SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS

PFP:00001

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

AKS00CNH

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 for Battery Service

AKS003TZ

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

Precautions When Using CONSULT-II

AKS003M4

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

CAUTION:

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

CHECK POINTS FOR USING CONSULT-II

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

Precautions For Trouble Diagnosis

AKS000ZD

CAN SYSTEM

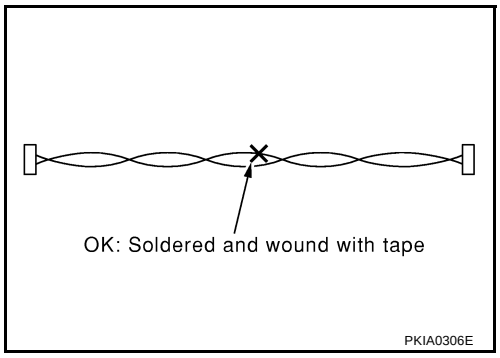
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precautions For Harness Repair

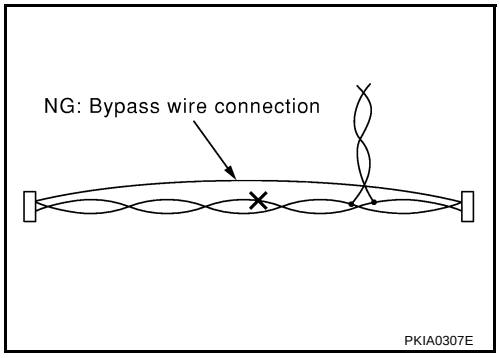
AKS000ZE

CAN SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



TROUBLE DIAGNOSES WORK FLOW

PFP:00004

When Displaying CAN Communication System Errors

AKS00C6O

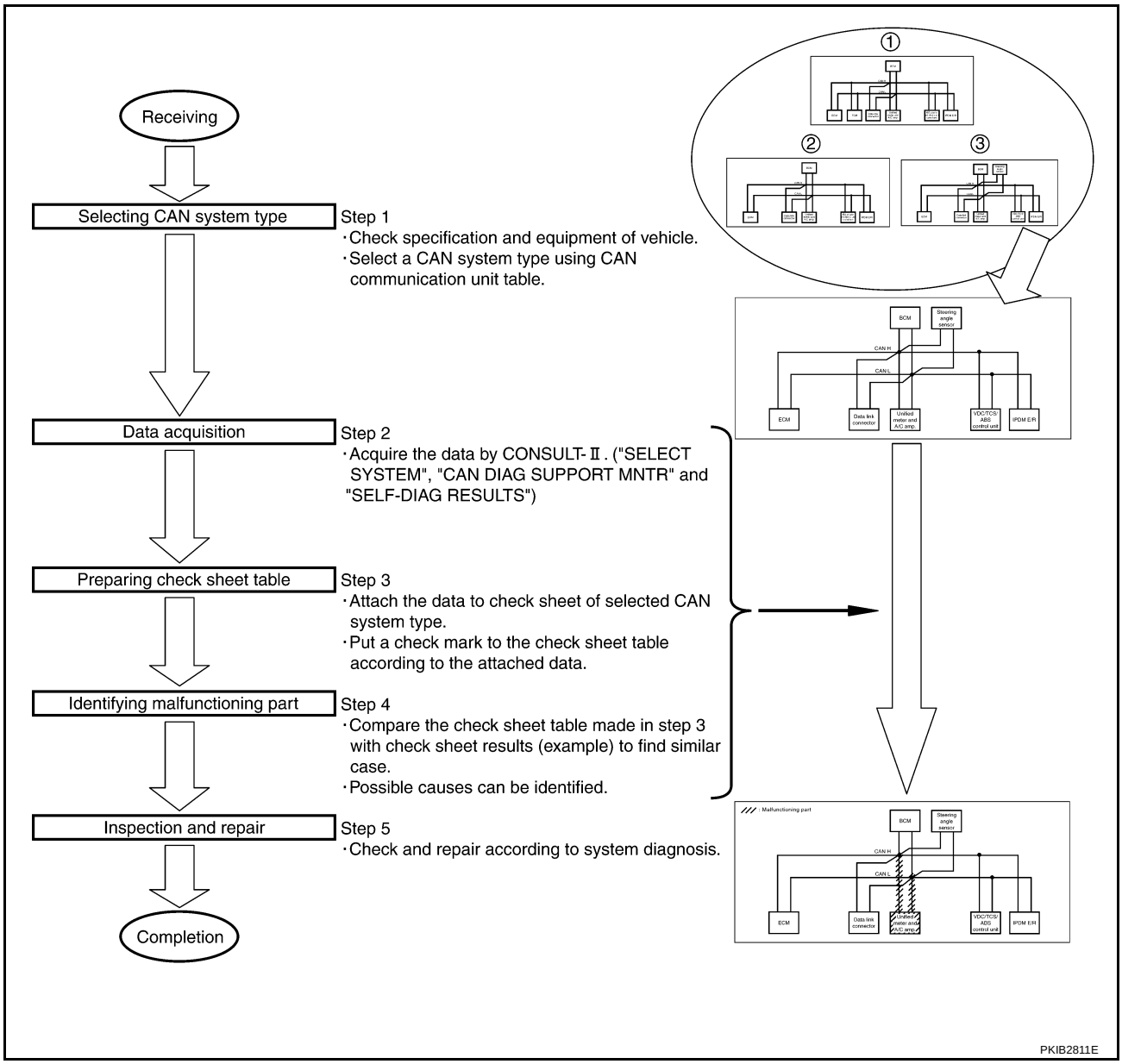
WHEN A MALFUNCTION IS DETECTED BY CAN COMMUNICATION SYSTEM

- CAN communication line is open. (CAN H, CAN L, or both)
- CAN communication line is shorted. (Ground, between CAN lines, or other harnesses)
- The areas related to CAN communication of unit is malfunctioning.

WHEN A MALFUNCTION IS DETECTED EXCEPT CAN COMMUNICATION SYSTEM

- Removal and installation of parts: When the units that perform CAN communication or the sensors related to CAN communication are removed and installed, malfunction may be detected (or DTC other than CAN communication may be detected).
- Fuse blown out (removed): CAN communication of the unit may be stopped at such time.
- Low voltage: If the voltage decreases because of battery discharge when IGN is ON, malfunction may be detected by self-diagnosis according to the units.

TROUBLE DIAGNOSIS FLOW CHART



- Step 1: Refer to LAN-7, "SELECTING CAN SYSTEM TYPE (HOW TO USE SPECIFICATION TABLE)" .
- Step 2: Refer to LAN-8, "ACQUISITION OF DATA BY CONSULT-II" .
- Step 3: Refer to LAN-9, "HOW TO USE CHECK SHEET TABLE" .
- Step 4: Refer to LAN-10, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced" .
- Step 5: Check and repair according to system diagnosis.

Diagnosis Procedure

AKS00C6P

SELECTING CAN SYSTEM TYPE (HOW TO USE SPECIFICATION TABLE)

Determine CAN system type from the equipment of the vehicle to select applicable check sheet.

(Example) Coupe/2WD/VQ35DE/MT/VDC

CAN Communication Unit

Go to CAN system, when selecting your CAN system type from the following table.

Body type	Coupe					Roadster		
Axle	2WD							
Engine	VQ35DE							
Transmission	A/T		M/T			A/T	M/T	
Brake control	TCS	VDC	ABS	TCS	VDC	TCS	TCS	VDC
CAN system type	1	5	2	3	4	1	3	4
CAN system trouble diagnosis	xx-xx	xx-xx	xx-xx	xx-xx	xx-xx	xx-xx	xx-xx	xx-xx

Check basic specification of the vehicle.

Which number is selected when sequentially selecting from the top of the specification table?
The number is “CAN system type” of the applicable vehicle.

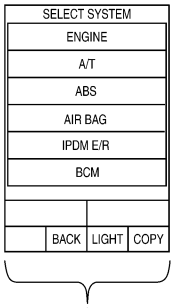
In the case of this example:
It corresponds to type 4.

PKIB9408E

ACQUISITION OF DATA BY CONSULT-II

Attach the data acquired by CONSULT-II on the check sheet determined according to CAN system type.

Copy "SELECT SYSTEM" screen of CONSULT-Ⅱ.



Check sheet table

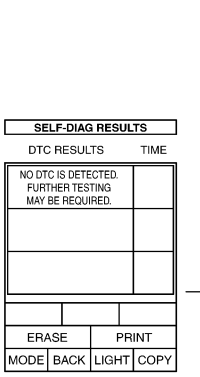
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR: Initial diagnosis	CAN DIAG SUPPORT MNTR: Transmit diagnosis	CAN DIAG SUPPORT MNTR: Receive diagnosis: ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R	SELF-DIAG RESULTS	
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–

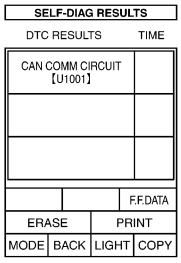
Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

Copy "SELF-DIAG RESULTS" screen of CONSULT-Ⅱ.



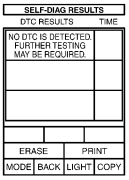


Attach copy of ENGINE SELF-DIAG RESULTS

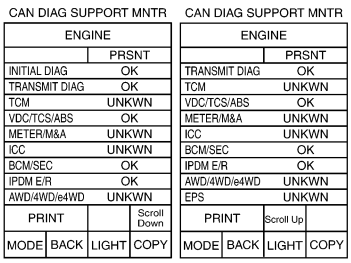
Attach copy of METER A/C AMP SELF-DIAG RESULTS

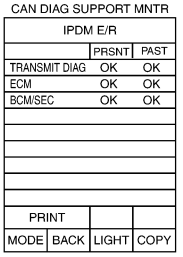
Attach copy of BCM SELF-DIAG RESULTS

Attach copy of ABS SELF-DIAG RESULTS



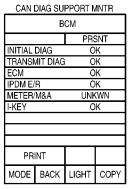
Copy "CAN DIAG SUPPORT MNTR" screen of CONSULT-Ⅱ.





Attach copy of ENGINE CAN DIAG SUPPORT MNTR

Attach copy of METER A/C AMP CAN DIAG SUPPORT MNTR



Attach copy of ABS CAN DIAG SUPPORT MNTR

Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

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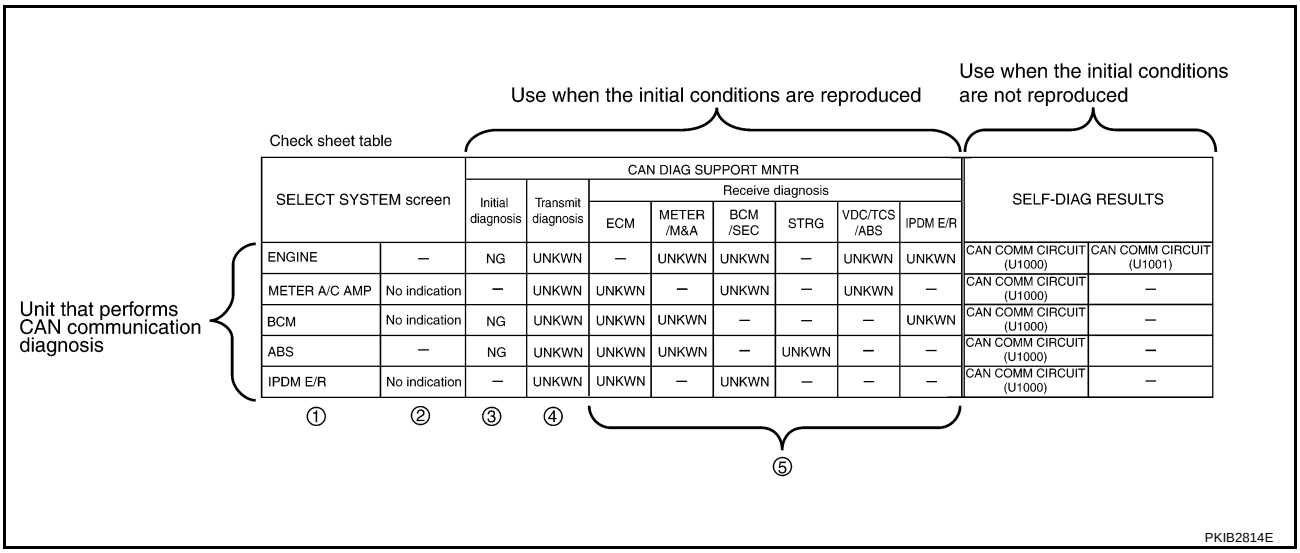
HOW TO USE CHECK SHEET TABLE



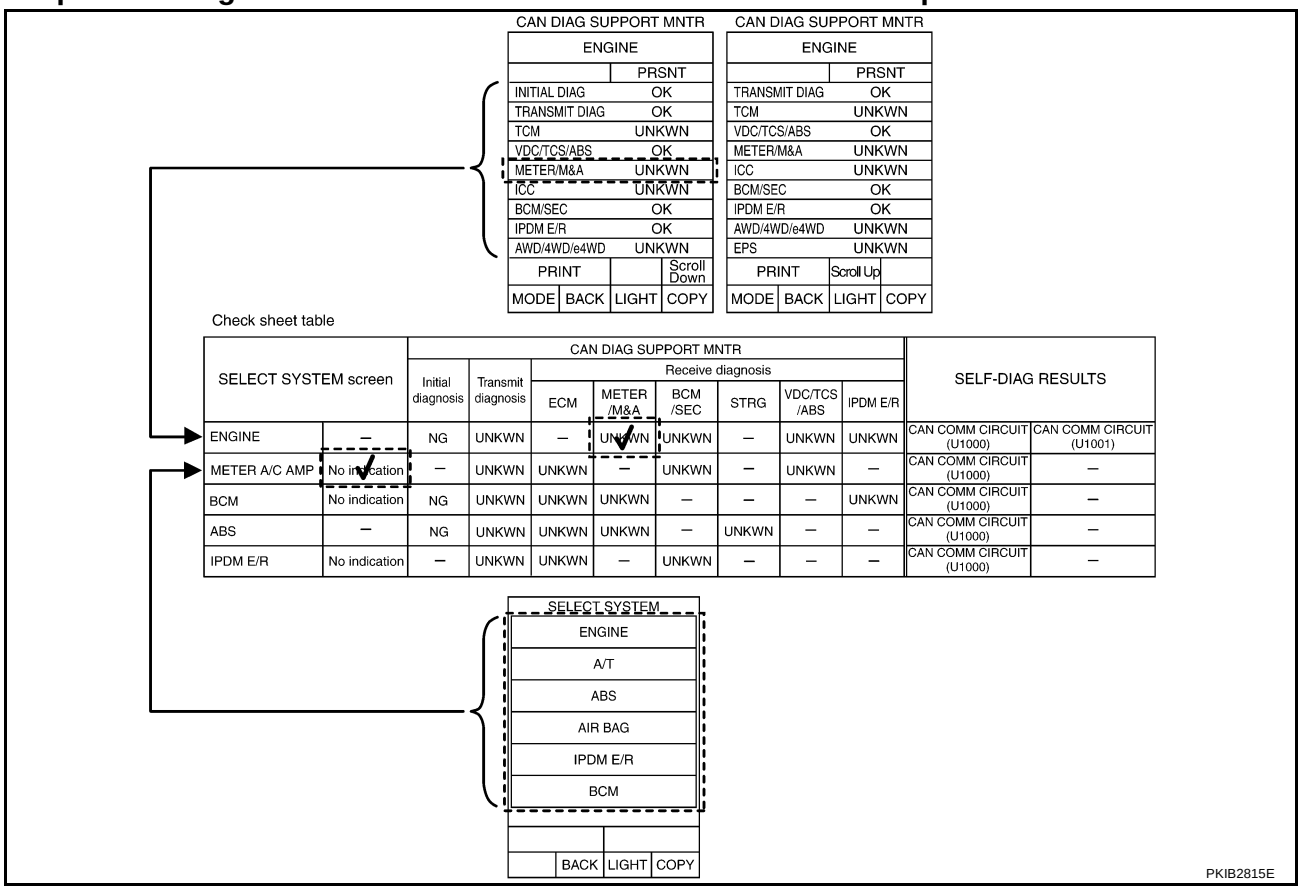
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–

1. Unit names displayed on CONSULT-II
2. “No indication”: Put a check mark to it if the unit name described in step 1 is not displayed on “SELECT SYSTEM” screen of CONSULT-II. (Unit communicating with CONSULT-II via CAN communication line)
   “–”: Column not used (Unit communicating with CONSULT-II excluding CAN communication line)
3. “NG”: Display “NG” when malfunction is detected in the initial diagnosis of the diagnosed unit. Replace the unit if “NG” is displayed.
   “–”: Column not used (Initial diagnosis is not performed.)
4. “UNKWN”: Display “UNKWN” when the diagnosed unit does not transmit the data normally. Put a check mark to it if “UNKWN” is displayed on CONSULT-II.
   “–”: Column not used (Transmit diagnosis is not performed.)
5. “UNKWN”: Display “UNKWN” when the diagnosed unit does not receive the data normally. Put a check mark to it if “UNKWN” is displayed on CONSULT-II.
   “–”: Column not used (It is not necessary for CAN communication trouble diagnosis.)

NOTE:
CAN communication diagnosis checks if CAN communication works normally. (Contents of data are not diagnosed.)

- When the initial conditions are reproduced. Refer to LAN-10, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced" .
- When the initial conditions are not reproduced. Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

Example of Filling in Check Sheet When Initial Conditions Are Reproduced

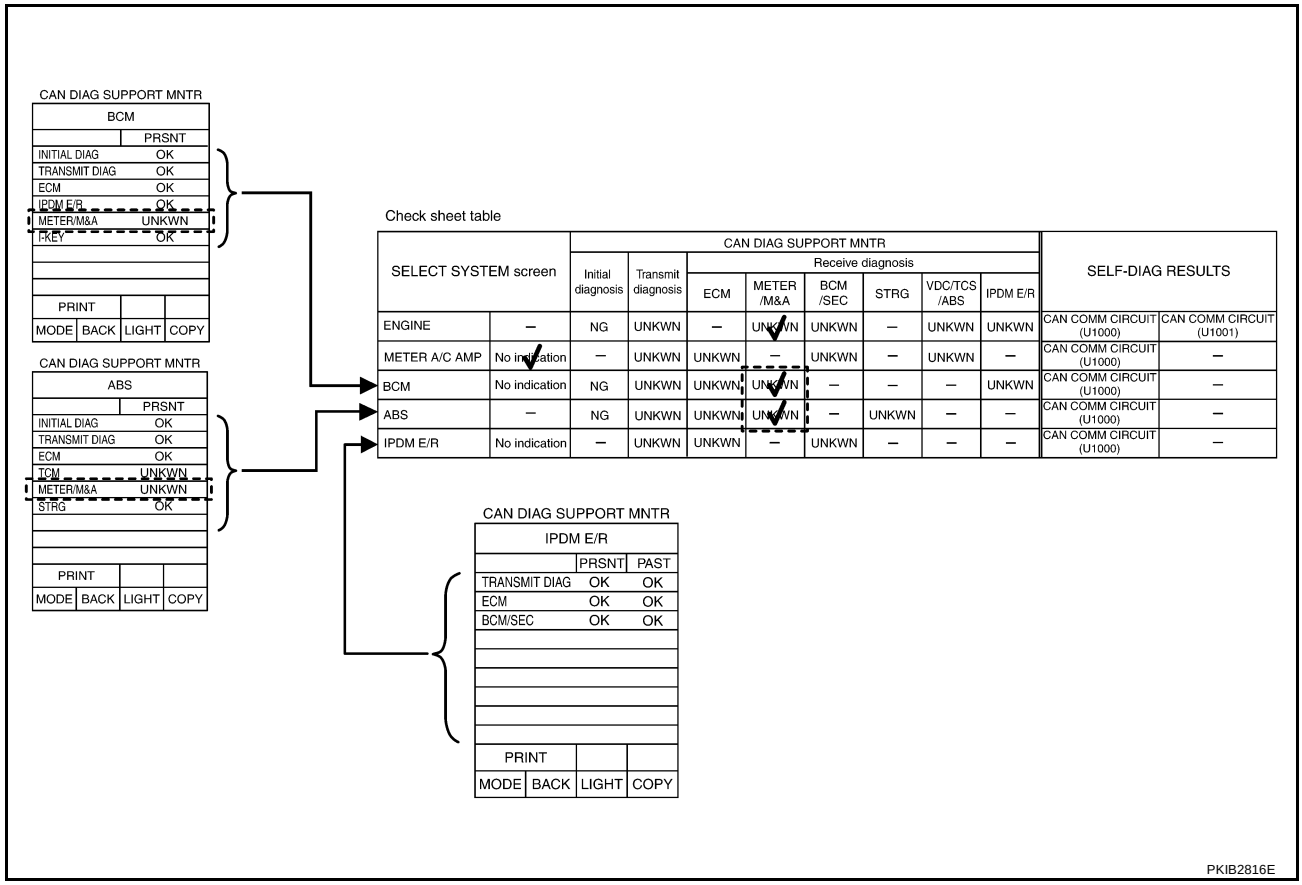


1. Put a check mark to “No indication” if some of unit names listed on the column of diagnosis system selection screen of a check sheet table are not displayed on “SELECT SYSTEM” screen attached to the check sheet.

   NOTE:
   Put a check mark to “No indication” of METER A/C AMP because METER A/C AMP is not displayed on “SELECT SYSTEM” screen.

2. Confirm the unit name that “UNKWN” is displayed from the copy of “CAN DIAG SUPPORT MNTR” screen of “ENGINE” attached to the check sheet, and then put a check mark to the check sheet table.

   NOTE:
   In “CAN DIAG SUPPORT MNTR” screen, “UNKWN” is displayed on “TCM”, “METER/M&A”, “ICC”, “AWD/4WD/e4WD” and “EPS”. But put a check mark to “METER/M&A” because “UNKWN” is listed on the column of reception diagnosis of the check sheet table.



3. Confirm the unit name that “UNKWN” is displayed on the copy of “CAN DIAG SUPPORT MNTR” screen of “BCM”, “ABS” and “IPDM E/R” as well as “ENGINE”. And then, put a check mark to the check sheet table.

NOTE:

- For “BCM”, “UNKWN” is displayed on “METER/M&A”. Put a check mark to it.
- For “ABS”, “UNKWN” is displayed on “TCM” and “METER/M&A”. But a put a check mark to “METER/M&A” because “UNKWN” is listed on the column of reception diagnosis on the check sheet.
- For “IPDM E/R”, “UNKWN” is not displayed. Do not put a check to it.

The arranged results of CAN diagnosis support monitor

Check sheet table

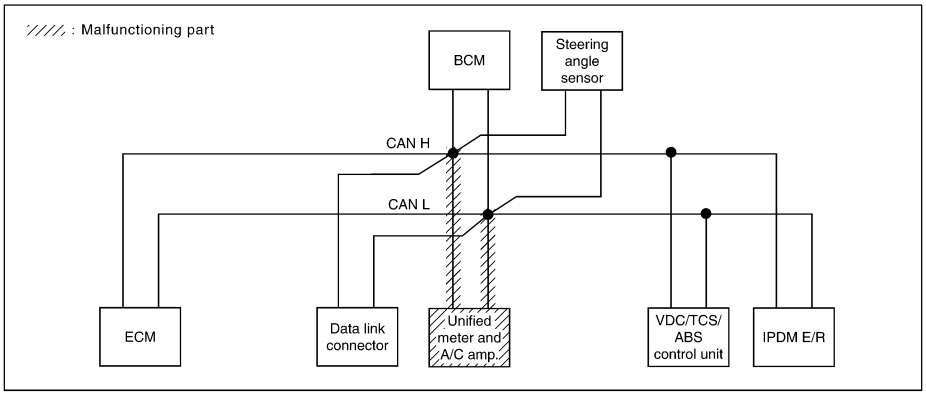
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–

Choose similar indications between the results of CAN diagnosis support monitor and the results of the check sheet. Malfunctioning parts are found.

Case 4
Check unified meter and A/C amp. circuit.

Check sheet results (example)

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–



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NOTE:
There is a case that some of “CAN DIAG SUPPORT MNTR” and “SELF-DIAG RESULTS” are not needed for diagnosis. In the case, “UNKWN” and “CAN COMM CIRCUIT(U1000)” in “Check sheet results (example)” change to “–”. Then, ignore check marks on the check sheet table.

4. Perform system diagnosis for possible causes identified.
5. Perform diagnosis again after inspection and repair. Make sure that repair is completely performed, and then end the procedure.

Start CAN system trouble diagnosis if this procedure can be confirmed. Refer to LAN-21, "CAN Communication Unit" .

Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—

SYSTEM ENGINE

SELF-DIAG RESULTS

DTC RESULTS	TIME
CAN COMM CIRCUIT [U1000]	1t
CAN COMM CIRCUIT [U1001]	1t

SYSTEM METER A/C AMP

SELF-DIAG RESULTS

DTC RESULTS	TIME
CAN COMM CIRCUIT [U1000]	PAST

SYSTEM BCM

SELF-DIAG RESULTS

DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	

SYSTEM ABS

SELF-DIAG RESULTS

DTC RESULTS	TIME
CAN COMM CIRCUIT [U1000]	1

SYSTEM IPDM E/R

SELF-DIAG RESULTS

DTC RESULTS	TIME
CAN COMM CIRCUIT [U1000]	PAST

PKIB2818E

1. See “SELF-DIAG RESULTS” of all units attached to the check sheet. If “CAN COMM CIRCUIT”, “CAN COMM CIRCUIT (U1000)” or “CAN COMM CIRCUIT (U1001)” is displayed, put a check mark to the applicable column of self-diagnostic results of the check sheet table.

NOTE:

- For “ENGINE”, “CAN COMM CIRCUIT (U1000)” and “CAN COMM CIRCUIT (U1001)” are displayed. Put a check mark to it.
- For “METER/M&A”, “CAN COMM CIRCUIT (U1000)” is displayed. Put a check mark to it.
- For “BCM”, “NO DTC IS DETECTED” is displayed. Do not put a check mark to it.
- For “ABS”, “CAN COMM CIRCUIT (U1000)” is displayed. Put a check mark to it.
- For “IPDM E/R”, “CAN COMM CIRCUIT (U1000)” is displayed. Put a check mark to it.

The arranged results of self-diagnosis

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000) ✓	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–

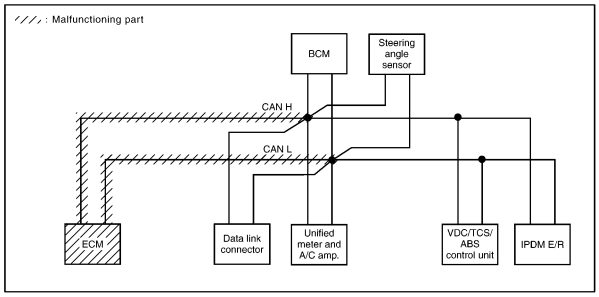
When the arranged results of self-diagnosis and check sheet results (example) are corresponding, possible causes can be selected.

Case 2
Check ECM circuit.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN ✓	–	UNKWN ✓	UNKWN ✓	–	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	–	UNKWN	UNKWN ✓	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN ✓	UNKWN	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000) ✓	–
ABS	–	NG	UNKWN	UNKWN ✓	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication	–	UNKWN	UNKWN ✓	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–

Case 9
Check CAN communication circuit.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN ✓	–	UNKWN ✓	UNKWN ✓	–	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication ✓	–	UNKWN	UNKWN ✓	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication ✓	NG	UNKWN	UNKWN ✓	UNKWN ✓	–	–	–	UNKWN	CAN COMM CIRCUIT (U1000) ✓	–
ABS	– ✓	–	UNKWN	UNKWN ✓	UNKWN ✓	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN ✓	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–



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NOTE:
There is a case that some of “CAN DIAG SUPPORT MNTR” and “SELF-DIAG RESULTS” are not needed for diagnosis. In the case, “UNKWN” and “CAN COMM CIRCUIT(U1000)” in “Check sheet results (example)” change to “–”. Then, ignore check marks on the check sheet table.

2. For the selected possible causes, it is expected that malfunctions have been found in the past.

CAN Diagnostic Support Monitor

AKS00C6Q

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR ECM

(Example)

CAN DIAG SUPPORT MNTR

ENGINE	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
TCM	OK
VDC/TCS/ABS	OK
METER/M&A	OK
ICC	UNKWN
BCM/SEC	OK
IPDM E/R	OK
AWD/4WD/e4WD	UNKWN

PRINT			Scroll Down
MODE	BACK	LIGHT	COPY

CAN DIAG SUPPORT MNTR

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

PRINT	Scroll Up		
MODE	BACK	LIGHT	COPY

SKIB0591E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
ENGINE	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	TCM	Make sure of normal reception from TCM.	OK/UNKWN
	VDC/TCS/ABS	Make sure of normal reception from VDC/TCS/ABS control unit.	OK/UNKWN
		Make sure of normal reception from ABS actuator and electric unit (control unit).	OK/UNKWN
	METER/M&A	Make sure of normal reception from unified meter and A/C amp.	OK/UNKWN
	ICC	ICC is not diagnosed.	UNKWN
	BCM/SEC	Make sure of normal reception from BCM.	OK/UNKWN
	IPDM E/R	Make sure of normal reception from IPDM E/R.	OK/UNKWN
	AWD/4WD/e4WD	AWD/4WD/e4WD is not diagnosed.	UNKWN
	EPS	EPS is not diagnosed.	UNKWN

Display Results (Present)

- OK: Normal
- NG: Malfunction
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR TCM

(Example)

CAN DIAG SUPPORT MNTR

A/T	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
VDC/TCS/ABS	OK
METER/M&A	OK
ICC/e4WD	UNKWN
AWD/4WD	UNKWN
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB1623E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
A/T	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	VDC/TCS/ABS	Make sure of normal reception from ABS actuator and electric unit (control unit).	OK/UNKWN
	METER/M&A	Make sure of normal reception from unified meter and A/C amp.	OK/UNKWN
	ICC/e4WD	ICC/4WD is not diagnosed.	UNKWN
	AWD/4WD	AWD/4WD is not diagnosed.	UNKWN

Display Results (Present)

- OK: Normal
- NG: Malfunction
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR UNIFIED METER AND A/C AMP.

(Example)

CAN DIAG SUPPORT MNTR

METER A/C AMP	PRSNT	PAST
TRANSMIT DIAG	OK	OK
ECM	OK	OK
TCM	OK	OK
BCM/SEC	OK	OK
VDC/TCS/ABS	OK	OK
IPDM E/R	-	-
DISPLAY	-	-
I-KEY	-	-
EPS	-	-

PRINT			Scroll Down
MODE	BACK	LIGHT	COPY

CAN DIAG SUPPORT MNTR

METER A/C AMP	PRSNT	PAST
IPDM E/R	-	-
DISPLAY	-	-
I-KEY	-	-
EPS	-	-
AWD/4WD	-	-
e4WD	-	-
ICC	-	-
LANE KEEP	-	-
TIRE-P	OK	OK

PRINT		Scroll Up	
MODE	BACK	LIGHT	COPY

SKIB1624E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present	Past
METER A/C AMP	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN/–	OK/0/1~39/–
	ECM	Make sure of normal reception from ECM.	OK/UNKWN/–	
	TCM	Make sure of normal reception from TCM.	OK/UNKWN/–	
	BCM/SEC	Make sure of normal reception from BCM.	OK/UNKWN/–	
	VDC/TCS/ABS	Make sure of normal reception from VDC/TCS/ABS control unit.	OK/UNKWN/–	
		Make sure of normal reception from ABS actuator and electric unit (control unit).	OK/UNKWN/–	
	IPDM E/R	IPDM E/R is not diagnosed.	–	
	DISPLAY	DISPLAY is not diagnosed.	–	
	I-KEY	I-KEY is not diagnosed.	–	
	EPS	EPS is not diagnosed.	–	
	AWD/4WD	AWD/4WD is not diagnosed.	–	
	e4WD	e4WD is not diagnosed.	–	
	ICC	ICC is not diagnosed.	–	
	LANE KEEP	LANE KEEP is not diagnosed.	–	
	TIRE-P	Not available for CAN system diagnosis.	OK/UNKWN	

Display Results (Present)

- OK: Normal
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.
- –: There is no received unit or the unit is not in the condition that reception diagnosis is performed

Display Results (Past)

- OK: Normal
- 0: There is malfunction now.
- 1 ~ 39: Displays when it is normal at present and finds malfunction in the past. It increases like 0→1→2...38→39 after returning to the normal condition whenever IGN OFF→ON. If it is over 39, it is fixed to 39 until the self-diagnostic results are erased. It returns to 0 when malfunction is detected again in the process.
- –: Undiagnosed

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR BCM

(Example)

CAN DIAG SUPPORT MNTR

BCM	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
IPDM E/R	OK
METER/M&A	OK
I-KEY	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB1625E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
BCM	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	IPDM E/R	Make sure of normal reception from IPDM E/R.	OK/UNKWN
	METER/M&A	Make sure of normal reception from unified meter and A/C amp.	OK/UNKWN
	I-KEY	I-KEY is not diagnosed.	OK

Display Results (Present)

- OK: Normal
- NG: Malfunction
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

ABS models

(Example)

CAN DIAG SUPPORT MNTR

ABS	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
PRINT	
MODE / BACK / LIGHT / COPY	

PKIA8949E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
ABS	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN

Display Results (Present)

- OK: Normal
- NG: Malfunction
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.

TCS models

(Example)

CAN DIAG SUPPORT MNTR

ABS	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
TCM	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB0594E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present
ABS	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	TCM	Make sure of normal reception from TCM.	OK/UNKWN

Display Results (Present)

- OK: Normal
- NG: Malfunction
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.

DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN FOR VDC/TCS/ABS CONTROL UNIT

(Example)

CAN DIAG SUPPORT MNTR

ABS	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
TCM	OK
METER/M&A	OK
STRG	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB1626E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present
ABS	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	TCM	Make sure of normal reception from TCM.	OK/UNKWN
	METER/M&A	Make sure of normal reception from unified meter and A/C amp.	OK/UNKWN
	STRG	Make sure of normal reception from steering angle sensor.	OK/UNKWN

Display Results (Present)

- OK: Normal
- NG: Malfunction
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.

DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN FOR IPDM E/R

(Example)

CAN DIAG SUPPORT MNTR

IPDM E/R		
	PRSNT	PAST
TRANSMIT DIAG	OK	OK
ECM	OK	OK
BCM/SEC	OK	OK
PRINT		
MODE / BACK	LIGHT	COPY

SKIB0595E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present	Past
IPDM E/R	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN/–	OK/0/1~39/–
	ECM	Make sure of normal reception from ECM.	OK/UNKWN/–	
	BCM/SEC	Make sure of normal reception from BCM.	OK/UNKWN/–	

Display Results (Present)

- OK: Normal
- UNKWN: The diagnosed unit does not transmit or receive the applicable data normally.
- –: There is no received unit or the unit is not in the condition that reception diagnosis is performed

Display Results (Past)

- OK: Normal
- 0: There is malfunction now.
- 1 ~ 39: Displays when it is normal at present and finds malfunction in the past. It increases like 0→1→2...38→39 after returning to the normal condition whenever IGN OFF→ON. If it is over 39, it is fixed to 39 until the self-diagnostic results are erased. It returns to 0 when malfunction is detected again in the process.
- –: Undiagnosed

CAN COMMUNICATION

PFP:23710

System Description

AKS000ZF

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

CAN Communication Unit

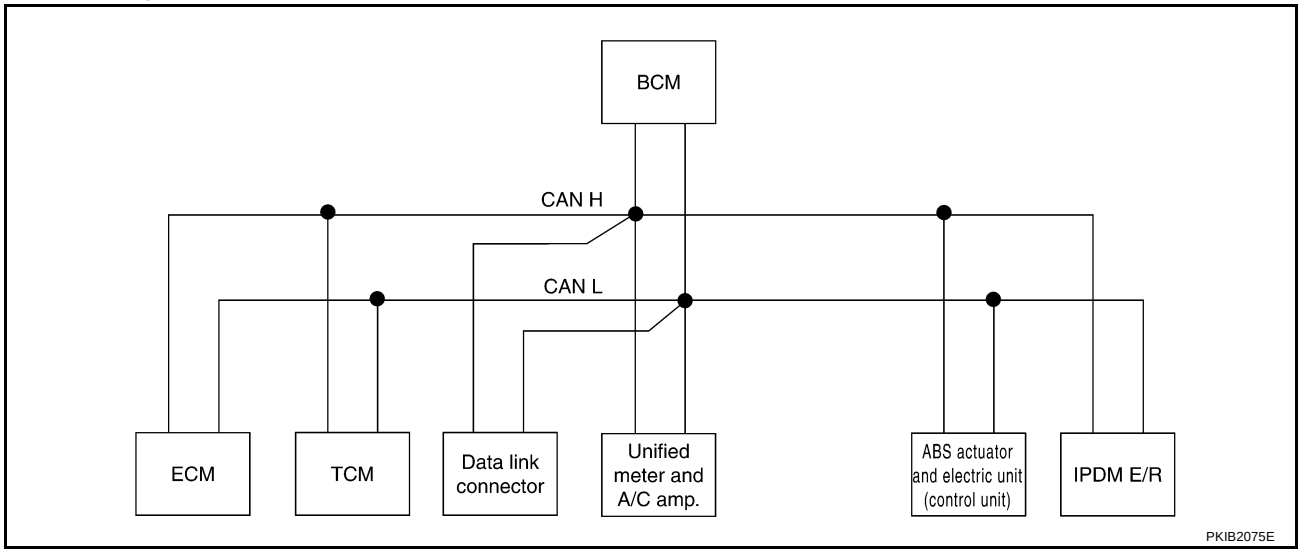
AKS00AVB

Go to CAN system, when selecting your CAN system type from the following table.

Body type	Coupe					Roadster		
Axle	2WD							
Engine	VQ35DE							
Transmission	A/T		M/T			A/T	M/T	
Brake control	TCS	VDC	ABS	TCS	VDC	TCS	TCS	VDC
CAN system type	1	5	2	3	4	1	3	4
CAN system trouble diagnosis	LAN-30	LAN-118	LAN-54	LAN-75	LAN-96	LAN-30	LAN-75	LAN-96

TYPE 1

System Diagram



Input/output Signal Chart

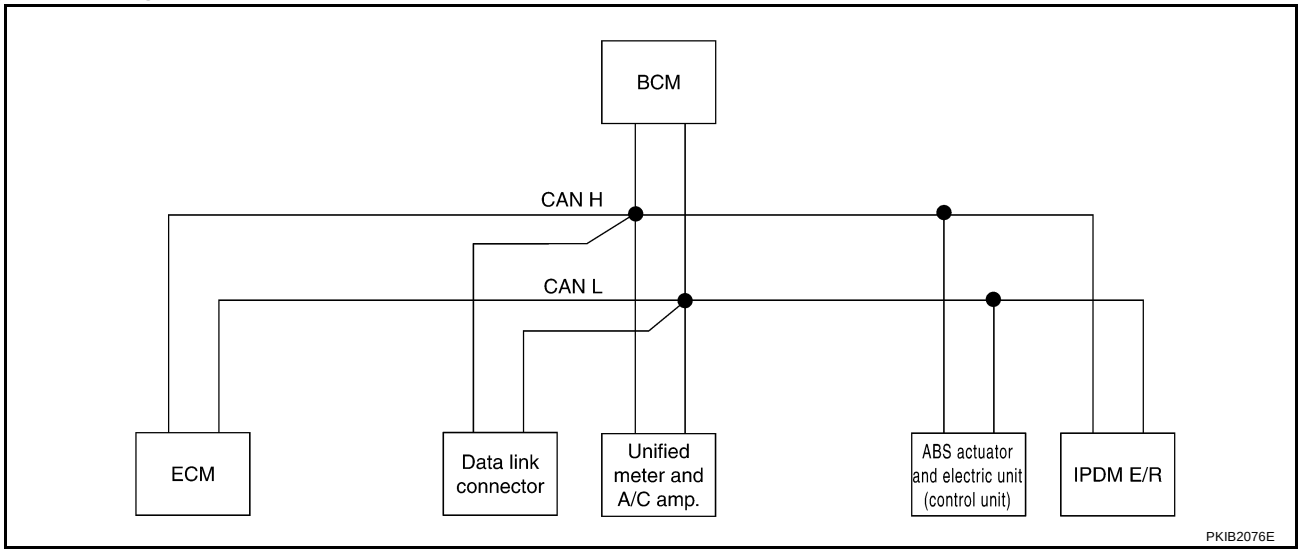
T: Transmit R: Receive

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R		R	
Engine coolant temperature signal	T		R			
Accelerator pedal position signal	T	R			R	
Closed throttle position signal	T	R				
Wide open throttle position signal	T	R				
Battery voltage signal	T	R				
Stop lamp switch signal		R	T			
Fuel consumption monitor signal	T		R			
A/T self-diagnosis signal	R	T				
A/T CHECK indicator lamp signal		T	R			
A/T position indicator signal		T	R		R	
Manual mode gear position signal		T	R			
ABS operation signal		R			T	
A/T shift schedule change demand signal		R			T	
A/C switch signal	R			T		
A/C compressor request signal	T					R
A/C compressor feedback signal	T		R			
Blower fan motor switch signal	R			T		
Cooling fan speed request signal	T					R
Position lights request signal			R	T		R
Low beam request signal				T		R
Low beam status signal	R					T
High beam request signal			R	T		R
High beam status signal	R					T
Day time running light request signal				T		R

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Vehicle speed signal			R		T	
	R	R	T	R		
Sleep request 1 signal			R	T		
Sleep request 2 signal				T		R
Wake up request 1 signal			R	T		
Door switch signal			R	T		R
Turn indicator signal			R	T		
Seat belt buckle switch signal			T	R		
Buzzer output signal			R	T		
Fuel level sensor signal	R		T			
Malfunction indicator lamp signal	T		R			
ASCD SET lamp signal	T		R			
ASCD operation signal	T	R				
ASCD CRUISE lamp signal	T		R			
ASCD OD cancel request signal	T	R				
Output shaft revolution signal	R	T				
Turbine revolution signal	R	T				
Front wiper request signal				T		R
Front wiper stop position signal				R		T
Rear window defogger switch signal				T		R
Rear window defogger control signal	R					T
Manual mode signal		R	T			
Not manual mode signal		R	T			
Manual mode shift up signal		R	T			
Manual mode shift down signal		R	T			
Manual mode indicator signal		T	R			
Theft warning horn request signal				T		R
Horn chirp signal				T		R
Ignition switch signal				T		R
ABS warning lamp signal			R		T	
TCS OFF indicator lamp signal			R		T	
SLIP indicator lamp signal			R		T	
Brake warning lamp signal			R		T	

TYPE 2

System Diagram



Input/output Signal Chart

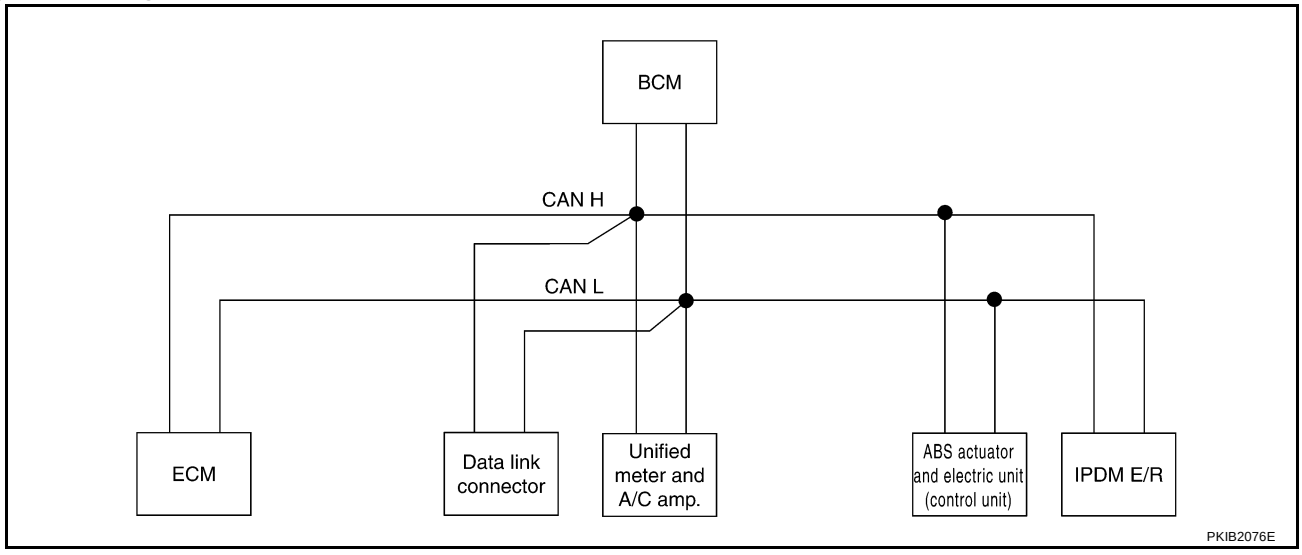
T: Transmit R: Receive

Signals	ECM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	
Engine coolant temperature signal	T	R			
Accelerator pedal position signal	T			R	
Fuel consumption monitor signal	T	R			
A/C switch signal	R		T		
A/C compressor request signal	T				R
A/C compressor feedback signal	T	R			
Blower fan motor switch signal	R		T		
Cooling fan speed request signal	T				R
Position lights request signal		R	T		R
Low beam request signal			T		R
Low beam status signal	R				T
High beam request signal		R	T		R
High beam status signal	R				T
Day time running light request signal			T		R
Vehicle speed signal		R		T	
	R	T	R		
Sleep request 1 signal		R	T		
Sleep request 2 signal			T		R
Wake up request 1 signal		R	T		
Door switch signal		R	T		R
Turn indicator signal		R	T		
Seat belt buckle switch signal		T	R		
Buzzer output signal		R	T		
Fuel level sensor signal	R	T			
Malfunction indicator lamp signal	T	R			

Signals	ECM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
ASCD SET lamp signal	T	R			
ASCD CRUISE lamp signal	T	R			
Front wiper request signal			T		R
Front wiper stop position signal			R		T
Rear window defogger switch signal			T		R
Rear window defogger control signal	R				T
Theft warning horn request signal			T		R
Horn chirp signal			T		R
Ignition switch signal			T		R
ABS warning lamp signal		R		T	
Brake warning lamp signal		R		T	

TYPE 3

System Diagram



Input/output Signal Chart

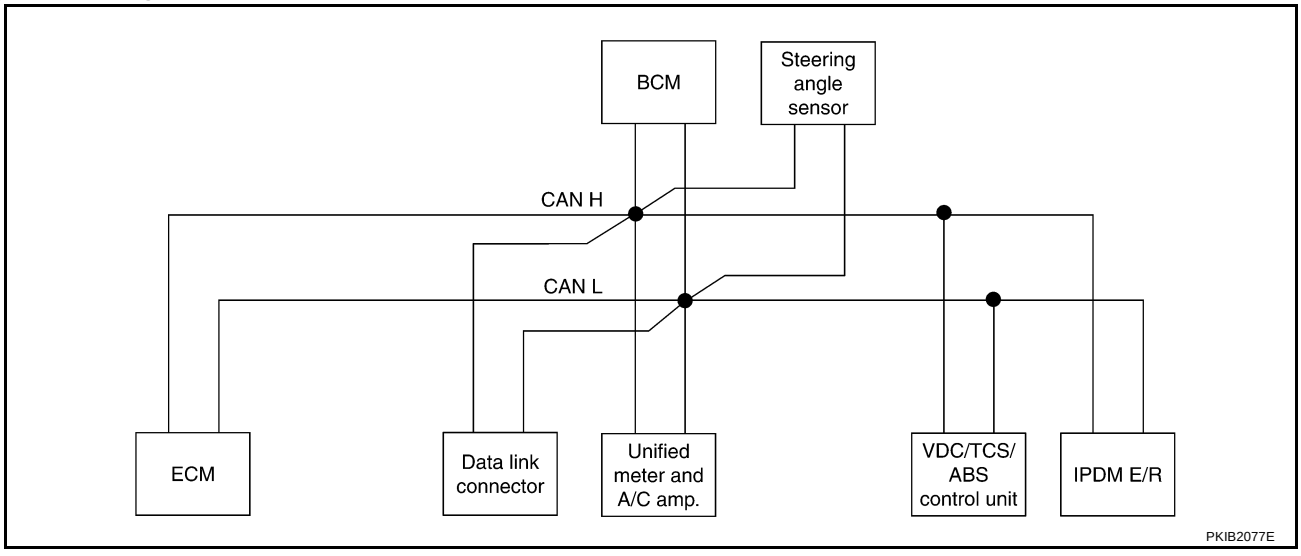
T: Transmit R: Receive

Signals	ECM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	
Engine coolant temperature signal	T	R			
Accelerator pedal position signal	T			R	
Fuel consumption monitor signal	T	R			
A/C switch signal	R		T		
A/C compressor request signal	T				R
A/C compressor feedback signal	T	R			
Blower fan motor switch signal	R		T		
Cooling fan speed request signal	T				R
Position lights request signal		R	T		R
Low beam request signal			T		R
Low beam status signal	R				T

Signals	ECM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
High beam request signal		R	T		R
High beam status signal	R				T
Day time running light request signal			T		R
Vehicle speed signal		R		T	
	R	T	R		
Sleep request 1 signal		R	T		
Sleep request 2 signal			T		R
Wake up request 1 signal		R	T		
Door switch signal		R	T		R
Turn indicator signal		R	T		
Seat belt buckle switch signal		T	R		
Buzzer output signal		R	T		
Fuel level sensor signal	R	T			
Malfunction indicator lamp signal	T	R			
ASCD SET lamp signal	T	R			
ASCD CRUISE lamp signal	T	R			
Front wiper request signal			T		R
Front wiper stop position signal			R		T
Rear window defogger switch signal			T		R
Rear window defogger control signal	R				T
Theft warning horn request signal			T		R
Horn chirp signal			T		R
Ignition switch signal			T		R
ABS warning lamp signal		R		T	
TCS OFF indicator lamp signal		R		T	
SLIP indicator lamp signal		R		T	
Brake warning lamp signal		R		T	

TYPE 4

System Diagram



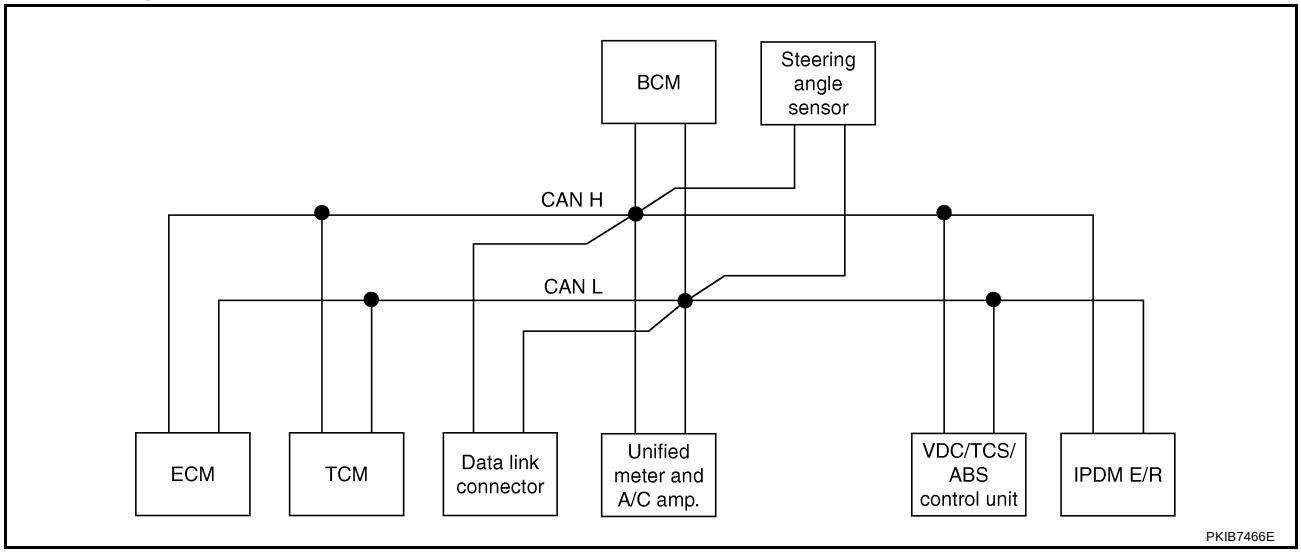
Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	Unified meter and A/C amp.	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
A/C switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan speed request signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R					T
High beam request signal		R	T			R
High beam status signal	R					T
Day time running light request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Door switch signal		R	T			R
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Buzzer output signal		R	T			
Fuel level sensor signal	R	T				
Malfunction indicator signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R					T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Ignition switch signal			T			R
Steering angle sensor signal				T	R	
Tire pressure signal		R	T			
ABS warning lamp signal		R			T	
VDC OFF indicator lamp signal		R			T	
SLIP indicator lamp signal		R			T	
Brake warning lamp signal		R			T	

TYPE 5

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T		R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
Manual mode gear position signal		T	R				
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
A/C switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan speed request signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	R						T
Day time running light request signal				T			R

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Door switch signal			R	T			R
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Buzzer output signal			R	T			
Fuel level sensor signal	R		T				
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD operation signal	T	R					
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R						T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Ignition switch signal				T			R
Steering angle sensor signal					T	R	
ABS warning lamp signal			R			T	
TCS OFF indicator lamp signal			R			T	
SLIP indicator lamp signal			R			T	
Brake warning lamp signal			R			T	

CAN SYSTEM (TYPE 1)

PFP:23710

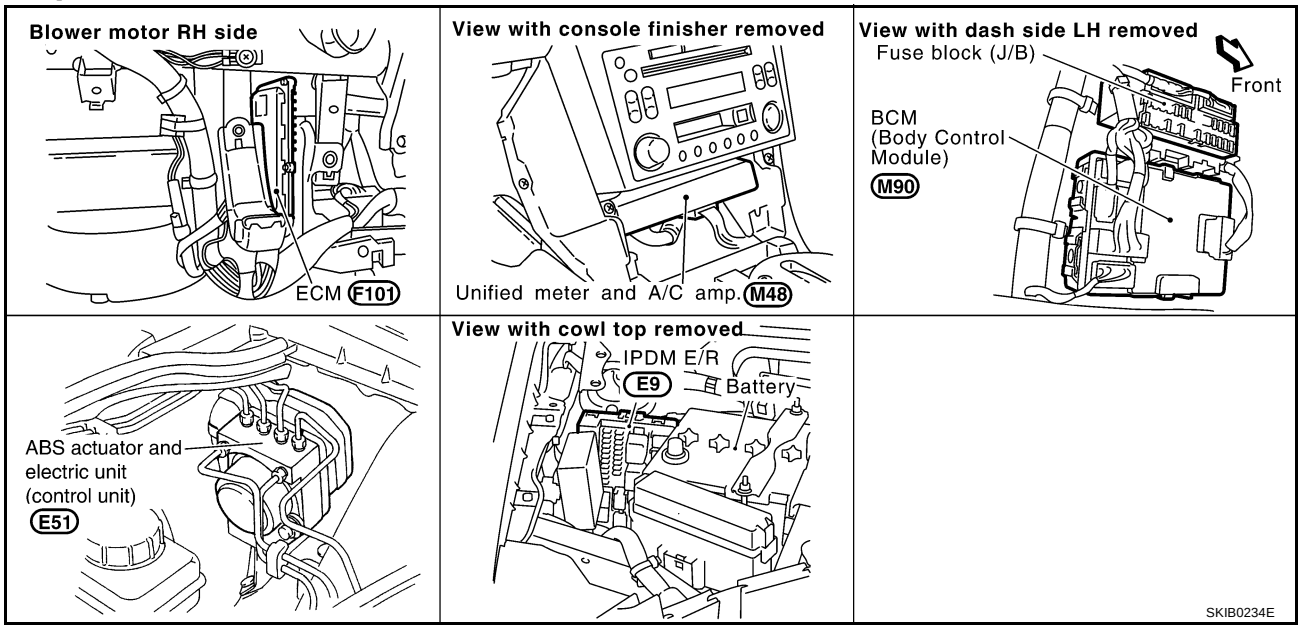
System Description

AKS00A8P

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

Component Parts and Harness Connector Location

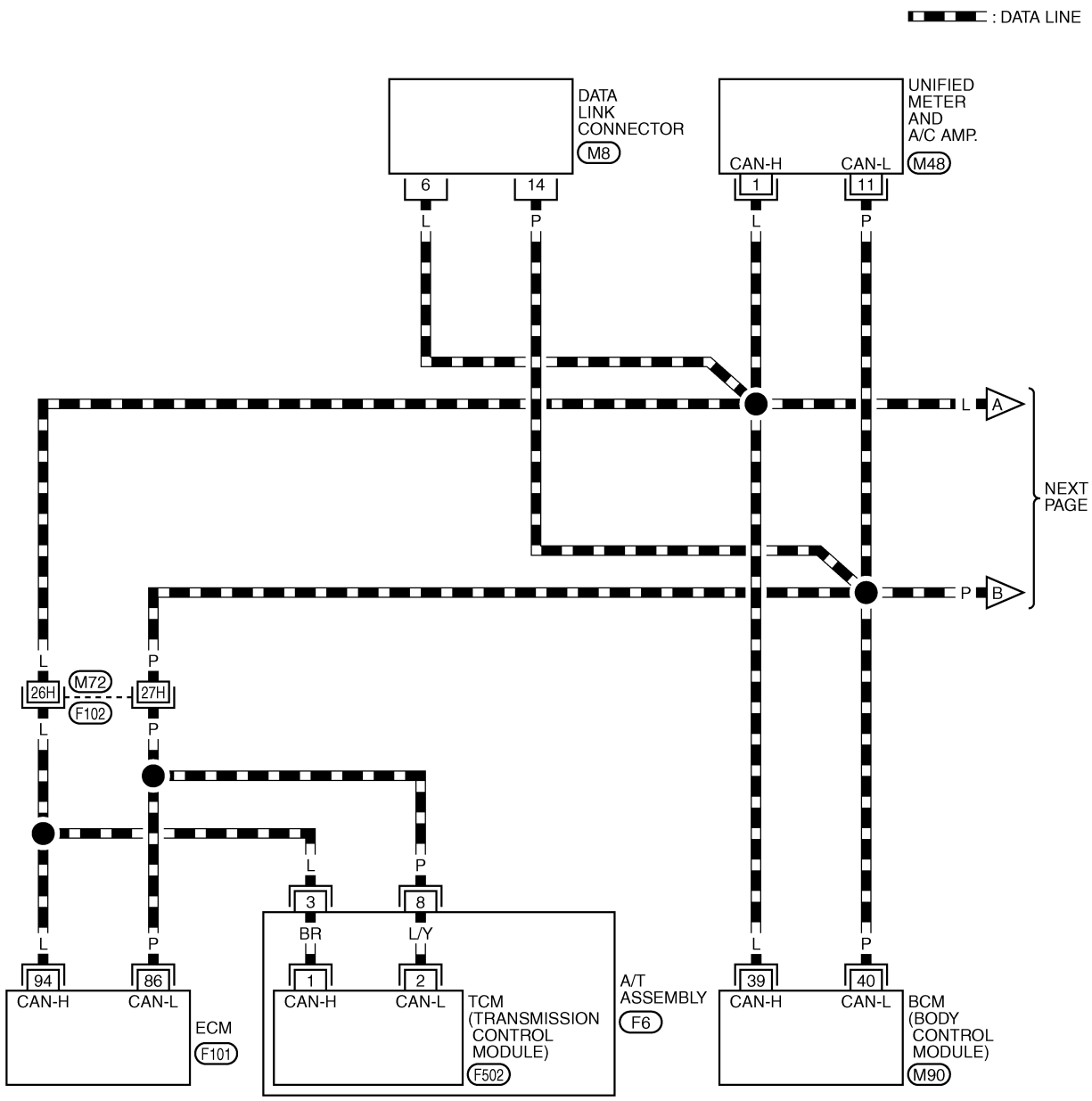
AKS00A8Q

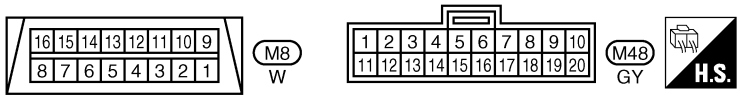


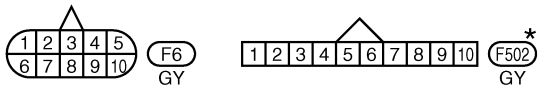
Wiring Diagram — CAN —

AKS00A8R

LAN-CAN-01





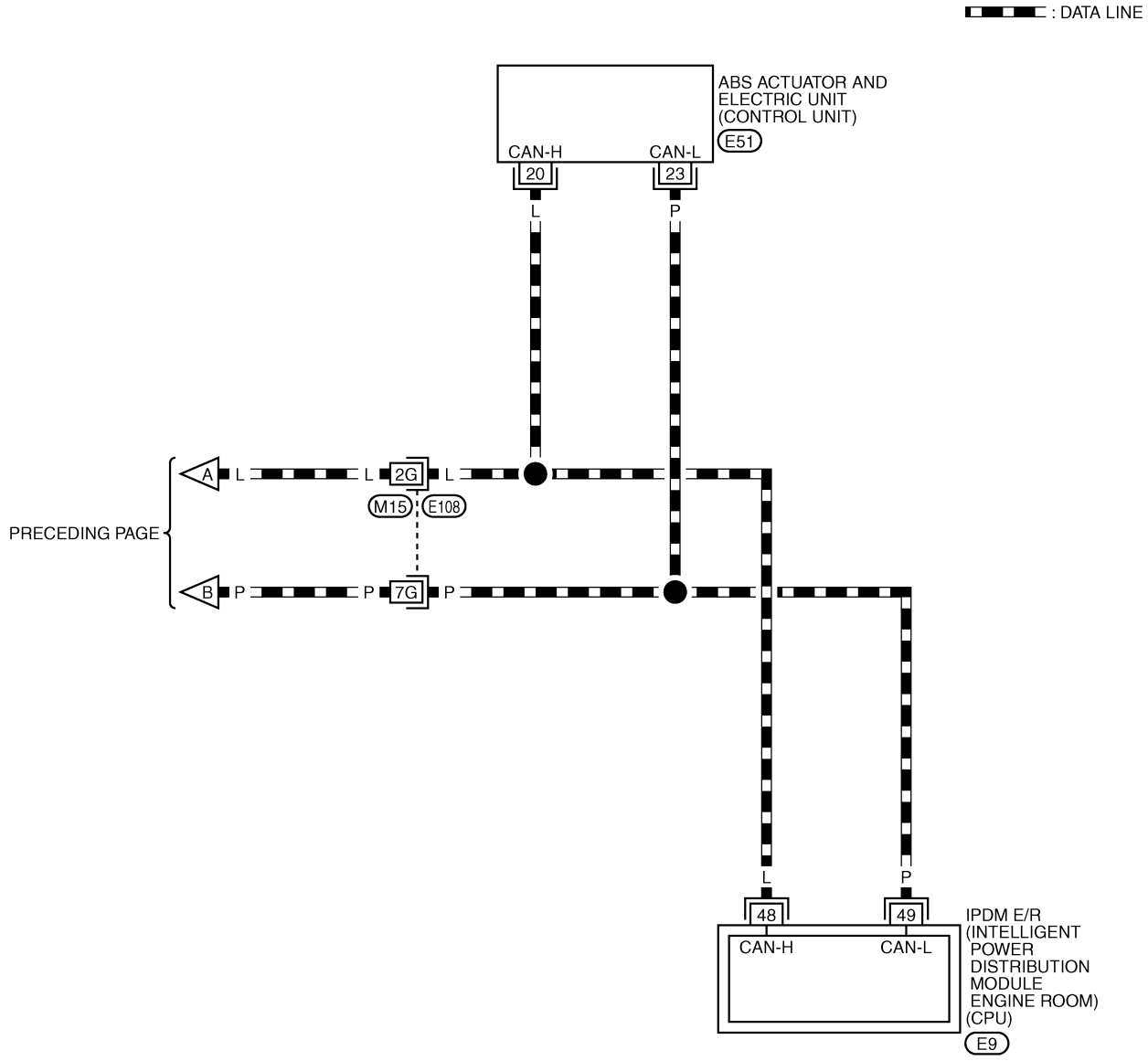


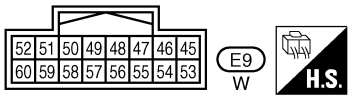
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M90, F101 -ELECTRICAL UNITS

TKWT2517E

LAN-CAN-02





REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

E51 -ELECTRICAL UNITS

TKWT1554E

CHECK SHEET

AKS00A8S

NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Check sheet table

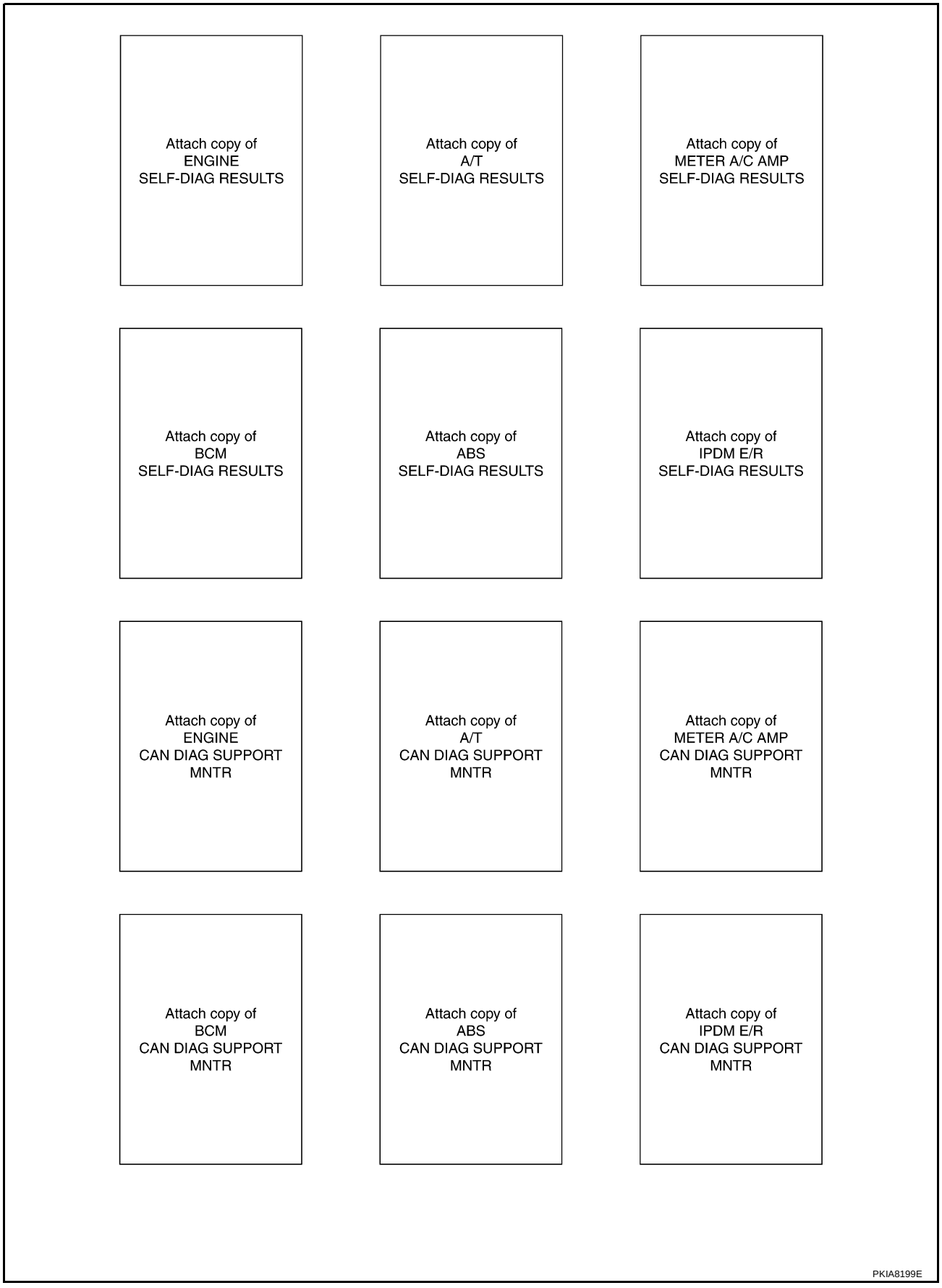
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB2210E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
METER A/C AMP
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8199E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

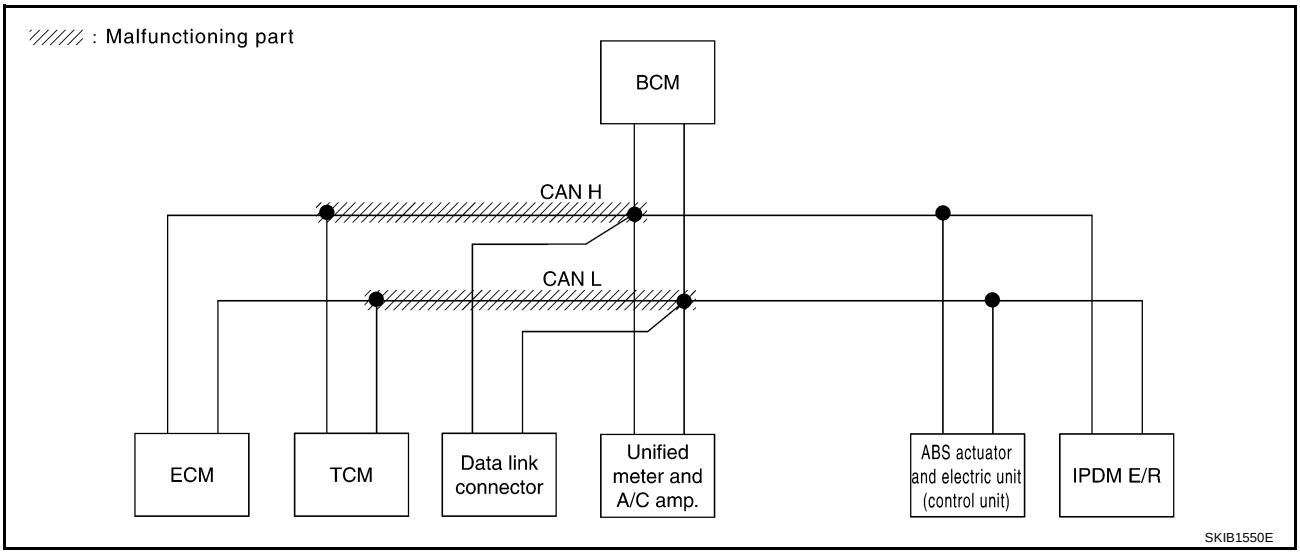
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-45, "Inspection Between TCM and Data Link Connector Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	–	NG	UNKWN	UNKWN	–	UNKWN ✓	–	UNKWN ✓	–	CAN COMM CIRCUIT (U1000) ✓	–
METER A/C AMP	No indication	–	UNKWN	UNKWN ✓	UNKWN ✓	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN ✓	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN ✓	UNKWN ✓	–	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication	–	UNKWN	UNKWN ✓	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000) ✓	–

PKIB2211E



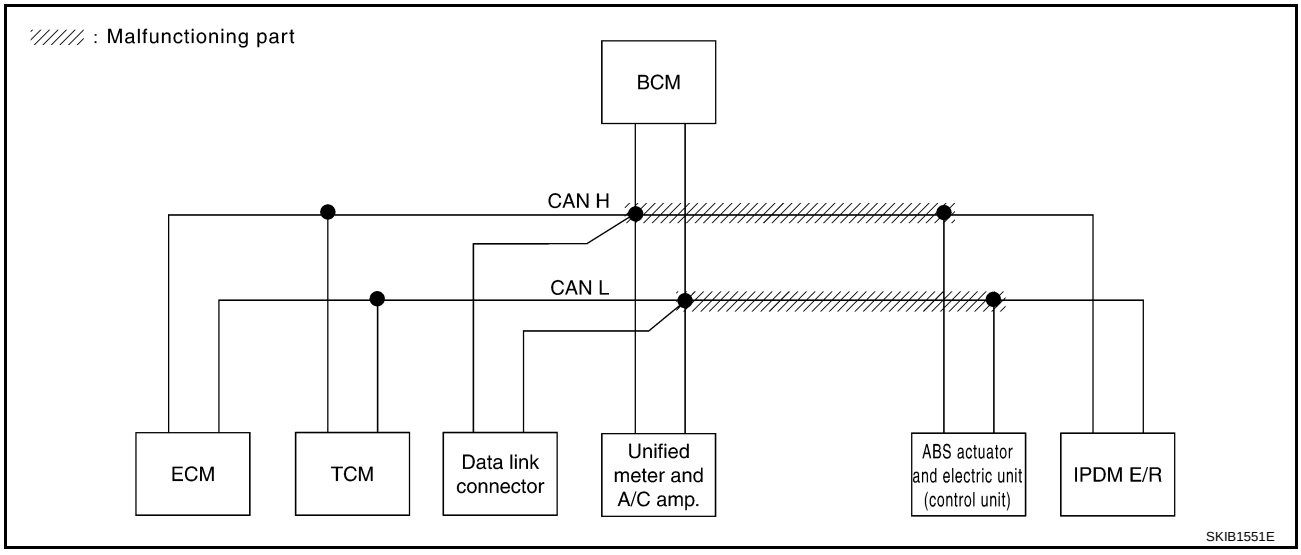
SKIB1550E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-45, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2212E

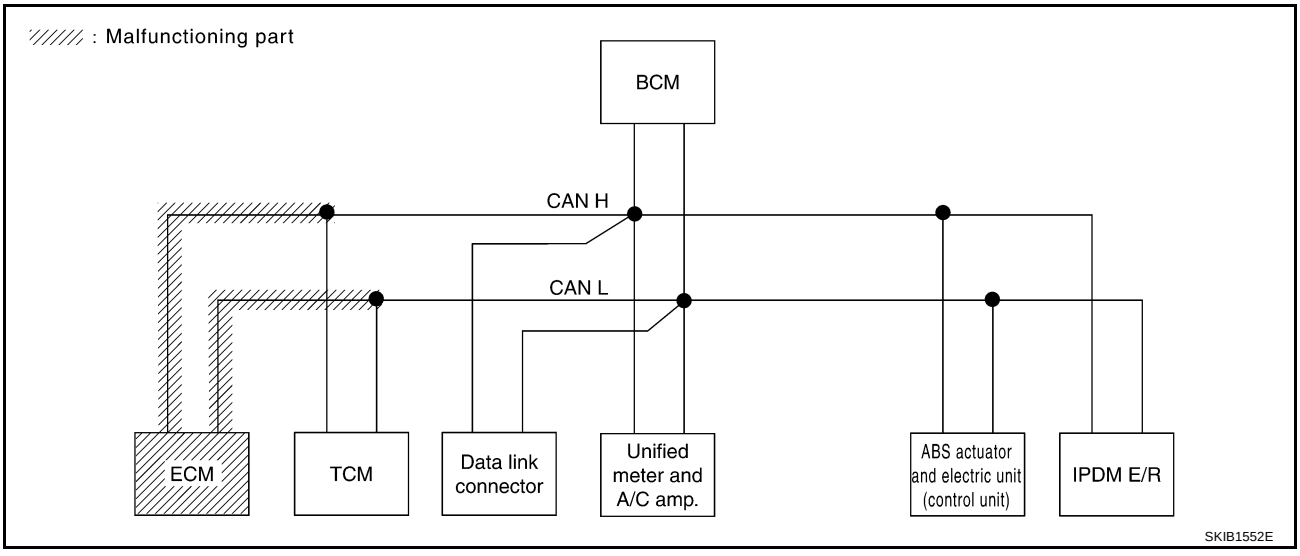


Case 3

Check ECM circuit. Refer to LAN-46, "ECM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2213E

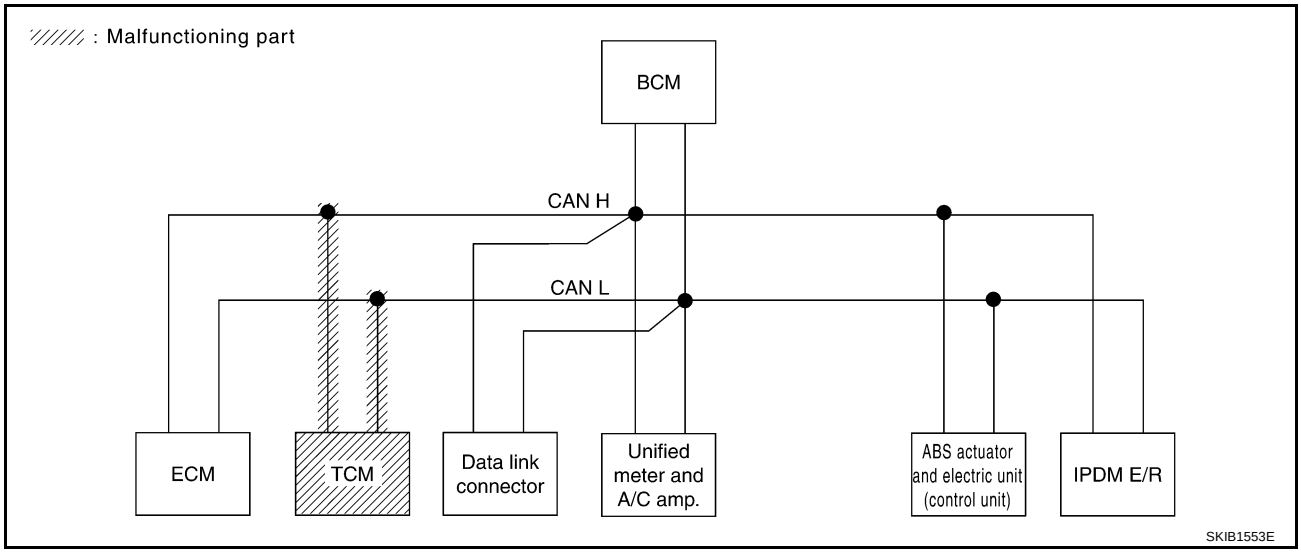


Case 4

Check TCM circuit. Refer to LAN-47, "TCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2214E

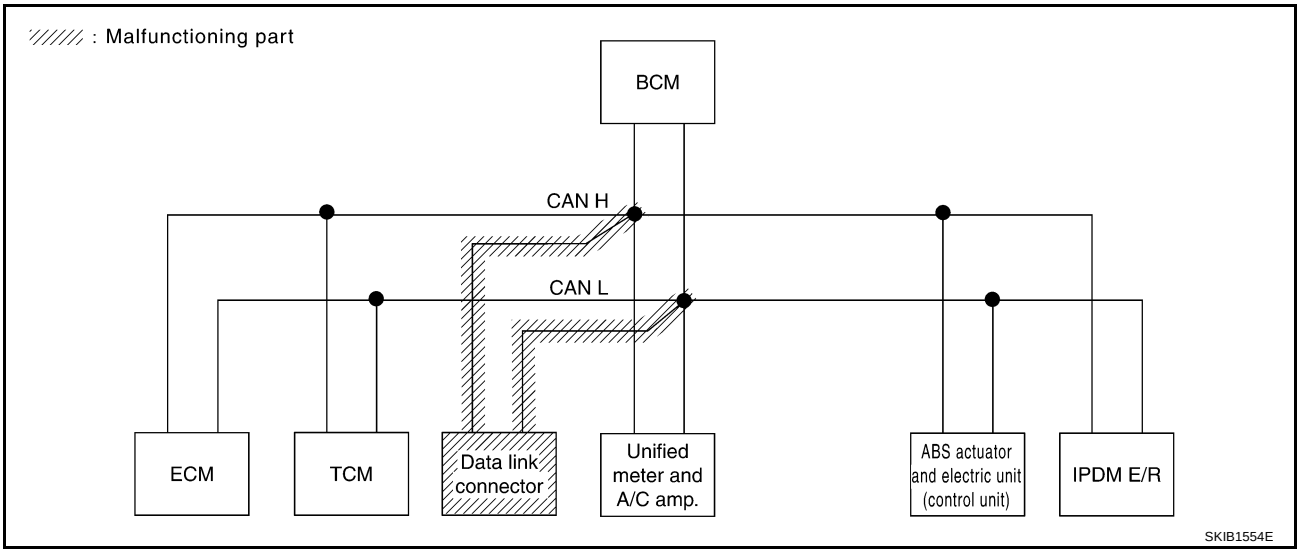


Case 5

Check data link connector circuit. Refer to LAN-47, "Data Link Connector Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2215E

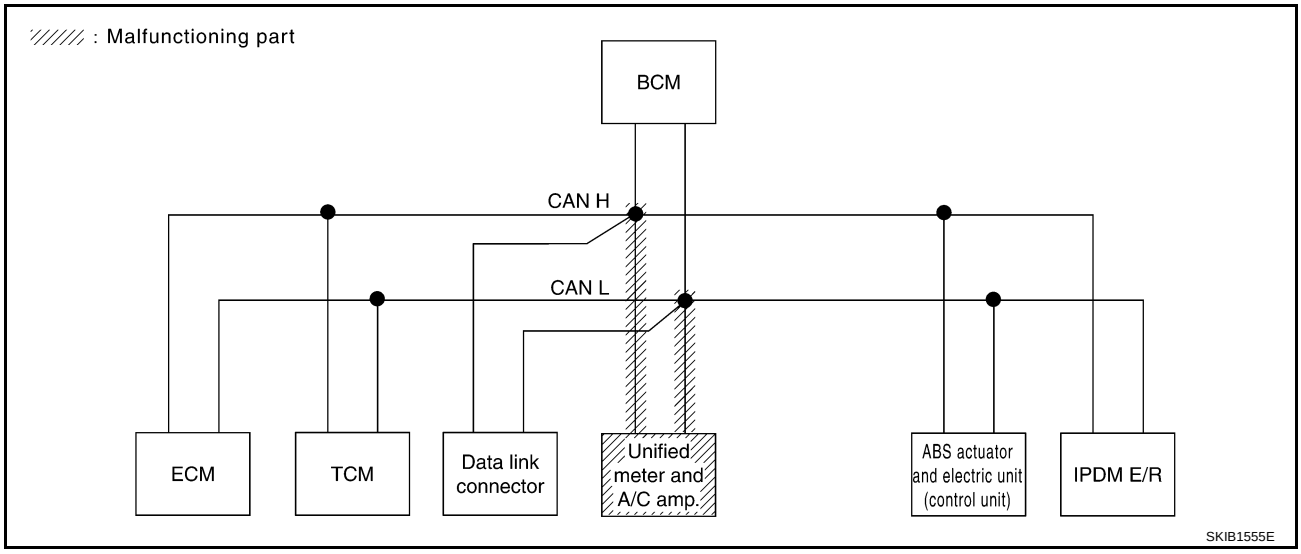


Case 6

Check unified meter and A/C amp. circuit. Refer to LAN-48, "Unified Meter and A/C Amp. Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN ✓	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	–	NG	UNKWN	UNKWN	–	UNKWN ✓	–	UNKWN	–	CAN COMM CIRCUIT (U1000) ✓	–
METER A/C AMP	No indication ✓	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN ✓	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2216E

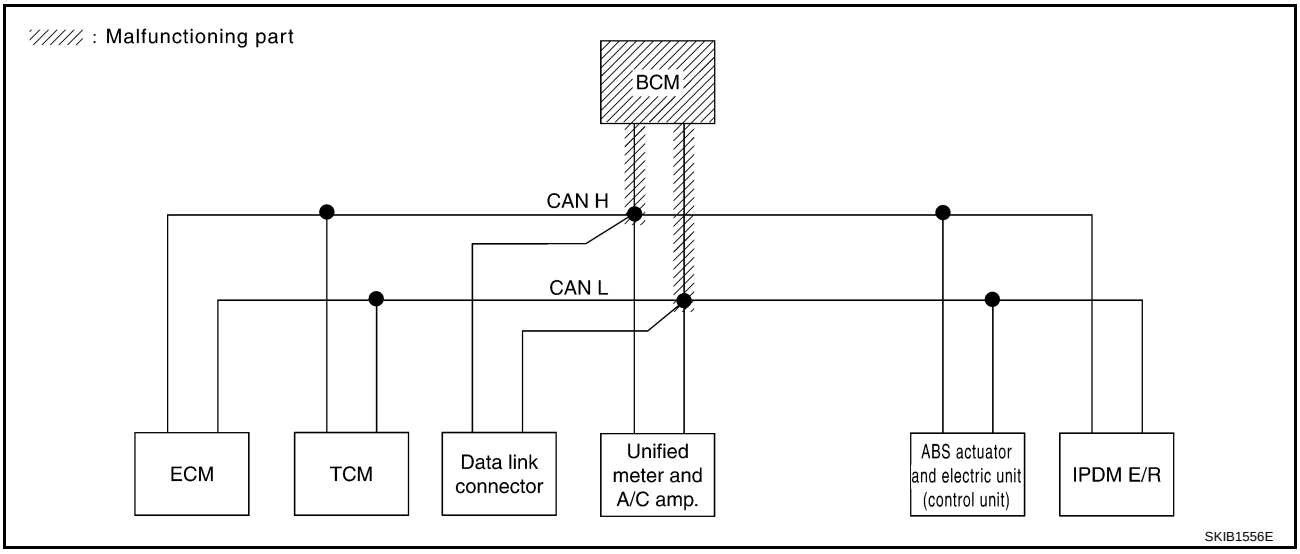


Case 7

Check BCM circuit. Refer to LAN-48, "BCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2217E



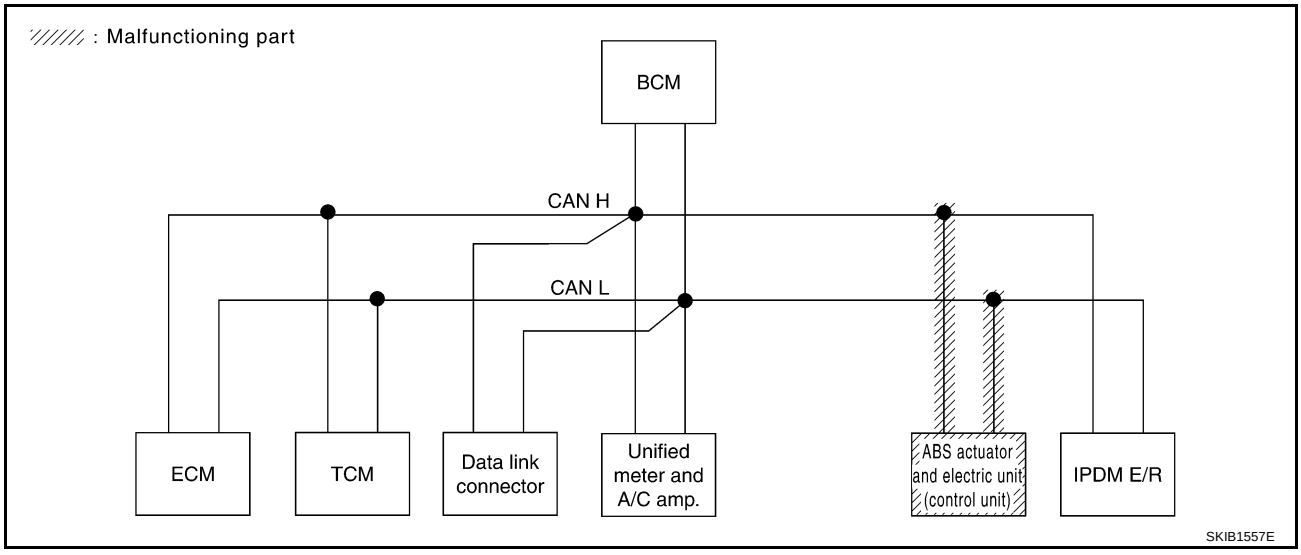
SKIB1556E

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-49, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2218E

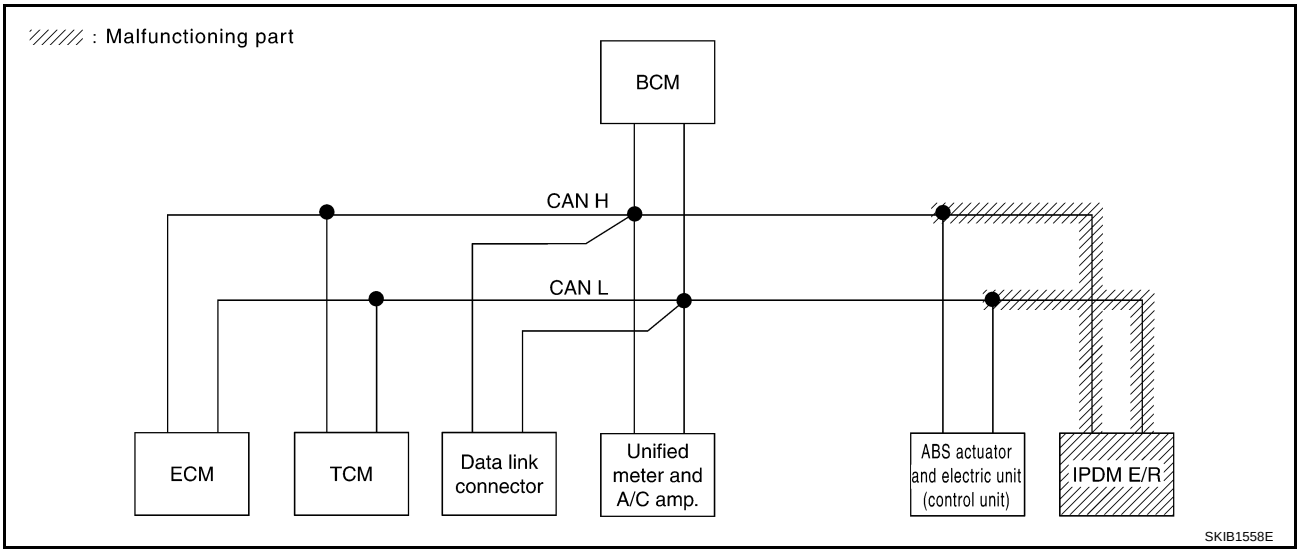


Case 9

Check IPDM E/R circuit. Refer to LAN-49, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2219E



SKIB1558E

Case 10

Check CAN communication circuit. Refer to LAN-50, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2220E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-53, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2221E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-53, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	–	–	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	–	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2222E

Inspection Between TCM and Data Link Connector Circuit

AKS00A8T

1. CHECK CONNECTOR

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

- Harness connector F102
- Harness connector M72

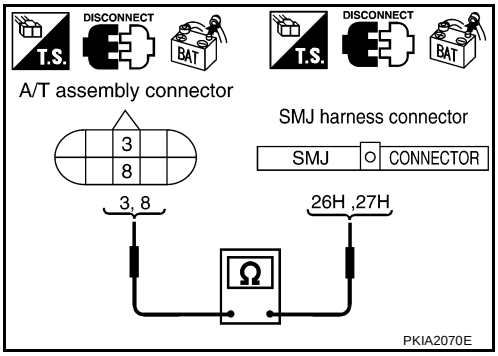
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F6 terminals 3 (L), 8 (P) and harness connector F102 terminals 26H (L), 27H (P).

3 (L) – 26H (L) : Continuity should exist.
8 (P) – 27H (P) : Continuity should exist.



OK or NG

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

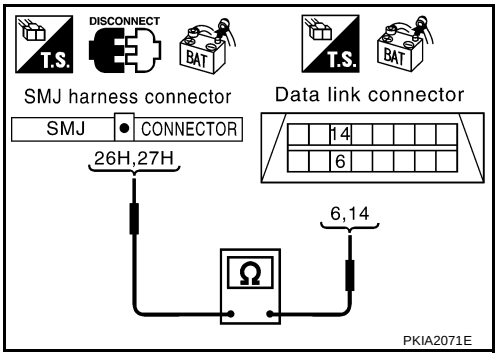
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 26H (L), 27H (P) and data link connector M8 terminals 6 (L), 14 (P).

26H (L) – 6 (L) : Continuity should exist.
27H (P) – 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.



Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit

AKS00A8W

1. CHECK CONNECTOR

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

- Harness connector M15
- Harness connector E108

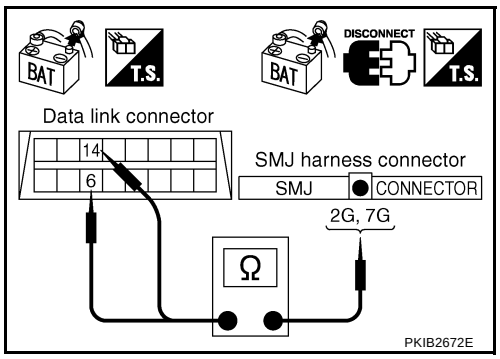
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and harness connector M15 terminals 2G (L), 7G (P).

6 (L) – 2G (L) : Continuity should exist.
14 (P) – 7G (P) : Continuity should exist.



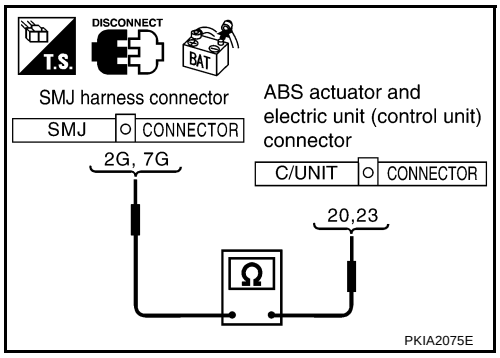
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L), 23 (P).

2G (L) – 20 (L) : Continuity should exist.
7G (P) – 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Inspection

AKS00A8X

1. CHECK CONNECTOR

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

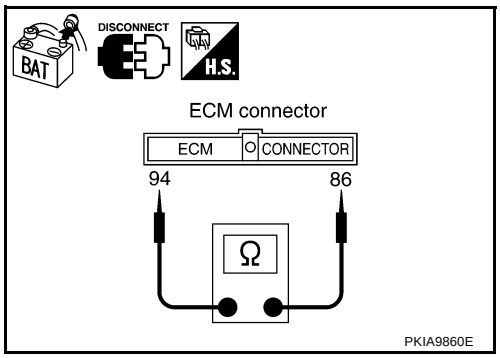
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Inspection

AKS00A8Y

1. CHECK CONNECTOR

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

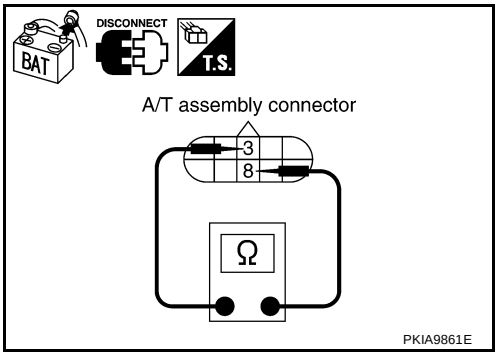
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F6 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F102.

Data Link Connector Circuit Inspection

AKS00A8Z

1. CHECK CONNECTOR

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

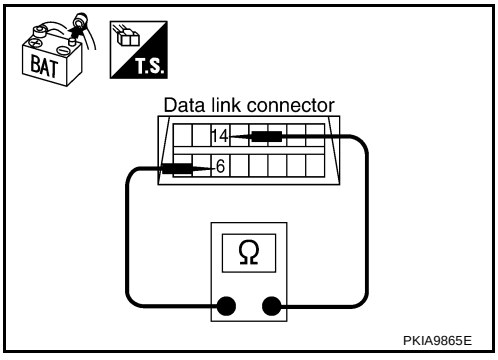
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-5, "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

AKS00A90

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).

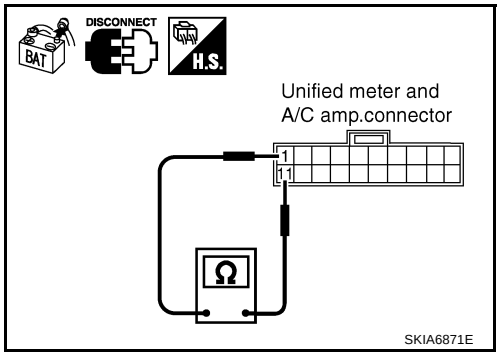
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS00A91

1. CHECK CONNECTOR

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

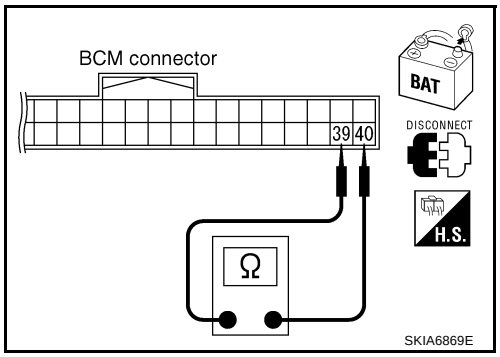
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

AKS00A92

1. CHECK CONNECTOR

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

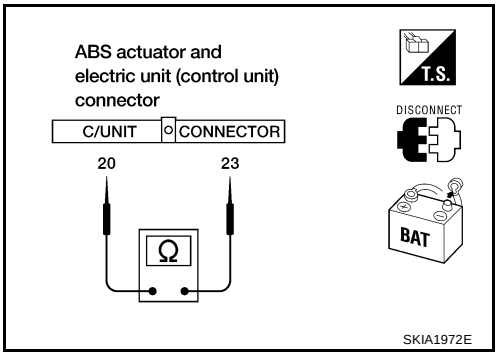
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L) and 23 (P).

20 (L) – 23 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

AKS00A93

1. CHECK CONNECTOR

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

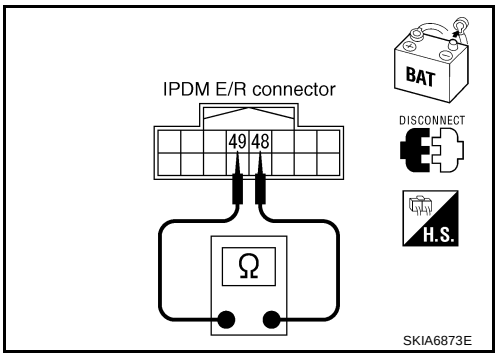
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E108.

CAN Communication Circuit Inspection

AKS00A94

1. CHECK CONNECTOR

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

- ECM
- A/T assembly
- Unified meter and A/C amp.
- BCM
- ABS actuator and electric unit (control unit)
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

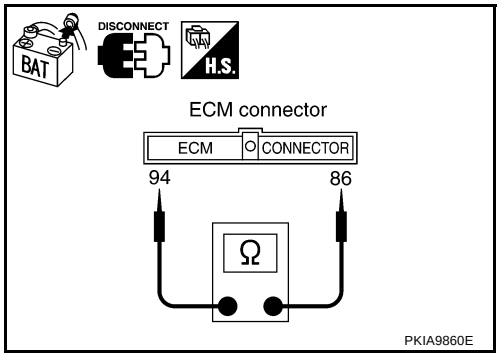
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- A/T assembly connector
- Harness connector F102

2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.



OK or NG

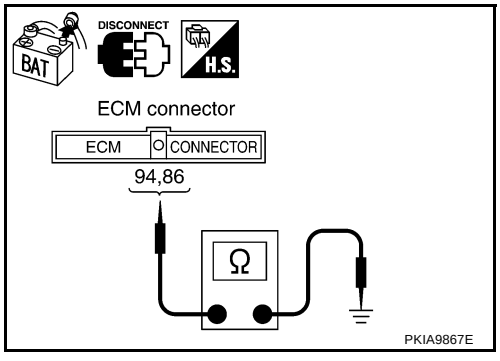
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – Ground : Continuity should not exist.
86 (P) – Ground : Continuity should not exist.



OK or NG

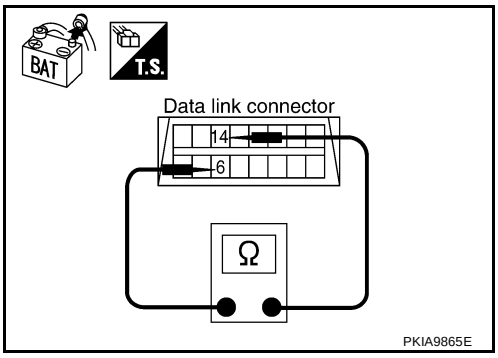
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Unified meter and A/C amp. connector
- BCM connector
- Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

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



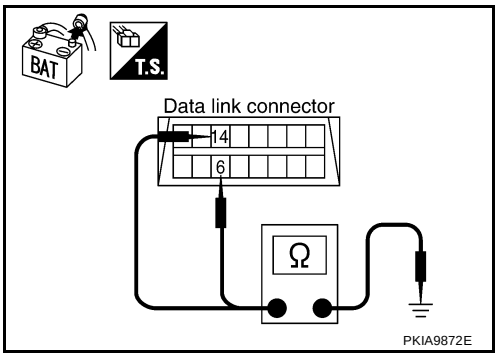
OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M8 terminals 6 (L), 14 (P) and ground.

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



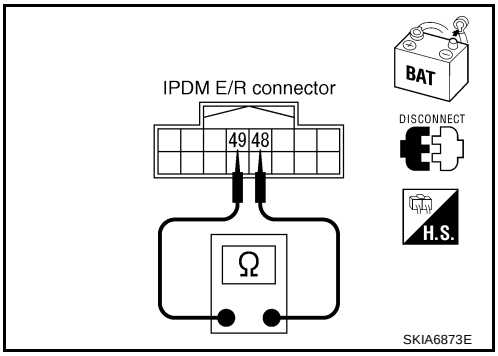
OK or NG

OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Continuity should not exist.



OK or NG

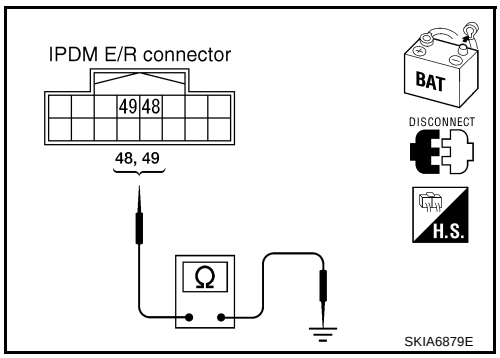
OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (P) and ground.

48 (L) – Ground : Continuity should not exist.

49 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108

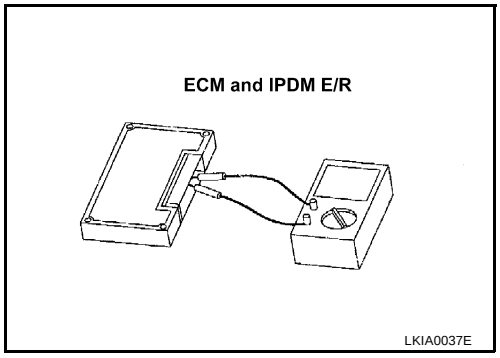
8. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.

94 – 86 : Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 9.

NG >> Replace ECM and/or IPDM E/R.

9. CHECK SYMPTOM

1. Fill in described symptoms on the column “Symptom” in the check sheet.
2. Connect all the connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. 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 reproduced.

- A/T assembly
- Unified meter and A/C amp.
- BCM
- 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

AKS00C6R

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

- IPDM E/R power supply circuit. Refer to PG-26, "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”" .

CAN SYSTEM (TYPE 2)

PFP:23710

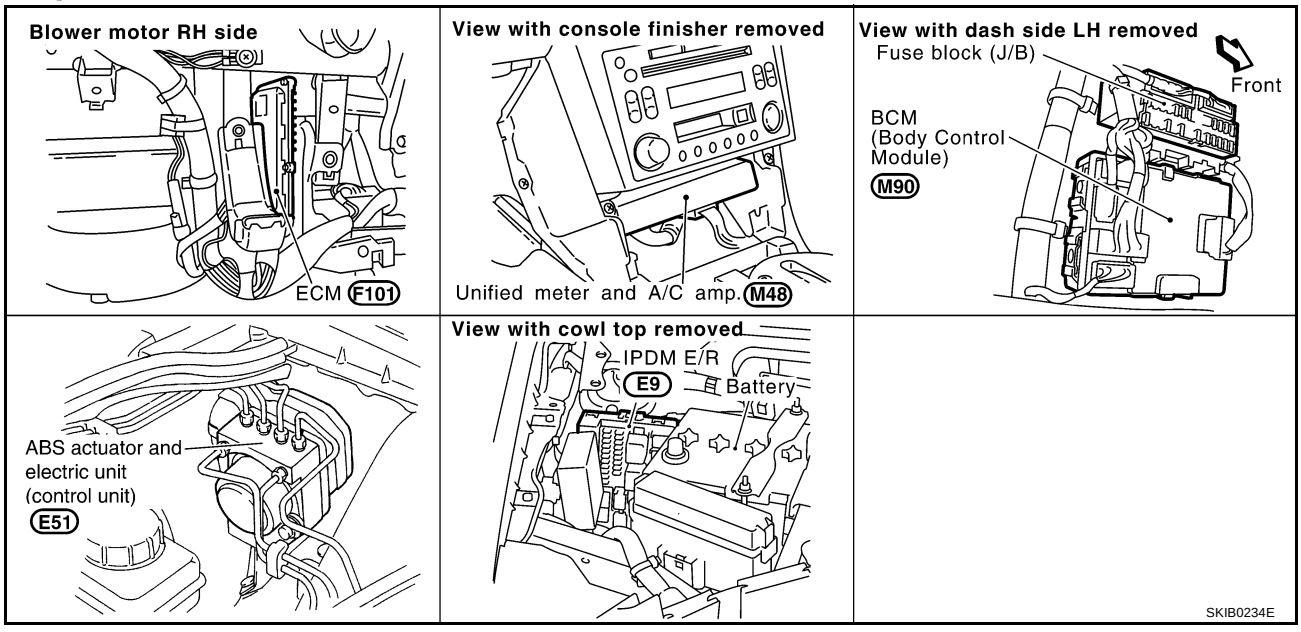
System Description

AKS009DC

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

Component Parts and Harness Connector Location

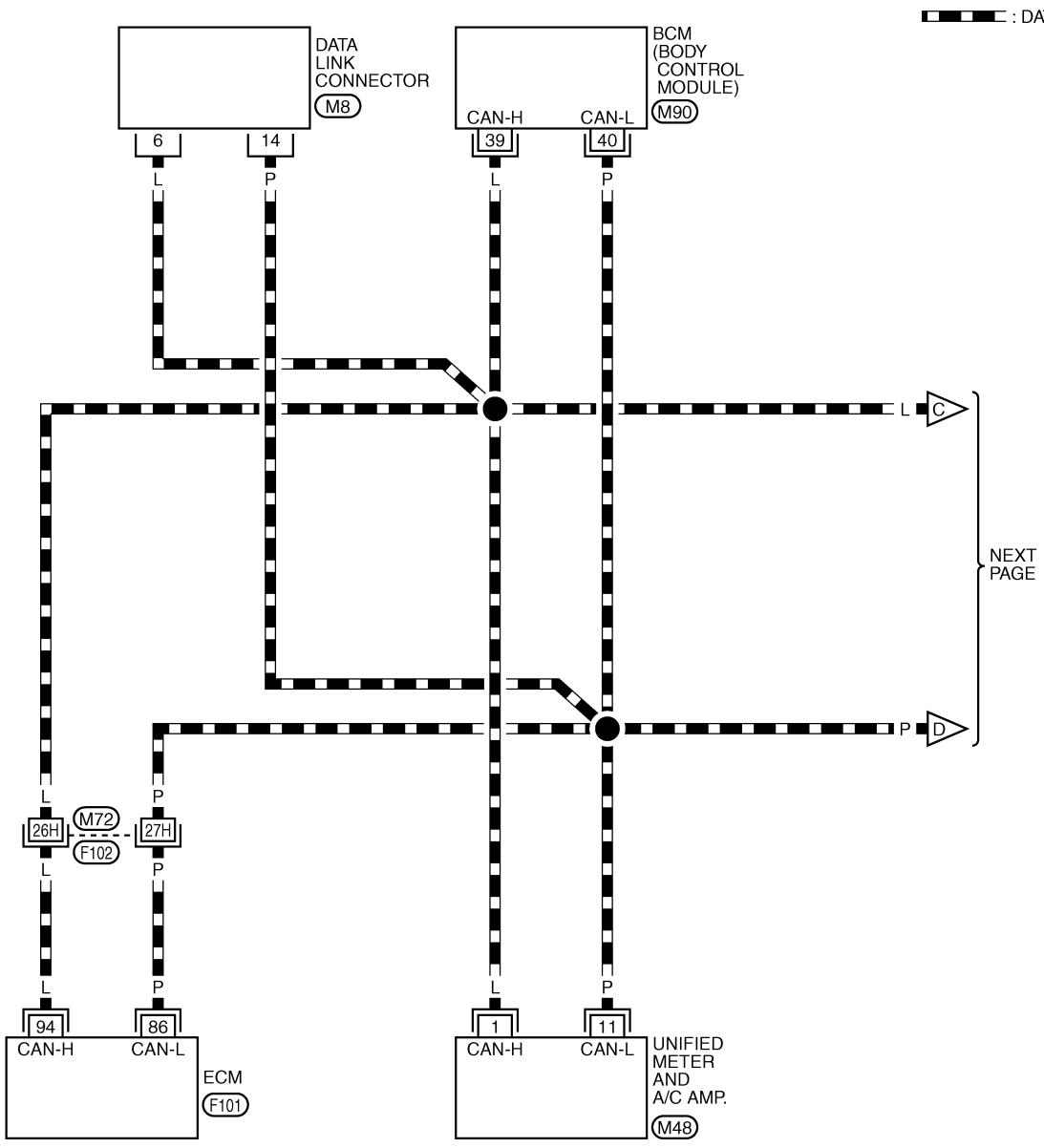
AKS009DD

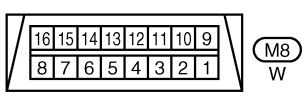


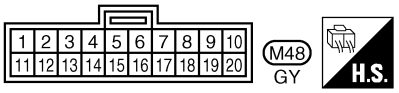
Wiring Diagram — CAN —

AKS009DE

LAN-CAN-03



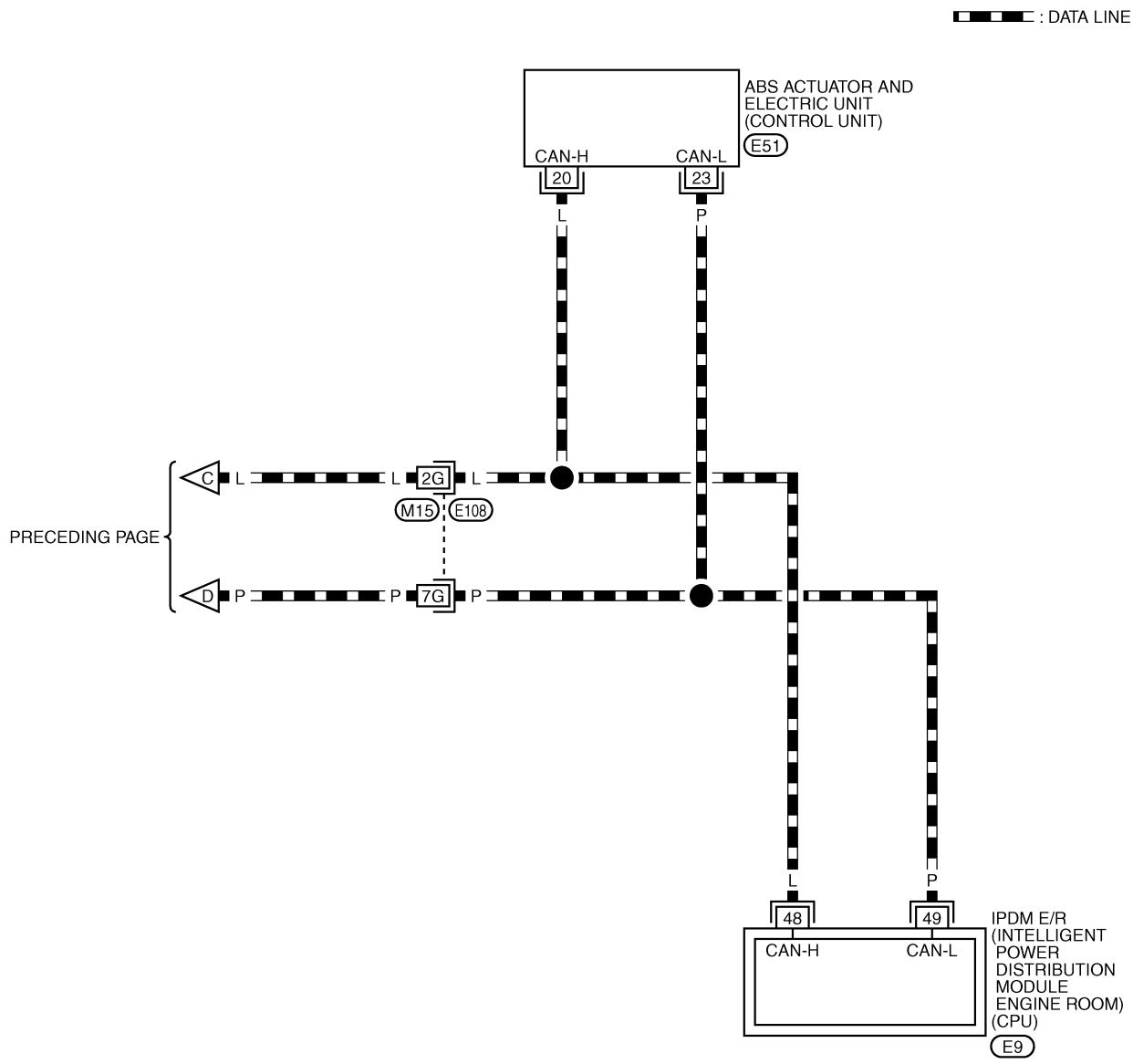


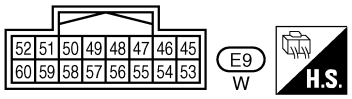


REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M90 , F101 -ELECTRICAL UNITS

TKWT2518E

LAN-CAN-04





REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
E51 -ELECTRICAL UNITS

TKWT1555E

CHECK SHEET

AKS00A9N

NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Check sheet table

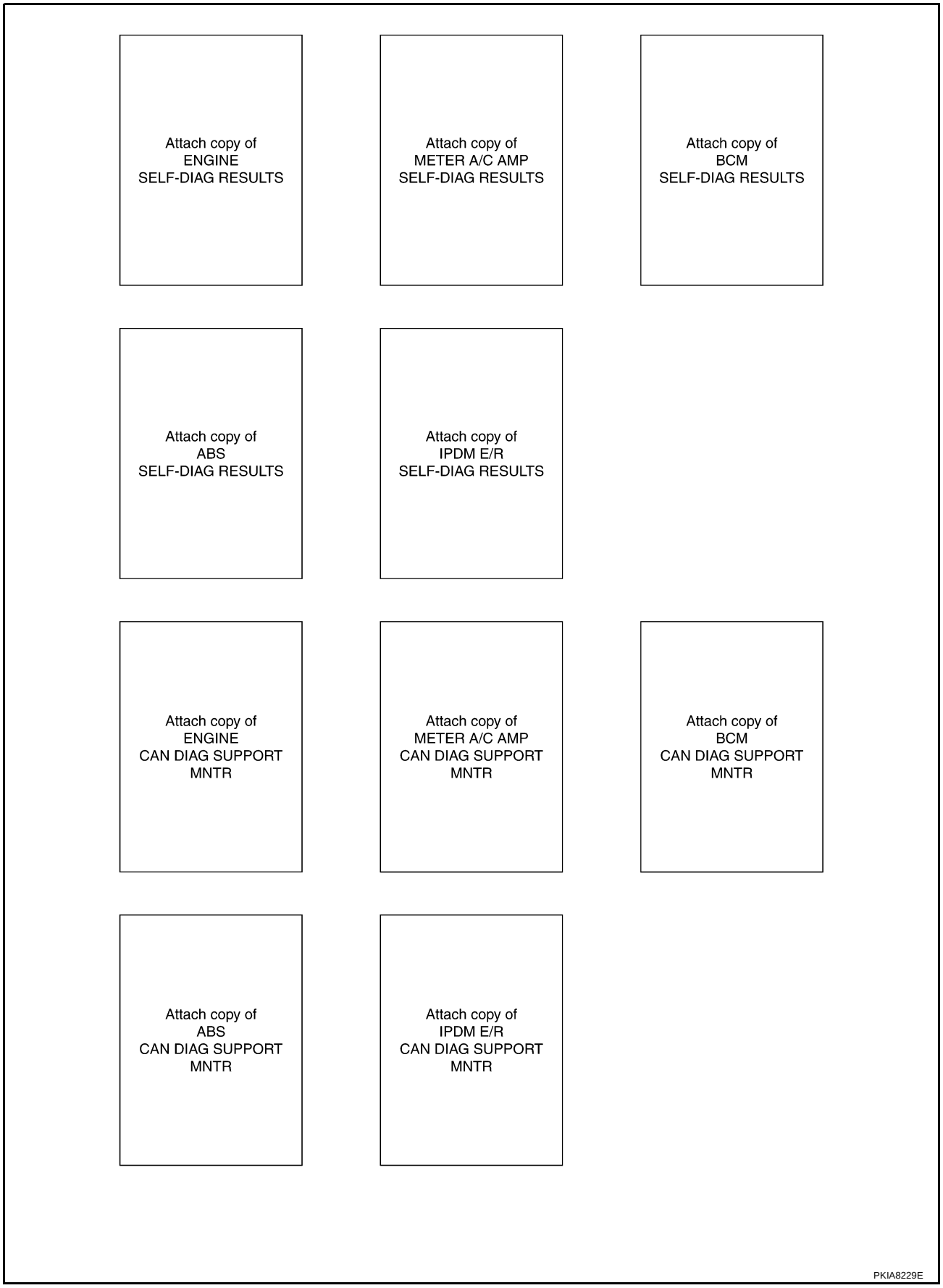
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB2223E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
METER A/C AMP
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8229E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

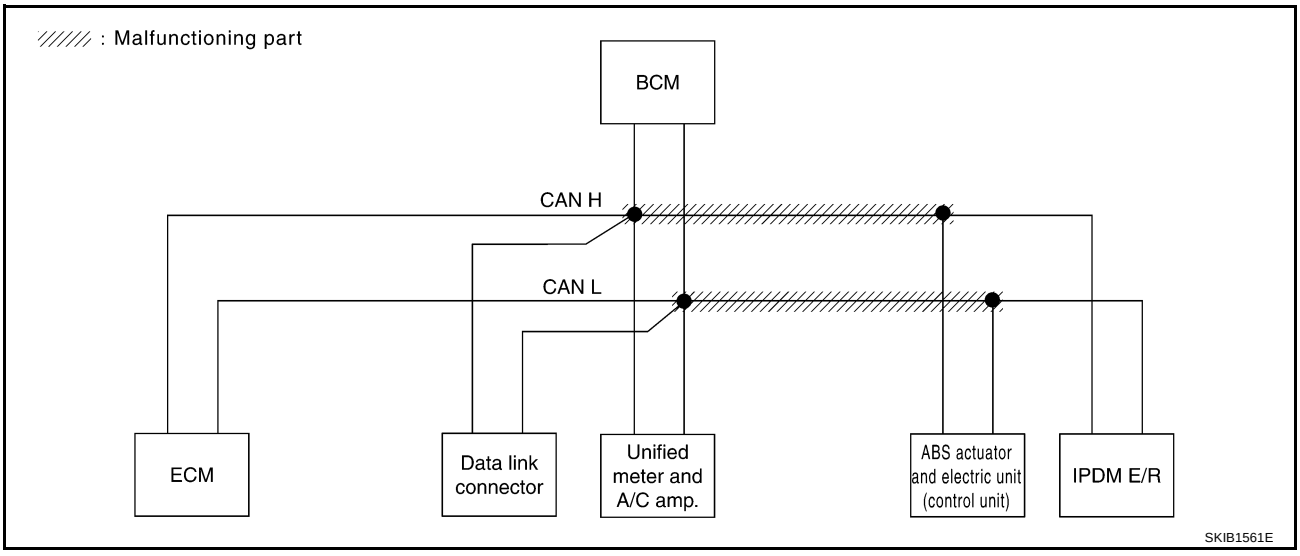
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-66, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN ✓	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN ✓	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN ✓	–	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000) ✓	–

PKIB2224E

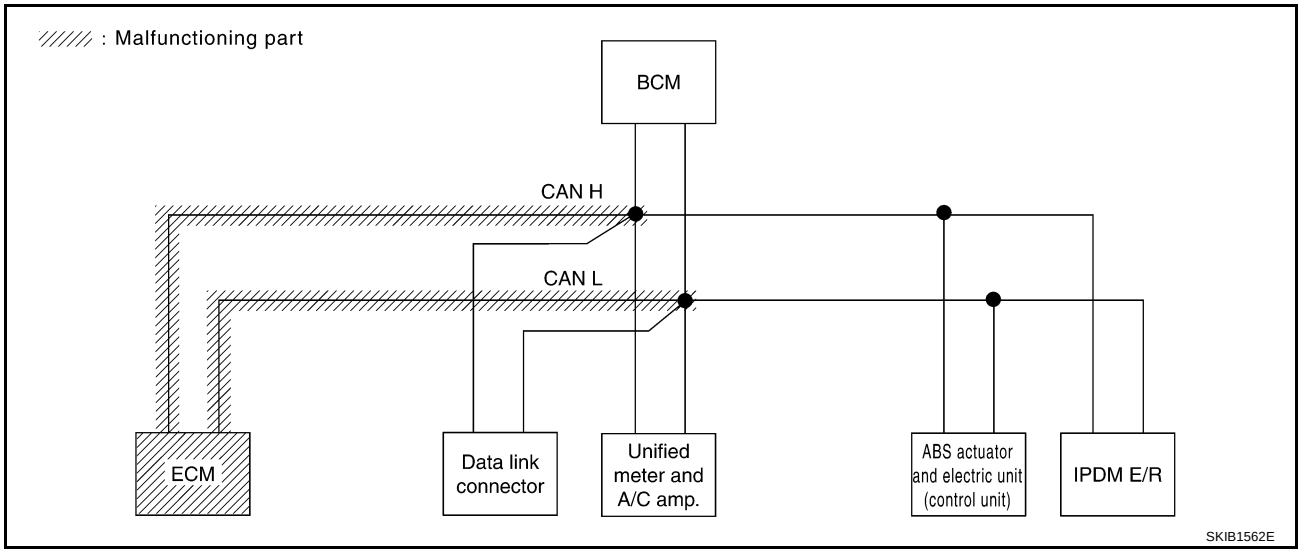


Case 2

Check ECM circuit. Refer to LAN-67, "ECM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2225E

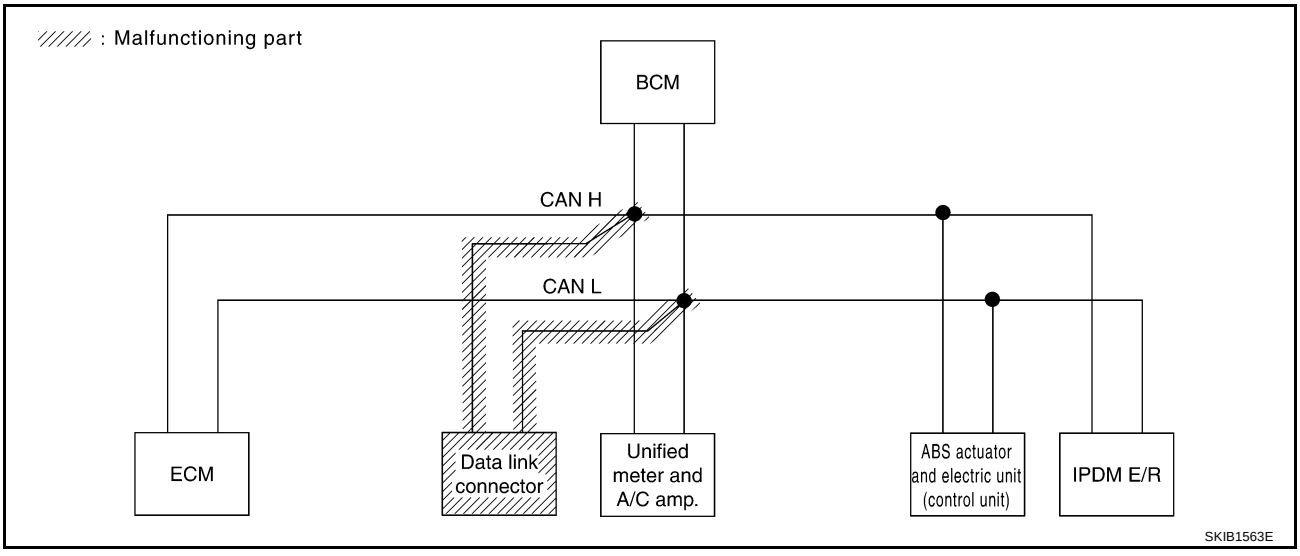


Case 3

Check data link connector circuit. Refer to LAN-68, "Data Link Connector Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2226E

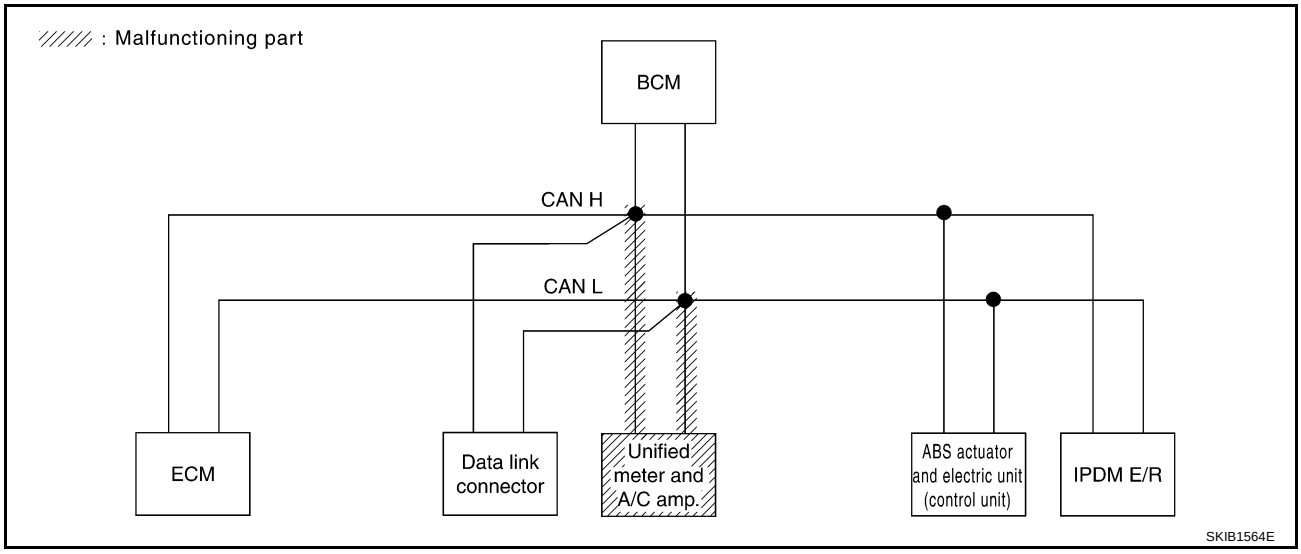


Case 4

Check unified meter and A/C amp. circuit. Refer to LAN-68, "Unified Meter and A/C Amp. Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2227E

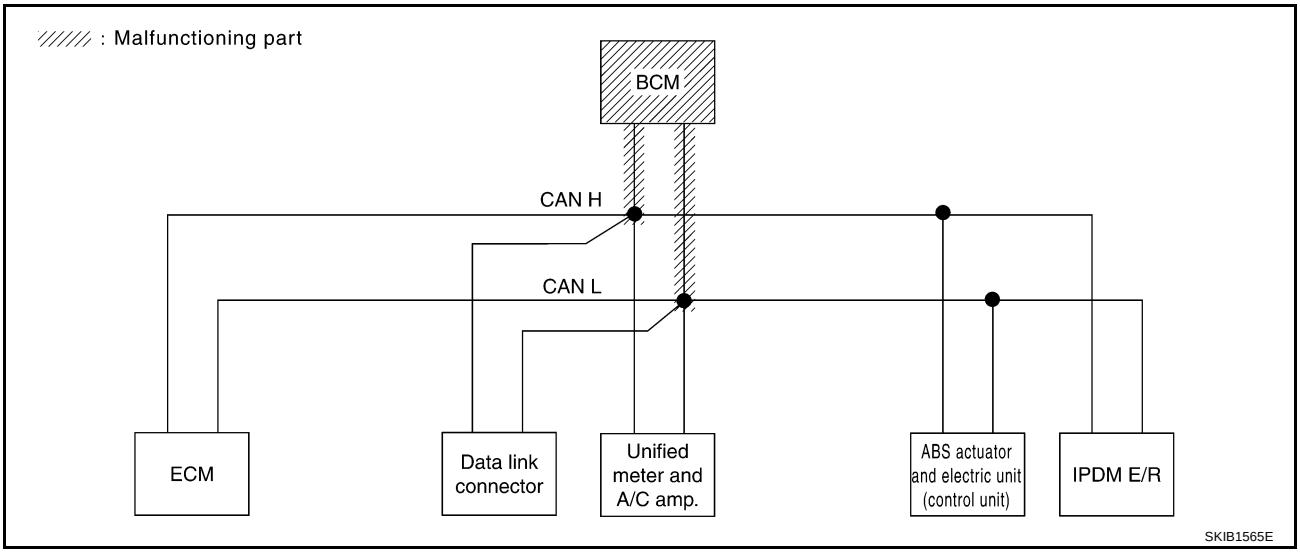


Case 5

Check BCM circuit. Refer to LAN-69, "BCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2228E

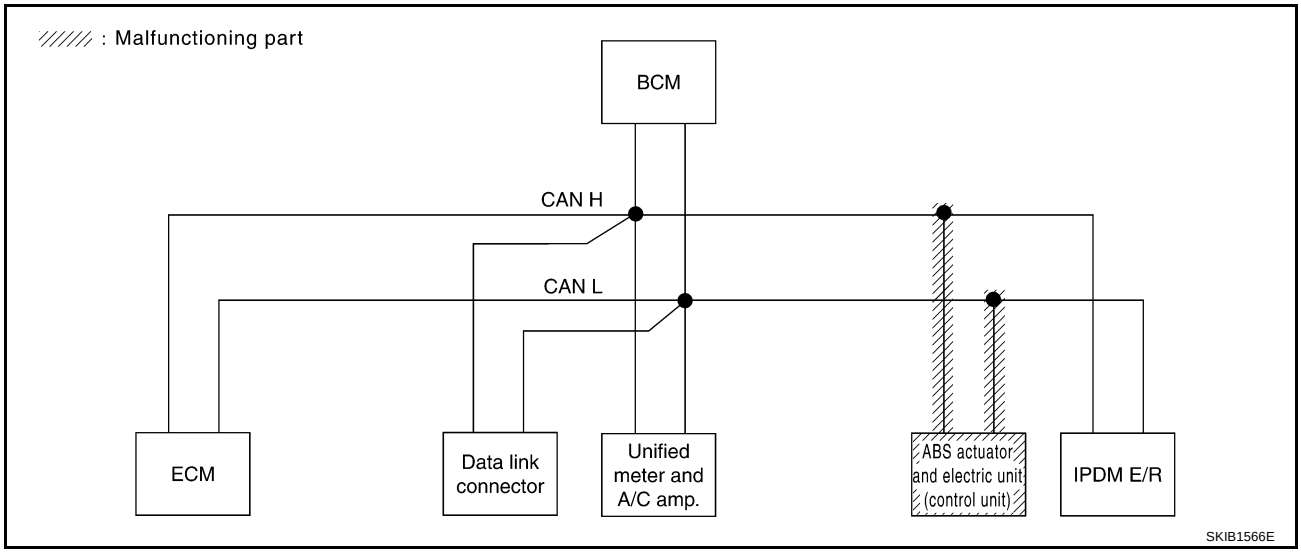


Case 6

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-69, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2229E

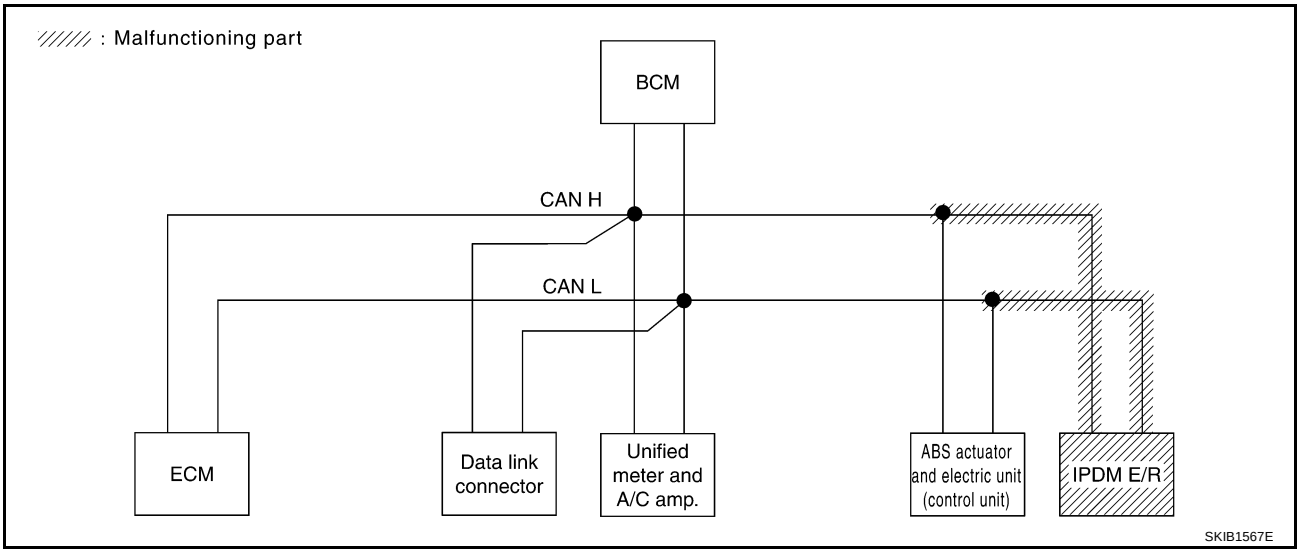


Case 7

Check IPDM E/R circuit. Refer to LAN-70, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2230E



SKIB1567E

Case 8

Check CAN communication circuit. Refer to LAN-71, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2231E

Case 9

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-74, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2232E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-74, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	–	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2233E

Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit

AKS00A9Q

1. CHECK CONNECTOR

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

- Harness connector M15
- Harness connector E108

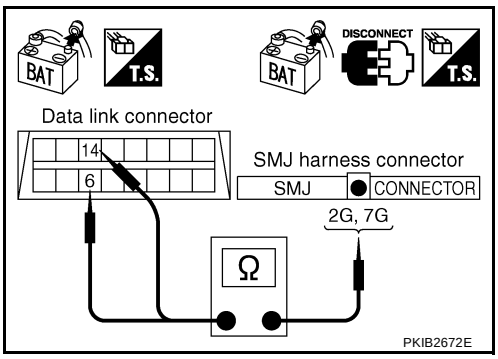
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and harness connector M15 terminals 2G (L), 7G (P).

6 (L) – 2G (L) : Continuity should exist.
14 (P) – 7G (P) : Continuity should exist.



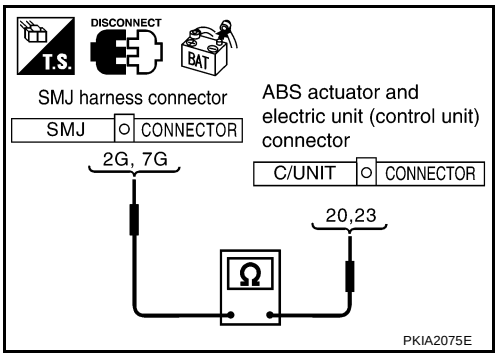
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L), 23 (P).

2G (L) – 20 (L) : Continuity should exist.
7G (P) – 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Inspection

AKS00A9R

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector F102
- Harness connector M72

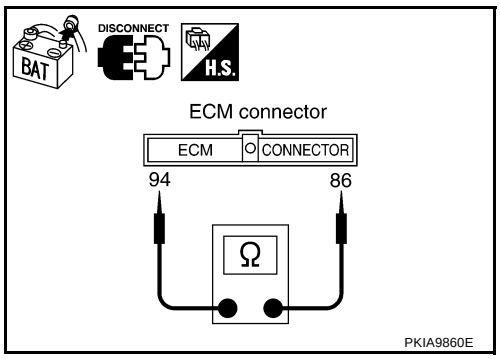
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.

Data Link Connector Circuit Inspection

AKS00A9S

1. CHECK CONNECTOR

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

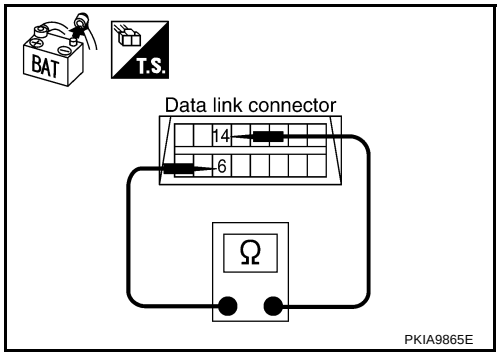
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-5, "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

AKS00A9T

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.

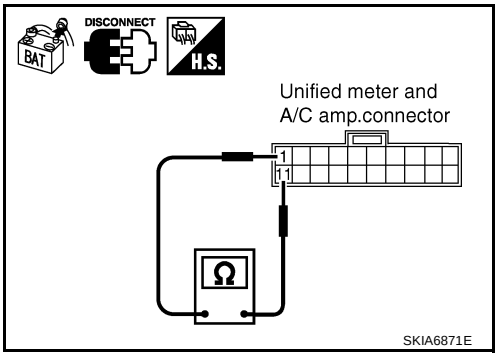
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66 Ω

OK or NG

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



BCM Circuit Inspection

AKS00A9U

1. CHECK CONNECTOR

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

OK or NG

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

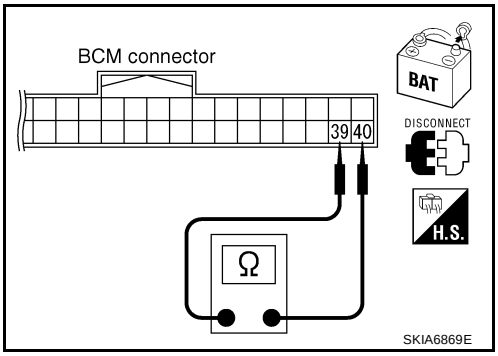
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

AKS00A9V

1. CHECK CONNECTOR

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

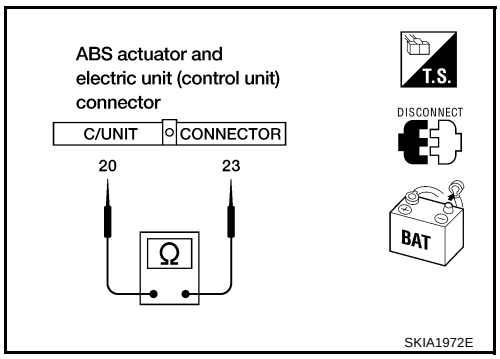
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L) and 23 (P).

20 (L) – 23 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

AKS00A9W

1. CHECK CONNECTOR

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

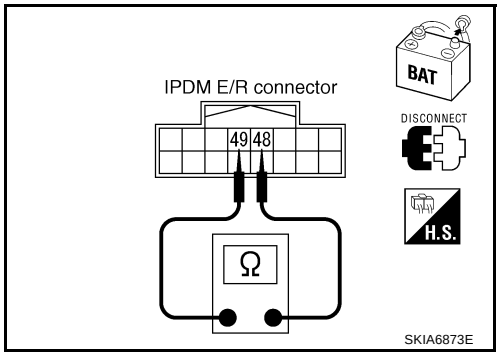
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E108.

CAN Communication Circuit Inspection

AKS00A9X

1. CHECK CONNECTOR

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

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

OK or NG

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

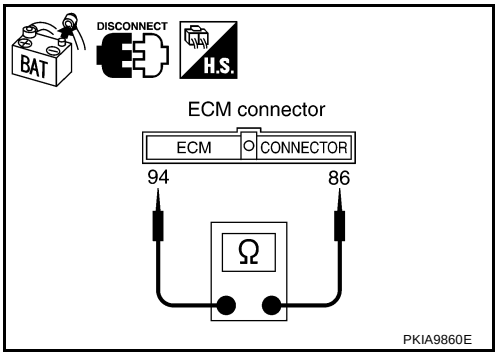
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector F102.



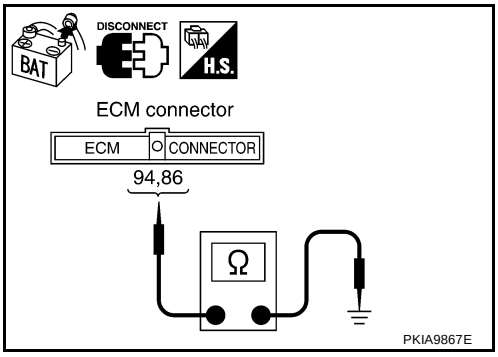
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – Ground : Continuity should not exist.
86 (P) – Ground : Continuity should not exist.

OK or NG

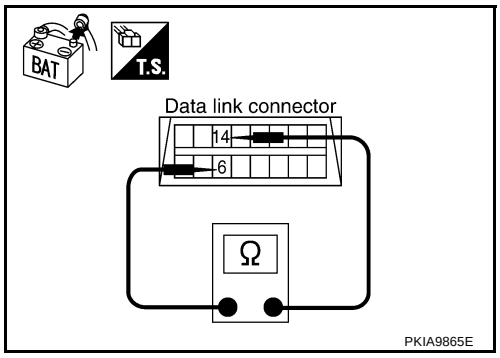
OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector F102.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Unified meter and A/C amp. connector
- BCM connector
- Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

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



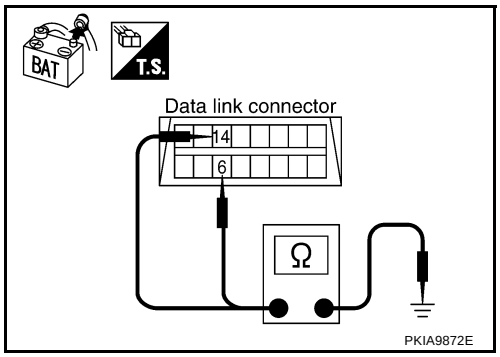
OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M8 terminals 6 (L), 14 (P) and ground.

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



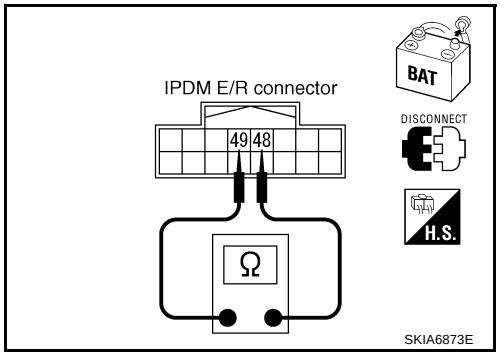
OK or NG

OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Continuity should not exist.



OK or NG

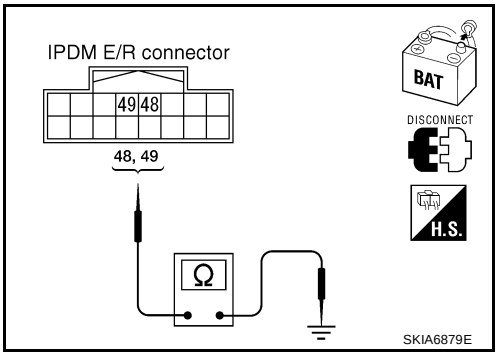
OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (P) and ground.

48 (L) – Ground : Continuity should not exist.

49 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108

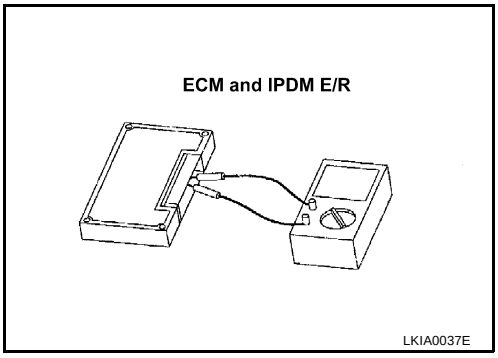
8. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.

94 – 86 : Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 9.

NG >> Replace ECM and/or IPDM E/R.

9. CHECK SYMPTOM

1. Fill in described symptoms on the column “Symptom” in the check sheet.
2. Connect all the connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. 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 reproduced.

- Unified meter and A/C amp.
- BCM
- 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

AKS00C6S

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

- IPDM E/R power supply circuit. Refer to PG-26, "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”" .

CAN SYSTEM (TYPE 3)

PFP:23710

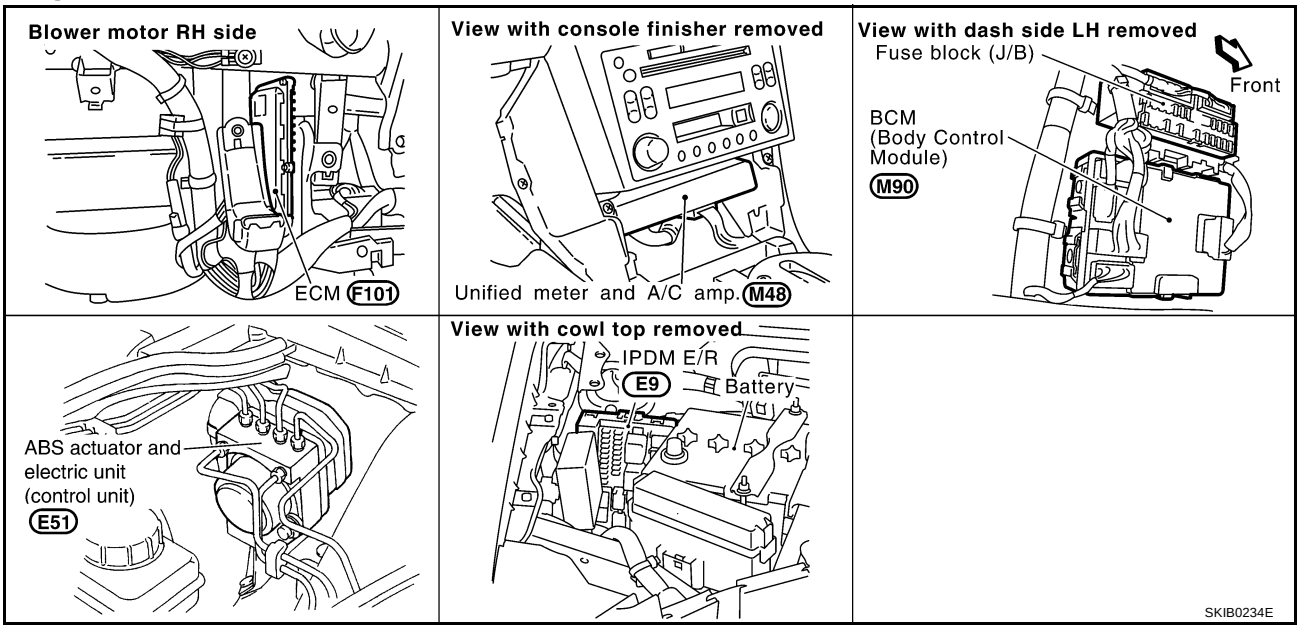
System Description

AKS00A97

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

Component Parts and Harness Connector Location

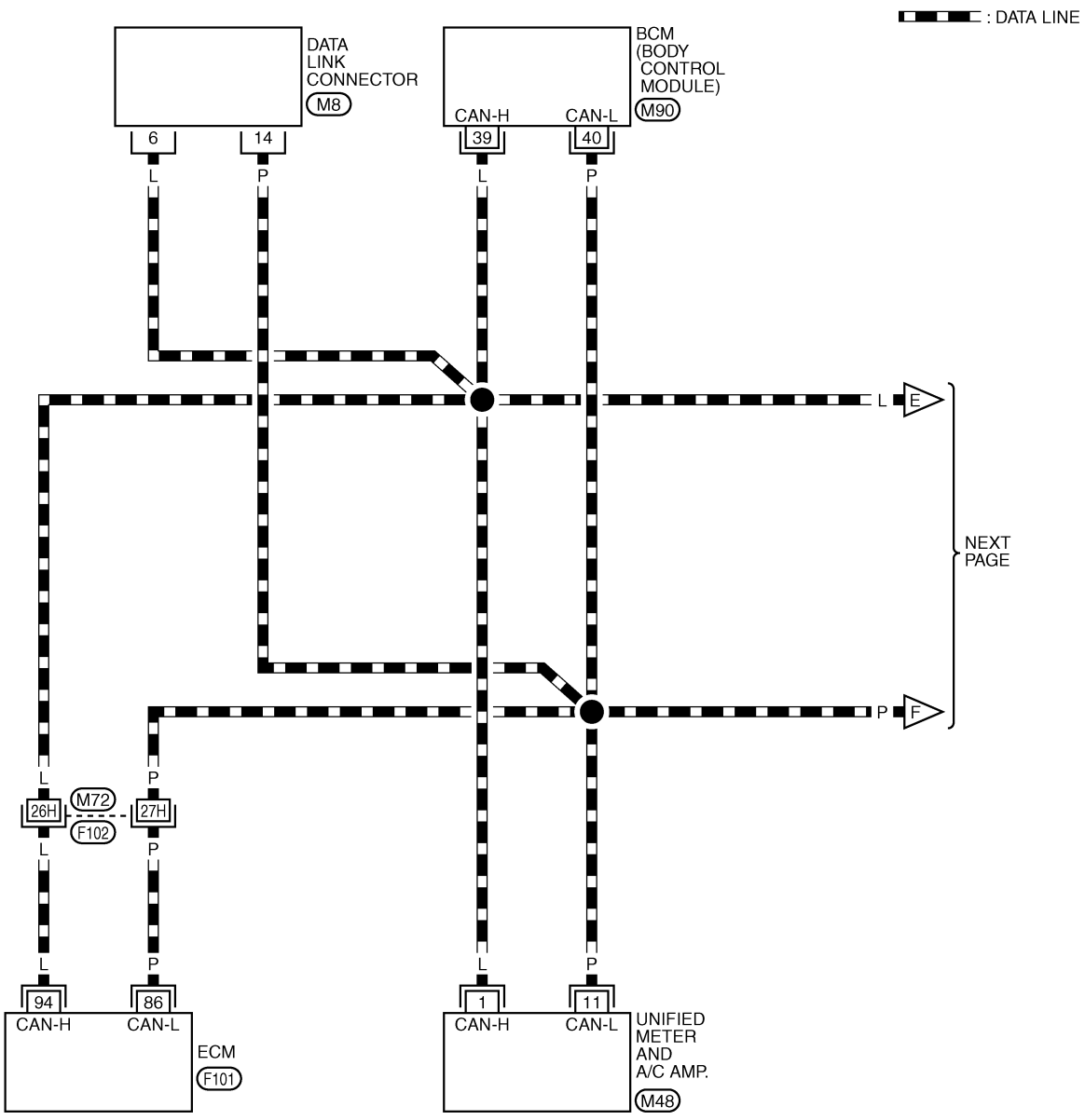
AKS00A98

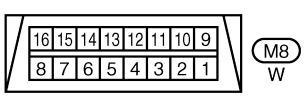


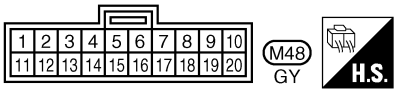
Wiring Diagram — CAN —

AKS00A99

LAN-CAN-05



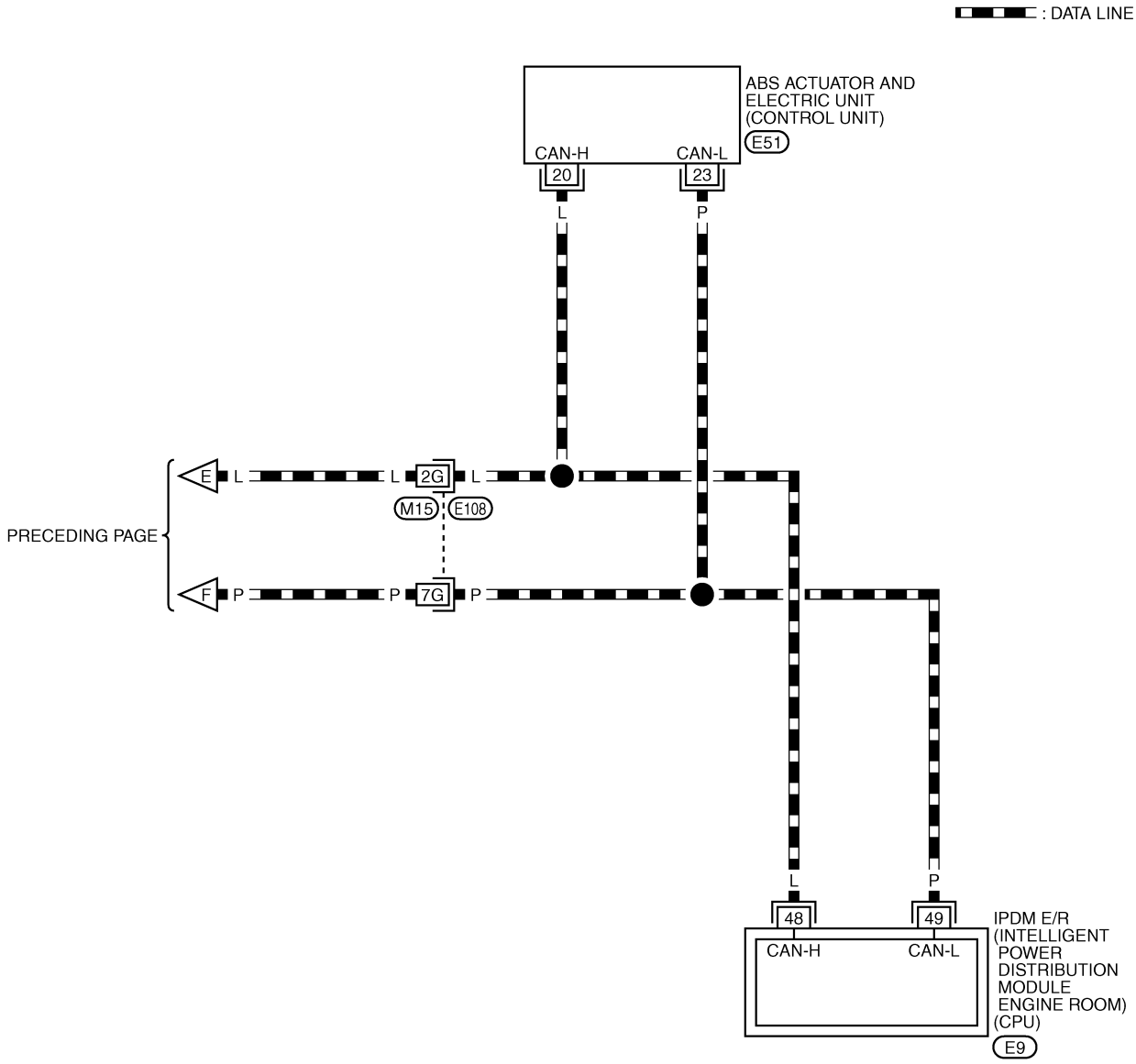




REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M90 , F101 -ELECTRICAL UNITS

TKWT3324E

LAN-CAN-06



TKWT3325E

CHECK SHEET

AKS00A9A

NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Check sheet table

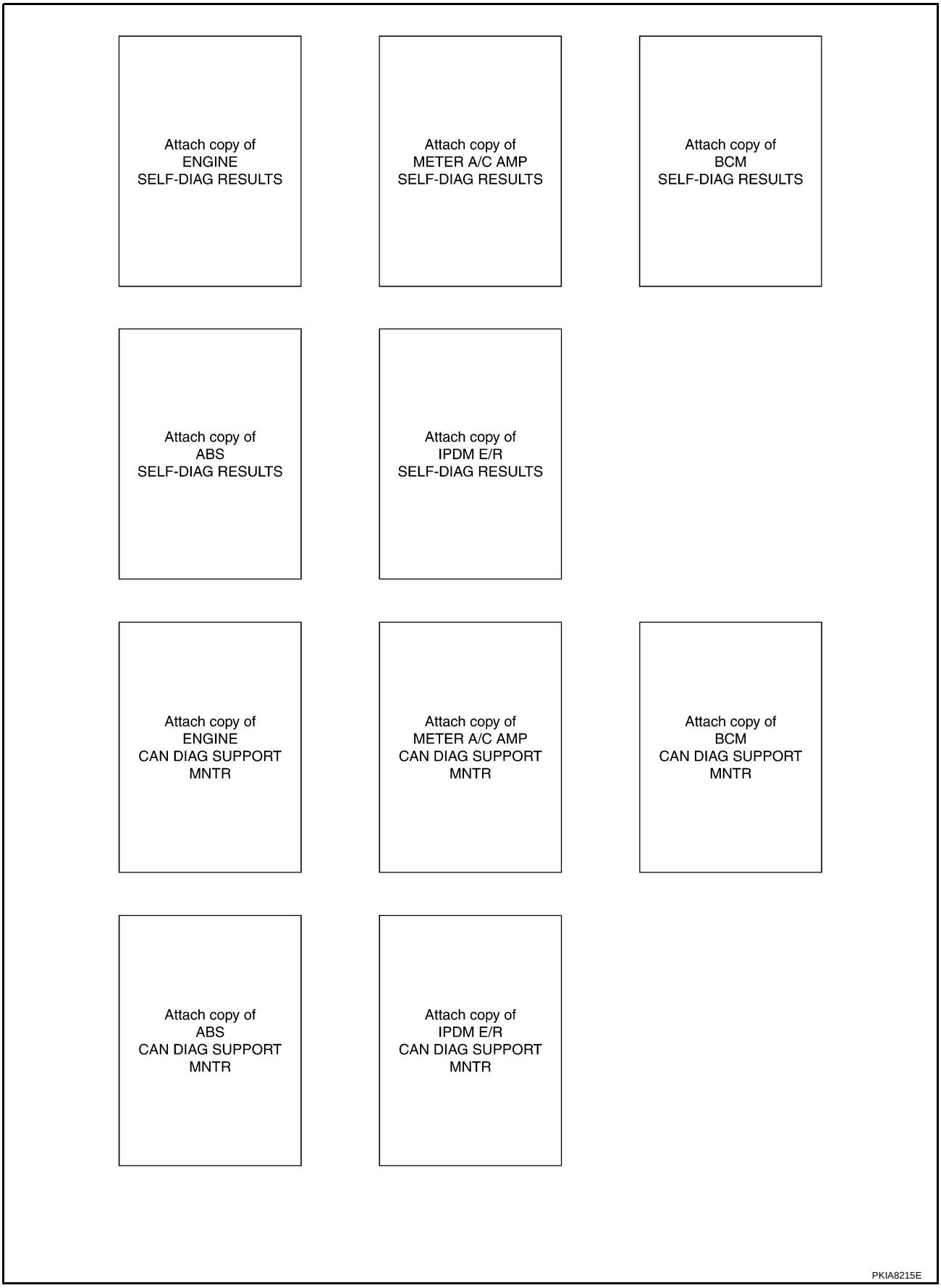
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB2234E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
METER A/C AMP
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8215E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

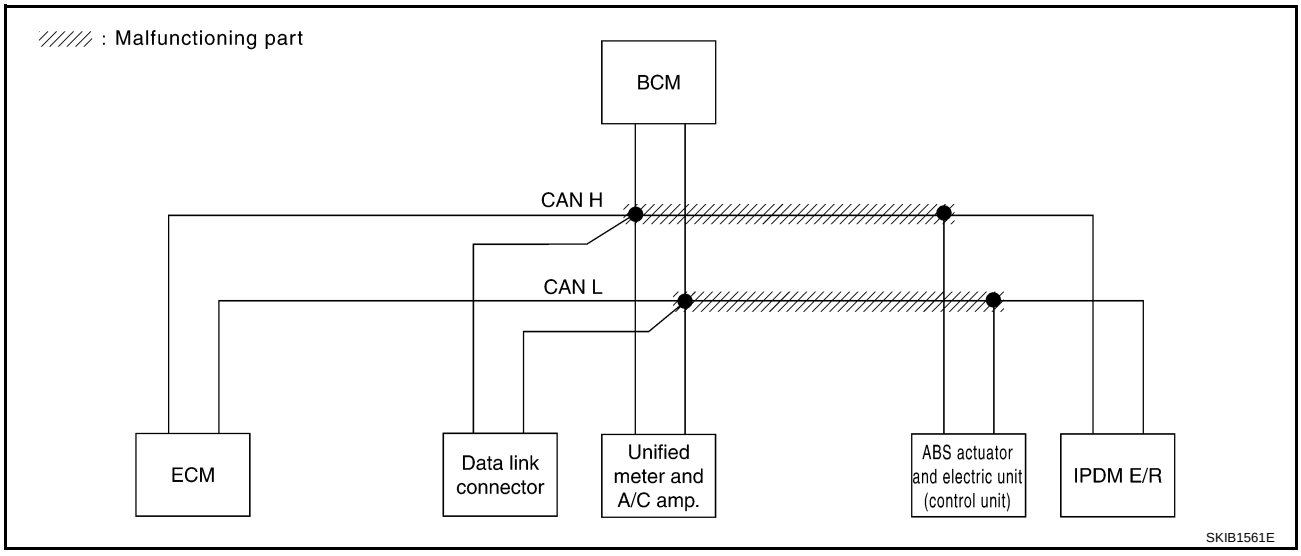
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-87, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN ✓	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN ✓	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN ✓	–	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000) ✓	–

PKIB2235E

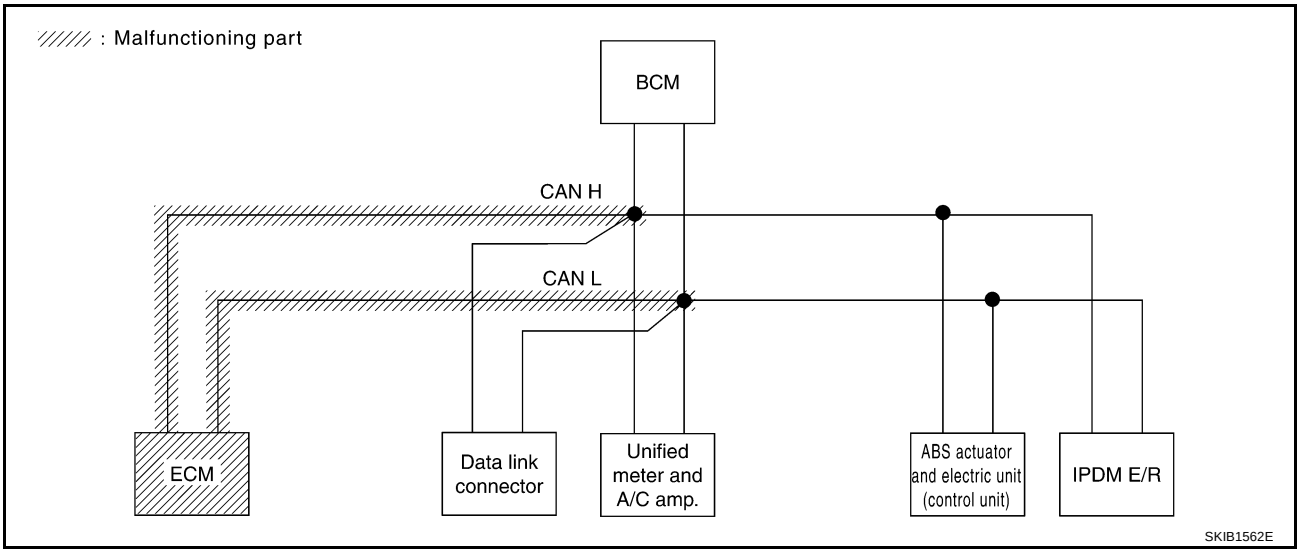


Case 2

Check ECM circuit. Refer to LAN-88, "ECM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2236E

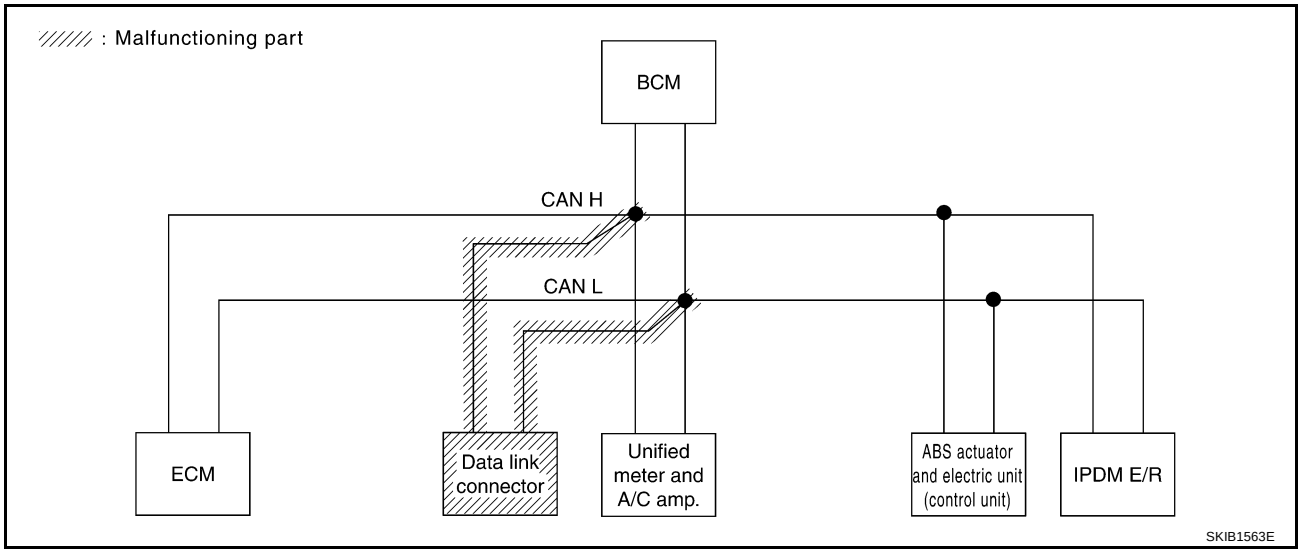


Case 3

Check data link connector circuit. Refer to LAN-89, "Data Link Connector Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication ✓	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication ✓	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2237E

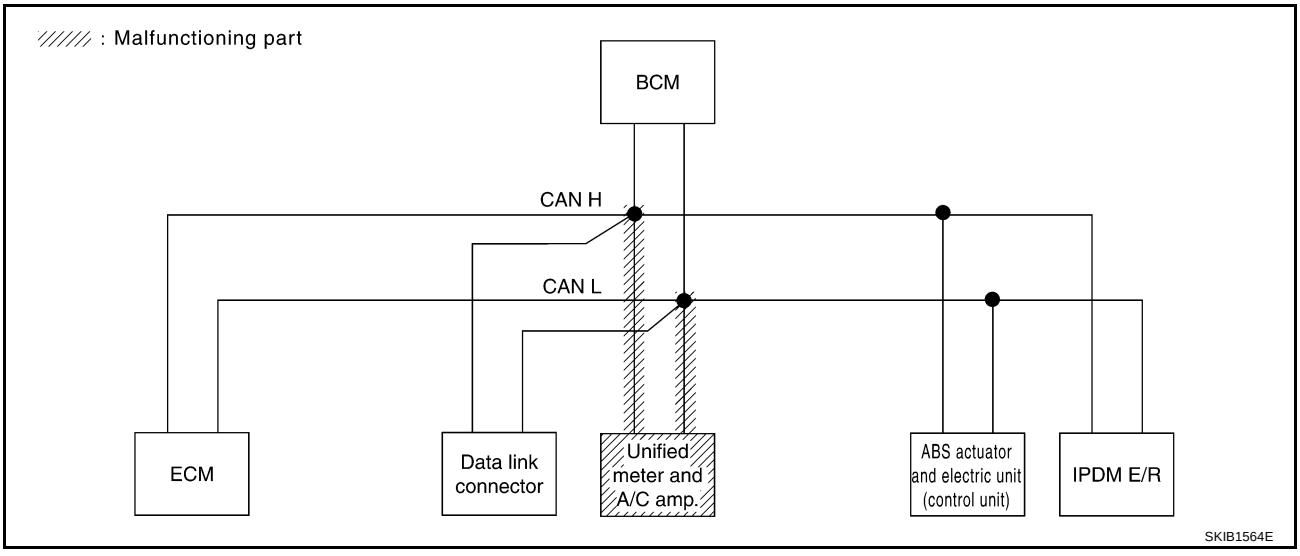


Case 4

Check unified meter and A/C amp. circuit. Refer to LAN-89, "Unified Meter and A/C Amp. Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2238E

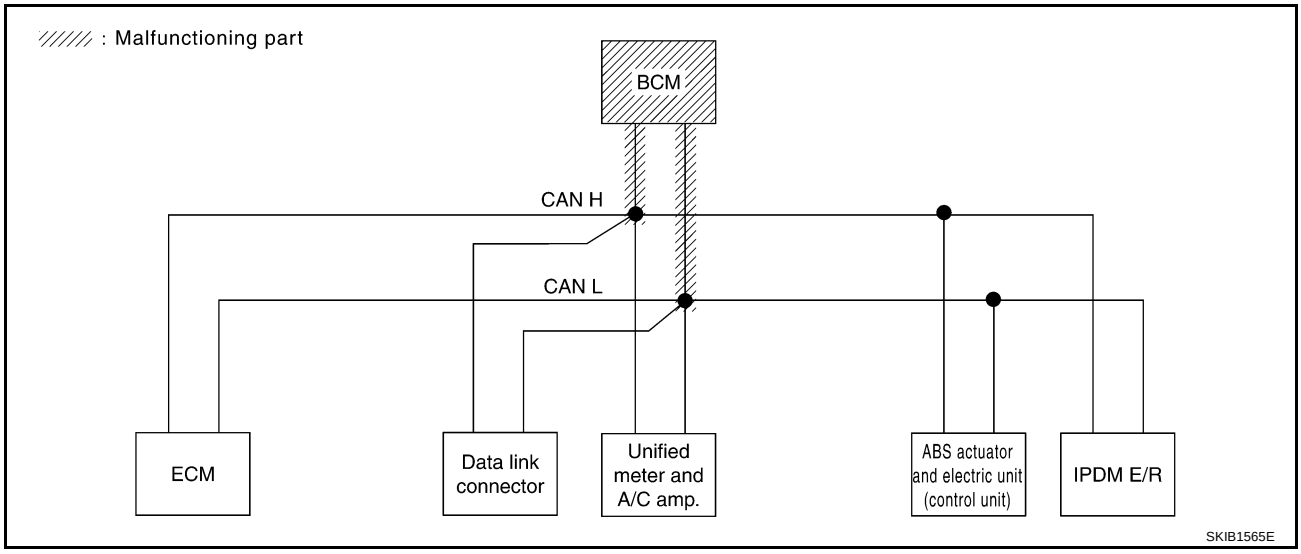


Case 5

Check BCM circuit. Refer to LAN-90, "BCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2239E

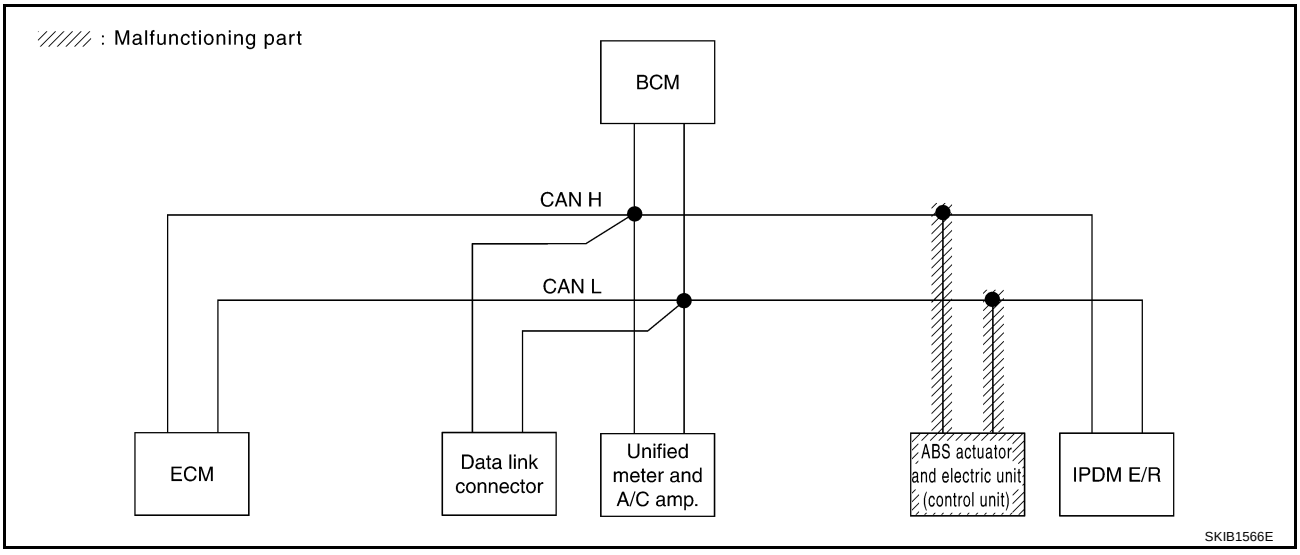


Case 6

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-90, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN ✓	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN ✓	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2240E

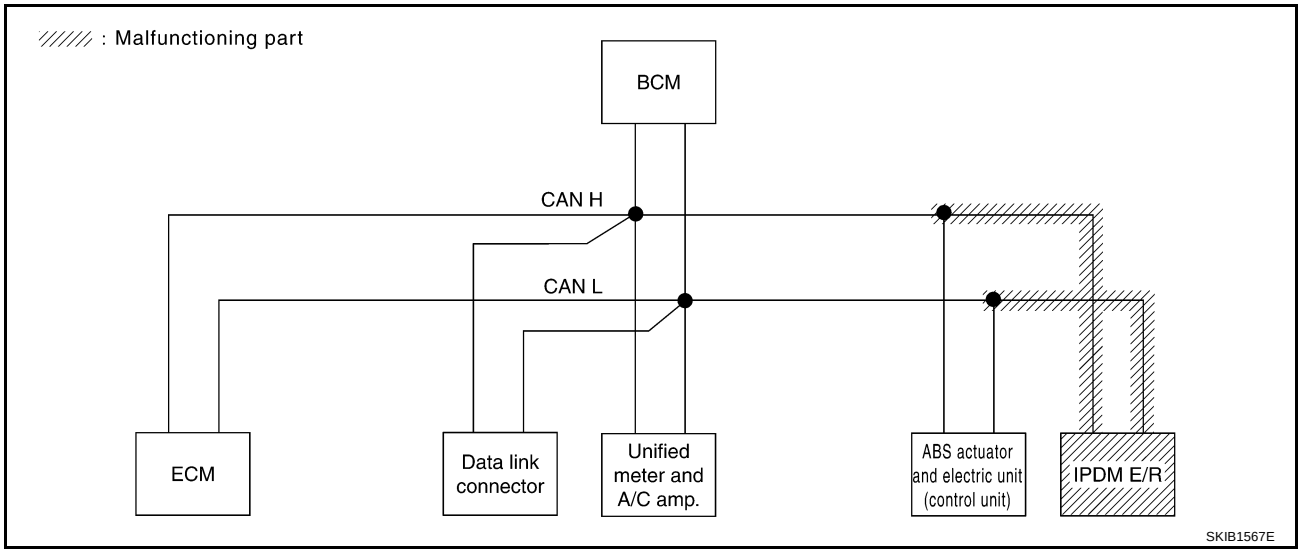


Case 7

Check IPDM E/R circuit. Refer to LAN-91, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2241E



Case 8

Check CAN communication circuit. Refer to LAN-92, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2242E

Case 9

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-95, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN ✓	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2243E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-95, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	–	UNKWN	UNKWN	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	–	–	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIB2244E

Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit

AKS00A9D

1. CHECK CONNECTOR

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

– Harness connector M15
– Harness connector E108

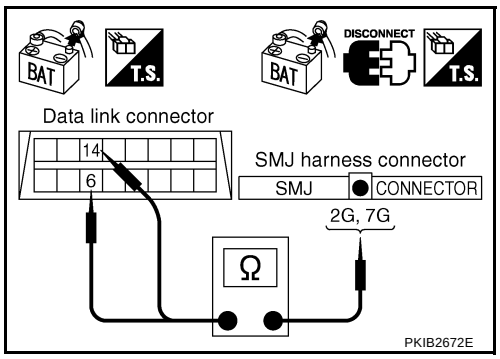
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and harness connector M15 terminals 2G (L), 7G (P).

6 (L) – 2G (L) : Continuity should exist.
14 (P) – 7G (P) : Continuity should exist.



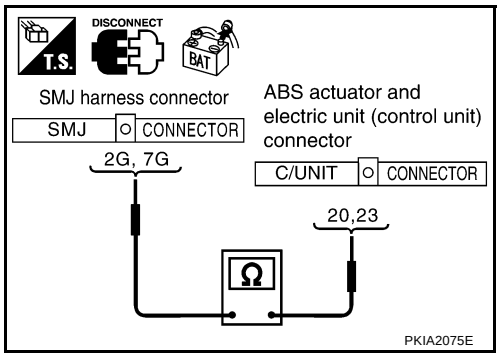
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L), 23 (P).

2G (L) – 20 (L) : Continuity should exist.
7G (P) – 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Inspection

AKS00A9E

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector F102
- Harness connector M72

OK or NG

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

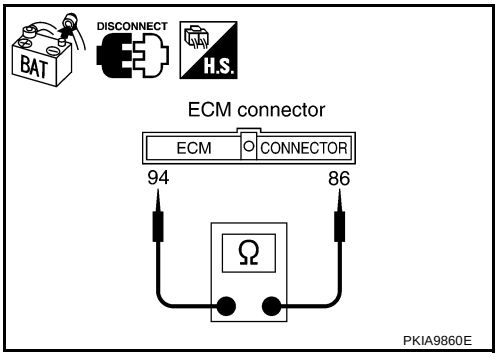
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.



Data Link Connector Circuit Inspection

AKS00A9F

1. CHECK CONNECTOR

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

OK or NG

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

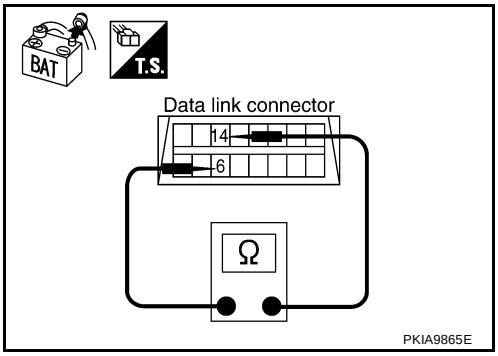
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-5, "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

AKS00A9G

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).

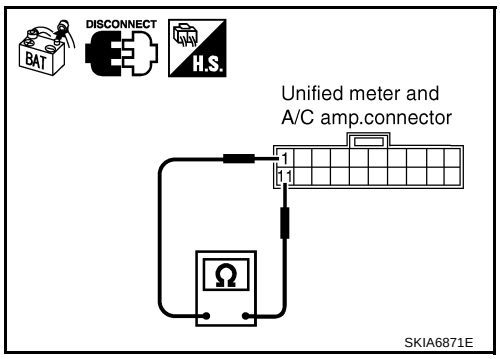
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS00A9H

1. CHECK CONNECTOR

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

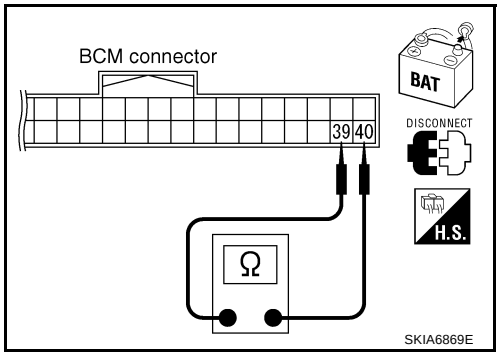
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

AKS00A9I

1. CHECK CONNECTOR

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

OK or NG

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

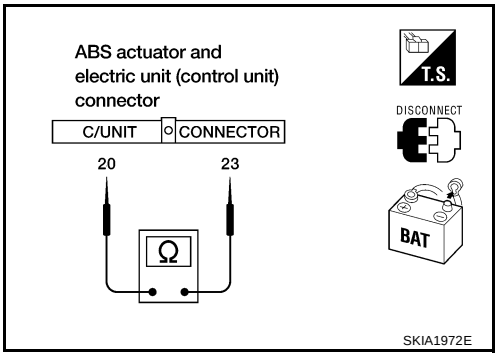
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L) and 23 (P).

20 (L) – 23 (P) : Approx. 54 – 66 Ω

OK or NG

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



IPDM E/R Circuit Inspection

AKS00A9J

1. CHECK CONNECTOR

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

OK or NG

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

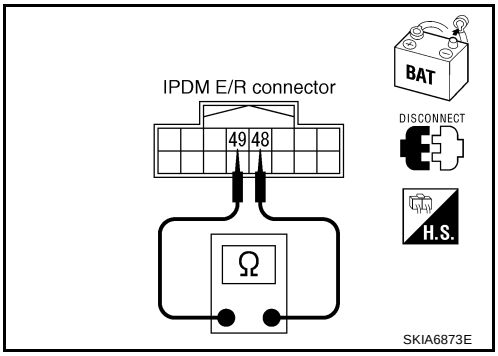
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Approx. 108 – 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E108.



CAN Communication Circuit Inspection

AKS00A9K

1. CHECK CONNECTOR

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

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

OK or NG

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

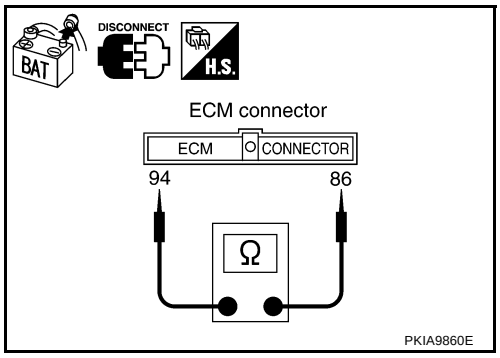
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector F102.



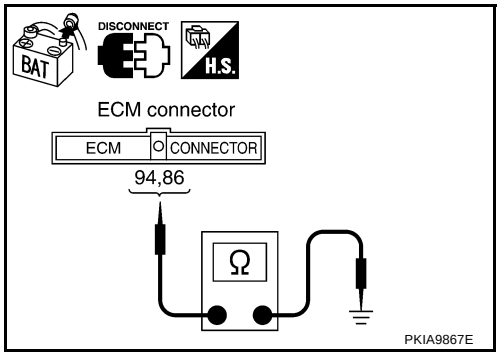
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – Ground : Continuity should not exist.
86 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector F102.

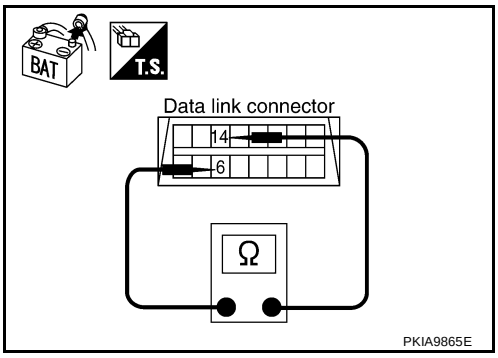


4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Unified meter and A/C amp. connector
- BCM connector
- Harness connector M15

2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

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



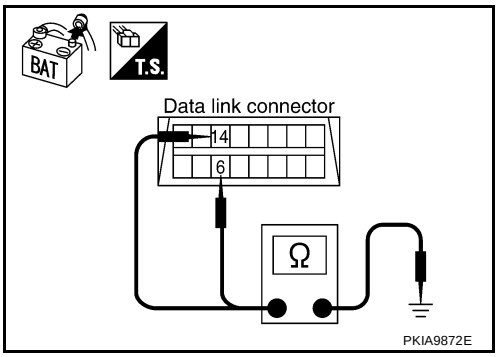
OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M8 terminals 6 (L), 14 (P) and ground.

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



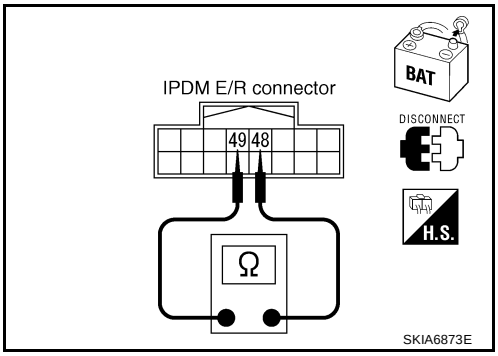
OK or NG

OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Continuity should not exist.



OK or NG

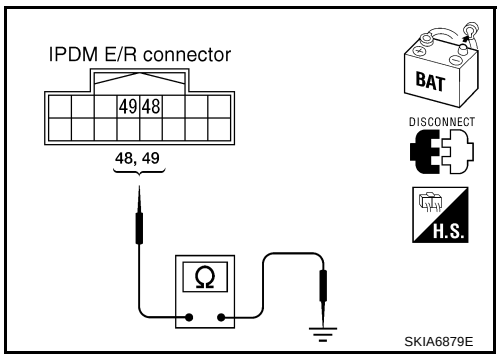
OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (P) and ground.

48 (L) – Ground : Continuity should not exist.

49 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108

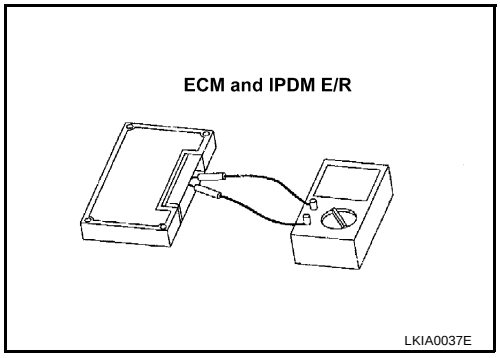
8. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.

94 – 86 : Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 9.

NG >> Replace ECM and/or IPDM E/R.

9. CHECK SYMPTOM

1. Fill in described symptoms on the column “Symptom” in the check sheet.
2. Connect all the connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. 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 reproduced.

- Unified meter and A/C amp.
- BCM
- 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

AKS00C6T

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

- IPDM E/R power supply circuit. Refer to PG-26, "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”" .

CAN SYSTEM (TYPE 4)

PFP:23710

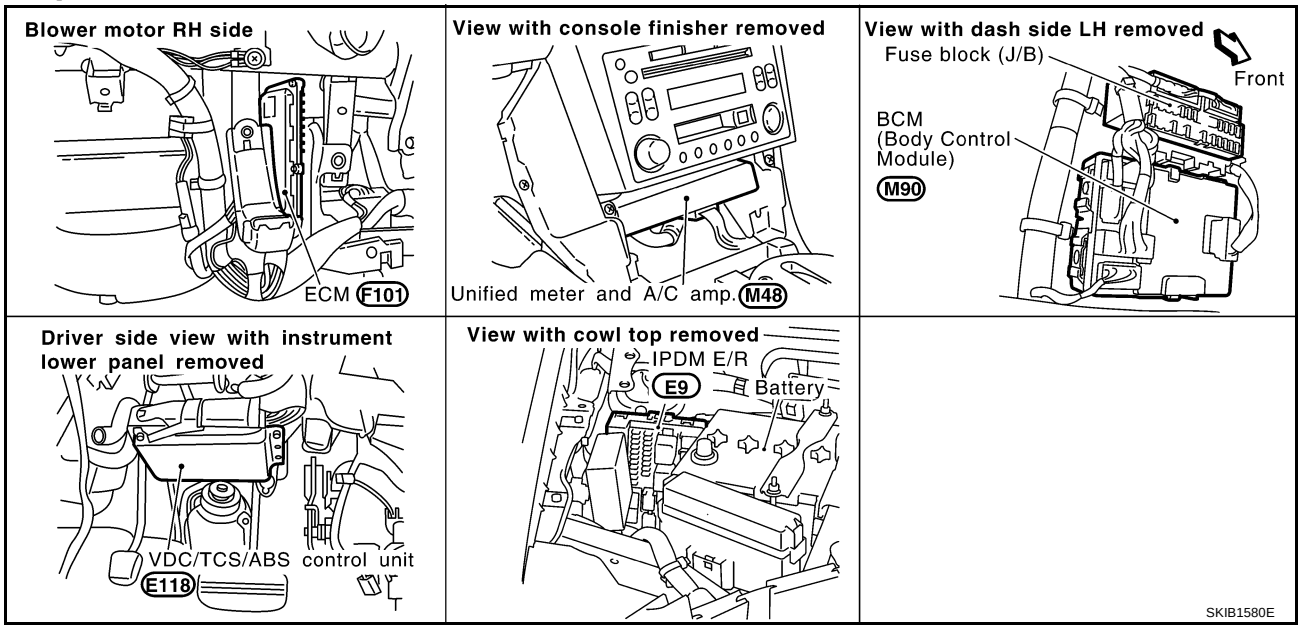
System Description

AKS009DT

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

Component Parts and Harness Connector Location

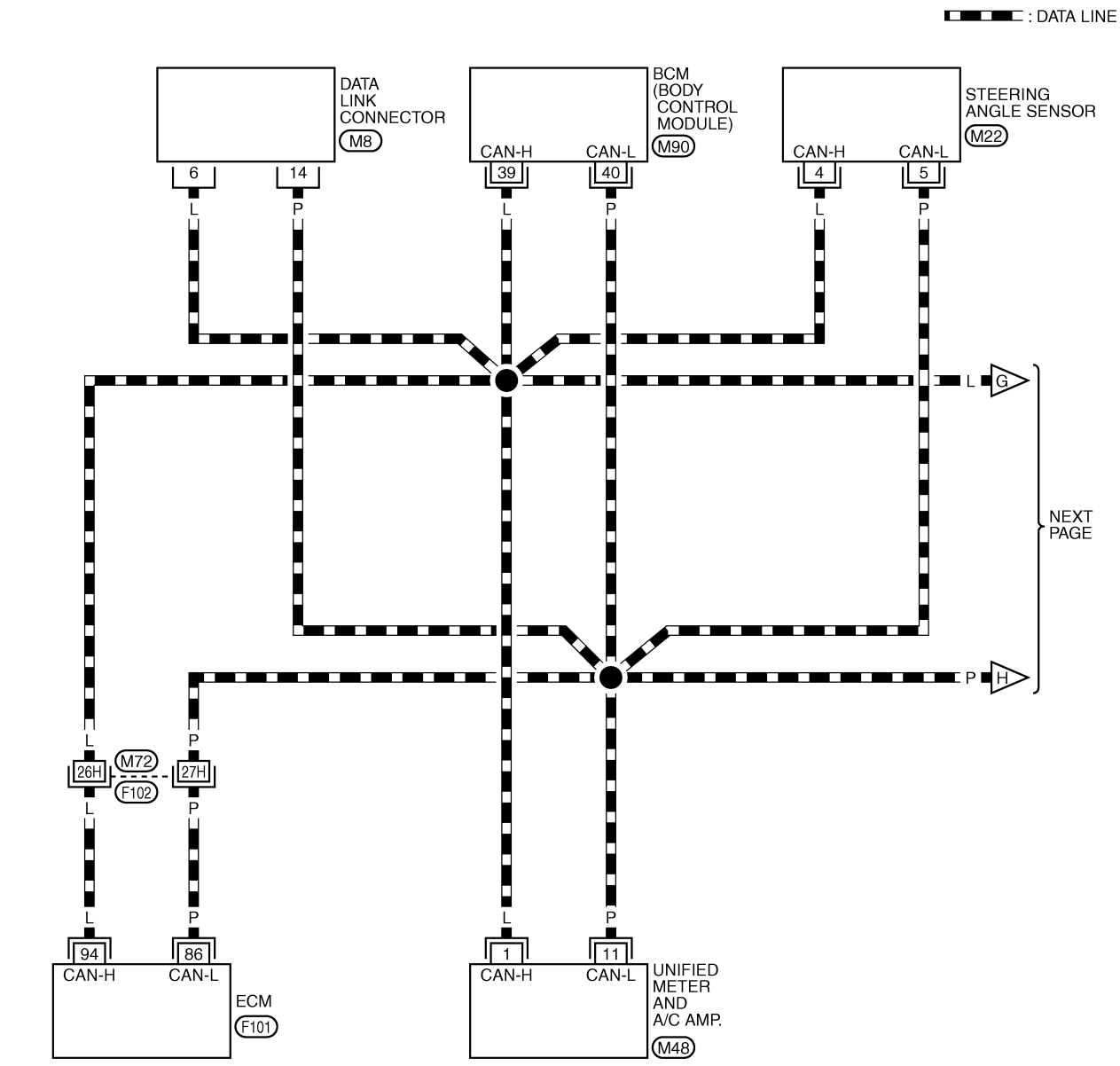
AKS009DU

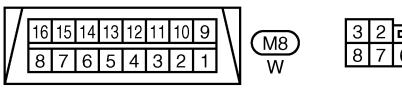


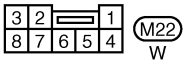
Wiring Diagram — CAN —

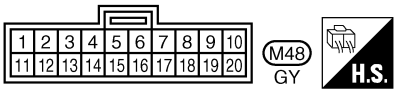
AKS009DV

LAN-CAN-07





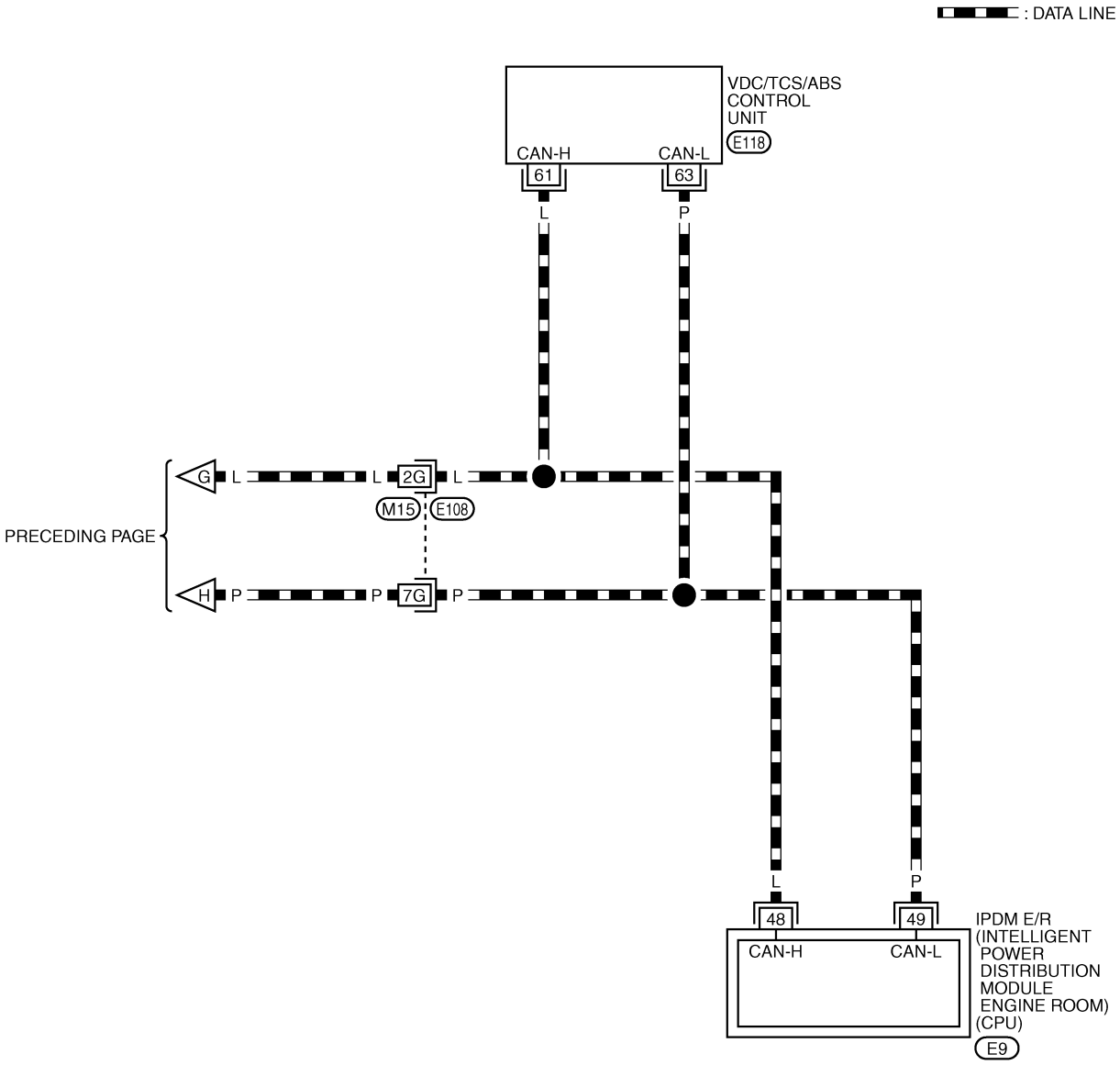




REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M90, F101 -ELECTRICAL UNITS

TKWT3326E

LAN-CAN-08


: DATA LINE
VDC/TCS/ABS CONTROL UNIT
E118
CAN-H
CAN-L
61
63
L
P
G
L
2G
M15
E108
PRECEDING PAGE
H
P
7G
48
49
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
E9
52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E9
W
H.S.
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
E118 -ELECTRICAL UNITS
TKWT3327E

CHECK SHEET

AKS00AA0

NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Check sheet table

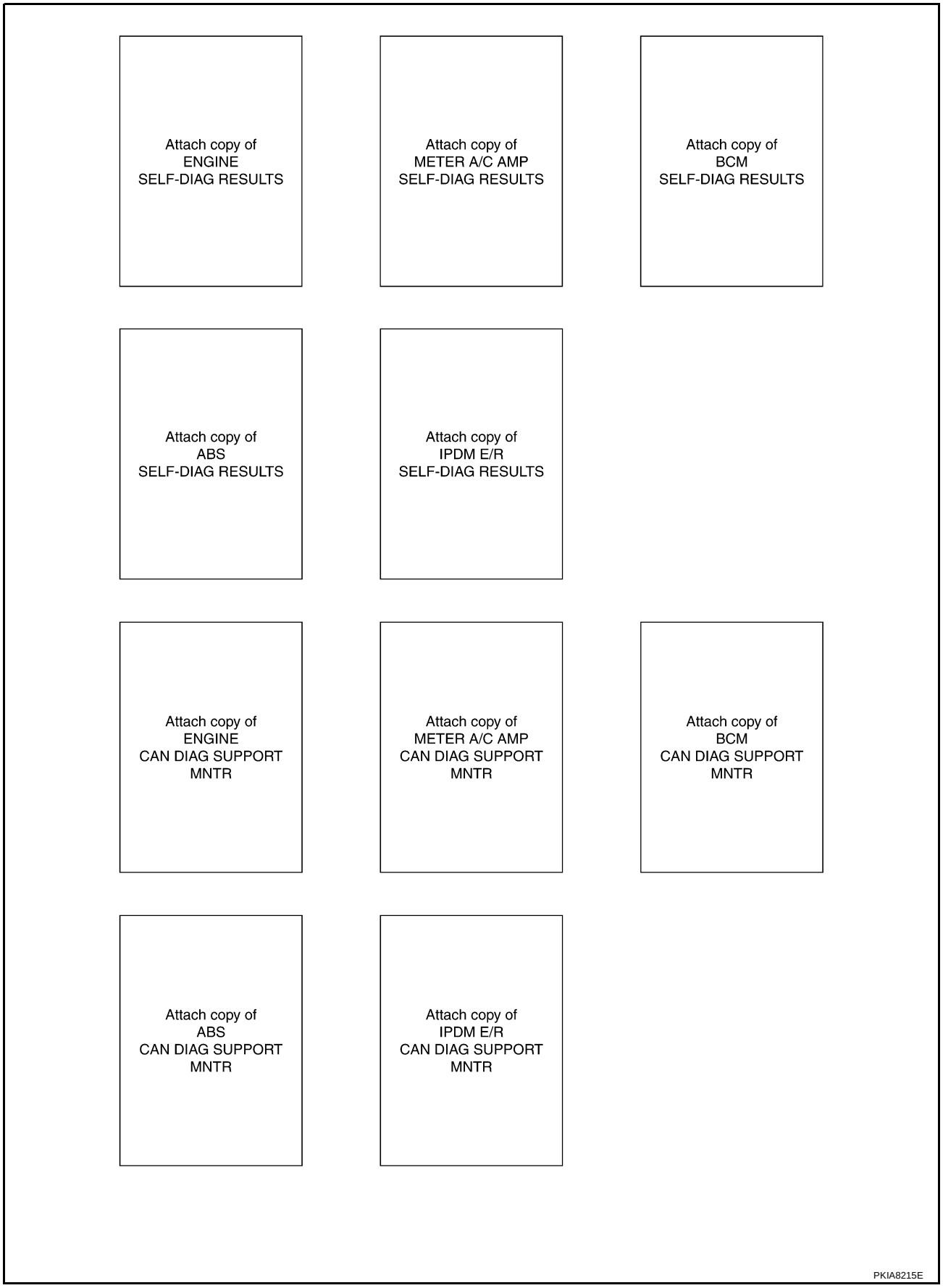
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB2245E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
METER A/C AMP
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8215E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

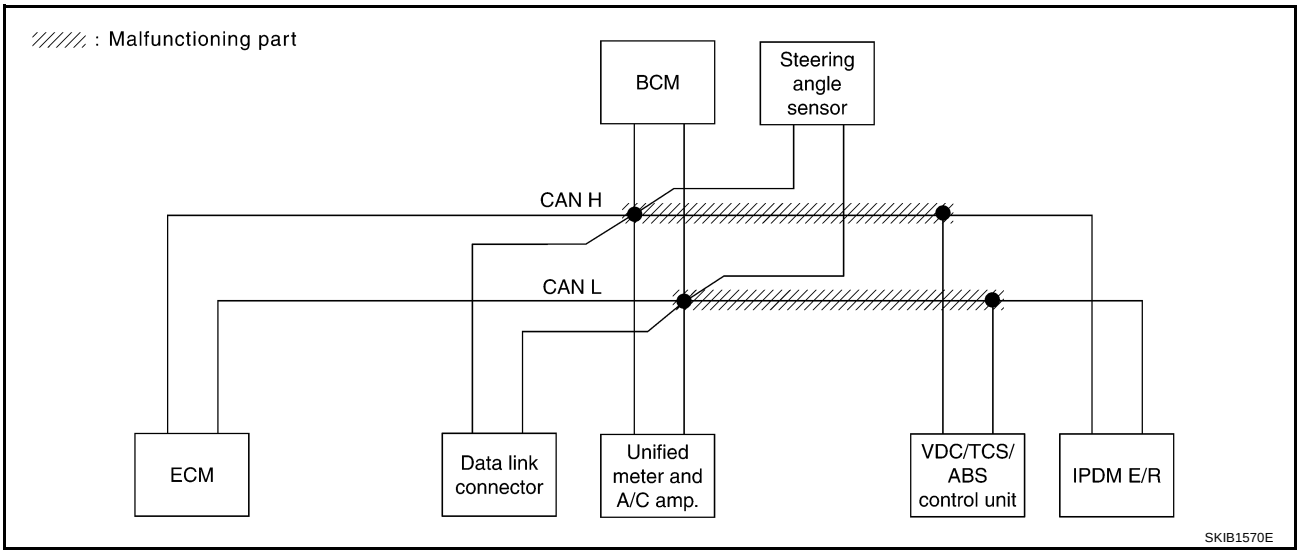
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between data link connector and VDC/TCS/ABS control unit. Refer to LAN-109, "Inspection Between Data Link Connector and VDC/TCS/ABS Control Unit Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN ✓	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—

PKIB2246E



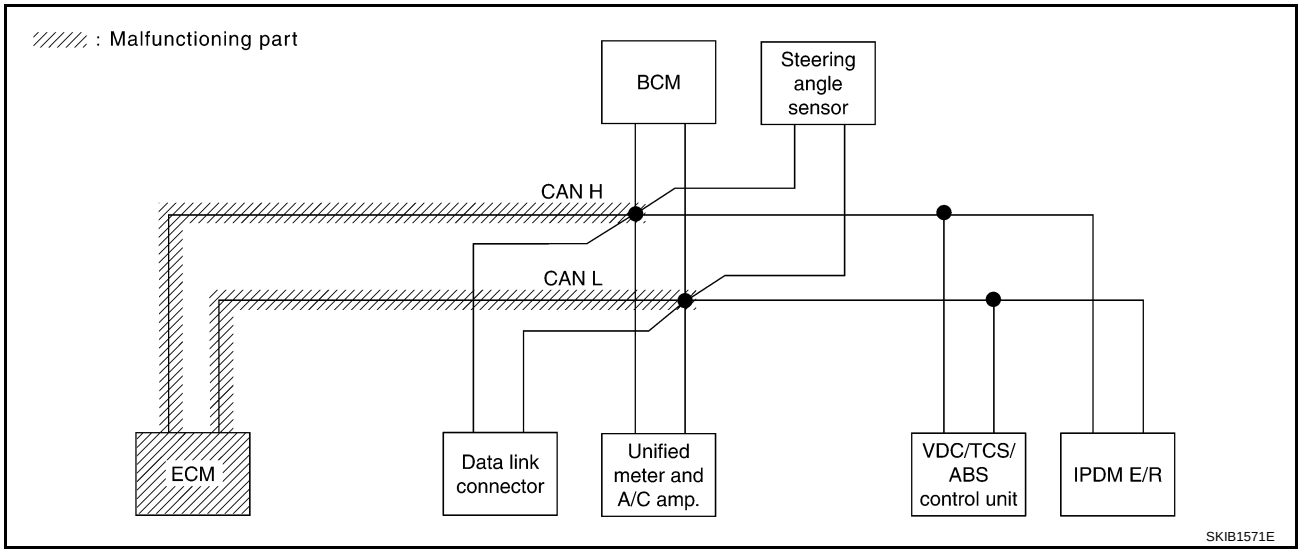
SKIB1570E

Case 2

Check ECM circuit. Refer to LAN-110, "ECM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) / CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) / —
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000) / —
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000) / —
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) / —

PKIB2247E



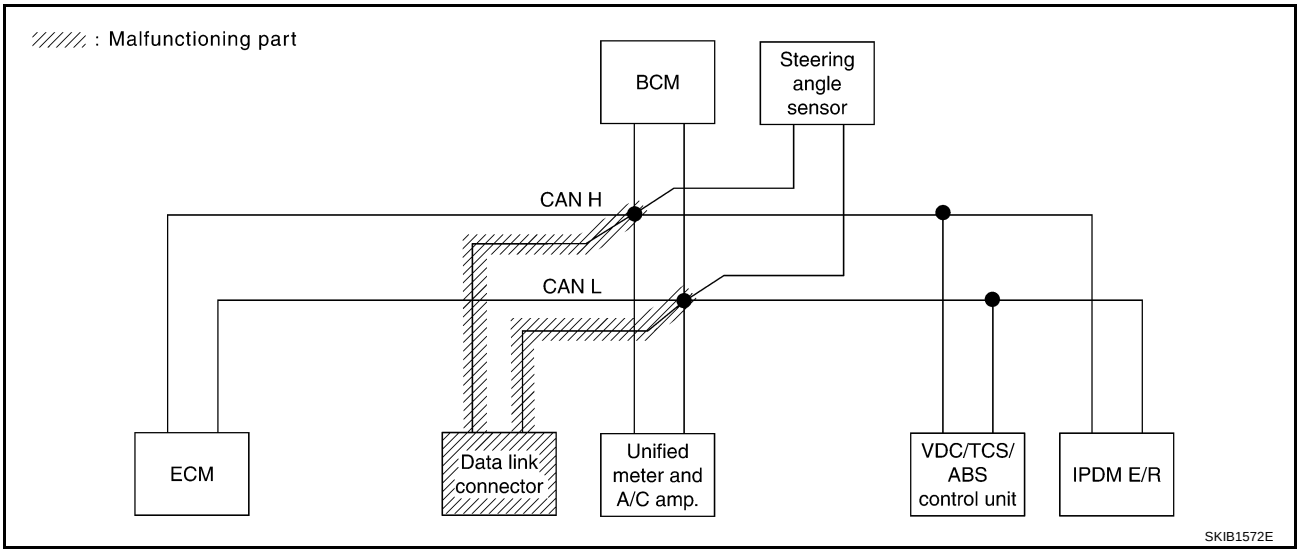
SKIB1571E

Case 3

Check data link connector circuit. Refer to LAN-111, "Data Link Connector Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication ✓	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2248E

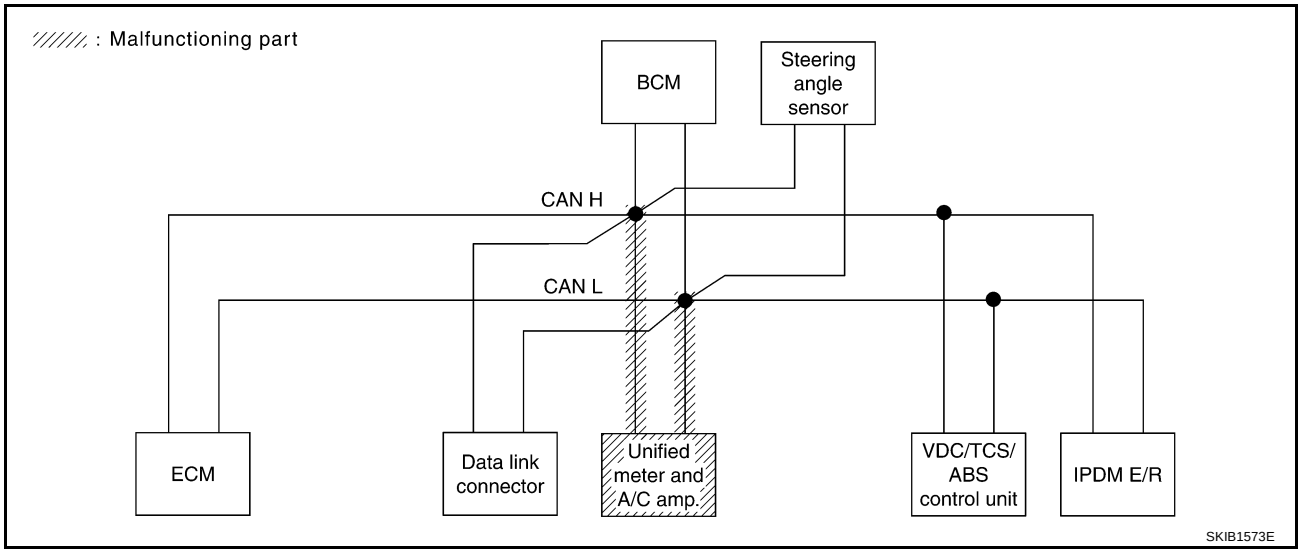


Case 4

Check unified meter and A/C amp. circuit. Refer to LAN-111, "Unified Meter and A/C Amp. Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
METER A/C AMP	No indication ✓	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2249E

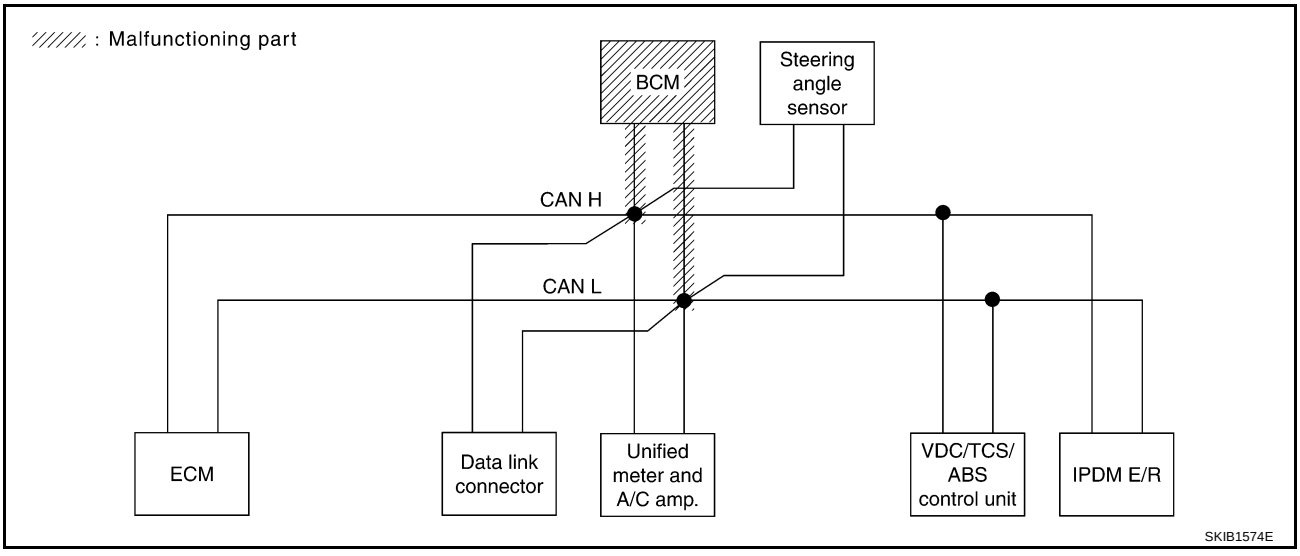


Case 5

Check BCM circuit. Refer to LAN-112, "BCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2250E

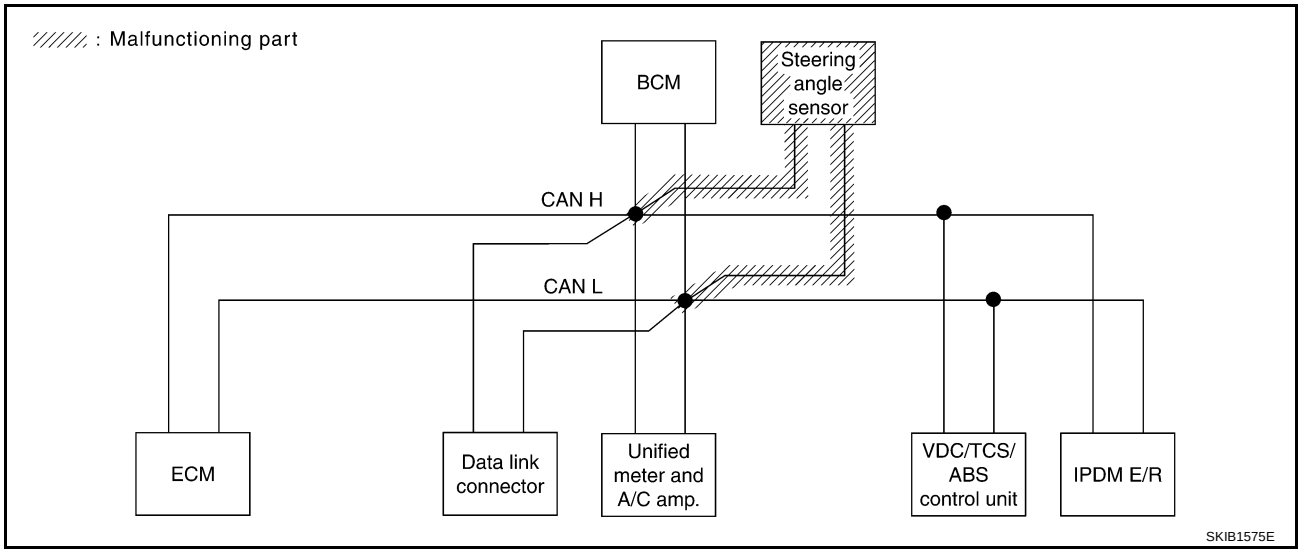


Case 6

Check steering angle sensor circuit. Refer to LAN-112, "Steering Angle Sensor Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2252E



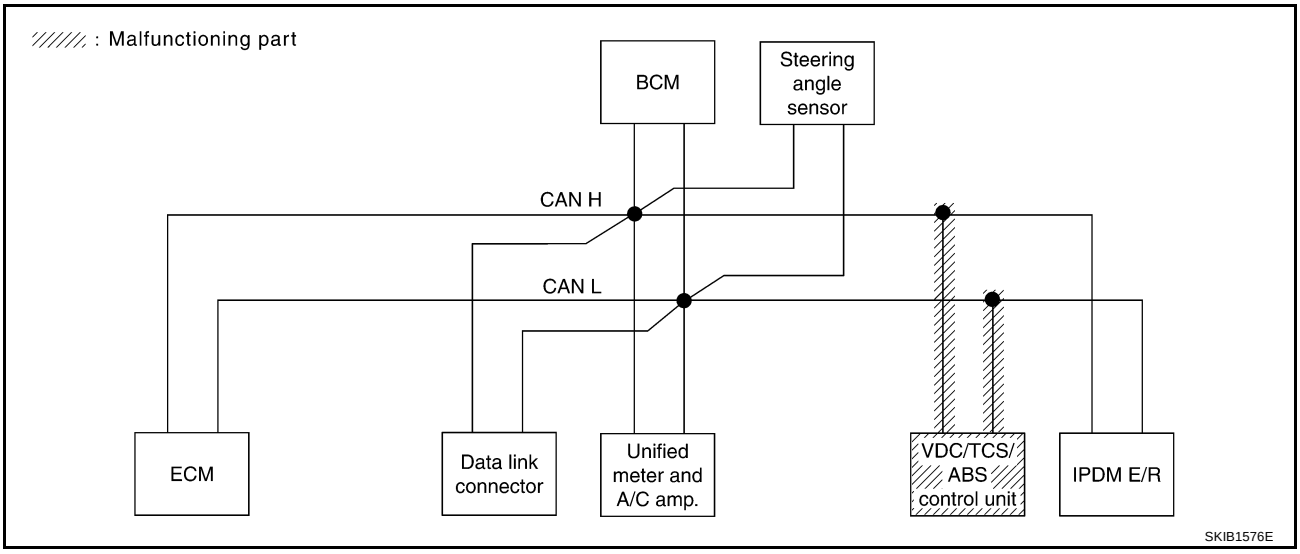
SKIB1575E

Case 7

Check VDC/TCS/ABS control unit circuit. Refer to LAN-113, "VDC/TCS/ABS Control Unit Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2253E



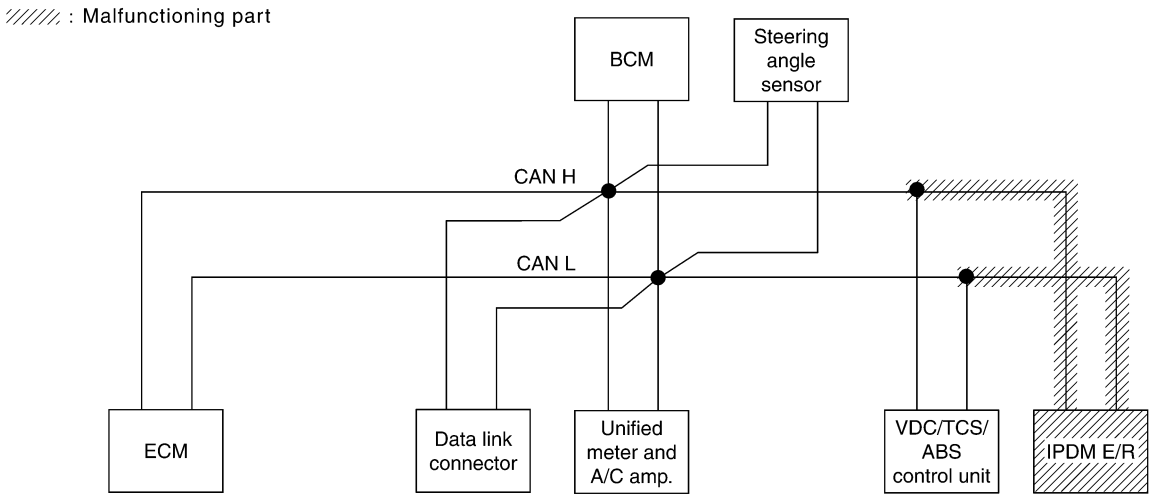
SKIB1576E

Case 8

Check IPDM E/R circuit. Refer to LAN-113, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2254E



SKIB1579E

Case 9

Check CAN communication circuit. Refer to LAN-114, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2255E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-117, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2256E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-117, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
METER A/C AMP	No indication	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB2257E

Inspection Between Data Link Connector and VDC/TCS/ABS Control Unit Circuit

AKS00AA3

1. CHECK CONNECTOR

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

- Harness connector M15
- Harness connector E108

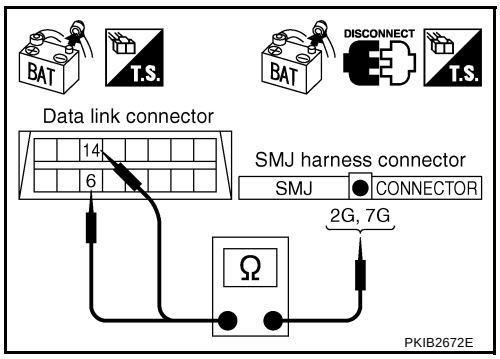
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and harness connector M15 terminals 2G (L), 7G (P).

6 (L) – 2G (L) : Continuity should exist.
14 (P) – 7G (P) : Continuity should exist.



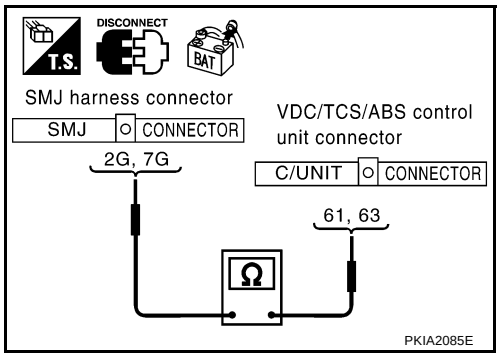
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (P).

2G (L) – 61 (L) : Continuity should exist.
7G (P) – 63 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Inspection

AKS00AA4

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector F102
- Harness connector M72

OK or NG

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

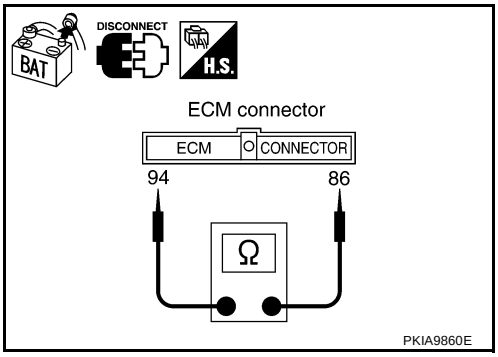
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.



Data Link Connector Circuit Inspection

AKS00AA5

1. CHECK CONNECTOR

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

OK or NG

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

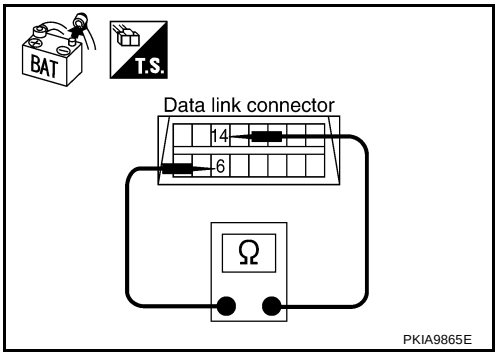
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-5, "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

AKS00AA6

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).

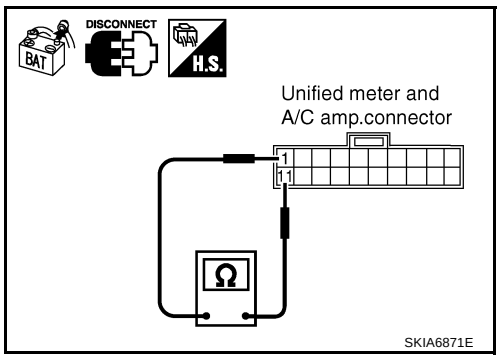
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS00AA7

1. CHECK CONNECTOR

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

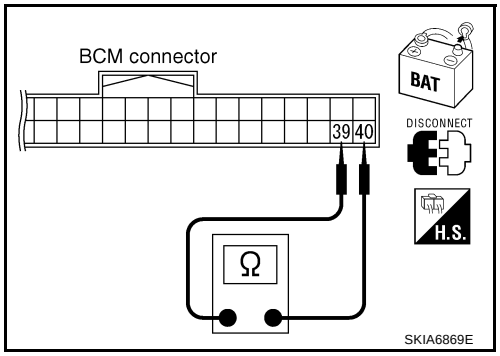
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Steering Angle Sensor Circuit Inspection

AKS00AA8

1. CHECK CONNECTOR

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

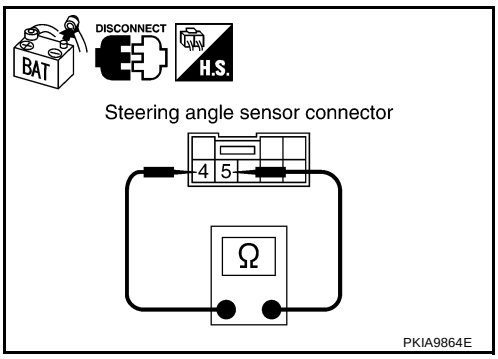
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M22 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.

VDC/TCS/ABS Control Unit Circuit Inspection

AKS00AA9

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check terminals and connector of VDC/TCS/ABS control unit for damage, bend and loose connection (control unit side and harness side).

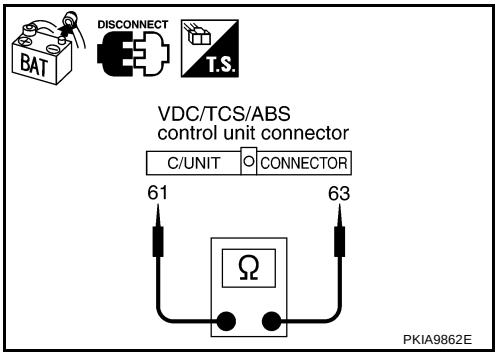
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector E118 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace VDC/TCS/ABS control unit.
NG >> Repair harness between VDC/TCS/ABS control unit and IPDM E/R.

IPDM E/R Circuit Inspection

AKS00AAA

1. CHECK CONNECTOR

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

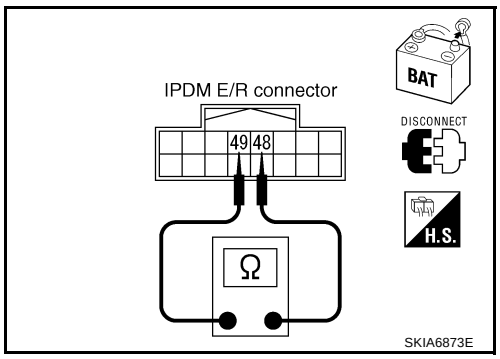
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E108.

CAN Communication Circuit Inspection

AKS00AAB

1. CHECK CONNECTOR

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

- ECM
- Unified meter and A/C amp.
- BCM
- Steering angle sensor
- VDC/TCS/ABS control unit
- IPDM E/R
- Between ECM and IPDM E/R

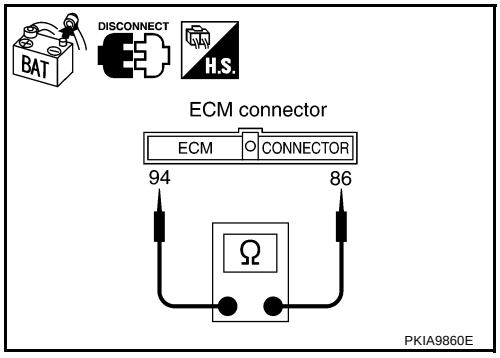
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector F102.

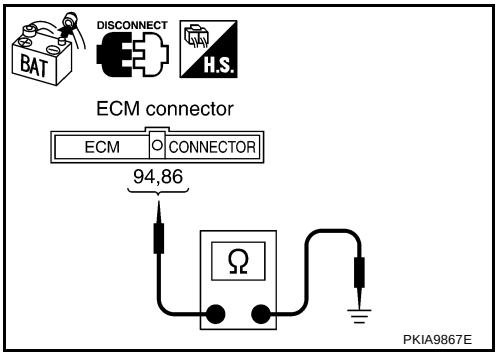
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – Ground : Continuity should not exist.
86 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector F102.



4. CHECK HARNESS FOR SHORT CIRCUIT

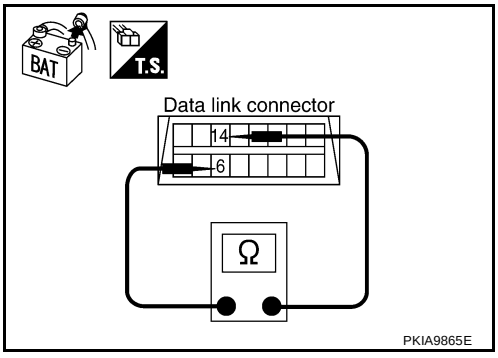
1. Disconnect following connectors.
   - Unified meter and A/C amp. connector
   - BCM connector
   - Steering angle sensor connector
   - Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

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

OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M15



5. CHECK HARNESS FOR SHORT CIRCUIT

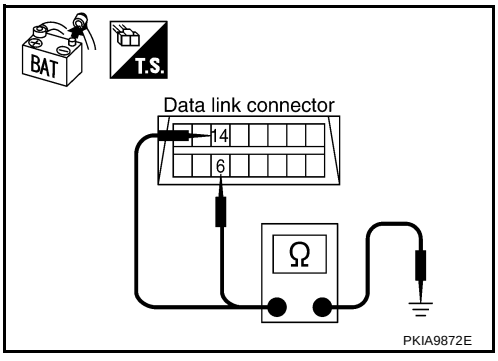
Check continuity between data link connector M8 terminals 6 (L), 14 (P) and ground.

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

OK or NG

OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

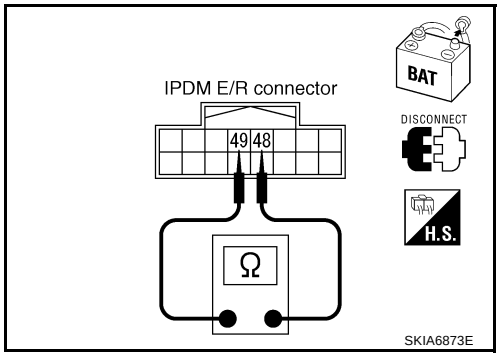
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M15



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Continuity should not exist.



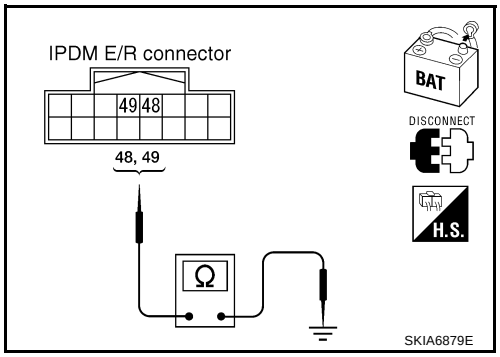
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and VDC/TCS/ABS control unit
- Harness between IPDM E/R and harness connector E108

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (P) and ground.

48 (L) – Ground : Continuity should not exist.
49 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and VDC/TCS/ABS control unit
- Harness between IPDM E/R and harness connector E108

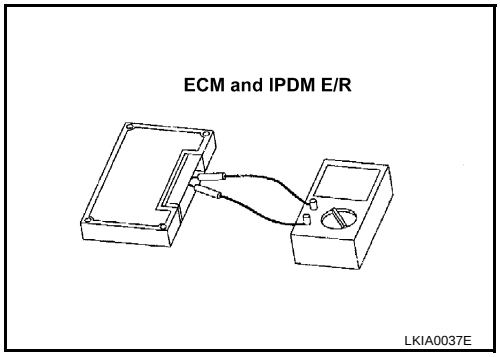
8. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.

94 – 86 : Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 9.
NG >> Replace ECM and/or IPDM E/R.

9. CHECK SYMPTOM

1. Fill in described symptoms on the column “Symptom” in the check sheet.
2. Connect all the connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"
.

10. 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 reproduced.

- Unified meter and A/C amp.
- BCM
- Steering angle sensor
- VDC/TCS/ABS 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

AKS00C6U

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

- IPDM E/R power supply circuit. Refer to PG-26, "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”" .

CAN SYSTEM (TYPE 5)

PFP:23710

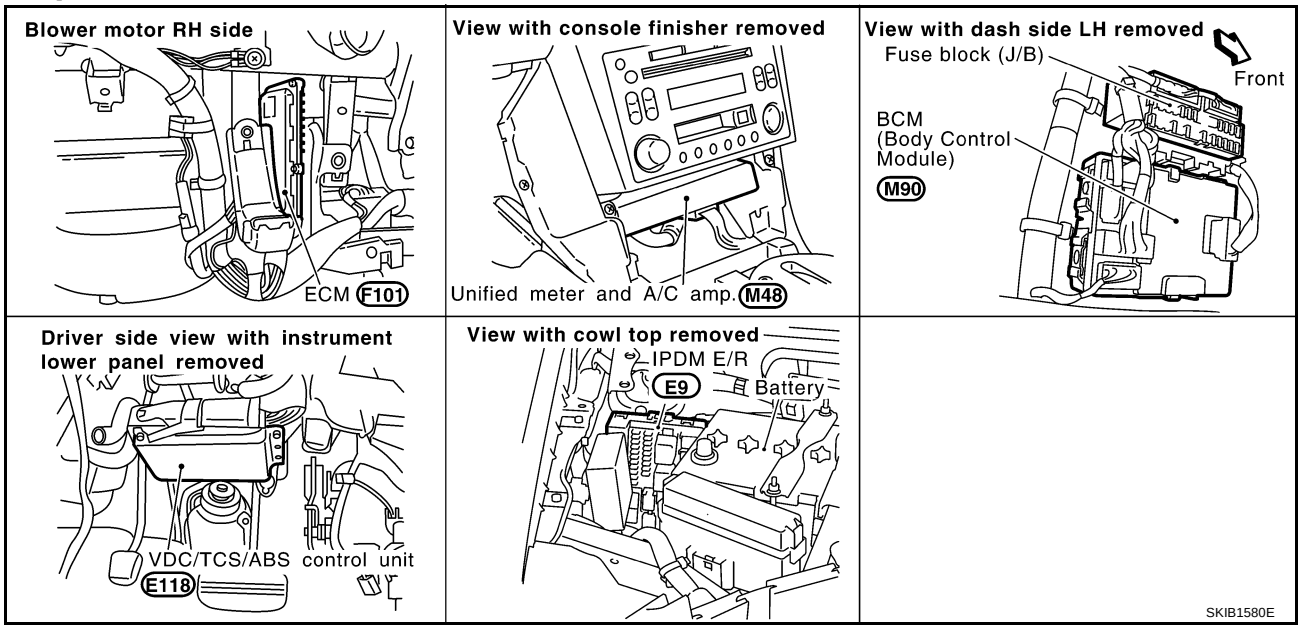
System Description

AKS00DT5

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

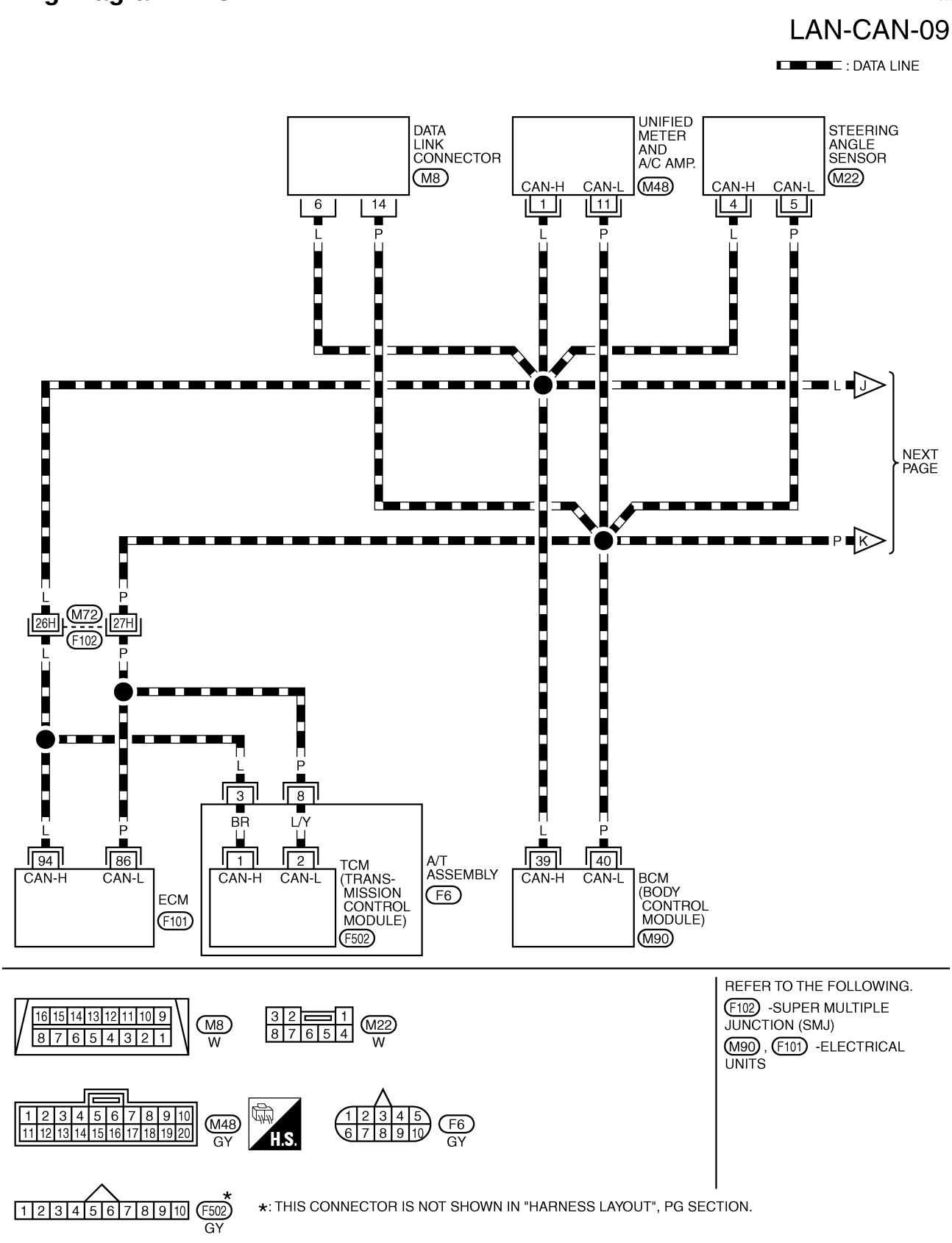
Component Parts and Harness Connector Location

AKS00DT6



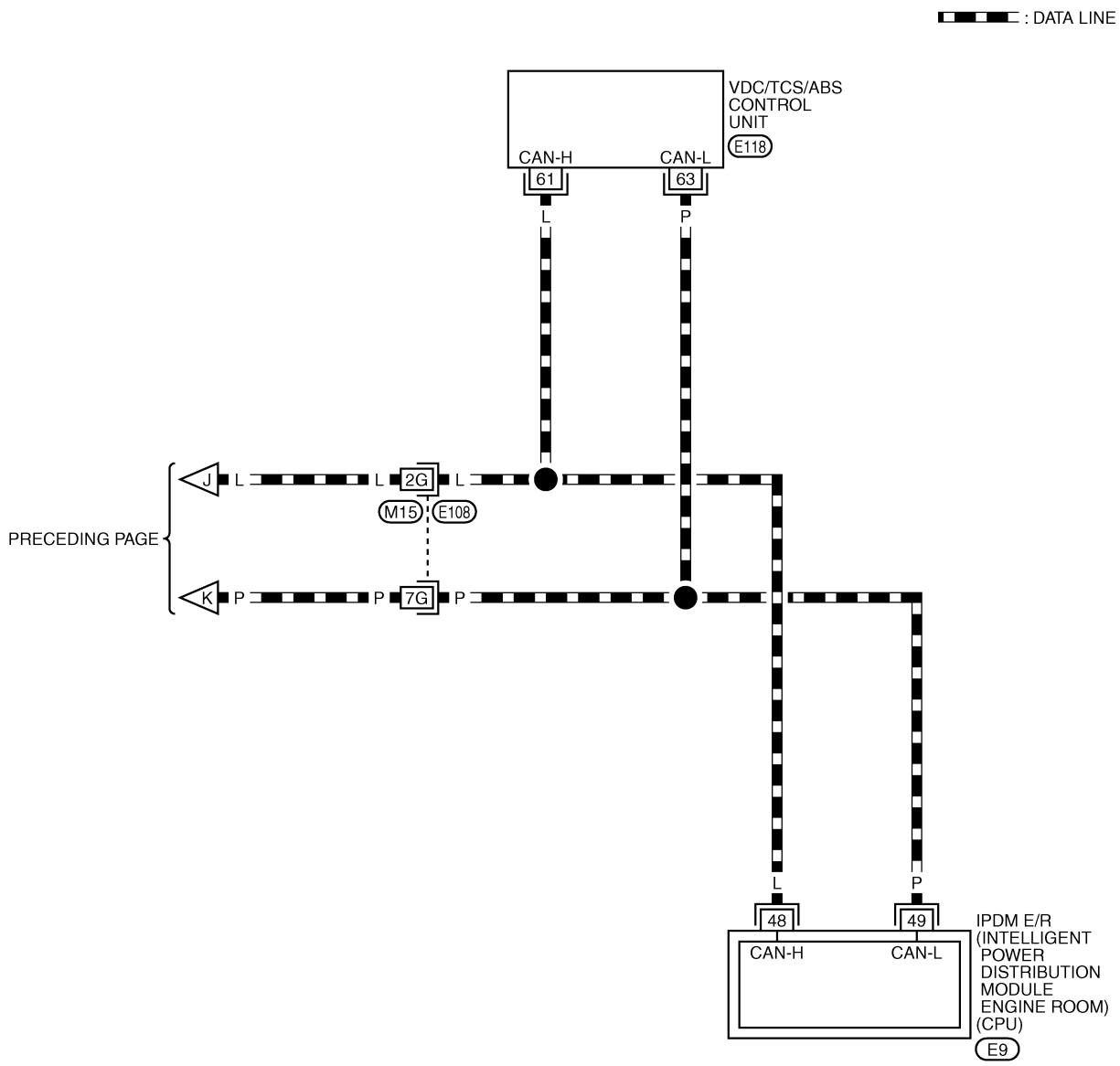
Wiring Diagram — CAN —

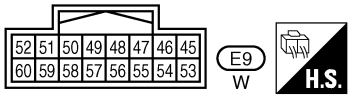
AKS00DT7



TKWT3239E

LAN-CAN-10





REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

E118 -ELECTRICAL UNITS

TKWT3240E

CHECK SHEET

AKS00DTN

NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Check sheet table

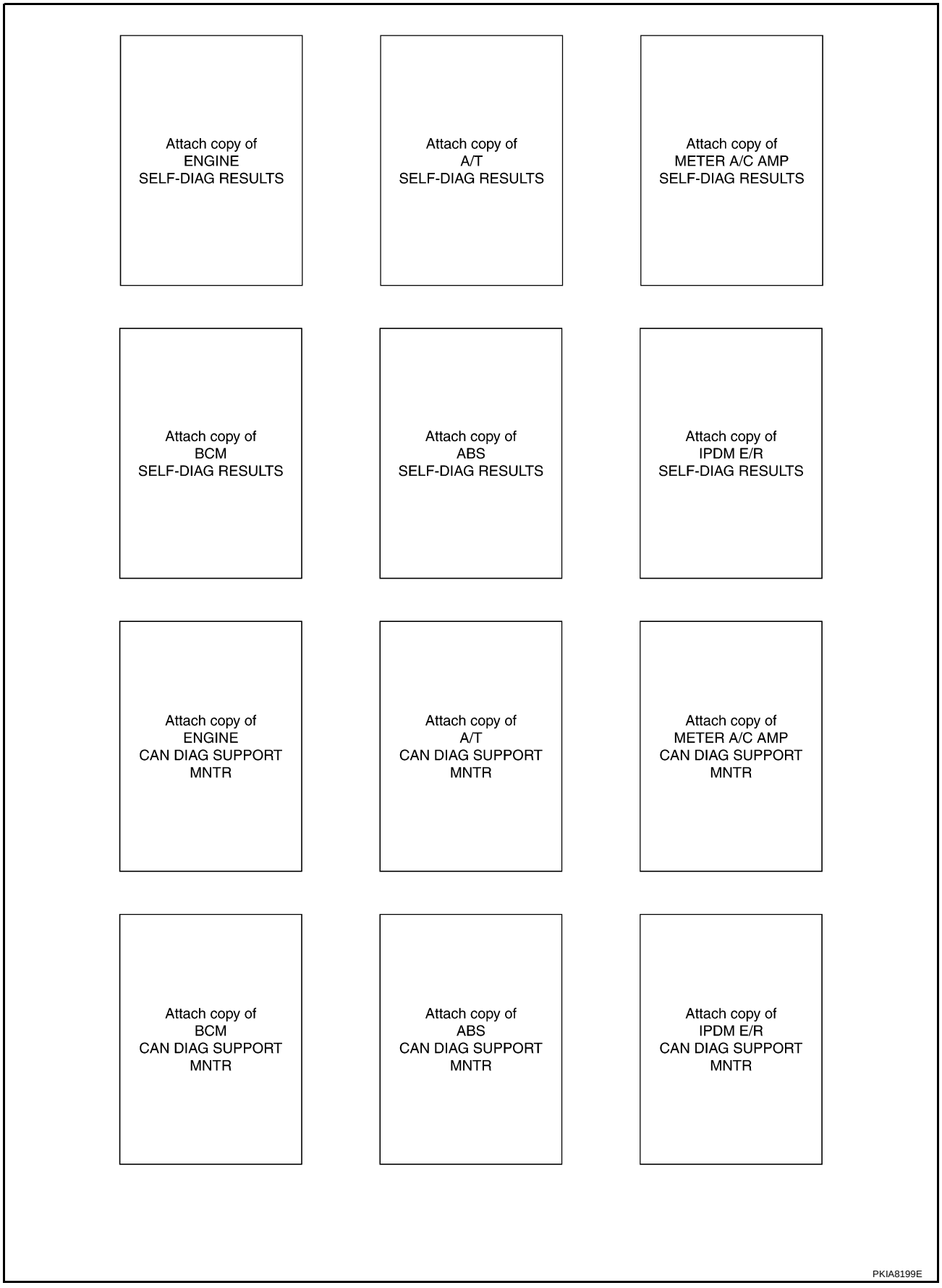
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB8662E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
METER A/C AMP
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
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IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8199E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

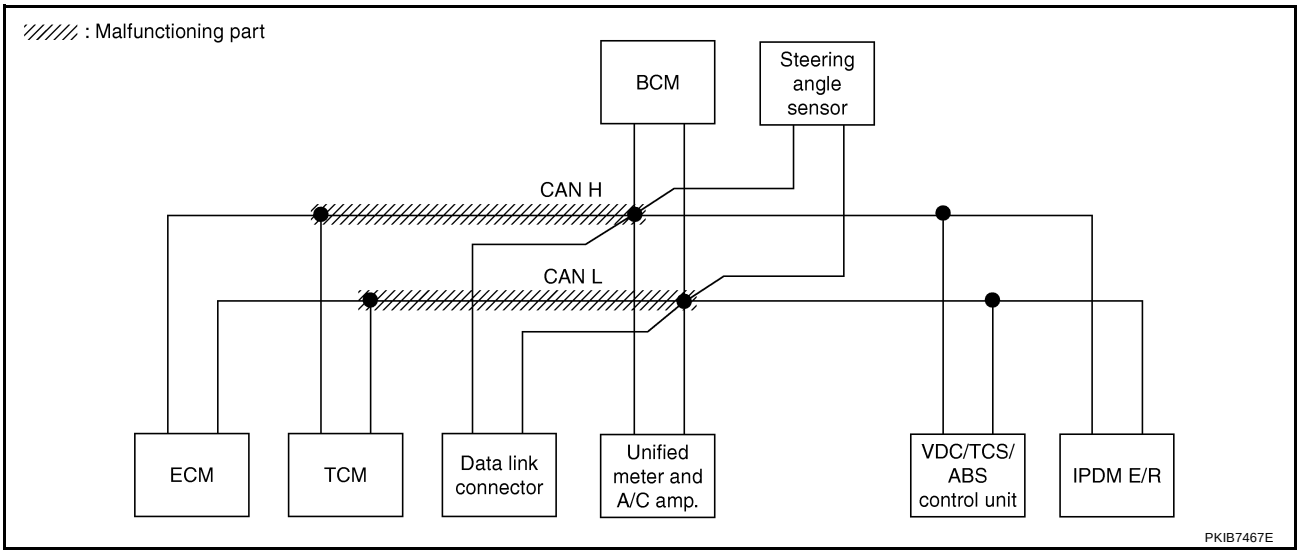
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-134, "Inspection Between TCM and Data Link Connector Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIB8663E



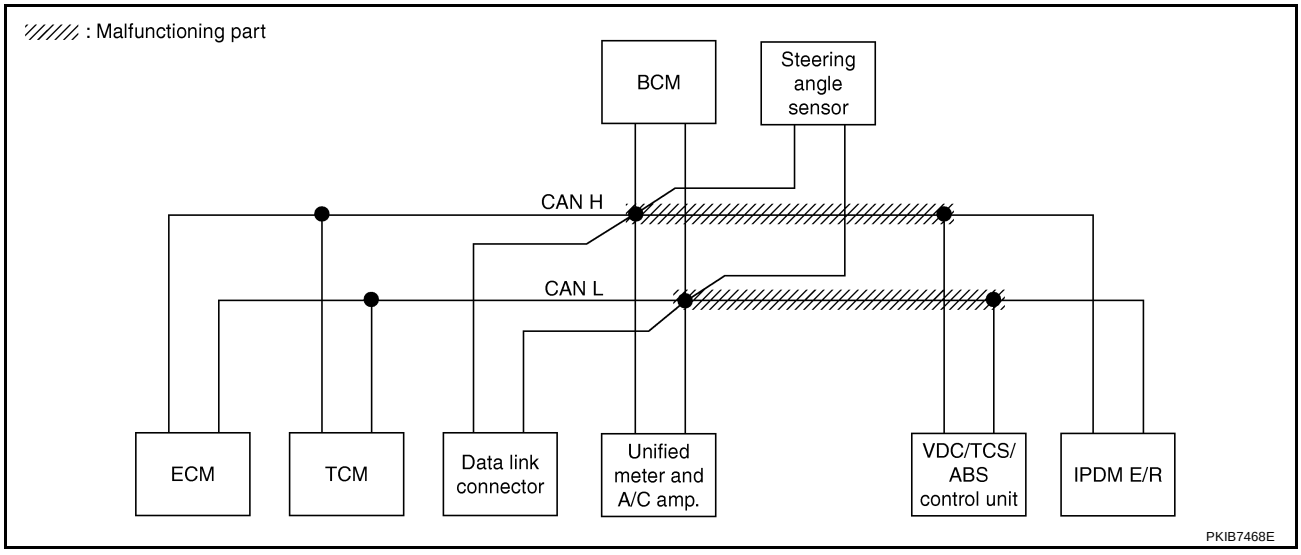
PKIB7467E

Case 2

Check harness between data link connector and VDC/TCS/ABS control unit. Refer to LAN-134, "Inspection Between Data Link Connector and VDC/TCS/ABS Control Unit Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	✓	✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	✓	—	✓	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	✓	—	✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	✓	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	✓	✓	✓	—	✓	—	—	✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	✓	—

PKIB8664E

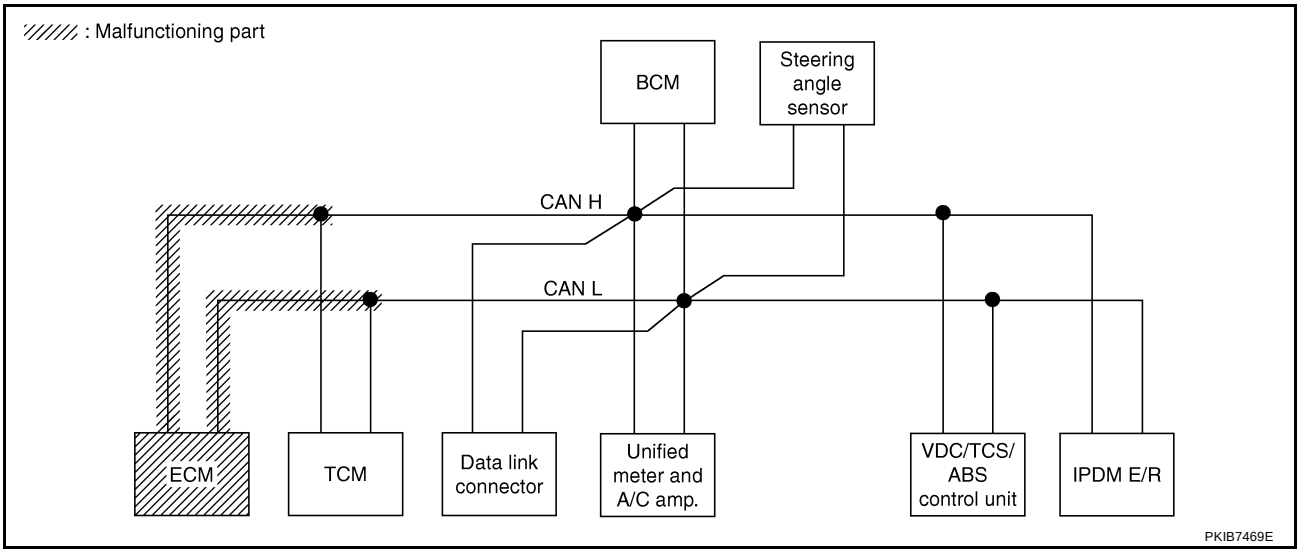


Case 3

Check ECM circuit. Refer to LAN-135, "ECM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
METER A/C AMP	No indication	—	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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) ✓	—

PKIB8665E

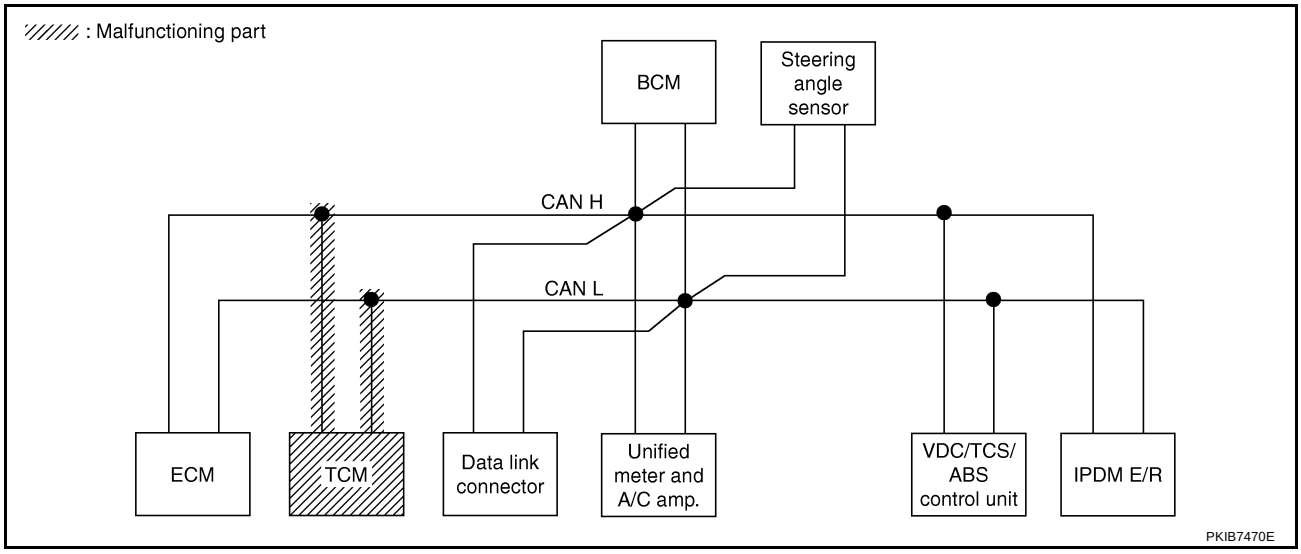


Case 4

Check TCM circuit. Refer to LAN-136, "TCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIB8666E



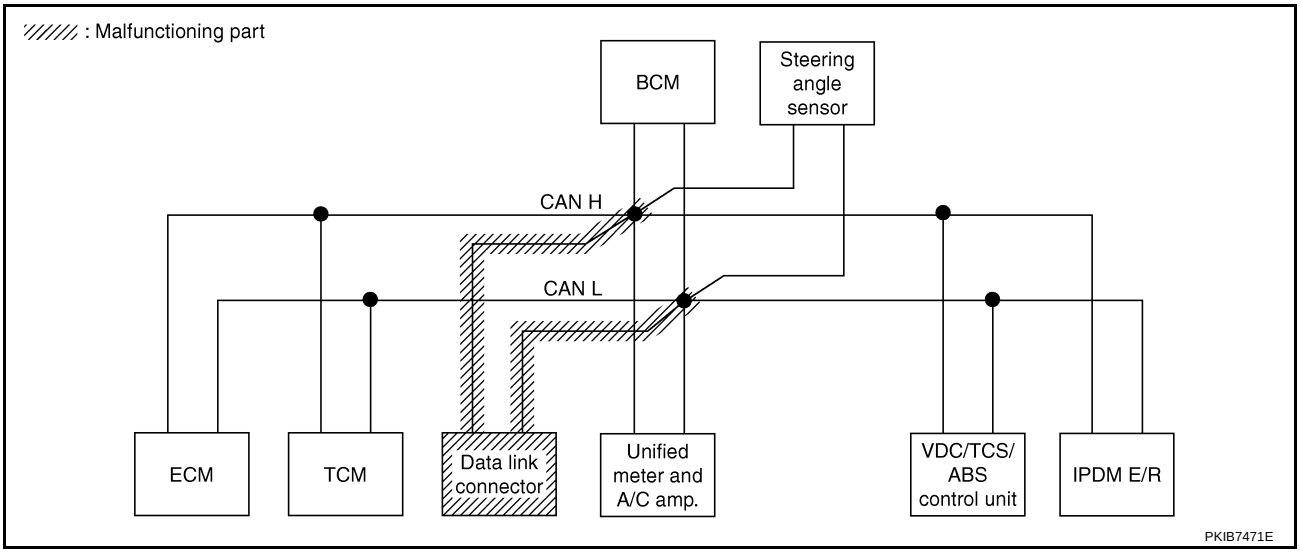
PKIB7470E

Case 5

Check data link connector circuit. Refer to LAN-136, "Data Link Connector Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication ✓	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)	—

PKIB8667E



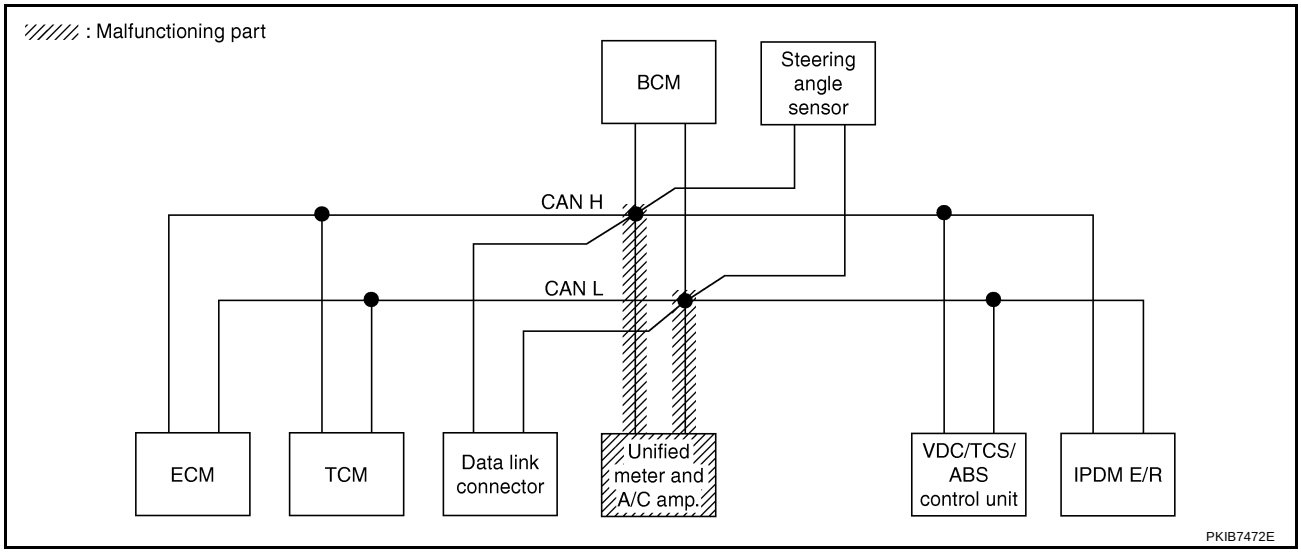
PKIB7471E

Case 6

Check unified meter and A/C amp. circuit. Refer to LAN-137, "Unified Meter and A/C Amp. Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
METER A/C AMP	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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)	—

PKIB8668E

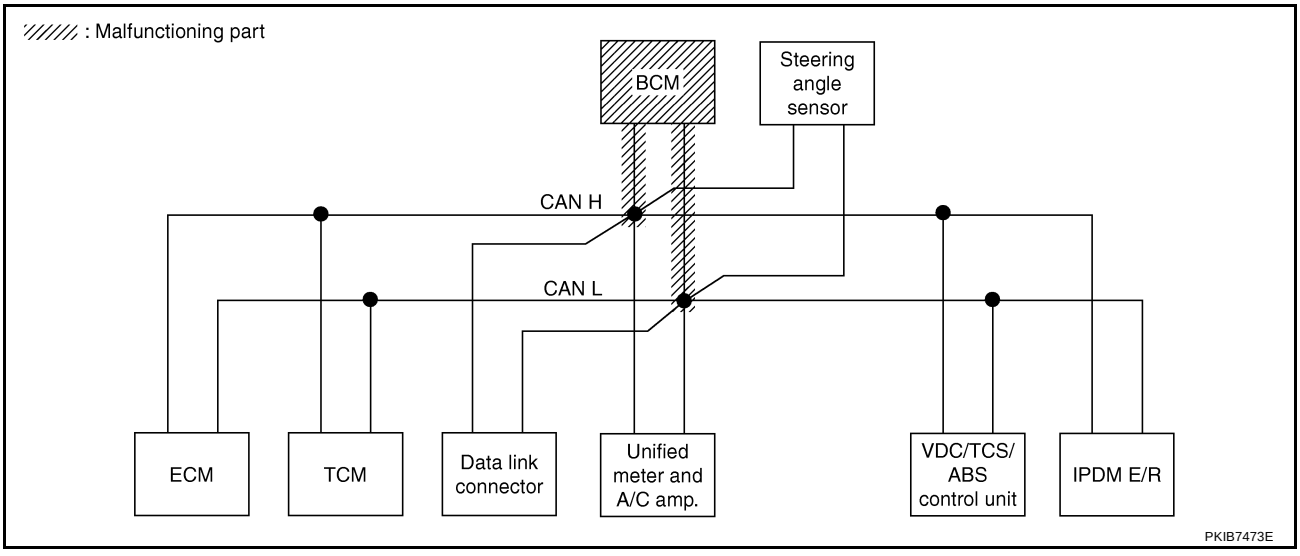


Case 7

Check BCM circuit. Refer to LAN-137, "BCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication ✓	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) ✓	—

PKIB8669E

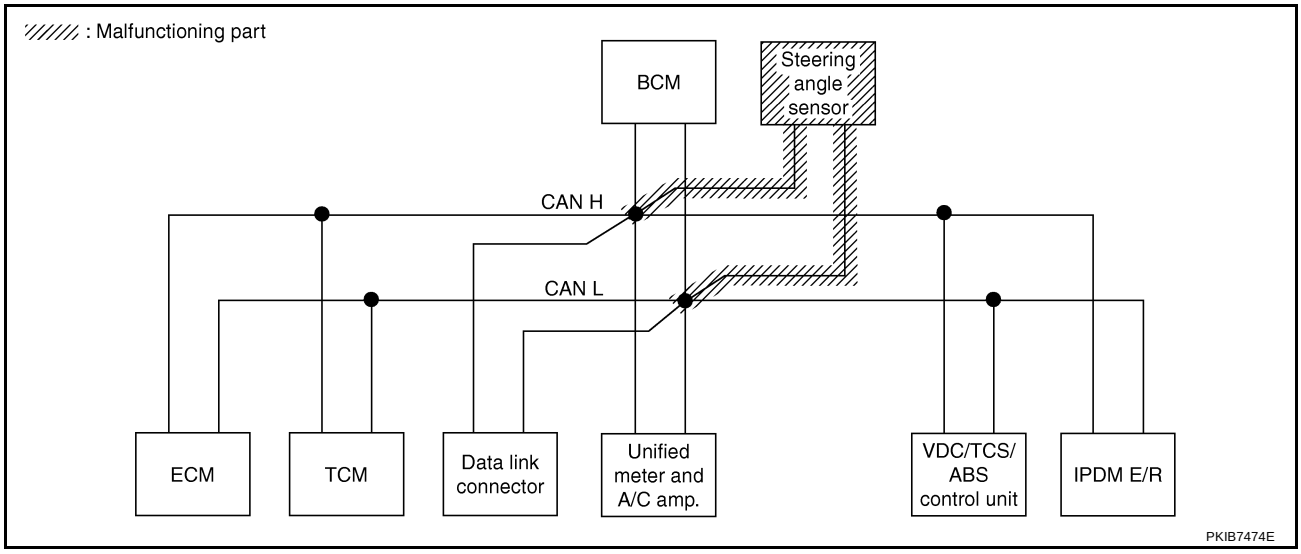


Case 8

Check steering angle sensor circuit. Refer to LAN-138, "Steering Angle Sensor Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIB8670E



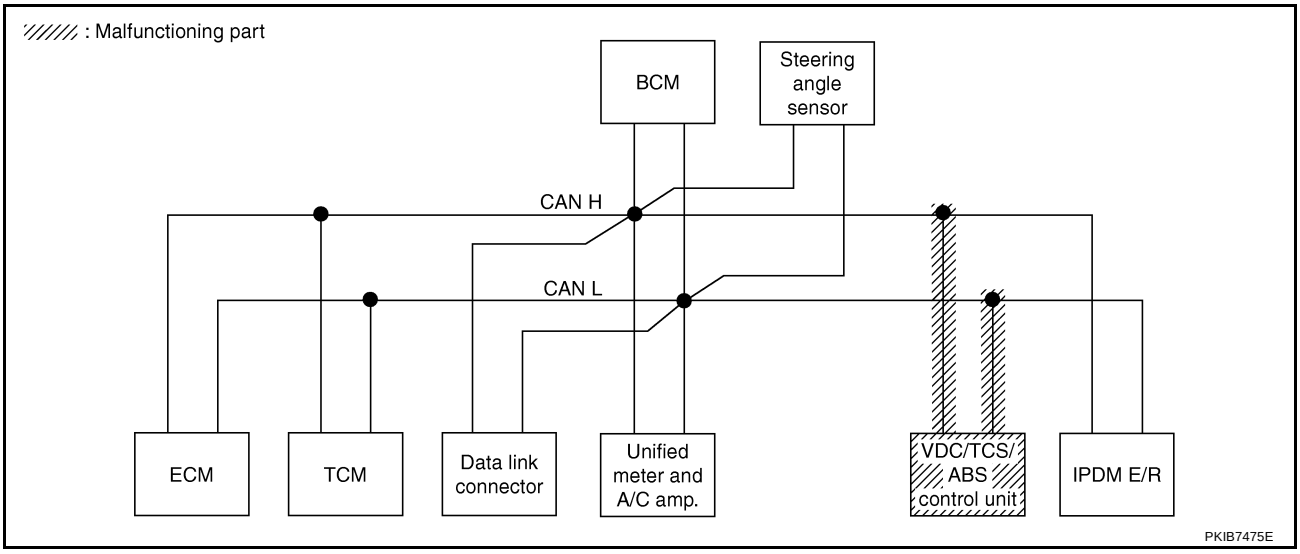
PKIB7474E

Case 9

Check VDC/TCS/ABS control unit circuit. Refer to LAN-138, "VDC/TCS/ABS Control Unit Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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)	—

PKIB8671E

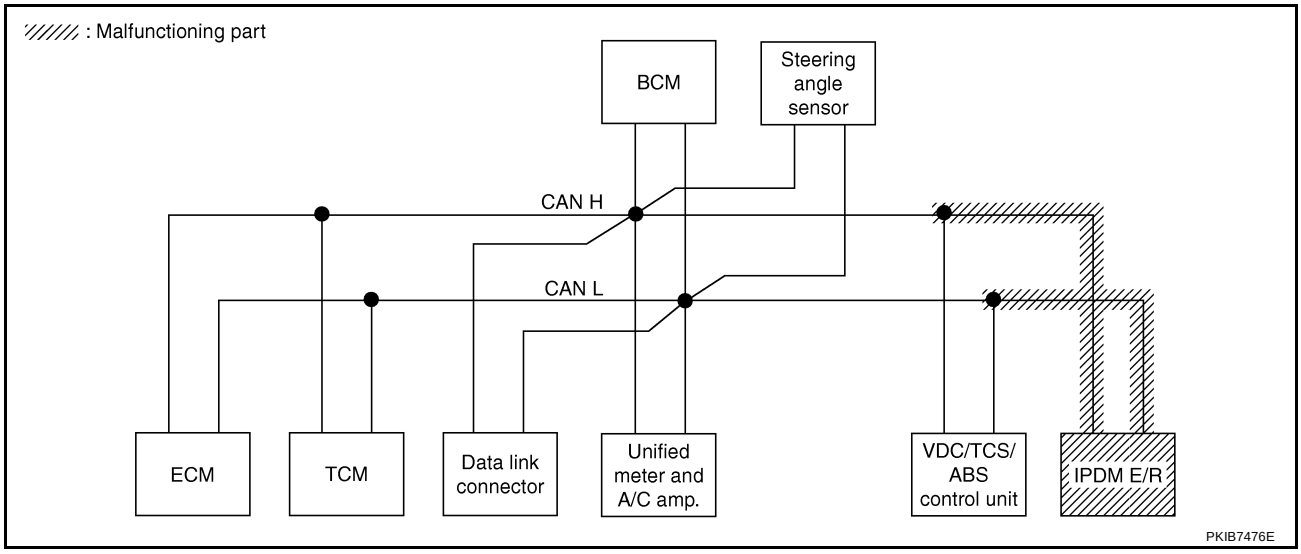


Case 10

Check IPDM E/R circuit. Refer to LAN-139, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIB8672E



PKIB7476E

Case 11

Check CAN communication circuit. Refer to LAN-139, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIB8673E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-142, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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)	—

PKIB8674E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-142, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB8675E

Inspection Between TCM and Data Link Connector Circuit

AKS00DTO

1. CHECK CONNECTOR

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

- Harness connector F102
- Harness connector M72

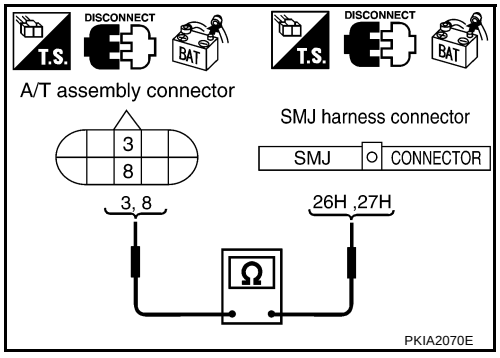
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F6 terminals 3 (L), 8 (P) and harness connector F102 terminals 26H (L), 27H (P).

3 (L) – 26H (L) : Continuity should exist.
8 (P) – 27H (P) : Continuity should exist.



OK or NG

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

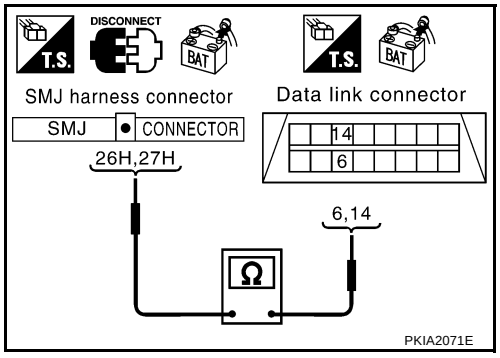
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 26H (L), 27H (P) and data link connector M8 terminals 6 (L), 14 (P).

26H (L) – 6 (L) : Continuity should exist.
27H (P) – 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.



Inspection Between Data Link Connector and VDC/TCS/ABS Control Unit Circuit

AKS00DTP

1. CHECK CONNECTOR

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

- Harness connector M15
- Harness connector E108

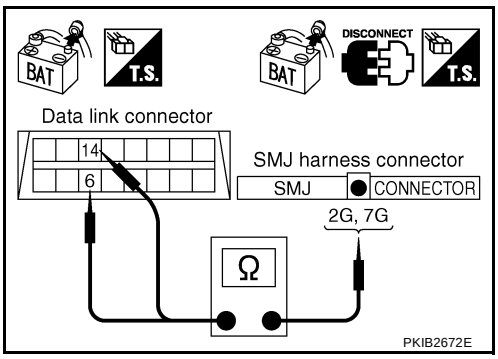
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and harness connector M15 terminals 2G (L), 7G (P).

6 (L) – 2G (L) : Continuity should exist.
14 (P) – 7G (P) : Continuity should exist.



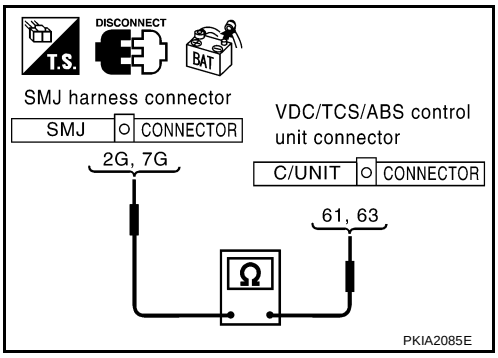
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (P).

2G (L) – 61 (L) : Continuity should exist.
7G (P) – 63 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Inspection

AKS00DTQ

1. CHECK CONNECTOR

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

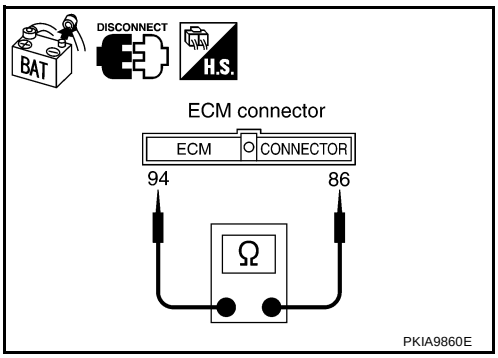
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Inspection

AKS00DTR

1. CHECK CONNECTOR

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

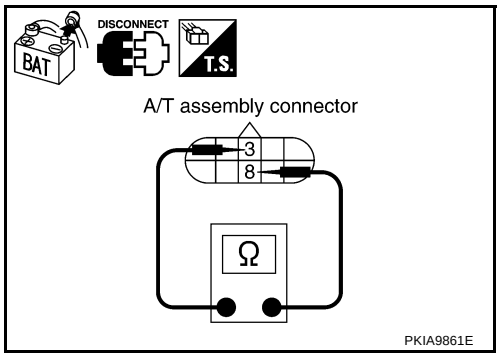
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F6 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F102.

Data Link Connector Circuit Inspection

AKS00DTS

1. CHECK CONNECTOR

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

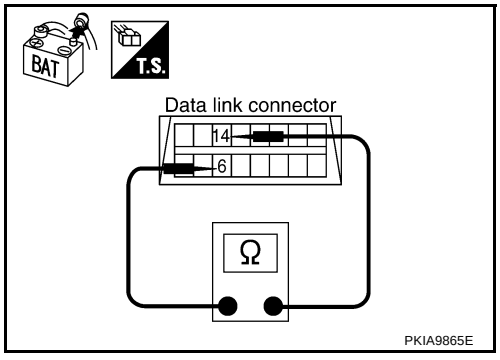
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-5, "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

AKS00DTT

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).

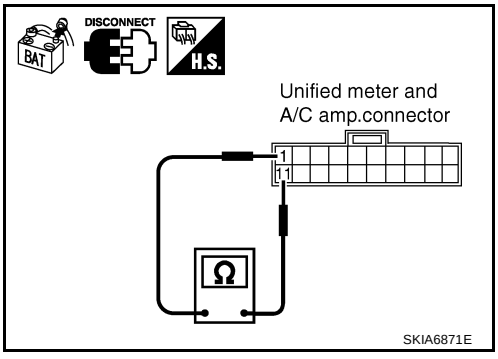
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS00DTU

1. CHECK CONNECTOR

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

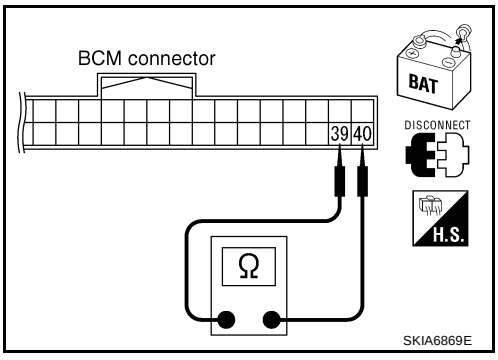
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-18, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Steering Angle Sensor Circuit Inspection

AKS00DTV

1. CHECK CONNECTOR

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

OK or NG

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

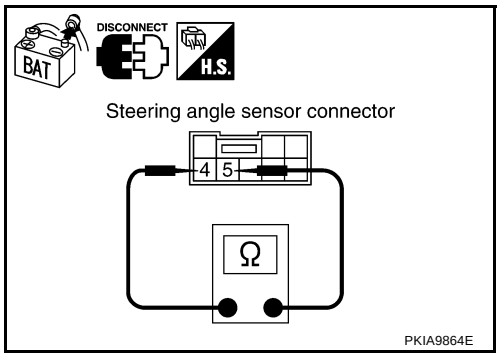
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M22 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.



VDC/TCS/ABS Control Unit Circuit Inspection

AKS00DTW

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check terminals and connector of VDC/TCS/ABS control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

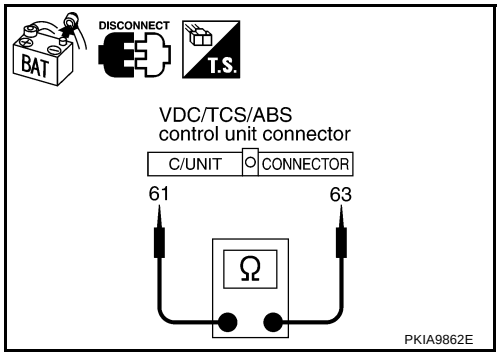
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector E118 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace VDC/TCS/ABS control unit.
NG >> Repair harness between VDC/TCS/ABS control unit and IPDM E/R.



IPDM E/R Circuit Inspection

AKS00DTX

1. CHECK CONNECTOR

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

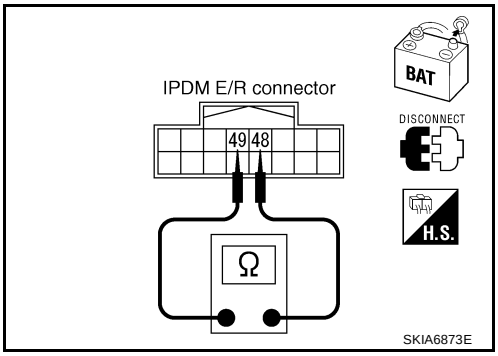
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E108.

CAN Communication Circuit Inspection

AKS00DTY

1. CHECK CONNECTOR

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

- ECM
- A/T assembly
- Unified meter and A/C amp.
- BCM
- Steering angle sensor
- VDC/TCS/ABS control unit
- IPDM E/R
- Between ECM and IPDM E/R

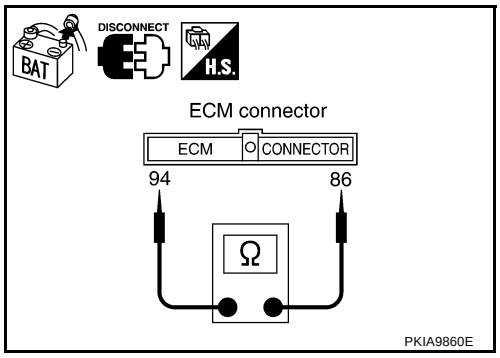
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ECM connector
- A/T assembly connector
- Harness connector F102
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.



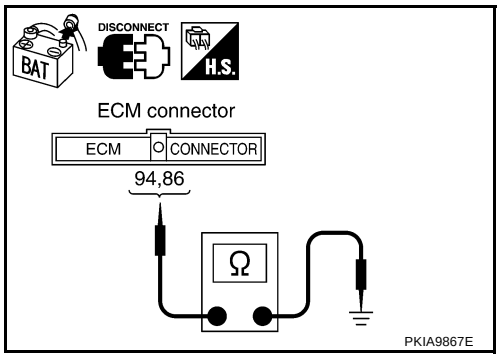
OK or NG

OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – Ground : Continuity should not exist.
86 (P) – Ground : Continuity should not exist.



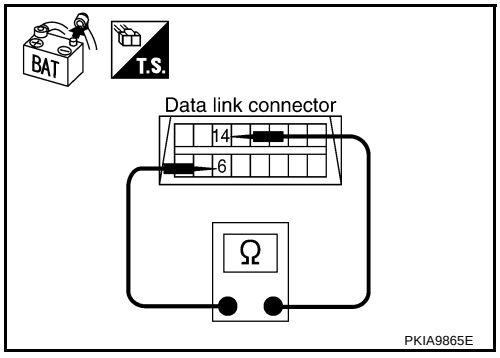
OK or NG

OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Unified meter and A/C amp. connector
- BCM connector
- Steering angle sensor connector
- Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

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



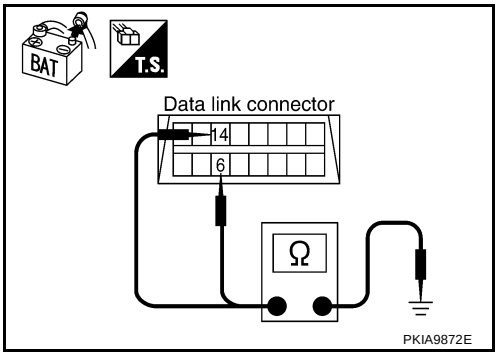
OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M15

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M8 terminals 6 (L), 14 (P) and ground.

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



OK or NG

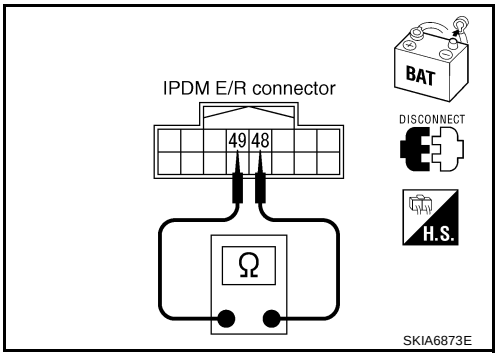
OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M15

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

48 (L) – 49 (P) : Continuity should not exist.



OK or NG

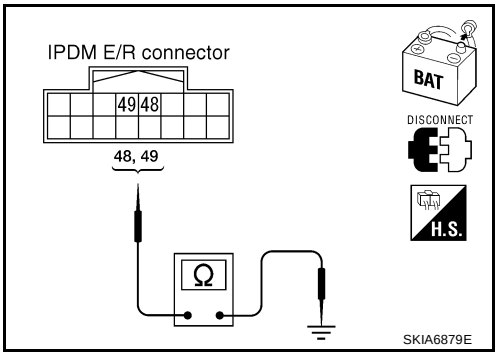
OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and VDC/TCS/ABS control unit
- Harness between IPDM E/R and harness connector E108

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (P) and ground.

48 (L) – Ground : Continuity should not exist.
49 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and VDC/TCS/ABS control unit
- Harness between IPDM E/R and harness connector E108

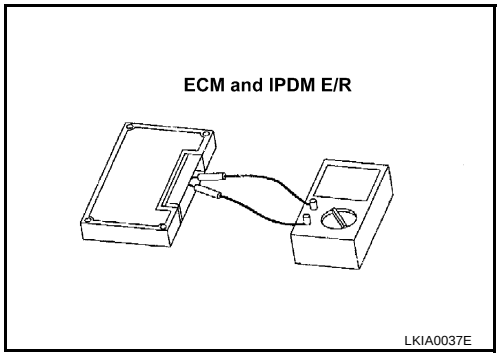
8. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.

94 – 86 : Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 9.
NG >> Replace ECM and/or IPDM E/R.

9. CHECK SYMPTOM

1. Fill in described symptoms on the column “Symptom” in the check sheet.
2. Connect all the connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

10. 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 reproduced.

- A/T assembly
- Unified meter and A/C amp.
- BCM
- Steering angle sensor
- VDC/TCS/ABS 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

AKS00DTZ

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

- IPDM E/R power supply circuit. Refer to PG-26, "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”" .