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NISSAN ALTIMA

MODEL L33 SERIES

QUICK REFERENCE INDEX

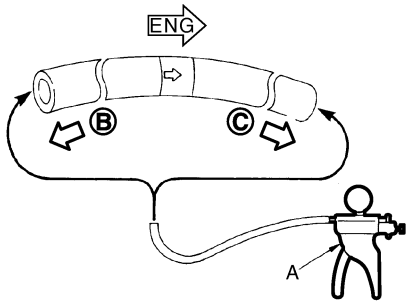
Monitor Item	Condition	Value/Status
PRBT ENG STRT	When the engine start is prohibited	Reset
	When the engine start is permitted	Set
PRMT ENG STRT	When the engine start is prohibited	Reset
	When the engine start is permitted	Set
PRMT RKE STRT	When the engine start is prohibited	Reset
	When the engine start is permitted	Set
PUSH SW	Return ignition switch to LOCK position	Off
	Press ignition switch	On
PUSH SW-IPDM	When engine switch (push switch) is not pressed	Off
	When engine switch (push switch) is pressed	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
REQ SW-AS	When passenger door request switch is not pressed	Off
	When passenger door request switch is pressed	On
REQ SW-DR	When driver door request switch is not pressed	Off
	When driver door request switch is pressed	On
REQ SW-BD/TR	When trunk opener request switch is not pressed	Off
	When trunk opener request switch is pressed	On
RKE-LOCK	When LOCK button of Intelligent Key is not pressed	Off
	When LOCK button of Intelligent Key is pressed	On
RKE-MODE CHG	When LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously	Off
	When LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously	On
RKE OPE COUN1	Operation frequency of Intelligent Key	0-19
RKE OPE COUN2	Operation frequency of Intelligent Key	0-19
RKE-PANIC	When PANIC button of Intelligent Key is not pressed	Off
	When PANIC button of Intelligent Key is pressed	On
RKE-P/W OPEN	When UNLOCK button of Intelligent Key is not pressed and held	Off
	When UNLOCK button of Intelligent Key is pressed and held	On
RKE-TR/BD	When TRUNK OPEN button of Intelligent Key is not pressed	Off
	When TRUNK OPEN button of Intelligent Key is pressed	On
RKE-UNLOCK	When UNLOCK button of Intelligent Key is not pressed	Off
	When UNLOCK button of Intelligent Key is pressed	On
SFT N-MET	When selector lever is in any position other than N	Off
	When selector lever is in N position	On
SFT P-MET	When selector lever is in any position other than P	Off
	When selector lever is in P position	On
SFT PN -IPDM	When selector lever is in any position other than P or N	Off
	When selector lever is in P or N position	On
SFT PN/N SW	When selector lever is in any position other than P or N	Off
	When selector lever is in P or N position	On
SHFTLCK SLNID PER SPLY	When BCM is not supplying power to shiftlock.	Off
	When BCM is supplying power to shiftlock.	On

SECTION BR
BRAKE SYSTEM

CONTENTS

Check Valve

INFOID:0000000009463730



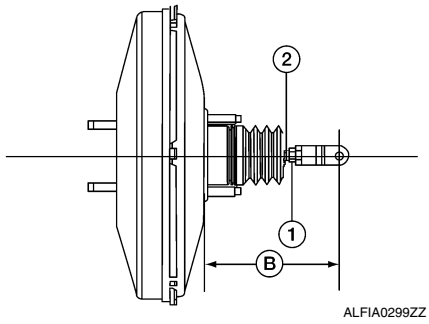
JPFIA0024ZZ

When suitable tool (A) is connected to the booster side (B)	Vacuum should not decrease more than 3.3 kPa (25 mmHg, 0.98 inHg) for 15 seconds under a vacuum of −26.6 ± 1.3 kPa (−500 ± 1.3 mmHg, −19.69 ± 0.04 inHg) at room tempurature.
When suitable tool (A) is connected to the engine side (C)	Vacuum should not exist.

Brake Booster

INFOID:0000000009463731

Unit: mm (in)



ALFIA0299ZZ

Input rod installation standard dimension (B) (1): Lock nut (2): Input rod	125 ± 0.5 (4.92 ± 0.02)

Front Disc Brake

INFOID:0000000009463732

Unit: mm (in)

Brake pad	Standard thickness (new)	11.0 (0.433)
	Wear limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	26.0 (1.024)
	Wear limit thickness	24.0 (0.945)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Maximum runout (with it attached to the vehicle)	0.040 (0.0016)

Rear Disc Brake

INFOID:0000000009463733

Unit: mm (in)

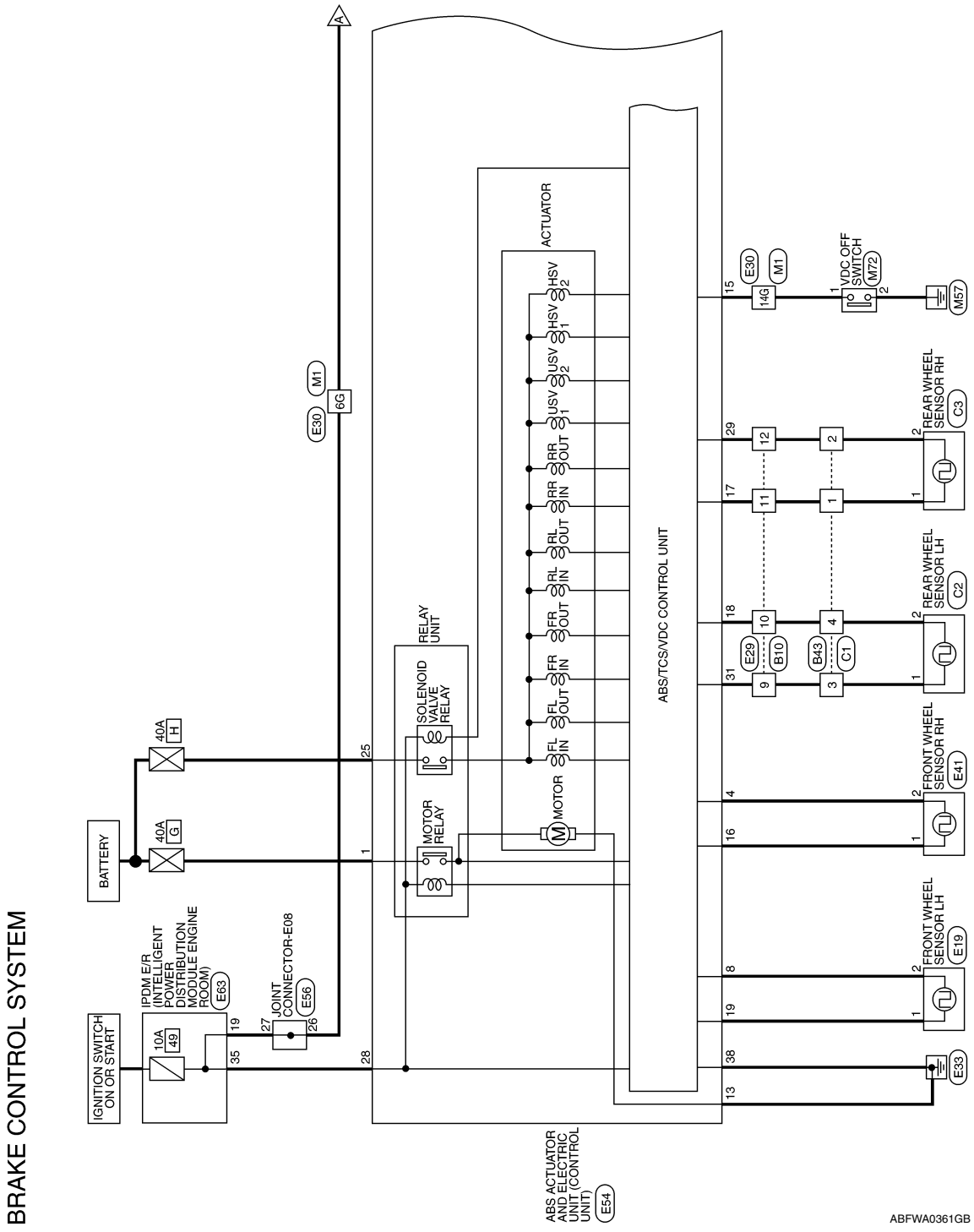
Brake pad	Standard thickness (new)	8.5 (0.335)
	Wear limit thickness	1.0 (0.039)

WIRING DIAGRAM

BRAKE CONTROL SYSTEM

Wiring Diagram

INFOID:0000000009463763



C1160 DECEL G SEN SET

DTC Logic

INFOID:0000000009463807

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1160	DECEL G SEN SET	When calibration of yaw rate/side/decel G sensor is not complete.	• Yaw rate/side/decel G sensor • Harness or connector • ABS actuator and electric unit (control unit) • Decel G sensor calibration is not performed

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSTIC RESULT

With CONSULT.
1. Turn ignition switch OFF to ON.
2. Perform self-diagnostic result.

Is DTC C1160 detected?

YES >> Proceed to diagnosis procedure. Refer to BRC-95, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000009463808

1.DECEL G SENSOR CALIBRATION

Perform decel G sensor calibration. Refer to BRC-60, "Work Procedure".

>> GO TO 2.

2.CHECK SELF-DIAGNOSTIC RESULT

With CONSULT.
Perform self-diagnostic result.

Is DTC C1160 detected?

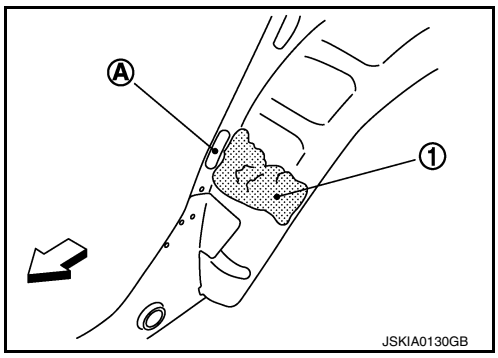
YES >> GO TO 3.
NO >> Inspection End.

3.CHECK YAW RATE/SIDE/DECEL G SENSOR SYSTEM

Check yaw rate/side/decel G sensor system. Refer to BRC-75, "Diagnosis Procedure".

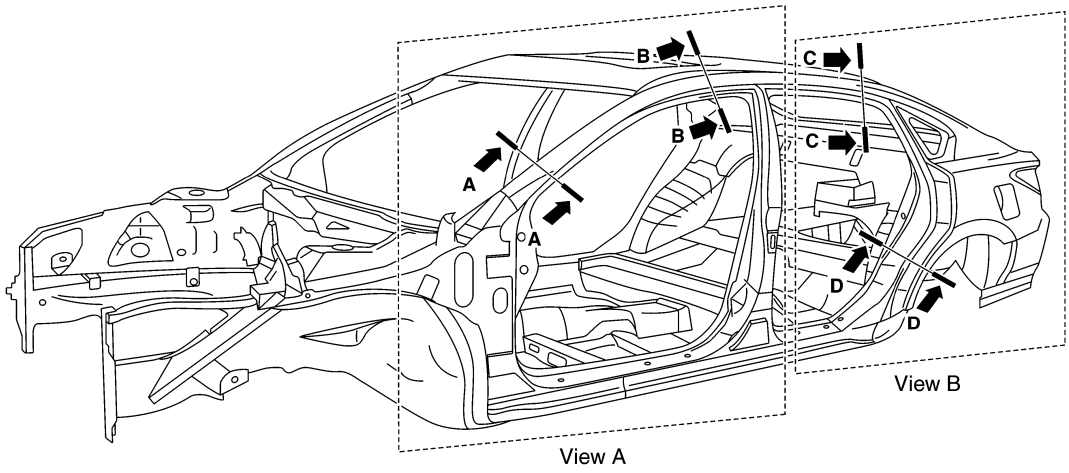
Is the inspection result normal?

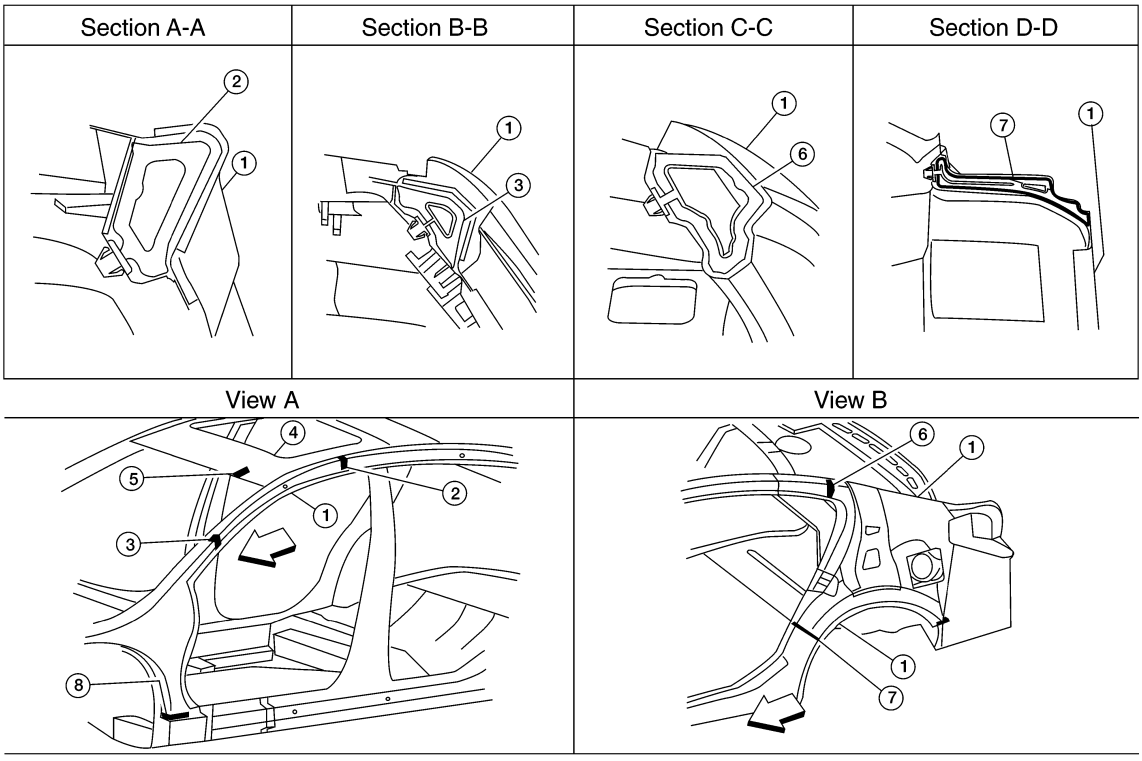
YES >> Replace ABS actuator and electric unit (control unit). Refer to BRC-128, "Removal and Installation".
NO >> Repair or replace malfunctioning components.



1. Urethane foam
A. Fill while avoiding flange area
⇦ : Front

d. Install service part.
NOTE:
Refer to the label on the urethane foam container for information on working times.





Position	Description
T - t	1473 (57.99)
U - u	1473 (57.99)
V - v	1450 (57.09)
W - w	1201 (47.28)

Figures marked with an (*) indicate symmetrically identical dimensions on both the RH and LH side of the vehicle.

Measurement Points

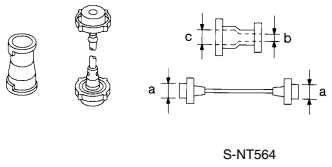
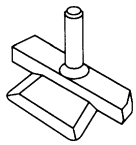
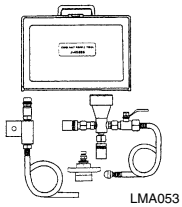
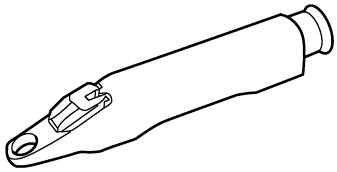
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000009460385

The actual shapes of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
EG17650301 (J-33984-A) Radiator cap tester adapter  S-NT564	Adapting radiator cap tester to radiator cap and radiator filler neck **a: 28 (1.10) dia.** **b: 31.4 (1.236) dia.** **c: 41.3 (1.626) dia.** Unit: mm (in)
KV10111100 (J-37228) Seal cutter  NT046	Removing chain tensioner cover and water pump cover
KV991J0070 (J-45695) Coolant Refill Tool  LMA053	Refilling engine cooling system
— (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant

Commercial Service Tool

INFOID:0000000009460386

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Capacity

INFOID:0000000009460426

ℓ (US qt, Imp qt)

Coolant capacity (With reservoir tank at MAX level)	9.2 (9-3/4, 8-1/8)

Thermostat

INFOID:0000000009460427

Valve opening temperature	82°C (180°F)
Full-open lift amount	8.6 mm / 95°C (0.339 in / 203°F)
Valve closing temperature	77°C (171°F)

Radiator

INFOID:0000000009460428

Unit: kPa (kg/cm^2, psi)

Cap relief pressure	Standard	127 ± 9.8 (1.30 ± 0.10, 18.4 ± 1.42)
Testing pressure		156 (1.6, 23)

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000009464681

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.
CAN communication signal chart. Refer to LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:0000000009464682

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If ITS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	• CAN communication system • ITS communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

Diagnosis Procedure

INFOID:0000000009464683

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ITS system ON, and then wait for 30 seconds or more.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U1000” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U1000” detected as the current malfunction?

YES >> Refer to DAS-48, "Description".
NO >> Refer to GI-43, "Intermittent Incident".

Connector No.	M157
Connector Name	JOINT CONNECTOR-M08
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	P	–
3	P	–

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3
4	5	6	7	8

Terminal No.	Color of Wire	Signal Name
4	BG	– (WITH REAR VIEW CAMERA)
8	R	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
1G	BG	– (WITH REAR VIEW CAMERA)
2G	R	–

Connector No.	E200
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

74	75	76
77	78	79	80	81

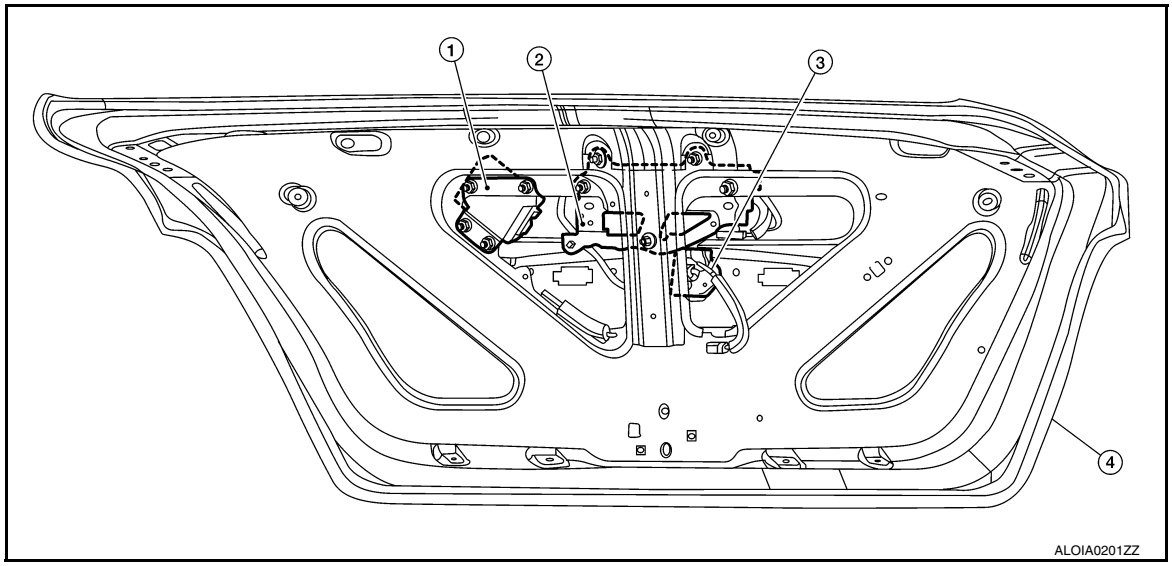
Terminal No.	Color of Wire	Signal Name
74	BG	WASH MTR (WITH REAR VIEW CAMERA)

ABOIA0118GB

REAR VIEW CAMERA WASHER CONTROL UNIT

Exploded View

INFOID:0000000009978537



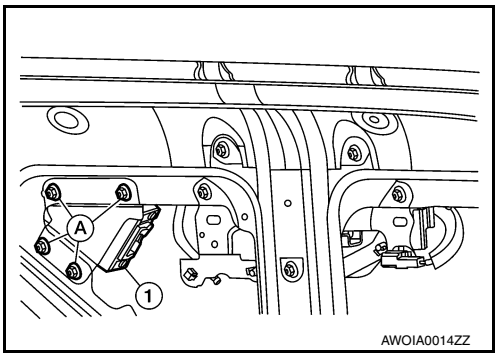
1. Rear view camera washer control unit
2. Rear view camera air pump motor
3. Rear view camera
4. Trunk lid

Removal and Installation

INFOID:0000000009978538

REMOVAL

1. Remove the trunk lid finisher. Refer to INT-33, "TRUNK LID FINISHER : Removal and Installation".
2. Disconnect the harness connector from the rear view camera washer control unit.
3. Remove the rear view camera washer control unit nuts (A).
4. Remove the rear view camera washer control unit (1).



INSTALLATION

Installation is in the reverse order of removal.

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000009464841

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.
CAN communication signal chart. Refer to LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:0000000009464842

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If ITS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	• CAN communication system • ITS communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

Diagnosis Procedure

INFOID:0000000009464843

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ITS system ON, and then wait for 30 seconds or more.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U1000” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U1000” detected as the current malfunction?

YES >> Refer to DAS-192, "Description".
NO >> Refer to GI-43, "Intermittent Incident".

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ITS control unit becomes inoperable.

1. Erase “self-diagnosis result”, and then perform “All DTC Reading” again after performing the action test. (Refer to DAS-254, "Description" for action test.)
2. Check that the Moving Object Detection system is normal.

>> Inspection End.

SECTION DLK
DOOR & LOCK

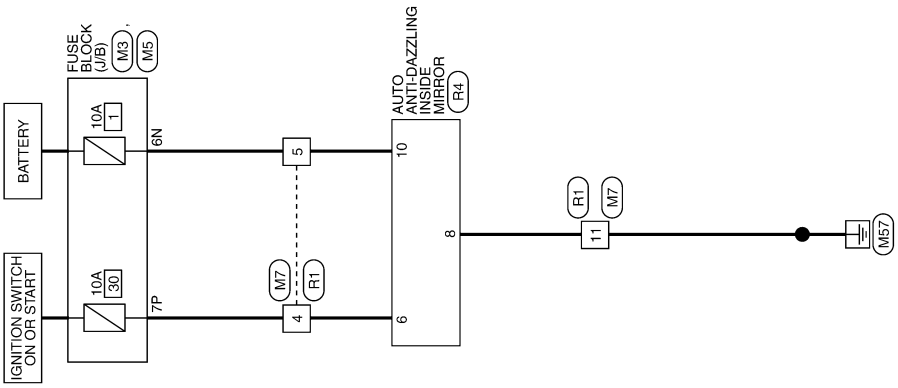
CONTENTS

WIRING DIAGRAM

HOMELINK UNIVERSAL TRANSCEIVER

Wiring Diagram

INFOID:0000000009461799



HOMELINK UNIVERSAL TRANSCEIVER

ABKWA1752GB

B26FF REMOTE KEYLESS ENTRY RECEIVER

DTC Logic

INFOID:0000000009461823

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26FF	INTELLIGENT TUNER COMMUNICATION FAIL	Inactive communication between BCM and remote keyless entry receiver.	• Harness or connector • Remote keyless entry receiver • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self-Diagnostic Result” mode of “BCM” using CONSULT.

Is DTC detected?

YES >> Refer to DLK-97, "Diagnosis Procedure".
NO >> Inspection End.

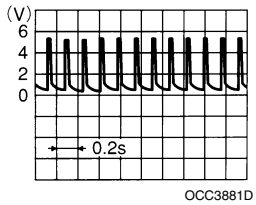
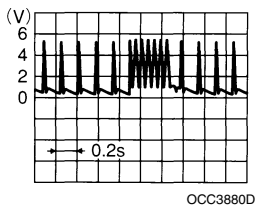
Diagnosis Procedure

INFOID:0000000009461824

Regarding Wiring Diagram information, refer to DLK-51, "Wiring Diagram".

1.CHECK REMOTE KEYLESS ENTRY RECEIVER OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Check signal between BCM harness connector and ground using oscilloscope.

(+) BCM Connector	(+) BCM Terminal	(–)	Condition	Signal (Reference value)
M20	119	Ground	Standby state	 OCC3881D
			Press the Intelligent Key lock or unlock button	 OCC3880D

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-80, "Removal and Installation".
NO >> GO TO 2.

2.CHECK REMOTE KEYLESS ENTRY RECEIVER CIRCUIT 1

1. Disconnect BCM and remote keyless entry receiver connectors.
2. Check continuity between BCM harness connector and remote keyless entry receiver harness connector.

BCM		Remote keyless entry receiver		Continuity
Connector	Terminal	Connector	Terminal	
M20	119	M27	2	Yes

3. Check continuity between BCM harness connector and ground.

(+)		(–)	Continuity
BCM			
Connector	Terminal		
M20	119	Ground	No

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. CHECK REMOTE KEYLESS ENTRY RECEIVER POWER SUPPLY

Check voltage between remote keyless entry receiver harness connector and ground.

(+)		(–)	Voltage Approx.
Remote keyless entry receiver			
Connector	Terminal		
M27	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO-1 >> Check 5A fuse No. 9 [located in fuse block J/B].
NO-2 >> Repair or replace harness between remote keyless entry receiver and 5A fuse No. 9.

4. CHECK REMOTE KEYLESS ENTRY RECEIVER GROUND CIRCUIT

Check continuity between remote keyless entry receiver harness connector and ground.

Remote keyless entry receiver		Ground	Continuity
Connector	Terminal		
M27	3		Yes

Is the inspection result normal?

YES >> Replace remote keyless entry receiver. Refer to DLK-224, "Removal and Installation".
NO >> Repair or replace harness.

Unit: mm (in)

Section	Item	Measurement	Standard
A – A	D	Clearance	3.6 ± 1.0 (0.14 ± 0.04)
	E	Surface height	0.0 ± 1.0 (0.00 ± 0.04)
B – B	F	Clearance	3.6 ± 1.0 (0.14 ± 0.04)
	G	Surface height	0.0 ± 1.0 (0.0 ± 0.04)
C – C	H	Clearance	7.1 ± 1.7 (0.28 ± 0.07)

LONGITUDINAL CLEARANCE

1. Remove the center pillar upper finisher. Refer to INT-24, "CENTER PILLAR UPPER FINISHER : Removal and Installation".
2. Loosen the rear door upper hinge nuts.
3. Loosen the rear door lower hinge bolts.
4. Move the rear door forward or backward as necessary until within specifications provided.
5. Tighten the lower hinge bolts to specification.

Rear door lower hinge bolts **20.6 N·m (2.1 kg-m, 15 ft-lb)**

6. Tighten the upper hinge nuts to specification.

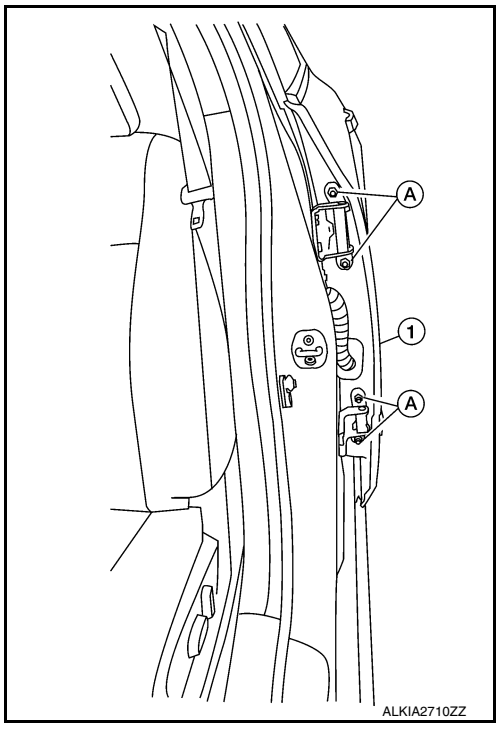
Rear door upper hinge nuts **20.6 N·m (2.1 kg-m, 15 ft-lb)**

7. Install the center pillar upper finisher. Refer to INT-24, "CENTER PILLAR UPPER FINISHER : Removal and Installation".

SURFACE HEIGHT ADJUSTMENT

1. Loosen the rear door hinge nuts (door side) (A).
2. Move the top and/or the bottom of the rear door (1) in or out as necessary until it is within specifications provided.
3. Tighten the rear door hinge nuts (door side) (A) to specification.

Rear door nuts **24.5 N·m (2.5 kg-m, 18 ft-lb)**



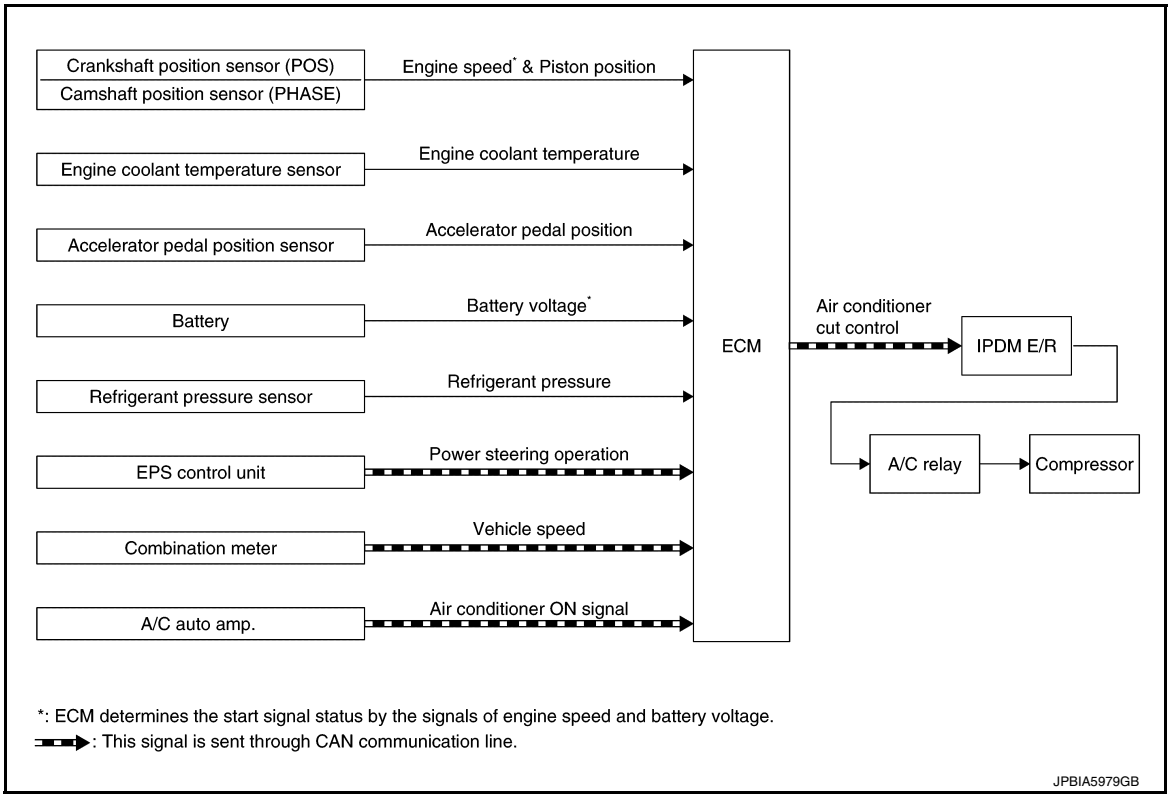
CAUTION:

- **Check rear door hinge rotating point for poor lubrication. If necessary, apply a suitable multi-purpose grease.**
- **After adjusting, apply touch-up paint (body color) to the head of rear door hinge bolts and nuts.**

tioner)

INFOID:0000000009462102

SYSTEM DIAGRAM



SYSTEM DESCRIPTION

This system improves engine operation when the air conditioner is used.
Under the following conditions, the air conditioner is turned off.

- When cranking the engine.
- At high engine speeds.
- When the engine coolant temperature becomes excessively high.
- When operating power steering during low engine speed or low vehicle speed.
- When engine speed is excessively low.
- When refrigerant pressure is excessively low or high.

AIR CONDITIONING CUT CONTROL : System Description (with manual air condition-

Priority	DTC	Detected items
2	P0031, P0032	Air fuel ratio (A/F) sensor 1 heater
	P0037, P0038	Heated oxygen sensor 2 heater
	P0075	Intake valve timing control solenoid valve/Intake valve timing intermediate lock control solenoid valve
	P0078	Exhaust valve timing control solenoid valve
	P0130, P0131, P0132, P014C, P014D, P015A, P015B, P117A, P2096, P2097	Air fuel ratio (A/F) sensor 1
	P0137, P0138, P0139	Heated oxygen sensor 2
	P0441	EVAP control system purge flow monitoring
	P0443, P0444, P0445	EVAP canister purge volume control solenoid valve
	P0447, P0448	EVAP canister vent control valve
	P0451, P0452, P0453	EVAP control system pressure sensor
	P1217	Engine over temperature (OVERHEAT)
	P1800	Intake manifold tuning valve
	P1805	Brake switch
	P2004	Intake manifold runner control valve
	P2100, P2103	Throttle control motor relay
	P2101	Electric throttle control function
	P2118	Throttle control motor
3	P0011, P052A, P052B	Intake valve timing control
	P0014	Exhaust valve timing control
	P0171, P0172	Fuel injection system function
	P0300, P0301, P0302, P0303, P0304	Misfire
	P0420	Three way catalyst function
	P0456	EVAP control system
	P0506, P0507	Idle speed control system
	P050A, P050B, P050E	Cold start control
	P0524	Engine oil pressure
	P1148	Closed loop control
	P1212	TCS communication line
	P1564	ASCD steering switch
	P1572	ASCD brake switch
	P1574	ASCD vehicle speed sensor
	P1715	Input speed sensor
	P2119	Electric throttle control actuator

DTC Index

INFOID:0000000009462124

×:Applicable —: Not applicable

DTC[*1]		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group[*4]	Reference page
CONSULT GST[*2]	ECM[*3]						
U0101	0101[*5]	CAN COMM CIRCUIT	—	1	×	B	EC-207
U1001	1001[*5]	CAN COMM CIRCUIT	—	2	—	—	EC-208

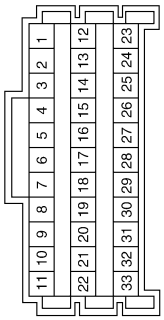
Connector No.	E51
Connector Name	BRAKE PEDAL POSITION SWITCH
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	BG	–
2	BR	–

Connector No.	E56
Connector Name	JOINT CONNECTOR-E08
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
10	BG	–
11	BG	–
15	L	–
16	L	–
20	LG	–
21	LG	–
22	LG	–
23	W	–
24	W	–

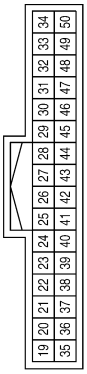
Connector No.	E57
Connector Name	STOP LAMP RELAY
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	R	–
3	W	–
5	G	–

Connector No.	E63
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
21	L	BCM IGNSW
27	BG	MOTOR FAN RLY MID
28	P	CAN-L
29	L	CAN-H

Terminal No.	Color of Wire	Signal Name
36	W	START IG-E/R
37	W	CLUTCH I/L SW
39	G	MOTOR FAN RLY HI
41	B	GND (SIGNAL)
43	LG	IGN SIGNAL
45	V	PD SENS SIG-E/R (WITH QR25DE)
47	O	PD SENS PWR-E/R (WITH QR25DE)
48	SB	PD SENS GND-E/R

ABBIA1817GB

>> GO TO 22.

22. CHECK “A/F ALPHA-B1”

1. Start engine.
2. Select “A/F ALPHA-B1” in “SPEC” of “DATA MONITOR” mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> Detect malfunctioning part of mass air flow sensor circuit and repair it. Refer to EC-228, "DTC Logic". Then GO TO 29.
NO >> GO TO 23.

23. CHECK “MAS A/F SE-B1”

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

Is the measurement value within the SP value?

YES >> GO TO 24.
NO >> More than the SP value: Replace mass air flow sensor, refer to EM-29, "Removal and Installation", and then GO TO 29.

24. REPLACE ECM

Replace ECM. Refer to EC-540, "Removal and Installation".

>> GO TO 29.

25. CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.
- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Improper specification of intake air system

Is the inspection result normal?

YES >> GO TO 27.
NO >> Repair or replace malfunctioning part, and then GO TO 26.

26. CHECK “B/FUEL SCHDL”

Select “B/FUEL SCHDL” in “SPEC” of “DATA MONITOR” mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END
NO >> Less than the SP value: GO TO 27.

27. CHECK “MAS A/F SE-B1”

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

Is the measurement value within the SP value?

YES >> GO TO 28.
NO >> Less than the SP value: Replace mass air flow sensor, refer to EM-29, "Removal and Installation", and then GO TO 30.

28. CHECK INTAKE SYSTEM

Check for the cause of air leak after the mass air flow sensor. Refer to the following.
- Disconnection, looseness, and cracks in air duct
- Looseness of oil filler cap
- Disconnection of oil level gauge
- Open stuck, breakage, hose disconnection, or cracks of PCV valve
- Disconnection or cracks of EVAP purge hose, open stuck of EVAP canister purge volume control solenoid valve

2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		–		Continuity
Electric throttle control actuator		ECM		
Connector	Terminal	Connector	Terminal	
F57	2	F13*1 F90*2	80	Existed

*1: Except for California
*2: For California

4. Also check harness for short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.
NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE POSITION SENSOR 2 GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		–		Continuity
Electric throttle control actuator		ECM		
Connector	Terminal	Connector	Terminal	
F57	4	F13*1 F90*2	78	Existed

*1: Except for California
*2: For California

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace error-detected parts.

4.CHECK THROTTLE POSITION SENSOR 2 INPUT SIGNAL CIRCUIT

1. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		–		Continuity
Electric throttle control actuator		ECM		
Connector	Terminal	Connector	Terminal	
F57	3	F13*1 F90*2	77	Existed

*1: Except for California
*2: For California

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

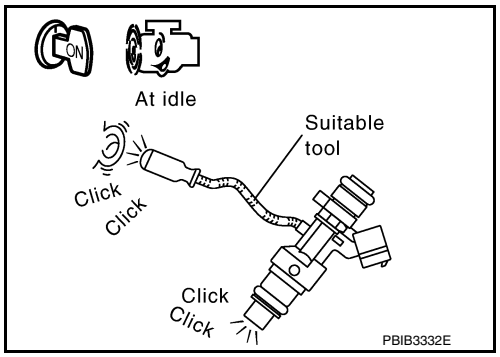
Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace error-detected parts.

5.CHECK THROTTLE POSITION SENSOR

1. Let engine idle.
2. Listen to each fuel injector operating sound.

Clicking noise should be heard.



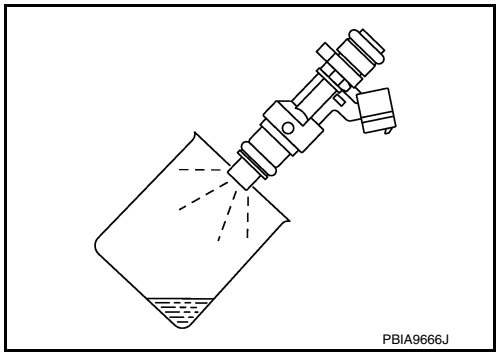
Is the inspection result normal?

YES >> GO TO 8.
NO >> Perform trouble diagnosis for “FUEL INJECTOR”, refer to EC-505, "Component Function Check".

8. CHECK FUEL INJECTOR

1. Turn ignition switch OFF.
2. Confirm that the engine is cooled down and there are no fire hazards near the vehicle.
3. Disconnect all fuel injector harness connectors.
4. Remove fuel tube assembly. Refer to EM-41, "Removal and Installation".
   Keep fuel hose and all fuel injectors connected to fuel tube.
5. Disconnect all ignition coil harness connectors.
6. Prepare pans or saucers under each fuel injector.
7. Crank engine for about 3 seconds.

Fuel should be sprayed evenly for each fuel injector.



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> Replace fuel injectors from which fuel does not spray out. Always replace O-ring with new ones. Refer to EM-41, "Removal and Installation".

YES >> GO TO 8.
NO >> GO TO 7.

7. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Check the EVAP canister purge volume control solenoid valve. Refer to EC-345, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EC-21, "Component Parts Location".

8. CHECK RUBBER TUBE FOR CLOGGING

1. Disconnect rubber tube connected to EVAP canister vent control valve.
2. Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 9.
NO >> Clean the rubber tube using an air blower.

9. CHECK EVAP CANISTER VENT CONTROL VALVE

Check the EVAP canister vent control valve. Refer to EC-352, "Component Inspection".

Is the inspection result normal?

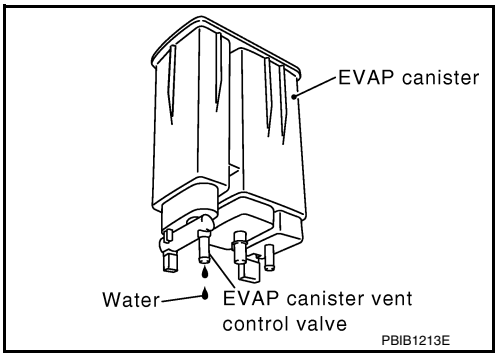
YES >> GO TO 10.
NO >> Replace EVAP canister vent control valve. Refer to FL-17, "Removal and Installation".

10. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Check if water will drain from EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 11.
NO >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".



11. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> GO TO 12.

12. DETECT MALFUNCTIONING PART

Check the following.
- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to FL-14, "Removal and Installation".

Component Inspection

INFOID:0000000009462274

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

With CONSULT
1. Turn ignition switch OFF.

5.CHECK CAUSE OF ENGINE OIL CONSUMPTION

Check the following item.

Step	Inspection item	Equipment	Standard	Reference
1	PCV valve	EC-539, "Inspection"		
2	Exhaust front tube	Visual	• No blocking • No abnormal sounds	—
3	Oil pump	Visual	• No blocking • No abnormal sounds	—
		LU-14, "Inspection"		
4	• Piston • Piston pin • Piston ring	• Piston to piston pin oil clearance • Piston ring side clearance • Piston ring end gap		EM-105, "How to Select Piston and Bearing"
5	Cylinder block	• Cylinder block top surface distortion • Piston to cylinder bore clearance		EM-96, "Inspection After Disassembly"

>> Repair or replace error-detected parts.

Component Inspection

INFOID:0000000009462320

1.CHECK EOP SENSOR

1. Turn ignition switch OFF.
2. Disconnect EOP sensor harness connector.
3. Check resistance between EOP sensor connector terminals.

EOP sensor		Condition	Resistance (kΩ)
+	–		
Terminal			
1	2	None	4 kΩ – 10 kΩ
	3		2 kΩ – 8 kΩ
2	1		4 kΩ – 10 kΩ
	3		1 kΩ – 3 kΩ
3	1		2 kΩ – 8 kΩ
	2		1 kΩ – 3 kΩ

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Replace EOP sensor. Refer to EC-21, "Component Parts Location".

+		–		Continuity
Battery current sensor		ECM		
Connector	Terminal	Connector	Terminal	
F5	2	F13*1 F90*2	61	Existed

*1: Except for California
*2: For California

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.
NO >> Repair or replace error-detected parts.

3.CHECK BATTERY TEMPERATURE SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

+		–		Continuity
Battery current sensor		ECM		
Connector	Terminal	Connector	Terminal	
F5	3	F13*1 F90*2	62	Existed

*1: Except for California
*2: For California

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace error-detected parts.

4.CHECK BATTERY TEMPERATURE SENSOR

Check the battery temperature sensor. Refer to EC-441, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> Replace battery negative cable assembly.

Component Inspection

INFOID:0000000009462374

1.CHECK BATTERY TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect battery current sensor.
3. Check the resistance between battery current sensor connector terminals.

Battery current sensor		Resistance
+	–	
Terminal		
2	3	Continuity with the resistance value 100 Ω or more

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace battery negative cable assembly.

+		–		Continuity
Electric throttle control actuator		ECM		
Connector	Terminal	Connector	Terminal	
F57	2	F13*1 F90*2	80	Existed

*1: Except for California
*2: For California

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.
NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE POSITION SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		–		Continuity
Electric throttle control actuator		ECM		
Connector	Terminal	Connector	Terminal	
F57	4	F13*1 F90*2	78	Existed

*1: Except for California
*2: For California

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace error-detected parts.

4.CHECK THROTTLE POSITION SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		–		Continuity
Electric throttle control actuator		ECM		
Connector	Terminal	Connector	Terminal	
F57	1	F13*1 F90*2	79	Existed
	3		77	

*1: Except for California
*2: For California

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

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair open circuit or short to ground or short to power in harness or connectors.

5.CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-490, "Component Inspection".

Is the inspection result normal?

EVAP LEAK CHECK

Inspection

INFOID:0000000009462466

CAUTION:

- **Do not use compressed air or a high pressure pump.**
- **Do not exceed 4.12 kPa (0.042 kg/cm^2, 0.6 psi) of pressure in EVAP system.**

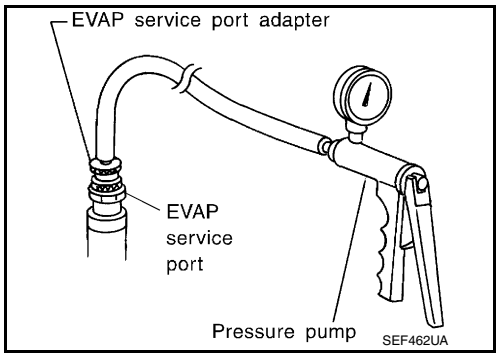
NOTE:

- Do not start engine.
- Improper installation of EVAP service port adapter [commercial service tool: (J-41413-OBD)] to the EVAP service port may cause a leak.

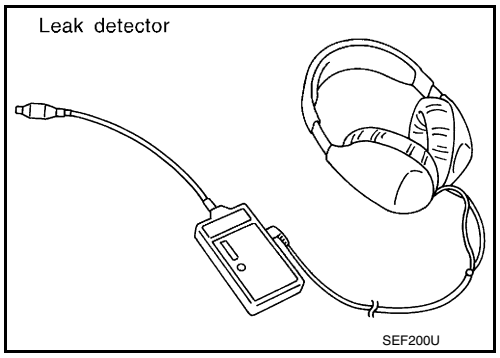
1. EVAP LEAK CHECK

With CONSULT

1. Install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.

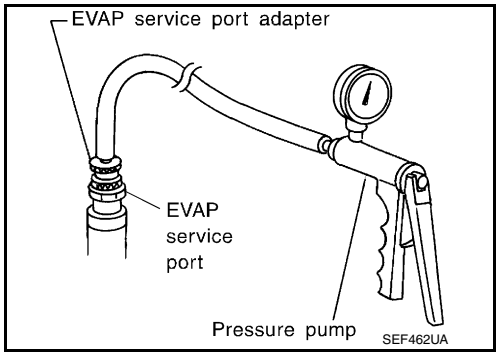


2. Turn ignition switch ON.
3. Select the “EVAP SYSTEM CLOSE” in “WORK SUPPORT” mode of “ENGINE” using CONSULT.
4. Touch “START”. A bar graph (Pressure indicating display) will appear on the screen.
5. Apply positive pressure to the EVAP system until the pressure indicator reaches the middle of the bar graph.
6. Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.
7. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to EC-62, "EVAPORATIVE EMISSION SYSTEM : System Description".



Without CONSULT

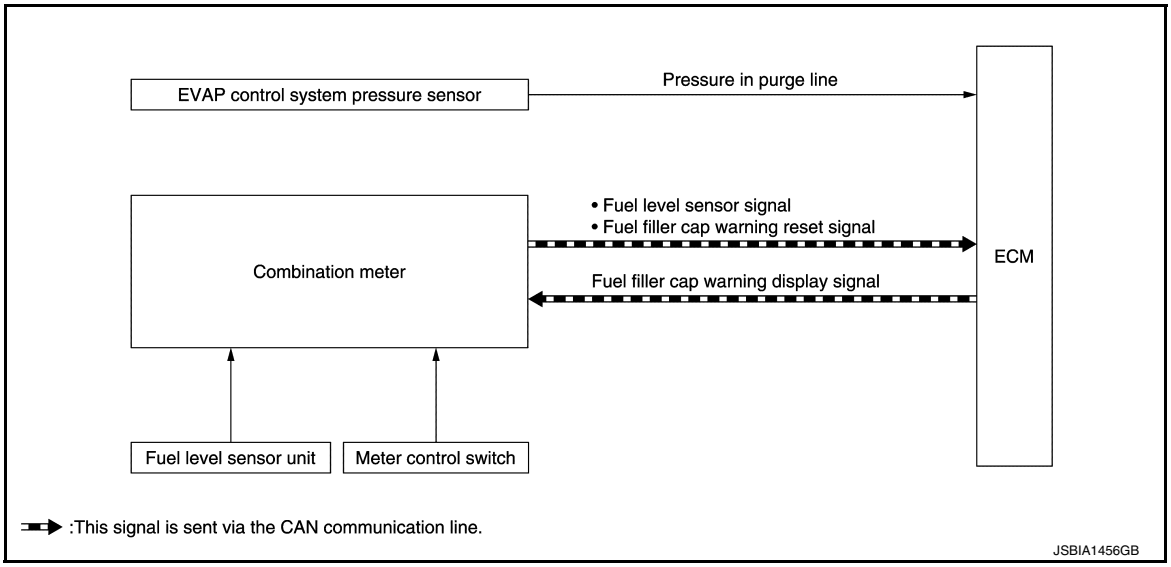
1. Install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.



FUEL FILLER CAP WARNING SYSTEM : System Description

INFOID:0000000009462525

SYSTEM DIAGRAM



INPUT/OUTPUT SIGNAL CHART

Input

Unit/Sensor	Input signal to ECM	ECM function
EVAP control system pressure sensor	Pressure in purge line	Fuel filler cap warning control
Combination meter	Fuel level sensor signal*	
	Fuel filler cap warning reset signal*	

*: This signal is sent to the ECM via the CAN communication line.

Output

Unit	Output signal	Actuator
ECM	Fuel filler cap warning display signal*	Combination meter

*: This signal is sent to the combination meter via the CAN communication line.

SYSTEM DESCRIPTION

The fuel filler cap warning system alerts the driver to the prevention of the fuel filler being left uncapped and malfunction occurrences after refueling, by turning ON the fuel filler cap warning display on the combination meter.
ECM judges a refueled state, based on a fuel level signal transmitted from the combination meter.
When a very small leak is detected through the EVAP leak diagnosis performed after judging the refueled state, ECM transmits a fuel filler cap warning display signal (request for display ON) to the combination meter via CAN communication.
When receiving the signal, the combination meter turns ON the fuel filler cap warning display.

CAUTION:
Check fuel filler cap installation condition when the fuel filler cap warning display turns ON.

Reset Operation

The fuel filler cap warning lamp tunes OFF, according to any condition listed below:

- Reset operation is performed by operating the meter control switch on the combination meter.
  - When the reset operation is performed, the combination meter transmits a fuel filler cap warning reset signal to ECM via CAN communication. ECM transmits a fuel filler cap warning display signal (request for display OFF) to the combination meter via CAN communication. When receiving the signal, the combination meter turns OFF the fuel filler cap warning display.
- EVAP leak diagnosis result is normal.
- Fuel refilled.
- DTC erased by using CONSULT.

NOTE:

DTC[*1]		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group[*4]	Refer-ence page
CONSULT GST[*2]	ECM[*3]						
P0463	0463	FUEL LEVL SEN/CIRC	—	2	×	B	EC-866
P0500	0500	VEH SPEED SEN/CIRC[*8]	—	2	×	B	EC-867
P0506	0506	ISC SYSTEM	—	2	×	B	EC-869
P0507	0507	ISC SYSTEM	—	2	×	B	EC-871
P050A	050A	COLD START CONTROL	—	2	×	A	EC-873
P050E	050E	COLD START CONTROL	—	2	×	A	EC-873
P0520	0520	EOP SENSOR/SWITCH	—	2	—	—	EC-875
P0524	0524	ENGINE OIL PRESSURE	—	1	—	—	EC-878
P0603	0603	ECM BACK UP/CIRCUIT	—	2	×	B	EC-881
P0605	0605	ECM	—	1 or 2	× or —	B	EC-883
P0607	0607	ECM	—	1	×	B	EC-884
P0643	0643	SENSOR POWER/CIRC	—	1	×	B	EC-885
P0850	0850	P-N POS SW/CIRCUIT	—	2	×	B	EC-887
P1148	1148	CLOSED LOOP-B1	—	1	×	A	EC-890
P1168	1168	CLOSED LOOP-B2	—	1	×	A	EC-890
P1212	1212	TCS/CIRC	—	2	—	—	EC-891
P1217	1217	ENG OVER TEMP	—	1	×	B	EC-892
P1225	1225	CTP LEARNING-B1	—	2	—	—	EC-895
P1226	1226	CTP LEARNING-B1	—	2	—	—	EC-896
P1550	1550	BAT CURRENT SENSOR	—	2	—	—	EC-897
P1551	1551	BAT CURRENT SENSOR	—	2	—	—	EC-899
P1552	1552	BAT CURRENT SENSOR	—	2	—	—	EC-899
P1553	1553	BAT CURRENT SENSOR	—	2	—	—	EC-901
P1554	1554	BAT CURRENT SENSOR	—	2	—	—	EC-903
P1556	1556	BAT TMP SEN/CIRC	—	2	—	—	EC-906
P1557	1557	BAT TMP SEN/CIRC	—	2	—	—	EC-906
P1564	1564	ASCD SW	—	1	—	—	EC-908
P1572	1572	ASCD BRAKE SW	—	1	—	—	EC-911
P1574	1574	ASCD VHL SPD SEN	—	1	—	—	EC-918
P1610	1610	LOCK MODE	—	2	—	—	SEC-68
P1611	1611	ID DISCORD, IMM-ECM	—	2	—	—	SEC-69
P1612	1612	CHAIN OF ECM-IMMU	—	2	—	—	SEC-70
P1614	1614	CHAIN OF IMMU-KEY	—	2	—	—	SEC-71
P1800	1800	VIAS S/V-1	—	2	—	—	EC-920
P1801	1801	VIAS S/V-2	—	2	—	—	EC-922
P1805	1805	BRAKE SW/CIRCUIT	—	2	—	—	EC-924
P2096	2096	A/F SENSOR1 (B1)	—	2	×	A	EC-927
P2097	2097	A/F SENSOR1 (B1)	—	2	×	A	EC-927
P2098	2098	A/F SENSOR1 (B2)	—	2	×	A	EC-927
P2099	2099	A/F SENSOR1 (B2)	—	2	×	A	EC-927
P2100	2100	ETC MOT PWR-B1	—	1	×	B	EC-931
P2101	2101	ETC FNCTN/CIRC-B1	—	1	×	B	EC-933

ACCELERATOR PEDAL RELEASED POSITION LEARNING

Description

INFOID:0000000009462553

Accelerator Pedal Released Position Learning is a function of ECM to learn the fully released position of the accelerator pedal by monitoring the accelerator pedal position sensor output signal. It must be performed each time the harness connector of the accelerator pedal position sensor or ECM is disconnected.

Work Procedure

INFOID:0000000009462554

1.START

1. Check that accelerator pedal is fully released.
2. Turn ignition switch ON and wait at least 2 seconds.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON and wait at least 2 seconds.
5. Turn ignition switch OFF and wait at least 10 seconds.

>> END

Component Inspection

INFOID:0000000009462594

1. CHECK MASS AIR FLOW (MAF) SENSOR-I

With CONSULT
1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Connect CONSULT and select “DATA MONITOR” mode.
5. Select “MAS A/F SE-B1” and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.8 – 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.6 – 1.9
	Idle to about 4,000 rpm	0.8 – 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Without CONSULT
1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Check the voltage between ECM harness connector terminals under the following conditions.

ECM			Condition	Voltage (V)
Connector	+	–		
	Terminal			
F79	82	80	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.8 – 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.6 – 1.9
			Idle to about 4,000 rpm	0.8 – 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2. CHECK FOR THE CAUSE OF UNEVEN AIR FLOW THROUGH MAF SENSOR

1. Turn ignition switch OFF.
2. Check for the cause of uneven air flow through MAF sensor. Refer to the following.

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

Is the inspection result normal?

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

3. CHECK MAF SENSOR-II

With CONSULT
1. Repair or replace malfunctioning part.
2. Start engine and warm it up to normal operating temperature.
3. Connect CONSULT and select “DATA MONITOR” mode.
4. Select “MAS A/F SE-B1” and check the indication.

2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
6. Let engine idle for 1 minute.
7. Check the voltage between ECM harness connector terminals under the following conditions.

DTC	ECM			Condition	Voltage
	Connector	+	–		
		Terminal	Terminal		
P0139	F79	57	59	Revving up to 4,000 rpm under no load at least 10 times	A change of voltage should be more than 0.96 V for 1 second during this procedure.
P0159		58			

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector terminals under the following conditions.
.

DTC	ECM			Condition	Voltage
	Connector	+	–		
		Terminal	Terminal		
P0139	F79	57	59	Keeping engine at idle for 10 minutes	A change of voltage should be more than 0.96 V for 1 second during this procedure.
P0159		58			

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 3.

3.PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector terminals under the following conditions.

DTC	ECM			Condition	Voltage
	Connector	+	–		
		Terminal	Terminal		
P0139	F79	57	59	Coasting from 80 km/h (50 MPH) in D position	A change of voltage should be more than 0.96 V for 1 second during this procedure.
P0159		58			

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to EC-777, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009462641

1.CLEAR MIXTURE RATIO SELF-LEARNING VALUE

1. Clear the mixture ratio self-learning value. Refer to EC-685, "Work Procedure".
2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171, P0172, P0174 or P0175 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171, P0174 or P0172, P0175. Refer to EC-787, "DTC Logic" or EC-791, "DTC Logic".
NO >> GO TO 2.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to EC-825, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009462679

1.CHECK EXHAUST SYSTEM

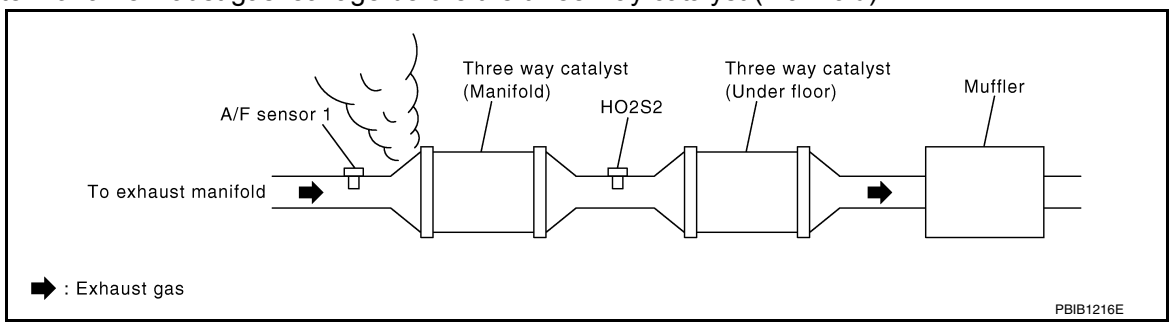
Visually check exhaust tubes and muffler for dents.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning part.

2.CHECK EXHAUST GAS LEAKAGE

1. Start engine and run it at idle.
2. Listen for an exhaust gas leakage before the three way catalyst (manifold).



Is exhaust gas leakage detected?

YES >> Repair or replace malfunctioning part.
NO >> GO TO 3.

3.CHECK INTAKE AIR LEAKAGE

Listen for an intake air leakage after the mass air flow sensor.

Is intake air leakage detected?

YES >> Repair or replace malfunctioning part.
NO >> GO TO 4.

4.CHECK IGNITION TIMING

Check idle speed and ignition timing.
For procedure, refer to EC-675, "Work Procedure".
For specification, refer to EC-998, "Idle Speed" and EC-998, "Ignition Timing".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Follow the EC-675, "Work Procedure".

5.CHECK FUEL INJECTORS

1. Stop engine and then turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals.

P050A, P050E COLD START CONTROL

Description

INFOID:0000000009462723

ECM controls ignition timing and engine idle speed when engine is started with pre-warming up condition. This control promotes the activation of three way catalyst by heating the catalyst and reduces emissions.

DTC Logic

INFOID:0000000009462724

DTC DETECTION LOGIC

NOTE:
If DTC P050A, P050E is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P050A	Cold start idle air control system performance	ECM does not control engine idle speed properly when engine is started with pre-warming up condition.	• Lack of intake air volume • Fuel injection system • ECM
P050E	Cold start engine exhaust temperature too low	The temperature of the catalyst inlet does not rise to the proper temperature when the engine is started with pre-warming up condition.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:
Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Select “DATA MONITOR” mode with CONSULT.
4. Check the indication of “COOLAN TEMP/S”.

With GST

Follow the procedure “With CONSULT” above.

Is the value of “COOLAN TEMP/S” between 4°C (39°F) and 36°C (97°F)?

YES >> GO TO 3.
NO-1 [If it is below 4°C (39°F)]>>Warm up the engine until the value of “COOLAN TEMP/S” reaches 4°C (39°F) or more. Retry from step 1.
NO-2 [If it is above 36°C (97°F)]>>Cool engine down to less than 36°C (97°F). Retry from step 1.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

With CONSULT

1. Set the select lever in N range.
2. Start the engine and warm up in idle with the value of “COOLAN TEMP/S” between 4°C (39°F) and 40°C (104°F) for more than 15 seconds.
3. Check 1st trip DTC.

With GST

Follow the procedure “With CONSULT” above.

Is 1st trip DTC detected?

YES >> Proceed to EC-874, "Diagnosis Procedure".

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK VIAS CONTROL SOLENOID VALVE 1

Check VIAS control solenoid valve 1. Refer to EC-921, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> Replace VIAS control solenoid valve 1. Refer to EC-548, "ENGINE CONTROL SYSTEM : Component Parts Location".

Component Inspection

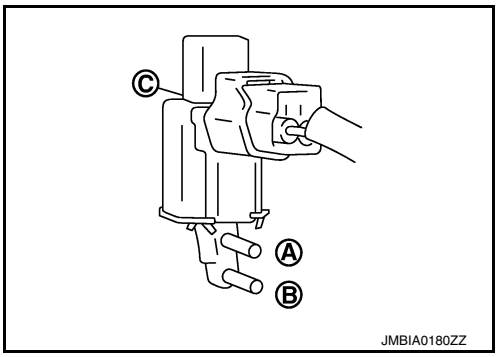
INFOID:0000000009462794

1. CHECK VIAS CONTROL SOLENOID VALVE 1

With CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Disconnect vacuum hoses connected to VIAS control solenoid valve 1.
4. Turn ignition switch ON.
5. Select “VIAS S/V-1” in “ACTIVE TEST” mode with CONSULT.
6. Check air passage continuity and operation delay time under the following conditions.

Condition (VIAS S/V-1)	Air passage continuity between (A) and (B)	Air passage continuity between (A) and (C)
ON	Existed	Not existed
OFF	Not existed	Existed

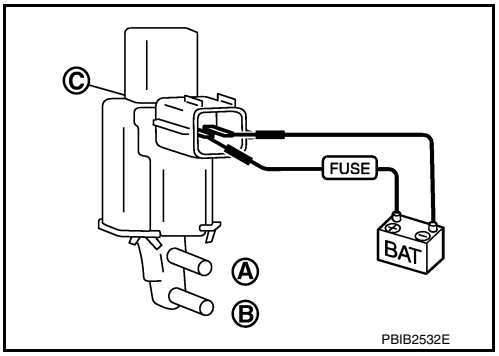


JMBIA0180ZZ

Without CONSULT

1. Turn ignition switch OFF.
2. Disconnect VIAS control solenoid valve 1 harness connector.
3. Disconnect vacuum hoses connected to VIAS volume control solenoid valve 1.
4. Check air passage continuity and operation delay time under the following conditions.

Condition	Air passage continuity between (A) and (B)	Air passage continuity between (A) and (C)
12 V direct current supply between terminals 1 and 2	Existed	Not existed
No supply	Not existed	Existed



PBIB2532E

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace VIAS control solenoid valve 1. Refer to EC-548, "ENGINE CONTROL SYSTEM : Component Parts Location".

Ignition coil			Ground	Voltage
Cylinder	Connector	Terminal		
1	F34	3	Ground	Battery voltage
2	F35	3		
3	F36	3		
4	F37	3		
5	F38	3		
6	F39	3		

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness or connectors.

7. CHECK IGNITION COIL GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between ignition coil harness connector and ground.

Ignition coil			Ground	Continuity
Cylinder	Connector	Terminal		
1	F34	2	Ground	Existed
2	F35	2		
3	F36	2		
4	F37	2		
5	F38	2		
6	F39	2		

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair open circuit or short to power in harness or connectors.

8. CHECK IGNITION COIL OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check the continuity between ignition coil harness connector and ECM harness connector.

Ignition coil			ECM		Continuity
Cylinder	Connector	Terminal	Connector	Terminal	
1	F34	1	F78	11	Existed
2	F35	1		10	
3	F36	1		9	
4	F37	1		15	
5	F38	1		14	
6	F39	1		13	

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

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

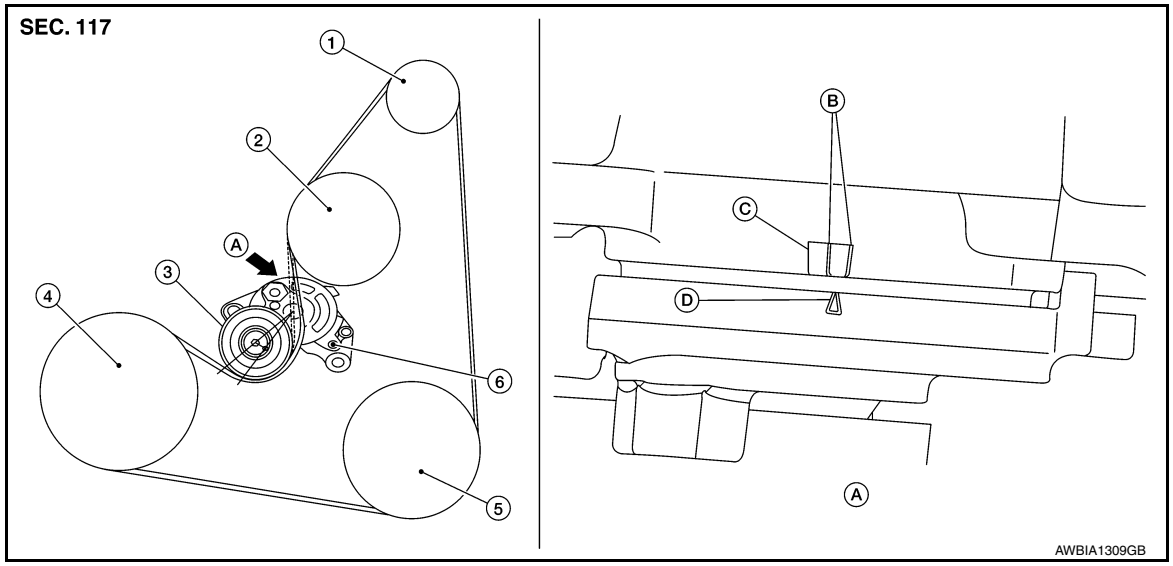
9. CHECK IGNITION COIL WITH POWER TRANSISTOR

Check ignition coil with power transistor. Refer to EC-970, "Component Inspection (Ignition Coil with Power Transistor)".

DRIVE BELTS

Exploded View

INFOID:0000000009460467



1. Generator pulley
2. Water pump pulley
3. Drive belt auto-tensioner
4. Crankshaft pulley
5. A/C compressor pulley
6. Drive belt retainer boss
A. View A
B. New drive belt range
C. Possible use range
D. Indicator (notch)

Checking Drive Belts

INFOID:0000000009460468

WARNING:
Inspect the drive belt only when the engine is stopped.

1. Visually check entire drive belt for wear, damage or cracks.
2. Check that the drive belt auto-tensioner indicator is within the possible use range.
   NOTE:
   - When new drive belt is installed, the drive belt auto-tensioner indicator should be within the new drive belt range.
   - Check the drive belt auto-tensioner indicator when the engine is cold.
3. If the drive belt auto-tensioner indicator is out of the possible use range or belt is damaged, replace drive belt.

Tension Adjustment

INFOID:0000000009460469

Belt tension is not manually adjustable, it is automatically adjusted by the drive belt auto-tensioner.

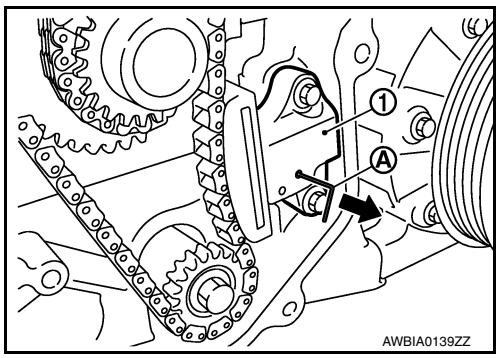
Removal and Installation

INFOID:0000000009460470

REMOVAL

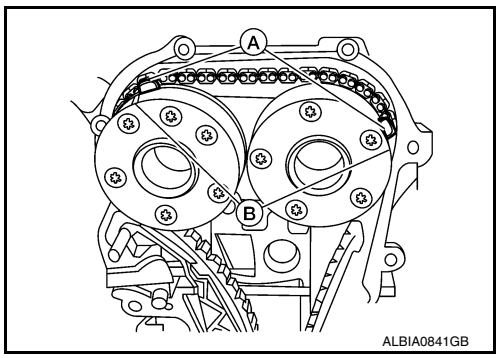
1. Remove the fender protector side cover (RH). Refer to EXT-26, "FENDER PROTECTOR : Removal and Installation".

4. Install timing chain tensioner for balancer unit (1).
   - Compress the plunger, insert a stopper pin (A), and then install the tensioner for the balancer unit.
   - Do not pull out (⬅) the stopper pin until after installing the timing chain tensioner for balancer unit.
   - Check matching mark position of balancer unit drive chain and each sprocket again.



5. Install camshaft sprockets.
   - Install them by lining up the mating marks on each camshaft sprocket (B) with the ones painted on the timing chain (A) during removal.
   - Before installation of chain tensioner, it is possible to re-match the marks on timing chain with the ones on each sprocket.

   CAUTION:
   - **Aligned mating marks could slip. Therefore, after matching them, hold the timing chain in place by hand.**
   - **Before and after installing chain tensioner, check again to make sure that mating marks have not slipped.**

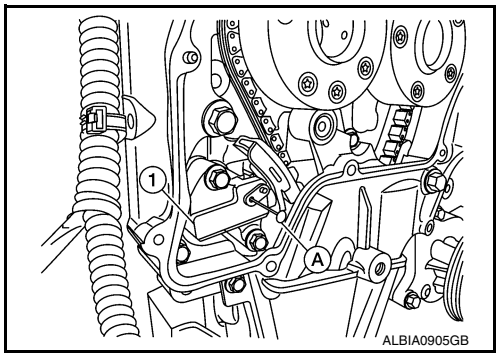


6. Install chain tensioner using the following procedure:

a. Install stopper pin (A) into the chain tensioner (1).

b. Install the chain tensioner and pull the stopper pin out.

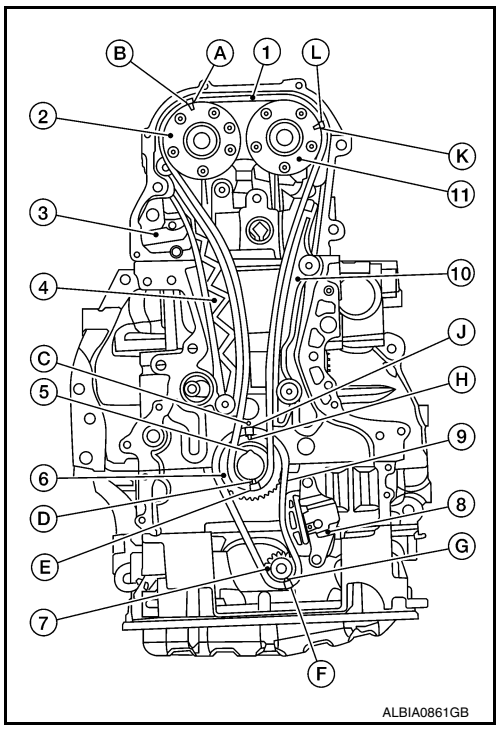
   CAUTION:
   After installation, pull the stopper pin out, and make sure that the tensioner is fully released.



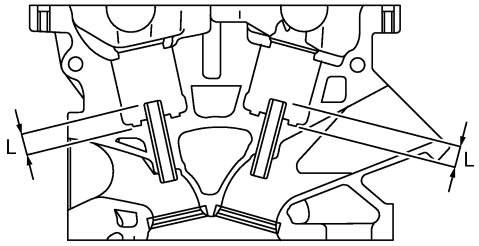
7. Install timing chain (1) and related parts.
   - Install by lining up mating marks on each sprocket and timing chain as shown.
   - Before and after installing chain tensioner (3), check to make sure the mating marks have not slipped.
   - After installing timing chain tensioner (3), remove the stopper pin, and make sure that the tensioner moves freely.

   CAUTION:
   - **For the following note, after the mating marks are aligned, keep them aligned by holding them by hand.**
   - **To avoid skipped teeth, do not move crankshaft and camshaft until front cover is installed.**

   NOTE:
   - Before installing chain tensioner (3) it is possible to slip the chain on the sprocket to align the chain timing mark with the sprocket timing mark.
   - There may be two color variations of the link marks (link colors) on the timing chain.
   - There are 26 links between the pink mating marks on the timing chain; and 64 links between the camshaft sprocket pink link and the crankshaft sprocket yellow link, on the timing chain side without the tensioner.



Unit: mm (in)

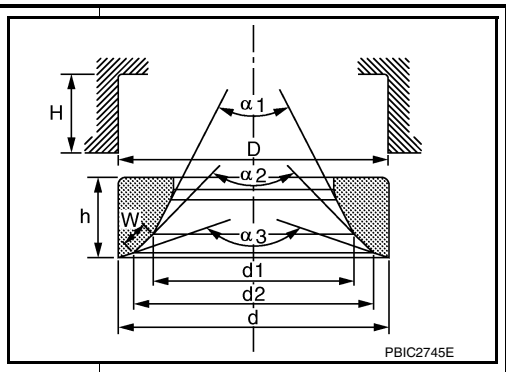


PBIC0184E

Description		Standard	Service
Valve guide	Outer diameter	10.023 - 10.034 (0.3946 - 0.3950)	10.223 - 10.234 (0.4025 - 0.4029)
	Inner diameter (Finished size)	6.000 - 6.018 (0.2362 - 0.2369)	
Cylinder head valve guide hole diameter		9.975 - 9.996 (0.3927 - 0.3935)	10.175 - 10.196 (0.4006 - 0.4014)
Interference fit of valve guide		0.027 - 0.059 (0.0011 - 0.0023)	
		Standard	
Valve guide clearance (Standard)	Intake	0.020 - 0.053 (0.0008 - 0.0021)	
	Exhaust	0.030 - 0.063 (0.0012 - 0.0025)	
Valve guide clearance (Limit)	Intake	0.08 (0.003)	
	Exhaust	0.09 (0.004)	
Projection length (L)	Intake	10.1 - 10.3 (0.398 - 0.406)	
	Exhaust	10.0 - 10.4 (0.394 - 0.409)	

Valve Seat

Unit: mm (in)



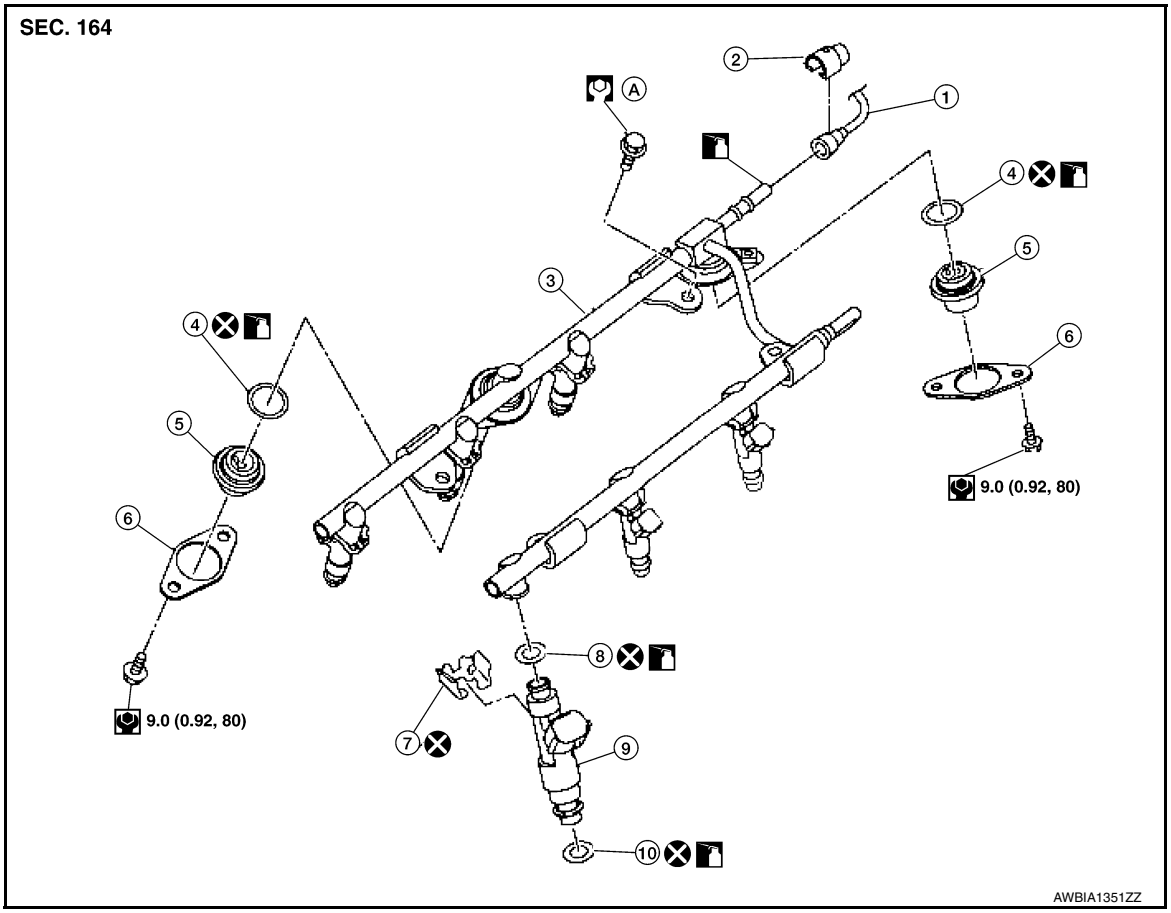
PBIC2745E

Description		Standard	Service
Cylinder head seat recess diameter (D)	Intake	36.500 - 36.516 (1.4370 - 1.4376)	37.000 - 37.016 (1.4567 - 1.4573)
	Exhaust	31.500 - 31.516 (1.2402 - 1.2408)	32.000 - 32.016 (1.2598 - 1.2605)
Valve seat interference fit	Intake	0.081 - 0.113 (0.0032 - 0.0044)	
	Exhaust	0.084 - 0.116 (0.0033 - 0.0046)	
Valve seat outer diameter (d)	Intake	36.597 - 36.613 (1.4408 - 1.4415)	37.097 - 37.113 (1.4605 - 1.4611)
	Exhaust	31.600 - 31.616 (1.2441 - 1.2447)	32.100 - 32.116 (1.2638 - 1.2644)
Diameter (d1)	Intake	33.5 (1.319)	
	Exhaust	28.0 (1.102)	
Diameter (d2)	Intake	34.8 - 35.3 (1.370 - 1.390)	
	Exhaust	29.6 - 30.1 (1.165 - 1.185)	

FUEL INJECTOR AND FUEL TUBE

Exploded View

INFOID:0000000009460554



1. Fuel feed hose	2. Quick connector cap	3. Fuel tube
4. O-ring	5. Fuel damper	6. Fuel damper cap
7. Clip	8. O-ring (black)	9. Fuel injector
10. O-ring (green)	A. Refer to INSTALLATION	

CAUTION:
- **Apply new engine oil when installing the parts as specified to do so.**
- **Do not remove or disassemble parts unless instructed as shown.**

Removal and Installation

INFOID:0000000009460555

REMOVAL

WARNING:
- **Put a "CAUTION: FLAMMABLE" sign in the workshop.**
- **Be sure to work in a well ventilated area and furnish workshop with a CO_2 fire extinguisher.**
- **Do not smoke while servicing fuel system. Keep open flames and sparks away from the work area.**
- **To avoid the danger of being scalded, do not drain engine coolant when engine is hot.**

1. Remove engine room cover. Refer to EM-143, "Removal and Installation".
2. Release the fuel pressure. Refer to EC-687, "Work Procedure".
3. Disconnect the battery negative terminal. Refer to PG-73, "Removal and Installation (Battery)".
4. Remove front wiper arm and cowl top extension. Refer to EXT-24, "Removal and Installation".
5. Remove strut tower bar. Refer to FSU-19, "Exploded View".

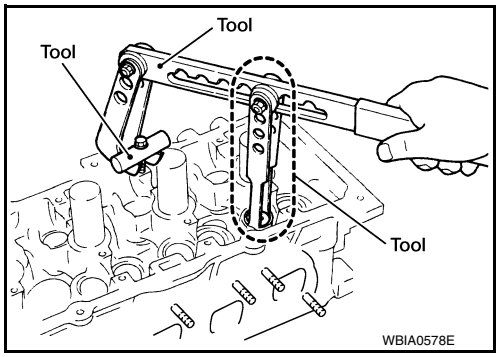
- **Attach tags to valve lifters so as not to mix them up.**

DISASSEMBLY

1. Remove spark plug.
2. Remove valve lifter.
   - Identify installation positions, and store them without mixing them up.
3. Remove valve collet.
   - Compress valve spring and remove valve collet with magnet hand using Tool.

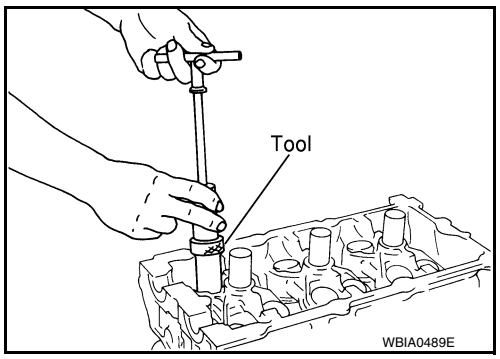
   CAUTION:
   When working, take care not to damage valve lifter holes.

   Tool numbers : KV10109230 (—)
   : KV10116200 (J-26336-A)
   : KV10115900 (J-26336-20)



4. Remove valve spring retainer, valve spring and valve spring seat.
5. Push valve stem to combustion chamber side, and remove valve.
   - Identify installation positions, and store them without mixing them up.
6. Remove valve oil seals using Tool.

   Tool number : KV10107902 (J-38959)



7. If valve seat must be replaced, refer to EM-212, "Inspection After Disassembly".
8. If valve guide must be replaced, refer to EM-212, "Inspection After Disassembly".
9. Remove spark plug tube, as necessary.
   - Using pair of pliers, pull spark plug tube out of cylinder head.

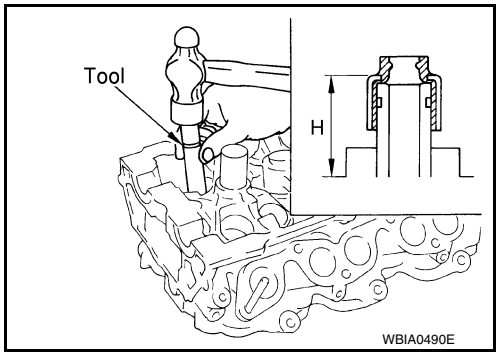
   CAUTION:
   - **Take care not to damage cylinder head.**
   - **Once removed, spark plug tube will be deformed and cannot be reused. Do not remove it unless absolutely necessary.**

ASSEMBLY

1. When valve guide is removed, install it. Refer to EM-212, "Inspection After Disassembly".
2. When valve seat is removed, install it. Refer to EM-212, "Inspection After Disassembly".
3. Install valve oil seals using Tool.

   Tool number : — (J-39386)

   Height (H) (Without valve spring seat installed)
   Intake and exhaust : 14.3 - 14.9 mm (0.563 - 0.587 in)



4. Install valve spring seat.
5. Install valves.
   - Install it in the original position.

   NOTE:
   Larger diameter valves are for intake side.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009951692

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

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

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

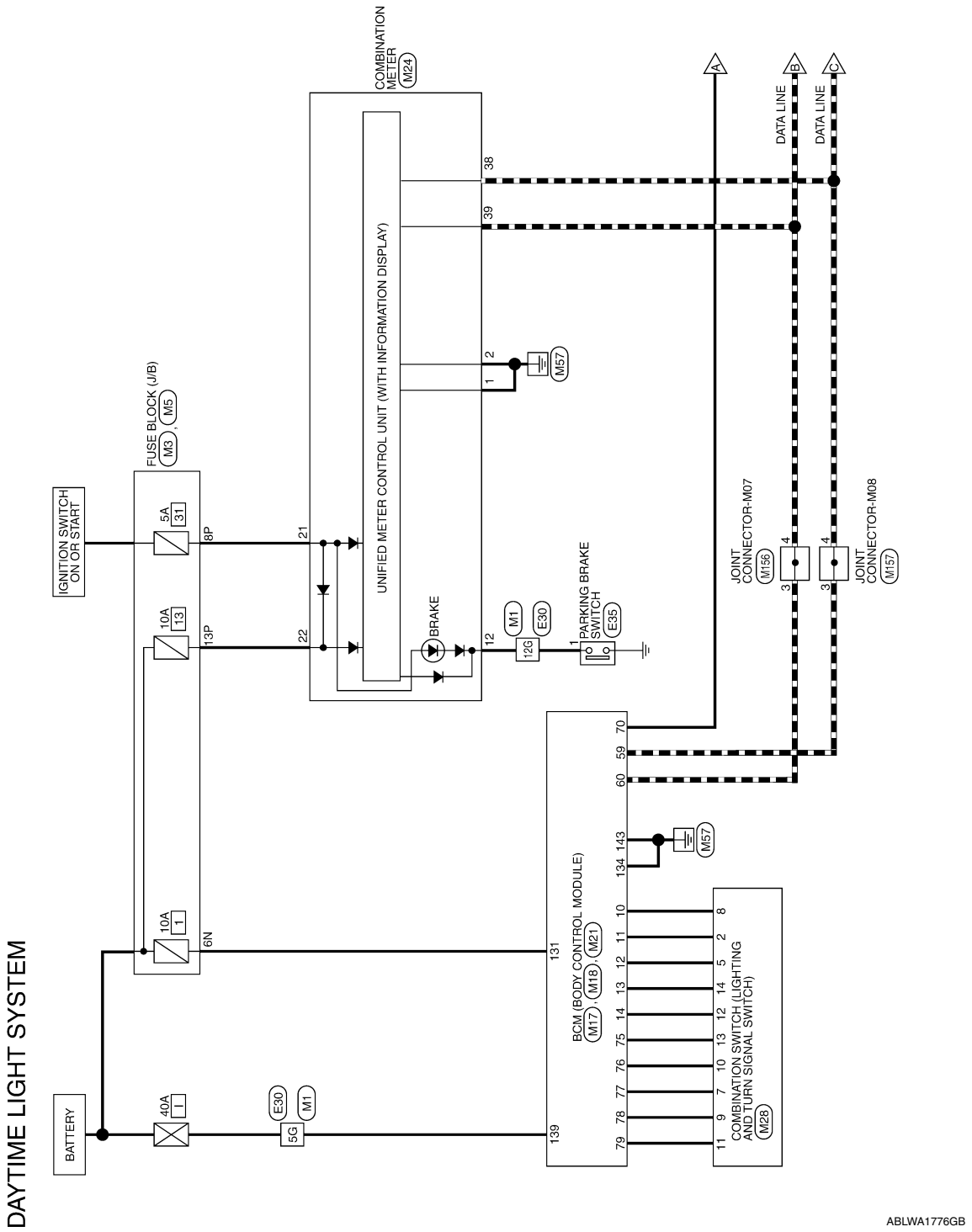
WARNING:

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

DAYTIME LIGHT SYSTEM

Wiring Diagram

INFOID:0000000009463567



>> GO TO 2

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3

3.BASIC INSPECTION

Check the operation of each part. Check that any concerns occur other than those mentioned in the customer interview.

>> GO TO 4

4.SELF-DIAGNOSIS WITH CONSULT

Perform the self diagnosis with CONSULT. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5
NO >> GO TO 6

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9

6.FAIL-SAFE ACTIVATION CHECK

Determine if the customer's concern is related to fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7
NO >> GO TO 8

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system in which the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

Perform the self diagnosis with CONSULT. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5
NO >> GO TO 11

11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

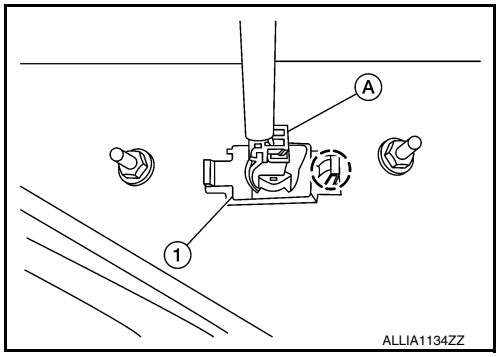
LICENSE PLATE LAMP

Removal and Installation

INFOID:0000000009463633

REMOVAL

1. Remove the license lamp finisher. Refer to EXT-37, "Removal and Installation".
2. Disconnect the harness connector (A) from the license plate lamp (1).
3. Release pawl and remove.
   ◌: Pawl



INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000009463634

WARNING:

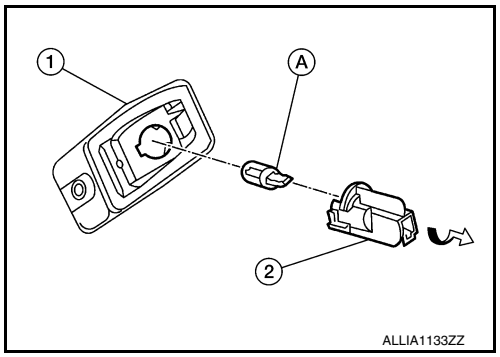
Do not touch bulb while it is lit or right after being turned off. Burning may result.

CAUTION:

- **Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.**

REMOVAL

1. Position trunk lid finisher (if equipped) aside. Refer to INT-33, "Exploded View".
2. Rotate license plate lamp bulb socket (2) counterclockwise and remove from license plate lamp (1).
3. Remove license plate lamp bulb (A) from license plate lamp bulb socket (2).



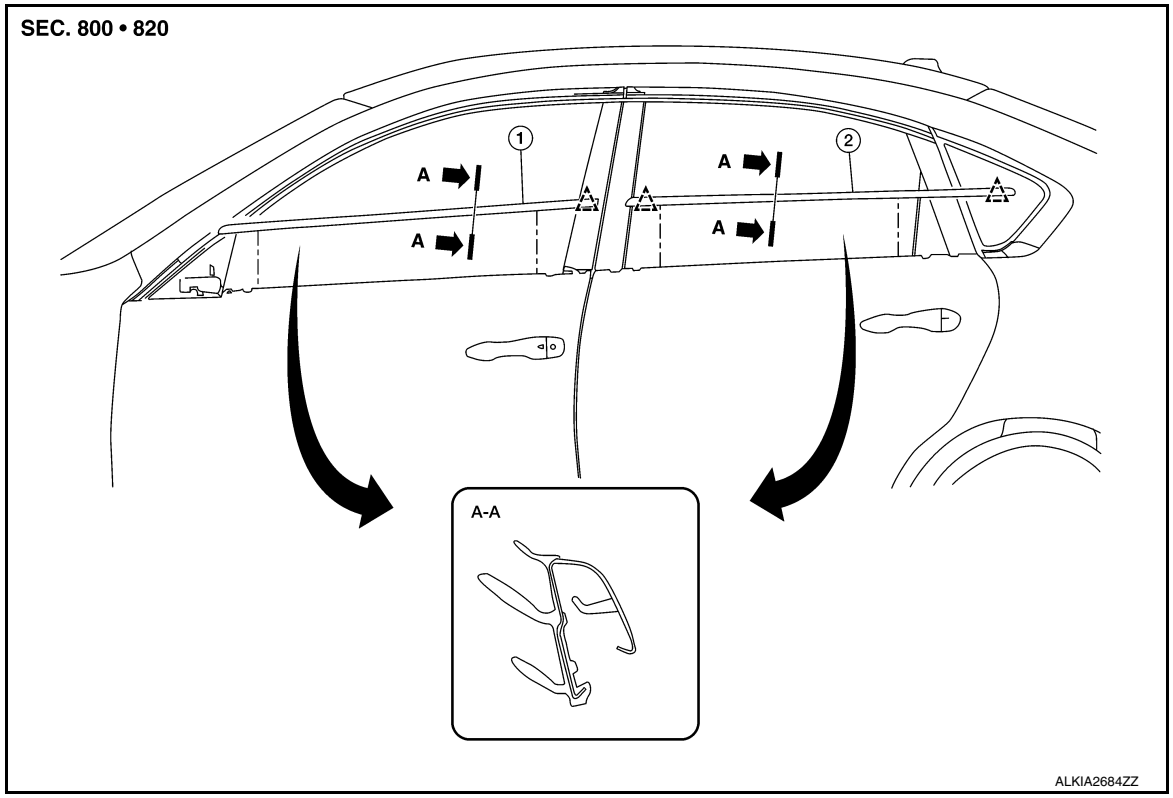
INSTALLATION

Installation is in the reverse order of removal.

DOOR OUTSIDE MOLDING

Exploded View

INFOID:0000000009461015



1. Front door outside molding
2. Rear door outside molding
Clips

Removal and Installation

INFOID:0000000009461016

FRONT DOOR OUTSIDE MOLDING

Removal

1. Remove the door mirror assembly. Refer to MIR-20, "Removal and Installation".
2. Lift and twist from rear side, disconnect clips from flange and pull the front door outside molding toward rear of the vehicle.

Installation

Installation is in the reverse order of removal.

REAR DOOR OUTSIDE MOLDING

Removal

Lift and twist from rear side, then disconnect clips from flange and pull the rear door outside molding out.

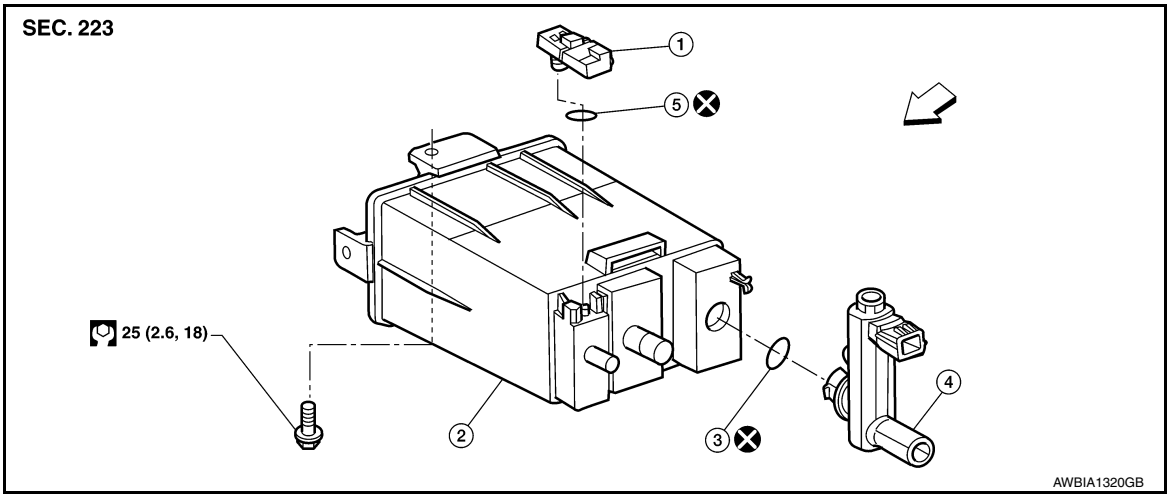
Installation

Installation is in the reverse order of removal.

EVAP CANISTER VENT CONTROL VALVE

Exploded View

INFOID:0000000009460613



1. EVAP control system pressure sensor
2. EVAP canister
3. O-ring
4. EVAP canister vent control valve
5. O-ring

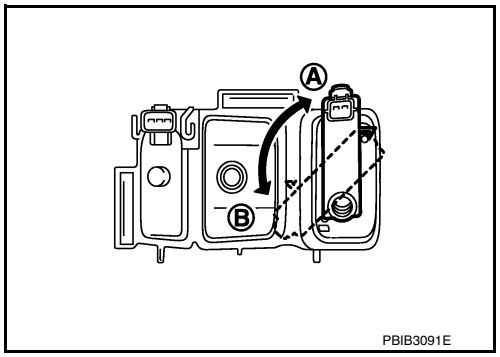
Removal and Installation

INFOID:0000000009460614

NOTE:
The EVAP canister vent control valve and EVAP canister system pressure sensor can be removed without removing the EVAP canister.

REMOVAL

1. Disconnect breather hose from EVAP canister.
2. Disconnect EVAP canister vent control valve.
3. Turn EVAP canister vent control valve counterclockwise.



(A) : Lock
(B) : Unlock

4. Remove the EVAP canister vent control valve and O-ring.
CAUTION:
Discard the O-ring. Do not reuse O-ring.

INSTALLATION

Installation is in the reverse order of removal.
CAUTION:
Do not reuse O-ring.

ABBREVIATION	DESCRIPTION
VIN	Vehicle identification number
VSS	Vehicle speed sensor

W

ABBREVIATION	DESCRIPTION
WOT	Wide open throttle

1

ABBREVIATION	DESCRIPTION
1_1	1st range first gear
1_2	1st range second gear
1GR	First gear

2

ABBREVIATION	DESCRIPTION
2_1	2nd range first gear
2_2	2nd range second gear
2GR	Second gear
2WD	2-wheel drive

3

ABBREVIATION	DESCRIPTION
3GR	Third gear

4

ABBREVIATION	DESCRIPTION
4GR	Fourth gear
4WAS	Four wheel active steer
4WD	Four wheel drive

5

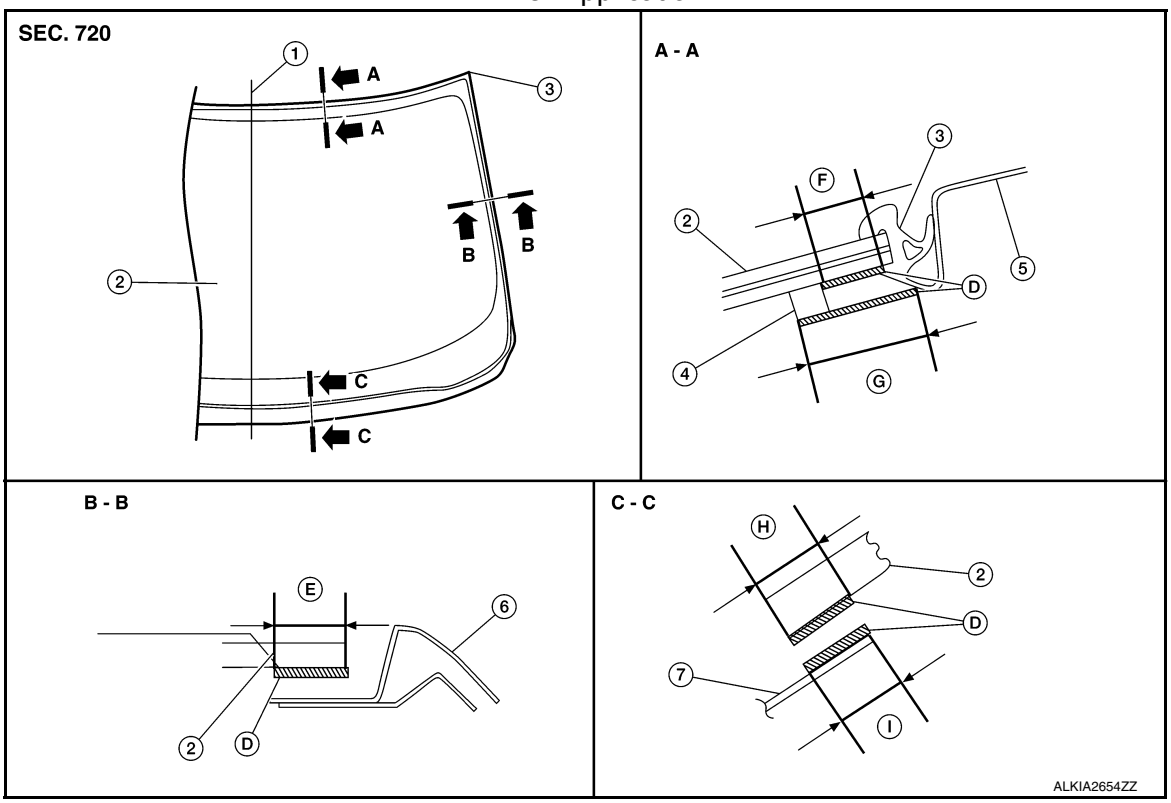
ABBREVIATION	DESCRIPTION
5GR	Fifth gear

6

ABBREVIATION	DESCRIPTION
6GR	Sixth gear

- **The vehicle should not be driven for at least 24 hours or until the urethane adhesive has completely cured. Curing time varies depending on temperature and humidity. The curing time will increase under lower temperature and lower humidity.**

Primer Application



1. Vehicle center
2. Windshield glass
3. Windshield glass upper molding
4. Spacer
5. Roof panel
6. Front pillar outer panel
7. Cowl top
D. Primer portion
E. 12.0 mm (0.5 in)
F. 9.5 mm (0.37 in)
G. 19.0 mm (0.7 in)
H. 25.0 mm (1.0 in)
I. 20.0 mm (0.8 in)

REPAIRING WATER LEAKS FOR WINDSHIELD

- Leaks can be repaired without removing and reinstalling glass.
- If water is leaking between the urethane adhesive material and body or glass, determine the extent of leakage.
- This can be done by applying water to the windshield area while pushing glass outward.
- To stop the leak, apply primer (if necessary) and then urethane adhesive to the leak point.

Installation is in the reverse order of removal.

CAUTION:

- **Do not reuse O-rings.**
- **Apply A/C oil to the new O-rings.**
- **After charging refrigerant, check for leaks. Refer to HA-21, "Leak Test".**

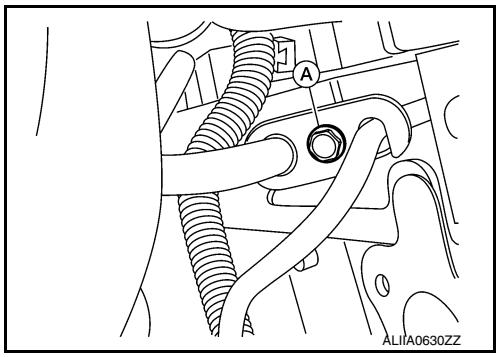
HIGH-PRESSURE FLEXIBLE HOSE

HIGH-PRESSURE FLEXIBLE HOSE : Removal and Installation

INFOID:0000000009463941

REMOVAL

1. Discharge the refrigerant. Refer to HA-23, "Recycle Refrigerant".
2. Remove the bolt (A) that retains the high-pressure flexible hose to the condenser pipe.
   CAUTION:
   Cap or wrap the joint of the hose with suitable material such as vinyl tape to avoid the entry of air.



3. Disconnect the high-pressure flexible hose from the compressor.
4. Remove the high-pressure flexible hose.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- **Do not reuse O-rings.**
- **Apply A/C oil to new O-rings.**
- **After charging refrigerant, check for leaks. Refer to HA-21, "Leak Test".**

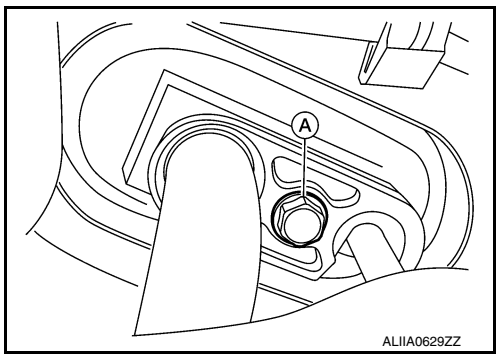
LOW-PRESSURE PIPE

LOW-PRESSURE PIPE : Removal and Installation

INFOID:0000000009463942

REMOVAL

1. Discharge the refrigerant. Refer to HA-23, "Recycle Refrigerant".
2. Drain the power steering fluid. Refer to ST-30, "Draining and Refilling".
3. Remove the bolt (A) that retains the low-pressure pipe to the expansion valve.
   CAUTION:
   Cap or wrap the joint of the pipe with suitable material such as vinyl tape to avoid the entry of air.



4. Remove the strut tower bar (VQ35DE only). Refer to FSU-19, "Exploded View".
5. Remove the high pressure piping upper and low pressure piping upper from the power steering pump assembly. Refer to ST-40, "Exploded View".

Connector No.	M155
Connector Name	JOINT CONNECTOR-M06
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	P	–
4	P	–

Connector No.	M156
Connector Name	JOINT CONNECTOR-M07
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	L	–
4	L	–

Connector No.	M157
Connector Name	JOINT CONNECTOR-M08
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	P	–
4	P	–

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
10	B	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
1M	BG	–

Connector No.	E10
Connector Name	ECM (QR25DE EXCEPT FOR CALIFORNIA)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
99	P	CAN-L
100	L	CAN-H
103	V	REFRIGERANT PRESSURE SENSOR
104	O	SENSOR POWER SUPPLY
124	SB	SENSOR GROUND

ABIIA1158GB

A/C SWITCH ASSEMBLY SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009463161

Regarding Wiring Diagram information, refer to HAC-34, "Wiring Diagram".

1.CHECK WITH SELF-DIAGNOSIS FUNCTION OF CONSULT

1. Using CONSULT, perform “SELF-DIAGNOSIS RESULTS” of HVAC.
2. Check if any DTC No. is displayed in the self-diagnosis results.

NOTE:
If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to HAC-55, "DTC Logic" or HAC-56, "DTC Logic".

Is any DTC No. displayed?

YES >> Perform diagnosis for the applicable DTC. Refer to HAC-31, "DTC Index".
NO >> GO TO 2.

2.CHECK TX (A/C SWITCH ASSEMBLY → A/C AUTO AMP.) CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect the A/C switch assembly and the A/C auto amp. connectors.
3. Check continuity between A/C switch assembly harness connector M79 terminal 10 and A/C auto amp. harness connector M152 terminal 24.

A/C switch assembly		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M79	10	M152	24	Yes

4. Check continuity between A/C switch assembly harness connector M79 terminal 10 and ground.

A/C switch assembly		—	Continuity
Connector	Terminal		
M79	10	Ground	No

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK RX (A/C AUTO AMP. → A/C SWITCH ASSEMBLY) CIRCUIT CONTINUITY

1. Check continuity between A/C switch assembly harness connector M79 terminal 9 and A/C auto amp. harness connector M152 terminal 4.

A/C switch assembly		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M79	9	M152	4	Yes

2. Check continuity between A/C switch assembly harness connector M79 terminal 9 and ground.

A/C switch assembly		—	Continuity
Connector	Terminal		
M79	9	Ground	No

Is the inspection result normal?

YES >> Perform trouble diagnosis for the A/C switch assembly. Refer to HAC-83, "A/C SWITCH ASSEMBLY : Diagnosis Procedure".
NO >> Repair harness or connector.

Terminal No.	Color of Wire	Signal Name
45	V	PD SENS SIG-E/R (WITH QR25DE)
45	P	PD SENS SIG-E/R (WITH VQ35DE)
47	O	PD SENS PWR-E/R (WITH QR25DE)
47	BG	PD SENS PWR-E/R (WITH VQ35DE)
48	SB	PD SENS GND-E/R
49	P	AMB SENS SIG-E/R
50	BG	AMB SENS GND-E/R

Connector No.	E63
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

Terminal No.	Color of Wire	Signal Name
28	P	CAN-L
29	L	CAN-H
41	B	GND (SIGNAL)
43	LG	IGN SIGNAL

Connector No.	E219
Connector Name	REFRIGERANT PRESSURE SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–
2	W	–
3	R	–

Connector No.	E211
Connector Name	AMBIENT SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	BG	–
2	R	–

Connector No.	E32
Connector Name	ECM (WITH VQ35DE)
Connector Color	GRAY

H.S.

128	124	120	116	112	108	104	100
127	123	119	115	111	107	103	99
126	122	118	114	110	106	102	98
125	121	117	113	109	105	101	97

Terminal No.	Color of Wire	Signal Name
113	P	CAN-L
114	L	CAN-H

Connector No.	E201
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97

Terminal No.	Color of Wire	Signal Name
82	W	PD SENS SIG-FEM
83	G	PD SENS PWR-FEM
86	R	PD SENS GND-FEM
87	BG	AMB SENS SIG-FEM
95	R	AMB SENS GND-FEM

ABIIA1167GB

System	Sub System	Direct Diagnostic Mode						
		Ecu Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN Diag Support Mntr
RAP system	RETAINED PWR			×				
Signal buffer system	SIGNAL BUFFER			×				
TPMS	AIR PRESSURE MONITOR		×	×	×	×		

INT LAMP

INT LAMP : CONSULT Function (BCM - INT LAMP)

INFOID:0000000009956798

CAUTION:
After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to "sleep mode", potentially causing a discharged battery and a no-start condition.

DATA MONITOR

Monitor Item [Unit]	Description
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.
PUSH -SW [On/Off]	Indicates condition of push-button ignition switch.
UNLK SEN -DR [On/Off]	Indicates condition of door unlock sensor.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
DOOR SW-BK [On/Off]	Indicates condition of trunk switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
TRNK/HAT MNTR [On/Off]	Indicates condition of trunk room lamp switch.
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.

ACTIVE TEST

Test Item	Description
INT LAMP	This test is able to check interior room lamp operation [On/Off].
STEP LAMP TEST	This test is able to check step lamp operation [On/Off].

WORK SUPPORT

NOTE:
The items listed below are the only applicable Work Support items for this vehicle. If other items are displayed on CONSULT, do not use or change the setting for these other items.

PUSH-BUTTON IGNITION SWITCH ILLUMINATION CIRCUIT

Description

INFOID:0000000009463891

Provides the power supply and the ground to control the push-button ignition switch illumination.

Component Function Check

INFOID:0000000009463892

1.CHECK PUSH-BUTTON IGNITION SWITCH ILLUMINATION OPERATION

CONSULT
1. Turn the ignition switch ON.
2. Select ENGINE SW ILLUMI of BCM (INTELLGENT KEY) active test item.
3. While operating the test item, check that the push-button ignition switch illumination turns ON/OFF

ON : Push-button ignition switch illumination ON
OFF : Push-button ignition switch illumination OFF

Is the inspection result normal?

YES >> Push-button ignition switch illumination circuit is normal.
NO >> Refer to INL-60, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009463893

Regarding Wiring Diagram information, refer to INL-33, "Wiring Diagram".

1.CHECK PUSH-BUTTON IGNITION SWITCH ILLUMINATION OPERATION

CONSULT
1. Turn the ignition switch ON.
2. Select ENGINE SW ILLUMI of BCM (INTELLIGENT KEY) active test item.
3. While operating the test item, check voltage between push-button ignition switch connector M38 terminal 5 and ground.

Terminals			Test item	Voltage
(+)		(-)		
Push-button ignition switch		Ground	ENGINE SW ILLUMI	
Connector	Terminal			
M38	5		ON	5 V
			OFF	0 V

Is the inspection result normal?

YES >> GO TO 4
NO >> GO TO 2

2.CHECK PUSH-BUTTON IGNITION SWITCH ILLUMINATION POWER SUPPLY OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector M18 and push-button ignition switch connector.
3. Check continuity between BCM connector M18 terminal 48 and push-button ignition switch connector M38 terminal 5.

BCM		Push-button ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
M18	48	M38	5	Yes

Is the inspection result normal?

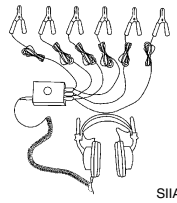
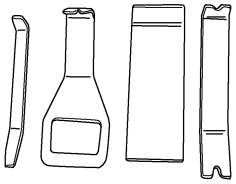
PREPARATION

PREPARATION

Special Service Tools

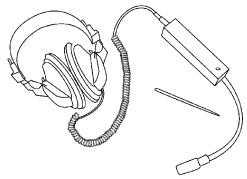
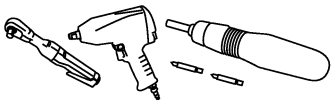
INFOID:0000000009461372

The actual shapes of the tools may differ from those illustrated here.

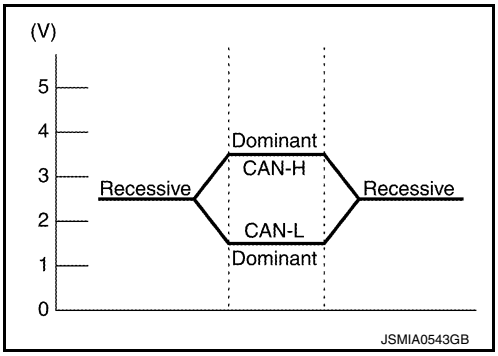
Tool number (TechMate No.) Tool name	Description
— (J-39570) Chassis Ear  SIIA0993E	Locating the noise
— (J-50397) NISSAN Squeak and Rattle Kit  ALJIA1232ZZ	Repairing the cause of noise
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

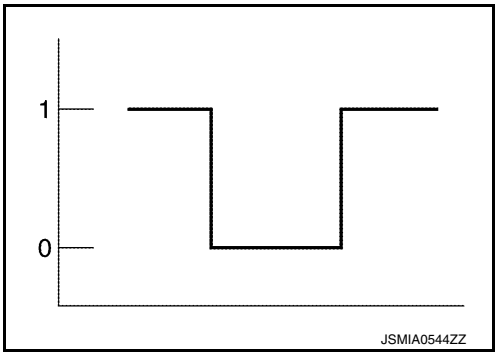
INFOID:0000000009461373

(TechMate No.) Tool name	Description
(J-39565) Engine Ear  SIIA0995E	Locating the noise
Power tool  PIIB1407E	Loosening nuts, screws and bolts

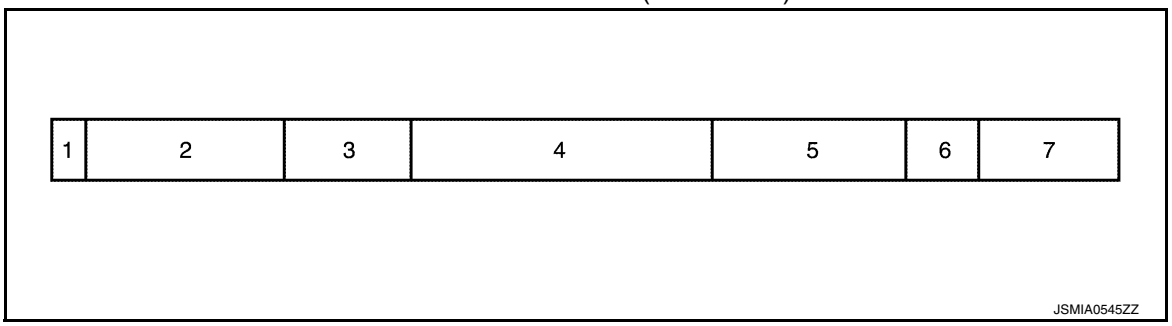
- The current flows separately into the termination circuits connected across the CAN communication system and the termination circuits drop voltage to generate a potential difference between the CAN-H line and the CAN-L line.
  NOTE:
  A signal with no current passage is called “Recessive” and one with current passage is called “Dominant”.



- The system produces digital signals for signal communications, by using the potential difference.



THE CONSTRUCTION OF CAN COMMUNICATION SIGNAL (MESSAGE)



No.	Message name	Description
1	Start of frame (1 bit)	Start of message.
2	Arbitration of field (11 bit)	Priorities of message-sending are shown when there is a possibility that multiple messages are sent at the same time.
3	Control field (6 bit)	Signal quantity in data field is shown.
4	Data field (0-64 bit)	Actual signal is shown.
5	CRC field (16 bit)	• The transmitting control unit calculates sending data in advance and writes the calculated value in a message. • The receiving control unit calculates received data and judges that the data reception is normal when the calculated value is the same as the value written in the sent data.
6	ACK field (2 bit)	The completion of normal reception is sent to the transmitting unit.
7	End of frame (7 bit)	End of message.

CAN Communication Line

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000009461450

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M18	60	59	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to BCS-74, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-80, "Removal and Installation".
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000009461495

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the combination meter for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	39	38	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-58, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-82, "Removal and Installation".
YES (Past error)>>Error was detected in the combination meter branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000009461540

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E63	29	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-31, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009951686

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

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

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

WARNING:

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

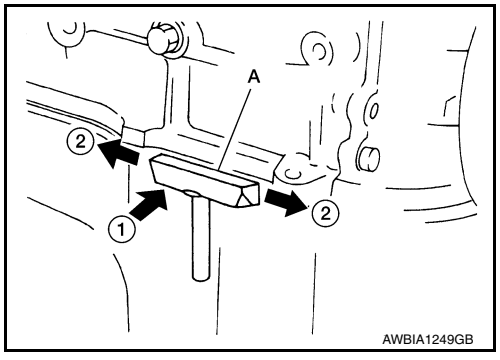
Precaution for Liquid Gasket

INFOID:0000000009461043

REMOVAL OF LIQUID GASKET

- After removing the bolts and nuts, separate the mating surface and remove the liquid gasket using Tool (A).

Tool Number (A): KV10111100 (J-37228)



CAUTION:

Be careful not to damage the mating surfaces.

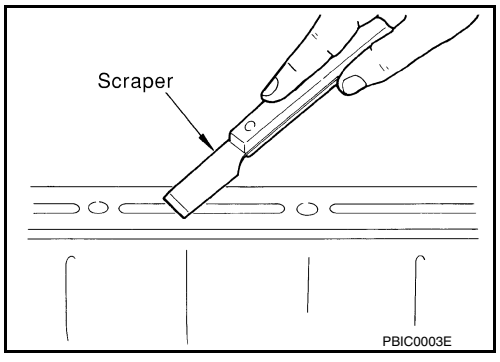
- In areas where the cutter is difficult to use, use a plastic hammer to lightly tap (1) the cutter where the liquid gasket is applied. Use a plastic hammer to slide (2) the cutter by tapping on the side.

CAUTION:

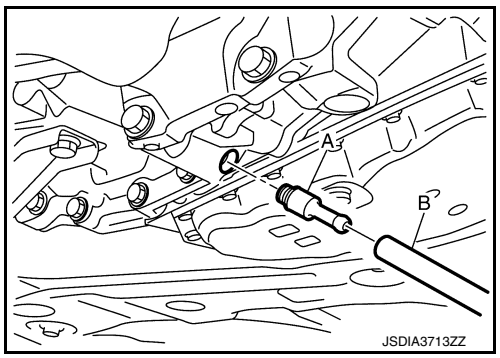
Do not damage the mating surfaces.

LIQUID GASKET APPLICATION PROCEDURE

1. Using a scraper, remove the old liquid gasket adhering to the gasket application surface and the mating surface.
   - Remove the liquid gasket completely from the groove of the gasket application surface, mounting bolts, and bolt holes.
2. Thoroughly clean the gasket application surface and the mating surface and remove adhering moisture, grease and foreign materials.
3. Attach the liquid gasket tube to the tube presser.
   Use Genuine Silicone RTV Sealant or equivalent. Refer to GI-21, "Recommended Chemical Products and Sealants".



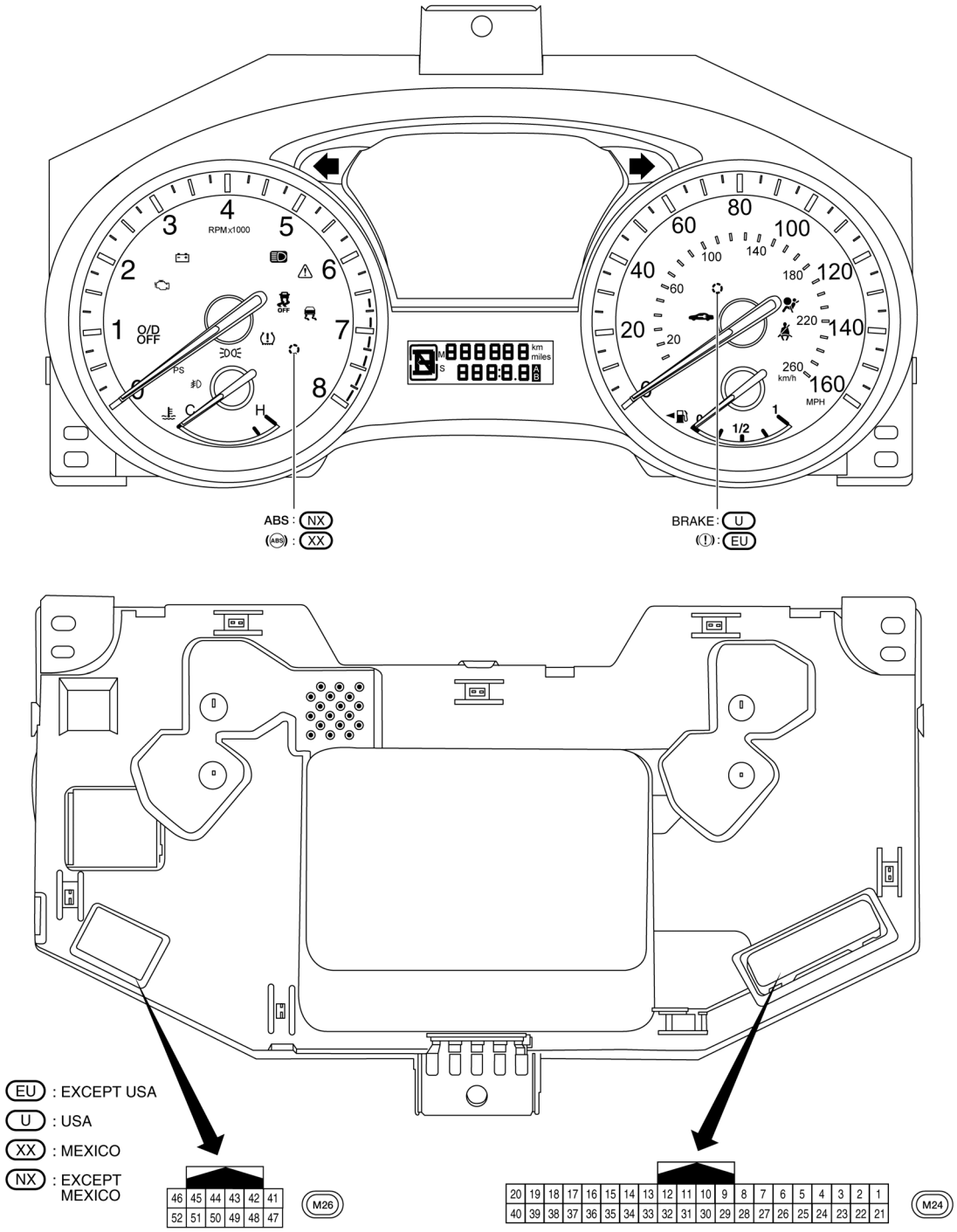
8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
9. Install the ATF changer hose (B) to the charging pipe.
CAUTION:
Press the ATF changer hose all the way onto the charging pipe until it stops.
10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 lmp qt) of the CVT fluid.
11. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.



12. Lift down the vehicle.
13. Start the engine.
14. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “DS”, and shift it to the “P” position.
NOTE:
Hold the lever at each position for 5 seconds.
15. Check that the CONSULT “Data Monitor” in “FLUID TEMP” is 35°C (95°F) to 45°C (113°F).
16. Stop the engine.
17. Lift up the vehicle.
18. Remove the drain plug, and then drain CVT fluid from oil pan.
19. Repeat steps 8 to 18 (one time).
20. Tighten the drain plug to the specified torque. Refer to TM-186, "Exploded View".
21. Remove the overflow plug.
22. Install the charging pipe set (KV311039S0) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
23. Install the ATF changer hose to the charging pipe.
CAUTION:
Press the ATF changer hose all the way onto the charging pipe until it stops.
24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 lmp qt) of the CVT fluid.
25. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.
26. Lift down the vehicle.
27. Start the engine.
28. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “DS”, and shift it to the “P” position.
NOTE:
Hold the lever at each position for 5 seconds.
29. Check that the CONSULT “Data Monitor” in “FLUID TEMP” is 35°C (95°F) to 45°C (113°F).
30. Lift up the vehicle.
31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.
CAUTION:
Perform this work with the vehicle idling.
NOTE:
If the CVT fluid is not drained, refer to “Adjustment” and refill with the CVT fluid.
32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to TM-186, "Exploded View".
CAUTION:
Do not reuse O-ring.
33. Lift down the vehicle.

METER SYSTEM : Arrangement of Combination Meter

INFOID:0000000009461673



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METER SYSTEM : Fail-Safe

INFOID:0000000009461674

FAIL-SAFE

The combination meter activates the fail-safe control if CAN communication with each unit is malfunctioning.

POWER SUPPLY AND GROUND CIRCUIT
COMBINATION METER
COMBINATION METER : Diagnosis Procedure

INFOID:0000000009461715

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK FUSES

Check that the following fuses are not blown.

Unit	Power source	Fuse No.
Combination meter	Battery	13
		25
	Ignition switch ON or START	31

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

2.POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector M24 terminals 5, 21, 22 and ground.

Terminals			Ignition switch position			
(+)		(–)	OFF	ACC	ON	START
Connector	Terminal					
M24	22	Ground	Battery voltage	Battery voltage	Battery voltage	Battery voltage
	21		0V	0V	Battery voltage	Battery voltage
	5		0V	Battery voltage	Battery voltage	0V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between combination meter harness connector M24 terminals 1, 2 and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M24	1	Ground	Yes
	2		

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

BCM (BODY CONTROL MODULE)
BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000009940932

Regarding Wiring Diagram information, refer to BCS-55, "Wiring Diagram".

ECU DIAGNOSIS INFORMATION

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

INFOID:0000000009461603

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1, 2, 3, 4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		• Front fog lamp switch ON • Daytime running light activated (Only for Canada models)	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		On
INTER/NP SW	Ignition switch ON	CVT selector lever in any position other than P or N	Off
		CVT selector lever in P or N position	On
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On

B2614 ACC RELAY CIRCUIT

DTC Logic

INFOID:0000000009461638

DTC DETECTION LOGIC

CONSULT Display	DTC detecting condition	Possible cause
ACC RELAY CIRCUIT [B2614]	An immediate operation of accessory relay-1 and accessory relay-2 is requested by BCM, but there is no response for more than 1 second.	• Harness or connectors • Accessory relay-1 • Accessory relay-2 • Fuse block J/B • BCM

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF DIAGNOSTIC RESULT

1. Turn the power supply position to ACC under the following conditions, and wait for at least 1 second.
- CVT selector lever is in the P (park) or N (neutral) position.
- Release the brake pedal.
2. Perform self diagnostic result.

Is DTC B2614 detected?

YES >> Refer to PCS-60, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000009461639

Regarding Wiring Diagram information, refer to PCS-44, "Wiring Diagram".

1. CHECK ACCESSORY RELAY-1 AND ACCESSORY RELAY-2 POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect accessory relay-1 and accessory relay-2.
3. Disconnect BCM connector M20.
4. Check continuity between accessory relay-1 connector J-3 terminal 2 and BCM connector M20 terminal 113.

Accessory relay-1		BCM		Continuity
Connector	Terminal	Connector	Terminal	
J-3	2	M20	113	Yes

5. Check continuity between accessory relay-2 connector M25 terminal 1 and BCM connector M20 terminal 113.

Accessory relay-2		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M25	1	M20	113	Yes

6. Check continuity between BCM connector M20 terminal 113 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	113	—	No

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

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

H.S.

7	8		9	10	11
12	13	14	15	16	17	18

Terminal No.	Color of Wire	Signal Name
7	B	GND (POWER)
11	Y	FR WIPER LO
15	R	FUEL PUMP
18	L	FR WIPER HI

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

H.S.

6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	L	–
5	L	–

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

H.S.

6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	P	–
5	P	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
5G	P	–
22G	L	–
23G	P	–

Connector No.	E62
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	BLACK

H.S.

5

Terminal No.	Color of Wire	Signal Name
5	W	–

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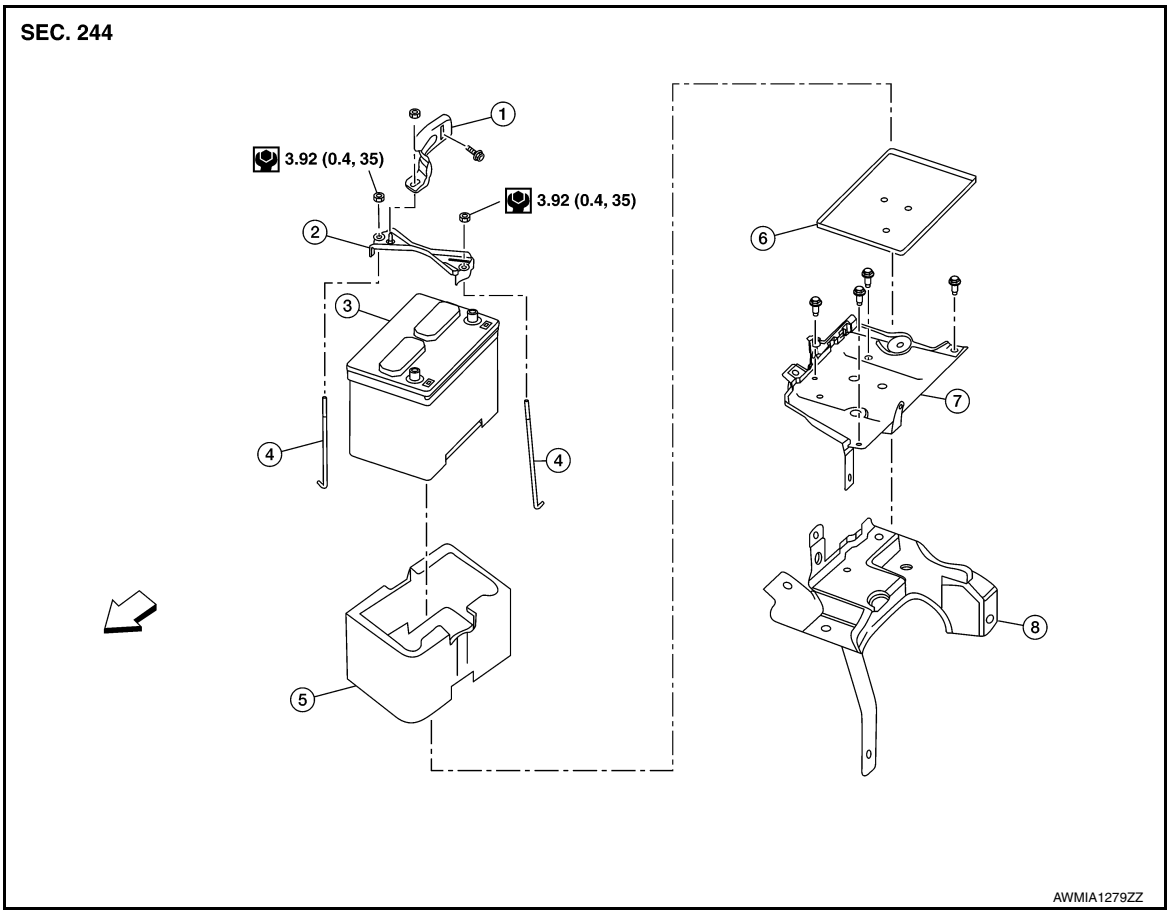
REMOVAL AND INSTALLATION

BATTERY

Exploded View

INFOID:0000000009460448



1. Upper ECM bracket	2. Battery frame	3. Battery
4. Battery rods	5. Battery tray cover	6. Battery tray liner
7. Battery tray	8. Battery tray support	⇦ Front

Removal and Installation (Battery)

INFOID:0000000009460449

REMOVAL

1. Remove cover of battery positive terminal.
2. Loosen battery terminal nuts and disconnect both positive and negative battery terminals.
   CAUTION:
   Disconnect the negative battery terminal first.
3. Remove battery frame nuts, battery frame and battery rods.
4. Remove battery cover.
5. Remove battery.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:
Connect the positive battery terminal first.

Battery terminal nut : 5.4 N·m (0.55 kg-m, 48 in-lb)

Rear power window switch RH connector	Terminal	Rear power window motor RH connector	Terminal	Continuity
D303	5	D304	1	Yes
	6		3	

4. Check continuity between rear power window switch RH connector D303 and ground.

Rear power window switch RH connector	Terminal	Ground	Continuity
D303	5		No
	6		

Is the inspection result normal?

YES >> Check rear power window switch RH. Refer to PWC-46, "REAR RH : Component Inspection".
NO >> Repair or replace harness or connectors.

3. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.
Refer to PWC-46, "REAR RH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> Replace rear power window motor RH. Refer to GW-25, "Removal and Installation".

REAR RH : Component Inspection

INFOID:0000000009460864

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW MOTOR RH

Check motor operation by connecting the battery voltage directly to rear power window motor RH D304.

Terminal		Motor condition
(+)	(–)	
3	1	DOWN
1	3	UP

Is the inspection result normal?

YES >> Power window motor is OK.
NO >> Replace rear power window motor RH. Refer to GW-25, "Removal and Installation".

1. Disconnect battery minus terminal or power window main switch connector. Reconnect it after a minute or more.
2. Turn ignition switch ON.
3. Operate power window switch to fully open the window. (This operation is unnecessary if the window is already fully open)
4. Continue pulling the power window switch UP (AUTO-UP operation). Even after glass stops at fully closed position, keep pulling the switch for 4 seconds or more.
5. Inspect anti-pinch function.

CHECK ANTI-PINCH FUNCTION

1. Fully open the door window.
2. Place a piece of wood near fully closed position.
3. Close door glass completely with AUTO-UP.

- Check that glass lowers for approximately 150 mm (5.91 in.) or 2 seconds without pinching piece of wood and stops.
- Check that glass does not rise when operating the power window main switch while lowering.

CAUTION:

- **Do not check with hands and other part of body because they may be pinched. Do not get pinched.**
- **Check that AUTO-UP operates before inspection when system initialization is performed.**
- **It may switch to fail-safe mode if open/close operation is performed continuously. Perform initial setting in that situation. Refer to PWC-79, "Fail Safe".**
- **Perform initial setting when auto-up operation or anti-pinch function does not operate normally.**
- **Finish initial setting. Otherwise, next operation cannot be done.**

1. **Auto-up operation**
2. **Anti-pinch function**
3. **Retained power operation when ignition switch is OFF.**

REMOVAL AND INSTALLATION

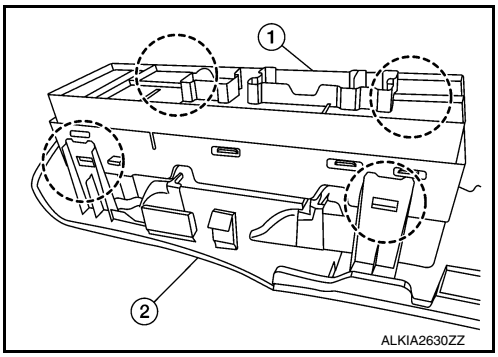
MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Removal and Installation

INFOID:0000000009460982

REMOVAL

1. Remove the front door pull handle outer finisher using a suitable tool.
2. Release the pawls using a suitable tool and lift the main power window and door lock/unlock switch and finisher as an assembly by starting at the rear, then pull upward and remove.
3. Disconnect the harness connector from the main power window and door lock/unlock switch.
4. Release the four pawls (two on each side) using a suitable tool, then separate the main power window and door lock/unlock switch (1) from the main power window and door lock switch finisher (2).
   ◌: Pawl
   CAUTION:
   Do not bend back the pawls on the switch finisher too far or breakage may occur.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

When the main power window and door lock/unlock switch is disconnected from the harness connector it is necessary to perform the initialization procedure. Refer to PWC-27, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

MOONROOF DOES NOT OPERATE ANTI-PINCH FUNCTION

Diagnosis Procedure

INFOID:0000000009461318

1. PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> Inspection End.
NO >> Perform basic inspection. Refer to RF-18, "Work Flow".

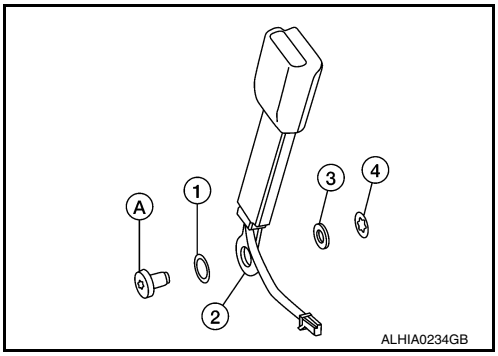
2. For driver side, disconnect the harness connector from seat belt buckle.
3. Remove the seat belt buckle anchor bolt, then remove the seat belt buckle.

Installation

Installation is in the reverse order of removal.

- During installation, make sure the seat belt buckle anchor bolt (A) is inserted through the components in the following order:

1.	Wave washer
2.	Seat belt buckle
3.	Spacer
4.	Star washer



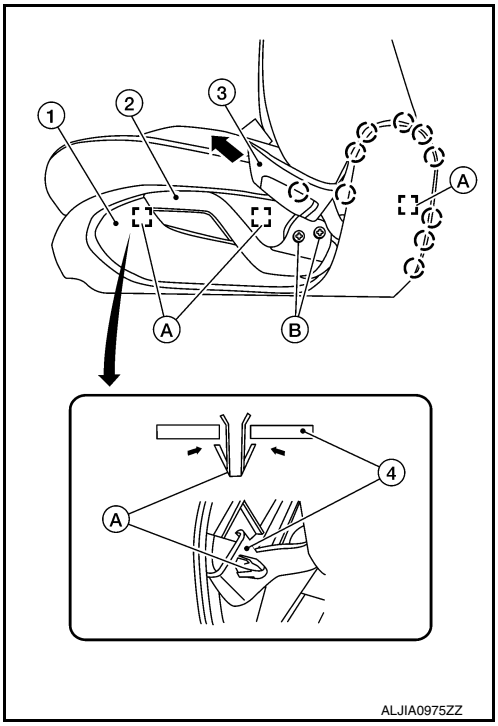
b. For manual seat:

i. Release pawl and remove recline lever (3) as shown.

ii. Remove two screws (B) and remove the lift lever (2).

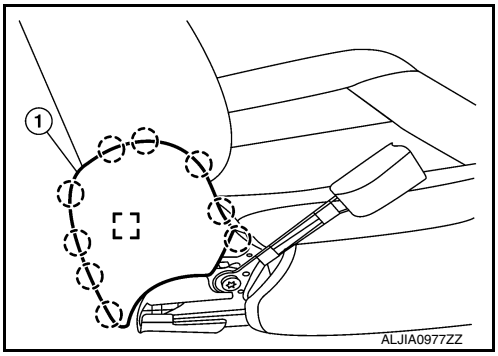
iii. Release metal clips (A) from the seat frame assembly (4) as shown.
: Metal clip

iv. Release the remaining pawls then remove the seat cushion outer finisher (LH) (1).
: Pawl



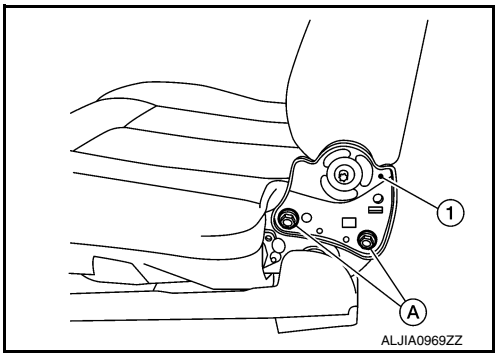
11. Remove the seat cushion outer finisher (RH) (1).

a. Release pawls then pull to release the metal clip.
: Metal clip
: Pawl



12. Remove the seat cushion inner finisher front (LH/RH) and seat cushion inner finisher rear (LH/RH).

13. Remove bolts (A) on both sides of seatback assembly (1) and remove the seatback assembly (1).



14. Remove the seatback pad from the seatback frame.

Power supply position	Engine start/stop condition		Push-button ignition switch operation frequency
	Selector lever	Brake pedal operation condition	
LOCK → START ACC → START ON → START	P (Park) or N (Neutral) position	Depressed	1
Engine is running → OFF	—	—	1

Vehicle speed: 4 km/h (2.5 MPH) or more

Power supply position	Engine start/stop condition		Push-button ignition switch operation frequency
	Selector lever	Brake pedal operation condition	
Engine is running → ACC	—	—	Emergency stop operation
Engine stall return operation while driving	N (Neutral) position	Not depressed	1

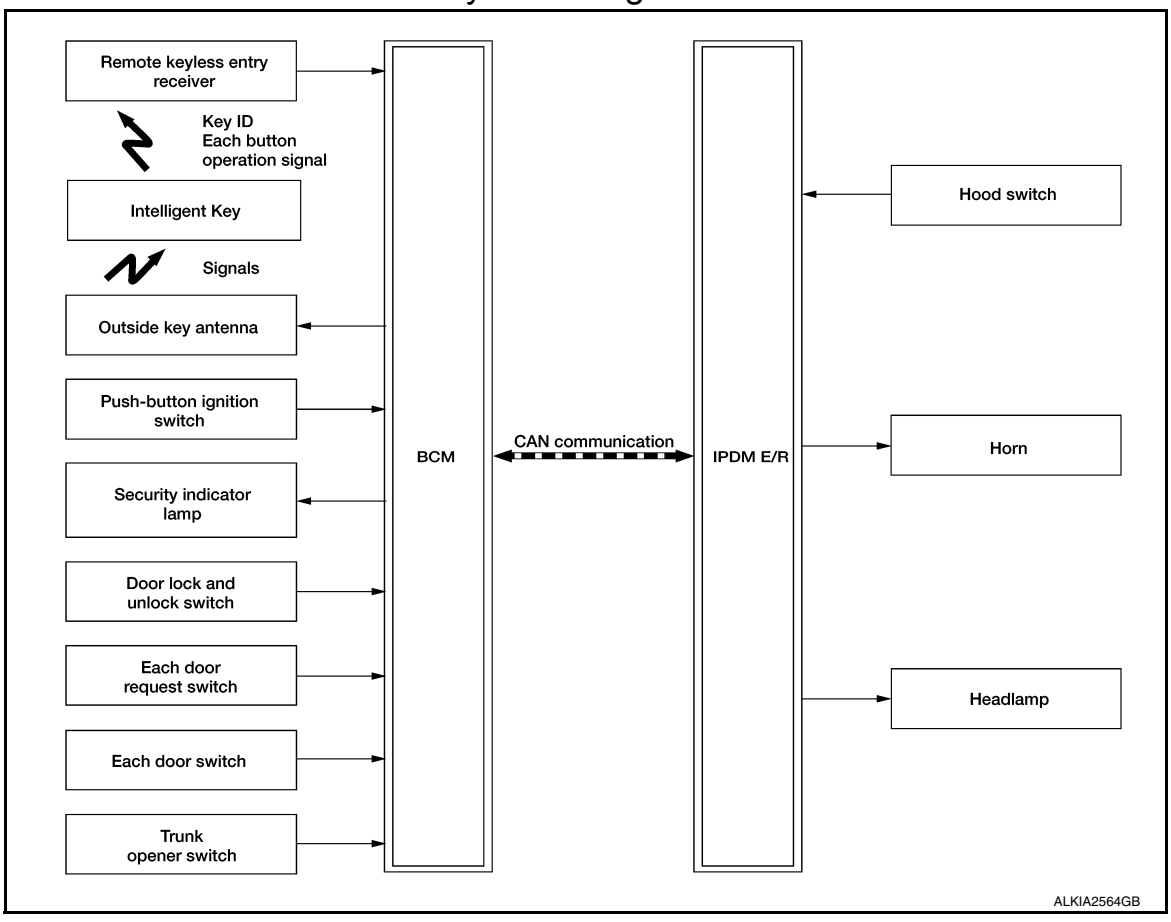
Emergency stop operation

- Press and hold the push-button ignition switch for 2 seconds or more.
- Press the push-button ignition switch 3 times or more within 1.5 seconds.

VEHICLE SECURITY SYSTEM

VEHICLE SECURITY SYSTEM : System Diagram

INFOID:0000000009461090



VEHICLE SECURITY SYSTEM : System Description

INFOID:0000000009461091

- The vehicle security system has two alarm functions (theft warning alarm and panic alarm) and reduces the possibility of a theft or mischief by activating horns and headlamps intermittently.

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to BCS-50, "DTC Inspection Priority Chart" and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-43, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

5. Check continuity between transmission range switch harness connector and ground.

Transmission Range Switch		Ground	Continuity
Connector	Terminal		
F85	2		No

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

6.CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

>> Inspection End.

7.CHECK CVT SHIFT SELECTOR RANGE SWITCH FUNCTION (METER)

1. Turn ignition switch ON.
2. Select “SHIFT IND" in DATA MONITOR mode (METER) with CONSULT.
3. Check “SHIFT IND" indication under the following conditions.

Monitor item	Condition		Indication
SHIFT IND	CVT Shift selector	P (Park) position	P
		N (Neutral) position	N

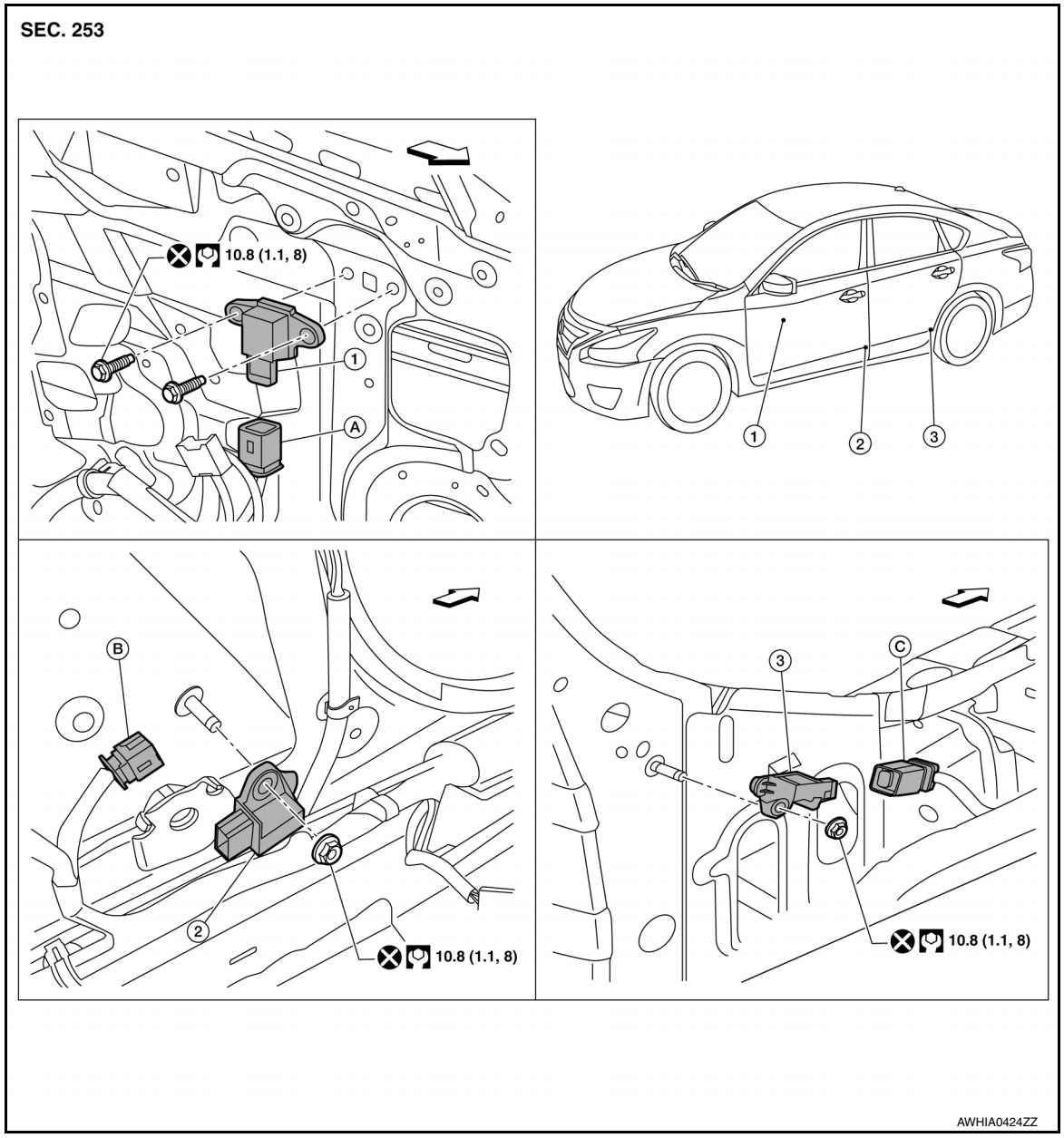
Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to TM-101, "Component Inspection".

SIDE AIR BAG (SATELLITE) SENSOR

Exploded View

INFOID:0000000009463078



1. Front door (satellite) sensor
2. Front side air bag (satellite) sensor
3. Rear side air bag (satellite) sensor
A. Front door (satellite) sensor harness connector
B. Front side air bag (satellite) sensor harness connector
C. Rear side air bag (satellite) sensor harness connector

⇦ Front

Removal and Installation

INFOID:0000000009463079

WARNING:

- **Before servicing the SRS, turn ignition switch OFF, disconnect both battery terminals and wait at least three minutes.**
- **Do not use air tools or electric tools for servicing.**

FRONT DOOR (SATELLITE) SENSOR (LH/RH)

Removal

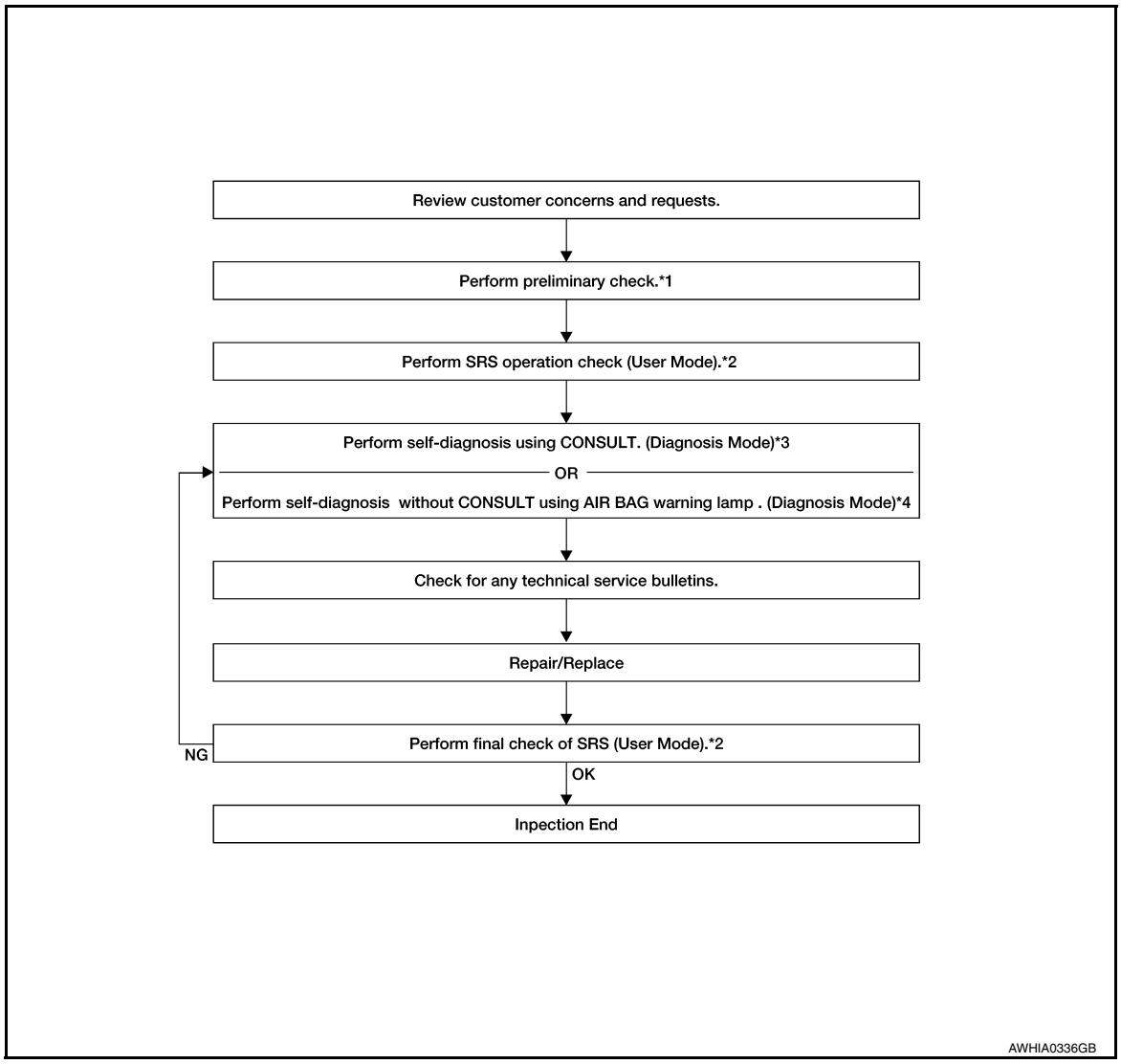
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009460734

OVERALL SEQUENCE



*1 SRC-15, "Diagnosis Description" *2 SRC-15, "SRS Operation Check" *3 SRC-16, "Trouble Diagnosis with CONSULT"

*4 SRC-17, "Trouble Diagnosis without CONSULT"

DETAILED WORK FLOW

1.CUSTOMER INFORMATION

Get detailed information from the customer about the symptom.

>> GO TO 2

2.PRELIMINARY CHECK

Perform preliminary check. Refer to SRC-15, "Diagnosis Description".

SRS will not enter diagnosis mode if no malfunction is detected in user mode.

Is the DTC detected?

YES >> Refer to SRC-88, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000009460785

NOTE:
Follow the procedures in numerical order when repairing malfunctioning parts. Confirm whether malfunction is eliminated using air bag warning lamp each time repair is finished. If malfunction is still observed, proceed to the next step. When malfunction is eliminated, further repair work is not required.

1. HARNESS CONNECTOR

Visually inspect all applicable harness connectors for the following:
- Visible damage to connector or terminal
- Loose terminal
- Poor connection

NOTE:
All harness connectors should be inspected from the air bag diagnosis unit to the end component (including any in-line connectors).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Perform one of the following repairs:
- Visible damage: Replace the harness.
- Loose terminal: Secure the terminal.
- Poor connection: Secure the connection.

2. CONFIRM DTC

1. Reconnect all harness connectors.
2. Turn ignition switch ON.
3. Check for DTC using CONSULT.

Is DTC still current?

YES >> GO TO 3
NO >> Refer to GI-43, "Intermittent Incident".

3. WIRING HARNESS

Check the wiring harness for visible damage[NOTE].

NOTE:
The entire wiring harness should be inspected from the air bag diagnosis sensor unit to the end component (including any in-line connectors).

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the harness.

4. CONFIRM DTC

1. Reconnect all harness connectors.
2. Turn ignition switch ON.
3. Check for DTC using CONSULT.

Is DTC still current?

YES >> GO TO 5.
NO >> Refer to GI-43, "Intermittent Incident".

5. AIR BAG DIAGNOSIS SENSOR UNIT

1. Replace the air bag diagnosis sensor unit. Refer to SR-26, "Removal and Installation".
2. Turn ignition switch ON.
3. Check for DTC using CONSULT.

Is DTC still current?

HEATED STEERING WHEEL SWITCH INDICATOR LAMP

Component Function Check

INFOID:0000000009461262

1.CHECK HEATED STEERING WHEEL SWITCH INDICATOR LAMP

1. Turn ignition switch ON.
2. Turn heated steering wheel switch ON. Observe indicator.
3. Turn heated steering wheel switch OFF. Observe indicator.

Does heated steering wheel switch indicator lamp turn ON and then OFF?

YES >> Inspection End.
NO >> Go to ST-26, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009461263

1.CHECK POWER CIRCUIT

1. Turn ignition switch OFF.
2. Remove the heated steering wheel switch.
3. Turn ignition switch ON.
4. Check voltage between heated steering wheel switch harness connector M51.

Connector	Terminal		Voltage (Approx.)
	+	-	
M51	1	2	Battery voltage

Is the inspection result normal?

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

2.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect heated steering wheel switch connector.
3. Check continuity between heated steering wheel switch harness connector terminal M51 and ground.

Connector	Terminal	Ground	Continuity
M51	6		Yes

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the harness or connectors.

3.CHECK HARNESS BETWEEN HEATED STEERING RELAY AND HEATED STEERING WHEEL SWITCH

1. Disconnect heated steering relay connector.
2. Check continuity between heated steering relay harness connector terminal M90 and heated steering wheel switch harness connector M51.

Heated steering relay		Heated steering wheel switch		Continuity
Connector	Terminal	Connector	Terminal	
M90	5	M51	5	Yes

3. Check continuity between heated steering relay harness connector M90 and ground.

Connector	Terminal	Ground	Continuity
M90	5		No

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connectors.

C1602 NO TUNING SET

DTC Logic

INFOID:0000000009460360

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
C1602	NO TUNING SET	Configration is not finished.	• Harness or connector • Power steering control module

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

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

>> GO TO 2.

2.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “EPS” self-diagnosis.

Is DTC “C1602” detected?

YES >> Proceed to diagnosis procedure. Refer to STC-26, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000009460361

1.PERFORM SELF-DIAGNOSIS

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Erase self-diagnostic results for “EPS”.
3. Turn the ignition switch OFF and wait for at least 10 seconds.
4. Perform self-diagnosis for “EPS”.

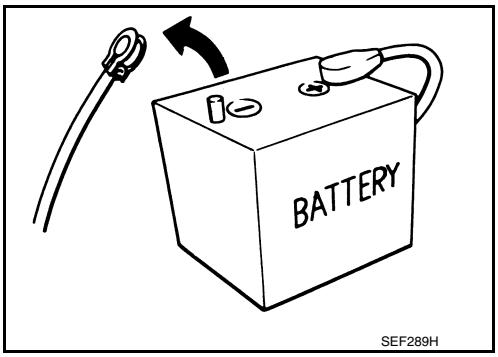
Is DTC “C1602” detected?

YES >> Power steering motor is malfunctioning. Replace power steering oil pump assembly. Refer to ST-38, "Removal and Installation".
NO >> Check pin terminal and connection of each harness connector for malfunctioning conditions.

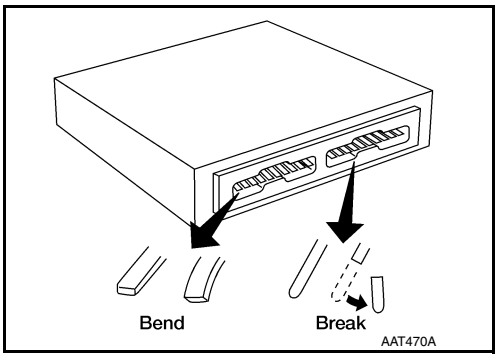
General Precautions

INFOID:0000000009463957

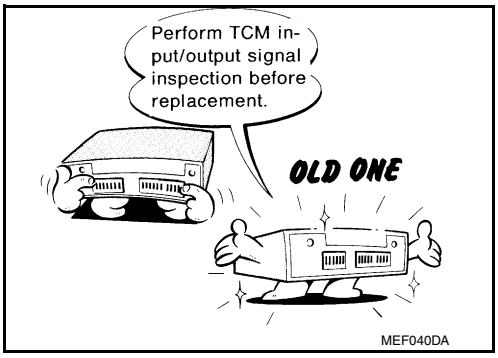
- **Turn ignition switch OFF and disconnect the battery cable from the negative terminal before connecting or disconnecting the CVT assembly harness connector. Because battery voltage is applied to TCM even if ignition switch is turned OFF.**



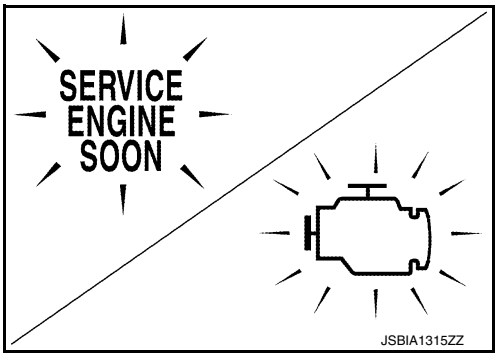
- **When connecting or disconnecting pin connectors into or from TCM, do not damage pin terminals (bend or break).**
  Check that there are not any bends or breaks on TCM pin terminal, when connecting pin connectors.



- **Perform TCM input/output signal inspection and check whether TCM functions normally or not before replacing TCM. Refer to TM-49, "Reference Value".**



- **Perform "DTC (Diagnostic Trouble Code) CONFIRMATION PROCEDURE".**
  If the repair is completed DTC should not be displayed in the "DTC CONFIRMATION PROCEDURE".



- Always use the specified brand of CVT fluid. Refer to MA-11, "FOR USA AND CANADA : Fluids and Lubricants".
- Use lint-free paper not cloth rags during work.
- Dispose of the waste oil using the methods prescribed by law, ordinance, etc. after replacing the CVT fluid.

DTC	Vehicle behavior	Conditions of vehicle
P0890	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed • Vehicle speed is not increased	
P0962	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0963	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0965	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	When a malfunction occurs on the low oil pressure side
	• Selector shock is large • Lock-up is not performed	When a malfunction occurs on the high oil pressure side
P0966	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0967	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P2765	• Start is slow • Acceleration is slow • Lock-up is not performed	—
P2813	• Selector shock is large • Start is slow • Acceleration is slow • Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side
	• Selector shock is large	When a malfunction occurs on the high oil pressure side
P2814	• Selector shock is large	—
P2815	• Selector shock is large	—
U0073	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
U0100	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
U0140	• Not changed from normal driving	—
U0141	• Not changed from normal driving	—
U0155	• Not changed from normal driving	—
U0300	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
U1000	• Not changed from normal driving	—
U1117	• Not changed from normal driving	—

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Logic

INFOID:0000000009464045

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible causes
P0711	FLUID TEMP SENSOR A (Transmission Fluid Temperature Sensor A Circuit Range/ Performance)	When any of 1 or 2 is satisfied: 1. Under the following diagnosis conditions, CVT fluid temperature does not rise to 10°C (50°F) after driving for a certain period of time with the TCM-received fluid temperature sensor value between – 40°C (–40°F) and 9°C (48.2°F). - TCM power supply voltage: More than 11 V - CAN communication is normal - Engine speed: 450 rpm or more - Accelerator pedal position: 3 deg. or more - Vehicle speed: 10 km/h (7 MPH) or more - U0100, P0705 and P0706 are not detected. - Selector lever: “D” position 2. When the condition of the final judgment is satisfied after satisfying that of the provisional judgment: - Provisional judgment: All of the following conditions are satisfied within 2 seconds after the ignition switch is turned ON. • U0073, U0100, P0712 and P0713 are not detected. • CAN communication is normal. • TCM power supply voltage: More than 11 V • The difference between CVT fluid temperature and engine coolant temperature is 55°C (131°F) or more, or –27°C (–16°F) or less. - Final judgment: When all of the following conditions are satisfied and this state is maintained for 300 seconds: • ECM is normal. • Provisional judgment is satisfied.	CVT fluid temperature sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1.PREPARATION BEFORE WORK

If another "DTC CONFIRMATION PROCEDURE" occurs just before, turn ignition switch OFF and wait for atleast 10 seconds, then perform the next test.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch OFF and cool the engine.
2. Turn ignition switch ON.
   CAUTION:
   Never start the engine.
3. Select “Data Monitor” in “TRANSMISSION”.
4. Select “FLUID TEMP”.
5. Record CVT fluid temperature.
6. Start the engine and wait for at least 2 minutes.
7. Drive the vehicle for the total minutes specified in the Driving time column below with the following conditions satisfied.

NO >> GO TO 3.

3. CHECK CIRCUIT BETWEEN CVT UNIT AND CONTROL VALVE

1. Disconnect control valve connector. Refer to TM-187, "Removal and Installation".
2. Check continuity between CVT unit harness connector terminal and control valve harness connector terminal.

CVT unit		Control valve		Continuity
Connector	Terminal	Connector	Terminal	
F209	13	F207	9	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace terminal cord assembly. Refer to TM-187, "Removal and Installation".

4. CHECK CIRCUIT BETWEEN CONTROL VALVE AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

Control valve Terminal	—	Condition	Resistance
9	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
		CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
		CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> There is malfunction of primary pressure solenoid valve. Replace transaxle assembly. Refer to TM-206, "Removal and Installation".

① CVT oil warmer ② Hose clamp ③ CVT fluid cooler hose A
④ CVT fluid cooler hose B ⑤ Transaxle assembly
Ⓐ : To radiator
: Always replace after every disassembly.

CVT FLUID COOLER HOSE : Removal and Installation

INFOID:0000000009464149

REMOVAL

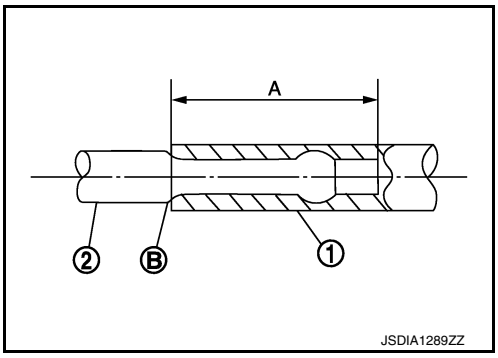
NOTE:
When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove front under cover. Refer to EXT-28, "Removal and Installation".
2. Remove engine room cover. Refer to EM-28, "Removal and Installation".
3. Remove front air duct and air cleaner case assembly. Refer to EM-29, "Removal and Installation".
4. Release hose clamp, then remove CVT fluid cooler hoses A and B from CVT oil warmer and radiator.
   CAUTION:
   Do not reuse hose clamps.

INSTALLATION

Installation is in the reverse order of removal.
CAUTION:
Do not reuse hose clamps.
• Insert CVT fluid cooler hoses according to dimension (A).

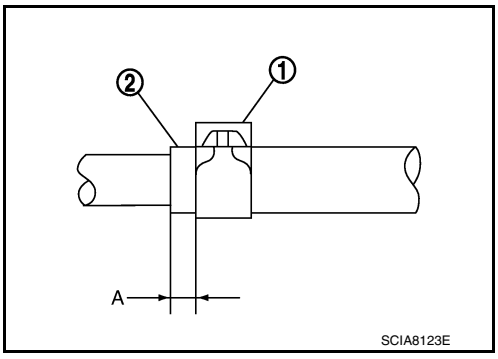
CVT fluid cooler hose (1)	Insert side tube (2)	Dimension (A)
CVT fluid cooler hose A	Radiator (United States and Canada)	End reaches the 2-stage bulge (B)
	CVT oil warmer	
CVT fluid cooler hose B	CVT oil warmer	
	Radiator (United States and Canada)	



• Install hose clamps (1) at both ends of CVT fluid cooler hoses (2) with dimension (A) from the hose end.

Dimension (A) : 5 – 7 mm (0.20 – 0.28 in)

• Hose clamp should not interfere with the bulge.



CVT fluid cooler hose	Hose end	Paint mark	Position of hose clamp*
CVT fluid cooler hose A	Radiator tube side (United States and Canada)	N/A	
	CVT oil warmer side	Facing to the front of the vehicle	B
CVT fluid cooler hose B	CVT oil warmer side	Facing downward	A
	Radiator tube side (United States and Canada)	N/A	

*: Refer to the illustrations for the specific position of each hose clamp tab.

Monitored item	(Unit)	Monitor item selection		Remarks
		ECU INPUT SIGNALS	MAIN SIGNALS	
NORMAL MODE*	(On/Off)	▼	▼	Displays whether it is the NORMAL mode.
SPORT MODE*	(On/Off)	▼	▼	Displays whether it is the SPORT mode.
AIR BLDING STATE*	(INCOMP/ COMP)	▼	▼	Displays the status of “ELECTRIC O.P. AIR BLEEDING” in “Work Support”.
ELECTRIC OP DUTY*	(%)	▼	▼	Displays the command signal value (duty) of the electric oil pump transmitted from TCM.
E-OP DUTY MON*	(%)	▼	▼	Monitors the status signal value (duty) transmitted from the electric oil pump and displays the monitored value.
ELECTRIC OP RELAY*	(On/Off)	▼	▼	Displays the command status from TCM to the electric oil pump relay.
E-OP RELAY MON*	(On/Off)	▼	▼	Monitors the command status from TCM to the oil pump relay and displays the monitored value.

*: Not applicable but displayed.

WORK SUPPORT

Item name	Description
CONFORM CVTF DETERIORTN	Checks the degradation level of the CVT fluid under severe conditions.
ERASE MEMORY DATA	Performs “erasing of the calibration data” and “erasing of the learned value” at the same time.
G SENSOR CALIBRATION	Compensates the G sensor.
ERASE LEARNING VALUE	Erases learning value memorized by TCM.
ENGINE BRAKE ADJ.	Although there is no malfunction on the transaxle and the CVT system, if a customer make a complaint like “I do not feel comfortable with automatic operation of the engine brake on downhill”, the engine brake may be cancelled with “engine brake adjustment”.
ERASE CALIBRATION DATA	Erases calibration data memorized by TCM.
WRITE IP CHARA - REPLACEMENT AT/CVT	Writes IP characteristics when transaxle assembly is replaced.
READ IP CHARA - REPLACEMENT TCM	Reads IP characteristics when TCM is replaced.
WRITE IP CHARA - REPLACEMENT TCM	Writes IP characteristics when TCM is replaced.

Engine brake adjustment

ENGINE BRAKE LEVEL
ON : Turn ON the engine brake control.
OFF : Turn OFF the engine brake control.

Check the degradation level of the CVT fluid.

CVTF degradation level data
210,000 or more : Replacement of the CVT fluid is required.
Less than 210,000 : Replacement of the CVT fluid is not required.

ACTIVE TEST

Item name	Description
CVT OIL COOLER FAN CIRCUIT	Checks the operation of CVT oil cooler fan relay.

P062F EEPROM

Description

INFOID:0000000009464253

TCM compares the calculated value stored in the flash ROM with the value stored in TCM. If the calculated value does not agree with the stored value, TCM judges this as a malfunction.

DTC Logic

INFOID:0000000009464254

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible causes
P062F	EEPROM (Internal Control Module EEPROM Error)	Flash ROM error is detected when turning ON the ignition switch.	• TCM (Flash ROM) • Harness or connector [TCM power supply (back-up) circuit is open or shorted]

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

If another "DTC CONFIRMATION PROCEDURE" occurs just before, turn ignition switch OFF and wait for at least 10 seconds, then perform the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

1. Start the engine.
2. Check the DTC.

Is “P062F” detected?

YES >> Go to TM-298, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009464255

1.CHECK INTERMITTENT INCIDNT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace the TCM. Refer to TM-384, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

P0890 TCM

DTC Logic

INFOID:0000000009464302

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible causes
P0890	TCM (Transmission Control Module Power Relay Sense Circuit Low)	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: • TCM power supply voltage: More than 11 V • Battery voltage: Less than 8.4 V	Harness or connector (TCM power supply (back-up) circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

If another "DTC CONFIRMATION PROCEDURE" occurs just before, turn ignition switch OFF and wait for at least 10 seconds, then perform the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

1. Start the engine and wait for 5 seconds or more.
2. Check the DTC.

Is “P0890” detected?

YES >> Go to TM-346, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009464303

1.CHECK TCM POWER SUPPLY (BACK-UP) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check voltage between TCM harness connector terminals and ground.

TCM		Ground	Voltage
Connector	Terminal		
F16	45	Ground	10 – 16 V
	46		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> GO TO 2.

2.DETECT MALFUNCTIONING ITEMS

Check the following items:
• Open or short circuit of harness between battery positive terminal and TCM connectors terminals 45 and 46.
• 10A fuse (No.60, located in the fuse and fusible link block). Refer to PG-71, "Terminal Arrangement".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".
NO >> Repair or replace malfunctioning parts.

Adjust the CVT fluid level. Refer to TM-286, "Adjustment".

ECU DIAGNOSIS INFORMATION

BCM, COMBINATION METER

List of ECU Reference

INFOID:0000000009462891

ECU	Reference
BCM	BCS-31, "Reference Value"
	BCS-50, "Fail Safe"
	BCS-50, "DTC Inspection Priority Chart"
	BCS-52, "DTC Index"
COMBINATION METER	MWI-22, "Reference Value"
	MWI-27, "Fail-Safe"
	MWI-27, "DTC Index"

C1708, C1709, C1710, C1711 TRANSMITTER (NO DATA)

DTC Logic

INFOID:0000000009464496

NOTE:
The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.
- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
[NO - DATA] - FL [C1708]	Data signal from the front LH wheel sensor cannot be detected.	• Driving in area with radio interference. • ID registration incomplete • Tire pressure sensor • Harness or connectors • Remote keyless entry receiver • BCM
[NO - DATA] - FR [C1709]	Data signal from the front RH wheel sensor cannot be detected.	
[NO - DATA] - RR [C1710]	Data signal from the rear RH wheel sensor cannot be detected.	
[NO - DATA] - RL [C1711]	Data signal from the rear LH wheel sensor cannot be detected.	

DTC CONFIRMATION PROCEDURE

1.PERFORM SELF DIAGNOSTIC RESULT

With CONSULT
1. Perform tire pressure sensor ID registration. Refer to WT-25, "Work Procedure".
2. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.
   NOTE:
   Avoid driving in areas with radio interference.
3. Perform Self Diagnostic Result.

Is DTC C1708, C1709, C1710, or C1711 detected?

YES >> Proceed to WT-30, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000009464497

NOTE:
The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.
- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs

Regarding Wiring Diagram information, refer to WT-14, "Wiring Diagram - With Individual Tire Pressure Display" or WT-20, "Wiring Diagram - Without Individual Tire Pressure Display".

1.CHECK TIRE PRESSURE SIGNAL

With CONSULT
1. Select Data Monitor from AIR PRESSURE MONITOR of BCM.
2. Check that the air pressures match the specified value.

FRONT WIPER AND WASHER SYSTEM CONNECTORS - WITHOUT REAR VIEW CAMERA WASHER CONTROL SYSTEM

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

H.S.

	1G	2G	3G	4G	5G
	6G	7G	8G	9G	10G

11G	12G	13G	14G	15G	16G	17G	18G	19G	20G	21G
22G	23G	24G	25G	26G	27G	28G	29G	30G		

31G	32G	33G	34G	35G	36G	37G	38G	39G	40G	41G
42G	43G	44G	45G	46G	47G	48G	49G	50G		

51G	52G	53G	54G	55G	56G	57G	58G	59G	60G	61G
62G	63G	64G	65G	66G	67G	68G	69G	70G		

71G	72G	73G	74G	75G	76G	77G	78G	79G	80G	81G
82G	83G	84G	85G	86G	87G	88G	89G	90G		

91G	92G	93G	94G	95G
96G	97G	98G	99G	100G

Terminal No.	Color of Wire	Signal Name
1G	LG	–
5G	W	–
22G	L	–
23G	P	–
36G	G	–
95G	BG	– (WITHOUT REAR VIEW CAMERA WASHER CONTROL SYSTEM)
100G	LG	– (WITHOUT REAR VIEW CAMERA WASHER CONTROL SYSTEM)

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

3N		2N	1N
8N	7N	6N	5N	4N

Terminal No.	Color of Wire	Signal Name
6N	W	–

Connector No.	M17
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	W	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1

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