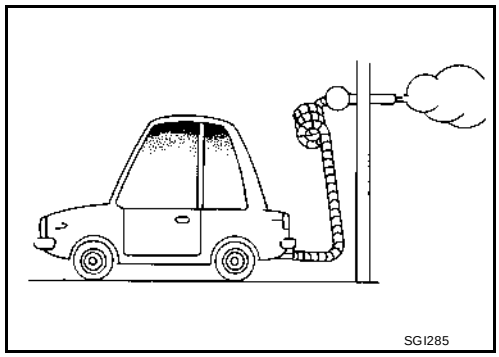
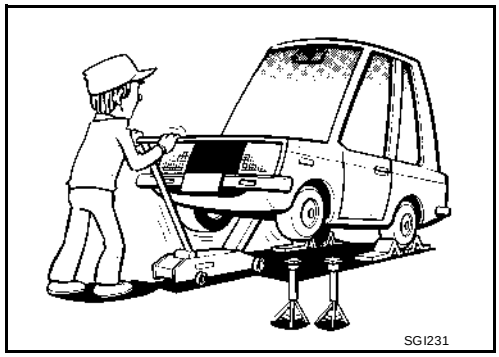
General Precautions

EAS00148

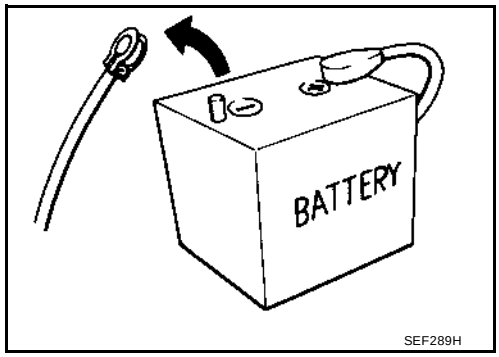
- Do not operate the engine for an extended period of time without proper exhaust ventilation.
  Keep the work area well ventilated and free of any flammable materials. Special care should be taken when handling any flammable or poisonous materials, such as gasoline, refrigerant gas, etc. When working in a pit or other enclosed area, be sure to properly ventilate the area before working with hazardous materials.
  Do not smoke while working on the vehicle.


SGI285

- Before jacking up the vehicle, apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving. After jacking up the vehicle, support the vehicle weight with safety stands at the points designated for proper lifting before working on the vehicle.
  These operations should be done on a level surface.
- When removing a heavy component such as the engine or transaxle/transmission, be careful not to lose your balance and drop them. Also, do not allow them to strike adjacent parts, especially the brake tubes and master cylinder.

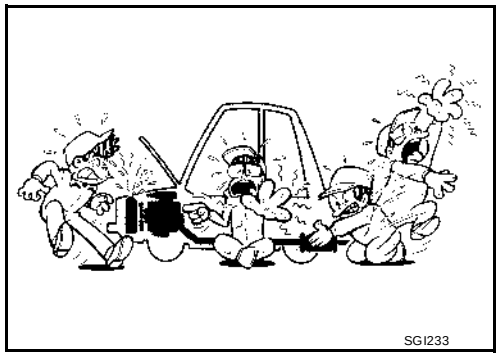

SGI231

- Before starting repairs which do not require battery power:
  Turn off ignition switch.
  Disconnect the negative battery terminal.
- If the battery terminals are disconnected, recorded memory of radio and each control unit is erased.
- Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.



SEF289H

- To prevent serious burns:
  Avoid contact with hot metal parts.
  Do not remove the radiator cap when the engine is hot.
- Dispose of or recycle drained oil or the solvent used for cleaning parts in an appropriate manner.
- Do not attempt to top off the fuel tank after the fuel pump nozzle shuts off automatically.
  Continued refueling may cause fuel overflow, resulting in fuel spray and possibly a fire.
- Clean all disassembled parts in the designated liquid or solvent prior to inspection or assembly.

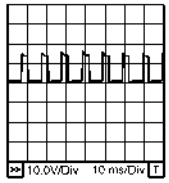

SGI233

- Replace oil seals, gaskets, packings, O-rings, locking washers, cotter pins, self-locking nuts, etc. with new ones.
- Replace inner and outer races of tapered roller bearings and needle bearings as a set.
- Arrange the disassembled parts in accordance with their assembled locations and sequence.
- Do not touch the terminals of electrical components which use microcomputers (such as ECM).
  Static electricity may damage internal electronic components.
- After disconnecting vacuum or air hoses, attach a tag to indicate the proper connection.
- Use only the fluids and lubricants specified in this manual.

Specification data are reference values and are measured between each terminal and ground.
Pulse signal is measured by CONSULT-II.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
24	BR/W	A/F sensor 1 heater (Bank 2)	**[Engine is running]** ● **Warm-up condition** ● Idle speed	Approximately 5V★  PBIB1584E

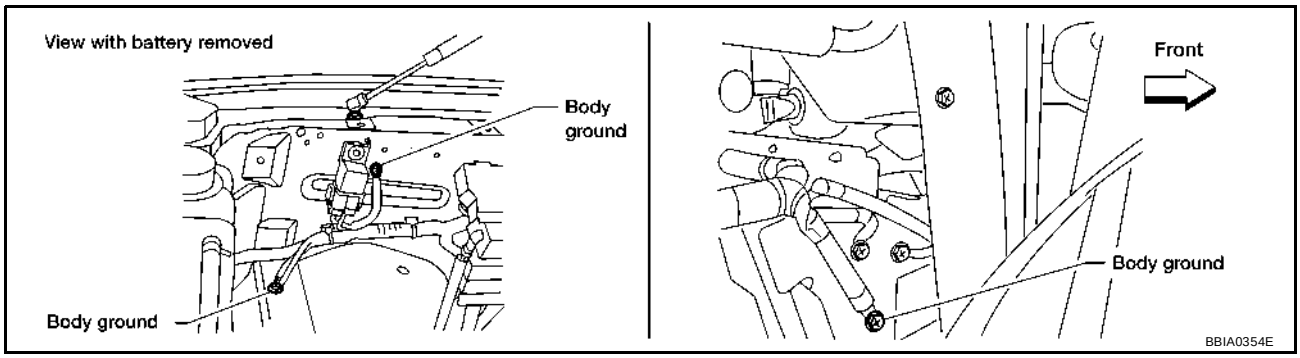
★: Average voltage for pulse signal (Actual pulse signal can be confirmed by oscilloscope.)

Diagnostic Procedure

UBS00H76

1. CHECK GROUND CONNECTIONS

1. Turn ignition switch OFF.
2. Loosen and retighten three ground screws on the body.



Refer to EC-133, "Ground Inspection" .

OK or NG

OK >> GO TO 2.
NG >> Repair or replace ground connections.

Diagnostic Procedure

UCS002FN

1. CHECK CAN COMMUNICATION LINE

Perform the self-diagnosis. Refer AT-93, "SELF-DIAGNOSTIC RESULT MODE" .

Is a malfunction in the CAN communication indicated in the results?

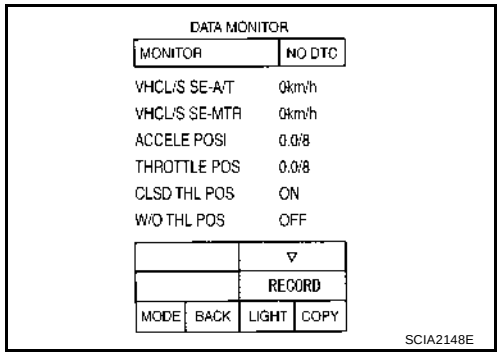
YES >> Check CAN communication line. Refer to AT-103, "DTC U1000 CAN COMMUNICATION LINE" .
NO >> GO TO 2.

2. CHECK INPUT SIGNAL

With CONSULT-II

1. Start engine.
2. Select “ECU INPUT SIGNALS” in “DATA MONITOR” mode for “A/T” with CONSULT-II.
3. Drive vehicle and read out the value of “VHCL/S SE·MTR”.

Item name	Condition	Display value (km/h)
VHCL/S SE·MTR	During driving	Approximately matches the speedometer reading.



OK or NG

OK >> GO TO 4.
NG >> GO TO 3.

3. CHECK COMBINATION METER

Check combination meter. Refer to DI-17, "How to Proceed With Trouble Diagnosis"

OK or NG

OK >> GO TO 8.
NG >> Repair or replace damaged parts.

4. CHECK TCM

Perform TCM input/output signals inspection. Refer to AT-90, "TCM Input/Output Signal Reference Values" .

OK or NG

OK >> GO TO 5.
NG >> GO TO 7.

5. CHECK DTC

Perform “DTC Confirmation Procedure”.

- Refer to AT-136, "DTC Confirmation Procedure" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 6.

6. DETECT MALFUNCTIONING ITEM

Check the following items:

- The A/T assembly harness connector terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the control valve with TCM. Refer to AT-241, "Control Valve With TCM and A/T Fluid Temperature Sensor 2" .
NG >> Repair or replace damaged parts.

tion. However, in this case there is no malfunction in yaw rate sensor system. Take vehicle off of turn table or other moving surface, and start engine. Results will return to normal.

Is the above displayed in the self-diagnosis display items?

Yes >> GO TO 2.
No >> Inspection End.

2. CONNECTOR INSPECTION

Disconnect the ABS actuator and electric unit (control unit) connector E125 and yaw rate/side/decel G sensor connector M108.
Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 3.
NG >> Repair or replace as necessary.

3. YAW RATE/SIDE/DECEL G SENSOR HARNESS INSPECTION

1. Turn off the ignition switch and disconnect yaw rate/side/decel G sensor connector M108 and ABS actuator and electric unit (control unit) connector E125.
2. Check continuity between the ABS actuator and electric unit (control unit) connector E125 and the yaw rate/side/decel G sensor connector M108.

ABS actuator and electric unit (control unit) harness connector E125	Yaw rate/side/decel G sensor harness connector M108	Continuity
6 (Y/R)	3 (Y/R)	Yes
24 (P)	5 (P)	Yes
25 (G/R)	1 (G/R)	Yes
29 (G/W)	2 (G/W)	Yes

OK or NG

OK >> GO TO 4.
NG >> Repair or replace as necessary.

4. YAW RATE/SIDE/DECEL G SENSOR INSPECTION

1. Connect the yaw rate/side/decel G sensor connector M108 and ABS actuator and electric unit (control unit) connector E125.
2. Use “DATA MONITOR” to check if the yaw rate/side/decel G sensor signals are normal.

Vehicle status	Yaw rate sensor (Data monitor standard)	Side G sensor (Data monitor standard)	Decel G Sensor (Data monitor standard)
When stopped	-4 to +4 deg/s	-1.1 to +1.1 m/s	-0.11 G to +0.11 G
Right turn	Negative value	Negative value	-
Left turn	Positive value	Positive value	-
Speed up	-	-	Negative value
Speed down	-	-	Positive value

OK or NG

OK >> Inspection End.
NG >> Replace the yaw rate/side/decel G sensor. Refer to BRC-69, "Removal and Installation" .

PRECAUTION

PFP:00011

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EKS007F3

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 and SB section of this Service Manual.

WARNING:

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

Wiring Diagrams and Trouble Diagnosis

EKS007F4

When you read wiring diagrams, refer to the following:

- Refer to GI-15, "How to Read Wiring Diagrams" .
- Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" for power distribution circuit.

When you perform trouble diagnosis, refer to the following:

- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" .
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" .

6. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Replace the accelerator pedal assembly.
2. Perform EC-90, "Accelerator Pedal Released Position Learning" .
3. Perform EC-90, "Throttle Valve Closed Position Learning" .
4. Perform EC-91, "Idle Air Volume Learning" .

>> **INSPECTION END**

7. CHECK THROTTLE POSITION SENSOR 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between electric throttle control actuator terminal 4 and ECM terminal 66. Refer to Wiring Diagram.

Continuity should exist.

4. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 8.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

8. CHECK THROTTLE POSITION SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check harness continuity between ECM terminal 50 and electric throttle control actuator terminal 1. Refer to Wiring Diagram.

Continuity should exist.

2. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 9.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

9. CHECK THROTTLE POSITION SENSOR

Refer to EC-270, "Component Inspection" .

OK or NG

OK >> GO TO 11.
NG >> GO TO 10.

10. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

1. Replace the electric throttle control actuator.
2. Perform EC-90, "Throttle Valve Closed Position Learning" .
3. Perform EC-91, "Idle Air Volume Learning" .

>> **INSPECTION END**

11. CHECK INTERMITTENT INCIDENT

Refer to EC-156, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSIS RESULTS

Perform self-diagnosis. Refer to AT-85, "SELF-DIAGNOSTIC RESULT MODE" .

Do the self-diagnosis results indicate PNP switch, ATF pressure switch 6?

YES >> Check the malfunctioning system. Refer to AT-104, "DTC P0705 PARK/NEUTRAL POSITION SWITCH" , AT-166, "DTC P1846 ATF PRESSURE SWITCH 6" .

NO >> GO TO 2.

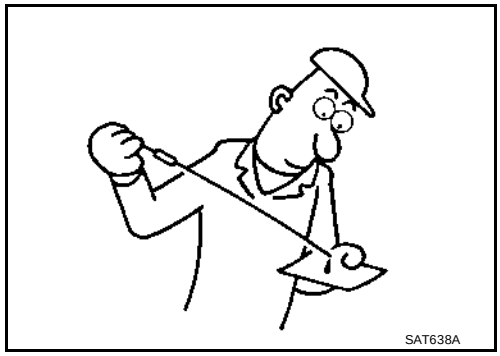
2. CHECK A/T FLUID LEVEL

Check the A/T fluid level. Refer to AT-13, "Checking A/T Fluid" .

OK or NG

OK >> GO TO 3.

NG >> Refill ATF.



3. CHECK CONTROL CABLE

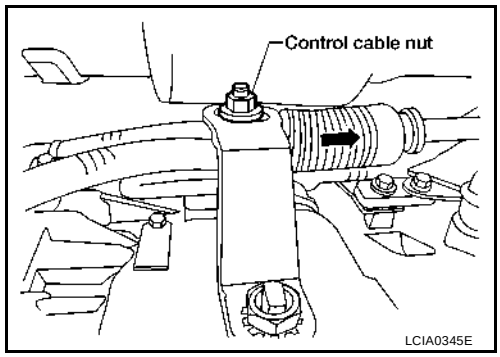
Check the control cable.

- Refer to AT-228, "Checking of A/T Position" .

OK or NG

OK >> GO TO 4.

NG >> Adjust control cable. Refer to AT-228, "Adjustment of A/T Position" .



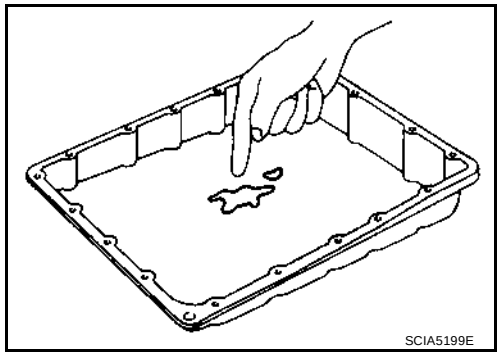
4. CHECK A/T FLUID CONDITION

1. Remove oil pan. Refer to AT-231, "Control Valve With TCM and A/T Fluid Temperature Sensor 2" .
2. Check A/T fluid condition. Refer to AT-50, "Fluid Condition Check" .

OK or NG

OK >> GO TO 5.

NG >> GO TO 8.



5. DETECT MALFUNCTIONING ITEM

- Check the malfunction items. If any items are damaged, repair or replace damaged parts. Refer to AT-60, "Symptom Chart" (Symptom No.16).

OK or NG

OK >> GO TO 6.

NG >> Repair or replace damaged parts.

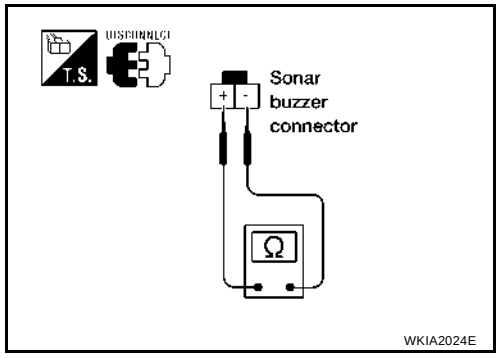
Component Inspection

EKS00BDB

SONAR BUZZER

1. Disconnect the sonar buzzer connector.
2. Check continuity between buzzer connector M117 terminal (+) and terminal (-)

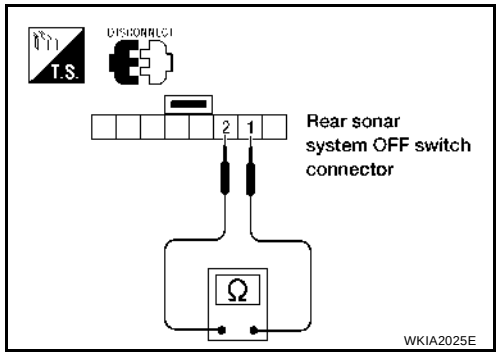
(+) - (-) **: Continuity should exist.**



REAR SONAR SYSTEM OFF SWITCH

Disconnect the rear sonar system OFF switch connector M116. Check continuity between the following terminals.

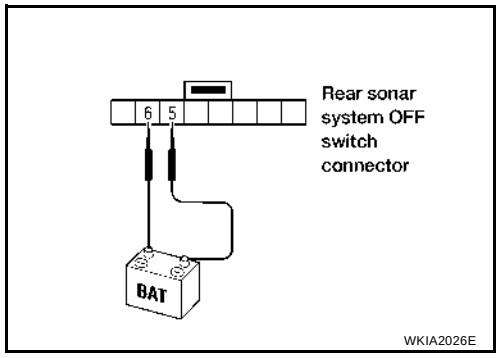
Rear sonar system OFF switch	Terminal to be inspected	Continuity
Depressed	1 - 2	Yes
Released		No



REAR SONAR SYSTEM OFF INDICATOR

Disconnect the rear sonar system OFF switch connector M116, and apply battery voltage (approx. 12V) to terminal 5. Check the rear sonar system OFF indicator operation when terminal 6 is connected to battery ground.

	Terminal to be inspected	Condition	Operation
Rear sonar system OFF switch	5	Approx. 12V	Rear sonar system OFF indicator lights
	6	Ground	



Removal and Installation of Rear Sonar System

EKS00BDC

REAR SONAR SENSORS

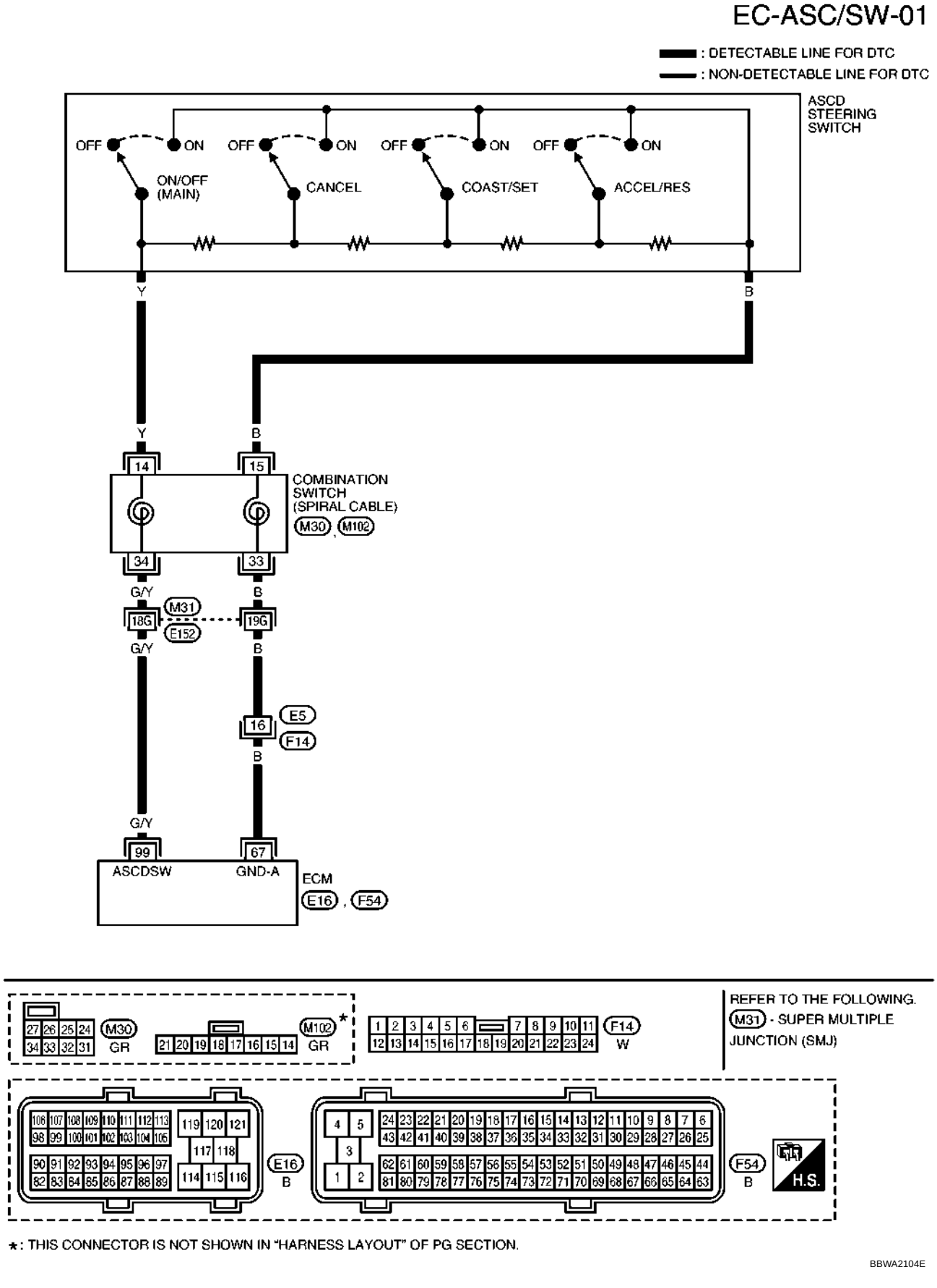
Refer to EI-15, "Removal and Installation" for rear sonar sensor removal and installation procedures.

SONAR CONTROL UNIT

1. Remove luggage side finisher LH. Refer to EI-40, "LUGGAGE FLOOR TRIM" to gain access to sonar control unit.
2. Disconnect electrical connector then remove sonar control unit. Refer to DI-58, "Component Parts and Harness Connector Location" .
3. Installation is in the reverse order of removal.

Wiring Diagram

UBS00L10



Terminals and Reference Value for IPDM E/R

EIS0060K

Terminal	Wire Color	Item	Condition			Voltage (V) (Approx.)
38	B	Ground	—			0
39	L	CAN-H	—			—
40	P	CAN-L	—			—
41	Y/B	Hood switch	Hood closed		OFF	0V
			Hood open		ON	Battery voltage
45	G/W	Horn relay	When doors locks are operated using keyfob (OFF → ON) *1			Battery voltage → 0V
52	L	Headlamp low (LH)	Ignition SW ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
54	R/Y	Headlamp low (RH)	Ignition SW ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
55	G	Headlamp high (LH)	Ignition SW ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
56	L/W *2 Y *3	Headlamp high (RH)	Ignition SW ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
59	B	Ground	—			0

1*: when horn reminder is ON.
2*: L/W is for USA.
3*: Y is for Canada.

CONSULT-II Function (BCM)

EIS0060L

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received date is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II INSPECTION PROCEDURE

CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

Front Wiper Arms

EKS00GBH

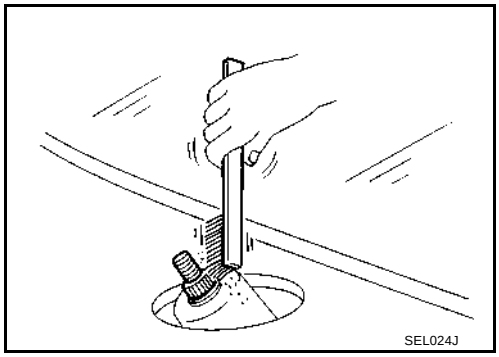
REMOVAL AND INSTALLATION

Removal

1. Remove wiper arm covers and wiper arm nuts.
2. Remove front RH wiper arm and front LH wiper arm.
3. Remove front RH blade assembly and front LH blade assembly.

Installation

1. Operate wiper motor one full cycle, then turn "OFF" (Auto Stop).
2. Clean up the pivot area as shown. This will reduce possibility of wiper arm looseness.



3. Install front RH blade assembly and front LH blade assembly.
4. Install front RH wiper arm and front LH wiper arm.
5. Tighten wiper arm nuts to specified torque, and install wiper arm covers.

Front wiper arm nuts : 23.6 N·m (2.4 kg-m, 17 ft-lb)

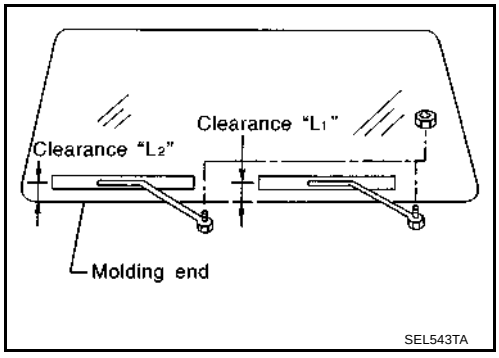
6. Ensure that wiper blades stop within proper clearance. Refer to WW-28, "FRONT WIPER ARM ADJUSTMENT" .

FRONT WIPER ARM ADJUSTMENT

1. Operate wiper motor one full cycle, then turn "OFF" (Auto Stop).
2. Lift the wiper blade up and then rest it onto glass surface, check the blade clearance "L1" and "L2".

Clearance "L1" : 41.5 - 56.5 mm (1.634 - 2.224 in)

Clearance "L2" : 52.5 - 67.5 mm (2.067 - 2.657 in)



3. Remove wiper arm covers and wiper arm nuts.
4. Adjust front wiper arms on wiper motor pivot shafts to obtain above specified blade clearances.
5. Tighten wiper arm nuts to specified torque, and install wiper arm covers.

Front wiper arm nuts : 23.6 N·m (2.4 kg-m, 17 ft-lb)

Most of these incidents can be repaired by adjusting, securing or insulating the item(s) or component(s) causing the noise.

SUNROOF/HEADLINING

Noises in the sunroof/headlining area can often be traced to one of the following:

1. Sunroof lid, rail, linkage or seals making a rattle or light knocking noise
2. Sun visor shaft shaking in the holder
3. Front or rear windshield touching headliner and squeaking

Again, pressing on the components to stop the noise while duplicating the conditions can isolate most of these incidents. Repairs usually consist of insulating with felt cloth tape.

OVERHEAD CONSOLE (FRONT AND REAR)

Overhead console noises are often caused by the console panel clips not being engaged correctly. Most of these incidents are repaired by pushing up on the console at the clip locations until the clips engage.
In addition look for:

1. Loose harness or harness connectors.
2. Front console map/reading lamp lens loose.
3. Loose screws at console attachment points.

SEATS

When isolating seat noise it's important to note the position the seat is in and the load placed on the seat when the noise is present. These conditions should be duplicated when verifying and isolating the cause of the noise.
Cause of seat noise include:

1. Headrest rods and holder
2. A squeak between the seat pad cushion and frame
3. The rear seatback lock and bracket

These noises can be isolated by moving or pressing on the suspected components while duplicating the conditions under which the noise occurs. Most of these incidents can be repaired by repositioning the component or applying urethane tape to the contact area.

UNDERHOOD

Some interior noise may be caused by components under the hood or on the engine wall. The noise is then transmitted into the passenger compartment.
Causes of transmitted underhood noise include:

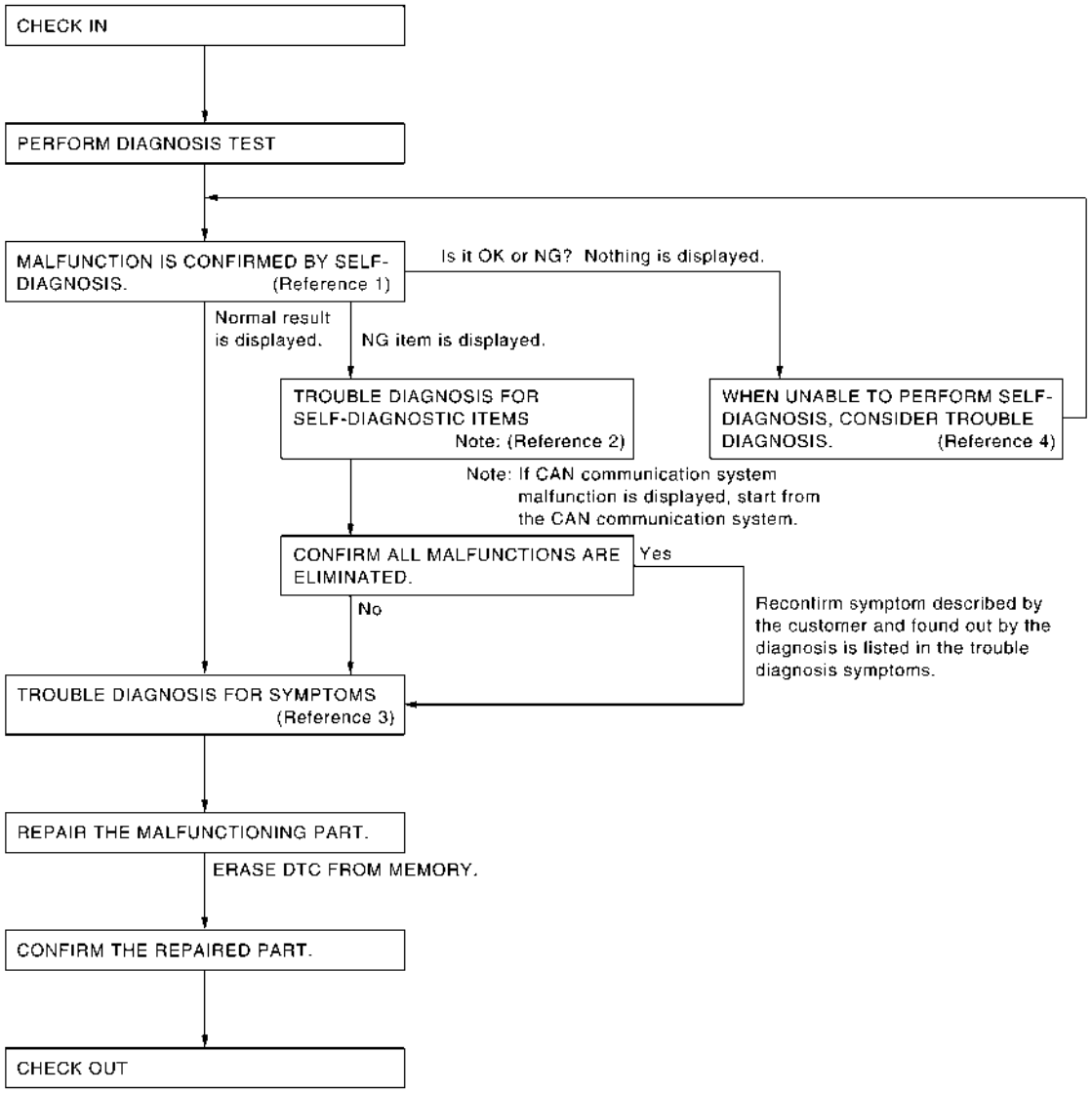
1. Any component installed to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator installation pins
5. Hood bumpers out of adjustment
6. Hood striker out of adjustment

These noises can be difficult to isolate since they cannot be reached from the interior of the vehicle. The best method is to secure, move or insulate one component at a time and test drive the vehicle. Also, engine RPM or load can be changed to isolate the noise. Repairs can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

Work Flow

INFOID:0000000003533791



SKIA1227E

- Reference 1··· Refer to ACS-30, "Self-Diagnostic Function".
- Reference 2··· Refer to ACS-34, "Diagnostic Trouble Code (DTC) Chart".
- Reference 3··· Refer to ACS-49, "Symptom Chart" .
- Reference 4··· Refer to GI-38, "CONSULT-II Data Link Connector (DLC) Circuit" and ACS-30, "Self-Diagnostic Function" .

CONSULT-II Function (ICC)

INFOID:0000000003533792

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

ICC diagnostic mode	Description
WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the ICC unit for setting the status suitable for required operation, input/output signals are received from the ICC unit and received data is displayed.
SELF-DIAG RESULTS	Displays ICC unit self-diagnosis results.
DATA MONITOR	Displays ICC unit input/output data in real-time.

C1142 PRESS SENSOR

Description

INFOID:0000000001686311

The front and rear pressure sensors convert the brake fluid pressure to an electric signal and transmit it to the ABS actuator and electric unit (control unit).

DTC Logic

INFOID:0000000001686312

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1142	PRESS SEN CIRCUIT	Pressure sensor signal line is open or shorted, or pressure sensor is malfunctioning.	• Harness or connector • Pressure sensor • ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSIS RESULTS

Check the self-diagnosis results.

Self-diagnosis results
PRESS SEN CIRCUIT

Is above displayed on the self-diagnosis display?

YES >> Proceed to diagnosis procedure. Refer to BRC-58, "Diagnosis Procedure".
NO >> Inspection End

Diagnosis Procedure

INFOID:0000000001686313

FRONT PRESSURE SENSOR INSPECTION PROCEDURE

1.CONNECTOR INSPECTION

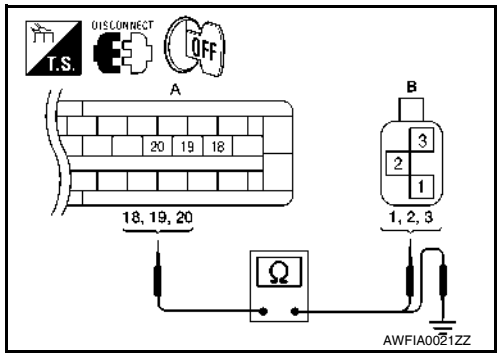
1. Turn the ignition switch OFF.
2. Disconnect the front pressure sensor connector E31 and ABS actuator and electric unit (control unit) connector E125 and inspect the terminals for deformation, disconnection, looseness, or damage.

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair connector.

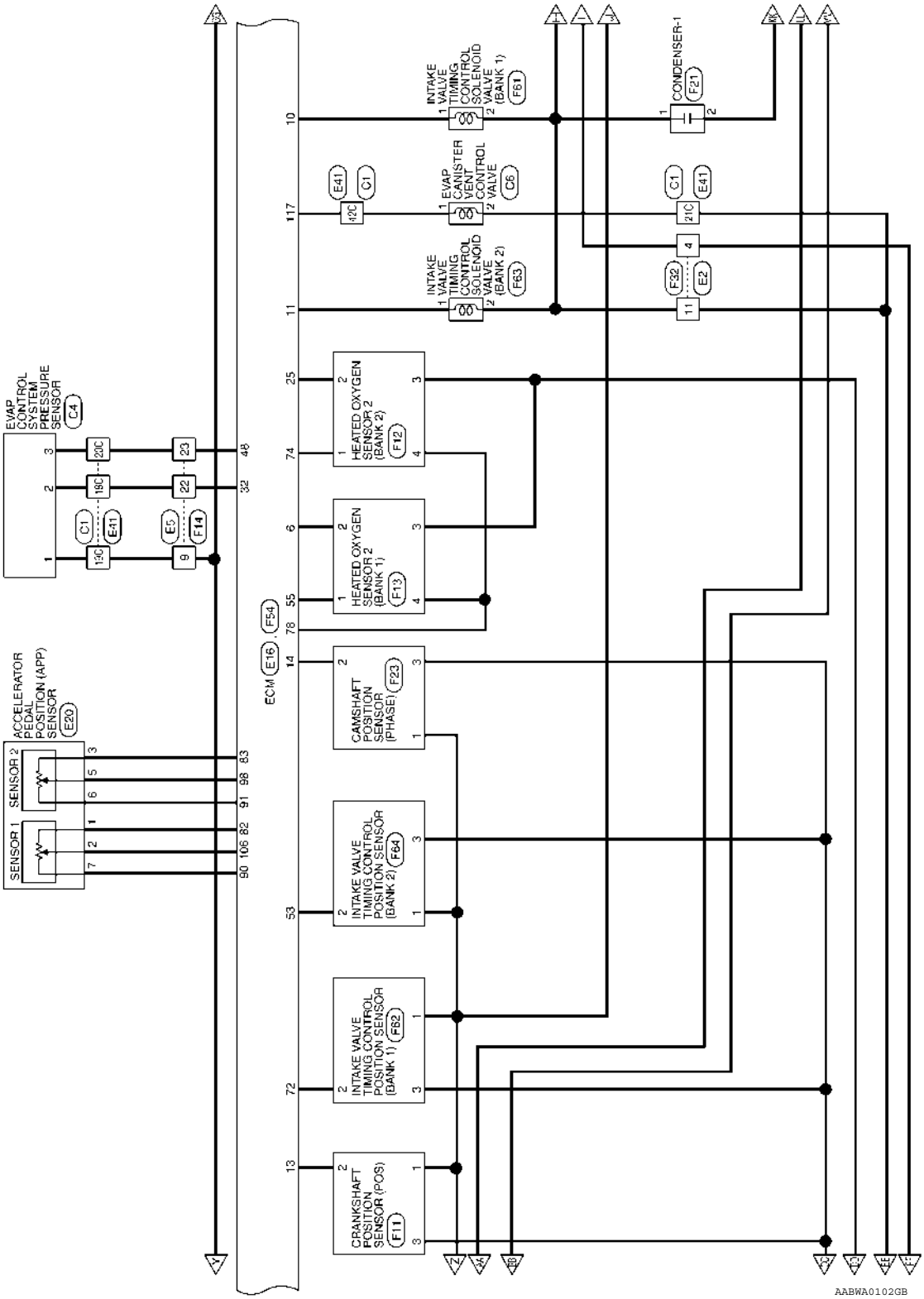
2.FRONT PRESSURE SENSOR CIRCUIT INSPECTION

1. Measure the continuity between the ABS actuator and electric unit (control unit) harness connector E125 (A) and front pressure sensor harness connector E31 (B).



ABS actuator and electric unit (control unit)		Front pressure sensor		Continuity
Connector	Terminal	Connector	Terminal	
A: E125	18	B: E31	3	Yes
	19		1	
	20		2	

2. Measure the continuity between the ABS actuator and electric unit (control unit) harness connector E125 (A) and body ground.


EVAP CONTROL SYSTEM PRESSURE SENSOR (C4)
ACCELERATOR PEDAL POSITION (APP) SENSOR (E20)
SENSOR 1
SENSOR 2
ECM (E16), (F54)
CRANKSHAFT POSITION SENSOR (POS) (F11)
CAMSHAFT POSITION SENSOR (PHASE) (F23)
HEATED OXYGEN SENSOR 2 (BANK 1) (F13)
HEATED OXYGEN SENSOR 2 (BANK 2) (F12)
INTAKE VALVE TIMING CONTROL POSITION SENSOR (BANK 1) (F62)
INTAKE VALVE TIMING CONTROL POSITION SENSOR (BANK 2) (F64)
INTAKE VALVE TIMING CONTROL SOLENOID VALVE (BANK 1) (F61)
INTAKE VALVE TIMING CONTROL SOLENOID VALVE (BANK 2) (F63)
EVAP CANISTER VENT CONTROL VALVE (C6)
CONDENSER-1 (F21)
AABWA0102GB