QUICK REFERENCE INDEX

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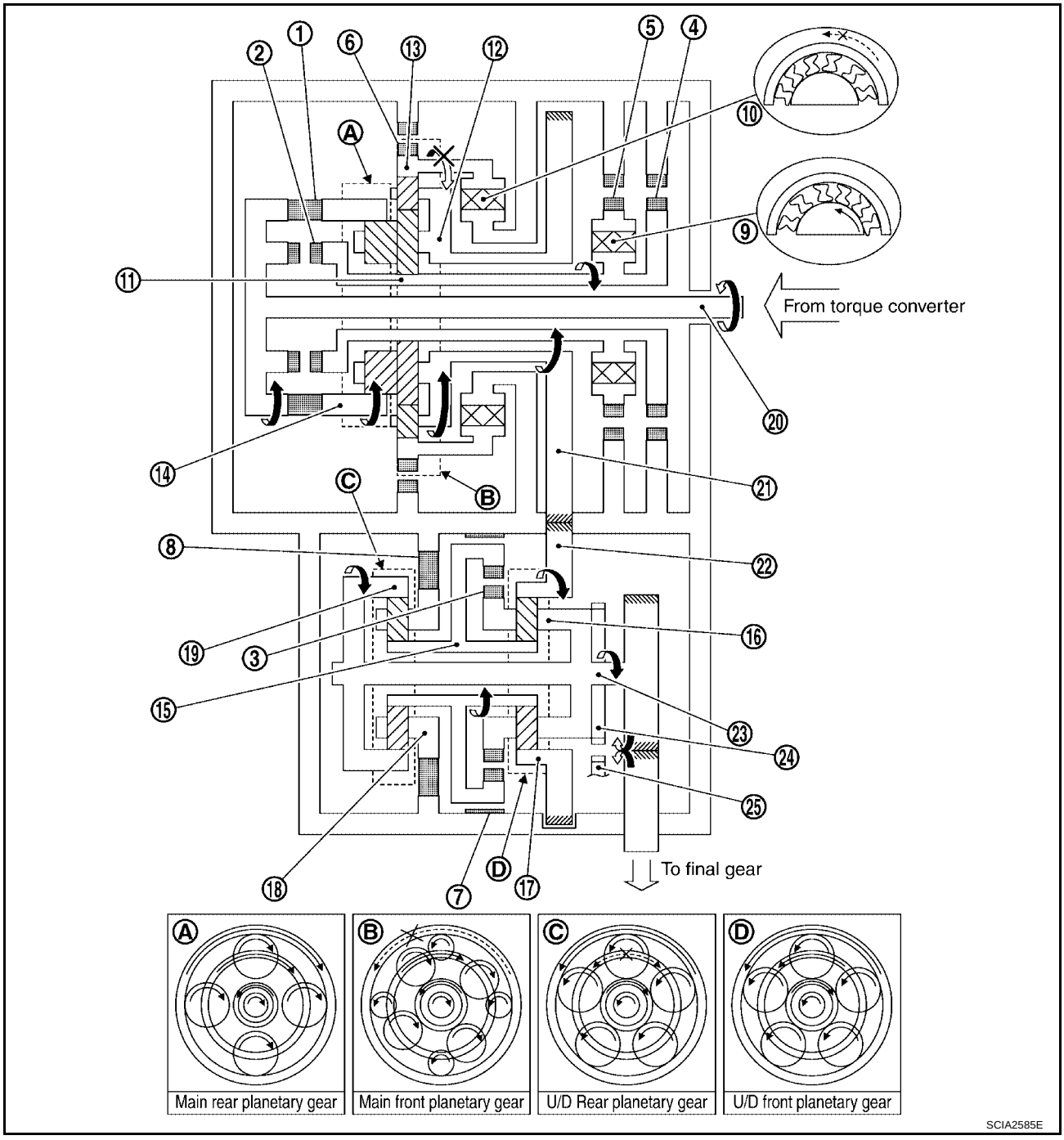
NISSAN MAXIMA

MODEL A34 SERIES



1. Forward clutch
2. Direct clutch
3. U/D clutch
4. 2nd coast brake
5. 2nd brake
6. 1st and reverse brake
7. U/D brake
8. B5 brake
9. One-way clutch No. 1
10. One-way clutch No. 2
11. Main sun gear
12. Main planetary carrier
13. Main front internal gear
14. Main rear internal gear
15. U/D sun gear
16. U/D front planetary carrier
17. U/D front internal gear
18. U/D rear planetary carrier
19. U/D rear internal gear
20. Input shaft
21. Counter drive gear
22. Counter driven gear
23. Output shaft
24. Parking gear
25. Parking pawl

CAUTION:
Run the engine at idle for at least one minute.

10. Repeat step 5 through 9 with selector lever in “manual mode” and “R” positions.

Stall speed: 2,430 - 2,730 rpm

Judgement stall test

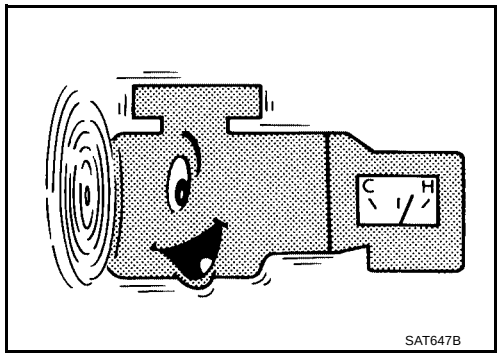
	Selector lever position		Possible cause
	D, M	R	
Stall rotation	H	O	● Line pressure is low (pressure control solenoid valve A malfunction, primary regulator valve malfunction) ● Forward clutch (slipping) ● One-way clutch No. 2
	O	H	● Line pressure is low (pressure control solenoid valve A malfunction, primary regulator valve malfunction) ● Direct clutch (slipping) ● 1st and reverse brake (slipping)
	L	L	● Engine or torque converter one-way clutch
	H	H	● Line pressure is low (pressure control solenoid valve A malfunction, primary regulator valve malfunction) ● B5 brake (slipping) ● Oil pump ● Oil strainer (clogging) ● Oil leak for each range circuit

O: Stall speed within standard value position
H: Stall speed higher than standard value
L: Stall speed lower than standard value

TIME LAG TEST

Time lag test procedure

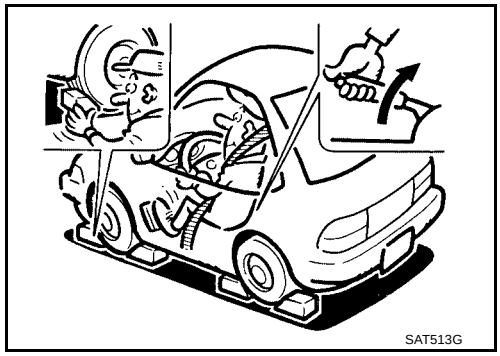
1. Inspect the amount of engine oil. Replenish the engine oil if necessary.
2. Drive for about 10 minutes to warm up the vehicle so that the A/T fluid temperature is 50 to 80°C (122 to 176°F). Check the amount of A/T fluid. Replenish if necessary.
3. Switch of A/C and light etc. are off.



SAT647B

4. Securely engage the parking brake so that the tires do not turn.
5. Engine start, apply foot brake.
6. Measure time lag by using stopwatch from moment when shift lever is shifted in “N” to “D” position and “N” to “R” position until moment slightly shock can be felt.

CAUTION:
- **Make sure to take 3 measurement and take the average value.**
- **Make sure to keep interval for more than one minute between time lag tests.**
  (That purpose is to remove clutch/brake pressure was left unfinished.)


SAT513G

Diagnostic Procedure

ECS00A21

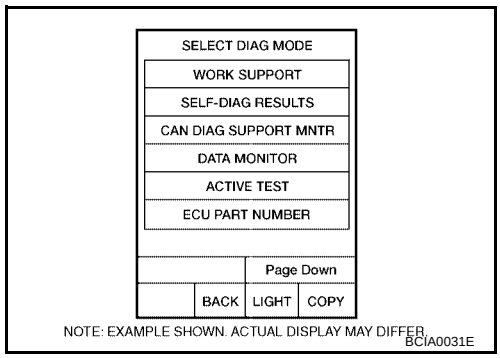
1. CHECK DTC

With CONSULT-II

1. Turn ignition switch “ON”. (Do not start engine.)
2. Select “A/T” with “SELF-DIAG RESULTS” mode in CONSULT-II.
3. Touch “ERASE”.
4. Turn ignition switch “OFF” and wait at least 10 seconds.
5. Perform DTC confirmation procedure, AT-88, "DTC Confirmation Procedure" .

Is the “TCM PROCESSOR” displayed again?

YES >> Replace TCM.
NO >> **INSPECTION END**



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

3. CHECK MALFUNCTIONING ITEM

1. Control valve assembly. Refer to AT-241, "Control Valve Assembly" .
2. Disassembly A/T. Refer to AT-252, "DISASSEMBLY" .
3. Check the following item:

- U/D brake. Refer to AT-252, "DISASSEMBLY" .
- 2nd coast brake. Refer to AT-272, "Oil Pump, 2nd Coast Brake & 2nd Brake" , AT-278, "One-Way Clutch Outer Race Sub Assembly & 2nd Coast Brake Hub & One-Way Clutch No.1" .
- 2nd brake. Refer to AT-272, "Oil Pump, 2nd Coast Brake & 2nd Brake" .
- One-way clutch No.1. Refer to AT-278, "One-Way Clutch Outer Race Sub Assembly & 2nd Coast Brake Hub & One-Way Clutch No.1" .
- One-way clutch No.2. Refer to AT-252, "DISASSEMBLY" .
- B5 brake. Refer to AT-280, "Transaxle Case Cover & B5 Brake" .

OK or NG

OK >> GO TO 4.
NG >> Repair or replace damaged parts.

4. CHECK DTC

Perform “DTC Confirmation Procedure”. Refer to AT-118, "DTC Confirmation Procedure" .

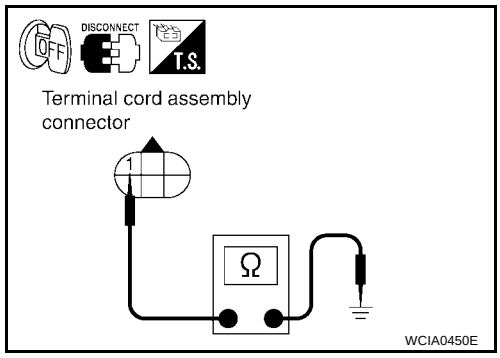
OK or NG

OK >> **INSPECTION END**
NG >> Replace control valve assembly. Refer to AT-241, "Control Valve Assembly" .

3. CHECK TERMINAL CORD ASSEMBLY WITH SHIFT SOLENOID VALVE B

1. Turn ignition switch “OFF”.
2. Disconnect terminal cord assembly harness connector.
3. Check resistance between terminal 1 and ground.

Connector	Terminal	Condition	Resistance (Approx.)
F62	1 - Ground	Temperature: 20°C (68°F)	11 - 16 Ω



OK or NG

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

4. CHECK HARNESS BETWEEN TCM AND TERMINAL CORD ASSEMBLY

Check the following.

- Open or short-circuit in the harness between TCM and terminal cord assembly.

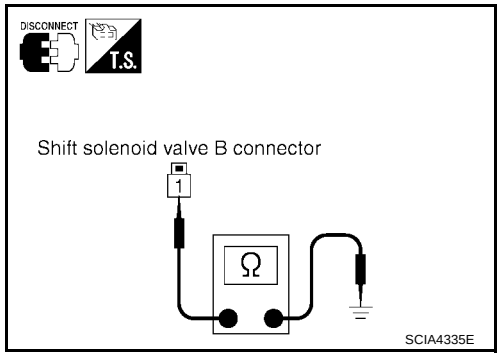
OK or NG

OK >> GO TO 7.
NG >> Repair or replace damaged parts.

5. CHECK SHIFT SOLENOID VALVE B

1. Remove side cover. Refer to AT-241, "Side cover" .
2. Disconnect shift solenoid valve B harness connector.
3. Check resistance between terminal 1 and ground.

Connector	Terminal	Condition	Resistance (Approx.)
F101	1 - Ground	Temperature: 20°C (68°F)	11 - 16 Ω



OK or NG

OK >> GO TO 6.
NG >> Replace the control valve assembly. Refer to AT-241, "Control Valve Assembly" .

6. CHECK HARNESS BETWEEN TERMINAL CORD ASSEMBLY AND SHIFT SOLENOID VALVE B

Check the following.

- Open or short-circuit in the harness between terminal cord assembly and shift solenoid valve B.

OK or NG

OK >> GO TO 7.
NG >> Repair or replace transmission wire. Refer to AT-241, "Terminal cord assembly" .

7. CHECK DTC

Perform “DTC Confirmation Procedure”. Refer to AT-154, "DTC Confirmation Procedure" .

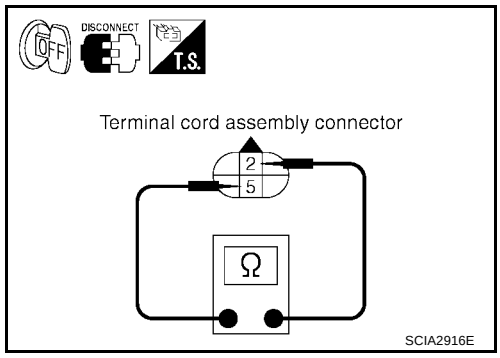
OK or NG

OK >> **INSPECTION END**
NG >> GO TO 8.

3. CHECK TERMINAL CORD ASSEMBLY WITH PRESSURE CONTROL SOLENOID VALVE C

1. Turn ignition switch “OFF”.
2. Disconnect terminal cord assembly harness connector.
3. Check resistance between terminals 2 and 5.

Connector	Terminal	Condition	Resistance (Approx.)
F62	2 - 5	Temperature: 20°C (68°F)	5.0 - 5.6 Ω



OK or NG

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

4. CHECK HARNESS BETWEEN TCM AND TERMINAL CORD ASSEMBLY

Check the following.

- Open or short-circuit in the harness between TCM and terminal cord assembly.

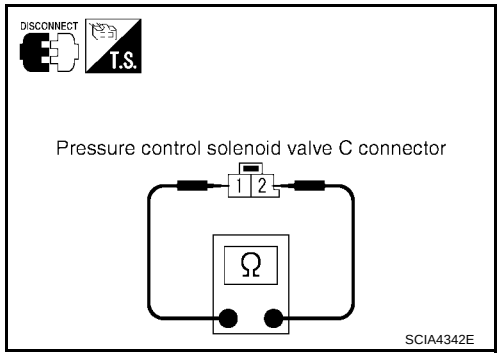
OK or NG

OK >> GO TO 7.
NG >> Repair or replace damaged parts.

5. CHECK PRESSURE CONTROL SOLENOID VALVE C

1. Remove side cover. Refer to AT-241, "Side cover" .
2. Disconnect pressure control solenoid valve C harness connector.
3. Check resistance between terminals 1 and 2.

Connector	Terminal	Condition	Resistance (Approx.)
F107	1 - 2	Temperature: 20°C (68°F)	5.0 - 5.6 Ω



OK or NG

OK >> GO TO 6.
NG >> Replace the control valve assembly. Refer to AT-241, "Control Valve Assembly" .

6. CHECK HARNESS BETWEEN TERMINAL CORD ASSEMBLY AND PRESSURE CONTROL SOLENOID VALVE C

Check the following.

- Open or short-circuit in the harness between terminal cord assembly and pressure control solenoid valve C.

OK or NG

OK >> GO TO 7.
NG >> Repair or replace transmission wire. Refer to AT-241, "Terminal cord assembly" .

7. CHECK DTC

Perform “DTC Confirmation Procedure”. Refer to AT-188, "DTC Confirmation Procedure" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 8.

DIAGNOSTIC PROCEDURE

1. CHECK MANUAL MODE SWITCH CIRCUIT

Check the manual mode switch circuit. Refer to AT-198, "DTC P0826 MANUAL MODE SWITCH CIRCUIT" .

OK or NG

OK >> GO TO 2.
NG >> Repair or replace damaged parts.

2. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis.

Is any malfunction detected by self-diagnostic?

YES >> Check the malfunctioning system.
NO >> **INSPECTION END**

A/T Does Not Shift: 5th gear → 4th gear

ECS00A77

SYMPTOM:

When shifted from 5M to 4M position in manual mode, does not downshift from 5th to 4th gear.

DIAGNOSTIC PROCEDURE

1. CHECK A/T FLUID LEVEL

Check the A/T fluid level. Refer to AT-54, "A/T FLUID CHECK" .

OK or NG

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

2. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis.

Is any malfunction detected by self-diagnostic?

YES >> Check the malfunctioning system.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING ITEM

1. Control valve assembly. Refer to AT-241, "Control Valve Assembly" .
2. Disassemble A/T. Refer to AT-252, "DISASSEMBLY" .
3. Check the following items:

- Forward and direct clutch assembly. Refer to AT-252, "DISASSEMBLY" .
- 2nd coast brake. Refer to AT-272, "Oil Pump, 2nd Coast Brake & 2nd Brake" , AT-278, "One-Way Clutch Outer Race Sub Assembly & 2nd Coast Brake Hub & One-Way Clutch No.1" .
- One-way clutch No.1. Refer to AT-278, "One-Way Clutch Outer Race Sub Assembly & 2nd Coast Brake Hub & One-Way Clutch No.1" .

OK or NG

OK >> GO TO 4.
NG >> Repair or replace damaged parts.

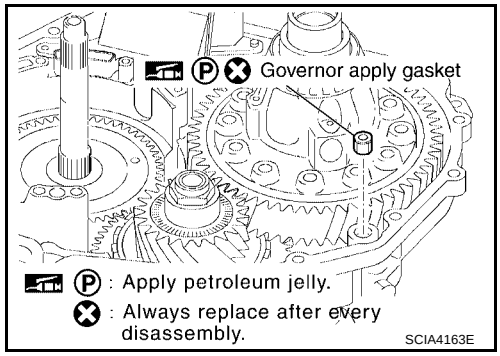
4. CHECK TCM

1. Check TCM input/output signal. Refer to AT-71, "TCM Input/Output Signal Reference Values" .
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

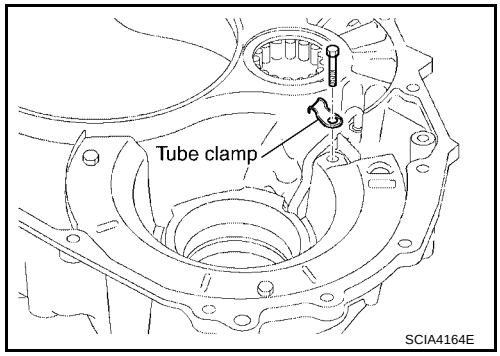
OK or NG

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

35. Remove governor apply gasket.
36. Remove seal ring.



37. Remove tube clamp bolt and clamp.

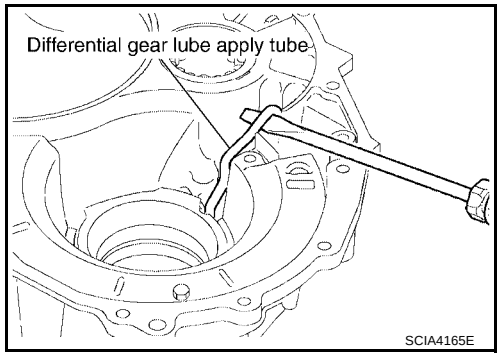


38. Remove differential gear lube apply tube using a suitable tool.

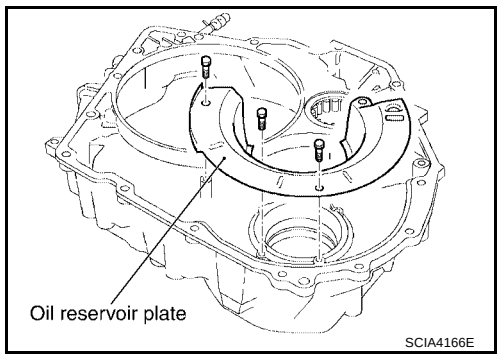
CAUTION:

Be careful not to bend or damage differential gear lube apply tube.

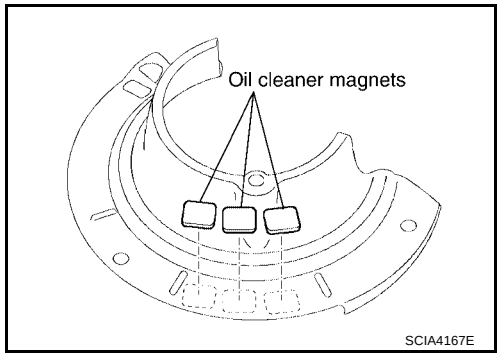
Be careful not to damage transaxle housing.



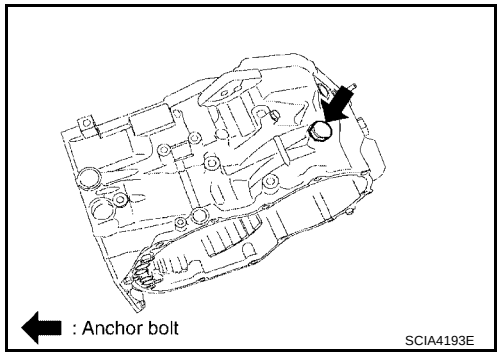
39. Remove oil reservoir plate.



40. Remove oil cleaner magnets from oil reservoir plate.

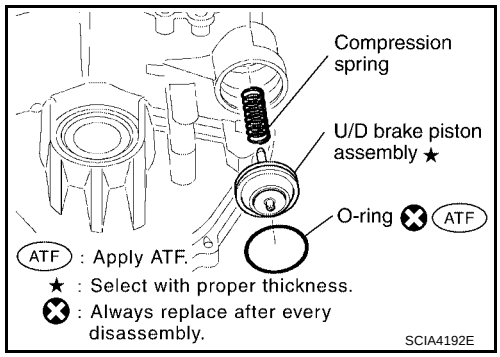


29. Tighten anchor bolt to specified torque. Refer to AT-245, "Components" .



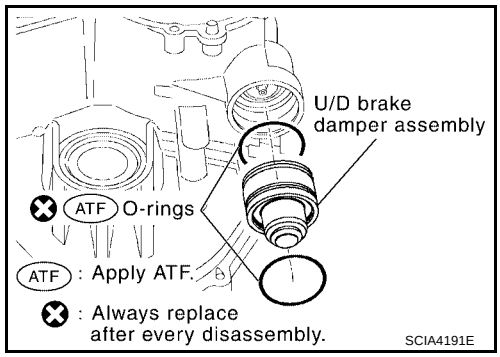
30. Install new O-ring in U/D brake piston assembly.
NOTE:
- Do not reuse O-rings.
- Apply ATF to O-rings.

31. Coat the inner surface of transaxle case with ATF.
32. Install compression spring and U/D brake piston assembly.

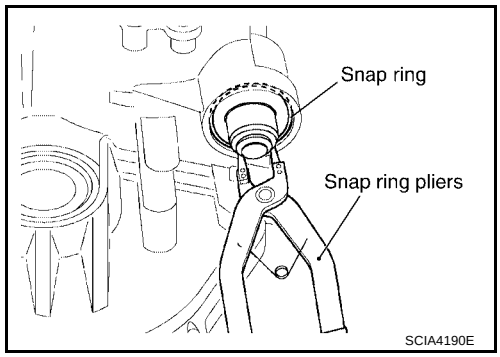


33. Install new O-rings in U/D brake damper assembly.
NOTE:
- Do not reuse O-ring.
- Apply ATF to O-ring.

34. Install U/D brake damper assembly.

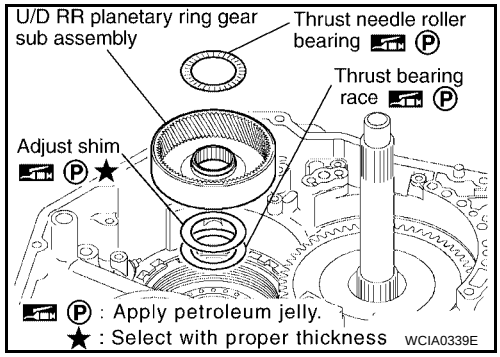


35. Install snap ring using a snap ring pliers.
CAUTION:
If the snap ring is deformed, replace it.



36. Install thrust needle roller bearing adjust shim and thrust bearing race in U/D RR planetary ring gear sub assembly.
NOTE:
Apply petroleum jelly to adjust shim, thrust needle roller bearing and thrust bearing race.

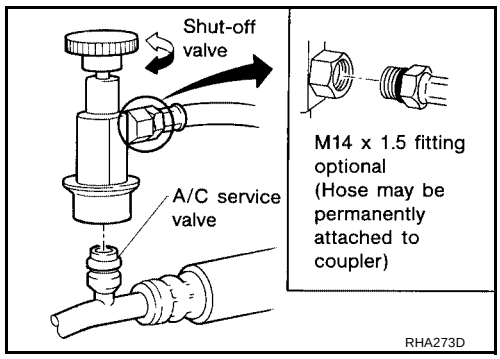
37. Install U/D RR planetary ring gear sub assembly.



SERVICE COUPLERS

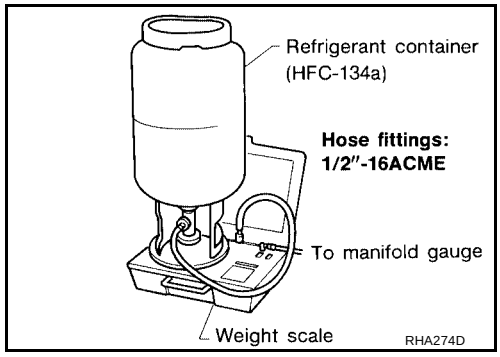
Never attempt to connect HFC-134a (R-134a) service couplers to a CFC-12 (R-12) A/C system. The HFC-134a (R-134a) couplers will not properly connect to the CFC-12 (R-12) system. However, if an improper connection is attempted, discharging and contamination may occur.

Shut-off valve rotation	A/C service valve
Clockwise	Open
Counterclockwise	Close



REFRIGERANT WEIGHT SCALE

Verify that no refrigerant other than HFC134a (R-134a) and specified lubricants have been used with the scale. If the scale controls refrigerant flow electronically, the hose fitting must be 1/2”-16 ACME.



CHARGING CYLINDER

Using a charging cylinder is not recommended. Refrigerant may be vented into air from cylinder's top valve when filling the cylinder with refrigerant. Also, the accuracy of the cylinder is generally less than that of an electronic scale or of quality recycle/recharge equipment.

Wiring Diagrams and Trouble Diagnosis

EJS002U4

When you read wiring diagrams, refer to the following:

- GI-13, "How to Read Wiring Diagrams"
- PG-4, "POWER SUPPLY ROUTING CIRCUIT"

When you perform trouble diagnosis, refer to the following:

- GI-9, "How to Follow Trouble Diagnoses"
- GI-25, "How to Perform Efficient Diagnosis for an Electrical Incident"

10. CHECK IN-VEHICLE SENSOR

Press (DEF) switch a second time. Temperature detected by in-vehicle sensor is indicated on the display (°F for U.S.A. model, °C for Canada model).

NOTE:
If temperature shown on display greatly differs from actual temperature, check sensor circuit first, then inspect sensor.

OK or NG

OK >> GO TO 11.
NG >> Go to ATC-94, "In-vehicle Sensor Circuit" .

11. CHECK INTAKE SENSOR

Press (DEF) switch a third time. Temperature detected by intake sensor is indicated on the display (°F for U.S.A. model, °C for Canada model).

NOTE:
If temperature shown on display greatly differs from actual temperature, check sensor circuit first, then inspect sensor.

OK or NG

OK >> GO TO 12.
NG >> Go to ATC-100, "Intake Sensor Circuit" .

12. CHECK CAN COMMUNICATION ERROR

1. Press ( ) (REC) switch.
2. CAN communication error between unified meter and A/C amp. and DISPLAY UNIT or DISPLAY CONTROL UNIT is detected.

OK or NG

OK >> 1. Turn ignition switch OFF or AUTO switch ON.
2. END

NG >> Go to CAN communication. Refer to DI-31, "CAN Communication System Description" .
- Unified meter and A/C amp. - DISPLAY UNIT
- Unified meter and A/C amp. - DISPLAY CONTROL UNIT

Display	CAN communication error
52	In good order
52	Display unit or Display control unit ⇨Unified meter and A/C amp.
52	Unified meter and A/C amp. ⇨Display unit or Display control unit

RJIA1762E

12. CHECK CAN COMMUNICATION

Check CAN communication. Refer to ATC-55, "DIAGNOSTIC PROCEDURE FOR LAN CIRCUIT" .

- BCM – ECM
- ECM – IPDM E/R
- ECM – Unified meter and A/C amp.

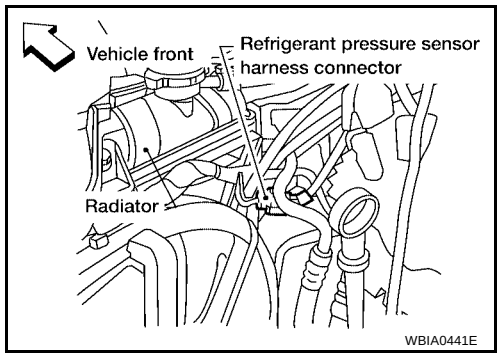
OK or NG

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

COMPONENT INSPECTION

Refrigerant Pressure Sensor

The refrigerant pressure sensor is attached to the condenser.



MODE DOOR MOTOR

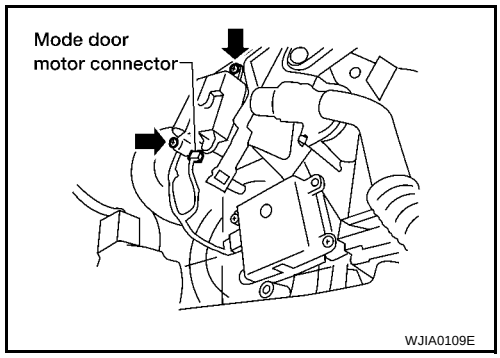
PFP:27731

Removal and Installation

EJS002VK

REMOVAL

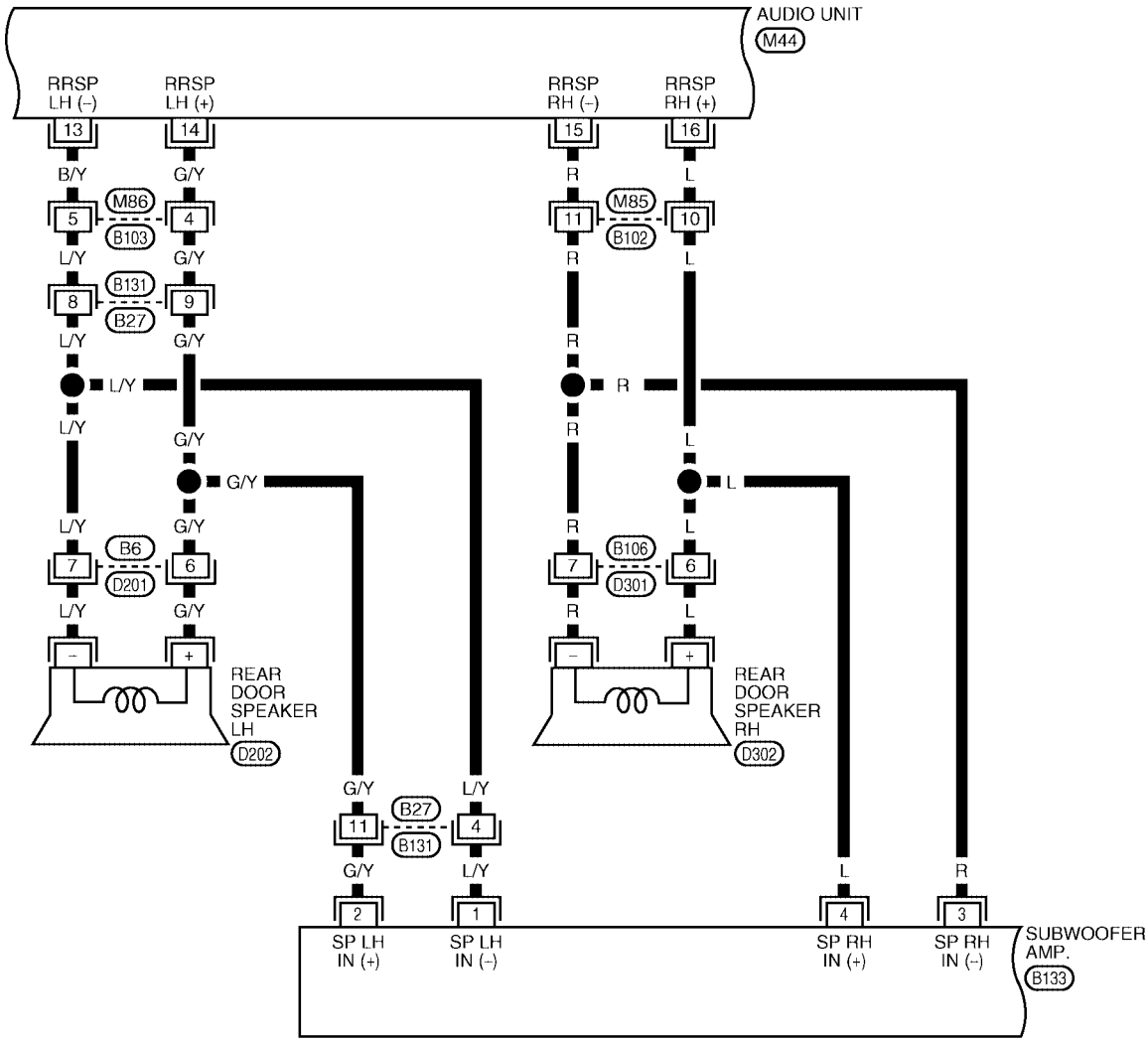
1. Remove the driver lower instrument panel assembly. Refer to IP-15, "Lower Driver Instrument Panel" .
2. Disconnect the mode door motor connector.
3. Remove the mode door motor screws and then remove the mode door motor.

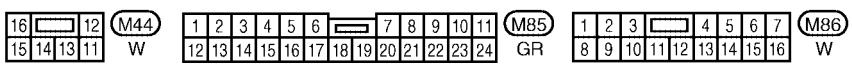


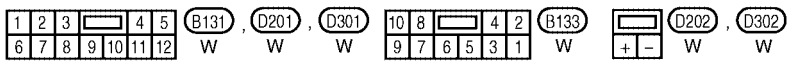
INSTALLATION

Installation is in the reverse order of removal.

AV-AUDIO-02







LKWA0141E

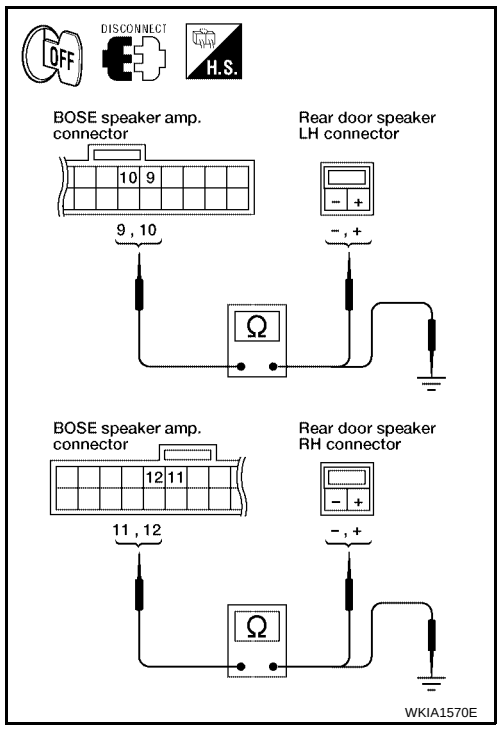
Sound Is Not Heard From Rear Door Speaker (BOSE System)

EKS009ET

1. HARNESS CHECK

1. Disconnect BOSE speaker amp. connector and rear door speaker connector.
2. Check continuity between BOSE speaker amp. harness connector terminal and speaker harness connector terminal.

Terminals				Continuity
BOSE speaker amp.		Speaker		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B128	9 (L/W)	D202	+ (L/W)	Yes
	10 (L/Y)		- (L/Y)	
	11 (L)	D302	+ (L)	
	12 (R)		- (R)	



3. Check continuity between BOSE speaker amp. harness connector terminal and ground.

Terminals			Continuity
BOSE speaker amp.		—	
Connector	Terminal (Wire color)		
B128	9 (L/W)	Ground	No
	10 (L/Y)		
	11 (L)		
	12 (R)		

OK or NG

OK >> GO TO 2.

NG >>
- Check connector housings for disconnected or loose terminals.
- Repair harness or connector.

On Board Self-Diagnosis Function

EKS009FH

DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode performed automatically.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.

DIAGNOSIS ITEM

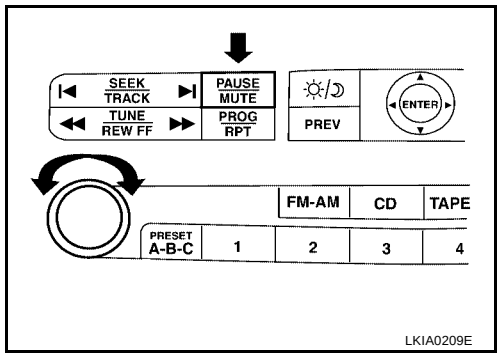
Mode	Item	Description	Reference page
Self-diagnosis	NETWORK CHECK	Check network between control unit and switch connected from display unit via communication line.	AV-82, "NETWORK CHECK"
	PARTS CHECK	● Perform diagnosis and setting of display unit. ● Perform self-diagnosis for auto air conditioner system.	AV-82, "PARTS CHECK"
	VERSION CHECK	Displays version of each unit.	AV-83, "VERSION CHECK"
	CAN DIAG MNTR	Display unit displays CAN communication status.	AV-83, "CAN DIAG MNTR (CAN DIAG MONITOR)"

Self-Diagnosis Mode

EKS009FI

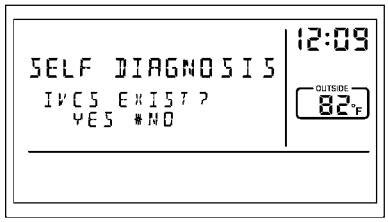
OPERATION PROCEDURES

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “PAUSE/MUTE” switch, 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.)



LKIA0209E

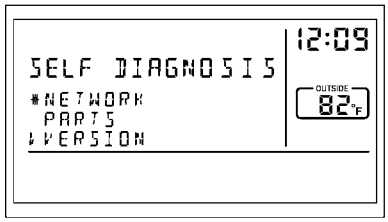
4. Display unit connection check screen.
5. Select each connecting unit (IVCS, CHANGER, SATELLITE RADIO).



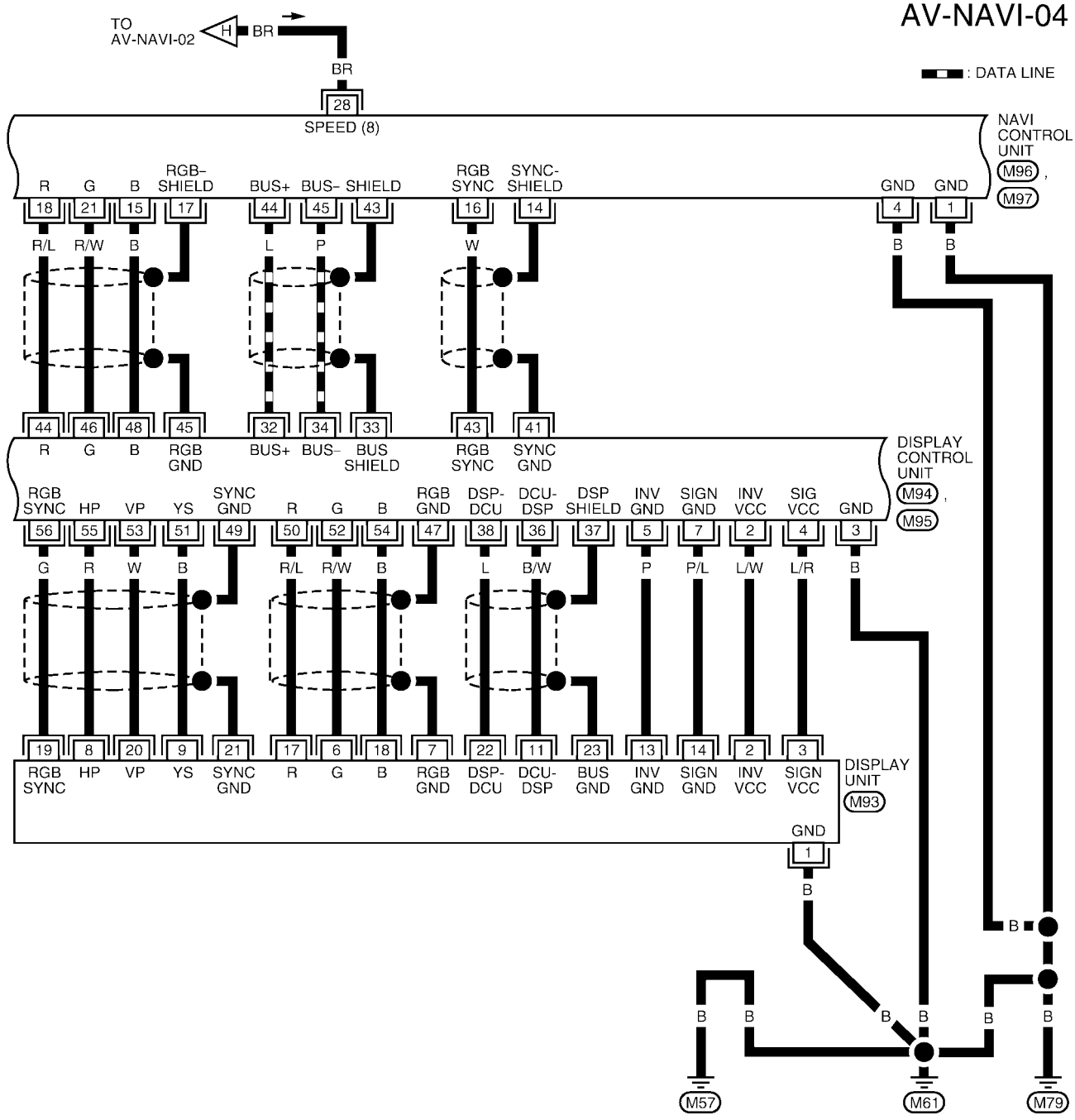
SKIA4377E

6. Self-diagnosis screen is displayed.
   - Using the joystick, select each item, and perform diagnosis.

CAUTION:
If self-diagnosis cannot be activated, refer to AV-84, "Trouble Diagnosis Chart by Symptom" .



SKIA4378E


AV-NAVI-04
: DATA LINE
TO AV-NAVI-02
H
BR
BR
28
SPEED (8)
NAVI CONTROL UNIT
M96
M97
R G B RGB-SHIELD BUS+ BUS- SHIELD RGB SYNC SYNC-SHIELD GND GND
18 21 15 17 44 45 43 16 14 4 1
R/L R/W B L P W B B
44 46 48 45 32 34 33 43 41
R G B RGB GND BUS+ BUS- BUS SHIELD RGB SYNC SYNC GND
DISPLAY CONTROL UNIT
M94
M95
RGB SYNC HP VP YS SYNC GND R G B RGB GND DSP-DCU DCU-DSP DSP SHIELD INV GND SIGN GND INV VCC SIG VCC GND
56 55 53 51 49 50 52 54 47 38 36 37 5 7 2 4 3
G R W B R/L R/W B L B/W P P/L L/W L/R B
19 8 20 9 21 17 6 18 7 22 11 23 13 14 2 3
RGB SYNC HP VP YS SYNC GND R G B RGB GND DSP-DCU DCU-DSP BUS GND INV GND SIGN GND INV VCC SIGN VCC
DISPLAY UNIT
M93
GND
1
B
M57
M61
M79
M93
W
M94
W
M95
W
M96
W
M97
GR

WKWA1691E

Power Supply and Ground Circuit Check for Display Control Unit

EKS009GE

1. CHECK FUSE

Make sure the following fuses of the display control unit are not blown.

Terminals		Power source	Fuse No.
Connector	Terminal (Wire color)		
M94	1 (W)	Battery power	3
	10 (V)	ACC power	6

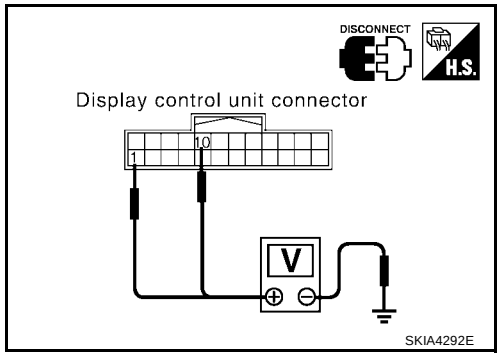
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect display control unit connector M94.
2. Check voltage between connector terminals and ground as follows.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M94	1 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
	10 (V)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.
NG >> Check harness for open between display control unit and fuse.

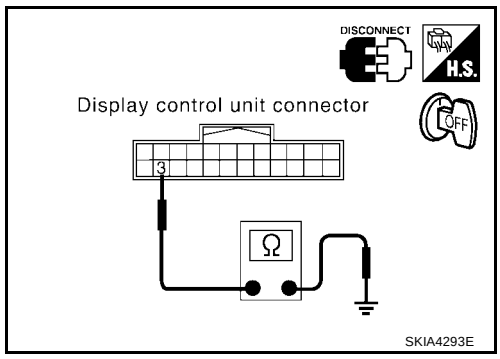
3. CHECK GROUND CIRCUIT

Check continuity between the following display control unit terminal and ground.

Terminals			Ignition switch	Continuity
(+)		(–)		
Connector	Terminal (Wire color)			
M94	3 (B)	Ground	OFF	Yes

OK or NG

OK >> Inspection End.
NG >> Repair or replace harness.



VOICE GUIDE

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.
	The vehicle is not on the recommended route.	Return to the recommended route or research the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

ROUTE SEARCH

Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.	Turn the time-regulating search conditions OFF. Turn “Avoid regulation time” in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search(Note) Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunctioning.
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunctioning.
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

NOTE:
Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

DUPLICATE THE NOISE AND TEST DRIVE

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when you confirm the repair.
If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:

1) Close a door.
2) Tap or push/pull around the area where the noise appears to be coming from.
3) Rev the engine.
4) Use a floor jack to recreate vehicle “twist”.
5) At idle, apply engine load (electrical load, half-clutch on M/T model, drive position on A/T model).
6) Raise the vehicle on a hoist and hit a tire with a rubber hammer.

- Drive the vehicle and attempt to duplicate the conditions the customer states exist when the noise occurs.
- If it is difficult to duplicate the noise, drive the vehicle slowly on an undulating or rough road to stress the vehicle body.

CHECK RELATED SERVICE BULLETINS

After verifying the customer concern or symptom, check ASIST for Technical Service Bulletins (TSBs) related to that concern or symptom.
If a TSB relates to the symptom, follow the procedure to repair the noise.

LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area.To help pinpoint the source of the noise, use a listening tool (Chassis Ear: J-39570, Engine Ear: J-39565 and mechanic's stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:

- removing the components in the area that you suspect the noise is coming from.
  Do not use too much force when removing clips and fasteners, otherwise clips and fasteners can be broken or lost during the repair, resulting in the creation of new noise.
- tapping or pushing/pulling the component that you suspect is causing the noise.
  Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
- feeling for a vibration with your hand by touching the component(s) that you suspect is (are) causing the noise.
- placing a piece of paper between components that you suspect are causing the noise.
- looking for loose components and contact marks.
  Refer to BL-8, "Generic Squeak and Rattle Troubleshooting" .

REPAIR THE CAUSE

- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:
  - separate components by repositioning or loosening and retightening the component, if possible.
  - insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A NISSAN Squeak and Rattle Kit (J-43980) is available through your authorized NISSAN Parts Department.

CAUTION:
Do not use excessive force as many components are constructed of plastic and may be damaged.
Always check with the Parts Department for the latest parts information.
The following materials are contained in the NISSAN Squeak and Rattle Kit (J-43980). Each item can be ordered separately as needed.
URETHANE PADS [1.5 mm (0.059 in) thick]
Insulates connectors, harness, etc.
76268-9E005: 100×135 mm (3.94×5.31 in)/76884-71L01: 60×85 mm (2.36×3.35 in)/76884-71L02: 15×25 mm (0.59×0.98 in)
INSULATOR (Foam blocks)
Insulates components from contact. Can be used to fill space behind a panel.
73982-9E000: 45 mm (1.77 in) thick, 50×50 mm (1.97×1.97 in)/73982-50Y00: 10 mm (0.39 in) thick, 50×50 mm (1.97×1.97 in)
INSULATOR (Light foam block)

Auto door lock mode can be changed using "WORK SUPPORT" mode in "AUTO LOCK SET". Refer to BL-49, "Work Support" .

CAN Communication System Description

EIS003QU

Refer to LAN-7, "CAN COMMUNICATION" .

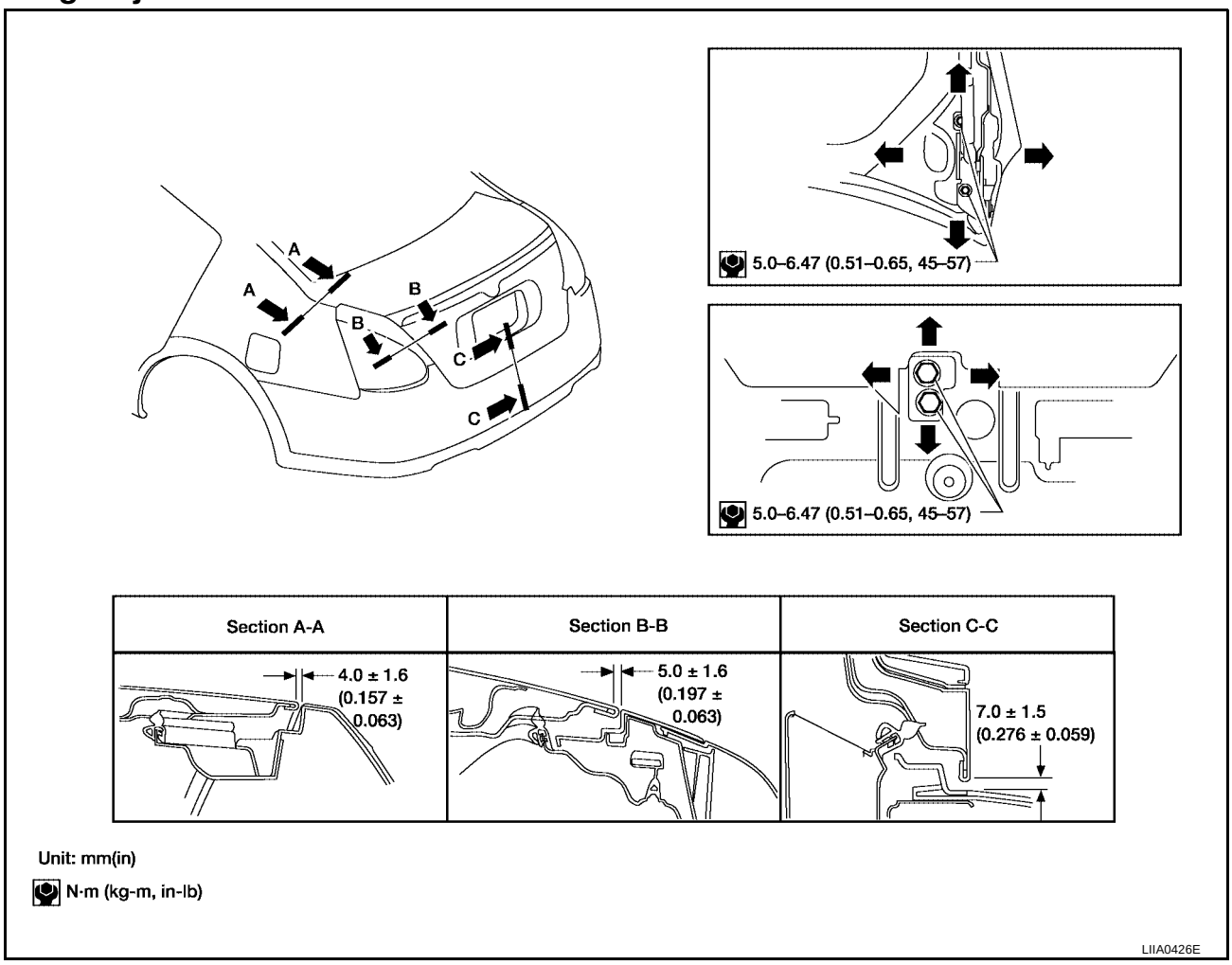
Terminals and Reference Value for BCM

EIS003RQ

Terminal	Wire Color	Item	Condition	Voltage (V) (Approx.)
30	L/W	Trunk lid opener switch	OFF → ON	Battery voltage → 0
55	W/B	Battery power supply	—	Battery voltage
68	R	Trunk lid opener release solenoid	When trunk lid opener release solenoid is operated using key fob (ON → OFF)	0 → Battery voltage

Fitting Adjustment

EIS003RR



LONGITUDINAL AND LATERAL CLEARANCE ADJUSTMENT

1. With the striker released, loosen the trunk lid hinge bolts to close the trunk lid.
2. Make the lateral clearance and the clearance to the rear window glass equal, and open the trunk lid to tighten the bolts to the specified torque.

SURFACE HEIGHT ADJUSTMENT

1. Loosen the striker bolts. Raise the striker to the top position, and temporarily tighten the upper bolt.
2. Close the trunk lid lightly and adjust the surface height, then open the trunk lid and tighten the striker bolts to the specified torque.

Diagnostic Procedure 1

EIS003SJ

Self-diagnostic results:
“CHAIN OF ECM-IMMU” displayed on CONSULT-II screen
First perform the “SELF-DIAG RESULTS” in “BCM” with CONSULT-II, then perform the trouble diagnosis of malfunction system indicated “SELF-DIAG RESULTS” of “BCM”. Refer to BL-103, "CONSULT-II".

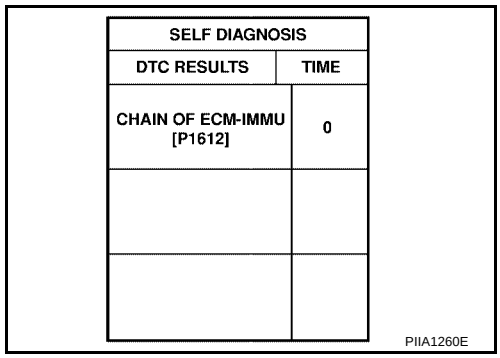
1. CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS “CHAIN OF ECM-IMMU” displayed on CONSULT-II screen.

NOTE:
In rare case, “CHAIN OF ECM-IMMU” might be stored during key registration procedure, even if the system is not malfunctioning.

Is CONSULT-II screen displayed as above?

Yes >> GO TO 2.
No >> GO TO BL-107, "SYMPTOM MATRIX CHART 1" .



2. CHECK POWER SUPPLY CIRCUIT FOR BCM

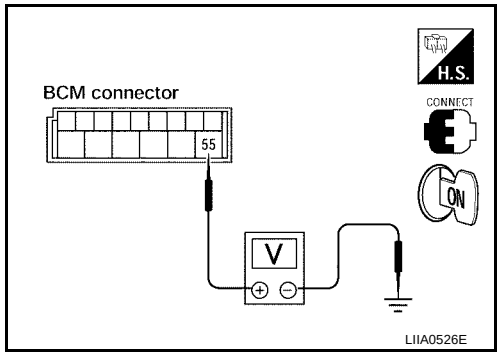
1. Disconnect BCM.
2. Check voltage between BCM connector M19 terminal 55 and ground.

55 (W/B) - Ground : Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Check the following:

- 50A fusible link (letter **f** , located in fuse and fusible link box)
- Harness for open or short between fuse and BCM connector
  Ref. Part No. C1



3. CHECK IGN SW. ON SIGNAL

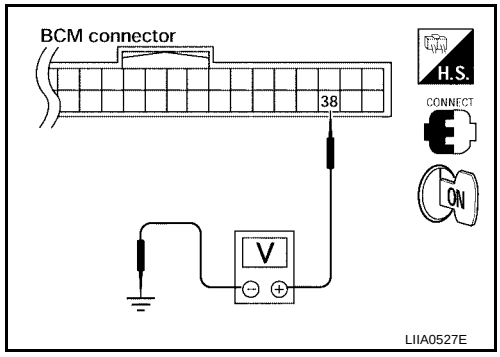
1. Turn ignition switch ON.
2. Check voltage between BCM connector M18 terminal 38 and ground.

38 (R/W) - Ground : Battery voltage

OK or NG

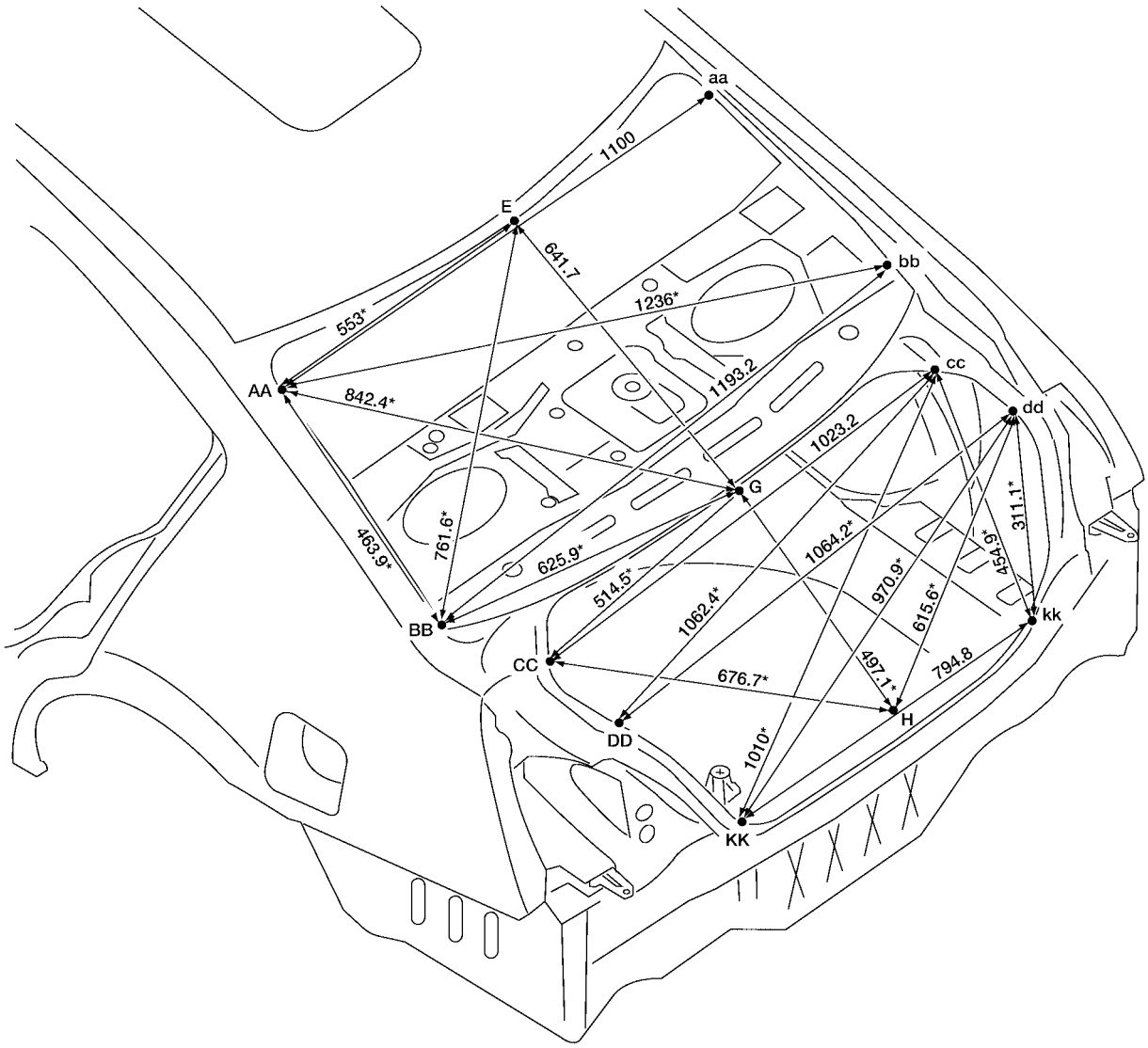
OK >> GO TO 4.
NG >> Check the following:

- 10A fuse [No. 1, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM connector
  Ref. part No. C2



REAR BODY MEASUREMENT

Figures marked with a (*) indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.



Unit: mm

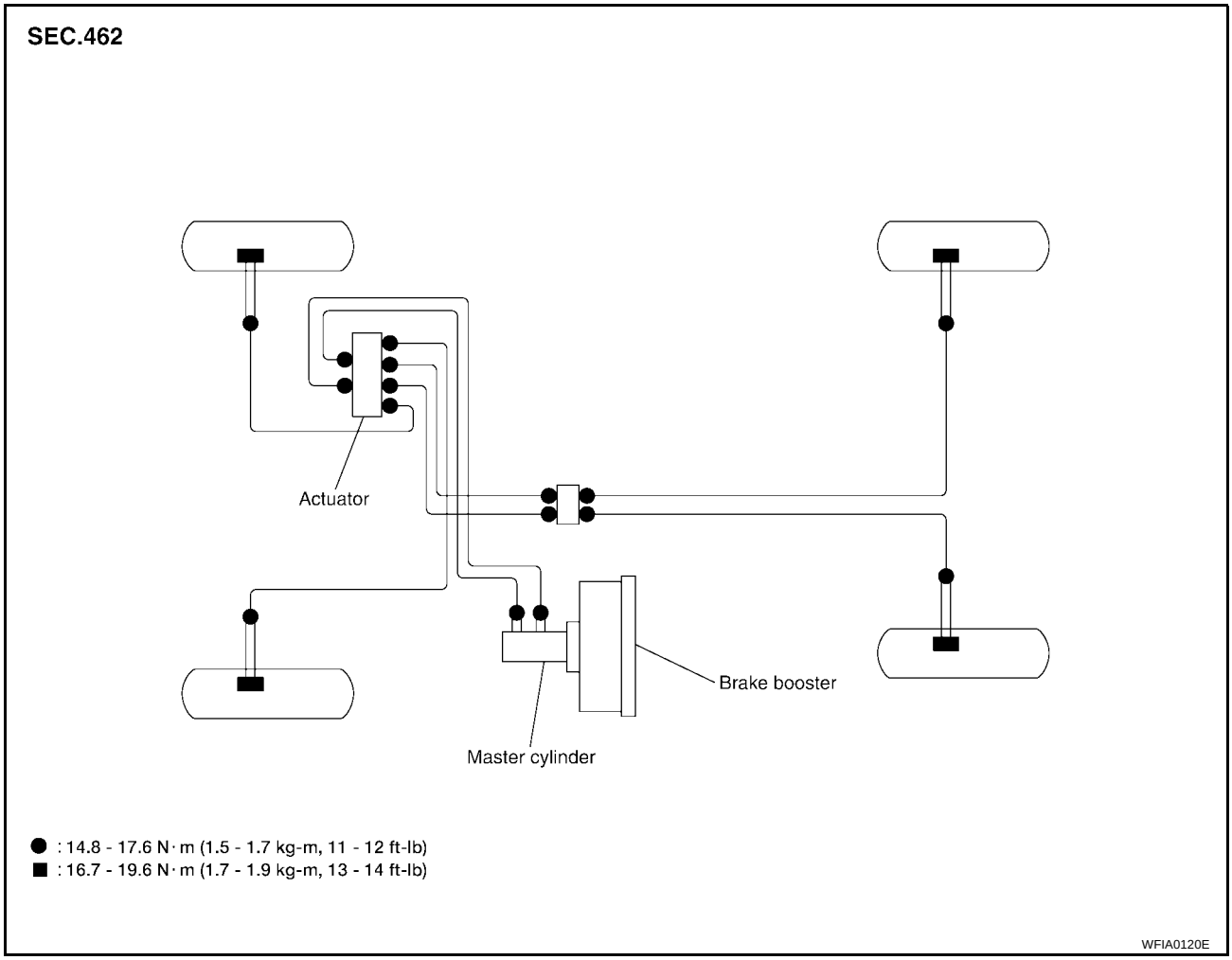
WIIA0490E

BRAKE PIPING AND HOSE

PFP:46210

Hydraulic Circuit

EFS004D4



Front Brake Piping and Hose

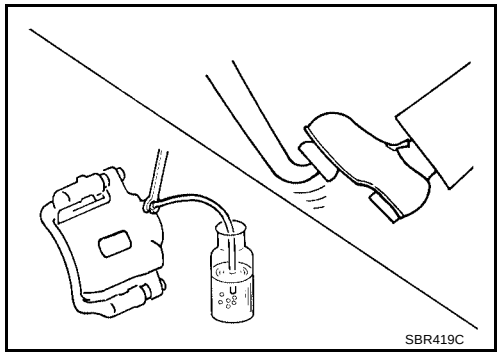
EFS004D5

REMOVAL

CAUTION:

- **Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, wash it away with water immediately.**
- **All hoses must be free from excessive bending, twisting and pulling.**
- **Cover the open end of lines and hoses when disconnecting to prevent entrance of dirt.**

1. Connect vinyl tube and container to air bleeder valve.
2. Drain brake fluid from each air bleeder valve by depressing brake pedal.



- If NO, GO TO 5.

2. Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
   - If YES, GO TO 3.
   - If NO, GO TO 4.
3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
4. Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefor, erase the self-diagnosis results.
5. Diagnose CAN communication system. Refer to LAN-7, "CAN COMMUNICATION" .

Precautions for Brake Control

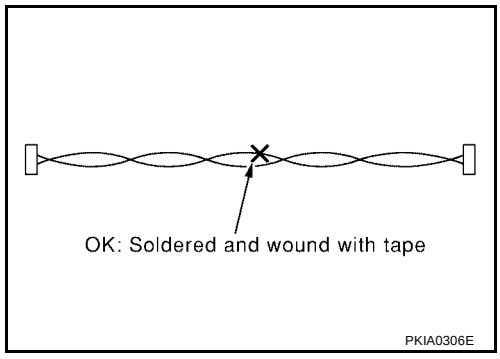
EFS004EA

- During ABS operation, the brake pedal may vibrate lightly and a mechanical noise may be heard. This is normal.
- Just after starting vehicle, the brake pedal may vibrate or a motor operating noise may be heard from engine compartment. This is a normal status of operation check.
- Stopping distance may be longer than that of vehicles without ABS when vehicle drives on rough, gravel, or snow-covered (fresh, deep snow) roads.
- When an error is indicated by ABS or another warning lamp, collect all necessary information from customer (what symptoms are present under what conditions) and check for simple causes before starting diagnosis. Besides electrical system inspection, check booster operation, brake fluid level, and fluid leaks.
- If incorrect tire sizes or types are installed on the vehicle or brake pads are not Genuine NISSAN parts, stopping distance or steering stability may deteriorate.
- If there is a radio, antenna or related wiring near control module, ABS function may have a malfunction or error.
- If aftermarket parts (car stereo, CD player, etc.) have been installed, check for incidents such as harness pinches, open circuits or improper wiring.

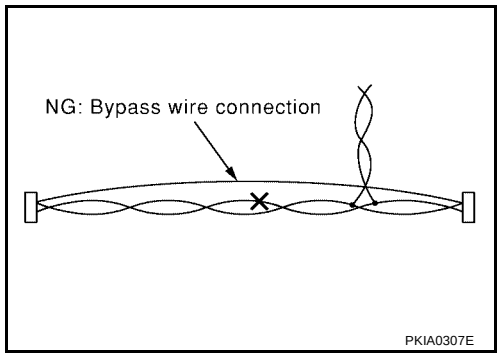
Precautions for CAN System

EFS004EB

- Do not apply voltage of 7.0V or higher to terminal to be measured.
- Maximum open terminal voltage of tester in use must be less than 7.0V.
- Before checking harnesses, turn ignition switch OFF and disconnect battery negative cable.
- Area to be repaired must be soldered and wrapped with tape. Make sure that fraying of twisted wire is within 110 mm (4.33 in).



- Do not make a bypass connection to repaired area. (If the circuit is bypassed, characteristics of twisted wire will be lost.)



Long Stopping Distance

EFS004F3

1. CHECK BASE BRAKING SYSTEM PERFORMANCE

1. Disable ABS by disconnecting ABS actuator and electric unit (control unit) connector.
2. Drive vehicle and check to see if stopping distance is still long.

NOTE:
Driving the vehicle with the ABS actuator and electric unit (control unit) disconnected may induce DTCs in electrical control units using CAN communication. After the inspection, clear all DTCs. Refer to LAN-7, "CAN COMMUNICATION" .

OK or NG

OK >> Go to BRC-37, "ABS Works Frequently" .
NG >> Perform Basic Inspection. Refer to BRC-21, "Basic Inspection" .

NOTE:
Stopping distance may be longer than vehicles without ABS when road condition is slippery.

ABS Does Not Work

EFS004F4

CAUTION:
The ABS does not operate when the vehicle speed is 10 km/h (6 MPH) or less.

1. CHECK WARNING LAMP ACTIVATION

Turn ignition switch ON and check for warning lamp activation.

- Warning lamp should activate for approximately 1 second after turning the ignition switch ON.

OK or NG

OK >> Carry out self-diagnosis. Refer to BRC-25, "SELF-DIAGNOSIS" .
NG >> Go to BRC-40, "ABS Warning Lamp Does Not Come On When Ignition Switch Is Turned On" .

Pedal Vibration or ABS Operation Noise

EFS004F5

NOTE:
During ABS activation, pedal vibration may be felt and a noise may be heard. This is normal and does not indicate a malfunction.

1. CHECK SYMPTOM

1. Apply brake.
2. Start engine.

Does the symptom occur only when engine is started?

YES >> Carry out self-diagnosis. Refer to BRC-25, "SELF-DIAGNOSIS" .
NO >> GO TO 2.

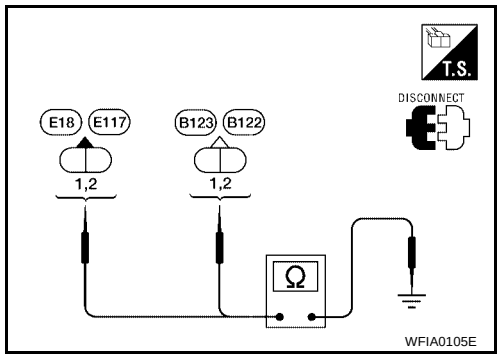
2. RECHECK SYMPTOM

Does the symptom occur only when electrical equipment switches (such as headlamp) are turned on?

YES >> Check for radio, antenna or related wiring that is routed too close to the ABS actuator and electric unit (control unit) and reroute as necessary.
NO >> Go to BRC-37, "ABS Works Frequently" .

6. CHECK WIRING HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and wheel sensor connector of malfunction code No.
2. Check resistance between harness connector terminal and ground.



Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair the circuit.

7. CHECK WIRING HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and wheel sensor connector of malfunction code No.
2. Check continuity between both wiring harness ends.

Sensor	ABS actuator and electric unit (control unit)		Wheel sensor		Continuity
	Connector - terminal	Wire color	Connector - terminal	Wire color	
Front LH	E125 - 22	G	E18 - 1	G	Yes
	E125 - 7	R	E18 - 2	R	
Front RH	E125 - 24	B	E117 - 1	B	
	E125 - 9	W	E117 - 2	W	
Rear LH	E125 - 11	P	B123 - 1	P	
	E125 - 26	L	B123 - 2	L	
Rear RH	E125 - 13	V	B122 - 1	V	
	E125 - 28	LG	B122 - 2	LG	

Continuity should exist.

OK or NG

OK >> Replace the ABS actuator and electric unit (control unit). Refer to BRC-85, "Removal and Installation" .
NG >> Repair the circuit.

Engine System Inspection

EFS004G0

INSPECTION PROCEDURE

1. SELF-DIAGNOSIS RESULT CHECK

Check self-diagnosis results.

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

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

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

Basic Inspection

EFS004H2

BRAKE FLUID LEVEL, FLUID LEAK, AND BRAKE PAD INSPECTION

1. Check fluid level in the brake fluid reservoir. If fluid level is low, add fluid.
2. Check the brake piping and around the ABS actuator and electric unit (control unit) for leaks. If there is leaking or seeping fluid, check the following items.
   - If ABS actuator and electric unit (control unit) connection is loose, tighten the piping to the specified torque and recheck for leaks.
   - If there is damage to the connection flare nut or ABS actuator and electric unit (control unit) screw, replace the damaged part and recheck for leaks.
   - When there is fluid leaking or seeping from a fluid connection, use a clean cloth to wipe off the fluid and recheck for leaks. If fluid is still seeping out, replace the damaged part. If the fluid is leaking at the ABS actuator and electric unit (control unit), replace the ABS actuator and electric unit (control unit) assembly.

     CAUTION:
     The ABS actuator and electric unit (control unit) cannot be disassembled and must be replaced as an assembly.
3. Check the brake pads for excessive wear.

POWER SYSTEM TERMINAL LOOSENESS AND BATTERY INSPECTION

Make sure the battery positive cable, negative cable and ground connection are not loose. In addition, make sure the battery is sufficiently charged.

ABS WARNING LAMP, SLIP INDICATOR LAMP AND VDC OFF INDICATOR LAMP INSPECTION

1. Make sure ABS warning lamp, SLIP indicator lamp and VDC OFF indicator lamp (when VDC OFF switch is off), turn on for approximately 1 second when the ignition switch is turned ON. If they do not, check the VDC OFF indicator lamp and then VDC OFF switch. Refer to BRC-129, "VDC OFF SWITCH" . Check CAN communications. If there are no errors with VDC OFF switch and CAN communication system, check combination meter. Refer to DI-5, "COMBINATION METERS" .
2. Make sure the lamps turn off approximately 1 second after the ignition switch is turned ON. If the lamp does not turn off, conduct self-diagnosis.
3. With the engine running, make sure VDC OFF indicator lamp turns on and off when VDC OFF switch is turned on and off. If the indicator lamp status does not correspond to switch operation, check the VDC OFF switch system. Refer to BRC-129, "VDC OFF SWITCH" .
4. Make sure ABS warning lamp, SLIP indicator lamp and VDC OFF indicator lamp turn off approximately 2 seconds after the engine is started. If ABS warning lamp, SLIP indicator lamp or VDC OFF indicator lamp have not turned off 10 seconds after the engine has been started, conduct self-diagnosis of the ABS actuator and electric unit (control unit).
5. After conducting the self-diagnosis, be sure to erase the error memory. Refer to BRC-111, "CONSULT-II Function (ABS)" .

Warning Lamp and Indicator Timing

EFS004H3

×: ON –: OFF

Condition	ABS warning lamp	VDC OFF indicator lamp	SLIP indicator lamp	Remarks
When the ignition switch is OFF	–	–	–	–
After the ignition switch is turned ON For approx. 0.5 seconds	×	×	×	–
Ignition switch ON Approx. 0.5 seconds later	–	–	–	Lamp goes off approx. 2 seconds after the engine start.
When the VDC OFF switch turns ON (VDC function OFF).	–	×	–	–

G SENSOR

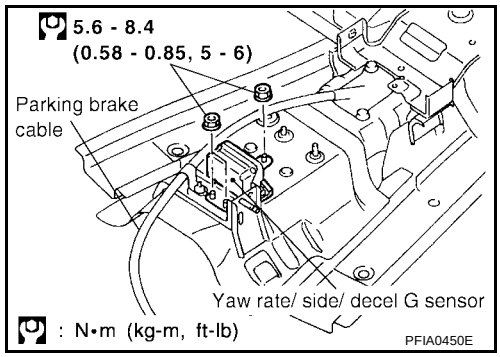
PFP:47930

Removal and Installation

EFS004HV

REMOVAL

1. Remove center console. Refer to IP-17, "DISASSEMBLY" .
2. Disconnect harness connector.
3. Remove attaching nuts and remove yaw rate/side/decel G sensor.



CAUTION:

- **Do not drop or strike the yaw rate/side/decel G sensor.**
- **Do not use power tools to remove or install yaw rate/side/decel G sensor.**

INSTALLATION

To install, reverse the removal procedure.

CAUTION:

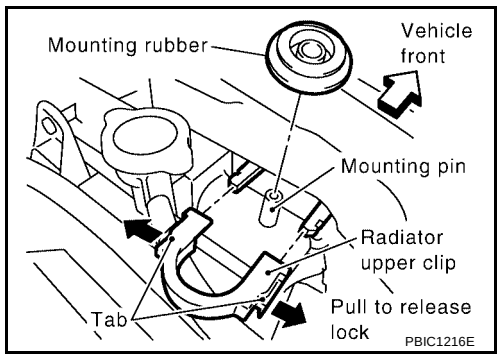
- **Do not drop or strike the yaw rate/side/decel G sensor.**

6. Remove the radiator upper clips by pulling the tabs outside to release the lock, as shown.

CAUTION:
To prevent damage, do not pull lock tabs excessively.

7. Remove radiator cooling fan assembly to radiator bolts.
8. Remove the radiator assembly.

CAUTION:
Do not damage or scratch air conditioner condenser and radiator core when removing.



INSTALLATION

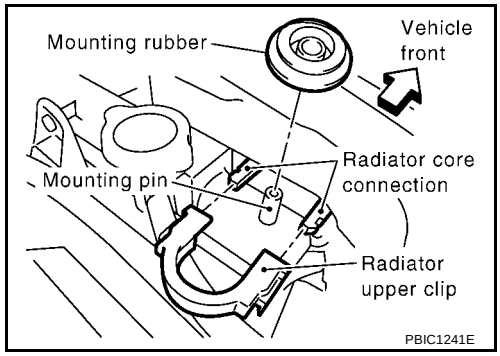
Installation is in the reverse order of removal, paying attention to the following.

- Fill the radiator with coolant. Refer to MA-14, "REFILLING ENGINE COOLANT" .

Installation of Radiator Upper Clip

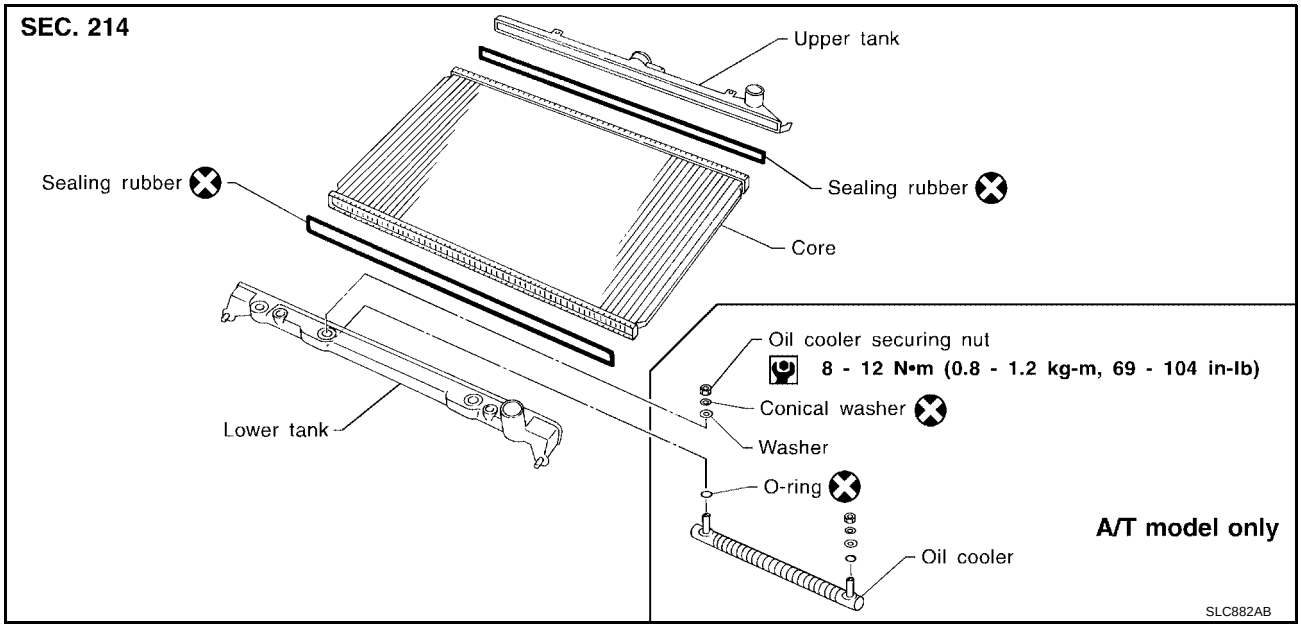
- Install radiator upper clip on radiator core connection with the following procedure:

1. Install the rubber on mounting pin of radiator core.
2. Align the radiator upper clip with the radiator core connection, then insert the radiator upper clip straight into the radiator core connections until a click is heard.
3. After connecting the radiator upper clip, use the following method to make sure it is fully connected.
   - Visually confirm that the two radiator upper clips are connected to the radiator core connections.
   - Move the radiator upper clip and the radiator forward and backward to make sure they are securely connected.



Disassembly and Assembly

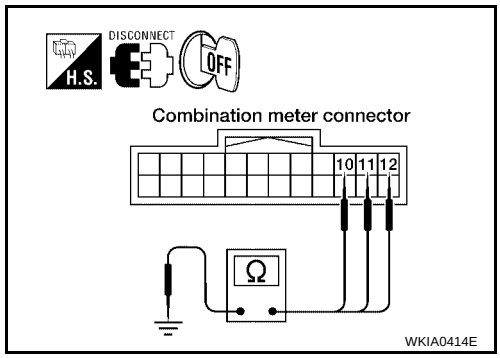
EBS00KLS



3. CHECK GROUND CIRCUIT

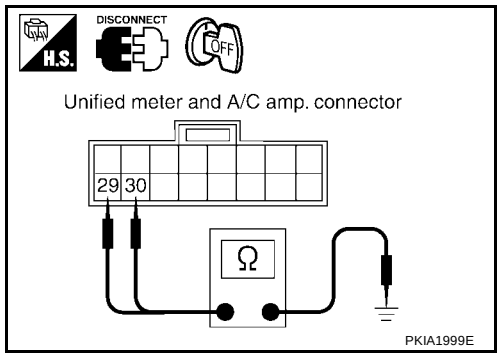
1. Check continuity between combination meter harness connector terminals and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M24	10 (B)	Ground	Yes
	11 (B)		
	12 (B)		



2. Check continuity between unified meter and A/C amp. harness connector terminals and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M50	29 (B)	Ground	Yes
	30 (B)		



OK or NG

OK >> Inspection End.
NG >> Repair harness or connector.

Symptom Chart 1

EKS00938

Trouble phenomenon	Possible cause
Improper speedometer and odo/trip meter Indication.	Refer to DI-20, "Vehicle Speed Signal Inspection" .
Improper tachometer indication.	Refer to DI-22, "Engine Speed Signal Inspection" .
Improper water temperature gauge indication.	Refer to DI-23, "Water Temperature Signal Inspection" .
Improper fuel gauge indication.	Refer to DI-24, "Fuel Level Sensor Signal Inspection 1" .
Improper low-fuel warning lamp indication.	Refer to DI-25, "Fuel Level Sensor Signal Inspection 2" .
More than one gauge does not give proper indication.	Replace the combination meter. Refer to DI-29, "Removal and Installation of Combination Meter" .
Improper A/T position indication.	Refer to DI-50, "A/T INDICATOR" .
Illumination control does not operate properly.	Refer to LT-174, "ILLUMINATION" .

Symptom Chart 2

EKS00939

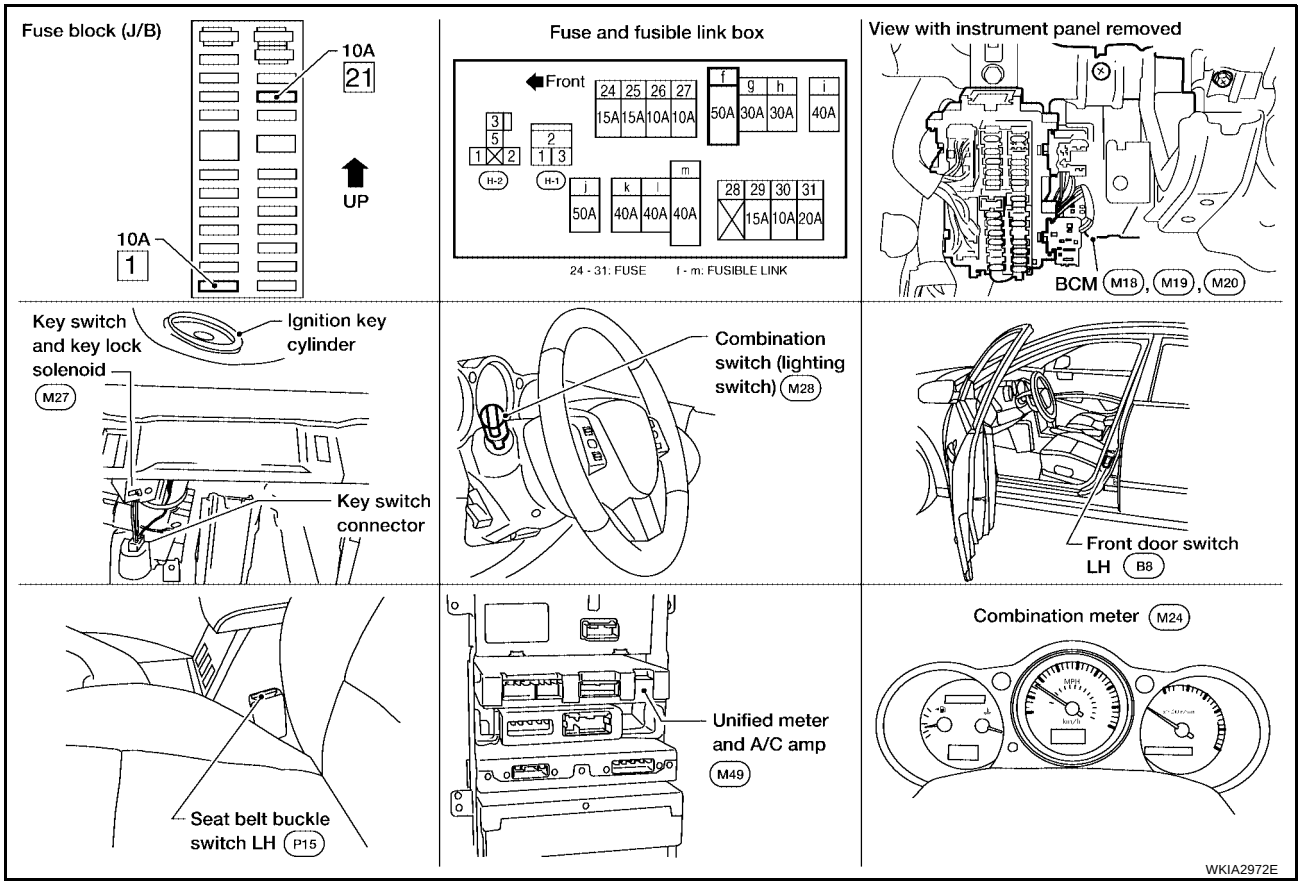
Displayed item [Code]	Inspection contents	Possible cause
CAN COMM CIRC [U1000]	Inspect the CAN communication.	Refer to LAN-7, "CAN COMMUNICATION" . **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is removed.**

WARNING CHIME

PFP:24814

Component Parts and Harness Connector Location

EKS00941



System Description

EKS00942

FUNCTION

Power is supplied at all times

- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to key switch and key lock solenoid terminal 3.

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 52, and
- to combination switch terminal 12
- through body grounds M57, M61, and M79.

NOTE:

When ignition key warning chime, light warning chime, and seat belt warning chime should be conducted at the same time, the priorities for each chime are the following.

1. Light warning chime
2. Ignition key warning chime
3. Seat belt warning chime

IGNITION KEY WARNING CHIME

With the key inserted in the ignition switch, the ignition switch in OFF position, and the driver's door open, the warning chime will sound.

Power is supplied

PRECAUTIONS

PFP:00001

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

UBS00K09

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.**

On Board Diagnostic (OBD) System of Engine and A/T

UBS00K0A

The ECM has an on board diagnostic system. It will light up the malfunction indicator lamp (MIL) to warn the driver of a malfunction causing emission deterioration.

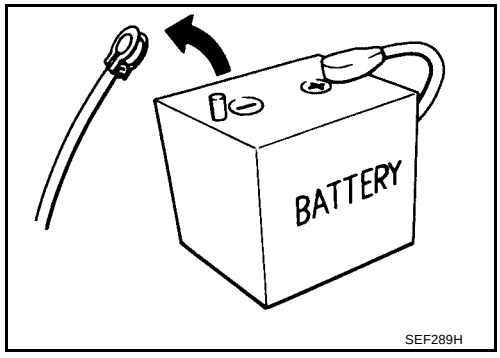
CAUTION:

- **Be sure to turn the ignition switch OFF and disconnect the negative battery cable before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to light up.**
- **Be sure to connect and lock the connectors securely after work. A loose (unlocked) connector will cause the MIL to light up due to the open circuit. (Be sure the connector is free from water, grease, dirt, bent terminals, etc.)**
- **Certain systems and components, especially those related to OBD, may use a new style slide-locking type harness connector. For description and how to disconnect, refer to PG-62, "HARNESS CONNECTOR" .**
- **Be sure to route and secure the harnesses properly after work. The interference of the harness with a bracket, etc. may cause the MIL to light up due to the short circuit.**
- **Be sure to connect rubber tubes properly after work. A misconnected or disconnected rubber tube may cause the MIL to light up due to the malfunction of the EVAP system or fuel injection system, etc.**
- **Be sure to erase the unnecessary malfunction information (repairs completed) from the ECM and TCM (Transmission control module) before returning the vehicle to the customer.**

Precaution

UBS00K0B

- **Always use a 12 volt battery as power source.**
- **Do not attempt to disconnect battery cables while engine is running.**
- **Before connecting or disconnecting the ECM harness connector, turn ignition switch OFF and disconnect battery ground cable. Failure to do so may damage the ECM because battery voltage is applied to ECM even if ignition switch is turned OFF.**
- **Before removing parts, turn ignition switch OFF and then disconnect battery ground cable.**



SEF289H

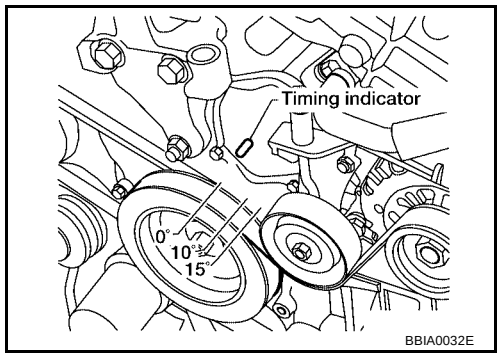
Items (CONSULT-II screen terms)	DTC*1		SRT code	Test value/ Test limit (GST only)	Trip	MIL	Refer- ence page
	CONSULT-II GST*2	ECM*3					
CYL 1 MISFIRE	P0301	0301	—	—	2	×	EC-287
CYL 2 MISFIRE	P0302	0302	—	—	2	×	EC-287
CYL 3 MISFIRE	P0303	0303	—	—	2	×	EC-287
CYL 4 MISFIRE	P0304	0304	—	—	2	×	EC-287
CYL 5 MISFIRE	P0305	0305	—	—	2	×	EC-287
CYL 6 MISFIRE	P0306	0306	—	—	2	×	EC-287
KNOCK SEN/CIRC-B1	P0327	0327	—	—	2	—	EC-295
KNOCK SEN/CIRC-B1	P0328	0328	—	—	2	—	EC-295
CKP SEN/CIRCUIT	P0335	0335	—	—	2	×	EC-300
CMP SEN/CIRC-B1	P0340	0340	—	—	2	×	EC-307
CMP SEN/CIRC-B2	P0345	0345	—	—	2	×	EC-307
EGR SYSTEM	P0400	0400	×	×	2	×	EC-316
EGR VOL CON/V CIR	P0403	0403	—	—	1	×	EC-324
EGR TEMP SEN/CIRC	P0405	0405	—	—	2	×	EC-331
EGR TEMP SEN/CIRC	P0406	0406	—	—	2	×	EC-331
TW CATALYST SYS-B1	P0420	0420	×	×	2	×	EC-338
TW CATALYST SYS-B2	P0430	0430	×	×	2	×	EC-338
EVAP PURG FLOW/MON	P0441	0441	×	×	2	×	EC-344
EVAP SMALL LEAK	P0442	0442	×	×	2	×	EC-350
PURG VOLUME CONT/V	P0444	0444	—	—	2	×	EC-359
PURG VOLUME CONT/V	P0445	0445	—	—	2	×	EC-359
VENT CONTROL VALVE	P0447	0447	—	—	2	×	EC-366
EVAP SYS PRES SEN	P0451	0451	—	—	2	×	EC-373
EVAP SYS PRES SEN	P0452	0452	—	—	2	×	EC-376
EVAP SYS PRES SEN	P0453	0453	—	—	2	×	EC-382
EVAP GROSS LEAK	P0455	0455	—	—	2	×	EC-390
EVAP VERY SML LEAK	P0456	0456	×*4	×	2	×	EC-398
FUEL LEV SEN SLOSH	P0460	0460	—	—	2	×	EC-408
FUEL LEVEL SENSOR	P0461	0461	—	—	2	×	EC-410
FUEL LEVL SEN/CIRC	P0462	0462	—	—	2	×	EC-412
FUEL LEVL SEN/CIRC	P0463	0463	—	—	2	×	EC-412
VEH SPEED SEN/CIRC*6	P0500	0500	—	—	2	×	EC-414
ISC SYSTEM	P0506	0506	—	—	2	×	EC-416
ISC SYSTEM	P0507	0507	—	—	2	×	EC-418
PW ST P SEN/CIRC	P0550	0550	—	—	2	—	EC-420
ECM	P0605	0605	—	—	1 or 2	× or —	EC-425
PNP SW/CIRC	P0705	0705	—	—	1	×	AT-90
ATF TEMP SEN/CIRC	P0710	0710	—	—	2	×	AT-95
FLUID TEMP SEN	P0711	0711	—	—	2	×	AT-100
TURBINE SENSOR	P0717	0717	—	—	1	×	AT-105
VHCL SPEED SEN·A/T*6	P0722	0722	—	—	1	×	AT-109
A/T 1ST GR FNCTN	P0731	0731	—	—	1	×	AT-115

15. CHECK IGNITION TIMING AGAIN

1. Run engine at idle.
2. Check ignition timing with a timing light.
   Refer to EC-77, "Idle Speed and Ignition Timing Check" .

A/T: 15 ± 5° BTDC (in P or N position)

M/T: 15 ± 5° BTDC (in neutral position)



OK or NG

OK (With CONSULT-II)>>GO TO 19.
OK (Without CONSULT-II)>>GO TO 20.
NG >> GO TO 16.

16. CHECK TIMING CHAIN INSTALLATION

Check timing chain installation. Refer to EM-58, "TIMING CHAIN" .

OK or NG

OK >> GO TO 17.
NG >> 1. Repair the timing chain installation.
2. GO TO 4.

17. DETECT MALFUNCTIONING PART

Check the following.

- Check camshaft position sensor (PHASE) and circuit. Refer to EC-307, "DTC P0340, P0345 CMP SENSOR (PHASE)" .
- Check crankshaft position sensor (POS) and circuit. Refer to EC-300, "DTC P0335 CKP SENSOR (POS)" .

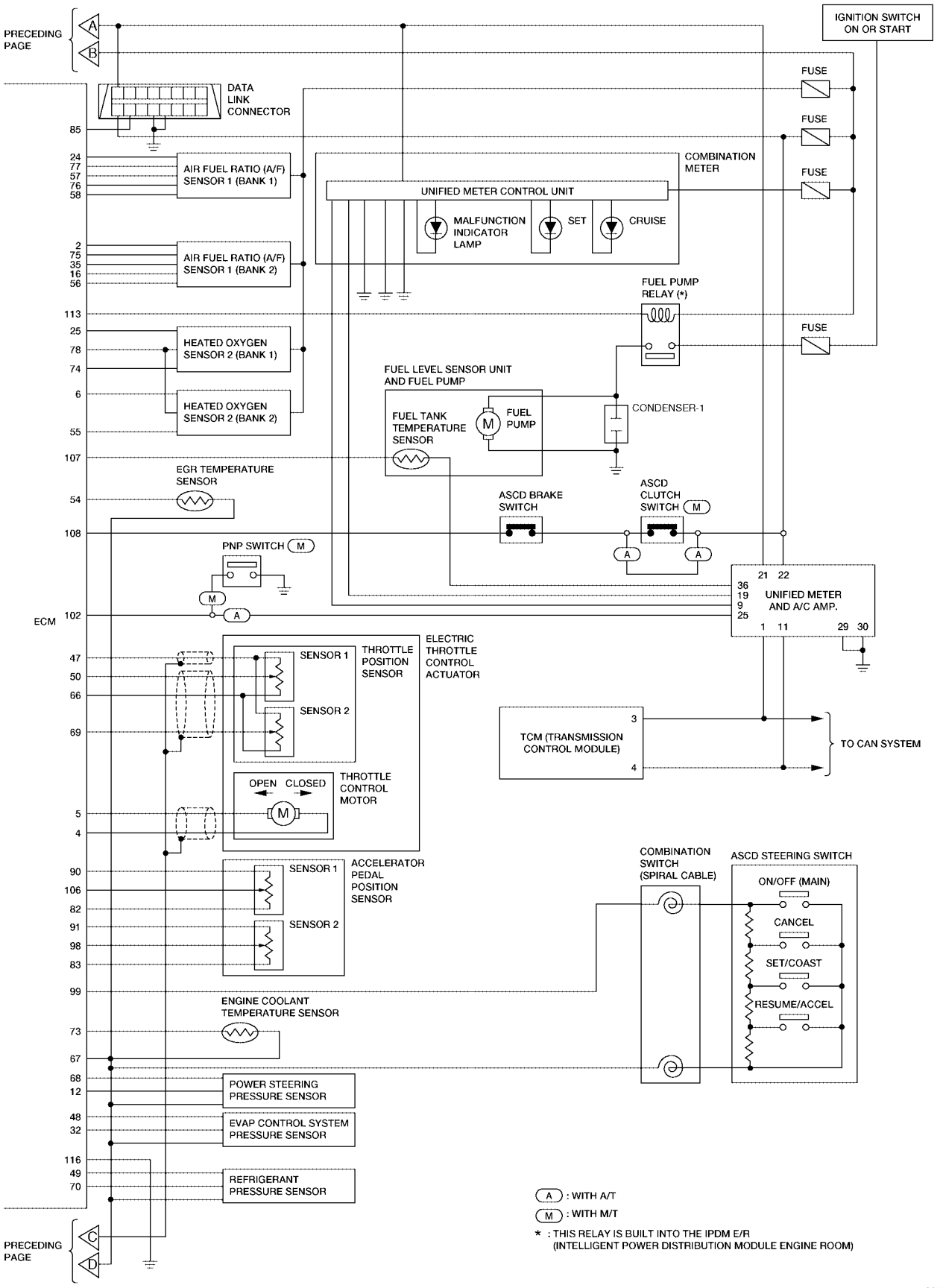
OK or NG

OK >> GO TO 18.
NG >> 1. Repair or replace.
2. GO TO 4.

18. CHECK ECM FUNCTION

1. Substitute another known-good ECM to check ECM function. (ECM may be the cause of an incident, but this is a rare case.)
2. Perform initialization of NVIS (NATS) system and registration of all NVIS (NATS) ignition key IDs. Refer to BL-101, "ECM Re-communicating Function" .

>> GO TO 4.

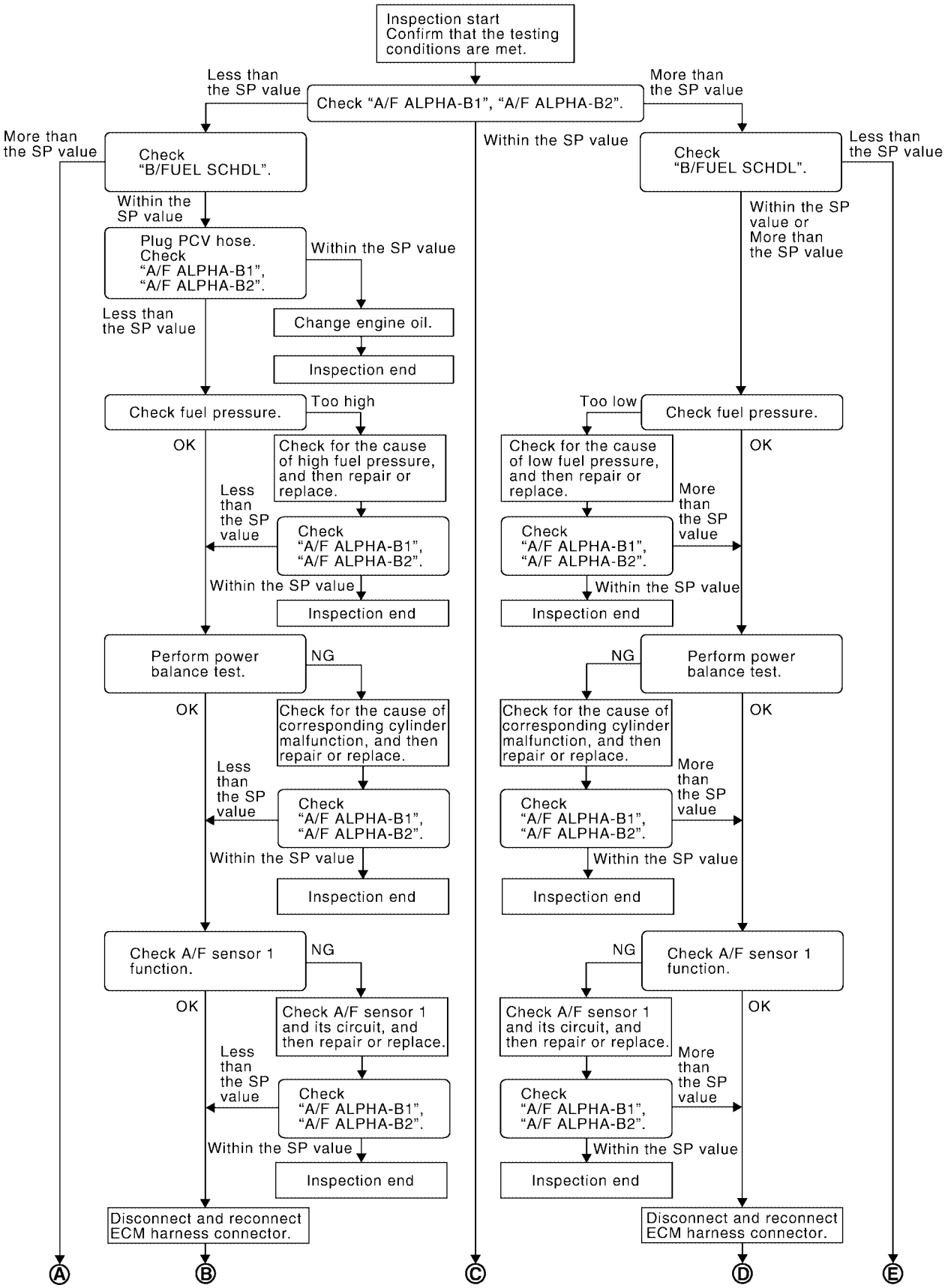

PRECEDING PAGE
A
B
IGNITION SWITCH ON OR START
FUSE
FUSE
FUSE
FUSE
DATA LINK CONNECTOR
85
24
77
57
76
58
AIR FUEL RATIO (A/F) SENSOR 1 (BANK 1)
COMBINATION METER
UNIFIED METER CONTROL UNIT
MALFUNCTION INDICATOR LAMP
SET
CRUISE
2
75
35
16
56
AIR FUEL RATIO (A/F) SENSOR 1 (BANK 2)
FUEL PUMP RELAY (*)
113
25
78
74
HEATED OXYGEN SENSOR 2 (BANK 1)
6
55
HEATED OXYGEN SENSOR 2 (BANK 2)
FUEL LEVEL SENSOR UNIT AND FUEL PUMP
FUEL TANK TEMPERATURE SENSOR
M
FUEL PUMP
CONDENSER-1
107
EGR TEMPERATURE SENSOR
54
ASCD BRAKE SWITCH
ASCD CLUTCH SWITCH
M
108
PNP SWITCH
M
A
A
A
21 22
36
19
9
25
UNIFIED METER AND A/C AMP.
1 11 29 30
ECM
102
M
A
47
50
66
69
SENSOR 1
SENSOR 2
THROTTLE POSITION SENSOR
ELECTRIC THROTTLE CONTROL ACTUATOR
3
TCM (TRANSMISSION CONTROL MODULE)
4
TO CAN SYSTEM
OPEN
CLOSED
THROTTLE CONTROL MOTOR
M
5
4
90
106
82
91
98
83
SENSOR 1
SENSOR 2
ACCELERATOR PEDAL POSITION SENSOR
COMBINATION SWITCH (SPIRAL CABLE)
ASCD STEERING SWITCH
ON/OFF (MAIN)
CANCEL
SET/COAST
RESUME/ACCEL
99
ENGINE COOLANT TEMPERATURE SENSOR
73
67
68
12
48
32
116
49
70
POWER STEERING PRESSURE SENSOR
EVAP CONTROL SYSTEM PRESSURE SENSOR
REFRIGERANT PRESSURE SENSOR
PRECEDING PAGE
C
D
A : WITH A/T
M : WITH M/T
* : THIS RELAY IS BUILT INTO THE IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

BBWA1489E

Diagnostic Procedure

UBS00K1R

OVERALL SEQUENCE



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4. CHECK HO2S2 HEATER OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between ECM terminal and HO2S2 terminal as follows. Refer to Wiring Diagram.

DTC	Terminals		Bank
	ECM	Sensor	
P0037, P0038	25	2	1
P0057, P0058	6	2	2

Continuity should exist.

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

OK or NG

OK >> GO TO 5.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

5. CHECK HEATED OXYGEN SENSOR 2 HEATER

Refer to EC-187, "Component Inspection" .

OK or NG

OK >> GO TO 6.
NG >> Replace malfunctioning heated oxygen sensor 2.

6. CHECK INTERMITTENT INCIDENT

Refer to EC-162, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

Component Inspection

UBS0092F

HEATED OXYGEN SENSOR 2 HEATER

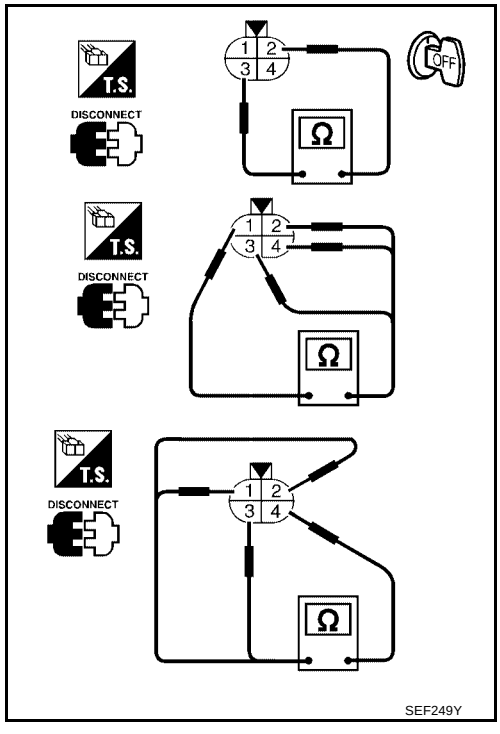
1. Check resistance between HO2S2 terminals as follows.

Terminal No.	Resistance
2 and 3	5.0 - 7.0 Ω at 25°C (77°F)
1 and 2, 3, 4	∞ Ω (Continuity should not exist)
4 and 1, 2, 3	

2. If NG, replace heated oxygen sensor 2.

CAUTION:

- **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; use a new one.**
- **Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner tool J-43897-18 or J-43897-12 and approved anti-seize lubricant.**



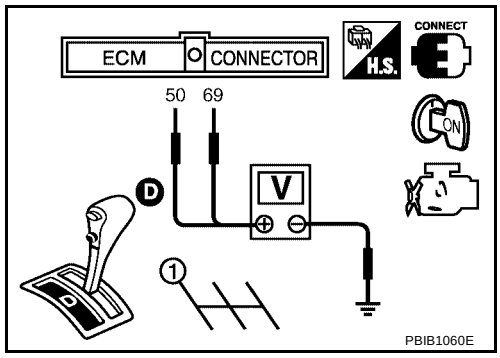
Component Inspection

UBS0093I

THROTTLE POSITION SENSOR

1. Reconnect all harness connectors disconnected.
2. Perform EC-90, "Throttle Valve Closed Position Learning" .
3. Turn ignition switch ON.
4. Set selector lever to D position (A/T), 1st position (M/T).
5. Check voltage between ECM terminals 50 (TP sensor 1 signal), 69 (TP sensor 2 signal) and ground under the following conditions.

Terminal	Accelerator pedal	Voltage
50 (Throttle position sensor 1)	Fully released	More than 0.36V
	Fully depressed	Less than 4.75V
69 (Throttle position sensor 2)	Fully released	Less than 4.75V
	Fully depressed	More than 0.36V



6. If NG, replace electric throttle control actuator and go to the next step.
7. Perform EC-90, "Throttle Valve Closed Position Learning" .
8. Perform EC-91, "Idle Air Volume Learning" .

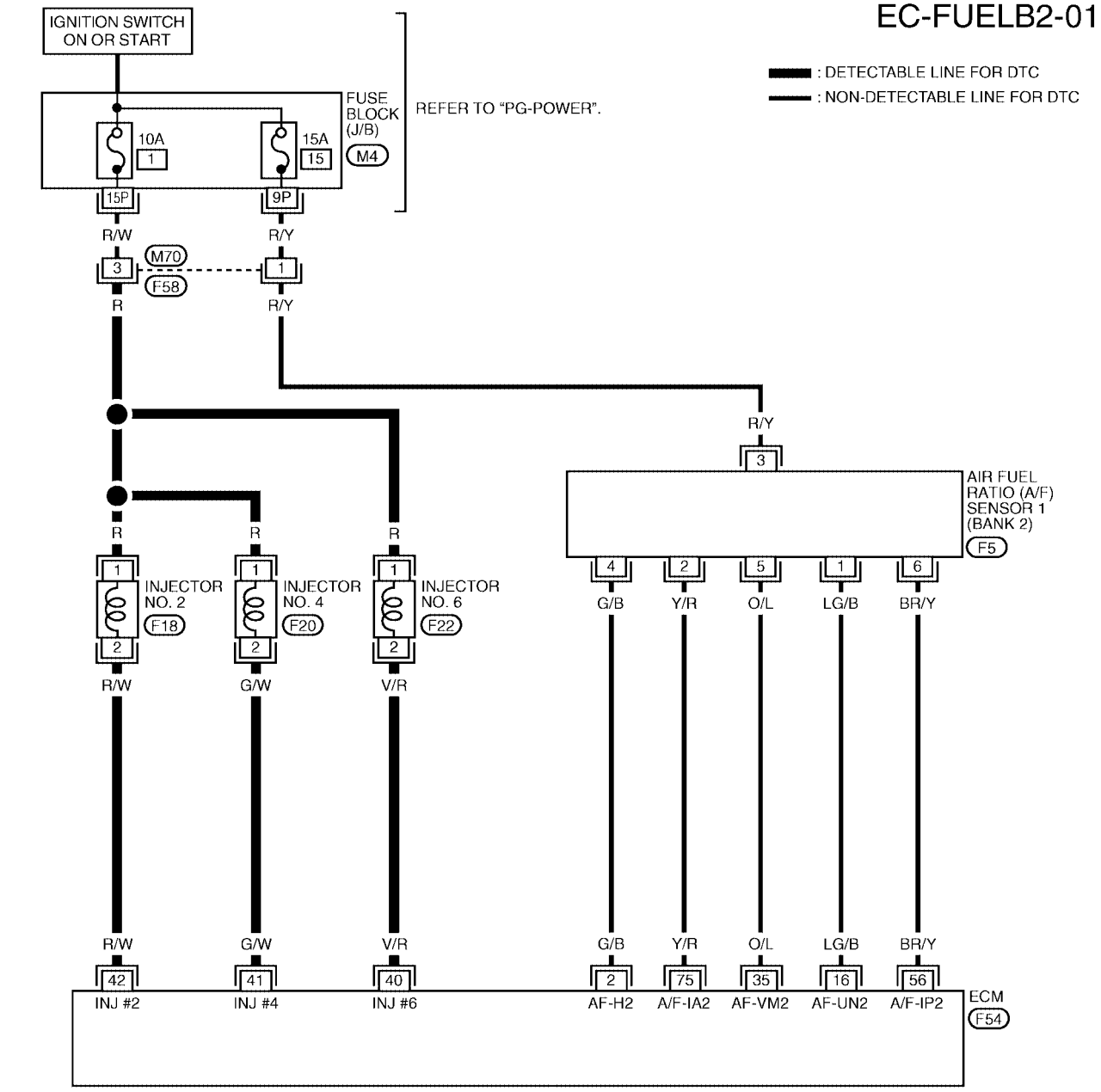
Removal and Installation

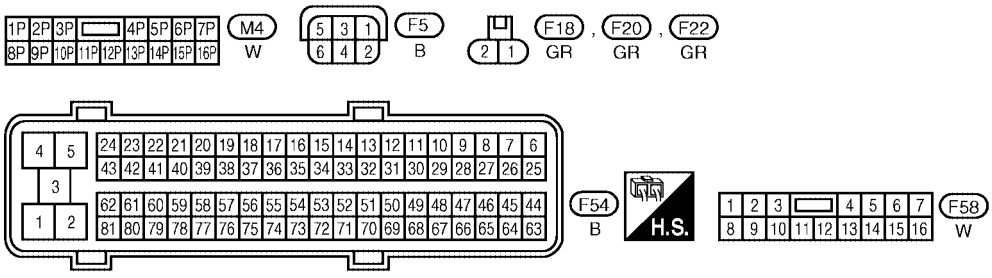
UBS0093J

ELECTRIC THROTTLE CONTROL ACTUATOR

Refer to EM-18, "INTAKE MANIFOLD COLLECTOR" .

BANK 2





BBWA1505E

3. PERFORM POWER BALANCE TEST

With CONSULT-II

1. Perform “POWER BALANCE” in “ACTIVE TEST” mode.
2. Is there any cylinder which does not produce a momentary engine speed drop?

ACTIVE TEST	
POWER BALANCE	
MONITOR	
ENG SPEED	XXX rpm
MAS A/F SE-B1	XXX V

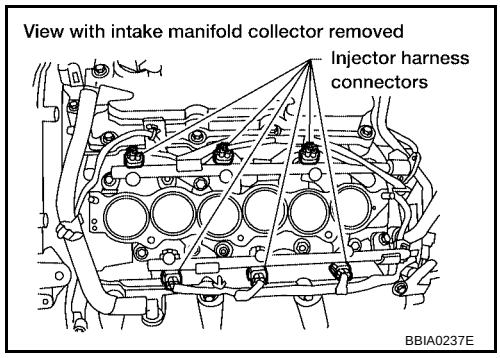
PBIB0133E

Without CONSULT-II

When disconnecting each injector harness connector one at a time, is there any cylinder which does not produce a momentary engine speed drop?

Yes or No

Yes >> GO TO 4.
No >> GO TO 7.

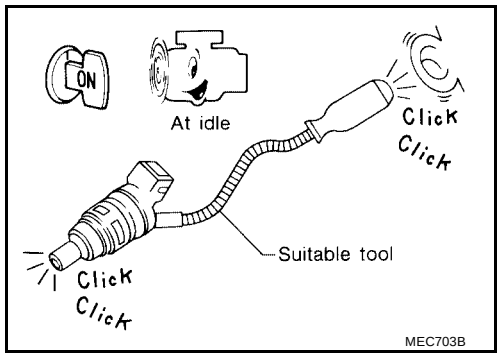


4. CHECK INJECTOR

Does each injector make an operating sound at idle?

Yes or No

Yes >> GO TO 5.
No >> Check injector(s) and circuit(s). Refer to EC-687, "INJECTOR CIRCUIT" .



5. CHECK EGR PASSAGE

Check EGR passage for clogging and cracks.

OK or NG

OK >> GO TO 6.
NG >> Repair or replace EGR passage.

6. CHECK EGR VOLUME CONTROL VALVE

Refer to EC-328, "Component Inspection" .

OK or NG

OK >> GO TO 7.
NG >> Replace EGR volume control valve.

7. CHECK EGR TEMPERATURE SENSOR AND CIRCUIT

Perform DTC Confirmation Procedure for DTC P 0405, P0406. Refer to EC-332, "DTC Confirmation Procedure" .

OK or NG

OK >> GO TO 8.
NG >> Repair or replace malfunctioning part.

8. CHECK INTERMITTENT INCIDENT

Refer to EC-162, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

14. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

Without CONSULT-II

1. Start engine and warm it up to normal operating temperature.
2. Stop engine.
3. Disconnect vacuum hose to EVAP canister purge volume control solenoid valve at EVAP service port.
4. Start engine and let it idle for at least 80 seconds.
5. Check vacuum hose for vacuum when revving engine up to 2,000 rpm.

Vacuum should exist.

OK or NG

OK >> GO TO 17.
NG >> GO TO 15.

15. CHECK VACUUM HOSE

Check vacuum hoses for clogging or disconnection. Refer to EC-117, "Vacuum Hose Drawing" .

OK or NG

OK >> GO TO 16.
NG >> Repair or reconnect the hose.

16. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to EC-364, "Component Inspection" .

OK or NG

OK >> GO TO 17.
NG >> Replace EVAP canister purge volume control solenoid valve.

17. CHECK FUEL TANK TEMPERATURE SENSOR

Refer to EC-274, "Component Inspection" .

OK or NG

OK >> GO TO 18.
NG >> Replace fuel level sensor unit.

18. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to EC-381, "Component Inspection" .

OK or NG

OK >> GO TO 19.
NG >> Replace EVAP control system pressure sensor.

19. CHECK EVAP PURGE LINE

Check EVAP purge line (pipe, rubber tube, fuel tank and EVAP canister) for cracks or improper connection. Refer to EC-34, "EVAPORATIVE EMISSION LINE DRAWING" .

OK or NG

OK >> GO TO 20.
NG >> Repair or reconnect the hose.

20. CLEAN EVAP PURGE LINE

Clean EVAP purge line (pipe and rubber tube) using air blower.

>> GO TO 21.

DTC Confirmation Procedure

UBS0097Z

CAUTION:

Never remove fuel filler cap during the DTC Confirmation Procedure.

NOTE:

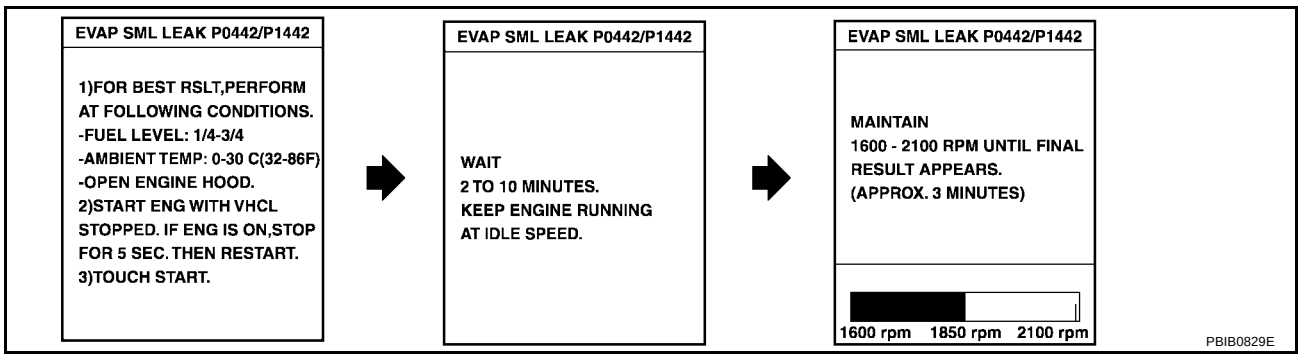
- **Make sure that EVAP hoses are connected to EVAP canister purge volume control solenoid valve properly.**
- If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

TESTING CONDITION:

- **Perform "DTC WORK SUPPORT" when the fuel level is between 1/4 and 3/4 full, and vehicle is placed on flat level surface.**
- **Open engine hood before conducting the following procedures.**

WITH CONSULT-II

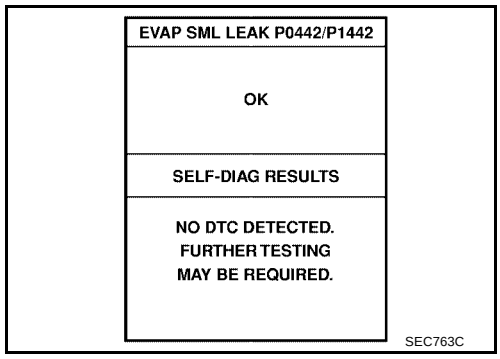
1. Tighten fuel filler cap securely until ratcheting sound is heard.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT-II.
5. Make sure that the following conditions are met.
   COOLAN TEMP/S: 0 - 70°C (32 - 158°F)
   INT/A TEMP SE: 0 - 60°C (32 - 140°F)
6. Select "EVAP SML LEAK P0442/P1442" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT-II.
   Follow the instruction displayed.



NOTE:

If the engine speed cannot be maintained within the range displayed on the CONSULT-II screen, go to EC-72, "Basic Inspection" .

7. Make sure that "OK" is displayed.
   If "NG" is displayed, select "SELF-DIAG RESULTS" mode and make sure that "EVAP GROSS LEAK [P0455]" is displayed. If it is displayed, refer to EC-392, "Diagnostic Procedure" .
   If P0442 is displayed, perform Diagnostic Procedure for DTC P0442, EC-352, "Diagnostic Procedure" .



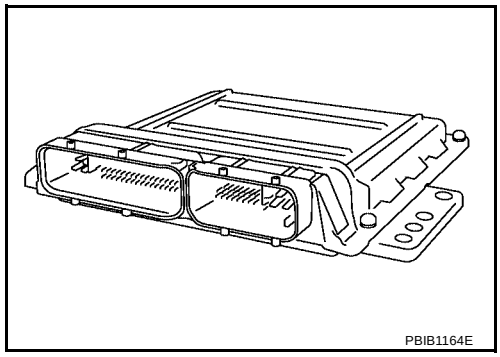
DTC P0605 ECM

PFP:23710

Component Description

UBS00994

The ECM consists of a microcomputer and connectors for signal input and output and for power supply. The ECM controls the engine.


PBIB1164E

On Board Diagnosis Logic

UBS00995

This self-diagnosis has one or two trip detection logic.

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0605 0605	Engine control module	A)	ECM calculation function is malfunctioning.	● ECM
		B)	ECM EEP-ROM system is malfunctioning.	
		C)	ECM self shut-off function is malfunctioning.	

FAIL-SAFE MODE

ECM enters fail-safe mode when the malfunction A is detected.

Detected items	Engine operation condition in fail-safe mode
Malfunction A	● ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring. ● ECM deactivates ASCD operation.

DTC Confirmation Procedure

UBS00996

Perform PROCEDURE FOR MALFUNCTION A first. If the 1st trip DTC cannot be confirmed, perform PROCEDURE FOR MALFUNCTION B. If there is no malfunction on PROCEDURE FOR MALFUNCTION B, perform PROCEDURE FOR MALFUNCTION C.

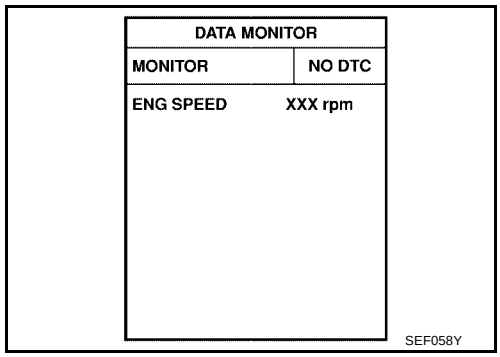
NOTE:

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

PROCEDURE FOR MALFUNCTION A

With CONSULT-II

1. Turn ignition switch ON.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. If 1st trip DTC is detected, go to EC-426, "Diagnostic Procedure"
.



SEF058Y

With GST

Follow the procedure “With CONSULT-II” above.

DTC P1128 THROTTLE CONTROL MOTOR

PFP:16119

Component Description

UBS009AA

The throttle control motor is operated by the ECM and it opens and closes the throttle valve.
The current opening angle of the throttle valve is detected by the throttle position sensor and it provides feedback to the ECM to control the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

On Board Diagnosis Logic

UBS009AB

This self-diagnosis has the one trip detection logic.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1128 1128	Throttle control motor circuit short	ECM detects short in both circuits between ECM and throttle control motor.	● Harness or connectors (Throttle control motor circuit is shorted.) ● Electric throttle control actuator (Throttle control motor)

FAIL-SAFE MODE

When the malfunction is detected, the ECM enters fail-safe mode and the MIL lights up.

Engine operating condition in fail-safe mode
ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.

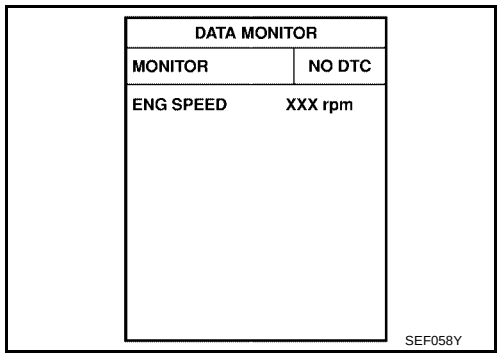
DTC Confirmation Procedure

UBS009AC

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

1. Turn ignition switch ON and wait at least 2 seconds.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Start engine and let it idle for 5 seconds.
4. If DTC is detected, go to EC-461, "Diagnostic Procedure" .



WITH GST

Follow the procedure “WITH CONSULT-II” above.

On Board Diagnosis Logic

UBS009BD

If the cooling fan or another component in the cooling system malfunctions, engine coolant temperature will rise.
When the engine coolant temperature reaches an abnormally high temperature condition, a malfunction is indicated.
This self-diagnosis has the one trip detection logic.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1217 1217	Engine over temperature (Overheat)	● Cooling fan does not operate properly (Overheat). ● Cooling fan system does not operate properly (Overheat). ● Engine coolant was not added to the system using the proper filling method. ● Engine coolant level is not within the specified range.	● Harness or connectors (The cooling fan circuit is open or shorted.) ● IPDM E/R ● Cooling fan ● Radiator hose ● Radiator ● Radiator cap ● Water pump ● Thermostat For more information, refer to EC-502, "Main 12 Causes of Overheating" .

CAUTION:
When a malfunction is indicated, be sure to replace the coolant. Refer to MA-14, "Changing Engine Coolant" . Also, replace the engine oil. Refer to MA-16, "Changing Engine Oil" .

1. **Fill radiator with coolant up to specified level with a filling speed of 2 liters per minute. Be sure to use coolant with the proper mixture ratio. Refer to MA-10, "ANTI-FREEZE COOLANT MIXTURE RATIO" .**
2. **After refilling coolant, run engine to ensure that no water-flow noise is emitted.**

4. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between the following terminals.
   Refer to Wiring Diagram.

	A/F sensor 1 terminal	ECM terminal
Bank 1	1	16
	2	75
	5	35
	6	56
Bank 2	1	76
	2	77
	5	57
	6	58

Continuity should exist.

4. Check harness continuity between the following terminals and ground.
   Refer to Wiring Diagram.

Bank 1		Bank 2	
A/F sensor 1 terminal	ECM terminal	A/F sensor 1 terminal	ECM terminal
1	16	1	76
2	75	2	77
5	35	5	57
6	56	6	58

Continuity should not exist.

5. Also check harness for short to power.

OK or NG

OK >> GO TO 5.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

5. CHECK INTERMITTENT INCIDENT

Perform EC-162, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

OK or NG

OK >> Replace A/F sensor 1.
NG >> Repair or replace.

Removal and Installation

UBS009CC

AIR FUEL RATIO (A/F) SENSOR 1

Refer to EM-27, "EXHAUST MANIFOLD AND THREE WAY CATALYST" .

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.

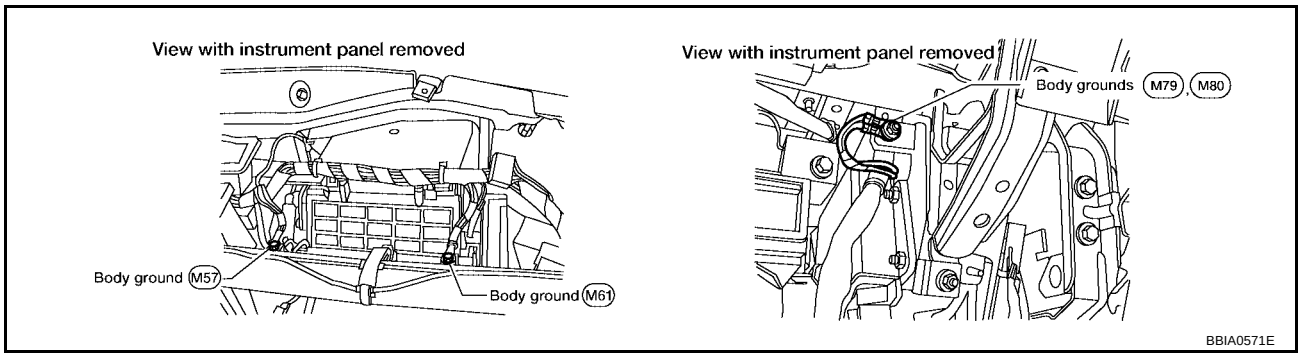
TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
57	P	A/F sensor 1 (Bank 2)	**[Engine is running]** ● **Warm-up condition** ● Idle speed	Approximately 2.6V
58	SB			Approximately 2.3V
76	G/Y			Approximately 3.1V
77	LG			Approximately 2.3V

Diagnostic Procedure

UBS009D7

1. CHECK GROUND CONNECTIONS

1. Turn ignition switch OFF.
2. Loosen and retighten four ground screws on the body.
   Refer to EC-171, "Ground Inspection" .

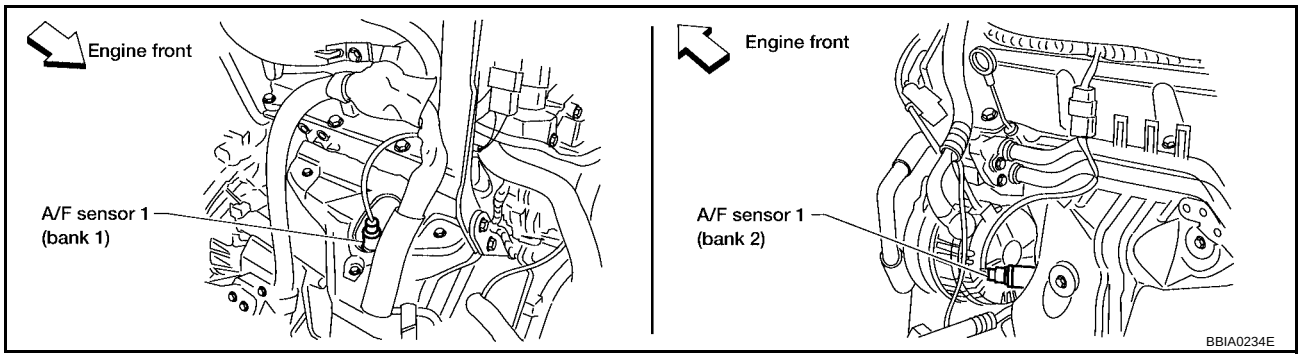


OK or NG

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

2. RETIGHTEN AIR FUEL RATIO (A/F) SENSOR 1

Loosen and retighten the air fuel ratio (A/F) sensor 1.



Tightening torque: 40 - 60 N-m (4.1 - 6.1 kg-m, 30 - 44 ft-lb)

>> GO TO 3.

DTC Confirmation Procedure

UBS009DZ

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

1. Turn ignition switch ON and wait at least 5 seconds.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON and select “DATA MONITOR” mode with CONSULT-II.
4. Start engine and let it idle for at least 1 minute.
5. Repeat next procedures 3 times.

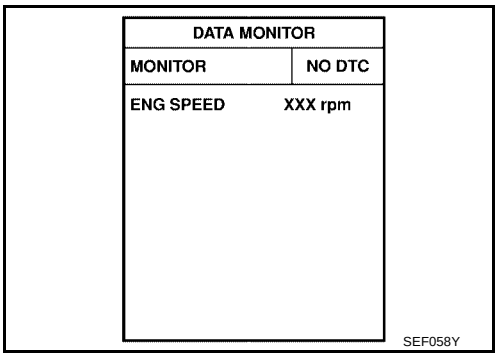
a. Increase the engine speed up to 3,000 to 3,500 rpm and keep it for 2 minutes and 50 seconds to 3 minutes.
Never exceed 3 minutes.

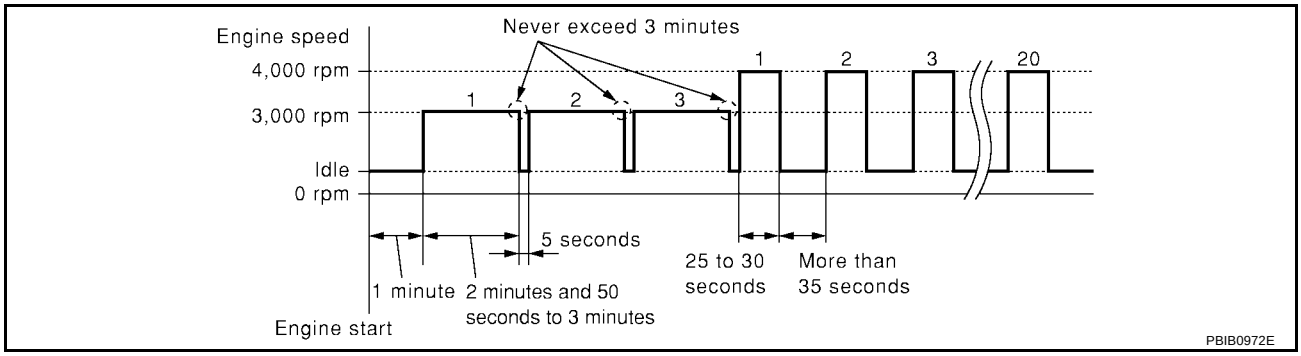
b. Fully released accelerator pedal and keep engine idle for about 5 seconds.

6. If 1st trip DTC is detected, go to EC-597, "Diagnostic Procedure"
.
If 1st trip DTC is not detected, go to the next step.
7. Repeat next procedure 20 times.

a. Quickly increase the engine speed up to 4,000 to 4,500 rpm or more and keep it for 25 to 30 seconds.

b. Fully released accelerator pedal and keep engine idle for at least 35 seconds.





8. If 1st trip DTC is detected, go to EC-597, "Diagnostic Procedure" .

WITH GST

Follow the procedure “WITH CONSULT-II” above.

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.

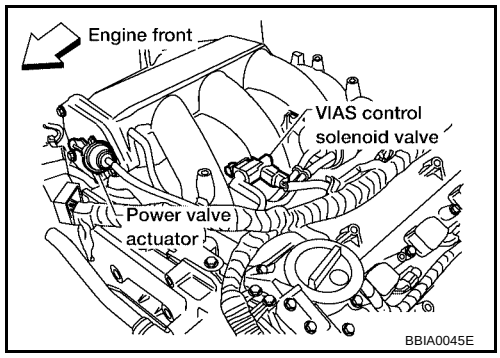
TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
29	Y/B	VIAS control solenoid valve	**[Engine is running]** ● Idle speed	BATTERY VOLTAGE (11 - 14V)
			[Engine is running] ● Engine speed: between 1,800 and 3,600 rpm.	0 - 1.0V
111	W/B	ECM relay (Self shut-off)	**[Engine is running]** **[Ignition switch: OFF]** ● For a few seconds after turning ignition switch OFF	0 - 1.5V
			[Ignition switch: OFF] ● More than a few seconds after turning ignition switch OFF	BATTERY VOLTAGE (11 - 14V)
119 120	R/G R/G	Power supply for ECM	**[Ignition switch: ON]**	BATTERY VOLTAGE (11 - 14V)

Diagnostic Procedure

UBS009FI

1. CHECK VIAS CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect VIAS control solenoid valve harness connector.
3. Turn ignition switch ON.

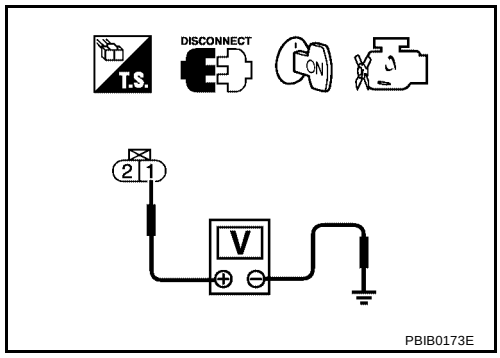


4. Check voltage between terminal 1 and ground with CONSULT-II or tester.

Voltage: Battery voltage

OK or NG

OK >> GO TO 3.
NG >> GO TO 2.



5. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between APP sensor terminal 1 and ECM terminal 91. Refer to Wiring Diagram.

Continuity should exist.

OK or NG

OK >> GO TO 7.
NG >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E25, M90
- Harness for open between ECM and accelerator pedal position sensor

>> Repair or replace open circuit.

7. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-III

Check harness for short to power and short to ground, between the following terminals.

ECM terminal	Sensor terminal	Reference Wiring Diagram
91	APP sensor terminal 1	EC-660, "Wiring Diagram"
47	Electric throttle control actuator terminal 1	EC-653, "Wiring Diagram"

OK or NG

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

8. CHECK THROTTLE POSITION SENSOR

Refer to EC-657, "Component Inspection" .

OK or NG

OK >> GO TO 16.
NG >> GO TO 9.

9. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

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

>> **INSPECTION END**

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.

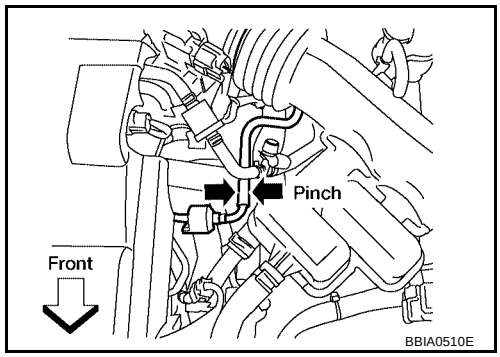
TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
113	B/O	Fuel pump relay	**[Ignition switch: ON]** ● For 1 second after turning ignition switch ON **[Engine is running]**	0 - 1.5V
			[Ignition switch: ON] ● More than 1 second after turning ignition switch ON	BATTERY VOLTAGE (11 - 14V)

Diagnostic Procedure

UBS009H8

1. CHECK OVERALL FUNCTION

1. Turn ignition switch ON.
2. Pinch fuel feed hose with two fingers.
   Fuel pressure pulsation should be felt on the fuel feed hose for 1 second after ignition switch is turned ON.



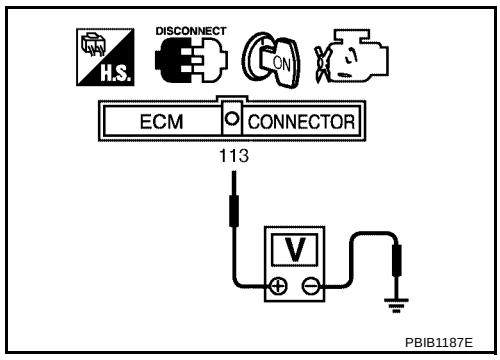
OK or NG

OK >> **INSPECTION END**
NG >> GO TO 2.

2. CHECK FUEL PUMP POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Turn ignition switch ON.
4. Check voltage between ECM terminal 113 and ground with CONSULT-II or tester.

Voltage: Battery voltage



OK or NG

OK >> GO TO 5.
NG >> GO TO 3.

PRECAUTIONS

PFP:00001

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

EIS003VX

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

EIS003VY

- 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 them 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.

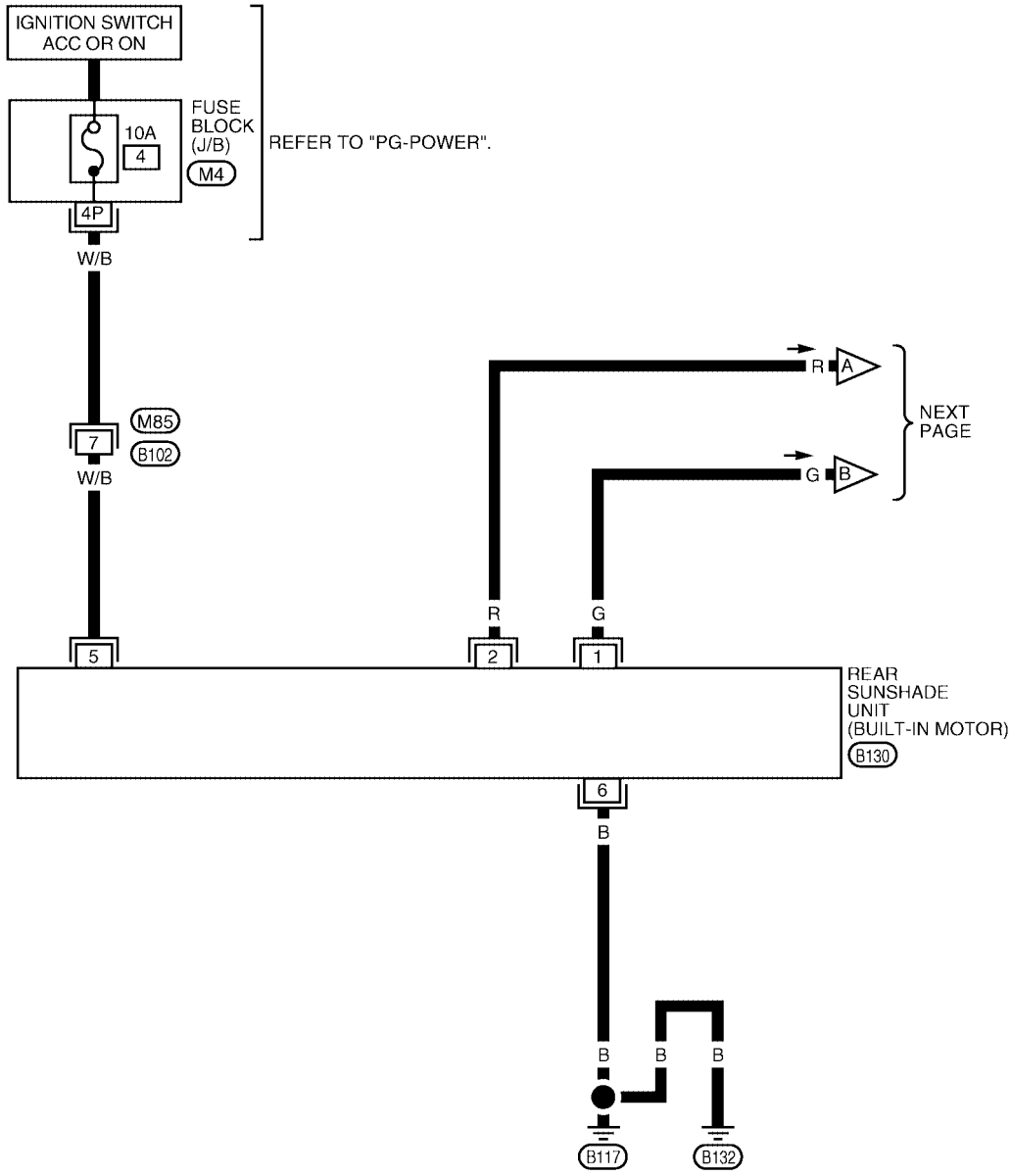
– Oil stain:
Dissolve a synthetic detergent in warm water (density of 2 to 3% or less), dip the cloth, then clean off the stain with the cloth. Next, dip the soft cloth in fresh water, and then squeeze it tightly. Then clean off the detergent completely. Then wipe the area with a soft dry cloth.

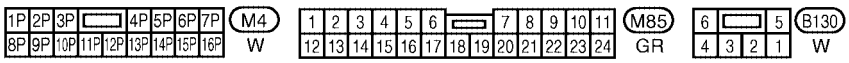
- Do not use any organic solvent, such as thinner or benzine.

Wiring Diagram — SHADE —

EIS003WM

EI-SHADE-01





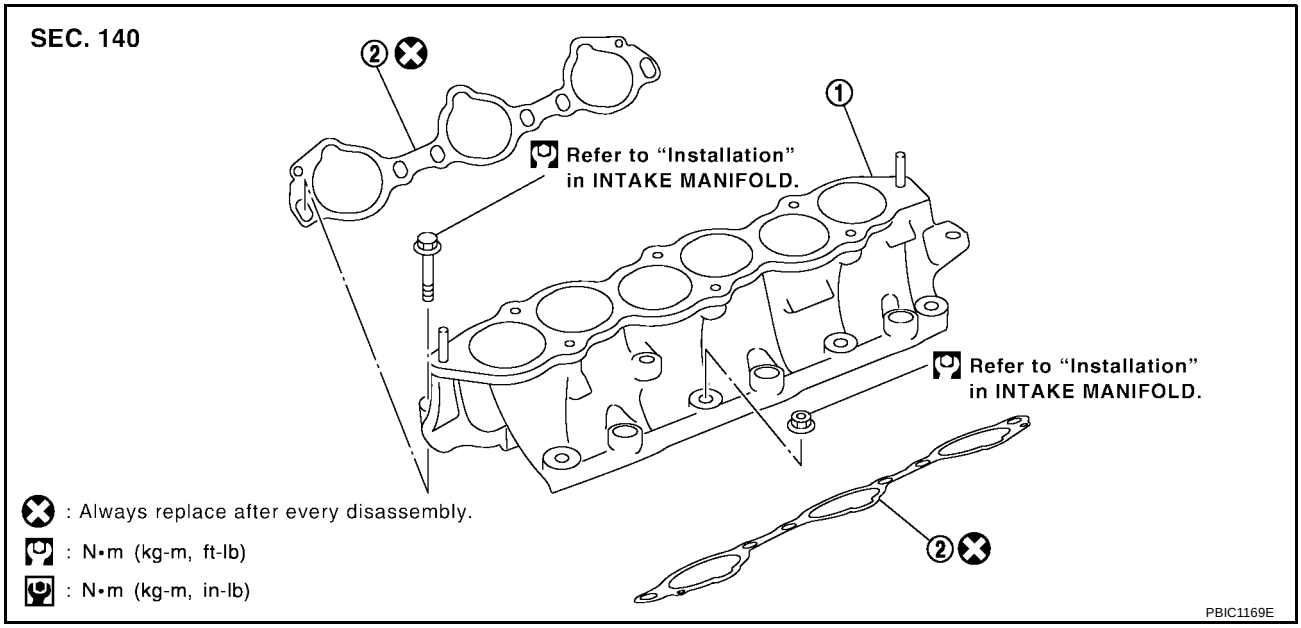
WIWA0319E

INTAKE MANIFOLD

PFP:14003

Removal and Installation

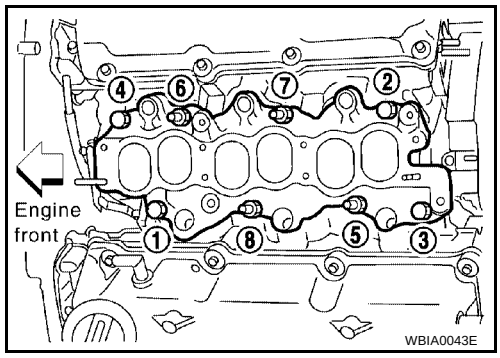
EBS00JAP



1. Intake manifold
2. Gasket

REMOVAL

1. Release the fuel pressure. Refer to EC-93, "FUEL PRESSURE RELEASE" .
2. Remove the intake manifold collector. Refer to EM-18, "Removal and Installation" .
3. Remove the fuel rail with the fuel injectors. Refer to EM-40, "Removal and Installation" .
4. Loosen the intake manifold nuts and bolts in the order shown using power tool, and remove the intake manifold.



1. Timing chain tensioner
2. Internal chain guide
3. Timing chain tensioner
4. Camshaft sprocket (EXH)
5. Timing chain (secondary)
6. Timing chain (primary)
7. Camshaft sprocket (INT)
8. Camshaft sprocket (EXH)
9. Timing chain (secondary)
10. Camshaft sprocket (INT)
11. Slack guide
12. Crankshaft sprocket
13. Timing chain tensioner
14. IVT control valve cover - right
15. Chain tensioner cover
16. RH engine mounting bracket
17. Water hose clamp
18. Water pump cover
19. IVT control valve cover - left
20. Front oil seal
21. Crankshaft pulley
22. Idler pulley
23. Idler pulley bracket
24. Front timing chain case
25. Rear timing chain case
26. Timing tension guide
27. O-ring
28. Collared O-ring
29. Seal ring

CAUTION:

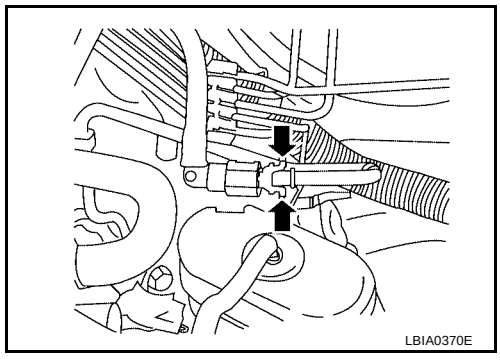
- **After removing timing chain, do not turn the crankshaft and camshaft separately, or the valves will strike the pistons.**
- **When installing camshafts, chain tensioners, oil seals, or other sliding parts, lubricate contacting surfaces with new engine oil.**
- **Apply new engine oil to bolt threads and seat surfaces when installing camshaft sprockets, camshaft brackets, and crankshaft pulley.**
- **Before disconnecting fuel hose, release fuel pressure. Refer to EC-93, "FUEL PRESSURE RELEASE" .**
- **Before removing the upper oil pan, remove the crankshaft position sensor (POS).**
- **Be careful not to damage sensor edges.**
- **Do not spill engine oil or coolant on drive belts.**

NOTE:

- This section describes procedures for removal/installation procedure of the front timing chain case and timing chain related parts, and rear timing chain case, when oil pan (upper) needs to be removed/installed for engine overhaul, etc.
- To remove/install front timing chain case, timing chain, and its related parts without removing oil pan (upper), refer to EM-46, "Removal and Installation" .

REMOVAL

1. Release the fuel pressure. Refer to EC-93, "FUEL PRESSURE RELEASE" .
2. Disconnect the battery negative terminal.
3. Drain the engine cooling system. Refer to MA-14, "DRAINING ENGINE COOLANT" .
4. Drain engine oil. Refer to MA-16, "Changing Engine Oil" .
5. Remove engine cover using power tool.
6. Remove side engine covers.
7. Remove the intake air duct with the air cleaner case lid and mass air flow sensor. Refer to EM-16, "Removal and Installation" .
8. Remove the engine coolant reservoir.
9. Disconnect the fuel rail quick connector at the vehicle piping side.
10. Remove the cowl top. Refer to EI-19, "Removal and Installation" .
11. Remove the windshield wiper assembly. Refer to WW-23, "Removal and Installation of Wiper Motor and Linkage" .
12. Remove the IPDM E/R and position aside. Remove the bracket.
13. Remove the front RH wheel and tire using power tool.
14. Remove the engine undercover.
15. Remove the RH inner fender splash shield.
16. Remove the drive belts and idler pulley. Refer to EM-15, "Removal and Installation" .
17. Recover the A/C system R134a and remove the A/C compressor. Refer to ATC-119, "Evacuating System and Charging Refrigerant" .



Valve Clearance

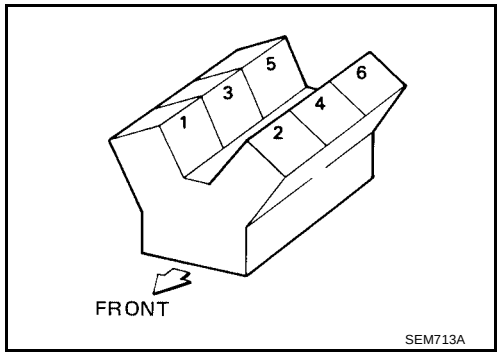
EBS00JAZ

CHECKING

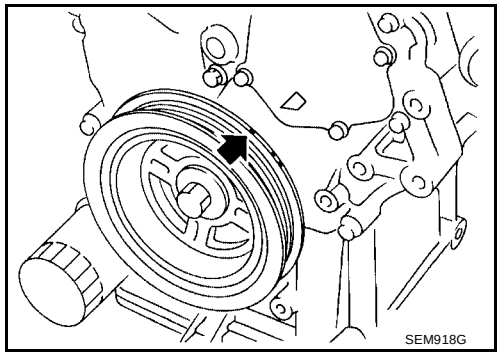
Perform inspection as follows after removal, installation or replacement of camshaft or valve related parts, or if there is unusual engine conditions regarding valve clearance.

NOTE:
Check valve clearance while engine is cold and not running.

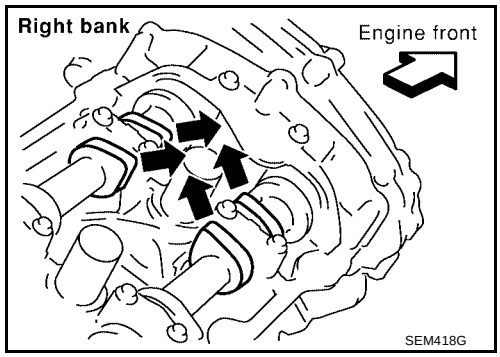
1. Remove the intake manifold collectors. Refer to EM-19, "REMOVAL" .
2. Remove the ignition coils. Refer to EM-37, "REMOVAL" .
3. Remove the spark plugs. Refer to EM-38, "REMOVAL" .
4. Remove the rocker covers. EM-43, "REMOVAL" .



5. Set No.1 cylinder at TDC on its compression stroke.
   - Align pointer with TDC mark on crankshaft pulley.



   - Check that the valve lifters on No.1 cylinder are loose and valve lifters on No.4 are tight. If not, turn the crankshaft one full revolution (360°) and align as shown.

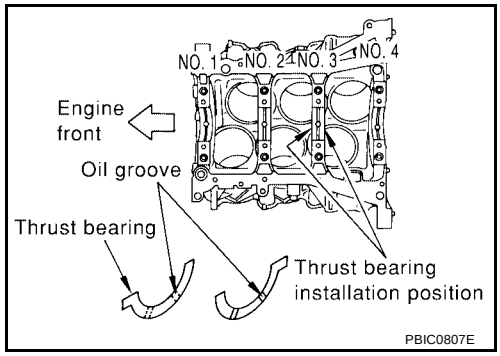


4. Install the main bearings and the thrust bearings.

a. Remove dust, dirt, and oil on the bearing mating surfaces of the cylinder block and the main bearing cap.

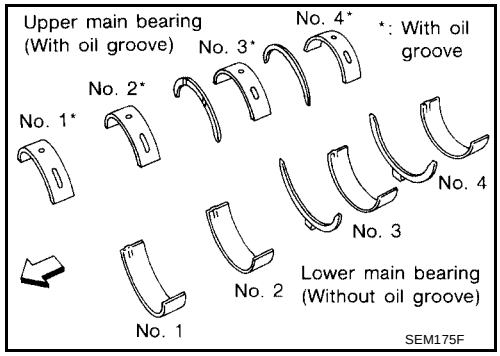
b. Install the thrust bearings to both sides of the No. 3 journal housing on the cylinder block and the main bearing cap.

- Install the thrust bearings with the oil groove facing the crankshaft arm (outside).
- Install bearing with a projection on one end on cylinder block and bearing with a projection at center on cap. Align each projection with mating notch.



5. Set the upper main bearings in their proper positions on the cylinder block.

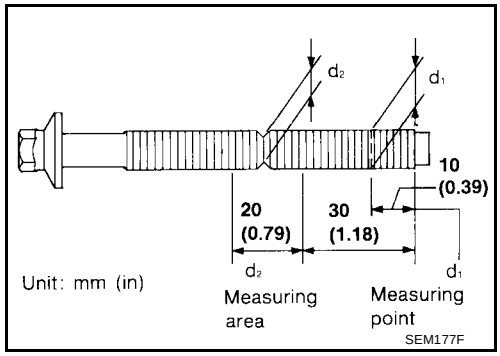
- Confirm the correct main bearings are used. Refer to EM-143, "PISTON-TO-CYLINDER BORE CLEARANCE" .



6. Check specifications for the re-use of the main bearing cap bolts.

- Measure d1 and d2 as shown.
- For d2, select the minimum diameter in the measuring area.
- If the difference between d1 and d2 exceeds the limit, replace the bolts for assembly.

Limit (d1 - d2) : 0.11 mm (0.0043 in)



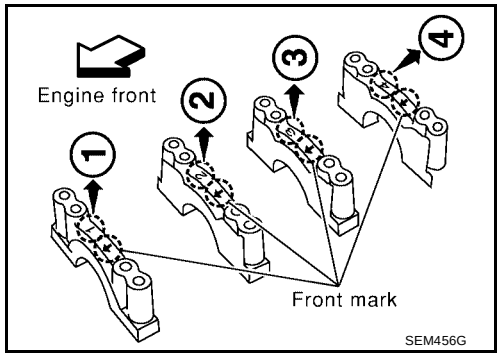
7. After installing the crankshaft, lower main bearings, main bearing caps, main bearing beam, and bearing cap bolts.

a. Make sure that the front marks on the main bearing beam faces the front of the engine.

b. Prior to tightening all the bearing cap bolts, place the bearing beam in its proper position by shifting the crankshaft in the axial position.

c. After tightening the bearing cap bolts, make sure the crankshaft turns smoothly.

d. Lubricate the threads and seat surfaces of the bolts with new engine oil.



Undersize

Unit: mm (in)

	Thickness	Crank pin journal diameter “Dp”
0.25 (0.0098)	1.626 - 1.634 (0.0640 - 0.0643)	Grind so that bearing clearance is the specified value.

MISCELLANEOUS COMPONENTS

Unit: mm (in)

Flywheel deflection [TIR]* - Standard	Less than 0.45 (0.0177)
Flywheel deflection [TIR]* - Limit	1.3 (0.051)
Drive plate runout [TIR]*	Less than 0.15 (0.0059)
Flywheel movement in rotation direction	Less than 24 (0.94)

*: Total indicator reading

BEARING CLEARANCE

Unit: mm (in)

Main bearing clearance	Standard	0.035 - 0.045 (0.0014 - 0.0018)*
	Limit	0.065 (0.0026)
Connecting rod bearing clearance	Standard	0.034 - 0.059 (0.0013 - 0.0023)*
	Limit	0.070 (0.0028)

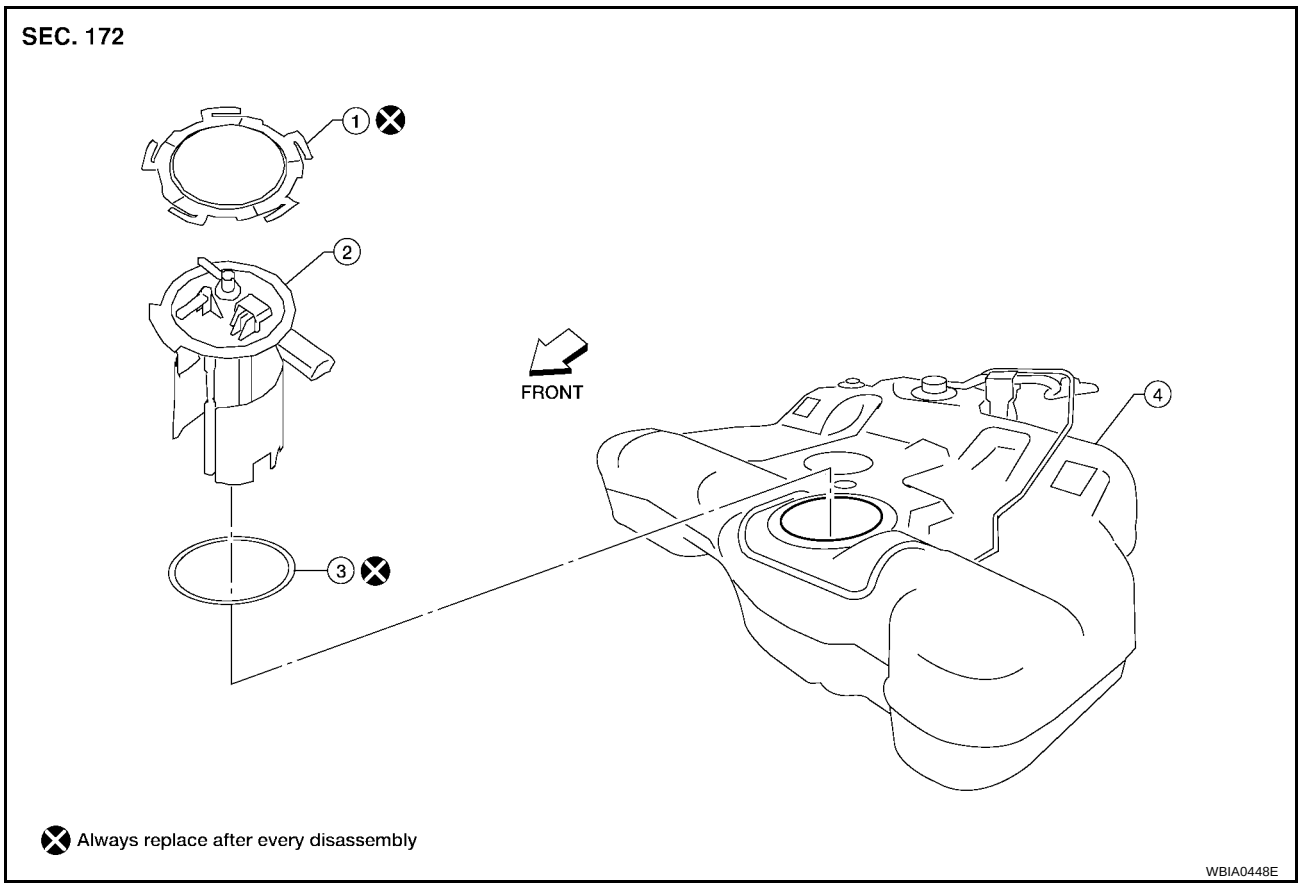
*: Actual clearance

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

PFP:17042

Removal and Installation

EBS00JT8



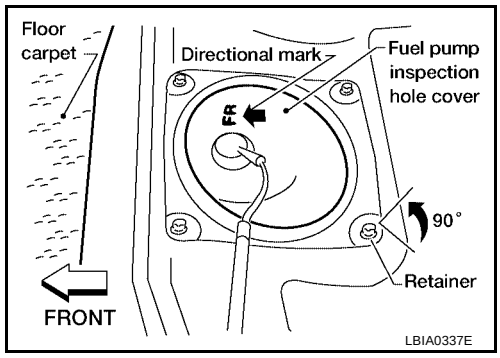
1. Lock ring
2. Fuel level sensor unit, fuel filter, and fuel pump assembly
3. O-ring
4. Fuel tank

REMOVAL

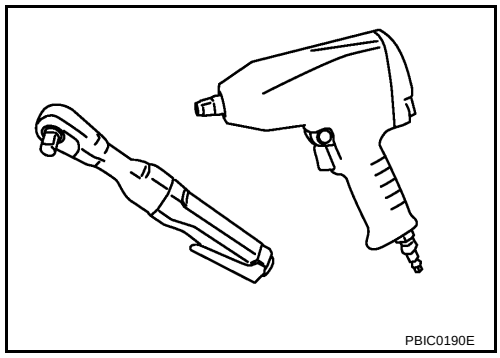
WARNING:

Read “General Precautions” before working on the fuel system.
Refer to FL-3, "General Precautions" .

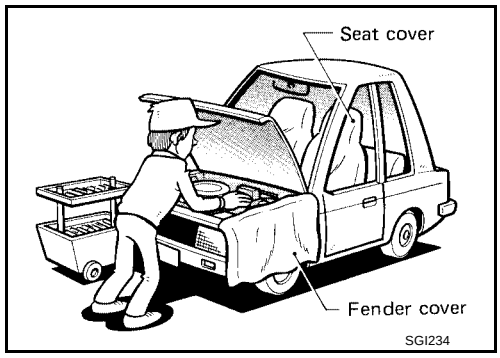
1. Unscrew the fuel filler cap to release the pressure inside the fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to EC-93, "FUEL PRESSURE RELEASE" .
3. Disconnect the battery ground cable.
4. Remove the rear seat bottom. Refer to SE-115, "Removal and Installation" .
5. Reposition the rear floor carpet out of the way to remove the fuel pump inspection hole cover.
6. Turn the four retainers 90° in a clockwise direction and remove the fuel pump inspection hole cover.



- Use approved bonding agent, sealants or their equivalents when required.
- Use hand tools, power tools (disassembly only) and recommended special tools where specified for safe and efficient service repairs.
- When repairing the fuel, oil, water, vacuum or exhaust systems, check all affected lines for leaks.


PBIC0190E

- Before servicing the vehicle:
  Protect fenders, upholstery and carpeting with appropriate covers.
  Take caution that keys, buckles or buttons do not scratch paint.



SGI234

WARNING:
To prevent ECM from storing the diagnostic trouble codes, do not carelessly disconnect the harness connectors which are related to the engine control system and TCM (transmission control module) system. The connectors should be disconnected only when working according to the WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

Precautions for Three Way Catalyst

EAS0019T

If a large amount of unburned fuel flows into the catalyst, the catalyst temperature will be excessively high. To prevent this, follow the instructions.

- Use unleaded gasoline only. Leaded gasoline will seriously damage the three way catalyst.
- When checking for ignition spark or measuring engine compression, make tests quickly and only when necessary.
- Do not run engine when the fuel tank level is low, otherwise the engine may misfire, causing damage to the catalyst.

Do not place the vehicle on flammable material. Keep flammable material off the exhaust pipe and the three way catalyst.

Precautions for Fuel (Unleaded Premium Gasoline Recommended)

EAS001H9

Use unleaded regular gasoline with an octane rating of at least 87 AKI (Anti-Knock Index) number (Research octane number 91).

For improved vehicle performance, NISSAN/INFINITI recommend the use of unleaded premium gasoline with an octane rating of at least 91 AKI number (Research octane number 96).

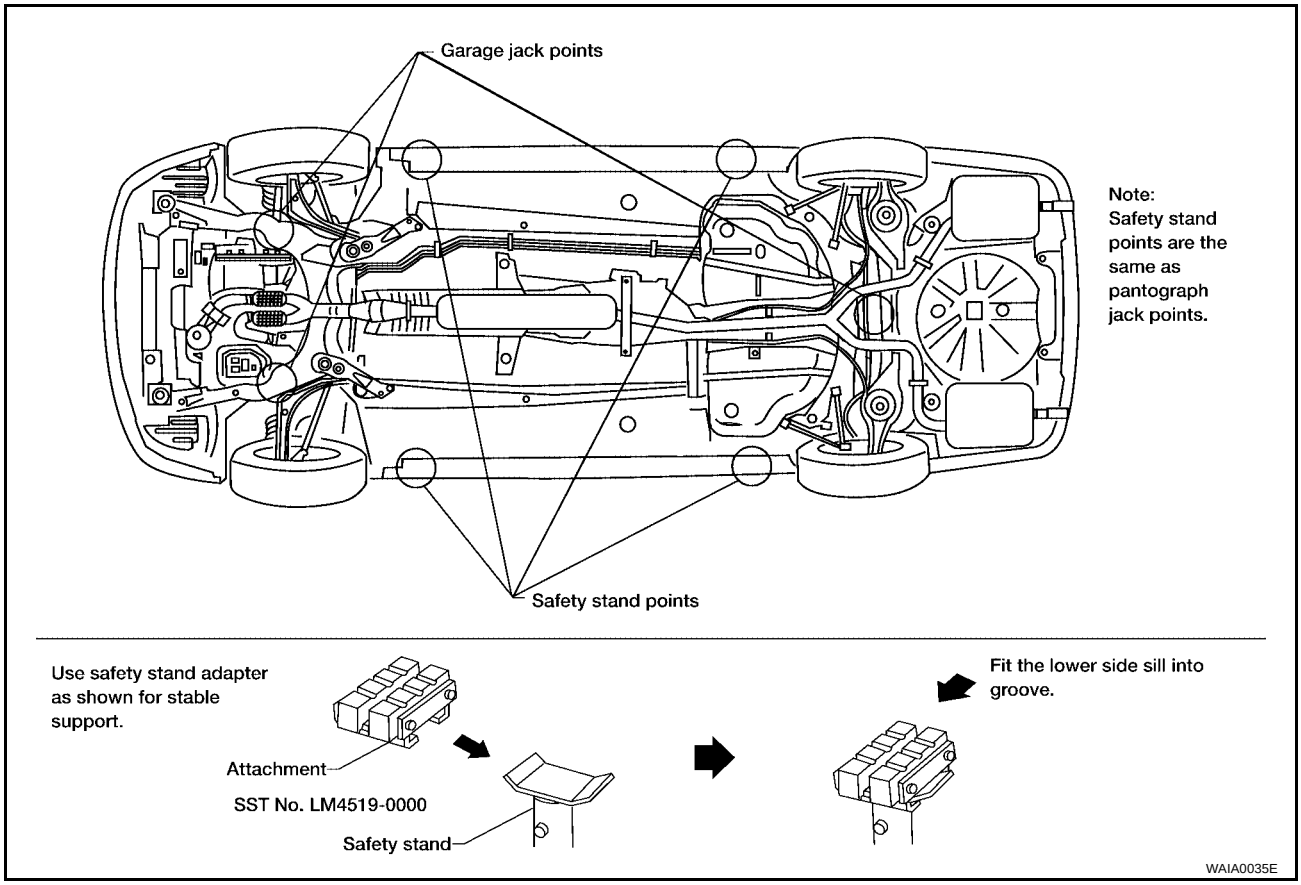
CAUTION:
Do not use leaded gasoline. Using leaded gasoline will damage the three way catalyst. Using a fuel other than that specified could adversely affect the emission control devices and systems, and could also affect the warranty coverage validity.

Garage Jack and Safety Stand

EAS001AH

WARNING:

- **Park the vehicle on a level surface when using the jack. Make sure to avoid damaging pipes, tubes, etc. under the vehicle.**
- **Never get under the vehicle while it is supported only by the jack. Always use safety stands when you have to get under the vehicle.**
- **Place wheel chocks at both front and back of the wheels on the ground.**
- **Lift at reinforced area of front suspension member where lower control arm attaches, staying in center line of wheels.**



- through BCM terminal 54
- to main power window and door lock/unlock switch terminal 19
- to power window and door lock/unlock switch RH terminal 10
- to rear power window switch LH and RH terminal 10.

With ignition switch in ON or START position, power is supplied (with front left and right only power window anti-pinch system)

- through 10A fuse [No.1, located in the fuse block (J/B)]
- to BCM terminal 38
- through BCM terminal 53
- to main power window and door lock/unlock switch terminal 10
- to rear power window switch LH and RH terminal 1 and 6.

With ignition switch in ON or START position, power is supplied (with front and rear power window anti-pinch system)

- through 10A fuse [No.1, located in the fuse block (J/B)]
- to BCM terminal 38
- through BCM terminal 53
- to main power window and door lock/unlock switch terminal 7.

Ground is supplied (with front left and right only power window anti-pinch)

- to BCM terminal 52
- to main power window and door lock/unlock switch terminal 17
- to power window and door lock/unlock switch RH terminal 11
- through body grounds M57, M61 and M79.

Ground is supplied (with front and rear power window anti-pinch)

- to BCM terminal 52
- to main power window and door lock/unlock switch terminal 17
- to front power window switch RH terminal 11
- through body grounds M57, M61 and M79.

MANUAL OPERATION

Front Driver Side Door (With Front Left and Right Only Anti-pinch System)

WINDOW UP

When the front LH switch in the main power window and door lock/unlock switch is pressed in the up position, power is supplied

- through main power window and door lock/unlock switch terminal 8
- to front power window motor LH terminal 1.

Ground is supplied

- through main power window and door lock/unlock switch terminal 11
- to front power window motor LH terminal 2.

Then, the motor raises the window until the switch is released.

WINDOW DOWN

When the front LH switch in the main power window and door lock/unlock switch is pressed in the down position, power is supplied

- through main power window and door lock/unlock switch terminal 11
- to front power window motor LH terminal 2.

Ground is supplied

- through main power window and door lock/unlock switch terminal 8
- to front power window motor LH terminal 1.

Then, the motor lowers the window until the switch is released.

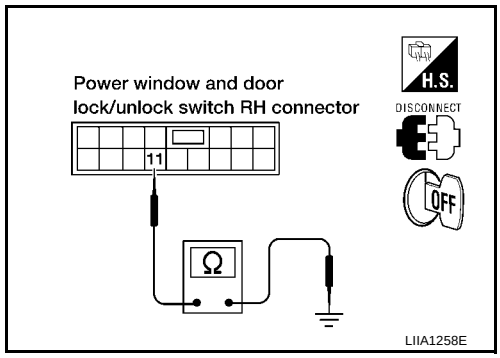
Front Driver Side Door (With Front and Rear Power Window Anti-pinch System)

WINDOW UP

2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front power window switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector D105 terminal 11 and ground.

11 (B) - Ground : Continuity should exist.



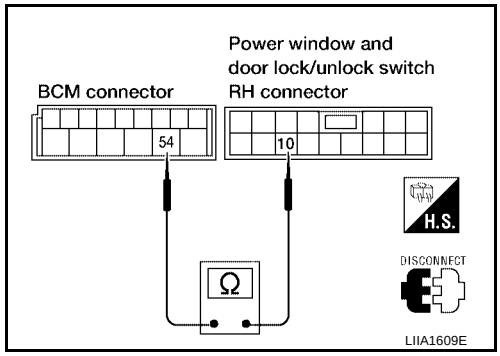
OK or NG

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

3. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH POWER SUPPLY CIRCUIT

1. Disconnect BCM.
2. Check continuity between BCM connector M19 terminal 54 and power window and door lock/unlock switch RH connector D105 terminal 10.

54 (W/R) - 10 (W/R) : Continuity should exist.



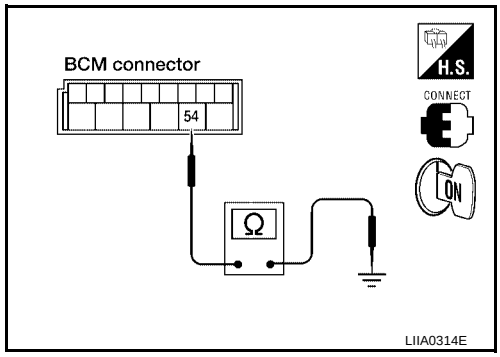
OK or NG

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

4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM.
2. Turn ignition switch ON.
3. Check voltage between BCM connector M19 terminal 54 and ground.

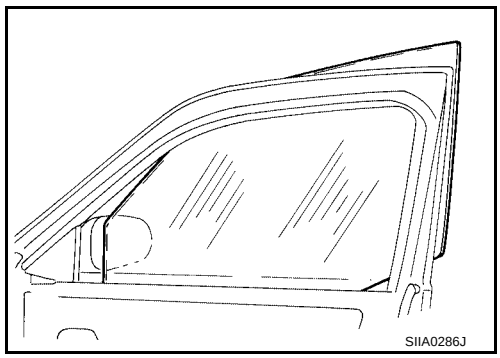
54 (W/R) - Ground : Battery voltage



OK or NG

OK >> Replace power window and door lock/unlock switch RH.
NG >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

6. While holding the door window, raise it at the rear end to pull the glass out of the sash toward the outside of the door.



INSTALLATION

Installation is in the reverse order of removal.

FITTING INSPECTION

- Check that the glass is securely fit into the glass run groove.
- Lower the glass slightly [approximately 10 to 20 mm (0.39 to 0.79 in)] and check that the clearance to the sash is parallel. If the clearance between the glass and sash is not parallel, loosen the regulator bolts, guide rail bolts, and glass and guide rail bolts to correct the glass position.

SETTING AFTER INSTALLATION

Setting of Limit Switch

If any of the following work has been done, set the limit switch (integrated in the motor).

- Removal and installation of the regulator.
- Removal and installation of the motor from the regulator.
- Removal and installation of the glass.
- Removal and installation of the glass run.

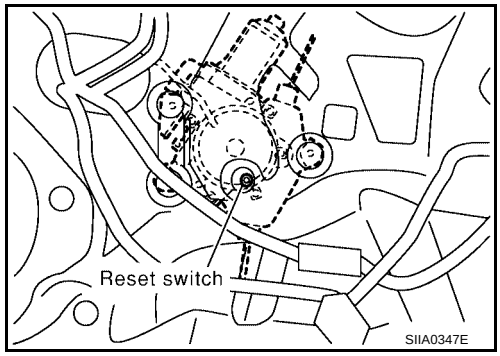
Resetting

After installing each component to the vehicle, perform the following procedure to reset the limit switch.

1. Raise the glass to the top position.
2. While pressing and holding the reset switch, lower the glass to the bottom position.
3. Release the reset switch. Verify that the reset switch returns to the original position, and then raises the glass to the top position.

CAUTION:

Do not operate the glass automatically to raise the glass to the top dead center position.

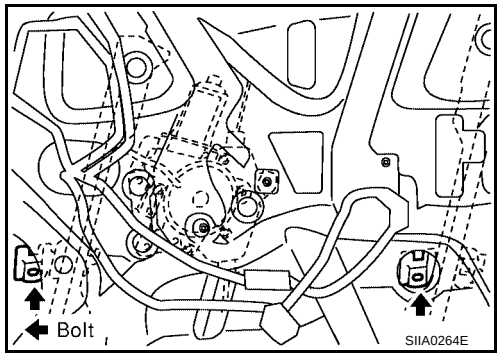


Door Module Assembly

EIS003UH

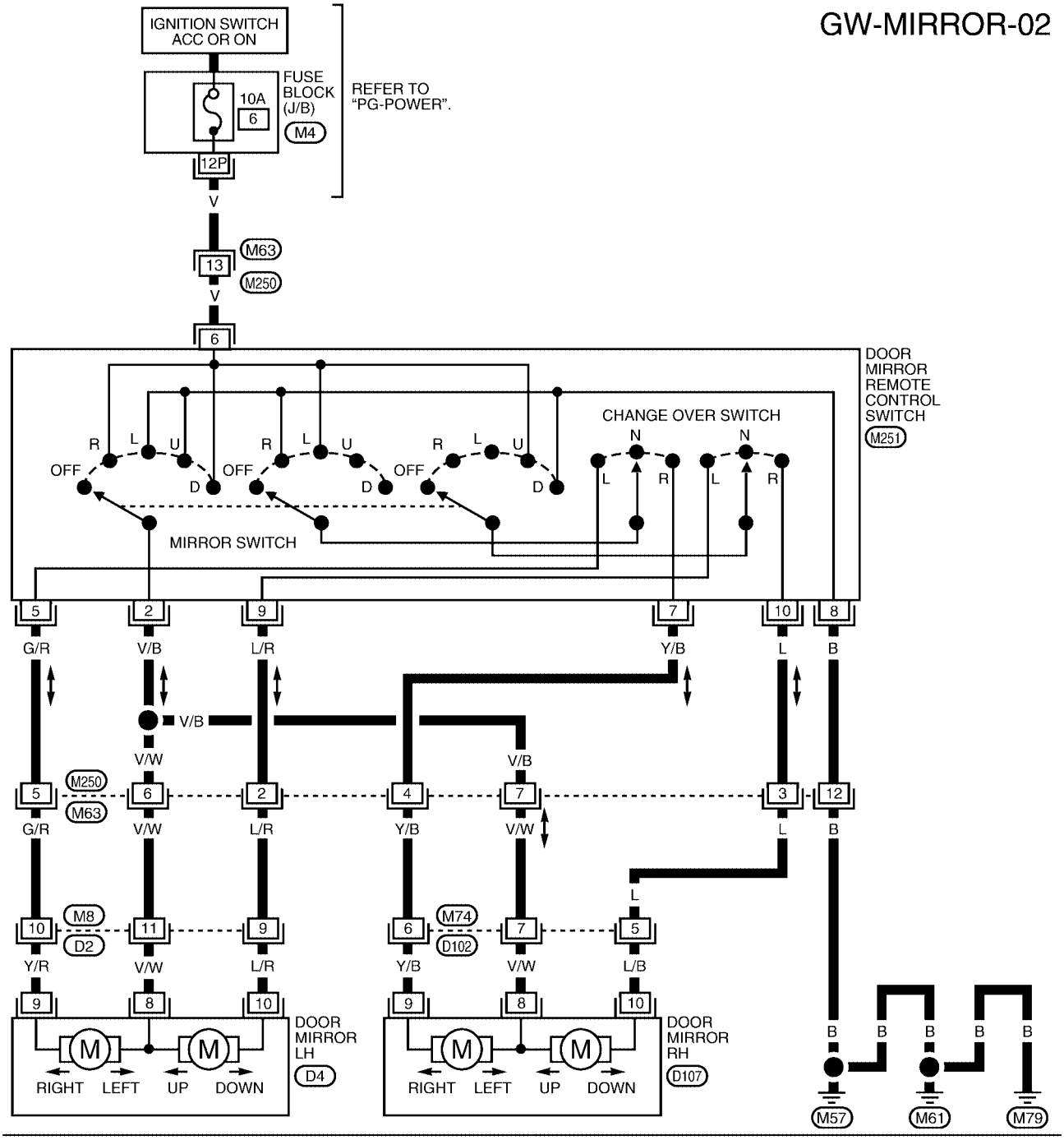
REMOVAL

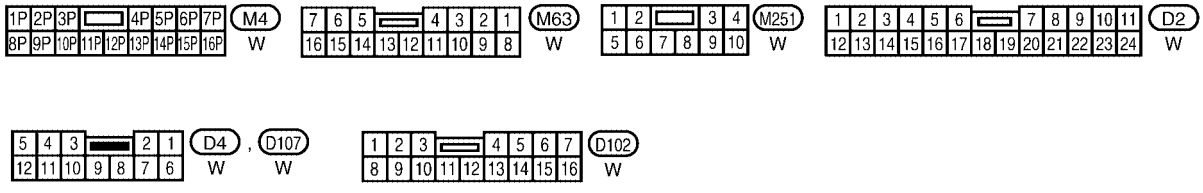
1. Remove the front door speaker. Refer to AV-57, "Removal and Installation of Front Door Speaker" .
2. Remove 2 hole covers over glass bolts.
3. Temporarily reconnect the power window main switch and raise/lower the door window until the glass bolts can be seen.



EARLY PRODUCTION

GW-MIRROR-02





WIWA1156E

PRECAUTIONS

PFP:00001

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

UKS0025K

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 When Using CONSULT-II

UKS002MT

When connecting CONSULT-II to data link connector, connect them through CONSULT-II CONVERTER.

CAUTION:

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

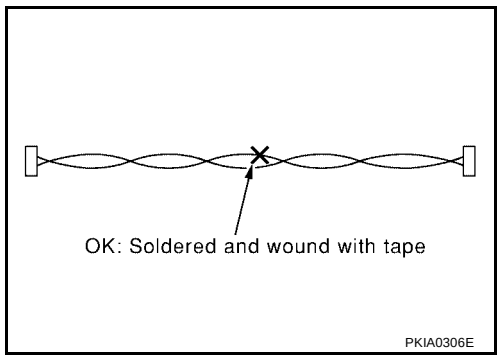
CHECK POINTS FOR USING CONSULT-II

1. Has CONSULT-II been used without connecting CONSULT-II CONVERTER on this vehicle?
   - If YES, GO TO 2.
   - If NO, GO TO 5.
2. Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
   - If YES, GO TO 3.
   - If NO, GO TO 4.
3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
4. Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefore, erase the self-diagnosis results.
5. Diagnose CAN communication system. Refer to LAN-7, "CAN Communication Unit" .

Precautions for CAN System

UKS0025L

- Do not apply voltage of 7.0 V or higher to terminal to be measured.
- Maximum open terminal voltage of tester in use must be less than 7.0 V.
- Before checking harnesses, turn ignition switch OFF and disconnect battery negative cable.
- Area to be repaired must be soldered and wrapped with tape. Make sure that fraying of twisted wire is within 110 mm (4.33 in).



Data Link Connector Circuit Check

UKS0025Y

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

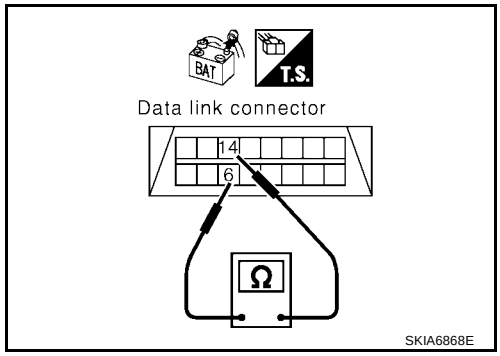
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-27, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS00260

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

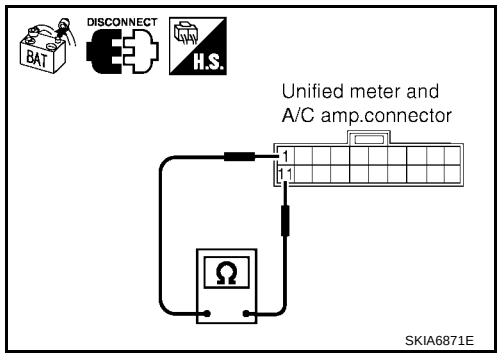
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.

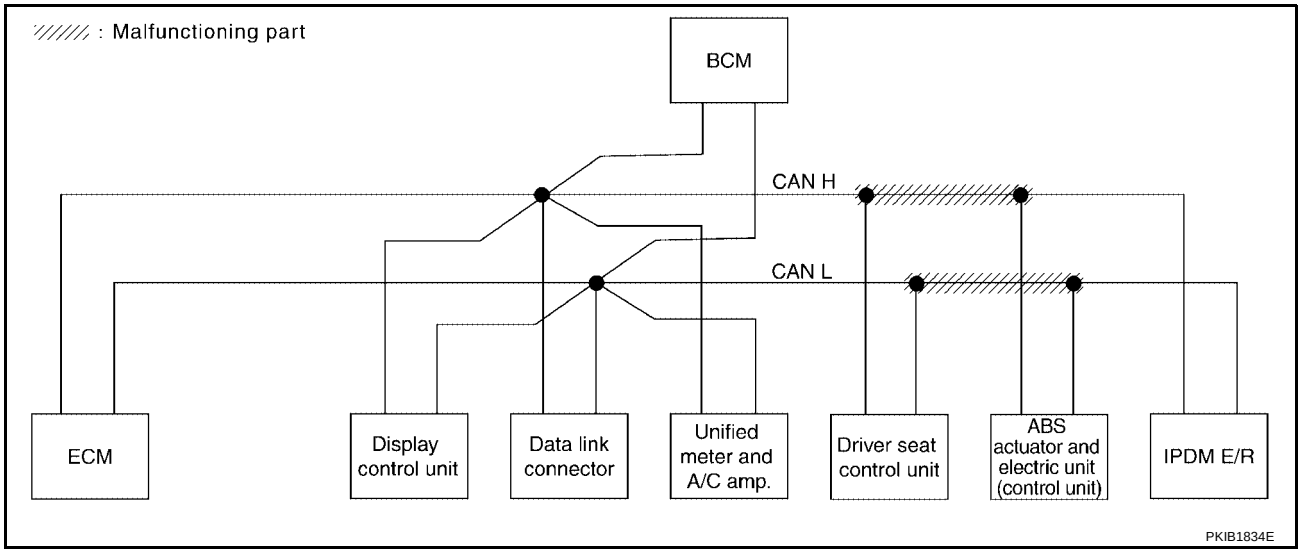


Case 2

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-83, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2279E



PKIB1834E

IPDM E/R Circuit Check

UKS002MM

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

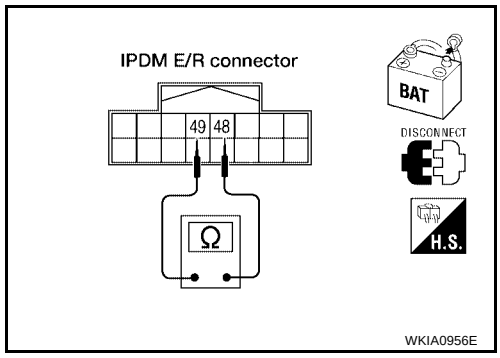
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002MN

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

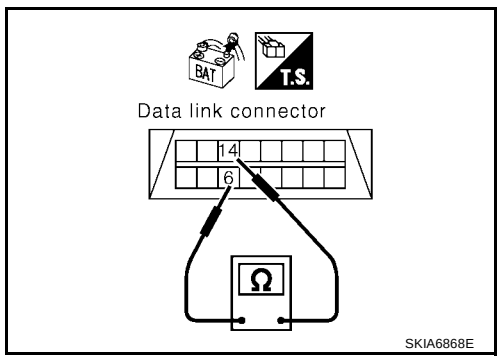
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

6 (L) - 14 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair the harness.

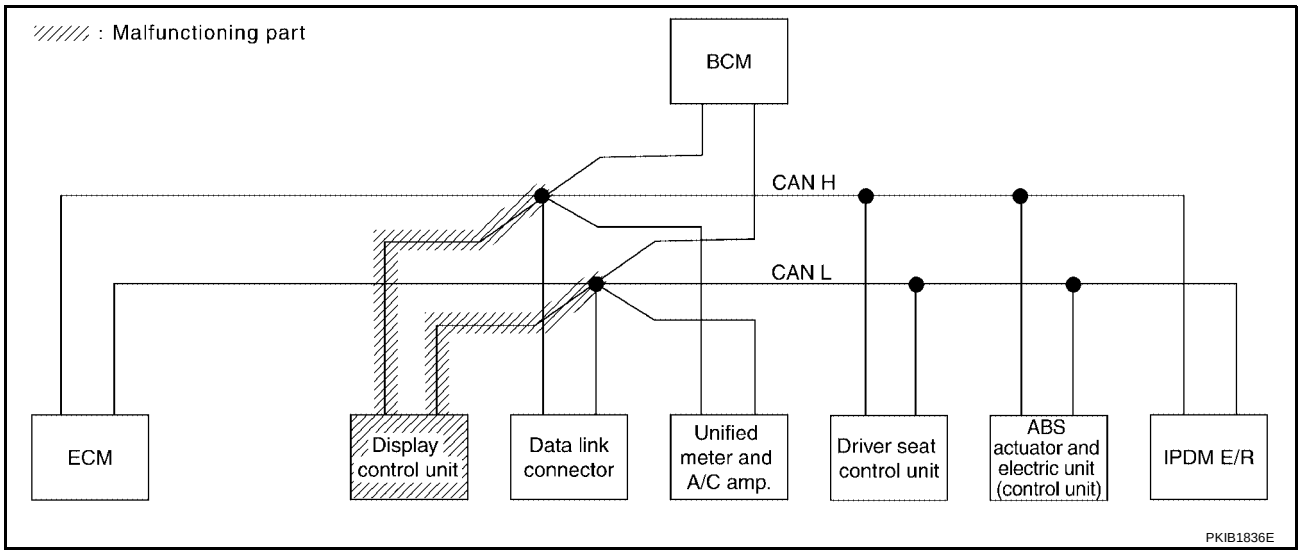


Case 4

Check display control unit circuit. Refer to LAN-150, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	-	CAN CIRC 5 ✓	CAN CIRC 2 ✓	-	CAN CIRC 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2855E



PKIB1836E

Display Unit Circuit Check

UKS002L4

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

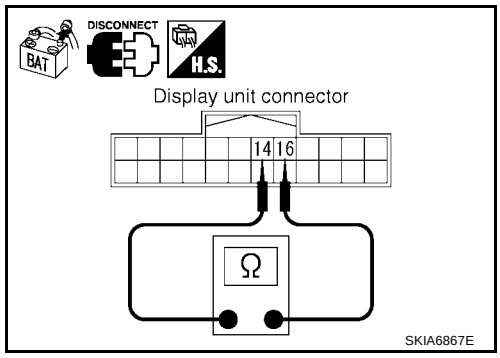
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.

Data Link Connector Circuit Check

UKS002L5

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

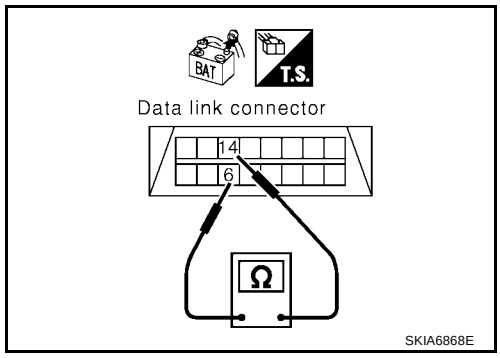
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66 Ω

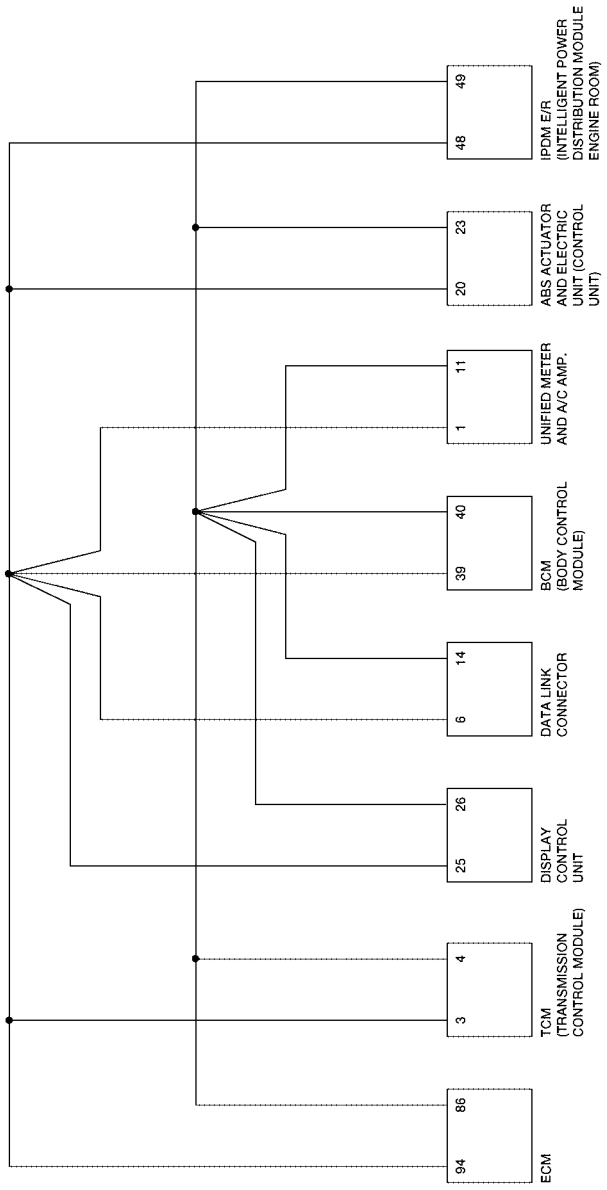


OK or NG

OK >> Diagnose again. Refer to LAN-160, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.

Schematic

UKS002A0



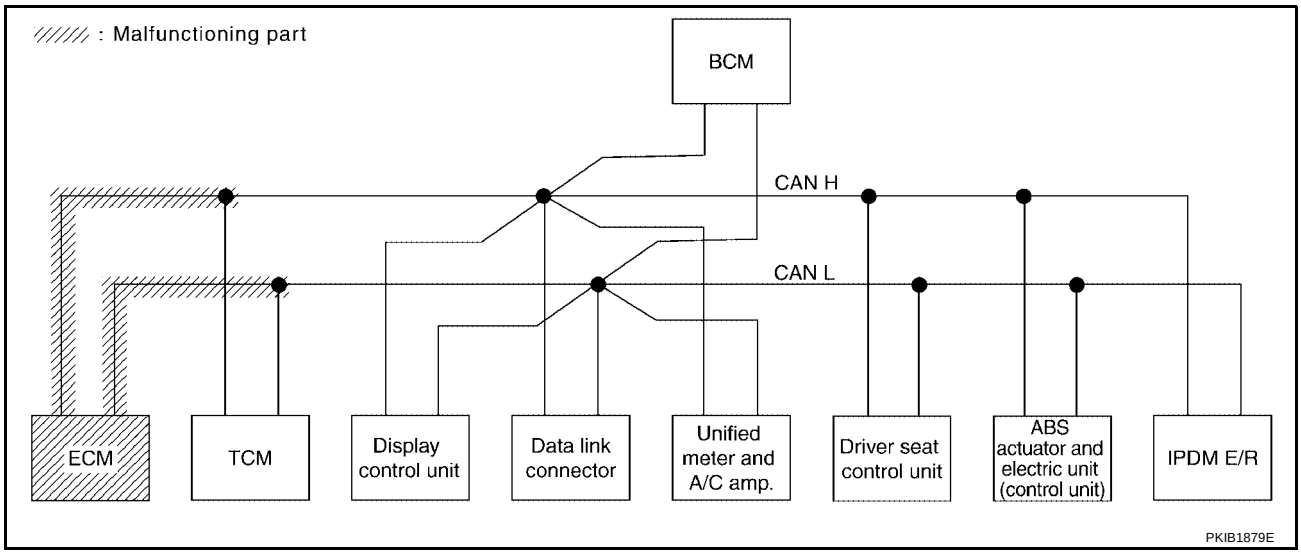
BKWA0294E

Case 4

Check ECM circuit. Refer to LAN-254, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2193E



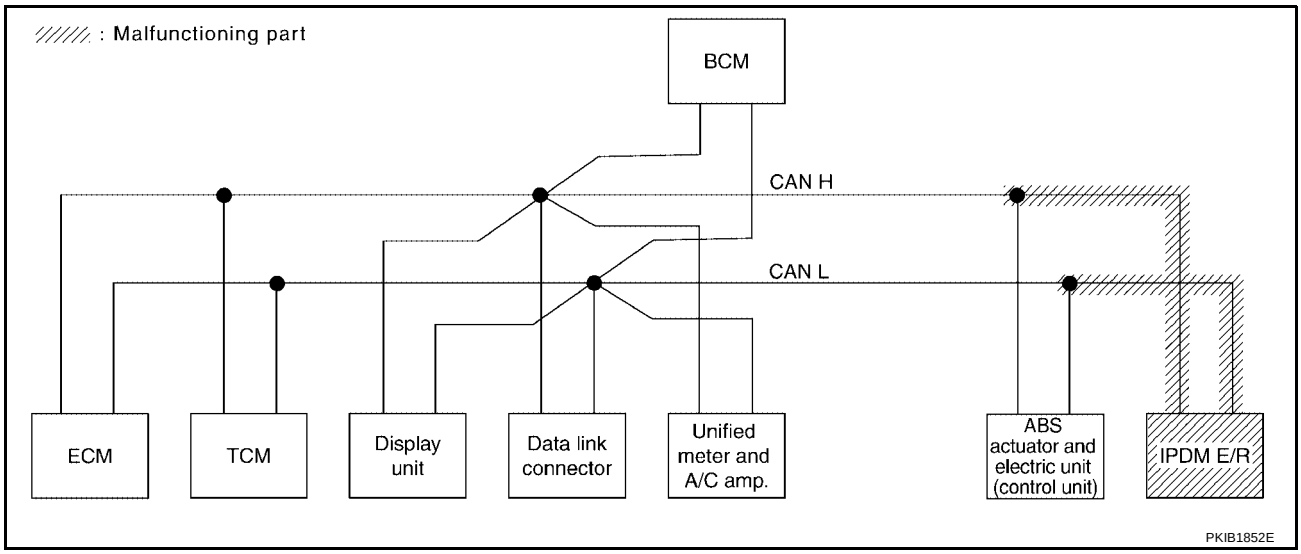
PKIB1879E

Case 10

Check IPDM E/R circuit. Refer to LAN-283, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	Non-application	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2318E



PKIB1852E

Case 11

Check CAN communication circuit. Refer to LAN-284, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	Non-application	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	Non-application		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Non-application	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	Non-application	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2319E

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002IZ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

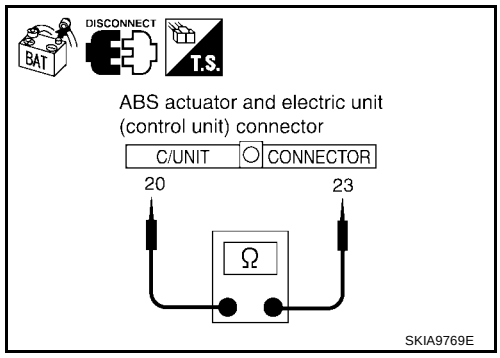
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002J0

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

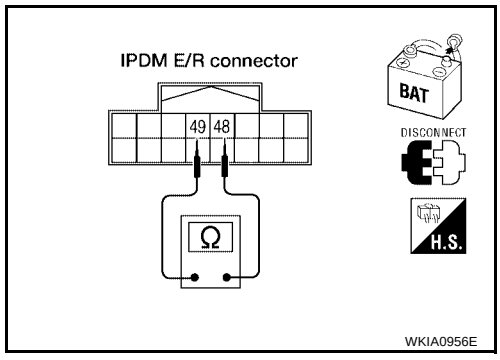
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



- The “CAN DIAG SUPPORT MNTR” items which are not in check sheet table are not related to diagnostic procedure on service manual.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

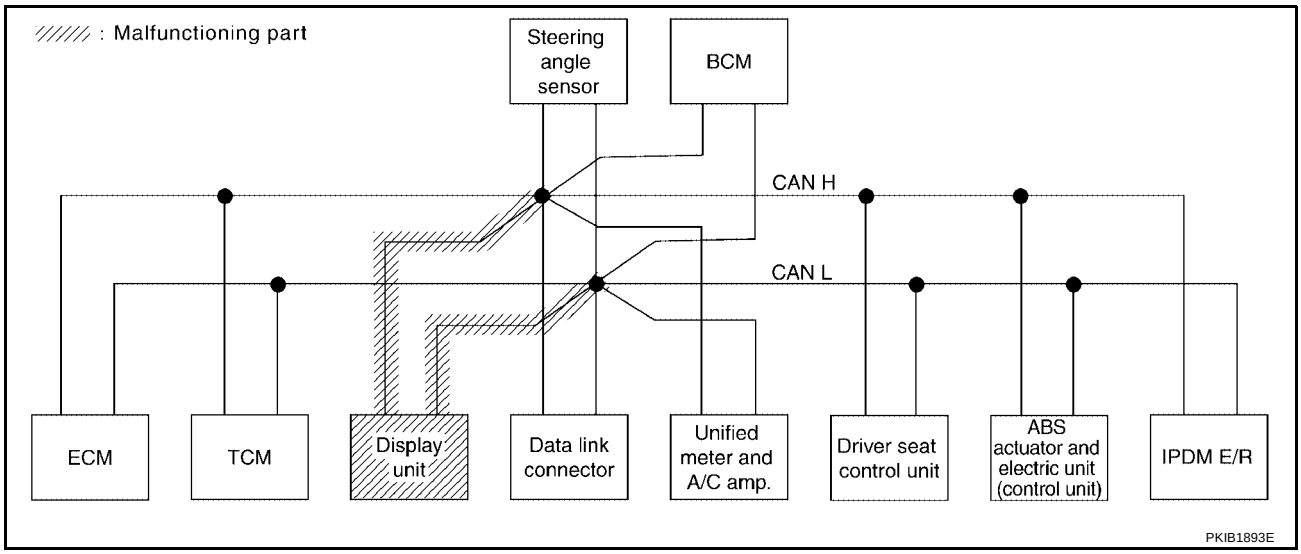
   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

Case 6

Check display unit circuit. Refer to LAN-390, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2237E

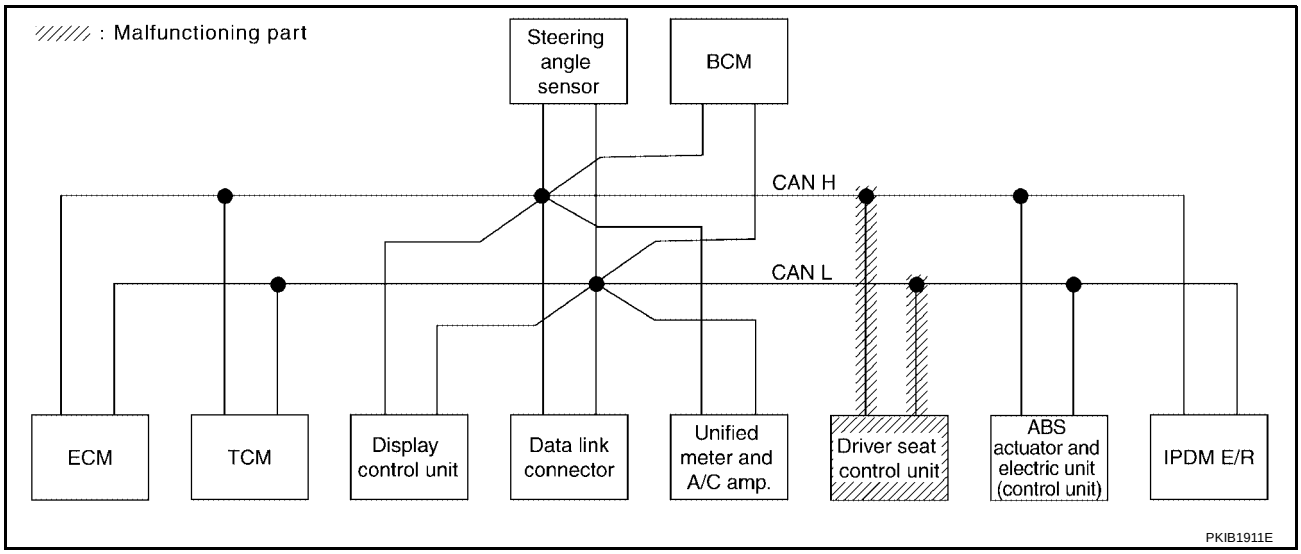


Case 11

Check driver seat control unit circuit. Refer to LAN-422, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2287E



PKIB1911E

CONSULT-II Function (BCM)

EKS008YS

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

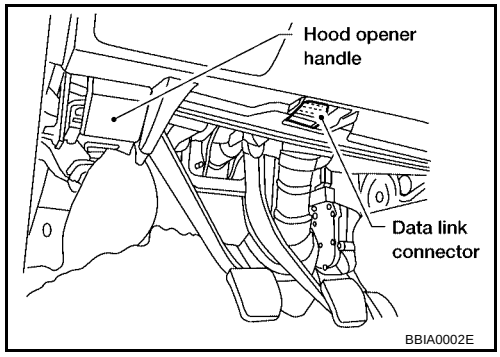
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	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 result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II OPERATION

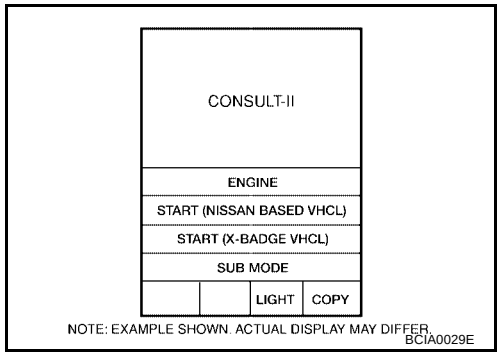
CAUTION:

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

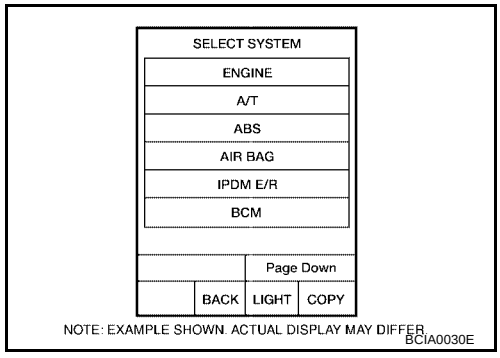
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".



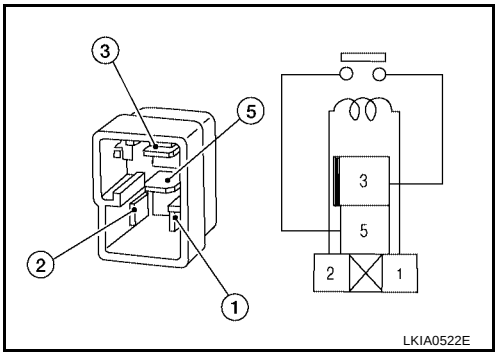
3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



2. CHECK DAYTIME LIGHT RELAY

1. Apply battery voltage to daytime light relay terminal 2 and ground terminal 1.
2. Check continuity between terminals 3 and 5.

3 - 5 : Continuity should exist.



OK or NG

OK >> GO TO 3.
NG >> Replace daytime light relay.

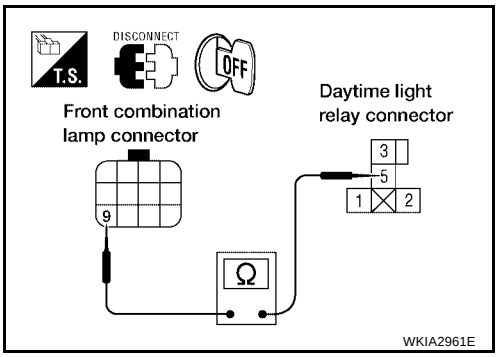
3. CHECK DAYTIME LIGHT RELAY CIRCUIT

1. Disconnect front combination lamp RH and LH connectors.
2. Check continuity between daytime light relay connector H2 terminal 5 (O) and front combination lamp RH harness connector E107 terminal 9 (O).

5 (O) - 9 (O) : Continuity should exist.

3. Check continuity between daytime light relay connector H2 terminal 5 (O) and front combination lamp LH harness connector E11 terminal 9 (O).

5 (O) - 9 (O) : Continuity should exist.



OK or NG

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

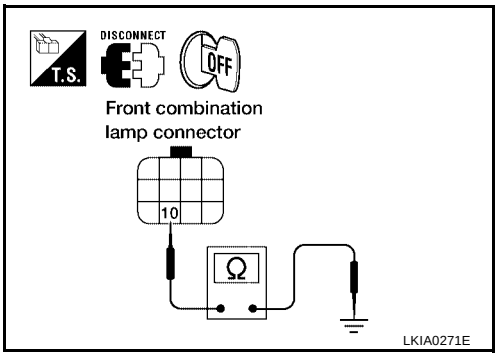
4. CHECK GROUND

1. Check continuity between front combination lamp RH harness connector E107 terminal 10 (B) and ground.

10 (B) - Ground : Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E11 terminal 10 (B) and ground.

10 (B) - Ground : Continuity should exist.



OK or NG

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

5. CHECK BULB

Inspect bulb of lamp which does not illuminate.

OK or NG

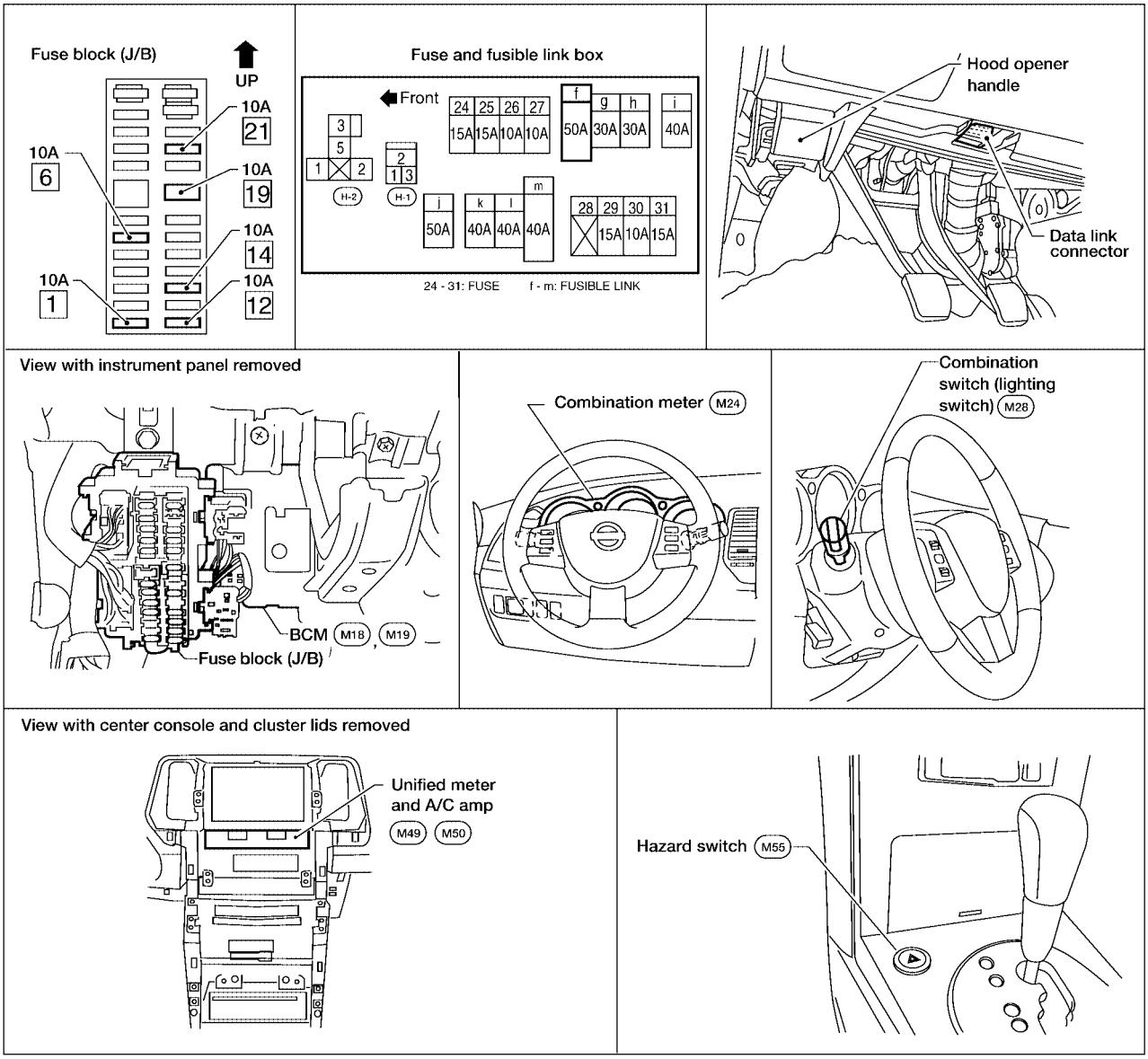
OK >> GO TO 6.
NG >> Replace bulb. Refer to LT-41, "HEADLAMP" .

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

EKS0090G



WKIA2958E

System Description

EKS0090H

OUTLINE

Power is supplied at all times

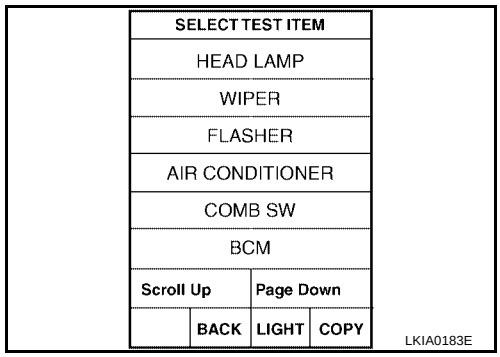
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM (body control module) terminal 55, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 42, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 21
- to combination meter terminal 24.

TURN SIGNAL OPERATION

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38, and

4. Touch "COMB SW" on "SELECT TEST ITEM" screen.



DATA MONITOR

Operation Procedure

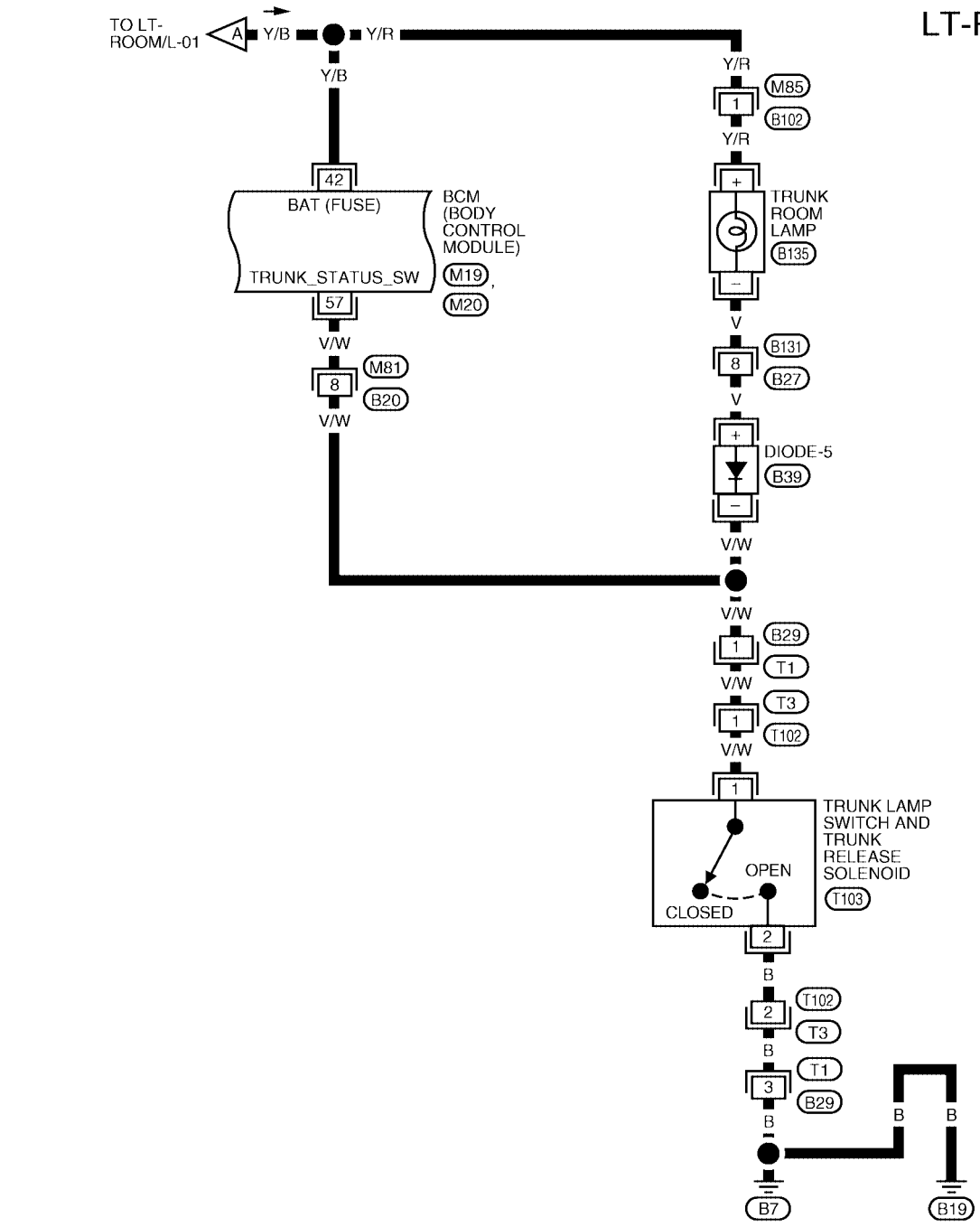
1. Touch "COMB SW" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

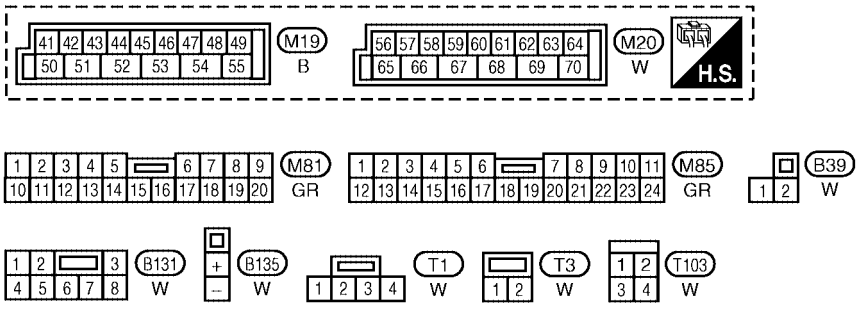
ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

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

Display Item List

Monitor item name "OPERATION OR UNIT"		Contents
TURN SIGNAL R	"ON/OFF"	Displays "Turn Right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays "Turn Left (ON)/Other (OFF)" status, determined from lighting switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays “Headlamp switch 1 (ON)/Other (OFF)” status, determined from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays "Auto light switch (ON)/Other (OFF)" status, determined from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays "Front fog lamp switch (ON)/Other (OFF)" status, determined from lighting switch signal.
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.


LT-ROOM/L-05
TO LT-ROOM/L-01
A
Y/B
Y/R
42
BAT (FUSE)
BCM (BODY CONTROL MODULE)
TRUNK_STATUS_SW
M19
M20
57
V/W
M81
8
B20
M85
1
B102
TRUNK ROOM LAMP
B135
B131
B27
DIODE-5
B39
B29
T1
T3
T102
TRUNK LAMP SWITCH AND TRUNK RELEASE SOLENOID
OPEN
CLOSED
T103
2
3
B
B7
B19


M19
B
M20
W
H.S.
M81
GR
M85
GR
B39
W
B131
W
B135
W
T1
W
T3
W
T103
W

WKWA1753E

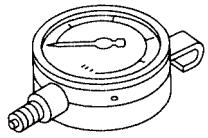
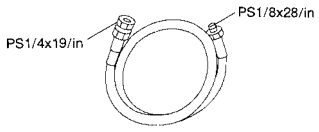
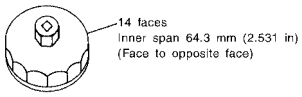
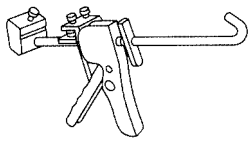
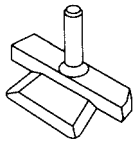
PREPARATION

PFP:00002

Special Service Tools

EBS00JBD

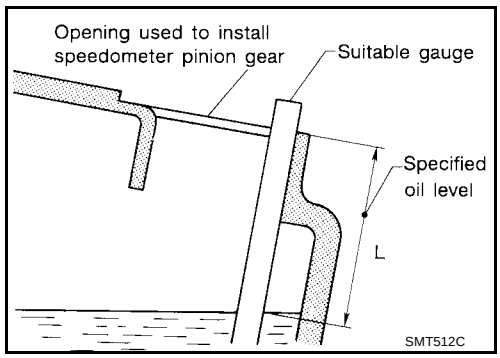
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
ST25051001 (J25695-1) Oil pressure gauge  NT050	Measuring oil pressure **Maximum measuring range: 2,452 kPa (25 kg-cm^2 , 356 psi)**
ST25052000 (J25695-2) Hose  S-NT559	Adapting oil pressure gauge to upper oil pan
KV10115801 (J38956) Oil filter wrench  S-NT772	Removing and installing oil filter
WS39930000 (—) Tube presser  NT052	Pressing the tube of liquid gasket
KV10111100 (J-37228) Seal cutter  NT046	Removing steel oil pan and rear timing chain case

Commercial Service Tool

EBS00JBE

3. Measure the oil level using a suitable gauge as shown, and check if the measured gauge level is within the specifications "L".



Oil level "L" : 49 - 55 mm (1.93 - 2.17 in)

CAUTION:
Never start the engine while checking the oil level.

4. Set a new O-ring on the speedometer pinion gear and install it in the transaxle case.

Speedometer pinion gear : 4.9 - 6.8 N·m (0.5 - 0.7 kg-m, 43 - 61 in-lb)

CAUTION:
Do not reuse the O-ring.

Changing M/T Oil

ELS0017H

DRAINING

1. Start the engine and let it run to warm up the oil.
2. Stop the engine. Remove the drain plug and drain the oil.
3. Set a new gasket on the drain plug and install it in the transaxle case.

Drain plug : 30 - 39 N·m (3.1 - 4.0 kg-m, 23 - 28 ft-lb)

CAUTION:
Do not reuse the gasket.

FILLING

1. Remove the speedometer pinion gear. Fill the transaxle with new oil.

Oil grade and capacity : Refer to MA-9, "Fluids and Lubricants" .

2. After refilling the transaxle with oil, check the oil level. Assemble a new O-ring on the speedometer pinion gear, then install it in the transaxle case.

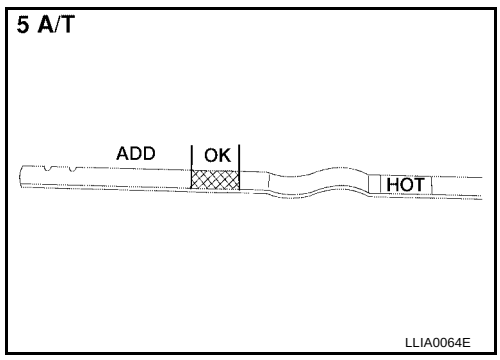
Speedometer pinion gear : 4.9 - 6.8 N·m (0.5 - 0.7 kg-m, 43 - 61 in-lb)

CAUTION:
Do not reuse the O-ring.

Checking A/T Fluid

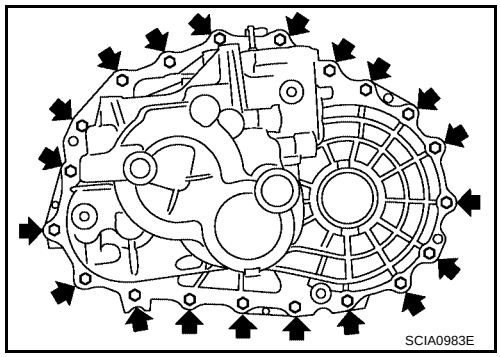
ELS0017I

1. Warm up the engine.
2. Check for any transaxle fluid leaks.
3. Before driving, the fluid level can be checked at fluid temperatures of 30° - 50°C (86° - 122°F) using the "COLD" range on the A/T fluid level gauge.



a. Park the vehicle on a level surface and set parking brake.
b. Start the engine and move the transaxle selector lever through each gear position. Leave the selector lever in the "P" park position.

5. Remove the transaxle case bolts as shown.

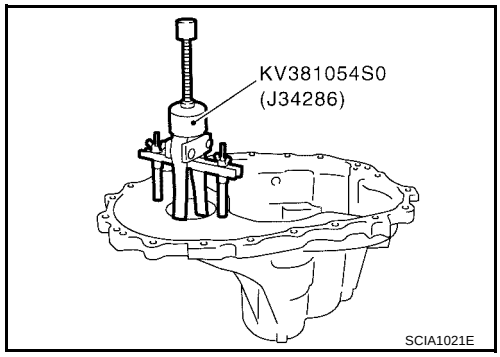


6. Remove the bore plug.

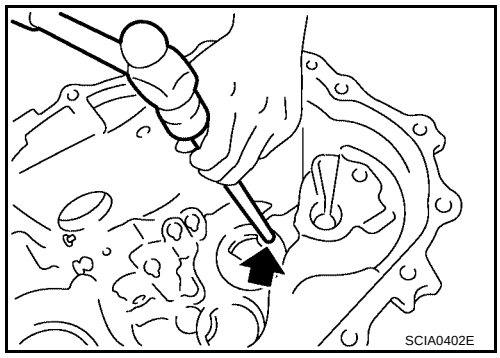
CAUTION:
Do not damage the transaxle case.

7. While spreading the snap ring of the mainshaft rear bearing located at bore plug hole, remove the transaxle case.
8. Remove the oil gutter and baffle plate.
9. Remove the snap ring, mainshaft rear bearing adjusting shim, and input shaft rear bearing adjusting shim from the transaxle case.

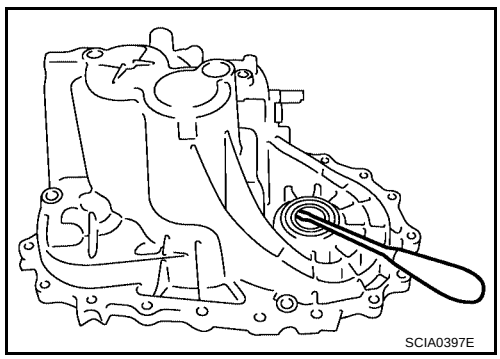
10. Remove the differential side bearing outer race (transaxle case side) using Tool as shown, and then remove the adjusting shim.



11. Remove the welch plug using suitable tools as shown.



12. Remove the differential oil seal using suitable tool as shown.



13. Remove the magnet from the clutch housing.

FINAL DRIVE (RS6F51A)

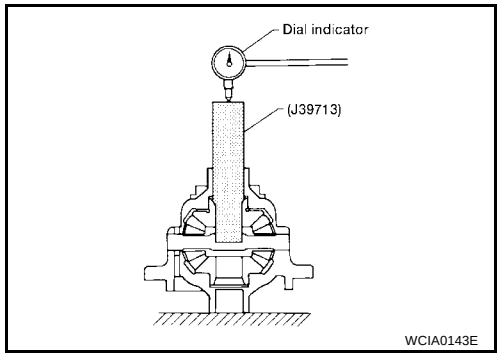
PFP:38411

Disassembly and Assembly

ECS009TK

PRE-INSPECTION

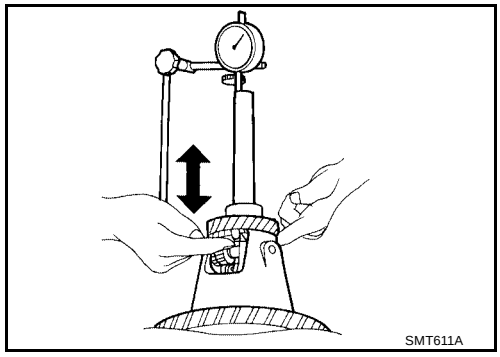
1. Clean final drive assembly sufficiently to prevent side gear thrust washer, differential case, side gear, and other parts from sticking by gear oil.
2. Upright the differential case so that the side gear to be measured faces upward.
3. Place final drive adapter and dial indicator onto side gears using Tool as shown.



4. Move side gears up and down, and measure the clearance as shown.

Clearance between side gear and differential case: 0.1 - 0.2 mm (0.004 - 0.008 in)

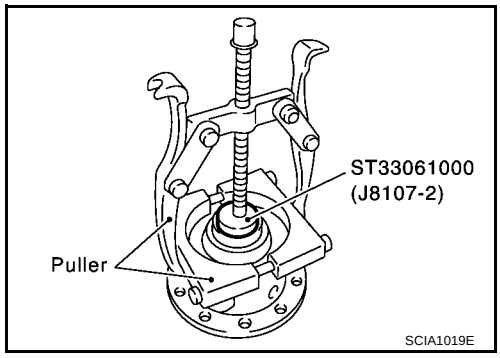
CAUTION:
There must be no resistance and the gears must rotate freely.



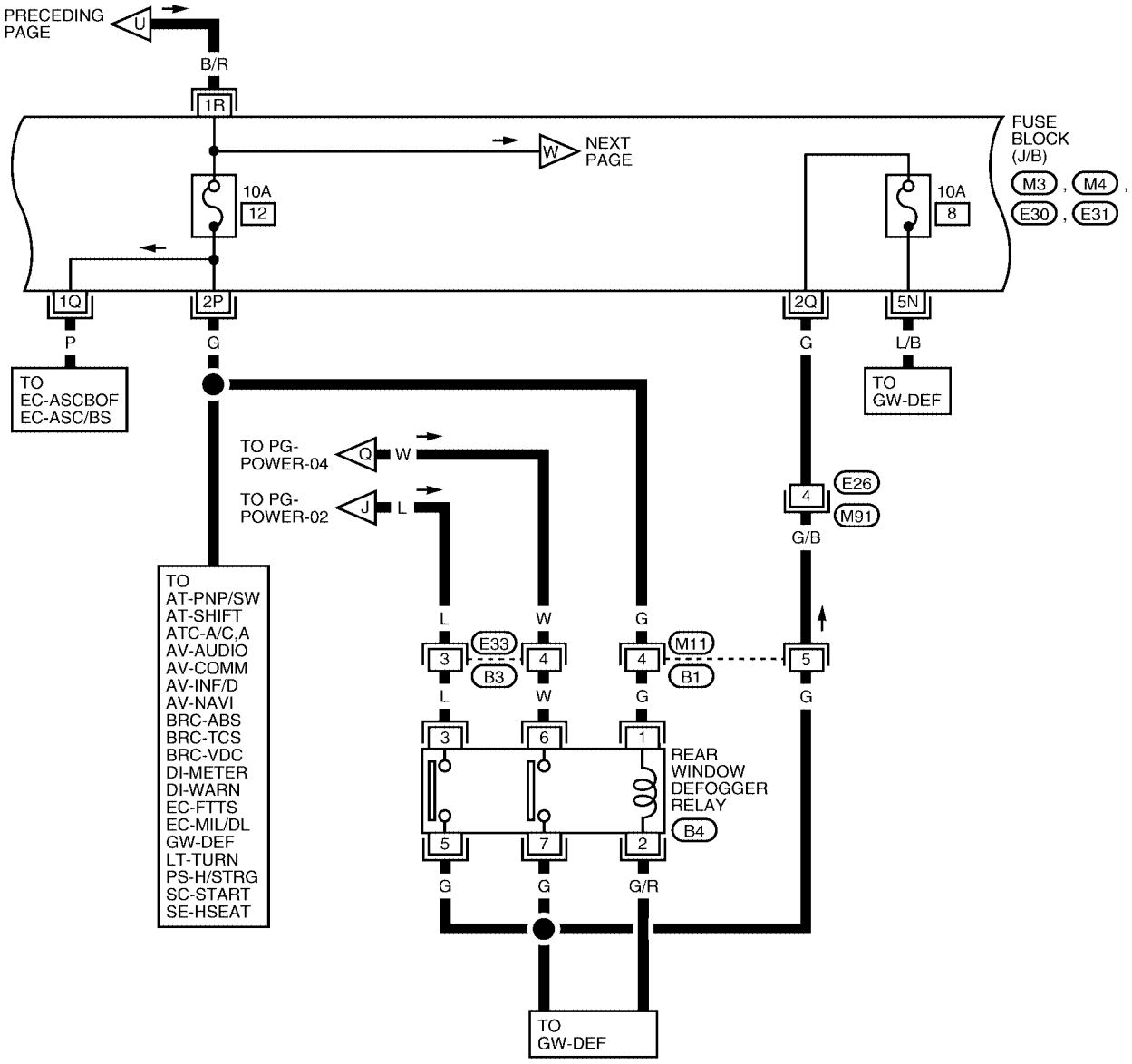
5. If the clearance measured is not within specification, adjust the clearance by changing the thrust washer thickness.
6. Turn the differential case upside down, and measure the clearance between the side gear and differential case on the other side to the same specifications, adjust using a thrust washer as necessary.

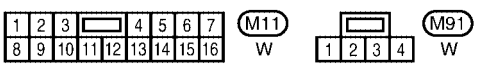
DISASSEMBLY

1. Remove the bolts and then separate the final gear from the differential case.
2. Remove speedometer drive gear.
3. Remove the differential side bearing (clutch housing side) using tool and puller as shown.

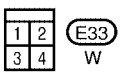


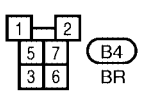
PG-POWER-08

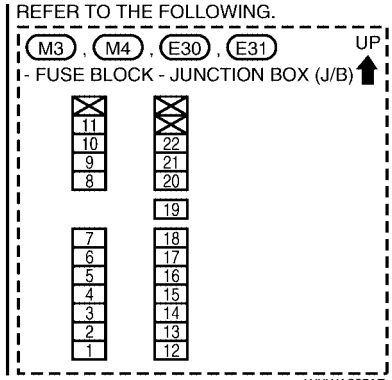

PRECEDING PAGE
U
B/R
1R
W
NEXT PAGE
10A
12
10A
8
FUSE BLOCK (J/B)
M3 , M4 , E30 , E31
1Q
2P
2Q
5N
P
G
G
L/B
TO EC-ASCBOF EC-ASC/BS
TO GW-DEF
TO PG-POWER-04
Q
W
TO PG-POWER-02
J
L
E26
4
M91
G/B
TO AT-PNP/SW AT-SHIFT ATC-A/C,A AV-AUDIO AV-COMM AV-INF/D AV-NAVI BRC-ABS BRC-TCS BRC-VDC DI-METER DI-WARN EC-FTTS EC-MIL/DL GW-DEF LT-TURN PS-H/STRG SC-START SE-HSEAT
L
W
G
E33
3
4
4
M11
B3
B1
5
L
W
G
G
3
6
1
REAR WINDOW DEFOGGER RELAY
B4
5
7
2
G
G
G/R
TO GW-DEF


M11
W

M91
W


E33
W


B4
BR


REFER TO THE FOLLOWING.
M3 , M4 , E30 , E31
- FUSE BLOCK - JUNCTION BOX (J/B)
UP
WKWA3251E

B3	(F1)	W/2	: Generator
B3	(F2)	-	: Generator
B3	(F3)	B/1	: A/C compressor
B3	*(F4)	GR/2	: Intake valve timing control solenoid valve (Bank 2)
B3	*(F5)	B/6	: Air fuel ratio (A/F) sensor 1 (Bank 2)
B2	*(F6)	GR/3	: Ignition coil No. 2 (with power transistor)
B4	*(F7)	GR/3	: Ignition coil No. 4 (with power transistor)
C3	*(F8)	GR/3	: Ignition coil No. 6 (with power transistor
B3	(F9)	-	: Engine ground
C4	(F10)	BR/3	: Front electronic controlled engine mount
C4	*(F11)	B/3	: Crankshaft position sensor (POS)
C3	*(F12)	L/4	: Heated oxygen sensor 2 (Bank 2)
B3	*(F13)	G/4	: Heated oxygen sensor 2 (Bank 1)
B2	*(F16)	-	: Engine ground
B2	*(F18)	GR/2	: Injector No. 2
B2	(F19)	B/2	: VIAS control solenoid valve
B1	*(F20)	GR/2	: Injector No. 4
B4	*(F21)	GR/2	: Condenser-2
C3	*(F22)	GR/2	: Injector No. 6
C4	*(F23)	B/3	: Camshaft position sensor (PHASE) (Bank 2)
C4	*(F24)	GR/2	: Engine coolant temperature sensor
E4	(F25)	BR/3	: Rear electronic controlled engine mount (with A/T)
D3	(F26)	GR/6	: To (F301)
C3	(F27)	-	: Starter motor
D4	(F28)	GR/1	: Starter motor
D4	*(F29)	GR/10	: Park/neutral position (PNP) switch (with A/T)
E4	(F30)	BR/8	: Terminal cord assembly
E3	*(F31)	B/6	: Mass air flow sensor
F2	*(F33)	GR/9	: To (E19)
E3	(F35)	GR/2	: To (E22)
E3	(F37)	L/2	: Turbine revolution sensor
D4	(F38)	L/2	: Revolution sensor
E3	(F39)	-	: Fusible link box (battery)
E3	(F40)	-	: Fusible link box (battery)
D4	(F41)	B/2	: Back-up lamp switch (with M/T)
F3	*(F42)	B/2	: Park/neutral position (PNP) switch (with M/T)
D1	*(F43)	G/6	: To (F201)
C1	*(F44)	G/8	: To (F101)
C1	*(F46)	B/3	: Power steering pressure sensor
E2	*(F50)	GR/6	: Electric throttle control actuator
G5	*(F54)	B/81	: ECM
G5	*(F56)	GR/20	: TCM (transmission control module)
G5	*(F57)	GR/28	: TCM (transmission control module)
G5	*(F58)	W/16	: To (M70)
G5	*(F59)	W/16	: To (M71)
G5	(F61)	L/4	: A/T PV IGN Relay
E4	(F62)	GR/6	: Terminal cord assembly
C3	*(F63)	GR/2	: EGR temperature sensor
E2	(F64)	GR/6	: EGR volume control valve
D1	*(F65)	B/6	: Air fuel ratio (A/F) sensor 1 (Bank 1)

WKIA4258E

Engine control sub-harness-1

C1	*(F101)	G/8	: To (F44)
C2	*(F102)	GR/2	: Injector No. 1
C1	*(F103)	GR/2	: Injector No. 3
D2	*(F104)	GR/2	: Injector No. 5
E1	*(F105)	L/2	: EVAP canister purge volume control solenoid valve
C2	(F106)	B/1	: Oil pressure switch
C2	*(F107)	G/2	: Intake valve timing control solenoid valve (Bank 1)

Engine control sub-harness-2

D1	*(F201)	G/6	: To (F43)
C1	*(F202)	GR/3	: Ignition coil No. 1 (with power transistor)
D2	*(F203)	GR/3	: Ignition coil No. 3 (with power transistor)
D2	*(F204)	GR/3	: Ignition coil No. 5 (with power transistor)

Engine control sub-harness-2

C4	*(F301)	GR/6	: To (F26)
C1	(F302)	B/2	: Knock sensor
C1	*(F303)	G/3	: Camshaft position sensor (PHASE) (Bank 1)

*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

- from heated steering relay terminal 5
- to combination switch (heated steering) terminal 1.

With power and ground supplied, the heated steering system will operate. The heated steering system will turn OFF when the steering wheel temperature reaches approximately 30° C (86° F).
Heated steering system operation can also be cancelled by pressing the heated steering wheel switch.

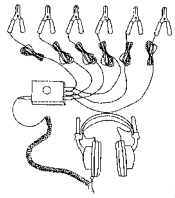
PREPARATION

PFP:00002

Special service tool

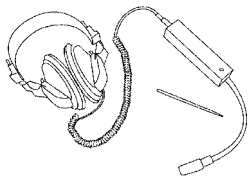
EIS003VA

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

Tool number (Kent-Moore No.) Tool name	Description
(J-39570) Chassis ear  SIIA0993E	Locating the noise
(J-43980) NISSAN Squeak and Rattle Kit  SIIA0994E	Repairing the cause of noise

Commercial Service Tool

EIS003VB

Tool name	Description
Engine ear  SIIA0995E	Locating the noise

Removal and Installation

EES001C8

REAR SUSPENSION ASSEMBLY

Removal

CAUTION:

Before removing the rear suspension assembly, disconnect the ABS wheel sensor from the assembly. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.

1. Remove the center exhaust tube with mufflers. Refer to EX-3, "Removal and Installation" .
2. Remove the brake caliper assembly using power tools. Refer to BR-30, "Removal and Installation of Caliper Assembly and Disc Rotor" .
   - Leave the brake line connected to the brake caliper.
   - Do not depress the brake pedal, or the caliper piston will pop out.
   - Do not pull or twist the brake hose.
3. Disconnect the parking brake cable assemblies from the front cable. Refer to PB-2, "Removal and Installation" .
4. Remove the rear ABS wheel sensors. Refer to BRC-41, "WHEEL SENSORS" .
5. Set a suitable jack to support the rear suspension assembly.
6. Remove the shock absorber upper end nut using power tools.
7. Remove the suspension member nuts and the member stay bolts using power tools.
8. Use the jack to support and lower the rear suspension member assembly for removal.

Installation

Installation is in the reverse order of removal. Refer to RSU-2, "Precautions" .

- Check the rear wheel alignment and adjust if necessary. Refer to RSU-13, "Rear Wheel Alignment (Unladen*)" .

SHOCK ABSORBER

Removal

1. Remove the wheel and tire using power tools.
2. Set a suitable jack on the rear lower link to remove the lower shock absorber nut and bolt using power tools.
3. Remove the suitable jack from rear lower link.
4. Remove the upper shock absorber nuts using power tools.
5. Remove the shock absorber.

Installation

Installation is in the reverse order of removal.

SUSPENSION ARM

Removal

1. Remove the rear suspension assembly. Refer to RSU-9, "REAR SUSPENSION ASSEMBLY" .
2. Remove the connecting rod mounting bracket from suspension arm using power tools.
3. Remove the two suspension arm nuts and bolts from the suspension member side of the suspension arm using power tools.
4. Remove the ball joint cotter pin and lock nut using power tools.
   - Discard the cotter pin, use a new cotter pin for installation.
5. Remove the suspension arm from the knuckle using Tool.

   Tool number : HT72520000 (J-25730-A)

   CAUTION:
   - **Do not damage the ball joint when removing.**
   - **While using Tool, temporarily tighten the nut so as not to damage screw threads.**

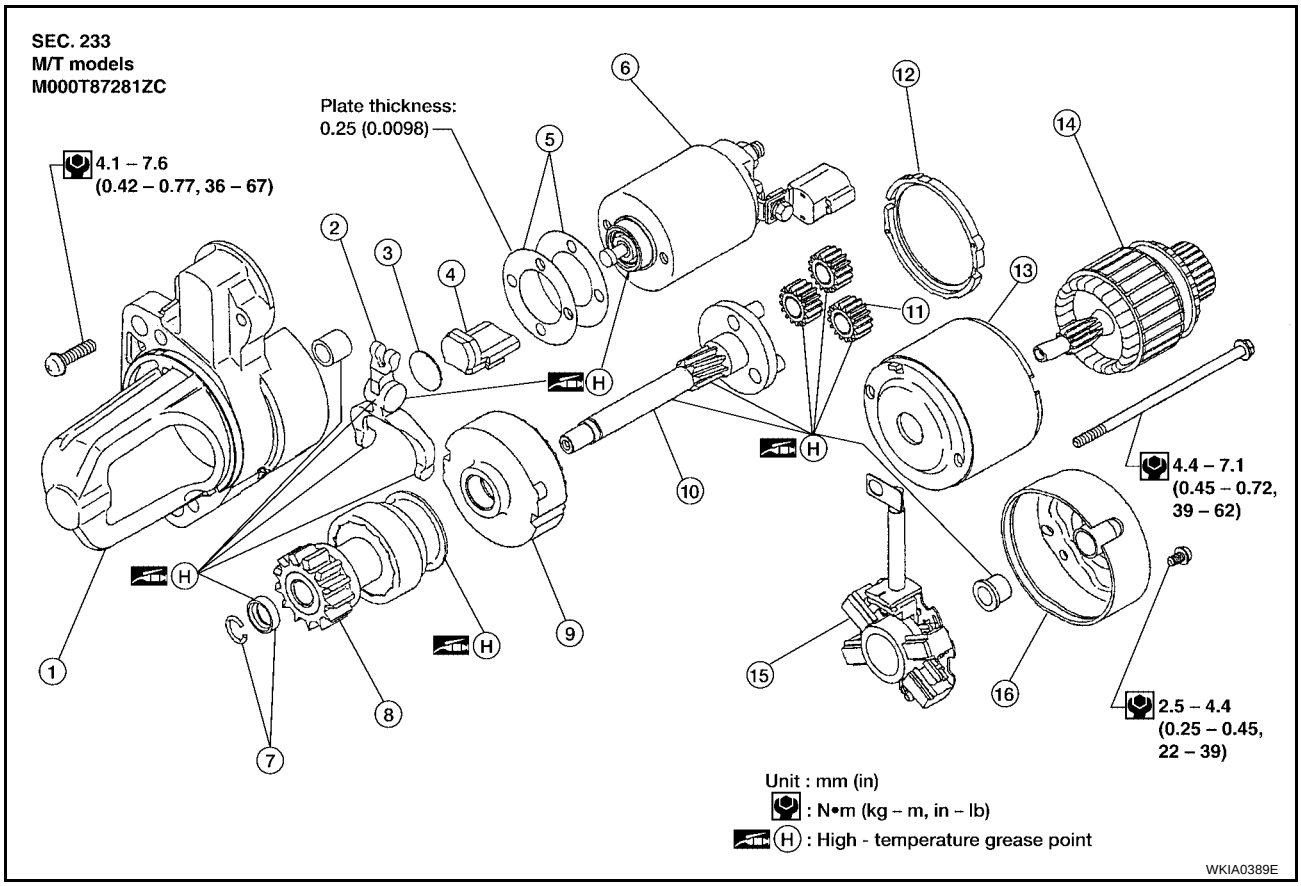
Installation

Installation is in the reverse order of removal.

- Discard the cotter pin, use a new cotter pin for installation.

Disassembly and Assembly

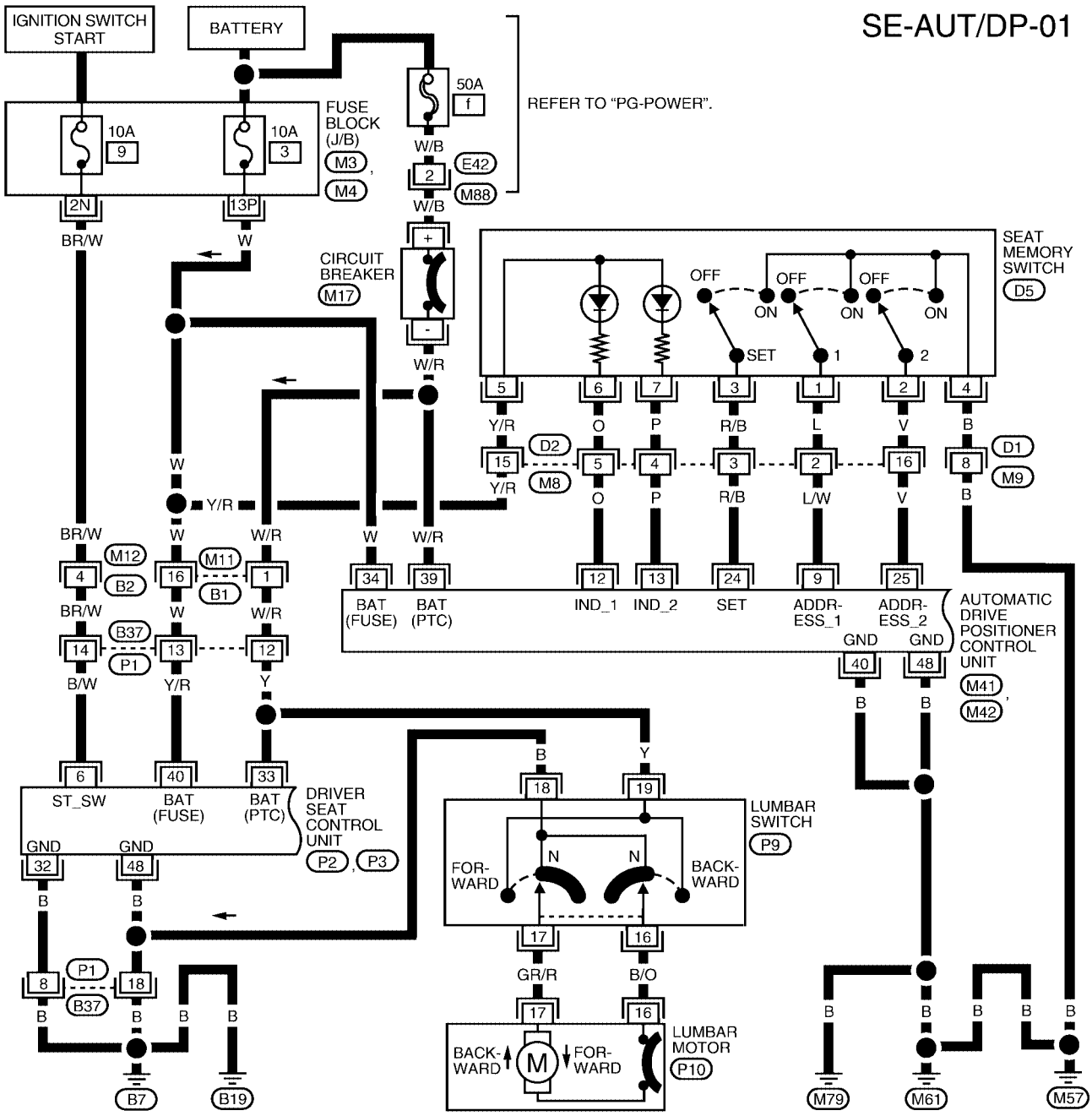
EKS008Y6

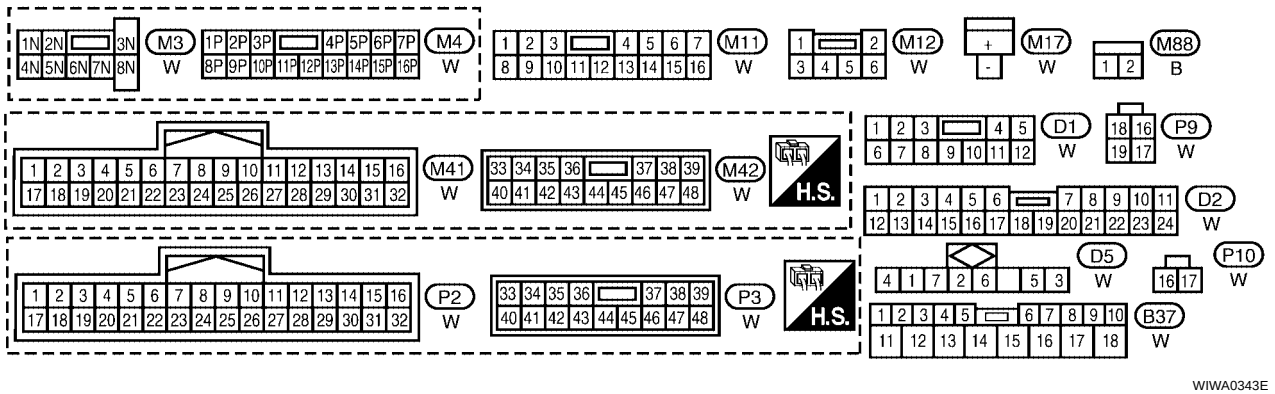


1. Gear case
2. Shift lever
3. Plate
4. Packing
5. Adjusting plate
6. Magnetic switch assembly
7. Pinion stopper set
8. Pinion assembly
9. Internal gear
10. Pinion shaft
11. Planetary gear
12. Packing
13. Yoke
14. Armature
15. Brush holder assembly
16. Rear cover

Wiring Diagram — AUT/DP —

EIS003XA





WIWA0343E

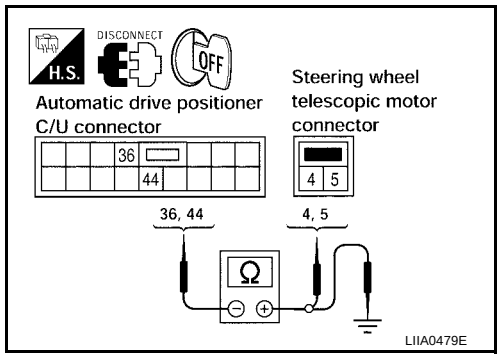
3. CHECK TELESCOPIC MOTOR HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect automatic drive positioner control unit and telescopic motor.
3. Check continuity between automatic drive positioner control unit connector M42 terminals 36, 44 and telescopic motor connector M66 terminals 4, 5.

36 (R) – 4 (R) : Continuity should exist.
44 (G) – 5 (G) : Continuity should exist.

4. Check continuity between automatic drive positioner control unit connector M42 terminals 36, 44 and ground.

36 (R) – Ground : Continuity should not exist.
44 (G) – Ground : Continuity should not exist.



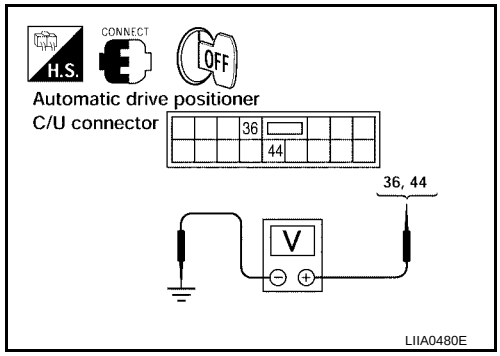
OK or NG

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

4. CHECK AUTOMATIC DRIVE POSITIONER CONTROL UNIT OUTPUT SIGNAL

1. Connect the automatic drive positioner control unit and telescopic motor.
2. Check voltage between automatic drive positioner control unit connector and ground.

Connector	Terminals (Wire color)		Condition	Voltage (V) (Approx.)
	(+)	(–)		
M42	36 (R)	Ground	Telescopic switch ON (FORWARD operation)	Battery voltage
			Other than above	0
	44 (G)		Telescopic switch ON (BACKWARD operation)	Battery voltage
			Other than above	0



OK or NG

OK >> Replace telescopic motor.
NG >> Replace automatic drive positioner control unit.

TILT CIRCUIT INSPECTION

1. CHECK TILT MOTOR

Check the following.

- Operation malfunction caused by tilt motor deformation or pinched harness or other foreign materials
- Operation malfunction and interference with other parts by poor installation

OK or NG

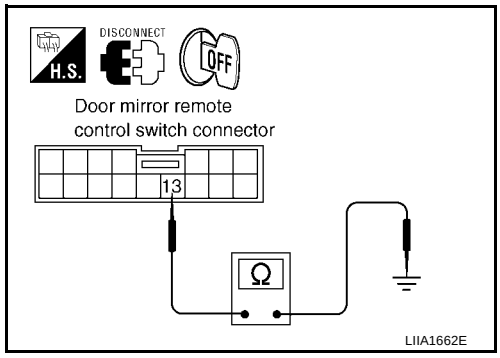
OK >> GO TO 2.
NG >> Repair the malfunctioning part and check again.

DOOR MIRROR REMOTE CONTROL SWITCH GROUND CIRCUIT CHECK (LATE PRODUCTION)

1. CHECK DOOR MIRROR REMOTE CONTROL SWITCH GROUND CIRCUIT

Check continuity between door mirror remote control switch connector M7 terminal 13 and ground.

13 (B) – Ground : Continuity should exist.



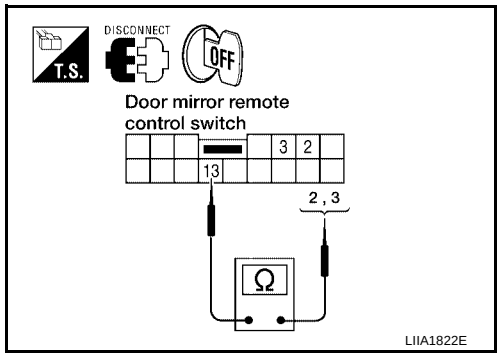
OK or NG

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

2. CHECK DOOR MIRROR REMOTE CONTROL SWITCH GROUND CIRCUIT

Check continuity between door mirror remote control switch terminals as follows.

Terminals		Condition	Continuity
(+)	(–)		
3	13	Changeover switch RIGHT position	Yes
		Other than above	No
2		Changeover switch LEFT position	Yes
		Other than above	No



OK or NG

OK >> Check the condition of the harness and the connector.
NG >> Replace door mirror remote control switch.