

Subaru Select Monitor

OCCUPANT DETECTION SYSTEM (DIAGNOSTICS)

6. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

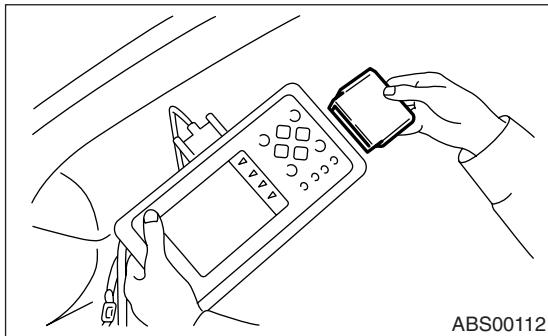
Read the DTC from recorded occupant detection control module when the occupant detection system is malfunction occurrence.

1) Prepare the Subaru Select Monitor kit. <Ref. to OD(diag)-5, SPECIAL TOOL, PREPARATION TOOL, General Description.>



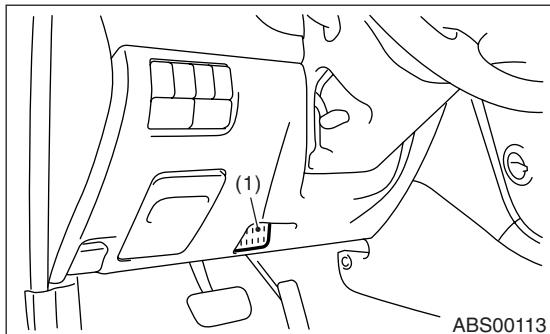
2) Connect the diagnosis cable to Subaru Select Monitor.

3) Insert the cartridge to Subaru Select Monitor. <Ref. to OD(diag)-5, SPECIAL TOOL, PREPARATION TOOL, General Description.>



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).



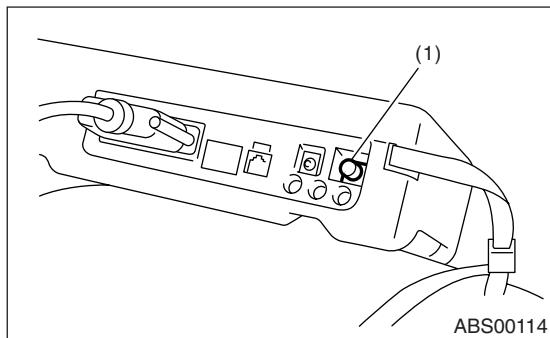
(1) Data link connector

(2) Connect the diagnosis cable to data link connector.

CAUTION:

Do not connect the scan tools except for Subaru Select Monitor.

5) Turn the ignition switch to ON (engine OFF) and turn the Subaru Select Monitor switch to ON.



(1) Power switch

6) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

7) On the «System Selection Menu» display screen, select the {Occupant detection system} and press the [YES] key.

8) Press the [YES] key after the {Occupant Detection System} is displayed.

9) On the «Occupant Detection System» display screen, select {DTC Display}, and then press the [YES] key.

NOTE:

- For details concerning operation procedures, refer to the “SUBARU SELECT MONITOR OPERATION MANUAL”.
- For details concerning DTCs, refer to “List of Diagnostic Trouble Code (DTC)”. <Ref. to OD(diag)-24, List of Diagnostic Trouble Code (DTC).>
- Display all the DTCs detected.
- If a particular DTC is not properly stored in memory (due to a drop in occupant detection control module power supply voltage, etc.) for an occurrence of a problem, a DTC that is suffixed with a question mark “?” will appear on the Subaru Select Monitor display. This shows it may be an unreliable reading.

10) If the occupant detection control module cannot communicate with Subaru Select Monitor, check the communication circuit. <Ref. to OD(diag)-16, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.>

11) When DTC is not displayed, check the meter circuit or Subaru Select Monitor communication circuit. <Ref. to OD(diag)-16, INSPECTION, Subaru Select Monitor.>

2. SENSOR DATA READ

Read the load cell sensor data when checking the list or analyzing the problem.

1) On the «Occupant Detection System» main menu screen, select the {Sensor Data Output} and press the [YES] key.

NOTE:

Do not touch the vehicle for approximately 20 seconds after pressing the [YES] key. Output value may be changed when sensing the pitching and vibration of the vehicle while reading sensor data output.

2) When the sensor output value is displayed in the [*****], press the [YES] key to move to the main menu.

Output Value (LSB)
Rear Left [*****]
Rear Right [*****]
Front Left [*****]
Front Right [*****]
Wsum [*****]
Press “YES”

OD-00006

3. CLEAR MEMORY MODE

Clear the DTC stored in the occupant detection system module after repairing occupant detection system.

NOTE:

After the breakdown is recovered, the breakdown code for completed recoveries are read out when the next breakdown occurs if the memory clear work is not performed.

- 1) Select the {Occupant Detection System} on the main menu, and press the [YES] key.
- 2) On the «Occupant Detection System» display screen, select {Clear Memory} and press the [YES] key.
- 3) When the {Done} is shown on the display, DTCs will be cleared.

NOTE:

When the {Cannot erase the DTC stored, perform the diagnosis according to trouble symptom} is shown, read the DTC and perform the diagnosis according to DTC. <Ref. to OD(diag)-25, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

4. SYSTEM CALIBRATION

CAUTION:

• If a trouble occurs during the system calibration resulting in stopping the process or interrupting sensor data read, the DTC 28 {Adjustment / Inspection halt} of occupant detection system will be detected to illuminate the airbag warning light. In this case, perform the system calibration again, or perform the system calibration again after repairing the trouble cause.

- Compartment temperature during the system calibration must be within 0 to 40°C.
- Perform the system adjusting after installing the seat to vehicle, when replace the occupant detection system or remove the passenger's seat.

- 1) Park vehicle on a level surface.
- 2) Unload the cargo and set the vehicle in curb weight condition.
- 3) Connect the Subaru Select Monitor to vehicle, and then turn the ignition switch to ON.
- 4) Turn the Subaru Select Monitor power to ON.
- 5) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.
- 6) On the «System Selection Menu» display screen, select the {Occupant detection system} and press the [YES] key.
- 7) «LOAD CELL TYPE OCCUPANT DETECTION SYSTEM Press the [YES] key» is displayed, press the [YES] key.

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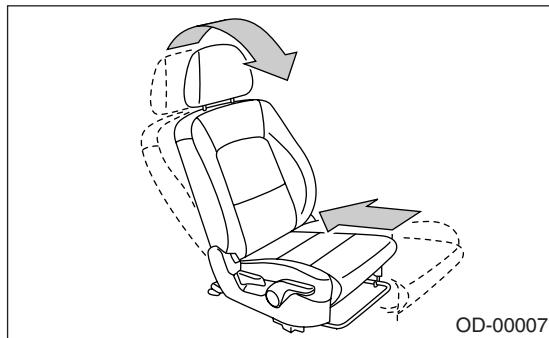
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- 8) On the «OCCUPANT DETECTION SYSTEM» display screen, select the {1.System Calibration} and press the [YES] key.
- 9) When the {Complete all calibration checks, illuminated and a trouble code saved. Continue: YES, Quit: NO} is displayed, press the [YES] key.
- 10) When the {Diagnostic code check No trouble Continue: YES, Quit: NO} is displayed, press the [YES] key.

NOTE:

When a DTC is detected, {Diagnostic code check some troubles occur See service manual Press YES to END} is displayed. Inspect the DTC, and perform the calibration again after repairing trouble cause.

- 11) When the {Empty the passenger seat Continue: YES, Quit: NO} is displayed, empty the passenger's seat and press the [YES] key.
- 12) When {Adjust the passenger seat to the condition shown in Service manual Continue: YES, Quit: NO} is displayed, slide the passenger's seat to the rearmost position and make sure to lock into place. Lock the backrest at the frontmost position, and press the [YES] key.



NOTE:

- After pressing the [YES] key, "Now processing ... Wait for a while. Do not touch or give impact to vehicle and seat" is displayed. Do not touch the vehicle for approximately 20 seconds while the message is displayed.
- When the {System calibration is unsuccessful See service manual Press YES to END} is displayed, go to step 19).

- 13) When the {Threshold adjustment is successfully completed weight inspection in service manual continue: YES, Quit: NO} is displayed, press the [YES] key.

- 14) When the {Empty the passenger seat Continue: YES, Quit: NO} is displayed, make sure the passenger's seat is empty and press the [YES] key.

- 15) When the {Adjust the passenger seat to the condition shown with service manual Continue: YES, Quit: NO} is displayed, check the seat position and press the [YES] key.

NOTE:

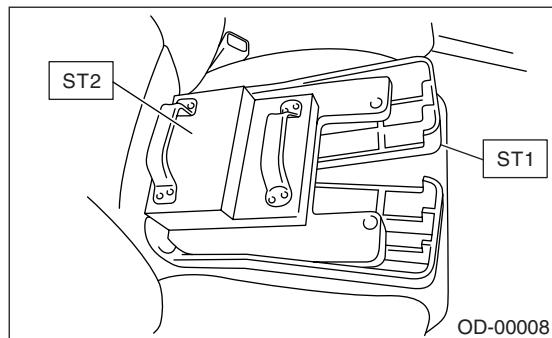
- Slide the seat to the rearmost position and lock it securely. Lock the backrest securely in the frontmost position. (For the model with power seat, operate the slide switch or reclining switch fully until no longer moved.)
- Diagnostic trouble code (DTC) is input when selecting the "NO" in this step.
- After pressing the [YES] key, "Now processing ... Wait for a while. Do not touch or give impact to vehicle and seat" is displayed. Do not touch the vehicle for approximately 20 seconds while the message is displayed.
- When the {System calibration is unsuccessful See service manual Press YES to END} is displayed, go to step 19).
- 16) When {Input threshold weight mass (lbs) [00.0] Press YES after inputting weight mass} is displayed, enter the weight (79.1 lbs) and press the [YES] key.

NOTE:

When an incorrect weight amount is entered, error will be generated.

- 17) When {Put threshold weight with the position on the passenger seat shown with service manual Continue: YES, Quit: NO} is displayed, check the seat position, assemble SPECIAL TOOL WEIGHT A and WEIGHT B and place it on the passenger's seat, then press the [YES] key.

ST1 98399AG000 SPECIAL TOOL WEIGHT A
ST2 98399AG010 SPECIAL TOOL WEIGHT B



NOTE:

- DTC is detected when selecting the "NO" in this step.
- Place the weight in the seat center, making sure the firm contact with the backrest.
- Do not touch or give any impact to the vehicle for approximately 20 seconds after pressing the [YES] key.
- When the {System calibration is unsuccessful See service manual Press YES to END} is displayed, go to step 19).
- 18) When the {System calibration is successfully completed Press YES to END} is displayed, press the [YES] key to finish the diagnosis.

19) When the {System calibration is unsuccessful See service manual Press YES to END} is displayed, the system is malfunctioning. Read the DTC, repair the trouble cause, and then perform the system calibration again. <Ref. to OD(diag)-20, Read Diagnostic Trouble Code (DTC).> <Ref. to OD(diag)-24, List of Diagnostic Trouble Code (DTC).>

CAUTION:

If the system calibration fails and stop the operation, DTC 28 {Adjustment / Inspection halt} will be recorded and airbag warning light will illuminate. If the DTC except {Adjustment / Inspection halt} is displayed, calibrate the system after the malfunction is repaired.

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B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

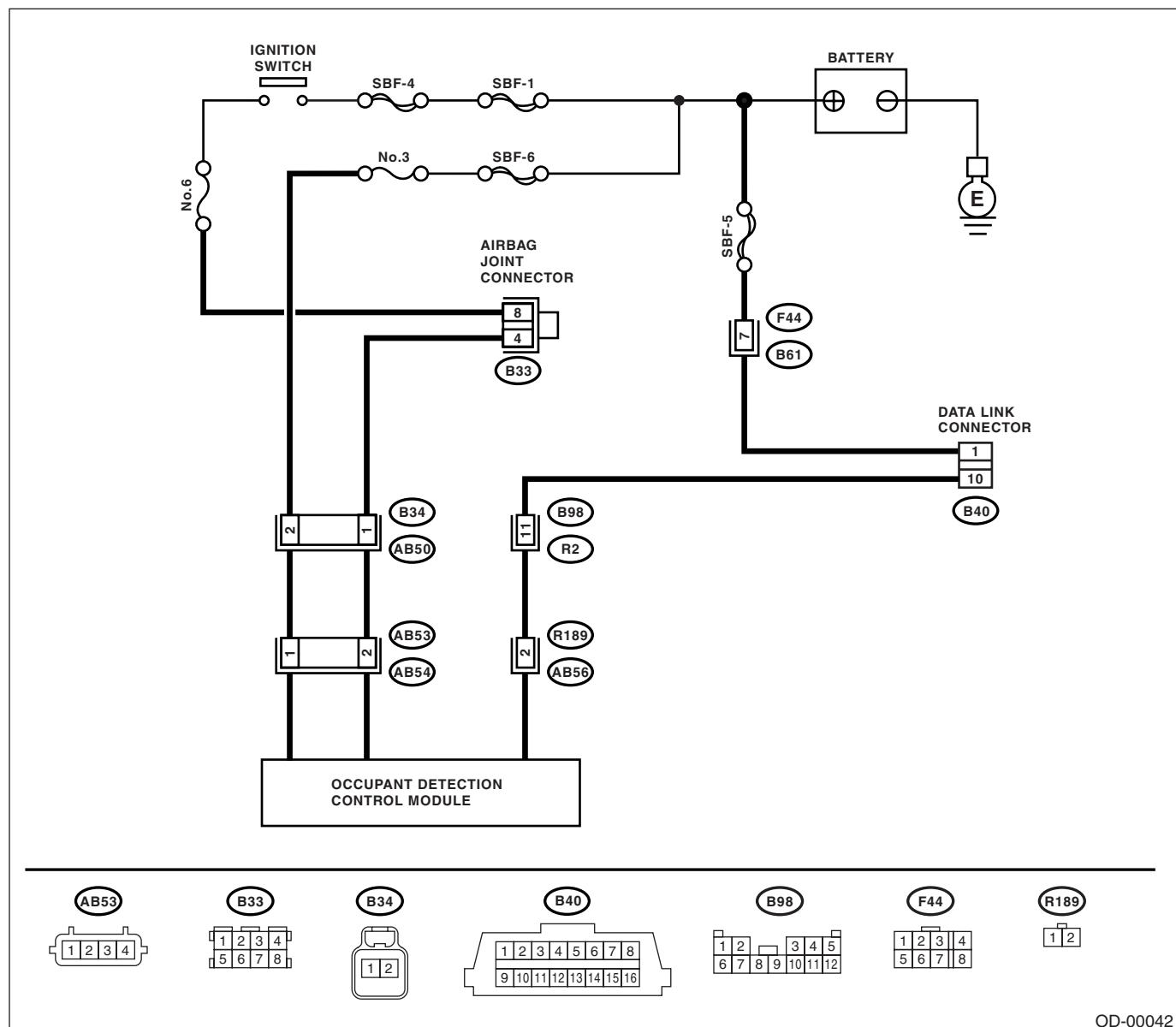
DETECTING CONDITION:

Defective harness connector

TROUBLE SYMPTOM:

Communication is impossible between occupant detection control module and Subaru Select Monitor.

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK IGNITION SWITCH.	Is the ignition switch ON?	Go to step 2.	Turn the ignition switch to ON, and select the occupant detection system mode using Subaru Select Monitor.

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Step	Check	Yes	No
2 CHECK BATTERY. 1) Turn the ignition switch to OFF. 2) Measure the battery voltage.	Is the voltage 11 V or more?	Go to step 3.	Charge or replace the battery.
3 CHECK BATTERY TERMINAL.	Is there poor contact at battery terminal?	Repair or tighten the battery terminal.	Go to step 4.
4 CHECK SUBARU SELECT MONITOR COMMUNICATION. 1) Turn the ignition switch to ON. 2) Using the Subaru Select Monitor, check whether communication to other system can be executed normally.	Is the system name displayed on the Subaru Select Monitor?	Go to step 8.	Go to step 5.
5 CHECK OCCUPANT DETECTION CONTROL MODULE CONNECTOR. Turn the ignition switch to OFF.	Is the occupant detection control module connectors and body harness connectors are connected securely?	Go to step 6.	Connect the occupant detection control module connector and body harness connector.
6 CHECK SUBARU SELECT MONITOR COMMUNICATION. 1) Turn the ignition switch to OFF. 2) Disconnect the occupant detection control module connector. 3) Turn the ignition switch to ON. 4) Check whether communication to other systems can be executed normally.	Is the system name displayed on the Subaru Select Monitor?	Replace the seat cushion frame assembly. <Ref. to SE-8, REMOVAL, Front Seat.>	Go to step 7.
7 CHECK HARNESS CONNECTOR BETWEEN EACH CONTROL MODULE AND DATA LINK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the occupant detection control module connector (R212). 3) Measure the resistance between data link connector and chassis ground. <i>Connector & terminal</i> <i>(B40) No. 10 — Chassis ground:</i>	Is the resistance $1 M\Omega$ or more?	Go to step 8.	Repair or replace the harness connector between each control module and data link connector. Replace the harness without repairing the air-bag harness.
8 CHECK THE OCCUPANT DETECTION SYSTEM CONTROL MODULE OUTPUT SIGNAL. 1) Turn the ignition switch to ON. 2) Measure the voltage between occupant detection control module and chassis ground. <i>Connector & terminal</i> <i>(B40) No. 10 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 9.	Repair or replace the harness connector between each control module and data link connector. Replace the harness without repairing the air-bag harness.
9 CHECK HARNESS CONNECTOR BETWEEN OCCUPANT DETECTION CONTROL MODULE AND DATA LINK CONNECTOR. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for more than 20 seconds. 2) Measure the resistance between occupant detection control module connector and data link connector. <i>Connector & terminal</i> <i>(R212) No. 2 — (B40) No. 10:</i>	Is the resistance less than 10Ω ?	Go to step 10.	Repair or replace the harness connector between occupant detection control module and data link connector.

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Step	Check	Yes	No
10 CHECK POWER SUPPLY CIRCUIT. 1) Disconnect connector (AB53) from vehicle harness. 2) Connect the connector (Z1) in the test harness Z to the connector (AB53). 3) Turn the ignition switch to ON. (Engine OFF) 4) Measure the voltage between connector (2Z) in the test harness Z and chassis ground. <i>Connector & terminal (2Z) No. 3 (+) — Chassis ground (-):</i>	Is the voltage 10 V or more?	Go to step 11.	Repair or replace the vehicle harness.
11 CHECK HARNESS CONNECTOR BETWEEN OCCUPANT DETECTION CONTROL MODULE AND CHASSIS GROUND. 1) Turn the ignition switch to OFF. 2) Measure the resistance between connector (2Z) in the test harness Z and chassis ground. <i>Connector & terminal (2Z) No. 1 — Chassis ground:</i>	Is the resistance less than 10 Ω ?	Go to step 12.	Repair or replace the body harness.
12 CHECK FOR POOR CONTACT OF CONNECTORS.	Is there poor contact in the control module power supply, ground circuit and data link connector?	Replace the airbag harness.	Replace the seat cushion frame assembly. <Ref. to SE-8, REMOVAL, Front Seat.>