SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS

PFP:00001

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

UKS001OF

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

WARNING:

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

Precautions When Using CONSULT-II

UKS001R6

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-6, "TROUBLE DIAGNOSES WORK FLOW" .

Precautions For Trouble Diagnosis

UKS001OG

CAN SYSTEM

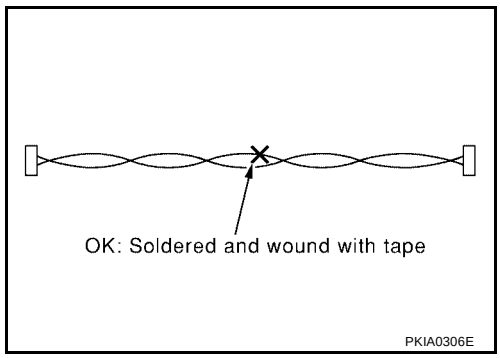
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair

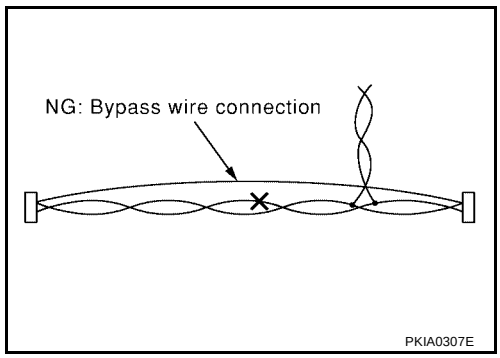
UKS001OH

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

UKS001YO

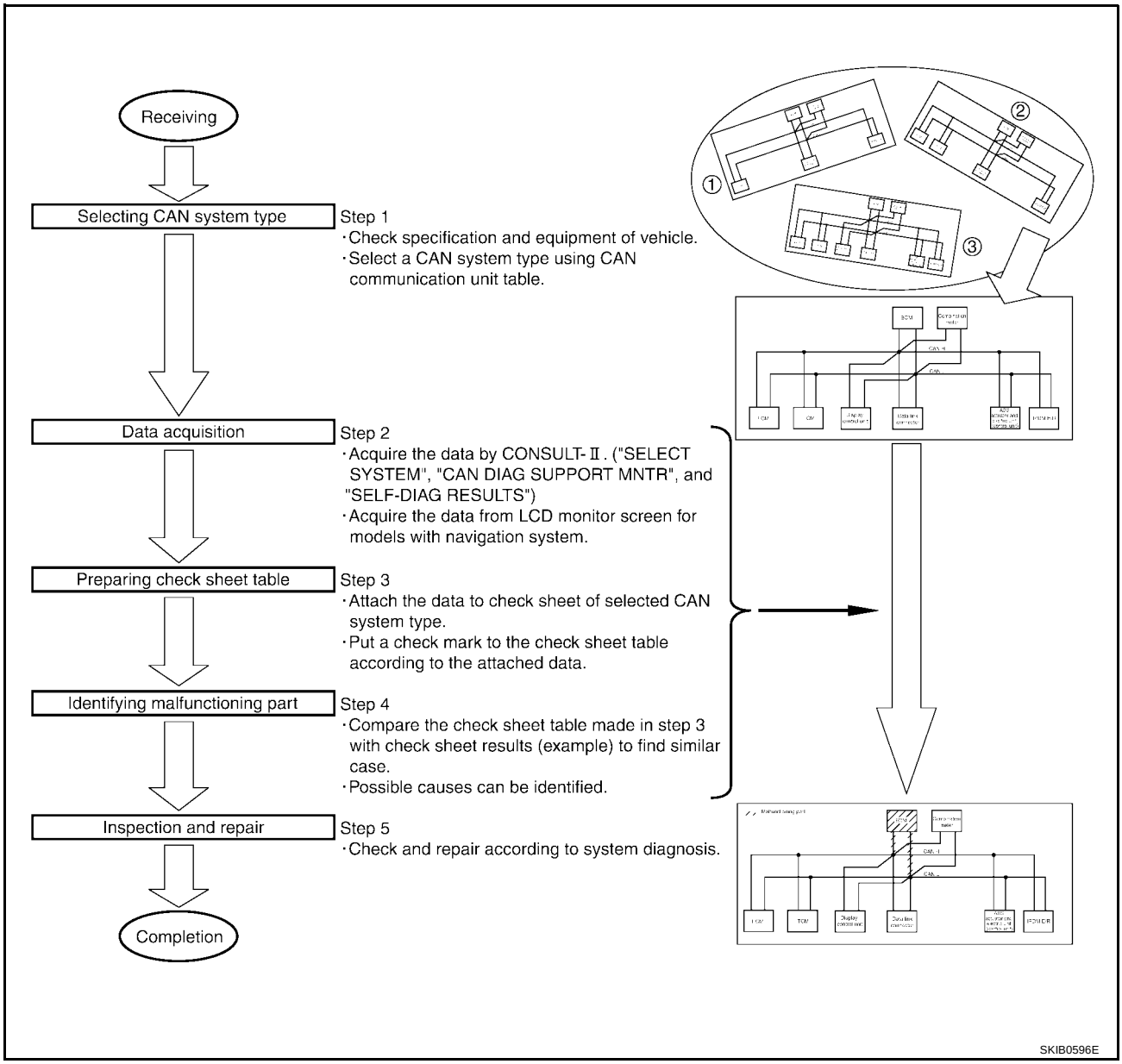
WHEN A MALFUNCTION IS DETECTED BY CAN COMMUNICATION SYSTEM

- 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-8, "SELECTING CAN SYSTEM TYPE (HOW TO USE SPECIFICATION TABLE)" .
- Step 2 : Refer to LAN-9, "ACQUISITION OF DATA BY CONSULT-II" .
- Step 3 : Refer to LAN-10, "HOW TO USE CHECK SHEET TABLE" .
- Step 4 : Refer to LAN-11, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced" .
- Step 5 : Check and repair according to system diagnosis.

Diagnosis Procedure

UKS001YP

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) Sedan/2WD/VQ35DE/5AT/TCS/With navigation system

CAN Communication Unit

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

Body type	Sedan											
Axle	2WD											
Engine	QR25DE		VQ35DE				QR25DE		VQ35DE			
Transmission	M/T						4A/T		5A/T			
Brake control	NO ABS	ABS	NO ABS	ABS	TCS		NO ABS	ABS	ABS	TCS	ABS	TCS
Navigation system					×	×		×			×	×
CAN system type	1			2	3	4	5	6	7	8	9	10
CAN system trouble diagnosis												

×: Applicable

Check basic specification of the vehicle.

Select "×" if it is model with navigation system.

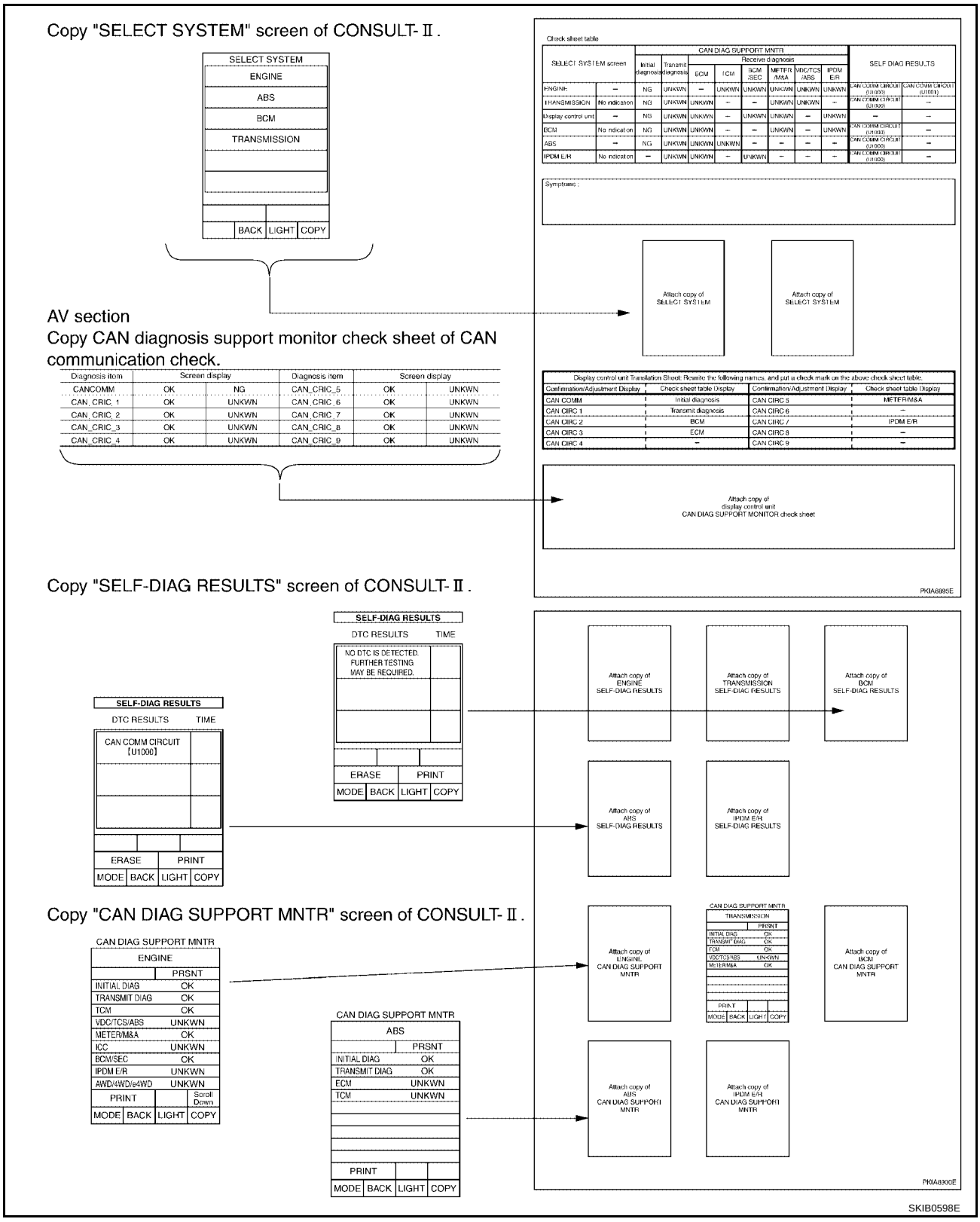
Which number is selected when sequentially selecting from the top of the specification table?
The number is "CAN system type" of the applicable vehicle.

In the case of this example:
It corresponds to type 10.

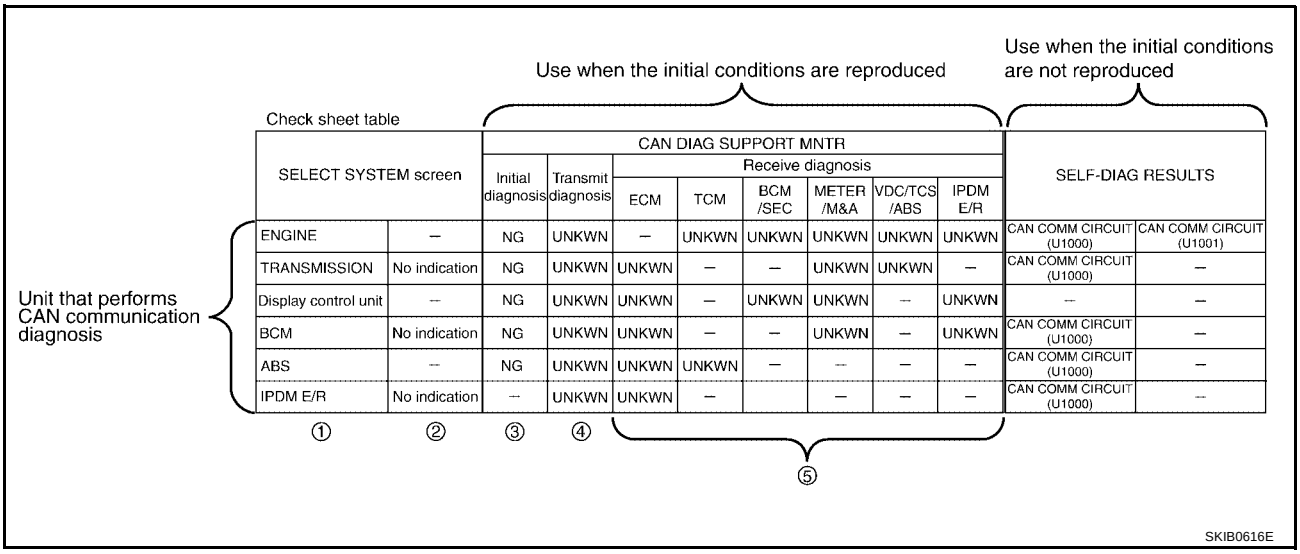
SKIB0597E

ACQUISITION OF DATA BY CONSULT-II

Attach the data acquired by CONSULT-II on the check sheet determined according to CAN system type.(For display control unit, transfer the data from the LCD monitor screen of the vehicle to the CAN diagnosis support monitor check sheet AV-131, "CAN Communication Line Check" .)



HOW TO USE CHECK SHEET TABLE

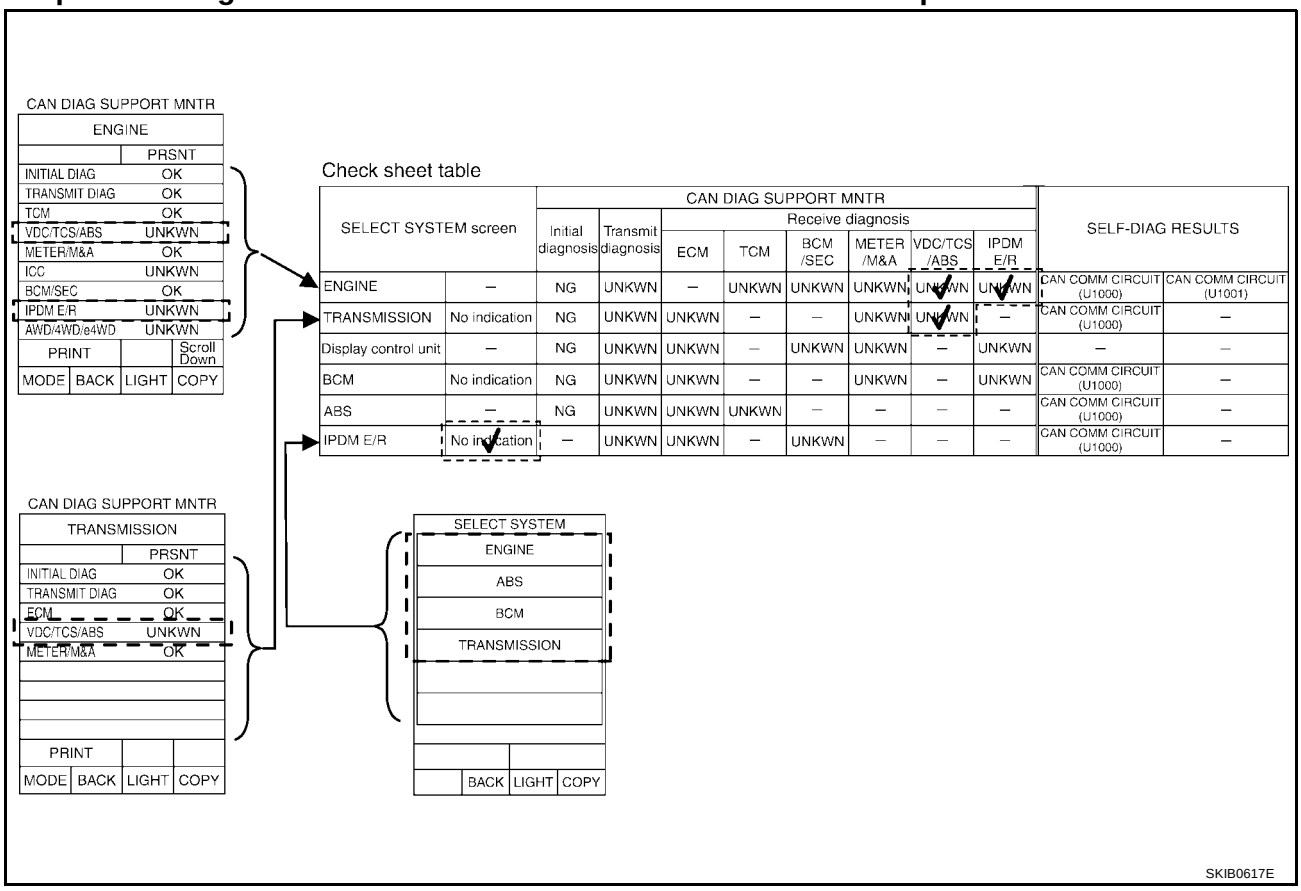


1. Unit names displayed on CONSULT-II
2. “No indication” : Put a check mark to it if the unit name described in step 1 is not displayed on “SELECT SYSTEM” screen of CONSULT-II. (Unit communicating with CONSULT-II via CAN communication line)
   “–” : Column not used (Unit communicating with CONSULT-II 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.
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.)

- Refer to LAN-11, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced" when the initial conditions are reproduced.
- Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" when the 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.

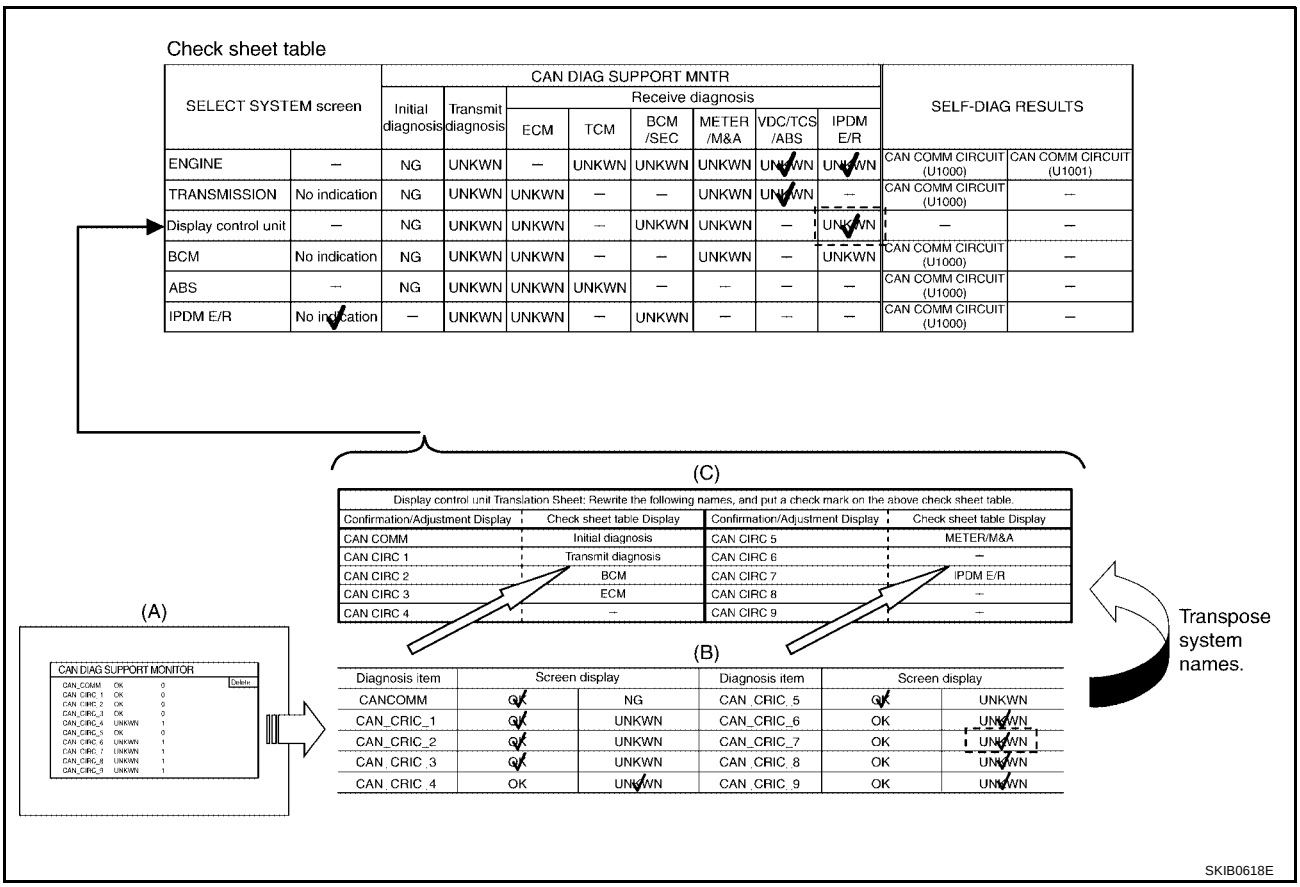
   NOTE:
   Put a check mark to “No indication” of IPDM E/R because IPDM E/R is not displayed on “SELECT SYSTEM” screen.

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 “VDC/TCS/ABS”, “ICC”, “IPDM E/R” and “AWD/4WD/e4WD”. But put a check mark to “VDC/TCS/ABS” and “IPDM E/R” because “UNKWN” is listed on the column of reception diagnosis of the check sheet table.

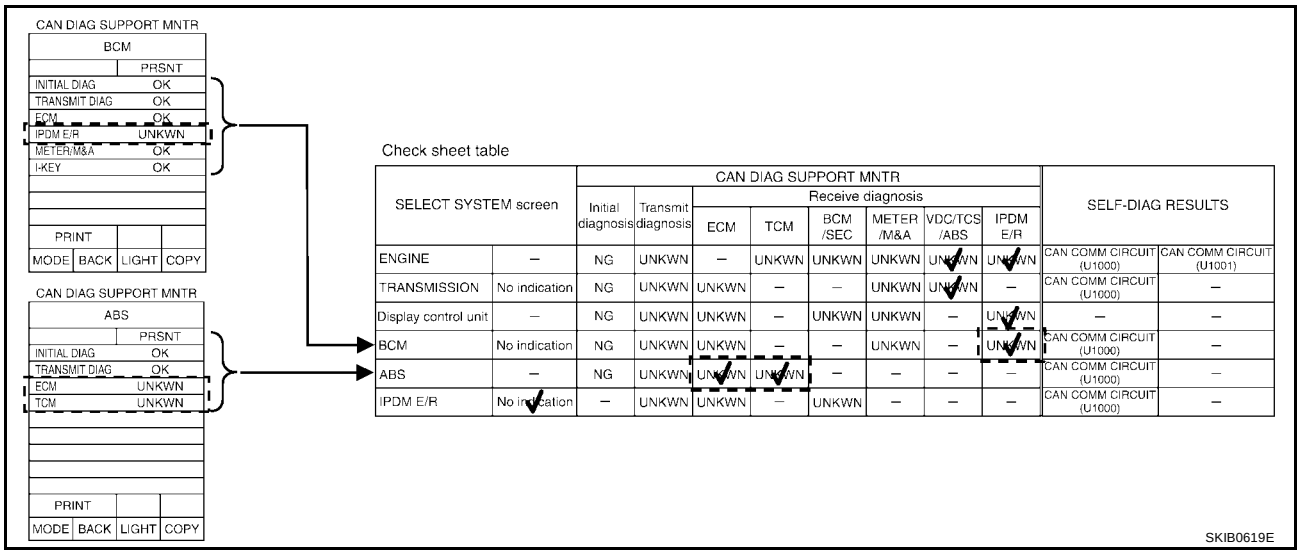
3. Confirm the unit name that “UNKWN” is displayed on the copy of “CAN DIAG SUPPORT MNTR” screen of “TRANSMISSION” as well as “ENGINE”. And then, put a check mark to the check sheet table.

   NOTE:
   - For “TRANSMISSION”, “UNKWN” is displayed on “VDC/TCS/ABS”. Put a check mark to it.



4. Display control unit reads the CAN diagnosis support monitor check sheet (B) AV-131, "CAN Communication Line Check" transferred from the LCD monitor screen(A). The transferred CAN diagnosis support monitor check sheet is copied to the Check sheet, and conversed according to the Display control unit Translation Sheet. And then put a check mark to the check sheet table.

NOTE:
In the CAN diagnosis support monitor check sheet (B), check marks are put to “CAN CIRC 4”, “CAN CIRC 6”, “CAN CIRC 7”, “CAN CIRC 8” and “CAN CIRC 9”. But, in the column of the check sheet table indication in Display control unit Translation Sheet (C), “IPDM E/R” is listed only for “CAN CIRC 7”. Therefore, put a check mark to “IPDM E/R” because “UNKWN” is listed on the column of reception diagnosis of the check sheet table.



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

NOTE:

- For “BCM”, “UNKWN” is displayed on “IPDM E/R”. Put a check mark to it.
- For “ABS”, “UNKWN” is displayed on “ECM” and “TCM”. Put a check mark 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	TCM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
TRANSMISSION	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN ✓	–	CAN COMM CIRCUIT (U1000)	–
Display control unit	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	UNKWN ✓	–	–
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)	–

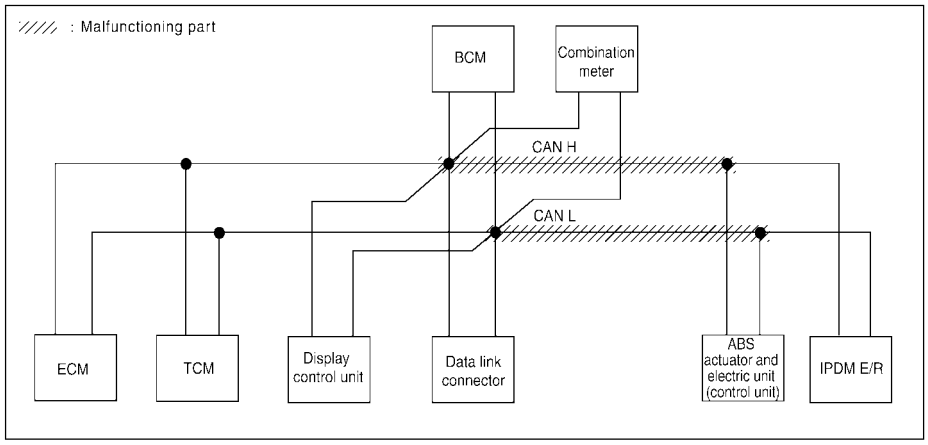
Choose similar indications between the results of CAN diagnosis support monitor and the results of the check sheet. Malfunctioning parts are found.

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit).

Check sheet results (example)

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



SKIB0620E

NOTE:

There is a check mark in VDC/TCS/ABS of “A/T” in “The arranged results of CAN diagnosis support monitor” sheet. Also, there is a mark of “–” both in VDC/TCS/ABS of “A/T” in the check sheet results (example). Therefore, neglect a check mark both in VDC/TCS/ABS of “A/T” in “The arranged results of CAN diagnosis support monitor” sheet.

6. Perform system diagnosis for possible causes identified.
7. 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. 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	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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) ✓	–

SYSTEM ENGINE

SELF-DIAG RESULTS

DTC RESULTS	TIME
CAN COMM CIRCUIT [U1001]	1t

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
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	

SYSTEM IPDM E/R

SELF-DIAG RESULTS

DTC RESULTS	TIME
CAN COMM CIRCUIT [U1000]	1

SKIB0621E

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 [U1001]” are 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”, “NO DTC IS DETECTED” is displayed. Do not put a check mark to it.
   - For “IPDM E/R”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.

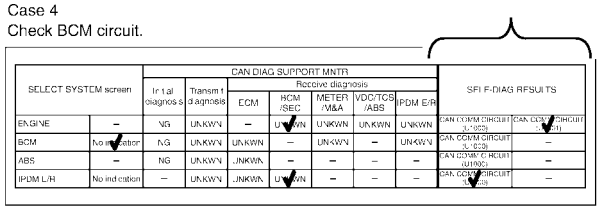
The arranged results of self-diagnosis

Check sheet table

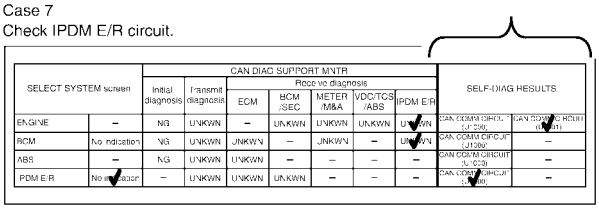
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
BCM	No indication	NG	UNKWN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

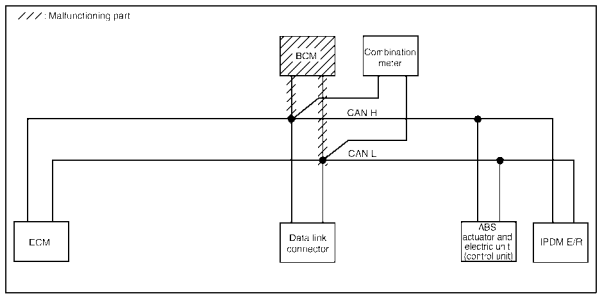
When the arranged results of self-diagnosis and check sheet results (example) are corresponding, possible causes can be selected.

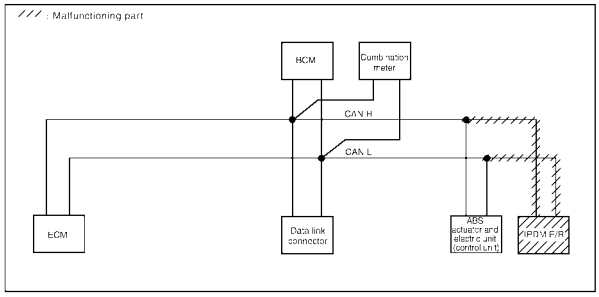
Case 4
Check BCM circuit.



Case 7
Check IPDM E/R circuit.







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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

UKS001YQ

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 ABS actuator and electric unit (control unit).	OK/UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	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

4A/T models

(Example)

CAN DIAG SUPPORT MNTR

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

SKIB0628E

“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	VDC/TCS/ABS is not diagnosed.	UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	OK/UNKWN
	ICC/e4WD	ICC/e4WD is not diagnosed.	UNKWN

Display Results (Present)

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

5A/T models

(Example)

CAN DIAG SUPPORT MNTR

TRANSMISSION	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
VDC/TCS/ABS	OK
METER/M&A	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB0592E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
TRANSMISSION	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 combination meter.	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 BCM

(Example)

CAN DIAG SUPPORT MNTR

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

SKIB0593E

“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 combination meter.	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 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)

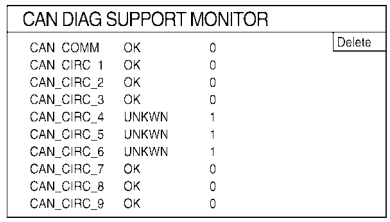
- OK : Normal
- UNKWN : The diagnosed unit does not transmit or receive the applicable data normally.
- – : There is no received unit or the unit is not in the condition that reception diagnosis is performed

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

DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN FOR DISPLAY CONTROL UNIT

(Example)



SKIB0645E

Unit name	Diagnosis item	Description	"CAN DIAG SUPPORT MONITOR" screen	Error counter (Reference)
Display control unit	CAN COMM	Make sure that microcomputer in ECU works normally.	OK/NG	0/1~50
	CAN CIRC 1	Make sure of normal transmission.	OK/UNKWN	
	CAN CIRC 2	Make sure of normal reception from BCM.	OK/UNKWN	
	CAN CIRC 3	Make sure of normal reception from ECM.	OK/UNKWN	
	CAN CIRC 4	CAN CIRC 4 is not diagnosed.	UNKWN	
	CAN CIRC 5	Make sure of normal reception from combination meter.	OK/UNKWN	
	CAN CIRC 6	CAN CIRC 6 is not diagnosed.	UNKWN	
	CAN CIRC 7	Make sure of normal reception from IPDM E/R.	OK/UNKWN	
	CAN CIRC 8	CAN CIRC 8 is not diagnosed.	UNKWN	
	CAN CIRC 9	CAN CIRC 9 is not diagnosed.	UNKWN	

Display Results (Present)

- OK : Normal
- NG : Malfunction
- 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 : Error Counter (Reference)

- 0 : It is normal now.
- 1 ~ 50 : Displays when it finds malfunction in the past even if it is normal or there is a malfunction at present. Also, displays when diagnosis is not performed. It increase like 0→1→2...49→50 after returning to the normal condition whenever IGN OFF→ON. If it is over 50, it is fixed to 50 until the self-diagnostic results are erased. Keep this condition until resetting it.

CAN COMMUNICATION

PFP:23710

System Description

UKS001OC

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

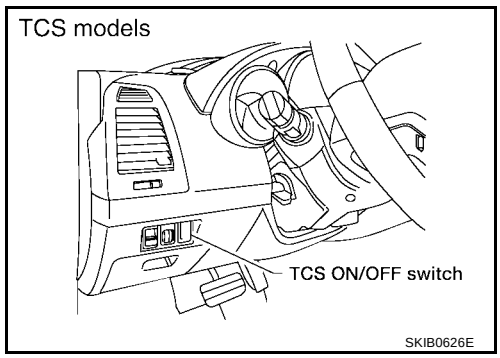
UKS001OE

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

Body type	Sedan															
Axle	2WD															
Engine	QR25DE		VQ35DE						QR25DE				VQ35DE			
Transmission	M/T								4A/T				5A/T			
Brake control	No ABS	ABS	No ABS		ABS		TCS		No ABS		ABS		ABS	TCS	ABS	TCS
Navigation system				×		×		×		×		×			×	×
CAN system type	1		2	1	2	3	4	5	6	5	6	7	8	9	10	
CAN system trouble diagnosis	LAN-37		LAN-49	LAN-32	LAN-54	LAN-73	LAN-94	LAN-118	LAN-134	LAN-113	LAN-139	LAN-163	LAN-189	LAN-215	LAN-242	

×: Applicable

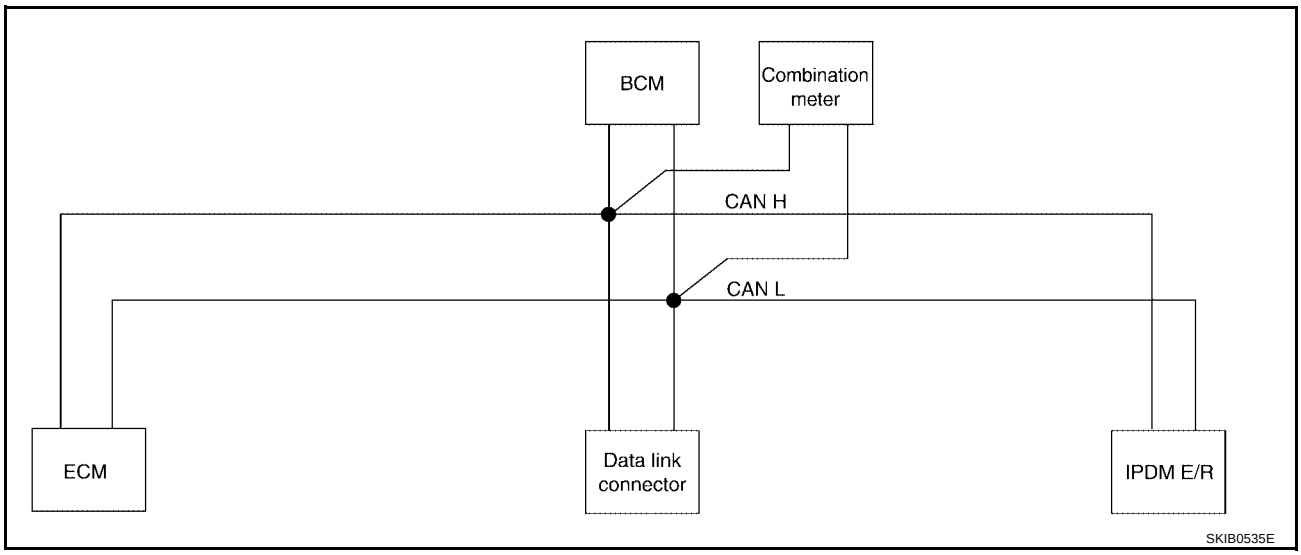
Vehicles equipped with TCS can be identified by the presence of a TCS ON/OFF switch.



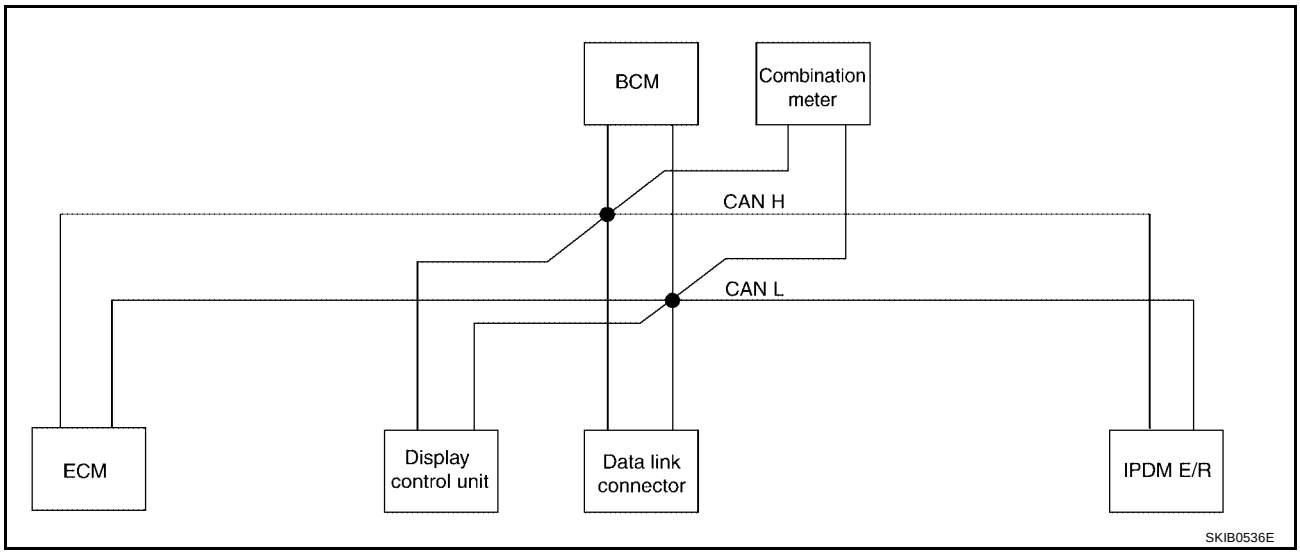
TYPE1/TYPE2

System diagram

- Type1



- Type2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Display control unit*	BCM	Combination meter	IPDM E/R
Engine speed signal	T	R		R	
Engine coolant temperature signal	T			R	
Fuel consumption monitor signal	T			R	
		R		T	
A/C switch signal	R		T		
A/C compressor signal	R				T
A/C compressor request signal	T				R
Blower fan switch signal	R		T		
Cooling fan motor operation signal	R				T
Cooling fan speed request signal	T				R
Position lights request			T	R	R
Low beam request			T		R
Low beam status	R				T
High beam request			T	R	R
High beam status	R				T
Front fog light request			T		R
Vehicle speed signal	R	R		T	
Oil pressure switch signal				R	T
Sleep request1			T	R	
Sleep request2			T		R
Seat belt buckle switch signal			R	T	
Door switch signal		R	T	R	R
Turn indicator signal			T	R	
Buzzer output signal			T	R	
Trunk switch signal			T	R	
Wiper stop position signal			R		T
Rear window defogger switch signal			T		R
Rear window defogger control signal	R	R	R		T

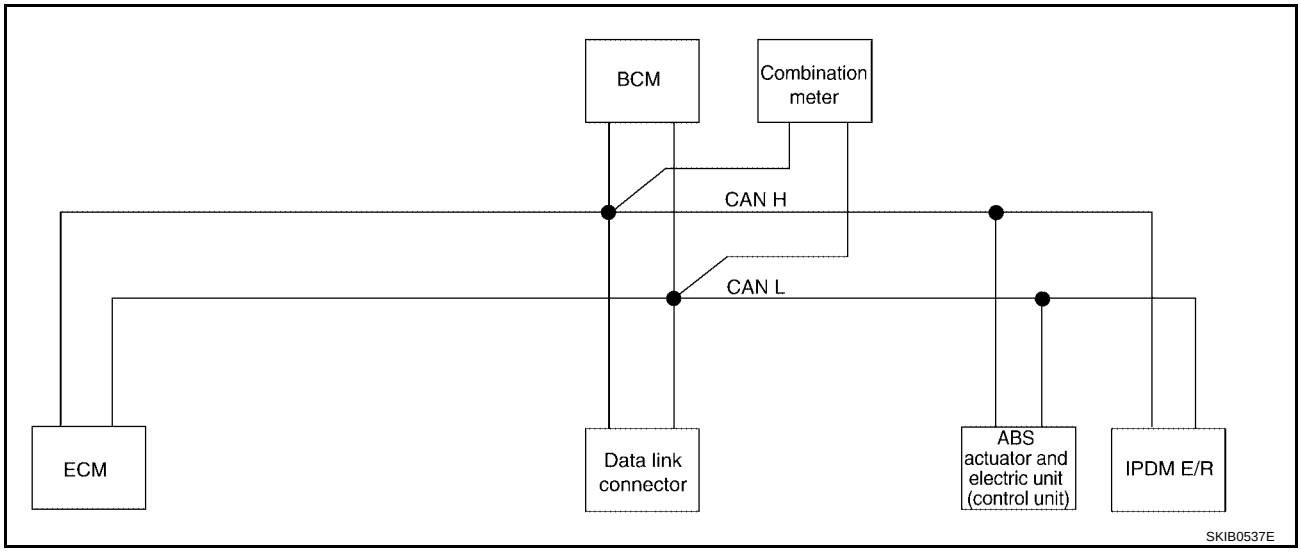
Signals	ECM	Display control unit*	BCM	Combination meter	IPDM E/R
Hood switch signal			R		T
Theft warning horn status signal			R		T
Distance to empty signal		R		T	
Fuel level low warning signal		R		T	
Theft warning horn request signal			T		R
Horn chirp signal			T		R
Fuel level sensor signal	R			T	
ASCD SET lamp signal	T			R	
ASCD CRUISE lamp signal	T			R	
Malfunction indicator lamp signal	T			R	

NOTE:
*:Navigation system only

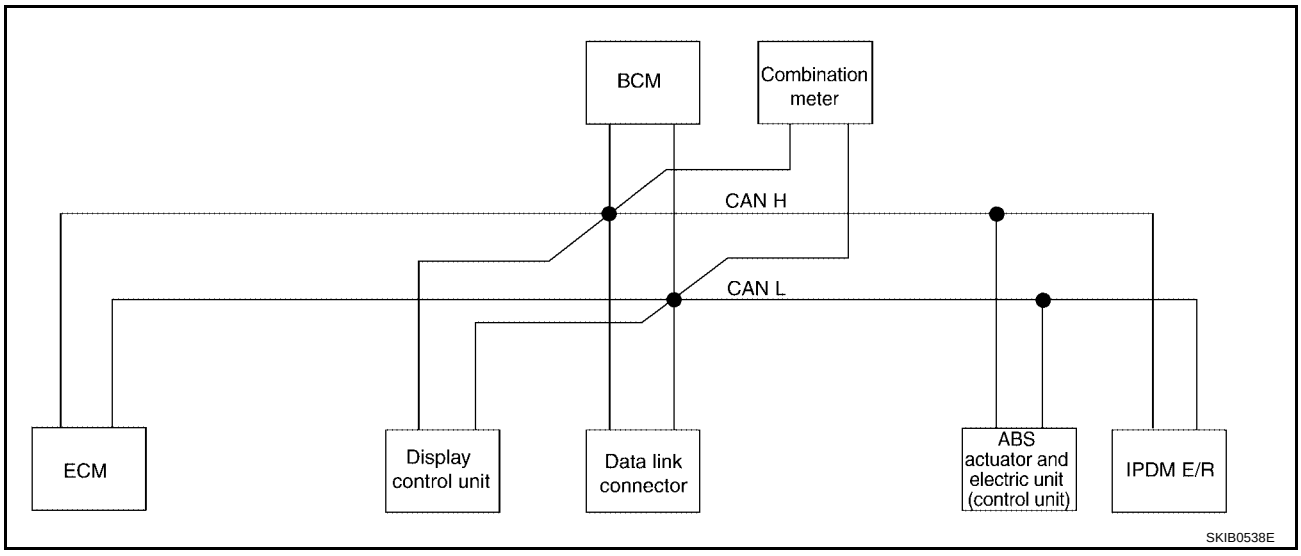
TYPE3/TYPE4

System diagram

- TYPE3



- TYPE4



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Display control unit*	BCM	Combination meter	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R	
Engine coolant temperature signal	T			R		
Fuel consumption monitor signal	T			R		
		R		T		
A/C switch signal	R		T			
A/C compressor signal	R					T
A/C compressor request signal	T					R
Cooling fan motor operation signal	R					T
Cooling fan speed request signal	T					R
Position lights request			T	R		R
Low beam request			T			R
Low beam status	R					T
High beam request			T	R		R
High beam status	R					T
Front fog light request			T			R
Vehicle speed signal				R	T	
	R	R	R	T		
Oil pressure switch signal				R		T
Sleep request1			T	R		
Sleep request2			T			R
Seat belt buckle switch signal			R	T		
Door switch signal		R	T	R		R
Turn indicator signal			T	R		
Buzzer output signal			T	R		
Trunk switch signal			T	R		
Wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R	R	R			T
Hood switch signal			R			T
Theft warning horn status signal			R			T
Distance to empty signal		R		T		
Fuel level low warning signal		R		T		
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Blower fan switch signal	R		T			
Fuel level sensor signal	R			T		
ASCD SET lamp signal	T			R		
ASCD CRUISE lamp signal	T			R		
Malfunction indicator lamp signal	T			R		

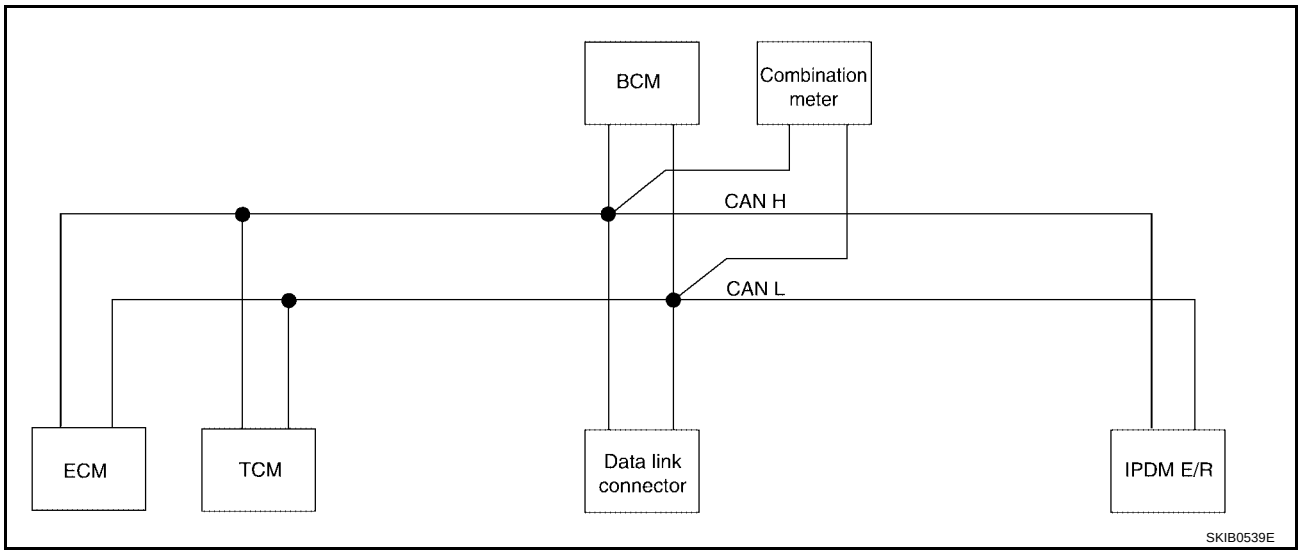
NOTE:

*:Navigation system only

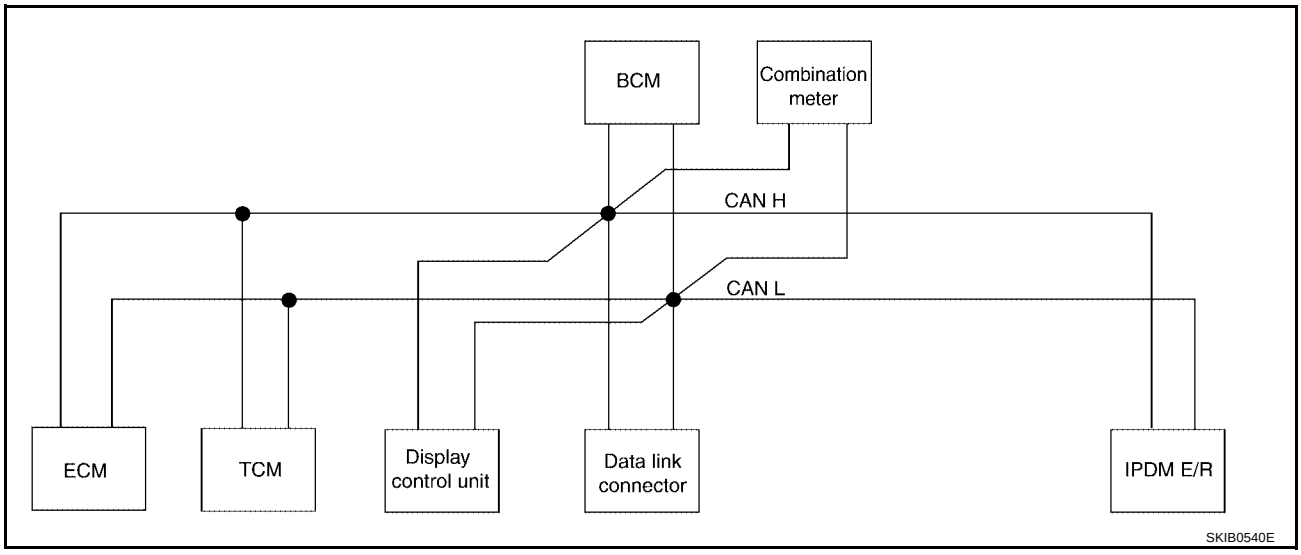
TYPE5/TYPE6

System diagram

- TYPE5



- TYPE6



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit*	BCM	Combination meter	IPDM E/R
Engine speed signal	T		R		R	
Engine coolant temperature signal	T				R	
Fuel consumption monitor signal	T				R	
			R		T	
A/T check indicator lamp signal		T			R	
A/T position indicator signal		T			R	
A/C switch signal	R			T		
A/C compressor signal	R					T
A/C compressor request signal	T					R
Blower fan switch signal	R			T		
Cooling fan motor operation signal	R					T

Signals	ECM	TCM	Display control unit*	BCM	Combination meter	IPDM E/R
Cooling fan speed request signal	T					R
Position lights request				T	R	R
Low beam request				T		R
Low beam status	R					T
High beam request				T	R	R
High beam status	R					T
Front fog light request				T		R
Vehicle speed signal	R		R	R	T	
Oil pressure switch signal					R	T
Sleep request1				T	R	
Sleep request2				T		R
Seat belt buckle switch signal				R	T	
Door switch signal			R	T	R	R
Turn indicator signal				T	R	
Buzzer output signal				T	R	
Trunk switch signal				T	R	
Wiper stop position signal				R		T
Rear window defogger switch signal				T		R
Rear window defogger control signal	R		R	R		T
Hood switch signal				R		T
Theft warning horn status signal				R		T
Distance to empty signal			R		T	
Fuel level low warning signal			R		T	
Theft warning horn request signal				T		R
Horn chirp signal				T		R
3rd position switch signal		R			T	
Closed throttle position signal	T	R				
Wide open throttle position signal	T	R				
Stop lamp switch signal		R			T	
Engine and A/T integrated control signal	T	R				
	R	T				
A/T self-diagnosis signal	R	T				
Output shaft revolution signal	R	T				
Fuel level sensor signal	R				T	
ASCD SET lamp signal	T				R	
ASCD CRUISE lamp signal	T				R	
Malfunction indicator lamp signal	T				R	

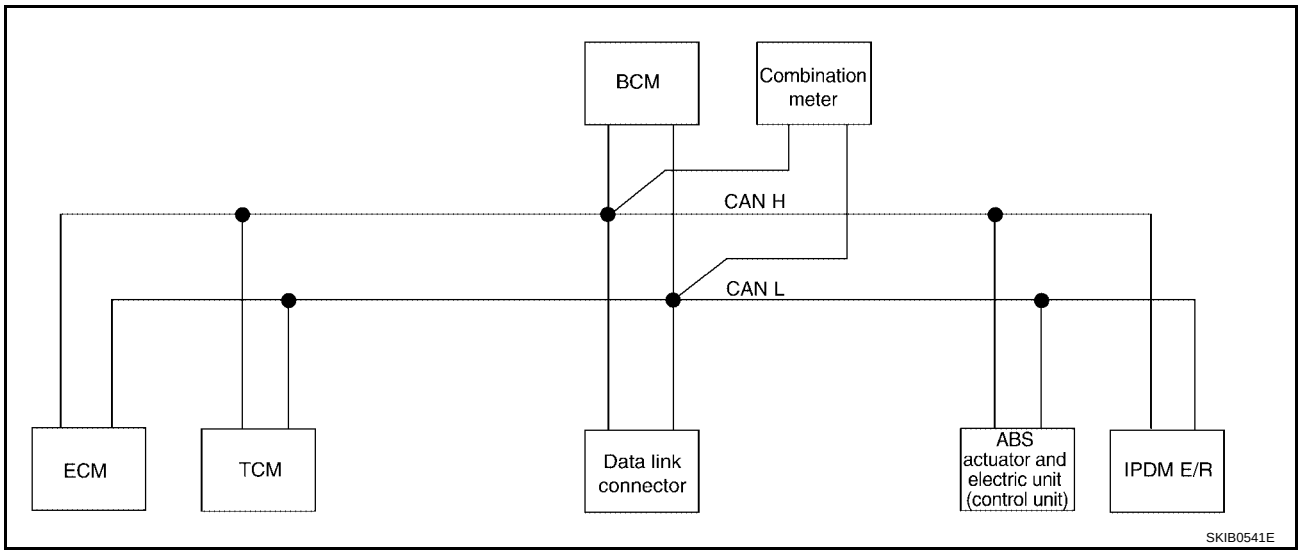
NOTE:

*:Navigation system only

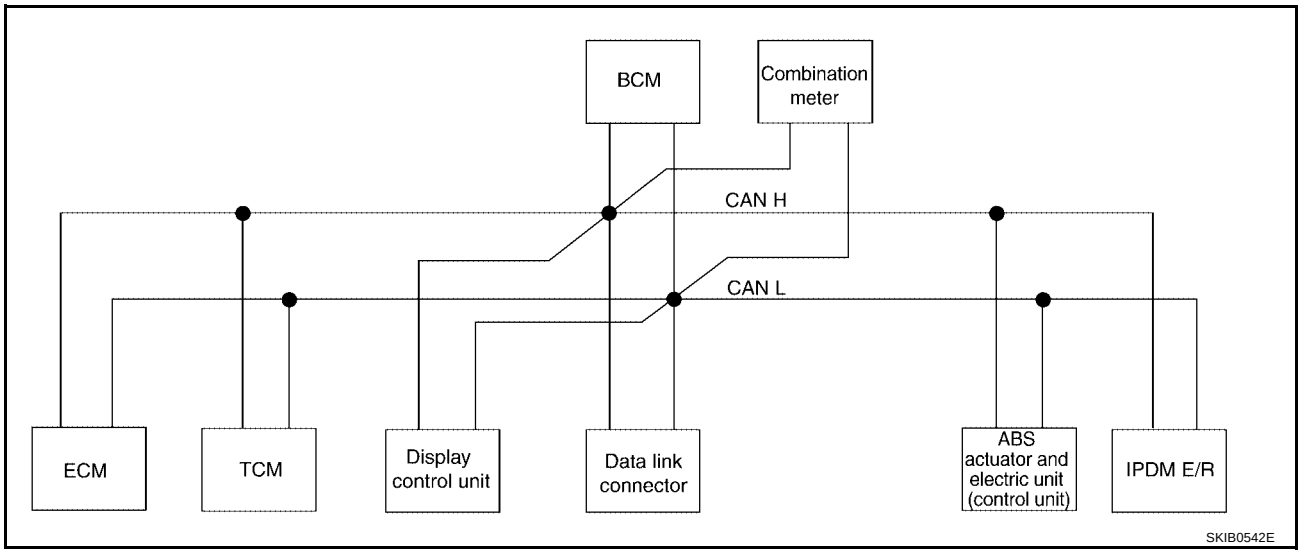
TYPE7/TYPE9

System diagram

- TYPE7



- TYPE9



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit*	BCM	Combination meter	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R		R		
Engine coolant temperature signal	T	R			R		
Fuel consumption monitor signal	T				R		
			R		T		
A/T warning lamp signal		T			R		
A/T position indicator signal		T			R		
ABS operation signal		R				T	
A/C switch signal	R			T			
A/C compressor signal	R						T

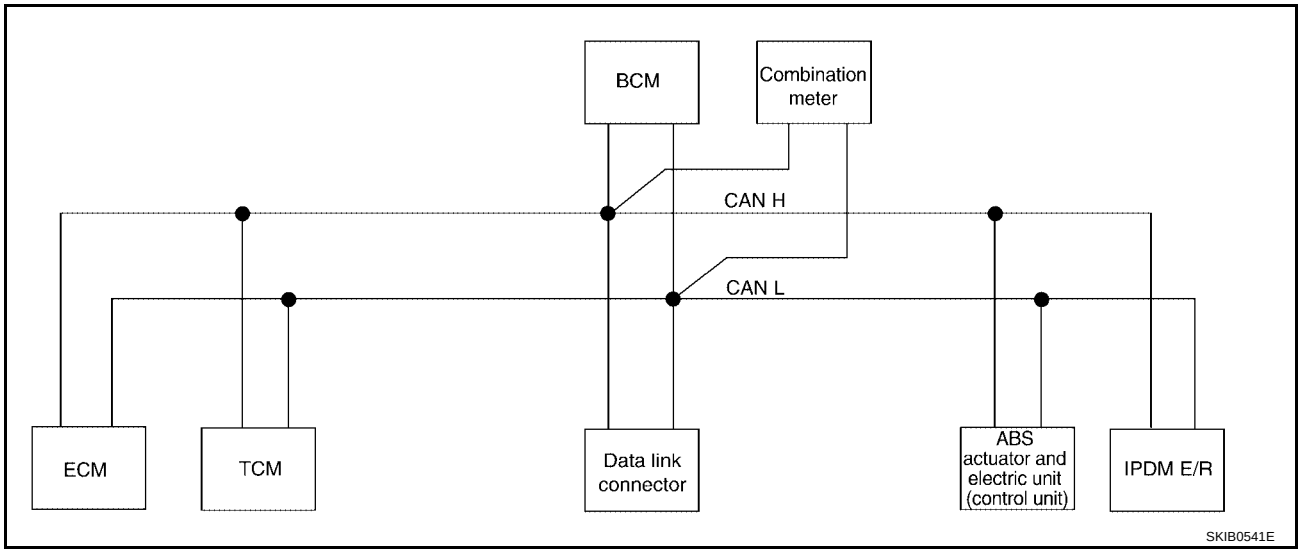
Signals	ECM	TCM	Display control unit*	BCM	Combination meter	ABS actuator and electric unit (control unit)	IPDM E/R
A/C compressor request signal	T						R
Cooling fan motor operation signal	R						T
Cooling fan speed request signal	T						R
Position lights request				T	R		R
Low beam request				T			R
Low beam status	R						T
High beam request				T	R		R
High beam status	R						T
Front fog light request				T			R
Vehicle speed signal					R	T	
	R	R	R	R	T		
Oil pressure switch signal					R		T
Sleep request1				T	R		
Sleep request2				T			R
Seat belt buckle switch signal				R	T		
Door switch signal			R	T	R		R
Turn indicator signal				T	R		
Buzzer output signal				T	R		
Trunk switch signal				T	R		
Wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R		R	R			T
Hood switch signal				R			T
Theft warning horn status signal				R			T
Distance to empty signal			R		T		
Fuel level low warning signal			R		T		
Theft warning horn request signal				T			R
Horn chirp signal				T			R
ASCD operation signal	T	R					
ASCD OD cancel request signal	T	R					
Manual mode indicator signal		T			R		
Electric throttle control signal	T	R					
Stop lamp switch signal		R			T		
Blower fan switch signal	R			T			
A/T self-diagnostic signal	R	T					
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Fuel level sensor signal	R				T		
ASCD SET lamp signal	T				R		
ASCD CRUISE lamp signal	T				R		
Malfunction indicator lamp signal	T				R		

NOTE:
*:Navigation system only

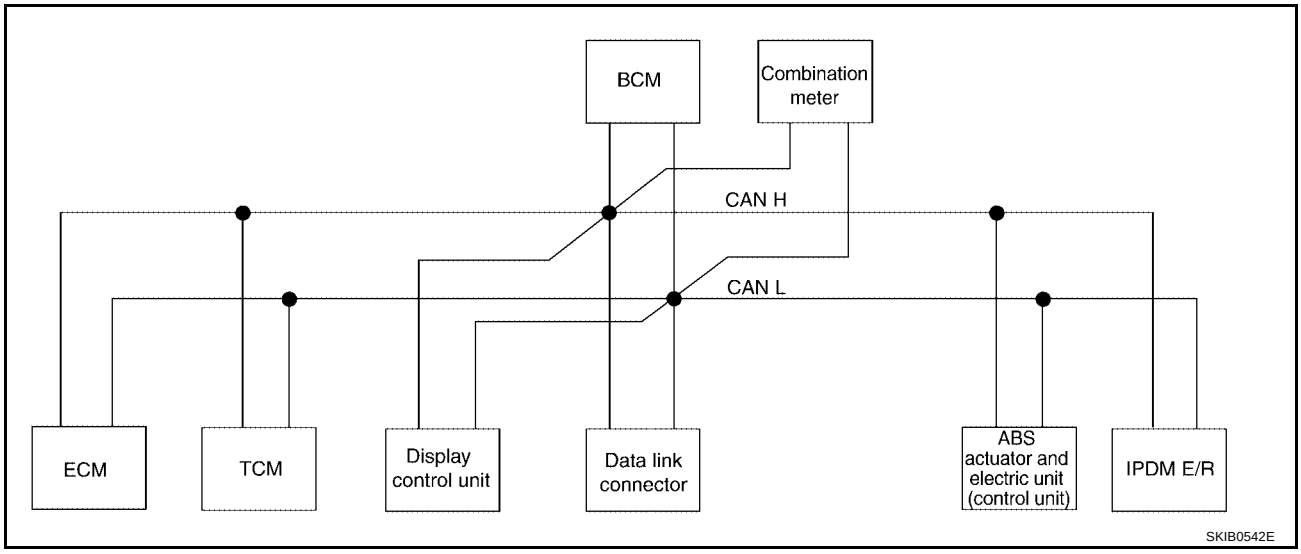
TYPE8/TYPE10

System diagram

- TYPE8



- TYPE10



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit*	BCM	Combination meter	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R		R	R	
Engine coolant temperature signal	T	R			R		
Accelerator pedal position signal	T					R	
Fuel consumption monitor signal	T				R		
			R		T		
A/T warning lamp signal		T			R		
A/T position indicator signal		T			R	R	

Signals	ECM	TCM	Display control unit*	BCM	Combination meter	ABS actuator and electric unit (control unit)	IPDM E/R
ABS operation signal		R				T	
A/C switch signal	R			T			
A/C compressor signal	R						T
A/C compressor request signal	T						R
Cooling fan motor operation signal	R						T
Cooling fan speed request signal	T						R
Position lights request				T	R		R
Low beam request				T			R
Low beam status	R						T
High beam request				T	R		R
High beam status	R						T
Front fog light request				T			R
Vehicle speed signal					R	T	
	R	R	R	R	T		
Oil pressure switch signal					R		T
Sleep request1				T	R		
Sleep request2				T			R
Seat belt buckle switch signal				R	T		
Door switch signal			R	T	R		R
Turn indicator signal				T	R		
Buzzer output signal				T	R		
Trunk switch signal				T	R		
Wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R		R	R			T
Hood switch signal				R			T
Theft warning horn status signal				R			T
Distance to empty signal			R		T		
Fuel level low warning signal			R		T		
Theft warning horn request signal				T			R
Horn chirp signal				T			R
ASCD operation signal	T	R					
ASCD OD cancel request signal	T	R					
Manual mode indicator signal		T			R		
Electric throttle control signal	T	R					
Stop lamp switch signal		R			T		
Blower fan switch signal	R			T			
A/T self-diagnosis signal	R	T					
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Fuel level sensor signal	R				T		
ASCD SET lamp signal	T				R		

Signals	ECM	TCM	Display control unit*	BCM	Combination meter	ABS actuator and electric unit (control unit)	IPDM E/R
ASCD CRUISE lamp signal	T				R		
Malfunction indicator lamp signal	T				R		

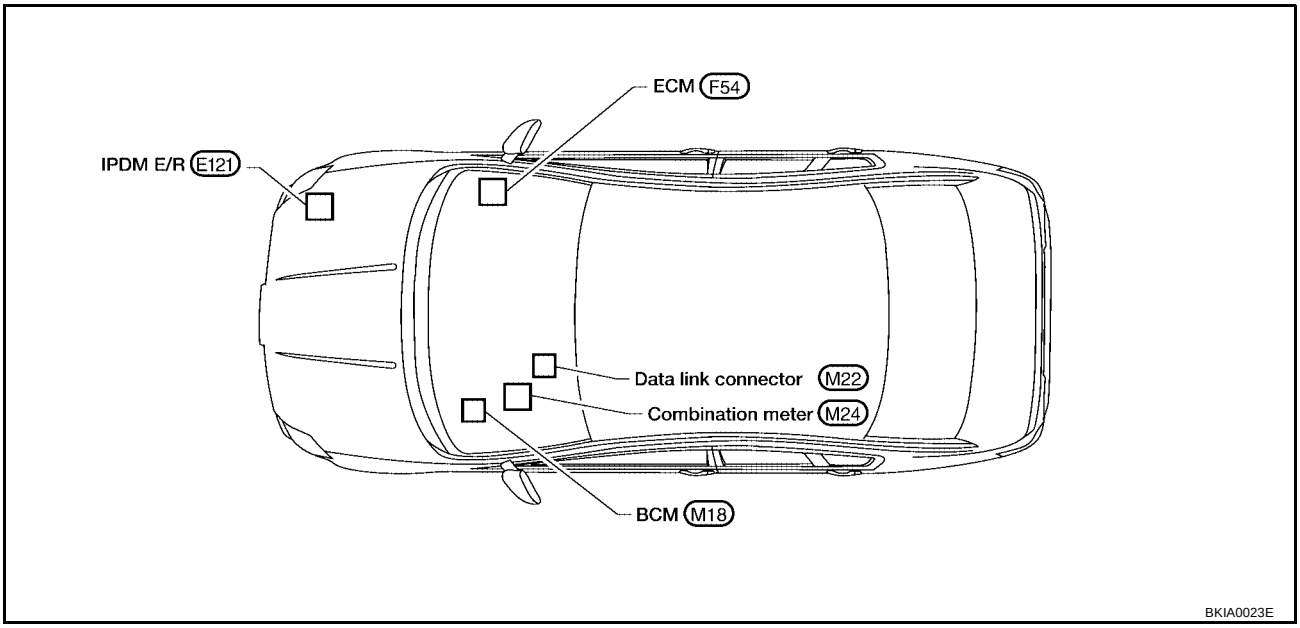
NOTE:
*:Navigation system only

CAN SYSTEM (TYPE 1)

PFP:23710

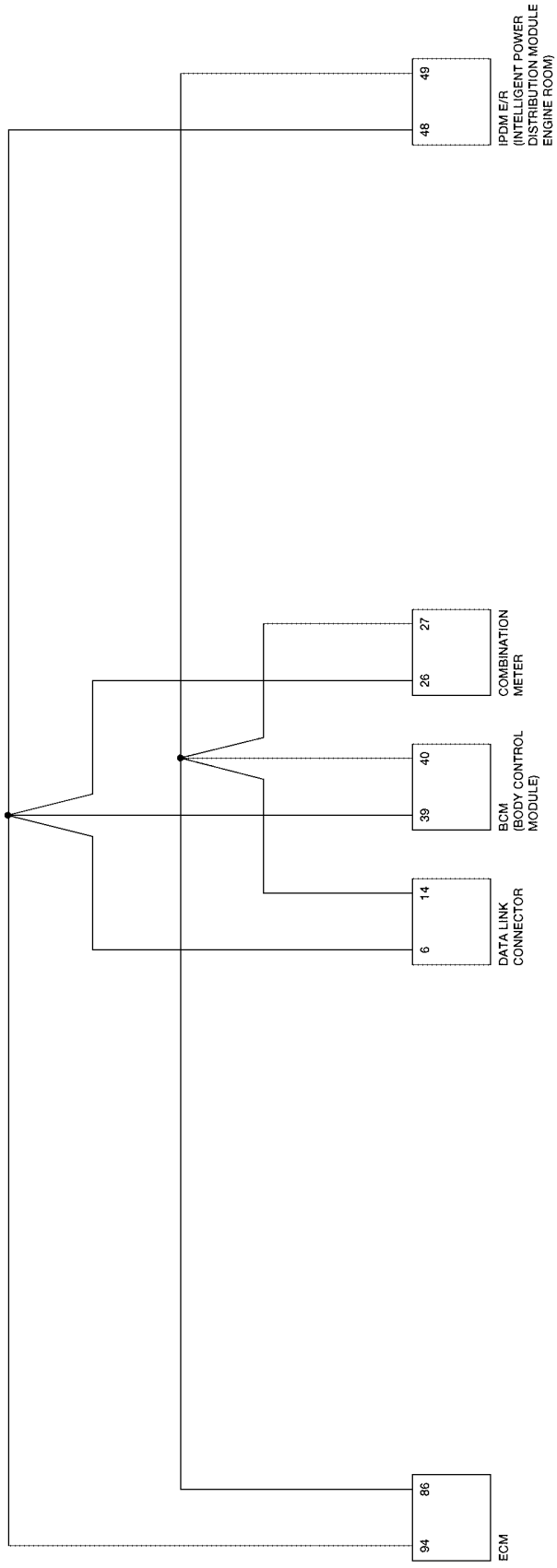
Component Parts and Harness Connector Location

UKS001YE



Schematic

UKS001YF

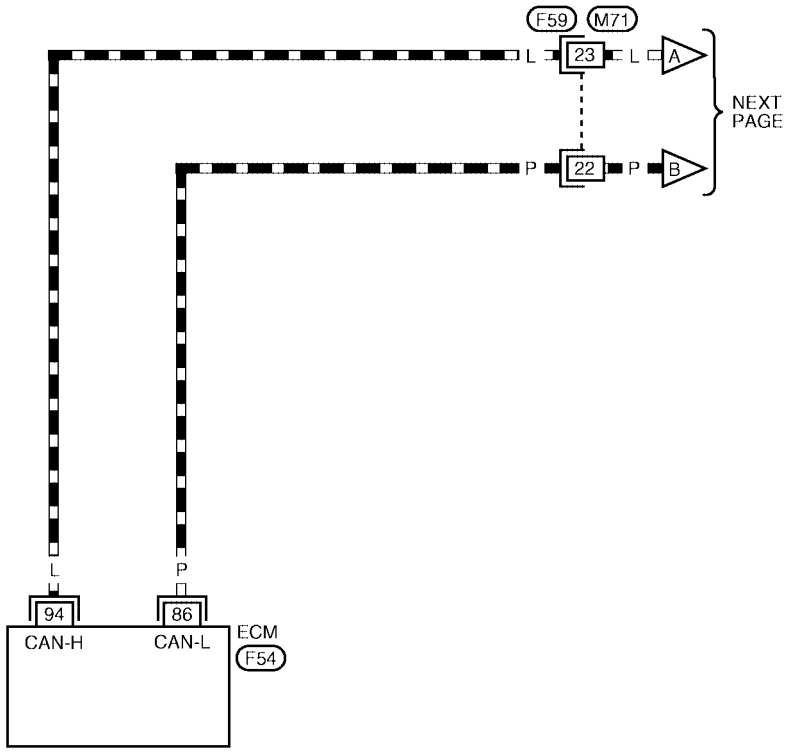


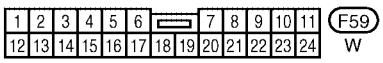
BKWA0118E

Wiring Diagram - CAN -

UKS001YG

LAN-CAN-01

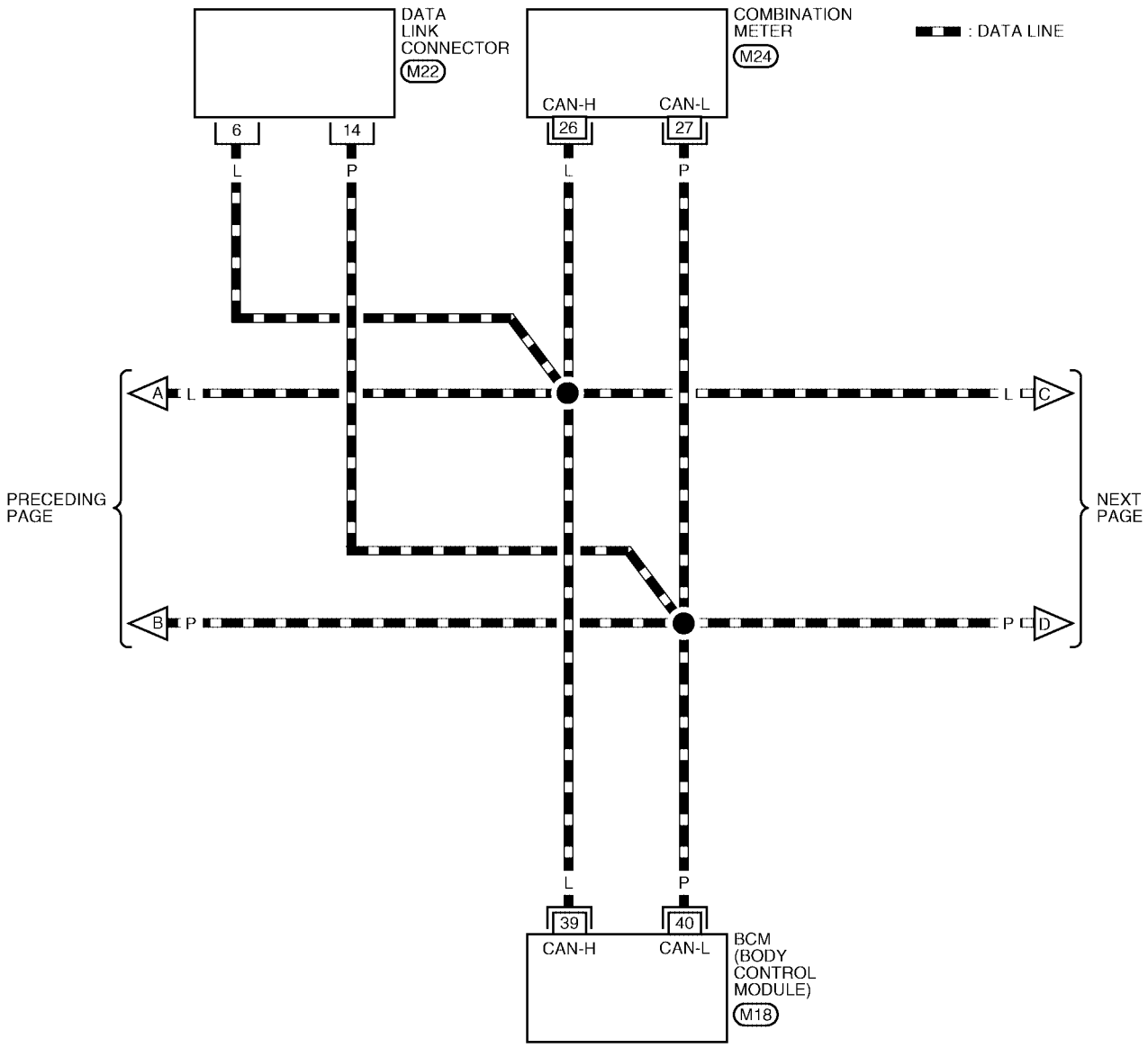


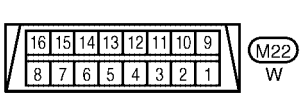


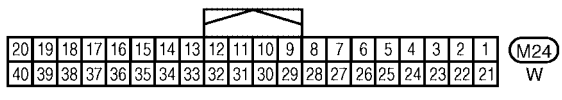
REFER TO THE FOLLOWING.
F54 - ELECTRICAL UNITS

BKWA0119E

LAN-CAN-02





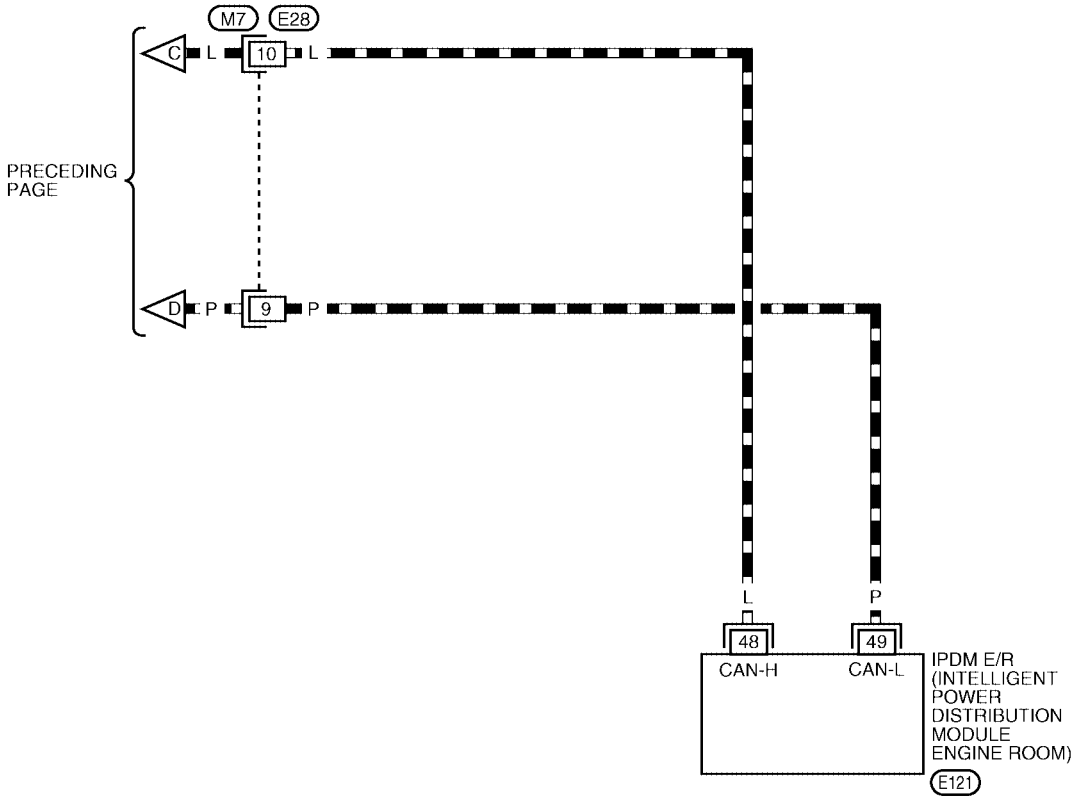


REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0120E

LAN-CAN-03

: DATA LINE



BKWA0121E

CHECK SHEET

UKS001RW

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	BCM /SEC	METER /M&A	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
BCM	No indication	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

Attach copy of ENGINE SELF-DIAG RESULTS

Attach copy of BCM SELF-DIAG RESULTS

Attach copy of IPDM E/R SELF-DIAG RESULTS

Attach copy of ENGINE CAN DIAG SUPPORT MNTR

Attach copy of BCM CAN DIAG SUPPORT MNTR

Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

PKIA8886E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

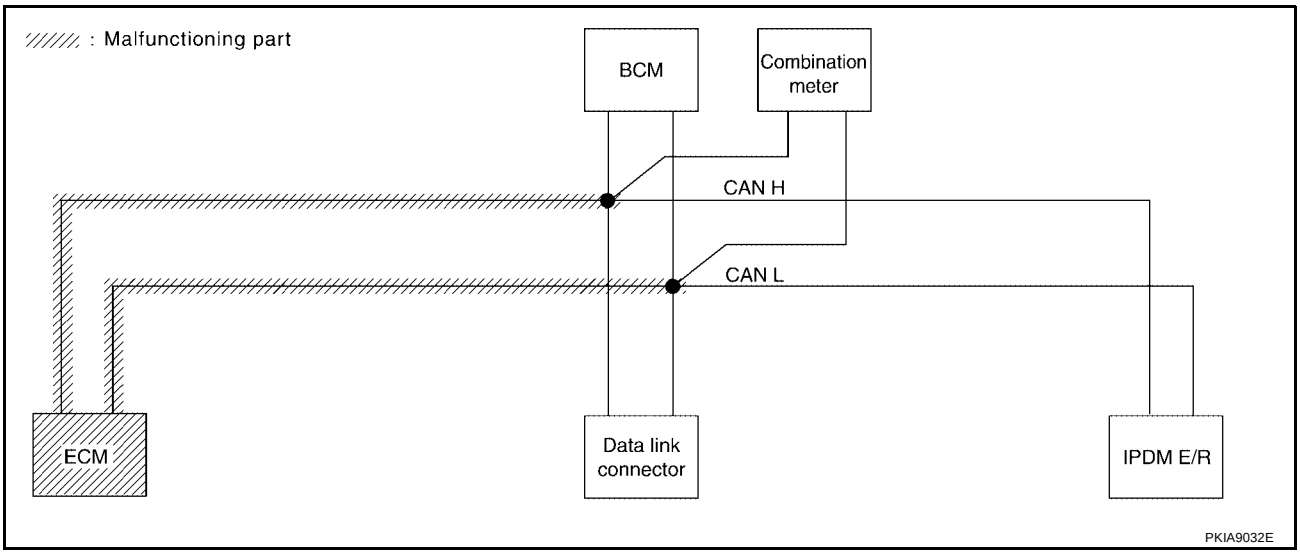
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check ECM circuit. Refer to LAN-43, "ECM Circuit Check" .

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

PKIA8943E

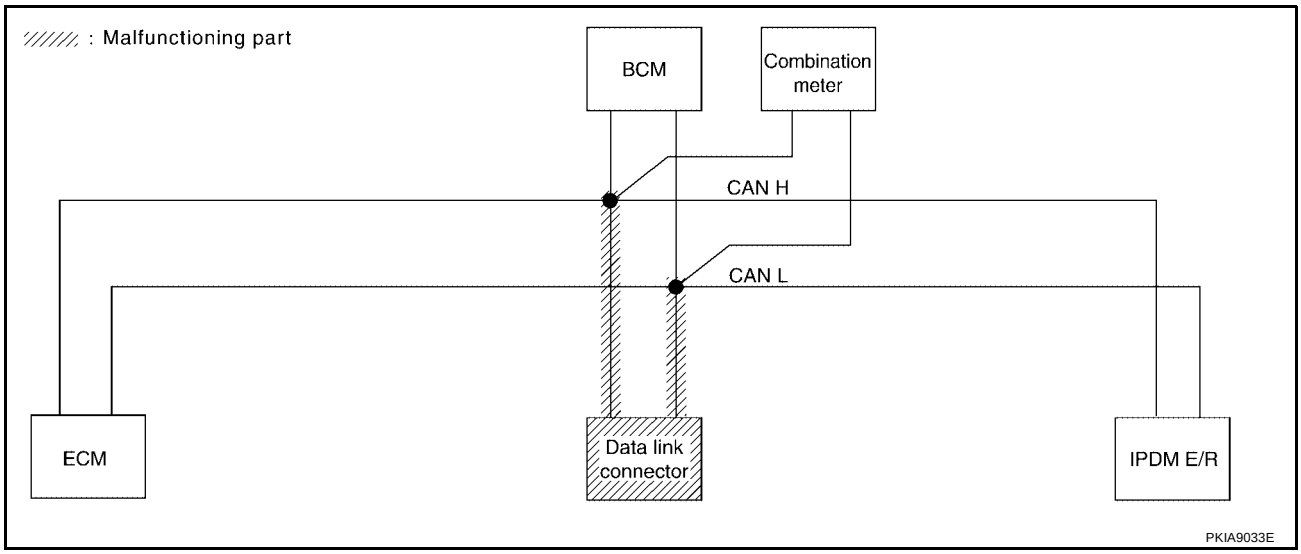


Case 2

Check data link connector circuit. Refer to LAN-43, "Data Link Connector Circuit Check" .

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

PKIA8944E



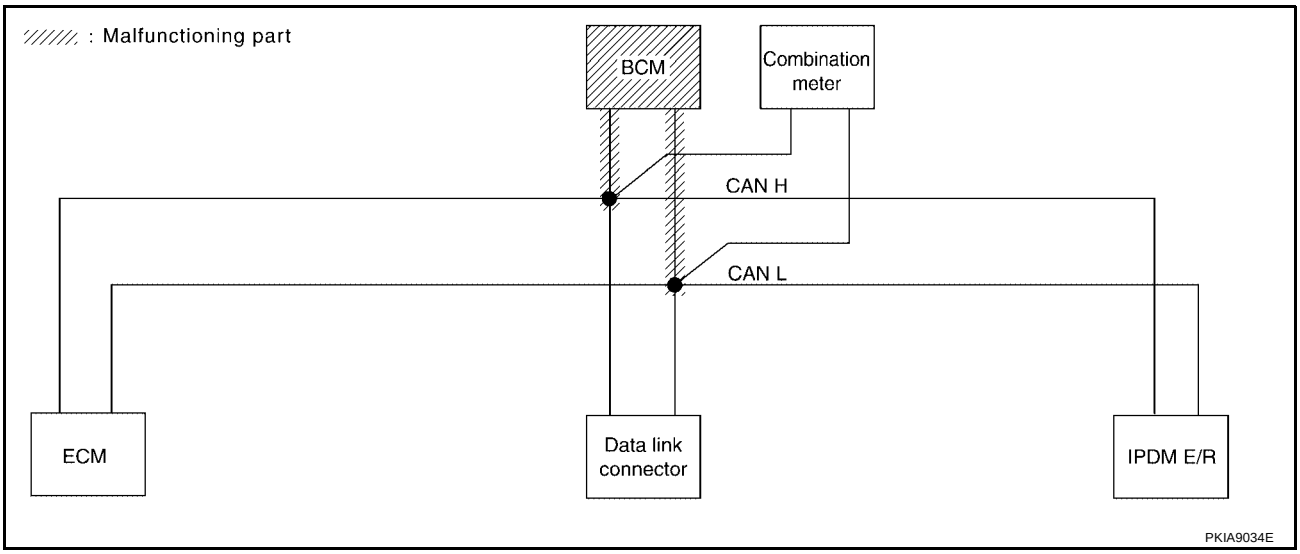
PKIA9033E

Case 3

Check BCM circuit. Refer to LAN-44, "BCM Circuit Check" .

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

PKIA8971E



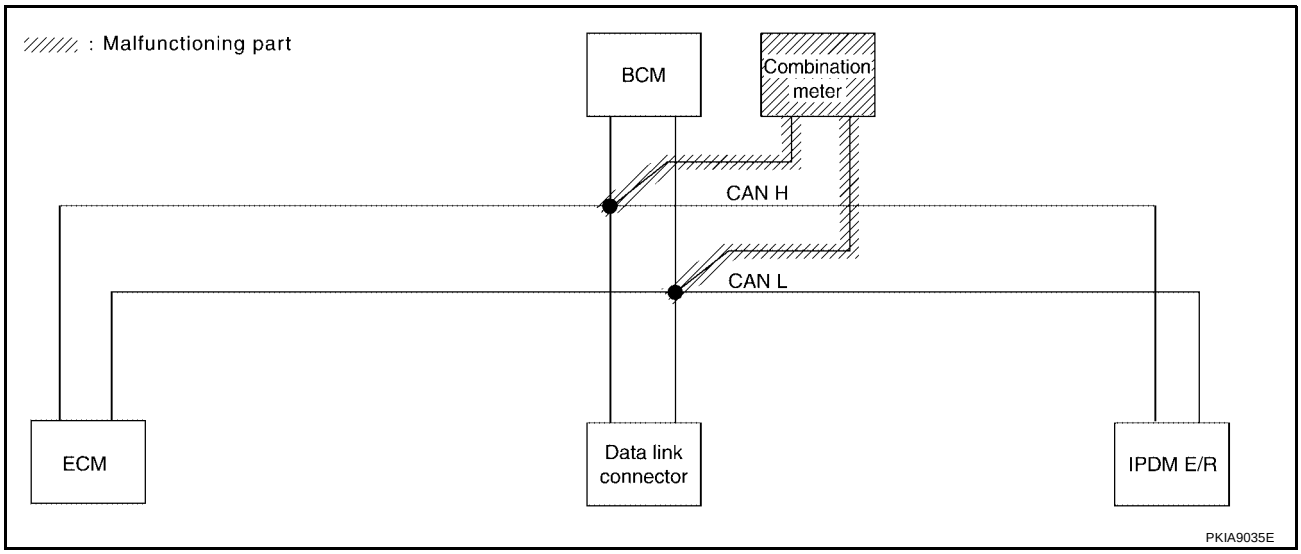
PKIA9034E

Case 4

Check combination meter circuit. Refer to LAN-44, "Combination Meter Circuit Check" .

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

PKIA8972E



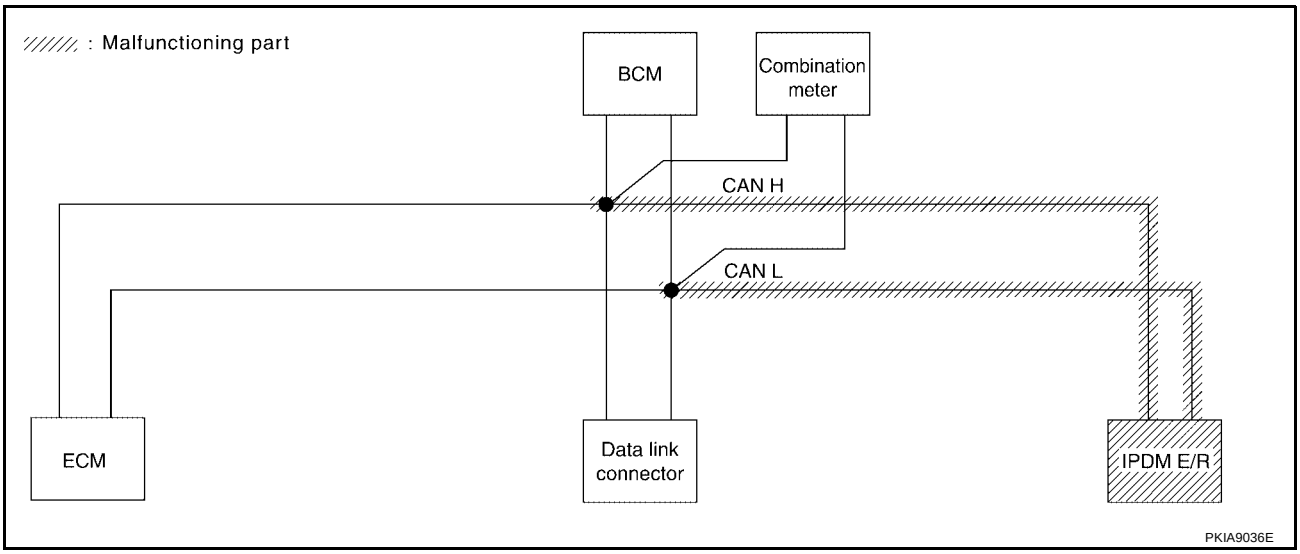
PKIA9035E

Case 5

Check IPDM E/R circuit. Refer to LAN-45, "IPDM E/R Circuit Check" .

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

PKIA8973E



PKIA9036E

Case 6

Check CAN communication circuit. Refer to LAN-45, "CAN Communication Circuit Check" .

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

PKIA8974E

ECM Circuit Check

UKS001YH

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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 F59
- Harness connector M71

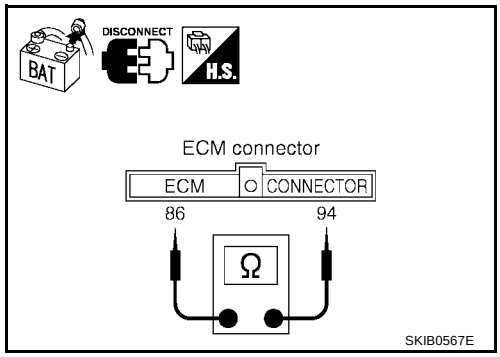
OK or NG

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 F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

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

Data Link Connector Circuit Check

UKS001YI

1. CHECK CONNECTOR

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

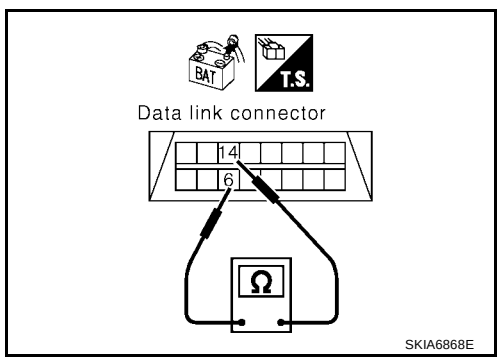
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001YJ

1. CHECK CONNECTOR

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

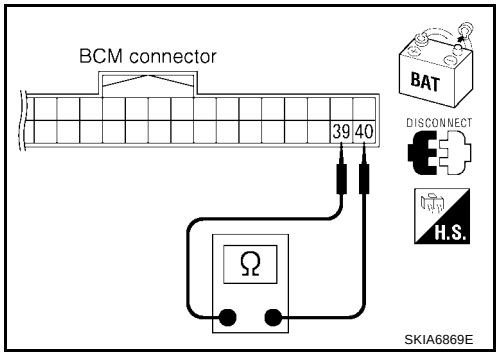
OK or NG

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 M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001YK

1. CHECK CONNECTOR

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

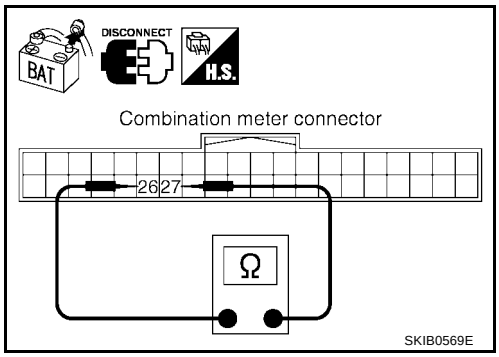
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

IPDM E/R Circuit Check

UKS001YL

1. CHECK CONNECTOR

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

- IPDM E/R connector
- Harness connector E28
- Harness connector M7

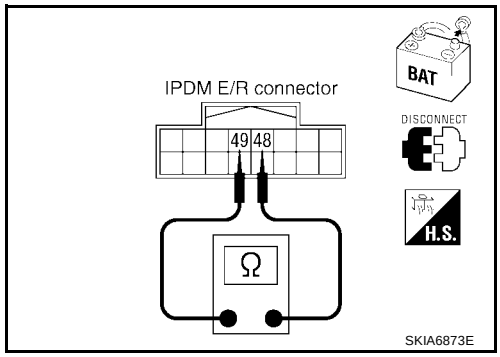
OK or NG

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 E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω



OK or NG

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

CAN Communication Circuit Check

UKS001YM

1. CHECK CONNECTOR

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

- ECM
- BCM
- Combination meter
- IPDM E/R
- Between ECM and IPDM E/R

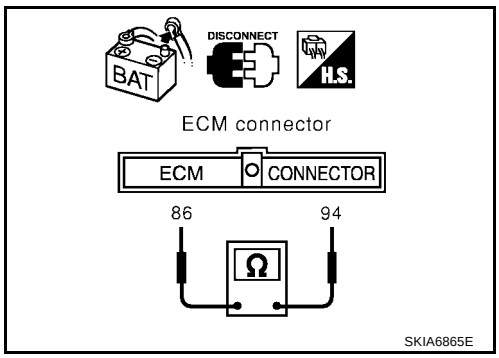
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ECM connector
- Harness connector F59
2. Check continuity between ECM harness connector F54 terminals 94 (L) and 86 (P).

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



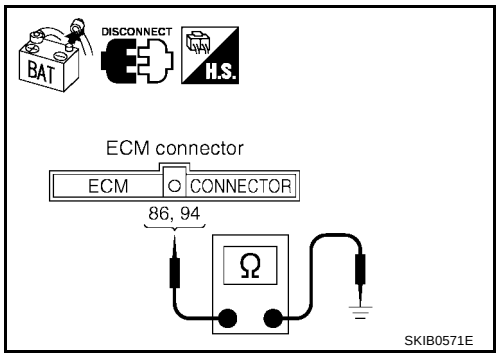
OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector F59.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 94 (L), 86 (P) and ground.

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



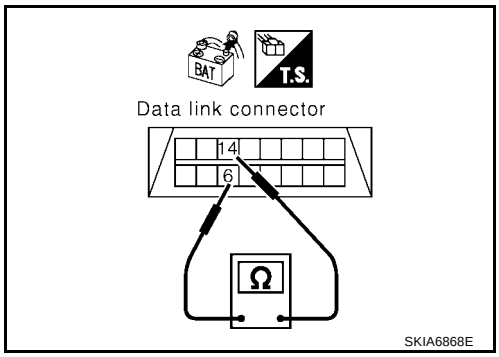
OK or NG

OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector F59.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- BCM connector
- Combination meter connector
- Harness connector M7
2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

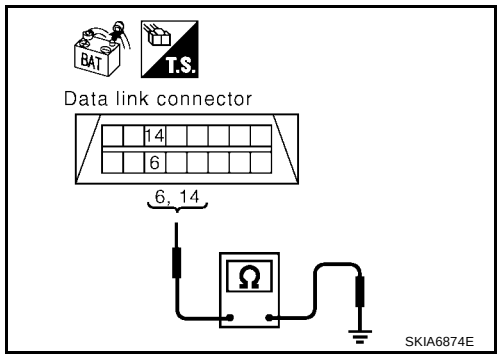
OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 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.

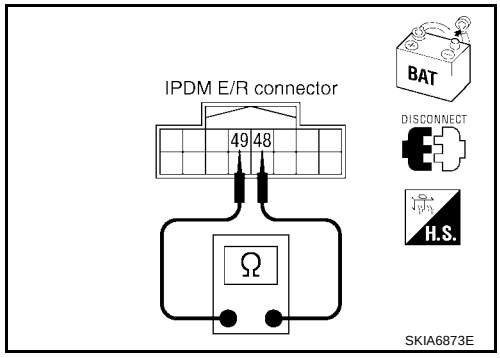
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

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



OK or NG

OK >> GO TO 7.

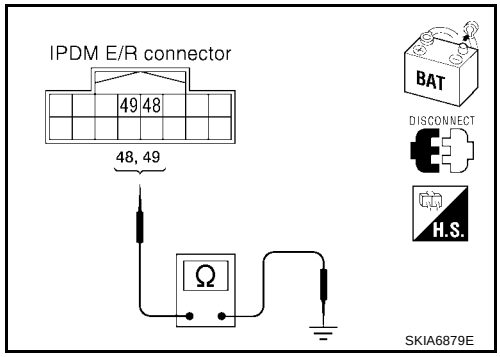
NG >> Repair harness between harness connector E28 and IPDM E/R.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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

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



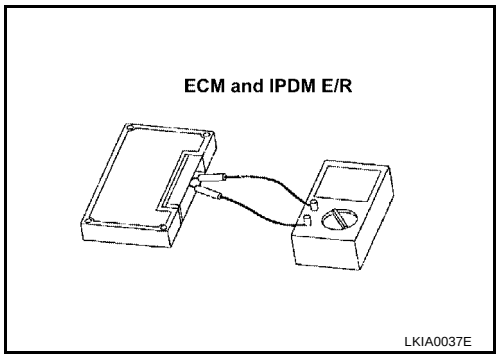
OK or NG

OK >> GO TO 8.

NG >> Repair harness between harness connector E28 and IPDM E/R.

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	

OK or NG

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"
.

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- BCM
- Combination meter
- ECM
- IPDM E/R

Inspection results

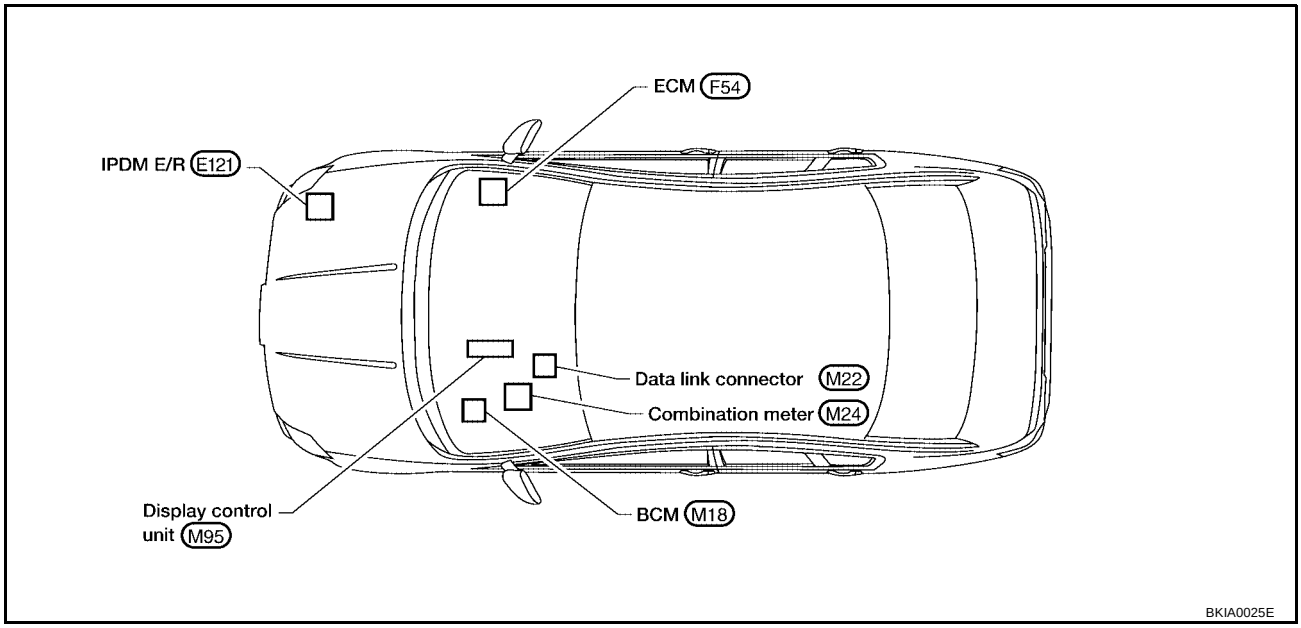
Reproduced>>Install removed unit, and then check the other unit.
Not reproduced>>Replace removed unit.

CAN SYSTEM (TYPE 2)

PFP:23710

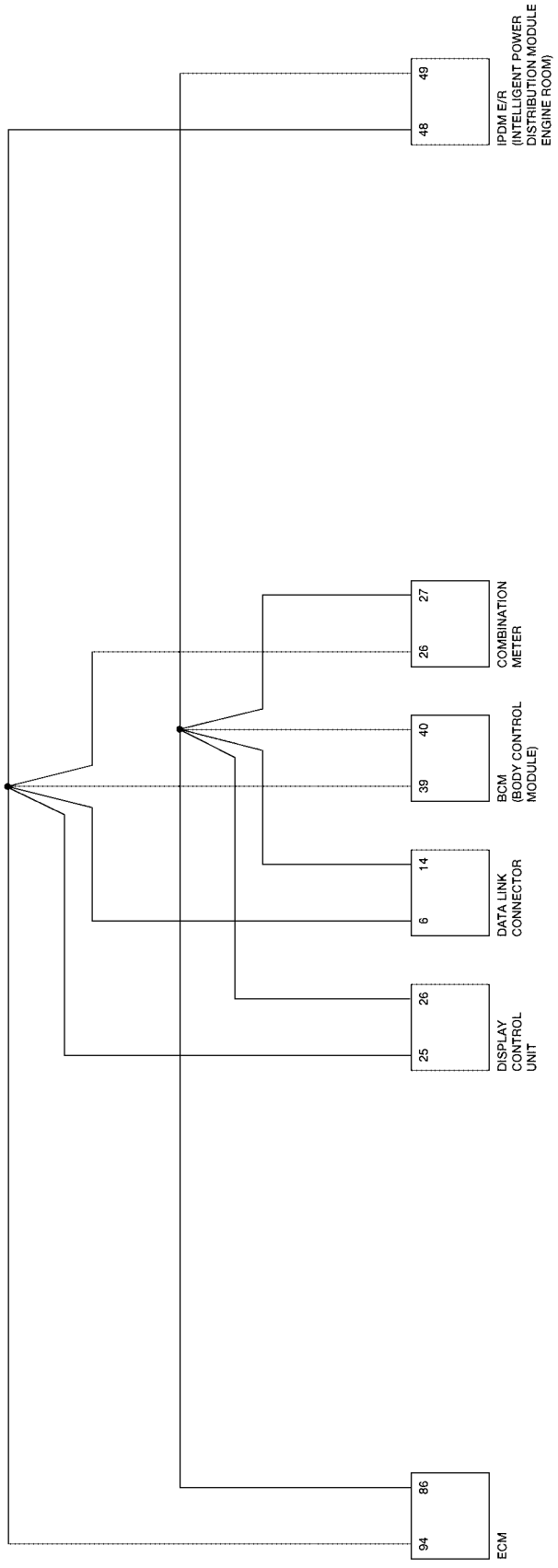
Component Parts and Harness Connector Location

UKS001Y3



Schematic

UKS001Y4

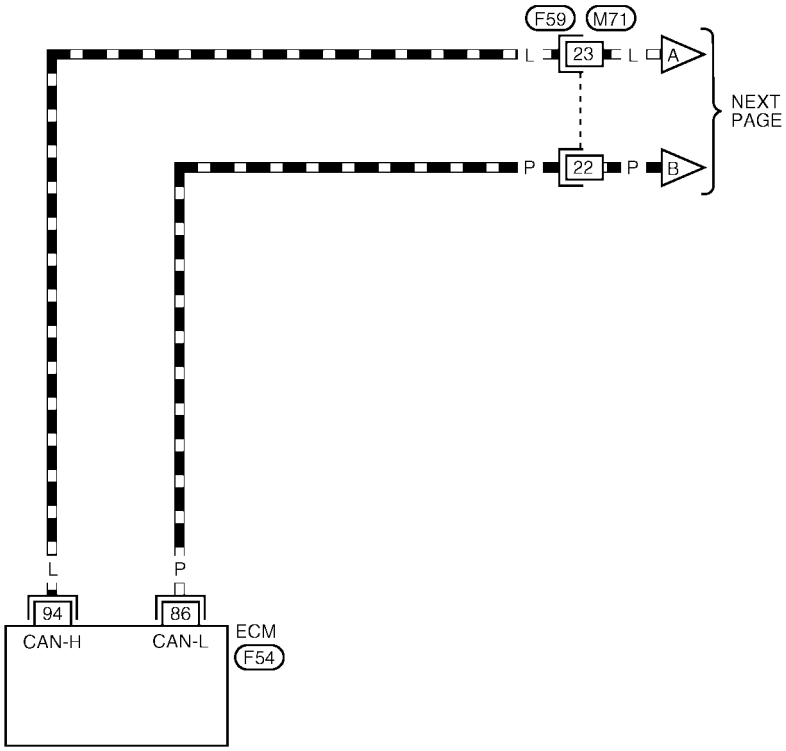


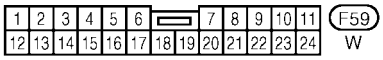
BKWA0114E

Wiring Diagram - CAN -

UKS001Y5

LAN-CAN-04

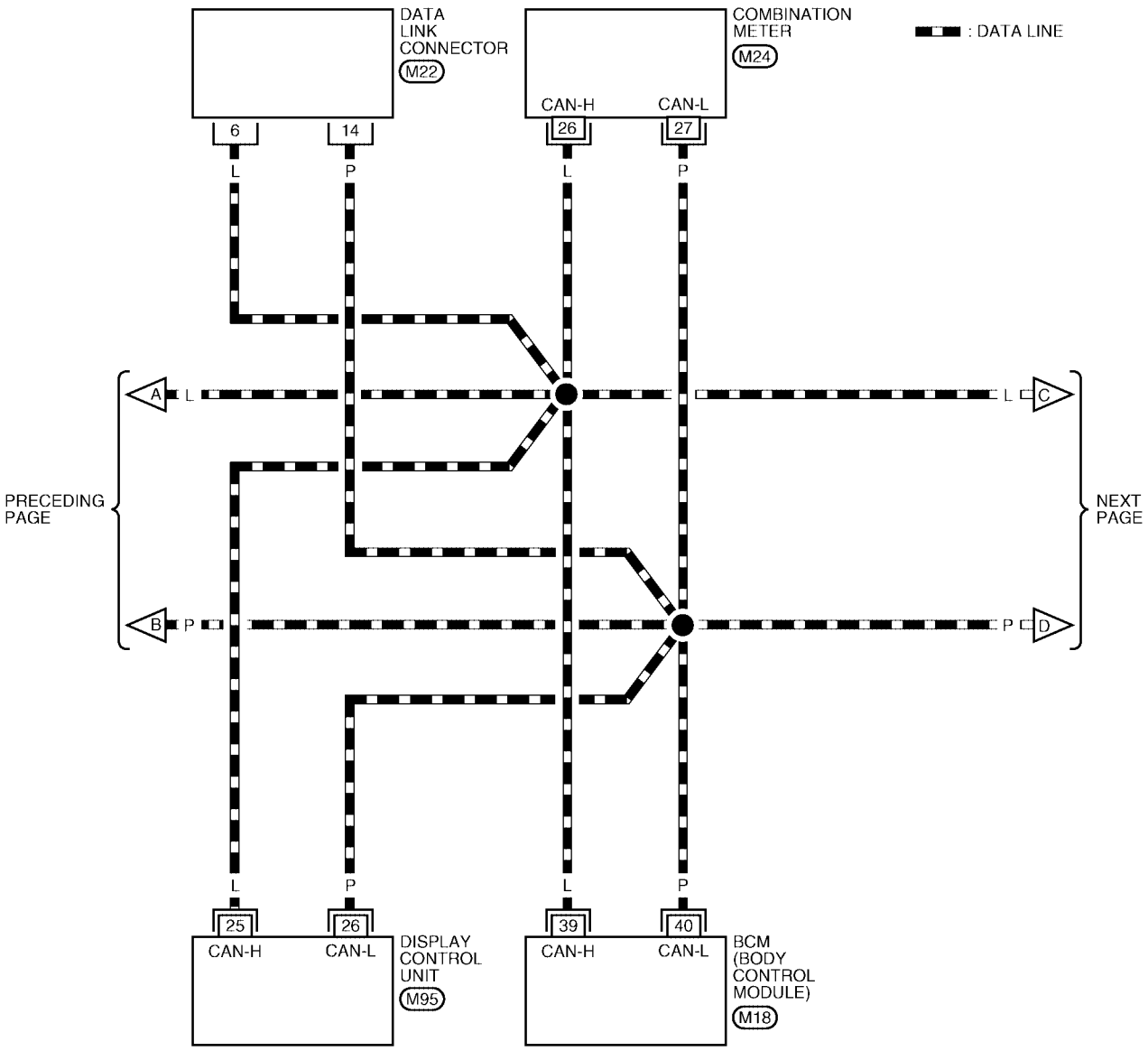


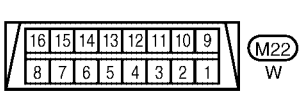


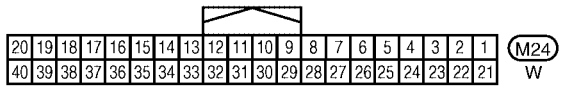
REFER TO THE FOLLOWING.
F54 - ELECTRICAL UNITS

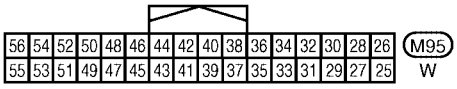
BKWA0115E

LAN-CAN-05





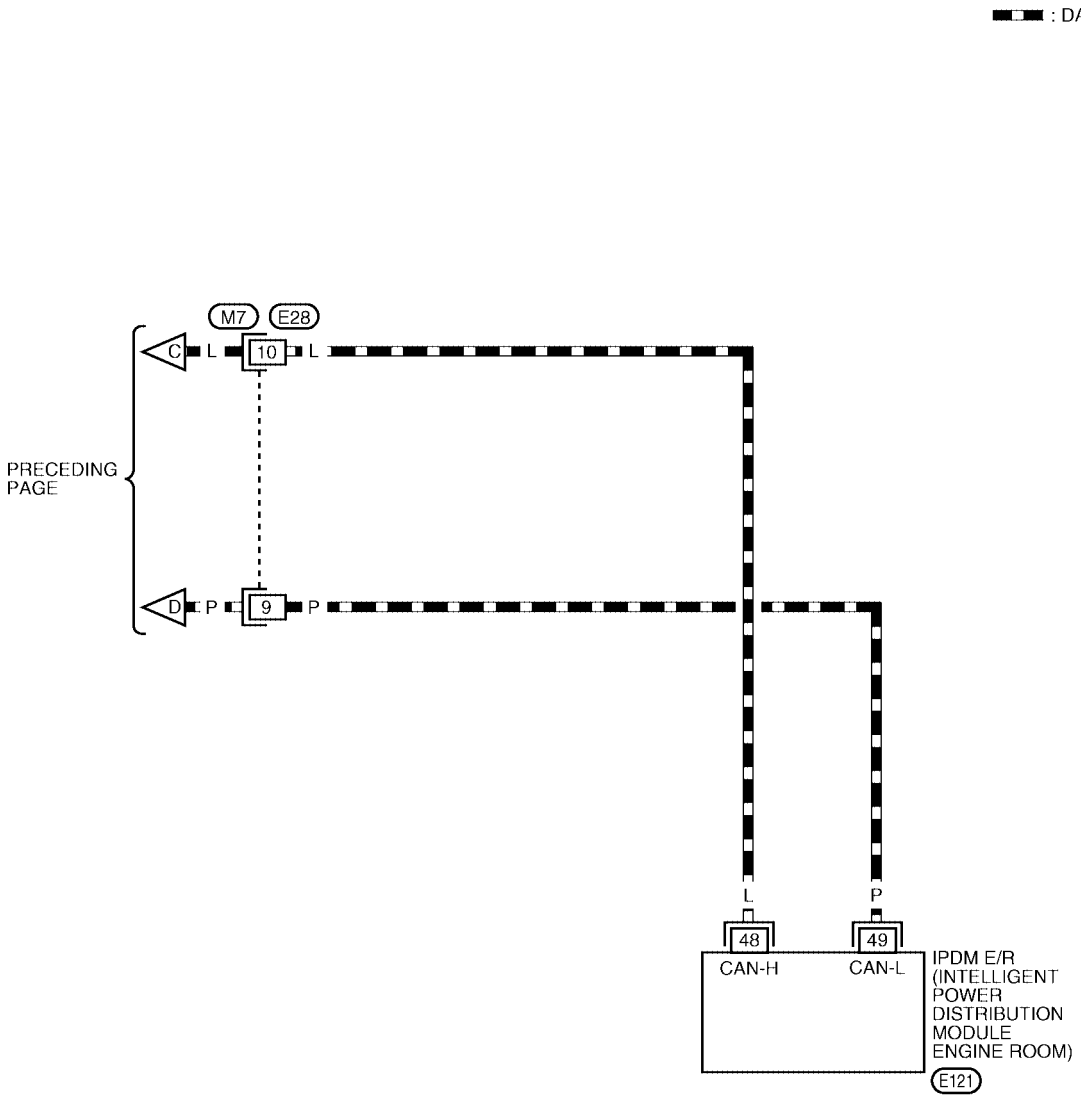


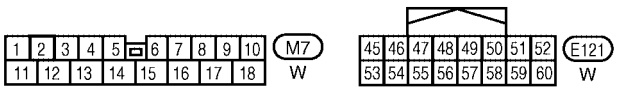


REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0116E

LAN-CAN-06





BKWA0117E

CHECK SHEET

UKS001RV

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	BCM /SEC	METER /M&A	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

Symptoms :

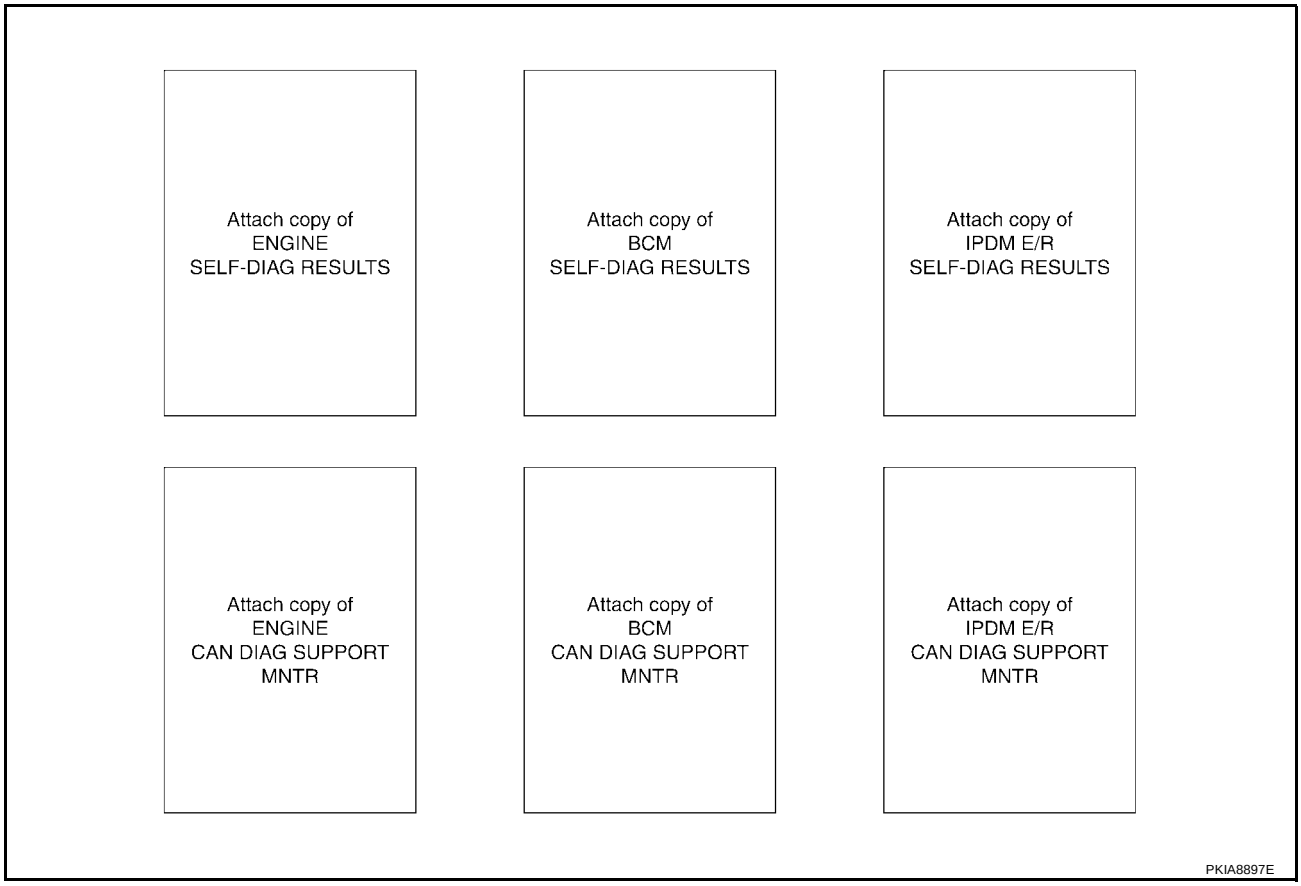
Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

Display control unit Translation Sheet: Rewrite the following names, and put a check mark on the above check sheet table.			
Confirmation/Adjustment Display	Check sheet table Display	Confirmation/Adjustment Display	Check sheet table Display
CAN COMM	Initial diagnosis	CAN CIRC 5	METER/M&A
CAN CIRC 1	Transmit diagnosis	CAN CIRC 6	—
CAN CIRC 2	BCM	CAN CIRC 7	IPDM E/R
CAN CIRC 3	ECM	CAN CIRC 8	—
CAN CIRC 4	—	CAN CIRC 9	—

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA8887E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8897E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

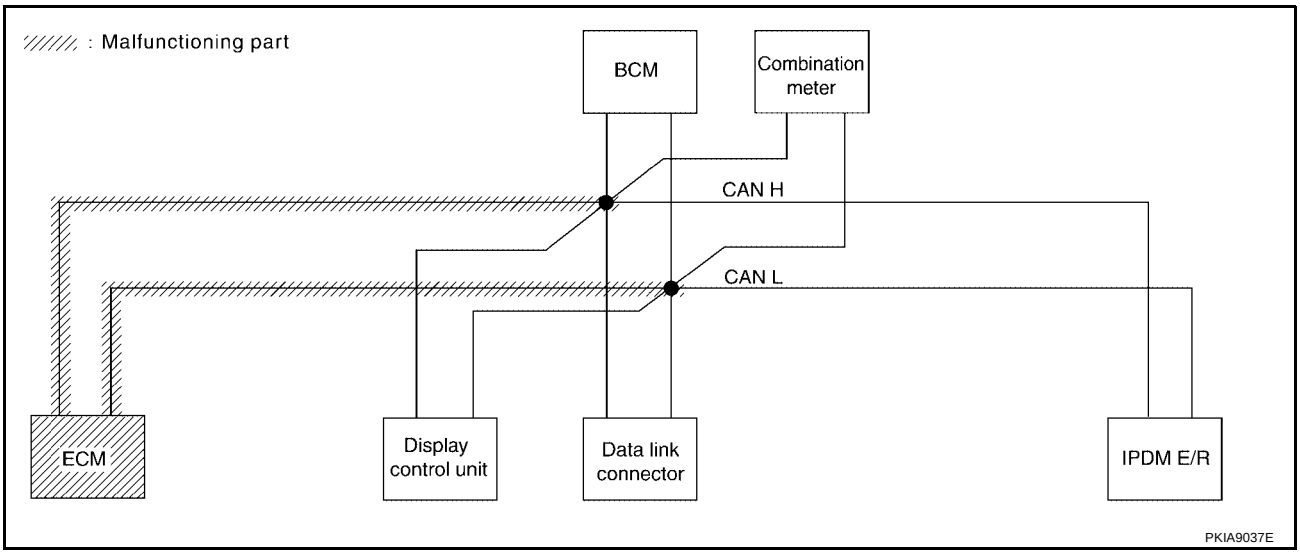
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check ECM circuit. Refer to LAN-62, "ECM Circuit Check" .

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

PKIA8901E

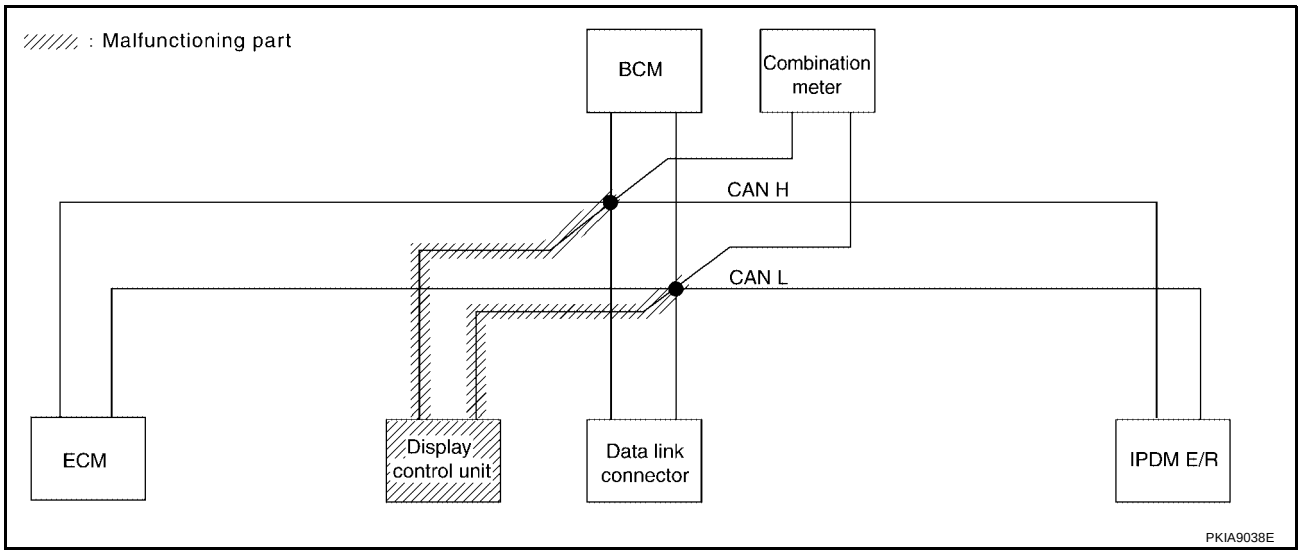


Case 2

Check display control unit circuit. Refer to LAN-62, "Display Control Unit Circuit Check" .

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

PKIA8902E



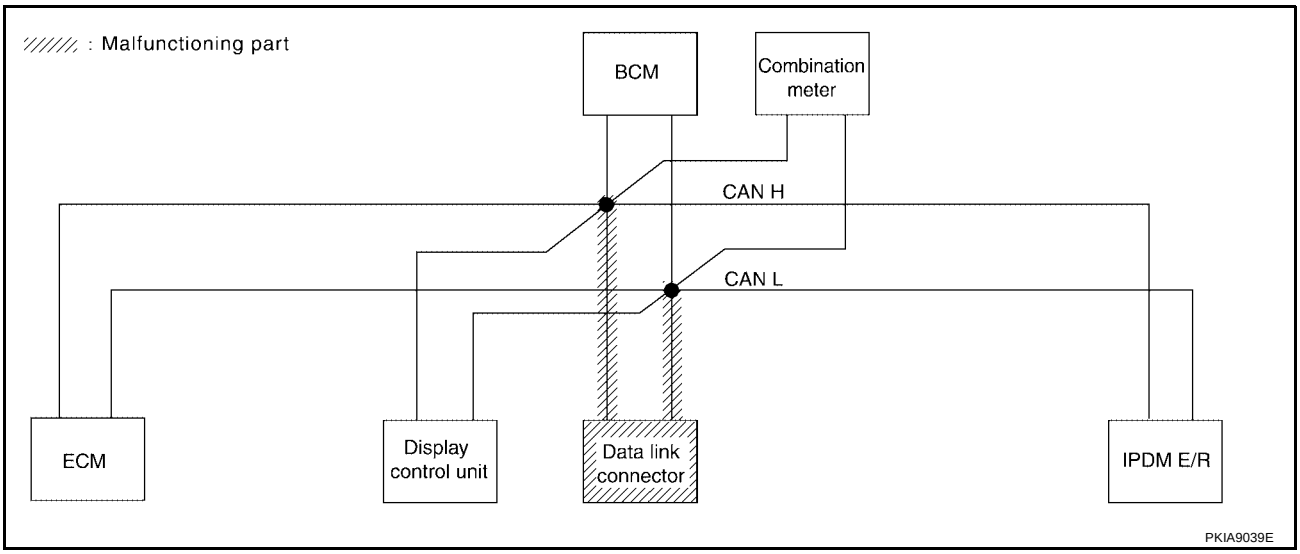
PKIA9038E

Case 3

Check data link connector circuit. Refer to LAN-63, "Data Link Connector Circuit Check" .

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

PKIA8903E



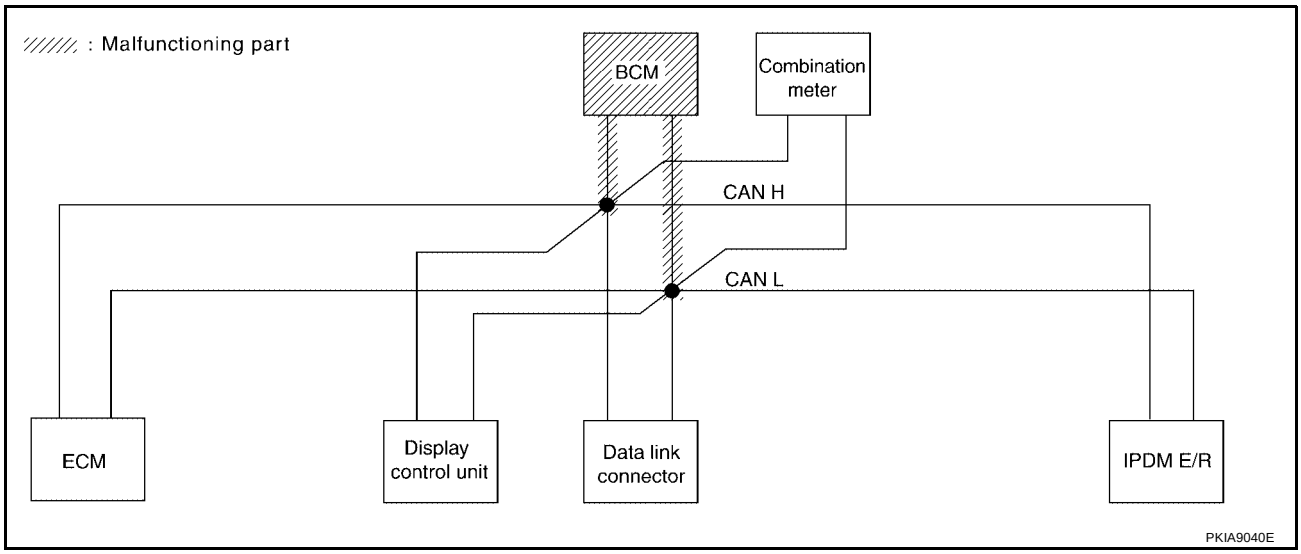
PKIA9039E

Case 4

Check BCM circuit. Refer to LAN-63, "BCM Circuit Check" .

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

PKIA8904E



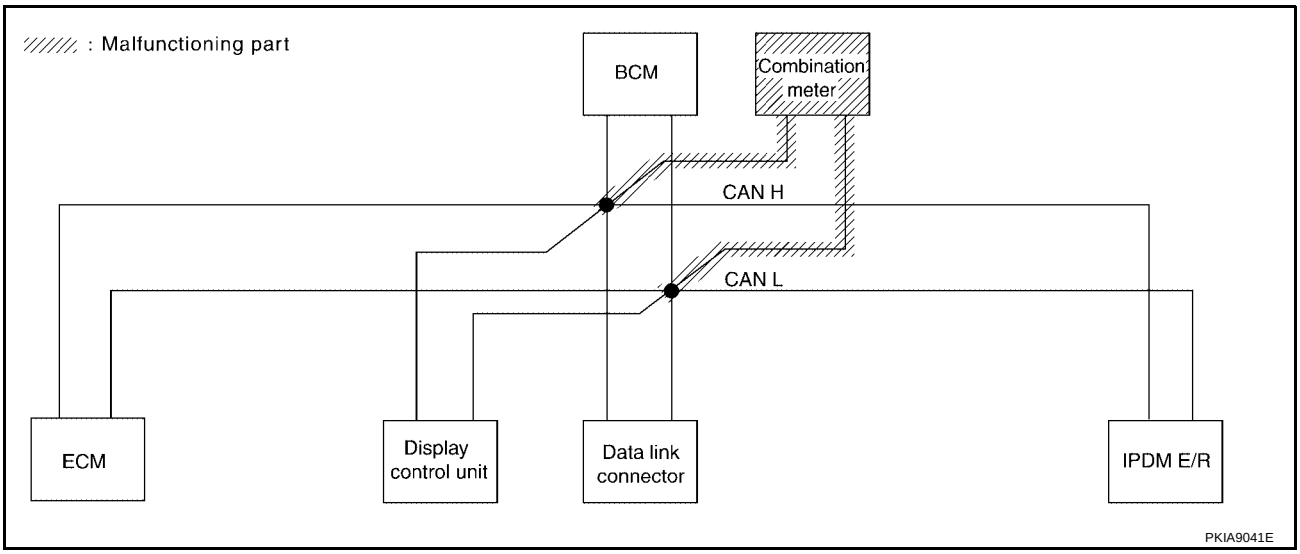
PKIA9040E

Case 5

Check combination meter circuit. Refer to LAN-64, "Combination Meter Circuit Check" .

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

PKIA8905E



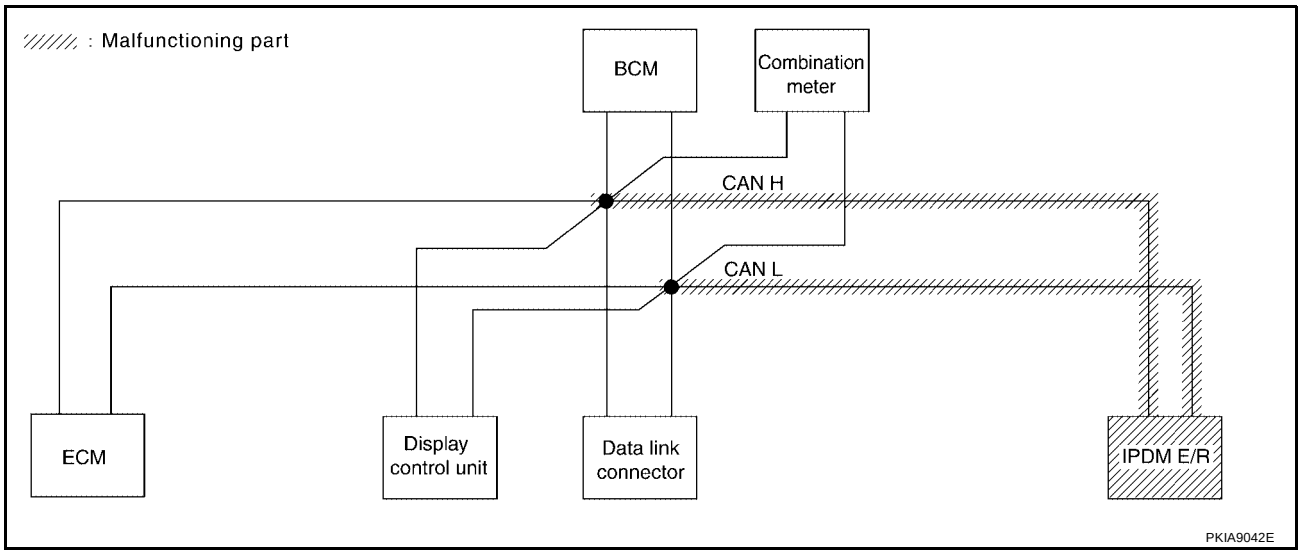
PKIA9041E

Case 6

Check IPDM E/R circuit. Refer to LAN-64, "IPDM E/R Circuit Check" .

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

PKIA8906E



PKIA9042E

Case 7

Check CAN communication circuit. Refer to LAN-65, "CAN Communication Circuit Check" .

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

PKIA8907E

ECM Circuit Check

UKS001Y6

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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 F59
- Harness connector M71

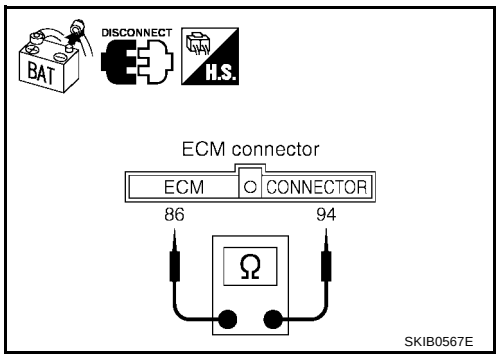
OK or NG

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 F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

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

Display Control Unit Circuit Check

UKS001Y7

1. CHECK CONNECTOR

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

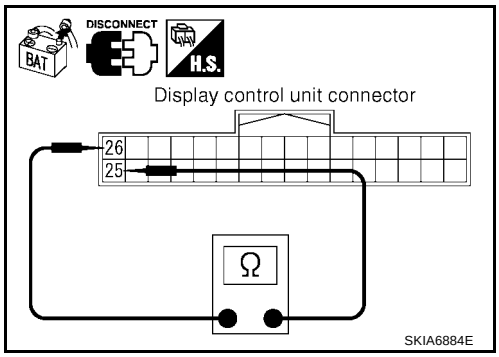
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66Ω



OK or NG

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

Data Link Connector Circuit Check

UKS001Y8

1. CHECK CONNECTOR

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

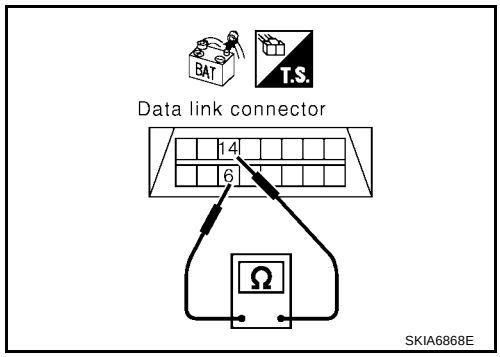
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001Y9

1. CHECK CONNECTOR

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

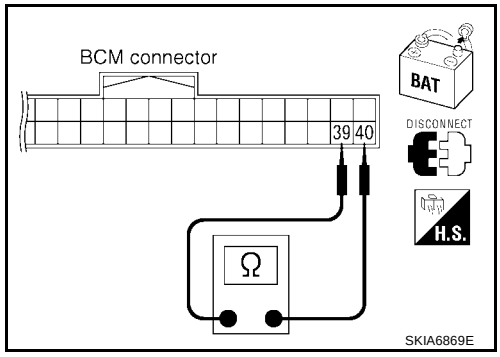
OK or NG

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 M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001YA

1. CHECK CONNECTOR

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

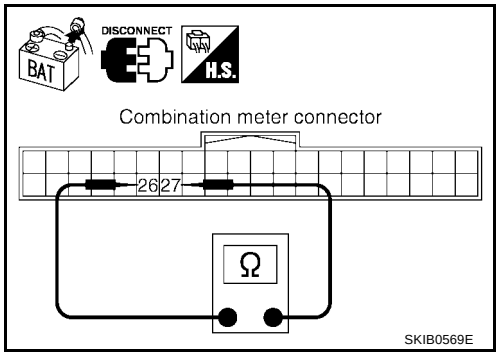
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

IPDM E/R Circuit Check

UKS001YB

1. CHECK CONNECTOR

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

- IPDM E/R connector
- Harness connector E28
- Harness connector M7

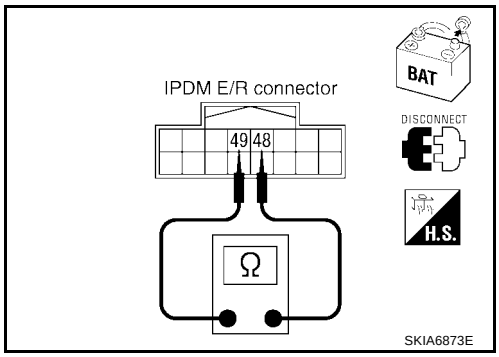
OK or NG

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 E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω



OK or NG

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

CAN Communication Circuit Check

UKS001YC

1. CHECK CONNECTOR

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

- ECM
- Display control unit
- BCM
- Combination meter
- 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.

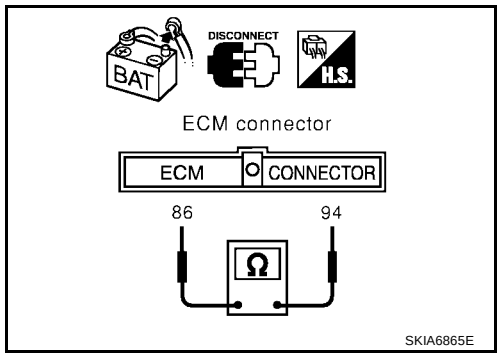
- ECM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 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 F59.



3. CHECK HARNESS FOR SHORT CIRCUIT

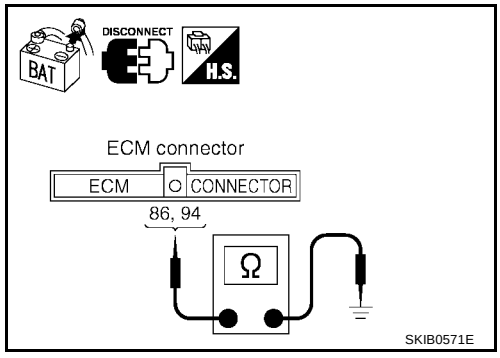
Check continuity between ECM harness connector F54 terminals 94 (L), 86 (P) and ground.

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 F59.

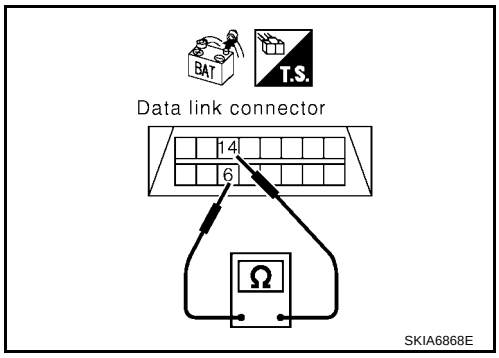


4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Display control unit connector
- BCM connector
- Combination meter connector
- Harness connector M7

2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

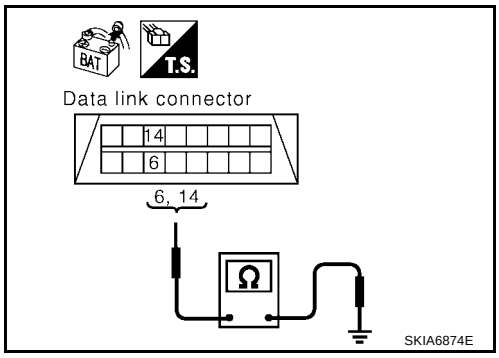
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

14 (P) - Ground : Continuity should not exist.



OK or NG

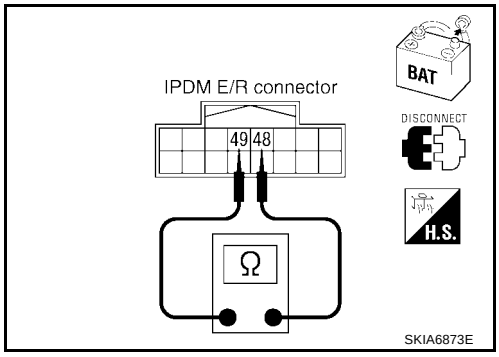
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

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



OK or NG

OK >> GO TO 7.

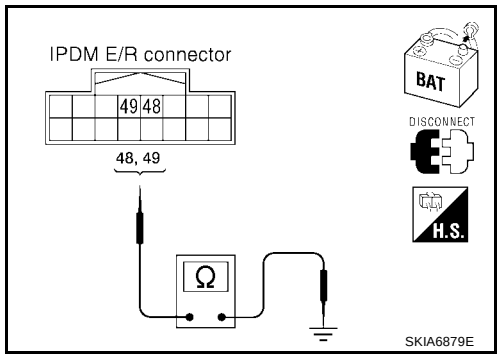
NG >> Repair harness between harness connector E28 and IPDM E/R.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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

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



OK or NG

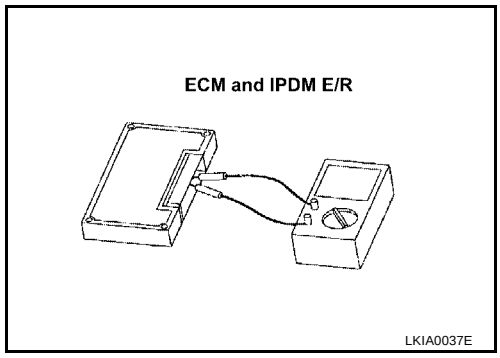
OK >> GO TO 8.

NG >> Repair harness between harness connector E28 and IPDM E/R.

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

OK >> GO TO 9.

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- Display control unit
- BCM
- Combination meter
- ECM
- IPDM E/R

Inspection results

Reproduced>>Install removed unit, and then check the other unit.

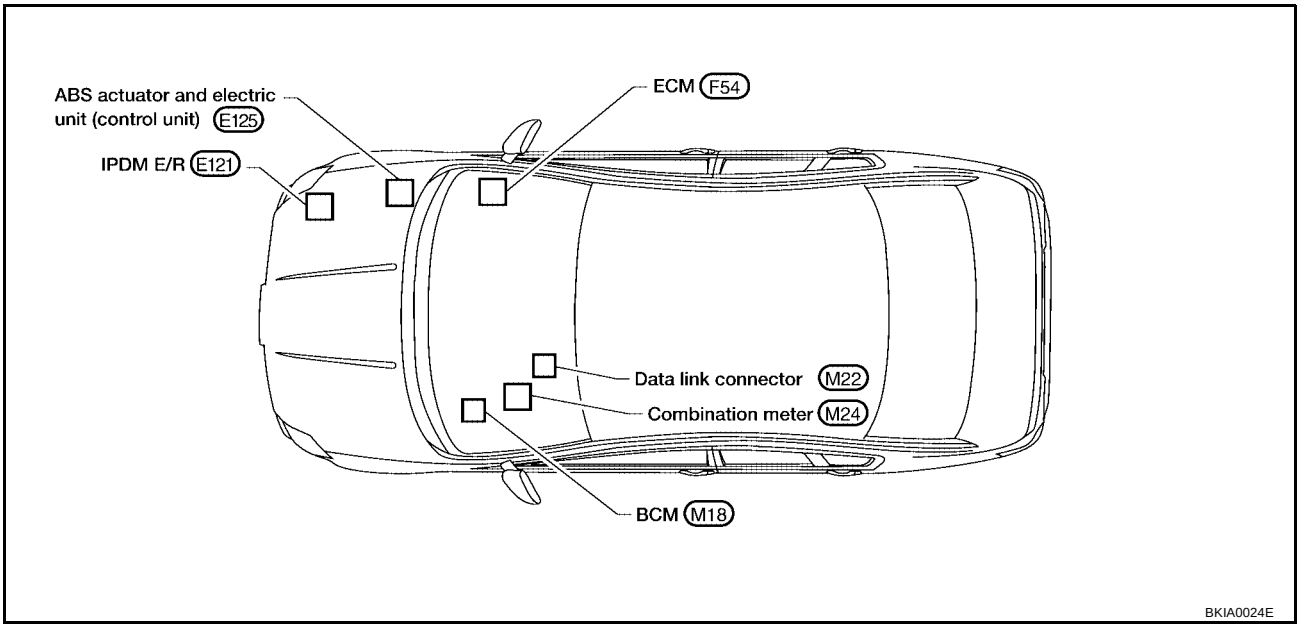
Not reproduced>>Replace removed unit.

CAN SYSTEM (TYPE 3)

PFP:23710

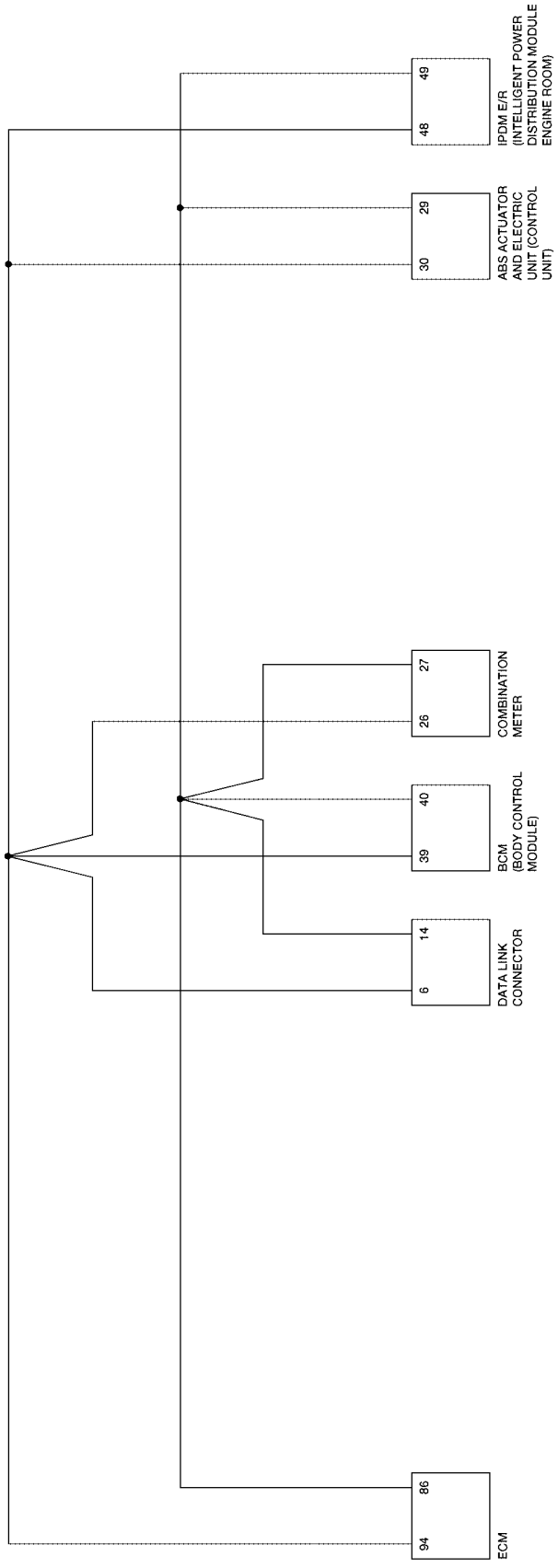
Component Parts and Harness Connector Location

UKS001XR



Schematic

UKS001XS

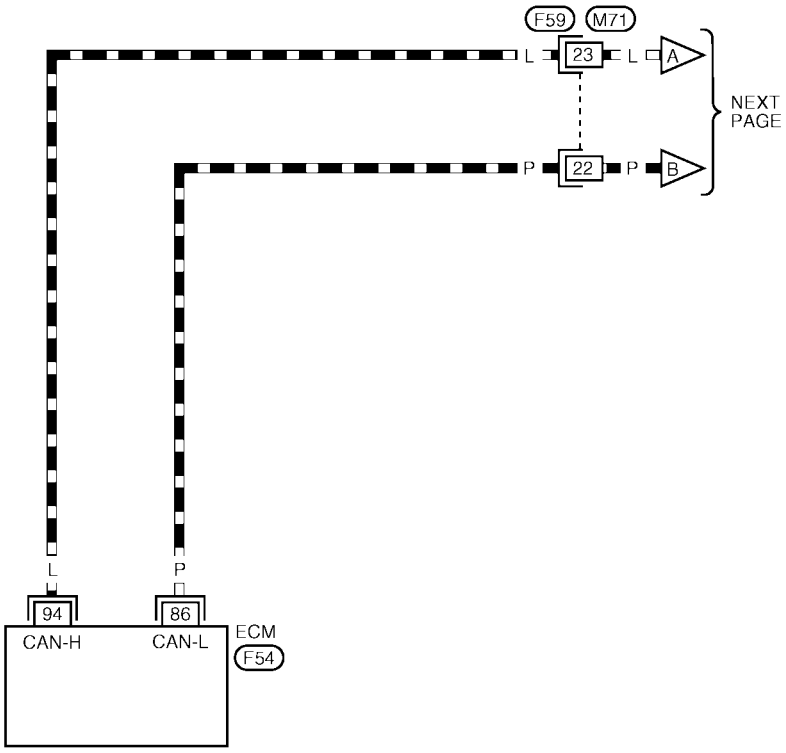


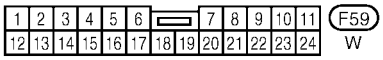
BKWA0110E

Wiring Diagram - CAN -

UKS001XT

LAN-CAN-07

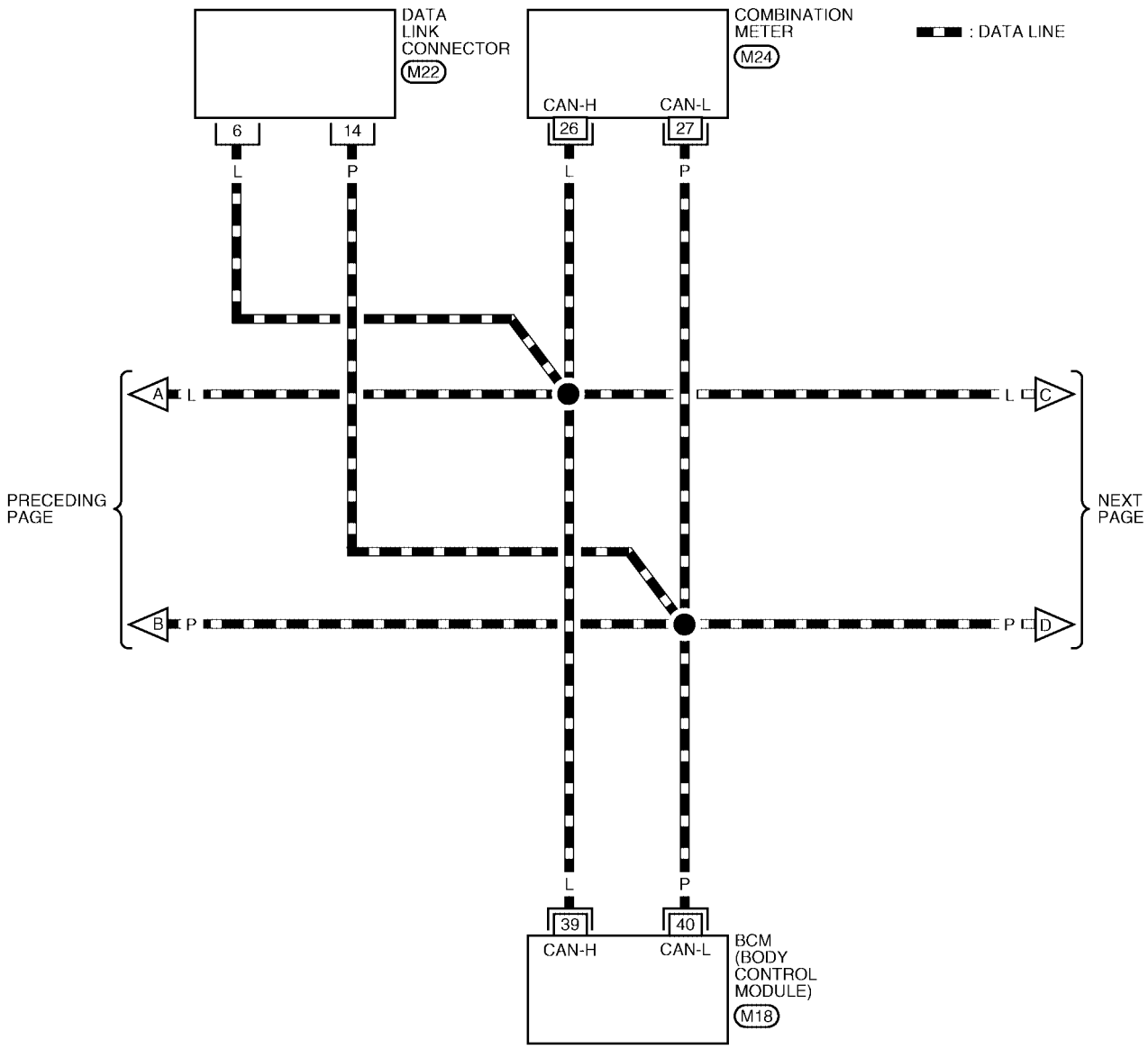


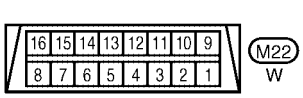


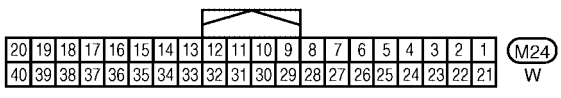
REFER TO THE FOLLOWING.
F54 - ELECTRICAL UNITS

BKWA0111E

LAN-CAN-08



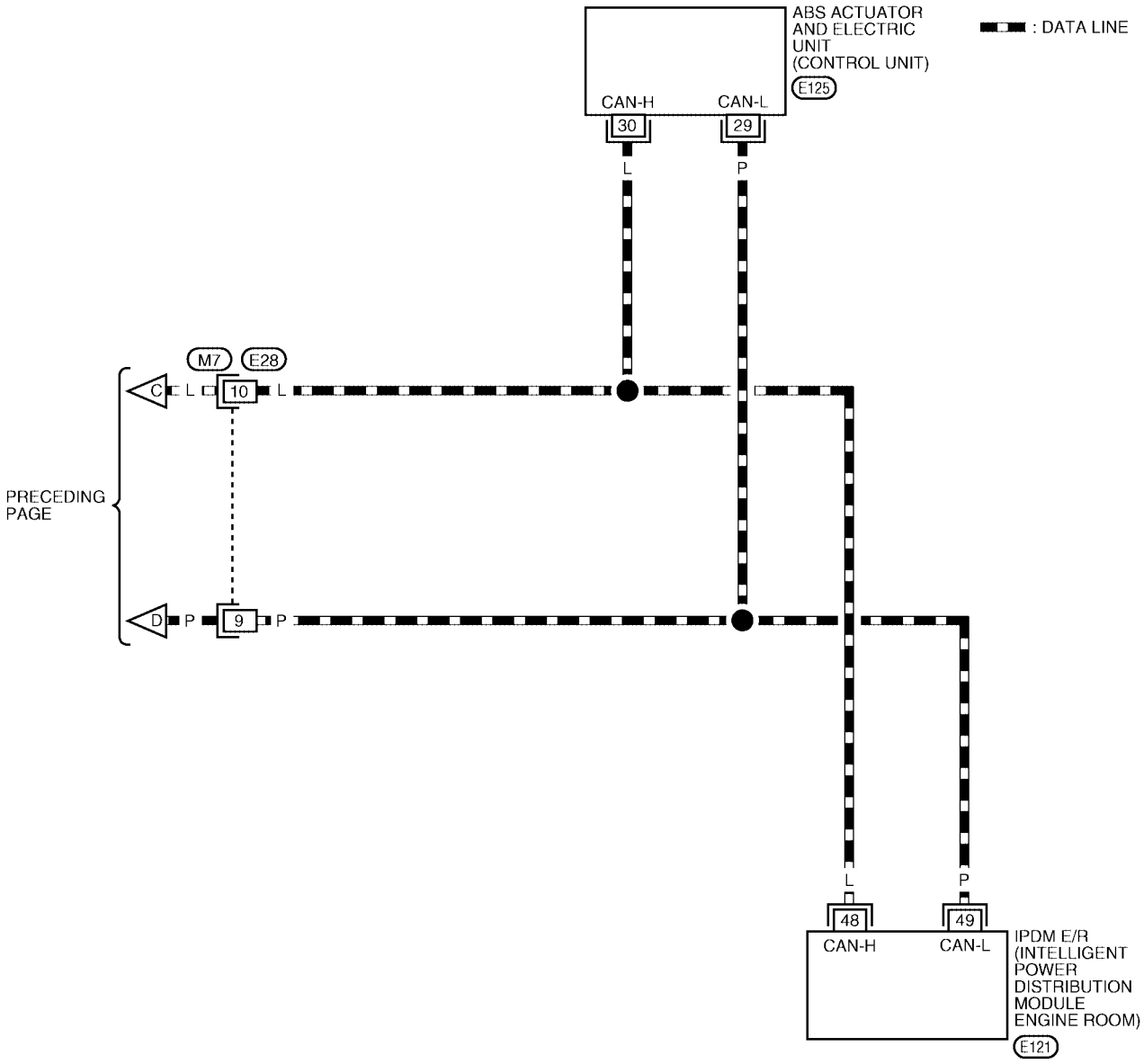


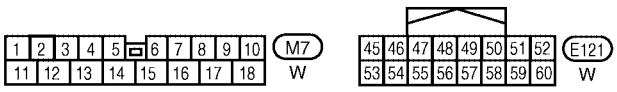


REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0112E

LAN-CAN-09





REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0113E

CHECK SHEET

UKS001RU

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	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
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

Attach copy of ENGINE 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 BCM CAN DIAG SUPPORT MNTR

Attach copy of ABS CAN DIAG SUPPORT MNTR

Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

PKIA8888E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

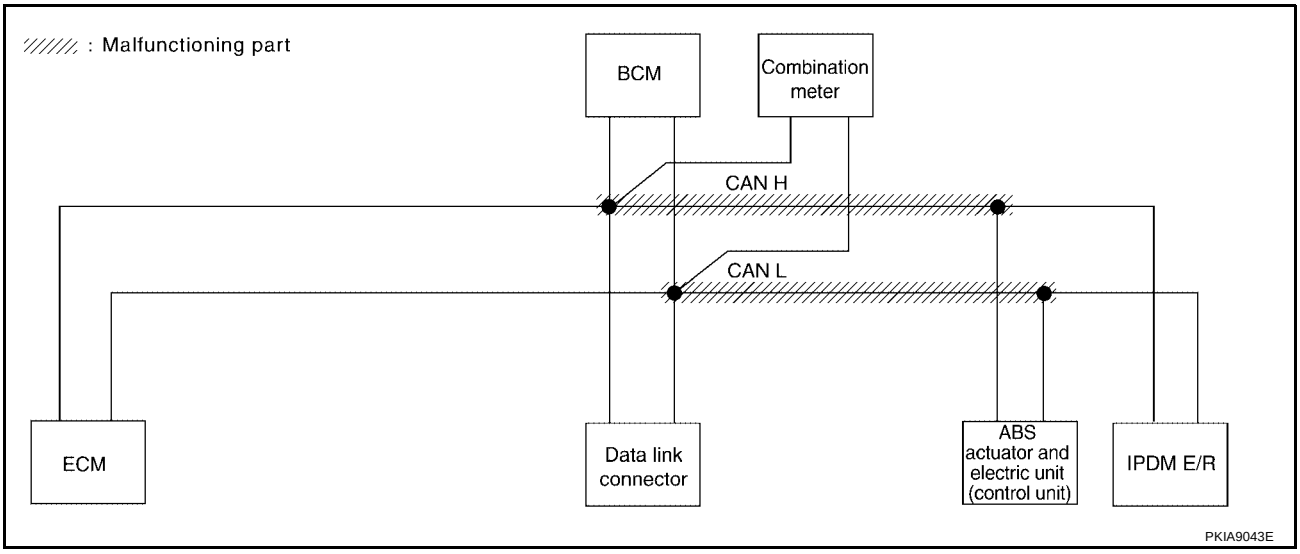
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)” , replace the control unit.

Case 1

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-81, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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) ✓	–

PKIA8976E

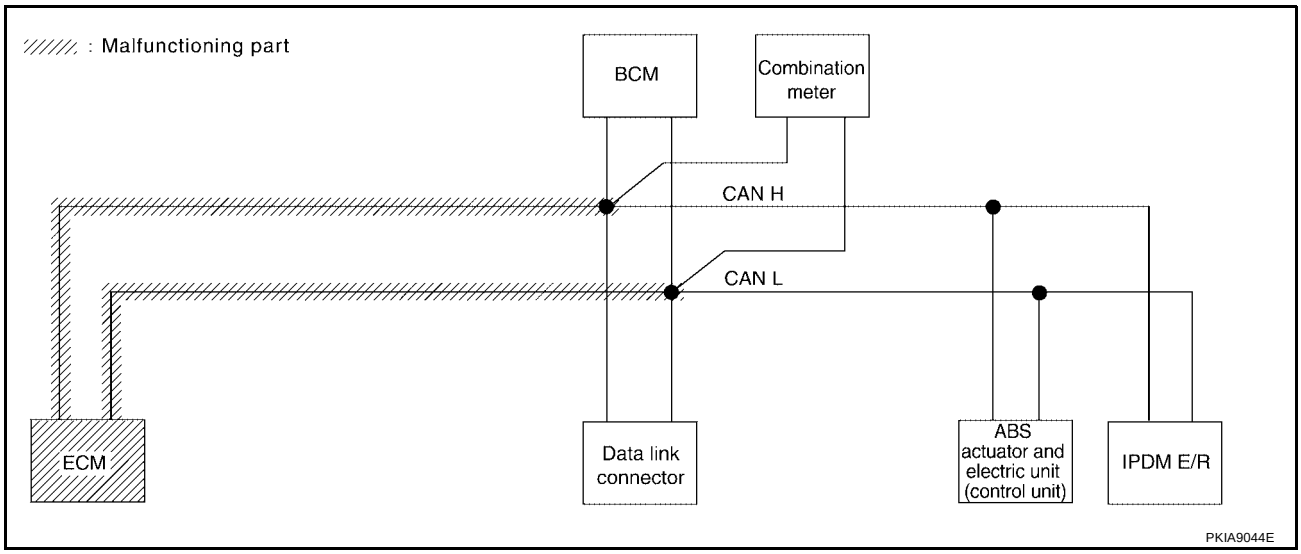


Case 2

Check ECM circuit. Refer to LAN-82, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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) ✓	—

PKIA8977E

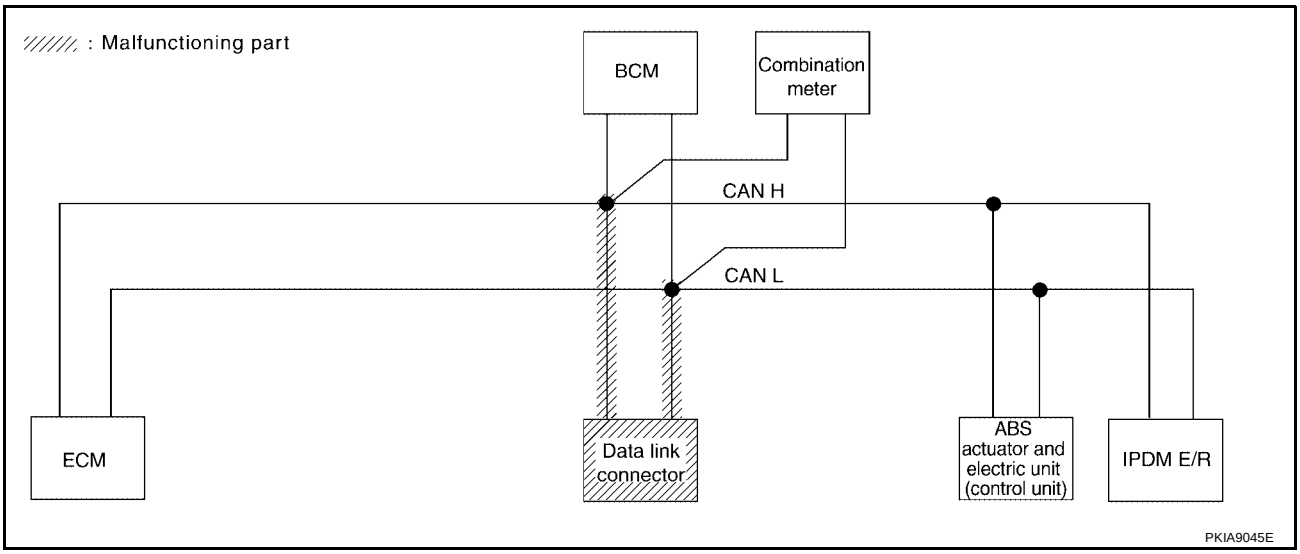


Case 3

Check data link connector circuit. Refer to LAN-82, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
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)	—

PKIA8978E



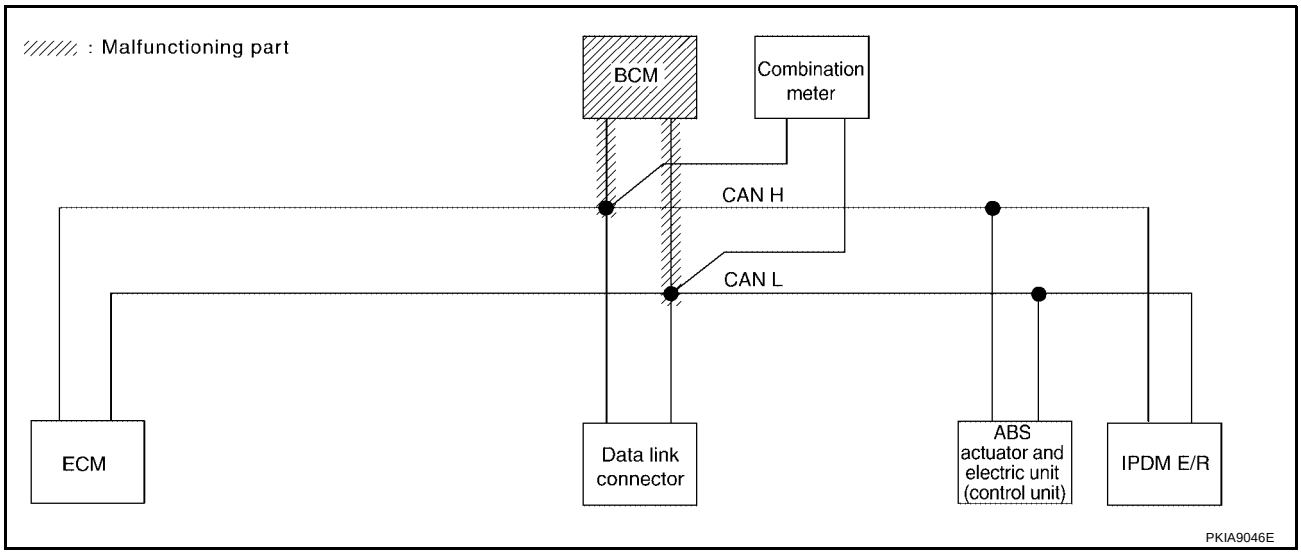
PKIA9045E

Case 4

Check BCM circuit. Refer to LAN-83, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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) ✓	—

PKIA8979E



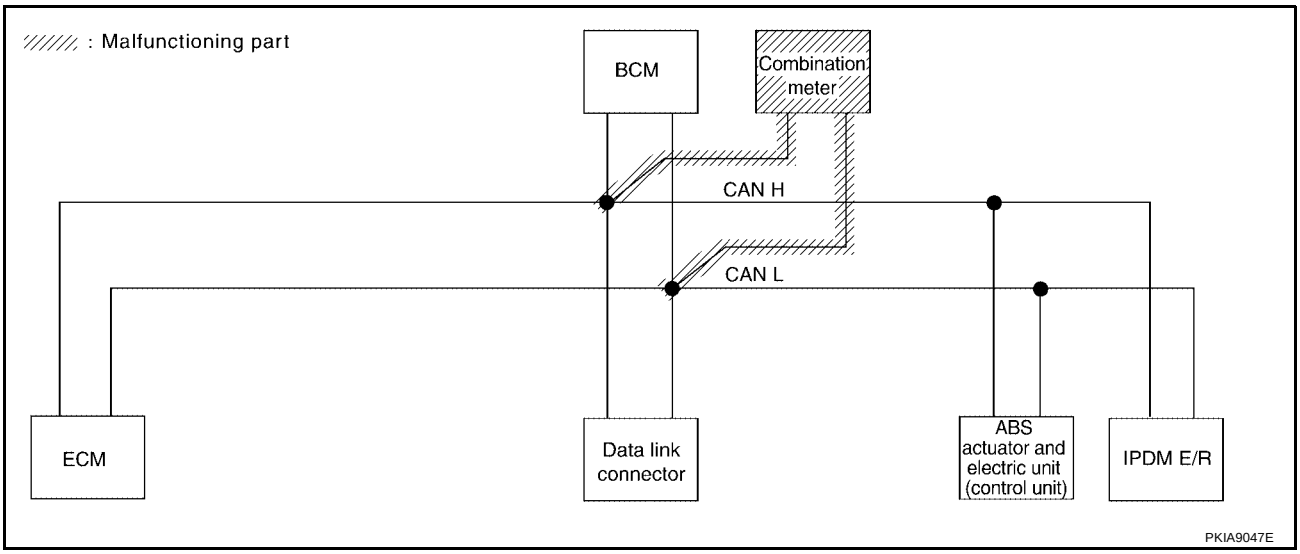
PKIA9046E

Case 5

Check combination meter circuit. Refer to LAN-83, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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)	—

PKIA8980E



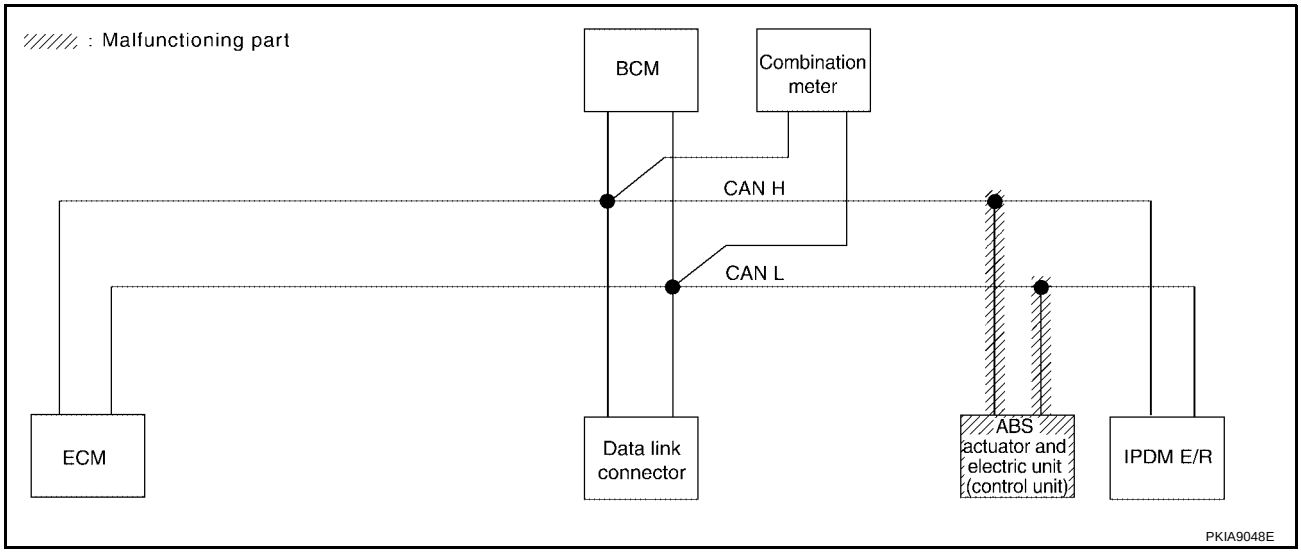
PKIA9047E

Case 6

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-84, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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)	—

PKIA8981E



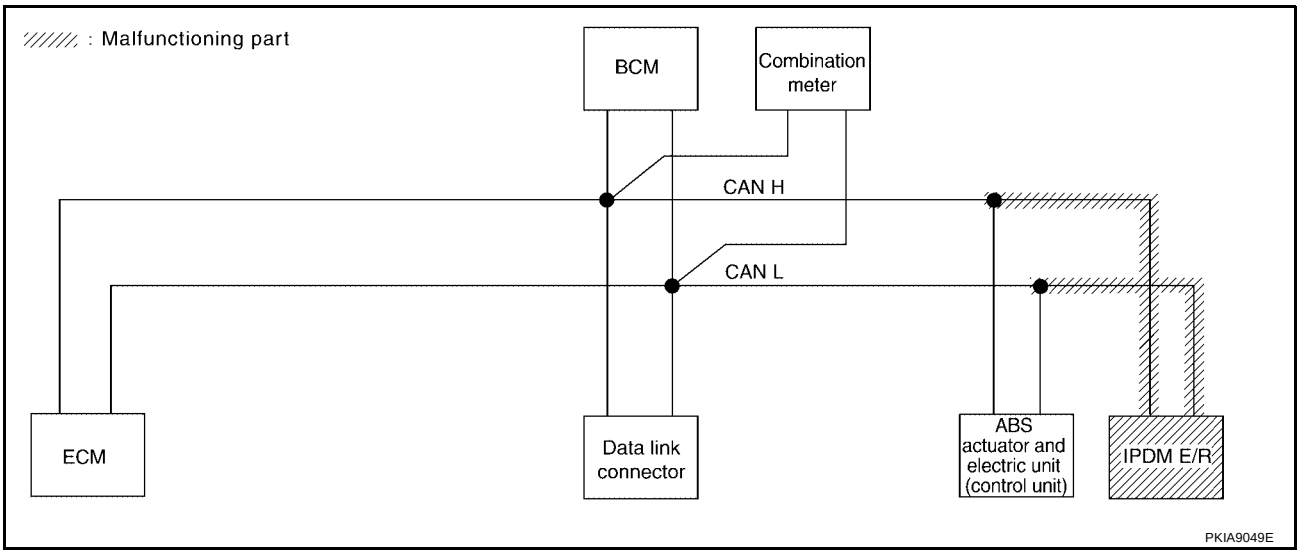
PKIA9048E

Case 7

Check IPDM E/R circuit. Refer to LAN-84, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
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)	—

PKIA8982E



PKIA9049E

Case 8

Check CAN communication circuit. Refer to LAN-85, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
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)	—

PKIA8983E

Case 9

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-88, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
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)	–

PKIA8984E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-88, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
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)	–

PKIA8985E

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

UKS001XU

1. CHECK CONNECTOR

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

- Harness connector M7
- Harness connector E28

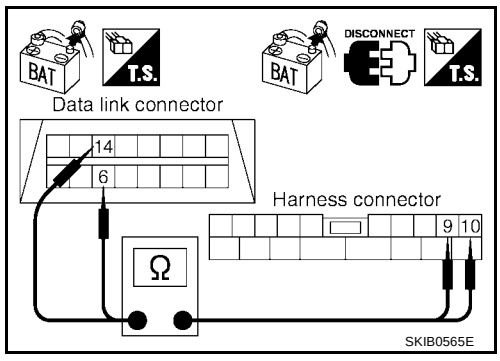
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M7 terminals 10 (L), 9 (P).

6 (L) - 10 (L) : Continuity should exist.
14 (P) - 9 (P) : Continuity should exist.



OK or NG

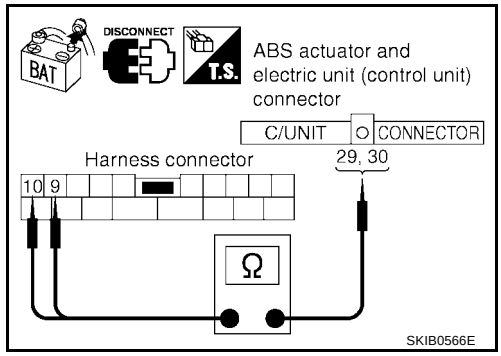
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E28 terminals 10 (L), 9 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L), 29 (P).

10 (L) - 30 (L) : Continuity should exist.

9 (P) - 29 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness.

ECM Circuit Check

UKS001XV

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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 F59
- Harness connector M71

OK or NG

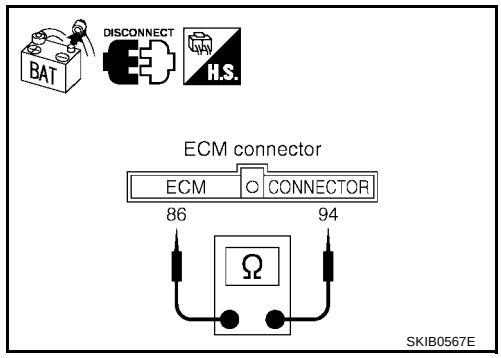
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.

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

Data Link Connector Circuit Check

UKS001XW

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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

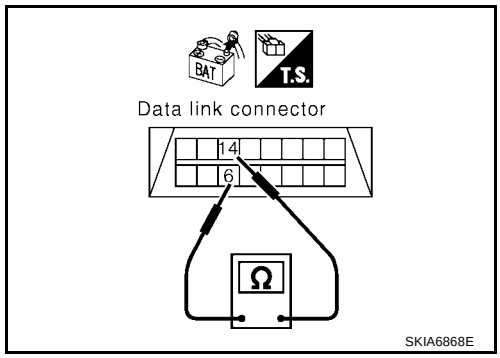
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001XX

1. CHECK CONNECTOR

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

OK or NG

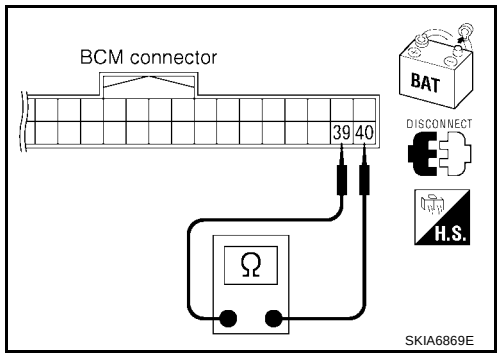
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001XY

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

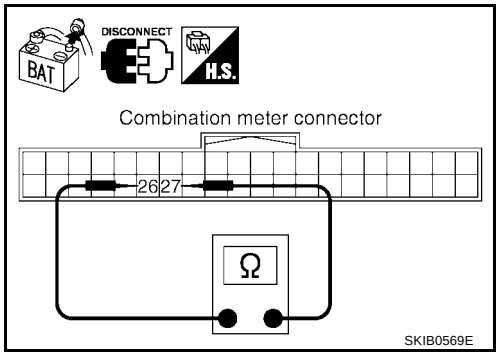
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω

OK or NG

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



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001XZ

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

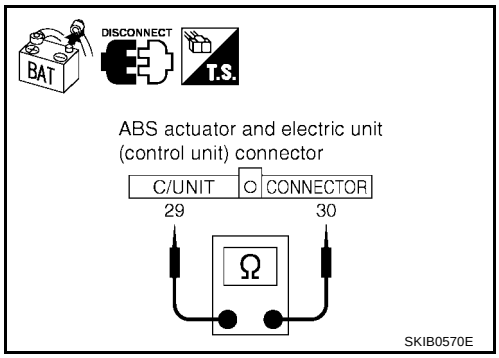
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L) and 29 (P).

30 (L) - 29 (P) : Approx. 54 - 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between harness connector E28 and ABS actuator and electric unit (control unit).



IPDM E/R Circuit Check

UKS001Y0

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

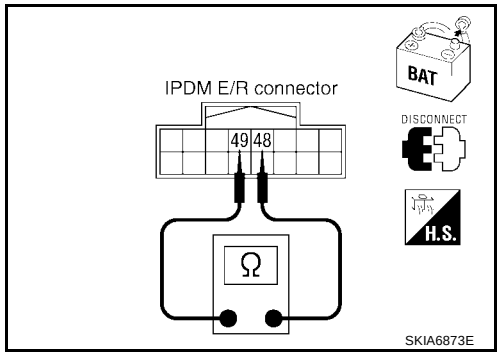
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between harness connector E28 and IPDM E/R.



CAN Communication Circuit Check

UKS001Y1

1. CHECK CONNECTOR

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

- ECM
- BCM
- Combination meter
- 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.

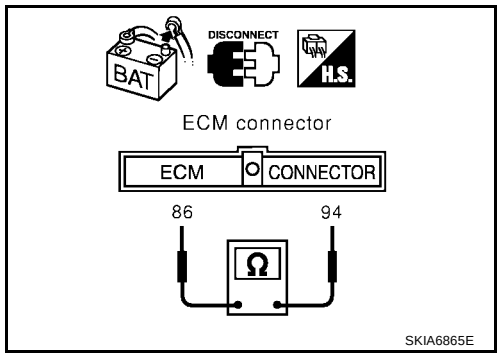
- ECM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 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 F59.

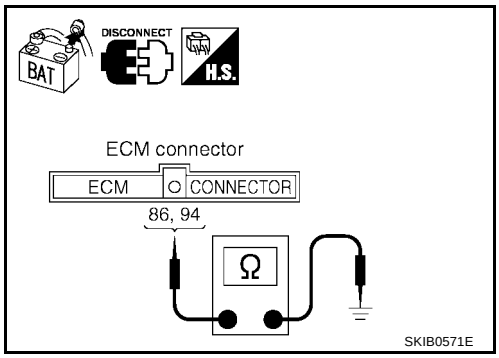


3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 94 (L), 86 (P) and ground.

94 (L) - Ground : Continuity should not exist.

86 (P) - Ground : Continuity should not exist.



OK or NG

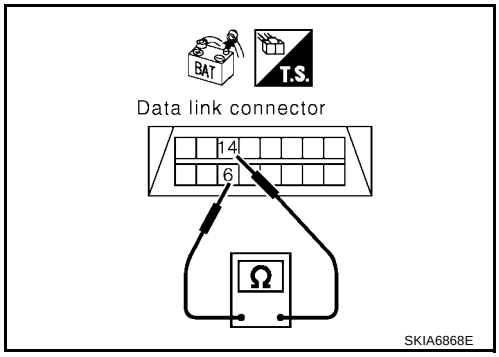
OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector F59.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- BCM connector
- Combination meter connector
- Harness connector M7
2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

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

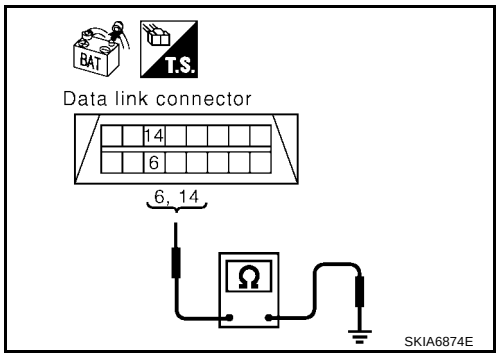
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 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.

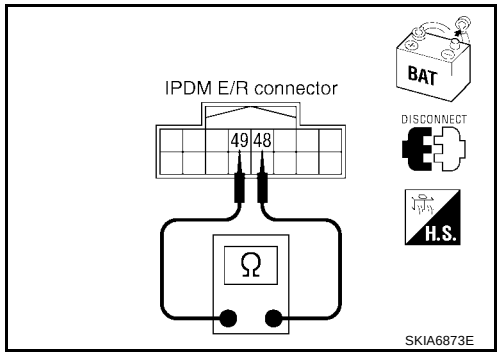
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

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 E121 terminals 48 (L) and 49 (P).

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



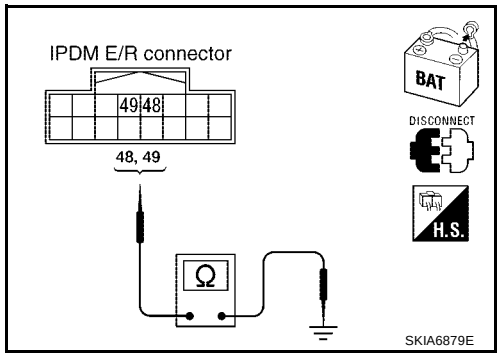
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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



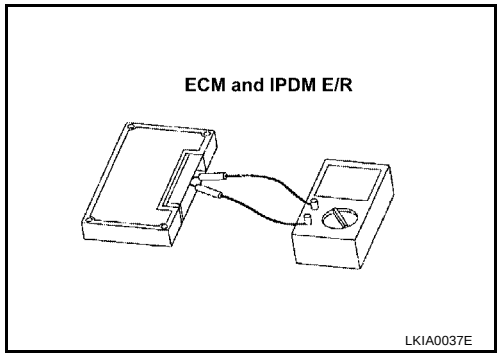
OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"
.

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001Y2

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

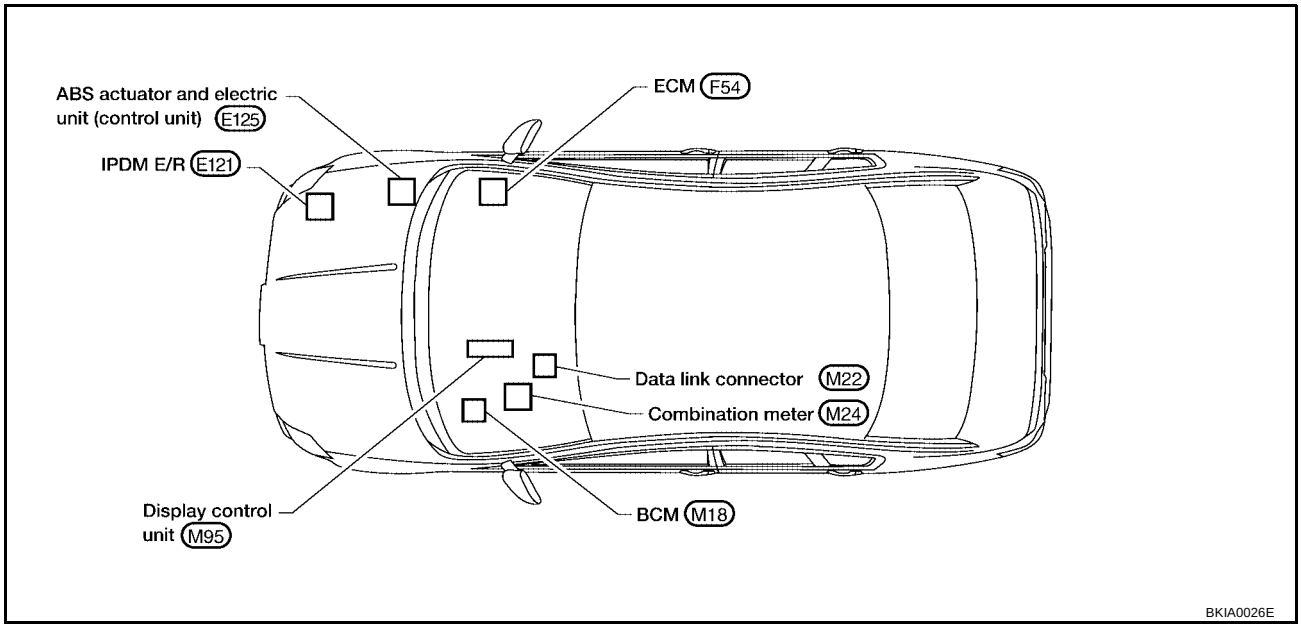
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 4)

PFP:23710

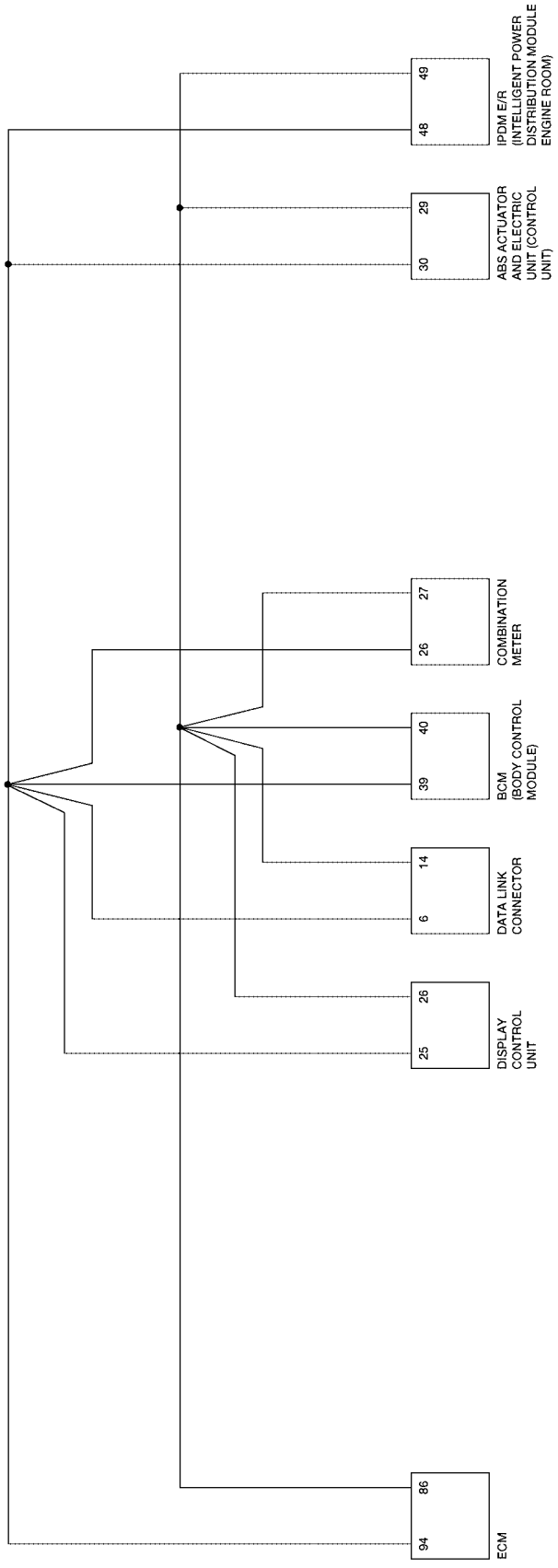
Component Parts and Harness Connector Location

UKS001VN



Schematic

UKS001VO



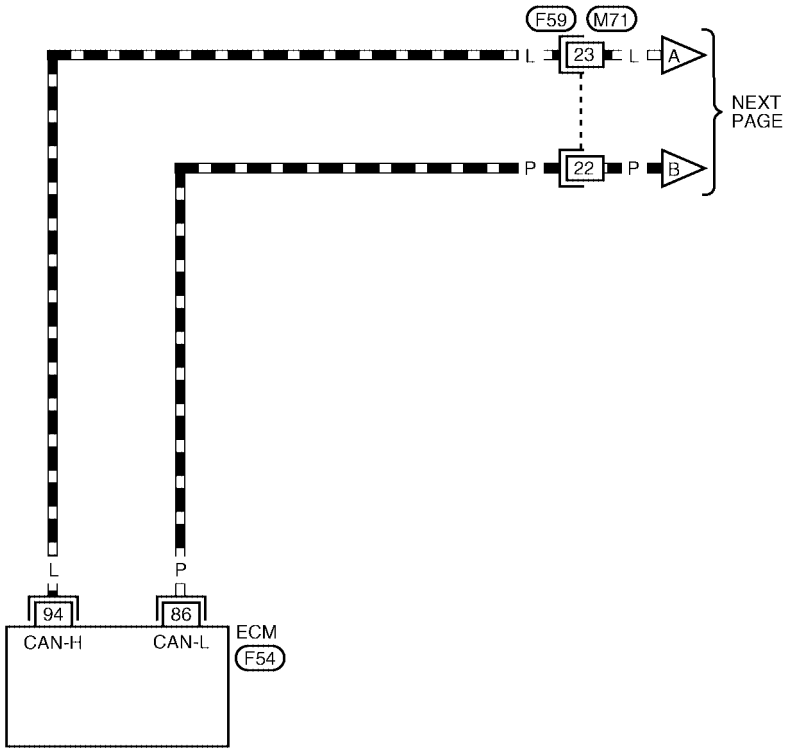
BKWA0106E

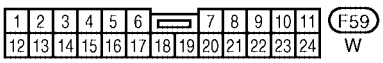
Wiring Diagram - CAN -

UKS001VP

LAN-CAN-10

: DATA LINE

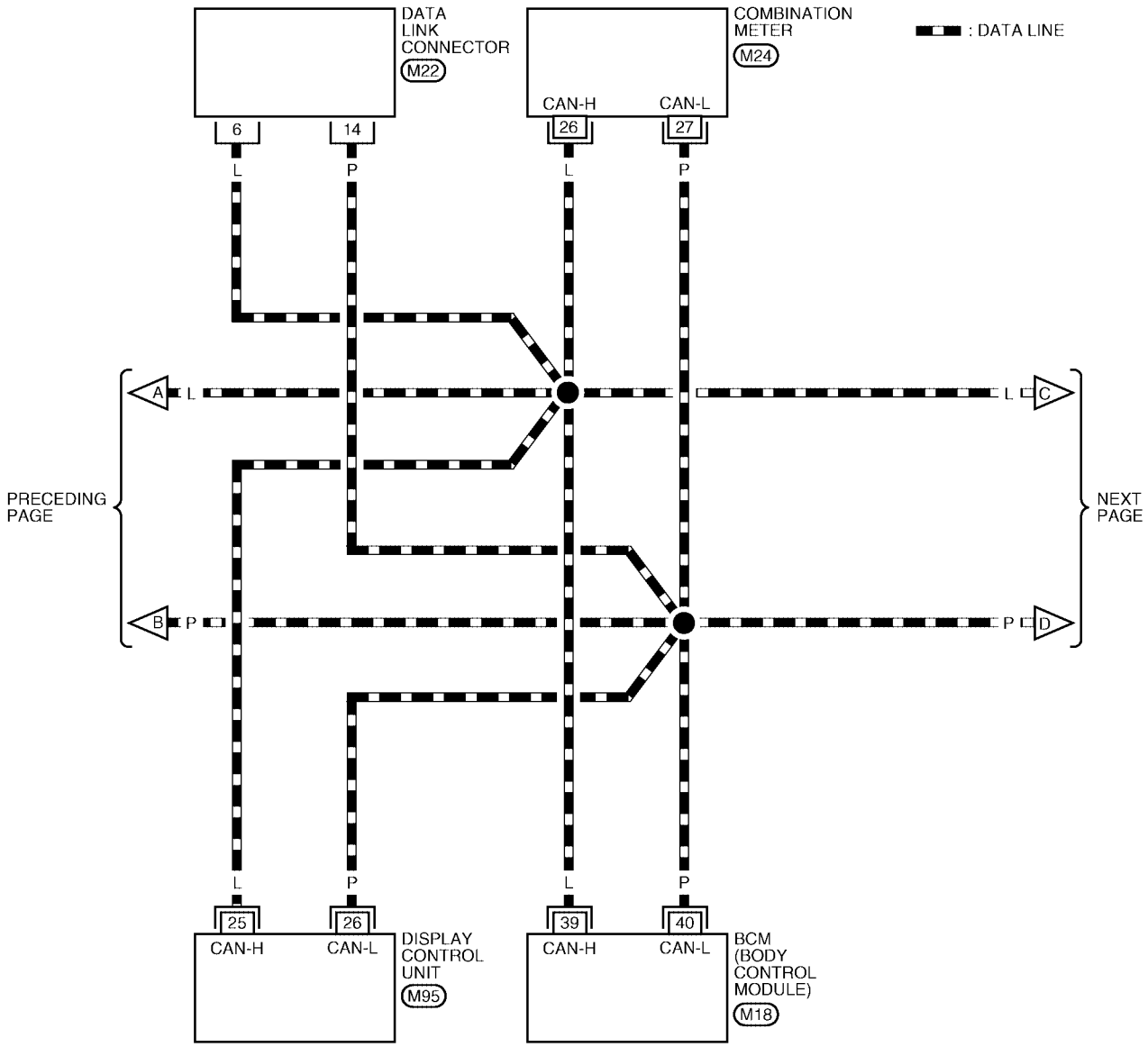


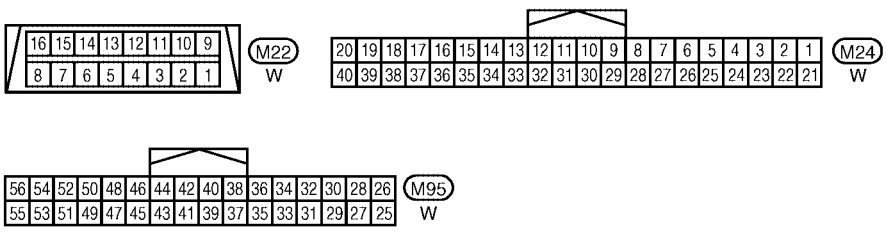


REFER TO THE FOLLOWING.
F54 - ELECTRICAL UNITS

BKWA0107E

LAN-CAN-11

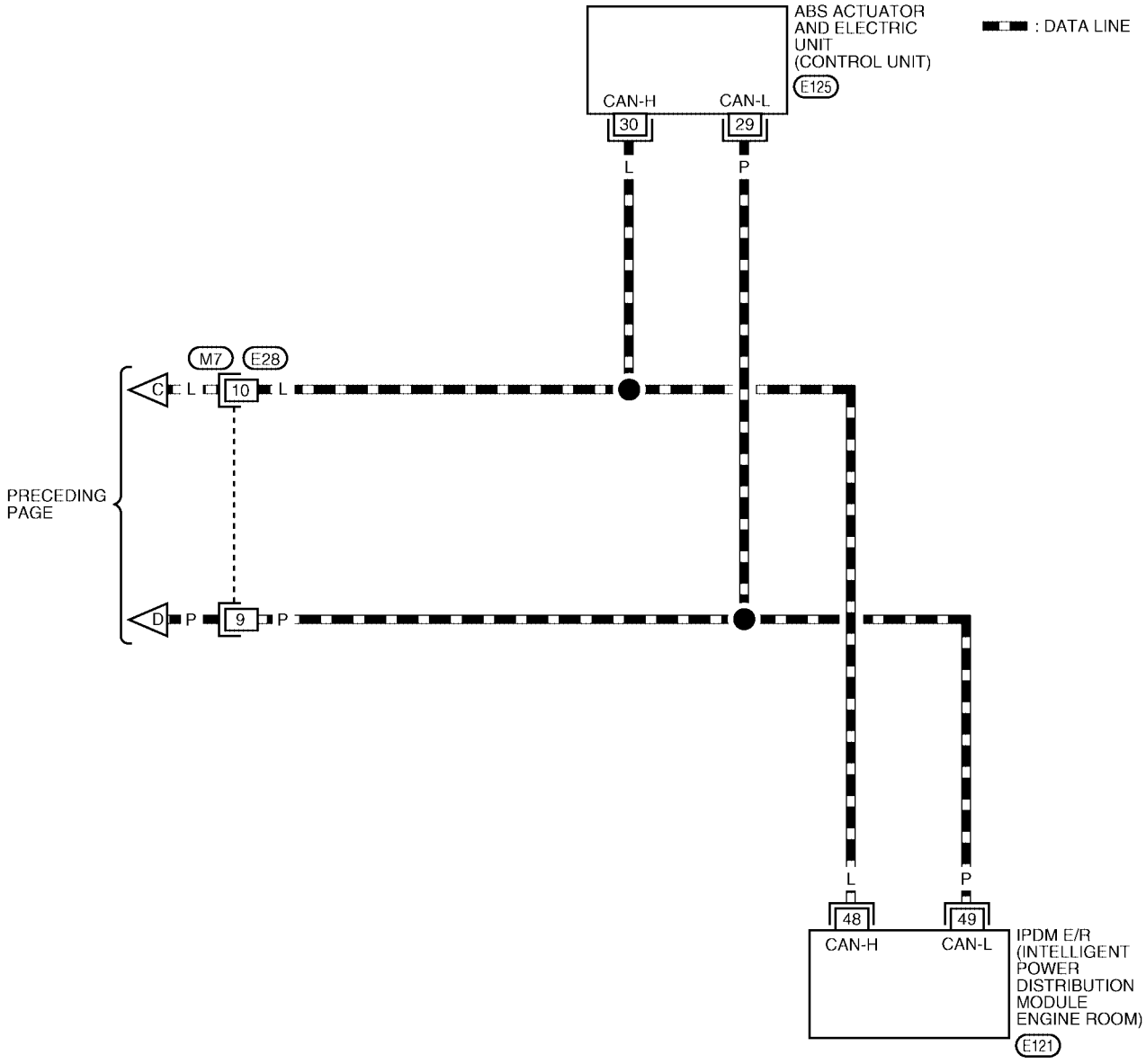


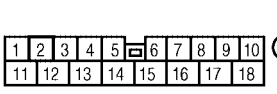


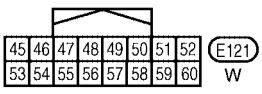
REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0108E

LAN-CAN-12







REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0109E

CHECK SHEET

UKS001RT

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	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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 :

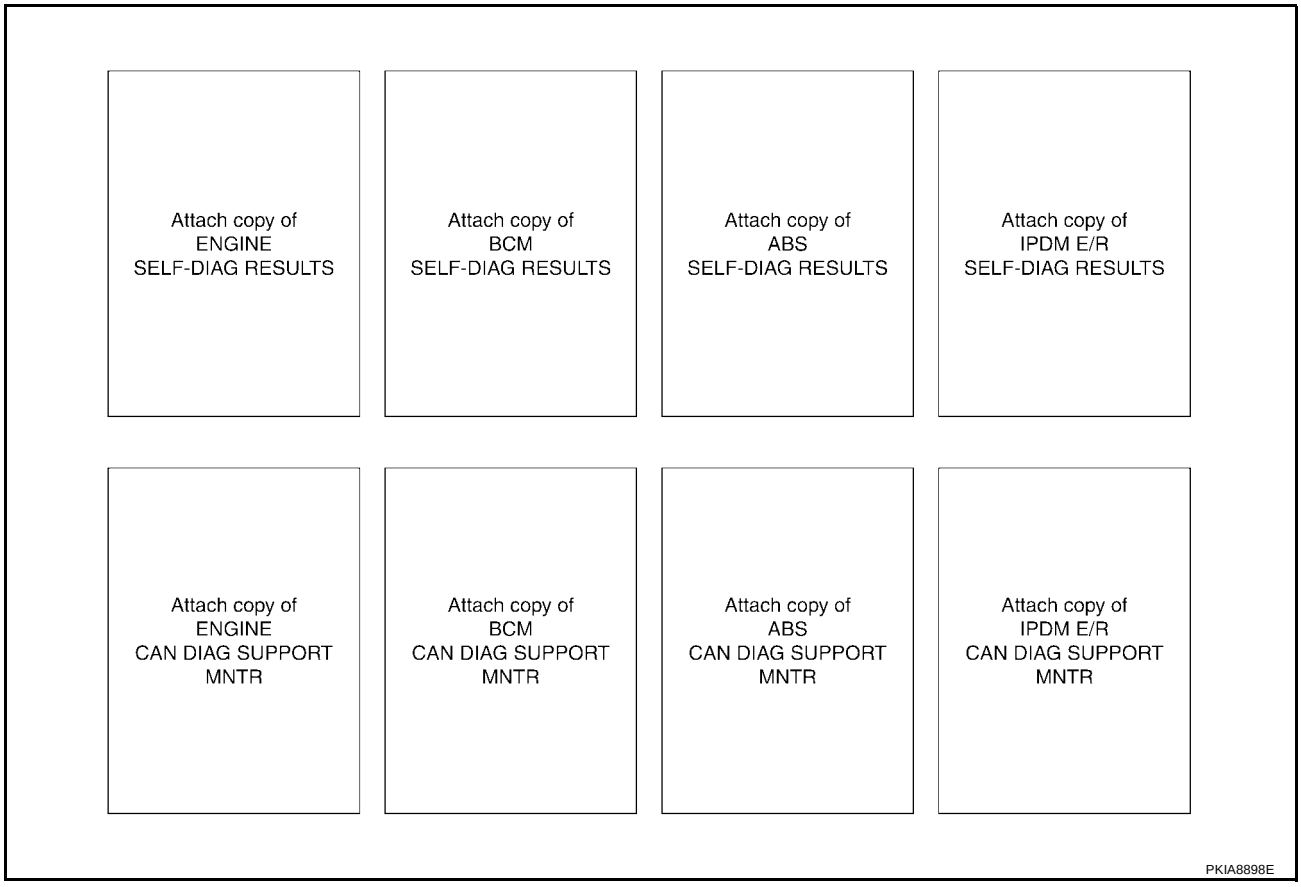
Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Display control unit Translation Sheet: Rewrite the following names, and put a check mark on the above check sheet table.			
Confirmation/Adjustment Display	Check sheet table Display	Confirmation/Adjustment Display	Check sheet table Display
CAN COMM	Initial diagnosis	CAN CIRC 5	METER/M&A
CAN CIRC 1	Transmit diagnosis	CAN CIRC 6	—
CAN CIRC 2	BCM	CAN CIRC 7	IPDM E/R
CAN CIRC 3	ECM	CAN CIRC 8	—
CAN CIRC 4	—	CAN CIRC 9	—

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA8889E


Attach copy of
ENGINE
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
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8898E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

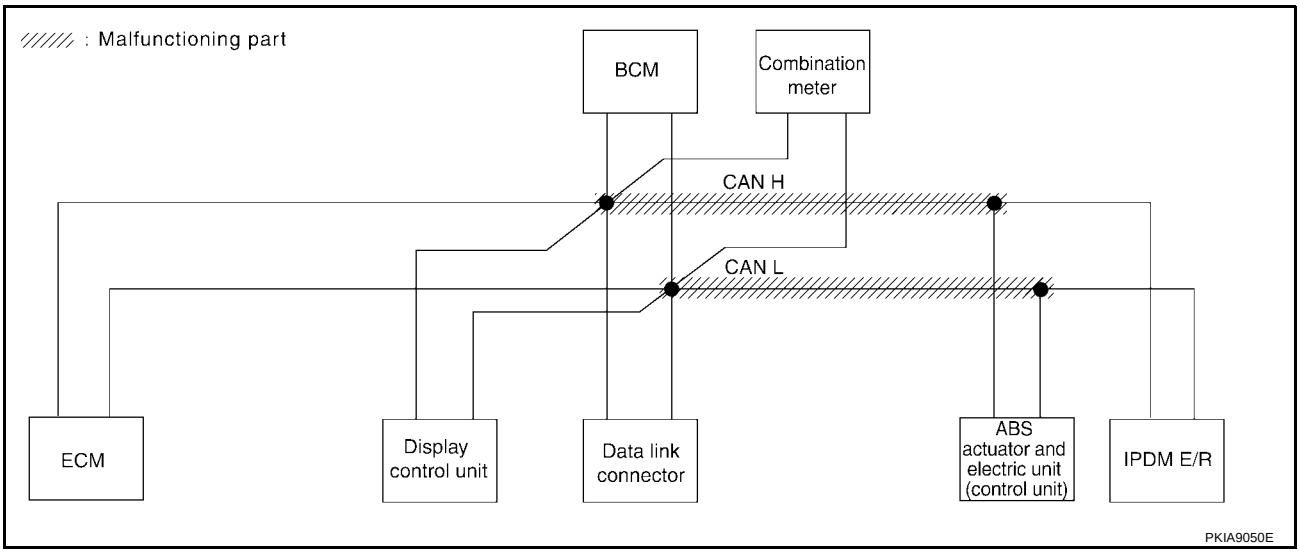
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-104, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	—	—
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) ✓	—

PKIA8909E

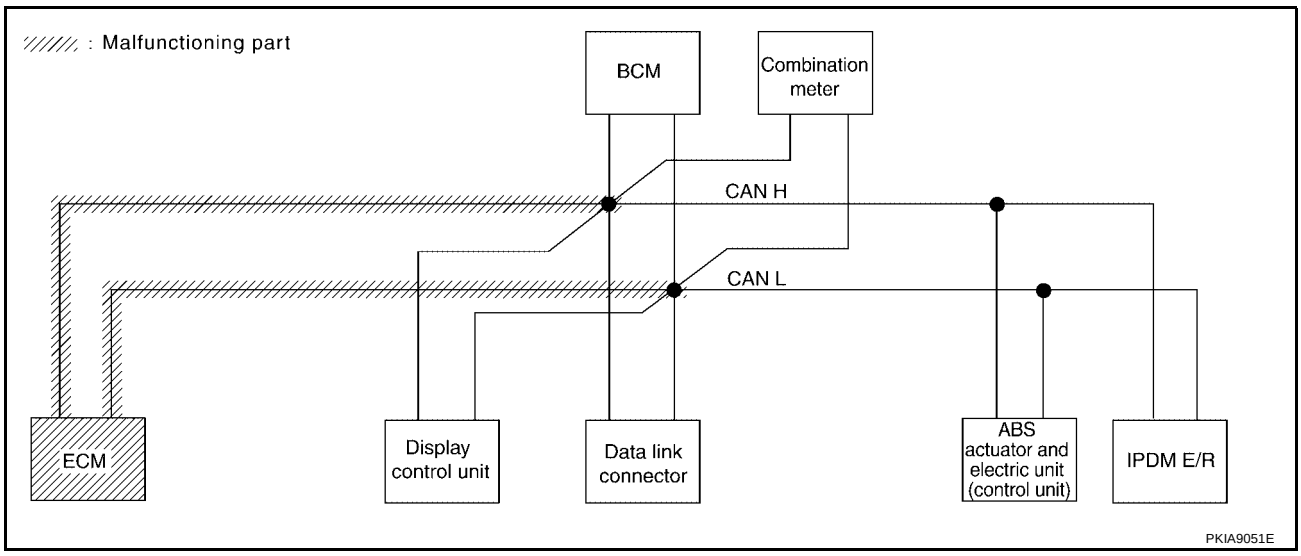


Case 2

Check ECM circuit. Refer to LAN-105, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8910E



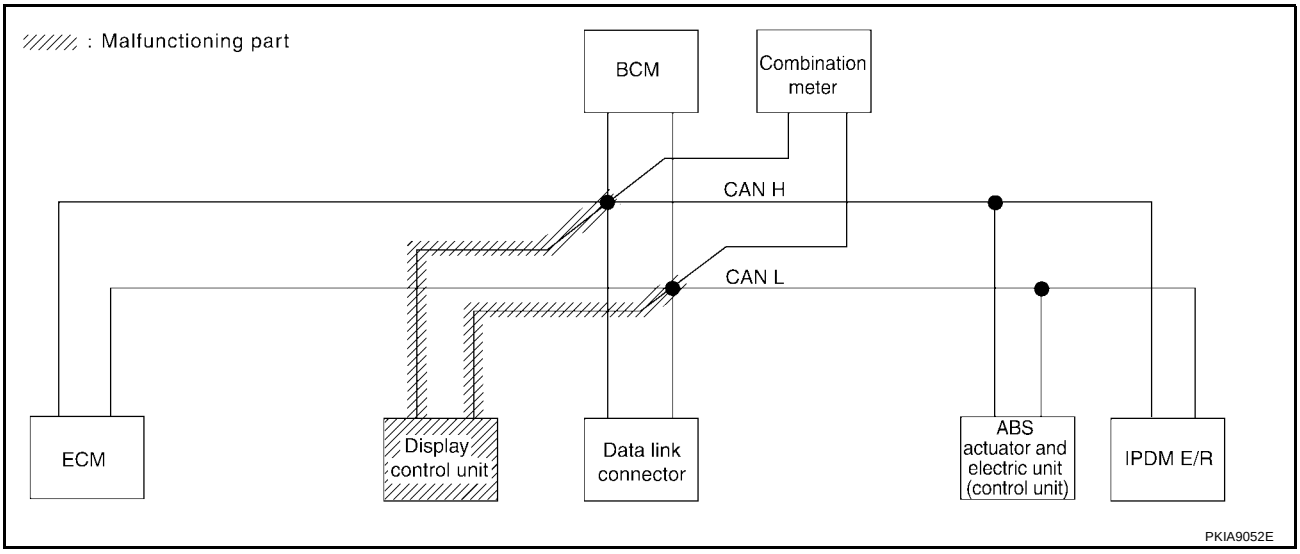
PKIA9051E

Case 3

Check display control unit circuit. Refer to LAN-106, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	—	—
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)	—

PKIA8911E



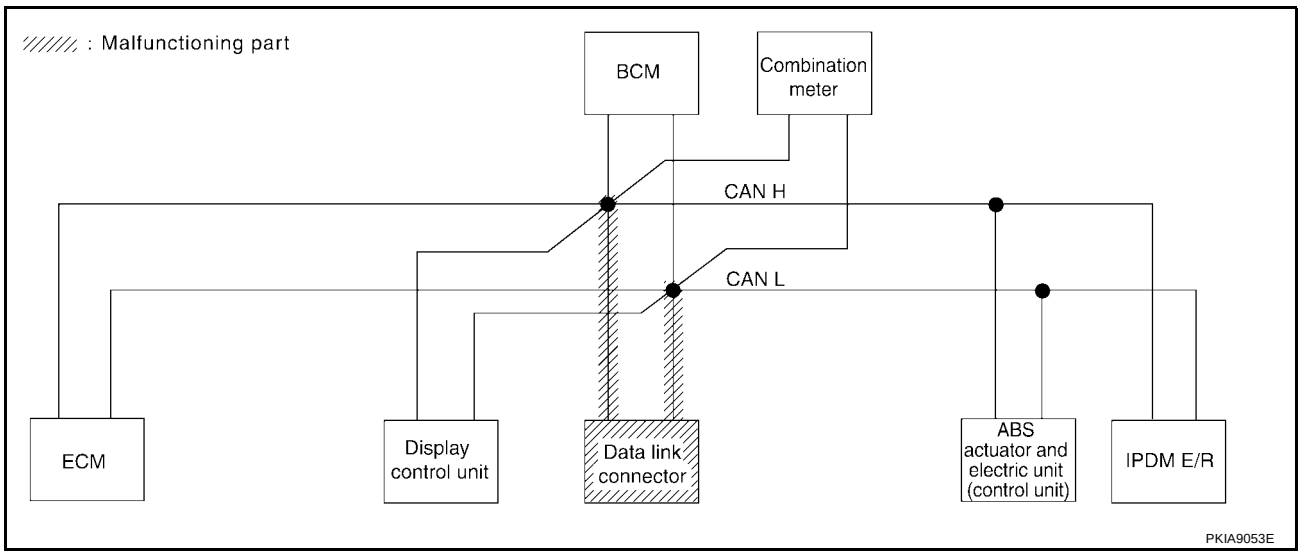
PKIA9052E

Case 4

Check data link connector circuit. Refer to LAN-106, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8912E



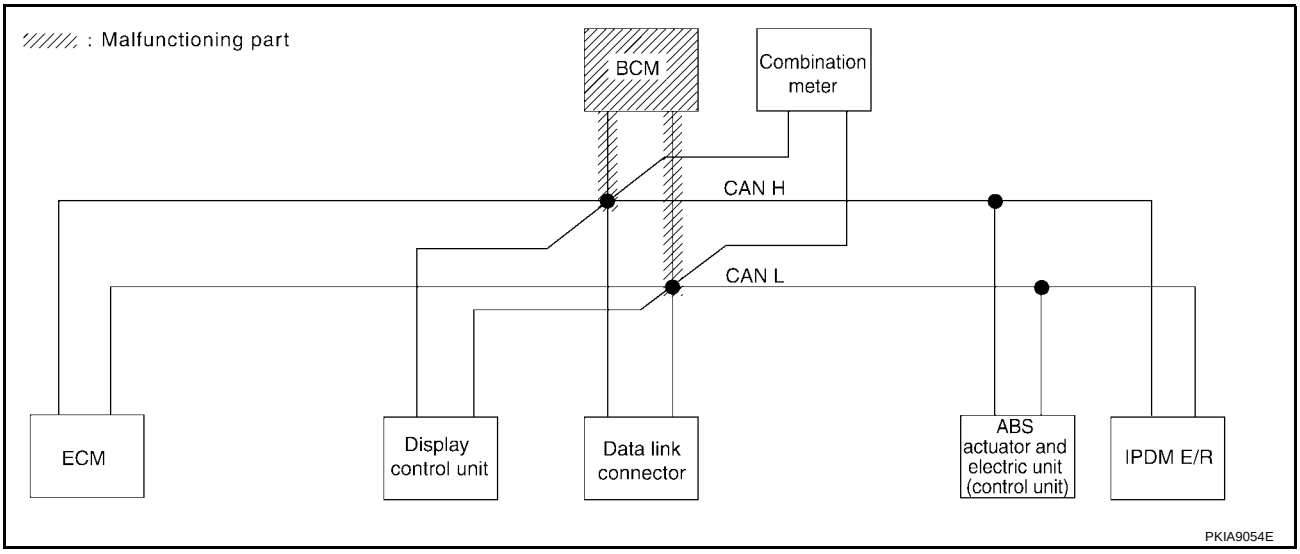
PKIA9053E

Case 5

Check BCM circuit. Refer to LAN-107, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8913E



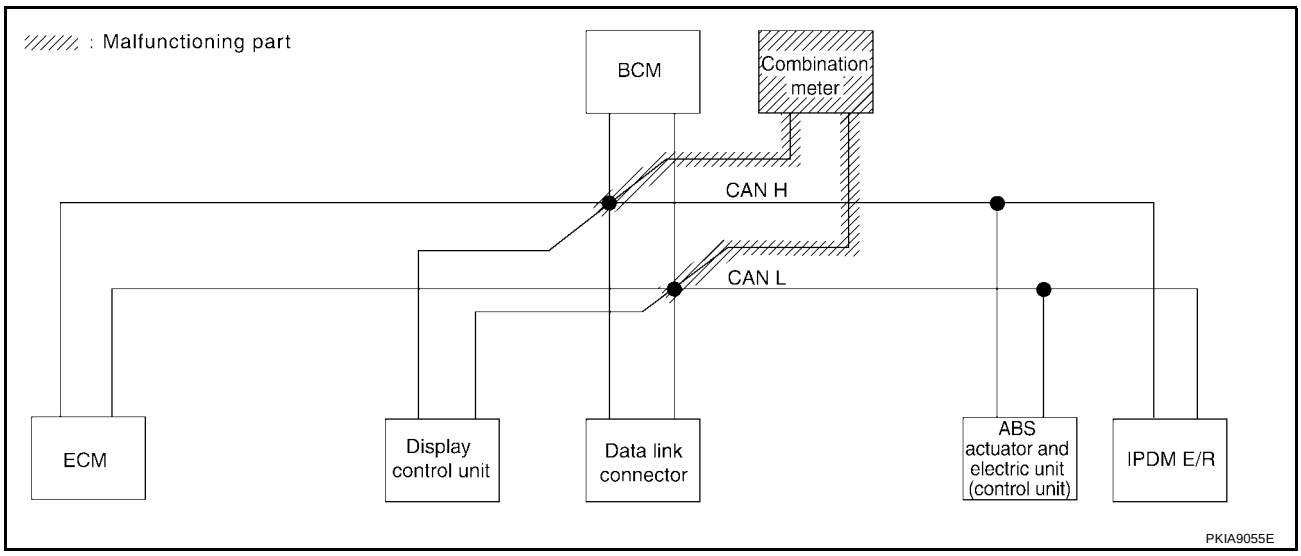
PKIA9054E

Case 6

Check combination meter circuit. Refer to LAN-107, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8914E



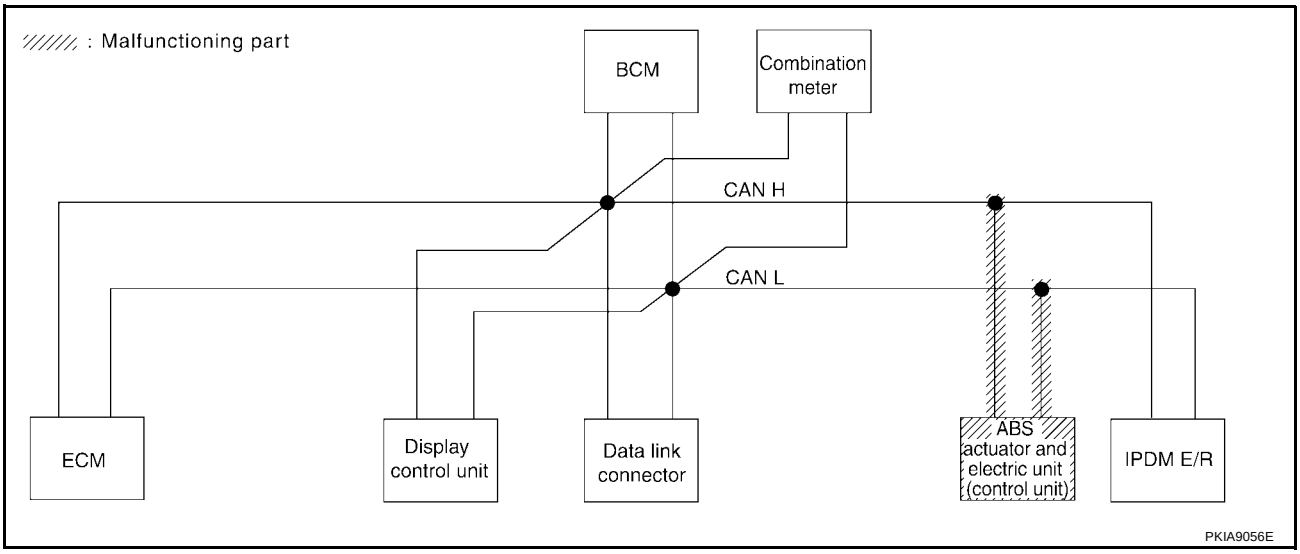
PKIA9055E

Case 7

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-108, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8915E

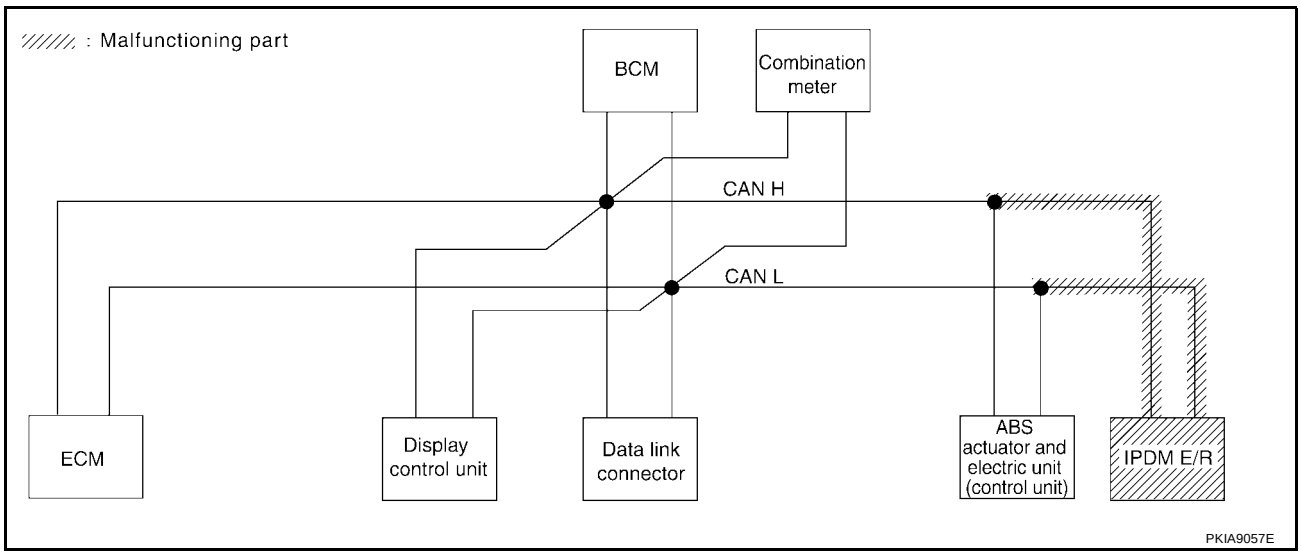


Case 8

Check IPDM E/R circuit. Refer to LAN-108, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8916E



PKIA9057E

Case 9

Check CAN communication circuit. Refer to LAN-109, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8917E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-112, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8918E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-112, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
Display control unit	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
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)	—

PKIA8919E

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

UKS001VQ

1. CHECK CONNECTOR

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

- Harness connector M7
- Harness connector E28

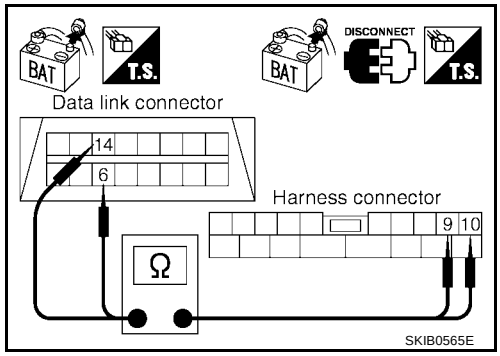
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M7 terminals 10 (L), 9 (P).

6 (L) - 10 (L) : Continuity should exist.
14 (P) - 9 (P) : Continuity should exist.



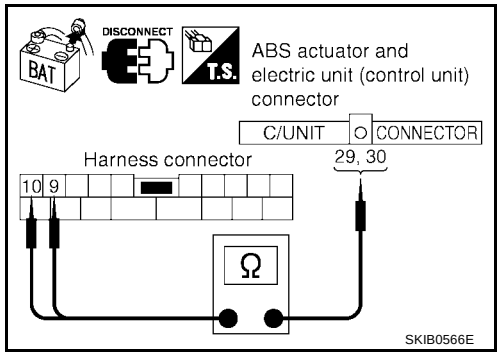
OK or NG

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 E28 terminals 10 (L), 9 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L), 29 (P).

10 (L) - 30 (L) : Continuity should exist.
9 (P) - 29 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Check

UKS001VR

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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 F59
- Harness connector M71

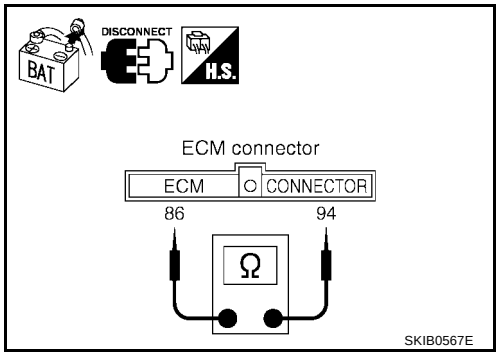
OK or NG

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 F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

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

Display Control Unit Circuit Check

UKS001VS

1. CHECK CONNECTOR

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

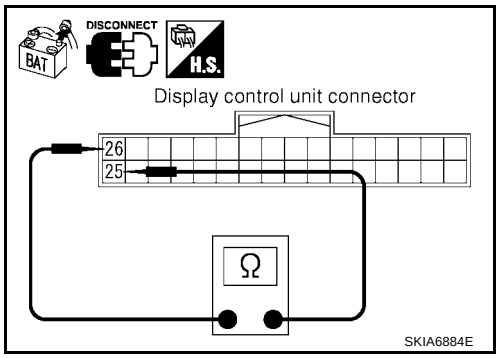
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66Ω



OK or NG

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

Data Link Connector Circuit Check

UKS001VT

1. CHECK CONNECTOR

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

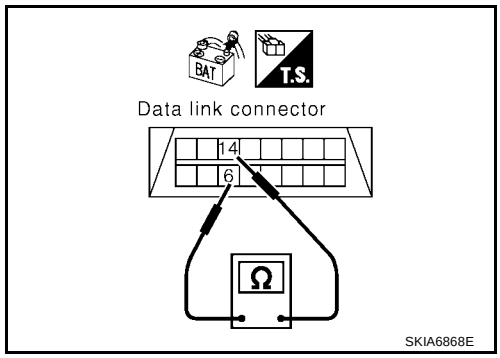
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001VU

1. CHECK CONNECTOR

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

OK or NG

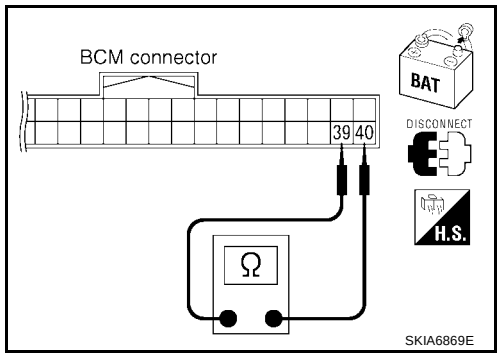
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001VV

1. CHECK CONNECTOR

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

OK or NG

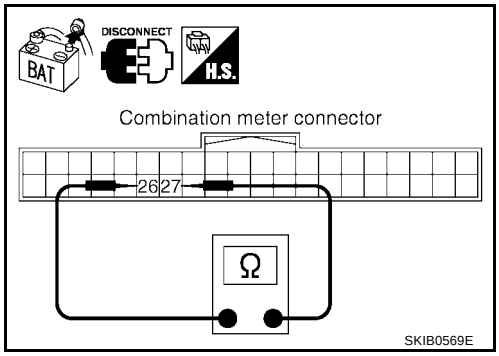
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001VW

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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).

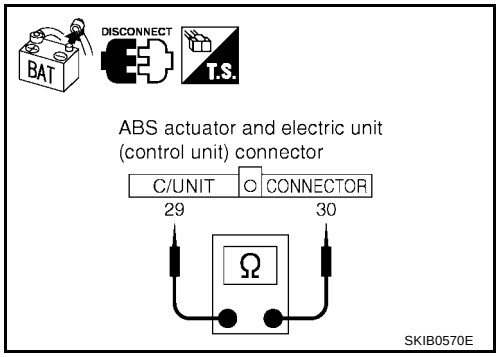
OK or NG

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 E125 terminals 30 (L) and 29 (P).

30 (L) - 29 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between harness connector E28 and ABS actuator and electric unit (control unit).

IPDM E/R Circuit Check

UKS001VX

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

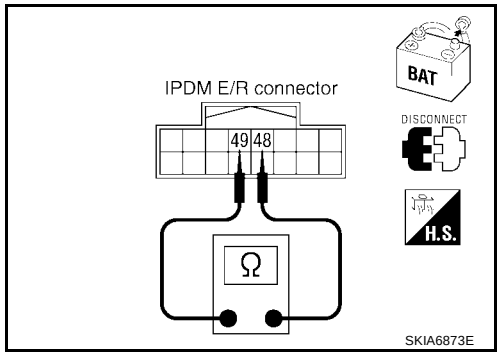
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between harness connector E28 and IPDM E/R.



CAN Communication Circuit Check

UKS001VY

1. CHECK CONNECTOR

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

- ECM
- Display control unit
- BCM
- Combination meter
- 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.

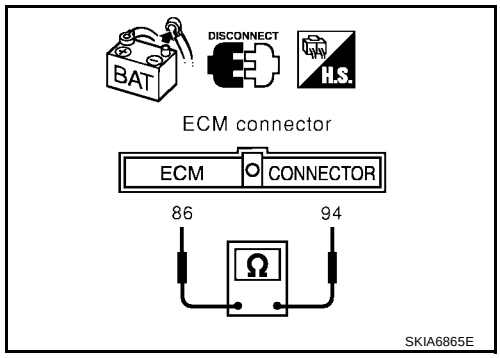
- ECM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 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 F59.

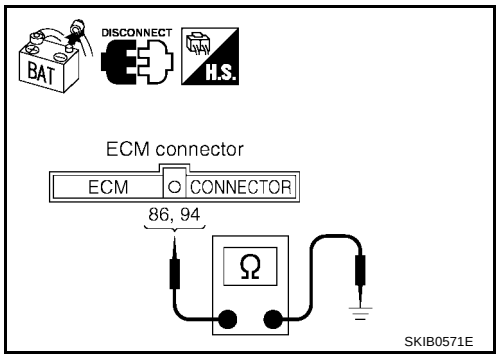


3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 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.

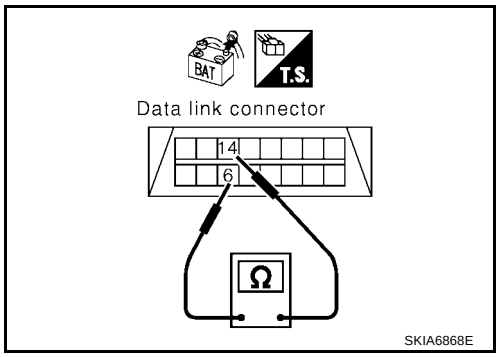
NG >> Repair harness between ECM and harness connector F59.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Display control unit connector
- BCM connector
- Combination meter connector
- Harness connector M7

2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

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

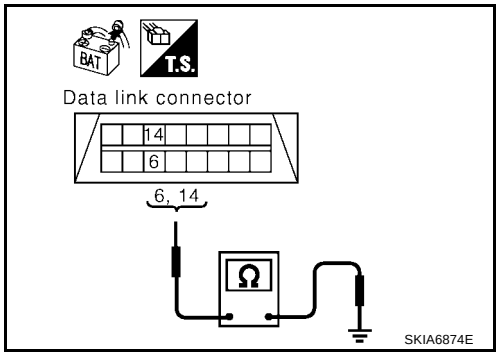
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 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.

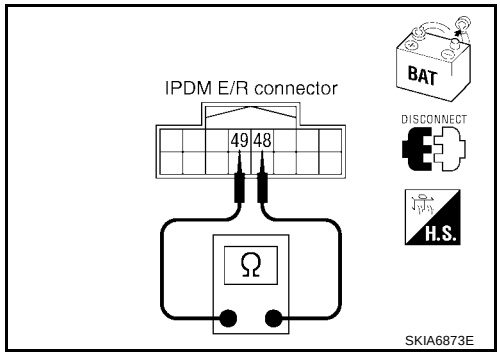
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

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 E121 terminals 48 (L) and 49 (P).

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



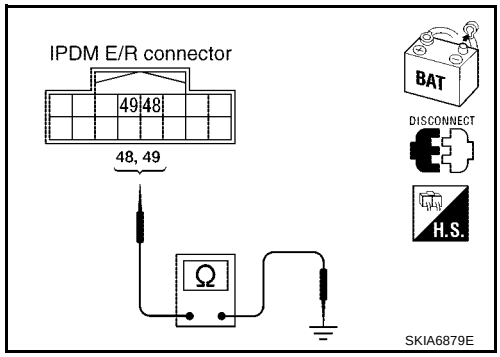
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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



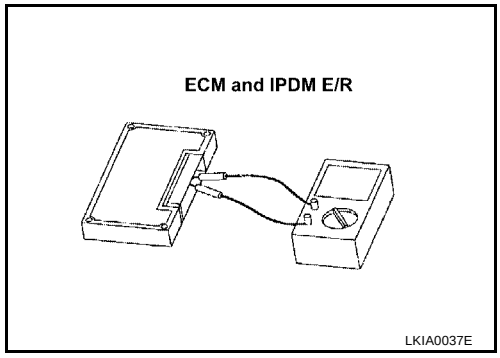
OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"
.

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- Display control unit
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001VZ

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

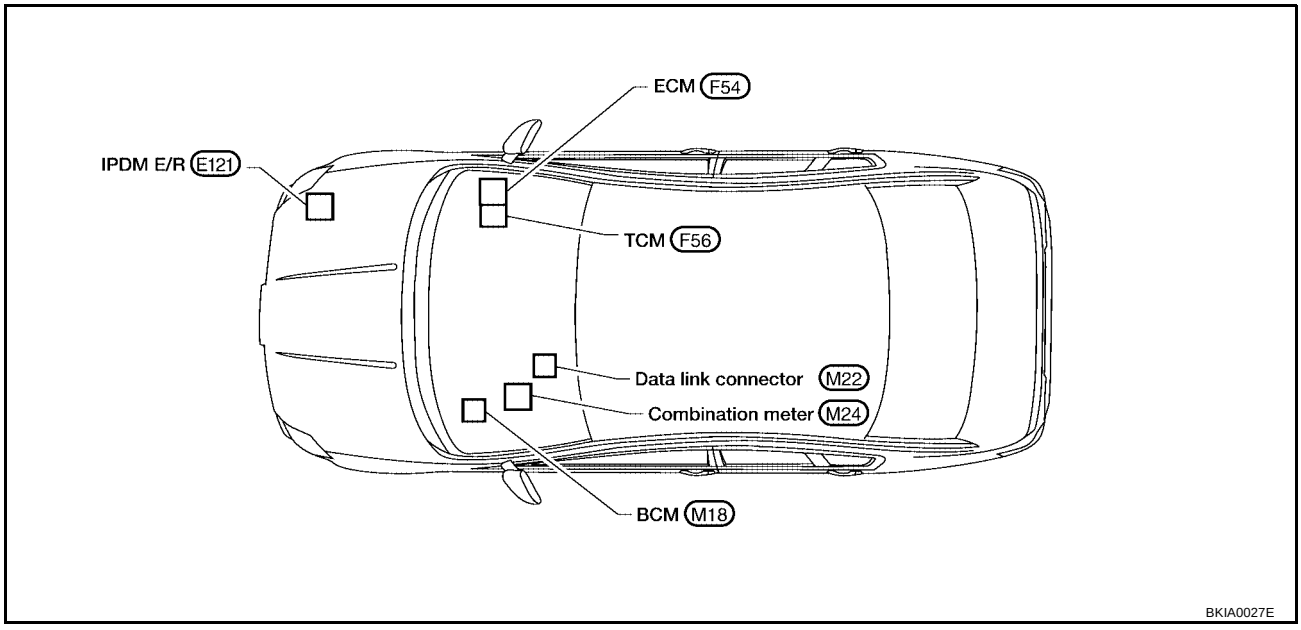
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 5)

PFP:23710

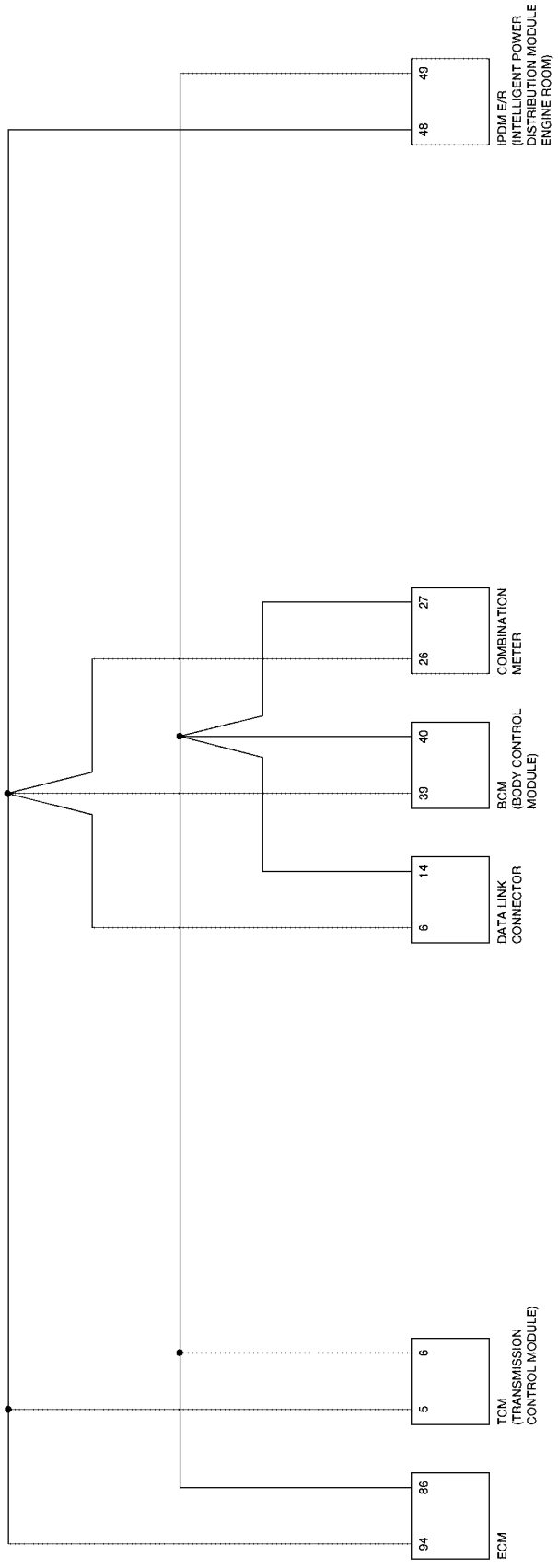
Component Parts and Harness Connector Location

UKS001VB



Schematic

UKS001VC

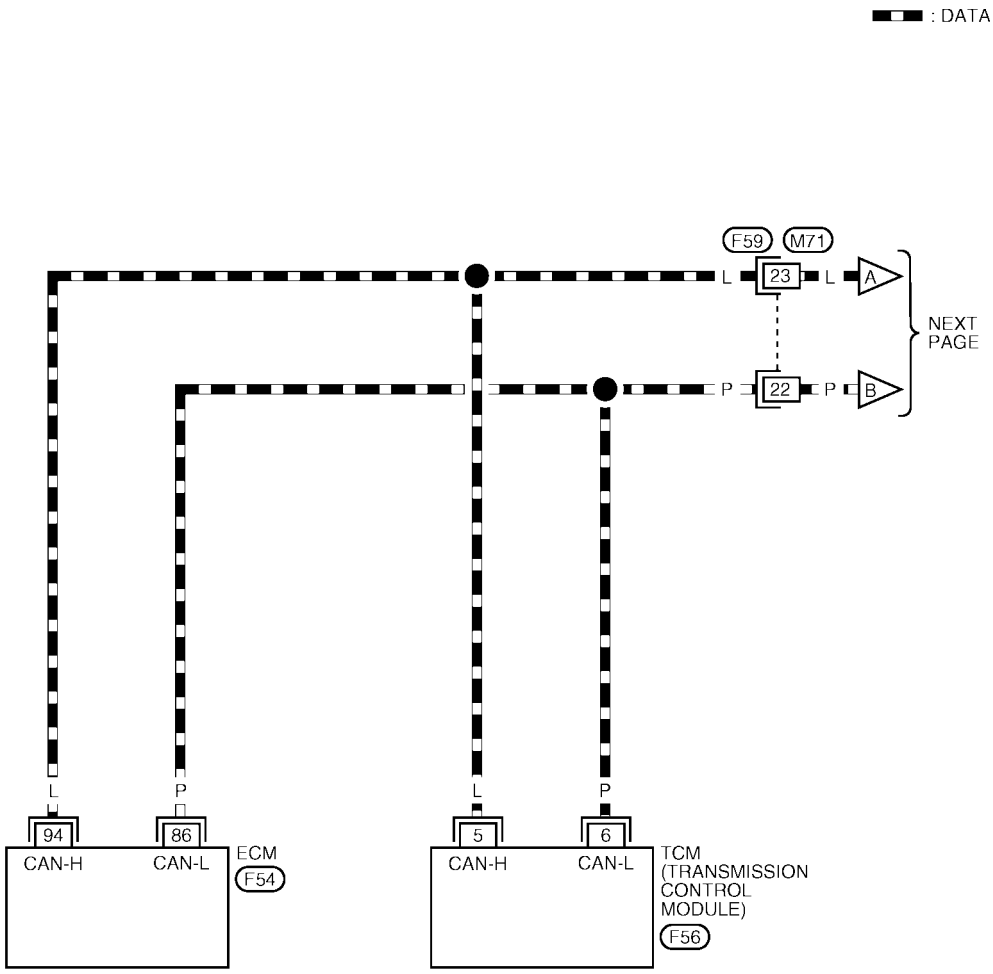


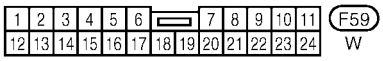
BKWA0098E

Wiring Diagram - CAN -

UKS001VD

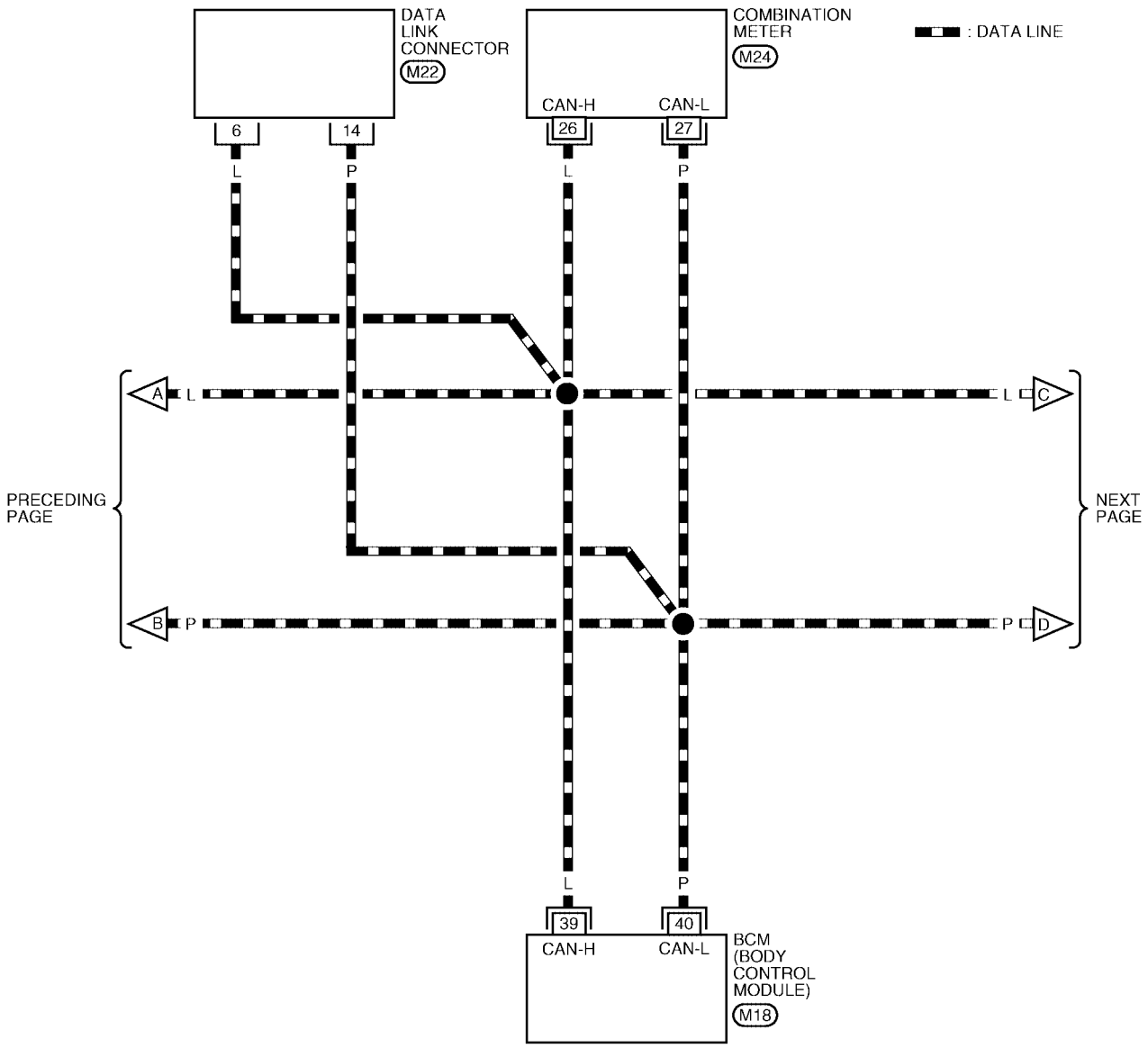
LAN-CAN-13

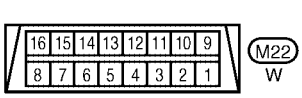


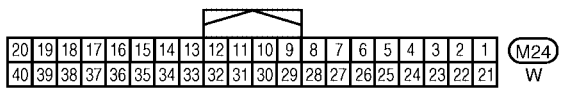


REFER TO THE FOLLOWING.
F54 , F56 - ELECTRICAL UNITS

BKWA0099E

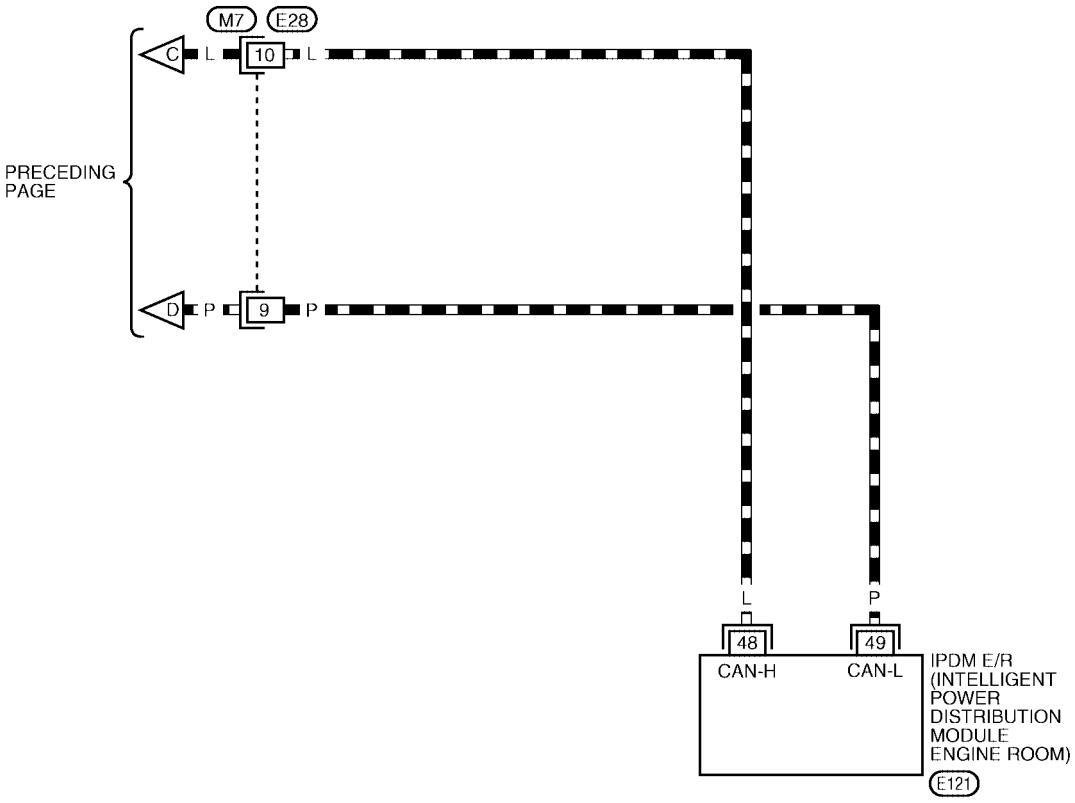


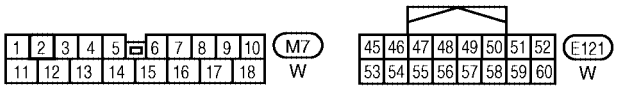




REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0100E


: DATA LINE
M7
E28
C
L
10
L
PRECEDING
PAGE
D
P
9
P
L
P
48
49
CAN-H
CAN-L
IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE ROOM)
E121


1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18
M7
W
45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60
E121
W

BKWA0101E

CHECK SHEET

UKS001RS

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	BCM /SEC	METER /M&A	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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

Attach copy of ENGINE SELF-DIAG RESULTS

Attach copy of A/T SELF-DIAG RESULTS

Attach copy of BCM 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 BCM CAN DIAG SUPPORT MNTR

Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

PKIA8890E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

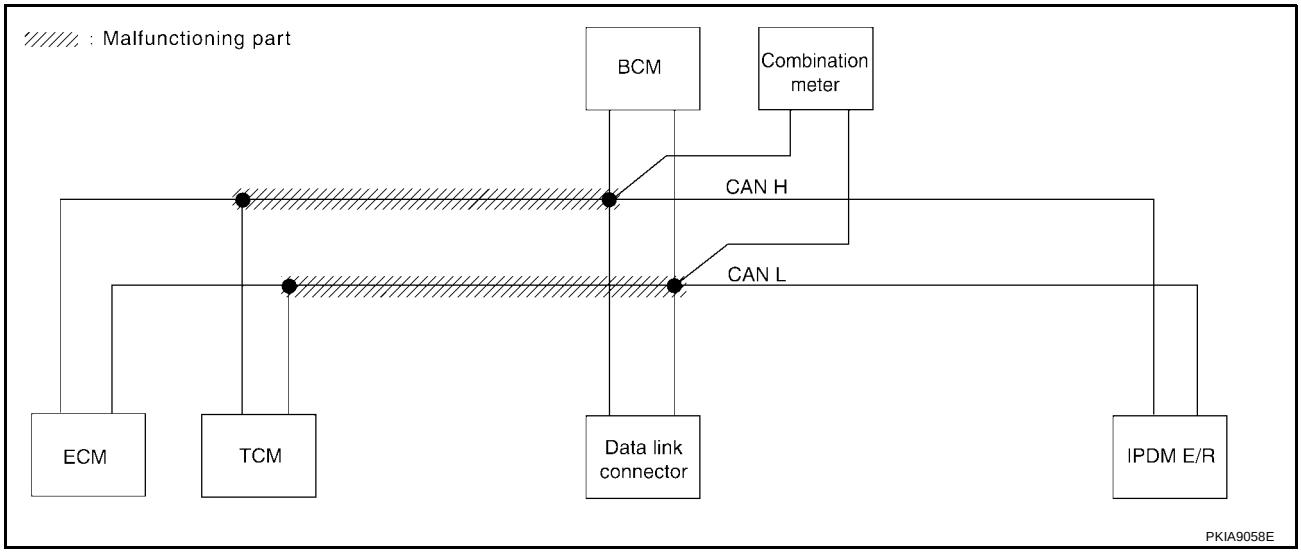
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-126, "Circuit Check Between TCM and Data Link Connector" .

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

PKIA8986E



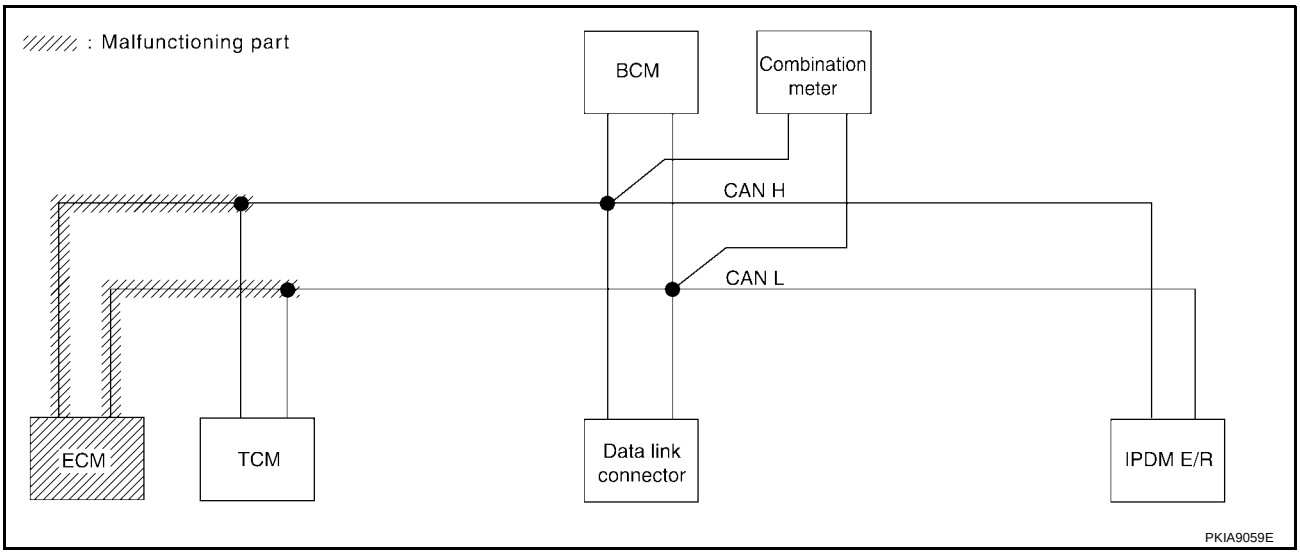
PKIA9058E

Case 2

Check ECM circuit. Refer to LAN-127, "ECM Circuit Check" .

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

PKIA8987E

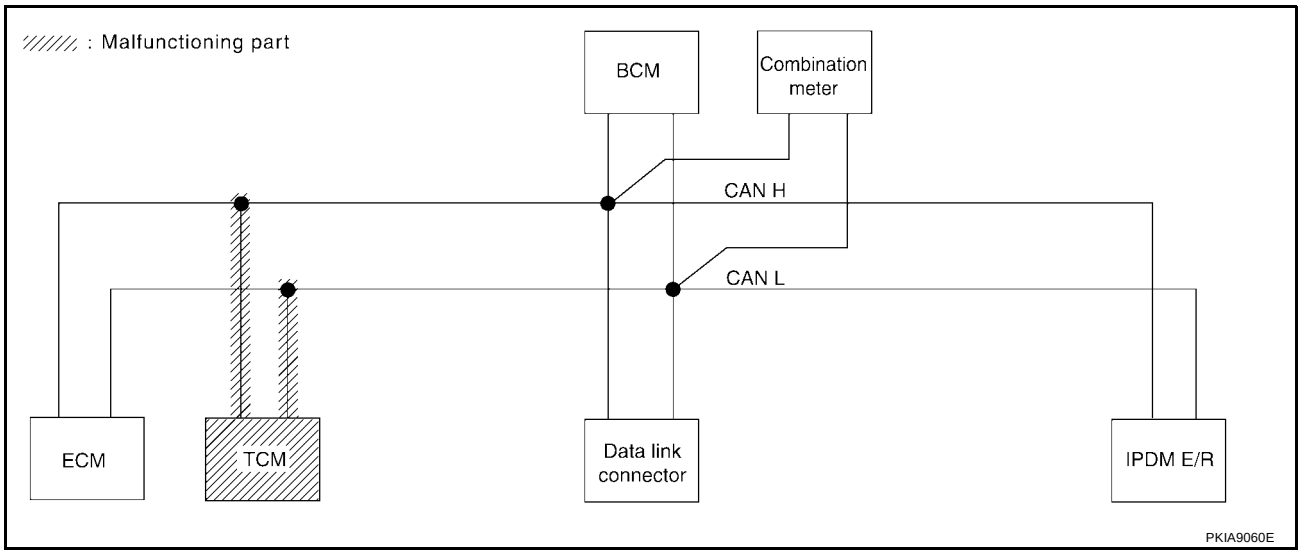


Case 3

Check TCM circuit. Refer to LAN-127, "TCM Circuit Check" .

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

PKIA8988E

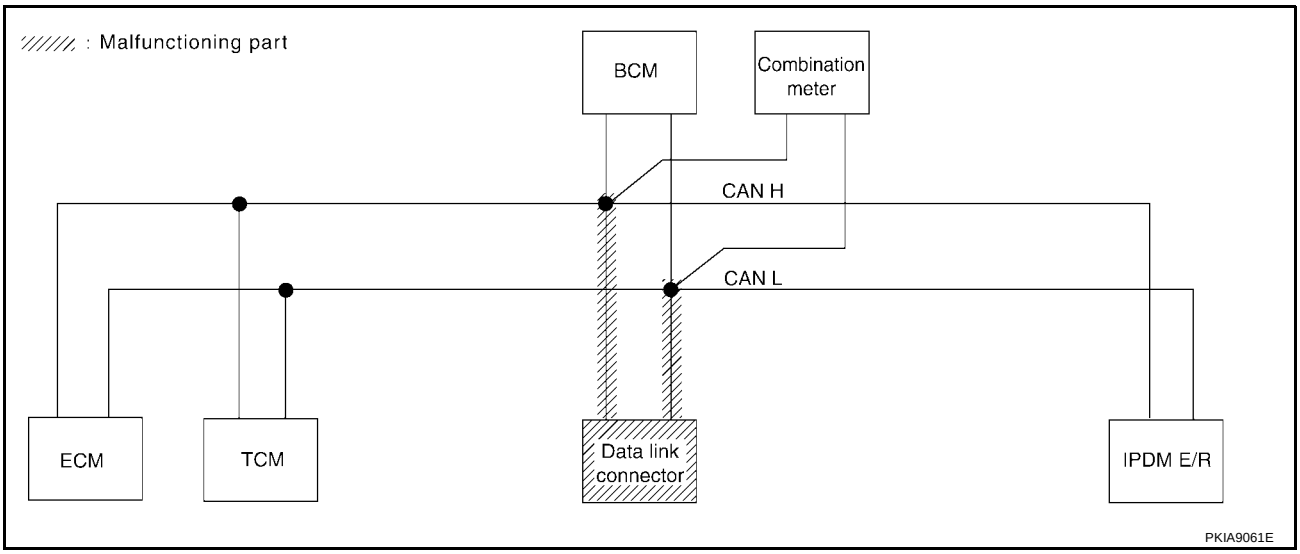


Case 4

Check data link connector circuit. Refer to LAN-128, "Data Link Connector Circuit Check" .

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

PKIA8989E

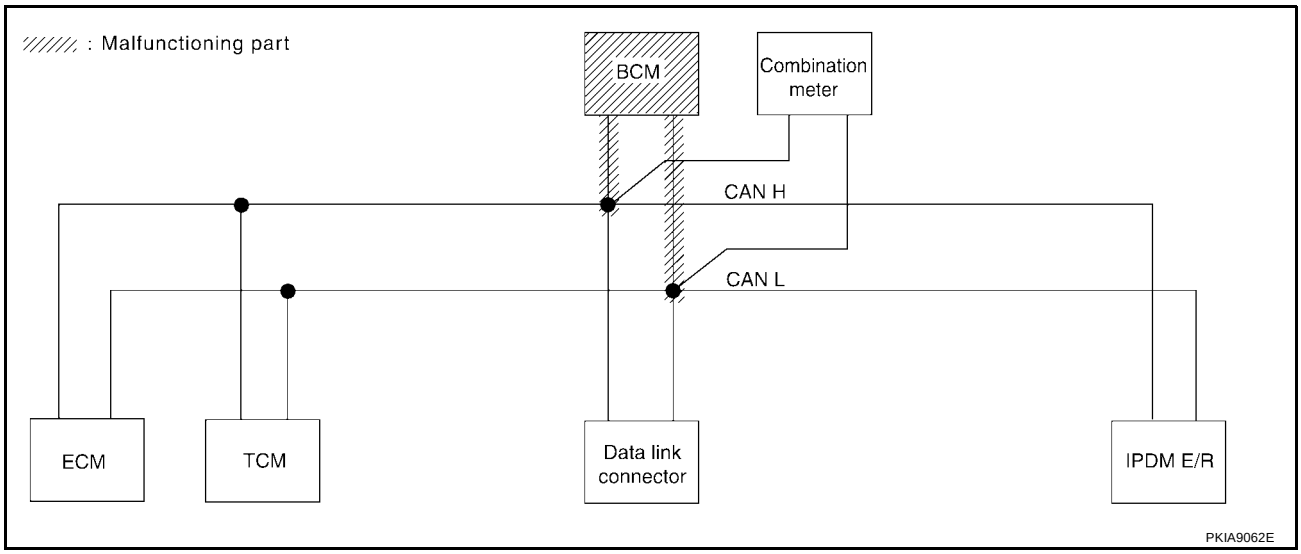


Case 5

Check BCM circuit. Refer to LAN-128, "BCM Circuit Check" .

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

PKIA8990E

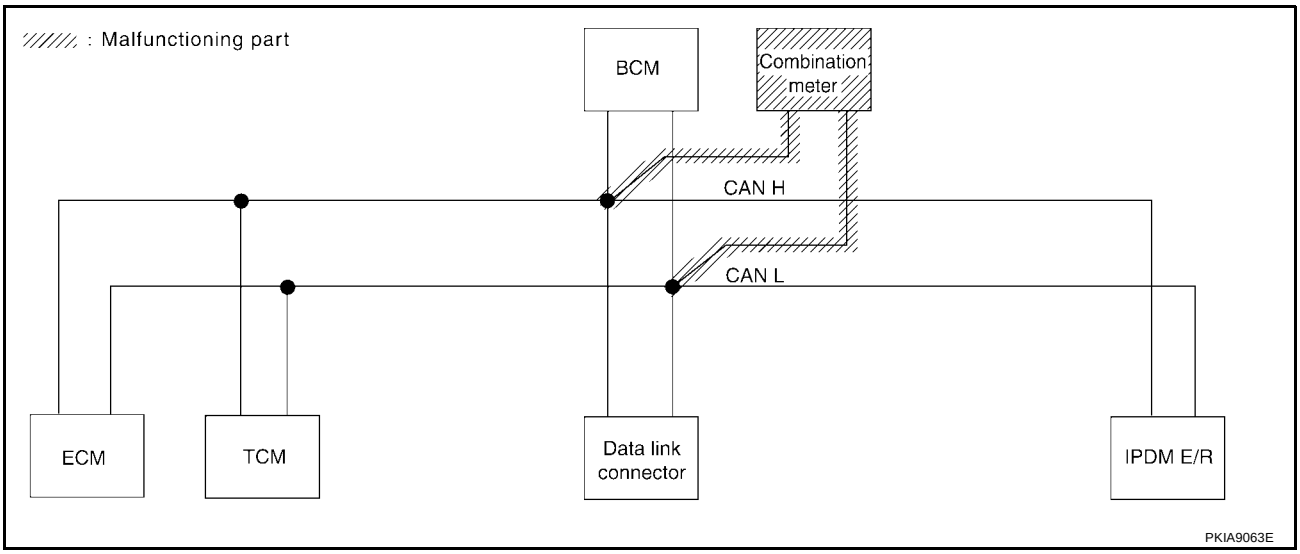


Case 6

Check combination meter circuit. Refer to LAN-129, "Combination Meter Circuit Check" .

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

PKIA8991E

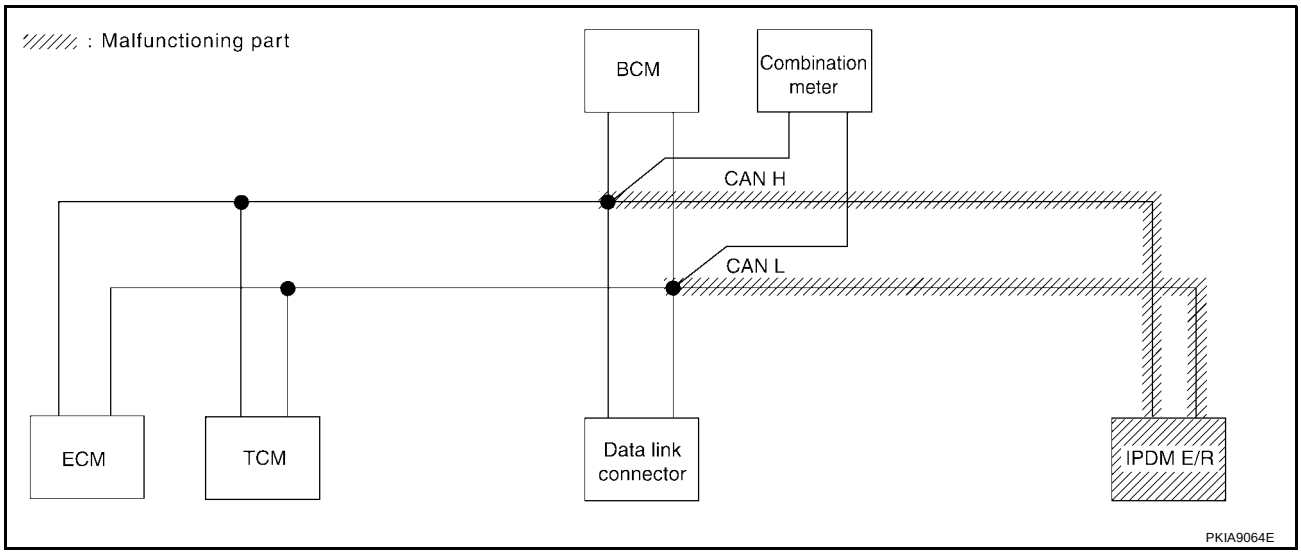


Case 7

Check IPDM E/R circuit. Refer to LAN-129, "IPDM E/R Circuit Check" .

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

PKIA8992E



PKIA9064E

Case 8

Check CAN communication circuit. Refer to LAN-130, "CAN Communication Circuit Check" .

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

PKIA8993E

Case 9

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-133, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA8994E

Circuit Check Between TCM and Data Link Connector

UKS001VE

1. CHECK CONNECTOR

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

- Harness connector F59
- Harness connector M71

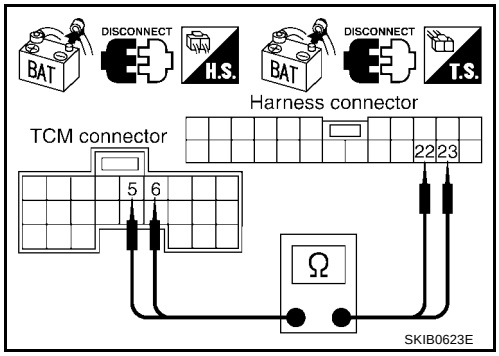
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 5 (L), 6 (P) and harness connector F59 terminals 23 (L), 22 (P).

5 (L) - 23 (L) : Continuity should exist.
6 (P) - 22 (P) : Continuity should exist.



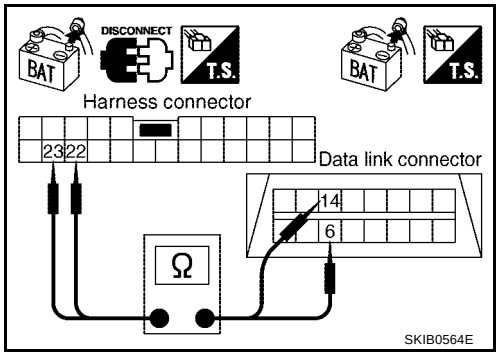
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M71 terminals 23 (L), 22 (P) and data link connector M22 terminals 6 (L), 14 (P).

23 (L) - 6 (L) : Continuity should exist.
22 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Check

UKS001VF

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

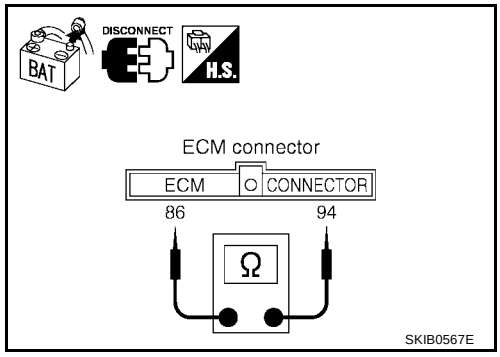
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between harness connector F59 and ECM.



TCM Circuit Check

UKS001VG

1. CHECK CONNECTOR

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

OK or NG

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

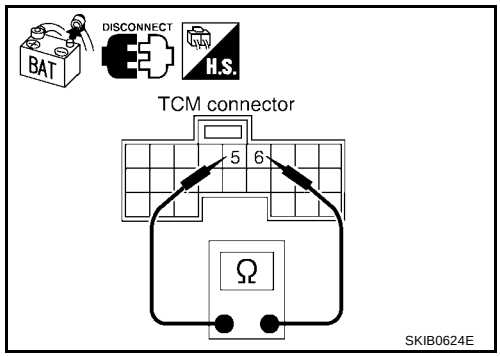
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 5 (L) and 6 (P).

5 (L) - 6 (P) : Approx. 54 - 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between harness connector F59 and TCM.



Data Link Connector Circuit Check

UKS001VH

1. CHECK CONNECTOR

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

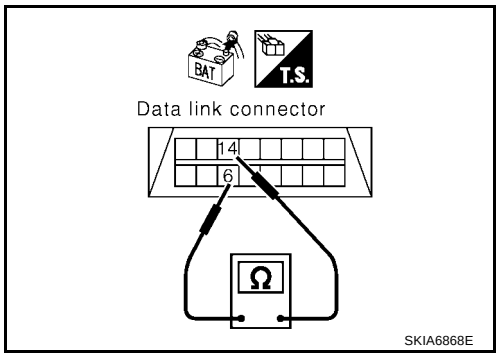
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001VI

1. CHECK CONNECTOR

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

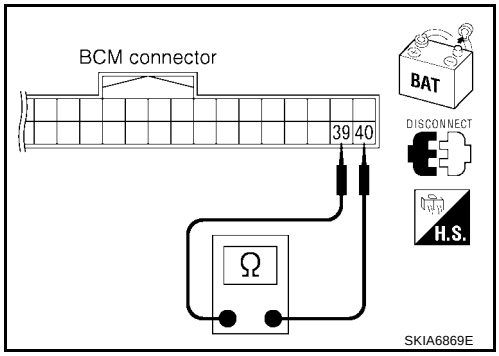
OK or NG

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 M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001VJ

1. CHECK CONNECTOR

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

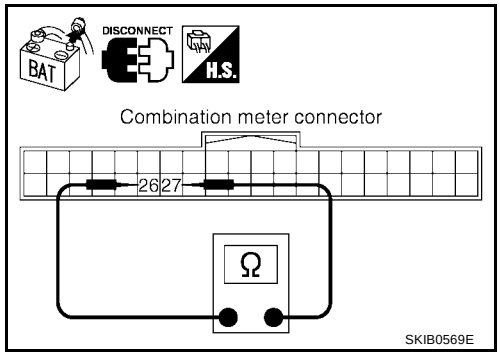
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

IPDM E/R Circuit Check

UKS001VK

1. CHECK CONNECTOR

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

- IPDM E/R connector
- Harness connector E28
- Harness connector M7

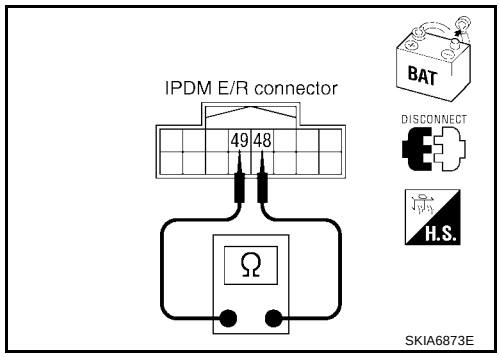
OK or NG

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 E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω



OK or NG

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

CAN Communication Circuit Check

UKS001VL

1. CHECK CONNECTOR

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

- ECM
- TCM
- BCM
- Combination meter
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

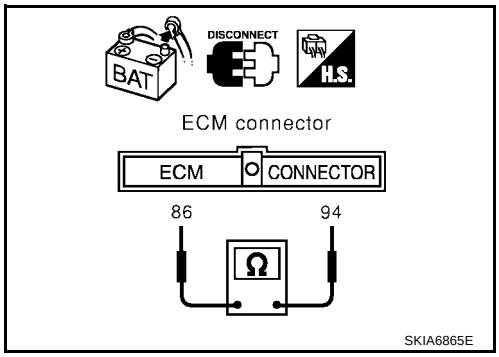
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- TCM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 terminals 94 (L) and 86 (P).

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



OK or NG

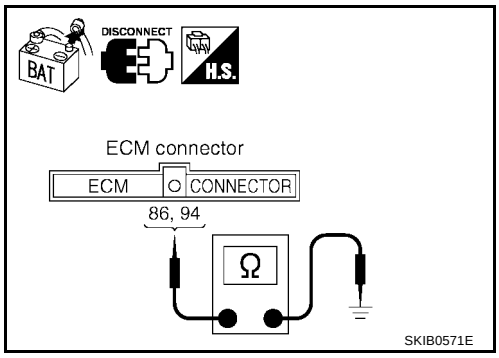
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 94 (L), 86 (P) and ground.

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



OK or NG

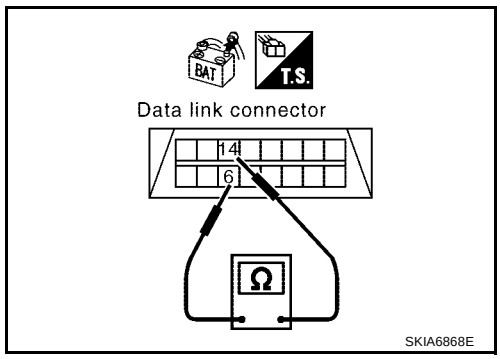
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- BCM connector
- Combination meter connector
- Harness connector M7
2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

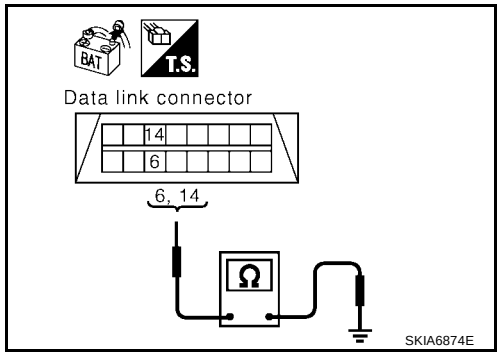
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

14 (P) - Ground : Continuity should not exist.



OK or NG

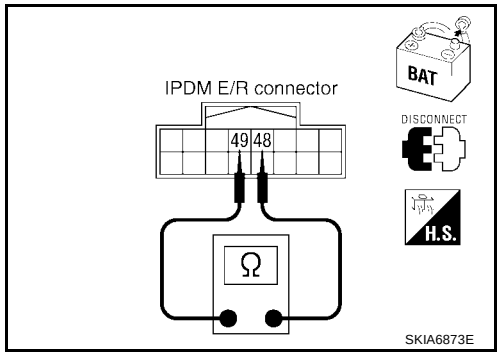
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

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



OK or NG

OK >> GO TO 7.

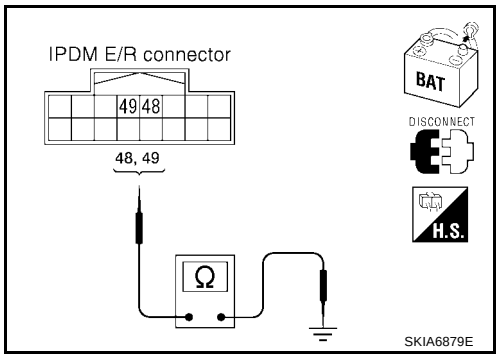
NG >> Repair harness between harness connector E28 and IPDM E/R.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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

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



OK or NG

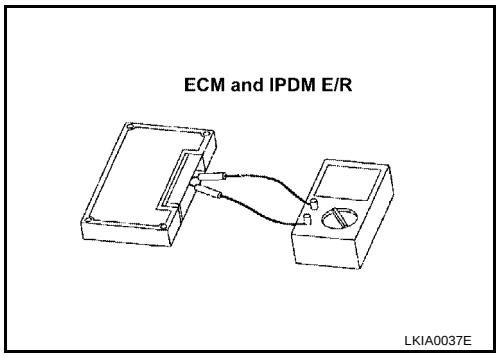
OK >> GO TO 8.

NG >> Repair harness between harness connector E28 and IPDM E/R.

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

OK >> GO TO 9.

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- TCM
- BCM
- Combination meter
- ECM
- IPDM E/R

Inspection results

Reproduced>>Install removed unit, and then check the other unit.

Not reproduced>>Replace removed unit.

IPDM E/R Ignition Relay Circuit Check

UKS001VM

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

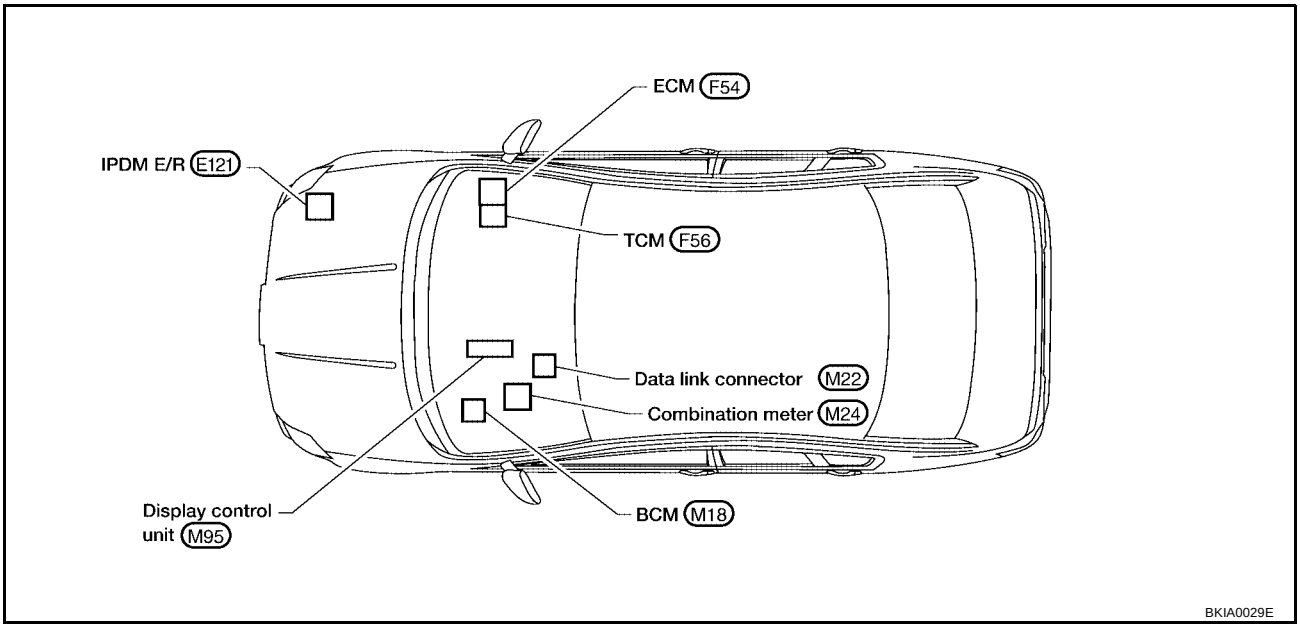
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 6)

PFP:23710

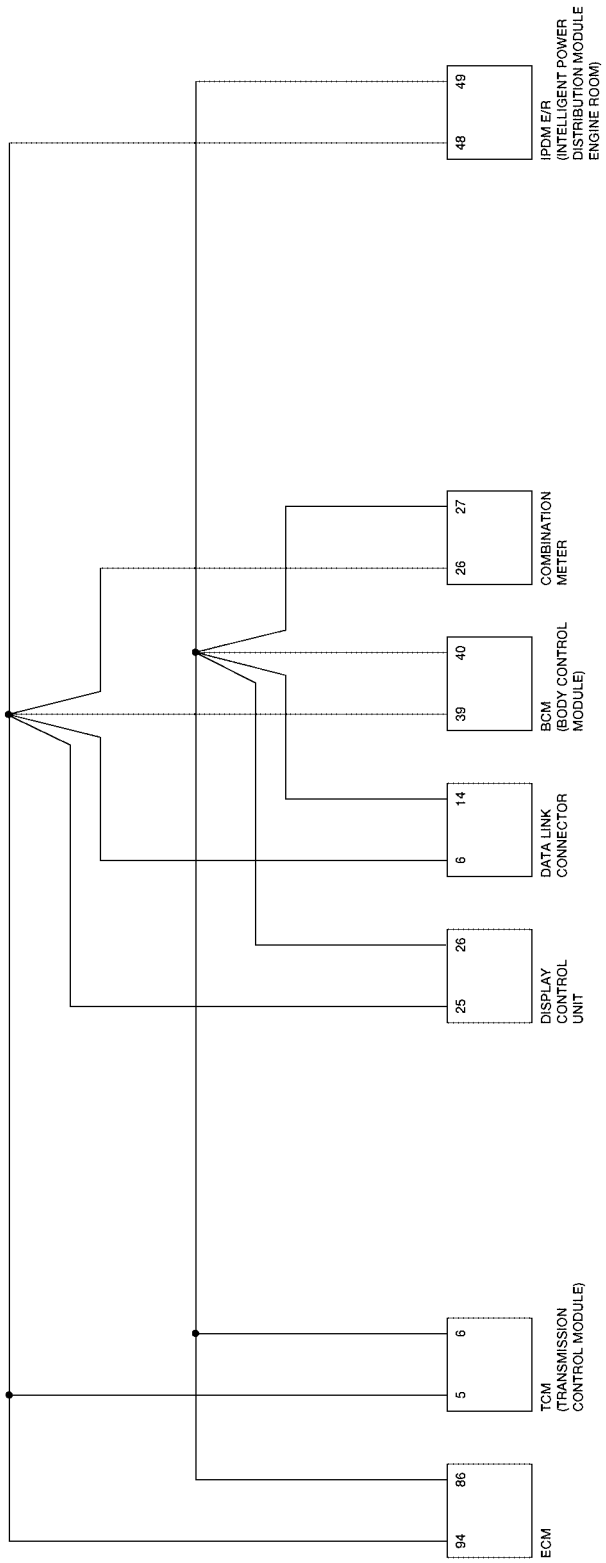
Component Parts and Harness Connector Location

UKS001T6



Schematic

UKS001T7

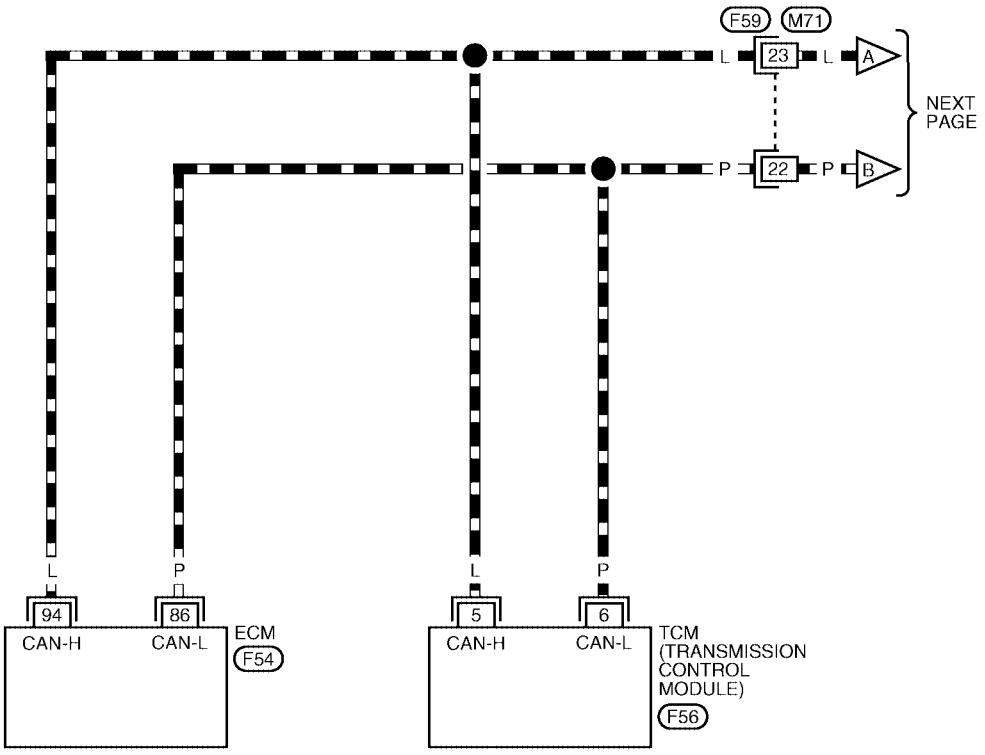


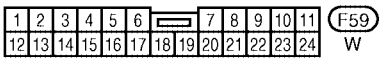
BKWA0094E

Wiring Diagram - CAN -

UKS001T8

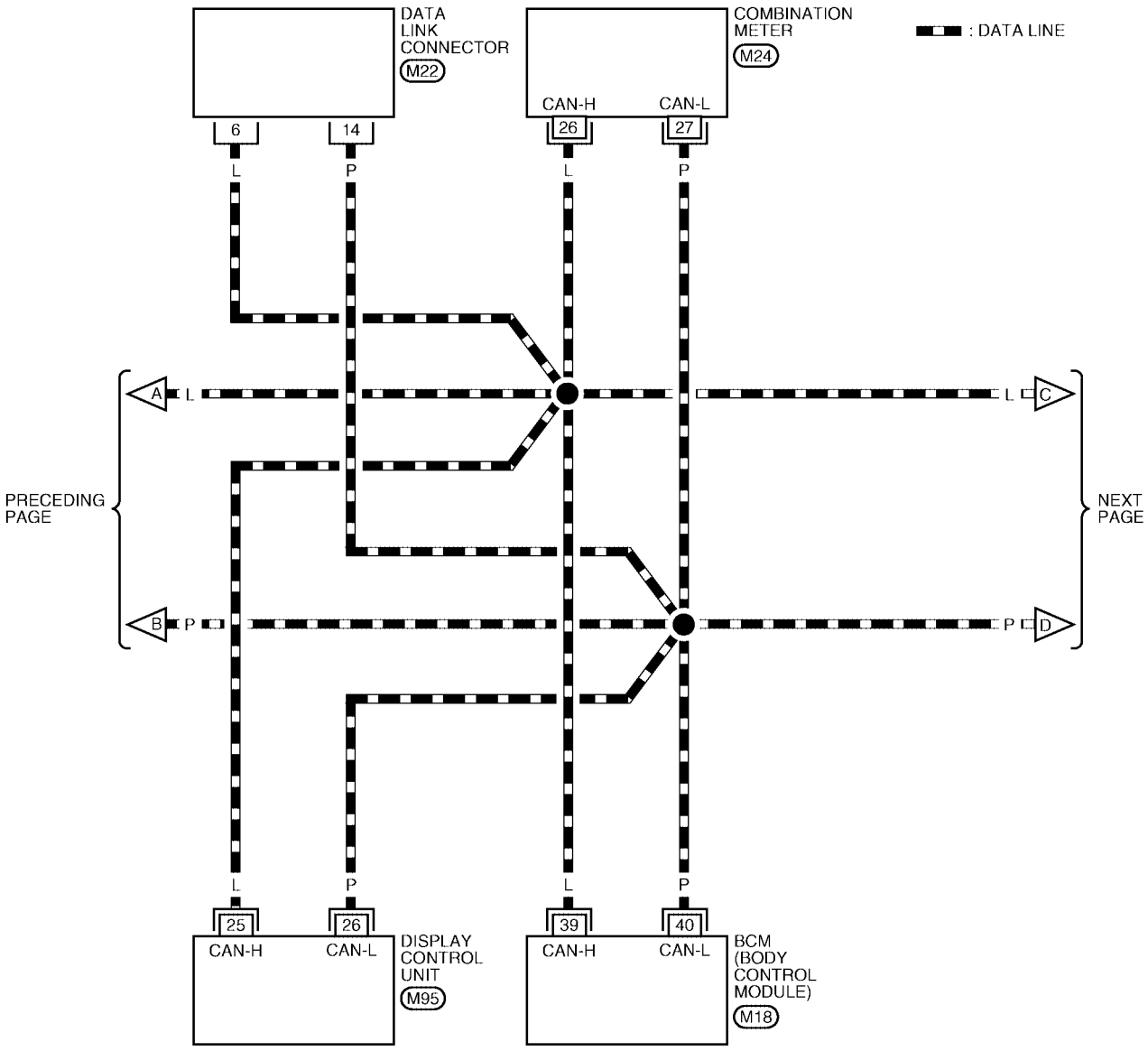
LAN-CAN-16

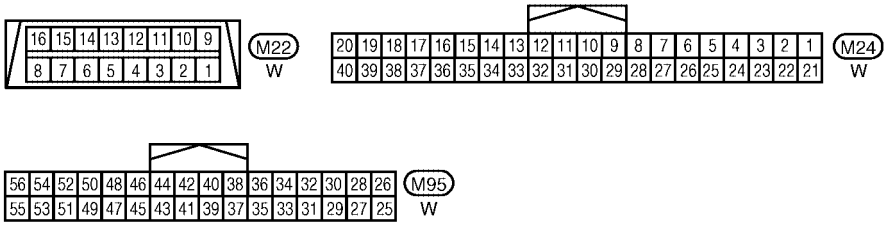




REFER TO THE FOLLOWING.
F54 , F56 - ELECTRICAL UNITS

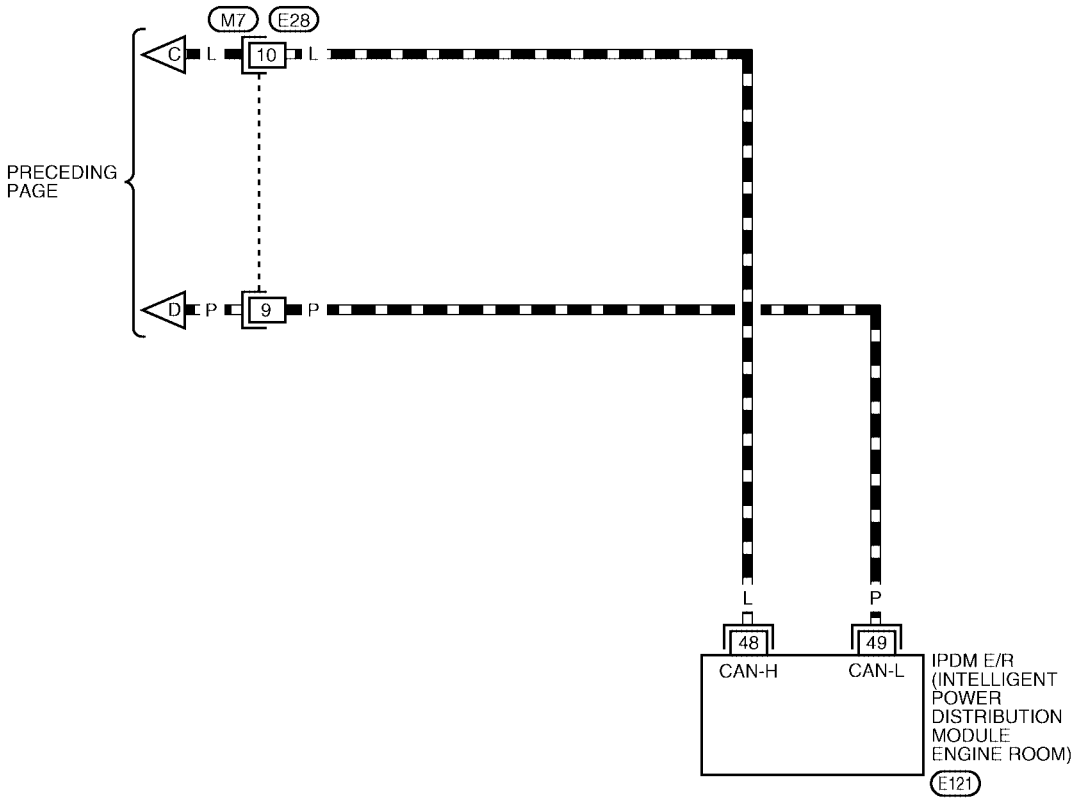
BKWA0095E





REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0096E


: DATA LINE
M7
E28
C
L
10
L
PRECEDING
PAGE
D
P
9
P
L
P
48
49
CAN-H
CAN-L
IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE ROOM)
E121


1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18
M7
W
45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60
E121
W

BKWA0097E

CHECK SHEET

UKS001RR

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	BCM /SEC	METER /M&A	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
Display control unit	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

Symptoms :

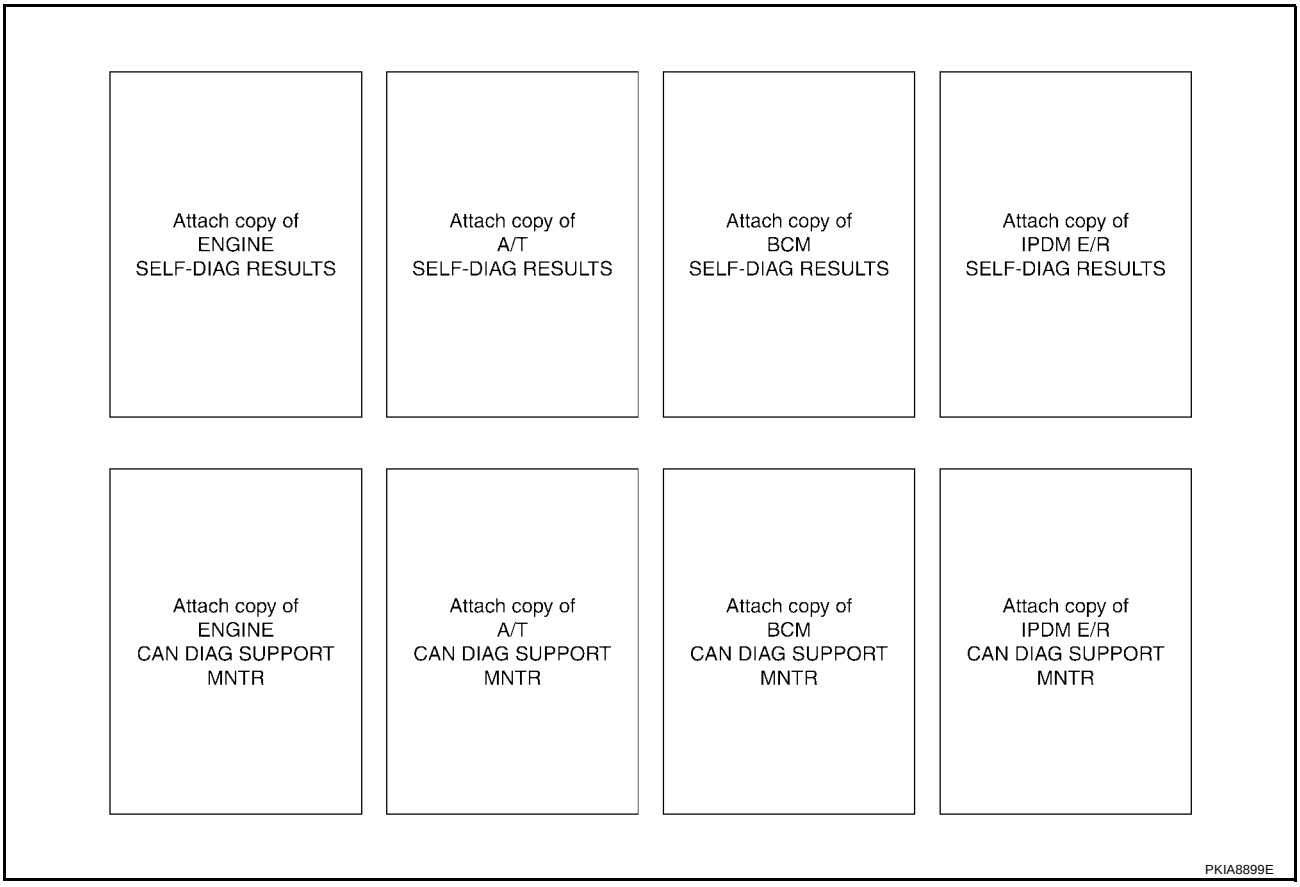
Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Display control unit Translation Sheet: Rewrite the following names, and put a check mark on the above check sheet table.			
Confirmation/Adjustment Display	Check sheet table Display	Confirmation/Adjustment Display	Check sheet table Display
CAN COMM	Initial diagnosis	CAN CIRC 5	METER/M&A
CAN CIRC 1	Transmit diagnosis	CAN CIRC 6	–
CAN CIRC 2	BCM	CAN CIRC 7	IPDM E/R
CAN CIRC 3	ECM	CAN CIRC 8	–
CAN CIRC 4	–	CAN CIRC 9	–

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA8891E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
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
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8899E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

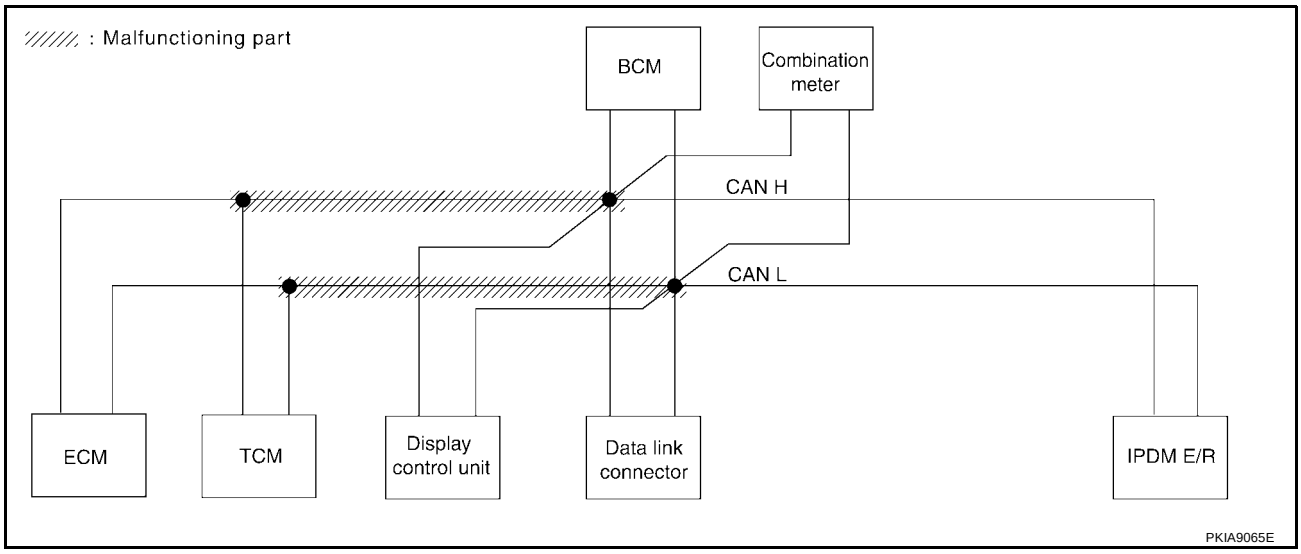
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-149, "Circuit Check Between TCM and Data Link Connector" .

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

PKIA8920E



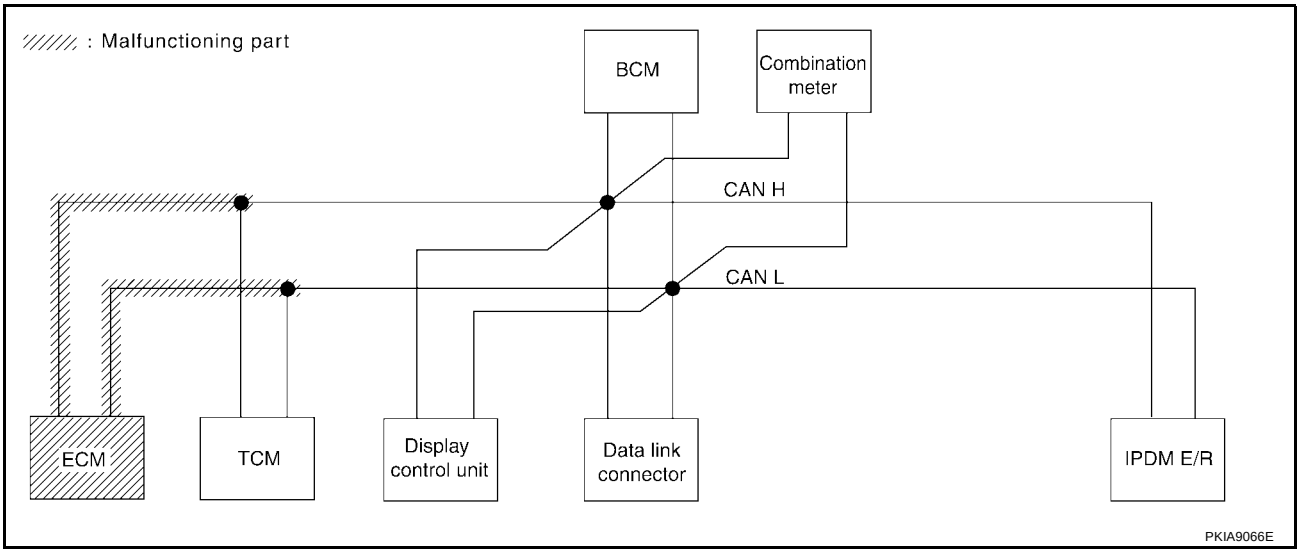
PKIA9065E

Case 2

Check ECM circuit. Refer to LAN-150, "ECM Circuit Check" .

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

PKIA8921E



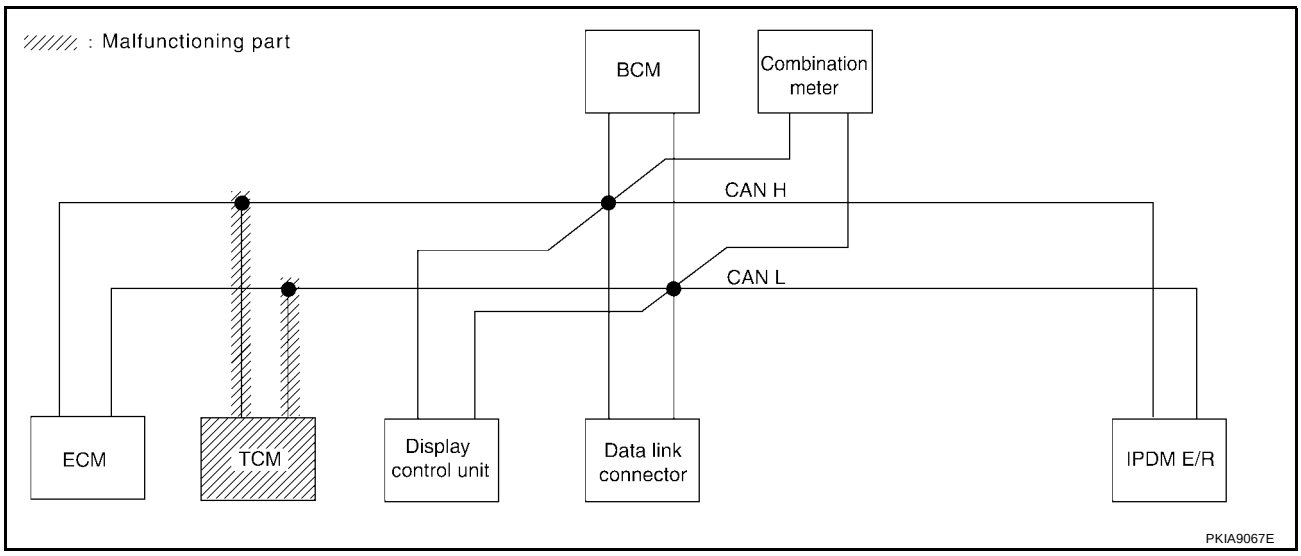
PKIA9066E

Case 3

Check TCM circuit. Refer to LAN-150, "TCM Circuit Check" .

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

PKIA8922E



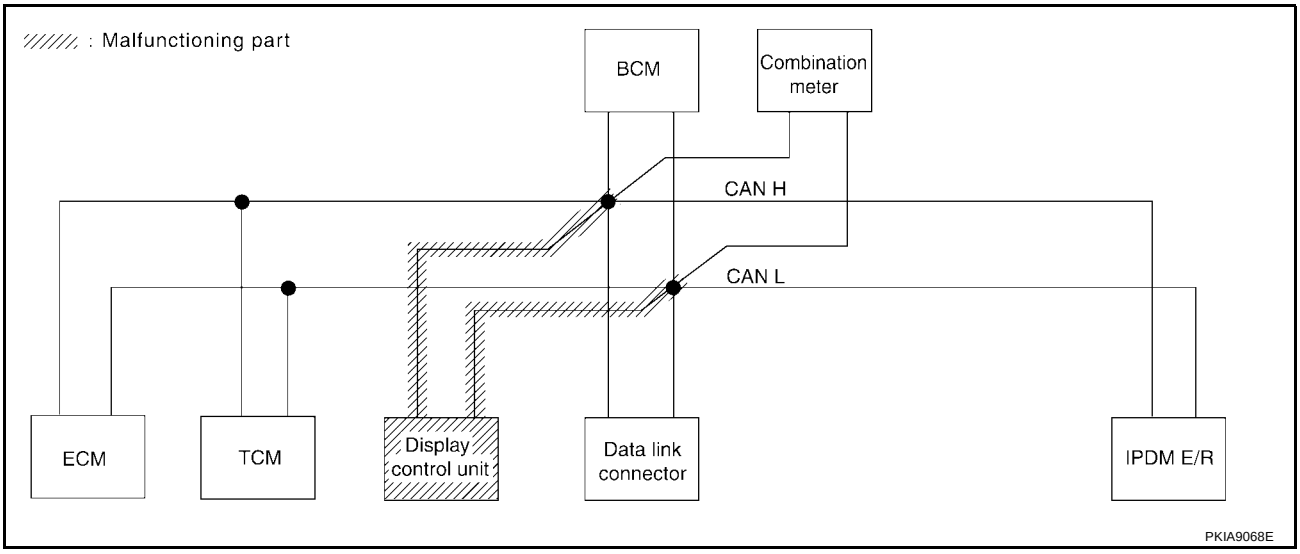
PKIA9067E

Case 4

Check display control unit circuit. Refer to LAN-151, "Display Control Unit Circuit Check" .

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

PKIA8923E



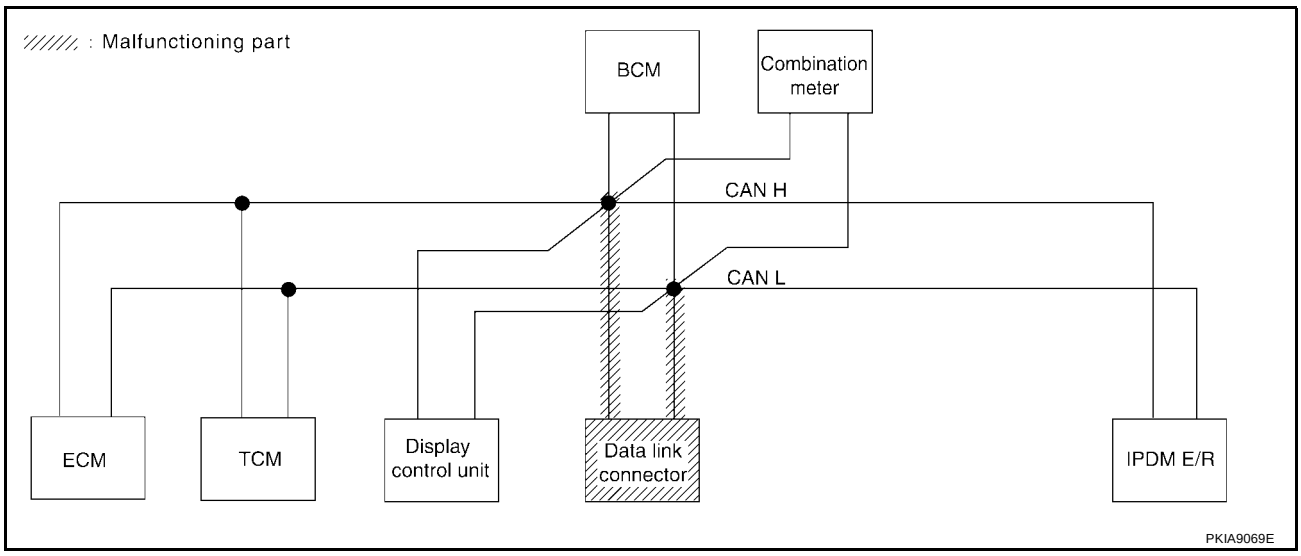
PKIA9068E

Case 5

Check data link connector circuit. Refer to LAN-151, "Data Link Connector Circuit Check" .

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

PKIA8924E

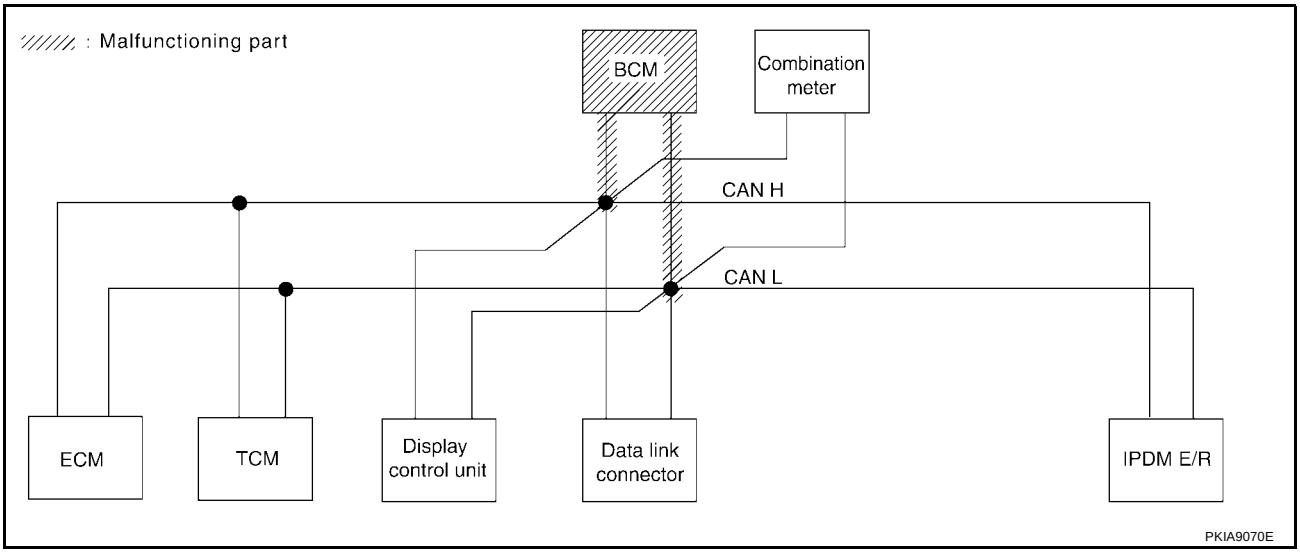


Case 6

Check BCM circuit. Refer to LAN-152, "BCM Circuit Check" .

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

PKIA8925E

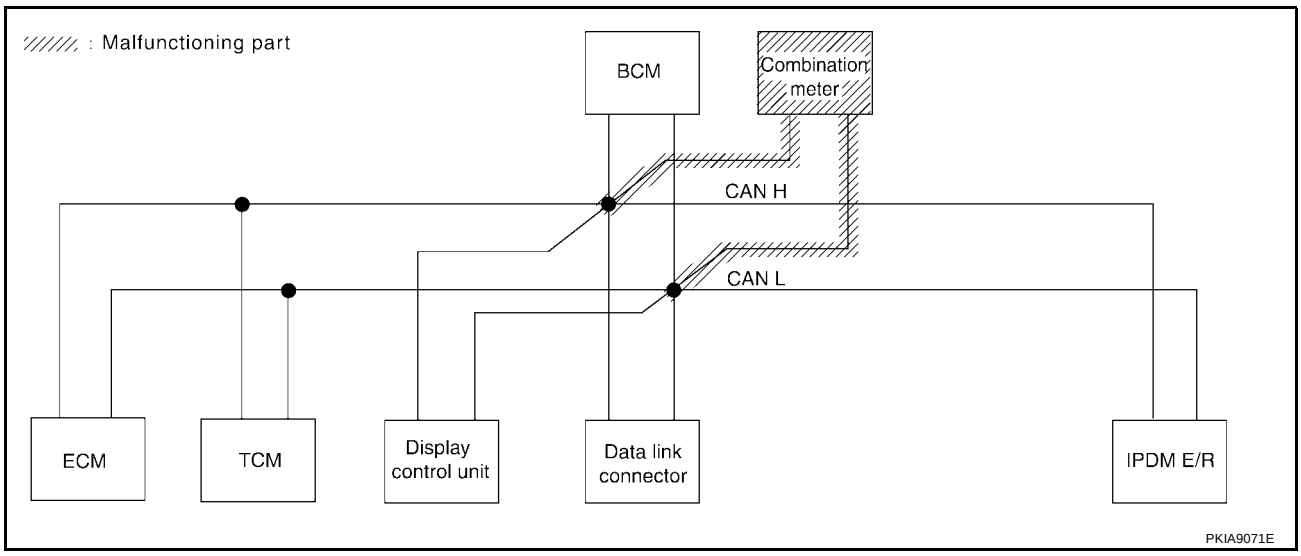


Case 7

Check combination meter circuit. Refer to LAN-152, "Combination Meter Circuit Check" .

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

PKIA8926E



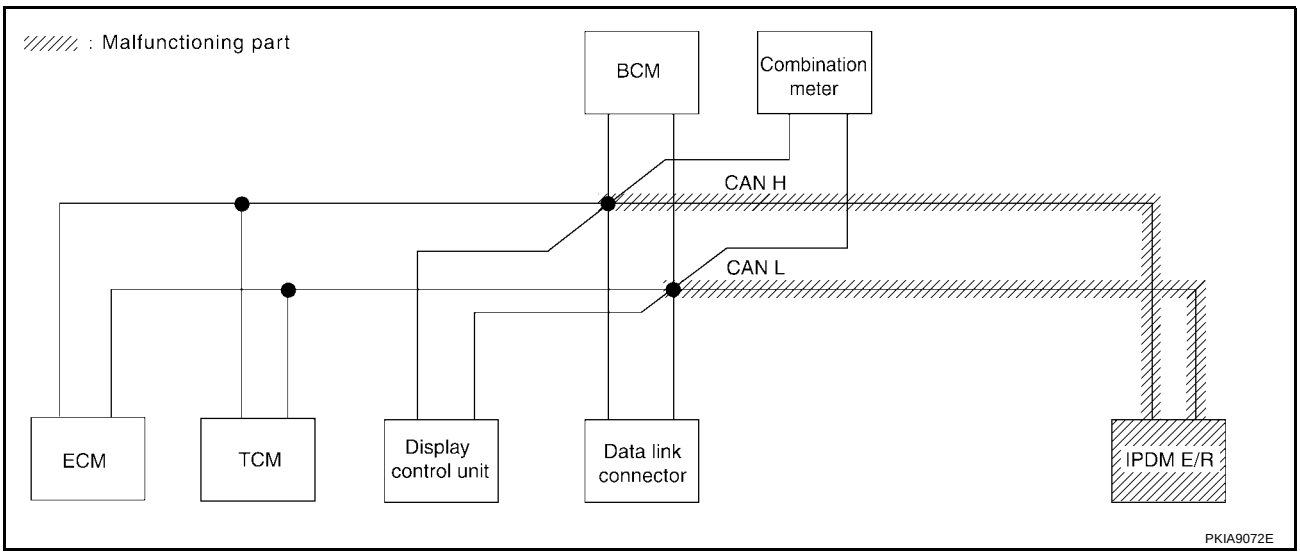
PKIA9071E

Case 8

Check IPDM E/R circuit. Refer to LAN-153, "IPDM E/R Circuit Check" .

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

PKIA8927E



PKIA9072E

Case 9

Check CAN communication circuit. Refer to LAN-154, "CAN Communication Circuit Check" .

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

PKIA8928E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-157, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA8929E

Circuit Check Between TCM and Data Link Connector

UKS001T9

1. CHECK CONNECTOR

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

– Harness connector F59
– Harness connector M71

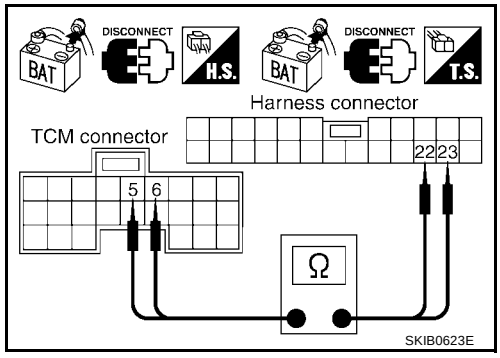
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 5 (L), 6 (P) and harness connector F59 terminals 23 (L), 22 (P).

5 (L) - 23 (L) : Continuity should exist.
6 (P) - 22 (P) : Continuity should exist.



OK or NG

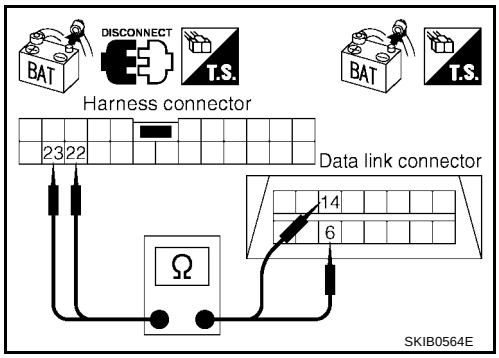
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M71 terminals 23 (L), 22 (P) and data link connector M22 terminals 6 (L), 14 (P).

23 (L) - 6 (L) : Continuity should exist.

22 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness.

ECM Circuit Check

UKS001TA

1. CHECK CONNECTOR

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

OK or NG

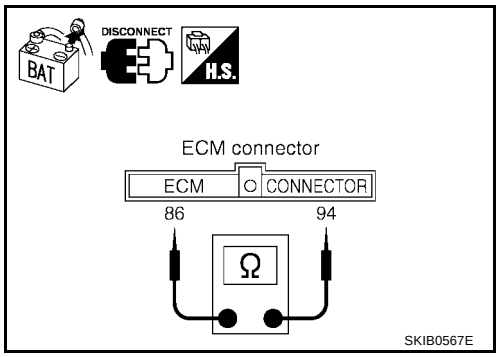
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.

NG >> Repair harness between harness connector F59 and ECM.

TCM Circuit Check

UKS001TB

1. CHECK CONNECTOR

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

OK or NG

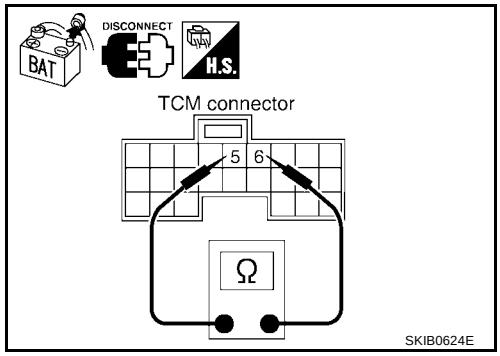
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 5 (L) and 6 (P).

5 (L) - 6 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between harness connector F59 and TCM.

Display Control Unit Circuit Check

UKS001TC

1. CHECK CONNECTOR

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

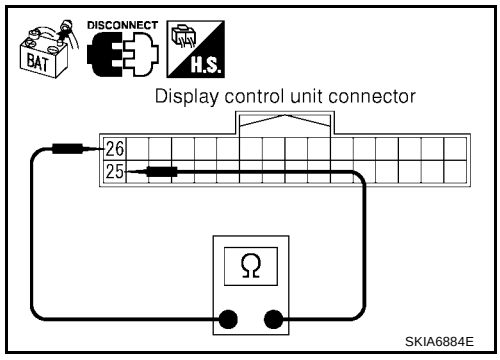
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66Ω



OK or NG

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

Data Link Connector Circuit Check

UKS001TD

1. CHECK CONNECTOR

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

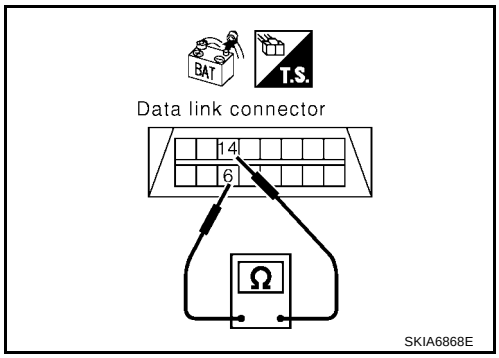
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001TE

1. CHECK CONNECTOR

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

OK or NG

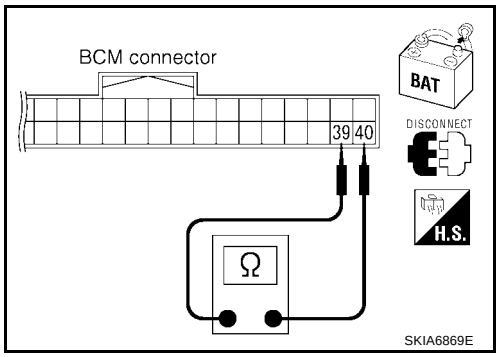
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001TF

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

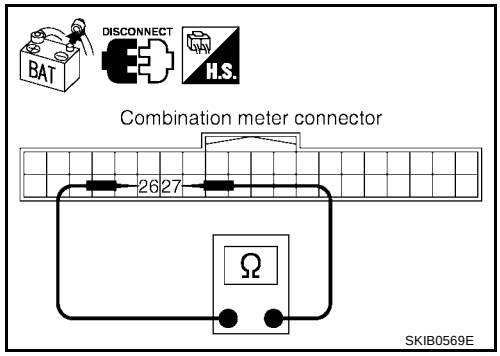
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω

OK or NG

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



UKS001TG

IPDM E/R Circuit Check

1. CHECK CONNECTOR

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

- IPDM E/R connector
- Harness connector E28
- Harness connector M7

OK or NG

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

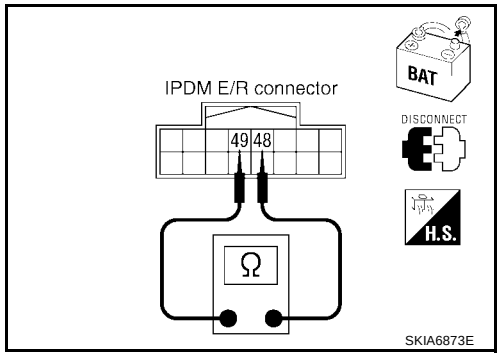
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω

OK or NG

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



CAN Communication Circuit Check

UKS001TH

1. CHECK CONNECTOR

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

- ECM
- TCM
- Display control unit
- BCM
- Combination meter
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

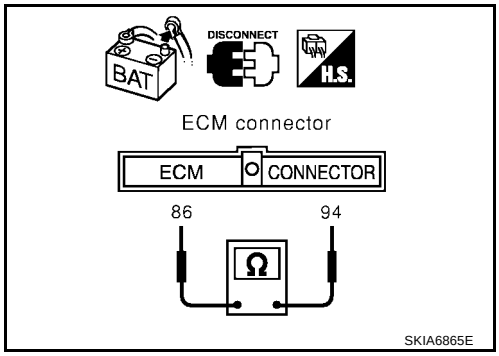
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- TCM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 terminals 94 (L) and 86 (P).

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



OK or NG

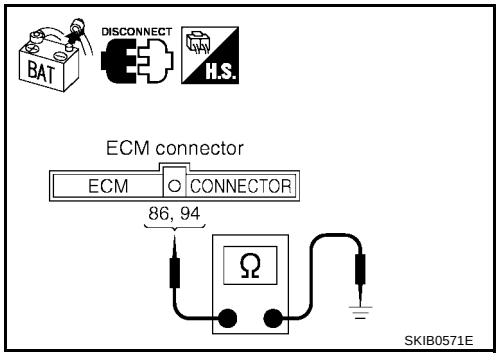
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 94 (L), 86 (P) and ground.

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



OK or NG

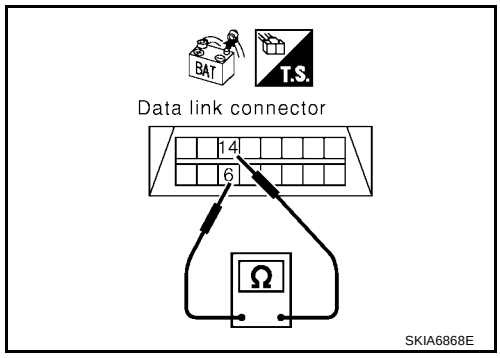
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Display control unit connector
- BCM connector
- Combination meter connector
- Harness connector M7
2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

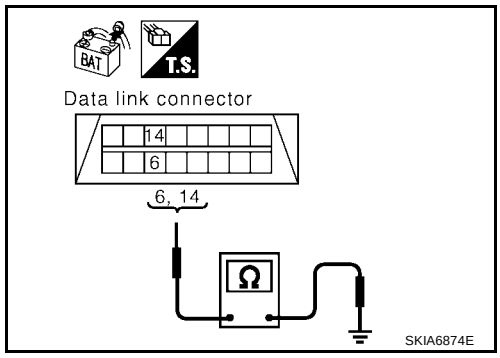
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

14 (P) - Ground : Continuity should not exist.



OK or NG

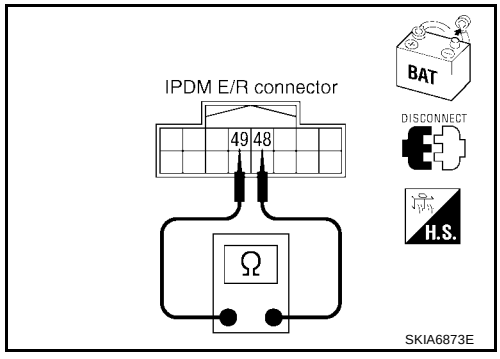
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

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



OK or NG

OK >> GO TO 7.

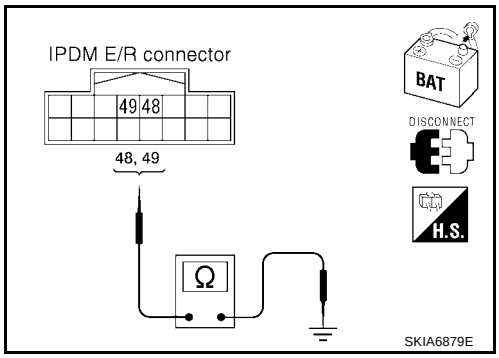
NG >> Repair harness between harness connector E28 and IPDM E/R.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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

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



OK or NG

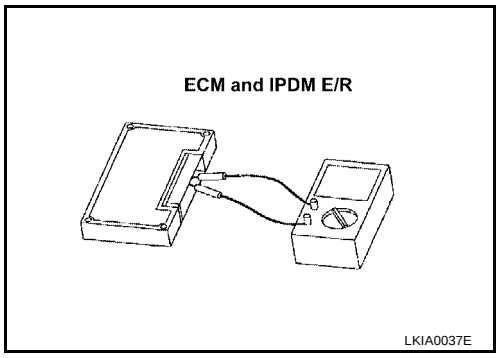
OK >> GO TO 8.

NG >> Repair harness between harness connector E28 and IPDM E/R.

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

OK >> GO TO 9.

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- TCM
- Display control unit
- BCM
- Combination meter
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001TI

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

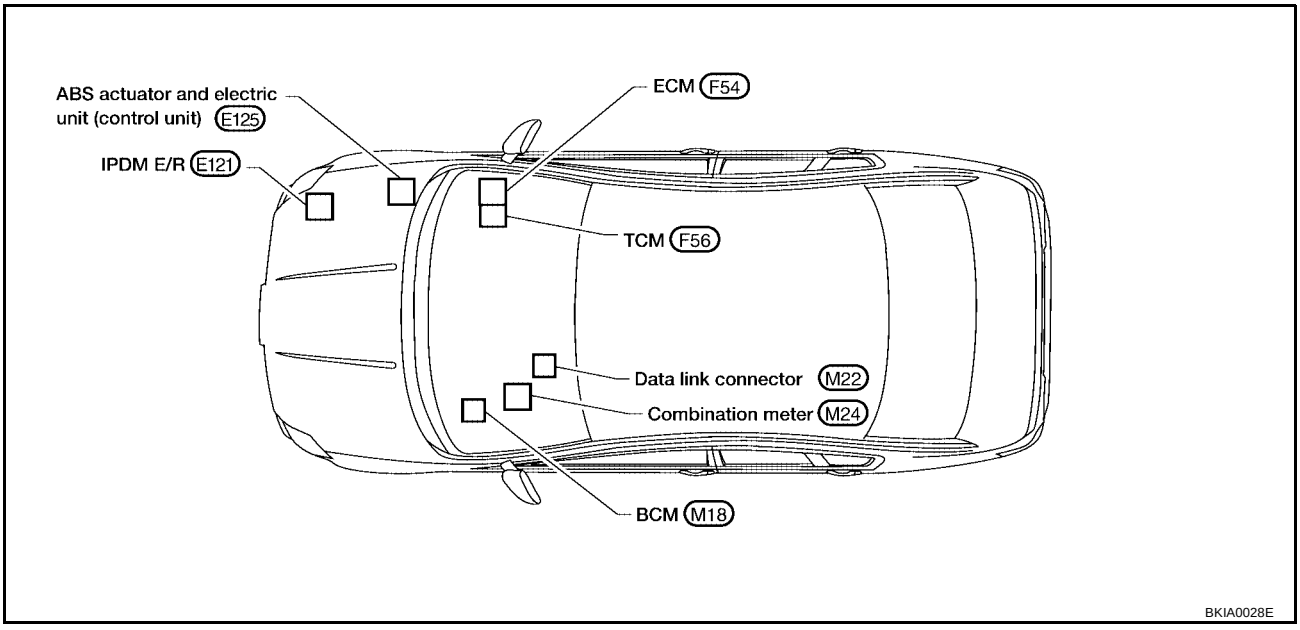
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 7)

PFP:23710

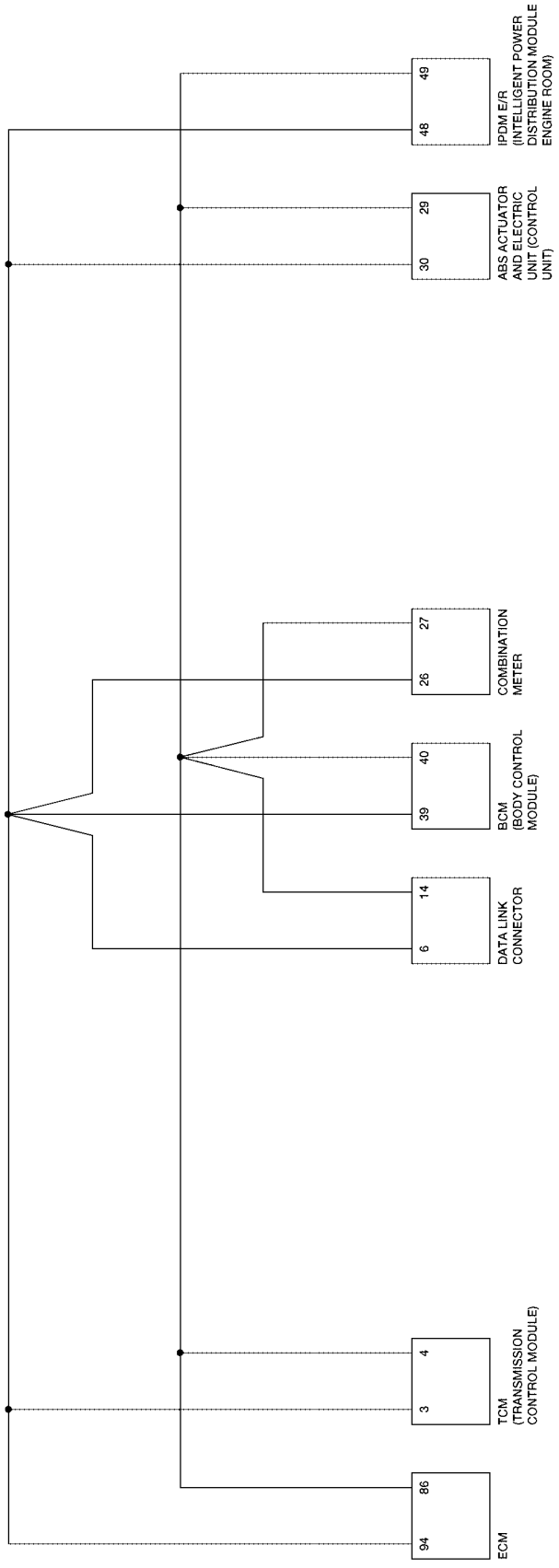
Component Parts and Harness Connector Location

UKS001SS



Schematic

UKS001ST

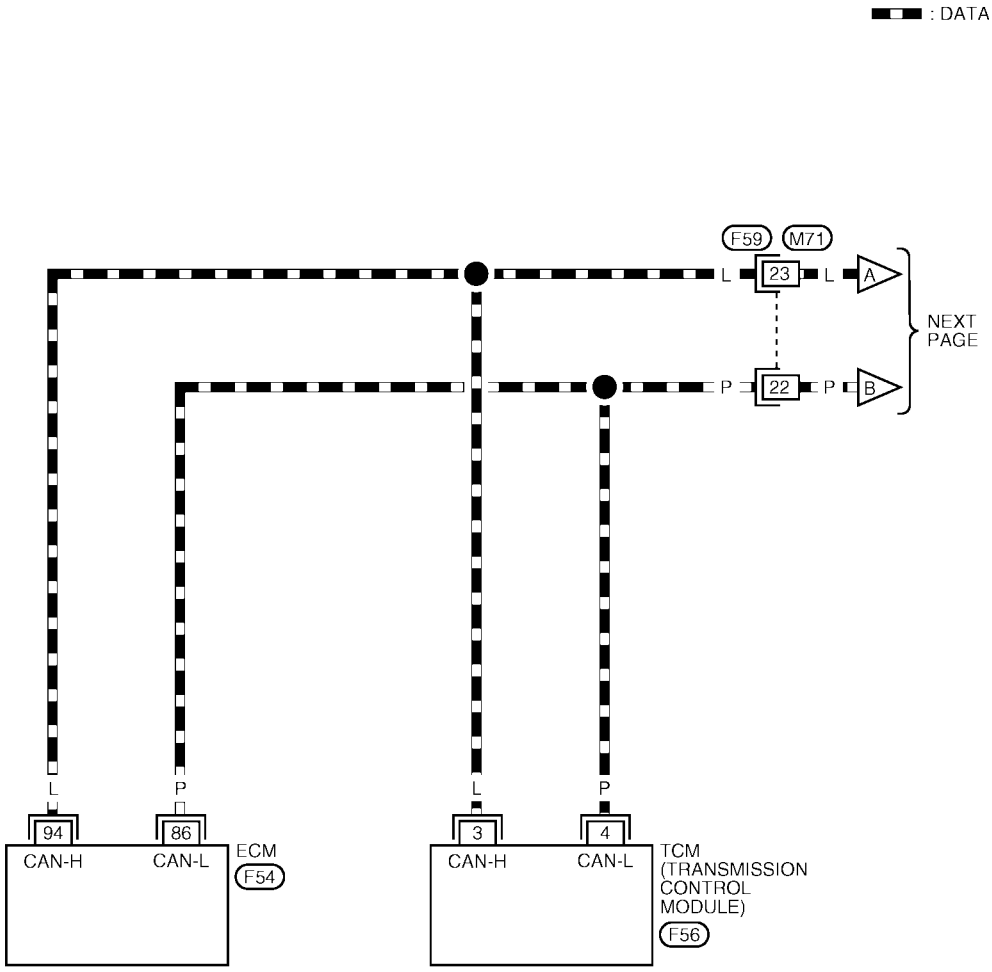


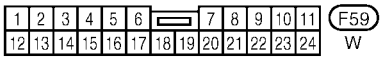
BKWA0331E

Wiring Diagram - CAN -

UKS001SU

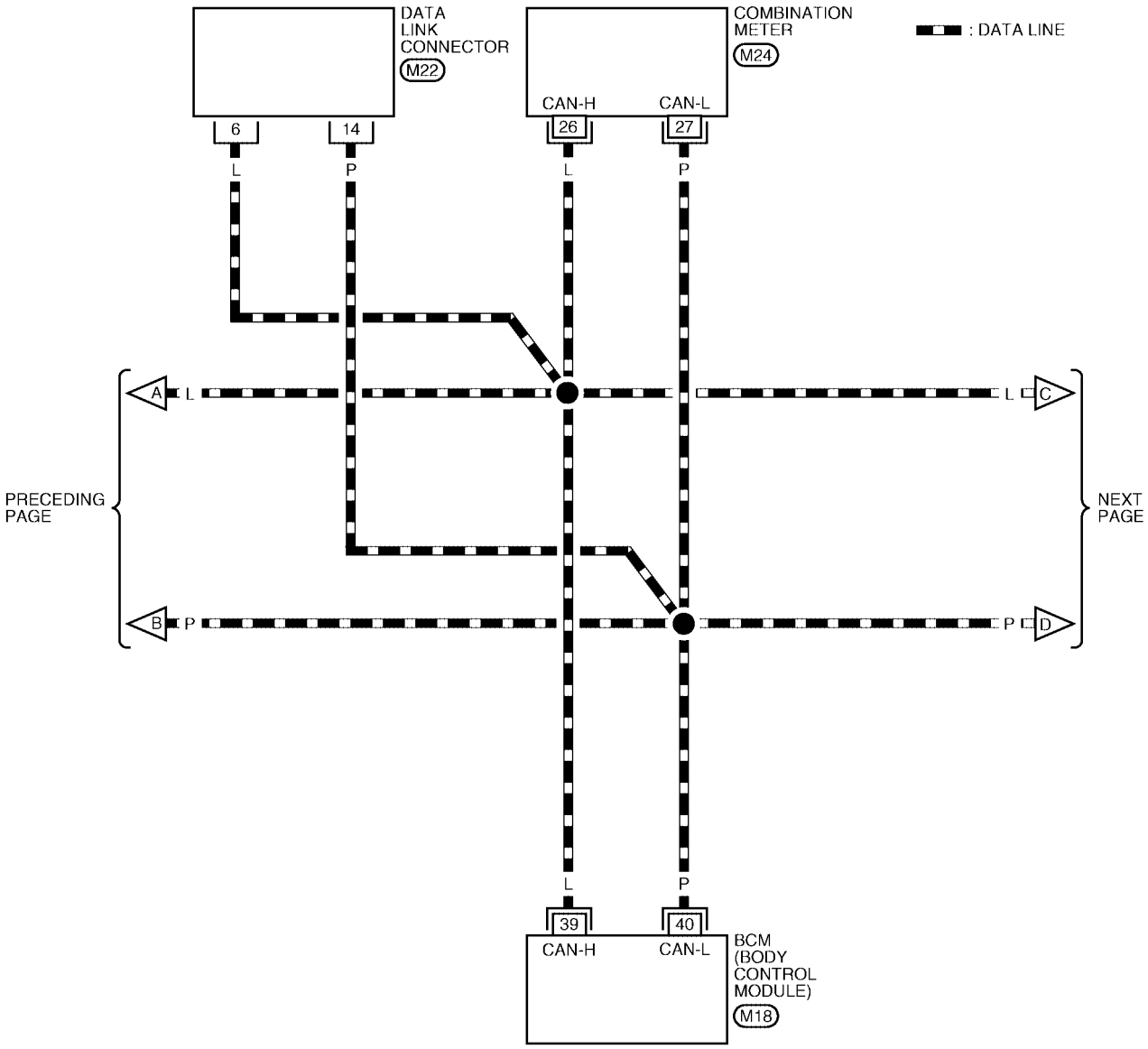
LAN-CAN-19

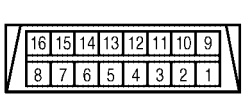


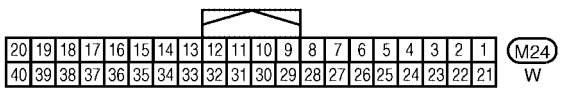


REFER TO THE FOLLOWING.
F54 , F56 - ELECTRICAL UNITS

BKWA0087E



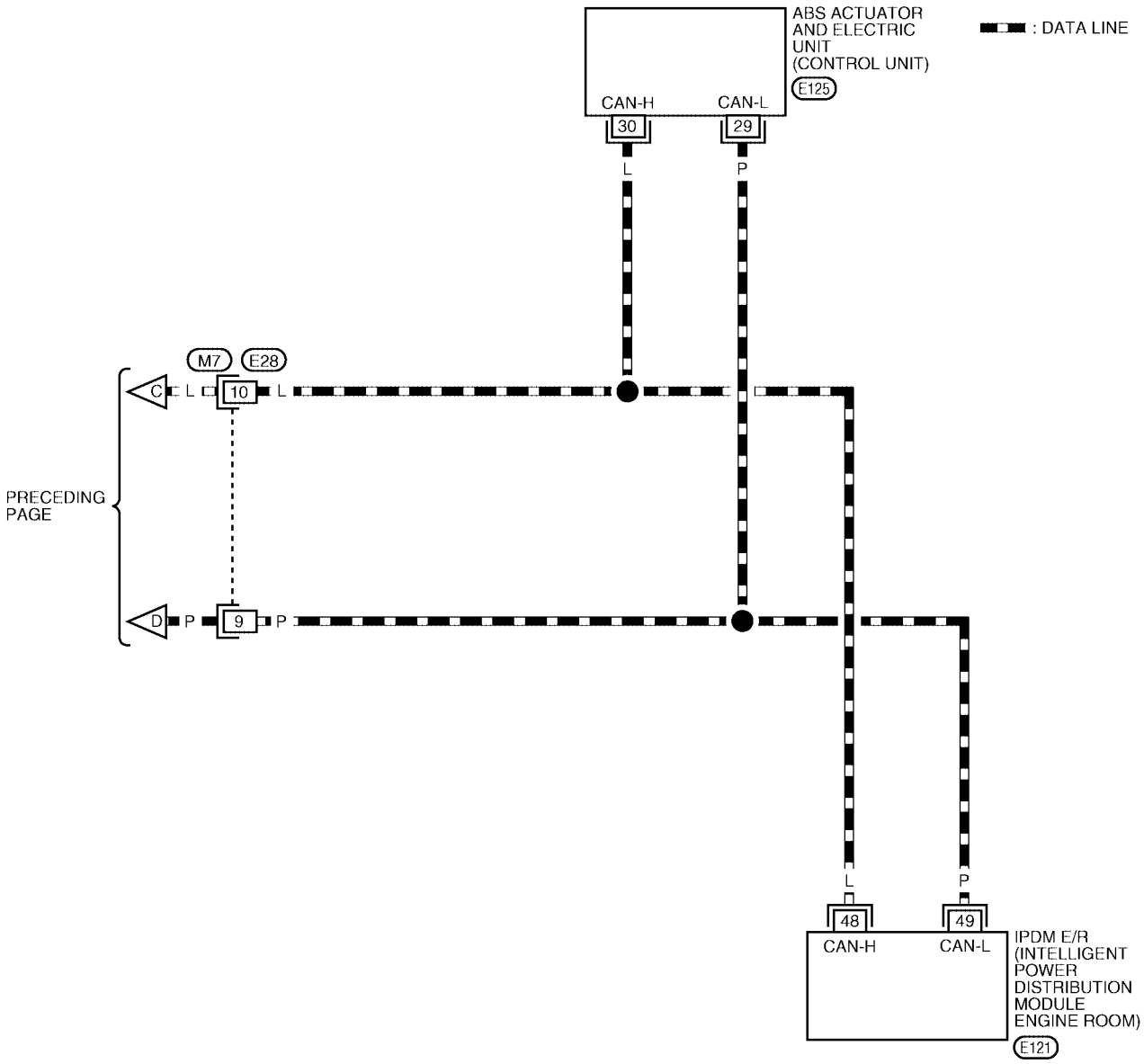


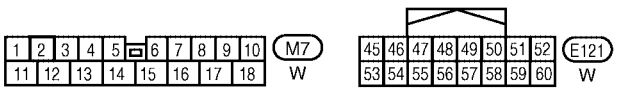


REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0088E

LAN-CAN-21





REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0089E

CHECK SHEET

UKS001RQ

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

Check sheet table

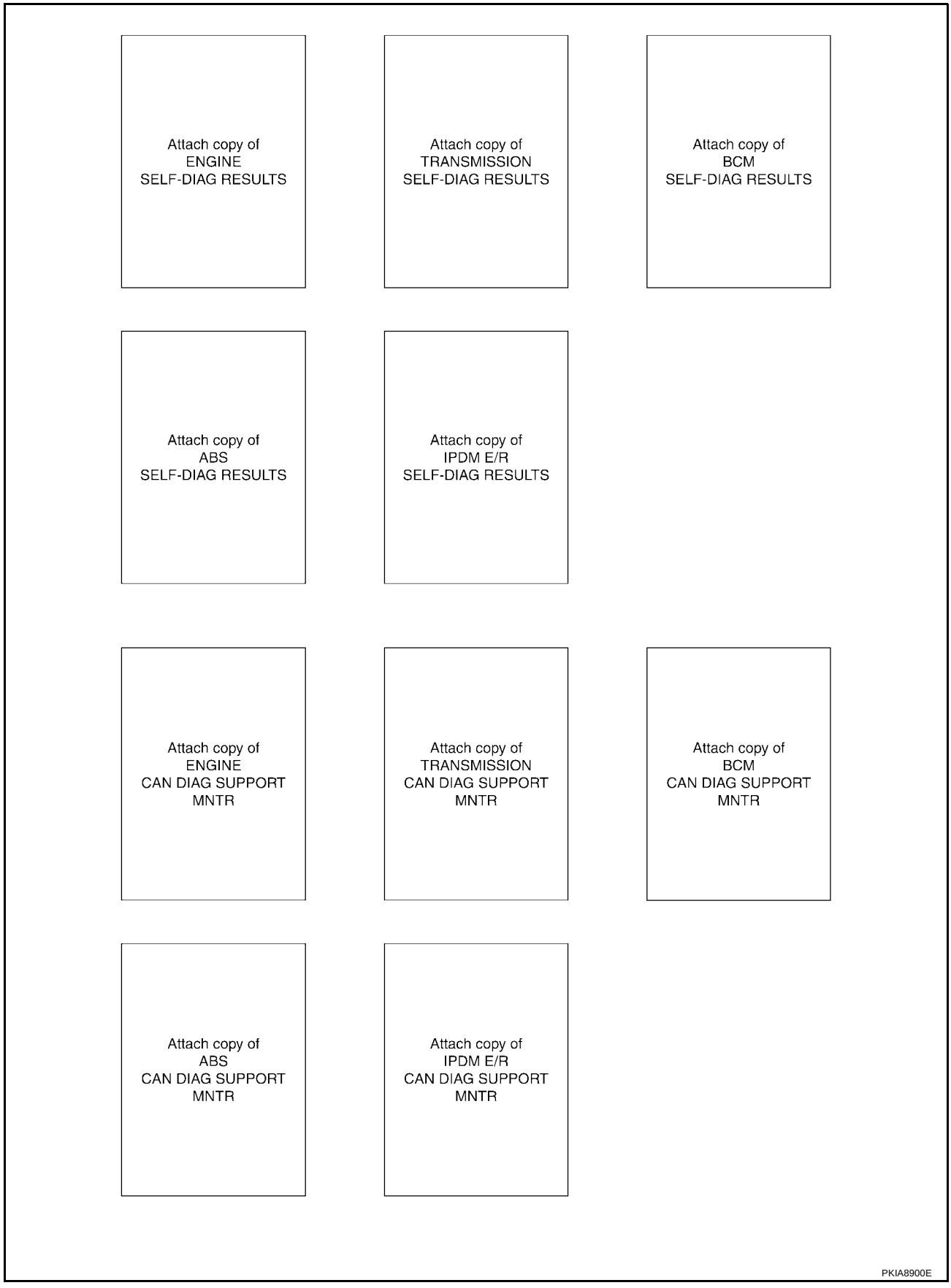
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
TRANSMISSION	No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

PKIA8892E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
TRANSMISSION
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
TRANSMISSION
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
PKIA8900E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

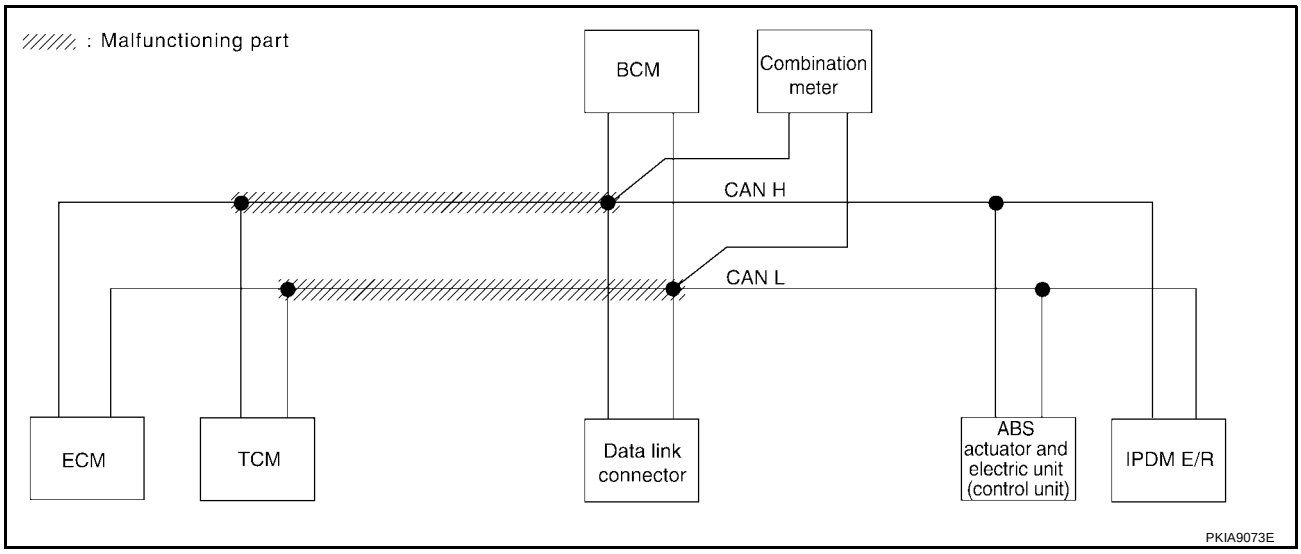
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-174, "Circuit Check Between TCM and Data Link Connector" .

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

PKIA8995E



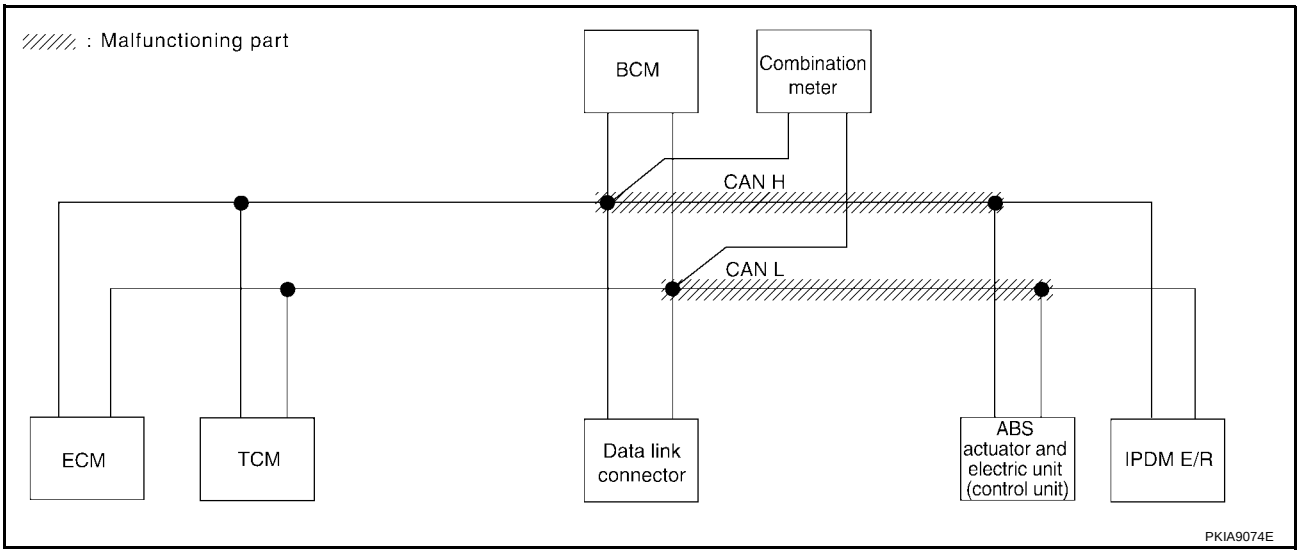
PKIA9073E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-175, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

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

PKIA8996E



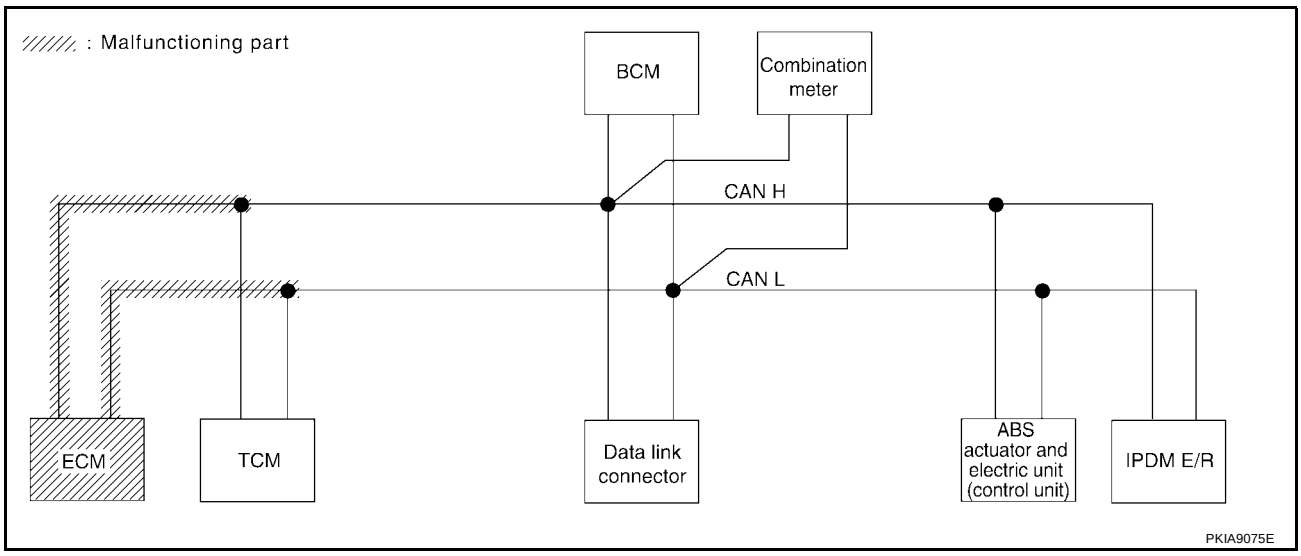
PKIA9074E

Case 3

Check ECM circuit. Refer to LAN-176, "ECM Circuit Check" .

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

PKIA8997E



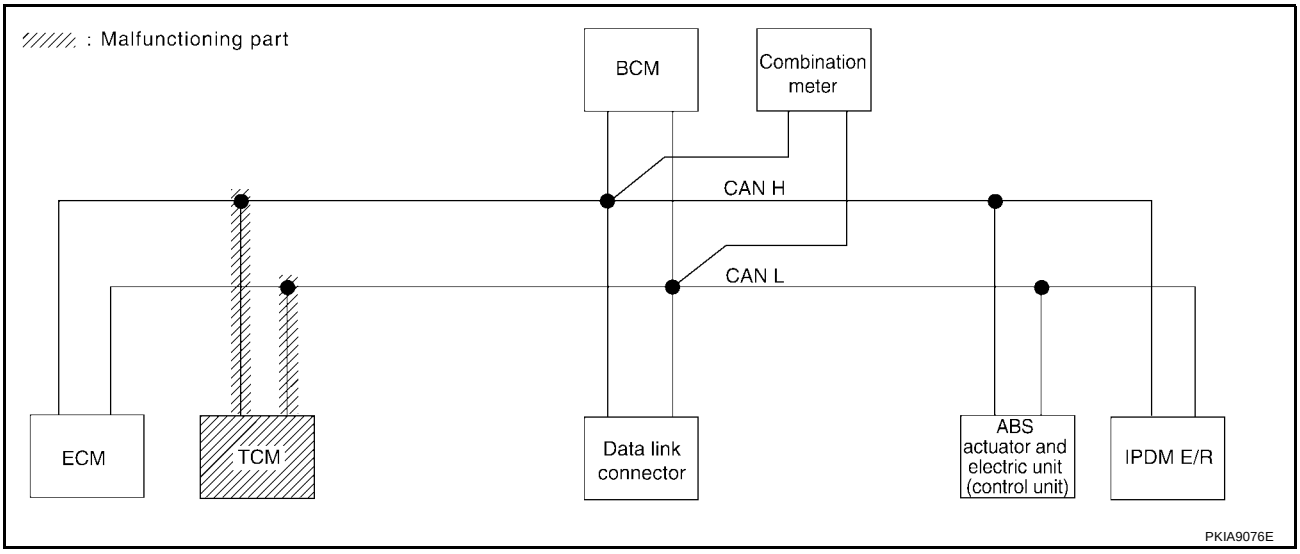
PKIA9075E

Case 4

Check TCM circuit. Refer to LAN-176, "TCM Circuit Check" .

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

PKIA8998E



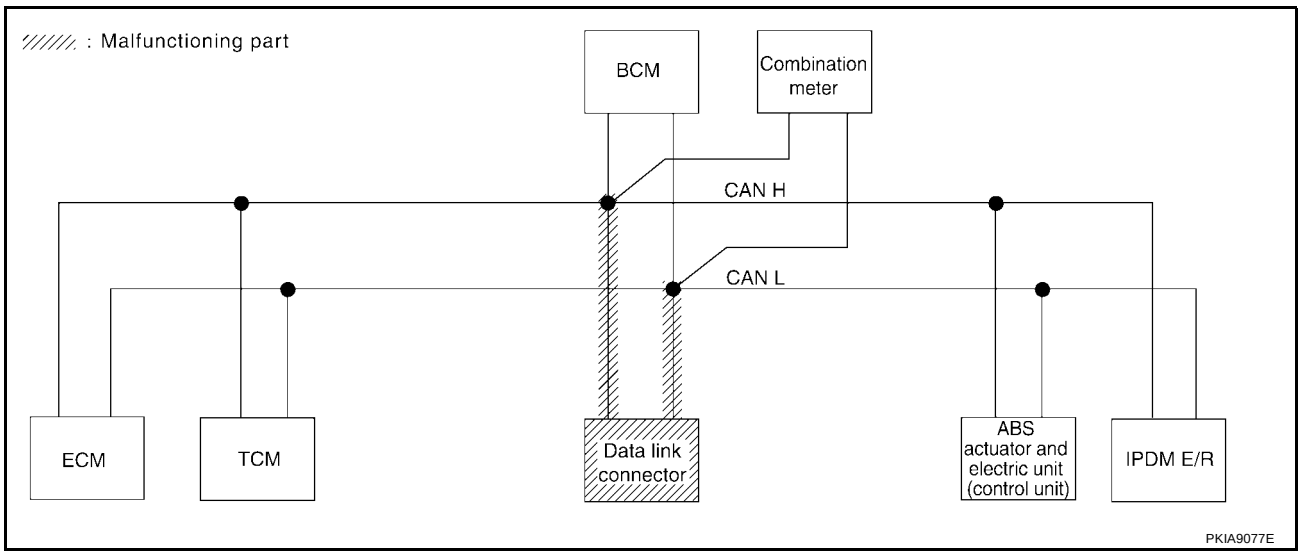
PKIA9076E

Case 5

Check data link connector circuit. Refer to LAN-177, "Data Link Connector Circuit Check" .

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

PKIA8999E



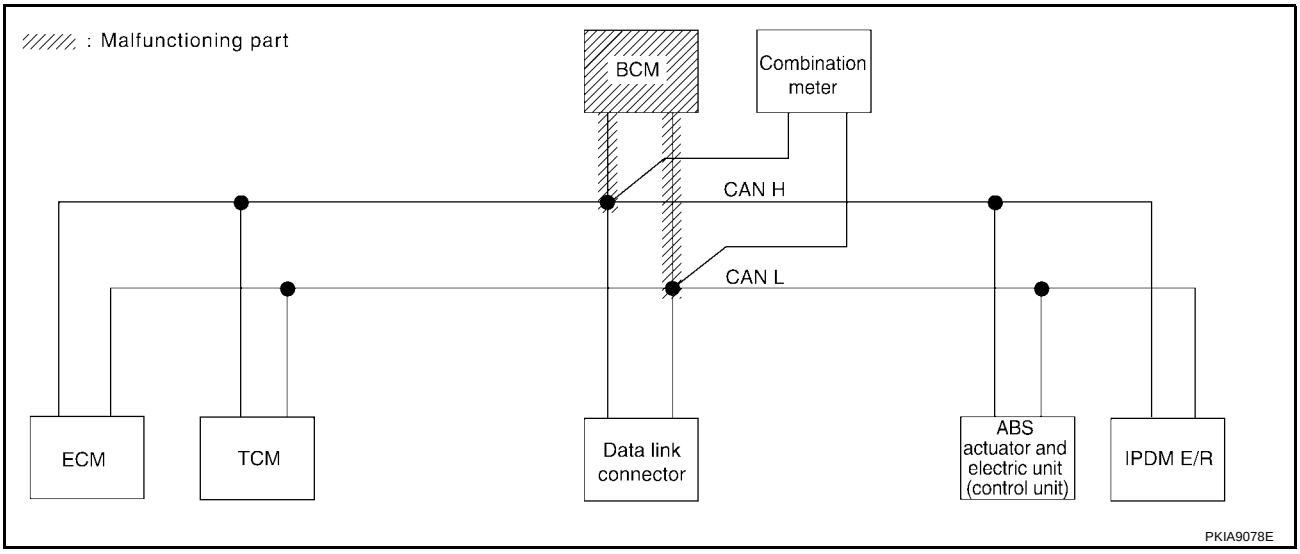
PKIA9077E

Case 6

Check BCM circuit. Refer to LAN-177, "BCM Circuit Check" .

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

PKIA9000E



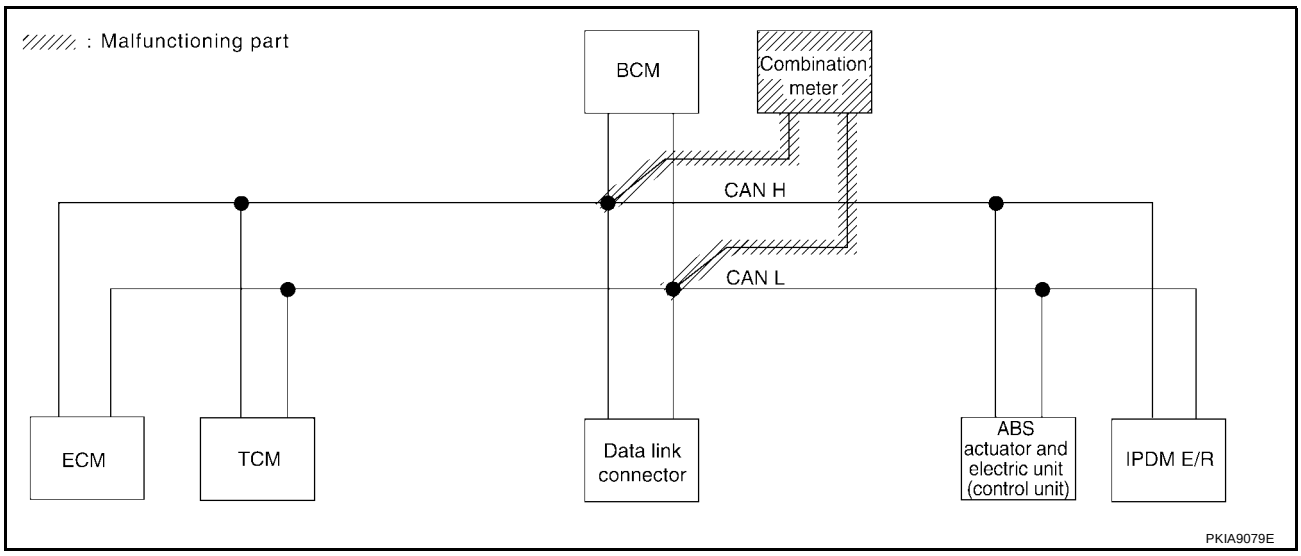
PKIA9078E

Case 7

Check combination meter circuit. Refer to LAN-178, "Combination Meter Circuit Check" .

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

PKIA9001E



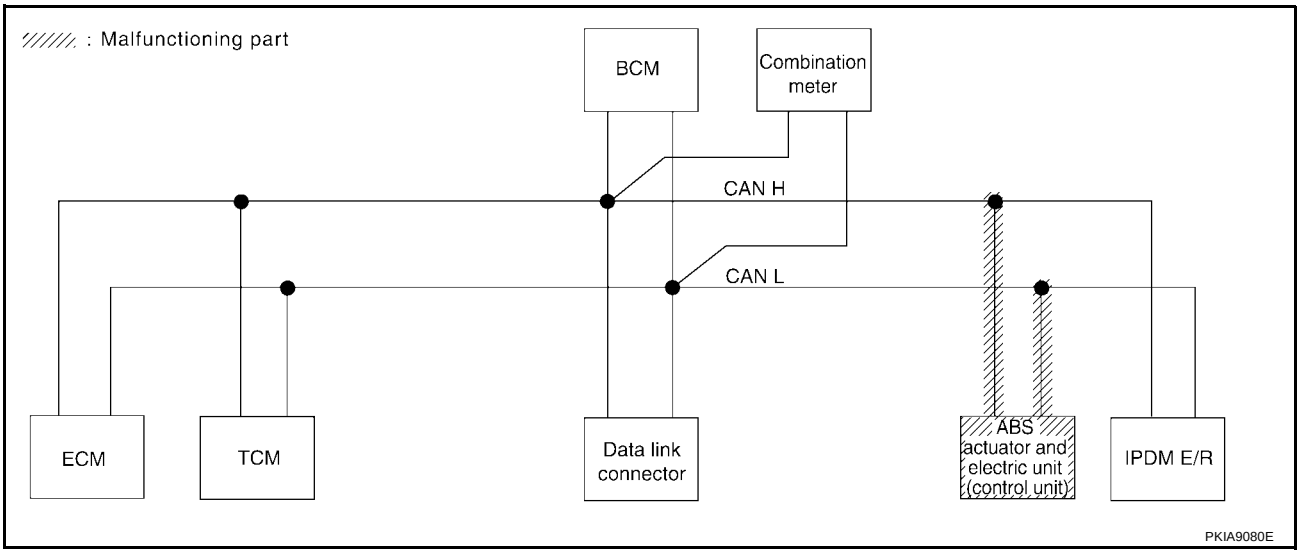
PKIA9079E

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-178, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

PKIA9002E

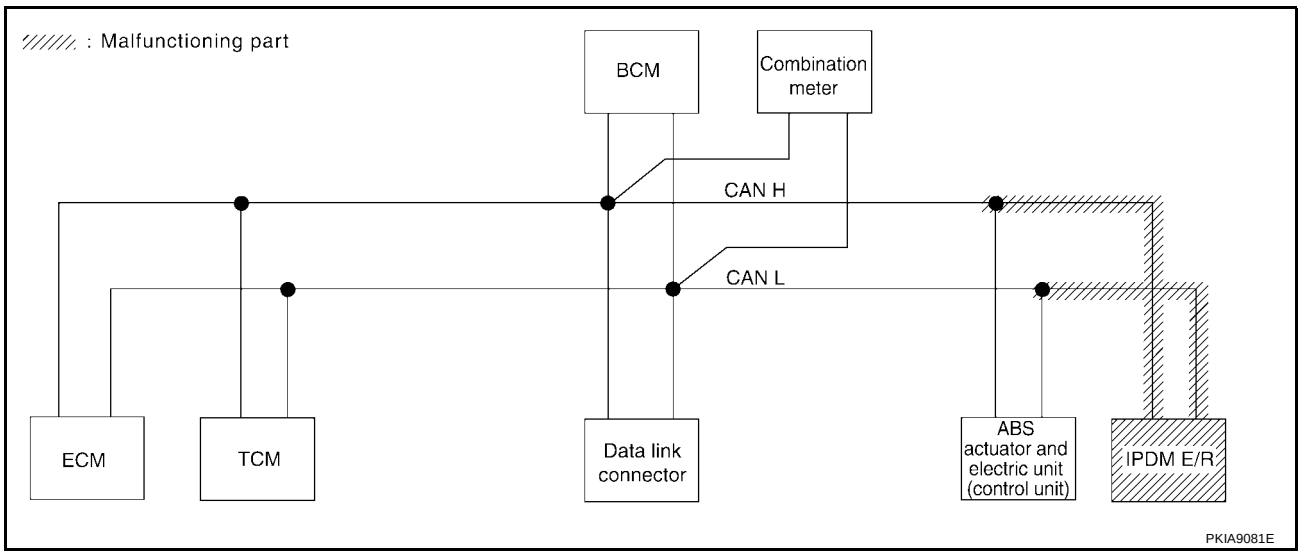


Case 9

Check IPDM E/R circuit. Refer to LAN-179, "IPDM E/R Circuit Check" .

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

PKIA9003E



PKIA9081E

Case 10

Check CAN communication circuit. Refer to LAN-180, "CAN Communication Circuit Check" .

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

PKIA9004E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-183, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA9005E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-183, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA9006E

Circuit Check Between TCM and Data Link Connector

UKS001SV

1. CHECK CONNECTOR

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

- Harness connector F59
- Harness connector M71

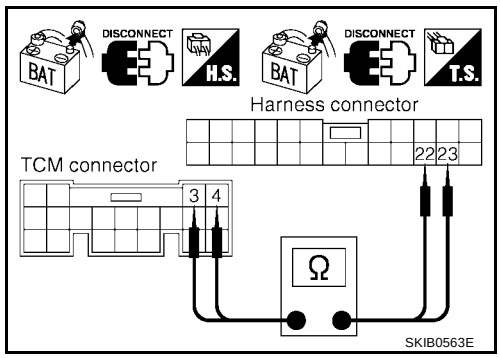
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 3 (L), 4 (P) and harness connector F59 terminals 23 (L), 22 (P).

3 (L) - 23 (L) : Continuity should exist.
4 (P) - 22 (P) : Continuity should exist.



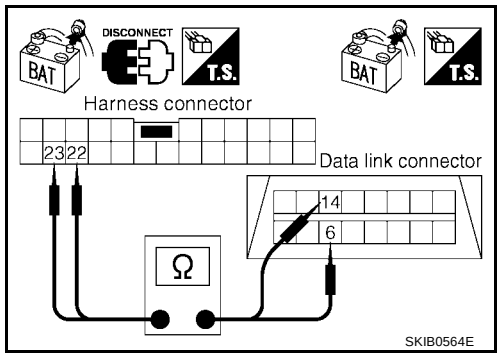
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M71 terminals 23 (L), 22 (P) and data link connector M22 terminals 6 (L), 14 (P).

23 (L) - 6 (L) : Continuity should exist.
22 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

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

UKS001SW

1. CHECK CONNECTOR

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

- Harness connector M7
- Harness connector E28

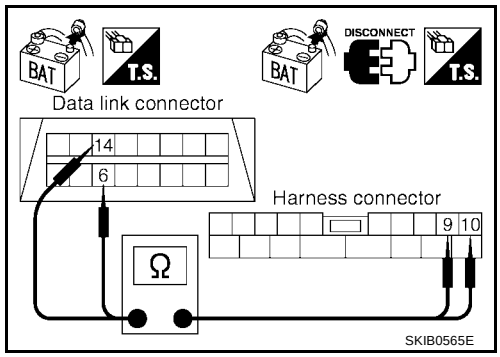
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M7 terminals 10 (L), 9 (P).

6 (L) - 10 (L) : Continuity should exist.
14 (P) - 9 (P) : Continuity should exist.



OK or NG

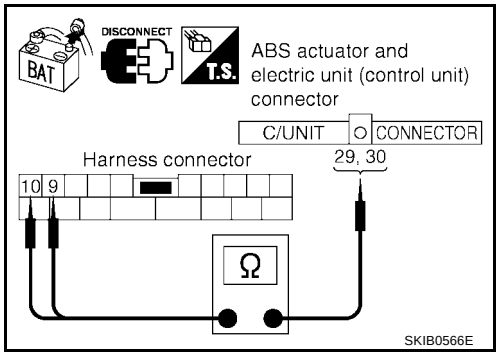
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E28 terminals 10 (L), 9 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L), 29 (P).

10 (L) - 30 (L) : Continuity should exist.

9 (P) - 29 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness.

ECM Circuit Check

UKS001SX

1. CHECK CONNECTOR

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

OK or NG

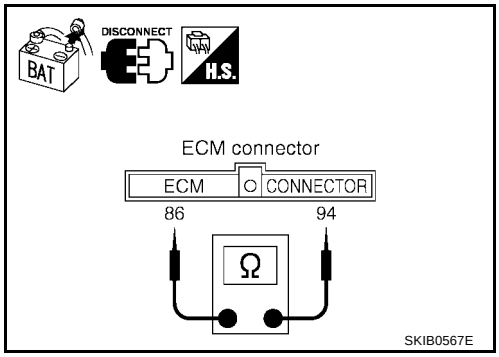
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.

NG >> Repair harness between harness connector F59 and ECM.

TCM Circuit Check

UKS001SY

1. CHECK CONNECTOR

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

OK or NG

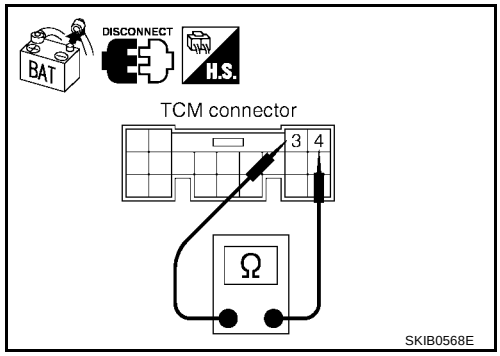
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between harness connector F59 and TCM.

Data Link Connector Circuit Check

UKS001SZ

1. CHECK CONNECTOR

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

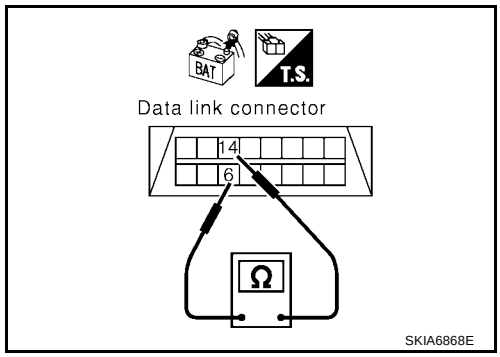
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001T0

1. CHECK CONNECTOR

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

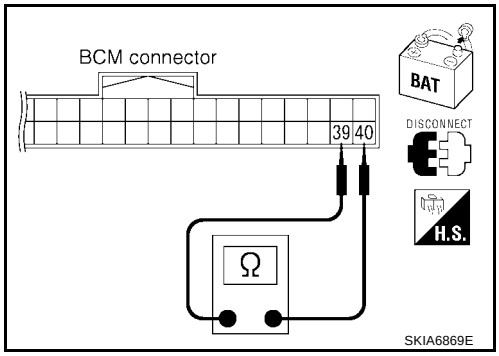
OK or NG

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 M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001T1

1. CHECK CONNECTOR

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

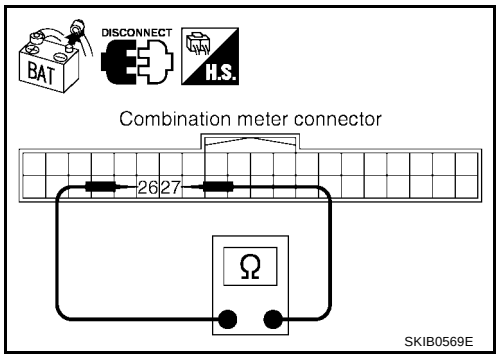
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001T2

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

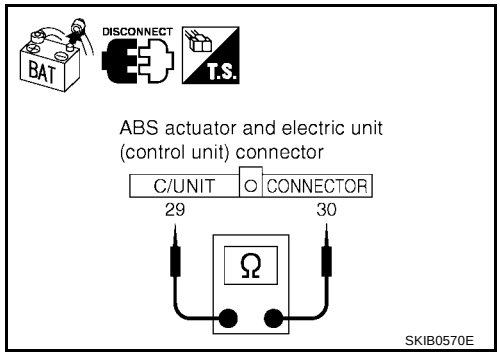
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L) and 29 (P).

30 (L) - 29 (P) : Approx. 54 - 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between harness connector E28 and ABS actuator and electric unit (control unit).



IPDM E/R Circuit Check

UKS001T3

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

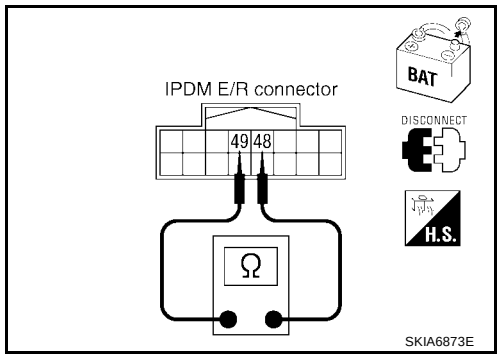
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between harness connector E28 and IPDM E/R.



CAN Communication Circuit Check

UKS001T4

1. CHECK CONNECTOR

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

- ECM
- TCM
- BCM
- Combination meter
- 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.

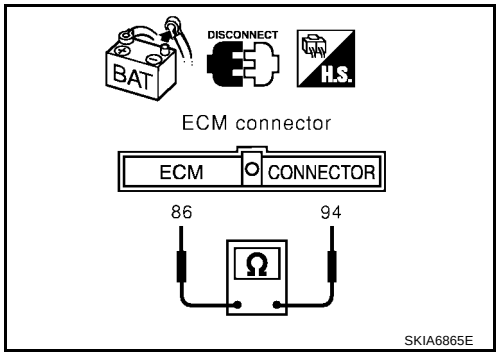
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- TCM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 terminals 94 (L) and 86 (P).

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



OK or NG

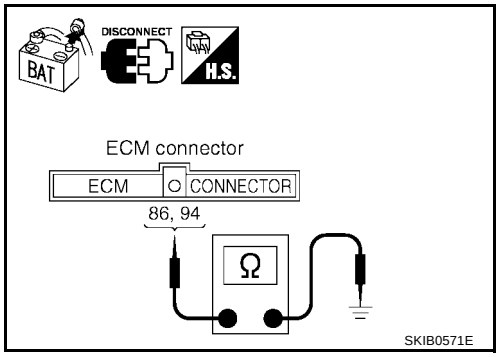
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 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.

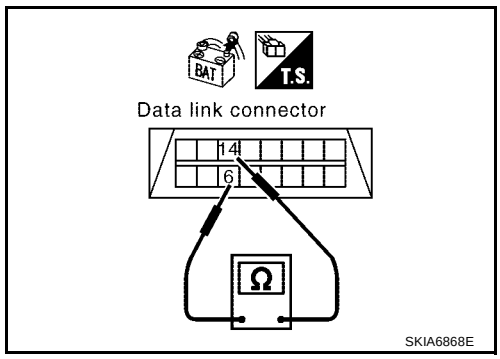
- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- BCM connector
- Combination meter connector
- Harness connector M7

2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

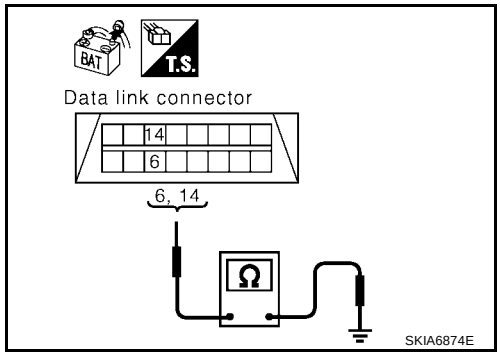
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

14 (P) - Ground : Continuity should not exist.



OK or NG

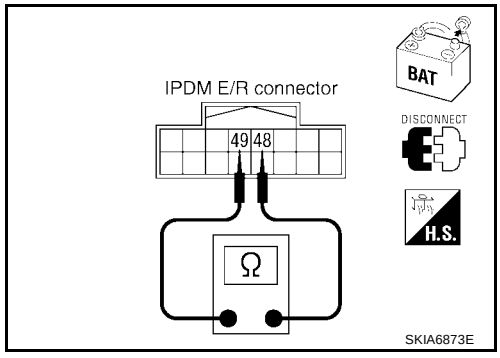
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

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 E121 terminals 48 (L) and 49 (P).

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



OK or NG

OK >> GO TO 7.

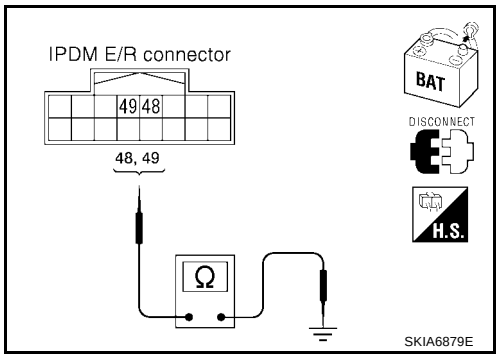
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 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.

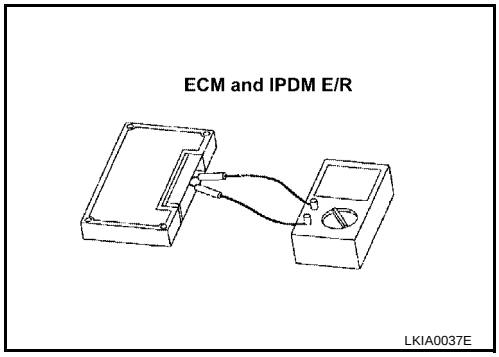
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

OK >> GO TO 9.

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- TCM
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001T5

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

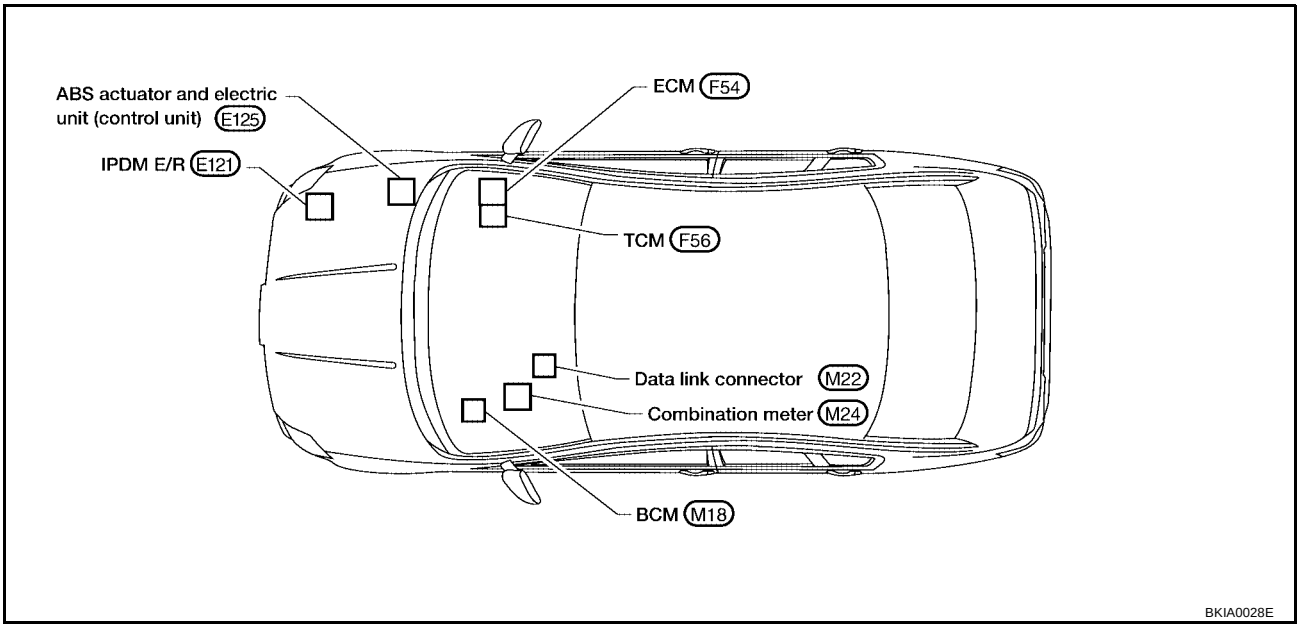
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 8)

PFP:23710

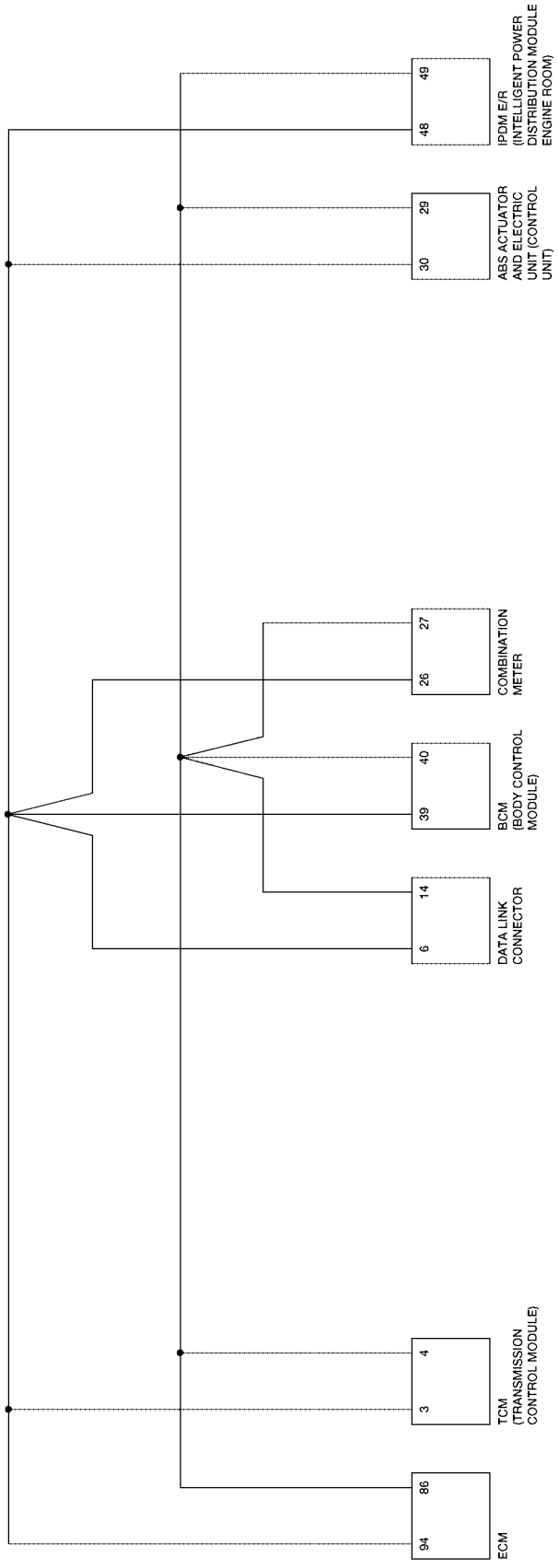
Component Parts and Harness Connector Location

UKS001SE



Schematic

UKS001SF

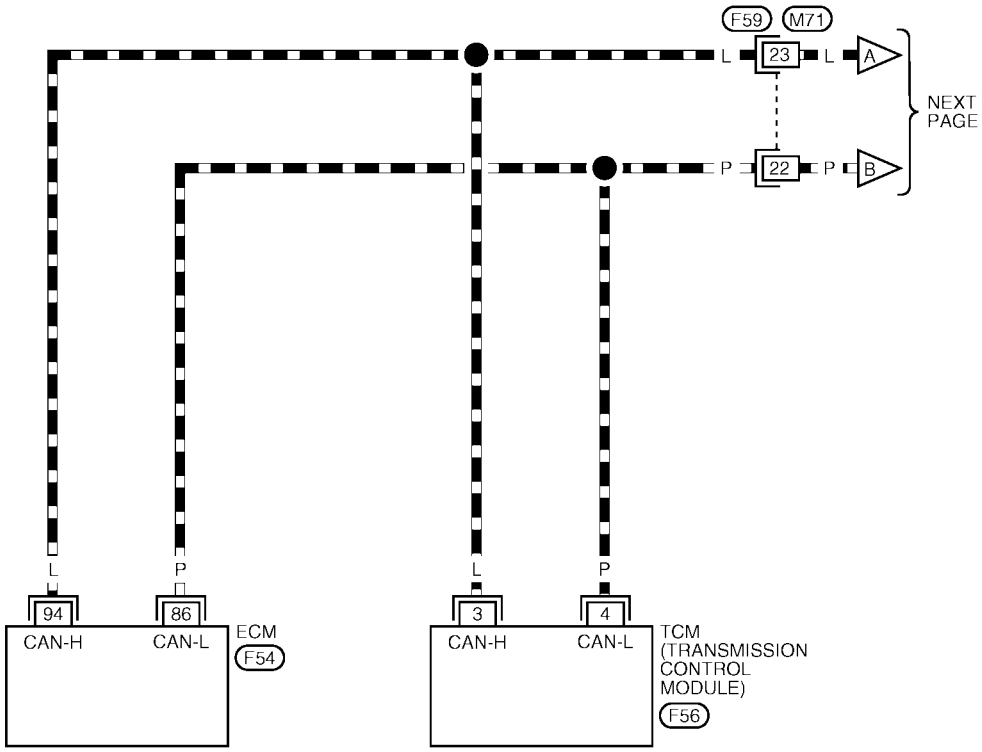


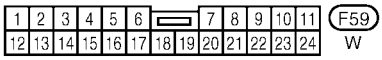
BKWA0331E

Wiring Diagram - CAN -

UKS001SG

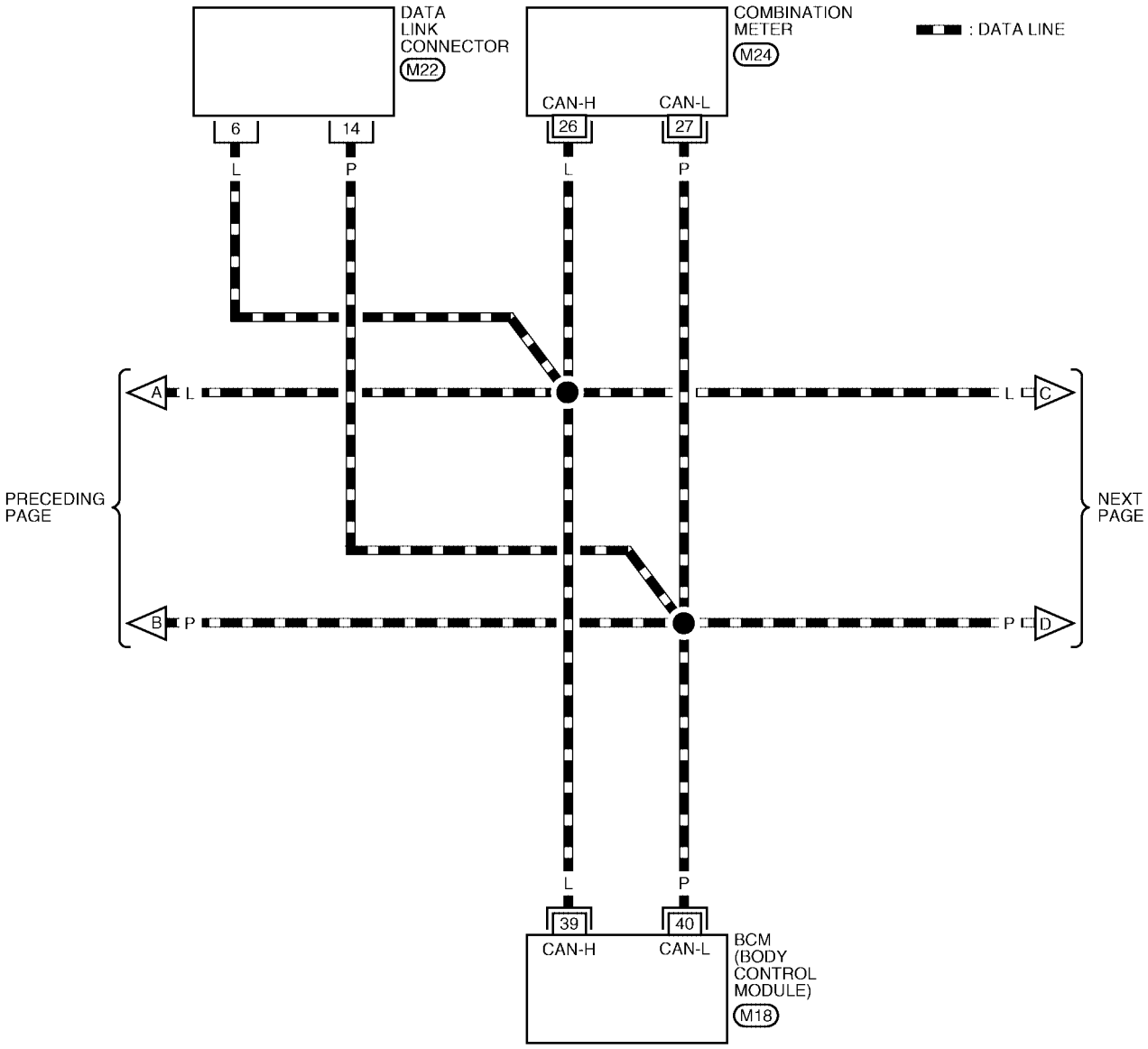
LAN-CAN-22

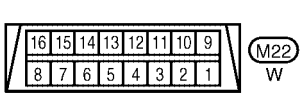


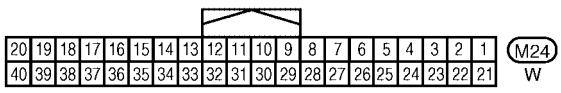


REFER TO THE FOLLOWING.
F54 , F56 - ELECTRICAL UNITS

BKWA0192E

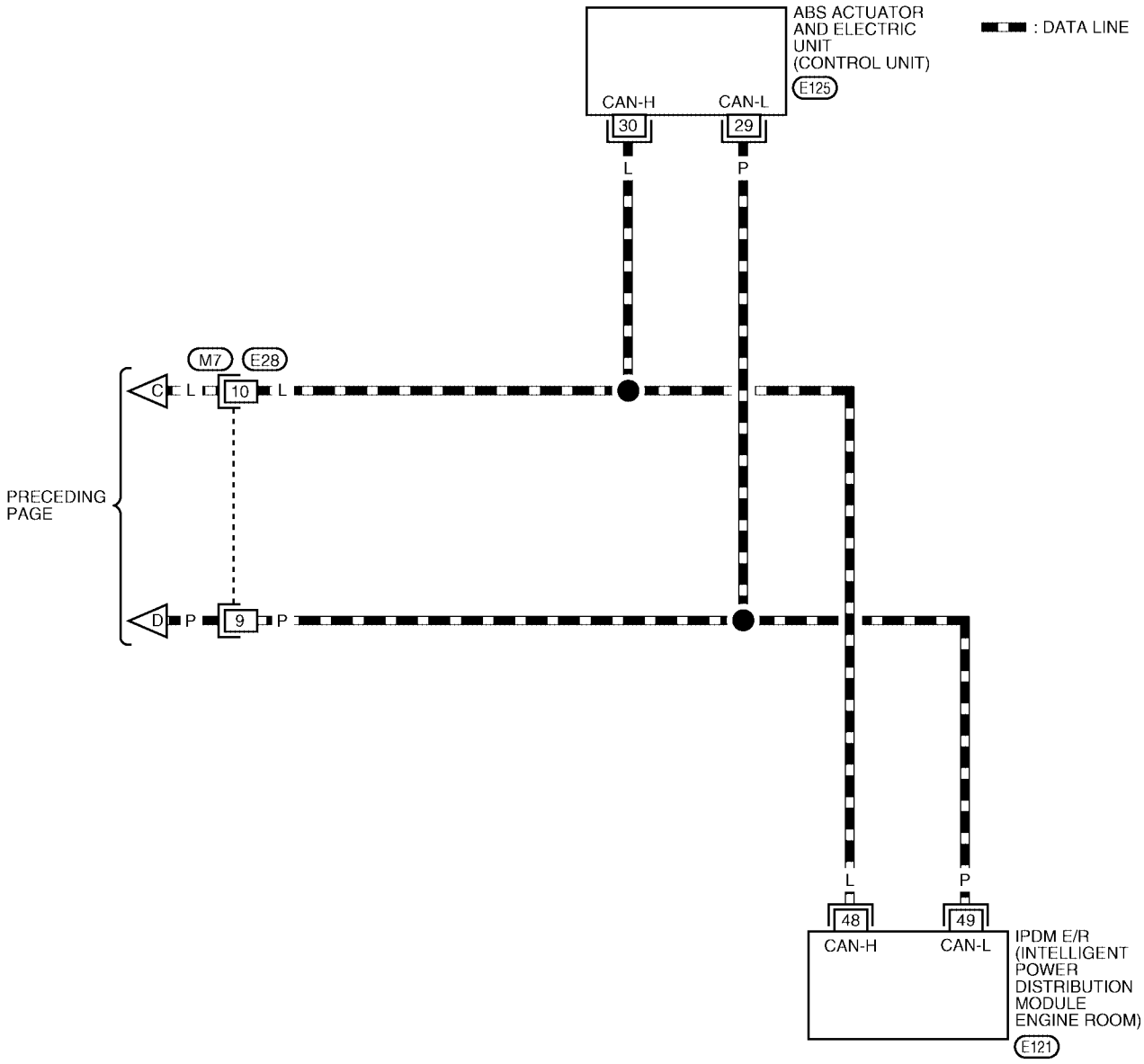


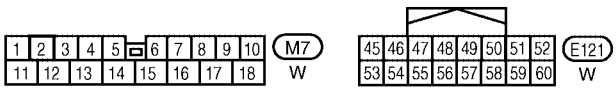




REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0193E





REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0194E

CHECK SHEET

UKS001RP

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

Check sheet table

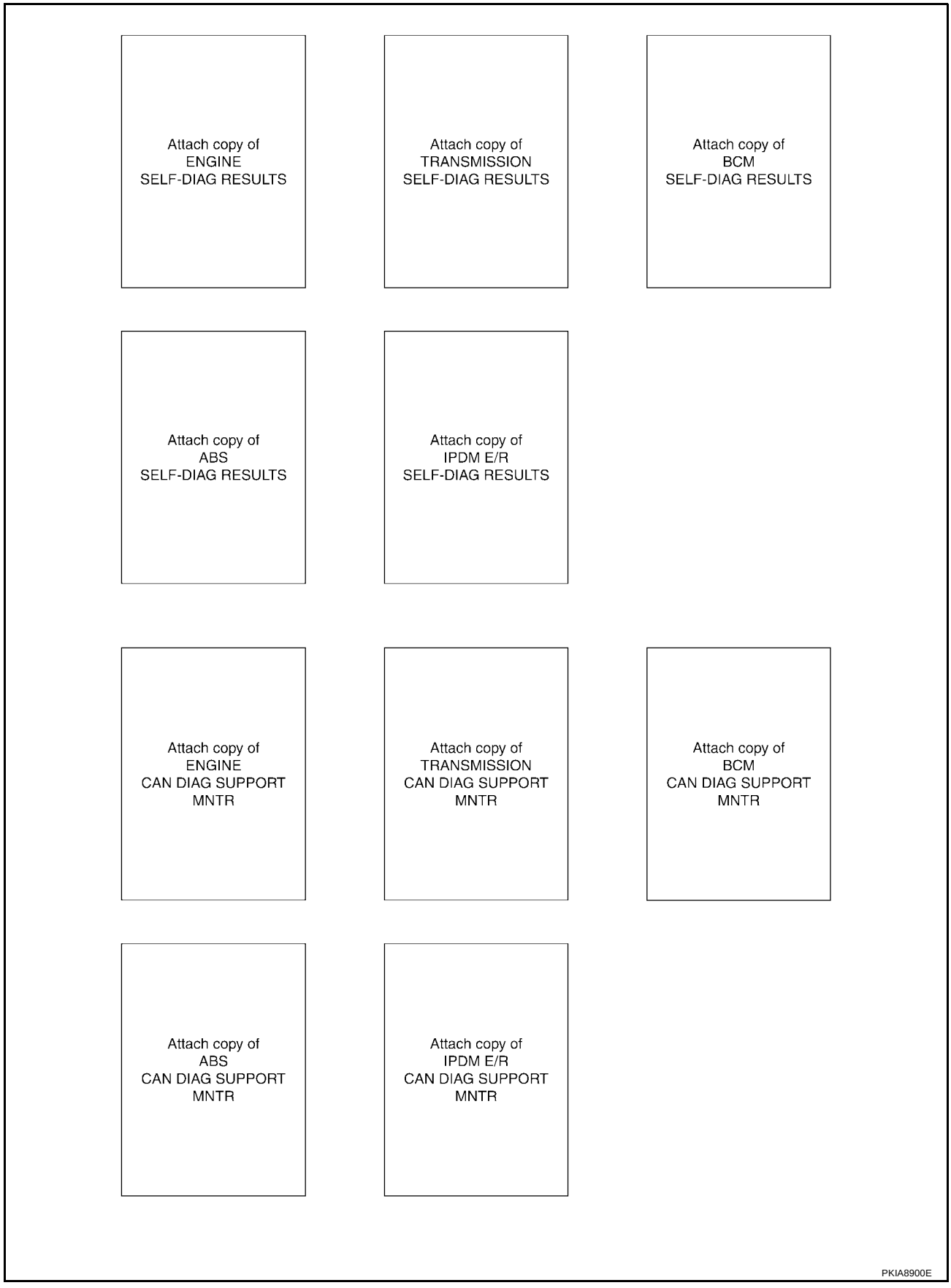
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
TRANSMISSION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

PKIA8893E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
TRANSMISSION
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
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ENGINE
CAN DIAG SUPPORT
MNTR
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TRANSMISSION
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MNTR
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BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA8900E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

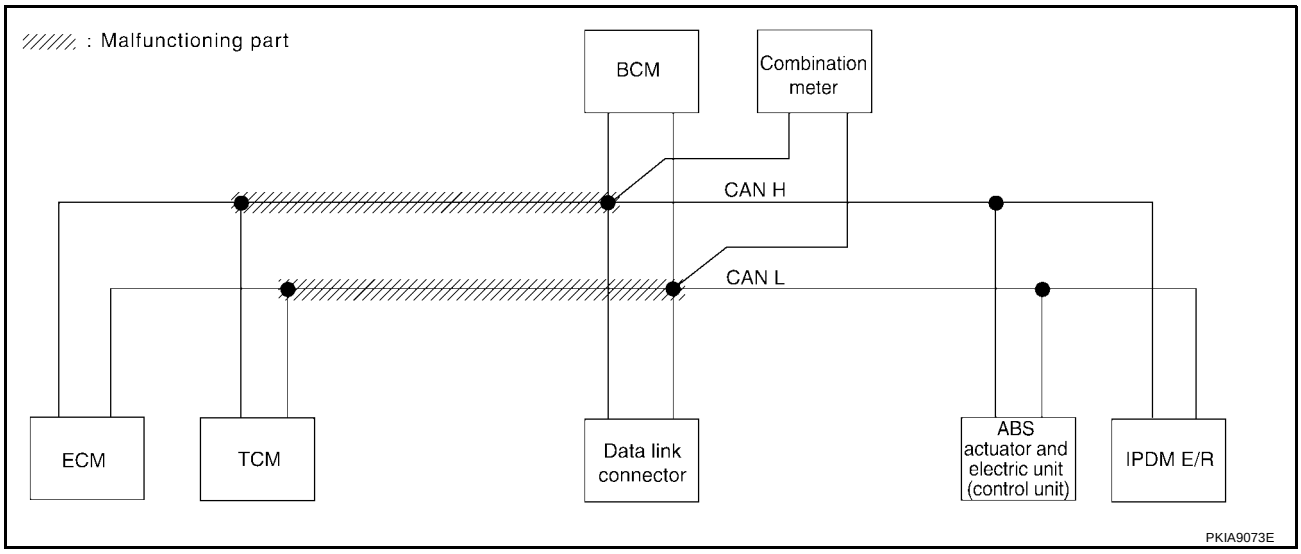
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-200, "Circuit Check Between TCM and Data Link Connector" .

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

PKIA9007E



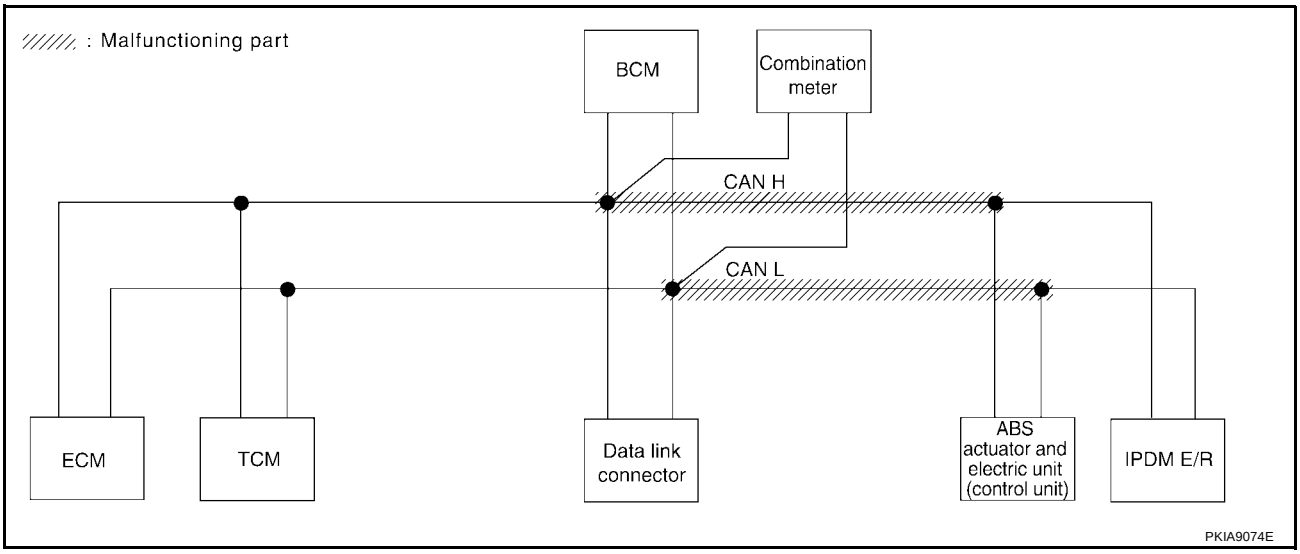
PKIA9073E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-201, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

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

PKIA9008E



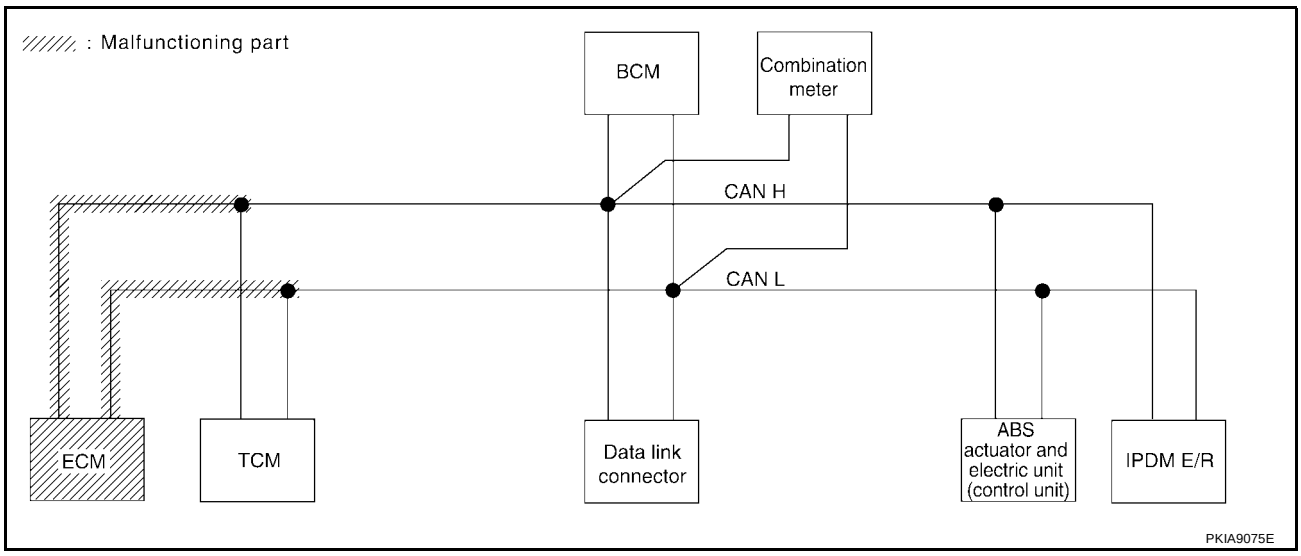
PKIA9074E

Case 3

Check ECM circuit. Refer to LAN-202, "ECM Circuit Check" .

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

PKIA9009E



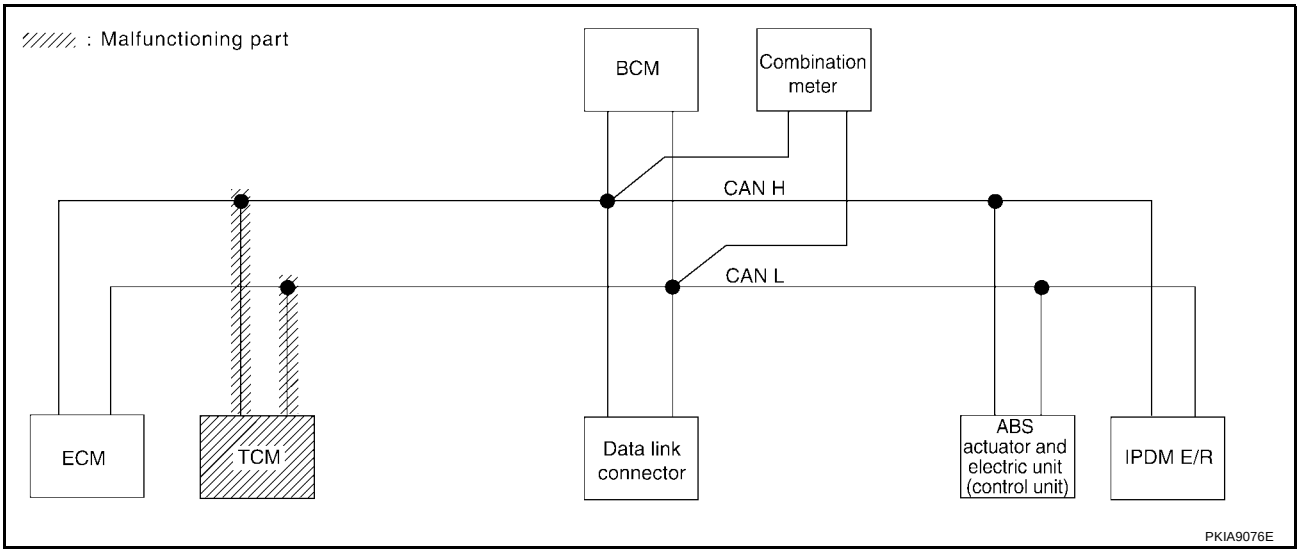
PKIA9075E

Case 4

Check TCM circuit. Refer to LAN-202, "TCM Circuit Check" .

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

PKIA9010E

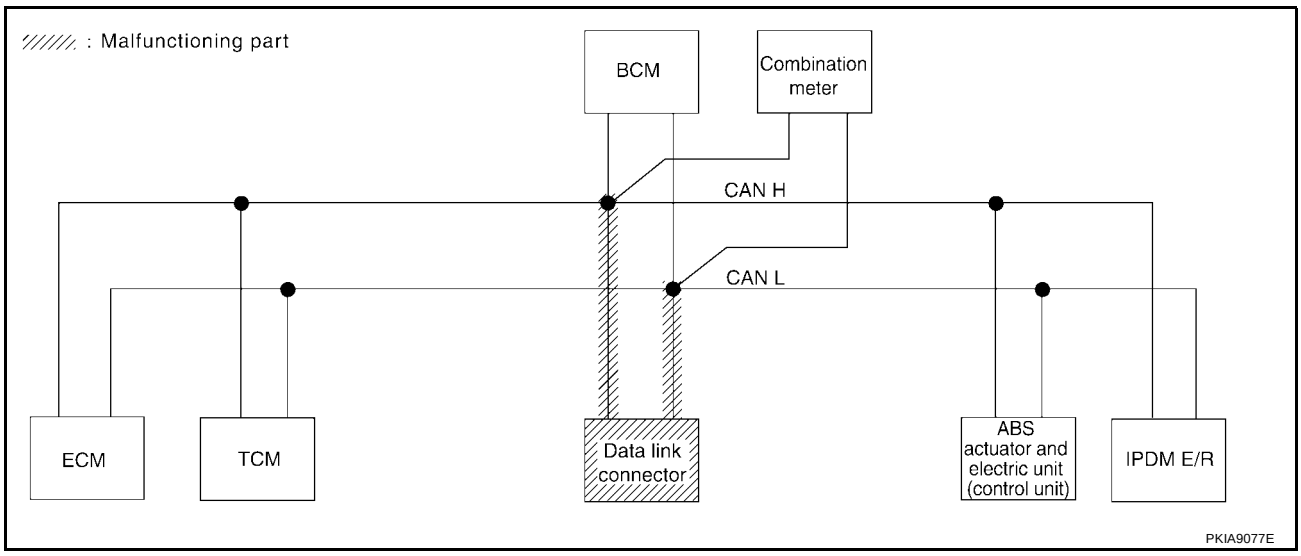


Case 5

Check data link connector circuit. Refer to LAN-203, "Data Link Connector Circuit Check" .

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

PKIA9011E



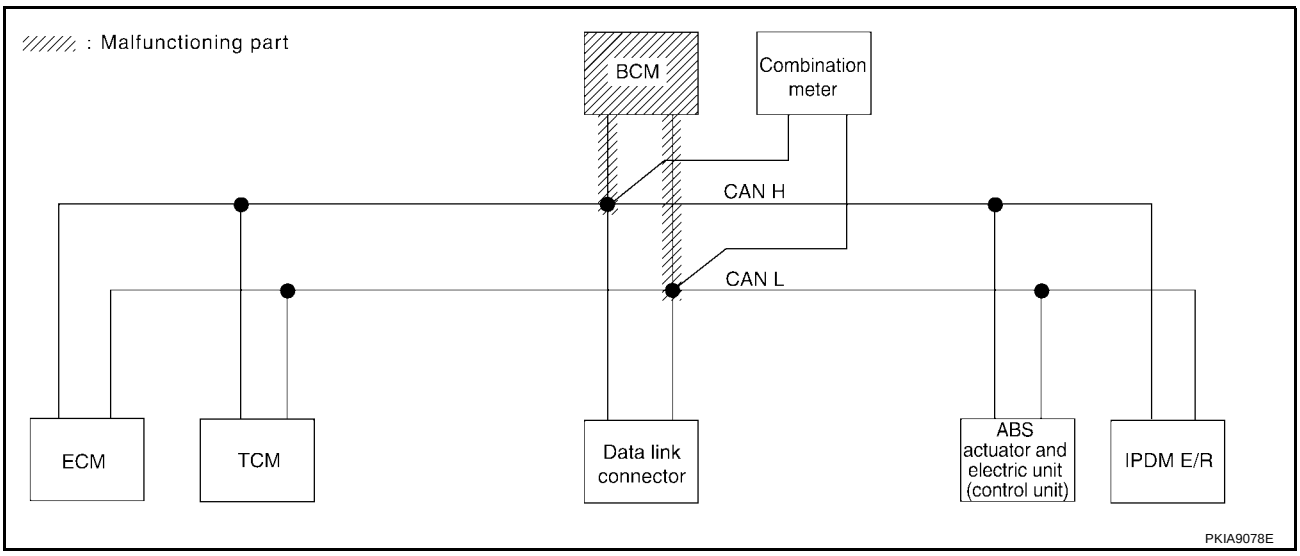
PKIA9077E

Case 6

Check BCM circuit. Refer to LAN-203, "BCM Circuit Check" .

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

PKIA9012E



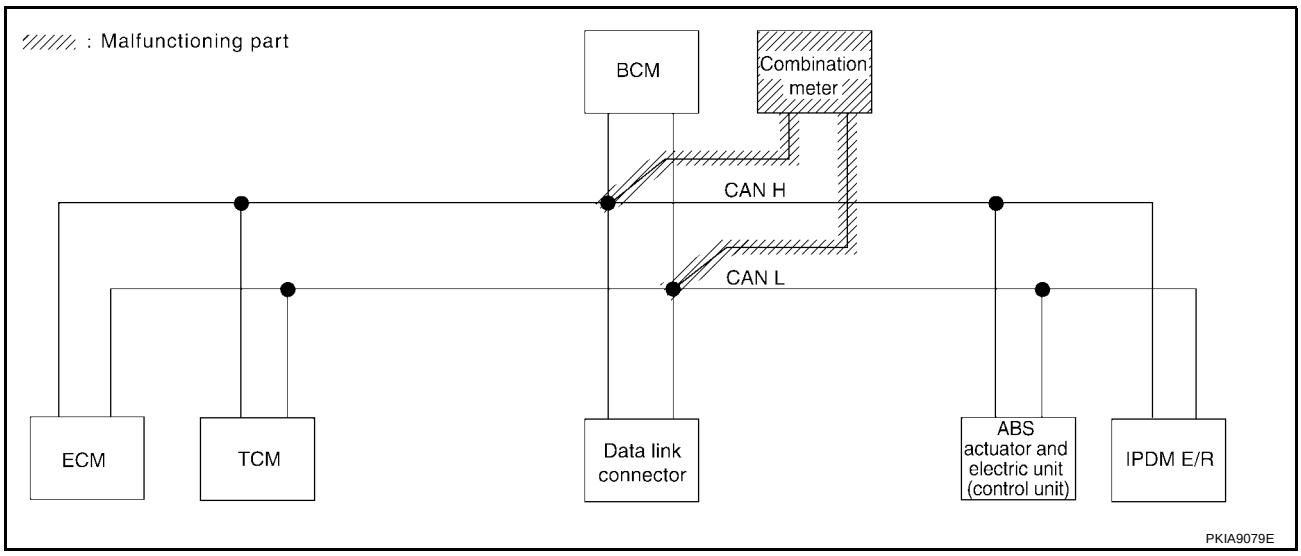
PKIA9078E

Case 7

Check combination meter circuit. Refer to LAN-204, "Combination Meter Circuit Check" .

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

PKIA9013E



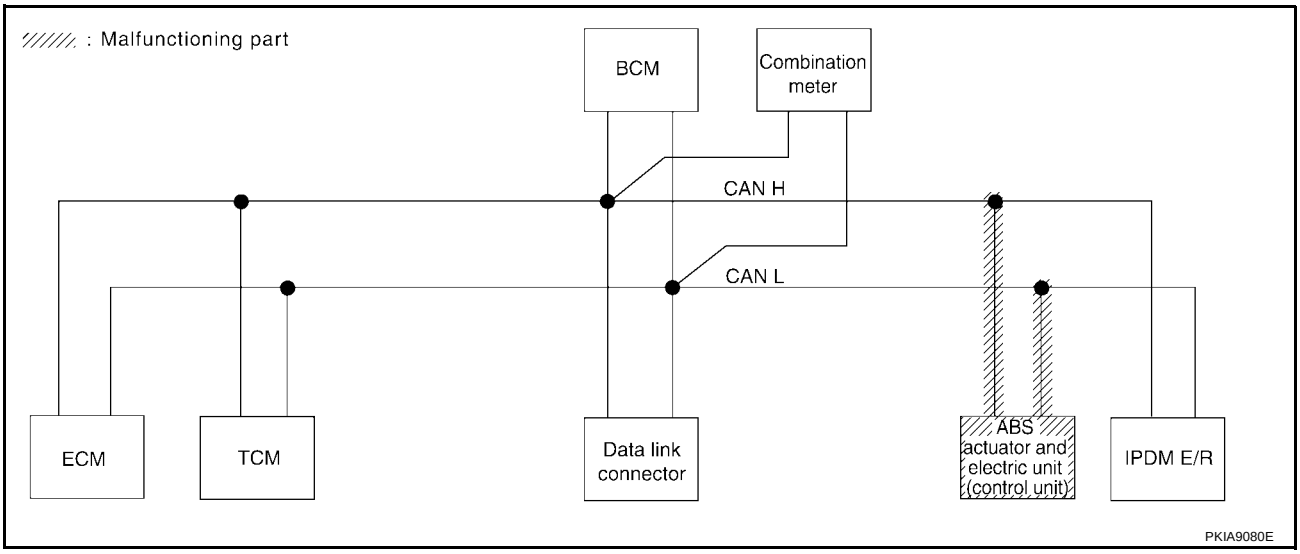
PKIA9079E

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-204, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

PKIA9014E



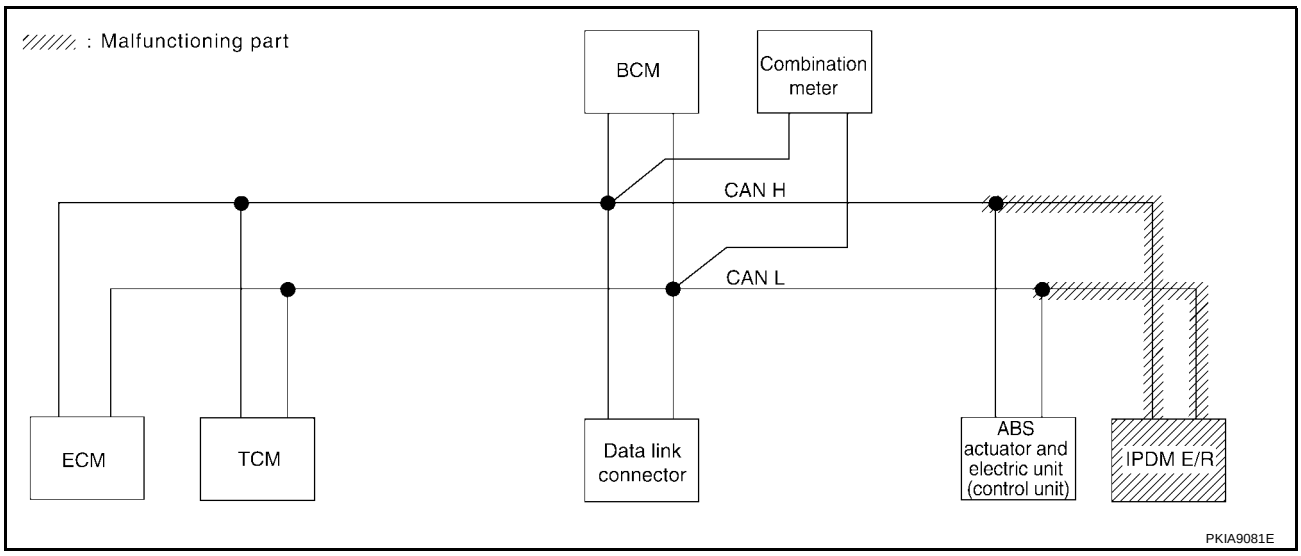
PKIA9080E

Case 9

Check IPDM E/R circuit. Refer to LAN-205, "IPDM E/R Circuit Check" .

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

PKIA9015E



PKIA9081E

Case 10

Check CAN communication circuit. Refer to LAN-206, "CAN Communication Circuit Check" .

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

PKIA9016E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-209, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA9017E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-209, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA9018E

Circuit Check Between TCM and Data Link Connector

UKS001SH

1. CHECK CONNECTOR

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

- Harness connector F59
- Harness connector M71

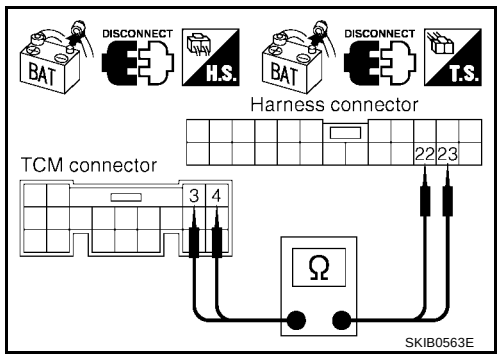
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 3 (L), 4 (P) and harness connector F59 terminals 23 (L), 22 (P).

3 (L) - 23 (L) : Continuity should exist.
4 (P) - 22 (P) : Continuity should exist.



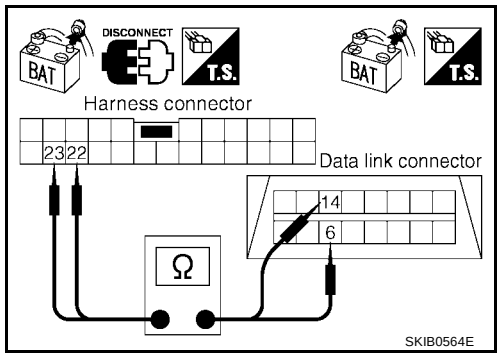
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M71 terminals 23 (L), 22 (P) and data link connector M22 terminals 6 (L), 14 (P).

23 (L) - 6 (L) : Continuity should exist.
22 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

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

UKS001SI

1. CHECK CONNECTOR

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

- Harness connector M7
- Harness connector E28

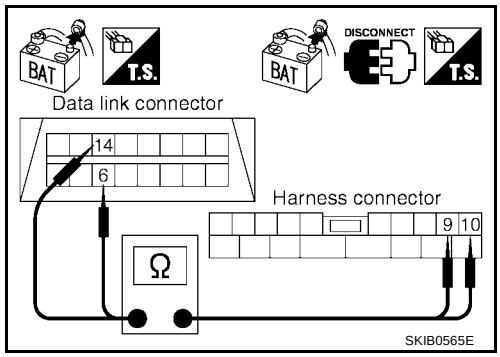
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M7 terminals 10 (L), 9 (P).

6 (L) - 10 (L) : Continuity should exist.
14 (P) - 9 (P) : Continuity should exist.



OK or NG

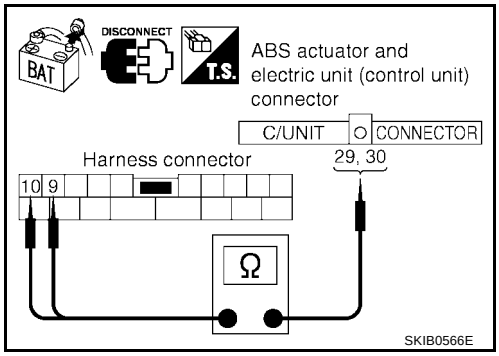
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E28 terminals 10 (L), 9 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L), 29 (P).

10 (L) - 30 (L) : Continuity should exist.

9 (P) - 29 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness.

ECM Circuit Check

UKS001SJ

1. CHECK CONNECTOR

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

OK or NG

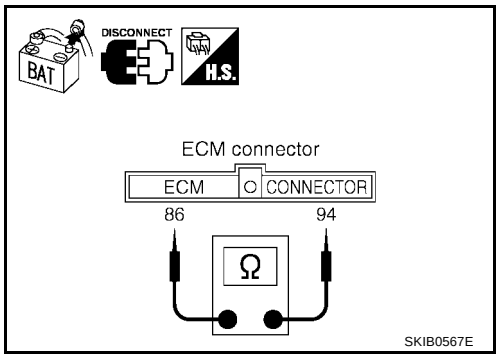
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.

NG >> Repair harness between harness connector F59 and ECM.

TCM Circuit Check

UKS001SK

1. CHECK CONNECTOR

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

OK or NG

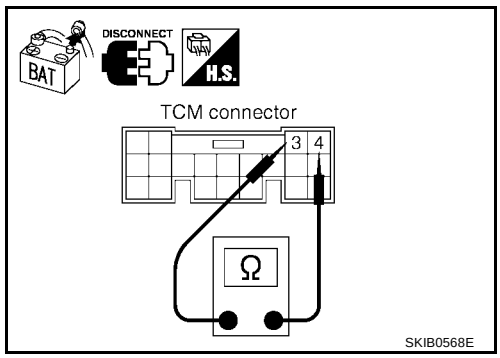
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between harness connector F59 and TCM.

Data Link Connector Circuit Check

UKS001SL

1. CHECK CONNECTOR

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

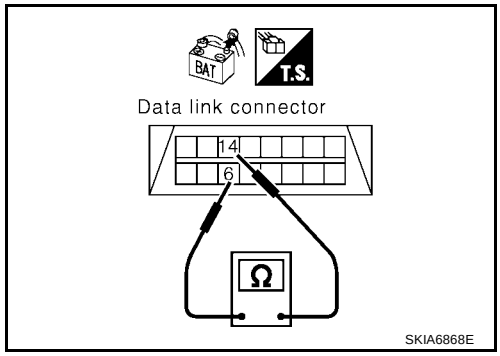
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001SM

1. CHECK CONNECTOR

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

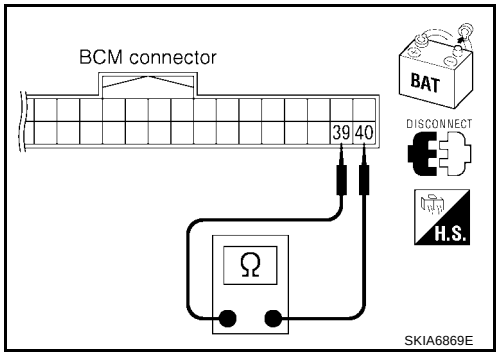
OK or NG

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 M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001SN

1. CHECK CONNECTOR

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

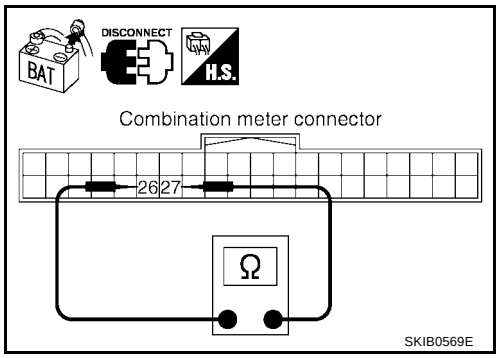
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001SO

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

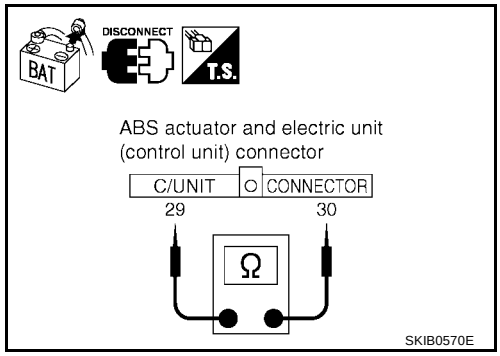
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L) and 29 (P).

30 (L) - 29 (P) : Approx. 54 - 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between harness connector E28 and ABS actuator and electric unit (control unit).



IPDM E/R Circuit Check

UKS001SP

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

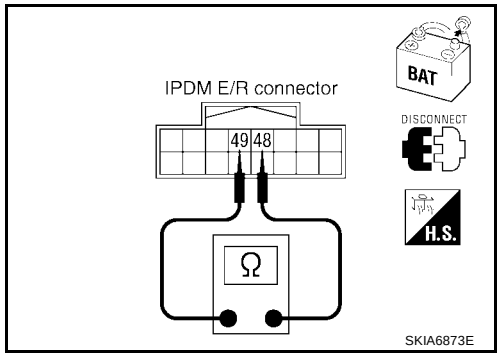
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between harness connector E28 and IPDM E/R.



CAN Communication Circuit Check

UKS001SQ

1. CHECK CONNECTOR

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

- ECM
- TCM
- BCM
- Combination meter
- 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.

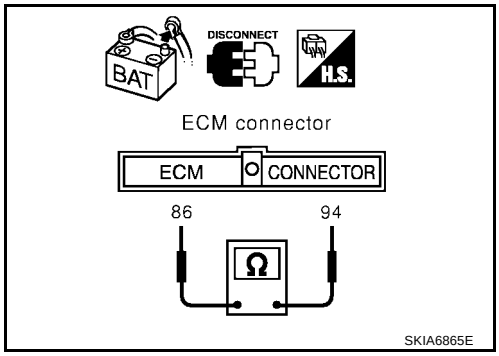
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- TCM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 terminals 94 (L) and 86 (P).

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



OK or NG

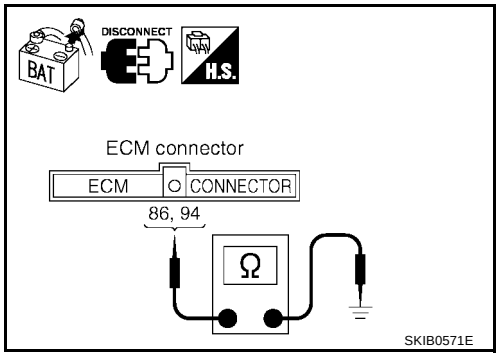
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 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.

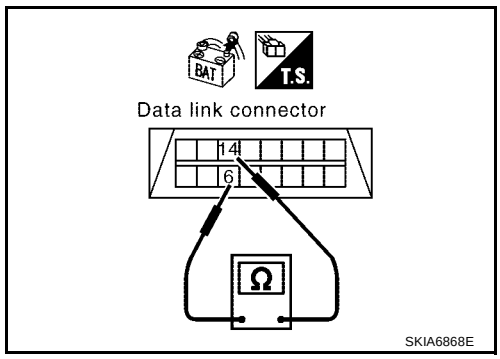
- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- BCM connector
- Combination meter connector
- Harness connector M7

2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

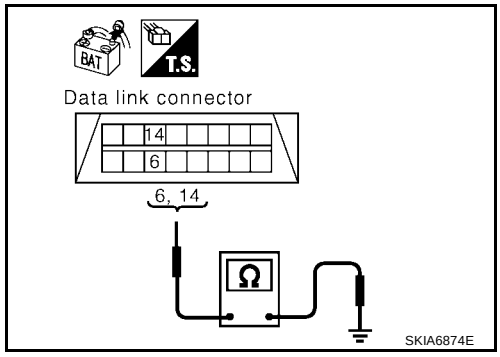
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

14 (P) - Ground : Continuity should not exist.



OK or NG

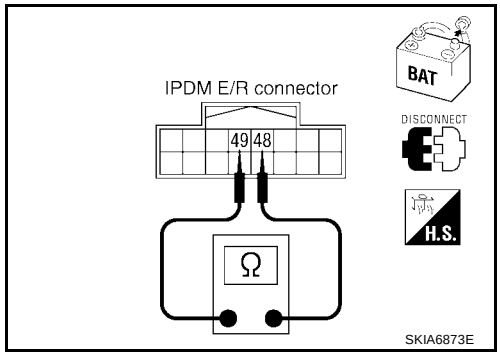
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

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 E121 terminals 48 (L) and 49 (P).

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



OK or NG

OK >> GO TO 7.

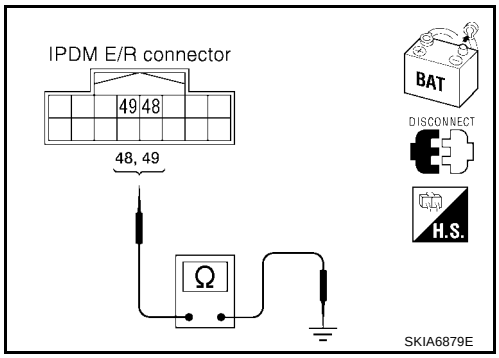
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 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.

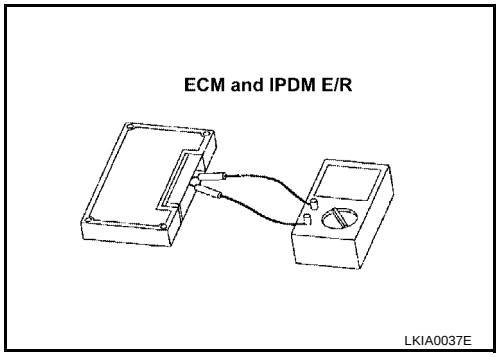
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



OK or NG

OK >> GO TO 9.

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.

NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- TCM
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001SR

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

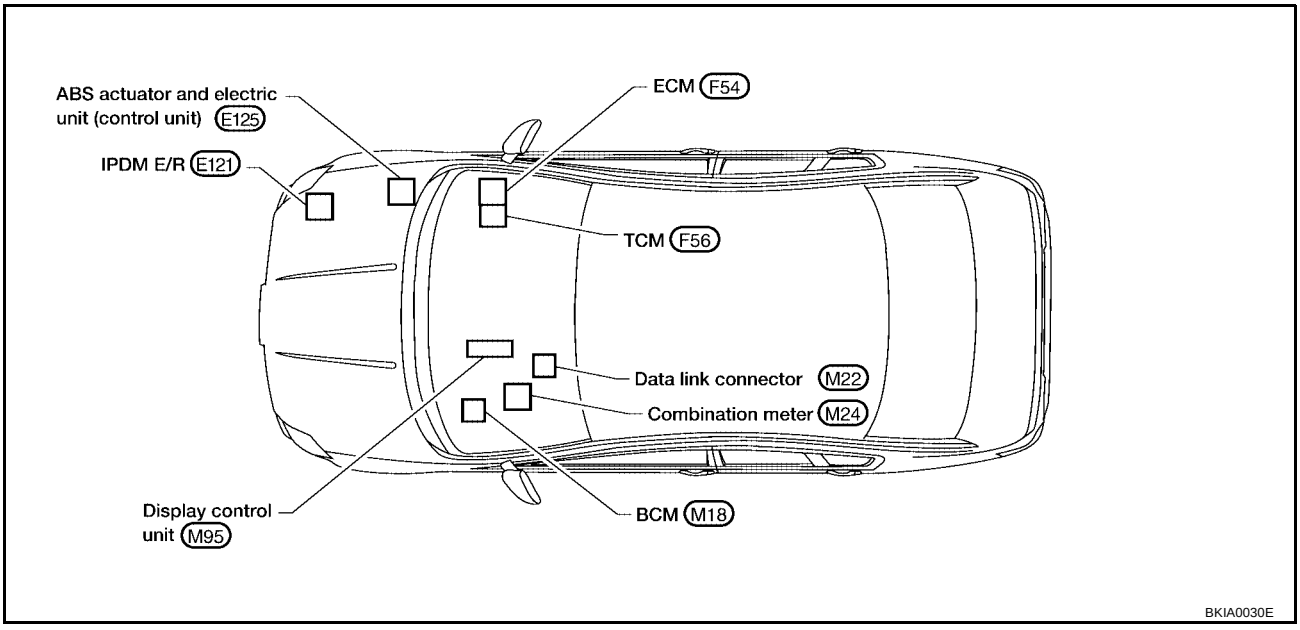
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 9)

PFP:23710

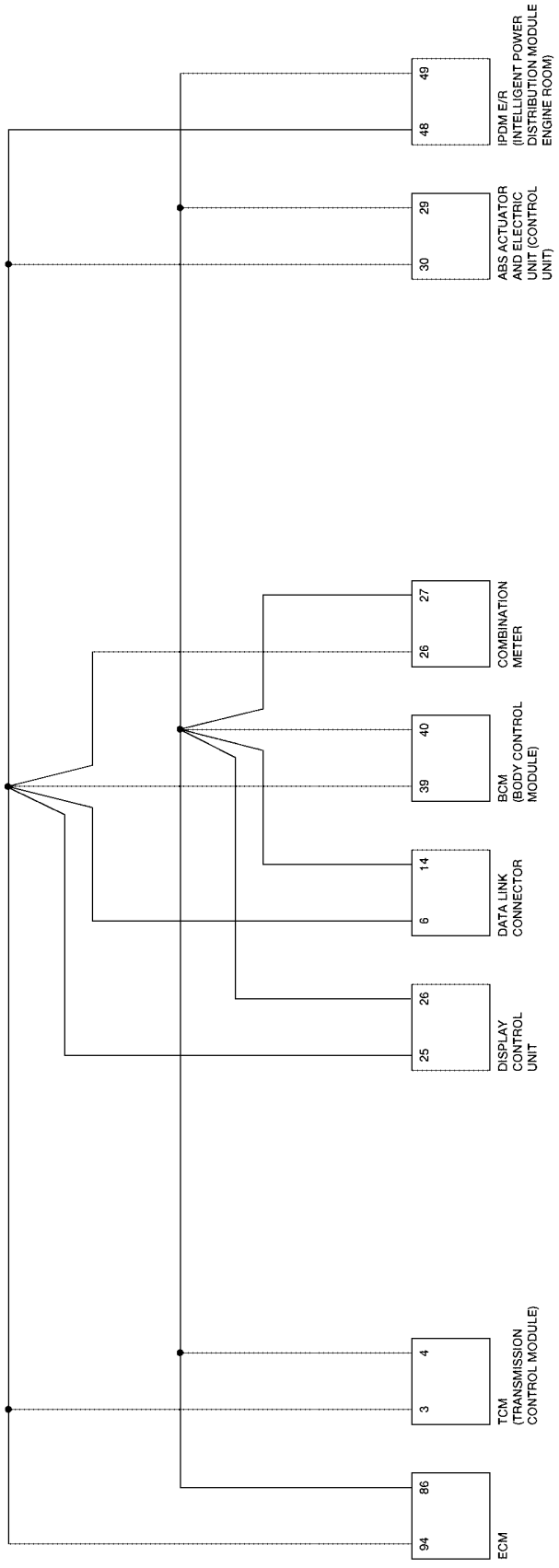
Component Parts and Harness Connector Location

UKS001SD



Schematic

UKS001RY

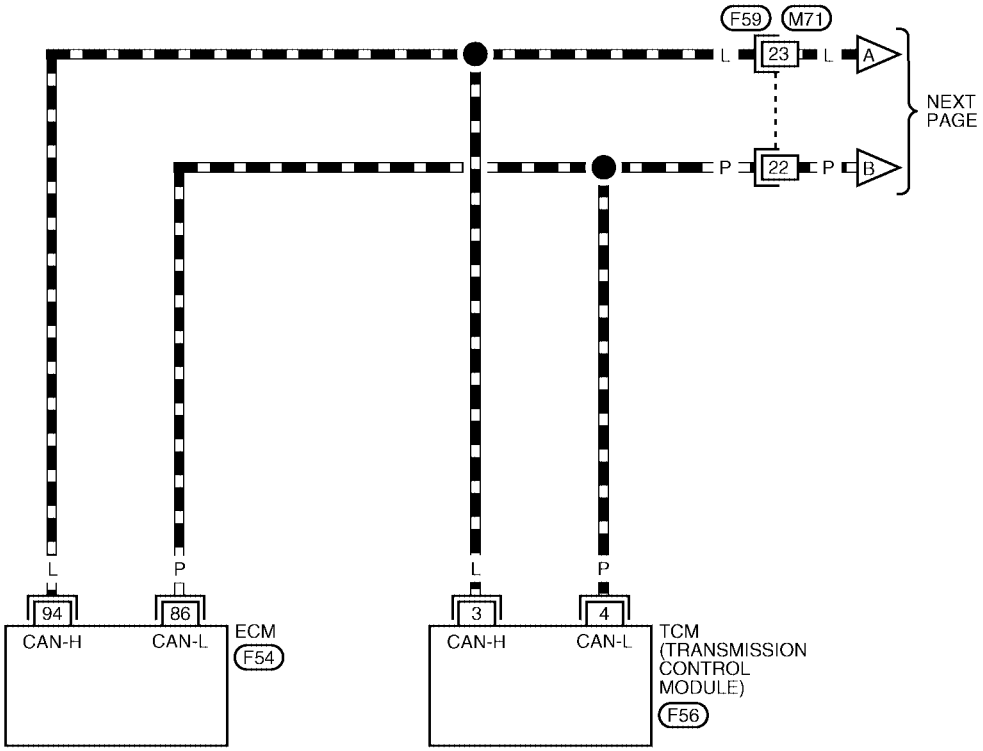


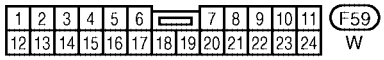
BKWA0082E

Wiring Diagram - CAN -

UKS001RZ

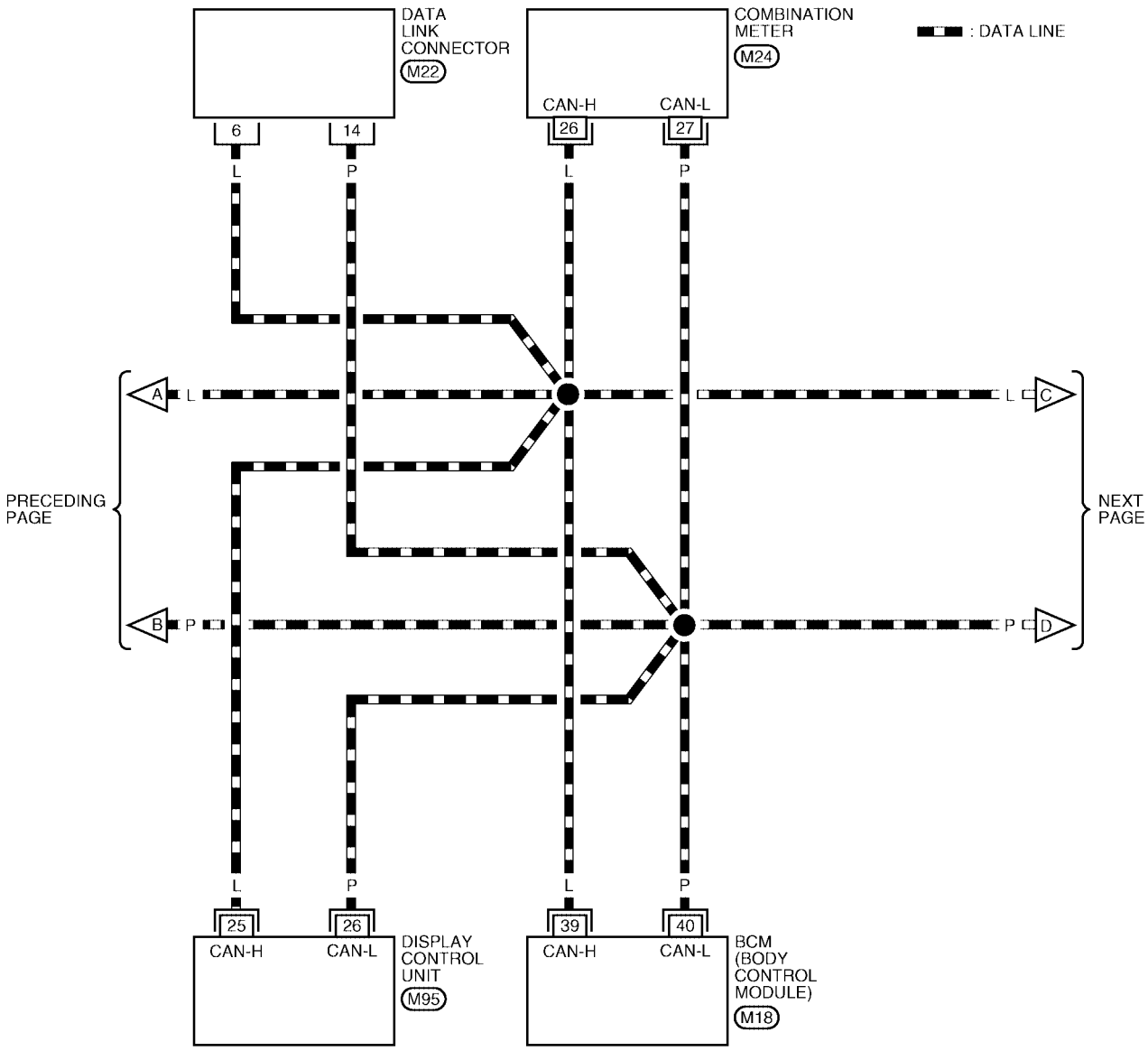
LAN-CAN-25

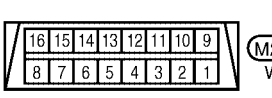


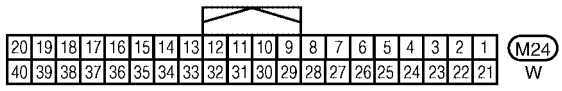


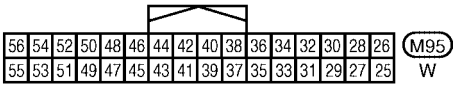
REFER TO THE FOLLOWING.
F54 , F56 - ELECTRICAL UNITS

BKWA0083E





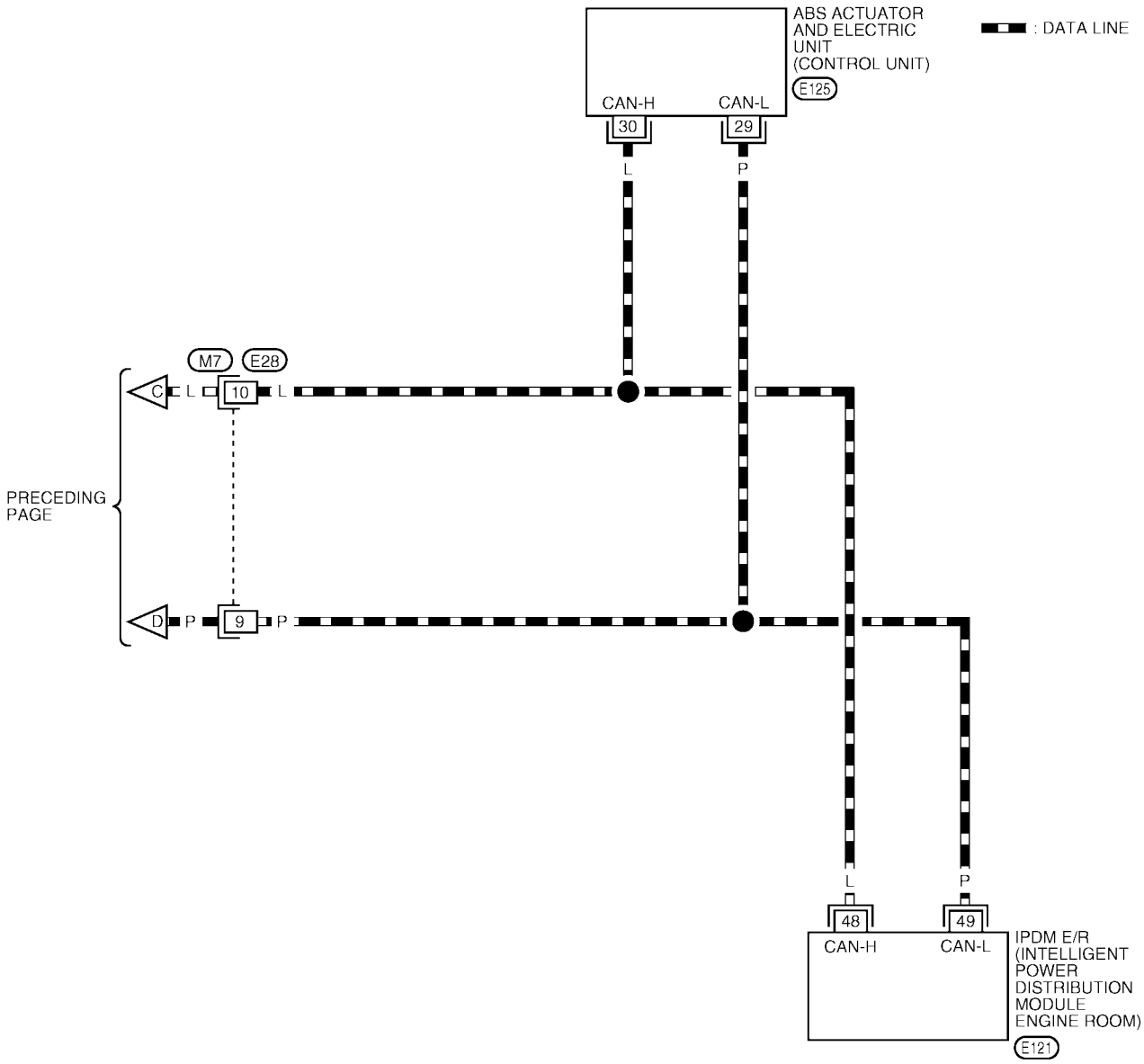




REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0084E

LAN-CAN-27



REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0085E

CHECK SHEET

UKS001RO

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	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
TRANSMISSION	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
Display control unit	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	–
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 :

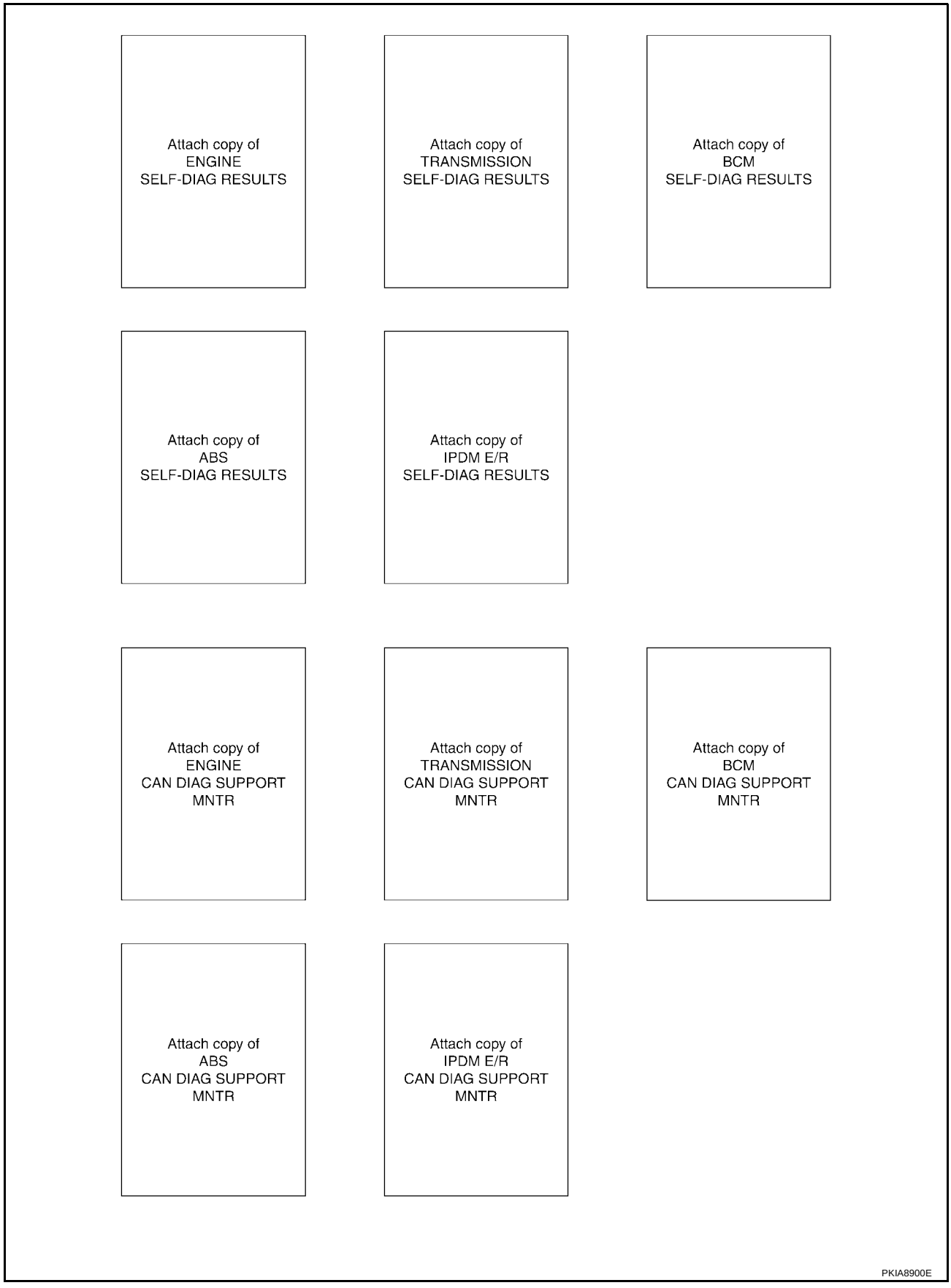
Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Display control unit Translation Sheet: Rewrite the following names, and put a check mark on the above check sheet table.			
Confirmation/Adjustment Display	Check sheet table Display	Confirmation/Adjustment Display	Check sheet table Display
CAN COMM	Initial diagnosis	CAN CIRC 5	METER/M&A
CAN CIRC 1	Transmit diagnosis	CAN CIRC 6	–
CAN CIRC 2	BCM	CAN CIRC 7	IPDM E/R
CAN CIRC 3	ECM	CAN CIRC 8	–
CAN CIRC 4	–	CAN CIRC 9	–

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA8894E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
TRANSMISSION
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
TRANSMISSION
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
PKIA8900E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

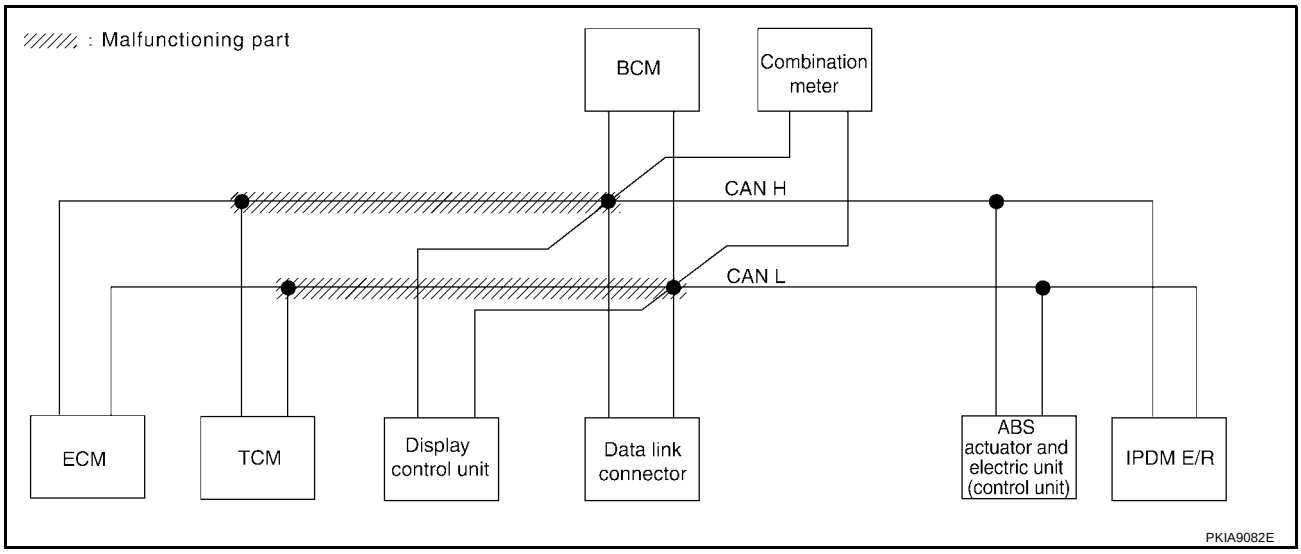
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-227, "Circuit Check Between TCM and Data Link Connector" .

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

PKIA9019E



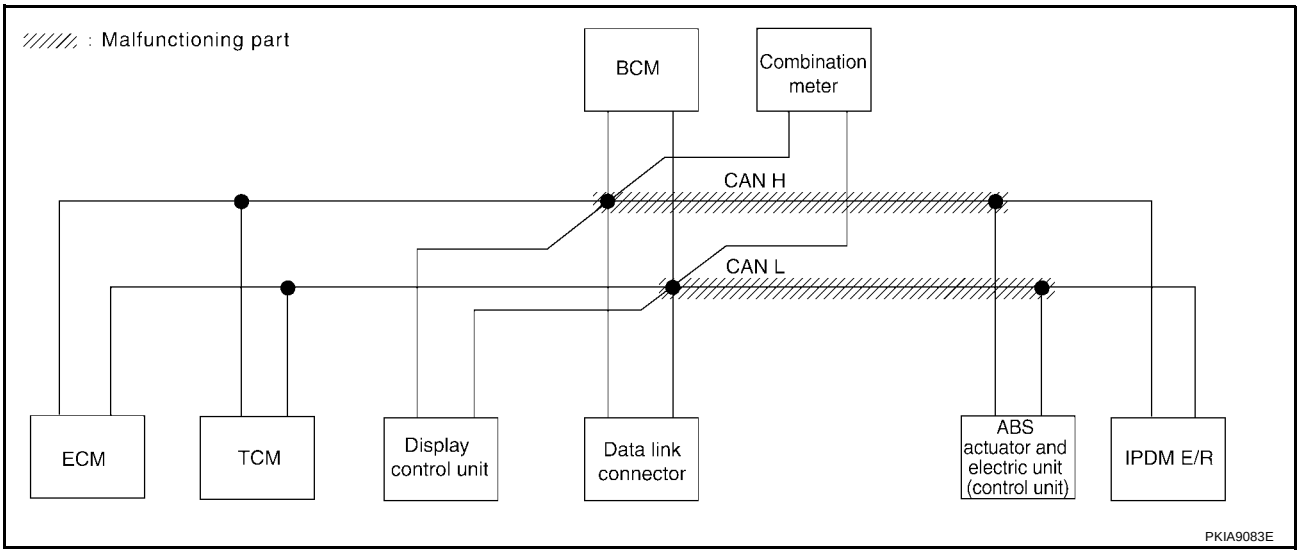
PKIA9082E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-228, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

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

PKIA9020E

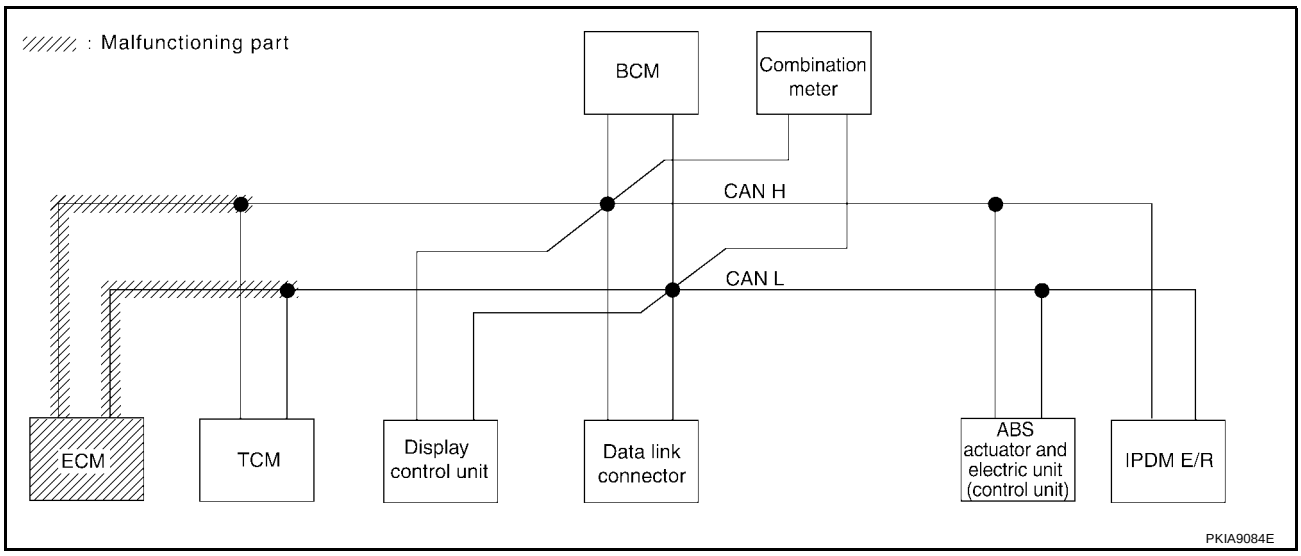


Case 3

Check ECM circuit. Refer to LAN-229, "ECM Circuit Check" .

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

PKIA9021E



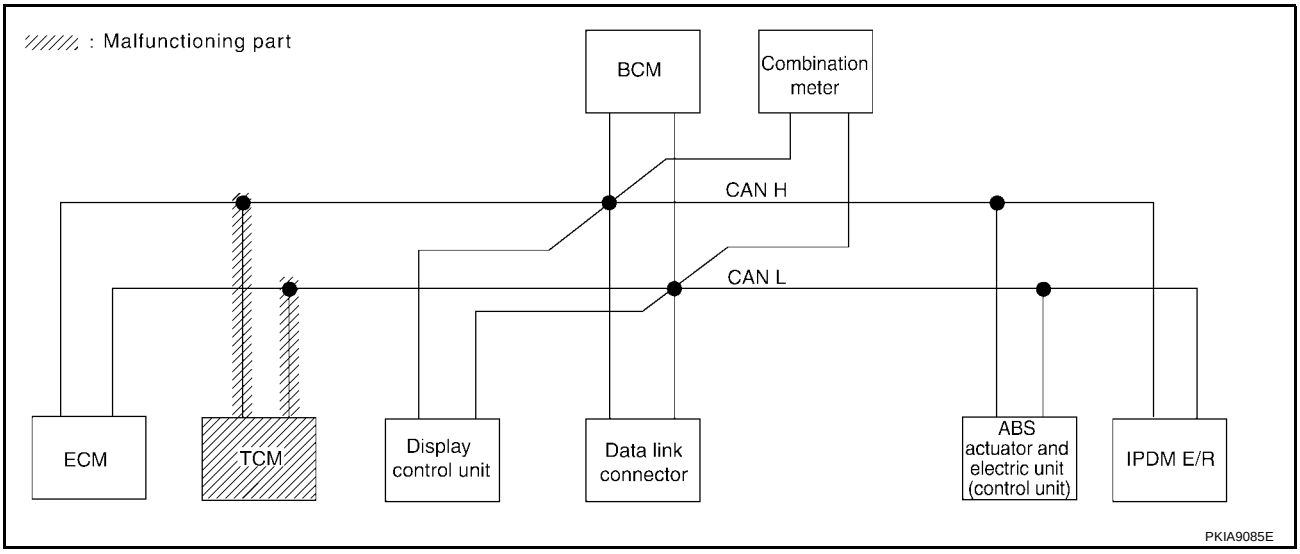
PKIA9084E

Case 4

Check TCM circuit. Refer to LAN-229, "TCM Circuit Check" .

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

PKIA9022E

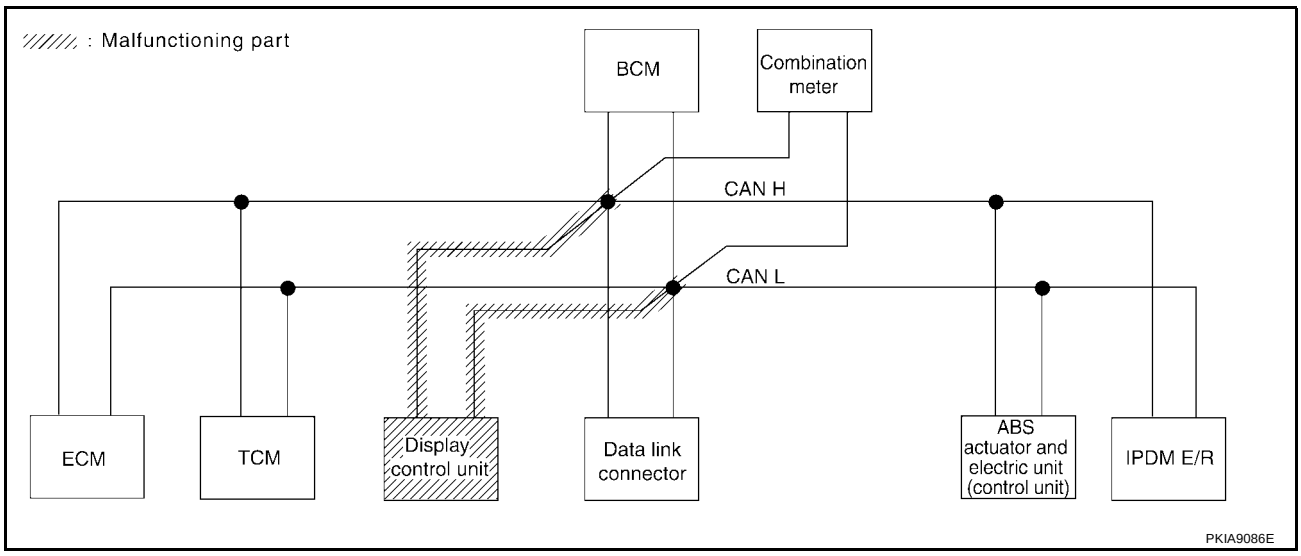


Case 5

Check display control unit circuit. Refer to LAN-230, "Display Control Unit Circuit Check" .

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

PKIA9023E



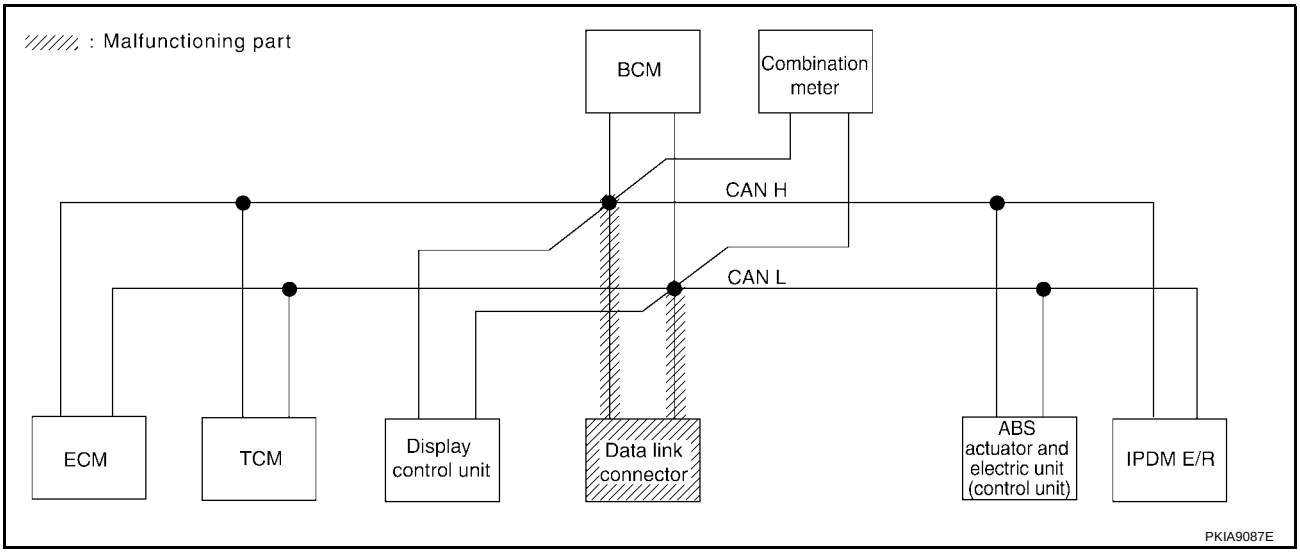
PKIA9086E

Case 6

Check data link connector circuit. Refer to LAN-230, "Data Link Connector Circuit Check" .

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

PKIA9024E



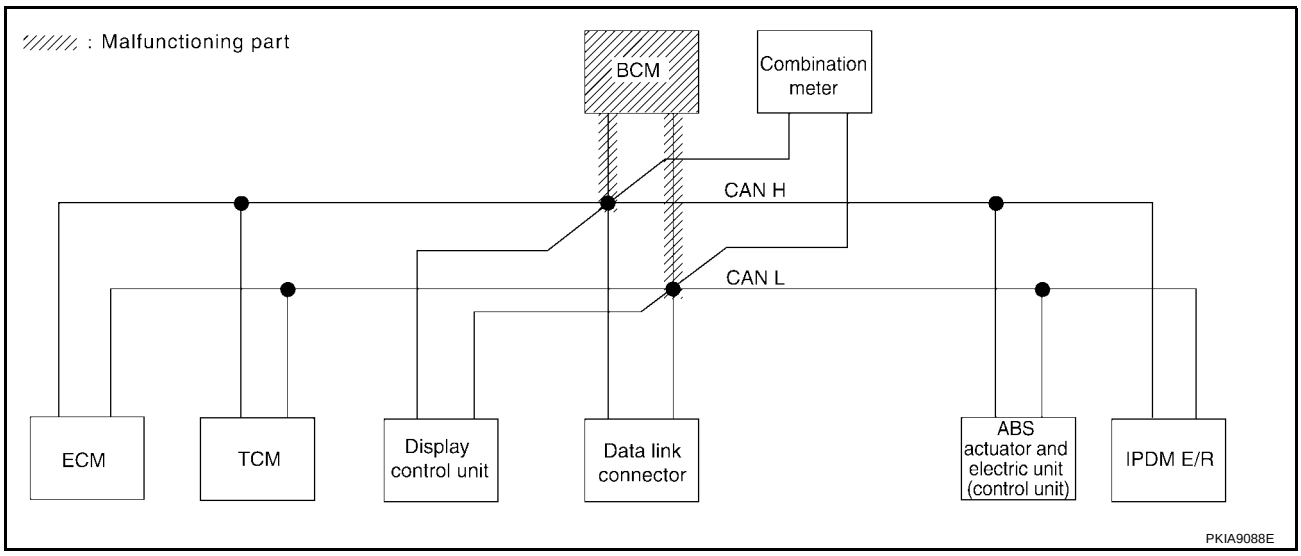
PKIA9087E

Case 7

Check BCM circuit. Refer to LAN-231, "BCM Circuit Check" .

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

PKIA9025E



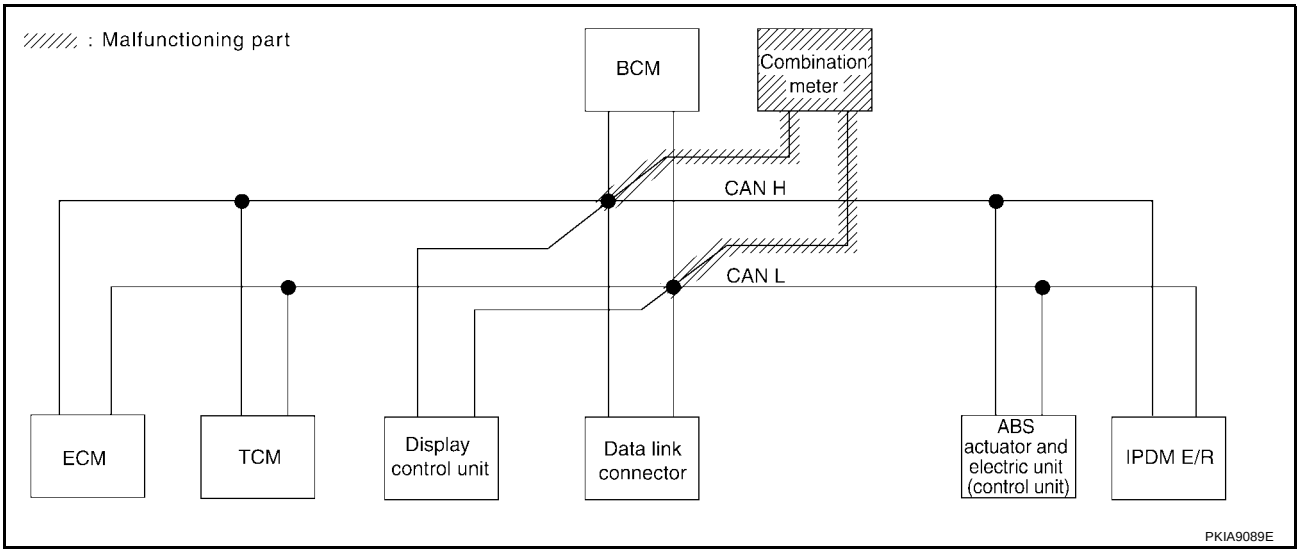
PKIA9088E

Case 8

Check combination meter circuit. Refer to LAN-231, "Combination Meter Circuit Check" .

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

PKIA9026E

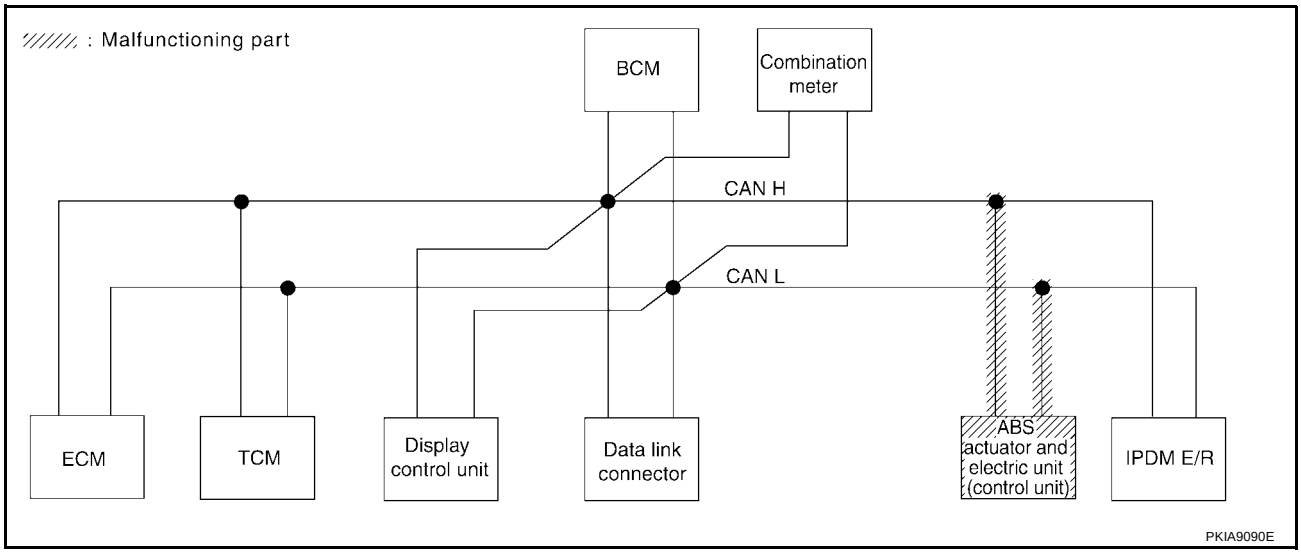


Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-232, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

PKIA9027E

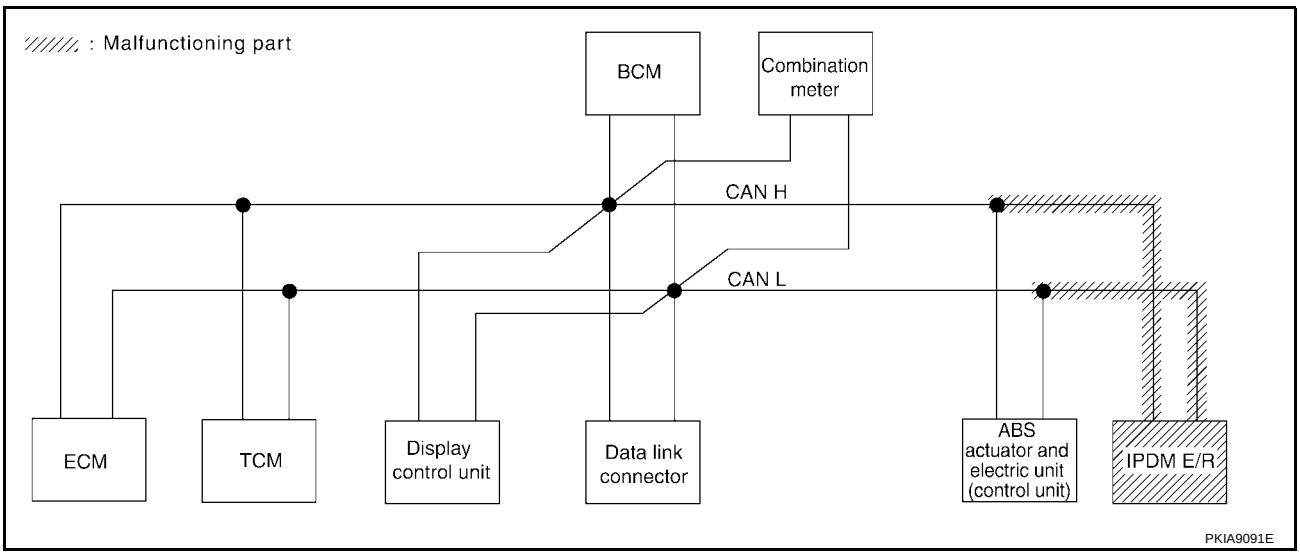


Case 10

Check IPDM E/R circuit. Refer to LAN-232, "IPDM E/R Circuit Check" .

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

PKIA9028E



PKIA9091E

Case 11

Check CAN communication circuit. Refer to LAN-233, "CAN Communication Circuit Check" .

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

PKIA9029E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-236, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA9030E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-236, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA9031E

Circuit Check Between TCM and Data Link Connector

UKS001S0

1. CHECK CONNECTOR

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

- Harness connector F59
- Harness connector M71

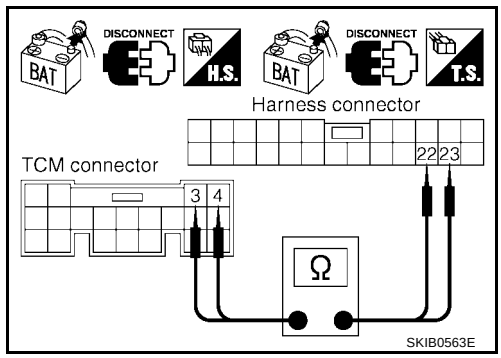
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 3 (L), 4 (P) and harness connector F59 terminals 23 (L), 22 (P).

3 (L) - 23 (L) : Continuity should exist.
4 (P) - 22 (P) : Continuity should exist.



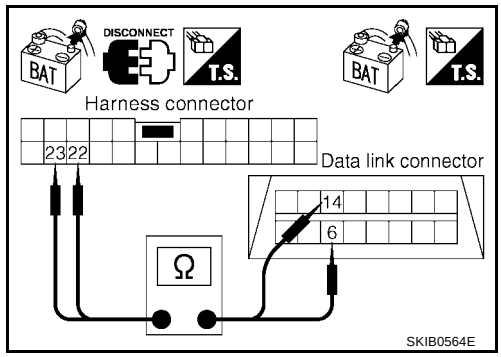
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M71 terminals 23 (L), 22 (P) and data link connector M22 terminals 6 (L), 14 (P).

23 (L) - 6 (L) : Continuity should exist.
22 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

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

UKS001S1

1. CHECK CONNECTOR

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

- Harness connector M7
- Harness connector E28

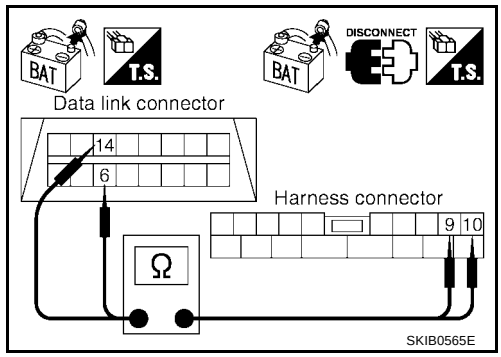
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M7 terminals 10 (L), 9 (P).

6 (L) - 10 (L) : Continuity should exist.
14 (P) - 9 (P) : Continuity should exist.



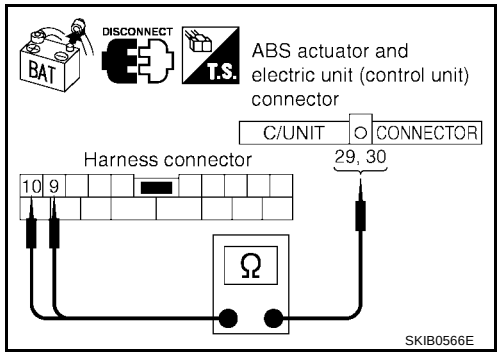
OK or NG

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 E28 terminals 10 (L), 9 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L), 29 (P).

10 (L) - 30 (L) : Continuity should exist.
9 (P) - 29 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.

ECM Circuit Check

UKS001S2

1. CHECK CONNECTOR

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

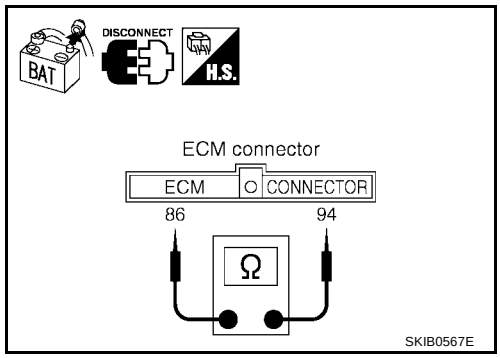
OK or NG

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 F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between harness connector F59 and ECM.

TCM Circuit Check

UKS001S3

1. CHECK CONNECTOR

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

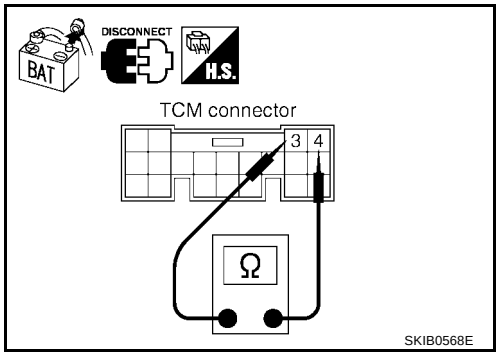
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between harness connector F59 and TCM.

Display Control Unit Circuit Check

UKS001S4

1. CHECK CONNECTOR

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

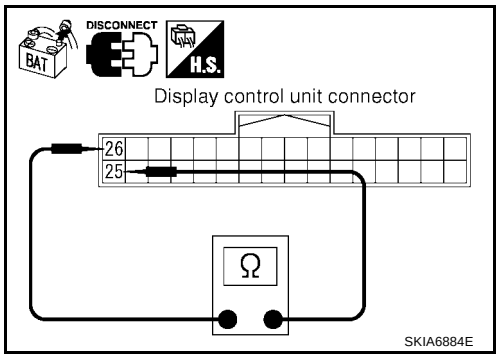
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66Ω



OK or NG

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

Data Link Connector Circuit Check

UKS001S5

1. CHECK CONNECTOR

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

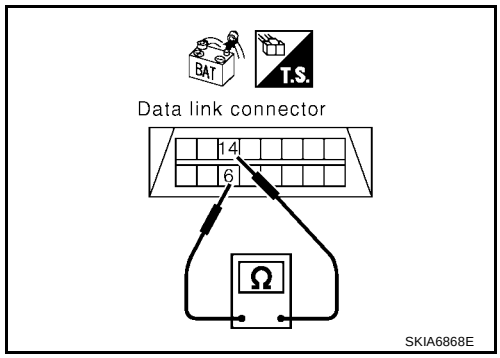
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001S6

1. CHECK CONNECTOR

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

OK or NG

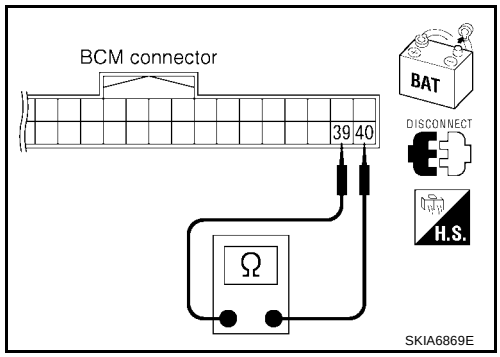
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001S7

1. CHECK CONNECTOR

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

OK or NG

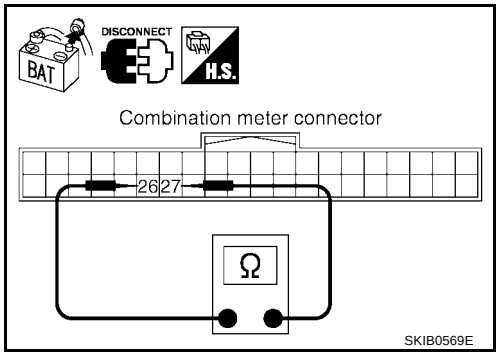
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001S8

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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).

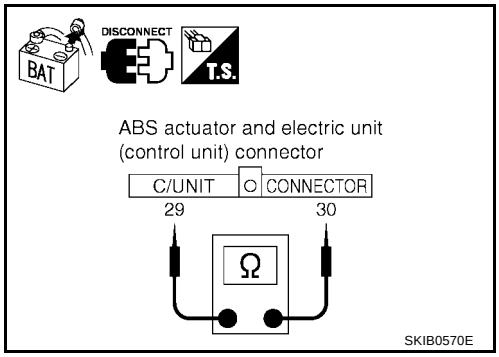
OK or NG

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 E125 terminals 30 (L) and 29 (P).

30 (L) - 29 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between harness connector E28 and ABS actuator and electric unit (control unit).

IPDM E/R Circuit Check

UKS001S9

1. CHECK CONNECTOR

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

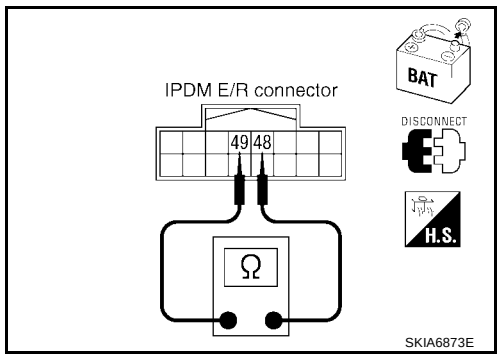
OK or NG

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 E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between harness connector E28 and IPDM E/R.

CAN Communication Circuit Check

UKS001SA

1. CHECK CONNECTOR

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

- ECM
- TCM
- Display control unit
- BCM
- Combination meter
- 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.

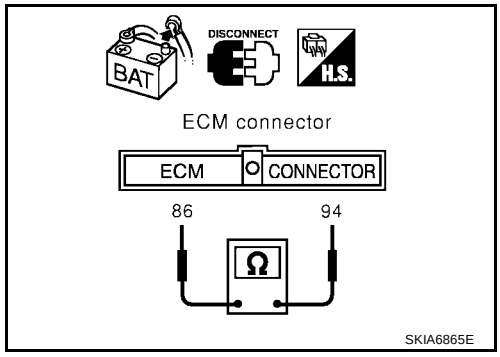
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- TCM connector
- Harness connector F59

2. Check continuity between ECM harness connector F54 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.

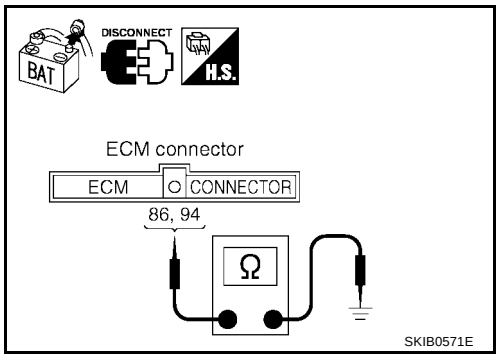
- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 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 harness connector F59
- Harness between TCM and harness connector F59

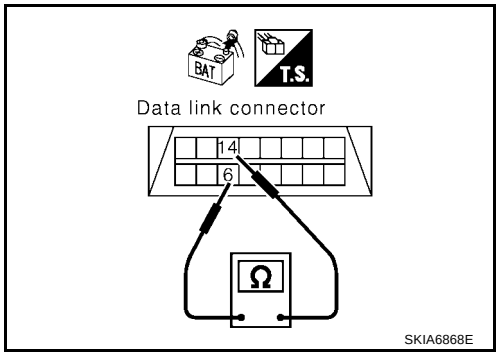
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- Display control unit connector
- BCM connector
- Combination meter connector
- Harness connector M7

2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

OK >> GO TO 5.

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

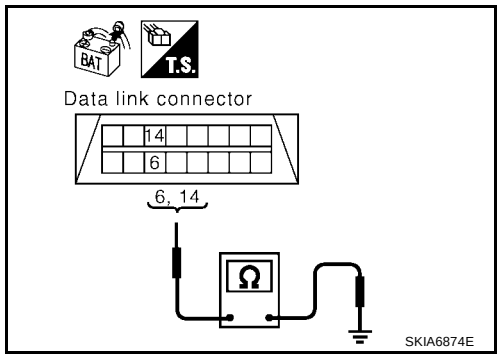
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 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.

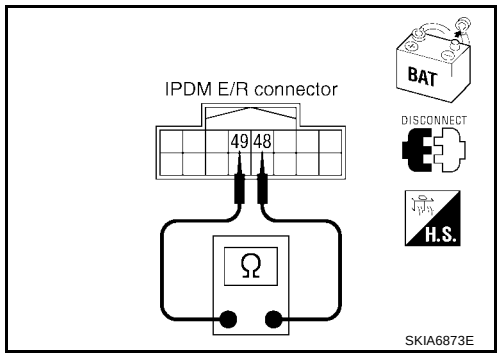
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

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 E121 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.

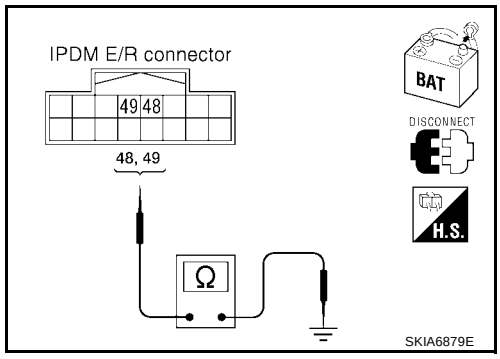
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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

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



OK or NG

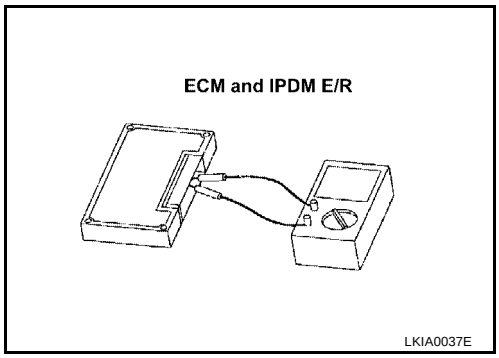
OK >> GO TO 8.

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

- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	

OK or NG

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- TCM
- Display control unit
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001SB

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

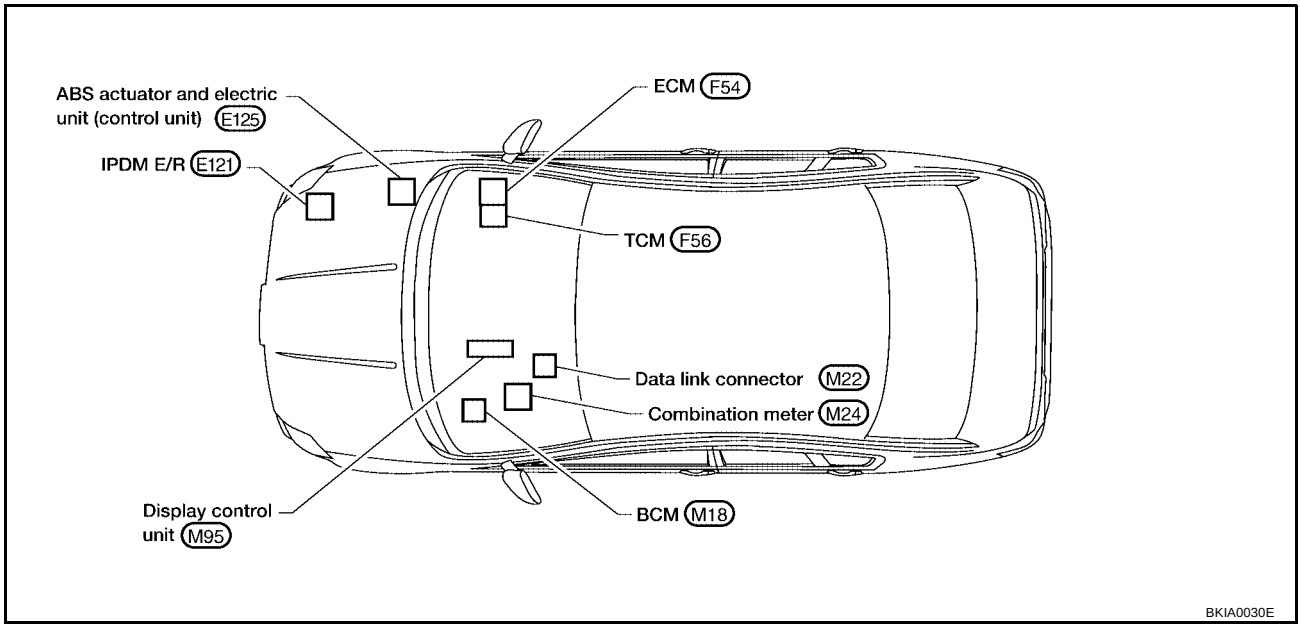
- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 10)

PFP:23710

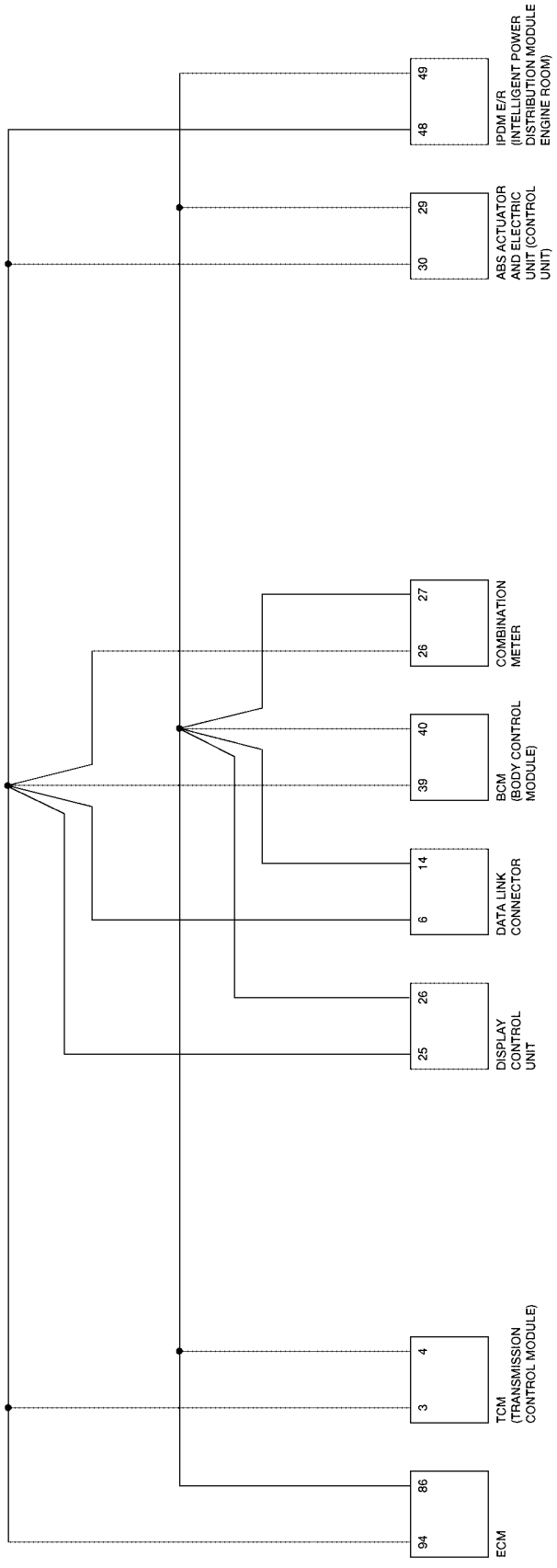
Component Parts and Harness Connector Location

UKS001SC



Schematic

UKS001R8

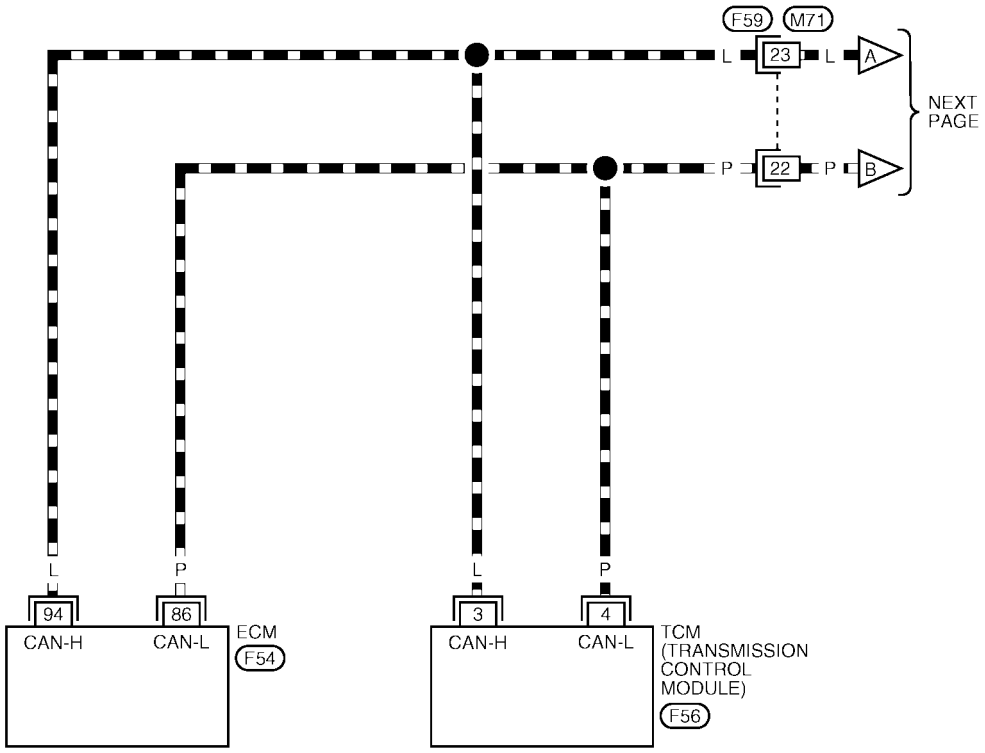


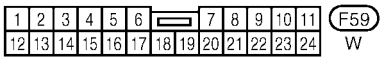
BKWA0082E

Wiring Diagram - CAN -

UKS001R9

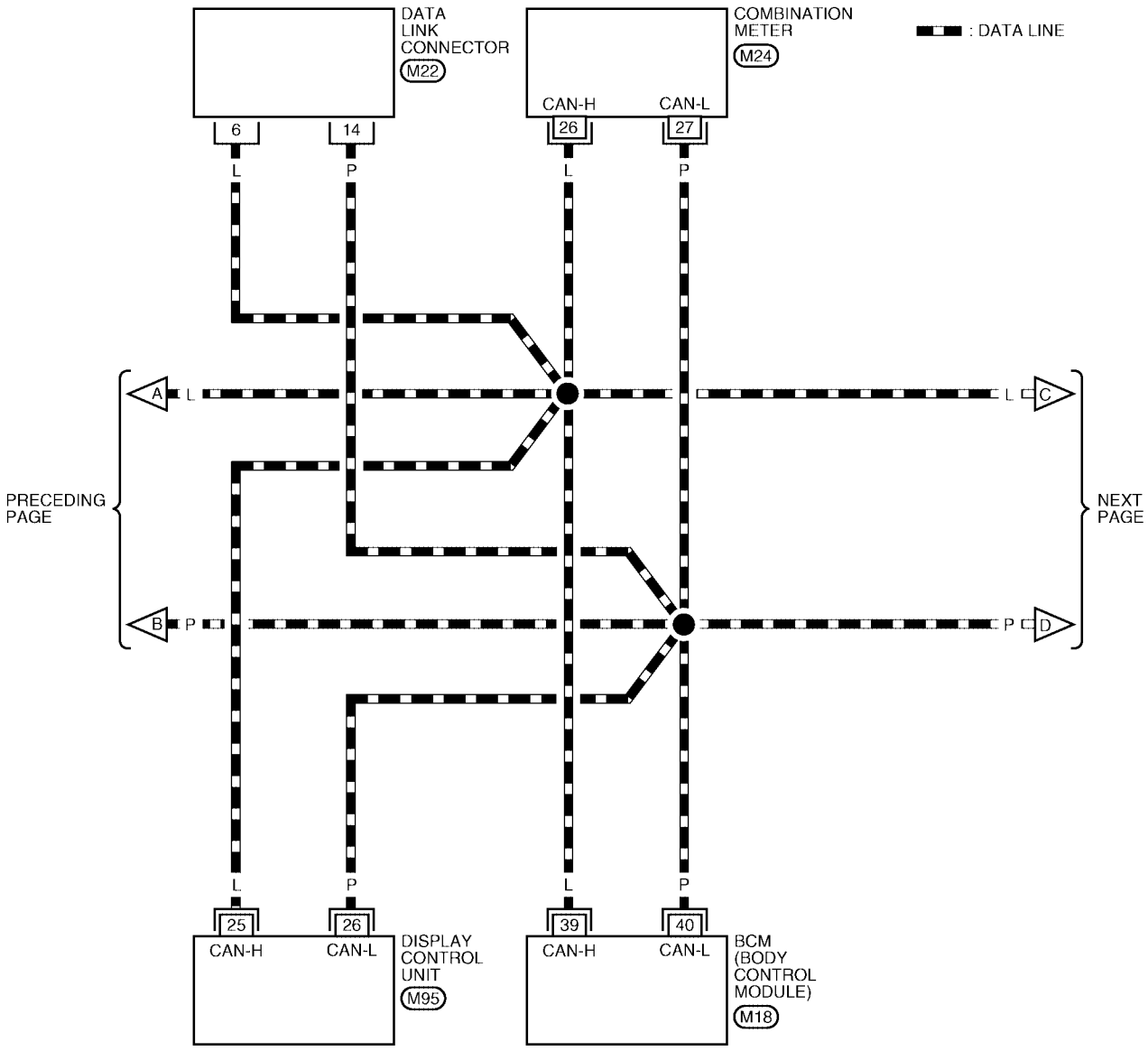
LAN-CAN-28

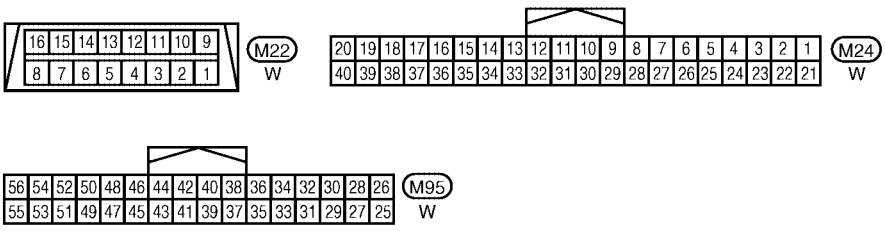




REFER TO THE FOLLOWING.
F54 , F56 - ELECTRICAL UNITS

BKWA0195E

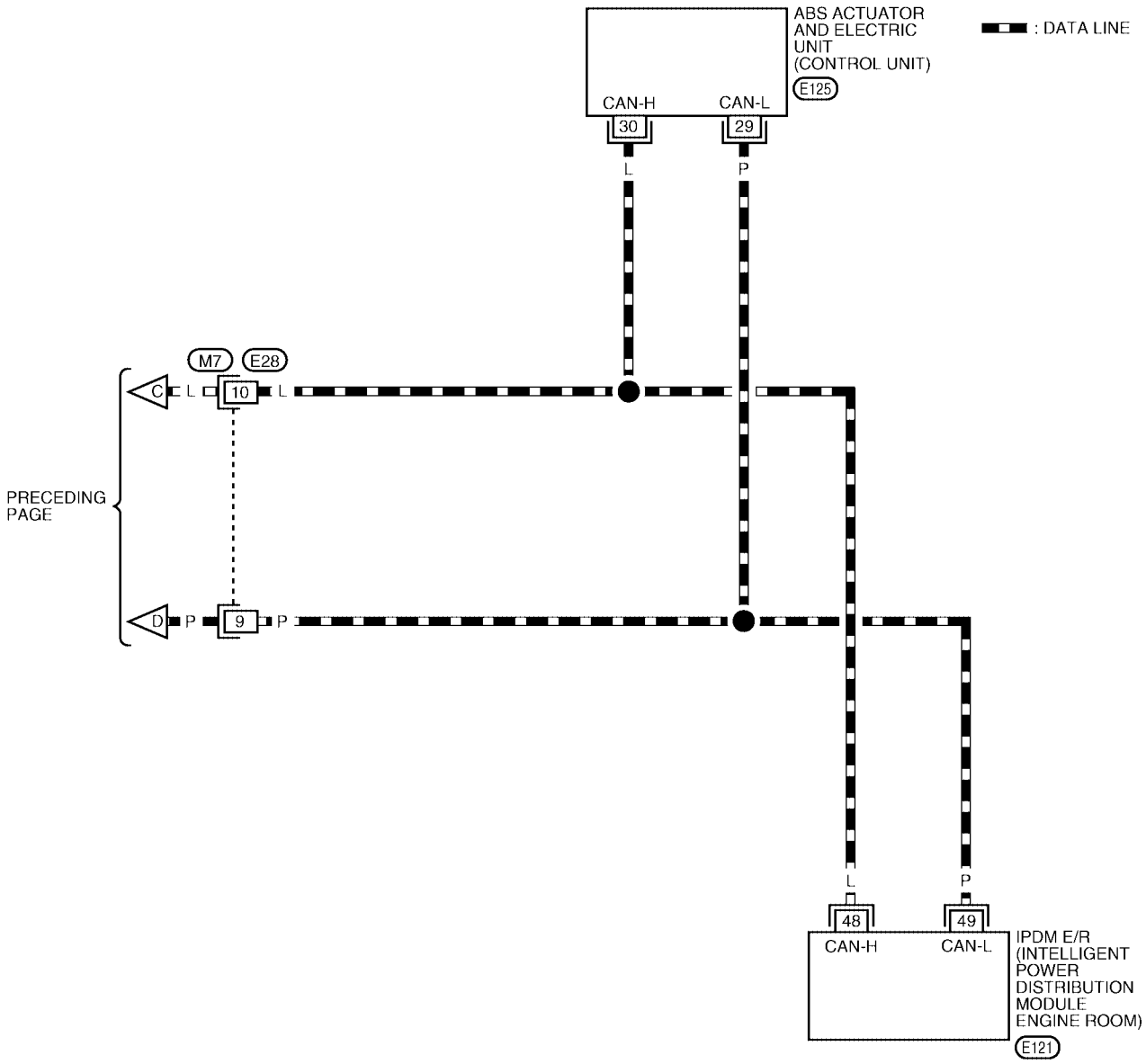


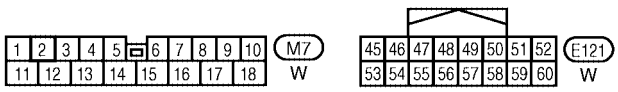


REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

BKWA0196E

LAN-CAN-30





REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0197E

CHECK SHEET

UKS001RA

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	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
TRANSMISSION	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—
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 :

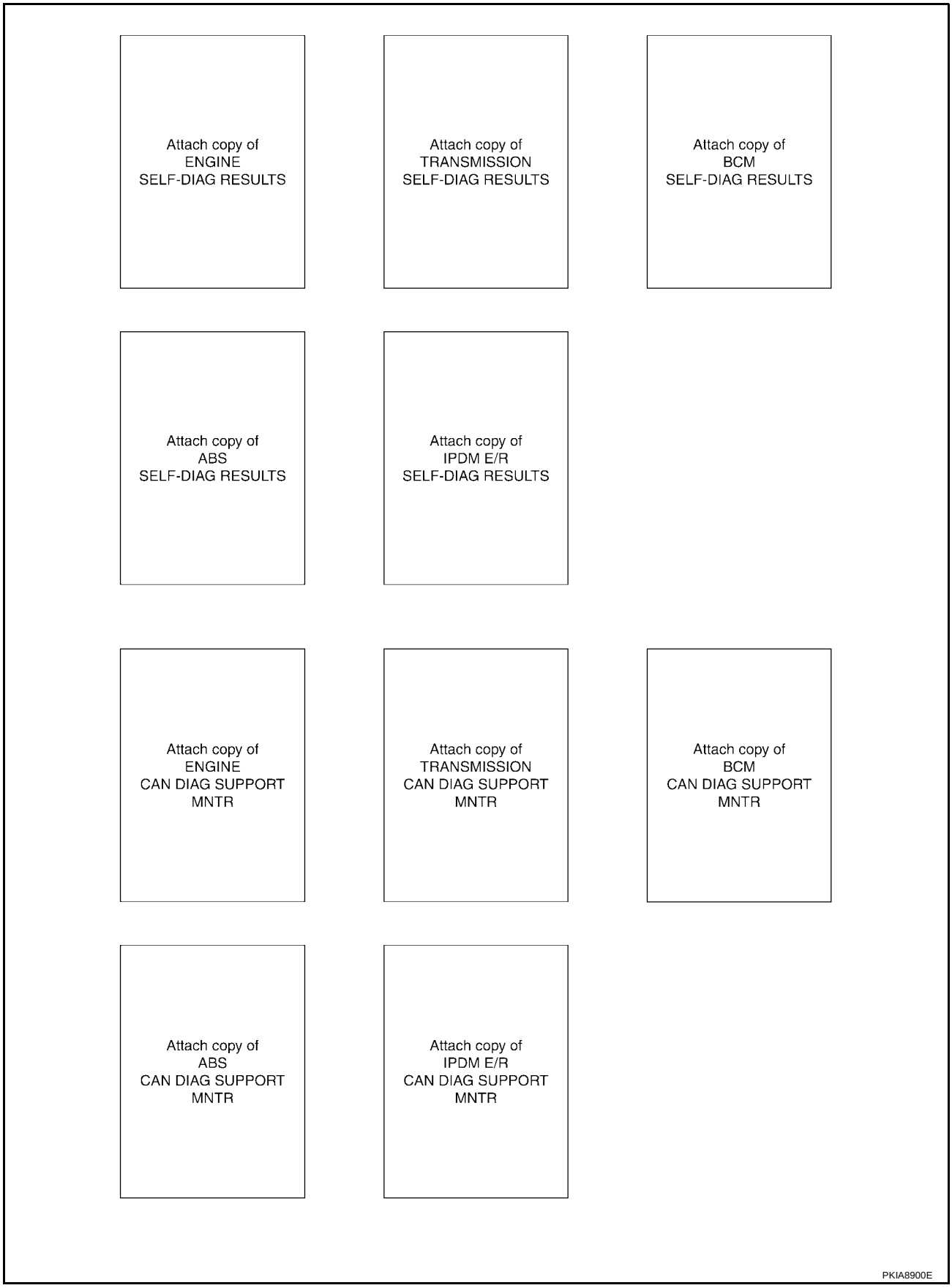
Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Display control unit Translation Sheet: Rewrite the following names, and put a check mark on the above check sheet table.			
Confirmation/Adjustment Display	Check sheet table Display	Confirmation/Adjustment Display	Check sheet table Display
CAN COMM	Initial diagnosis	CAN CIRC 5	METER/M&A
CAN CIRC 1	Transmit diagnosis	CAN CIRC 6	—
CAN CIRC 2	BCM	CAN CIRC 7	IPDM E/R
CAN CIRC 3	ECM	CAN CIRC 8	—
CAN CIRC 4	—	CAN CIRC 9	—

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA8895E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
TRANSMISSION
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
TRANSMISSION
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
PKIA8900E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

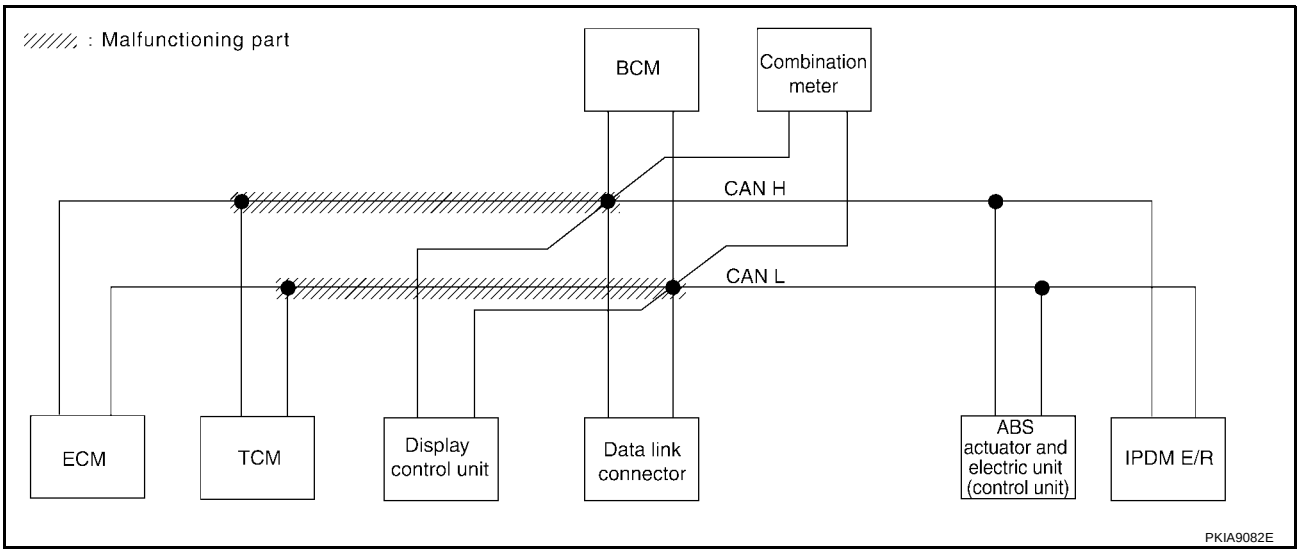
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-254, "Circuit Check Between TCM and Data Link Connector" .

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

PKIA8930E



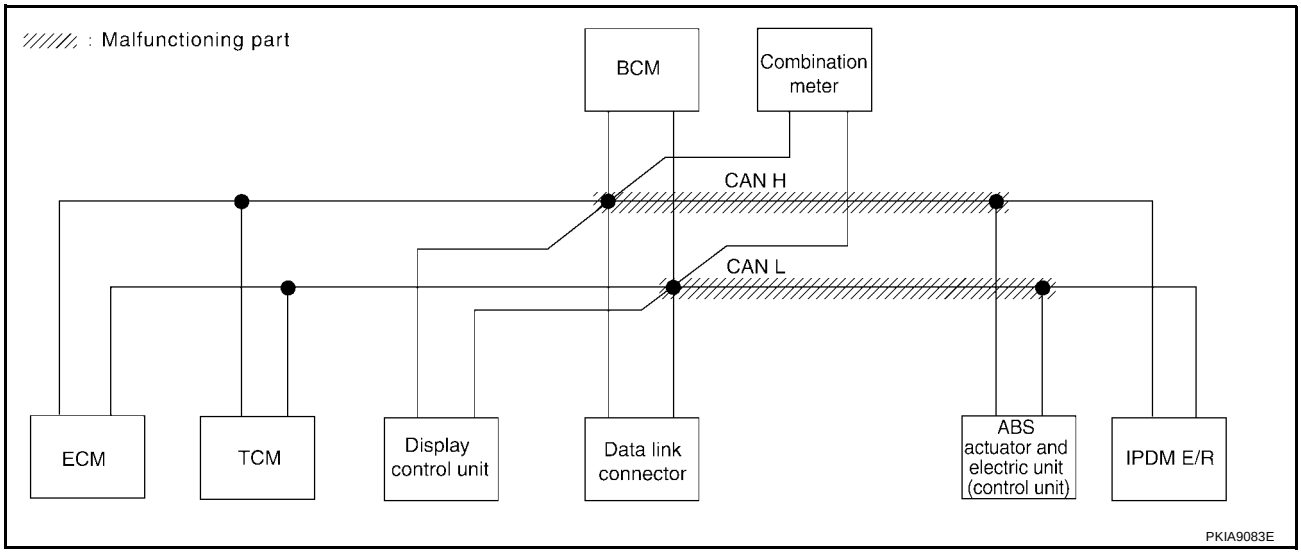
PKIA9082E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-255, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

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

PKIA8931E



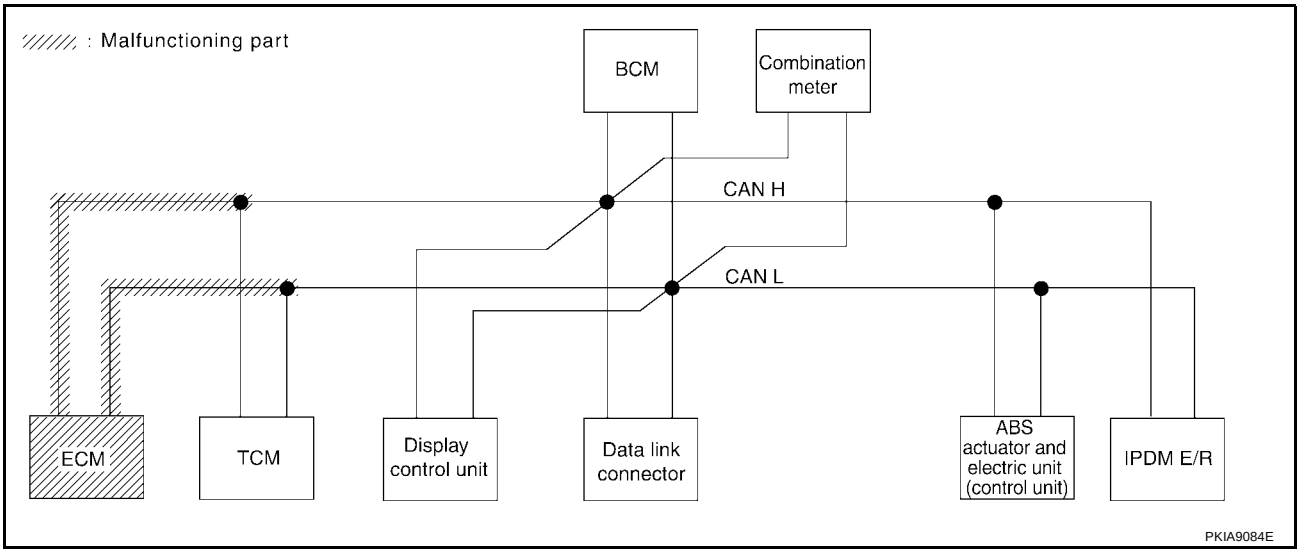
PKIA9083E

Case 3

Check ECM circuit. Refer to LAN-256, "ECM Circuit Check" .

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

PKIA8932E



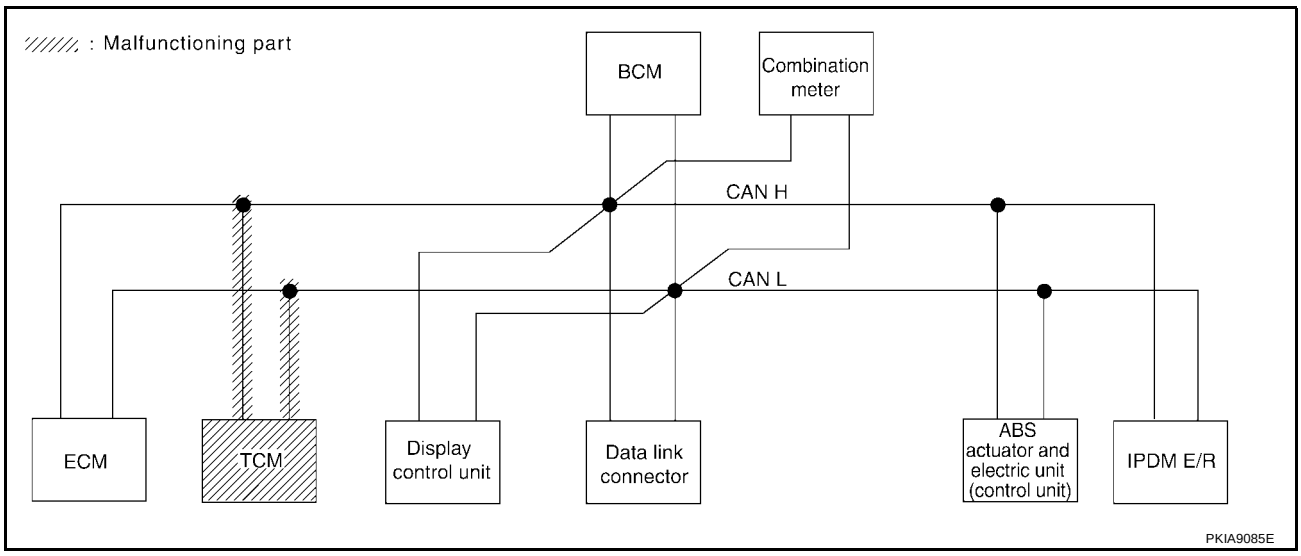
PKIA9084E

Case 4

Check TCM circuit. Refer to LAN-256, "TCM Circuit Check" .

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

PKIA8933E



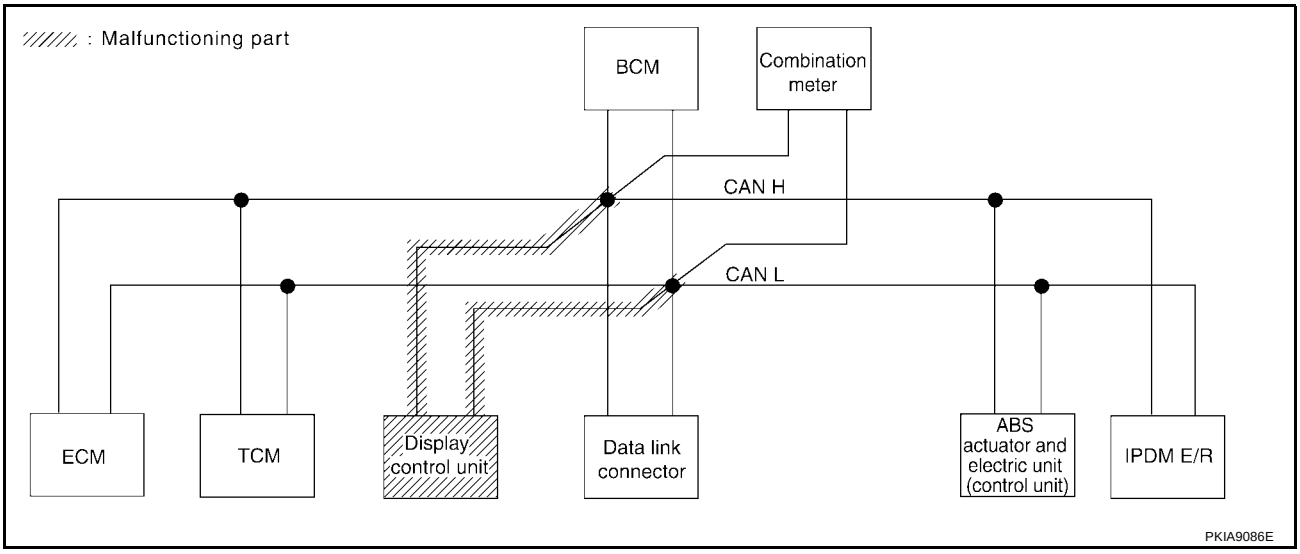
PKIA9085E

Case 5

Check display control unit circuit. Refer to LAN-257, "Display Control Unit Circuit Check" .

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

PKIA8934E



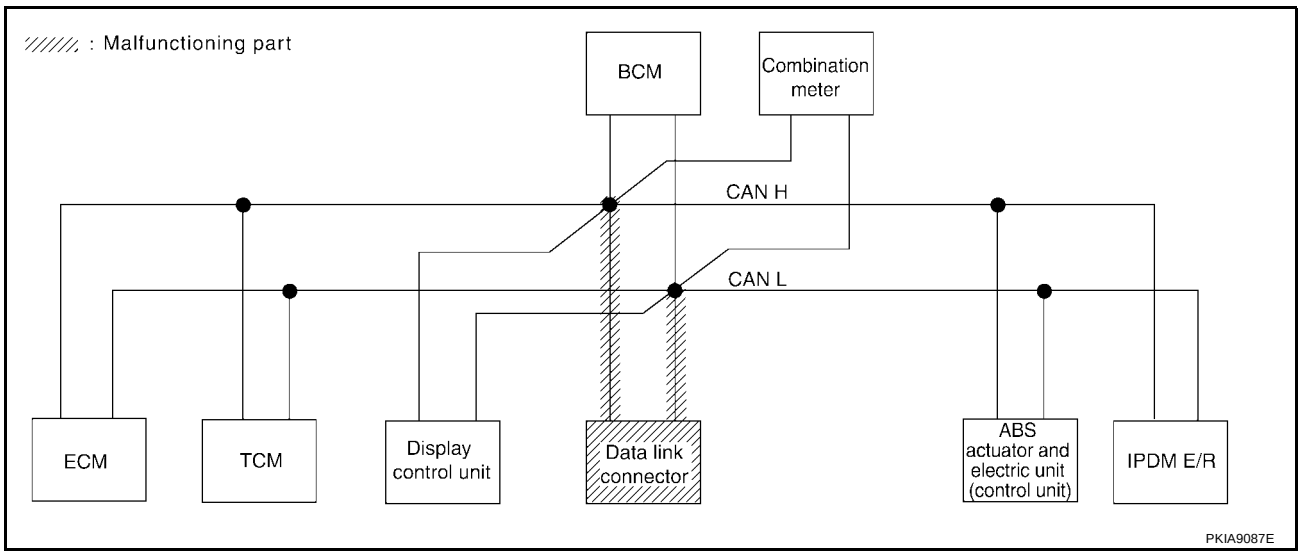
PKIA9086E

Case 6

Check data link connector circuit. Refer to LAN-257, "Data Link Connector Circuit Check" .

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

PKIA8935E



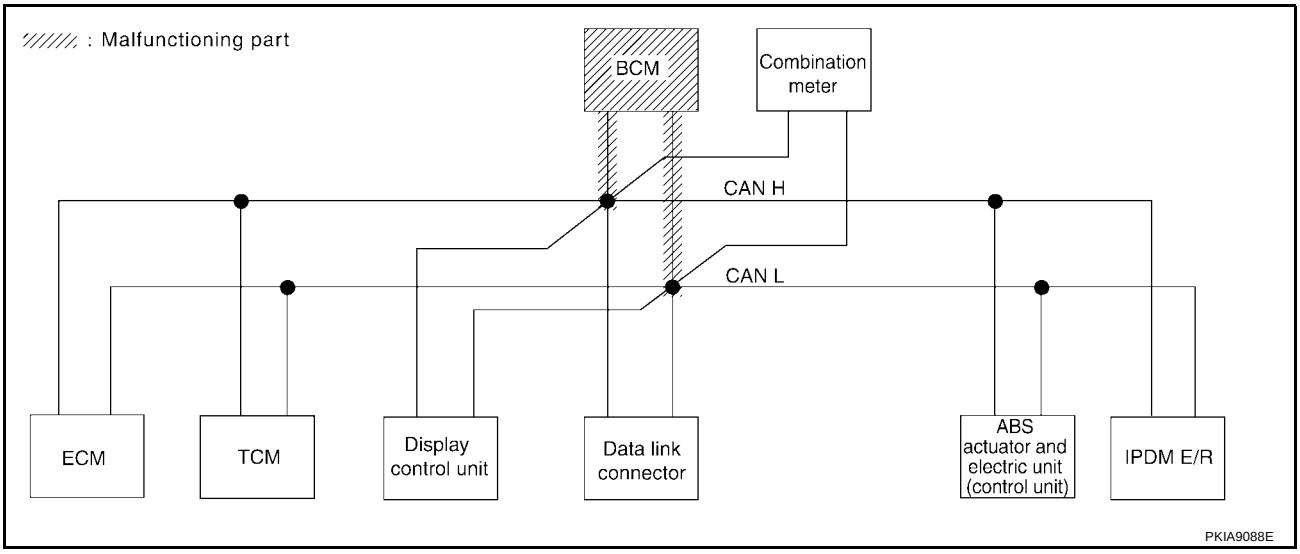
PKIA9087E

Case 7

Check BCM circuit. Refer to LAN-258, "BCM Circuit Check" .

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

PKIA8936E



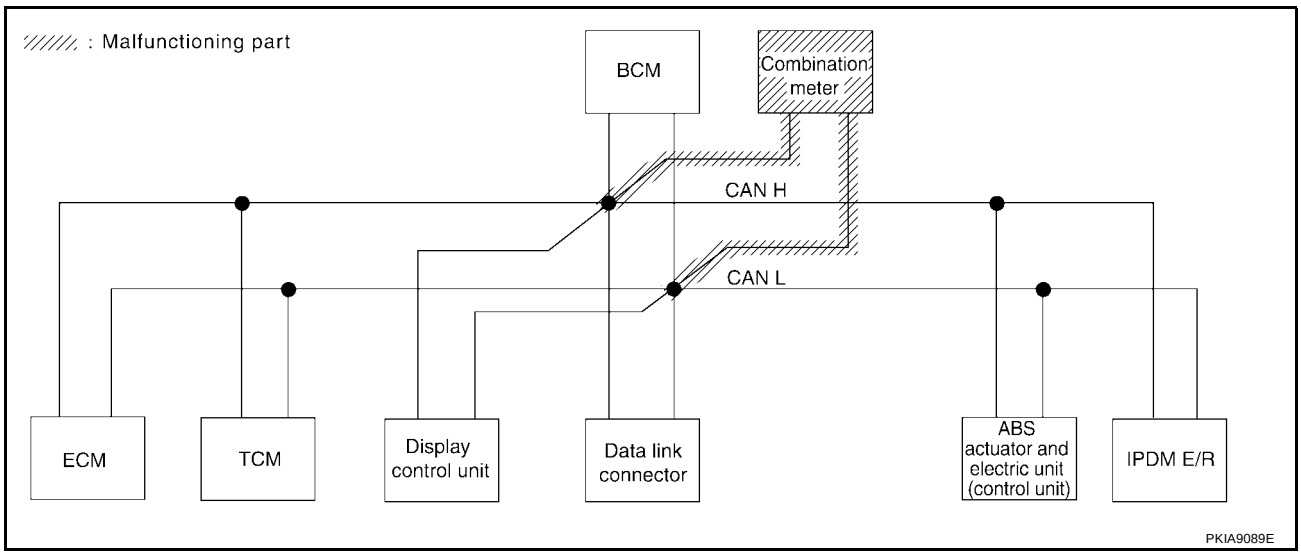
PKIA9088E

Case 8

Check combination meter circuit. Refer to LAN-258, "Combination Meter Circuit Check" .

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

PKIA8937E



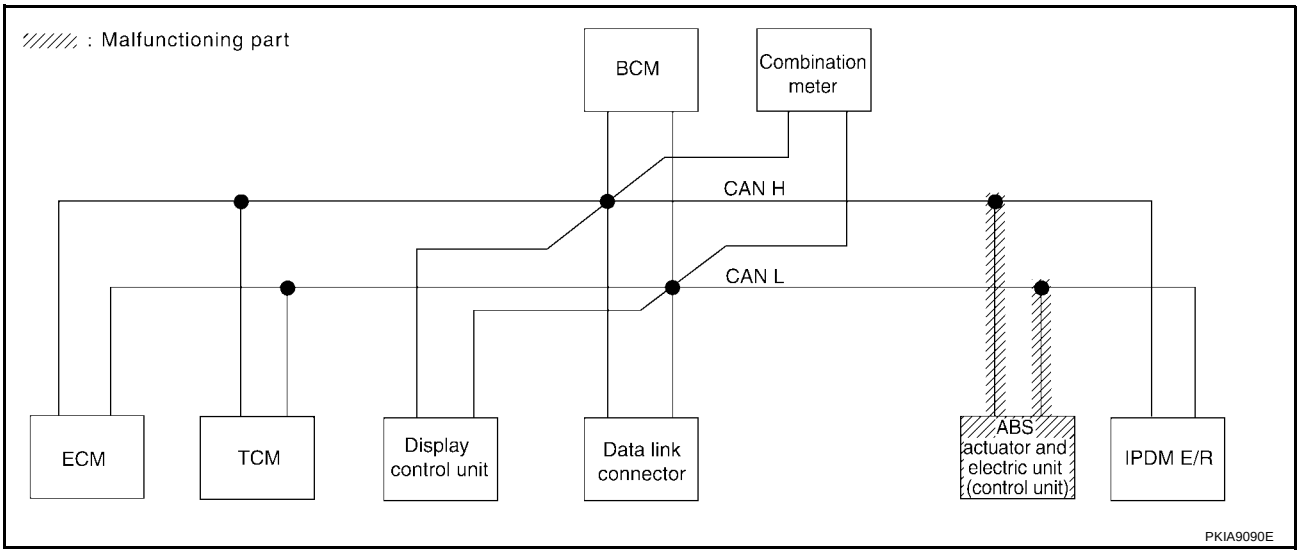
PKIA9089E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-259, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

PKIA8938E

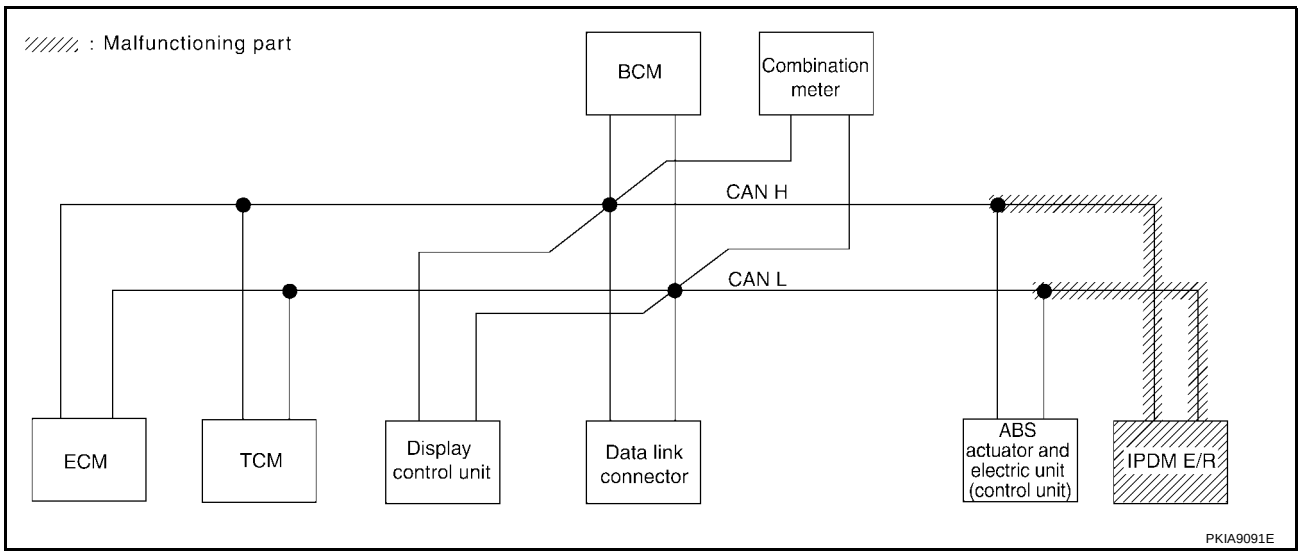


Case 10

Check IPDM E/R circuit. Refer to LAN-259, "IPDM E/R Circuit Check" .

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

PKIA8939E



PKIA9091E

Case 11

Check CAN communication circuit. Refer to LAN-260, "CAN Communication Circuit Check" .

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

PKIA8940E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-263, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA8941E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-263, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIA8942E

Circuit Check Between TCM and Data Link Connector

UKS001RB

1. CHECK CONNECTOR

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

- Harness connector F59
- Harness connector M71

OK or NG

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

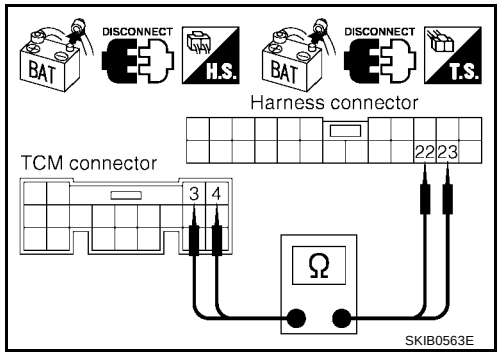
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 3 (L), 4 (P) and harness connector F59 terminals 23 (L), 22 (P).

3 (L) - 23 (L) : Continuity should exist.
4 (P) - 22 (P) : Continuity should exist.

OK or NG

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



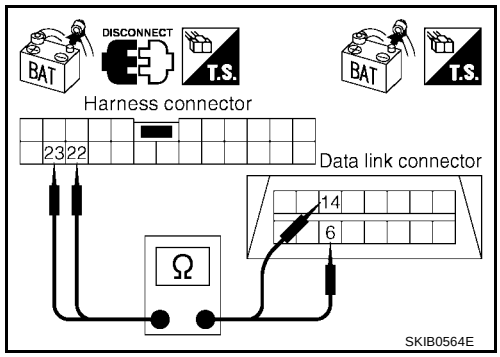
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M71 terminals 23 (L), 22 (P) and data link connector M22 terminals 6 (L), 14 (P).

23 (L) - 6 (L) : Continuity should exist.
22 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness.



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

UKS001RC

1. CHECK CONNECTOR

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

- Harness connector M7
- Harness connector E28

OK or NG

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

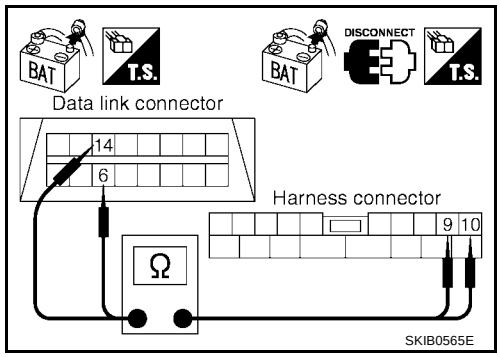
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M7 terminals 10 (L), 9 (P).

6 (L) - 10 (L) : Continuity should exist.
14 (P) - 9 (P) : Continuity should exist.

OK or NG

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

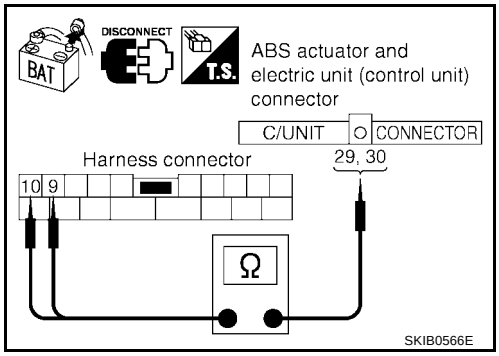


3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E28 terminals 10 (L), 9 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L), 29 (P).

10 (L) - 30 (L) : Continuity should exist.

9 (P) - 29 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness.

ECM Circuit Check

UKS001RD

1. CHECK CONNECTOR

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

OK or NG

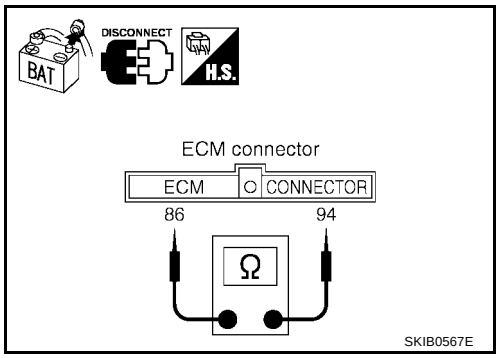
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 94 (L) and 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.

NG >> Repair harness between harness connector F59 and ECM.

TCM Circuit Check

UKS001RE

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

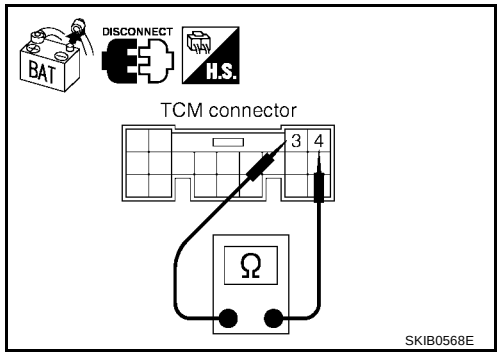
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between harness connector F59 and TCM.



Display Control Unit Circuit Check

UKS001RI

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Check terminals and connector of display 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.

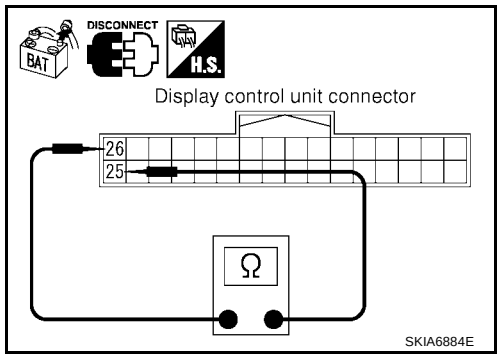
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66Ω

OK or NG

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



Data Link Connector Circuit Check

UKS001RF

1. CHECK CONNECTOR

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

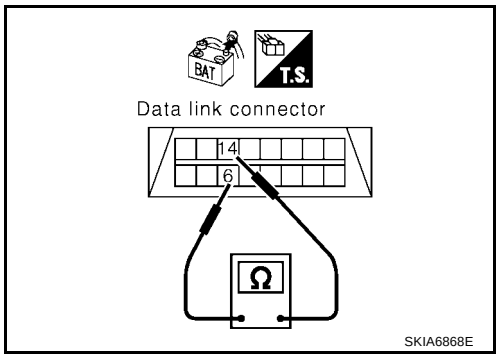
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

NG >> Repair harness between data link connector and combination meter.

BCM Circuit Check

UKS001RH

1. CHECK CONNECTOR

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

OK or NG

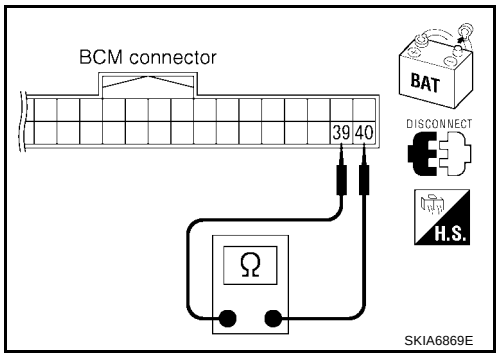
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Repair harness between data link connector and BCM.

Combination Meter Circuit Check

UKS001RG

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

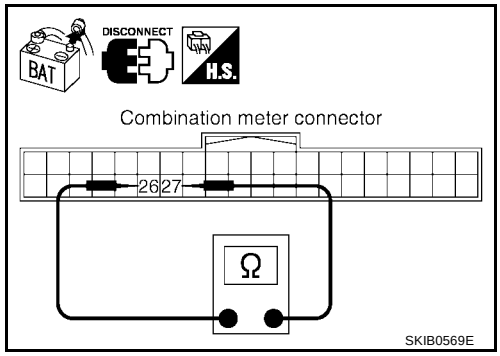
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 26 (L) and 27 (P).

26 (L) - 27 (P) : Approx. 54 - 66Ω

OK or NG

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



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001RJ

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

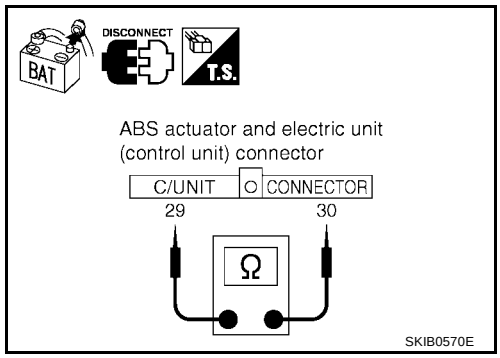
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L) and 29 (P).

30 (L) - 29 (P) : Approx. 54 - 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between harness connector E28 and ABS actuator and electric unit (control unit).



IPDM E/R Circuit Check

UKS001RK

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect battery cable at 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.

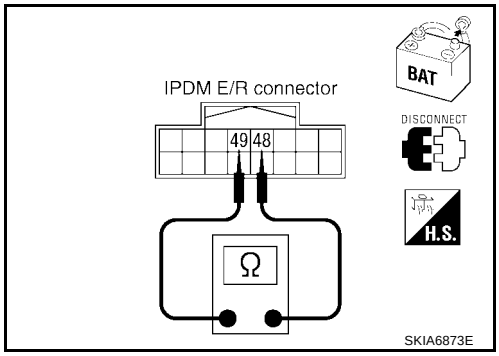
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between harness connector E28 and IPDM E/R.



CAN Communication Circuit Check

UKS001RL

1. CHECK CONNECTOR

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

- ECM
- TCM
- Display control unit
- BCM
- Combination meter
- 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
- TCM connector
- Harness connector F59

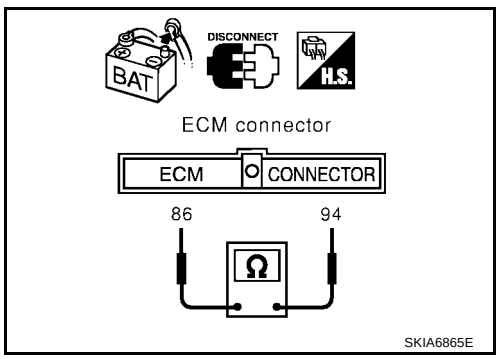
2. Check continuity between ECM harness connector F54 terminals 94 (L) and 86 (P).

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.

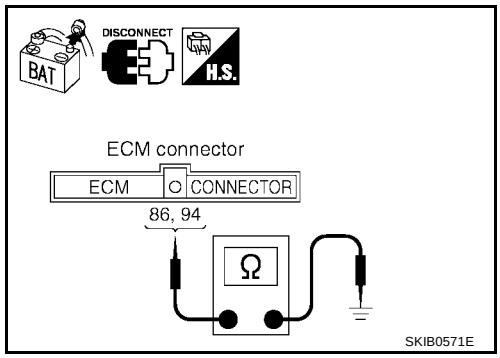
- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 94 (L), 86 (P) and ground.

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



OK or NG

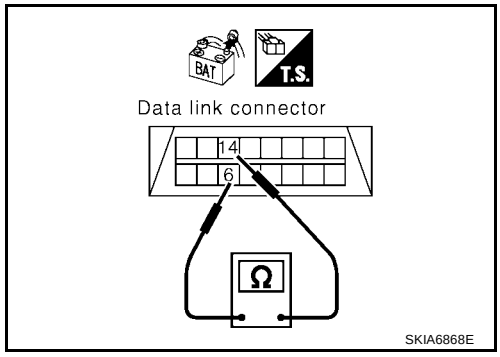
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and harness connector F59
- Harness between TCM and harness connector F59

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Display control unit connector
- BCM connector
- Combination meter connector
- Harness connector M7

2. Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



OK or NG

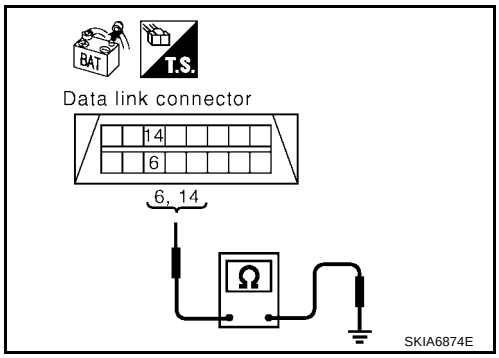
OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 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.

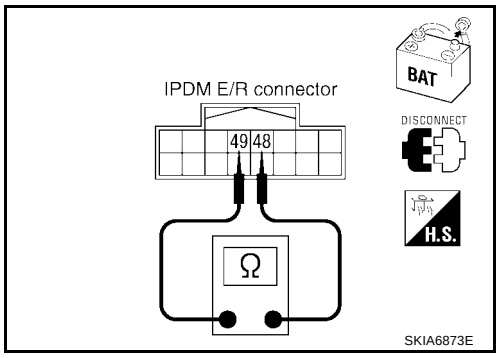
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M71
- Harness between data link connector and Display control unit
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M7

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 E121 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.

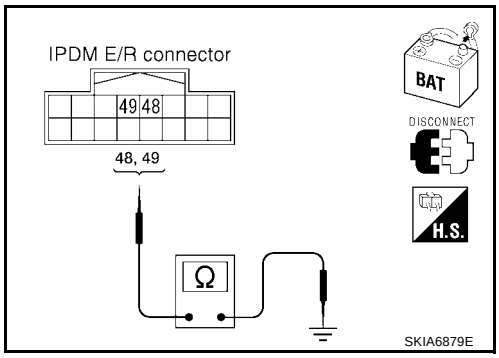
- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (P) and ground.

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

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



OK or NG

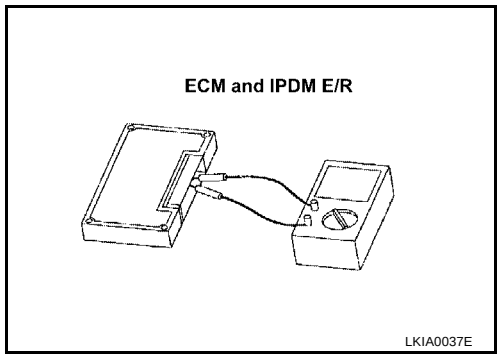
OK >> GO TO 8.

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

- Harness between harness connector E28 and ABS actuator and electric unit (control unit)
- Harness between harness connector E28 and IPDM E/R

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

1. Remove ECM and IPDM E/R from vehicle.
2. Check resistance between ECM terminals 94 and 86.
3. Check resistance between IPDM E/R terminals 48 and 49.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	

OK or NG

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

9. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 10.
NG >> Refer to LAN-14, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

10. UNIT REPRODUCIBILITY INSPECTION

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

1. Turn ignition switch OFF.
2. Disconnect battery cable at negative terminal.
3. Disconnect the unit connector.
4. Connect battery cable at 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.

- TCM
- Display control unit
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Check

UKS001RM

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .