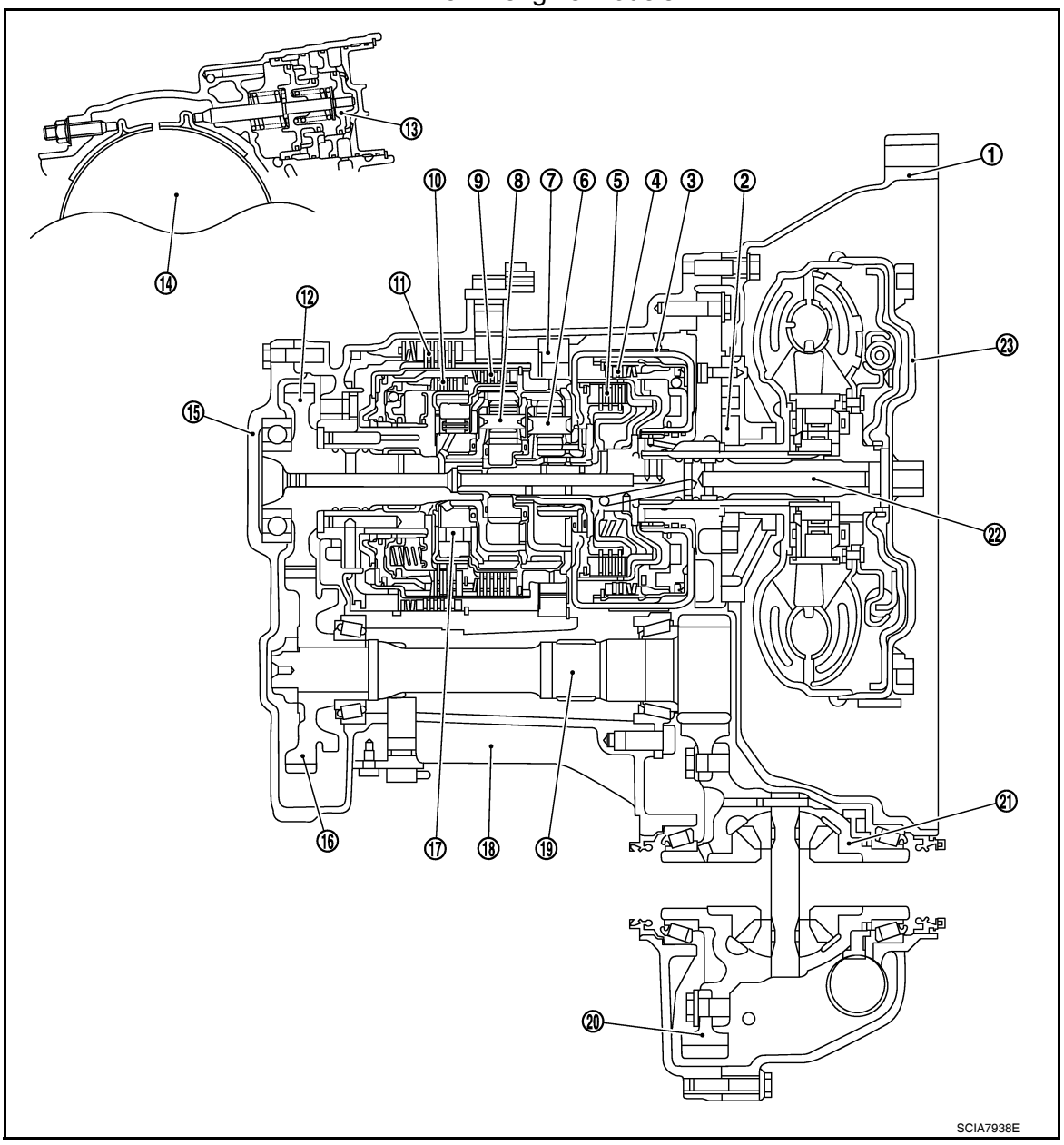
Edition: September 2009
Revision: January 2010
Publication No. SM0E-1C11U1

NISSAN VERSA

MODEL C11 SERIES

QUICK REFERENCE INDEX

MR18DE engine models



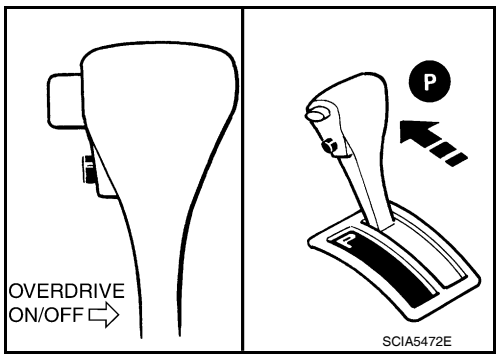
1. Converter housing
2. Oil pump
3. Brake band
4. Reverse clutch
5. High clutch
6. Front planetary gear
7. Low one-way clutch
8. Rear planetary gear
9. Forward clutch
10. Overrun clutch
11. Low & reverse brake
12. Output gear
13. Band servo piston
14. Reverse clutch drum
15. Side cover
16. Idler gear
17. Forward one-way clutch
18. Transaxle case
19. Reduction pinion gear
20. Final gear
21. Differential case
22. Input shaft
23. Torque converter

Shift Mechanism

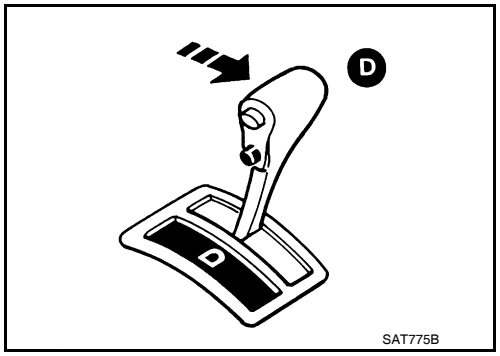
INFOID:0000000005397220

CONSTRUCTION

3. Push overdrive control switch. (OD OFF indicator lamp is off.)
4. Move selector lever to “P” position.
5. Start engine.



6. Move selector lever to “D” position.

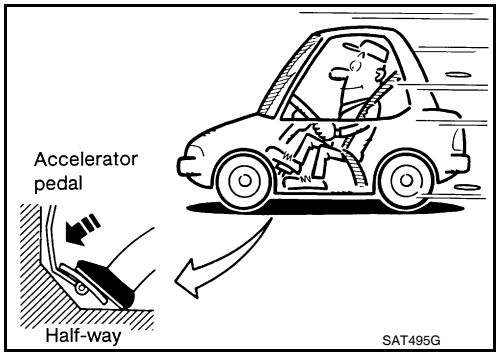


7. Accelerate vehicle by constantly depressing accelerator pedal half-way.

Read gear position. Refer to AT-77, "CONSULT-III Function (TRANSMISSION)" .

Does vehicle start from D_1 ?

YES >> GO TO 2.
NO >> • Mark the box on the “Diagnostic Worksheet Chart”.
• Go to AT-187, "Vehicle Cannot Be Started from D_1" .
• Continue “Road Test”.



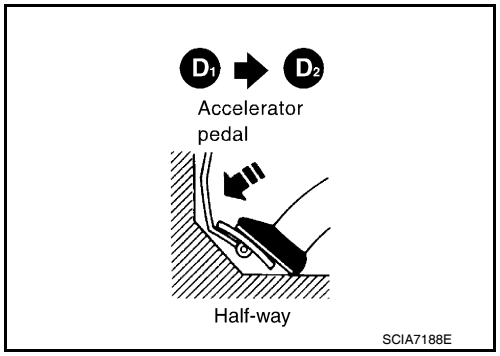
2. CHECK SHIFT-UP (D_1 TO D_2)

Check shift-up (D_1 to D_2).
Specified speed when shifting from D_1 to D_2. Refer to AT-64, "Vehicle Speed at Which Gear Shifting Occurs" .

Read gear position, throttle opening and vehicle speed. Refer to AT-77, "CONSULT-III Function (TRANSMISSION)" .

Does A/T shift from D_1 to D_2 at the specified speed?

YES >> GO TO 3.
NO >> • Mark the box on the “Diagnostic Worksheet Chart”.
• Go to AT-189, "A/T Does Not Shift: $D_1 \rightarrow D_2$ or Does Not Kickdown: $D_4 \rightarrow D_2$" .
• Continue “Road Test”.



3. CHECK SHIFT-UP (D_2 TO D_3)

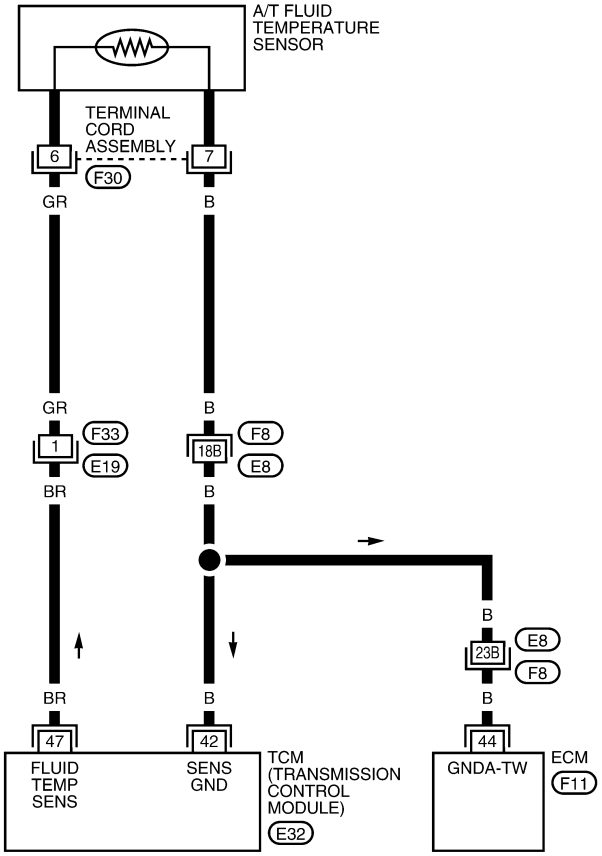
Check shift-up (D_2 to D_3).
Specified speed when shifting from D_2 to D_3. Refer to AT-64, "Vehicle Speed at Which Gear Shifting Occurs" .

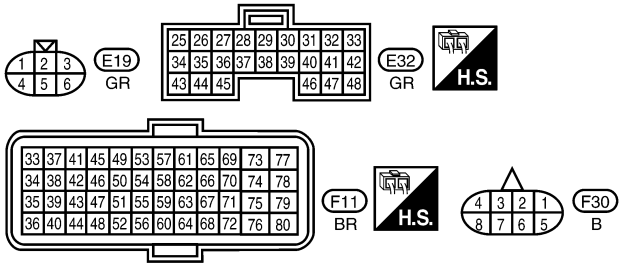
Wiring Diagram - AT - FTS

INFOID:0000000005397272

AT-FTS-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC





REFER TO THE FOLLOWING.
F8 - SUPER MULTIPLE JUNCTION (SMJ)

ABDWA0212GB

TCM TERMINALS AND REFERENCE VALUES

Refer to AT-75, "TCM Terminal and Reference Value".

Diagnosis Procedure

INFOID:0000000005397273

1.CHECK INPUT SIGNAL

P0745 PRESSURE CONTROL SOLENOID A

Description

INFOID:0000000005397324

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to signals sent from the TCM.
The line pressure duty cycle value is not constant when the closed throttle position switch is ON. To confirm the line pressure duty cycle at low-pressure, the accelerator (throttle) should be open until the closed throttle position switch is OFF.

CONSULT-III Reference Value in Data Monitor Mode

INFOID:0000000005397325

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
LINE PRES DTY	Small throttle opening (Low line pressure) ⇔ Large throttle opening (High line pressure)	0% ⇔ 94%

On Board Diagnosis Logic

INFOID:0000000005397326

- This is an OBD-II self-diagnostic item.
- Diagnostic trouble code “P0745 PC SOLENOID A” with CONSULT-III or 11th judgement flicker without CONSULT-III is detected when TCM detects an improper voltage drop while it tries to operate the solenoid valve.

Possible Cause

INFOID:0000000005397327

- Harness or connector
  (The solenoid circuit is open or shorted.)
- Line pressure solenoid valve

DTC Confirmation Procedure

INFOID:0000000005397328

CAUTION:
If performing this “DTC Confirmation Procedure” again, always turn ignition switch OFF and wait at least 10 seconds before continuing.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-III

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-III.
2. Touch “START”.
3. Depress accelerator pedal completely and wait at least 1 second.
4. If the check result is NG, go to AT-135, "Diagnosis Procedure" .

WITH GST

Follow the procedure “WITH CONSULT-III”.

WITHOUT CONSULT-III

1. Start engine.
2. With brake pedal depressed, shift the lever from “P”→“N”→“D”→“N”→“P” positions.
3. Perform self-diagnosis. Refer to AT-82, "Diagnosis Procedure without CONSULT-III" .
4. If the check result is NG, go to AT-135, "Diagnosis Procedure" .

OK >> **INSPECTION END**
NG >> GO TO 5.

5. CHECK TCM

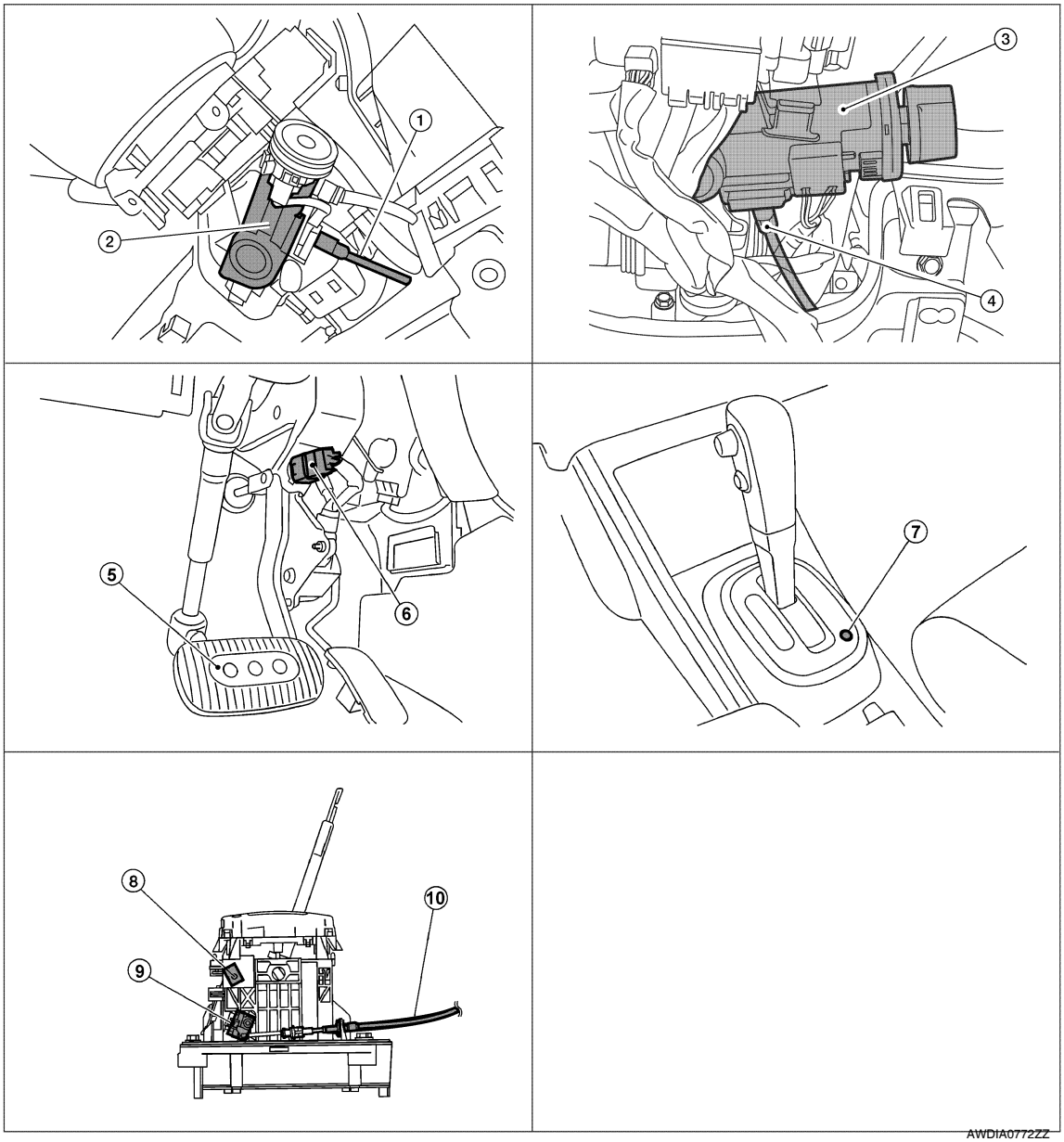
1. Check TCM input/output signal. Refer to AT-75, "TCM Terminal and Reference Value" .
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

OK or NG

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

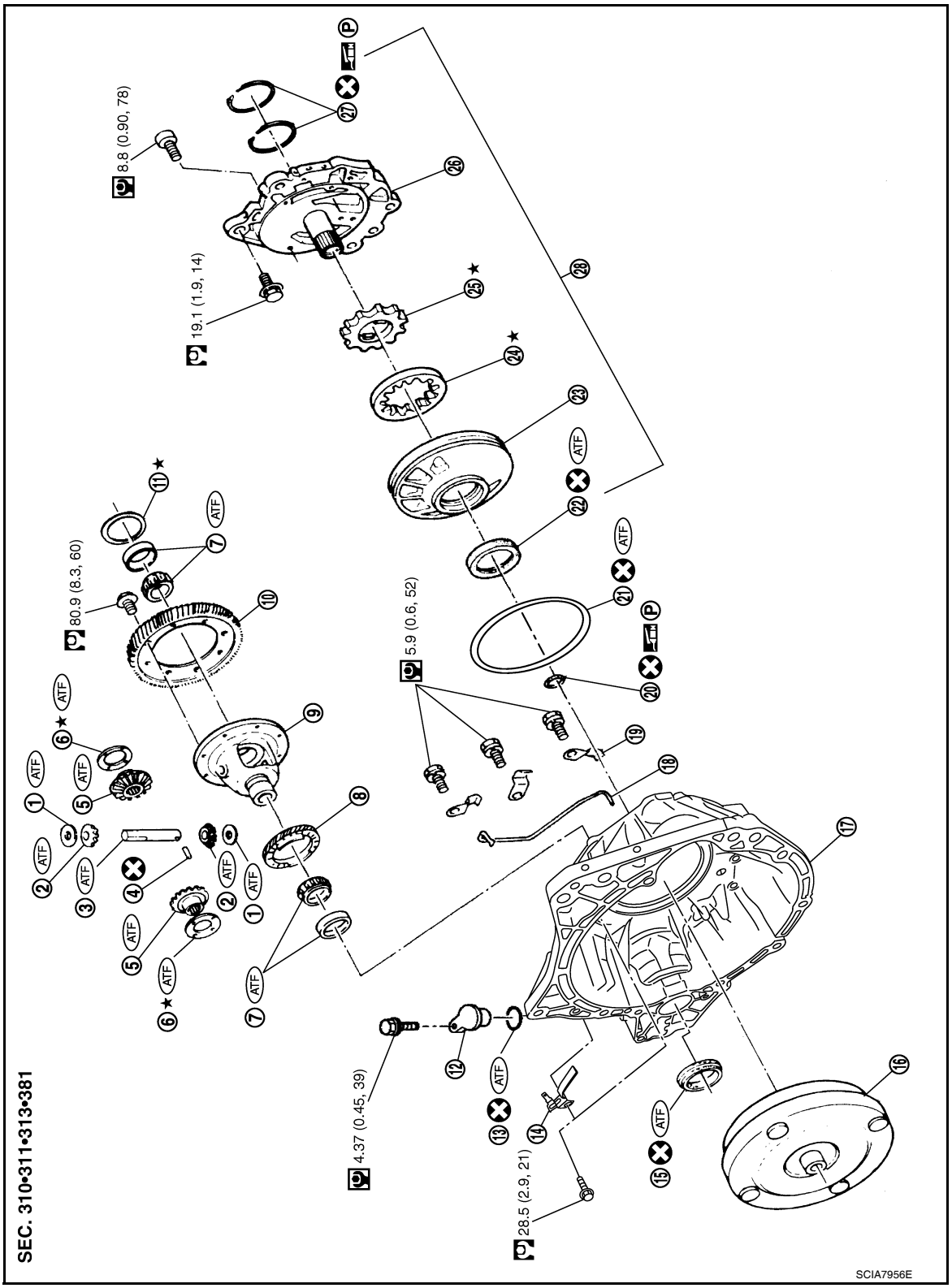
Shift Lock System Parts Location

INFOID:0000000005397414



1. Key interlock cable (Without Intelligent Key)
2. Key cylinder (Without Intelligent Key)
3. Ignition knob switch (With Intelligent Key)
4. Key interlock cable (With Intelligent Key)
5. Brake pedal
6. Stop lamp switch
7. Shift lock release button
8. Park position switch
9. Shift lock solenoid
10. Key interlock cable

With ABS

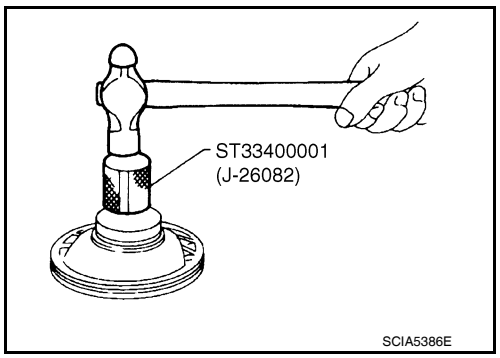


1. Pinion mate gear thrust washer
2. Pinion mate gear
3. Pinion mate shaft
4. Lock pin
5. Side gear
6. Side gear thrust washer
7. Differential side bearing
8. Speedometer drive gear
9. Differential case
10. Final gear
11. Differential side bearing adjusting shim
12. Plug
13. O-ring
14. Bracket
15. RH differential side oil seal
16. Torque converter
17. Converter housing
18. Differential lubricant tube

1. Install oil pump housing oil seal on oil pump housing.

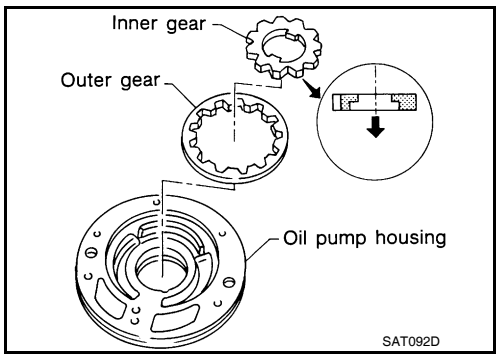
Tool number : ST33400001 (J-26082)

CAUTION:
- **Do not reuse oil pump housing oil seal.**
- **Apply ATF to outer surface of oil pump housing oil seal.**



2. Install inner gear and outer gear on oil pump housing.

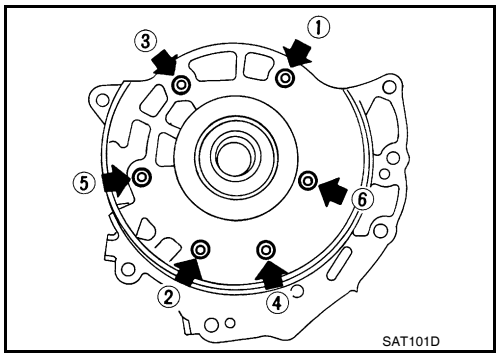
CAUTION:
Be careful with the direction of inner gear.



3. Install oil pump cover on oil pump housing.

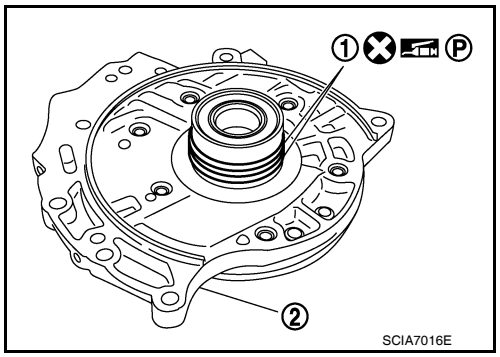
a. Wrap masking tape around splines of oil pump cover assembly to protect seal. Position oil pump cover assembly on oil pump housing assembly, then remove masking tape.

b. Tighten oil pump cover bolts in the order as shown, and then tighten them to the specified torque in the same order. Refer to AT-278, "Oil Pump".



4. Install seal rings (1) to oil pump assembly (2) carefully after packing ring groove with petroleum jelly.

CAUTION:
Do not spread gap of seal rings (1) excessively while installing. The seal rings (1) may be deformed.



Control Valve Assembly

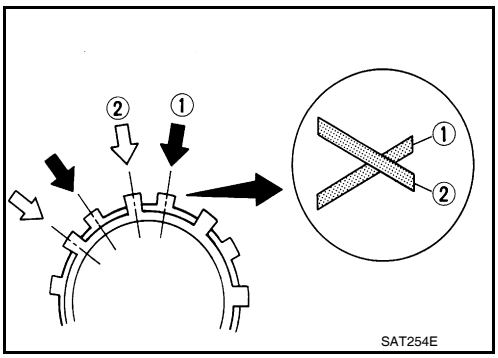
INFOID:0000000005397438

COMPONENTS

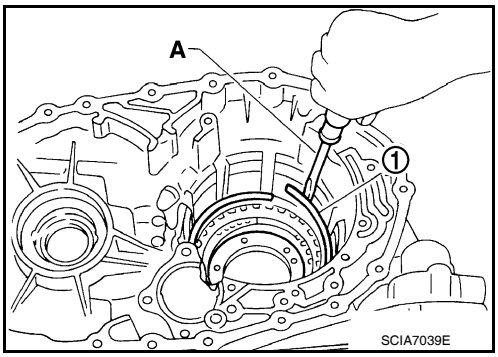
• MR18DE engine models
(1): Snap ring
(2): Retaining plate
(3): Drive plate
(4): Driven plate
(5): Retaining plate
(6): Dish plate
Drive plate/Driven plate: 5/5

CAUTION:
Be careful with the order of plates

NOTE:
Install two dish plates fitting each installation direction with groove displaced slightly.



6. Install snap ring (1) using a suitable tool (A).

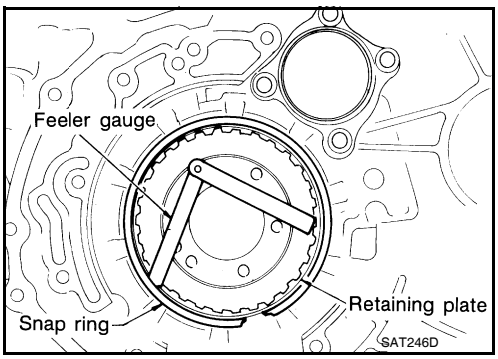


7. Measure clearance between retaining plate and snap ring. If not within allowable limit, select proper retaining plate (front side). Refer to “Parts Information” for retaining plate selection.

Specified clearance

Standard and allowable limit:

Refer to AT-376, "Clutches and Brakes".



8. Check operation of low & reverse brake. Refer to "DISASSEMBLY".

Rear Internal Gear and Forward Clutch Hub

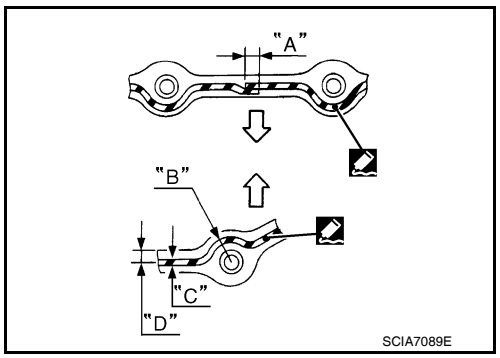
INFOID:0000000005397445

COMPONENTS

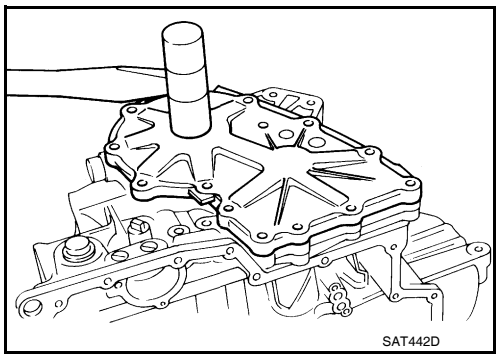
2. Apply recommended sealant (Genuine Anaerobic Liquid Gasket or equivalent.) to transaxle case as shown.
⇦: Inside of side cover

(A) : 3 - 5 mm (0.12 - 0.20 in)
(B) : 8 mm (0.31 in) R
(C) : 1.5 mm (0.059 in) dia.
(D) : 4 mm (0.16 in)

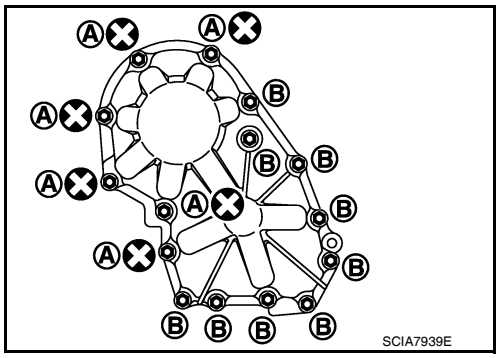
CAUTION:
- **Apply the sealant on the center between the bolt holes.**
- **Completely remove all moisture, oil and old sealant, etc. from the transaxle case and side cover mounting surfaces.**



3. Fit mounting part of output shaft bearing on side cover to output shaft bearing, and after adjusting knock pin position, install it with light taps of a soft hammer and things like that.
CAUTION:
When installing, to avoid getting damaged and deformed, set mounting part straight to parallel with the mounting surface.



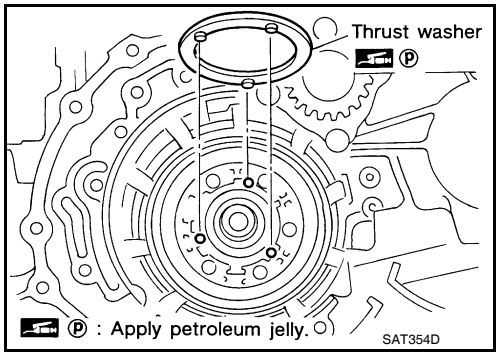
4. Tighten side cover bolts to specified torque. Refer to AT-237, "Component".
CAUTION:
- **Do not mix bolts (A) and (B).**
- **Always replace bolts (A) as they are self-sealing bolts.**



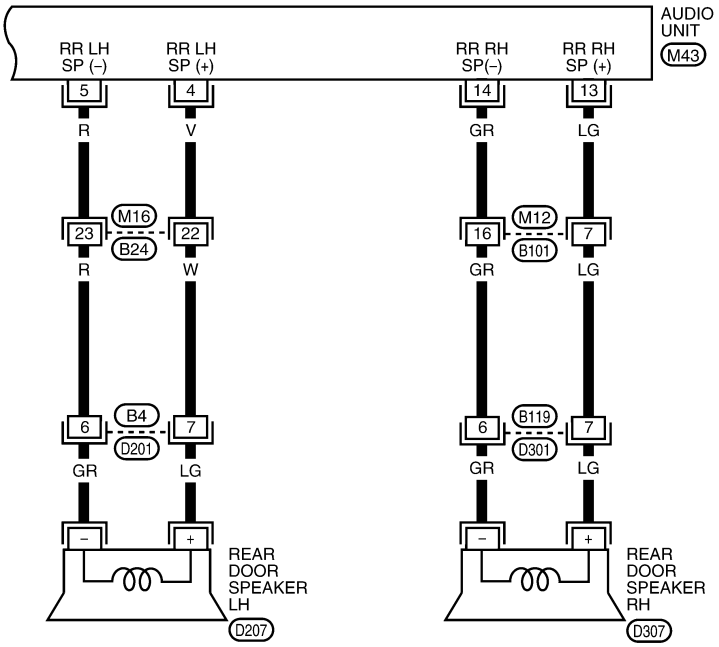
Assembly (2)

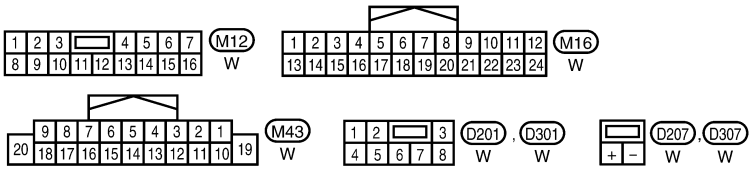
INFOID:0000000005397452

1. Remove paper rolled around bearing retainer.
2. Install thrust washer on bearing retainer.
CAUTION:
Align pawls of thrust washer with holes of bearing retainer.



AV-AUDIO-04





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SERVICE INFORMATION

PRECAUTIONS

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

INFOID:0000000005924391

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

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

PRECAUTIONS WHEN USING 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 3 minutes before performing any service.**

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000005975904

NOTE:

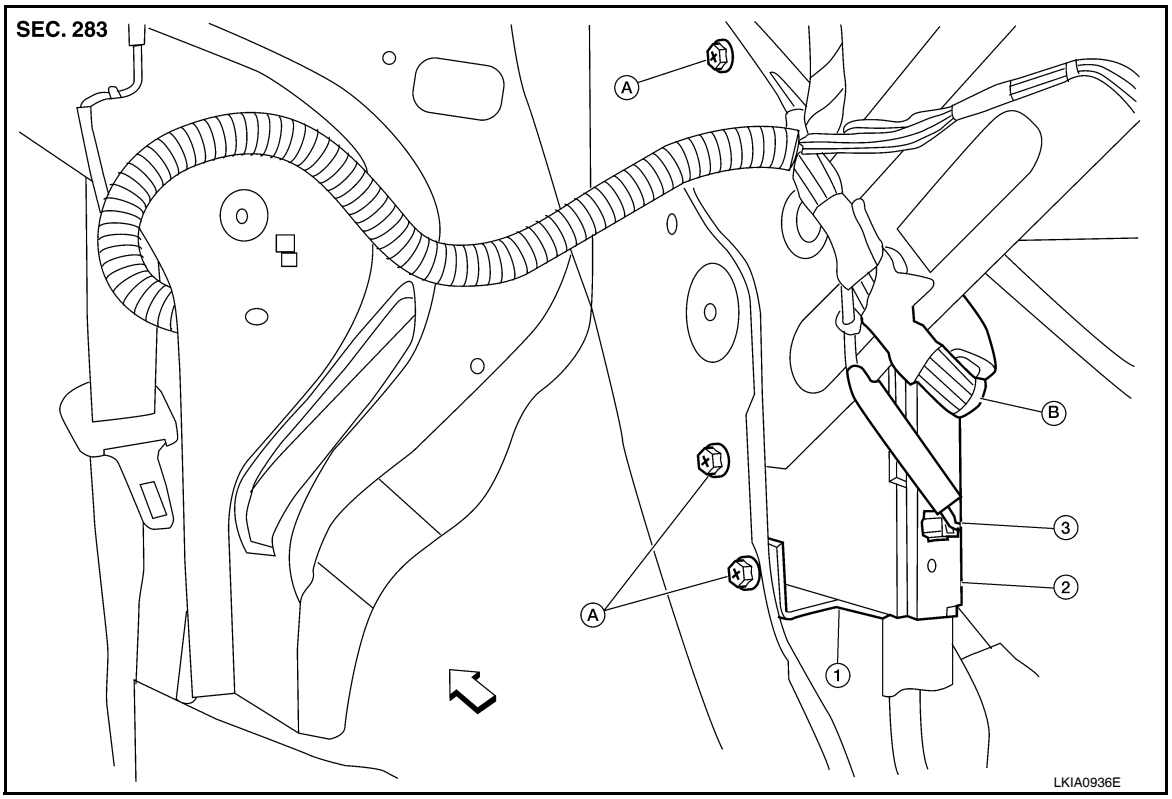
- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

Sedan



1. Bluetooth control unit bracket
2. Bluetooth control unit
3. Bluetooth antenna feeder connector
A. Bluetooth control unit bolts
B. Bluetooth control unit connector
⇐ Front

Removal

1. For hatchback, remove luggage side lower finisher (RH). Refer to EI-54, "Removal and Installation".
   • Disconnect Bluetooth antenna harness clip.
2. For sedan, remove the trunk room side finisher (RH). Refer to EI-57, "Removal and Installation".
   • Disconnect the Bluetooth antenna harness connector.
3. Disconnect the Bluetooth control unit harness connector.
4. Remove the Bluetooth control unit upper and lower bracket bolts.
5. Unhook the Bluetooth control unit upper and lower brackets and remove Bluetooth control unit.
6. Remove Bluetooth control unit bracket screws and remove the upper and lower brackets from unit.

Installation

Installation is in the reverse order of removal.

BLUETOOTH ANTENNA

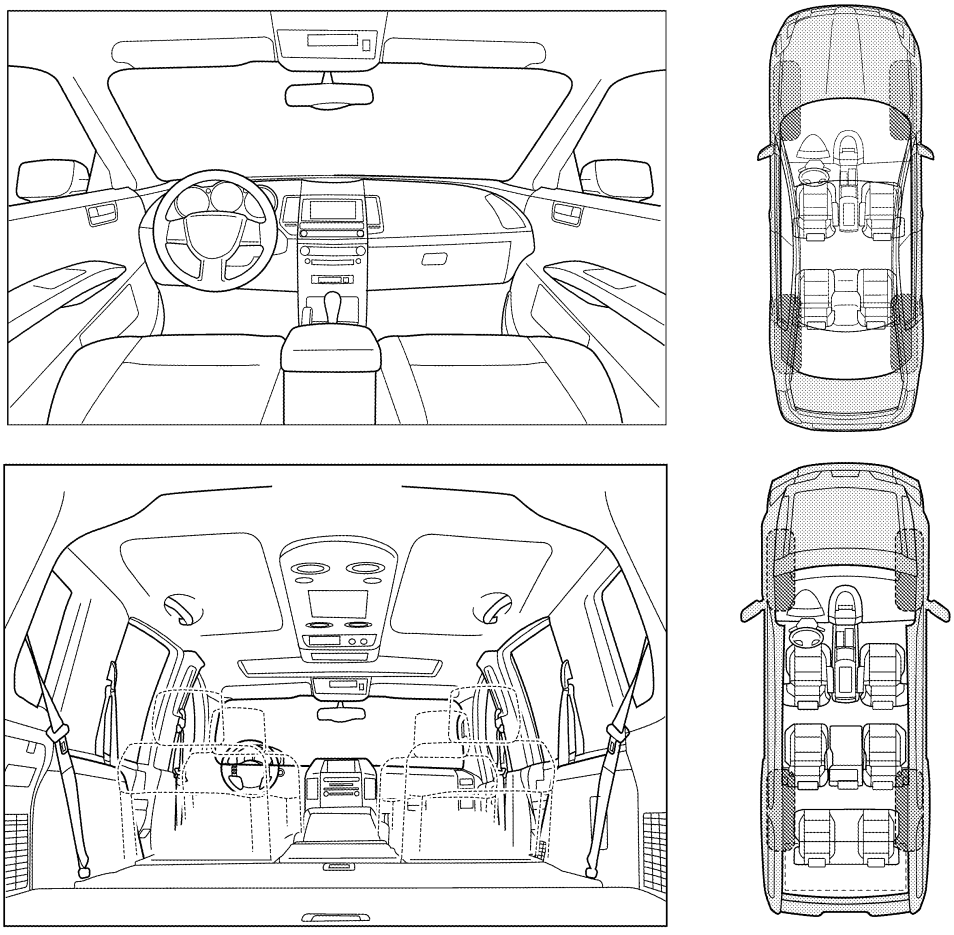
Diagnostic Worksheet

INFOID:0000000005396546

Dear Customer:
We are concerned about your satisfaction with your vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your vehicle right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service advisor or technician to ensure we confirm the noise you are hearing.

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

I. WHERE DOES THE NOISE COME FROM? (circle the area of the vehicle)
The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.



Continue to page 2 of the worksheet and briefly describe the location of the noise or rattle. In addition, please indicate the conditions which are present when the noise occurs.

-1-

LAIA0072E

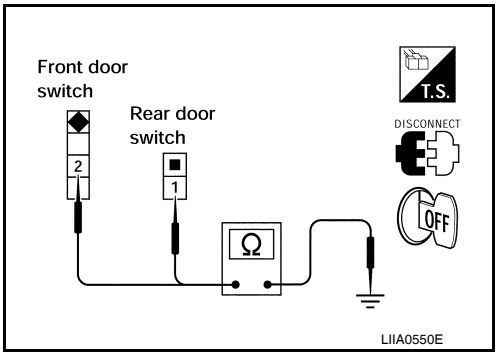
OK or NG

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

3.CHECK DOOR SWITCHES

Check continuity between door switch terminal and switch case ground.

Component	Terminals	Condition of switch	Continuity
Front door switch LH/RH	2 – Case ground	Pushed	No
		Released	Yes
Rear door switch LH/RH	1 – Case ground	Pushed	No
		Released	Yes



OK or NG

OK >> Check door switch case ground condition.
NG >> Replace door switch.

Key Switch (Insert) Check

INFOID:0000000005396567

1.CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-III

Check key switch "KEY ON SW" in DATA MONITOR mode with CONSULT–III. Refer to BL-41, "CONSULT-III Function (BCM)" .

- When key is inserted into ignition key cylinder:

KEY ON SW : ON

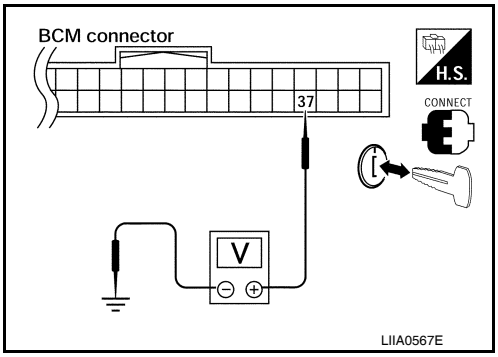
- When key is removed from ignition key cylinder:

KEY ON SW : OFF

Without CONSULT-III

Check voltage between BCM connector and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(–)		
M18	37	Ground	Key is inserted.	Battery voltage
			Key is removed.	0



OK or NG

OK >> Key switch circuit is OK.
NG-1 >> GO TO 2 (with Intelligent Key).
NG-2 >> GO TO 3 (without Intelligent Key).

2.CHECK KEY SWITCH (WITH INTELLIGENT KEY)

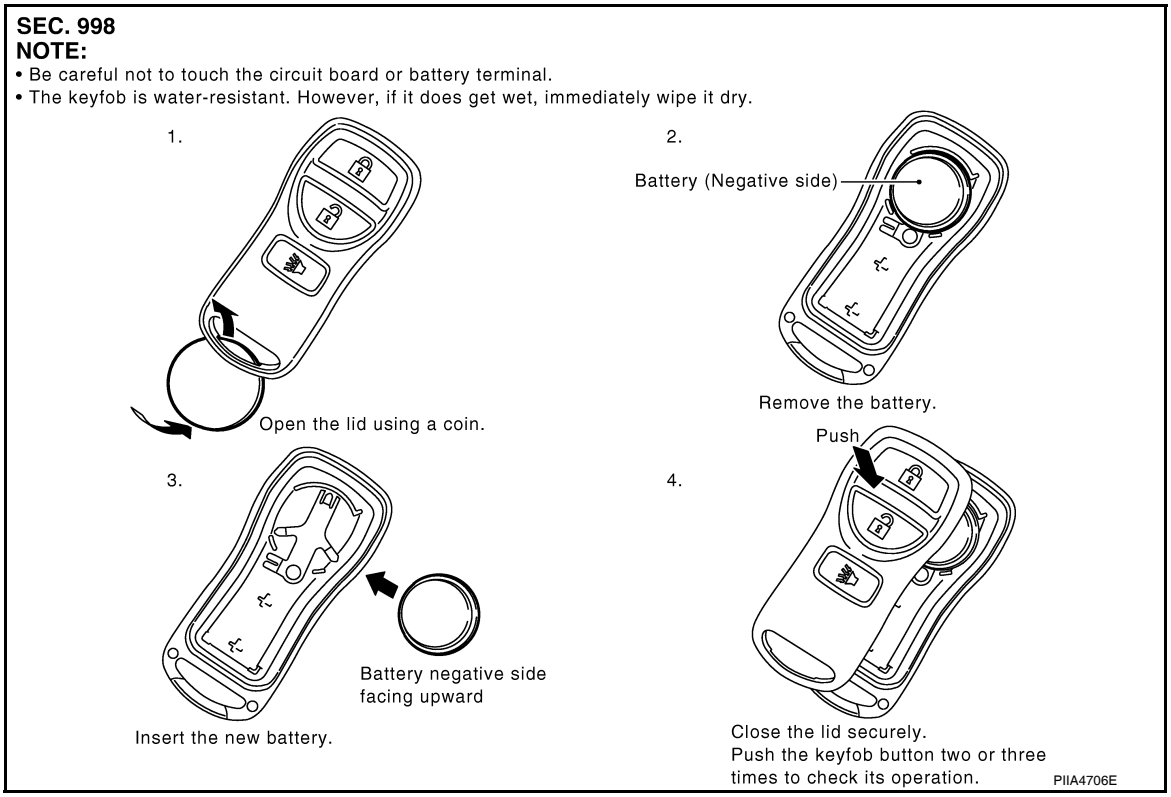
1. Turn ignition switch OFF.
2. Disconnect key switch and ignition knob switch connector.
3. Check ignition knob switch key switch and ignition knob key switch.

- When registering an additional keyfob, the existing ID codes in memory may or may not be erased. If five ID codes are stored in memory, when an additional code is registered, only the oldest code is erased. If less than five ID codes are stored in memory, when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new keyfobs, repeat the procedure “Additional ID code entry” for each new keyfob.
- Entry of maximum five ID codes is allowed. When more than five ID codes are entered, the oldest ID code will be erased.
- Even if same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

Keyfob Battery Replacement

INFOID:0000000005396596

SEC. 998
NOTE:
- Be careful not to touch the circuit board or battery terminal.
- The keyfob is water-resistant. However, if it does get wet, immediately wipe it dry.

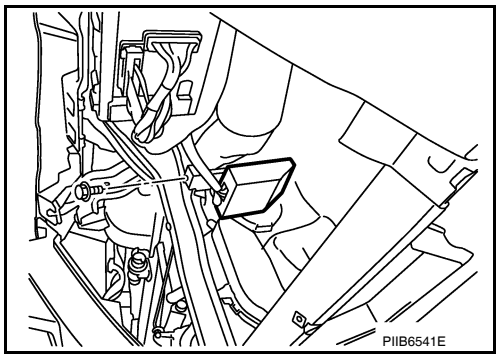


Removal and Installation of Remote Keyless Entry Receiver

INFOID:0000000005396597

REMOVAL

1. Remove glove box assembly. Refer to IP-12, "Removal and Installation" .
2. Disconnect remote keyless entry receiver connector, remove screw and remote keyless entry receiver.



INSTALLATION

Installation is in the reverse order of removal.

- If the following “symptoms” are detected, check systems shown in the “Diagnosis/procedure” column in this order.

Conditions of Vehicle (Operating Conditions)
- “LOCK/UNLOCK BY I-KEY” is ON when setting on CONSULT-III.
- Mechanical key is out of ignition switch.
- Ignition switch is not depressed.
- All doors are closed.
- Intelligent Key is registered.

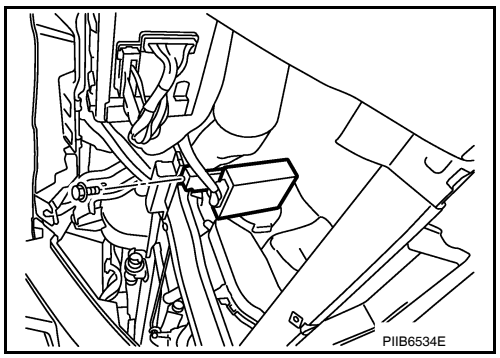
Symptom	Diagnosis/service procedure	Reference page
Door lock/unlock does not operate by all request switches.	1. Check door switch (hatchback).	BL-131
	2. Check door switch (sedan).	BL-133
	3. Check key switch.	BL-127
	4. Check ignition knob switch.	BL-129
	5. Replace Intelligent Key unit.	BL-158
Door lock/unlock does not operate by request switch (driver side).	1. Check door request switch (driver side).	BL-135
	2. Check outside key antenna (driver side).	BL-143
	3. Replace Intelligent Key unit.	BL-158
Door lock/unlock does not operate by request switch (passenger side).	1. Check door request switch (passenger side).	BL-135
	2. Check outside key antenna (passenger side).	BL-143
	3. Replace Intelligent Key unit.	BL-158
Door lock/unlock does not operate by back door request switch (hatchback).	1. Check back door request switch.	BL-137
	2. Check outside key antenna (rear bumper).	BL-144
	3. Replace Intelligent Key unit.	BL-158
Door lock/unlock does not operate by trunk opener request switch (sedan).	1. Check trunk opener request switch.	BL-138
	2. Check outside key antenna (rear bumper).	BL-144
	3. Replace Intelligent Key unit.	BL-158
Auto lock function does not operate.	1. Check “AUTO RELOCK TIMER” setting in “WORK SUPPORT”.	BL-117
	2. Replace Intelligent Key unit.	BL-158
Key reminder function does not operate.	1. Check door switch (hatchback).	BL-131
	2. Check door switch (sedan).	BL-133
	3. Check inside key antenna.	BL-146
	4. Check unlock sensor.	BL-140
	5. Check Intelligent Key battery.	BL-158
	6. Replace Intelligent Key unit.	BL-158

REMOTE KEYLESS ENTRY FUNCTION MALFUNCTION

NOTE:
- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to BL-115, "Trouble Diagnosis Procedure".
- Make sure that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following “symptoms” are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

Conditions of Vehicle (Operating Conditions)
- Ignition switch is not depressed.
- All doors are closed.

2. Disconnect Intelligent Key unit connector, remove screw and Intelligent Key unit.



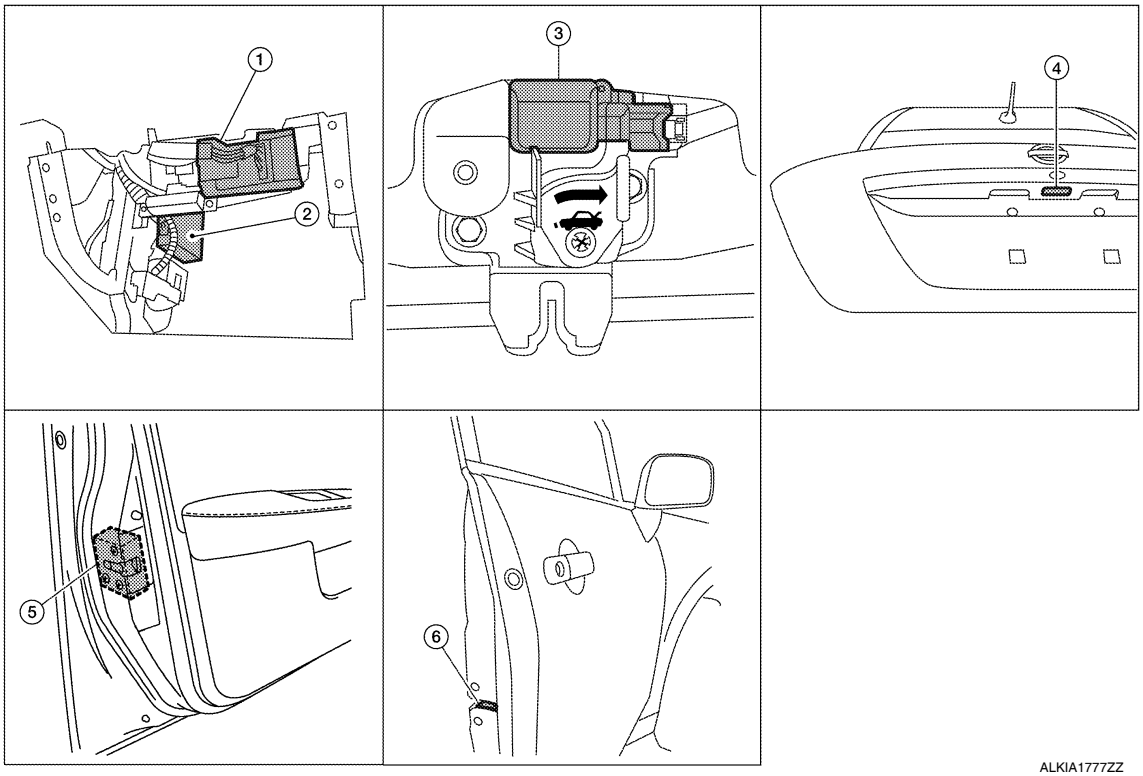
INSTALLATION

Installation is in the reverse order of removal.

TRUNK LID OPENER

Component Parts and Harness Connector Location

INFOID:0000000005396668



ALKIA1777ZZ

1. BCM M18, M19, M20 (view with glove box removed)
2. Intelligent Key unit M52 (with Intelligent Key)
3. Trunk lamp switch and trunk release solenoid B127
4. Trunk lid opener switch B128
5. Front door lock actuator LH (door unlock sensor) D3 (without power windows)
6. Front door lock actuator RH (door unlock sensor) D114 (with power windows)

System Description

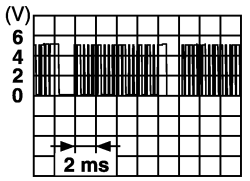
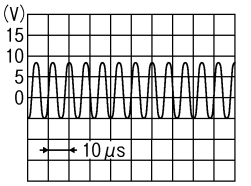
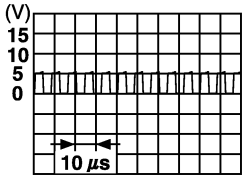
INFOID:0000000005396669

Power is supplied at all times
- through 40A fusible link (letter **g,** located in fuse and fusible link box)
- to BCM terminal 70
- through 10A fuse [No. 8, located in fuse block (J/B)]
- to BCM terminal 57
- through 10A fuse [No. 31, located in fuse block (J/B)]
- to Intelligent Key unit terminal 11 (with Intelligent Key).

Ground is supplied
- to BCM terminal 67 and
- to Intelligent Key unit terminal 12 (with Intelligent Key)
- through body grounds M57 and M61.

When trunk lid opener switch is ON (pushed), ground is supplied
- to BCM terminal 30 (without Intelligent Key)
- through trunk lid opener switch terminals 1 and 2
- through front door lock actuator LH (door unlock sensor) terminals 4 and 5 (without power windows) or
- through front door lock actuator RH (door unlock sensor) terminals 4 and 5 (with power windows)
- through body grounds M57 and M61
- to Intelligent Key unit terminal 24 (with Intelligent Key)
- through trunk lid opener switch terminals 1 and 2
- through body grounds B117 and B132.

Then power is supplied
- through BCM terminal 53
- to trunk lamp switch and trunk release solenoid terminal 2.

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
29	V	Back door request switch (hatchback)	—	Press back door request switch.	0
				Other than above	5
		Trunk opener request switch (sedan)	—	Press trunk opener request switch.	0
				Other than above	5
31	BR	Steering lock solenoid ground	—	—	0
32	GR	Steering lock solenoid communication signal	LOCK	When Intelligent Key is inside vehicle, press ignition knob switch.	 SIIA1911J
				Other than above	5
33	R	Rear floor antenna (+) signal	LOCK	• Any door open → all door close • Press ignition knob switch: ON (Ignition knob switch)	 PIIB5502J
34	G	Rear floor antenna (-) signal			
37	BR	Front outside antenna RH (+) signal	LOCK	Press door request switch RH.	 SIIA1910J
38	Y	Front outside antenna RH (-) signal			

*1: With continuously variable transmission (CVT) or automatic transmission (A/T).

*2: With manual transmission (M/T).

CONSULT-III Function (BCM)

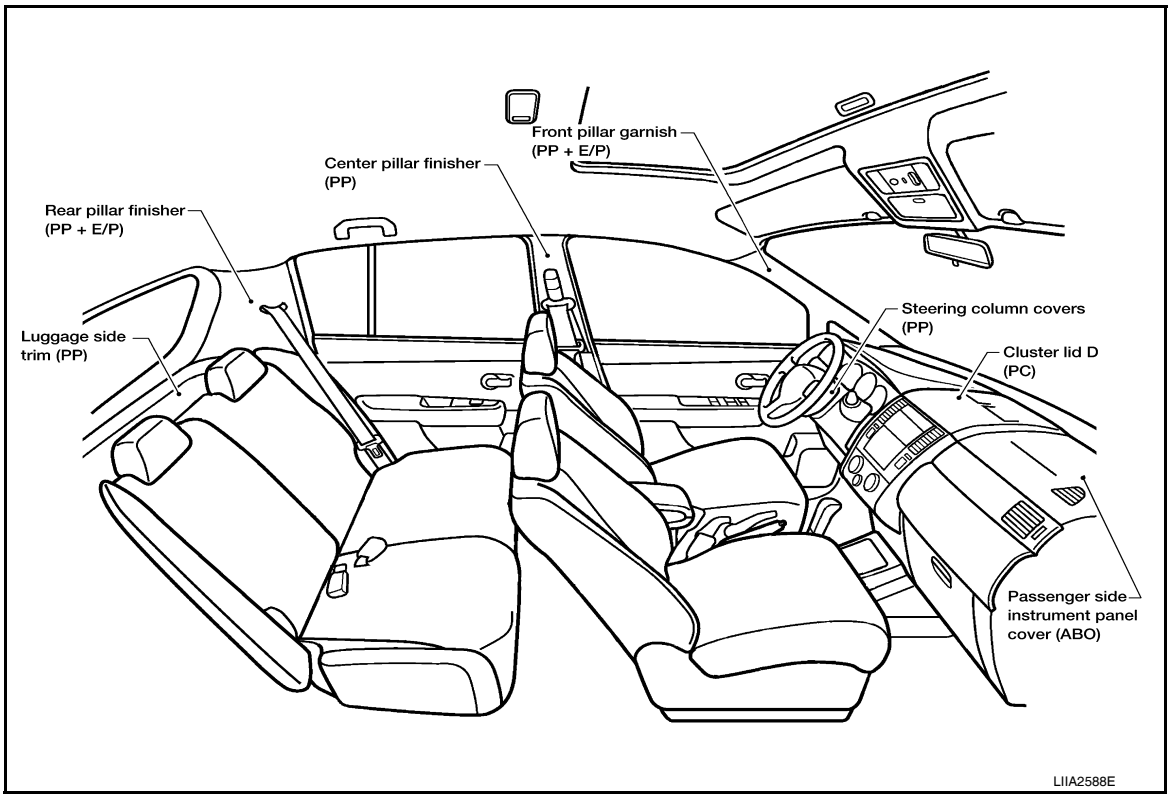
INFOID:0000000005396689

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

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

CONSULT-III APPLICATION ITEM

4. Front pillar inner reinforcement (RH&LH)
5. Lower dash reinforcement
6. 4th crossmember (RH&LH)
7. Front side member rear extension (RH&LH)
8. 3rd crossmember (RH&LH)
9. Front seat outer rear bracket (RH&LH)
10. Front seat inner rear bracket (RH&LH)
11. 2nd crossmember (RH&LH)
12. Front seat outer front bracket (RH&LH)
13. Front seat inner front bracket (RH&LH)
14. Fender bracket (RH&LH)
15. Strut housing assembly RH
16. Cowl top side upper (RH&LH)
17. Front strut housing (RH&LH)
18. Upper torque rod reinforcement
19. Closing plate assembly RH
20. Engine mount reinforcement
21. Strut tower front reinforcement RH
22. Front hoodledge lower RH
23. Frame bracket outer (RH&LH)
24. Front bumper support bracket (RH&LH)
25. Closing plate (RH&LH)
26. Front suspension rear bracket (RH&LH)
27. Front side member outrigger (RH&LH)
28. Front side member assembly (RH&LH)
29. Front side member (RH&LH)
30. Frame bracket (RH&LH)
31. Closing plate assembly LH
32. Hoodledge connector (RH&LH)
33. Radiator core side support (RH&LH)
34. Radiator core support upper (RH&LH)
35. Hoodledge upper (RH&LH)
36. Hoodledge reinforcement assembly (RH&LH)
37. Dash side (RH&LH)
38. Dash side assembly (RH& LH)
39. Front floor reinforcement (RH&LH)
40. Front floor front (RH&LH)
41. Front floor center
42. Rear seat crossmember
43. Rear center crossmember
44. Rear seat upper crossmember
45. Rear side member (RH&LH)
46. Sill inner extension (RH&LH)
47. Rear side member extension (RH&LH)
48. Rear side member assembly (RH & LH)
49. Rear floor front
50. Rear floor front assembly
51. Rear floor side (RH&LH)
52. Rear floor rear



Precaution in Repairing High Strength Steel

INFOID:0000000005396725

High strength steel is used for body panels in order to reduce vehicle weight.
Accordingly, precautions in repairing automotive bodies made of high strength steel are described below:

HIGH STRENGTH STEEL (HSS) USED IN NISSAN VEHICLES

Tensile strength	Nissan/Infiniti designation	Major applicable parts
373 N/mm^2 (38kg/mm^2 ,54klb/sq in)	SP130	• Front & rear side member assembly • Front side member closing plate assembly • Front strut housing • Lower dash • Rear seat crossmember • Other reinforcements
785-1350 N/mm^2 (80-138kg/mm^2 , 114-196klb/sq in)	SP150	• Center pillar reinforcement (Component part) • Outer roof side rail reinforcement (Component part)

SP130 is the most commonly used HSS.

SP150 HSS is used only on parts that require much more strength.

Read the Following Precautions When Repairing HSS:

1. Additional points to consider

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000005396977

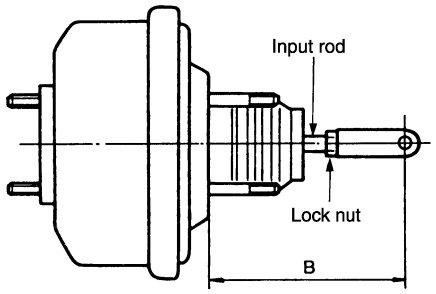
Use the chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Reference page		BR-25, BR-36	BR-25, BR-36	BR-25	BR-31, BR-36	BR-31, BR-36	BR-31, BR-36	BR-31, BR-36	BR-31, BR-36	—	BR-31, BR-36	BR-36	FAX-5, "NVH Troubleshooting Chart"	MT-51, "NVH Troubleshooting Chart"	FSU-6, "NVH Troubleshooting Chart"	WT-5, "NVH Troubleshooting Chart"	WT-5, "NVH Troubleshooting Chart"	FAX-5, "NVH Troubleshooting Chart"	PS-5, "NVH Troubleshooting Chart"
Possible cause and SUSPECTED PARTS		Pads/Lining damaged	Pads/Lining - uneven wear	Shims damaged	Rotor imbalance	Rotor damage	Rotor runout	Rotor deformation	Rotor deflection	Rotor rust	Rotor thickness variation	Drum out of round	WHEEL HUB	DIFFERENTIAL	SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	STEERING
Symptom	Noise	×	×	×									×	×	×	×	×	×	×
	Shake				×								×		×	×	×	×	×
	Shimmy, Shudder				×	×	×	×	×	×	×	×			×	×	×		×

×: Applicable

Brake Booster

INFOID:0000000005397010



SGIA0060E

Input rod installation standard dimension (B)	159 ± 0.5 mm (6.26 ± 0.02 in)
Vacuum leakage [at vacuum of – 66.7 kPa (– 500 mmHg, –19.69 inHg)]	Within 3.3 kPa (25 mmHg, 0.98 inHg) of vacuum for 15 seconds

Front Disc Brake

INFOID:0000000005397011

Unit: mm (in)

Brake model		AD22VK
Brake pad	Standard thickness (new)	9.0 (0.354)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	22.0 (0.866)
	Repair limit thickness	20.0 (0.787)
	Runout limit	0.06 (0.0024)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

Unit: mm (in)

Brake model		CLZ25VF
Brake pad	Standard thickness (new)	9.5 (0.374)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	24.0 (0.945)
	Repair limit thickness	22.0 (0.866)
	Runout limit (measured at 10.0 mm (0.394 in) inside the disc edge	0.04 (0.0016)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

Rear Drum Brake

INFOID:0000000005397012

Unit: mm (in)

Brake model		LT20
Brake lining	Standard thickness (new)	4.0 (0.157)
	Repair limit thickness	1.5 (0.059)
Drum	Standard inner diameter (new)	203 (7.992)
	Repair limit inner diameter	204.5 (8.051)

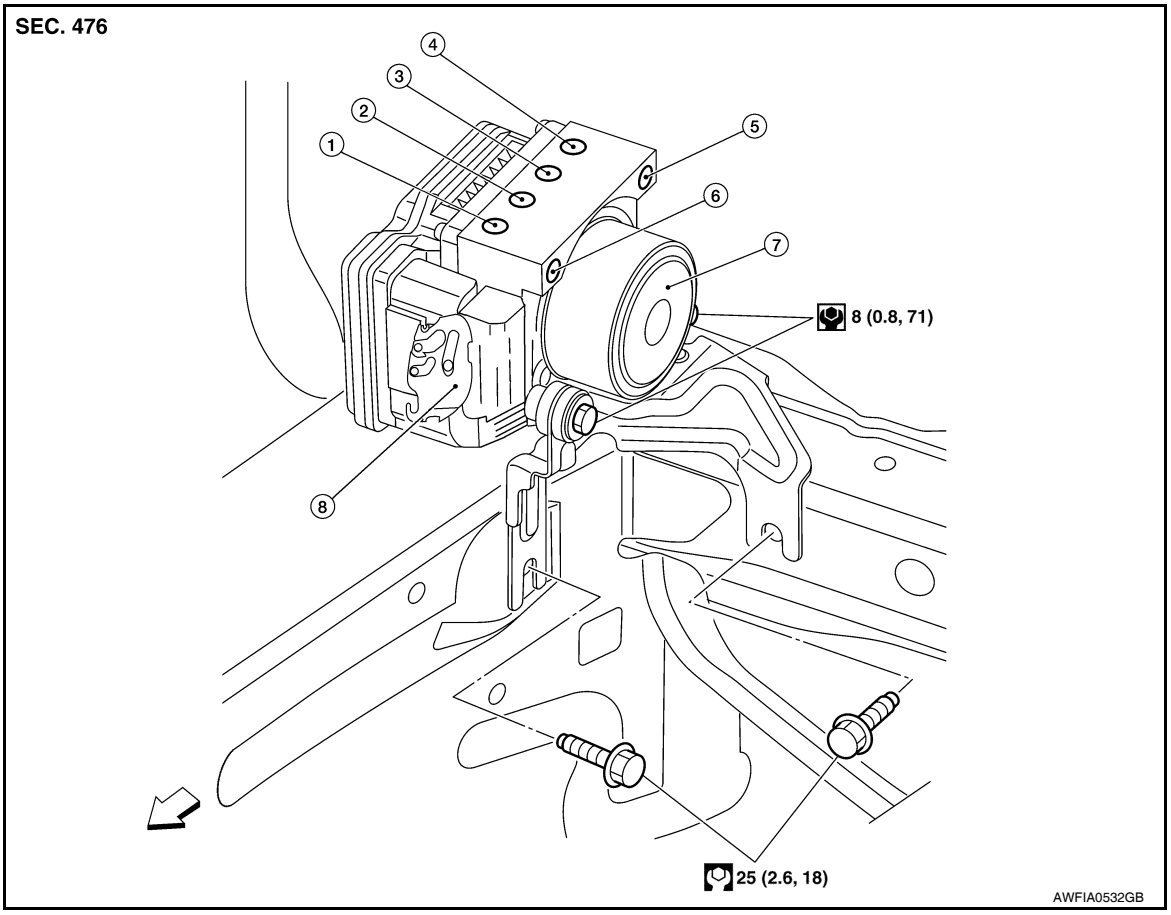
Unit: mm (in)

Brake model		LT23
Brake lining	Standard thickness (new)	4.0 (0.157)
	Repair limit thickness	1.5 (0.059)
Drum	Standard inner diameter (new)	228.6 (9.000)
	Repair limit inner diameter	230.0 (9.055)

ACTUATOR AND ELECTRIC UNIT (ASSEMBLY)

Removal and Installation

INFOID:0000000005397053



1.	To front right caliper	2.	To rear left wheel cylinder	3.	To rear right wheel cylinder
4.	To front left caliper	5.	From master cylinder primary side	6.	From master cylinder secondary side
7.	ABS actuator and electric unit (control unit)	8.	Harness connector	⇦	Front

CAUTION:

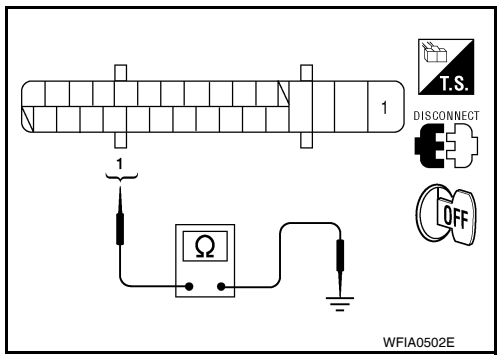
- **Before servicing, disconnect battery negative terminal.**
- **To remove brake tube, use flare nut wrench to prevent flare nuts and brake tube from being damaged. To install, use flare nut torque wrench, tighten flare nut to the specified torque. Refer to BR-11, "Hydraulic Circuit".**
- **Do not apply excessive impact to ABS actuator and electric unit (control unit), such as dropping it.**
- **Do not remove and install actuator by holding harness.**
- **After work is completed, bleed the air from the brake hydraulic system. Refer to BR-9, "Bleeding Brake System".**

REMOVAL

1. Disconnect the battery negative terminal.
2. Remove the cowl top. Refer to EI-22, "Removal and Installation".
3. Disconnect ABS actuator and electric unit (control unit) connector.
4. Loosen brake tube flare nuts, then remove brake tubes from ABS actuator and electric unit (control unit).
5. Remove brake booster hose from engine. Refer to BR-23, "Removal and Installation".
6. Remove ABS actuator and electric unit (control unit) bracket bolts.
7. Remove ABS actuator and electric unit (control unit).

2. Check resistance between ABS actuator and electric unit (control unit) connector E33 and ground.

ABS actuator and electric unit (control unit) harness connector E33	Body ground	Measured value (Approx.)
1	—	0Ω



OK or NG

OK >> Perform self-diagnosis again. If the same results appear, replace ABS actuator and electric unit (control unit). Refer to BRC-89, "Removal and Installation".

NG >> Repair the circuit.

Stop Lamp Switch System Inspection

INFOID:0000000005612166

INSPECTION PROCEDURE

1.SELF-DIAGNOSIS RESULT CHECK

Check self-diagnosis results.

Self-diagnosis results
STOP LAMP SW

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

YES >> GO TO 2.

NO >> Inspection End.

2.CONNECTOR INSPECTION

1. Disconnect the ABS actuator and electric unit (control unit) and stop lamp switch connectors.
2. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

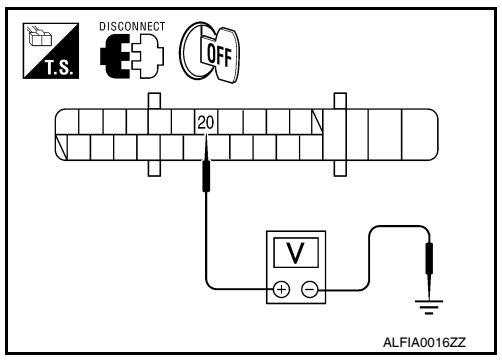
OK >> GO TO 3.

NG >> Repair or replace as necessary.

3.CHECK STOP LAMP SWITCH CIRCUIT

1. Connect stop lamp switch connector.
2. Check voltage between ABS actuator and electric unit (control unit) connector E33 terminal 20 and ground.

ABS actuator and electric unit (control unit)		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
E33	20	—	Brake pedal depressed	Battery voltage
			Brake pedal released	0V



Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to BRC-89, "Removal and Installation".

NO >> GO TO 4

4.CHECK STOP LAMP SWITCH CIRCUIT FOR OPEN

SERVICE DATA AND SPECIFICATIONS (SDS)

Clutch Control System

INFOID:0000000005397156

Type of clutch control	Hydraulic

Clutch Pedal

INFOID:0000000005397157

Clearance (A) between clutch pedal and ASCD switch threaded end while clutch pedal is fully released (if equipped).	0.74 - 1.96 mm (0.0291 - 0.0772 in)
Clearance (C) between clutch pedal and clutch interlock switch threaded end while clutch pedal is fully depressed.	0.74 - 1.96 mm (0.0291 - 0.0772 in)

Clutch Disc

INFOID:0000000005397158

Engine type	HR16DE	MR18DE
Model	200	225
Facing size (outer dia. × inner dia. × thickness)	200 mm x 140 mm x 3.1 mm (7.87 in x 5.51 in x 0.122 in)	225 mm × 160 mm × 3.2 mm (8.86 in × 6.30 in × 0.126 in)
Thickness of disc assembly with load	7.1 - 7.5 mm (0.280 - 0.295 in) with 4,658 N (475 kg, 1,047 lb)	7.2 - 7.6 mm (0.283 - 0.299 in) with 5,394 N (550 kg, 1,213 lb)
Runout limit/diameter of the area to be measured	1.0 mm (0.039 in) / 190 mm (7.48 in) dia	1.0 mm (0.039 in) / 215 mm (8.46 in) dia.
Maximum spline backlash (at outer edge of disc)	0.8 mm (0.031 in)	0.9 mm (0.035 in)
Wear limit of facing (depth to the rivet head)	0.3 mm (0.012 in)	0.3 mm (0.012 in)

Clutch Cover

INFOID:0000000005397159

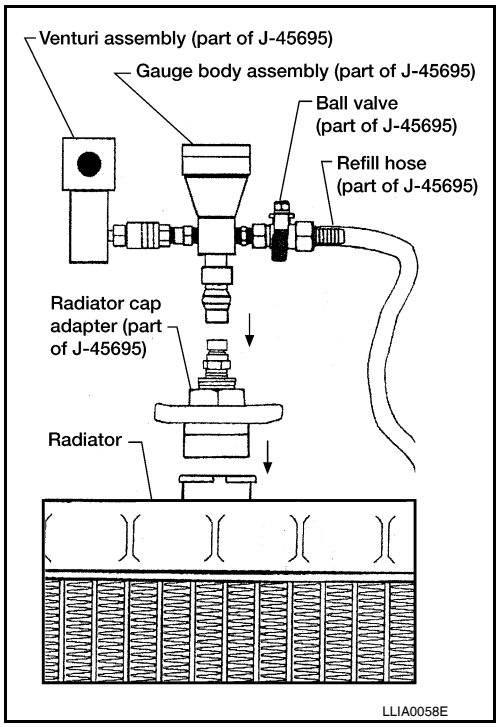
Engine type	HR16DE	MR18DE
Set-load	4,658 N (475.1 kg, 1,047.1 lb)	5,394 N (550 kg, 1,213 lb)
Diaphragm spring lever height	29 - 31 mm (1.14 - 1.22 in)	20 - 22 mm (0.79 - 0.87 in)
Uneven limit of diaphragm spring toe height	0.7 mm (0.028 in) or less	0.7 mm (0.028 in) or less

REFILLING ENGINE COOLANT

1. Install the radiator drain plug. Install the reservoir tank and cylinder block drain plug, if removed for a total system drain or for engine removal or repair.
   - **The radiator must be completely empty of coolant and water.**
   - **Apply sealant to the threads of the cylinder block drain plugs. Use Genuine High Performance Thread Sealant or equivalent. Refer to GI-42, "Recommended Chemical Product and Sealant".**

   Radiator drain plug : Refer to CO-40, "Component".
   Cylinder block drain plug : 9.8 N·m (1.0 kg-m, 87 in-lb)
2. If disconnected, reattach the upper radiator hose at the engine side.
3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

   Tool number : KV991J0070 (J-45695)

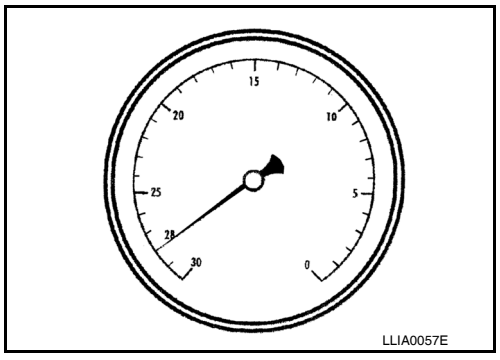


5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.
   - **Use Genuine NISSAN Long Life Anti-freeze coolant or equivalent, mixed with distilled water or demineralized water.**
     Refer to MA-15, "Anti-freeze Coolant Mixture Ratio".

   Engine coolant capacity (with reservoir tank) : Refer to MA-14, "Fluids and Lubricants".
6. Install an air hose to the venturi assembly, the air pressure must be within specification.

   Compressed air supply pressure : 549 - 824 kPa (5.6 - 8.4 kg/cm^2, 80 - 119 psi)

   CAUTION:
   The compressed air supply must be equipped with an air dryer.
7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.
8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, use the vacuum specifications based on the altitude above sea level.



Altitude above sea level	Vacuum gauge reading
0 - 100 m (328 ft)	: 28 inches of vacuum
300 m (984 ft)	: 27 inches of vacuum
500 m (1,641 ft)	: 26 inches of vacuum
1,000 m (3,281 ft)	: 24 - 25 inches of vacuum

9. When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses any vacuum. If the vacuum level drops, perform any necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for any leaks.

Control item		Fluid pressure control	Select control	Shift control	Lock-up control	CAN communication control	Fail-safe function (*3)
Output	Step motor			X			X
	TCC solenoid valve		X		X		X
	Lock-up select solenoid valve		X		X		X
	Line pressure solenoid valve	X	X	X			X
	Secondary pressure solenoid valve	X		X			X
	O/D OFF indicator signal(*2)			X		X	

*1: Input by CAN communications.

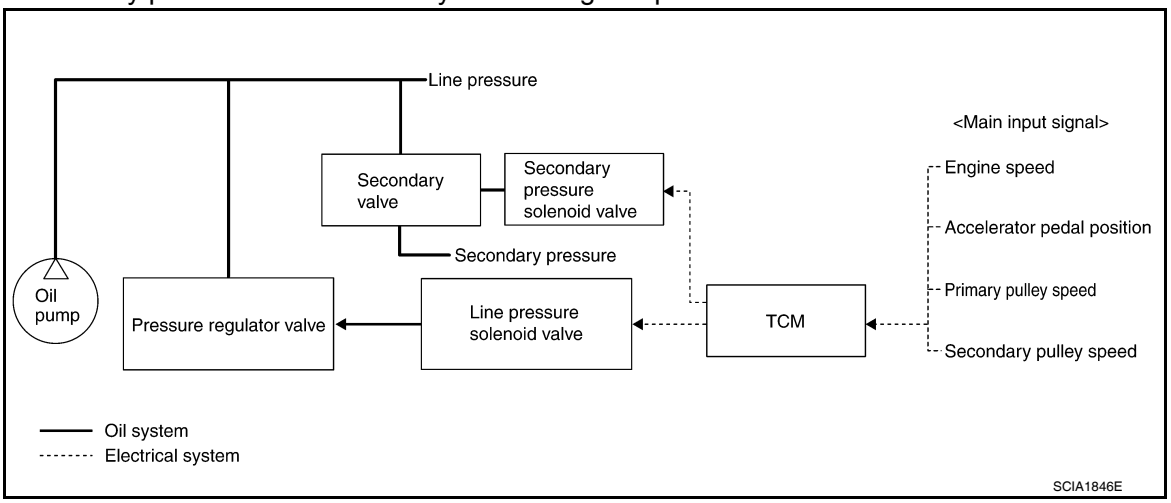
*2: Output by CAN communications.

*3: If these input and output signals are different, the TCM triggers the fail-safe function.

Line Pressure and Secondary Pressure Control

INFOID:0000000005397776

- When an input torque signal equivalent to the engine drive force is sent from the ECM to the TCM, the TCM controls the line pressure solenoid valve and secondary pressure solenoid valve.
- This line pressure solenoid controls the pressure regulator valve as the signal pressure and adjusts the pressure of the operating oil discharged from the oil pump to the line pressure most appropriate to the driving state. Secondary pressure is controlled by decreasing line pressure.



NORMAL CONTROL

Optimize the line pressure and secondary pressure, depending on driving conditions, on the basis of the throttle position, the engine speed, the primary pulley (input) revolution speed, the secondary pulley (output) revolution speed, the brake signal, the transmission range switch signal, the lock-up signal, the voltage, the target gear ratio, the fluid temperature, and the fluid pressure.

FEEDBACK CONTROL

When controlling the normal fluid pressure or the selected fluid pressure, the secondary pressure can be set more accurately by using the fluid pressure sensor to detect the secondary pressure and controlling the feedback.

Shift Control

INFOID:0000000005397777

In order to select the gear ratio which can obtain the driving force in accordance with driver's intention and the vehicle condition, TCM monitors the driving conditions, such as the vehicle speed and the throttle position and selects the optimum gear ratio, and determines the gear change steps to the gear ratio. Then send the com-

P0703 BRAKE SWITCH B

Description

INFOID:0000000005397810

ON, OFF status of the stop lamp switch is sent via the CAN communication from the combination meter to TCM using the signal.

CONSULT-III Reference Value in Data Monitor Mode

INFOID:0000000005397811

Item name	Condition	Display value
BRAKE SW	Depressed brake pedal	on
	Released brake pedal	off

On Board Diagnosis Logic

INFOID:0000000005397812

- This is not an OBD-II self-diagnostic item.
- Diagnostic trouble code “P0703” with CONSULT-III is detected when the stop lamp switch does not switch to ON and OFF.

- The stop lamp switch does not switch to ON, OFF.

Possible Cause

INFOID:0000000005397813

- Harness or connectors
  (Stop lamp switch, and combination meter circuit are open or shorted.)
  (CAN communication line is open or shorted.)
- Stop lamp switch

DTC Confirmation Procedure

INFOID:0000000005397814

CAUTION:
Always drive vehicle at a safe speed.
NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-III

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-III.
3. Start engine.
4. Start vehicle for at least 3 consecutive seconds.
5. If DTC is detected, go to CVT-60, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005397815

1.CHECK CAN COMMUNICATION LINE

Perform the self-diagnosis check. Refer to CVT-48, "CONSULT-III Function (TRANSMISSION)".

Is any malfunction of the “U1000” indicated?

YES >> Check CAN communication line. Refer to CVT-56.
NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH CIRCUIT

With CONSULT-III

1. Turn ignition switch ON. (Do not start engine.)
2. Select “ECU INPUT SIGNALS” in “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-III.
3. Read out ON/OFF switching action of the “BRAKE SW”.

OK or NG

OK >> GO TO 3.
NG >> Repair or replace damaged parts.

3. CHECK SECONDARY SPEED SENSOR SYSTEM AND PRIMARY SPEED SENSOR SYSTEM

Check secondary speed sensor system and primary speed sensor system. Refer to CVT-76, CVT-72.

OK or NG

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

4. DETECT MALFUNCTIONING ITEM

Check the following:
- Power supply and ground circuit for TCM. Refer to CVT-114, "Wiring Diagram - CVT - POWER".
- The TCM pin terminals for damage or loose connection with harness connector.

OK or NG

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

5. CHECK DTC

Perform CVT-96, "DTC Confirmation Procedure".

OK or NG

OK >> **INSPECTION END**
NG >> Replace the transaxle assembly or TCM. Refer to CVT-173, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000005397973

1.CHECK STEP MOTOR

With CONSULT-III
It is monitoring whether “GEAR RATIO: 2.56 - 0.43” changes similarly to “STM STEP: (–20) - (+180)” by DATA MONITOR mode. Refer to CVT-48, "CONSULT-III Function (TRANSMISSION)".

Without CONSULT-III
Inspect the engine speed (rise and descend), vehicle speed, throttle position, and check shift change. Refer to CVT-176, "Vehicle Speed When Shifting Gears".

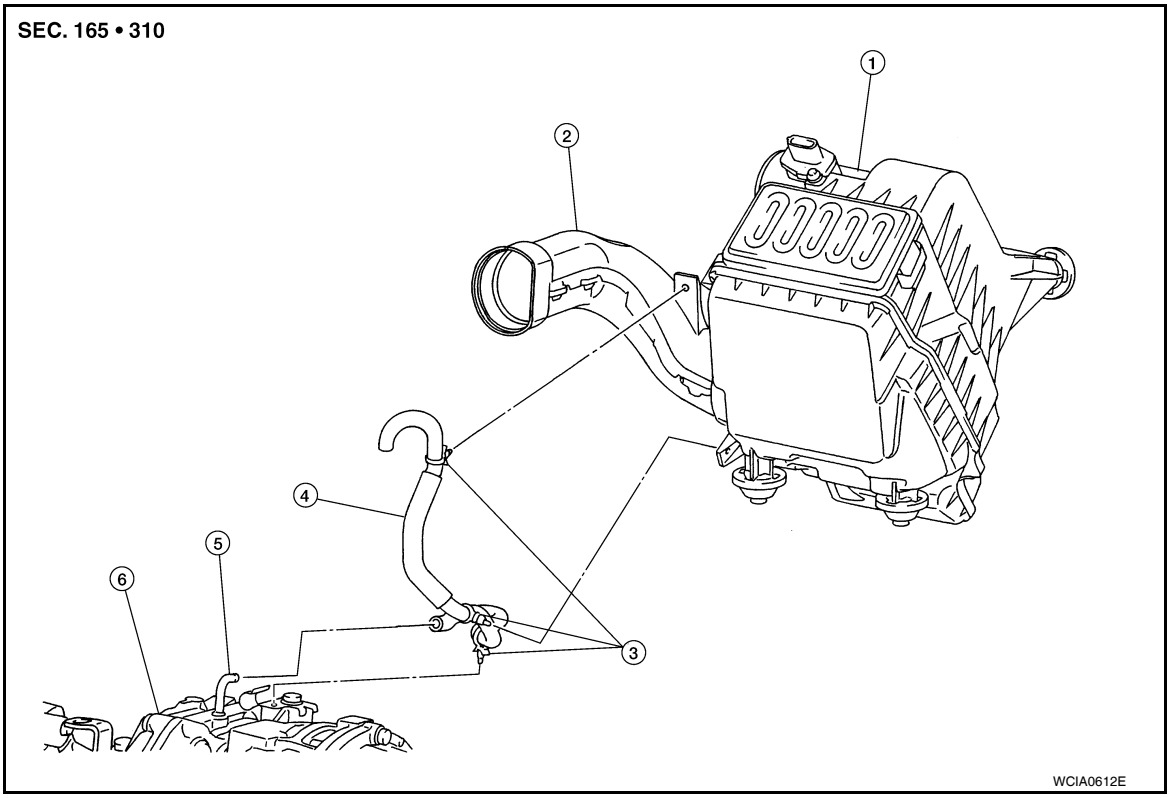
OK or NG

OK >> **INSPECTION END**
NG >> Replace the transaxle assembly. Refer to CVT-173, "Removal and Installation".

AIR BREATHER HOSE

Removal and Installation

INFOID:0000000005398011



1. Air cleaner case	2. Air duct	3. Clip
4. Air breather hose	5. Air breather tube	6. CVT

REMOVAL

1. Remove air duct (front), air duct (inlet) and air cleaner case. Refer to EM-135.
2. Remove air breather hose.

INSTALLATION

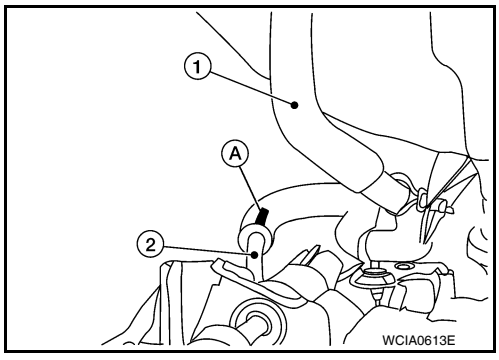
Installation is in the reverse order of removal.

CAUTION:

Make sure air breather hose is not collapsed or blocked due to folding or bending when installed.

NOTE:

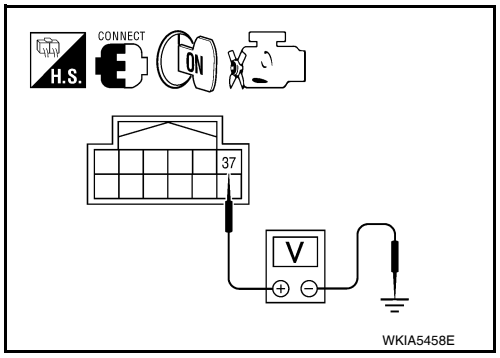
- Install the air breather hose (1) to the air breather tube (2) so that the paint mark (A) faces upward. Also make sure the air breather hose end is pushed up to the tube bend portion.
- When installing air breather hose (1) to air duct and air cleaner case, make sure to fully insert the hose clips.



2.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
IPDM E/R connector	Terminal			
E46	37	Ground	Engine stopped	0 V



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> GO TO 3.

3.CHECK OIL PRESSURE SWITCH

1. Turn ignition switch OFF.
2. Disconnect oil pressure switch connector.
3. Check oil pressure switch. Refer to DI-32, "Component Inspection".

OK or NG

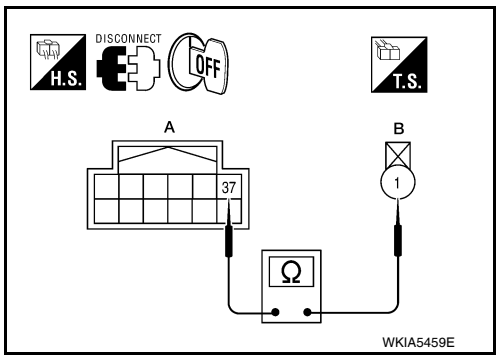
OK >> GO TO 4.

NG >> Replace oil pressure switch.

4.CHECK OIL PRESSURE SWITCH CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector (A) and oil pressure switch harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E46	37	F32	1	Yes



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

5.CHECK CAN COMMUNICATION

Select “METER/M&A” on CONSULT-III, and perform self-diagnosis of combination meter.

Self-diagnostic results content

No malfunction detected>> GO TO 6.

Malfunction detected>> Check applicable parts, and repair or replace as necessary.

6.CHECK COMBINATION METER INPUT SIGNAL

Select “METER/M&A” on CONSULT-III. Operate ignition switch with “OIL W/L” of “DATA MONITOR” and check operation status.

“OIL W/L”

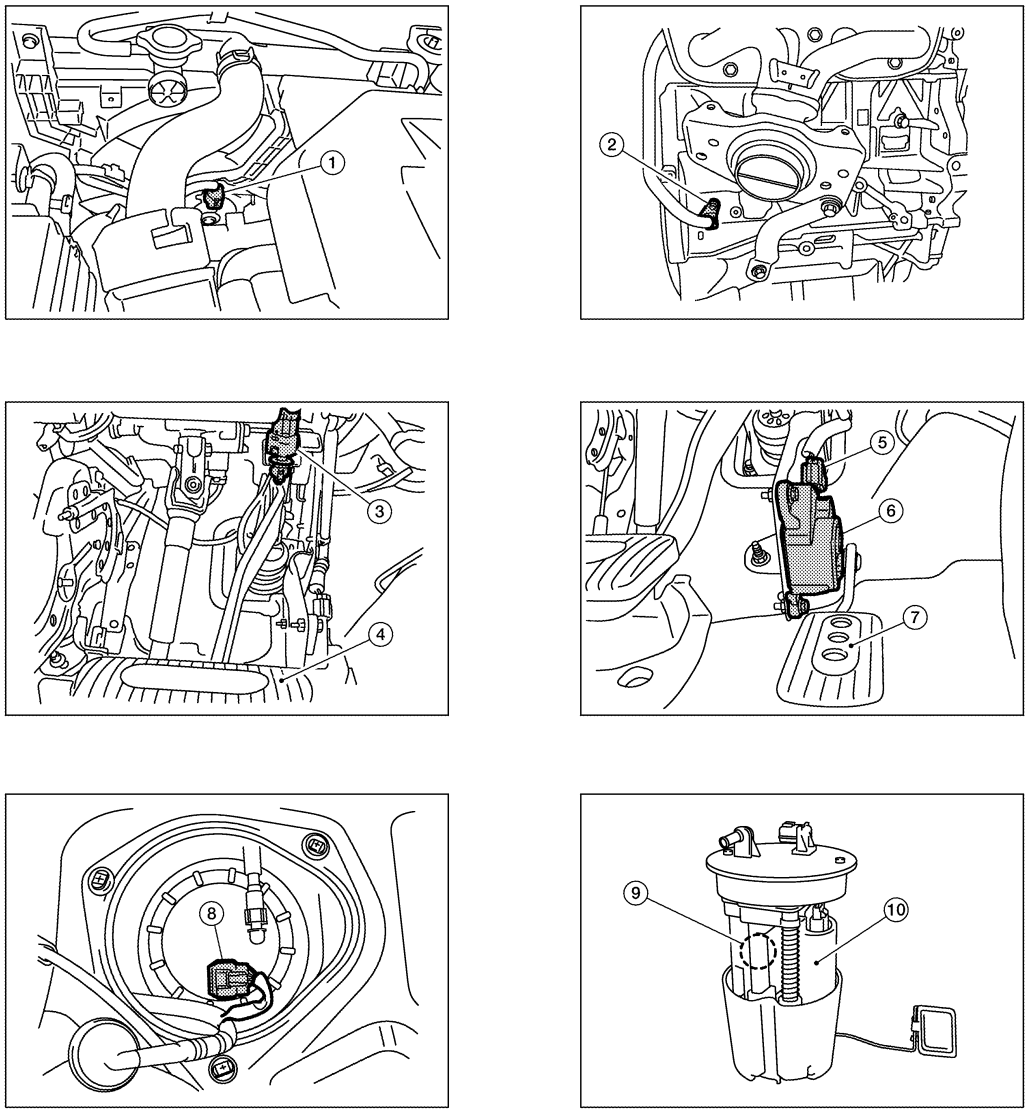
When ignition switch is in ON position (Engine stopped.) : ON

When engine running : OFF

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Removal and Installation".

NG >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".



AWBIA0044ZZ

1. Cooling fan motor harness connector
2. Crankshaft position sensor
3. Stop lamp switch
4. Brake pedal
5. Accelerator pedal position sensor harness connector
6. Accelerator pedal position sensor
7. Accelerator pedal
8. Fuel level sensor unit and fuel pump harness connector (view with inspection hole cover removed)
9. Fuel pressure regulator
10. Fuel pump

Component Description

INFOID:0000000005398259

Component	Reference
Accelerator pedal position sensor	EC-392, "Description"
Camshaft position sensor (PHASE)	EC-262, "Description"
Crankshaft position sensor (POS)	EC-257, "Description"
Engine coolant temperature sensor	EC-161, "Description"

In most cases the ECM will automatically complete its self-diagnosis cycle during normal usage, and the SRT status will indicate “CMPLT” for each application system. Once set as “CMPLT”, the SRT status remains “CMPLT” until the self-diagnosis memory is erased.
Occasionally, certain portions of the self-diagnostic test may not be completed as a result of the customer's normal driving pattern; the SRT will indicate “INCMP” for these items.

NOTE:
The SRT will also indicate “INCMP” if the self-diagnosis memory is erased for any reason or if the ECM memory power supply is interrupted for several hours.
If, during the state emissions inspection, the SRT indicates “CMPLT” for all test items, the inspector will continue with the emissions test. However, if the SRT indicates “INCMP” for one or more of the SRT items the vehicle is returned to the customer untested.

NOTE:
If permanent DTC is stored or MIL illuminates during the state emissions inspection, the vehicle is also returned to the customer untested even though the SRT indicates “CMPLT” for all test items. Therefore, it is important to check SRT (“CMPLT”), DTC (No DTCs) and permanent DTC (No permanent DTCs) before the inspection.

SRT Item
The table below shows required self-diagnostic items to set the SRT to “CMPLT”.

SRT item (CONSULT-III indication)	Performance Priority*	Required self-diagnostic items to set the SRT to “CMPLT”	Corresponding DTC No.
CATALYST	2	Three way catalyst function	P0420
EVAP SYSTEM	2	EVAP control system purge flow monitoring	P0441
	1	EVAP control system	P0442
	2	EVAP control system	P0456
HO2S	2	Air fuel ratio (A/F) sensor 1	P0133
		Heated oxygen sensor 2	P0137
		Heated oxygen sensor 2	P0138
		Heated oxygen sensor 2	P0139
EGR/VVT SYSTEM	3	Intake value timing control function	P0011

*: If completion of several SRTs is required, perform driving patterns (DTC CONFIRMATION PROCEDURE), one by one based on the priority for models with CONSULT-III.

SRT Set Timing
SRT is set as “CMPLT” after self-diagnosis has been performed one or more times. Completion of SRT is done regardless of whether the result is OK or NG. The set timing is different between OK and NG results and is shown in the table below.

Self-diagnosis result		Example				
		Diagnosis	Ignition cycle ← ON → OFF ← ON → OFF ← ON → OFF ← ON →			
All OK	Case 1	P0400	OK (1)	— (1)	OK (2)	— (2)
		P0402	OK (1)	— (1)	— (1)	OK (2)
		P1402	OK (1)	OK (2)	— (2)	— (2)
		SRT of EGR	“CMPLT”	“CMPLT”	“CMPLT”	“CMPLT”
	Case 2	P0400	OK (1)	— (1)	— (1)	— (1)
		P0402	— (0)	— (0)	OK (1)	— (1)
		P1402	OK (1)	OK (2)	— (2)	— (2)
		SRT of EGR	“INCMP”	“INCMP”	“CMPLT”	“CMPLT”

U1001 CAN COMM CIRCUIT

Description

INFOID:0000000005398296

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic

INFOID:0000000005398297

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
U1001	CAN communication line	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission related diagnosis) for 2 seconds or more.	• Harness or connectors (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 3 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

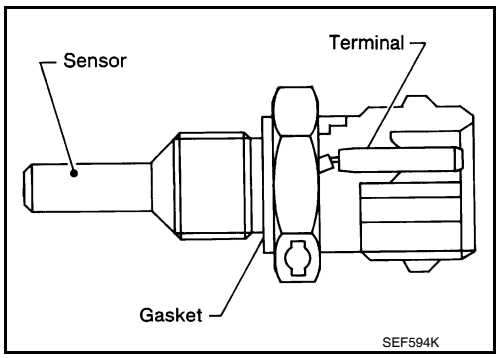
YES >> EC-125, "Diagnosis Procedure".
NO >> INSPECTION END

P0117, P0118 ECT SENSOR

Description

INFOID:0000000005398338

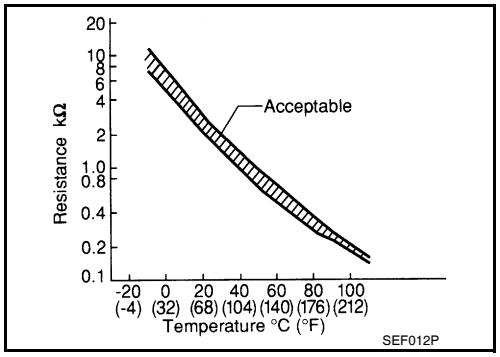
The engine coolant temperature sensor is used to detect the engine coolant temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine coolant temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
–10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.37 - 2.63
50 (122)	2.2	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260

*: These data are reference values and are measured between ECM terminal 38 (Engine coolant temperature sensor) and ground.



CAUTION:

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

DTC Logic

INFOID:0000000005398339

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P0117	Engine coolant temperature sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	• Harness or connectors (The sensor circuit is open or shorted.) • Engine coolant temperature sensor
P0118	Engine coolant temperature sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

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.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check DTC.

Is DTC detected?

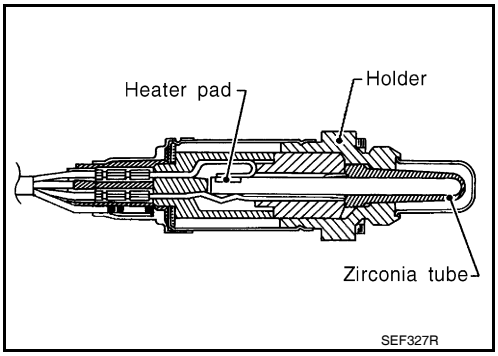
YES >> Go to EC-162, "Diagnosis Procedure".
NO >> INSPECTION END

P0137 HO2S2

Description

INFOID:0000000005398377

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

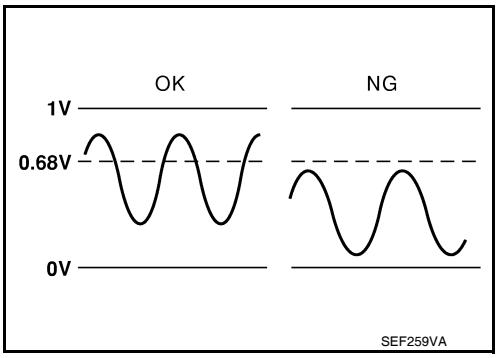


DTC Logic

INFOID:0000000005398378

DTC DETECTION LOGIC

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



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

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT-III?

Do you have CONSULT-III?

YES >> GO TO 2.
NO >> GO TO 5.

2.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.
TESTING CONDITION:
For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F).

>> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

With CONSULT-III

1. Cool engine down until “COOLAN TEMP/S” indication is less than 60°C (140°F).
2. Wait at least 10 seconds.
3. Check 1st trip DTC.

With GST

Follow the procedure “With CONSULT-III” above.

Is 1st trip DTC detected?

YES >> Go to EC-236, "Diagnosis Procedure".
NO >> INSPECTION END

P0441 EVAP CONTROL SYSTEM

DTC Logic

INFOID:0000000005398437

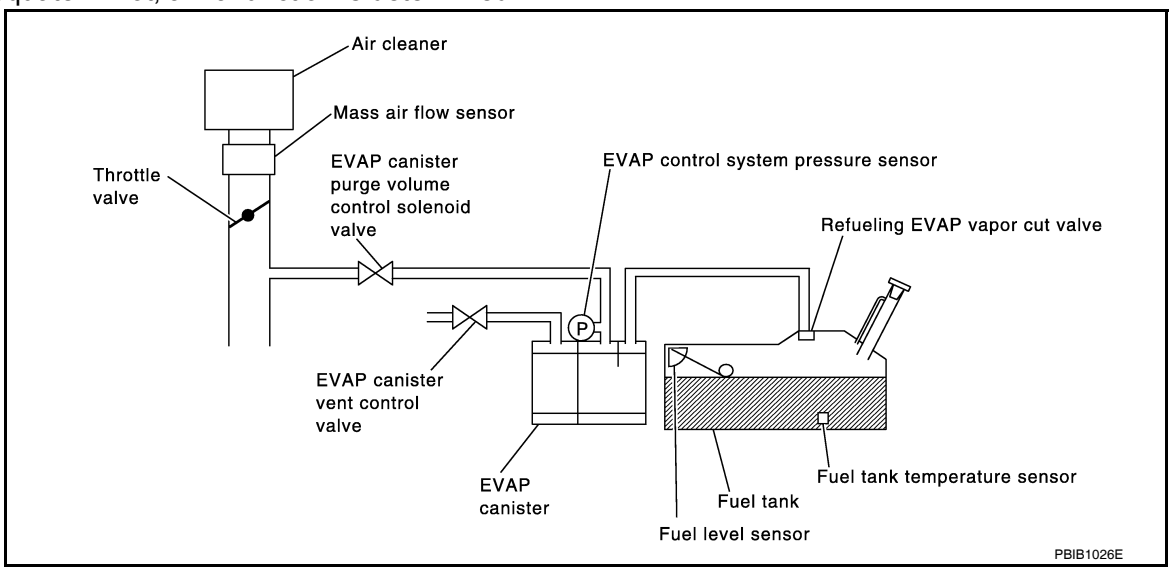
DTC DETECTION LOGIC

NOTE:

If DTC P0441 is displayed with other DTC such as P2122, P2123, P2127, P2128 or P2138, first perform trouble diagnosis for other DTC.

In this evaporative emission (EVAP) control system, purge flow occurs during non-closed throttle conditions. Purge volume is related to air intake volume. Under normal purge conditions (non-closed throttle), the EVAP canister purge volume control solenoid valve is open to admit purge flow. Purge flow exposes the EVAP control system pressure sensor to intake manifold vacuum.

Under normal conditions (non-closed throttle), sensor output voltage indicates if pressure drop and purge flow are adequate. If not, a malfunction is determined.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0441	EVAP control system incorrect purge flow	EVAP control system does not operate properly, EVAP control system has a leak between intake manifold and EVAP control system pressure sensor.	• EVAP canister purge volume control solenoid valve stuck closed • EVAP control system pressure sensor and the circuit • Loose, disconnected or improper connection of rubber tube • Blocked rubber tube • Cracked EVAP canister • EVAP canister purge volume control solenoid valve circuit • Accelerator pedal position sensor • Blocked purge port • EVAP canister vent control valve • Drain filter

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT-III?

Do you have CONSULT-III?

YES >> GO TO 2.
NO >> GO TO 6.

2.PRECONDITIONING

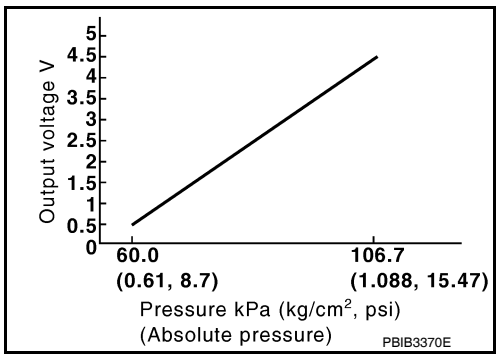
If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

Description

INFOID:0000000005398469

The EVAP control system pressure sensor detects pressure in the purge line. The sensor output voltage to the ECM increases as pressure increases.



DTC Logic

INFOID:0000000005398470

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0452	EVAP control system pressure sensor low input	An excessively low voltage from the sensor is sent to ECM.	• Harness or connectors (EVAP control system pressure sensor circuit is open or shorted.) [Crankshaft position sensor (POS) circuit is shorted.) (Accelerator pedal position sensor circuit is shorted.) (Refrigerant pressure sensor circuit is shorted.) • EVAP control system pressure sensor • Crankshaft position sensor (POS) • Accelerator pedal position sensor • Refrigerant pressure sensor

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.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Select “DATA MONITOR” mode with CONSULT-III.
5. Make sure that “FUEL T/TMP SE” indication is more than 0°C (32°F).
6. Start engine and wait at least 20 seconds.
7. Check 1st trip DTC.

With GST

1. Start engine and warm it up to normal operating temperature.

Is intake air leak detected?

YES >> Discover air leak location and repair.
NO >> GO TO 3.

3. REPLACE ECM

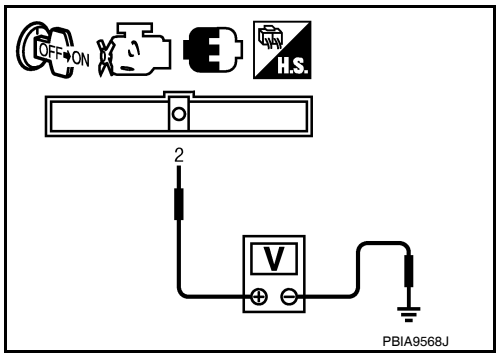
1. Stop engine.
2. Replace ECM.
3. Perform EC-23, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

>> INSPECTION END

YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT-I

1. Check the voltage between ECM harness connector and ground under the following conditions.



ECM		Ground	Condition	Voltage
Connector	Terminal			
F10	2	Ground	Ignition switch: OFF	Approx. 0 V
			Ignition switch: ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 3.

3. CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Disconnect IPDM E/R harness connector.
4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E46	46	F10	15	Existed

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

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

4. DETECT MALFUNCTIONING PART

Check the following.
- Harness connectors E8, F8
- Harness for open or short between ECM and IPDM E/R

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

5. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT-II

1. Check the continuity between ECM harness connector and IPDM E/R harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E43	8	F10	2	Existed

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

Is the inspection result normal?

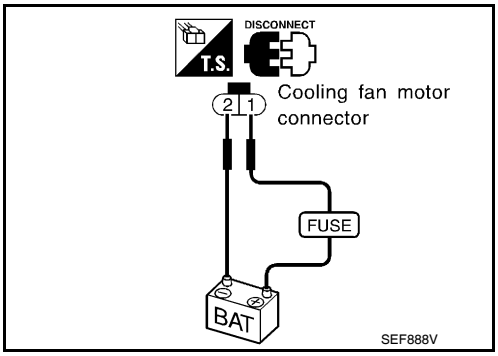
YES >> GO TO 7.
NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.
- Harness connectors E8, F8
- Harness for open or short between ECM and IPDM E/R

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

1. Disconnect cooling fan motor harness connectors.
2. Supply cooling fan motor terminals with battery voltage and check operation.

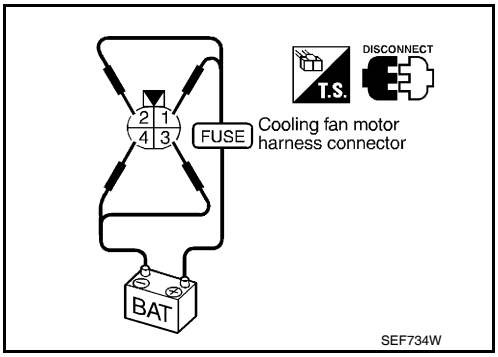


	Terminals	
	(+)	(-)
Cooling fan motor	1	2

Cooling fan motor should operate.
If NG, replace cooling fan motor.

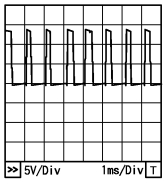
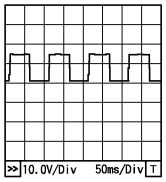
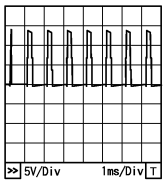
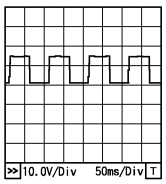
Models without A/C

1. Disconnect cooling fan motor harness connectors.
2. Supply cooling fan motor terminals with battery voltage and check operation.



	Speed	terminals	
		(+)	(–)
Cooling fan motor	Low	1	4
		2	3
	High	1 and 2	3 and 4

Cooling fan motor should operate.
If NG, replace cooling fan motor.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
1	L	Throttle control motor (Open)	**[Ignition switch: ON]** • Engine stopped • Selector lever position: D (A/T), 1st (M/T) • Accelerator pedal: Fully depressed	Approximately 3.2 V★  PBIA8150J
2	SB	Throttle control motor power supply	**[Ignition switch: ON]**	BATTERY VOLTAGE (11 - 14 V)
3	G	A/F sensor 1 heater	**[Engine is running]** • **Warm-up condition** • Idle speed (More than 140 seconds after starting engine)	Approximately 2.9 - 8.8 V★  PBIA8148J
4	P	Throttle control motor (Close)	**[Ignition switch: ON]** • Engine stopped • Selector lever position: D (A/T), 1st (M/T) • Accelerator pedal: Fully released	0 - 14 V★  PBIA8149J
5	G	Heated oxygen sensor 2 heater	**[Engine is running]** • Engine speed: Below 3,600 rpm after the following conditions are met. - Engine: After warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load.	Approximately 10 V★  PBIA8148J
			[Ignition switch: ON] • Engine stopped **[Engine is running]** • Engine speed: Above 3,600 rpm.	BATTERY VOLTAGE (11 - 14 V)

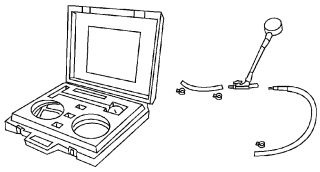
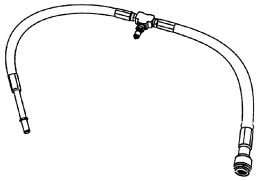
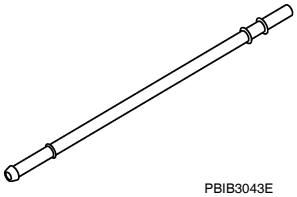
PREPARATION

PREPARATION

Special Service Tools

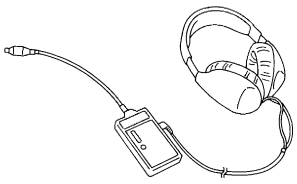
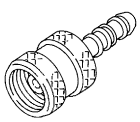
INFOID:0000000005398648

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

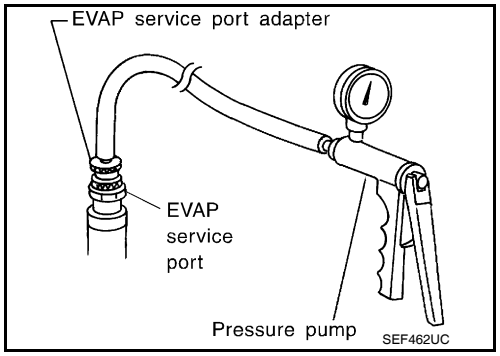
Tool number (Kent-Moore No.) Tool name	Description
(J-44321) Fuel pressure gauge kit  LEC642	Checks fuel pressure
(J-44321-6) Fuel pressure adapter  LBIA0376E	Connects fuel pressure gauge to quick connector type fuel lines.
KV10118400 Fuel tube adapter  PBIB3043E	Measures fuel pressure

Commercial Service Tools

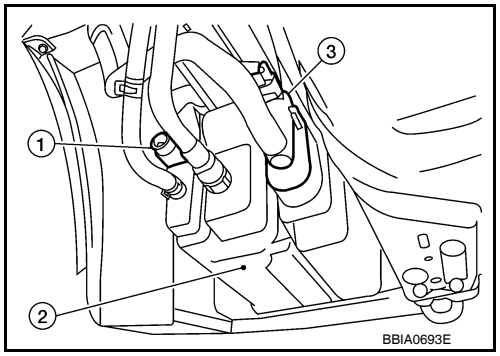
INFOID:0000000005398649

Tool name (Kent-Moore No.)	Description
Leak detector i.e.: (J-41416)  S-NT703	Locates the EVAP leak
EVAP service port adapter i.e.: (J-41413-OBD)  S-NT704	Applies positive pressure through EVAP service port

1. Attach the EVAP service port adapter securely to the EVAP service port.
2. Also attach the pressure pump with pressure gauge to the EVAP service port adapter.

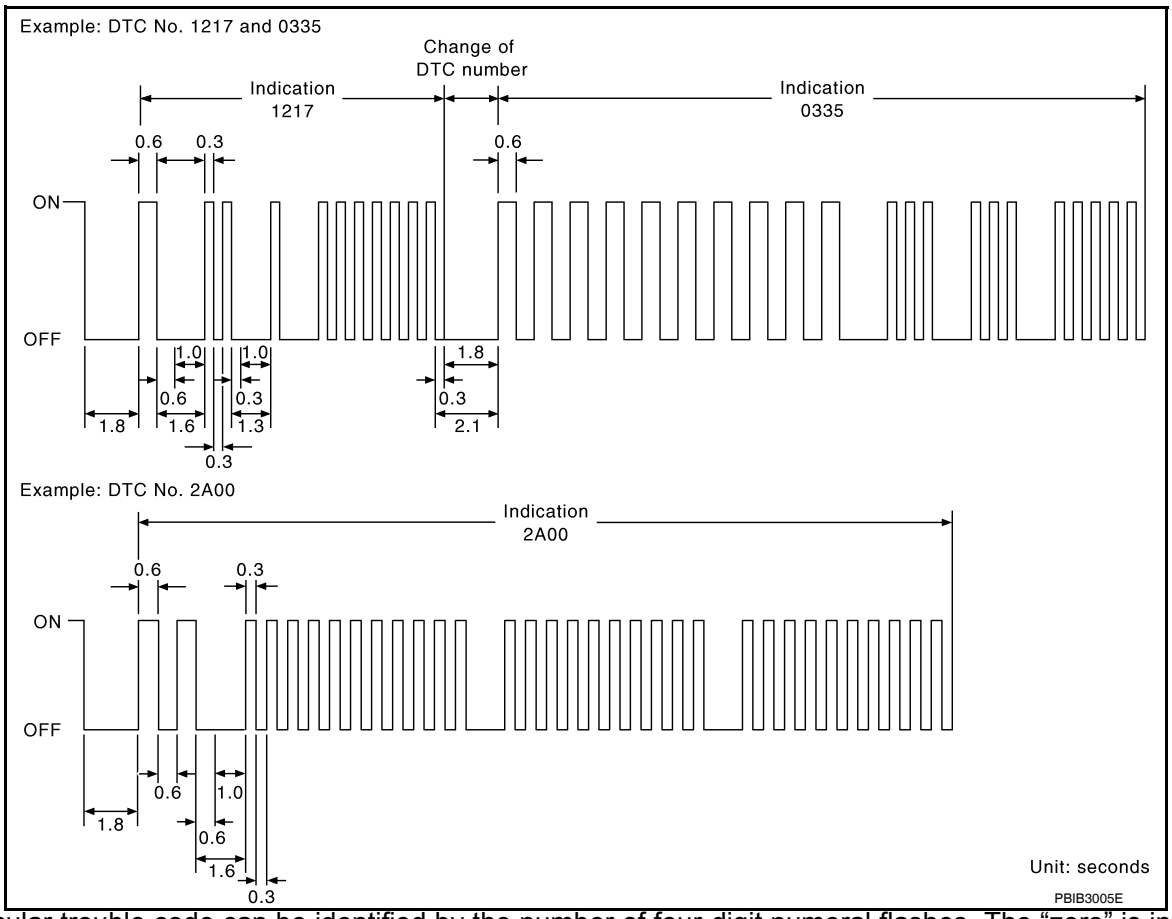


3. Apply battery voltage to the terminal of EVAP canister vent control valve (3) to make a closed EVAP system.
   - EVAP control system pressure sensor (1)
   - EVAP canister (2)



4. To locate the leak, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.014 to 0.028 kg/cm^2, 0.2 to 0.4 psi).
5. Remove EVAP service port adapter and hose with pressure pump.
6. Locate the leak using a leak detector. Refer to EC-525, "Description".

tified codes can be identified by using the CONSULT-III or GST. A DTC will be used as an example for how to read a code.



A particular trouble code can be identified by the number of four-digit numeral flashes. The “zero” is indicated by the number of ten flashes. The “A” is indicated by the number of eleven flash. The length of time the 1,000th-digit numeral flashes on and off is 1.2 seconds consisting of an ON (0.6-second) - OFF (0.6-second) cycle. The 100th-digit numeral and lower digit numerals consist of a 0.3-second ON and 0.3-second OFF cycle. A change from one digit numeral to another occurs at an interval of 1.0-second OFF. In other words, the later numeral appears on the display 1.3 seconds after the former numeral has disappeared.
A change from one trouble code to another occurs at an interval of 1.8-second OFF.
In this way, all the detected malfunctions are classified by their DTC numbers. The DTC 0000 refers to no malfunction. (See EC-503)

How to Erase Diagnostic Test Mode II (Self-diagnostic Results)
The DTC can be erased from the back-up memory in the ECM by depressing accelerator pedal.
Refer to "How to Erase Diagnostic Test Mode II (Self-diagnostic Results)".
- **If the battery is disconnected, the DTC will be lost from the backup memory within 24 hours.**
- **Be careful not to erase the stored memory before starting trouble diagnoses.**

OBD System Operation Chart

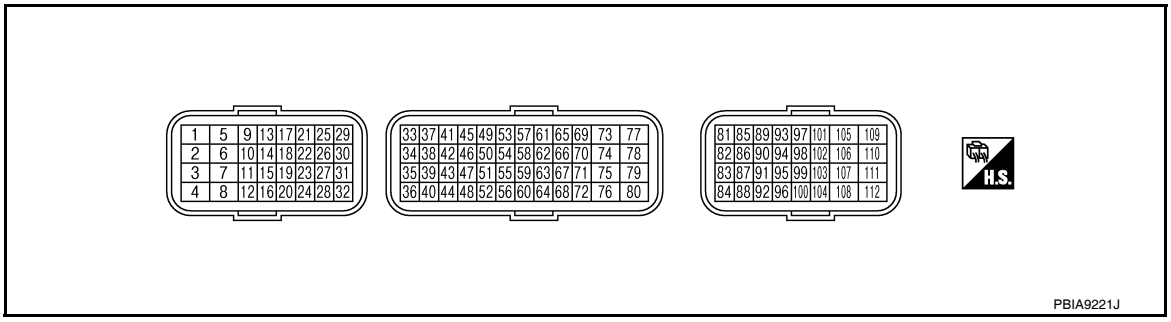
INFOID:0000000005532403

RELATIONSHIP BETWEEN MIL, 1ST TRIP DTC, DTC, AND DETECTABLE ITEMS

- When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data are stored in the ECM memory.
- When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data are stored in the ECM memory, and the MIL will come on. For details, refer to EC-541, "Two Trip Detection Logic".
- The MIL will go off after the vehicle is driven 3 times (driving pattern B) with no malfunction. The drive is counted only when the recorded driving pattern is met (as stored in the ECM). If another malfunction occurs while counting, the counter will reset.
- The DTC and the freeze frame data will be stored until the vehicle is driven 40 times (driving pattern A) without the same malfunction recurring (except for Misfire and Fuel Injection System). For Misfire and Fuel Injection System, the DTC and freeze frame data will be stored until the vehicle is driven 80 times (driving pattern

ECM Harness Connector Terminal Layout

INFOID:0000000005532419

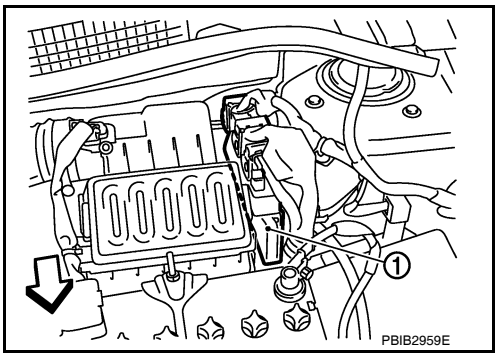


ECM Terminal and Reference Value

INFOID:0000000005532420

PREPARATION

1. ECM (1) is located in the engine room left side near battery.
   - ⇦: Vehicle front

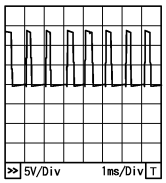
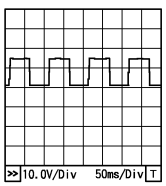


ECM INSPECTION TABLE

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

CAUTION:

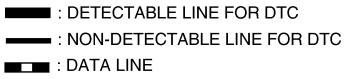
Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECMs transistor. Use a ground other than ECM terminals, such as the ground.

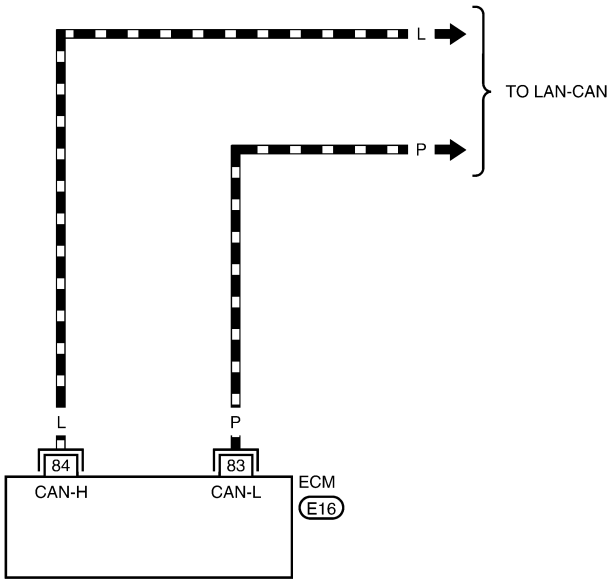
Terminal No.	Wire color	Item	Condition	Data (DC Voltage)
1	L	Throttle control motor (Open)	**[Ignition switch: ON]** • Engine stopped • Shift lever: D (A/T, CVT), 1st (M/T) • Accelerator pedal: Fully depressed	Approximately 3.2 V★  PBIA8150J
2	SB	Throttle control motor power supply	**[Ignition switch: ON]**	BATTERY VOLTAGE (11 - 14 V)
3	G	A/F sensor 1 heater	**[Engine is running]** • **Warm-up condition** • Idle speed (More than 140 seconds after starting engine)	Approximately 2.9 - 8.8 V★  PBIA8148J

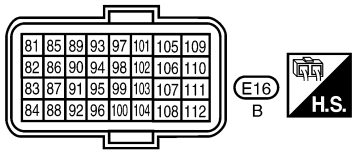
Wiring Diagram

INFOID:0000000005532441

EC-CAN-01







BBWA2626E

Diagnosis Procedure

INFOID:0000000005532442

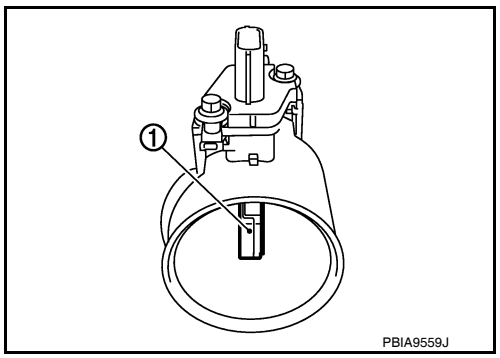
Go to LAN-26, "CAN System Specification Chart".

DTC P0112, P0113 IAT SENSOR

Component Description

INFOID:0000000005532496

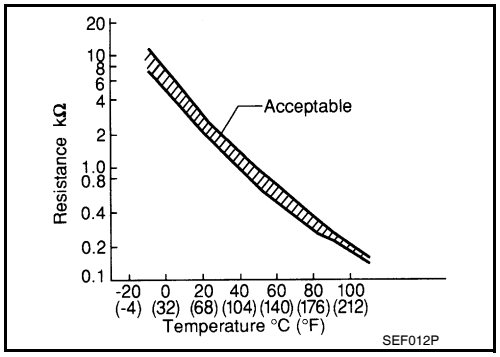
The intake air temperature sensor is built-into mass air flow sensor (1). The sensor detects intake air temperature and transmits a signal to the ECM.
The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rise.



<Reference data>

Intake air temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
25 (77)	3.3	1.800 - 2.200
80 (176)	1.2	0.283 - 0.359

*: This data is reference value and is measured between ECM terminal 46 (Intake air temperature sensor) and ground.



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

On Board Diagnosis Logic

INFOID:0000000005532497

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0112 0112	Intake air temperature sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	• Harness or connectors (Intake air temperature sensor circuit is open or shorted.) • Intake air temperature sensor
P0113 0113	Intake air temperature sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC Confirmation Procedure

INFOID:0000000005532498

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

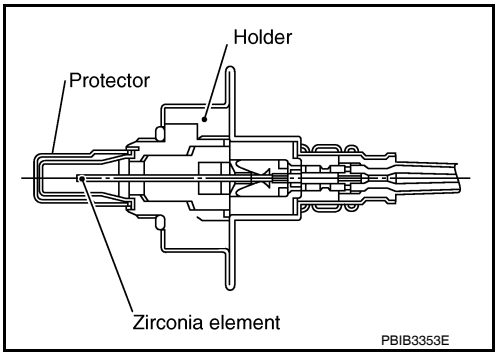
1. Turn ignition switch ON and wait at least 5 seconds.
2. Check 1st trip DTC.
3. If 1st trip DTC is detected, go to EC-680, "Diagnosis Procedure".

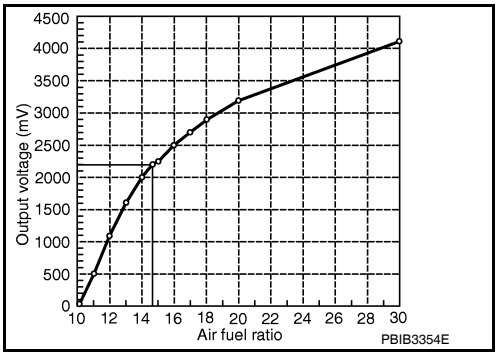
DTC P0132 A/F SENSOR 1

Component Description

INFOID:0000000005532556

The air fuel ratio (A/F) sensor 1 is a planar one-cell limit current sensor. The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element.
The sensor is capable of precise measurement λ = 1, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range.
The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.
Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of about 800°C (1,472°F).





CONSULT-III Reference Value in Data Monitor Mode

INFOID:0000000005532557

Specification data are reference values.

Monitor item	Condition		Specification
A/F SEN1 (B1)	• Engine: After warming up	Maintaining engine speed at 2,000 rpm	Fluctuates around 2.2 V

On Board Diagnosis Logic

INFOID:0000000005532558

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the air fuel ratio (A/F) sensor 1 signal is not inordinately high.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P0132 0132	Air fuel ratio (A/F) sensor 1 circuit high voltage	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 5 V.	• Harness or connectors [Air fuel ratio (A/F) sensor circuit is open or shorted.] • Air fuel ratio (A/F) sensor 1

DTC Confirmation Procedure

INFOID:0000000005532559

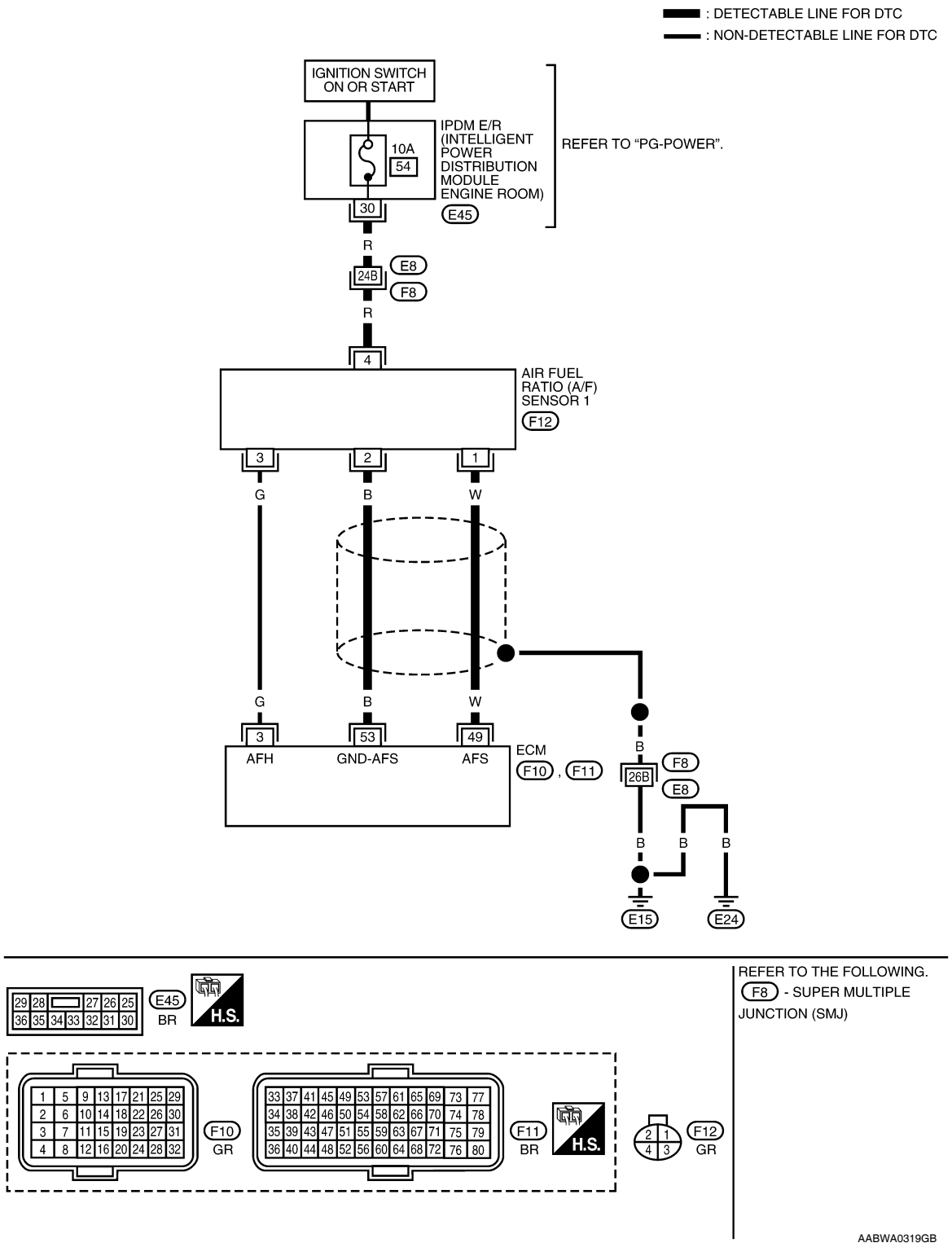
NOTE:
If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.
TESTING CONDITION:
Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

WITH CONSULT-III
1. Start engine and warm it up to normal operating temperature.
2. Select “A/F SEN1 (B1)” in “DATA MONITOR” mode with CONSULT-III.
3. Check “A/F SEN1 (B1)” indication.
   If the indication is constantly approx. 5 V, go to EC-719, "Diagnosis Procedure".

Wiring Diagram

INFOID:0000000005612767

EC-A/F-01



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

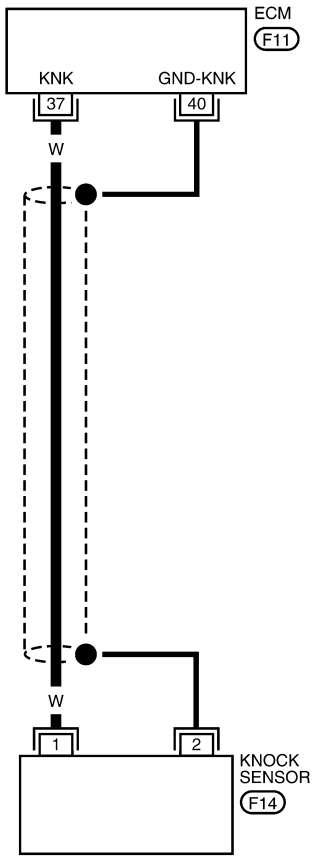
CAUTION:

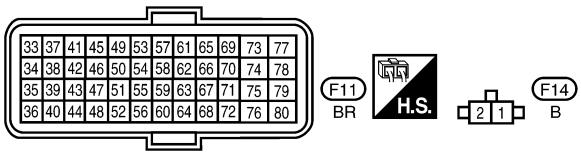
Wiring Diagram

INFOID:0000000005532633

EC-KS-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC





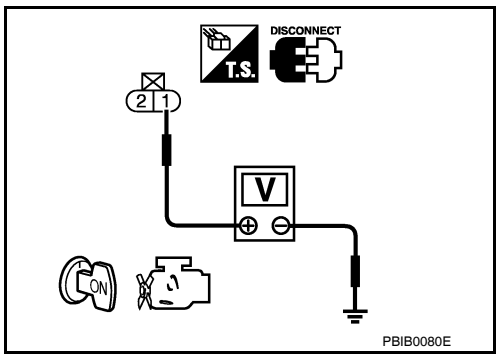
BBWA2637E

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

CAUTION:

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

4. Check voltage between EVAP canister purge volume control solenoid valve terminal 1 and ground with CONSULT-III or tester.



Voltage: Battery voltage

OK or NG

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

2. DETECT MALFUNCTIONING PART

Check the following.
- Harness connectors E8, F8
- Harness for open or short between EVAP canister purge volume control solenoid valve and IPDM E/R

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

3. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between ECM terminal 9 and EVAP canister purge volume control solenoid valve terminal 2. Refer to Wiring Diagram.

Continuity should exist.

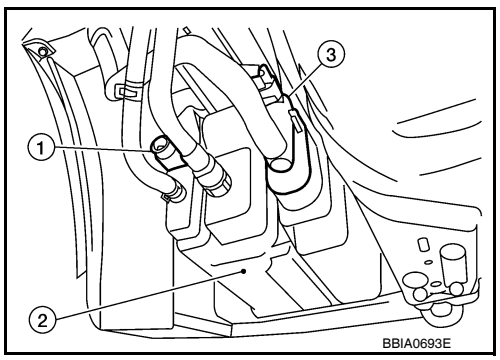
4. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 4.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

4. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

1. Disconnect EVAP control system pressure sensor harness connector.
- EVAP control system pressure sensor (1)
- EVAP canister (2)
- EVAP canister vent control valve (3)
2. Check connectors for water.



Water should not exist.

OK or NG

OK >> GO TO 5.
NG >> Replace EVAP control system pressure sensor.

5. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to EC-850, "Component Inspection".

OK or NG

OK (With CONSULT-III)>>GO TO 6.
OK (Without CONSULT-III)>>GO TO 7.
NG >> Replace EVAP control system pressure sensor.

6. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

With CONSULT-III

1. Turn ignition switch OFF.
2. Reconnect harness connectors disconnected.
3. Start engine.

1. Check harness continuity between ECM terminal 42 and EVAP control system pressure sensor terminal 2. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

OK >> GO TO 15.
NG >> GO TO 14.

14. DETECT MALFUNCTIONING PART

Check the following.
- Harness connectors E8, F8
- Harness connectors M69, E7
- Harness connectors B102, M13
- Harness for open or short between ECM and EVAP control system pressure sensor

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

15. CHECK RUBBER TUBE

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

OK or NG

OK >> GO TO 16.
NG >> Clean the rubber tube using an air blower, repair or replace rubber tube.

16. CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to EC-840, "Component Inspection".

OK or NG

OK >> GO TO 17.
NG >> Replace EVAP canister vent control valve.

17. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to EC-850, "Component Inspection".

OK or NG

OK >> GO TO 18.
NG >> Replace EVAP control system pressure sensor.

18. CHECK DRAIN FILTER

Refer to EC-814, "Component Inspection".

OK or NG

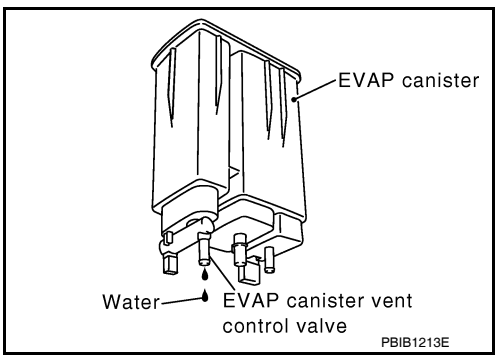
OK >> GO TO 19.
NG >> Replace drain filter.

19. CHECK IF EVAP CANISTER SATURATED WITH WATER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Does water drain from the EVAP canister?

Yes or No

Yes >> GO TO 20.
No >> GO TO 22.



DTC P0850 PNP SWITCH

Component Description

INFOID:0000000005532766

When the shift lever position is Neutral, park/neutral position (PNP) switch is ON. (M/T)
When the shift lever position is P or N, transmission range switch is ON. (A/T and CVT)
ECM detects the position because the continuity of the line (the ON signal) exists.

CONSULT-III Reference Value in Data Monitor Mode

INFOID:0000000005532767

Specification data are reference values.

Monitor item	Condition		Specification
P/N POSI SW	• Ignition switch: ON	Shift lever: P or N (A/T, CVT), Neutral (M/T)	ON
		Shift lever: Except above	OFF

On Board Diagnosis Logic

INFOID:0000000005532768

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0850 0850	Park/neutral position switch	The park/neutral position (PNP) signal is not changed in the process of engine starting and driving.	• Harness or connectors [Park/neutral position (PNP) signal circuit is open or shorted.] • Park/neutral position (PNP) switch (M/T) • Transmission range switch (A/T and CVT)

DTC Confirmation Procedure

INFOID:0000000005532769

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

WITH CONSULT-III

1. Turn ignition switch ON.
2. Select “P/N POSI SW” in “DATA MONITOR” mode with CONSULT-III. Then check the “P/N POSI SW” signal under the following conditions.

Position (Shift lever)	Known-good signal
N or P position (A/T, CVT) Neutral position (M/T)	ON
Except above	OFF

If NG, go to EC-904, "Diagnosis Procedure".
If OK, go to following step.

3. Select “DATA MONITOR” mode with CONSULT-III.
4. Start engine and warm it up to normal operating temperature.
5. Maintain the following conditions for at least 60 consecutive seconds.

ENG SPEED	More than 1,200 rpm (CVT) More than 1,450 rpm (A/T) More than 1,900 rpm (M/T)
COOLAN TEMP/S	More than 70°C (158°F)

• Harness for open or short between stop lamp switch and battery

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

13. CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal 99 and stop lamp switch terminal 2. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

OK >> GO TO 14.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

14. CHECK STOP LAMP SWITCH

Refer to EC-938, "Component Inspection"

OK or NG

OK >> GO TO 15.
NG >> Replace stop lamp switch.

15. CHECK INTERMITTENT INCIDENT

Refer to EC-632.

>> **INSPECTION END**

Component Inspection

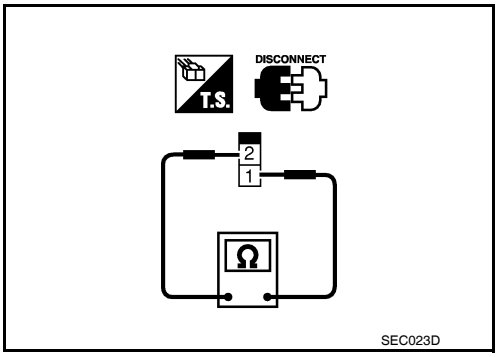
INFOID:0000000005532809

ASCD BRAKE SWITCH

1. Turn ignition switch OFF.
2. Disconnect ASCD brake switch harness connector.
3. Check continuity between ASCD brake switch terminals 1 and 2 under the following conditions.

Condition	Continuity
Brake pedal: Fully released.	Should exist.
Brake pedal: Slightly depressed.	Should not exist.

If NG, adjust ASCD brake switch installation, refer to BR-6, and perform step 3 again.



ASCD CLUTCH SWITCH

1. Turn ignition switch OFF.
2. Disconnect ASCD clutch switch harness connector.

• Refrigerant pressure sensor (Refer to MTC-38.)

OK or NG

OK >> GO TO 10.
NG >> Replace malfunctioning component.

6. CHECK APP SENSOR 2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between ECM terminal 104 and APP sensor terminal 1. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

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

7. CHECK APP SENSOR 2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check harness continuity between ECM terminal 103 and APP sensor terminal 6. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

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

8. CHECK APP SENSOR

Refer to EC-975, "Component Inspection".

OK or NG

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

9. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Replace accelerator pedal assembly.
2. Perform EC-580, "Accelerator Pedal Released Position Learning".
3. Perform EC-580, "Throttle Valve Closed Position Learning".
4. Perform EC-580, "Idle Air Volume Learning".

>> **INSPECTION END**

10. CHECK INTERMITTENT INCIDENT

Refer to EC-632.

>> **INSPECTION END**

Component Inspection

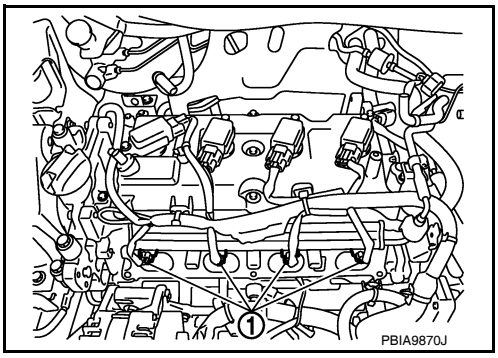
INFOID:0000000005532868

ACCELERATOR PEDAL POSITION SENSOR

1. Reconnect all harness connectors disconnected.
2. Turn ignition switch ON.

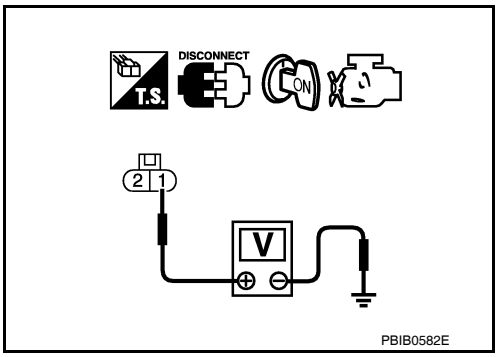
3.CHECK FUEL INJECTOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect fuel injector (1) harness connector.
3. Turn ignition switch ON.



4. Check voltage between fuel injector terminal 1 and ground with CONSULT-III or tester.

Voltage: Battery voltage



OK or NG

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

4.DETECT MALFUNCTIONING PART

Check the following.
- Harness connectors E8, F8
- IPDM E/R harness connector E45
- 10 A fuse
- Harness for open or short between fuel injector and fuse

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

5.CHECK FUEL INJECTOR OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between fuel injector terminal 2 and ECM terminals 25, 29, 30, 31. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

OK >> GO TO 6.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

6.CHECK FUEL INJECTOR

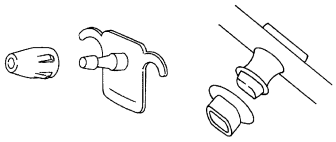
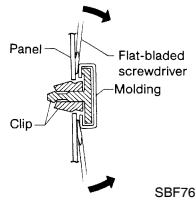
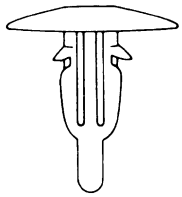
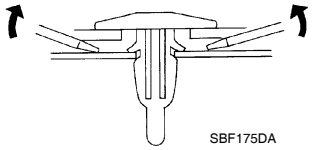
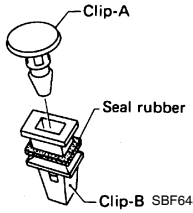
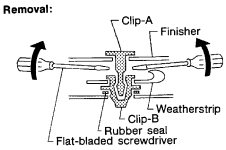
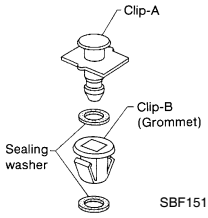
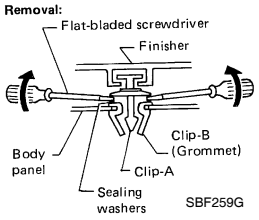
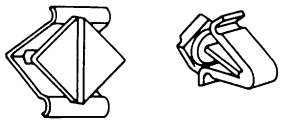
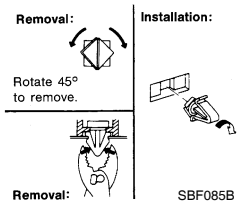
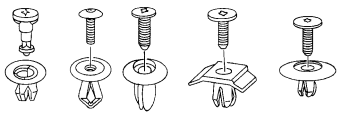
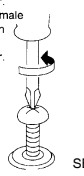
Refer to EC-1013, "Component Inspection".

OK or NG

OK >> GO TO 7.
NG >> Replace fuel injector.

7.CHECK INTERMITTENT INCIDENT

Refer to EC-632.

Symbol No.	Shapes	Removal & Installation
CE107	 SBF411H	 SBF767B
CE117 	 SBF174D	**Removal:** Remove by bending up with a flat-bladed screwdriver or pliers.  SBF175DA
CF110 	 SBF648B	**Removal:**  SBF649B
CF118 	 SBF151D	**Removal:**  SBF259G
CG101	 SBF145B	**Removal:** **Installation:**  SBF085B
CS101 	 SBF078B	**Removal:** 1. Screw out with a Phillips screwdriver. 2. Remove female portion with flat-bladed screwdriver.  SBF992G

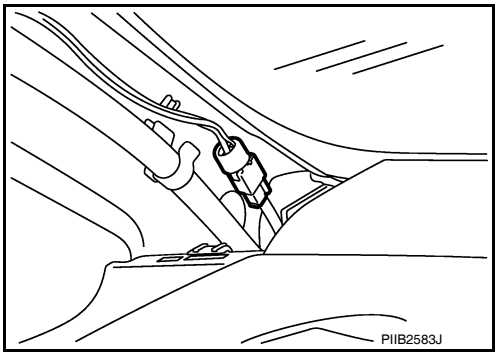
1. Headlining
2. Assist grip
3. Room lamp
4. Sunvisor
5. Cap
6. Sunvisor holder
7. Map lamp assembly (if equipped)
8. Antenna feeder cable
9. Roof console assembly (if equipped)
10. Roof plate (if equipped)
11. Dual lock fastener
12. Insulator
13. Room lamp harness
14. Cover
A. With sunroof
B. Without sunroof
△ Clip C103
⇦ Vehicle front

Removal and Installation - Hatchback

INFOID:0000000005396844

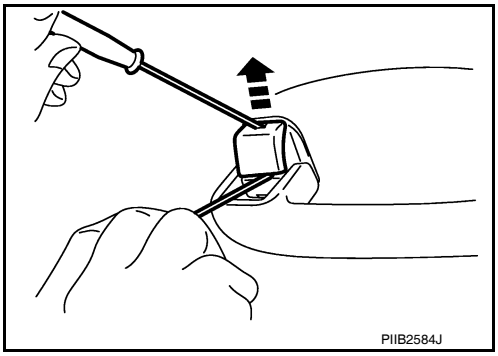
REMOVAL

1. Disconnect the negative and positive battery terminals, then wait at least three minutes.
2. Remove front seat assembly RH/LH. Refer to SE-12, "Removal and Installation".
3. Remove rear seat cushion and rear seatback. Refer to SE-16, "Removal and Installation".
4. Remove front seat belt shoulder anchor RH/LH. Refer to SB-4, "Removal and Installation of Front Seat Belt".
5. Remove center console body assembly. Refer to IP-11.
6. Remove front pillar garnish RH/LH. Refer to EI-40, "Removal and Installation".
7. Remove antenna feeder cable clip, then disconnect antenna feeder cable connector.



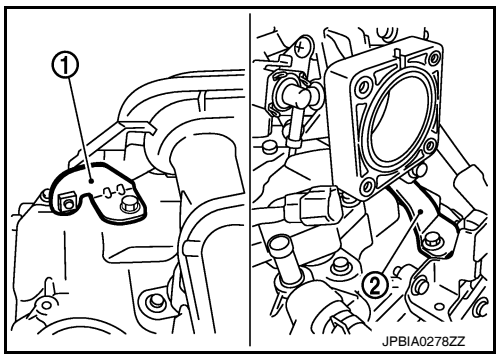
8. Remove front and rear kicking plate inner RH/LH, center pillar lower garnish, center pillar upper garnish, front and rear body side welt RH/LH. Refer to EI-40, "Removal and Installation".

   WARNING:
   Do not reuse center pillar upper garnish if removed.
9. Remove back door weatherstrip. Refer to EI-38.
10. Release the clips using a suitable tool, then remove the front and rear assist grips.



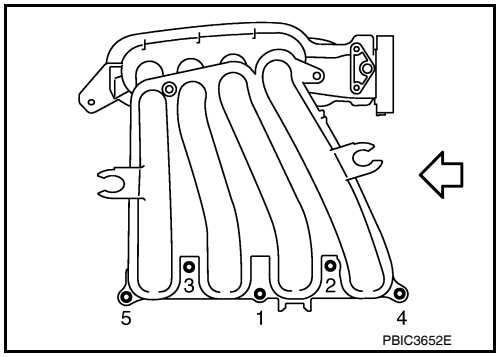
11. Remove the sunvisor caps and screws, then remove sunvisor RH/LH.

7. Remove intake manifold support front (1) and bolt from rear (2).
   • Bracket (2) is not removed. Remove bolt from intake manifold.



8. Remove intake manifold.
   • Loosen bolts in the reverse of the order shown.

   ⇦ : Engine front



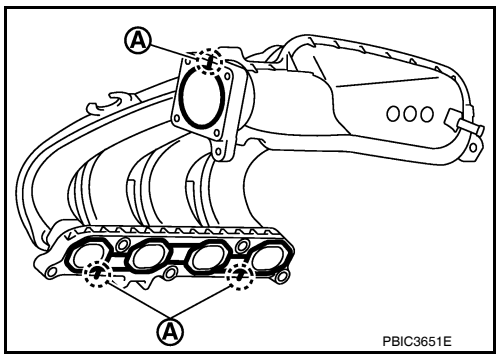
9. Remove EVAP canister purge volume control solenoid valve from intake manifold, if necessary.
   CAUTION:
   Handle EVAP canister purge volume control solenoid valve carefully and avoid impacts.
10. Remove intake manifold support (center) from cylinder head, if necessary.
    NOTE:
    The intake manifold support (center) functions as the guide when the intake manifold is installed.

INSTALLATION

Installation is in the reverse order of removal.

Intake Manifold

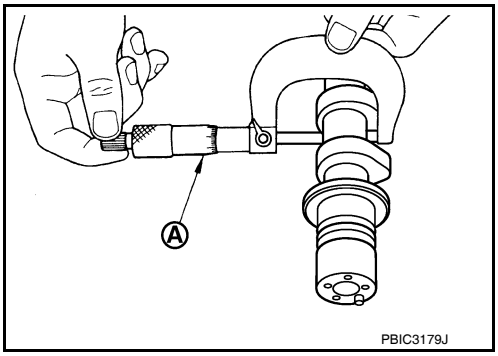
1. Install the gasket to the intake manifold.
   • Align the protrusion (A) of gasket to the groove of intake manifold.



2. Place the intake manifold into the installation position.
   CAUTION:
   Make sure that the oil level gauge guide is not disconnected from the fixing clip of water inlet due to interference with intake manifold.

Measure the outer diameter of camshaft journal with a micrometer (A).

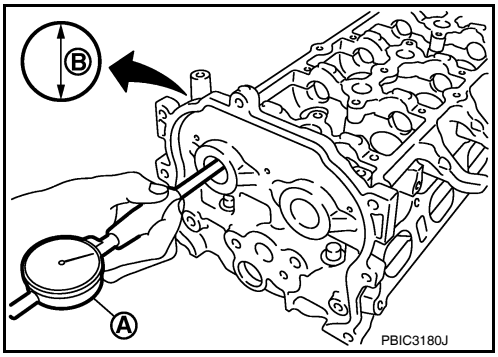
Standard: Refer to EM-112, "Camshaft".



CAMSHAFT BRACKET INNER DIAMETER

- Tighten camshaft bracket bolts with the specified torque. Refer to EM-59, "Removal and Installation".
- Measure inner diameter (B) of camshaft bracket with a bore gauge (A).

Standard: Refer to EM-112, "Camshaft".



CAMSHAFT JOURNAL OIL CLEARANCE

- (Oil clearance) = (Camshaft bracket inner diameter) – (Camshaft journal diameter)

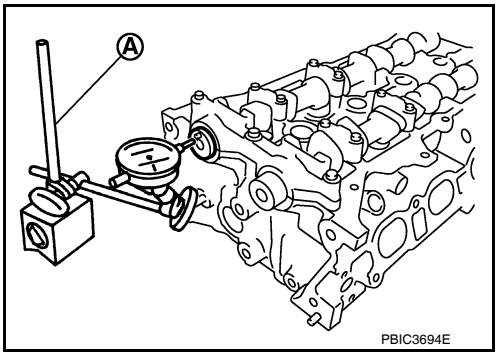
Standard and Limit: Refer to EM-112, "Camshaft".

- If it exceeds the limit, replace either or both camshaft and cylinder head.
  NOTE:
  Camshaft brackets cannot be replaced as single parts, because they are machined together with cylinder head. Replace whole cylinder head assembly.

Camshaft End Play

1. Install camshaft in cylinder head. Refer to EM-59, "Removal and Installation".
2. Install a dial indicator (A) in thrust direction on front end of camshaft. Measure the camshaft end play on the dial indicator when camshaft is moved forward/backward (in direction to axis).

Standard and Limit: Refer to EM-112, "Camshaft".

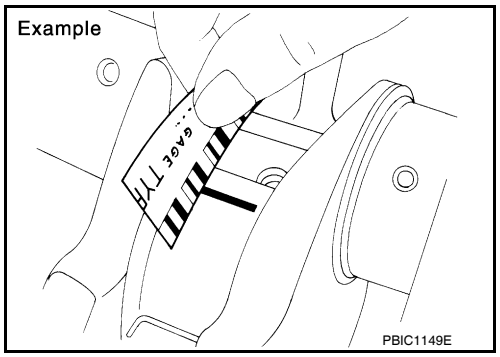


- Remove engine oil and dust on crankshaft pin and the surfaces of each bearing completely.
- Cut a plastigage slightly shorter than the bearing width, and place it in crankshaft axial direction, avoiding oil holes.
- Install connecting rod bearings to connecting rod and cap, and tighten connecting rod bolts to the specified torque. Refer to EM-90, "Disassembly and Assembly".

CAUTION:
Never rotate crankshaft.

- Remove connecting rod cap and bearing, and using the scale on the plastigage bag, measure the plastigage width.

NOTE:
The procedure when the measured value exceeds the limit is same as that described in the “Method by Calculation”.



MAIN BEARING OIL CLEARANCE

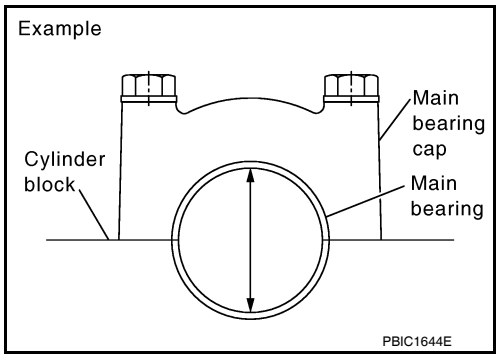
Method by Calculation

- Install main bearings to cylinder block and main bearing cap, and tighten main bearing cap bolts to the specified torque. Refer to EM-90, "Disassembly and Assembly".
- Measure the inner diameter of main bearing with a bore gauge.

(Bearing oil clearance) = (Main bearing inner diameter) – (Crankshaft main journal diameter)

Standard : Refer to EM-120, "Main Bearing".

- If the clearance exceeds the limit, select proper main bearing according to main bearing inner diameter and crankshaft main journal diameter to obtain the specified bearing oil clearance. Refer to EM-108, "Main Bearing".



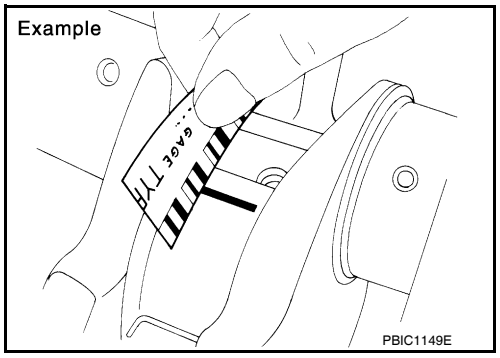
Method of Using Plastigage

- Remove engine oil and dust on crankshaft main journal and the surfaces of each bearing completely.
- Cut a plastigage slightly shorter than the bearing width, and place it in crankshaft axial direction, avoiding oil holes.
- Install main bearings to cylinder block and main bearing cap, and tighten main bearing cap bolts to the specified torque. Refer to EM-90, "Disassembly and Assembly".

CAUTION:
Never rotate crankshaft.

- Remove main bearing cap and bearings, and using the scale on the plastigage bag, measure the plastigage width.

NOTE:
The procedure when the measured value exceeds the limit is same as that described in the “Method by Calculation”.

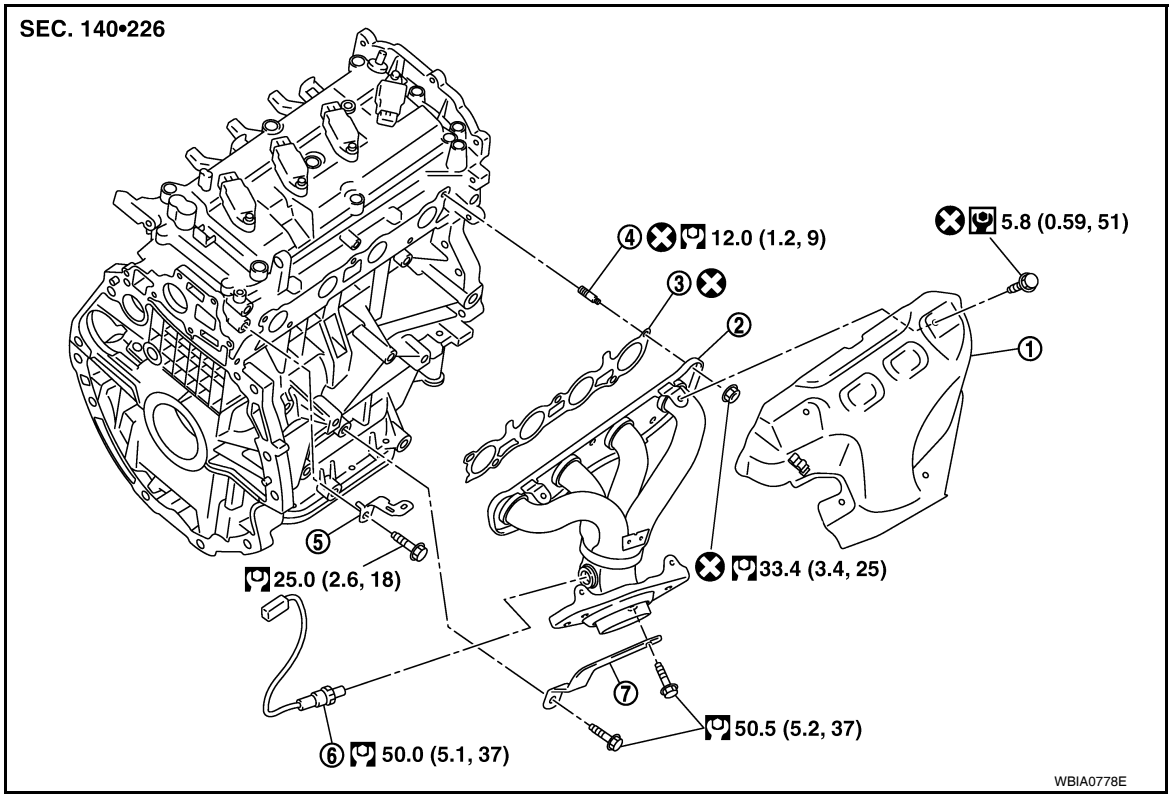


MAIN BEARING CRUSH HEIGHT

EXHAUST MANIFOLD

Component

INFOID:0000000005398121



1. Exhaust manifold cover
2. Exhaust manifold
3. Gasket
4. Stud bolt
5. Bracket
6. Air fuel ratio sensor 1
7. Exhaust manifold stay

⇦ Engine front

Removal and Installation

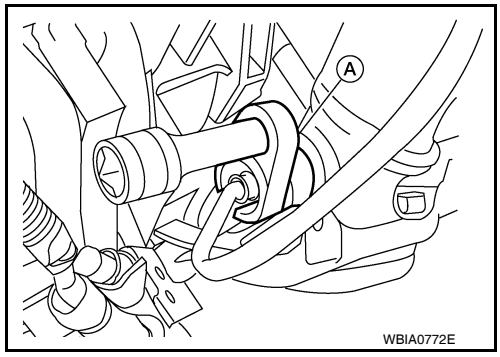
INFOID:0000000005398122

REMOVAL

1. Remove cowl top. Refer to EI-22, "Removal and Installation".
2. Remove exhaust front tube. Refer to EX-11, "Component".
3. Remove exhaust manifold cover.
4. Remove the air fuel ratio sensor 1, using Tool (A).

Tool number :KV991J0050 (J-44626)

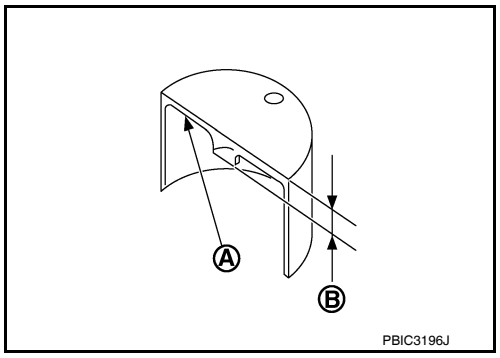
CAUTION:
Handle it carefully and avoid impacts.



5. Remove exhaust manifold side bolt of exhaust manifold stay.

Intake : 0.30 mm (0.012 in)
Exhaust : 0.33 mm (0.013 in)

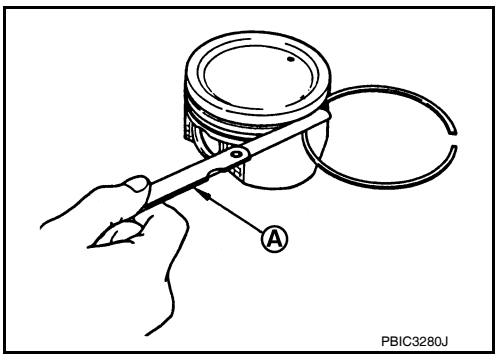
- Thickness of new valve lifter (B) can be identified by stamp mark (A) on the reverse side (inside the cylinder).
  Stamp mark “302” indicates 3.02 mm (0.1189 in) in thickness.



NOTE:
Available thickness of valve lifter: 26 sizes range 3.00 to 3.50 mm (0.1181 to 0.1378 in) in steps of 0.02 mm (0.0008 in) (when manufactured at factory). Refer to EM-223, "Standard and Limit".

5. Install the selected valve lifter.
6. Install camshaft. Refer to EM-166, "Removal and Installation".
7. Install timing chain and related parts. Refer to EM-156.
8. Manually rotate crankshaft pulley a few rotations.
9. Make sure that the valve clearances is within the standard.
10. Installation of the remaining components is in the reverse order of removal.

- Measure the side clearance of piston ring and piston ring groove with a feeler gauge (A).



Standard:

Top ring	**: 0.04 - 0.08 mm (0.002 - 0.003 in)**
2nd ring	**: 0.03 - 0.07 mm (0.001 - 0.003 in)**
Oil ring	**: 0.015 - 0.185 mm (0.001 - 0.007 in)**

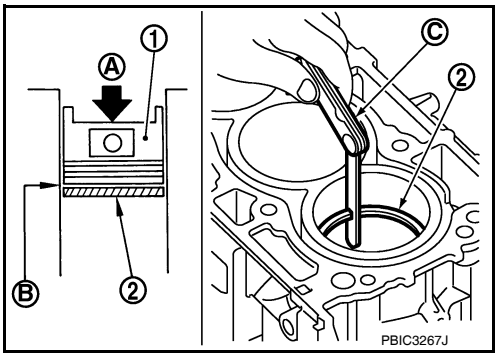
Limit:

Top ring	**: 0.11 mm (0.0043 in)**
2nd ring	**: 0.10 mm (0.0039 in)**

- If the measured value exceeds the limit, replace piston ring, and measure again. If it still exceeds the limit, replace piston also.

PISTON RING END GAP

- Make sure that cylinder bore inner diameter is within specification. Follow the "Cylinder Bore Inner Diameter" procedure.
- Lubricate with new engine oil to piston (1) and piston ring (2), and then insert (A) piston ring until middle of cylinder (B) with piston, and measure piston ring end gap with a feeler gauge (C).



Standard:

Top ring	**: 0.20 - 0.30 mm (0.008 - 0.012 in)**
2nd ring	**: 0.50 - 0.65 mm (0.020 - 0.026 in)**
Oil ring (rail ring)	**: 0.15 - 0.45 mm (0.006 - 0.018 in)**

Limit:

Top ring	**: 0.51 mm (0.020 in)**
2nd ring	**: 0.83 mm (0.033 in)**
Oil ring (rail ring)	**: 0.78 mm (0.031 in)**

- If the measured value exceeds the limit, replace piston ring, and measure again. If it still exceeds the limit, replace the cylinder block.

CONNECTING ROD BEND AND TORSION

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000005397123

Use chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Reference page			—	—	—	FAX-6	—	FAX-6	FSU-6, "NVH Troubleshooting Chart"	Refer to FRONT AXLE in this chart.	WT-5, "NVH Troubleshooting Chart"	WT-5, "NVH Troubleshooting Chart"	Refer to DRIVE SHAFT in this chart.	BR-5, "NVH Troubleshooting Chart"	PS-5, "NVH Troubleshooting Chart"
Possible cause and SUSPECTED PARTS			Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	Wheel bearing damage	FRONT SUSPENSION	FRONT AXLE	TIRES	ROAD WHEELS	DRIVE SHAFT	BRAKES	STEERING
Symptom	DRIVE SHAFT	Noise	×	×				×	×	×	×	×		×	×
		Shake	×		×			×	×	×	×	×		×	×
	FRONT AXLE	Noise				×	×	×	×		×	×	×	×	×
		Shake				×	×	×	×		×	×	×	×	×
		Vibration				×	×	×	×		×		×		×
		Shimmy				×	×		×		×	×		×	×
		Shudder				×			×		×	×		×	×
		Poor quality ride or handling				×	×		×		×	×			

×: Applicable

SERVICE DATA AND SPECIFICATIONS (SDS)

Standard and Limit

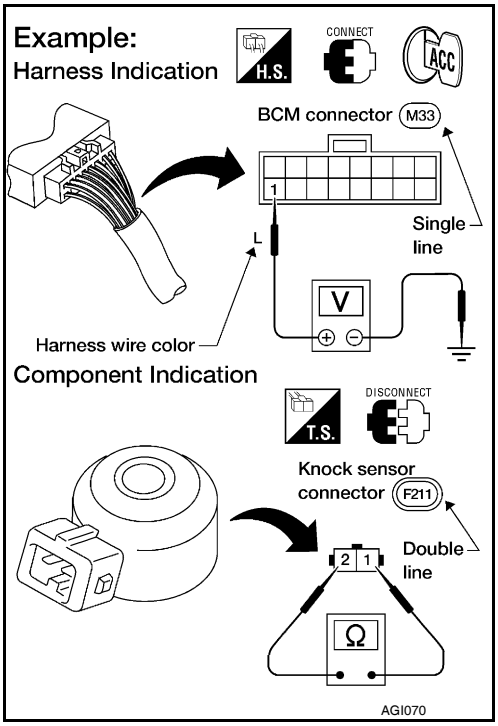
INFOID:0000000006055189

FUEL TANK

Unit: ℓ (US gal, Imp gal)

Fuel tank capacity	50.0 (13 1/4, 11)
Fuel recommendation	Refer to MA-14

- Letter designations next to test meter probe indicate harness (connector) wire color.
- Connector numbers in a single circle M33 indicate harness connectors.



Component Indication

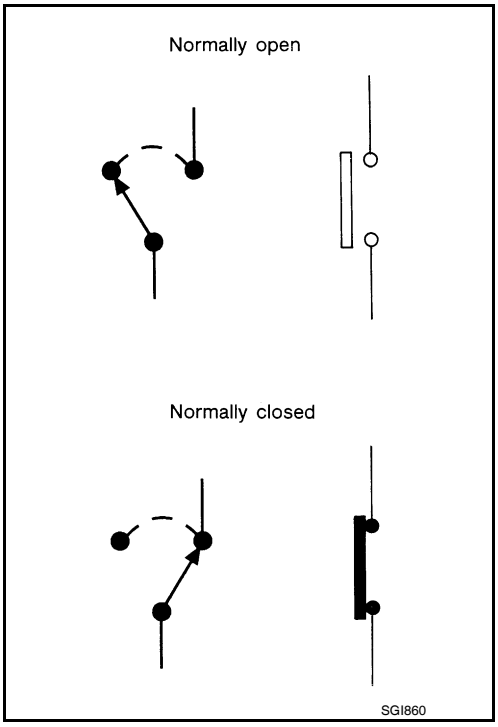
Connector numbers in a double circle F211 indicate component connectors.

Switch Positions

Switches are shown in wiring diagrams as if the vehicle is in the “normal” condition.

A vehicle is in the “normal” condition when:

- ignition switch is “OFF”,
- doors, hood and trunk lid/back door are closed,
- pedals are not depressed, and
- parking brake is released.



Detectable Lines and Non-Detectable Lines

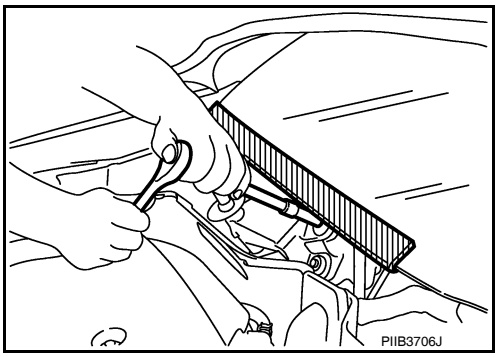
In some wiring diagrams, two kinds of lines, representing wires, with different weight are used.

5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

Precaution for Procedure without Cowl Top Cover

INFOID:0000000005396730

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

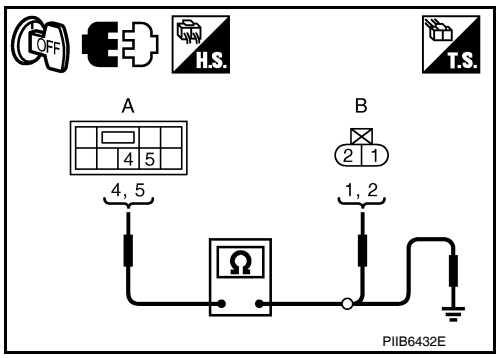


Handling for Adhesive and Primer

INFOID:0000000005396731

- Do not use an adhesive which is past its usable date. Shelf life of the adhesive is limited to six months after the date of manufacture. Carefully adhere to the expiration or manufacture date printed on the box.
- Keep primers and adhesive in a cool, dry place. Ideally, they should be stored in a refrigerator.
- Open the seal of the primer and adhesive just before application. Discard the remainder after application.
- Before application, be sure to shake the primer container to stir the contents. If any floating material is found, do not use it.
- If any primer or adhesive contacts the skin, wipe it off with gasoline or equivalent and wash the skin with soap.
- When using primer and adhesive, always observe the precautions in the instruction manual.

1. Turn ignition switch OFF.
2. Disconnect rear power window switch LH.
3. Check continuity between rear power window switch LH connector D203 (A) terminals 4, 5 and rear power window motor LH connector D204 (B) terminals 1, 2.



4 - 1 : Continuity should exist.
5 - 2 : Continuity should exist.

4. Check continuity between rear power window switch LH connector D203 (A) terminals 4, 5 and ground.

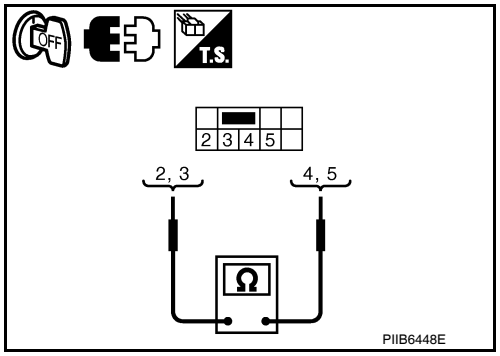
4 - Ground : Continuity should not exist.
5 - Ground : Continuity should not exist.

OK or NG

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

3. CHECK POWER WINDOW SWITCH

1. Disconnect rear power window switch LH.
2. Check continuity between rear power window switch LH terminals.



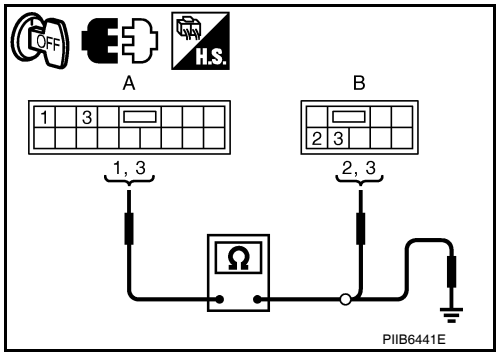
	Terminals		Condition	Continuity
Rear power window switch LH	2	5	UP	No
			Other than above	Yes
	3	4	DOWN	No
			Other than above	Yes

OK or NG

OK >> GO TO 4.
NG >> Replace rear power window switch LH. Refer to EI-34, "Removal and Installation" .

4. CHECK REAR POWER WINDOW SWITCH LH CIRCUIT

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between power window main switch connector and rear power window switch LH connector.



Connector	Terminal	Connector	Terminal	Continuity
A		B		
Main power window and door lock/unlock switch: D7	1	Rear power window switch LH: D203	2	Yes
	3		3	

3. Check continuity power window main switch connector and ground.

Connector	Terminal	Ground	Continuity
A			
Main power window and door lock/unlock switch: D7	1		No
	3		

OK or NG

OK >> Replace main power window and door lock/unlock switch. Refer to EI-34, "Removal and Installation" .

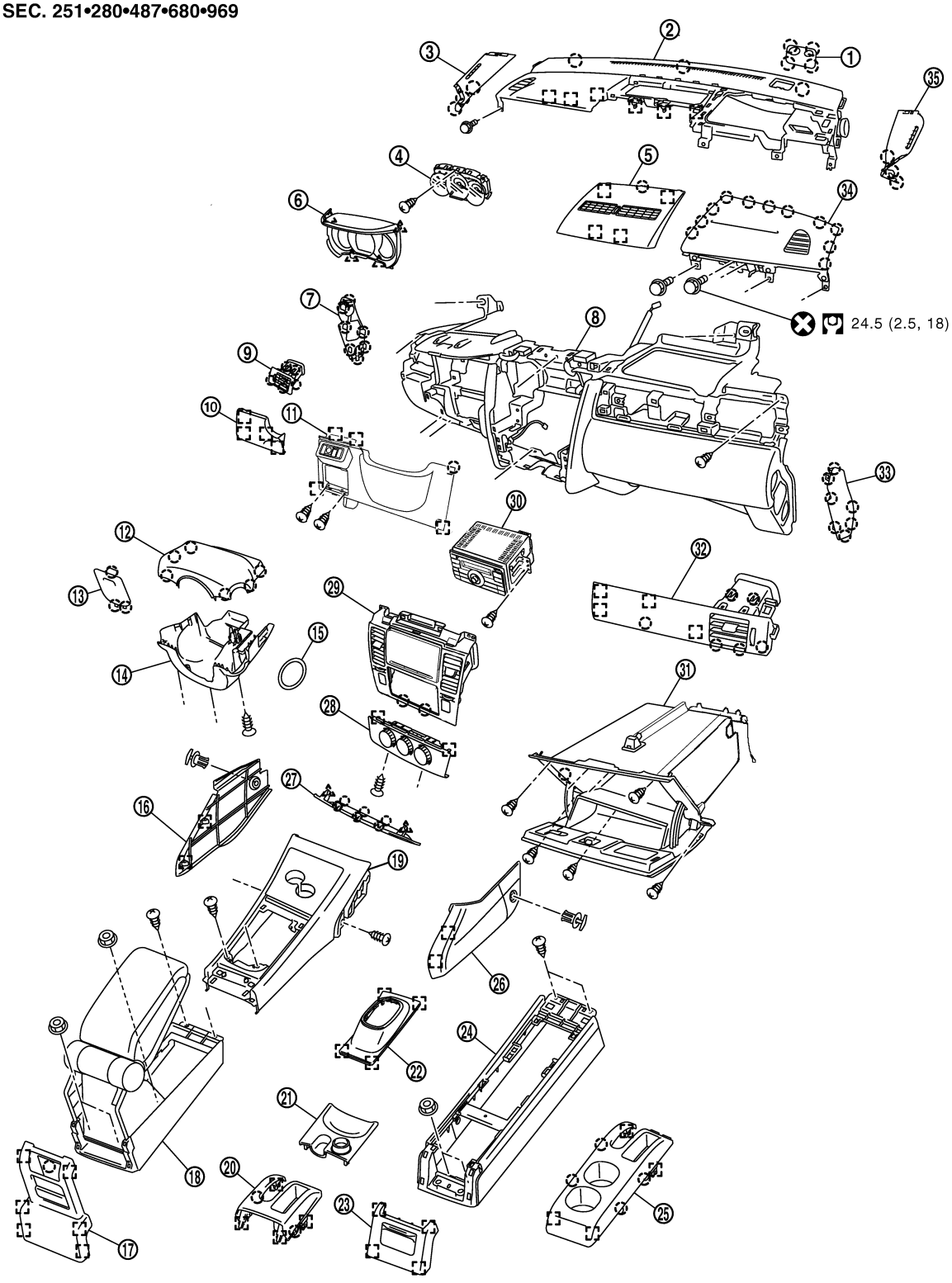
ON-VEHICLE REPAIR

INSTRUMENT PANEL ASSEMBLY

Component Parts

INFOID:0000000005396856

SEC. 251•280•487•680•969



PRECAUTIONS

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

INFOID:0000000006007865

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

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

PRECAUTIONS WHEN USING 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 3 minutes before performing any service.**

Precautions for Trouble Diagnosis

INFOID:0000000005395131

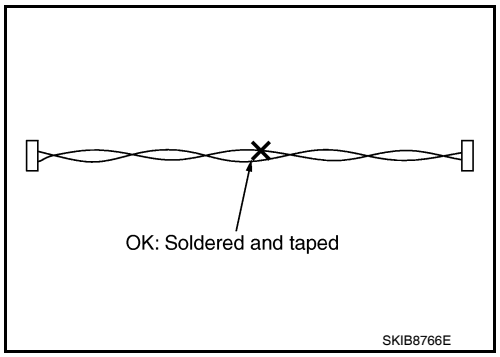
CAUTION:

- **Never apply 7.0 V or more to the measurement terminal.**
- **Use a tester with open terminal voltage of 7.0 V or less.**
- **Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.**

Precautions for Harness Repair

INFOID:0000000005395132

- Solder the repaired area and wrap tape around the soldered area.
  NOTE:
  A fray of twisted lines must be within 110 mm (4.33 in).



EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000005531662

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 EPS control unit 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 EPS control unit.
2. Check the resistance between the EPS control unit harness connector terminals.

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M53	9	16	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the EPS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to STC-9, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the EPS control unit. Refer to PS-9, "Removal and Installation".
YES (Past error)>>Error was detected in the EPS control unit branch line.
NO >> Repair the power supply and the ground circuit.

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000005531800

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	39	40	Approx. 54 – 66

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-16, "BCM Power Supply and Ground Circuit Inspection".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-19, "Removal and Installation of BCM".
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000005531888

1.CHECK CONNECTOR

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

- IPDM E/R
- Harness connector E7 (M/T models without ABS)
- Harness connector M69 (M/T models without ABS)

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.		
E46	41	40	Approx. 108 – 132

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 PG-27, "IPDM E/R Power/Ground Circuit Inspection".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000005531948

1.CHECK CONNECTOR

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

- IPDM E/R
- Harness connector E7 (M/T models without ABS)
- Harness connector M69 (M/T models without ABS)

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.		
E46	41	40	Approx. 108 – 132

Is the measurement value within the specification?

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

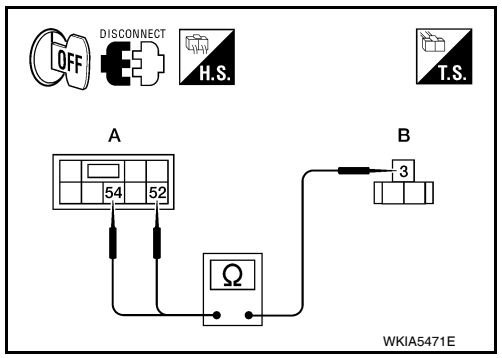
3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

3. Check continuity between IPDM E/R harness connector (A) and headlamp harness connector (B).



Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E47	54	E26	3	Yes
LH		52	E25		

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

INFOID:0000000005394890

1.HEADLAMP LOW BEAM FUSE INSPECTION

Inspect 15A fuse No. 40 (LH) and fuse No. 41 (RH).

OK or NG

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

2.CHECK BULB

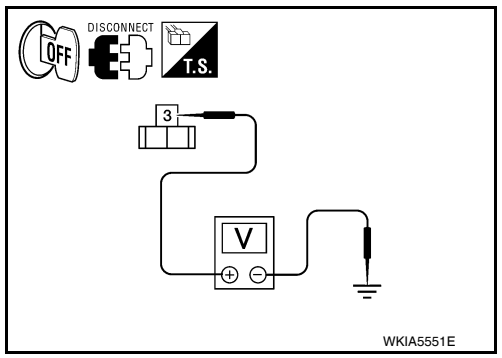
Check bulb of headlamp which does not illuminate.

OK or NG

OK >> GO TO 3.
NG >> Replace bulb. Refer to LT-25, "Bulb Replacement" .

3.CHECK HEADLAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect headlamp connector.
3. Lighting switch is turned to 2ND position.
4. Check voltage between headlamp harness connector and ground.



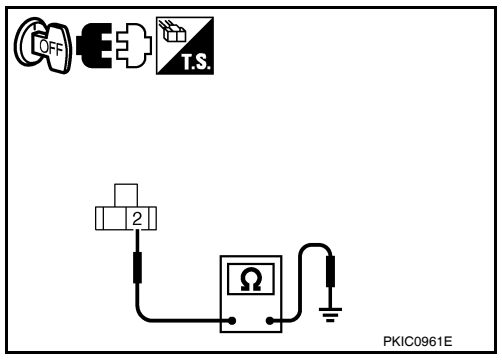
Terminal				Voltage
(+)			(−)	
Headlamp connector		Terminal		
RH	E26	3	Ground	Battery voltage
LH	E25			

OK or NG

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

4.CHECK HEADLAMP GROUND CIRCUIT

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



Headlamp connector		Terminal	Ground	Continuity
RH	E26	2		Yes
LH	E25			

OK or NG

OK >> Check condition of headlamp harness connector.
NG >> Repair harness or connector.

3. Perform the preliminary check. Refer to LT-59, "Preliminary Check" .
4. Check symptom and repair or replace the cause of the malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000005394934

CHECK POWER SUPPLY AND GROUND CIRCUIT FOR BCM
Refer to BCS-16, "BCM Power Supply and Ground Circuit Inspection" .

CONSULT-III Function (BCM)

INFOID:0000000005394935

Refer to LT-13, "CONSULT-III Function (BCM)" .

Turn Signals Do Not Operate

INFOID:0000000005394936

1.CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-III
1. Select “BCM” on CONSULT-III. Select “FLASHER” on “SELECT TEST ITEM” screen.
2. Select “DATA MONITOR” on “SELECT DIAG MODE” screen. Make sure that “TURN SIGNAL R” and “TURN SIGNAL L” turns ON-OFF linked with operation of lighting switch.

When turn signal switch is right position : TURN SIGNAL R ON

When turn signal switch is left position : TURN SIGNAL L ON

Without CONSULT-III
Refer to LT-66, "Combination Switch Inspection" .

OK or NG

OK >> Replace the BCM. BCS-19, "Removal and Installation of BCM"
NG >> Check combination switch (lighting switch). Refer to LT-66, "Combination Switch Inspection" .

Front Turn Signal Lamp Does Not Operate

INFOID:0000000005394937

1.CHECK BULB

Verify the bulb standard of each turn signal lamp is correct. Refer to LT-117, "Exterior Lamp" .

OK or NG

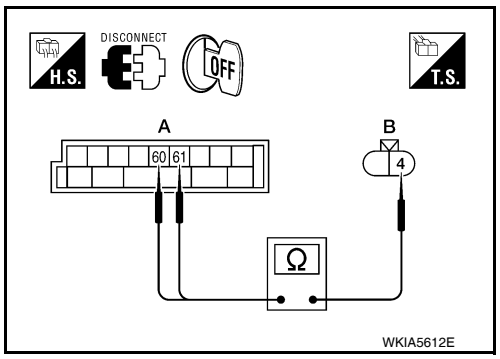
OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to LT-62, "Bulb Replacement for Front Turn Signal Lamp" .

2.CHECK FRONT TURN SIGNAL LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and front combination lamp LH or RH connector.
3. Check continuity between BCM harness connector M20 (A) terminal 60 and front combination lamp LH harness connector E29 (B) terminal 4.

60 - 4 : Continuity should exist.

4. Check continuity between BCM harness connector M20 terminal 61 (A) and front combination lamp RH harness connector E30 (B) terminal 4.



61 - 4 : Continuity should exist.

OK or NG

OK >> GO TO 3.

• to map lamp terminal 1
Power is supplied
• through BCM terminal 56
• to map lamp terminal 4.
When interior room lamp switch is ON, ground is supplied
• to interior room lamp terminal 1
• through map lamp (with map lamp) terminal 7
• through map lamp (with map lamp) terminal 1
• through grounds M57 and M61.
Power is supplied
• through BCM terminal 56
• through map lamp (with map lamp) terminal 4
• through map lamp (with map lamp) terminal 6
• to room lamp terminal 3.

INTERIOR ROOM LAMP TIMER OPERATION

Without Intelligent Key System

When room lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for room lamp ON/OFF.
In addition, when the interior room lamp turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied
• through 10A fuse [No. 14, located in fuse block (J/B)]
• to key switch and key lock solenoid terminal 2.
When the key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
When front door key cylinder switch LH is unlocked, ground is supplied
• to BCM terminal 7
• through front door key cylinder switch LH terminal 3
• through front door key cylinder switch LH terminal 2
• through grounds M57 and M61.
At the time that front door LH is opened, BCM detects that front door LH is unlocked. It determines that interior room lamp timer operation condition is met, and turns the room lamp ON for 30 seconds.
When key is in ignition key cylinder (key switch ON),
Power is supplied
• through key switch and key lock solenoid terminal 1
• to BCM terminal 37.
When key is removed from key switch and key lock solenoid (key switch OFF), the power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room lamp timer conditions are met, and turns the room lamp ON for 30 seconds.
When front door LH opens → closes, and the key is not inserted in the key switch and key lock solenoid (key switch OFF), voltage at BCM terminal 47 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for room lamp operation are met and turns the room lamp ON for 30 seconds.
Interior room lamp timer control is canceled under the following conditions:
• Front door LH is locked (locked by front door key cylinder switch LH, keyfob or door lock/unlock switch).
• Front door LH is opened (front door switch LH).
• Ignition switch ON.

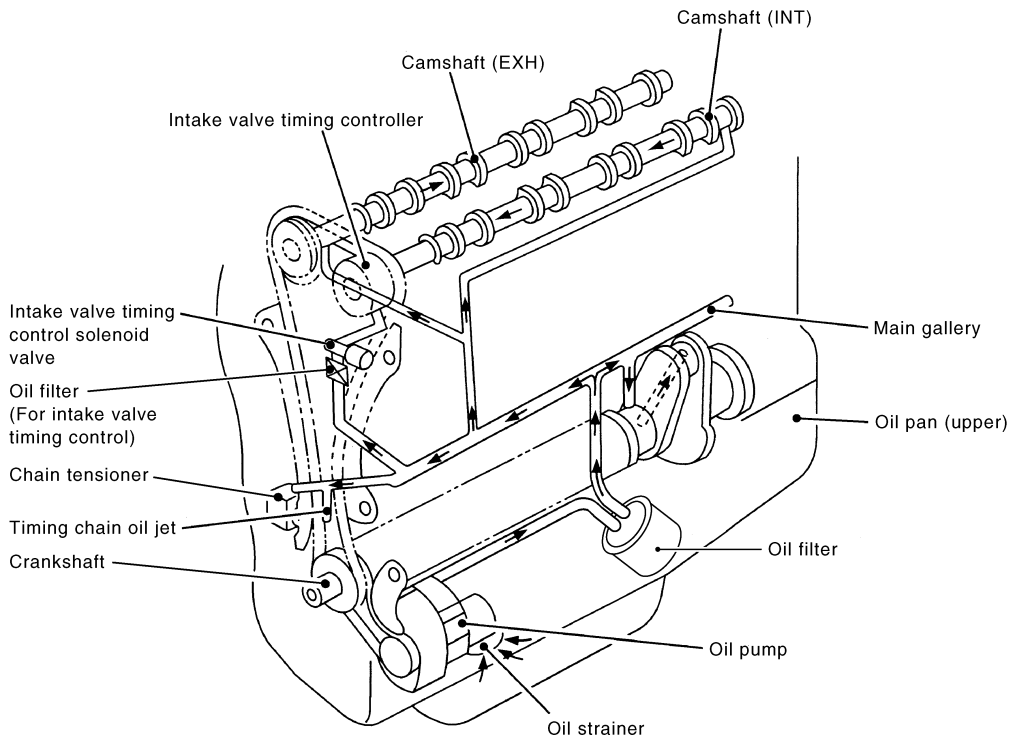
With Intelligent Key System

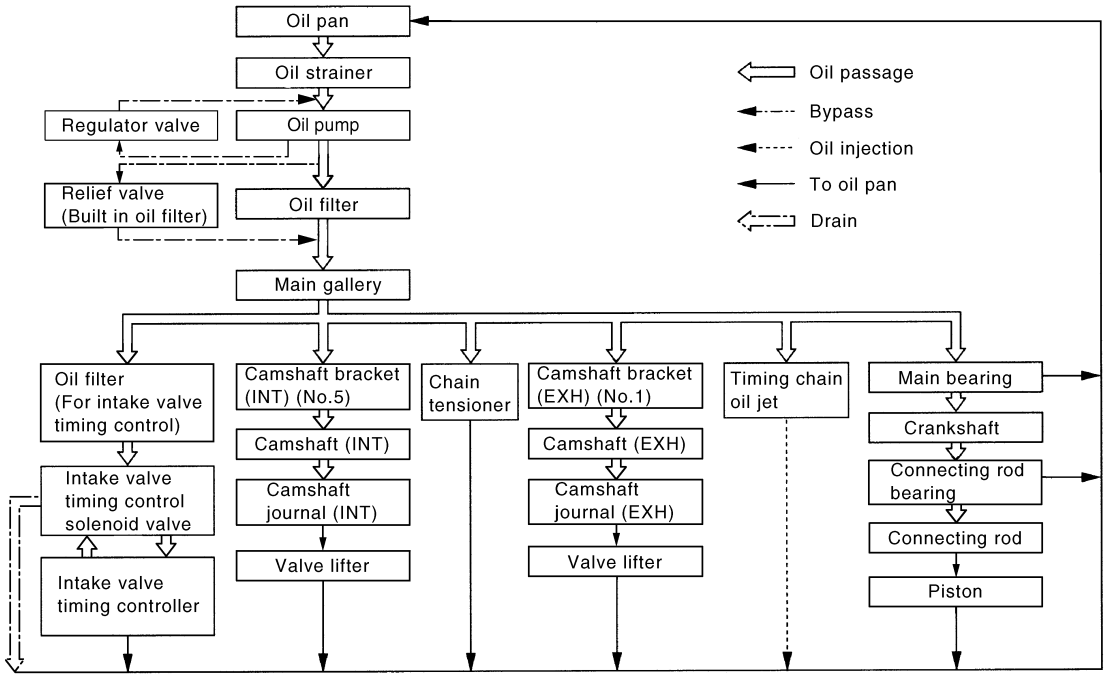
When the room lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 second) for room lamp ON/OFF.
In addition, when interior room lamp turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied
• through 10A fuse (No. 31, located in fuse and fusible link box)
• to key switch and ignition knob switch terminals 2 and 4.
When key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
When the ignition knob switch is released, power will not be supplied to Intelligent Key unit terminal 27.
When front door key cylinder switch LH is unlocked, ground is supplied
• to BCM terminal 7
• through front door key cylinder switch LH terminal 3

LUBRICATION SYSTEM

Lubrication Circuit

INFOID:0000000005398168





PBIC4575E

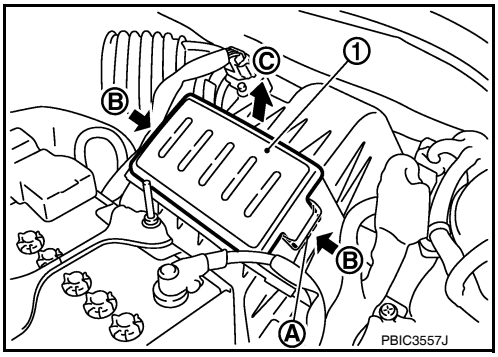
10. Clip
11. Resonator
12. Grommet
13. Air cleaner case
A. To electric throttle control actuator
B. To rocker cover

AIR CLEANER FILTER : Changing Air Cleaner Filter

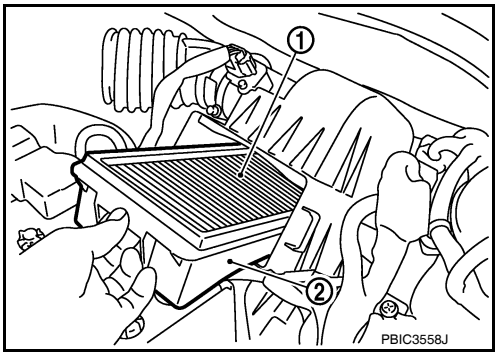
INFOID:0000000005714328

REMOVAL

1. Push the tabs (A) of both ends of the air cleaner cover (1) into the inside (B).
2. Pull up the air cleaner cover (1) and remove it (C).



3. Remove the air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter (1) from the holder (2).



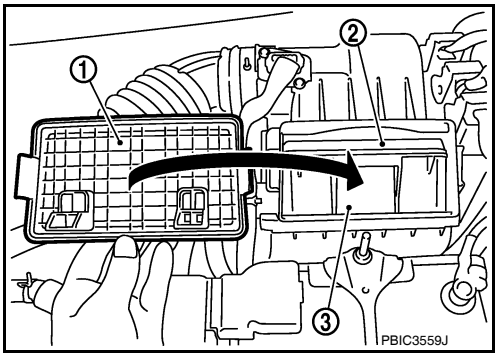
INSPECTION AFTER REMOVAL

It is necessary to replace the air cleaner filter at the recommended intervals, more often under dusty driving conditions. Refer to MA-9, "Introduction of Periodic Maintenance".

INSTALLATION

Installation is in the reverse order of removal.

- Install the air cleaner cover (1) in the direction shown.
- Air cleaner filter (2)
- Holder (3)



ENGINE OIL

ENGINE OIL : Inspection

INFOID:0000000005714329

ENGINE OIL LEVEL

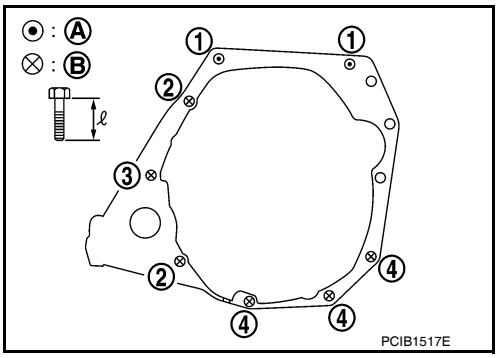
NOTE:

Park vehicle on a level surface, wait 10 minutes and check the engine oil level.

1. Pull out oil level gauge and wipe it clean.

CAUTION:

- **Make sure the transaxle assembly does not interfere with the wire harnesses and clutch tube.**
- **When installing transaxle assembly, do not bring input shaft into contact with clutch cover.**
- **If transaxle is removed from the vehicle, always replace CSC. Refer to CL-13, "Removal and Installation".**
- When installing the transaxle assembly to the engine, install the bolts according to the following:
  (A): Transaxle to engine
  (B): Engine to transaxle



Bolt No.	1	2	3	4
Quantity	2	2	1	3
Bolt length "ℓ" mm (in)	55 (2.17)	49 (1.93)	69 (2.72)	55 (2.17)
Tightening torque N·m (kg-m, ft-lb)	48.0 (4.9, 35)			

- After installation perform the following:

- Bleed the air from the clutch hydraulic system. Refer to CL-9, "Air Bleeding Procedure".
- Check for oil leakage and oil level. Refer to MT-11, "Inspection".
- Check the control linkage. Refer to MT-15, "Inspection".

Disassembly and Assembly

INFOID:0000000005397178

COMPONENTS

Case and Housing Component

VEHICLE SPEED SENSOR

Removal and Installation

INFOID:0000000005403290

REMOVAL

1. Disconnect vehicle speed sensor.
2. Remove vehicle speed sensor.

INSTALLATION

Installation is in the reverse order of removal.

FINAL DRIVE

Disassembly and Assembly

INFOID:0000000005397204

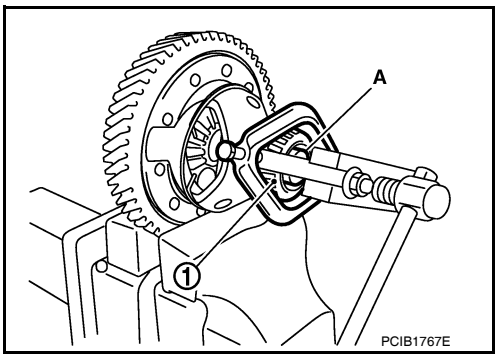
DISASSEMBLY

1. Remove differential side bearing inner race (clutch housing side) (1) according to the following procedures.

a. Set a suitable toolto differential side bearing inner race (clutch housing side).

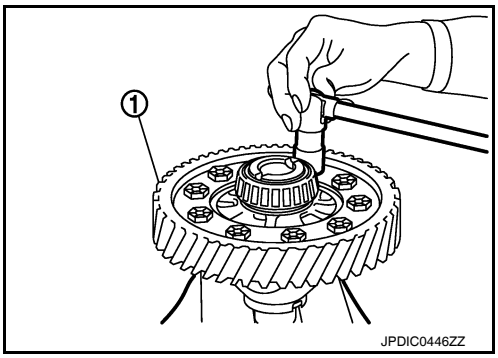
b. Remove differential side bearing inner race (clutch housing side) using Tool (A).

Tool number A: ST33061000 (J-8107-2)



2. Remove speedometer drive gear.

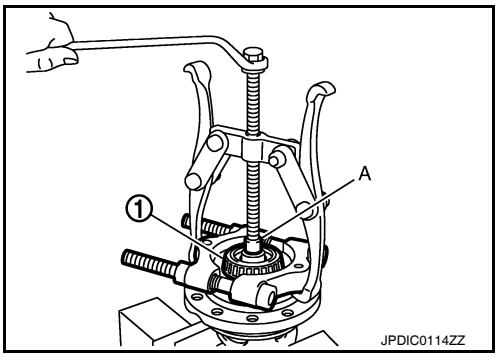
3. Remove final gear bolts, and then remove final gear (1).



4. Remove differential side bearing inner race (transaxle case side) (1) according to the following procedures.

a. Set a suitable tool to differential side bearing inner race (transaxle case side).

b. Remove differential side bearing inner race (transaxle case side) using a suitable tool (A).



INSPECTION AFTER DISASSEMBLY

Gear and Case

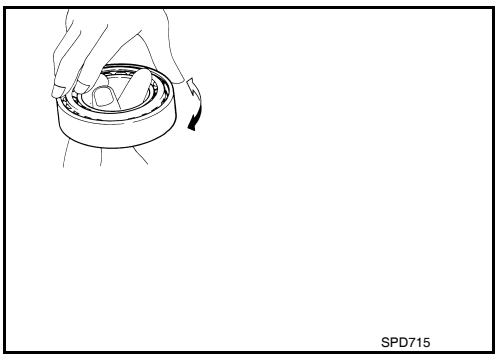
Check final gear and differential case. Replace if necessary.

Bearing

Check bearing for damage and unsmooth rotation. Replace if necessary.

CAUTION:

- **Replace differential side bearing outer race (clutch housing side) and differential side bearing inner race (clutch housing side) as a set.**
- **Replace differential side bearing inner race (transaxle case side) and differential side bearing outer race (transaxle case side) as a set.**



ASSEMBLY

>> GO TO 5.

5.CHECK AIR MIX DOOR CONTROL LINKAGE

Check and verify air mix door mechanism for smooth operation.

OK or NG

OK >> If the symptom still exists, perform a complete operational check. Refer to MTC-31, "Operational Check" If other symptoms exist, refer to MTC-23, "How to Perform Trouble Diagnosis for Quick and Accurate Repair".

NG >> Repair or adjust air mix door control linkage. Refer to MTC-65, "Air Mix Door Cable Adjustment".

Intake Door

INFOID:0000000005396500

SYMPTOM:
- Intake door does not change.

INSPECTION FLOW

1.CONFIRM SYMPTOM BY PERFORMING OPERATIONAL CHECK - REC ( )

1. Slide the intake door lever to the REC ( ) position.
2. Turn the blower motor to maximum speed.
3. Slide the intake door lever to the FRE position.
4. Listen for intake door position change (you should hear blower sound change slightly).

Can a symptom be duplicated?

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

2.PERFORM COMPLETE OPERATIONAL CHECK

Perform a complete operational check and check for any symptoms. Refer to MTC-31, "Operational Check" .

Can a symptom be duplicated?

YES >> Refer to MTC-23, "How to Perform Trouble Diagnosis for Quick and Accurate Repair" .
NO >> System OK.

3.CHECK FOR SERVICE BULLETINS

Check for any service bulletins.

>> GO TO 4.

4.CHECK INTAKE DOOR CONTROL LINKAGE

Check intake door control linkage mechanism for smooth operation.

OK or NG

OK >> If the symptom still exists, perform a complete operational check. Refer to MTC-31, "Operational Check" . If other symptoms exist, refer to MTC-23, "How to Perform Trouble Diagnosis for Quick and Accurate Repair" .

NG >> Repair or adjust control linkage. Refer to MTC-64, "Intake Door Cable Adjustment" .

Front Blower Motor Circuit

INFOID:0000000005396501

SYMPTOM: Front blower motor operation is malfunctioning.

INSPECTION FLOW

1.CONFIRM SYMPTOM BY PERFORMING OPERATIONAL CHECK - FRONT BLOWER

1. Turn blower control dial to "1" position. Blower should operate on low speed.
2. Turn the blower control dial to "2" position, and continue checking blower speed until all speeds are checked.

Can the symptom be duplicated?

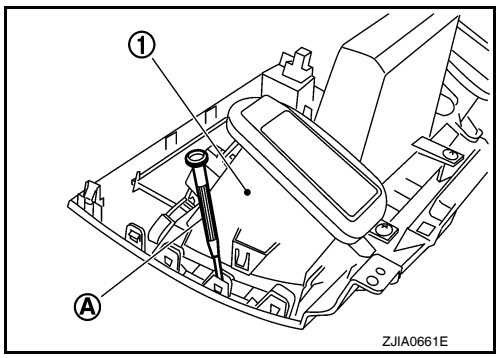
YES >> GO TO 3.

1. Front floor duct
2. Rear floor duct (left)
3. Clip
4. Rear floor duct (right)

CENTER VENTILATOR GRILLES

Removal

1. Remove cluster lid C. Refer to IP-11.
2. Remove center ventilator grills (1) from cluster lid C using suitable tool (A).



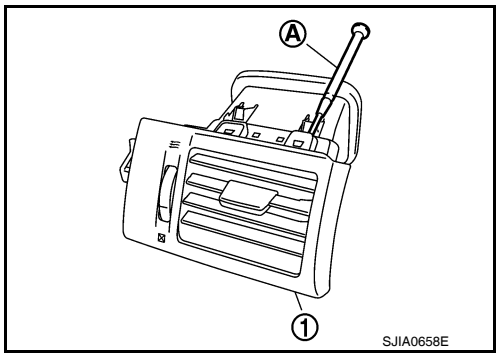
Installation

Installation is in the reverse order of removal.

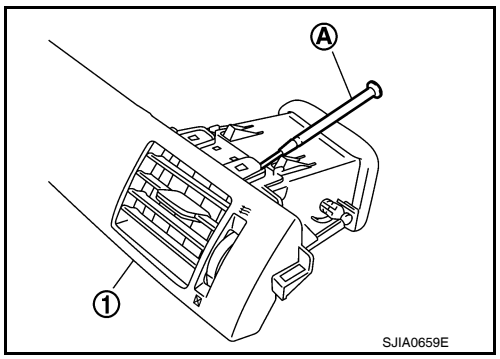
SIDE VENTILATOR GRILLES (LH/RH)

Removal

1. Remove side ventilator assembly (LH). Refer to IP-11.
2. Remove side ventilator grille (LH) (1) using suitable tool (A).



3. Remove side ventilator assembly (RH). Refer to IP-11.
4. Remove the side ventilator grille (RH) screw.
5. Remove side ventilator grille (RH) (1) using suitable tool (A).



Installation

Installation is in the reverse order of removal.

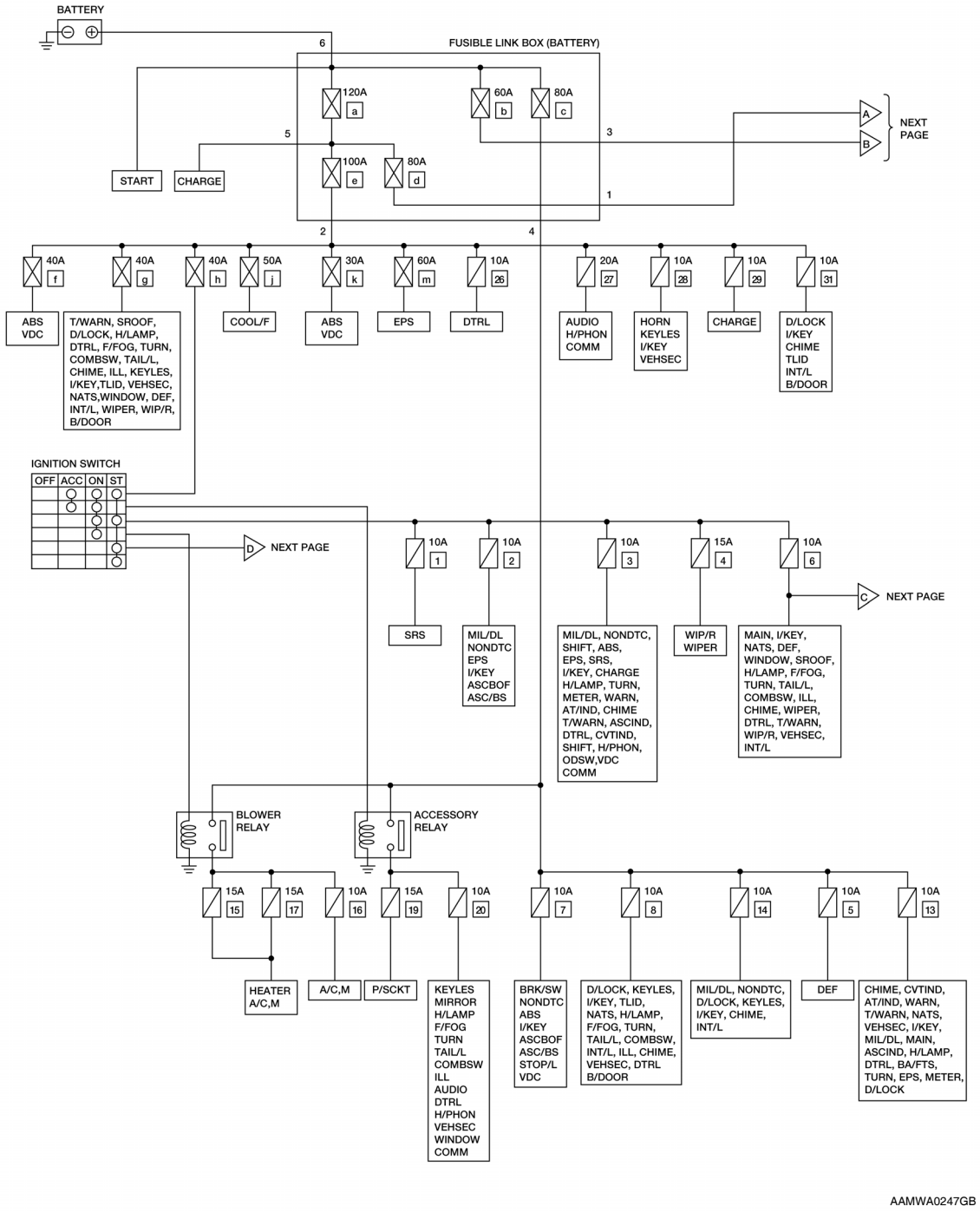
DEFROSTER NOZZLE AND SIDE DEFROSTER DUCTS (LH/RH)

POWER SUPPLY ROUTING CIRCUIT

Schematic

INFOID:0000000005395348

For detailed ground distribution, refer to PG-30, "Ground Distribution" .



C2	M6	W/4	: Steering lock solenoid	D2	M43	W/20	: Audio unit
B3	M7	W/16	: Door mirror remote control switch	D2	M44	W/16	: Audio unit
A3	M8	W/16	: To D2	D2	M45	W/12	: Audio unit
A3	M9	W/16	: To D1	A1	M46	BR/2	: Front tweeter LH
E2	M10	GR/2	: Instrument panel antenna	G1	M47	BR/2	: Front tweeter RH
G3	M11	W/4	: To B106	B2	M48	L/4	: Heated mirror relay
G4	M12	W/16	: To B101	E1	M49	W/24	: iPod ® adapter
G3	M13	W/24	: To B102	E1	M50	GR/16	: iPod ® side
G3	M14	W/24	: To B120	E2	M52	W/40	: Intelligent key unit
B4	M15	W/16	: To B23	B2	M53	W/16	: EPS control unit
B4	M16	W/24	: To B24	B3	M54	B/2	: EPS control unit
D5	M17	B/1	: Parking brake switch	D2	M55	W/4	: Hazard switch
F2	M18	W/40	: BCM (body control module)	B2	M57	—	: Body ground
F2	M19	W/15	: BCM (body control module)	F2	M59	W/2	: Glove box lamp
F3	M20	B/15	: BCM (body control module)	C1	M60	L/2	: EPS control unit
C2	M21	W/4	: NATS antenna amp.	F1	M61	—	: Body ground
B3	M22	W/16	: Data link connector	E2	M62	W/2	: Front blower motor
E3	M23	W/4	: Remote keyless entry receiver	C1	M63	W/4	: Torque sensor
C1	M24	W/40	: Combination meter	C3	M64	W/8	: Steering angle sensor
C3	M25	/2	: Diode-1	A2	M69	SMJ	: To E7
B2	M26	W/6	: Ignition switch	D2	M70	W/24	: AV control unit
C2	M27	GR/6	: Key switch and key lock solenoid	D2	M71	W/9	: AV control unit
C2	M28	W/16	: Combination switch	D1	M72	B/5	: USB interface and aux jack
C3	M29	Y/6	: Combination switch	B2	M73	GR/6	: Key switch and ignition knob switch
C3	M30	GR/8	: Combination switch	G3	M74	W/12	: To D102
A4	M31	W/24	: To B1	G3	M75	W/12	: To D101
E3	M32	W/4	: To M150	E1	M76	B/4	: USB interface and aux jack
D2	M33	B/15	: Front air control	F2	M77	Y/4	: Front passenger air bag module
B3	M34	GR/6	: VDC OFF switch	A2	M78	B/2	: To E11
D4	M35	Y/28	: Air bag diagnosis sensor unit	B1	M79	—	: Body ground
C3	M36	W/3	: Front passenger air bag OFF indicator	D3	M150	W/4	: To M32
D4	M38	W/6	: A/T shift selector (with A/T)	C3	M151	W/4	: Front blower motor resistor
D4	M38	W/6	: CVT shift selector (without intelligent key)				

5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

Precaution for Steering System

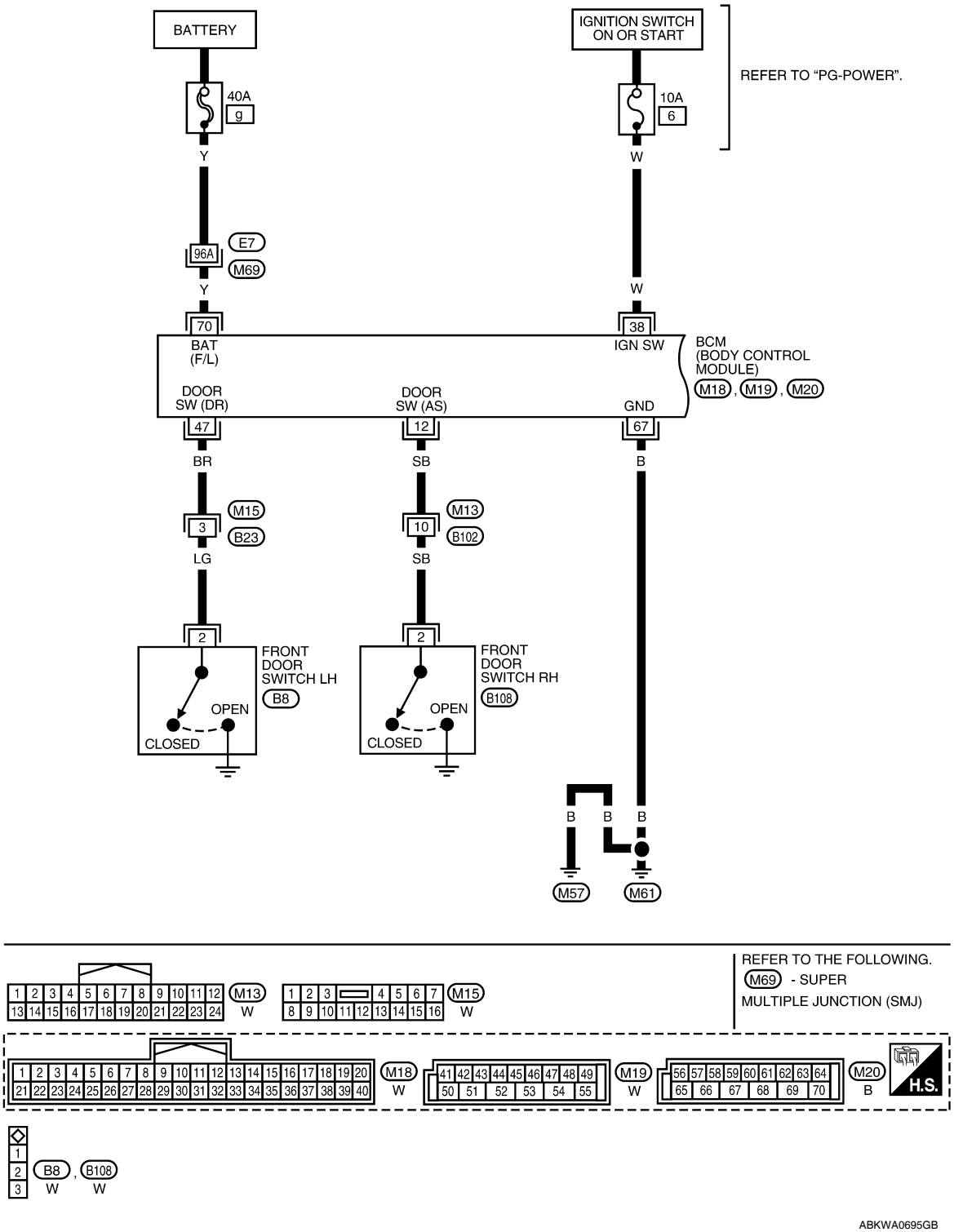
INFOID:0000000005396930

- In case of removing steering gear assembly, make the final tightening with grounded and unloaded vehicle condition, and then check wheel alignment.
- Observe the following precautions when disassembling.
- Before disassembly, thoroughly clean the outside of the unit.
- Disassembly should be done in a clean work area. It is important to prevent the internal parts from becoming contaminated by dirt or other foreign matter.
- For easier and proper assembly, place disassembled parts in order on a parts rack.
- Use nylon cloth or paper towels to clean the parts; common shop rags can leave lint that might interfere with their operation.
- Do not reuse non-reusable parts.
- Before assembling, apply the specified grease to the directed parts.

Wiring Diagram - SROOF -

INFOID:0000000005396797

RF-SROOF-01



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5. Remove the outer retractor anchor bolt, then remove outer seat belt retractor.

INSTALLATION OF OUTER SEAT BELT RETRACTOR - HATCHBACK

Installation is in the reverse order of removal.

REMOVAL OF OUTER SEAT BELT RETRACTOR - SEDAN

1. Remove rear seat cushion, refer to SE-15.
2. Remove outer seat belt anchor bolt.
3. Release the seat belt escutcheon, then remove from belt.
4. Remove rear parcel shelf finisher, refer to EI-45, "Removal and Installation".
5. Remove outer seat belt retractor bolt, then remove outer seat belt retractor.

INSTALLATION OF OUTER SEAT BELT RETRACTOR - SEDAN

Installation is in the reverse order of removal. Refer to EI-45, "Removal and Installation".

REMOVAL OF CENTER SEAT BELT RETRACTOR - HATCHBACK

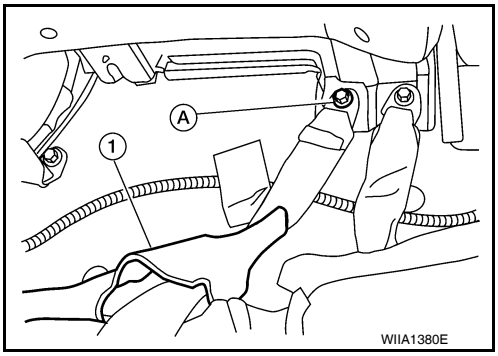
1. Remove and disassemble the rear seat cushion, refer to SE-15.
2. Remove the center seat belt retractor.

INSTALLATION OF CENTER SEAT BELT RETRACTOR - HATCHBACK

Installation is in the reverse order of removal.

REMOVAL OF CENTER SEAT BELT RETRACTOR - SEDAN

1. Lift front edge of rear seat cushion and slide forward.
2. Remove center seat belt anchor bolt (A), then pull center seat belt through rear seat cushion (1).
3. Release the seat belt escutcheon, then remove from belt.
4. Remove rear parcel shelf finisher, refer to EI-45, "Removal and Installation".
5. Remove the bolt, then remove center seat belt retractor.



INSTALLATION OF CENTER SEAT BELT RETRACTOR - SEDAN

Installation is in the reverse order of removal.

REMOVAL OF SEAT BELT BUCKLE

1. Remove rear seat cushion, refer to SE-15.
2. Remove buckle anchor bolt, then remove seat belt buckle.

INSTALLATION OF SEAT BELT BUCKLE

Installation is in the reverse order of removal.

Seat Belt Inspection

INFOID:0000000005396888

AFTER A COLLISION

WARNING:

Inspect all seat belt assemblies including retractors and attaching hardware after any collision. NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Failure to do so could result in serious personal injury in an accident. Seat belt assemblies not in use during a collision should also be replaced if either damage or improper operation is noted. Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision in which the air bags are deployed.

Replace any seat belt assembly (including anchor bolts) if:

- The seat belt was in use at the time of a collision (except for minor collisions and the belts, retractors and buckles show no damage and continue to operate properly).

If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:

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

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

CHECK RELATED SERVICE BULLETINS

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

LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

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

- removing the components in the area that you suspect the noise is coming from.
  Do not use too much force when removing clips and fasteners, otherwise clips and fasteners can be broken or lost during the repair, resulting in the creation of new noise.
- tapping or pushing/pulling the component that you suspect is causing the noise.
  Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
- feeling for a vibration with your hand by touching the component(s) that you suspect is (are) causing the noise.
- placing a piece of paper between components that you suspect are causing the noise.
- looking for loose components and contact marks.
  Refer to SE-7, "Generic Squeak and Rattle Troubleshooting" .

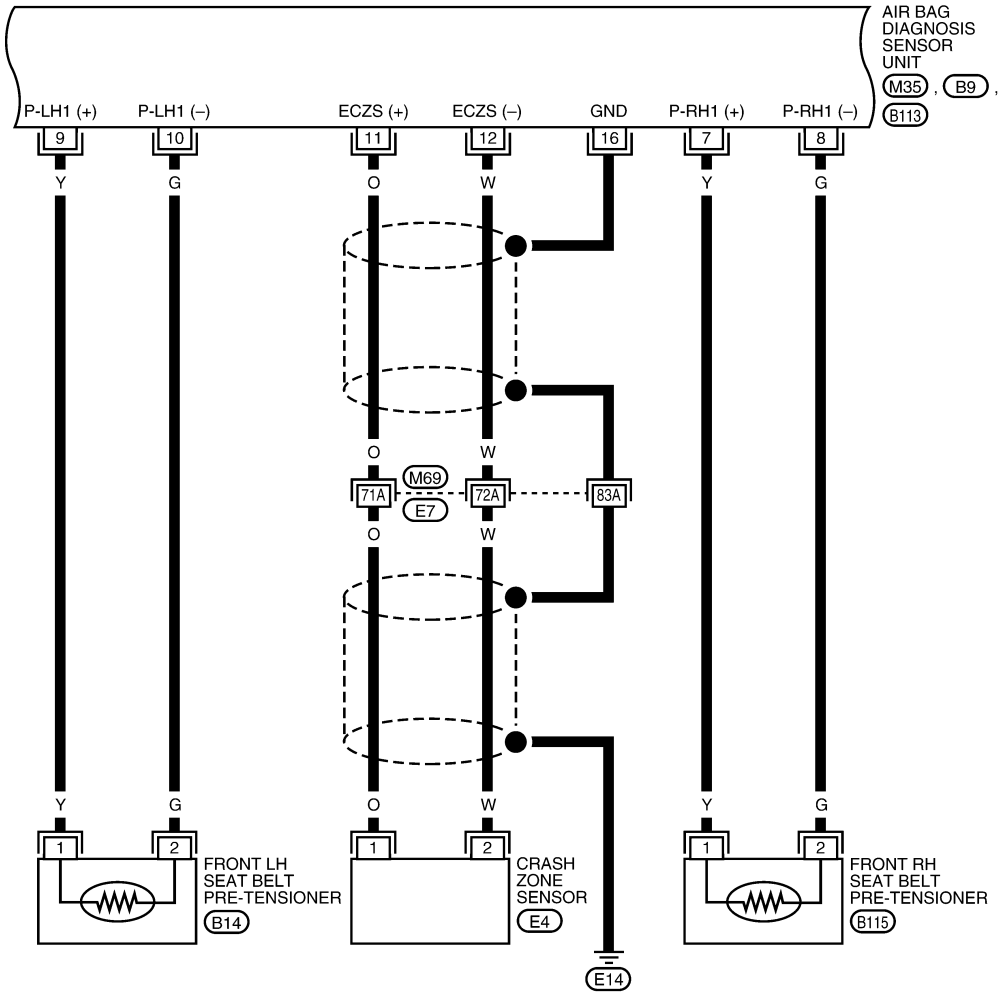
REPAIR THE CAUSE

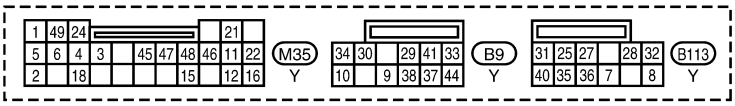
- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:

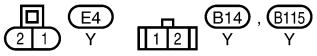
- separate components by repositioning or loosening and retightening the component, if possible.
- insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A NISSAN Squeak and Rattle Kit (J-43980) is available through your authorized NISSAN Parts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

CAUTION:
Do not use excessive force as many components are constructed of plastic and may be damaged.
Always check with the Parts Department for the latest parts information.
The following materials are contained in the NISSAN Squeak and Rattle Kit (J-43980). Each item can be ordered separately as needed.
URETHANE PADS [1.5 mm (0.059 in) thick]
Insulates connectors, harness, etc.
76268-9E005: 100×135 mm (3.94×5.31 in)/76884-71L01: 60×85 mm (2.36×3.35 in)/76884-71L02: 15×25 mm (0.59×0.98 in)
INSULATOR (Foam blocks)
Insulates components from contact. Can be used to fill space behind a panel.
73982-9E000: 45 mm (1.77 in) thick, 50×50 mm (1.97×1.97 in)/73982-50Y00: 10 mm (0.39 in) thick, 50×50 mm (1.97×1.97 in)
INSULATOR (Light foam block)
80845-71L00: 30 mm (1.18 in) thick, 30×50 mm (1.18×1.97 in)
FELT CLOTH TAPE
Used to insulate where movement does not occur. Ideal for instrument panel applications.
68370-4B000: 15×25 mm (0.59×0.98 in) pad/68239-13E00: 5 mm (0.20 in) wide tape roll. The following materials not found in the kit can also be used to repair squeaks and rattles.
UHMW (TEFLON) TAPE
Insulates where slight movement is present. Ideal for instrument panel applications.

SRS-SRS-05







REFER TO THE FOLLOWING.
M69 - SUPER MULTIPLE JUNCTION (SMJ)

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Part	Inspection
Center inner pillar	1. Check the center inner pillar on the collision side for damage (dents, cracks, deformation, etc.). 2. If damaged - REPAIR the center inner pillar.
Trim/headlining	1. Check for visible signs of damage (dents, cracks, deformation, etc.) of the interior tim on the collision side. 2. If damaged - REPLACE the damaged trim parts.
Door-mounted curtain air bag module LH	If the door-mounted curtain air bag LH has NOT deployed: 1. Check for visible signs of damage (dents tears, deformation, etc.) of the door finisher on the collision side. 2. If damaged - REPLACE the door finisher LH with new fasteners. 3. Check for visible signs of damaged (dears etc.) of the door-mounted curtain air bag module LH. 4. Check harness and connectors for damage, and terminals for deformities. 5. If no damage is found, reinstall door finisher. **CAUTION:** **When removing door mounted curtain air bag module from door finisher, never reuse door finisher.** 6. If damaged - REPLACE the door finisher LH and door-mounted curtain air bag module LH with new fasteners.
Door-mounted curtain air bag module RH	If the door-mounted curtain air bag RH has NOT deployed: 1. Check for visible signs of damage (dents tears, deformation, etc.) of the door finisher on the collision side. 2. If damaged - REPLACE the door finisher RH with new fasteners. 3. Check for visible signs of damaged (tears etc.) of the door-mounted curtain air bag module RH. 4. Check harness and connectors for damage, and terminals for deformities. 5. If no damage is found, reinstall door finisher. **CAUTION:** **When removing door mounted curtain air bag module from door finisher, never reuse door finisher.** 6. If damaged - REPLACE the door finisher RH and door-mounted curtain air bag module RH with new fasteners.
Pop-up roll bar	If the pop-up roll bar NOT deployed: 1. Check for visible signs of damage (dents tears, deformation, etc.) of the pop-up roll bar. 2. If damaged - REPLACE the pop-up roll bar with new fasteners. 3. Check harness and connectors for damage, and terminals for deformities. 4. If no damage is found, reinstall the pop-up roll bar with new fasteners. 5. Check for visible signs of damage (dents, cracks, deformation, etc.) of the seatback support brace assembly. 6. If damaged - REPAIR the seatback support brace assembly.