BODY SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.
This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.
Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

BODY SECTION

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

CC(diag)

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**CHECK MALFUNCTION INDICATOR LIGHT.** Ensure the malfunction indicator light illuminates.	Does the malfunction indicator light illuminate?	Go to step **5.**	Go to step **2.**
2	**CHECK CRUISE INDICATOR LIGHT.** Ensure the cruise indicator light blinks.	Does the cruise indicator light blink?	Go to step **5.**	Go to step **3.**
3	**CHECK CRUISE CONTROL MAIN SWITCH OPERATION.** Check the cruise control main switch operation. (Ensure the cruise indicator light illuminates.)	Is the cruise control main switch turned on? (Does the cruise indicator light illuminate?)	Go to step **4.**	Go to phenomenon 1. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
4	**CHECK CRUISE CONTROL SET OPERATION.** Check the cruise control set operation.	Can the cruise control be set while driving at more than 40 km/h (25 MPH)?	Go to step **6.**	Go to step **5.**
5	**PERFORM CRUISE CANCEL CONDITIONS DIAGNOSIS.** Perform the cruise cancel conditions diagnosis.	Is DTC displayed?	Go to “List of Diagnostic Trouble Code (DTC)”. <Ref. to CC(diag)-12, List of Diagnostic Trouble Code (DTC).>	Go to phenomenon 2. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
6	**CHECK CRUISE SET INDICATOR LIGHT.** Ensure the cruise set indicator light illuminates.	Does the cruise set indicator light illuminate?	Go to step **7.**	Go to phenomenon 3. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
7	**CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED.** Make sure the vehicle speed is held within set speed.	Is vehicle speed held within set speed ±3 km/h (±2 MPH)? (Make an inspection on a level road.)	Go to step **8.**	Go to phenomenon 4. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
8	**CHECK RESUME/ACCEL OPERATION.** Check the RESUME/ACCEL switch operation.	Does the vehicle speed increase or return to set speed after RESUME/ACCEL switch has been pressed?	Go to step **9.**	Go to phenomenon 5. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

	Step	Check	Yes	No
9	**CHECK SET/COAST OPERATION.** Check the SET/COAST switch operation.	Does the vehicle speed decrease after SET/COAST switch has been pressed?	Go to step **10.**	Go to phenomenon 6. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
10	**CHECK CANCEL OPERATION.** Check the CANCEL switch operation.	Is the cruise control released after CANCEL switch has been pressed?	Go to step **11.**	Go to phenomenon 7. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
11	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after brake pedal has been depressed?	Go to step **12.**	Go to phenomenon 8. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
12	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after shifting to the neutral position?	Go to step **13.**	Go to phenomenon 9. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
13	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after depressing the clutch pedal?	Finish the diagnosis.	Go to phenomenon 10. <Ref. to CC(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

2. General Description

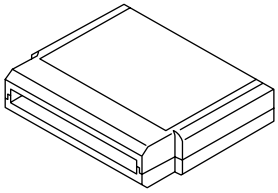
A: CAUTION

Airbag system wiring harness is routed near the cruise control command switch.

CAUTION:
• All airbag system wiring harnesses and connectors are yellow. Do not use the electrical test equipment on these circuits.
• Be careful not to damage the airbag system wiring harness when servicing the cruise control command switch.

B: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST24082AA230	24082AA230	CARTRIDGE	Troubleshooting for electrical system
 ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical system • English: 22771AA030 (Without printer) • German: 22771AA070 (Without printer) • French: 22771AA080 (Without printer) • Spanish: 22771AA090 (Without printer)

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and ampere.

C: INSPECTION

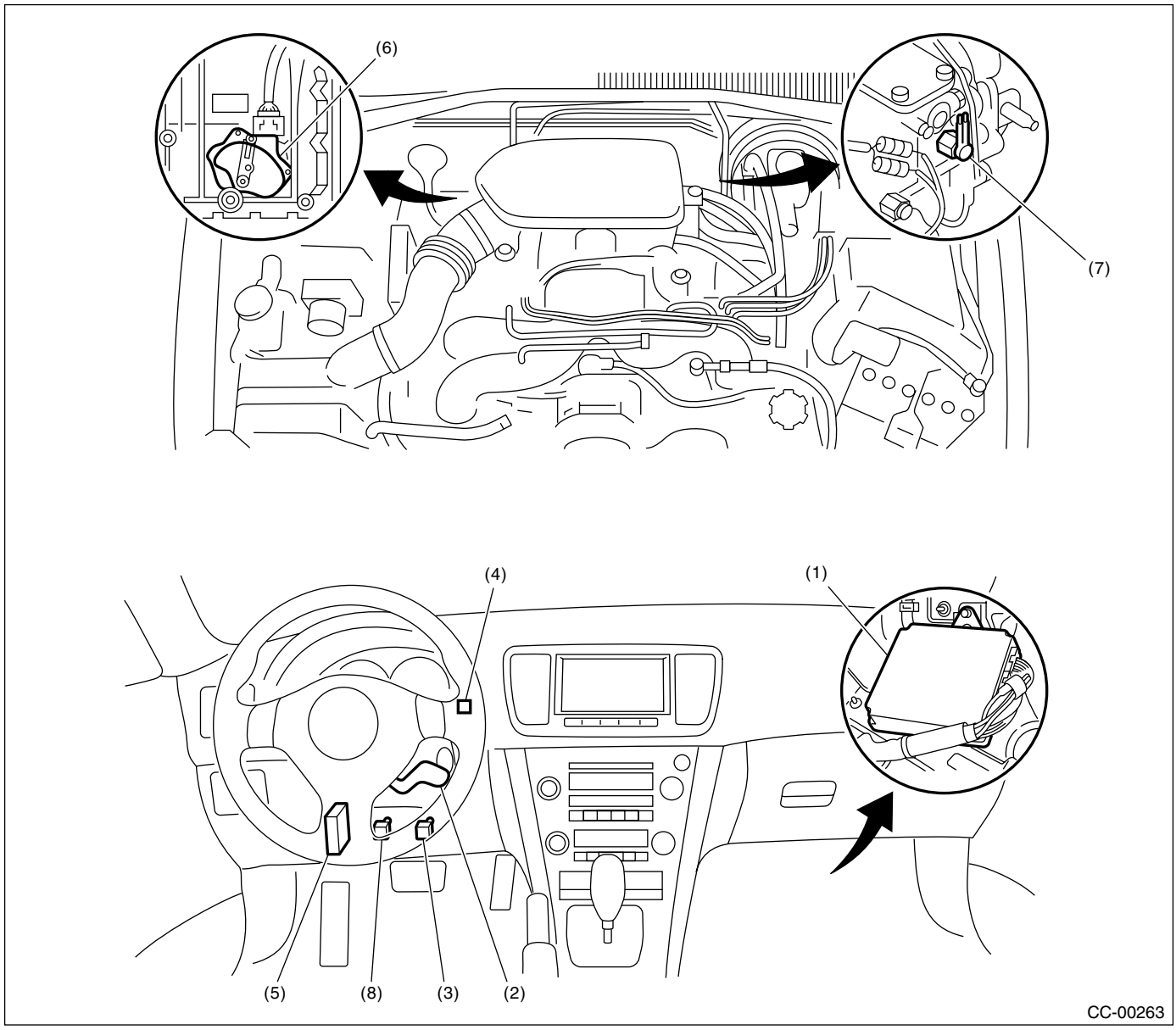
Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V or more

Specific gravity:
More than 1.260

3. Electrical Component Location

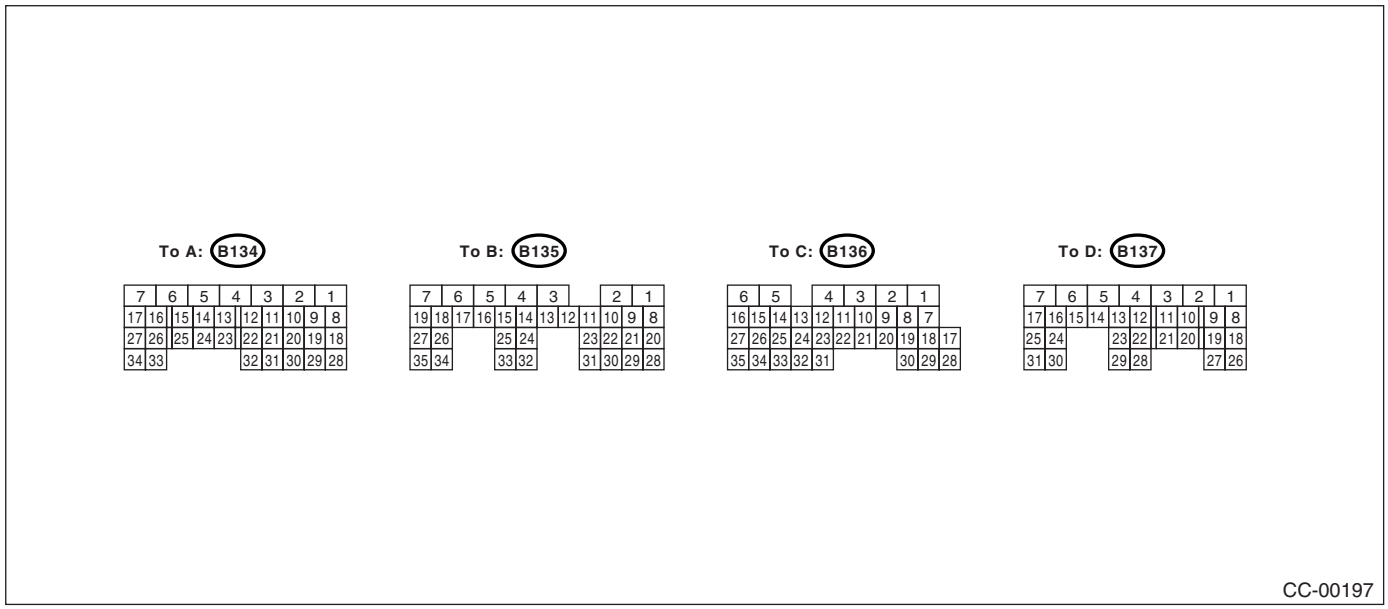
A: LOCATION



(1) Engine control module (ECM)
(2) Cruise control command switch
(3) Stop and brake switch
(4) Cruise indicator light and cruise set indicator light
(5) Transmission control module (TCM) (AT model)
(6) Inhibitor switch (AT model)
(7) Neutral position switch (MT model)
(8) Clutch switch (MT model)

4. Engine Control Module (ECM) I/O Signal

A: ELECTRICAL SPECIFICATION



- 2.0 L turbo model, 3.0 L model, 2.5 L EC, K4 and EK model

Content		Terminal No.	Measurement Condition and I/O Signal (Idling with ignition ON: Except cruise set light)
Main power supply	VB (CONTROL 1) VB (CONTROL 2)	B6 B5	• Battery voltage is present when the main power is turned ON. • “0 V” voltage is present when the main power is turned OFF.
Command Switch		C11	• “0 V” voltage is present when the command switch is turned to CANCEL position. • “Approx. 1 V” voltage is present when the command switch is turned to SET/COAST position. • “Approx. 3 V” voltage is present when the command switch is turned to RESUME/ACCEL position. • “Approx. 4 V” voltage is present when the command switch is released.
Brake switch 1 (Brake switch)		C9	• Battery voltage is present when the brake pedal is released. • “0 V” voltage is present when the brake pedal is depressed.
Brake switch 2 (Stop light switch)		C8	• Battery voltage is present when the brake pedal is depressed. • “0 V” voltage is present when the brake pedal is released.
Main switch		C7	• “0 V” voltage is present while the main switch is pressed or turned on. • Battery voltage is present when the main switch is turned OFF.
Ground	GND (CONTROL 1) GND (CONTROL 2)	D2 D1	—
Ignition switch		D14	• Battery voltage is present when the ignition switch is turned ON. • “0 V” voltage is present when the ignition switch is turned OFF.
Clutch switch (MT model)		C10	• “0 V” voltage is present when the clutch pedal is depressed. • Battery voltage is present when the clutch pedal is released.
Neutral position switch (MT model)		D9	• “0 V” voltage is present when the shift lever is set in any position except neutral. • “Approx. 5 V” voltage is present when the shift lever is set in neutral position.
Neutral signal (AT model)		D9	• “Approx. 5 V” voltage (4AT model) or battery voltage (5AT model) is present when the shift lever is set in any position except “P” or “N”. • “0 V” voltage is present when the shift lever is set in “P” or “N” position.

• 2.0 L non-turbo model, 2.5 L KS, KA model

Content		Terminal No.	Measurement Condition and I/O Signal (Idling with ignition ON: Except cruise set light)
Main power supply	VB (CONTROL 1) VB (CONTROL 2)	C3 C4	• Battery voltage is present when the main power is turned ON. • "0 V" voltage is present when the main power is turned OFF.
Command Switch		C21	• "0 V" voltage is present when the command switch is turned to CANCEL position. • "Approx. 1 V" voltage is present when the command switch is turned to SET/COAST position. • "Approx. 3 V" voltage is present when the command switch is turned to RESUME/ACCEL position. • "Approx. 4 V" voltage is present when the command switch is released.
Brake switch 1 (Brake switch)		D12	• Battery voltage is present when the brake pedal is released. • "0 V" voltage is present when the brake pedal is depressed.
Brake switch 2 (Stop light switch)		D13	• Battery voltage is present when the brake pedal is depressed. • "0 V" voltage is present when the brake pedal is released.
Main switch		D14	• "0 V" voltage is present while the main switch is pressed or turned on. • Battery voltage is present when the main switch is turned OFF.
Ground	GND (CONTROL 1) GND (CONTROL 2)	C5 C6	—
Ignition switch		B13	• Battery voltage is present when the ignition switch is turned ON. • "0 V" voltage is present when the ignition switch is turned OFF.
Clutch switch (MT model)		D22	• "0 V" voltage is present when the clutch pedal is depressed. • Battery voltage is present when the clutch pedal is released.
Neutral position switch (MT model)		B12	• "0 V" voltage is present when the shift lever is set in any position except neutral. • "Approx. 5 V" voltage is present when the shift lever is set in neutral position.
Neutral signal (AT model)		B12	• "Approx. 5 V" voltage is present when the shift lever is set in any position except "P" or "N". • "0 V" voltage is present when the shift lever is set in "P" or "N" position.

B: WIRING DIAGRAM

<Ref. to WI-134, WIRING DIAGRAM, Cruise Control System.>

5. Subaru Select Monitor

A: OPERATION

1. GENERAL DESCRIPTION

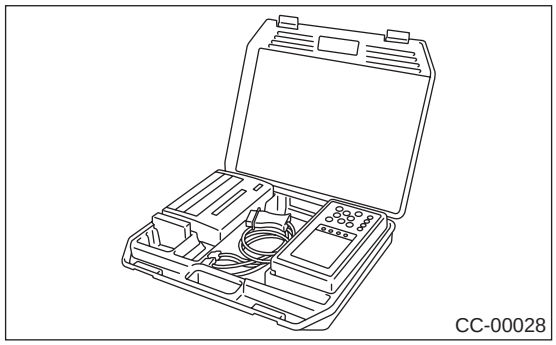
For the on-board diagnosis function of the cruise control system, use Subaru Select Monitor.
The on-board diagnosis function operates under two categories, which are used depending on the type of problems;
1) Cruise Control Cancel Conditions Diagnosis:
(1) This category of diagnosis requires actual vehicle driving in order to determine the cause, as when cruise speed is cancelled during driving although cruise cancel condition is not entered.
(2) Cruise control memory in ECM stores the cancel condition (Code No.) which occurred during driving. When there are plural cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

CAUTION:
• The cruise control memory stores not only the cruise "cancel" which occurred (although "cancel" operation is not entered by the driver), but also the "cancel" condition input by the driver.
• The content of memory is cleared when ignition switch or cruise control main switch is turned OFF.

2) Real-time Diagnosis:
Real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to the signal emitted from switches, sensors, etc.
(1) Vehicle cannot be driven at cruise speed when problem occurs in the cruise control system or its associated circuits.
(2) Monitor the signal conditions from switches and sensors.

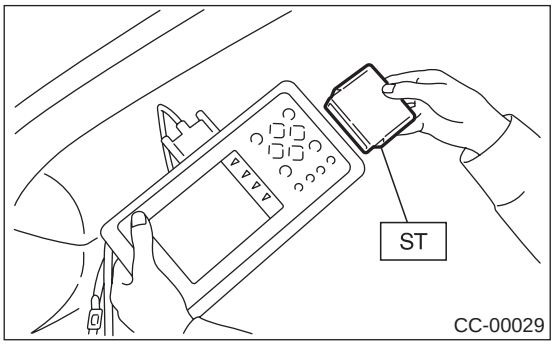
2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare the Subaru Select Monitor kit.


CC-00028

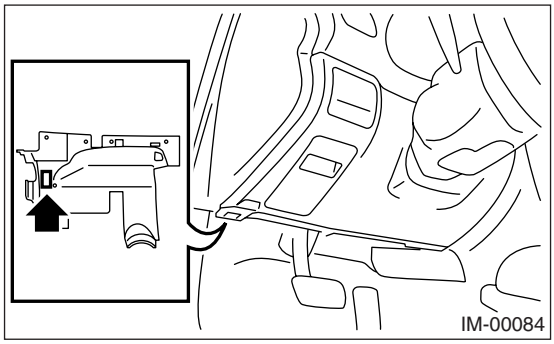
2) Connect the diagnosis cable to Subaru Select Monitor.

3) Insert the cartridge to Subaru Select Monitor. <Ref. to CC(diag)-4, SPECIAL TOOL, PREPARATION TOOL, General Description.>

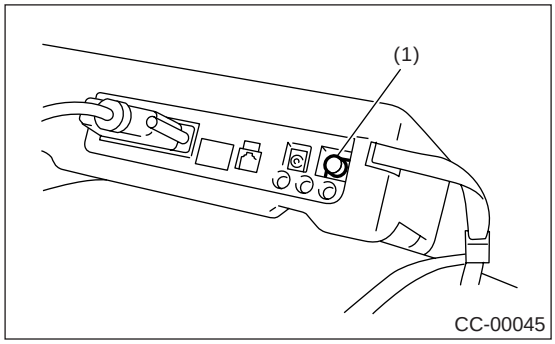


CC-00029

4) Connect the Subaru Select Monitor to data link connector.
(1) Data link connector is located in the lower portion of instrument panel (on the driver's side).


IM-00084

(2) Connect the diagnosis cable to data link connector.
5) Start the engine and turn the cruise control main switch to ON.
6) Turn the Subaru Select Monitor switch to ON.



CC-00045

(1) Power switch

7) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.
On the system selection display screen, select the {Engine} and press the [YES] key. Press the [YES] key after the information of engine type is displayed.
8) Drive vehicle at least 40 km/h (25 MPH) with cruise speed set.

9) If the cruise speed is canceled by itself (without doing any cancel operations), DTC will display on the screen when selecting the {Check Cancel Code} and pressing the [YES] key on the engine malfunction diagnosis display screen.

CAUTION:
• When performing diagnostics, observe the legal speed of the road.
• DTC will also displayed when cruise control cancel is effected by driver. Do not confuse.
• Put a co-worker in the vehicle to assist the diagnosis during driving.

NOTE:
DTC will be cleared by turning ignition switch or cruise control main switch to OFF.

3. REAL-TIME DIAGNOSIS

1) Connect the Subaru Select Monitor.
2) Turn the ignition switch and cruise control main switch to ON.
3) Turn the Subaru Select Monitor switch to ON.
4) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.
5) On the «System Selection Menu» display screen, select the {Engine} and press the [YES] key.
6) Press the [YES] key after the information of engine type is displayed.
7) On the «Cruise Control Diagnosis» display screen, select the {Current Data Display/Save}, and then press the [YES] key.
8) Make sure that normal indication is displayed when operated as follows:
• Depress/release the brake pedal. (Stop light switch and brake switch turn ON.)
• Turn the main switch to ON.
• Turn the “CANCEL” switch to ON.
• Turn ON the “SET/COAST” switch.
• Turn ON the “RESUME/ACCEL” switch.
• Depress or release the clutch pedal.
• Place the shift lever in any position except neutral.

NOTE:
• For details concerning operation procedure, refer to “SUBARU SELECT MONITOR OPERATION MANUAL”.
• For DTC, refer to “List of Diagnostic Trouble Code (DTC)”. <Ref. to CC(diag)-12, List of Diagnostic Trouble Code (DTC).>

6. Diagnostics with Phenomenon

A: DIAGNOSTIC PROCEDURE WITH PHENOMENON

Phenomenon		Checking item	Reference
1	Cruise control main switch is not turned to ON. (Cruise indicator light does not illuminate.)	(1) Check the cruise indicator light.	<Ref. to CC(diag)-11, CHECK CRUISE INDICATOR LIGHT & CRUISE SET INDICATOR LIGHT., Diagnostics with Phenomenon.>
		(2) Check the cruise control command switch.	<Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2	Cruise control cannot be set.	(1) Check the cruise control command switch.	<Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(2) Check the stop light switch and brake switch.	<Ref. to CC(diag)-18, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the clutch switch.	<Ref. to CC(diag)-21, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(4) Check the neutral position switch.	<Ref. to CC(diag)-24, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(5) Check the vehicle speed sensor.	<Ref. to CC(diag)-32, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
3	Cruise set indicator light does not illuminate.	Check the cruise set indicator light.	<Ref. to CC(diag)-11, CHECK CRUISE INDICATOR LIGHT & CRUISE SET INDICATOR LIGHT., Diagnostics with Phenomenon.>
4	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	Inspect the vehicle speed sensor.	<Ref. to CC(diag)-32, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
5	Vehicle speed does not increase or does not return to set speed after RESUME/ ACCEL switch has been pressed.	Check the RESUME/ACCEL switch.	<Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
6	Vehicle speed does not decrease after SET/COAST switch has been pressed.	Check the SET/COAST switch.	<Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
7	Cruise control is not released after CANCEL switch has been pressed.	Check the CANCEL switch.	<Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
8	Cruise control is not released after brake pedal has been depressed.	Check the stop light switch and brake switch.	<Ref. to CC(diag)-18, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
9	Cruise control is not released after shifting to the neutral position.	Check the neutral position switch.	<Ref. to CC(diag)-24, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
10	Cruise control is not released after clutch pedal has been depressed.	Check the clutch switch.	<Ref. to CC(diag)-21, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

B: CHECK CRUISE INDICATOR LIGHT & CRUISE SET INDICATOR LIGHT.

TROUBLE SYMPTOM:

Cruise control can be set, but the cruise indicator light & cruise set indicator light do not illuminate.

	Step	Check	Yes	No
1	**CHECK CRUISE INDICATOR LIGHT & CRUISE SET INDICATOR LIGHT.** 1) Perform the self-diagnosis for combination meter. <Ref. to IDI-3, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.> 2) Check the cruise indicator light & cruise set indicator light illuminate.	Does the cruise indicator light & cruise set indicator light illuminate?	Go to step **2.**	Replace the meter case assembly. <Ref. to IDI-16, Combination Meter Assembly.>
2	**CHECK LAN COMMUNICATION CIRCUIT ERROR DISPLAY.** 1) Turn the ignition switch to ON again after completing self-diagnosis. 2) Check that communication error is displayed on the odo/trip meter in combination meter.	Is the error code “Er xx” displayed on odo/trip meter?	Check the LAN communication circuit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-35, Engine Control Module (ECM).> <Ref. to FU(H6DO)-34, Engine Control Module (ECM).>

7. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Contents of diagnosis	Reference
11	Main switch	Main switch of cruise control command switch is turned to OFF, and then the cruise control is released.	This DTC is indicated without operating the main switch. <Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
12	Stop and brake switch	Stop light switch or brake switch is turned to ON, and then the cruise control is released.	This DTC is indicated without depressing the brake pedal. <Ref. to CC(diag)-18, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
13	Clutch switch	Clutch switch is turned to ON, and then the cruise control is released.	This DTC is indicated without depressing the brake pedal. <Ref. to CC(diag)-21, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
14	Neutral switch	Neutral position switch is turned to ON, and then the cruise control is released.	This DTC is indicated without shifting to neutral position. <Ref. to CC(diag)-24, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
15	Cancel switch	Cancel switch is turned to ON, and then the cruise control is released.	This DTC is indicated without operating the cancel switch. <Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
16	Ignition switch	Ignition switch is turned to OFF, and then the cruise control is released.	This DTC is indicated without operating the ignition switch. <Ref. to CC(diag)-29, DTC 16 IGNITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Item	Contents of diagnosis	Reference
21	Cruise Control Switch Malfunction When Ignition Switch Is Turned To ON	When the ignition switch is turned to ON, each switch of cruise control command switch is already turned to ON.	This DTC is indicated without operating the main switch. <Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
22	Vehicle Speed Variation Malfunction	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(diag)-32, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
23	Engine Related Sensor Malfunction	Malfunction related to engine is detected.	<Ref. to EN(H4SO 2.0)(diag)-2, Basic Diagnostic Procedure.> <Ref. to EN(H4SO 2.5)(diag)-2, Basic Diagnostic Procedure.> <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.> <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>
24	Cruise Control Related Switch Malfunction	Command switch malfunction is detected. (When the switch is being pressed ON for an abnormal period of time (about two minutes), open circuit is detected.)	This DTC is indicated with normal operation. <Ref. to CC(diag)-15, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
25	Brake Switch Input Circuit Malfunction	Malfunction of brake switch input circuit in ECM is detected.	<Ref. to CC(diag)-18, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
26	Engine speed signal	• Abnormal increase of engine speed is detected. • Gear is placed in Neutral, 1st or Reverse positions.	Cruise in more than 2nd shift position.
32	Out of Vehicle Speed of Cruise Control Operation	• Controlled vehicle speed decreased under the limit during cruising. • Set operation was performed out of vehicle speed available for setting. • Resume operation was performed without memorized vehicle speed.	This DTC is displayed though the vehicle speed is increased to the speed available for cruise set and set operation was performed again. <Ref. to CC(diag)-32, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Item	Contents of diagnosis	Reference
33	WAIT is prohibited after operating accelerator pedal.	Controlled vehicle speed increased above the limit during cruising.	This DTC is displayed when driving at higher speed than appropriate cruise control speed. In this case, lower the vehicle speed to the speed available for cruise set, and perform cruise set operation again.
34	Prohibited when accelerator pedal position large is continued.	The vehicle has been driven at higher speed than set vehicle speed for an abnormal period of time (about 10 minutes) during cruise driving.	This DTC is displayed when driving for a long period of time at higher speed than appropriate cruise set vehicle speed by operating accelerator pedal. In this case, release the cruise set.
35	Prohibited when vehicle speed feedback unavailable.	Set vehicle speed cannot keep because of some reasons (steep uphill, parking brake, abnormal decrease of engine output, etc.) during cruise driving.	This DTC is displayed when driving condition is not suitable for cruise control. Perform cruise set operation again after eliminating the estimated cause.
41	VDC/TCS operation	Vehicle dynamics control (VDC) or TCS is operated during cruise driving or cruise setting.	This DTC is displayed when driving condition is not suitable for cruise control. Perform cruise set operation again after eliminating the estimated cause.
42	High speed CAN communication malfunction	High speed CAN communication malfunction is detected during cruise driving or cruise setting.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
43	ABS/VDC malfunction	ABS or vehicle dynamics control (VDC) system malfunction is detected during cruise driving or cruise setting.	<Ref. to ABS(diag)-2, Basic Diagnostic Procedure.> or <Ref. to VDC(diag)-2, Basic Diagnostic Procedure.>
44	Body integrated module malfunction	Body integrated module system malfunction is detected during cruise driving or cruise setting.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
45	Meter malfunction	Combination meter malfunction is detected during cruise driving or cruise setting.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

8. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

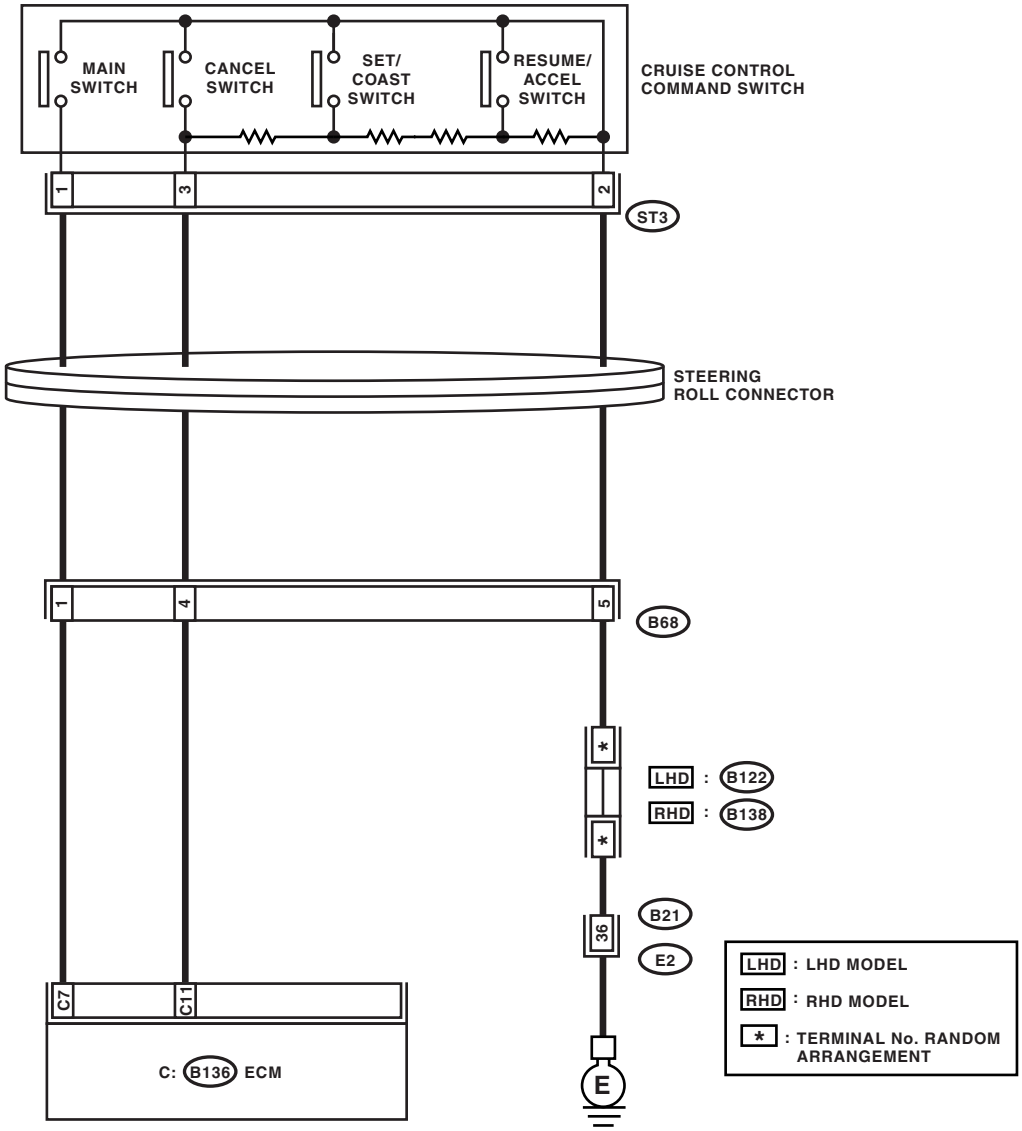
A: DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH

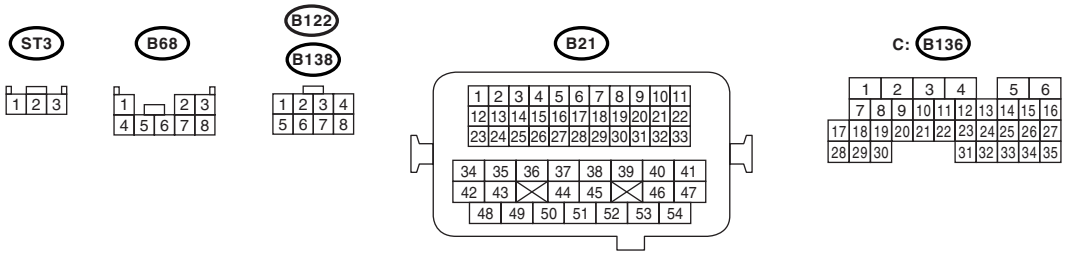
TROUBLE SYMPTOM:

- Cruise control cannot be set. (Cancelled immediately.)
- Cruise control cannot be released.

WIRING DIAGRAM:

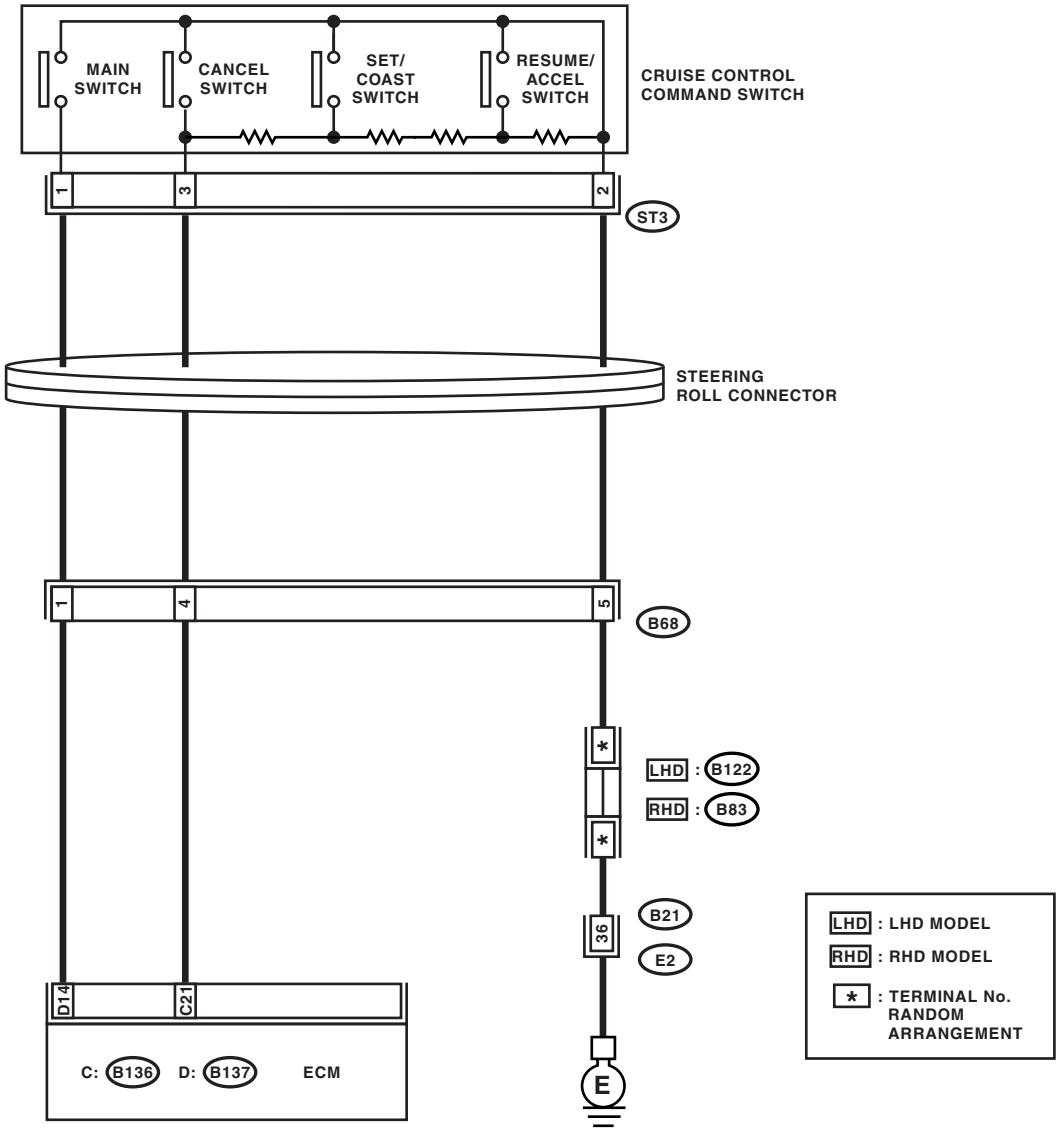
- 2.0 L turbo model, 3.0 L model, 2.5 L EC, K4 and EK model

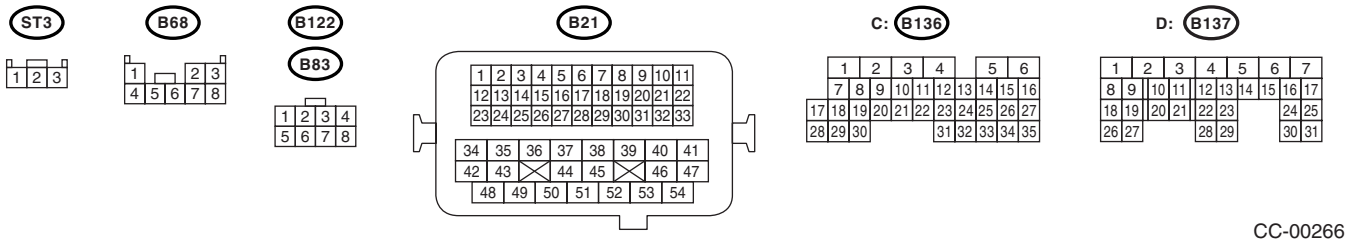




CC-00265

- 2.0 L non-turbo model, 2.5 L KS, KA model





CC-00266

	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL COMMAND SWITCH.** 1) Remove the driver's airbag module. <Ref. to AB-14, REMOVAL, Driver's Airbag Module.> 2) Disconnect the harness connector of cruise control command switch. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(ST3) No. 1 (+) — Chassis ground (−):*** ***(ST3) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 5 V?	Go to step **2.**	Check the harness for open or short circuit between cruise control command switch and ECM.
2	**INSPECTION FOR CANCEL SWITCH.** 1) Turn the ignition switch to OFF. 2) Remove the cruise control command switch. <Ref. to CC-5, REMOVAL, Cruise Control Command Switch.> 3) Measure the resistance between switch terminals when CANCEL switch is pressed and not pressed. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance less than 1 Ω when CANCEL switch is pressed? Is the resistance approx. 4 kΩ when CANCEL switch is not pressed?	Go to step **3.**	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
3	**CHECK SET/COAST SWITCH.** Measure the resistance between switch terminals when SET/COAST switch is pressed and not pressed. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance approx. 250 Ω when SET/COAST switch is pressed? Is the resistance approx. 4 kΩ when SET/COAST switch is not pressed?	Go to step **4.**	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
4	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure the resistance between switch terminals when RESUME/ACCEL switch is pressed and not pressed. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance approx. 1500 Ω when RESUME/ACCEL switch is pressed? Is the resistance approx. 4 kΩ when RESUME/ACCEL switch is not pressed?	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-35, Engine Control Module (ECM).> <Ref. to FU(H6DO)-34, Engine Control Module (ECM).>	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>

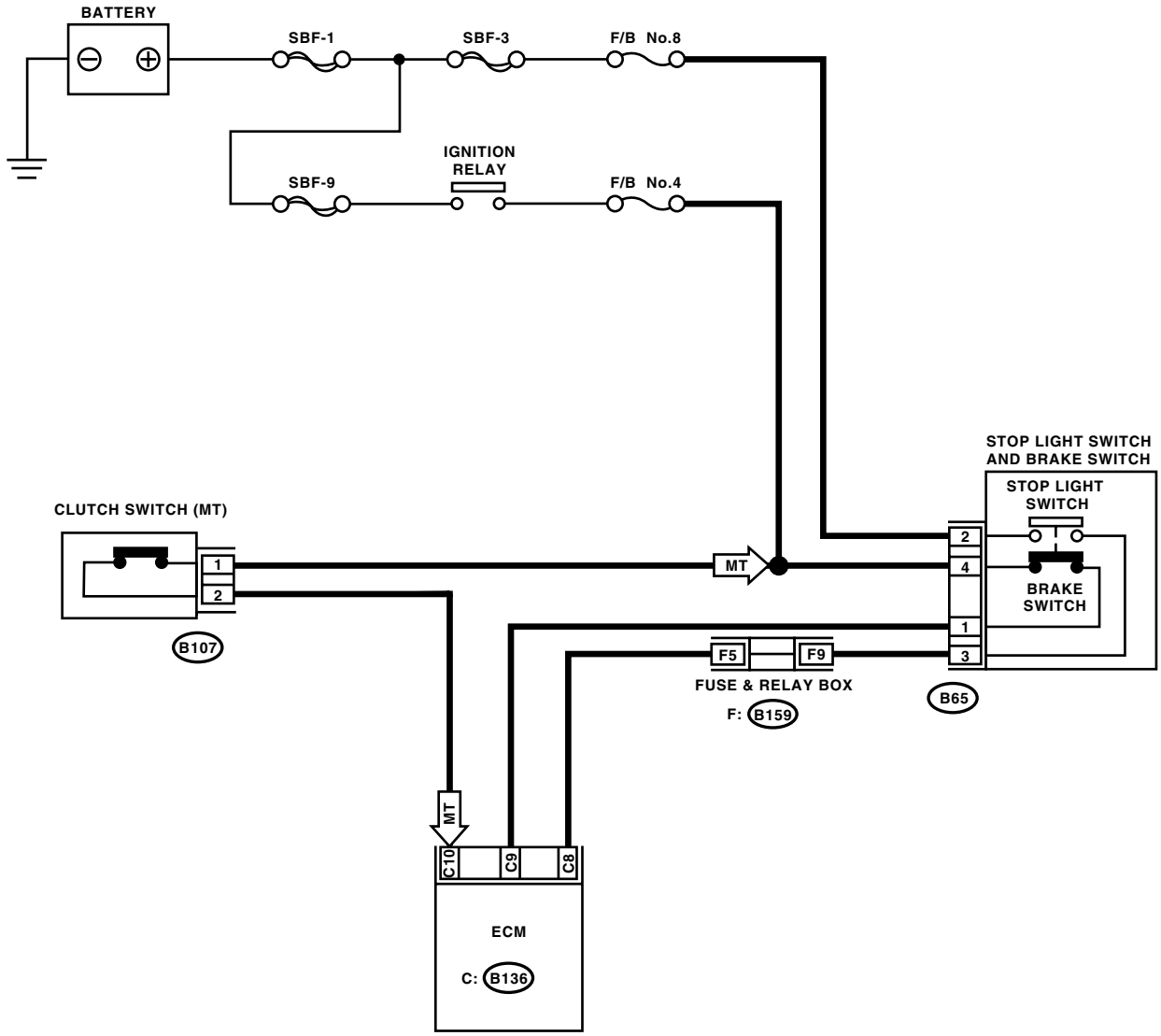
B: DTC 12 and 25 STOP LIGHT SWITCH AND BRAKE SWITCH

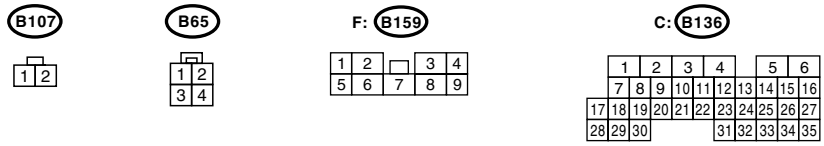
TROUBLE SYMPTOM:

- Cruise control cannot be set.
- Cruise control cannot be released.

WIRING DIAGRAM:

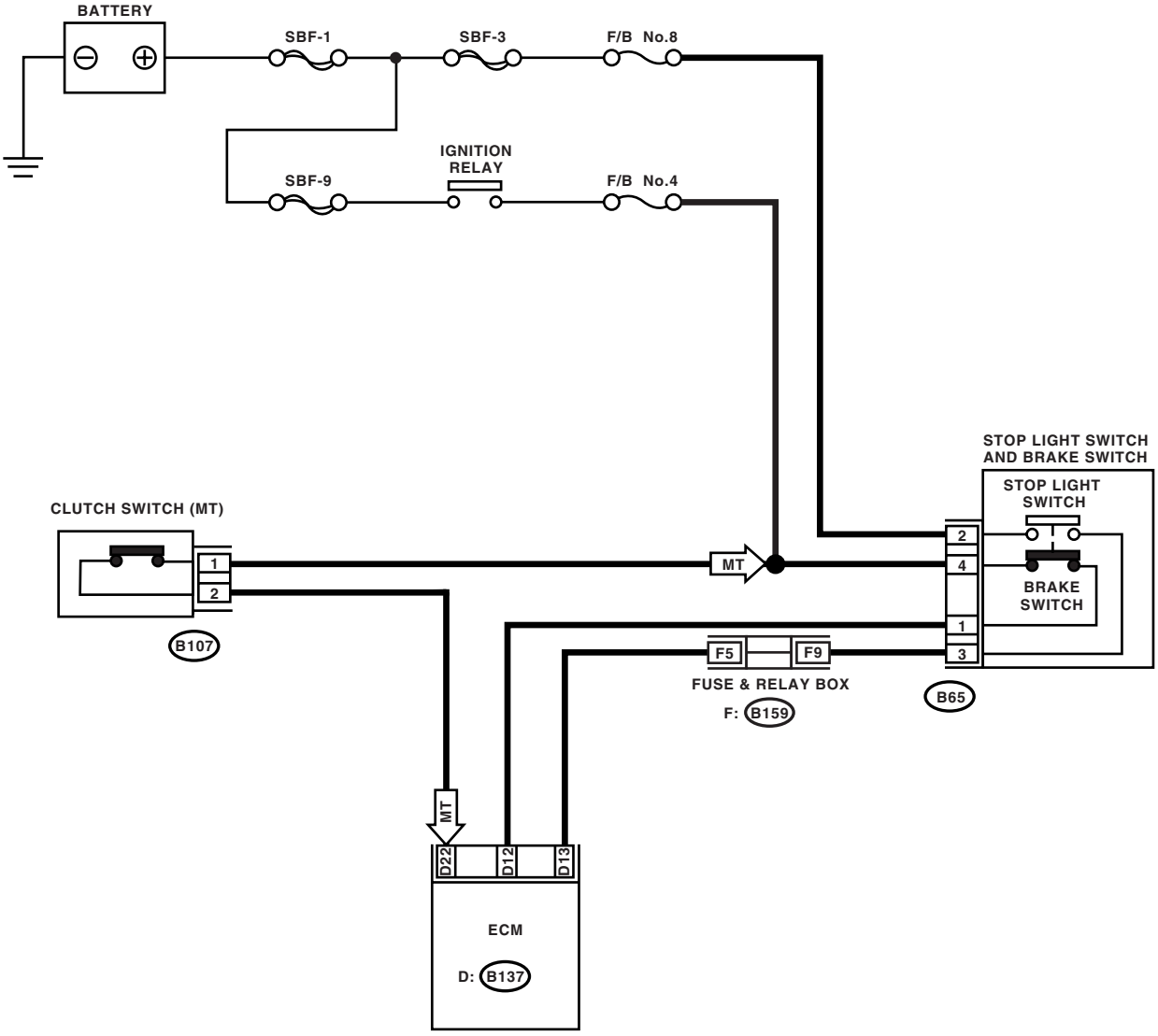
- 2.0 L turbo model, 3.0 L model, 2.5 L EC, K4 and EK model

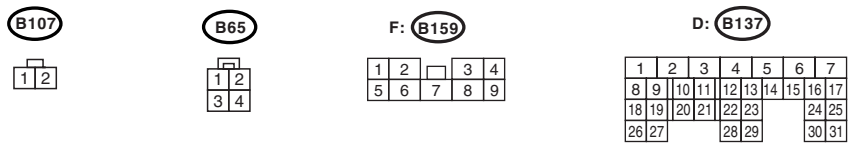




CC-00267

- 2.0 L non-turbo model, 2.5 L for KS, KA model





CC-00268

	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch and brake switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	• Check fuse No. 8 (in fuse & relay box). • Check the harness for open or short between stop light/brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 4 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3.**	• Check fuse No. 4 (in fuse & relay box). • Check the harness for open or short between stop light/brake switch and fuse & relay box.
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of ECM. 3) Measure the resistance between ECM harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***2.0 L turbo model, 3.0 L model, 2.5 L EC, K4 and EK model:*** ***(B136) No. 8 — (B65) No. 3:*** ***(B136) No. 9 — (B65) No. 1:*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(B137) No. 13 — (B65) No. 3:*** ***(B137) No. 12 — (B65) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4.**	Repair the harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check the stop light switch and brake switch. <Ref. to CC-6, Stop Light and Brake Switch.>	Are the stop light switch and brake switch OK?	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-35, Engine Control Module (ECM).> <Ref. to FU(H6DO)-34, Engine Control Module (ECM).>	Replace the stop light switch and brake switch.

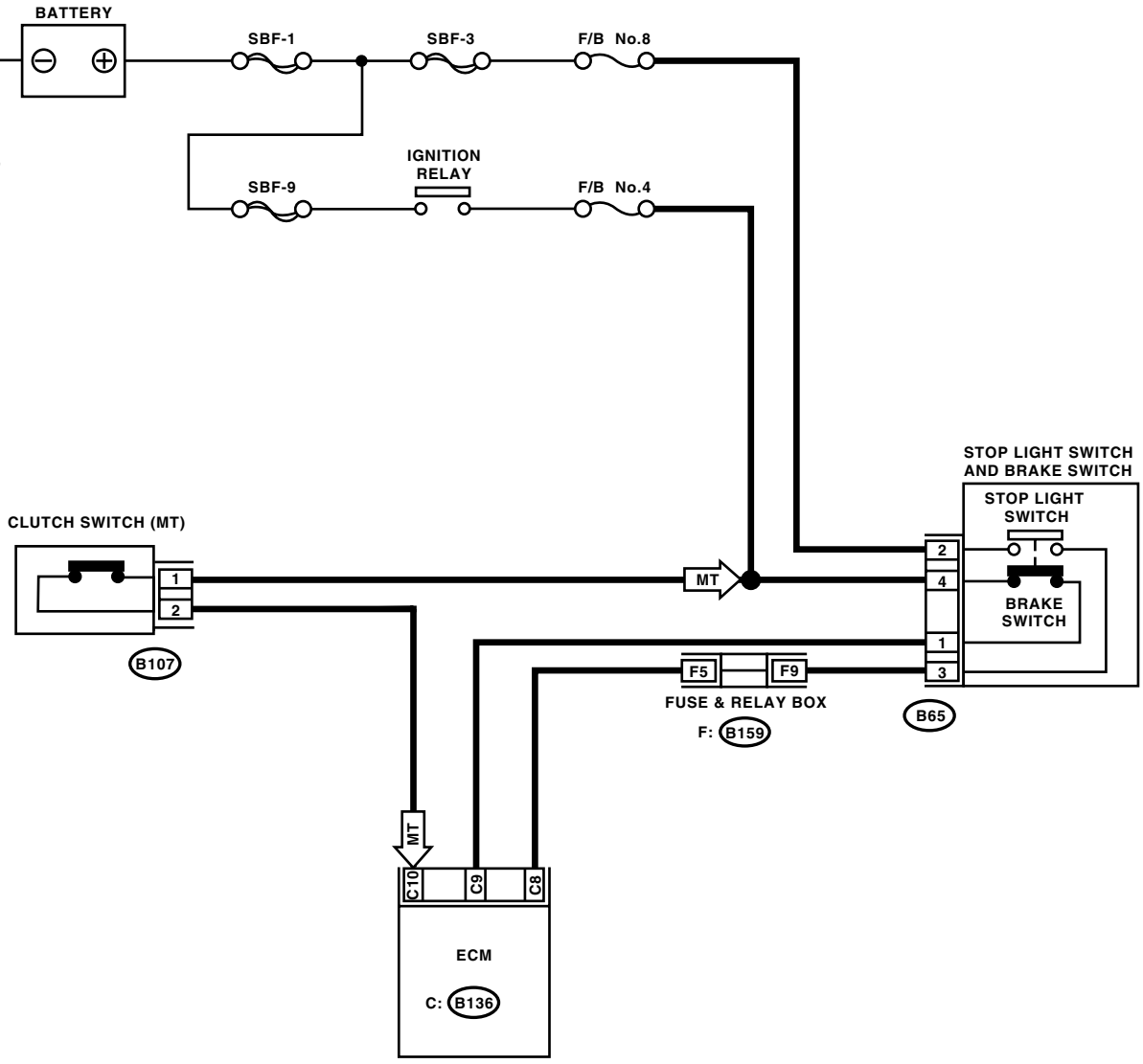
C: DTC 13 CLUTCH SWITCH

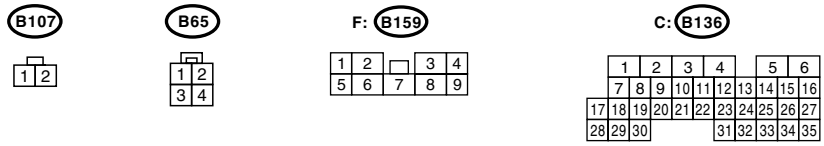
TROUBLE SYMPTOM:

- Cruise control cannot be set.
- Cruise control cannot be released.

WIRING DIAGRAM:

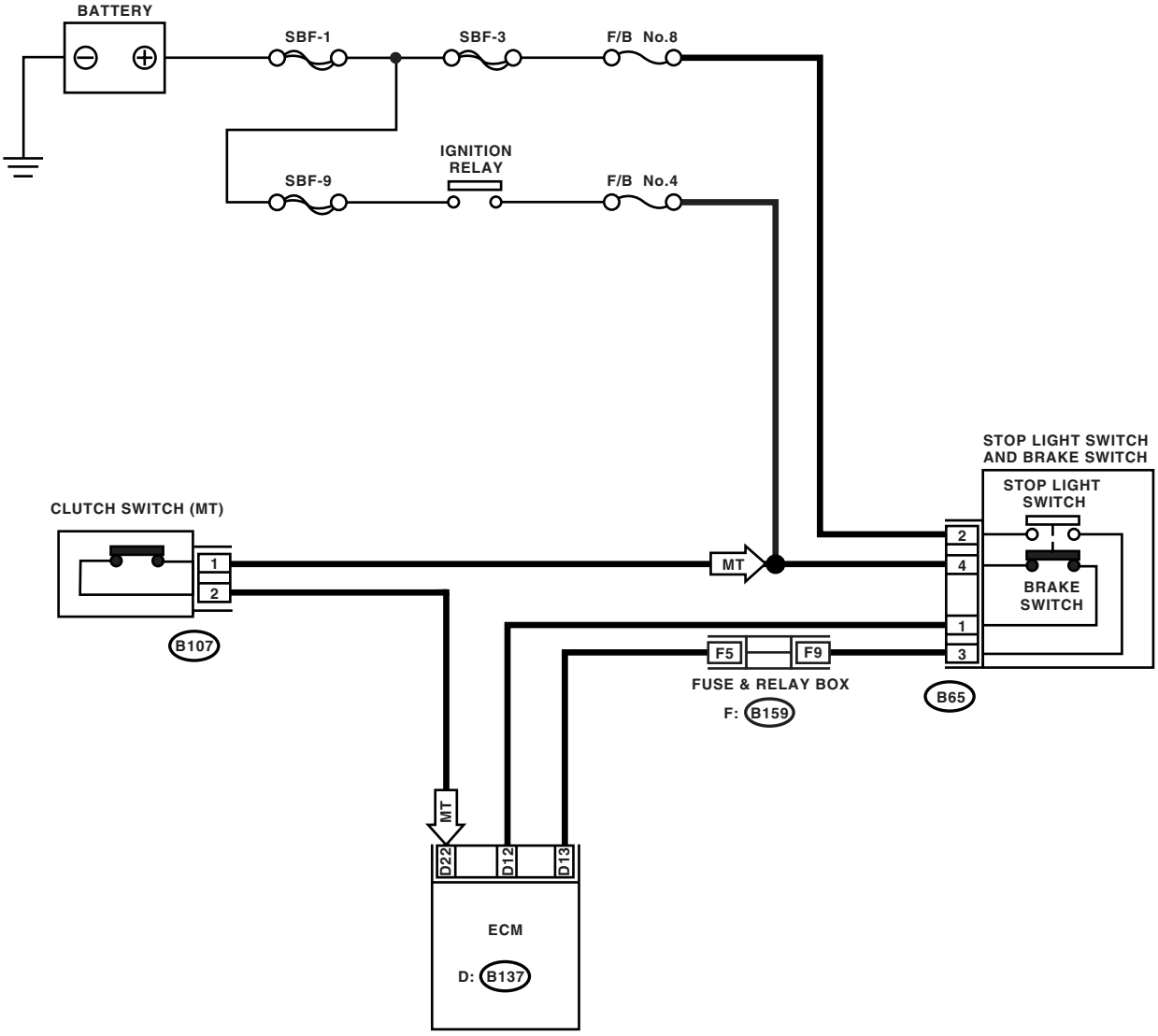
- 2.5 L EC, K4 and EK model

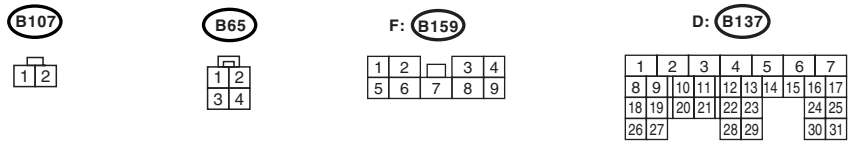




CC-00267

- 2.0 L non-turbo model, 2.5 L KS, KA model





CC-00268

	Step	Check	Yes	No
1	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the clutch switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 1 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	• Check fuse No. 4 (in fuse & relay box). • Check the harness for open or short between clutch switch and fuse & relay box.
2	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Measure the resistance between clutch switch harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***2.5 L EC, K4 and EK model:*** ***(B107) No. 2 — (B136) No. 10:*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(B107) No. 2 — (B137) No. 22:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair the harness.
3	**CHECK CLUTCH SWITCH.** Remove and check the clutch switch. <Ref. to CC-7, Clutch Switch.>	Is the clutch switch OK?	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).>	Replace the clutch switch.

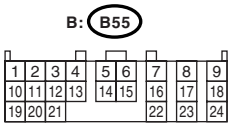
D: DTC 14 NEUTRAL POSITION SWITCH

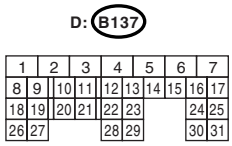
TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:

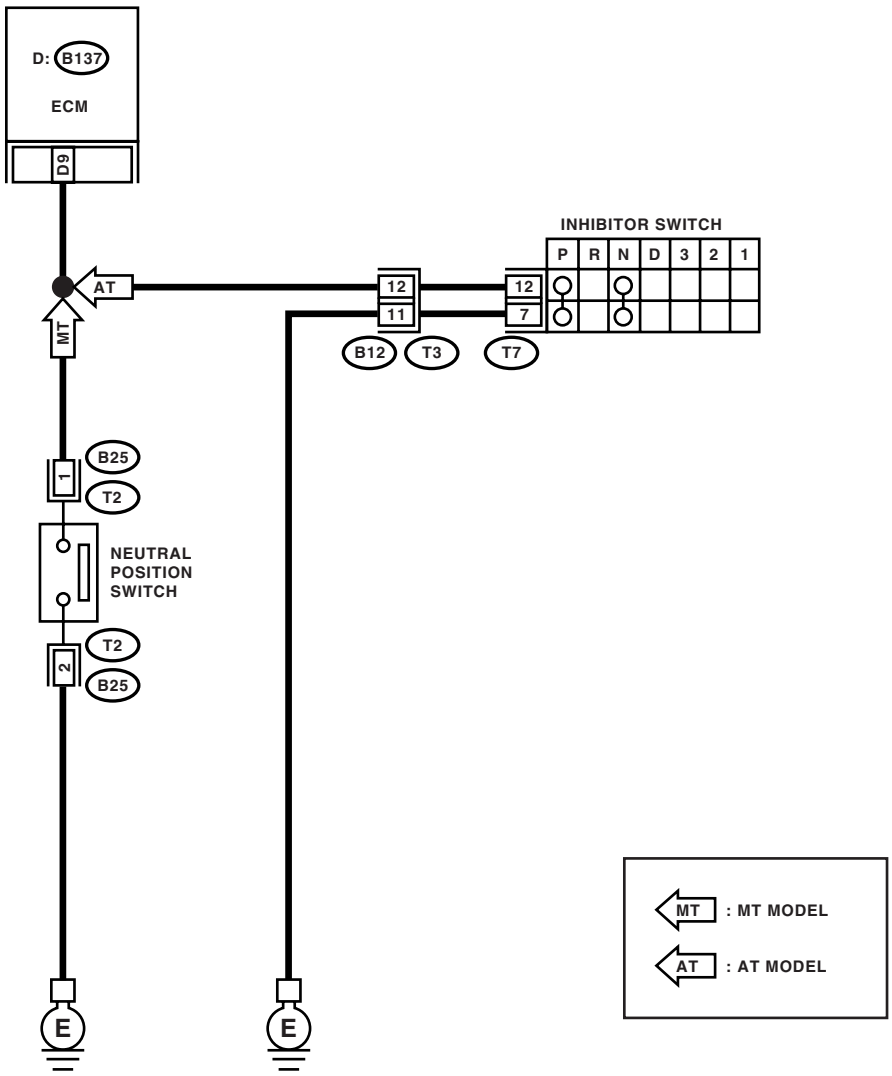
- 2.0 L turbo model, 3.0 L model

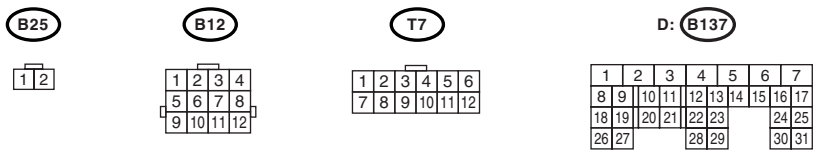




CC-00219

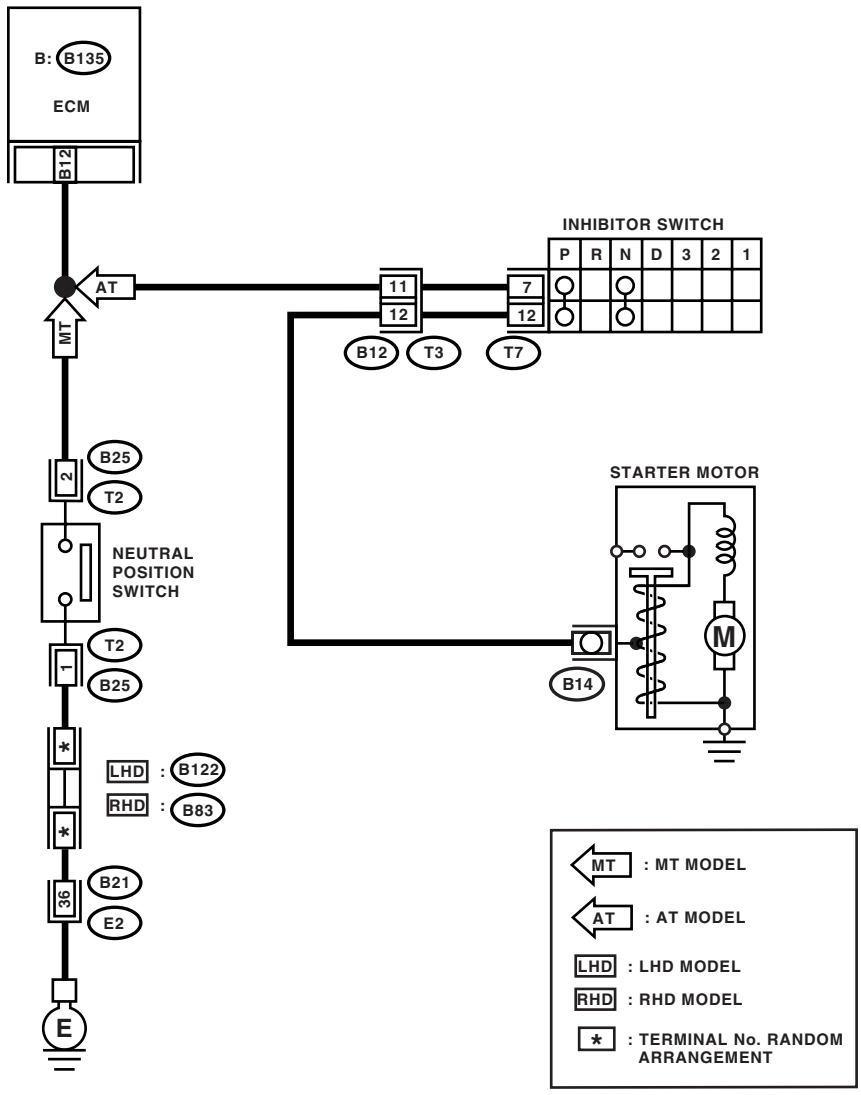
- 2.5 L EC, K4 and EK model

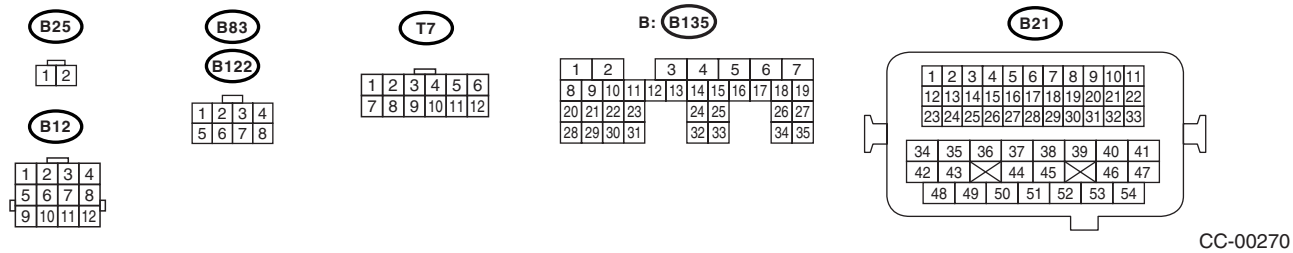




CO-00269

- 2.0 L non-turbo model, 2.5 L KS, KA model





CC-00270

	Step	Check	Yes	No
1	**CHECK VEHICLE FOR SPECIFICATION.** Check the vehicle for destination and specification.	Is the vehicle turbo model or 3.0 L model?	Go to step **2.**	Go to step **5.**
2	**CHECK NEUTRAL POSITION SWITCH.** 1) Connect the Subaru Select Monitor to data link connector. 2) Turn the ignition switch and Subaru Select Monitor switch to ON. 3) Select {Engine} from the main menu. 4) Then, select {Current Data Display & Save}. 5) Check the neutral position switch signal by shifting the select lever to “P” or “N” range.	Is ON displayed in the Subaru Select Monitor when the select lever is in “P” or “N” range? Or is OFF displayed in the Subaru Select Monitor when the select lever is in other than “P” or “N” range?	Replace the ECM. <Ref. to FU(H4DOTC)-35, Engine Control Module (ECM).> <Ref. to FU(H6DO)-34, Engine Control Module (ECM).>	Go to step **3.**
3	**CHECK TCM OUTPUT VOLTAGE.** 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B55) No. 19 (+) — Chassis ground (−):***	Is the voltage more than 10 V when the select lever is in other than “P” or “N” range? Or is the voltage less than 1 V when the select lever is in “P” or “N” range?	Go to step **4.**	Inspect the TCM. <Ref. to 5AT(diag)-2, Basic Diagnostics Procedure.>
4	**CHECK HARNESS BETWEEN TCM AND ECM.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from TCM and ECM. 3) Measure the resistance between TCM harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B137) No. 9 — (B55) No. 19:***	Is the resistance less than 10 Ω?	Replace the ECM. <Ref. to FU(H4DOTC)-35, Engine Control Module (ECM).> <Ref. to FU(H6DO)-34, Engine Control Module (ECM).>	Repair the wiring harness.
5	**CHECK TRANSMISSION TYPE.**	Is the transmission type AT?	Go to step **6.**	Go to step **9.**
6	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the inhibitor switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***2.5 L EC, K4 and EK model:*** ***(T7) No. 12 (+) — Chassis ground (−):*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(T7) No. 7 (+) — Chassis ground (−):***	Is the voltage approx. 5 V?	Go to step **7.**	Check the harness for open or short between inhibitor switch and ECM.
7	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the starter motor harness connector. 3) Measure the resistance between inhibitor switch harness connector terminal and chassis ground. ***Connector & terminal*** ***2.5 L EC, K4 and EK model:*** ***(T7) No. 7 — Chassis ground:*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(T7) No. 12 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **8.**	Repair the harness.

	Step	Check	Yes	No
8	**CHECK INHIBITOR SWITCH.** Remove and check the inhibitor switch. <Ref. to CC-8, Inhibitor Switch.>	Is the inhibitor switch OK?	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).>	Replace the inhibitor switch.
9	**CHECK NEUTRAL POSITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the neutral position switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***2.5 L EC, K4 and EK model:*** ***(B25) No. 1 (+) — Chassis ground (−):*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(B25) No. 2 (+) — Chassis ground (−):***	Is the voltage approx. 5 V?	Go to step **10.**	Check the harness for open or short between neutral position switch and ECM.
10	**CHECK NEUTRAL POSITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between neutral position switch harness connector terminal and chassis ground. ***Connector & terminal*** ***2.5 L EC, K4 and EK model:*** ***(B25) No. 2 — Chassis ground:*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(B25) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **11.**	Repair the harness.
11	**CHECK NEUTRAL POSITION SWITCH.** Remove and check the neutral position switch. <Ref. to CC-9, Neutral Position Switch.>	Is the neutral position switch OK?	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).>	Replace the neutral position switch.

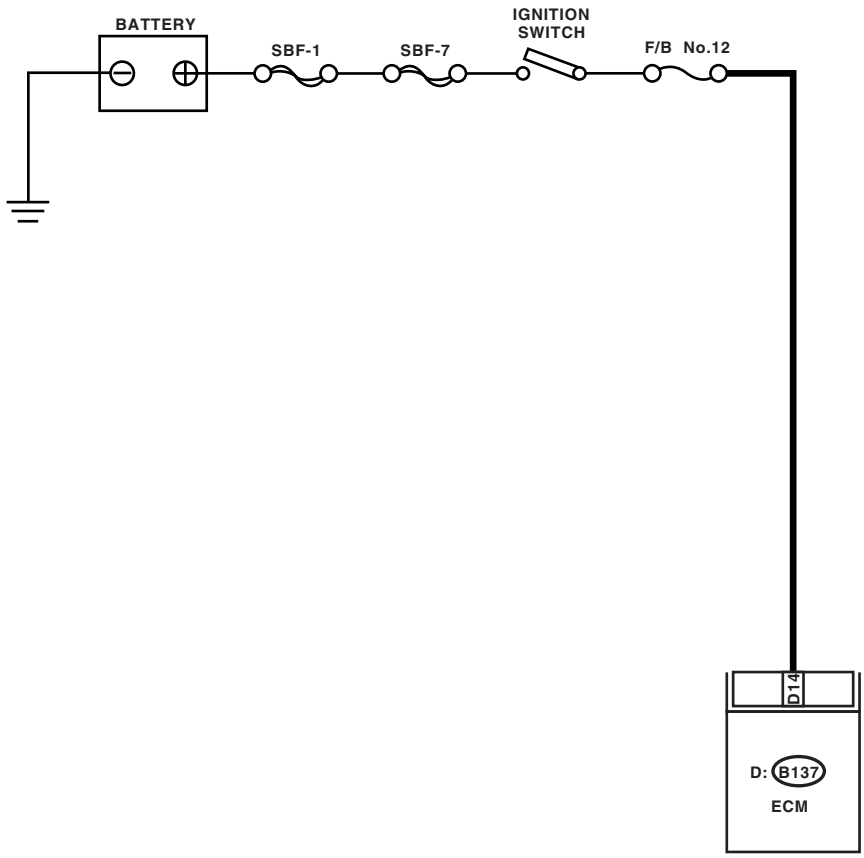
E: DTC 16 IGNITION SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:

- 2.0 L turbo model, 3.0 L model, 2.5 L EC, K4 and EK model

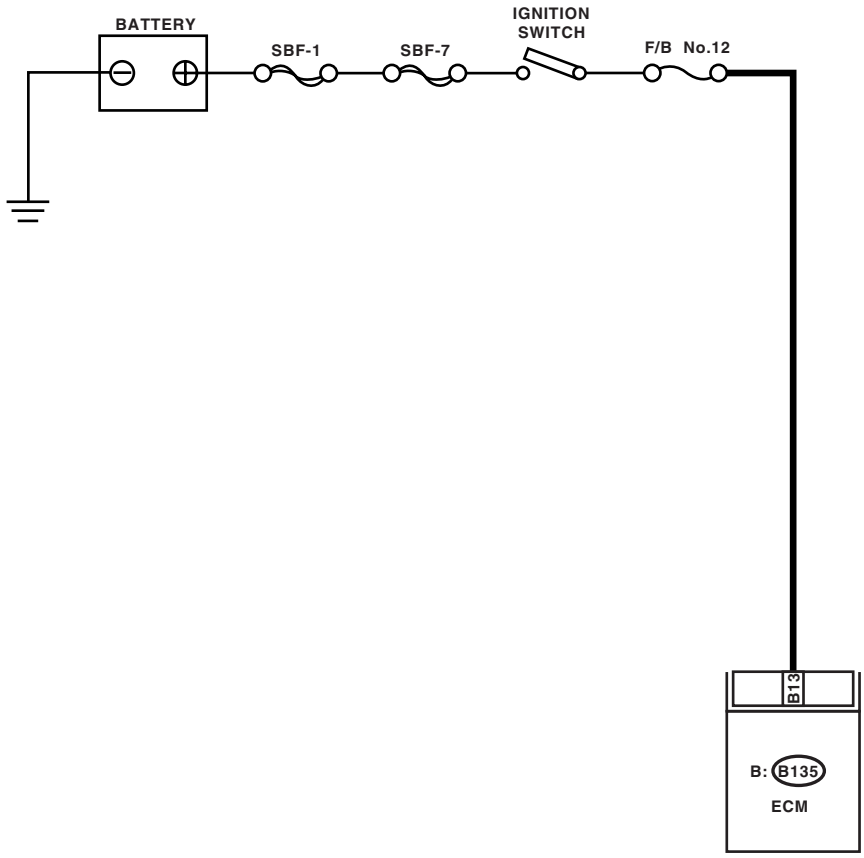


D: B137

1	2	3	4	5	6	7			
8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23			24	25
26	27			28	29			30	31

CC-00220

- 2.0 L non-turbo model, 2.5 L KS, KA model



B: B135

1	2			3	4	5	6	7		
8	9	10	11	12	13	14	15	16	17	18	19
20	21	22	23			24	25			26	27
28	29	30	31			32	33			34	35

CC-00271

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***2.0 L turbo model, 3.0 L model, 2.5 L EC, K4 and EK model:*** ***(B137) No. 14 (+) — Chassis ground (−):*** ***2.0 L non-turbo model, 2.5 L KS, KA model:*** ***(B135) No. 13 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Check poor contact in ECM connector.	• Check fuse No. 12 (in fuse & relay box). • Check the harness for open or short circuit between ignition switch and ECM.

F: DTC 22 AND 32 VEHICLE SPEED SENSOR

DIAGNOSIS:
Disconnection or short circuit of vehicle speed sensor system.
TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)

	Step	Check	Yes	No
1	**CHECK ABS WARNING LIGHT.** 1) Turn the ignition switch to ON. 2) After the combination meter initial operation is completed, confirm that the ABS warning light continues to illuminate.	Does the ABS warning light continue to illuminate?	Check ABSCM or VDCCM <Ref. to ABS(diag)-2, Basic Diagnostic Procedure.> or <Ref. to VDC(diag)-2, Basic Diagnostic Procedure.>	Go to step **2.**
2	**CHECK LAN COMMUNICATION CIRCUIT ERROR DISPLAY.** Check that the communication error is displayed on the odo/trip meter in combination meter.	Is the error code “Er xx” displayed on odo/trip meter?	Check the LAN communication circuit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Replace the ECM. <Ref. to FU(H4SO 2.0)-34, Engine Control Module (ECM).> <Ref. to FU(H4SO 2.5)-36, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-35, Engine Control Module (ECM).> <Ref. to FU(H6DO)-34, Engine Control Module (ECM).>