Edition: March 2006
Revision: March 2006
Publication No. SM7E-1V42U0

NISSAN QUEST

MODEL V42 SERIES

QUICK REFERENCE INDEX

INDEX FOR DTC

PFP:00024

Alphabetical Index

ECS00E61

NOTE:
If DTC U1000 is displayed with other DTCs, first perform the trouble diagnosis for DTC U1000. Refer to AT-84 .

Items (CONSULT-II screen terms)	DTC		Reference page
	OBD-II	Except OBD-II	
	CONSULT-II GST*1	CONSULT-II only "TRANSMISSION"	
A/T 1ST GR FNCTN	P0731	P0731	AT-116
A/T 2ND GR FNCTN	P0732	P0732	AT-119
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PC SOL C(TCC&SFT)	P0795	P0795	AT-185
PC SOL C STC ON	P0797	P0797	AT-190
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SHIFT	P0780	P0780	AT-181
SHIFT SOL A	P0750	P0750	AT-146
SHIFT SOL B	P0755	P0755	AT-151
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SHIFT SOL D	P0765	P0765	AT-166
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VHCL SPEED SEN-A/T	P0722	P0722	AT-110

*1: These numbers are prescribed by SAE J2012.

SMOOTH LOCK-UP CONTROL

When shifting from the lock-up released state to the lock-up applied state, the current output to the pressure control solenoid valve C is controlled with the TCM. In this way, when shifting to the lock-up applied state, the torque converter clutch is temporarily set to the half-clutched state to reduce the shock.

Half-Clutched State

- The current output from the TCM to the pressure control solenoid valve C is varied to steadily increase the pressure control solenoid valve C pressure.
  In this way, the lock-up apply pressure gradually rises and while the torque converter clutch piston is put into half-clutched status, the torque converter clutch piston operating pressure is increased and the coupling is completed smoothly.

Slip Lock-up Control

- In the slip region, the pressure control solenoid valve C current is controlled with the TCM to put it into the half-clutched state. This absorbs the engine torque fluctuation and lock-up operates from low speed.
  This raises the fuel efficiency for 4th and 5th gears at both low speed and when the accelerator has a low degree of opening.

TCM INSPECTION TABLE

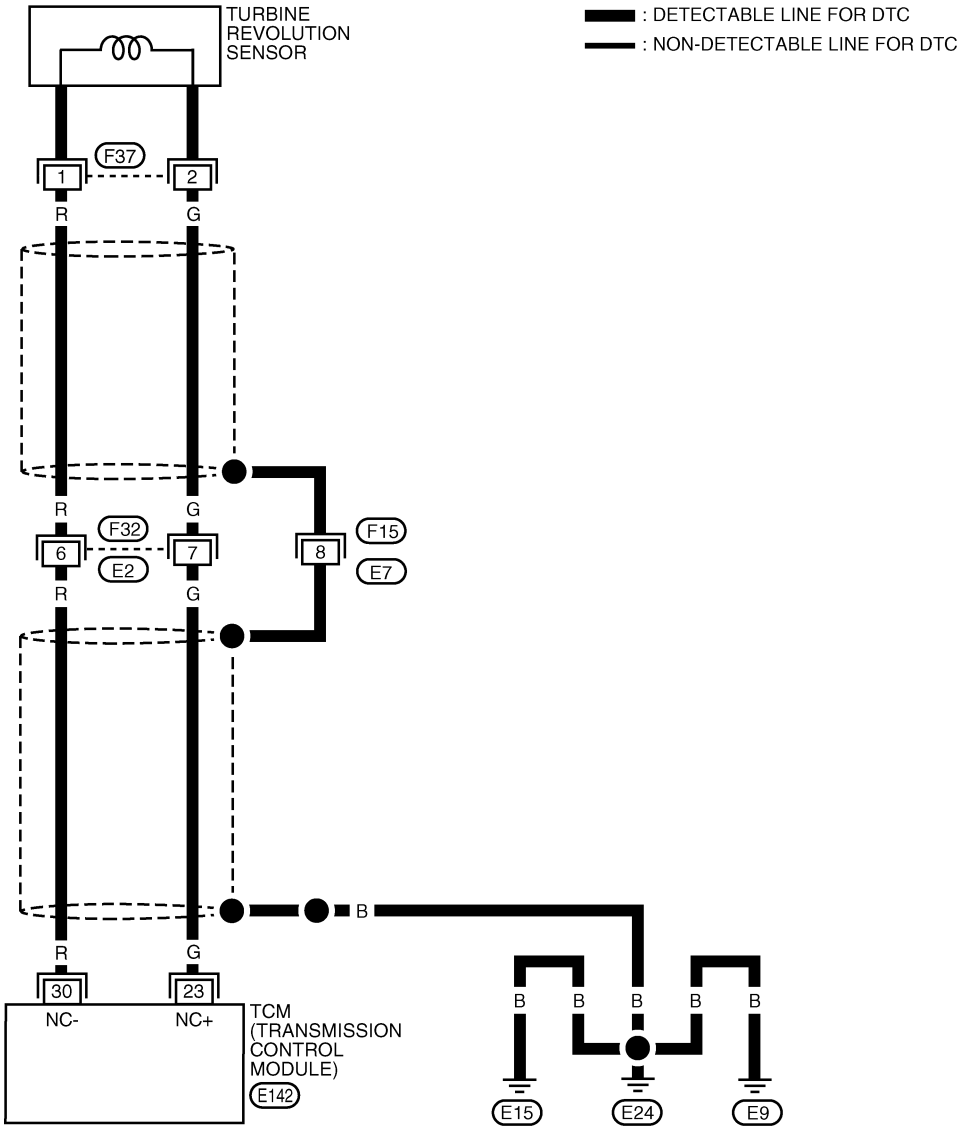
Data are reference value and are measured between each terminal and ground.

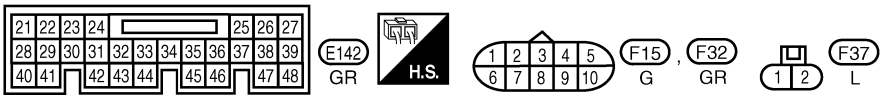
Terminal	Wire color	Item	Condition		Data (Approx.)
1	Y/W	A/T PV IGN relay		When turning ignition switch ON.	0 - 1.5V
				When turning ignition switch OFF.	0V
3	L	CAN-H	–		–
4	P	CAN-L	–		–
14	B	Ground	–		0V
16	O	Lever switch		Lever switch: “ON” position	0V
				Lever switch: “OFF” position	Battery voltage
21	G/B	Pressure control solenoid valve B ground		When engine is running with idle speed and setting selector lever to “P” position.	0V
22	L	Revolution sensor power supply		When turning ignition switch ON.	Battery voltage
				When turning ignition switch OFF.	0V
23	G	Turbine revolution sensor power supply		When turning ignition switch ON.	Battery voltage
				When turning ignition switch OFF.	0V
24	BR	PNP switch A		Selector lever: “P”, “R” and “L” position	0V
				Other than the above	Battery voltage
25	G/R	Shift solenoid valve B		When shift solenoid valve B operates. (When driving in 1st or 5th gear.)	Battery voltage
				When shift solenoid valve B does not operate.	0V
26	W/B	Shift solenoid valve D		When shift solenoid valve D operates. (When driving in 3rd, 4th or 5th gear.)	Battery voltage
				When shift solenoid valve D does not operate.	0V
27	Y/R	Power supply (Memory back-up)		When turning ignition switch ON.	Battery voltage
				When turning ignition switch OFF.	Battery voltage
28	W	Pressure control solenoid valve C ground		When engine is running with idle speed and setting selector lever to “P” position.	0V

Wiring Diagram — AT — TRSC

ECS00E8C

AT-TRSC-01





BCWA0342E

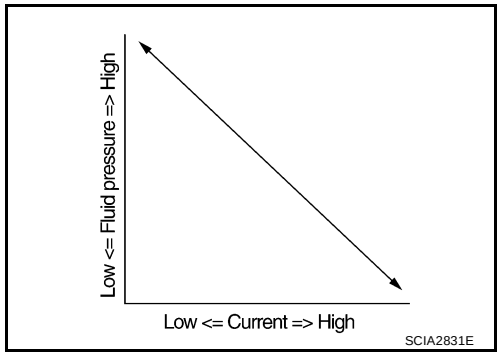
DTC P0745 PRESSURE CONTROL SOLENOID VALVE A (LINE PRESSURE)

PFP:31940

Description

ECS00E9R

- The pressure control solenoid valve A is normally high, 3-port linear pressure control solenoid.
- The pressure control solenoid valve A regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.



On Board Diagnosis Logic

ECS00E9S

- This is an OBD-II self-diagnostic item.
- Diagnostic trouble code “PC SOL A(L/PRESS)” with CONSULT-II or P0745 without CONSULT-II is detected under the following conditions.
  - When normal voltage is not applied to solenoid due to open, short, and so on.
  - When TCM detects as irregular by comparing target value with monitor value.

Possible Cause

ECS00E9T

- Harness or connectors
  (The solenoid circuit is open or shorted.)
- Pressure control solenoid valve A

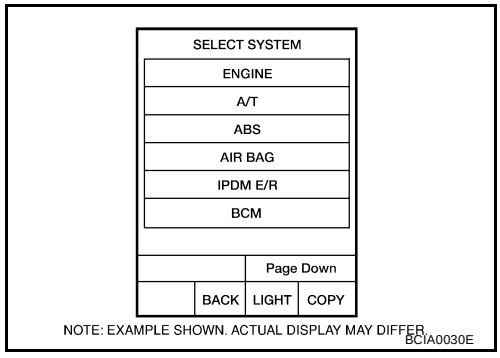
DTC Confirmation Procedure

ECS00E9U

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch “OFF” and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch “ON”. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine.
4. Run engine for at least 13 consecutive seconds at idle speed.
5. If DTC is detected, go to AT-143, "Diagnostic Procedure" .



WITH GST

Follow the procedure “With CONSULT-II”.

8. CHECK TCM

1. Check TCM input/output signal. Refer to AT-72, "TCM Input/Output Signal Reference Values" .
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> **INSPECTION END**
NG >> Repair or replace damaged parts.

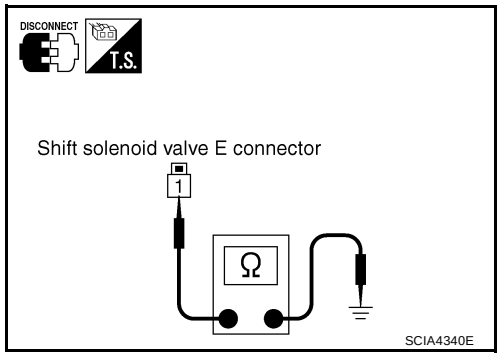
Component Inspection

ECS00EB3

SHIFT SOLENOID VALVE E

1. Remove side cover. Refer to AT-237, "Side cover" .
2. Disconnect shift solenoid valve E harness connector.
3. Check resistance between terminal 1 and ground.

Connector	Terminal	Condition	Resistance (Approx.)
F71	1 - Ground	Temperature: 20°C (68°F)	11 - 16 Ω



4. If NG, replace the control valve assembly. Refer to AT-237, "Control Valve Assembly" .

Vehicle Does Not Creep Backward In “R” Position

ECS00ECF

SYMPTOM:

The vehicle does not creep in the “R” position. Or an extreme lack of acceleration is observed.

DIAGNOSTIC PROCEDURE

1. CHECK A/T FLUID LEVEL

Check the A/T fluid level. Refer to AT-55, "A/T FLUID CHECK" .

OK or NG

OK >> GO TO 2.
NG >> Refill ATF.

2. CHECK CONTROL CABLE AND PNP SWITCH POSITION

Check the control cable and PNP switch position.

- Refer to AT-236, "Control Cable Adjustment" .

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable and PNP switch position. Refer to AT-236, "Control Cable Adjustment" or AT-234, "Park/Neutral Position (PNP) Switch Adjustment" .

3. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis.

Is any malfunction detected by self-diagnostic?

YES >> Check the malfunctioning system.
NO >> GO TO 4.

4. DETECT MALFUNCTIONING ITEM

1. Control valve assembly. Refer to AT-237, "Control Valve Assembly" .
2. Disassemble A/T. Refer to AT-247, "DISASSEMBLY" .
3. Check the following items:

- Forward and direct clutch assembly. Refer to AT-247, "DISASSEMBLY" .
- 1st and reverse brake. Refer to AT-247, "DISASSEMBLY" .
- B5 brake. Refer to AT-274, "Transaxle Case Cover & B5 Brake" .
- Torque convertor. Refer to AT-247, "DISASSEMBLY" .

OK or NG

OK >> GO TO 5.
NG >> Repair or replace damaged parts.

5. CHECK TCM

1. Check TCM input/output signal. Refer to AT-72, "TCM Input/Output Signal Reference Values" .
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> GO TO 6.
NG >> Repair or replace damaged parts.

6. CHECK SYMPTOM

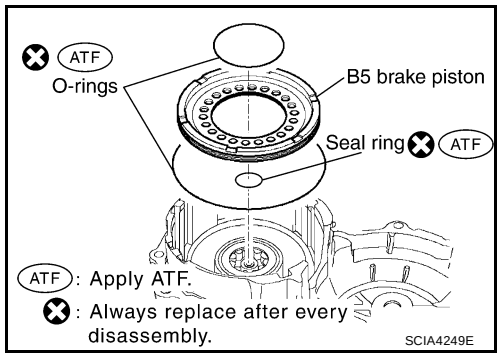
Check again.

OK or NG

OK >> **INSPECTION END**
NG >> Repair or replace damaged parts.

10. 2nd brake disc
11. 2nd brake flange
12. One-way clutch No.1
13. 2nd coast brake hub
14. Snap ring
15. 2nd coast brake plate
16. Snap ring
17. O-ring
18. 2nd coast brake piston
19. Return spring
20. 2nd coast brake disc
21. 2nd coast brake flange
22. Thrust washer
23. Thrust washer
24. Return spring
25. 1st and reverse brake piston
26. Thrust bearing race
27. Counter drive gear sub assembly
28. One-way clutch outer race sub assembly
29. Thrust washer
30. Snap ring
31. Thrust bearing
32. O-ring
33. Snap ring
34. Planetary gear assembly
35. FR planetary ring gear assembly
36. Snap ring
37. 1st and reverse brake disc
38. 1st and reverse brake flange
39. 1st and reverse brake plate
40. 1st and reverse brake flange
41. One-way clutch No.2
42. Thrust bearing
43. Thrust bearing race
44. Thrust needle roller bearing
45. Seal ring
46. Forward and direct clutch assembly
47. Planetary sun gear sub assembly
48. Thrust bearing race
49. Thrust needle roller bearing
50. RR planetary ring gear assembly
51. Thrust needle roller bearing
52. Thrust bearing race

13. Remove O-rings from B5 brake piston.
14. Remove seal ring from transaxle case cover.



INSPECTION

- Check that the sliding surface of discs and plates are not worn or burnt. If the discs or plates are worn or burnt, replace them.

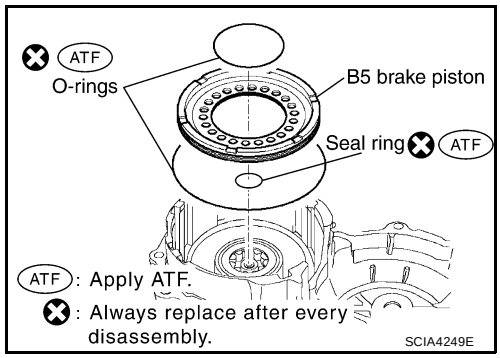
  CAUTION:
  Soak new clutch discs at least 2 hours in ATF.

ASSEMBLY

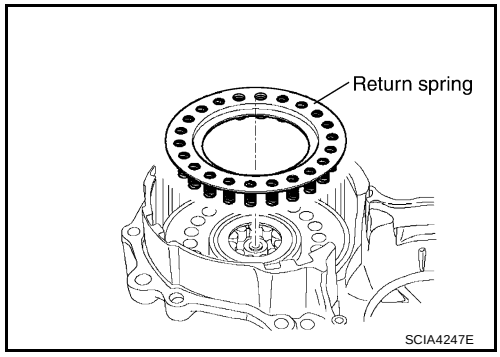
1. Install seal ring in transaxle case cover.

   CAUTION:
   - **Do not reuse seal ring.**
   - **Apply ATF to seal ring.**
2. Install O-rings in B5 brake piston.

   CAUTION:
   - **Do not reuse O-rings.**
   - **Apply ATF to O-rings.**
3. Coat the inner surface of transaxle case cover with ATF.
4. Press B5 brake piston into the transaxle case cover.



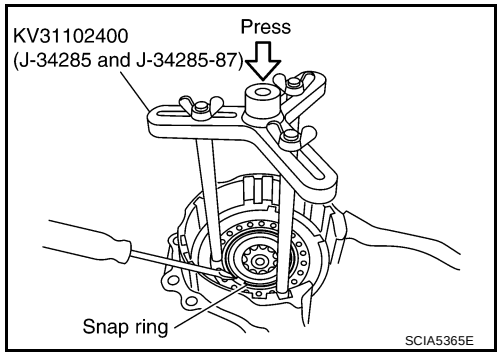
5. Place return spring on B5 brake piston.



6. Place Tool on return spring, and compress return spring with a press.

   Tool number : KV31102400 (J-34285 and J-34285-87)

   CAUTION:
   Do not press return spring too much to avoid deformation.
7. Install snap ring using suitable tool.



U/D RR PLANETARY RING GEAR SUB ASSEMBLY

	Thickness mm (in)	Part number*
Thickness of adjust shims	0.81 (0.0319)	31435 8Y100
	0.90 (0.0350)	31435 8Y101
	1.00 (0.0400)	31435 8Y102
	1.10 (0.0430)	31435 8Y103
	1.20 (0.0470)	31435 8Y104
	1.30 (0.0510)	31435 8Y105
	1.40 (0.0550)	31435 8Y106
	1.50 (0.0590)	31435 8Y107
	1.60 (0.0630)	31435 8Y108

* : Always check with the Parts Department for the latest parts information.

U/D GEAR ASSEMBLY

	Thickness mm (in)	Part number*
Thickness of thrust washer races	0.80 (0.0310)	31435 8Y021
	0.90 (0.0350)	31435 8Y068
	1.00 (0.0400)	31435 8Y069
	1.10 (0.0430)	31435 8Y070
	1.20 (0.0470)	31435 8Y071
	1.30 (0.0510)	31435 8Y072
	1.40 (0.0550)	31435 8Y073
	1.50 (0.0590)	31435 8Y074

* : Always check with the Parts Department for the latest parts information.

PLANETARY SUN GEAR SUB ASSEMBLY

Inner diameter of planetary sun gear sub assembly bushing mm (in)	Standard	22.200 - 22.226 (0.8740 - 0.8750)
	Allowable limit	22.276 (0.8770)

PLANETARY GEAR ASSEMBLY

Inner diameter of planetary gear assembly bushing mm (in)	Standard	30.056 - 30.082 (1.1833 - 1.1843)
	Allowable limit	30.132 (1.1863)

Final Drive

ECS00EDY

DIFFERENTIAL SIDE BEARING ADJUSTING SHIMS

Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
1.00 (0.0394)	31438 8Y001	1.48 (0.0583)	31438 8Y013
1.05 (0.0413)	31438 8Y002	1.51 (0.0594)	31438 8Y014
1.10 (0.0433)	31438 8Y003	1.54 (0.0606)	31438 8Y015
1.15 (0.0453)	31438 8Y004	1.57 (0.0618)	31438 8Y016
1.20 (0.0472)	31438 8Y005	1.60 (0.0630)	31438 8Y017
1.25 (0.0492)	31438 8Y006	1.65 (0.0650)	31438 8Y018
1.30 (0.0512)	31438 8Y007	1.70 (0.0669)	31438 8Y019
1.33 (0.0524)	31438 8Y008	1.75 (0.0689)	31438 8Y020
1.36 (0.0535)	31438 8Y009	1.80 (0.0709)	31438 8Y021
1.39 (0.0547)	31438 8Y010	1.85 (0.0728)	31438 8Y022
1.42 (0.0559)	31438 8Y011	1.90 (0.0748)	31438 8Y023
1.45 (0.0571)	31438 8Y012		

*: Always check with the Parts Department for the latest parts information.

TURNING TORQUE

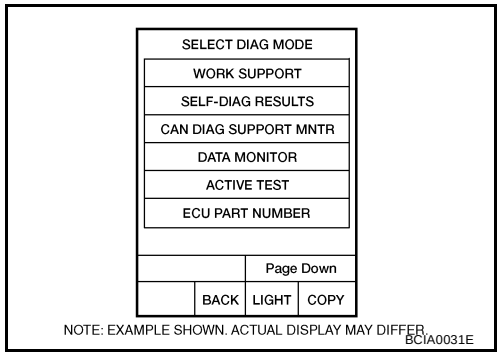
Turning torque of final drive assembly	0.7 - 1.2 N·m (0.08 - 0.12kg-m, 7 - 10 in-lb)

DTC	Reference page	
B2584	Intake door motor (passenger) circuit failure	ATC-90, "DIAGNOSTIC PROCEDURE FOR INTAKE DOOR MOTOR (PASSENGER)"
U1000	CAN bus fault	LAN-7, "TROUBLE DIAGNOSIS"
B2586	Intake door motor (driver) circuit failure	ATC-88, "DIAGNOSTIC PROCEDURE FOR INTAKE DOOR MOTOR (DRIVER)"
B2587	Stuck button	ATC-160, "FRONT AIR CONTROL"
B2587	Mode door motor circuit failure	ATC-62, "Mode Door Motor Circuit"

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.



2. Touch either “MAIN SIGNALS” or “SELECTION FROM MENU” on “DATA MONITOR” screen.

MAIN SIGNALS	Monitors all the items.
SELECTION FROM MENU	Selects and monitors the individual item selected.

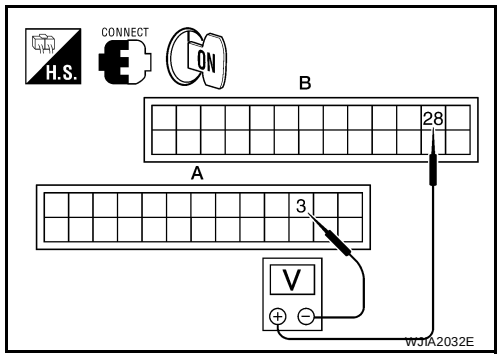
3. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “MAIN SIGNALS” is selected, all the items will be monitored.
4. Touch “START”.
5. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item	Value	Contents
BATT VIA CAN	"V"	Displays battery voltage signal.
IGN VIA CAN	"ON/OFF"	Displays ignition switch signal.
DVR SUNLD SEN	"W/M2"	Displays optical sensor (driver) signal.
PAS SUNLD SEN	"W/M2"	Displays optical sensor (passenger) signal.
AMB TEMP SEN	"°C/°F"	Displays ambient temperature sensor signal.
EVAP TEMP SEN	"°C/°F"	Displays intake sensor signal.
INCAR TMP SEN	"°C/°F"	Displays in-vehicle temperature sensor signal.
RR TEMPSET FR	"V"	Displays air mix door (front) set point signal.
RR TEMPSET RR	"V"	Displays air mix door (rear) set point signal.
MODE FDBCK	"V"	Displays mode door motor feedback signal.
DVR MIX FDBCK	"V"	Displays intake door motor (driver) feedback signal.
PAS MIX FDBCK	"V"	Displays intake door motor (passenger) feedback signal.
RR FDBCK	"V"	Displays air mix door motor (rear) feedback signal.
RECIRC	"ON/OFF"	Displays recirculation switch signal.
DEFROST	"V"	Displays defroster switch signal.

6. CHECK FRONT AIR CONTROL FOR PBR POWER AND GROUND

1. Reconnect front air control harness connector.
2. Turn ignition switch ON.
3. Check voltage between front air control harness connector M49 (A) terminal 3 and front air control harness connector M50 (B) terminal 28.



Connector	Terminals		Voltage (Approx.)
	(+)	(-)	
Front air control: M49/M50	28 (M50)	3 (M49)	5V

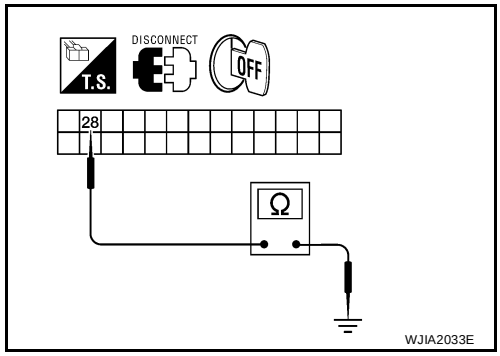
OK or NG

OK >> GO TO 8.
NG >> GO TO 7.

7. CHECK PBR REFERENCE VOLTAGE CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Disconnect the front air control harness connector.
3. Check continuity between front air control harness connector M49 terminal 28 and ground.

Continuity should not exist.



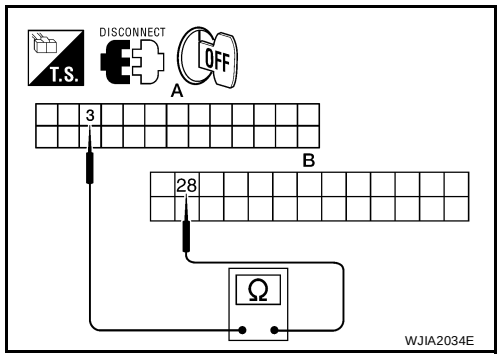
OK or NG

OK >> Replace front air control. Refer to ATC-160, "FRONT AIR CONTROL" .
NG >> Repair or replace harness as necessary.

8. CHECK PBR REFERENCE VOLTAGE AND GROUND CIRCUITS

1. Turn ignition switch OFF.
2. Disconnect the front air control harness connector.
3. Check continuity between front air control harness connector M50 (B) terminal 28 and front air control harness connector M49 (A) terminal 3.

Continuity should exist.



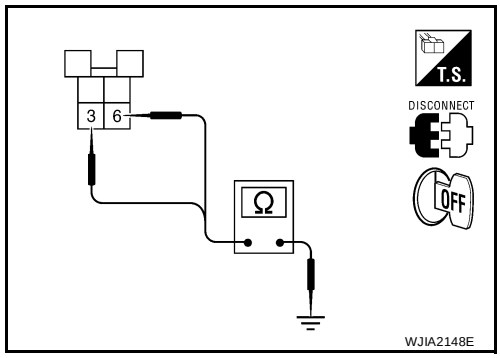
OK or NG

OK >> GO TO 10.
NG >> GO TO 9.

10. CHECK FRONT BLOWER MOTOR RELAY SUPPLY CIRCUITS FOR SHORT

Check continuity between front blower motor relay harness connector H-2 terminals 6 and 3 and ground.

Continuity should not exist.



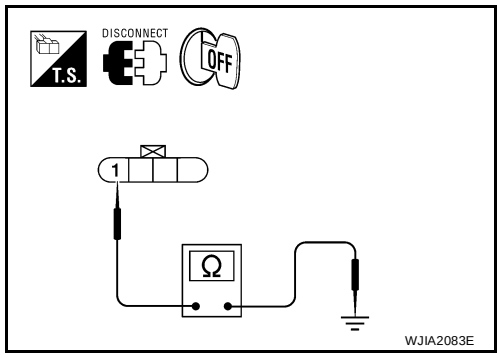
OK or NG

OK >> GO TO 11.
NG >> Repair harness or connector.

11. CHECK VARIABLE BLOWER CONTROL (FRONT) POWER SUPPLY CIRCUIT FOR SHORT

1. Disconnect variable blower control (front) harness connector.
2. Check continuity between variable blower control (front) harness connector M122 terminal 1 and ground.

Continuity should not exist.



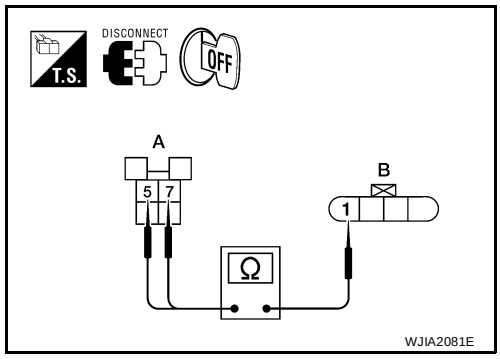
OK or NG

OK >> Replace variable blower control (front). Refer to ATC-186, "VARIABLE BLOWER CONTROL (FRONT)" .
NG >> Repair harness or connector.

12. CHECK VARIABLE BLOWER CONTROL (FRONT) POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect variable blower control (front) connector and front blower motor relay connector.
3. Check continuity between front blower motor relay harness connector H-2 (A) terminals 5 and 7 and variable blower control (front) harness connector M122 (B) terminal 1.

Continuity should exist.



OK or NG

OK >> GO TO 13.
NG >> Repair harness or connector.

13. CHECK FRONT BLOWER MOTOR

Check front blower motor. Refer to ATC-104, "Front Blower Motor" .

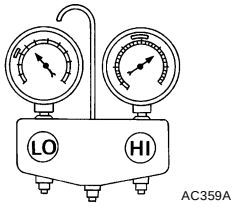
OK or NG

OK >> GO TO 14.
NG >> Replace front blower motor relay.

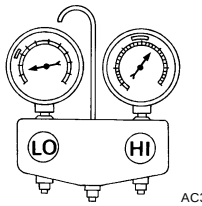
TROUBLE DIAGNOSES FOR UNUSUAL PRESSURE

Whenever system's high and/or low side pressure is unusual, diagnose using a manifold gauge. The marker above the gauge scale in the following tables indicates the standard (usual) pressure range. Since the standard (usual) pressure, however, differs from vehicle to vehicle, refer to above table (Ambient air temperature-to-operating pressure table).

Both High- and Low-pressure Sides are Too High

Gauge indication	Refrigerant cycle	Probable cause	Corrective action
Both high- and low-pressure sides are too high.  AC359A	Pressure is reduced soon after water is splashed on condenser.	Excessive refrigerant charge in refrigeration cycle	Reduce refrigerant until specified pressure is obtained.
	Air suction by cooling fan is insufficient.	Insufficient condenser cooling performance ↓ 1. Condenser fins are clogged. 2. Improper fan rotation of cooling fan	● Clean condenser. ● Check and repair cooling fan as necessary.
	● Low-pressure pipe is not cold. ● When compressor is stopped high-pressure value quickly drops by approximately 196 kPa (2 kg/cm^2 , 28 psi). It then decreases gradually thereafter.	Poor heat exchange in condenser (After compressor operation stops, high-pressure decreases too slowly.) ↓ Air in refrigeration cycle	Evacuate and recharge system.
	Engine tends to overheat.	Engine cooling systems malfunction.	Check and repair engine cooling system.
	● An area of the low-pressure pipe is colder than areas near the evaporator outlet. ● Plates are sometimes covered with frost.	● Excessive liquid refrigerant on low-pressure side ● Excessive refrigerant discharge flow ● Expansion valve is open a little compared with the specification. ↓ Improper expansion valve adjustment	Replace expansion valve.

High-pressure Side is Too High and Low-pressure Side is Too Low

Gauge indication	Refrigerant cycle	Probable cause	Corrective action
High-pressure side is too high and low-pressure side is too low.  AC360A	Upper side of condenser and high-pressure side are hot, however, liquid tank is not so hot.	High-pressure tube or parts located between compressor and condenser are clogged or crushed.	● Check and repair or replace malfunctioning parts. ● Check oil for contamination.

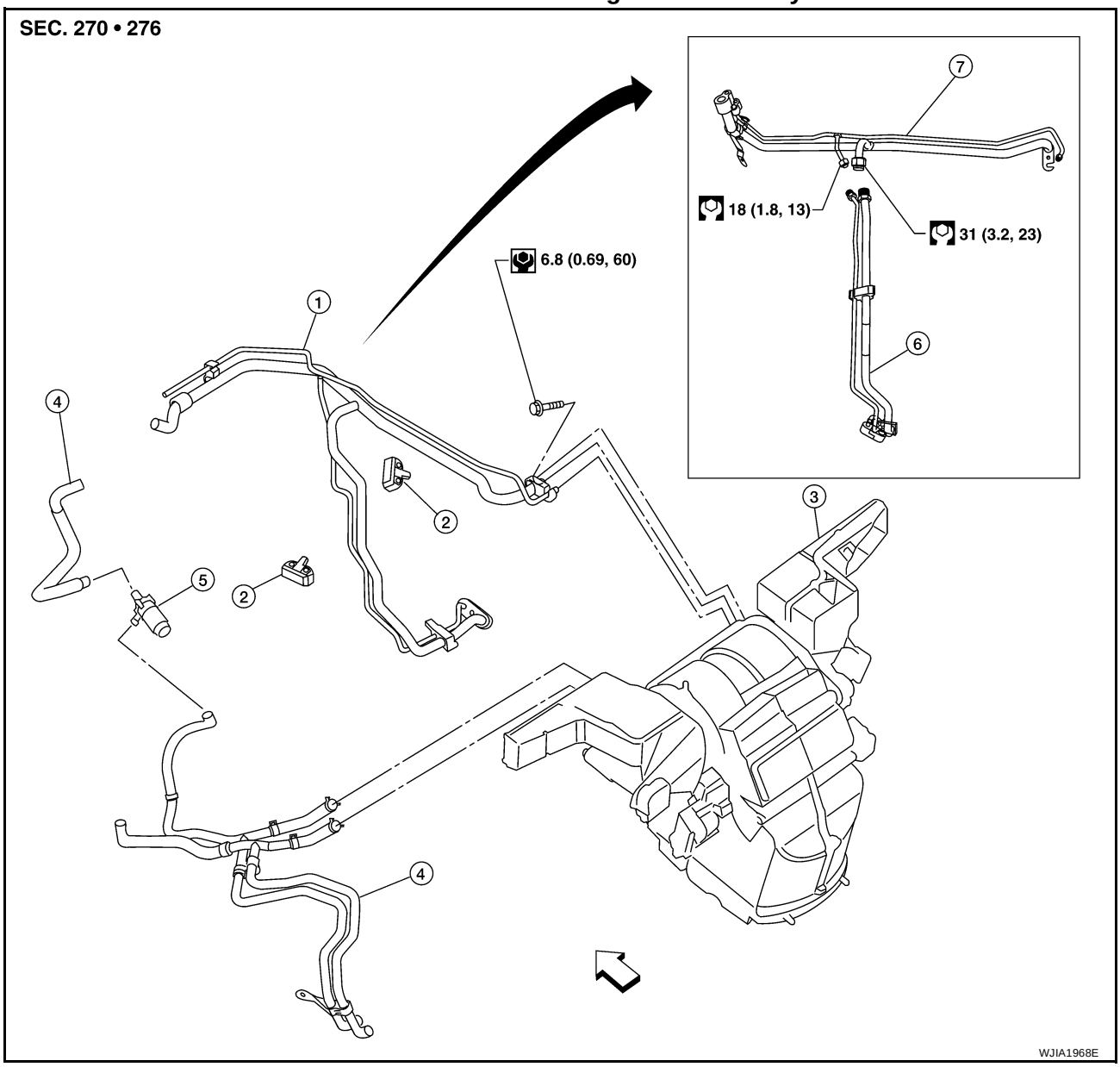
HEATER & COOLING UNIT ASSEMBLY

PFP:27110

Components

EJS004KQ

Front Heater and Cooling Unit Assembly

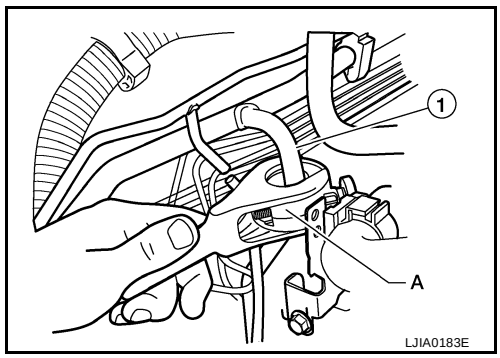


1. High/low pressure pipe (production)	2. High/low pressure pipe bracket	3. Front heater and cooling unit assembly
4. Front heater core pipe and hose assembly	5. Heater pump	6. High/low pressure pipe - lower (service)
7. High/low pressure pipe - upper (service)	⇐ Front	

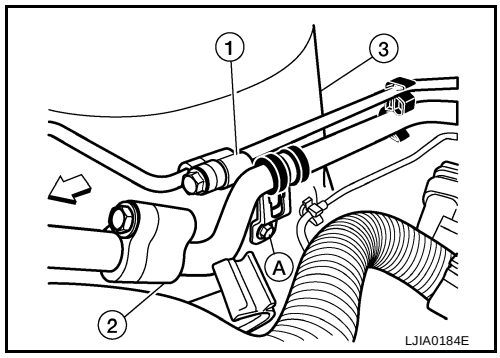
9. Carefully cut the low pressure pipe (1) using a suitable ratchet-type pipe cutter (A) as shown.

CAUTION:

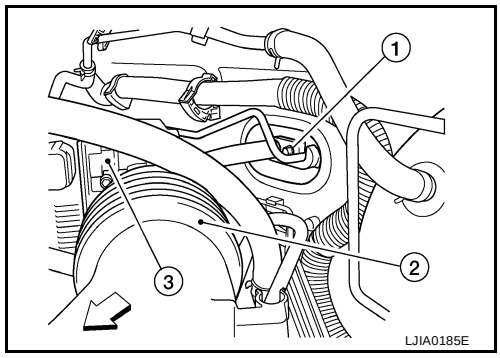
- **Do NOT damage the hydraulic brake lines or any other surrounding parts when cutting the pipe.**
- **A small amount of refrigerant may discharge from the pipe when it is cut.**



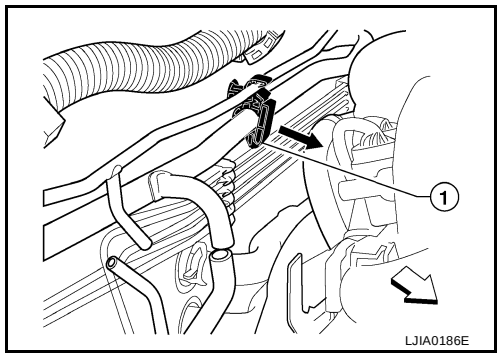
10. Disconnect the power brake booster vacuum hose from the intake manifold collector to allow removal of the cut A/C pipes.
11. Disconnect the high pressure pipe connection (1), low pressure pipe connection (2), and the A/C pipe clamp bolt (A) located near the RH front suspension strut tower (3) as shown.



12. Disconnect the high/low pressure pipe connector bolt (1) from the front expansion valve as shown.
    - Air cleaner to electric throttle control actuator tube (2)
    - Electric throttle control actuator (3)
    - ⇐: Front

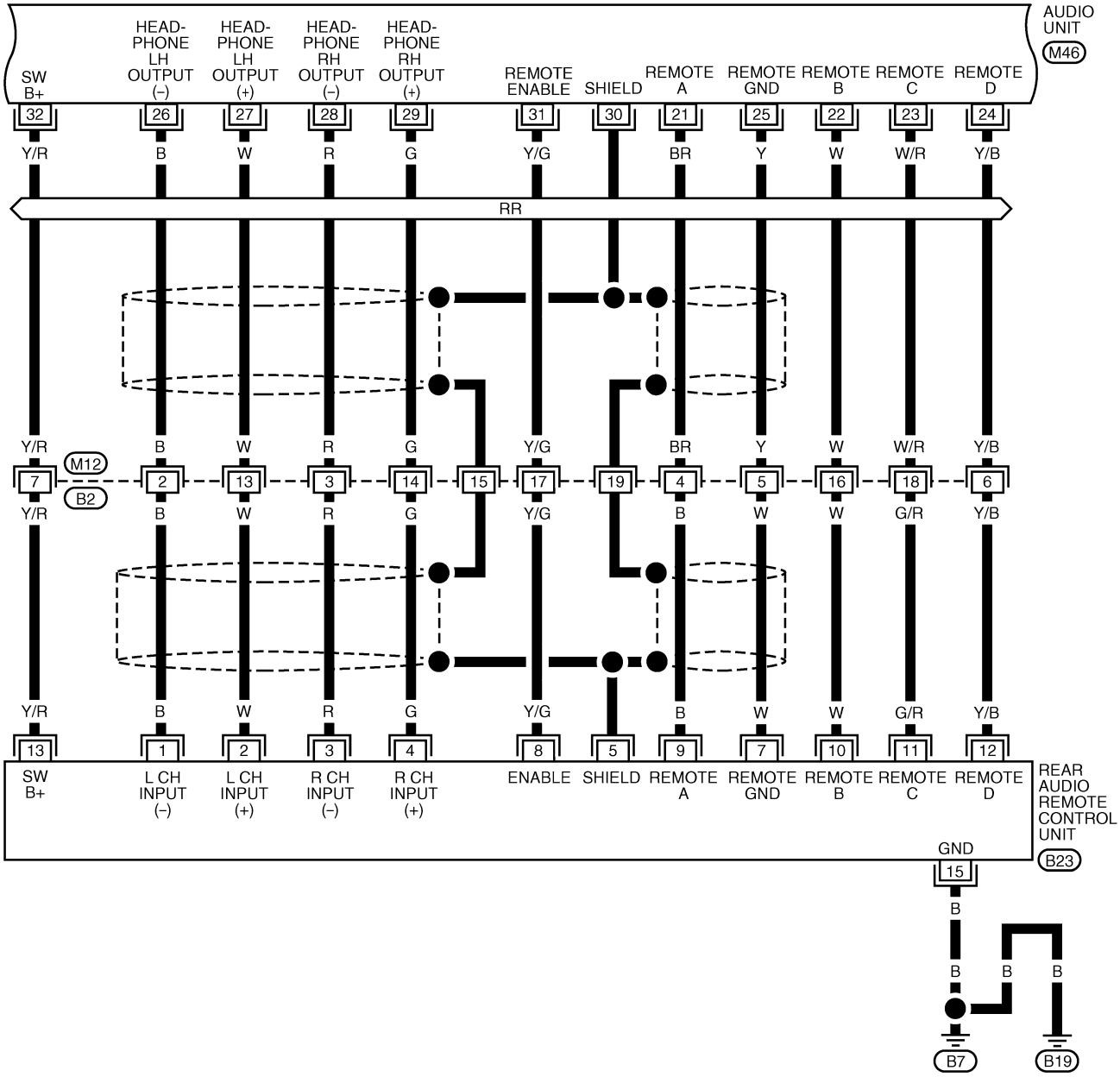


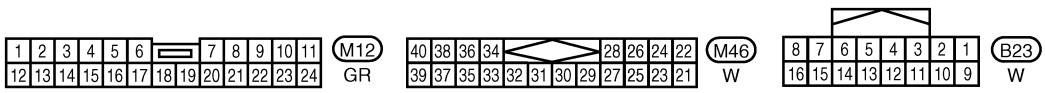
13. Use a suitable tool to pry the pipe support clip (1) from the threaded stud on the dash panel as shown.
    - ⇐: Front



AV-AUDIO-03

RR : WITH REAR AUDIO REMOTE CONTROL UNIT

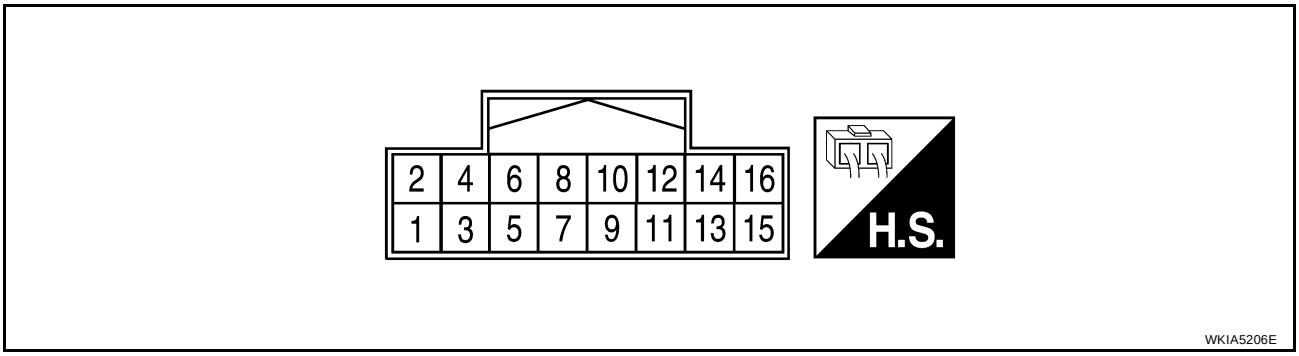




WKWA4739E

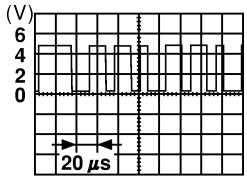
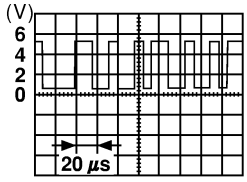
AV Switch Harness Connector Terminal Layout

EKS00HS1

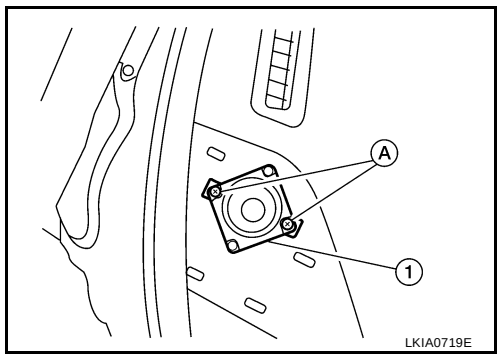


Terminals and Reference Value for AV Switch

EKS00FL0

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (Y/R)	Ground	Battery power	Input	OFF	–	Battery voltage	System does not work properly.
2 (V)	Ground	ACC signal	Input	ACC	–	Battery voltage	System does not work properly.
3 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON (position 1).	Battery voltage	AV switch illumination does not come on when lighting switch is ON (position 1).
					Turn lighting switch OFF.	Approx. 3.0V or less	
4 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V.	AV switch illumination cannot be controlled.
5 (B)	Ground	Ground	–	ON	–	0V	–
6 (V)	Ground	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.
7	–	Shield ground	–	–	–	–	–
8 (LG)	Ground	Communication signal (-)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
12 (R) *1 (V) *2	Ground	Remote control A	Input	ON	Press MODE switch	0V	Steering wheel audio controls do not function.
					Press SEEK UP switch	0.75V	
					Press VOL UP switch	2V	
					Except for above	5V	

2. Remove the front tweeter (1) by removing the screws (A) and disconnecting the harness connector.



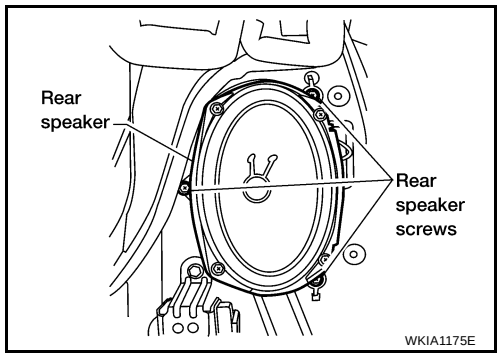
Installation

Installation is in the reverse order of removal.

REAR SPEAKER

Removal

1. Remove rear lower finisher assembly. Refer to EI-37, "REAR LOWER FINISHER ASSEMBLY" .
2. Remove the three rear speaker screws and remove speaker.
3. Disconnect rear speaker electrical connector.



Installation

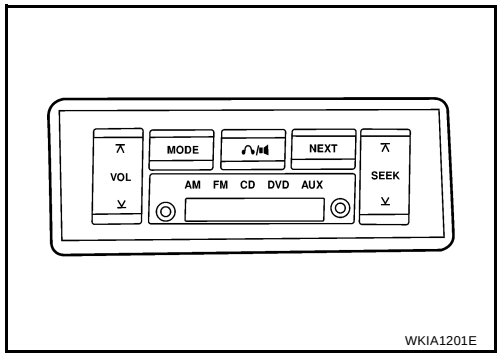
Installation is in the reverse order of removal.

REAR AUDIO CONTROL UNIT

Removal

1. Carefully remove the rear audio remote control unit from the headlining.

   CAUTION:
   Wrap removal tool with clean shop cloth to prevent damage to the headlining.
2. Disconnect rear audio electrical connector.
3. Remove the rear audio remote control unit.



Installation

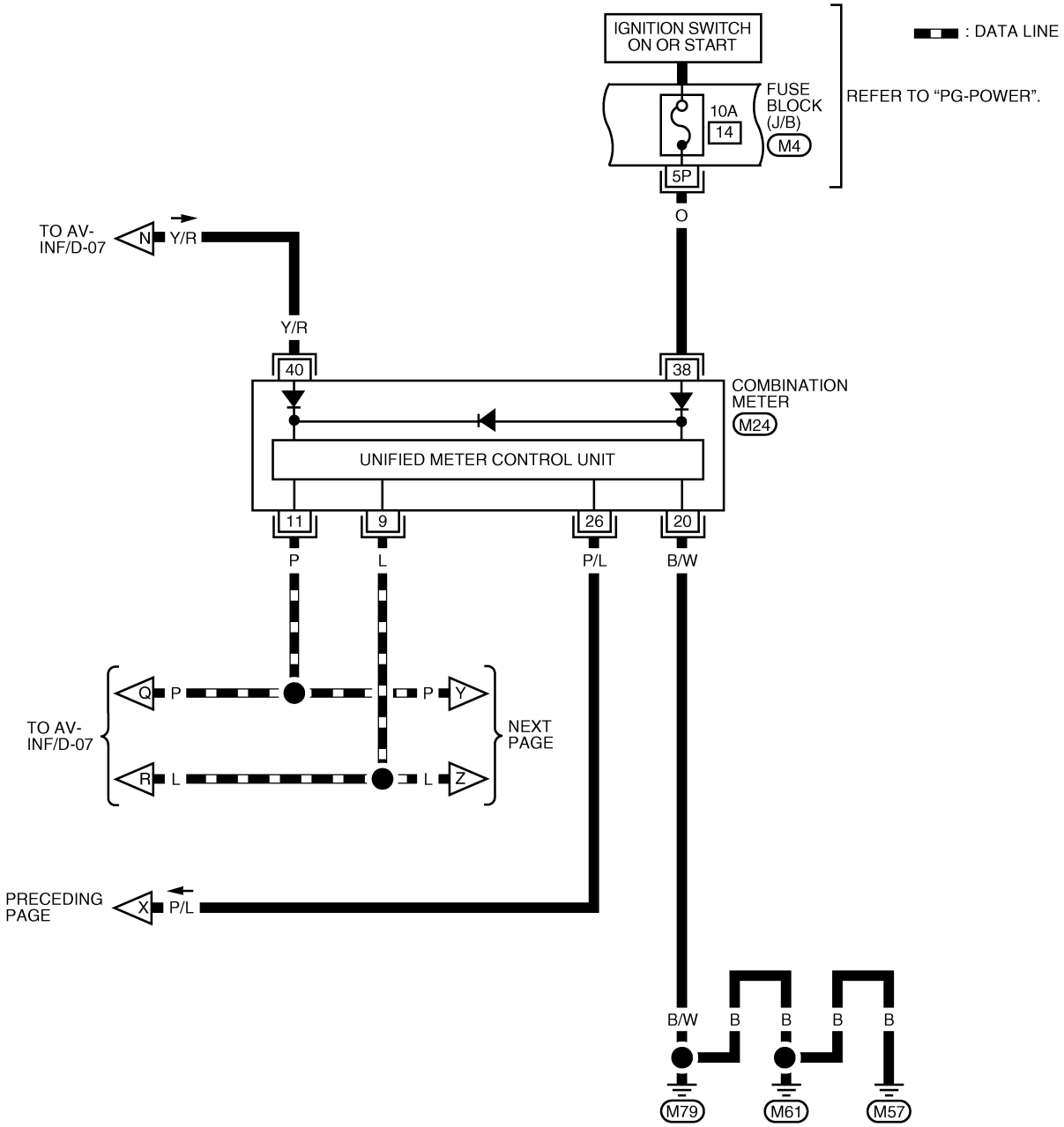
Installation is in the reverse order of removal.

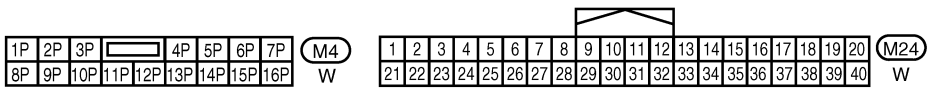
REAR TWEETER

Removal

1. Remove back door lower finisher. Refer to EI-37, "BACK DOOR LOWER FINISHER" .
2. Remove push pins and remove tweeter.

AV-INF/D-11



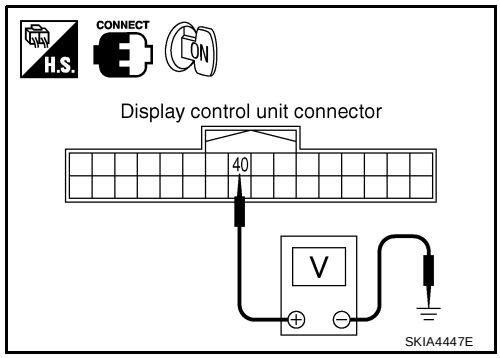


WKWA4781E

5. CHECK 3: AUDIO-TX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Connect display control unit connector.
3. Turn ignition switch ON.
4. Check signal between display control unit harness connector M95 terminal 40 and ground with CONSULT-II or oscilloscope.

40 - Ground	**: Refer to AV-133, "Terminals and Reference Value for Display Control Unit" .**



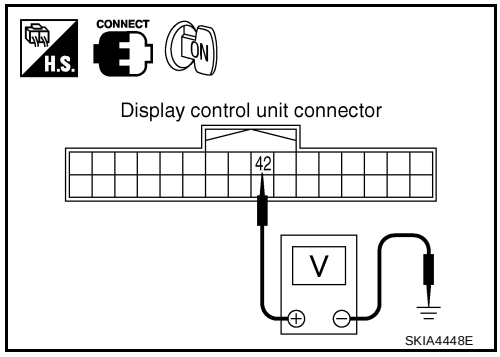
OK or NG

OK >> GO TO 6.
NG >> Replace display control unit. Refer to AV-169, "DISPLAY CONTROL UNIT" .

6. CHECK 4: AUDIO-RX COMMUNICATION SIGNAL

1. Turn ignition switch ON.
2. Check signal between display control unit harness connector M95 terminal 42 and ground with CONSULT-II or oscilloscope.

42 - Ground	**: Refer to AV-133, "Terminals and Reference Value for Display Control Unit" .**



OK or NG

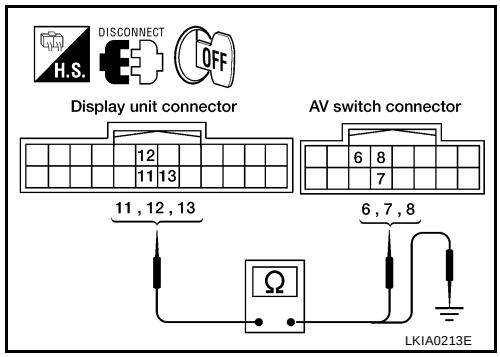
OK >> Inspection End.
NG >> Replace audio unit. Refer to AV-87, "Removal and Installation" .

AV Communication Line Check (With Monochrome Display)

EKS00HTQ

1. CHECK AV SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV switch connector.
3. Check continuity between display unit and AV switch.



Terminals				Continuity
Display unit		AV switch		
Connector	Terminal	Connector	Terminal	
M93	11	M98	6	Yes
	13		8	
	12		7	

4. Check continuity between display unit and ground.

Terminals			Continuity
Connector	Terminal	Terminal	
M93	11	Ground	No
	13		

OK or NG

OK >> GO TO 2.
NG >> Repair harness.

Screen switch						Diagnosis No.
Switch color	DCU*	DISPLAY	Audio unit	Navigation	GPS antenna	
Red	×					1
Gray	×	x				2
	x		x			3
	×			×	×	4

*: DCU = Display control unit

CAUTION:

- **When AV switch has a malfunction, you cannot start. Refer to AV-229, "Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)" .**
- **When display unit has a malfunction, you cannot start. Refer to AV-227, "Screen is Not Shown" .**

Self-Diagnosis Codes

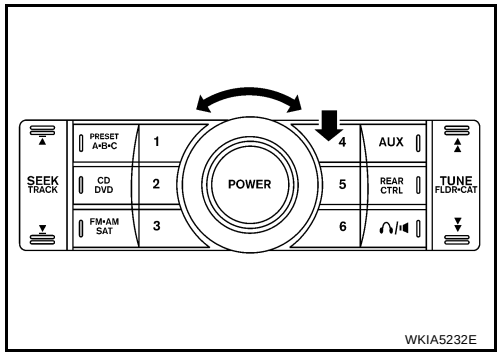
Diagnosis No.	Possible cause	Reference page
1	Display control unit malfunction.	Refer to AV-169 .
2	Display communication line between display control unit and display unit.	Refer to AV-213 .
3	Audio unit power supply and ground circuit. Audio communication line between display control unit and audio unit.	Refer to AV-211 .
4	NAVI control unit power supply and ground circuit. AV communication line between display control unit and NAVI control unit.	Refer to AV-240 .

Self-Diagnosis Mode (NAVI)

EKS00FN2

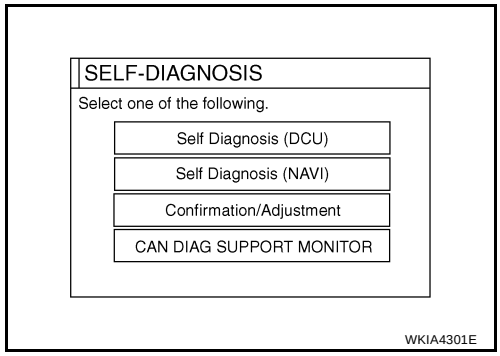
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “4” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)



WKIA5232E

4. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis (DCU)”, “Self-Diagnosis (NAVI)”, “Confirmation/Adjustment” and “CAN DIAG SUPPORT MONITOR” will become selective.

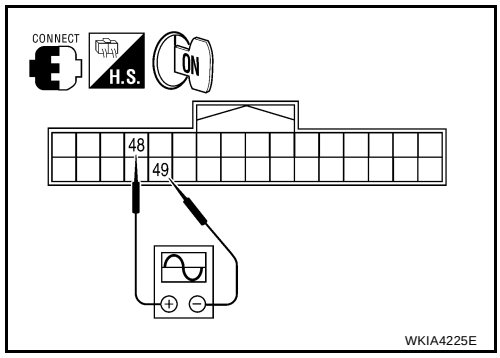


WKIA4301E

2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Check signal between NAVI control unit connector B505 terminals 48 and 49 with CONSULT-II or oscilloscope.

48 - 49 **: Refer to AV-186, "Terminals and Reference Value for NAVI Control Unit" .**



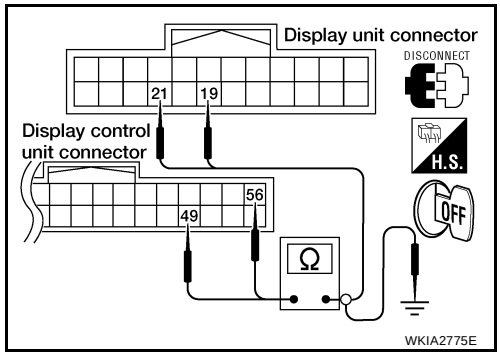
OK or NG

OK >> GO TO 3.
NG >> Replace NAVI control unit. Refer to AV-240, "NAVI CONTROL UNIT" .

3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.

Terminals				Continuity
Display control unit		Display unit		
Connector	Terminal	Connector	Terminal	
M95	56	M93	19	Yes
	49		21	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	56	Ground	No
	49		

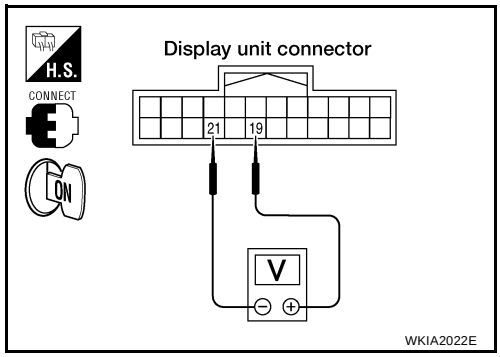
OK or NG

OK >> GO TO 4.
NG >> Repair harness.

4. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit connector M93 terminals 19 and 21 with CONSULT-II or oscilloscope.

19 - 21 **: Refer to AV-188, "Terminals and Reference Value for Display Unit" .**

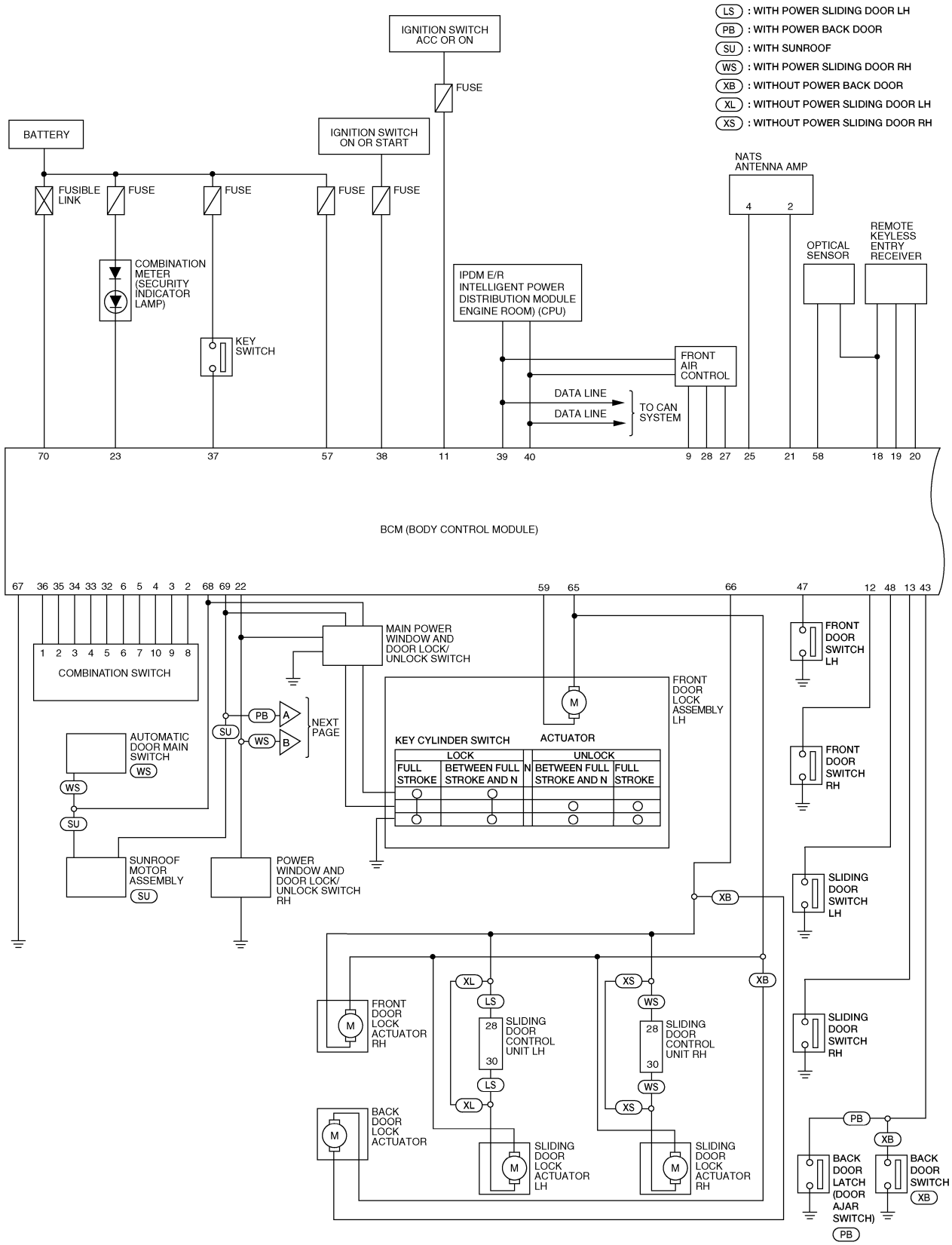


OK or NG

OK >> Replace display unit. Refer to AV-168, "DISPLAY UNIT" .
NG >> Replace display control unit. Refer to AV-169, "DISPLAY CONTROL UNIT" .

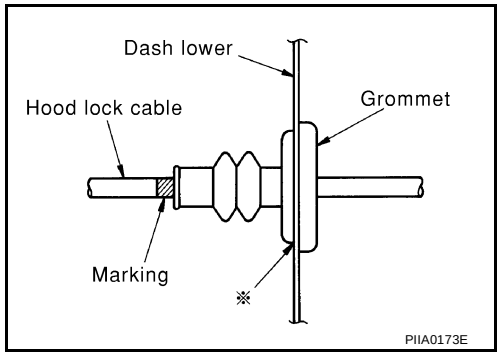
Schematic

EKS00FHT

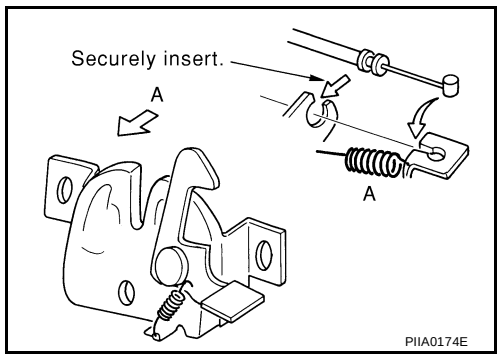


INSTALLATION

1. Pull the hood lock cable through the dash lower panel hole to the engine room. Be careful not to bend the cable too much, keeping the radius 100mm (3.94 in) or more.
2. Make sure the cable is not offset from the positioning grommet, and push the grommet into the panel hole securely.
3. Apply the sealant around the grommet at * mark.



4. Install the cable securely to the lock.
5. After installing, check the hood lock adjustment and hood opener operation. Refer to BL-14, "HOOD LOCK ADJUSTMENT" .



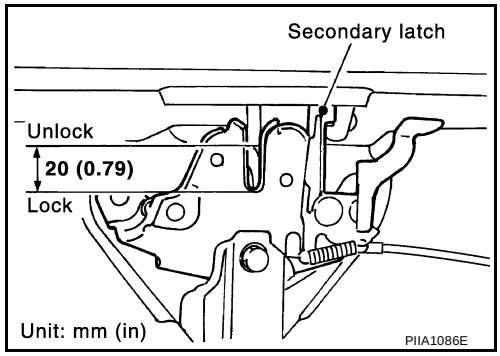
Hood Lock Control Inspection

EIS007D9

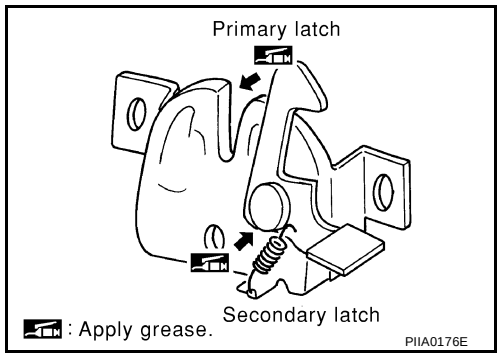
CAUTION:

If the hood lock cable is bent or deformed, replace it.

1. Make sure the secondary latch is properly engaged with the secondary striker with hood's own weight by dropping it from approx. 200 mm (7.87 in) height.
2. While operating the hood opener, carefully make sure the front end of the hood is raised by approx. 20 mm (0.79 in). Also make sure the hood opener returns to the original position.



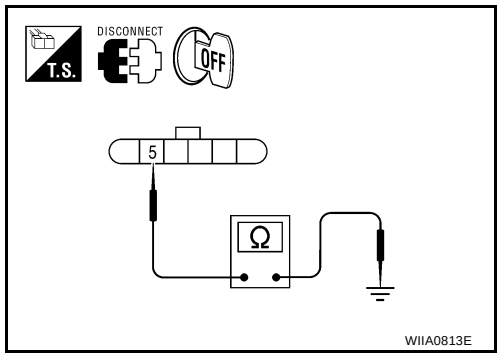
3. Check the hood lock lubrication condition. If necessary, apply “body grease” to the points shown in the figure.



2. CHECK DOOR KEY CYLINDER SWITCH LH GROUND HARNESS

1. Turn ignition switch OFF.
2. Disconnect front door lock assembly LH (key cylinder switch).
3. Check continuity between front door lock assembly LH (key cylinder switch) connector D14 terminal 5 and body ground.

Connector	Terminals	Continuity
D14	5 – Ground	Yes



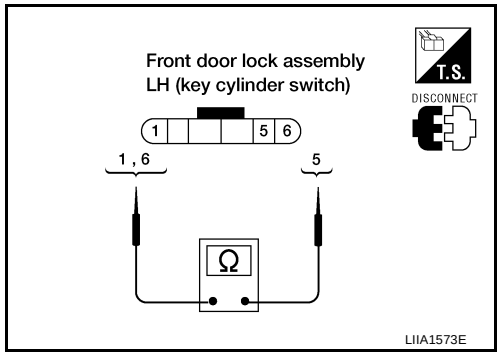
OK or NG

OK >> GO TO 3.
NG >> Repair or replace harness.

3. CHECK DOOR KEY CYLINDER SWITCH LH

Check continuity between front door lock assembly LH (key cylinder switch) terminals.

Terminals	Condition	Continuity
1 – 5	Key is turned to UNLOCK or neutral.	No
	Key is turned to LOCK.	Yes
5 – 6	Key is turned to LOCK or neutral.	No
	Key is turned to UNLOCK.	Yes

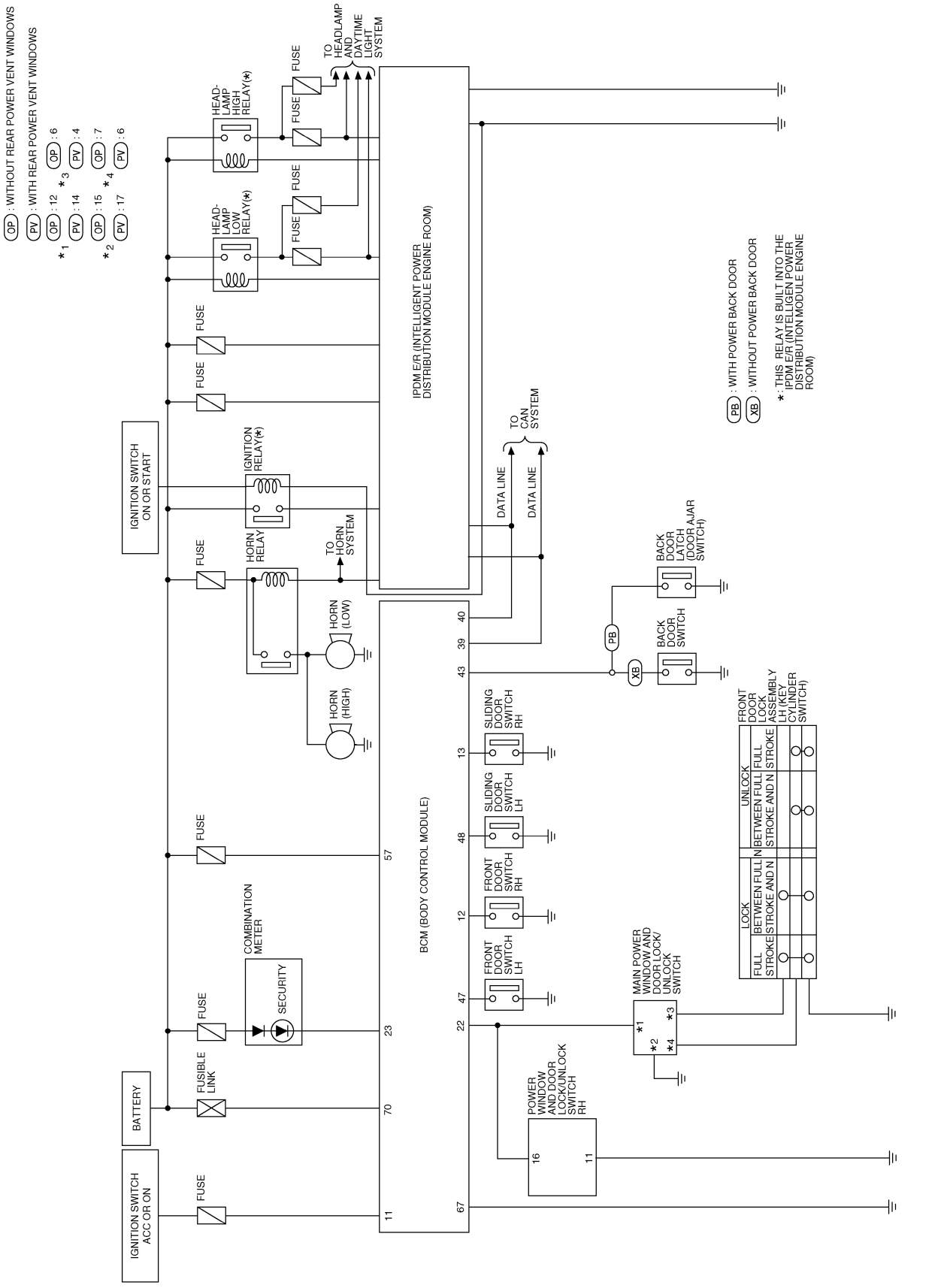


OK or NG

OK >> GO TO 4.
NG >> Replace front door lock assembly LH (key cylinder switch). Refer to BL-190, "FRONT DOOR LOCK" .

Schematic

EIS007EK

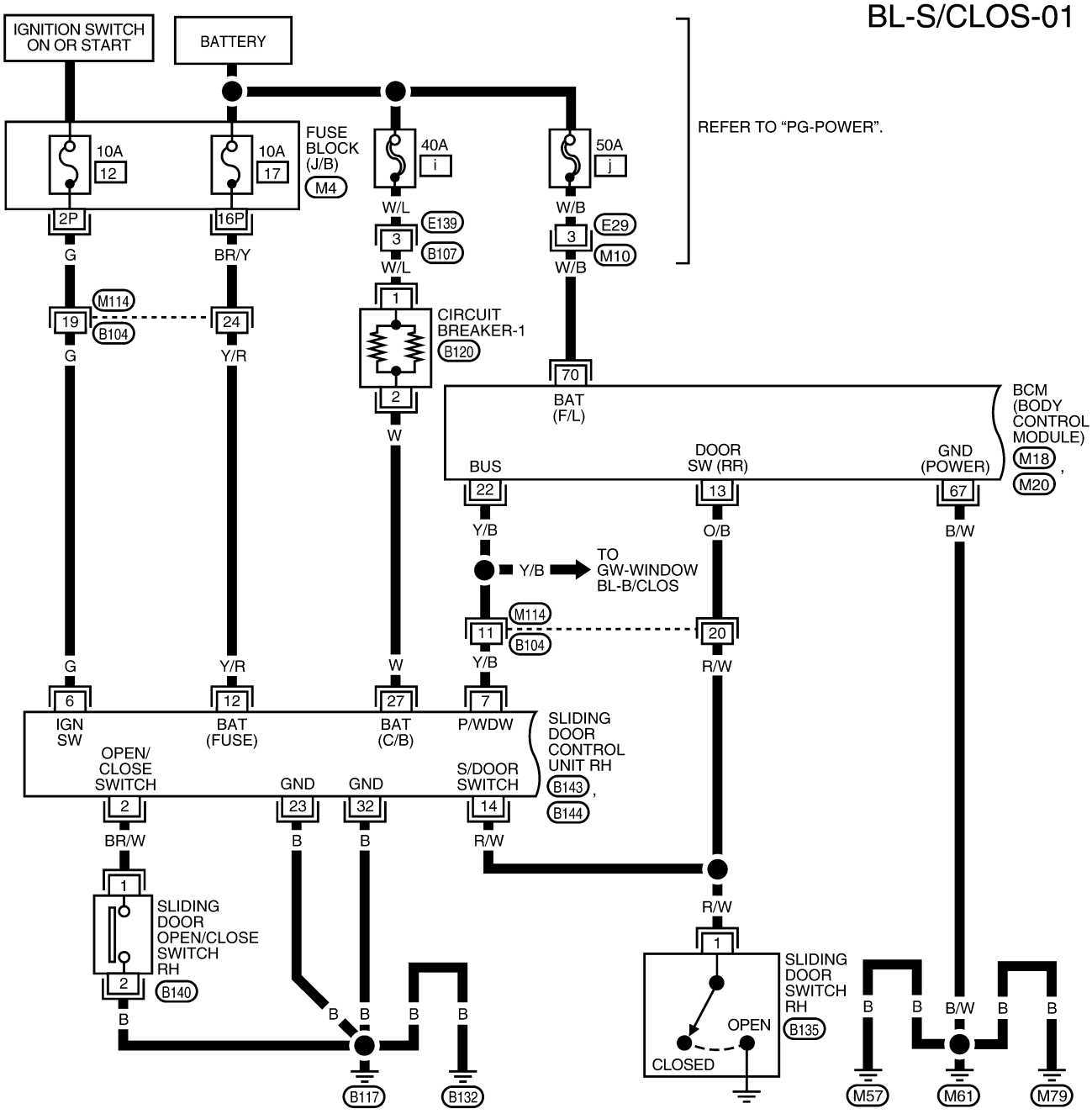


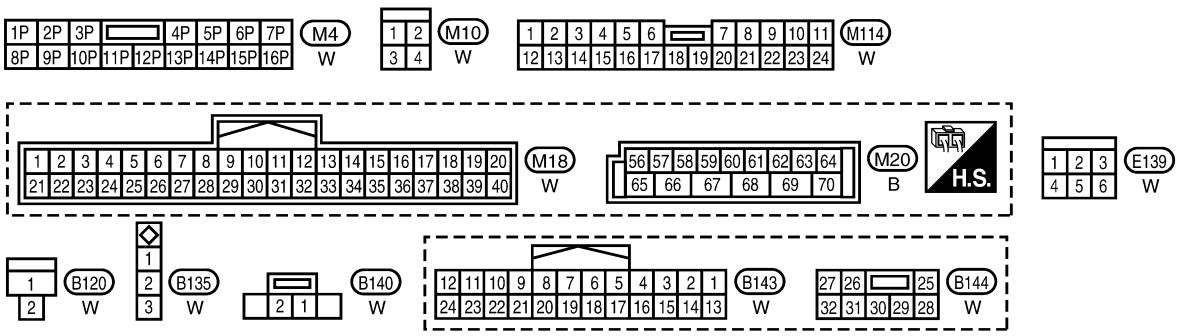
WIWA1827E

Wiring Diagram — S/CLOS —

WITH RH AUTOMATIC SLIDING DOOR SYSTEM

EIS007F1



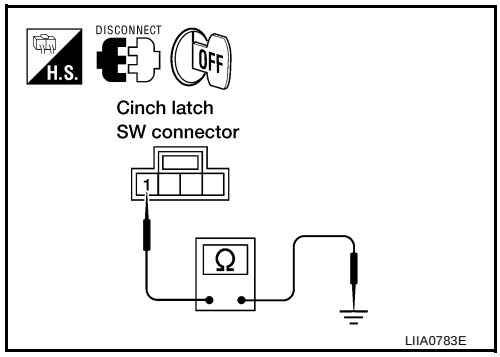


WIWA1834E

3. NEUTRAL SWITCH GROUND INSPECTION

1. Close the sliding door.
2. Check continuity between cinch latch switch connector D202 (LH) or D302 (RH) terminal 1 and ground.

1 - Ground : Continuity should exist.



OK or NG

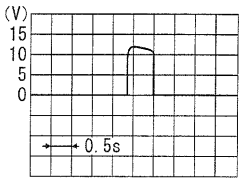
OK >> Replace the cinch latch switch.
NG >> Repair or replace harness.

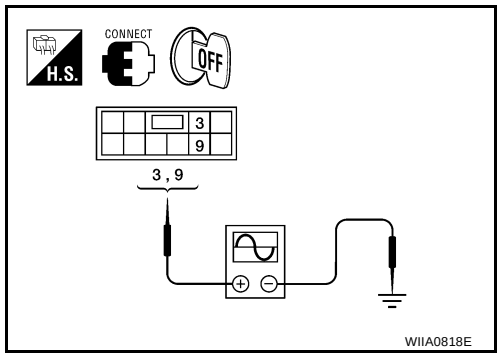
Cinch Latch Motor System Inspection

EIS007FM

1. CINCH LATCH MOTOR SIGNAL INSPECTION

1. Turn ignition switch OFF.
2. While fully opening and closing the sliding door, check voltage waveform between sliding door latch control unit connector D204 (LH) or D304 (RH) terminals 3, 9 and ground using an oscilloscope.

3 - Ground 9 - Ground	 SIIA1480E



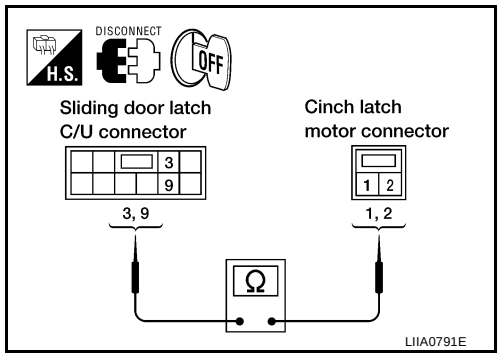
OK or NG

OK >> GO TO 2.
NG >> Replace the sliding door latch control unit.

2. CINCH LATCH MOTOR CIRCUIT INSPECTION

1. Disconnect cinch latch switch and sliding door latch control unit.
2. Check continuity between cinch latch motor connector D203 (LH) or D303 (RH) terminals 1, 2 and sliding door latch control unit connector D204 (LH) or D304 (RH) terminals 3, 9.

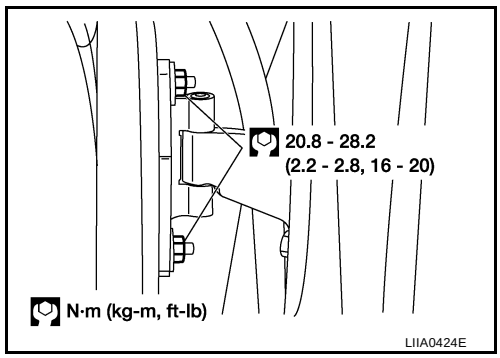
1 - 3 : Continuity should exist.
2 - 9 : Continuity should exist.



OK or NG

OK >> GO TO 3.
NG >> Repair or replace harness.

5. Remove the door-side hinge nuts and bolts, and remove the door assembly.



Installation is in the reverse order of removal.

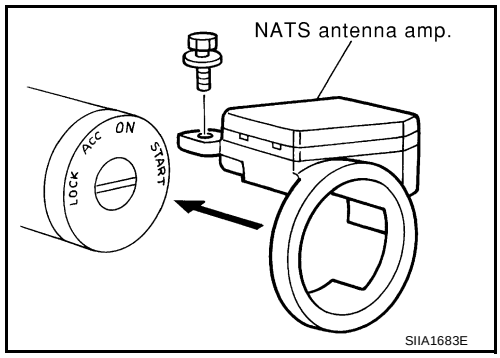
- Align the front door. Refer to BL-183, "Longitudinal clearance and surface height adjustment at front end" .

How to Replace NATS Antenna Amp.

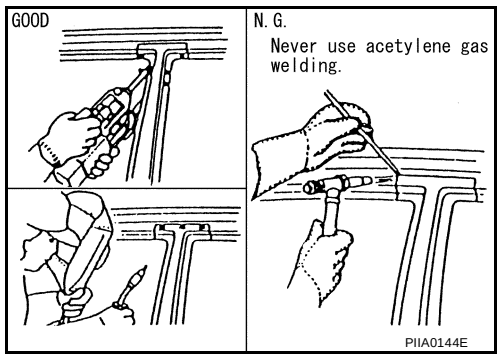
EIS007GV

NOTE:

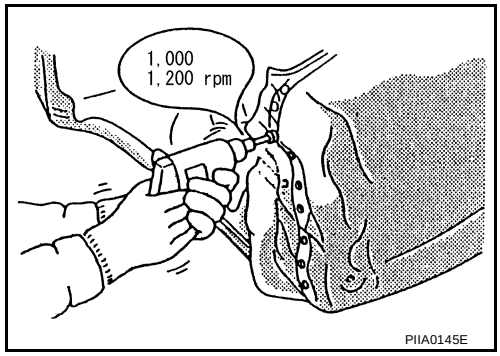
- **If NATS antenna amp. is not installed correctly, NVIS (NATS) system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show “LOCK MODE” or “CHAIN OF IMMU-KEY”.**
- **Initialization is not necessary when only NATS antenna amp. is replaced with a new one.**



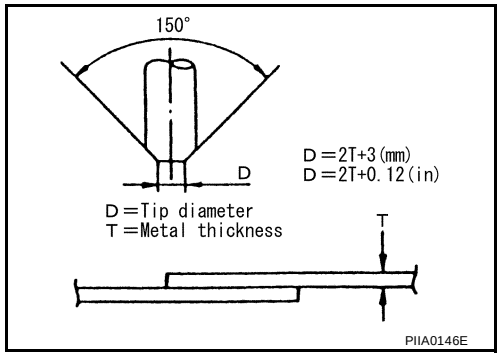
- When welding HSS panels, use spot welding whenever possible in order to minimize weakening surrounding areas due to heat.
  If spot welding is impossible, use M.I.G. welding. Do not use gas (torch) welding because it is inferior in welding strength.



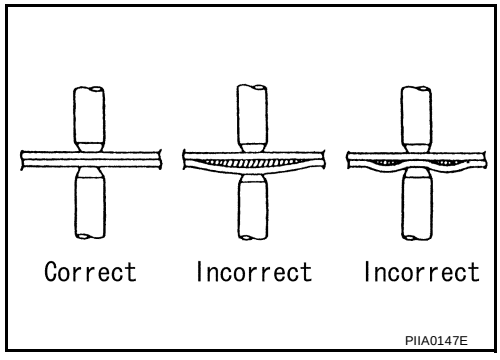
- The spot weld on HSS panels is harder than that of an ordinary steel panel.
  Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.
- SP150 HSS panels with a tensile strength of 785 to 981 N/mm^2 (80 to 100 kg/mm^2, 114 to 142 klb/sq in), used as reinforcement in the door guard beams, is too strong to repair. When these HSS parts are damaged, the outer panels also sustain substantial damage; therefore, the assembly parts must be replaced.



2. Precautions in spot welding HSS
   This work should be performed under standard working conditions. Always note the following when spot welding HSS:
   - The electrode tip diameter must be sized properly according to the metal thickness.



   - The panel surfaces must fit flush to each other, leaving no gaps.



BRAKE MASTER CYLINDER

PFP:46010

On-board Inspection

EFS005YT

LEAK INSPECTION

- Check for leaking in the master cylinder installation surface, the reservoir tank installation surface, the reservoir hose connections, and the brake tube connections.

Removal and Installation

EFS005YU

CAUTION:

Be careful not to splash brake fluid on painted areas, it may cause damage. If brake fluid is splashed on painted areas, wash it away with water immediately.

REMOVAL

1. Remove the cowl top and cowl top extension. Refer to EI-19, "Removal and Installation" .
2. Drain the brake fluid. Refer to BR-11, "Changing Brake Fluid" .
3. Remove the air cleaner to electric throttle control actuator tube attached to air cleaner case (upper). Refer to EM-16, "Removal and Installation" .
4. Disconnect the harness connector for the brake fluid level switch.
5. Disconnect the master cylinder brake tubes and the hose from the reservoir tank to the sub tank using a suitable tool.
6. Remove the master cylinder nuts and remove the master cylinder.

INSTALLATION

CAUTION:

- **Refill with new brake fluid. Refer to MA-9, "Fluids and Lubricants" .**
- **Never reuse drained brake fluid.**

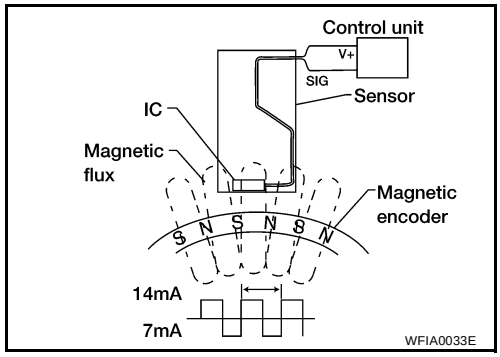
1. Place master cylinder onto brake booster and tighten the master cylinder nuts to specification. Refer to BR-16, "Disassembly and Assembly" .
2. Connect the sub tank hose to the master cylinder reservoir tank and fill the sub tank with new brake fluid.
3. Plug all ports on master cylinder with your fingers to prevent air suction while releasing brake pedal.
4. Have an assistant depress brake pedal slowly several times until no air comes out of the master cylinder.
   - Install and tighten brake tube flare nuts to specification. Refer to BR-12, "Hydraulic Circuit" .
   - Refill the brake system fluid and bleed the air from the brake system. Refer to BR-11, "Bleeding Brake System" .
5. Installation of the remaining components is in reverse order of removal.

- TCS may be activated during sudden vehicle acceleration, wide open throttle acceleration, sudden transmission shifts or when the vehicle is driven on a road with a varying surface friction coefficient.
- The SLIP indicator lamp flashes to inform the driver of TCS operation.

Wheel Sensors

EFS005ZZ

Each wheel sensor unit consists of a wheel hub with a series of internal magnets and a sensor element. The wheel sensors are installed on the inner side of the wheel knuckles. As the wheel rotates, the sensor generates a square-wave signal. The frequency increases as the wheel speed increases.



Fail-Safe Function

EFS00600

CAUTION:
If the Fail-Safe function is activated, perform the Self Diagnosis for ABS/TCS system.

ABS/EBD SYSTEM

In case of an electrical malfunction with the ABS, the ABS warning lamp and SLIP indicator lamp will turn on. In case of an electrical malfunction with the EBD system, the BRAKE warning lamp, ABS warning lamp and SLIP indicator lamp will turn on.
The system will revert to one of the following conditions of the Fail-Safe function.

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

TCS SYSTEM

In case of TCS system malfunction, the SLIP indicator lamp is turned on and the condition of the vehicle is the same as the condition of vehicles without TCS system. In case of an electrical malfunction with the TCS system, the ABS control continues to operate normally without TCS control.

Vehicle Jerks During TCS Activation

EFS0060Q

1. ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS

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

Are self-diagnosis result items displayed?

YES >> After checking and repairing the applicable item, perform the ABS actuator and electric unit (control unit) self-diagnosis again.
NO >> GO TO 2.

2. ENGINE SPEED SIGNAL INSPECTION

Perform data monitor with CONSULT-II for the ABS actuator and electric unit (control unit).

Is the engine speed at idle 400 rpm or higher?

YES >> GO TO 4.
NO >> GO TO 3.

3. ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis.

Are self-diagnosis result items displayed?

YES >> After checking and repairing the applicable item, perform the ECM self-diagnosis again.
NO >> GO TO 4.

4. TCM SELF-DIAGNOSIS

Perform TCM self-diagnosis.

Are self-diagnosis result items displayed?

YES >> After checking and repairing the applicable item, perform the TCM self-diagnosis again.
NO >> GO TO 5.

5. CONNECTOR INSPECTION

Disconnect the ABS actuator and electric unit (control unit) connector and the ECM connectors and check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 6.
NG >> Repair or replace as necessary.

6. CAN COMMUNICATION INSPECTION

Check the CAN communication system. Refer to LAN-44, "TROUBLE DIAGNOSIS" .

OK or NG

OK >> Inspection End.
NG >> Refer to LAN-44, "TROUBLE DIAGNOSIS" .

Item (Unit)	Data monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
ACTUATOR RLY (ON/OFF)	–	×	×	ABS actuator relay signal (ON/OFF) status is displayed.
EBD WARN LAMP (ON/OFF)	–	–	×	Brake warning lamp (ON/OFF) status is displayed.
P POSI SIG (ON/OFF)	–	–	×	Shift position judged by PNP switch signal.
N POSI SIG (ON/OFF)	–	–	×	Shift position judged by PNP switch signal.
CRANKING SIG (ON/OFF)	–	–	×	Ignition switch START position signal input status is displayed.
CV1 (ON/OFF)	–	–	×	Primary side switch-over solenoid valve (cut valve) (ON/OFF) status is displayed.
CV2 (ON/OFF)	–	–	×	Secondary side switch-over solenoid valve (cut-valve) (ON/OFF) status is displayed.
SV1 (ON/OFF)	–	–	×	Primary side switch-over solenoid valve (suction valve) (ON/OFF) status is displayed.
SV2 (ON/OFF)	–	–	×	Secondary side switch-over solenoid valve (suction valve) (ON/OFF) status is displayed.
VDC FAIL SIG (ON/OFF)	–	–	×	VDC fail signal (ON/OFF) status is displayed.
TCS FAIL SIG (ON/OFF)	–	–	×	TCS fail signal (ON/OFF) status is displayed.
ABS FAIL SIG (ON/OFF)	–	–	×	ABS fail signal (ON/OFF) status is displayed.
EBD FAIL SIG (ON/OFF)	–	–	×	EBD fail signal (ON/OFF) status is displayed.
FLUID LEV SW (ON/OFF)	×	–	×	Brake fluid level switch (ON/OFF) status is displayed.
EBD SIGNAL (ON/OFF)	–	–	×	EBD operation (ON/OFF) status is displayed.
ABS SIGNAL (ON/OFF)	–	–	×	ABS operation (ON/OFF) status is displayed.
TCS SIGNAL (ON/OFF)	–	–	×	TCS operation (ON/OFF) status is displayed.
VDC SIGNAL (ON/OFF)	–	–	×	VDC operation (ON/OFF) status is displayed.
STOP LAMP SW2	–	–	×	ASCD (ON/OFF) status is displayed.

×: Applicable
–: Not applicable

ACTIVE TEST

CAUTION:

- **Do not perform active test while driving.**
- **Make sure to completely bleed air from the brake system.**
- **The ABS and brake warning lamps turn on during the active test.**

Operation Procedure

1. Connect the CONSULT-II and CONSULT-II CONVERTER to the data link connector and start the engine.

ENGINE COOLANT

PFP:KQ100

System Check

EBS00PSS

WARNING:

- **Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure fluid escaping from the radiator.**
- **Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing down and turning it all the way.**

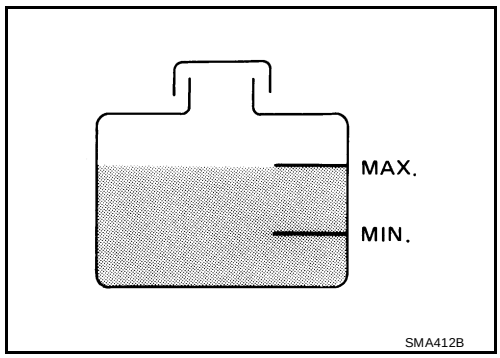
CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks
- Damage
- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

- Check if the reservoir tank coolant level is within MIN to MAX when the engine is cool.
- Adjust coolant level if it is too much or too little.

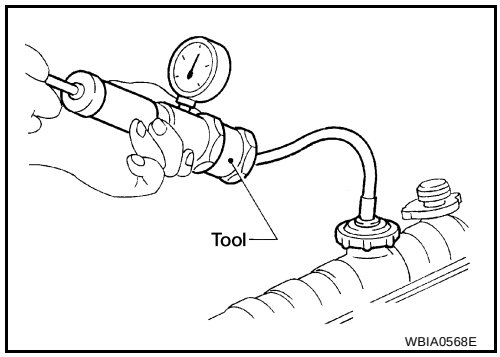


CHECKING COOLING SYSTEM FOR LEAKS

To check for leakage, apply pressure to the cooling system using Tool.

Tool number : EG17650301 (J-33984-A)

Testing pressure : 157 kPa (1.6 kg/cm^2 , 23 psi)



WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

Higher pressure than specified may cause radiator damage.

CHECKING RADIATOR CAP

1. Inspect the radiator cap.
   - Replace the cap if the metal plunger cannot be seen around the edge of the black rubber gasket.
   - Replace the cap if deposits of waxy residue or other foreign material are on the black rubber gasket or the metal retainer.

   NOTE:
   Thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.

DATA MONITOR

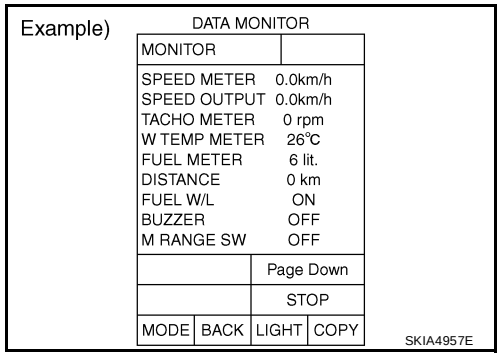
Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Touch either "MAIN SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

MAIN SIGNALS	Monitors main signals.
SELECTION FROM MENU	Selects and monitors individual signal.

3. Touch "START".
4. When "SELECTION FROM MENU" is selected, touch individual items to be monitored. When "MAIN SIGNALS" is selected, main items will be monitored.
5. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Example)



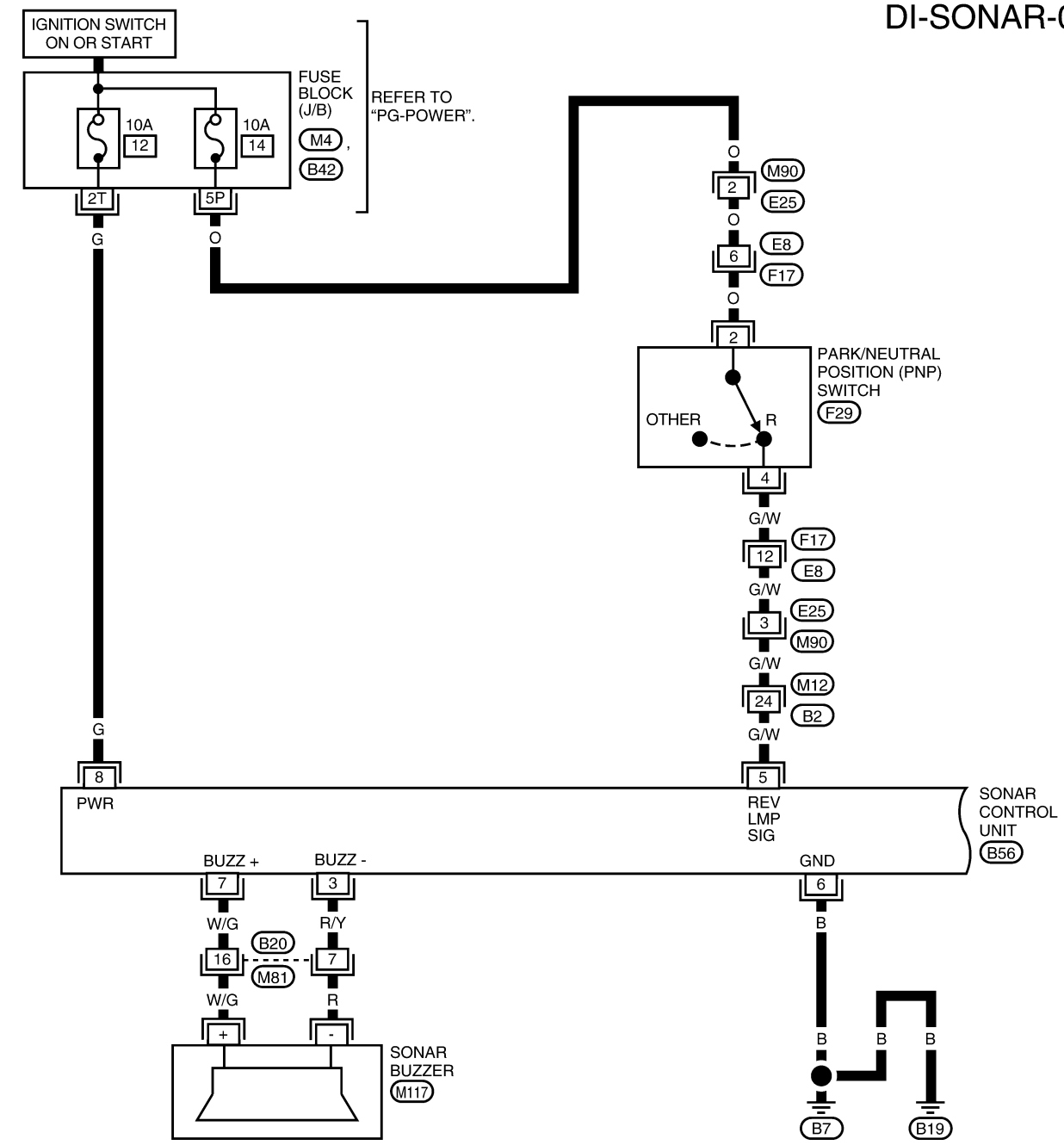
Display Item List

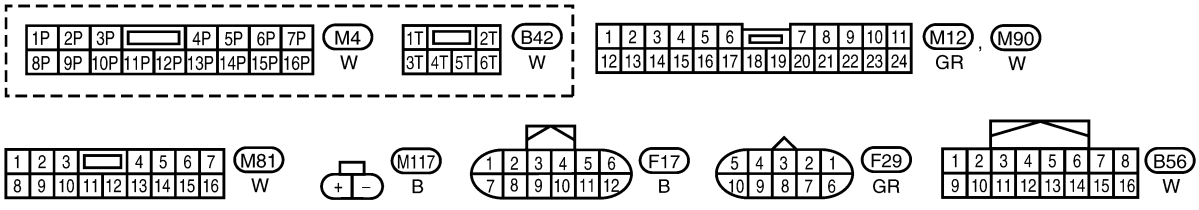
Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
SPEED METER [km/h] or [mph]	X	X	This is the angle correction value after the speed signal from the ABS actuator and electric unit (control unit) is converted into the vehicle speed.
SPEED OUTPUT [km/h] or [mph]	X	X	This is the angle correction value before the speed signal from the ABS actuator and electric unit (control unit) is converted into the vehicle speed.
TACHO METER [rpm]	X	X	This is the converted value for the engine speed signal from the ECM.
W TEMP METER [°C] or [°F]	X	X	This is the converted value for the water temp signal from the ECM.
FUEL METER [lit.]	X	X	This is the processed value for the signal (resistance value) from the fuel gauge.
DISTANCE [km]	X	X	This is the calculated value for the speed signal from the ABS actuator and electric unit (control unit), the signal (resistance signal) from the fuel gauge and fuel consumption from ECM.
FUEL W/L [ON/OFF]	X	X	Indicates [ON/OFF] condition of low fuel warning lamp.
C-ENG W/L [ON/OFF]		X	Indicates [ON/OFF] condition of malfunction indicator lamp.
AIR PRES W/L [ON/OFF]		X	Indicates [ON/OFF] condition of low tire pressure indicator lamp.
SEAT BELT W/L [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt warning lamp.
BUZZER [ON/OFF]	X	X	Indicates [ON/OFF] condition of buzzer.
DOOR W/L [ON/OFF]		X	Indicates [ON/OFF] condition of door warning lamp.
HI-BEAM IND [ON/OFF]		X	Indicates [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		X	Indicates [ON/OFF] condition of turn indicator.
OIL W/L [ON/OFF]		X	Indicates [ON/OFF] condition of oil pressure warning lamp.
VDC/TCS IND [ON/OFF]		X	Indicates [ON/OFF] condition of VDC OFF indicator lamp.
ABS W/L [ON/OFF]		X	Indicates [ON/OFF] condition of ABS warning lamp.
SLIP IND [ON/OFF]		X	Indicates [ON/OFF] condition of SLIP indicator lamp.

Wiring Diagram — SONAR —

EKS00FG6

DI-SONAR-01





WKWA4672E

INDEX FOR DTC

DTC*1		Items (CONSULT-II screen terms)	Reference page
CONSULT-II GST*2	ECM*3		
P1211	1211	TCS C/U FUNCTN	EC-542
P1212	1212	TCS/CIRC	EC-543
P1217	1217	ENG OVER TEMP	EC-544
P1225	1225	CTP LEARNING	EC-555
P1226	1226	CTP LEARNING	EC-557
P1402	1402	EGR SYSTEM	EC-559
P1421	1421	COLD START CONTROL	EC-566
P1564	1564	ASCD SW	EC-568
P1572	1572	ASCD BRAKE SW	EC-576
P1574	1574	ASCD VHL SPD SEN	EC-584
P1610 - P1615	1610 - 1615	NATS MALFUNCTION	BL-203
P1800	1800	VIAS S/V CIRC	EC-586
P1805	1805	BRAKE SW/CIRCUIT	EC-591
P2100	2100	ETC MOT PWR	EC-596
P2101	2101	ETC FUNCTION/CIRC	EC-602
P2103	2103	ETC MOT PWR	EC-596
P2118	2118	ETC MOT	EC-609
P2119	2119	ETC ACTR	EC-615
P2122	2122	APP SEN 1/CIRC	EC-617
P2123	2123	APP SEN 1/CIRC	EC-617
P2127	2127	APP SEN 2/CIRC	EC-624
P2128	2128	APP SEN 2/CIRC	EC-624
P2135	2135	TP SENSOR	EC-632
P2138	2138	APP SENSOR	EC-640
P2A00	2A00	A/F SENSOR 1 (B1)	EC-648
P2A03	2A03	A/F SENSOR 1 (B2)	EC-648

*1: 1st trip DTC No. is the same as DTC No.
*2: This number is prescribed by SAE J2012.
*3: In Diagnostic Test Mode II (Self-diagnostic results), this number is controlled by NISSAN.
*4: The troubleshooting for this DTC needs CONSULT-II.

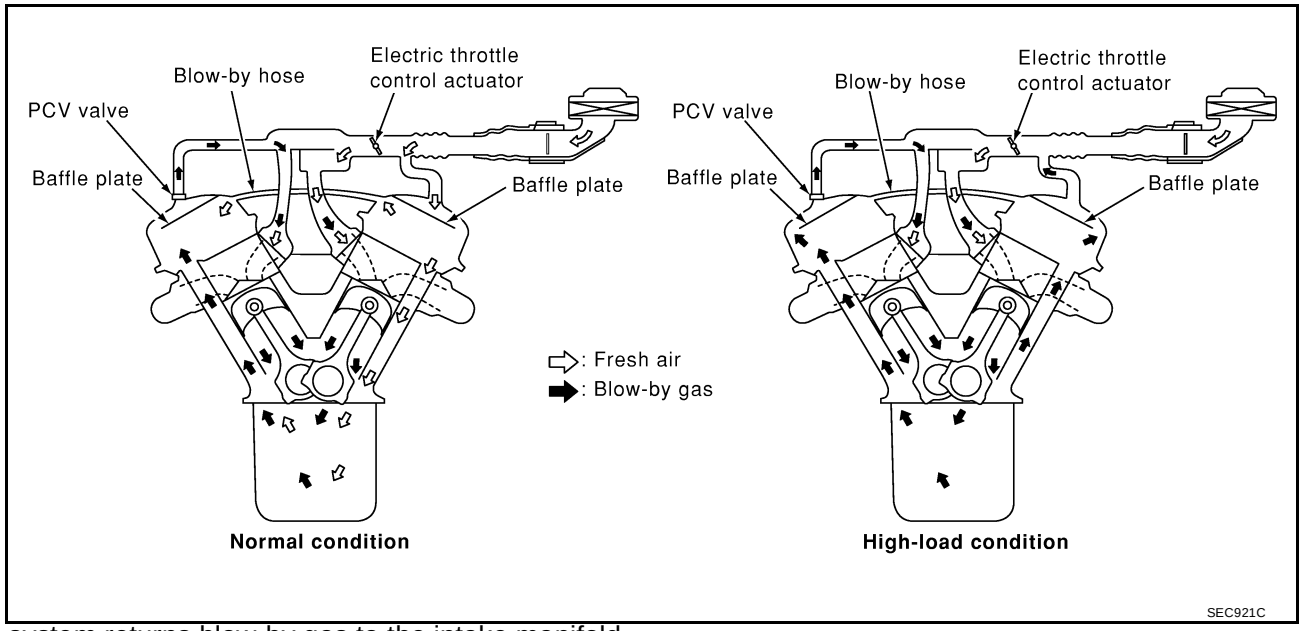
POSITIVE CRANKCASE VENTILATION

PFP:11810

Description

UBS00P15

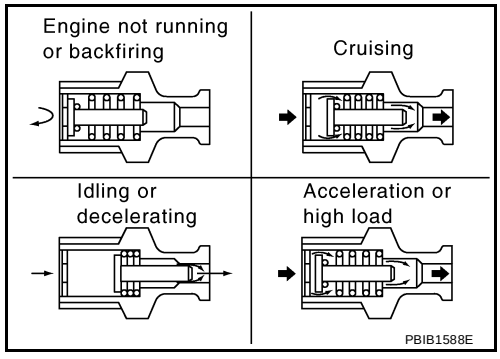
SYSTEM DESCRIPTION



This system returns blow-by gas to the intake manifold.

The positive crankcase ventilation (PCV) valve is provided to conduct crankcase blow-by gas to the intake manifold. During partial throttle operation of the engine, the intake manifold sucks the blow-by gas through the PCV valve. Normally, the capacity of the valve is sufficient to handle any blow-by and a small amount of ventilating air. The ventilating air is then drawn from the air inlet tubes into the crankcase. In this process the air passes through the hose connecting air inlet tubes to rocker cover. Under full-throttle condition, the manifold vacuum is insufficient to draw the blow-by flow through the valve. The flow goes through the hose connection in the reverse direction.

On vehicles with an excessively high blow-by, the valve does not meet the requirement. This is because some of the flow will go through the hose connection to the air inlet tubes under all conditions.

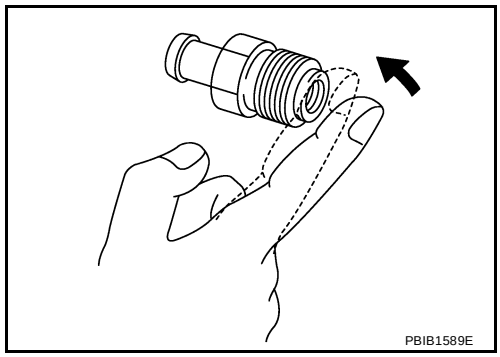


Component Inspection

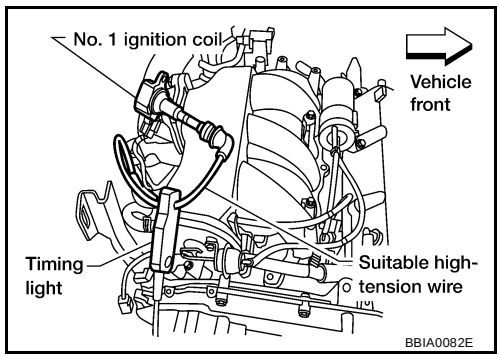
UBS00P16

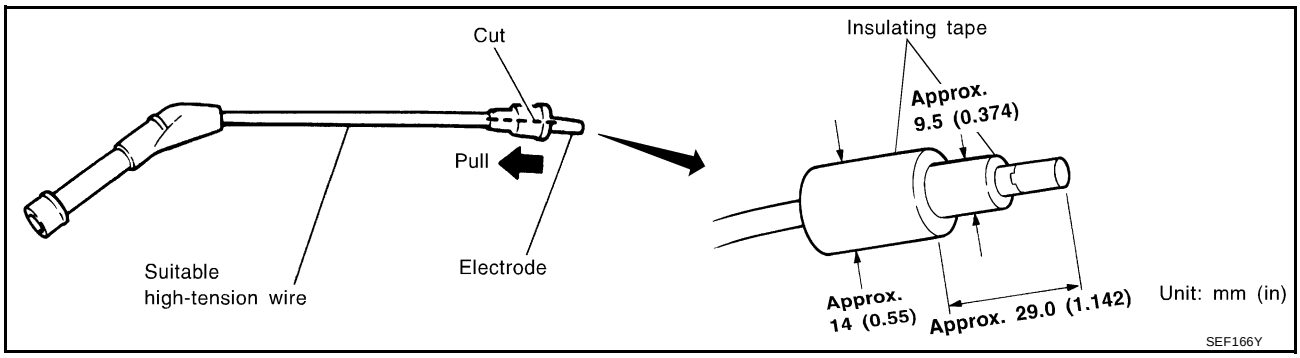
PCV (POSITIVE CRANKCASE VENTILATION) VALVE

With engine running at idle, remove PCV valve from rocker cover. A properly working valve makes a hissing noise as air passes through it. A strong vacuum should be felt immediately when a finger is placed over valve inlet.

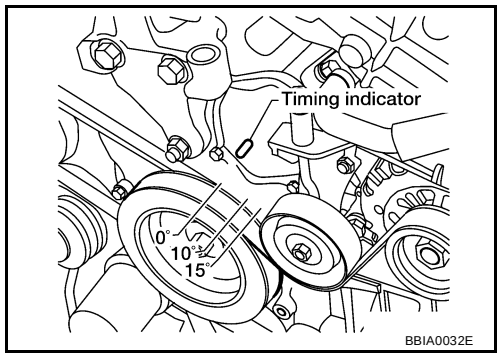


2. Connect No.1 ignition coil and spark plug with suitable high-tension wire as shown, and attach timing light clamp to this wire.





3. Check ignition timing.



Procedure After Replacing ECM

UBS00QA8

When replacing ECM, the following procedure must be performed.

1. Perform initialization of NVIS (NATS) system and registration of all NVIS (NATS) ignition key IDs. Refer to BL-205, "ECM Re-communicating Function" .
2. Perform EC-79, "VIN Registration" .
3. Perform EC-80, "Accelerator Pedal Released Position Learning" .
4. Perform EC-80, "Throttle Valve Closed Position Learning" .
5. Perform EC-80, "Idle Air Volume Learning" .

VIN Registration

UBS00P1F

DESCRIPTION

VIN Registration is an operation to registering VIN in ECM. It must be performed each time ECM is replaced.

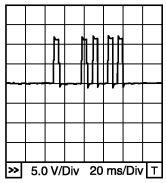
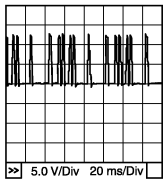
NOTE:

Accurate VIN which is registered in ECM may be required for Inspection & Maintenance (I/M).

OPERATION PROCEDURE

With CONSULT-II

1. Check the VIN of the vehicle and note it. Refer to GI-47, "IDENTIFICATION INFORMATION" .
2. Turn ignition switch ON and engine stopped.

TER-MINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
25	P	Heated oxygen sensor 2 heater (Bank 1)	**[Engine is running]** ● Engine speed: Below 3,600 rpm after the following conditions are met – Engine: After warming up – Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load.	0 - 1.0V
			[Ignition switch: ON] ● Engine stopped **[Engine is running]** ● Engine speed: Above 3,600 rpm	BATTERY VOLTAGE (11 - 14V)
29	Y/G	VIAS control solenoid valve	**[Engine is running]** ● Idle speed	BATTERY VOLTAGE (11 - 14V)
			[Engine is running] ● Engine speed: Between 1,800 and 3,600 rpm	0 - 1.0V
32	BR	EVAP control system pressure sensor	**[Ignition switch: ON]**	Approximately 1.8 - 4.8V
33	Y	Camshaft position sensor (PHASE) (Bank 1)	**[Engine is running]** ● **Warm-up condition** ● Idle speed **NOTE:** The pulse cycle changes depending on rpm at idle	1.0 - 4.0V★  PBIB1039E
			[Engine is running] ● Engine speed: 2,000 rpm	1.0 - 4.0V★  PBIB1040E
34	Y/G	Intake air temperature sensor	**[Engine is running]**	Approximately 0 - 4.8V Output voltage varies with intake air temperature.

25. CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Improper specification of intake air system

OK or NG

OK >> GO TO 27.
NG >> Repair or replace malfunctioning part, and then GO TO 26.

26. CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "DATA MONITOR (SPEC)" mode, and make sure that the indication is within the SP value.

OK or NG

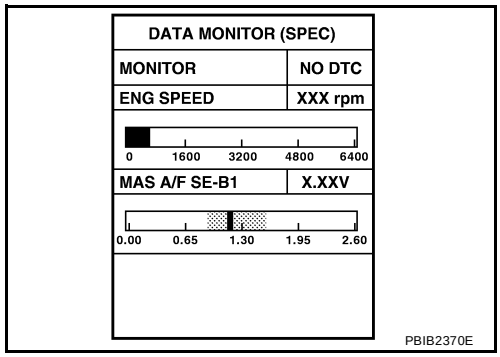
OK >> **INSPECTION END**
NG (Less than the SP value)>>GO TO 27.

27. CHECK "MAS A/F SE-B1"

Select "MAS A/F SE-B1" in "DATA MONITOR (SPEC)" mode, and make sure that the indication is within the SP value.

OK or NG

OK >> GO TO 28.
NG (Less than the SP value)>>Replace mass air flow sensor, and then GO TO 30.



28. CHECK INTAKE SYSTEM

Check for the cause of air leak after the mass air flow sensor. Refer to the following.

- Disconnection, looseness, and cracks in air duct
- Looseness of oil filler cap
- Disconnection of oil level gauge
- Open stuck, breakage, hose disconnection, or cracks of PCV valve
- Disconnection or cracks of EVAP purge hose, open stuck of EVAP canister purge volume control solenoid valve
- Malfunctioning seal of rocker cover gasket
- Disconnection, looseness, or cracks of hoses, such as vacuum hose, connecting to intake air system parts
- Malfunctioning seal of intake air system, etc.

>> GO TO 30.

29. CHECK "A/F ALPHA-B1", "A/F ALPHA-B2", AND "B/FUEL SCHDL"

Select "A/F ALPHA-B1", "A/F ALPHA-B2", and "B/FUEL SCHDL" in "DATA MONITOR (SPEC)" mode, and make sure that the each indication is within the SP value.

OK or NG

OK >> **INSPECTION END**
NG >> Detect malfunctioning part according to EC-95, "Symptom Matrix Chart" .

Specification data are reference values and are measured between each terminal and ground.

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)
6	GR	Heated oxygen sensor 2 heater (bank 2)	**[Engine is running]** ● Engine speed: Below 3,600 rpm after the following conditions are met. – Engine: After warming up – Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load.	0 - 1.0V
			[Ignition switch: ON] ● Engine stopped **[Engine is running]** ● Engine speed: Above 3,600 rpm.	BATTERY VOLTAGE (11 - 14V)
55	W	Heated oxygen sensor 2 (Bank 2)	**[Engine is running]** ● Revving engine from idle to 3,000 rpm quickly after the following conditions are met – Engine: After warming up – Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - Approximately 1.0V
78	B	Heated oxygen sensor 2 ground	**[Engine is running]** ● **Warm-up condition** ● Idle speed	Approximately 0V

Component Inspection

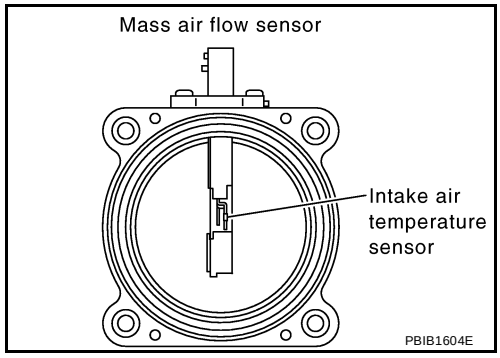
UBS00P3W

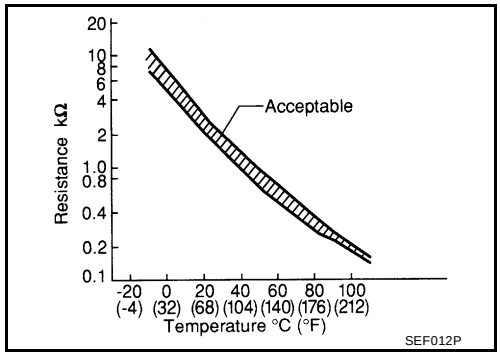
INTAKE AIR TEMPERATURE SENSOR

1. Check resistance between mass air flow sensor terminals 1 and 2 under the following conditions.

Intake air temperature °C (°F)	Resistance kΩ
25 (77)	1.800 - 2.200

2. If NG, replace mass air flow sensor (with intake air temperature sensor).





Removal and Installation

UBS00P3X

MASS AIR FLOW SENSOR

Refer to EM-16, "AIR CLEANER AND AIR DUCT" .

Removal and Installation

UBS00P51

AIR FUEL RATIO (A/F) SENSOR 1

Refer to EM-26, "EXHAUST MANIFOLD AND THREE WAY CATALYST" .

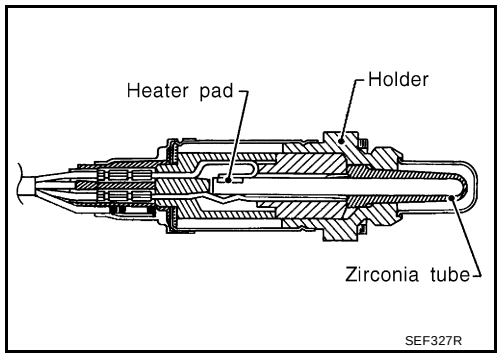
DTC P0137, P0157 HO2S2

PFP:226A0

Component Description

UBS00P5N

The heated oxygen sensor 2, after three way catalyst (manifold), monitors the oxygen level in the exhaust gas on each bank.
Even if switching characteristics of the A/F sensor 1 are shifted, the air-fuel ratio is controlled to stoichiometric, by the signal from the heated oxygen sensor 2.
This sensor is made of ceramic zirconia. The zirconia generates voltage from approximately 1V in richer conditions to 0V in leaner conditions.
Under normal conditions the heated oxygen sensor 2 is not used for engine control operation.



CONSULT-II Reference Value in Data Monitor Mode

UBS00P5O

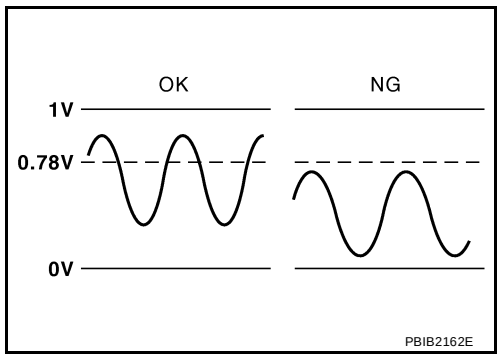
Specification data are reference values.

MONITOR ITEM	CONDITION	SPECIFICATION
HO2S2 (B1) HO2S2 (B2)	● Revving engine from idle to 3,000 rpm quickly after the following conditions are met – Engine: After warming up – Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - 0.3V ←→ Approx. 0.6 - 1.0V
HO2S2 MNTR (B1) HO2S2 MNTR (B2)		LEAN ←→ RICH

On Board Diagnosis Logic

UBS00P5P

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the heated oxygen sensor 1. The oxygen storage capacity of the three way catalyst (manifold) causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the maximum voltage of the sensor is sufficiently high during the various driving condition such as fuel-cut.



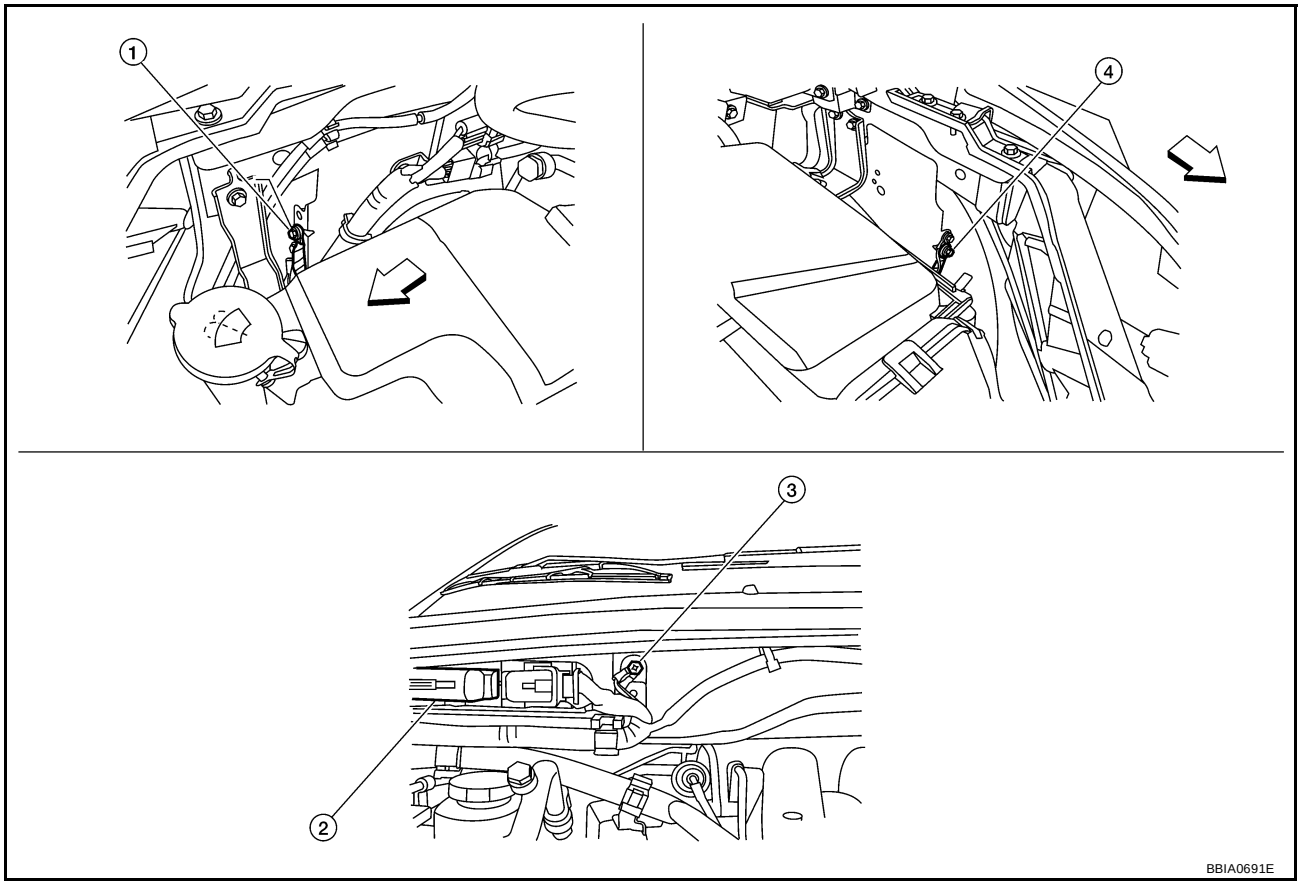
DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0137 0137 (Bank 1)	Heated oxygen sensor 2 circuit low voltage	The maximum voltage from the sensor is not reached to the specified voltage.	● Harness or connectors (The sensor circuit is open or shorted) ● Heated oxygen sensor 2 ● Fuel pressure ● Fuel injector ● Intake air leaks
P0157 0157 (Bank 2)			

Diagnostic Procedure

UBS00P6B

1. CHECK GROUND CONNECTIONS

1. Turn ignition switch OFF.
2. Loosen and retighten three ground screws on the body. Refer to EC-158, "Ground Inspection" .



⇦: Vehicle front

1. Body ground E24
2. ECM
3. Body ground E9
4. Body ground E15

OK or NG

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

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E5, F14
- Harness connectors B106, E138
- Harness connectors B148, B251
- Harness for open or short between “fuel level sensor unit and fuel pump” and ECM

>> Repair open circuit or short to ground or short to power in harness or connector.

6. CHECK FUEL TANK TEMPERATURE SENSOR

Refer to EC-351, "Component Inspection" .

OK or NG

OK >> GO TO 7.
NG >> Replace “fuel level sensor unit and fuel pump”.

7. CHECK INTERMITTENT INCIDENT

Refer to EC-149, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

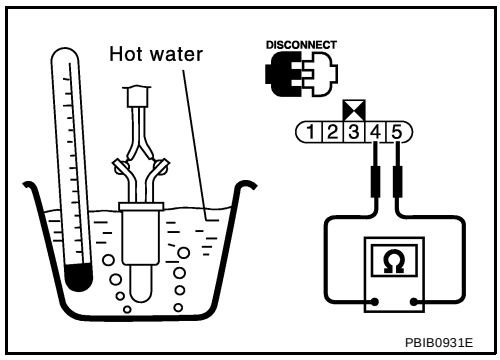
Component Inspection

UBS00P6R

FUEL TANK TEMPERATURE SENSOR

1. Remove “fuel level sensor unit and fuel pump”.
2. Check resistance between “fuel level sensor unit and fuel pump” terminals 4 and 5 by heating with hot water or heat gun as shown in the figure.

Temperature °C (°F)	Resistance kΩ
20 (68)	2.3 - 2.7
50 (122)	0.79 - 0.90



Removal and Installation

UBS00P6S

FUEL TANK TEMPERATURE SENSOR

Refer to FL-5, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" .

6. CHECK CKP SENSOR (POS) INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal 13 and CKP sensor (POS) terminal 2. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

OK >> GO TO 7.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

7. CHECK CRANKSHAFT POSITION SENSOR (POS)

Refer to EC-386, "Component Inspection" .

OK or NG

OK >> GO TO 8.
NG >> Replace crankshaft position sensor (POS).

8. CHECK GEAR TOOTH

Visually check for chipping signal plate gear tooth.

OK or NG

OK >> GO TO 9.
NG >> Replace the signal plate.

9. CHECK INTERMITTENT INCIDENT

Refer to EC-149, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

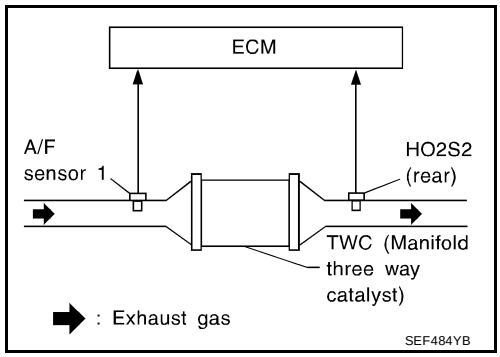
DTC P0420, P0430 THREE WAY CATALYST FUNCTION

PFP:20905

On Board Diagnosis Logic

UBS00P8I

The ECM monitors the switching frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2.
A three way catalyst (manifold) with high oxygen storage capacity will indicate a low switching frequency of heated oxygen sensor 2. As oxygen storage capacity decreases, the heated oxygen sensor 2 switching frequency will increase.
When the frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2 approaches a specified limit value, the three way catalyst (manifold) malfunction is diagnosed.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0420 0420 (Bank 1) P0430 0430 (Bank 2)	Catalyst system efficiency below threshold	● Three way catalyst (manifold) does not operate properly. ● Three way catalyst (manifold) does not have enough oxygen storage capacity.	● Three way catalyst (manifold) ● Exhaust tube ● Intake air leaks ● Fuel injector ● Fuel injector leaks ● Spark plug ● Improper ignition timing

DTC Confirmation Procedure

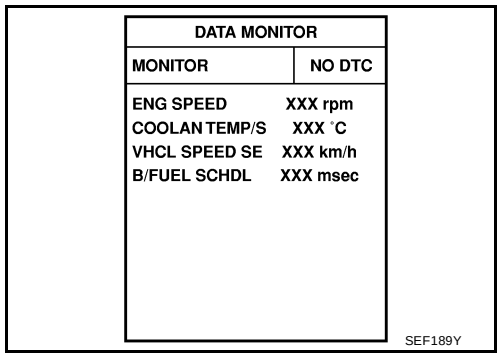
UBS00P8J

NOTE:
If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

WITH CONSULT-II

TESTING CONDITION:
Do not hold engine speed for more than the specified minutes below.

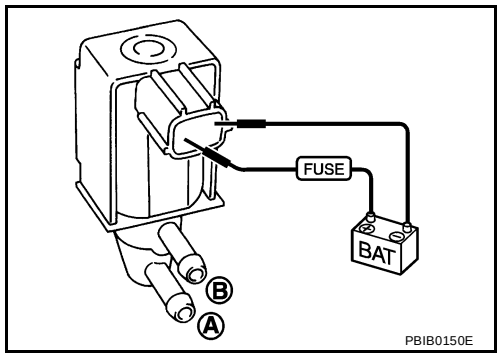
1. Turn ignition switch ON and select “DATA MONITOR” mode with CONSULT-II.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
5. Let engine idle for 1 minute.
6. Make sure that “COOLAN TEMP/S” indicates more than 70°C (158°F).
   If not, warm up engine and go to next step when “COOLAN TEMP/S” indication reaches to 70°C (158°F).
7. Open engine hood.



Without CONSULT-II

Check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

Condition	Air passage continuity between A and B
12V direct current supply between terminals 1 and 2	Yes
No supply	No



UBS00P99

Removal and Installation

EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to EM-18, "INTAKE MANIFOLD COLLECTOR"

.

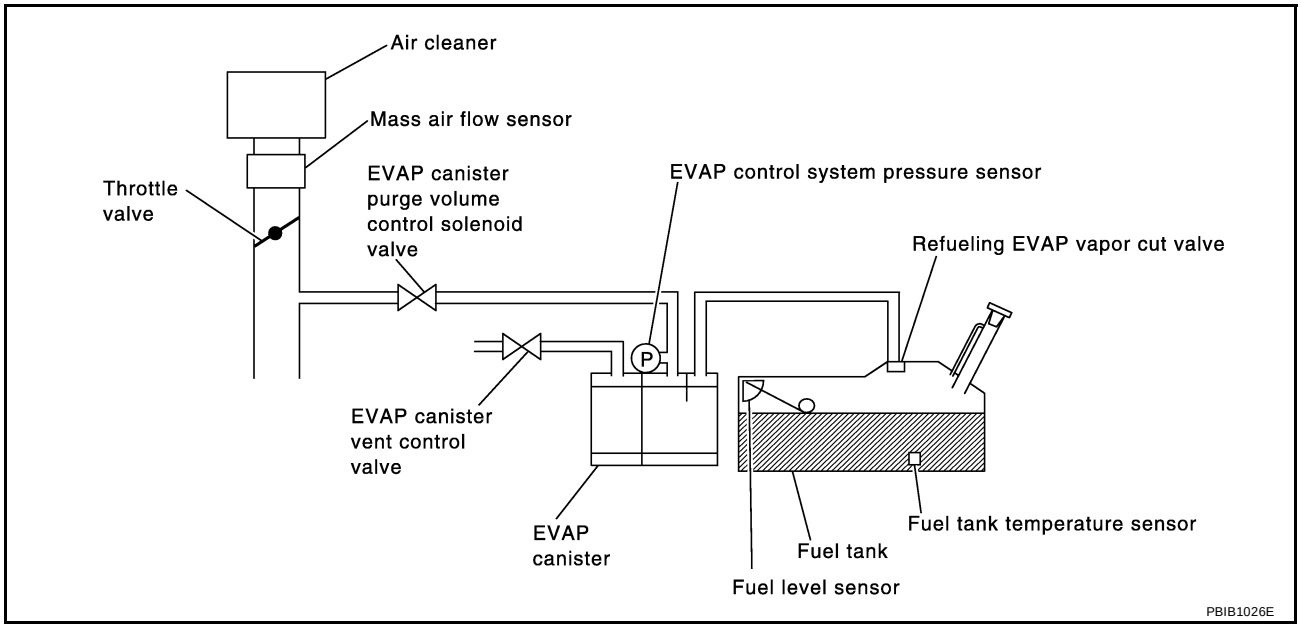
DTC P0455 EVAP CONTROL SYSTEM

PFP:14950

On Board Diagnosis Logic

UBS00PA8

This diagnosis detects a very large leak (fuel filler cap fell off etc.) in EVAP system between the fuel tank and EVAP canister purge volume control solenoid valve.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0455 0455	EVAP control system gross leak detected	EVAP control system has a very large leak such as fuel filler cap fell off, EVAP control system does not operate properly.	● Fuel filler cap remains open or fails to close. ● Incorrect fuel tank vacuum relief valve ● Incorrect fuel filler cap used ● Foreign matter caught in fuel filler cap. ● Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve. ● Foreign matter caught in EVAP canister vent control valve. ● EVAP canister or fuel tank leaks ● EVAP purge line (pipe and rubber tube) leaks ● EVAP purge line rubber tube bent. ● Loose or disconnected rubber tube ● EVAP canister vent control valve and the circuit ● EVAP canister purge volume control solenoid valve and the circuit ● Fuel tank temperature sensor ● O-ring of EVAP canister vent control valve is missing or damaged. ● EVAP control system pressure sensor ● Refueling EVAP vapor cut valve ● ORVR system leaks

CAUTION:

- **Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may come on.**
- **If the fuel filler cap is not tightened properly, the MIL may come on.**
- **Use only a genuine NISSAN rubber tube as a replacement.**

6. CHECK INTERMITTENT INCIDENT

Refer to EC-149, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

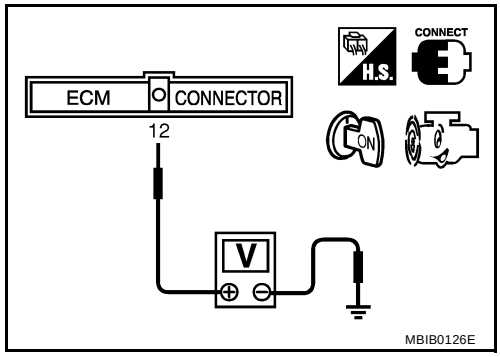
Component Inspection

UBS00PBD

POWER STEERING PRESSURE SENSOR

1. Reconnect all harness connectors disconnected.
2. Start engine and let it idle.
3. Check voltage between ECM terminal 12 and ground under the following conditions.

Condition	Voltage
Steering wheel: Being turned	0.5 - 4.5V
Steering wheel: Not being turned	0.4 - 0.8V



Removal and Installation

UBS00QAH

POWER STEERING PRESSURE SENSOR

Refer to PS-24, "HYDRAULIC LINE" .

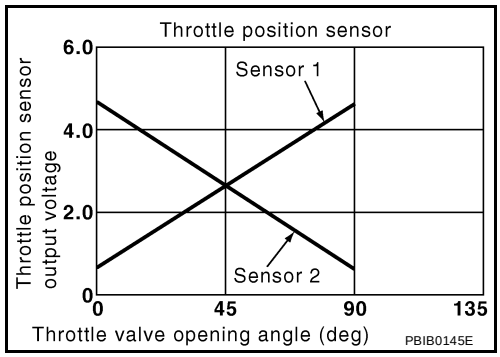
DTC P1225 TP SENSOR

PFP:16119

Component Description

UBS00PCF

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle position sensor responds to the throttle valve movement.
The throttle position sensor has the two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



On Board Diagnosis Logic

UBS00PCG

The MIL will not light up for this diagnosis.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1225 1225	Closed throttle position learning performance	Closed throttle position learning value is excessively low.	● Electric throttle control actuator (TP sensor 1 and 2)

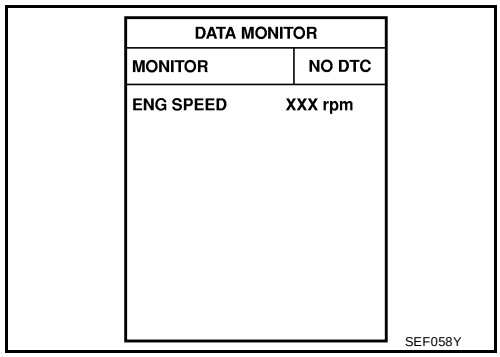
DTC Confirmation Procedure

UBS00PCH

NOTE:
If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.
TESTING CONDITION:
Before performing the following procedure, confirm that battery voltage is more than 10V at idle.

WITH CONSULT-II

1. Turn ignition switch ON.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. If 1st trip DTC is detected, go to EC-556, "Diagnostic Procedure"
.



WITH GST

Follow the procedure “WITH CONSULT-II” above.

2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E5, F14
- Harness for open or short between VIAS control solenoid valve and IPDM E/R
- Harness for open or short between VIAS control solenoid valve and ECM

>> Repair harness or connectors.

3. CHECK VIAS CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between ECM terminal 29 and VIAS control solenoid valve terminal 2. 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 4.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

4. CHECK VIAS CONTROL SOLENOID VALVE

Refer to EC-589, "Component Inspection" .

OK or NG

OK >> GO TO 5.
NG >> Replace VIAS control solenoid valve.

5. CHECK INTERMITTENT INCIDENT

Refer to EC-149, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

Component Inspection

UBS00PDJ

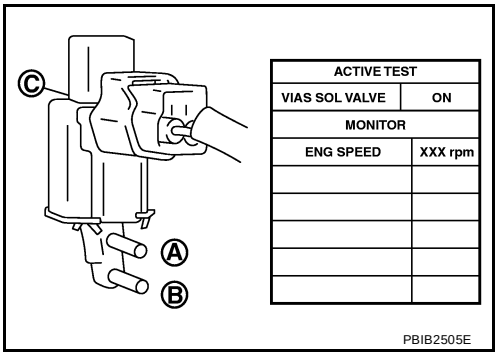
VIAS CONTROL SOLENOID VALVE

With CONSULT-II

1. Reconnect all harness connectors disconnected.
2. Turn ignition switch ON.
3. Perform “VIAS SOL VALVE” in “ACTIVE TEST” mode.
4. Check air passage continuity and operation delay time under the following conditions.

Condition VIAS SOL VALVE	Air passage continuity between A and B	Air passage continuity between A and C
ON	Yes	No
OFF	No	Yes

Operation takes less than 1 second.



6. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Replace accelerator pedal assembly.
2. Perform EC-80, "Accelerator Pedal Released Position Learning" .
3. Perform EC-80, "Throttle Valve Closed Position Learning" .
4. Perform EC-80, "Idle Air Volume Learning" .

>> **INSPECTION END**

7. CHECK INTERMITTENT INCIDENT

Refer to EC-149, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

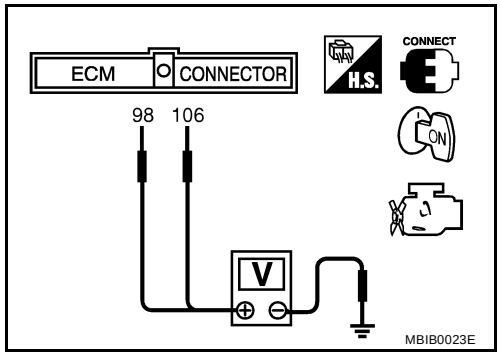
Component Inspection

UBS00PEM

ACCELERATOR PEDAL POSITION SENSOR

1. Reconnect all harness connectors disconnected.
2. Turn ignition switch ON.
3. Check voltage between ECM terminals 106 (APP sensor 1 signal), 98 (APP sensor 2 signal) and ground under the following conditions.

Terminal	Accelerator pedal	Voltage
106 (Accelerator pedal position sensor 1)	Fully released	0.5 - 1.0V
	Fully depressed	4.2 - 4.8V
98 (Accelerator pedal position sensor 2)	Fully released	0.25 - 0.5V
	Fully depressed	0.2 - 2.5V



4. If NG, replace accelerator pedal assembly and go to next step.
5. Perform EC-80, "Accelerator Pedal Released Position Learning" .
6. Perform EC-80, "Throttle Valve Closed Position Learning" .
7. Perform EC-80, "Idle Air Volume Learning" .

Removal and Installation

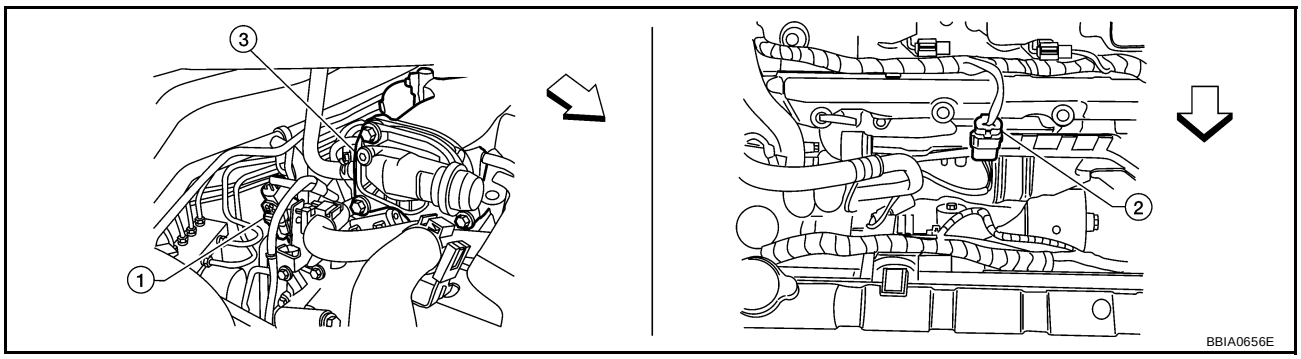
UBS00PEN

ACCELERATOR PEDAL

Refer to ACC-3, "ACCELERATOR CONTROL SYSTEM" .

5. CHECK HARNESS CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect A/F sensor 1 harness connector.



⇦: Vehicle front

1. Air fuel ratio (A/F) sensor 1 (bank 1) harness connector
2. Air fuel ratio (A/F) sensor 1 (bank 2) harness connector
3. Intake manifold collector

3. Check harness connector for water.
   Water should not exist.

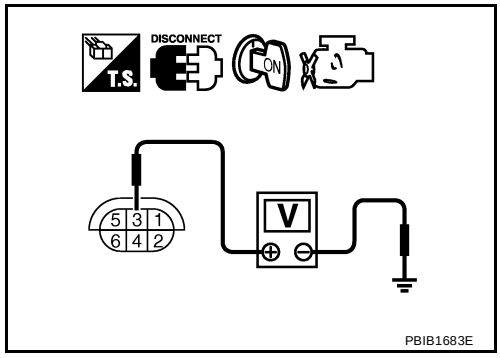
OK or NG

OK >> GO TO 6.
NG >> Repair or replace harness connector.

6. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between A/F sensor 1 terminal 3 and ground with CONSULT-II or tester.

   Voltage: Battery voltage



OK or NG

OK >> GO TO 8.
NG >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E5, F14
- IPDM E/R harness connector E122
- 15A fuse
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

IGNITION SIGNAL

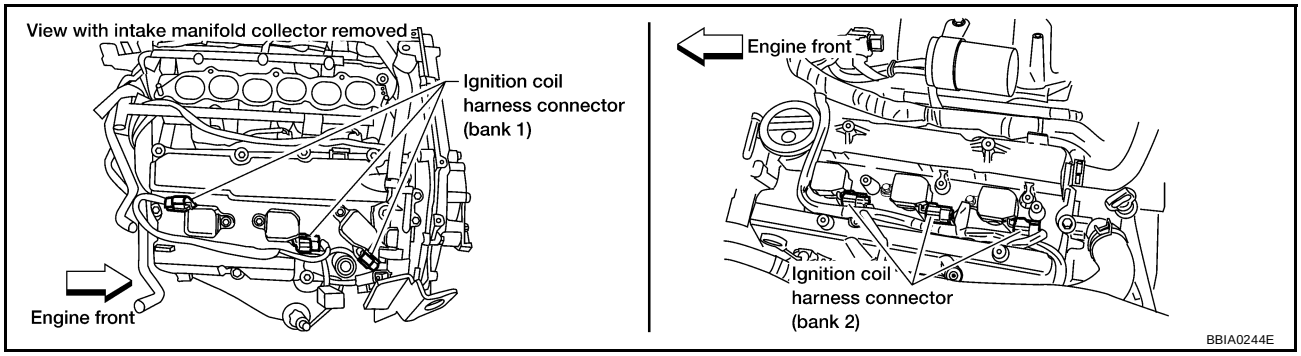
PFP:22448

Component Description

UBS00PGB

IGNITION COIL & POWER TRANSISTOR

The ignition signal from the ECM is sent to and amplified by the power transistor. The power transistor turns ON and OFF the ignition coil primary circuit. This ON/OFF operation induces the proper high voltage in the coil secondary circuit.



PRECAUTIONS

PFP:00001

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

EIS007K2

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.**

Precautions

EIS007K3

- When removing or disassembling any part, be careful not to damage or deform it. Protect parts which may get in the way with cloth.
- When removing parts with a screwdriver or other tool, protect parts by wrapping the tool with vinyl or tape.
- Keep removed parts protected with cloth.
- If a clip is deformed or damaged, replace it.
- If an unreusable part is removed, replace it with a new one.
- Tighten bolts and nuts firmly to the specified torque.
- After re-assembly has been completed, make sure each part functions correctly.
- Remove stains in the following way.

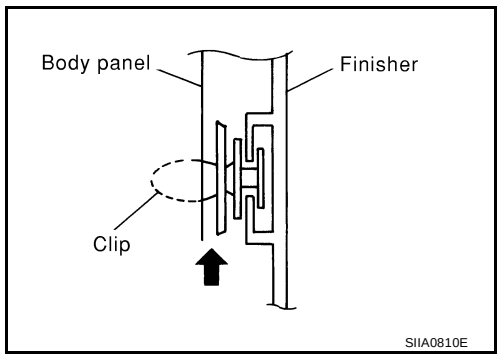
– Water-soluble stains:
Dip a cloth in warm water, and squeeze tightly. After wiping the stain, wipe with a soft dry cloth.

– Oil stain:
Dissolve a synthetic detergent in warm water (density of 2 to 3% or less), dip the cloth, then clean off the stain with the cloth. Next, dip the soft cloth in fresh water, and then squeeze it tightly. Then clean off the detergent completely. Then wipe the area with a soft dry cloth.

- Do not use any organic solvent, such as thinner or benzine.

3. Remove lower dash side finisher.

CAUTION:
Insert screw driver rolled with cloth between panel on vehicle and clip (as indicated with arrow), and disconnect clip.



Installation

Installation is in the reverse order of removal.

FRONT PILLAR FINISHER

Removal

1. Remove defrost grille assembly. Refer to ATC-191, "GRILLES" .
2. Remove upper dash side finisher. Refer to EI-36, "DASH SIDE FINISHER (UPPER, LOWER)" .
3. Release clips and remove front pillar finisher.

Installation

Installation is in the reverse order of removal.

REAR LOWER FINISHER ASSEMBLY

Removal

1. Disconnect the negative battery cable.
2. Remove rear kicking plate.
3. Remove rear kick escutcheon.
4. Remove 3rd row seat spring escutcheon.
5. Remove cargo net hooks using Tool.

Tool number : J-47126

6. Release clips and remove rear lower finisher assembly.
   - For LH, disconnect harness connectors.

Installation

Installation is in the reverse order of removal.

REAR PILLAR UPPER FINISHER

Removal

1. Remove rear kicking plate.
2. Remove rear kick escutcheon.
3. Remove cargo net hooks using Tool.

Tool number : J-47126

4. Remove seat belt D rings from rear pillar upper finisher. Refer to SB-8, "Third Row Seat Belt" .
5. Remove rear lower finisher assembly. Refer to EI-37, "REAR LOWER FINISHER ASSEMBLY" .
6. Remove screw covers and screws, then remove rear pillar upper finisher.
   - For LH, disconnect harness connectors.

Installation

Installation is in the reverse order of removal.

BACK DOOR LOWER FINISHER

Removal

1. Remove pull handle covers.

1.	Exhaust manifold (RH bank)	2.	Exhaust manifold (LH bank)	3.	Air fuel ratio (A/F) sensor 1 (bank 2)
4.	Three way catalyst (manifold) (bank 2)	5.	Three way catalyst (manifold) (bank 1)	6.	Air fuel ratio (A/F) sensor 1 (bank 1)
7.	Heated oxygen sensor 2 (bank 1)	8.	Heated oxygen sensor 2 (bank 2)	9.	Gasket
10.	Three way catalyst supports	A.	Stud	B.	Bolt
⇐	Engine Front				

REMOVAL

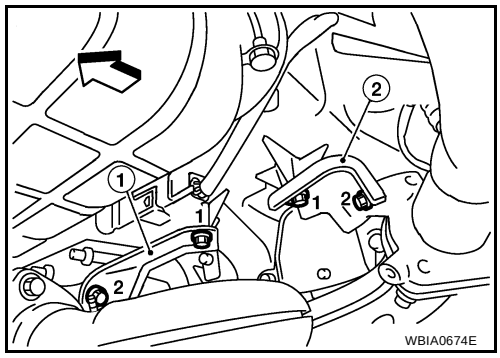
WARNING:

- **Perform the work when the exhaust and cooling system have completely cooled down.**
- **When removing the front and rear engine mounting through bolts and nuts, lift the engine up slightly for safety. For engine slingers, refer to EM-113, "REMOVAL" .**

1. Disconnect battery. Refer to SC-9, "Removal and Installation" .
2. Remove cowl top. Refer to EI-19, "Removal and Installation" .
3. Disconnect air fuel ratio (A/F) sensor 1 (bank 2) connector.
4. Remove the front wheel and tires using power tool.
5. Remove the engine undercover.
6. Remove the inner wheel well splash shields.
7. If removing only air fuel ratio (A/F) sensor 1 (bank 2) do so at this time through the wheel well opening, using Tool.

   Tool number : KV991J0050 (J-44626)

8. If removing the exhaust manifold (LH bank), remove the radiator and cooling fan assembly. Refer to CO-15, "Removal and Installation" .
9. Remove the front exhaust tube. Refer to EX-3, "Removal and Installation" .
10. If removing the exhaust manifold (RH), remove the front suspension member. Refer to FSU-15, "Removal and Installation" .
11. Remove the bank 1 (1) and bank 2 (2) three way catalyst manifolds support bolts in the order as shown.
    - ⇐: Engine front



12. Remove heated oxygen sensor 2 (bank 1), heated oxygen sensor 2 (bank 2), air fuel ratio (A/F) sensor 1 (bank 1) and air fuel ratio (A/F) sensor 1 (bank 2).

a. Remove harness connector of each sensor, and disconnect the harness from the bracket and middle clamp.

b. Remove both heated oxygen sensors and air fuel ratio (A/F) sensors using Tool.

   Tool numbers : KV10114400 (J-38365)

   CAUTION:
   - **Be careful not to damage heated oxygen sensors or air fuel ratio (A/F) sensors.**
   - **Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; replace with a new sensor.**

13. Remove exhaust manifold and three way catalyst manifold heat shields using power tool.
14. Remove the three way catalyst (manifold) (bank 1) and three way catalyst (manifold) (bank 2) by loosening the bolts first and then removing the nuts and through bolts using power tool.

18. Remove the timing chain tensioner (1) and slack guide (6).
    - Place paint marks on the timing chain and sprockets to indicate the correct position of the components for installation.

a. Pull lever (4) down and release plunger stopper tab (2). Plunger stopper tab (2) can be pushed up to release [coaxial structure with lever (4)].
    - ⇐: pull lever

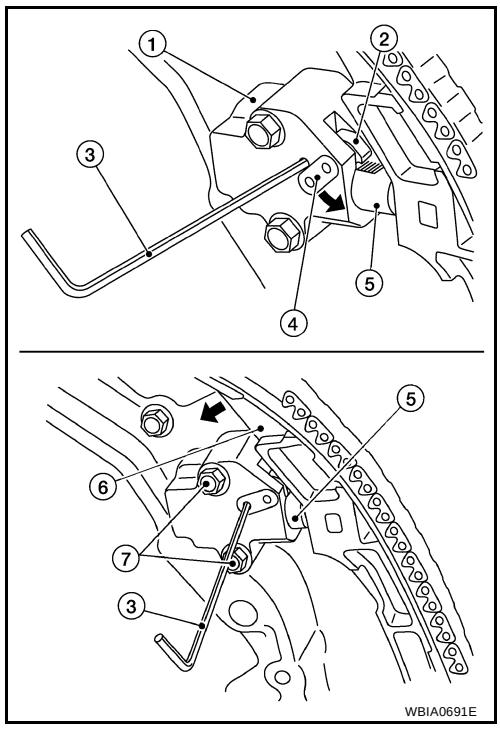
b. Insert stopper pin (3) into tensioner body hole to hold lever (4), and keep the tab (2) released. An Allen wrench [2.5 mm (0.098 in)] (3) is used for a stopper pin as an example.

c. Insert plunger (5) into tensioner body hole by pressing the slack guide (6).
    - ⇐: Press slack guide

d. Keep the slack guide (6) pressed and hold it by pushing the stopper pin (3) through the lever hole and body hole as shown.

e. Remove the timing chain tensioner installation bolts (7) and remove the timing chain tensioner (1).

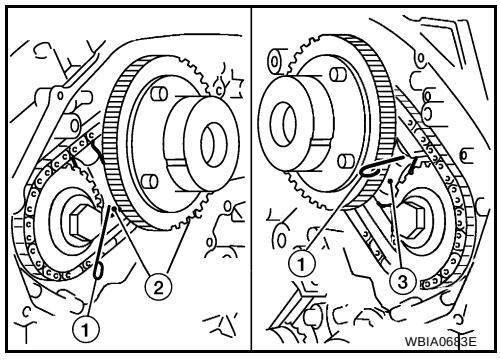
f. Remove slack guide installation bolt and the slack guide (6).



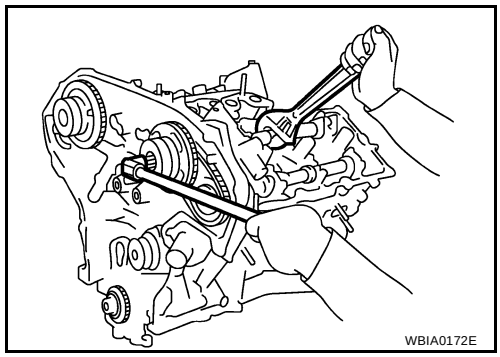
19. Remove primary timing chain and crankshaft sprocket.

CAUTION:
After removing timing chain, do not turn the crankshaft and camshaft separately, or the valves will strike the pistons.

20. Attach a suitable stopper pin (1) to the RH (2) and LH (3) secondary timing chain tensioners.



21. Remove the intake and exhaust camshaft sprocket bolts.
    - Apply paint to the timing chain and camshaft sprockets for alignment during installation.
    - Secure the hexagonal portion of the camshaft using a wrench to loosen the bolts as shown.



22. Remove the secondary timing chains (3) with camshaft sprockets.

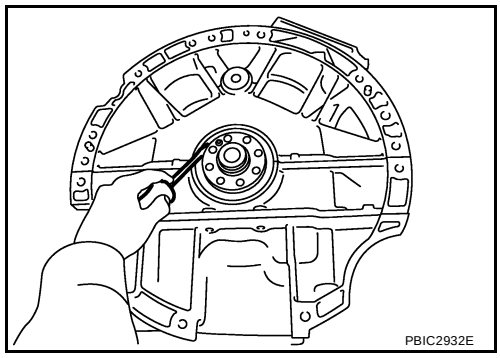
Removal and Installation of Rear Oil Seal

EBS00QUT

REMOVAL

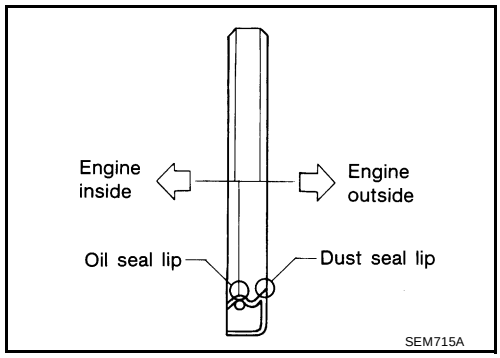
1. Remove transmission assembly. Refer to AT-239, "REMOVAL AND INSTALLATION" .
2. Remove rear oil seal with a suitable tool.

CAUTION:
Be careful not to damage crankshaft and cylinder block.

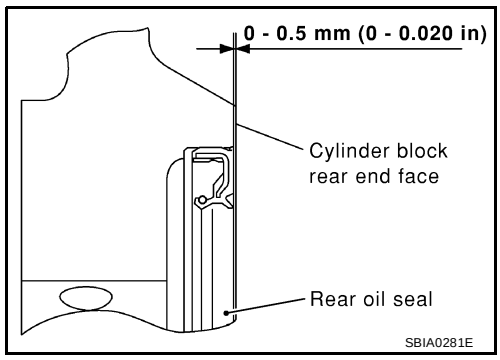


INSTALLATION

1. Apply new engine oil to new rear oil seal joint surface and seal lip.
2. Install rear oil seal so that each seal lip is oriented as shown.



- Press in rear oil seal to the position as shown.

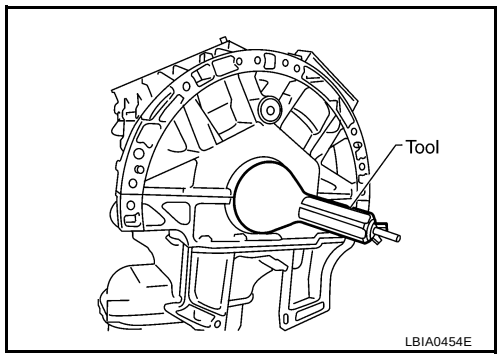


- Press-fit rear oil seal using Tool.

Tool number : — (J-47128)

CAUTION:

- **Be careful not to damage crankshaft and cylinder block.**
- **Press-fit oil seal straight to avoid causing burrs or tilting.**
- **Do not touch grease applied onto oil seal lip.**



3. Installation of the remaining components is in the reverse order of removal.

How to Select Piston and Bearing

EBS00PS6

DESCRIPTION

Selection points	Selection parts	Selection items	Selection methods
Between cylinder block and crankshaft	Main bearing	Main bearing grade (bearing thickness)	Determined by matching of cylinder block bearing housing grade (inner diameter of housing) and crankshaft journal grade (outer diameter of journal)
Between crankshaft and connecting rod	Connecting rod bearing	Connecting rod bearing grade (bearing thickness)	Combining service grades for connecting rod big end inner diameter and crankshaft pin outer diameter determine connecting rod bearing selection.
Between cylinder block and piston	Piston and piston pin assembly (The piston is available together with piston pin as an assembly.)	Piston grade (piston outer diameter)	Piston grade = cylinder bore grade (inner diameter of bore)
*Between piston and connecting rod	–	–	–

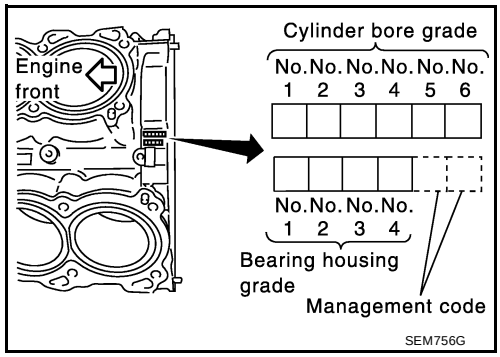
* For the service parts, the grade for fitting cannot be selected between a piston pin and a connecting rod. (Only 0 grade is available.) The information at the shipment from the plant is described as a reference.

- The identification grade stamped on each part is the grade for the dimension measured in new condition. This grade cannot apply to reused parts.
- For reused or repair parts, measure the dimension accurately. Determine the grade by comparing the measurement with the values or each selection table.
- For details of the measurement method of each part, the reuse standards and the selection method of the selective fitting parts, refer to the text.

HOW TO SELECT A PISTON

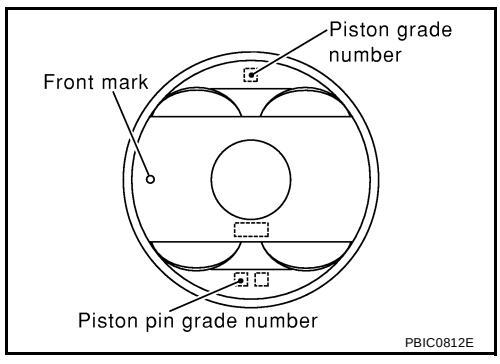
When New Cylinder Block is Used

- Check the cylinder bore grade (1, 2 or 3) on rear side of cylinder block, and select a piston of the same grade.
- The piston is available with piston pin as a set for the service part. (Only 0 grade piston pin is available.)



When Cylinder Block is Reused

1. Measure the cylinder block bore inner diameter.
2. Determine the bore grade by comparing the measurement with the values under the cylinder bore inner diameter of the EM-130, "Piston Selection Table" .
3. Select the piston of the same grade.

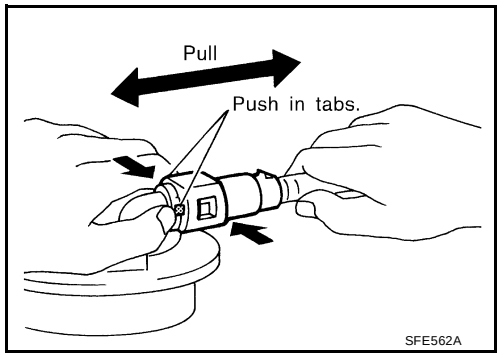


SECTION FAX
FRONT AXLE

CONTENTS

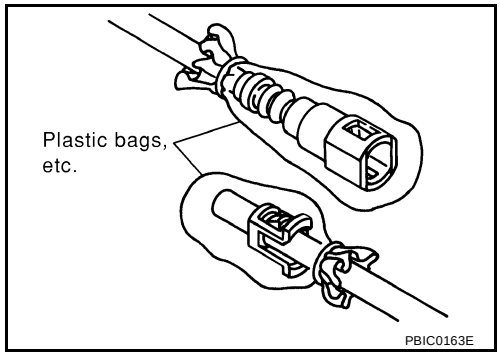
a. Disconnect the quick connectors as follows:

- Hold the sides of the connector, push in tabs and pull out the tube.
- If the connector and the tube are stuck together, push and pull several times until they start to move. Then disconnect them by pulling.



CAUTION:

- **The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.**
- **Do not use any tools to remove the quick connector.**
- **Keep the resin tube away from heat. Be especially careful when welding near the tube.**
- **Prevent liquid acids, such as battery electrolyte, from getting on the resin tube.**
- **Do not bend or twist the tube during installation and removal.**
- **Only when the tube is replaced, remove the remaining retainer on the tube or fuel level sensor, fuel filter, and fuel pump assembly.**
- **When the tube or fuel level sensor, fuel filter, and fuel pump assembly is replaced, also replace the retainer with a new one (green colored retainer).**
- **To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags or something similar.**

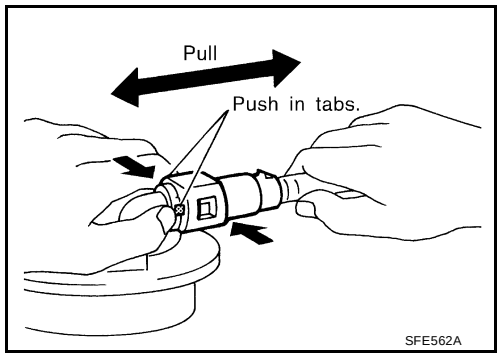


12. Remove the fuel tank.
13. If replacing the fuel tank, disconnect the EVAP hose and remove the fuel level sensor unit, fuel filter, and fuel pump assembly to transfer to the new fuel tank. Refer to FL-5, "Removal and Installation" .

INSTALLATION

Installation is in the reverse order of removal.

- Before tightening the fuel tank mounting straps, temporarily install the fuel filler hose, recirculation hose, and EVAP canister hose. Tighten all fasteners to specification.
- Connect the quick connector as follows:
  - Check the connection for damage or any foreign materials.
  - Align the connector with the tube, then insert the connector straight into the tube until a click is heard.
  - After the tube is connected, make sure the connection is secure by pulling on the tube and the connector to make sure they are securely connected.



How to Follow Trouble Diagnoses

EAS001PI

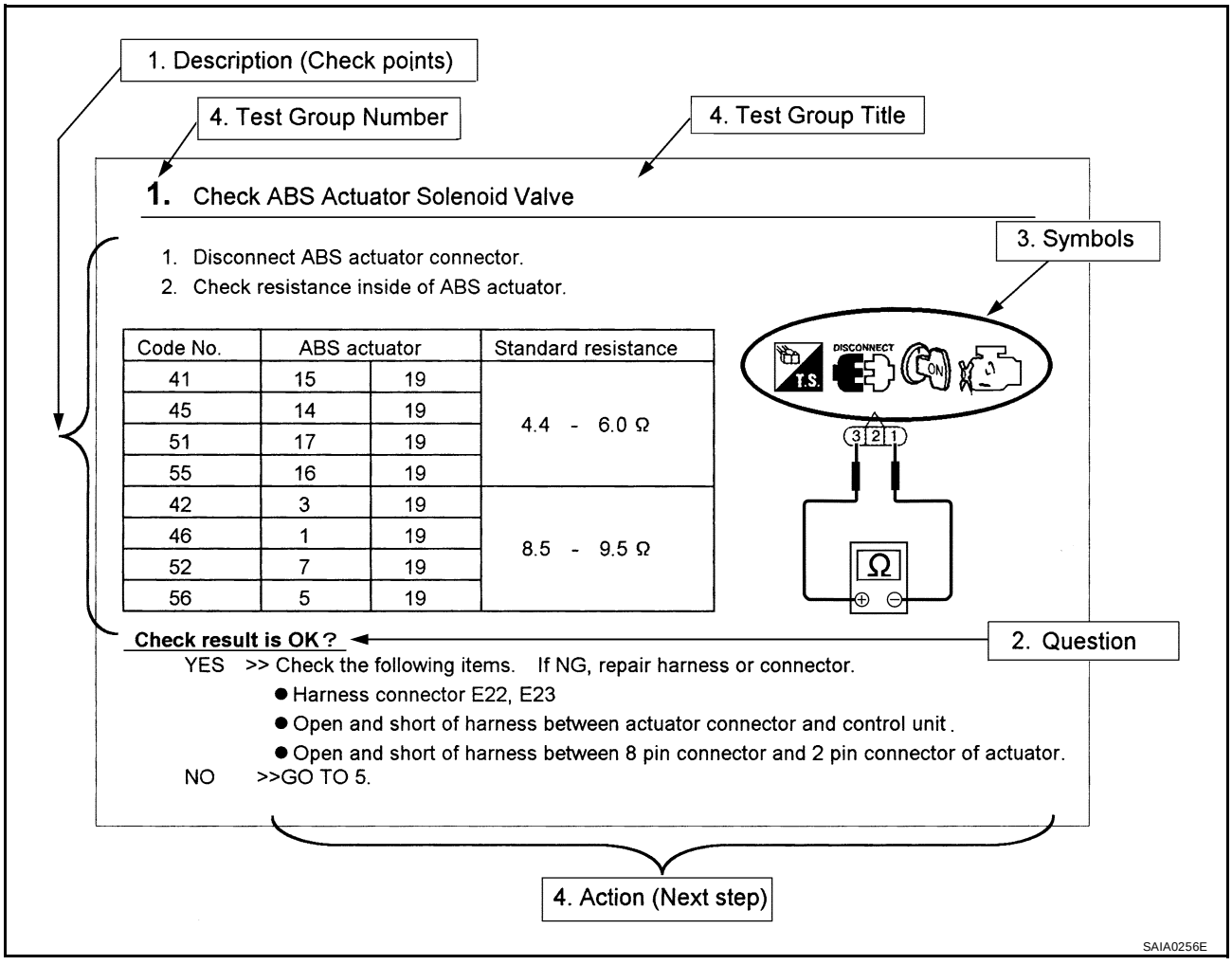
DESCRIPTION

NOTICE:

Trouble diagnoses indicate work procedures required to diagnose problems effectively. Observe the following instructions before diagnosing.

1. **Before performing trouble diagnoses, read the “Preliminary Check”, the “Symptom Chart” or the “Work Flow”.**
2. **After repairs, re-check that the problem has been completely eliminated.**
3. **Refer to Component Parts and Harness Connector Location for the Systems described in each section for identification/location of components and harness connectors.**
4. **Refer to the Circuit Diagram for quick pinpoint check.**
   If you need to check circuit continuity between harness connectors in more detail, such as when a sub-harness is used, refer to Wiring Diagram in each individual section and Harness Layout in PG section for identification of harness connectors.
5. **When checking circuit continuity, ignition switch should be OFF.**
6. **Before checking voltage at connectors, check battery voltage.**
7. **After accomplishing the Diagnostic Procedures and Electrical Components Inspection, make sure that all harness connectors are reconnected as they were.**

HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES



1. **Work and diagnostic procedure**
   Start to diagnose a problem using procedures indicated in enclosed test groups.
2. **Questions and required results**
   Questions and required results are indicated in bold type in test group.
   The meaning of are as follows:

TIGHTENING TORQUE OF STANDARD BOLTS

PFP:00000

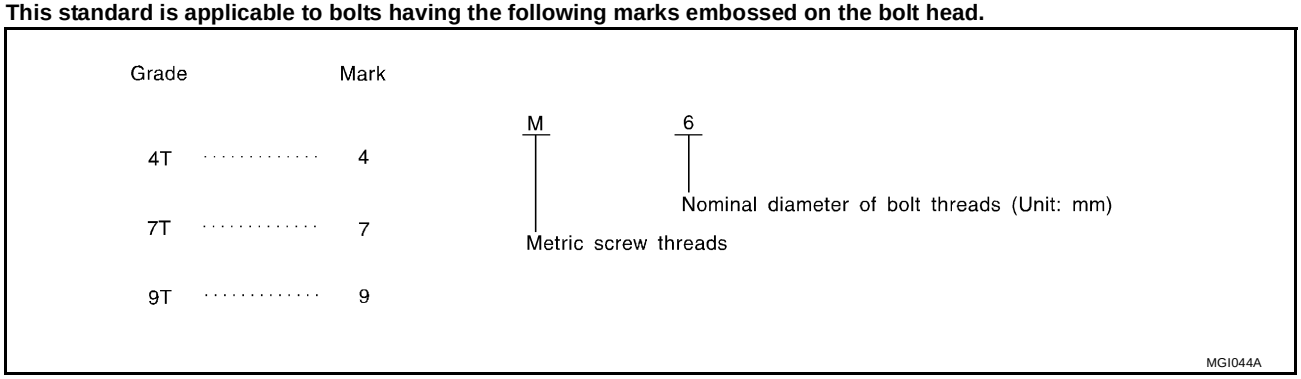
Tightening Torque Table

EAS001Q0

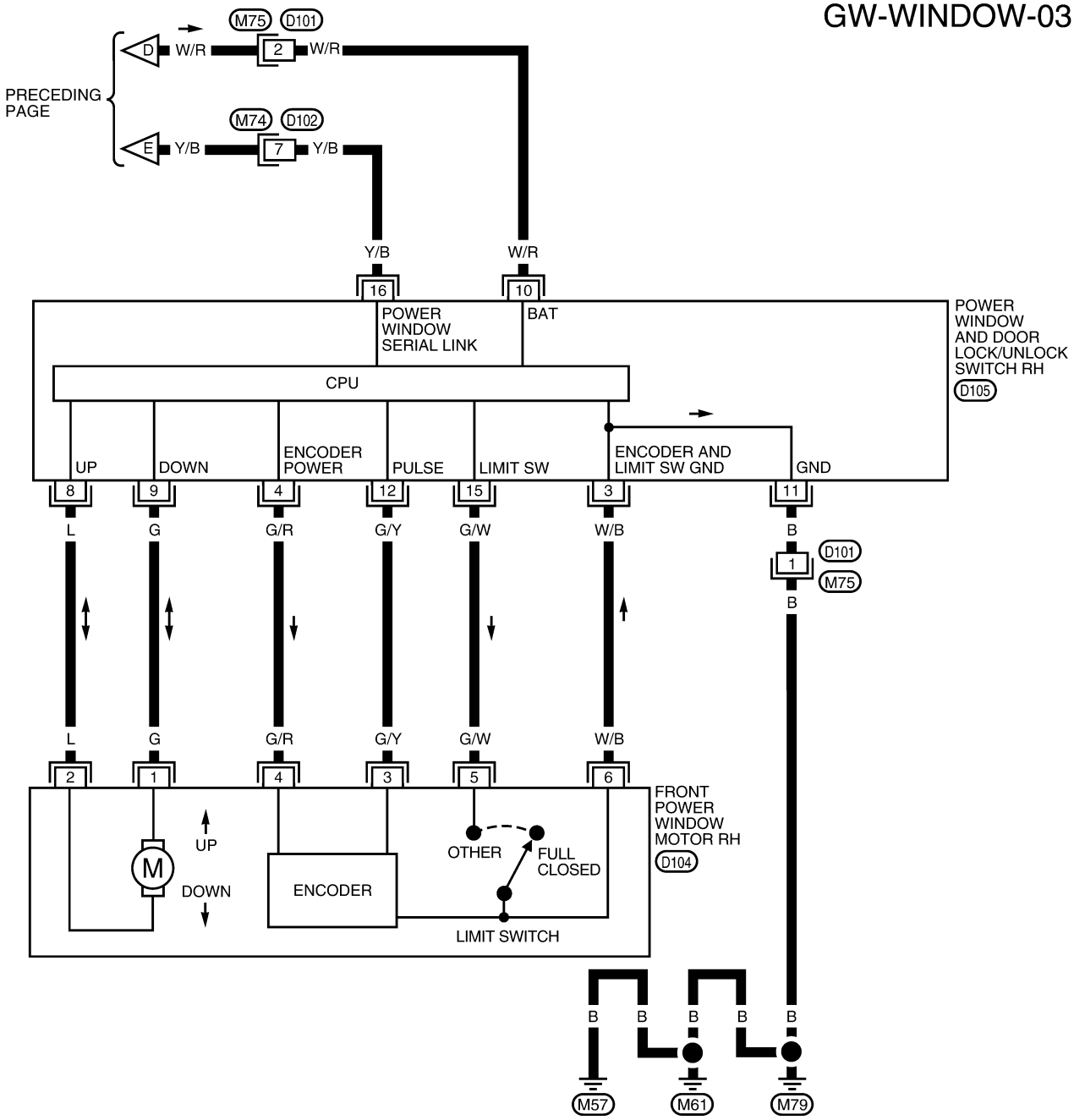
Grade	Bolt size	Bolt diameter * mm	Pitch mm	Tightening torque (Without lubricant)							
				Hexagon head bolt				Hexagon flange bolt			
				N·m	kg-m	ft-lb	in-lb	N·m	kg-m	ft-lb	in-lb
4T	M6	6.0	1.0	5.1	0.52	3.8	45.1	6.1	0.62	4.5	53.8
	M8	8.0	1.25	13	1.3	9	—	15	1.5	11	—
			1.0	13	1.3	9	—	16	1.6	12	—
	M10	10.0	1.5	25	2.5	18	—	29	3.0	22	—
			1.25	25	2.6	19	—	30	3.1	22	—
	M12	12.0	1.75	42	4.3	31	—	51	5.2	38	—
			1.25	46	4.7	34	—	56	5.7	41	—
	M14	14.0	1.5	74	7.5	54	—	88	9.0	65	—
7T	M6	6.0	1.0	8.4	0.86	6.2	74.6	10	1.0	7	87
	M8	8.0	1.25	21	2.1	15	—	25	2.5	18	—
			1.0	22	2.2	16	—	26	2.7	20	—
	M10	10.0	1.5	41	4.2	30	—	48	4.9	35	—
			1.25	43	4.4	32	—	51	5.2	38	—
	M12	12.0	1.75	71	7.2	52	—	84	8.6	62	—
			1.25	77	7.9	57	—	92	9.4	68	—
	M14	14.0	1.5	127	13.0	94	—	147	15.0	108	—
9T	M6	6.0	1.0	12	1.2	9	—	15	1.5	11	—
	M8	8.0	1.25	29	3.0	22	—	35	3.6	26	—
			1.0	31	3.2	23	—	37	3.8	27	—
	M10	10.0	1.5	59	6.0	43	—	70	7.1	51	—
			1.25	62	6.3	46	—	74	7.5	54	—
	M12	12.0	1.75	98	10.0	72	—	118	12.0	87	—
			1.25	108	11.0	80	—	137	14.0	101	—
	M14	14.0	1.5	177	18.0	130	—	206	21.0	152	—

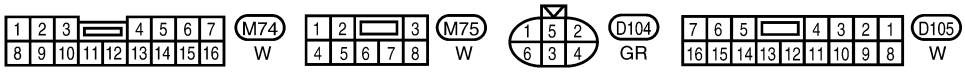
*: Nominal diameter

1. **Special parts are excluded.**
2. **This standard is applicable to bolts having the following marks embossed on the bolt head.**



GW-WINDOW-03

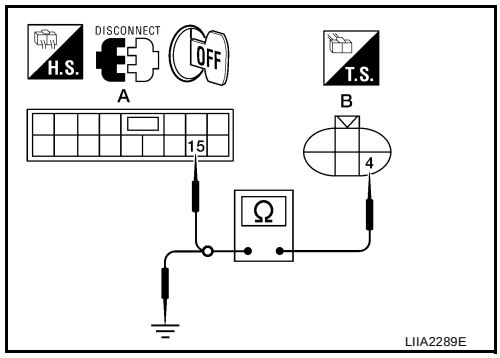




WIWA1777E

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between front power window motor LH connector and main power window and door lock/unlock switch connector.



Connector	Terminal	Connector	Terminal	Continuity
A		B		
Main power window and door lock/unlock switch: D7	15	Front power window motor LH: D9	4	Yes

4. Check continuity between front power window motor LH connector and ground.

Connector	Terminal	Ground	Continuity
B			
Front power window motor LH: D9	4		No

OK or NG

OK >> Replace main power window and door lock/unlock switch. Refer to EI-30, "FRONT DOOR" .
NG >> Repair or replace harness.

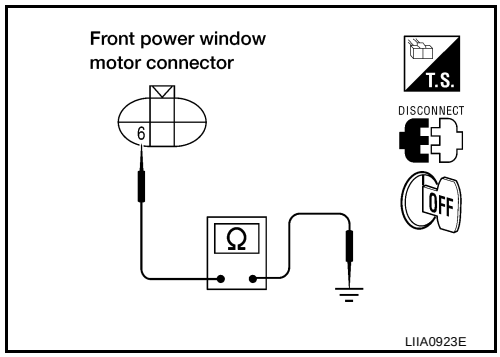
3. CHECK ENCODER GROUND

1. Turn ignition switch OFF.
2. Disconnect front power window motor LH.
3. Check continuity between front power window motor LH connector D9 terminal 6 and ground.

6 - Ground : Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> GO TO 4.



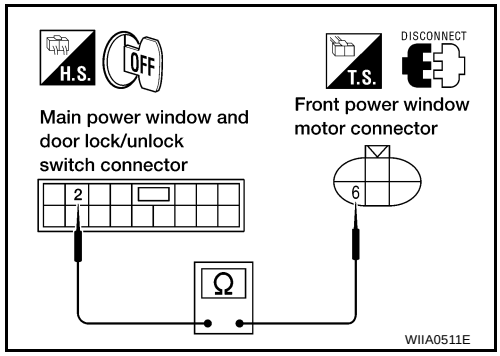
4. CHECK ENCODER GROUND CIRCUIT

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between front power window motor LH connector D9 terminal 6 and main power window and door lock/unlock switch connector D7 terminal 2.

6 - 2 : Continuity should exist.

OK or NG

OK >> Replace main power window and door lock/unlock switch. Refer to EI-30, "FRONT DOOR" .
NG >> Repair or replace harness.



Terminal and Reference Value for BCM

EIS007IU

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminal and Reference Value for IPDM E/R

EIS007IV

Refer to PG-27, "Terminals and Reference Values for IPDM E/R" .

Work Flow

EIS007IW

1. Check the symptom and customer's requests.
2. Understand the outline of system. Refer to GW-87, "System Description" .
3. According to the trouble diagnosis chart, repair or replace the cause of the malfunction. Refer to GW-93, "Trouble Diagnoses Symptom Chart" .
4. Does rear window defogger operate normally? YES: GO TO 5, NO: GO TO 3.
5. Inspection End.

CONSULT-II Function (BCM)

EIS007IX

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

BCM diagnostic test item	Diagnostic mode	Content
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 data 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 results 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 START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Display Item List

Monitor item “Operation”		Content
REAR DEF SW	“ON/OFF”	Displays “Press (ON)/others (OFF)” status determined with the rear window defogger switch.
IGN ON SW	“ON/OFF”	Displays “IGN (ON)/OFF” status determined with the ignition switch signal.

ACTIVE TEST

Display Item List

Test item	Content
REAR WINDOW DEFOGGER	Gives a drive signal to the rear window defogger to activate it.

Trouble Diagnoses Symptom Chart

EIS007IY

- Make sure other systems using the signal of the following systems operate normally.

1. Steering member assembly
2. Defrost grille
3. Speaker cover LH
4. Meter cover
5. Instrument panel
6. Combination meter
7. Cluster lid A
8. LH vent grille
9. Instrument panel side finisher LH
10. Instrument lower panel LH
11. Storage bin
12. Steering column upper cover
13. Steering column lower cover
14. Ignition switch bezel
15. Knee protector
16. Instrument panel side cover LH
17. Instrument panel side cover RH
18. Center stack trim panel
19. Center lower trim
20. DVD door
21. DVD deck
22. Audio unit
23. Cluster lid C
24. AV switch
25. Assistant under cover panel
26. Glove box assembly
27. Front air control
28. RH vent grille
29. Instrument panel side finisher RH
30. Display unit
31. Cluster lid D
32. Speaker cover RH

REMOVAL

1. Disconnect the battery negative and positive terminals.
2. Remove cluster lid C. Refer to IP-13, "Cluster Lid C" .
3. Remove steering column. Refer to PS-9, "STEERING COLUMN" .
4. Remove combination meter. Refer to IP-12, "Combination Meter" .
5. Remove display unit. Refer to AV-168, "DISPLAY UNIT" .
6. Disconnect center speaker.
7. Disconnect GPS antenna.
8. Remove defrost grille.
9. Remove front pillar finishers LH and RH.
10. Remove front speakers. Refer to AV-88, "FRONT TWEETER" .
11. Remove instrument panel assembly.

INSTALLATION

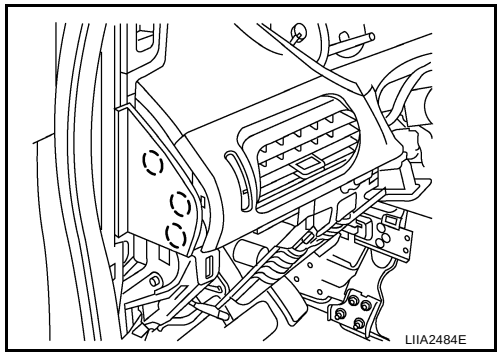
Installation is in the reverse order of removal.

Cluster Lid A

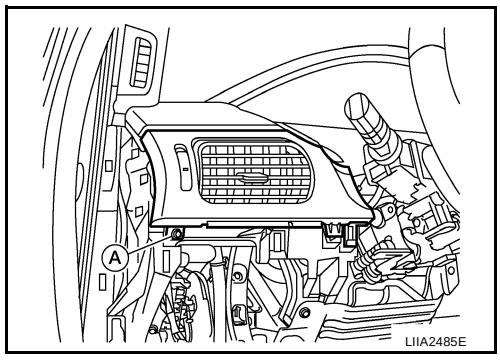
EIS0090D

REMOVAL

1. Remove instrument panel side finisher.



2. Remove screw (1) and LH vent grille.



3. Remove upper and lower steering column covers.
4. Pull to release clips and remove cluster lid A.

2. CAN DIAG SUPPORT MNTR: Check each item on “CAN DIAG SUPPORT MNTR”. Draw a line on the diagnosis sheet to indicate the error circuit.

a. Reception item of “ENGINE”: On “TCM”, “UNKWN” is indicated. This means ECM cannot receive the signal from TCM. Draw a line to indicate an error between ECM and TCM (line 2-a in the figure).

NOTE:
If “UNKWN” is indicated on “TRANSMIT DIAG”, then the control unit cannot transmit CAN communication signal to each unit. Draw a line between the control unit and the splice.

b. Reception item of “ADAPTIVE LIGHT”: On “TCM”, “UNKWN” is indicated. This means AFS cannot receive the signal from TCM. Draw a line to indicate an error between AFS and TCM (line 2-b in the figure).

c. Reception item of “MULTI AV”: “UNKWN” is not indicated. This indicates normal communication between AV and its receiving units. Do not draw any line.

(Example)

SYSTEM ENGINE
DATE
P/#

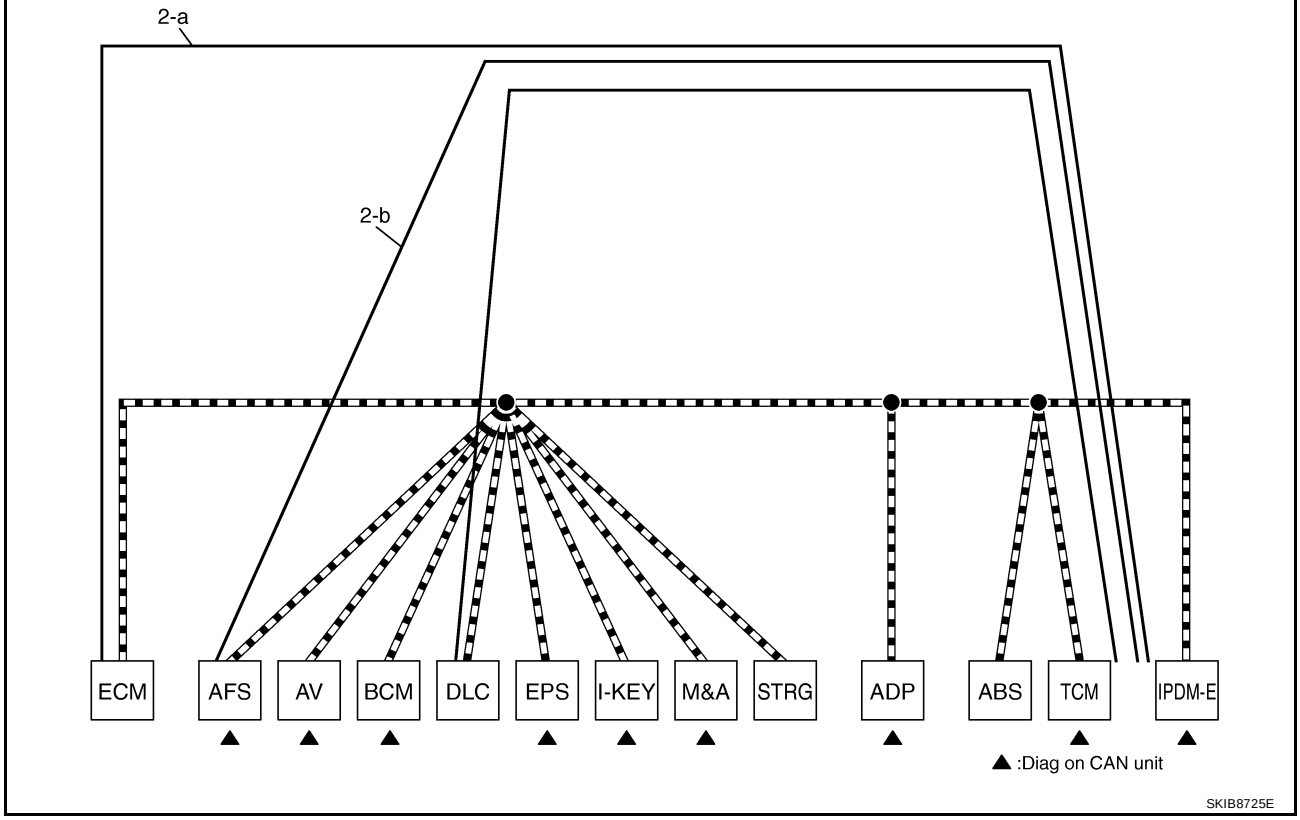
	PRSNT	PAST
TRANSMIT DIAG	OK	OK
VDC/TCS/ABS	OK	OK
METER/M&A	-	-
BCM/SEC	OK	OK
ICC	-	-
HVAC	-	-
TCM	UNKWN	0
EPS	OK	OK
IPDM E/R	OK	OK
e4WD	-	-
AWD/4WD	-	-

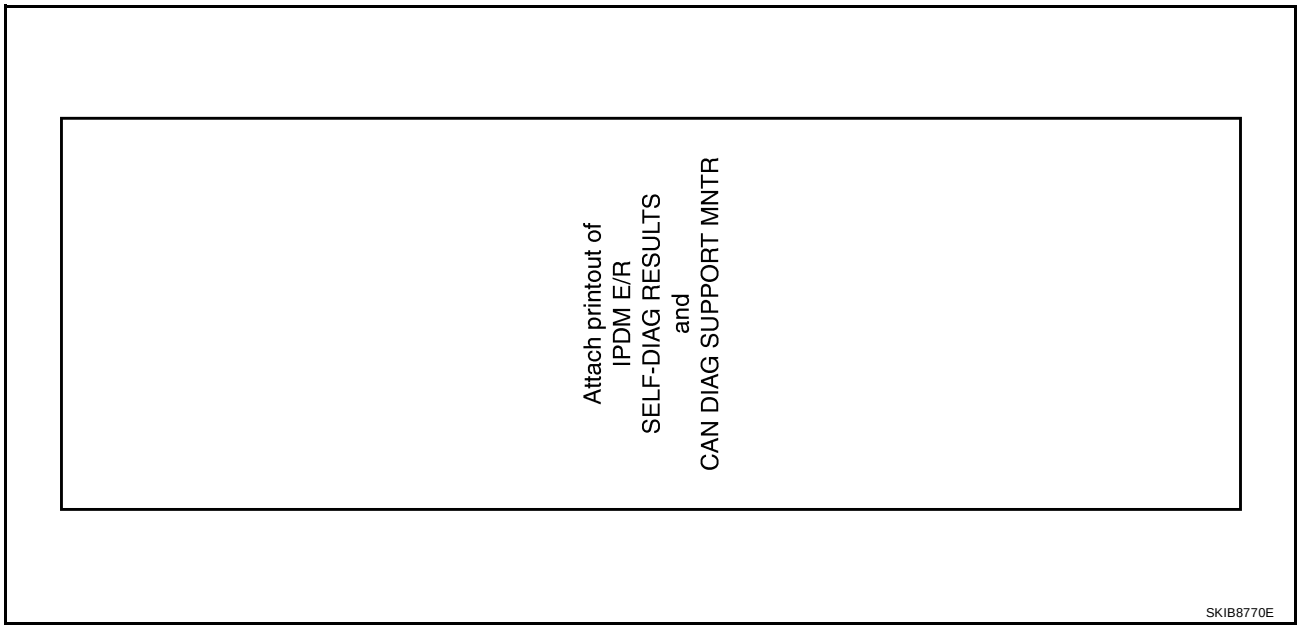
SYSTEM ADAPTIVE LIGHT
DATE
P/#

	PRSNT	PAST
TRANSMIT DIAG	-	-
ECM	OK	OK
METER/M&A	OK	OK
TCM	UNKWN	0
STRG	OK	OK
EPS	-	-
IPDM E/R	OK	OK

SYSTEM MULTI AV
DATE
P/#

	PRSNT	PAST
TRANSMIT DIAG	-	-
ECM	OK	OK
METER/M&A	OK	OK
BCM/SEC	-	-
HVAC	-	-
IPDM E/R	-	-
TIRE-P	-	-





ON-BOARD DIAGNOSIS COPY SHEET

NOTE:

CAN diagnostic support monitor of the display control unit is indicated on the vehicle display.

- Models with color display: Refer to AV-165, "CAN Communication Line Check (With Color Display)" .
- Models with navigation system: Refer to AV-216, "CAN Communication Line Check" .

Vehicle monitor (Display control unit) CAN DIAG SUPPORT MONITOR copy sheet

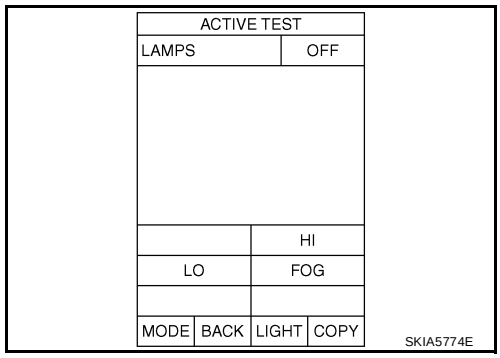
Indication item (Diagnosis item)	Vehicle monitor		Indication item (Diagnosis item)	Vehicle monitor	
	Result indicated	Error counter		Result indicated	Error counter
CAN_COMM (Initial diagnosis)			CAN_CIRC_5 (Receive diagnosis of Combination meter)		
CAN_CIRC_1 (Transmit diagnosis)			CAN_CIRC_6	Not available	
CAN_CIRC_2 (Receive diagnosis of BCM)			CAN_CIRC_7 (Receive diagnosis of IPDM E/R)		
CAN_CIRC_3 (Receive diagnosis of ECM)			CAN_CIRC_8	Not available	
CAN_CIRC_4 (Receive diagnosis of Front air control)			CAN_CIRC_9	Not available	

SKIB8771E

2. HEADLAMP ACTIVE TEST

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "HI" on "ACTIVE TEST" screen.
4. Make sure headlamp high beam operates.

Headlamp high beam should operate.



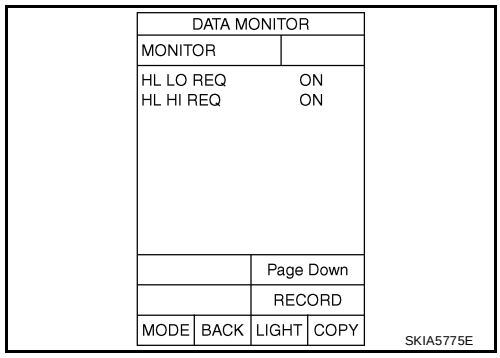
OK or NG

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

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Make sure "HL LO REQ" and "HL HI REQ" turns ON when lighting switch is in HIGH position.

When lighting switch is in HIGH position : HL LO REQ ON
: HL HI REQ ON

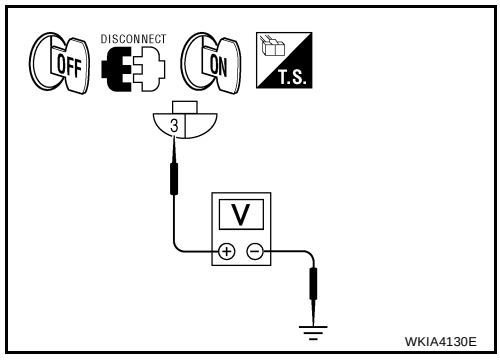


OK or NG

OK >> Replace IPDM E/R. Refer to PG-33, "Removal and Installation of IPDM E/R" .
NG >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .

4. CHECK HEADLAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Turn ignition switch ON.
4. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Select "LAMPS" on "SELECT TEST ITEM" screen.
6. Touch "HI" on "ACTIVE TEST" screen.
7. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector terminals and ground.



Terminals (+)			(–)	Voltage
Front combination lamp connector		Terminal		
RH	E13	3	Ground	Battery voltage
LH	E45			

OK or NG

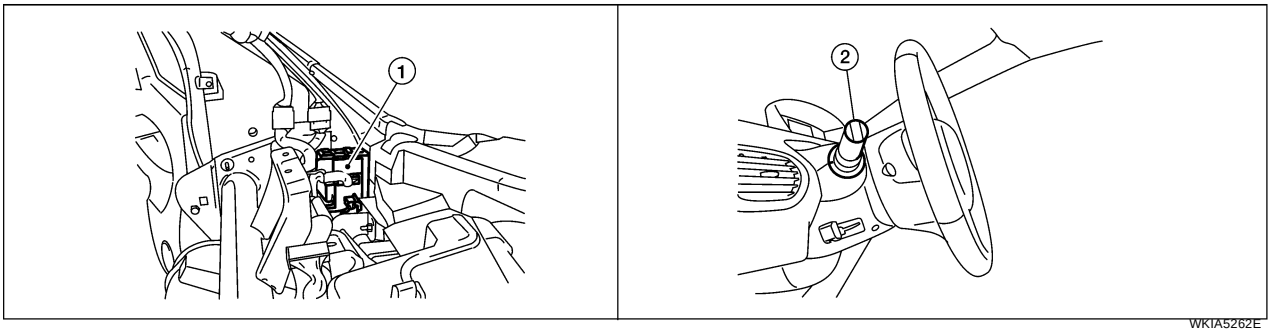
OK >> GO TO 6.
NG >> GO TO 5.

FRONT FOG LAMP

PFP:26150

Component Parts and Harness Connector Location

EKS00FC4



1. BCM M18, M20 (view with instrument panel removed)
2. Combination switch (lighting switch) M28

System Description

EKS00FC5

Control of the fog lamps is dependent upon the position of the combination switch (lighting switch). The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) for front fog lamp operation. When the lighting switch is placed in the fog lamp position, the BCM (body control module) receives input signal requesting the fog lamps to illuminate. When the headlamps are illuminated, this input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the front fog lamp relay coil. When activated, this relay directs power to the front fog lamps.

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 43, located in the IPDM E/R)
- to front fog lamp relay, located in the IPDM E/R, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57.

When the ignition switch is in ON or START position, power is supplied

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

When the ignition switch is in ACC or ON position, power is supplied

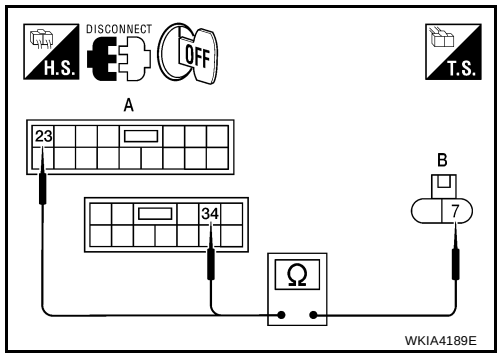
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

4. CHECK CORNERING LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connectors and front combination lamp LH and RH connectors.
3. Check continuity between IPDM E/R harness connector terminal and front combination lamp harness connector terminal.



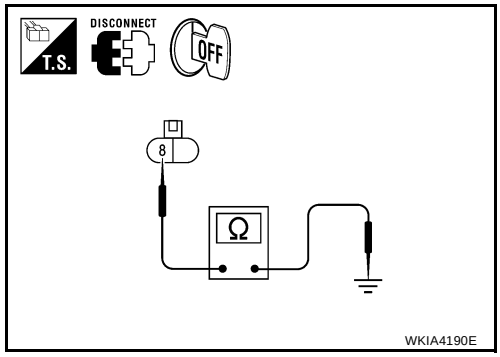
A			B			Continuity
IPDM E/R connector		Terminal	Front combination lamp connector		Terminal	
RH	E122	23	RH	E137	7	Yes
LH	E124	34	LH	E43		

OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

5. CHECK GROUND

Check continuity between front combination lamp harness connector terminal and ground.



Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E137	8	Ground	No
LH	E43			

OK or NG

OK >> Replace IPDM E/R. Refer to PG-33, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

Bulb Replacement

EKS00FDA

Refer to LT-85, "Bulb Replacement" .

Removal and Installation

EKS00I8H

Refer to LT-26, "Removal and Installation" .

1. BCM M18, M19, M20 (view with instrument panel removed)
2. Lamps on demand switch M108
3. Key switch M27
   Ignition keyhole illumination M25
4. Foot lamp LH M99
   RH M100
5. Personal lamp with rear roof console R52, R54
6. Personal lamp without rear roof console R2, R7, R12, R13
7. Cargo lamp R11
8. Room/map lamps R9
9. Vanity lamp LH R3
   RH R8
10. Back door switch (without power back door) D512
    Back door latch (door ajar switch) (with power back door) D511
11. Main power window and door lock/unlock switch D7, D8
    Power window and door lock/unlock switch RH D105
12. Front door lock assembly LH (key cylinder switch) D14
13. Front door switch LH B8
    RH B108
14. Sliding door switch LH B46
    RH B135
15. Combination switch (lighting switch) M28

System Description

EKS00FEB

When lamps on demand switch is in DOOR position, room/map lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, door switches, unlock signal from keyfob, door lock and unlock switch, key cylinder switch, and ignition switch.
When room/map lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room/map lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.
The room/map lamp and personal lamp timer is controlled by the BCM (body control module).
Room/map lamp and personal lamp timer control settings can be changed with CONSULT-II.
Ignition keyhole illumination turns ON when front door LH is opened (door switch ON) or key is removed from key cylinder. Illumination turns OFF when front door LH is closed (door switch OFF).
Step and foot lamp turns ON when any door is opened (door switch ON). Lamp turns OFF when all doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to key switch terminal 1, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 70.

When the key is inserted in key switch, power is supplied

- through the key switch terminal 2
- to BCM terminal 37.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79.

When the front door LH is opened, ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 1
- through case ground of front door switch LH.

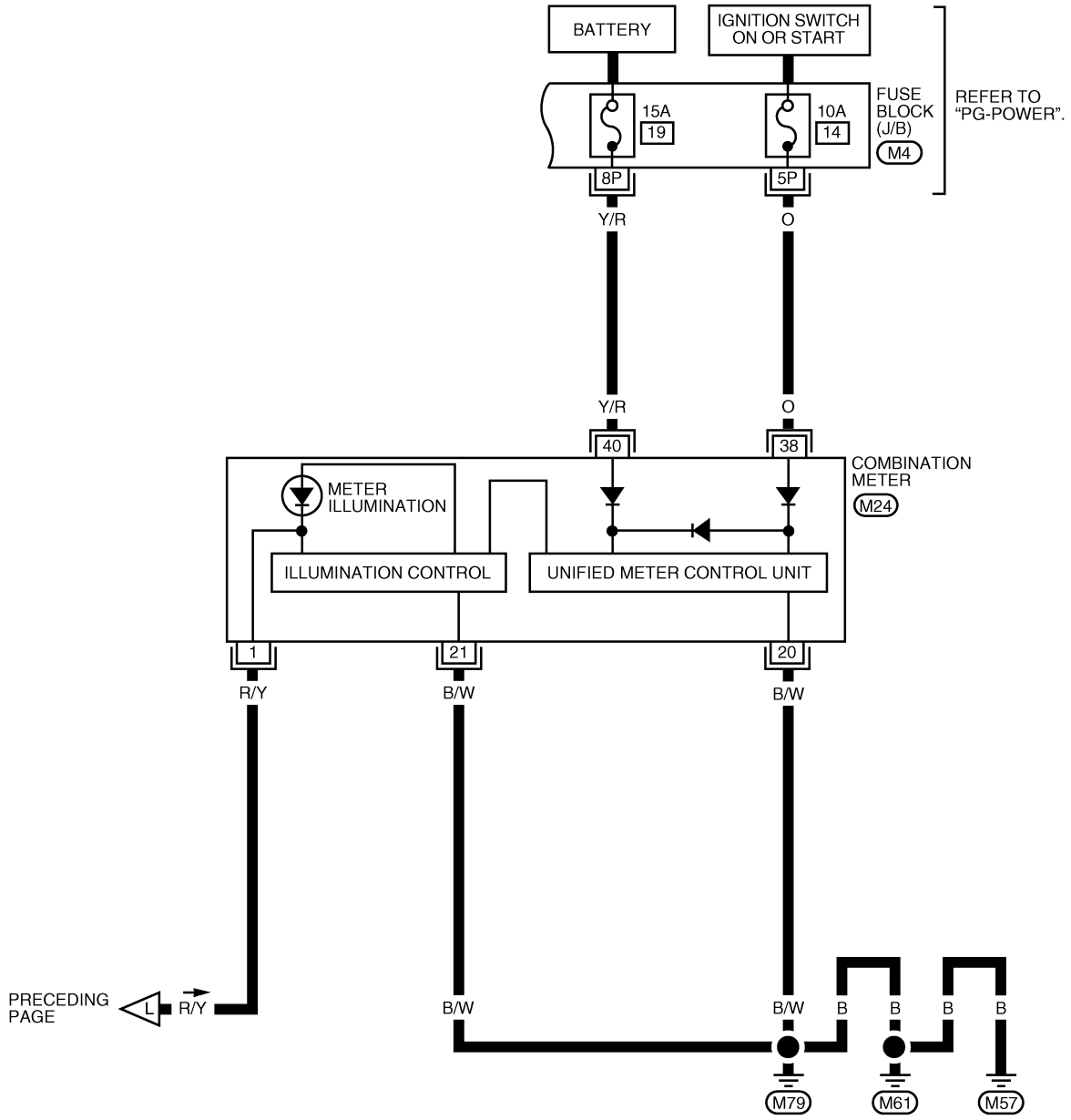
When the front door RH is opened, ground is supplied

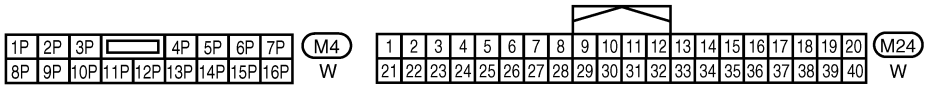
- to BCM terminal 12
- through front door switch RH terminal 1
- through case ground of front door switch RH.

When the sliding door LH is opened, ground is supplied

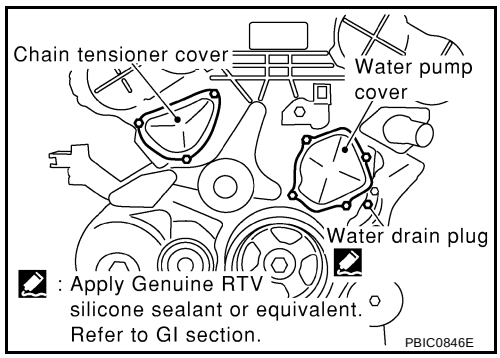
- to BCM terminal 48
- through sliding door switch LH terminal 1

LT-ILL-08



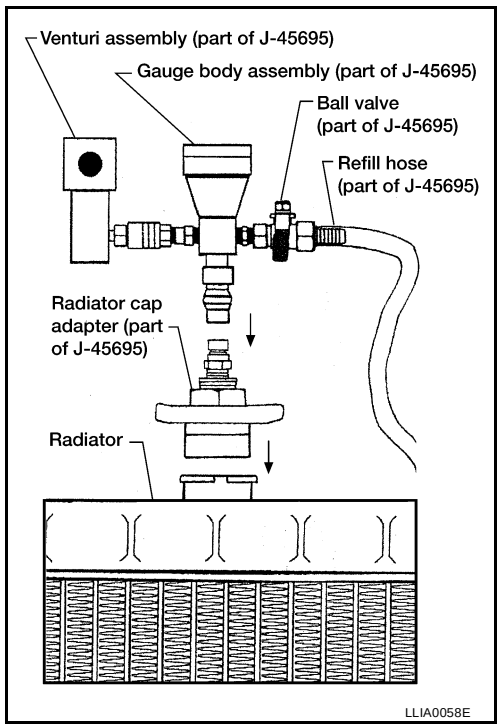


WKWA4731E



Radiator drain plug : Refer to CO-15, "RADIATOR" .
Cylinder block front drain plug : Refer to EM-118, "CYLINDER BLOCK" .
Cylinder block RH drain plug : Refer to EM-118, "CYLINDER BLOCK" .
Cylinder block LH drain plug : Refer to EM-118, "CYLINDER BLOCK" .

2. If disconnected, reattach the upper radiator hose at the engine side.
3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.



Tool number : KV991J0070 (J-45695)

5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.
   - Use Genuine NISSAN Long Life Anti-Freeze Coolant or equivalent, mixed 50/50 with distilled water or demineralized water.
     Refer to MA-10, "ANTI-FREEZE COOLANT MIXTURE RATIO" .

Engine coolant capacity (with reservoir) : Refer to MA-9, "Fluids and Lubricants" .

6. Install an air hose to the venturi assembly, the air pressure must be within specification.

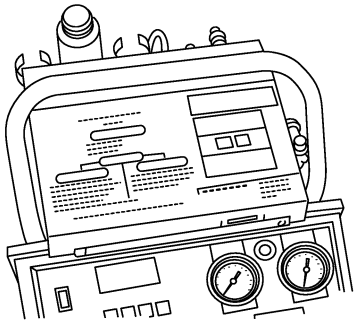
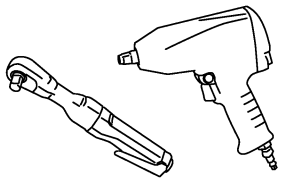
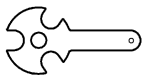
Compressed air supply pressure : 5.7 - 8.5 kPa (5.6 - 8.4 kg/cm^2 , 80 - 120 psi)

CAUTION:
The compressed air supply must be equipped with an air dryer.

7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.

Commercial Service Tools

EJS004M0

Tool number Tool name	Description
(J-41810-NI) Refrigerant identifier equipment (R-134a)  RJIA0197E	For checking refrigerant purity and system contamination
Power tool  PBIC0190E	Loosening bolts and nuts
(J-44614) Clutch disc holding tool  WHA230	Clutch disc holding tool

A/C System Self-diagnosis Function

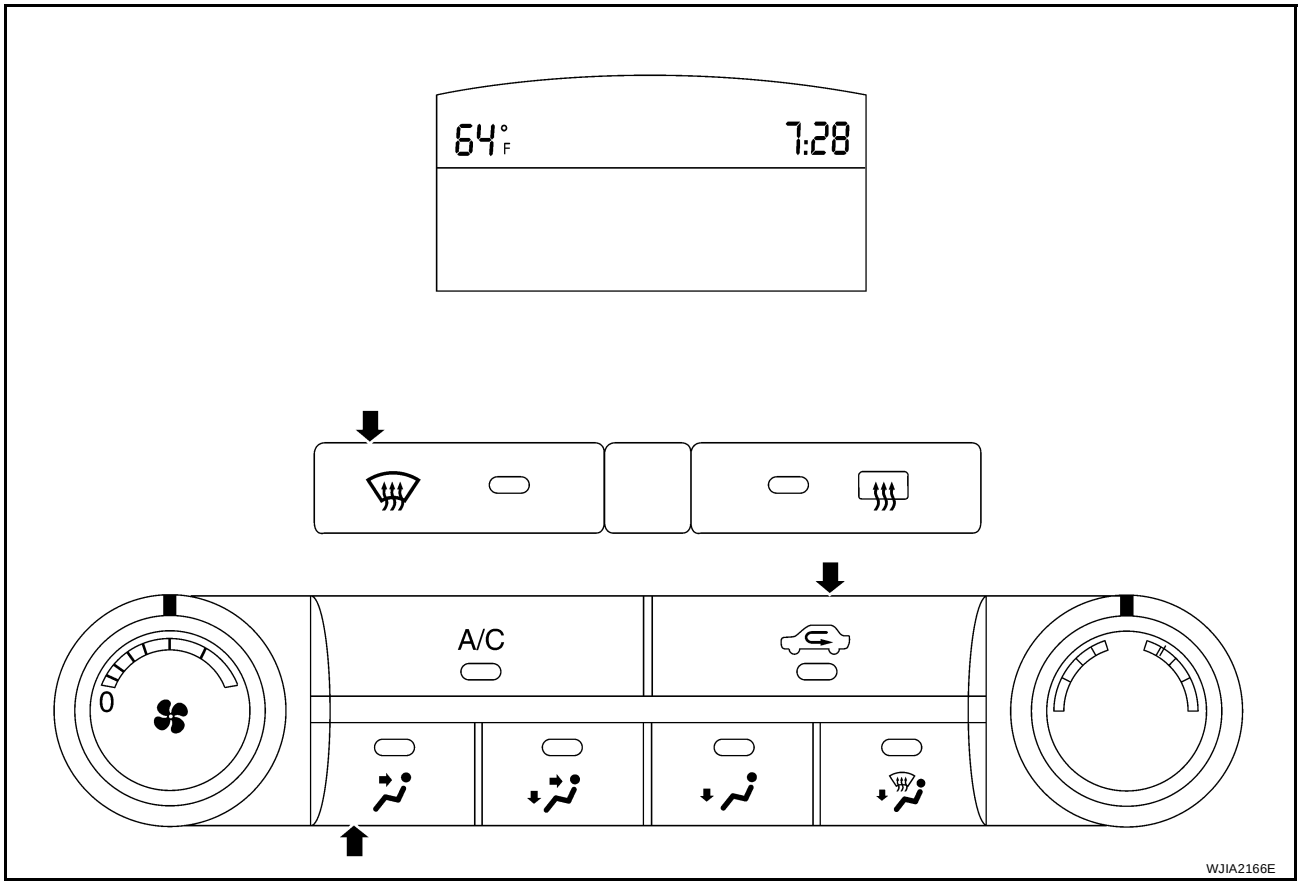
EJS004MI

DESCRIPTION

NOTE:
If using CONSULT-II, refer to MTC-32, "SELF-DIAGNOSIS" .

The self-diagnostic system diagnoses sensors, CAN system, battery voltage, and stuck button on front air control. Refer to applicable sections (items) for details. Shifting from usual control to the self-diagnostic system is accomplished by the following:

The ignition switch must be on and ambient temperature must be at least 10°C (50°F). Press the A/C switch to turn on the HVAC system. Press the vent (and defrost button at the same time. Then press the recirculation ( ) switch. the fault codes (if any are present) will display in the ambient temperature area. Refer to ATC-54, "SELF-DIAGNOSIS CODE CHART" . The fault codes will continue to scroll until self-diagnostic mode is exited. To exit self-diagnostic mode, press any button.



Front Blower Motor Circuit

EJS004MP

SYMPTOM:

- Blower motor operation is malfunctioning.

INSPECTION FLOW

1. CONFIRM SYMPTOM BY PERFORMING OPERATIONAL CHECK - FRONT BLOWER

1. Rotate the blower control dial clockwise. Blower should operate.
2. Rotate the blower control dial clockwise, and continue checking blower speed and fan symbol until all speeds are checked.

Can the symptom be duplicated?

YES >> GO TO 3.
NO >> GO TO 2.

2. CHECK FOR ANY SYMPTOMS

Perform a complete operational check for any symptoms. Refer to MTC-53, "Operational Check (Front)" .

Does another symptom exist?

YES >> Refer the symptom table. Refer to MTC-35, "SYMPTOM TABLE" .
NO >> System OK.

3. CHECK FOR SERVICE BULLETINS

Check for any service bulletins.

>> GO TO 4.

4. PERFORM SELF-DIAGNOSIS

Perform self-diagnosis to check for any codes. Refer to MTC-51, "A/C System Self-diagnosis Function" .

Are any self-diagnosis codes present?

YES >> GO TO appropriate malfunctioning sensor circuit. Refer to MTC-52, "SELF-DIAGNOSIS CODE CHART" .
NO >> GO TO 5.

5. CHECK BLOWER MOTOR OPERATION

Check and verify blower motor operates in all speeds.

Does blower motor operate in all speeds?

YES >> GO TO 6.
NO >> Refer to MTC-87, "DIAGNOSTIC PROCEDURE FOR BLOWER MOTOR" .

6. RECHECK FOR ANY SYMPTOMS

Perform a complete operational check for any symptoms. Refer to MTC-53, "Operational Check (Front)" .

Does another symptom exist?

YES >> Refer to MTC-35, "SYMPTOM TABLE" .
NO >> Replace front air control. Refer to MTC-142, "FRONT AIR CONTROL" .

12. CHECK CAN COMMUNICATION

Check CAN communication. Refer to ATC-31, "CAN Communication System Description" .

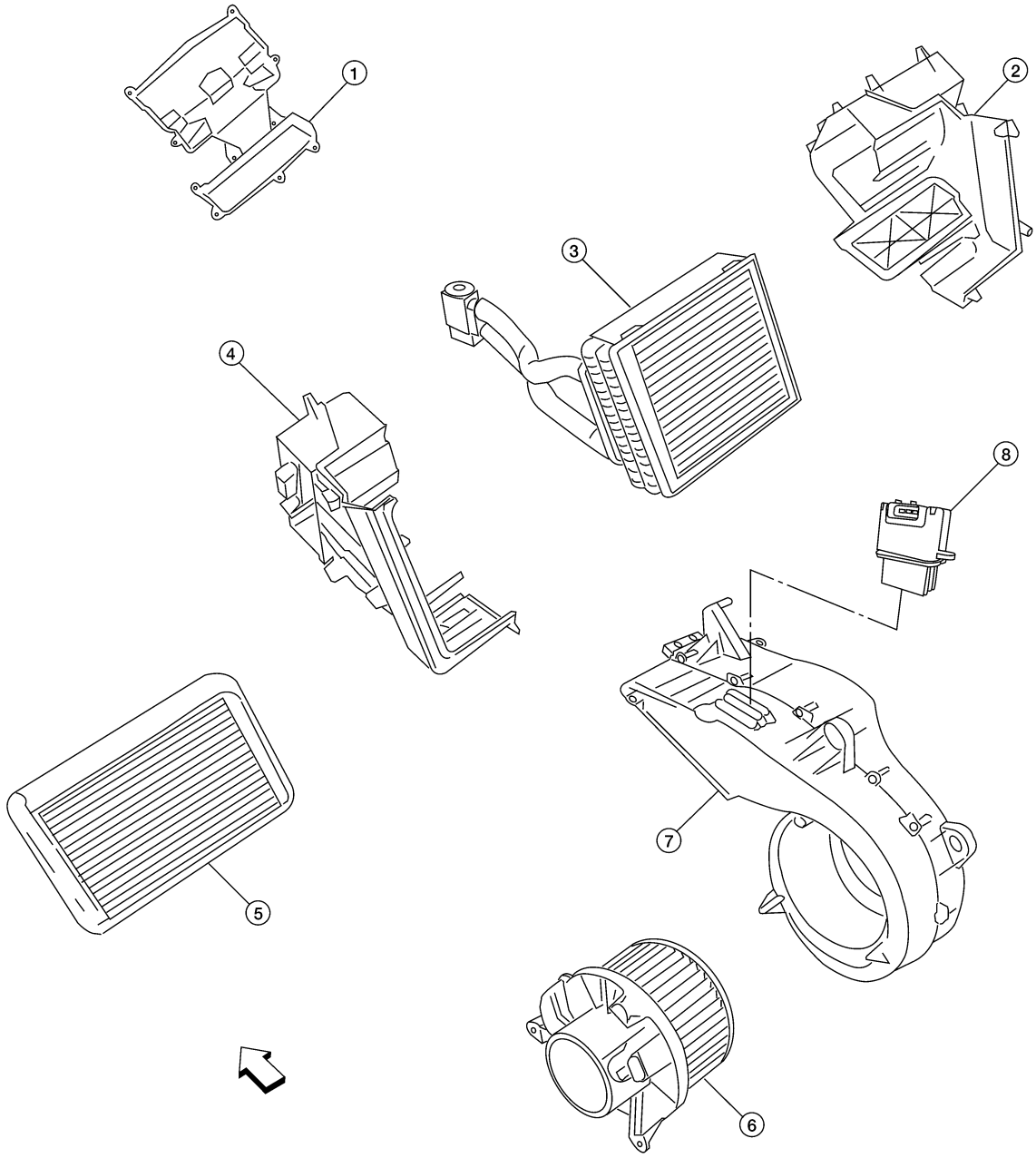
- BCM – ECM
- ECM – IPDM E/R
- ECM – Front air control

OK or NG

OK >> Inspection End.
NG >> Repair or replace malfunctioning part(s).

Rear Heater and Cooling Unit Assembly

SEC. 274



WJIA2146E

1. Front cover
2. Evaporator and heater core case
3. Evaporator
4. Side cover
5. Heater core
6. Rear blower motor
7. Blower motor case
8. Variable blower control (rear)
⇐ Front

Removal and Installation

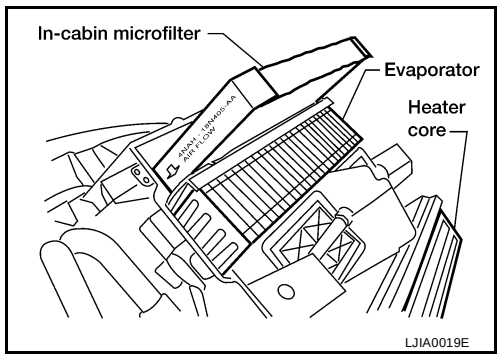
EJS004N7

FRONT HEATER CORE

Removal

1. Remove the front heater and cooling unit assembly. Refer to MTC-150, "FRONT HEATER AND COOLING UNIT ASSEMBLY" .

6. Remove the two in-cabin microfilters.
7. Remove the evaporator.



INSTALLATION

Installation is in the reverse order of removal.

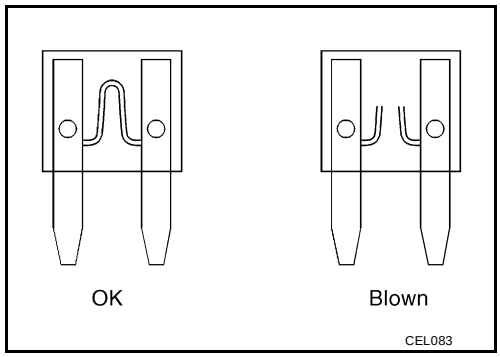
CAUTION:

- **Replace the O-rings on the low-pressure flexible hose and the high-pressure pipe with new ones. Apply compressor oil to the O-rings before installing them.**
- **When installing the in-cabin microfilters, face the microfilters according to the air flow direction arrow printed on the side of the filters.**

Fuse

EKS00GAA

- If fuse is blown, be sure to eliminate cause of incident before installing new fuse.
- Use fuse of specified rating. Never use fuse of more than specified rating.
- Do not partially install fuse, always insert it into fuse holder properly.
- Remove fuse for “ELECTRICAL PARTS (BAT)” if vehicle is not used for a long period of time.



Fusible Link

EKS00GAB

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

CAUTION:

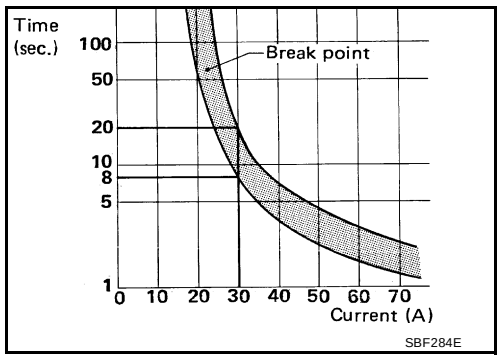
- **If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of incident.**
- **Never wrap outside of fusible link with vinyl tape.**
- **Never let fusible link touch any other wiring harness, vinyl or rubber parts.**

Circuit Breaker (Built Into BCM)

EKS00GAC

For example, when current is 30A, the circuit is broken within 8 to 20 seconds.
A circuit breaker is used for the following systems:

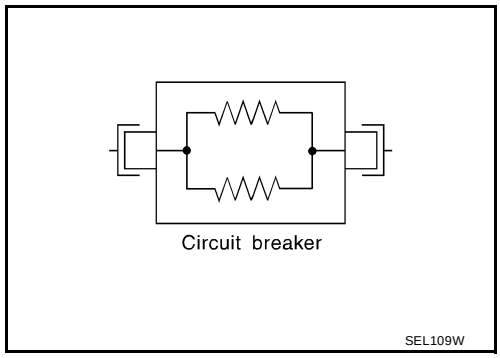
- Power windows
- Power sunroof



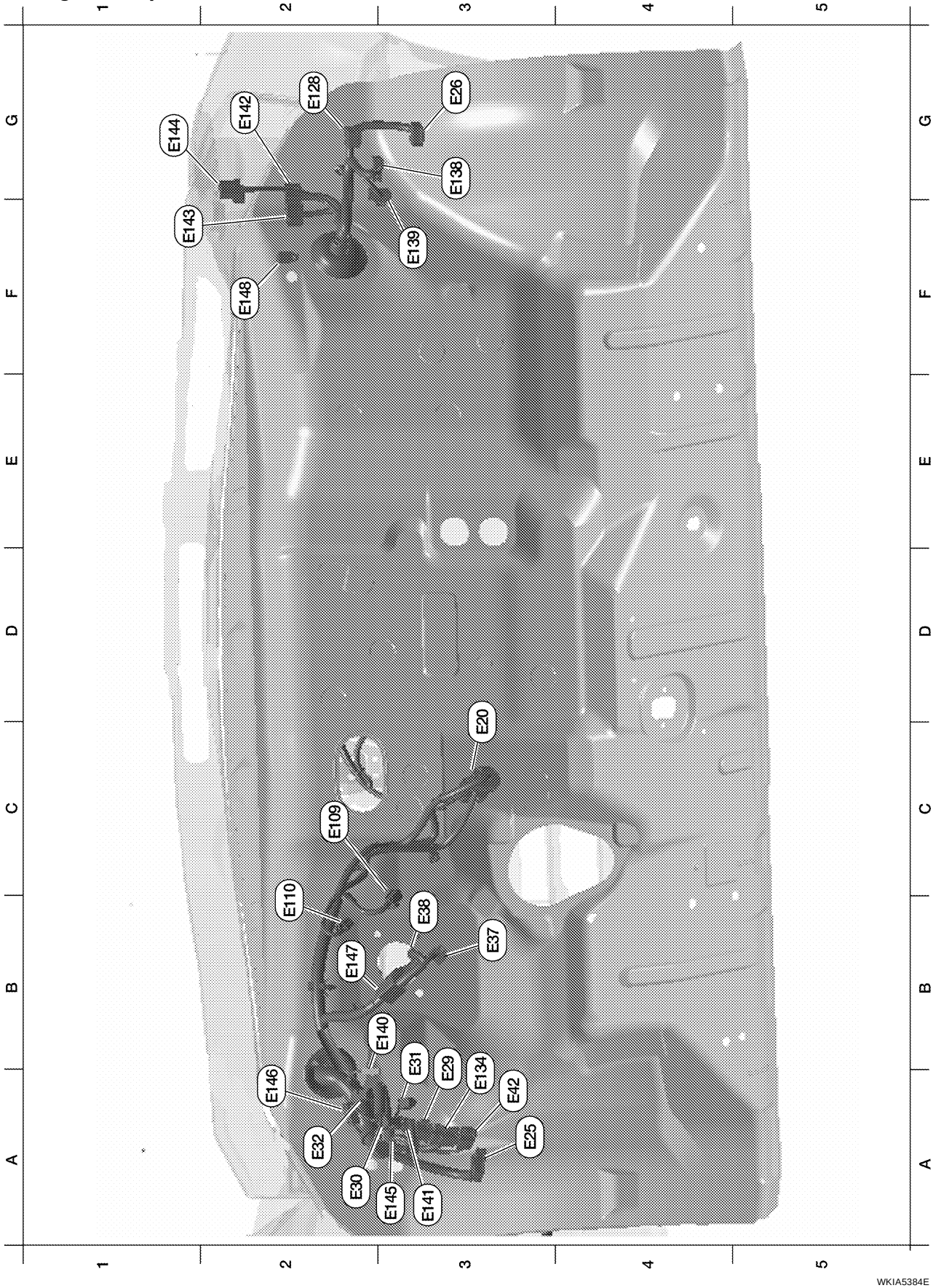
Circuit Breaker (PTC)

EKS00I8K

The PTC thermistor generates heat in response to current flow. The temperature (and resistance) of the thermistor element varies with current flow. Excessive current flow will cause the element's temperature to rise. When the temperature reaches a specified level, the electrical resistance will rise sharply to reduce the circuit current. This reduced current flow will cause the element to cool lowering the resistance accordingly. Once resistance falls to a specified level normal circuit current flow is allowed to resume.



Passenger Compartment

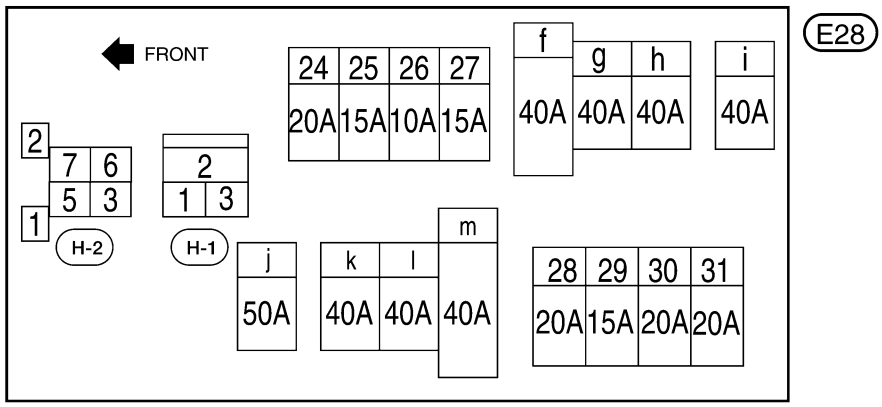


FUSE AND FUSIBLE LINK BOX

PFP:24381

Terminal Arrangement

EKS00FPD



24 - 3 : FUSE f - m : FUSIBLE LINK

WKIA5415E

INSPECTION AFTER REMOVAL

Check for deformity, cracks, and damage on the wheel hub assembly, replace if necessary.

CAUTION:

The wheel hub assembly does not require maintenance. If any of the following symptoms are noted, replace the wheel hub assembly.

- **Growling noise is emitted from the wheel hub bearing during operation.**
- **Wheel hub bearing drags or turns roughly.**

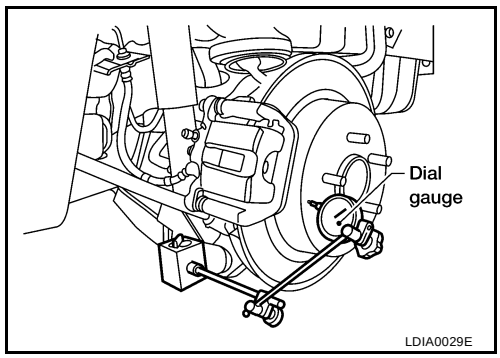
INSTALLATION

Installation is in the reverse order of removal.

INSPECTION AFTER INSTALLATION

- Check that the wheel bearing operates smoothly.
- Check that the wheel hub bearing axial end play is within specification as shown.

Axial end play : 0.05 mm (0.002 in) or less

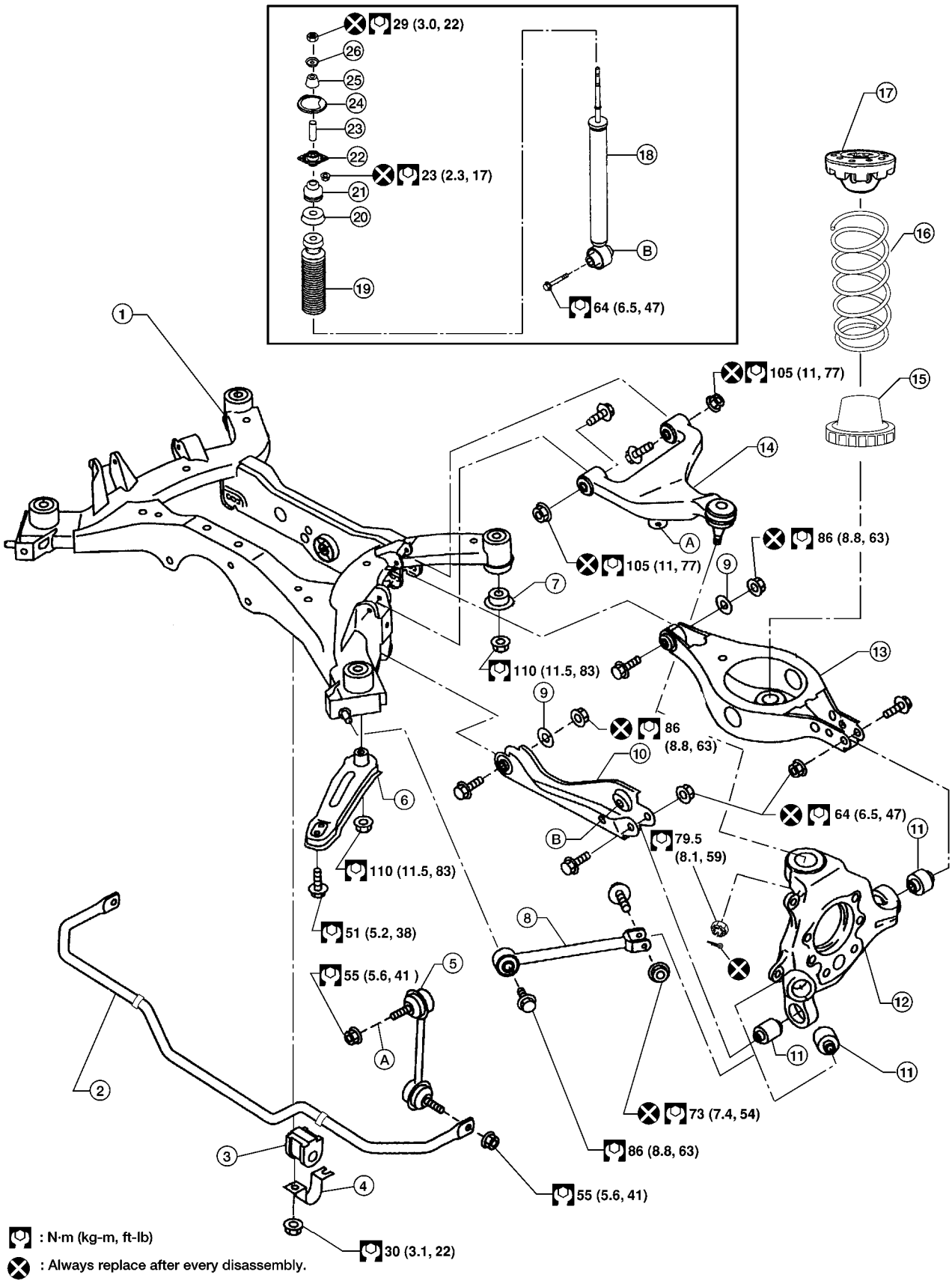


REAR SUSPENSION ASSEMBLY

PFP:55020

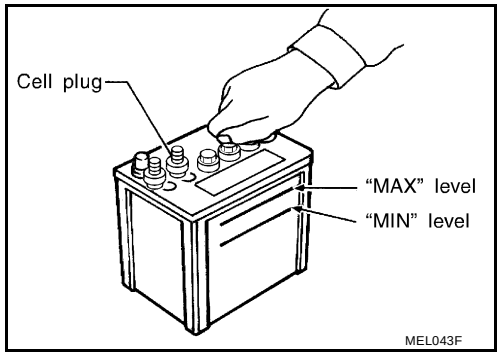
Components

EES0020V



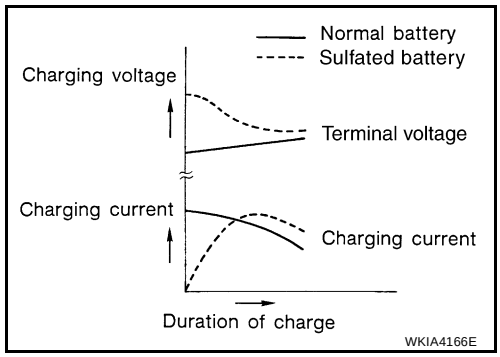
WEIA0110E

- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



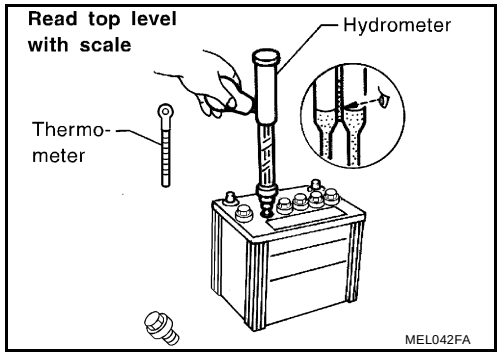
Sulfation

A battery will be completely discharged if it is left unattended for a long time and the specific gravity will become less than 1.100. This may result in sulfation on the cell plates.
To determine if a battery has been sulfated, note its voltage and current when charging it. As shown in the figure, less current and higher voltage are observed in the initial stage of charging sulfated batteries.
A sulfated battery may sometimes be brought back into service by means of a long, slow charge, 12 hours or more, followed by a battery capacity test.



SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.
2. Use the following chart to correct your hydrometer reading according to electrolyte temperature.



Hydrometer Temperature Correction

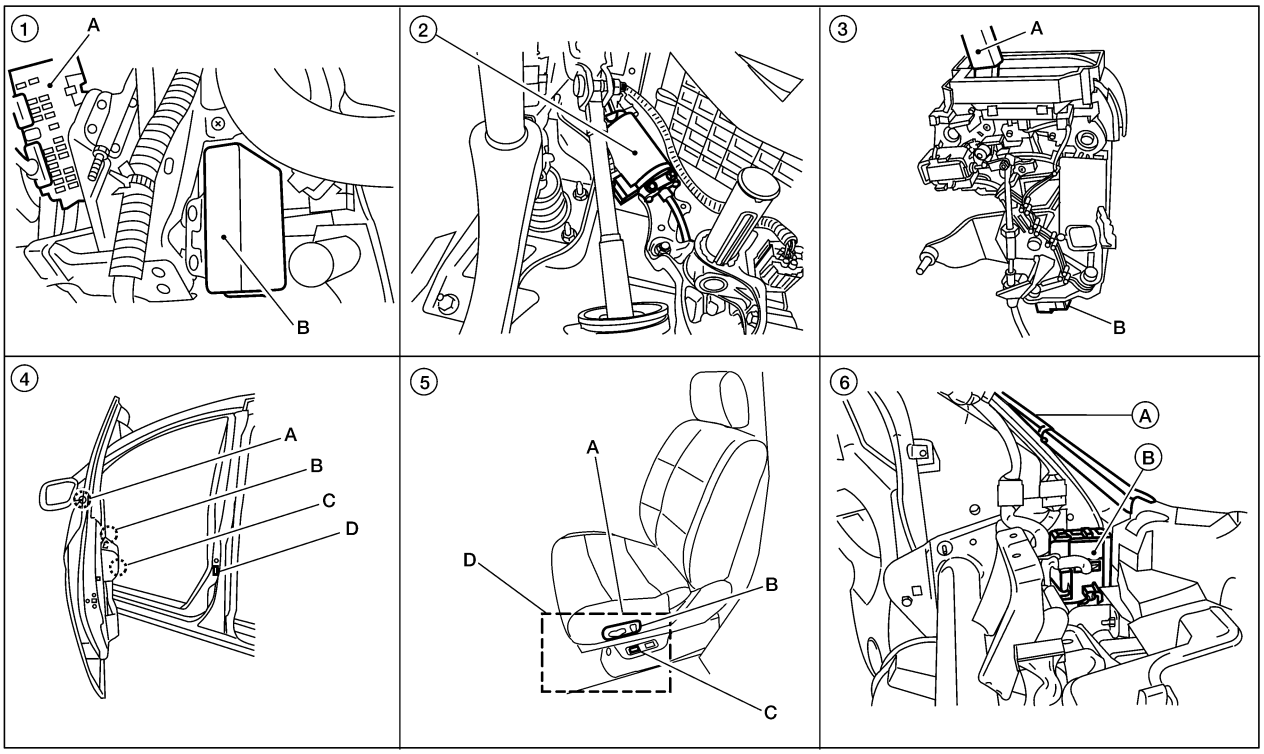
Battery electrolyte temperature °C (°F)	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (130)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	–0.004
16 (60)	–0.008
10 (50)	–0.012
4 (40)	–0.016
–1 (30)	–0.020
–7 (20)	–0.024

AUTOMATIC DRIVE POSITIONER

PFP:28491

Component Parts And Harness Connector Location

EIS007L3



LIIA2458E

1. A. Fuse block (J/B)
   B. Automatic drive positioner control unit M41, M42 (view with instrument panel removed)
2. Pedal adjusting motor E109, E110
3. A. A/T selector lever
   B. A/T device M34
4. A. Door mirror LH D4, D13
   Door mirror RH D107, D113
   B. Door mirror remote control switch D10
   C. Seat memory switch D5
   D. Front door switch LH B8
5. A. Sliding motor LH B403
   Reclining motor LH B404
   Lifting motor (front) B405
   Lifting motor (rear) B406
   B. Power seat switch LH B407
   C. Pedal adjusting switch B22
   D. Driver seat control unit B401, B402
   (front seat LH view)
6. A. A-pillar
   B. BCM M18, M19, M20 (view with instrument panel removed)

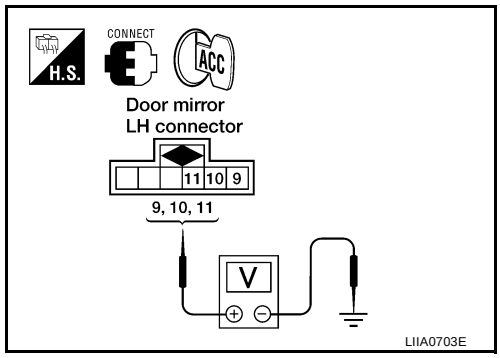
System Description

EIS007L6

- Refer to Owner's Manual for Automatic Drive Positioner system operating instructions.
- The settings (ON/OFF) of the automatic sliding seat (entry/exiting operation) at entry/exit can be changed as desired, using the display unit in the center of the instrument panel. The set content is transmitted by CAN communication, from display control unit to driver seat control unit.
- Using CONSULT-II, the seat slide amount at entry/exit setting can be changed.

4. CHECK MIRROR MOTOR SIGNAL

1. Connect the automatic drive positioner control unit and door mirror LH.
2. Turn ignition switch to ACC.
3. Check voltage between door mirror LH connector and ground.



Connector	Terminals (+)	Terminals (-)	Condition	Voltage (V) (Approx.)
D13	10	Ground	Mirror motor is operated UP	1.7 - Battery voltage
			Other than above	0
	9		Mirror motor is operated LEFT	1.7 - Battery voltage
			Other than above	0
	11		Mirror motor is operated DOWN or RIGHT	1.7 - Battery voltage
			Other than above	0

OK or NG

OK >> Replace door mirror LH. Refer to GW-107, "Door Mirror Assembly" .
NG >> Repair or replace harness.

Mirror Motor RH Circuit Check

EIS007LO

1. CHECK DOOR MIRROR RH MECHANISM

Check the following items.
Operation malfunction caused by a foreign object caught in door mirror face edge.

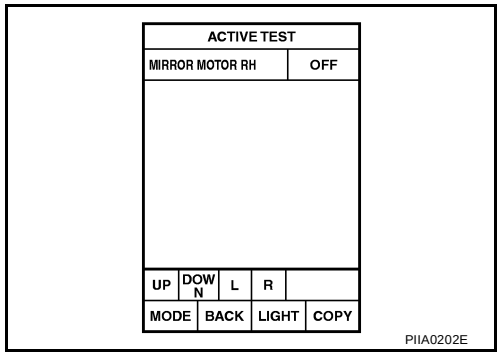
OK or NG

OK >> GO TO 2.
NG >> Repair the malfunctioning parts, and check the symptom again.

2. CHECK FUNCTION

With CONSULT-II

Check the operation with “MIRROR MOTOR RH” in the ACTIVE TEST.



Test item	Description
MIRROR MOTOR RH	The mirror motor RH moves the mirror UP/DOWN and LEFT/RIGHT by receiving the drive signal.

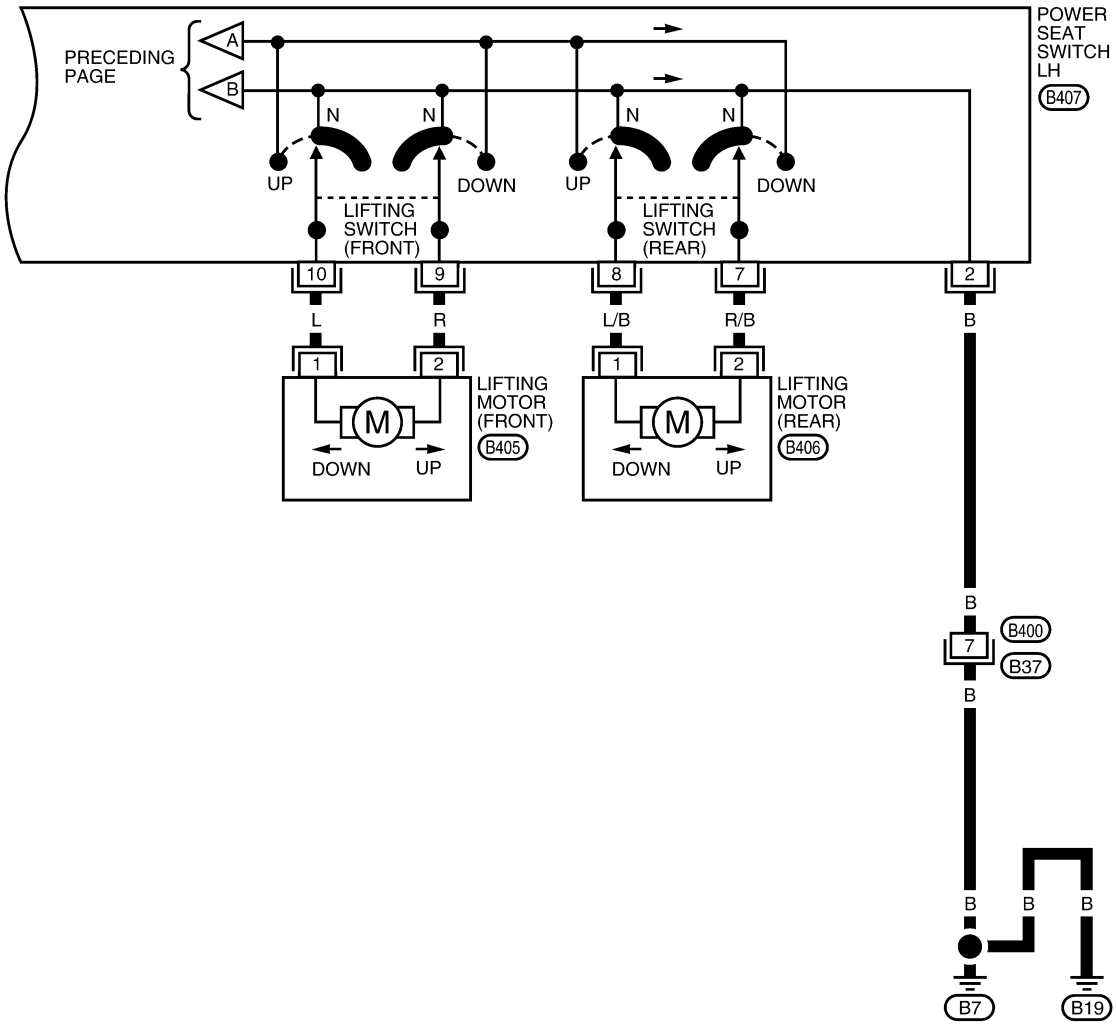
Without CONSULT-II

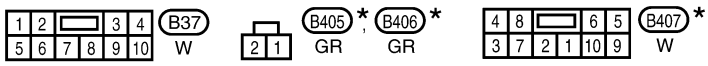
GO TO 3.

OK or NG

OK >> Mirror motor RH circuit is OK.
NG >> GO TO 3.

SE-SEAT-02

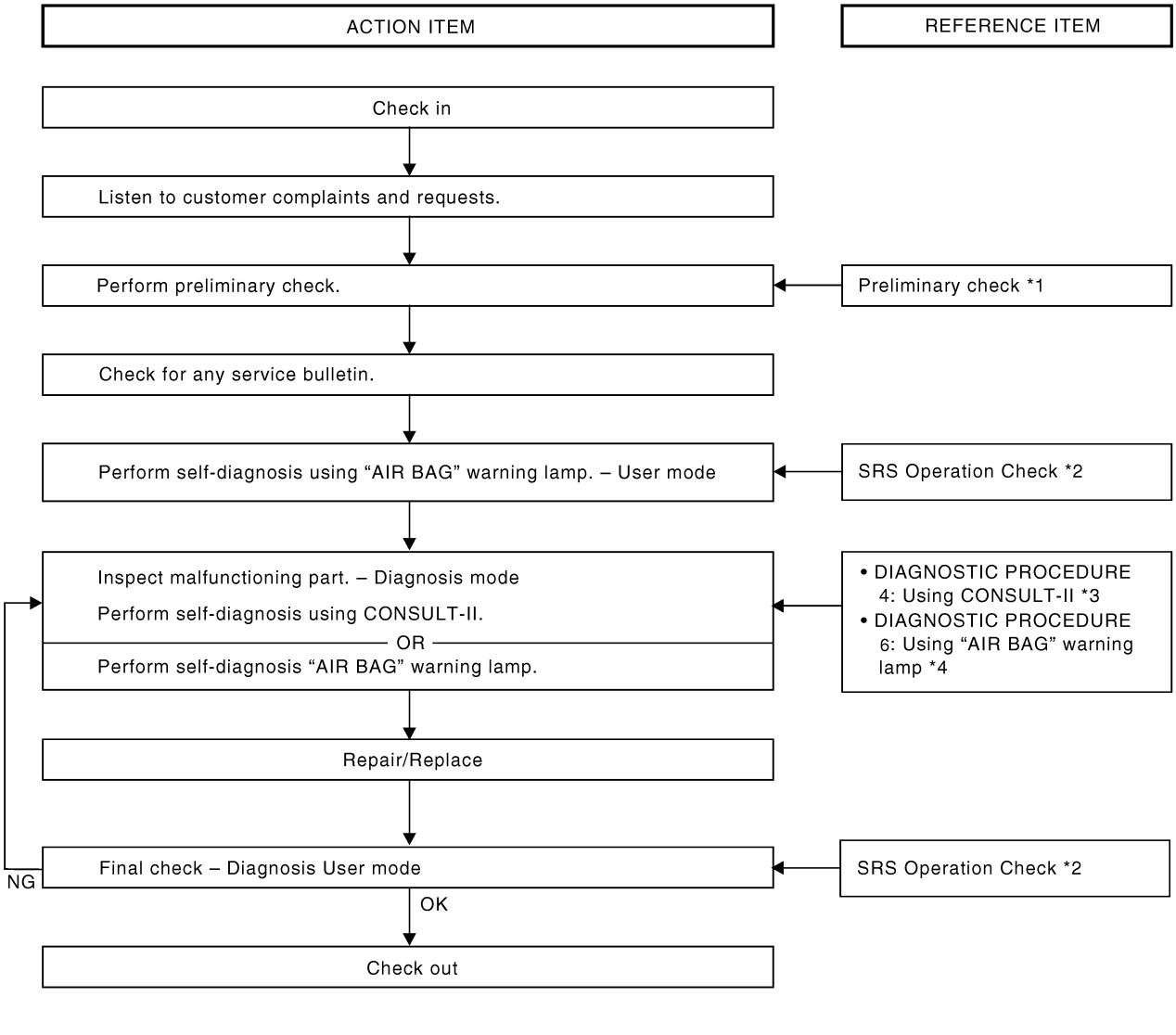




*: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.

WIWA1804E

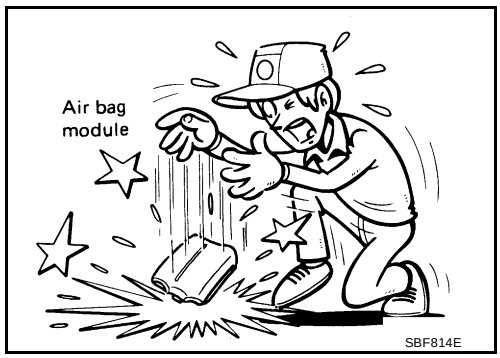
WORK FLOW



WHIA0098E

*1: SRS-8 *2: SRS-20 *3: SRS-28
*4: SRS-34

- **Replace the air bag module if it has been dropped or sustained an impact.**
- **Do not allow oil, grease or water to come in contact with the air bag module.**



INSTALLATION

Installation is in the reverse order of removal.

- For removal/installation of the direct-connect SRS connectors, refer to SRS-7, "Direct-connect SRS Component Connectors" .
- After the work is completed, perform self-diagnosis to check that no malfunction is detected. Refer to SRS-20, "SRS Operation Check" .