

**CHASSIS 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.

<b>FRONT SUSPENSION</b>	<b>FS</b>
<b>REAR SUSPENSION</b>	<b>RS</b>
<b>WHEEL AND TIRE SYSTEM</b>	<b>WT</b>
<b>DIFFERENTIALS</b>	<b>DI</b>
<b>TRANSFER CASE</b>	<b>TC</b>
<b>DRIVE SHAFT SYSTEM</b>	<b>DS</b>
<b>ABS</b>	<b>ABS</b>
<b>ABS (DIAGNOSTICS)</b>	<b>ABS(diag)</b>
<b>VEHICLE DYNAMICS CONTROL (VDC)</b>	<b>VDC</b>
<b>VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)</b>	<b>VDC(diag)</b>
<b>BRAKE</b>	<b>BR</b>
<b>PARKING BRAKE</b>	<b>PB</b>
<b>POWER ASSISTED SYSTEM (POWER STEERING)</b>	<b>PS</b>

# VEHICLE DYNAMICS CONTROL (VDC)

# VDC

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# General Description

VEHICLE DYNAMICS CONTROL (VDC)

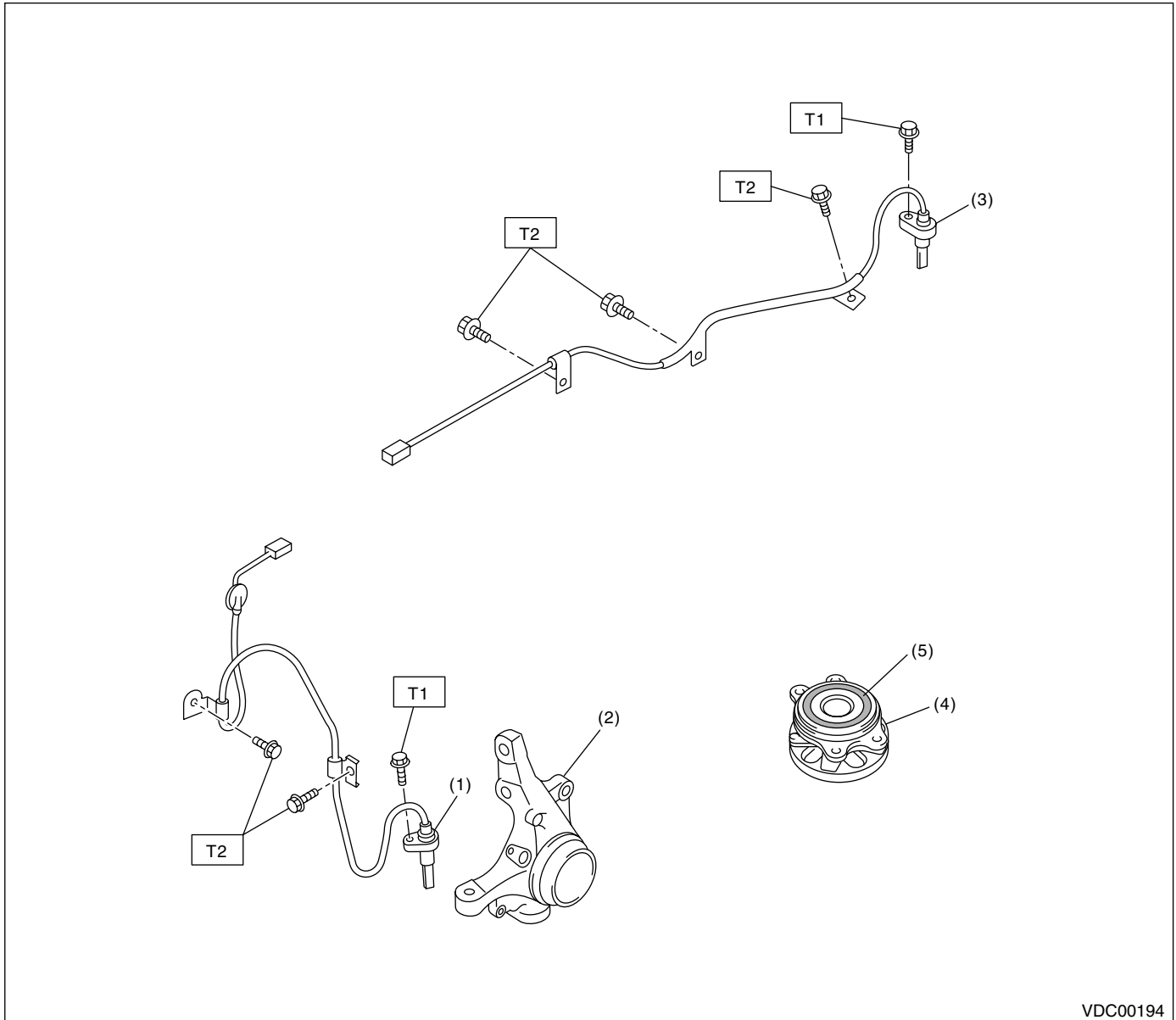
## 1. General Description

### A: SPECIFICATION

Item			Standard values or identification	
ABS wheel speed sensor	ABS wheel speed sensor gap (for reference)	Front	0.77 — 1.43 mm (0.030 — 0.056 in)	
		Rear	0.64 — 1.56 mm (0.025 — 0.061 in)	
	Marks of harness (Marks, Color)	Front	RH	K1 (White)
			LH	K2 (Yellow)
		Rear	RH	K5 (White)
			LH	K6 (Yellow)
Yaw rate & lateral G sensor	Lateral G sensor voltage		2.5±0.2 V	
Marks of VDCCM&H/U	Wagon 2.5 i		G3	
	Sedan 2.5 i		G9	
	Wagon 3.0 R		G4	
	Sedan 3.0 R		GA	
	OUTBACK 3.0 R		G2	

## B: COMPONENT

### 1. ABS WHEEL SPEED SENSOR



VDC00194

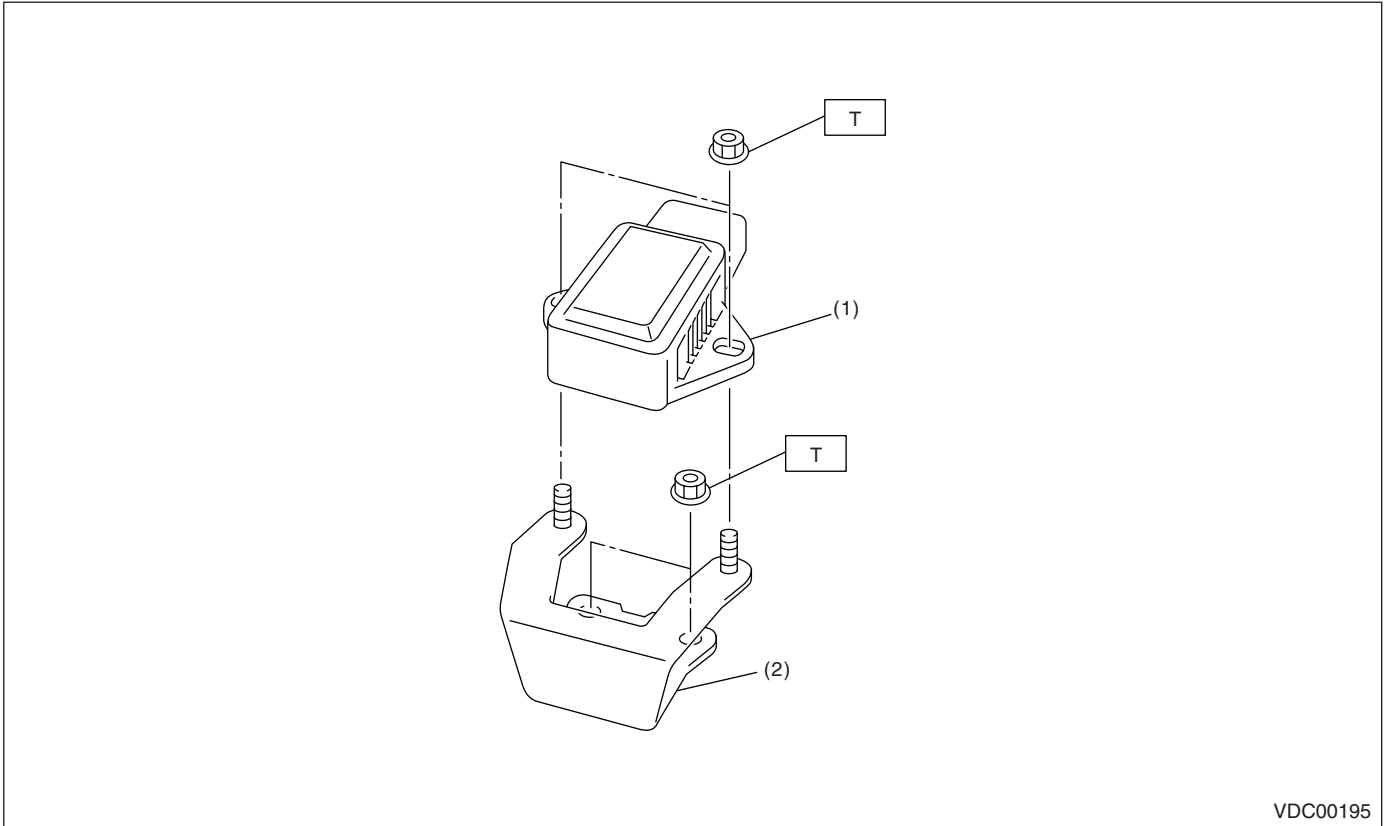
- |                                  |                      |
|----------------------------------|----------------------|
| (1) Front ABS wheel speed sensor | (4) Hub unit bearing |
| (2) Front housing                | (5) Magnetic encoder |
| (3) Rear ABS wheel speed sensor  |                      |

**Tightening torque: N·m (kgf·m, ft·lb)**  
**T1: 7.5 (0.76, 5.5)**  
**T2: 33 (3.4, 24)**

# General Description

VEHICLE DYNAMICS CONTROL (VDC)

## 2. YAW RATE & LATERAL G SENSOR



VDC00195

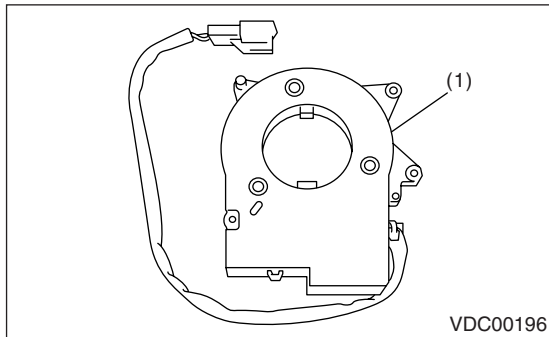
(1) Yaw rate & lateral G sensor

(2) Bracket

**Tightening torque: N·m (kgf·m, ft·lb)**

**T: 7.5 (0.76, 5.5)**

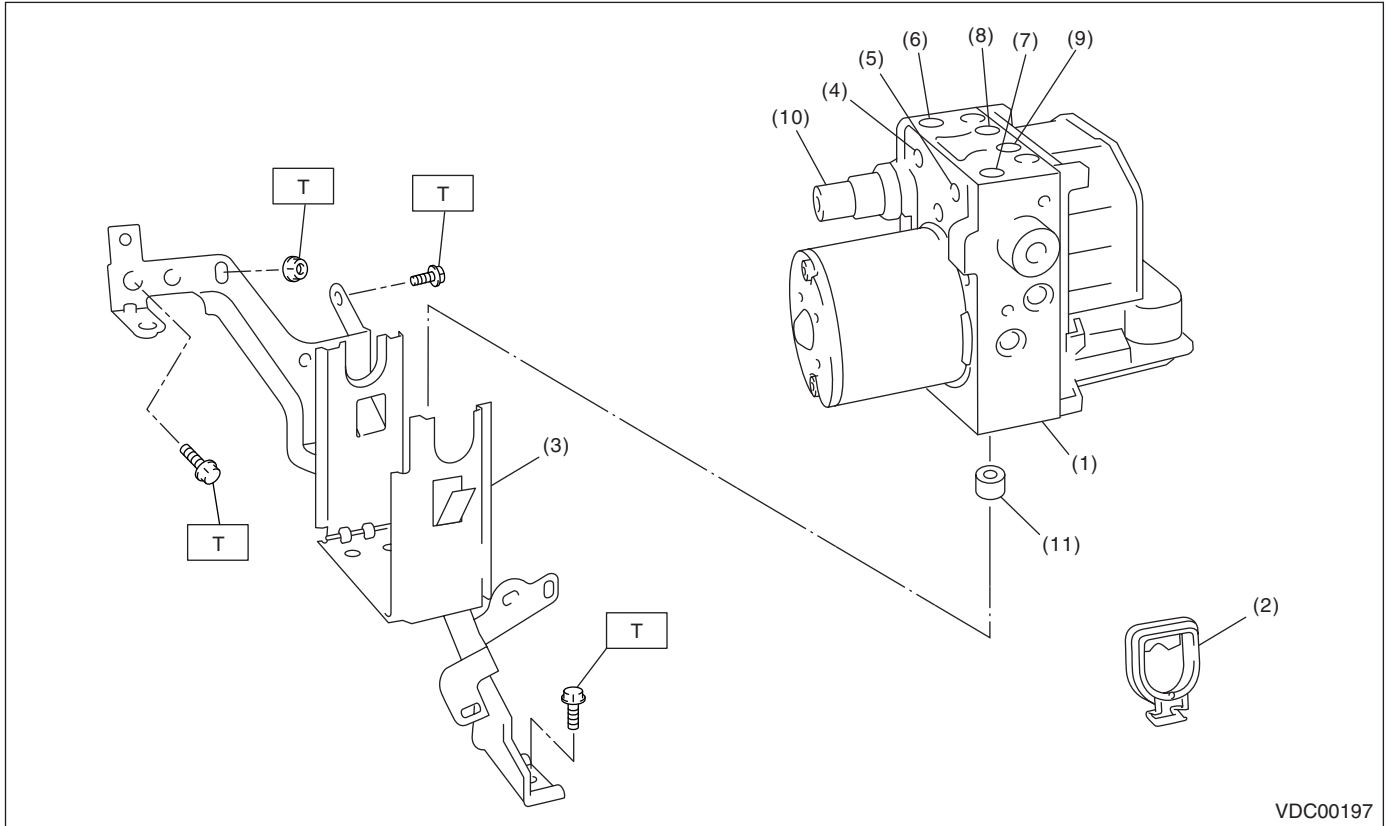
## 3. STEERING ANGLE SENSOR



VDC00196

(1) Steering angle sensor

## 4. VDC CONTROL MODULE & HYDRAULIC CONTROL UNIT (VDCCM&H/U)



- (1) VDC control module and hydraulic control unit (VDCCM&H/U)
- (2) Clip
- (3) Bracket
- (4) Rear RH outlet

- (5) Rear LH outlet
- (6) Secondary inlet
- (7) Primary inlet
- (8) Front LH outlet
- (9) Front RH outlet

- (10) Pressure sensor
- (11) Damper

**Tightening torque: N·m (kgf·m, ft·lb)**  
**T: 33 (3.4, 24)**

## General Description

### VEHICLE DYNAMICS CONTROL (VDC)

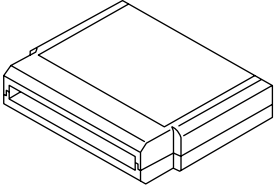

#### C: CAUTION

- Wear work clothing, including a cap, protective goggles and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before disconnecting electrical connectors of sensors or units, be sure to disconnect the ground cable from battery.

- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Be careful not to burn yourself, because each part on the vehicle is hot after running.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.

#### D: 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. <ul style="list-style-type: none"> <li>• English: 22771AA030 (Without printer)</li> <li>• German: 22771AA070 (Without printer)</li> <li>• French: 22771AA080 (Without printer)</li> <li>• Spanish: 22771AA090 (Without printer)</li> </ul>

##### 2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and ampere.
Pressure gauge	Used for measuring oil pressure.
Oscilloscope	Used for measuring sensor.

# VDC Control Module & Hydraulic Control Unit (VDCCM&H/U)

VEHICLE DYNAMICS CONTROL (VDC)

## 2. VDC Control Module & Hydraulic Control Unit (VDCCM&H/U)

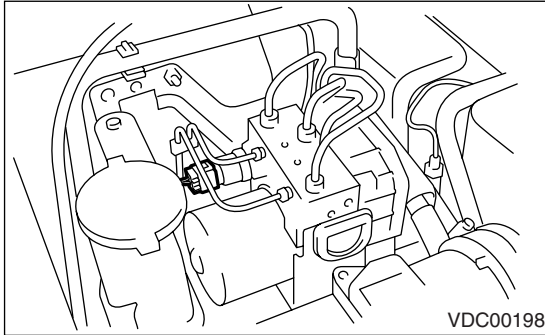
### A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Use compressed air to get rid of water and dust around the VDCCM&H/U.

#### NOTE:

When dust and dirt are attached to the terminal, they may cause poor contact.

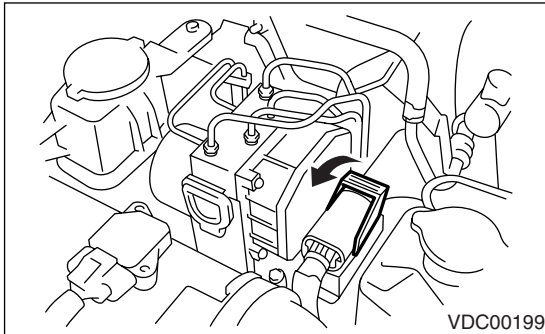
- 3) Disconnect the pressure sensor connector.



- 4) Disconnect the VDCCM&H/U connector with pulling up the lock lever.

#### CAUTION:

Do not pull the harness when disconnecting connector.

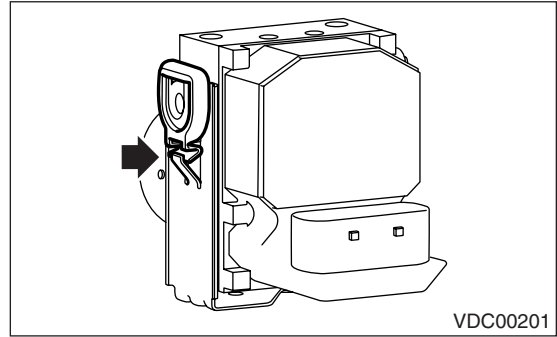


- 5) Disconnect the brake pipes from VDCCM&H/U.
- 6) Wrap the brake pipe using a vinyl bag not to spill the brake fluid on the vehicle body.

#### CAUTION:

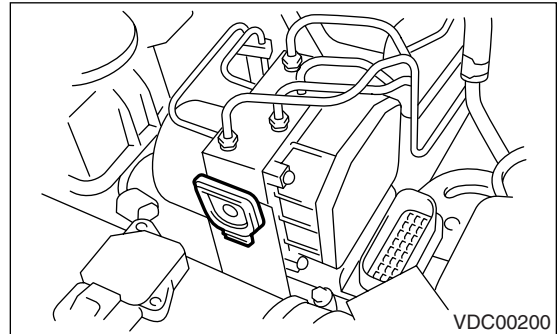
When the brake fluid is attached to vehicle body, wash it off with water and wipe the water.

- 7) Remove the clips, and then remove the VDCCM&H/U.



#### CAUTION:

- VDCCM&H/U cannot be disassembled. Do not attempt to loosen the bolts and nuts.
- Do not drop or bump the VDCCM&H/U.
- Do not turn VDCCM&H/U upside down or place it sideways for storage.
- Be careful that no foreign objects are mixed in VDCCM&H/U.
- Be careful that no water enters connectors.



- 8) Remove the VDCCM&H/U bracket.

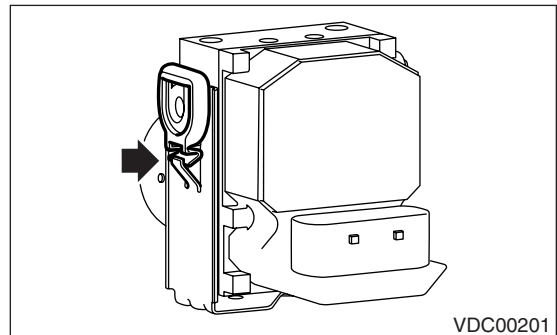
### B: INSTALLATION

- 1) Install the VDCCM&H/U bracket.

#### Tightening torque:

**33 N·m (3.3 kgf·m, 24 ft·lb)**

- 2) Install the VDCCM&H/U to bracket.
- 3) Install the clip.



#### NOTE:

Hook the clip on the pawl of bracket securely.



# VDC Control Module & Hydraulic Control Unit (VDCCM&H/U)

## VEHICLE DYNAMICS CONTROL (VDC)

4) Connect the brake pipes to their specified VDC-CM&H/U positions.

### Tightening torque:

**15 N·m (1.5 kgf·m, 11.1 ft·lb)**

5) Connect the connector to VDCCM&H/U.

### NOTE:

- Be sure to remove all foreign matters from inside the connector before connecting.
- Ensure that the VDCCM&H/U connector is securely locked.

6) Connect the pressure sensor connector.

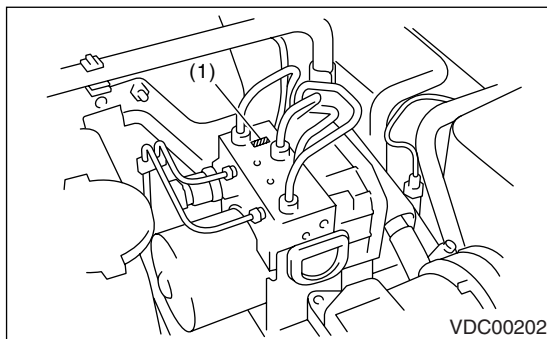
7) Bleed air from the brake system.

## C: INSPECTION

1) Check the connected and fixed condition of connector.

2) Check the mark used for VDCCM&H/U identification.

Refer to "SPECIFICATION" for mark. <Ref. to VDC-2, SPECIFICATION, General Description.>



(1) Mark

### 1. CHECKING THE HYDRAULIC UNIT ABS OPERATION BY PRESSURE GAUGE

<Ref. to ABS-7, CHECKING THE HYDRAULIC UNIT ABS OPERATION BY PRESSURE GAUGE, INSPECTION, ABS Control Module and Hydraulic Control Unit (ABSCM&H/U).>

### 2. CHECKING THE HYDRAULIC UNIT ABS OPERATION WITH BRAKE TESTER

<Ref. to ABS-8, CHECKING THE HYDRAULIC UNIT ABS OPERATION WITH BRAKE TESTER, INSPECTION, ABS Control Module and Hydraulic Control Unit (ABSCM&H/U).>

### 3. CHECKING THE HYDRAULIC UNIT VDC OPERATION BY PRESSURE GAUGE

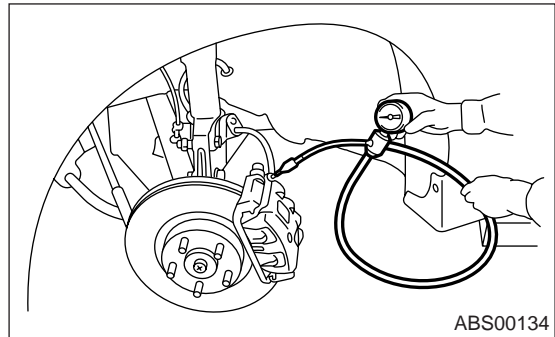
- 1) Lift-up the vehicle, and then remove the wheels.
- 2) Remove the air bleeder screws from the FL and FR caliper bodies.
- 3) Connect two pressure gauges to the FL and FR caliper bodies.

### CAUTION:

- Pressure gauges used exclusively for brake fluid must be used.
- Do not use the pressure gauge for the measurement of transmission oil pressure since the piston seal may be expanded and deformed.

### NOTE:

Wrap a sealing tape around the pressure gauge.



4) Bleed air from the pressure gauges.

5) Perform VDC sequence control.

<Ref. to VDC-11, VDC Sequence Control.>

6) When the hydraulic unit begins to work, first the FL side performs compression, holding, and decompression, and then the FR side performs compression, holding, and decompression.

7) Read values indicated on the pressure gauge and check if the fluctuation of the values between decompression and compression meets the standard values. Depress the brake pedal and check that it is not abnormally hard, and tightness is normal.

	Front wheel	Rear wheel
When compressed	3,000 kPa (31 kgf/cm <sup>2</sup> , 441 psi) or more	2,000 kPa (20 kgf/cm <sup>2</sup> , 284 psi) or more
When decompressed	500 kPa (5 kgf/cm <sup>2</sup> , 73 psi) or less	500 kPa (5 kgf/cm <sup>2</sup> , 73 psi) or less

8) Disconnect the pressure gauges from FL and FR caliper bodies.

9) Install the air bleeder screws of FL and FR caliper bodies.

10) Remove the air bleeder screws from the RL and RR caliper bodies.

11) Connect two pressure gauges to the RL and RR caliper bodies.

12) Bleed air from the pressure gauges and the RL and RR caliper bodies.

13) Perform VDC sequence control.

<Ref. to VDC-11, VDC Sequence Control.>

# VDC Control Module & Hydraulic Control Unit (VDCCM&H/U)

VEHICLE DYNAMICS CONTROL (VDC)

14) When the hydraulic unit begins to work, first the RR side performs compression, holding, and decompression, and then the RL side performs compression, holding, and decompression.

15) Read the values indicated on the pressure gauges and check it within specified. Depress the brake pedal and check that it is not abnormally hard, and tightness is normal.

16) Disconnect the pressure gauge from the RL and RR caliper bodies.

17) Install the air bleeder screws of RL and RR caliper bodies.

18) Bleed air from the brake line.

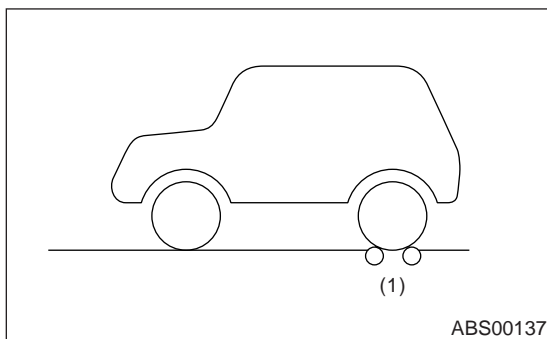
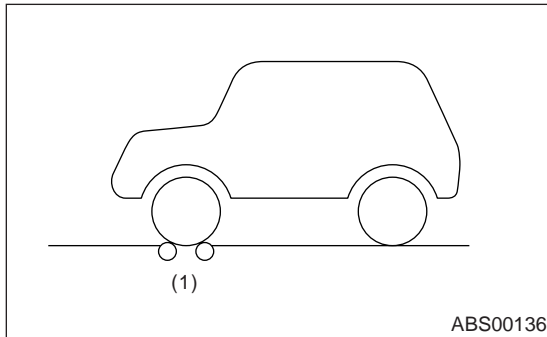
## 4. CHECK HYDRAULIC UNIT VDC OPERATION WITH BRAKE TESTER

1) Set the wheels other than the measured one on free rollers.

2) Prepare for operating the VDC sequence control.

<Ref. to VDC-11, VDC Sequence Control.>

3) Set the front wheels or rear wheels on the brake tester and set the select lever position to "N" range.



(1) Brake tester

4) Operate the brake tester.

5) Perform VDC sequence control.

<Ref. to VDC-11, VDC Sequence Control.>

6) When the hydraulic unit begins to work; check the following working sequence.

(1) The FL wheel performs compression, holding and decompression in sequence, and subsequently the FR wheel repeats the cycle.

(2) The RR wheel performs compression, holding and decompression in sequence, and subsequently the RL wheel repeats the cycle.

7) Read values indicated on the brake tester and check if the fluctuation of the values between decompression and compression meets the standard values.

	Front wheel	Rear wheel
When compressed	2,000 N (203 kgf, 447 lb) or more	1,000 N (102 kgf, 225 lb) or more
When decompressed	500 N (51 kgf, 112 lb) or less	500 N (51 kgf, 112 lb) or less

8) After the inspection, depress the brake pedal and check that it is not abnormally hard, and tightness is normal.

## D: ADJUSTMENT

When the following replacement, removal and installation is performed, be sure to perform the centering setting of steering angle sensor and zero point setting of yaw rate & lateral G sensor.

- VDCCM&H/U
- Steering angle sensor
- Yaw rate & lateral G sensor
- Steering wheel parts (Including airbag)
- Suspension parts
- Wheel alignment adjustment

1) Park the vehicle straight on a level surface. (Engine operation on "P" or "N" range)

2) Check that steering wheels are positioned in center. (When the center position is not correct, adjust the wheel alignment.)

3) Set the Subaru Select Monitor to vehicle, select the {Set up mode for Neutral of Steering Angle Sensor & Lateral G Sensor 0 point} on «Function check sequence» display. (Follow the step on display.)

4) On the «Brake Control System» display screen, select the {Current Data Display & Save}, and check that the steering angle sensor is displayed "0 deg".

5) When the "0 deg" is not displayed, repeat the above steps and check that the "0 deg" is displayed.

6) Drive the vehicle for 10 minutes, and check that the ABS and VDC warning light is not illuminated.

7) Check that the unnecessary operation of VDC, or losing control of steering is not occurred. And when the malfunction occurred, repeat the above steps.

## **3. ABS Sequence Control**

### **A: OPERATION**

<Ref. to ABS-10, OPERATION, ABS Sequence Control.>

#### **1. ABS SEQUENCE CONTROL WITH DIAGNOSIS CONNECTOR**

<Ref. to ABS-10, ABS SEQUENCE CONTROL WITH DIAGNOSIS CONNECTOR, OPERATION, ABS Sequence Control.>

#### **2. ABS SEQUENCE CONTROL WITH SUBARU SELECT MONITOR**

<Ref. to ABS-10, ABS SEQUENCE CONTROL WITH SUBARU SELECT MONITOR, OPERATION, ABS Sequence Control.>

#### **3. CONDITIONS FOR ABS SEQUENCE CONTROL**

<Ref. to ABS-11, CONDITIONS FOR ABS SEQUENCE CONTROL, OPERATION, ABS Sequence Control.>

### **B: SPECIFICATION**

#### **1. CONDITIONS FOR COMPLETION OF ABS SEQUENCE CONTROL**

<Ref. to ABS-12, CONDITIONS FOR COMPLETION OF ABS SEQUENCE CONTROL, SPECIFICATION, ABS Sequence Control.>

## 4. VDC Sequence Control

### A: OPERATION

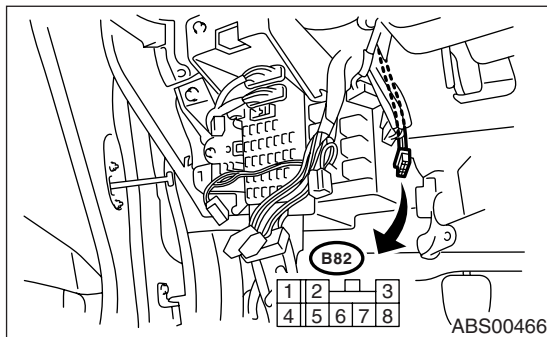
- 1) While the VDC sequence control is performed, the operation of the hydraulic unit can be checked using the brake tester or pressure gauge after the hydraulic unit solenoid valve is operated.
- 2) VDC sequence control can be started by diagnosis connector or Subaru Select Monitor.

### 1. VDC SEQUENCE CONTROL WITH DIAGNOSIS CONNECTOR

#### NOTE:

In the event of any trouble, the VDC sequence control is not operated.

- 1) Turn the ignition switch to OFF at the vehicle stationary mode.
- 2) Take out the diagnosis connector from the inside of instrument panel lower cover on the driver's side and connect one of the ground terminals to connector terminal No. 8.



- 3) Turn the ignition switch to ON and start the engine immediately without pressing the brake pedal.
- 4) After VDC warning light goes out and starting the engine, perform the brake pedal operation as follows; depress it within 3 seconds, → release it, → depress it again, → release it again.
- 5) After completion of VDC sequence control, turn the ignition switch to OFF.

### 2. VDC SEQUENCE CONTROL WITH SUBARU SELECT MONITOR

#### NOTE:

In the event of any trouble, the sequence control may not be operative.

- 1) Connect the Subaru Select Monitor to data link connector under the driver's side instrument panel lower cover.
- 2) Turn the ignition switch to ON.
- 3) Set the Subaru Select Monitor switch to ON.
- 4) Set the Subaru Select Monitor to the "Brake Control" mode.

- 5) When the "VDC Inspection Mode" is selected from the "Function check sequence" menu, the "VDC sequence control" will start.

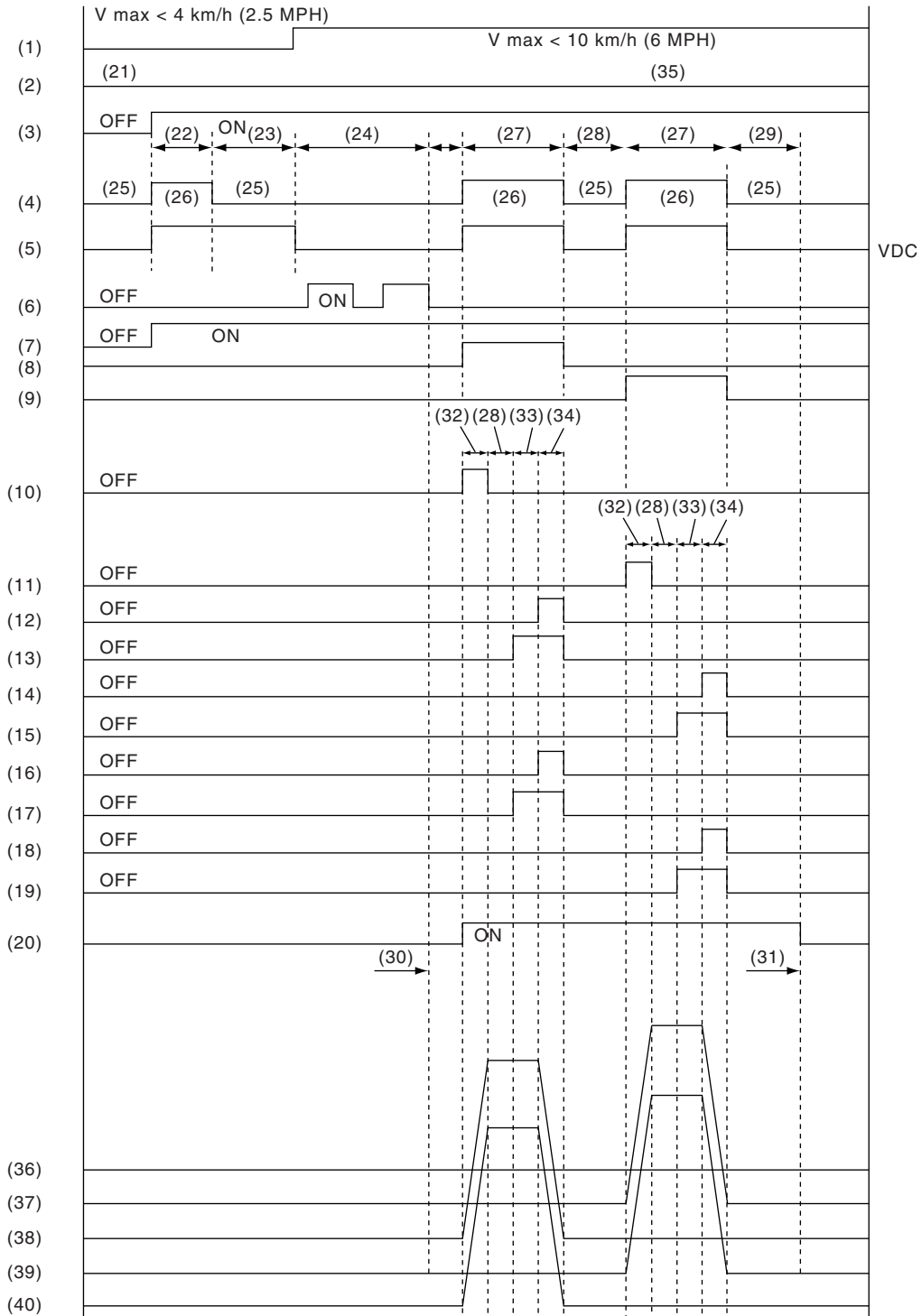
- 6) Since "Press the [YES] key" is displayed, press the YES key.

- 7) Operation points will be displayed on the Subaru Select Monitor.

# VDC Sequence Control

VEHICLE DYNAMICS CONTROL (VDC)

## 3. CONDITIONS FOR VDC SEQUENCE CONTROL



VDC00203

# VDC Sequence Control

VEHICLE DYNAMICS CONTROL (VDC)

(1) All wheel speed	(16) RR decompression valve	(30) Point A
(2) DL terminal	(17) RR compression valve	(31) Reset
(3) Ignition key	(18) RL decompression valve	(32) 0.8 sec.
(4) ABS warning light	(19) RL compression valve	(33) 1.2 sec.
(5) VDC warning light	(20) Pump motor	(34) 0.4 sec.
(6) Stop light switch	(21) Diagnosis connector and connection	(35) When using the Subaru Select Monitor, both connection and non-connection of diagnosis connector are acceptable.
(7) Valve relay	(22) 1.5 sec.	
(8) VDC switching valve 1 FL	(23) Approx. 3 sec.	
(9) VDC switching valve 1 FR	(24) Within 3 sec.	(36) Master cylinder pressure
(10) VDC switching valve 2 FL	(25) Light OFF	(37) FR wheel cylinder pressure
(11) VDC switching valve 2 FR	(26) Light ON	(38) FL wheel cylinder pressure
(12) FL decompression valve	(27) 3.4 sec.	(39) RL wheel cylinder pressure
(13) FL compression valve	(28) 1 sec.	(40) RR wheel cylinder pressure
(14) FR decompression valve	(29) 1.6 sec.	
(15) FR compression valve		

## NOTE:

When using the Subaru Select Monitor, the control operation starts from point A. The patterns from ignition key ON to the point A show that operation is started by diagnosis connector.

## B: SPECIFICATION

### 1. CONDITIONS FOR COMPLETION OF VDC SEQUENCE CONTROL

When the following conditions develop, the VDC sequence control stops and VDC operation is returned to the normal control mode.

- 1) When the speed of at least one wheel reaches 10 km/h (6 MPH).
- 2) When the diagnosis connector is disconnected. (Without Subaru Select Monitor)
- 3) When the brake pedal is pressed during sequence control and the stop light switch is set to ON.
- 4) When the brake pedal is pressed after the ignition key is turned to ON, and before VDC warning light goes out. (Without Subaru Select Monitor)
- 5) Turn the ignition key to ON and when 3 seconds or more have elapsed after the VDC warning light goes OFF.
- 6) After completion of VDC sequence control.
- 7) When malfunction is detected.

# Yaw Rate & Lateral G Sensor

VEHICLE DYNAMICS CONTROL (VDC)

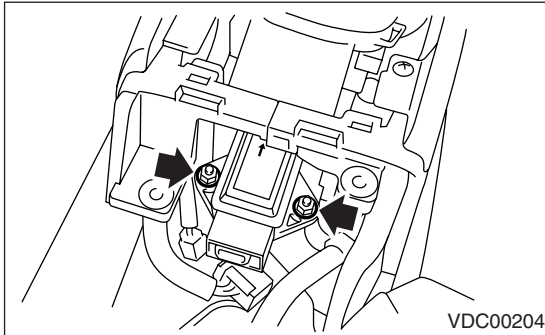
## 5. Yaw Rate & Lateral G Sensor

### A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the console box.  
<Ref. to EI-53, Console Box.>
- 3) Disconnect the connector from the yaw rate & lateral G sensor.
- 4) Remove the yaw rate & lateral G sensor.

#### CAUTION:

Do not drop or bump the yaw rate & lateral G sensor.

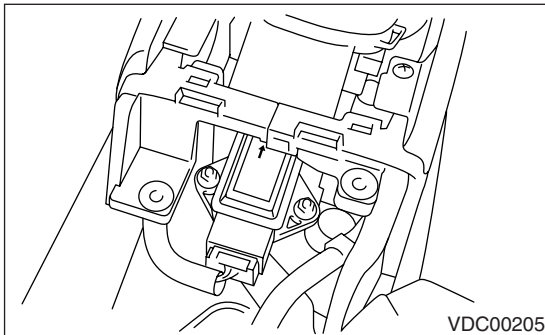


### B: INSTALLATION

Install in the reverse order of removal.

#### NOTE:

Install the yaw rate & lateral G sensor to body with directing the arrow mark on sensors to vehicle front.



#### Tightening torque:

**7.5 N·m (0.76 kgf-m, 5.5 ft-lb)**

#### CAUTION:

After completion of installation, set the following two positions.

- Positioning to the center of steering angle sensor
- Positioning of the yaw rate & lateral G sensor to zero

The above procedure is required VDCCM&H/U to identify the vehicle position afterward. For the setting procedure of step 2 above, refer to "VDC Control Module & Hydraulic Control Unit". <Ref. to VDC-9, ADJUSTMENT, VDC Control Module & Hydraulic Control Unit (VDC-CM&H/U).>

# Yaw Rate & Lateral G Sensor

VEHICLE DYNAMICS CONTROL (VDC)

## C: INSPECTION

### 1. YAW RATE & LATERAL G SENSOR SIGNAL

Step	Check	Yes	No
<b>1 CHECK YAW RATE &amp; LATERAL G SENSOR.</b> 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor connector to data link connector. 3) Turn the ignition switch to ON. 4) Set the Subaru Select Monitor connector to the {Brake Control} mode. 5) Select {Current Data Display & Save}. 6) Read the output voltage of yaw rate & lateral G sensor.	Are the indicated values when the vehicle is placed horizontally Lateral G sensor: -1.5 — 1.5 m/s Yaw rate sensor: -4 — 4 deg/s?	Go to step 2.	Repair the harness connector between yaw rate & lateral G sensor and VDCCM&H/U. Or replace the yaw rate & lateral G sensor.
<b>2 CHECK LATERAL G SENSOR.</b> 1) Remove the console box. 2) Remove the yaw rate & lateral G sensor from vehicle. (Do not disconnect the connector.) 3) Read the display of Subaru Select Monitor. NOTE: When the yaw rate & lateral G sensor is moved with its power supply on, DTC of yaw rate & lateral G sensor may be recorded.	Is the value 6.8 — 12.8 m/s when the yaw rate & lateral G sensor are inclined rightward to 90°?	Go to step 3.	Repair the harness connector between yaw rate & lateral G sensor and VDCCM&H/U. Or replace the yaw rate & lateral G sensor.
<b>3 CHECK LATERAL G SENSOR.</b> Read the display of Subaru Select Monitor. NOTE: When the yaw rate & lateral G sensor is moved with its power supply on, DTC of yaw rate & lateral G sensor may be recorded.	Is the value -6.8 — -12.8 m/s when the yaw rate & lateral G sensor are inclined leftward to 90°?	Yaw rate & lateral G sensor is normal.	Repair the harness connector between yaw rate & lateral G sensor and VDCCM&H/U. Or replace the yaw rate & lateral G sensor.



# Steering Angle Sensor

VEHICLE DYNAMICS CONTROL (VDC)

## 6. Steering Angle Sensor

### A: REPLACEMENT

#### CAUTION:

- Do not perform the removal except when the replacement.
- When replacing more than three times, replace the combination switch as assembly to protect screw part.

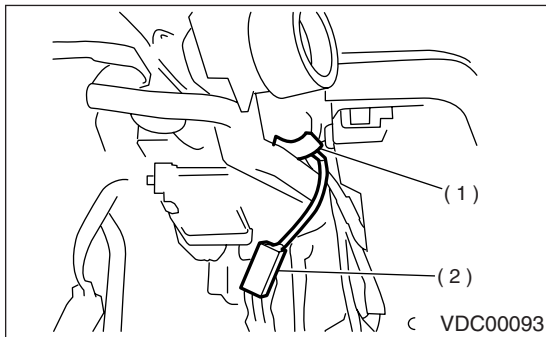
- 1) Set the steering wheel in a wheel-forward position.
- 2) Disconnect the ground cable from battery.
- 3) Remove the airbag module.  
<Ref. to AB-14, REMOVAL, Driver's Airbag Module.>

#### WARNING:

Always refer to "Airbag System" when performing the airbag module repair service.

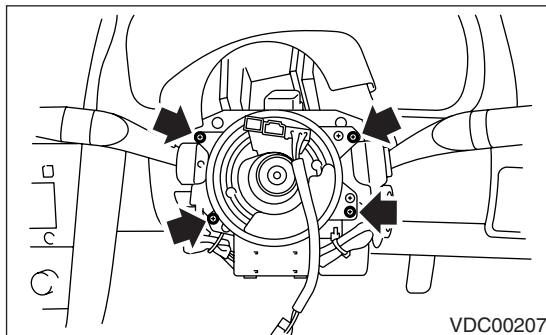
<Ref. to AB-4, CAUTION, General Description.>

- 4) Remove the steering wheel.  
<Ref. to PS-20, REMOVAL, Steering Wheel.>
- 5) Remove the screws and detach the steering column lower cover.
- 6) Remove the two screws securing the steering column upper cover.
- 7) Unlock the harness band and disconnect the connector of steering angle sensor.

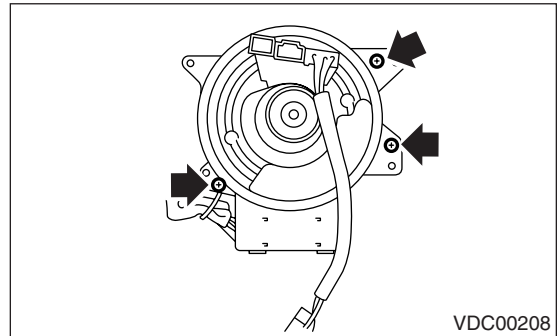


- (1) Harness band
- (2) Connector

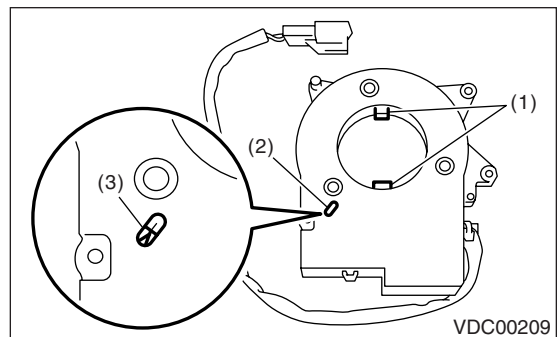
- 8) Remove the screws which secure the roll connector to steering column.



- 9) Remove the steering angle sensor from roll connector.



- 10) Turn the protrusion portion of new steering angle sensor to match the alignment mark of inspection hole.



- (1) Protrusion portion
- (2) Inspection hole
- (3) Alignment mark

#### CAUTION:

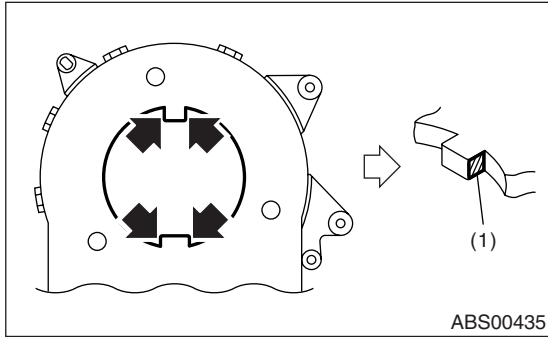
Be careful not to allow foreign particles to enter from inspection hole.

- 11) Align the center of roll connector.  
<Ref. to AB-23, INSTALLATION, Roll Connector.>

# Steering Angle Sensor

VEHICLE DYNAMICS CONTROL (VDC)

12) Apply thin coat of grease which is enclosed with new part to the protruding parts (four) of steering angle sensor.

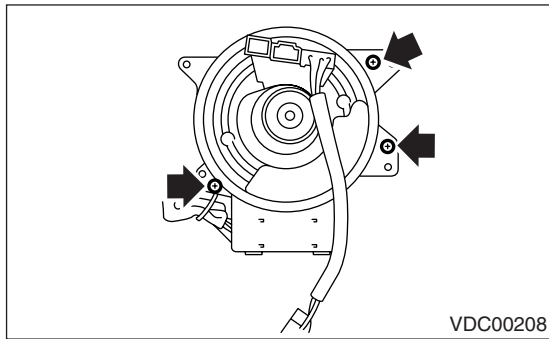


(1) Apply grease.

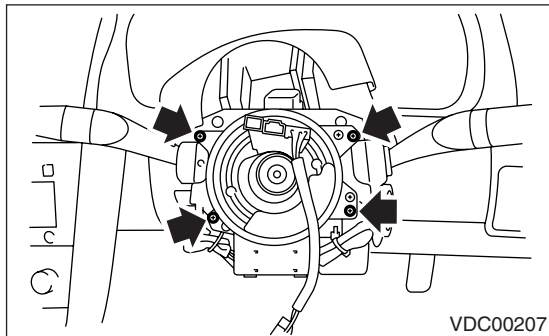
13) Align the position of protrusion portion and install the roll connector to the steering angle sensor.

### **Tightening torque:**

**0.5 N·m (0.05 kgf·m, 0.36 ft·lb)**



14) Install the roll connector to combination switch.



15) Install the steering wheel.  
<Ref. to PS-20, INSTALLATION, Steering Wheel.>

### **Tightening torque:**

**44 N·m (4.5 kgf·m, 32.5 ft·lb)**

16) Install the airbag module to steering wheel.  
<Ref. to AB-14, INSTALLATION, Driver's Airbag Module.>

### **WARNING:**

Always refer to "Airbag System" before performing the service operation.

<Ref. to AB-4, CAUTION, General Description.>

17) Connect the battery ground cable to battery.

### **CAUTION:**

After completion of installation, adjust the following two positions.

- Positioning to the center of steering angle sensor
- Positioning of the yaw rate & lateral G sensor to zero

The above procedure is required for VDCCM to identify the vehicle position afterward. For the setting procedure of step 2 above, refer to "VDC Control Module & Hydraulic Control Unit". <Ref. to VDC-9, ADJUSTMENT, VDC Control Module & Hydraulic Control Unit (VDC-CM&H/U).>

### 7. Front ABS Wheel Speed Sensor

#### A: NOTE

For the vehicle equipped with VDC, it has the same ABS wheel speed sensor as installed to the vehicle equipped with ABS. For removal, installation and inspection procedure, refer to ABS section.

<Ref. to ABS-13, Front ABS Wheel Speed Sensor.>

### 8. Rear ABS Wheel Speed Sensor

#### A: NOTE

For the vehicle equipped with VDC, it has the same ABS wheel speed sensor as installed to the vehicle equipped with ABS. For removal, installation and inspection procedure, refer to ABS section.

<Ref. to ABS-15, Rear ABS Wheel Speed Sensor.>

### 9. Front Magnetic Encoder

#### A: NOTE

For the vehicle equipped with VDC, it has the same magnetic encoder as installed to the vehicle equipped with ABS. For removal, installation and inspection procedure, refer to ABS section.

<Ref. to ABS-16, Front Magnetic Encoder.>

### 10.Rear Magnetic Encoder

#### A: NOTE

For the vehicle equipped with VDC, it has the same magnetic encoder as installed to the vehicle equipped with ABS. For removal, installation and inspection procedure, refer to ABS section.

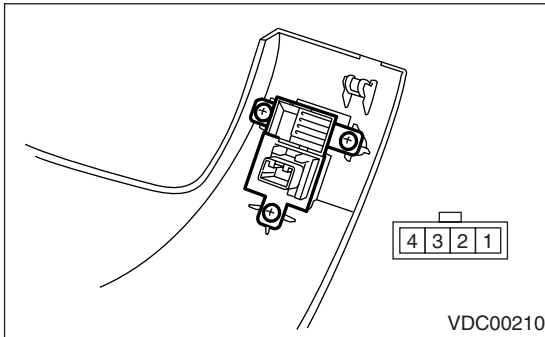
<Ref. to ABS-17, Rear Magnetic Encoder.>

## 11.VDC OFF Switch

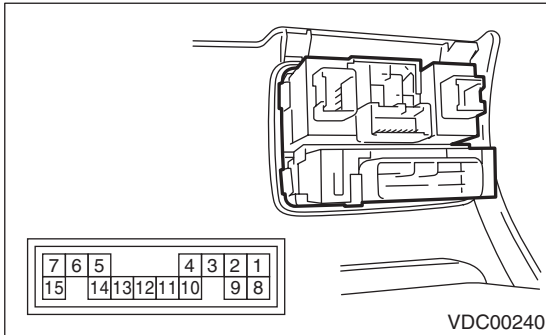
### A: REMOVAL

- 1) Remove the instrument panel lower cover.
- 2) Remove the screws, and then remove the VDC OFF switch.

- RHD model



- LHD model



### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

Measure the resistance between VDC OFF switch terminals.

- RHD model

Switch position	Terminal No.	Standard
OFF	2 — 3	More than 1 MΩ
ON	2 — 3	Less than 1 Ω

- LHD model

Switch position	Terminal No.	Standard
OFF	2 — 15	More than 1 MΩ
ON	2 — 15	Less than 1 Ω

If NG, replace the VDC OFF switch.