

BRC

SECTION

BRAKE CONTROL SYSTEM

CONTENTS

ABS		
BASIC INSPECTION	5	
DIAGNOSIS AND REPAIR WORKFLOW	5	
Work Flow	5	
Diagnostic Work Sheet	7	
FUNCTION DIAGNOSIS	8	
ABS	8	
System Diagram	8	
System Description	8	
Component Parts Location	10	
Component Description	11	
CONSULT-III Function (ABS)	11	
COMPONENT DIAGNOSIS	15	
C1101, C1102, C1103, C1104 WHEEL SENSOR-1	15	
Description	15	
DTC Logic	15	
Diagnosis Procedure	15	
Component Inspection	17	
C1105, C1106, C1107, C1108 WHEEL SENSOR-2	18	
Description	18	
DTC Logic	18	
Diagnosis Procedure	18	
Component Inspection	20	
DTC C1109 BATTERY VOLTAGE [ABNORMAL]	21	
Description	21	
DTC Logic	21	
Diagnosis Procedure	21	
DTC C1110 CONTROL FAILURE	23	
DTC Logic	23	
Diagnosis Procedure	23	
DTC C1111 PUMP MOTOR	24	
Description	24	
DTC Logic	24	
Diagnosis Procedure	24	
Component Inspection	25	
DTC C1114 MAIN RELAY	26	
Description	26	
DTC Logic	26	
Diagnosis Procedure	26	
Component Inspection	27	
DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]	28	
Description	28	
DTC Logic	28	
Diagnosis Procedure	28	
Component Inspection	30	
C1120, C1122, C1124, C1126 IN ABS SOL	31	
Description	31	
DTC Logic	31	
Diagnosis Procedure	31	
Component Inspection	32	
C1121, C1123, C1125, C1127 OUT ABS SOL	33	
Description	33	
DTC Logic	33	
Diagnosis Procedure	33	
Component Inspection	34	
U1000 CAN COMM CIRCUIT	35	
Description	35	
DTC Logic	35	
Diagnosis Procedure	35	
ABS WARNING LAMP	36	
Description	36	
Component Function Check	36	
Diagnosis Procedure	36	
BRAKE WARNING LAMP	37	

BRC

G

H

I

J

K

L

M

N

O

P

Description	37	SENSOR ROTOR	59
Component Function Check	37	Removal and Installation	59
Diagnosis Procedure	37		
ECU DIAGNOSIS	38	ABS ACTUATOR AND ELECTRIC UNIT	
ABS ACTUATOR AND ELECTRIC UNIT		(CONTROL UNIT)	60
Reference Value	38	Exploded View	60
Fail-Safe	39	Removal and Installation	60
DTC No. Index	39	VDC/TCS/ABS	
WIRING DIAGRAM	41	BASIC INSPECTION	62
BRAKE CONTROL SYSTEM - ABS	41	DIAGNOSIS AND REPAIR WORKFLOW	62
SEDAN	41	Work Flow	62
SEDAN : Wiring Diagram	41	Diagnostic Work Sheet	65
SYMPTOM DIAGNOSIS	47	INSPECTION AND ADJUSTMENT	66
ABS	47	ADDITIONAL SERVICE WHEN REPLACING	
Symptom Table	47	CONTROL UNIT	66
EXCESSIVE ABS FUNCTION OPERATION		ADDITIONAL SERVICE WHEN REPLACING	
FREQUENCY	48	CONTROL UNIT : Description	66
Diagnosis Procedure	48	ADDITIONAL SERVICE WHEN REPLACING	
UNEXPECTED PEDAL REACTION	49	CONTROL UNIT : Special Repair Requirement	66
Diagnosis Procedure	49	ADJUSTMENT OF STEERING ANGLE SENSOR	
THE BRAKING DISTANCE IS LONG	50	NEUTRAL POSITION	66
Diagnosis Procedure	50	ADJUSTMENT OF STEERING ANGLE SENSOR	
ABS FUNCTION DOES NOT OPERATE	51	NEUTRAL POSITION : Description	66
Diagnosis Procedure	51	ADJUSTMENT OF STEERING ANGLE SENSOR	
PEDAL VIBRATION OR ABS OPERATION		NEUTRAL POSITION : Special Repair Require-	
SOUND OCCURS	52	ment	66
Diagnosis Procedure	52	FUNCTION DIAGNOSIS	68
NORMAL OPERATING CONDITION	53	VDC/TCS/ABS	68
Description	53	System Diagram	68
PRECAUTION	54	System Description	68
PRECAUTIONS	54	Component Parts Location	71
Precaution for Supplemental Restraint System		Component Description	72
(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-		CONSULT-III Function (ABS)	72
SIONER"	54	COMPONENT DIAGNOSIS	77
Precaution for Brake System	54	C1101, C1102, C1103, C1104 WHEEL SEN-	
Precaution for Brake Control	54	SOR-1	77
PREPARATION	56	Description	77
PREPARATION	56	DTC Logic	77
Special Service Tool	56	Diagnosis Procedure	77
Commercial Service Tool	56	Component Inspection	79
ON-VEHICLE REPAIR	57	Special Repair Requirement	79
WHEEL SENSORS	57	C1105, C1106, C1107, C1108 WHEEL SEN-	
Removal and Installation	57	SOR-2	80
		Description	80
		DTC Logic	80
		Diagnosis Procedure	80
		Component Inspection	82
		Special Repair Requirement	82
		DTC C1109 BATTERY VOLTAGE [ABNOR-	
		MAL]	83

Description	83	DTC C1142 PRESS SEN CIRCUIT	102	
DTC Logic	83	Description	102	A
Diagnosis Procedure	83	DTC Logic	102	
Special Repair Requirement	84	Diagnosis Procedure	102	
C1110, C1153, C1170 ABS ACTUATOR AND		Component Inspection	103	B
ELECTRIC UNIT (CONTROL UNIT)	85	Special Repair Requirement	103	
DTC Logic	85	C1143, C1144 STEERING ANGLE SENSOR .	104	C
Diagnosis Procedure	85	Description	104	
Special Repair Requirement	85	DTC Logic	104	
DTC C1111 PUMP MOTOR	86	Diagnosis Procedure	104	D
Description	86	Component Inspection	105	
DTC Logic	86	Special Repair Requirement	106	
Diagnosis Procedure	86	C1145, C1146 YAW RATE/SIDE G SENSOR .	107	E
Component Inspection	87	Description	107	
Special Repair Requirement	87	DTC Logic	107	
DTC C1114 MAIN RELAY	88	Diagnosis Procedure	107	
Description	88	Component Inspection	109	BRC
DTC Logic	88	Special Repair Requirement	109	
Diagnosis Procedure	88	C1147, C1148, C1149, C1150 USV/HSV LINE.	110	G
Component Inspection	89	Description	110	
Special Repair Requirement	89	DTC Logic	110	
DTC C1115 ABS SENSOR [ABNORMAL SIG-		Diagnosis Procedure	110	H
NAL]	90	Component Inspection	111	
Description	90	Special Repair Requirement	112	
DTC Logic	90	C1154 TRANSMISSION RANGE SWITCH	113	I
Diagnosis Procedure	90	Description	113	
Component Inspection	92	DTC Logic	113	
Special Repair Requirement	92	Diagnosis Procedure	113	J
DTC C1116 STOP LAMP SW	93	Special Repair Requirement	114	
Description	93	DTC C1155 BR FLUID LEVEL LOW	115	K
DTC Logic	93	Description	115	
Diagnosis Procedure	93	DTC Logic	115	
Component Inspection	94	Diagnosis Procedure	115	
Special Repair Requirement	94	Component Inspection	116	L
C1120, C1122, C1124, C1126 IN ABS SOL	95	Special Repair Requirement	116	
Description	95	DTC C1156 ST ANG SEN COM CIR	117	M
DTC Logic	95	Description	117	
Diagnosis Procedure	95	DTC Logic	117	
Component Inspection	96	Diagnosis Procedure	117	
Special Repair Requirement	97	U1000 CAN COMM CIRCUIT	118	N
C1121, C1123, C1125, C1127 OUT ABS SOL...	98	Description	118	
Description	98	DTC Logic	118	
DTC Logic	98	Diagnosis Procedure	118	O
Diagnosis Procedure	98	PARKING BRAKE SWITCH	119	
Component Inspection	99	Description	119	P
Special Repair Requirement	100	Component Function Check	119	
C1130, C1131, C1132, C1133, C1136 EN-		Diagnosis Procedure	119	
GINE SIGNAL	101	Component Inspection	120	
Description	101	Special Repair Requirement	120	
DTC Logic	101	VDC OFF SWITCH	121	
Diagnosis Procedure	101	Description	121	
Special Repair Requirement	101	Component Function Check	121	

Diagnosis Procedure	121	Diagnosis Procedure	154
Component Inspection	122	UNEXPECTED PEDAL REACTION	155
Special Repair Requirement	122	Diagnosis Procedure	155
ABS WARNING LAMP	123	THE BRAKING DISTANCE IS LONG	156
Description	123	Diagnosis Procedure	156
Component Function Check	123	ABS FUNCTION DOES NOT OPERATE	157
Diagnosis Procedure	123	Diagnosis Procedure	157
Special Repair Requirement	123	PEDAL VIBRATION OR ABS OPERATION	
BRAKE WARNING LAMP	124	SOUND OCCURS	158
Description	124	Diagnosis Procedure	158
Component Function Check	124	VEHICLE JERKS DURING VDC/TCS/ABS	
Diagnosis Procedure	124	CONTROL	159
Special Repair Requirement	125	Diagnosis Procedure	159
VDC OFF INDICATOR LAMP	126	PRECAUTION	160
Description	126	PRECAUTIONS	160
Component Function Check	126	Precaution for Supplemental Restraint System	
Diagnosis Procedure	126	(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-	
Special Repair Requirement	127	SIONER" Service	160
SLIP INDICATOR LAMP	128	Precaution for Brake System	160
Description	128	Precaution for Brake Control	160
Component Function Check	128	PREPARATION	162
Diagnosis Procedure	128	PREPARATION	162
Special Repair Requirement	128	Special Service Tool	162
ECU DIAGNOSIS	129	Commercial Service Tool	162
ABS ACTUATOR AND ELECTRIC UNIT		ON-VEHICLE REPAIR	163
(CONTROL UNIT)	129	WHEEL SENSORS	163
Reference Value	129	Removal and Installation	163
Fail-Safe	131	SENSOR ROTOR	165
DTC No. Index	132	Removal and Installation	165
WIRING DIAGRAM	135	ABS ACTUATOR AND ELECTRIC UNIT	
BRAKE CONTROL SYSTEM - VDC	135	(CONTROL UNIT)	166
COUPE	135	Exploded View	166
COUPE : Wiring Diagram	135	Removal and Installation	166
SEDAN	143	G SENSOR	168
SEDAN : Wiring Diagram	144	Removal and Installation	168
SYMPTOM DIAGNOSIS	153	STEERING ANGLE SENSOR	169
VDC/TCS/ABS	153	Removal and Installation	169
Symptom Table	153		
EXCESSIVE ABS FUNCTION OPERATION			
FREQUENCY	154		

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000005432791

DESCRIPTION

Basic Concept

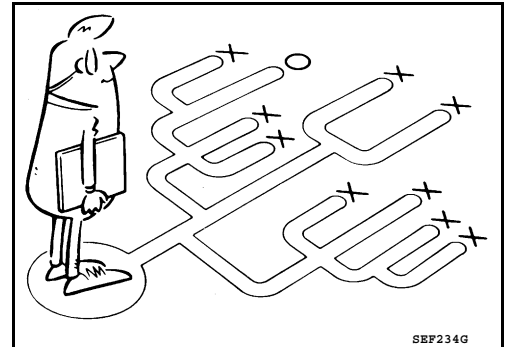
- The most important point to perform trouble diagnosis is to understand systems (control and mechanism) in vehicle thoroughly.
- It is also important to clarify customer complaints before inspection.

First of all, reproduce symptom, and understand it fully.

Ask customer about his/her complaints carefully. In some cases, they will be necessary to check symptom by driving vehicle with customer.

CAUTION:

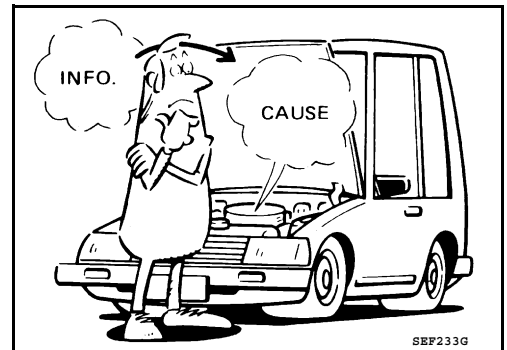
Customers are not professionals. Do not assume "maybe customer means..." or "maybe customer mentioned this symptom".



- It is essential to check symptoms right from the beginning in order to repair a malfunction completely.

For an intermittent malfunction, it is important to reproduce symptom based on interview with customer and past examples. Do not perform inspection on ad hoc basis. Most intermittent malfunctions are caused by poor contacts. In this case, it will be effective to shake suspected harness or connector by hand. When repairs are performed without any symptom check, no one can judge if malfunction has actually been eliminated.

- After diagnostic, make sure to perform "ERASE MEMORY". Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).
- Always read "GI General Information" to confirm general precautions. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).



Asking Complaints

- Complaints against malfunction vary depending on each person. It is important to clarify customer complaints.
- Ask customer about what symptoms are present and under what conditions. Use information to reproduce symptom while driving.
- It is also important to use diagnostic sheet so as not to miss information.

KEY POINTS

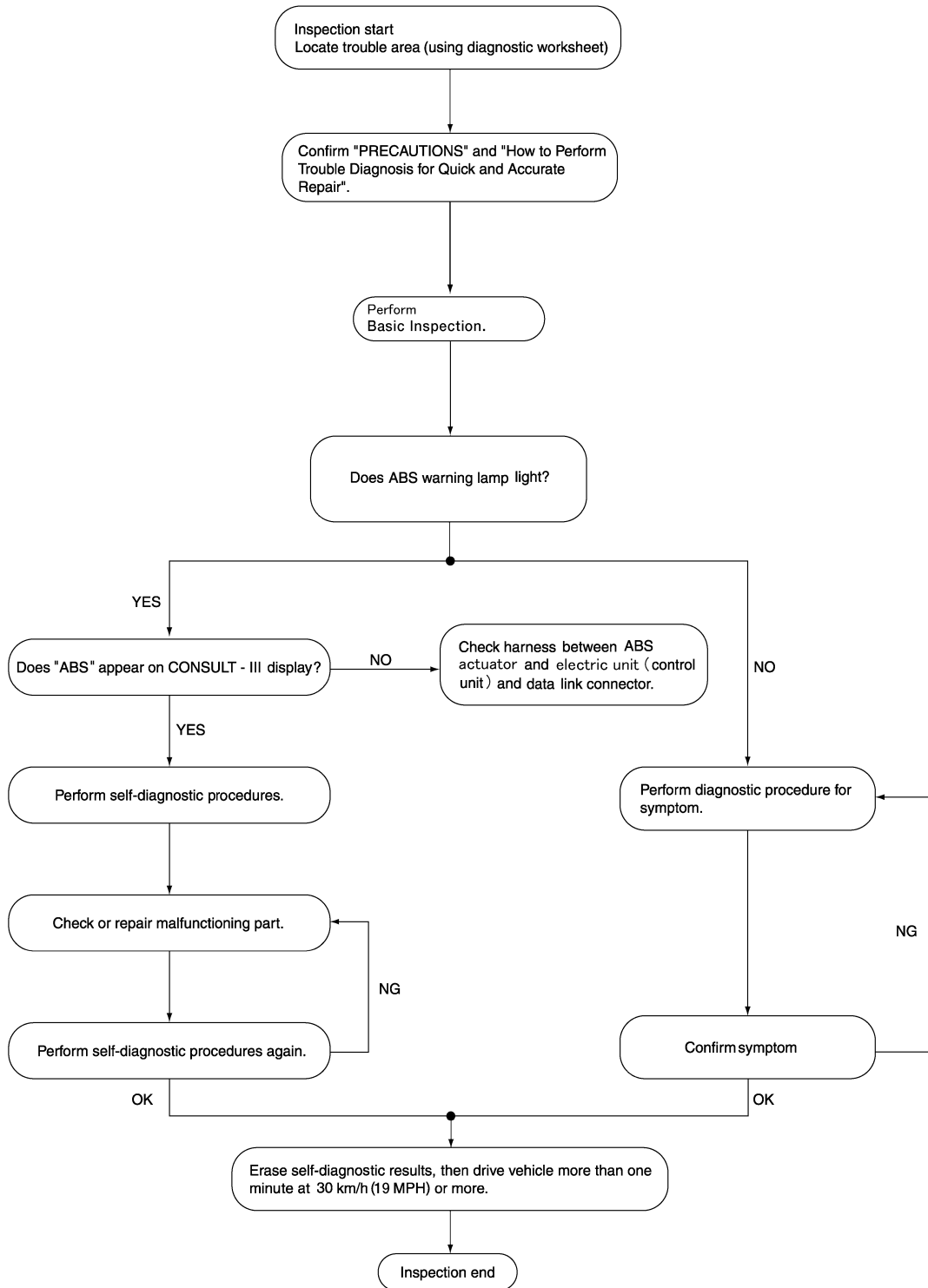
WHAT Vehicle model
WHEN Date, Frequencies
WHERE Road conditions
HOW Operating conditions,
 Weather conditions,
 Symptoms

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[ABS]

OVERALL SEQUENCE



WFIA0558E

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[ABS]

Diagnostic Work Sheet

INFOID:0000000005432792

Customer name MR/MS	Model & Year		VIN
Engine #	Trans.		Mileage
Incident Date	Manuf. Date		In Service Date
Symptoms	<input type="checkbox"/> Noise and vibration (from engine compartment) <input type="checkbox"/> Noise and vibration (from axle)	<input type="checkbox"/> Warning / Indicator activate	<input type="checkbox"/> Firm pedal operation <input type="checkbox"/> Large stroke pedal operation
	<input type="checkbox"/> ABS does not work (Wheels lock when braking)	<input type="checkbox"/> ABS does not work (wheels slip when braking)	<input type="checkbox"/> Lack of sense of acceleration
Engine conditions	<input type="checkbox"/> When starting <input type="checkbox"/> After starting		
Road conditions	<input type="checkbox"/> Low friction road (<input type="checkbox"/> Snow <input type="checkbox"/> Gravel <input type="checkbox"/> Other) <input type="checkbox"/> Bumps / potholes		
Driving conditions	<input type="checkbox"/> Full-acceleration <input type="checkbox"/> High speed cornering <input type="checkbox"/> Vehicle speed: Greater than 10 km/h (6 MPH) <input type="checkbox"/> Vehicle speed: 10 km/h (6 MPH) or less <input type="checkbox"/> Vehicle is stopped		
Applying brake conditions	<input type="checkbox"/> Suddenly <input type="checkbox"/> Gradually		
Other conditions	<input type="checkbox"/> Operation of electrical equipment <input type="checkbox"/> Shift change <input type="checkbox"/> Other descriptions		

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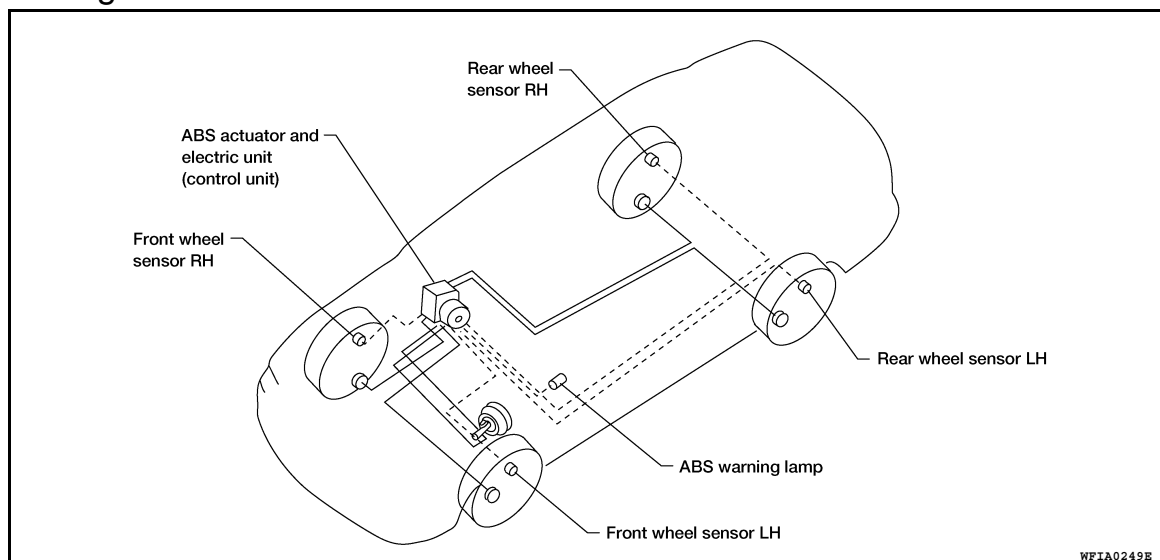
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FUNCTION DIAGNOSIS

ABS

System Diagram



System Description

ABS SYSTEM

In case of electrical malfunctions with the ABS, ABS warning lamp will turn ON and the condition of the vehicle will be fail-safe which is the same condition of vehicles without ABS system.

NOTE:

ABS self-diagnosis sound may be heard. That is a normal condition because a self-diagnosis for "Ignition switch ON" and "The first starting" are being performed.

CAUTION:

If the Fail-Safe function is activated, then perform self-diagnosis for ABS control system.

PURPOSE

The Anti-lock Brake System (ABS) consists of electronic and hydraulic components. It allows for control of braking force so that locking of the wheels can be avoided.

The ABS:

- Ensures proper tracking performance through steering wheel operation.
- Enables obstacles to be avoided through steering wheel operation.
- Enables vehicle stability by preventing flat spins.

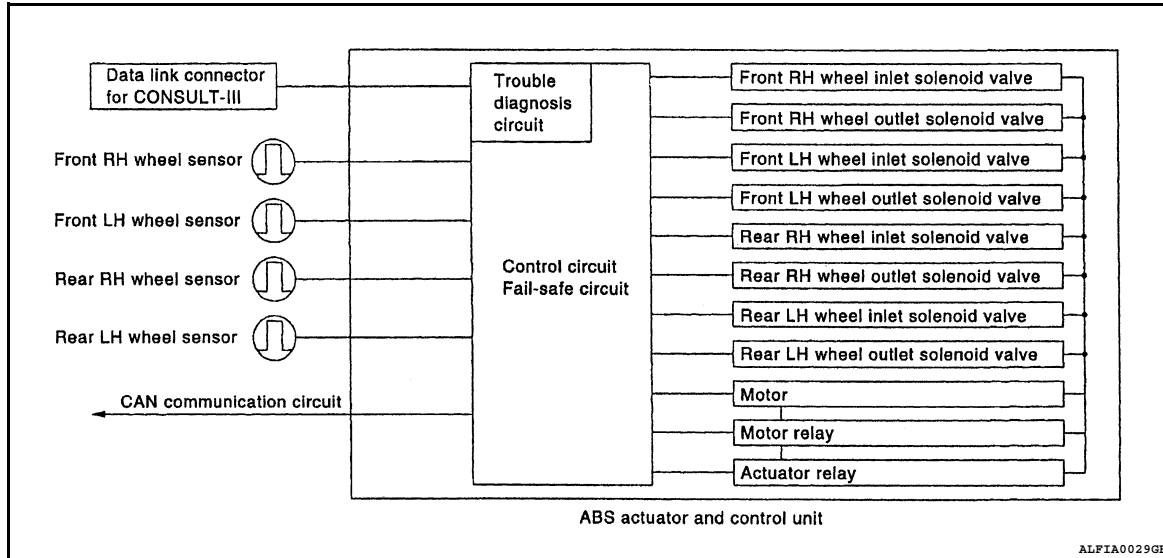
OPERATION

- When the vehicle speed is less than 10 km/h (6 MPH) this system does not work.
- The ABS has self-test capabilities. The system turns on the ABS warning lamp for 2 seconds after turning the ignition switch ON. The system performs another test the first time the vehicle reaches 6 km/h (4 MPH). A mechanical noise may be heard as the ABS performs a self-test. This is a normal part of the self-test feature. If a malfunction is found during this check, the ABS warning lamp will come on.
- During ABS operation, a mechanical noise may be heard. This is a normal condition.

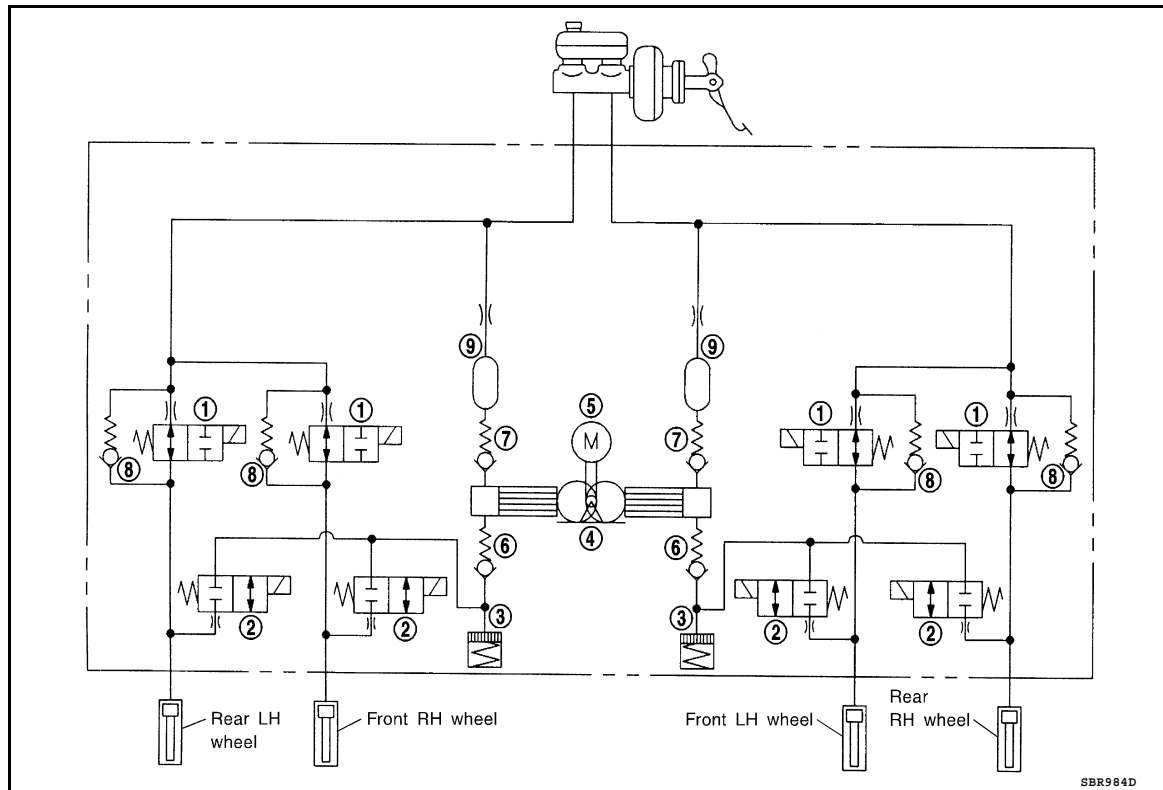
FAIL SAFE

If trouble occurs in the ABS, the ABS warning lamp in the combination meter comes on. At the same time, the vehicle stops the ABS control and braking becomes the same as that of a vehicle without ABS.

< FUNCTION DIAGNOSIS > ELECTRICAL COMPONENTS



HYDRAULIC CIRCUIT DIAGRAM



- | | | |
|-------------------------|--------------------------|----------------|
| 1. Inlet solenoid valve | 2. Outlet solenoid valve | 3. Reservoir |
| 4. Pump | 5. Motor | 6. Inlet valve |
| 7. Outlet valve | 8. Bypass check valve | 9. Damper |

OPERATION THAT IS NOT "SYSTEM ERROR"

ABS

- When starting engine or just after starting vehicle, brake pedal may vibrate or the motor operating sound may be heard from engine room. This is a normal states of the operation check.
- During ABS operation, brake pedal lightly vibrates and a mechanical sound may be heard. This is normal.
- Stopping distance may be longer than that of vehicles without ABS when vehicle drives on rough, gravel, or snow-covered (fresh, deep snow) roads.

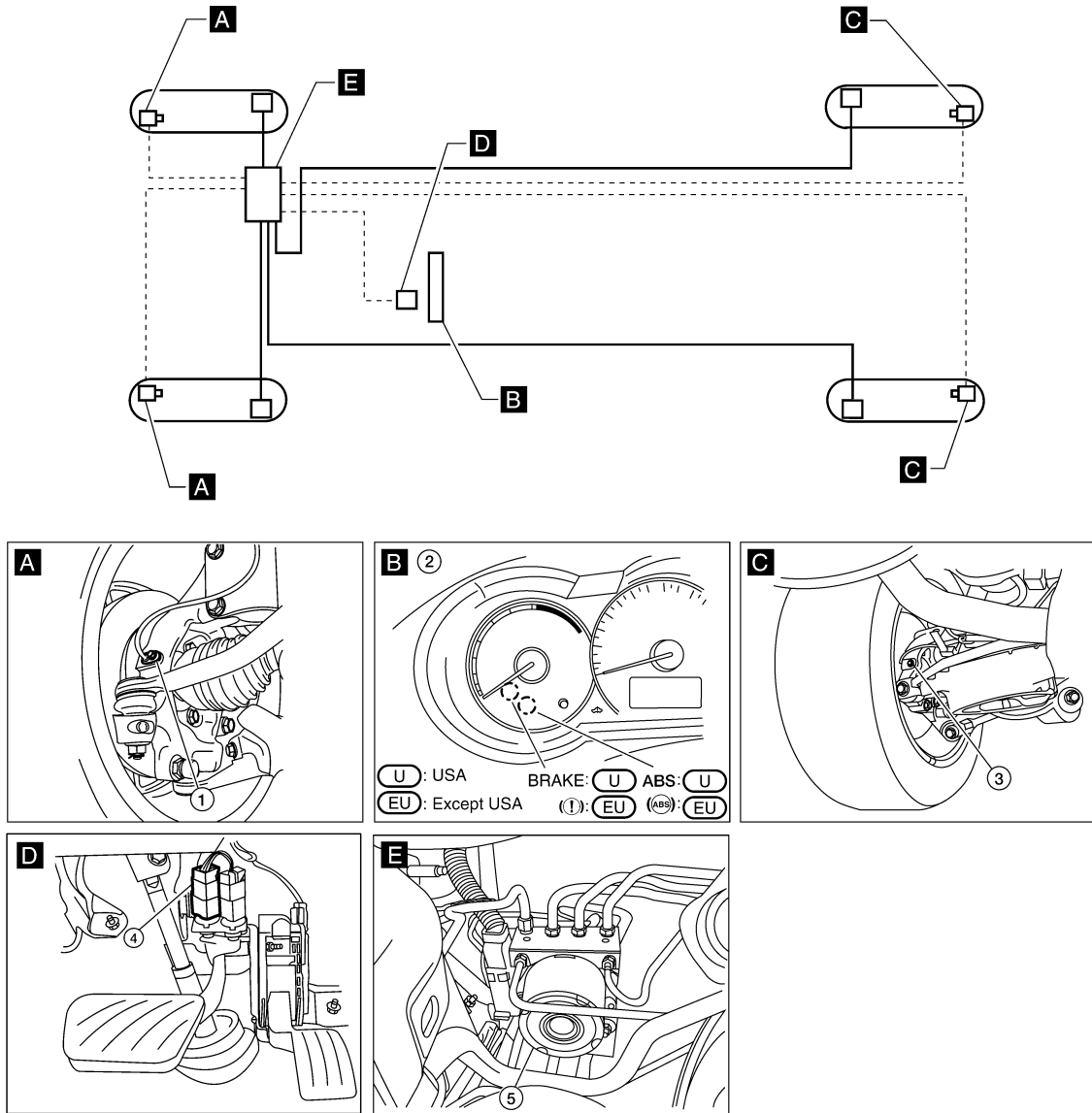
< FUNCTION DIAGNOSIS >

CAN Communication

Refer to [LAN-7. "System Description"](#).

Component Parts Location

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1. Front wheel sensor LH E19
Front wheel sensor RH E41
2. Combination meter M24
3. Rear wheel sensor LH C2
Rear wheel sensor RH C3
4. Stop lamp switch E38
5. ABS actuator and electric unit (control unit) E26

< FUNCTION DIAGNOSIS >

Component Description

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Component parts		Reference
ABS actuator and electric unit (control unit)	Pump	BRC-24, "Description"
	Motor	
	Actuator relay (Main relay)	BRC-26, "Description"
	Solenoid valve	BRC-31, "Description"
Wheel sensor		BRC-15, "Description"
ABS warning lamp		BRC-36, "Description"
Brake warning lamp		BRC-37, "Description"

CONSULT-III Function (ABS)

INFOID:0000000005432797

FUNCTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Diagnostic test mode	Function
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on CONSULT-III.
Self Diagnostic Result	Self-diagnostic results can be read and erased quickly.
Data Monitor	Input/Output data in the ABS actuator and electric unit (control unit) can be read.
Active Test	Diagnostic test mode is which CONSULT-III drives some actuators apart from the ABS actuator and electric unit (control unit) and also shifts some parameters in a specified range.
ECU Identification	ABS actuator and electric unit (control unit) part number can be read.
Function Test	Performed by CONSULT-III instead of a technician to determine whether each system is "OK" or "NG".
CAN Diag Support Mntr	The results of transmit/receive diagnosis of CAN communication can be read.

SELF-DIAGNOSIS RESULTS

Operation Procedure

1. Turn ignition switch OFF.
2. Connect CONSULT-III to data link connector.
3. Turn ignition switch ON.
4. Start engine and drive vehicle at 30 km/h (19 MPH) or more for approximately 1 minute.
5. After stopping vehicle, with the engine running, touch "ABS", "SELF-DIAG RESULTS" in order on the CONSULT-III screen.
6. The self-diagnostic results are displayed.
 - Check ABS warning lamp. If "NO FAILURE" is displayed. Refer to [BRC-36, "Component Function Check"](#).
7. Perform the appropriate inspection from display item list, and repair or replace the malfunctioning component. Refer to "Display Item List".
8. Start engine and drive vehicle at 30 km/h (19 MPH) or more for approximately 1 minute.

CAUTION:

When the wheel sensor malfunctions, after inspecting the wheel sensor system, the ABS warning lamp and brake warning lamp will not turn OFF even when the system is normal unless the vehicle is driven at approximately 30 km/h (19 MPH) or more for approximately 1 minute.

Erase Memory

1. Turn ignition switch OFF.
2. Start engine and touch "ABS", "SELF-DIAG RESULTS", "ERASE MEMORY" in order on the CONSULT-III screen to erase the diagnostic memory.
If "ABS" is not indicated, go to [GI-49, "CONSULT-III Data Link Connector \(DLC\) Circuit"](#).

< FUNCTION DIAGNOSIS >

CAUTION:

If the diagnostic memory is not erased, re-perform the operation from step 4.

3. Perform self-diagnosis again, and make sure that diagnostic memory is erased.
4. Drive vehicle at 30 km/h (19 MPH) or more for approximately 1 minute as the final inspection, and make sure that the ABS warning lamp and brake warning lamp turn OFF.

NOTE:

Brake warning lamp will turn on in case of parking brake operation (when switch is ON) or of brake fluid level switch operation (when brake fluid is insufficient).

Display Item List

Display item	Malfunction detecting condition	Check item
RR RH SENSOR-1 [C1101] ^{*1}	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	BRC-15. "Diagnosis Procedure" (Note 1)
RR LH SENSOR-1 [C1102] ^{*1}	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
FR RH SENSOR-1 [C1103] ^{*1}	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
FR LH SENSOR-1 [C1104] ^{*1}	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
RR RH SENSOR-2 [C1105] ^{*1}	When the circuit in the rear RH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	BRC-18. "Diagnosis Procedure" (Note 1)
RR LH SENSOR-2 [C1106] ^{*1}	When the circuit in the rear LH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
FR RH SENSOR-2 [C1107] ^{*1}	When the circuit in the front RH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
FR LH SENSOR- 2 [C1108] ^{*1}	When the circuit in the front LH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
BATTERY VOLTAGE [ABNORMAL] [C1109]	When the ABS actuator and electric unit (control unit) power supply voltage is lower than normal.	BRC-21. "Diagnosis Procedure"
CONTROLLER FAILURE [C1110] ^{*2}	When there is an internal malfunction in the ABS actuator and electric unit (control unit).	BRC-23. "Diagnosis Procedure"
PUMP MOTOR [C1111]	During the actuator motor operating with ON, when the actuator motor turns OFF, or when the control line for actuator motor relay is open.	BRC-24. "Diagnosis Procedure"
	During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	
MAIN RELAY [C1114]	During the actuator relay operating with OFF, when the actuator relay turns ON. Or when the control line for the relay is shorted to the ground.	BRC-26. "Diagnosis Procedure"
	During the actuator relay operating with ON, when the actuator relay turns OFF, or when the control line for the relay is open.	
ABS SENSOR [ABNORMAL SIGNAL] [C1115]	When wheel sensor input signal is malfunctioning.	BRC-28. "Diagnosis Procedure" (Note 1)
FR LH IN ABS SOL [C1120]	When the control unit detects a malfunction in the front left inlet solenoid circuit.	BRC-31. "Diagnosis Procedure"
FR LH OUT ABS SOL [C1121]	When the control unit detects a malfunction in the front left outlet solenoid circuit.	BRC-33. "Diagnosis Procedure"
FR RH IN ABS SOL [C1122]	When the control unit detects a malfunction in the front right inlet solenoid circuit.	BRC-31. "Diagnosis Procedure"

ABS

[ABS]

< FUNCTION DIAGNOSIS >

Display item	Malfunction detecting condition	Check item
FR RH OUT ABS SOL [C1123]	When the control unit detects a malfunction in the front right outlet solenoid circuit.	BRC-33. "Diagnosis Procedure"
RR LH IN ABS SOL [C1124]	When the control unit detects a malfunction in the rear left inlet solenoid circuit.	BRC-31. "Diagnosis Procedure"
RR LH OUT ABS SOL [C1125]	When the control unit detects a malfunction in the rear left outlet solenoid circuit.	BRC-33. "Diagnosis Procedure"
RR RH IN ABS SOL [C1126]	When the control unit detects a malfunction in the rear right inlet solenoid circuit.	BRC-31. "Diagnosis Procedure"
RR RH OUT ABS SOL [C1127]	When the control unit detects a malfunction in the rear right outlet solenoid circuit.	BRC-33. "Diagnosis Procedure"
CAN COMM CIRCUIT [U1000]*3	When there is a malfunction in the CAN communication circuit.	BRC-35. "Diagnosis Procedure"

*1: Be sure to confirm the ABS warning lamp illuminates when the ignition switch is turned ON after repairing the shorted sensor circuit, but the lamp turns off when driving the vehicle over 30 km/h (19 MPH) for approximately 1 minute in accordance with SELF-DIAGNOSIS PROCEDURE.

*2: When "CONTROLLER FAILURE" is displayed, check to see if the ABS warning lamp is burned out, and check the circuit between the ABS warning lamp and ABS actuator and electric unit (control unit) for open or short. Then, check the ABS actuator and electric unit (control unit) and circuit.

*3: When malfunctions are detected in several systems, including CAN communication circuit [U1000], troubleshoot CAN communication circuit first. Refer to [BRC-35. "Diagnosis Procedure"](#).

DATA MONITOR

Display Item List

CAUTION:

The display shows the control unit calculation data, so a normal value might be displayed even in the event the output circuit (harness) is open or short - circuited.

Item (Unit)	Data monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIG- NALS	SELECTION FROM MENU	
FR LH SENSOR (km/h)	×	×	×	Wheel speed calculated by front LH wheel sensor signal is displayed.
FR RH SENSOR (km/h)	×	×	×	Wheel speed calculated by front RH wheel sensor signal is displayed.
RR LH SENSOR (km/h)	×	×	×	Wheel speed calculated by rear LH wheel sensor signal is displayed.
RR RH SENSOR (km/h)	×	×	×	Wheel speed calculated by rear RH wheel sensor signal is displayed.
STOP LAMP SW (ON/OFF)	×	×	×	Stop lamp switch (ON/OFF) status is displayed.
BATTERY VOLT (V)	×	×	×	Voltage supplied to ABS actuator and electric unit (control unit) is displayed.
FR RH IN SOL (ON/OFF)	—	×	×	Front RH IN ABS solenoid (ON/OFF) status is displayed.
FR RH OUT SOL (ON/OFF)	—	×	×	Front RH OUT ABS solenoid (ON/OFF) status is displayed.
FR LH IN SOL (ON/OFF)	—	×	×	Front LH IN ABS solenoid (ON/OFF) status is displayed.
FR LH OUT SOL (ON/OFF)	—	×	×	Front LH OUT ABS solenoid (ON/OFF) status is displayed.
RR RH IN SOL (ON/OFF)	—	×	×	Rear RH IN ABS solenoid (ON/OFF) status is displayed.
RR RH OUT SOL (ON/OFF)	—	×	×	Rear RH OUT ABS solenoid (ON/OFF) status is displayed.

ABS

< FUNCTION DIAGNOSIS >

[ABS]

RR LH IN SOL (ON/OFF)	—	×	×	Rear LH IN ABS solenoid (ON/OFF) status is displayed.
RR LH OUT SOL (ON/OFF)	—	×	×	Rear LH OUT ABS solenoid (ON/OFF) status is displayed.
MOTOR RELAY (ON/OFF)	—	×	×	ABS motor relay signal (ON/OFF) status is displayed.
ACTUATOR RLY (ON/OFF)	—	×	×	ABS actuator relay signal (ON/OFF) status is displayed.
ABS WARN LAMP (ON/OFF)	—	×	×	ABS warning lamp (ON/OFF) status is displayed.

×: Applicable

—: Not applicable

Note: A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

ACTIVE TEST

CAUTION:

- Do not perform active test while driving vehicle.
- Make sure to completely bleed air from brake system.
- The active test cannot be performed with the ABS warning lamp and brake warning lamp are ON.
- ABS warning lamp and brake warning lamp are ON during active test.

Operation Procedure

NOTE:

- When active test is performed while depressing the pedal, the pedal depression amount will change. This is normal. (Only solenoid valve and ABS motor)
- "TEST IS STOPPED" is displayed 10 seconds after operation start.
- After "TEST IS STOPPED" is displayed, to perform test again, touch "BACK" to restart the process.

Solenoid Valve

NOTE:

The example shown is for front right wheel. The procedure for the other wheels is the same as given below.

- When performing an active test of the ABS function, select the "MAIN SIGNALS" for each test item. In addition, when performing an active test of the TCS function, select the item menu for each test item.
- For ABS solenoid valve, touch "UP", "KEEP", and "DOWN" on the display screen. For ABS solenoid valve (ACT), touch "UP", "ACT UP", "ACT KEEP" and confirm that solenoid valves (IN, OUT) operate as shown in the table below.

Operation (Note)	ABS solenoid valve			ABS solenoid valve (ACT)		
	UP	KEEP	DOWN	UP	ACT UP	ACT KEEP
FR RH IN SOL	OFF	ON	ON	OFF	OFF	OFF
FR RH OUT SOL	OFF	OFF	ON*	OFF	OFF	OFF

*: ON for 1 to 2 seconds after the touch, and then OFF

Note: A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

ABS Motor

Touch "ON" and "OFF" on screen. Make sure motor relay and actuator relay operates as shown in table below.

Operation	ON	OFF
MOTOR RELAY	ON	OFF
ACTUATOR RLY (Note)	ON	ON

Note: A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

< COMPONENT DIAGNOSIS >

[ABS]

COMPONENT DIAGNOSIS

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

Description

INFOID:0000000005432798

When the sensor rotor rotates, the magnetic field changes. It converts the magnetic field changes to current signals (rectangular wave) and transmits them to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005432799

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1101	RR RH SENSOR-1	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	<ul style="list-style-type: none">• Harness or connector• Wheel sensor• ABS actuator and electric unit (control unit)
C1102	RR LH SENSOR-1	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1103	FR RH SENSOR-1	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1104	FR LH SENSOR-1	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
RR RH SENSOR-1
RR LH SENSOR-1
FR RH SENSOR-1
FR LH SENSOR-1

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-15. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005432800

Regarding Wiring Diagram information, refer to [BRC-41. "SEDAN : Wiring Diagram"](#).

CAUTION:

Do not check between wheel sensor terminals.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check terminals for deformation, disconnection, looseness or damage.

Is the inspection result normal?

- YES >> GO TO 2
NO >> Repair or replace as necessary.

2.CHECK WHEEL SENSOR OUTPUT SIGNAL

1. Disconnect connectors from wheel sensor of malfunction code No.
2. Connect ABS active wheel sensor tester (J-45741) to wheel sensor using appropriate adapter.

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

[ABS]

< COMPONENT DIAGNOSIS >

3. Turn on the ABS active wheel sensor tester power switch.

NOTE:

The green POWER indicator should illuminate. If the POWER indicator does not illuminate, replace the battery in the ABS active wheel sensor tester before proceeding.

4. Spin the wheel of the vehicle by hand and observe the red SENSOR indicator on the ABS active wheel sensor tester. The red SENSOR indicator should flash on and off to indicate an output signal.

NOTE:

If the red SENSOR indicator illuminates but does not flash, reverse the polarity of the tester leads and retest.

Does the ABS active wheel sensor tester detect a signal?

YES >> GO TO 3

NO >> Replace wheel sensor. Refer to [BRC-57, "Removal and Installation"](#).

3.CHECK TIRE

Check air pressure, wear and size.

Is the inspection result normal?

YES >> GO TO 4

NO >> • Adjust air pressure, or replace tire.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK WHEEL BEARINGS

Check wheel bearing axial end play. Refer to [FAX-5, "Inspection"](#) (front) or [RAX-5, "On-vehicle Service"](#) (rear).

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace as necessary. Refer to [FAX-7, "Removal and Installation"](#) (front) or [RAX-6, "Removal and Installation"](#) (rear).

5.CHECK WHEEL SENSOR HARNESS

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check continuity between terminals. (Also check continuity when steering wheel is turned right and left and when sensor harness inside the wheel house is moved.)

	Power supply circuit		Signal circuit		Ground circuit	
Wheel	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit) (Signal - Ground)	ABS actuator and electric unit (control unit) (Signal) - Body Ground
Front RH	9	1	10	2	9, 10 - 1, 4	9, 10 - Body ground
Front LH	16	1	5	2	16, 5 - 1, 4	16, 5 - Body ground
Rear RH	8	1	19	2	8, 19 - 1, 4	8, 19 - Body ground
Rear LH	6	1	17	2	6, 17 - 1, 4	6, 17 - Body ground

Power supply circuit : Continuity should exist.

Signal circuit : Continuity should exist.

Ground circuit : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 6

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

6.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

1. Reconnect ABS actuator and electric unit (control unit) connector.
2. Turn ignition switch ON.
3. Check between wheel sensor connector power supply terminal and ground.

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

< COMPONENT DIAGNOSIS >

[ABS]

Wheel	Wheel sensor	Ground	Voltage
Front RH	1	—	8 V or more
Front LH			
Rear LH			
Rear RH			

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

Component Inspection

INFOID:0000000005432801

1.CHECK DATA MONITOR

On "DATA MONITOR", select "FR LH SENSOR", "FR RH SENSOR", "RR LH SENSOR", and "RR RH SENSOR", and check the vehicle speed.

Wheel sensor	Vehicle speed (DATA MONITOR)
FR LH SENSOR	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	
RR LH SENSOR	
RR RH SENSOR	

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-15, "Diagnosis Procedure"](#).

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[ABS]

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

Description

INFOID:000000005432802

When the sensor rotor rotates, the magnetic field changes. It converts the magnetic field changes to current signals (rectangular wave) and transmits them to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432803

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1105	RR RH SENSOR-2	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	<ul style="list-style-type: none">• Harness or connector• Wheel sensor• ABS actuator and electric unit (control unit)
C1106	RR LH SENSOR-2	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1107	FR RH SENSOR-2	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1108	FR LH SENSOR-2	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
RR RH SENSOR-2
RR LH SENSOR-2
FR RH SENSOR-2
FR LH SENSOR-2

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to [BRC-18, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005778727

Regarding Wiring Diagram information, refer to [BRC-41, "SEDAN : Wiring Diagram"](#).

CAUTION:

Do not check between wheel sensor terminals.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check terminals for deformation, disconnection, looseness or damage.

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace as necessary.

2.CHECK WHEEL SENSOR OUTPUT SIGNAL

1. Disconnect connectors from wheel sensor of malfunction code No.
2. Connect ABS active wheel sensor tester (J-45741) to wheel sensor using appropriate adapter.
3. Turn on the ABS active wheel sensor tester power switch.

NOTE:

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

[ABS]

< COMPONENT DIAGNOSIS >

The green POWER indicator should illuminate. If the POWER indicator does not illuminate, replace the battery in the ABS active wheel sensor tester before proceeding.

- Spin the wheel of the vehicle by hand and observe the red SENSOR indicator on the ABS active wheel sensor tester. The red SENSOR indicator should flash on and off to indicate an output signal.

NOTE:

If the red SENSOR indicator illuminates but does not flash, reverse the polarity of the tester leads and retest.

Does the ABS active wheel sensor tester detect a signal?

YES >> GO TO 3

NO >> Replace wheel sensor. Refer to [BRC-57. "Removal and Installation"](#).

3.CHECK TIRE

Check air pressure, wear and size.

Is the inspection result normal?

YES >> GO TO 4

NO >> • Adjust air pressure, or replace tire.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK WHEEL BEARINGS

Check wheel bearing axial end play. Refer to [FAX-5. "Inspection"](#) (front) or [RAX-5. "On-vehicle Service"](#) (rear).

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace as necessary. Refer to [FAX-7. "Removal and Installation"](#) (front) or [RAX-6. "Removal and Installation"](#) (rear).

5.CHECK WHEEL SENSOR HARNESS

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
- Check continuity between terminals. (Also check continuity when steering wheel is turned right and left and when sensor harness inside the wheel house is moved.)

Wheel	Power supply circuit		Signal circuit		Ground circuit	
	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit) (Signal - Ground)	ABS actuator and electric unit (control unit) (Signal) - Body Ground
Front RH	9	1	10	2	9, 10 - 1, 4	9, 10 - Body ground
Front LH	16	1	5	2	16, 5 - 1, 4	16, 5 - Body ground
Rear RH	8	1	19	2	8, 19 - 1, 4	8, 19 - Body ground
Rear LH	6	1	17	2	6, 17 - 1, 4	6, 17 - Body ground

Power supply circuit : Continuity should exist.

Signal circuit : Continuity should exist.

Ground circuit : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 6

NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

6.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

- Reconnect ABS actuator and electric unit (control unit) connector.
- Turn ignition switch ON.
- Check between wheel sensor connector power supply terminal and ground.

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[ABS]

Wheel	Wheel sensor	Ground	Voltage
Front RH	1	—	8 V or more
Front LH			
Rear LH			
Rear RH			

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

Component Inspection

INFOID:000000005778728

1. CHECK DATA MONITOR

On "DATA MONITOR", select "FR LH SENSOR", "FR RH SENSOR", "RR LH SENSOR", and "RR RH SENSOR", and check the vehicle speed.

Wheel sensor	Vehicle speed (DATA MONITOR)
FR LH SENSOR	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	
RR LH SENSOR	
RR RH SENSOR	

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-18, "Diagnosis Procedure"](#).

DTC C1109 BATTERY VOLTAGE [ABNORMAL]

< COMPONENT DIAGNOSIS >

[ABS]

DTC C1109 BATTERY VOLTAGE [ABNORMAL]

Description

INFOID:000000005432806

Supplies electric power to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432807

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1109	BATTERY VOLTAGE [ABNORMAL]	When the ABS actuator and electric unit (control unit) power supply voltage is lower than normal.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
BATTERY VOLTAGE [ABNORMAL]

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-21, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432808

Regarding Wiring Diagram information, refer to [BRC-41, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

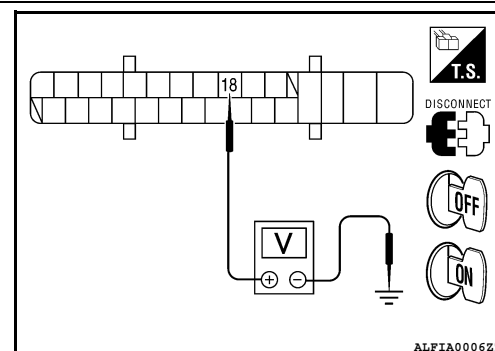
Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) POWER SUPPLY CIRCUIT AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Turn ignition switch ON.
4. Check voltage between ABS actuator and electric unit (control unit) connector E26 terminal 18 and ground.

ABS actuator and electric unit (control unit)	Ground	Condition	Voltage
18	—	Ignition switch ON	Battery voltage (Approx. 12 V)
		Ignition switch OFF	Approx. 0 V



DTC C1109 BATTERY VOLTAGE [ABNORMAL]

< COMPONENT DIAGNOSIS >

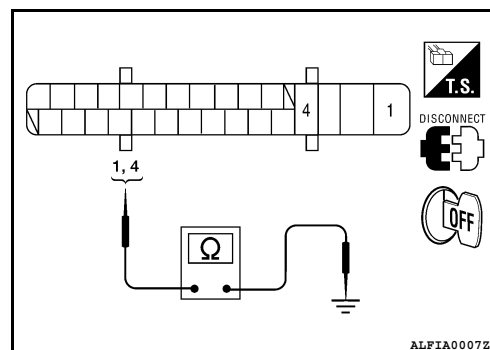
[ABS]

5. Turn ignition switch OFF.
6. Check continuity between ABS actuator and electric unit (control unit) connector E26 terminals 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

- YES >> • Check battery for terminal looseness, low voltage, etc. If any malfunction is found, repair malfunctioning parts.
- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
- NO >> • Repair or replace malfunctioning components.
- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



DTC C1110 CONTROL FAILURE

< COMPONENT DIAGNOSIS >

[ABS]

DTC C1110 CONTROL FAILURE

DTC Logic

INFOID:0000000005432809

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1110	CONTROLLER FAILURE	When there is an internal malfunction in the ABS actuator and electric unit (control unit).	<ul style="list-style-type: none">ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
CONTROLLER FAILURE

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-23, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005432810

1.REPLACE ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

CAUTION:

Replace **ABS actuator and electric unit (control unit)** when self-diagnostic result shows items other than that applicable.

- >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

DTC C1111 PUMP MOTOR

< COMPONENT DIAGNOSIS >

[ABS]

DTC C1111 PUMP MOTOR

Description

INFOID:000000005432811

PUMP

The pump returns the brake fluid stored in the reservoir to the master cylinder by reducing the pressure.

MOTOR

The motor drives the pump according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432812

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1111	PUMP MOTOR	During the actuator motor operating with ON, when the actuator motor turns OFF, or when the control line for actuator motor relay is open.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)
		During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
PUMP MOTOR

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to [BRC-24, "Diagnosis Procedure"](#).

NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432813

Regarding Wiring Diagram information, refer to [BRC-41, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 2

2. CHECK ABS MOTOR AND MOTOR RELAY POWER SUPPLY CIRCUIT

DTC C1111 PUMP MOTOR

[ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between the ABS actuator and electric unit (control unit) connector E26 terminal 2 and ground.

ABS actuator and electric unit (control unit)	Ground	Voltage
2	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

- YES >> GO TO 3
- NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

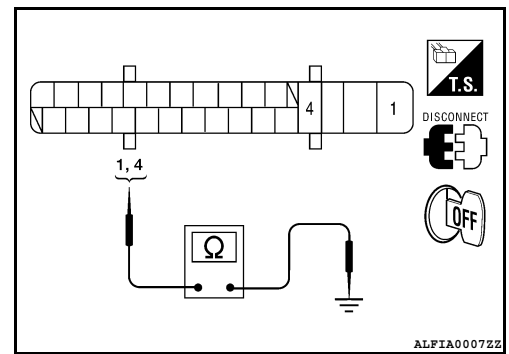
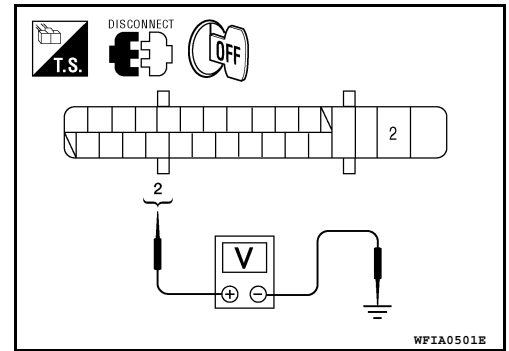
3. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E26 terminals 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

- YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
- NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



Component Inspection

INFOID:000000005432814

1. CHECK ACTIVE TEST

1. On "ACTIVE TEST", select "ABS MOTOR".
2. Touch ON and OFF on screen. Make sure motor relay and actuator relay operates as shown in table below.

Operation	ON	OFF
MOTOR RELAY	ON	OFF
ACTUATOR RLY (Note)	ON	ON

NOTE:

A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Is the inspection result normal?

- YES >> Inspection End.
- NO >> Go to diagnosis procedure. Refer to [BRC-24, "Diagnosis Procedure"](#).

DTC C1114 MAIN RELAY

< COMPONENT DIAGNOSIS >

[ABS]

DTC C1114 MAIN RELAY

Description

INFOID:000000005432815

Activates or deactivates each solenoid valve according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432816

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1114	MAIN RELAY	During the actuator relay operating with OFF, when the actuator relay turns ON, or when the control line for the relay is shorted to the ground.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)
		During the actuator relay operating with ON, when the actuator relay turns ON, or when the control line for the relay is open.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
MAIN RELAY

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-26, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432817

Regarding Wiring Diagram information, refer to [BRC-41, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

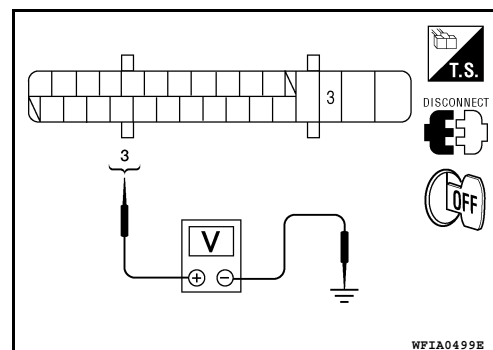
2.CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

DTC C1114 MAIN RELAY

[ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E26 terminal 3 and ground.



ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

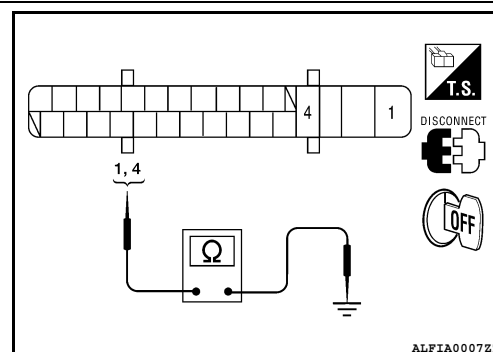
YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E26 terminal 1, 4 and ground.



ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Component Inspection

INFOID:000000005778735

1.CHECK ACTIVE TEST

1. On "ACTIVE TEST", select "ABS MOTOR".
2. Touch ON and OFF on screen. Make sure motor relay and actuator relay operates as shown in table below.

Operation	ON	OFF
MOTOR RELAY	ON	OFF
ACTUATOR RLY (Note)	ON	ON

NOTE:

A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-24, "Diagnosis Procedure"](#).

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

< COMPONENT DIAGNOSIS >

[ABS]

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

Description

INFOID:000000005432819

When the sensor rotor rotates, the magnetic field changes. It converts the magnetic field changes to current signals (rectangular wave) and transmits them to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432820

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1115	ABS SENSOR [ABNORMAL SIGNAL]	When wheel sensor input signal is malfunctioning.	<ul style="list-style-type: none">• Harness or connector• Wheel sensor• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
ABS SENSOR [ABNORMAL SIGNAL]

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-28. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005778729

Regarding Wiring Diagram information, refer to [BRC-41. "SEDAN : Wiring Diagram"](#).

CAUTION:

Do not check between wheel sensor terminals.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check terminals for deformation, disconnection, looseness or damage.

Is the inspection result normal?

- YES >> GO TO 2
NO >> Repair or replace as necessary.

2.CHECK WHEEL SENSOR OUTPUT SIGNAL

1. Disconnect connectors from wheel sensor of malfunction code No.
2. Connect ABS active wheel sensor tester (J-45741) to wheel sensor using appropriate adapter.
3. Turn on the ABS active wheel sensor tester power switch.

NOTE:

The green POWER indicator should illuminate. If the POWER indicator does not illuminate, replace the battery in the ABS active wheel sensor tester before proceeding.

4. Spin the wheel of the vehicle by hand and observe the red SENSOR indicator on the ABS active wheel sensor tester. The red SENSOR indicator should flash on and off to indicate an output signal.

NOTE:

If the red SENSOR indicator illuminates but does not flash, reverse the polarity of the tester leads and retest.

Does the ABS active wheel sensor tester detect a signal?

- YES >> GO TO 3

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

[ABS]

< COMPONENT DIAGNOSIS >

NO >> Replace wheel sensor. Refer to [BRC-57. "Removal and Installation"](#).

3.CHECK TIRE

Check air pressure, wear and size.

Is the inspection result normal?

YES >> GO TO 4

NO >> • Adjust air pressure, or replace tire.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK WHEEL BEARINGS

Check wheel bearing axial end play. Refer to [FAX-5. "Inspection"](#) (front) or [RAX-5. "On-vehicle Service"](#) (rear).

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace as necessary. Refer to [FAX-7. "Removal and Installation"](#) (front) or [RAX-6. "Removal and Installation"](#) (rear).

5.CHECK WHEEL SENSOR HARNESS

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check continuity between terminals. (Also check continuity when steering wheel is turned right and left and when sensor harness inside the wheel house is moved.)

	Power supply circuit		Signal circuit		Ground circuit	
Wheel	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit) (Signal - Ground)	ABS actuator and electric unit (control unit) (Signal) - Body Ground
Front RH	9	1	10	2	9, 10 - 1, 4	9, 10 - Body ground
Front LH	16	1	5	2	16, 5 - 1, 4	16, 5 - Body ground
Rear RH	8	1	19	2	8, 19 - 1, 4	8, 19 - Body ground
Rear LH	6	1	17	2	6, 17 - 1, 4	6, 17 - Body ground

Power supply circuit : Continuity should exist.

Signal circuit : Continuity should exist.

Ground circuit : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 6

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

6.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

1. Reconnect ABS actuator and electric unit (control unit) connector.
2. Turn ignition switch ON.
3. Check between wheel sensor connector power supply terminal and ground.

Wheel	Wheel sensor	Ground	Voltage
Front RH	1	—	8 V or more
Front LH			
Rear LH			
Rear RH			

Is the inspection result normal?

YES >> Inspection End.

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

[ABS]

< COMPONENT DIAGNOSIS >

NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-60. "Removal and Installation"](#).

Component Inspection

INFOID:0000000005778730

1.CHECK DATA MONITOR

On "DATA MONITOR", select "FR LH SENSOR", "FR RH SENSOR", "RR LH SENSOR", and "RR RH SENSOR", and check the vehicle speed.

Wheel sensor	Vehicle speed (DATA MONITOR)
FR LH SENSOR	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	
RR LH SENSOR	
RR RH SENSOR	

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-28. "Diagnosis Procedure"](#).

C1120, C1122, C1124, C1126 IN ABS SOL

< COMPONENT DIAGNOSIS >

[ABS]

C1120, C1122, C1124, C1126 IN ABS SOL

Description

INFOID:000000005432823

The solenoid valve increases, holds or decreases the fluid pressure of each brake caliper according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432824

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1120	FR LH IN ABS SOL	When the control unit detects a malfunction in the front LH inlet solenoid circuit.	• ABS actuator and electric unit (control unit)
C1122	FR RH IN ABS SOL	When the control unit detects a malfunction in the front RH inlet solenoid circuit.	
C1124	RR LH IN ABS SOL	When the control unit detects a malfunction in the rear LH inlet solenoid circuit.	
C1126	RR RH IN ABS SOL	When the control unit detects a malfunction in the rear RH inlet solenoid circuit.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
FR LH IN ABS SOL
FR RH IN ABS SOL
RR LH IN ABS SOL
RR RH IN ABS SOL

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-31, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005778732

Regarding Wiring Diagram information, refer to [BRC-41, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

C1120, C1122, C1124, C1126 IN ABS SOL

[ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E26 terminal 3 and ground.

ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E26 terminal 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

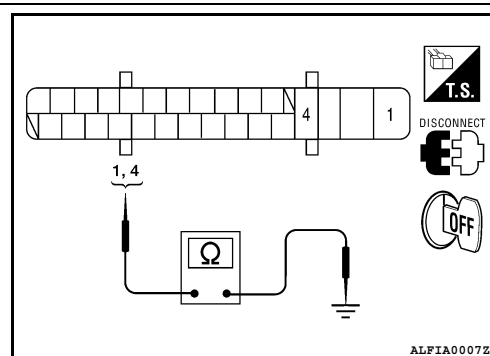
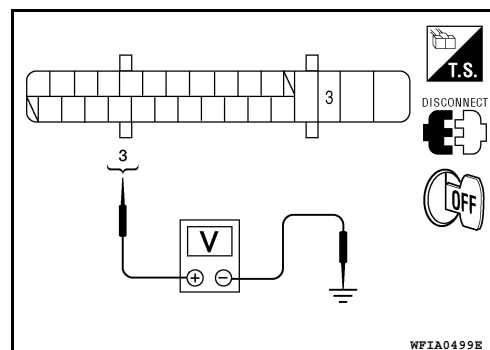
Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



Component Inspection

INFOID:000000005432826

1. CHECK ACTIVE TEST

1. Select each test menu item on "ACTIVE TEST".
2. On the display, touch "UP", "KEEP", and "DOWN", and check that the system operates as shown in the table below.

NOTE:

The example below is for front right wheel. The procedure for the other wheels is the same as given below.

Operation (Note)	ABS solenoid valve		
	UP	KEEP	DOWN
FR RH IN SOL	OFF	ON	ON
FR RH OUT SOL	OFF	OFF	ON*

*: ON for 1 to 2 seconds after the touch, and then OFF.

NOTE:

A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-31, "Diagnosis Procedure"](#).

C1121, C1123, C1125, C1127 OUT ABS SOL

< COMPONENT DIAGNOSIS >

[ABS]

C1121, C1123, C1125, C1127 OUT ABS SOL

Description

INFOID:000000005432827

The solenoid valve increases, holds or decreases the fluid pressure of each brake caliper according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432828

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1121	FR LH OUT ABS SOL	When the control unit detects a malfunction in the front LH outlet solenoid circuit.	• ABS actuator and electric unit (control unit)
C1123	FR RH OUT ABS SOL	When the control unit detects a malfunction in the front RH outlet solenoid circuit.	
C1125	RR LH OUT ABS SOL	When the control unit detects a malfunction in the rear LH outlet solenoid circuit.	
C1127	RR RH OUT ABS SOL	When the control unit detects a malfunction in the rear RH outlet solenoid circuit.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
FR LH OUT ABS SOL
FR RH OUT ABS SOL
RR LH OUT ABS SOL
RR RH OUT ABS SOL

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-33, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005778733

Regarding Wiring Diagram information, refer to [BRC-41, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

C1121, C1123, C1125, C1127 OUT ABS SOL

[ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E26 terminal 3 and ground.

ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E26 terminal 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

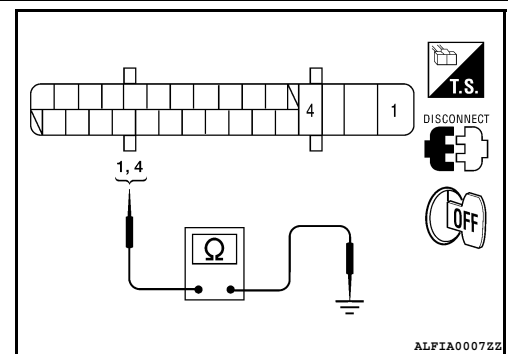
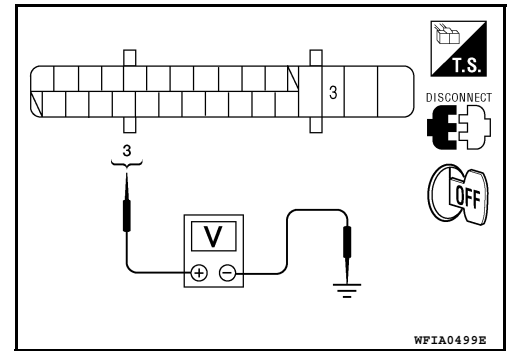
Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



Component Inspection

INFOID:000000005778731

1. CHECK ACTIVE TEST

1. Select each test menu item on "ACTIVE TEST".
2. On the display, touch "UP", "KEEP", and "DOWN", and check that the system operates as shown in the table below.

NOTE:

The example below is for front right wheel. The procedure for the other wheels is the same as given below.

Operation (Note)	ABS solenoid valve		
	UP	KEEP	DOWN
FR RH IN SOL	OFF	ON	ON
FR RH OUT SOL	OFF	OFF	ON*

*: ON for 1 to 2 seconds after the touch, and then OFF.

NOTE:

A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-33, "Diagnosis Procedure"](#).

U1000 CAN COMM CIRCUIT

< COMPONENT DIAGNOSIS >

[ABS]

U1000 CAN COMM CIRCUIT

Description

INFOID:000000005432831

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic

INFOID:000000005432832

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
U1000	CAN COMM CIRCUIT	When ABS actuator and electric unit (control unit) is not transmitting or receiving CAN communication signal for 2 seconds or more.	<ul style="list-style-type: none">CAN communication lineABS actuator and electric unit (control unit)

BRC

Diagnosis Procedure

INFOID:000000005432833

1.CONNECTOR INSPECTION

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
- Reconnect connector and perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

Self-diagnosis results
CAN COMM CIRCUIT

Is above displayed on the self-diagnosis display?

- YES >> Refer to [GI-49, "Description"](#).
NO >> Inspection End.

ABS WARNING LAMP

< COMPONENT DIAGNOSIS >

[ABS]

ABS WARNING LAMP

Description

INFOID:0000000005432834

×: ON –: OFF

Condition	ABS warning lamp
Ignition switch OFF	–
For 2 seconds after turning ON ignition switch	×
2 seconds later after turning ON ignition switch	–
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

Component Function Check

INFOID:0000000005432835

1.CHECK ABS WARNING LAMP OPERATION

Check that the lamp illuminates for approximately 2 seconds after the ignition switch is turned ON.

Is the inspection result normal?

YES >> Inspection End

NO >> Go to diagnosis procedure. Refer to [BRC-36, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000005432836

1.CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> GO TO 2

NO >> Check items displayed by self-diagnosis.

2.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to [MWI-4, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-60, "Removal and Installation"](#).

NO >> Repair or replace combination meter. Refer to [MWI-153, "Removal and Installation"](#).

BRAKE WARNING LAMP

< COMPONENT DIAGNOSIS >

[ABS]

BRAKE WARNING LAMP

Description

INFOID:000000005432837

×: ON –: OFF

Condition	Brake warning lamp (Note 1)
Ignition switch OFF	–
Ignition switch ON	× (Note 2)
EBD function is malfunctioning.	×

NOTE:

- 1: Brake warning lamp will turn on in case of parking brake operation (when switch is ON) or of brake fluid level switch operation (when brake fluid is insufficient).
- 2: After starting engine, brake warning lamp is turned off.

Component Function Check

INFOID:000000005432838

1.BRAKE WARNING LAMP OPERATION CHECK 1

Check that the lamp illuminates after the ignition switch is turned ON, and turns OFF after the engine is started.

Is the inspection result normal?

YES >> GO TO 2

NO >> Go to diagnosis procedure. Refer to [BRC-37. "Diagnosis Procedure"](#).

2.BRAKE WARNING LAMP OPERATION CHECK 2

Check that the brake warning lamp in the combination meter turns ON/OFF correctly when operating the parking brake lever (M/T models) or the parking brake pedal (CVT models).

Is the inspection result normal?

YES >> Inspection End.

NO >> Check parking brake switch. Refer to [BRC-119. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005432839

1.CHECK PARKING BRAKE SWITCH

Check that the brake warning lamp in the combination meter turns ON/OFF correctly when operating the parking brake lever (M/T models) or the parking brake pedal (CVT models).

Is the inspection result normal?

YES >> GO TO 2

NO >> Check parking brake switch. Refer to [BRC-119. "Diagnosis Procedure"](#).

2.CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-11. "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Check items displayed by self-diagnosis.

3.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to [MWI-4. "Work Flow"](#).

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-60. "Removal and Installation"](#).

NO >> Repair or replace combination meter. Refer to [MWI-153. "Removal and Installation"](#).

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[ABS]

ECU DIAGNOSIS

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Reference Value

INFOID:000000005432840

VALUES ON THE DIAGNOSIS TOOL

CAUTION:

The display shows the control unit calculation data, so a normal value might be displayed even in the event the output circuit (harness) is open or short - circuited.

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
FR LH SENSOR FR RH SENSOR RR LH SENSOR RR RH SENSOR	Wheel speed	0 [km/h]	Vehicle stopped
		Nearly matches the speed meter display ($\pm 10\%$ or less)	Vehicle running (Note 1)
STOP LAMP SW	Brake pedal operation	When brake pedal is depressed	ON
		When brake pedal is not depressed	OFF
BATTERY VOLT	Battery voltage supplied to the ABS actuator and electric unit (control unit)	Ignition switch ON	10 – 16 V
SLCT LVR POSI	A/T shift position	P position R position N position D position	P R N D
PARK BRAKE SW	Parking brake switch	Parking brake switch is active	ON
		Parking brake switch is inactive	OFF
FR LH IN SOL FR LH OUT SOL FR RH IN SOL FR RH OUT SOL RR LH IN SOL RR LH OUT SOL RR RH IN SOL RR RH OUT SOL	Operation status of all solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	ON
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	OFF
MOTOR RELAY	Motor and motor relay operation	When the motor relay and motor are operating	ON
		When the motor relay and motor are not operating	OFF
ACTUATOR RLY (Note 2)	Actuator relay operation	When the actuator relay is operating	ON
		When the actuator relay is not operating	OFF
ABS WARN LAMP	ABS warning lamp (Note 3)	When ABS warning lamp is ON	ON
		When ABS warning lamp is OFF	OFF
ABS SIGNAL	ABS operation	ABS is active	ON
		ABS is inactive	OFF

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[ABS]

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
ABS FAIL SIG	ABS fail-safe signal	In ABS fail-safe	ON
		ABS is normal	OFF

Note 1: Confirm tire pressure is normal.

Note 2: A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Note 3: On and off timing for warning lamp and indicator lamp. Refer to [BRC-11, "CONSULT-III Function \(ABS\)".](#)

Fail-Safe

INFOID:0000000005432843

ABS SYSTEM

In case of electrical malfunctions with ABS, the ABS warning lamp will turn on. Simultaneously, the ABS switches to the fail-safe mode.

- In case of a malfunction with ABS, the result of a fail-safe mode will be normal braking without the aid of ABS.

NOTE:

ABS self-diagnosis sound may be heard. That is a normal condition because a self-diagnosis for "Ignition switch ON" and "The first starting" are being performed.

CAUTION:

If the Fail-Safe function is activated, then perform self-diagnosis for ABS control system.

DTC No. Index

INFOID:0000000005432844

CAUTION:

If the Fail-Safe function is activated, then perform self-diagnosis for VDC/TCS/ABS control system.

Display item	Malfunction detecting condition	Check item
RR RH SENSOR-1 [C1101]* ¹	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	BRC-15, "Diagnosis Procedure" (Note 1)
RR LH SENSOR-1 [C1102]* ¹	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
FR RH SENSOR-1 [C1103]* ¹	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
FR LH SENSOR-1 [C1104]* ¹	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
RR RH SENSOR-2 [C1105]* ¹	When the circuit in the rear RH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	BRC-18, "Diagnosis Procedure" (Note 1)
RR LH SENSOR-2 [C1106]* ¹	When the circuit in the rear LH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
FR RH SENSOR-2 [C1107]* ¹	When the circuit in the front RH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
FR LH SENSOR- 2 [C1108]* ¹	When the circuit in the front LH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
BATTERY VOLTAGE [ABNORMAL] [C1109]	When the ABS actuator and electric unit (control unit) power supply voltage is lower than normal.	BRC-21, "Diagnosis Procedure"
CONTROLLER FAILURE [C1110]* ²	When there is an internal malfunction in the ABS actuator and electric unit (control unit).	BRC-23, "Diagnosis Procedure"

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[ABS]

Display item	Malfunction detecting condition	Check item
PUMP MOTOR [C1111]	During the actuator motor operating with ON, when the actuator motor turns OFF, or when the control line for actuator motor relay is open.	BRC-24, "Diagnosis Procedure"
	During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	
MAIN RELAY [C1114]	During the actuator relay operating with OFF, when the actuator relay turns ON. Or when the control line for the relay is shorted to the ground.	BRC-26, "Diagnosis Procedure"
	During the actuator relay operating with ON, when the actuator relay turns OFF, or when the control line for the relay is open.	
ABS SENSOR [ABNORMAL SIGNAL] [C1115]	When wheel sensor input signal is malfunctioning.	BRC-28, "Diagnosis Procedure" (Note 1)
FR LH IN ABS SOL [C1120]	When the control unit detects a malfunction in the front left inlet solenoid circuit.	BRC-31, "Diagnosis Procedure"
FR LH OUT ABS SOL [C1121]	When the control unit detects a malfunction in the front left outlet solenoid circuit.	BRC-33, "Diagnosis Procedure"
FR RH IN ABS SOL [C1122]	When the control unit detects a malfunction in the front right inlet solenoid circuit.	BRC-31, "Diagnosis Procedure"
FR RH OUT ABS SOL [C1123]	When the control unit detects a malfunction in the front right outlet solenoid circuit.	BRC-33, "Diagnosis Procedure"
RR LH IN ABS SOL [C1124]	When the control unit detects a malfunction in the rear left inlet solenoid circuit.	BRC-31, "Diagnosis Procedure"
RR LH OUT ABS SOL [C1125]	When the control unit detects a malfunction in the rear left outlet solenoid circuit.	BRC-33, "Diagnosis Procedure"
RR RH IN ABS SOL [C1126]	When the control unit detects a malfunction in the rear right inlet solenoid circuit.	BRC-31, "Diagnosis Procedure"
RR RH OUT ABS SOL [C1127]	When the control unit detects a malfunction in the rear right outlet solenoid circuit.	BRC-33, "Diagnosis Procedure"
CAN COMM CIRCUIT [U1000]*3	When there is a malfunction in the CAN communication circuit.	BRC-35, "Diagnosis Procedure"

*1: Be sure to confirm the ABS warning lamp illuminates when the ignition switch is turned ON after repairing the shorted sensor circuit, but the lamp turns off when driving the vehicle over 30 km/h (19 MPH) for approximately 1 minute in accordance with SELF-DIAGNOSIS PROCEDURE.

*2: When "CONTROLLER FAILURE" is displayed, check to see if the ABS warning lamp is burned out, and check the circuit between the ABS warning lamp and ABS actuator and electric unit (control unit) for open or short. Then, check the ABS actuator and electric unit (control unit) and circuit.

*3: When malfunctions are detected in several systems, including CAN communication circuit [U1000], troubleshoot CAN communication circuit first. Refer to [LAN-7, "System Description"](#).

BRAKE CONTROL SYSTEM - ABS

< WIRING DIAGRAM >

[ABS]

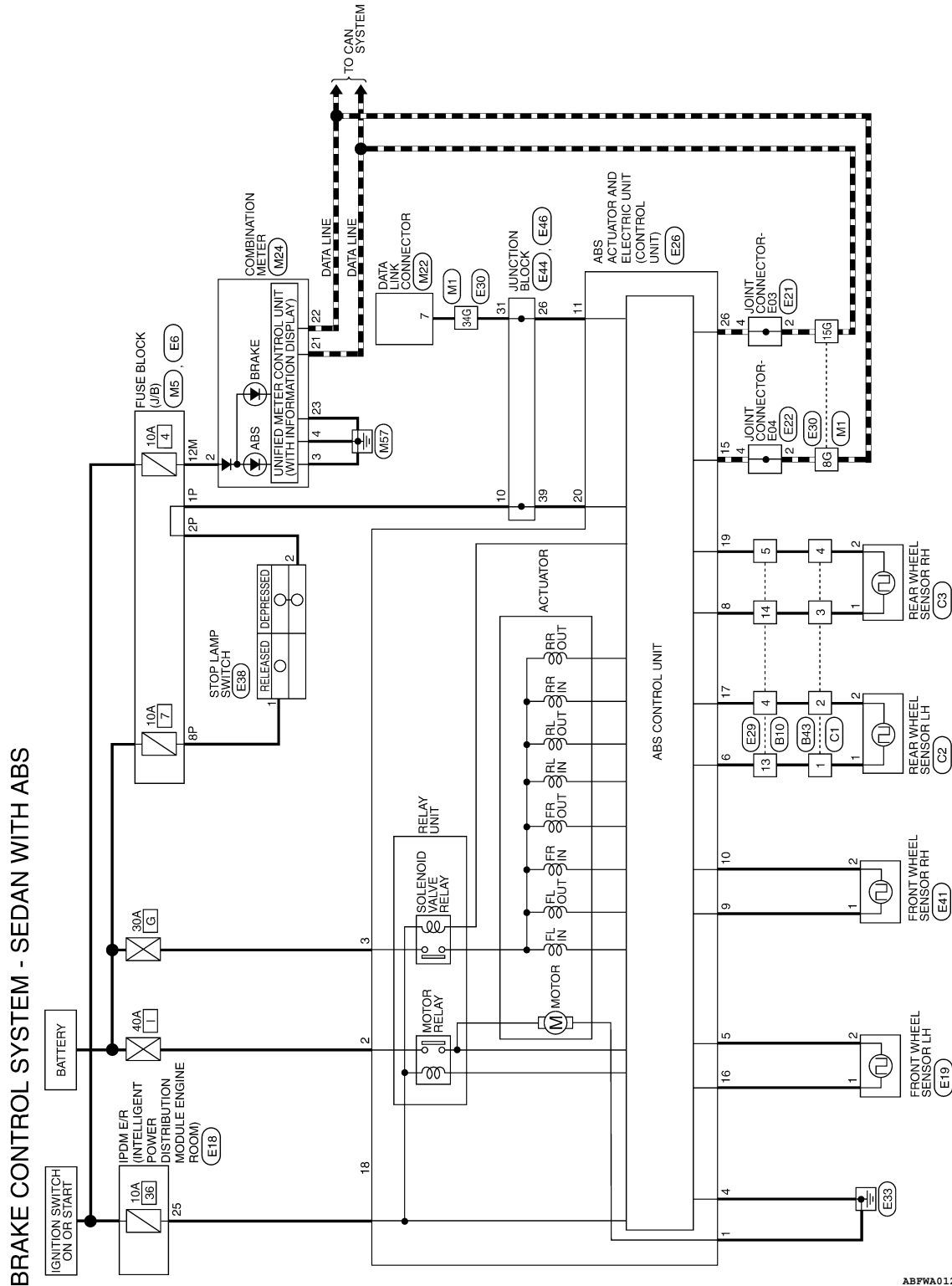
WIRING DIAGRAM

BRAKE CONTROL SYSTEM - ABS

SEDAN

SEDAN : Wiring Diagram

INFOID:000000005432842



ABFWA0126GB

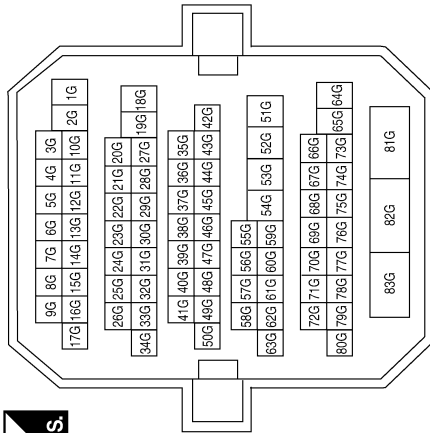
BRAKE CONTROL SYSTEM - ABS

< WIRING DIAGRAM >

[ABS]

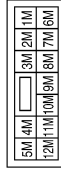
BRAKE CONTROL SYSTEM CONNECTORS - SEDAN WITH ABS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



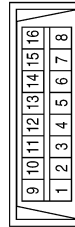
Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-
34G	O	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



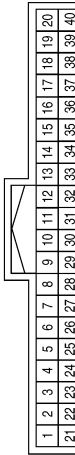
Terminal No.	Color of Wire	Signal Name
12M	O	-

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	O	-

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	O	IGN
3	B	GND (POWER)
4	B	GND (ILL)
21	L	CAN-H
22	P	CAN-L
23	B	GND (CIRCUIT)

Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1P	SB	-
2P	LG	-
8P	R	-

BRAKE CONTROL SYSTEM - ABS

< WIRING DIAGRAM >

[ABS]

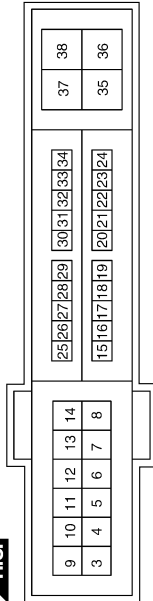
Connector No.	E19
Connector Name	FRONT WHEEL SENSOR LH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	W	-
2	V	-

Terminal No.	Color of Wire	Signal Name
25	GR	ABS ECU

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

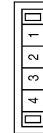


Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	P	-
4	P	-

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	-
4	L	-

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BRAKE CONTROL SYSTEM - ABS

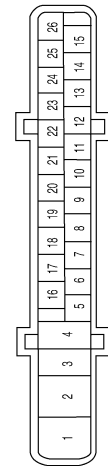
[ABS]

< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
19	BR	DS RR
20	SB	BLS
21	-	-
22	-	-
23	-	-
24	-	-
25	-	-
26	L	CAN-H

Terminal No.	Color of Wire	Signal Name
5	V	DS FL
6	G	DP RL
7	-	-
8	L	DP RR
9	B	DP FR
10	LG	DS FR
11	GR	DIAG-K
12	-	-
13	-	-
14	-	-
15	P	CAN-L
16	W	DP FL
17	O	DS RL
18	GR	IGN

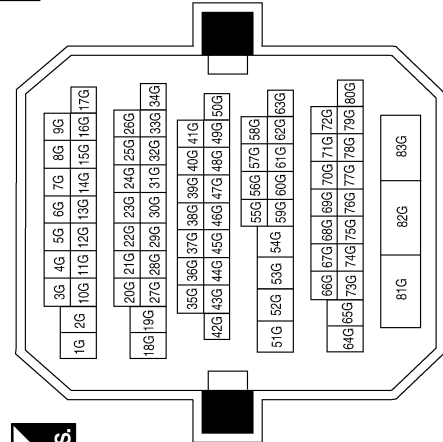
Connector No.	E26
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITH ABS)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	MGND
2	G	UB (MR)
3	R	UB (VR)
4	B	GND

Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-
34G	O	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	E29
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	O	-
5	BR	-
13	G	-
14	L	-

ABFIA0307GB

BRAKE CONTROL SYSTEM - ABS

< WIRING DIAGRAM >

[ABS]

Connector No.	E44
Connector Name	JUNCTION BLOCK
Connector Color	BROWN

5	4	3	2	1
12	11	10	9	8
7	6			



Terminal No.	Color of Wire	Signal Name
10	SB	-

Connector No.	E41
Connector Name	FRONT WHEEL SENSOR RH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	B	-
2	LG	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH (WITH CVT)
Connector Color	WHITE

3	4
1	2



Terminal No.	Color of Wire	Signal Name
1	R	-
2	LG	-

Connector No.	C2
Connector Name	REAR WHEEL SENSOR LH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	G	-
2	O	-

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	G	-
2	O	-
3	LG	-
4	BR	-

Connector No.	E46
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

31	30	29	28	27	26	25
40	39	38	37	36	35	34
33	32					



Terminal No.	Color of Wire	Signal Name
26	GR	-
31	O	-
39	SB	-

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BRAKE CONTROL SYSTEM - ABS

< WIRING DIAGRAM >

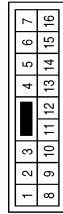
[ABS]

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	G	-
2	O	-
3	LG	-
4	BR	-

Connector No.	B10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	O	-
5	BR	-
13	G	-
14	LG	-

Connector No.	C3
Connector Name	REAR WHEEL SENSOR RH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	BR	-

ABFIA0309GB

SYMPTOM DIAGNOSIS

ABS

Symptom Table

INFOID:000000005432845

If ABS warning lamp turns ON, perform self-diagnosis.

Symptom	Check item	Reference
Excessive ABS function operation frequency	Brake force distribution	BRC-48. "Diagnosis Procedure"
	Looseness of front and rear axle	
	Wheel sensor and rotor system	
Unexpected pedal reaction	Brake pedal stroke	BRC-49. "Diagnosis Procedure"
	Make sure the braking force is sufficient when the ABS is not operating.	
The braking distance is long	Check stopping distance when the ABS is not operating.	BRC-50. "Diagnosis Procedure"
ABS function does not operate (Note 1)	ABS actuator and electric unit (control unit)	BRC-51. "Diagnosis Procedure"
Pedal vibration or ABS operation sound occurs (Note 2)	Brake pedal	BRC-52. "Diagnosis Procedure"
	ABS actuator and electric unit (control unit)	

NOTE:

- 1: The ABS does not operate when the speed is 10 km/h (6 MPH) or less.
- 2: Under the following conditions, ABS is activated and vibration is felt when brake pedal is lightly depressed (just place a foot on it). However, this is normal.
 - When shifting gears
 - When driving on slippery road
 - During cornering at high speed
 - When passing over bumps or grooves [at approximately 50 mm (1.97 in) or more]
 - When pulling away just after starting engine [at approximately 10 km/h (6 MPH) or higher]

EXCESSIVE ABS FUNCTION OPERATION FREQUENCY

< SYMPTOM DIAGNOSIS >

[ABS]

EXCESSIVE ABS FUNCTION OPERATION FREQUENCY

Diagnosis Procedure

INFOID:000000005432846

1.CHECK START

Check front and rear brake force distribution using a brake tester.

Is the inspection result normal?

YES >> GO TO 2

NO >> Check brake system.

2.CHECK FRONT AND REAR AXLE

Make sure that there is no excessive play in the front and rear axles. Refer to front: [FAX-7. "Removal and Installation"](#), Rear: [RAX-6. "Removal and Installation"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace malfunctioning components.

3.CHECK WHEEL SENSOR AND SENSOR ROTOR

Check the following.

- Wheel sensor installation for damage.
- Sensor rotor installation for damage.
- Wheel sensor connector connection.
- Wheel sensor harness inspection.

Is the inspection result normal?

YES >> GO TO 4

NO >>

- Replace wheel sensor or sensor rotor.
- Repair harness.

4.CHECK ABS WARNING LAMP DISPLAY

Make sure that the ABS warning lamp is turned off after the ignition switch is turned ON or when driving.

Is the inspection result normal?

YES >> Normal

NO >> Perform self-diagnosis. Refer to [BRC-8. "System Description"](#).

UNEXPECTED PEDAL REACTION

< SYMPTOM DIAGNOSIS >

[ABS]

UNEXPECTED PEDAL REACTION

Diagnosis Procedure

INFOID:000000005432847

1.CHECK BRAKE PEDAL STROKE

Check brake pedal stroke. Refer to [BRC-8, "System Description"](#).

Is the stroke too big?

- YES >> • Bleed air from brake tube and hose. Refer to [BR-16, "Bleeding Brake System"](#).
• Check brake pedal, brake booster, and master cylinder for mount play, looseness, brake system fluid leakage, etc. Refer to brake pedal: [BR-44, "Brake Pedal"](#), brake booster and master cylinder: [BR-45, "Brake Booster"](#).

NO >> GO TO 2

2.CHECK FUNCTION

Disconnect ABS actuator and electric unit (control unit) connector to deactivate ABS. Check if braking force is normal in this condition. Connect connector after inspection.

Is the inspection result normal?

- YES >> GO TO procedure 3 "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom 1. Refer to [BRC-47, "Symptom Table"](#).

NO >> Check brake system.

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THE BRAKING DISTANCE IS LONG

< SYMPTOM DIAGNOSIS >

[ABS]

THE BRAKING DISTANCE IS LONG

Diagnosis Procedure

INFOID:0000000005432848

CAUTION:

The stopping distance on slippery road surfaces might be longer with the ABS operating than when the ABS is not operating.

1.CHECK FUNCTION

Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector to deactivate ABS. In this condition, check stopping distance. After inspection, connect connector.

Is the inspection result normal?

- YES >> GO TO procedure 3 "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom 1. Refer to [BRC-47. "Symptom Table"](#).
- NO >> Check brake system.

ABS FUNCTION DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[ABS]

ABS FUNCTION DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000005432849

CAUTION:

ABS does not operate when speed is 10 km/h (6 MPH) or lower.

1.CHECK ABS WARNING LAMP DISPLAY

Make sure that the ABS warning lamp turns OFF after ignition switch is turned on or when driving.

Is the inspection result normal?

YES >> GO TO procedure 3 "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom 1. Refer to [BRC-47, "Symptom Table"](#).

NO >> Perform self-diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS

< SYMPTOM DIAGNOSIS >

[ABS]

PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS

Diagnosis Procedure

INFOID:0000000005432850

CAUTION:

Under the following conditions, ABS is activated and vibration is felt when brake pedal is lightly depressed (just place a foot on it). However, this is normal.

- When shifting gears
- When driving on slippery road
- During cornering at high speed
- When passing over bumps or grooves [at approximately 50 mm (1.97 in) or more]
- When pulling away just after starting engine [at approximately 10 km/h (6 MPH) or higher]

1. SYMPTOM CHECK 1

Check if there is pedal vibration or operation sound when the engine is started.

Do symptoms occur?

YES >> GO TO 2

NO >> Perform self -diagnosis. Refer to [BRC-11, "CONSULT-III Function \(ABS\)"](#).

2. SYMPTOM CHECK 2

Check symptoms when electrical component (headlamps, etc.) switches are operated.

Do symptoms occur?

YES >> Check if there is a radio, antenna, antenna lead wire, or wiring close to the control unit. If there is, move it farther away.

NO >> GO TO procedure 3 "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom 1. Refer to [BRC-47, "Symptom Table"](#).

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[ABS]

NORMAL OPERATING CONDITION

Description

INFOID:0000000005432851

Symptom	Result
Slight vibrations are felt on the brake pedal and the operation noises occur, when ABS is activated.	This is a normal condition due to ABS activation.
Stopping distance is longer than that of vehicles without ABS when the vehicle drives on rough, gravel, or snow-covered (fresh, deep snow) roads.	
The brake pedal vibrates and motor operation noises occur from the engine room, after the engine starts and just after the vehicle starts.	This is a normal, and it is caused by the ABS operation check.

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PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000005789625

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

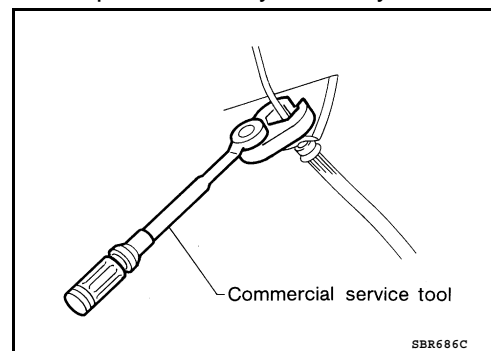
Precaution for Brake System

INFOID:000000005432853

- Recommended fluid is brake fluid "DOT 3".
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted surface of body. If brake fluid is splashed on painted surfaces of body immediately wipe off then with cloth and then wash it away with water.
- Never use mineral oils such as gasoline or kerosene. They will ruin rubber parts of the hydraulic system.
- Use a flare nut wrench when removing flare nuts, and use a flare nut torque wrench when tighten brake tube flare nuts.
- When installing brake tubes, be sure to check torque.
- Brake system is an important safety part. If a brake fluid leak is detected, always disassemble the affected part. If a malfunction is detected, replace part with a new one.
- Before working, turn ignition switch OFF and disconnect connectors of ABS actuator and electric unit (control unit) or the battery cable from the negative terminal.

WARNING:

Clean brake pads and shoes with a waste cloth, then wipe with a dust collector.



Precaution for Brake Control

INFOID:000000005432854

- Just after starting vehicle after ignition switch ON, brake pedal may vibrate or motor operating noise may be heard from engine compartment. This is normal condition.
- When an error is indicated by ABS or another warning lamp, collect all necessary information from customer (what symptoms are present under what conditions) and check for simple causes before starting diagnostic

PRECAUTIONS

< PRECAUTION >

[ABS]

- servicing. Besides electrical system inspection, check brake booster operation, brake fluid level, and oil leaks.
- If tire size and type are used in an improper combination, or brake pads are not Genuine NISSAN parts, stopping distance or steering stability may deteriorate.
- ABS might be out of order or malfunctions by putting a radio (wiring inclusive), an antenna and a lead-in wire near the control unit.
- If aftermarket parts (car stereo, CD player, etc.) have been installed, check for incidents such as harness pinches, open circuits, and improper wiring.
- When replacing the following parts with parts other than genuine parts or making modifications: Suspension-related parts (shock absorber, spring, bushing, etc.), tires, wheels (other than specified sizes), brake-related parts (pad, rotor, caliper, etc.), engine-related parts (muffler, ECM, etc.) and body reinforcement-related parts (roll bar, tower bar, etc.).
- When driving with worn or deteriorated suspension, tires and brake-related parts.

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PREPARATION

< PREPARATION >

[ABS]

PREPARATION

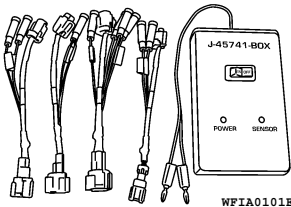
PREPARATION

Special Service Tool

INFOID:000000005432855

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

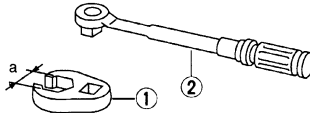
Tool number (Kent-Moore No.) Tool name	Description
— (J-45741) ABS active wheel sensor tester	Checking operation of ABS active wheel sensor



Commercial Service Tool

INFOID:000000005432856

Tool name	Description
1. Flare nut crowfoot 2. Torque wrench	Removing and installing brake piping a: 10mm (0.39 in)/12mm (0.47 in)

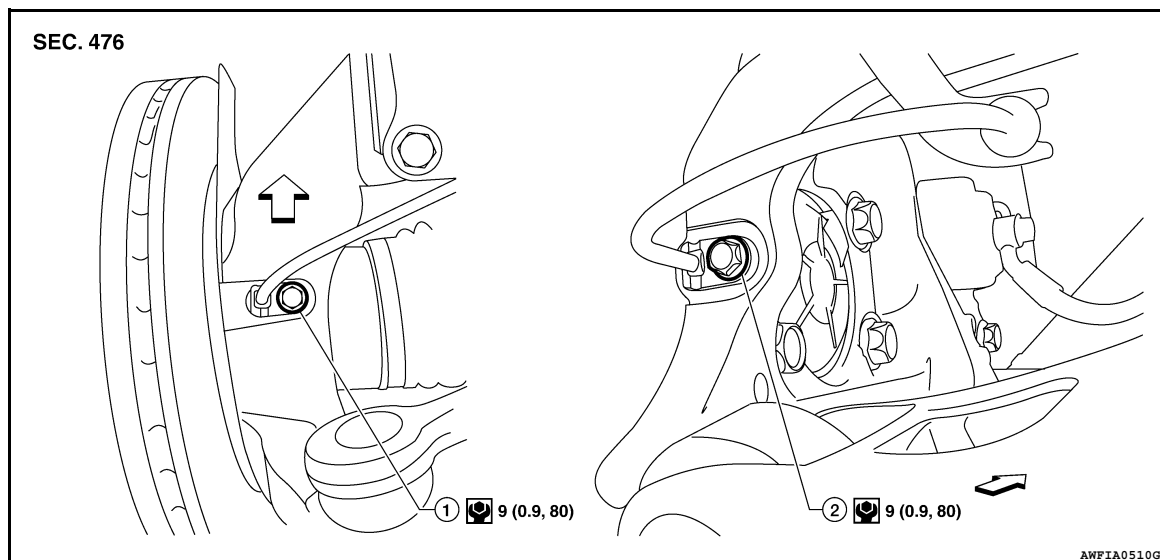


ON-VEHICLE REPAIR

WHEEL SENSORS

Removal and Installation

INFOID:000000005432857



1. Front wheel sensor

2. Rear wheel sensor

← Front

CAUTION:

- Be careful not to damage wheel sensor edge and sensor rotor teeth.
- When removing the front or rear wheel hub, first remove the wheel sensor from the wheel hub. Failure to do so may result in damage to the wheel sensor wires making the sensor inoperative.
- Pull out the wheel sensor, being careful to turn it as little as possible. Do not pull on the wheel sensor harness.
- Before installation, check if foreign objects such as iron fragments are adhered to the pick-up part of the sensor or to the inside of the hole in the wheel hub for the wheel sensor, or if a foreign object is caught in the surface of the mating surface for the sensor rotor. Fix as necessary and then install the wheel sensor.

FRONT WHEEL SENSOR

Removal

1. Remove front wheel and tire. Refer to [WT-65, "Adjustment"](#).
2. Partially front wheel fender protector. Refer to [EXT-20, "Removal and Installation"](#).
3. Remove wheel sensor bolt and wheel sensor.
4. Remove harness wire from mounts and disconnect wheel sensor harness connector.

Installation

Installation is in the reverse order of removal.

REAR WHEEL SENSOR

Removal

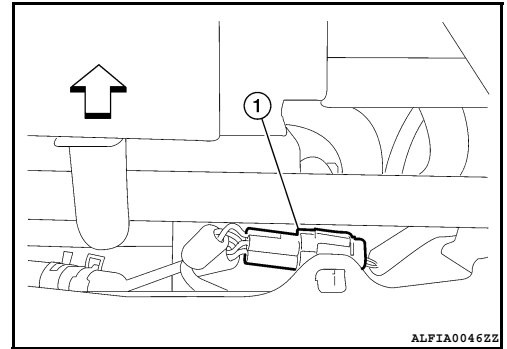
1. Remove rear wheel and tire. Refer to [WT-65, "Adjustment"](#).

WHEEL SENSORS

< ON-VEHICLE REPAIR >

[ABS]

2. Disconnect wheel sensor harness connector (1).
 - ⇐: Front



3. Remove harness wire clips from rear suspension member.
4. Remove wheel sensor bolt and wheel sensor from rear wheel hub and bearing assembly.

Installation

Installation is in the reverse order of removal.

SENSOR ROTOR

Removal and Installation

INFOID:0000000005432858

The front and rear wheel sensor rotors are an integral part of the wheel hubs and can not be disassembled. When replacing the sensor rotor, replace the wheel hub. Refer to [FAX-7. "Removal and Installation"](#) (front), [RAX-6. "Removal and Installation"](#) (rear).

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

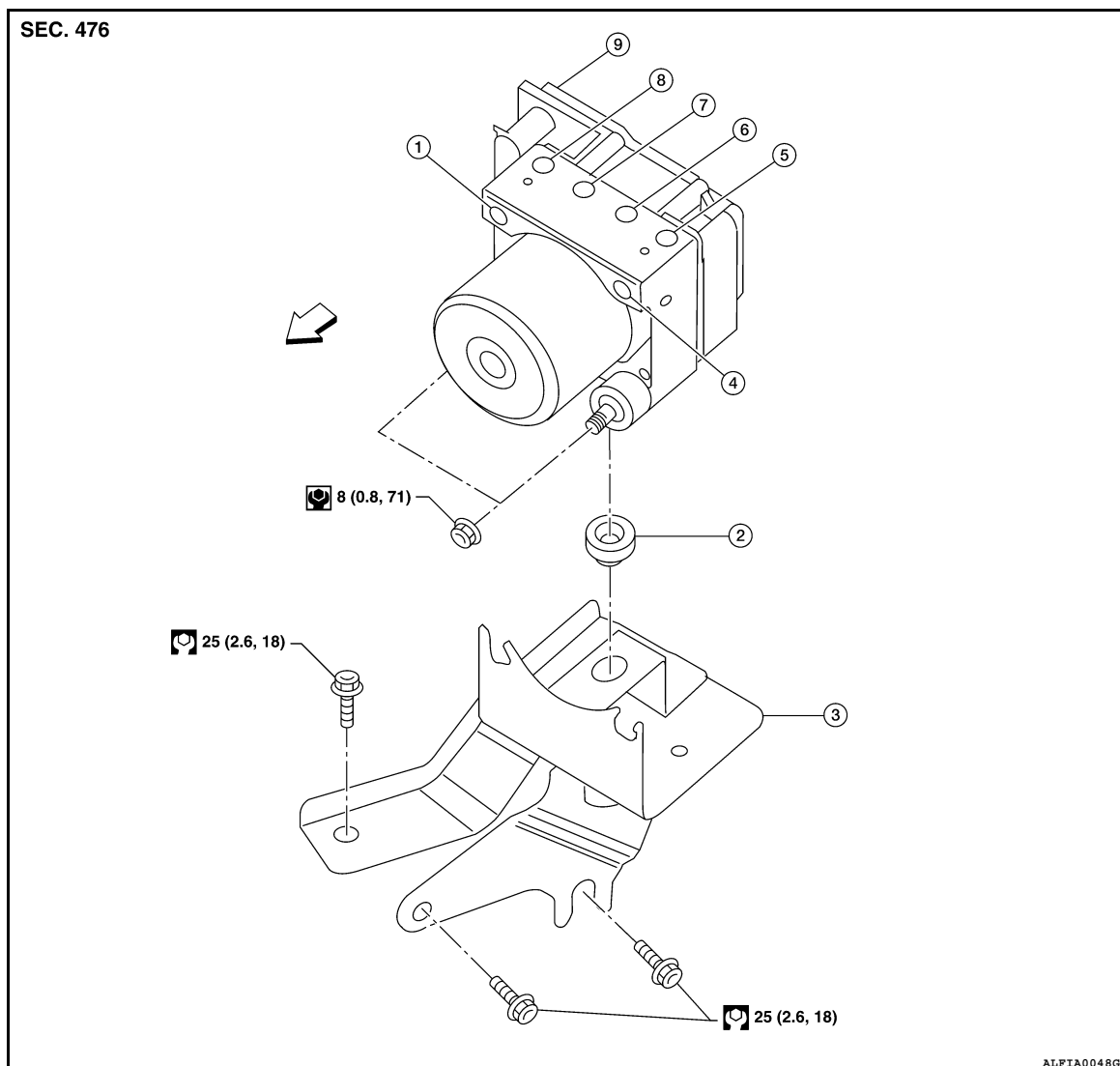
< ON-VEHICLE REPAIR >

[ABS]

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Exploded View

INFOID:000000005432859



- | | | |
|--|------------------------------|--|
| 1. From master cylinder secondary side | 2. Grommet | 3. Bracket |
| 4. From master cylinder primary side | 5. To front LH brake caliper | 6. To rear RH brake caliper |
| 7. To rear LH brake caliper | 8. To front RH brake caliper | 9. ABS actuator and electric unit (control unit) |

⇐ Front

Removal and Installation

INFOID:000000005432860

CAUTION:

Be careful of the following.

- Before servicing, disconnect the battery cable from negative terminal.
- To remove brake pipe, use a suitable tool (flare nut wrench) to prevent flare nuts and brake tube from being damaged. To install, use suitable tool (flare nut torque wrench).
- Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.
- Do not remove and install ABS actuator and electric unit (control unit) by holding harness.
- After work is completed, bleed air from brake tube. Refer to [BR-16, "Bleeding Brake System"](#).
- After installing harness connector on the ABS actuator and electric unit (control unit), make sure connector is securely locked.

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ON-VEHICLE REPAIR >

[ABS]

REMOVAL

1. Remove front wiper arms. Refer to [WW-85, "FRONT WIPER ARMS : Removal and Installation"](#).
2. Remove cowl top. Refer to [EXT-19, "Removal and Installation"](#).
3. Disconnect washer hose.
4. Disconnect the battery negative terminal.
5. Remove tower bar, if equipped. Refer to [FSU-12, "Exploded View"](#).
6. Disconnect ABS actuator and electric unit (control unit) connector.
7. Loosen brake tube flare nuts, then remove brake tubes from ABS actuator and electric unit (control unit) using a suitable tool.
8. Remove ABS actuator and electric unit (control unit) nuts.
9. Remove ABS actuator and electric unit (control unit).
10. Remove bracket as necessary.

INSTALLATION

Installation is in the reverse order of removal.

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000005432939

PRECAUTIONS FOR DIAGNOSIS

If steering angle sensor, steering system parts, suspension system parts, ABS actuator and electric unit (control unit) or tires have been replaced, or if wheel alignment has been adjusted, be sure to adjust neutral position of steering angle sensor before driving. Refer to [BRC-66, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description"](#).

DESCRIPTION

Basic Concept

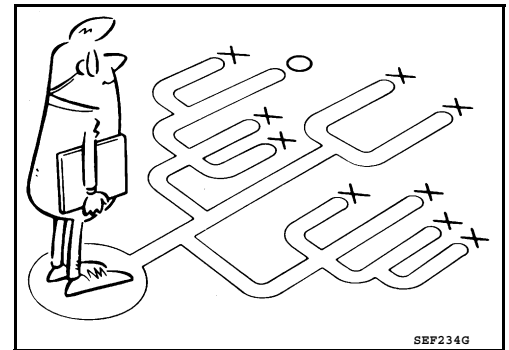
- The most important point to perform trouble diagnosis is to understand systems (control and mechanism) in vehicle thoroughly.
- It is also important to clarify customer complaints before inspection.

First of all, reproduce symptom, and understand it fully.

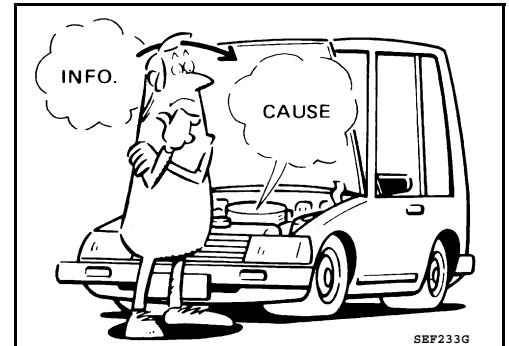
Ask customer about his/her complaints carefully. In some cases, they will be necessary to check symptom by driving vehicle with customer.

CAUTION:

Customers are not professionals. Do not assume "maybe customer means..." or "maybe customer mentioned this symptom".



- It is essential to check symptoms right from beginning in order to repair a malfunction completely. For an intermittent malfunction, it is important to reproduce symptom based on interview with customer and past examples. Do not perform inspection on ad hoc basis. Most intermittent malfunctions are caused by poor contacts. In this case, it will be effective to shake suspected harness or connector by hand. When repairs are performed without any symptom check, no one can judge if malfunction has actually been eliminated.
- After diagnostic, make sure to perform "ERASE MEMORY". Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).
- Always read "GI General Information" to confirm general precautions. Refer to [GI-3](#).



Asking Complaints

- Complaints against malfunction vary depending on each person. It is important to clarify customer complaints.
- Ask customer about what symptoms are present and under what conditions. Use information to reproduce symptom while driving.
- It is also important to use diagnostic sheet so as not to miss information.

KEY POINTS

WHAT Vehicle model
WHEN Date, Frequencies
WHERE Road conditions
HOW Operating conditions,
 Weather conditions,
 Symptoms

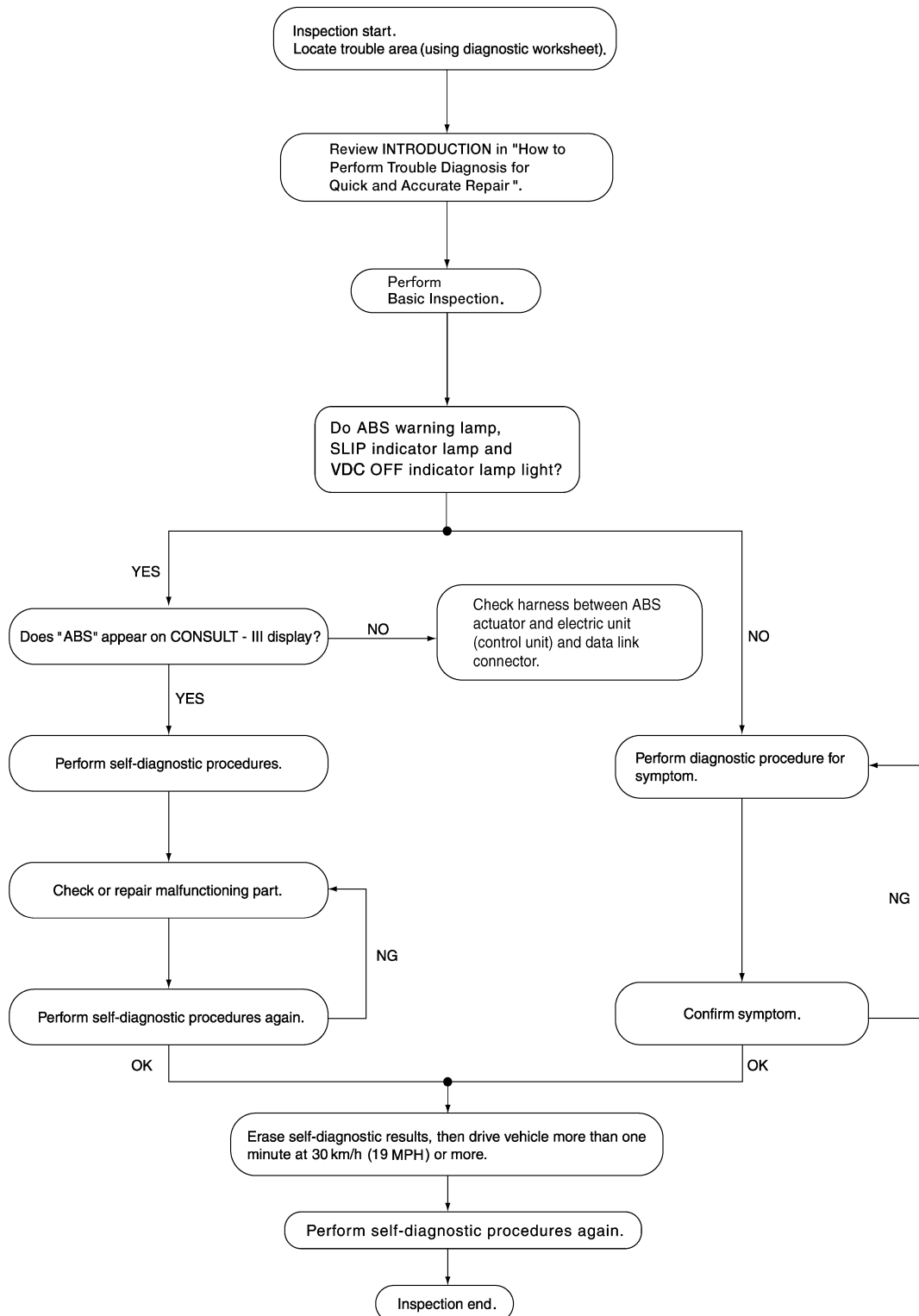
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DIAGNOSIS AND REPAIR WORKFLOW

[VDC/TCS/ABS]

< BASIC INSPECTION >

OVERALL SEQUENCE



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DETAILED FLOW

1.COLLECT THE INFORMATION FROM THE CUSTOMER

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using the diagnosis worksheet. Refer to [BRC-65, "Diagnostic Work Sheet"](#).

>> GO TO 2.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[VDC/TCS/ABS]

2.PERFORM THE SELF-DIAGNOSIS

Check the DTC display with the self-diagnosis function. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is there any DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

3.PERFORM THE SYSTEM DIAGNOSIS

Perform the diagnosis applicable to the displayed DTC. Refer to [BRC-132, "DTC No. Index"](#).

>> GO TO 7.

4.CHECK THE SYMPTOM THAT IS NOT CONSIDERED A SYSTEM MALFUNCTION

Check that the symptom is a normal operation that is not considered a system malfunction. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the symptom is a normal operation?

YES >> INSPECTION END

NO >> GO TO 5.

5.CHECK THE WARNING LAMP AND INDICATOR LAMP FOR ILLUMINATION

Check that the warning lamp and indicator lamp illuminate.

- ABS warning lamp: Refer to [BRC-123, "Description"](#).
- Brake warning lamp: Refer to [BRC-124, "Description"](#).
- VDC OFF indicator lamp: Refer to [BRC-126, "Description"](#).
- SLIP indicator lamp: Refer to [BRC-128, "Description"](#).

Is ON/OFF timing normal?

YES >> GO TO 6.

NO >> GO TO 2.

6.PERFORM THE DIAGNOSIS BY SYMPTOM

Perform the diagnosis applicable to the symptom.

>> GO TO 7.

7.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 8.

8.FINAL CHECK

Perform the self-diagnosis again, and check that the malfunction is repaired completely. After checking, erase the self-diagnosis memory. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is no other DTC present and the repair completed?

YES >> Inspection End

NO >> GO TO 3.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[VDC/TCS/ABS]

Diagnostic Work Sheet

INFOID:000000005432940

Customer name MR/MS	Model & Year		VIN
Engine #	Trans.		Mileage
Incident Date	Manuf. Date		In Service Date
Symptoms	<input type="checkbox"/> Noise and vibration (from engine compartment) <input type="checkbox"/> Noise and vibration (from axle)	<input type="checkbox"/> Warning / Indicator activate	<input type="checkbox"/> Firm pedal operation <input type="checkbox"/> Large stroke pedal operation
	<input type="checkbox"/> TCS does not work (Rear wheels slip when accelerating)	<input type="checkbox"/> ABS does not work (Wheels lock when braking)	<input type="checkbox"/> Lack of sense of acceleration
Engine conditions	<input type="checkbox"/> When starting <input type="checkbox"/> After starting		
Road conditions	<input type="checkbox"/> Low friction road (<input type="checkbox"/> Snow <input type="checkbox"/> Gravel <input type="checkbox"/> Other) <input type="checkbox"/> Bumps / potholes		
Driving conditions	<input type="checkbox"/> Full-acceleration <input type="checkbox"/> High speed cornering <input type="checkbox"/> Vehicle speed: Greater than 10 km/h (6 MPH) <input type="checkbox"/> Vehicle speed: 10 km/h (6 MPH) or less <input type="checkbox"/> Vehicle is stopped		
Applying brake conditions	<input type="checkbox"/> Suddenly <input type="checkbox"/> Gradually		
Other conditions	<input type="checkbox"/> Operation of electrical equipment <input type="checkbox"/> Shift change <input type="checkbox"/> Other descriptions		

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INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:000000005432941

After replacing the ABS actuator and electric unit (control unit), perform the neutral position adjustment for the steering angle sensor.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:000000005432942

1. PERFORM THE NEUTRAL POSITION ADJUSTMENT FOR THE STEERING ANGLE SENSOR

Perform the neutral position adjustment for the steering angle sensor.

>> Refer to [BRC-66, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description"](#).

ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description

INFOID:000000005432943

In case of doing work that applies to the list below, make sure to adjust neutral position of steering angle sensor before running vehicle.

×: Required –: Not required

Situation	Adjustment of steering angle sensor neutral position
Removing/Installing ABS actuator and electric unit (control unit)	—
Replacing ABS actuator and electric unit (control unit)	×
Removing/Installing steering angle sensor	×
Replacing steering angle sensor	×
Removing/Installing steering components	×
Replacing steering components	×
Removing/Installing suspension components	×
Replacing suspension components	×
Change tires to new ones	—
Tire rotation	—
Adjusting wheel alignment	×

ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement

INFOID:000000005432944

ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

CAUTION:

To adjust neutral position of steering angle sensor, make sure to use CONSULT-III (Adjustment cannot be done without CONSULT-III)

1. ALIGN THE VEHICLE STATUS

Stop vehicle with front wheels in straight-ahead position.

>> GO TO 2.

2. PERFORM THE NEUTRAL POSITION ADJUSTMENT FOR THE STEERING ANGLE SENSOR

1. On the CONSULT-III screen, touch "WORK SUPPORT", then "ST ANG SEN ADJUSTMENT".
2. Touch "START".

INSPECTION AND ADJUSTMENT

[VDC/TCS/ABS]

< BASIC INSPECTION >

CAUTION:

Do not touch steering wheel while adjusting steering angle sensor.

3. After approximately 10 seconds, touch "END".

NOTE:

After approximately 60 seconds, the adjustment ends automatically.

4. Turn ignition switch OFF, then turn it ON again.

CAUTION:

Be sure to perform above operation.

>> GO TO 3.

3. CHECK DATA MONITOR

1. Run vehicle with front wheels in straight-ahead position, then stop.
2. Select "DATA MONITOR". Then make sure "STR ANGLE SIG" is within $0 \pm 2.5^\circ$.

Is the steering angle within the specified range?

YES >> GO TO 4.

NO >> Perform the neutral position adjustment for the steering angle sensor again, GO TO 1.

4. ERASE THE SELF-DIAGNOSIS MEMORY

Erase the self-diagnosis memories of the ABS actuator and electric unit (control unit) and ECM.

- ABS actuator and electric unit (control unit): Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).
- ECM: Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Are the memories erased?

YES >> INSPECTION END

NO >> Check the items indicated by the self-diagnosis.

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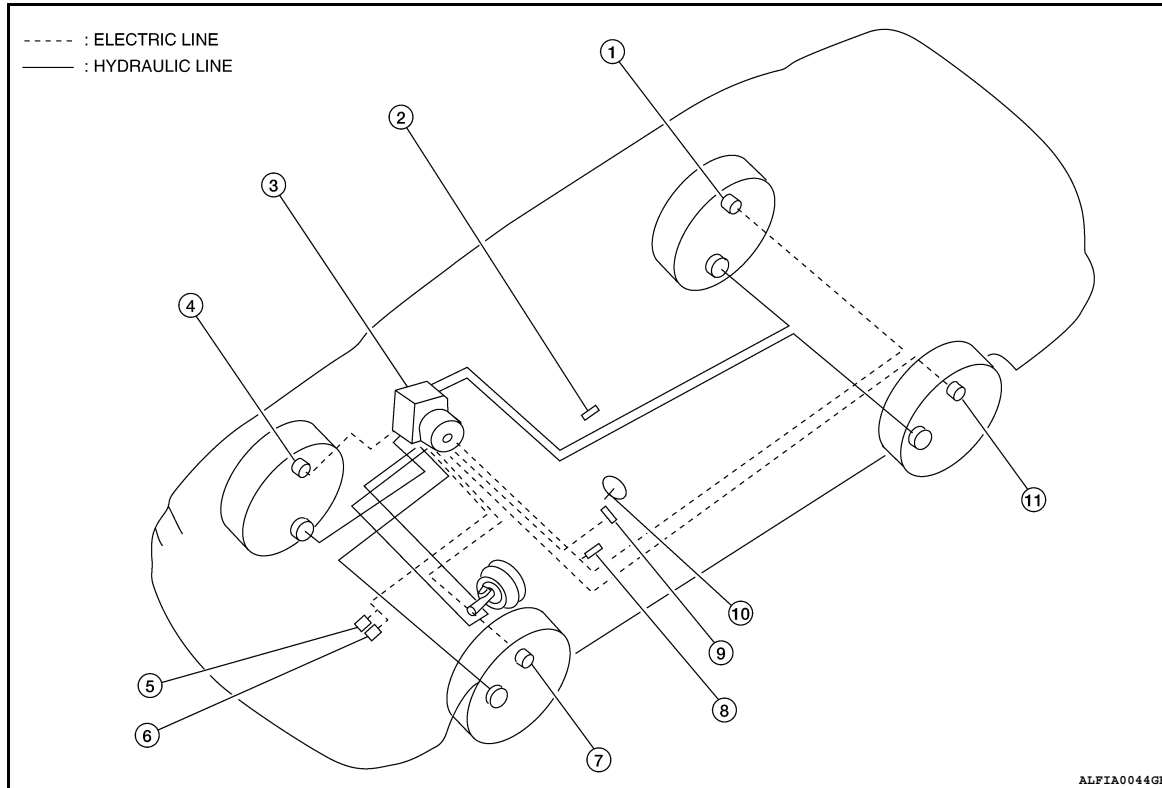
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FUNCTION DIAGNOSIS

VDC/TCS/ABS

System Diagram

INFOID:000000005432945



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- | | | |
|---------------------------|---------------------------------|---|
| 1. Rear RH wheel sensor | 2. Yaw rate/side/decel G sensor | 3. ABS actuator and electric unit (control unit) |
| 4. Front RH wheel sensor | 5. TCM | 6. ECM |
| 7. Front LH wheel sensor | 8. VDC OFF switch | 9. ABS, SLIP, VDC OFF and BRAKE indicator lamps (combination meter) |
| 10. Steering angle sensor | 11. Rear LH wheel sensor | |

System Description

INFOID:000000005432946

ABS, EBD SYSTEM

In case of electrical malfunctions with the ABS, ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp will turn on. In case of electrical malfunctions with the EBD, brake warning lamp, ABS warning lamp, VDC OFF indicator lamp and SLIP indicator lamp will turn on. Simultaneously, the VDC/TCS/ABS become one of the following conditions of the fail-safe function.

- For malfunction of ABS, only the EBD is activated and the condition of vehicle is the same condition of vehicles without TCS/ABS system.

NOTE:

ABS self-diagnosis sound may be heard. That is a normal condition because a self-diagnosis for "Ignition switch ON" and "The first starting" are being performed.

- For malfunction of EBD, EBD and ABS become inoperative, and the condition of vehicle is the same as the condition of vehicles without TCS/ABS, EBD system.

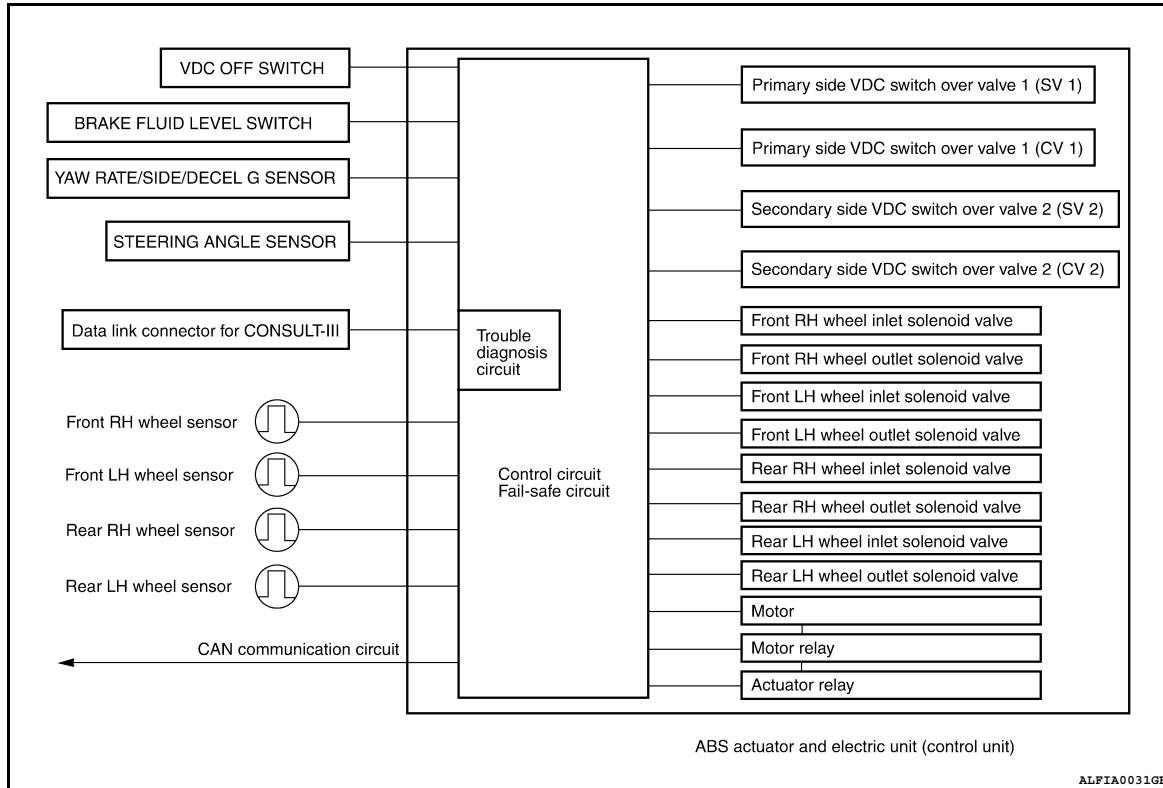
VDC / TCS

In case of malfunction in the VDC/TCS/ABS system, VDC OFF indicator lamp, SLIP indicator lamp are turned on, and the condition of vehicle is the same as the condition of vehicles without VDC/TCS control.

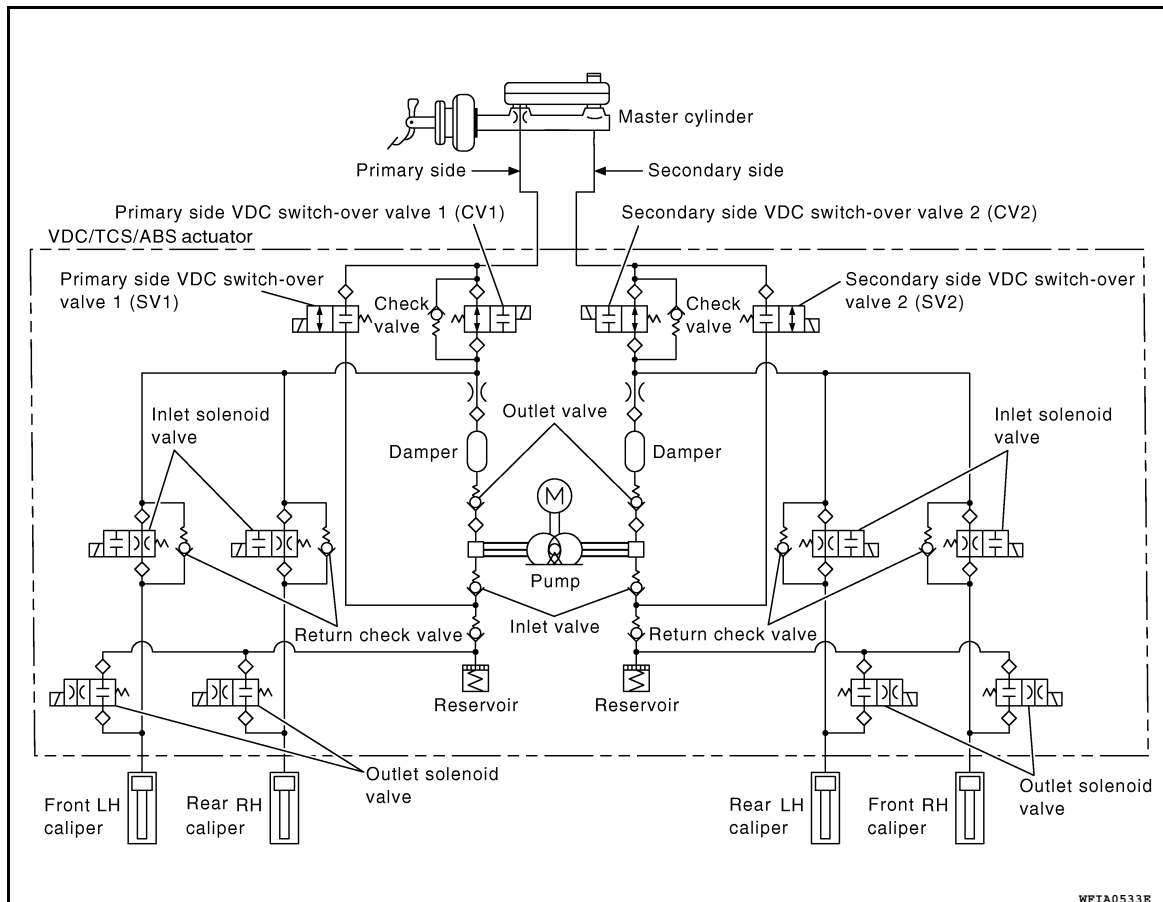
CAUTION:

If the Fail-Safe function is activated, then perform self-diagnosis for VDC/TCS/ABS control system.

ELECTRICAL COMPONENTS



VDC / TCS



OPERATION THAT IS NOT "SYSTEM ERROR"

Operation That Is Not "System Error"

ABS

- When starting engine or just after starting vehicle, brake pedal may vibrate or the motor operating sound may be heard from engine room. This is a normal states of the operation check.
- During ABS operation, brake pedal lightly vibrates and a mechanical sound may be heard. This is normal.
- Stopping distance may be longer than that of vehicles without ABS when vehicle drives on rough, gravel, or snow-covered (fresh, deep snow) roads.

TCS

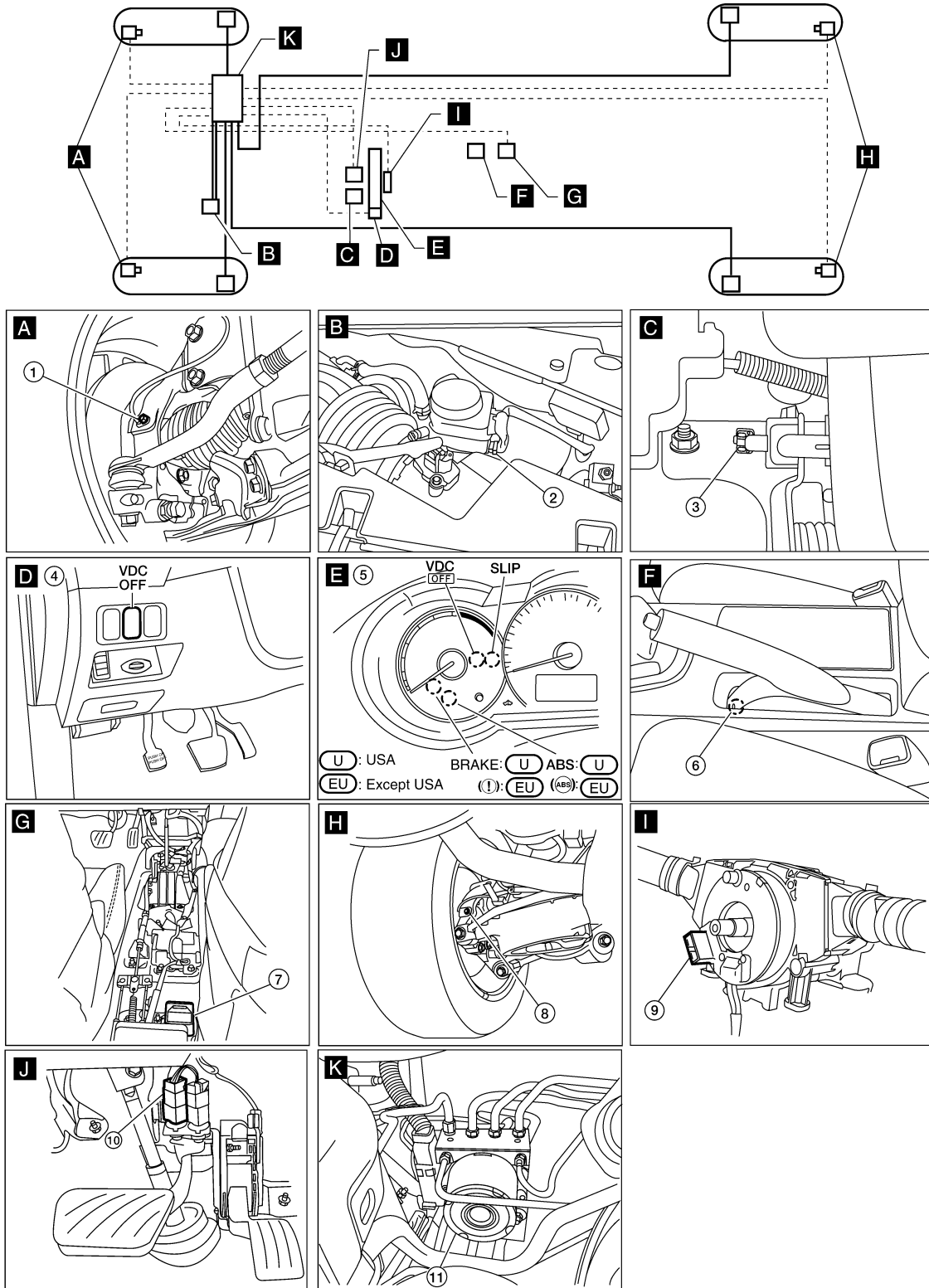
- Depending on road circumstances, driver may have a sluggish feel. This is normal, because optimum traction has highest priority under TCS operation.
- When vehicle is passing through a road where surface friction varies, downshifting or depressing accelerator pedal fully may activate TCS temporarily.

VDC

- During VDC operation, body and brake pedal lightly vibrate and mechanical sounds may be heard. This is normal.
- If vehicle is rotated on turn table, or rolled and rocked on ship, ABS warning lamp, VDC OFF indicator lamp, and SLIP indicator lamp may turn on. In this case, start engine on normal road again. If ABS warning lamp, VDC OFF indicator lamp, and SLIP indicator lamp turn off after restart, it is normal.
- When starting TCS or VDC under rapid acceleration or hard turn, operating sound by brake pedal is generated. However, this is not malfunction. This is because TCS and VDC are functioning normally.
- VDC may not operate normally or ABS warning lamp, VDC OFF indicator lamp and SLIP indicator lamp may turn on when driving special roads with extremely steep slant (banks on circuit road and so on.) However, it is not malfunction when returning to a normal state after restarting the engine. In that case, be sure to erase the memory of self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).
- Yaw rate /side G sensor malfunction may occur under hard turn like spin turn, rapid acceleration turn, drift run, etc., when VDC function is OFF (VDC OFF switch is turned on). It is not malfunction if it is possible to return to a normal position after restarting engine. Then erase the memory of self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).
- VDC OFF indicator lamp and SLIP indicator lamp may simultaneously turn on when low tire pressure warning lamp turns on. This is not a VDC system error but results from characteristic change of tires.

CAN Communication

Refer to [LAN-7, "System Description"](#).



- | | | |
|---|---------------------------------|--|
| 1. Front wheel sensor LH E19
Front wheel sensor RH E41 | 2. Brake fluid level switch E24 | 3. Parking brake switch (with CVT) E35 |
| 4. VDC OFF switch M72 | 5. Combination meter M24 | 6. Parking brake switch (with M/T) M73 |

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- | | | |
|--|---|---|
| 7. Yaw rate/side/decel G sensor M55 | 8. Rear wheel sensor LH C2
Rear wheel sensor RH C3 | 9. Steering angle sensor (behind spiral cable)
(Steering wheel removed for clarity)
M53 |
| 10. Stop lamp switch (with CVT) E38
Stop lamp switch (with M/T) E52 | 11. ABS actuator and electric unit (control unit) E54 | |

Component Description

INFOID:0000000005432948

Component parts		Reference
ABS actuator and electric unit (control unit)	Pump	BRC-86, "Description"
	Motor	
	Actuator relay (Main relay)	BRC-88, "Description"
	Solenoid valve	BRC-95, "Description"
	Pressure sensor	BRC-102, "Description"
	VDC switch-over valve (CV1, CV2, SV1, SV2)	BRC-121, "Description"
Wheel sensor		BRC-77, "Description"
Yaw rate/side G sensor		BRC-107, "Description"
Steering angle sensor		BRC-104, "Description"
Stop lamp switch		BRC-93, "Description"
VDC OFF switch		BRC-121, "Description"
ABS warning lamp		BRC-123, "Description"
Brake warning lamp		BRC-124, "Description"
Parking brake switch		BRC-119, "Description"
VDC OFF indicator lamp		BRC-126, "Description"
SLIP indicator lamp		BRC-128, "Description"

CONSULT-III Function (ABS)

INFOID:0000000005432949

FUNCTION

CONSULT-III can display each diagnostic item using the following diagnostic test modes.

Diagnostic test mode	Function
Work support	Supports inspections and adjustments. Commands are transmitted to the ABS actuator and electric unit (control unit) for setting the status suitable for required operation, input/output signals are received from the ABS actuator and electric unit (control unit) and received data is displayed.
Function Test	This mode is used to inform customers when the vehicle requires periodic maintenance.
Data Monitor	Displays ABS actuator and electric unit (control unit) input/output data in real time.
Active Test	Operation of electrical loads can be checked by sending drive signals to them.
Self Diagnostic Result	Displays ABS actuator and electric unit (control unit) self-diagnosis results.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication can be read.
ECU Identification	ABS actuator and electric unit (control unit) part number can be read.

SELF DIAGNOSTIC RESULT MODE

Operation Procedure

Before performing the self-diagnosis, start engine and drive vehicle at 30 km/h (19 MPH) or more for approximately 1 minute.

How to Erase Self-Diagnosis Results

After erasing DTC memory, start engine and drive vehicle at 30 km/h (19 MPH) or more for approximately 1 minute as the final inspection, and make sure that the ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp turn OFF.

CAUTION:

If memory cannot be erased, perform applicable diagnosis.

NOTE:

- When the wheel sensor malfunctions, after inspecting the wheel sensor system, the ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp will not turn OFF even when the system is normal unless the vehicle is driving at approximately 30 km/h (19 MPH) or more for approximately 1 minute.
- Brake warning lamp will turn ON in case of parking brake operation (when switch is ON) or of brake fluid level switch operation (when brake fluid is insufficient).
- VDC OFF switch should not stay in "ON" position.

Display Item List

Refer to [BRC-132, "DTC No. Index"](#).

DATA MONITOR

Display Item List

Item (Unit)	Data monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
FR LH SENSOR (km/h, mph)	×	×	×	Wheel speed (km/h, mph) calculated by front LH wheel sensor signal is displayed.
FR RH SENSOR (km/h, mph)	×	×	×	Wheel speed (km/h, mph) calculated by front RH wheel sensor signal is displayed.
RR LH SENSOR (km/h, mph)	×	×	×	Wheel speed (km/h, mph) calculated by rear LH wheel sensor signal is displayed.
RR RH SENSOR (km/h, mph)	×	×	×	Wheel speed (km/h, mph) calculated by rear RH wheel sensor signal is displayed.
FR RH IN SOL (On/Off)	—	×	×	Front RH IN ABS solenoid (On/Off) status is displayed.
FR RH OUT SOL (On/Off)	—	×	×	Front RH OUT ABS solenoid (On/Off) status is displayed.
FR LH IN SOL (On/Off)	—	×	×	Front LH IN ABS solenoid (On/Off) status is displayed.
FR LH OUT SOL (On/Off)	—	×	×	Front LH OUT ABS solenoid (On/Off) status is displayed.
RR RH IN SOL (On/Off)	—	×	×	Rear RH IN ABS solenoid (On/Off) status is displayed.
RR RH OUT SOL (On/Off)	—	×	×	Rear RH OUT ABS solenoid (On/Off) status is displayed.
RR LH IN SOL (On/Off)	—	×	×	Rear LH IN ABS solenoid (On/Off) status is displayed.
RR LH OUT SOL (On/Off)	—	×	×	Rear LH OUT ABS solenoid (On/Off) status is displayed.
STOP LAMP SW (On/Off)	×	×	×	Stop lamp switch (On/Off) status is displayed.
MOTOR RELAY (On/Off)	—	×	×	ABS motor relay signal (On/Off) status is displayed.
ACTUATOR RLY (On/Off)	—	×	×	ABS actuator relay signal (On/Off) status is displayed.
ABS WARN LAMP (On/Off)	—	×	×	ABS warning lamp (On/Off) status is displayed.

VDC/TCS/ABS

< FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

OFF LAMP (On/Off)	—	×	×	VDC OFF lamp (On/Off) status is displayed.
OFF SW (On/Off)	—	×	×	VDC OFF switch (On/Off) status is displayed.
SLIP LAMP (On/Off)	—	×	×	SLIP indicator lamp (On/Off) status is displayed.
BATTERY VOLT (V)	×	×	×	Voltage (V) supplied to ABS actuator and electric unit (control unit) is displayed.
SLCT LVR POSI (N/P, R, N/P, D)	×	×	×	Selector lever position judged by PNP switch signal.
YAW RATE SEN (d/s)	×	×	×	Yaw rate (d/s) detected by yaw rate sensor is displayed.
ACCEL POS SIG (%)	×	—	×	Throttle valve open/close (%) status judged by CAN communication signal is displayed.
SIDE G-SENSOR (m/s ²)	×	—	×	Lateral acceleration (m/s ²) detected by side G sensor is displayed.
STR ANGLE SIG (deg)	×	—	×	Steering angle (deg) detected by steering angle sensor is displayed.
PRESS SENSOR (bar)	×	—	×	Brake fluid pressure detected by pressure sensor is displayed.
EBD SIGNAL (On/Off)	—	—	×	EBD operation (On/Off) status is displayed.
ABS SIGNAL (On/Off)	—	—	×	ABS operation (On/Off) status is displayed.
TCS SIGNAL (On/Off)	—	—	×	TCS operation (On/Off) status is displayed.
VDC SIGNAL (On/Off)	—	—	×	VDC operation (On/Off) status is displayed.
ABS FAIL SIG (On/Off)	—	—	×	ABS fail signal (On/Off) status is displayed.
TCS FAIL SIG (On/Off)	—	—	×	TCS fail signal (On/Off) status is displayed.
VDC FAIL SIG (On/Off)	—	—	×	VDC fail signal (On/Off) status is displayed.
CRANKING SIG (On/Off)	—	—	×	Cranking condition (On/Off) status is displayed.
FLUID LEV SW (On/Off)	×	—	×	Brake fluid level switch (On/Off) status is displayed.
PARK BRAKE SW (On/Off)	×	—	×	Parking brake switch (On/Off) status is displayed.
USV[FL-RR] (On/Off)	—	—	×	Primary side USV solenoid valve (On/Off) status is displayed.
USV[FR-RL] (On/Off)	—	—	×	Secondary side USV solenoid valve (On/Off) status is displayed.
HSV[FL-RR] (On/Off)	—	—	×	Primary side HSV solenoid valve (On/Off) status is displayed.
HSV[FR-RL] (On/Off)	—	—	×	Secondary side HSV solenoid valve (On/Off) status is displayed.
V/R OUTPUT (On/Off)	—	—	×	Valve relay operation signal (On/Off) status is displayed.
M/R OUTPUT (On/Off)	—	—	×	Motor relay operation signal (On/Off) status is displayed.
ENGINE RPM (rpm)	×	—	×	Engine speed judged by CAN communication signal is displayed.

x: Applicable

-: Not applicable

ACTIVE TEST

CAUTION:

- Do not perform active test while driving vehicle.
- Make sure to completely bleed air from brake system.
- The active test cannot be performed with the ABS warning lamp, VDC indicator lamp, SLIP indicator lamp or brake warning lamp on.
- ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp are on during active test.

NOTE:

- When active test is performed while depressing the pedal, the pedal depression amount will change. This is normal. (Only solenoid valve and ABS motor)
- "TEST IS STOPPED" is displayed 10 seconds after operation start.
- After "TEST IS STOPPED" is displayed, to perform test again, touch BACK.

Test Item

SOLENOID VALVE

- When performing an active test of the ABS function, select "MAIN SIGNALS" for each test item.
- For ABS solenoid valve, touch "Up", "Keep", and "Down" on the display screen. For ABS solenoid valve (ACT), touch "Up", "ACT UP", "ACT KEEP" and confirm that solenoid valves operate as shown in the table below.

Operation		ABS solenoid valve			ABS solenoid valve (ACT)		
		Up	Keep	Down	Up	ACT UP	ACT KEEP
FR RH SOL	FR RH IN SOL	Off	On	On	—	—	—
	FR RH OUT SOL	Off	Off	On*	—	—	—
	USV[FR-RL]	Off	Off	On*	—	—	—
	HSV[FR-RL]	Off	Off	On*	—	—	—
FR LH SOL	FR LH IN SOL	Off	On	On	—	—	—
	FR LH OUT SOL	Off	Off	On*	—	—	—
	USV[FL-RR]	Off	Off	On*	—	—	—
	HSV[FL-RR]	Off	Off	On*	—	—	—
RR RH SOL	RR RH IN SOL	Off	On	On	—	—	—
	RR RH OUT SOL	Off	Off	On*	—	—	—
	USV[FL-RR]	Off	Off	On*	—	—	—
	HSV[FL-RR]	Off	Off	On*	—	—	—
RR LH SOL	RR LH IN SOL	Off	On	On	—	—	—
	RR LH OUT SOL	Off	Off	On*	—	—	—
	USV[FR-RL]	Off	Off	On*	—	—	—
	HSV[FR-RL]	Off	Off	On*	—	—	—
FR RH ABS SOLENOID (ACT)	FR RH IN SOL	—	—	—	Off	Off	Off
	FR RH OUT SOL	—	—	—	Off	Off	Off
	USV[FR-RL]	—	—	—	Off	On	On
	HSV[FR-RL]	—	—	—	Off	On*	Off
FR LH ABS SOLENOID (ACT)	FR LH IN SOL	—	—	—	Off	Off	Off
	FR LH OUT SOL	—	—	—	Off	Off	Off
	USV[FL-RR]	—	—	—	Off	Off	Off
	HSV[FL-RR]	—	—	—	Off	Off	Off

VDC/TCS/ABS

< FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

Operation		ABS solenoid valve			ABS solenoid valve (ACT)		
		Up	Keep	Down	Up	ACT UP	ACT KEEP
RR RH ABS SOLENOID (ACT)	RR RH IN SOL	—	—	—	Off	Off	Off
	RR RH OUT SOL	—	—	—	Off	Off	Off
	USV[FL-RR]	—	—	—	Off	Off	Off
	HSV[FL-RR]	—	—	—	Off	Off	Off
RR LH ABS SOLENOID (ACT)	RR LH IN SOL	—	—	—	Off	Off	Off
	RR LH OUT SOL	—	—	—	Off	Off	Off
	USV[FR-RL]	—	—	—	Off	On	On
	HSV[FR-RL]	—	—	—	Off	On*	Off

*: On for 1 to 2 seconds after the touch, and then Off

ABS MOTOR

- Touch “On” and “Off” on screen. Make sure motor relay, actuator relay, V/R output and M/R output operate as shown in table below.

Operation	On	Off
MOTOR RELAY	On	Off
ACTUATOR RLY	On	On

COMPONENT DIAGNOSIS

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

Description

INFOID:0000000005432950

When the sensor rotor rotates, the magnetic field changes. It converts the magnetic field changes to current signals (rectangular wave) and transmits them to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005432951

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1101	RR RH SENSOR-1	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	<ul style="list-style-type: none"> • Harness or connector • Wheel sensor • ABS actuator and electric unit (control unit)
C1102	RR LH SENSOR-1	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1103	FR RH SENSOR-1	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1104	FR LH SENSOR-1	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
RR RH SENSOR-1
RR LH SENSOR-1
FR RH SENSOR-1
FR LH SENSOR-1

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-77. "Diagnosis Procedure"](#).
 NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005432952

Regarding Wiring Diagram information, refer to [BRC-135. "COUPE : Wiring Diagram"](#) or [BRC-144. "SEDAN : Wiring Diagram"](#).

CAUTION:

Do not check between wheel sensor terminals.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check terminals for deformation, disconnection and looseness.

Is the inspection result normal?

- YES >> GO TO 2
 NO >> Repair or replace as necessary.

2.CHECK WHEEL SENSOR OUTPUT SIGNAL

1. Disconnect connectors from wheel sensor of malfunction code No.

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

2. Connect ABS active wheel sensor tester (J-45741) to wheel sensor using appropriate adapter.
3. Turn on the ABS active wheel sensor tester power switch.

NOTE:

The green POWER indicator should illuminate. If the POWER indicator does not illuminate, replace the battery in the ABS active wheel sensor tester before proceeding.

4. Spin the wheel of the vehicle by hand and observe the red SENSOR indicator on the ABS active wheel sensor tester. The red SENSOR indicator should flash on and off to indicate an output signal.

NOTE:

If the red SENSOR indicator illuminates but does not flash, reverse the polarity of the tester leads and retest.

Does the ABS active wheel sensor tester detect a signal?

YES >> GO TO 3

NO >> Replace wheel sensor. Refer to [BRC-163. "Removal and Installation"](#).

3.CHECK TIRE

Check air pressure, wear and size.

Is the inspection result normal?

YES >> GO TO 4

NO >> • Adjust air pressure, or replace tire.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK WHEEL BEARINGS

Check wheel bearing axial end play. Refer to [FAX-5. "Inspection"](#) (front) or [RAX-5. "On-vehicle Service"](#) (rear).

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace as necessary. Refer to [FAX-7. "Removal and Installation"](#) (front) or [RAX-6. "Removal and Installation"](#) (rear).

5.CHECK WHEEL SENSOR HARNESS

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check continuity between terminals. (Also check continuity when steering wheel is turned right and left and when sensor harness inside the wheel house is moved.)

	Power supply circuit		Signal circuit		Ground circuit	
Wheel	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit) (Signal - Ground)	ABS actuator and electric unit (control unit) (Signal) - Body Ground
Front RH	9	1	10	2	9, 10 - 1, 4	9, 10 - Body ground
Front LH	16	1	5	2	16, 5 - 1, 4	16, 5 - Body ground
Rear RH	8	1	19	2	8, 19 - 1, 4	8, 19 - Body ground
Rear LH	6	1	17	2	6, 17 - 1, 4	6, 17 - Body ground

Power supply circuit : Continuity should exist.

Signal circuit : Continuity should exist.

Ground circuit : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 6

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

6.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

1. Reconnect ABS actuator and electric unit (control unit) connector.
2. Turn ignition switch ON.

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

3. Check between wheel sensor connector power supply terminal and ground.

Wheel	Wheel sensor	Ground	Voltage
Front RH	1	—	8 V or more
Front LH			
Rear LH			
Rear RH			

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

Component Inspection

INFOID:0000000005432953

1.CHECK DATA MONITOR

On "DATA MONITOR", select "FR LH SENSOR", "FR RH SENSOR", "RR LH SENSOR", and "RR RH SENSOR", and check the vehicle speed.

Wheel sensor	Vehicle speed (DATA MONITOR)
FR LH SENSOR	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	
RR LH SENSOR	
RR RH SENSOR	

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-77, "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:0000000005432963

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

Description

INFOID:000000005432954

When the sensor rotor rotates, the magnetic field changes. It converts the magnetic field changes to current signals (rectangular wave) and transmits them to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432955

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1105	RR RH SENSOR-2	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	<ul style="list-style-type: none">• Harness or connector• Wheel sensor• ABS actuator and electric unit (control unit)
C1106	RR LH SENSOR-2	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1107	FR RH SENSOR-2	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
C1108	FR LH SENSOR-2	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
RR RH SENSOR-2
RR LH SENSOR-2
FR RH SENSOR-2
FR LH SENSOR-2

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-80, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005778744

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

CAUTION:

Do not check between wheel sensor terminals.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check terminals for deformation, disconnection and looseness.

Is the inspection result normal?

- YES >> GO TO 2
NO >> Repair or replace as necessary.

2.CHECK WHEEL SENSOR OUTPUT SIGNAL

1. Disconnect connectors from wheel sensor of malfunction code No.
2. Connect ABS active wheel sensor tester (J-45741) to wheel sensor using appropriate adapter.
3. Turn on the ABS active wheel sensor tester power switch.

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

NOTE:

The green POWER indicator should illuminate. If the POWER indicator does not illuminate, replace the battery in the ABS active wheel sensor tester before proceeding.

4. Spin the wheel of the vehicle by hand and observe the red SENSOR indicator on the ABS active wheel sensor tester. The red SENSOR indicator should flash on and off to indicate an output signal.

NOTE:

If the red SENSOR indicator illuminates but does not flash, reverse the polarity of the tester leads and retest.

Does the ABS active wheel sensor tester detect a signal?

YES >> GO TO 3

NO >> Replace wheel sensor. Refer to [BRC-163, "Removal and Installation"](#).

3.CHECK TIRE

Check air pressure, wear and size.

Is the inspection result normal?

YES >> GO TO 4

NO >> • Adjust air pressure, or replace tire.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK WHEEL BEARINGS

Check wheel bearing axial end play. Refer to [FAX-5, "Inspection"](#) (front) or [RAX-5, "On-vehicle Service"](#) (rear).

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace as necessary. Refer to [FAX-7, "Removal and Installation"](#) (front) or [RAX-6, "Removal and Installation"](#) (rear).

5.CHECK WHEEL SENSOR HARNESS

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check continuity between terminals. (Also check continuity when steering wheel is turned right and left and when sensor harness inside the wheel house is moved.)

Wheel	Power supply circuit		Signal circuit		Ground circuit	
	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit) (Signal - Ground)	ABS actuator and electric unit (control unit) (Signal) - Body Ground
Front RH	9	1	10	2	9, 10 - 1, 4	9, 10 - Body ground
Front LH	16	1	5	2	16, 5 - 1, 4	16, 5 - Body ground
Rear RH	8	1	19	2	8, 19 - 1, 4	8, 19 - Body ground
Rear LH	6	1	17	2	6, 17 - 1, 4	6, 17 - Body ground

Power supply circuit : Continuity should exist.

Signal circuit : Continuity should exist.

Ground circuit : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 6

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

6.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

1. Reconnect ABS actuator and electric unit (control unit) connector.
2. Turn ignition switch ON.
3. Check between wheel sensor connector power supply terminal and ground.

C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Wheel	Wheel sensor	Ground	Voltage
Front RH	1	—	8 V or more
Front LH			
Rear LH			
Rear RH			

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

Component Inspection

INFOID:000000005778745

1.CHECK DATA MONITOR

On "DATA MONITOR", select "FR LH SENSOR", "FR RH SENSOR", "RR LH SENSOR", and "RR RH SENSOR", and check the vehicle speed.

Wheel sensor	Vehicle speed (DATA MONITOR)
FR LH SENSOR	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	
RR LH SENSOR	
RR RH SENSOR	

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-80, "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778746

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

DTC C1109 BATTERY VOLTAGE [ABNORMAL]

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1109 BATTERY VOLTAGE [ABNORMAL]

Description

INFOID:0000000005432958

Supplies electric power to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005432959

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1109	BATTERY VOLTAGE [ABNORMAL]	When the ABS actuator and electric unit (control unit) power supply voltage is lower than normal.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
BATTERY VOLTAGE [ABNORMAL]

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-83, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005432960

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

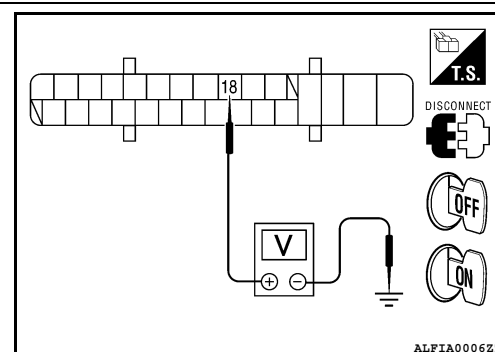
1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) POWER SUPPLY CIRCUIT AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Turn ignition switch ON.
4. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 18 and ground.



DTC C1109 BATTERY VOLTAGE [ABNORMAL]

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

ABS actuator and electric unit (control unit)	Ground	Condition	Voltage
18	—	Ignition switch ON	Battery voltage (Approx. 12 V)
		Ignition switch OFF	Approx. 0 V

5. Turn ignition switch OFF.
6. Check continuity between ABS actuator and electric unit (control unit) connector E54 terminals 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

YES >> • Check battery for terminal looseness, low voltage, etc. If any malfunction is found, repair malfunctioning parts.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

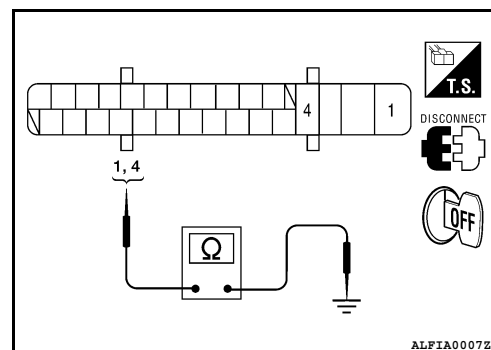
Special Repair Requirement

INFOID:000000005778750

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END



C1110, C1153, C1170 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1110, C1153, C1170 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

DTC Logic

INFOID:000000005432961

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1110	CONTROLLER FAILURE	When there is an internal malfunction in the ABS actuator and electric unit (control unit).	• ABS actuator and electric unit (control unit)
C1153	EMERGENCY BRAKE	When ABS actuator and electric unit (control unit) is malfunctioning. (Pressure increase is too much or too little)	
C1170	VARIANT CODING	In a case where VARIANT CODING is different.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
CONTROLLER FAILURE
EMERGENCY BRAKE
VARIANT CODING

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-85, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432962

1.REPLACE ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

CAUTION:

Replace **ABS actuator and electric unit (control unit)** when self-diagnostic result shows items other than that applicable.

- >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

Special Repair Requirement

INFOID:000000005778751

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

DTC C1111 PUMP MOTOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1111 PUMP MOTOR

Description

INFOID:0000000005432964

PUMP

The pump returns the brake fluid stored in the reservoir to the master cylinder by reducing the pressure.

MOTOR

The motor drives the pump according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005432965

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1111	PUMP MOTOR	During the actuator motor operating with ON, when the actuator motor turns OFF, or when the control line for actuator motor relay is open.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)
		During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
PUMP MOTOR

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to [BRC-86, "Diagnosis Procedure"](#).

NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005432966

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 2

2. CHECK ABS MOTOR AND MOTOR RELAY POWER SUPPLY CIRCUIT

DTC C1111 PUMP MOTOR

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between the ABS actuator and electric unit (control unit) connector E54 terminal 2 and ground.

ABS actuator and electric unit (control unit)	Ground	Voltage
2	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E54 terminals 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

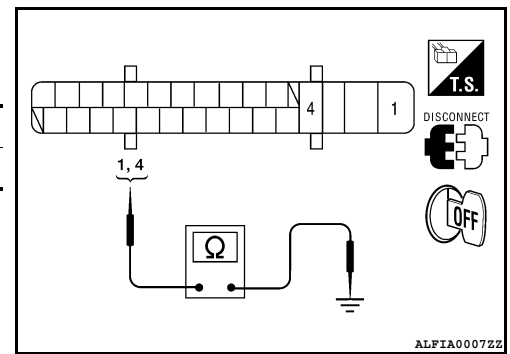
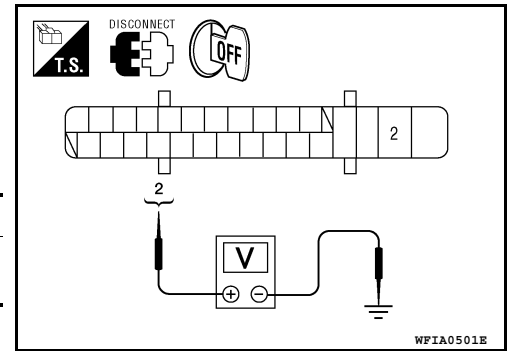
Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166. "Removal and Installation"](#).

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



Component Inspection

INFOID:000000005432967

1. CHECK ACTIVE TEST

1. On "ACTIVE TEST", select "ABS MOTOR".
2. Touch ON and OFF on screen. Make sure motor relay and actuator relay operates as shown in table below.

Operation	ON	OFF
MOTOR RELAY	ON	OFF
ACTUATOR RLY (Note)	ON	ON

NOTE:

A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-86. "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778752

1. ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

DTC C1114 MAIN RELAY

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1114 MAIN RELAY

Description

INFOID:000000005432968

Activates or deactivates each solenoid valve according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432969

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1114	MAIN RELAY	During the actuator relay operating with OFF, when the actuator relay turns ON, or when the control line for the relay is shorted to the ground.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)
		During the actuator relay operating with ON, when the actuator relay turns ON, or when the control line for the relay is open.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
MAIN RELAY

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-88, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432970

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

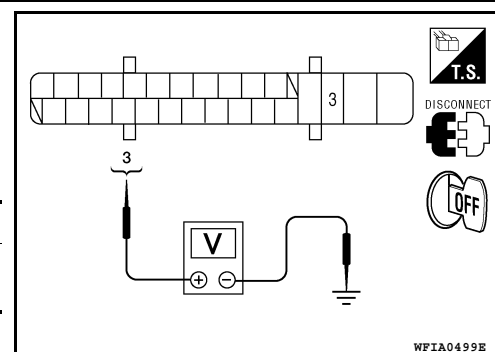
2.CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

DTC C1114 MAIN RELAY

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 3 and ground.



ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

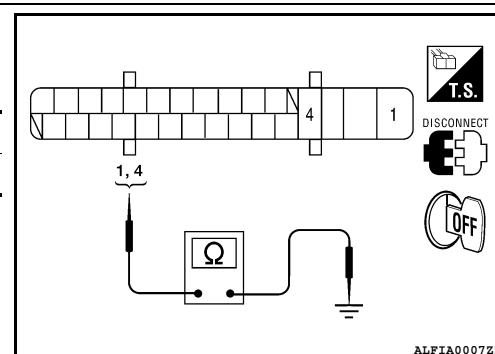
YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E54 terminals 1, 4 and ground.



ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166. "Removal and Installation"](#).

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Component Inspection

INFOID:000000005778754

1.CHECK ACTIVE TEST

1. On "ACTIVE TEST", select "ABS MOTOR".
2. Touch ON and OFF on screen. Make sure motor relay and actuator relay operates as shown in table below.

Operation	ON	OFF
MOTOR RELAY	ON	OFF
ACTUATOR RLY (Note)	ON	ON

NOTE:

A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-86. "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778754

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

Description

INFOID:000000005432972

When the sensor rotor rotates, the magnetic field changes. It converts the magnetic field changes to current signals (rectangular wave) and transmits them to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432973

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1115	ABS SENSOR [ABNORMAL SIGNAL]	When wheel sensor input signal is malfunctioning.	<ul style="list-style-type: none">• Harness or connector• Wheel sensor• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
ABS SENSOR [ABNORMAL SIGNAL]

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-90. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005778747

Regarding Wiring Diagram information, refer to [BRC-135. "COUPE : Wiring Diagram"](#) or [BRC-144. "SEDAN : Wiring Diagram"](#).

CAUTION:

Do not check between wheel sensor terminals.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check terminals for deformation, disconnection and looseness.

Is the inspection result normal?

- YES >> GO TO 2
NO >> Repair or replace as necessary.

2.CHECK WHEEL SENSOR OUTPUT SIGNAL

1. Disconnect connectors from wheel sensor of malfunction code No.
2. Connect ABS active wheel sensor tester (J-45741) to wheel sensor using appropriate adapter.
3. Turn on the ABS active wheel sensor tester power switch.

NOTE:

The green POWER indicator should illuminate. If the POWER indicator does not illuminate, replace the battery in the ABS active wheel sensor tester before proceeding.

4. Spin the wheel of the vehicle by hand and observe the red SENSOR indicator on the ABS active wheel sensor tester. The red SENSOR indicator should flash on and off to indicate an output signal.

NOTE:

If the red SENSOR indicator illuminates but does not flash, reverse the polarity of the tester leads and retest.

Does the ABS active wheel sensor tester detect a signal?

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

YES >> GO TO 3

NO >> Replace wheel sensor. Refer to [BRC-163, "Removal and Installation"](#).

3.CHECK TIRE

Check air pressure, wear and size.

Is the inspection result normal?

YES >> GO TO 4

NO >> • Adjust air pressure, or replace tire.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK WHEEL BEARINGS

Check wheel bearing axial end play. Refer to [FAX-5, "Inspection"](#) (front) or [RAX-5, "On-vehicle Service"](#) (rear).

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace as necessary. Refer to [FAX-7, "Removal and Installation"](#) (front) or [RAX-6, "Removal and Installation"](#) (rear).

5.CHECK WHEEL SENSOR HARNESS

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and malfunctioning wheel sensor connectors.
3. Check continuity between terminals. (Also check continuity when steering wheel is turned right and left and when sensor harness inside the wheel house is moved.)

Wheel	Power supply circuit		Signal circuit		Ground circuit	
	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit)	Wheel sensor Front Rear	ABS actuator and electric unit (control unit) (Signal - Ground)	ABS actuator and electric unit (control unit) (Signal) - Body Ground
Front RH	9	1	10	2	9, 10 - 1, 4	9, 10 - Body ground
Front LH	16	1	5	2	16, 5 - 1, 4	16, 5 - Body ground
Rear RH	8	1	19	2	8, 19 - 1, 4	8, 19 - Body ground
Rear LH	6	1	17	2	6, 17 - 1, 4	6, 17 - Body ground

Power supply circuit : Continuity should exist.

Signal circuit : Continuity should exist.

Ground circuit : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 6

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

6.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

1. Reconnect ABS actuator and electric unit (control unit) connector.
2. Turn ignition switch ON.
3. Check between wheel sensor connector power supply terminal and ground.

Wheel	Wheel sensor	Ground	Voltage
Front RH	1	—	8 V or more
Front LH			
Rear LH			
Rear RH			

Is the inspection result normal?

YES >> Inspection End.

DTC C1115 ABS SENSOR [ABNORMAL SIGNAL]

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166. "Removal and Installation"](#).

Component Inspection

INFOID:000000005778748

1.CHECK DATA MONITOR

On "DATA MONITOR", select "FR LH SENSOR", "FR RH SENSOR", "RR LH SENSOR", and "RR RH SENSOR", and check the vehicle speed.

Wheel sensor	Vehicle speed (DATA MONITOR)
FR LH SENSOR	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	
RR LH SENSOR	
RR RH SENSOR	

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-90. "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778749

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

DTC C1116 STOP LAMP SW

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1116 STOP LAMP SW

Description

INFOID:000000005432976

The stop lamp switch transmits the stop lamp switch signal (ON/OFF) to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:000000005432977

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1116	STOP LAMP SW	When stop lamp switch circuit is open.	<ul style="list-style-type: none">• Harness or connector• Stop lamp switch• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
STOP LAMP SWITCH

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-93. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432978

Regarding Wiring Diagram information, refer to [BRC-135. "COUPE : Wiring Diagram"](#) or [BRC-144. "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch and ABS actuator and electric unit (control unit) connectors.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connectors securely.
5. Start engine.
6. Repeat pumping brake pedal carefully several times, and perform self-diagnosis. Refer to [BRC-72. "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK STOP LAMP SWITCH CIRCUIT

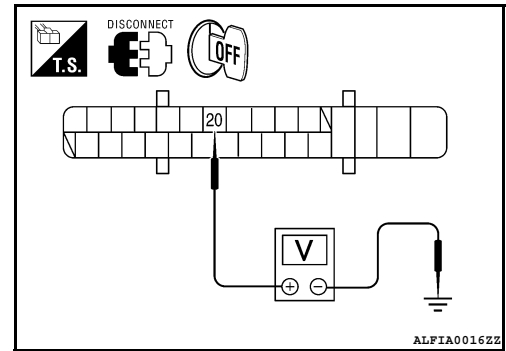
DTC C1116 STOP LAMP SW

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 20 and ground.

ABS actuator and electric unit (control unit)	Ground	Condition	Voltage
20	—	Brake pedal depressed	Battery voltage (Approx. 12 V)
		Brake pedal released	Approx. 0V



Is the inspection result normal?

YES >> Perform self-diagnosis.

NO >> • Repair or replace stop lamp switch circuit.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Component Inspection

INFOID:000000005432979

1.CHECK STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Check continuity between stop lamp switch terminals.

Stop lamp switch terminals	Condition	Continuity
1 – 2	Brake pedal depressed.	Yes
	Brake pedal released.	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace stop lamp switch.

Special Repair Requirement

INFOID:000000005778755

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

C1120, C1122, C1124, C1126 IN ABS SOL

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1120, C1122, C1124, C1126 IN ABS SOL

Description

INFOID:0000000005432980

The solenoid valve increases, holds or decreases the fluid pressure of each brake caliper according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005432981

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1120	FR LH IN ABS SOL	When the control unit detects a malfunction in the front LH inlet solenoid circuit.	• ABS actuator and electric unit (control unit)
C1122	FR RH IN ABS SOL	When the control unit detects a malfunction in the front RH inlet solenoid circuit.	
C1124	RR LH IN ABS SOL	When the control unit detects a malfunction in the rear LH inlet solenoid circuit.	
C1126	RR RH IN ABS SOL	When the control unit detects a malfunction in the rear RH inlet solenoid circuit.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
FR LH IN ABS SOL
FR RH IN ABS SOL
RR LH IN ABS SOL
RR RH IN ABS SOL

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-95, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005778756

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

C1120, C1122, C1124, C1126 IN ABS SOL

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 3 and ground.

ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E54 terminals 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

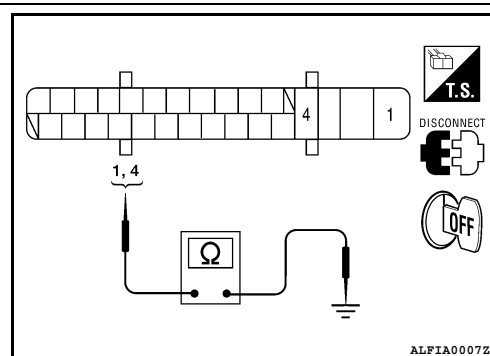
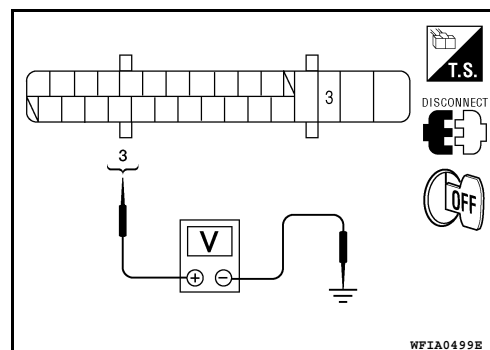
Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



Component Inspection

INFOID:000000005432983

1. CHECK ACTIVE TEST

1. Select each test menu item on "ACTIVE TEST".
2. On the display, touch "Up", "Keep", and "Down", and check that the system operates as shown in the table below.

Operation		ABS solenoid valve		
		Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
	FR RH OUT SOL	Off	Off	On*
	USV[FR-RL]	Off	Off	On*
	HSV[FR-RL]	Off	Off	On*
FR LH SOL	FR LH IN SOL	Off	On	On
	FR LH OUT SOL	Off	Off	On*
	USV[FL-RR]	Off	Off	On*
	HSV[FL-RR]	Off	Off	On*
RR RH SOL	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
	USV[FL-RR]	Off	Off	On*
	HSV[FL-RR]	Off	Off	On*

C1120, C1122, C1124, C1126 IN ABS SOL

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Operation		ABS solenoid valve		
		Up	Keep	Down
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*
	USV[FR-RL]	Off	Off	On*
	HSV[FR-RL]	Off	Off	On*

*: On for 1 to 2 seconds after the touch, and then Off

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-95, "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:0000000005778757

1.AJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

C1121, C1123, C1125, C1127 OUT ABS SOL

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1121, C1123, C1125, C1127 OUT ABS SOL

Description

INFOID:0000000005432984

The solenoid valve increases, holds or decreases the fluid pressure of each brake caliper according to the signals transmitted by the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005432985

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1121	FR LH OUT ABS SOL	When the control unit detects a malfunction in the front LH outlet solenoid circuit.	• ABS actuator and electric unit (control unit)
C1123	FR RH OUT ABS SOL	When the control unit detects a malfunction in the front RH outlet solenoid circuit.	
C1125	RR LH OUT ABS SOL	When the control unit detects a malfunction in the rear LH outlet solenoid circuit.	
C1127	RR RH OUT ABS SOL	When the control unit detects a malfunction in the rear RH outlet solenoid circuit.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
FR LH OUT ABS SOL
FR RH OUT ABS SOL
RR LH OUT ABS SOL
RR RH OUT ABS SOL

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-98, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005778758

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

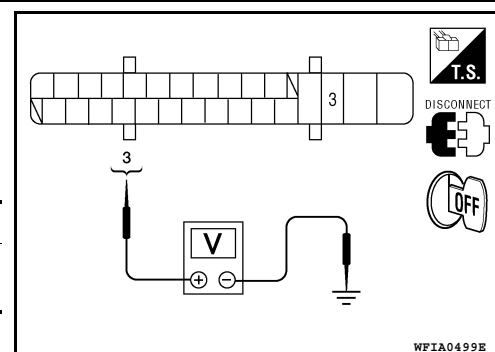
2.CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

C1121, C1123, C1125, C1127 OUT ABS SOL

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 3 and ground.



ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

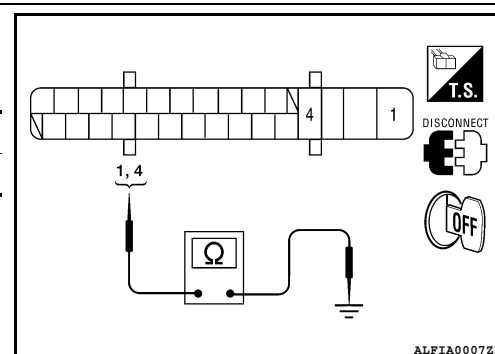
YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E54 terminals 1, 4 and ground.



ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

NO >> • Repair or replace malfunctioning components.

- Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Component Inspection

INFOID:000000005778759

1.CHECK ACTIVE TEST

1. Select each test menu item on "ACTIVE TEST".
2. On the display, touch "Up", "Keep", and "Down", and check that the system operates as shown in the table below.

Operation		ABS solenoid valve		
		Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
	FR RH OUT SOL	Off	Off	On*
	USV[FR-RL]	Off	Off	On*
	HSV[FR-RL]	Off	Off	On*
FR LH SOL	FR LH IN SOL	Off	On	On
	FR LH OUT SOL	Off	Off	On*
	USV[FL-RR]	Off	Off	On*
	HSV[FL-RR]	Off	Off	On*
RR RH SOL	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
	USV[FL-RR]	Off	Off	On*
	HSV[FL-RR]	Off	Off	On*

C1121, C1123, C1125, C1127 OUT ABS SOL

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Operation		ABS solenoid valve		
		Up	Keep	Down
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*
	USV[FR-RL]	Off	Off	On*
	HSV[FR-RL]	Off	Off	On*

*: On for 1 to 2 seconds after the touch, and then Off

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-98, "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778760

1.AJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

C1130, C1131, C1132, C1133, C1136 ENGINE SIGNAL

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1130, C1131, C1132, C1133, C1136 ENGINE SIGNAL

Description

INFOID:000000005432988

ABS actuator and electric unit (control unit) and ECM exchange the engine signal with CAN communication line.

DTC Logic

INFOID:000000005432989

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1130	ENGINE SIGNAL 1	Major engine components are malfunctioning.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)• ECM• CAN communication line
C1131	ENGINE SIGNAL 2		
C1132	ENGINE SIGNAL 3		
C1133	ENGINE SIGNAL 4		
C1136	ENGINE SIGNAL 6		

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
ENGINE SIGNAL 1
ENGINE SIGNAL 2
ENGINE SIGNAL 3
ENGINE SIGNAL 4
ENGINE SIGNAL 6

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-101, "Diagnosis Procedure"](#).
NO >> Inspection End

Diagnosis Procedure

INFOID:000000005432990

INSPECTION PROCEDURE

1.CHECK ENGINE SYSTEM

1. Perform ECM self-diagnosis. Repair or replace items indicated, then perform ECM self-diagnosis again. Refer to [EC-1171, "CONSULT-III Function"](#).
2. Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection end.
NO >>
 - Repair or replace malfunctioning components.
 - Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Special Repair Requirement

INFOID:000000005778761

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

DTC C1142 PRESS SEN CIRCUIT

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

DTC C1142 PRESS SEN CIRCUIT

Description

INFOID:000000005432992

The pressure sensor converts the brake fluid pressure to an electric signal and transmits it to the ABS actuator and electric unit (control unit). (The pressure sensor is integrated in the ABS actuator and electric unit (control unit).)

DTC Logic

INFOID:000000005432993

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1142	PRESS SEN CIRCUIT	Pressure sensor signal line is open or shorted, or pressure sensor is malfunctioning.	<ul style="list-style-type: none">• Harness or connector• Stop lamp switch• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
PRESS SEN CIRCUIT

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-102, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432994

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CHECK STOP LAMP SWITCH CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) and stop lamp switch connectors.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connectors securely.
5. Start engine.
6. Repeat pumping brake pedal carefully several times, and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> GO TO 2
NO >> Poor connection of connector terminals. Repair or replace connector.

2.CHECK STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Check continuity between stop lamp switch terminals.

Stop lamp switch terminals	Condition	Continuity
1 – 2	Brake pedal depressed.	Yes
	Brake pedal released.	No

DTC C1142 PRESS SEN CIRCUIT

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 3
NO >> Replace stop lamp switch.

3.CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Connect stop lamp switch connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 20 and ground.

ABS actuator and electric unit (control unit)		Condition	Voltage
Connector	Terminal		
E54	20	Brake pedal depressed	Battery voltage
		Brake pedal released	Approx. 0 V

Is the inspection result normal?

- YES >> GO TO 4
NO >> Repair or replace malfunctioning components.

4.CHECK SELF-DIAGNOSIS RESULTS

Check self-diagnosis results.

Self-diagnosis results
PRESS SEN CIRCUIT

Is above displayed on the self-diagnosis display?

- YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
NO >> Inspection End.

Component Inspection

INFOID:000000005432995

1.CHECK DATA MONITOR

On "DATA MONITOR", select "PRESS SENSOR" and check the brake fluid pressure.

Condition	PRESS SENSOR (DATA MONITOR)
With ignition switch turned ON and brake pedal released.	Approx. 0 bar
With ignition switch turned ON and brake pedal depressed.	– 40 to 300 bar

Is the inspection result normal?

- YES >> Inspection End.
NO >> Go to diagnosis procedure. Refer to [BRC-102, "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778762

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

C1143, C1144 STEERING ANGLE SENSOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1143, C1144 STEERING ANGLE SENSOR

Description

INFOID:000000005432997

The steering angle sensor detects the rotation amount, angular velocity and direction of the steering wheel, and transmits the data to the ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000005432998

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1143	ST ANG SEN CIRCUIT	Neutral position of steering angle sensor is dislocated, or the steering angle sensor is malfunctioning.	<ul style="list-style-type: none">• Harness or connector• Steering angle sensor• ABS actuator and electric unit (control unit)
C1144	ST ANG SEN SIGNAL	Neutral position of steering angle sensor is not finished.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
ST ANG SEN CIRCUIT
ST ANG SEN SIGNAL

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-104, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005432999

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK STEERING ANGLE SENSOR HARNESS

1. Check CAN communication system. Refer to [LAN-17, "Trouble Diagnosis Flow Chart"](#).

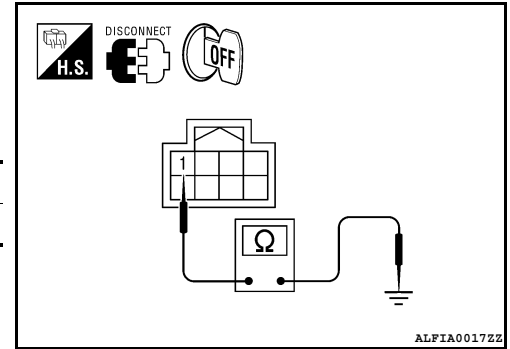
C1143, C1144 STEERING ANGLE SENSOR

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

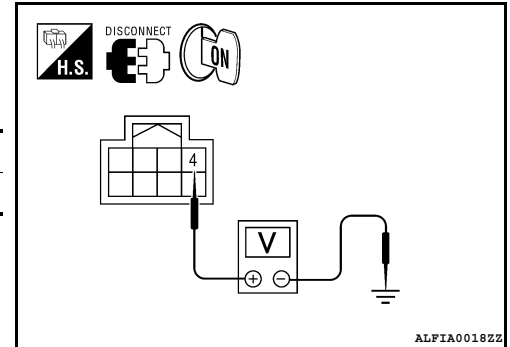
- Turn ignition switch OFF.
- Disconnect steering angle sensor connector.
- Check continuity between steering angle sensor connector M53 terminal 1 and ground.

Steering angle sensor	Ground	Continuity
1	—	Yes



- Turn ignition switch ON.
- Check voltage between steering angle sensor connector M53 terminal 4 and ground.

Steering angle sensor	Ground	Voltage
4	—	Battery voltage (Approx. 12 V)



Is the inspection result normal?

YES >> GO TO 3

NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3.CHECK DATA MONITOR

- Turn ignition switch OFF.
- Connect the steering angle sensor and ABS actuator and electric unit (control unit) connectors.
- Select "STR ANGLE SIG" in "Data Monitor" and check steering angle sensor signal.

Steering condition	STR ANGLE SIG (Data monitor)
Driving straight	- 2.5 ° to + 2.5 °
Turn 90° to right	Approx.+ 90 °
Turn 90° to left	Approx.- 90 °

Is the inspection result normal?

YES >> Perform self-diagnosis.

NO >> • Replace spiral cable (steering angle sensor) and adjust neutral position of steering angle sensor. Refer to [BRC-169. "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Component Inspection

INFOID:0000000005433000

1.CHECK DATA MONITOR

Select "STR ANGLE SIG" in "DATA MONITOR" and check steering angle sensor signal.

Steering condition	STR ANGLE SIG (DATA MONITOR)
Driving straight	±2.5 °
Turn 90 ° to right	Approx. +90 °
Turn 90 ° to left	Approx. -90 °

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-104. "Diagnosis Procedure"](#).

C1143, C1144 STEERING ANGLE SENSOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Special Repair Requirement

INFOID:000000005778763

1. ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

C1145, C1146 YAW RATE/SIDE G SENSOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1145, C1146 YAW RATE/SIDE G SENSOR

Description

INFOID:0000000005433002

The yaw rate/side/decel G sensor detects the yaw rate/side/decel G affecting the vehicle, and transmits the data to the ABS actuator and electric unit (control unit) as an analog voltage signal.

DTC Logic

INFOID:0000000005433003

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1145	YAW RATE SENSOR	Yaw rate sensor is malfunctioning, or the yaw rate sensor signal line is open or shorted.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)• Yaw rate/side G sensor
C1146	SIDE G-SEN CIRCUIT	Side G sensor is malfunctioning, or circuit of side G sensor is open or shorted.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
YAW RATE SENSOR
SIDE G-SEN CIRCUIT

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-107, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005433004

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

CAUTION:

- Sudden turns (such as spin turns, acceleration turns), drifting, etc., when VDC function is off (VDC OFF switch "ON") may cause yaw rate/side/decel G sensor system to indicate a malfunction. However, this is not a malfunction, if normal operation can be resumed after restarting engine. Then erase memory of self-diagnosis.
- If vehicle is on turn-table at entrance to parking garage, or on other moving surface, VDC OFF indicator lamp may illuminate and CONSULT-III self-diagnosis may indicate yaw rate sensor system malfunction. However, in this case there is no malfunction in yaw rate sensor system. Take vehicle off of turn-table or other moving surface, and start engine. Results will return to normal. And after doing spin turns or acceleration turns with VDC function is being off (VDC OFF switch "ON"), too, the results will return to a normal condition by re-starting vehicle.

1.CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect yaw rate/side/decel G sensor and ABS actuator and electric unit (control unit) connectors.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

C1145, C1146 YAW RATE/SIDE G SENSOR

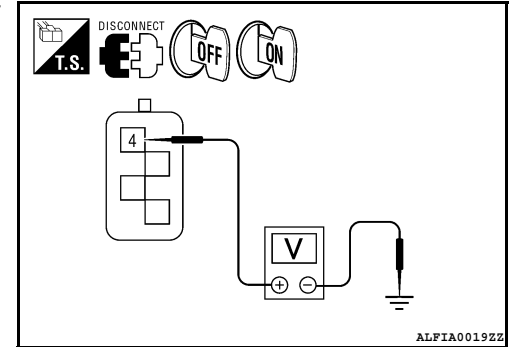
< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

2.CHECK YAW RATE/SIDE/DECEL G SENSOR POWER SUPPLY CIRCUIT

Check voltage between yaw rate/side/decel G sensor connector M55 terminal 4 and ground.

Yaw rate/side/decel G sensor	Ground	Condition	Voltage
4	—	Ignition switch ON	Battery voltage (Approx. 12 V)
		Ignition switch OFF	Approx. 0V



Is the inspection result normal?

YES >> GO TO 3

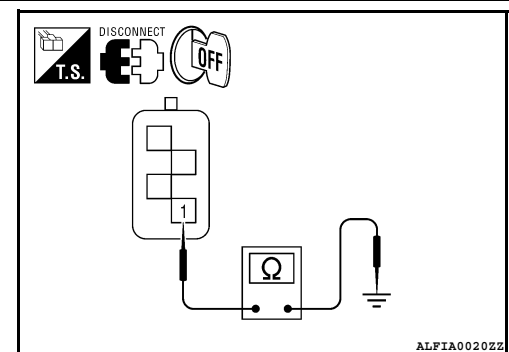
NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3.CHECK YAW RATE/SIDE/DECEL G SENSOR GROUND SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check resistance between yaw rate/side/decel G sensor connector M55 terminal 1 and ground.

Yaw rate/side/decel G sensor	Ground	Continuity
1	—	Yes



Is the inspection result normal?

YES >> GO TO 4

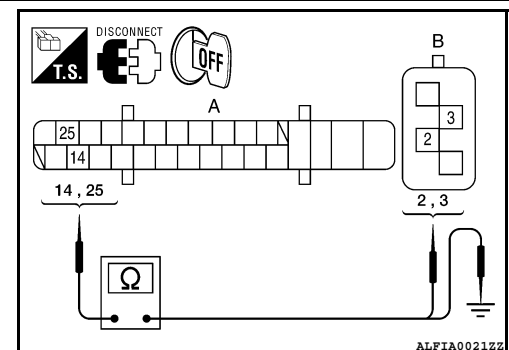
NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

4.CHECK YAW RATE/SIDE/DECEL G SENSOR HARNESS

1. Check continuity between ABS actuator and electric unit (control unit) connector (A) E54 and yaw rate/side/decel G sensor connector (B) M55.

ABS actuator and electric unit (control unit)	Yaw rate/side/decel G sensor	Continuity
14	2	Yes
25	3	



2. Check continuity between ABS actuator and electric unit (control unit) connector (A) E54 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
14	—	No
25		

Is the inspection result normal?

YES >> GO TO 5

NO >> • Repair or replace malfunctioning components.

• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

5.CHECK DATA MONITOR

1. Connect the Yaw rate/side/decel G sensor and ABS actuator and electric unit (control unit) connectors.
2. Select "YAW RATE SEN", "SIDE G-SENSOR" in "Data Monitor" and check Yaw rate/side/decel G sensor signal.

C1145, C1146 YAW RATE/SIDE G SENSOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Vehicle condition	Yaw rate sensor (Data monitor)	Side G sensor (Data monitor)
Stopped	Approx. 0 d/s	Approx. 0 m/s ²
Turning right	Negative value	Negative value
Turning left	Positive value	Positive value

Is the inspection result normal?

- YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166. "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
- NO >> • Replace Yaw rate/side/decel G sensor. Refer to [BRC-168. "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

Component Inspection

INFOID:000000005433005

1.CHECK DATA MONITOR

Select "YAW RATE SEN", "SIDE G-SENSOR" in "DATA MONITOR" and check yaw rate/side/decel G sensor signal.

Vehicle condition	YAW RATE SEN (DATA MONITOR)	SIDE G-SENSOR (DATA MONITOR)
Stopped	Approx. 0 d/s	Approx. 0 m/s ²
Turning right	Negative value	Negative value
Turning left	Positive value	Positive value

Is the inspection result normal?

- YES >> Inspection End.
- NO >> Go to diagnosis procedure. Refer to [BRC-107. "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:000000005778764

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

C1147, C1148, C1149, C1150 USV/HSV LINE

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1147, C1148, C1149, C1150 USV/HSV LINE

Description

INFOID:0000000005433007

USV1, USV2 (CUT VALVE)

The cut valve shuts off the normal brake fluid path from the master cylinder, when VDC/TCS is activated.

HSV1, HSV2 (SUCTION VALVE)

The suction valve supplies the brake fluid from the master cylinder to the pump, when VDC/TCS is activated.

DTC Logic

INFOID:0000000005433008

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1147	USV LINE[FL-RR]	VDC switch-over solenoid valve (USV1) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	<ul style="list-style-type: none">• Harness or connector• ABS actuator and electric unit (control unit)
C1148	USV LINE[FR-RL]	VDC switch-over solenoid valve (USV2) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	
C1149	HSV LINE[FL-RR]	VDC switch-over solenoid valve (HSV1) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	
C1150	HSV LINE[FR-RL]	VDC switch-over solenoid valve (HSV2) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
USV LINE[FL-RR]
USV LINE[FR-RL]
HSV LINE[FL-RR]
HSV LINE[FR-RL]

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-110. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005778765

Regarding Wiring Diagram information, refer to [BRC-135. "COUPE : Wiring Diagram"](#) or [BRC-144. "SEDAN : Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72. "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

< COMPONENT DIAGNOSIS >

YES >> Inspection End.
NO >> GO TO 2

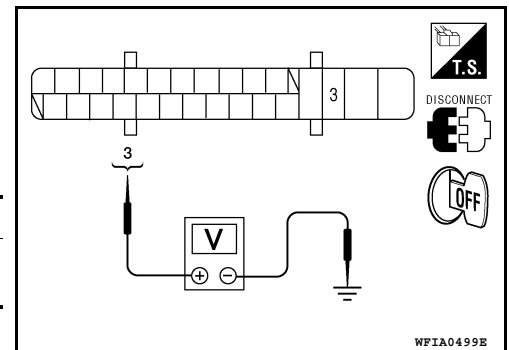
2. CHECK SOLENOID AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E54 terminal 3 and ground.

ABS actuator and electric unit (control unit)	Ground	Voltage
3	—	Battery voltage (Approx. 12 V)

Is the inspection result normal?

YES >> GO TO 3
NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

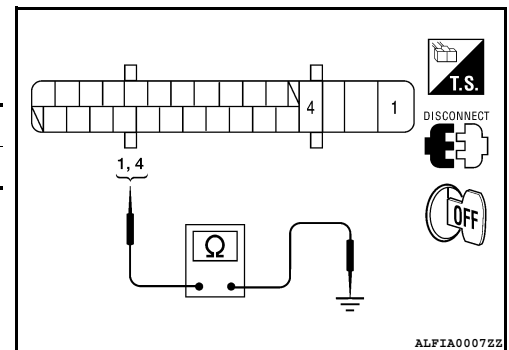
**3. CHECK SOLENOID AND ACTUATOR RELAY GROUND CIRCUIT**

Check continuity between ABS actuator and electric unit (control unit) connector E54 terminals 1, 4 and ground.

ABS actuator and electric unit (control unit)	Ground	Continuity
1, 4	—	Yes

Is the inspection result normal?

YES >> • Replace ABS actuator and electric unit (control unit).
Refer to [BRC-166. "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

**Component Inspection**

INFOID:000000005433010

1. CHECK ACTIVE TEST

1. Select each test menu item on "ACTIVE TEST".
2. On the display, touch "Up", "ACT UP", and "KEEP", and check that the system operates as shown in the table below.

Operation		ABS solenoid valve (ACT)		
		Up	ACT UP	ACT KEEP
FR RH ABS SOLENOID (ACT)	FR RH IN SOL	Off	Off	Off
	FR RH OUT SOL	Off	Off	Off
	USV[FR-RL]	Off	On	On
	HSV[FR-RL]	Off	On*	Off
FR LH ABS SOLENOID (ACT)	FR LH IN SOL	Off	Off	Off
	FR LH OUT SOL	Off	Off	Off
	USV[FL-RR]	Off	Off	Off
	HSV[FL-RR]	Off	Off	Off
RR RH ABS SOLENOID (ACT)	RR RH IN SOL	Off	Off	Off
	RR RH OUT SOL	Off	Off	Off
	USV[FL-RR]	Off	Off	Off
	HSV[FL-RR]	Off	Off	Off

C1147, C1148, C1149, C1150 USV/HSV LINE

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Operation		ABS solenoid valve (ACT)		
		Up	ACT UP	ACT KEEP
RR LH ABS SOLENOID (ACT)	RR LH IN SOL	Off	Off	Off
	RR LH OUT SOL	Off	Off	Off
	USV[FR-RL]	Off	On	On
	HSV[FR-RL]	Off	On*	Off

*: On for 1 to 2 seconds after the touch, and then Off

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-110, "Diagnosis Procedure"](#).

Special Repair Requirement

INFOID:0000000005778766

1.AJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

C1154 TRANSMISSION RANGE SWITCH

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

C1154 TRANSMISSION RANGE SWITCH

Description

INFOID:000000005433012

The transmission range switch signal is transmitted to the ABS actuator and electric unit (control unit) using the CAN communication lines.

DTC Logic

INFOID:000000005433013

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1154	PNP POS SIG	Transmission range switch signal or communication line between the ABS actuator and electric unit (control unit) and TCM is open or shorted.	<ul style="list-style-type: none">• Harness or connector• Transmission range switch

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
PNP POS SIG

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-113, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000005433014

1.CHECK DATA MONITOR

Select "SLCT LVR POSI" in "Data Monitor" and check transmission range switch signal.

Selector lever position	SLCT LVR POSI (Data monitor)
P position	P
R position	R
N position	N
D position	D

Is the inspection result normal?

- YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
NO >> GO TO 2

2.CHECK TRANSMISSION RANGE SWITCH

Perform transmission range switch inspection. Refer to [TM-132, "Description"](#).

Is the inspection result normal?

- YES >> • Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".
NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

C1154 TRANSMISSION RANGE SWITCH

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Special Repair Requirement

INFOID:000000005778767

1. ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

DTC C1155 BR FLUID LEVEL LOW

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1155 BR FLUID LEVEL LOW

Description

INFOID:0000000005433015

The brake fluid level switch converts the brake fluid level to an electric signal and transmits it to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000005433016

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1155	BR FLUID LEVEL LOW	Brake fluid level is low or communication line between the ABS actuator and electric unit (control unit) and brake fluid level switch is open or shorted.	<ul style="list-style-type: none">• Harness or connector• Brake fluid level switch

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
BR FLUID LEVEL LOW

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-115, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005433017

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

CAUTION:

Check brake fluid level in brake reservoir tank before starting inspection.

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect brake fluid level switch and combination meter connectors.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

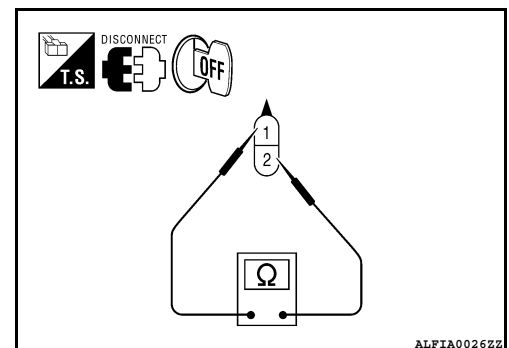
- YES >> Inspection End.
NO >> GO TO 2

2.CHECK BRAKE FLUID LEVEL SWITCH

1. Turn ignition switch OFF.
2. Disconnect brake fluid level switch connector.
3. Check continuity between brake fluid level switch connector E24 terminals 1 and 2.

Brake fluid level switch	Condition	Continuity
1, 2	Brake fluid reservoir is full.	No
	Brake fluid reservoir is empty.	Yes

Is the inspection result normal?



DTC C1155 BR FLUID LEVEL LOW

[VDC/TCS/ABS]

< COMPONENT DIAGNOSIS >

- YES >> GO TO 3
NO >> • Brake fluid level switch is malfunctioning. Replace reservoir tank. Refer to [BR-22. "Exploded View"](#).
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

3.CHECK BRAKE FLUID LEVEL SWITCH HARNESS

1. Disconnect combination meter connector.
2. Check continuity between combination meter connector M24 (A) terminal 27 and brake fluid level switch connector E24 (B) terminal 1.

27 - 1 : Continuity should exist.

3. Check continuity between combination meter connector M24 (A) terminal 27 and ground.

27 - Ground : Continuity should not exist.

Is the inspection result normal?

- YES >> GO TO 4
NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".

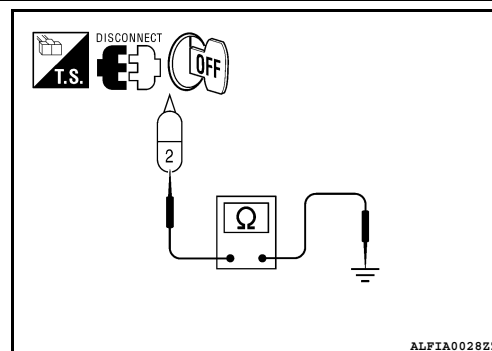
4.CHECK BRAKE FLUID LEVEL SWITCH GROUND CIRCUIT

Check continuity between brake fluid level switch connector E24 (B) terminal 2 and ground.

2 - Ground : Continuity should exist.

Is the inspection result normal?

- YES >> Brake fluid level switch circuit is OK.
NO >> • Repair or replace malfunctioning components.
• Perform the self-diagnosis, and make sure that the result shows "NO DTC IS DETECTED".



INFOID:000000005433018

Component Inspection

1.CHECK BRAKE FLUID LEVEL SWITCH

1. Turn ignition switch OFF.
2. Disconnect brake fluid level switch connector.
3. Check continuity between brake fluid level switch terminals.

Brake fluid level switch terminals	Condition	Continuity
1 - 2	Brake fluid reservoir is full.	No
	Brake fluid reservoir is empty.	Yes

Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace reservoir tank.

Special Repair Requirement

INFOID:0000000005778768

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

DTC C1156 ST ANG SEN COM CIR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

DTC C1156 ST ANG SEN COM CIR

Description

INFOID:0000000005433020

The steering angle sensor is connected to the ABS actuator and electric unit (control unit) in addition to CAN lines. CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic

INFOID:0000000005433021

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1156	ST ANG SEN COM CIR	When steering angle sensor is not transmitting CAN communication signal to the ABS actuator and electric unit (control unit).	<ul style="list-style-type: none">• Harness or connector• CAN communication line• Steering angle sensor• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
ST ANG SEN COM CIR

Is above displayed on the self-diagnosis display?

- YES >> Proceed to diagnosis procedure. Refer to [BRC-117, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005433022

1.CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
4. Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Self-diagnosis results
CAN COMM CIRCUIT
ST ANG SEN COM CIR

Is above displayed on the self-diagnosis display?

- YES >> Refer to [LAN-17, "Trouble Diagnosis Flow Chart"](#).
NO >> Inspection End.

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000005433023

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic

INFOID:0000000005433024

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
U1000	CAN COMM CIRCUIT	When ABS actuator and electric unit (control unit) is not transmitting or receiving CAN communication signal for 2 seconds or more.	<ul style="list-style-type: none"> CAN communication line ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000005433025

1. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminals for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminals.
- Reconnect connector and perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Self-diagnosis results
CAN COMM CIRCUIT

Is above displayed on the self-diagnosis display?

- YES >> Refer to [LAN-17, "Trouble Diagnosis Flow Chart"](#).
 NO >> Inspection End.

PARKING BRAKE SWITCH

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

PARKING BRAKE SWITCH

Description

INFOID:000000005433026

The parking brake switch converts the status of the parking brake pedal to an electric signal and transmits it to the combination meter. Then, through CAN communication, the signal is carried to the ABS actuator and electric unit (control unit).

Component Function Check

INFOID:000000005433027

1.CHECK PARKING BRAKE SWITCH OPERATION

Operate the parking brake and check that the brake warning lamp in the combination meter turns on/off correctly.

Condition	Brake warning lamp illumination status
When the parking brake is engaged	ON
When the parking brake is not engaged	OFF

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-119, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005433028

Regarding Wiring Diagram information, refer to [BRC-135, "COUPE : Wiring Diagram"](#) or [BRC-144, "SEDAN : Wiring Diagram"](#).

1.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Disconnect combination meter and parking brake switch connectors.
2. Check continuity between combination meter connector M24 terminal 26 and parking brake switch connector M73 (coupe; or sedan with M/T) or E35 (sedan with CVT) terminal 1.

26 - 1 : Continuity should exist.

3. Check continuity between combination meter harness connector M24 terminal 26 and ground.

26 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair harness or connector.

2.CHECK PARKING BRAKE SWITCH

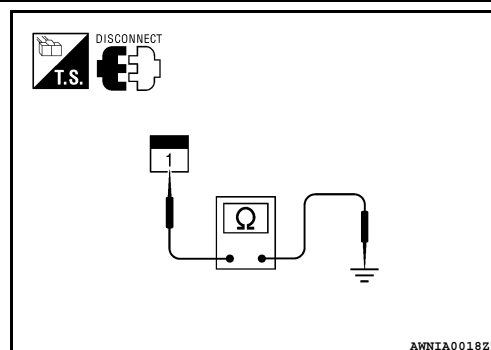
Check continuity between parking brake switch terminal 1 and switch case ground.

Component	Terminal	Condition	Continuity
Parking brake switch	1	Parking brake applied	Yes
		Parking brake released	No

Is the inspection result normal?

YES >> Check parking brake switch case ground condition.

NO >> Replace parking brake switch.



PARKING BRAKE SWITCH

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Component Inspection

INFOID:000000005433029

1.CHECK PARKING BRAKE SWITCH

1. Turn ignition switch OFF.
2. Disconnect parking brake switch connector.
3. Check continuity between parking brake switch terminal 1 and ground.

Parking brake switch terminal	Ground	Condition	Continuity
1	—	When the parking brake is engaged.	Yes
		When the parking brake is released.	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace parking brake switch.

Special Repair Requirement

INFOID:000000005778769

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

VDC OFF SWITCH

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

VDC OFF SWITCH

Description

INFOID:0000000005433030

VDC OFF switch can deactivate (turn OFF) the VDC/TCS function by pressing the VDC OFF switch.

Component Function Check

INFOID:0000000005433031

1.CHECK VDC OFF SWITCH OPERATION

Turn ON/OFF the VDC OFF switch and check that the VDC OFF indicator lamp in the combination meter turns ON/OFF correctly.

Condition	VDC OFF indicator lamp illumination status
VDC OFF switch: ON	ON
VDC OFF switch: OFF	OFF

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-121. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000005433032

Regarding Wiring Diagram information, refer to [BRC-135. "COUPE : Wiring Diagram"](#) or [BRC-144. "SEDAN : Wiring Diagram"](#).

1.CHECK VDC OFF SWITCH

Perform the VDC OFF switch component inspection. Refer to [BRC-122. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2

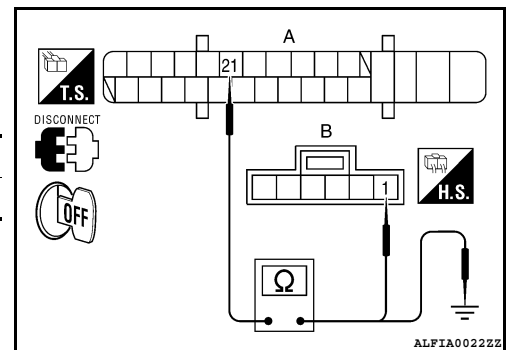
NO >> Replace VDC OFF switch.

2.CHECK VDC OFF SWITCH HARNESS

1. Disconnect ABS actuator and electric unit (control unit) connector E54.

2. Check continuity between ABS actuator and electric unit (control unit) connector E54 (A) terminal 21 and VDC OFF switch connector M72 (B) terminal 1.

ABS actuator and electric unit (control unit)	VDC OFF switch	Continuity
21	1	Yes



3. Check continuity between ABS actuator and electric unit (control unit) connector E54 (A) terminal 21 and ground.

ABS actuator and electric unit (control unit)	Body ground	Continuity
21	Ground	No

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace malfunctioning components.

VDC OFF SWITCH

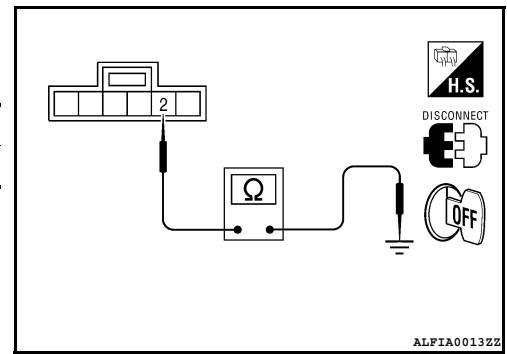
< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

3.CHECK VDC OFF SWITCH GROUND

Check continuity between VDC OFF switch connector M72 terminal 2 and ground.

VDC OFF switch	Body ground	Continuity
2	Ground	Yes



Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace malfunctioning components.

Component Inspection

INFOID:000000005433033

1.CHECK VDC OFF SWITCH

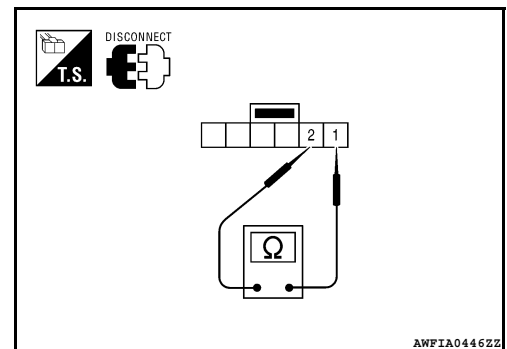
1. Disconnect VDC OFF switch connector.
2. Check continuity between VDC OFF switch terminals.

VDC OFF switch terminals	Condition	Continuity
1 - 2	VDC OFF switch pressed.	Yes
	VDC OFF switch released.	No

Is the inspection result normal?

YES >> Inspection End

NO >> Replace VDC OFF switch.



Special Repair Requirement

INFOID:000000005778770

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

ABS WARNING LAMP

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

ABS WARNING LAMP

Description

INFOID:000000005433034

×: ON –: OFF

Condition	ABS warning lamp
Ignition switch OFF	–
For 2 seconds after turning ON ignition switch	×
2 seconds later after turning ON ignition switch	–
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

Component Function Check

INFOID:000000005433035

1.CHECK ABS WARNING LAMP OPERATION

Check that the lamp illuminates for approximately 2 seconds after the ignition switch is turned ON.

Is the inspection result normal?

YES >> Inspection End.

NO >> Go to diagnosis procedure. Refer to [BRC-123, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005433036

1.CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> GO TO 2

NO >> Check items displayed by self-diagnosis.

2.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to [MWI-4, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

NO >> Repair or replace combination meter. Refer to [MWI-153, "Removal and Installation"](#).

Special Repair Requirement

INFOID:000000005778771

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

BRAKE WARNING LAMP

Description

INFOID:0000000005433037

×: ON –: OFF

Condition	Brake warning lamp (Note 1)
Ignition switch OFF	–
Ignition switch ON	× (Note 2)
EBD function is malfunctioning.	×

NOTE:

- 1: Brake warning lamp will turn on in case of parking brake operation (when switch is ON) or of brake fluid level switch operation (when brake fluid is insufficient).
- 2: After starting engine, brake warning lamp is turned off.

Component Function Check

INFOID:0000000005433038

1. BRAKE WARNING LAMP OPERATION CHECK 1

Check that the lamp illuminates after the ignition switch is turned ON, and turns OFF after the engine is started.

Is the inspection result normal?

YES >> GO TO 2

NO >> Go to diagnosis procedure. Refer to [BRC-124. "Diagnosis Procedure"](#).

2. BRAKE WARNING LAMP OPERATION CHECK 2

Check that the brake warning lamp in the combination meter turns ON/OFF correctly when operating the parking brakes.

Is the inspection result normal?

YES >> Inspection End.

NO >> Check parking brake switch. Refer to [MWI-54. "Description"](#).

Diagnosis Procedure

INFOID:0000000005433039

1. CHECK PARKING BRAKE SWITCH

Check that the brake warning lamp in the combination meter turns ON/OFF correctly when operating the parking brakes.

Is the inspection result normal?

YES >> GO TO 2

NO >> Check parking brake switch. Refer to [MWI-54. "Description"](#).

2. CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-72. "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Check items displayed by self-diagnosis.

3. CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to [MWI-4. "Work Flow"](#).

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166. "Removal and Installation"](#).

NO >> Repair or replace combination meter. Refer to [MWI-153. "Removal and Installation"](#).

BRAKE WARNING LAMP

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Special Repair Requirement

INFOID:0000000005778772

1.AJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

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VDC OFF INDICATOR LAMP

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

VDC OFF INDICATOR LAMP

Description

INFOID:0000000005433040

×: ON –: OFF

Condition	VDC OFF indicator lamp
Ignition switch OFF	–
For 2 seconds after turning ON ignition switch	×
2 seconds later after turning ON ignition switch	–
VDC OFF switch turned ON. (VDC function is OFF.)	×
VDC/TCS function is malfunctioning.	×
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

Component Function Check

INFOID:0000000005433041

1.VDC OFF INDICATOR LAMP OPERATION CHECK 1

Check that the lamp illuminates for approximately 2 seconds after the ignition switch is turned ON.

Is the inspection result normal?

YES >> GO TO 2

NO >> Go to diagnosis procedure. Refer to [BRC-126, "Diagnosis Procedure"](#).

2.VDC OFF INDICATOR LAMP OPERATION CHECK 2

Check that the VDC OFF indicator lamp in the combination meter turns ON/OFF correctly when operating the VDC OFF switch.

Is the inspection result normal?

YES >> Inspection End.

NO >> Check VDC OFF switch. Refer to [BRC-121, "Description"](#).

Diagnosis Procedure

INFOID:0000000005433042

1.CHECK VDC OFF SWITCH

Check that the VDC OFF indicator lamp in the combination meter turns ON/OFF correctly when operating the VDC OFF switch.

Is the inspection result normal?

YES >> GO TO 2

NO >> Check VDC OFF switch. Refer to [BRC-121, "Diagnosis Procedure"](#).

2.CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Check items displayed by self-diagnosis.

3.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to [MWI-4, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

NO >> Repair or replace combination meter. Refer to [MWI-153, "Removal and Installation"](#).

VDC OFF INDICATOR LAMP

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Special Repair Requirement

INFOID:000000005778773

1.AJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169, "Removal and Installation"](#).

>> END

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SLIP INDICATOR LAMP

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

SLIP INDICATOR LAMP

Description

INFOID:000000005433043

×: ON –: OFF

Condition	SLIP indicator lamp
Ignition switch OFF	–
For 2 seconds after turning ON ignition switch	×
2 seconds later after turning ON ignition switch	–
VDC/TCS function is malfunctioning.	×
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

Component Function Check

INFOID:000000005433044

1.CHECK SLIP INDICATOR LAMP OPERATION

Check that the lamp illuminates for approximately 2 seconds after the ignition switch is turned ON.

Is the inspection result normal?

YES >> Inspection End

NO >> Go to diagnosis procedure. Refer to [BRC-128. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005433045

1.CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-72. "CONSULT-III Function \(ABS\)"](#).

Is the inspection result normal?

YES >> GO TO 2

NO >> Check items displayed by self-diagnosis.

2.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to [MWI-4. "Work Flow"](#).

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166. "Removal and Installation"](#).

NO >> Repair or replace combination meter. Refer to [MWI-153. "Removal and Installation"](#).

Special Repair Requirement

INFOID:000000005778774

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform the neutral position adjustment for the steering angle sensor, when replacing the ABS actuator and electric unit (control unit). Refer to [BRC-169. "Removal and Installation"](#).

>> END

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[VDC/TCS/ABS]

ECU DIAGNOSIS

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Reference Value

INFOID:0000000005433046

VALUES ON THE DIAGNOSIS TOOL

CAUTION:

The display shows the control unit calculation data, so a normal value might be displayed even in the event the output circuit (harness) is open or short - circuited.

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
FR LH SENSOR FR RH SENSOR RR LH SENSOR RR RH SENSOR	Wheel speed	0 [km/h]	Vehicle stopped
		Nearly matches the speed meter display ($\pm 10\%$ or less)	Vehicle running (Note 1)
STOP LAMP SW	Brake pedal operation	When brake pedal is depressed	ON
		When brake pedal is not depressed	OFF
BATTERY VOLT	Battery voltage supplied to the ABS actuator and electric unit (control unit)	Ignition switch ON	10 – 16 V
SLCT LVR POSI	A/T shift position	P position R position N position D position	P R N D
OFF SW	VDC OFF switch ON/OFF	VDC OFF switch ON (When VDC OFF indicator lamp is ON)	ON
		VDC OFF switch OFF (When VDC OFF indicator lamp is OFF)	OFF
YAW RATE SEN	Yaw rate detected by yaw rate/side G sensor	When vehicle stop	Approx. 0 d/s
		When vehicle turning	-75 to 75 d/s
ACCEL POS SIG	Throttle actuator opening/closing is displayed (linked with accelerator pedal)	Accelerator pedal not depressed (ignition switch is ON)	0 %
		Depress accelerator pedal (ignition switch is ON)	0 - 100 %
SIDE G-SENSOR	Transverse G detected by side G sensor	Vehicle stopped	Approx. 0 m/s ²
		Vehicle turning right	Negative value (m/s ²)
		Vehicle turning left	Positive value (m/s ²)
STR ANGLE SIG	Steering angle detected by steering angle sensor	Straight-ahead	Approx. 0°
		Steering wheel turned	-720 to 720°
PRESS SENSOR	Brake fluid pressure detected by pressure sensor	With ignition switch turned ON and brake pedal released	Approx. 0 bar
		With ignition switch turned ON and brake pedal depressed	-40 to 300 bar

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[VDC/TCS/ABS]

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
ENGINE RPM	With engine running	With engine stopped	0 rpm
		Engine running	Almost in accordance with tachometer display
FLUID LEV SW	Brake fluid level switch	When brake fluid level switch ON	ON
		When brake fluid level switch OFF	OFF
PARK BRAKE SW	Parking brake switch	Parking brake switch is active	ON
		Parking brake switch is inactive	OFF
FR LH IN SOL FR LH OUT SOL FR RH IN SOL FR RH OUT SOL RR LH IN SOL RR LH OUT SOL RR RH IN SOL RR RH OUT SOL	Operation status of all solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	ON
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	OFF
MOTOR RELAY	Motor and motor relay operation	When the motor relay and motor are operating	ON
		When the motor relay and motor are not operating	OFF
ACTUATOR RLY (Note 2)	Actuator relay operation	When the actuator relay is operating	ON
		When the actuator relay is not operating	OFF
ABS WARN LAMP	ABS warning lamp (Note 3)	When ABS warning lamp is ON	ON
		When ABS warning lamp is OFF	OFF
OFF LAMP	VDC OFF indicator lamp (Note 3)	When VDC OFF indicator lamp is ON	ON
		When VDC OFF indicator lamp is OFF	OFF
SLIP LAMP	SLIP indicator lamp (Note 3)	When SLIP indicator lamp is ON	ON
		When SLIP indicator lamp is OFF	OFF
SNOW MODE SW	Snow mode switch	When snow mode switch is ON	ON
		When snow mode switch is OFF	OFF
BST OPER SIG	Not applied but displayed	—	OFF
M-MODE SIG	Manual mode activated	When the manual mode is active	ON
		When the manual mode is inactive	OFF

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[VDC/TCS/ABS]

Monitor item	Display content	Data monitor		
		Condition	Reference value in normal operation	
EBD SIGNAL	EBD operation	EBD is active	ON	A
		EBD is inactive	OFF	B
ABS SIGNAL	ABS operation	ABS is active	ON	C
		ABS is inactive	OFF	
TCS SIGNAL	TCS operation	TCS is active	ON	D
		TCS is inactive	OFF	
VDC SIGNAL	VDC operation	VDC is active	ON	E
		VDC is inactive	OFF	
EBD FAIL SIG	EBD fail-safe signal	In EBD fail-safe	ON	F
		EBD is normal	OFF	
ABS FAIL SIG	ABS fail-safe signal	In ABS fail-safe	ON	BRC
		ABS is normal	OFF	
TCS FAIL SIG	TCS fail-safe signal	In TCS fail-safe	ON	G
		TCS is normal	OFF	
VDC FAIL SIG	VDC fail-safe signal	In VDC fail-safe	ON	H
		VDC is normal	OFF	
CRANKING SIG	Crank operation	Crank is active	ON	I
		Crank is inactive	OFF	
USV HSV (FL-RR, FR-RL) (Note 2)	VDC switch-over valve	When actuator (switch-over valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (when in fail-safe mode)	ON	J
		When actuator (switch-over valve) is not active and actuator relay is active (ignition switch ON)	OFF	K
V/R OUTPUT (Note 2)	Solenoid valve relay activated	When the solenoid valve relay is active (When ignition switch OFF)	ON	L
		When the solenoid valve relay is not active (in the fail-safe mode)	OFF	M
M/R OUTPUT	Actuator motor and motor relay activated	When the actuator motor and motor relay are active ("ACTIVE TEST" with CONSULT-III)	ON	N
		When the actuator motor and motor relay are inactive	OFF	O

Note 1: Confirm tire pressure is normal.

Note 2: A brief moment of ON/OFF condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

Note 3: On and off timing for warning lamp and indicator lamp. Refer to [BRC-68, "System Description"](#).

Fail-Safe

INFOID:000000005433049

ABS, EBD SYSTEM

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[VDC/TCS/ABS]

In case of electrical malfunctions with the ABS, ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp will turn on. In case of electrical malfunctions with the EBD, brake warning lamp, ABS warning lamp, VDC OFF indicator lamp and SLIP indicator lamp will turn on. Simultaneously, the VDC/TCS/ABS become one of the following conditions of the fail-safe function.

- For malfunction of ABS, only the EBD is activated and the condition of vehicle is the same condition of vehicles without TCS/ABS system.

NOTE:

ABS self-diagnosis sound may be heard. That is a normal condition because a self-diagnosis for "Ignition switch ON" and "The first starting" are being performed.

- For malfunction of EBD, EBD and ABS become inoperative, and the condition of vehicle is the same as the condition of vehicles without TCS/ABS, EBD system.

VDC / TCS

In case of malfunction in the VDC/TCS/ABS system, VDC OFF indicator lamp, SLIP indicator lamp are turned on, and the condition of vehicle is the same as the condition of vehicles without VDC/TCS control.

CAUTION:

If the Fail-Safe function is activated, then perform self-diagnosis for VDC/TCS/ABS control system.

DTC No. Index

INFOID:000000005433050

Display item	Malfunction detecting condition	Check item
RR RH SENSOR-1 [C1101]	Circuit of rear RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	BRC-77. "Diagnosis Procedure" (Note 1)
RR LH SENSOR-1 [C1102]	Circuit of rear LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
FR RH SENSOR-1 [C1103]	Circuit of front RH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
FR LH SENSOR-1 [C1104]	Circuit of front LH wheel sensor is open. Or when the sensor power voltage is outside the standard.	
RR RH SENSOR-2 [C1105]	When the circuit in the rear RH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	BRC-80. "Diagnosis Procedure" (Note 1)
RR LH SENSOR-2 [C1106]	When the circuit in the rear LH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
FR RH SENSOR-2 [C1107]	When the circuit in the front RH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
FR LH SENSOR- 2 [C1108]	When the circuit in the front LH wheel sensor is short-circuited. Or when the distance between the wheel sensor and sensor rotor is too large and the sensor pulse cannot be recognized by the control unit.	
BATTERY VOLTAGE [ABNORMAL] [C1109]	When the ABS actuator and electric unit (control unit) power supply voltage is lower than normal.	BRC-83. "Diagnosis Procedure"
CONTROLLER FAILURE [C1110]	When there is an internal malfunction in the ABS actuator and electric unit (control unit).	BRC-85. "Diagnosis Procedure"
PUMP MOTOR [C1111]	During the actuator motor operating with ON, when the actuator motor turns OFF, or when the control line for actuator motor relay is open.	BRC-86. "Diagnosis Procedure"
	During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	
MAIN RELAY [C1114]	During the actuator relay operating with OFF, when the actuator relay turns ON. Or when the control line for the relay is shorted to the ground.	BRC-88. "Diagnosis Procedure"
	During the actuator relay operating with ON, when the actuator relay turns OFF, or when the control line for the relay is open.	
ABS SENSOR [ABNORMAL SIGNAL] [C1115]	When wheel sensor input signal is malfunctioning.	BRC-90. "Diagnosis Procedure" (Note 1)

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[VDC/TCS/ABS]

Display item	Malfunction detecting condition	Check item
STOP LAMP SW [C1116]	When stop lamp switch circuit is open.	BRC-93, "Diagnosis Procedure"
FR LH IN ABS SOL [C1120]	When the control unit detects a malfunction in the front left inlet solenoid circuit.	BRC-95, "Diagnosis Procedure"
FR RH IN ABS SOL [C1122]	When the control unit detects a malfunction in the front right inlet solenoid circuit.	
RR LH IN ABS SOL [C1124]	When the control unit detects a malfunction in the rear left inlet solenoid circuit.	
RR RH IN ABS SOL [C1126]	When the control unit detects a malfunction in the rear right inlet solenoid circuit.	
FR LH OUT ABS SOL [C1121]	When the control unit detects a malfunction in the front left outlet solenoid circuit.	BRC-98, "Diagnosis Procedure"
FR RH OUT ABS SOL [C1123]	When the control unit detects a malfunction in the front right outlet solenoid circuit.	
RR LH OUT ABS SOL [C1125]	When the control unit detects a malfunction in the rear left outlet solenoid circuit.	
RR RH OUT ABS SOL [C1127]	When the control unit detects a malfunction in the rear right outlet solenoid circuit.	
ENGINE SIGNAL 1 [C1130]	Major engine components are malfunctioning.	BRC-101, "Diagnosis Procedure"
ENGINE SIGNAL 2 [C1131]		
ENGINE SIGNAL 3 [C1132]		
ENGINE SIGNAL 4 [C1133]		
ENGINE SIGNAL 6 [C1136]		
PRESS SEN CIRCUIT [C1142]	Pressure sensor signal line is open or shorted, or pressure sensor is malfunctioning.	BRC-102, "Diagnosis Procedure"
ST ANG SEN CIRCUIT [C1143]	Neutral position of steering angle sensor is dislocated, or the steering angle sensor is malfunctioning.	BRC-104, "Diagnosis Procedure"
ST ANG SEN SIGNAL [C1144]	Neutral position correction of steering angle sensor is not finished.	
YAW RATE SENSOR [C1145]	Yaw rate sensor is malfunctioning, or the yaw rate sensor signal line is open or shorted.	BRC-107, "Diagnosis Procedure"
SIDE G-SEN CIRCUIT [C1146]	Side G sensor is malfunctioning, or circuit of side G sensor is open or shorted.	
USV LINE [FL-RR] [C1147]	VDC switch-over solenoid valve (USV1) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	BRC-110, "Diagnosis Procedure"
USV LINE [FR-RL] [C1148]	VDC switch-over solenoid valve (USV2) on the secondary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	
HSV LINE [FL-RR] [C1149]	VDC switch-over solenoid valve (HSV1) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	
HSV LINE [FR-RL] [C1150]	VDC switch-over solenoid valve (HSV2) on the secondary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	
EMERGENCY BRAKE [C1153]	When ABS actuator and electric unit (control unit) is malfunctioning. (Pressure increase is too much or too little)	BRC-85, "Diagnosis Procedure"
PNP POS SIG [C1154]	TCM or ABS actuator and electric unit (control unit) internal malfunction.	BRC-113, "Diagnosis Procedure"
BR FLUID LEVEL LOW [C1155]	Brake fluid level is low or communication line between the ABS actuator and electric unit (control unit) and brake fluid level switch is open or shorted.	BRC-115, "Diagnosis Procedure"

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS >

[VDC/TCS/ABS]

Display item	Malfunction detecting condition	Check item
ST ANG SEN COM CIR [C1156]	CAN communication circuit or steering angle sensor is malfunctioning.	BRC-117. "Diagnosis Procedure"
VARIANT CODING [C1170]	In a case where VARIANT CODING is different.	BRC-85. "Diagnosis Procedure"
CAN COMM CIRCUIT [U1000]	When there is a malfunction in the CAN communication circuit.	BRC-118. "Diagnosis Procedure" (Note 2)

Note 1: After completing repairs of shorted sensor circuit, when ignition switch is turned ON, ABS warning lamp turns on. Make sure that ABS warning lamp turns off while driving vehicle at 30 km/h (19 MPH) or more for approximately 1 minute according to self-diagnosis procedure. In addition, if wheel sensor 2 is displayed for wheels, check wheel sensor circuit and also check control unit power voltage.

Note 2: When malfunctions are detected in several systems, including CAN communication circuit [U1000], troubleshoot CAN communication circuit. Refer to [BRC-118. "Diagnosis Procedure"](#).

BRAKE CONTROL SYSTEM - VDC

[VDC/TCS/ABS]

< WIRING DIAGRAM >

WIRING DIAGRAM

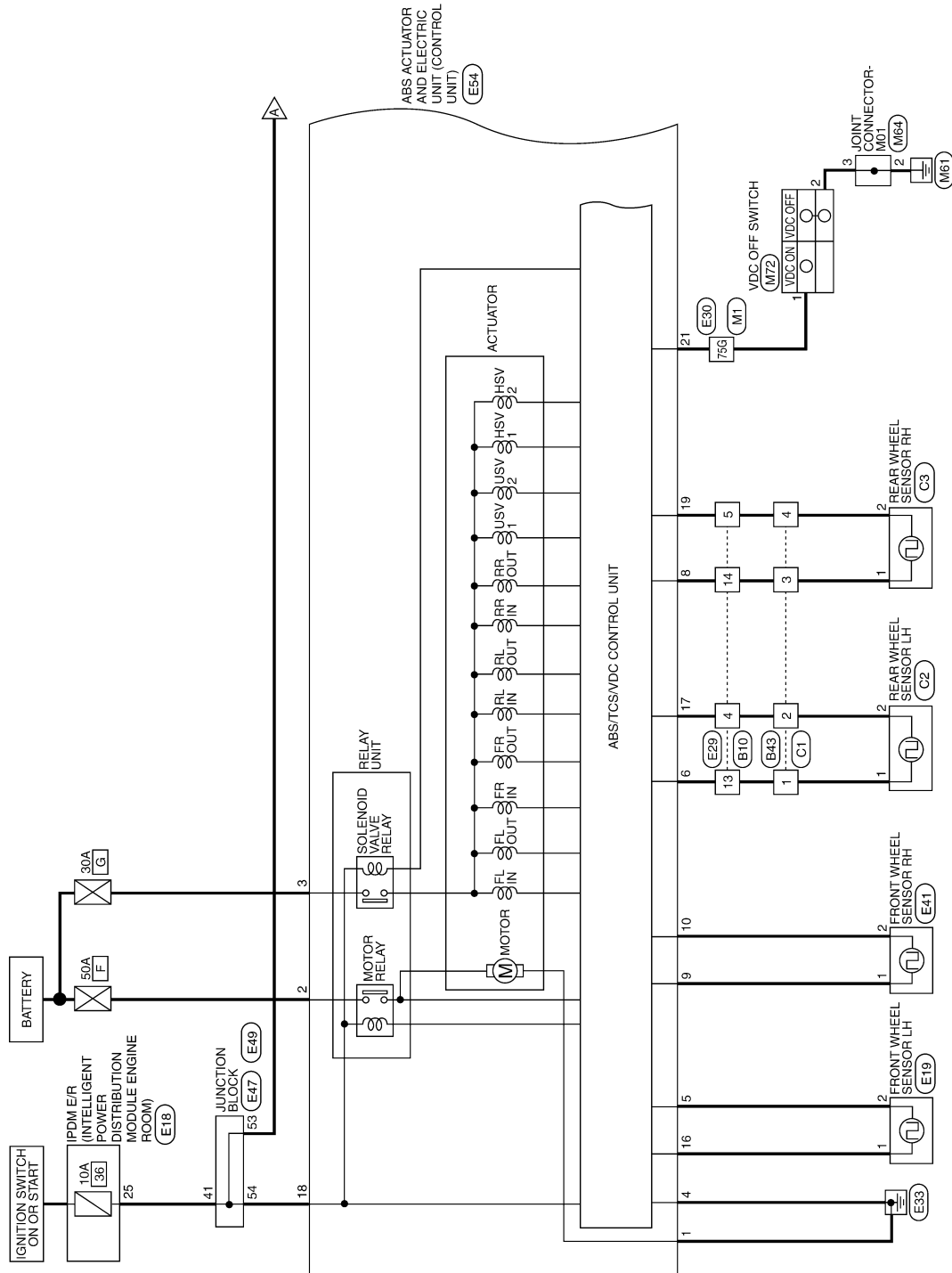
BRAKE CONTROL SYSTEM - VDC

COUPE

COUPE : Wiring Diagram

INFOID:0000000005433047

BRAKE CONTROL SYSTEM - COUPE

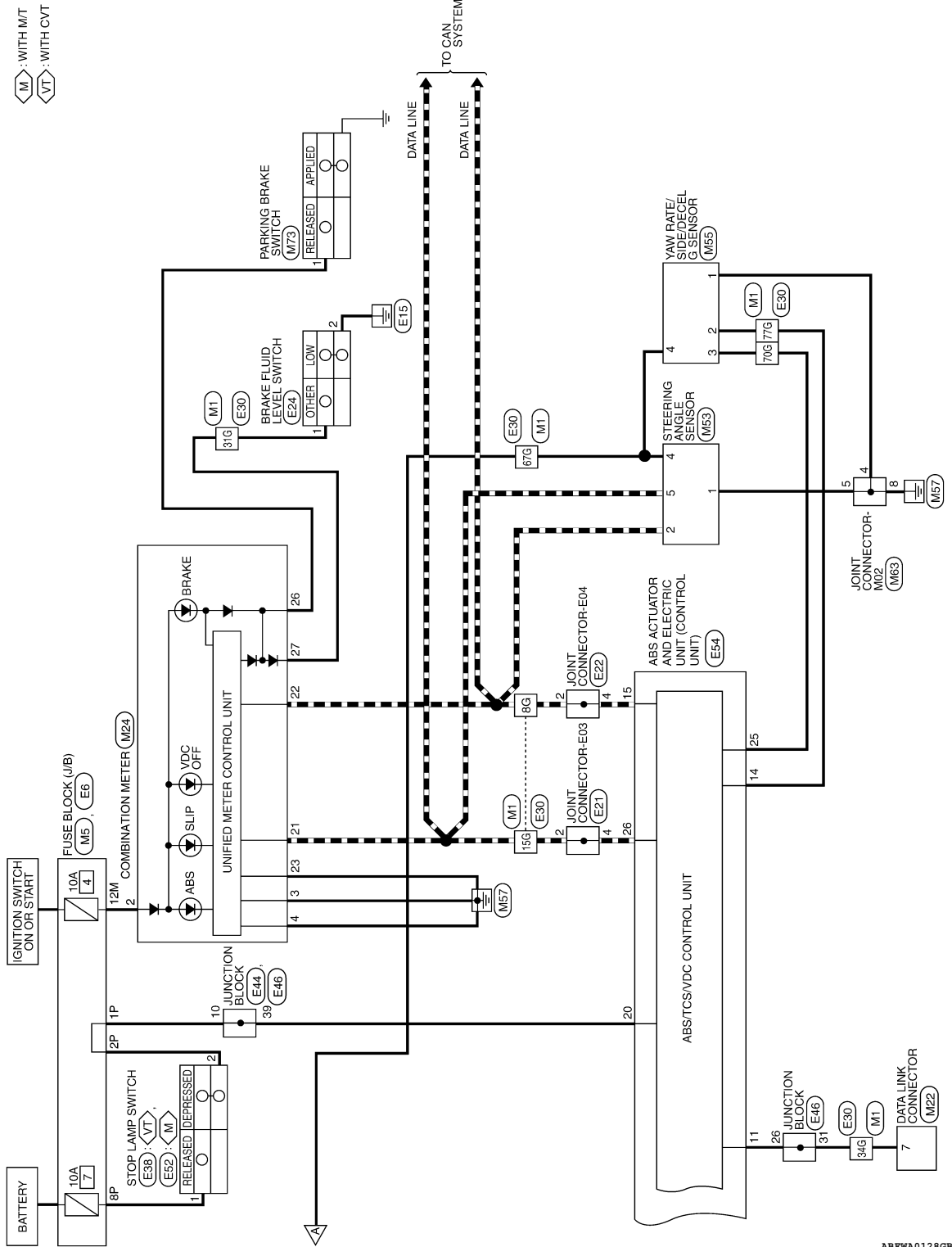


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BRAKE CONTROL SYSTEM - VDC

[VDC/TCS/ABS]

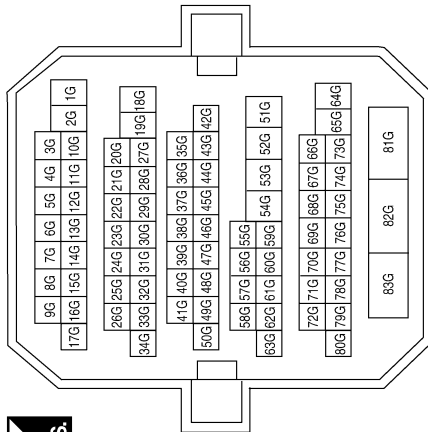
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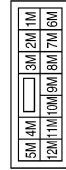
BRAKE CONTROL SYSTEM CONNECTORS - COUPE

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



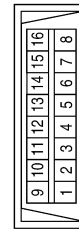
Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-
31G	V	-
34G	O	-
67G	GR	-
70G	Y	-
75G	SB	-
77G	Y/B	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



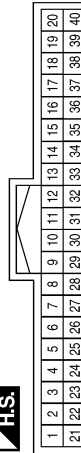
Terminal No.	Color of Wire	Signal Name
12M	O	-

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	O	-

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	O	IGN
3	B	GND (POWER)
4	B	GND (ILL)
21	L	CAN-H
22	P	CAN-L

Terminal No.	Color of Wire	Signal Name
23	B	GND (CIRCUIT)
26	G/R	PKB
27	V	BRAKE OIL IN

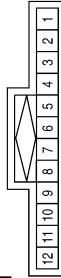
ABFIA0310GB

BRAKE CONTROL SYSTEM - VDC

[VDC/TCS/ABS]

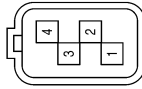
< WIRING DIAGRAM >

Connector No.	M63
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



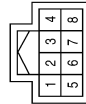
Terminal No.	Color of Wire	Signal Name
4	B	—
5	B	—
8	B	—

Connector No.	M55
Connector Name	YAW RATE/SIDE/DECEL G SENSOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	GND
2	Y/B	CAN-L
3	Y	CAN-H
4	GR	IG

Connector No.	M53
Connector Name	STEERING ANGLE SENSOR
Connector Color	WHITE



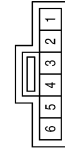
Terminal No.	Color of Wire	Signal Name
1	B	GND
2	P	CAN-L
4	GR	IG
5	L	CAN-H

Connector No.	M73
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	G/R	—

Connector No.	M72
Connector Name	VDC OFF SWITCH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	SB	—
2	B	—

Connector No.	M64
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
2	B	—
3	B	—

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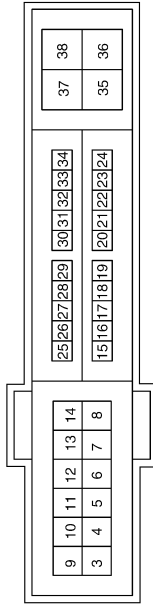
BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

[VDC/TCS/ABS]

Terminal No.	Color of Wire	Signal Name
25	GR	ABS ECU

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1P	SB	-
2P	LG	-
8P	R	-

Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE



Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	P	-
4	P	-

Terminal No.	Color of Wire	Signal Name
2	L	-
4	L	-

Connector No.	E19
Connector Name	FRONT WHEEL SENSOR LH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	W	-
2	V	-

ABFIA0312GB

A B C D E G H I J K L M N O P

BRC

BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

[VDC/TCS/ABS]

Connector No.	E24
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	V	-
2	B/Y	-

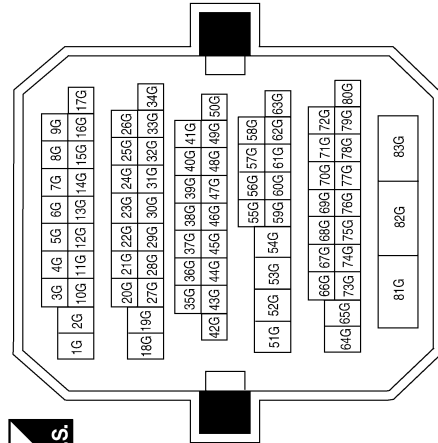
Connector No.	E29
Connector Name	WIRE TO WIRE
Connector Color	WHITE



7	6	5	4	3	2	1
16	15	14	13	12	11	10
9	8					

Terminal No.	Color of Wire	Signal Name
4	O	-
5	BR	-
13	G	-
14	L	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-
31G	V	-
34G	O	-
67G	W	-
70G	B	-
75G	R	-
77G	O	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH (WITH CVT)
Connector Color	WHITE



3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	R	-
2	LG	-

BRAKE CONTROL SYSTEM - VDC

[VDC/TCS/ABS]

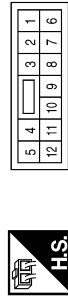
< WIRING DIAGRAM >

Connector No.	E41
Connector Name	FRONT WHEEL SENSOR RH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	B	-
2	LG	-

Connector No.	E44
Connector Name	JUNCTION BLOCK
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
10	SB	-

Connector No.	E46
Connector Name	JUNCTION BLOCK
Connector Color	WHITE



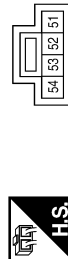
Terminal No.	Color of Wire	Signal Name
26	GR	-
31	O	-
39	SB	-

Connector No.	E47
Connector Name	JUNCTION BLOCK
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
41	GR	-

Connector No.	E49
Connector Name	JUNCTION BLOCK
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
53	W	-
54	GR	-

Connector No.	E52
Connector Name	STOP LAMP SWITCH (WITH M/T)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	R	-
2	LG	-

ABFIA0314GB

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BRAKE CONTROL SYSTEM - VDC

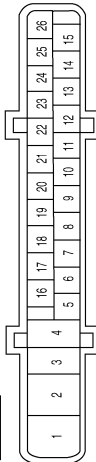
< WIRING DIAGRAM >

[VDC/TCS/ABS]

Terminal No.	Color of Wire	Signal Name
21	R	ASR AUS
22	—	—
23	—	—
24	—	—
25	B	CAN-P2
26	L	CAN-H

Terminal No.	Color of Wire	Signal Name
5	V	DS FL
6	G	DP RL
7	—	—
8	L	DP RR
9	B	DP FR
10	LG	DS FR
11	GR	DIAG-K
12	—	—
13	—	—
14	O	CAN-M2
15	P	CAN-L
16	W	DP FL
17	O	DS RL
18	GR	UZ
19	BR	DS RR
20	SB	BLS

Connector No.	E54
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITH VDC)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	MGND
2	G	UB (MR)
3	R	UB (VR)
4	B	GND

Connector No.	C3
Connector Name	REAR WHEEL SENSOR RH
Connector Color	GRAY



Connector No.	C2
Connector Name	REAR WHEEL SENSOR LH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	LG	—
2	BR	—

Terminal No.	Color of Wire	Signal Name
1	G	—
2	O	—

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	G	—
2	O	—
3	LG	—
4	BR	—

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BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

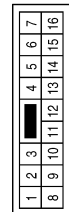
[VDC/TCS/ABS]

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	G	-
2	O	-
3	LG	-
4	BR	-

Connector No.	B10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	O	-
5	BR	-
13	G	-
14	LG	-

SEDAN

ABFIA0316GB

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BRAKE CONTROL SYSTEM - VDC

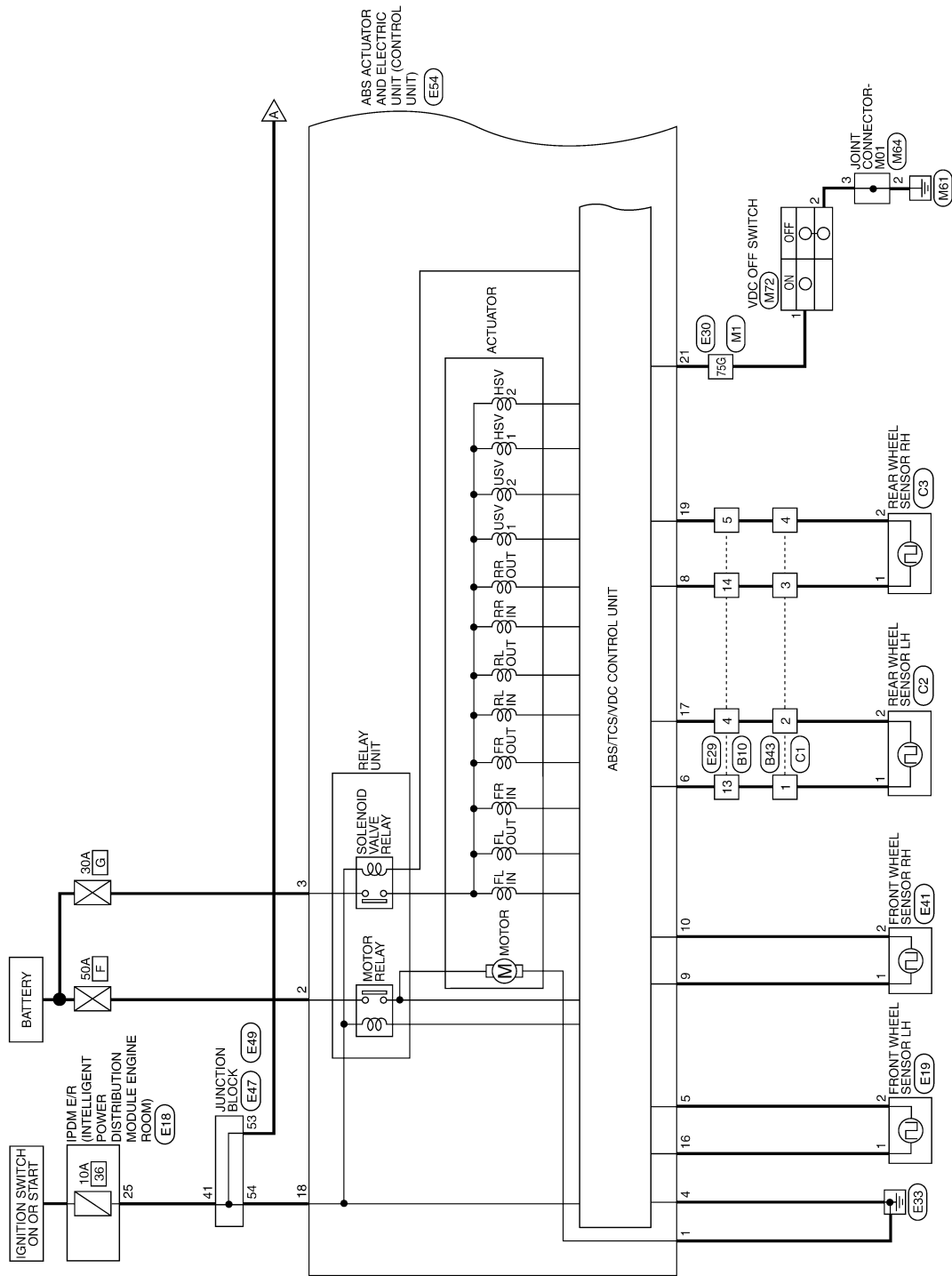
[VDC/TCS/ABS]

< WIRING DIAGRAM >

SEDAN : Wiring Diagram

INFOID:0000000005433048

BRAKE CONTROL SYSTEM - SEDAN WITH VDC

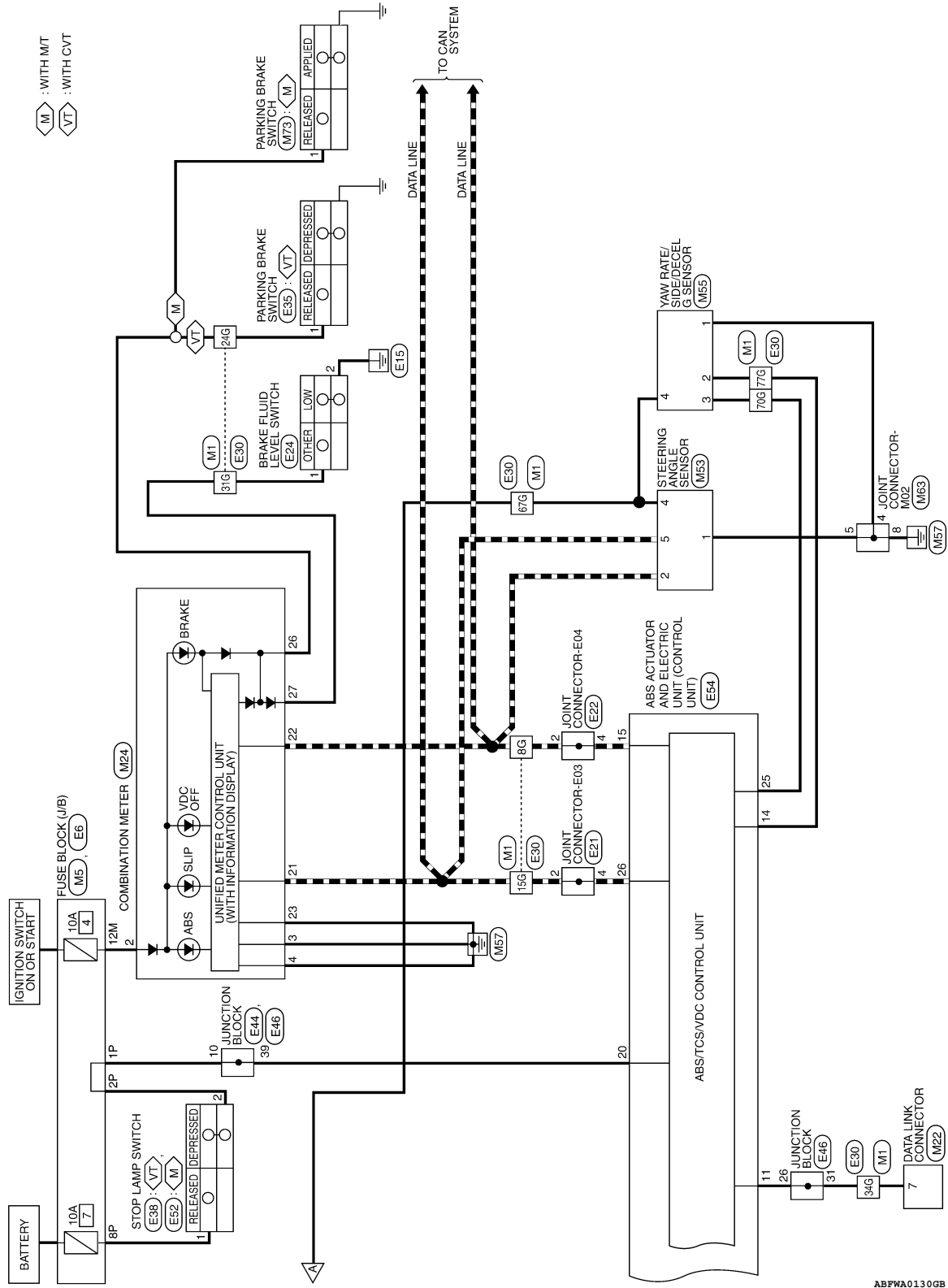


ABFWA0129GB

BRAKE CONTROL SYSTEM - VDC

[VDC/TCS/ABS]

< WIRING DIAGRAM >



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BRC

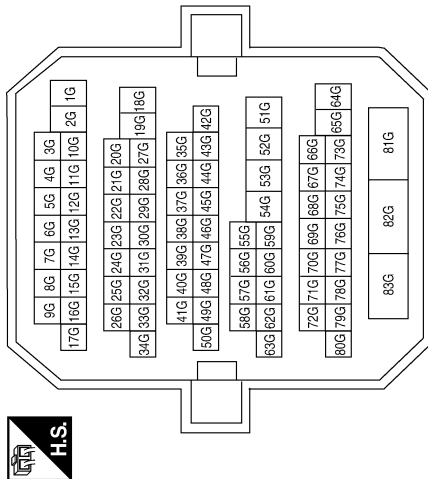
BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

[VDC/TCS/ABS]

BRAKE CONTROL SYSTEM CONNECTORS - SEDAN WITH VDC

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-
24G	G/R	-
31G	V	-
34G	O	-
67G	GR	-
70G	Y	-
75G	SB	-
77G	Y/B	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



5M	4M	3M	2M	1M
12M	11M	10M	9M	8M
7M	6M	5M	4M	3M

Terminal No.	Color of Wire	Signal Name
12M	O	-

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Connector No.	M53
Connector Name	STEERING ANGLE SENSOR
Connector Color	WHITE



1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
7	O	-

Terminal No.	Color of Wire	Signal Name
2	O	IGN
3	B	GND (POWER)
4	B	GND (ILL)
21	L	CAN-H
22	P	CAN-L
23	B	GND (CIRCUIT)
26	G/R	PKB
27	V	BRAKE OIL IN

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	P	CAN-L
4	GR	IG
5	L	CAN-H

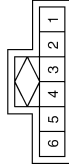
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BRAKE CONTROL SYSTEM - VDC

[VDC/TCS/ABS]

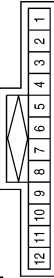
< WIRING DIAGRAM >

Connector No.	M64
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



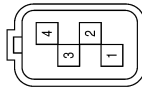
Terminal No.	Color of Wire	Signal Name
2	B	-
3	B	-

Connector No.	M63
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
4	B	-
5	B	-
8	B	-

Connector No.	M55
Connector Name	YAW RATE/SIDE/DECEL G SENSOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	GND
2	Y/B	CAN-L
3	Y	CAN-H
4	GR	IG

Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



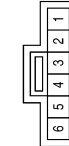
Terminal No.	Color of Wire	Signal Name
1P	SB	-
2P	LG	-
8P	R	-

Connector No.	M73
Connector Name	PARKING BRAKE SWITCH (WITH M/T)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	G/R	-

Connector No.	M72
Connector Name	VDC OFF SWITCH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	B	-

ABFIA0318GB

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BRC
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BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

[VDC/TCS/ABS]

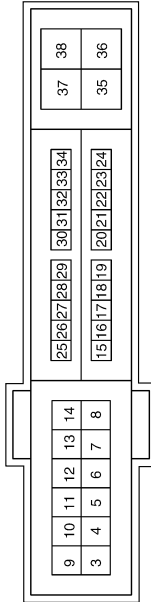
Connector No.	E19
Connector Name	FRONT WHEEL SENSOR LH
Connector Color	GRAY



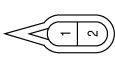
Terminal No.	Color of Wire	Signal Name
1	W	-
2	V	-

Terminal No.	Color of Wire	Signal Name
25	GR	ABS ECU

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Connector No.	E24
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	V	-
2	B/Y	-

Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	P	-
4	P	-

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	-
4	L	-

ABFIA0319GB

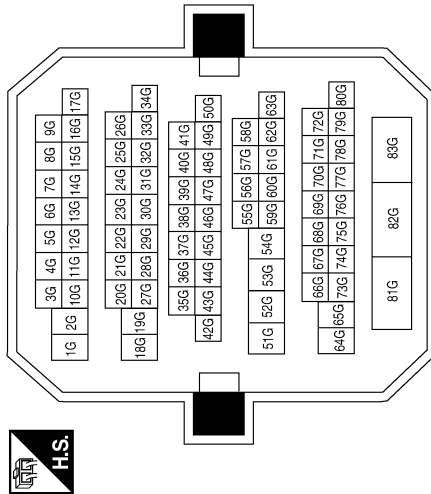
BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

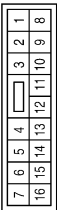
[VDC/TCS/ABS]

Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-
24G	P	-
31G	V	-
34G	O	-
67G	W	-
70G	B	-
75G	R	-
77G	O	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	E29
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	O	-
5	BR	-
13	G	-
14	L	-

Connector No.	E41
Connector Name	FRONT WHEEL SENSOR RH
Connector Color	GRAY



Connector No.	E38
Connector Name	STOP LAMP SWITCH (WITH CVT)
Connector Color	WHITE



Connector No.	E35
Connector Name	PARKING BRAKE SWITCH (WITH CVT)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	LG	-

Terminal No.	Color of Wire	Signal Name
1	R	-
2	LG	-

Terminal No.	Color of Wire	Signal Name
1	P	-

ABFIA0320GB

A B C D E G H I J K L M N O P

BRC

BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

[VDC/TCS/ABS]

Connector No.	E47
Connector Name	JUNCTION BLOCK
Connector Color	WHITE



42	41
46	45
44	43

Terminal No.	Color of Wire	Signal Name
41	GR	-

Connector No.	E46
Connector Name	JUNCTION BLOCK
Connector Color	WHITE



31	30	29	28	27	26	25
40	39	38	37	36	35	34
33	32					

Terminal No.	Color of Wire	Signal Name
26	GR	-
31	O	-
39	SB	-

Connector No.	E44
Connector Name	JUNCTION BLOCK
Connector Color	BROWN



5	4	3	2	1
12	11	10	9	8
7	6			

Terminal No.	Color of Wire	Signal Name
10	SB	-

Connector No.	E52
Connector Name	STOP LAMP SWITCH (WITH M/T)
Connector Color	BLACK



2	1
---	---

Terminal No.	Color of Wire	Signal Name
1	R	-
2	LG	-

Connector No.	E49
Connector Name	JUNCTION BLOCK
Connector Color	BROWN



54	53	52	51
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Terminal No.	Color of Wire	Signal Name
53	W	-
54	GR	-

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BRAKE CONTROL SYSTEM - VDC

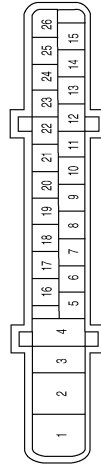
[VDC/TCS/ABS]

< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
21	R	ASR AUS
22	—	—
23	—	—
24	—	—
25	B	CAN-P2
26	L	CAN-H

Terminal No.	Color of Wire	Signal Name
6	G	DP RL
7	—	—
8	L	DP RR
9	B	DP FR
10	LG	DS FR
11	GR	DIAG-K
12	—	—
13	—	—
14	O	CAN-M2
15	P	CAN-L
16	W	DP FL
17	O	DS RL
18	GR	UZ
19	BR	DS RR
20	SB	BLS

Connector No.	E54
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	MGND
2	G	UB (MR)
3	R	UB (VR)
4	B	GND
5	V	DS FL

Connector No.	C3
Connector Name	REAR WHEEL SENSOR RH
Connector Color	GRAY



Connector No.	C2
Connector Name	REAR WHEEL SENSOR LH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	LG	—
2	BR	—

Terminal No.	Color of Wire	Signal Name
1	G	—
2	O	—

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	G	—
2	O	—
3	LG	—
4	BR	—

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BRAKE CONTROL SYSTEM - VDC

< WIRING DIAGRAM >

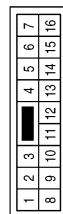
[VDC/TCS/ABS]

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	G	-
2	O	-
3	LG	-
4	BR	-

Connector No.	B10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	O	-
5	BR	-
13	G	-
14	LG	-

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SYMPTOM DIAGNOSIS

VDC/TCS/ABS

Symptom Table

INFOID:0000000005433051

If ABS warning lamp, VDC OFF indicator lamp and SLIP indicator lamp turn ON, perform self-diagnosis.

Symptom	Check item	Reference
Excessive ABS function operation frequency	Brake force distribution	BRC-154, "Diagnosis Procedure"
	Looseness of front and rear axle	
	Wheel sensor and rotor system	
Unexpected pedal reaction	Brake pedal stroke	BRC-155, "Diagnosis Procedure"
	Make sure the braking force is sufficient when the ABS is not operating.	
The braking distance is long	Check stopping distance when the ABS is not operating.	BRC-156, "Diagnosis Procedure"
ABS function does not operate (Note 1)	ABS actuator and electric unit (control unit)	BRC-157, "Diagnosis Procedure"
Pedal vibration or ABS operation sound occurs (Note 2)	Brake pedal	BRC-158, "Diagnosis Procedure"
	ABS actuator and electric unit (control unit)	
Vehicle jerks during VDC/TCS/ABS control	ABS actuator and electric unit (control unit)	BRC-159, "Diagnosis Procedure"
	TCM	
	ECM	

NOTE:

- 1: The ABS does not operate when the speed is 10 km/h (6 MPH) or less.
- 2: Under the following conditions, ABS is activated and vibration is felt when brake pedal is lightly depressed (just place a foot on it). However, this is normal.
 - When shifting gears
 - When driving on slippery road
 - During cornering at high speed
 - When passing over bumps or grooves [at approximately 50 mm (1.97 in) or more]
 - When pulling away just after starting engine [at approximately 10 km/h (6 MPH) or higher]

EXCESSIVE ABS FUNCTION OPERATION FREQUENCY

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

EXCESSIVE ABS FUNCTION OPERATION FREQUENCY

Diagnosis Procedure

INFOID:0000000005433052

1.CHECK START

Check front and rear brake force distribution using a brake tester.

Is the inspection result normal?

YES >> GO TO 2

NO >> Check brake system.

2.CHECK FRONT AND REAR AXLE

Make sure that there is no excessive play in the front and rear axles. Refer to front: [FAX-5, "Inspection"](#), Rear: [RAX-5, "On-vehicle Service"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace malfunctioning components.

3.CHECK WHEEL SENSOR AND SENSOR ROTOR

Check the following.

- Wheel sensor installation for damage.
- Sensor rotor installation for damage.
- Wheel sensor connector connection.
- Wheel sensor harness inspection.

Is the inspection result normal?

YES >> GO TO 4

NO >>

- Replace wheel sensor or sensor rotor.
- Repair harness.

4.CHECK ABS WARNING LAMP DISPLAY

Make sure that the ABS warning lamp is turned off after the ignition switch is turned ON or when driving.

Is the inspection result normal?

YES >> Normal

NO >> Perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

UNEXPECTED PEDAL REACTION

[VDC/TCS/ABS]

< SYMPTOM DIAGNOSIS >

UNEXPECTED PEDAL REACTION

Diagnosis Procedure

INFOID:0000000005433053

1.CHECK BRAKE PEDAL STROKE

Check brake pedal stroke. Refer to [BR-13, "Inspection and Adjustment"](#).

Is the stroke too big?

- YES >> • Bleed air from brake tube and hose. Refer to [BR-16, "Bleeding Brake System"](#).
• Check brake pedal, brake booster, and master cylinder for mount play, looseness, brake system fluid leakage, etc. Refer to brake pedal: [BR-13, "Inspection and Adjustment"](#), brake booster and master cylinder.

NO >> GO TO 2

2.CHECK FUNCTION

Disconnect ABS actuator and electric unit (control unit) connector to deactivate ABS. Check if braking force is normal in this condition. Connect connector after inspection.

Is the inspection result normal?

- YES >> GO TO procedure 3 "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom 1. Refer to [BRC-154, "Diagnosis Procedure"](#).

NO >> Check brake system.

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THE BRAKING DISTANCE IS LONG

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

THE BRAKING DISTANCE IS LONG

Diagnosis Procedure

INFOID:0000000005433054

CAUTION:

The stopping distance on slippery road surfaces might be longer with the ABS operating than when the ABS is not operating.

1.CHECK FUNCTION

Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector to deactivate ABS. In this condition, check stopping distance. After inspection, connect connector.

Is the inspection result normal?

- YES >> GO TO procedure "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom. Refer to [BRC-154. "Diagnosis Procedure"](#).
- NO >> Check brake system.

ABS FUNCTION DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

ABS FUNCTION DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000005433055

CAUTION:

ABS does not operate when speed is 10 km/h (6 MPH) or lower.

1. CHECK ABS WARNING LAMP DISPLAY

Make sure that the ABS warning lamp turns OFF after ignition switch is turned on or when driving.

Is the inspection result normal?

YES >> GO TO procedure "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom. Refer to [BRC-154, "Diagnosis Procedure"](#).

NO >> Perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

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PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS

Diagnosis Procedure

INFOID:000000005433056

CAUTION:

Under the following conditions, ABS is activated and vibration is felt when brake pedal is lightly depressed (just place a foot on it). However, this is normal.

- When shifting gears
- When driving on slippery road
- During cornering at high speed
- When passing over bumps or grooves [at approximately 50 mm (1.97 in) or more]
- When pulling away just after starting engine [at approximately 10 km/h (6 MPH) or higher]

1. SYMPTOM CHECK 1

Check if there is pedal vibration or operation sound when the engine is started.

Do symptoms occur?

YES >> GO TO 2

NO >> Perform self-diagnosis. Refer to [BRC-72, "CONSULT-III Function \(ABS\)".](#)

2. SYMPTOM CHECK 2

Check symptoms when electrical component (headlamps, etc.) switches are operated.

Do symptoms occur?

YES >> Check if there is a radio, antenna, antenna lead wire, or wiring close to the control unit. If there is, move it farther away.

NO >> GO TO procedure "CHECK WHEEL SENSOR AND SENSOR ROTOR" of symptom. Refer to [BRC-154, "Diagnosis Procedure".](#)

VEHICLE JERKS DURING VDC/TCS/ABS CONTROL

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

VEHICLE JERKS DURING VDC/TCS/ABS CONTROL

Diagnosis Procedure

INFOID:000000005433057

1.SYMPTOM CHECK

Check if the vehicle jerks during VDC/TCS/ABS control.

Is the inspection result normal?

- YES >> Normal.
- NO >> GO TO 2

2.CHECK SELF-DIAGNOSIS RESULTS

Perform self-diagnostic of ABS actuator and electric unit (control unit). Refer to [BRC-72, "CONSULT-III Function \(ABS\)"](#).

Are self-diagnosis results indicated?

- YES >> Check corresponding items, make repairs, and perform ABS actuator and electric unit (control unit) self-diagnosis.
- NO >> GO TO 3

3.CHECK CONNECTOR

- Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector and check terminal for deformation, disconnection, looseness, etc.
- Securely connect connectors and perform ABS actuator and electric unit (control unit) self-diagnosis.

Are self-diagnosis results indicated?

- YES >> If poor contact, damage, open or short circuit of connector terminal is found, repair or replace.
- NO >> GO TO 4

4.CHECK ECM AND A/T SELF-DIAGNOSIS RESULTS

Perform ECM and CVT self-diagnosis.

Are self-diagnosis results indicated?

- YES >> Check the corresponding items.
 - ECM: Refer to [EC-1157](#).
 - CVT: Refer to [TM-86](#).
- NO >> Replace ABS actuator and electric unit (control unit). Refer to [BRC-166, "Removal and Installation"](#).

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" Service

INFOID:000000005433058

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

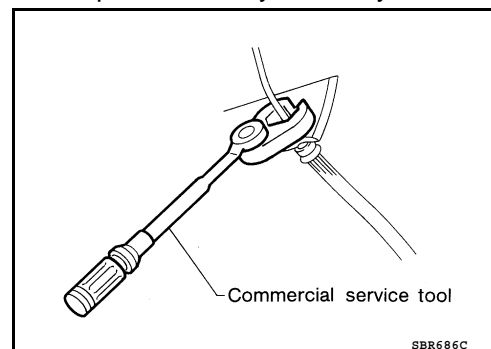
Precaution for Brake System

INFOID:000000005433059

- Recommended fluid is brake fluid "DOT 3".
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted surface of body. If brake fluid is splashed on painted surfaces of body immediately wipe off then with cloth and then wash it away with water.
- Never use mineral oils such as gasoline or kerosene. They will ruin rubber parts of the hydraulic system.
- Use a flare nut wrench when removing flare nuts, and use a flare nut torque wrench when tighten brake tube flare nuts.
- When installing brake tubes, be sure to check torque.
- Brake system is an important safety part. If a brake fluid leak is detected, always disassemble the affected part. If a malfunction is detected, replace part with a new one.
- Before working, turn ignition switch OFF and disconnect connectors of ABS actuator and electric unit (control unit) or the battery cable from the negative terminal.

WARNING:

Clean brake pads and shoes with a waste cloth, then wipe with a dust collector.



Precaution for Brake Control

INFOID:000000005433060

- Just after starting vehicle after ignition switch ON, brake pedal may vibrate or motor operating noise may be heard from engine compartment. This is normal condition.
- When an error is indicated by ABS or another warning lamp, collect all necessary information from customer (what symptoms are present under what conditions) and check for simple causes before starting diagnostic servicing. Besides electrical system inspection, check brake booster operation, brake fluid level, and oil leaks.
- If tire size and type are used in an improper combination, or brake pads are not Genuine NISSAN parts, stopping distance or steering stability may deteriorate.
- ABS might be out of order or malfunctions by putting a radio (wiring inclusive), an antenna and a lead-in wire near the control unit.
- If aftermarket parts (car stereo, CD player, etc.) have been installed, check for incidents such as harness pinches, open circuits, and improper wiring.
- VDC system may not operate normally or a VDC OFF indicator lamp or SLIP indicator lamp may light.

PRECAUTIONS

< PRECAUTION >

[VDC/TCS/ABS]

- When replacing the following parts with parts other than genuine parts or making modifications: Suspension-related parts (shock absorber, spring, bushing, etc.), tires, wheels (other than specified sizes), brake-related parts (pad, rotor, caliper, etc.), engine-related parts (muffler, ECM, etc.) and body reinforcement-related parts (roll bar, tower bar, etc.).
- When driving with worn or deteriorated suspension, tires and brake-related parts.

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PREPARATION

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[VDC/TCS/ABS]

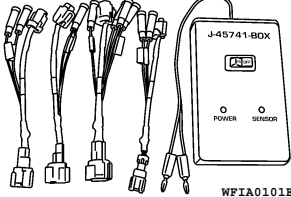
PREPARATION

PREPARATION

Special Service Tool

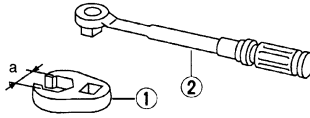
INFOID:000000005433061

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
<p>— (J-45741) ABS active wheel sensor tester</p>  <p>WFIA0101E</p>	Checking operation of ABS active wheel sensor

Commercial Service Tool

INFOID:000000005433062

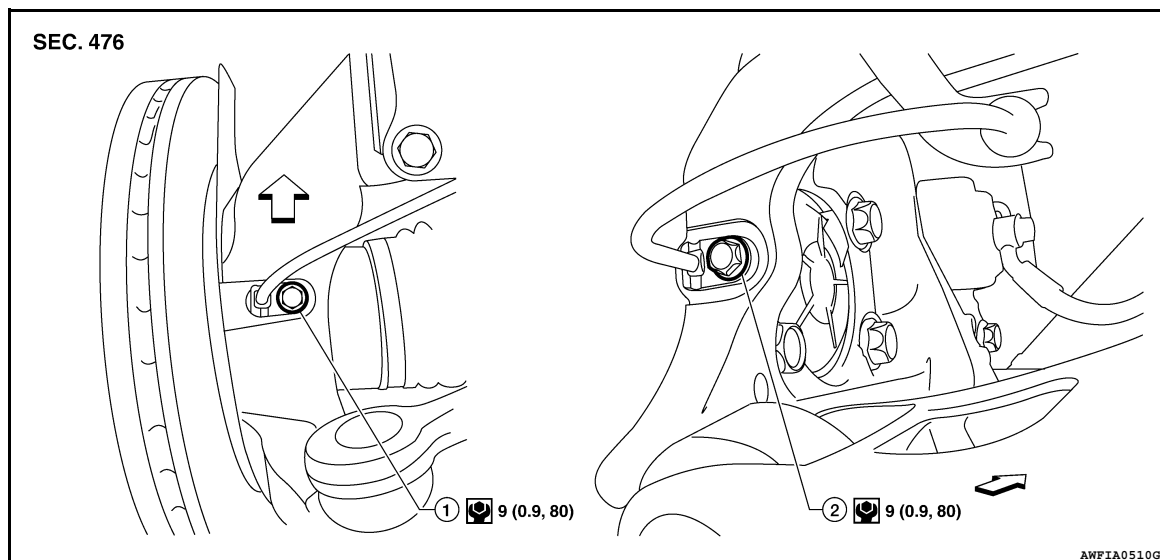
Tool name	Description
<p>1. Flare nut crowfoot 2. Torque wrench</p>  <p>S-NT360</p>	Removing and installing brake piping a: 10mm (0.39 in)/12mm (0.47 in)

ON-VEHICLE REPAIR

WHEEL SENSORS

Removal and Installation

INFOID:000000005433063



1. Front wheel sensor

2. Rear wheel sensor

← Front

CAUTION:

- Be careful not to damage wheel sensor edge and sensor rotor teeth.
- When removing the front or rear wheel hub, first remove the wheel sensor from the wheel hub. Failure to do so may result in damage to the wheel sensor wires making the sensor inoperative.
- Pull out the wheel sensor, being careful to turn it as little as possible. Do not pull on the wheel sensor harness.
- Before installation, check if foreign objects such as iron fragments are adhered to the pick-up part of the sensor or to the inside of the hole in the wheel hub for the wheel sensor, or if a foreign object is caught in the surface of the mating surface for the sensor rotor. Fix as necessary and then install the wheel sensor.

FRONT WHEEL SENSOR

Removal

1. Remove front wheel and tire. Refer to [WT-65, "Adjustment"](#).
2. Partially front wheel fender protector. Refer to [EXT-20, "Removal and Installation"](#).
3. Remove wheel sensor bolt and wheel sensor.
4. Remove harness wire from mounts and disconnect wheel sensor harness connector.

Installation

Installation is in the reverse order of removal.

REAR WHEEL SENSOR

Removal

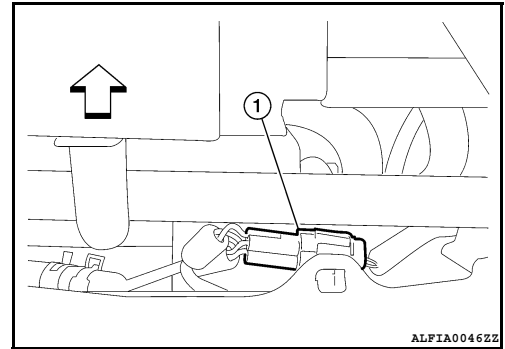
1. Remove rear wheel and tire. Refer to [WT-65, "Adjustment"](#).

WHEEL SENSORS

< ON-VEHICLE REPAIR >

[VDC/TCS/ABS]

2. Disconnect wheel sensor harness connector (1).
 - ⇐: Front
3. Remove harness wire clips from rear suspension member.
4. Remove wheel sensor bolt and wheel sensor from rear wheel hub and bearing assembly.



Installation

Installation is in the reverse order of removal.

SENSOR ROTOR

Removal and Installation

INFOID:0000000005433064

The front and rear wheel sensor rotors are an integral part of the wheel hubs and can not be disassembled. When replacing the sensor rotor, replace the wheel hub. Refer to [FAX-7. "Removal and Installation"](#) (front), [RAX-6. "Removal and Installation"](#) (rear).

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

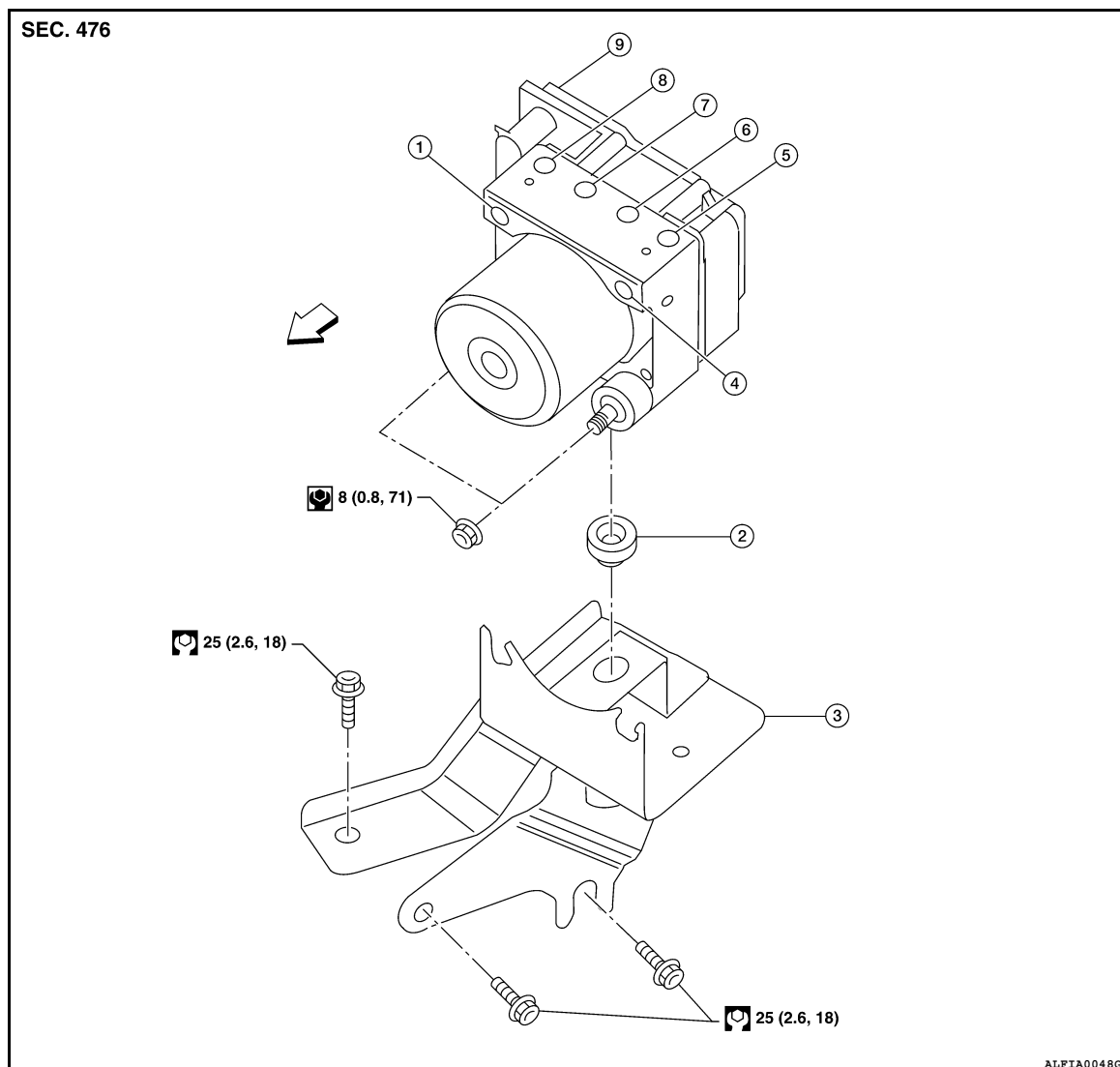
< ON-VEHICLE REPAIR >

[VDC/TCS/ABS]

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Exploded View

INFOID:000000005433065



- | | | |
|--|------------------------------|--|
| 1. From master cylinder secondary side | 2. Grommet | 3. Bracket |
| 4. From master cylinder primary side | 5. To front LH brake caliper | 6. To rear RH brake caliper |
| 7. To rear LH brake caliper | 8. To front RH brake caliper | 9. ABS actuator and electric unit (control unit) |

⇐ Front

Removal and Installation

INFOID:000000005433066

CAUTION:

Be careful of the following.

- Before servicing, disconnect the battery cable from negative terminal.
- To remove brake pipe, use a suitable tool (flare nut wrench) to prevent flare nuts and brake tube from being damaged. To install, use suitable tool (flare nut torque wrench).
- Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.
- Do not remove and install ABS actuator and electric unit (control unit) by holding harness.
- After work is completed, bleed air from brake tube. Refer to [BR-16, "Bleeding Brake System"](#).
- After installing harness connector on the ABS actuator and electric unit (control unit), make sure connector is securely locked.

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ON-VEHICLE REPAIR >

[VDC/TCS/ABS]

REMOVAL

1. Remove front wiper arms. Refer to [WW-85, "FRONT WIPER ARMS : Removal and Installation"](#).
2. Remove cowl top. Refer to [EXT-19, "Removal and Installation"](#).
3. Disconnect washer hose.
4. Disconnect the battery negative terminal.
5. Remove tower bar, if equipped. Refer to [FSU-12, "Exploded View"](#).
6. Disconnect ABS actuator and electric unit (control unit) connector.
7. Loosen brake tube flare nuts, then remove brake tubes from ABS actuator and electric unit (control unit) using a suitable tool.
8. Remove ABS actuator and electric unit (control unit) nuts.
9. Remove ABS actuator and electric unit (control unit).
10. Remove bracket as necessary.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

In the case that the ABS actuator and electronic unit (control unit) is replaced, after installation, adjust position of steering angle sensor. Refer to [BRC-66, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).

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G SENSOR

Removal and Installation

INFOID:0000000005433067

CAUTION:

- Do not drop or strike the yaw rate/side G sensor, because it has little endurance to impacts.
- Do not use power tools, because yaw rate/side G sensor is sensitive to impacts.
- For installation, make sure the arrow on top of the yaw rate/side G sensor is pointing to the front of the vehicle.

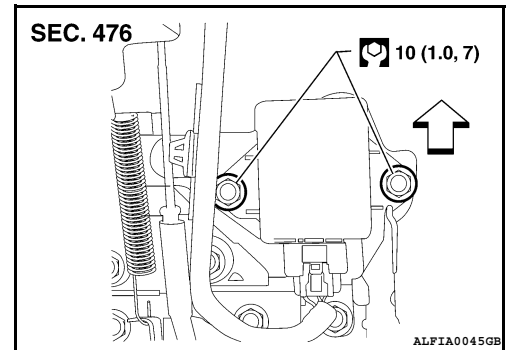
REMOVAL

1. Remove the center console. Refer to [IP-17, "Exploded View"](#).
2. Disconnect the yaw rate/side G sensor harness connector.
3. Remove the yaw rate/side G sensor nuts. Remove the yaw rate/side G sensor.

INSTALLATION

Installation is in the reverse order of removal.

- For installation, make sure the arrow on top of the yaw rate/side G sensor is pointing to the front of the vehicle.
- ⬅: Front of vehicle.



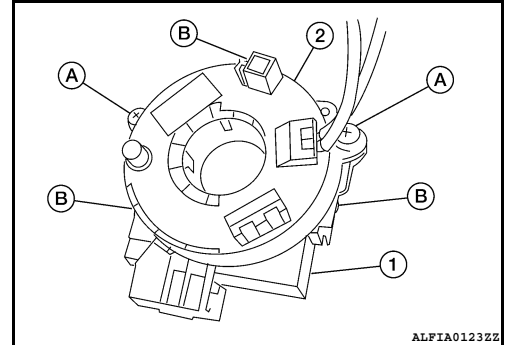
STEERING ANGLE SENSOR

Removal and Installation

INFOID:000000005433068

REMOVAL

1. Remove the spiral cable. Refer to [SR-7, "Removal and Installation"](#).
2. Remove the two screws (A) and release the three clips (B) to remove the steering angle sensor (1) from spiral cable (2).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Perform the neutral adjustment for the steering angle sensor. Refer to [BRC-66, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).