

D

Е

## **CONTENTS**

ABS	C1109 POWER AND GROUND SYSTEM	24	BRC
BASIC INSPECTION6	Description DTC Logic	24	
DIAGNOSIS AND REPAIR WORKFLOW 6	Diagnosis Procedure	24	G
Work Flow6 Diagnostic Work Sheet8	C1110 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)	26	
FUNCTION DIAGNOSIS9	Description DTC Logic		Н
ABS9	Diagnosis Procedure		
System Diagram	C1111 ABS MOTOR, MOTOR RELAY SYSTEM  Description	27	J
	DTC Logic  Diagnosis Procedure		
System Diagram	Component Inspection	28	K
System Description	C1113 G SENSOR		
Component Description14	Description		
DIAGNOSIS SYSTEM [ABS ACTUATOR	DTC Logic  Diagnosis Procedure  Component Inspection	29	L
AND ELECTRIC UNIT (CONTROL UNIT)]15 CONSULT-III Function15			B. //
CONSOLT-III T UIICIIOIT19	C1115 WHEEL SENSOR		M
COMPONENT DIAGNOSIS18	Description DTC Logic	32	
C1101, C1102, C1103, C1104 WHEEL SEN-	Diagnosis Procedure		Ν
SOR-118	Component Inspection	34	
Description18 DTC Logic18	C1120, C1122, C1124, C1126 IN ABS SOL .  Description		0
Diagnosis Procedure18	DTC Logic		
Component Inspection20	Diagnosis Procedure		
C1105, C1106, C1107, C1108 WHEEL SEN-	Component Inspection		Р
SOR-2	C1121, C1123, C1125, C1127 OUT ABS SOI		
Description         21           DTC Logic         21	Description		
Diagnosis Procedure21	DTC Logic		
Component Inspection23	Diagnosis Procedure		
Component moperation20	Component Inspection	38	

C1140 ACTUATOR RELAY SYSTEM	39	PEDAL VIBRATION OR ABS OPERATION
Description		SOUND OCCURS
DTC Logic		Diagnosis Procedure
Diagnosis Procedure		•
Component Inspection		NORMAL OPERATING CONDITION
·		Description
U1000 CAN COMM CIRCUIT	41	
Description	41	PRECAUTION
DTC Logic	41	DDECALITIONS.
Diagnosis Procedure		PRECAUTIONS
		FOR USA AND CANADA
U1010 CONTROL UNIT (CAN)		FOR USA AND CANADA : Precaution for Supple-
Description		mental Restraint System (SRS) "AIR BAG" and
DTC Logic		"SEAT BELT PRE-TENSIONER"
Diagnosis Procedure	42	FOR USA AND CANADA : Precaution for Proce-
DDAKE ELLID I EVEL CWITCH		dure without Cowl Top Cover
BRAKE FLUID LEVEL SWITCH		FOR USA AND CANADA : Precaution for Brake
Description		
Component Function Check		System
Diagnosis Procedure		FOR USA AND CANADA : Precaution for Brake
Component Inspection	44	Control
PARKING BRAKE SWITCH	AF	EXCEPT FOR MEXICO
		EXCEPT FOR MEXICO : Precaution for Supple-
Description		mental Restraint System (SRS) "AIR BAG" and
Component Function Check		"SEAT BELT PRE-TENSIONER"
Diagnosis Procedure		EXCEPT FOR MEXICO : Precaution for Proce-
Component Inspection	45	dure without Cowl Top Cover
ABS WARNING LAMP	17	EXCEPT FOR MEXICO : Precaution for Brake
Description		System
•		EXCEPT FOR MEXICO : Precaution for Brake
Component Function Check		Control
Diagnosis Procedure	47	CONTO
BRAKE WARNING LAMP	48	ON-VEHICLE REPAIR
Description		
Component Function Check		WHEEL SENSOR
Diagnosis Procedure		ED ONT WHEEL OF YOUR
		FRONT WHEEL SENSOR
ECU DIAGNOSIS	49	FRONT WHEEL SENSOR : Exploded View
		FRONT WHEEL SENSOR : Removal and Instal-
ABS ACTUATOR AND ELECTRIC UNIT		lation
(CONTROL UNIT)	49	REAR WHEEL SENSOR
Reference Value	49	
Wiring Diagram -BRAKE CONTROL SYSTEM-	52	REAR WHEEL SENSOR: Exploded View REAR WHEEL SENSOR: Removal and Installa-
Fail-Safe		
DTC No. Index		tion
		SENSOR ROTOR
SYMPTOM DIAGNOSIS	57	
EVACABLE ADA ELIMATICA ADED ATTAC		FRONT SENSOR ROTOR
EXCESSIVE ABS FUNCTION OPERATION		FRONT SENSOR ROTOR: Exploded View
FREQUENCY		FRONT SENSOR ROTOR : Removal and Instal-
Diagnosis Procedure	57	lation
INCURRED DEDAL DEACTION		
UNEXPECTED PEDAL REACTION		REAR SENSOR ROTOR
Diagnosis Procedure	58	REAR SENSOR ROTOR : Exploded View
THE BRAKING DISTANCE IS LONG	<b>50</b>	REAR SENSOR ROTOR : Removal and Installa-
		tion
Diagnosis Procedure	59	
ABS FUNCTION DOES NOT OPERATE	60	ABS ACTUATOR AND ELECTRIC UNIT
Diagnosis Procedure		(CONTROL UNIT)
Diagnosis Flocedule		Exploded View

SEL.

C CENCOD 74	SOR-2102
G SENSOR71	Description102
Exploded View71	DTC Logic102
Removal and Installation71	Diagnosis Procedure102
VDC/TCS/ABS	Component Inspection104
BASIC INSPECTION72	C1109 POWER AND GROUND SYSTEM 105
DIAGNOSIS AND REPAIR WORKFLOW72	Description105
Work Flow72	DTC Logic105
Diagnostic Work Sheet	Diagnosis Procedure105
INSPECTION AND ADJUSTMENT76	C1110 ABS ACTUATOR AND ELECTRIC
INSPECTION AND ADJUSTMENT	UNIT (CONTROL UNIT)107
ADJUSTMENT OF STEERING ANGLE SENSOR	Description107
NEUTRAL POSITION76	DTC Logic
ADJUSTMENT OF STEERING ANGLE SENSOR	Diagnosis Procedure107
NEUTRAL POSITION : Description	
ADJUSTMENT OF STEERING ANGLE SENSOR	C1111 ABS MOTOR, MOTOR RELAY SYS-
NEUTRAL POSITION : Special Repair Require-	TEM108
ment	Description108
THORE I THE PART OF THE PART O	DTC Logic108
FUNCTION DIAGNOSIS78	Diagnosis Procedure108
	Component Inspection109
VDC78	·
System Diagram78	C1113, C1145, C1146 YAW RATE/SIDE/DE-
System Description78	CEL G SENSOR110
Component Parts Location78	Description110
Component Description81	DTC Logic110
	Diagnosis Procedure110
TCS82	Component Inspection112
System Diagram82	·
System Description82	C1115 WHEEL SENSOR113
Component Parts Location82	Description113
Component Description85	DTC Logic113
	Diagnosis Procedure113
ABS86	Component Inspection115
System Diagram86	04440.070.01.4140.01417.014
System Description86	C1116 STOP LAMP SWITCH116
Component Parts Location86	Description116
Component Description89	DTC Logic116
EDD	Diagnosis Procedure116
EBD90	Component Inspection117
System Diagram90	C4440 AWD SYSTEM
System Description90	C1118 AWD SYSTEM118
Component Parts Location90	Description
Component Description93	DTC Logic118
DIAGNOSIS SYSTEM [ABS ACTUATOR	Diagnosis Procedure118
	C1120, C1122, C1124, C1126 IN ABS SOL 119
AND ELECTRIC UNIT (CONTROL UNIT)]94	Description119
CONSULT-III Function94	·
COMPONENT DIAGNOSIS99	DTC Logic
33	Diagnosis Procedure
C1101, C1102, C1103, C1104 WHEEL SEN-	Component Inspection120
SOR-199	C1121, C1123, C1125, C1127 OUT ABS SOL. 122
Description	Description
	DTC Logic122
DTC Logic	Diagnosis Procedure122
Diagnosis Procedure	
Component Inspection101	Component Inspection123

C1105, C1106, C1107, C1108 WHEEL SEN-

Removal and Installation ......69

C1130 ENGINE SIGNAL	125	Diagnosis Procedure	143
Description		Component Inspection	144
DTC Logic	125	A D.C. IA/A DAUNIO I. A M.D.	
Diagnosis Procedure		ABS WARNING LAMP	
C4440 ACTUATOD DELAV EVETEM	400	Description  Component Function Check	
C1140 ACTUATOR RELAY SYSTEM		Diagnosis Procedure	
Description DTC Logic		Diagnosis Procedure	145
Diagnosis Procedure		BRAKE WARNING LAMP	146
Component Inspection		Description	146
Component inspection	121	Component Function Check	146
C1143, C1144 STEERING ANGLE SE	ENSOR . 128	Diagnosis Procedure	146
Description	128	VDC OFF INDICATOR LAMP	4.47
DTC Logic		VDC OFF INDICATOR LAMP	
Diagnosis Procedure		Description  Component Function Check	
Component Inspection		Diagnosis Procedure	
Special Repair Requirement	129	Diagnosis Frocedure	147
C1155 BRAKE FLUID LEVEL SWITC	H 130	SLIP INDICATOR LAMP	148
Description		Description	148
DTC Logic		Component Function Check	148
Diagnosis Procedure		Diagnosis Procedure	148
Component Inspection		ECH DIA CNOCIC	
·		ECU DIAGNOSIS	149
C1164, C1165 CV SYSTEM		ABS ACTUATOR AND ELECTRIC UNIT	
Description		(CONTROL UNIT)	149
DTC Logic		Reference Value	
Diagnosis Procedure		Wiring Diagram -BRAKE CONTROL SYSTEM-	
Component Inspection	134	Fail-Safe	
C1166, C1167 SV SYSTEM	135	DTC No. Index	
Description			
DTC Logic		SYMPTOM DIAGNOSIS	159
Diagnosis Procedure		<b>EXCESSIVE ABS FUNCTION OPERATION</b>	
Component Inspection		FREQUENCY	450
04470 0700   4440 0140		Diagnosis Procedure	
C1176 STOP LAMP SW2		Diagnosis Procedure	159
Description		UNEXPECTED PEDAL REACTION	160
DTC Logic		Diagnosis Procedure	160
Diagnosis Procedure  Component Inspection		THE DRAWING DIGTANCE IO LONG	
Component inspection	130	THE BRAKING DISTANCE IS LONG	
U1000 CAN COMM CIRCUIT	139	Diagnosis Procedure	161
Description	139	ABS FUNCTION DOES NOT OPERATE	162
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure	139	· ·	
HAGAG CONTROL LINIT (CAN)	440	PEDAL VIBRATION OR ABS OPERATION	
U1010 CONTROL UNIT (CAN)		SOUND OCCURS	
Description DTC Logic		Diagnosis Procedure	163
Diagnosis Procedure		VEHICLE JERKS DURING VDC/TCS/ABS	
Diagnosis Flocedule	140		404
PARKING BRAKE SWITCH	141	CONTROL	
Description	141	Diagnosis Procedure	104
Component Function Check		NORMAL OPERATING CONDITION	165
Diagnosis Procedure	141	Description	
Component Inspection	141	·	
VDC OEE SWITCH	440	PRECAUTION	166
VDC OFF SWITCH		PRECAUTIONS	460
Description  Component Function Check		NEGAUTIONS	100
COMPONENT ANDROLL OF THE CONTROL OF			

FOR USA AND CANADA
EXCEPT FOR MEXICO: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"
EXCEPT FOR MEXICO: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"
WHEEL SENSOR169
FRONT WHEEL SENSOR

REAR WHEEL SENSOR	А
SENSOR ROTOR171	В
FRONT SENSOR ROTOR171 FRONT SENSOR ROTOR : Exploded View171 FRONT SENSOR ROTOR : Removal and Installation171	С
REAR SENSOR ROTOR171 REAR SENSOR ROTOR : Exploded View171 REAR SENSOR ROTOR : Removal and Installation171	D E
ABS ACTUATOR AND ELECTRIC UNIT         172           (CONTROL UNIT)         172           Exploded View         172           Removal and Installation         172	BRC
G SENSOR	G
STEERING ANGLE SENSOR	Н

G

J

Κ

L

 $\mathbb{N}$ 

Ν

0

Ρ

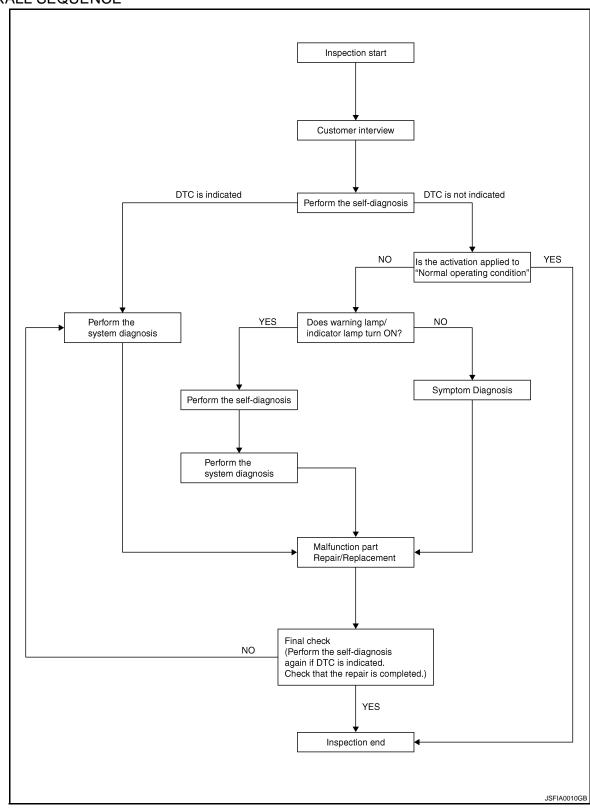
< BASIC INSPECTION > [ABS]

# **BASIC INSPECTION**

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

#### **OVERALL SEQUENCE**



**DETAILED FLOW** 

### **DIAGNOSIS AND REPAIR WORKFLOW**

[ABS] < BASIC INSPECTION > 1. COLLECT THE INFORMATION FROM THE CUSTOMER Α 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-8, "Diagnostic Work Sheet". В >> GO TO 2. 2.PERFORM THE SELF-DIAGNOSIS Check the DTC display with the self-diagnosis function. Refer to BRC-15, "CONSULT-III Function". Is there any DTC displayed? YES >> GO TO 3. D NO >> GO TO 4. 3.PERFORM THE SYSTEM DIAGNOSIS Perform the diagnosis applicable to the displayed DTC. Refer to BRC-56, "DTC No. Index". >> GO TO 7. **BRC** f 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-62. "Description". Is the symptom a normal operation? >> INSPECTION END YES NO >> GO TO 5. Н  ${f 5.}$ CHECK THE WARNING LAMP FOR ILLUMINATION Check that the warning lamp illuminate. • ABS warning lamp: Refer to BRC-47, "Description". Brake warning lamp: Refer to <u>BRC-48</u>, "<u>Description</u>". 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.  $7.\mathtt{REPAIR}$  OR REPLACE THE MALFUNCTIONING PARTS Repair or replace the specified malfunctioning parts. M >> GO TO 8. 8. FINAL CHECK Ν Perform the again, and check that the malfunction is repaired completely. After checking, erase the self-diagnosis memory. Refer to BRC-15, "CONSULT-III Function". Is no other DTC present and the repair completed? YES >> INSPECTION END NO >> GO TO 3. Р

### **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION >

[ABS]

# **Diagnostic Work Sheet**

INFOID:0000000001747687

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

SFIA3264E

INFOID:0000000001747688

Α

В

D

Е

**BRC** 

# **FUNCTION DIAGNOSIS**

**ABS** 

System Diagram

Combination meter (Brake warning lamp, ABS warning lamp) CAN communication Front RH wheel sensor G sensor (AWD models) Rear RH wheel ABS actuator and sensor electric unit (control unit) Rear LH Front LH wheel wheel sensor sensor JSFIA0167GB

### System Description

INFOID:0000000001747689

Anti-Lock Braking System is a function that detects wheel revolution while braking, electronically controls
braking force, and prevents wheel locking during sudden braking. It improves handling stability and maneuverability for avoiding obstacles.

Electrical system diagnosis by CONSULT-III is available.

N /I

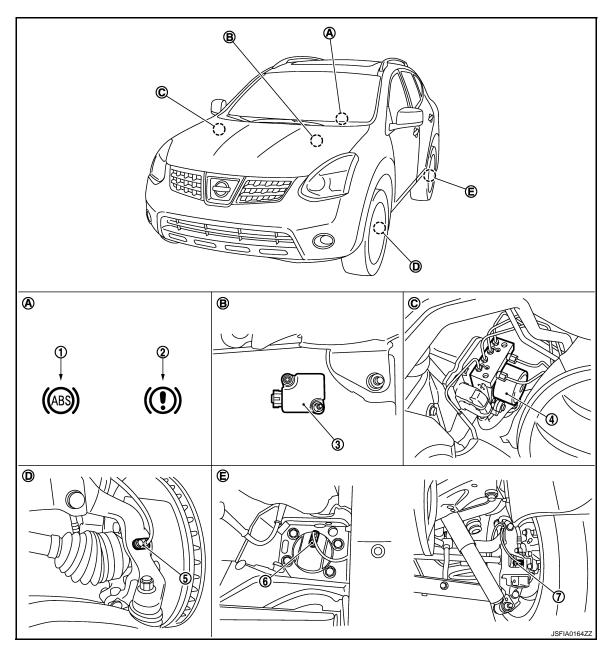
L

Ν

0

### **Component Parts Location**

INFOID:0000000001747690



- 1. ABS warning lamp
- 4. ABS actuator and electric unit (control unit)
- 7. Rear wheel sensor (AWD models)
- A. Combination meter
- D. Steering knuckle

- 2. Brake warning lamp
- 5. Front wheel sensor
- B. Center console
- E. Rear axle

- 3. G sensor (AWD models)
- 6. Rear wheel sensor (2WD models)
- C. Engine room (right side)

### **ABS**

### < FUNCTION DIAGNOSIS >

### [ABS]

Α

В

С

D

Е

# **Component Description**

INFOID:0000000001747691

Component parts		Reference
ABS actuator and electric unit (control unit)	Pump	BRC-27, "Description"
	Motor	BIXO-27, Description
ABS actuator and electric unit (control unit)	Actuator relay (Main relay)	BRC-39, "Description"
	Solenoid valve	BRC-35, "Description"
Wheel sensor		BRC-18, "Description"
G sensor (AWD models)		BRC-29, "Description"
ABS warning lamp		BRC-47, "Description"
Brake warning lamp		BRC-48, "Description"

BRC

G

Н

J

Κ

L

M

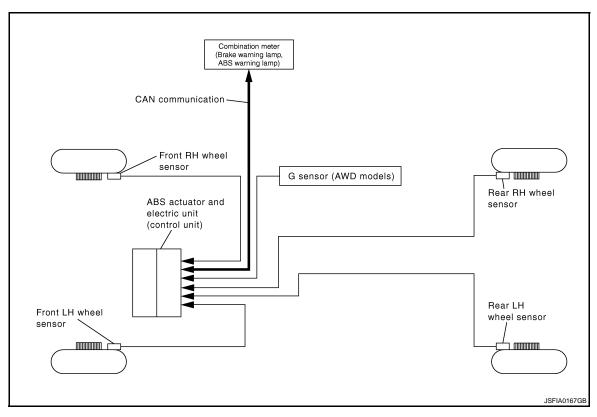
Ν

0

### **EBD**

### System Diagram

INFOID:0000000001772474



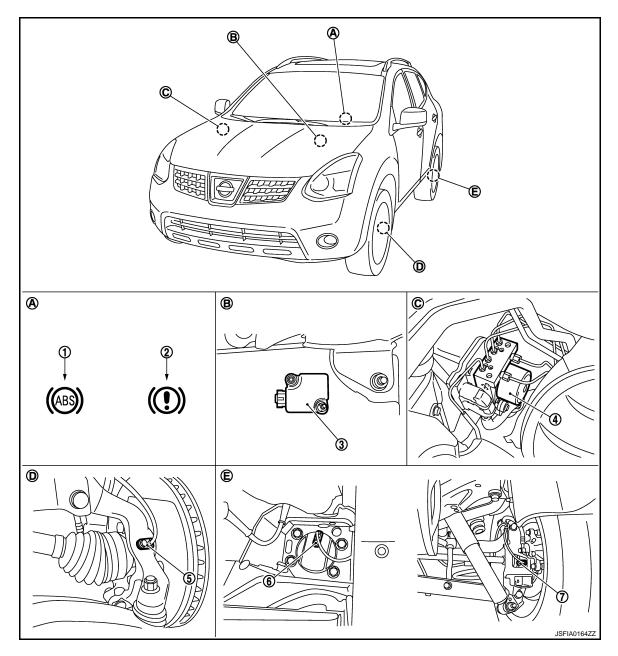
## System Description

INFOID:0000000001747693

- Electric Brake force Distribution is a following function. ABS actuator and electric unit (control unit) detects subtle slippages between the front and rear wheels during braking. Then is electronically controls the rear braking force (brake fluid pressure) to reducing and reduces rear wheel slippage. Accordingly it improves vehicle stability.
- Electrical system diagnosis by CONSULT-III is available.

### **Component Parts Location**

INFOID:0000000001772475



- 1. ABS warning lamp
- 4. ABS actuator and electric unit (control unit)
- 7. Rear wheel sensor (AWD models)
- A. Combination meter
- D. Steering knuckle

- 2. Brake warning lamp
- Front wheel sensor
- B. Center console
  - E. Rear axle

- 3. G sensor (AWD models)
- 6. Rear wheel sensor (2WD models)
- C. Engine room (right side)

В

Α

C

D

Е

BRC

G

Н

0

K

L

M

Ν

0

# **Component Description**

INFOID:0000000001772476

Component parts		Reference
	Pump	PDC 27 "Description"
ABS notugtor and electric unit (control unit)	Motor	BRC-27, "Description"
Actuator and electric unit (control unit) Actuator relay (Main relay)		BRC-39, "Description"
	Solenoid valve	BRC-35, "Description"
Wheel sensor		BRC-18, "Description"
G sensor (AWD models)		BRC-29, "Description"
ABS warning lamp		BRC-47, "Description"
Brake warning lamp		BRC-48, "Description"

### DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

# DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL

# UNIT)]

#### **FUNCTION**

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

Diagnostic test mode	Function
Self-diagnostic results	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 part number	ABS actuator and electric unit (control unit) part number can be read.

#### **SELF-DIAG RESULTS MODE**

< FUNCTION DIAGNOSIS >

**CONSULT-III Function** 

#### 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 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 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).

#### Display Item List

Refer to BRC-56, "DTC No. Index".

#### DATA MONITOR MODE

Display Item List

	SELECT MC	NITOR ITEM	
Monitor item (Unit)	ECU INPUT SIGNALS	MAIN SIGNALS	Remarks
FR LH SENSOR [km/h (MPH)]	×	×	
FR RH SENSOR [km/h (MPH)]	×	×	Wheel speed
RR LH SENSOR [km/h (MPH)]	×	×	Wileel Speed
RR RH SENSOR [km/h (MPH)]	×	×	
STOP LAMP SW (On/Off)	×	×	Stop lamp switch signal status
BATTERY VOLT (V)	×	×	Battery voltage supplied to the ABS actuator and electric unit (control unit)

BRC

В

D

Е

[ABS]

INFOID:0000000001747696

Н

J

K

M

Ν

Р

x: Applicable ▼: Optional item

# DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

< FUNCTION DIAGNOSIS > [ABS]

	SELECT MC	NITOR ITEM		
Monitor item (Unit)	ECU INPUT SIGNALS	MAIN SIGNALS	Remarks	
DECEL G-SEN1 (On/Off) (AWD models)	×	×	Vehicle on level surface or on slope	
DECEL G-SEN2 (On/Off) (AWD models)	×	×	verifice of level surface of off slope	
FR RH IN SOL (On/Off)	▼	×		
FR RH OUT SOL (On/Off)	▼	×		
FR LH IN SOL (On/Off)	▼	×		
FR LH OUT SOL (On/Off)	▼	×	Operation status of each solenoid valve	
RR RH IN SOL (On/Off)	▼	×	Operation status of each solenoid valve	
RR RH OUT SOL (On/Off)	▼	×		
RR LH IN SOL (On/Off)	▼	×		
RR LH OUT SOL (On/Off)	▼	×		
MOTOR RELAY (On/Off)	▼	×	Motor and motor relay operation	
ACTUATOR RLY (On/Off)	▼	×	Actuator relay operation	
ABS WARN LAMP (On/Off)	▼	×	ABS warning lamp	
EBD SIGNAL (On/Off)	▼	▼	EBD operation	
ABS SIGNAL (On/Off)	▼	▼	ABS operation	
EBD FAIL SIG (On/Off)	▼	▼	EBD fail-safe signal	
ABS FAIL SIG (On/Off)	▼	▼	ABS fail-safe signal	

#### **ACTIVE TEST MODE**

#### **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.

#### 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.

#### Test Item

#### ABS SOLENOID VALVE

• For ABS solenoid valve, touch "Up", "Keep", and "Down". Then use screen monitor to check that solenoid valve operates as shown in solenoid valve operation chart.

# DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

#### < FUNCTION DIAGNOSIS >

|--|

Α

В

D

Е

Test item	Diaplay item	Display		
rest item	Display item	Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
FR KII SOL	FR RH OUT SOL	Off	Off	On*
FR LH SOL	FR LH IN SOL	Off	On	On
	FR LH OUT SOL	Off	Off	On*
RR RH SOL	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*

<sup>\*:</sup> On for 1 to 2 seconds after the touch, and then Off.

#### **ABS MOTOR**

• Touch "On" and "Off" on screen. Make sure motor relay and actuator relay operates as shown in table below.

Test item	Display item	Display	
rest item	Display item	On	
ABS MOTOR	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.

#### ECU PART NUMBER

ABS actuator and electric unit (control unit) part number can be read.

BRC

Н

J

r\

M

Ν

0

### COMPONENT DIAGNOSIS

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

Description INFOID.000000001747697

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:000000001747698

#### 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 short circuit. Current signal from sensor is outside limits.	
C1102	RR LH SENSOR-1	Circuit of rear LH wheel sensor is open or short circuit. Current signal from sensor is outside limits.	Harness or connector     Wheel sensor
C1103	FR RH SENSOR-1	Circuit of front RH wheel sensor is open or short circuit. Current signal from sensor is outside limits.	ABS actuator and electric unit (control unit)
C1104	FR LH SENSOR-1	Circuit of front LH wheel sensor is open or short circuit. Current signal from sensor is outside limits.	

#### 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-18, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

INFOID:0000000001747699

#### **CAUTION:**

#### Do not check between wheel sensor terminals.

### 1. CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- · Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

### 2. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- Check terminal to see if it is deformed, disconnected, loose, etc., Repair or replace it if any malfunction condition is found.

### C1101, C1102, C1103, C1104 WHEEL SENSOR-1

#### < COMPONENT DIAGNOSIS >

[ABS]

Α

В

D

Е

**BRC** 

Ν

Р

Reconnect connectors and then perform the self-diagnosis.

Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Repair or replace connector.

## 3.CHECK WHEEL SENSOR HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. 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.)

Measurement terminal for signal circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	12	E39 (Front RH)	4	
E36	27	E22 (Front LH)	2	Existed
	15	B41 (Rear RH)	8	LXISteu
	30	B44 (Rear LH)	6	

Measurement terminal for power supply circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	21	E39 (Front RH)	3	
E36	23	E22 (Front LH)	1	Existed
	11	B41 (Rear RH)	7	LXISIGU
	26	B44 (Rear LH)	5	

Measurement terminal for ground circuit

ABS actuator and electric unit (control unit)				Continuity
Connector	Terminal	Connector	Terminal	Continuity
E36	12, 21	- E36	3, 4	Not existed
	27, 23			
	15, 11			
	30, 26			

5. Reconnect ABS actuator and electric unit (control unit) connector.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

### 4. CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- 2. Check voltage between wheel sensor harness connector power supply terminal and ground.

Wheel sensor		_	Voltage
Connector	Terminal	_	voltage
E39 (Front RH)	3		Approx. 8 V or more
E22 (Front LH)	1	Ground	
B41 (Rear RH)	7	Ground	
B44 (Rear LH)	5		

Is the inspection result normal?

### C1101, C1102, C1103, C1104 WHEEL SENSOR-1

#### < COMPONENT DIAGNOSIS >

[ABS]

YES >> Replace applicable wheel sensor.

NO >> Replace ABS actuator and electric unit (control unit).

### Component Inspection

INFOID:0000000001747700

### 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	
FR RH SENSOR	Nearly matches the speedometer dis-
RR LH SENSOR	play (±10% or less)
RR RH SENSOR	

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-18">BRC-18</a>, "Diagnosis Procedure".

#### C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[ABS]

Α

В

D

Е

### C1105, C1106, C1107, C1108 WHEEL SENSOR-2

Description INFOID:0000000001747701

ABS unit continually monitors wheel speed sensors to detect abnormal signals.

DTC Logic INFOID:0000000001747702

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause	
C1105	RR RH SENSOR-2	Signal from rear RH wheel sensor does not match other 3 wheel speed signals.	Sensor not installed currently     Sensor rotor or encoder damaged     Sensor rotor loose on axle     Electrical interference	
C1106	RR LH SENSOR-2	Signal from rear LH wheel sensor does not match other 3 wheel speed signals.		
C1107	FR RH SENSOR-2	Signal from front RH wheel sensor does not match other 3 wheel speed signals.	Wheel not turning - e.g. vehicle driven on 2WD dyno	
C1108	FR LH SENSOR-2	Signal from front LH wheel sensor does not match other 3 wheel speed signals.	Sensor damaged     ABS unit damaged	

#### 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 <a href="BRC-21">BRC-21</a>, "Diagnosis Procedure".

>> INSPECTION END NO

### Diagnosis Procedure

#### **CAUTION:**

#### Do not check between wheel sensor terminals.

### CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

## 2. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector. 2.
- Disconnect malfunctioning wheel sensor connector.
- Check terminal to see if it is deformed, disconnected, loose, etc., Repair or replace it if any malfunction condition is found.
- Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

Revision: 2008 January

**BRC** 

Н

K

INFOID:0000000001908175

N

2008 Rogue

NO >> Poor connection of connector terminal. Repair or replace connector.

# 3. CHECK WHEEL SENSOR HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. 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.)

Measurement terminal for signal circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E36	12	E39 (Front RH)	4	
	27	E22 (Front LH)	2	Existed
	15	B41 (Rear RH)	8	LXISIGU
	30	B44 (Rear LH)	6	

Measurement terminal for power supply circuit

ABS actuator and ele	ectric unit (control unit)	Wheel	sensor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E36	21	E39 (Front RH)	3	
	23	E22 (Front LH)	1	Existed
	11	B41 (Rear RH)	7	Existed
	26	B44 (Rear LH)	5	

Measurement terminal for ground circuit

ABS actuator and electric unit (control unit)			Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E36	12, 21	- E36	2.4	Not existed
	27, 23			
	15, 11		E36 3, 4	
	30, 26			

5. Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

### 4. CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- 2. Check voltage between wheel sensor harness connector power supply terminal and ground.

Wheel	sensor		Voltage
Connector	Terminal	_	voltage
E39 (Front RH)	3		
E22 (Front LH)	1	Ground	Approx. 8 V or more
B41 (Rear RH)	7	Ground	Approx. 6 v or more
B44 (Rear LH)	5		

#### Is the inspection result normal?

YES >> Replace applicable wheel sensor.

NO >> Replace ABS actuator and electric unit (control unit).

### C1105, C1106, C1107, C1108 WHEEL SENSOR-2

#### < COMPONENT DIAGNOSIS >

[ABS]

Α

В

C

D

Е

INFOID:0000000001908176

### Component Inspection

# 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	
FR RH SENSOR	Nearly matches the speedometer dis-
RR LH SENSOR	play (±10% or less)
RR RH SENSOR	

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-32">BRC-32</a>, "Diagnosis Procedure".

BRC

G

Н

Κ

L

M

Ν

0

### C1109 POWER AND GROUND SYSTEM

Description INFOID:000000001747705

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

**DTC** Logic INFOID:0000000001747706

#### 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 is lower than normal and vehicle speed is greater than 6km/h (4 MPH). Power supply is greater than normal limits.	Harness or connector     ABS actuator and electric unit (control unit)     Fuse     Vehicle electrical power system

#### 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?

>> Proceed to diagnosis procedure. Refer to <a href="BRC-24">BRC-24</a>, "Diagnosis Procedure". YES

NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000001747707

### 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connector and then perform the self-diagnosis.

### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Repair or replace connector.

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

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Turn ignition switch ON or OFF and check voltage between ABS actuator and electric unit (control unit) harness connector terminal and ground.

ABS actuator and electric unit (control unit)			Condition	Voltage	
Connector	Terminal		Condition	voltage	
E36	16	Ground	Ignition switch: ON	Battery voltage	
L30	10	Giodila	Ignition switch: OFF	Approx. 0 V	

Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

3.abs power supply check (under load conditions)

#### **C1109 POWER AND GROUND SYSTEM**

#### < COMPONENT DIAGNOSIS >

[ABS]

Α

В

D

Е

- 1. Use 12 V lamp (normal rating 10 to 20 W) connected between E36 terminals 16 and 4. With ignition switch ON check bulb illuminates correctly.
- Check ABS motor supply under loaded condition (connector E36 terminals 1 and 3).

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Check both power supply and ground circuit.

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

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and electric unit (control unit)			Continuity
Connector	Terminal		Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

- YES >> Check battery for terminal looseness, low voltage, etc. it any malfunction is found, repair malfunctioning parts.
- NO >> Repair or replace malfunctioning components (check ABS earth bolt for tightness and corrosion).

BRC

Н

K

L

Ν

O

### C1110 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< COMPONENT DIAGNOSIS >

[ABS]

### C1110 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

**Description** 

ABS unit is continuously monitoring ECU hardware and software for correct operation.

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1110	CONTROLLER FAILURE	Possible internal failure of control unit components.	Internal failure of control unit components. ABS solenoid valve or motor power supply/ ground abnormality.

#### DTC CONFIRMATION PROCEDURE

### 1. CHECK SELF-DIAGNOSIS RESULTS

- Check both ABS solenoid valve and motor supply and ground circuits using a suitable electrical load.
- Check wheel speed sensor inputs.
- 3. Check the self-diagnosis results.

O 16 15 15 15 15 15 15 15 15 15 15 15 15 15
Self-diagnosis results
CONTROLLER FAILURE

#### 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:0000000001747710

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 those applicable.

>> Replace ABS actuator and electric unit (control unit).

#### C1111 ABS MOTOR, MOTOR RELAY SYSTEM

< COMPONENT DIAGNOSIS >

[ABS]

### C1111 ABS MOTOR, MOTOR RELAY SYSTEM

Description INFOID:0000000001747711

**PUMP** 

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

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

DTC Logic INFOID:0000000001747712 

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1111	11 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.	Harness or connector     ABS actuator and electric unit
CIIII	TOWN WOTON	During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	(control unit)

Е

Α

В

#### DTC CONFIRMATION PROCEDURE

### CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results	_
PUMP MOTOR	

#### Is above displayed on the self-diagnosis display?

>> Proceed to diagnosis procedure. Refer to BRC-27, "Diagnosis Procedure". YES

NO >> INSPECTION END

### Diagnosis Procedure

INFOID:0000000001747713

### 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnect, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

### 2.CHECK ABS MOTOR AND MOTOR RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check voltage between the ABS actuator and electric unit (control unit) harness connector terminal and ground.

ABS actuator and electric unit (control unit)			Voltage
Connector	Terminal	_	voltage
E36	1	Ground	Battery voltage

Reconnect ABS actuator and electric unit (control unit) connector.

**BRC-27** Revision: 2008 January 2008 Rogue

**BRC** 

Н

M

Ν

#### C1111 ABS MOTOR, MOTOR RELAY SYSTEM

# < COMPONENT DIAGNOSIS > Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

# ${f 3.}$ abs power supply check (under load conditions)

Use 12 V lamp (normal rating 10 to 20 W) connected between E36 terminals 1 and 2. With ignition switch ON check bulb illuminates correctly.

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Check both power supply and ground circuit.

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

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and electric unit (control unit)		_	Continuity
Connector	Terminal	_	Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components. (Check ABS each bolt for tightness and corrosion).

### Component Inspection

INFOID:0000000001747714

[ABS]

### 1. CHECK ACTIVE TEST

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

Test item	Display item	Dis	play
	Display item	On	Off
ABS MOTOR	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 <u>BRC-27</u>, "<u>Diagnosis Procedure</u>".

Α

#### C1113 G SENSOR

Description INFOID:0000000001747715

G sensor detects 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:0000000001747716

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1113	G SENSOR	G sensor is malfunctioning, or signal line of G sensor is open or shorted.	Harness or connector     ABS actuator and electric unit (control unit)     G sensor     Electrical interference     Vehicle driven on AWD rolling road

#### DTC CONFIRMATION PROCEDURE

### 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results **G SENSOR** 

### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-29">BRC-29</a>, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

### 1. CHECK CONNECTOR

Turn ignition switch OFF.

- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Disconnect G sensor connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

## 2. CHECK G SENSOR HARNESS

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector. 2.
- 3. Disconnect G sensor connector.
- Check continuity between G sensor harness connector terminals and ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and ele	ectric unit (control unit)	G se	ensor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13	B32	2	
E36 29 14 28	29		3	Existed
	14		4	Existed
	28		5	

**BRC-29** Revision: 2008 January 2008 Rogue

BRC

D

Е

INFOID:0000000001747717

K

M

Ν

#### < COMPONENT DIAGNOSIS >

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

# 3.check g sensor power supply circuit

- Turn ignition switch ON.
- 2. Check voltage between G sensor harness connector terminal and ground.

G sensor			Condition	Voltage
Connector	Terminal		Condition	voltage
B32	1	Ground	Ignition switch: ON	Battery voltage
DSZ	'	Giodila	Ignition switch: OFF	Approx. 0 V

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

### 4.CHECK G SENSOR

- 1. Remove G sensor from the vehicle. Refer to <a href="BRC-71">BRC-71</a>, "Exploded View".
- 2. Connect the following terminals between G sensor and connector.

G sensor	Harness connector	
Terminal	Connector	Terminal
1		1
2		2
3	B32	3
4		4
5		5

- 3. Turn ignition switch ON.
- 4. Check voltage between G sensor terminals.

Condition	G sensor		
Condition	Terminals 4 – 5	Terminals 3 – 5	
Horizontal	1.50 – 1.95 V	1.50 – 1.95 V	
Longitudinally 20°	3.51 – 4.14 V	3.51 – 4.14 V	
Longitudinally 40°	1.50 – 1.95 V	3.51 – 4.14 V	

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Replace G sensor.

### Component Inspection

1. CHECK DATA MONITOR

Select "DECEL G-SEN1" and "DECEL G-SEN2", in "DATA MONITOR" and check G sensor signal.

Monitor item	Condition	DATA MONITOR
DECEL G-SEN1	Changes according to an	On
	indication shown by the decel G sensor	Off
	Changes according to an	On
DECEL G-SEN2	indication shown by the decel G sensor	Off

#### Is the inspection result normal?

Revision: 2008 January BRC-30 2008 Rogue

INFOID:0000000001747718

C1113 G SENSOR [ABS] < COMPONENT DIAGNOSIS > YES >> INSPECTION END >> Go to diagnosis procedure. Refer to <a href="BRC-29">BRC-29</a>, "Diagnosis Procedure". NO BRC

Α

В

С

D

Е

G

Н

J

Κ

L

M

Ν

0

Ρ

**BRC-31** Revision: 2008 January 2008 Rogue

#### C1115 WHEEL SENSOR

Description INFOID:000000001747719

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

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1115	ABS SENSOR [ABNORMAL SIGNAL]	Miss-match between the 4 wheel speed sensor signals.	Harness or connector not a possible cause. Other possible causes tire radius (due to wrong size or pressure) interference.

#### 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 <a href="BRC-32">BRC-32</a>, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

INFOID:0000000001908177

#### **CAUTION:**

#### Do not check between wheel sensor terminals.

1. CHECK TIRES

Check air pressure, wear and size.

Are air pressure, wear and size within standard?

YES >> GO TO 2.

NO >> Adjust air pressure, or replace tire.

### 2.CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check that there is no deformation, misalignment, float, and backlash on the wheel sensor and wheel sensor mounting surface.
- Check that the wheel sensor in installed with no misalignment and backlash.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 3.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

### 3.CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- Check terminal to see if it is deformed, disconnected, loose, etc., Repair or replace it if any malfunction condition is found.
- 5. Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 4.

NO >> Poor connection of connector terminal. Repair or replace connector.

#### C1115 WHEEL SENSOR

#### < COMPONENT DIAGNOSIS >

[ABS]

Α

В

D

Е

### 4. CHECK WHEEL SENSOR HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. 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.)

Measurement terminal for signal circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	12	E39 (Front RH)	4	Existed	
E36	27	E22 (Front LH)	2		
	15	B41 (Rear RH)	8	LXISIGU	
	30	B44 (Rear LH)	6		

Measurement terminal for power supply circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity
Connector	Terminal	Connector Terminal		Continuity
E36	21	E39 (Front RH)	3	Existed
	23	E22 (Front LH)	1	
	11	B41 (Rear RH)	7	Existed
	26	B44 (Rear LH)	5	1

Measurement terminal for ground circuit

ABS actuator and electric unit (control unit)				Continuity	
Connector	Terminal	erminal Connector Terminal			
	12, 21	E36	3, 4	Not existed	
E36	27, 23				
E30	15, 11				
	30, 26				

5. Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning components.

### 5.check wheel sensor power supply circuit

- 1. Turn ignition switch ON.
- 2. Check voltage between wheel sensor harness connector power supply terminal and ground.

Wheel sensor			Voltage	
Connector Terminal			voltage	
E39 (Front RH)	3		Approx. 8 V or more	
E22 (Front LH)	1	Ground		
B41 (Rear RH)			Approx. 6 v or more	
B44 (Rear LH)	5			

#### Is the inspection result normal?

YES >> Replace applicable wheel sensor.

NO >> Replace ABS actuator and electric unit (control unit).

BRC

Н

ı

M

Ν

0

### **C1115 WHEEL SENSOR**

#### < COMPONENT DIAGNOSIS >

[ABS]

### Component Inspection

INFOID:0000000001908178

### 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		
FR RH SENSOR	Nearly matches the speedometer display (±10% or less)	
RR LH SENSOR		
RR RH SENSOR		

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-32">BRC-32</a>, "Diagnosis Procedure".

#### C1120, C1122, C1124, C1126 IN ABS SOL

< COMPONENT DIAGNOSIS >

[ABS]

### C1120, C1122, C1124, C1126 IN ABS SOL

Description INFOID:0000000001747723

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:0000000001747724

#### 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.	
C1122	FR RH IN ABS SOL	When the control unit detects a malfunction in the front RH inlet solenoid circuit.	ABS actuator and electric unit
C1124	RR LH IN ABS SOL	When the control unit detects a malfunction in the rear LH inlet solenoid circuit.	(control unit)
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-35, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

### 2.check connector

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or
- 4. Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Replace or repair connector.

**BRC-35** Revision: 2008 January 2008 Rogue

D

Е

Α

**BRC** 

N

INFOID:0000000001747725

# 3.check actuator relay power supply circuit

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

ABS actuator and ele	ectric unit (control unit)	_	Voltage
Connector Terminal			voltage
E36	2	Ground	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

### 4. CHECK ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and ele	ectric unit (control unit)	_	Continuity
Connector Terminal			Continuity
E36 3, 4		Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

### Component Inspection

INFOID:0000000001747726

### 1. CHECK ACTIVE TEST

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

Test item	Display item -	Display		
		Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
	FR RH OUT SOL	Off	Off	On*
FR LH SOL	FR LH IN SOL	Off	On	On
	FR LH OUT SOL	Off	Off	On*
RR RH SOL	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*

<sup>\*:</sup> 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 <a href="BRC-35">BRC-35</a>, "Diagnosis Procedure".

### C1121, C1123, C1125, C1127 OUT ABS SOL

< COMPONENT DIAGNOSIS >

[ABS]

Α

D

Е

**BRC** 

N

### C1121, C1123, C1125, C1127 OUT ABS SOL

Description INFOID:000000001908179

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

#### 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 <a href="BRC-37">BRC-37</a>, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

INFOID:0000000001908180

### 1. CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

### 2.check connector

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Replace or repair connector.

Revision: 2008 January BRC-37 2008 Rogue

### C1121, C1123, C1125, C1127 OUT ABS SOL

#### < COMPONENT DIAGNOSIS >

[ABS]

# 3.check actuator relay power supply circuit

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

ABS actuator and ele	ectric unit (control unit)	_	Voltage
Connector Terminal			voltage
E36	2	Ground	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

### 4. CHECK ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and ele	ectric unit (control unit)	_	Continuity
Connector	Terminal		Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

### Component Inspection

INFOID:0000000001908181

### 1. CHECK ACTIVE TEST

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

Test item	Display item –	Display		
rest item		Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
FR RH SOL	FR RH OUT SOL	Off	Off	On*
FR LH SOL	FR LH IN SOL	Off	On	On
TR EITSOL	FR LH OUT SOL	Off	Off	On*
RR RH SOL	RR RH IN SOL	Off	On	On
KK KIT SOL	RR RH OUT SOL	Off	Off	On*
RR LH SOL	RR LH IN SOL	Off	On	On
INI LIT SOL	RR LH OUT SOL	Off	Off	On*

<sup>\*:</sup> 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-37, "Diagnosis Procedure".

#### C1140 ACTUATOR RELAY SYSTEM

< COMPONENT DIAGNOSIS >

[ABS]

Α

D

Е

**BRC** 

Н

K

N

Р

INFOID:0000000001747733

### C1140 ACTUATOR RELAY SYSTEM

Description INFOID:000000001747731

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

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause	
C1140	ACTUATOR BLV	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.	Harness or connector     ABS actuator and electric unit	
	ACTUATOR RLY	During the actuator relay operating with ON, when the actuator relay turns ON, or when the control line for the relay is open.	(control unit)	

#### DTC CONFIRMATION PROCEDURE

### 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
ACTUATOR RLY

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-39">BRC-39</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

1.check connector

1. Turn ignition switch OFF.

- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

### 2.CHECK ACTUATOR RELAY POWER SUPPLY CIRCUIT

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

ABS actuator and ele	ectric unit (control unit)		Voltage
Connector	Terminal		voltage
E36	2	Ground	Battery voltage

Reconnect ABS actuator and electric unit (control unit) connector.

### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

unit) connector.

Revision: 2008 January BRC-39

### C1140 ACTUATOR RELAY SYSTEM

#### < COMPONENT DIAGNOSIS >

[ABS]

# 3.abs power supply check (under load conditions)

Use 12 V lamp (normal rating 10 to 20 W) connected between E36 terminals 1 and 3. With ignition switch ON check bulb illuminates correctly.

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Check both power supply and ground circuit.

# ${f 4.}$ CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and ele	ectric unit (control unit)		Continuity
Connector Terminal			Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components. (Check ABS each bolt for tightness and corrosion).

### Component Inspection

INFOID:0000000001908174

### 1. CHECK ACTIVE TEST

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

Test item	Display item	Display	
rest item	Display item	On	Off
ABS MOTOR	MOTOR RELAY	On	Off
ABS WOTOR	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 <u>BRC-27</u>, "<u>Diagnosis Procedure</u>".

#### **U1000 CAN COMM CIRCUIT**

< COMPONENT DIAGNOSIS >

[ABS]

Α

D

Е

BRC

### U1000 CAN COMM CIRCUIT

**Description** 

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

#### 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.	

#### DTC CONFIRMATION PROCEDURE

### 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results	
CAN COMM CIRCUIT	

#### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to BRC-41, "Diagnosis Procedure".

NO >> INSPECTION END

### **Diagnosis Procedure**

INFOID:000000001747737

### 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and perform self-diagnosis.

Self-diagnosis results	
CAN COMM CIRCUIT	

#### Is above displayed on the self-diagnosis display?

YES >> Go to LAN-23, "CAN System Specification Chart".

NO >> INSPECTION END

.

1

Ν

[ABS]

### U1010 CONTROL UNIT (CAN)

Description INFOID:000000001747738

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

#### DTC DETECTION LOGIC

DTC	Items	Diagnostic item is detected when	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of ABS actuator and electric unit (control unit).	ABS actuator and electric unit (control unit) error

#### DTC CONFIRMATION PROCEDURE

### 1. RECHECK DTC

- 1. Turn the ignition switch OFF to ON.
- 2. Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### Is DTC "U1010" detected?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-42">BRC-42</a>, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

INFOID:0000000001747740

2008 Rogue

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

Check that there is no malfunction in ABS actuator and electric unit (control unit) harness connector or disconnection.

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace the harnesses and connectors.

#### **BRAKE FLUID LEVEL SWITCH**

< COMPONENT DIAGNOSIS >

[ABS]

Α

### BRAKE FLUID LEVEL SWITCH

Description INFOID:000000001747741

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).

### Component Function Check

INFOID:0000000001747742

### 1. CHECK BRAKE FLUID LEVEL SWITCH OPERATION

Operate the brake fluid level switch. Then check that the brake warning lamp in the combination meter turns on/off correctly.

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-43">BRC-43</a>, "Diagnosis Procedure".

### Diagnosis Procedure

INFOID:0000000001747743

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect brake fluid level switch connector and combination meter connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connectors and then perform component function check. Refer to <u>BRC-43</u>, "Component Function Check".

#### Is the inspection result normal?

YES >> Poor connection of connector terminal. Replace or repair connector.

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 terminals.

Brake fluid level switch		Condition	Continuity	
Connector	Terminal	Condition	Continuity	
E37	1-2	When brake fluid is full in the reservoir tank.	Not existed	
E3/ 1-2		When brake fluid is empty in the reservoir tank.	Existed	

#### Is the inspection result normal?

YES >> GO TO 3.

NO

>> Brake fluid level switch is malfunction. Replace reservoir tank.

### 3.CHECK BRAKE FLUID LEVEL SWITCH CIRCUIT

- . Disconnect combination meter connector.
- Check continuity between brake fluid level switch harness connector terminals and combination meter harness connector terminal and/or ground.

Combination meter		Brake fluid level switch		Continuity
Connector	Terminal	Connector Terminal		Continuity
M34	27	E37	1	Existed

Combina	tion meter		Continuity
Connector	Terminal		Continuity
M34	27	Ground	Not existed

BRC

D

Е

NC.

Н

.

M

Ν

Ρ

2008 Rogue

### **BRAKE FLUID LEVEL SWITCH**

#### < COMPONENT DIAGNOSIS >

Brake fluid	level switch		Continuity
Connector	Connector Terminal		Continuity
E37	2	Ground	Existed

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning components.

### Component Inspection

INFOID:0000000001747744

[ABS]

# 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 connector terminals.

Brake fluid level switch		Condition	Continuity	
Connector	Terminal	Condition	Continuity	
E37 1 – 2		When brake fluid is full in the reservoir tank.	Not existed	
		When brake fluid is empty in the reservoir tank.	Existed	

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace reservoir tank.

### **PARKING BRAKE SWITCH**

#### < COMPONENT DIAGNOSIS >

[ABS]

Α

### PARKING BRAKE SWITCH

Description INFOID:0000000001747745

The parking brake switch converts the status of the parking brake pedal to an electric signal and transmits it to the ABS actuator and electric unit (control unit).

### Component Function Check

#### INFOID:0000000001747746

INFOID:0000000001747747

### 1. CHECK PARKING BRAKE SWITCH OPERATION

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

Condition	Brake warning lamp illumination status
When the parking brake switch is operation	ON
When the parking brake switch is not operation.	OFF

#### BRC

Н

Ν

Р

D

Е

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <u>BRC-45</u>, "<u>Diagnosis Procedure</u>".

# Diagnosis Procedure

# 1. CHECK PARKING BRAKE SWITCH

- Turn ignition switch OFF. Disconnect parking brake switch connector.
- Check continuity between parking brake switch connector terminal and ground.

Parking brake switch		Condition	Continuity
Connector	Terminal	Condition	Continuity
E103	1 – Ground	When the parking brake switch is operated.	Existed
E 103 I – Ground		When the parking brake switch is not operated.	Not existed

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace parking brake switch.

### 2.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to MWI-32, "Diagnosis Description".

#### Is the inspection result normal?

>> INSPECTION END YES

NO >> Repair or replace combination meter.

### Component Inspection

### INFOID:0000000001747748

# 1. CHECK PARKING BRAKE SWITCH

- Turn ignition switch OFF.
- Disconnect parking brake switch connector.
- Check continuity between parking brake switch connector terminal and ground.

**BRC-45** 

### **PARKING BRAKE SWITCH**

### < COMPONENT DIAGNOSIS >

[ABS]

Parking brake switch		Condition	Continuity	
Connector	Terminal	Condition	Continuity	
E103	1 – Ground	When the parking brake switch is operated.	Existed	
E103	i – Giouna	When the parking brake switch is not operated.	Not existed	

### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace parking brake switch. Refer to PB-6, "Exploded View".

#### ABS WARNING LAMP

[ABS] < COMPONENT DIAGNOSIS >

**ABS WARNING LAMP** 

Description INFOID:0000000001747749

×: ON -: OFF

INFOID:0000000001747750

INFOID:0000000001747751

Condition	ABS warning lamp
Ignition switch OFF	-
For 1 second after turning ignition switch ON	×
1 second later after turning ignition switch ON	-
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

### Component Function Check

### 1. CHECK ABS WARNING LAMP OPERATION

Check that the lamp illuminates for approximately 1 second after the ignition switch is turned ON.

### Is the inspection result normal?

>> INSPECTION END YES

NO >> Go to diagnosis procedure. Refer to <a href="BRC-47">BRC-47</a>, "Diagnosis Procedure".

### Diagnosis Procedure

### 1. CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### 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-32, "Diagnosis Description".

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter. BRC

Α

В

D

Е

Н

J

K

L

M

Ν

### **BRAKE WARNING LAMP**

Description INFOID:000000001747752

 $\times$ : ON -: OFF

Condition	Brake warning lamp (Note 1)
Ignition switch OFF	-
For 1 second after turning ignition switch ON	× (Note 2)
1 second later after turning 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:0000000001747753

### 1.BRAKE WARNING LAMP OPERATION CHECK 1

Check that the lamp illuminates for approximately 1 second after the ignition switch is turned ON.

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Go to diagnosis procedure. Refer to <a href="BRC-48">BRC-48</a>, "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 pedal.

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Check parking brake switch. Refer to <a href="BRC-45">BRC-45</a>, "Diagnosis Procedure".

### Diagnosis Procedure

INFOID:0000000001747754

## 1. CHECK PARKING BRAKE SWITCH

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Check parking brake switch. Refer to <a href="BRC-45">BRC-45</a>, "Diagnosis Procedure".

### 2.check self-diagnosis

Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### 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 <a href="MWI-32">MWI-32</a>, "Diagnosis Description".

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter.

< ECU DIAGNOSIS > [ABS]

# **ECU DIAGNOSIS**

# ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Reference Value

#### 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.

		Data monitor	_
Monitor item	Display content	Condition	Reference value in normal operation
		Vehicle stopped	0 [km/h (MPH)]
FR LH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)
		Vehicle stopped	0 [km/h (MPH)]
FR RH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)
		Vehicle stopped	0 [km/h (MPH)]
RR LH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)
	Wheel speed	Vehicle stopped	0 [km/h (MPH)]
RR RH SENSOR		Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)
STOP LAMP SW	Stop lamp switch signal status	When brake pedal is depressed	On
STOP LAWIF SW	Stop lamp switch signal status	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
DECEL G-SEN1	Decel G detected by decel G sensor	Changes according to an indication shown by the decel G sensor	On
(Note 2)	Decei o detected by decei o serisor		Off
DECEL G-SEN2	Decal C detected by decal C conser	Changes according to an indication shown by the decel G sensor	On
(Note 2)	Decel G detected by decel G sensor		Off
FR RH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("AC-TIVE 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
	Operation status of each calcassid value	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
FR RH OUT SOL	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off

Revision: 2008 January BRC-49 2008 Rogue

D

Α

В

Е

BRC

Н

J

K

L

 $\mathbb{N}$ 

Ν

0

< ECU DIAGNOSIS > [ABS]

		Data monitor		
Monitor item	Display content	Condition	Reference value in normal operation	
FR LH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
TR EITIN SOL	Operation status of each solehold valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
FR LH OUT SOL	Operation status of each calonaid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
RR RH IN SOL	Operation status of each calonaid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
RR RH OUT SOL	Operation status of each calculated value	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
RR LH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
	Operation status of each solehold valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
RR LH OUT SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
KK EITOOT SOL	Operation status of each solehold valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
MOTOR RELAY	Material	When the motor relay and motor are operating	On	
MOTOR RELAY	Motor and motor relay operation	When the motor relay and motor are not operating	Off	
ACTUATOR RLY		When the actuator relay is operating	On	
(Note 3)	Actuator relay operation	When the actuator relay is not operating	Off	
ABO MASS	ABS warning lamp	When ABS warning lamp is ON	On	
ABS WARN LAMP	(Note 4)	When ABS warning lamp is OFF	Off	
EDD OIGHT		EBD is active	On	
EBD SIGNAL	EBD operation	EBD is inactive	Off	
450 010N11	100	ABS is active	On	
ABS SIGNAL	ABS operation	ABS is inactive	Off	
EDD EATL OLG	EDD feil auforit und	In EBD fail-safe	On	
EBD FAIL SIG	EBD fail-safe signal	EBD is normal	Off	

< ECU DIAGNOSIS > [ABS]

		Data monitor	
Monitor item	Display content	Condition	Reference value in normal operation
ABS FAIL SIG	APS fail cofe cignal	In ABS fail-safe	On
ABS FAIL SIG	ABS fail-safe signal	ABS is normal	Off

#### NOTE:

- 1: Confirm tire pressure is normal.
- 2: Only AWD models.
- 3: Every 20 seconds momentary switch to Off.
- 4: On and off timing for warning lamp and indicator lamp.
- ABS warning lamp: Refer to BRC-47, "Description".

BRC

Α

В

С

D

Е

G

Н

-

J

K

L

M

Ν

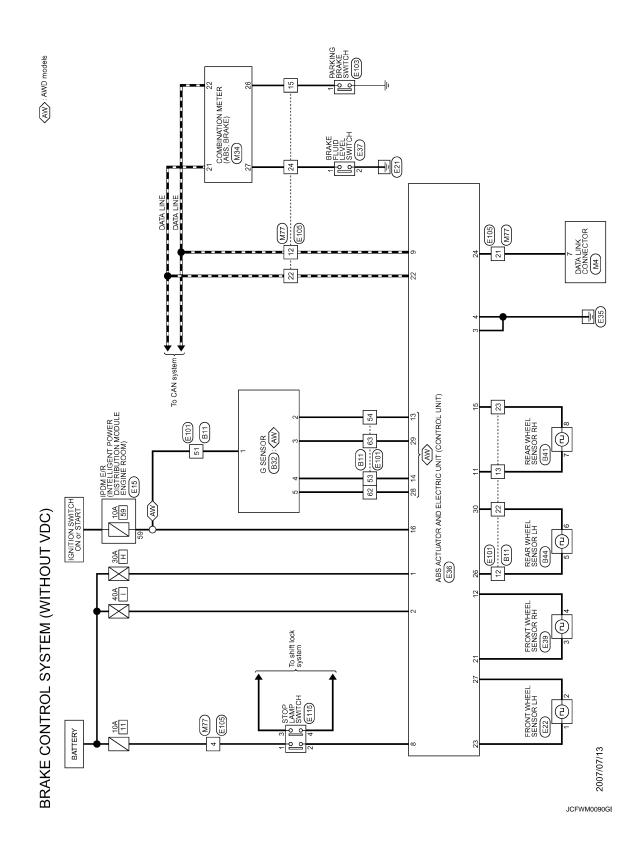
0

[ABS]

Wiring Diagram -BRAKE CONTROL SYSTEM-

INFOID:0000000001747756

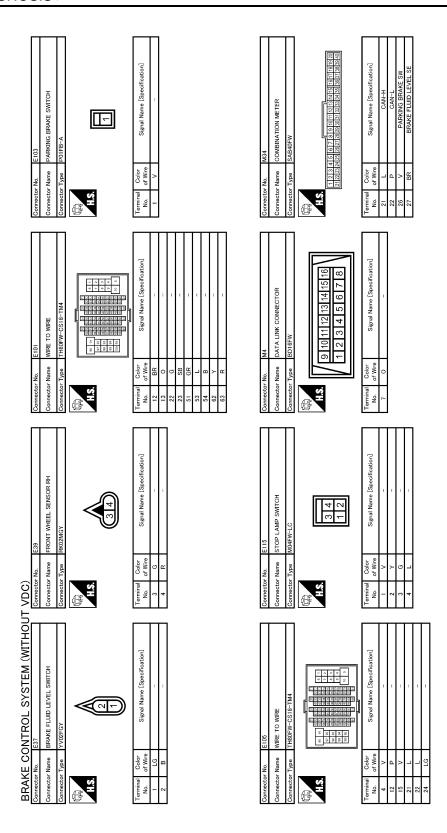
2008 Rogue



< ECU DIAGNOSIS > [ABS]

			ППППППППППППППППППППППППППППППППППППППП			Α
	SORLH	Signal Name [Specification]	IGN FR SENSOR VB CAN H FL SENSOR VB DAG K RL SENSOR VB FL SENSOR SIG G GND G GND G SWZ RL SENSOR SIG			В
	REAR WHEEL SENSOR LH PROZPEGY	Signal Na	所   円   円   円			С
	Connector Name Connector Type	Terminal Color No. of Wire 5 BR 6 G	16 BR 21 C G 23 W W 24 GR 26 BR 26 BR 27 P P 29 R 30 G			D
		[pod]	C UNIT	Dool 1		Е
	REAR WHEEL SENSOR RH PROZPICY	Signal Name (Specification)	E36 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) RH28FB-NU4-DH	Signal Name [Specification] MOTOR AGTR AGTR AGND A GND A GND A GND L STOP LAMP SW GAN L R SENSOR VG G CHECK G CHECK G CHECK G SHECK G		BRC
		Sig Objor SB		Color of Wire Sign Sign Sign Sign Sign Sign Sign Sign		G
	Connector No. Connector Type Connector Type	Terminal of O of 7 7 7 8 8	Connector No. Connector Name Connector Type H.S.	Terminal Of O O O O O O O O O O O O O O O O O O		Н
		officetion]		ification]		I
	wwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwww	Signal Name (Specification) CRN GST GSZ GSS GSI GND	FROMT WHEEL SENSOR LH PROZMGY	Signal Name [Specification]		J
	Connector No. B32 Connector Name G SENSOR Connector Type YDZÜĞEW H.S.	Color of Wire B R R B R CG R CG R CG R CG R CG R CG R		of Wire P		K
HOLIT VDG	Connector No. Connector Type	Terminal No. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	Connector No. Connector Name Connector Type H.S.	Terminal No.		L
TEM (WITH	8 5 8 8 8 5 0 8 8 8	Signal Name [Specification]	E15 IPDM E.R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) NS16PW-CS  52 51 50  49 48 47  61 60 59 58 57 56 55 54	Signal Name [Specification]		M
ITROL SYS	WIRE TO WIRE THBOMW-CSIG-TMA	Signal Name	5 M. E./R. (INTELLIGE STRIBUTION MODU STREW-CS 16 F	Signal Name		Ν
BRAKE CONTROL SYSTEM (WITHOUT	Connector No. B11 Connector Name WIF Connector Type TH	Terminal Color No. 12 BR II.2 BR II.2 BR II.3	ector No. ector Type  53	Terminal Color No. of Wire 59 BR		0
Ω.	Conn	<u> </u>	Common Co	<u>F</u> ∐	JCFWM0091GE	Р

Revision: 2008 January BRC-53 2008 Rogue



JCFWM0092GE

< ECU DIAGNOSIS > [ABS]

Α

В

С

D

Е

### BRC

G

Н

-

J

Κ

L

M

Ν

Р

0

INFOID:0000000001747757

JCFWM0093GE

Fail-Safe

### ABS, EBD SYSTEM

BRAKE CONTROL SYSTEM (WITHOUT VDC)

e a a a a

In case of electrical malfunctions with the ABS, ABS warning lamp will turn ON. In case of electrical malfunctions with the EBD, brake warning lamp, ABS warning lamp will turn ON. Simultaneously, the ABS become one of the following conditions of the fail-safe function.

< ECU DIAGNOSIS > [ABS]

• For malfunction of ABS, only the EBD is activated and the condition of vehicle 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.

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

DTC No. Index

DTC	Items (CONSULT screen terms)	Reference	
C1101	RR RH SENSOR-1	BRC-18, "DTC Logic"	
C1102	RR LH SENSOR-1		
C1103	FR RH SENSOR-1		
C1104	FR LH SENSOR-1		
C1105	RR RH SENSOR-2		
C1106	RR LH SENSOR-2	DDC 24 "DTC Logic"	
C1107	FR RH SENSOR-2	BRC-21, "DTC Logic"	
C1108	FR LH SENSOR-2		
C1109	BATTERY VOLTAGE [ABNORMAL]	BRC-24, "DTC Logic"	
C1110	CONTROLLER FAILURE	BRC-26, "DTC Logic"	
C1111	PUMP MOTOR	BRC-27, "DTC Logic"	
C1113	G SENSOR	BRC-29, "DTC Logic"	
C1115	ABS SENSOR [ABNORMAL SIGNAL]	BRC-32, "DTC Logic"	
C1120	FR LH IN ABS SOL	BRC-35, "DTC Logic"	
C1121	FR LH OUT ABS SOL	BRC-37, "DTC Logic"	
C1122	FR RH IN ABS SOL	BRC-35, "DTC Logic"	
C1123	FR RH OUT ABS SOL	BRC-37, "DTC Logic"	
C1124	RR LH IN ABS SOL	BRC-35, "DTC Logic"	
C1125	RR LH OUT ABS SOL	BRC-37, "DTC Logic"	
C1126	RR RH IN ABS SOL	BRC-35, "DTC Logic"	
C1127	RR RH OUT ABS SOL	BRC-37, "DTC Logic"	
C1140	ACTUATOR RLY	BRC-39, "DTC Logic"	
U1000	CAN COMM CIRCUIT	BRC-41, "DTC Logic"	
U1010	CONTROL UNIT (CAN)	BRC-42, "DTC Logic"	

### **EXCESSIVE ABS FUNCTION OPERATION FREQUENCY**

SYMPTOM DIAGNOSIS > [ABS]
SYMPTOM DIAGNOSIS

# EXCESSIVE ABS FUNCTION OPERATION FREQUENCY

# 1.CHECK START

Diagnosis Procedure

Check front and rear brake force distribution using a brake tester. Refer to <u>BR-47, "General Specifications"</u>. 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.

- Front
- 2WD models: Refer to FAX-8, "Inspection".
- AWD models: Refer to FAX-32, "Inspection".
- Rea
- 2WD models: Refer to RAX-4, "Inspection".
- AWD models: Refer to RAX-11, "Inspection".

### 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 ABS warning lamp illuminated?

YES >> Perform self-diagnosis.

NO >> Normal

BRC

Н

Α

В

D

Е

INFOID:0000000001747759

M

K

Ν

#### **UNEXPECTED PEDAL REACTION**

< SYMPTOM DIAGNOSIS > [ABS]

### **UNEXPECTED PEDAL REACTION**

### Diagnosis Procedure

INFOID:0000000001747760

### 1. CHECK BRAKE PEDAL STROKE

Check brake pedal stroke. Refer to BR-9, "Inspection and Adjustment".

#### Is the stroke too large?

YES

- >> Bleed air from brake tube and hose. Refer to BR-13, "Bleeding Brake System".
  - Check brake pedal, brake booster, and master cylinder for mount play, looseness, brake system fluid leakage, etc.
  - Brake pedal: Refer to BR-9, "Inspection and Adjustment".
  - Master cylinder: Refer to BR-14, "Inspection".
  - Brake booster: Refer to BR-15, "Inspection".

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 >> Normal

NO >> Check brake system.

#### THE BRAKING DISTANCE IS LONG

SYMPTOM DIAGNOSIS > [ABS]
THE BRAKING DISTANCE IS LONG

# Diagnosis Procedure 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 >> Normal

NO >> Check brake system.

BRC

Α

В

C

D

Е

INFOID:0000000001747761

G

Н

K

L

M

Ν

0

#### **ABS FUNCTION DOES NOT OPERATE**

< SYMPTOM DIAGNOSIS > [ABS]

### **ABS FUNCTION DOES NOT OPERATE**

Diagnosis Procedure

INFOID:0000000001747762

#### **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 >> Normal

NO >> Perform self-diagnosis.

### PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS

[ABS] < SYMPTOM DIAGNOSIS > PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS Α Diagnosis Procedure INFOID:0000000001747763 **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] D 1.SYMPTOM CHECK 1 Check that there are pedal vibrations when the engine is started. Е Do vibrations occur? YES >> GO TO 2. NO >> Inspect the brake pedal. BRC 2.SYMPTOM CHECK 2 Check that there are ABS operation noises when the engine is started. Do the operation noises occur? YES >> GO TO 3. NO >> Perform self -diagnosis. Н 3.SYMPTOM CHECK 3 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 >> Normal J K L M Ν Р

### **NORMAL OPERATING CONDITION**

[ABS]

< SYMPTOM DIAGNOSIS >

# NORMAL OPERATING CONDITION

Description INFOID:000000001747764

Symptom	Result	
Slight vibrations are felt on the brake pedal and the operation noises occur, when ABS is activated.	This is a normal condi-	
Stopping distance is longer than that of vehicles without ABS when the vehicle drives on rough, gravel, or snow-covered (fresh, deep snow) roads.	tion due to the ABS activation.	
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.	

< PRECAUTION > [ABS]

## **PRECAUTION**

# PRECAUTIONS FOR USA AND CANADA

FOR USA AND CANADA: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

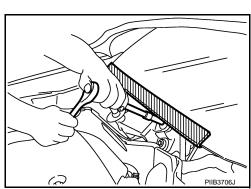
The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air 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 "SRS AIRBAG" and "SEAT BELT" 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 "SRS AIRBAG".
- 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.

FOR USA AND CANADA: Precaution for Procedure without Cowl Top Cover

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



FOR USA AND CANADA: Precaution for Brake System

### WARNING:

Clean any dust from the front brake and rear brake with a vacuum dust collector. Never blow with compressed air.

#### **CAUTION:**

- Only use "DOT 3" brake fluid. Refer to MA-17, "FOR NORTH AMERICA: Fluids and Lubricants".
- Never reuse drained brake fluid.
- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
  off immediately and wash with water if it gets on a painted surface.
- Never use mineral oils such as gasoline or light oil to clean. They may damage rubber parts and cause improper operation.
- Always loosen the brake tube flare nut with a flare nut wrench.

BRC

Α

В

D

Е

Н

INFOID:0000000003249021

J

K

...

INFOID:0000000003186057

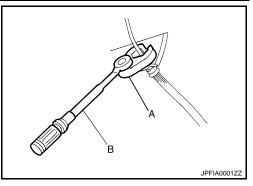
Ν

0

#### **PRECAUTIONS**

< PRECAUTION > [ABS]

- Tighten the brake tube flare nut to the specified torque with crowfoot (A) and torque wrench (B).
- Always confirm the specified tightening torque when installing the brake pipes.
- Turn the ignition switch OFF and disconnect the ABS actuator and electric unit (control unit) connector or the battery negative terminal before performing the work.
- Check that no brake fluid leakage is present after replacing the parts.



#### FOR USA AND CANADA: Precaution for Brake Control

INFOID:0000000001747767

- When starting engine or when starting vehicle just after starting engine, 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 estimate 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.

#### EXCEPT FOR MEXICO

# EXCEPT FOR MEXICO: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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. Information necessary to service the system safely is included in the "SRS AIRBAG" and "SEAT BELT" of this Service Manual.

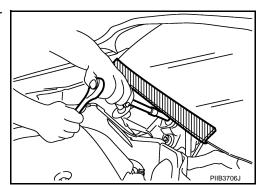
#### **WARNING:**

- 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 "SRS AIRBAG".
- 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.

### EXCEPT FOR MEXICO: Precaution for Procedure without Cowl Top Cover

INFOID:0000000003249023

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



#### **PRECAUTIONS**

< PRECAUTION > [ABS]

### **EXCEPT FOR MEXICO: Precaution for Brake System**

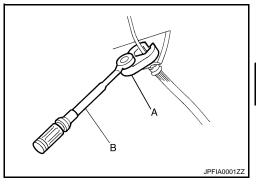
INFOID:00000000003247418

#### WARNING:

Clean any dust from the front brake and rear brake with a vacuum dust collector. Never blow with compressed air.

#### **CAUTION:**

- Only use "DOT 3" brake fluid. Refer to MA-18, "FOR MEXICO: Fluids and Lubricants".
- Never reuse drained brake fluid.
- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
  off immediately and wash with water if it gets on a painted surface.
- Never use mineral oils such as gasoline or light oil to clean. They may damage rubber parts and cause improper operation.
- Always loosen the brake tube flare nut with a flare nut wrench.
- Tighten the brake tube flare nut to the specified torque with crowfoot (A) and torque wrench (B).
- Always confirm the specified tightening torque when installing the brake pipes.
- Turn the ignition switch OFF and disconnect the ABS actuator and electric unit (control unit) connector or the battery negative terminal before performing the work.
- Check that no brake fluid leakage is present after replacing the parts.



#### **EXCEPT FOR MEXICO: Precaution for Brake Control**

INFOID:0000000003247419

- When starting engine or when starting vehicle just after starting engine, 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 estimate 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.

BRC

Α

В

D

Е

Ы

L

M

Ν

Р

Revision: 2008 January BRC-65 2008 Rogue

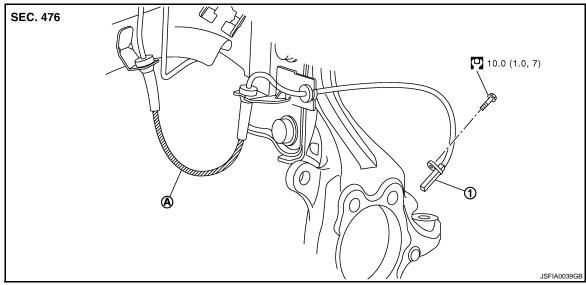
< ON-VEHICLE REPAIR > [ABS]

### ON-VEHICLE REPAIR

WHEEL SENSOR FRONT WHEEL SENSOR

FRONT WHEEL SENSOR: Exploded View





- 1. Front LH wheel sensor
- A. Yellow line (slant line)

Refer to GI-4, "Components" for symbol in the figure.

#### NOTE:

The above figure (front side) shows left side. Right side is the mirror image.

FRONT WHEEL SENSOR: Removal and Installation

INFOID:0000000001747770

#### **REMOVAL**

Pay attention to the following when removing sensor.

#### **CAUTION:**

- Do not twist sensor harness as much as possible, when removing it. Pull sensors out without pulling sensor harness.
- Take care to avoid damaging sensor edges or rotor teeth. Remove wheel sensor first before removing front or rear wheel hub. This is to avoid damage to sensor wiring and loss of sensor function.
- When you see the harness of the wheel sensor from the front side of the vehicle ensure that the yellow lines (A) are not twisted.

#### INSTALLATION

Pay attention to the following when installing wheel sensor. Tighten installation bolts to the specified torques.

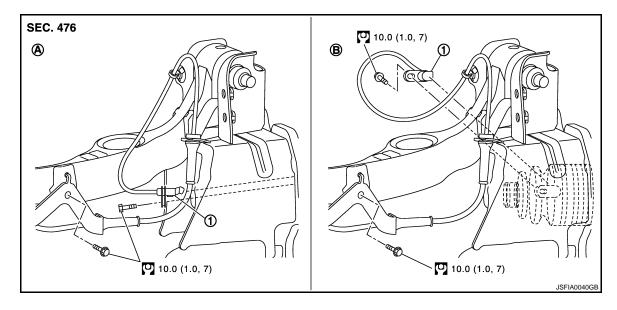
- When installing, make sure there is no foreign material such as iron chips on and in the mounting hole of the wheel sensor. Make sure no foreign material has been caught in the sensor rotor. Remove any foreign material and clean the mount.
- When installing wheel sensor, be sure to press rubber grommets in until they lock at locations shown above in the figure. When installed, harness must not be twisted.

#### REAR WHEEL SENSOR

< ON-VEHICLE REPAIR > [ABS]

### **REAR WHEEL SENSOR: Exploded View**

INFOID:0000000001747771



Rear LH wheel sensor

A. 2WD models

B. AWD models

Refer to GI-4, "Components" for symbol in the figure.

#### NOTE:

The above figure (front side) shows left side. Right side is the mirror image.

#### REAR WHEEL SENSOR: Removal and Installation

INFOID:0000000001747772

#### REMOVAL

Pay attention to the following when removing sensor.

#### CAUTION:

- Do not twist sensor harness as much as possible, when removing it. Pull sensors out without pulling sensor harness.
- Take care to avoid damaging sensor edges or rotor teeth. Remove wheel sensor first before removing front or rear wheel hub. This is to avoid damage to sensor wiring and loss of sensor function.

#### INSTALLATION

Pay attention to the following when installing wheel sensor. Tighten installation bolts to the specified torques.

- When installing, make sure there is no foreign material such as iron chips on and in the mounting hole of the wheel sensor. Make sure no foreign material has been caught in the sensor rotor. Remove any foreign material and clean the mount.
- When installing wheel sensor, be sure to press rubber grommets in until they lock at locations shown above in the figure. When installed, harness must not be twisted.

Е

D

Α

В

BRC

Н

M

Ν

#### SENSOR ROTOR

< ON-VEHICLE REPAIR > [ABS]

SENSOR ROTOR

FRONT SENSOR ROTOR

FRONT SENSOR ROTOR: Exploded View

INFOID:0000000001747773

Refer to FAX-10, "Exploded View" (2WD models), FAX-34, "Exploded View" (AWD models).

FRONT SENSOR ROTOR: Removal and Installation

INFOID:0000000001747774

#### REMOVAL

Sensor rotor cannot be disassembled. Remove the sensor rotor together with hub bearing assembly. Refer to <u>FAX-10, "Removal and Installation"</u> (2WD models), <u>FAX-34, "Removal and Installation"</u> (AWD models).

#### INSTALLATION

Sensor rotor cannot be disassembled. Installation the sensor rotor together with hub bearing assembly. Refer to <u>FAX-10</u>, "Removal and Installation" (2WD models), <u>FAX-34</u>, "Removal and Installation" (AWD models).

REAR SENSOR ROTOR

REAR SENSOR ROTOR: Exploded View

INFOID:0000000001747775

Refer to RAX-5, "Exploded View" (2WD models), RAX-13, "Exploded View" (AWD models).

REAR SENSOR ROTOR: Removal and Installation

INFOID:0000000001747776

#### **2WD MODELS**

Removal

Sensor rotor cannot be disassembled. Remove the sensor rotor together with hub bearing assembly. Refer to RAX-5, "Removal and Installation".

Installation

Sensor rotor cannot be disassembled. Installation the sensor rotor together with hub bearing assembly. Refer to RAX-5, "Removal and Installation".

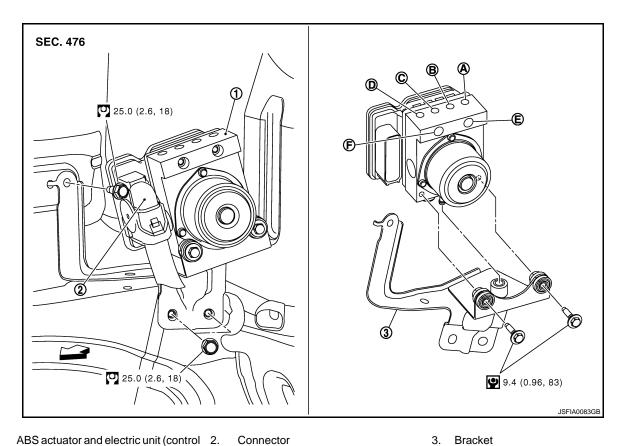
#### AWD MODELS

For removal and installation of sensor rotor, refer to RAX-16, "Disassembly and Assembly".

[ABS] < ON-VEHICLE REPAIR >

## ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

**Exploded View** INFOID:000000001747777



- 1. unit)
- В. To rear RH brake caliper
- C. To Rear LH brake caliper

To front RH brake caliper

To front LH brake caliper

- From master cylinder primary side
- From master cylinder secondary side

< >
☐: Vehicle front

A.

Refer to GI-4, "Components" for symbol in the figure.

#### Removal and Installation

**REMOVAL** 

#### **CAUTION:**

- Before servicing, disconnect the battery cable from negative terminal.
- To remove brake tube, use a flare nut wrench to prevent flare nuts and brake tube from being damaged. To install, use flare nut crowfoot and torque wrench.
- Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.
- Do not remove and install actuator by holding harness.
- After work is completed, bleed air from brake tube. Refer to BR-13, "Bleeding Brake System".
- Remove cowl top. Refer to EXT-20, "Exploded View". 1.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Loosen brake tube flare nuts, then remove brake tubes from ABS actuator and electric unit (control unit).
- Remove tire (front LH side).
- Remove fender protector (rear): (front LH side). Refer to <u>EXT-22, "Exploded View"</u>.
- Remove ABS actuator and electric unit (control unit) bracket mounting nut. 6.
- Remove ABS actuator and electric unit (control unit) from vehicle. 7.

#### INSTALLATION

**BRC-69** Revision: 2008 January 2008 Rogue В

Α

D

Е

BRC

K

L

INFOID:0000000001747778

M

< ON-VEHICLE REPAIR > [ABS]

Note the following, and install in the reverse order of removal.

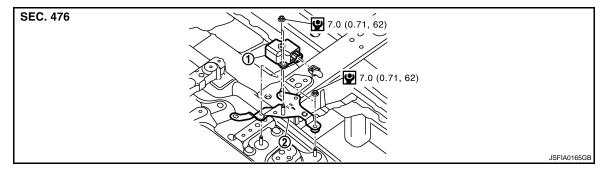
#### **CAUTION:**

- Before servicing, disconnect the battery cable from negative terminal.
- To remove brake tube, use a flare nut wrench to prevent flare nuts and brake tube from being damaged. To install, use flare nut crowfoot and torque wrench.
- Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.
- Do not remove and install actuator by holding harness.
- After work is completed, bleed air from brake tube. Refer to <u>BR-13, "Bleeding Brake System"</u>.
- After installing harness connector in the ABS actuator and electric unit (control unit), make sure connector is securely locked.

< ON-VEHICLE REPAIR > [ABS]

### **G SENSOR**

Exploded View



G sensor
 Bracket

∠ : Vehicle front

Refer to GI-4, "Components" for symbol in the figure.

### Removal and Installation

REMOVAL

### **CAUTION:**

Do not drop or strike G sensor, or do not use power tool etc., because G sensor is sensitive to the impact.

- Remove center console assembly. Refer to <u>IP-20, "Exploded View"</u>.
- 2. Disconnect G sensor harness connector.
- 3. Remove mounting nuts. Remove G sensor.

#### **INSTALLATION**

Note the following, and install in the reverse order of removal.

#### **CAUTION:**

Do not drop or strike G sensor, or do not use power tool etc., because G sensor is sensitive to the impact.

BRC

INFOID:0000000001747780

Α

В

D

Е

J

L

K

M

Ν

0

### **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION > [VDC/TCS/ABS]

# **BASIC INSPECTION**

### DIAGNOSIS AND REPAIR WORKFLOW

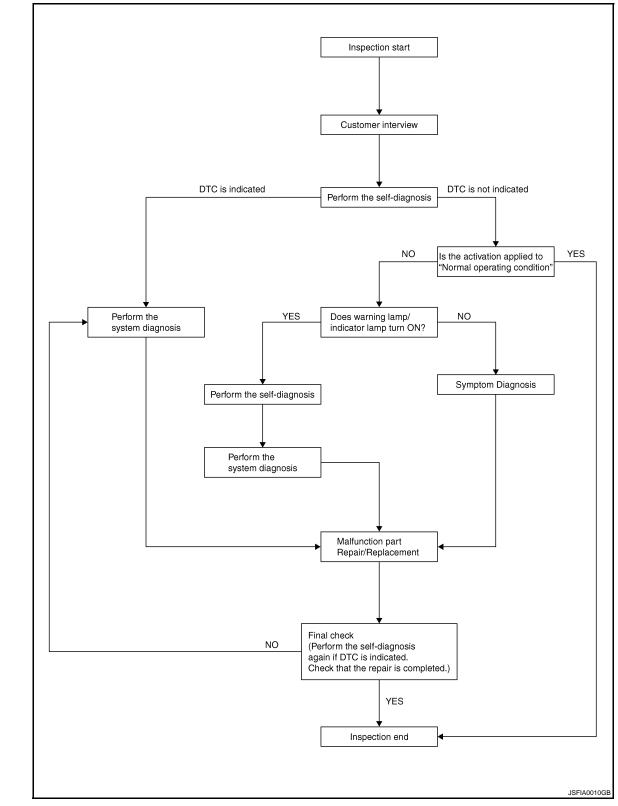
Work Flow

#### 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 <a href="https://example.com/BRC-76">BRC-76</a>, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION: Description".

< BASIC INSPECTION > [VDC/TCS/ABS]

## OVERALL SEQUENCE



## **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 <a href="BRC-75">BRC-75</a>, "Diagnostic Work Sheet".

Α

В

С

D

Е

BRC

Н

J

<

-

//

N

0

H

## **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-94, "CONSULT-III Function".

#### 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-157, "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 <u>BRC-165</u>, <u>"Description"</u>.

## Is the symptom a normal operation?

YES >> INSPECTION END

NO >> GO TO 5.

## ${f 5.}$ CHECK THE WARNING LAMP AND INDICATOR LAMP FOR ILLUMINATION

Check that the warning lamp and indicator lamp illuminate.

- ABS warning lamp: Refer to BRC-145, "Description".
- Brake warning lamp: Refer to BRC-146, "Description".
- VDC OFF indicator lamp: Refer to <u>BRC-147</u>, "<u>Description</u>".
- SLIP indicator lamp: Refer to BRC-148, "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 <u>BRC-94</u>, "CONSULT-III Function".

#### 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:0000000001747782

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

SFIA3265E

BRC

Α

В

С

D

Е

G

Н

J

Κ

L

M

Ν

0

[VDC/TCS/ABS]

## INSPECTION AND ADJUSTMENT

## ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

## ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION: Description

NFOID:0000000001747783

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

x: Required -: Not required

Situation	Adjustment of steering angle sensor neutral position
Removing/Installing steering angle sensor	×
Replacing steering angle sensor	×
Removing/Installing steering wheel	×
Replacing steering wheel	×
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

# 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)

 ${f 1}$  . 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" and "ST ANG SEN ADJUSTMENT" in order.
- 2. Touch "START".

#### **CAUTION:**

Do not touch steering wheel while adjusting steering angle sensor.

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

#### NOTE:

After approximately 60 seconds, it 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.
- Select "DATA MONITOR". Then make sure "STR ANGLE SIG" is within 0±2.5°.

Is the steering angle within the specified range?

YES >> GO TO 4.

## **INSPECTION AND ADJUSTMENT**

 $\frac{<\text{BASIC INSPECTION}>}{\text{NO}} >> \text{Perform the neutral position adjustment for the steering angle sensor again, GO TO 1.} \\ \textbf{4.} \text{ERASE THE SELF-DIAGNOSIS MEMORY}$ 

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-94, "CONSULT-III Function".
- ECM
- For CALIFORNIA: Refer to EC-92, "Diagnosis Description".
- For USA (FEDERAL) and CANADA: Refer to EC-572, "CONSULT-III Function".
- For MEXICO: Refer to EC-996, "CONSULT-III Function".

## Are the memories erased?

- YES >> INSPECTION END
- NO >> Check the items indicated by the self-diagnosis.

BRC

Α

В

C

D

Е

Н

K

L

M

Ν

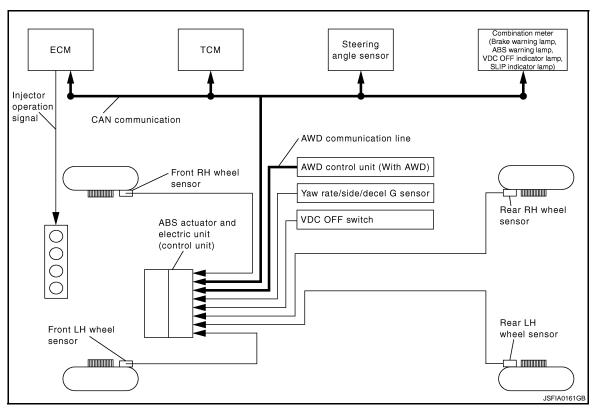
 $\cap$ 

# **FUNCTION DIAGNOSIS**

**VDC** 

System Diagram

INFOID:0000000001747785



## System Description

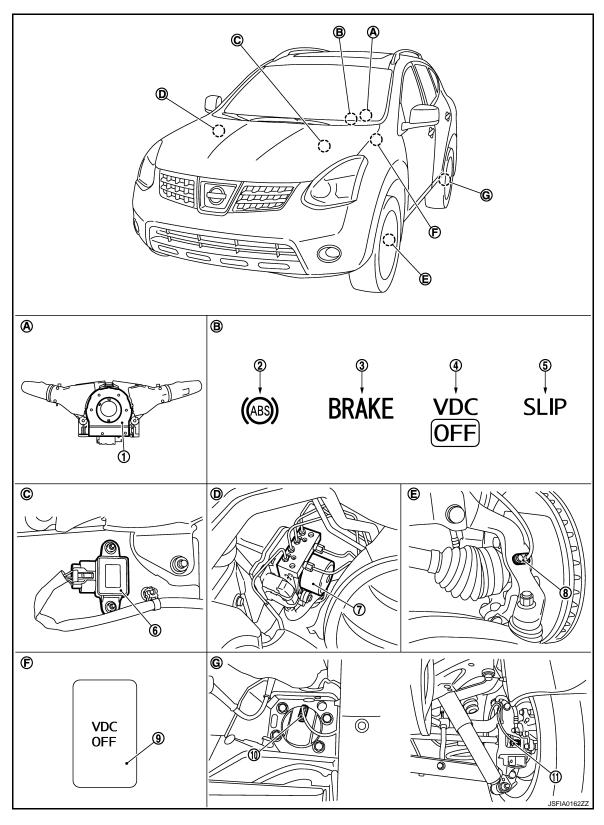
INFOID:0000000001747786

- Vehicle Dynamics Control system detects driver's steering operation amount and brake pedal travel from steering angle sensor and pressure sensor. Using information from yaw rate/side/decel G sensor and wheel sensor, VDC judges driving condition (conditions of under steer and over steer) to improve vehicle driving stability by controlling brake application to 4 wheels and engine output.
- During VDC operation, it informs driver of system operation by flashing SLIP indicator lamp.
- Electrical system diagnosis by CONSULT-III is available.

## Component Parts Location

INFOID:0000000001747787

FOR USA



- Steering angle sensor 1.
- VDC OFF indicator lamp
- 7. ABS actuator and electric unit (control unit)
- 10. Rear wheel sensor (2WD models)
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 8. Front wheel sensor
- 3. Brake warning lamp
- Yaw rate/side/decel G sensor 6.
- VDC OFF switch

11. Rear wheel sensor (AWD models)

Α

В

C

D

Е

BRC

Н

G

K

M

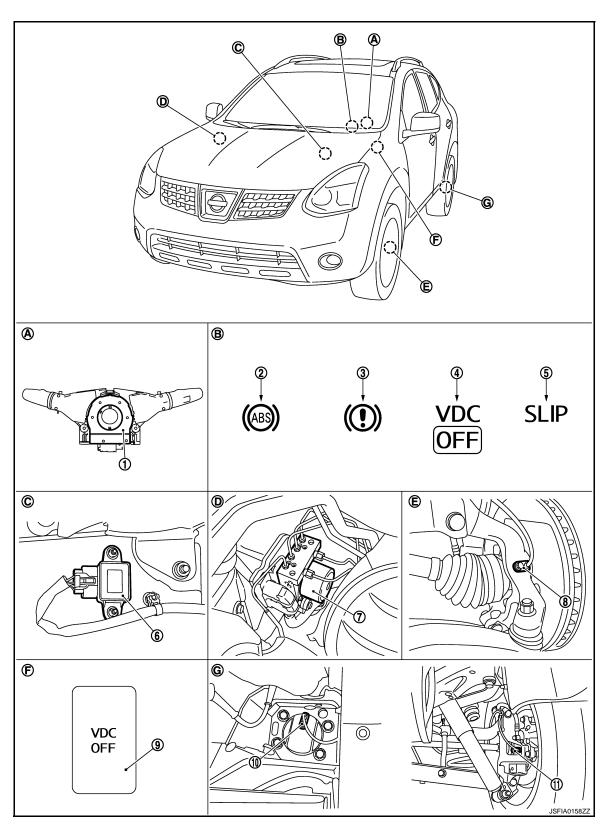
Ν

0

- A. Back of spiral cable assembly
- D. Engine room (right side)
- G. Rear axle

- B. Combination meter
- E. Steering knuckle
- C. Center console
- F. Instrument driver lower panel

## **EXCEPT FOR USA**



- 1. Steering angle sensor
- 4. VDC OFF indicator lamp
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 3. Brake warning lamp
- 6. Yaw rate/side/decel G sensor

## **VDC**

< FUNCTION DIAGNOSIS >	[VDC/TCS/ABS]

- ABS actuator and electric unit (control unit)
  - 8. Front wheel sensor
- 9. VDC OFF switch

- 10. Rear wheel sensor (2WD models)
  - models) 11. Rear wheel sensor (AWD models)
- A. Back of spiral cable assembly
- B. Combination meter
- C. Center console

- D. Engine room (right side)
- E. Steering knuckle
- F. Instrument driver lower panel

G. Rear axle

## **Component Description**

INFOID:0000000001747788

Compo	Reference	
	Pump	PDC 109 "Description"
	Motor	BRC-108, "Description"
APC actuator and algebric unit (control unit)	Actuator relay (Main relay)	BRC-126, "Description"
ABS actuator and electric unit (control unit)	Solenoid valve	BRC-119, "Description"
	VDC switch-over valve (CV1, CV2)	BRC-133, "Description"
	VDC switch-over valve (SV1, SV2)	BRC-135, "Description"
Wheel sensor		BRC-99, "Description"
Yaw rate/side/decel G sensor		BRC-110, "Description"
Steering angle sensor		BRC-128, "Description"
VDC OFF switch		BRC-143, "Description"
ABS warning lamp		BRC-145, "Description"
Brake warning lamp		BRC-146, "Description"
VDC OFF indicator lamp		BRC-147, "Description"
SLIP indicator lamp		BRC-148, "Description"

G

Α

В

D

Е

**BRC** 

Н

|

•

L

M

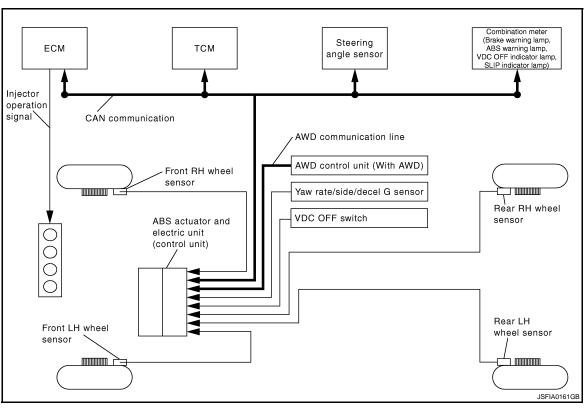
Ν

 $\cap$ 

**TCS** 

## System Diagram

INFOID:0000000001751303



## System Description

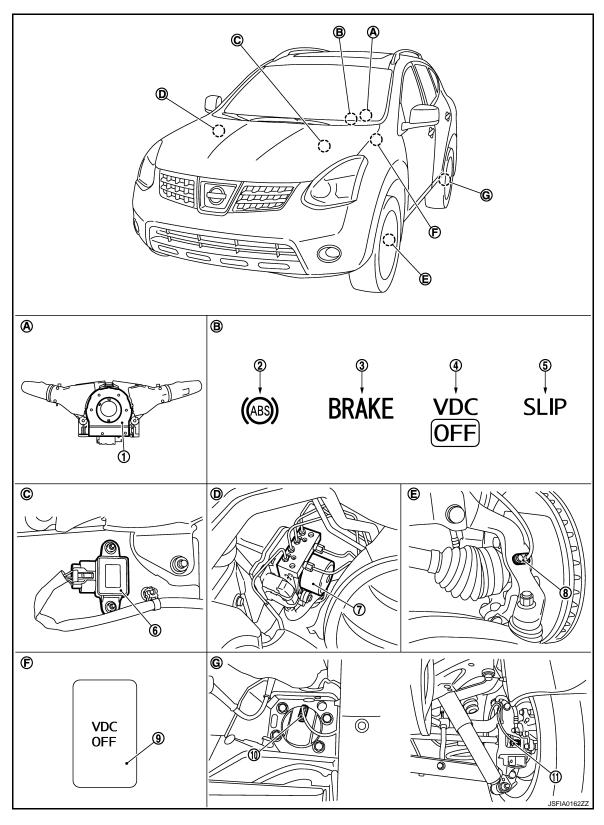
INFOID:0000000001747790

- Traction Control System is a function that electronically controls engine torque, brake fluid pressure and CVT shift position to ensure the optimum slippage ratio at drive wheels by computing wheel speed signals from 4 wheel sensors. When ABS actuator and electric unit (control unit) detects a spin at drive wheels (rear wheels), it compares wheel speed signals from all 4 wheels. At this time, LH and RH rear brake fluid pressure are controlled, while fuel being cut to engine and throttle valve being closed to reduce engine torque by the control unit. Further more, throttle position is continuously controlled to ensure the optimum engine torque at all times.
- During TCS operation, it informs driver of system operation by flashing SLIP indicator lamp.
- Electrical system diagnosis by CONSULT-III is available.

## Component Parts Location

INFOID:0000000001751304

FOR USA



- 1. Steering angle sensor
- 4. VDC OFF indicator lamp
- 7. ABS actuator and electric unit (control unit)
- 10. Rear wheel sensor (2WD models)
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 8. Front wheel sensor
- 11. Rear wheel sensor (AWD models)
- 3. Brake warning lamp
- 6. Yaw rate/side/decel G sensor
- 9. VDC OFF switch

Α

В

С

D

Е

BRC

G

Н

0

Κ

L

M

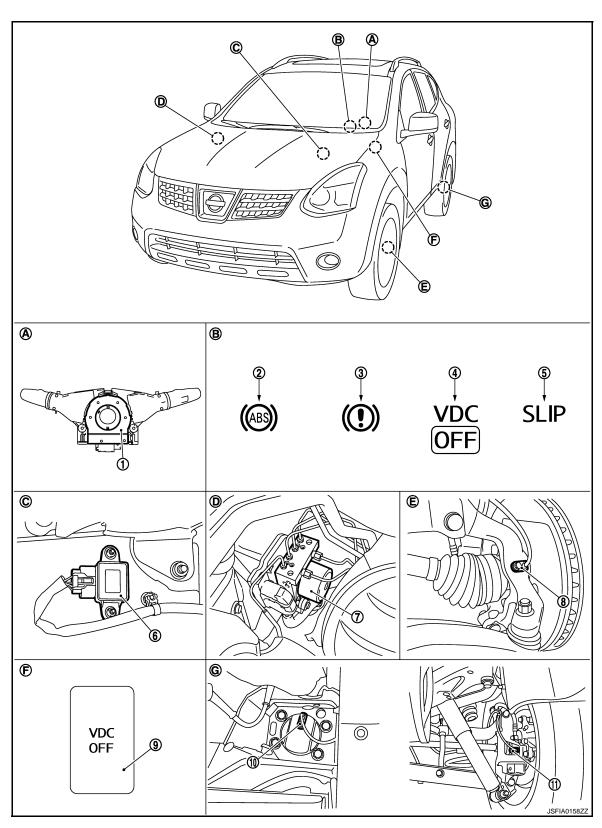
Ν

0

- A. Back of spiral cable assembly
- D. Engine room (right side)
- G. Rear axle

- B. Combination meter
- E. Steering knuckle
- C. Center console
- F. Instrument driver lower panel

## **EXCEPT FOR USA**



- 1. Steering angle sensor
- 4. VDC OFF indicator lamp
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 3. Brake warning lamp
- 6. Yaw rate/side/decel G sensor

## **TCS**

< FUNCTION DIAGNOSIS >	[VDC/TCS/ABS]
S I UNCTION DIAGNOSIS >	[

ABS actuator and electric unit (con-VDC OFF switch 8. Front wheel sensor 7. Α trol unit) 10. Rear wheel sensor (2WD models) Rear wheel sensor (AWD models) 11. C. Back of spiral cable assembly B. Combination meter Center console В D. Engine room (right side) E. Steering knuckle F. Instrument driver lower panel

## Component Description

Rear axle

G.

INFOID:0000000001751305

Compo	Reference		
	Pump	PDC 109 "Description"	
	Motor	BRC-108, "Description"	
ABS actuator and electric unit (control unit)	Actuator relay (Main relay)	BRC-126, "Description"	
ABS actuator and electric unit (control unit)	Solenoid valve	BRC-119, "Description"	
	VDC switch-over valve (CV1, CV2)	BRC-133, "Description"	В
	VDC switch-over valve (SV1, SV2)	BRC-135, "Description"	
Wheel sensor	BRC-99, "Description"		
Yaw rate/side/decel G sensor	BRC-110, "Description"	(	
Steering angle sensor	BRC-128, "Description"		
VDC OFF switch	BRC-143, "Description"		
ABS warning lamp	BRC-145, "Description"		
Brake warning lamp	BRC-146, "Description"		
VDC OFF indicator lamp		BRC-147, "Description"	<del></del>
SLIP indicator lamp		BRC-148, "Description"	

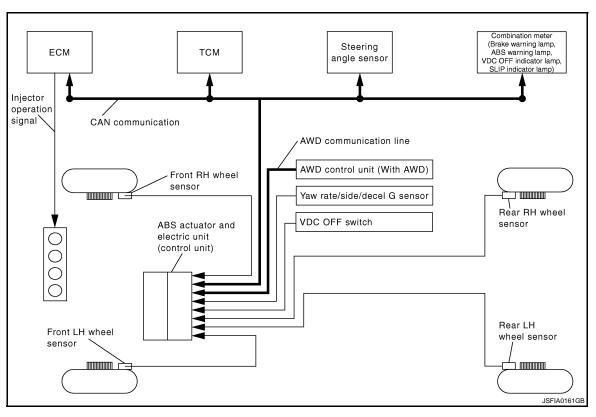
M

Ν

## **ABS**

## System Diagram

INFOID:0000000001751306



## System Description

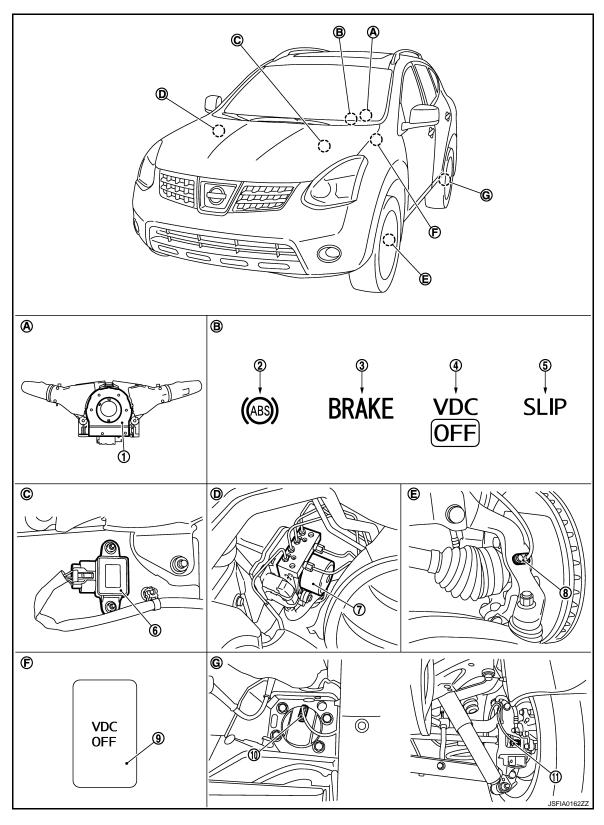
INFOID:0000000001747794

- Anti-Lock Braking System is a function that detects wheel revolution while braking, electronically controls
  braking force, and prevents wheel locking during sudden braking. It improves handling stability and maneuverability for avoiding obstacles.
- Electrical system diagnosis by CONSULT-III is available.

## **Component Parts Location**

INFOID:0000000001751307

FOR USA



- Steering angle sensor 1.
- VDC OFF indicator lamp
- 7. ABS actuator and electric unit (control unit)
- 10. Rear wheel sensor (2WD models)
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 8. Front wheel sensor
- 3. Brake warning lamp
- Yaw rate/side/decel G sensor 6.
- VDC OFF switch

11. Rear wheel sensor (AWD models)

Α

В

C

D

Е

BRC

Н

G

K

M

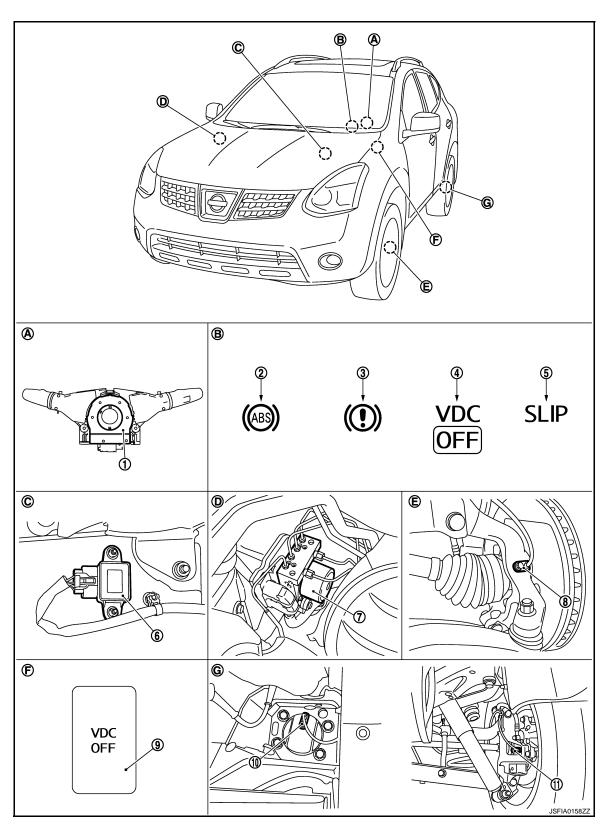
Ν

0

- A. Back of spiral cable assembly
- D. Engine room (right side)
- G. Rear axle

- B. Combination meter
- E. Steering knuckle
- C. Center console
- F. Instrument driver lower panel

## **EXCEPT FOR USA**



- 1. Steering angle sensor
- 4. VDC OFF indicator lamp
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 3. Brake warning lamp
- 6. Yaw rate/side/decel G sensor

## **ABS**

[VDC/TCS/ABS] < FUNCTION DIAGNOSIS >

- ABS actuator and electric unit (control unit)
- 8. Front wheel sensor
- VDC OFF switch

- 10. Rear wheel sensor (2WD models) 11. Rear wheel sensor (AWD models)
- Back of spiral cable assembly
- B. Combination meter
- D. Engine room (right side)
- E. Steering knuckle
- C. Center console F. Instrument driver lower panel

Rear axle G.

Component Description

INFOID:0000000001751308

Α

В

D

Е

BRC

G

Н

Compo	Reference	
	Pump	PDC 109 "Description"
	Motor	BRC-108, "Description"
	Actuator relay (Main relay)	BRC-126, "Description"
ABS actuator and electric unit (control unit)	Solenoid valve	BRC-119, "Description"
	VDC switch-over valve (CV1, CV2)	BRC-133, "Description"
	VDC switch-over valve (SV1, SV2)	BRC-135, "Description"
Wheel sensor	BRC-99, "Description"	
Yaw rate/side/decel G sensor		BRC-110, "Description"
Steering angle sensor		BRC-128, "Description"
VDC OFF switch		BRC-143, "Description"
ABS warning lamp	BRC-145, "Description"	
Brake warning lamp	BRC-146, "Description"	
VDC OFF indicator lamp		BRC-147, "Description"
SLIP indicator lamp		BRC-148, "Description"

M

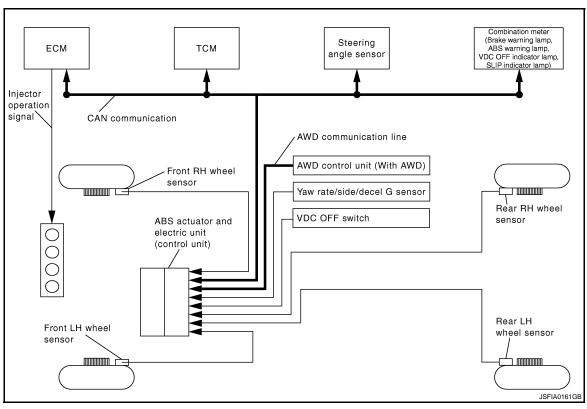
Ν

0

**EBD** 

## System Diagram

INFOID:0000000001751309



## System Description

INFOID:0000000001747798

- Electric Brake force Distribution is a following function. ABS actuator and electric unit (control unit) detects subtle slippages between the front and rear wheels during braking. Then is electronically controls the rear braking force (brake fluid pressure) to reducing and reduces rear wheel slippage. Accordingly it improves vehicle stability.
- Electrical system diagnosis by CONSULT-III is available.

## Component Parts Location

INFOID:0000000001751310

FOR USA

Α

В

C

D

Е

BRC

G

Н

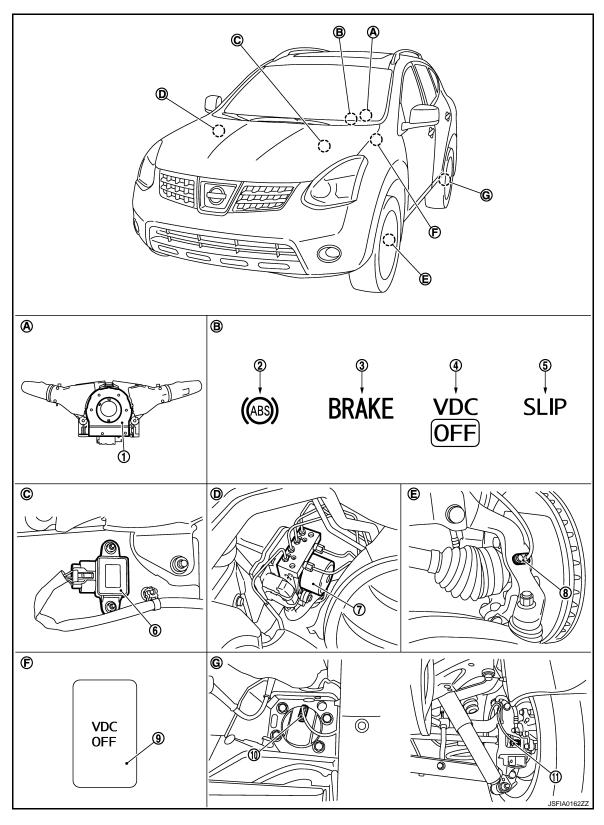
K

M

Ν

0

Р



- Steering angle sensor 1.
- VDC OFF indicator lamp
- 7. ABS actuator and electric unit (control unit)
- 10. Rear wheel sensor (2WD models)
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 8. Front wheel sensor
- 3. Brake warning lamp
- Yaw rate/side/decel G sensor 6.
- VDC OFF switch

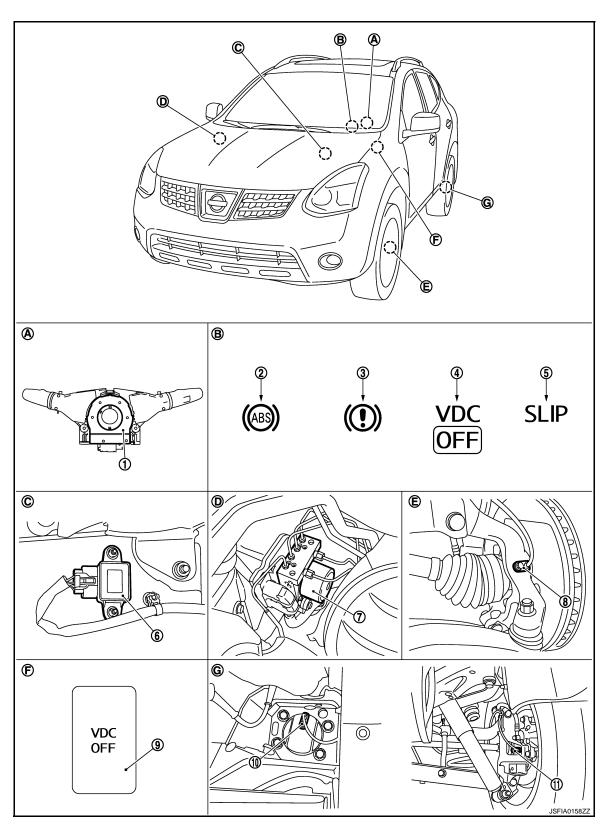
**BRC-91** Revision: 2008 January 2008 Rogue

11. Rear wheel sensor (AWD models)

- A. Back of spiral cable assembly
- D. Engine room (right side)
- G. Rear axle

- B. Combination meter
- E. Steering knuckle
- C. Center console
- F. Instrument driver lower panel

## **EXCEPT FOR USA**



- 1. Steering angle sensor
- 4. VDC OFF indicator lamp
- 2. ABS warning lamp
- 5. SLIP indicator lamp
- 3. Brake warning lamp
- 6. Yaw rate/side/decel G sensor

## **EBD**

_		INIC		ע וי	IAC	2016	SISC	_
<	Fι	11 <i>A</i> ( '	ונטו ו	u ı,	IAU	7171	ノンコン	>

## [VDC/TCS/ABS]

- ABS actuator and electric unit (control unit)
- Front wheel sensor
- 9. VDC OFF switch

- 10. Rear wheel sensor (2WD models)
- 11. Rear wheel sensor (AWD models)
- A. Back of spiral cable assembly
- B. Combination meter
- C. Center console

- D. Engine room (right side)
- E. Steering knuckle
- F. Instrument driver lower panel

G. Rear axle

## **Component Description**

INFOID:0000000001751311

Compo	Reference	
	Pump	PDC 109 "Description"
	Motor	BRC-108, "Description"
APC actuator and algebric unit (control unit)	Actuator relay (Main relay)	BRC-126, "Description"
ABS actuator and electric unit (control unit)	Solenoid valve	BRC-119, "Description"
	VDC switch-over valve (CV1, CV2)	BRC-133, "Description"
	VDC switch-over valve (SV1, SV2)	BRC-135, "Description"
Wheel sensor		BRC-99, "Description"
Yaw rate/side/decel G sensor		BRC-110, "Description"
Steering angle sensor		BRC-128, "Description"
VDC OFF switch		BRC-143, "Description"
ABS warning lamp		BRC-145, "Description"
Brake warning lamp		BRC-146, "Description"
VDC OFF indicator lamp		BRC-147, "Description"
SLIP indicator lamp		BRC-148, "Description"

BRC

Α

В

D

Е

G

Н

|

J

1

ī

M

Ν

0

< FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

# DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

## **CONSULT-III Function**

INFOID:0000000001747809

#### **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 results	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 part number	ABS actuator and electric unit (control unit) part number can be read.

#### **WORK SUPPORT**

Item	Description	
ST ANG SEN ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.	

#### SELF DIAGNOSTIC RESULT

#### **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 "ON" position.

Display Item List

Refer to BRC-157, "DTC No. Index".

#### DATA MONITOR MODE

Display Item List

< FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

SELECT MONITOR ITEM		ONITOR ITEM	×: Applicable ▼: Optional item	
Monitor item (Unit)	ECU INPUT SIGNALS	MAIN SIGNALS	Remarks	
FR LH SENSOR [km/h (MPH)]	×	×		
FR RH SENSOR [km/h (MPH)]	×	×	Wheel speed	
RR LH SENSOR [km/h (MPH)]	×	×	Wileel Speed	
RR RH SENSOR [km/h (MPH)]	×	×		
STOP LAMP SW (On/Off)	×	×	Stop lamp switch signal status	
BATTERY VOLT (V)	×	×	Battery voltage supplied to the ABS actuator and electric unit (control unit)	
GEAR	×	×	Gear position determined by TCM	
OFF SW On/Off)	×	×	VDC OFF switch	
YAW RATE SEN (d/s)	×	×	Yaw rate detected by yaw rate/side/decel G sensor	
DECEL G-SEN (G)	×	×	Decel G detected by yaw rate/side/decel G sensor	
ACCEL POS SIG (%)	×	•	Throttle actuator opening/closing is displayed (Linked with accelerator pedal)	
SIDE G-SENSOR (m/s <sup>2</sup> )	×	•	Transverse G detected by yaw rate/side/decel G sensor	
STR ANGLE SIG (°)	×	•	Steering angle detected by steering angle sensor	
ENGINE RPM [tr/min (rpm)]	×	•	Engine speed	
FLUID LEV SW (On/Off)	×	•	Brake fluid level switch signal status	
FR RH IN SOL (On/Off)	•	×		
FR RH OUT SOL (On/Off)	•	×		
FR LH IN SOL (On/Off)	•	×		
FR LH OUT SOL (On/Off)	•	×	Operation status of each solenoid valve	
RR RH IN SOL (On/Off)	•	×	Operation status of cach soleliola valve	
RR RH OUT SOL On/Off)	•	×		
RR LH IN SOL On/Off)	•	×		
RR LH OUT SOL (On/Off)	•	×		
MOTOR RELAY (On/Off)	•	×	Motor and motor relay operation	
ACTUATOR RLY On/Off)	•	×	Actuator relay operation	

#### < FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

SELECT MONITOR ITEM		ONITOR ITEM	
Monitor item (Unit)	ECU INPUT SIGNALS	MAIN SIGNALS	Remarks
ABS WARN LAMP (On/Off)	•	×	ABS warning lamp
OFF LAMP (On/Off)	•	×	VDC OFF indicator lamp
SLIP LAMP (On/Off)	•	×	SLIP indicator lamp
N POSI SIG (On/Off)	•	•	N range status
P POSI SIG (On/Off)	•	•	P range status
R POSI SIG (On/Off)	•	•	R range status
CRAKING SIG (On/Off)	•	•	CAN mask request for cranking
CV1 (On/Off)	•	▼	Cut valve 1 monitor
CV2 (On/Off)	•	▼	Cut valve 2 monitor
SV1 (On/Off)	•	▼	Suction valve 1 monitor
SV2 (On/Off)	•	•	Suction valve 2 monitor
STOP LAMP SW2 (On/Off)	•	▼	ASCD brake switch signal status
EBD SIGNAL (On/Off)	•	▼	EBD operation
ABS SIGNAL (On/Off)	•	▼	ABS operation
TCS SIGNAL (On/Off)	•	▼	TCS operation
VDC SIGNAL (On/Off)	•	▼	VDC operation
EBD FAIL SIG (On/Off)	•	▼	EBD fail-safe status
ABS FAIL SIG (On/Off)	•	▼	ABS fail-safe status
TCS FAIL SIG (On/Off)	•	▼	TCS fail-safe status
VDC FAIL SIG (On/Off)	•	▼	VDC fail-safe status
4WD MODE MON (On/Off)	▼	▼	AWD mode monitor

## **ACTIVE TEST MODE**

#### **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 OFF indicator lamp, SLIP indicator lamp and brake warning lamp are on.
- ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp are on during active test.
- Erase memory of ICC system after implementing active test.

#### < FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

В

D

Е

**BRC** 

Н

M

Ν

Р

#### 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.

#### Test Item

#### ABS SOLENOID VALVE

• For ABS solenoid valve, touch "Up", "Keep" and "Down". Then use screen monitor to check that solenoid valve operates as shown in the table below.

Test item	Dianlassitam		Display	
	Display item	Up	Keep	Down
	FR RH IN SOL	Off	On	On
FR RH SOL	FR RH OUT SOL	Off	Off	On*
FR KH SOL	CV1	Off	Off	Off
	SV1	Off	Off	Off
	FR LH IN SOL	Off	On	On
FR LH SOL	FR LH OUT SOL	Off	Off	On*
	CV2	Off	Off	Off
	SV2	Off	Off	Off
	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
RR RH SOL	CV2	Off	Off	Off
	SV2	Off	Off	Off
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*
	CV1	Off	Off	Off
	SV1	Off	Off	Off

<sup>\*:</sup> On for 1 to 2 seconds after the touch, and then Off.

#### ABS SOLENOID VALVE (ACT)

• For ABS solenoid valve (ACT), touch "Up", "ACT UP" and "ACT KEEP". Then use screen monitor to check that solenoid valve operates as shown in the table below.

Toot item	Diamlay itam	Display		
Test item	Display item	Up	ACT UP	ACT KEEP
	FR RH IN SOL	Off	Off	Off
FR RH ABS SOLENOID	FR RH OUT SOL	Off	Off	Off
(ACT)	CV1	Off	On	On
	SV1	Off	On*	Off
FR LH ABS SOLENOID (ACT)	FR LH IN SOL	Off	Off	Off
	FR LH OUT SOL	Off	Off	Off
	CV2	Off	On	On
	SV2	Off	On*	Off
RR RH ABS SOLENOID (ACT)	RR RH IN SOL	Off	Off	Off
	RR RH OUT SOL	Off	Off	Off
	CV2	Off	On	On
	SV2	Off	On*	Off

## < FUNCTION DIAGNOSIS >

[VDC/TCS/ABS]

Test item	Dianlayitam	Display		
	Display item	Up	ACT UP	ACT KEEP
RR LH ABS SOLENOID (ACT)	RR LH IN SOL	Off	Off	Off
	RR LH OUT SOL	Off	Off	Off
	CV1	Off	On	On
	SV1	Off	On*	Off

<sup>\*:</sup> On for 1 to 2 seconds after the touch, and then Off.

#### **ABS MOTOR**

• Touch "On" and "Off" on screen. Make sure motor relay and actuator relay operates as shown in table below.

Test item	Display item	Dis	play
	Display item	On	Off
ABS MOTOR	MOTOR RELAY	On	Off
	ACTUATOR RLY	On	On

## **ECU PART NUMBER**

ABS actuator and electric unit (control unit) part number can be read.

## C1101, C1102, C1103, C1104 WHEEL SENSOR-1

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## COMPONENT DIAGNOSIS

C1101, C1102, C1103, C1104 WHEEL SENSOR-1

Description INFOID:000000001747810

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

#### 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 short circuit. Current signal from sensor is outside limits.	
C1102	RR LH SENSOR-1	Circuit of rear LH wheel sensor is open or short circuit. Current signal from sensor is outside limits.	Harness or connector     Wheel sensor
C1103	FR RH SENSOR-1	Circuit of front RH wheel sensor is open or short circuit. Current signal from sensor is outside limits.	ABS actuator and electric unit (control unit)
C1104	FR LH SENSOR-1	Circuit of front LH wheel sensor is open or short circuit. Current signal from sensor is outside limits.	

#### 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 <a href="BRC-99">BRC-99</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

CAUTION:

Do not check between wheel sensor terminals.

## 1. CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

## 2.CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. Check terminal to see if it is deformed, disconnected, loose, etc., Repair or replace it if any malfunction condition is found.

BRC

Α

В

D

Е

Н

J

Κ

1 \

N

Р

INFOID:0000000001747812

-

## C1101, C1102, C1103, C1104 WHEEL SENSOR-1

#### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

5. Reconnect connectors and then perform the self-diagnosis.

Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Repair or replace connector.

# 3.CHECK WHEEL SENSOR HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. 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.)

Measurement terminal for signal circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	12	E39 (Front RH)	4		
E36	27	E22 (Front LH)	2	Existed	
L30	15	B41 (Rear RH)	8	LAISIGU	
	30	B44 (Rear LH)	6		

Measurement terminal for power supply circuit

ABS actuator and ele	ABS actuator and electric unit (control unit)		Wheel sensor	
Connector	Terminal	Connector	Terminal	Continuity
	21	E39 (Front RH)	3	
E36	23	E22 (Front LH)	1	Existed
E30	11	B41 (Rear RH)	7	Existed
	26	B44 (Rear LH)	5	

Measurement terminal for ground circuit

ABS actuator and electric unit (control unit)			Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
	12, 21	E36	3, 4	Not existed	
E36	27, 23				
E30	15, 11				
	30, 26				

5. Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

## 4. CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- 2. Check voltage between wheel sensor harness connector power supply terminal and ground.

Wheel	sensor		Voltage	
Connector	Terminal			
E39 (Front RH)	3			
E22 (Front LH)	1	Ground	Approx. 8 V or more	
B41 (Rear RH)	7	Giodila	Approx. 6 v or more	
B44 (Rear LH)	5			

Is the inspection result normal?

## C1101, C1102, C1103, C1104 WHEEL SENSOR-1

## < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

YES >> Replace applicable wheel sensor.

NO >> Replace ABS actuator and electric unit (control unit).

## Component Inspection

INFOID:0000000001747813

## 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	
FR RH SENSOR	Nearly matches the speedometer dis-
RR LH SENSOR	play (±10% or less)
RR RH SENSOR	

## Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-99">BRC-99</a>, "Diagnosis Procedure".

BRC

Α

В

C

D

Е

Н

1

Κ

L

M

Ν

0

## C1105, C1106, C1107, C1108 WHEEL SENSOR-2

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## C1105, C1106, C1107, C1108 WHEEL SENSOR-2

Description INFOID:000000001908422

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

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1105	RR RH SENSOR-2	Signal from rear RH wheel sensor does not match other 3 wheel speed signal.	Sensor not installed currently     Sensor rotor or encoder dam-
C1106	RR LH SENSOR-2	Signal from rear LH wheel sensor does not match other 3 wheel speed signal.	aged     Sensor rotor loose on axle     Electrical interference
C1107	FR RH SENSOR-2	Signal from front RH wheel sensor does not match other 3 wheel speed signal.	Wheel not turning - e.g. veh cle driven on 2WD dyno
C1108	FR LH SENSOR-2	Signal from front LH wheel sensor does not match other 3 wheel speed signal.	Sensor damaged     ABS unit damaged

## 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 <a href="BRC-102">BRC-102</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001908423

#### **CAUTION:**

#### Do not check between wheel sensor terminals.

## 1. CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- · Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

# 2. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- Check terminal to see if it is deformed, disconnected, loose, etc., Repair or replace it if any malfunction condition is found.
- 5. Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

## C1105, C1106, C1107, C1108 WHEEL SENSOR-2

## < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Α

В

D

Е

BRC

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Repair or replace connector.

# 3.CHECK WHEEL SENSOR HARNESS

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Disconnect malfunctioning wheel sensor connector.

4. 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.)

Measurement terminal for signal circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	12	E39 (Front RH)	4	Existed
E36	27	E22 (Front LH)	2	
L30	15	B41 (Rear RH)	8	LXISIGU
	30	B44 (Rear LH)	6	

Measurement terminal for power supply circuit

ABS actuator and electric unit (control unit)		Wheel sensor		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	21	E39 (Front RH)	3	Existed	
E36	23	E22 (Front LH)	1		
E30	11	B41 (Rear RH)	7		
	26	B44 (Rear LH)	5		

Measurement terminal for ground circuit

	Continuity			
Connector	Terminal	Connector	Terminal	Continuity
	12, 21	E36	3, 4	Not existed
E36	27, 23			
E30	15, 11			
	30, 26			

5. Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

## f 4.CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between wheel sensor harness connector power supply terminal and ground.

Wheel sensor			Voltage	
Connector	Terminal		voltage	
E39 (Front RH)	3			
E22 (Front LH)	1	Ground	Approx. 8 V or more	
B41 (Rear RH)	7			
B44 (Rear LH)	5			

#### Is the inspection result normal?

YES >> Replace applicable wheel sensor.

NO >> Replace ABS actuator and electric unit (control unit).

**BRC-103** Revision: 2008 January 2008 Rogue

M

## C1105, C1106, C1107, C1108 WHEEL SENSOR-2

## < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## Component Inspection

INFOID:0000000001908424

# 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		
FR RH SENSOR	Nearly matches the speedometer dis-	
RR LH SENSOR	play (±10% or less)	
RR RH SENSOR		

## Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-102">BRC-102</a>, "Diagnosis Procedure".

## C1109 POWER AND GROUND SYSTEM

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## C1109 POWER AND GROUND SYSTEM

Description INFOID:0000000001747818

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

DTC Logic INFOID:0000000001747819

#### 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 is lower than normal. Power supply is greater than normal limits.	Harness or connector     ABS unit     Fuse     Vehicle electrical power system

## 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 <a href="BRC-105">BRC-105</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

## 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YFS >> GO TO 2.

NO >> Poor connection of connector terminal. Repair or replace connector.

## 2.check abs actuator and electric unit (control unit) power supply circuit and **GROUND CIRCUIT**

- 1. Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Turn ignition switch ON or OFF and check voltage between ABS actuator and electric unit (control unit) harness connector terminal and ground.

ABS actuator and electric unit (control unit)		_	Condition	Voltage
Connector	Terminal	_	Condition	voltage
E36	16	Ground	Ignition switch: ON	Battery voltage
E30	10	Ground	Ignition switch: OFF	Approx. 0 V

Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components. **BRC** 

Α

В

D

Е

INFOID:0000000001747820

M

Ν

## **C1109 POWER AND GROUND SYSTEM**

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

# ${f 3.}$ abs power supply check (under load conditions)

- 1. Use 12 V lamp (normal rating 10 to 20 W) connected between E36 terminals 16 and 4. With ignition switch ON check bulb illuminates correctly.
- Check ABS motor supply under loaded condition (connector E36 terminals 1 and 3).

## Is the inspection result normal?

YES >> GO TO 4.

NO >> Check both power supply and ground circuit.

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

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and electr	ric unit (control unit)	_	Continuity
Connector Terminal			Continuity
E36	3, 4	Ground	Existed

## Is the inspection result normal?

- YES >> Check battery for terminal looseness, low voltage, etc. it any malfunction is found, repair malfunctioning parts.
- NO >> Repair or replace malfunctioning components. (Check ABS earth bolt for tightness and corrosion.)

## C1110 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

[VDC/TCS/ABS] < COMPONENT DIAGNOSIS >

## C1110 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Description INFOID:0000000001747821

ABS unit is continuously monitoring ECU hardware and software for correct operation.

**DTC** Logic INFOID:0000000001747822

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause	
C1110	CONTROLLER FAILURE	Possible internal failure of control unit components.	Internal failure of control unit components. ABS solenoid valve or motor power supply / ground abnormal.	D E

#### DTC CONFIRMATION PROCEDURE

# 1. CHECK SELF-DIAGNOSIS RESULTS

- Check both ABS solenoid valve and motor supply and ground circuits using a suitable electrical load.
- Check wheel speed sensor inputs.
- 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 <a href="BRC-107">BRC-107</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

 ${f 1}$  . 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 those applicable.

>> Replace ABS actuator and electric unit (control unit).

BRC

Α

В

Н

K

INFOID:0000000001747823

L

Ν

## C1111 ABS MOTOR, MOTOR RELAY SYSTEM

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## C1111 ABS MOTOR, MOTOR RELAY SYSTEM

Description INFOID:000000001747824

#### **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

#### 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.	Harness or connector     ABS actuator and electric unit
	TOWN WOTON	During the actuator motor operating with OFF, when the actuator motor turns ON, or when the control line for relay is shorted to ground.	(control unit)

#### 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 <a href="BRC-108">BRC-108</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001747826

## 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnect, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

## 2. CHECK ABS MOTOR AND MOTOR RELAY POWER SUPPLY CIRCUIT

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

ABS actuator and electric unit (control unit)			Voltage
Connector	Terminal	_	voltage
E36	1	Ground	Battery voltage

4. Reconnect ABS actuator and electric unit (control unit) connector.

### C1111 ABS MOTOR, MOTOR RELAY SYSTEM

#### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

# ${f 3.}$ abs power supply check (under load condition)

Use 12 V lamp (normal rating 10 to 20 W) connected between E36 terminals 2 and 3. With ignition switch ON check bulb illuminates correctly.

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Check both power supply and ground circuit.

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

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and ele	ectric unit (control unit)		Continuity
Connector Terminal		_	Continuity
E36 3, 4		Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components. (Check ABS each bolt for tightness and corrosion.)

## Component Inspection

## 1. CHECK ACTIVE TEST

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

Test item	Display item	Display	
rest item	Display item	On	Off
ABS MOTOR	MOTOR RELAY	On	Off
	ACTUATOR RLY	On	On

#### Is the inspection result normal?

Revision: 2008 January

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to BRC-108, "Diagnosis Procedure".

IVI

2008 Rogue

BRC-109

Α

В

С

D

BRC

INFOID:0000000001747827

K

N

0

### C1113, C1145, C1146 YAW RATE/SIDE/DECEL G SENSOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## C1113, C1145, C1146 YAW RATE/SIDE/DECEL G SENSOR

Description INFOID:0000000017478228

Yaw rate/side/decel G sensor detects 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

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause	
C1113	G SENSOR		Harness or connector	
C1145	C1145 YAW RATE SENSOR		<ul> <li>ABS actuator and electric unit (control unit)</li> </ul>	
C1146	SIDE G-SEN CIRCUIT	Yaw rate/side/decel G sensor is malfunctioning, or signal line of yaw rate/side/decel G sensor is open or shorted.	<ul> <li>Yaw rate/side/decel G sensor</li> <li>Electrical interference</li> <li>Vehicle driven on AWD rolling road</li> </ul>	

#### DTC CONFIRMATION PROCEDURE

## 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

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

#### 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:0000000001747830

## 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect yaw rate/side/decel G sensor connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connectors and then perform the self-diagnosis.

### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

## 2.CHECK YAW RATE/SIDE/DECEL G SENSOR HARNESS

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Disconnect yaw rate/side/decel G sensor connector.
- Check continuity between yaw rate/side/decel G sensor harness connector terminals and ABS actuator and electric unit (control unit) harness connector terminals.

## C1113, C1145, C1146 YAW RATE/SIDE/DECEL G SENSOR

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

ABS actuator and electric unit (control unit)		Yaw rate/side/decel G sensor		Continuity
Connector	Terminal	Connector Terminal		Continuity
	13	B38	4	
E36	14		5	Existed
E30	28		2	Existed
	29		6	

### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

# 3.check yaw rate/side/decel g sensor harness connector

Check continuity between G sensor harness connector terminal and ground.

Yaw rate/side/decel G sensor		Continuity
Connector Terminal		
	2 – 4	
B38	2 – 5	
	2 – 6	Not existed
	4 – 5	
	4 – 6	
	5 – 6	

### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

### 4. CHECK YAW RATE/SIDE/DECEL G SENSOR 1

- 1. Connect yaw rate/side/decel G sensor connector.
- 2. Connect ABS actuator and electric unit (control unit) connector.
- 3. Turn ignition switch ON.
- Move yaw rate/side/decel G sensor as shown in the figure to check the output of before and after moving the sensor with the CONSULT-III data monitor.

Condition	DATA MONITAOR
Horizontal	Approx. 0 G
Vertical	Approx. +1 G

#### Is the inspection result normal?

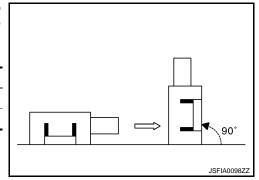
YES >> Replace yaw rate/side/decel G sensor.

NO >> GO TO 5.

## 5.CHECK YAW RATE/SIDE/DECEL G SENSOR 2

- Turn ignition switch OFF.
- 2. Connect following terminals between yaw rate/side/decel G sensor and connector.

Yaw rate/side/decel G	Harness connector		
sensor	Connector	Terminal	
2	B38	2	
4 5 6		4	
		5	
		6	



BRC

Α

В

D

Е

Н

Κ

L

I\Λ

M

Ν

0

## C1113, C1145, C1146 YAW RATE/SIDE/DECEL G SENSOR

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

- 3. Turn ignition switch ON.
- 4. Check voltage between yaw rate/side/decel G sensor harness connector terminals.

#### **CAUTION:**

Never short out the terminals while measuring voltages.

Yaw rate/side/decel G sensor		Voltage
connector	Terminal	vollage
B38	5 – 2	2.5 – 4.5 V
D30	6 – 2	0.5 – 2.5 V

### Is the inspection result normal?

YES >> Replace ABS actuator end electric unit (control unit). Perform self-diagnosis again.

NO >> Replace yaw rate/side/decel G sensor. Perform self-diagnosis again.

## Component Inspection

INFOID:0000000001747831

## 1. CHECK DATA MONITOR

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

#### YAW RATE SENSOR

Vehicle condition	DATA MONITOR	
Vehicle stopped	Approx. 0 d/s	
Vehicle turning	-100 to 100 d/s	
SIDE G SENSOR		
Vehicle condition	DATA MONITOR	
Vehicle stopped	Approx. 0 m/s <sup>2</sup>	
Vehicle turning right	Negative value	
Vehicle turning left	Positive value	
DECEL G SENSOR		
Vehicle condition	DATA MONITOR	
Vehicle stopped	-0.11 to +0.11 G	
During acceleration	Negative value	
During deceleration	Positive value	

### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-110">BRC-110</a>, "Diagnosis Procedure".

### C1115 WHEEL SENSOR

Description INFOID:000000001908425

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

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1115	ABS SENSOR [ABNORMAL SIGNAL]	Miss-match between the 4 wheel speed sensor signals.	Harness or connector not a possible cause. Other possible causes tire radius (due to wrong size or pressure) interference.

#### 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 <u>BRC-113</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

## **Diagnosis Procedure**

INFOID:0000000001908426

#### **CAUTION:**

Do not check between wheel sensor terminals.

## 1. CHECK TIRES

Check air pressure, wear and size.

Are air pressure, wear and size within standard?

YES >> GO TO 2.

NO >> Adjust air pressure, or replace tire.

## 2.CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check that there is no deformation, misalignment, float, and backlash on the wheel sensor and wheel sensor mounting surface.
- Check that the wheel sensor in installed with no misalignment and backlash.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 3.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

## 3.check connector

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. Check terminal to see if it is deformed, disconnected, loose, etc., Repair or replace it if any malfunction condition is found.
- 5. Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 4.

Revision: 2008 January

NO >> Poor connection of connector terminal. Repair or replace connector.

BRC

M

N

Р

2008 Rogue

D

Е

Α

BRC-113

## 4. CHECK WHEEL SENSOR HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect malfunctioning wheel sensor connector.
- 4. 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.)

Measurement terminal for signal circuit

ABS actuator and electric unit (control unit) Wheel sensor		sensor	Continuity	
Connector	Terminal	Connector Terminal		Continuity
	12	E39 (Front RH)	4	
E36	27	E22 (Front LH)	2	Existed
	15	B41 (Rear RH)	8	Existed
	30	B44 (Rear LH)	6	

Measurement terminal for power supply circuit

ABS actuator and ele	ABS actuator and electric unit (control unit)		Wheel sensor		
Connector	Terminal	Connector	Terminal	Continuity	
	21	E39 (Front RH)	3	Existed	
E36	23	E22 (Front LH)	1		
	11	B41 (Rear RH)	7	LXISIEU	
	26	B44 (Rear LH)	5		

Measurement terminal for ground circuit

ABS actuator and electric unit (control unit)			Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
	12, 21	E36		Not existed	
E36	27, 23		3, 4		
E30	15, 11		3, 4		
	30, 26				

5. Reconnect ABS actuator and electric unit (control unit) connector.

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning components.

## ${f 5}$ .CHECK WHEEL SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between wheel sensor harness connector power supply terminal and ground.

Wheel	sensor	— Voltage	
Connector	Terminal	_	vollage
E39 (Front RH)	3		
E22 (Front LH)	1	Ground	Approx. 8 V or more
B41 (Rear RH)	7	Giodila	Approx. 6 v or more
B44 (Rear LH)	5		

### Is the inspection result normal?

YES >> Replace applicable wheel sensor.

NO >> Replace ABS actuator and electric unit (control unit).

## **C1115 WHEEL SENSOR**

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## Component Inspection

INFOID:0000000001908427

# 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 dis-
	play (±10% or less)
RR RH SENSOR	

### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <u>BRC-113, "Diagnosis Procedure"</u>.

BRC

Α

В

C

D

Е

G

Н

Κ

L

M

Ν

0

### C1116 STOP LAMP SWITCH

Description INFOID.000000001747836

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

DTC Logic (INFOID:000000001747837

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1116	STOP LAMP SW	When stop lamp switch circuit is open.	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 SW	

### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <u>BRC-116</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001747838

## 1. CHECK STOP LAMP ILLUMINATE

Check stop lamps illuminate when brake pedal is pressed.

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Check stop lamp circuit.

## 2.CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect stop lamp switch connector.
- 4. Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 5. Reconnect connectors securely.
- Start engine.
- 7. Repeat pumping brake pedal carefully several times, and perform self-diagnosis.

### Is any item indicated in the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Replace or repair connector.

## 3.CHECK STOP LAMP SWITCH CIRCUIT

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

### C1116 STOP LAMP SWITCH

### < COMPONENT DIAGNOSIS >

## [VDC/TCS/ABS]

INFOID:0000000001747839

	or and electric ntrol unit)	_	Condition	Voltage
Connector	Terminal			
E36	8	Ground	Brake pedal is depressed	Battery voltage
L30	8	Giodila	Brake pedal is released	Approx. 0 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning components.

## Component Inspection

# 1. CHECK STOP LAMP SWITCH

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

Stop lamp switch	Condition	Continuity
Terminal	Condition	
1 – 2	Release stop lamp switch (When brake pedal is depressed.)	Existed
1 – 2	Push stop lamp switch (When brake pedal is released.)	Not existed

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to <u>BR-18</u>, "Exploded View".

BRC

Α

В

D

Е

G

Н

K

M

Ν

0

### C1118 AWD SYSTEM

Description INFOID:000000001747840

It transmits the value calculated by AWD control unit to ABS actuator and electric unit (control unit) with AWD communication line (line for AWD system only). ABS actuator and electric unit (control unit) controls AWD solenoid valve according to the received command value.

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1118	4WD SYSTEM	An error is detected on AWD control unit side. (AWD control unit fail-safe mode)	Harness or connector     AWD communication line     AWD control unit     ABS actuator and electric unit (control unit)

#### DTC CONFIRMATION PROCEDURE

## 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results	
4WD SYSTEM	

### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <u>BRC-118</u>. "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

# Diagnosis Procedure

INFOID:0000000001747842

## 1. CHECK AWD CONTROL UNIT

Perform AWD control unit self-diagnosis.

### Is DTC "C1211" or "C1212" detected?

YES-1 >> When C1211 is display: Refer to DLN-20, "Diagnosis Procedure".

YES-2 >> When C1212 is display: Refer to DLN-22, "Diagnosis Procedure".

NO >> Replace ABS actuator and electric unit (control unit).

### C1120, C1122, C1124, C1126 IN ABS SOL

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## C1120, C1122, C1124, C1126 IN ABS SOL

Description INFOID:000000001747843

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

#### 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.	
C1122	FR RH IN ABS SOL	When the control unit detects a malfunction in the front RH inlet solenoid circuit.	ABS actuator and electric unit
C1124	RR LH IN ABS SOL	When the control unit detects a malfunction in the rear LH inlet solenoid circuit.	(control unit)
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 <a href="BRC-119">BRC-119</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

## 1. CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

## 2.check connector

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Replace or repair connector.

BRC

D

Е

Α

|

N

INFOID:0000000001747845

# ${f 3.}$ CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

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

ABS actuator and electric unit (control unit)		_	Voltage
Connector	Terminal		voltage
E36	2	Ground	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

## f 4.CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and electric unit (control unit)		_	Continuity
Connector	Terminal		Continuity
E36	3, 4	Ground	Existed

### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

## Component Inspection

INFOID:0000000001747846

## 1. CHECK ACTIVE TEST

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

Test item	Display item	Display		
rest item	Display Item	Up	Keep	Down
	FR RH IN SOL	Off	On	On
FR RH SOL	FR RH OUT SOL	Off	Off	On*
FR KH SUL	CV1	Off	Off	Off
	SV1	Off	Off	Off
	FR LH IN SOL	Off	On	On
FR LH SOL	FR LH OUT SOL	Off	Off	On*
FR LH SOL	CV2	Off	Off	Off
	SV2	Off Off Off Off	Off	
	RR RH IN SOL	Off	On	On
RR RH SOL	RR RH OUT SOL	Off	Off	On*
KK KH 30L	CV2	Off	Off	Off
	SV2	Off	Off	Off
	RR LH IN SOL	Off	On	On
RR LH SOL	RR LH OUT SOL	Off	Off	On*
KK LH SOL	CV1	Off	Off	Off
	SV1	Off	Off	Off

<sup>\*:</sup> On for 1 to 2 seconds after the touch, and then Off.

## C1120, C1122, C1124, C1126 IN ABS SOL

01120, 01122, 01124, 01120 IN ADS 30L		
< COMPONENT DIAGNOSIS >	[VDC/TCS/ABS]	
Is the inspection result normal?		
YES >> INSPECTION END		Α

В

С

D

Е

BRC

G

Н

J

Κ

L

M

Ν

0

Ρ

>> Go to diagnosis procedure. Refer to <a href="BRC-119">BRC-119</a>, "Diagnosis Procedure". NO

## C1121, C1123, C1125, C1127 OUT ABS SOL

**Description** 

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

#### 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.	
C1123	FR RH OUT ABS SOL	When the control unit detects a malfunction in the front RH outlet solenoid circuit.	ABS actuator and electric unit
C1125	RR LH OUT ABS SOL	When the control unit detects a malfunction in the rear LH outlet solenoid circuit.	(control unit)
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 <a href="BRC-122">BRC-122</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001908430

## 1.CHECK SENSOR AND SENSOR ROTOR

- Check that there is no damage or adherence of foreign matter on the sensor rotor surface.
- Check sensor rotor for damage.
- Check wheel sensor for damage, disconnection or looseness.
- Check that there is no deformation on the wheel sensor mounting surface.

#### Are the sensor and sensor rotor normal?

YES >> GO TO 2.

NO >> Repair wheel sensor mount or replace sensor rotor. Then perform the self-diagnosis.

## 2.check connector

- Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Replace or repair connector.

### C1121, C1123, C1125, C1127 OUT ABS SOL

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

# ${f 3.}$ CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

- 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) harness connector terminal and ground.

ABS actuator and electric unit (control unit)			Voltage
Connector	Terminal		voltage
E36	2	Ground	Battery voltage

### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

## 4.CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and electric unit (control unit)			Continuity
Connector	Terminal		Continuity
E36	3, 4	Ground	Existed

### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

## Component Inspection

## 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.

Test item	Display item	Display		
rest item	Display item —	Up	Keep	Down
	FR RH IN SOL	Off	On	On
FR RH SOL	FR RH OUT SOL	Off	Off	On*
FR RH SOL	CV1	Off	Off	Off
	SV1	Off	Off	Off
	FR LH IN SOL	Off	On	On
FR LH SOL	FR LH OUT SOL	Off	Off	On*
FR LH SOL	CV2	Off	Off	Off
	SV2	Off Off Off Off	Off	
	RR RH IN SOL	Off	On	On
RR RH SOL	RR RH OUT SOL	Off	Off	On*
KK KH 30L	CV2	Off	Off	Off
	SV2	Off	Off	Off
	RR LH IN SOL	Off	On	On
DD I H COI	RR LH OUT SOL	Off	Off	On*
RR LH SOL	CV1	Off	Off	Off
	SV1	Off	Off	Off

<sup>\*:</sup> On for 1 to 2 seconds after the touch, and then Off.

Revision: 2008 January BRC-123 2008 Rogue

BRC

В

D

Е

G

Н

INFOID:0000000001908431

Κ

N /I

Ν

 $\circ$ 

## C1121, C1123, C1125, C1127 OUT ABS SOL

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-122">BRC-122</a>, "Diagnosis Procedure".

		C1130 ENGINE SIGNAL		
< COMP	ONENT DIAGNOSIS >		[VDC/TCS/ABS]	
C1130	ENGINE SIGNAL	-		А
Descrip	otion		INFOID:000000001747851	, (
ABS acti	uator and electric unit (co	ntrol unit) and ECM exchange the engine sign	nal via CAN communication	В
DTC Lo	ogic		INFOID:000000001747852	
DTC DE	TECTION LOGIC			С
DTC	Display item	Malfunction detected condition	Possible cause	D
C1130	ENGINE SIGNAL 1	ECM signals are invalid or ECM self diagnosis indicates a fault that prevents correct TCS operation.	Harness or connector     ABS actuator and electric unit (control unit)     ECM     CAN communication line	Е
DTC CC	NFIRMATION PROCE	DURE	_	BR
<b>1.</b> CHEC	CK SELF-DIAGNOSIS RE	SULTS		
Check th	e self-diagnosis results.			G
	Self-diagnosis			
le above	displayed on the self-diag			Н
YES		procedure. Refer to <u>BRC-125, "Diagnosis Proce</u>	edure".	I
Diagno	sis Procedure		INFOID:000000001747853	
	CK ENGINE SYSTEM			J
2. Perf		Repair or replace items indicated, then perform ctric unit (control unit) self-diagnosis.  agnosis display?	ECM self-diagnosis again.	K
	>> Repair or replace the a >> INSPECTION END	affected part.		L

Revision: 2008 January BRC-125 2008 Rogue

M

Ν

0

### C1140 ACTUATOR RELAY SYSTEM

Description INFOID:000000001747854

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

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1140 A	ACTUATOR RLY	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> <li>Harness or connector</li> <li>ABS actuator and electric unit (control unit)</li> </ul>
01140	NOTONI ON NET	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	
ACTUATOR RLY	

#### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-126">BRC-126</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001747856

## 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connector and then perform the self-diagnosis.

### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

# 2.check solenoid, vdc switch-over valve and actuator relay power supply circuit

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector.
- Check voltage between ABS actuator and electric unit (control unit) harness connector terminal and ground.

ABS actuator and electric unit (control unit)			Voltage
Connector	Terminal		voltage
E36	2	Ground	Battery voltage

Reconnect ABS actuator and electric unit (control unit) connector.

### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

### C1140 ACTUATOR RELAY SYSTEM

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Α

В

D

Е

BRC

# ${f 3.}$ abs power supply check (under load condition)

Use 12 V lamp (normal rating 10 to 20 W) connected between E36 terminals 1 and 3. With ignition switch ON check bulb illuminates correctly.

### Is the inspection result normal?

YES >> GO TO 4.

NO >> Check both power supply and ground circuit.

## 4.check abs actuator and electric unit (control unit) ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and electric unit (control unit)			Continuity
Connector	Terminal	_	Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components. (Check ABS each bolt for tightness and corrosion.)

## Component Inspection

INFOID:0000000001908428

## 1. CHECK ACTIVE TEST

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.

Test item	Display item	Display	
rest item	Diopiay itom	On	Off
ABS MOTOR	MOTOR RELAY	On	Off
	ACTUATOR RLY	On	On

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to BRC-108, "Diagnosis Procedure".

Н

,

ı

M

Ν

0

## C1143, C1144 STEERING ANGLE SENSOR

Description INFOID:000000001747862

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

#### 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.	Harness or connector     Steering angle sensor
C1144	ST ANG SEN SIGNAL	Neutral position of steering angle sensor is not finished.	ABS actuator and electric unit (control unit)

#### DTC CONFIRMATION PROCEDURE

### 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 <a href="BRC-128">BRC-128</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001747864

## 1. CHECK VEHICLE STATE

Check vehicle for any suspension/steering misalignment or damage.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Correct any damage found.

## 2. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Disconnect steering angle sensor connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 5. Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 3.

NO >> Poor connection of connector terminal. Replace or repair connector.

# ${f 3.}$ check steering angle sensor harness

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

Steering angle sensor		_	Continuity
Connector	Terminal		Continuity
M30	3	Ground	Existed

### C1143, C1144 STEERING ANGLE SENSOR

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

4. Turn ignition switch ON.

Check voltage between steering angle sensor harness connector terminal and ground.

Steering angle sensor			Voltage	
Connector	Terminal		vollage	
M30	1	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

## 4.CHECK DATA MONITOR

1. Connect the steering angle sensor connector and ABS actuator and electric unit (control unit) connector.

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 >> GO TO 5.

NO >> Adjust neutral position of steering angle sensor.

## 5.CHECK FOR BACKLASH

1. Check for backlash [turn wheel to left then straight then right then straight (approx. 90°)].

2. Check straight position is always similar value.

#### Is there noticeable backlash?

YES >> Check sensor is correctly fitted to combination switch.

NO >> Check sensor output is correct from lock to lock.

## Component Inspection

## 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 <u>BRC-128</u>, "<u>Diagnosis Procedure</u>".

### Special Repair Requirement

## ${f 1}$ .adjustment of steering angle sensor neutral position

Always perform the "ST ANG SEN ADJUSTMENT" in "WORK SUPPORT", when replacing the steering angle sensor.

>> END

BRC

Α

В

D

Е

0

Н

INFOID:000000001747865

\_ K

L

L

D. /I

Ν

INFOID:0000000001747866

2008 Rogue

## C1155 BRAKE FLUID LEVEL SWITCH

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

### C1155 BRAKE FLUID LEVEL SWITCH

Description INFOID.000000001747879

Brake fluid level switch contacts close when brake fluid level is low. This is detected by the combination meter which sends the status of fluid level to the VDC unit via the CAN bus.

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1155	BR FLUID LEVEL LOW	Ignition switch ON and brake fluid signal low or not available for 10 seconds.	<ul> <li>Brake fluid level low</li> <li>Brake fluid level switch failure</li> <li>Wiring to brake fluid level switch short circuit</li> <li>CAN bus failure</li> <li>Combination meter failure</li> </ul>

#### 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 <a href="BRC-130">BRC-130</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001747881

## 1. CHECK BRAKE FLUID LEVEL

Check the brake fluid level.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Investigate and fix.

## 2.CHECK BRAKE WARNING LAMP 1

Check that the brake warning lamp illuminates after the ignition switch is turned ON.

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Check wiring to brake fluid level sensor and brake fluid level sensor.

### 3.CHECK BRAKE WARNING LAMP 2

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

### Is the inspection result normal?

YES >> GO TO 4.

NO >> Check parking brake switch.

## 4. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect brake fluid level switch connector and combination meter connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connectors and then perform the self-diagnosis.

### C1155 BRAKE FLUID LEVEL SWITCH

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

### Is any item indicated on the self-diagnosis display?

YES >> GO TO 5.

NO >> Poor connection of connector terminal. Replace or repair connector.

# 5. 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 terminals.

Brake fluid	level switch	Condition	Continuity
Connector	Terminal	Condition	
F37 1-2		When brake fluid is full in the reservoir tank.	Not existed
LOI	1 2	When brake fluid is empty in the reservoir tank.	Existed

### Is the inspection result normal?

YES >> GO TO 6.

NO >> Brake fluid level switch is malfunction. Replace reservoir tank.

### 6.CHECK BRAKE FLUID LEVEL SWITCH CIRCUIT

- Disconnect combination meter connector.
- 2. Check continuity between brake fluid level switch harness connector terminals and combination meter harness connector terminal and/or ground.

Combination meter		Brake fluid level switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M34	27	E37	1	Existed

Combina	tion meter		Continuity
Connector	Connector Terminal		Continuity
M34	27	Ground	Not existed

Brake fluid	level switch		Continuity
Connector	Terminal	_	Continuity
E37	2	Ground	Existed

### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

## Component Inspection

# 1. CHECK BRAKE FLUID LEVEL SWITCH

1. Turn ignition switch OFF.

Revision: 2008 January

- 2. Disconnect brake fluid level switch connector.
- Check continuity between brake fluid level switch connector terminals.

Brake fluid level switch		Condition	Continuity
Connector	Terminal	Conducti	Continuity
E37 1 – 2		When brake fluid is full in the reservoir tank.	Not existed
	1-2	When brake fluid is empty in the reservoir tank.	Existed
	•	<u> </u>	·

BRC

Α

В

D

Е

Н

,

L

M

INFOID:0000000001747882

F

### C1155 BRAKE FLUID LEVEL SWITCH

## < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-130">BRC-130</a>, "Diagnosis Procedure".

## C1164, C1165 CV SYSTEM

Description INFOID:000000001747883

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

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1164	CV1	VDC switch-over solenoid valve (CV1) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	Harness or connector     ABS actuator and electric unit
C1165	CV2	VDC switch-over solenoid valve (CV2) on the secondary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	(control unit)

### DTC CONFIRMATION PROCEDURE

## 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results

CV1

CV2

### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-133">BRC-133</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

## 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

## 2.CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

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

ABS actuator and ele	ectric unit (control unit)		Voltage
Connector Terminal			voltage
E36	2	Ground	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

3.check solenoid, vdc switch-over valve and acuator relay ground circuit

BRC

Α

В

D

Е

INFOID:0000000001747885

M

K

Ν

## C1164, C1165 CV SYSTEM

#### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and ele	ectric unit (control unit)	_	Continuity
Connector Terminal			Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

## Component Inspection

INFOID:0000000001747886

## 1. CHECK ACTIVE TEST

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

Test item	Display item	Display		
iest item	Display item	Up	ACT UP	ACT KEEP
	FR RH IN SOL	Off	Off	Off
FR RH ABS SOLENOID	FR RH OUT SOL	Off	Off	Off
(ACT)	CV1	Off	On	On
	SV1	Off	On*	Off
	FR LH IN SOL	Off	Off	Off
FR LH ABS SOLENOID	FR LH OUT SOL	Off	Off	Off
(ACT)	CV2	Off	On	On
	SV2	Off	On*	Off
	RR RH IN SOL	Off	Off	Off
RR RH ABS SOLENOID	RR RH OUT SOL	Off	Off	Off
(ACT)	CV2	Off	On	On
	SV2	Off	On*	Off
RR LH ABS SOLENOID (ACT)	RR LH IN SOL	Off	Off	Off
	RR LH OUT SOL	Off	Off	Off
	CV1	Off	On	On
	SV1	Off	On*	Off

<sup>\*:</sup> 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 <a href="BRC-133">BRC-133</a>, "Diagnosis Procedure".

## C1166, C1167 SV SYSTEM

Description INFOID:000000001747887

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

DTC Logic

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1166	SV1	VDC switch-over solenoid valve (SV1) on the primary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	Harness or connector     ABS actuator and electric unit
C1167	SV2	VDC switch-over solenoid valve (SV2) on the secondary side is open circuit or shorted, or the control line is open or shorted to the power supply or the ground.	(control unit)

### DTC CONFIRMATION PROCEDURE

## 1. CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
SV1
SV2

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-135">BRC-135</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

## 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- 4. Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

## 2.CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY POWER SUPPLY CIRCUIT

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

ABS actuator and	electric unit (control unit)	_	Voltage
Connector Terminal			voltage
E36 2		Ground	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning components.

3.check solenoid, vdc switch-over valve and acuator relay ground circuit

BRC

D

Е

Α

Н

INFOID:0000000001908432

\_\_\_\_ K

1 \

M

N

Ν

0

## C1166, C1167 SV SYSTEM

#### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Check continuity between ABS actuator and electric unit (control unit) harness connector terminals and ground.

ABS actuator and ele	ectric unit (control unit)	_	Continuity
Connector Terminal			Continuity
E36	3, 4	Ground	Existed

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace malfunctioning components.

## Component Inspection

INFOID:0000000001908433

## 1. CHECK ACTIVE TEST

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

Test item	Diaplay itam		Display	
rest item	Display item -	Up	ACT UP	ACT KEEP
	FR RH IN SOL	Off	Off	Off
FR RH ABS SOLENOID	FR RH OUT SOL	Off	Off	Off
(ACT)	CV1	Off	On	On
	SV1	Off	On*	Off
	FR LH IN SOL	Off	Off	Off
FR LH ABS SOLENOID	FR LH OUT SOL	Off	Off	Off
(ACT)	CV2	Off	On	On
	SV2	Off	On*	Off
	RR RH IN SOL	Off	Off	Off
RR RH ABS SOLENOID	RR RH OUT SOL	Off	Off	Off
(ACT)	CV2	Off	On	On
	SV2	Off	On*	Off
RR LH ABS SOLENOID (ACT)	RR LH IN SOL	Off	Off	Off
	RR LH OUT SOL	Off	Off	Off
	CV1	Off	On	On
	SV1	Off	On*	Off

<sup>\*:</sup> 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 <a href="BRC-135">BRC-135</a>, "Diagnosis Procedure".

### C1176 STOP LAMP SW2

Description INFOID:0000000001747891

When the brake pedal is depressed, ASCD brake switch is turned OFF and stop lamp switch is turned ON.

DTC Logic INFOID:0000000001747892

#### DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1176	STOP LAMP SW2	When ASCD brake switch circuit is open.	Harness or connector     ASCD brake 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 SW2

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-137">BRC-137</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

## 1. CHECK CONNECTOR

Turn ignition switch OFF.

- Disconnect ABS actuator and electric unit (control unit) connector.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or replace terminal.
- Reconnect connectors and then perform the self-diagnosis.

#### Is any item indicated on the self-diagnosis display?

YES >> GO TO 2.

NO >> Poor connection of connector terminal. Replace or repair connector.

### 2.CHECK ASCD BRAKE SWITCH

- Turn ignition switch OFF.
- Disconnect ASCD brake switch connector. 2.
- Check continuity between ASCD brake switch connector terminals.

ASCD brake switch	Condition	Continuity	
Terminal	Condition		
1 – 2	Brake pedal is fully released.	Existed	
1 – 2	Brake pedal is slightly depressed.	Not existed	

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace ASCD brake switch.

## 3.CHECK ASCD BRAKE SWITCH POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ASCD brake switch connector.
- Turn ignition switch ON.

**BRC** 

Α

В

D

Е

INFOID:0000000001747893

K

N

### C1176 STOP LAMP SW2

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

4. Check voltage between ASCD brake switch harness connector and ground.

ASCD bra	ake switch		Voltage	
Connector Terminal		_	voltage	
E112	1	Ground	Battery voltage	

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning components.

## 4. CHECK ASCD BRAKE SWITCH INPUT SIGNAL CIRCUIT

Turn ignition switch OFF.

2. Disconnect ABS actuator and electric unit (control unit) connector.

Check continuity between ASCD brake switch harness connector and ABS actuator and electric unit (control unit) harness connector.

ASCD bra	ake switch	ABS actuator a	Continuity	
Connector	Terminal	Connector		
E112	2	E36	6	Existed

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning components.

## Component Inspection

INFOID:0000000001747894

## 1. CHECK ASCD BRAKE SWITCH

- 1. Turn ignition switch OFF.
- Disconnect ASCD brake switch connector.
- 3. Check continuity between ASCD brake switch connector terminals.

ASCD brake switch	Condition	Continuity	
Terminal	Condition		
1 – 2	Brake pedal is fully released.	Existed	
1 – 2	Brake pedal is slightly depressed.	Not existed	

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ASCD brake switch. Refer to <u>BR-18</u>, "Exploded View".

### **U1000 CAN COMM CIRCUIT**

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

### U1000 CAN COMM CIRCUIT

Description INFOID:0000000001747895

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:0000000001747896

#### 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.	

### DTC CONFIRMATION PROCEDURE

## CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results	
CAN COMM CIRCUIT	

#### Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to BRC-139, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

1. CHECK CONNECTOR

- Turn ignition switch OFF.
- Disconnect ABS actuator and electric unit (control unit) connector. 2.
- Check terminal for deformation, disconnection, looseness, and so on. If any malfunction is found, repair or 3. replace terminal.
- Reconnect connector and perform self-diagnosis.

Self-diagnosis results	
CAN COMM CIRCUIT	

#### Is above displayed on the self-diagnosis display?

YES >> Go to LAN-23, "CAN System Specification Chart".

>> INSPECTION END NO

BRC

D

Е

Α

INFOID:0000000001747897

## U1010 CONTROL UNIT (CAN)

Description INFOID:000000001747898

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

#### DTC DETECTION LOGIC

DTC	Items	Diagnostic item is detected when	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of ABS actuator and electric unit (control unit).	ABS actuator and electric unit (control unit) error

#### DTC CONFIRMATION PROCEDURE

## 1. RECHECK DTC

- 1. Turn the ignition switch OFF to ON.
- 2. Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### Is DTC "U1010" detected?

YES >> Proceed to diagnosis procedure. Refer to <a href="BRC-140">BRC-140</a>, "Diagnosis Procedure".

NO >> INSPECTION END

## Diagnosis Procedure

INFOID:0000000001747900

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

Check that there is no malfunction in ABS actuator and electric unit (control unit) harness connector or disconnection.

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to BRC-172, "Exploded View".

NO >> Repair or replace the harnesses and connectors.

### **PARKING BRAKE SWITCH**

#### < COMPONENT DIAGNOSIS >

#### [VDC/TCS/ABS]

### PARKING BRAKE SWITCH

**Description** 

The parking brake switch converts the status of the parking brake pedal to an electric signal and transmits it to the ABS actuator and electric unit (control unit).

## Component Function Check

#### INFOID:0000000001747902

### 1. CHECK PARKING BRAKE SWITCH OPERATION

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

Condition	Brake warning lamp illumination status
When the parking brake switch is operation	ON
When the parking brake switch is not operation.	OFF

#### BRC

Н

M

Ν

Р

D

Е

Α

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-141">BRC-141</a>, "Diagnosis Procedure".

INFOID:0000000001747903

## Diagnosis Procedure

## 1. CHECK PARKING BRAKE SWITCH

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

Parking brake switch			Condition	Continuity
Connector	Terminal		Condition	Continuity
E103	4	Ground	When the parking brake switch is operated.	Existed
	,	Ground	When the parking brake switch is not operated.	Not existed

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace parking brake switch.

## 2.CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to <a href="MWI-32">MWI-32</a>, "Diagnosis Description".

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Check ABS actuator and electric unit (control unit). Refer to <u>BRC-94, "CONSULT-III Function"</u>.

## Component Inspection

#### INFOID:0000000001747904

## 1. CHECK PARKING BRAKE SWITCH

1. Turn ignition switch OFF.

Revision: 2008 January

- Disconnect parking brake switch connector.
- Check continuity between parking brake switch connector terminal and ground.

### **PARKING BRAKE SWITCH**

### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

Parking brake switch			Condition	Continuity
Connector	Terminal	_	Condition	Continuity
E103	1	Ground	When the parking brake switch is operated.	Existed
L103	ľ	Giodila	When the parking brake switch is not operated.	Not existed

### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace parking brake switch. Refer to PB-6. "Exploded View".

INFOID:0000000001747906

INFOID:0000000001747907

### **VDC OFF SWITCH**

**Description** 

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

## Component Function Check

## 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 <a href="BRC-143">BRC-143</a>, "Diagnosis Procedure".

## Diagnosis Procedure

## 1. CHECK VDC OFF SWITCH

Turn ignition switch OFF.

2. Disconnect VDC OFF switch connector.

3. Check continuity between VDC OFF switch connector terminals.

VDC OFF switch	Condition	Continuity	
Terminal	Conducti	Continuity	
1 – 2	When VDC OFF switch is hold pressed.	Existed	
	When releasing VDC OFF switch.	Not existed	

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> VDC OFF switch is malfunctioning. Replace VDC OFF switch.

## 2.CHECK VDC OFF SWITCH HARNESS

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

Check continuity between VDC OFF switch connector terminals and ABS actuator and electric unit (control unit) connector terminal and/or ground.

ABS actuator and electric unit (control unit)		VDC OFF switch		Continuity
Connector	Terminal	Connector	Terminal	
E36	5	M5	1	Existed

ABS actuator and electric unit (control unit)			Continuity
Connector	Terminal		Continuity
E36	5	Ground	Not existed

VDC OFF switch			Continuity
Connector	Terminal		Continuity
M5	2	Ground	Existed

#### Is the inspection result normal?

Revision: 2008 January BRC-143

**BRC** 

Α

В

D

Е

Н

. .

L

M

Ν

Р

2008 Rogue

### **VDC OFF SWITCH**

#### < COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

YES >> GO TO 3.

NO >> If the open or short in harness, repair or replace harness.

## 3. CHECK COMBINATION METER

Check if the indication and operation of combination meter are normal. Refer to <a href="MWI-32">MWI-32</a>, "Diagnosis Description".

### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter.

## Component Inspection

INFOID:0000000001747908

# 1. CHECK VDC OFF SWITCH

- 1. Turn ignition switch OFF.
- 2. Disconnect VDC OFF switch connector.
- 3. Check continuity between VDC OFF switch connector terminals.

VDC OFF switch	Condition	Condition
Terminal	Condition	
1 – 2	When VDC OFF switch is hold pressed.	Existed
	When releasing VDC OFF switch.	Not existed

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace VDC OFF switch.

#### **ABS WARNING LAMP**

#### < COMPONENT DIAGNOSIS >

#### [VDC/TCS/ABS]

## **ABS WARNING LAMP**

Description INFOID:000000001747913

×: ON –: OFF

Α

В

D

Е

BRC

Н

Condition	ABS warning lamp
Ignition switch OFF	-
For 1 second after turning ignition switch ON	×
1 second later after turning ignition switch ON	-
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

## Component Function Check

#### INFOID:0000000001747914

## 1. CHECK ABS WARNING LAMP OPERATION

Check that the lamp illuminates for approximately 1 second after the ignition switch is turned ON.

## Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-145">BRC-145</a>. "Diagnosis Procedure".

#### C

## Diagnosis Procedure

## 1. CHECK SELF-DIAGNOSIS

INFOID:0000000001747915

Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Check items displayed by self-diagnosis.

## 2.CHECK COMBINATION METER

J

Check if the indication and operation of combination meter are normal. Refer to MWI-32, "Diagnosis Description".

#### Is the inspection result normal?

K

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter.

M

Ν

0

[VDC/TCS/ABS]

#### **BRAKE WARNING LAMP**

Description INFOID:000000001747916

×: ON -: OFF

Condition	Brake warning lamp (Note 1)
Ignition switch OFF	-
For 1 second after turning ignition switch ON	× (Note 2)
1 second later after turning 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:0000000001747917

## 1.BRAKE WARNING LAMP OPERATION CHECK 1

Check that the lamp illuminates for approximately 1 second after the ignition switch is turned ON.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Go to diagnosis procedure. Refer to <a href="BRC-146">BRC-146</a>, "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 pedal.

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Check parking brake switch. Refer to <a href="BRC-141">BRC-141</a>, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000001747918

## 1. CHECK PARKING BRAKE SWITCH

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Check parking brake switch. Refer to <u>BRC-141</u>, "<u>Diagnosis Procedure</u>".

## 2.CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### 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 <a href="MWI-32">MWI-32</a>, "Diagnosis Description".

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter.

#### **VDC OFF INDICATOR LAMP**

< COMPONENT DIAGNOSIS >

[VDC/TCS/ABS]

## VDC OFF INDICATOR LAMP

Description INFOID:000000001747919

×: ON –: OFF

Condition	VDC OFF indicator lamp
Ignition switch OFF	-
For 1 second after turning ignition switch ON	×
1 second later after turning ignition switch ON	-
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:0000000001747920

## 1.VDC OFF INDICATOR LAMP OPERATION CHECK 1

Check that the lamp illuminates for approximately 1 second after the ignition switch is turned ON.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Go to diagnosis procedure. Refer to <a href="BRC-147">BRC-147</a>, "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 <u>BRC-143</u>, "<u>Diagnosis Procedure</u>".

## Diagnosis Procedure

## 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 <u>BRC-143</u>, "<u>Diagnosis Procedure</u>".

## CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### 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-32, "Diagnosis Description".

**BRC-147** 

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter.

BRC

Α

В

D

Е

)I\C

Н

INFOID:0000000001747921

\_\_\_\_\_

L

K

M

Ν

0

[VDC/TCS/ABS]

## SLIP INDICATOR LAMP

Description INFOID:000000001747922

 $\times$ : ON -: OFF

Condition	SLIP indicator lamp
Ignition switch OFF	-
For 1 second after turning ignition switch ON	×
1 second later after turning ignition switch ON	-
VDC/TCS function is malfunctioning.	×
ABS function is malfunctioning.	×
EBD function is malfunctioning.	×

## Component Function Check

INFOID:0000000001747923

## 1. CHECK SLIP INDICATOR LAMP OPERATION

Check that the lamp illuminates for approximately 1 second after the ignition switch is turned ON.

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to <a href="BRC-148">BRC-148</a>, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000001747924

## 1. CHECK SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis.

#### 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-32, "Diagnosis Description".

#### Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit).

NO >> Repair or replace combination meter.

< ECU DIAGNOSIS > [VDC/TCS/ABS]

## **ECU DIAGNOSIS**

## ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Reference Value

#### 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.

		Data monitor		D
Monitor item	Display content	Condition	Reference value in normal operation	_
		Vehicle stopped	0 [km/h (MPH)]	Е
FR LH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)	BR
		Vehicle stopped	0 [km/h (MPH)]	
FR RH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)	G
		Vehicle stopped	0 [km/h (MPH)]	
RR LH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)	Н
		Vehicle stopped	0 [km/h (MPH)]	
RR RH SENSOR	Wheel speed	Vehicle running (Note 1)	Nearly matches the speed meter display (± 10% or less)	J
STOP LAMP SW	Stop lamp switch signal status	When brake pedal is depressed	On	
STOI LAWI SW	Stop lamp switch signal status	When brake pedal is not depressed	Off	K
BATTERY VOLT	Battery voltage supplied to the ABS actuator and electric unit (control unit)	Ignition switch ON	10 – 16 V	r
GEAR	Gear position determined by TCM	1st gear 2nd gear 3rd gear 4th gear 5th gear 6th gear	1 2 3 4 5 6	L
OFF SW	VDC OFF switch ON/OFF	VDC OFF switch ON (When VDC OFF indicator lamp is ON)	On	NI
OIT SW	VDC OTT SWIRCH CIWOTT	VDC OFF switch OFF (When VDC OFF indicator lamp is OFF)	Off	N
YAW RATE SEN	Yaw rate detected by yaw rate sensor	Vehicle stopped	Approx. 0 d/s	$\cap$
TAW TO THE GEN	Taw fate detected by yaw fate sensor	Vehicle turning	-100 to 100 d/s	
		Vehicle stopped	-0.11 - +0.11 G	
DECEL G-SEN	Decel G detected by decel G sensor	During acceleration	Negative value	Р
		During deceleration	Positive value	
ACCEL POS SIG	Throttle actuator opening/closing is displayed	Accelerator pedal not depressed (ignition switch is ON)	0 %	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(linked with accelerator pedal)	Depress accelerator pedal (ignition switch is ON)	0 - 100 %	

Revision: 2008 January BRC-149 2008 Rogue

В

Α

D

SRC

G

IZ.

. . .

IN

0

< ECU DIAGNOSIS > [VDC/TCS/ABS]

< ECU DIAGNOS	515 >		[VDC/TCS/ABS]
		Data monitor	
Monitor item	Display content	Condition	Reference value in normal operation
		Vehicle stopped	Approx. 0 m/s <sup>2</sup>
SIDE G-SENSOR	Transverse G detected by side G sensor	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
0750 7 0.0	Steering angle detected by steering angle	During straight	Approx. 0°
STR ANGLE SIG	sensor	Steering wheel turned	–720 to 720°
		With engine stopped	0 [tr/min (rpm)]
ENGINE SPEED	With engine running	Engine running	Almost in accordance with tachometer display
ELLID LEV CW	Drake fluid level eviteb signal status	When brake fluid level switch ON	On
FLUID LEV SW	Brake fluid level switch signal status	When brake fluid level switch OFF	Off
ED DH IN SOI	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
FR RH IN SOL	Operation status of each solehold valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
ED DU QUIT SQU	Operation status of each coloneid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
FR RH OUT SOL	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
ED III IN COL	Operation status of each calculation when	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
FR LH IN SOL	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
ED III OUT COL	Operation status of each calculation when	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
FR LH OUT SOL C	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
DD DLI IN SOI	Operation status of each colonoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
RR RH IN SOL	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
RR RH OLIT SOL	Operation status of each solenoid valvo	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
RR RH OUT SOL	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off

[VDC/TCS/ABS] < ECU DIAGNOSIS >

		Data monitor	Data monitor	
Monitor item	Display content	Condition	Reference value in normal operation	
R LH IN SOL	Operation status of each calencid value	Actuator (solenoid valve) is active ("AC-TIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
KK LH IIV SOL	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
R LH OUT SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("AC-TIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On	
IN EIT OUT OOL	Operation status of each soleriold valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off	
OTOR RELAY	Motor and motor relay operation	When the motor relay and motor are operating	On	
IOTOR RELAT	Wotor and motor relay operation	When the motor relay and motor are not operating	Off	
CTUATOR RLY	Actuator relay operation	When the actuator relay is operating	On	
OTOATOR KLI	Actuator relay operation	When the actuator relay is not operating	Off	
BS WARN LAMP	ABS warning lamp	When ABS warning lamp is ON	On	
(Note 2) When ABS warning lamp is OFF		When ABS warning lamp is OFF	Off	
PFF LAMP	VDC OFF indicator lamp	When VDC OFF indicator lamp is ON	On	
/ ((V))	(Note 2)	When VDC OFF indicator lamp is OFF	Off	
LIP LAMP	SLIP indicator lamp	When SLIP indicator lamp is ON	On	
	(Note 2)	When SLIP indicator lamp is OFF	Off	
BD SIGNAL	EBD operation	EBD is active	On	
JD OIOIVAL	235 operation	EBD is inactive	Off	
BS SIGNAL	ABS operation	ABS is active	On	
JO GIGINAL	ADO Operation	ABS is inactive	Off	
CS SIGNAL	TCS operation	TCS is active	On	
JO SIGNAL	TCS operation	TCS is inactive	Off	
DC SIGNAL	VDC operation	VDC is active	On	
JU SIGNAL	VDC operation	VDC is inactive	Off	
DD EATL CIC	ERD foil cofe circul	In EBD fail-safe	On	
BD FAIL SIG	EBD fail-safe signal	EBD is normal	Off	
20 5411 010	ADC fail acts circus!	In ABS fail-safe	On	
BS FAIL SIG	ABS fail-safe signal	ABS is normal	Off	
	T00 ( 1) ( ) .	In TCS fail-safe	On	
CS FAIL SIG	TCS fail-safe signal	TCS is normal	Off	
		In VDC fail-safe	On	
DC FAIL SIG	VDC fail-safe signal	VDC is normal	Off	
		Crank is active	On	
RANKING SIG	Crank operation	Crank is inactive	Off	
		For N range	On	
POSI SIG	N position signal	Except for N range	Off	
		For P range	On	
POSI SIG	P position signal	Except for P range	Off	

**BRC-151** Revision: 2008 January 2008 Rogue

< ECU DIAGNOSIS > [VDC/TCS/ABS]

-		Data monitor	
Monitor item	Display content	Condition	Reference value in normal operation
R POSI SIG	D position signal	For R range	On
R POSI SIG	R position signal	Except for R range	Off
		AUTO is active	AUTO
4WD MODE MON	Axle condition	LOCK is active	LOCK
		2WD is active	2WD
CV1	Operation status of each calengid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
CV1 Operation status of each solenoid valve		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
CV2 Operation status of each solenoid valve		Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
CV2 Operation status of each so	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
SV4	Operation atoms of each colonsiduals	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
SV1 Operation status of e	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
SV2	Operation status of each calengid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III) or actuator relay is inactive (in fail-safe mode)	On
SV2	Operation status of each solenoid valve	When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
STOP LAMP SW2	Stop lamp switch signal status	When brake pedal is depressed	On
OTOF LAWIF 3WZ	Stop family switch signal status	When brake pedal is not depressed	Off

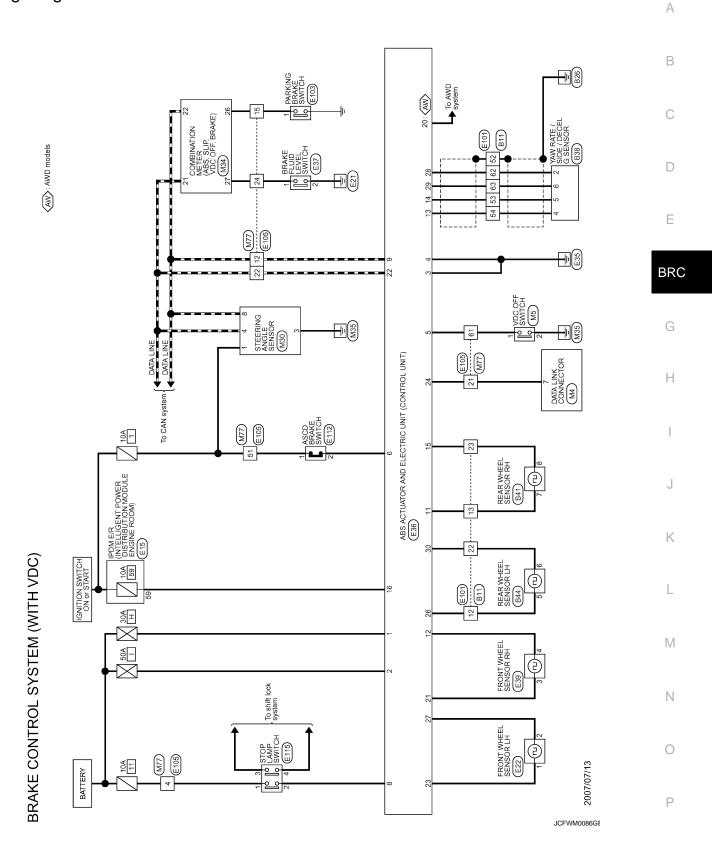
#### NOTE:

- 1: Confirm tire pressure is normal.
- 2: On and off timing for warning lamp and indicator lamp.
- ABS warning lamp: Refer to BRC-145, "Description".
- Brake warning lamp: Refer to BRC-146, "Description".
- VDC OFF indicator lamp: Refer to BRC-147, "Description".
- SLIP indicator lamp: Refer to BRC-148, "Description".

< ECU DIAGNOSIS > [VDC/TCS/ABS]

INFOID:0000000001747929

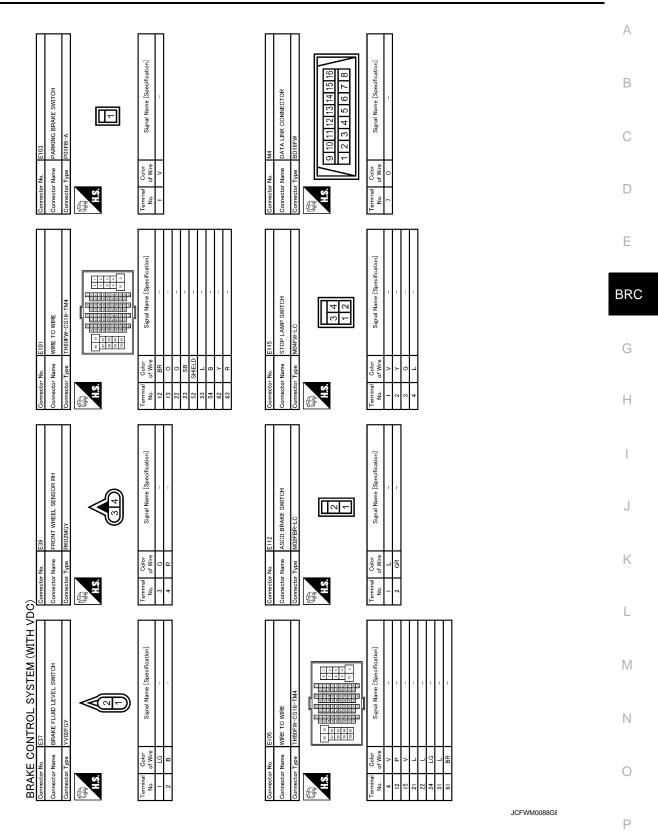
Wiring Diagram -BRAKE CONTROL SYSTEM-

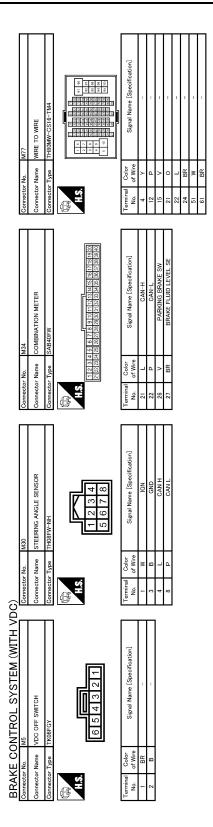


BRAKE CONTROL SYSTEM (WITH VE	DC)	Connector No B41	Connector No 1844
. e	l e	e e	ne ne
т	т	7	┰
1	1	1	1
11 21 21 21 21 21 21 21 21 21 21 21 21 2	H.S.	H.S.	H.S.
	(123456)		99
Terminal Color Signal Name [Specification]	Terminal Color Signal Name [Specification]	Terminal Color Signal Name [Specification]	Terminal Color Signal Name [Specification]
12 BR -	2 Y GND	7 O -	5 BR
5 5	7 - 1	┨	┨
SHIELD	6 K SEKIAL-		
53 L 54 B			
62 Y – – 63 R – –			
Connector No.	Connector No F22	Gonnactor No E36	14 I
9	9	٩	SB
Т	Т	(CONTROL UNIT)	BB :
Connector Type NST0FW-US	Connector Type RNUZMGY	Connector Type KHZ8FB-NU4-DH	20 Y 4WD COMM
			, _
	<b>V</b>		W FL.
53 52 51 50 - 49 48 47		1 2 5 6 7 8 9 10 11 12 13 14 15 16 17 18	GR
62 61 60 59 58 57 56 55 54	(12)	3 4 19 20 21 22 23 24 25 26 27 28 29 30 31 32	26 BR RL SENSOR VB
			. >-
			В
lal	nal	Terminal Color Signal Name [Specification]	30 G RL SENSOR SIG
No. of Wire 59 BR –	No. of Wire		
ł	2 P -	2 BR ACTR	
		a 6	
		6 GR ASCD CANCEL SW	
		SB	
		9 P CANL	
		) ec	
		13 B G CHECK	

JCFWM0087GE

< ECU DIAGNOSIS > [VDC/TCS/ABS]





JCFWM0089GE

Fail-Safe

#### 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.

[VDC/TCS/ABS] < ECU DIAGNOSIS >

• 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.

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

DTC No. Index INFOID:0000000001747931

DTC	Items (CONSULT screen terms)	Reference	
C1101	RR RH SENSOR-1		BRO
C1102	RR LH SENSOR-1	DDC 00 "DTC Logic"	DIKC
C1103	FR RH SENSOR-1	BRC-99, "DTC Logic"	
C1104	FR LH SENSOR-1		G
C1105	RR RH SENSOR-2		
C1106	RR LH SENSOR-2	PDC 102 "DTC Logic"	Н
C1107	FR RH SENSOR-2	BRC-102, "DTC Logic"	П
C1108	FR LH SENSOR-2		
C1109	BATTERY VOLTAGE [ABNORMAL]	BRC-105, "DTC Logic"	
C1110	CONTROLLER FAILURE	BRC-107, "DTC Logic"	<del></del>
C1111	PUMP MOTOR	BRC-108, "DTC Logic"	
C1113	G SENSOR	BRC-110, "DTC Logic"	J
C1115	ABS SENSOR [ABNORMAL SIGNAL]	BRC-113, "DTC Logic"	<del></del>
C1116	STOP LAMP SW	BRC-116, "DTC Logic"	K
C1118	4WD SYSTEM	BRC-118, "DTC Logic"	<del></del>
C1120	FR LH IN ABS SOL	BRC-119, "DTC Logic"	
C1121	FR LH OUT ABS SOL	BRC-122, "DTC Logic"	L
C1122	FR RH IN ABS SOL	BRC-119, "DTC Logic"	
C1123	FR RH OUT ABS SOL	BRC-122, "DTC Logic"	M
C1124	RR LH IN ABS SOL	BRC-119, "DTC Logic"	
C1125	RR LH OUT ABS SOL	BRC-122, "DTC Logic"	
C1126	RR RH IN ABS SOL	BRC-119, "DTC Logic"	N
C1127	RR RH OUT ABS SOL	BRC-122, "DTC Logic"	
C1130	ENGINE SIGNAL 1	BRC-125, "DTC Logic"	
C1140	ACTUATOR RLY	BRC-126, "DTC Logic"	
C1143	ST ANG SEN CIRCUIT	DDC 400   DTC	
C1144	ST ANG SEN SIGNAL	BRC-128, "DTC Logic"	Р
C1145	YAW RATE SENSOR	DDO 440   DTO	
C1146	SIDE G-SEN CIRCUIT	BRC-110, "DTC Logic"	
C1155	BR FLUID LEVEL LOW	BRC-130, "DTC Logic"	
C1164	CV1	DDO 400   DTO   - : :	
C1165	CV2	BRC-133, "DTC Logic"	

**BRC-157** Revision: 2008 January 2008 Rogue

D

Е

Α

В

RC

< ECU DIAGNOSIS > [VDC/TCS/ABS]

DTC	Items (CONSULT screen terms)	Reference	
C1166	SV1	BRC-135, "DTC Logic"	
C1167	SV2	BRC-135, DTC Logic	
C1176	STOP LAMP SW2	BRC-137, "DTC Logic"	
U1000	CAN COMM CIRCUIT	BRC-139, "DTC Logic"	
U1010	CONTROL UNIT(CAN)	BRC-140, "DTC Logic"	

## **EXCESSIVE ABS FUNCTION OPERATION FREQUENCY**

[VDC/TCS/ABS] < SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

## **EXCESSIVE ABS FUNCTION OPERATION FREQUENCY**

## Diagnosis Procedure

## 1.CHECK START

Check front and rear brake force distribution using a brake tester. Refer to BR-47, "General Specifications". 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.

- Front
- 2WD models: Refer to FAX-8, "Inspection".
- AWD models: Refer to FAX-32, "Inspection".
- 2WD models: Refer to RAX-4, "Inspection".
- AWD models: Refer to RAX-11, "Inspection".

#### 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.

>> • Replace wheel sensor or sensor rotor. NO

· 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 ABS warning lamp illuminated?

YES >> Perform self-diagnosis.

NO >> Normal

Α

В

D

Е

INFOID:0000000001747932

BRC

Н

K

M

Ν

#### **UNEXPECTED PEDAL REACTION**

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

## UNEXPECTED PEDAL REACTION

## Diagnosis Procedure

INFOID:0000000001747933

## 1. CHECK BRAKE PEDAL STROKE

Check brake pedal stroke. Refer to BR-9, "Inspection and Adjustment".

#### Is the stroke too large?

YES

- >> Bleed air from brake tube and hose. Refer to BR-13, "Bleeding Brake System".
  - Check brake pedal, brake booster, and master cylinder for mount play, looseness, brake system fluid leakage, etc.
  - Brake pedal: Refer to BR-9, "Inspection and Adjustment".
  - Master cylinder: Refer to BR-14, "Inspection".
  - Brake booster: Refer to BR-15, "Inspection".

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 >> Normal

NO >> Check brake system.

#### THE BRAKING DISTANCE IS LONG

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

## THE BRAKING DISTANCE IS LONG

## Diagnosis Procedure

INFOID:0000000001747934

#### **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 >> Normal

NO >> Check brake system.

BRC

Α

В

C

D

Е

G

Н

Κ

L

M

Ν

0

#### **ABS FUNCTION DOES NOT OPERATE**

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

## **ABS FUNCTION DOES NOT OPERATE**

Diagnosis Procedure

INFOID:0000000001747935

#### **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 >> Normal

NO >> Perform self-diagnosis.

#### PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS

[VDC/TCS/ABS] < SYMPTOM DIAGNOSIS > PEDAL VIBRATION OR ABS OPERATION SOUND OCCURS Α Diagnosis Procedure INFOID:0000000001747936 **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] D 1.SYMPTOM CHECK 1 Check that there are pedal vibrations when the engine is started. Е Do vibrations occur? YES >> GO TO 2. NO >> Inspect the brake pedal. BRC 2.SYMPTOM CHECK 2 Check that there are ABS operation noises when the engine is started. Do the operation noises occur? YES >> GO TO 3. NO >> Perform self -diagnosis. Н 3.SYMPTOM CHECK 3 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 >> Normal J K L M Ν

**BRC-163** Revision: 2008 January 2008 Rogue

#### VEHICLE JERKS DURING VDC/TCS/ABS CONTROL

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

## VEHICLE JERKS DURING VDC/TCS/ABS CONTROL

## Diagnosis Procedure

INFOID:0000000001747937

## 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).

#### 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 TCM SELF-DIAGNOSIS RESULTS

Perform ECM self-diagnosis and TCM self-diagnosis.

#### Are self-diagnosis results indicated?

YES >> Check the corresponding items.

- ECM
- For CALIFORNIA: Refer to EC-92, "Diagnosis Description".
- For USA (FEDERAL) and CANADA: Refer to EC-559, "Diagnosis Description".
- For MEXICO: Refer to EC-983, "Diagnosis Description".
- TCM: Refer to TM-41, "Diagnosis Description".

NO >> Replace ABS actuator and electric unit (control unit).

## **NORMAL OPERATING CONDITION**

< SYMPTOM DIAGNOSIS >

[VDC/TCS/ABS]

## NORMAL OPERATING CONDITION

Description INFOID:000000001747938

Symptom	Result	
Slight vibrations are felt on the brake pedal and the operation noises occur, when VDC, TCS or ABS is activated.		
Stopping distance is longer than that of vehicles without ABS when the vehicle drives on rough, gravel, or snow-covered (fresh, deep snow) roads.	This is a normal condition due to the VDC, TCS or ABS activation.	
The brake pedal moves and generates noises, when TCS or VDC is activated due to rapid acceleration or sharp turn.		
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.	
Depending on the road conditions, the driver may experience a sluggish feel.	This is normal, because	
TCS may activate momentarily if wheel speed changes when driving over location where friction coefficient varies, when downshifting, or when fully depressing accelerator pedal.	TCS places the highest priority on the optimum traction (stability).	
The ABS warning lamp, VDC OFF indicator lamp and SLIP indicator lamp may turn ON when the vehicle is subject to strong shaking or large vibration, such as when the vehicle is rotating on a turntable or located on a ship while the engine is running.	In this case, restart the engine on a normal road. If the normal con-	
VDC may not operate normally or the ABS warning lamp, VDC OFF indicator lamp, and SLIP indicator lamp may illuminate, when running on a special road that is extremely slanted (e.g. bank in a circuit course).	dition is restored, there is no malfunction. At that time, erase the self-diagnosis memory.	
A malfunction may occur in the yaw rate/side G sensor system, when the vehicle turns sharply, such as during a spin turn, axle turn, or drift driving, while the VDC function is off (VDC OFF indicator lamp illuminated).		
The vehicle speed will not increase even though the accelerator pedal is depressed, when inspecting the speedometer on a 2-wheel chassis dynamometer.	Normal (Deactivate the VDC/TCS function before performing an inspection on a chassis dynamometer.)	

BRC

Α

В

С

D

Е

G

Н

J

Κ

L

M

Ν

0

< PRECAUTION > [VDC/TCS/ABS]

## **PRECAUTION**

# PRECAUTIONS FOR USA AND CANADA

FOR USA AND CANADA: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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 "SRS AIRBAG" and "SEAT BELT" of this Service Manual.

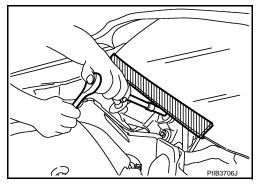
#### **WARNING:**

- 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 "SRS AIRBAG".
- 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.

FOR USA AND CANADA: Precaution for Procedure without Cowl Top Cover

INFOID:0000000003249024

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



FOR USA AND CANADA: Precaution for Brake System

INFOID:0000000003186058

#### **WARNING:**

Clean any dust from the front brake and rear brake with a vacuum dust collector. Never blow with compressed air.

#### **CAUTION:**

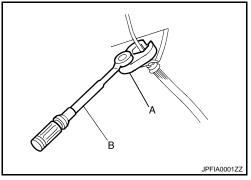
- Only use "DOT 3" brake fluid. Refer to MA-17, "FOR NORTH AMERICA: Fluids and Lubricants".
- Never reuse drained brake fluid.
- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it off immediately and wash with water if it gets on a painted surface.
- Never use mineral oils such as gasoline or light oil to clean. They may damage rubber parts and cause improper operation.
- Always loosen the brake tube flare nut with a flare nut wrench.

#### **PRECAUTIONS**

< PRECAUTION > [VDC/TCS/ABS]

• Tighten the brake tube flare nut to the specified torque with crowfoot (A) and torque wrench (B).

- Always confirm the specified tightening torque when installing the brake pipes.
- Turn the ignition switch OFF and disconnect the ABS actuator and electric unit (control unit) connector or the battery negative terminal before performing the work.
- Check that no brake fluid leakage is present after replacing the parts.



## FOR USA AND CANADA: Precaution for Brake Control

INFOID:0000000001747941

- When starting engine or when starting vehicle just after starting engine, 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 estimate 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.
- 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.

#### EXCEPT FOR MEXICO

## EXCEPT FOR MEXICO: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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. Information necessary to service the system safely is included in the "SRS AIRBAG" and "SEAT BELT" 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 "SRS AIRBAG".
- 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.

BRC

D

Α

G

Н

J

L

M

Ν

0

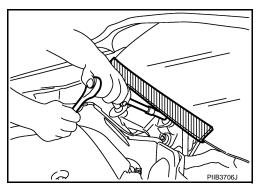
Ρ

< PRECAUTION > [VDC/TCS/ABS]

## **EXCEPT FOR MEXICO: Precaution for Procedure without Cowl Top Cover**

IFOID:0000000003249025

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



### **EXCEPT FOR MEXICO: Precaution for Brake System**

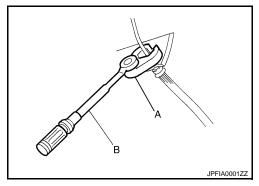
INFOID:0000000003247425

#### **WARNING:**

Clean any dust from the front brake and rear brake with a vacuum dust collector. Never blow with compressed air.

#### **CAUTION:**

- Only use "DOT 3" brake fluid. Refer to MA-18, "FOR MEXICO: Fluids and Lubricants".
- Never reuse drained brake fluid.
- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it off immediately and wash with water if it gets on a painted surface.
- Never use mineral oils such as gasoline or light oil to clean. They may damage rubber parts and cause improper operation.
- Always loosen the brake tube flare nut with a flare nut wrench.
- Tighten the brake tube flare nut to the specified torque with crowfoot (A) and torque wrench (B).
- Always confirm the specified tightening torque when installing the brake pipes.
- Turn the ignition switch OFF and disconnect the ABS actuator and electric unit (control unit) connector or the battery negative terminal before performing the work.
- Check that no brake fluid leakage is present after replacing the parts.



#### EXCEPT FOR MEXICO: Precaution for Brake Control

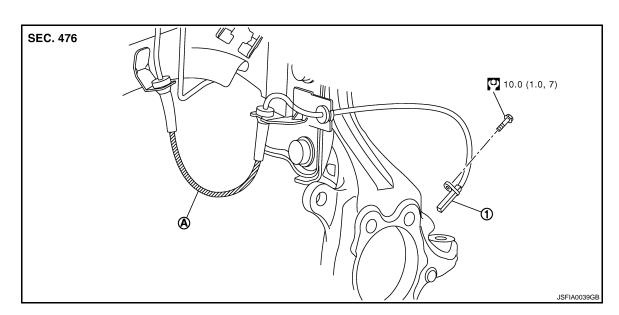
INFOID:0000000003247426

- When starting engine or when starting vehicle just after starting engine, 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 estimate 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.
- 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.

## ON-VEHICLE REPAIR

WHEEL SENSOR FRONT WHEEL SENSOR

FRONT WHEEL SENSOR: Exploded View



1. Front LH wheel sensor

A. Yellow line (slant line)

Refer to GI-4, "Components" for symbol in the figure.

#### NOTE:

The above figure (front side) shows left side. Right side is the mirror image.

#### FRONT WHEEL SENSOR: Removal and Installation

#### REMOVAL

Pay attention to the following when removing sensor.

#### **CAUTION:**

- Do not twist sensor harness as much as possible, when removing it. Pull sensors out without pulling sensor harness.
- Take care to avoid damaging sensor edges or rotor teeth. Remove wheel sensor first before removing front or rear wheel hub. This is to avoid damage to sensor wiring and loss of sensor function.
- When you see the harness of the wheel sensor from the front side of the vehicle ensure that the yellow lines (A) are not twisted.

#### INSTALLATION

Pay attention to the following when installing wheel sensor. Tighten installation bolts to the specified torques.

- When installing, make sure there is no foreign material such as iron chips on and in the mounting hole of the wheel sensor. Make sure no foreign material has been caught in the sensor rotor. Remove any foreign material and clean the mount.
- When installing wheel sensor, be sure to press rubber grommets in until they lock at locations shown above in the figure. When installed, harness must not be twisted.

#### REAR WHEEL SENSOR

BRC

Α

В

D

Е

INFOID:0000000001908202

G

Н

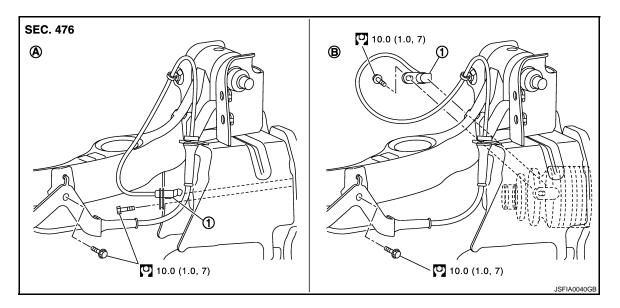
INFOID:0000000001908203

L

Ν

REAR WHEEL SENSOR: Exploded View

INFOID:0000000001908204



- 1. Rear LH wheel sensor
- A. 2WD models

B. AWD models

Refer to GI-4, "Components" for symbol in the figure.

#### NOTE:

The above figure (front side) shows left side. Right side is the mirror image.

REAR WHEEL SENSOR: Removal and Installation

INFOID:0000000001908205

#### REMOVAL

Pay attention to the following when removing sensor.

#### **CAUTION:**

- Do not twist sensor harness as much as possible, when removing it. Pull sensors out without pulling sensor harness.
- Take care to avoid damaging sensor edges or rotor teeth. Remove wheel sensor first before removing front or rear wheel hub. This is to avoid damage to sensor wiring and loss of sensor function.

#### INSTALLATION

Pay attention to the following when installing wheel sensor. Tighten installation bolts to the specified torques.

- When installing, make sure there is no foreign material such as iron chips on and in the mounting hole of the wheel sensor. Make sure no foreign material has been caught in the sensor rotor. Remove any foreign material and clean the mount.
- When installing wheel sensor, be sure to press rubber grommets in until they lock at locations shown above in the figure. When installed, harness must not be twisted.

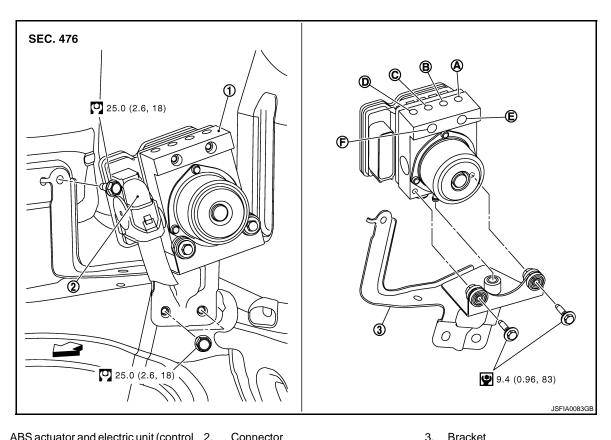
SENSOR ROTOR	
< ON-VEHICLE REPAIR > [VDC/TCS/ABS]	
SENSOR ROTOR	٨
FRONT SENSOR ROTOR	Α
FRONT SENSOR ROTOR : Exploded View	В
Refer to FAX-10, "Exploded View" (2WD models), FAX-34, "Exploded View" (AWD models).	
FRONT SENSOR ROTOR: Removal and Installation	С
REMOVAL Sensor rotor cannot be disassembled. Remove the sensor rotor together with hub bearing assembly. Refer to FAX-10, "Removal and Installation" (2WD models), FAX-34, "Removal and Installation" (AWD models).  INSTALLATION	
Sensor rotor cannot be disassembled. Installation the sensor rotor together with hub bearing assembly. Refer to <a href="FAX-10">FAX-10</a> , "Removal and Installation" (2WD models), <a href="FAX-34">FAX-34</a> , "Removal and Installation" (AWD models). REAR SENSOR ROTOR	Е
REAR SENSOR ROTOR : Exploded View	BRC
Refer to RAX-5, "Exploded View" (2WD models), RAX-13, "Exploded View" (AWD models).	
REAR SENSOR ROTOR : Removal and Installation	G
2WD MODELS	
Removal	Н
Sensor rotor cannot be disassembled. Remove the sensor rotor together with hub bearing assembly. Refer to RAX-5, "Removal and Installation".	I
Installation Sensor rotor cannot be disassembled. Installation the sensor rotor together with hub bearing assembly. Refer	
to RAX-5, "Removal and Installation".	J
AWD MODELS	
For removal and installation of sensor rotor, refer to RAX-16, "Disassembly and Assembly".	K
	L
	M
	Ν

**BRC-171** 2008 Rogue Revision: 2008 January

0

Ρ

**Exploded View** INFOID:0000000001908210



- 1. ABS actuator and electric unit (control 2. unit)

3. Bracket

- A. To front LH brake caliper
- B. To rear RH brake caliper
- From master cylinder primary side
- C. To Rear LH brake caliper F. From master cylinder secondary side

<□: Vehicle front

Refer to GI-4, "Components" for symbol in the figure.

#### Removal and Installation

To front RH brake caliper

INFOID:0000000001908374

## **REMOVAL**

#### **CAUTION:**

- Before servicing, disconnect the battery cable from negative terminal.
- To remove brake tube, use a flare nut wrench to prevent flare nuts and brake tube from being damaged. To install, use flare nut crowfoot and torque wrench.
- Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.
- Do not remove and install actuator by holding harness.
- After work is completed, bleed air from brake tube. Refer to BR-13, "Bleeding Brake System".
- Remove cowl top. Refer to EXT-20, "Exploded View". 1.
- 2. Disconnect ABS actuator and electric unit (control unit) connector.
- 3. Loosen brake tube flare nuts, then remove brake tubes from ABS actuator and electric unit (control unit).
- Remove tire (front LH side).
- 5. Remove fender protector (rear): (front LH side). Refer to EXT-22, "Exploded View".
- Remove ABS actuator and electric unit (control unit) bracket mounting nut.
- Remove ABS actuator and electric unit (control unit) from vehicle.

#### INSTALLATION

[VDC/TCS/ABS] < ON-VEHICLE REPAIR >

Note the following, and install in the reverse order of removal.

#### **CAUTION:**

- Before servicing, disconnect the battery cable from negative terminal.
- To remove brake tube, use a flare nut wrench to prevent flare nuts and brake tube from being damaged. To install, use flare nut crowfoot and torque wrench.
- Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.
- Do not remove and install actuator by holding harness.
- After work is completed, bleed air from brake tube. Refer to <u>BR-13, "Bleeding Brake System"</u>.
- . After installing harness connector in the ABS actuator and electric unit (control unit), make sure connector is securely locked.

BRC

Α

В

D

Е

Н

K

L

Ν

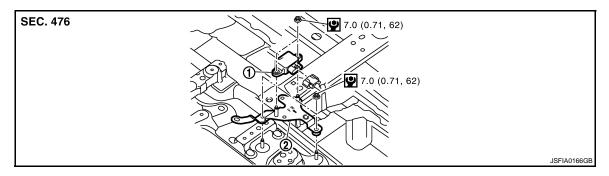
Р

**BRC-173** Revision: 2008 January 2008 Rogue

< ON-VEHICLE REPAIR > [VDC/TCS/ABS]

## **G SENSOR**

Exploded View



- 1. yaw rate/side/decel G sensor
- 2. Bracket

<□: Vehicle front

Refer to GI-4, "Components" for symbol in the figure.

#### Removal and Installation

INFOID:0000000001747954

#### **REMOVAL**

#### **CAUTION:**

Do not drop or strike yaw rate/side/decel G sensor, or do not use power tool etc., because yaw rate/side/decel G sensor is sensitive to the impact.

- Remove center console assembly. Refer to <u>IP-20, "Exploded View"</u>.
- Disconnect yaw rate/side/decel G sensor harness connector.
- 3. Remove mounting bolts. Remove yaw rate/side/decel G sensor.

#### **INSTALLATION**

Note the following, and install in the reverse order of removal.

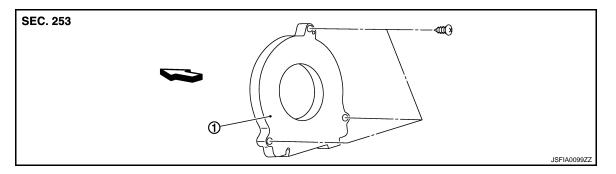
#### **CAUTION:**

Do not drop or strike yaw rate/side/decel G sensor, or do not use power tool etc., because yaw rate/side/decel G sensor is sensitive to the impact.

< ON-VEHICLE REPAIR > [VDC/TCS/ABS]

## STEERING ANGLE SENSOR

Exploded View



1. Steering angle sensor

<□: Vehicle front

#### Removal and Installation

INFOID:0000000001747956

#### **REMOVAL**

- Remove spiral cable assembly. Refer to <u>SR-8</u>, "<u>Exploded View</u>" (DUAL STAGE AIR BAG models), <u>SR-27</u>, "<u>Exploded View</u>" (SINGLE STAGE AIR BAG models).
- 2. Remove steering angle sensor from spiral cable assembly.

#### INSTALLATION

Note the following, and install in the reverse order of removal.

**CAUTION:** 

After work, make sure to adjust neutral position of steering angle sensor. Refer to <u>BRC-76, "ADJUST-MENT OF STEERING ANGLE SENSOR NEUTRAL POSITION: Description"</u>.

BRC

Н

Α

В

D

Е

K

L

J

M

Ν