 CONFIRMATION TEST

NEXT

END

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CRUISE CONTROL – CRUISE CONTROL SYSTEM

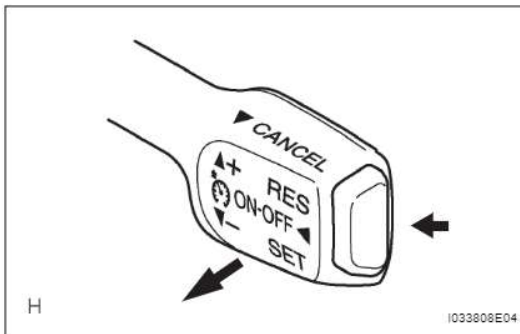
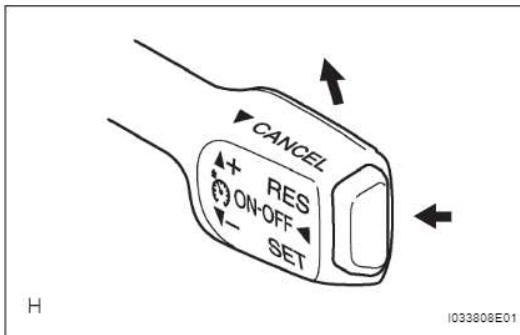
ROAD TEST

HINT:

SET and '-', RES and '+', ON-OFF functions share the same switch. Operate the cruise control main switch according to the directions (↓, ↑, ←) indicated on the switch.

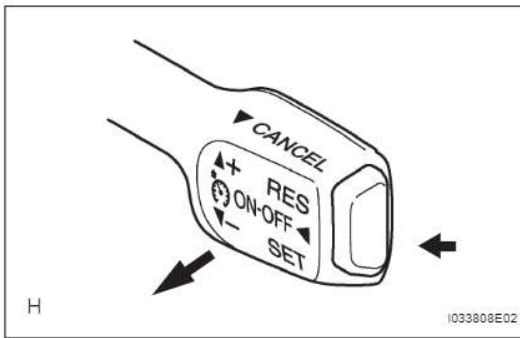
1. PROBLEM SYMPTOM CONFIRMATION

- (a) Inspect the SET function.
 - (1) Push the ON-OFF button.
 - (2) Drive at the required speed (40 km/h (25 mph) or higher).
 - (3) Push down the cruise control main switch to "SET / -".
 - (4) After releasing the switch, check that the vehicle cruises at the set speed.
- (b) Inspect the '+' (ACCEL) function.
 - (1) Push the ON-OFF button on.
 - (2) Drive at the required speed (40 km/h (25 mph) or higher).
 - (3) Push down the cruise control main switch to "SET / -".
 - (4) Check that vehicle speed increases while the cruise control main switch is pushed up to "RES / +", and that the vehicle cruises at the newly set speed when the switch is released.
 - (5) Momentarily (approximately 0.6 seconds) push up the cruise control main switch to "RES / +" and then immediately release it. Check that vehicle speed increases by approximately 1.6 km/h (1.0 mph) (Tap-up function).
- (c) Inspect the '-' (COAST) function.
 - (1) Push the ON-OFF button on.
 - (2) Drive at the required speed (40 km/h (25 mph) or higher).
 - (3) Push down the cruise control main switch to "SET / -".
 - (4) Check that vehicle speed decreases while the cruise control main switch is pushed down to "SET / -", and the vehicle cruises at the newly set speed when the switch is released.
 - (5) Momentarily (approximately 0.6 seconds) push down the cruise control main switch to "SET / -", and then immediately release it. Check that the vehicle speed decreases by approximately 1.6 km/h (1.0 mph) (Tap-down function).

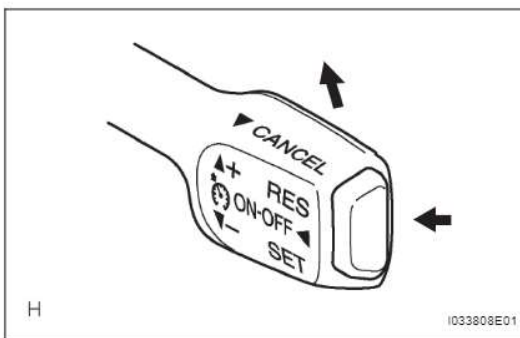


CRUISE CONTROL – CRUISE CONTROL SYSTEM

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- (d) Inspect the CANCEL function.
- (1) Push the ON-OFF button on.
 - (2) Drive at the required speed (40 km/h (25 mph) or higher).
 - (3) Push down the cruise control main switch to "SET / -".
 - (4) When doing one of the following, check that the cruise control system is canceled and that the normal driving mode is reset.
 - Depressing the brake pedal
 - Depressing the clutch pedal (Manual Transaxle)
 - Moving the shift lever from the D position to the N, 2 or L position.
 - Pushing the ON-OFF button off
 - Pulling the cruise control main switch to CANCEL



- (e) Inspect the RES (RESUME) function.
- (1) Push the ON-OFF button on.
 - (2) Drive at the required speed (40 km/h (25 mph) or higher).
 - (3) Push down the cruise control main switch to "SET / -".
 - (4) When doing one of the following, check that the cruise control system is canceled and that the normal driving mode is reset.
 - Depressing the brake pedal
 - Depressing the clutch pedal (manual Transaxle)
 - Moving the shift lever from the D position to the N, 2 or L position.
 - Pulling the cruise control main switch to CANCEL
 - (5) After pushing the cruise control main switch to "RES / +" at a driving speed of more than 40 km/h (25 mph), check that the vehicle restores the speed prior to the cancellation.

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CRUISE CONTROL – CRUISE CONTROL SYSTEM

PROBLEM SYMPTOMS TABLE

If a normal system code is displayed during the DTC check but the problem still occurs, check the circuits for each problem symptom in the order given in the table below and proceed to the relevant troubleshooting page.

HINT:

Inspect the fuses and relays before confirming the suspected areas as shown in the table below.

Inspect each malfunction circuit in numerical order for the corresponding symptom.

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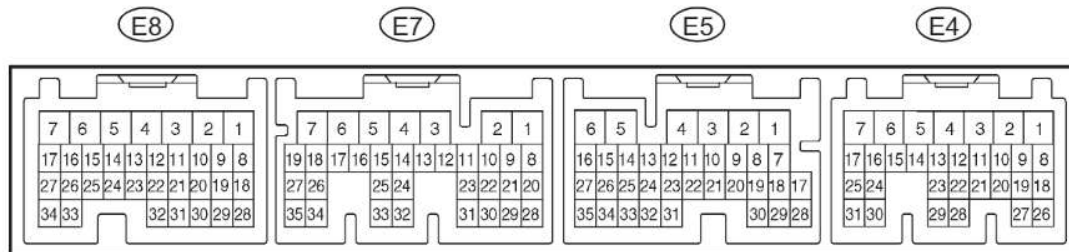
Symptom	Suspected Area	See page
Main switch cannot be turned ON. (Cruise indicator light in combination meter does not come on.)	1. Cruise control switch circuit	CC-30
	2. Combination meter system (CRUISE main indicator light circuit)	CC-35
	3. Combination meter assembly	ME-4
	4. ECM	CC-11
Vehicle speed setting cannot be done. (Although indicator light in combination meter comes on when the main switch is turned ON, it goes off when vehicle speed is set.)	1. Cruise control switch circuit	CC-30
	2. ECM	CC-11
Setting cannot be done. (Indicator light in combination meter comes on when the main switch is turned ON and it remains ON while setting.)	1. Cruise control switch circuit	CC-30
	2. Vehicle speed sensor circuit	CC-17
	3. Stop light switch circuit	CC-18
	4. Combination meter system (CRUISE main indicator light circuit)	CC-35
	5. Clutch switch circuit (Manual Transaxle)	CC-23
	6. Park/Neutral position switch circuit (Automatic Transaxle)	CC-26
	7. Combination meter assembly	ME-4
	8. ECM	CC-11
While the vehicle is driven with cruise control, the set control is canceled. (Indicator light and CRUISE remain ON.)	1. Cruise control switch circuit	CC-30
	2. Vehicle speed sensor circuit	CC-17
	3. Stop light switch circuit	CC-18
	4. Combination meter system (CRUISE main indicator light circuit)	CC-35
	5. Clutch switch circuit (Manual Transaxle)	CC-23
	6. Park / Neutral position switch circuit (Automatic Transaxle)	CC-26
	7. Combination meter assembly	ME-4
	8. ECM	CC-11
Hunting (Speed is not constant.)	1. Vehicle speed sensor circuit	CC-17
	2. ECM	CC-11
Setting cannot be canceled (when functions such as - (coast), + (acceleration), resume, set speed change are operated using control switch).	1. Diagnosis circuit	CC-39
DTC is not output or is output when it should not be.	1. Diagnosis circuit	CC-39
CRUISE main indicator light does not come on.	1. Cruise control switch circuit	CC-30
	2. Combination meter system (CRUISE main indicator light circuit)	CC-35
	3. Combination meter assembly	ME-4
	4. ECM	CC-11

CRUISE CONTROL – CRUISE CONTROL SYSTEM

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TERMINALS OF ECM

1. CHECK ECM



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Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
TC (E5-17) - E1 (E8-3)	R - L	DTC output signal	Ignition switch ON → Connect terminals TC and CG of DLC3	10 to 14 V → Below 2 V
D (E5-21) - E1 (E8-3) *1	R - L	Clutch switch input signal	Ignition switch ON, depress clutch pedal → release clutch pedal	Below 1 V → 10 to 14 V
D (E5-21) - E1 (E8-3) *2	W - L	Shift position input signal	Ignition switch ON, shift D position → any shift position except D	10 to 14 V → Below 1 V
ST1- (E4-16) - E1 (E8-3)	L - L	Cruise cancel input signal	Ignition switch ON, depress brake pedal → release brake pedal	Below 1 V → 10 to 14 V
PI (E5-18) - E1 (E8-3)	B - L	Cruise main indicator light input signal	Ignition switch ON, cruise control main switch ON	Below 1 V → 10 to 14 V
STP (E5-4) - E1 (E8-3)	L - L	Stop light switch input signal	Ignition switch ON, depress brake pedal → release brake pedal	10 to 14 V → Below 1 V
CCS (E5-31) - E1 (E8-3)	Y - L	Cruise control main switch input signal	Ignition switch ON	10 to 14 V
CCS (E5-31) - E1 (E8-3)	Y - L	Cruise control main switch input signal	CANCEL switch held ON	6.6 to 10.1 V
CCS (E5-31) - E1 (E8-3)	Y - L	Cruise control main switch input signal	SET / - switch held ON	4.5 to 7.1 V
CCS (E5-31) - E1 (E8-3)	Y - L	Cruise control main switch input signal	RES / + switch held ON	2.3 to 4 V
CCS (E5-31) - E1 (E8-3)	Y - L	Cruise control main switch input signal	MAIN switch held ON	Below 1 V

HINT:

*1: Manual Transaxle

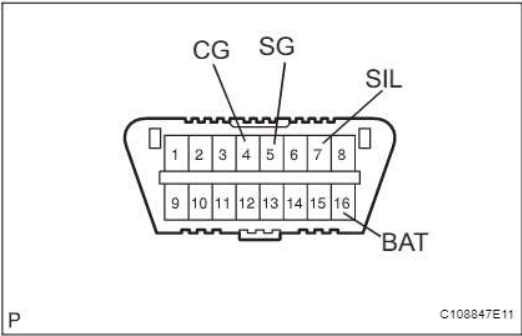
*2: Automatic Transaxle

DIAGNOSIS SYSTEM

1. DESCRIPTION
The CRUISE indicator light on the combination meter blinks when the cruise control is malfunctioning. And then, the ECM (PCM) stores diagnosis trouble codes (DTCs). DTCs can be read from the data link connector (DLC3) with a intelligent tester or an OBDII scan tool. If the CRUISE indicator light blinks, read DTCs to isolate the problem.

2. CHECK DLC3
(a) The vehicle's ECM uses ISO 9141-2 for communication. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 9141-2 format.

CC

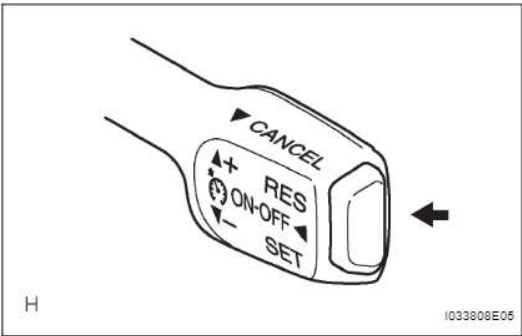


Symbols (Terminal NO.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	11 to 10 V

HINT:
If the display shows "UNABLE TO CONNECT TO VEHICLE" after connecting the intelligent tester to the DLC3 and turning the ignition switch to the ON position, there is a problem with either the vehicle or the tester. (Intelligent tester only)

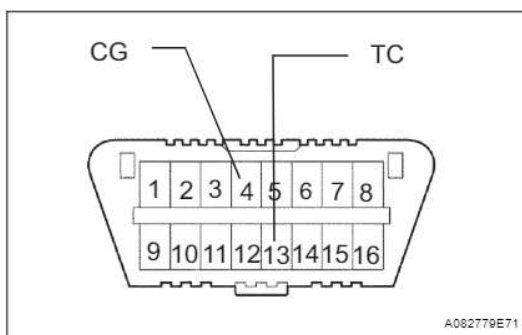
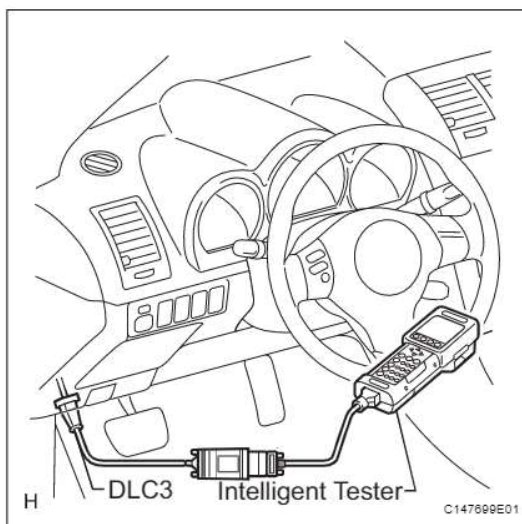
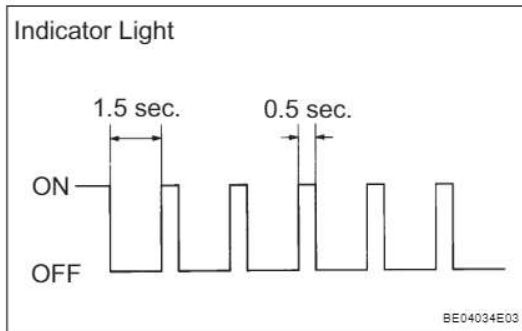
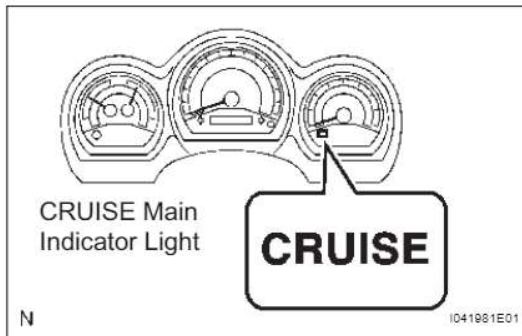
- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still not possible when the tester is connected to another vehicle, the problem is probably in the tester itself, so consult the Service Department listed in the tester's instruction manual.

3. CHECK CRUISE MAIN INDICATOR LIGHT
(a) Turn the ignition switch to the ON position.



CRUISE CONTROL – CRUISE CONTROL SYSTEM

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- (b) Check that the CRUISE main indicator light comes on when the cruise control main switch ON-OFF button is pushed on, and that the indicator light goes off when the ON-OFF button is pushed off.

HINT:

If there is a problem with the indicator light, inspect the CRUISE main indicator light circuit (see page [CC-35](#)).

HINT:

If a malfunction occurs in the vehicle speed sensors, stop light switch assembly or other related parts during cruise control driving, the ECM actuates AUTO CANCEL of the cruise control. Then the CRUISE main indicator light starts to blink, informing the driver of the malfunction. At the same time, data of the malfunction is stored as a diagnostic trouble code (DTC).

CC

DTC CHECK / CLEAR

1. DTC CHECK / CLEAR (USING INTELLIGENT TESTER)

(a) DTC CHECK

- (1) Connect the intelligent tester to the DLC3.
- (2) Turn the ignition switch to the ON position.
- (3) Read DTCs on the tester screen.

(b) DTC CLEAR

- (1) Connect the intelligent tester to the DLC3.
- (2) Turn the ignition switch to the ON position.
- (3) Clear the DTCs following the prompts on the tester screen.
- (4) Recheck DTCs.

HINT:

Intelligent tester has a "Snapshot" function which records the monitored data.

Refer to the intelligent tester operator's manual for further details.

2. DTC CHECK / CLEAR (USING SST CHECK WIRE)

(a) DTC CHECK

- (1) Using SST, connect terminals 13 (TC) and 4 (CG) of the DLC3.

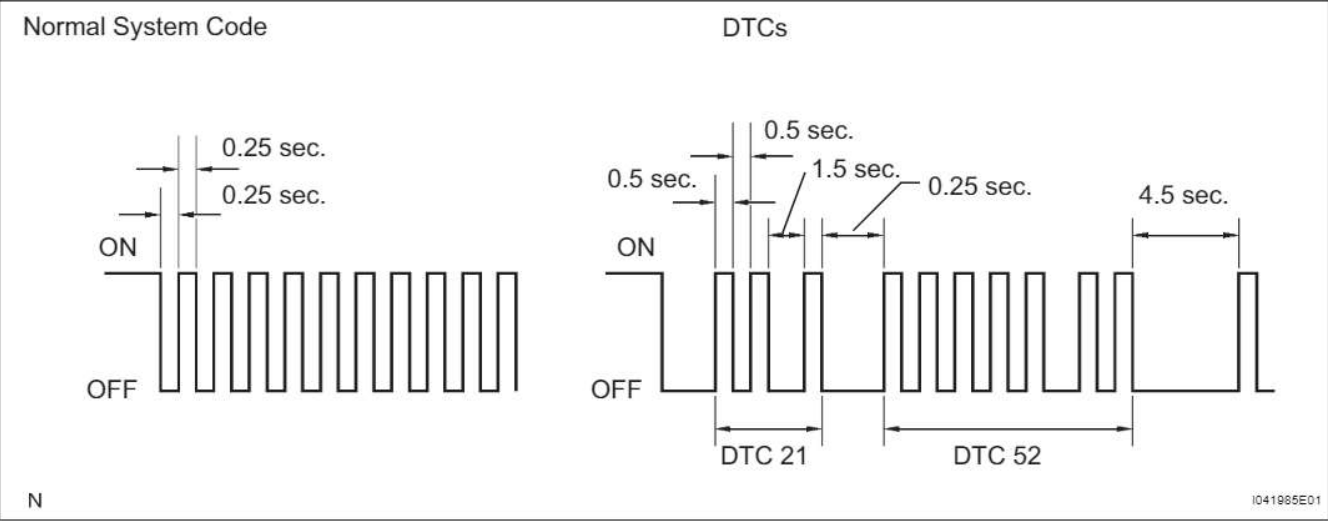
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- (2) Turn the ignition switch to the ON position.

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CRUISE CONTROL – CRUISE CONTROL SYSTEM

(3) Read and record DTCs from the CRUISE main indicator light on the combination meter. As examples, refer to the chart below for the blinking patterns of the normal system code and DTCs 21 and 52.



HINT:
If the CRUISE main indicator light does not blink DTC blinking patterns, or the normal system code blinking pattern, inspect the following circuits.

Relevant Circuit	See Procedure
TC and CG terminal circuit	CC-35
CRUISE main indicator light circuit	CC-39

- (b) DTC CLEAR
- Turn the ignition switch OFF.
 - If DTCs are indicated, repair the relevant circuits referring to the Diagnostic Trouble Code Chart (see page [CC-16](#)).
 - Clear the DTCs according to either one of the following procedures.
 - Disconnect the negative (-) battery cable for 60 seconds.
 - Remove the EFI fuse for 60 seconds.
 - Recheck DTCs.

CRUISE CONTROL – CRUISE CONTROL SYSTEM**CC-17****DATA LIST / ACTIVE TEST****1. DATA LIST**

- (a) While the intelligent tester is connected to the DLC3 with the ignition switch in the ON position, the cruise control DATA LIST can be displayed. Follow the prompts on the tester screen to access the DATA LIST.

ECM (Cruise Control):

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
VEHICLE SPD	Vehicle speed / min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual vehicle speed	-
MEMORY SPD	Cruise control memorized speed / min.: 0°, max.: 125°	Actual stored vehicle speed	-
THROTTLE	Required throttle opening angle / min.: 36km/h (22.5 mph), max.: 200 km/h (125 mph)	Actual required throttle opening angle	-
CRUISE CTRL	Cruise control system active condition / ON or OFF	ON: Cruise control activated OFF: Cruise control inactivated	-
MAIN SW (MAIN)	Main switch signal (Main CPU) / ON or OFF	ON: Main switch ON (Pushed on) OFF: Main switch OFF (Pushed off)	-
MAIN SW (SUB)	Main switch signal (Sub CPU) / ON or OFF	ON: Main switch ON (Pushed on) OFF: Main switch OFF (Pushed off)	-
CCS READY M	Cruise control system standby condition (Main CPU) / ON or OFF	ON - OFF: ON / OFF changes each time main switch is pushed in.	-
CCS INDICATOR M	Cruise indicator signal (Main CPU) / ON or OFF	ON: "CRUISE" ON OFF: "CRUISE" OFF	-
CANCEL SW	CANCEL switch signal / ON or OFF	ON: CANCEL switch ON OFF: CANCEL switch OFF	-
SET / COAST SW	SET / - switch signal ON or OFF	ON: SET / - switch ON OFF: SET / - switch OFF	-
RES / ACC SW	RES / + switch signal ON or OFF	ON: RES / + switch ON OFF: RES / + switch OFF	-
STP LIGHT SW2 M	Stop light switch signal (Main CPU) / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
STP LIGHT SW1 S	Stop light switch signal (Sub CPU) / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
STP LIGHT SW2 S	Stop light switch signal (Sub CPU) / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
SHIFT D POS	PNP switch signal (D position) / ON or OFF	ON: Shift position D OFF: Any shift position except D	For automatic transaxle

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DIAGNOSTIC TROUBLE CODE CHART

DTC Code	Detection Item	Trouble Area	See page
P0500/21	Vehicle Speed Sensor Circuit	- Vehicle speed sensor - Vehicle speed sensor circuit - ECM	CC-17
P0503/23	Vehicle Speed Sensor Circuit	- Vehicle speed sensor - Vehicle speed sensor circuit - ECM	CC-17
P0571/52	Stop Light Switch Circuit	- Stop light switch assembly - Stop light switch assembly circuit - ECM	CC-18
P0607/54	Input Signal Circuit Abnormal	- ECM	CC-22

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CRUISE CONTROL – CRUISE CONTROL SYSTEM

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DTC	P0500/21	Vehicle Speed Sensor Circuit
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DTC	P0503/23	Vehicle Speed Sensor Circuit
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DESCRIPTION(see page [ES-212](#))

DTC No.	DTC Detection Condition	Trouble Area
P0500/21	This trouble code is output when the vehicle speed signal from the vehicle speed sensor is cut for 0.14 sec. or more while the cruise control is operating.	- Vehicle speed sensor - Vehicle speed sensor signal circuit - ECM
P0503/23	Momentary interruption and noise are detected when a rapid change of vehicle speed occurs while the cruise control is operating.	- Vehicle speed sensor - Vehicle speed sensor signal circuit - ECM

CC**WIRING DIAGRAM**(see page [ES-212](#))**INSPECTION PROCEDURE**(see page [ES-212](#))

CRUISE CONTROL – CRUISE CONTROL SYSTEM

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INSPECTION PROCEDURE**HINT:**

When troubleshooting in accordance with the PROBLEM SYMPTOMS TABLE, be sure to follow the table before replacing the ECM.

1 CHOOSE DIAGNOSIS METHOD

(a) Choose the diagnosis method.

Method	Proceed to
Using intelligent tester	A
Not using intelligent tester	B

CC**B****Go to step 3****A****2 READ VALUE ON INTELLIGENT TESTER**

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position, and turn the intelligent tester main switch on.
- (c) Select the item "STP LIGHT SW M", "STP LIGHT SW S1" or "STP LIGHT SW D2" in the DATA LIST, and read its value display on the intelligent tester.
- (d) Check that the stop light come on when the brake pedal is depressed, and goes off when the brake pedal is released.

ECM (Cruise Control)

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
STP LIGHT SW2 M	Stop light SW signal (Main CPU) / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
STP LIGHT SW1 M	Stop light SW signal (Sub CPU) / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
STP LIGHT SW2 S	Stop light SW signal (Sub CPU) / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-

OK:

When the brake pedal is operated, the display changes as shown above.

Result

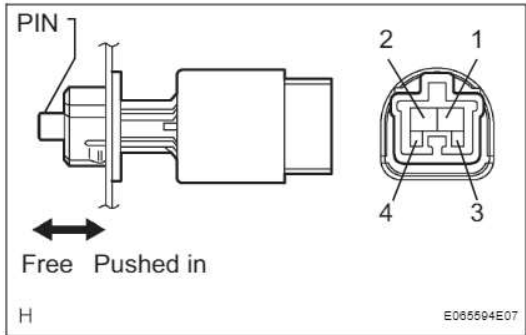
Result	Proceed to
OK (When troubleshooting in accordance with the DTC CHART.)	A
OK (When troubleshooting in accordance with the PROBLEM SYMPTOMS TABLE.)	B
NG	C

A**REPLACE ECM**

B **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

C

3 INSPECT STOP LIGHT SWITCH ASSEMBLY



- (a) Disconnect the S8 stop light switch connector.
- (b) Measure the resistance according to the value(s) in the table below.

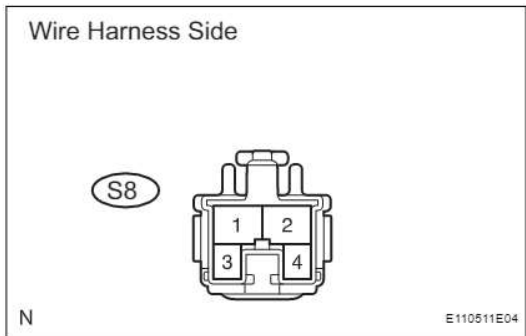
Standard resistance

Tester Connection	Condition	Specified Condition
1 - 2	Switch pin free	Below 1 Ω
3 - 4	Switch pin free	10 kΩ or higher
1 - 2	Switch pin pushed in	10 kΩ or higher
3 - 4	Switch pin pushed in	Below 1 Ω

NG **REPLACE STOP LIGHT SWITCH ASSEMBLY**

OK

4 CHECK WIRE HARNESS (STOP LIGHT SWITCH - BATTERY)



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

Standard voltage

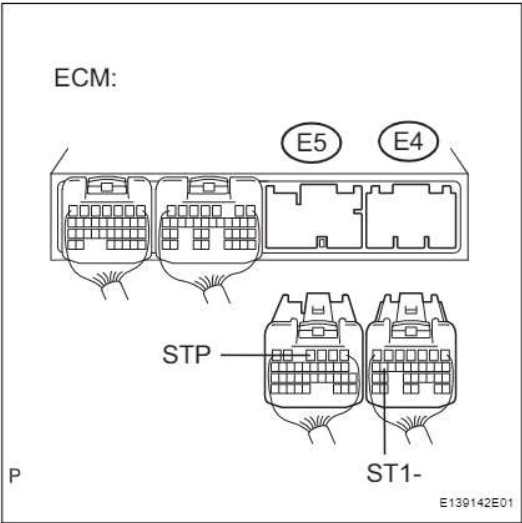
Tester Connection	Condition	Specified Condition
2 - Body ground	Always	10 to 14 V
3 - Body ground	Ignition switch ON	10 to 14 V

NG **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

5

CHECK WIRE HARNESS (ECM - STOP LIGHT SWITCH)



- (a) Reconnect the S8 stop light switch connector.
- (b) Disconnect the E4 and E5 connectors from the ECM.
- (c) Turn the ignition switch to the ON position.
- (d) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
E4-16 (ST1-) - Body ground	Brake pedal depressed	Below 1 V
E4-16 (ST1-) - Body ground	Brake pedal released	10 to 14 V
E5-4 (STP) - Body ground	Brake pedal depressed	10 to 14 V
E5-4 (STP) - Body ground	Brake pedal released	Below 1 V

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM

CC-24

CRUISE CONTROL – CRUISE CONTROL SYSTEM

DTC	P0607/54	Input Signal Circuit Abnormal
-----	----------	-------------------------------

DESCRIPTION

This DTC indicates the internal abnormalities of the ECM.

DTC No.	Detection Condition	Trouble Area
P0607/54	The ECM has a supervisory CPU and a control ECU inside. This trouble code is output when each input STP signal is different for 0.15 sec. or more. This trouble code is output after 0.4 sec. has passed from the time the cruise cancel input signal (STP input) is input into the ECM.	ECM

HINT:
The ECM receives signals from each sensor to control all the functions of the cruise control with the microcomputer.
When a trouble code is detected, the fail-safe remains on until the ignition switch is turned off.

INSPECTION PROCEDURE

1	CHECK FOR DTC
---	---------------

- (a) Delete the DTC.
- (b) Check for DTCs.

OK:
No DTC is output.

NG	REPLACE ECM
----	-------------

OK

END

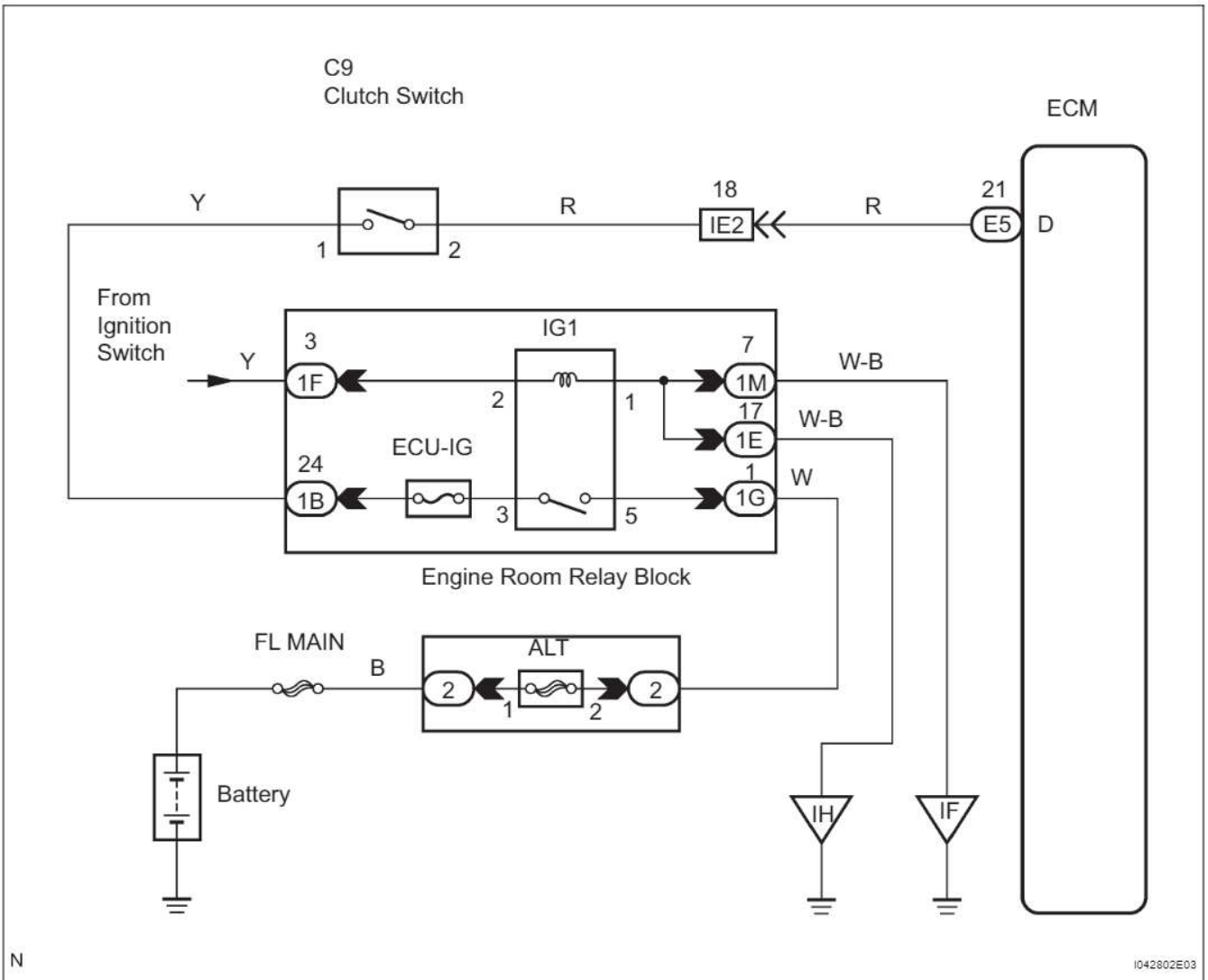
CRUISE CONTROL – CRUISE CONTROL SYSTEM

CC-25

Clutch Switch Circuit**DESCRIPTION**

Clutch switch circuit inspection is necessary for manual transaxle vehicles.

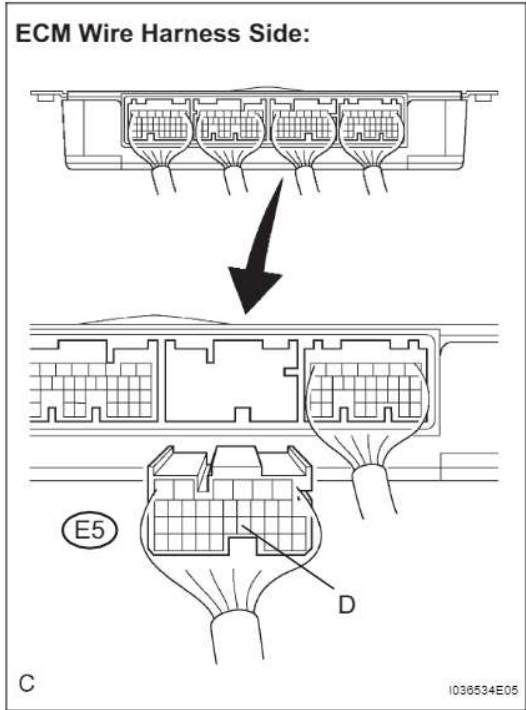
When the clutch pedal is released, the ECM receives positive (+) battery voltage through the IG1 relay and ECU-IG fuse. While depressing the clutch pedal, the clutch switch assembly sends a signal to terminal D of the ECM. The ECM cancels cruise control driving when terminal D receives the signal.

WIRING DIAGRAM

INSPECTION PROCEDURE

1

CHECK WIRE HARNESS (ECM - BATTERY)



- (a) Disconnect the E5 connector from the ECM
- (b) Turn the ignition switch on the ON position.
- (c) Measure the voltage according to the value(s) in the table below.
- Standard voltage

Tester Connection	Condition	Specified Condition
E5-21 (D) - Body ground	Clutch pedal depressed	Below 1 V
E5-21 (D) - Body ground	Clutch pedal released	10 to 14 V

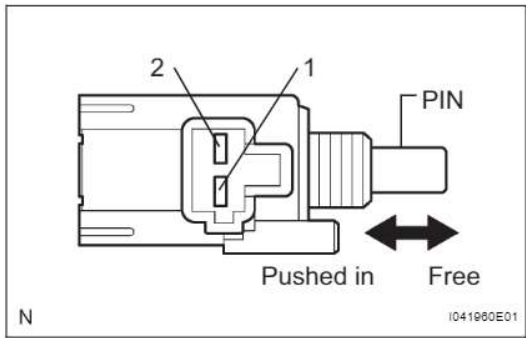
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG

2

INSPECT CLUTCH SWITCH ASSEMBLY



- (a) Disconnect the C9 clutch switch connector.
- (b) Measure the resistance according to the value(s) in the table below.
- Standard resistance

Tester Connection	Condition	Specified Condition
1 - 2	Switch pin free (Clutch pedal depressed)	10 kΩ or higher
1 - 2	Switch pin pushed in (Clutch pedal depressed)	Below 1 Ω

NG

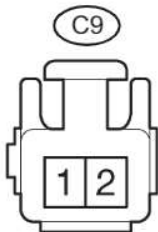
REPLACE CLUTCH SWITCH ASSEMBLY

OK

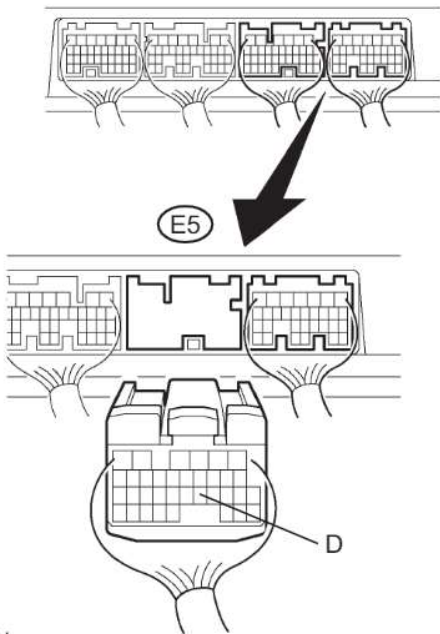
3

CHECK WIRE HARNESS (CLUTCH SWITCH - ECM)

Clutch Switch Connector Front View:



ECM Wire Harness View:



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

Standard resistance

Tester Connection	Condition	Specified Condition
C9-2 (D) - E5-21 (D)	Always	Below 1 Ω
E5-21 (D) - Body ground	Always	10 kΩor higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

CC

OK

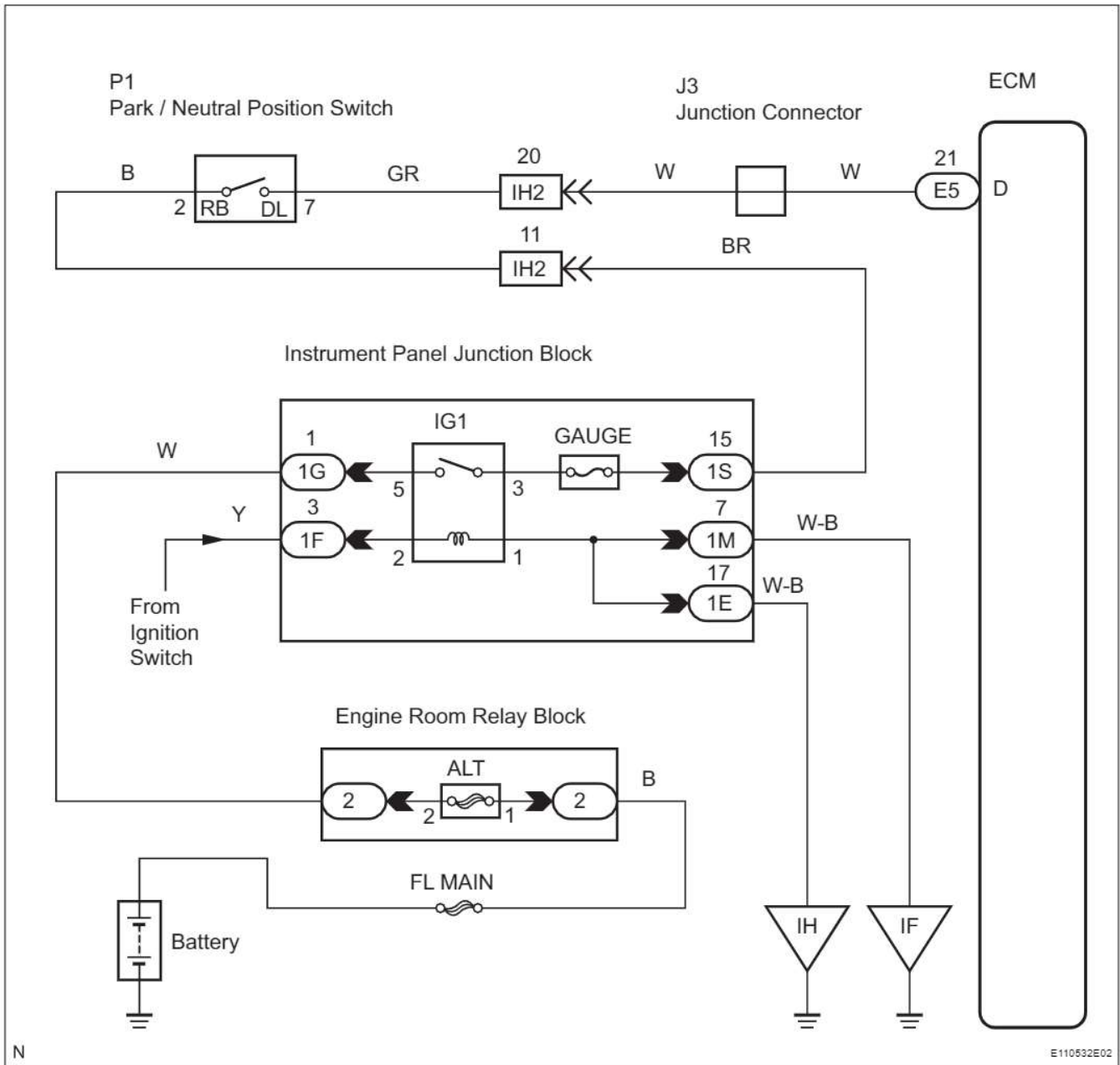
REPAIR OR REPLACE HARNESS AND CONNECTOR (CLUTCH SWITCH - BATTERY)

CC-28

CRUISE CONTROL – CRUISE CONTROL SYSTEM

Park / Neutral Position Switch Circuit**DESCRIPTION**

The park / neutral position switch circuit inspection is necessary for automatic transaxle equipped vehicle. When the shift lever is in any position except D, a signal is sent from the park / neutral position switch to the ECM. When this signal is input during cruise control driving, the ECM cancels the cruise control.

WIRING DIAGRAM

CRUISE CONTROL – CRUISE CONTROL SYSTEM

CC-29

INSPECTION PROCEDURE

1 CHOOSE DIAGNOSIS METHOD

(a) Choose the diagnosis method.

Method	Proceed to
Using intelligent tester	A
Not using intelligent tester	B

B**Go to step 3****A****2 READ VALUE ON INTELLIGENT TESTER**

- (a) Connect the intelligent tester to the DLC3.
 (b) Turn the ignition switch to the ON position and turn the intelligent tester main switch on.
 (c) Select the item below in the "DATA LIST", and read the display on the intelligent tester.

ECM (Cruise Control)

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
SHIFT D POS	PNP SW signal (D position) ON or OFF	ON: Shift position D OFF: Any shift position except D	-

OK:

When the shift lever is operated, the display changes as shown above.

OK

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

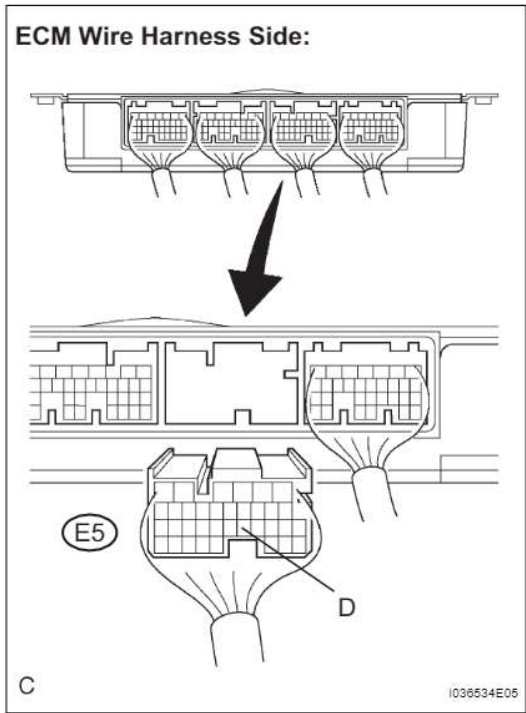
NG**CC**

CC-30

CRUISE CONTROL – CRUISE CONTROL SYSTEM

3

CHECK WIRE HARNESS (ECM - BATTERY)



- (a) Disconnect the E5 connector from the ECM.
- (b) Turn the ignition switch to the ON position.
- (c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
E5-21 (D) - Body ground	Shift position D	10 to 14 V
E5-21 (D) - Body ground	Any shift position except D	Below 1 V

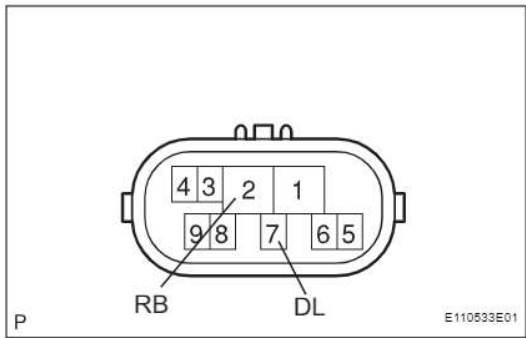
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG

4

INSPECT PARK / NEUTRAL POSITION SWITCH ASSEMBLY



- (a) Disconnect the P1 park / neutral position switch connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
2 (RB) - 7 (DL)	Shift position D	Below 1 Ω
2 (RB) - 7 (DL)	Any shift position except D	10 k Ω or higher

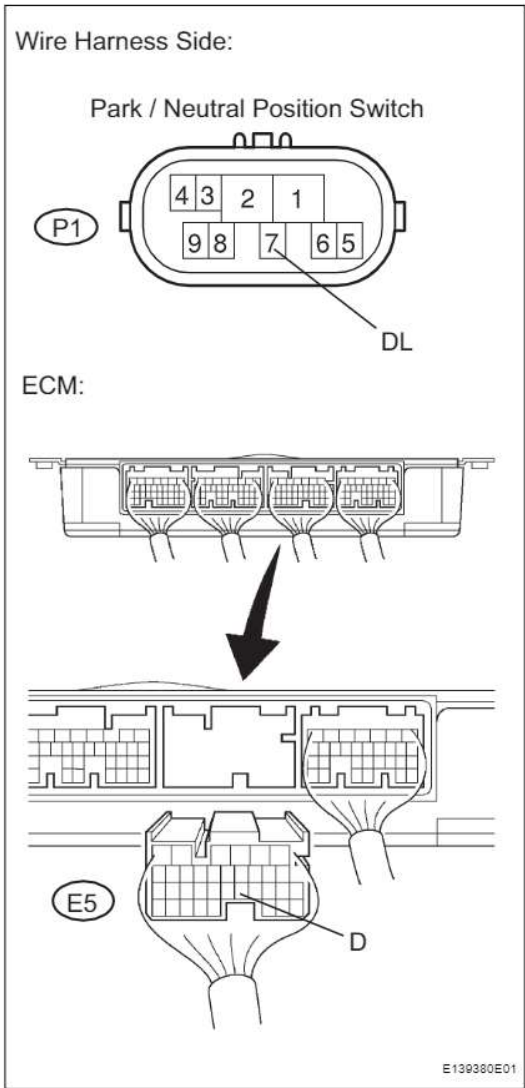
NG

REPLACE PARK / NEUTRAL POSITION SWITCH ASSEMBLY

OK

5

CHECK WIRE HARNESS (PARK / NEUTRAL POSITION SWITCH - ECM)



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

Standard resistance

Tester Connection	Condition	Specified Condition
P1-7 (DL) - E5-21 (D)	Always	Below 1 Ω
E5-21 (D) - Body ground	Always	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

CC

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (PARK / NEUTRAL POSITION SWITCH - BATTERY)

CC-32

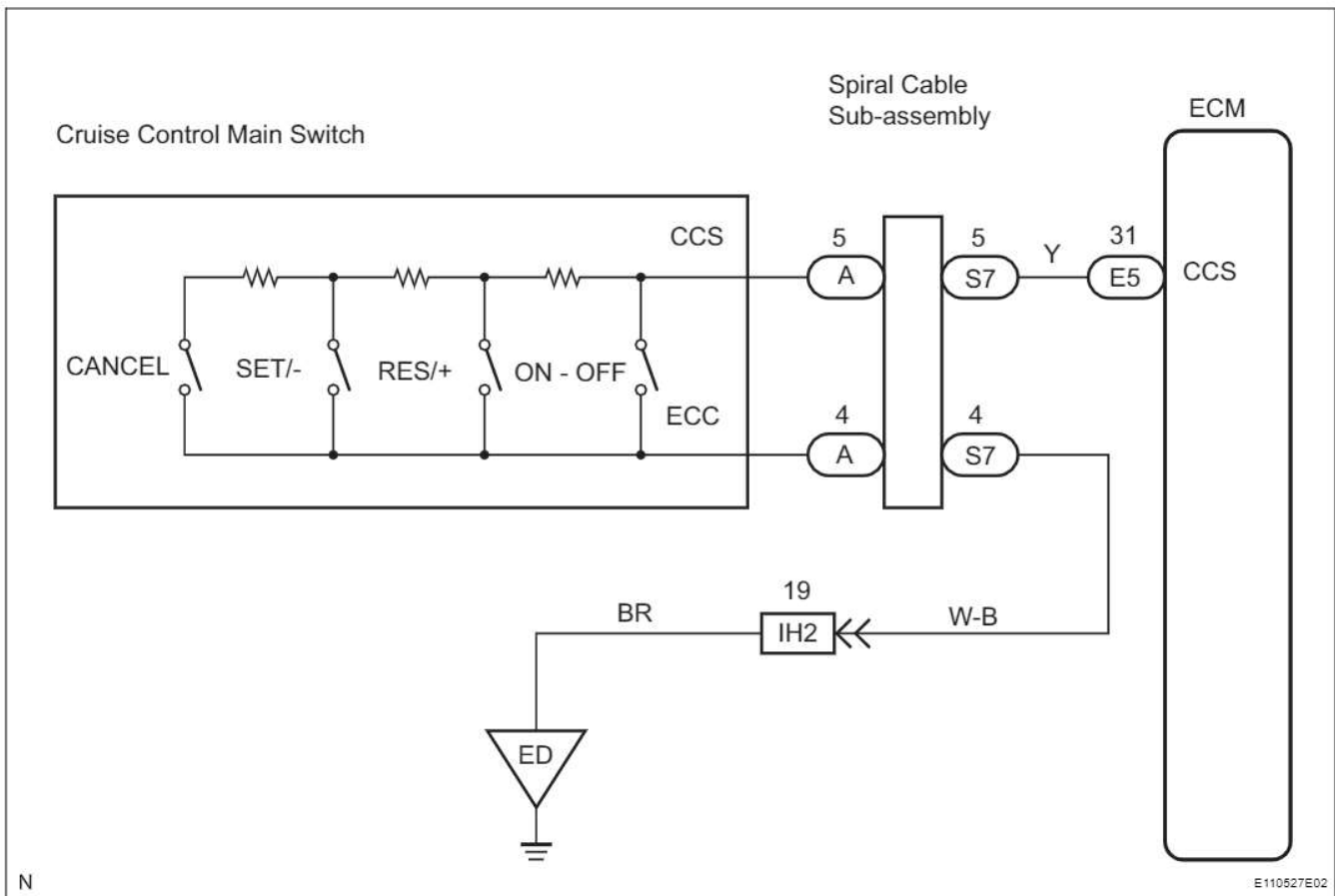
CRUISE CONTROL – CRUISE CONTROL SYSTEM

Cruise Control Switch Circuit

DESCRIPTION

The cruise control main switch operates seven functions: SET, '-' (COAST), TAP-DOWN, RESUME, '+' (ACCEL), TAP-UP, and CANCEL. The SET, TAP-DOWN and COAST functions, and the RESUME, TAP-UP and ACCEL functions are operated with the same switch. The cruise control main switch is an automatic return type switch which turns on only while operating it in each arrow direction and turns off after releasing it. The internal contact point of the cruise control main switch is turned on with the switch operation. Then the ECM reads the voltage that has been changed by the switch operation to control SET, '-' (COAST), RESUME, '+' (ACCEL) and CANCEL.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHOOSE DIAGNOSIS METHOD

(a) Choose the diagnosis method.

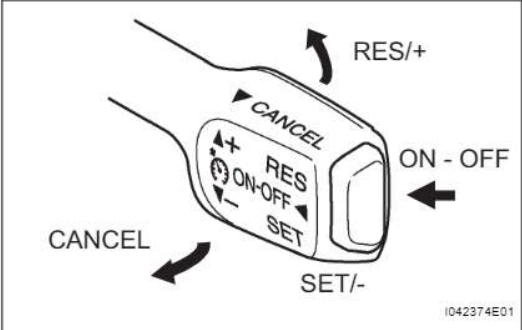
Method	Proceed to
Using intelligent tester	A
Not using intelligent tester	B

B

Go to step 3

A

2 READ VALUE ON INTELLIGENT TESTER



- (a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position.
(c) According to the display on the tester, read the "DATA LIST".

CC

ECM (Cruise Control)

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
MAIN SW (MAIN)	Main SW signal (Main CPU) ON or OFF	ON: Main SW ON (Pushed on) OFF: Main SW OFF (Pushed off)	-
MAIN SW (SUB)	Main SW signal (Sub CPU) ON or OFF	ON: Main SW ON (Pushed on) OFF: Main SW OFF (Pushed off)	-
CANCEL SW	CANCEL SW signal ON or OFF	ON: CANCEL SW ON OFF: CANCEL SW OFF	-
SET / COAST SW	SET/- SW signal ON or OFF	ON: SET/- SW ON OFF: SET/- SW OFF	-
RES / ACC SW	RES/+ SW signal ON or OFF	ON: RES/+ SW ON OFF: RES/+ SW OFF	-

OK:
When the cruise control main switch is operated, the display changes as shown above.

Result

Result	Proceed to
OK	A
NG (All items are defective.)	B
NG (One to four items are defective.)	C

A

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C

REPLACE CRUISE CONTROL MAIN SWITCH ASSEMBLY

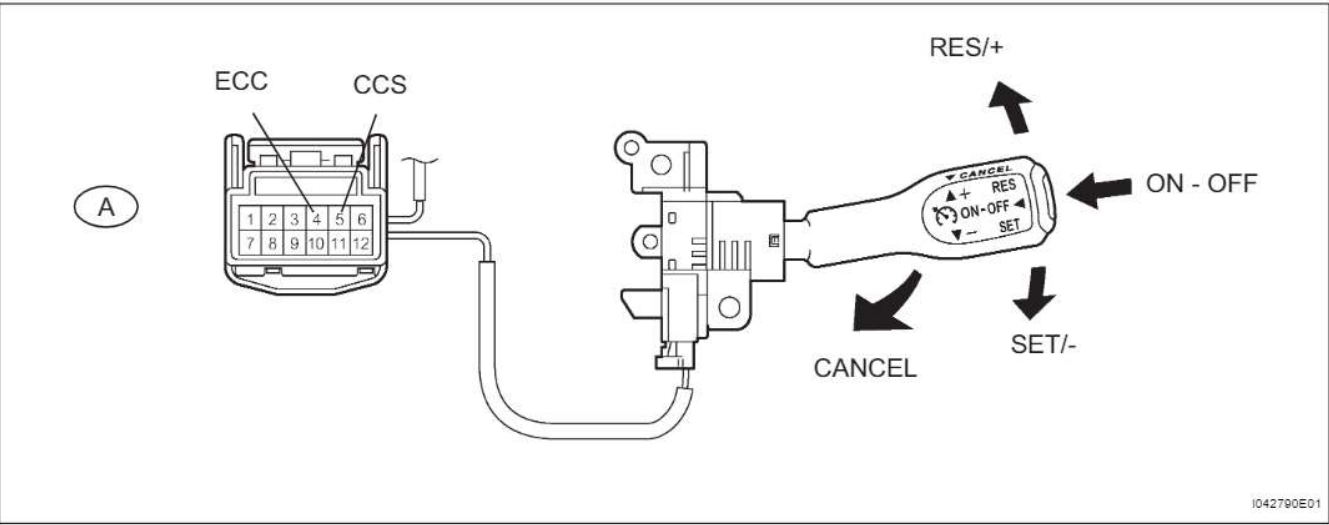
B

3 INSPECT CRUISE CONTROL MAIN SWITCH ASSEMBLY

- (a) Disconnect the cruise control main switch connector.

CC-34

CRUISE CONTROL – CRUISE CONTROL SYSTEM



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

Standard resistance

Tester Connection	Condition	Specified Condition
4 - 5	Neutral	10 kΩor higher
4 - 5	RES/+	210 to 270 Ω
4 - 5	SET/-	560 to 700 Ω
4 - 5	CANCEL	1,380 to 1,700 Ω
4 - 5	Main switch OFF	10 kΩor higher
4 - 5	Main switch ON	Below 1 Ω

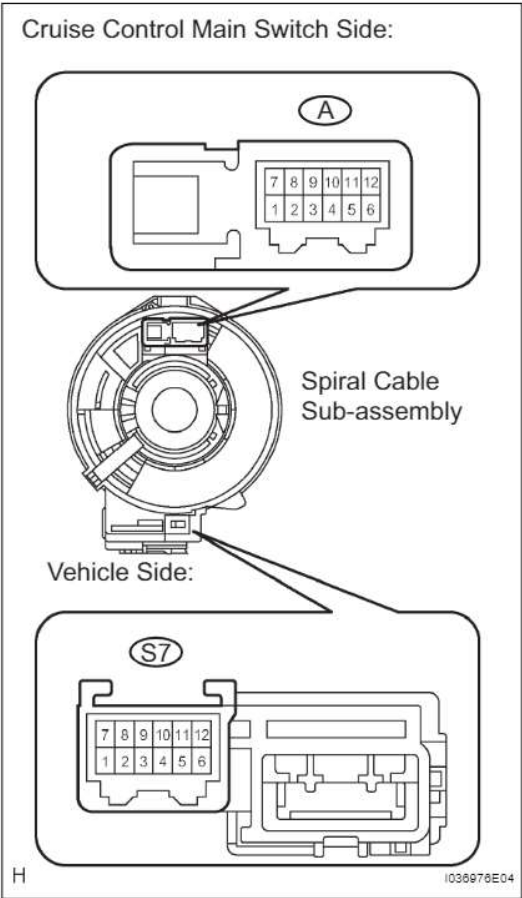
NG

REPLACE CRUISE CONTROL MAIN SWITCH ASSEMBLY

OK

4

INSPECT SPIRAL CABLE SUB-ASSEMBLY



- (a) Disconnect the S7 spiral cable connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
A-4 - S7-4	Always	Below 1 Ω
A-5 - S7-5	Always	Below 1 Ω

NG → REPLACE SPIRAL CABLE SUB-ASSEMBLY

CC

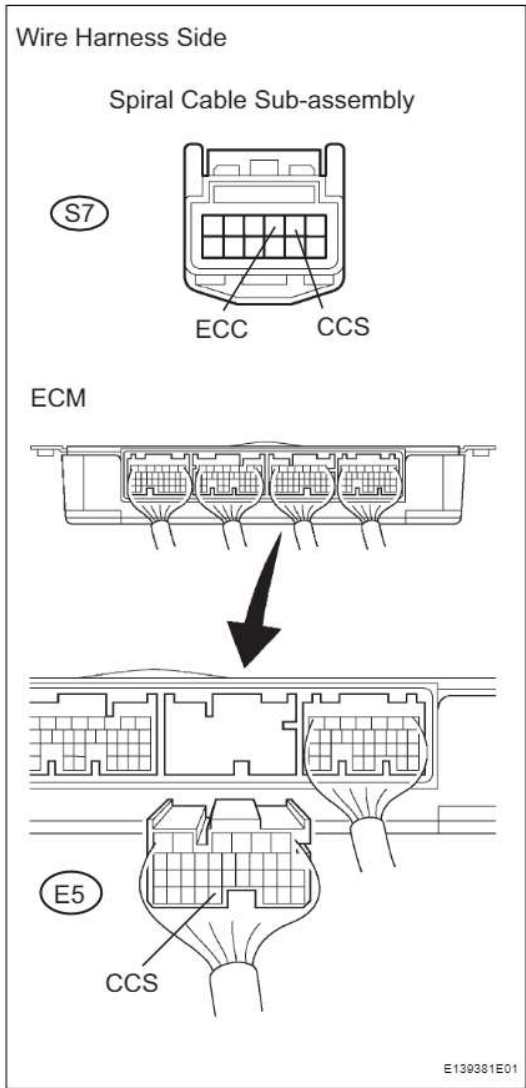
OK

CC-36

CRUISE CONTROL – CRUISE CONTROL SYSTEM

5

CHECK WIRE HARNESS (SPIRAL CABLE - ECM AND BODY GROUND)



- (a) Disconnect the E5 connector from the ECM.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Connection	Specified Condition
S7-5 - E5-31 (CCS)	Always	Below 1 Ω
E5-31 (CCS) - Body ground	Always	10 kΩ or higher
S7-4 - Body ground	Always	Below 1 Ω

NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR

CRUISE CONTROL – CRUISE CONTROL SYSTEM

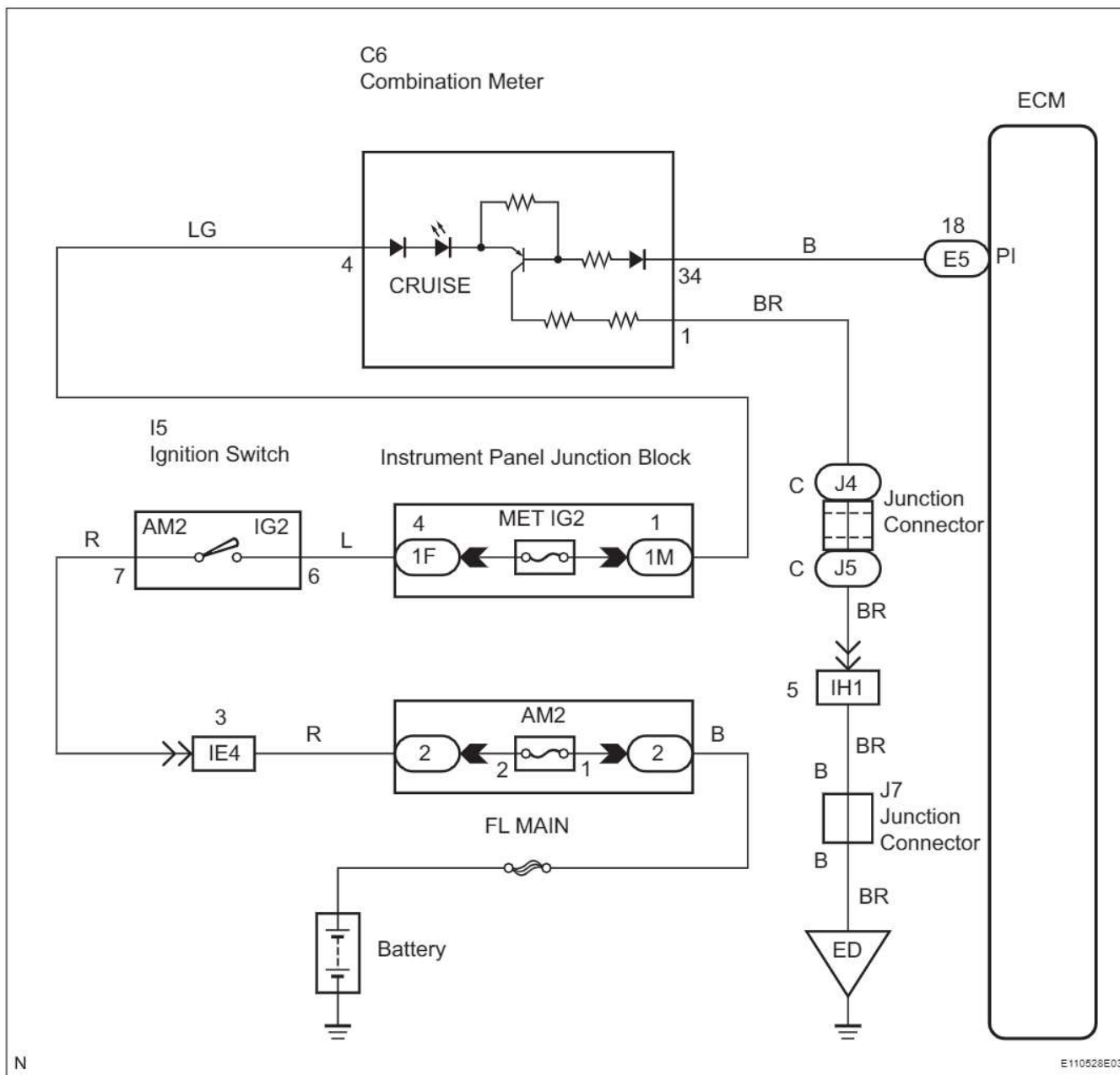
CC-37

Cruise Main Indicator Light Circuit

DESCRIPTION

When the cruise control main switch is turned off, the cruise control does not operate.

WIRING DIAGRAM



CC

CC-38

CRUISE CONTROL – CRUISE CONTROL SYSTEM

INSPECTION PROCEDURE

1

CHOOSE DIAGNOSIS METHOD

(a) Choose the diagnosis method.

Method	Proceed to
Using intelligent tester	A
Not using intelligent tester	B

B

Go to step 3

A

2

READ VALUE ON INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position and turn the intelligent tester main switch on.
- (c) Select the item below in the "DATA LIST", and read the display on the intelligent tester.

ECM (Cruise Control)

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
CCS INDICATOR M	Cruise indicator signal (Main CPU) ON or OFF	ON: "CRUISE" ON OFF: "CRUISE" OFF	-

OK:
When the cruise control main switch is operated, the display changes as shown above.

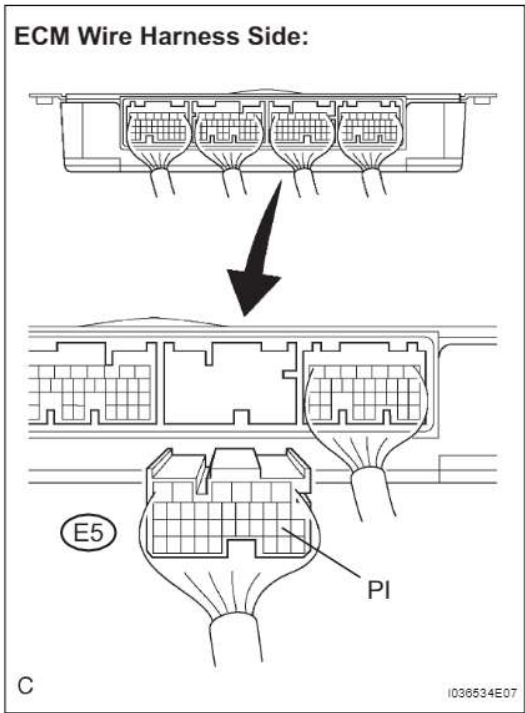
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG

3

CHECK WIRE HARNESS (ECM - BATTERY)



- (a) Disconnect the E5 connector from the ECM.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
E5-18 (P1) - Body ground	Cruise main indicator light ON →OFF (Cruise control main switch ON → OFF)	Below 1 V→ 10 to 14 V

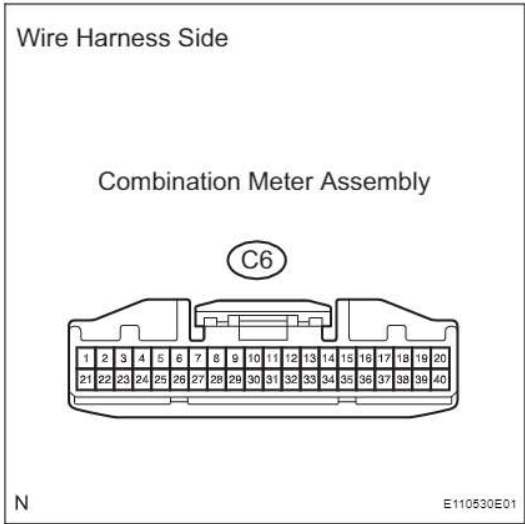
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG

4

INSPECT COMBINATION METER ASSEMBLY



- (a) Disconnect the C6 combination meter connector.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
C6-4 - Body ground	Ignition switch OFF	Below 1 V
C6-4 - Body ground	Ignition switch ON	10 to 14 V

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR (COMBINATION METER-BATTERY)

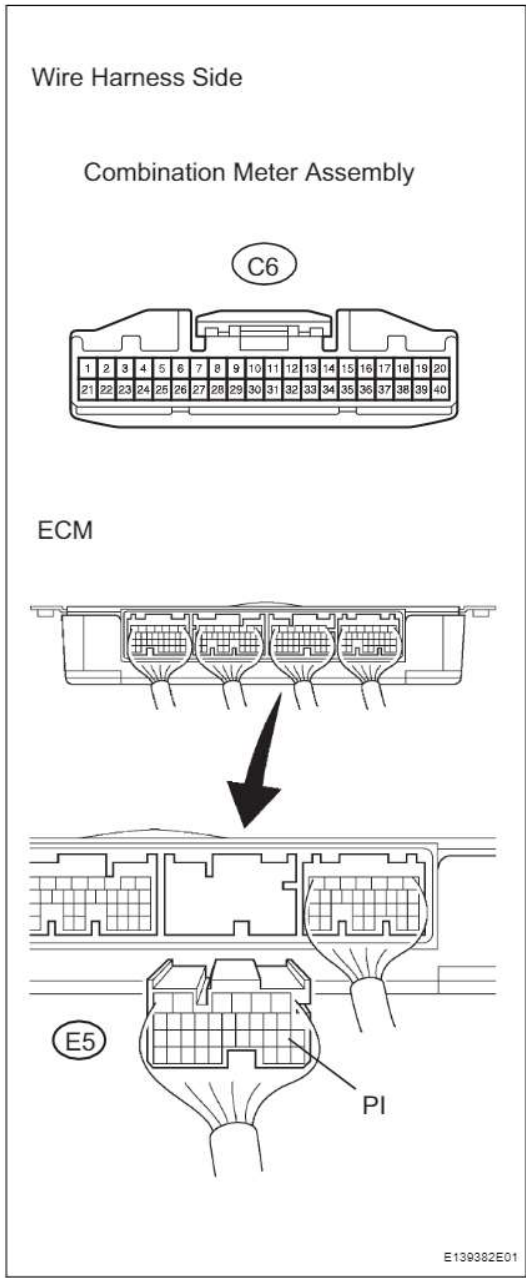
OK

CC-40

CRUISE CONTROL – CRUISE CONTROL SYSTEM

5

CHECK WIRE HARNESS (COMBINATION METER - ECM AND BODY GROUND)



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

Standard resistance		
Tester Connection	Condition	Specified Condition
C6-34 - E5-18 (PI)	Always	Below 1 Ω
E5-18 (PI) - Body ground	Always	10 k Ω or higher
C6-1 - Body ground	Always	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

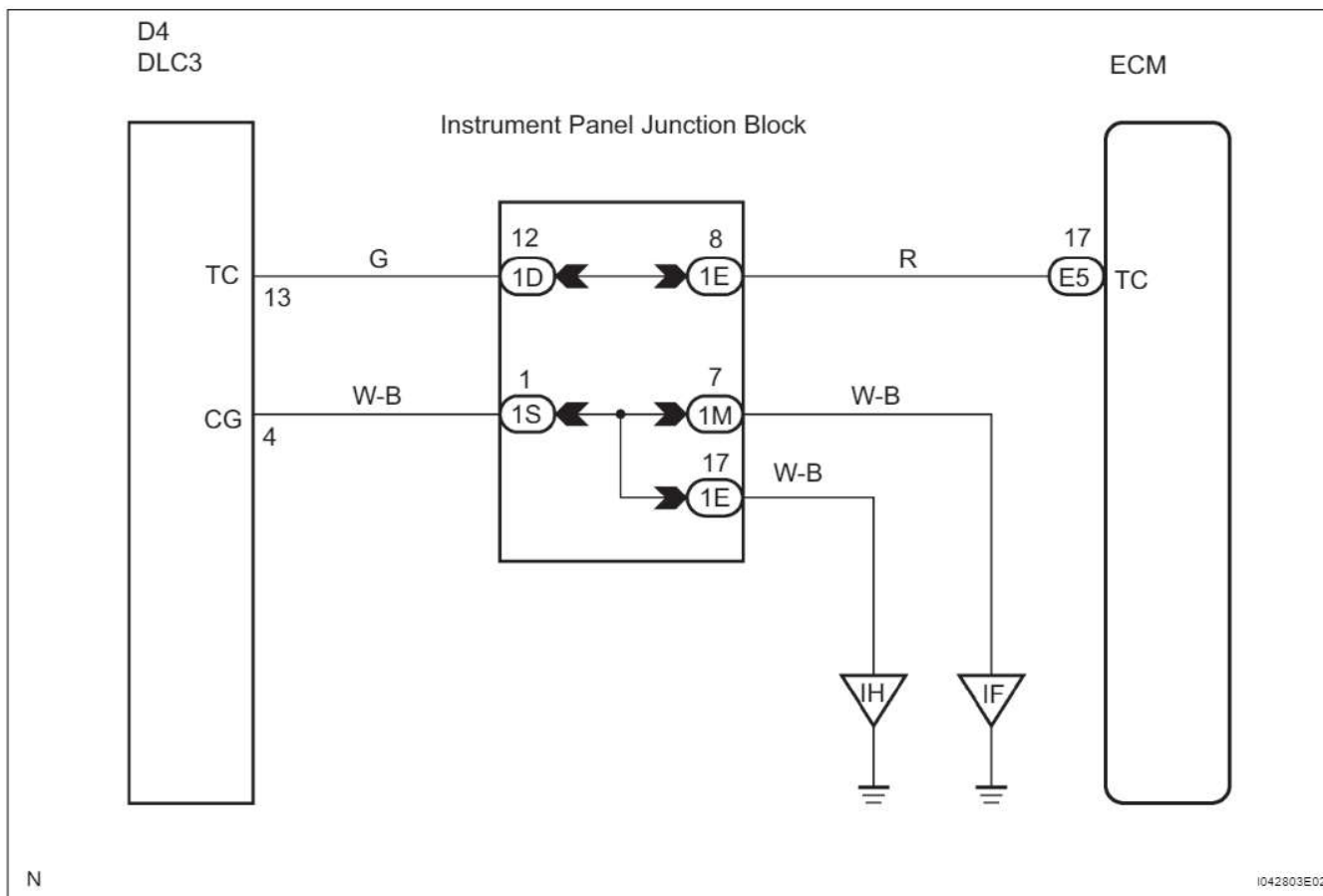
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

CRUISE CONTROL – CRUISE CONTROL SYSTEM

CC-41

Diagnosis Circuit**DESCRIPTION**

Making a short circuit between terminals TC and CG of the DLC3 will output DTCs from the DLC3.

WIRING DIAGRAM**HINT:**

When a particular warning light stays blinking, a ground short in the wiring of terminal TC of the DLC3 or an internal ground short in the relevant ECU is suspected.

CC-42

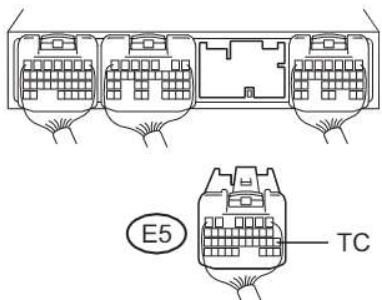
CRUISE CONTROL – CRUISE CONTROL SYSTEM

INSPECTION PROCEDURE

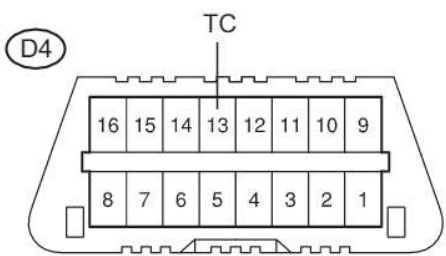
1

CHECK WIRE HARNESS (DLC3 - ECM AND BODY GROUND)

ECM Wire Harness Side:



DLC3:



OK

(a) Disconnect the E4 connector from the ECM.

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

Standard resistance

Tester Connection	Condition	Specified Condition
D4-13 (TC) - E4-20 (TC)	Always	Below 1 Ω
D4-13 (TC) - Body ground	Always	10 kΩ or higher

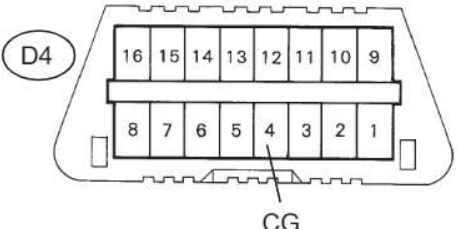
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

2

CHECK WIRE HARNESS (DLC3 - BODY GROUND)

DLC3:



OK

REPLACE ECM

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

Standard resistance

Tester Connection	Condition	Specified Condition
D4-4 (CG) - Body ground	Always	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

https://cardiagn.com/cruise-control-07-scion-tc/

42/42