

### 12. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

#### **A: DTC C0021 FRONT RIGHT ABS SENSOR CIRCUIT OPEN OR SHORT**

**NOTE:**

For the diagnostic procedure, refer to DTC C0027 “RL WHEEL SPEED SENSOR CIRCUIT OPEN/HIGH INPUT”. <Ref. to VDC(diag)-40, DTC C0027 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

#### **B: DTC C0023 FRONT LEFT ABS SENSOR CIRCUIT OPEN OR SHORT**

**NOTE:**

For the diagnostic procedure, refer to DTC C0027 “RL WHEEL SPEED SENSOR CIRCUIT OPEN/HIGH INPUT”. <Ref. to VDC(diag)-40, DTC C0027 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

#### **C: DTC C0025 REAR RIGHT ABS SENSOR CIRCUIT OPEN OR SHORT**

**NOTE:**

For the diagnostic procedure, refer to DTC C0027 “RL WHEEL SPEED SENSOR CIRCUIT OPEN/HIGH INPUT”. <Ref. to VDC(diag)-40, DTC C0027 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## D: DTC C0027 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORT

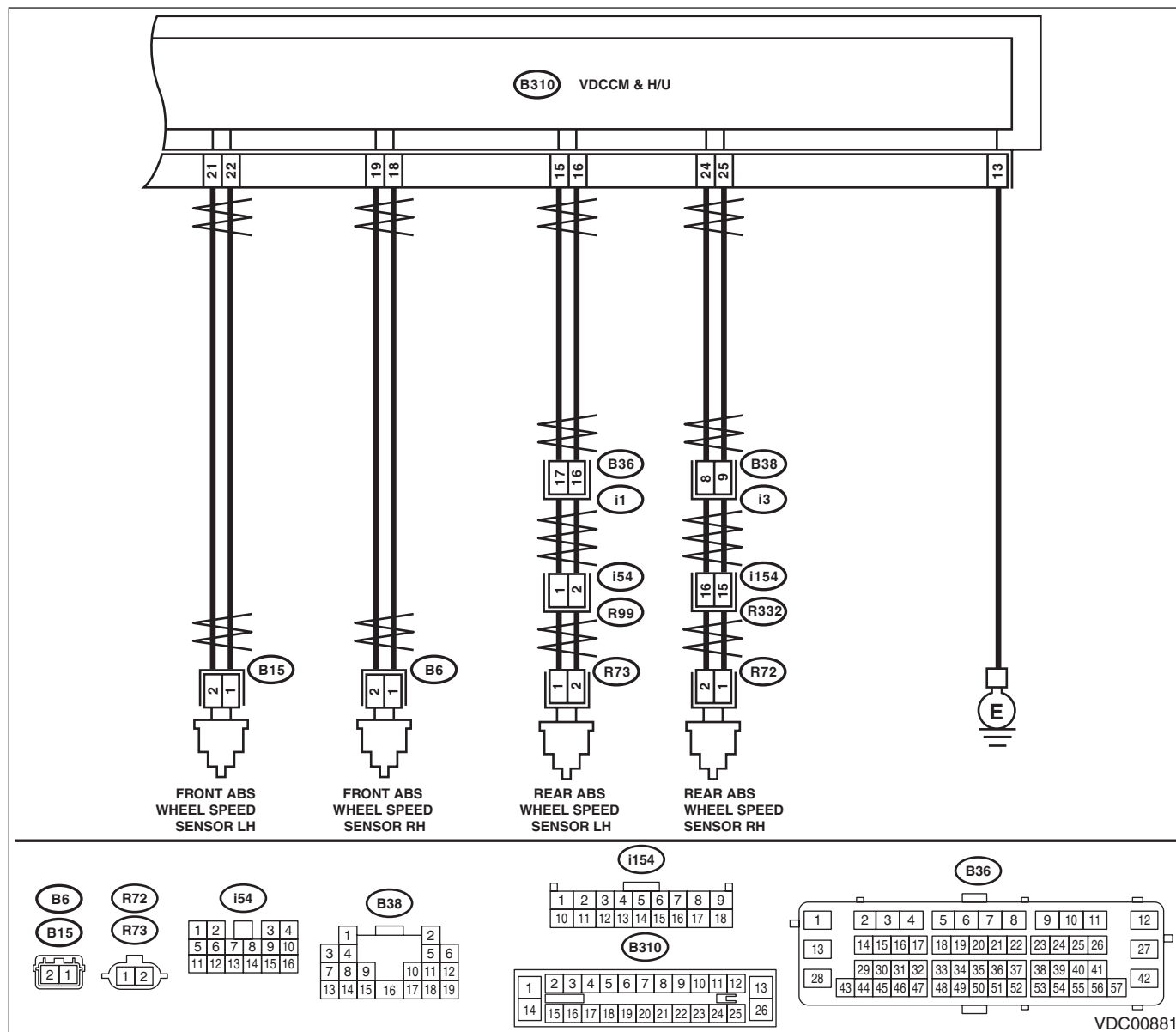
### DTC DETECTING CONDITION:

- Defective ABS wheel speed sensor (broken wire, input voltage too high)
- Defective harness connector

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



Step	Check	Yes	No
1	<b>CHECK POOR CONTACT OF CONNECTOR.</b> Check if there is poor contact between VDCCM&H/U and ABS wheel speed sensor.	Repair the connector.	Go to step 2.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

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Step	Check	Yes	No
<b>2</b> <b>CHECK HARNESS CONNECTOR BETWEEN VDCCM&amp;H/U AND ABS WHEEL SPEED SENSOR.</b> 1) Disconnect the connector (B310) from the VDCCM&H/U. 2) Disconnect the connector from ABS wheel speed sensor. 3) Measure the resistance between VDCCM&H/U connector and ABS wheel speed sensor connector. <b>Connector &amp; terminal</b> <b>DTC C0021</b> (B310) No. 18 — (B6) No. 1: (B310) No. 19 — (B6) No. 2: <b>DTC C0023</b> (B310) No. 22 — (B15) No. 1: (B310) No. 21 — (B15) No. 2: <b>DTC C0025</b> (B310) No. 25 — (R72) No. 1: (B310) No. 24 — (R72) No. 2: <b>DTC C0027</b> (B310) No. 15 — (R73) No. 1: (B310) No. 16 — (R73) No. 2:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the harness connector between VDCCM&H/U and ABS wheel speed sensor.
<b>3</b> <b>CHECK GROUND SHORT OF HARNESS.</b> Measure the resistance between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>DTC C0021</b> (B310) No. 19 — Chassis ground: <b>DTC C0023</b> (B310) No. 21 — Chassis ground: <b>DTC C0025</b> (B310) No. 25 — Chassis ground: <b>DTC C0027</b> (B310) No. 15 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the harness connector between VDCCM&H/U and ABS wheel speed sensor.
<b>4</b> <b>CHECK ABS WHEEL SPEED SENSOR POWER SUPPLY CIRCUIT.</b> 1) Connect the VDCCM&H/U connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between ABS wheel speed sensor connector and chassis ground. <b>Connector &amp; terminal</b> <b>DTC C0021</b> (B6) No. 1 (+) — Chassis ground (–): <b>DTC C0023</b> (B15) No. 1 (+) — Chassis ground (–): <b>DTC C0025</b> (R72) No. 2 (+) — Chassis ground (–): <b>DTC C0027</b> (R73) No. 2 (+) — Chassis ground (–):	Is the voltage 5 — 16 V?	Go to step 6.	Go to step 5.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>5 CHECK VDCCM&amp;H/U POWER SUPPLY CIRCUIT.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the VDCCM&H/U connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between VDCCM&H/U connector terminals. <b>Connector &amp; terminal</b> <b>(B310) No. 7 (+) — (B310) No. 13 (–):</b> <b>(B310) No. 14 (+) — (B310) No. 13 (–):</b> <b>(B310) No. 1 (+) — (B310) No. 13 (–):</b>	Is the voltage 10 — 15 V?	Go to step 6.	Check the generator, battery and VDCCM&H/U power supply circuit.
<b>6 CHECK ABS WHEEL SPEED SENSOR SIGNAL.</b> 1) Install the ABS wheel speed sensor. 2) Prepare an oscilloscope. 3) Check the ABS wheel speed sensor. <Ref. to VDC-28, CHECK ABS WHEEL SPEED SENSOR UNIT., INSPECTION, Front ABS Wheel Speed Sensor.>	Does the oscilloscope indicate the waveform pattern as shown in the figure?	Go to step 7.	Replace the ABS wheel speed sensor. <Ref. to VDC-27, Front ABS Wheel Speed Sensor.>
<b>7 CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 8.
<b>8 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

### E: DTC C0022 FRONT RIGHT ABS SENSOR SIGNAL

#### NOTE:

For the diagnostic procedure, refer to DTC C0028 “RL WHEEL SPEED SENSOR SIGNAL”. <Ref. to VDC(diag)-43, DTC C0028 REAR LEFT ABS SENSOR SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### F: DTC C0024 FRONT LEFT ABS SENSOR SIGNAL

#### NOTE:

For the diagnostic procedure, refer to DTC C0028 “RL WHEEL SPEED SENSOR SIGNAL”. <Ref. to VDC(diag)-43, DTC C0028 REAR LEFT ABS SENSOR SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### G: DTC C0026 REAR RIGHT ABS SENSOR SIGNAL

#### NOTE:

For the diagnostic procedure, refer to DTC C0028 “RL WHEEL SPEED SENSOR SIGNAL”. <Ref. to VDC(diag)-43, DTC C0028 REAR LEFT ABS SENSOR SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## H: DTC C0028 REAR LEFT ABS SENSOR SIGNAL

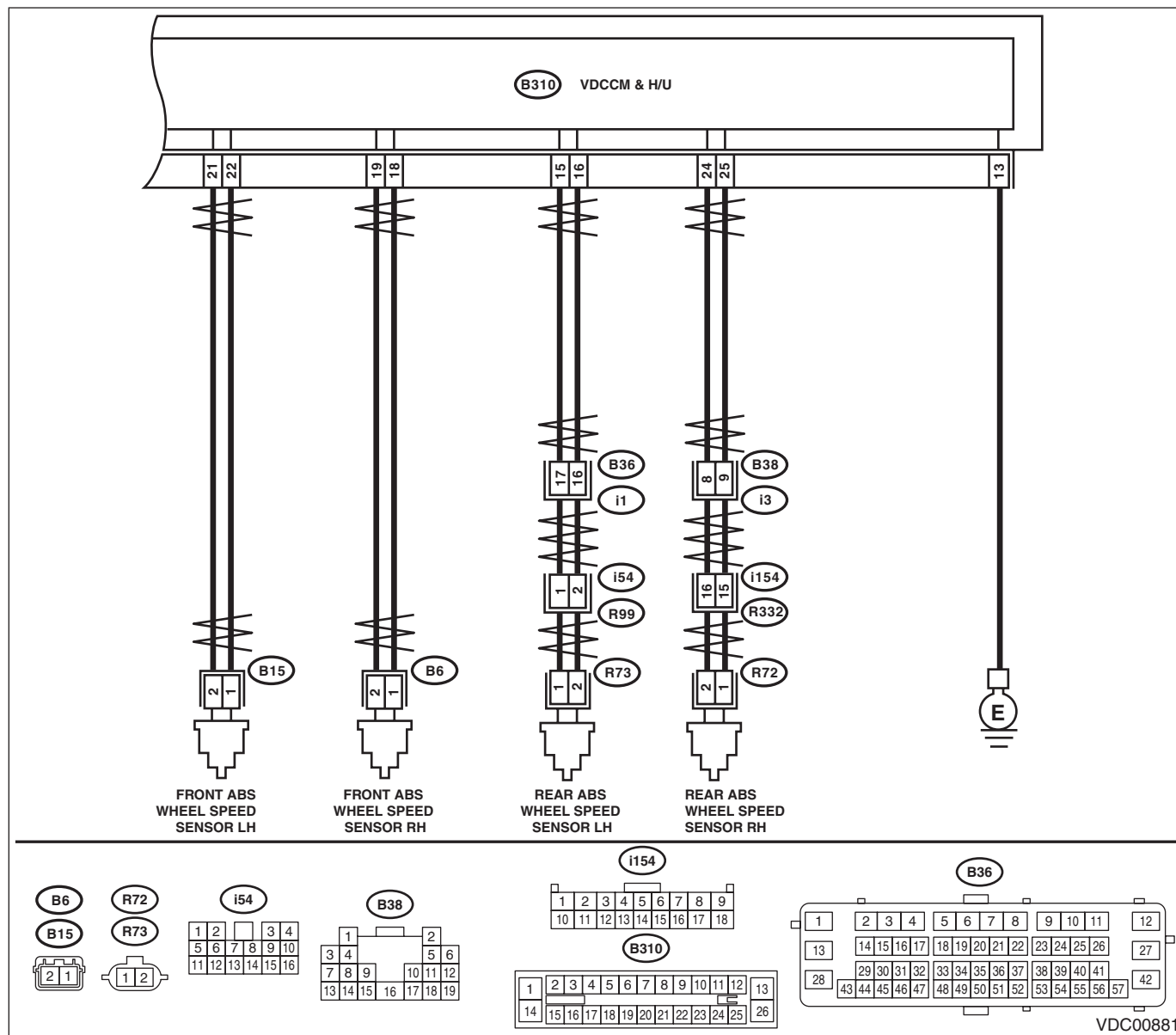
### DTC DETECTING CONDITION:

- Defective ABS wheel speed sensor signal (noise, irregular signal, etc.)
- Defective harness connector

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



Step	Check	Yes	No
1	<b>CHECK OUTPUT OF ABS WHEEL SPEED SENSOR USING SUBARU SELECT MONITOR.</b> 1) Select "Current Data Display & Save" on the Subaru Select Monitor. 2) Read the defective ABS wheel speed sensor output.	Go to step 2.	Go to step 7.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2</b>	<b>CHECK POOR CONTACT OF CONNECTOR.</b> Turn the ignition switch to OFF.	Is there poor contact of connectors between VDCCM&H/U and ABS wheel speed sensor?	Repair the connector. Go to step 3.
<b>3</b>	<b>CHECK CAUSE OF SIGNAL NOISE.</b> Make sure the radio wave devices and electronic components are installed correctly.	Are the radio wave devices and electronic components installed correctly?	Go to step 4. Install the radio wave devices and electronic components properly.
<b>4</b>	<b>CHECK CAUSE OF SIGNAL NOISE.</b> Check if the noise sources (such as an antenna) are installed near the sensor harness.	Are noise sources installed?	Install the noise sources apart from sensor harness. Go to step 5.
<b>5</b>	<b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).> Go to step 6.
<b>6</b>	<b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).> It results from a temporary noise interference.
<b>7</b>	<b>CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR.</b>	Is the ABS wheel speed sensor installation bolt tightened 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)?	Go to step 8. Tighten the ABS wheel speed sensor installation bolts.
<b>8</b>	<b>CHECK ABS WHEEL SPEED SENSOR SIGNAL.</b> 1) Install the ABS wheel speed sensor. 2) Prepare an oscilloscope. 3) Check the ABS wheel speed sensor. <Ref. to VDC-28, CHECK ABS WHEEL SPEED SENSOR UNIT., INSPECTION, Front ABS Wheel Speed Sensor.>	Does the oscilloscope indicate the waveform pattern like shown in the figure when the tire is slowly turned? Does the oscilloscope indication repeat the waveform pattern like shown in the figure when the tire is slowly turned in equal speed for one rotation or more?	Go to step 10. Go to step 9.
<b>9</b>	<b>CHECK ABS WHEEL SPEED SENSOR OR MAGNETIC ENCODER.</b>	Are there foreign matter, breakage or damage at the tip of ABS wheel speed sensor or magnetic encoder?	Remove dirt thoroughly. Also replace the ABS wheel speed sensor or magnetic encoder as a unit with hub unit bearing if it is broken or damaged. Go to step 10.
<b>10</b>	<b>CHECK CAUSE OF SIGNAL NOISE.</b> Make sure the radio wave devices and electronic components are installed correctly.	Are the radio wave devices and electronic components installed correctly?	Go to step 11. Install the radio wave devices and electronic components properly.
<b>11</b>	<b>CHECK CAUSE OF SIGNAL NOISE.</b> Check if the noise sources (such as an antenna) are installed near the sensor harness.	Is the noise sources installed?	Go to step 12. Install the noise sources apart from sensor harness.
<b>12</b>	<b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).> Go to step 13.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>13</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference. <b>NOTE:</b> Though the ABS warning light, and the VDC warning light & VDC indicator light remain lit at this point, this is normal. Drive the vehicle at 12 km/h (7 MPH) or more in order to turn off the ABS warning light, and the VDC warning light & VDC indicator light. Be sure to drive the vehicle and check that the warning light goes off.

## **I: DTC C0031 FR HOLD VALVE MALFUNCTION**

### **NOTE:**

For the diagnostic procedure, refer to DTC C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## **J: DTC C0032 FR PRESSURE REDUCING VALVE MALFUNCTION**

### **NOTE:**

For the diagnostic procedure, refer to DTC C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## **K: DTC C0033 FL HOLD VALVE MALFUNCTION**

### **NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## **L: DTC C0034 FL PRESSURE REDUCING VALVE MALFUNCTION**

### **NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## **M: DTC C0035 RR HOLD VALVE MALFUNCTION**

### **NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

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### **N: DTC C0036 RR PRESSURE REDUCING VALVE MALFUNCTION**

**NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### **O: DTC C0037 RL HOLD VALVE MALFUNCTION**

**NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### **P: DTC C0038 RL PRESSURE REDUCING VALVE MALFUNCTION**

**NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### **Q: DTC C0061 NORMAL OPENING VALVE 1 MALFUNCTION**

**NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### **R: DTC C0062 NORMAL OPENING VALVE 2 MALFUNCTION**

**NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### **S: DTC C0063 NORMAL CLOSING VALVE 1 MALFUNCTION**

**NOTE:**

For the diagnostic procedure, refer to C0064 "NORMAL CLOSING VALVE 2 MALFUNCTION". <Ref. to VDC(diag)-47, DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## T: DTC C0064 NORMAL CLOSING VALVE 2 MALFUNCTION

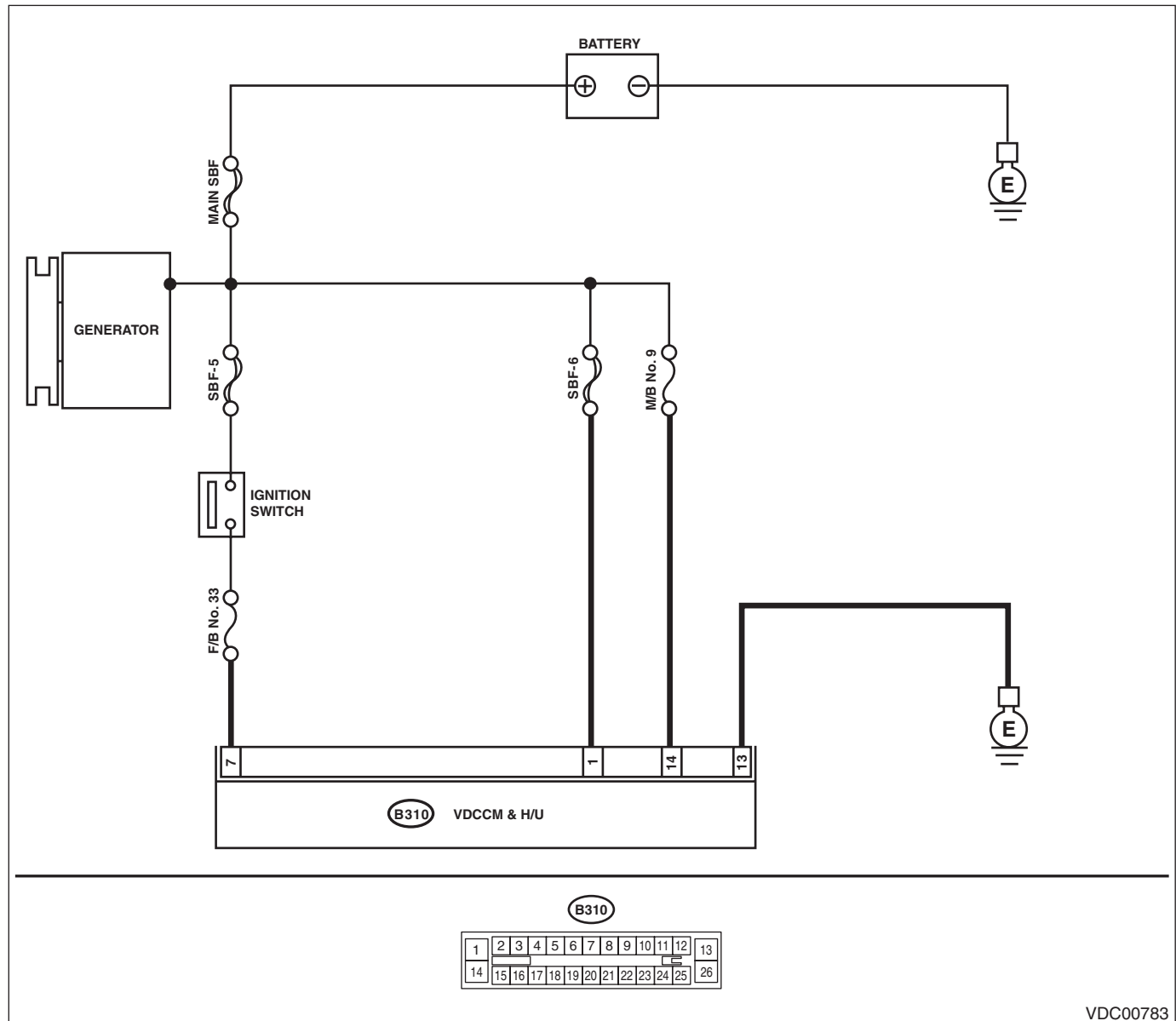
### DTC DETECTING CONDITION:

- Defective harness connector
- Defective VDCH/U solenoid valve

### TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



VDC00783

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step		Check	Yes	No
1	<b>CHECK VDCCM&amp;H/U INPUT VOLTAGE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the VDCCM&H/U. 3) Run the engine at idle. 4) Measure the voltage between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 7 (+) — Chassis ground (-):</b> <b>(B310) No. 14 (+) — Chassis ground (-):</b> <b>(B310) No. 1 (+) — Chassis ground (-):</b>	Is the voltage 10 — 15 V?	Go to step 2.	Repair the power supply circuit.
2	<b>CHECK VDCCM&amp;H/U GROUND CIRCUIT.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 13 — Chassis ground:</b>	Is the resistance less than 10 $\Omega$ ?	Go to step 3.	Repair the VDCCM&H/U ground harness.
3	<b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of connector between generator, battery and VDCCM&H/U?	Repair the connector.	Go to step 4.
4	<b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
5	<b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## U: DTC C0041 ECM

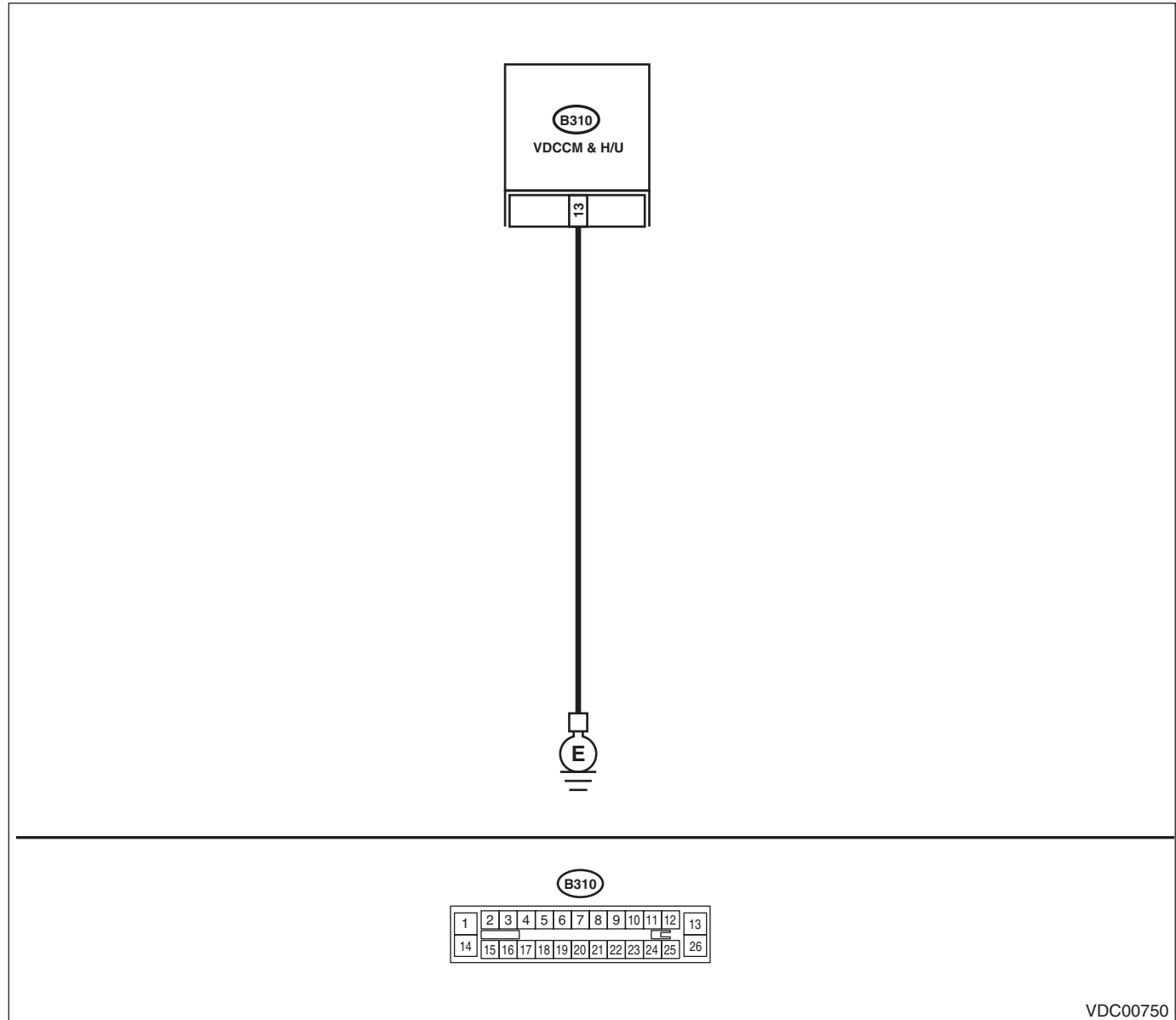
### DTC DETECTING CONDITION:

Defective VDCCM&H/U

### TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



VDC00750

Step	Check	Yes	No
1 <b>CHECK VDCCM&amp;H/U GROUND CIRCUIT.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the VDCCM&H/U. 3) Measure the resistance between VDCCM&H/U and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 13 — Chassis ground:</b>	Is the resistance less than 10 $\Omega$ ?	Go to step 2.	Repair the VDCCM&H/U ground harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2</b>	<b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of the connector between the battery, ignition switch and VDCCM&H/U?	Repair the connector. Go to step 3.
<b>3</b>	<b>CHECK CAUSE OF SIGNAL NOISE.</b>	Are the radio wave devices and electronic components installed correctly?	Go to step 4. Install the radio wave devices and electronic components properly.
<b>4</b>	<b>CHECK CAUSE OF SIGNAL NOISE.</b>	Is there a noise source (such as an antenna) installed near the sensor harness and VDCCM?	Install the noise source apart from the sensor harness and VDCCM. Go to step 5.
<b>5</b>	<b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).> Go to step 6.
<b>6</b>	<b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).> Temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## V: DTC C0041 PARAMETER SELECTION ERROR

### DTC DETECTING CONDITION:

VDCCM parameter selection error

### TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### NOTE:

When the VDCCM&H/U is replaced, this DTC may be stored.

Step	Check	Yes	No
<b>1</b> <b>CHECK VDCCM&amp;H/U IDENTIFICATION SYMBOL.</b> Check the identification symbol attached on the H/U. Identification symbol: V1	Is the identification symbol correct?	Go to step 2.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>2</b> <b>CHECK PARAMETER SELECTED IN VDC-CM.</b> <Ref. to VDC(diag)-19, PARAMETER CHECK, OPERATION, Subaru Select Monitor.>	Does the parameter registered in the VDCCM match the relevant vehicle?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Select and register the correct parameter. <Ref. to VDC(diag)-19, PARAMETER SELECTION, OPERATION, Subaru Select Monitor.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## W: DTC C0042 POWER SUPPLY VOLTAGE FAILURE

### DTC DETECTING CONDITION:

Improper VDCCM&H/U power supply voltage

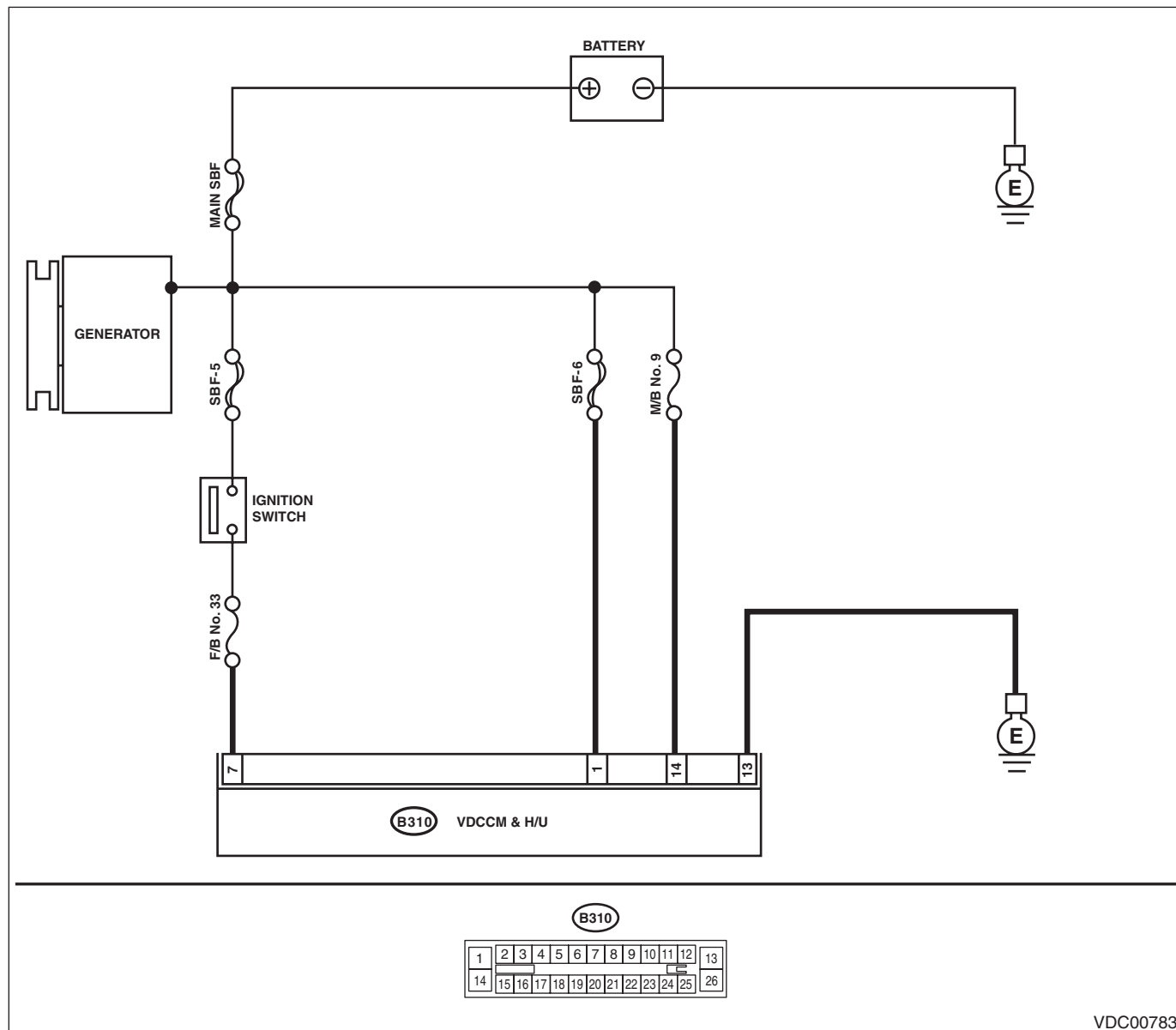
### TROUBLE SYMPTOM:

- ABS does not operate.
- EBD may not operate.
- VDC does not operate.
- Hill start assist does not operate.

### NOTE:

Warning lights go off if voltage returns.

### WIRING DIAGRAM:



VDC00783

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK GENERATOR.</b> 1) Start the engine. 2) Run the engine at idle after warming up. 3) Measure the voltage between generator terminal B and chassis ground. <b>Terminals</b> <b>Generator terminal B (+) — Chassis ground (–):</b>	Is the voltage 10 — 15 V?	Go to step 2.	Repair the generator. <Ref. to SC(H4SO)-16, Generator.>
<b>2 CHECK BATTERY TERMINAL.</b> Turn the ignition switch to OFF.	Are the positive and negative battery terminals clamped tightly?	Go to step 3.	Tighten the terminal.
<b>3 CHECK VDCCM&amp;H/U INPUT VOLTAGE.</b> 1) Disconnect the connector from the VDCCM&H/U. 2) Run the engine at idle. 3) Operate devices such as headlights, air conditioner, defogger, etc. which produce an electrical load. 4) Measure the voltage between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 7 (+) — Chassis ground (–):</b> <b>(B310) No. 14 (+) — Chassis ground (–):</b> <b>(B310) No. 1 (+) — Chassis ground (–):</b>	Is the voltage 10 — 15 V?	Go to step 4.	Repair the power supply circuit.
<b>4 CHECK VDCCM&amp;H/U GROUND CIRCUIT.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 13 — Chassis ground:</b>	Is the resistance less than 10 Ω?	Go to step 5.	Repair the VDCCM&H/U ground harness.
<b>5 CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of connector between generator, battery and VDCCM&H/U?	Repair the connector.	Go to step 6.
<b>6 CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 7.
<b>7 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## X: DTC C0044 TCM COMMUNICATION CIRCUIT

### DTC DETECTING CONDITION:

No CAN signal from TCM.

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK LAN SYSTEM.</b> Perform the diagnosis for LAN system. <Ref. to LAN(diag)-10, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is there any fault in LAN system?	Perform the diagnosis according to DTC for LAN system. <Ref. to LAN(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 2.
<b>2</b> <b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of TCM connector?	Repair the connector.	Go to step 3.
<b>3</b> <b>CHECK TCM.</b>	Is the TCM normal?	Go to step 4.	Replace the TCM. <Ref. to 5AT-57, Transmission Control Module (TCM).> <Ref. to CVT-123, Transmission Control Module (TCM).>
<b>4</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
<b>5</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## Y: DTC C0045 TCM MALFUNCTION

### DTC DETECTING CONDITION:

Defective TCM

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK AT SYSTEM OR CVT SYSTEM.</b> 1) Start the engine. 2) Check the DTC in AT system or CVT system.	Is DTC of AT system or CVT system displayed?	Repair the AT system or CVT system. <Ref. to 5AT(diag)-33, List of Diagnostic Trouble Code (DTC).> <Ref. to CVT(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 2.
<b>2</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 3.
<b>3</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

### Z: DTC C0045 INCORRECT VDC CONTROL MODULE SPECIFICATIONS

#### DTC DETECTING CONDITION:

Different control module specification

#### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

#### NOTE:

When parameter selection for VDCCM is improper, this DTC may be memorized.

Step	Check	Yes	No
<b>1 CHECK VDCCM&amp;H/U IDENTIFICATION SYMBOL.</b> Check the identification symbol attached on the H/U. Identification symbol: V1	Is the identification symbol correct?	Go to step 2.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>2 CHECK PARAMETER SELECTED IN VDCCM.</b> <Ref. to VDC(diag)-19, PARAMETER CHECK, OPERATION, Subaru Select Monitor.>	Does the parameter registered in the VDCCM match the relevant vehicle?	Go to step 3.	Select and register the correct parameter. <Ref. to VDC(diag)-19, PARAMETER SELECTION, OPERATION, Subaru Select Monitor.>
<b>3 CHECK TCM SPECIFICATION.</b> Check the TCM specification.	Is the specification of TCM same as vehicle specification?	Go to step 4.	Replace the TCM. <Ref. to 5AT-57, Transmission Control Module (TCM).> <Ref. to CVT-123, Transmission Control Module (TCM).>
<b>4 CHECK AT SYSTEM OR CVT SYSTEM.</b> 1) Start the engine. 2) Check the DTC in AT system or CVT system.	Is DTC of AT system or CVT system displayed?	Repair the AT system or CVT system. <Ref. to 5AT(diag)-33, List of Diagnostic Trouble Code (DTC).> <Ref. to CVT(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 5.
<b>5 CHECK ECM SPECIFICATION.</b> Check the ECM specification.	Is the specification of ECM same as vehicle specification?	Go to step 6.	Replace the ECM. <Ref. to FU(H4SO)-41, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-58, Engine Control Module (ECM).> <Ref. to FU(H6DO)-52, Engine Control Module (ECM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step		Check	Yes	No
6	<b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 7.
	<b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

### AA:DTC C0046 BODY INTEGRATED MODULE COMMUNICATION CIRCUIT

#### DTC DETECTING CONDITION:

No CAN signal received from body integrated unit.

#### TROUBLE SYMPTOM:

- VDC may not operate.
- Hill start assist does not operate. (MT model only)

Step	Check	Yes	No
<b>1</b> <b>CHECK LAN SYSTEM.</b> Perform the diagnosis for LAN system. <Ref. to LAN(diag)-10, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is there any fault in LAN system?	Perform the diagnosis according to DTC for LAN system. <Ref. to LAN(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 2.
<b>2</b> <b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of body integrated unit connector?	Repair the connector.	Go to step 3.
<b>3</b> <b>CHECK BODY INTEGRATED UNIT.</b> Perform the diagnosis for body integrated unit. <Ref. to BC(diag)-11, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is the body integrated unit normal?	Go to step 4.	Perform the diagnosis according to DTC for the body integrated unit. <Ref. to BC(diag)-24, List of Diagnostic Trouble Code (DTC).>
<b>4</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
<b>5</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AB:DTC C0047 CAN COMMUNICATION

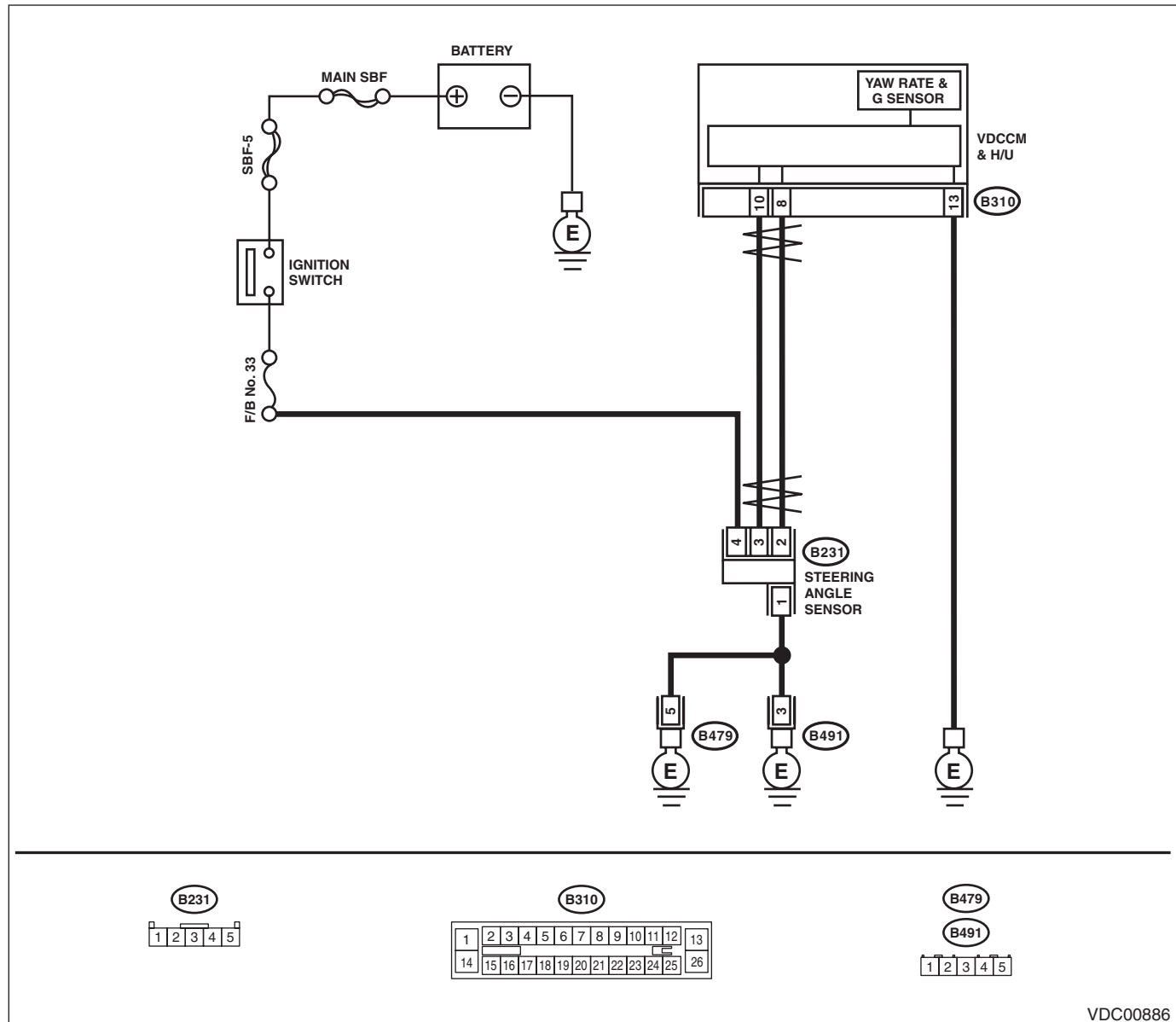
### DTC DETECTING CONDITION:

CAN communication line circuit is open or shorted.

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



Step	Check	Yes	No
1	<b>CHECK LAN SYSTEM.</b> Perform the diagnosis for LAN system. <Ref. to LAN(diag)-10, OPERATION, Read Diagnostic Trouble Code (DTC).>	Perform the diagnosis according to DTC for LAN system. <Ref. to LAN(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 2.
2	<b>CHECK POOR CONTACT OF CONNECTORS.</b>	Repair the connector.	Go to step 3.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>3</b> <b>CHECK OUTPUT OF STEERING ANGLE SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Select "Current Data Display & Save" on the Subaru Select Monitor. 2) Check the «Steer Angle Sensor Op».	Does the output signal change?	Go to step 4.	Check output of the steering angle sensor. <Ref. to VDC(diag)-78, DTC C0071 STEER ANGLE SENSOR OP, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
<b>4</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AC:DTC C0048 PARKING BRAKE SYSTEM COMMUNICATION CIRCUIT

### DTC DETECTING CONDITION:

No CAN signal from parking brake control module.

### TROUBLE SYMPTOM:

- VDC may not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK LAN SYSTEM.</b> Perform the diagnosis for LAN system. <Ref. to LAN(diag)-10, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is there any fault in LAN system?	Perform the diagnosis according to DTC for LAN system. <Ref. to LAN(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 2.
<b>2</b> <b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of the parking brake control module connector?	Repair the connector.	Go to step 3.
<b>3</b> <b>CHECK PARKING BRAKE SYSTEM.</b> Perform the diagnosis for the parking brake system. <Ref. to PB(diag)-23, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is the parking brake system normal?	Go to step 4.	Perform the diagnosis according to DTC for the parking brake system. <Ref. to PB(diag)-35, List of Diagnostic Trouble Code (DTC).>
<b>4</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
<b>5</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AD:DTC C0051 VALVE RELAY

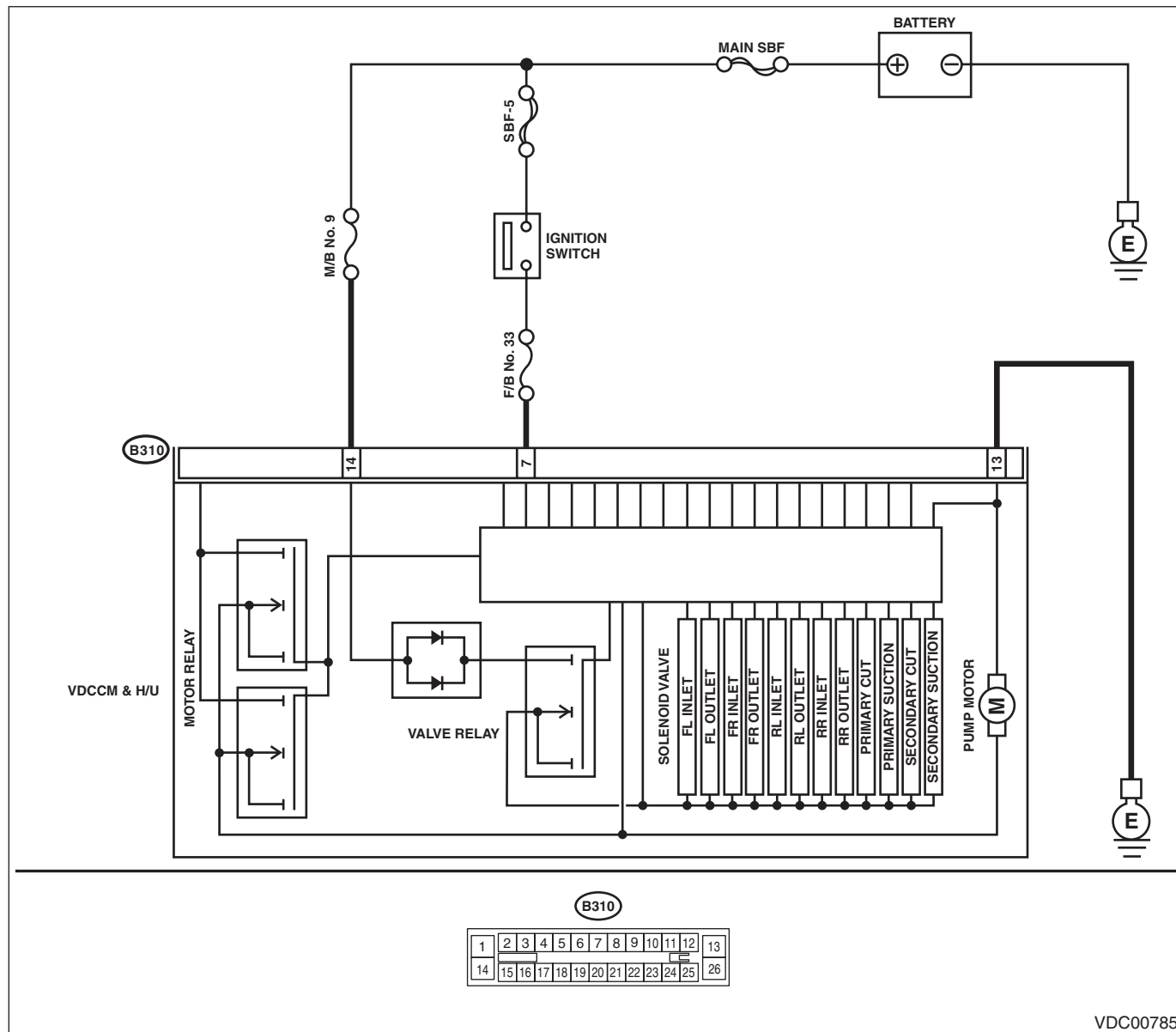
### DTC DETECTING CONDITION:

Defective valve relay

### TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



VDC00785



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK VDCCM&amp;H/U INPUT VOLTAGE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the VDCCM&H/U. 3) Run the engine at idle. 4) Measure the voltage between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 7 (+) — Chassis ground (-):</b> <b>(B310) No. 14 (+) — Chassis ground (-):</b>	Is the voltage 10 — 15 V?	Go to step 2.	Repair the power supply circuit.
<b>2 CHECK VDCCM&amp;H/U INPUT VOLTAGE.</b> Calculate the voltage difference measured in step 1. A: (B310) No. 7 (+) — Chassis ground (-): B: (B310) No. 14 (+) — Chassis ground (-):	Is the voltage difference between A and B 2 V or more?	Repair the power supply circuit.	Go to step 3.
<b>3 CHECK INSTALLATION OF VDCCM&amp;H/U GROUND.</b>	Is the VDCCM&H/U ground terminal installation bolt tightened to 13 N·m (1.3 kgf-m, 9.6 ft-lb)?	Go to step 4.	Tighten the VDCCM&H/U ground terminal installation bolt.
<b>4 CHECK VDCCM&amp;H/U GROUND CIRCUIT.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 13 — Chassis ground:</b>	Is the resistance less than 10 Ω?	Go to step 5.	Repair the VDCCM&H/U ground harness.
<b>5 CHECK VDCCM&amp;H/U VALVE RELAY.</b> Measure the resistance between VDCCM&H/U connector terminals. <b>Connector &amp; terminal</b> <b>(B310) No. 14 — (B310) No. 13:</b>	Is the resistance 1 MΩ or more?	Go to step 6.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>6 CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of connector between generator, battery and VDCCM&H/U?	Repair the connector.	Go to step 7.
<b>7 CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 8.
<b>8 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AE:DTC C0052 MOTOR MALFUNCTION

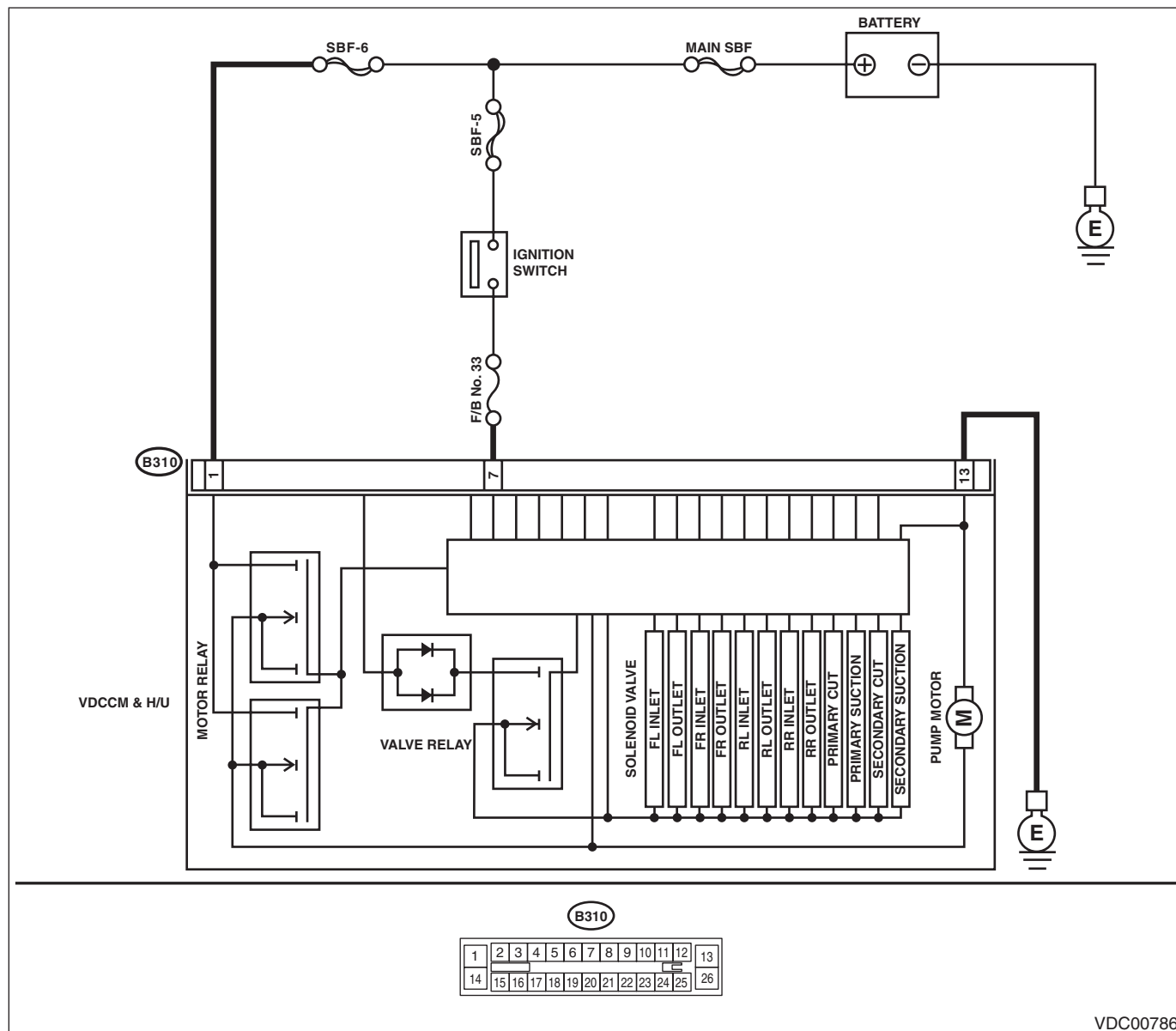
### DTC DETECTING CONDITION:

- Defective motor and motor relay
- Defective harness connector

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- EBD may not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK VDCCM&amp;H/U INPUT VOLTAGE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the VDCCM&H/U. 3) Turn the ignition switch to ON. 4) Measure the voltage between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 1 (+) — Chassis ground (-):</b> <b>(B310) No. 7 (+) — Chassis ground (-):</b>	Is the voltage 10 — 15 V?	Go to step 2.	Repair the VDCCM&H/U power supply circuit.
<b>2 CHECK VDCCM&amp;H/U INPUT VOLTAGE.</b> Calculate the voltage difference measured in step 1. A: (B310) No. 1 (+) — Chassis ground (-): B: (B310) No. 7 (+) — Chassis ground (-):	Is the voltage difference between A and B 2 V or more?	Repair the power supply circuit.	Go to step 3.
<b>3 CHECK INSTALLATION OF VDCCM&amp;H/U GROUND.</b>	Is the VDCCM&H/U ground terminal installation bolt tightened to 13 N·m (1.3 kgf-m, 9.6 ft-lb)?	Go to step 4.	Tighten the VDCCM&H/U ground terminal installation bolt.
<b>4 CHECK VDCCM&amp;H/U GROUND CIRCUIT.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B310) No. 13 — Chassis ground:</b>	Is the resistance less than 10 Ω?	Go to step 5.	Repair the VDCCM&H/U ground harness.
<b>5 CHECK VDCCM&amp;H/U MOTOR RELAY.</b> Measure the resistance between VDCCM&H/U connector terminals. <b>Terminals</b> <b>No. 1 — No. 13:</b>	Is the resistance 1 MΩ or more?	Go to step 6.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>6 CHECK POOR CONTACT OF CONNECTORS.</b> Turn the ignition switch to OFF.	Is there poor contact of connector between generator, battery and VDCCM&H/U?	Repair the connector.	Go to step 7.
<b>7 CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 8.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>8</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs. <b>NOTE:</b> Though the ABS warning light, and the VDC warning light & VDC indicator light remain lit at this point, this is normal. Drive the vehicle at 12 km/h (7 MPH) or more in order to turn off the ABS warning light, and the VDC warning light & VDC indicator light. Be sure to drive the vehicle and check that the warning light goes off.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AF:DTC C0054 BLS OFF MALFUNCTION

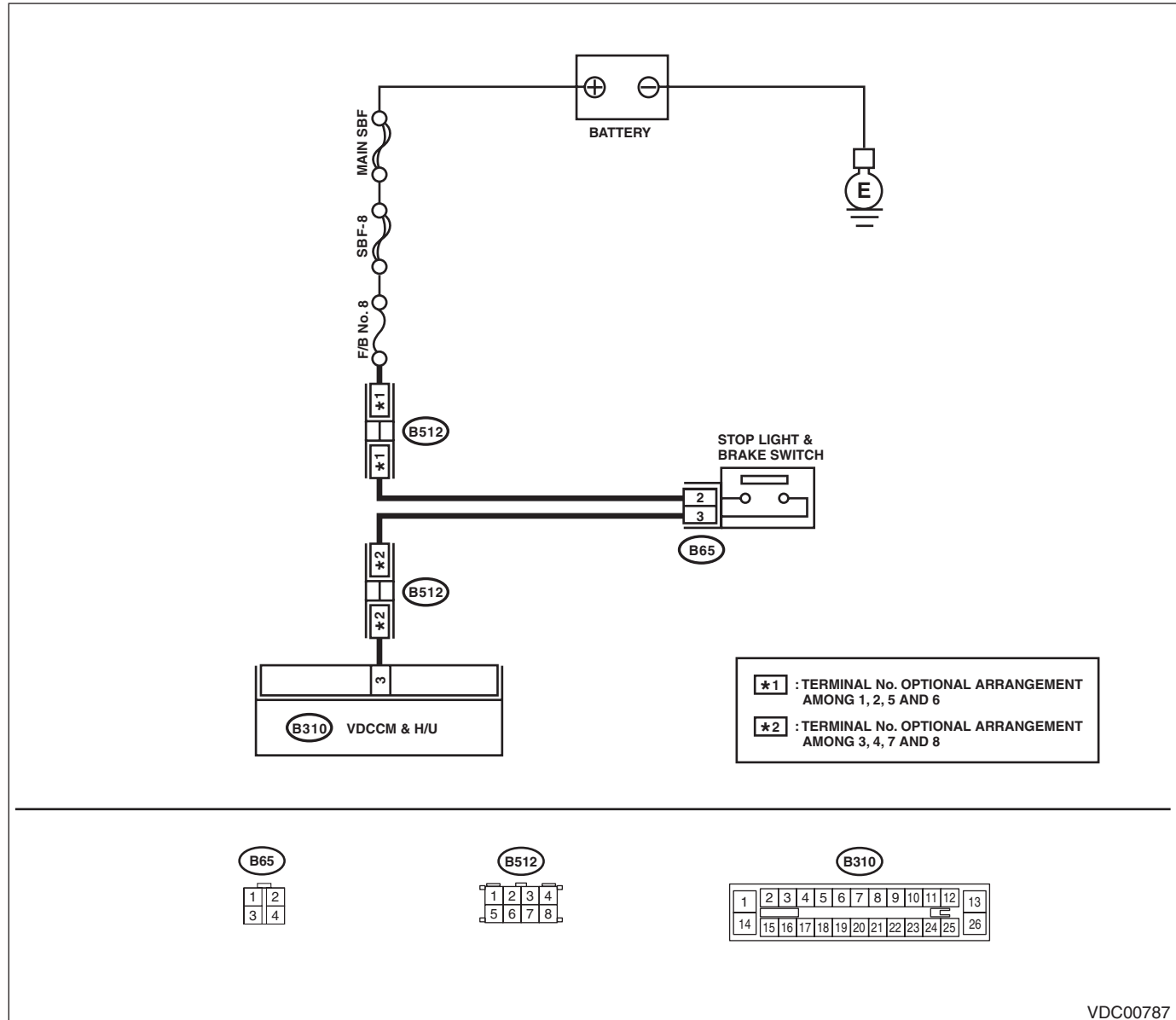
### DTC DETECTING CONDITION:

Defective stop light switch

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



VDC00787

Step	Check	Yes	No
<b>1 CHECK STOP LIGHT SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch connector. 3) Measure the resistance of stop light switch terminals. <b>Terminals</b> <b>No. 2 — No. 3:</b>	Is the resistance 1 $\Omega$ or less when the switch is ON (when pedal is depressed)?	Go to step 2.	Replace the stop light switch. <Ref. to BR-59, Stop Light Switch.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2</b> <b>CHECK STOP LIGHT POWER SUPPLY.</b> Measure the voltage between stop light switch terminal and chassis ground. <b>Connector &amp; terminal</b> <b>(B65) No. 2 (+) — Chassis ground (–):</b>	Is the voltage 10 — 15 V?	Go to step 3.	Repair the stop light power supply circuit.
<b>3</b> <b>CHECK STOP LIGHT SWITCH HARNESS.</b> 1) Disconnect the connector from the VDCCM&H/U. 2) Measure the resistance between VDCCM&H/U and stop light switch. <b>Connector &amp; terminal</b> <b>(B65) No. 3 — (B310) No. 3:</b>	Is the resistance less than 1 Ω?	Go to step 4.	Repair the stop light switch circuit.
<b>4</b> <b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of connector between stop light switch and VDCCM&H/U?	Repair the connector.	Go to step 5.
<b>5</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 6.
<b>6</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AG:DTC C0054 BLS ON MALFUNCTION

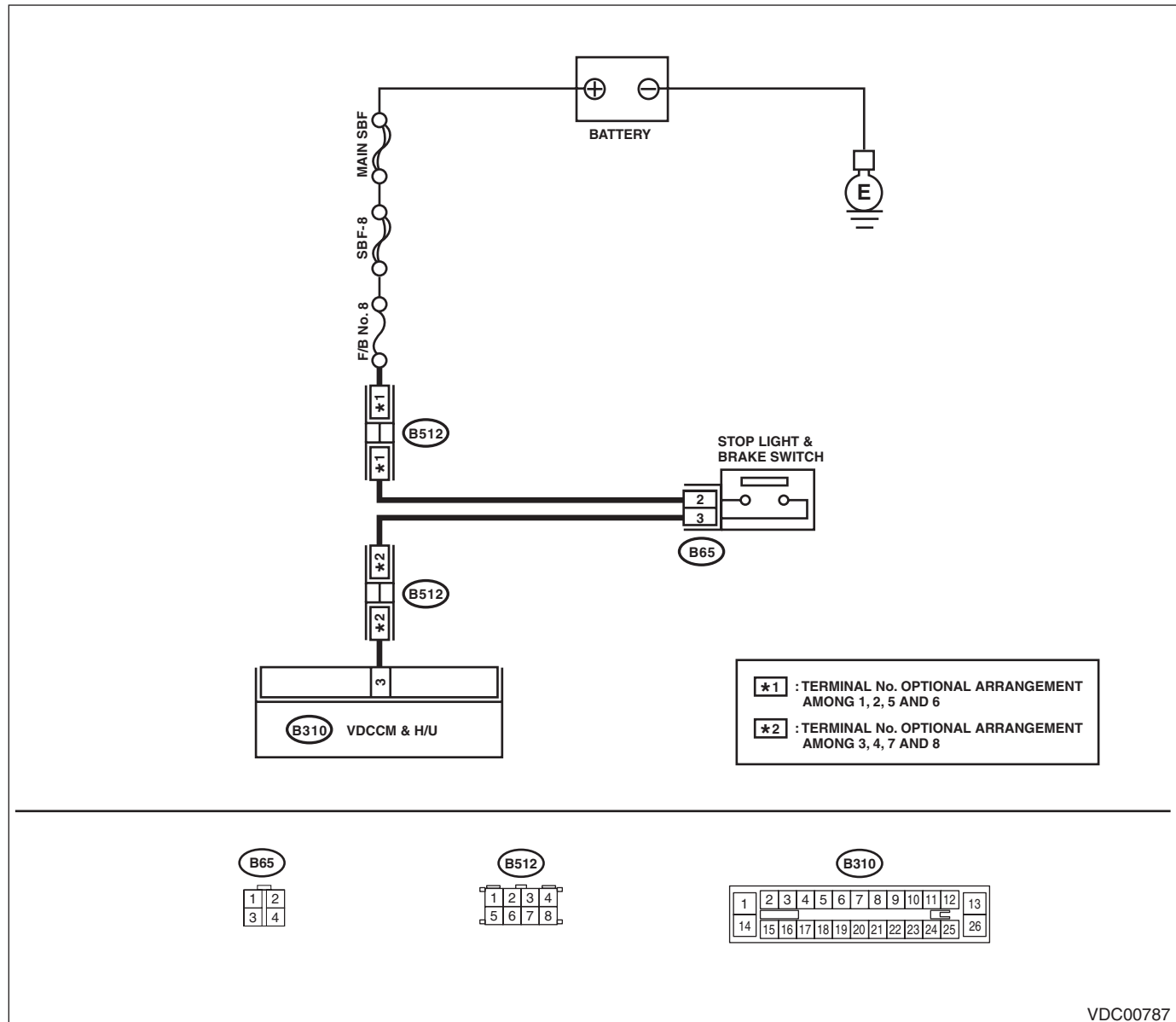
### DTC DETECTING CONDITION:

Defective stop light switch

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



VDC00787

Step	Check	Yes	No
<b>1 CHECK STOP LIGHT SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch connector. 3) Measure the resistance of stop light switch terminals. <b>Terminals</b> <b>No. 2 — No. 3:</b>	Is the resistance 1 MΩ or more when switch is OFF (when pedal is not depressed)?	Go to step 2.	Replace the stop light switch. <Ref. to BR-59, Stop Light Switch.>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2 CHECK STOP LIGHT SWITCH HARNESS.</b> 1) Disconnect the connector from the VDCCM&H/U. 2) Measure the resistance between VDCCM&H/U connector and chassis ground. <b>Connector &amp; terminal (B310) No. 3 — Chassis ground:</b>	Is the resistance less than 1 MΩ?	Go to step 3.	Repair the stop light switch circuit.
<b>3 INTERVIEW CUSTOMERS.</b> Make sure that the operation was performed in which accelerator pedal and brake pedal were depressed simultaneously (with depressing brake pedal with left foot).	Were the acceleration pedal and brake pedal depressed simultaneously?	System is normal. (DTC may be recorded while brake is applied during driving.)	Go to step 4.
<b>4 CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
<b>5 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs.

## AH:DTC C0056 G SENSOR FAILURE

### DTC DETECTING CONDITION:

Longitudinal G sensor signal failure

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

### NOTE:

For the diagnostic procedure, refer to DTC C0056 “G SENSOR SIGNAL”. <Ref. to VDC(diag)-71, DTC C0056 G SENSOR SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AI: DTC C0056 G SENSOR SIGNAL

### DTC DETECTING CONDITION:

Longitudinal G sensor signal failure

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK INSTALLATION OF VDCCM&amp;H/U.</b>	Is VDCCM&H/U installed properly without being tilted? Is the bracket deformation-free? Are the VDCCM&H/U installation bolts installed without missing or getting loose?	Go to step 2.	Repair the fault location. Go to step 2. • Install VDCCM&H/U properly. • Replace the bracket if faulty. • Tighten the VDCCM&H/U installation bolt. <Ref. to VDC-5, VDC CONTROL MODULE & HYDRAULIC CONTROL UNIT (VDCCM&H/U), COMPONENT, General Description.>
<b>2</b> <b>CHECK OUTPUT OF LONGITUDINAL G SENSOR USING SUBARU SELECT MONITOR.</b> 1) Park the vehicle on a level surface. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Fr Rr G sensor Output» displayed on display.	Is the indicated reading of the longitudinal G sensor on the monitor display $-2 \sim 2 \text{ m/s}^2$ ?	Go to step 3.	Recheck from step 1, and if the problem is not solved, go to next. Go to step 6.
<b>3</b> <b>SET 0 POINT FOR LONGITUDINAL G SENSOR USING SUBARU SELECT MONITOR.</b> 1) Select "Function Check Sequence" on Subaru Select Monitor. 2) Perform the "Longitudinal G sensor & lateral G sensor 0 point setting mode". <Ref. to VDC-15, LONGITUDINAL G SENSOR & LATERAL G SENSOR 0 POINT SETTING MODE, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Is the 0 point setting successful?	Go to step 4.	Recheck from step 1, and when the 0 point setting is not possible, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>4</b> <b>DRIVING INSPECTION.</b> Drive approximately 10 minutes, and check if the warning lights illuminate or improperly operate during driving. In a safe place, drive the vehicle while alternating acceleration and deceleration as much as possible.	Did the ABS warning light or VDC warning light remain off? Does ABS or VDC operate without malfunction?	Go to step 5.	Recheck from step 1, and when the warning lights illuminate or improperly operate, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>5</b> <b>CHECK OUTPUT OF LONGITUDINAL G SENSOR USING SUBARU SELECT MONITOR.</b> 1) Park the vehicle on a level surface. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Fr Rr G sensor Output» displayed on display.	Is the indicated reading of the longitudinal G sensor on the monitor display $-1.5 \text{ — } 1.5 \text{ m/s}^2$ ?	End. It results from a temporary noise interference.	Recheck from step 1, and if the problem is not solved, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>6</b> <b>CHECK OUTPUT OF LONGITUDINAL G SENSOR USING SUBARU SELECT MONITOR.</b> 1) Remove the VDCCM&H/U installation bolt and bracket. 2) Keep VDCCM&H/U in a horizontal position. 3) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 4) Read the «Fr Rr G sensor Output» displayed on display.	When the VDCCM&H/U is in a horizontal position, is the indicated reading of the longitudinal G sensor on the monitor display $-1.5 \text{ — } 1.5 \text{ m/s}^2$ ?	Check the bracket and brake pipe, and install VDCCM&H/U in a horizontal position to the vehicle.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AJ:DTC C0057 ECM COMMUNICATION CIRCUIT

### DTC DETECTING CONDITION:

No CAN signal from ECM.

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK LAN SYSTEM.</b> Perform the diagnosis for LAN system. <Ref. to LAN(diag)-10, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is there any fault in LAN system?	Perform the diagnosis according to DTC for LAN system. <Ref. to LAN(diag)-32, List of Diagnostic Trouble Code (DTC).>	Go to step 2.
<b>2</b> <b>CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of ECM connector?	Repair the connector.	Go to step 3.
<b>3</b> <b>CHECK ECM.</b>	Is ECM normal?	Go to step 4.	Replace the ECM. <Ref. to FU(H4SO)-41, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-58, Engine Control Module (ECM).> <Ref. to FU(H6DO)-52, Engine Control Module (ECM).>
<b>4</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
<b>5</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AK:DTC C0057 ECM CONTROL SYSTEM

### DTC DETECTING CONDITION:

ECM malfunctioning

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1 CHECK COOPERATION CONTROL FEASIBILITY OF ECM USING SUBARU SELECT MONITOR.</b> 1) Start the engine, and run the engine at idle approximately 5 minutes. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Check the «E/G Control Stop Flag» displayed on screen.	Is the «E/G Control Stop Flag» “1”?	Go to step 4.	Go to step 2.
<b>2 CHECK WARNING LIGHT.</b> Check whether the VDC warning light illuminates after driving for 1 minute or more at a speed of 10 km/h or more.	Does the VDC warning light illuminate?	Go to step 3.	VDC is normal. Perform the Clear Memory Mode. NOTE: DTC may be recorded if cranking is performed during driving.
<b>3 CHECK POOR CONTACT OF CONNECTORS.</b>	Is there poor contact of ECM connector?	Repair the connector.	Go to step 4.
<b>4 CHECK ECM.</b>	Is ECM normal?	Go to step 5.	Replace the ECM. <Ref. to FU(H4SO)-41, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-58, Engine Control Module (ECM).> <Ref. to FU(H6DO)-52, Engine Control Module (ECM).>
<b>5 CHECK VDCCM&amp;H/U.</b> 1) Connect all connectors. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 6.
<b>6 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

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## **AL:DTC C0057 VDC INTERRUPTED DUE TO EGI REASON**

### **DTC DETECTING CONDITION:**

Cooperation control prohibition of ECM

### **TROUBLE SYMPTOM:**

- VDC does not operate.
- Hill start assist does not operate.

### **NOTE:**

- For the diagnostic procedure, refer to DTC C0057 “ECM CONTROL SYSTEM”. <Ref. to VDC(diag)-74, DTC C0057 ECM CONTROL SYSTEM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
- Warning lights go off if the cooperation control of ECM returns.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AM:DTC C0071 NO SIGNAL FROM STEERING ANGLE SENSOR

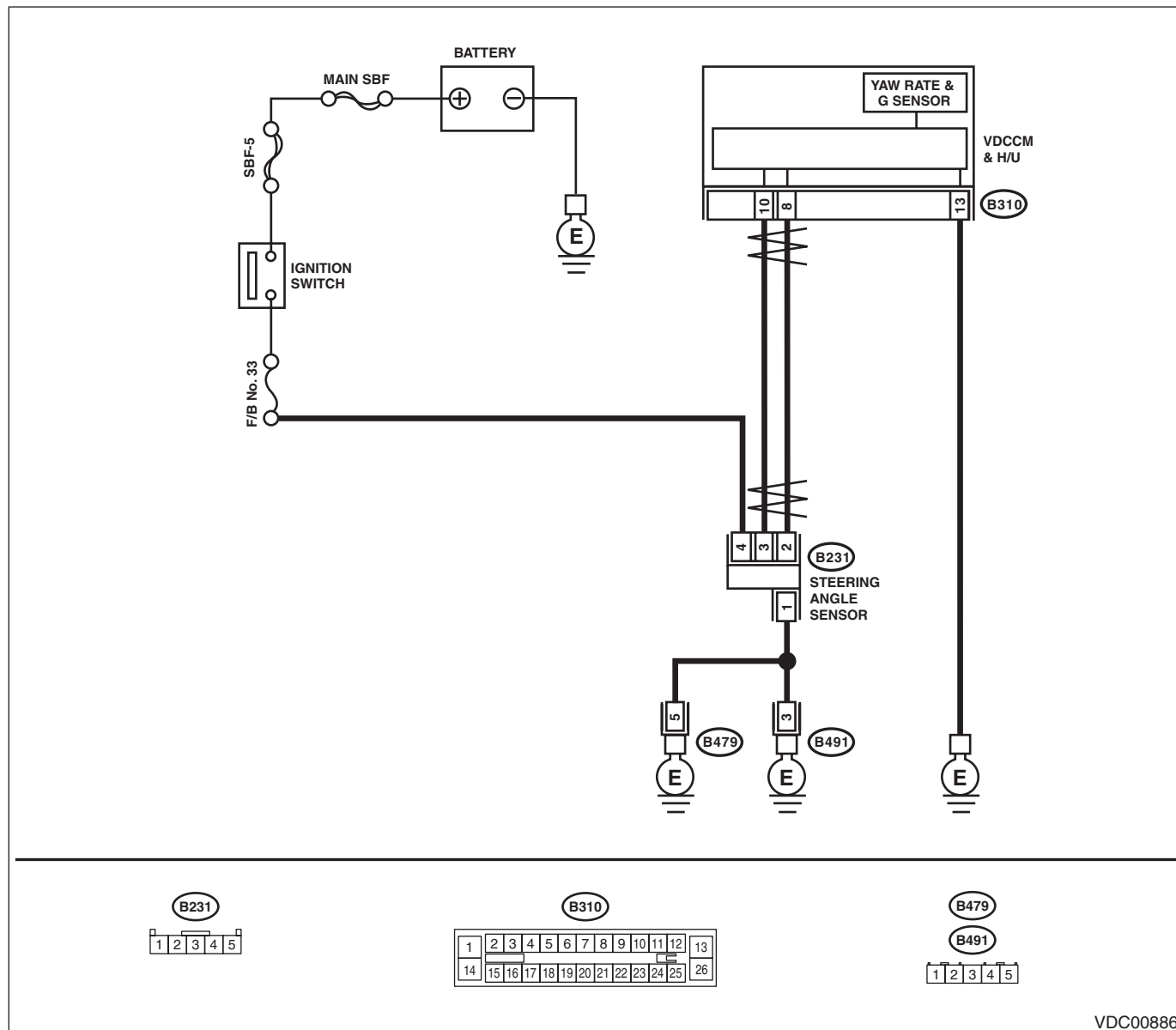
### DTC DETECTING CONDITION:

Communication from steering angle sensor is faulty.

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

### WIRING DIAGRAM:



Step	Check	Yes	No
1	<b>CHECK POWER SUPPLY FOR STEERING ANGLE SENSOR.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from steering angle sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between steering angle sensor and chassis ground. <b>Connector &amp; terminal</b> <b>(B231) No. 4 (+) — Chassis ground (-):</b>	Is the voltage 10 — 15 V?	Go to step 2.
			Repair the steering angle sensor power supply circuit.

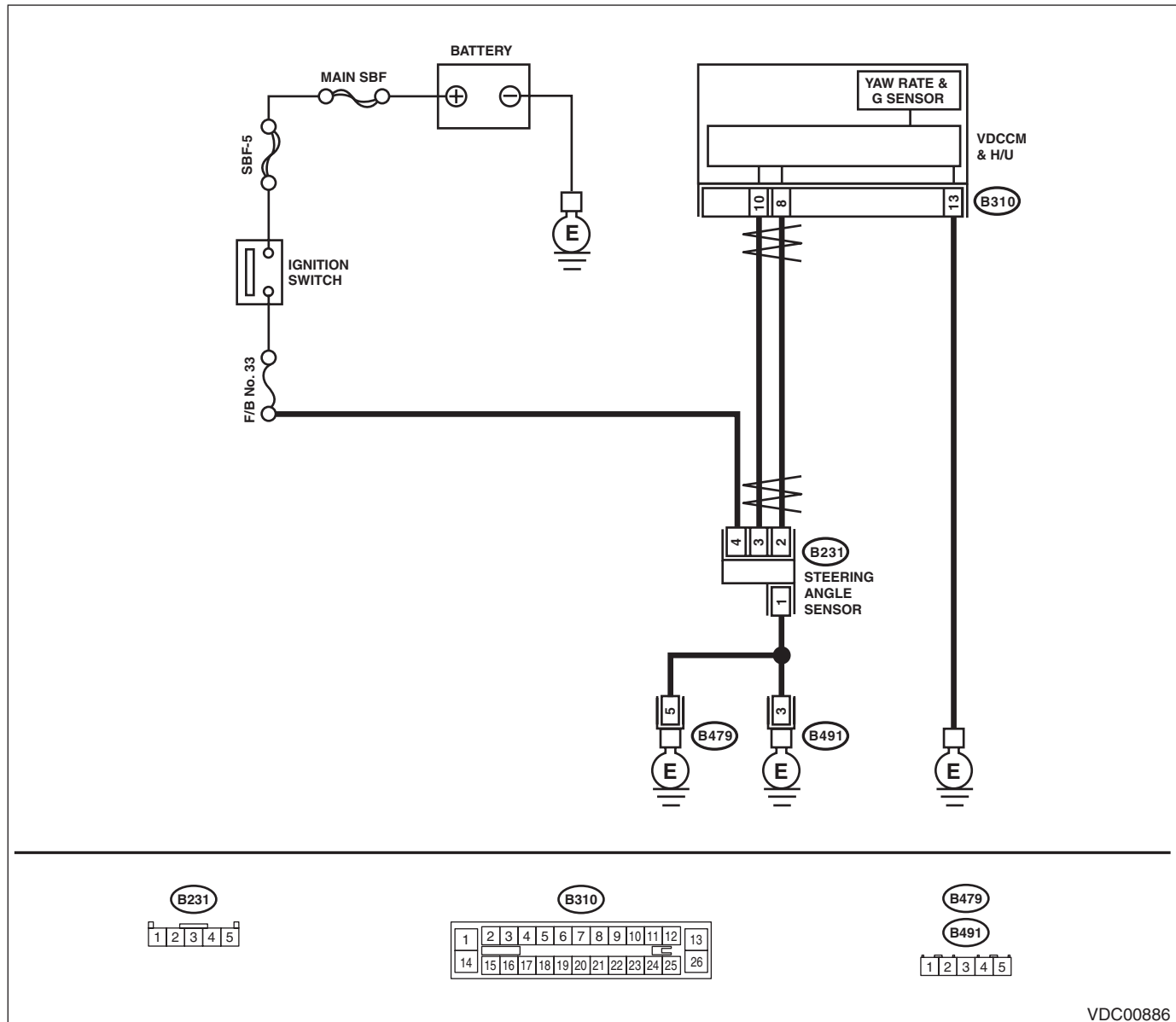
# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2 CHECK GROUND CIRCUIT OF STEERING ANGLE SENSOR.</b> Measure the resistance between steering angle sensor and chassis ground. <b>Connector &amp; terminal (B231) No. 1 — Chassis ground:</b>	Is the resistance less than 10 $\Omega$ ?	Go to step 3.	Repair ground circuit in the steering angle sensor.
<b>3 CHECK STEERING ANGLE SENSOR.</b> 1) Turn the ignition switch to OFF. 2) Connect all connectors. 3) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 4) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 5) Read the DTC.	Is the same DTC displayed?	Go to step 4.	Go to step 5.
<b>4 CHECK VDCCM&amp;H/U.</b> 1) Turn the ignition switch to OFF. 2) Replace the steering angle sensor. <Ref. to VDC-23, Steering Angle Sensor.> 3) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 4) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 5) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 6.
<b>5 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs. Though VDC warning light may remain lit, this is normal. Warning light goes off when the vehicle is driven at 12 km/h (7 MPH) or more.
<b>6 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Original steering angle sensor malfunction

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

### WIRING DIAGRAM:



Step	Check	Yes	No
<b>1</b> <b>CHECK POWER SUPPLY FOR STEERING ANGLE SENSOR.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from steering angle sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between steering angle sensor and chassis ground. <b>Connector &amp; terminal</b> <b>(B231) No. 4 (+) — Chassis ground (–):</b>	Is the voltage 10 — 15 V?	Go to step 2.	Repair the steering angle sensor power supply circuit.



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2 CHECK GROUND CIRCUIT OF STEERING ANGLE SENSOR.</b> Measure the resistance between steering angle sensor and chassis ground. <b>Connector &amp; terminal</b> <b>(B231) No. 1 — Chassis ground:</b>	Is the resistance less than 10 $\Omega$ ?	Go to step 3.	Repair ground circuit in the steering angle sensor.
<b>3 CHECK STEERING ANGLE SENSOR HARNESS.</b> 1) Disconnect the connector from the VDCCM&H/U. 2) Measure the resistance between VDCCM&H/U and steering angel sensor. <b>Connector &amp; terminal</b> <b>(B231) No. 2 — (B310) No. 8:</b> <b>(B231) No. 3 — (B310) No. 10:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the harness between the steering angle sensor and VDCCM&H/U.
<b>4 CHECK GROUND SHORT CIRCUIT OF STEERING ANGLE SENSOR HARNESS.</b> Measure the resistance between steering angle sensor and chassis ground. <b>Connector &amp; terminal</b> <b>(B231) No. 2 — Chassis ground:</b> <b>(B231) No. 3 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 5.	Repair the harness between the steering angle sensor and VDCCM&H/U.
<b>5 CHECK STEERING WHEEL.</b> 1) Drive the vehicle on a flat road. 2) Park the vehicle straight. 3) Check the steering wheel for deviation from center.	Is the deviation from the center of steering wheel less than 5°?	Go to step 6.	Perform the centering adjustment of steering wheel, and perform Set up mode for Neutral of Steering Angle Sensor & Lateral G Sensor 0 point. <Ref. to VDC-15, SET UP MODE FOR NEUTRAL OF STEERING ANGLE SENSOR & LATERAL G SENSOR 0 POINT, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>6 CHECK OUTPUT OF STEERING ANGLE SENSOR USING SUBARU SELECT MONITOR.</b> 1) Adjust steering wheel to the center position. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Steer Angle Sensor Op» displayed on display.	Is the indicated reading of the «Steer Angle Sensor Op» on the monitor display -10° — 10°?	Perform Set up mode for Neutral of Steering Angle Sensor & Lateral G Sensor 0 point. Go to step 7. <Ref. to VDC-15, SET UP MODE FOR NEUTRAL OF STEERING ANGLE SENSOR & LATERAL G SENSOR 0 POINT, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Check the installation of the steering wheel and steering angle sensor.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>7 CHECK STEERING ANGLE SENSOR USING SUBARU SELECT MONITOR.</b> 1) Turn the ignition switch to OFF. 2) Connect all connectors. 3) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 4) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 5) Read the DTC.	Is the same DTC displayed?	Go to step 8.	Go to step 9.
<b>8 CHECK VDCCM&amp;H/U.</b> 1) Turn the ignition switch to OFF. 2) Replace the steering angle sensor. <Ref. to VDC-23, Steering Angle Sensor.> 3) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 4) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 5) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 10.
<b>9 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Temporary poor contact occurs. Though VDC warning light may remain lit, this is normal. Warning light goes off when the vehicle is driven at 12 km/h (7 MPH) or more.
<b>10 CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	Original steering angle sensor malfunction

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

AO:DTC C0072 ABNORMAL YAW RATE SENSOR OUTPUT

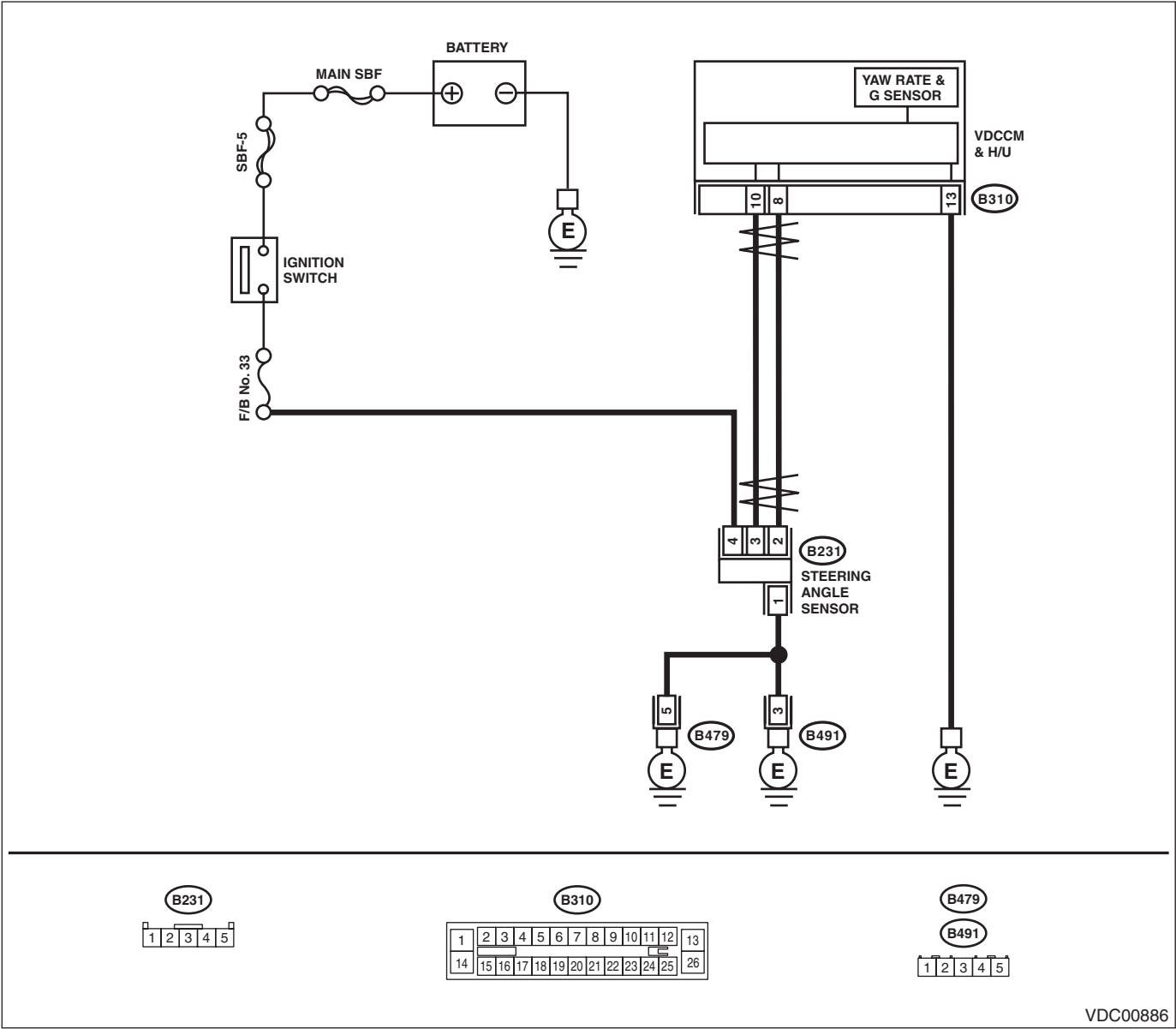
DTC DETECTING CONDITION:

Defective yaw rate sensor

TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

WIRING DIAGRAM:



VDC00886

Step	Check	Yes	No
1	<b>INTERVIEW CUSTOMERS.</b> Check if the vehicle ran the road with banks or sandy surface (which does not mean a dirt road).	Did the vehicle run the road with banks or sandy surface (which does not mean a dirt road)?  VDCCM&H/U may record DTC when the vehicle ran the road with banks or sandy surface (which does not mean a dirt road).	Go to step 2.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>2</b> <b>CHECK INSTALLATION OF VDCCM&amp;H/U.</b>	Is VDCCM&H/U installed properly without being tilted? Is the bracket deformation-free? Are the VDCCM&H/U installation bolts installed without missing or getting loose?	Go to step 3.	Repair the fault location. Go to step 3. • Install VDCCM&H/U properly. • Replace the bracket if faulty. • Tighten the VDCCM&H/U installation bolt. <Ref. to VDC-5, VDC CONTROL MODULE & HYDRAULIC CONTROL UNIT (VDCCM&H/U), COMPONENT, General Description.>
<b>3</b> <b>CHECK OUTPUT OF YAW RATE &amp; G SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Drive the vehicle on a flat road. 2) Park the vehicle straight. 3) Select "Current Data Display & Save" on the Subaru Select Monitor. 4) Read the «Yaw Rate Sensor Output» displayed on display.	Is the reading indicated on monitor display -4 — 4 deg/s?	Go to step 4.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>4</b> <b>CHECK OUTPUT OF STEERING ANGLE SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Drive the vehicle on a flat road. 2) Park the vehicle straight. 3) Select "Current Data Display & Save" on the Subaru Select Monitor. 4) Read the «Steer Angle Sensor Op» displayed on display.	Is the reading indicated on monitor display -5 — 5°?	Go to step 5.	Perform the centering adjustment of steering wheel.
<b>5</b> <b>CHECK VDCCM&amp;H/U.</b> 1) Turn the ignition switch to OFF. 2) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 3) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 4) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 6.
<b>6</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference. Though VDC warning light may remain lit, this is normal. Warning light goes off when the vehicle is driven at 12 km/h (7 MPH) or more.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

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### AP:DTC C0073 LATERAL G SENSOR POWER/OUTPUT

**NOTE:**

For the diagnostic procedure, refer to DTC C0073 “ABNORMAL LATERAL G SENSOR OUTPUT”. <Ref. to VDC(diag)-84, DTC C0073 ABNORMAL LATERAL G SENSOR OUTPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
1 <b>CHECK INSTALLATION OF VDCCM&amp;H/U.</b>	Is VDCCM&H/U installed properly without being tilted? Is the bracket deformation-free? Are the VDCCM&H/U installation bolts installed without missing or getting loose?	Go to step 2.	Repair the fault location. Go to step 2. • Install VDCCM&H/U properly. • Replace the bracket if faulty. • Tighten the VDCCM&H/U installation bolt. <Ref. to VDC-5, VDC CONTROL MODULE & HYDRAULIC CONTROL UNIT (VDCCM&H/U), COMPONENT, General Description.>
2 <b>CHECK OUTPUT OF STEERING ANGLE SENSOR USING SUBARU SELECT MONITOR.</b> 1) Park the vehicle straight on a level surface. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Steer Angle Sensor Op» displayed on display.	Is the indicated reading of the steering angle sensor on the monitor display $-10^{\circ}$ — $10^{\circ}$ ?	Go to step 3.	Check the installation of steering angle sensor.
3 <b>CHECK OUTPUT OF LATERAL G SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Park the vehicle straight on a level surface. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Lateral G sensor Output» displayed on display.	Is the indicated reading of the lateral G sensor on the monitor display $-2$ — $2 \text{ m/s}^2$ ?	Go to step 4.	Recheck from step 1, and if the problem is not solved, go to next. Go to step 7.
4 <b>SET 0 POINT FOR LATERAL G SENSOR USING SUBARU SELECT MONITOR.</b> 1) Select «Function Check Sequence» on Subaru Select Monitor. 2) Perform Set up mode for Neutral of Steering Angle Sensor & Lateral G Sensor 0 point. <Ref. to VDC-15, SET UP MODE FOR NEUTRAL OF STEERING ANGLE SENSOR & LATERAL G SENSOR 0 POINT, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Is the 0 point setting successful?	Go to step 5.	Recheck from step 1, and when the 0 point setting is not possible, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
5 <b>DRIVING INSPECTION.</b> Drive approximately 10 minutes, and check if the warning lights illuminate or improperly operate during driving. In a safe place, drive the vehicle while alternating acceleration and deceleration as much as possible.	Did the ABS warning light or VDC warning light remain off? Does ABS or VDC operate without malfunction?	Go to step 6.	Recheck from step 1, and when the warning lights illuminate or improperly operate, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>6</b> <b>CHECK OUTPUT OF LATERAL G SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Park the vehicle on a level surface. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Lateral G sensor Output» displayed on display.	Is the indicated reading of the lateral G sensor on the monitor display $-1.5 \text{ — } 1.5 \text{ m/s}^2$ ?	End. It results from a temporary noise interference. Though VDC warning light may remain lit, this is normal. Warning light goes off when the vehicle is driven at 12 km/h (7 MPH) or more.	Recheck from step 1, and if the problem is not solved, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>7</b> <b>CHECK OUTPUT OF LATERAL G SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Remove the VDCCM&H/U installation bolt and bracket. 2) Keep VDCCM&H/U in a horizontal position. 3) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 4) Read the «Lateral G sensor Output» displayed on display.	When the VDCCM&H/U is in a horizontal position, is the indicated reading of the lateral G sensor on the monitor display $-1.5 \text{ — } 1.5 \text{ m/s}^2$ ?	Check the bracket and brake pipe, and install VDCCM&H/U in a horizontal position to the vehicle.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AR:DTC C0074 MASTER CYLINDER PRESSURE SENSOR OUTPUT

### DTC DETECTING CONDITION:

Defective pressure sensor

### TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK STOP LIGHT SWITCH CIRCUIT.</b> Check stop light switch open circuit.	Is the stop light switch circuit OK?	Go to step 2.	Repair the stop light switch circuit. NOTE: If there is malfunction in the stop light circuit, DTC may be recorded in the memory.
<b>2</b> <b>CHECK OUTPUT OF PRESSURE SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Select {Current Data Display & Save} in Subaru Select Monitor. 2) Read the master cylinder output displayed on display.	With the brake pedal released, is the displayed value 0 — 11 bar?	Go to step 3.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>3</b> <b>CHECK OUTPUT OF PRESSURE SENSOR WITH SUBARU SELECT MONITOR.</b> 1) Select {Current Data Display & Save} in Subaru Select Monitor. 2) Read the master cylinder output displayed on display.	When the brake pedal is operated, does the master cylinder output value displayed on the display change in accordance with the brake pedal?	Go to step 4.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>4</b> <b>CHECK PRESSURE SENSOR.</b> 1) Clear the memory. <Ref. to VDC(diag)-25, Clear Memory Mode.> 2) Perform the Inspection Mode. <Ref. to VDC(diag)-24, Inspection Mode.> 3) Read the DTC.	Is the same DTC displayed?	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step 5.
<b>5</b> <b>CHECK OTHER DTC DETECTION.</b>	Is any other DTC displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-35, List of Diagnostic Trouble Code (DTC).>	It results from a temporary noise interference.

## AS:DTC C0075 WHEEL CYLINDER PRESSURE SENSOR OUTPUT

### DTC DETECTING CONDITION:

Different VDCCM&H/U specification

### NOTE:

When this DTC is displayed, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

## AT:DTC C0081 SYSTEM FAILURE

### DTC DETECTING CONDITION:

VDC long time sequential control

### TROUBLE SYMPTOM:

- VDC does not operate.
- Hill start assist does not operate.

Step	Check	Yes	No
<b>1</b> <b>CHECK INSTALLATION OF VDCCM&amp;H/U.</b>	Is VDCCM&H/U installed properly without being tilted? Is the bracket deformation-free? Are the VDCCM&H/U installation bolts installed without missing or getting loose?	Go to step 2.	Repair the fault location. Go to step 2. • Install VDCCM&H/U properly. • Replace the bracket if faulty. • Tighten the VDCCM&H/U installation bolt. <Ref. to VDC-5, VDC CONTROL MODULE & HYDRAULIC CONTROL UNIT (VDCCM&H/U), COMPONENT, General Description.>
<b>2</b> <b>CHECK STEERING WHEEL.</b> 1) Drive the vehicle on a flat road. 2) Park the vehicle straight. 3) Check the steering wheel for deviation from center.	Is the deviation from the center of steering wheel less than 5°?	Go to step 3.	Perform the centering adjustment of steering wheel, and perform Set up mode for Neutral of Steering Angle Sensor & Lateral G Sensor 0 point. Go to step 3. <Ref. to VDC-15, SET UP MODE FOR NEUTRAL OF STEERING ANGLE SENSOR & LATERAL G SENSOR 0 POINT, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>3</b> <b>CHECK OUTPUT OF STEERING ANGLE SENSOR USING SUBARU SELECT MONITOR.</b> 1) Adjust steering wheel to the center position. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read the «Steer Angle Sensor Op» displayed on display.	Is the indicated reading of the «Steer Angle Sensor Op» on the monitor display -10° — 10°?	Go to step 4.	Check the installation of the steering wheel and steering angle sensor, and replace the parts if necessary.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

Step	Check	Yes	No
<b>4 CHECK OUTPUT OF SENSORS USING SUB-ARU SELECT MONITOR.</b> 1) Drive the vehicle on a flat road. 2) Park the vehicle straight. 3) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 4) Read output of sensors displayed on display.	Are the indicated reading of sensor outputs following values? Lateral G sensor Output: $-2 \sim 2 \text{ m/s}^2$ Longitudinal G sensor output: $-2 \sim 2 \text{ m/s}^2$ Yaw Rate Sensor Output: $-4 \sim 4 \text{ deg/s}$	Go to step 5.	Recheck from step 1, and if the problem is not solved, go to next. Go to step 8.
<b>5 SET 0 POINT FOR LONGITUDINAL G SENSOR USING SUBARU SELECT MONITOR.</b> 1) Select "Function Check Sequence" on Subaru Select Monitor. 2) Perform Set up mode for Neutral of Steering Angle Sensor & Lateral G Sensor 0 point. <Ref. to VDC-15, SET UP MODE FOR NEUTRAL OF STEERING ANGLE SENSOR & LATERAL G SENSOR 0 POINT, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Is the 0 point setting successful?	Go to step 6.	Recheck from step 1, and when the 0 point setting is not possible, replace the VDCCM&H/U and steering angle sensor. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).> <Ref. to VDC-23, Steering Angle Sensor.>
<b>6 DRIVING INSPECTION.</b> Drive approximately 10 minutes, and check if the warning lights illuminate or improperly operate during driving.	Did the ABS warning light or VDC warning light remain off? Does ABS or VDC operate without malfunction?	Go to step 7.	Recheck from step 1, and when the warning lights illuminate or improperly operate, replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>7 CHECK OUTPUT OF SENSORS USING SUB-ARU SELECT MONITOR.</b> 1) Park the vehicle on a level surface. 2) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 3) Read output of sensors displayed on display.	Are the indicated reading of sensor outputs following values? Lateral G sensor Output: $-1.5 \sim 1.5 \text{ m/s}^2$ Longitudinal G sensor output: $-1.5 \sim 1.5 \text{ m/s}^2$ Yaw Rate Sensor Output: $-4 \sim 4 \text{ deg/s}$	It results from a temporary noise interference.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
<b>8 CHECK OUTPUT OF SENSORS USING SUB-ARU SELECT MONITOR.</b> 1) Remove the VDCCM&H/U installation bolt and bracket. 2) Keep VDCCM&H/U in a horizontal position. 3) Connect Subaru Select Monitor, and select {Current Data Display & Save}. 4) Read output of sensors displayed on display.	When VDCCM&H/U is in a horizontal position, are the indicated reading of sensor outputs following values? Lateral G sensor Output: $-1.5 \sim 1.5 \text{ m/s}^2$ Longitudinal G sensor output: $-1.5 \sim 1.5 \text{ m/s}^2$ Yaw Rate Sensor Output: $-4 \sim 4 \text{ deg/s}$	Check the bracket and brake pipe, and install VDCCM&H/U in a horizontal position to the vehicle.	Replace the VDCCM&H/U. <Ref. to VDC-9, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>