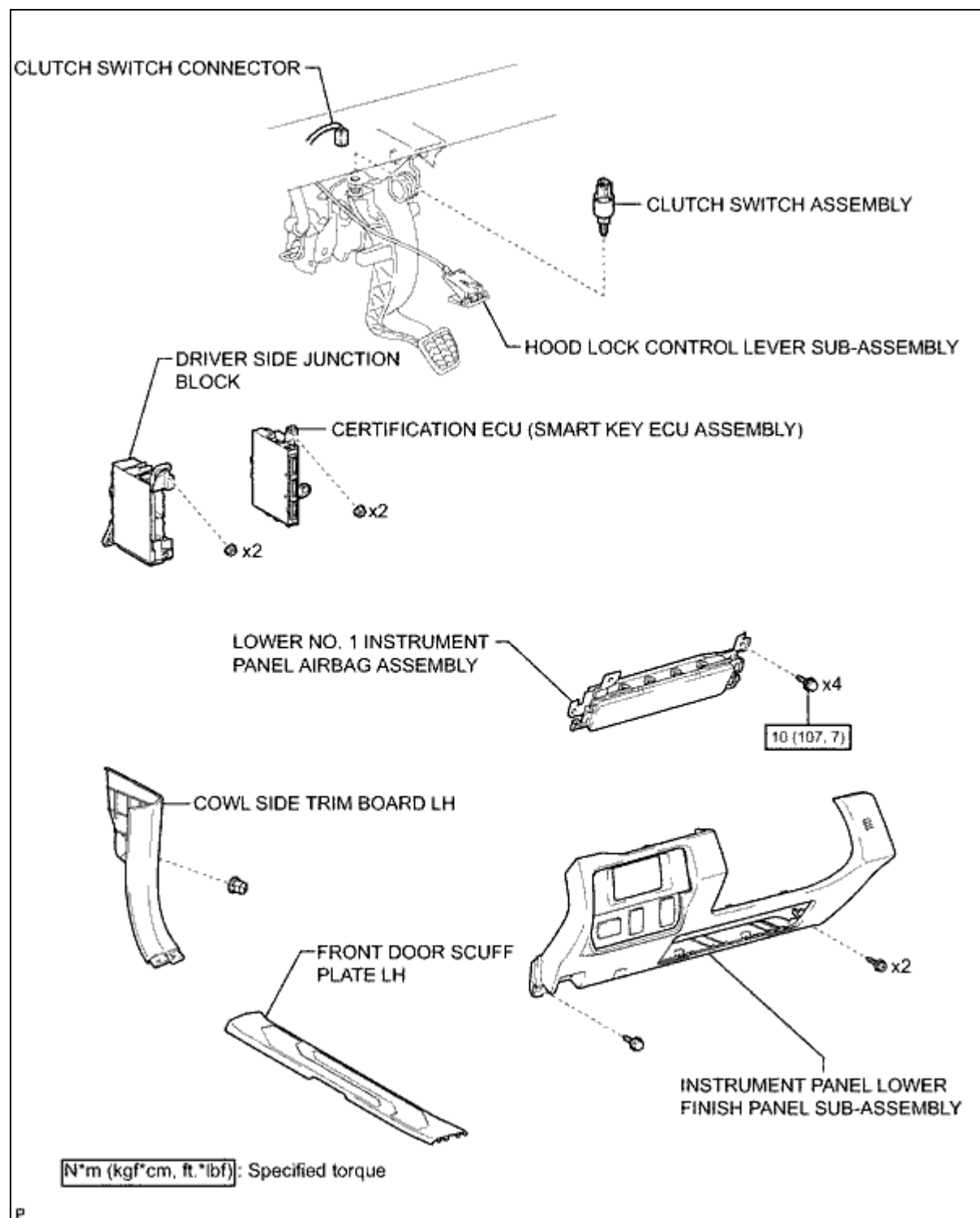


Last Modified: 11-13-2015	6.6 K	Doc ID: RM00000170100AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CLUTCH SWITCH: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016HH026X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CLUTCH SWITCH: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL CLUTCH SWITCH ASSEMBLY

- (a) Install the clutch switch assembly and tighten the nut.
- (b) Connect the connector.

2. INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)

3. INSTALL LOWER NO. 1 INSTRUMENT PANEL AIRBAG ASSEMBLY [INFO](#)

4. INSTALL DRIVER SIDE JUNCTION BLOCK

- (a) Install the driver side junction block with the 2 nuts.

Torque:

8.0 N·m {82 kgf·cm, 71in·lbf}

5. INSTALL INSTRUMENT PANEL LOWER FINISH PANEL SUB-ASSEMBLY [INFO](#)

6. INSTALL HOOD LOCK CONTROL LEVER SUB-ASSEMBLY [INFO](#)

7. INSTALL COWL SIDE TRIM BOARD LH [INFO](#)

8. INSTALL FRONT DOOR SCUFF PLATE LH (for Access Cab) [INFO](#)

9. INSTALL FRONT DOOR SCUFF PLATE LH (for Double Cab) [INFO](#)

10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

Torque:

5.4 N·m {55 kgf·cm, 48in·lbf}



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016AY024X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CLUTCH SWITCH: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

(a) Wait for at least 90 seconds after disconnecting the cable to prevent the airbag from working.

2. REMOVE FRONT DOOR SCUFF PLATE LH (for Access Cab) INFO

3. REMOVE FRONT DOOR SCUFF PLATE LH (for Double Cab) INFO

4. REMOVE COWL SIDE TRIM BOARD LH INFO

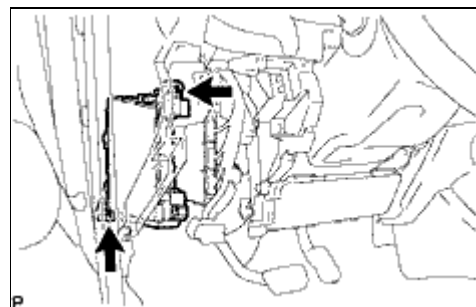
5. SEPARATE HOOD LOCK CONTROL LEVER SUB-ASSEMBLY INFO

6. REMOVE INSTRUMENT PANEL LOWER FINISH PANEL SUB-ASSEMBLY INFO

7. REMOVE LOWER NO. 1 INSTRUMENT PANEL AIRBAG ASSEMBLY INFO

8. SEPARATE DRIVER SIDE JUNCTION BLOCK

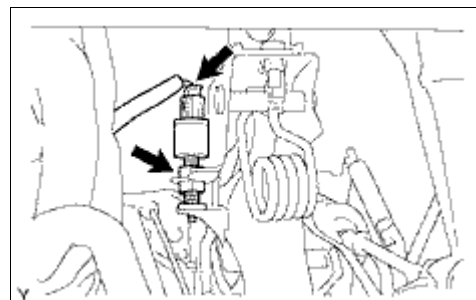
(a) Remove the 2 nuts to separate the driver side junction block.



9. SEPARATE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)

10. REMOVE CLUTCH SWITCH ASSEMBLY

(a) Disconnect the connector.



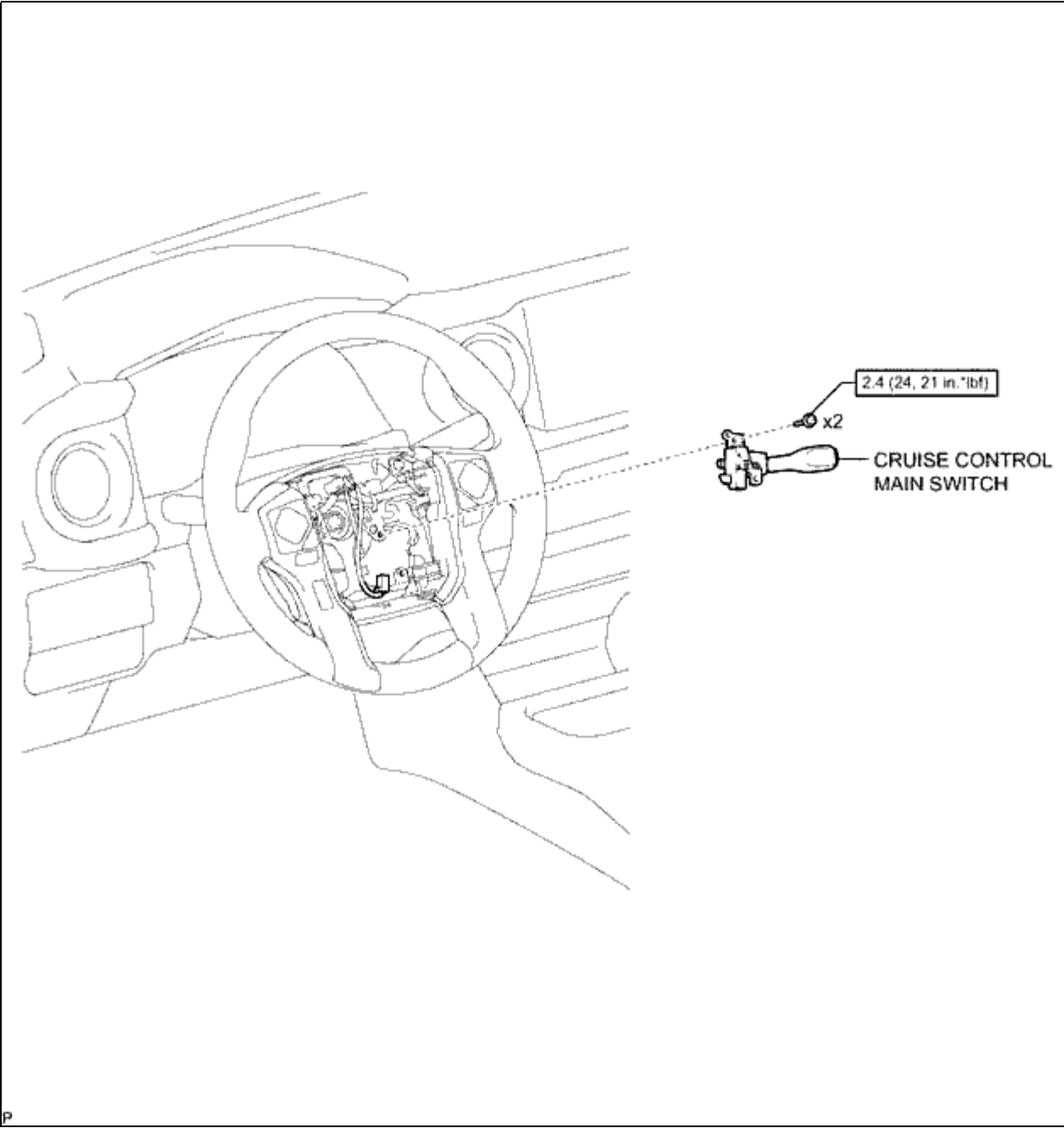
(b) Loosen the nut to remove the clutch switch assembly.



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000000VQ207RX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



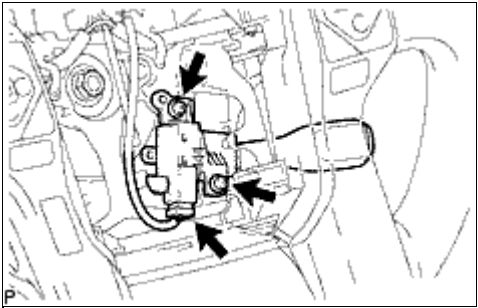
Last Modified: 11-13-2015	6.6 A	Doc ID: RM000000VQ10BEX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL CRUISE CONTROL MAIN SWITCH

- (a) Install the cruise control main switch with the 2 screws and connect the connector.

Torque:
2.4 N·m {24 kgf·cm, 21in·lbf}



2. INSTALL STEERING PAD ASSEMBLY

INFO



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000000VQ30BFX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: REMOVAL; 2016 MY Tacoma [08/2015 -]		

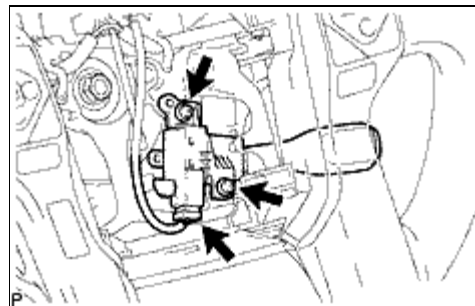
REMOVAL

1. REMOVE STEERING PAD ASSEMBLY

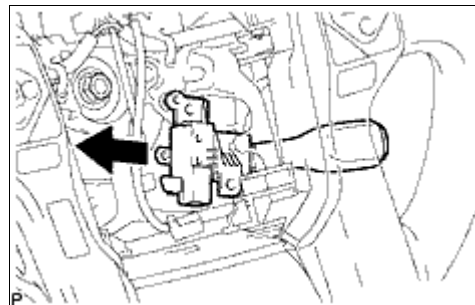
INFO

2. REMOVE CRUISE CONTROL MAIN SWITCH

(a) Disconnect the connector and remove the 2 screws.



(b) Remove the cruise control main switch from the steering wheel.



Last Modified: 11-13-2015	6.6 J	Doc ID: RM00000155W00TX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): Clutch Switch Circuit; 2016 MY Tacoma [08/2015 -]		

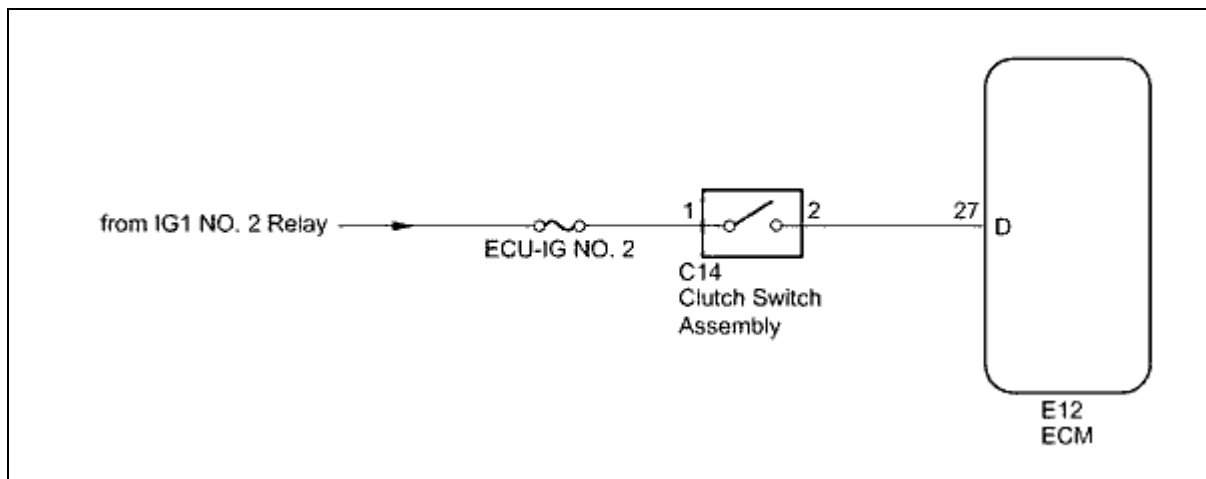
Clutch Switch Circuit

DESCRIPTION

Clutch switch circuit inspection is necessary for manual transmission vehicles.

When the clutch pedal is released, the ECM receives the positive (+) battery voltage through the ECU-IG NO. 2 fuse and ignition switch. While the clutch pedal is depressed, the clutch switch assembly sends a signal to terminal D of the ECM. The ECM cancels cruise control when terminal D receives the signal (voltage of below 1 V).

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

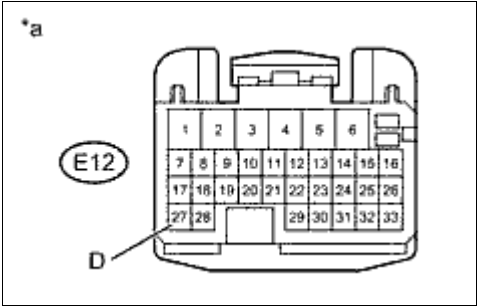
PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (ECM - BATTERY)
----	--

- (a) Disconnect the ECM connector.
- (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
E12-27 (D) - Body ground	Clutch pedal depressed	Below 1 V
E12-27 (D) - Body ground	Clutch pedal released	11 to 14 V



Text in Illustration

*a	Front view of wire harness connector (to ECM)
----	---

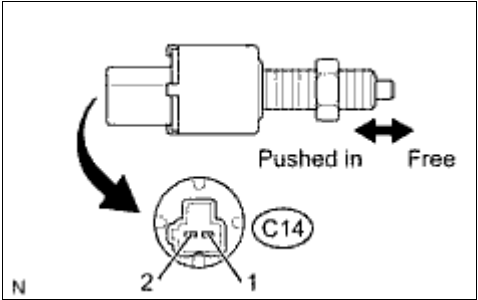
- (d) Reconnect the ECM connector.

OK ▶ **PROCEED TO PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

NG
▼

2.	INSPECT CLUTCH SWITCH ASSEMBLY
----	---------------------------------------

- (a) Remove the clutch switch assembly **INFO** .



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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
-------------------	-----------	---------------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C14-1 - C14-2	Clutch pedal depressed	10 kΩ or higher
C14-1 - C14-2	Clutch pedal released	Below 1 Ω

(c) Reinstall the clutch switch.

NG  **REPLACE CLUTCH SWITCH ASSEMBLY**

OK



3.	CHECK HARNESS AND CONNECTOR (CLUTCH SWITCH ASSEMBLY - ECM)
-----------	---

(a) Disconnect the E12 ECM connector.

(b) Disconnect the C14 clutch switch assembly connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C14-2 - Body ground	Always	10 kΩ or higher
C14-2 - E12-27 (D)	Always	Below 1 Ω

(d) Reconnect the clutch switch connector.

(e) Reconnect the ECM connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR
(CLUTCH SWITCH ASSEMBLY - ECM)**

OK  **REPAIR OR REPLACE HARNESS OR CONNECTOR
(CLUTCH SWITCH ASSEMBLY - BATTERY)**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000000PLU0FRX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): Cruise Control Switch Circuit; 2016 MY Tacoma [08/2015 -]		

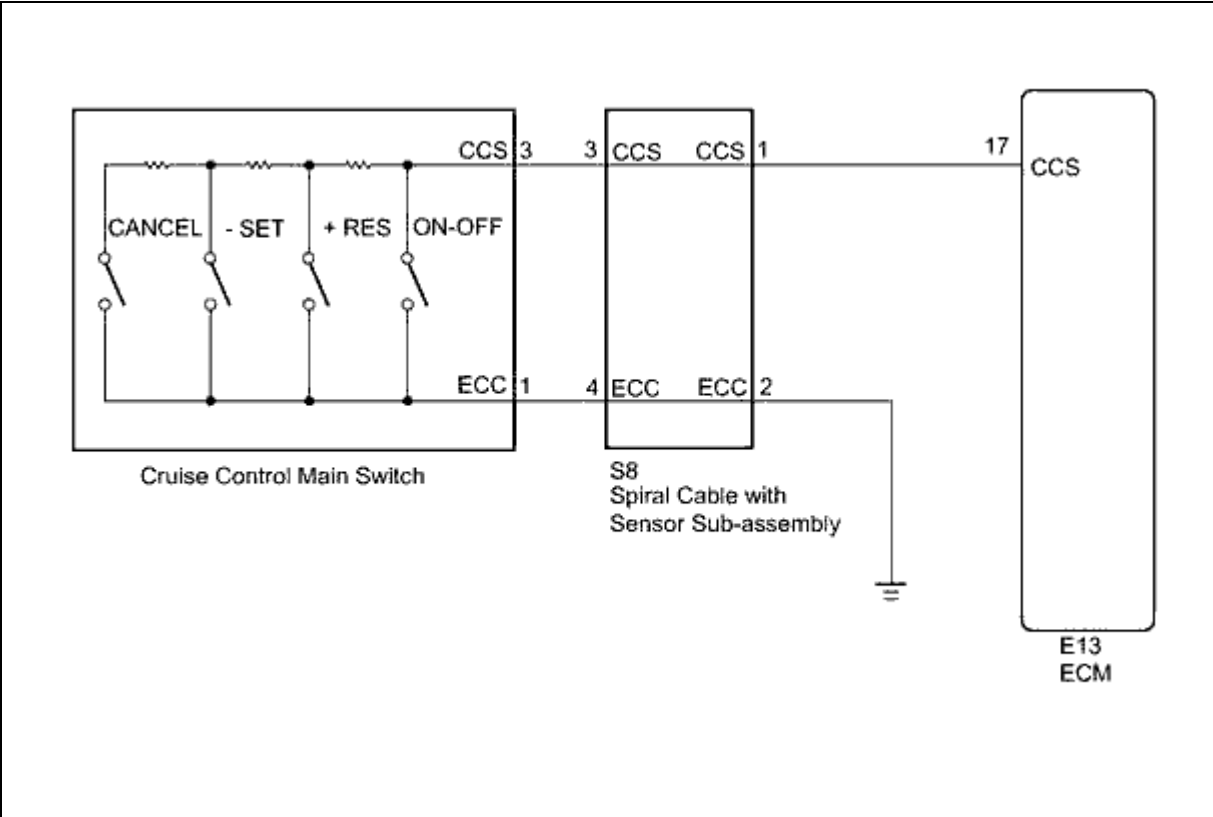
Cruise Control Switch Circuit

DESCRIPTION

This circuit sends signals to the ECM depending on the cruise control main switch condition.

The battery supplies the positive (+) battery voltage to the cruise control main switch. Then terminal CCS of the ECM receives the voltage as the signal according to the switch condition.

WIRING DIAGRAM

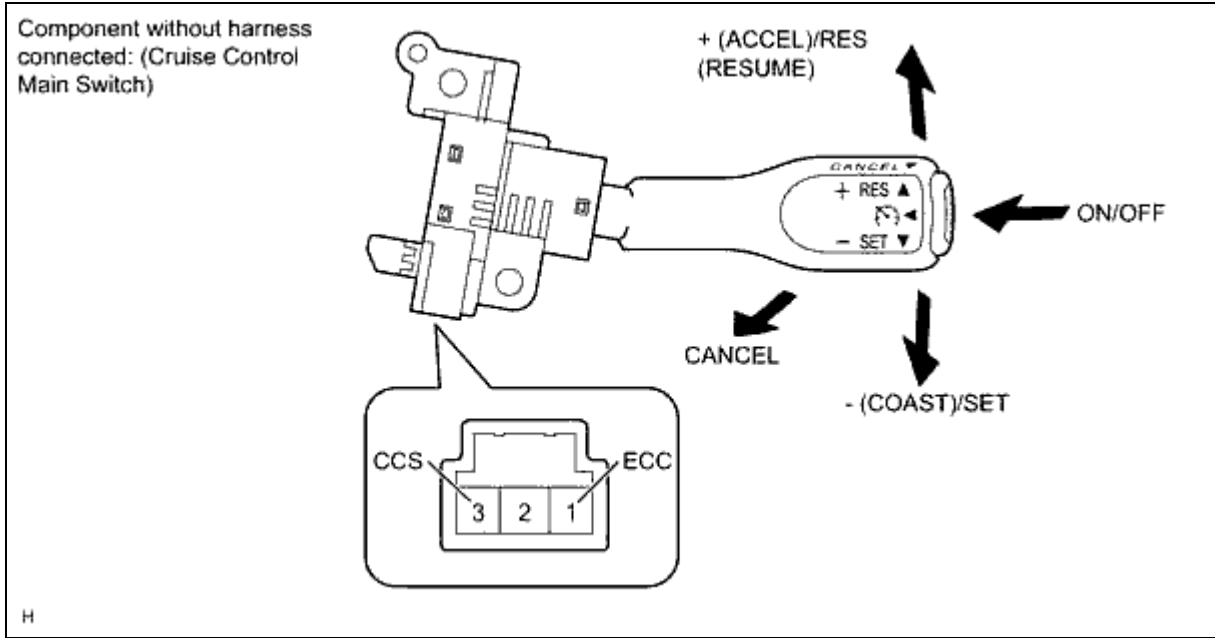


INSPECTION PROCEDURE

PROCEDURE

1.	INSPECT CRUISE CONTROL MAIN SWITCH
-----------	---

(a) Remove the cruise control main switch INFO .



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

Standard Resistance:

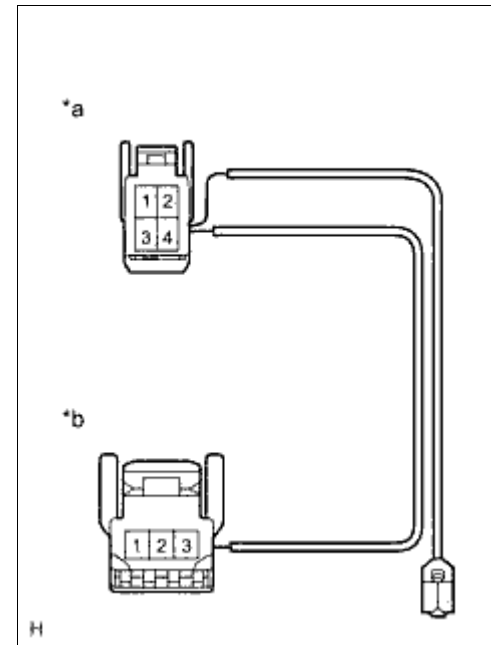
TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 3	+ (ACCEL)/RES (RESUME)	235 to 245 Ω
1 - 3	- (COAST)/SET	617 to 643 Ω
1 - 3	CANCEL	1,509 to 1,571 Ω
1 - 3	Main Switch OFF	10 k Ω or higher
1 - 3	Main Switch ON	Below 1 Ω

(c) Reinstall the cruise control main switch.

NG **REPLACE CRUISE CONTROL MAIN SWITCH**

OK

2.	CHECK HARNESS AND CONNECTOR (CRUISE CONTROL MAIN SWITCH - SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY)
----	---



(a) Disconnect the spiral cable with sensor sub-assembly side and main switch side connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (main switch side) - 3 (spiral cable with sensor sub-assembly side)	Always	Below 1 Ω
3 (main switch side) - 4 (spiral cable with sensor sub-assembly side)	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Spiral Cable with Sensor Sub-assembly)
*b	Front view of wire harness connector (to Cruise Control Main Switch)

(c) Reconnect the spiral cable with sensor sub-assembly side and main switch side connector.

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



3.	INSPECT SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY
-----------	--

NOTICE:

The spiral cable with sensor sub-assembly is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable with sensor sub-assembly may prevent the airbag from deploying. Be sure to read the page shown in the brackets.

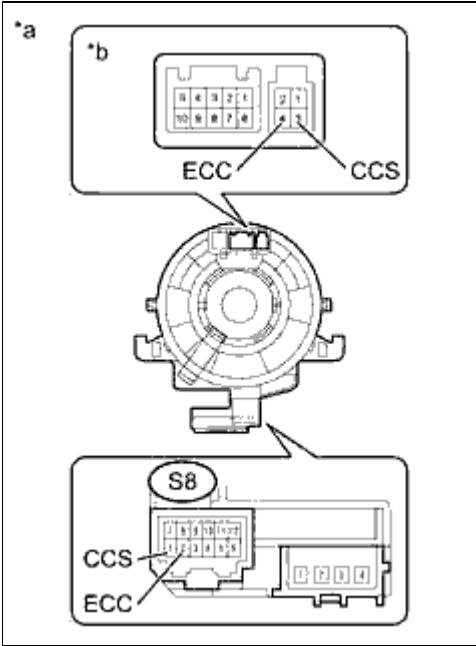
HINT:

- Removal INFO .
- Installation INFO .

- (a) Remove the spiral cable with sensor sub-assembly.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (CCS) main switch side - S8-1 (CCS)	The spiral cable with sensor sub-assembly position is center	Below 1 Ω
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the left	
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the right	
4 (ECC) main switch side - S8-2 (ECC)	The spiral cable with sensor sub-assembly position is center	Below 1 Ω
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the left	
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the right	



Text in Illustration

*a	Component without harness connected (Spiral Cable with Sensor Sub-assembly)
*b	Cruise Control Main Switch Side

- (c) Reinstall the spiral cable with sensor sub-assembly.

NG ▶ **REPLACE SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY**

OK



4.	CHECK HARNESS AND CONNECTOR (SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY - ECM AND BODY GROUND)
----	--

- (a) Disconnect the E13 ECM connector.
- (b) Disconnect the S8 spiral cable with sensor sub-assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
S8-2 (ECC) - Body Ground	Always	Below 1 Ω

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E13-17 (CCS) - S8-1 (CCS)	Always	Below 1 Ω
E13-17 (CCS) - Body ground	Always	10 k Ω or higher

- (d) Reconnect the ECM connector.
- (e) Reconnect the spiral cable with sensor sub-assembly connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK  **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000000PLV0FDX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): Cruise Main Indicator Light Circuit; 2016 MY Tacoma [08/2015 -]		

Cruise Main Indicator Light Circuit

DESCRIPTION

- When the ECM detects a cruise control switch on signal from the cruise control switch, the ECM sends the signal to the combination meter assembly through CAN communication. Then the cruise control indicator light turns on.
- The cruise control indicator light circuit uses CAN communication. If there is a malfunction in this circuit, check for DTCs in the CAN communication system before troubleshooting this circuit.

INSPECTION PROCEDURE

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM (CRUISE MAIN INDICATOR LIGHT)
-----------	---

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Combination Meter / Active Test.
- According to the display on the Techstream, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Indicat. Lamp Cruise	Cruise main indicator light	ON/OFF	Confirm that the vehicle is stopped with the engine idling.

OK:

Cruise main indicator light turns on/off.

NG  **GO TO METER / GAUGE SYSTEM**

OK



2. READ VALUE USING TECHSTREAM (CRUISE CONTROL SWITCH)

- (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 / Cruise Control / Data List.
- (e) According to the display on the Techstream, read the Data List.

Cruise Control

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main SW M-CPU	Cruise control switch (Main CPU) / OFF or ON	OFF: Cruise control switch off ON: Cruise control switch on	-

OK:

On screen, item changes between ON and OFF according to above chart.

NG ► **REPLACE ECM**

OK ► **PROCEED TO NEXT SUSPECTED AREA SHOWN IN
PROBLEM SYMPTOMS TABLE**



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PM308PX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- Connect the Techstream to the DLC3.
- Turn the ignition switch ON.
- Turn the Techstream on.
- Enter the following menus:
Powertrain / Cruise Control / Data List.
- According to the display on the Techstream, read the Data List.

Cruise Control

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
CCS Vehicle Spd	Vehicle speed/min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual vehicle speed	-
CCS Mem Vehicle Spd	Cruise control memorized speed/min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual stored vehicle speed	-
Cruise Control	Cruise control system active condition/ON or OFF	ON: Cruise control activated OFF: Cruise control deactivated	-
CCS Main SW M-CPU	Main switch signal (Main CPU)/ON or OFF	ON: Main switch on (Pushed on) OFF: Main switch off (Pushed off)	"3"
CCS Ready M-CPU	Cruise control system standby condition (Main CPU)/ON or OFF	ON/OFF: Change ON/OFF each time Main SW is pushed in.	"1"
CCS Indicator M-CPU	Cruise indicator signal (Main CPU)/ON or OFF	ON: "CCS READY" ON OFF: "CCS READY" OFF	"2"
Cancel Switch	CANCEL switch signal/ON or OFF	ON: CANCEL switch on OFF: CANCEL switch off	-
SET/COAST Switch	-/SET switch signal/ON or OFF	ON: -/SET switch on OFF: -/SET switch off	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
RES/ACC Switch	+ /RES switch signal/ON or OFF	ON: +/RES switch on OFF: +/RES switch off	-
Stop Light SW M-CPU	Stop light switch signal (Main CPU)/ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
Cruise Operation Status	PNP switch signal (D position)/ON or OFF	ON: Shift lever in D OFF: Shift lever not in D	-
CCS Request Torque	Cruise control request torque/min.: -1024 Nm, max.: 1016 Nm	Actual required torque	-
# Codes	Number of present trouble codes/min.: 0, max.: 255	Number of DTCs will be displayed	-

HINT:

- "3" is OK but "1" is NG → ECM failure
- "1" is OK but "2" is NG → DTC output or ECM failure
- "3" is OK but CRUISE indicator does not come on → CRUISE main indicator, wire harness or ECM failure



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PM00E3X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

DIAGNOSIS SYSTEM

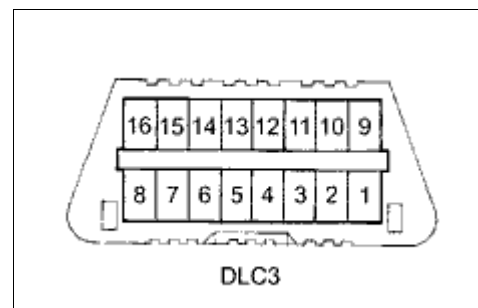
1. DESCRIPTION

The ECM stores DTCs (Diagnostic Trouble Codes) when trouble occurs on the vehicle. The diagnosis system allows reading of DTCs stored in the ECM when a the Techstream is connected to the DLC3 (Data Link Connector 3). If the CRUISE MAIN indicator light does not come on after a DTC check, it means that a malfunction has occurred in the cruise control system. Use a the Techstream or SST to check for DTCs.

2. CHECK DLC3

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

TERMINAL NO.	TESTER CONNECTION	CONDITION	SPECIFICATION
4	Chassis ground - Body Ground	Always	Below 1 Ω
16	Battery positive - Body Ground	Always	9 to 14 V



HINT:

If the Techstream display shows "UNABLE TO CONNECT TO VEHICLE" after connecting the Techstream to the DLC3 and turning the ignition to the ON position, there is a problem in either the vehicle or the Techstream itself.

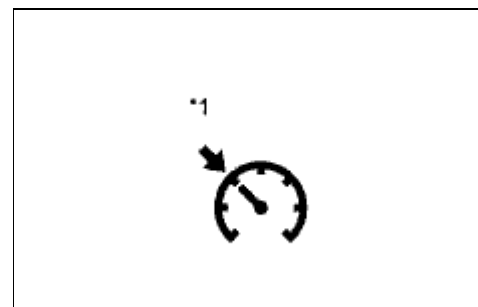
- If communication is normal when connecting the tester to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still not possible when connecting the tester to another vehicle, it suggests the problem exists in the tester. In this case, consult the Service Department listed in the tester's instruction manual.

3. CHECK INDICATOR

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

Text in Illustration

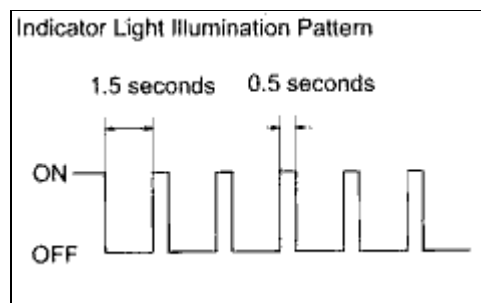
*1	Cruise Control Indicator Light
----	--------------------------------



(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 ON/OFF illumination of the indicator light, inspect the cruise main indicator light circuit **INFO** .



HINT:

If a malfunction occurs in the vehicle speed sensor, stop light switch assembly or other related parts while cruise control driving, the ECM actuates AUTO CANCEL of the cruise control. Then the power indicator turn off, the warning light illuminates and the vehicle display indicates a malfunction, to inform the driver of the malfunction. At the same time, data of the malfunction is stored as a diagnostic trouble code (DTC).



Last Modified: 11-13-2015	6.6 S	Doc ID: RM000000PLQ0BZX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

If a trouble code is indicated while checking DTCs, inspect the circuit listed for that code in the table below, and proceed to the applicable page.

Cruise Control System

DTC CODE	DETECTION ITEM	SEE PAGE
P057113	Brake Switch "A" Circuit Open	INFO
P057162	Brake Switch "A" Signal Compare Failure	INFO
P057504	Cruise Control System Internal Failure	INFO
P057549	Cruise Control Internal Electronic Failure	INFO
P157800	Brake System	INFO
P160700	Cruise Control Input Processor	INFO
U012287	Lost Communication with Vehicle Dynamics Control Module Missing Message	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PM10ATX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus:
Powertrain / Cruise Control / Trouble Codes.
- (e) Read the DTCs.

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus:
Powertrain / Cruise Control / Trouble Codes.
- (e) Clear the DTCs.



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PLO0FMX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedures to troubleshoot the cruise control system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

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 COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*
-----------	--

(a) Use the Techstream to check if the CAN communication system is functioning normally.

Result

RESULT	PROCEED TO
CAN DTC is not output	A
CAN DTC is output	B

B **GO TO CAN COMMUNICATION SYSTEM**

A

4.	CHECK FOR DTC*
-----------	-----------------------

(a) Check for DTCs [INFO](#) .

(b) Clear the DTCs [INFO](#) .

(c) Recheck for DTCs. Based on the DTCs output in the first step, try to force output of the cruise control system DTCs by simulating the conditions indicated by the DTCs.

Result

RESULT	PROCEED TO
DTC is not output	A
DTC is output	B

B **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A

5.	PROBLEM SYMPTOMS TABLE
-----------	-------------------------------

(a) Refer to Problem Symptoms Table [INFO](#) .

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) Road Test INFO

(b) Terminals of ECM INFO

(c) Data List / Active Test INFO

NEXT



7.	ADJUST, REPAIR OR REPLACE
-----------	----------------------------------

NEXT



8.	CONFIRMATION TEST
-----------	--------------------------

NEXT  **END**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005UPZ002X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): P057113; Brake Switch "A" Circuit Open; 2016 MY Tacoma [08/2015 -]		

DTC	P057113	Brake Switch "A" Circuit Open
------------	----------------	--------------------------------------

DESCRIPTION

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA	NOTE
P057113	- Vehicle Condition: Cruise control operating - Malfunction Status: Stop light switch assembly circuit malfunction	- VSC system - ECM	SAE: P0571

INSPECTION PROCEDURE

NOTICE:

First check the CAN communication systems by following How to Proceed with Troubleshooting. After checking that there are no malfunctions in the CAN communication system, proceed to troubleshooting

INFO

PROCEDURE

1.	CHECK FOR DTC (VEHICLE STABILITY CONTROL SYSTEM)
-----------	---

- Connect the Techstream to the DLC3.
- Turn the ignition switch on.
- Turn the Techstream on.
- Enter the following menus: Chassis / ABS/VSC/TRAC / Trouble Codes.
- Check for DTCs INFO.

OK:

Vehicle stability control system DTCs are not output.

Result

RESULT	PROCEED TO
OK	A
NG (for Hydraulic Brake Booster)	B
NG (for Vacuum Brake Booster)	C

B  **GO TO VEHICLE STABILITY CONTROL SYSTEM**

A



2.	CHECK FOR DTC (CRUISE CONTROL SYSTEM)
-----------	--

(a) Clear the DTCs  .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.

(c) Check the DTCs  .

OK:

DTC P057113 is not output

NG ► **REPLACE ECM**

OK ► **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM0000044B502FX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): P057162; Brake Switch "A" Signal Compare Failure; 2016 MY Tacoma [08/2015 -]		

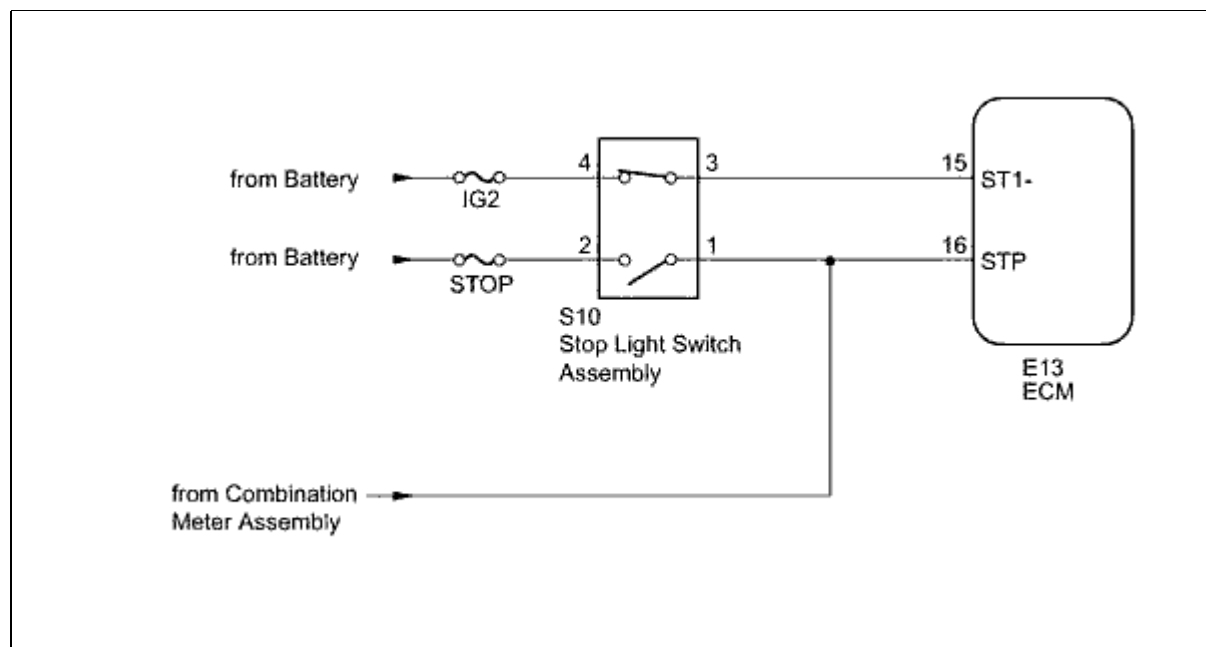
DTC	P057162	Brake Switch "A" Signal Compare Failure
------------	----------------	--

DESCRIPTION

When the brake pedal is depressed, stop light switch assembly sends a signal to the ECM. Upon receiving the signal, the ECM cancels the cruise control system.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA	NOTE
P057162	- Vehicle Condition: Ignition switch on, cruise control main switch on - Malfunction Status: Stop light switch assembly malfunction input signal	- Stop light switch assembly - Harness or connector - ECM	SAE: P0571

WIRING DIAGRAM



INSPECTION PROCEDURE

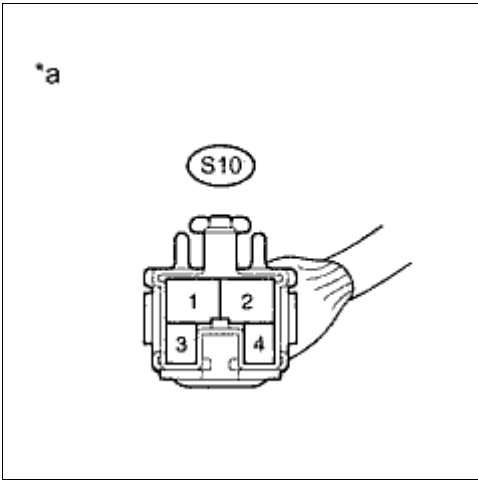
NOTICE:

Inspect the fuses for circuits related to this system before performing the following procedure.

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH ASSEMBLY - BATTERY)
----	--

(a) Disconnect the stop light switch assembly connector.



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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
S10-2 - Body ground	Always	11 to 14 V
S10-4 - Body ground	Ignition switch on	11 to 14 V
	Ignition switch off	Below 1 V

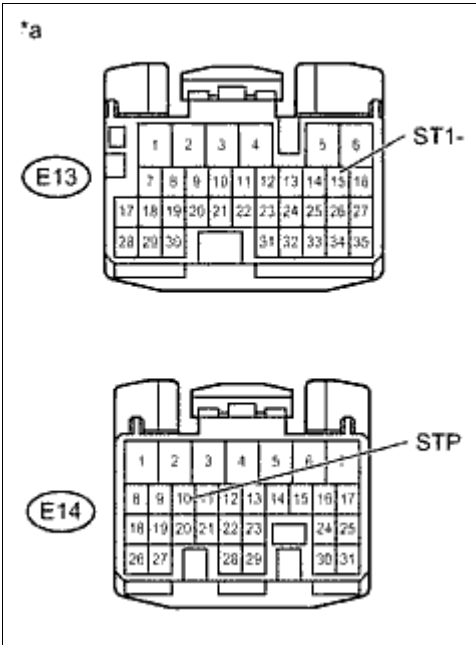
Text in Illustration

*a	Front view of wire harness connector (to Stop Light Switch Assembly)
----	---

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.	CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH INPUT CIRCUIT)
----	---



(a) Disconnect the ECM connector.

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E13-15 (ST1-) - Body ground	Ignition switch on, brake pedal released	7.5 to 14 V
	Ignition switch on, brake pedal depressed	Below 1.5 V
E14-10 (STP) - Body ground	Brake pedal released	Below 1.5 V
	Brake pedal depressed	7.5 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to ECM)
----	--

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3.	INSPECT STOP LIGHT SWITCH ASSEMBLY
-----------	---

(a) Inspect the stop light switch assembly .

(b) Clear the DTCs .

(c) Check for DTCs  .

OK:

DTC P057162 is not output

NG  **REPLACE ECM**

OK  **REPLACE STOP LIGHT SWITCH ASSEMBLY**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM0000044B602CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): P057504,P057549; Cruise Control System Internal Failure; 2016 MY Tacoma [08/2015 -]		

DTC	P057504	Cruise Control System Internal Failure
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DTC	P057549	Cruise Control Internal Electronic Failure
------------	----------------	---

DESCRIPTION

This is output when the ECM detects malfunctions in the internal circuit.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA	NOTE
P057504	- Vehicle Condition: Cruise control in operation - Malfunction Status: ECM internal cancel circuit malfunction	ECM	SAE: P0575
P057549			

INSPECTION PROCEDURE

PROCEDURE

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

(a) Clear the DTCs  .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.

(c) Check the DTCs  .

OK:

DTC P057504 and P057549 are not output.

NG  **REPLACE ECM**

OK  **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000000ZK7074X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): P157800; Brake System; 2016 MY Tacoma [08/2015 -]		

DTC	P157800	Brake System
------------	----------------	---------------------

DESCRIPTION

This DTC is output when the VSC system has a problem. Check the VSC system when this DTC is output.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA	NOTE
P157800	• Diagnosis Condition: Cruise control in operation • Malfunction Status: Brake System Malfunction	• VSC system • ECM	SAE: P1578

INSPECTION PROCEDURE

HINT:

When this DTC is output, confirm that the vehicle stability control system is normal since it may be malfunctioning.

for Hydraulic Brake Booster: [INFO](#)

for Vacuum Brake Booster: [INFO](#)

PROCEDURE

1.	CHECK FOR DTC (ABS/VSC/TRAC)
-----------	-------------------------------------

- Connect the Techstream to the DLC3.
- Turn the ignition switch on.
- Turn the Techstream on.
- Enter the following menus: Chassis / ABS/VSC/TRAC / Trouble Codes.
- Check for DTCs [INFO](#).

OK:

Vehicle stability control system DTCs are not output

Result

RESULT	PROCEED TO
OK	A

RESULT	PROCEED TO
NG (for Hydraulic Brake Booster)	B
NG (for Vacuum Brake Booster)	C

B ► **GO TO VEHICLE STABILITY CONTROL SYSTEM**

C ► **GO TO VEHICLE STABILITY CONTROL SYSTEM**

A



2.	CHECK FOR DTC (DTC P157800)
-----------	------------------------------------

(a) Clear the DTCs  .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.

(c) Turn the Techstream on.

(d) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -/SET to begin control of vehicle speed by the cruise control system.

(e) Check the DTCs  .

OK:

DTC P157800 is not output

NG ► **REPLACE ECM**

OK ► **USE SIMULATION METHOD TO CHECK**





Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005UB3002X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): P160700; Cruise Control Input Processor; 2016 MY Tacoma [08/2015 -]		

DTC	P160700	Cruise Control Input Processor
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DESCRIPTION

When the ECM determines that there is a malfunction, the ECM illuminates the MIL and stores a DTC.

HINT:

When these DTCs are stored, the ECM cuts the current supplied to the throttle motor and the throttle valve returns to the predetermined opening amount by the return spring.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA	NOTE
P160700	• Diagnosis Condition: Ignition switch on • Malfunction Status: ECM internal malfunction • Malfunction Period: Approximately 1 second • Trip Count: 1 trip • Detection Method: Continuous monitoring • Required Sensors/ Components: ECM	SFI system	SAE: P1607

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 moving or stationary, 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 FOR DTC
-----------	----------------------

(a) Clear the DTCs  .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.

(c) Check the DTCs  .

OK:

DTC P160700 is not output

NG  **GO TO SFI SYSTEM**

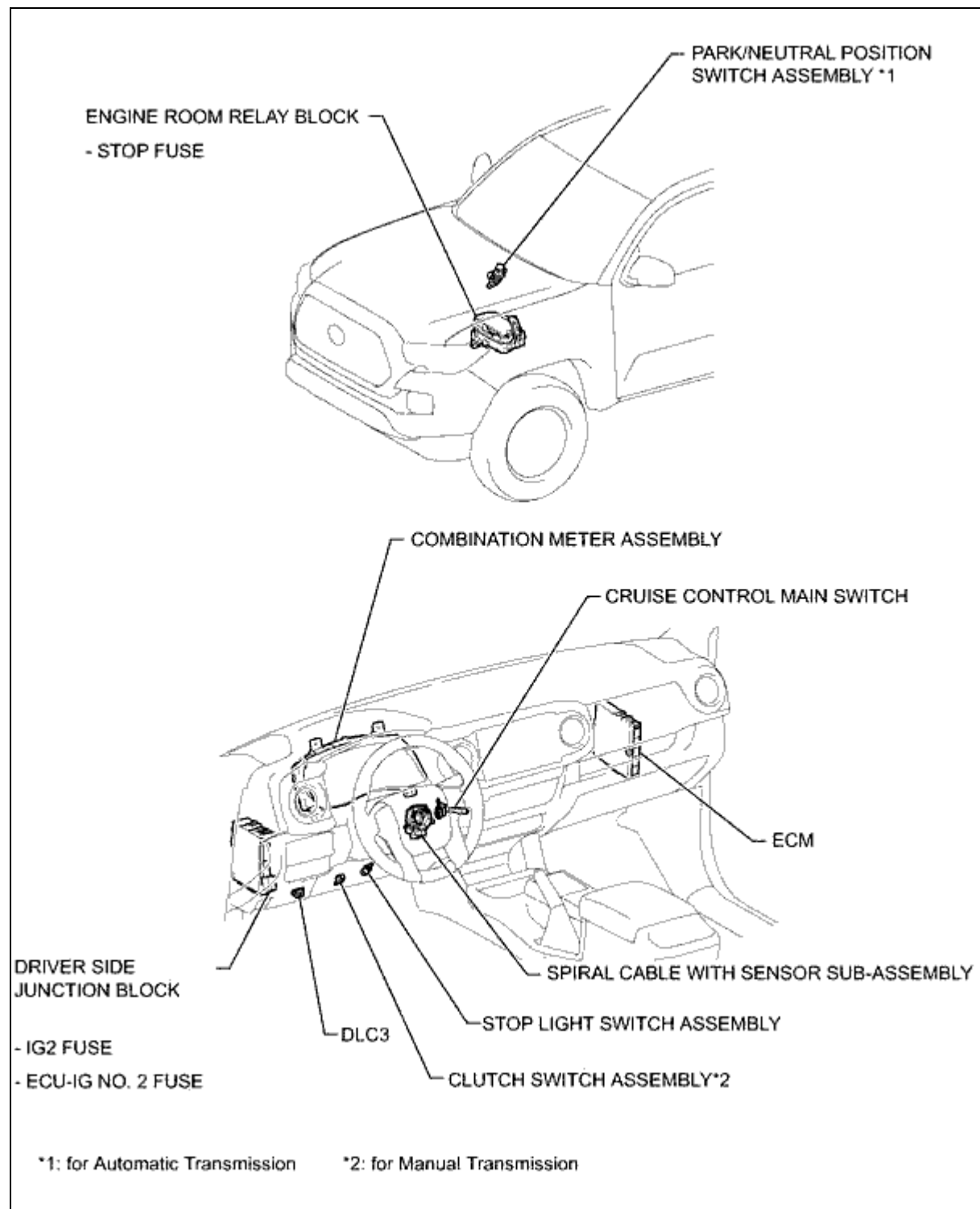
OK  **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 R	Doc ID: RM000000SSZ084X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION





Last Modified: 11-13-2015	6.6 T	Doc ID: RM000001AFS010X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the causes of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Cruise Control System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Main switch cannot be turned ON (Indicator light on the combination meter does not come on)	Cruise Control Switch Circuit	INFO
	Cruise Main Indicator Light Circuit	INFO
	ECM	INFO
Desired speed cannot be set (Indicator light on the combination meter comes on when the main switch is turned ON, but goes off when operating the "SET" function)	Cruise Control Switch Circuit	INFO
	ECM	INFO
Desired speed cannot be set (Indicator light on the combination meter comes on when the main switch is turned ON and it remains ON, while operating the "SET" function)	Cruise Control Switch Circuit	INFO
	Lighting System	INFO
	Clutch Switch Circuit (for Manual Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60E Automatic Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60F Automatic Transmission)	INFO
	Combination Meter System	INFO
	ECM	INFO
While cruise control driving, the set speed is canceled (Indicator light remains ON)	Cruise Control Switch Circuit	INFO
	Vehicle Speed Sensor Circuit	INFO
	Lighting System	INFO
	Cruise Main Indicator Light Circuit	INFO
	Clutch Switch Circuit (for Manual Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60E Automatic Transmission)	INFO

SYMPTOM	SUSPECTED AREA	SEE PAGE
	Park/neutral Position Switch Circuit (for AC60F Automatic Transmission)	INFO
	ECM	INFO
	Vehicle Speed Sensor Circuit	INFO
	ECM	INFO
Speed setting cannot be canceled ("CANCEL" function failure only)	Cruise Control Switch Circuit	INFO
	ECM	INFO
DTC is not output, or is output when should not be	TC and CG Terminal Circuit	INFO
	ECM	INFO
Cruise Main indicator light does not come on	Cruise Control Switch Circuit	INFO
	Cruise Main Indicator Light Circuit	INFO
	ECM	INFO
	Combination Meter Assembly	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000ST00D8X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): ROAD TEST; 2016 MY Tacoma [08/2015 -]		

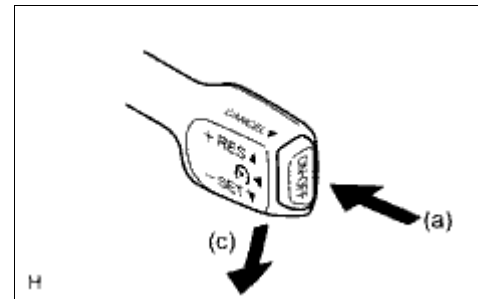
ROAD TEST

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. INSPECT 'SET' FUNCTION

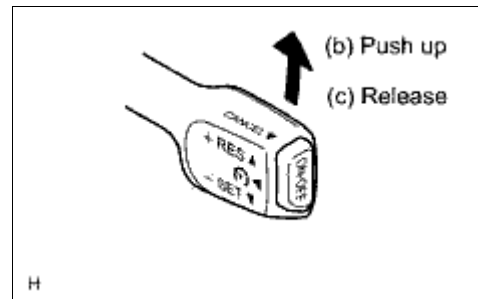
- (a) Push the ON-OFF button on.



- (b) Drive at the vehicle at a desired speed 25 mph (40 km/h) or higher.
(c) Push down the control switch lever to "-/SET" to set the cruising speed.
(d) After releasing the lever, check that the vehicle cruises at the set speed.

2. INSPECT '+' FUNCTION

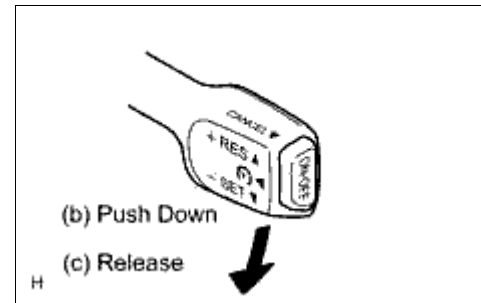
- (a) Set a desired speed as in step 1.



- (b) Check that the vehicle speed increases while the control switch lever is pushed up to "+/RES".
(c) Check that the vehicle cruises at the newly set speed when the switch is released.
(d) Momentarily (approximately 0.6 seconds) push up the control switch lever to the "+/RES", and then release it. Check that the vehicle speed increases by approximately 1 mph (1.6 km/h) with each lever operation (Tap-up function).

3. INSPECT '-' FUNCTION

(a) Set a desired speed as in step 1.



(b) Check that the vehicle speed decreases while the control switch lever is pushed down to "-/SET".

(c) Check that the vehicle cruises at the newly set speed when the switch is released.

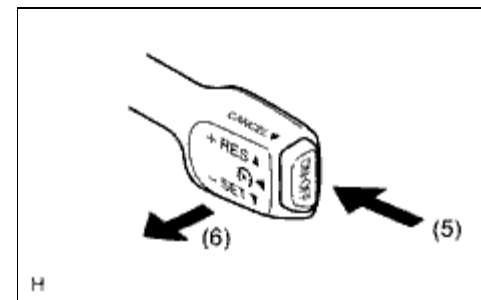
(d) Momentarily (approximately 0.6 seconds) push down the control switch to "-/SET", and then release it. Check that the vehicle speed decreases by approximately 1 mph (1.6 km/h) with each lever operation (Tap-down function).

HINT:

- The cruise control system automatically cancels when the vehicle speed decreases to below 25 mph (40 km/h).

4. INSPECT 'CANCEL' FUNCTION

(a) Set a desired speed as in step 1.



(b) Check that the system cancels cruise control when one of the following is conducted:

- (1) Depressing the brake pedal
- (2) Depressing the clutch pedal (M/T)
- (3) Shifting into any position except D and S while driving
- (4) Pushing the cruise control main switch ON-OFF button off
- (5) Pulling the cruise control switch lever to "CANCEL"

5. INSPECT 'RES (RESUME)' FUNCTION

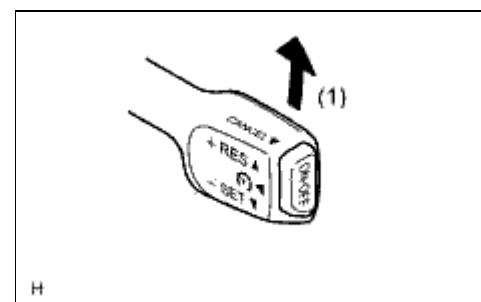
(a) Set a desired speed as in step 1.

- (1) After canceling the cruise control according to any of the above operations except (5), push up the switch lever to "+/RES" at a speed of 25 mph (40 km/h) or higher.

(2) Check that the vehicle resumes the previously set speed.

HINT:

The 'RES' function does not resume the set speed when the vehicle speed decreases to below 25 mph (40 km/h).





Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PLZ0ELX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

SYSTEM DESCRIPTION

1. CRUISE CONTROL SYSTEM

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

The microcomputer which controls the cruise control system is built into the ECM, and the actuator is the throttle position sensor and motor.

Constant speed control gets ready 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.

HINT:

- The cruise control main switch is an automatic return type switch which operates only while it is pushed in one direction and turns off after it is released.
- "SET" and "-", "RES" and "+", "ON" and "OFF" operations are all controlled by using the same switch.

(a) 'SET' function

When the cruise control main switch is pushed down to "-/SET", the ECM stores the set speed and compares it with the actual vehicle speed. If the actual driving speed is greater than the set speed, the ECM sends a signal to the throttle position sensor and motor 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.

(b) '+' function

The cruise set speed increases while the cruise control main switch lever is pushed up to "+/RES". The vehicle begins to cruise at the newly set speed when the cruise control main switch lever is released.

(c) Tap-up function

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

(d) '-' function

The cruise set speed decreases while the cruise control main switch lever is pushed down to "-/SET". The vehicle begins to cruise at the newly set speed when the cruise control main switch lever is released.

(e) Tap-down function

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

(f) Low speed limit

The lowest possible limit of the speed setting range is approximately 25 mph (40 km/h). The cruise control system cannot be set when the vehicle speed is below the speed limit. Cruise control operation is

automatically canceled when the vehicle speed decreases to below the low speed limit while the cruise control is in operation.

(g) High speed limit

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

(h) 'RES' function

If the cruise control operation was canceled under the manual cancel condition (other than by turning cruise control main switch ON-OFF button off), and if the driving speed is within the limit range, pushing the cruise control main switch to "+/RES" restores the vehicle speed stored at the time of cancellation, and maintains constant speed control. Even when cruise control is canceled automatically due to the vehicle speed decreasing below the low speed limit, cruise control can be resumed when the vehicle speed returns to over the low speed limit, since the stored vehicle speed remains in the memory.

(i) MANUAL CANCEL function

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

- The cruise control main switch is pulled to "CANCEL".
- The brake pedal is depressed.
- The clutch pedal is depressed (M/T ONLY).
- The cruise control main switch ON-OFF button is pushed off.
- The D position circuit in the neutral start switch is turned from ON to OFF. Shift the gear from the D or S position to the positions.

(j) AUTO CANCEL function

- (1) When any of the following malfunctions occurs, the ECM clears the set vehicle speed and deactivates the cruise control.

In this case, the power indicator turn off, the warning light illuminates and the vehicle display indicates a malfunction*1 until the cruise control main switch is turned OFF and the ECM allows the cruise control to be reactivated when the main switch is next turned ON again.

*1: w/ Multi-information Display

- Open or short malfunctions in the stop light switch.
- Abnormalities in the vehicle speed signal.
- Malfunctions in the throttle body.

- (2) When any of the following malfunctions occurs, the ECM clears the set vehicle speed and deactivates the cruise control.

In this case, the power indicator turn off, the warning light illuminates and the vehicle display indicates a malfunction until the cruise control main switch is turned OFF and the ECM allows the cruise control to be reactivated when the ignition switch is next turned ON again.

- Malfunctions in the stop light switch input circuit.
- Malfunctions in the cancel circuit.

- (3) When the vehicle is in one of the following conditions, the ECM deactivates the cruise control (the cruise control can be reset).

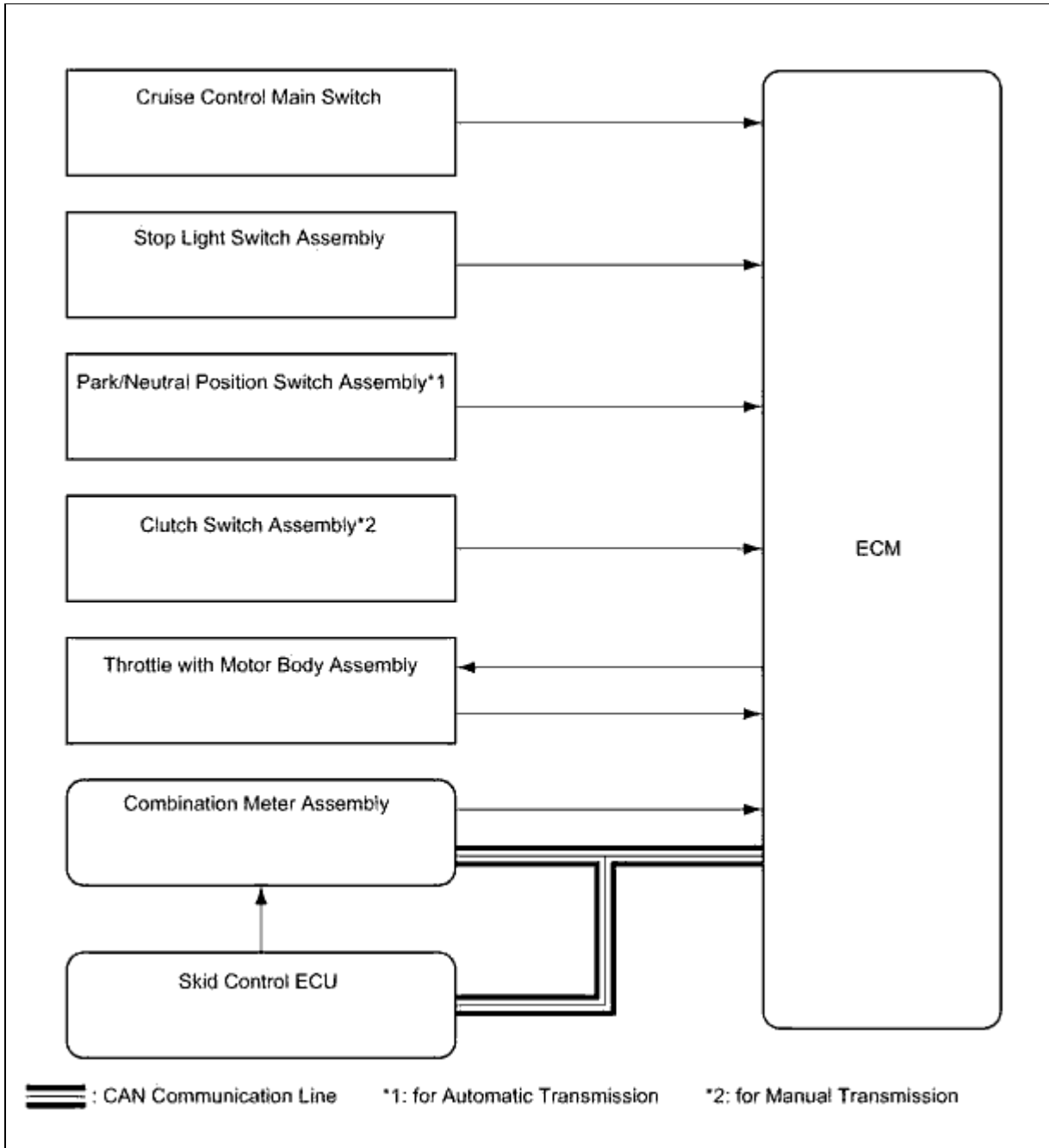
- Actual vehicle speed is below the lower vehicle speed limit (the set vehicle speed is retained).
- Actual vehicle speed decreases by 10 mph (16 km/h) from the set vehicle speed (the set vehicle speed is cleared).
- VSC operates while vehicle is in motion.
- TRAC operates for a certain amount of time while the vehicle is in motion.

- TRAC and VSC are off.



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PM20DCX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM



Communication Table

SENDER	RECEIVER	SIGNAL	LINE
ECM	Combination Meter Assembly	Cruise main indicator light signal	CAN
Skid Control ECU	ECM	Vehicle stability control system operation signal	CAN



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000001BSO00SX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): TC and CG Terminal Circuit; 2016 MY Tacoma [08/2015 -]		

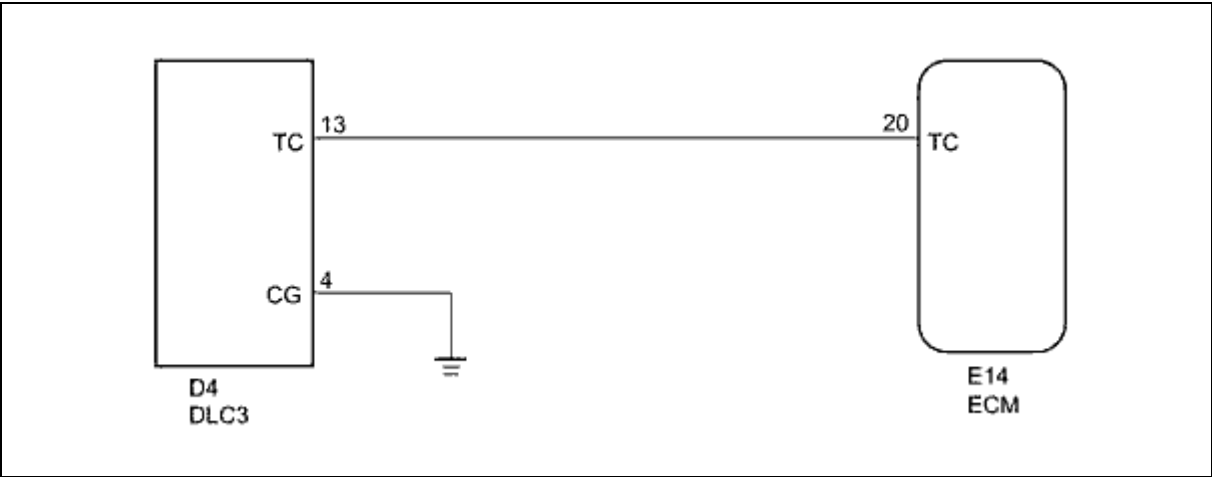
TC and CG Terminal Circuit

DESCRIPTION

The DLC3 circuit enables reading of Diagnostic Trouble Codes (DTCs) with no Techstream by connecting terminals TC and CG of the DLC3 connector.

Stored DTCs are displayed in blinking patterns of the CRUISE MAIN indicator light located on the combination meter.

WIRING DIAGRAM



HINT:

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

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (TC of DLC3 - ECM)
----	---

- (a) Disconnect the E21 ECM connector.
 - (b) Measure the resistance according to the value(s) in the table below.
- Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
-------------------	-----------	---------------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D4-13 (TC) - E14-20 (TC)	Always	Below 1 Ω

(c) Reconnect the ECM connector.

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.	CHECK HARNESS AND CONNECTOR (TC of DLC3 - BODY GROUND)
-----------	---

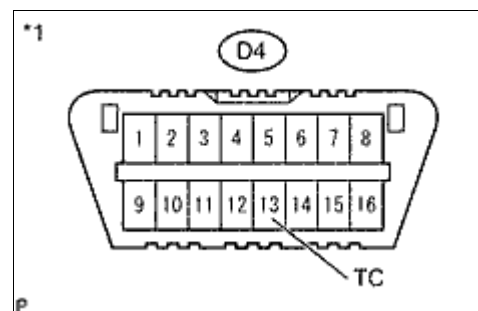
(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
TC (D4-13) - Body ground	Always	10 k Ω or higher

Text in Illustration

*1	DLC3
----	------



NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

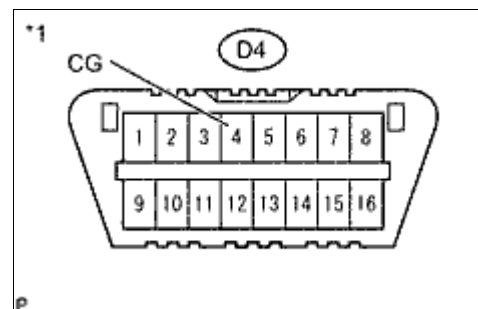
3.	CHECK HARNESS AND CONNECTOR (CG of DLC3 - BODY GROUND)
-----------	---

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
CG (D4-4) - Body ground	Always	Below 1 Ω

Text in Illustration



*1	DLC3
----	------

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

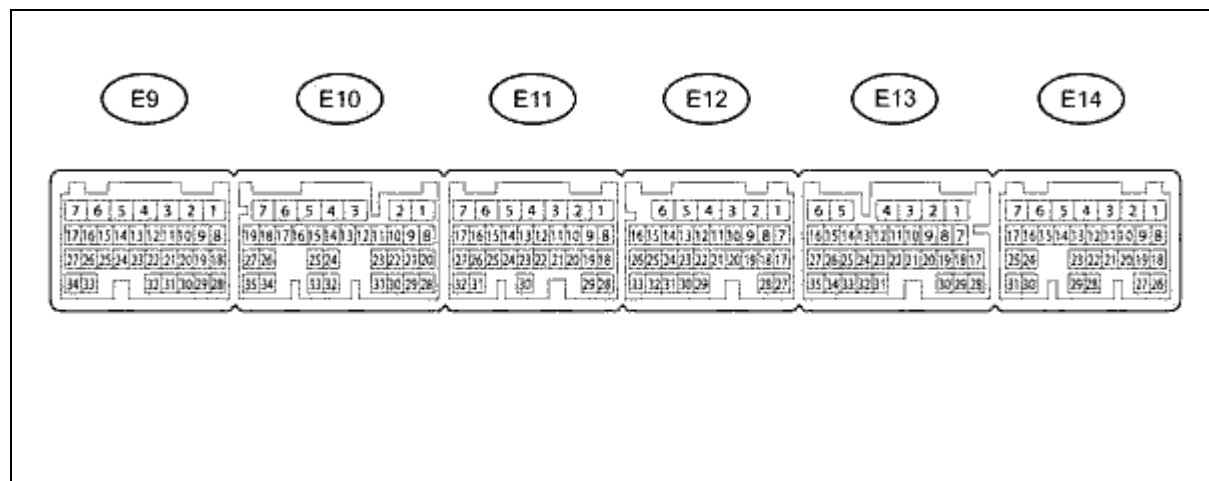
OK ► REPLACE ECM



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PLR03XX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. ECM



TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E14-20 (TC) - E11-1 (E1)	G - W-B	DTC output signal	Ignition switch ON	11 to 14 V
E14-20 (TC) - E11-1 (E1)	G - W-B	DTC output signal	Ignition switch ON Connect terminals TC and CG of DLC3	Below 2 V
E13-15 (ST1-) - E11-1 (E1)	V - W-B	Cruise cancel input signal	Ignition switch ON Depress Brake pedal	Below 1 V
E13-15 (ST1-) - E11-1 (E1)	V - W-B	Cruise cancel input signal	Ignition switch ON Release brake pedal	11 to 14 V
E13-16 (STP) - E11-1 (E1)	P - W-B	Stop light switch input signal	Depress brake pedal	11 to 14 V
E13-16 (STP) - E11-1 (E1)	P - W-B	Stop light switch input signal	Release brake pedal	Below 1 V
E13-17 (CCS) - E11-1 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON	11 to 14 V
E13-17 (CCS) - E11-1 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON CANCEL switch ON	6.6 to 10.1 V
E13-17 (CCS) - E11-1 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON -(COAST)/SET switch ON	4.5 to 7.1 V
E13-17 (CCS) - E11-1 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON +(ACCEL)/RES switch ON	2.3 to 4 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E13-17 (CCS) - E11-1 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON MAIN switch ON	Below 1 V
E11-1 (E1) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
E12-27 (D) - E11-1 (E1)*1	R - W-B	Park/neutral position switch signal	Ignition switch ON, shift lever D or 3 positions	11 to 14 V
E12-27 (D) - E11-1 (E1)*1	R - W-B	Park/neutral position switch signal	Ignition switch ON, shift lever other than D and 3 positions	Below 1 V
E12-27 (D) - E11-1 (E1)*2	R - W-B	Clutch switch input signal	Ignition switch ON Depress clutch pedal	Below 1 V
E12-27 (D) - E11-1 (E1)*2	R - W-B	Clutch switch input signal	Ignition switch ON Release clutch pedal	11 to 14 V

*1: for Automatic Transmission

*2: for Manual Transmission



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002X22047X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2GR-FKS): U012287; Lost Communication with Vehicle Dynamics Control Module Missing Message; 2016 MY Tacoma [08/2015 -]		

DTC	U012287	Lost Communication with Vehicle Dynamics Control Module Missing Message
------------	----------------	--

DESCRIPTION

The ECM receives signals from the skid control ECU (brake actuator assembly) via CAN communication.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA	NOTE
U012287	While cruise control main switch ON, communication stop between skid control ECU (brake actuator assembly) continues for 2.6 seconds or more	• CAN communication system • ECM • Skid control ECU (brake actuator assembly)	SAE: U0122

INSPECTION PROCEDURE

HINT:

Refer to troubleshooting in CAN Communication System [INFO](#) .

PROCEDURE

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

(a) Clear the DTCs [INFO](#) .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
 - (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
 - (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.
- (c) Check the DTCs [INFO](#) .

OK:

DTC U012287 is not output

OK  **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM00000155W00UX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): Clutch Switch Circuit; 2016 MY Tacoma [08/2015 -]		

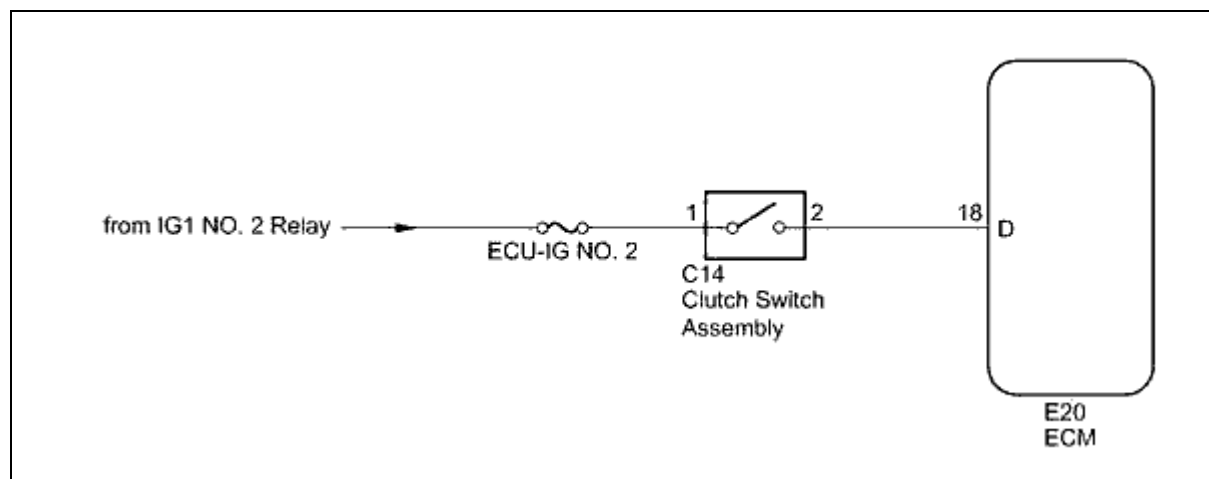
Clutch Switch Circuit

DESCRIPTION

Clutch switch circuit inspection is necessary for manual transmission vehicles.

When the clutch pedal is released, the ECM receives the positive (+) battery voltage through the IG1 No. 2 fuse and ignition switch. While the clutch pedal is depressed, the clutch switch assembly sends a signal to terminal D of the ECM. The ECM cancels cruise control when terminal D receives the signal (voltage of below 1 V).

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

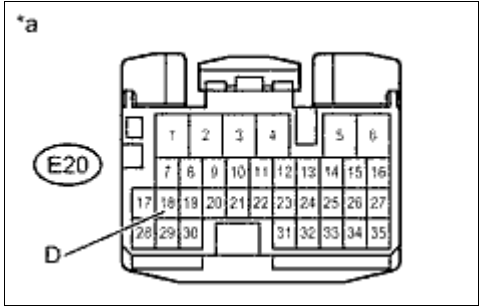
PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (ECM - BATTERY)
----	--

- (a) Disconnect the ECM connector.
- (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
E20-18 (D) - Body ground	Clutch pedal depressed	Below 1 V
E20-18 (D) - Body ground	Clutch pedal released	11 to 14 V



Text in Illustration

*a	Front view of wire harness connector (to ECM)
----	---

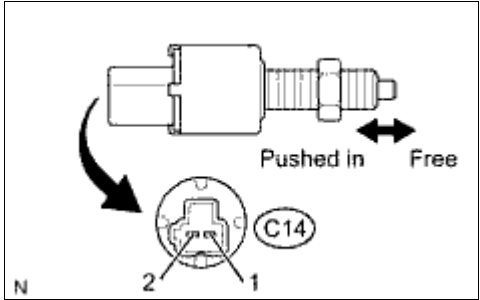
- (d) Reconnect the ECM connector.

OK ► PROCEED TO PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE

NG
▼

2.	INSPECT CLUTCH SWITCH ASSEMBLY
----	--------------------------------

- (a) Remove the clutch switch assembly INFO.



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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
-------------------	-----------	---------------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C14-1 - C14-2	Clutch pedal depressed	10 kΩ or higher
C14-1 - C14-2	Clutch pedal released	Below 1 Ω

(c) Reinstall the clutch switch.

NG  **REPLACE CLUTCH SWITCH ASSEMBLY**

OK



3.	CHECK HARNESS AND CONNECTOR (CLUTCH SWITCH ASSEMBLY - ECM)
-----------	---

(a) Disconnect the E20 ECM connector.

(b) Disconnect the C14 clutch switch assembly connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C14-2 - Body ground	Always	10 kΩ or higher
C14-2 - E20-18 (D)	Always	Below 1 Ω

(d) Reconnect the clutch switch connector.

(e) Reconnect the ECM connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR
(CLUTCH SWITCH ASSEMBLY - ECM)**

OK  **REPAIR OR REPLACE HARNESS OR CONNECTOR
(CLUTCH SWITCH ASSEMBLY - BATTERY)**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000000PLU0G7X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): Cruise Control Switch Circuit; 2016 MY Tacoma [08/2015 -]		

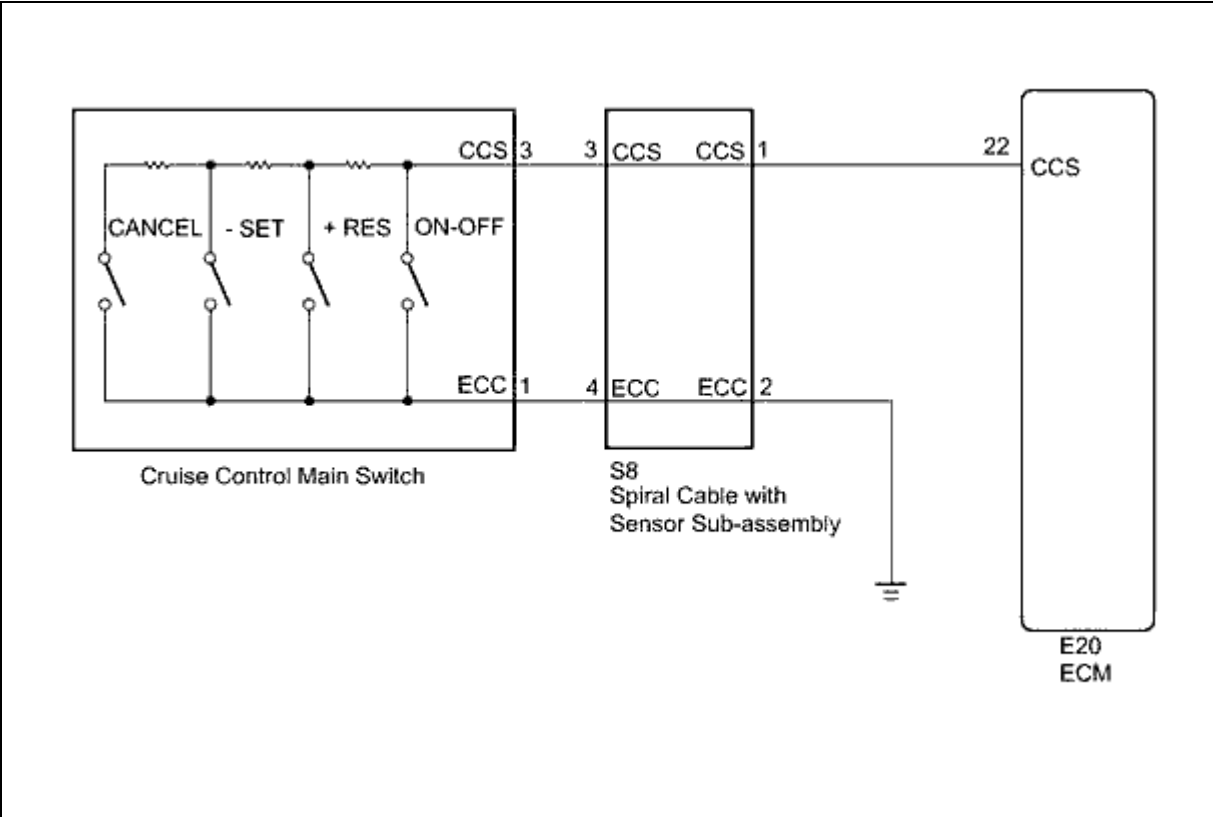
Cruise Control Switch Circuit

DESCRIPTION

This circuit sends signals to the ECM depending on the cruise control main switch condition.

The battery supplies the positive (+) battery voltage to the cruise control main switch. Then terminal CCS of the ECM receives the voltage as the signal according to the switch condition.

WIRING DIAGRAM

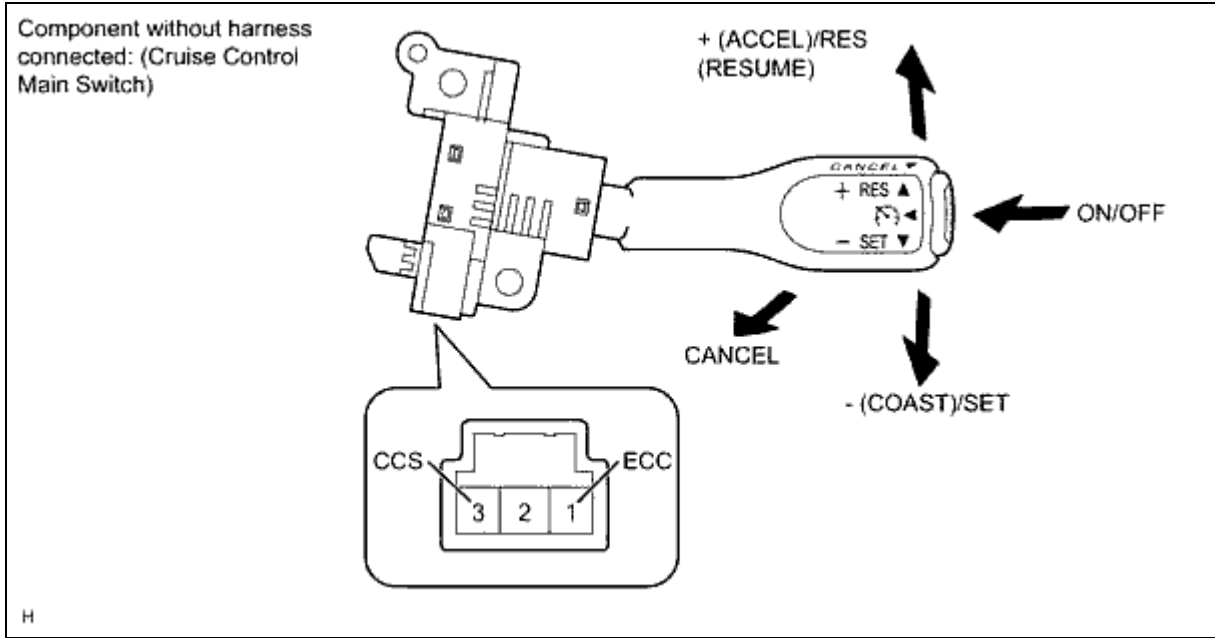


INSPECTION PROCEDURE

PROCEDURE

1.	INSPECT CRUISE CONTROL MAIN SWITCH
----	---

(a) Remove the cruise control main switch INFO .



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

Standard Resistance:

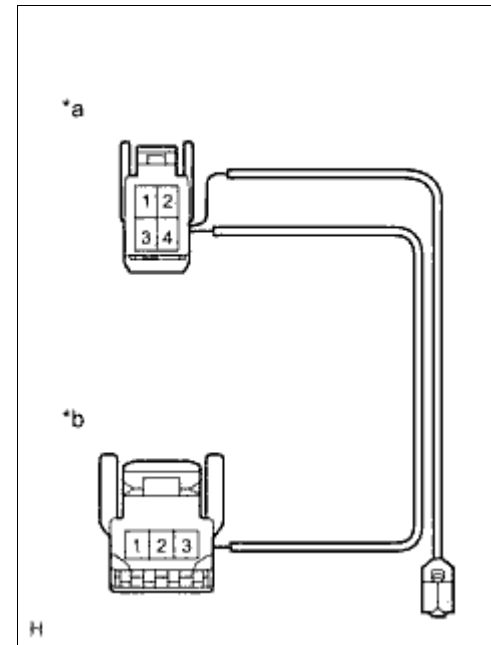
TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 3	+ (ACCEL)/RES (RESUME)	235 to 245 Ω
1 - 3	- (COAST)/SET	617 to 643 Ω
1 - 3	CANCEL	1,509 to 1,571 Ω
1 - 3	Main Switch OFF	10 k Ω or higher
1 - 3	Main Switch ON	Below 1 Ω

(c) Reinstall the cruise control main switch.

NG **REPLACE CRUISE CONTROL MAIN SWITCH**

OK

2.	CHECK HARNESS AND CONNECTOR (CRUISE CONTROL MAIN SWITCH - SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY)
----	---



(a) Disconnect the spiral cable with sensor sub-assembly side and main switch side connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (main switch side) - 3 (spiral cable with sensor sub-assembly side)	Always	Below 1 Ω
3 (main switch side) - 4 (spiral cable with sensor sub-assembly side)	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Spiral Cable with Sensor Sub-assembly)
*b	Front view of wire harness connector (to Cruise Control Main Switch)

(c) Reconnect the spiral cable with sensor sub-assembly side and main switch side connector.

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3.	INSPECT SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY
-----------	--

NOTICE:

The spiral cable with sensor sub-assembly is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable with sensor sub-assembly may prevent the airbag from deploying. Be sure to read the page shown in the brackets.

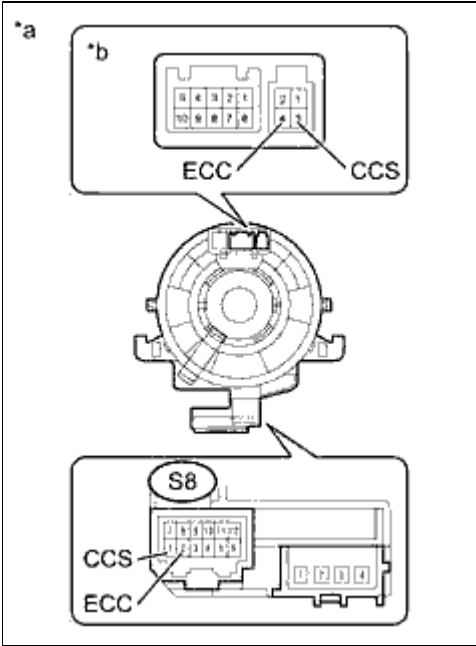
HINT:

- Removal INFO .
- Installation INFO .

- (a) Remove the spiral cable with sensor sub-assembly.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (CCS) main switch side - S8-1 (CCS)	The spiral cable with sensor sub-assembly position is center	Below 1 Ω
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the left	
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the right	
4 (ECC) main switch side - S8-2 (ECC)	The spiral cable with sensor sub-assembly position is center	Below 1 Ω
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the left	
	The spiral cable with sensor sub-assembly position is 2.5 rotations to the right	



Text in Illustration

*a	Component without harness connected (Spiral Cable with Sensor Sub-assembly)
*b	Cruise Control Main Switch Side

- (c) Reinstall the spiral cable with sensor sub-assembly.

NG ▶ **REPLACE SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY**

OK



4.	CHECK HARNESS AND CONNECTOR (SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY - ECM AND BODY GROUND)
----	--

- (a) Disconnect the E20 ECM connector.
- (b) Disconnect the S8 spiral cable with sensor sub-assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
S8-2 (ECC) - Body Ground	Always	Below 1 Ω

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E20-22 (CCS) - S8-1 (CCS)	Always	Below 1 Ω
E20-22 (CCS) - Body ground	Always	10 k Ω or higher

- (d) Reconnect the ECM connector.
- (e) Reconnect the spiral cable with sensor sub-assembly connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK  **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000000PLV0FTX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): Cruise Main Indicator Light Circuit; 2016 MY Tacoma [08/2015 -]		

Cruise Main Indicator Light Circuit

DESCRIPTION

- When the ECM detects a cruise control switch on signal from the cruise control switch, the ECM sends the signal to the combination meter assembly through CAN communication. Then the cruise control indicator light turns on.
- The cruise control indicator light circuit uses CAN communication. If there is a malfunction in this circuit, check for DTCs in the CAN communication system before troubleshooting this circuit.

INSPECTION PROCEDURE

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM (CRUISE MAIN INDICATOR LIGHT)
-----------	---

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Combination Meter / Active Test.
- According to the display on the Techstream, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Indicat. Lamp Cruise	Cruise main indicator light	ON/OFF	Confirm that the vehicle is stopped with the engine idling.

OK:

Cruise main indicator light turns on/off.

NG  **GO TO METER / GAUGE SYSTEM**

OK



2. READ VALUE USING TECHSTREAM (CRUISE CONTROL SWITCH)

- (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 / Cruise Control / Data List.
- (e) According to the display on the Techstream, read the Data List.

Cruise Control

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main SW M-CPU	Cruise control switch (Main CPU) / OFF or ON	OFF: Cruise control switch off ON: Cruise control switch on	-

OK:

On screen, item changes between ON and OFF according to above chart.

NG  **REPLACE ECM**

OK  **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PM308UX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- Connect the Techstream to the DLC3.
- Turn the ignition switch ON.
- Turn the Techstream on.
- Enter the following menus:
Powertrain / Cruise Control / Data List.
- According to the display on the Techstream, read the Data List.

Cruise Control

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
CCS Vehicle Spd	Vehicle speed/min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual vehicle speed	-
CCS Mem Vehicle Spd	Cruise control memorized speed/min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual stored vehicle speed	-
Cruise Control	Cruise control system active condition/ON or OFF	ON: Cruise control activated OFF: Cruise control deactivated	-
CCS Main SW M-CPU	Main switch signal (Main CPU)/ON or OFF	ON: Main switch on (Pushed on) OFF: Main switch off (Pushed off)	"3"
CCS Ready M-CPU	Cruise control system standby condition (Main CPU)/ON or OFF	ON/OFF: Change ON/OFF each time Main SW is pushed in.	"1"
CCS Indicator M-CPU	Cruise indicator signal (Main CPU)/ON or OFF	ON: "CCS READY" ON OFF: "CCS READY" OFF	"2"
Cancel Switch	CANCEL switch signal/ON or OFF	ON: CANCEL switch on OFF: CANCEL switch off	-
SET/COAST Switch	-/SET switch signal/ON or OFF	ON: -/SET switch on OFF: -/SET switch off	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
RES/ACC Switch	+ /RES switch signal/ON or OFF	ON: +/RES switch on OFF: +/RES switch off	-
Stop Light SW M-CPU	Stop light switch signal (Main CPU)/ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
Cruise Operation Status	PNP switch signal (D position)/ON or OFF	ON: Shift lever in D OFF: Shift lever not in D	-
CCS Request Torque	Cruise control request torque/min.: -1024 Nm, max.: 1016 Nm	Actual required torque	-
# Codes	Number of present trouble codes/min.: 0, max.: 255	Number of DTCs will be displayed	-

HINT:

- "3" is OK but "1" is NG → ECM failure
- "1" is OK but "2" is NG → DTC output or ECM failure
- "3" is OK but CRUISE indicator does not come on → CRUISE main indicator, wire harness or ECM failure



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PM00EDX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

DIAGNOSIS SYSTEM

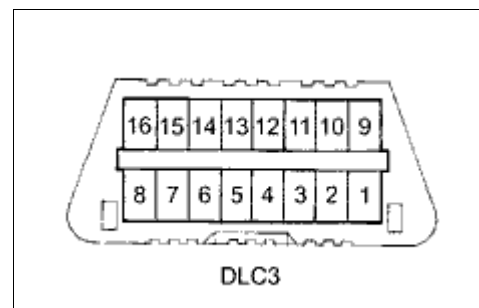
1. DESCRIPTION

The ECM stores DTCs (Diagnostic Trouble Codes) when trouble occurs on the vehicle. The diagnosis system allows reading of DTCs stored in the ECM when a the Techstream is connected to the DLC3 (Data Link Connector 3). If the CRUISE MAIN indicator light does not come on after a DTC check, it means that a malfunction has occurred in the cruise control system. Use a the Techstream or SST to check for DTCs.

2. CHECK DLC3

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

TERMINAL NO.	TESTER CONNECTION	CONDITION	SPECIFICATION
4	Chassis ground - Body Ground	Always	Below 1 Ω
16	Battery positive - Body Ground	Always	9 to 14 V



HINT:

If the Techstream display shows "UNABLE TO CONNECT TO VEHICLE" after connecting the Techstream to the DLC3 and turning the ignition to the ON position, there is a problem in either the vehicle or the Techstream itself.

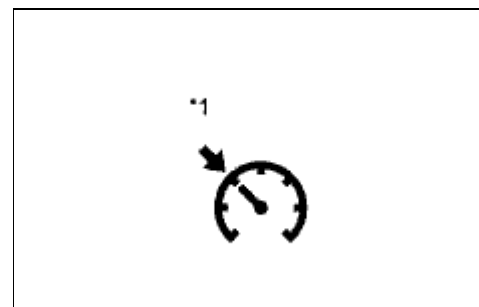
- If communication is normal when connecting the tester to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still not possible when connecting the tester to another vehicle, it suggests the problem exists in the tester. In this case, consult the Service Department listed in the tester's instruction manual.

3. CHECK INDICATOR

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

Text in Illustration

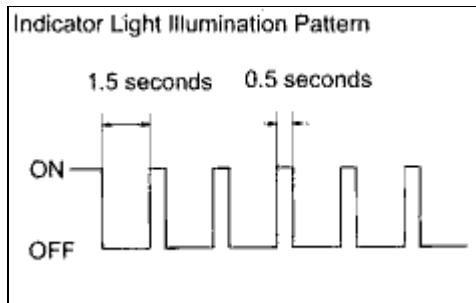
*1	Cruise Control Indicator Light
----	--------------------------------



(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 ON/OFF illumination of the indicator light, inspect the cruise main indicator light circuit **INFO** .



HINT:

If a malfunction occurs in the vehicle speed sensor, stop light switch assembly or other related parts while cruise control driving, the ECM actuates AUTO CANCEL of the cruise control. Then the power indicator turn off, the warning light illuminates and the vehicle display indicates a malfunction, to inform the driver of the malfunction. At the same time, data of the malfunction is stored as a diagnostic trouble code (DTC).



Last Modified: 11-13-2015	6.6 S	Doc ID: RM000000PLQ0C9X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

If a trouble code is indicated while checking DTCs, inspect the circuit listed for that code in the table below, and proceed to the applicable page.

Cruise Control System

DTC CODE	DETECTION ITEM	SEE PAGE
P0571	Stop Light Switch Circuit Malfunction	INFO
P0575	Cruise Control Input Circuit	INFO
P1578	Brake System Malfunction	INFO
U0122	Lost Communication with Skid Control ECU	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PM10AYX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus:
Powertrain / Cruise Control / Trouble Codes.
- (e) Read the DTCs.

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus:
Powertrain / Cruise Control / Trouble Codes.
- (e) Clear the DTCs.



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PLO0FRX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedures to troubleshoot the cruise control system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

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 COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*
-----------	--

(a) Use the Techstream to check if the CAN communication system is functioning normally.

Result

RESULT	PROCEED TO
CAN DTC is not output	A
CAN DTC is output	B

B **GO TO CAN COMMUNICATION SYSTEM**

A

4.	CHECK FOR DTC*
-----------	-----------------------

(a) Check for DTCs [INFO](#) .

(b) Clear the DTCs [INFO](#) .

(c) Recheck for DTCs. Based on the DTCs output in the first step, try to force output of the cruise control system DTCs by simulating the conditions indicated by the DTCs.

Result

RESULT	PROCEED TO
DTC is not output	A
DTC is output	B

B **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A

5.	PROBLEM SYMPTOMS TABLE
-----------	-------------------------------

(a) Refer to Problem Symptoms Table [INFO](#) .

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) Road Test [INFO](#) .

(b) Terminals of ECM [INFO](#) .

(c) Data List / Active Test [INFO](#) .

NEXT



7.	ADJUST, REPAIR OR REPLACE
-----------	----------------------------------

NEXT



8.	CONFIRMATION TEST
-----------	--------------------------

NEXT  **END**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM00000155Y00QX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): P0571; Stop Light Switch Circuit Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	P0571	Stop Light Switch Circuit Malfunction
------------	--------------	--

DESCRIPTION

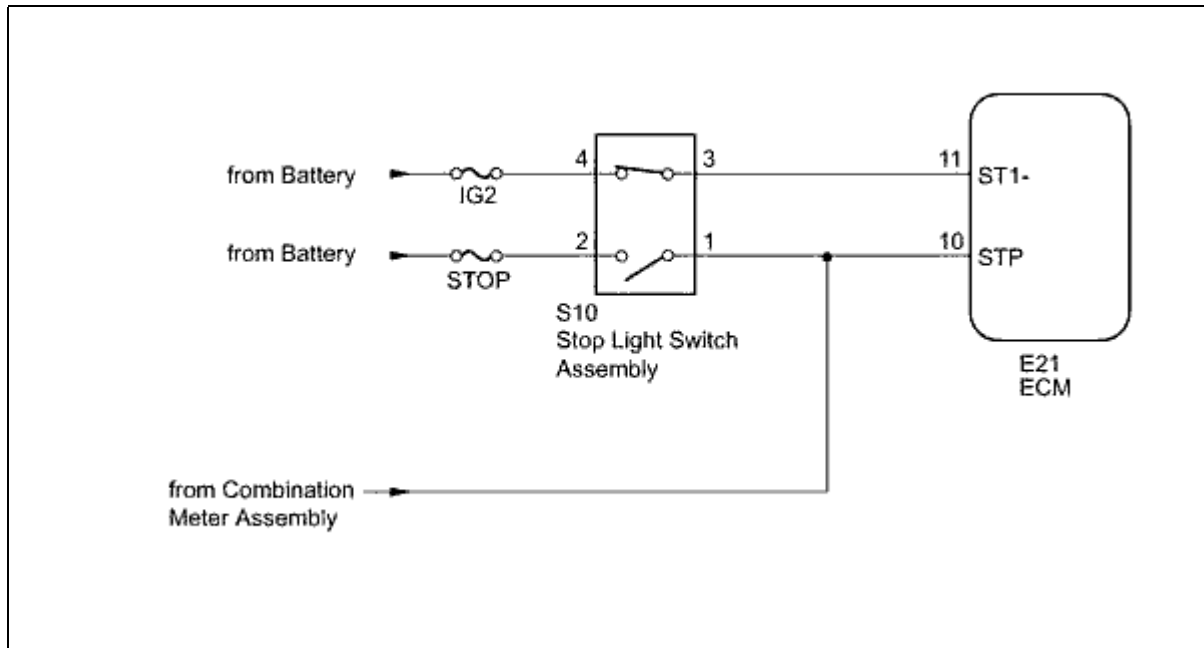
The cruise control system cancels cruising when the ECM detects that the brake pedal is depressed while cruise control driving. The stop light switch assembly sends signals to the ECM according to the brake pedal conditions. When the brake pedal is free, terminal ST1- is the positive (+) battery voltage, and terminal STP voltage is below 1 V. While depressing the brake pedal, terminal ST1- is below 1 V, and STP is positive (+) battery voltage. Under braking, the ECM cancels cruise control as one of the manual cancel functions.

The ECM outputs this trouble code when the voltage of terminals ST1- and STP are both below 1 V for 0.5 seconds or more at the same moment.

The fail-safe function operates to enable normal driving even if there is a malfunction in the stop light signal circuit.

DTC NO.	DTC DETECTED CONDITIONS	TROUBLE AREAS
P0571	ECM detects a malfunction of the stop light switch circuit under both of the following conditions. • Voltage of terminal STP is below 1 V for 0.5 seconds or more. • Voltage of terminal ST1- is below 1 V for 0.5 seconds or more.	• Stop light switch assembly • Stop light switch circuit • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	CHECK FOR DTC (VEHICLE STABILITY CONTROL SYSTEM)
----	---

(a) Check for DTCs in Vehicle Stability Control System INFO.

OK:

DTC is not output.

NG ▶ GO TO DTC CHART

OK



2.	CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH ASSEMBLY - BATTERY)
----	---

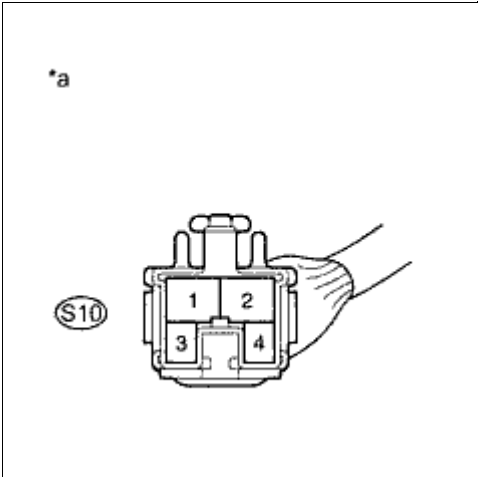
- (a) Disconnect the S10 connector from the stop light switch assembly.
- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
S10-2 - Body ground	Always	11 to 14 V
S10-4 - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Stop Light Switch Assembly)
----	---



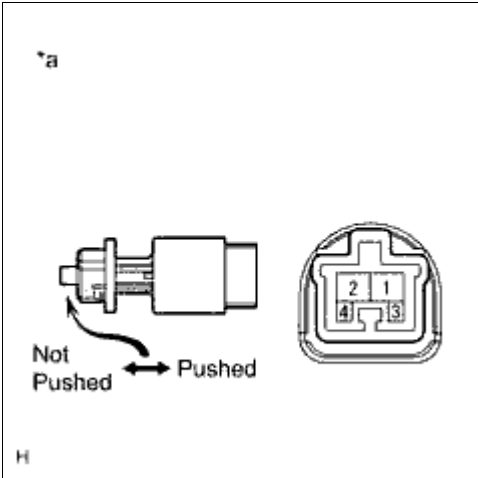
- (c) Reconnect the stop light switch assembly connector.

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.	INSPECT STOP LIGHT SWITCH ASSEMBLY
----	------------------------------------

- (a) Turn the ignition switch off.



- (b) Remove the stop light switch assembly **INFO** .
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
S10-1 - S10-2	Switch pin not pushed	Below 1Ω
S10-3 - S10-4	Switch pin not pushed	10 kΩ or higher
S10-1 - S10-2	Switch pin pushed	10 kΩ or higher
S10-3 - S10-4	Switch pin pushed	Below 1Ω

Text in Illustration

*a	Component without harness connected (Stop Light Switch assembly)
----	---

(d) Reinstall the stop light switch assembly.

NG  **REPLACE STOP LIGHT SWITCH ASSEMBLY**

OK



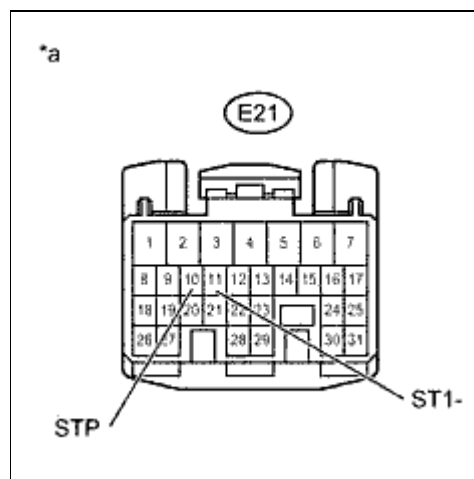
4.	INSPECT ECM
-----------	--------------------

(a) Disconnect the ECM connectors.

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E21-10 (STP) - Body ground	Brake pedal depressed	11 to 14 V
E21-10 (STP) - Body ground	Brake pedal released	Below 1V
E21-11 (ST1-) - Body ground	Brake pedal depressed	Below 1V
E21-11 (ST1-) - Body ground	Brake pedal released	11 to 14 V



Text in Illustration

*a	Front view of wire harness connector (to ECM)
----	--

(c) Reconnect the ECM connectors.

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE ECM



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002U3L04DX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): P0575; Cruise Control Input Circuit; 2016 MY Tacoma [08/2015 -]		

DTC	P0575	Cruise Control Input Circuit
------------	--------------	-------------------------------------

DESCRIPTION

This DTC indicates the internal abnormalities of the ECM.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
P0575	When both of the following conditions are met: • STP signals input to the ECM supervisory CPU and control ECU are different for 0.15 seconds or more • 0.4 seconds have passed after cruise cancel input signal (STP input) is input to the ECM	ECM

HINT:

If DTC P0575 is detected while the cruise control is in operation, the skid control ECU clears the stored vehicle speed in the ECM and cancels the cruise control operation. At the same time, the CRUISE main indicator light blinks to inform the driver of the malfunction. When this trouble code is detected, fail-safe remains on until the ignition switch is turned off.

INSPECTION PROCEDURE

PROCEDURE

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

(a) Clear the DTC  .

(b) Recheck for DTC  .

OK:

DTC P0575 is not output.

NG  **REPLACE ECM**

OK  **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000000ZK707BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): P1578; Brake System Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	P1578	Brake System Malfunction
------------	--------------	---------------------------------

DESCRIPTION

This DTC is output when the VSC system has a problem. Check the VSC system when this DTC is output.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
P1578	• Diagnosis Condition: Cruise control in operation • Malfunction Status: Brake System Malfunction	• VSC system • ECM

INSPECTION PROCEDURE

HINT:

When this DTC is output, confirm that the vehicle stability control system is normal since it may be malfunctioning.

for Hydraulic Brake Booster: **INFO**

for Vacuum Brake Booster: **INFO**

PROCEDURE

1.	CHECK FOR DTC (ABS/VSC/TRAC)
-----------	-------------------------------------

- Connect the Techstream to the DLC3.
- Turn the ignition switch on.
- Turn the Techstream on.
- Enter the following menus: Chassis / ABS/VSC/TRAC / Trouble Codes.
- Check for DTCs **INFO**.

OK:

Vehicle stability control system DTCs are not output

Result

RESULT	PROCEED TO
OK	A

RESULT	PROCEED TO
NG (for Hydraulic Brake Booster)	B
NG (for Vacuum Brake Booster)	C

B ► **GO TO VEHICLE STABILITY CONTROL SYSTEM**

C ► **GO TO VEHICLE STABILITY CONTROL SYSTEM**

A



2.	CHECK FOR DTC (DTC P1578)
-----------	----------------------------------

(a) Clear the DTCs  .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.

(c) Turn the Techstream on.

(d) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -/SET to begin control of vehicle speed by the cruise control system.

(e) Check the DTCs  .

OK:

DTC P1578 is not output

NG ► **REPLACE ECM**

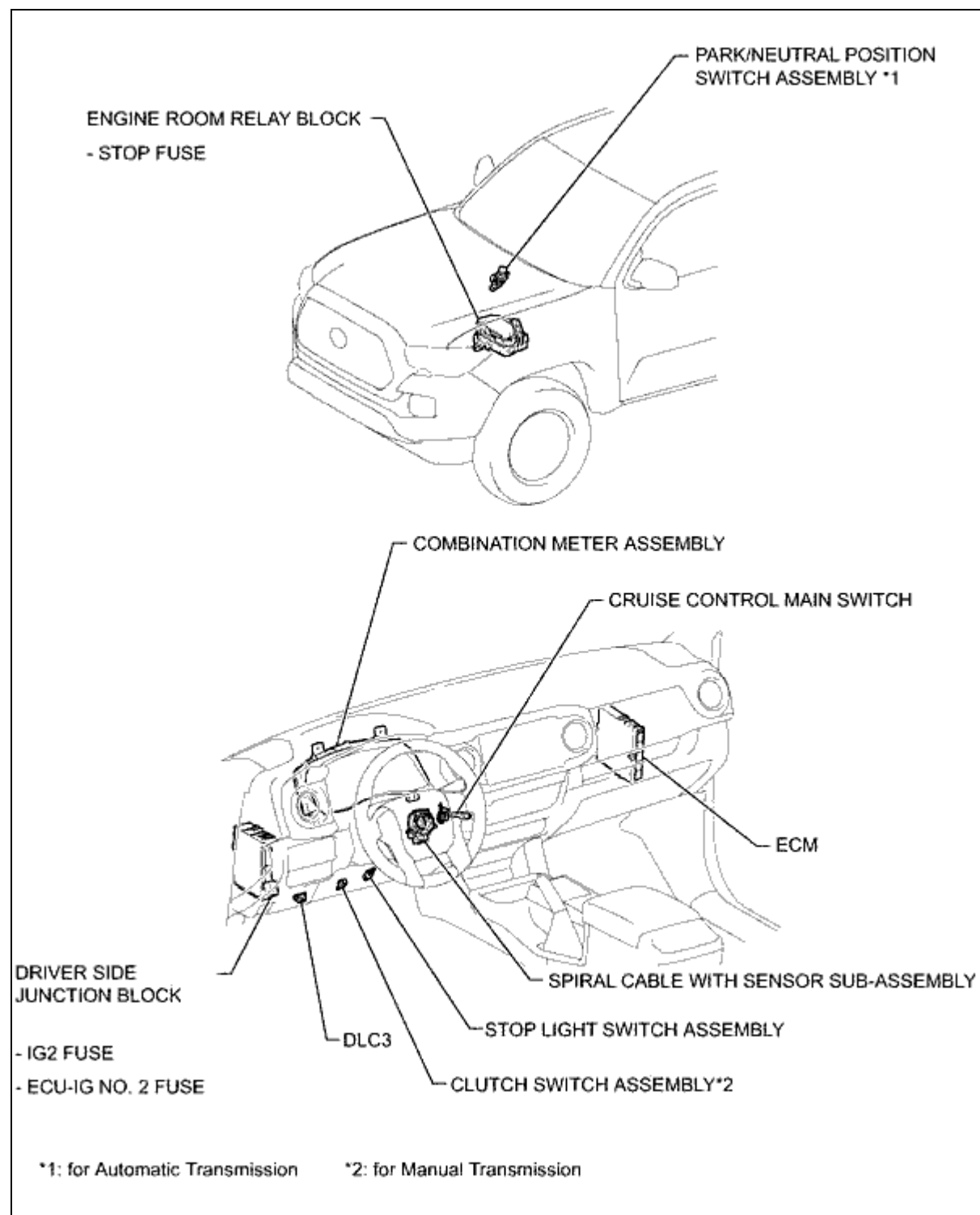
OK ► **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 R	Doc ID: RM000000SSZ087X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION





Last Modified: 11-13-2015	6.6 T	Doc ID: RM000001AFS011X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the causes of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Cruise Control System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Main switch cannot be turned ON (Indicator light on the combination meter does not come on)	CAN Communication Line	INFO
	Cruise Control Switch Circuit	INFO
	Cruise Main Indicator Light Circuit	INFO
	Combination Meter System	INFO
	ECM	INFO
Desired speed cannot be set (Indicator light on the combination meter comes on when the main switch is turned ON, but goes off when operating the "SET" function)	Cruise Control Switch Circuit	INFO
	ECM	INFO
Desired speed cannot be set (Indicator light on the combination comes on when the main switch is turned ON and it remains ON, while operating the "SET" function)	Cruise Control Switch Circuit	INFO
	Lighting System	INFO
	Clutch Switch Circuit (for Manual Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60E Automatic Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60F Automatic Transmission)	INFO
	Cruise Main Indicator Light Circuit	INFO
	Vehicle Speed Sensor Circuit	INFO
	Combination Meter System	INFO
	ECM	INFO
While cruise control driving, the set speed is canceled (Indicator light remains ON)	Cruise Control Switch Circuit	INFO
	Vehicle Stability Control System (for Hydraulic Brake Booster)	INFO

SYMPTOM	SUSPECTED AREA	SEE PAGE
	Vehicle Stability Control System (for Vacuum Brake Booster)	INFO
	Lighting System	INFO
	Cruise Main Indicator Light Circuit	INFO
	Clutch Switch Circuit (for Manual Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60E Automatic Transmission)	INFO
	Park/neutral Position Switch Circuit (for AC60F Automatic Transmission)	INFO
	ECM	INFO
Hunting occurs (Speed is not constant)	Vehicle Speed Sensor Circuit	INFO
	ECM	INFO
Speed setting cannot be canceled ("CANCEL" function failure only)	Cruise Control Switch Circuit	INFO
	ECM	INFO
DTC is not output, or is output when should not be	TC and CG Terminal Circuit	INFO
	ECM	INFO
Cruise Main indicator light does not come on	Cruise Control Switch Circuit	INFO
	Cruise Main Indicator Light Circuit	INFO
	ECM	INFO
	Combination Meter Assembly	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000ST00DIX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): ROAD TEST; 2016 MY Tacoma [08/2015 -]		

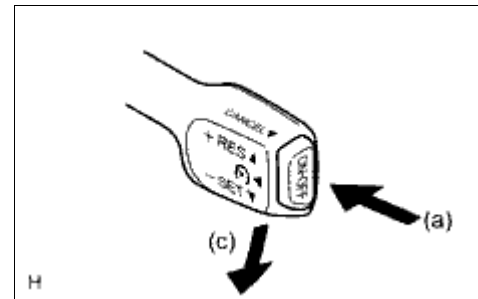
ROAD TEST

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. INSPECT 'SET' FUNCTION

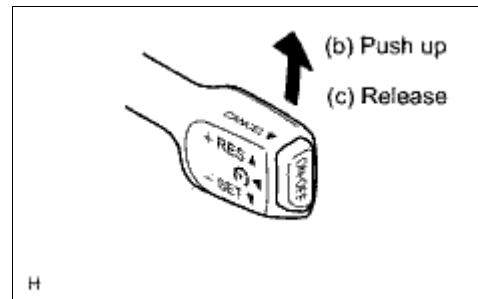
- (a) Push the ON-OFF button on.



- (b) Drive at the vehicle at a desired speed 25 mph (40 km/h) or higher.
(c) Push down the control switch lever to "-/SET" to set the cruising speed.
(d) After releasing the lever, check that the vehicle cruises at the set speed.

2. INSPECT '+' FUNCTION

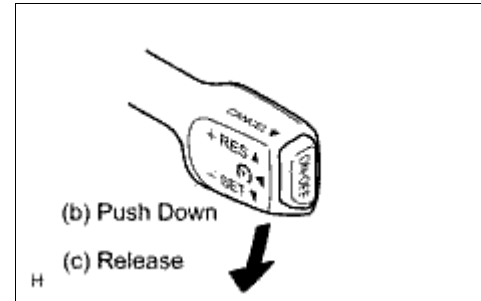
- (a) Set a desired speed as in step 1.



- (b) Check that the vehicle speed increases while the control switch lever is pushed up to "+/RES".
(c) Check that the vehicle cruises at the newly set speed when the switch is released.
(d) Momentarily (approximately 0.6 seconds) push up the control switch lever to the "+/RES", and then release it. Check that the vehicle speed increases by approximately 1 mph (1.6 km/h) with each lever operation (Tap-up function).

3. INSPECT '-' FUNCTION

(a) Set a desired speed as in step 1.



(b) Check that the vehicle speed decreases while the control switch lever is pushed down to "-/SET".

(c) Check that the vehicle cruises at the newly set speed when the switch is released.

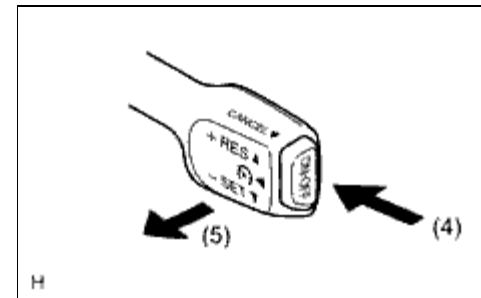
(d) Momentarily (approximately 0.6 seconds) push down the control switch to "-/SET", and then release it. Check that the vehicle speed decreases by approximately 1 mph (1.6 km/h) with each lever operation (Tap-down function).

HINT:

- The cruise control system automatically cancels when the vehicle speed decreases to below 25 mph (40 km/h).

4. INSPECT 'CANCEL' FUNCTION

(a) Set a desired speed as in step 1.



(b) Check that the system cancels cruise control when one of the following is conducted:

- (1) Depressing the brake pedal
- (2) Depressing the clutch pedal (M/T)
- (3) Shifting into any position except D and S while driving.
- (4) Pushing the cruise control main switch ON-OFF button off
- (5) Pulling the cruise control switch lever to "CANCEL"

5. INSPECT 'RES (RESUME)' FUNCTION

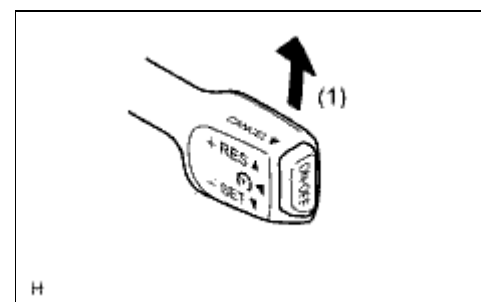
(a) Set a desired speed as in step 1.

- (1) After canceling the cruise control according to any of the above operations except (4), push up the switch lever to "+/RES" at a speed of 25 mph (40 km/h) or higher.

(2) Check that the vehicle resumes the previously set speed.

HINT:

The 'RES' function does not resume the set speed when the vehicle speed decreases below 25 mph (40 km/h).





Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000PLZ0EVX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

SYSTEM DESCRIPTION

1. CRUISE CONTROL SYSTEM

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

The microcomputer which controls the cruise control system is built into the ECM, and the actuator is the throttle position sensor and motor.

Constant speed control gets ready 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.

HINT:

- The cruise control main switch is an automatic return type switch which operates only while it is pushed in one direction and turns off after it is released.
- "SET" and "-", "RES" and "+", "ON" and "OFF" operations are all controlled by using the same switch.

(a) 'SET' function

When the cruise control main switch is pushed down to "-/SET", the ECM stores the set speed and compares it with the actual vehicle speed. If the actual driving speed is greater than the set speed, the ECM sends a signal to the throttle position sensor and motor 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.

(b) '+' function

The cruise set speed increases while the cruise control main switch lever is pushed up to "+/RES". The vehicle begins to cruise at the newly set speed when the cruise control main switch lever is released.

(c) Tap-up function

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

(d) '-' function

The cruise set speed decreases while the cruise control main switch lever is pushed down to "-/SET". The vehicle begins to cruise at the newly set speed when the cruise control main switch lever is released.

(e) Tap-down function

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

(f) Low speed limit

The lowest possible limit of the speed setting range is approximately 25 mph (40 km/h). The cruise control system cannot be set when the vehicle speed is below the speed limit. Cruise control operation is

automatically canceled when the vehicle speed decreases to below the low speed limit while the cruise control is in operation.

(g) High speed limit

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

(h) 'RES' function

If the cruise control operation was canceled under the manual cancel condition (other than by turning cruise control main switch ON-OFF button off), and if the driving speed is within the limit range, pushing the cruise control main switch to "+/RES" restores the vehicle speed stored at the time of cancellation, and maintains constant speed control. Even when cruise control is canceled automatically due to the vehicle speed decreasing below the low speed limit, cruise control can be resumed when the vehicle speed returns to over the low speed limit, since the stored vehicle speed remains in the memory.

(i) MANUAL CANCEL function

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

- The cruise control main switch is pulled to "CANCEL".
- The brake pedal is depressed.
- The clutch pedal is depressed (M/T ONLY).
- The cruise control main switch ON-OFF button is pushed off.
- The D position circuit in the neutral start switch is turned from ON to OFF. Shift the gear from the D or S position to the N position.

(j) AUTO CANCEL function

- (1) When any of the following malfunctions occurs, the ECM clears the set vehicle speed and deactivates the cruise control.

In this case, the power indicator turn off, the warning light illuminates and the vehicle display indicates a malfunction*1 until the cruise control main switch is turned OFF and the ECM allows the cruise control to be reactivated when the main switch is next turned ON again.

*1: w/ Multi-information Display

- Open or short malfunctions in the stop light switch.
- Abnormalities in the vehicle speed signal.
- Malfunctions in the throttle body.

- (2) When any of the following malfunctions occurs, the ECM clears the set vehicle speed and deactivates the cruise control.

In this case, the power indicator turn off, the warning light illuminates and the vehicle display indicates a malfunction until the cruise control main switch is turned OFF and the ECM allows the cruise control to be reactivated when the ignition switch is next turned ON again.

- Malfunctions in the stop light switch input circuit.
- Malfunctions in the cancel circuit.

- (3) When the vehicle is in one of the following conditions, the ECM deactivates the cruise control (the cruise control can be reset).

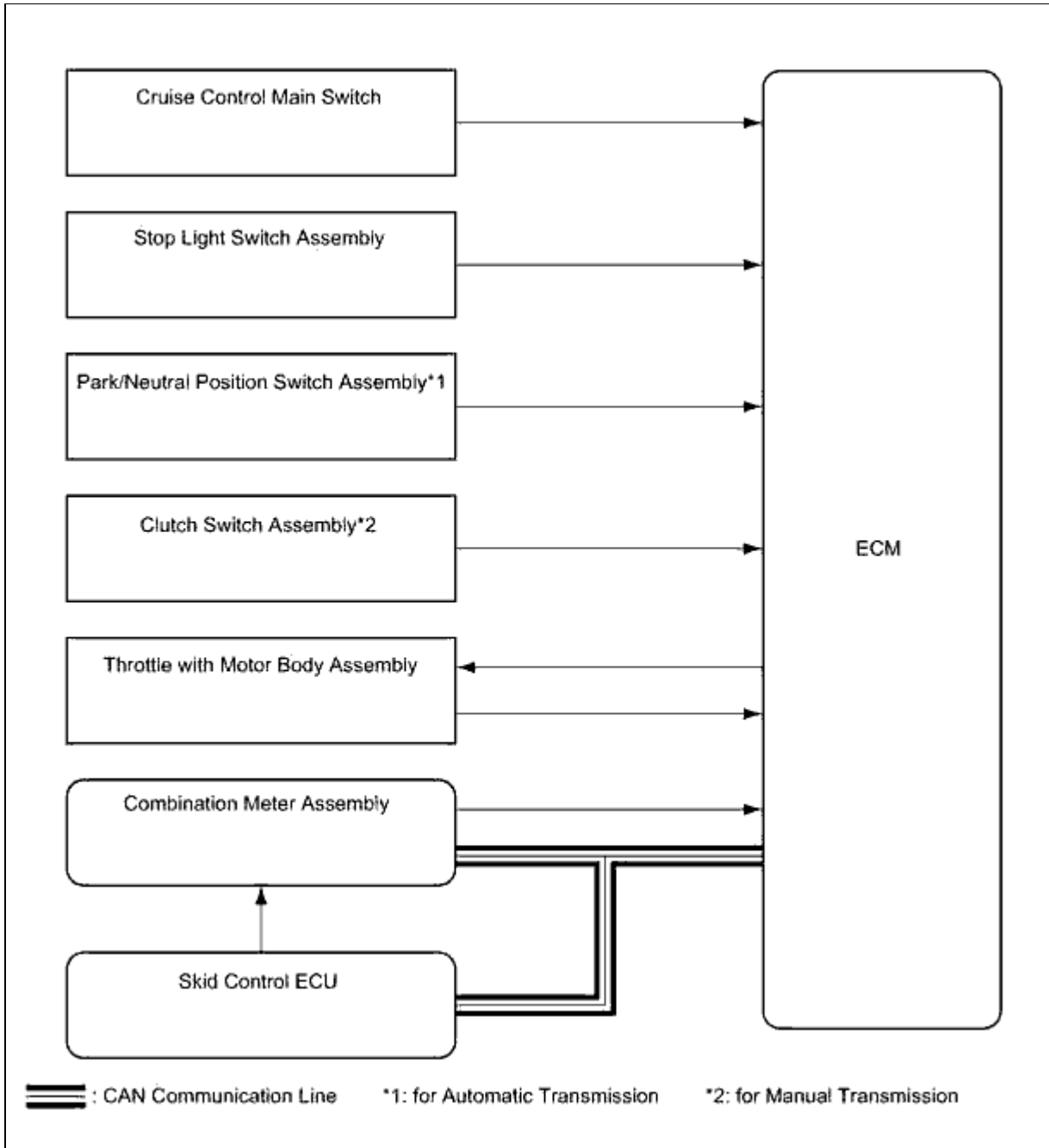
- Actual vehicle speed is below the lower vehicle speed limit (the set vehicle speed is retained).
- Actual vehicle speed decreases by 10 mph (16 km/h) from the set vehicle speed (the set vehicle speed is cleared).
- VSC operates while vehicle is in motion.
- TRAC operates for a certain amount of time while the vehicle is in motion.

- TRAC and VSC are off.



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PM20DMX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM



Communication Table

SENDER	RECEIVER	SIGNAL	LINE
ECM	Combination Meter Assembly	Cruise main indicator light signal	CAN
Skid Control ECU	ECM	Vehicle stability control system operation signal	CAN



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000001BSO00TX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): TC and CG Terminal Circuit; 2016 MY Tacoma [08/2015 -]		

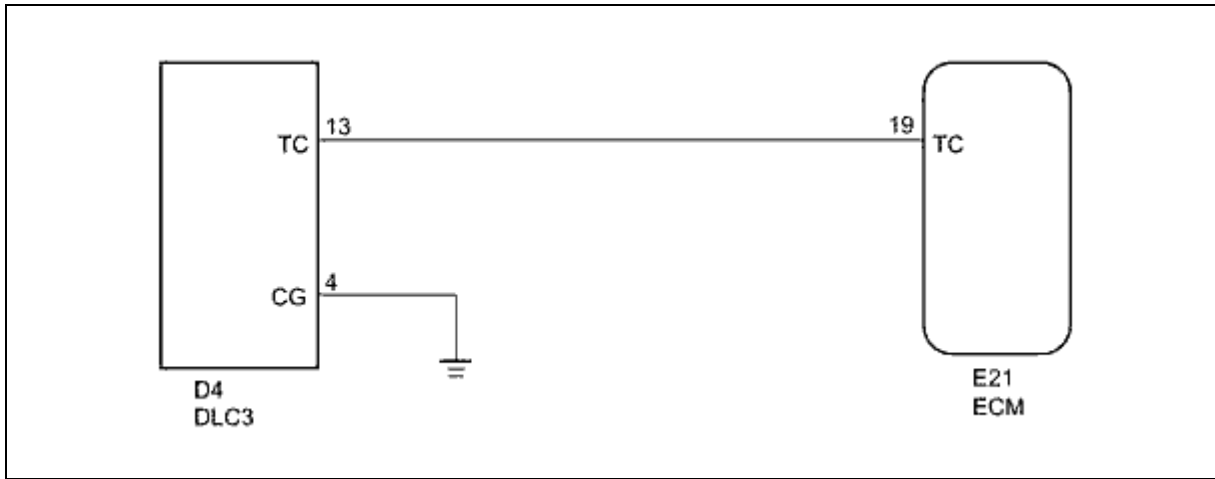
TC and CG Terminal Circuit

DESCRIPTION

The DLC3 circuit enables reading of Diagnostic Trouble Codes (DTCs) with no Techstream by connecting terminals TC and CG of the DLC3 connector.

Stored DTCs are displayed in blinking patterns of the CRUISE MAIN indicator light located on the combination meter.

WIRING DIAGRAM



HINT:

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

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (TC of DLC3 - ECM)
----	---

- (a) Disconnect the E21 ECM connector.
 - (b) Measure the resistance according to the value(s) in the table below.
- Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
-------------------	-----------	---------------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D4-13 (TC) - E21-19 (TC)	Always	Below 1 Ω

(c) Reconnect the ECM connector.

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.	CHECK HARNESS AND CONNECTOR (TC of DLC3 - BODY GROUND)
-----------	---

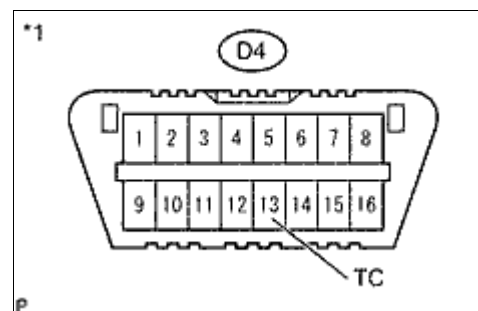
(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
TC (D4-13) - Body ground	Always	10 k Ω or higher

Text in Illustration

*1	DLC3
----	------



NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

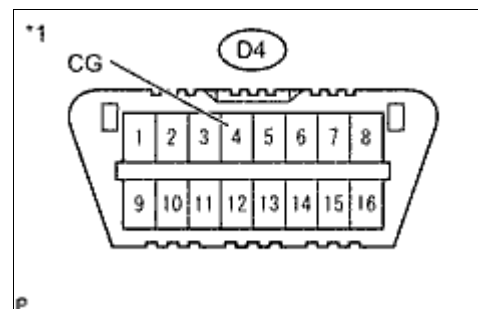
3.	CHECK HARNESS AND CONNECTOR (CG of DLC3 - BODY GROUND)
-----------	---

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
CG (D4-4) - Body ground	Always	Below 1 Ω

Text in Illustration



*1	DLC3
----	------

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

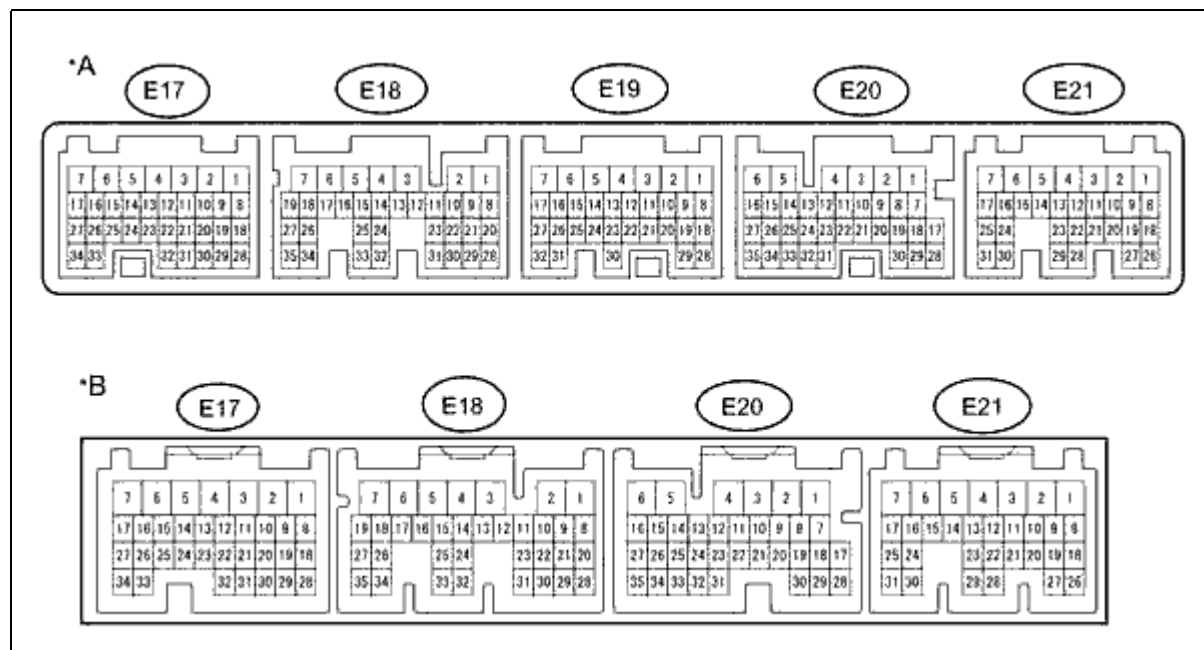
OK ► REPLACE ECM



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PLR044X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. ECM



Text in Illustration

*A	for Automatic Transmission	*B	for Manual Transmission
----	----------------------------	----	-------------------------

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E21-19 (TC) - E17-3 (E1)	G - W-B	DTC output signal	Ignition switch ON	11 to 14 V
E21-19 (TC) - E17-3 (E1)	G - W-B	DTC output signal	Ignition switch ON Connect terminals TC and CG of DLC3	Below 2 V
E21-11 (ST1-) - E17-3 (E1)	V - W-B	Cruise cancel input signal	Ignition switch ON Depress Brake pedal	Below 1 V
E21-11 (ST1-) - E17-3 (E1)	V - W-B	Cruise cancel input signal	Ignition switch ON Release brake pedal	11 to 14 V
E21-10 (STP) - E17-3 (E1)	P - W-B	Stop light switch input signal	Depress brake pedal	11 to 14 V
E21-10 (STP) - E17-3 (E1)	P - W-B	Stop light switch input signal	Release brake pedal	Below 1 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E20-22 (CCS) - E17-3 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON	11 to 14 V
E20-22 (CCS) - E17-3 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON CANCEL switch ON	6.6 to 10.1 V
E20-22 (CCS) - E17-3 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON -(COAST)/SET switch ON	4.5 to 7.1 V
E20-22 (CCS) - E17-3 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON +(ACCEL)/RES switch ON	2.3 to 4 V
E20-22 (CCS) - E17-3 (E1)	B - W-B	Cruise control main switch output signal	Ignition switch ON MAIN switch ON	Below 1 V
E17-3 (E1) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
E20-18 (D) - E17-3 (E1)*1	SB - W-B	Park/neutral position switch signal	Ignition switch ON, shift lever D or S positions	11 to 14 V
E20-18 (D) - E17-3 (E1)*1	SB - W-B	Park/neutral position switch signal	Ignition switch ON, shift lever other than D and S positions	Below 1 V
E20-18 (D) - E17-3 (E1)*2	SB - W-B	Clutch switch input signal	Ignition switch ON Depress clutch pedal	Below 1 V
E20-18 (D) - E17-3 (E1)*2	SB - W-B	Clutch switch input signal	Ignition switch ON Release clutch pedal	11 to 14 V

*1: for Automatic Transmission

*2: for Manual Transmission



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002X2204CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM (for 2TR-FE): U0122; Lost Communication with Skid Control ECU; 2016 MY Tacoma [08/2015 -]		

DTC	U0122	Lost Communication with Skid Control ECU
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DESCRIPTION

The ECM receives signals from the skid control ECU (brake actuator assembly) via CAN communication.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
U0122	While cruise control main switch ON, communication stop between skid control ECU (brake actuator assembly) and ECM continues for 2.6 seconds or more	• CAN communication system • ECM • Skid control ECU (brake actuator assembly)

INSPECTION PROCEDURE

HINT:

Refer to troubleshooting in CAN Communication System [INFO](#) .

PROCEDURE

1.	CHECK FOR DTC
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(a) Clear the DTCs [INFO](#) .

(b) Perform the following to make sure that the DTC detection conditions are met.

HINT:

If the detection conditions are not met, the malfunction cannot be detected.

- (1) Drive the vehicle at a speed for which cruise control operation is possible.
- (2) Turn the cruise control system on using the cruise control main switch (ON/OFF).
- (3) Push the cruise control main switch to -SET to begin control of vehicle speed using the cruise control system.

(c) Check the DTCs [INFO](#) .

OK:

DTC U0122 is not output

OK ► USE SIMULATION METHOD TO CHECK

