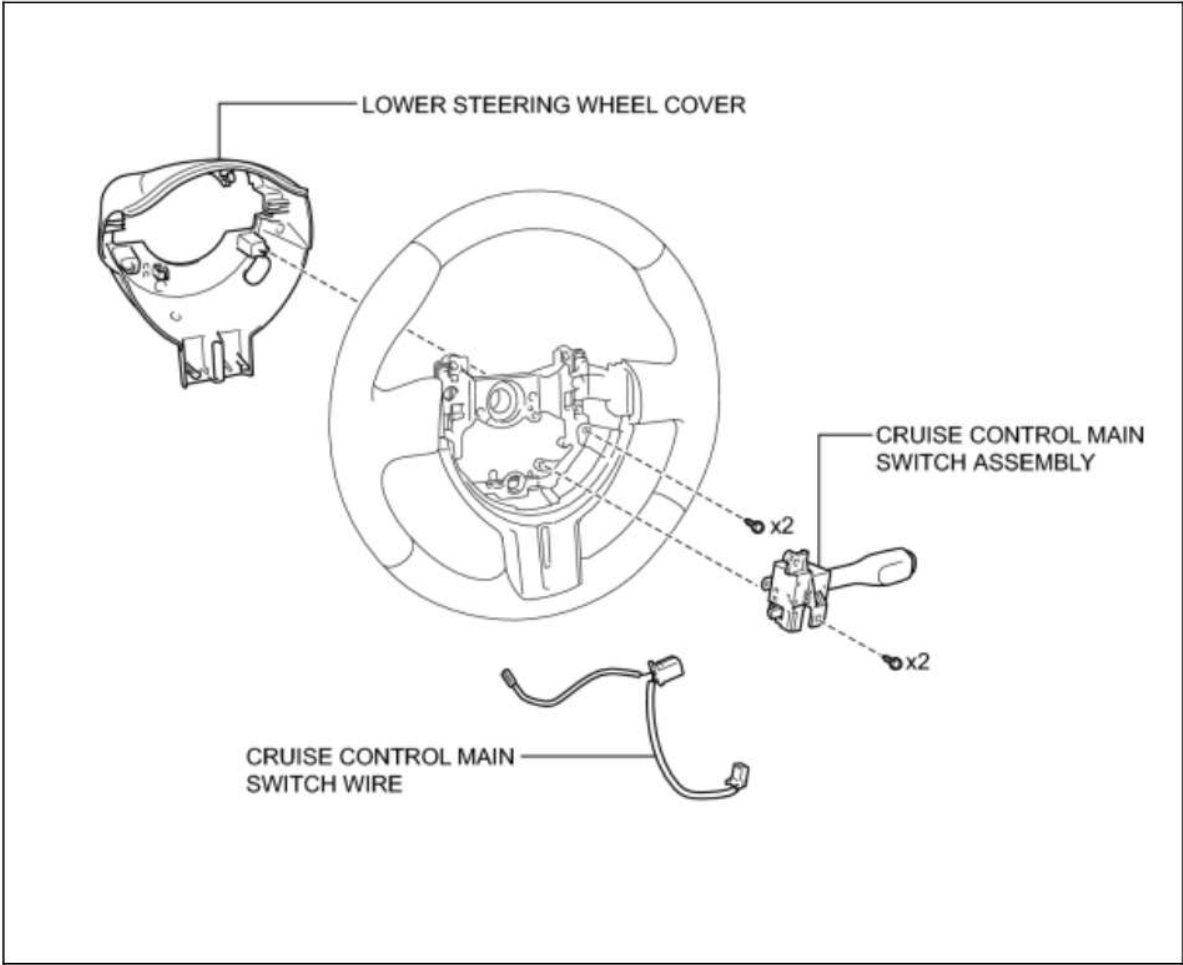


Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000VQ204UX
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



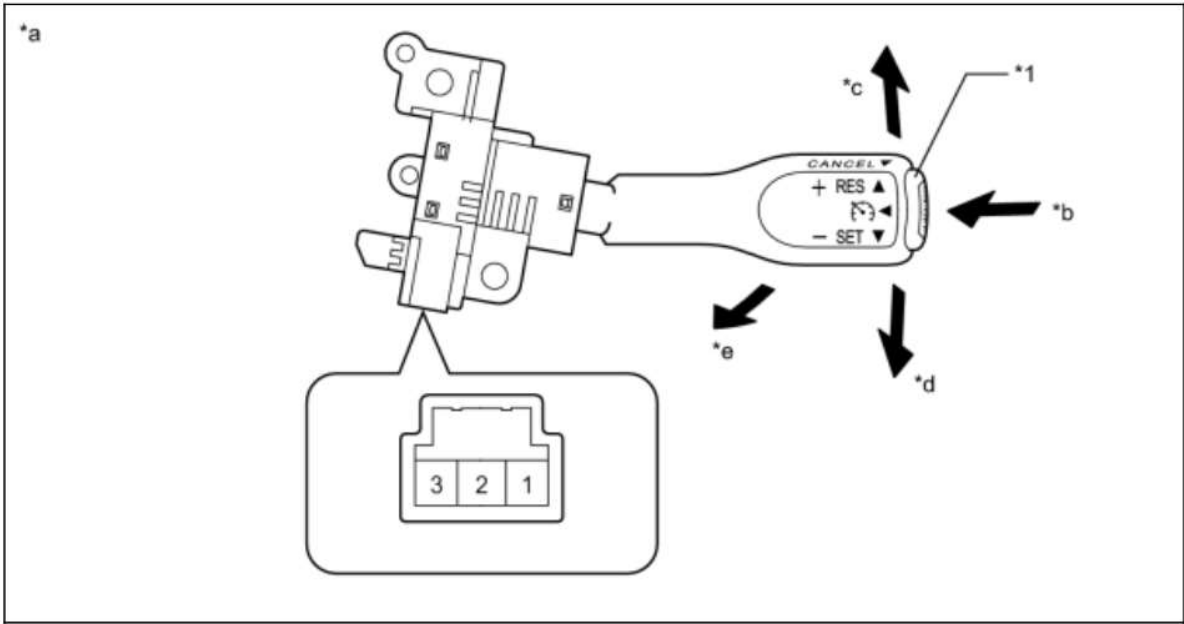
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Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004TQH00FX
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT CRUISE CONTROL MAIN SWITCH ASSEMBLY

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



Text in Illustration

*1	Cruise Control Main Switch Assembly (ON-OFF button)	-	-
*a	Component without harness connected (Cruise Control Main Switch Assembly)	*b	ON-OFF
*c	+/RES	*d	-/SET
*e	CANCEL	-	-

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 3	Cruise control Main switch Assembly (ON-OFF button) released	1 MΩ or higher
	Cruise control Main switch Assembly (ON-OFF button) pushed	Below 2.5 Ω
	+/RES switch ON	235 to 245 Ω
	-/SET switch ON	617 to 643 Ω
	CANCEL switch ON	1509 to 1571 Ω



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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000VQ107IX
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL CRUISE CONTROL MAIN SWITCH ASSEMBLY

- (a) Connect the cruise control main switch wire connector to the cruise control main switch assembly.
- (b) Set the cruise control main switch assembly to the lower steering wheel cover.
- (c) Engage the 2 claws and install the lower steering wheel cover.
- (d) Install the 4 screws.
- (e) Engage the clamp.

2. INSTALL STEERING WHEEL ASSEMBLY

INFO



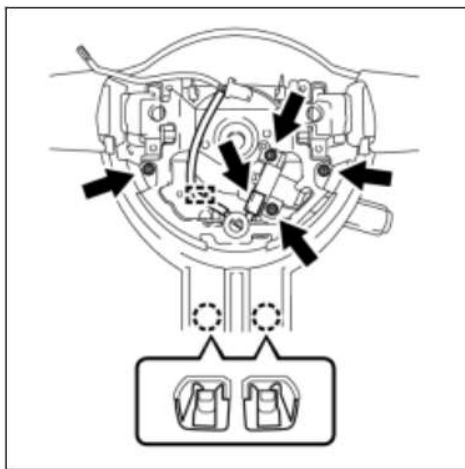
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000VQ307IX
Title: CRUISE CONTROL: CRUISE CONTROL MAIN SWITCH: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE STEERING WHEEL ASSEMBLY

INFO

2. REMOVE CRUISE CONTROL MAIN SWITCH ASSEMBLY



(a) Remove the 4 screws.

(b) Engage the 2 claws and remove the lower steering wheel cover and cruise control main switch assembly.

(c) Disengage the clamp and disconnect the cruise control main switch wire connector.



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000005AY5000X
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: CANCEL CODE (2013 FR-S)		

CANCEL CODE

1. DESCRIPTION

The ECM stores cancellation of cruise control due to driver operation and system abnormality as a "CANCEL CODE". In troubleshooting, the "CANCEL CODE" can be used to specify the cause of the malfunction.

HINT:

- The "CANCEL CODE" for canceled cruise control resulting from a driver operation is also stored. Therefore, fault troubleshooting needs to determine whether the "CANCEL CODE" is due to a driver operation or a system abnormality.
- Storage of a "CANCEL CODE" due to the driver canceling cruise control is normal, and not a system abnormality.
- The "CANCEL CODE" is cleared by turning off the ignition switch. So, does not turn the ignition switch off until the "CANCEL CODE" has been checked.

2. READ CANCEL CODE

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Perform a cruise control road test, and recreate the driving conditions in which cruise control was previously canceled.
- After cruise control is canceled, check the DATA LIST [INFO](#) .
- Check the stored "CANCEL CODE".

*: "(MEMORY)" displays the storage history of the "CANCEL CODE", and is not deleted by turning the ignition switch off. When clearing, perform to clear the DTC [INFO](#) .

Cruise Cancel : Main Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Main Switch	Cruise control was canceled through a cruise control main switch operation or cruise control main switch signal abnormality. / ON or OFF	• Operation of cruise control main switch • Cruise control main switch assembly malfunction • Cruise control main switch circuit malfunction
	Troubleshooting:	

1. Confirm whether there has been a cruise control main switch operation.
2. If it was stored resulting from other than a driver operation, refer to "Cruise Control Switch Circuit", and perform a check [INFO](#) .

Cruise Cancel : Stop/Brake Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Stop/Brake Switch	Cruise control was canceled through a brake pedal operation or stop light switch signal abnormality. / ON or OFF	• Brake pedal operation • Stop light switch assembly malfunction • Stop light switch circuit malfunction
	Troubleshooting: 1. Confirm whether there has been a brake pedal operation. 2. If it was stored resulting from other than a driver operation, refer to "Stop Light Switch Circuit", and perform a check INFO .	

Cruise Cancel : Clutch Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Clutch Switch	Cruise control was canceled through a clutch pedal operation or clutch switch signal abnormality. / ON or OFF	• Clutch pedal operation • Clutch switch assembly malfunction • Clutch switch circuit malfunction
	Troubleshooting: 1. Confirm whether there has been a clutch pedal operation. 2. If it was stored resulting from other than a driver operation, refer to "Clutch Switch Circuit", and perform a check INFO .	

Cruise Cancel : Neutral Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
	Cruise control was canceled through a shift lever	• Shift lever operation • Park/neutral position switch

Cruise Cancel : Neutral Switch	operation or park/neutral start switch signal abnormality. / ON or OFF	assembly malfunction • Park/neutral position switch circuit malfunction
	Troubleshooting: 1. Confirm whether there has been a shift lever operation. 2. If it was stored resulting from other than a driver operation, refer to "Transmission Control Switch Circuit", and perform a check INFO .	

Cruise Cancel : Cancel Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Cancel Switch	Cruise control was canceled through a CANCEL switch operation or CANCEL switch signal abnormality. / ON or OFF	• CANCEL switch operation • Cruise control main switch assembly malfunction • Cruise control main switch circuit malfunction
	Troubleshooting: 1. Confirm whether there has been a CANCEL switch operation. 2. If it was stored resulting from other than a driver operation, refer to "Cruise Control Switch Circuit", and perform a check INFO .	

Cruise Cancel : IG Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : IG Switch	Cruise control was canceled through an ignition switch operation or ECM power supply circuit abnormality. / ON or OFF	• Ignition switch operation • ECM power supply circuit malfunction
	Troubleshooting: 1. Confirm whether there has been an ignition switch operation. 2. If it was stored resulting from other than a driver operation, refer to "ECM Power Source Circuit", and perform a check INFO .	

Cruise Cancel : Vehicle Speed 1

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
		• Speed sensor malfunction

Cruise Cancel : Vehicle Speed 1	Cruise control was canceled through a vehicle speed signal abnormality. / ON or OFF	• Skid control ECU (Brake actuator assembly) malfunction • ECM malfunction
	Troubleshooting: 1. Check the VSC system DTC INFO .	

Cruise Cancel : Engine Revolution

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Engine Revolution	One of the following conditions is met: • Cruise control was canceled through detection of engine speed that is more than specified. • Cruise control was canceled through moving the shift lever to 1st or R position. / ON or OFF	• Shift lever operation • Crankshaft position sensor malfunction • ECM malfunction
	Troubleshooting: 1. Confirm whether there has been a shift lever operation. 2. If it was stored resulting from other than a driver operation, refer to DTC P0335, and perform a check INFO .	

Cruise Cancel : Out of Range

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Out of Range	One of the following conditions is met: • Cruise control was canceled through vehicle speed dropping below minimum cruise control speed. • Cruise control was canceled through setting the cruise control outside permitted vehicle speed. • Cruise control was canceled through a RESUME operation with no recorded vehicle speed. / ON or OFF	• SET switch operation • RESUME switch operation • Speed sensor malfunction • Skid control ECU (Brake actuator assembly) malfunction
	Troubleshooting: 1. Confirm whether there has been a SET or RESUME operation. 2. Perform a cruise control road test with a vehicle speed at 40km/h or more. 3. If the "CANCEL CODE" is stored again, check the VSC system DTC INFO .	

Cruise Cancel : Accel Angle

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA

Cruise Cancel : Accel Angle	Cruise control was canceled through an accelerator pedal operation resulting in more than 10 minutes of set vehicle speed. / ON or OFF	Accelerator pedal operation
	Troubleshooting: 1. Confirm whether there has been an accelerator pedal operation.	

Cruise Cancel : Keeping Vehicle Speed

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Keeping Vehicle Speed	Cruise control was canceled through an inability to maintain vehicle speed. / ON or OFF	• Parking brake not released • Insufficient tire pressure • Road condition (inclination, road surface)
	Troubleshooting: 1. Confirm the road conditions (inclination, road surface) when the "CANCEL CODE" was stored. 2. Check the vehicle status (parking brake, tire pressure).	

Cruise Cancel : VSC/TRC Operation

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : VSC/TRC Operation	Cruise control was canceled through a VSC/TR(A)C operation. / ON or OFF	VSC/TR(A)C operation
	Troubleshooting: -	

Cruise Cancel : ABS/VSC Abnormal

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : ABS/VSC Abnormal	Cruise control was canceled through an ABS/VSC system abnormality / ON or OFF	ABS/VSC system malfunction
	Troubleshooting: 1. Check the VSC system DTC INFO .	

Cruise Cancel : Meter Abnormal

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Meter Abnormal	Cruise control was canceled through a combination meter assembly abnormality. / ON or OFF	Combination meter assembly malfunction
	Troubleshooting: 1. Check the combination meter assembly INFO .	

Cruise Cancel : Brake Switch Abnormal

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Brake Switch Abnormal	Cruise control was canceled through a stop light switch assembly abnormality. / ON or OFF	Stop light switch assembly malfunction
	Troubleshooting: 1. Refer to "Stop Light Switch Circuit", and perform a check INFO .	

Cruise Cancel : Neutral Switch Abnormal

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Neutral Switch Abnormal	Cruise control was canceled through a park/neutral position switch abnormality. / ON or OFF	Park/neutral position switch assembly malfunction
	Troubleshooting: 1. Refer to "Transmission Control Switch Circuit", and perform a check INFO .	

Cruise Cancel : Vehicle Speed 2

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Vehicle Speed 2	Cruise control was canceled through a vehicle speed change abnormality. / ON or OFF	- Speed sensor malfunction - Skid control ECU (Brake actuator assembly) malfunction
	Troubleshooting: 1. Check the VSC system DTC INFO .	

Cruise Cancel : Engine Abnormal

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Engine Abnormal	Cruise control was canceled through an engine system abnormality. / ON or OFF	Engine control system malfunction
	Troubleshooting: 1. Check the engine control system DTC INFO .	

Cruise Cancel : Switch Related to Cruise Control

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Switch Related to Cruise Control	Cruise control was canceled through a cruise control main switch fixation (2 minutes or more continuous input). / ON or OFF	Cruise control main switch assembly malfunction
	Troubleshooting: 1. Refer to "Cruise Control Switch Circuit", and perform a check INFO .	

Cruise Cancel : Brake Switch Abnormal(Memory)*

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Brake Switch Abnormal(Memory)	"Cruise Cancel : Brake Switch Abnormal" is detected. / ON or OFF	Stop light switch assembly malfunction
	Troubleshooting: 1. Refer to "Stop Light Switch Circuit", and perform a check INFO .	

Cruise Cancel : Neutral Switch Abnormal(Memory)*

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Neutral Switch Abnormal(Memory)	"Cruise Cancel : Neutral Switch Abnormal" is detected. / ON or OFF	Park/neutral position switch assembly malfunction
	Troubleshooting: 1. Refer to "Transmission Control Switch Circuit", and perform a check INFO .	

Cruise Cancel : Vehicle Speed 2(Memory)*

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Vehicle Speed 2(Memory)	"Cruise Cancel : Vehicle Speed 2" is detected. / ON or OFF	- Speed sensor malfunction - Skid control ECU (Brake actuator assembly) malfunction
	Troubleshooting: 1. Check the VSC system DTC INFO .	

Cruise Cancel : Engine Abnormal(Memory)*

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Engine Abnormal(Memory)	"Cruise Cancel : Engine Abnormal" is detected. / ON or OFF	Engine control system malfunction
	Troubleshooting: 1. Check the engine control system DTC INFO .	

Cruise Cancel : Switch Related to CCS(Memory)*

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : Switch Related to CCS(Memory)	"Cruise Cancel : Switch Related to Cruise Control" is detected. / ON or OFF	Cruise control main switch assembly malfunction
	Troubleshooting: 1. Refer to "Cruise Control Switch Circuit", and perform a check	

INFO

Cruise Cancel : ECT Abnormal

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	TROUBLE AREA
Cruise Cancel : ECT Abnormal	Cruise control was canceled through an automatic transmission system abnormality. / ON or OFF	Automatic transmission system malfunction
	Troubleshooting: 1. Check the automatic transmission system DTC INFO .	



Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000ZAN031X
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: Clutch Switch Circuit (2013 FR-S)		

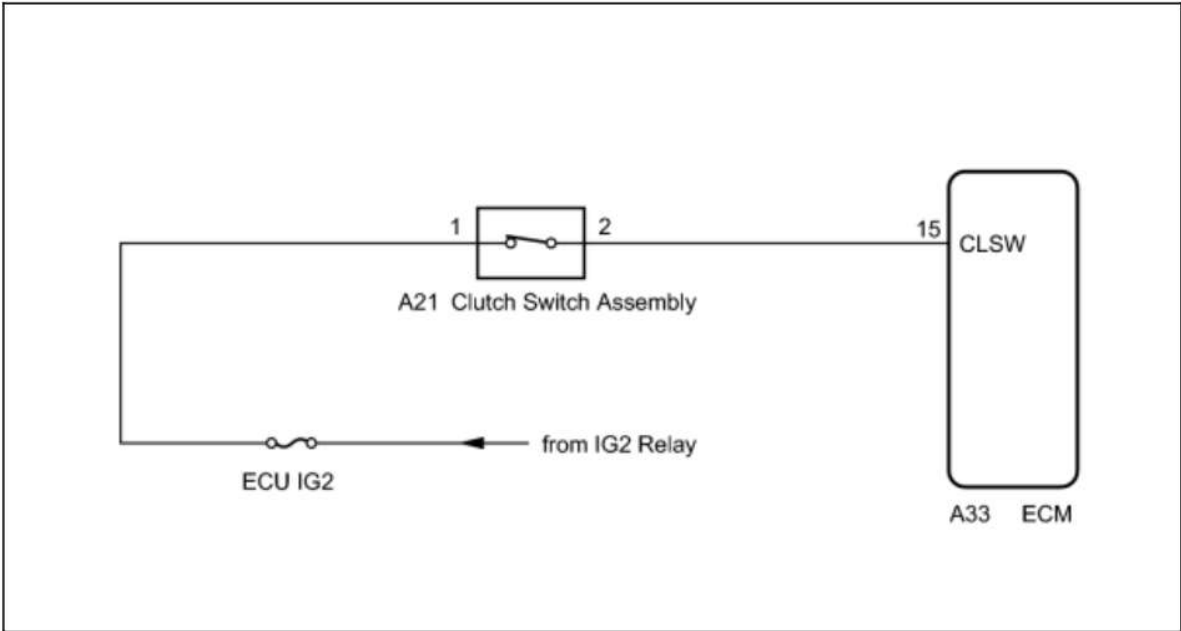
Clutch Switch Circuit

DESCRIPTION

Clutch switch circuit inspection is necessary for M/T vehicles.

When the clutch pedal is released, the ECM receives positive (+) battery voltage through the ECU IG2 fuse. While depressing the clutch pedal, the clutch switch sends a signal to terminal CLSW of the ECM. The ECM cancels cruise control drive when terminal CLSW receives the signal.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Clutch switch assembly conditions can be checked using the Techstream.

- 1. Connect the Techstream to the DLC3.
- 2. Turn the ignition switch to ON.
- 3. Turn the Techstream on.
- 4. Enter the following menus: Powertrain / Engine / Data List / All Data / Clutch Switch INFO .

Engine

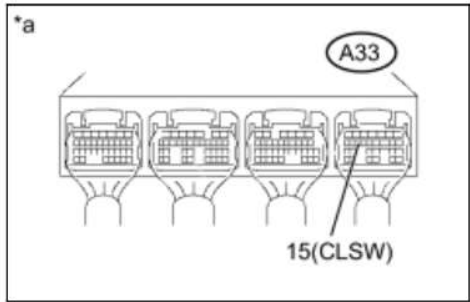
CLUTCH PEDAL OPERATION	CLUTCH SWITCH
Depressed	ON

Released

OFF

PROCEDURE

1. CHECK ECM (TERMINAL VOLTAGE)



(a) Turn the ignition switch to ON.

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

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-15 (CLSW) - Body ground	Clutch pedal depressed	Below 1 V
	Clutch pedal released	11 to 14 V

Text in Illustration

*a	Component with harness connected (ECM)
----	--

NG ▶ INSPECT CLUTCH SWITCH ASSEMBLY

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

2. INSPECT CLUTCH SWITCH ASSEMBLY

(a) Inspect the clutch switch assembly INFO .

NG ▶ REPLACE CLUTCH SWITCH ASSEMBLY

OK
▼

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

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

Standard resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-15 (CLSW) - A21-2	Always	Below 1 Ω

Standard resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-15 (CLSW) or A21-2 - Body ground	Always	10 k Ω or higher

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

OK  **INSPECT ECM POWER SOURCE CIRCUIT**



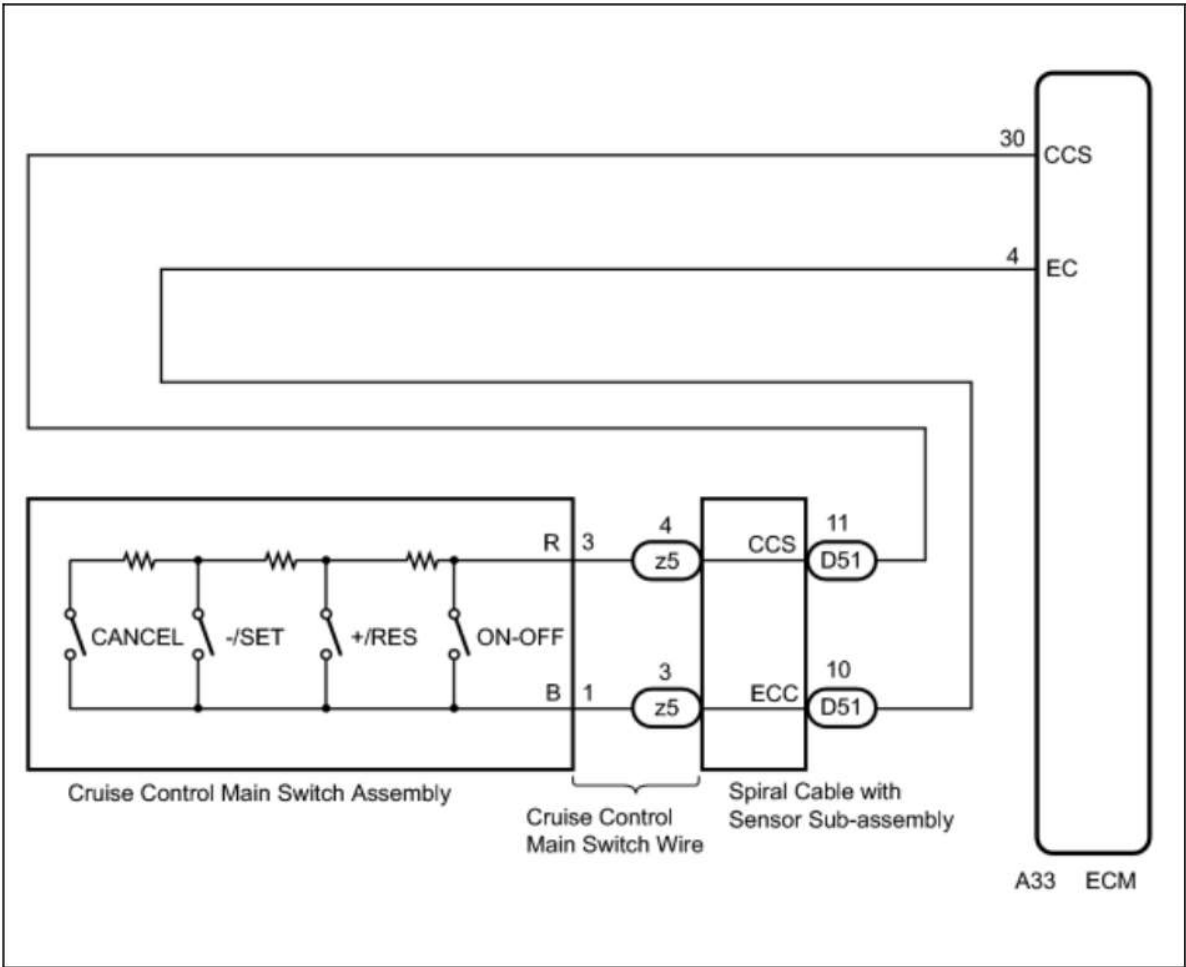
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PLU0BDX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: Cruise Control Switch Circuit (2013 FR-S)		

Cruise Control Switch Circuit

DESCRIPTION

The cruise control main switch is used to turn the cruise control system on and off, as well as operate 7 functions: SET, - (COAST), TAP-DOWN, RES (RESUME), + (ACCEL), TAP-UP and CANCEL. The SET, TAP-DOWN and - (COAST) functions, and the RES (RESUME), TAP-UP and + (ACCEL) functions are operated with the same switch. The cruise control main switch is an automatic return type switch which turns on only while operating it in the direction of each arrow and turns off after releasing it. The internal contact points of the cruise control main switch turn on with switch operation. Then the ECM reads the voltage value that has been changed by the switch operation to control SET, - (COAST), RES (RESUME), + (ACCEL), and CANCEL.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

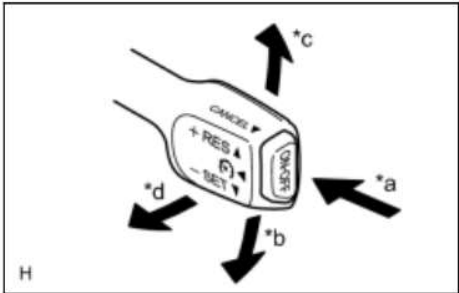
1.

READ VALUE ON TECHSTREAM

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Select the following menu items: Powertrain / Cruise Control / Data List.
- (e) Check the Data List to confirm proper functioning of the cruise control main switch.

Text in Illustration

*a	ON-OFF
*b	-/SET
*c	+ /RES
*d	CANCEL



Cruise Control

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main SW M-CPU	Cruise control main switch signal (Main CPU) / ON or OFF	ON: cruise control main switch (ON-OFF button) pushed OFF: cruise control main switch (ON-OFF button) released	-
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	-
RES/ACC Switch	+ /RES switch signal / ON or OFF	ON: +/RES switch on OFF: +/RES switch off	-

OK:

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

- NG▶INSPECT CRUISE CONTROL MAIN SWITCH ASSEMBLY
- OK▶PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE

2.INSPECT CRUISE CONTROL MAIN SWITCH ASSEMBLY

(a) Inspect the cruise control main switch assembly INFO .

- NG▶REPLACE CRUISE CONTROL MAIN SWITCH ASSEMBLY

OK
▼

3.CHECK CRUISE CONTROL MAIN SWITCH WIRE

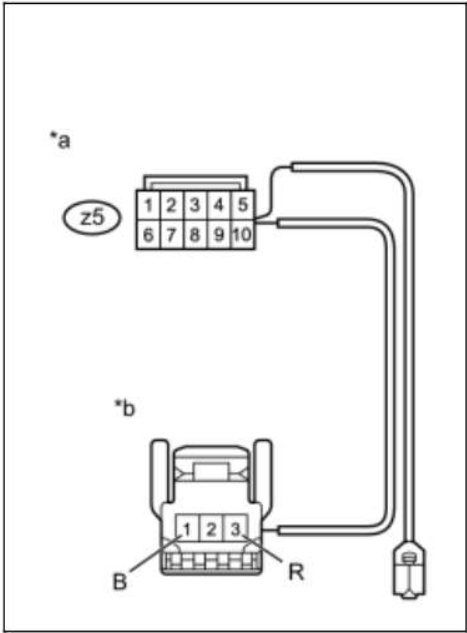
- (a) Disconnect the cruise control main switch assembly connector.
- (b) Disconnect the spiral cable with sensor sub-assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for open):

TESTER CONNECTION	SPECIFIED CONDITION
Cruise control main switch side connector terminal 3 (R) - z5-4	Below 1 Ω
Cruise control main switch side connector terminal 1 (B) - z5-3	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 Assembly)



NG  **REPAIR OR REPLACE CRUISE CONTROL MAIN SWITCH WIRE**

OK



4. INSPECT SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY

(a) Inspect the spiral cable with sensor sub-assembly  .

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

OK



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

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

Standard Resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-30 (CCS) - D51-11 (CCS)	Always	Below 1 Ω
A33-4 (EC) - D51-10 (ECC)	Always	Below 1 Ω

Standard Resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-30 (CCS) or D51-11 (CCS) - Body ground	Always	10 k Ω or higher
A33-4 (EC) or D51-10 (ECC) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR (SPIRAL CABLE WITH SENSOR**

SUB-ASSEMBLY - ECM)

OK  REPLACE ECM



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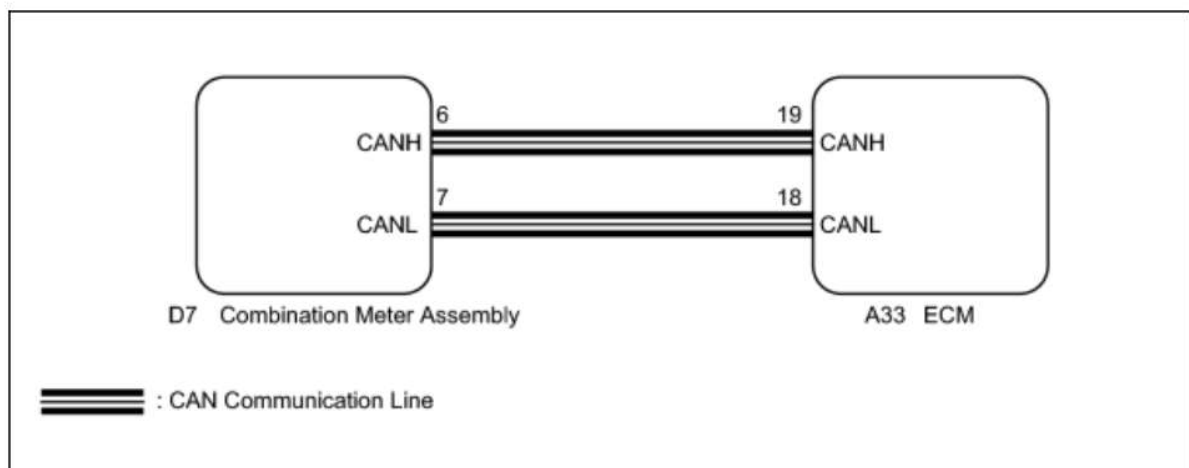
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PLV0B2X
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: Cruise Main Indicator Light Circuit (2013 FR-S)		

Cruise Main Indicator Light Circuit

DESCRIPTION

- The ECM turns on the cruise control indicator light by sending indicator output demand signals to the combination meter assembly using CAN communication.
- The cruise control indicator light illuminates in green when the cruise control system has been turned on using the ON-OFF switch. If a malfunction is detected, the cruise control indicator light changes to amber.
- The cruise control indicator light circuit uses CAN communication. If the cruise control indicator light is not functioning correctly, check for CAN communication DTCs before troubleshooting this circuit.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. PERFORM ACTIVE TEST USING TECHSTREAM

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Select the following menu items: Body Electrical / Combination Meter / Active Test.
- Check the cruise control indicator light by performing the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Indicat. Lamp Cruise	Cruise control indicator light	Cruise control indicator light (illuminated in green) ON / OFF	-
Cruise Warning	Cruise control indicator light	Cruise control indicator light (illuminated in amber) ON / OFF	-

OK:

The cruise control indicator light goes on or off.

NG ► REPLACE COMBINATION METER ASSEMBLY**OK ► PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003TL901UX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: Cruise SET Indicator Light Circuit (2013 FR-S)		

Cruise SET Indicator Light Circuit

DESCRIPTION

- The ECM turns on the SET indicator light by sending indicator output demand signals to the combination meter assembly using CAN communication.
- The cruise control SET indicator light illuminates when the cruise control system is controlling vehicle speed.
- The cruise control indicator light circuit uses CAN communication. If the cruise control indicator light is not functioning correctly, check for CAN communication DTCs before troubleshooting this circuit.

WIRING DIAGRAM

Refer to Cruise Main Indicator Light Circuit [INFO](#) .

INSPECTION PROCEDURE

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM
-----------	---

- 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.
- Check the cruise control SET indicator light by performing the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Indicat. SET	Cruise control SET indicator light	Cruise control SET indicator light ON / OFF	-

OK:

The cruise control SET indicator light goes on or goes off.

NG ► **REPLACE COMBINATION METER ASSEMBLY**

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



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Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PM3071X
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: DATA LIST / ACTIVE TEST (2013 FR-S)		

DATA LIST / ACTIVE TEST

1. READ 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.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Select the following menu items: Powertrain / Cruise Control / Data List.
- Read the Data List according to the display on the Techstream.

[Powertrain / Cruise Control / Data List]

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	Stored vehicle speed / Min.: 0 km/h (0 mph), Max.: 255 km/h (158 mph)	Actual stored vehicle speed	-
Cruise Request Torque	Required engine torque / Min.: - 32768 Nm, Max.: 32767 Nm	Actual required engine torque	-
Cruise Control	Cruise control system active condition / ON or OFF	ON: Cruise control activated OFF: Cruise control deactivated	-
CCS Indicator M-CPU	Cruise control indicator light illumination signal (Main CPU) / ON or OFF	ON: Cruise control indicator light illuminated in green OFF: Cruise control indicator light not on	-
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	-
RES/ACC Switch	+/RES switch signal / ON or OFF	ON: +/RES switch on OFF: +/RES switch off	-
CCS Ready M-CPU	Cruise control system standby condition (Sub CPU) / ON or OFF	Each time cruise control main switch (ON-OFF button) is pushed, ON/OFF changes	-
		ON: cruise control main switch	

Main SW M-CPU	cruise control main switch signal (Main CPU) / ON or OFF	(ON-OFF button) pushed OFF: cruise control main switch (ON-OFF button) released	-
Stop Light Switch 1	Stop light switch signal1 / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
Stop Light Switch 2	Stop light switch signal2 / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
Cruise Cancel : Main Switch	"CANCEL CODE" by cruise control main switch operation / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Stop/Brake Switch	"CANCEL CODE" by brake pedal operation / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Clutch Switch	"CANCEL CODE" by clutch pedal operation (for Manual Transmission) / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Neutral Switch	"CANCEL CODE" by shift lever operation (for Automatic Transmission) / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Cancel Switch	"CANCEL CODE" by CANCEL switch operation / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : IG Switch	"CANCEL CODE" by ignition switch operation / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Vehicle Speed 1	"CANCEL CODE" by abnormal vehicle speed signal / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Engine Revolution	"CANCEL CODE" by raising engine speed / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Out of Range	"CANCEL CODE" by setting the cruise control outside permitted vehicle speed / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO
Cruise Cancel : Accel Angle	"CANCEL CODE" by accelerator pedal operation / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO

Cruise Cancel : Keeping Vehicle Speed	"CANCEL CODE" by inability to maintain vehicle speed / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : VSC/TRC Operation	"CANCEL CODE" by VSC/TR(A)C operation / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : ABS/VSC Abnormal	"CANCEL CODE" by ABS/VSC abnormality / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Meter Abnormal	"CANCEL CODE" by combination meter assembly abnormality / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Brake Switch Abnormal	"CANCEL CODE" by stop light switch assembly abnormality / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Neutral Switch Abnormal	"CANCEL CODE" by park/neutral position switch abnormality / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Vehicle Speed 2	"CANCEL CODE" by abnormal vehicle speed change / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Engine Abnormal	"CANCEL CODE" by engine control system abnormality / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Switch Related to Cruise Control	"CANCEL CODE" by cruise control main switch abnormality / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Brake Switch Abnormal(Memory)	"Cruise Cancel : Brake Switch Abnormal" is detected / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Neutral Switch Abnormal(Memory)	"Cruise Cancel : Neutral Switch Abnormal" is detected / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .
Cruise Cancel : Vehicle Speed 2(Memory)	"Cruise Cancel : Vehicle Speed 2" is detected / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" INFO .

Cruise Cancel : Engine Abnormal(Memory)	"Cruise Cancel : Engine Abnormal" is detected / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" 
Cruise Cancel : Switch Related to CCS(Memory)	"Cruise Cancel : Switch Related to CCS" is detected / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" 
Cruise Cancel : ECT Abnormal	"CANCEL CODE" by automatic transmission system / ON or OFF	ON: "CANCEL CODE" detected OFF: "CANCEL CODE" not detected	Refer to "CANCEL CODE" 
Brake Cancel Switch	Stop light switch signal / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-

2. PERFORM ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Select the following menu items: Body Electrical / Combination Meter / Active Test.
- Perform "Active Test" according to the display on Techstream.

HINT:

The ignition switch must be turned on to proceed with the Active Test using the Techstream.

[Body Electrical / Combination Meter / Active Test]

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Indicat. Lamp Cruise	Cruise control indicator light	Cruise control indicator light (illuminated in green) ON / OFF	-
Indicat. SET	Cruise control SET indicator light	Cruise control SET indicator light ON / OFF	-
Cruise Warning	Cruise control indicator light	Cruise control indicator light (illuminated in amber) ON / OFF	-



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PM00ABX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: DIAGNOSIS SYSTEM (2013 FR-S)		

DIAGNOSIS SYSTEM

1. DESCRIPTION

The ECM controls the cruise control system of the vehicle. The data and DTCs relating to the cruise control system can be read from the DLC3 of the vehicle. Use the Techstream to check and solve the problem.

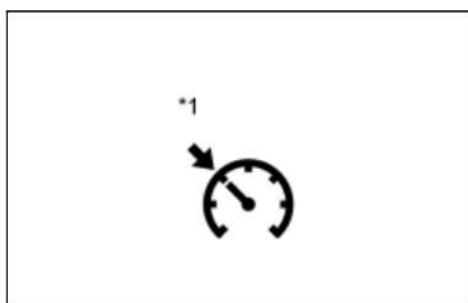
HINT:

If a speed sensor, stop light switch or any other related part malfunctions, the ECM cancels cruise control operation automatically.

2. CHECK INDICATOR

(a) Turn the ignition switch to ON.

(b) Check that the cruise control indicator light illuminates in green when the cruise control system is turned on using the cruise control main switch (ON-OFF button), and that the indicator light turns off when the cruise control system is turned off using the cruise control main switch (ON-OFF button). If the results are not as specified, perform the Cruise Main Indicator Light Circuit inspection procedure [INFO](#).



Text in Illustration

*1	Cruise Control Indicator Light (Green)
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HINT:

While driving with the cruise control system controlling vehicle speed, the ECM will automatically cancel cruise control system control of vehicle speed when a malfunction occurs in one of the following: speed sensors, stop light switch assembly, or other related parts. When control of vehicle speed by the cruise control system is automatically canceled, the cruise control indicator changes to amber. At the same time, a DTC is stored.

Last Modified: 3-27-2012	6.4 S	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004VW9004X
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: DIAGNOSTIC TROUBLE CODE CHART (2013 FR-S)		

DIAGNOSTIC TROUBLE CODE CHART

DTC CODE	DETECTION ITEM	SEE PAGE
P0500	Vehicle Speed Sensor Malfunction	INFO
U0073	Control Module Communication Bus "A" Off	INFO
U0101	Lost Communication with TCM	INFO
U0122	Lost Communication with Vehicle Dynamics Control Module	INFO
U0155	Lost Communication with Instrument Panel Cluster (IPC) Control Module	INFO
U0402	Invalid Data Received from TCM	INFO
U0416	Invalid Data Received from Vehicle Dynamics Control Module	INFO
U0423	Invalid Data Received from Instrument Panel Cluster Control Module	INFO



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Model Year: 2013	Model: FR-S	Doc ID: RM000000PM107UX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: DTC CHECK / CLEAR (2013 FR-S)		

DTC CHECK / CLEAR

1. DTC CHECK

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Select the following menu items: Powertrain / Cruise Control / Trouble Codes.
- (e) Check the details of the DTC(s)  .

2. DTC CLEAR

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



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PLO0BNX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2013 FR-S)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

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

1. VEHICLE BROUGHT TO WORKSHOP

NEXT



2. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage with the ignition switch off.

Standard Voltage:

11 to 14 V

If the voltage is below 11 V, replace or recharge the battery before proceeding to the next step.

NEXT



3. CHECK COMMUNICATION FUNCTION OF CONTROLLER AREA NETWORK (CAN)*

(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*

Refer to DTC Check / Clear [INFO](#) .

- (a) Check for DTCs and note any codes that are output.
- (b) Clear the DTCs.
- (c) Recheck for DTCs. Try to reproduce the DTCs by duplicating the conditions indicated by the DTCs.

Result:

RESULT	PROCEED TO
DTC does not reoccur	A
DTC reoccurs	B

B ► GO TO DTC CHART

A



5. ROAD TEST

- (a) Perform the road test [INFO](#) .
- (b) Check that cruise control is not canceled by other than canceling operations by the driver.

Result:

RESULT	PROCEED TO
Cruise control is cancelled	A
Cruise control is not cancelled	B

B ► GO TO STEP 8

A



6. CHECK "CANCEL CODE"*

HINT:

The driver's history of canceling cruise control is also stored.

(a) Check "CANCEL CODE"  .

Result:

RESULT	PROCEED TO
"CANCEL CODE" is not detected	A
"CANCEL CODE" is detected	B

B  **ADJUST, REPAIR OR REPLACE ACCORDING TO "CANCEL CODE"**

A



7. PROBLEM SYMPTOMS TABLE

Refer to Problem Symptoms Table  .

Result:

RESULT	PROCEED TO
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B  **ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE**

A



8. OVERALL ANALYSIS AND TROUBLESHOOTING*

(a) Terminals of ECU  .

(b) Data List / Active Test  .

NEXT
▼

9.	ADJUST, REPAIR OR REPLACE
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NEXT
▼

10.	CONFIRMATION TEST
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NEXT ► END



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Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000ZRD07IX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: P0500: Vehicle Speed Sensor Malfunction (2013 FR-S)		

DTC	P0500	Vehicle Speed Sensor Malfunction
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DESCRIPTION

Refer to P0500 [INFO](#) .

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
P0500	DTC P0500 is detected in SFI system.	- Speed sensor - Skid control ECU (Brake Actuator Assembly) - ECM

WIRING DIAGRAM

Refer to P0500 [INFO](#) .

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK DTC OUTPUT
-----------	-------------------------

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Powertrain / Engine / Trouble Codes.
- Read the DTCs.

Result:

RESULT	PROCEED TO
DTC is not output	A
DTC P0500 is output	B

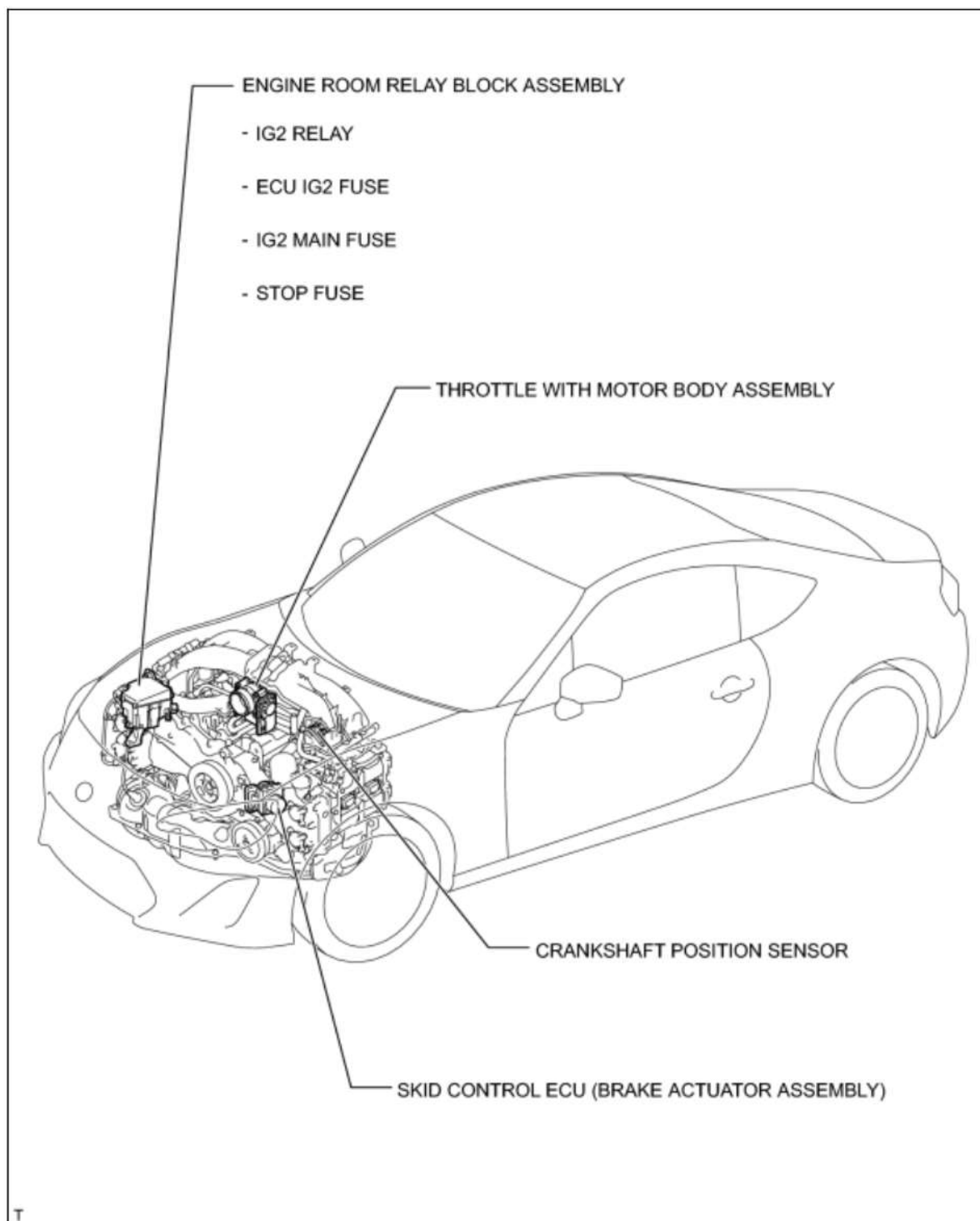
B ► **GO TO TROUBLESHOOTING FOR DTC P0500**

A ► **CHECK FOR INTERMITTENT PROBLEMS**

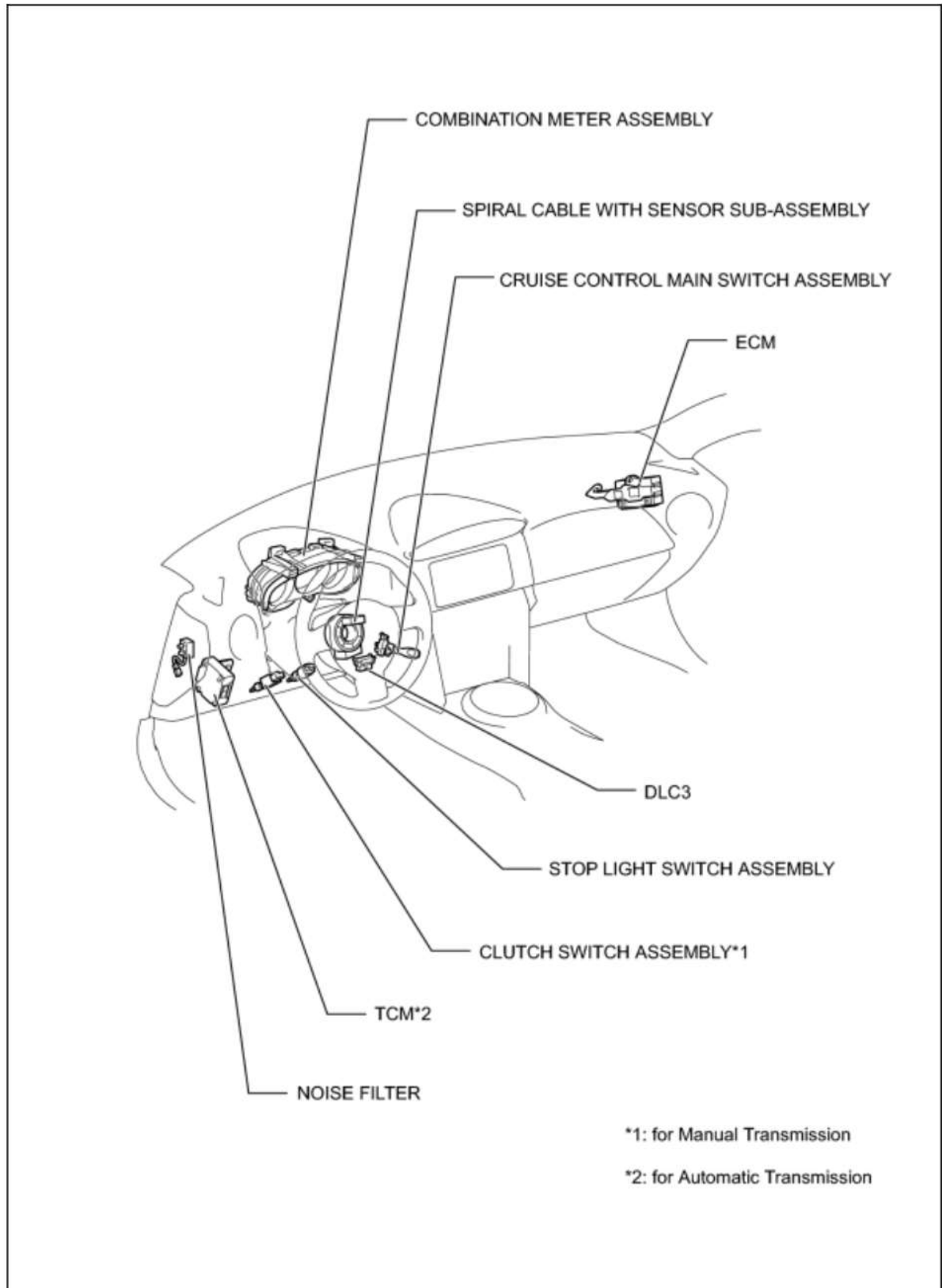
Last Modified: 3-27-2012	6.4 R	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000SSZ06FX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: PARTS LOCATION (2013 FR-S)		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



Last Modified: 3-27-2012	6.4 L	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PLN08BX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: PRECAUTION (2013 FR-S)		

PRECAUTION

1. HANDLING PRECAUTION FOR CRUISE CONTROL SYSTEM

- (a) Turn the cruise control system off using the cruise control main switch (ON-OFF button) when not using the cruise control system.
- (b) Be careful as the vehicle speed increases when driving downhill with the cruise control system controlling vehicle speed.
- (c) The + (ACCEL)/RES (RESUME) operation changes according to the cruise control system status. When the cruise control system is controlling vehicle speed, the + (ACCEL) function operates. When the cruise control system is not controlling vehicle speed, the RES (RESUME) function operates.
- (d) While the cruise control system is controlling vehicle speed, if the cruise control indicator light changes to amber, turn the cruise control system off using the cruise control main switch (ON-OFF button) to reset the cruise control system. After the cruise control system is reset, if the cruise control system does not turn on, or if the cruise control system stops functioning immediately after being turned on, there may be a malfunction.
- (e) Do not use the cruise control system where the road conditions are as follows:
 - Heavy traffic
 - Steep downhill roads
 - Roads with sharp turns
 - Icy or snowy roads
 - Slippery roads
- (f) Do not use the cruise control system while towing.



Last Modified: 3-27-2012	6.4 T	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PLS0BAX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: PROBLEM SYMPTOMS TABLE (2013 FR-S)		

PROBLEM SYMPTOMS TABLE

HINT:

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

Cruise Control System

SYMPTOM	SUSPECTED AREA	SEE PAGE
The cruise control system cannot be turned on using the cruise control main switch (ON-OFF button).	Cruise control main switch circuit	INFO
	Cruise main indicator light circuit	INFO
	ECM	INFO
Vehicle speed cannot be set (the cruise control indicator light illuminates in green when the cruise control system is turned on using the cruise control main switch (ON-OFF button), but the cruise control indicator light goes out when the cruise control main switch is pushed to -/SET).	Cruise control main switch circuit	INFO
	ECM	INFO
Vehicle speed cannot be set (the cruise control indicator light illuminates in green when the cruise control system is turned on using the cruise control main switch (ON-OFF button), and it remains illuminated when the cruise control main switch is pushed to -/SET).	Stop light switch circuit	INFO
	Vehicle speed sensor circuit	INFO
	Cruise control main switch circuit	INFO
	Automatic transmission system*2	INFO
	VSC system	INFO
	Combination meter	INFO

	assembly	
	ECM	INFO
Vehicle speed control by the cruise control system is automatically canceled after it has started.	Stop light switch circuit	INFO
	Automatic transmission system*2	INFO
	Cruise control main switch circuit	INFO
	VSC system	INFO
	Combination meter assembly	INFO
	ECM	INFO
Pulling back on the cruise control main switch does not cancel vehicle speed control by the cruise control system. (The cruise control indicator light remains illuminated in green.)	Cruise control main switch circuit	INFO
	VSC system	INFO
	Combination meter assembly	INFO
	ECM	INFO
Pulling back on the cruise control main switch does not cancel vehicle speed control by the cruise control system. (The cruise control indicator light goes out.)	ECM	INFO
Vehicle speed control by the cruise control system is not canceled when vehicle speed drops below the low speed limit. (The cruise control indicator light remains illuminated in green.)	VSC system	INFO
	ECM	INFO
Vehicle speed control by the cruise control system is not canceled when vehicle speed drops below the low speed limit. (The cruise control indicator light goes out.)	ECM	INFO
Depressing the brake pedal does not cancel vehicle speed control by the cruise control system. (The cruise control indicator light remains illuminated in green.)	Stop light switch circuit	INFO
	Combination meter assembly	INFO
	ECM	INFO
Depressing the brake pedal does not cancel vehicle speed control by the cruise control system. (The cruise control indicator light goes out.)	ECM	INFO
	Stop light switch circuit	INFO

Moving the shift lever does not cancel vehicle speed control by the cruise control system. (The cruise control indicator light remains illuminated in green.)	Automatic transmission system*2	INFO
	Combination meter assembly	INFO
	ECM	INFO
Moving the shift lever does not cancel vehicle speed control by the cruise control system. (The cruise control indicator light goes out.)	ECM	INFO
Vehicle speed control by the cruise control system is not canceled when paddle shift switch is operated. (The cruise control indicator light remains illuminated in green.)*1	Automatic transmission system*2	INFO
	Combination meter assembly	INFO
	ECM	INFO
Vehicle speed control by the cruise control system is not canceled when paddle shift switch is operated. (The cruise control indicator light goes out.)*1	ECM	INFO
Hunting (Speed is not constant.)	Vehicle speed sensor circuit	INFO
	SFI system	INFO
The cruise control SET indicator light does not illuminate. (Vehicle speed can be set)	Cruise SET indicator light circuit	INFO
	ECM	INFO

*1: w/ Shift Paddle Switch

*2: for Automatic Transmission

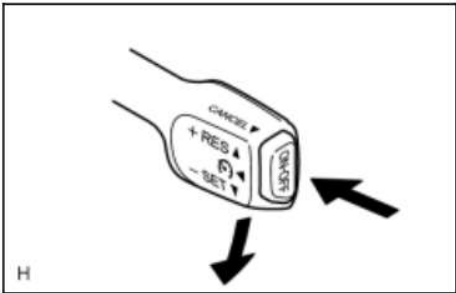


Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000ST009EX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: ROAD TEST (2013 FR-S)		

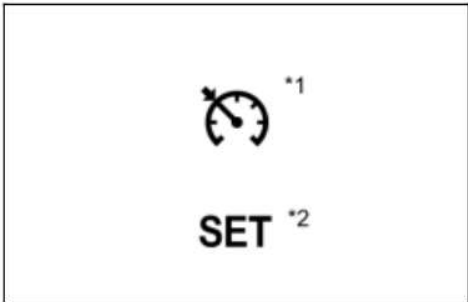
ROAD TEST

1. PROBLEM SYMPTOM CONFIRMATION

(a) Inspect the SET function.



- (1) Turn the cruise control system on using the cruise control main switch (ON-OFF button).
- (2) Check that the cruise control indicator light illuminates in green on the combination meter assembly.
- (3) Drive at a speed between 40 km/h (25 mph) and 145 km/h (90 mph).
- (4) Push the cruise control main switch to -/SET.



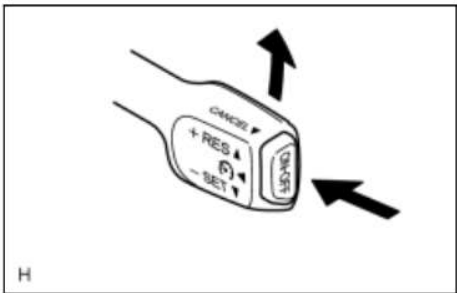
(5) Check that the cruise control SET indicator light illuminates at this time.

Text in Illustration

*1	Cruise Control Indicator Light (Green)
*2	Cruise Control SET Indicator

(6) After releasing the switch, check that the vehicle maintains the set speed.

(b) Inspect the + (ACCEL) function.

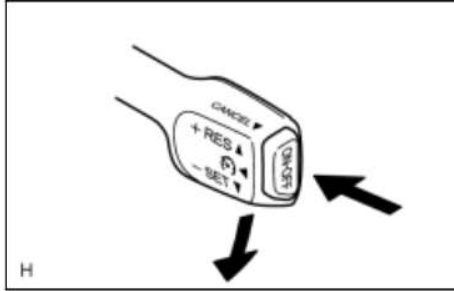


- (1) Turn the cruise control system on using the cruise control main switch (ON-OFF button).
- (2) Drive at a speed between 40 km/h (25 mph) and 145 km/h (90 mph).
- (3) Push the cruise control main switch to -/SET.
- (4) Check that vehicle speed increases while the cruise control main switch is pushed to +/RES, and that the vehicle maintains the newly set speed when the switch is released.

- (5) Push the cruise control main switch to +/RES and then release it immediately. Check that vehicle speed increases by approximately 1.6 km/h (1.0 mph) (tap-up control).

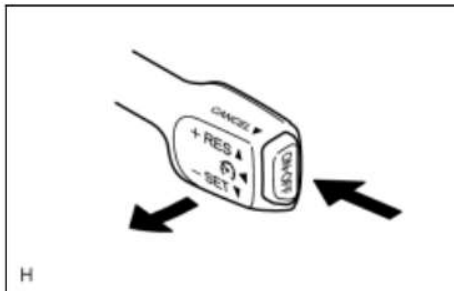
(c) Inspect the - (COAST) function.

- (1) Turn the cruise control system on using the cruise control main switch (ON-OFF button).
- (2) Drive at a speed between 40 km/h (25 mph) and 145 km/h (90 mph).
- (3) Push the cruise control main switch to -/SET.
- (4) Check that vehicle speed decreases while the cruise control main switch is pushed to -/SET, and the vehicle maintains the newly set speed when the switch is released.
- (5) Push the cruise control main switch to -/SET, and then release it immediately. Check that vehicle speed decreases by approximately 1.6 km/h (1.0 mph) (tap-down control).



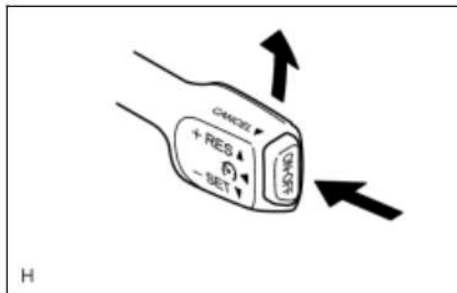
(d) Inspect the CANCEL function.

- (1) Turn the cruise control system on using the cruise control main switch (ON-OFF button).
- (2) Drive at a speed between 40 km/h (25 mph) and 145 km/h (90 mph).
- (3) Push the cruise control main switch to -/SET.
- (4) When any of the following are performed, check that cruise control system control of vehicle speed is canceled and that the normal driving mode (no control of vehicle speed by the cruise control system) resumes.



- Depressing the brake pedal
- Moving the shift lever to 1st or R position (for Manual Transmission)
- Moving the shift lever from D or M to any other position (for Automatic Transmission)
- Selecting the 3rd, 2nd or 1st range with the shift lever in M (for Automatic Transmission)
- Selecting the 3rd, 2nd or 1st range using the shift paddle switch with the shift lever in M (w/ shift paddle switch) (for Automatic Transmission)
- Pulling the cruise control main switch to CANCEL
- Turning the cruise control system off using the cruise control main switch (ON-OFF button)

(e) Inspect the RES (RESUME) function.



- (1) Turn the cruise control system on using the cruise control main switch (ON-OFF button).
- (2) Drive at a speed between 40 km/h (25 mph) and 145 km/h (90 mph).
- (3) Push the cruise control main switch to -/SET.
- (4) Cancel cruise control system control of vehicle speed by performing any of the above operations (other than turning the cruise control system off using the cruise control main switch (ON-OFF button)).
- (5) After pushing the cruise control main switch to +/RES at a speed of more than 40 km/h (25 mph), check that the vehicle resumes the speed set prior to cancellation.



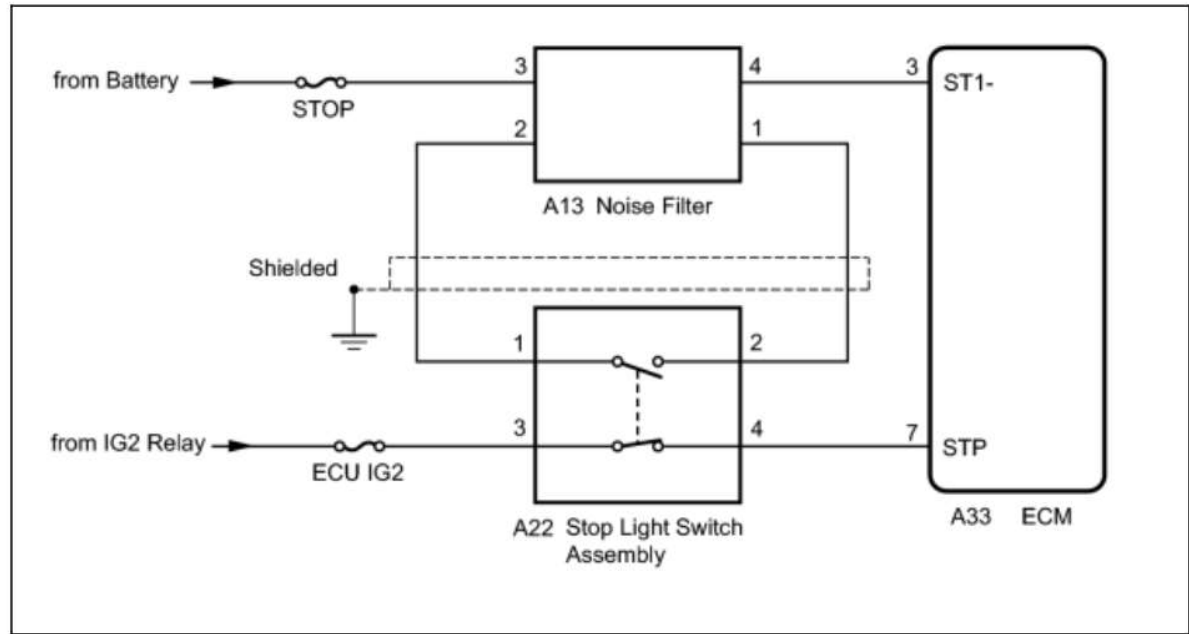
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000057KI000X
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: Stop Light Switch Circuit (2013 FR-S)		

Stop Light Switch Circuit

DESCRIPTION

When the brake pedal is released, terminal STP of the ECM receives positive (+) battery voltage through the ECU IG2 fuse. While depressing the brake pedal, the stop light switch sends a signal to terminals STP and ST1- of the ECM. The ECM cancels cruise control drive when terminal STP receives the signal.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Stop light switch assembly conditions can be checked using the Techstream.

1. Connect the Techstream to the DLC3.
2. Turn the ignition switch to ON.
3. Turn the Techstream on.
4. Enter the following menus: Powertrain / Cruise Control / Data List / Stop Light Switch 1 and Stop Light Switch 2.

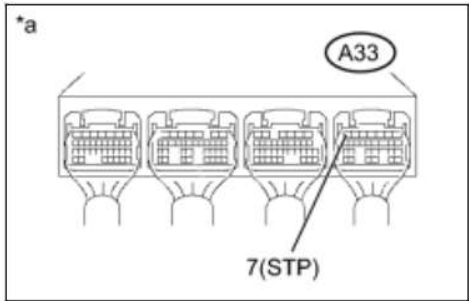
Cruise Control

BRAKE PEDAL OPERATION	STOP LIGHT SWITCH 1	STOP LIGHT SWITCH 2
Depressed	ON	ON
Released	OFF	OFF

PROCEDURE

1.

CHECK ECM (TERMINAL VOLTAGE)



(a) Turn the ignition switch to ON.

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

Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-7 (STP) - Body ground	Brake pedal released	11 to 14 V
	Brake pedal depressed	Below 1 V

Text in Illustration

*a	Component with harness connected (ECM)
----	--

NG

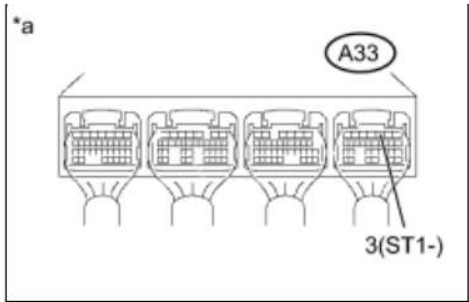
CHECK TERMINAL VOLTAGE (POWER SOURCE OF STOP LIGHT SWITCH ASSEMBLY)

OK

2.

CHECK ECM (TERMINAL VOLTAGE)

(a) Turn the ignition switch to ON.



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

Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-3 (ST1-) - Body ground	Brake pedal depressed	11 to 14 V
	Brake pedal released	Below 1 V

Text in Illustration

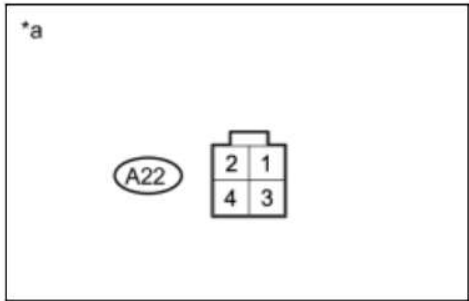
*a	Component with harness connected (ECM)
----	--

- NG

CHECK TERMINAL VOLTAGE (POWER SOURCE OF STOP LIGHT SWITCH ASSEMBLY)
- OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE

3.	CHECK TERMINAL VOLTAGE (POWER SOURCE OF STOP LIGHT SWITCH ASSEMBLY)
----	---



(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	CONDITION	SPECIFIED CONDITION

A22-3 - Body ground	Ignition switch ON	11 to 14 V
---------------------	--------------------	------------

Text in Illustration

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

NG  **INSPECT ECM POWER SOURCE CIRCUIT****OK****4. CHECK HARNESS AND CONNECTOR (ECM - STOP LIGHT SWITCH ASSEMBLY)**

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

Standard resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-7 (STP) - A22-4	Always	Below 1 Ω

Standard resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-7 (STP) or A22-4 - Body ground	Always	10 k Ω or higher

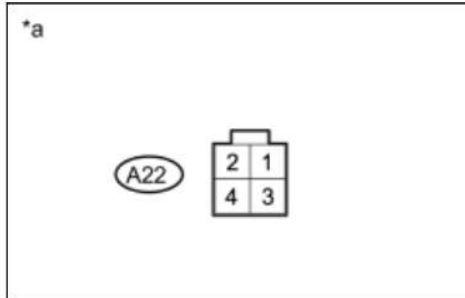
NG  **REPAIR OR REPLACE HARNESS AND CONNECTOR****OK****5. INSPECT STOP LIGHT SWITCH ASSEMBLY**

- (a) Inspect the stop light switch assembly  .

NG  **REPLACE STOP LIGHT SWITCH ASSEMBLY**

OK ► REPLACE ECM

6.

CHECK TERMINAL VOLTAGE (POWER SOURCE OF STOP LIGHT SWITCH ASSEMBLY)

(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	CONDITION	SPECIFIED CONDITION
A22-1 - Body ground	Always	11 to 14 V

Text in Illustration

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

NG ► CHECK HARNESS AND CONNECTOR (NOISE FILTER - STOP LIGHT SWITCH ASSEMBLY)

OK



7.

CHECK HARNESS AND CONNECTOR (ECM - STOP LIGHT SWITCH ASSEMBLY)

(a) Disconnect the ECM connector.

(b) Disconnect the stop light switch assembly connector.

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

Standard resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-3 (ST1-) - A22-2	Always	Below 1 Ω

Standard resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-3 (ST1-) or A22-2 - Body ground	Always	10 k Ω or higher

NG ► **CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH ASSEMBLY - NOISE FILTER)**

OK



8.	INSPECT STOP LIGHT SWITCH ASSEMBLY
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(a) Inspect the stop light switch assembly  .

NG ► **REPLACE STOP LIGHT SWITCH ASSEMBLY**

OK ► **REPLACE ECM**

9.	CHECK HARNESS AND CONNECTOR (NOISE FILTER - STOP LIGHT SWITCH ASSEMBLY)
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(a) Disconnect the stop light switch assembly connector.

(b) Disconnect the noise filter connector.

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

Standard resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A22-1 - A13-2	Always	Below 1 Ω

Standard resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A22-1 or A13-2 - Body ground	Always	10 k Ω or higher

NG ► **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK
10. INSPECT NOISE FILTER

(a) Inspect the noise filter .

NG **REPLACE NOISE FILTER**
OK **REPAIR OR REPLACE HARNESS AND CONNECTOR (NOISE FILTER - BATTERY)**
11. CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH ASSEMBLY - NOISE FILTER)

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

Standard resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A22-2 - A13-1	Always	Below 1 Ω

Standard resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A22-2 or A13-1 - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS AND CONNECTOR**
OK
12. INSPECT NOISE FILTER

(a) Inspect the noise filter .

NG ► **REPLACE NOISE FILTER**

OK



13. CHECK HARNESS AND CONNECTOR (ECM - NOISE FILTER)

- (a) Disconnect the ECM connector.
- (b) Disconnect the noise filter connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-3 (ST1-) - A13-4	Always	Below 1 Ω

Standard resistance (Check for short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A33-3 (ST1-) or A13-4 - Body ground	Always	10 k Ω or higher

NG ► **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK ► **REPLACE ECM**



TOYOTA

Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PLZ0AFX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: SYSTEM DESCRIPTION (2013 FR-S)		

SYSTEM DESCRIPTION

1. CRUISE CONTROL SYSTEM

This system is controlled by the ECM, and control is performed using the throttle with motor body assembly. The ECM controls the following functions: ON-OFF, - (COAST)/SET, + (ACCEL)/RES (RESUME), CANCEL, vehicle speed operation and shift down control.

- The ECM compares the vehicle speed from the speed sensor with the stored vehicle speed set using the cruise control main switch. The ECM instructs the throttle valve motor of the throttle with motor body assembly to close the valve when the vehicle speed is greater than the stored speed, and instructs it to open the valve when the vehicle speed is less than the stored speed.
- The ECM receives signals such as ON-OFF, - (COAST)/SET, + (ACCEL)/RES (RESUME), and CANCEL from the cruise control main switch and executes the command.
- The ECM illuminates the combination meter assembly cruise control indicator light in green when the cruise control system is turned on using the cruise control main switch (ON-OFF button).
- The ECM illuminates the combination meter assembly cruise control indicator light in amber when a malfunction occurs during cruise control driving.
-



The ECM illuminates the combination meter assembly cruise control SET indicator light when vehicle speed control begins after the cruise control main switch is pushed to -/SET while driving.

Text in Illustration

*1	Cruise Control Indicator Light (Illuminated in Green or in Amber)
*2	Cruise Control SET Indicator

2. LIMIT CONTROL

(a) Low speed limit

The lowest possible set speed is approximately 40 km/h (25 mph). The cruise control system cannot be set when the vehicle speed is below the low speed limit. Control of vehicle speed will be automatically canceled but the stored vehicle speed will be retained when the vehicle speed drops below the low speed limit while the cruise control is controlling vehicle speed.

(b) High speed limit

The highest possible set speed is approximately 145 km/h (90 mph). The cruise control system cannot be set when the vehicle speed is over the high speed limit. Also, + (ACCEL)/RES (RESUME) cannot be used to increase the speed beyond the high speed limit.

3. OPERATION OF CRUISE CONTROL

The cruise control main switch is used to turn the cruise control system on and off, as well as operate 7 functions: SET, - (COAST), TAP-DOWN, RES (RESUME), + (ACCEL), TAP-UP, and CANCEL. The SET, TAP-DOWN, and - (COAST) functions, and the RES (RESUME), TAP-UP, and + (ACCEL) functions are operated with the same switch. The cruise control main switch is an automatic return type switch which turns on only while operating it in the direction of each arrow, and turns off after it is released.

(a) SET CONTROL

The vehicle speed is stored and speed control begins when the cruise control main switch is pushed to -/SET while driving with the cruise control system on (while the cruise control indicator light is illuminated in green), and the vehicle speed is within the set speed range (between the low and high speed limits).

(b) - (COAST) CONTROL

When the cruise control system is controlling vehicle speed and the cruise control main switch is pushed to -/SET and held in that position, the cruise control system sends a "required engine torque = 0 Nm" demand signal to the ECM. Following this, the vehicle speed is stored and maintained when the cruise control main switch is released.

(c) TAP-DOWN CONTROL

When the cruise control system is controlling vehicle speed and the cruise control main switch is tapped to the -/SET side (for approximately 0.6 seconds), the stored vehicle speed decreases by approximately 1.6 km/h (1.0 mph) for each time the switch is tapped. When the cruise control main switch is tapped to -/SET and the difference between the current and stored vehicle speed is more than 5 km/h (approximately 3 mph), the current vehicle speed is stored and speed control is performed.

(d) ACCELERATION CONTROL

When the cruise control system is controlling vehicle speed and the cruise control main switch is pushed to +/RES and held in that position, the cruise control system sends a signal to the ECM to operate the throttle valve motor of the throttle with motor body assembly to open the throttle valve. Following this, the vehicle speed is stored and maintained when the cruise control main switch is released.

(e) TAP-UP CONTROL

When the cruise control system is controlling vehicle speed and the cruise control main switch is tapped to the +/RES side (for approximately 0.6 seconds), the stored vehicle speed increases by approximately 1.6 km/h (1.0 mph) for each time the switch is tapped. When the cruise control main switch is tapped to +/RES and the difference between the current and stored vehicle speed is more than 5 km/h (approximately 3 mph), the stored vehicle speed will not be changed.

(f) RESUME CONTROL

If cruise control system control of vehicle speed was canceled due to any of the manual cancel conditions (other than turning the cruise control system off using the ON-OFF switch), and if the vehicle speed is between the low and high speed limits, the stored vehicle speed from the time of cancelation will be resumed and maintained when the cruise control main switch is pushed to +/RES.

(g) SHIFT DOWN CONTROL (for Automatic Transmission)

When the vehicle is cruising uphill, the transmission may shift down according to ECT control. After the ECM judges that uphill cruising has ended based on the throttle valve angle, the transmission will shift up. If the transmission shifts down during acceleration or resume control, it will shift up after acceleration or resume control is completed.

(h) MANUAL CANCEL CONTROL

Performing any of the following cancels the cruise control system control of vehicle speed (the stored vehicle speed in the ECM is maintained).

- Depressing the brake pedal.
- Moving the shift lever to 1st or R position. (for Manual Transmission)
- Moving the shift lever from D or M to any other position. (for Automatic Transmission)
- Selecting the 3rd, 2nd or 1st range with the shift lever in M. (for Automatic Transmission)
- Selecting the 3rd, 2nd or 1st range using the shift paddle switch with the shift lever in M (w/ shift paddle switch). (for Automatic Transmission)
- Pulling the cruise control main switch to CANCEL
- Turning the cruise control system off using the cruise control main switch (ON-OFF button) (the stored vehicle speed in the ECM is not maintained)

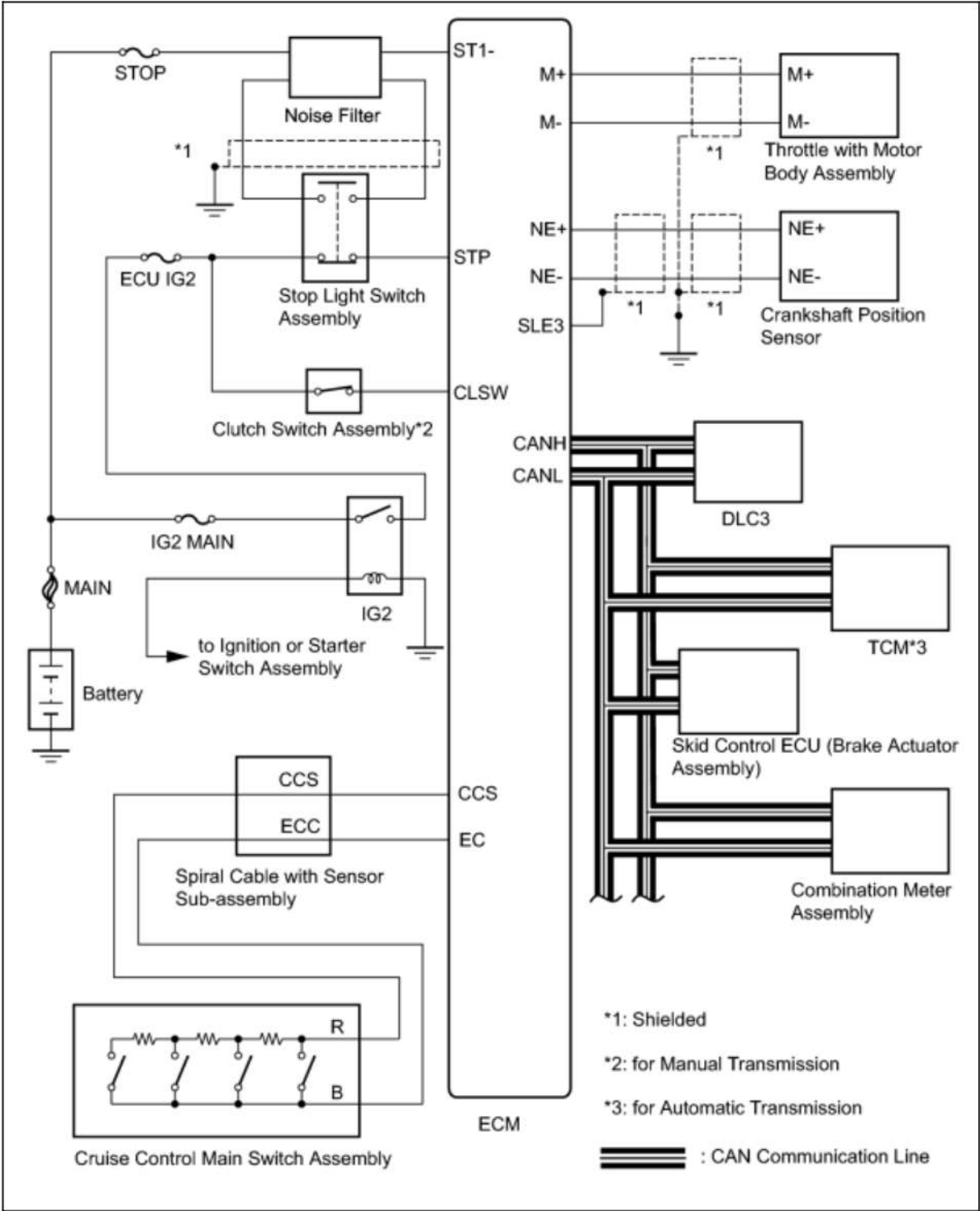
4. AUTO CANCEL

The ECM cancels the cruise control under the specified conditions. The cause for cancellation can be confirmed by referring to the "CANCEL CODE" .



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PM209IX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: SYSTEM DIAGRAM (2013 FR-S)		

SYSTEM DIAGRAM



Communication Table

SENDER	RECEIVER	SIGNAL	LINE
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TCM	ECM	Shift lever position and gear range signal	CAN
Skid control ECU (Brake Actuator Assembly)	ECM	• Vehicle speed signal • ABS, TR(A)C and/or VSC operation signal	CAN
ECM	Combination Meter Assembly (Cruise Control Indicator Light) (Cruise Control SET Indicator)	Cruise control indicator and cruise control SET indicator operation signal	CAN

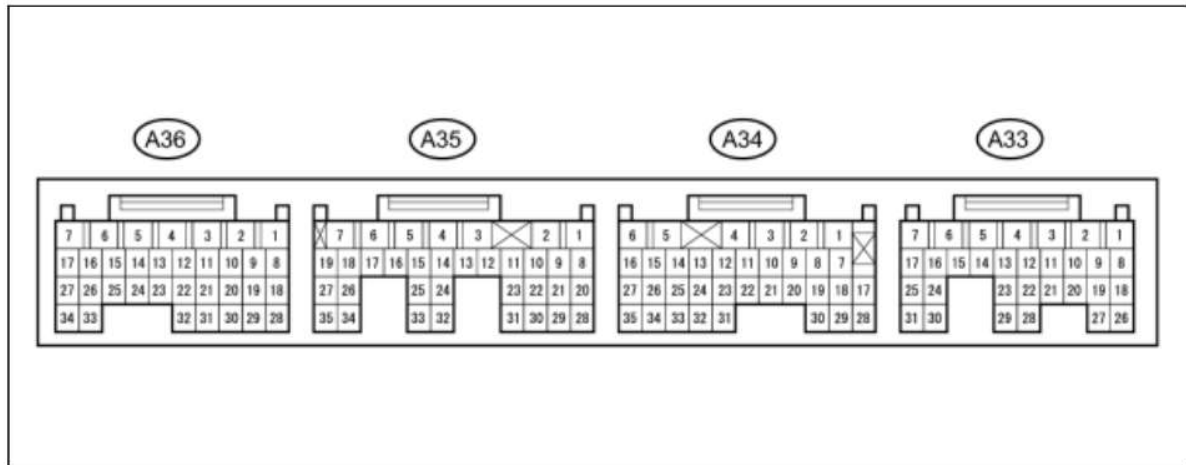


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Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001W1U05TX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: TERMINALS OF ECM (2013 FR-S)		

TERMINALS OF ECM

1. CHECK ECM



TERMINAL NO. (SYMBOLS)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A33-3 (ST1-) - A33-4 (EC)	BR-B - B-L	Brake signal	Ignition switch ON, Brake pedal depressed	Below 1 V
			Ignition switch ON, Brake pedal released	11 to 14 V
A33-7 (STP) - A33- 4 (EC)	R - B-L	Stop light signal	Ignition switch ON, Brake pedal depressed	11 to 14 V
			Ignition switch ON, Brake pedal released	Below 1 V
A33-15 (CLSW)* - A33-4 (EC)	R-Y - B-L	Clutch switch circuit	Ignition switch ON, Clutch pedal depressed	Below 1 V
			Ignition switch ON, Clutch pedal released	11 to 14 V
A33-30 (CCS) - A33-4 (EC)	W-L - B-L	Cruise control main switch circuit	Cruise control main switch (ON-OFF button) released	1 MΩ or higher
			Cruise control main switch (ON-OFF button) pushed	Below 2.5 Ω
			+ / RES switch ON	235 to 245 Ω
			- / SET switch ON	617 to 643 Ω
			CANCEL switch ON	1509 to 1571 Ω

*: for Manual Transmission



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Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002X2201MX
Title: CRUISE CONTROL: CRUISE CONTROL SYSTEM: U0073,U0101,U0122,U0155,U0402,U0416,U0423: Control Module Communication Bus "A" Off (2013 FR-S)		

DTC	U0073	Control Module Communication Bus "A" Off
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DTC	U0101	Lost Communication with TCM
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DTC	U0122	Lost Communication with Vehicle Dynamics Control Module
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DTC	U0155	Lost Communication with Instrument Panel Cluster (IPC) Control Module
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DTC	U0402	Invalid Data Received from TCM
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DTC	U0416	Invalid Data Received from Vehicle Dynamics Control Module
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DTC	U0423	Invalid Data Received from Instrument Panel Cluster Control Module
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DESCRIPTION

The ECM communicates several signals with each sensor and ECU by CAN communication circuit.

There are any malfunctions in the communication circuit, one or more DTCs in the CAN communication system are output.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
U0073	Bus off state for 0.436 seconds or more (1 trip detection logic)	• Wire harness (CANL and CANH circuits) • ECM
U0101	No communication between ECM and TCM for 0.5 seconds or more (1 trip detection logic)	• Wire harness (CANL and CANH circuits) • TCM • ECM
	No communication between ECM and skid control ECU for	• Wire harness (CANL and CANH circuits)

U0122	0.5 seconds or more (1 trip detection logic)	• Skid control ECU (Brake actuator assembly) • ECM
U0155	No communication between ECM and combination meter assembly for 0.5 seconds or more (1 trip detection logic)	• Wire harness (CANL and CANH circuits) • Combination meter assembly • ECM
U0402	Invalid data received from TCM for 2 seconds or more (1 trip detection logic)	• Wire harness (CANL and CANH circuits) • TCM • ECM
U0416	Invalid data received from skid control ECU (brake actuator assembly) for 2 seconds or more (1 trip detection logic)	• Wire harness (CANL and CANH circuits) • Skid control ECU (Brake actuator assembly) • ECM
U0423	Invalid data received from combination meter assembly for 2 seconds or more (1 trip detection logic)	• Wire harness (CANL and CANH circuits) • Combination meter assembly • ECM

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK ANY OTHER DTCS OUTPUT
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- (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 / Trouble Codes.
- (e) Read the DTCs.

Result:

RESULT	PROCEED TO
DTC U0073, U0101, U0122, U0155, U0402, U0416 or U0423 is output	A
DTC U0073, U0101, U0122, U0155, U0402, U0416 or U0423 and other DTCs are output	B

B ► **GO TO DTC CHART**

A ► **GO TO CAN COMMUNICATION SYSTEM**

