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NISSAN
MURANO
MODEL Z50 SERIES

QUICK REFERENCE INDEX

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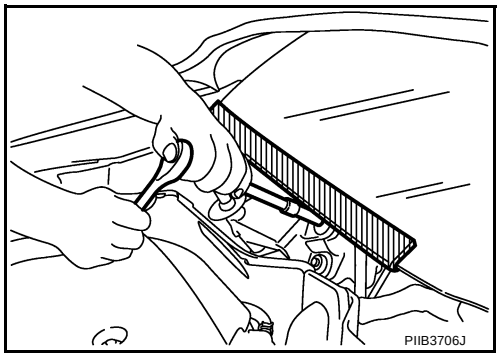
Precautions for Procedures without Cowl Top Cover

AJS001XR

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



Precautions for Working with HFC-134a (R-134a)

AJS000Y8

CAUTION:

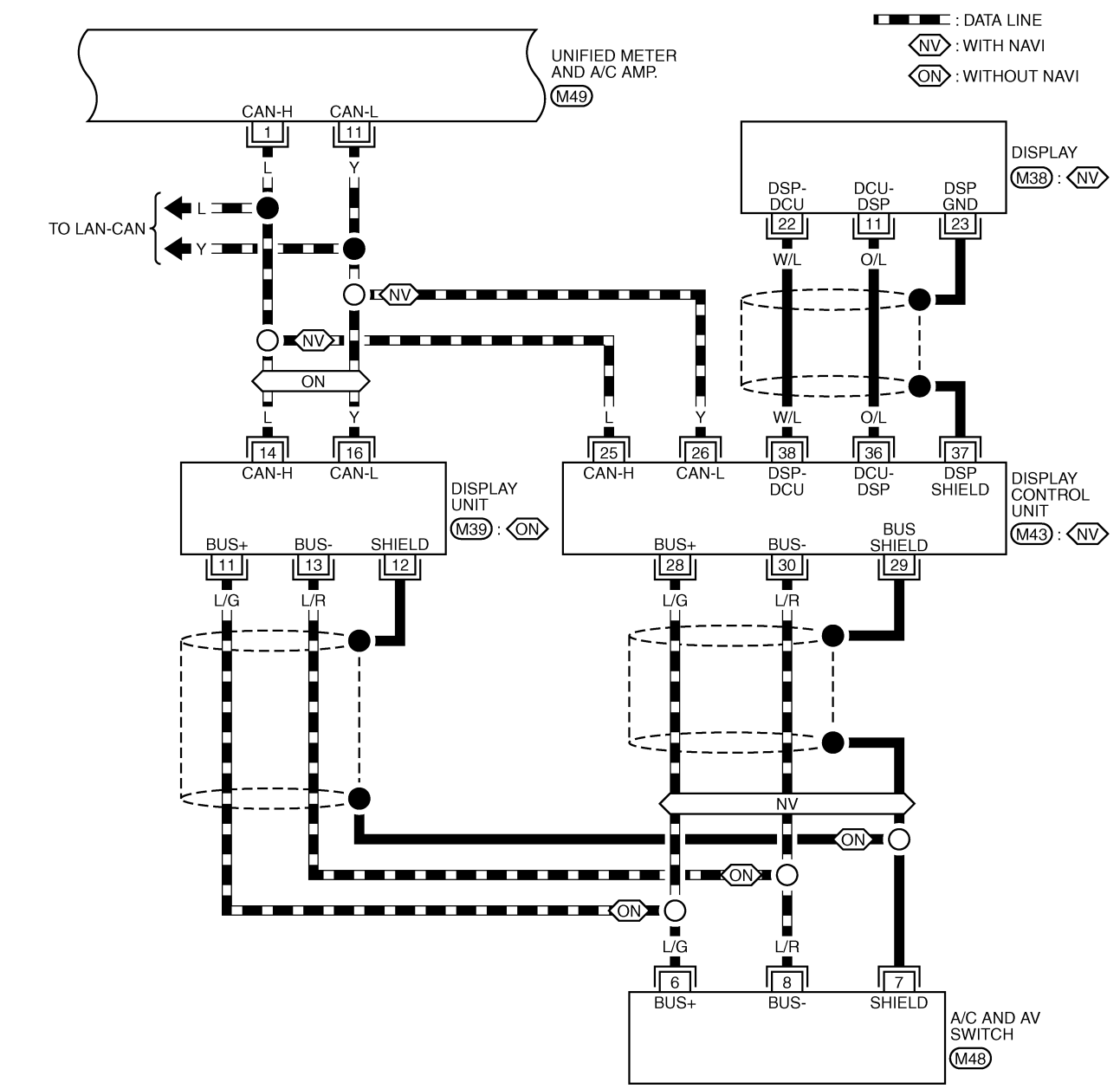
- **CFC-12 (R-12) refrigerant and HFC-134a (R-134a) refrigerant are not compatible. If the refrigerants are mixed and compressor malfunction is likely to occur, refer to "CONTAMINATED REFRIGERANT" below. To determine the purity of HFC-134a (R-134a) in the vehicle and recovery tank, use Refrigerant Recovery/Recycling Recharging equipment and Refrigerant Identifier.**
- **Use only specified lubricant for the HFC-134a (R-134a) A/C system and HFC-134a (R-134a) components. If lubricant other than that specified is used, compressor malfunction is likely to occur.**
- **The specified HFC-134a (R-134a) lubricant rapidly absorbs moisture from the atmosphere. The following handling precautions must be observed:**
  - **When removing refrigerant components from a vehicle, immediately cap (seal) the component to minimize the entry of moisture from the atmosphere.**
  - **When installing refrigerant components to a vehicle, never remove the caps (unseal) until just before connecting the components. Connect all refrigerant loop components as quickly as possible to minimize the entry of moisture into system.**
  - **Only use the specified lubricant from a sealed container. Immediately reseal containers of lubricant. Without proper sealing, lubricant will become moisture saturated and should not be used.**
  - **Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. Remove HFC-134a (R-134a) from the A/C system, using certified service equipment meeting requirements of SAE J-2210 [HFC-134a (R-134a) recycling equipment], or J-2209 [HFC-134a (R-134a) recovery equipment]. If accidental system discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.**
  - **Never allow lubricant (Nissan A/C System Oil Type S) to come in contact with styrofoam parts. Damage may result.**

CONTAMINATED REFRIGERANT

If a refrigerant other than pure HFC-134a (R-134a) is identified in a vehicle, take appropriate steps shown below:

- Explain to the customer that environmental regulations prohibit the release of contaminated refrigerant into the atmosphere.
- Explain that recovery of the contaminated refrigerant could damage service equipment and refrigerant supply.
- Suggest the customer return the vehicle to the location of previous service where the contamination may have occurred.
- In case of repairing, recover the refrigerant using only **dedicated equipment and containers. Never recover contaminated refrigerant into the existing service equipment.** If the facility does not have dedicated recovery equipment, contact a local refrigerant product retailer for available service. This refrigerant must be disposed of in accordance with all federal and local regulations. In addition, replacement of all refrigerant system components on the vehicle is recommended.
- If the vehicle is within the warranty period, the air conditioner warranty is void. Please contact Nissan Customer Affairs for further assistance.

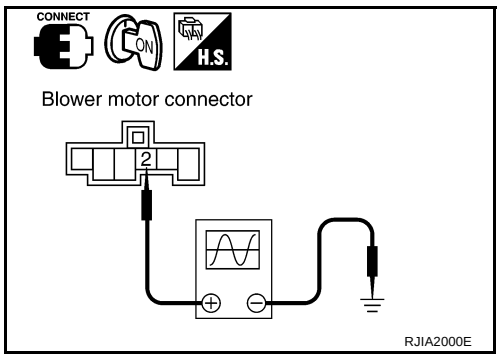
ATC-A/C-02



TJWA0050E

4. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

1. Reconnect blower motor connector and unified meter and A/C amp. connector.
2. Turn ignition switch ON.



3. Change the fan speed from Lo to Hi, and check the duty ratios between blower motor harness connector M70 terminal 2 (L/Y) and ground using an oscilloscope. Normal terminal 2 (L/Y) drive signal duty ratios are shown in the table below.

Blower fan speed	1st	2nd	3rd	4th	5th	6th	7th
Blower motor connector M70 terminal No. 2 (Oscilloscope)	T1 Approx. 1.6 ms	T2 Approx. 1.6 ms	T3 Approx. 1.6 ms	T4 Approx. 1.6 ms	T5 Approx. 1.6 ms	T6 Approx. 1.6 ms	T7 Approx. 1.6 ms
Duty ratio	Approx. 21 - 31%	Approx. 33 - 39%	Approx. 41 - 47%	Approx. 49 - 59%	Approx. 61 - 71%	Approx. 73 - 83%	Approx. 85 - 91%

NOTE: Duty ratio = $\frac{Tx}{\text{Approx. } 1.6 \text{ ms}}$ x 100 (%)

RJIA1792E

OK or NG

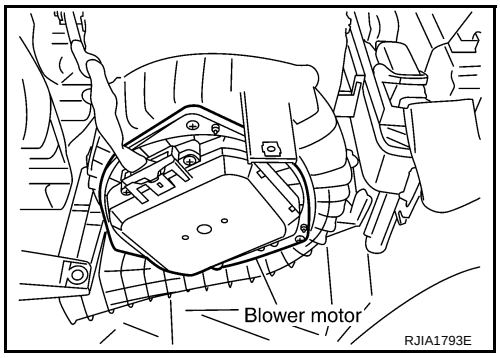
OK >> Replace blower motor after confirming the fan air flow does not change.
NG >> Replace unified meter and A/C amp.

COMPONENT INSPECTION

Blower Motor

Confirm smooth rotation of the blower motor.

- Ensure that there are no foreign particles inside the blower unit.



BLOWER UNIT

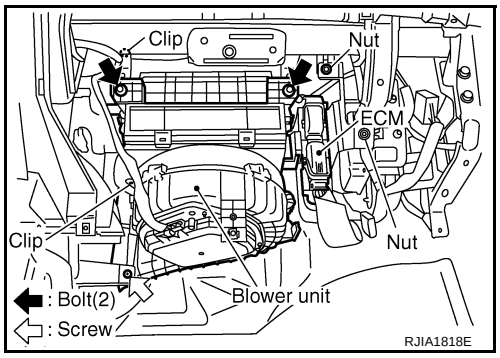
PFP:27200

Removal and Installation

AJS000ZV

REMOVAL

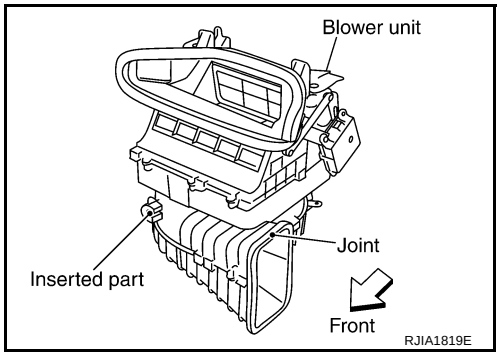
1. Remove instrument passenger lower panel. Refer to IP-11, "Removal and Installation" .
2. Remove ECM with bracket attached.
3. Disconnect intake door motor connector and blower fan motor connector.
4. Remove mounting nuts, bolts and screw, and then remove blower unit.
5. Remove harness clips from blower unit.



6. Remove blower unit.

   CAUTION:

   Move blower unit rightward, and remove locating pin (1 part) and joint. Then remove blower unit downward.



INSTALLATION

Installation is basically the reverse order of removal.

CAUTION:

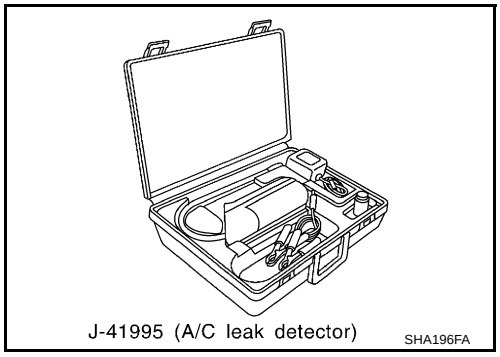
Make sure locating pin (1 part) and joint are securely inserted.

Electronic Refrigerant Leak Detector

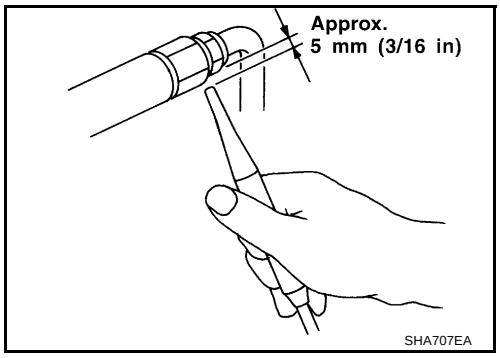
AJS0010M

PRECAUTIONS FOR HANDLING LEAK DETECTOR

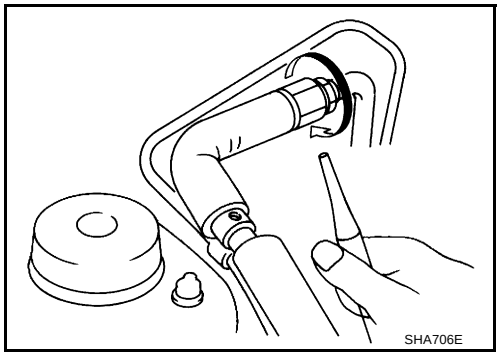
When performing a refrigerant leak check, use an A/C electrical leak detector (SST) or equivalent. Ensure that the instrument is calibrated and set properly per the operating instructions.
The leak detector is a delicate device. In order to use the leak detector properly, read the operating instructions and perform any specified maintenance.



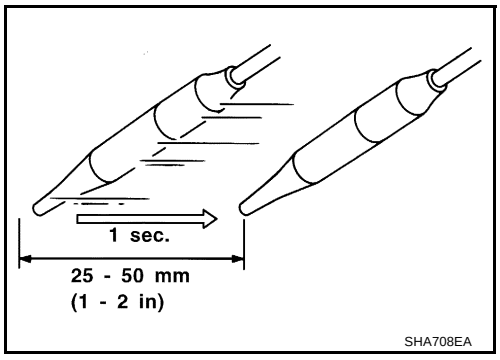
1. Position probe approximately 5 mm (3/16 in) away from point to be checked.

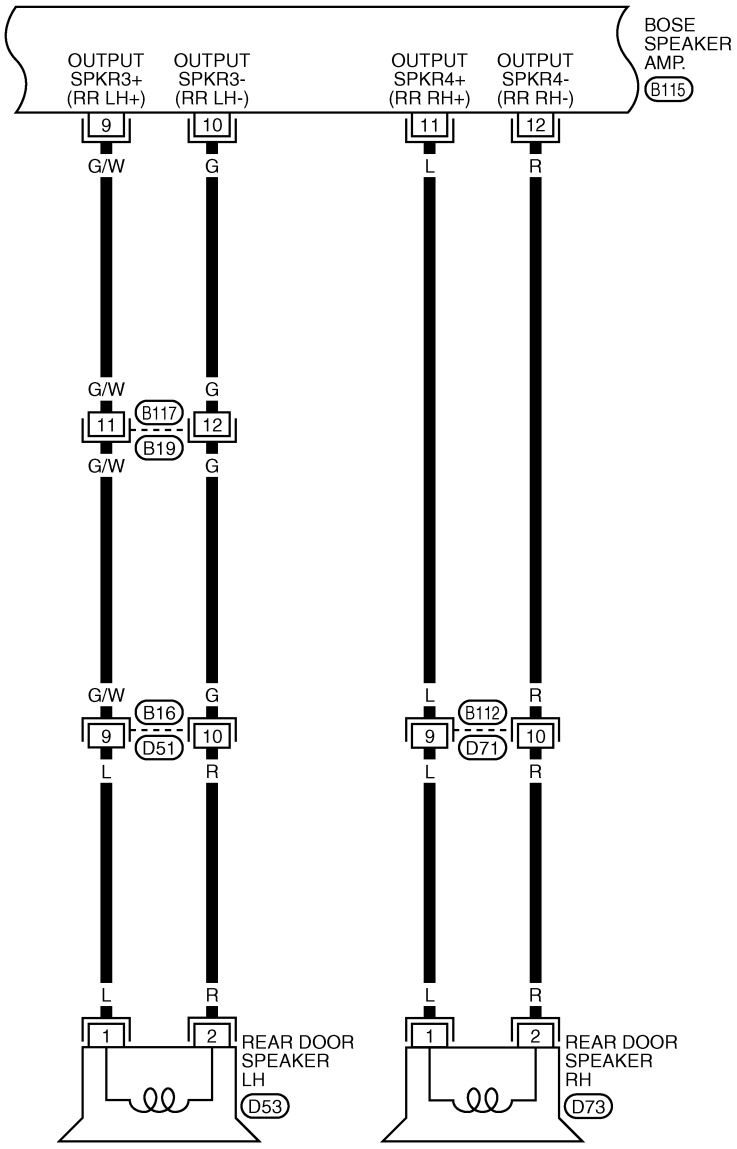


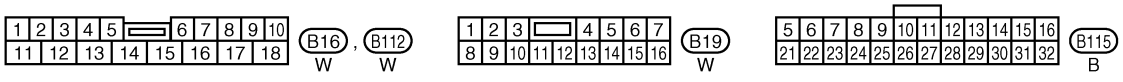
2. When testing, circle each fitting completely with probe.

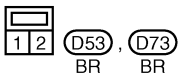


3. Move probe along component approximately 25 to 50 mm (1 to 2 in)/sec.




BOSE SPEAKER AMP.
B115
OUTPUT SPKR3+ (RR LH+)
OUTPUT SPKR3- (RR LH-)
OUTPUT SPKR4+ (RR RH+)
OUTPUT SPKR4- (RR RH-)
9
10
11
12
G/W
G
L
R
B117
B19
B16
D51
B112
D71
REAR DOOR SPEAKER LH
D53
REAR DOOR SPEAKER RH
D73

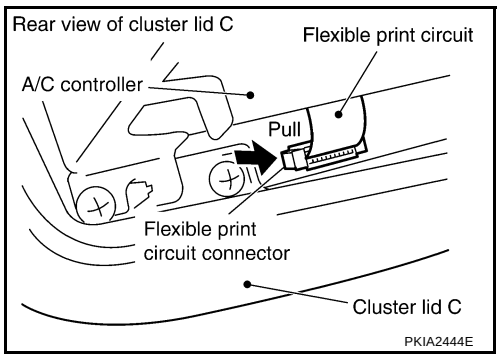

B16
W
B112
W
B19
W
B115
B


D53
BR
D73
BR

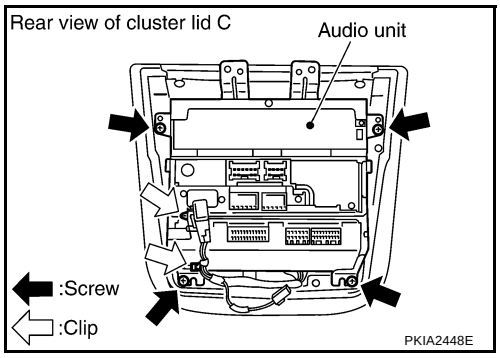
TKWB0919E

7. Unlock FPC (Flexible Print Circuit) connector lock on A/C and AV switch side.
8. Pull off flexible printed circuit from connector.

CAUTION:
Make sure mating surface of FPC (Flexible Print Circuit) and the direction of connector terminal.

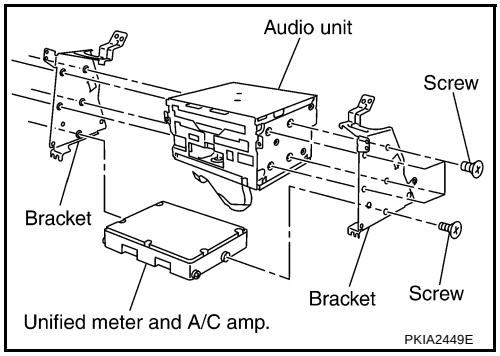


9. Remove screws (4) and clips (2). Then remove audio unit from cluster lid C.



10. Remove audio unit screws (8), unified meter and A/C amp. screws (2) and remove bracket.

CAUTION:
- **When carrying audio unit body, do not touch internal mechanism access from cassette tape slot.**
- **Be careful not to allow foreign material to enter from cassette tape slot.**
- **Use appropriate screws for each, as screws for audio unit are different from that for unified meter and A/C amp.**



INSTALLATION

Installation is the reverse order of removal.

NAVIGATION SYSTEM

PFP:25915

System Description

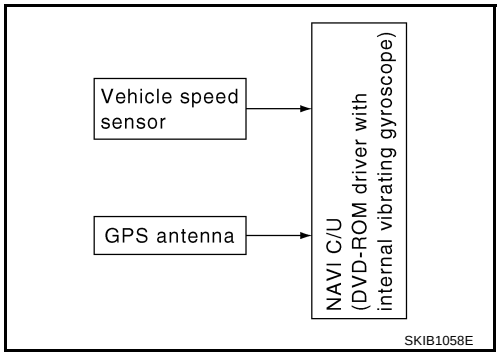
AKS00D2B

NAVIGATION SYSTEM

Location Detection Principle

The navigation system periodically calculates the vehicle's current position according to the following three signals:

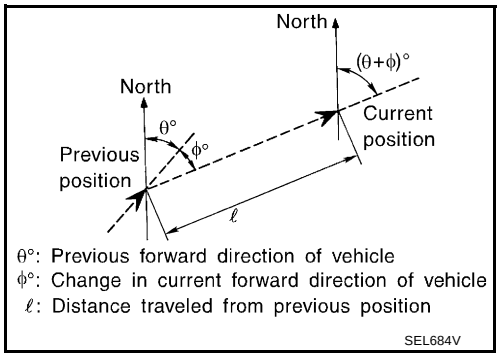
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)



The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen as a current-location mark. More accurate data is judged and used by comparing vehicle position detection results found by the GPS with the result by map-matching.

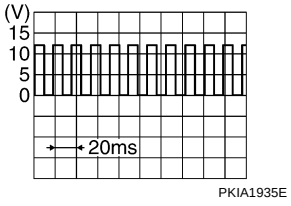
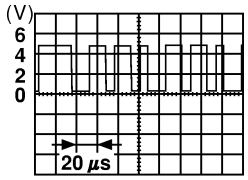
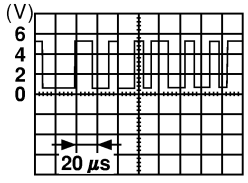
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

- Travel distance
  Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction
  Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	Correct direction cannot be detected when vehicle speed is low.

More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
25 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12 V	NAVI screen does not switch to night-time mode after the lighting switch is turned ON.
					Lighting switch OFF	Approx. 0 V	
26 (G)	Ground	Ignition signal	Input	ON	—	Battery voltage	Navigation current-location mark does not indicate the correct position.
27 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V	Navigation current-location mark moves strangely when the vehicle is moving backwards.
					Selector lever except R position	Approx. 0 V	
28 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E	Navigation current-location mark does not indicate the correct position.
30 (R/W)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V	NAVI control unit illumination cannot be controlled.
43	Ground	Shield	—	ON	—	Approx. 0 V	—
44 (O)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIA0175E	System does not work properly.
45 (B/P)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIA0176E	System does not work properly.
66	67	GPS signal	Input	ON	Connector is not connected	Approx. 5 V	Navigation system GPS correction is not possible.

Power Supply and Ground Circuit Check for Rear View Camera Control Unit

AKS00CGV

1. CHECK FUSE

Make sure that the following fuses of rear view camera control unit are not blown.

Unit	Signal	Fuse No.
Rear view camera control unit	Battery power supply	38
	ACC power supply	6

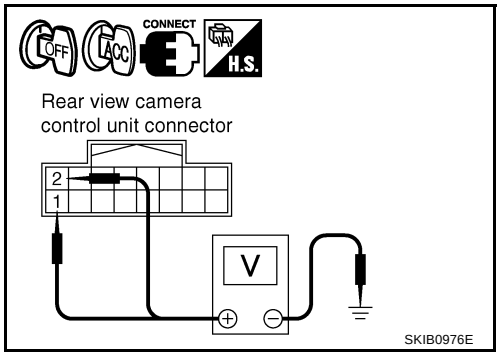
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between rear view camera control unit harness connector terminals and ground.

Terminals			OFF	ACC
(+)		(–)		
Connector	Terminal No. (Wire color)			
B37	1 (Y)	Ground	Battery voltage	Battery voltage
	2 (P/B)		0 V	Battery voltage



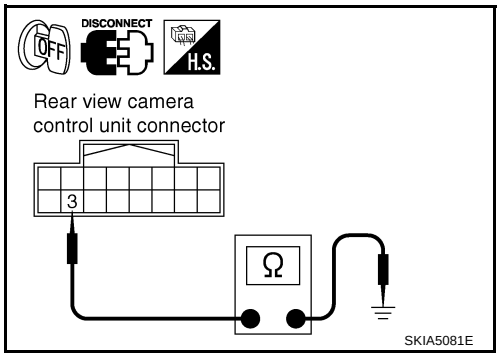
OK or NG

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

3. CHECK GROUND CIRCUIT

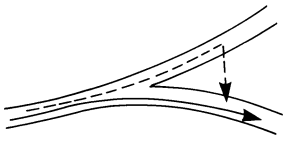
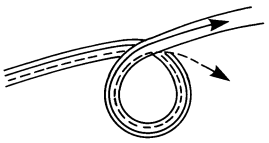
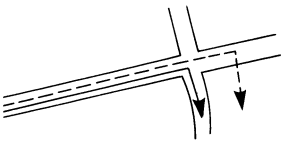
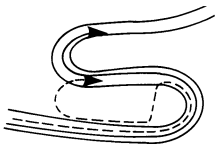
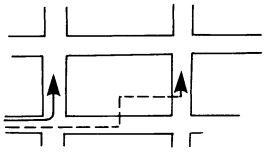
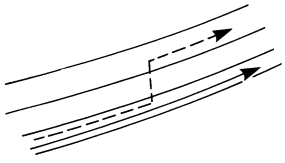
1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit connector.
3. Check continuity between rear view camera control unit harness connector B37 terminal 3 (B) and ground.

3 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Cause (condition)		Driving condition	Remarks (correction, etc.)
Road configuration	Y–intersections  ELK0192D	At a Y intersection or similar gradual division of roads, error the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	If after traveling about 10 km (6 miles) the correct location has not been restored, perform location correction, and if necessary, direction correction.
	Spiral roads  ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
	Straight roads  ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle turned at a corner.	
	Zigzag roads  ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
	Roads laid out in a grid pattern  ELK0196D	When driving at where roads are laid out in a grid pattern, where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
	Parallel roads  ELK0197D	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

TRUNK

Trunk noises are often caused by a loose jack or loose items put into the trunk by the owner.
In addition look for:

1. Trunk lid dumpers out of adjustment
2. Trunk lid striker out of adjustment
3. The trunk lid torsion bars knocking together
4. A loose license plate or bracket

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

SUNROOF/HEADLINING

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

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

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

SEATS

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

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

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

UNDERHOOD

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

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

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

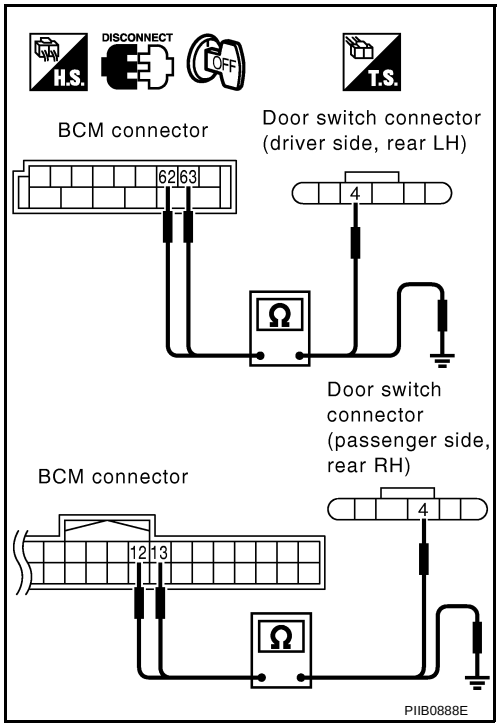
2. CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch and unified BCM connectors.
3. Check continuity between BCM and door switch.

Door switch	Connector	Terminal (wire color)	Connector	Terminal (wire color)	Continuity
Driver side	M36	62 (SB)	D10	4 (SB)	Yes
Rear LH		63 (R/W)	D56	4 (V)	
Passenger side	M34	12 (R or R/G)	D38	4 (R/G)	
Rear RH		13 (R/Y or R/W)	D76	4 (R/W)	

4. Check continuity between BCM and ground.

Door switch	Connector	Terminal (wire color)		Continuity
Driver side	M36	62 (SB)	Ground	No
Rear LH		63 (R/W)		
Passenger side	M34	12 (R or R/G)		
Rear RH		13 (R/Y or R/W)		



OK or NG

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

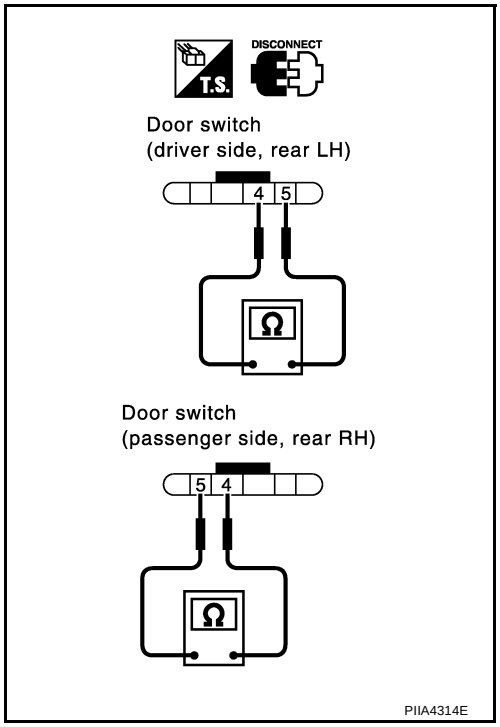
3. CHECK DOOR SWITCH

Check continuity between door switch terminals 4 and 5.

Terminal		Door switch condition	Continuity
4	5	Open position	Yes
		Closed position	No

OK or NG

OK >> GO TO 4.
NG >> Replace door switch.



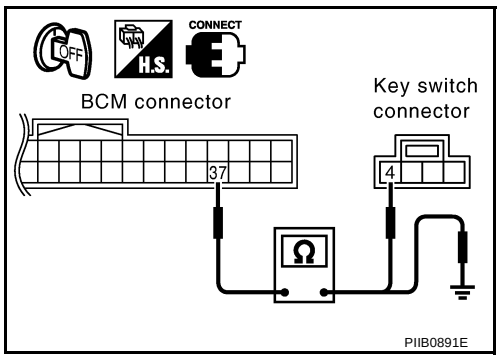
3. CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M34 terminal 37 and key switch harness connector M28 terminal 4.

37 (B/R) - 4 (B/R) : Continuity should exist.

3. Check continuity between BCM harness connector M34 terminal 37 and ground.

37 (B/R) - Ground : Continuity should not exist.



OK or NG

OK >> Check the following.
- 10A fuse [No.21, located in the fuse block (J/B)]
- Harness for open or short between key switch and fuse

NG >> Repair harness or connector.

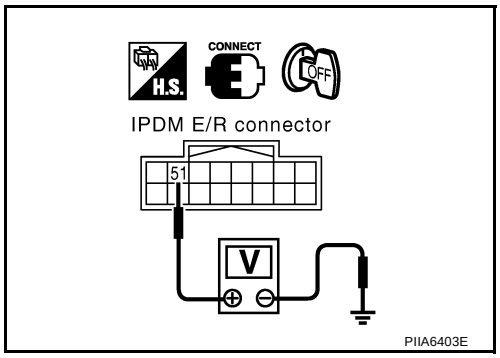
Check IPDM E/R Operation

AIS002FW

1. CHECK IPDM E/R INPUT VOLTAGE

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R connector E9 terminal 51 and ground.

51 (G/O) – Ground : Battery voltage



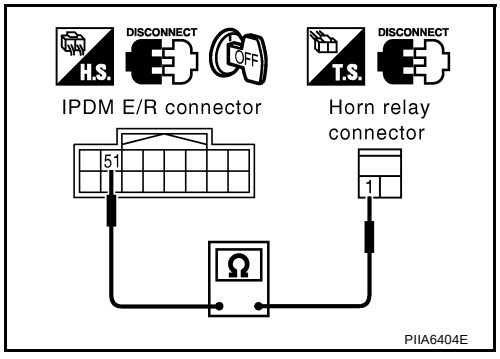
OK or NG

OK >> Replace IPDM E/R.
NG >> GO TO 2.

2. CHECK IPDM E/R HARNESS

1. Disconnect IPDM E/R and horn relay connector.
2. Check continuity between IPDM E/R connector E9 terminal 51 and horn relay connector E11 terminal 1.

51 (G/O) – 1 (G/O) : Continuity should exist.

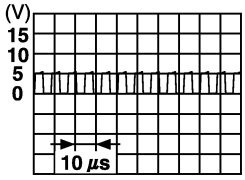
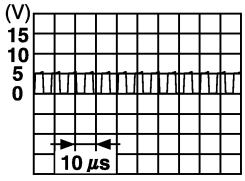
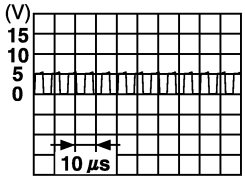


OK or NG

OK >> Check harness connection.
NG >> Repair or replace harness.

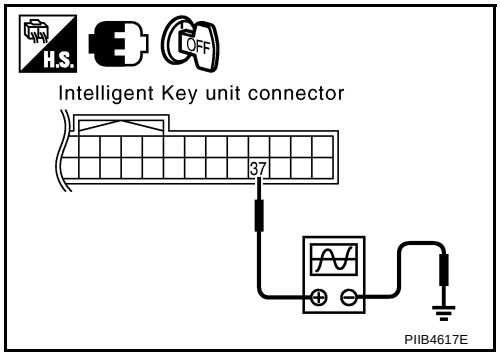
Terminals and Reference Value for Intelligent Key Unit

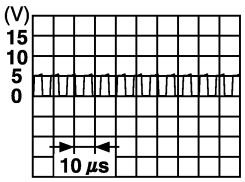
AIS006C3

Terminal	Wire Color	Item	Condition			Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions		
1	L/Y	Steering lock unit power supply	LOCK	—		5
2	L	CAN-H	—	—		—
3	Y	CAN-L	—	—		—
4	GR	Intelligent Key warning buzzer (engine room)	LOCK	Operate door request switch.	Buzzer OFF	Battery voltage
					Sound buzzer	0
5	B/W	Front door request switch (driver side)	—	Press front door request switch (driver side).		0
				Other than above		5
6	G	Ignition switch (ON)	ON	—		Battery voltage
7	B/R	Key switch	LOCK	Insert mechanical key into ignition key cylinder.		Battery voltage
				Remove mechanical key from ignition key cylinder.		0
8	L/W	KEY indicator (green)	LOCK	When Intelligent Key is inside vehicle, press ignition knob switch.		0
				Ignition knob switch OFF		Battery voltage
9	G/B	KEY warning lamp (red)	LOCK	When Intelligent Key is outside vehicle, press ignition knob switch.		0
				Ignition knob switch OFF		Battery voltage
10	P/B	Ignition switch (ACC)	ACC	—		Battery voltage
11	G/Y	Power source (Fuse)	—	—		Battery voltage
12	B	Ground	—	—		0
13	Y	Inside key antenna (+) signal (Luggage room)	LOCK	Press ignition knob switch: ON (Ignition knob switch)		 SIIA1910J
14	BR	Inside key antenna (-) signal (Luggage room)				
15	L	Inside key antenna (+) signal (Console)	LOCK	Press ignition knob switch: ON (Ignition knob switch)		 SIIA1910J
16	B/W	Inside key antenna (-) signal (Console)				
17	W	Outside key antenna (Rear bumper) (+) signal	LOCK	Press back door opener request switch.		 SIIA1910J
18	B	Outside key antenna (Rear bumper) (-) signal				

3. CHECK OUTSIDE KEY ANTENNA POWER SUPPLY

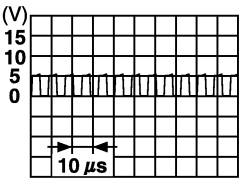
1. Replace outside key antenna (door mirror). (New antenna or other antenna)
2. Connect Intelligent Key unit connector and outside key antenna (door mirror) connector.
3. Check signal between Intelligent Key unit connector and ground with oscilloscope.



Connector	Item	Terminal (wire color) (+)	Terminal (wire color) (-)	Condition	Signal (Reference value)
M99	Passenger side	37 (LG)	Ground	Request switch is pushed	

SIIA1910J

4. Disconnect outside key antenna (door mirror) connector.
5. Replace outside key antenna (rear door RH). (New antenna or other antenna)
6. Connect outside key antenna (rear door RH) connector.
7. Check signal between Intelligent Key unit connector and ground with oscilloscope.

Connector	Item	Terminal (wire color) (+)	Terminal (wire color) (-)	Condition	Signal (Reference value)
M99	Passenger side	37 (LG)	Ground	Request switch is pushed	

SIIA1910J

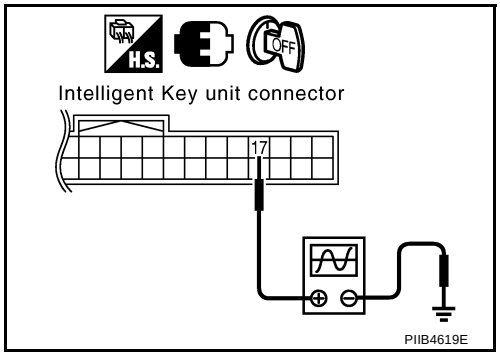
OK or NG

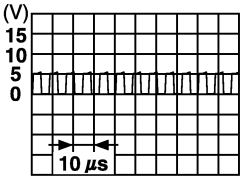
OK >> Check condition of harness and connector.
NG >> Replace malfunction outside key antenna.

CHECK OUTSIDE KEY ANTENNA (REAR BUMPER)

1. CHECK OUTSIDE KEY ANTENNA INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check signal between Intelligent Key unit connector and ground with oscilloscope.



Connector	Item	Terminal (wire color) (+)	Terminal (wire color) (-)	Condition	Signal (Reference value)
M99	Rear bumper	17 (W/L)	Ground	Request switch is pushed	

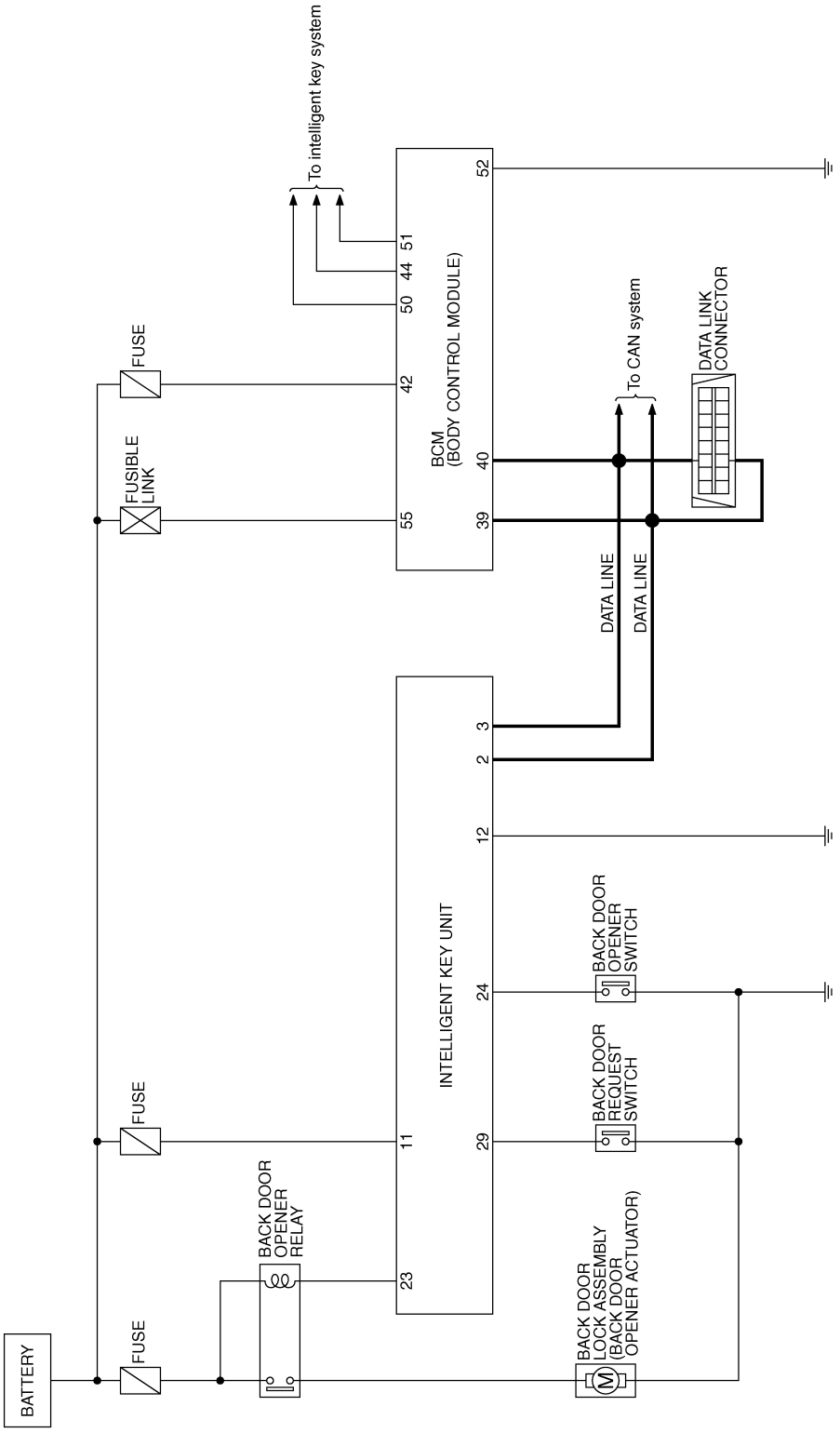
SIIA1910J

OK or NG

OK >> Check condition of harness and connector.
NG >> GO TO 2.

Schematic / With Intelligent Key

AIS006EM

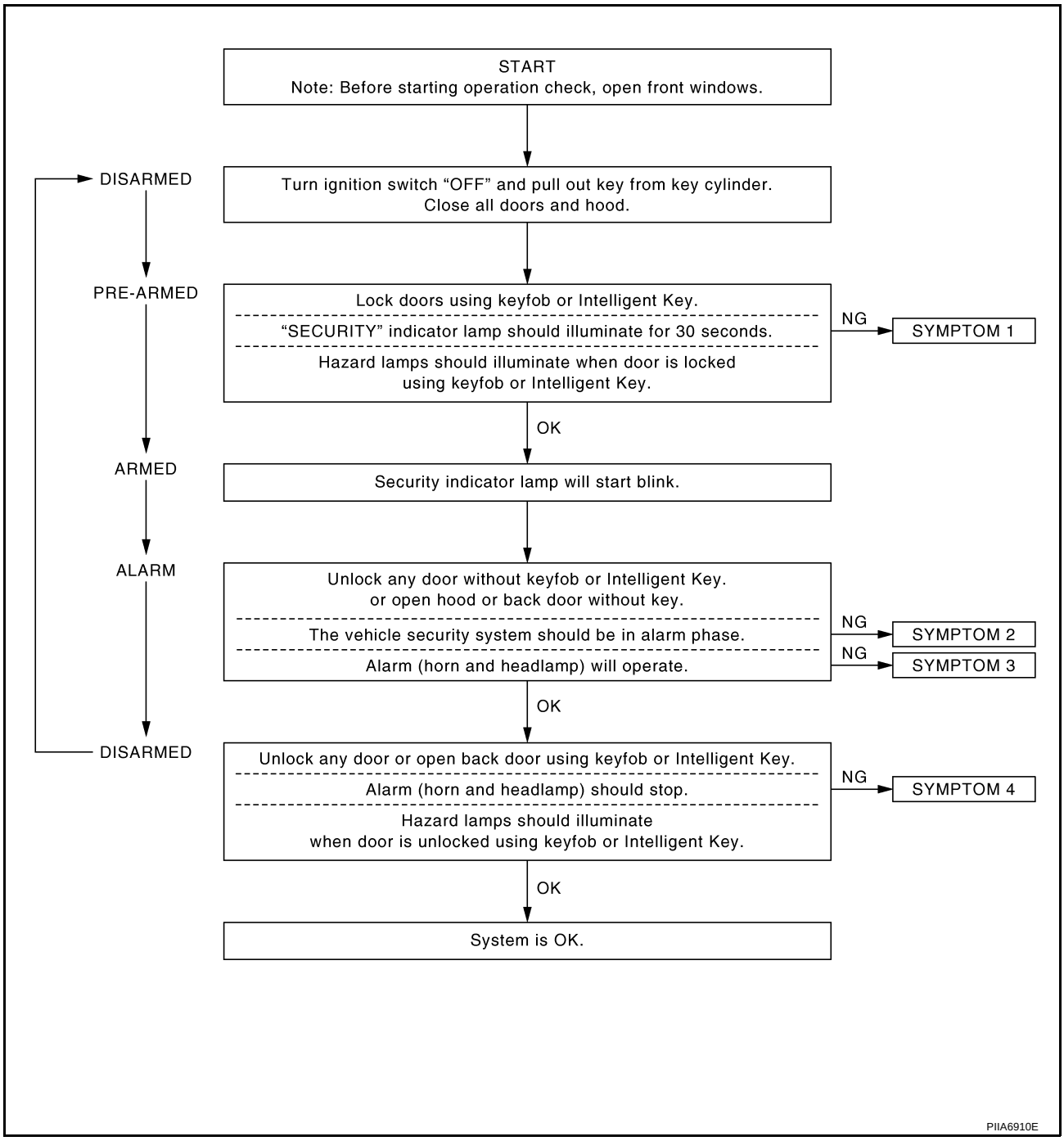


TIWB0292E

Preliminary Check

AIS001VX

The system operation is canceled by turning ignition switch to “ACC” at any step between START and ARMED in the following flow chart.

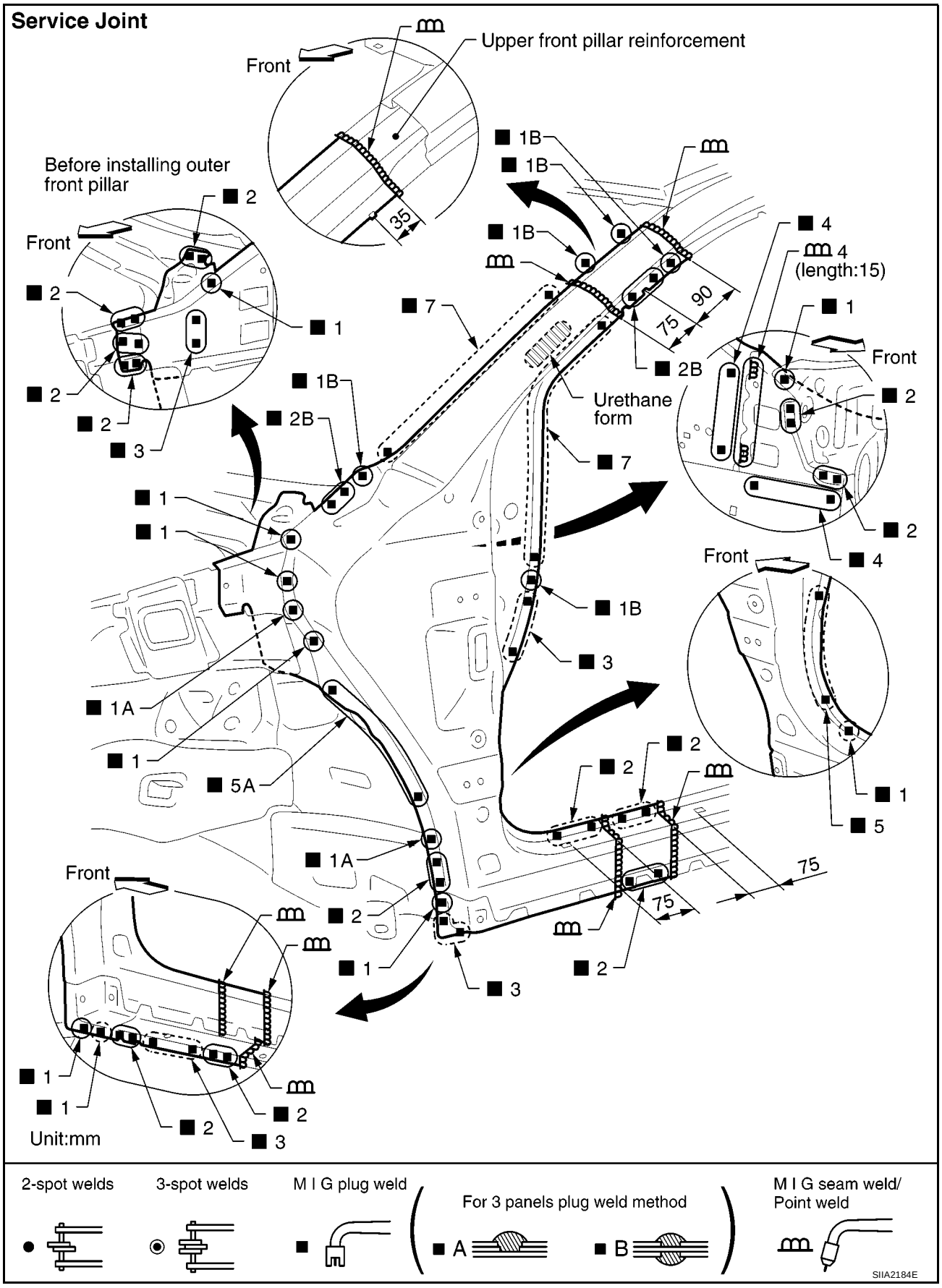


After performing preliminary check, go to symptom chart. Refer to BL-227, "Symptom Chart" .

1. Hoodledge assembly
2. Upper hoodledge
3. Lower front hoodledge
4. Hoodledge reinforcement
5. Air box assembly
6. Side cowl top
7. Lower dash
8. Side dash
9. Front floor
10. Center front floor reinforcement
11. Front floor reinforcement (RH&LH)
12. Front side member stiffener
13. Center floor member assembly
14. Inner sill
15. 2ND crossmember assembly
16. 3RD crossmember assembly
17. Rear floor
18. Rear floor rear
19. Rear floor front extension
20. Rear seat back support assembly
21. Outer rear seat belt anchor reinforcement
22. 2ND seat mounting bracket
23. Rear floor side
24. Spare tire clamp bracket
25. Front side member assembly
26. Front side member
27. Front side member connector
28. Bumper stay reinforcement assembly
29. Front suspension mounting bracket
30. Front side member outrigger assembly
31. Lower dash crossmember
32. Front side member closing plate assembly
33. Front side member front closing plate
34. Front side member center extension
35. Front side member rear extension
36. Rear seat crossmember
37. Rear side member assembly
38. Inner sill extension
39. Jack up point bracket
40. Sill closing plate
41. Rear side member extension
42. Center rear crossmember assembly
43. Spare wheel crossmember

FRONT PILLAR

- Work after hoodledge reinforcement has been removed.



REMOVAL

CAUTION:

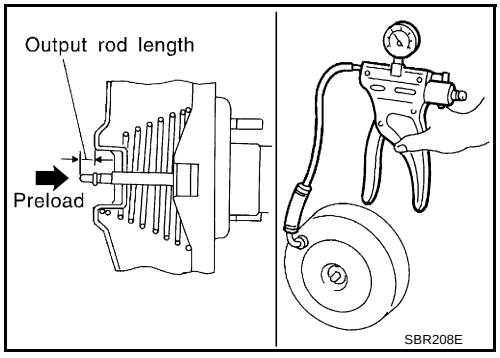
- **Be careful not to deform or bend brake piping while removing and installing the brake booster.**
- **Replace clevis pin if it is damaged.**
- **Be careful not to damage brake booster stud bolt threads. If brake booster is tilted or inclined during installation, the dash panel may damage the threads.**
- **Attach the check valve in the correct orientation.**

1. Remove brake master cylinder. Refer to BR-15, "BRAKE MASTER CYLINDER"
2. Remove cowl top cover. Refer to EI-21, "COWL TOP" .
3. Remove vacuum hose from the brake booster. Refer to BR-25, "VACUUM LINES" .
4. Remove the brake pedal snap pin and clevis pin from inside the vehicle.
5. Remove brake tube bracket from dash panel.
6. Remove nuts from the brake booster and brake pedal assembly.
7. Remove brake booster assembly from the dash panel.

INSPECTION AFTER REMOVAL

Output Rod Length Inspection

1. Using a handy vacuum pump, apply a vacuum of –66.7 kPa (–500 mmHg, –19.69 inHg) to the brake booster.
2. Check output rod length.



Standard dimension when applying a vacuum of –66.7 kPa (–500 mmHg, –19.69 inHg):

Without VDC models : 10.4mm (0.409 in)

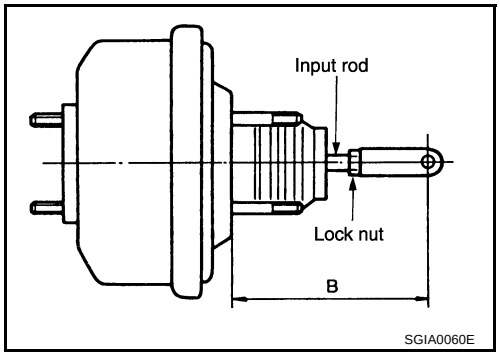
With VDC models : –15.7mm (–0.6181 in)

INSTALLATION

1. Loosen the lock nut to adjust the input rod length so that the length B (in the figure) satisfies the specified value.

   Length “B” : 125 mm (4.92 in)

2. After adjusting “B”, temporarily tighten the lock nut to install the booster assembly to the vehicle. At this time, securely install a gasket between the booster assembly and the dash panel.
3. Connect the brake pedal with the clevis of the input rod.
4. Install the pedal bracket mounting nuts and tighten them to the specified torque.
5. Install the master cylinder to the booster assembly. Refer to BR-15, "Removal and Installation" .
6. Adjust the height and play of the brake pedal.
7. Tighten the lock nut of the input rod to the specified torque.
8. Install vacuum hose to brake booster. Refer to BR-25, "VACUUM LINES" .
9. Install brake tube bracket to dash panel.
10. Install cowl top cover. Refer to EI-21, "COWL TOP" .
11. Refill new brake fluid and bleed air. Refer to BR-12, "Bleeding Brake System" .



Note3: Serves as EBD warning lamp.

CONSULT- II Functions

AFS0018S

CONSULT-II MAIN FUNCTION

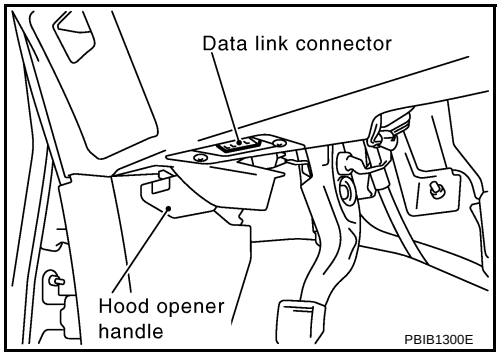
In a diagnosis function (main function), there are “SELF-DIAGNOSTIC RESULTS”, “DATA MONITOR”, “CAN DIAG SUPPORT MNTR”, “ACTIVE TEST”, “FUNCTION TEST”, “ECU PART NUMBER”.

Diagnostic test mode	Function	Reference
SELF-DIAG-NOSTIC RESULTS	Self-diagnostic results can be read and erased quickly.	BRC-22, "SELF-DIAGNOSIS"
DATA MONI-TOR	Input/Output data in the ABS actuator and electric unit (control unit) can be read.	BRC-24, "DATA MONITOR"
CAN DIAG SUPPORT MNTR	The results of transmit/receive diagnosis of communication can be read.	—
ACTIVE TEST	Diagnostic Test Mode in which CONSULT-II drives some actuators apart from the ABS actuator and electric unit (control unit) and also shifts some parameters in a specified range.	BRC-26, "ACTIVE TEST"
FUNCTION TEST	Performed by CONSULT-II instead of a technician to determine whether each system is “OK” or “NG”.	—
ECU PART NUMBER	ABS actuator and electric unit (control unit) part number can be read.	—

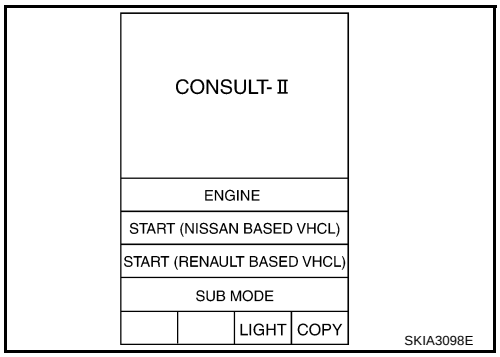
CONSULT-II BASIC OPERATION PROCEDURE

1. Turn ignition switch OFF.
2. Connect CONSULT-II and CONSULT-II CONVERTER to data link connector.

   CAUTION:
   If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which performs CAN communication.
3. Turn ignition switch ON.



4. Touch “START (NISSAN BASED VHCL)”.



5. Touch “ABS” in “SELECT SYSTEM” screen.

TROUBLE DIAGNOSIS

PFP:00004

How to Perform Trouble Diagnosis for Quick and Accurate Repair

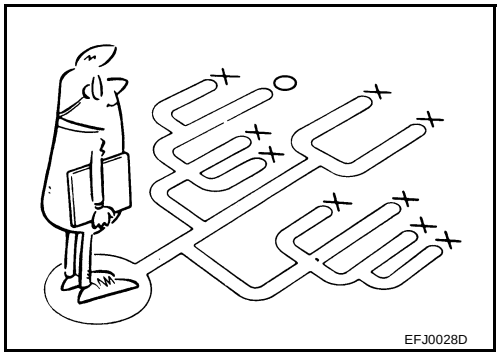
AFS001ZW

INTRODUCTION

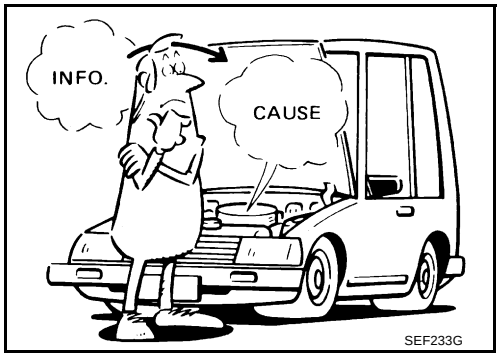
- Most important point to perform diagnosis is to understand systems (control and mechanism) in vehicle thoroughly.

- It is also important to clarify customer complaints before inspection.
  First of all, reproduce symptom, and understand it fully.
  Ask customer about his/her complaints carefully. In some cases, it will be necessary to check symptom by driving vehicle with customer.

  NOTE:
  Customers are not professionals. Do not assume “maybe customer means...” or “maybe customer mentioned this symptom”.


EFJ0028D

- It is essential to check symptoms right from beginning in order to repair a malfunction completely.
  For an intermittent malfunction, it is important to reproduce symptom based on interview with customer and past examples. Do not perform inspection on ad hoc basis. Most intermittent malfunctions are caused by poor contacts. In this case, it will be effective to shake suspected harness or connector by hand. When repairs are performed without any symptom check, no one can judge if malfunction has actually been eliminated.
- After diagnosis, make sure to perform “erase memory”. Refer to BRC-72, "Operation Procedure" .
- For an intermittent malfunction, move harness or harness connector by hand to check poor contact or false open circuit.

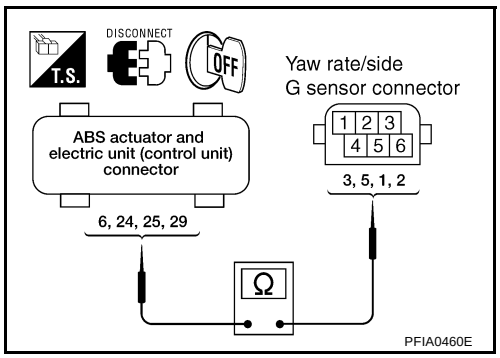


SEF233G

- Always read “GI General Information” to confirm general precautions. Refer to GI-4, "General Precautions" .

3. CHECK YAW RATE SENSOR/SIDE G SENSOR HARNESS

1. Turn ignition switch OFF and disconnect yaw rate/side/decel G sensor connector M61 and ABS actuator and electric unit (control unit) connector E24.
2. Check continuity between ABS actuator and electric unit (control unit) vehicle side connector and yaw rate/side/decel G sensor vehicle side connector.



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

OK or NG

OK >> GO TO 4.
NG >> If open or short in harness, repair or replace harness.

4. CHECK YAW RATE SENSOR/SIDE/DECEL G SENSOR

1. Connect yaw rate /side/decel G sensor M61 and ABS actuator and electric unit (control unit) connector E24.
2. Use “Data Monitor” to check if yaw rate sensor/side/decel G sensor are normal.

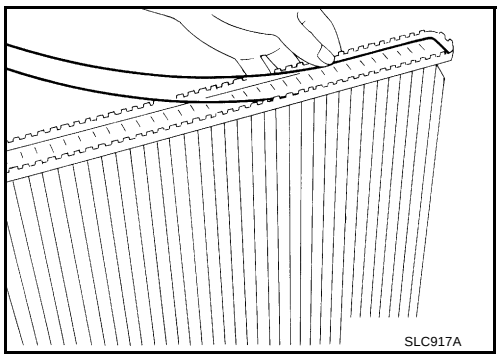
Vehicle status	Yaw rate sensor (Data monitor standard)	Side G sensor (Data monitor standard)	Decel G sensor (Data monitor standard)
When stopped	–4 to +4°/s	–1.1 to +1.1 m/s^2	–0.11 G to +0.11 G
Right turn	Negative value	Negative value	–
Left turn	Positive value	Positive value	–
Speed up	–	–	Negative value
Speed down	–	–	Positive value

OK or NG

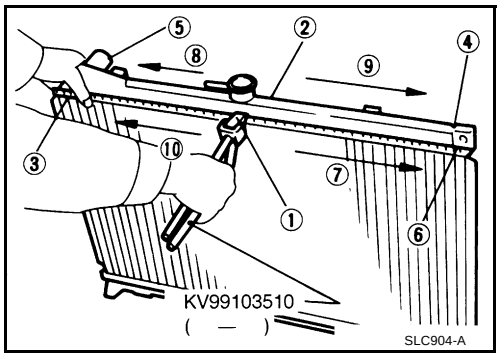
OK >> Perform ABS actuator and electric unit (control unit) self diagnosis again.
NG >> Replace the malfunctioning yaw rate sensor/side/decel G sensor, and then perform ABS actuator and electric unit (control unit) self-diagnosis again.

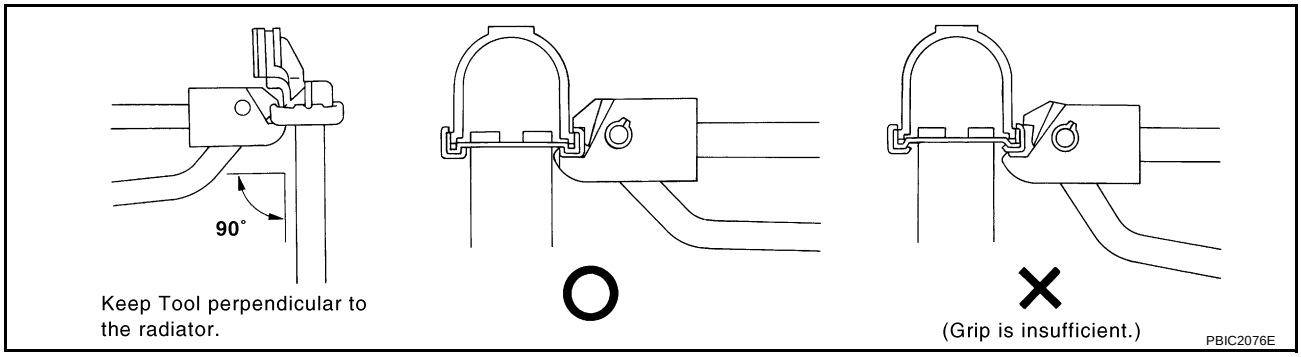
2. Install new sealing rubber while pushing it with fingers.

CAUTION:
Be careful not to twist sealing rubber.

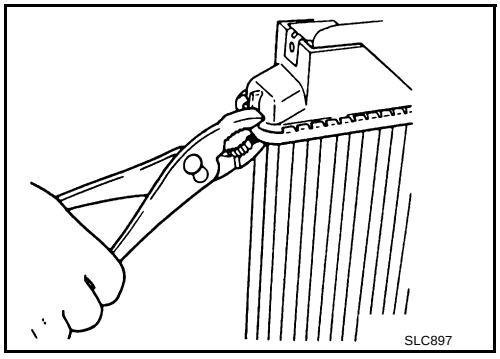


3. Caulk tank in numerical order as shown in the figure with the radiator plate pliers A [SST].



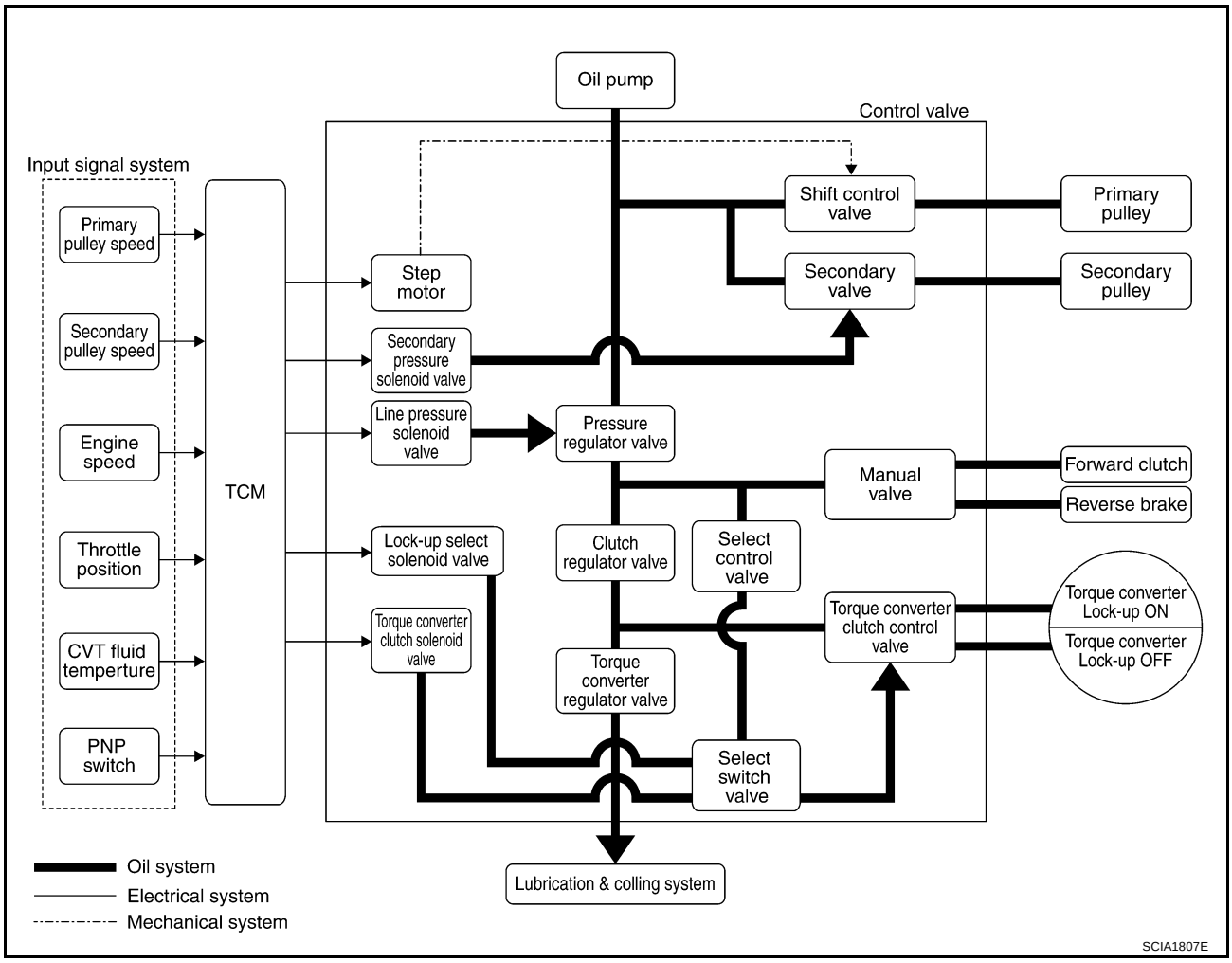


- Use pliers in the locations where the radiator plate pliers A cannot be used.



Hydraulic Control System

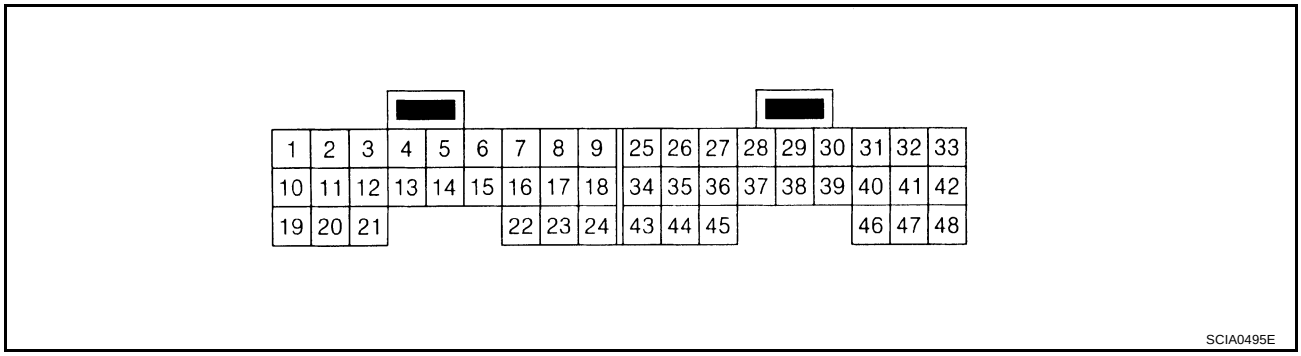
ACS002IN



TCM Input/Output Signal Reference Values

ACS007X3

TCM TERMINAL CONNECTOR LAYOUT



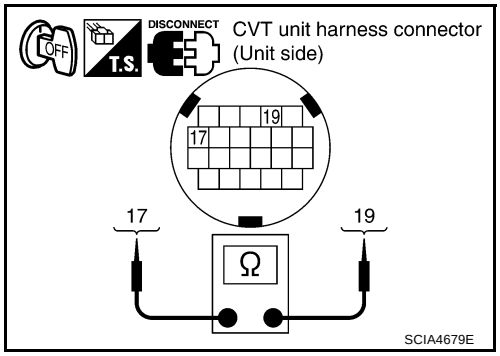
TCM INSPECTION TABLE

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

Terminal	Wire color	Item	Condition		Data (Approx.)
1	R/Y	Pressure control solenoid valve A (Line pressure solenoid valve)	 and 	Release your foot from the accelerator pedal.	5.0 - 7.0V
				Press the accelerator pedal all the way down.	1.0 - 3.0V
2	W/B	Pressure control solenoid valve B (Secondary pressure solenoid valve)		Release your foot from the accelerator pedal.	5.0 - 7.0V
				Press the accelerator pedal all the way down.	3.0 - 4.0V
3	L/W	Torque converter clutch solenoid valve		When vehicle cruises in “D” position.	When CVT performs lock-up.	6.0V
					When CVT does not perform lock-up.	1.0V
4	L/Y	Lock-up select solenoid valve		“P” and “N” positions		Battery voltage
				Wait at least for 5 seconds with the selector lever in “R”, “D”, “S”* and “L”* positions *: Without manual mode.		0V
5	L	CAN H	–			–
6	Y	CAN L	–			–
8	SB	Back-up lamp relay		Selector lever in “R” position.		0V
				Selector lever in other positions.		Battery voltage
10	Y/L	Power supply		—		Battery voltage
				—		0V
11	G/R	Step motor A	Within 2 seconds after ignition switch ON, the time measurement by using the pulse width measurement function (Hi level) of CONSULT-II.*1 **CAUTION:** **Connect the diagnosis data link cable to the vehicle diagnosis connector.** *1: A circuit tester cannot be used to test this item.			30.0 msec
12	O/B	Step motor B				10.0 msec
13	G/W	ROM assembly	—			—
14	L/R	ROM assembly	—			—
15	BR/R	ROM assembly	—			—

3. CHECK CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminals.



Name	Connector	Terminal	Temperature °C (°F)	Resistance (Approx.)
CVT fluid temperature sensor	F6	17 - 19	20 (68)	6.5 kΩ
			80 (176)	0.9 kΩ

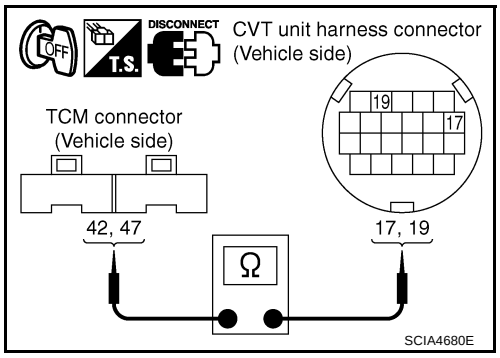
4. Reinstall any part removed.

OK or NG

OK >> GO TO 4.
NG >> Replace the transaxle assembly. Refer to CVT-232, "Removal and Installation" .

4. CHECK HARNESS BETWEEN TCM AND CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect the TCM connector and CVT unit harness connector.
3. Check continuity between TCM connector terminal and CVT unit harness connector terminal.



Item	Connector	Terminal (Wire color)	Continuity
TCM	F104	42 (W/R)	Yes
CVT unit harness connector	F6	19 (W/R)	
TCM	F104	47 (V)	Yes
CVT unit harness connector	F6	17 (V)	

4. If OK, check harness for short to ground and short to power.
5. Reinstall any part removed.

OK or NG

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

5. CHECK DTC

Perform “DTC Confirmation Procedure”. Refer to CVT-91, "DTC Confirmation Procedure" .

OK or NG

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

6. CHECK TCM

1. Check TCM input/output signal. Refer to CVT-58, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

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

DTC P0778 PRESSURE CONTROL SOLENOID B ELECTRICAL (SEC PRESSURE SOLENOID VALVE)

PFP:31941

Description

ACS002J9

The pressure control solenoid valve B (secondary pressure solenoid valve) regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

CONSULT-II Reference Value

ACS002TF

Remarks: Specification data are reference values.

Monitor item	Condition	Display value (Approx.)
ISOLT3	Secondary pressure low - Secondary pressure high	0.8 - 0.0A
SOLMON3	“N” position idle	0.6 - 0.7A
	When stalled	0.4 - 0.6A

On Board Diagnosis Logic

ACS002JA

- This is an OBD-II self-diagnostic item.
- Diagnostic trouble code “P0778 PRS CNT SOL/B CIRC” with CONSULT-II is detected under the following conditions.
  - TCM detects an improper voltage drop when it tries to operate the solenoid valve.
  - When TCM compares target value with monitor value and detects an irregularity.

Possible Cause

ACS002JB

- Harness or connectors
  (Solenoid circuit is open or shorted.)
- Pressure control solenoid valve B (Secondary pressure solenoid valve)

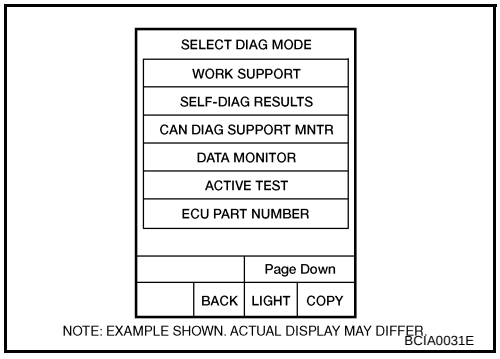
DTC Confirmation Procedure

ACS002JC

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

WITH CONSULT-II

1. Turn ignition switch ON.
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and wait at least 5 seconds.
4. If DTC is detected, go to CVT-132, "Diagnostic Procedure" .



WITH GST

Follow the procedure “WITH CONSULT-II”.

Diagnostic Procedure

ACS002KF

1. CHECK STEP MOTOR FUNCTION

Perform the self-diagnosis check. Refer to CVT-67, "SELF-DIAGNOSTIC RESULT MODE" .

Is a malfunction in the step motor function indicated in the results?

YES >> Repair or replace damaged parts. (Check the step motor function. Refer to CVT-179, "DTC P1778 STEP MOTOR - FUNCTION" .)

NO >> GO TO 2.

2. CHECK OUTPUT SPEED SENSOR (SECONDARY SPEED SENSOR SYSTEM) AND INPUT SPEED SENSOR (PRIMARY SPEED SENSOR) SYSTEM

Check secondary speed sensor system and primary speed sensor system. Refer to CVT-101, "DTC P0720 VEHICLE SPEED SENSOR CVT (SECONDARY SPEED SENSOR)" , CVT-96, "DTC P0715 INPUT SPEED SENSOR CIRCUIT (PRI SPEED SENSOR)" .

OK or NG

OK >> GO TO 3.

NG >> Repair or replace damaged parts.

3. CHECK ENGINE SPEED SIGNAL SYSTEM

Check engine speed signal system. Refer to CVT-107, "DTC P0725 ENGINE SPEED SIGNAL" .

OK or NG

OK >> GO TO 4.

NG >> Repair or replace damaged parts. Refer to EC-641, "IGNITION SIGNAL" .

4. DETECT MALFUNCTIONING ITEM

Check the following:

- Power supply and ground circuit for TCM. Refer to CVT-156, "DTC P1701 TRANSMISSION CONTROL MODULE (POWER SUPPLY)" .
- 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 “DTC Confirmation Procedure”. Refer to CVT-165, "DTC Confirmation Procedure" .

OK or NG

OK >> **INSPECTION END**

NG >> Replace TCM or transaxle assembly. Refer to CVT-9, "Precautions for TCM and CVT Assembly Replacement" , CVT-232, "Removal and Installation" .

5. CHECK SYMPTOM

Check again. Refer to CVT-53, "Cruise Test" .

OK or NG

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

6. CHECK TCM

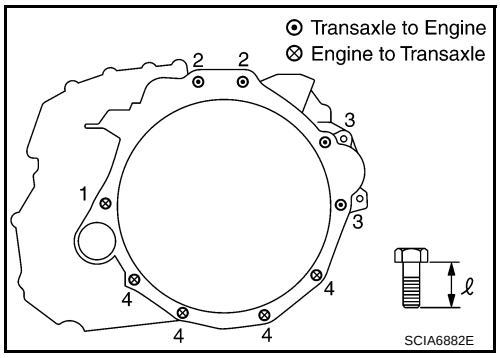
1. Check TCM input/output signals. Refer to CVT-58, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-232, "Removal and Installation" .
NG >> Repair or replace damaged parts.

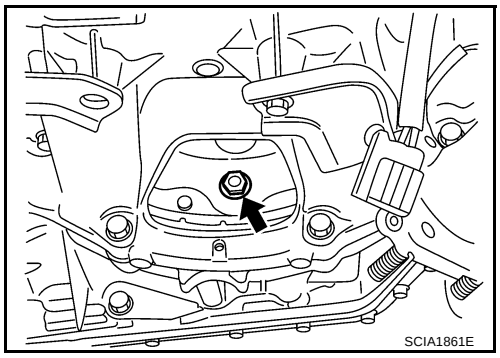
- When installing transaxle to the engine, attach the fixing bolts in accordance with the following standard.

Bolt No.	1	2	3	4
Number of bolts	1	2	2	4
Bolt length “ℓ”mm (in)	52 (2.05)	36 (1.42)	105 (4.13)	35 (1.38)
Tightening torque N·m (kg-m, ft-lb)	75 (7.7, 55)			47 (4.8, 35)



- Align the positions of tightening nuts for drive plate with those of the torque converter, and temporarily tighten the nuts. Then, tighten the nuts with the specified torque.

  : **51 N·m (5.2 kg-m, 38 ft-lb)**



CAUTION:

- **When turning crankshaft, turn it clockwise as viewed from the front of the engine.**
- **When tightening the tightening nuts for the torque converter after fixing the crankshaft pulley bolts, be sure to confirm the tightening torque of the crankshaft pulley mounting bolts. Refer to EM-68, "INSTALLATION" .**
- **After converter is installed to drive plate, rotate crankshaft several turns and check to be sure that transaxle rotates freely without binding.**

- Install POS sensor. Refer to EM-29, "Removal and Installation" .
- After completing installation, check for fluid leakage, fluid level, and the positions of CVT. Refer to CVT-15, "Checking CVT Fluid" , CVT-214, "Adjustment of CVT Position" , CVT-215, "Checking of CVT Position" .
- When replacing the CVT assembly, erase EEP ROM in TCM. Refer to CVT-9, "Precautions for TCM and CVT Assembly Replacement" .

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
O/D OFF SW [ON/OFF]		X	Indicates [ON/OFF] condition of CVT device (second position switch).
BRAKE SW [ON/OFF]		X	Indicates [ON/OFF] condition of brake switch (stop lamp switch).
AT-M IND [ON/OFF] *2	X	X	Indicates [ON/OFF] condition of CVT manual mode indicator.
AT-M GEAR [5-1] *3	X	X	Indicates [5-1] condition of CVT manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift D range indicator.
L RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift L range indicator.
CVT IND [ON/OFF]		X	Indicates [ON/OFF] condition of CVT indicator.
S RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift S range indicator.
CRUISE IND [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Indicates [ON/OFF] condition of SET indicator.
4WD LOCK SW [ON/OFF]		X	Indicates [ON/OFF] condition of AWD lock switch.
4WD LOCK IND [ON/OFF]		X	Indicates [ON/OFF] condition of AWD lock indicator lamp.
4WD W/L [ON/OFF]		X	Indicates [ON/OFF] condition of AWD warning lamp.

NOTE:
Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.
*1: Monitor keeps indicating “OFF” when brake warning lamp is on by the parking brake operation or low brake fluid level.
*2: Vehicles without manual mode always indicates “OFF”.
*3: Vehicles without manual mode always indicates “1”.

DTC [U1000] CAN Communication Circuit

AKS00D5H

Symptom: Display CAN COMM CIRC [U1000] at the result of self-diagnosis for unified meter and A/C amp.

1. CHECK CAN COMMUNICATION

1. Select “SELF-DIAG RESULTS” mode for “METER A/C AMP” with CONSULT-II.
2. Print out CONSULT-II screen.

>> Go to “CAN system”. Refer to LAN-5, "Precautions When Using CONSULT-II" .

DTC [B2202] Meter Communication Circuit

AKS00D5I

Symptom: Display METER COMM CIRC [B2202] at the result of self-diagnosis for unified meter and A/C amp.

1. CHECK CONNECTOR

Check combination meter, unified meter and A/C amp. and terminals (combination meter side, unified meter and A/C amp. side and harness side) for looseness or bent terminals.

OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK METER/GAUGES VISUALLY

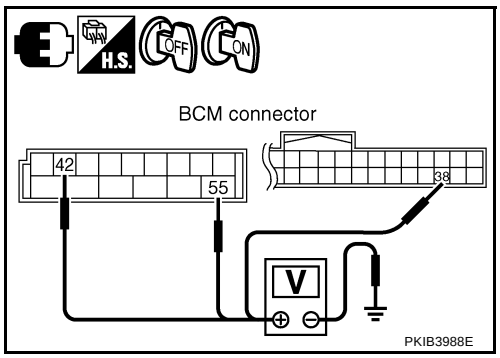
Check the pointer on the meter/gauges fluctuate at the engine start.

Is the fluctuation acceptable?

YES >> GO TO 3.
NO >> GO TO 6.

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between BCM harness connector terminals and ground.



Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal (Wire color)			
M35	55 (W/B)	Ground	Battery voltage	Battery voltage
	42 (GR)			
M34	38 (R)		0 V	Battery voltage

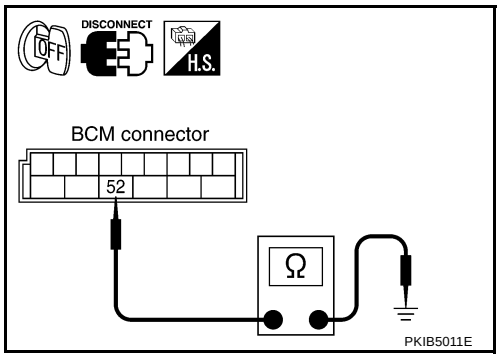
OK or NG

OK >> GO TO 3.
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector M35 terminal 52 (B) and ground.

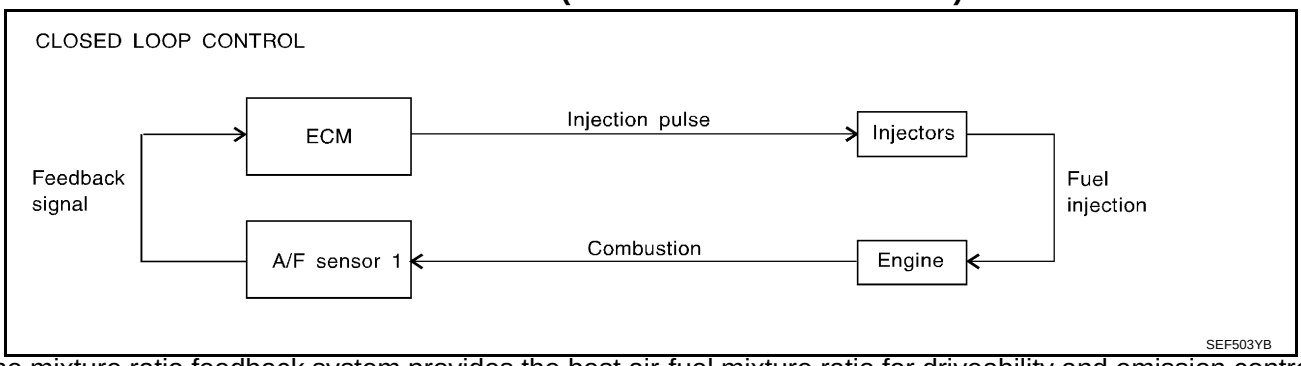
52 (B) – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

MIXTURE RATIO FEEDBACK CONTROL (CLOSED LOOP CONTROL)



The mixture ratio feedback system provides the best air-fuel mixture ratio for driveability and emission control. The three way catalyst (manifold) can then better reduce CO, HC and NOx emissions. This system uses air fuel ratio (A/F) sensor 1 in the exhaust manifold to monitor whether the engine operation is rich or lean. The ECM adjusts the injection pulse width according to the sensor voltage signal. For more information about air fuel ratio (A/F) sensor 1, refer to EC-483, "DTC P1271, P1281 A/F SENSOR 1" . This maintains the mixture ratio within the range of stoichiometric (ideal air-fuel mixture).
This stage is referred to as the closed loop control condition.
Heated oxygen sensor 2 is located downstream of the three way catalyst (manifold). Even if the switching characteristics of air fuel ratio (A/F) sensor 1 shift, the air-fuel ratio is controlled to stoichiometric by the signal from heated oxygen sensor 2.

Open Loop Control

The open loop system condition refers to when the ECM detects any of the following conditions. Feedback control stops in order to maintain stabilized fuel combustion.

- Deceleration and acceleration
- High-load, high-speed operation
- Malfunction of A/F sensor 1 or its circuit
- Insufficient activation of A/F sensor 1 at low engine coolant temperature
- High engine coolant temperature
- During warm-up
- After shifting from N to D
- When starting the engine

MIXTURE RATIO SELF-LEARNING CONTROL

The mixture ratio feedback control system monitors the mixture ratio signal transmitted from A/F sensor 1. This feedback signal is then sent to the ECM. The ECM controls the basic mixture ratio as close to the theoretical mixture ratio as possible. However, the basic mixture ratio is not necessarily controlled as originally designed. Both manufacturing differences (i.e., mass air flow sensor hot wire) and characteristic changes during operation (i.e., injector clogging) directly affect mixture ratio.
Accordingly, the difference between the basic and theoretical mixture ratios is monitored in this system. This is then computed in terms of “injection pulse duration” to automatically compensate for the difference between the two ratios.
“Fuel trim” refers to the feedback compensation value compared against the basic injection duration. Fuel trim includes short term fuel trim and long term fuel trim.
“Short term fuel trim” is the short-term fuel compensation used to maintain the mixture ratio at its theoretical value. The signal from A/F sensor 1 indicates whether the mixture ratio is RICH or LEAN compared to the theoretical value. The signal then triggers a reduction in fuel volume if the mixture ratio is rich, and an increase in fuel volume if it is lean.
“Long term fuel trim” is overall fuel compensation carried out long-term to compensate for continual deviation of the short term fuel trim from the central value. Such deviation will occur due to individual engine differences, wear over time and changes in the usage environment.

HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION

How to Erase DTC

WITH CONSULT-II

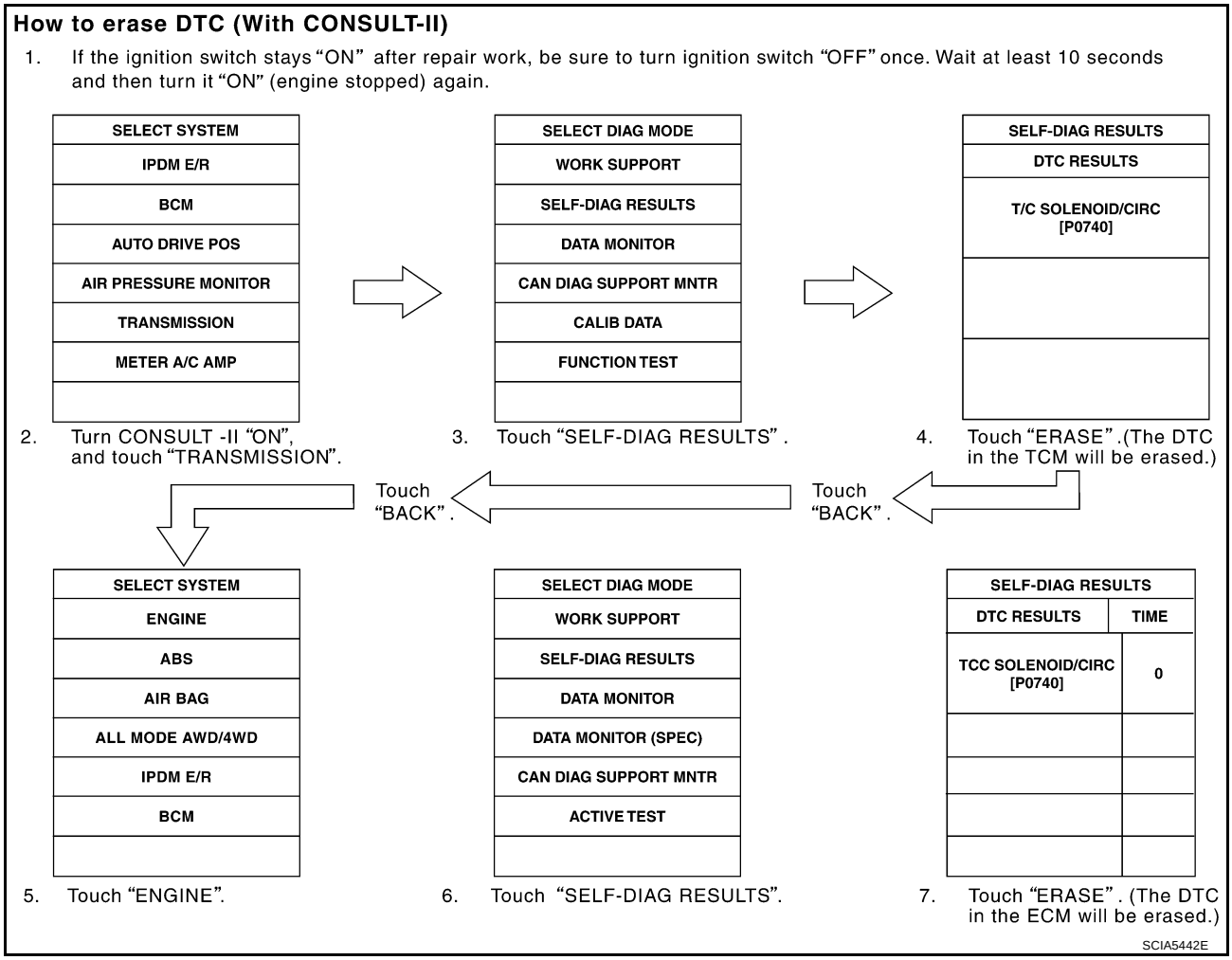
The emission related diagnostic information in the ECM can be erased by selecting “ERASE” in the “SELF-DIAG RESULTS” mode with CONSULT-II.

If DTCs are displayed for both ECM and TCM (Transmission control module), they need to be erased individually from the ECM and TCM (Transmission control module).

NOTE:

If the DTC is not for CVT related items (see EC-8), skip steps 2 through 4.

1. If the ignition switch stays ON after repair work, be sure to turn ignition switch OFF once. Wait at least 10 seconds and then turn it ON (engine stopped) again.
2. Turn CONSULT-II ON and touch “TRANSMISSION”.
3. Touch “SELF-DIAG RESULTS”.
4. Touch “ERASE”. [The DTC in the TCM (Transmission control module) will be erased.] Then touch “BACK” twice.
5. Touch “ENGINE”.
6. Touch “SELF-DIAG RESULTS”.
7. Touch “ERASE”. (The DTC in the ECM will be erased.)



WITH GST

The emission related diagnostic information in the ECM can be erased by selecting Service $04 with GST.

NOTE:

If the DTC is not for CVT related items (see EC-8), skip step 2.

1. If the ignition switch stays ON after repair work, be sure to turn ignition switch OFF once. Wait at least 10 seconds and then turn it ON (engine stopped) again.

Detailed Flow

1. GET INFORMATION FOR SYMPTOM

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using the EC-98, "DIAGNOSTIC WORKSHEET" .

>> GO TO 2.

2. CHECK DTC*1

1. Check DTC*1 .
2. Perform the following procedure if DTC*1 is displayed.

- Record DTC*1 and freeze frame data*2 . (Print them out with CONSULT-II or GST.)
- Erase DTC*1 . (Refer to EC-60, "HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION" .)
- Study the relationship between the cause detected by DTC*1 and the symptom described by the customer. (Symptom Matrix Chart is useful. Refer to EC-103, "Symptom Matrix Chart" .)

3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

Symptom is described, DTC*1 is displayed>>GO TO 3.
Symptom is described, DTC*1 is not displayed>>GO TO 4.
Symptom is not described, DTC*1 is displayed>>GO TO 5.

3. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer (except MIL ON).
DIAGNOSIS WORK SHEET is useful to verify the incident.
Connect CONSULT-II to the vehicle in DATA MONITOR (AUTO TRIG) mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
DIAGNOSIS WORK SHEET is useful to verify the incident.
Connect CONSULT-II to the vehicle in DATA MONITOR (AUTO TRIG) mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

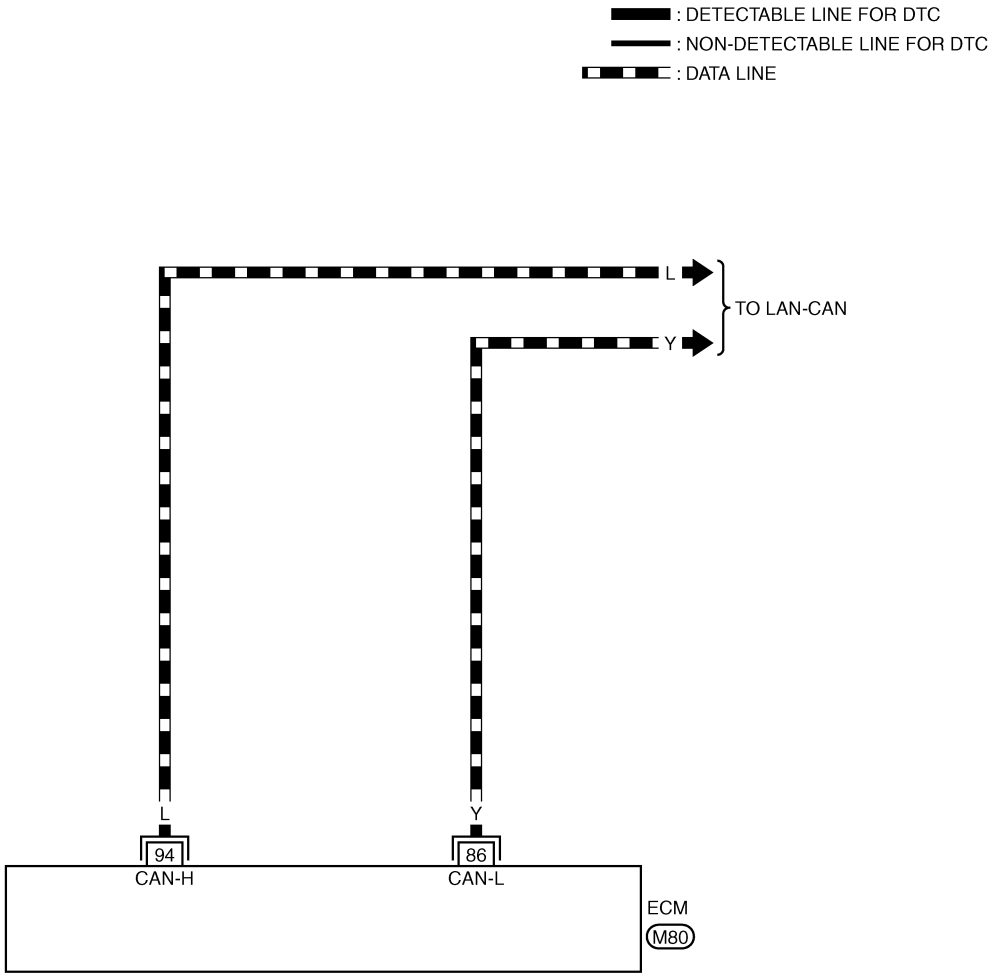
>> GO TO 6.

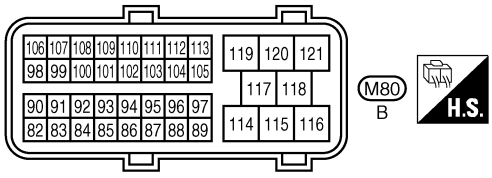
Monitored item [Unit]	ECM INPUT SIGNALS	MAIN SIGNALS	Description	Remarks
THRTL SEN 1 [V]	×	×	● The throttle position sensor signal voltage is displayed.	● THRTL SEN 2 signal is converteds by ECM internally. Thus, it differ from ECM terminal voltage signal.
THRTL SEN 2 [V]	×			
FUEL T/TEMP SE [°C] or [°F]	×		● The fuel temperature (determined by the signal voltage of the fuel tank temperature sensor) is displayed.	
INT/A TEMP SE [°C] or [°F]	×	×	● The intake air temperature (determined by the signal voltage of the intake air temperature sensor) is indicated.	
EVAP SYS PRES [V]	×		● The signal voltage of EVAP control system pressure sensor is displayed.	
FUEL LEVEL SE [V]	×		● The signal voltage of the fuel level sensor is displayed.	
START SIGNAL [ON/OFF]	×	×	● Indicates start signal status [ON/OFF] computed by the ECM according to the signals of engine speed and battery voltage.	● After starting the engine, [OFF] is displayed regardless of the starter signal.
CLSD THL POS [ON/OFF]	×	×	● Indicates idle position [ON/OFF] computed by ECM according to the accelerator pedal position sensor signal.	
AIR COND SIG [ON/OFF]	×	×	● Indicates [ON/OFF] condition of the air conditioner switch as determined by the air conditioner signal.	
P/N POSI SW [ON/OFF]	×	×	● Indicates [ON/OFF] condition from the park/neutral position (PNP) switch signal.	
PW/ST SIGNAL [ON/OFF]	×	×	● [ON/OFF] condition of the power steering system (determined by the signal voltage of the power steering pressure sensor signal) is indicated.	
LOAD SIGNAL [ON/OFF]	×	×	● Indicates [ON/OFF] condition from the electrical load signal. ON: Rear window defogger switch is ON and/or lighting switch is in 2nd position. OFF: Both rear window defogger switch and lighting switch are OFF.	
IGNITION SW [ON/OFF]	×		● Indicates [ON/OFF] condition from ignition switch signal.	
HEATER FAN SW [ON/OFF]	×		● Indicates [ON/OFF] condition from heater fan switch signal.	
BRAKE SW [ON/OFF]	×		● Indicates [ON/OFF] condition from the stop lamp switch signal.	
INJ PULSE-B1 [msec]		×	● Indicates the actual fuel injection pulse width compensated by ECM according to the input signals.	● When the engine is stopped, a certain computed value is indicated.
INJ PULSE-B2 [msec]				
IGN TIMING [BTDC]		×	● Indicates the ignition timing computed by ECM according to the input signals.	● When the engine is stopped, a certain value is indicated.
CAL/LD VALUE [%]			● “Calculated load value” indicates the value of the current air flow divided by peak air flow.	

Wiring Diagram

ABS004BG

EC-CAN-01





TBWA0343E

3. CHECK INTAKE AIR TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between mass air flow sensor terminal 6 and ECM terminal 67. 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 INTAKE AIR TEMPERATURE SENSOR

Refer to EC-204, "Component Inspection" .

OK or NG

OK >> GO TO 5.
NG >> Replace mass air flow sensor (with intake air temperature sensor).

5. CHECK INTERMITTENT INCIDENT

Refer to EC-157, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

Component Inspection

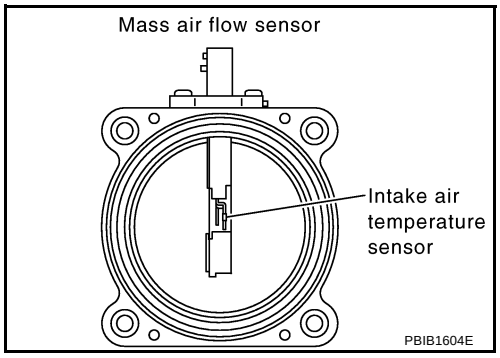
ABS004CP

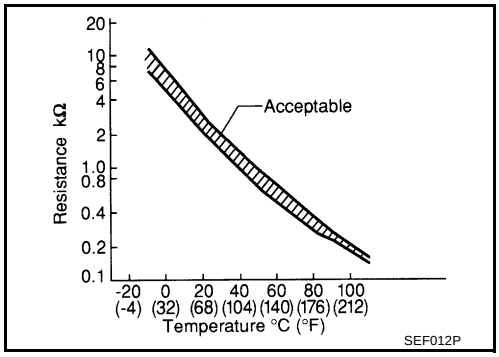
INTAKE AIR TEMPERATURE SENSOR

1. Check resistance between mass air flow sensor terminals 5 and 6 under the following conditions.

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

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





Removal and Installation

ABS004CQ

MASS AIR FLOW SENSOR

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

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

CAUTION:

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

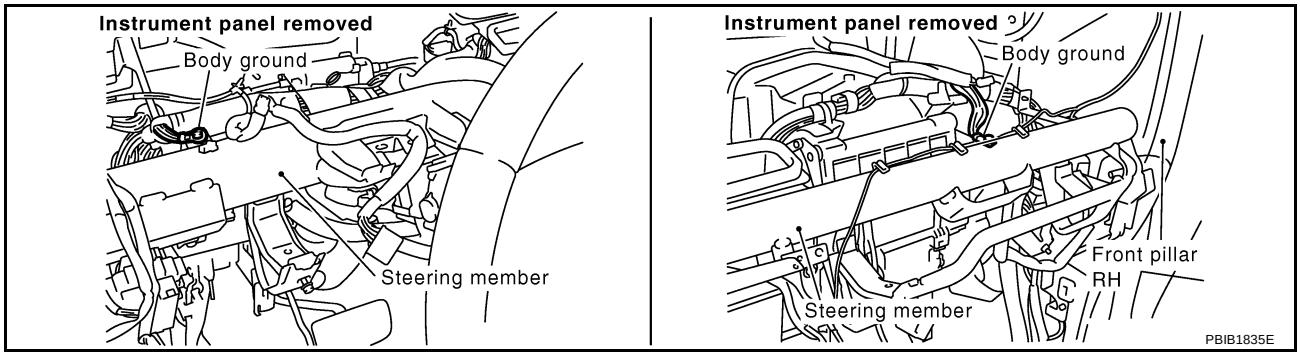
TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
55	W	Heated oxygen sensor 2 (bank 2)	**[Engine is running]** ● **Warm-up condition** ● Revving engine from idle to 3,000 rpm quickly after the following conditions are met. – After keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load.	0 - Approximately 1.0V
78	B	Sensor ground (Heated oxygen sensor 2)	**[Engine is running]** ● **Warm-up condition** ● Idle speed	Approximately 0V

Diagnostic Procedure

ABS004ER

1. CHECK GROUND CONNECTIONS

1. Turn ignition switch OFF.
2. Loosen and retighten two ground screws on the body.
   Refer to EC-166, "Ground Inspection" .



OK or NG

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

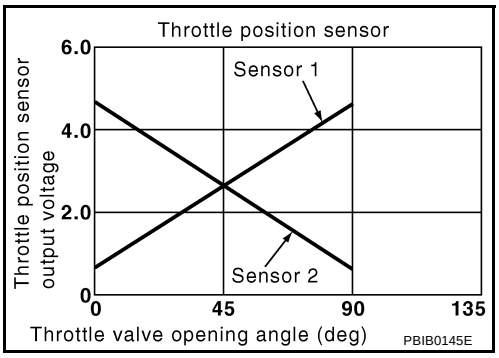
DTC P0222, P0223 TP SENSOR

PFP:16119

Component Description

ABS004V9

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



CONSULT-II Reference Value in Data Monitor Mode

ABS004VA

Specification data are reference values.

MONITOR ITEM	CONDITION		SPECIFICATION
THRTL SEN 1 THRTL SEN 2*	● Ignition switch: ON (Engine stopped) ● Shift lever: D	Accelerator pedal: Fully released	More than 0.36V
		Accelerator pedal: Fully depressed	Less than 4.75V

*: Throttle position sensor 2 signal is converted by ECM internally. Thus, it differ from ECM terminal voltage signal.

On Board Diagnosis Logic

ABS004VB

These self-diagnoses have the one trip detection logic.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0222 0222	Throttle position sensor 1 circuit low input	An excessively low voltage from the TP sensor 1 is sent to ECM.	● Harness or connectors (TP sensor 1 circuit is open or shorted.) (APP sensor 2 circuit is shorted.) ● Electric throttle control actuator (TP sensor 1) ● Accelerator pedal position sensor (APP sensor 2)
P0223 0223	Throttle position sensor 1 circuit high input	An excessively high voltage from the TP sensor 1 is sent to ECM.	

FAIL-SAFE MODE

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

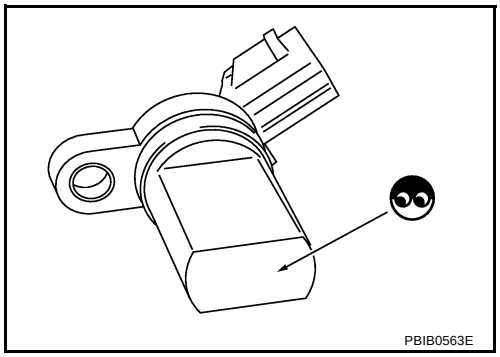
Engine operation condition in fail-safe mode
The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. So, the acceleration will be poor.

Component Inspection

ABS004GB

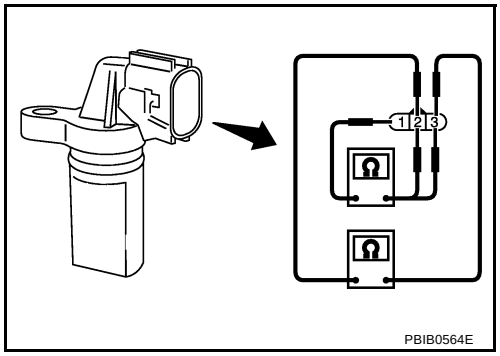
CAMSHAFT POSITION SENSOR (PHASE)

1. Loosen the fixing bolt of the sensor.
2. Disconnect camshaft position sensor (PHASE) harness connector.
3. Remove the sensor.
4. Visually check the sensor for chipping.



5. Check resistance as shown in the figure.

Terminal No. (Polarity)	Resistance Ω [at 25°C (77°F)]
1 (+) - 2 (-)	Except 0 or ∞
1 (+) - 3 (-)	
2 (+) - 3 (-)	



Removal and Installation

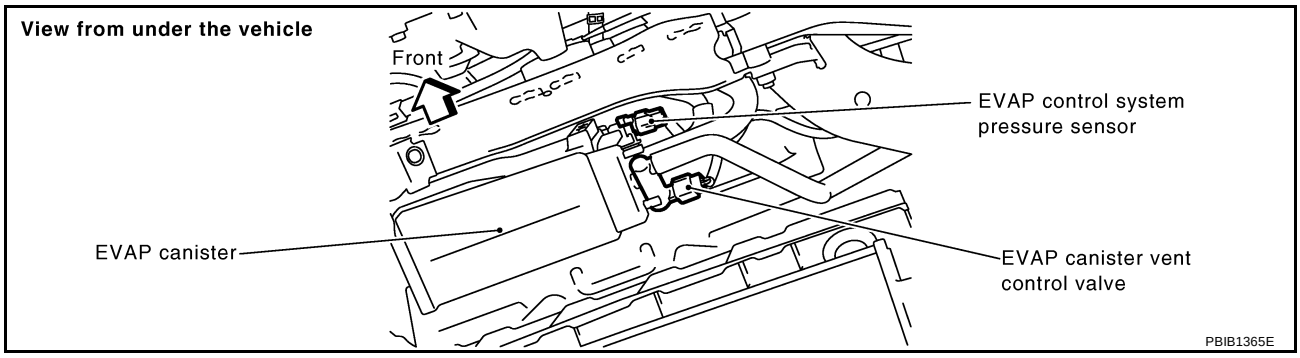
ABS004GC

CAMSHAFT POSITION SENSOR (PHASE)

Refer to EM-79, "CAMSHAFT" .

2. CHECK EVPA CONTROL SYSTEM PRESSURE SENSOR CONNECTOR FOR WATER

1. Disconnect EVAP control system pressure sensor harness connector.



2. Check sensor harness connector for water.

Water should not exist.

OK or NG

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

3. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to EC-348, "Component Inspection" .

OK or NG

OK >> GO TO 4.
NG >> Replace EVAP control system pressure sensor.

4. CHECK INTERMITTENT INCIDENT

Refer to EC-157, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .
For wiring diagram, refer to EC-351 .

>> **INSPECTION END**

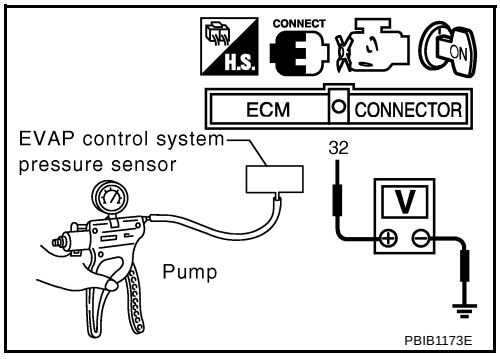
Component Inspection

ABS005GQ

EVAP CONTROL SYSTEM PRESSURE SENSOR

1. Remove EVAP control system pressure sensor with its harness connector connected from EVAP canister. **Always replace O-ring with a new one.**
2. Install a vacuum pump to EVAP control system pressure sensor.
3. Turn ignition switch ON and check output voltage between ECM terminal 32 and ground under the following conditions.

Applied vacuum kPa (mmHg, inHg)	Voltage V
Not applied	1.8 - 4.8
-26.7 (-200, -7.87)	2.1 to 2.5V lower than above value



CAUTION:

- **Always calibrate the vacuum pump gauge when using it.**
- **Do not apply below -93.3 kPa (-700 mmHg, -27.56 inHg) or pressure over 101.3 kPa (760 mmHg, 29.92 inHg).**

4. If NG, replace EVAP control system pressure sensor.

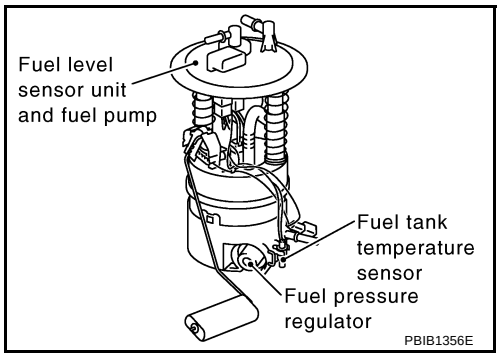
DTC P0462, P0463 FUEL LEVEL SENSOR

PFP:25060

Component Description

ABS004HZ

The fuel level sensor is mounted in the fuel level sensor unit. The sensor detects a fuel level in the fuel tank and transmits a signal to the “unified meter and A/C amp.”. The “unified meter and A/C amp.” sends the fuel level sensor signal to the ECM through CAN communication line.
It consists of two parts, one is mechanical float and the other is variable resistor. Fuel level sensor output voltage changes depending on the movement of the fuel mechanical float.



On Board Diagnosis Logic

ABS004VI

NOTE:
If DTC P0462 or P0463 is displayed with DTC U1000 or U1001, first perform the trouble diagnosis for DTC U1000, U1001. Refer to EC-167 .
This diagnosis indicates the former, to detect open or short circuit malfunction.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0462 0462	Fuel level sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	● Harness or connectors (The CAN communication line is open or shorted) ● Harness or connectors (The sensor circuit is open or shorted) ● Unified meter and A/C amp. ● Fuel level sensor
P0463 0463	Fuel level sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

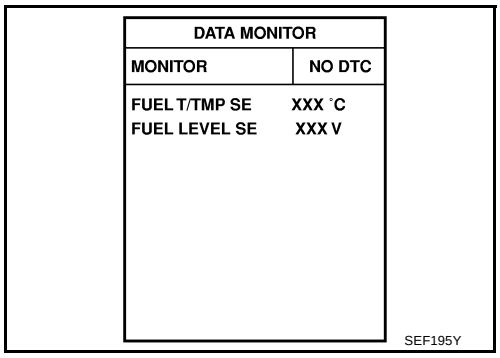
DTC Confirmation Procedure

ABS004I1

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 11V at ignition switch ON.

WITH CONSULT-II

1. Turn ignition switch ON.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Wait at least 5 seconds.
4. If 1st trip DTC is detected, go to EC-385, "Diagnostic Procedure" .



WITH GST

Follow the procedure “WITH CONSULT-II” above.

DTC P1121 ELECTRIC THROTTLE CONTROL ACTUATOR

PFP:16119

Component Description

ABS004J5

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc.
The throttle control motor is operated by the ECM and it opens and closes the throttle valve.
The throttle position sensor detects the throttle valve position, and the opening and closing speed of the throttle valve and feeds the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

On Board Diagnosis Logic

ABS004J6

This self-diagnosis has the one trip detection logic.

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P1121 1121	Electric throttle control actuator	A)	Electric throttle control actuator does not function properly due to the return spring malfunction.	● Electric throttle control actuator
		B)	Throttle valve opening angle in fail-safe mode is not in specified range.	
		C)	ECM detects the throttle valve is stuck open.	

FAIL-SAFE MODE

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

Detected items	Engine operating condition in fail-safe mode
Malfunction A	ECM controls the electric throttle actuator by regulating the throttle opening around the idle position. The engine speed will not rise more than 2,000 rpm.
Malfunction B	ECM controls the electric throttle control actuator by regulating the throttle opening to 20 degrees or less.
Malfunction C	While the vehicle is driving, it slows down gradually by fuel cut. After the vehicle stops, the engine stalls. The engine can restart in N or P position, and engine speed will not exceed 1,000 rpm or more.

DTC Confirmation Procedure

ABS004J7

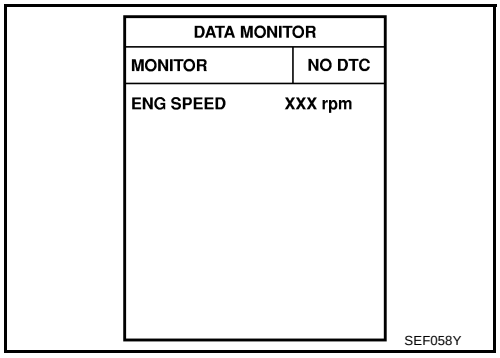
NOTE:

- **Perform PROCEDURE FOR MALFUNCTION A AND B first. If the DTC cannot be confirmed, perform PROCEDURE FOR MALFUNCTION C.**
- If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

PROCEDURE FOR MALFUNCTION A AND B

With CONSULT-II

1. Turn ignition switch ON and wait at least 1 second.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Shift selector lever to D position and wait at least 3 seconds.
4. Shift selector lever to P or N position.
5. Turn ignition switch OFF and wait at least 10 seconds.
6. Turn ignition switch ON and wait at least 1 second.
7. Shift selector lever to D position and wait at least 3 seconds.
8. Shift selector lever to P or N position.
9. Turn ignition switch OFF, wait at least 10 seconds, and then turn ON.
10. If DTC is detected, go to EC-421, "Diagnostic Procedure" .



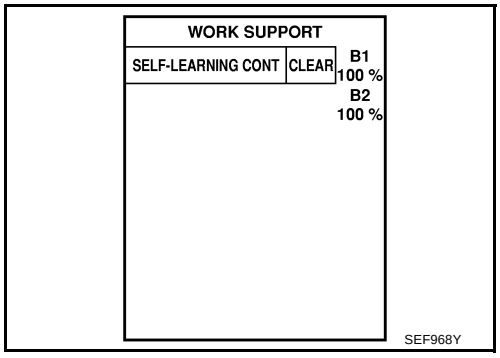
With GST

Follow the procedure “WITH CONSULT-II” above.

2. CLEAR THE SELF-LEARNING DATA

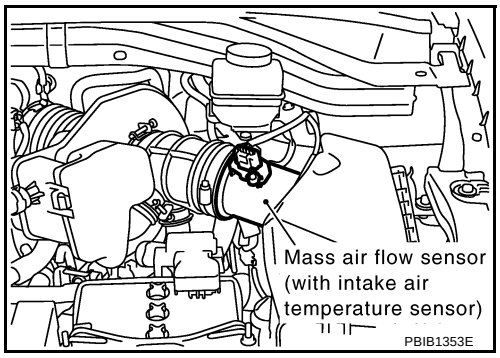
With CONSULT-II

1. Start engine and warm it up to normal operating temperature.
2. Select “SELF-LEARNING CONT” in “WORK SUPPORT” mode with CONSULT-II.
3. Clear the self-learning control coefficient by touching “CLEAR”.
4. Run engine for at least 10 minutes at idle speed.
   Is the 1st trip DTC P0171 or P0174 detected?
   Is it difficult to start engine?



Without CONSULT-II

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF.
3. Disconnect mass air flow sensor harness connector, and restart and run engine for at least 5 seconds at idle speed.
4. Stop engine and reconnect mass air flow sensor harness connector.
5. Make sure DTC P0102 is displayed.
6. Erase the DTC memory. Refer to EC-60, "HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION" .
7. Make sure DTC P0000 is displayed.
8. Run engine for at least 10 minutes at idle speed.
   Is the 1st trip DTC P0171 or P0174 detected?
   Is it difficult to start engine?



Yes or No

Yes >> Perform trouble diagnosis for DTC P0171or P0174. Refer to EC-245 .
No >> GO TO 3.

Removal and Installation

ABS00A6B

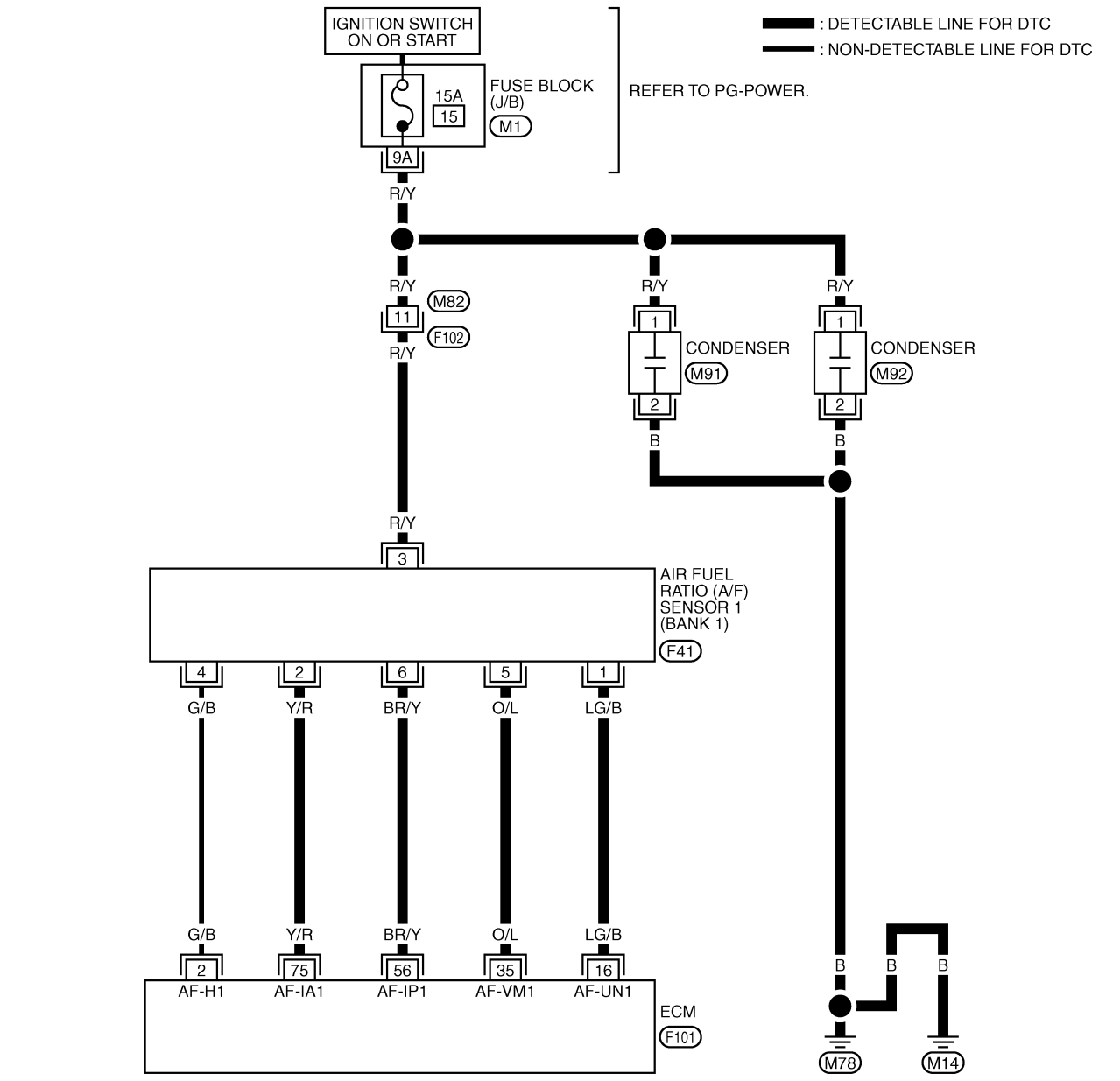
AIR FUEL RATIO (A/F) SENSOR 1

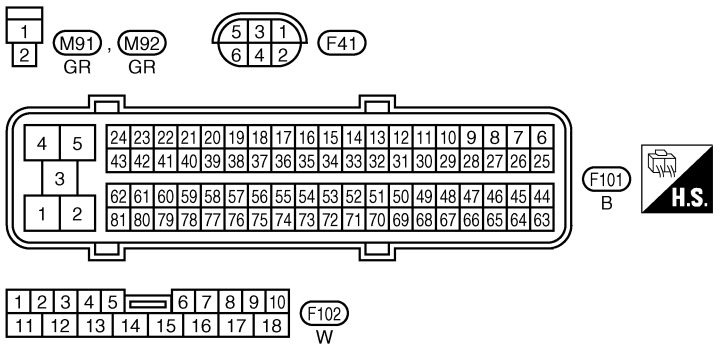
Refer to EM-25, "EXHAUST MANIFOLD AND THREE WAY CATALYST" .

Wiring Diagram
BANK 1

ABS00A72

EC-AF1B1-01





REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TBWA0692E

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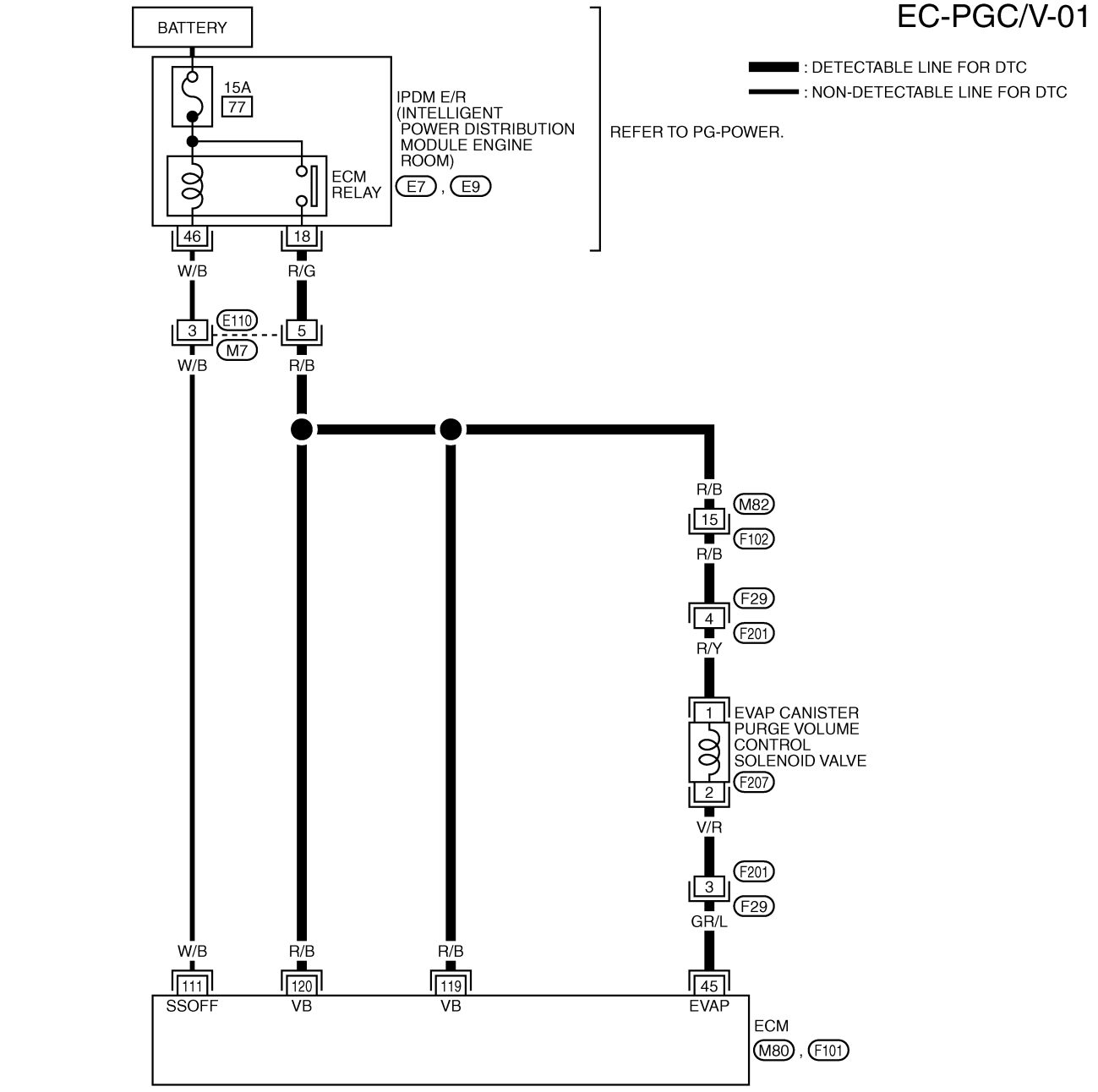
Wiring Diagram

ABS004LT



TBWB0274E

DTC P1715 INPUT SPEED SENSOR (PRIMARY SPEED SENSOR)

PFP:31935

Description

ABS007ZN

ECM receives primary speed sensor signal from TCM through CAN communication line.

CONSULT-II Reference Value in Data Monitor Mode

ABS007ZO

Specification data are reference values.

MONITOR ITEM	CONDITION	SPECIFICATION
I/P PULLY SPD	● Vehicle speed: More than 20 km/h (12MPH)	Almost the same speed as the tachometer indication

On Board Diagnosis Logic

ABS007ZP

NOTE:

- **If DTC P1715 is displayed with DTC U1000 or U1001 first perform the trouble diagnosis for DTC U1000, U1001. Refer to EC-167 .**
- **If DTC P1715 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to EC-397 .**
- **If DTC P1715 is displayed with DTC P0335, first perform the trouble diagnosis for DTC P0335. Refer to EC-297 .**
- **If DTC P1715 is displayed with DTC P0340, P0345, first perform the trouble diagnosis for DTC P0340, P0345. Refer to EC-304 .**

The MIL will not light up for this diagnosis.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1715 1715	Input speed sensor (Primary speed sensor) (TCM output)	Primary speed sensor signal is different from the theoretical value calculated by ECM from secondary speed sensor signal and engine rpm signal.	● Harness or connectors (The CAN communication line is open or shorted) ● Harness or connectors (Primary speed sensor circuit is open or shorted) ● TCM

DTC Confirmation Procedure

ABS007ZQ

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-II

1. Turn ignition switch ON.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Start engine.
4. Drive vehicle at a speed of more than 50 km/h (31 MPH) for at least 5 seconds.
5. If 1st trip DTC is detected, go to EC-601, "Diagnostic Procedure" .

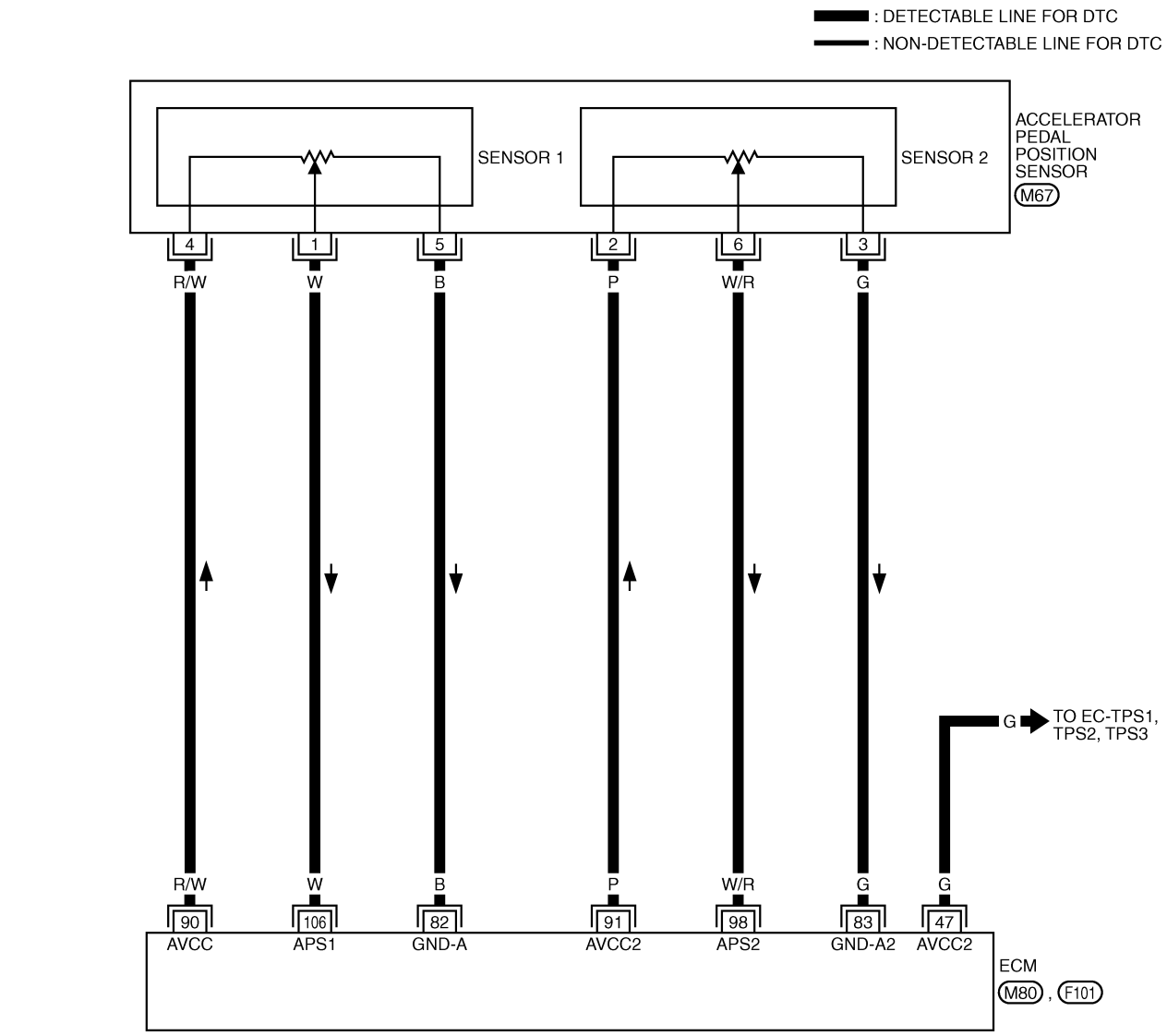
WITH GST

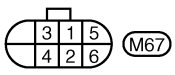
Follow the procedure “WITH CONSULT-II” above.

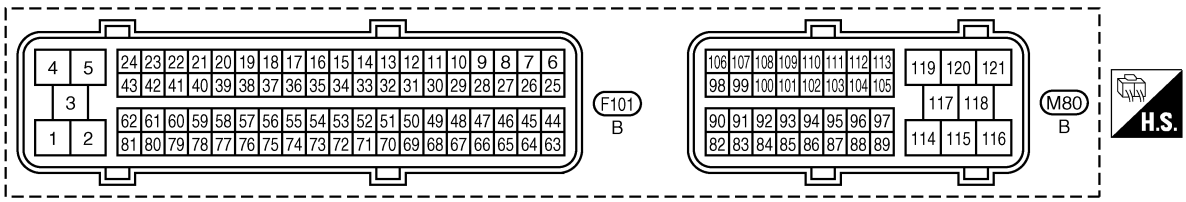
Wiring Diagram

ABS004O5

EC-APPS3-01







TBWA0716E

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

CAUTION:

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

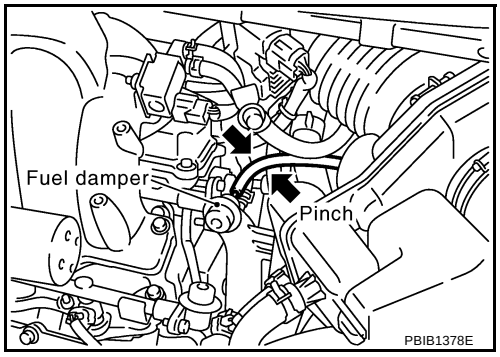
TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
113	B/P	Fuel pump relay	**[Ignition switch: ON]** ● For 1 second after turning ignition switch ON **[Engine is running]**	0 - 1.5V
			[Ignition switch: ON] ● More than 1 second after turning ignition switch ON.	BATTERY VOLTAGE (11 - 14V)

Diagnostic Procedure

ABS004ON

1. CHECK OVERALL FUNCTION

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



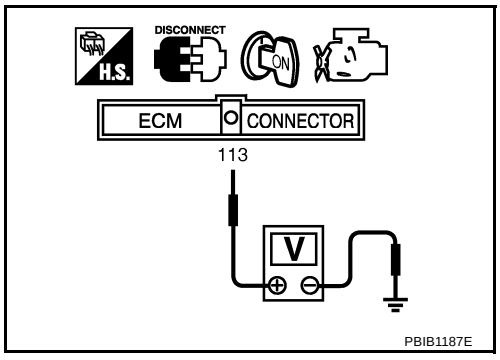
OK or NG

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

2. CHECK FUEL PUMP POWER SUPPLY CIRCUIT-I

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

Voltage: Battery voltage



OK or NG

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

DUPLICATE THE NOISE AND TEST DRIVE

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

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

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

CHECK RELATED SERVICE BULLETINS

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

LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Chassis Ear: J39570, Engine Ear and mechanics 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 fastener 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 EI-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.

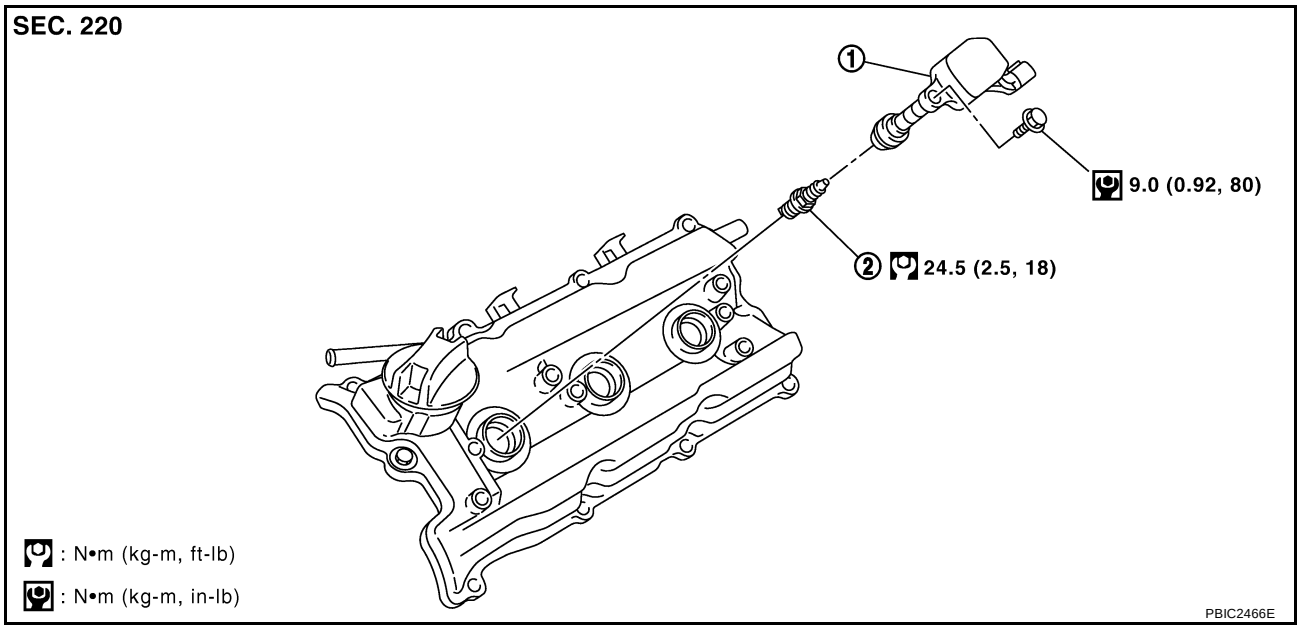
CAUTION:
Do not use excessive force as many components are constructed of plastic and may be damaged.
Always check with the Parts Department for the latest parts information.
The following materials are contained in the Nissan Squeak and Rattle Kit (J-43980). Each item can be ordered separately as needed.
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)

IGNITION COIL

PFP:22448

Removal and Installation

ABS0032I



1. Ignition coil
2. Spark plug

REMOVAL

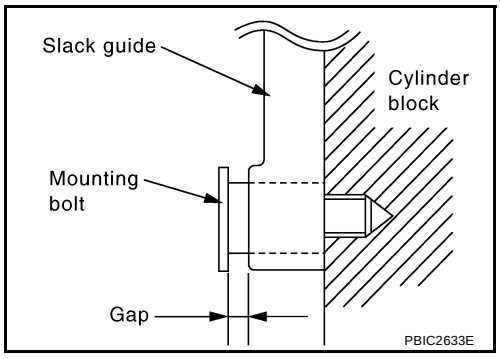
1. Remove engine cover. Refer to EM-18, "INTAKE MANIFOLD COLLECTOR" .
2. Remove front wiper arm and extension cowl top (lower and upper). Refer to WW-4, "FRONT WIPER AND WASHER SYSTEM" and EI-21, "COWL TOP" .
3. Remove intake manifold collectors (upper and lower). (At the right bank side, remove ignition coil) Refer to EM-18, "INTAKE MANIFOLD COLLECTOR" .
4. Move aside harness, harness bracket, and hoses located above ignition coil.
5. Disconnect harness connector from ignition coil.
6. Remove ignition coil.

CAUTION:
Do not drop or shock it.

INSTALLATION

Install in the reverse order of removal.

CAUTION:
Do not overtighten slack guide mounting bolt. It is normal for a gap to exist under the bolt seat when mounting bolt is tightened to specification.



9. Install the timing chain tensioner (primary) with the following procedure:

a. Pull plunger stopper tab up (or turn lever downward) so as to remove plunger stopper tab from the ratchet of plunger.

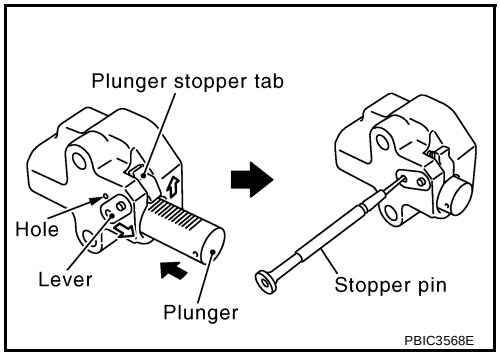
NOTE:
Plunger stopper tab and lever are synchronized.

b. Push plunger into the inside of tensioner body.

c. Hold plunger in the fully compressed position by engaging plunger stopper tab with the tip of ratchet.

d. To secure lever, insert stopper pin through hole of lever into tensioner body hole.

- The lever parts and the tab are synchronized. Therefore, the plunger will be secured under this condition.

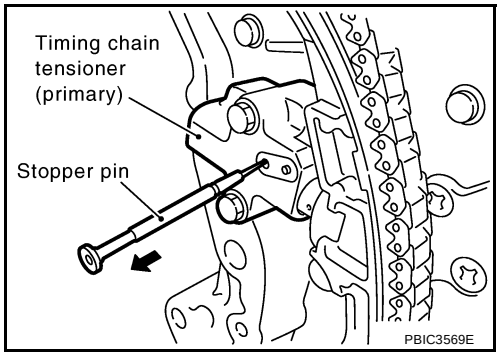


NOTE:
Figure shows the example of 1.2 mm (0.047 in) diameter thin screwdriver being used as the stopper pin.

e. Install timing chain tensioner (primary).

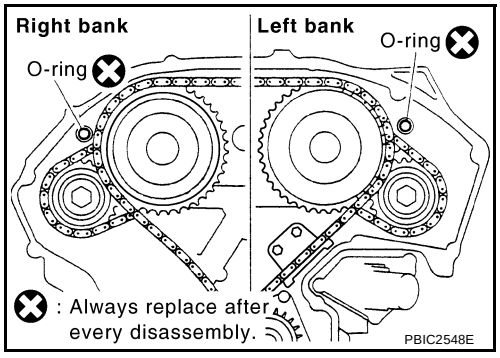
- Remove any dirt and foreign materials completely from the back and the mounting surfaces of timing chain tensioner (primary).

f. Pull out stopper pin after installing, and then release plunger.



10. Make sure again that the mating marks on each sprocket and each timing chain have not slipped out of alignment.

11. Install new O-rings on rear timing chain case.



12. Install new front oil seal on front timing chain case.

- Apply new engine oil to both oil seal lip and dust seal lip.

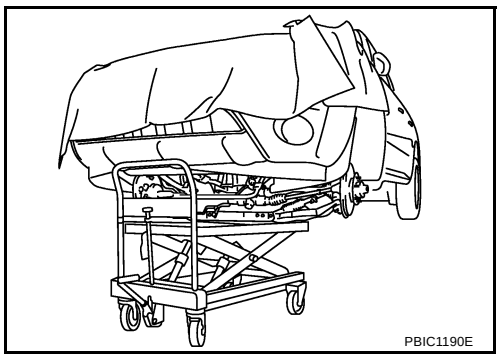
8. Disconnect power steering piping at a point between vehicle and engine. Refer to PS-33, "HYDRAULIC LINE" .
   - Install plug to avoid leakage of power steering fluid.
9. Remove rear plate cover from oil pan (upper). Then remove bolts fixing drive plate to torque converter. Refer to EM-29, "OIL PAN AND OIL STRAINER" and CVT-232, "TRANSAXLE ASSEMBLY" .
10. Remove transaxle joint bolts which pierce at oil pan (upper) lower rear side. Refer to CVT-232, "TRANSAXLE ASSEMBLY" .
11. Remove crankshaft position sensor (POS).

    CAUTION:
    - **Handle carefully to avoid dropping and shocks.**
    - **Do not disassemble.**
    - **Do not allow metal powder to adhere to magnetic part at sensor tip.**
    - **Do not place sensors in a location where they are exposed to magnetism.**

Removal Work

1. Use a manual lift table caddy (commercial service tool) or equivalently rigid tool such as a transmission jack. Securely support bottom of front suspension member.

   CAUTION:
   Put a piece of wood or something similar as the supporting surface, secure a completely stable condition.

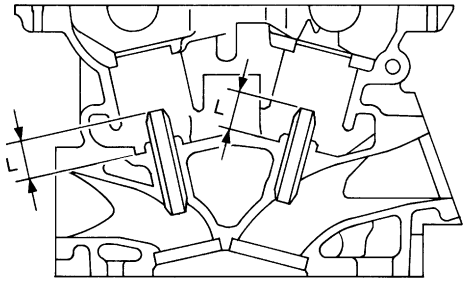

PBIC1190E

2. Remove RH engine mounting insulator and RH engine mounting bracket.
3. Remove mounting bolt between transverse link and front suspension member with power tool.
4. Remove front suspension member mounting nuts and bolts. Refer to FSU-5, "FRONT SUSPENSION ASSEMBLY" .
5. Carefully lower jack, or raise lift to remove the engine, the transaxle and transfer (AWD models) assembly and front suspension member. When performing work, observe the following caution:

   CAUTION:
   - **Confirm there is no interference with the vehicle.**
   - **Make sure all connection points have been disconnected.**
   - **Keep in mind the center of vehicle gravity changes. If necessary, use jack(s) to support the vehicle at rear jacking point(s) to prevent it from falling it off the lift.**

Valve Guide

Unit: mm (in)



SEM950E

Items		Standard	0.2 (0.008) oversize (Service)
Valve guide	Outer diameter	10.023 - 10.034 (0.3946 - 0.3950)	10.223 - 10.234 (0.4025 - 0.4029)
	Inner diameter (Finished size)	6.000 - 6.018 (0.2362 - 0.2369)	
Cylinder head valve guide hole diameter		9.975 - 9.996 (0.3927 - 0.3935)	10.175 - 10.196 (0.4006 - 0.4014)
Interference fit of valve guide		0.027 - 0.059 (0.0011 - 0.0023)	
Items		Standard	Limit
Valve guide clearance	Intake	0.020 - 0.053 (0.0008 - 0.0021)	0.08 (0.003)
	Exhaust	0.030 - 0.063 (0.0012 - 0.0025)	0.10 (0.004)
Projection length “L”		12.6 - 12.8 (0.496 - 0.504)	

- Wear protective clothing, including impervious gloves where practicable.
- Do not put oily rags in pockets.
- Avoid contaminating clothes, particularly underpants, with oil.
- Heavily soiled clothing and oil-impregnated footwear should not be worn. Overalls must be cleaned regularly.
- First aid treatment should be obtained immediately for open cuts and wounds.
- Use barrier creams, applying them before each work period, to help the removal of oil from the skin.
- Wash with soap and water to ensure all oil is removed (skin cleansers and nail brushes will help). Preparations containing lanolin replace the natural skin oils which have been removed.
- Do not use gasoline, kerosene, diesel fuel, gas oil, thinners or solvents for cleaning skin.
- If skin disorders develop, obtain medical advice without delay.
- Where practical, degrease components prior to handling.
- Where there is a risk of eye contact, eye protection should be worn, for example, chemical goggles or face shields; in addition an eye wash facility should be provided.

ENVIRONMENTAL PROTECTION PRECAUTIONS

Dispose of used oil and used oil filters through authorized waste disposal contractors to licensed waste disposal sites, or to the waste oil reclamation trade. If in doubt, contact the local authority for advice on disposal facilities.
It is illegal to pour used oil on to the ground, down sewers or drains, or into water sources.
The regulations concerning pollution vary between regions.

Precautions for Air Conditioning

AAS000CQ

Use an approved refrigerant recovery unit any time the air conditioning system must be discharged. Refer to ATC/MTC section “HFC-134a (R-134a) Service Procedure”, “REFRIGERANT LINES” for specific instructions.

TOW TRUCK TOWING

PFP:00000

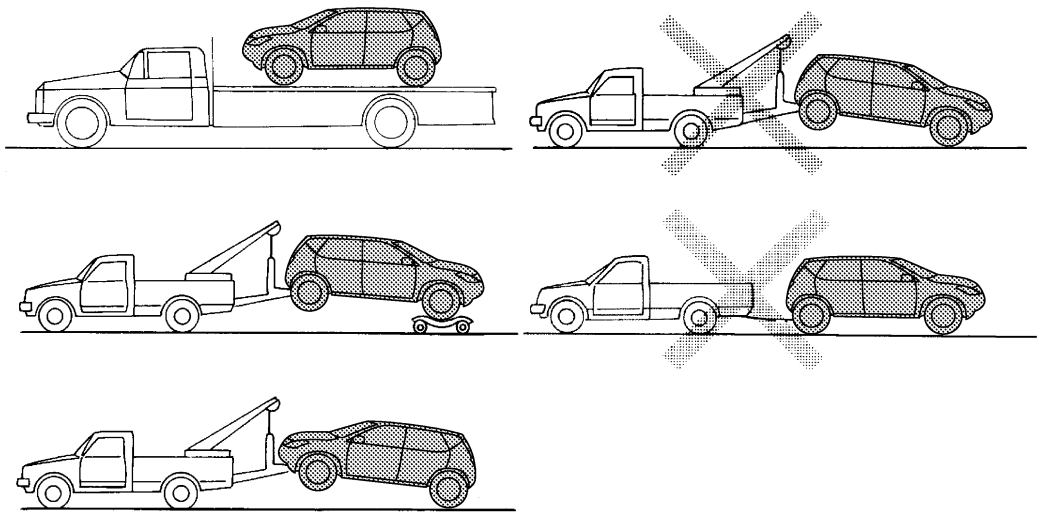
Tow Truck Towing

AAS000DB

CAUTION:

- **All applicable state or Provincial (in Canada) laws and local laws regarding the towing operation must be obeyed.**
- **It is necessary to use proper towing equipment to avoid possible damage to the vehicle during towing operation. Towing is in accordance with Towing Procedure Manual at dealer.**
- **Always attach safety chains before towing.**
- **When towing, make sure that the transmission, steering system and power train are in good order. If any unit is damaged, dollies must be used.**
- **Never tow an CVT model from the rear (that is backward) with four wheels on the ground. This may cause serious and expensive damage to the transmission.**

2WD model



PAIA0090E

2WD MODELS

NISSAN recommends that vehicle be towed with the driving (front) wheels off the ground or that a dolly be used as illustrated.

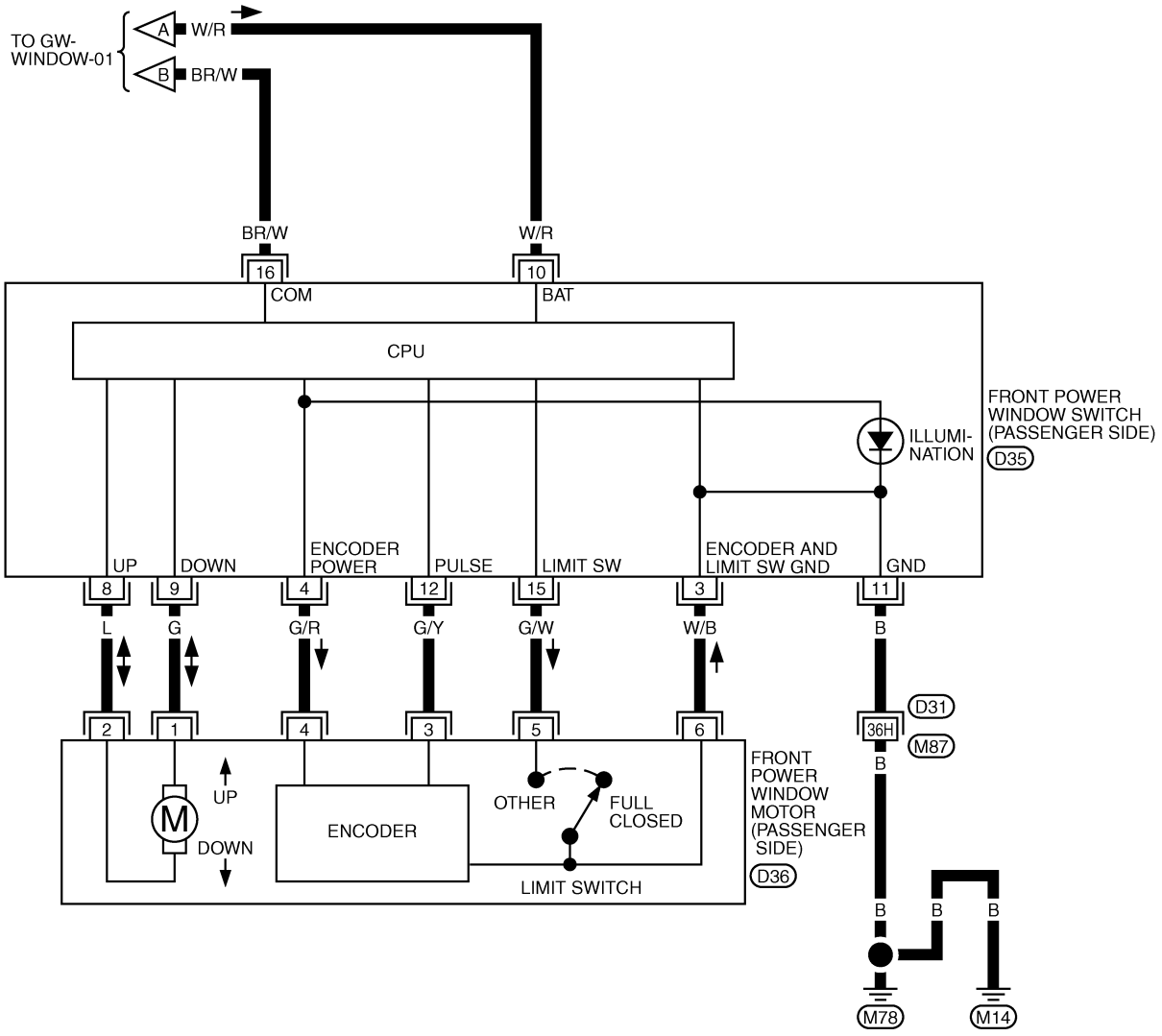
CAUTION:

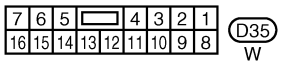
- **Never tow CVT models with the front wheels on the ground or four wheels on the ground (forward or backward) as this may cause serious and expensive damage to the transmission.**
  If it is necessary to tow the vehicle with the rear wheels raised, always use towing dollies under the front wheels.
- **When towing CVT models with the front wheels on towing dollies:**

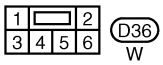
– **Turn the ignition key to the OFF position, and secure the steering wheel in a straight ahead position with a rope or similar device.**
  Never secure the steering wheel by turning the ignition key to the LOCK position. This may damage the steering lock mechanism.

– **Move the selector lever to the N (Neutral) position.**

GW-WINDOW-04







REFER TO THE FOLLOWING.
D31 -SUPER MULTIPLE JUNCTION (SMJ)

TIWA0506E

Door Key Cylinder Switch Check/With Intelligent Key

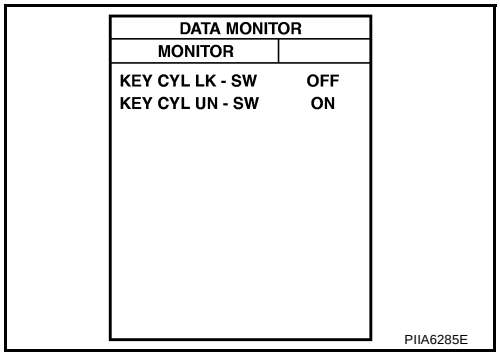
AIS006A1

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

With CONSULT-II

Check door key cylinder switch (“KEY CYL LK-SW”, “KEY CYL UN-SW”) in “DATA MONITOR” mode with CONSULT-II.

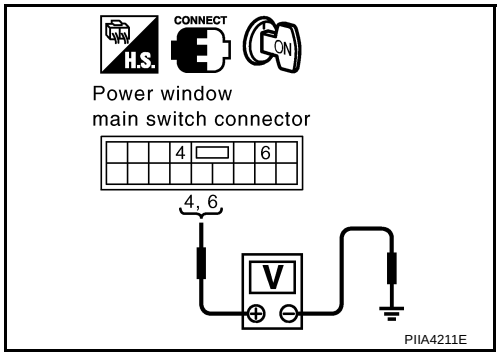
Monitor item	Condition
KEY CYL LK- SW	Lock: ON
	Neutral/Unlock: OFF
KEY CYL UN- SW	Unlock: ON
	Neutral/Lock: OFF



Without CONSULT-II

Check voltage between power window main switch connector and ground.

Connector	Terminals (Wire color)		Key position	Voltage (V) (Approx.)
	(+)	(–)		
D6	4 (L)	Ground	Lock	0
			Neutral/Unlock	5
	6 (R)		Unlock	0
			Neutral/Lock	5



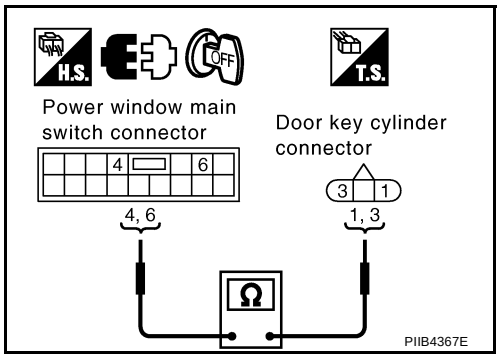
OK or NG

OK >> Door key cylinder switch is OK.
NG >> GO TO 2.

2. CHECK DOOR KEY CYLINDER SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect power window main switch and door key cylinder switch connector.
3. Check continuity between power window main switch connector D6 terminal 4, 6 and door key cylinder switch connector D11 terminals 1, 3.

4 (L) – 1 (L) : Continuity should exist.
6 (R) – 3 (R) : Continuity should exist.

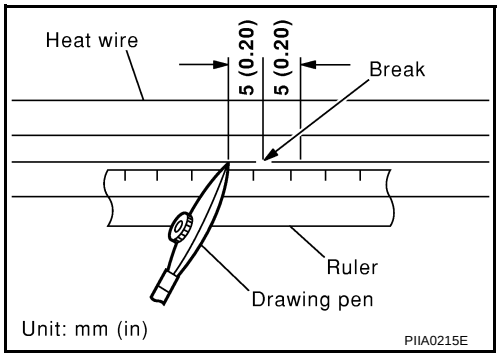


OK or NG

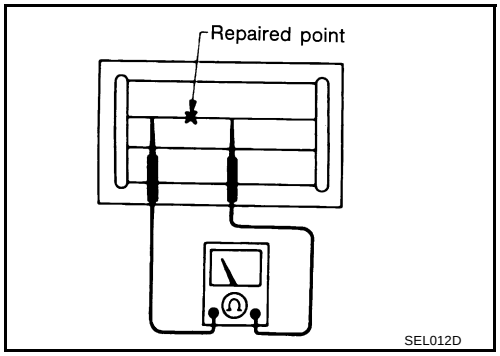
OK >> GO TO 3.
NG >> Repair or replace harness.

REPAIRING PROCEDURE

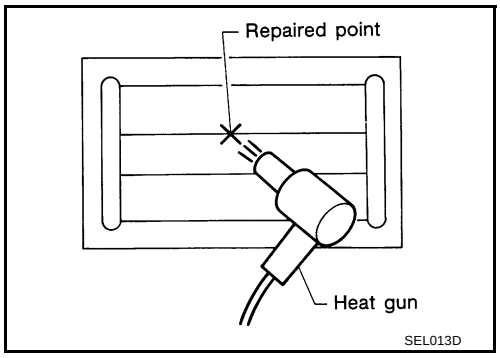
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.
   Shake silver composition container before use.
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.
   Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.
   If a heat gun is not available, let the repaired area dry for 24 hours.



PRECAUTIONS

PFP:00001

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

AKS007PK

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

WARNING:

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

Precautions When Using CONSULT-II

AKS004YM

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

CAUTION:

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

CHECK POINTS FOR USING CONSULT-II

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

Precautions for Trouble Diagnosis

AKS004YN

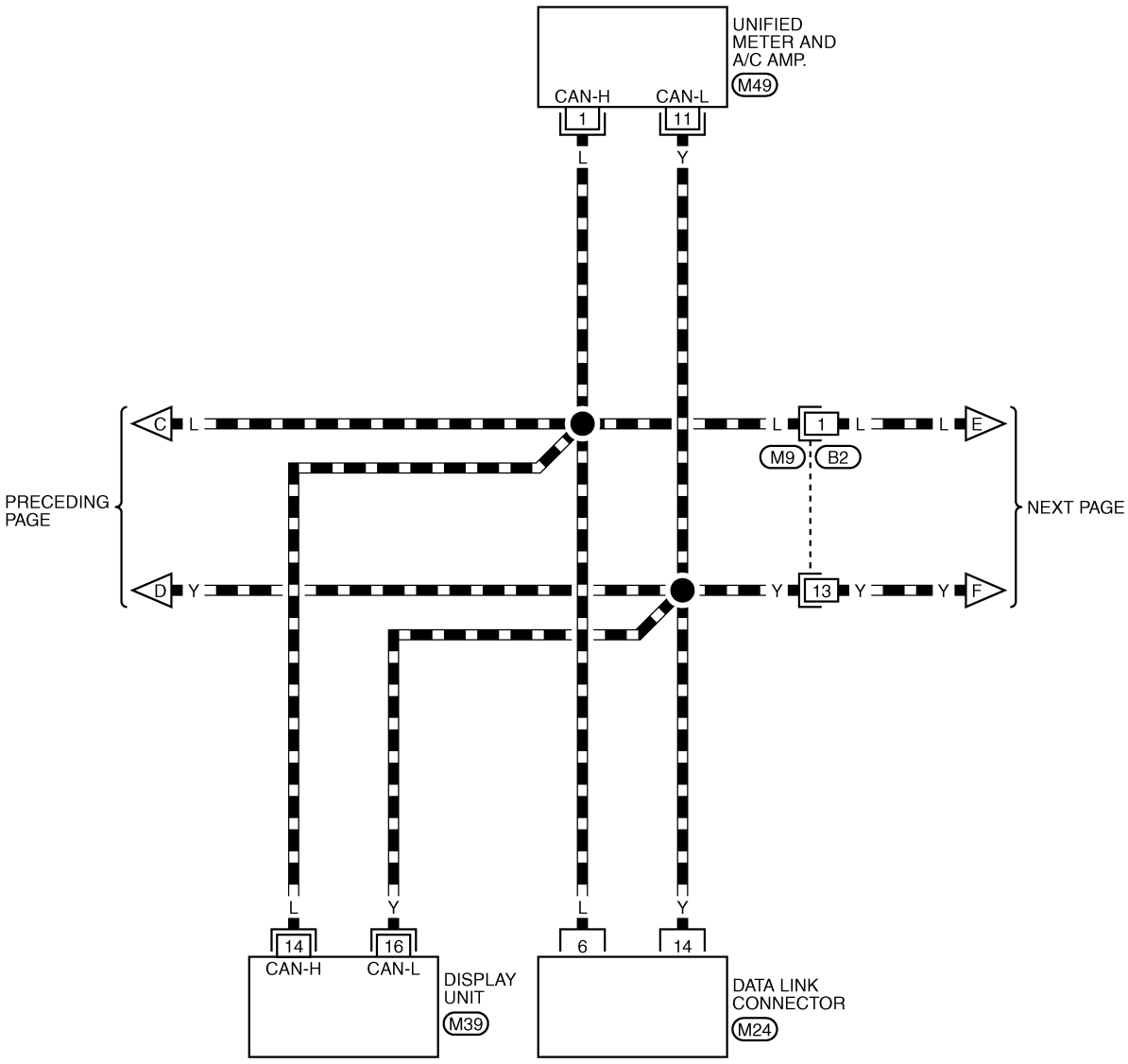
CAN SYSTEM

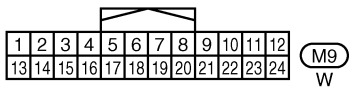
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Signals	ECM	Intelligent Key unit	TCM	Low tire pressure warning control unit	BCM	Display unit	Display control unit	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Front fog lights request signal					T								R
Front wiper request signal					T								R
High beam request signal					T			R					R
Horn chirp signal					T								R
Ignition switch signal					T					R			R
Key fob door unlock signal					T					R			
Key fob ID signal					T					R			
Key switch signal					T					R			
Low beam request signal					T								R
Oil pressure switch signal					T			R					
					R								T
Position lights request signal					T			R					R
Rear window defogger switch signal					T								R
Sleep request 1 signal					T			R					
Sleep request 2 signal					T								R
System setting signal					R	T	T			R			
					T	R	R			T			
Theft warning horn request signal					T								R
Turn indicator signal					T			R					
A/C switch/indicator signal						T	T	R					
						R	R	T					
Distance to empty signal						R	R	T					
Fuel level low warning signal						R	R	T					
Vehicle speed signal			R					R			R	T	
	R	R		R	R		R	T		R			
Seat belt buckle switch signal					R			T					
Manual mode shift down signal			R					T					
Manual mode shift up signal			R					T					
Manual mode signal			R					T					
Not manual mode signal			R					T					
Second position signal			R					T					
Stop lamp switch signal											R	T	
			R					T					
Fuel level sensor signal	R							T					
AWD lock switch signal								T			R		
Parking brake switch signal								T			R		
Steering angle sensor signal									T			R	
AWD lock indicator lamp signal								R			T		

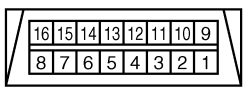
LAN-CAN-07

: DATA LINE

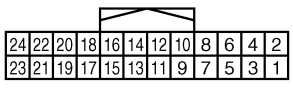




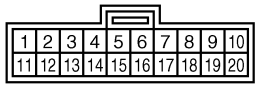
M9
W



M24
W



M39
W

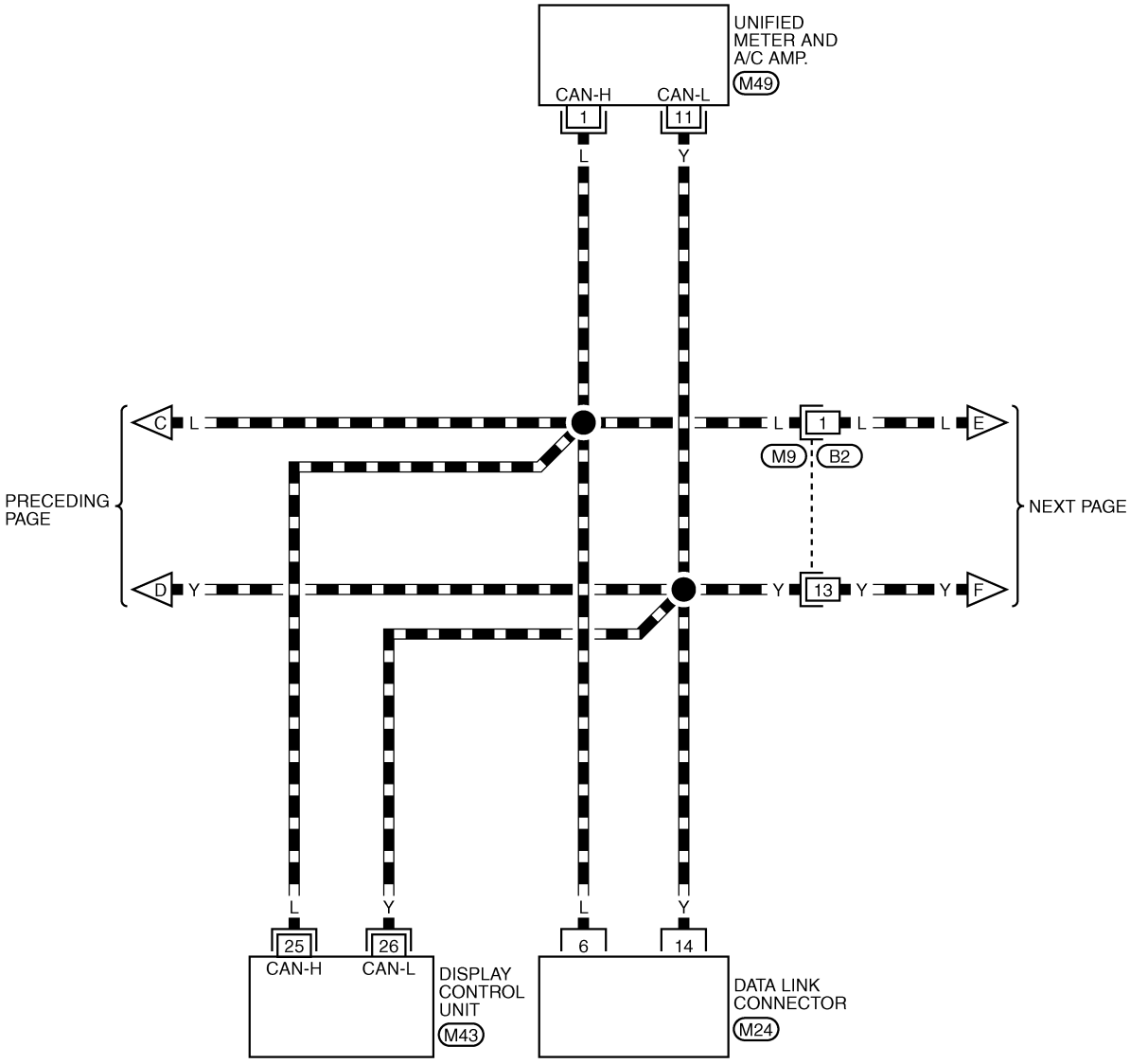


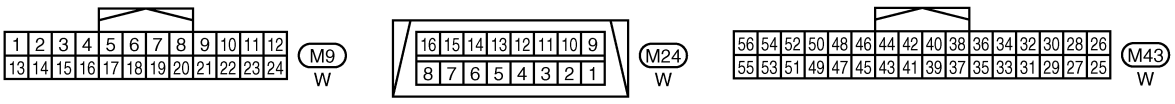
M49
GR

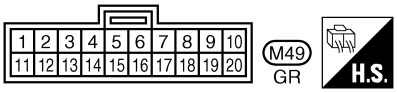
TKWB0829E

LAN-CAN-12

: DATA LINE



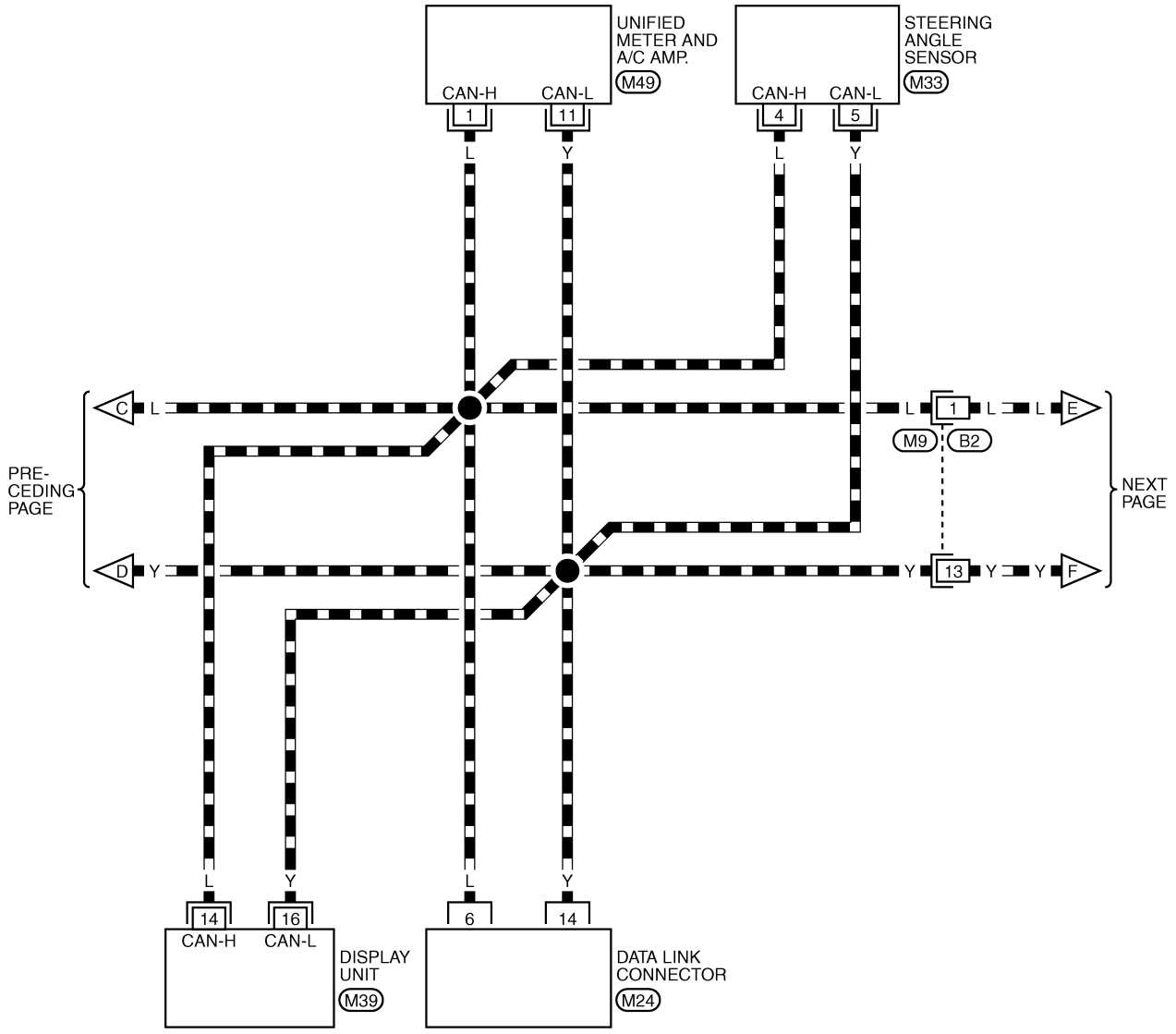


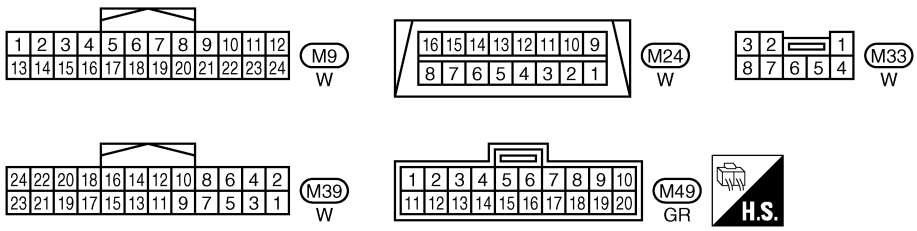


TKWB0835E

LAN-CAN-17

: DATA LINE





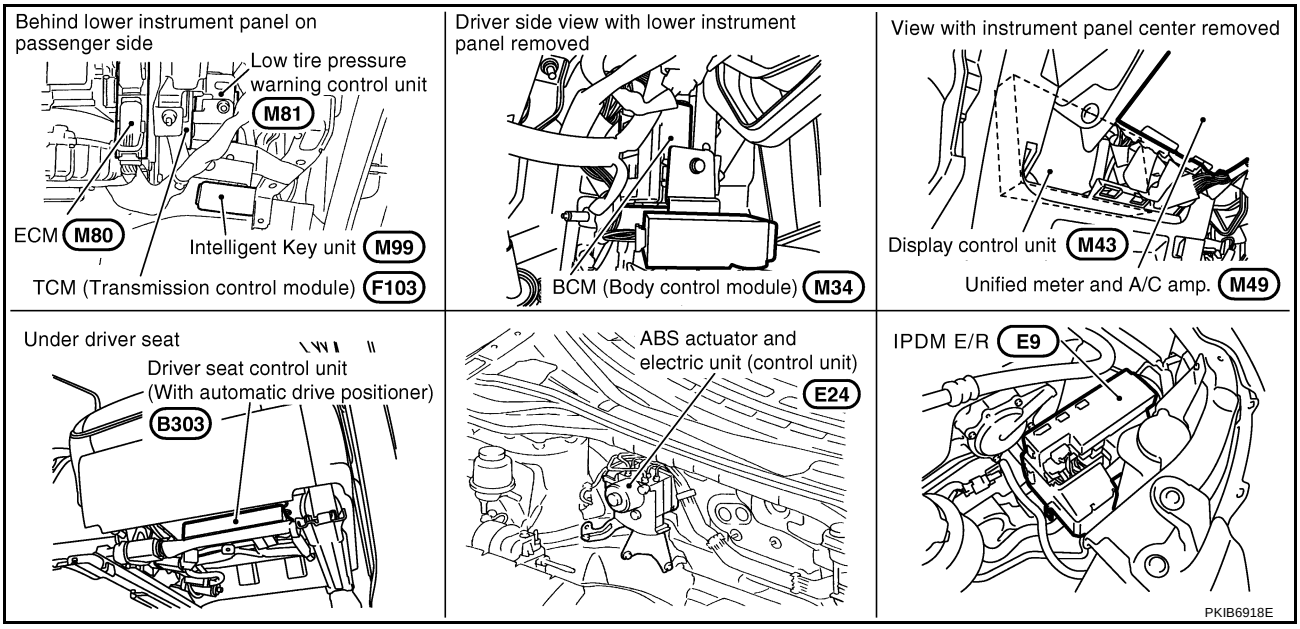
TKWB0841E

CAN SYSTEM (TYPE 5)

PFP:23710

Component Parts and Harness Connector Location

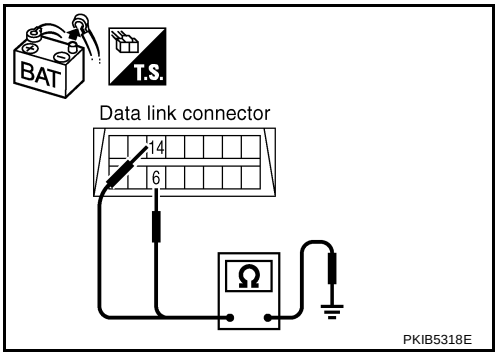
AKS00AEI



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M24 terminals 6 (L), 14 (Y) and ground.

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



OK or NG

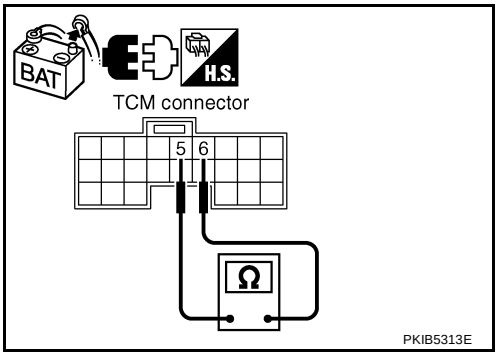
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and ECM
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and harness connector M82
- Harness between data link connector and low tire pressure warning control unit
- Harness between data link connector and BCM
- Harness between data link connector and display control unit
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M9

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector F103 terminals 5 (L) and 6 (Y).

5 (L) - 6 (Y) : Continuity should not exist.



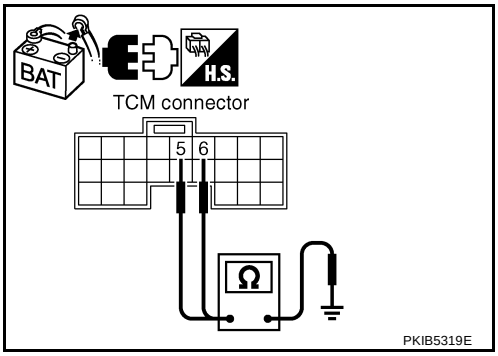
OK or NG

OK >> GO TO 5.
NG >> Repair harness between TCM and harness connector F102.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between TCM harness connector F103 terminals 5 (L), 6 (Y) and ground.

5 (L) - Ground : Continuity should not exist.
6 (Y) - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness between TCM and harness connector F102.

12. CHECK UNIT REPRODUCIBILITY

Perform the following procedure for each unit, and then perform reproducibility test.

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the unit connector.
4. Connect the battery cable to the negative terminal.
5. Make sure that the symptom filled in the “Symptom” of the check sheet is reproduced. (Do not confuse it with the symptom related to removed unit.)
6. Make sure that the same symptom is reproduce.

- TCM
- BCM
- Display unit
- Unified meter and A/C amp.
- AWD control unit
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Check results

Reproduced>>Install removed unit, and then check the other unit.
Not reproduced>>Replace removed unit.

IPDM E/R Ignition Relay Circuit Inspection

AKS00CKC

Check the following. If no malfunction is found, replace the IPDM E/R.

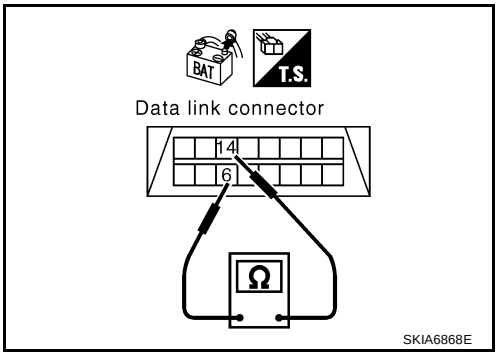
- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-10, "IGNITION POWER SUPPLY - IGNITION SW. IN “ON” AND/OR “START”" .

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ECM connector
- Intelligent Key unit connector
- Harness connector M82
- BCM connector
- Display unit connector
- Unified meter and A/C amp. connector
- Harness connector M9

2. Check continuity between data link connector M24 terminals 6 (L) and 14 (Y).

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



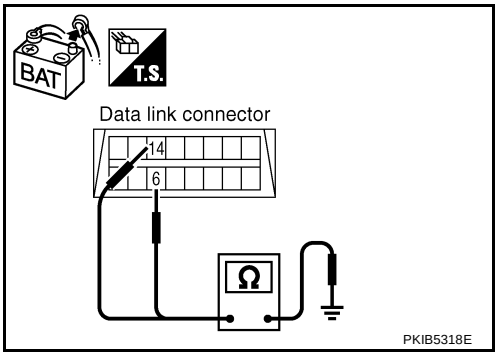
OK or NG

OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and ECM
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and harness connector M82
- Harness between data link connector and BCM
- Harness between data link connector and display unit
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and harness connector M9

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M24 terminals 6 (L), 14 (Y) and ground.

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



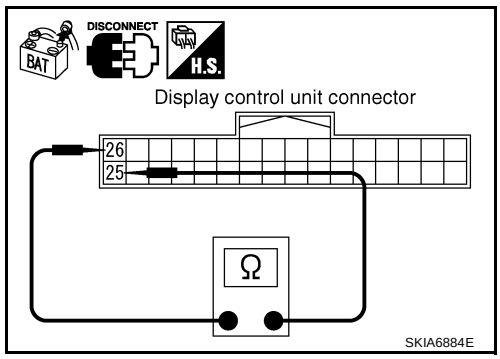
OK or NG

OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and ECM
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and harness connector M82
- Harness between data link connector and BCM
- Harness between data link connector and display unit
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and harness connector M9

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M43 terminals 25 (L) and 26 (Y).

25 (L) - 26 (Y) : Approx. 54 - 66Ω



OK or NG

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

Data Link Connector Circuit Inspection

AKS00CJA

1. CHECK CONNECTOR

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

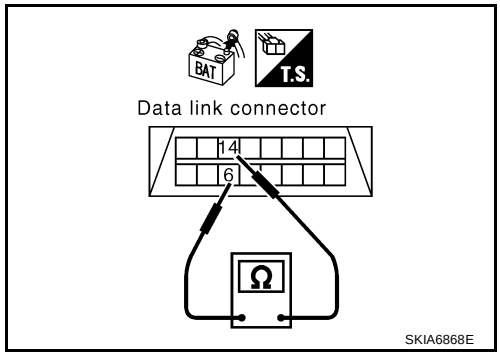
OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M24 terminals 6 (L) and 14 (Y).

6 (L) - 14 (Y) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-7, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and unified meter and A/C amp.

Unified Meter and A/C Amp. Circuit Inspection

AKS00CJB

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check terminals and connector of unified meter and A/C amp. for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

Case 18

Check CAN communication circuit. Refer to LAN-375, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR													SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis												
				ECM	I-KEY	TCM	TIRE-P	BCM /SEC	DISPLAY	METER /M&A	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	✓ UNKWN	—	—	✓ UNKWN	—	✓ UNKWN	—	✓ UNKWN	—	✓ UNKWN	✓ UNKWN	✓ UNKWN	✓ CAN COMM CIRCUIT (U1000)	✓ CAN COMM CIRCUIT (U1001)
INTELLIGENT KEY	✓ No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—	—	—	—	✓ CAN COMM CIRCUIT (U1000)	—
TRANSMISSION	✓ No indication	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	UNKWN	—	✓ CAN COMM CIRCUIT (U1000)	—
AIR PRESSURE MONITOR	✓ No indication	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	—	—	—	✓ CAN COMM CIRCUIT (U1000)	—
BCM	✓ No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
Display unit	—	NG	✓ UNKWN	✓ UNKWN	—	—	✓ UNKWN	✓ UNKWN	—	✓ UNKWN	—	—	—	✓ UNKWN	—	—
METER A/C AMP	✓ No indication	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	✓ CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	✓ No indication	NG	UNKWN	—	—	UNKWN	—	UNKWN	—	UNKWN	—	—	—	—	✓ CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	✓ UNKWN	—	—	—	—	—	—	—	—	—	—	—	✓ CAN COMM CIRCUIT (U1000)	—
ABS	—	✓ NG	✓ UNKWN	✓ UNKWN	—	✓ UNKWN	—	—	—	—	✓ UNKWN	✓ UNKWN	—	—	✓ CAN COMM CIRCUIT (U1000)	—
IPDM E/R	✓ No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	—	—	✓ CAN COMM CIRCUIT (U1000)	—

PKIB4883E

Case 19

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-381, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR													SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis												
				ECM	I-KEY	TCM	TIRE-P	BCM /SEC	DISPLAY	METER /M&A	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	—	✓ UNKWN	—	UNKWN	—	UNKWN	—	✓ UNKWN	✓ UNKWN	UNKWN	✓ CAN COMM CIRCUIT (U1000)	✓ CAN COMM CIRCUIT (U1001)
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
TRANSMISSION	No indication	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AIR PRESSURE MONITOR	No indication	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
Display unit	—	NG	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	✓ UNKWN	UNKWN	UNKWN	UNKWN	—	—	✓ UNKWN	✓ UNKWN	—	✓ CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	—	✓ UNKWN	—	UNKWN	—	UNKWN	—	—	—	—	✓ CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

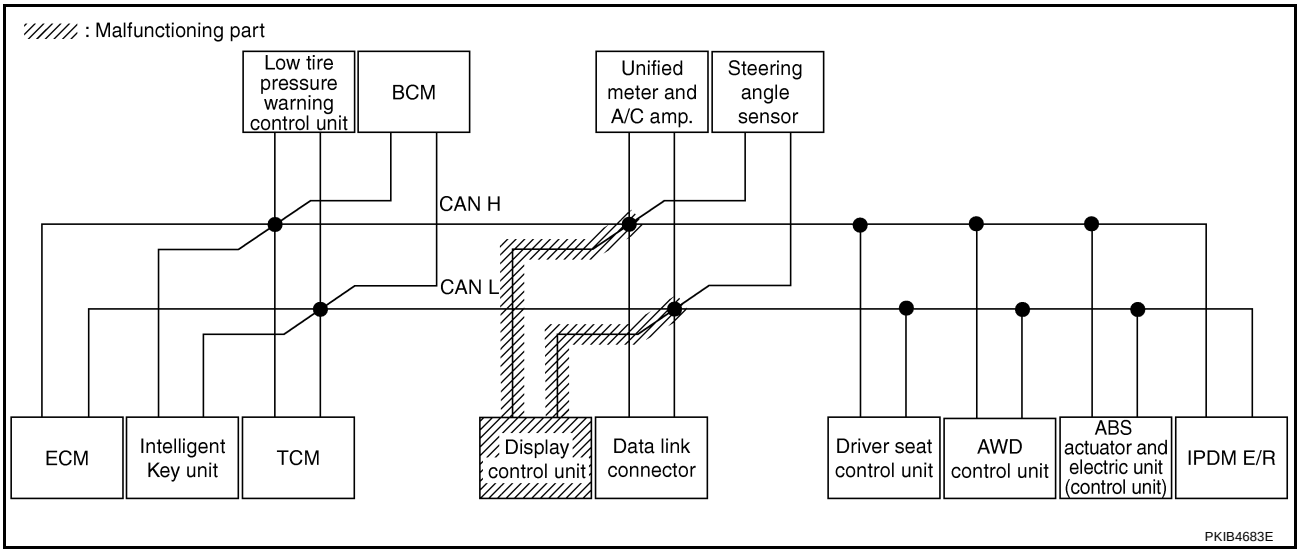
PKIC6349E

Case 10

Check display control unit circuit. Refer to LAN-415, "Display Control Unit Circuit Inspection" .

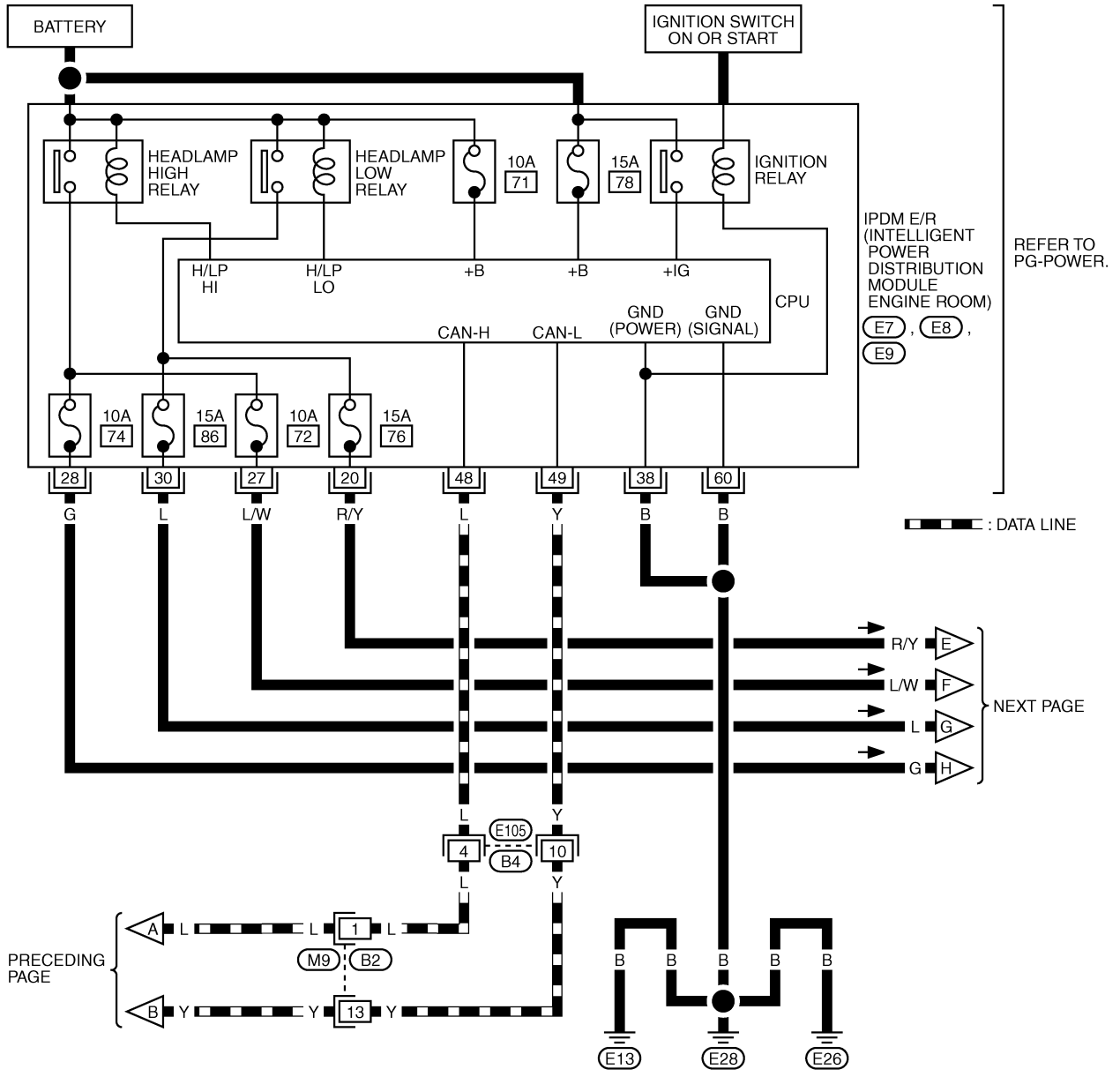
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR													SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis												
				ECM	I-KEY	TCM	TIRE-P	BCM /SEC	DISPLAY	METER /M&A	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
TRANSMISSION	No indication	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AIR PRESSURE MONITOR	No indication	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	—	—	—	UNKWN ✓	—	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	—	UNKWN	—	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

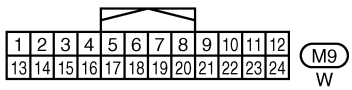
PKIB4895E

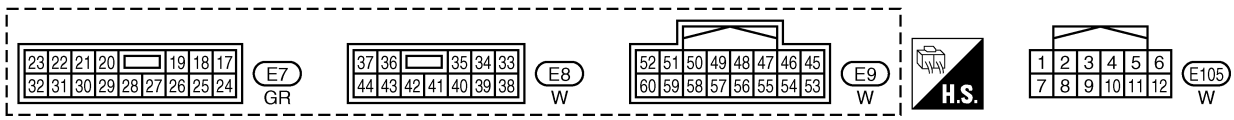


PKIB4683E

LT-H/LAMP-02



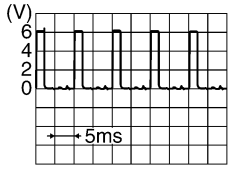
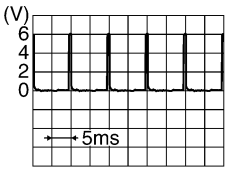
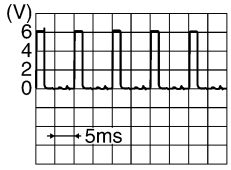
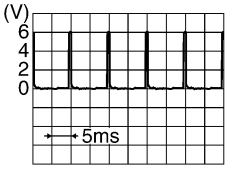
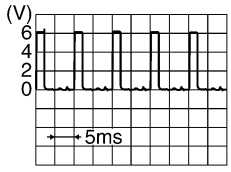
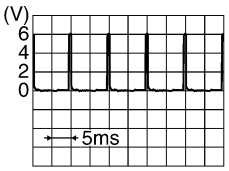
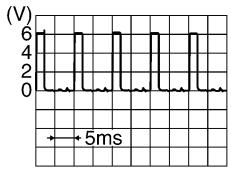




TKWB0442E

Terminals and Reference Values for BCM

AKS00AKA

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	P/L	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	R/G	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	R/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	R/W	Combination switch input 1			
11	P/B	Ignition switch (ACC)	ACC	—	Battery voltage
32	LG/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	G/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	LG/R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

CONSULT-II Functions (IPDM E/R)

AKS00CRD

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

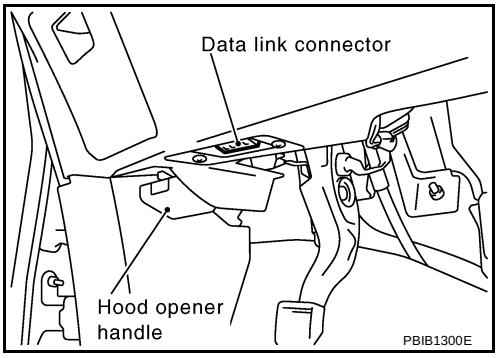
Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-20, "SELF-DIAG RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

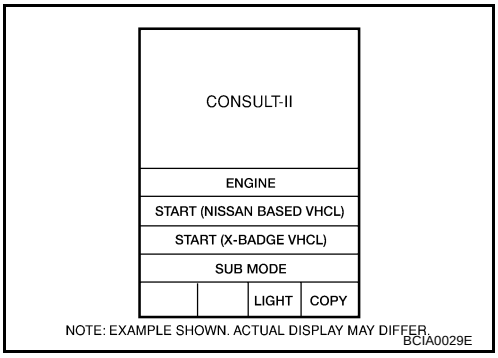
CAUTION:

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

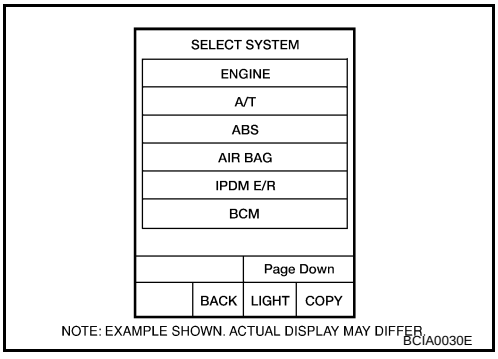
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn the ignition switch ON.



2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
If “IPDM E/R” is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit" .



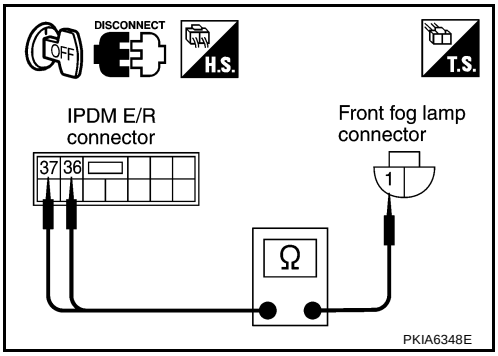
5. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E8 terminal 36 (G/W) and front fog lamp RH harness connector E94 terminal 1 (G/W).

36 (G/W) – 1 (G/W) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 37 (W/R) and front fog lamp LH harness connector E92 terminal 1 (W/R).

37 (W/R) – 1(W/R) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

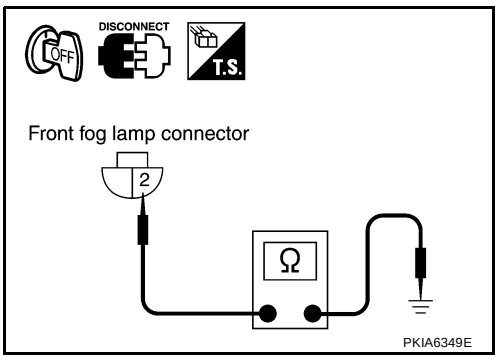
6. CHECK FRONT FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E94 terminal 2 (B) and ground.

2 (B) – Ground : Continuity should exist.

2. Check continuity between front fog lamp LH harness connector E92 terminal 2 (B) and ground.

2 (B) – Ground : Continuity should exist.



OK or NG

OK >> Check front fog lamp bulbs.
NG >> Repair harness or connector.

Front Fog Lamp Does Not Illuminate (One Side)

AKS00AM9

1. CHECK BULB

Check bulb of lamp which does not illuminate.

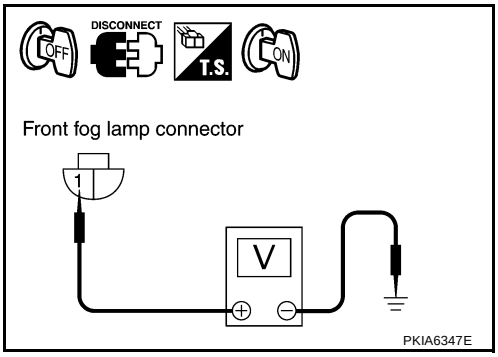
OK or NG

OK >> GO TO 2.
NG >> Replace front fog lamp bulb.

2. CHECK FRONT FOG LAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH or LH connector.
3. Check voltage between front fog lamp RH or LH harness connectors and ground.

Terminal				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E94	1 (G/W)	Ground	Battery voltage
LH	E92	1 (W/R)		



OK or NG

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

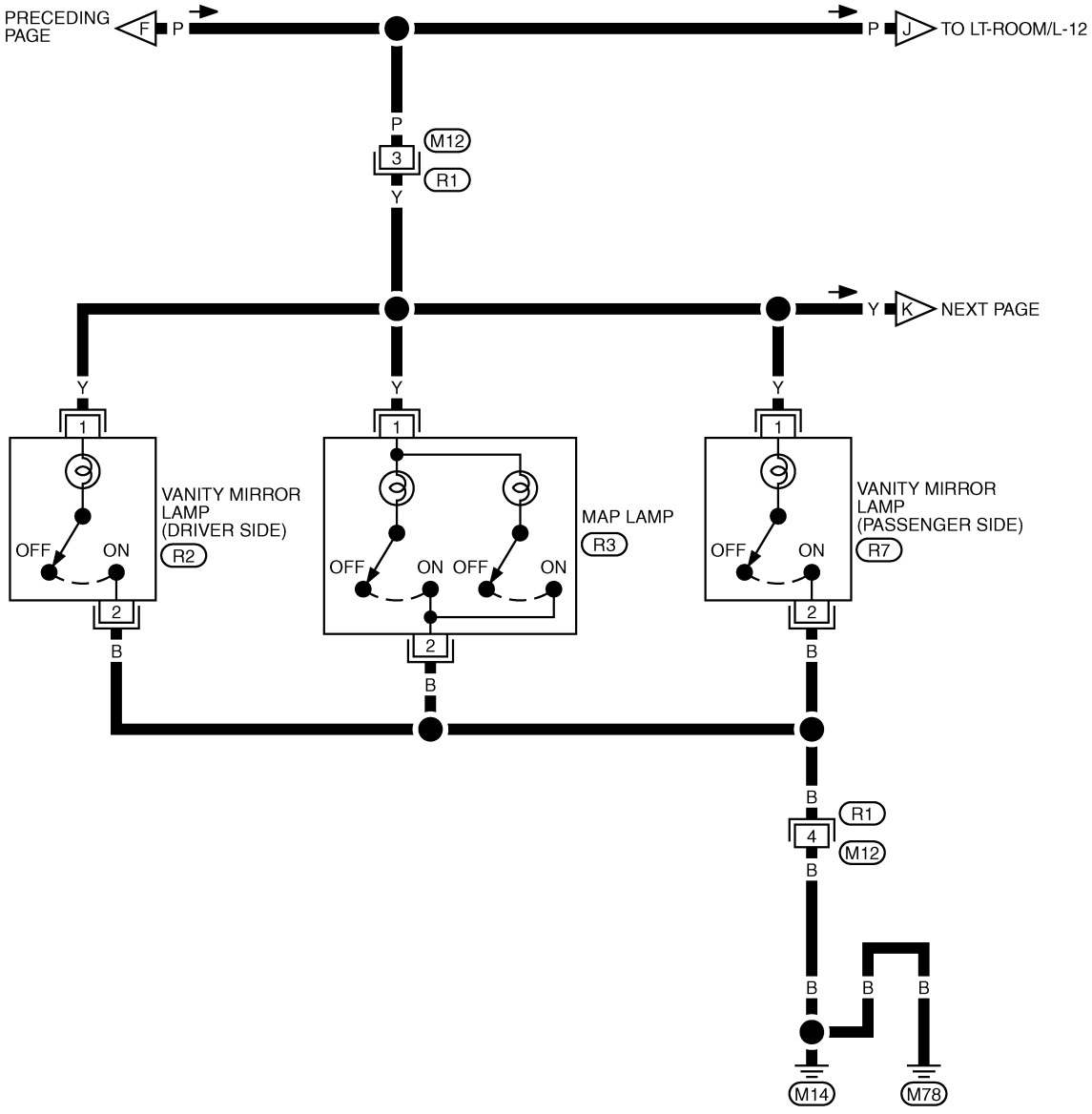
communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

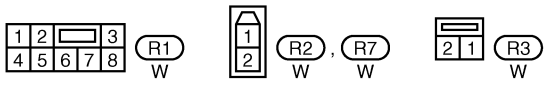
CAN Communication Unit

AKS007QX

Refer to LAN-29, "CAN Communication Unit" .

LT-ROOM/L-10





TKWB0912E

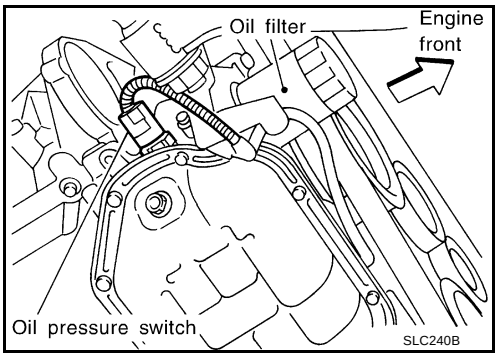
OIL PRESSURE CHECK

WARNING:

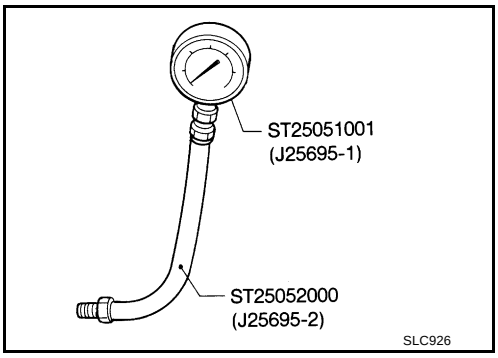
- **Be careful not to get burn yourself, as engine oil may be hot.**
- **Oil pressure check should be done in “Parking position”.**

1. Check the engine oil level. Refer to LU-6, "ENGINE OIL LEVEL" .
2. Remove splash guard (RH).
3. Disconnect harness connector at oil pressure switch, and remove oil pressure switch using deep socket (commercial service tool)

   CAUTION:
   Do not drop or shock oil pressure switch.



4. Install pressure gauge [SST] and hose [SST].



5. Start the engine and warm it up to normal operating temperature.
6. Check the engine oil pressure with engine running under no-load.

   NOTE:
   When the engine oil temperature is low, the engine oil pressure becomes high.

Engine oil pressure [Engine oil temperature at 80°C (176°F)]

Engine speed (rpm)	Approximate discharge pressure [kPa (kg/cm^2 , psi)]
Idle speed	More than 98 (1.0, 14)
2,000	More than 294 (3.0, 43)

If difference is extreme, check engine oil passage and oil pump for engine oil leaks.

7. After the inspections, install oil pressure switch as follows:

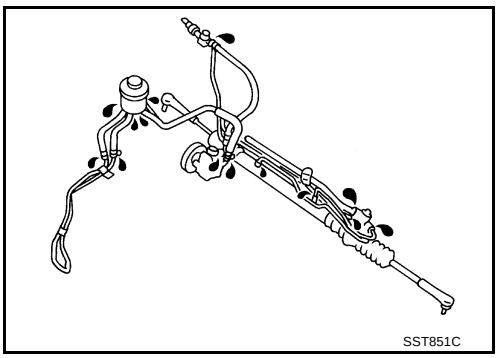
a. Remove old liquid gasket adhering to oil pressure switch and mating surface.

b. Apply liquid gasket and tighten oil pressure switch to the specification.
Use Genuine RTV Silicone Sealant or equivalent. Refer to GI-47, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS" .

Oil pressure switch:

: 14.8 N·m (1.5 kg-m, 11 ft-lb)

- **Check lines for improper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.**
- **Check rack boots for accumulation of power steering fluid.**

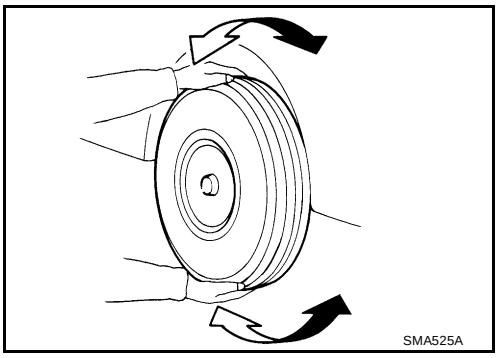

SST851C

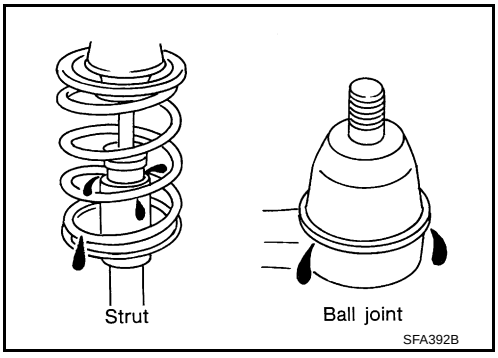
Axle and Suspension Parts

ALS000DZ

Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

- Shake each wheel to check for excessive play.
- Check wheel bearings for smooth operation.
- Check axle and suspension nuts and bolts for looseness.
- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.


SMA525A

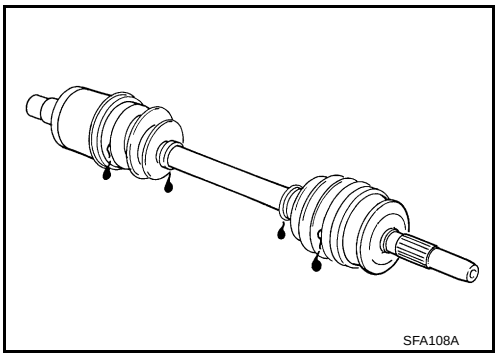


SFA392B

Drive Shaft

ALS000E0

Check boot and drive shaft for cracks, wear, damage and grease leakage.


SFA108A

Auto Active Test

AKS00A4E

DESCRIPTION

- In auto active test mode, operation inspection can be performed when IPDM E/R sends a drive signal to the following systems:
  - Rear window defogger
  - Front wipers
  - Tail lamps and parking lamps
  - Front fog lamps
  - Headlamps (Hi, Lo)
  - A/C compressor (magnetic clutch)
  - Cooling fan

OPERATION PROCEDURE

1. Close hood and front door (passenger side), and then lift wiper arms away from windshield (to prevent glass damage by wiper operation).

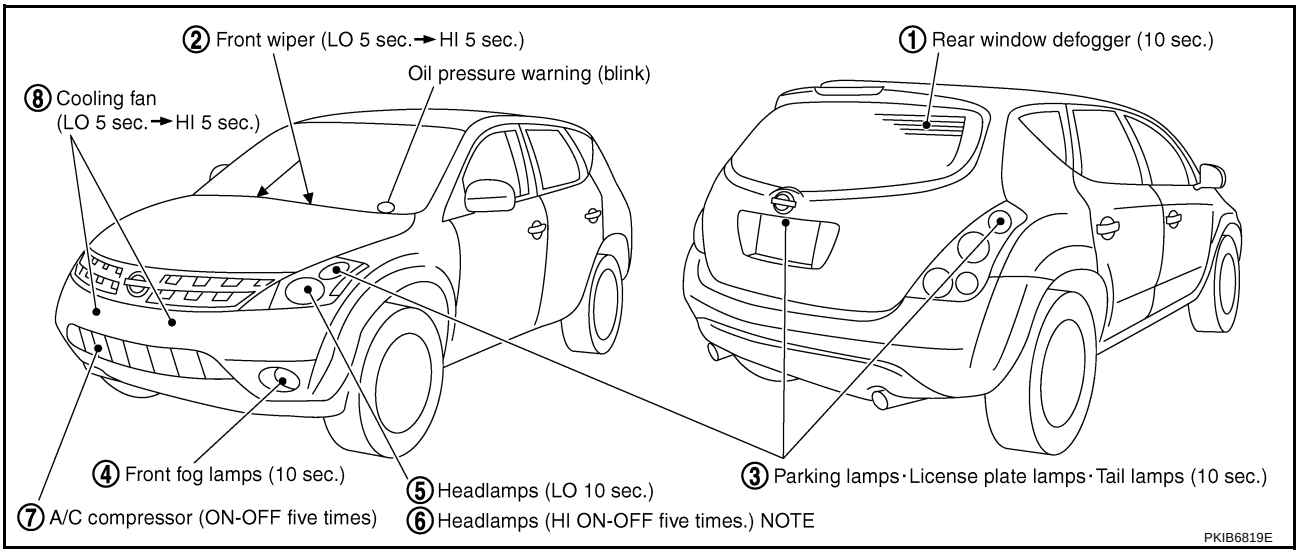
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn ignition switch OFF.
3. Turn ignition switch ON, and within 20 seconds, open and close 10 times of front door LH. Then turn ignition switch OFF.
4. Turn ignition switch ON within 10 seconds after ignition switch OFF.
5. When auto active test mode is actuated, horn chirps once. Oil pressure warning lamp starts blinking.
6. After a series of operations is repeated three times, auto active test is completed.

   NOTE:
   When auto active test mode has to be cancelled halfway, turn ignition switch OFF.

   CAUTION:
   Be sure to inspect BL-45, "Check Door Switch" when the auto active test cannot be performed.

INSPECTION IN AUTO ACTIVE TEST MODE

- When auto active test mode is actuated, the following eight steps are repeated three times.



NOTE:
Turns ON-OFF the solenoid to switch Hi/Lo. In this case, the bulb does not illuminate.

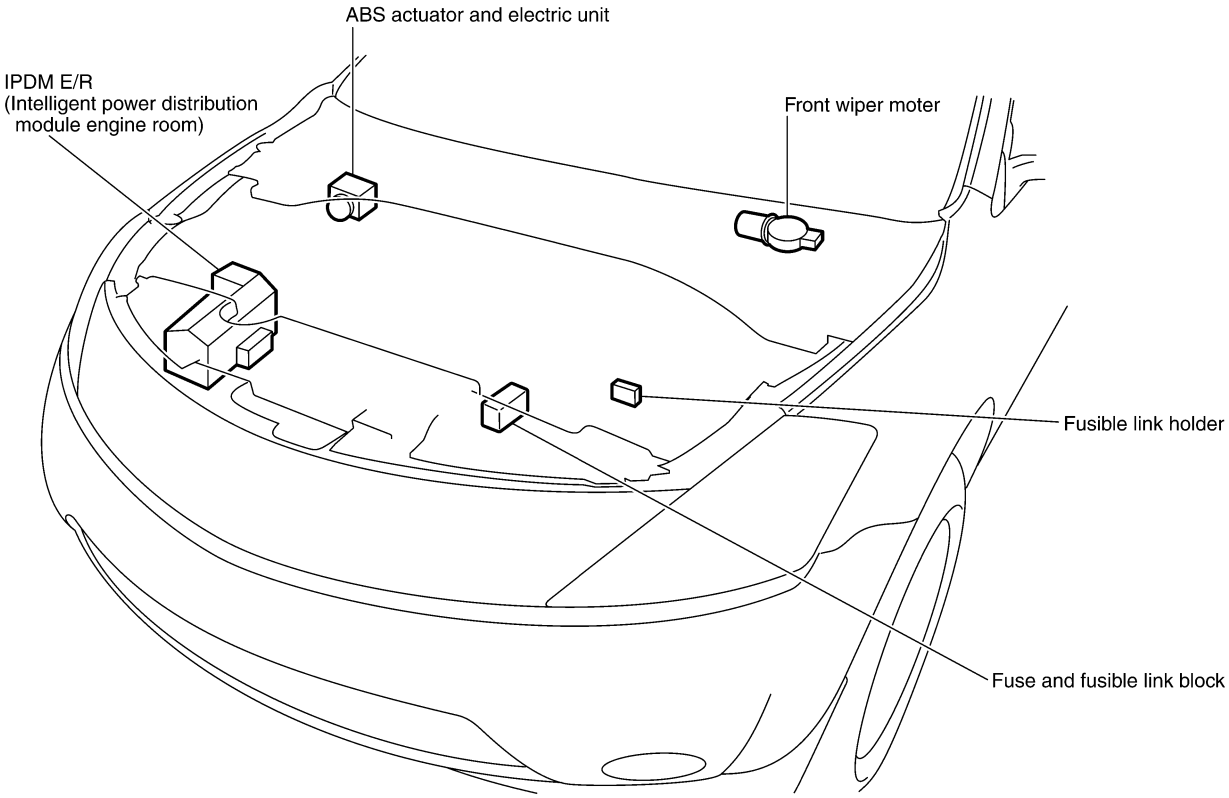
ELECTRICAL UNITS LOCATION

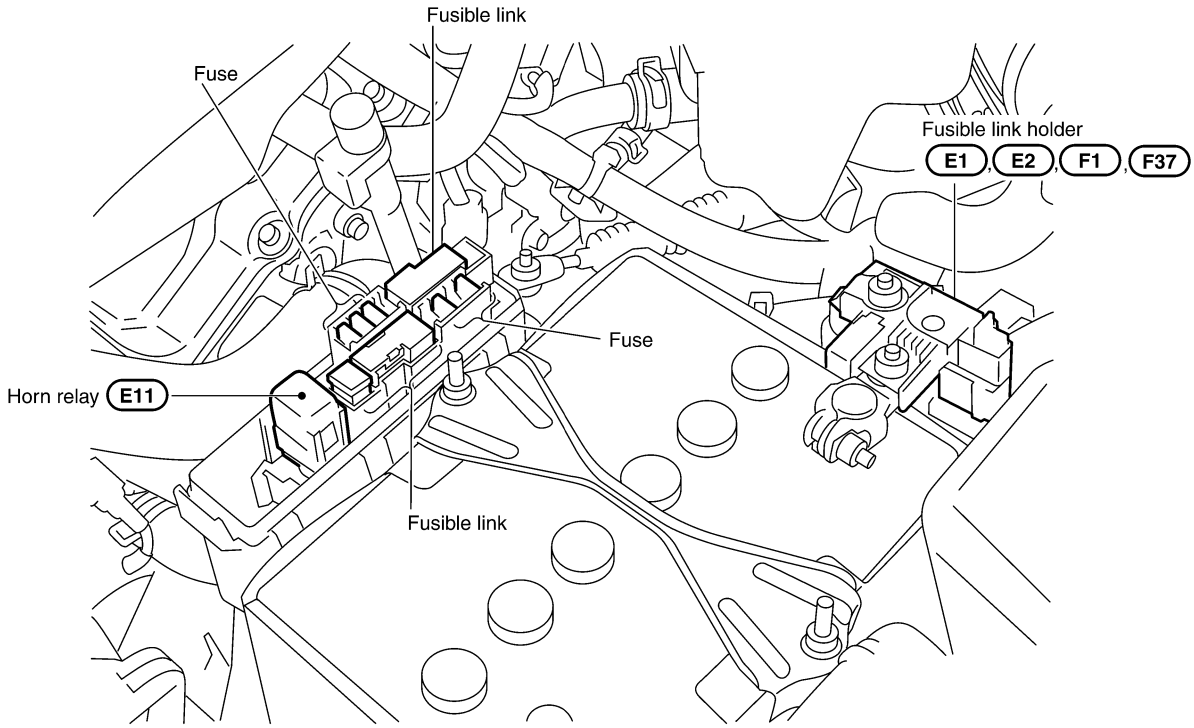
PFP:25230

Electrical Units Location

AKS007HM

ENGINE COMPARTMENT





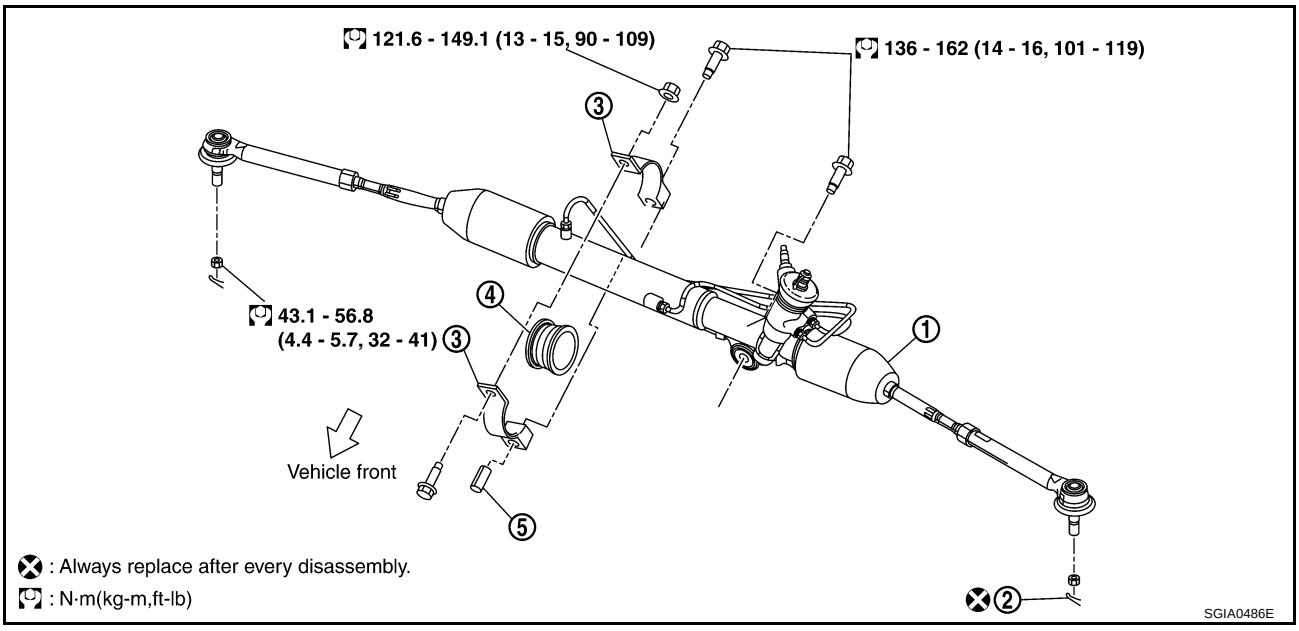
CKIA0319E

POWER STEERING GEAR AND LINKAGE

PFP:49001

Removal and Installation

AGS000CO



1. Steering gear assembly
2. Cotter pin
3. Rack mounting bracket
4. Rack mounting insulator
5. Sleeve

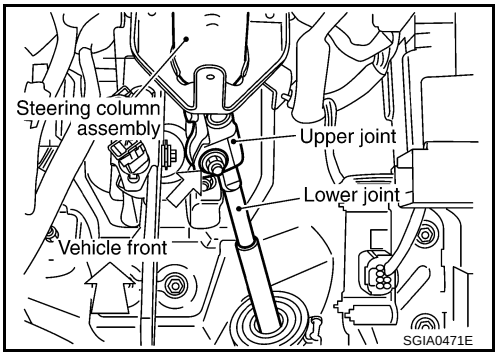
CAUTION:

Spiral cable may snap due to steering operation if steering column is separated from steering gear assembly. Therefore fix steering wheel with a string to avoid turns.

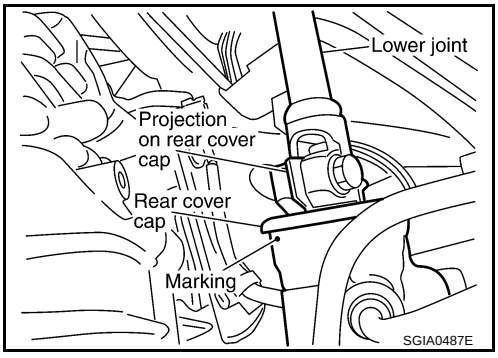
REMOVAL

2WD

1. Set wheels in the straight-ahead position.
2. Remove lock nut and bolt, then separate lower joint from upper joint.
3. Remove tires from vehicle with power tool.



4. Confirm slit of lower joint fits with the projection on rear cover cap, furthermore marking position on steering gear assembly nearly fits with the projection on rear cover cap.
5. Remove cotter pin at steering knuckle, then loosen mounting nut.



SECTION RF
ROOF

CONTENTS

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front door lock assembly (driver side and passenger side) connector.
3. Check continuity between BCM connector M34, 36 terminals 12, 62 and front door lock assembly connector D10 (driver side), D38 (passenger side) terminal 4.

Driver side

62 (SB) – 4 (SB) : Continuity should exist.

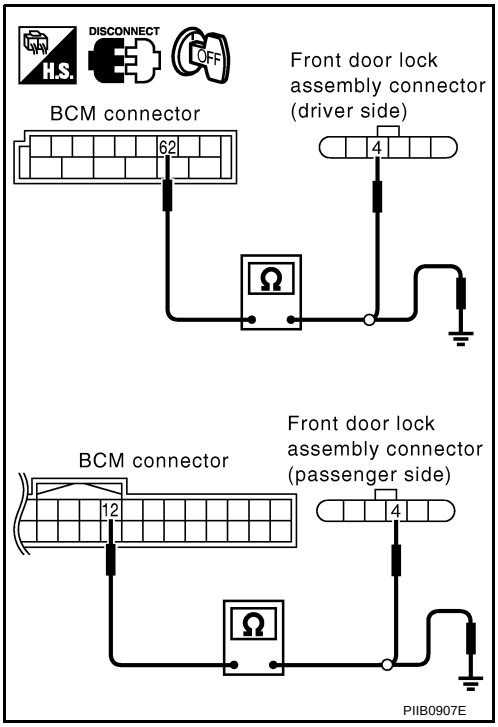
Passenger side

12 (R) – 4 (R/G) : Continuity should exist.

4. Check continuity between BCM connector M34, 36 terminals 12, 62 and ground.

12 (R) – Ground : Continuity should not exist.

62 (SB) – Ground : Continuity should not exist.



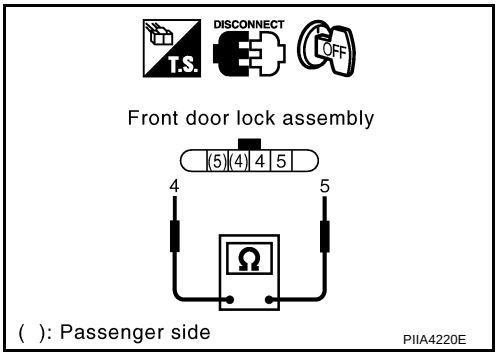
OK or NG

OK >> GO TO 3.
NG >> Repair or replace harness between BCM and front door lock assembly.

3. CHECK DOOR SWITCH

Check continuity between front door lock assembly terminal 4 and 5.

Terminal		Door switch	Continuity
4	5	OPEN	No
		CLOSE	Yes



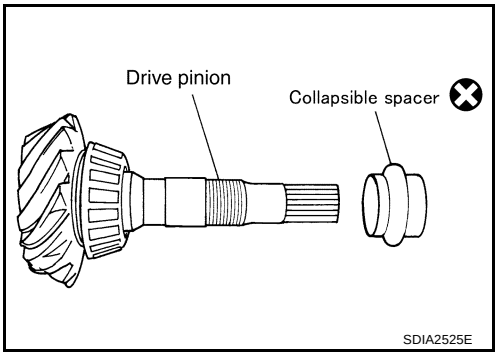
OK or NG

OK >> GO TO 4.
NG >> Replace malfunction front door lock assembly.

5. Assemble collapsible spacer to drive pinion.

CAUTION:

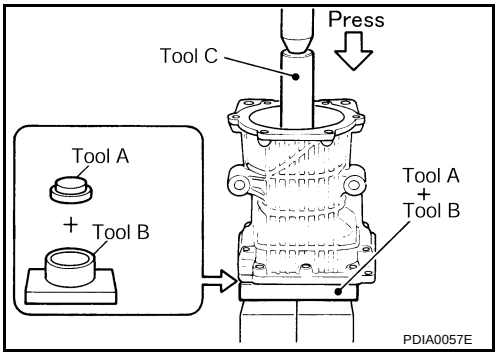
- **Be careful of the mounting direction of collapsible spacer.**
- **Do not reuse collapsible spacer.**



6. Apply gear oil to drive pinon front bearing, and assemble pinion front bearing inner race to drive pinion. Using the drifts and press stand, press the pinion front bearing inner race to drive pinon as far as drive pinion nut can be tightened.

Tool number **A: KV40100610 (J-26089)**
B: ST38220000 (—)
C: ST23860000 (—)

CAUTION:
Do not reuse pinion front bearing inner race.



7. Apply anti-corrosive oil to the thread and seat of drive pinion nut, and temporarily tighten drive pinion nut to drive pinion.

CAUTION:
Do not reuse drive pinion nut.

8. Fit drive pinon socket onto drive pinion spline. Using the pinon nut wrench, adjust the drive pinion nut tightening torque and pinion bearing preload torque.

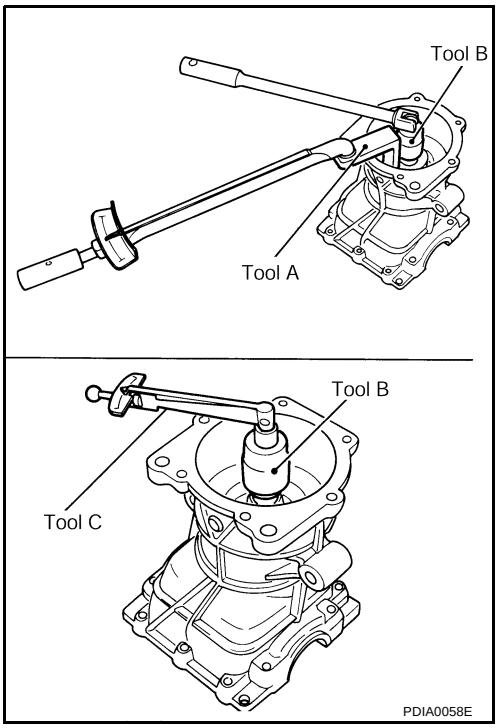
Tool number **A: KV38108400 (—)**
B: KV38108500 (—)
C: ST3127S000 (J-25765-A)

Drive pinion nut tightening torque:
181 - 361 N·m (19 - 36 kg-m, 134 - 266 ft-lb)

Drive pinion bearing preload:
0.69 - 1.18 N·m (0.07 - 0.12 kg-m, 7 - 10 in-lb)

CAUTION:

- **Adjust the lower limit of the drive pinion nut tightening torque first.**
- **If the preload torque exceeds the specified value, replace collapsible spacer and tighten it again to adjust. Never loosen drive pinion nut to adjust the preload torque.**
- **After adjustment, rotate drive pinion back and forth 2 to 3 times to check for unusual noise, rotation malfunction, and other malfunctions.**



9. Install differential case assembly. Refer to RFD-28, "Differential Assembly" .

CAUTION:
Do not install rear cover.

10. Install dummy cover set, and check drive gear runout, tooth contact, and backlash. Refer to RFD-17, "Drive Gear Runout" , RFD-18, "Tooth Contact" , RFD-20, "Backlash" .
11. Remove dummy cover set, then install rear cover, and side oil seal. Refer to RFD-28, "Differential Assembly" .

TOP TETHER STRAP CHILD RESTRAINT

PFP:88000

Removal and Installation

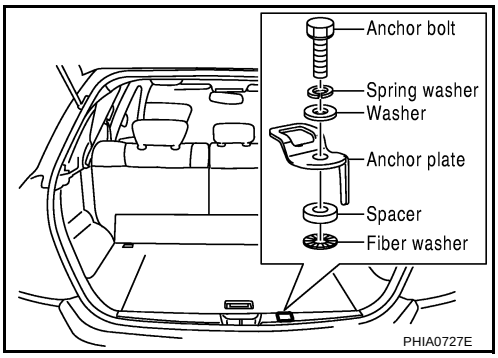
AHS000R6

CAUTION:
Replace anchor bolts if they are deformed or worn out.

REMOVAL

1. Remove the rear plate. Refer to EI-38, "Removal and Installation" .
2. Remove the top tether strap child restraint.

:24.0 N·m (2.4 kg-m, 18 ft-lb)



INSTALLATION

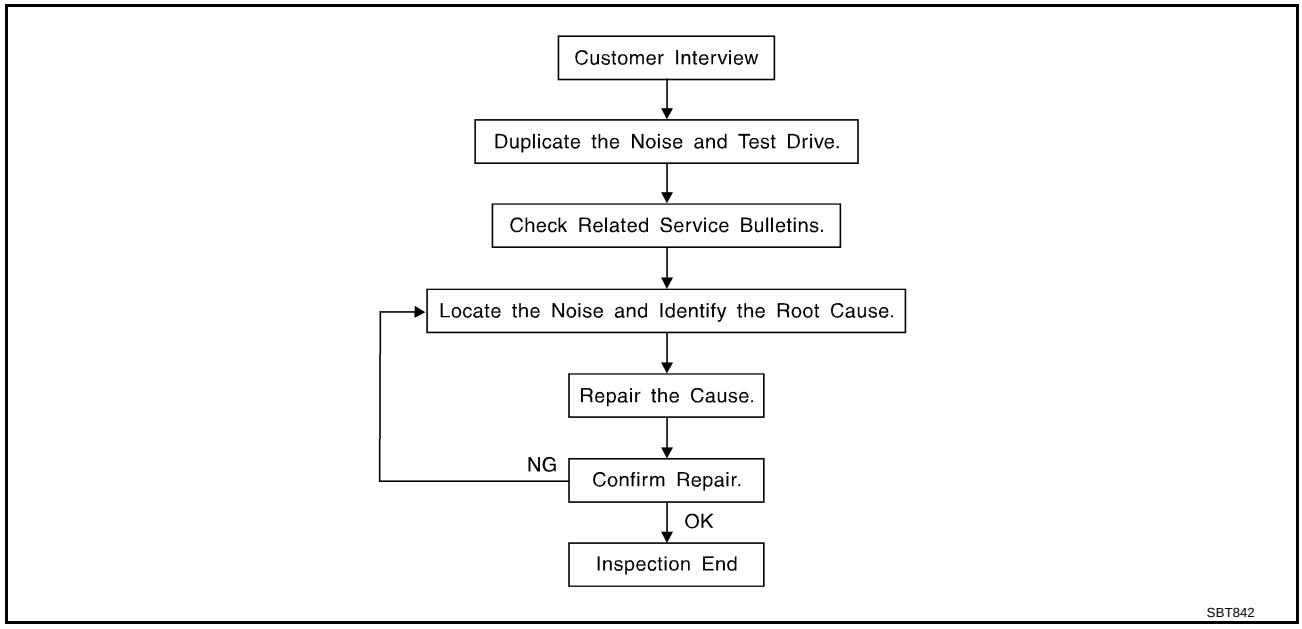
Install in the reverse order of removal.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

PFP:00000

Work Flow

AIS0038Y



CUSTOMER INTERVIEW

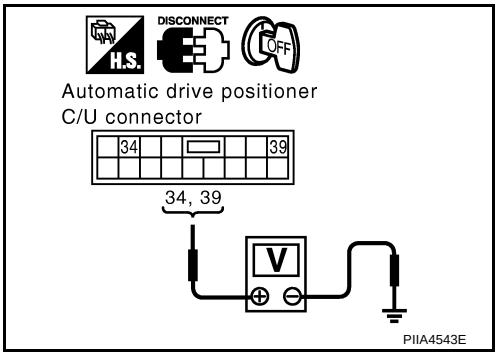
Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any customer's comments; refer to SE-9, "Diagnostic Worksheet" . This information is necessary to duplicate the conditions that exist when the noise occurs.

- The customer may not be able to provide a detailed description or the location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, be sure to diagnose and repair the noise that the customer is concerned about. This can be accomplished by test driving the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
- Squeak —(Like tennis shoes on a clean floor)
  Squeak characteristics include the light contact/fast movement/brought on by road conditions/hard surfaces=higher pitch noise/softer surfaces=lower pitch noises/edge to surface=chirping
- Creak—(Like walking on an old wooden floor)
  Creak characteristics include firm contact/slow movement/twisting with a rotational movement/pitch dependent on materials/often brought on by activity.
- Rattle—(Like shaking a baby rattle)
  Rattle characteristics include the fast repeated contact/vibration or similar movement/loose parts/missing clip or fastener/incorrect clearance.
- Knock —(Like a knock on a door)
  Knock characteristics include hollow sounding/sometimes repeating/often brought on by driver action.
- Tick—(Like a clock second hand)
  Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or road conditions.
- Thump—(Heavy, muffled knock noise)
  Thump characteristics include softer knock/dead sound often drought on by activity.
- Buzz—(Like a bumble bee)
  Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending upon the person. A noise that you may judge as acceptable may be very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

7. CHECK POWER SUPPLY CIRCUIT (AUTOMATIC DRIVE POSITIONER CONTROL UNIT)

1. Disconnect automatic drive positioner control unit connector.
2. Check voltage between automatic drive positioner control unit connector M20 terminal 34 (Y/R), 39 (W/R) and ground.

34 (Y/R) – Ground : Battery voltage
39 (W/R) – Ground : Battery voltage



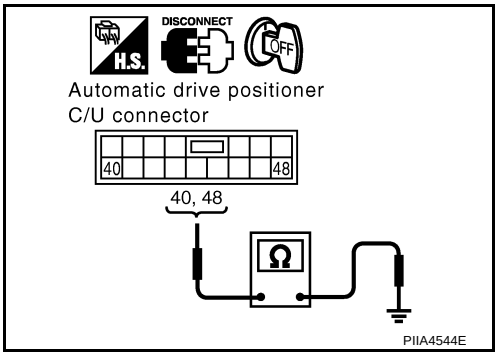
OK or NG

OK >> GO TO 8.
NG >> Repair or replace harness between driver seat control unit and fuse block (J/B).

8. CHECK GROUND CIRCUIT (AUTOMATIC DRIVE POSITIONER CONTROL UNIT)

Check continuity between the automatic drive positioner control unit connector M20 terminal 40 (B), 48 (B) and ground.

40 (B) – Ground : Continuity should exist.
48 (B) – Ground : Continuity should exist.



OK or NG

OK >> Automatic drive positioner control unit circuit is OK.
NG >> Repair or replace harness between automatic drive positioner control unit and ground.

Door Mirror Remote Control Switch (Changeover Switch) Circuit Check

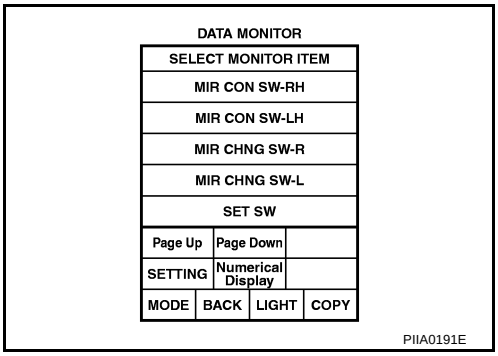
AIS003HG

1. CHECK FUNCTION

With CONSULT–II

Check the operation on “MIR CHNG SW – R” or “MIR CHNG SW–L" in the DATA MONITOR.

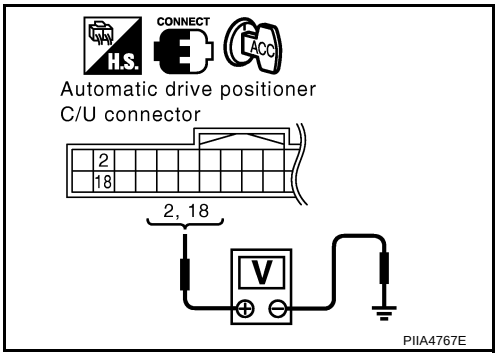
Monitor item [OPERATION or UNIT]		Contents
MIR CHNG SW–R	“ON/OFF”	ON/OFF status judged from the door mirror remote control switch (switching to RIGHT) signal is displayed.
MIR CHNG SW–L	“ON/OFF”	ON/OFF status judged from the door mirror remote control switch (switching to LEFT) signal is displayed.



Without CONSULT–II

1. Turn ignition switch ACC.
2. Check voltage between automatic drive positioner control unit connector and ground.

Connector	Terminals (Wire color) (+)	Terminals (Wire color) (-)	Condition	Voltage (V) (Approx)
M19	2 (L/W)	Ground	Changeover switch RIGHT position	0
			Changeover switch neutral position	5
	18 (BR/Y)		Changeover switch LEFT position	0
			Changeover switch neutral position	5



OK or NG

OK >> Door mirror remote control switch (changeover switch) is OK.
NG >> GO TO 2.

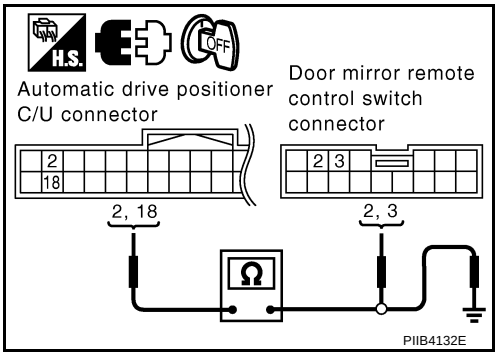
2. CHECK DOOR MIRROR REMOTE CONTROL SWITCH CIRCUIT HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect automatic drive positioner control unit and door mirror remote control switch connector.
3. Check continuity between automatic drive positioner control unit connector M19 terminal 2 (L/W), 18 (BR/Y) and door mirror remote control switch connector M66 terminal 3 (L/W), 2 (BR/Y).

   2 (L/W) – 3 (L/W) :Continuity should exist.
   18 (BR/Y) – 2 (BR/Y) :Continuity should exist.

4. Check continuity between automatic drive positioner control unit connector M19 terminal 2 (L/W), 18 (BR/Y) and ground.

   2 (L/W) – Ground :Continuity should not exist.
   18 (BR/Y) – Ground :Continuity should not exist.

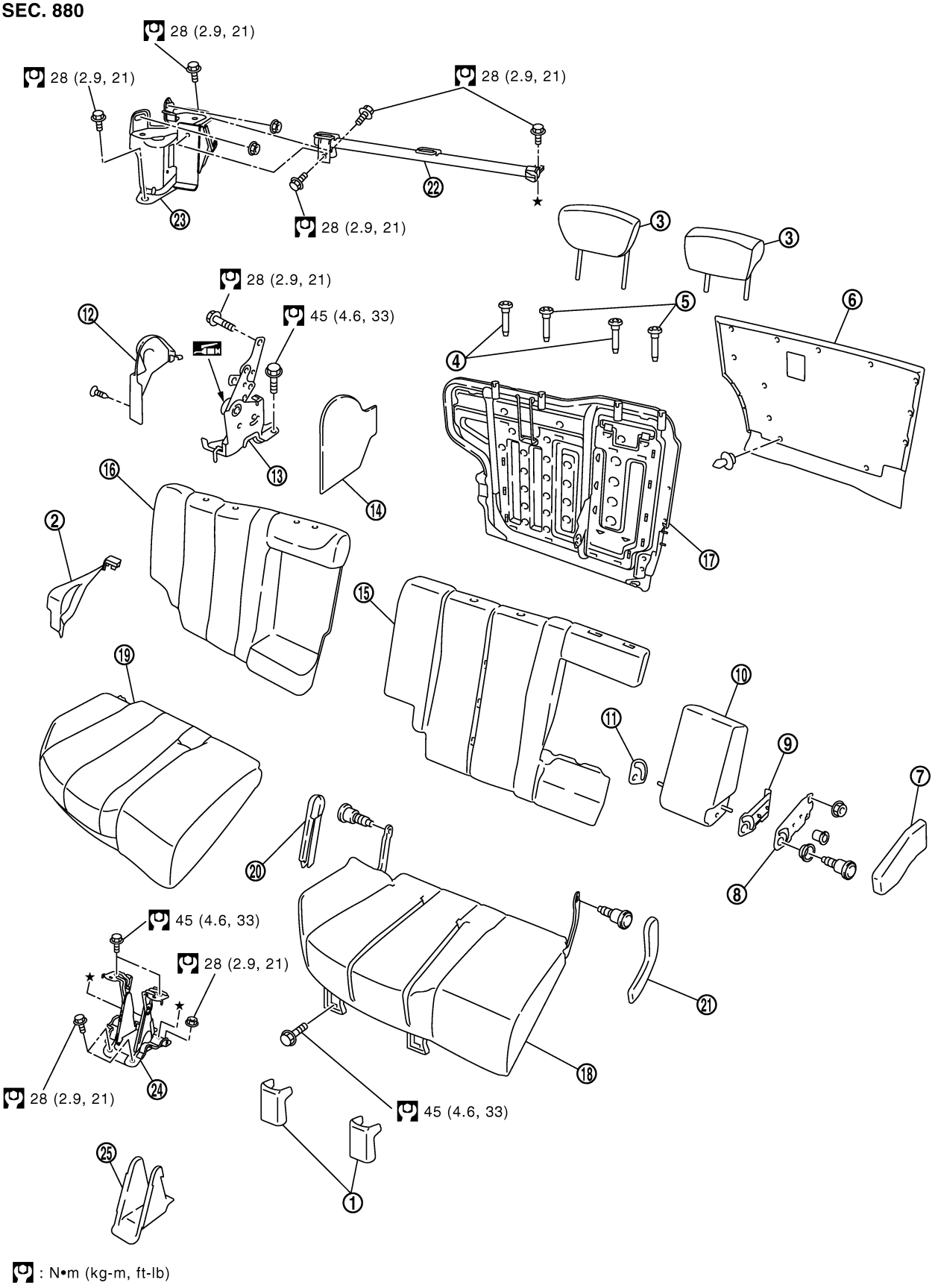


OK or NG

OK >> GO TO 3.
NG >> Repair or replace harness between automatic drive positioner control unit and door remote control switch.

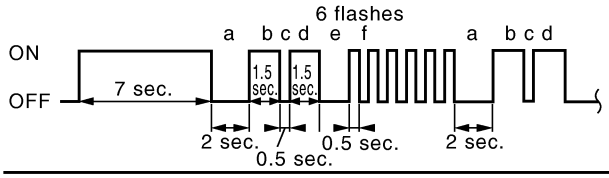
RH SIDE SEAT

SEC. 880



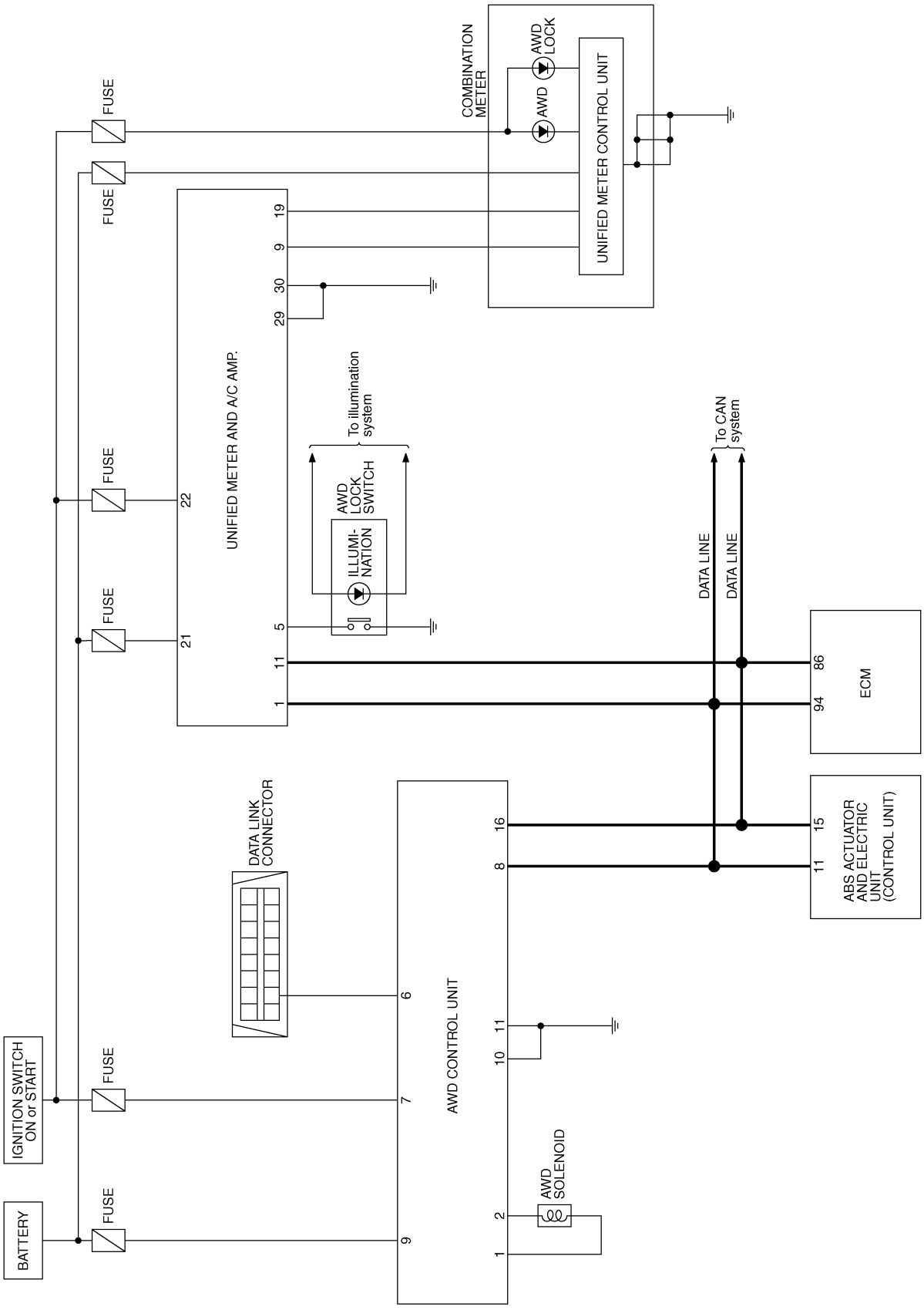
: N•m (kg-m, ft-lb)

PIIB4962E

<LH side curtain air bag module>	
Flash pattern	Repair order
a through f are repeated. f: Six flashes indicate malfunctioning LH side curtain air bag module circuit.  PHIA1241E	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the related harness.

Circuit Diagram

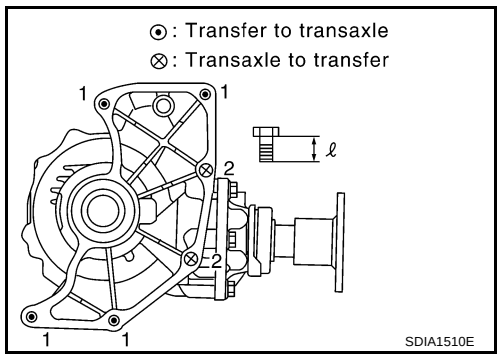
ADS000VE



TDWB0013E

- When installing the transfer to the transaxle, install the mounting bolts following the standard below.

Bolt No.	1	2
Quantity	4	2
Bolt length " ℓ " mm (in)	65 (2.56)	40 (1.57)
Tightening torque N·m (kg-m, ft-lb)	34.3 (3.5, 25)	



CAUTION:
When installing transfer to transaxle, be careful not to damage oil seal of transaxle.

- After the installation, check the oil level and oil leakage. Refer to TF-10, "Inspection" .

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