SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS

PFP:00001

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

AKS00CG9

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

AKS00A8N

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-21, "CAN Communication Unit" .

Precautions For Trouble Diagnosis

AKS000BF

CAN SYSTEM

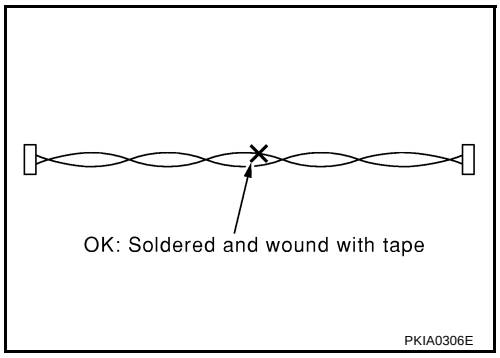
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precautions For Harness Repair

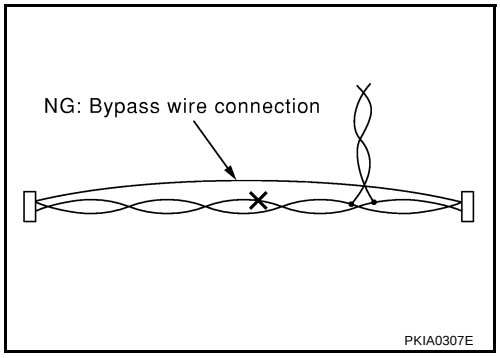
AKS000BG

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

AKS00CBK

WHEN A MALFUNCTION IS DETECTED BY CAN COMMUNICATION SYSTEM

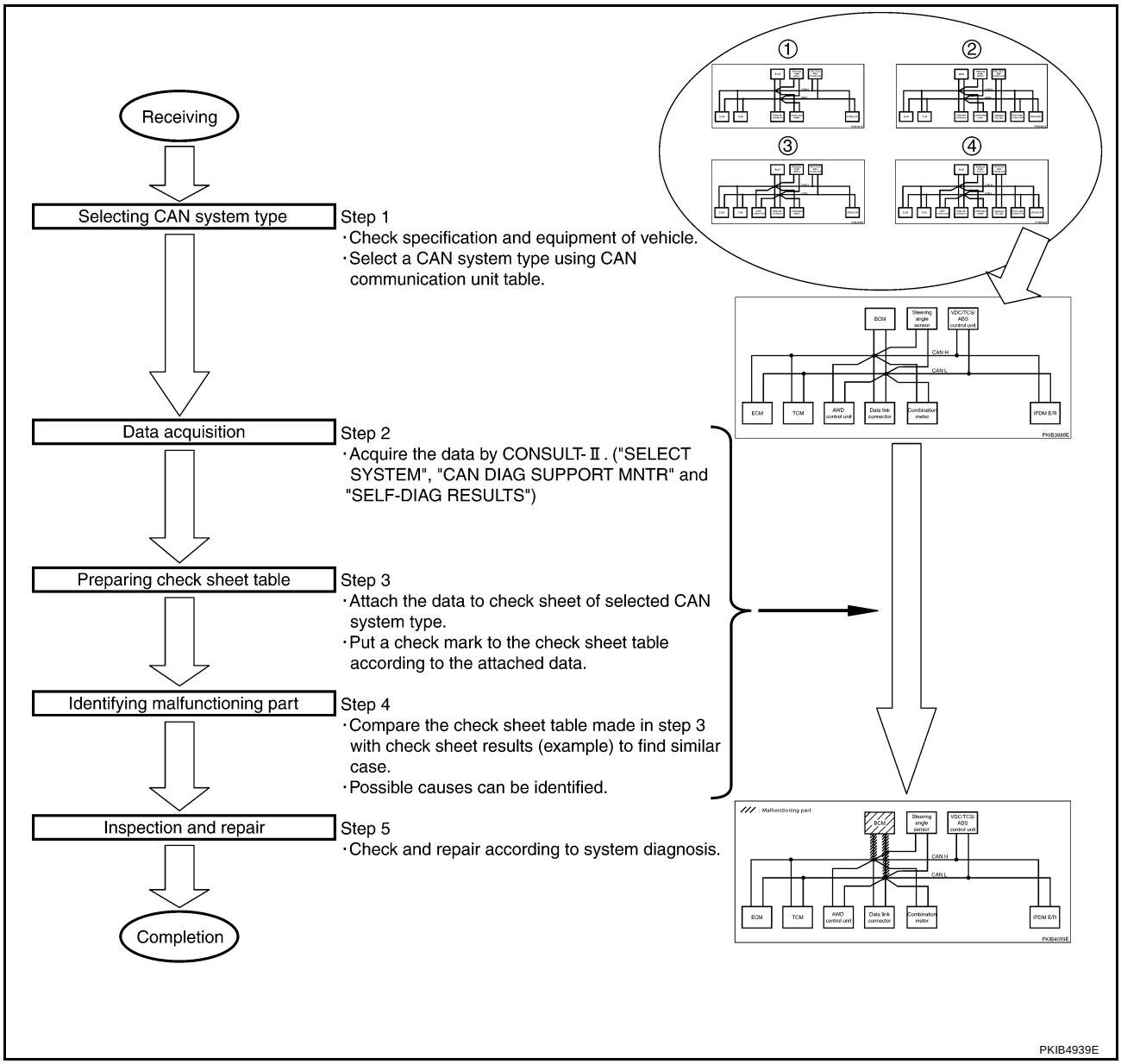
- CAN communication line is open. (CAN H, CAN L, or both)
- CAN communication line is shorted. (Ground, between CAN lines, or other harnesses)
- The areas related to CAN communication of unit is malfunctioning.

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

Depending on the control unit which performs CAN communication, “U1010” may be indicated as the result of self-diagnosis. Replace the control unit if “U1010” is indicated.



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

Diagnosis Procedure

AKS00CBL

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/4WD/VQ35DE/AT/VDC/Without Intelligent Key system/Without automatic drive positioner

CAN Communication Unit

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

Body type	Sedan				Check basic specification of the vehicle.
Axle	2WD		4WD		
Engine	VQ35DE				
Transmission	A/T				
Brake control	VDC				
Intelligent Key system		×		×	Select " ×" if it is model with Intelligent Key system.
Automatic drive positioner		×		×	Select " ×" if it is model with Automatic drive positioner system.
CAN system type	1	2	3	4	Which number is selected when sequentially selecting from the top of the specification table? The number is "CAN system type" of the applicable vehicle.
CAN system trouble diagnosis	XX-XX	XX-XX	XX-XX	XX-XX	

× : Applicable

In the case of this example:
It corresponds to type 3.

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ACQUISITION OF DATA BY CONSULT-II

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

Copy "SELECT SYSTEM" screen of CONSULT-Ⅱ.

SELECT SYSTEM
ENGINE
A/T
ABS
AIR BAG
ALL MODE AWD/4WD
IPDM E/R
Page Down
BACK LIGHT COPY

SELECT SYSTEM
ABS
AIR BAG
ALL MODE AWD/4WD
IPDM E/R
INTELLIGENT KEY
AUTO DRIVE POS
Page Up
BACK LIGHT COPY

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR Initial diagnosis	Transmit diagnosis	Receive diagnosis ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R	SELF-DIAG RESULTS	
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
ALL MODE AWD/4WD	–	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	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

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

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	
ERASE	PRINT
MODE BACK LIGHT COPY	

SELF-DIAG RESULTS
DTC RESULTS
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.
ERASE PRINT
MODE BACK LIGHT COPY

Attach copy of ENGINE SELF-DIAG RESULTS

Attach copy of A/T SELF-DIAG RESULTS

Attach copy of ALL MODE AWD/4WD SELF-DIAG RESULTS

Attach copy of BCM SELF-DIAG RESULTS

Attach copy of ABS SELF-DIAG RESULTS

SELF-DIAG RESULTS	
DTC RESULTS	TIME
CAN COMM CIRCUIT [U1000]	
ERASE	PRINT
MODE BACK LIGHT COPY	

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

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	UNKWN
IPDM E/R	OK
AWD/4WD/e4WD	OK
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	UNKWN
IPDM E/R	OK
AWD/4WD/e4WD	OK
EPS	UNKWN
PRINT	Scroll Up
MODE BACK LIGHT COPY	

CAN DIAG SUPPORT MNTR ABS	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
TCM	OK
METER/M&A	OK
STRG	OK
AWD/4WD	OK
PRINT	
MODE BACK LIGHT COPY	

Attach copy of ENGINE CAN DIAG SUPPORT MNTR

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

Attach copy of ALL MODE AWD/4WD 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

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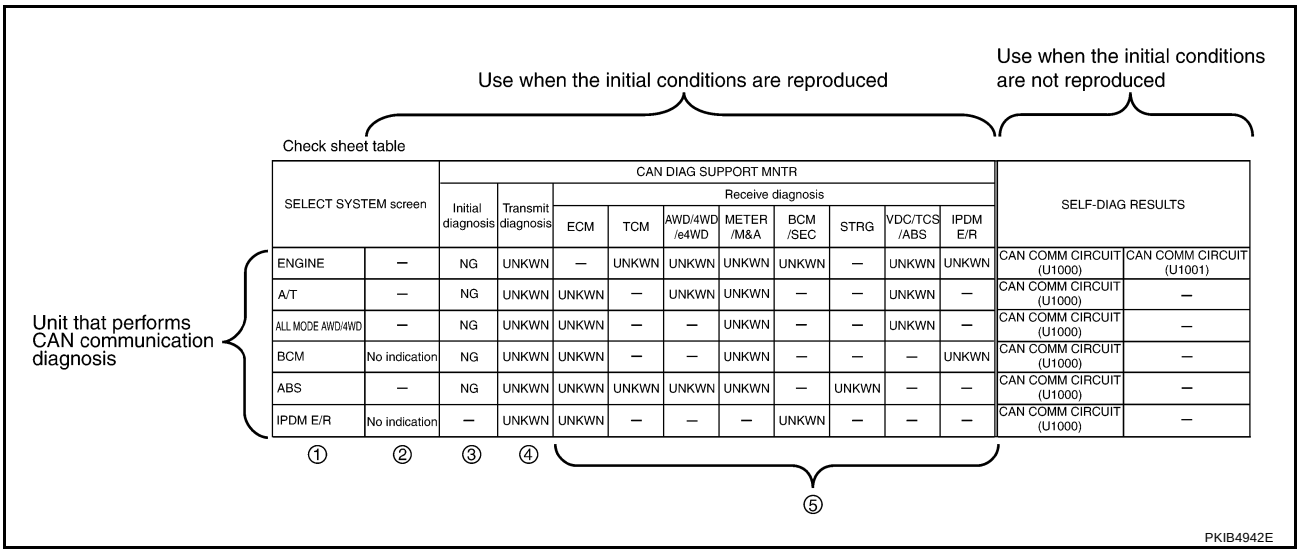
HOW TO USE CHECK SHEET TABLE



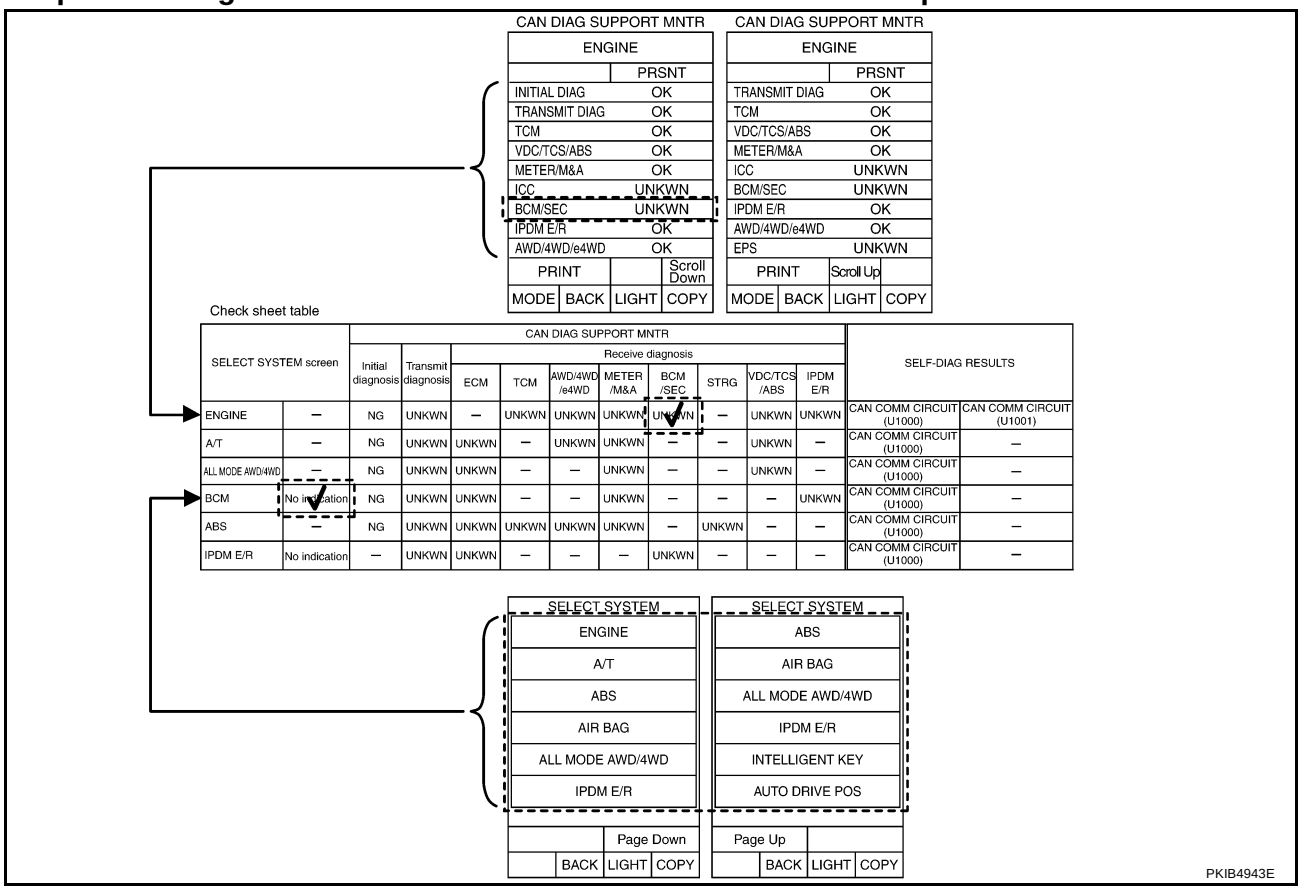
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
ALL MODE AWD/4WD	–	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	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–

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

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

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

Example of Filling in Check Sheet When Initial Conditions Are Reproduced

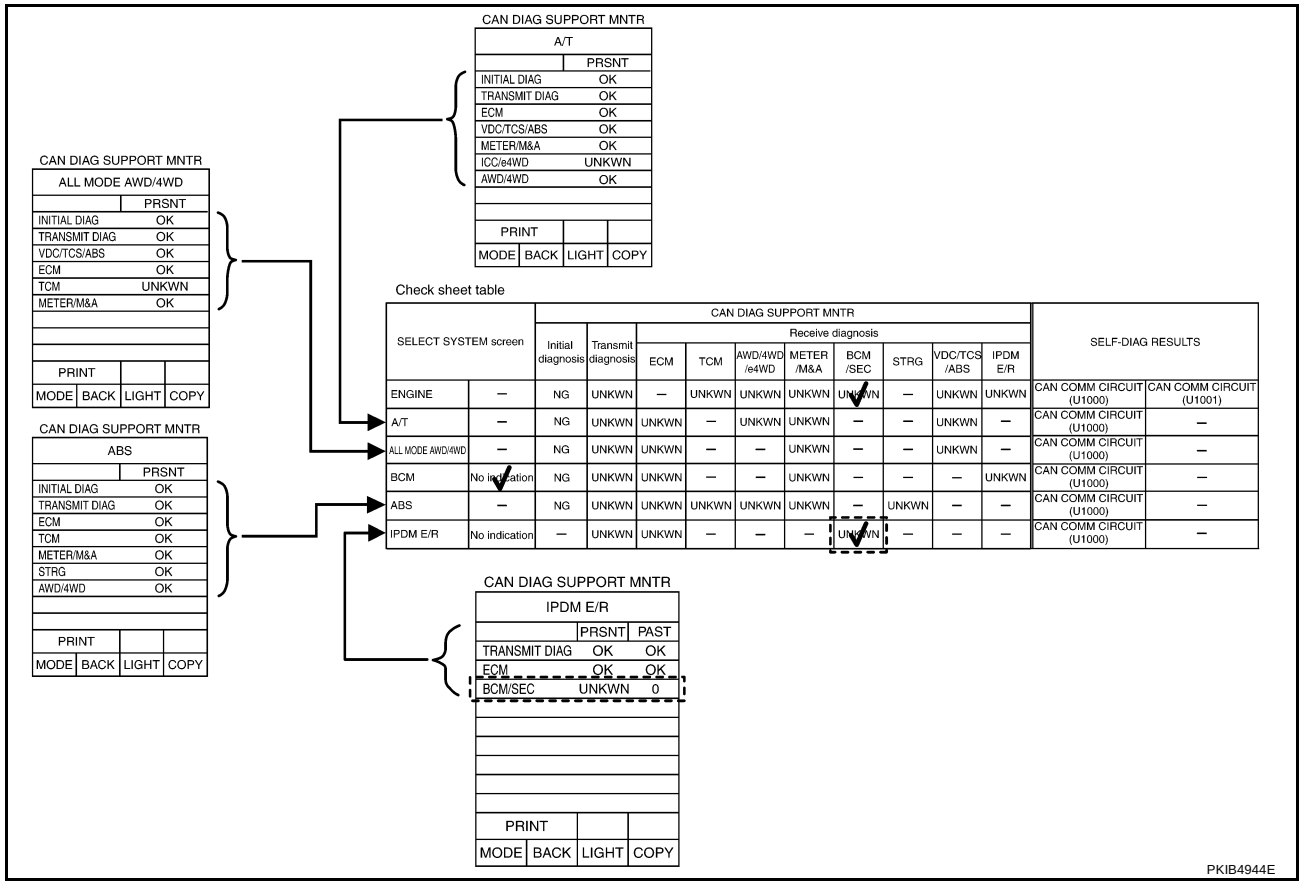


1. Put a check mark to “No indication” if some of unit names listed on the column of diagnosis system selection screen of a check sheet table are not displayed on “SELECT SYSTEM” screen attached to the check sheet.

   NOTE:
   Put a check mark to “No indication” of BCM because BCM 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 “ICC”, “BCM/SEC” and “EPS”. But put a check mark to “BCM/SEC” 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 “A/T”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” as well as “ENGINE”. And then, put a check mark to the check sheet table.

NOTE:

- For “A/T”, “UNKWN” is displayed on “ICC/e4WD”. But, do not put a check mark to their columns of reception diagnosis of the check sheet table because “UNKWN” is not listed.
- For “ALL MODE AWD/4WD”, “UNKWN” is displayed on “TCM”. But, do not put a check mark to their columns of reception diagnosis of the check sheet table because “UNKWN” is not listed.
- For “ABS”, “UNKWN” is not displayed. Do not put a check to it.
- For “IPDM E/R”, “UNKWN” is displayed on “BCM/SEC”. Put a check mark to it.

The arranged results of CAN diagnosis support monitor

Check sheet table

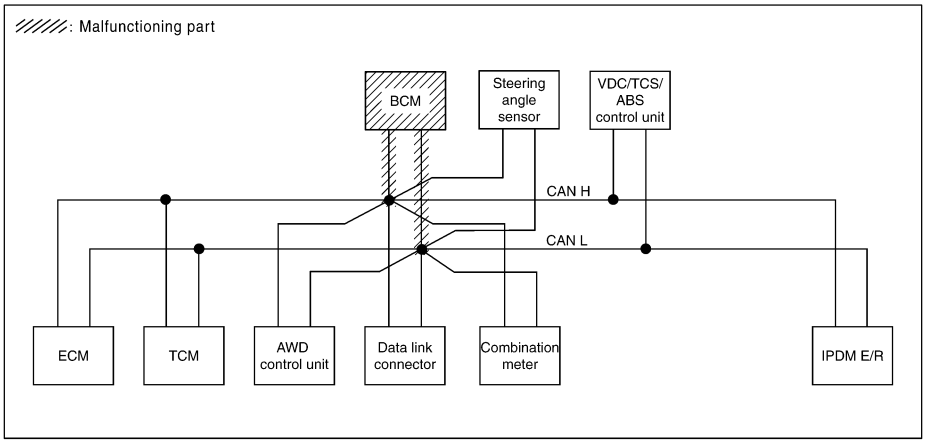
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN ✓	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
ALL MODE AWD/4WD	–	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	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 8
Check BCM circuit.

Check sheet results (example)

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN ✓	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
ALL MODE AWD/4WD	–	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	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN ✓	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–



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

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

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

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

SYSTEM ENGINE
SELF-DIAG RESULTS
DTC RESULTS TIME
CAN COMM CIRCUIT [U1001] 1t

SYSTEM A/T
SELF-DIAG RESULTS
DTC RESULTS
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.

SYSTEM ALL MODE AWD/4WD
SELF-DIAG RESULTS
DTC RESULTS TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.

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] PAST

PKIB4946E

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 “A/T”, “NO DTC IS DETECTED” is displayed. Do not put a check mark to it.
- For “ALL MODE AWD/4WD”, “NO DTC IS DETECTED” is displayed. Do not 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.

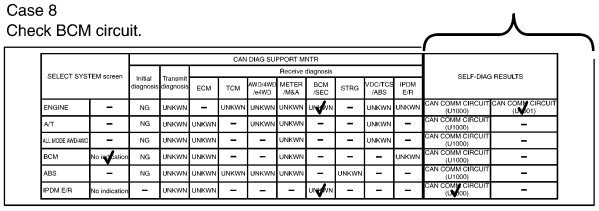
The arranged results of self-diagnosis

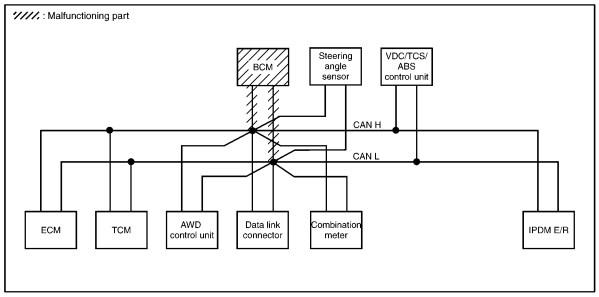
Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
ALL MODE AWD/4WD	–	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	UNKWN	UNKWN	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–

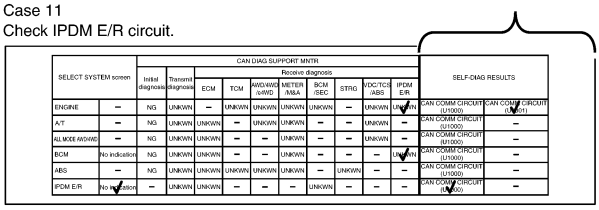
When the arranged results of self-diagnosis and check sheet results (example) are corresponding, possible causes can be selected.

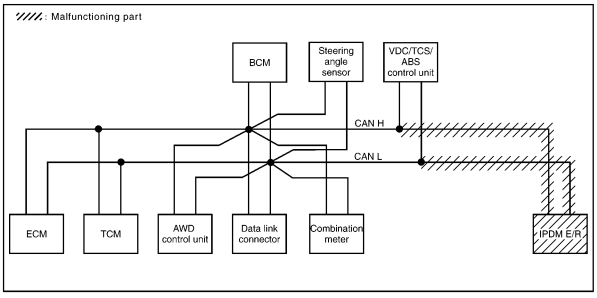
Case 8
Check BCM circuit.





Case 11
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

AKS00CBM

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	OK
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	OK
EPS	UNKWN
PRINT	Scroll Up
MODE / BACK / LIGHT / COPY	

SKIB2334E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
ENGINE	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	TCM	Make sure of normal reception from TCM.	OK/UNKWN
	VDC/TCS/ABS	Make sure of normal reception from VDC/TCS/ABS control unit.	OK/UNKWN
	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	Make sure of normal reception from AWD control unit.	OK/UNKWN
	EPS	EPS is not diagnosed.	UNKWN

Display Results (Present)

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

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR TCM

(Example)

CAN DIAG SUPPORT MNTR

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

SKIB2335E

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

(Example)

CAN DIAG SUPPORT MNTR

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

PKIA8948E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
ALL MODE AWD/ 4WD	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	VDC/TCS/ABS	Make sure of normal reception from VDC/TCS/ABS control unit.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	TCM	TCM is not diagnosed.	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	OK
I-KEY	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB1625E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
BCM	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	IPDM E/R	Make sure of normal reception from IPDM E/R.	OK/UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	OK/UNKWN
	I-KEY	Make sure of normal reception from Intelligent Key unit.	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 INTELLIGENT KEY UNIT

(Example)

CAN DIAG SUPPORT MNTR

INTELLIGENT KEY		
	PRSNT	PAST
TRANSMIT DIAG	OK	OK
ECM	OK	OK
METER/M&A	OK	OK
BCM/SEC	OK	OK
PRINT		
MODE / BACK	LIGHT	COPY

SKIB2359E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present	past
INTELLIGENT KEY	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN	OK/0/1~39/–
	ECM	Make sure of normal reception from ECM.	OK/UNKWN	
	METER/M&A	Make sure of normal reception from combination meter.	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.

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 VDC/TCS/ABS CONTROL UNIT

(Example)

CAN DIAG SUPPORT MNTR

ABS	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
TCM	OK
STRG	OK
METER/M&A	OK
AWD/4WD	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB2336E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
ABS	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	TCM	Make sure of normal reception from TCM.	OK/UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	OK/UNKWN
	STRG	Make sure of normal reception from steering angle sensor.	OK/UNKWN
	AWD/4WD	Make sure of normal reception from AWD control unit.	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 DRIVER SEAT CONTROL UNIT

(Example)

CAN DIAG SUPPORT MNTR

AUTO DRIVE POS.	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
BCM/SEC	OK
METER/M&A	OK
TCM	OK
PRINT	
MODE / BACK / LIGHT / COPY	

SKIB2360E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
AUTO DRIVE POS.	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	BCM/SEC	Make sure of normal reception from BCM.	OK/UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	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

CAN COMMUNICATION

PFP:23710

System Description

AKS000D9

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

AKS000DA

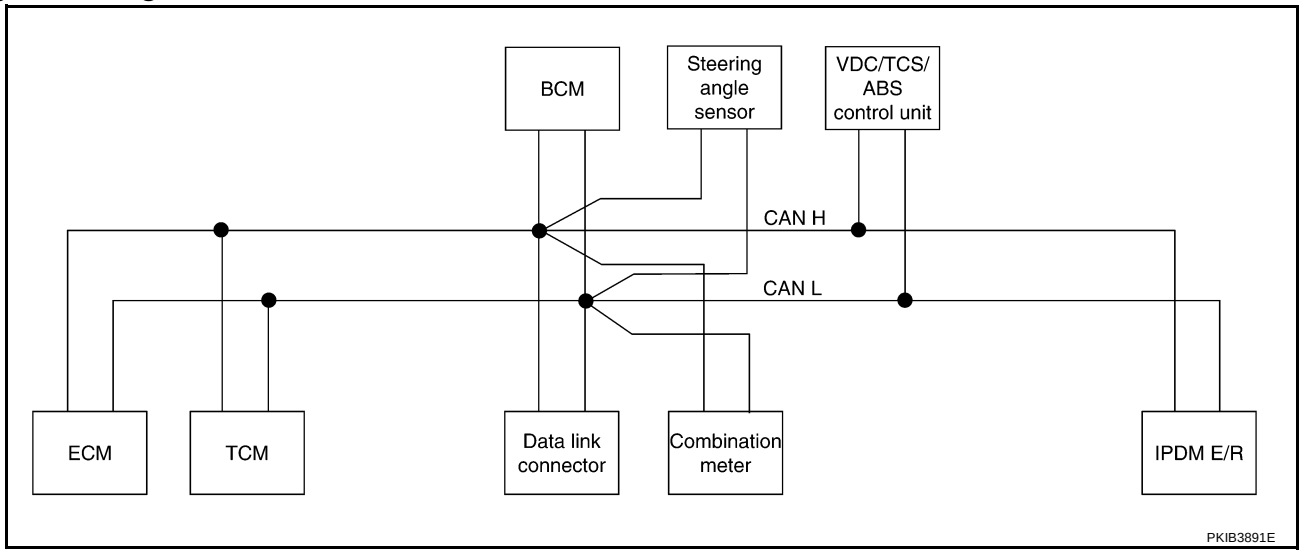
Go to CAN system, when selecting your CAN system type from the following table.

Body type	Sedan			
Axle	2WD		4WD	
Engine	VQ35DE			
Transmission	A/T			
Brake control	VDC			
Intelligent Key system		×		×
Automatic drive positioner		×		×
CAN system type	1	2	3	4
CAN system trouble diagnosis	LAN-30	LAN-57	LAN-90	LAN-119

×:Applicable

TYPE 1

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

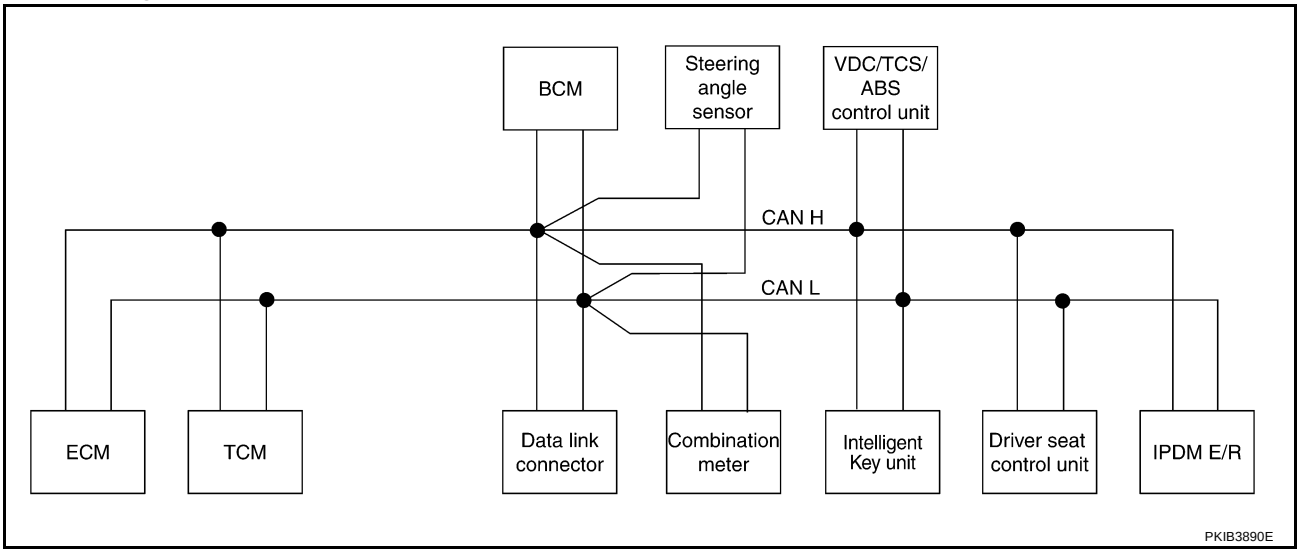
Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
A/C compressor request signal	T						R
A/C switch signal	R			T			
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
A/T self-diagnosis signal	R	T					
Accelerator pedal position signal	T	R				R	

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
ASCD SET lamp signal	T		R				
Battery voltage signal	T	R					
Blower fan motor switch signal	R			T			
Buzzer output signal			R	T			
Closed throttle position signal	T	R					
Cooling fan motor operation signal	T						R
Door switch signal			R	T			R
Engine coolant temperature signal	T		R				
Engine speed signal	T	R	R			R	
Front fog lights request signal				T			R
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Fuel level sensor signal	R		T				
High beam request signal			R	T			R
High beam status signal	R						T
Hood switch signal				R			T
Horn chirp signal				T			R
Low beam request signal				T			R
Low beam status signal	R						T
Malfunction indicator lamp signal	T		R				
Manual mode indicator signal		T	R				
Manual mode shift down signal		R	T				
Manual mode shift up signal		R	T				
Manual mode signal		R	T				
Not manual mode signal		R	T				
Oil pressure switch signal			R				T
Output shaft revolution signal	R	T					
Position lights request signal			R	T			R
Rear window defogger control signal	R						T
Rear window defogger switch signal				T			R
Seat belt buckle switch signal			T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Snow mode switch signal	R		T				
Steering angle sensor signal					T	R	
Stop lamp switch signal		R	T				
Theft warning horn request signal				T			R
Tire pressure signal			R	T			
Turbine revolution signal	R	T					

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Turn indicator signal			R	T			
Vehicle speed signal			R			T	
	R	R	T	R			
Wake up request 1 signal				T			R
Wake up request 2 signal				T			R
Wide open throttle position signal	T	R					

TYPE 2

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	Intelligent Key unit	VDC/ TCS/ ABS control unit	Driver seat control unit	IPDM E/ R
A/C compressor request signal	T								R
A/C switch signal	R			T					
A/T CHECK indicator lamp signal		T	R						
A/T position indicator signal		T	R				R	R*	
A/T self-diagnosis signal	R	T							
Accelerator pedal position signal	T	R					R		
ASCD CRUISE lamp signal	T		R						
ASCD OD cancel request signal	T	R							
ASCD operation signal	T	R							
ASCD SET lamp signal	T		R						
Battery voltage signal	T	R							
Blower fan motor switch signal	R			T					
Buzzer output signal			R	T					
Closed throttle position signal	T	R							
Cooling fan motor operation signal	T								R
Door lock/unlock status signal				T		R			

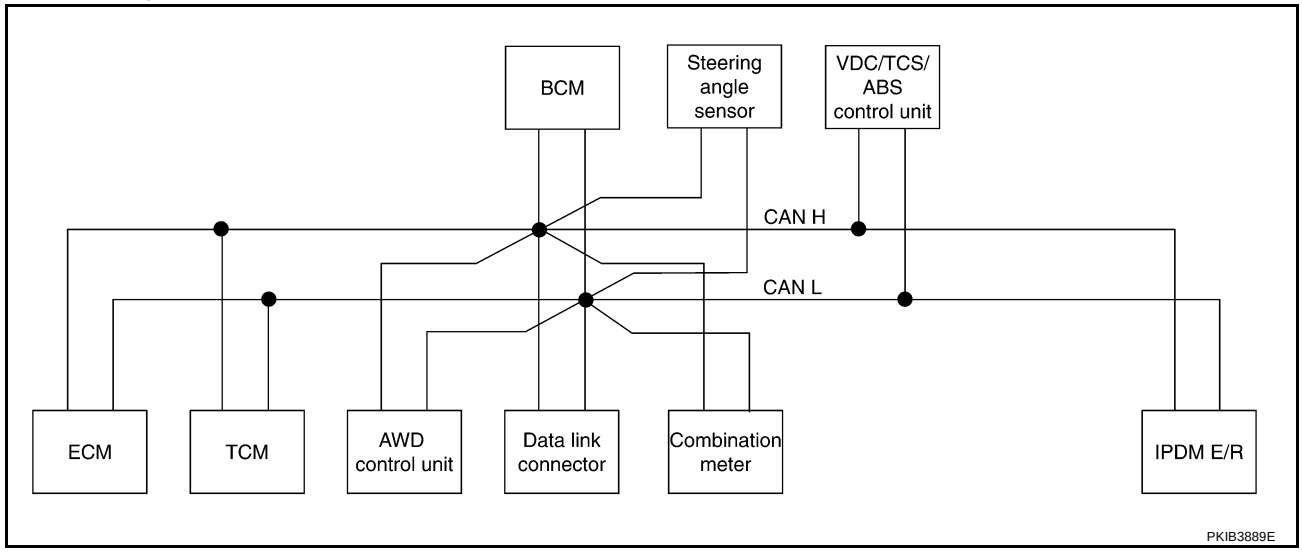
Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	Intelligent Key unit	VDC/TCS/ABS control unit	Driver seat control unit	IPDM E/R
Door lock/unlock/trunk open request signal				R		T			
Door switch signal			R	T		R		R	R
Engine coolant temperature signal	T		R						
Engine speed signal	T	R	R			R	R		
Front fog lights request signal				T					R
Front wiper request signal				T					R
Front wiper stop position signal				R					T
Fuel level sensor signal	R		T						
Hazard and horn request signal				R		T			
High beam request signal			R	T					R
High beam status signal	R								T
Hood switch signal				R					T
Horn chirp signal				T					R
Key fob door unlock signal				T				R	
Key switch signal				T				R	
Low beam request signal				T					R
Low beam status signal	R								T
Malfunction indicator lamp signal	T		R						
Manual mode indicator signal		T	R						
Manual mode shift down signal		R	T						
Manual mode shift up signal		R	T						
Manual mode signal		R	T						
Not manual mode signal		R	T						
Oil pressure switch signal			R						T
Output shaft revolution signal	R	T							
Panic alarm request signal				R		T			
Position lights request signal			R	T					R
Power window open request signal				R		T			
Rear window defogger control signal	R								T
Rear window defogger switch signal				T					R
Seat belt buckle switch signal			T	R					
Sleep request 1 signal			R	T					
Sleep request 2 signal				T					R
Snow mode switch signal	R		T						
Starter permission signal				R		T			
Steering angle sensor signal					T		R		
Stop lamp switch signal		R	T						
Theft warning horn request signal				T					R
Tire pressure signal			R	T					
Turbine revolution signal	R	T							

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	Intelligent Key unit	VDC/TCS/ABS control unit	Driver seat control unit	IPDM E/R
Turn indicator signal			R	T					
Vehicle speed signal			R				T		
	R	R	T	R		R		R	
Wake up request 1 signal				T					R
Wake up request 2 signal				T					R
Wide open throttle position signal	T	R							

*: P range and R range only

TYPE 3

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

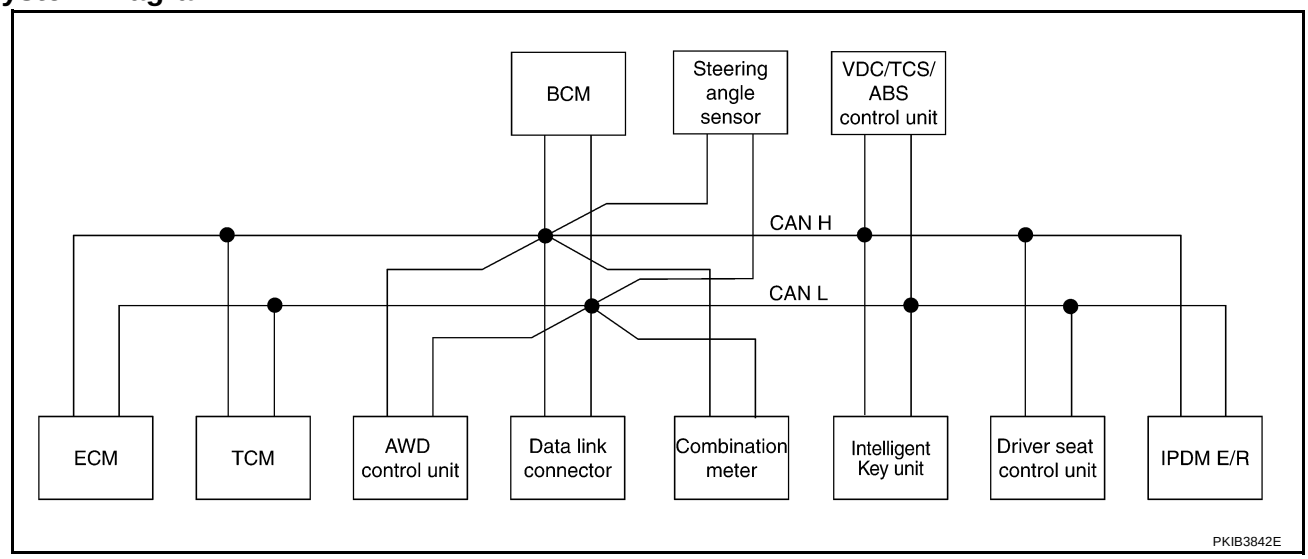
Signals	ECM	TCM	AWD control unit	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
A/C compressor request signal	T							R
A/C switch signal	R				T			
A/T CHECK indicator lamp signal		T		R				
A/T position indicator signal		T		R			R	
A/T self-diagnosis signal	R	T						
Accelerator pedal position signal	T	R	R				R	
ASCD CRUISE lamp signal	T			R				
ASCD OD cancel request signal	T	R						
ASCD operation signal	T	R						
ASCD SET lamp signal	T			R				
AWD warning lamp signal			T	R				
Battery voltage signal	T	R						
Blower fan motor switch signal	R				T			
Buzzer output signal				R	T			

Signals	ECM	TCM	AWD control unit	Combination meter	BCM	Steering angle sensor	VDC/ TCS/ABS control unit	IPDM E/R
Closed throttle position signal	T	R						
Cooling fan motor operation signal	T							R
Door switch signal				R	T			R
Engine coolant temperature signal	T			R				
Engine speed signal	T	R	R	R			R	
Front fog lights request signal					T			R
Front wiper request signal					T			R
Front wiper stop position signal					R			T
Fuel level sensor signal	R			T				
High beam request signal				R	T			R
High beam status signal	R							T
Hood switch signal					R			T
Horn chirp signal					T			R
Low beam request signal					T			R
Low beam status signal	R							T
Malfunction indicator lamp signal	T			R				
Manual mode indicator signal		T		R				
Manual mode shift down signal		R		T				
Manual mode shift up signal		R		T				
Manual mode signal		R		T				
Not manual mode signal		R		T				
Oil pressure switch signal				R				T
Output shaft revolution signal	R	T						
Parking brake switch signal			R	T				
Position lights request signal				R	T			R
Rear window defogger control signal	R							T
Rear window defogger switch signal					T			R
Seat belt buckle switch signal				T	R			
Sleep request 1 signal				R	T			
Sleep request 2 signal					T			R
SNOW mode switch signal	R		R	T				
Steering angle sensor signal						T	R	
Stop lamp switch signal		R		T				
			R				T	
Theft warning horn request signal					T			R
Tire pressure signal				R	T			
Turbine revolution signal	R	T						
Turn indicator signal				R	T			
Vehicle speed signal			R	R			T	
	R	R		T	R			
Wake up request 1 signal					T			R

Signals	ECM	TCM	AWD control unit	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Wake up request 2 signal					T			R
Wide open throttle position signal	T	R						

TYPE 4

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	AWD control unit	Combination meter	BCM	Steering angle sensor	Intelligent Key unit	VDC/TCS/ABS control unit	Driver seat control unit	IPDM E/R
A/C compressor request signal	T									R
A/C switch signal	R				T					
A/T CHECK indicator lamp signal		T		R						
A/T position indicator signal		T		R				R	R*	
A/T self-diagnosis signal	R	T								
Accelerator pedal position signal	T	R	R					R		
ASCD CRUISE lamp signal	T			R						
ASCD OD cancel request signal	T	R								
ASCD operation signal	T	R								
ASCD SET lamp signal	T			R						
AWD warning lamp signal			T	R						
Battery voltage signal	T	R								
Blower fan motor switch signal	R				T					
Buzzer output signal				R	T					
Closed throttle position signal	T	R								

Signals	ECM	TCM	AWD control unit	Combination meter	BCM	Steering angle sensor	Intelligent Key unit	VDC/ TCS/ ABS control unit	Driver seat control unit	IPDM E/R
Cooling fan motor operation signal	T									R
Door lock/unlock status signal					T		R			
Door lock/unlock/trunk open request signal					R		T			
Door switch signal				R	T		R	R	R	R
Engine coolant temperature signal	T			R						
Engine speed signal	T	R	R	R			R	R		
Front fog lights request signal					T					R
Front wiper request signal					T					R
Front wiper stop position signal					R					T
Fuel level sensor signal	R			T						
Hazard and horn request signal					R		T			
High beam request signal				R	T					R
High beam status signal	R									T
Hood switch signal					R					T
Horn chirp signal					T					R
Key fob door unlock signal					T				R	
Key switch signal					T				R	
Low beam request signal					T					R
Low beam status signal	R									T
Malfunction indicator lamp signal	T			R						
Manual mode indicator signal		T		R						
Manual mode shift down signal		R		T						
Manual mode shift up signal		R		T						
Manual mode signal		R		T						
Not manual mode signal		R		T						
Oil pressure switch signal				R						T
Output shaft revolution signal	R	T								
Panic alarm request signal					R		T			
Parking brake switch signal			R	T						
Position lights request signal				R	T					R
Power window open request signal					R		T			
Rear window defogger control signal	R									T
Rear window defogger switch signal					T					R
Seat belt buckle switch signal				T	R					
Sleep request 1 signal				R	T					

Signals	ECM	TCM	AWD control unit	Combination meter	BCM	Steering angle sensor	Intelligent Key unit	VDC/ TCS/ ABS control unit	Driver seat control unit	IPDM E/R
Sleep request 2 signal					T					R
SNOW mode switch signal	R		R	T						
Starter permission signal					R		T			
Steering angle sensor signal						T		R		
Stop lamp switch signal		R		T						
			R					T		
Theft warning horn request signal					T					R
Tire pressure signal				R	T					
Turbine revolution signal	R	T								
Turn indicator signal				R	T					
Vehicle speed signal			R	R				T		
	R	R		T	R		R		R	
Wake up request 1 signal					T					R
Wake up request 2 signal					T					R
Wide open throttle position signal	T	R								

*: P range and R range only

CAN SYSTEM (TYPE 1)

PFP:23710

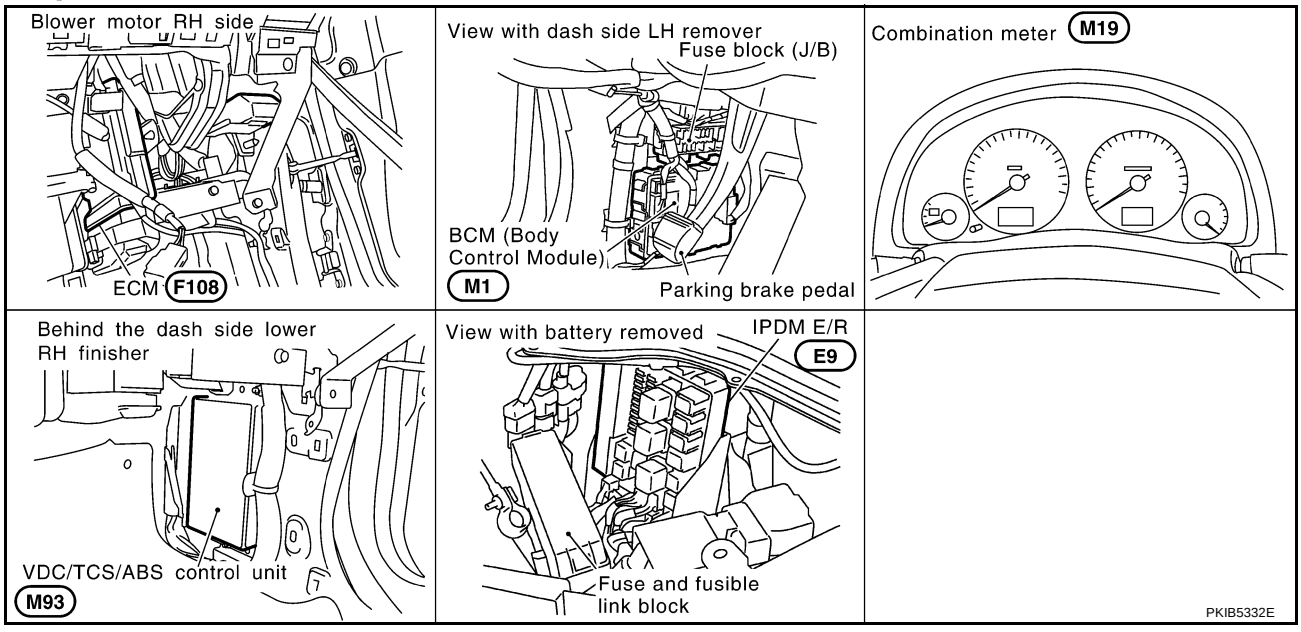
System Description

AKS0092B

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

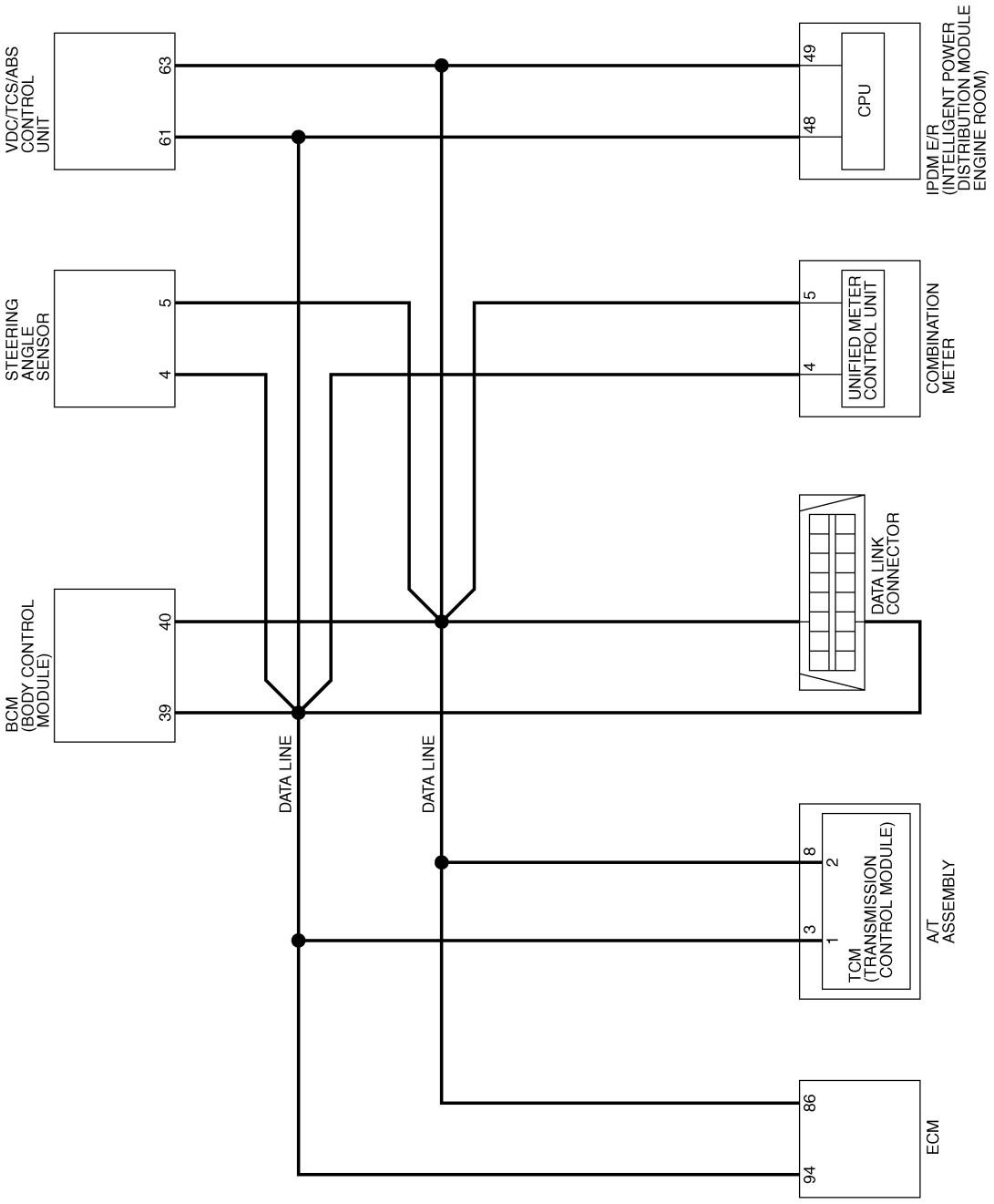
Component Parts and Harness Connector Location

AKS0092C



Schematic–

AKS0092D

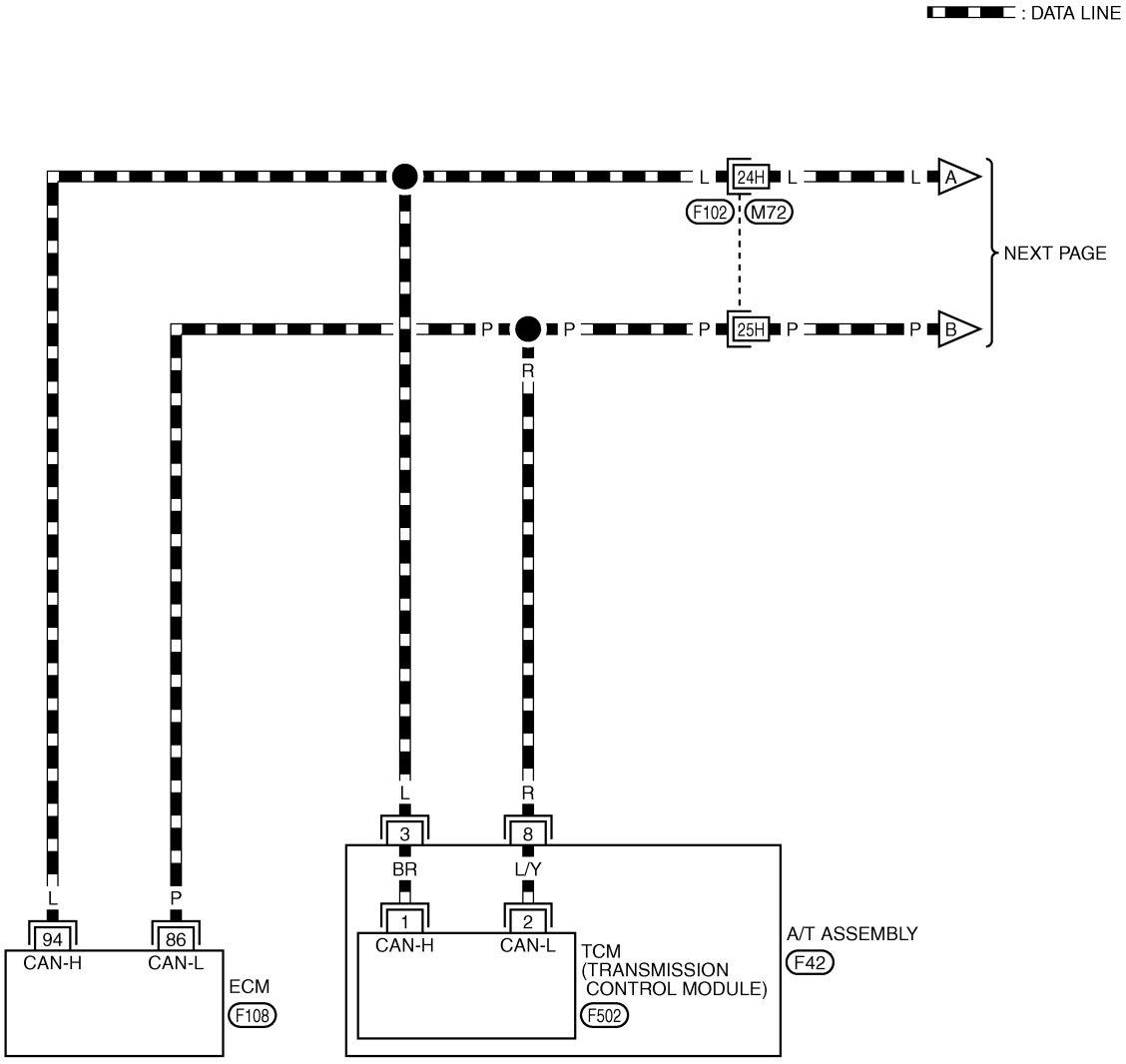


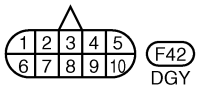
TKWM2111E

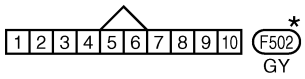
Wiring Diagram - CAN -

AKS0092E

LAN-CAN-01





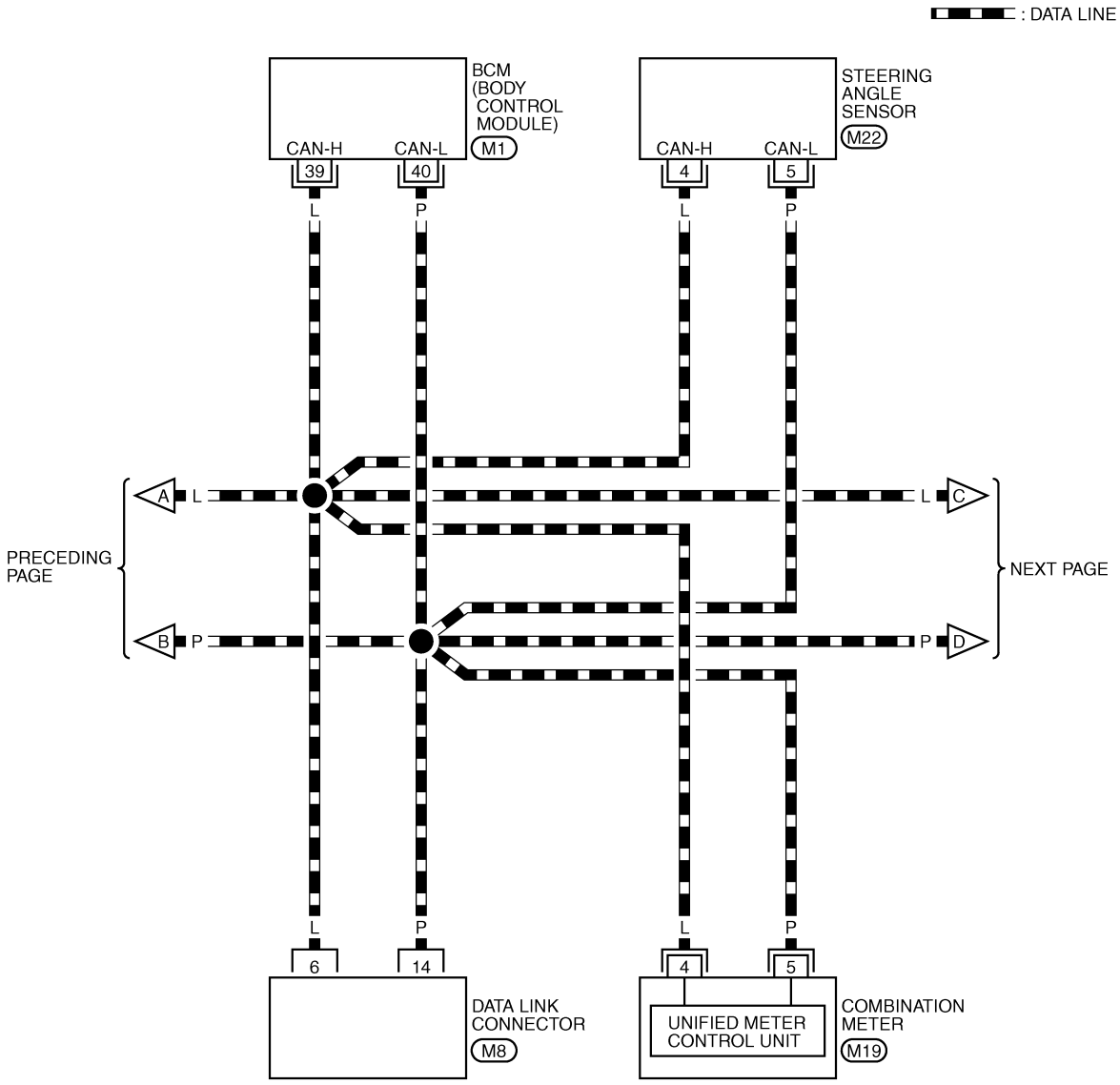


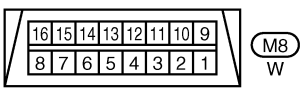
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
F108 -ELECTRICAL UNITS

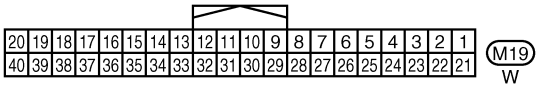
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

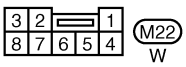
TKWM2112E

LAN-CAN-02





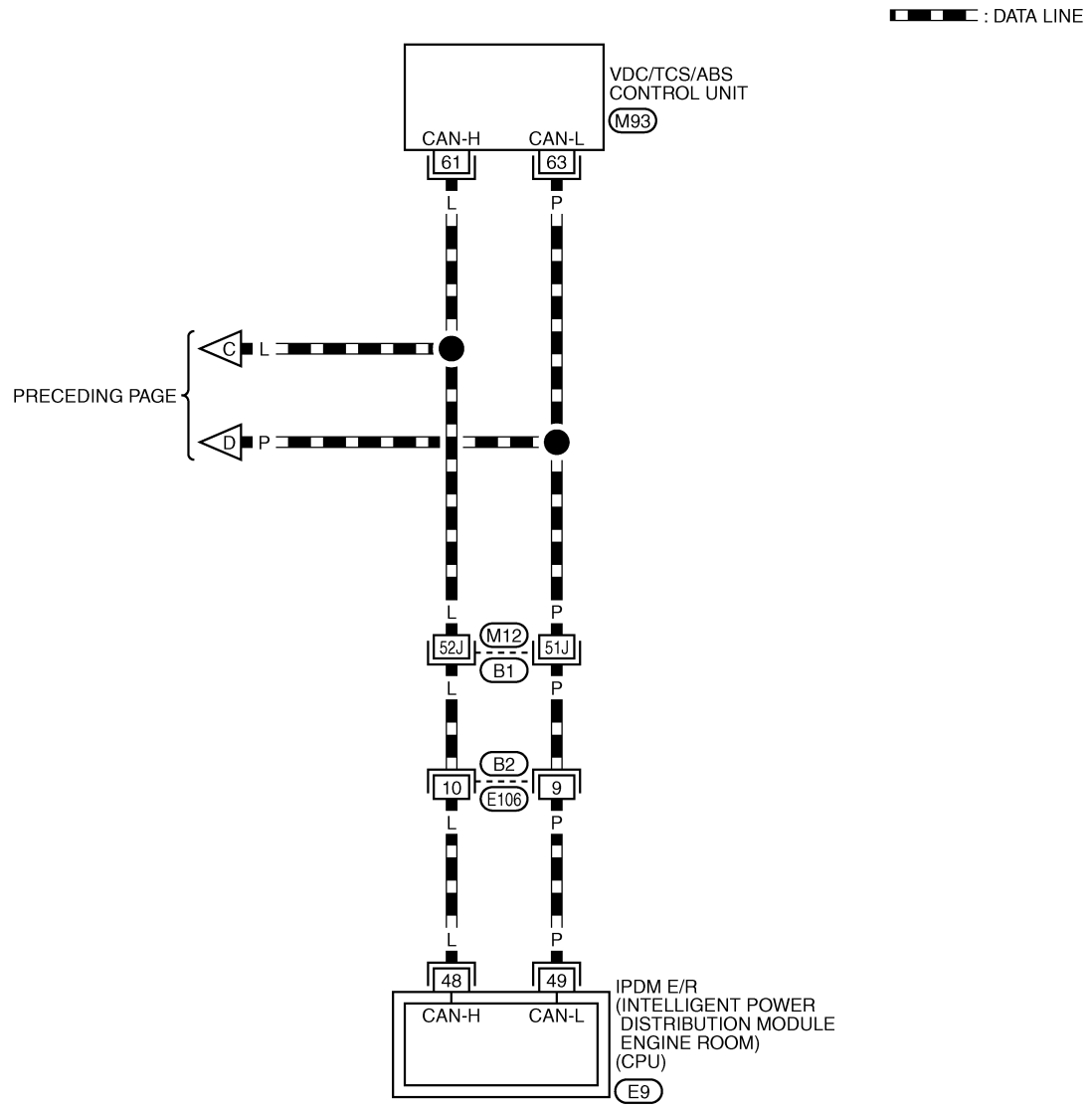




REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2113E

LAN-CAN-03



REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

M93 -ELECTRICAL UNITS

TKWM2114E

CHECK SHEET

AKS0092F

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

Check sheet table

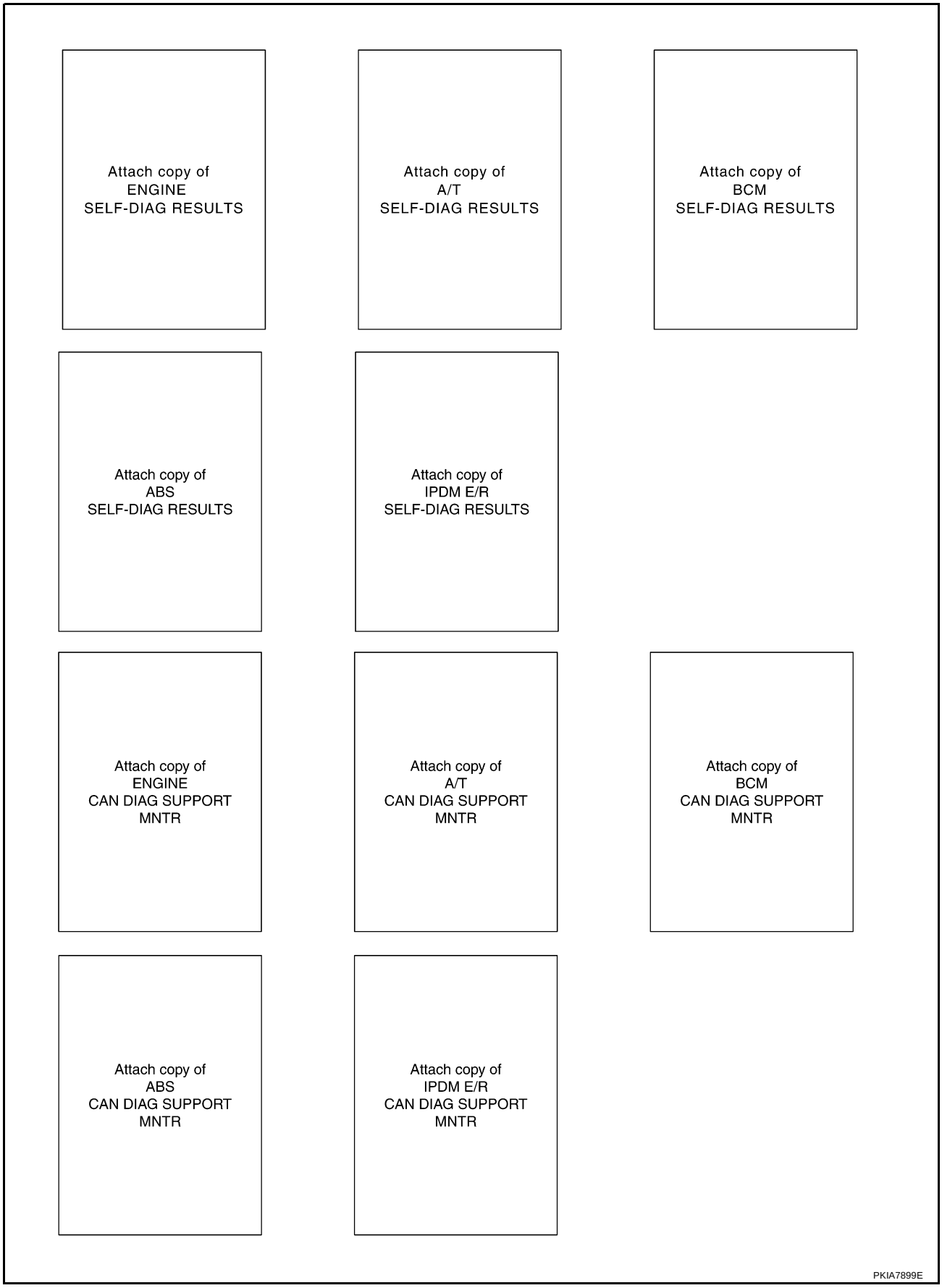
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB3892E


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
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA7899E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

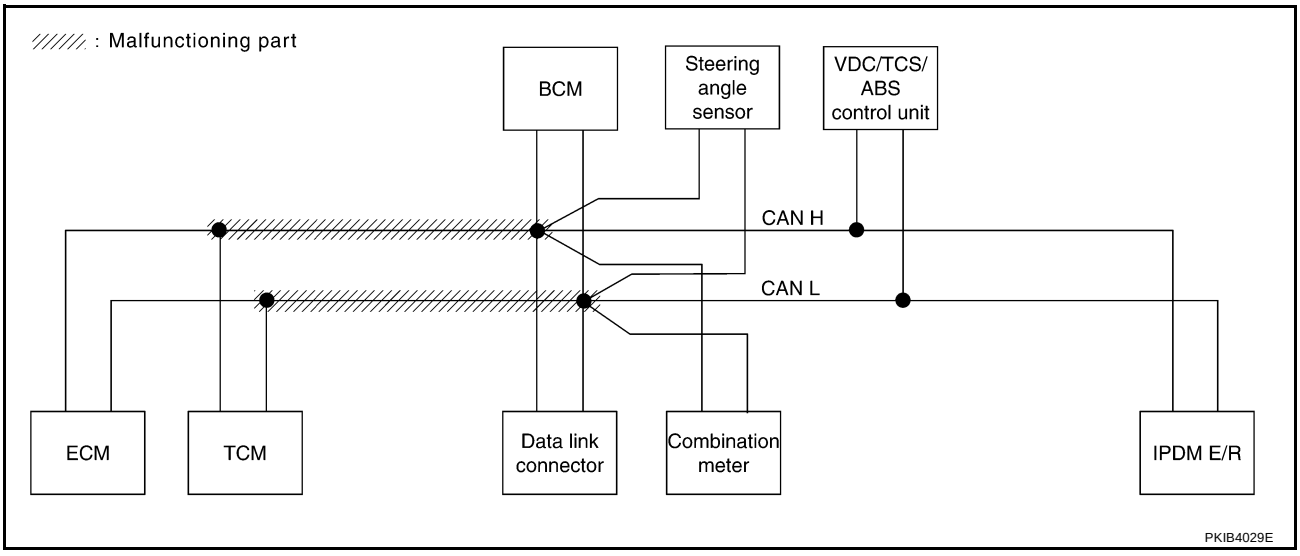
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-47, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB3893E

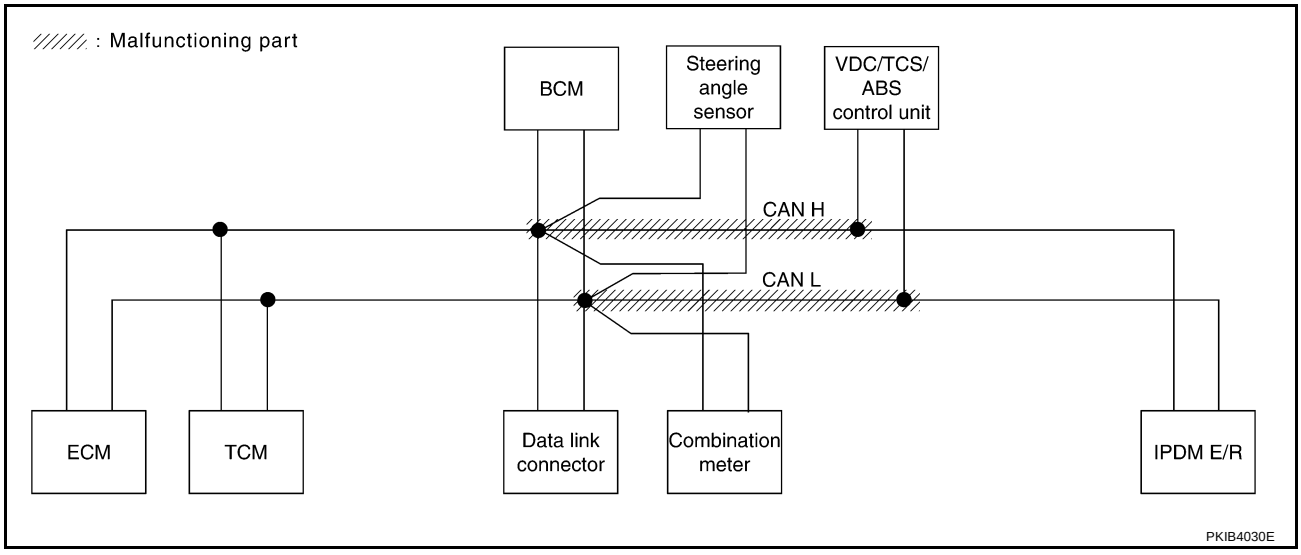


Case 2

Check harness between data link connector and VDC/TCS/ABS control unit. Refer to LAN-48, "Inspection Between Data Link Connector and VDC/TCS/ABS Control Unit Circuit" .

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

PKIB3894E



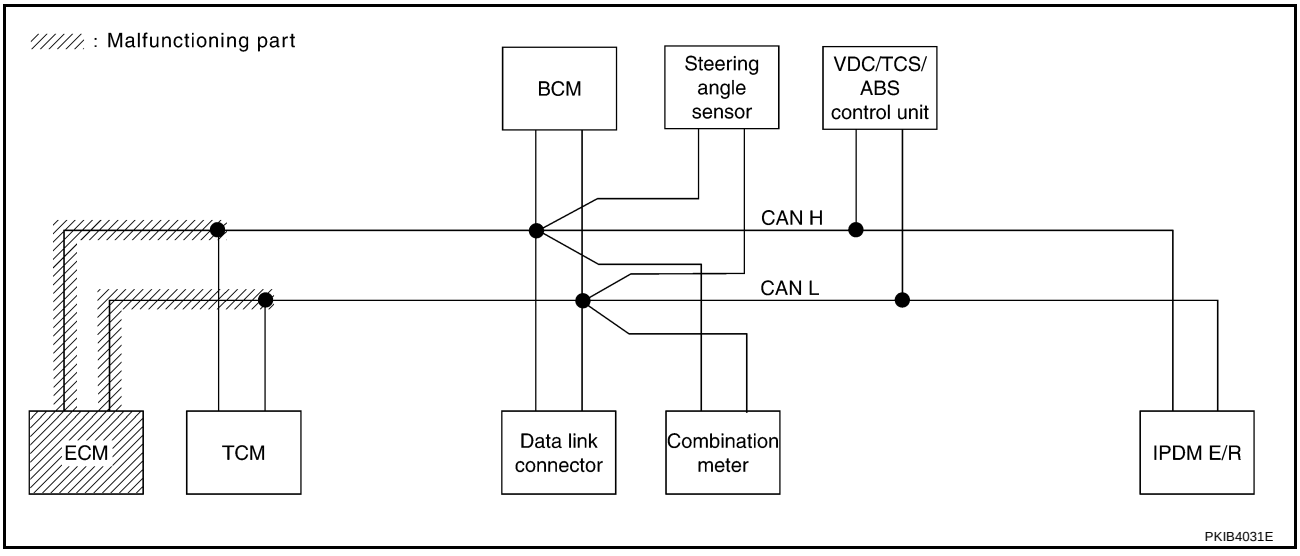
PKIB4030E

Case 3

Check ECM circuit. Refer to LAN-49, "ECM Circuit Inspection" .

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

PKIB3895E



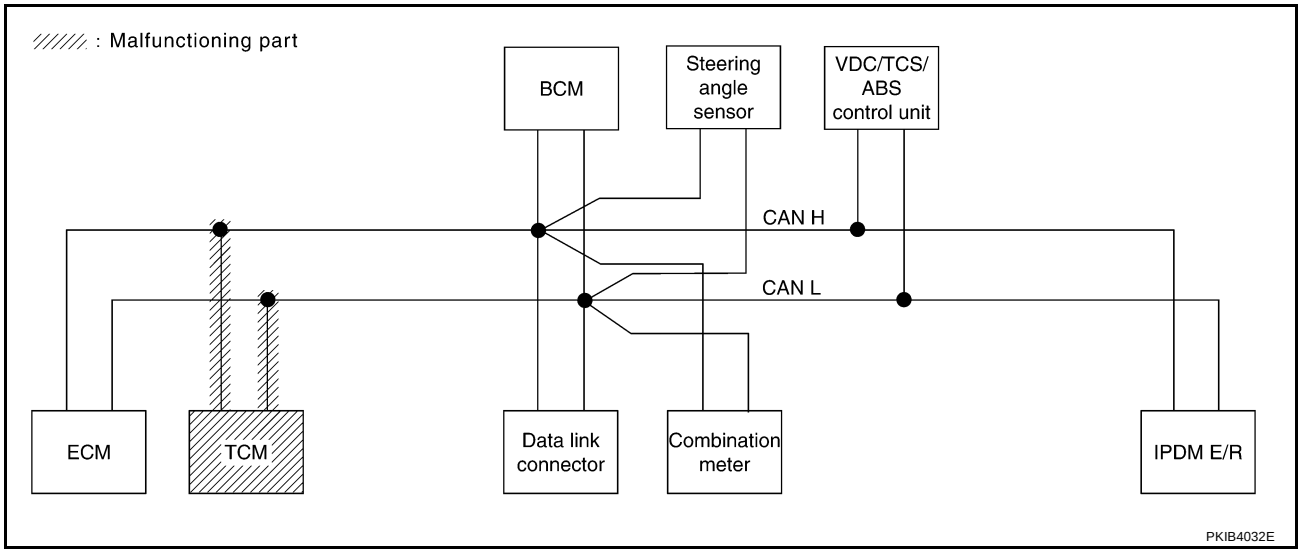
PKIB4031E

Case 4

Check TCM circuit. Refer to LAN-49, "TCM Circuit Inspection" .

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

PKIB3896E



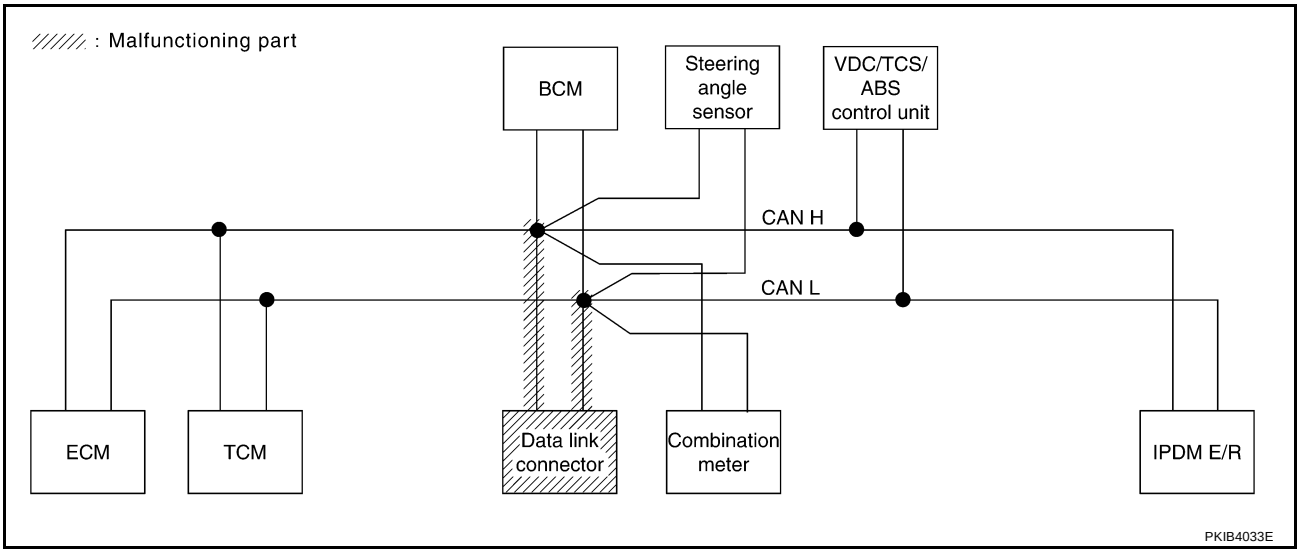
PKIB4032E

Case 5

Check data link connector circuit. Refer to LAN-50, "Data Link Connector Circuit Inspection" .

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

PKIB3897E



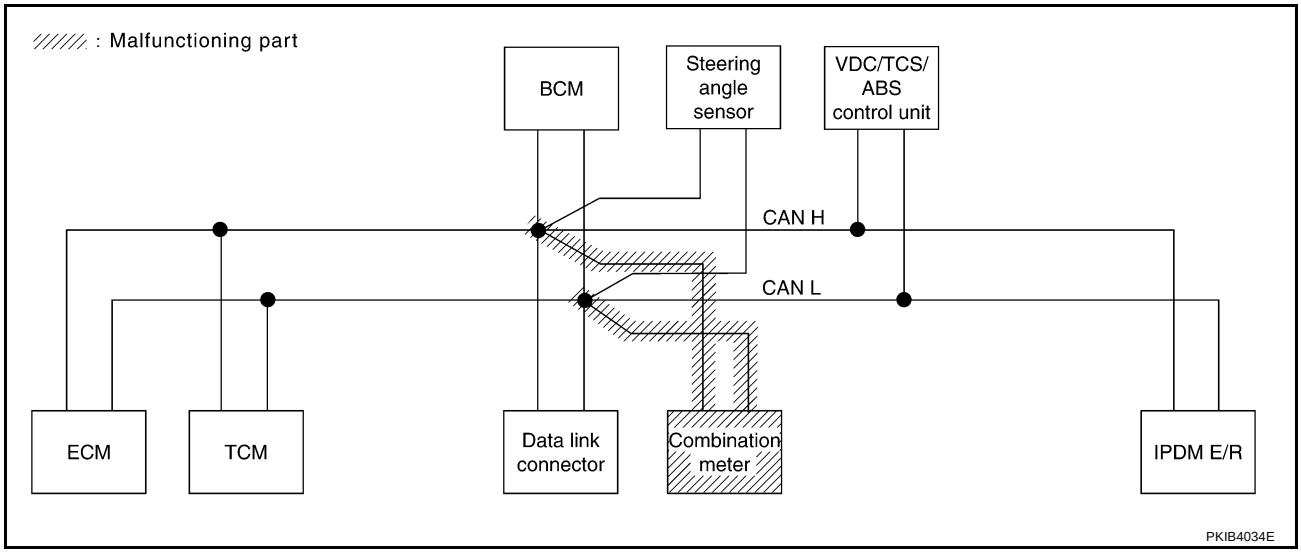
PKIB4033E

Case 6

Check combination meter circuit. Refer to LAN-50, "Combination Meter Circuit Inspection" .

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

PKIB3898E



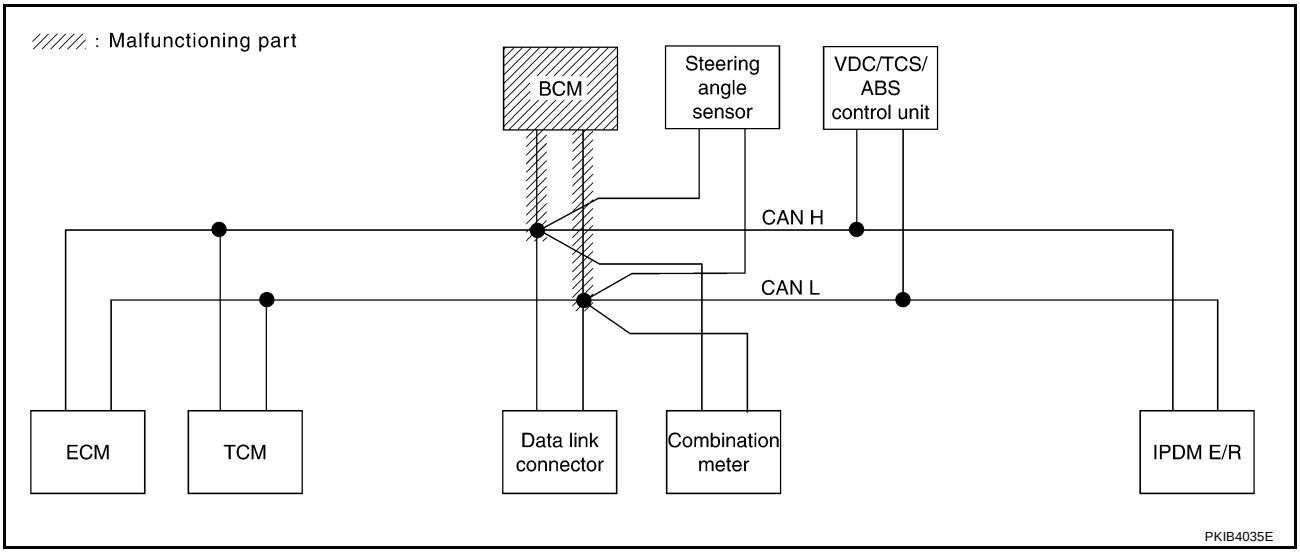
PKIB4034E

Case 7

Check BCM circuit. Refer to LAN-51, "BCM Circuit Inspection" .

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

PKIB3899E



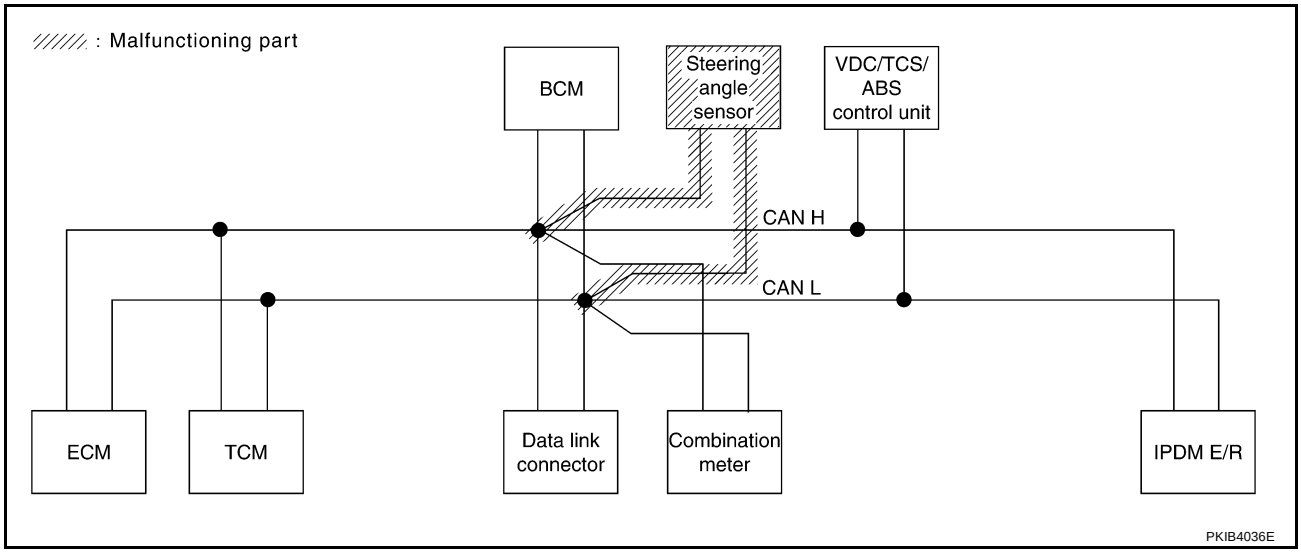
PKIB4035E

Case 8

Check steering angle sensor circuit. Refer to LAN-51, "Steering Angle Sensor Circuit Inspection" .

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

PKIB3900E



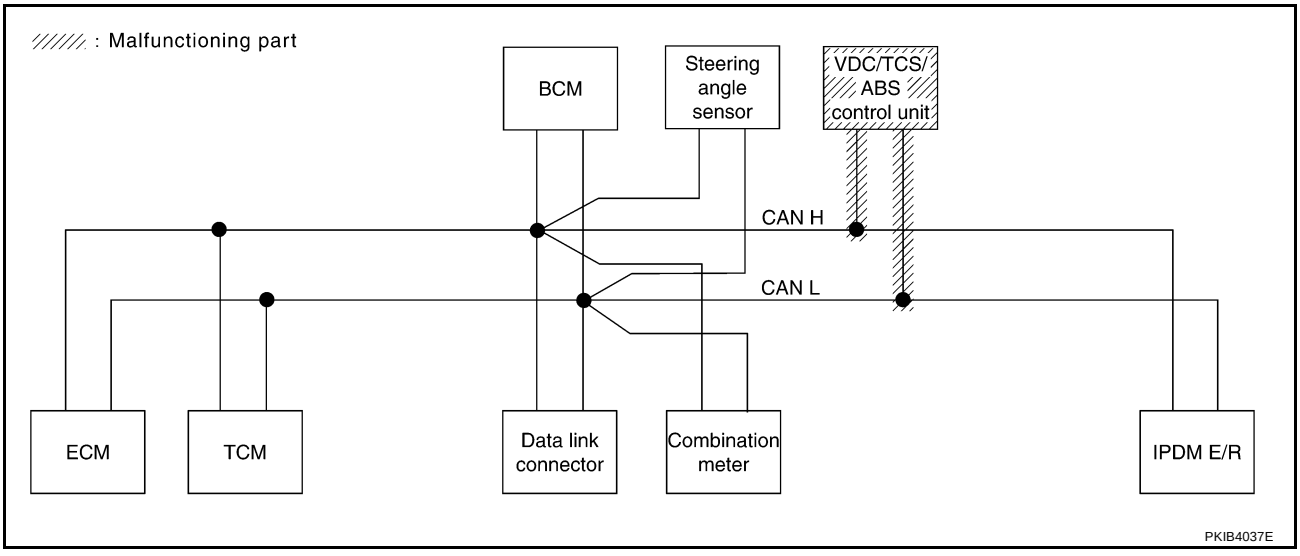
PKIB4036E

Case 9

Check VDC/TCS/ABS control unit circuit. Refer to LAN-52, "VDC/TCS/ABS Control Unit Circuit Inspection" .

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

PKIB3901E



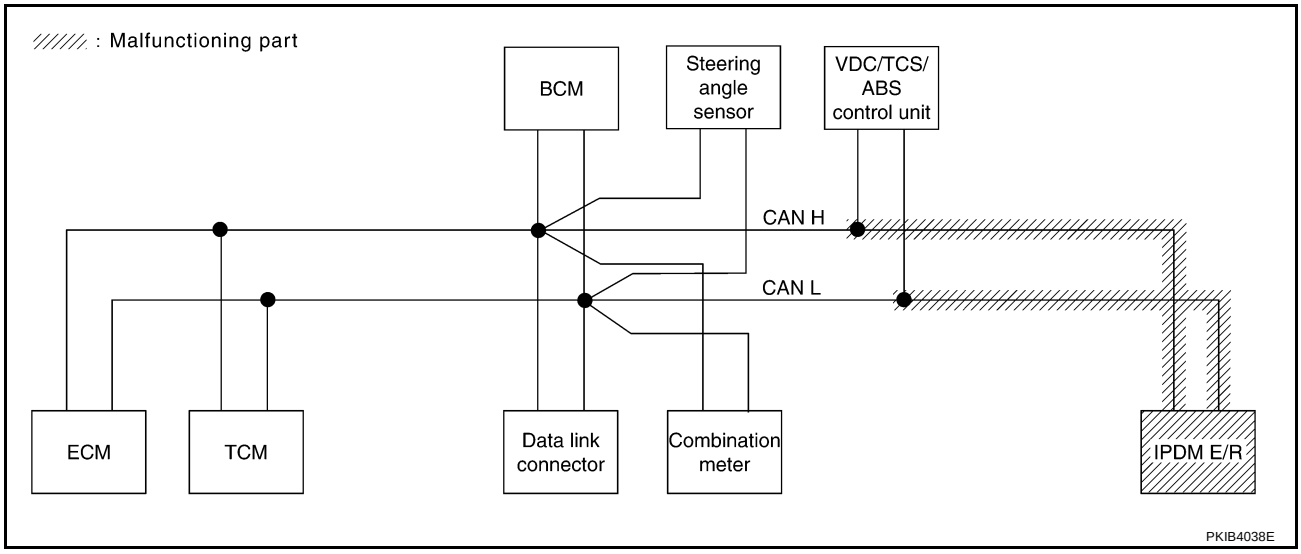
PKIB4037E

Case 10

Check IPDM E/R circuit. Refer to LAN-52, "IPDM E/R Circuit Inspection" .

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

PKIB3902E



PKIB4038E

Case 11

Check CAN communication circuit. Refer to LAN-53, "CAN Communication Circuit Inspection" .

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

PKIB3903E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-56, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIB3904E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-56, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIB3905E

Inspection Between TCM and Data Link Connector Circuit

AKS0092G

1. CHECK CONNECTOR

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

- Harness connector F102
- Harness connector M72

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F42 terminals 3 (L), 8 (R) and harness connector F102 terminals 24H (L), 25H (P).

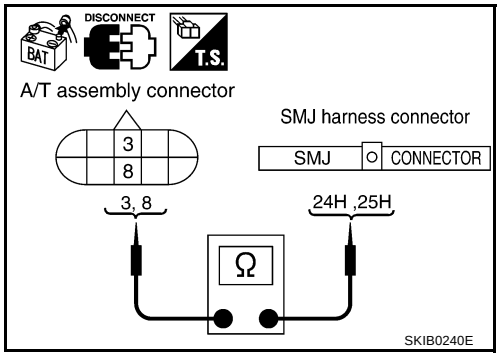
3 (L) – 24H (L) : Continuity should exist.

8 (R) – 25H (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 24H (L), 25H (P) and data link connector M8 terminals 6 (L), 14 (P).

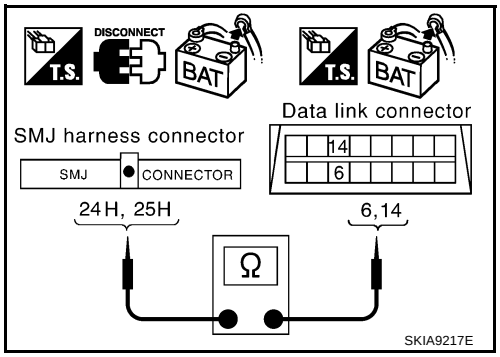
24H (L) – 6 (L) : Continuity should exist.

25H (P) – 14 (P) : Continuity should exist.

OK or NG

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

NG >> Repair harness.



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

AKS0092H

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect ECM connector and VDC/TCS/ABS control unit connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and VDC/TCS/ABS control unit harness connector M93 terminals 61 (L), 63 (P).

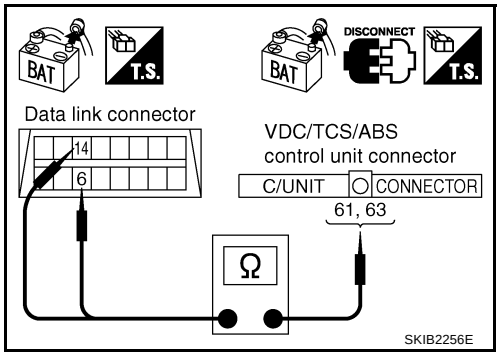
6 (L) – 61 (L) : Continuity should exist.

14 (P) – 63 (P) : Continuity should exist.

OK or NG

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

NG >> Repair harness.



ECM Circuit Inspection

AKS0092I

1. CHECK CONNECTOR

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

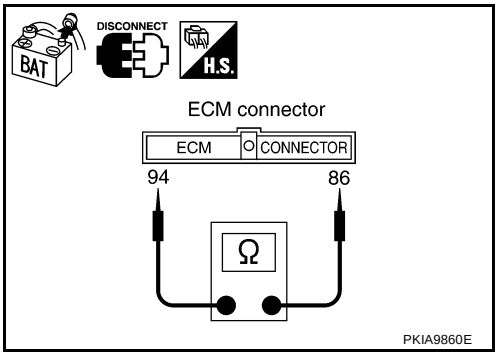
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F108 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω



OK or NG

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

TCM Circuit Inspection

AKS0092J

1. CHECK CONNECTOR

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

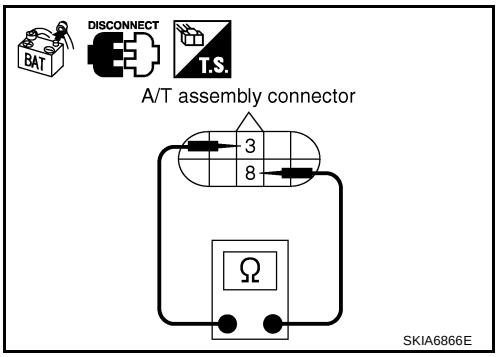
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F42 terminals 3 (L) and 8 (R).

3 (L) – 8 (R) : Approx. 54 – 66 Ω



OK or NG

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

Data Link Connector Circuit Inspection

AKS00AAH

1. CHECK CONNECTOR

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

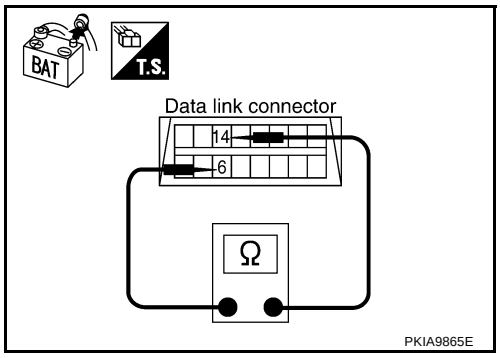
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

Combination Meter Circuit Inspection

AKS0092K

1. CHECK CONNECTOR

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

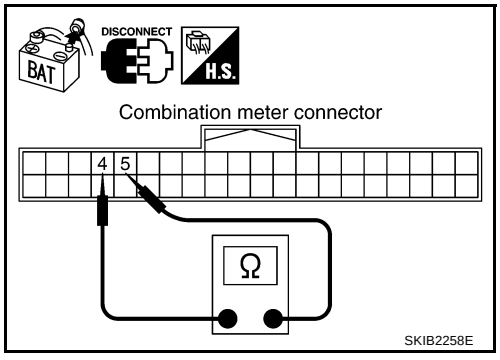
OK or NG

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 M19 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS0092L

1. CHECK CONNECTOR

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

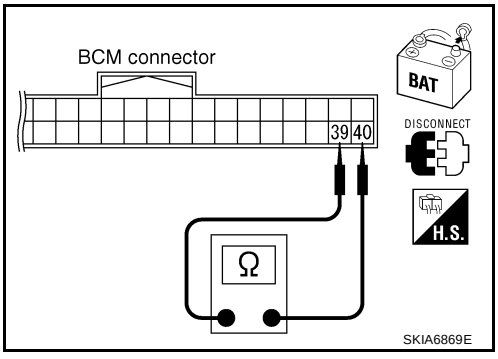
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M1 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Steering Angle Sensor Circuit Inspection

AKS0092M

1. CHECK CONNECTOR

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

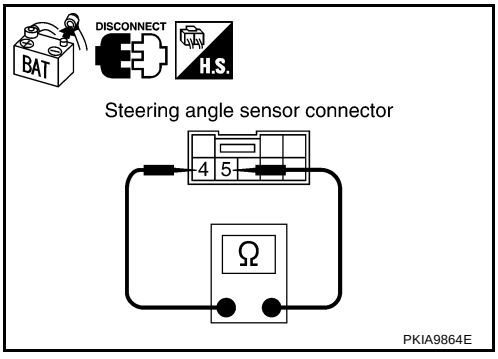
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) – 5 (P) : Approx. 54 – 66 Ω



OK or NG

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

VDC/TCS/ABS Control Unit Circuit Inspection

AKS0092N

1. CHECK CONNECTOR

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

OK or NG

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

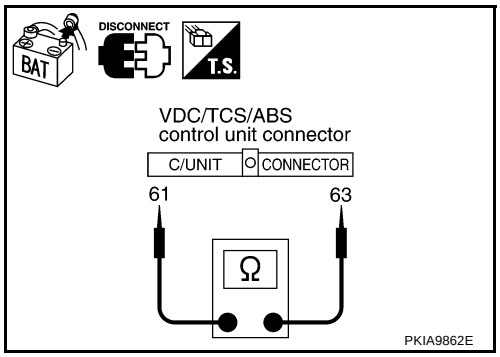
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector M93 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace VDC/TCS/ABS control unit.
NG >> Repair harness between VDC/TCS/ABS control unit and harness connector M12.



IPDM E/R Circuit Inspection

AKS0092O

1. CHECK CONNECTOR

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

- IPDM E/R connector
- Harness connector B2
- Harness connector E106
- Harness connector M12
- Harness connector B1

OK or NG

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

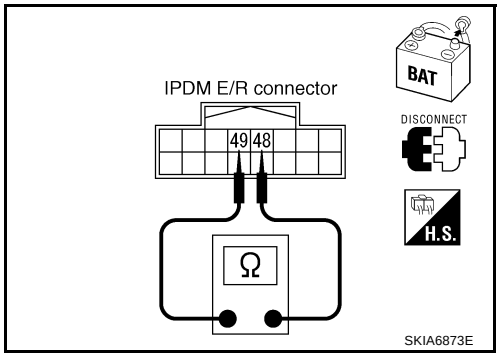
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : Approx. 108 – 132 Ω

OK or NG

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



CAN Communication Circuit Inspection

AKS0092P

1. CHECK CONNECTOR

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

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

OK or NG

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

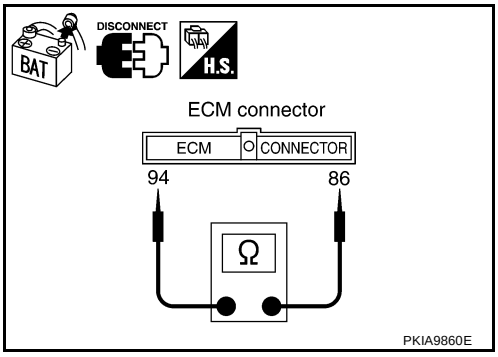
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

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

2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (P).

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



OK or NG

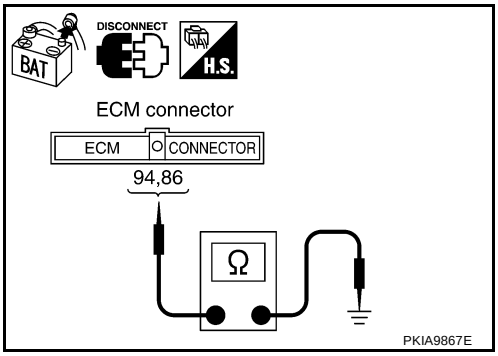
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F108 terminals 94 (L), 86 (P) and ground.

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



OK or NG

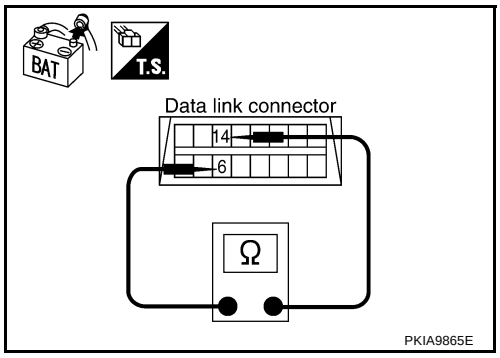
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

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

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Combination meter connector
- BCM connector
- Steering angle sensor connector
- VDC/TCS/ABS control unit connector
- Harness connector M12

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



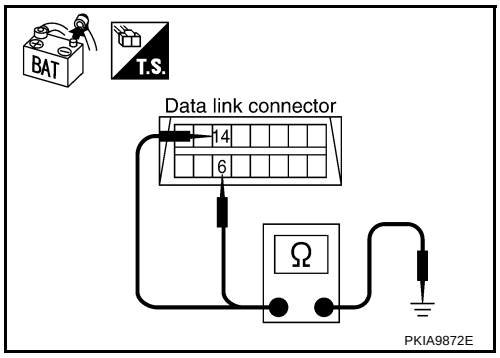
6 (L) – 14 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

5. CHECK HARNESS FOR SHORT CIRCUIT

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



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

OK or NG

OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

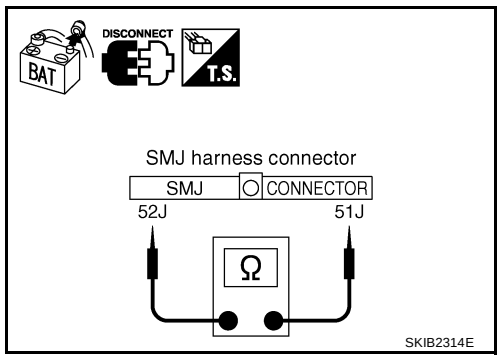
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B2.
2. Check continuity between harness connector B1 terminals 52J (L) and 51J (P).

52J (L) – 51J (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector B1 and harness connector B2.



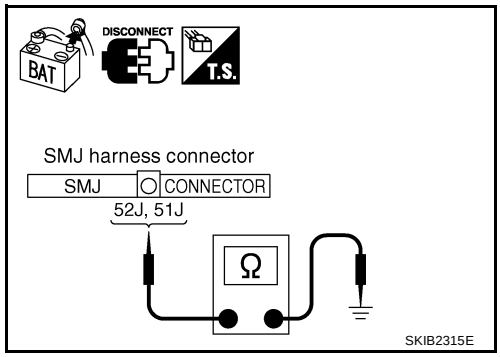
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B1 terminals 52J (L), 51J (P) and ground.

52J (L) – Ground : Continuity should not exist.
51J (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector B1 and harness connector B2.



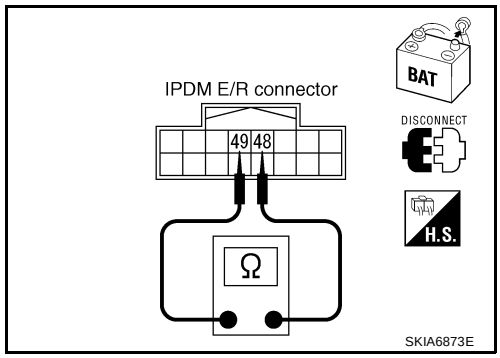
8. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 9.
NG >> Repair harness between IPDM E/R and harness connector B2.



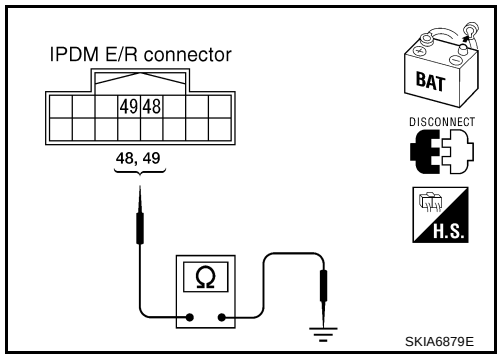
9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 10.
NG >> Repair harness between IPDM E/R and harness connector B2.



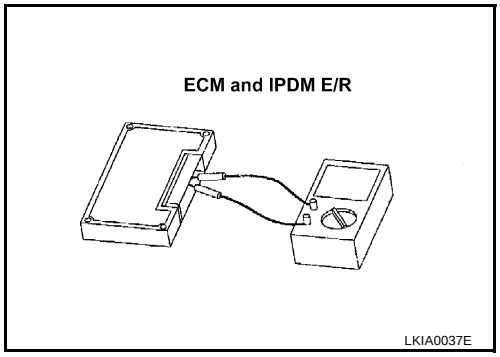
10. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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

94 – 86 : Approx. 108 – 132 Ω

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

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 11.
NG >> Replace ECM and/or IPDM E/R.

11. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 12.
NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

12. CHECK UNIT REPRODUCIBILITY

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

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

- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- VDC/TCS/ABS control unit
- ECM
- IPDM E/R

Check results

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

IPDM E/R Ignition Relay Circuit Inspection

AKS0092Q

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-10, "IGNITION POWER SUPPLY - IGNITION SW. IN “ON” AND/OR “START”" .

CAN SYSTEM (TYPE 2)

PFP:23710

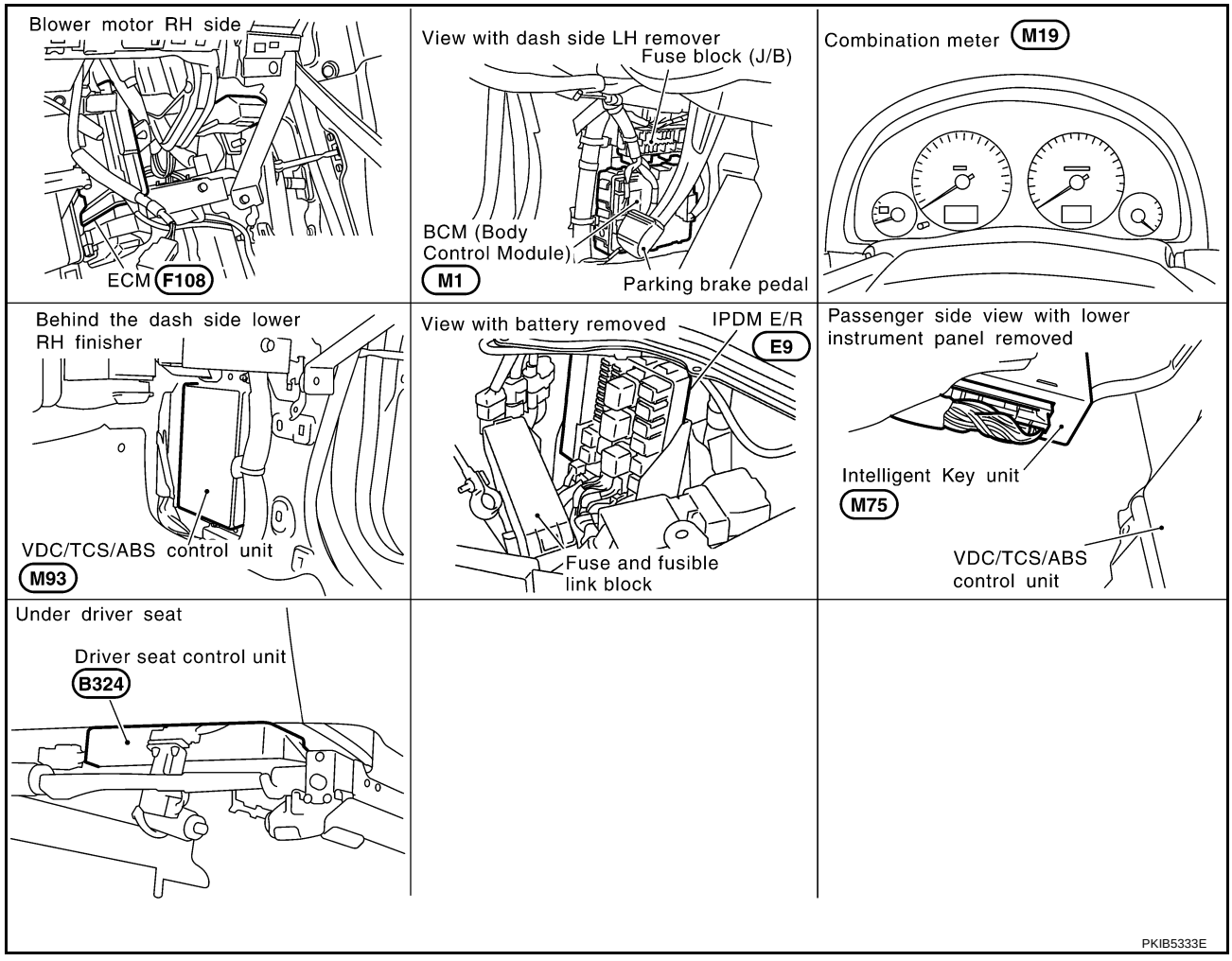
System Description

AKS00C9L

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

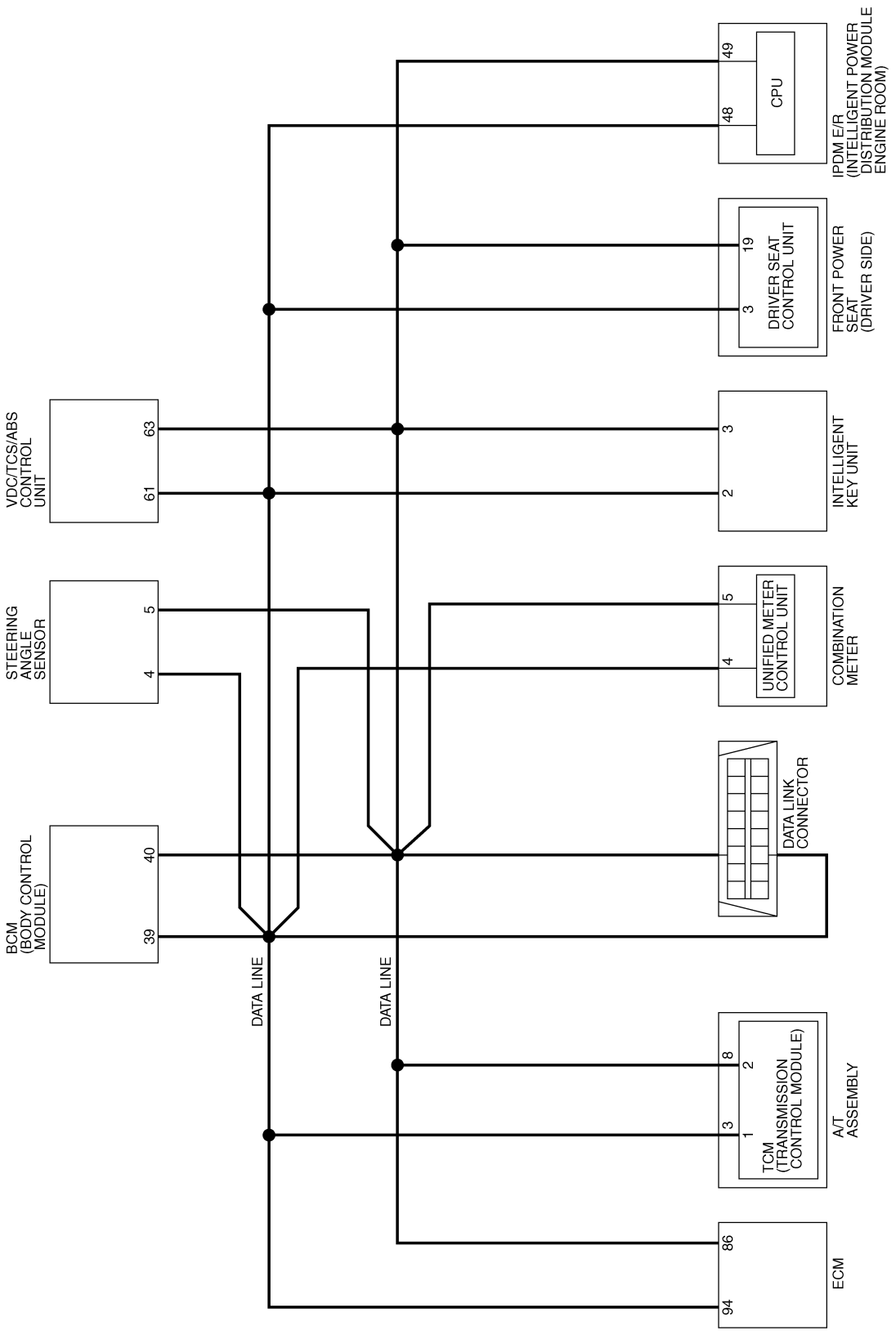
Component Parts and Harness Connector Location

AKS00C9M



Schematic

AKS00C9N

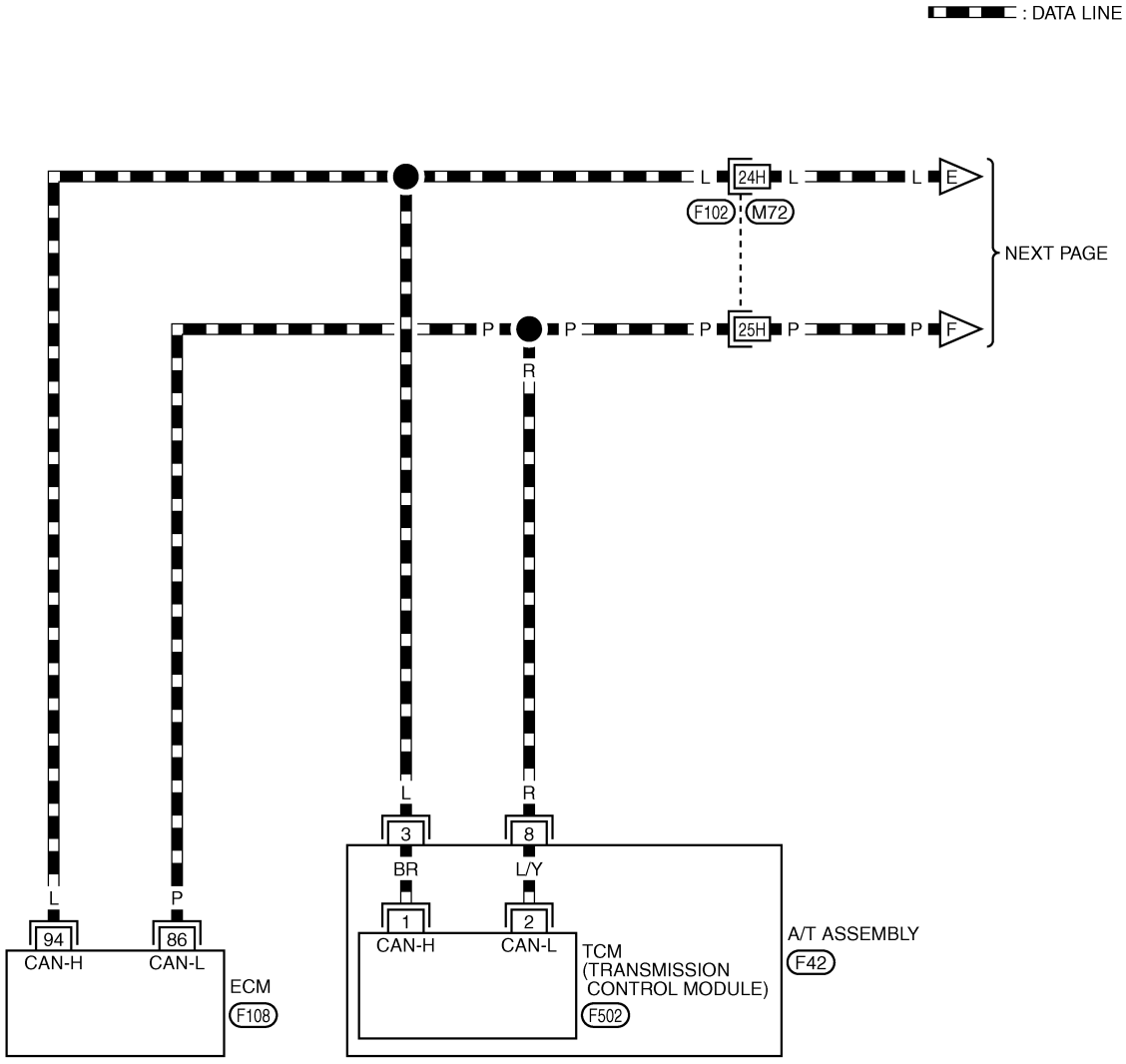


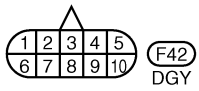
TKWM2465E

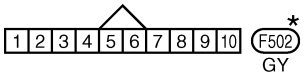
Wiring Diagram - CAN -

AKS00C9O

LAN-CAN-04





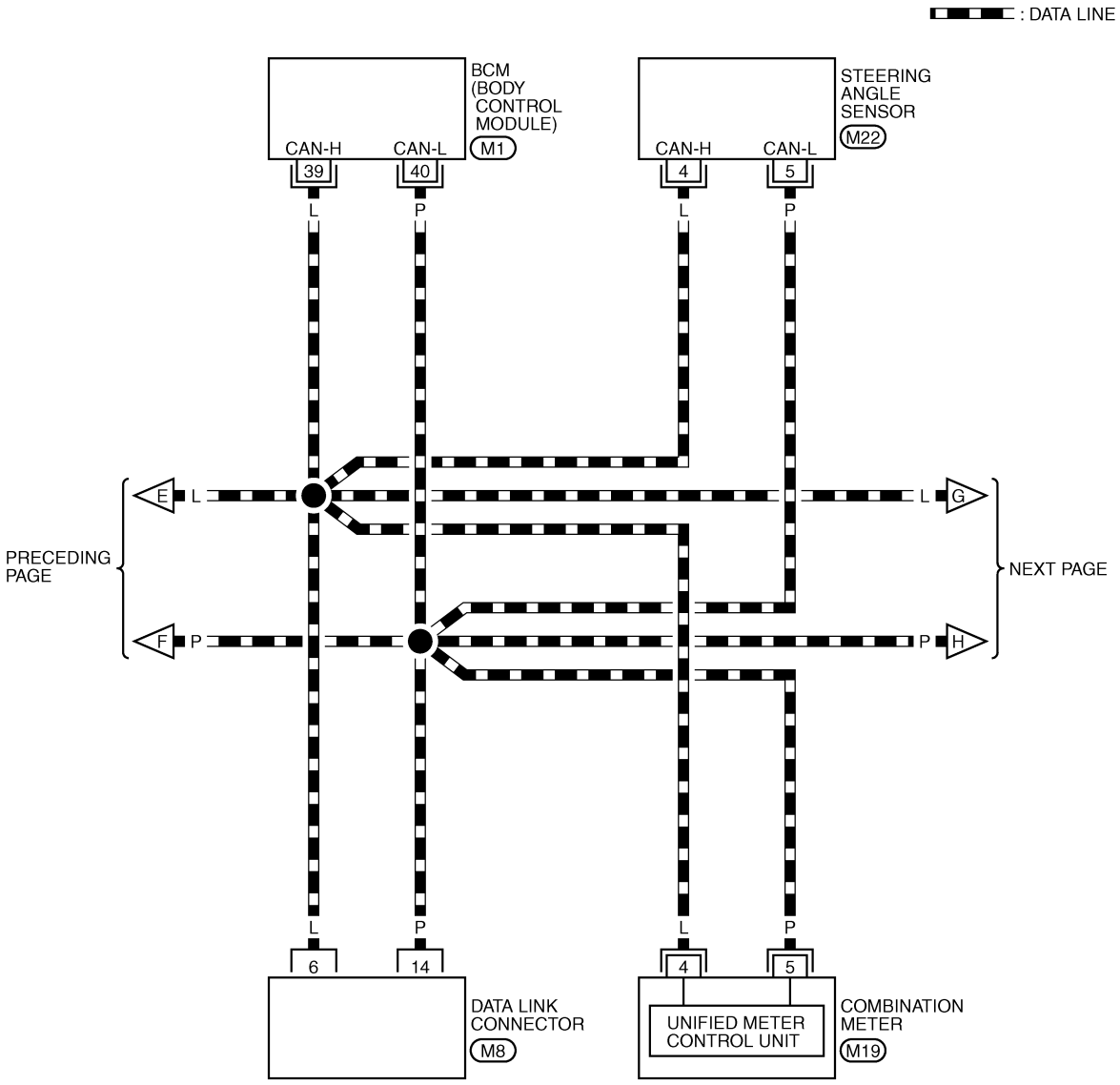


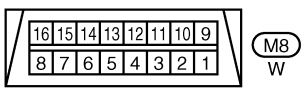
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
F108 -ELECTRICAL UNITS

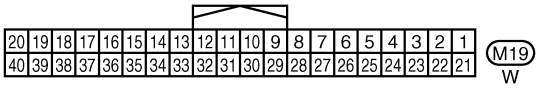
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

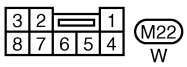
TKWM2466E

LAN-CAN-05





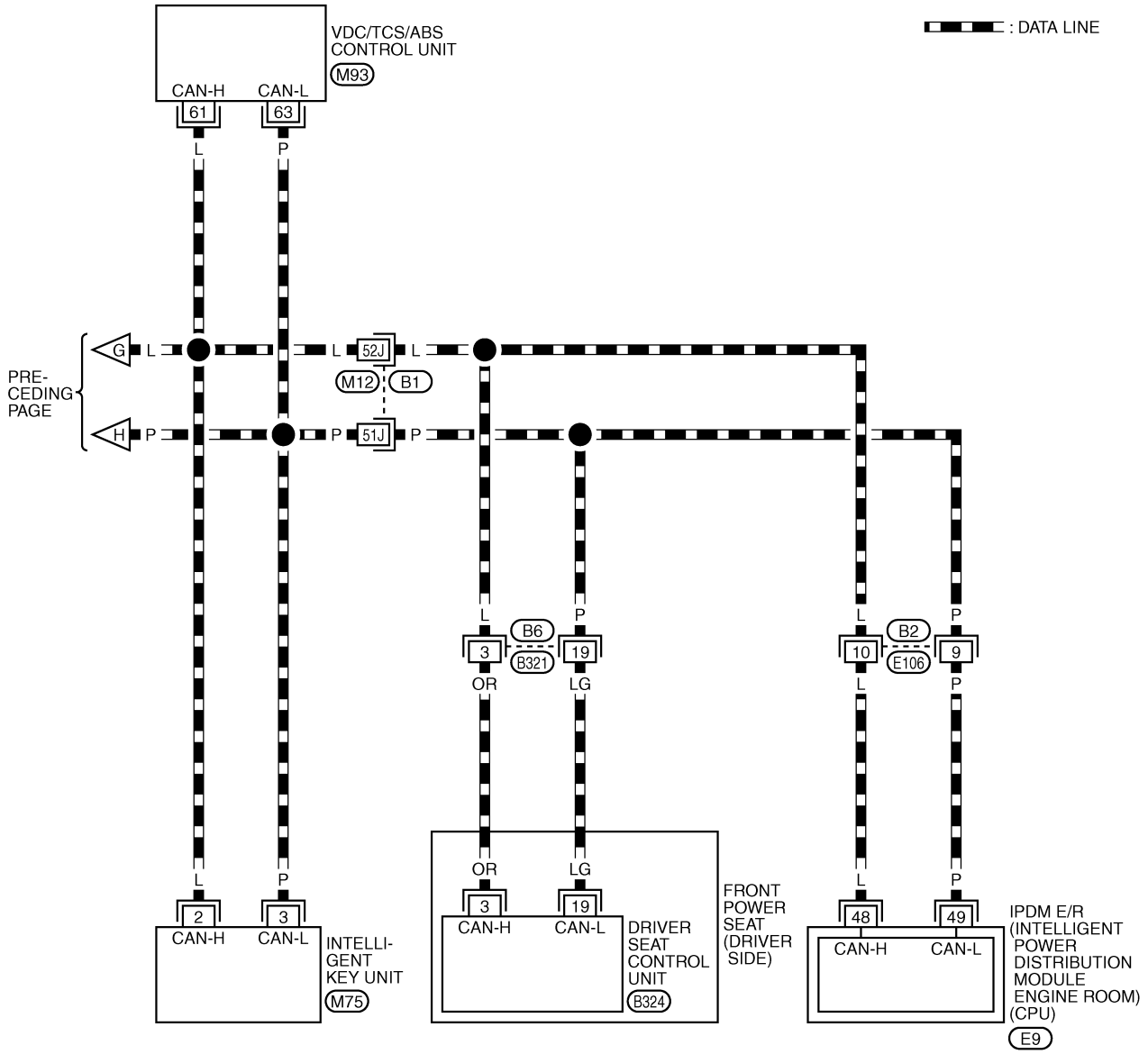


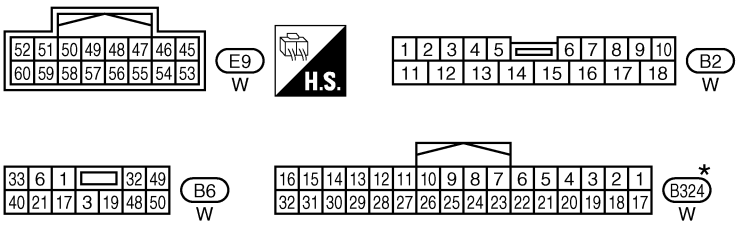


REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2467E

LAN-CAN-06





REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M75, M93 -ELECTRICAL UNITS

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

TKWM2468E

CHECK SHEET

AKS00C9P

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

Check sheet table

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

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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 INTELLIGENT KEY SELF-DIAG RESULTS
Attach copy of ABS SELF-DIAG RESULTS	Attach copy of AUTO DRIVE POS. 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 INTELLIGENT KEY CAN DIAG SUPPORT MNTR
Attach copy of ABS CAN DIAG SUPPORT MNTR	Attach copy of AUTO DRIVE POS. CAN DIAG SUPPORT MNTR	Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR	

PKIB3907E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

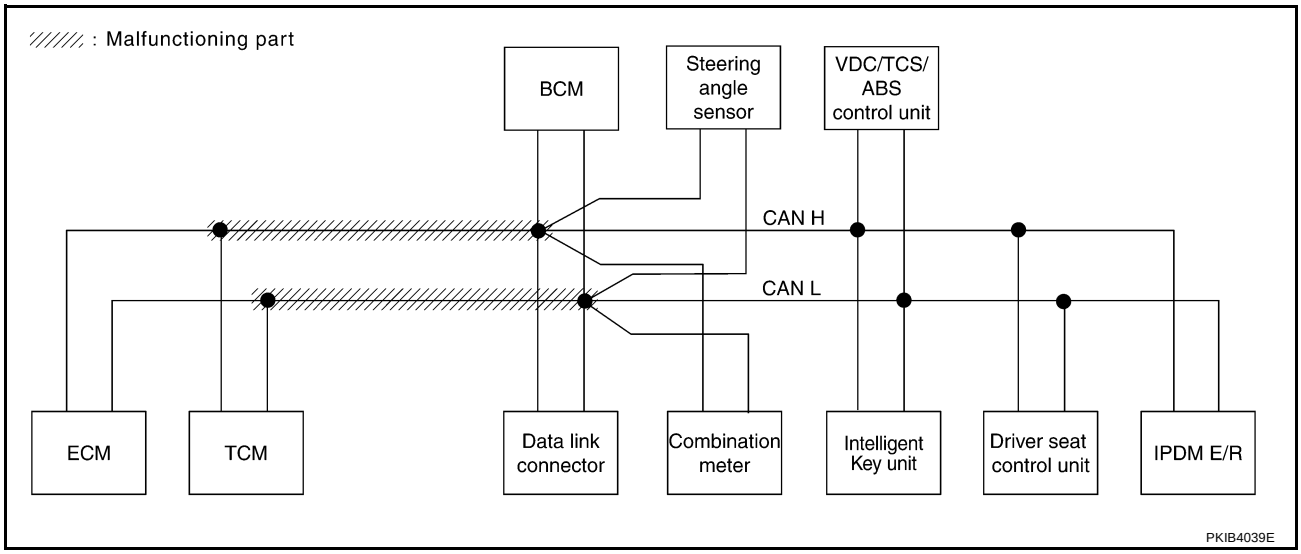
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-77, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB3908E

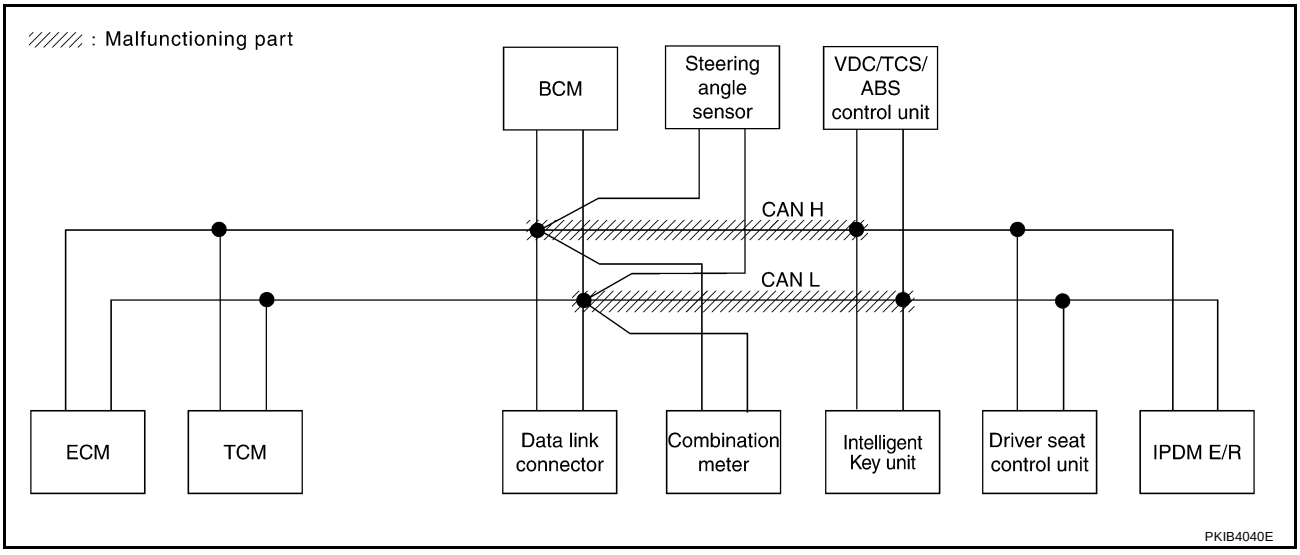


Case 2

Check harness between data link connector and Intelligent Key unit. Refer to LAN-78, "Inspection Between Data Link Connector and Intelligent Key Unit Circuit" .

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

PKIB3909E



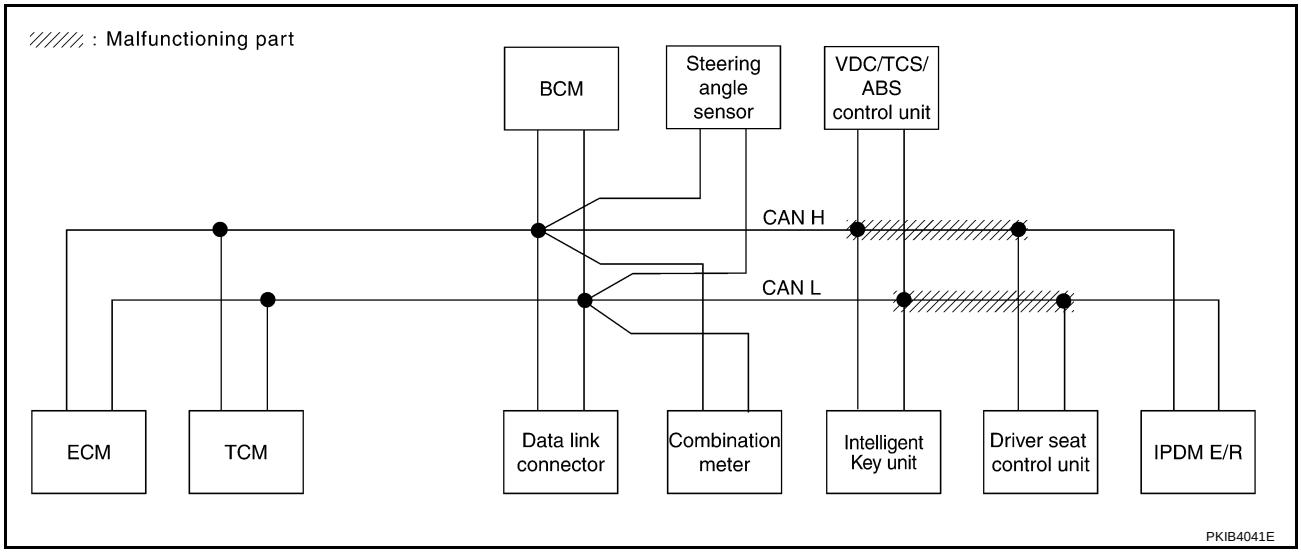
PKIB4040E

Case 3

Check harness between Intelligent Key unit and driver seat control unit. Refer to LAN-79, "Inspection Between Intelligent Key Unit and Driver Seat Control Unit Circuit" .

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

PKIB3910E



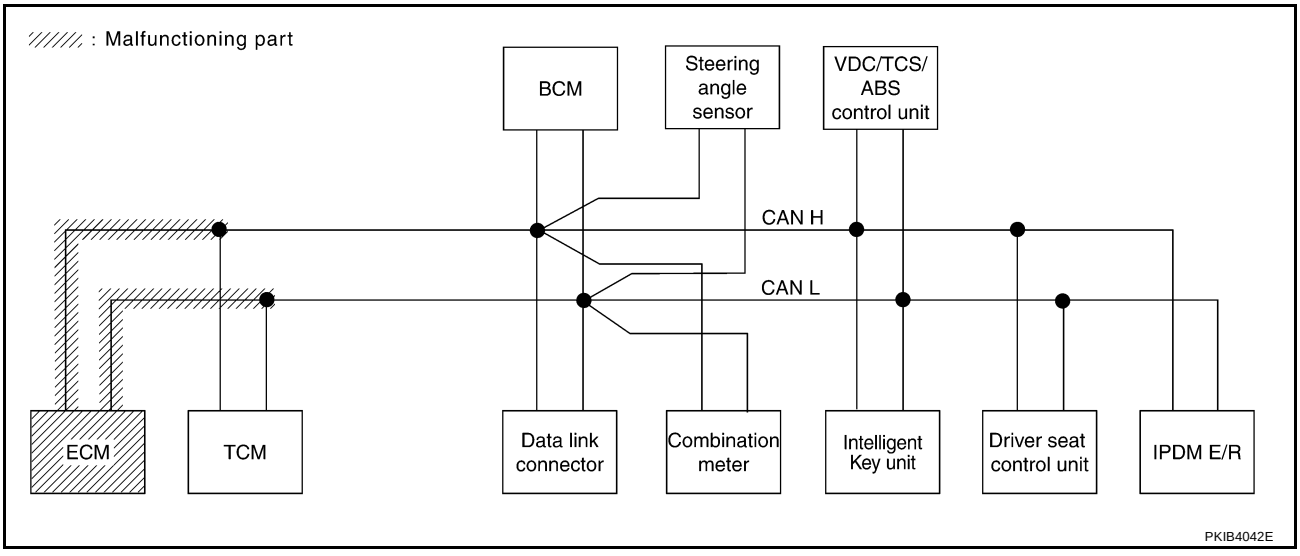
PKIB4041E

Case 4

Check ECM circuit. Refer to LAN-79, "ECM Circuit Inspection" .

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

PKIB3911E



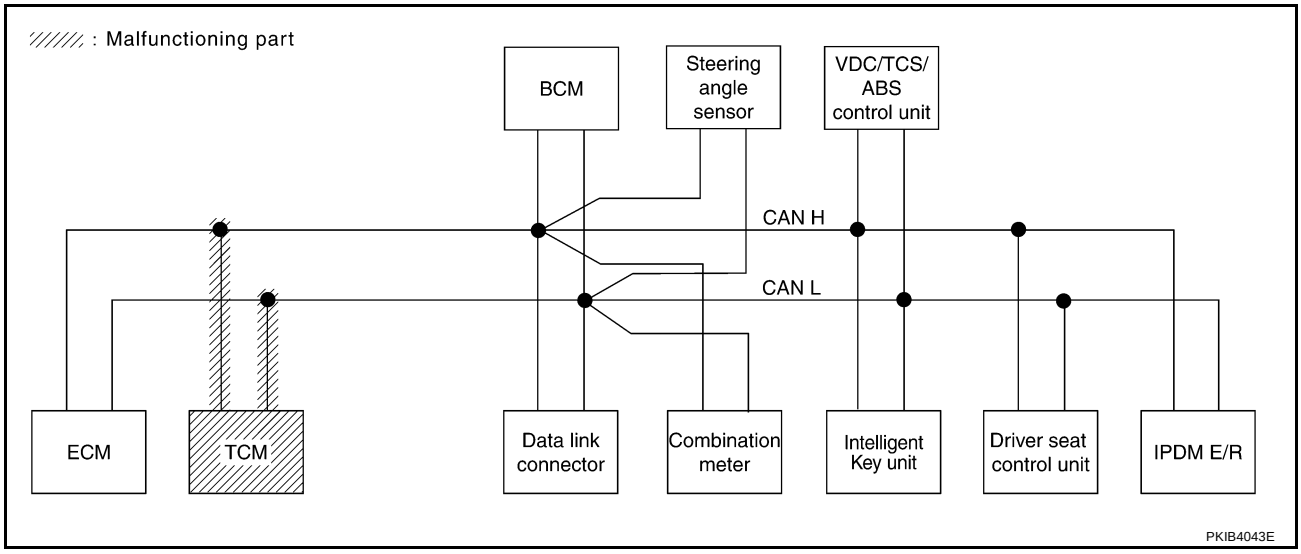
PKIB4042E

Case 5

Check TCM circuit. Refer to LAN-80, "TCM Circuit Inspection" .

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

PKIB3912E



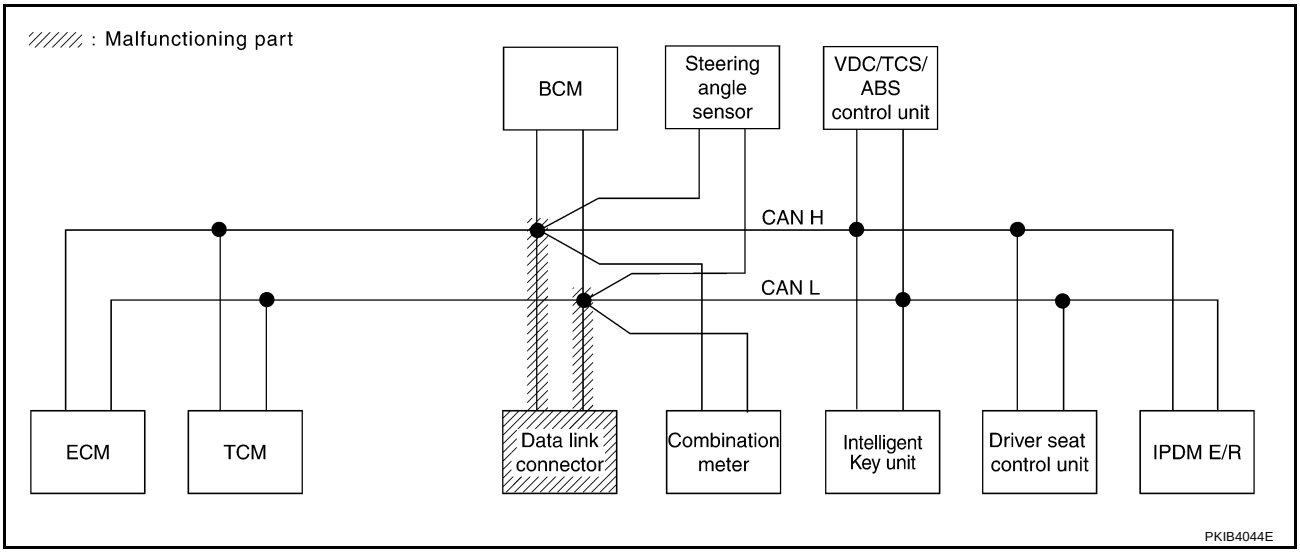
PKIB4043E

Case 6

Check data link connector circuit. Refer to LAN-80, "Data Link Connector Circuit Inspection" .

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

PKIB3913E



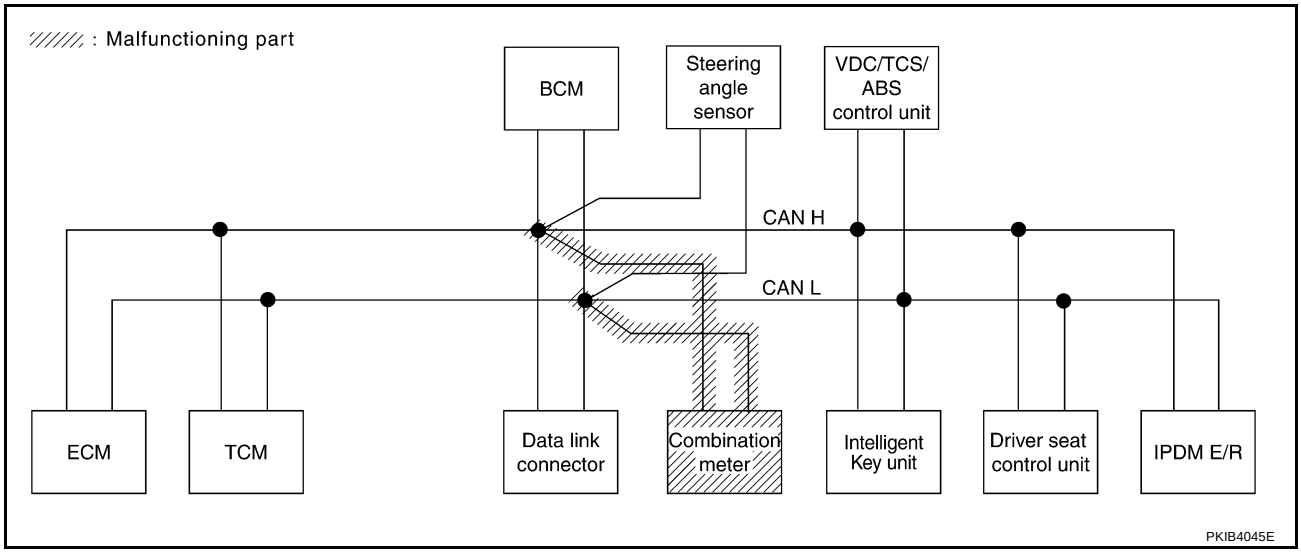
PKIB4044E

Case 7

Check combination meter circuit. Refer to LAN-81, "Combination Meter Circuit Inspection" .

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

PKIB3914E



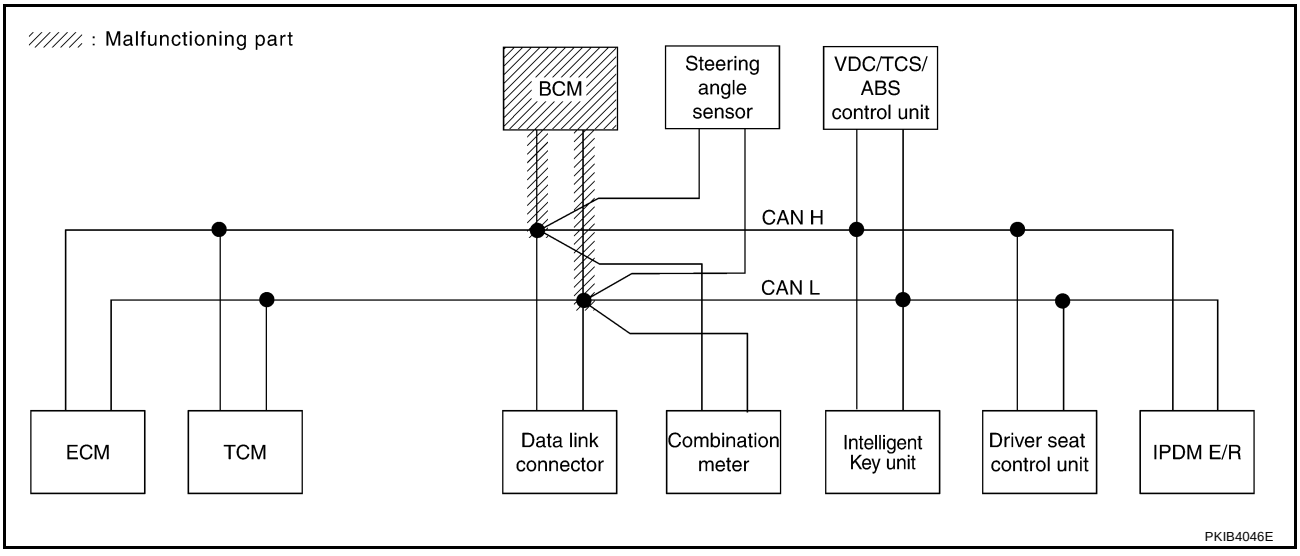
PKIB4045E

Case 8

Check BCM circuit. Refer to LAN-81, "BCM Circuit Inspection" .

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

PKIB3915E



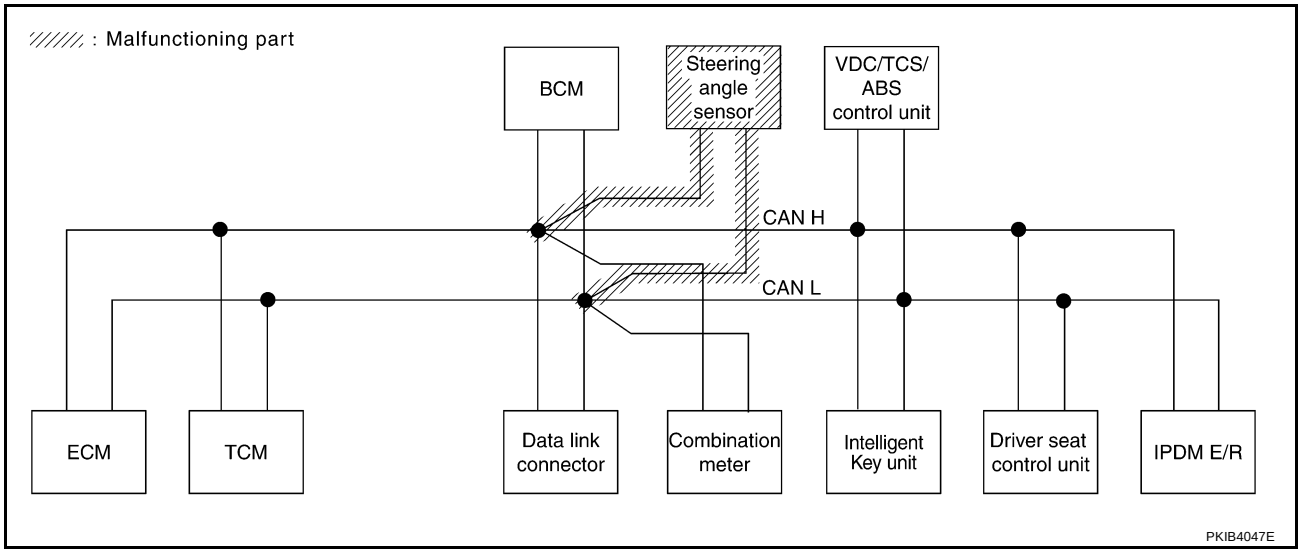
PKIB4046E

Case 9

Check steering angle sensor circuit. Refer to LAN-82, "Steering Angle Sensor Circuit Inspection" .

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

PKIB3916E



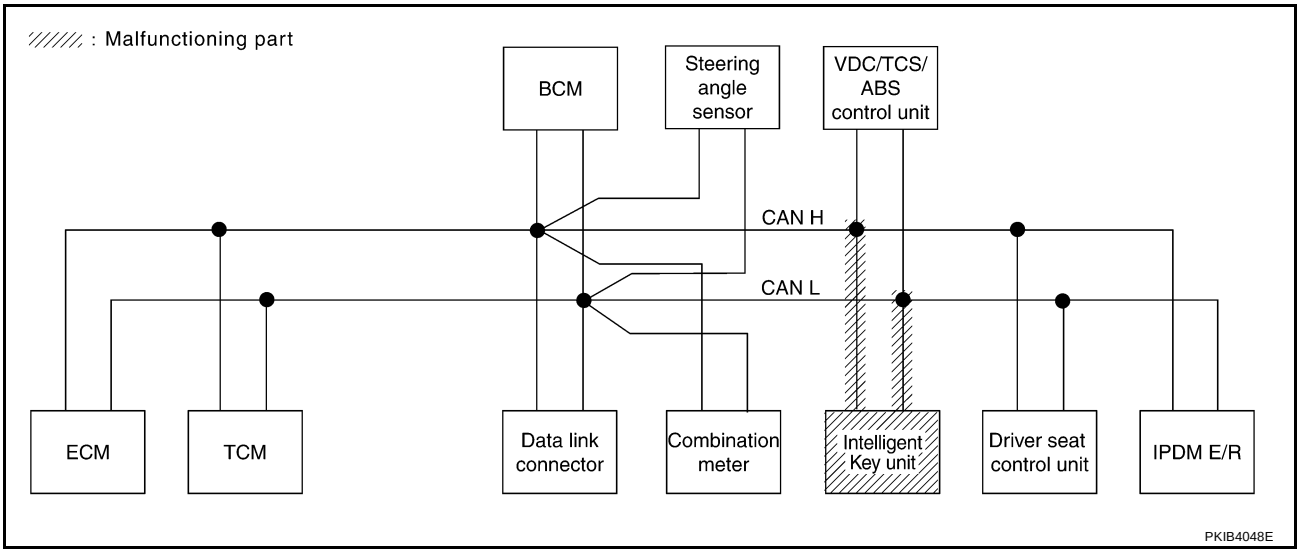
PKIB4047E

Case 10

Check Intelligent Key unit circuit. Refer to LAN-82, "Intelligent Key Unit Circuit Inspection" .

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

PKIB3917E



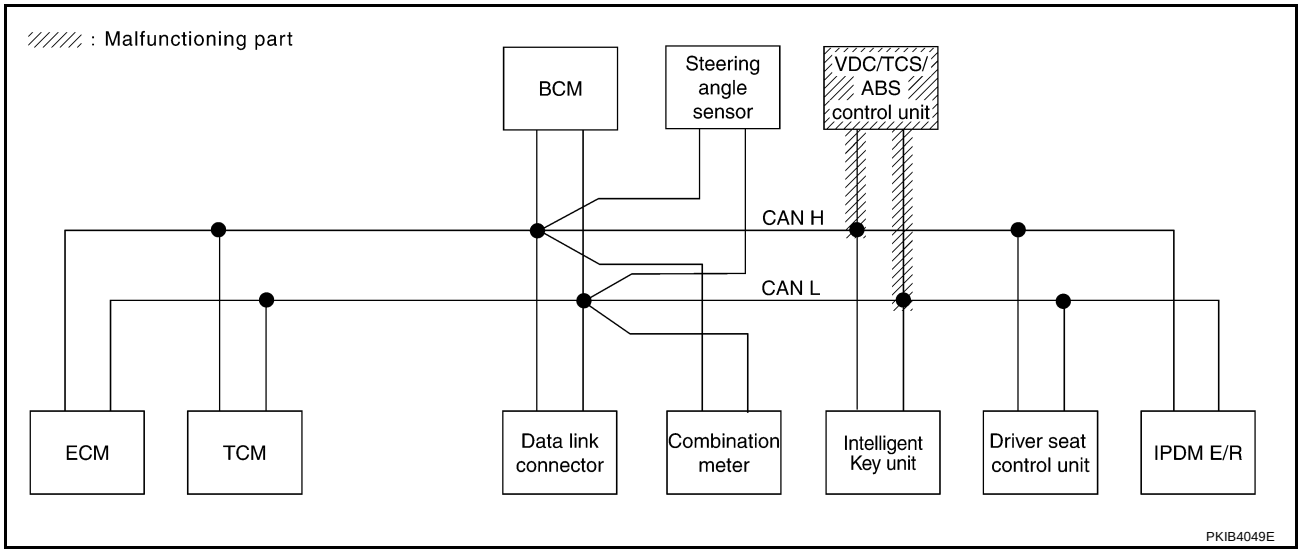
PKIB4048E

Case 11

Check VDC/TCS/ABS control unit circuit. Refer to LAN-83, "VDC/TCS/ABS Control Unit Circuit Inspection" .

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

PKIB3918E



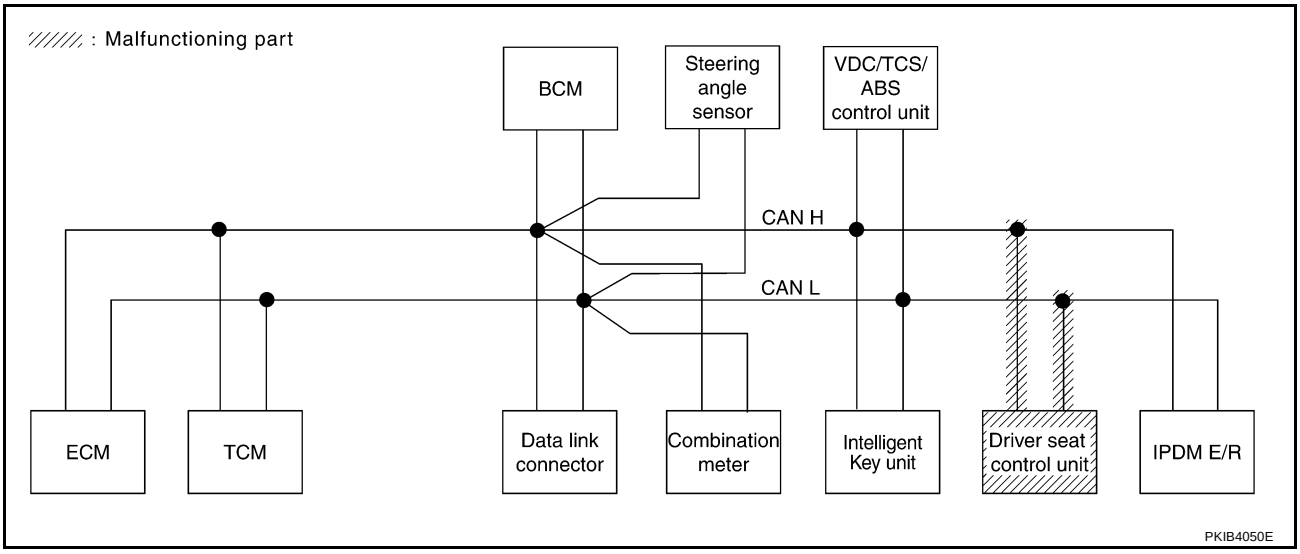
PKIB4049E

Case 12

Check driver seat control unit circuit. Refer to LAN-83, "Driver Seat Control Unit Circuit Inspection" .

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

PKIB3919E



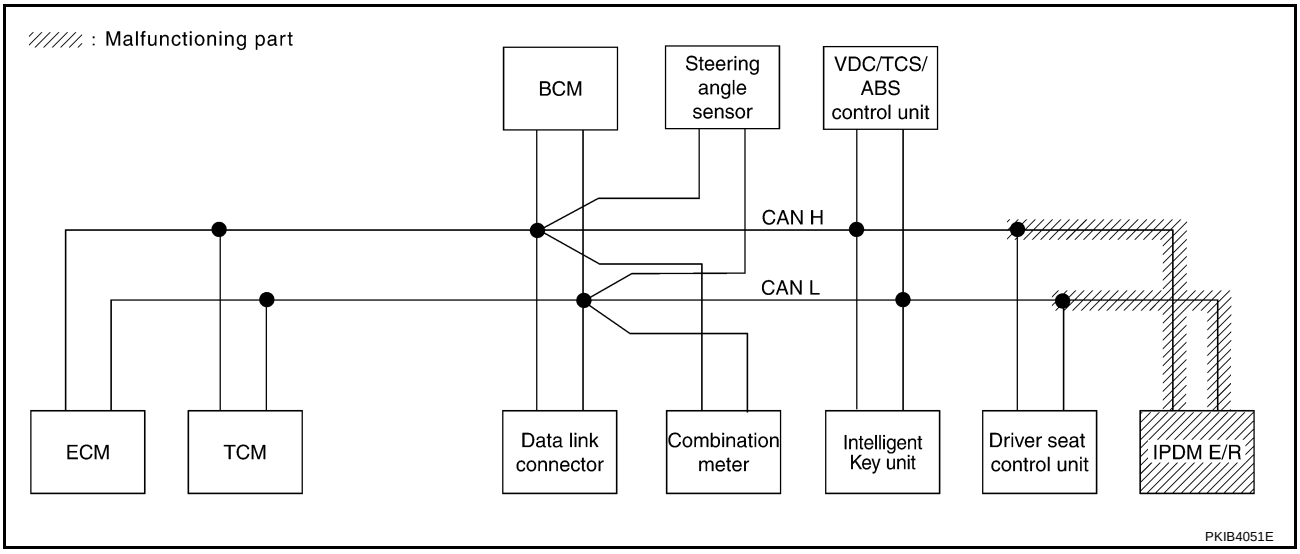
PKIB4050E

Case 13

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

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

PKIB3920E



PKIB4051E

Case 14

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

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

PKIB3921E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-89, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIB3922E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-89, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIB3923E

Inspection Between TCM and Data Link Connector Circuit

AKS00C9Q

1. CHECK CONNECTOR

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

- Harness connector F102
- Harness connector M72

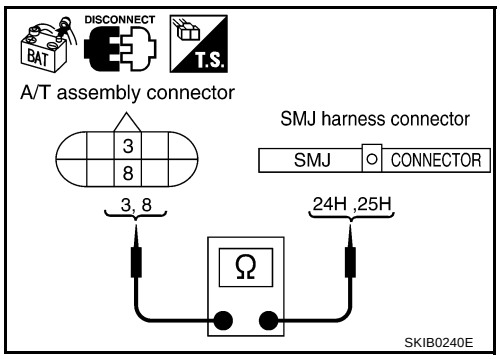
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F42 terminals 3 (L), 8 (R) and harness connector F102 terminals 24H (L), 25H (P).

3 (L) – 24H (L) : Continuity should exist.
8 (R) – 25H (P) : Continuity should exist.



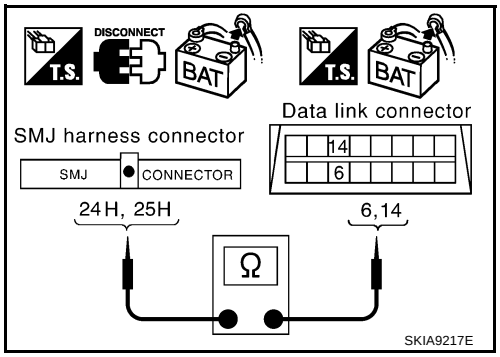
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 24H (L), 25H (P) and data link connector M8 terminals 6 (L), 14 (P).

24H (L) – 6 (L) : Continuity should exist.
25H (P) – 14 (P) : Continuity should exist.



OK or NG

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

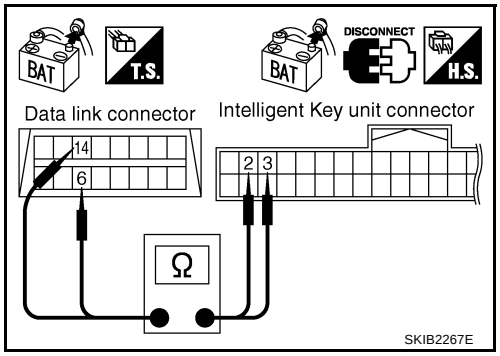
Inspection Between Data Link Connector and Intelligent Key Unit Circuit

AKS00C9R

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect ECM connector and Intelligent Key unit connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and Intelligent Key unit harness connector M75 terminals 2 (L), 3 (P).

6 (L) – 2 (L) : Continuity should exist.
14 (P) – 3 (P) : Continuity should exist.



OK or NG

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

Inspection Between Intelligent Key Unit and Driver Seat Control Unit Circuit

AKS00CAM

1. CHECK CONNECTOR

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

- Harness connector M12
- Harness connector B1

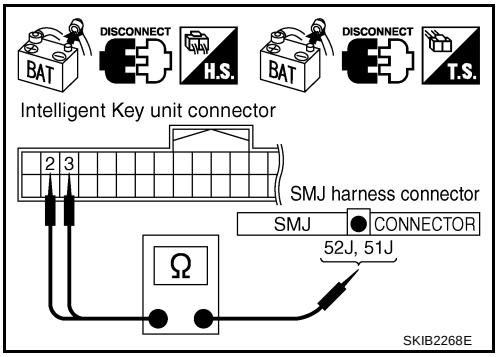
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector and harness connector M12.
2. Check continuity between Intelligent Key unit harness connector M75 terminals 2 (L), 3 (P) and harness connector M12 terminals 52J (L), 51J (P).

2 (L) – 52J (L) : Continuity should exist.
3 (P) – 51J (P) : Continuity should exist.



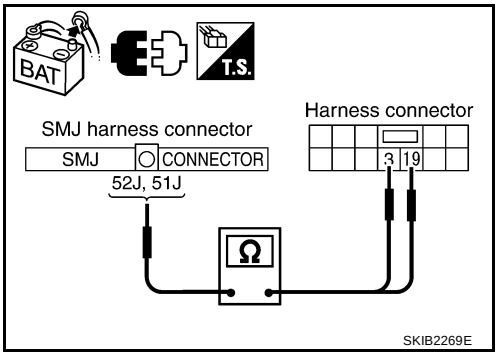
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B6.
2. Check continuity between harness connector B1 terminals 52J (L), 51J (P) and harness connector B6 terminals 3 (L), 19 (P).

52J (L) – 3 (L) : Continuity should exist.
51J (P) – 19 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

AKS00C9S

1. CHECK CONNECTOR

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

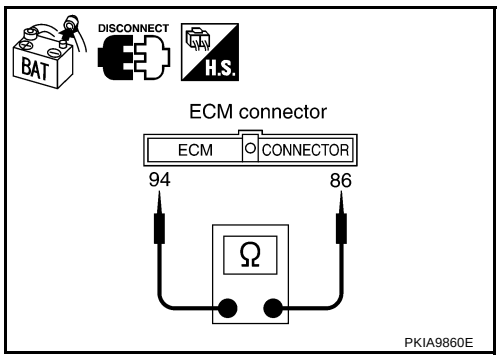
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F108 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω



OK or NG

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

TCM Circuit Inspection

AKS00C9T

1. CHECK CONNECTOR

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

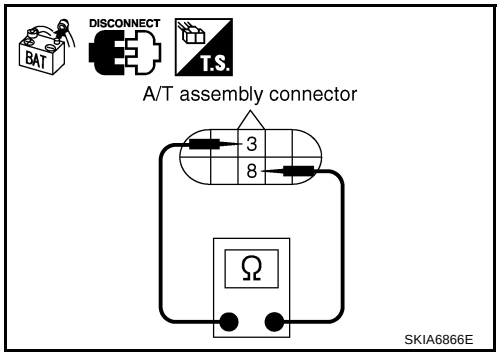
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F42 terminals 3 (L) and 8 (R).

3 (L) – 8 (R) : Approx. 54 – 66 Ω



OK or NG

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

Data Link Connector Circuit Inspection

AKS00C9U

1. CHECK CONNECTOR

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

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

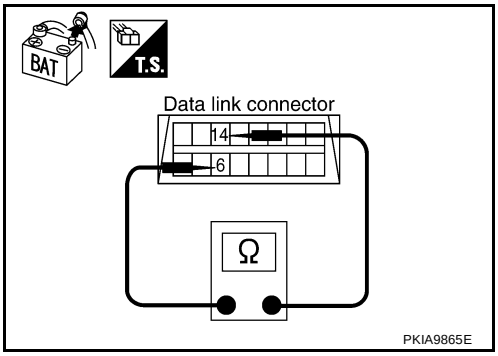
Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .

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



Combination Meter Circuit Inspection

AKS00C9V

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the 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

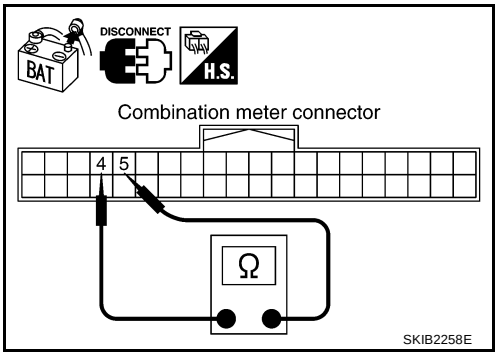
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M19 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace combination meter.

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



BCM Circuit Inspection

AKS00C9W

1. CHECK CONNECTOR

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

OK or NG

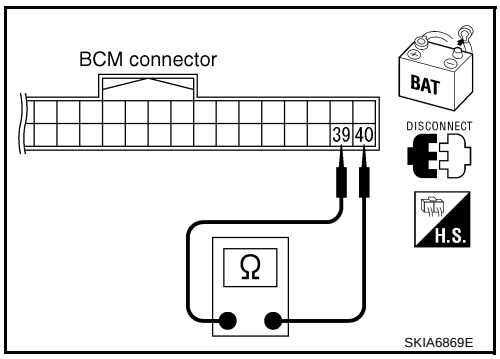
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M1 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Steering Angle Sensor Circuit Inspection

AKS00C9X

1. CHECK CONNECTOR

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

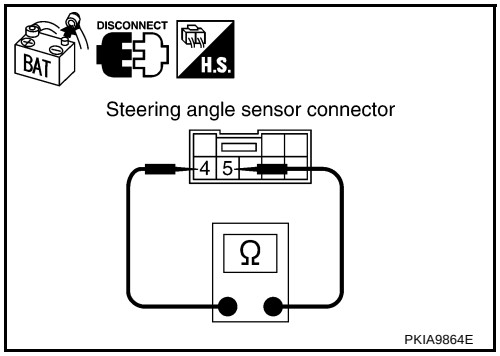
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) – 5 (P) : Approx. 54 – 66 Ω



OK or NG

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

Intelligent Key Unit Circuit Inspection

AKS00CAN

1. CHECK CONNECTOR

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

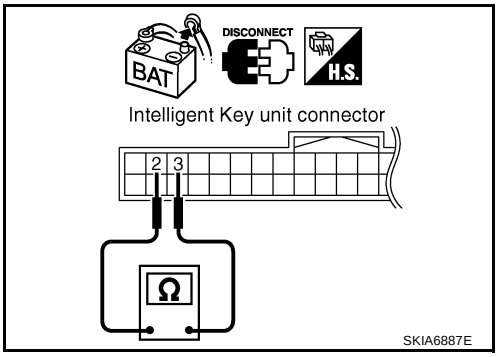
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M75 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace Intelligent Key unit.
NG >> Repair harness between Intelligent Key unit and VDC/TCS/ABS control unit.

VDC/TCS/ABS Control Unit Circuit Inspection

AKS00C9Y

1. CHECK CONNECTOR

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

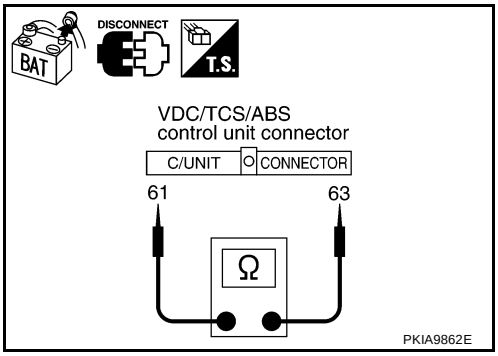
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector M93 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace VDC/TCS/ABS control unit.
NG >> Repair harness between VDC/TCS/ABS control unit and harness connector M12.

Driver Seat Control Unit Circuit Inspection

AKS00CAO

1. CHECK CONNECTOR

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

- Driver seat control unit connector
- Harness connector B6
- Harness connector B321

OK or NG

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

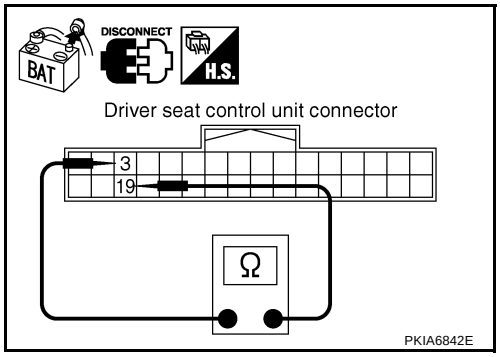
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector B324 terminals 3 (OR) and 19 (LG).

3 (OR) – 19 (LG) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B2.



IPDM E/R Circuit Inspection

AKS00C9Z

1. CHECK CONNECTOR

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

- IPDM E/R connector
- Harness connector B2
- Harness connector E106

OK or NG

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

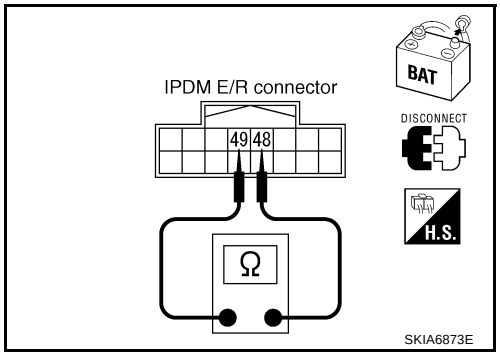
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : Approx. 108 – 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector B6.



CAN Communication Circuit Inspection

AKS00CA0

1. CHECK CONNECTOR

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

- ECM
- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- Intelligent Key unit
- VDC/TCS/ABS control unit
- Driver seat control unit
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

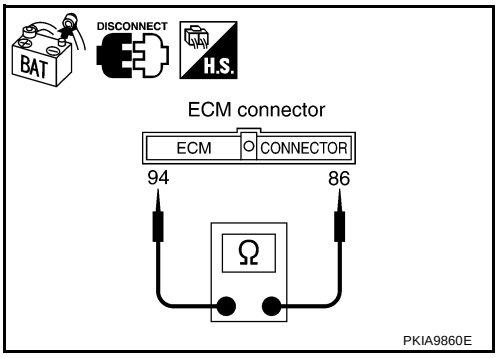
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

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

2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (P).

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



OK or NG

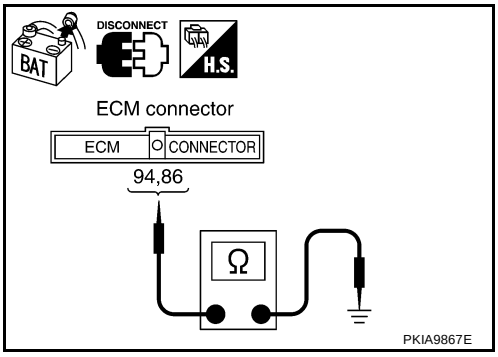
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F108 terminals 94 (L), 86 (P) and ground.

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



OK or NG

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

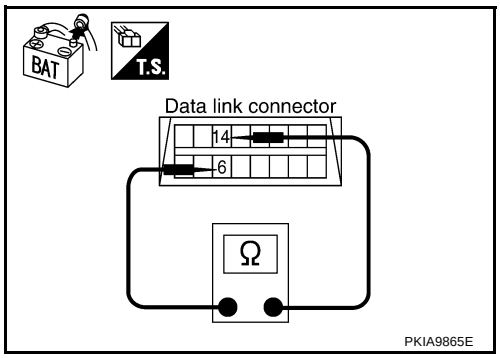
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Combination meter connector
- BCM connector
- Steering angle sensor connector
- Intelligent Key unit connector
- VDC/TCS/ABS control unit connector
- Harness connector M12

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

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



OK or NG

OK >> GO TO 5.

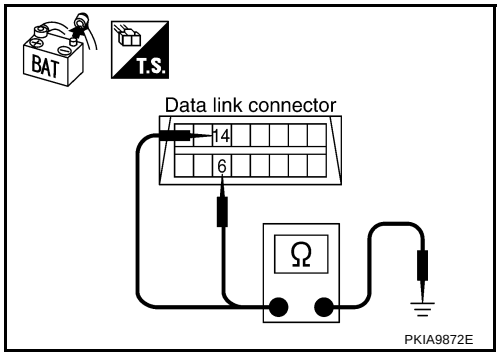
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

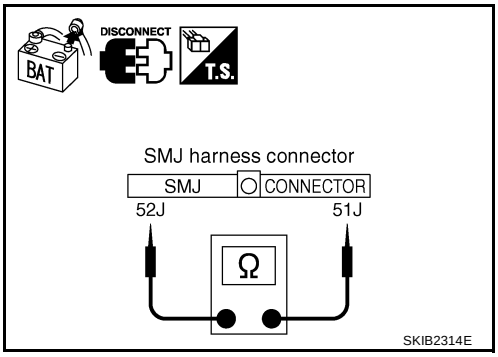
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B6 and harness connector B2.
2. Check continuity between harness connector B1 terminals 52J (L) and 51J (P).

52J (L) – 51J (P) : Continuity should not exist.



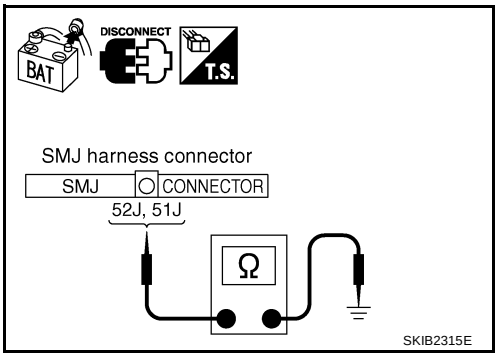
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector B1 and harness B6
- Harness between harness connector B1 and harness connector B2

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B1 terminals 52J (L), 51J (P) and ground.

52J (L) – Ground : Continuity should not exist.
51J (P) – Ground : Continuity should not exist.



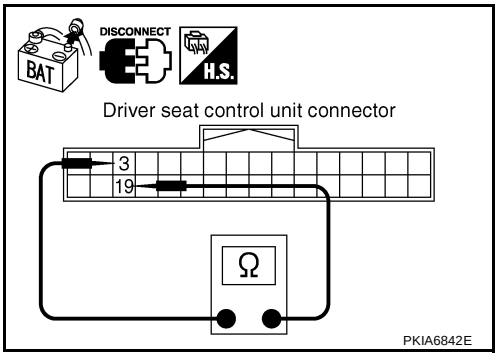
OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector B1 and harness B6
- Harness between harness connector B1 and harness connector B2

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check continuity between driver seat control unit harness connector B324 terminals 3 (OR) and 19 (LG).

3 (OR) – 19 (LG) : Continuity should not exist.



OK or NG

OK >> GO TO 9.
NG >> Repair harness between driver seat control unit and harness connector B321.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between driver seat control unit harness connector B324 terminals 3 (OR), 19 (LG) and ground.

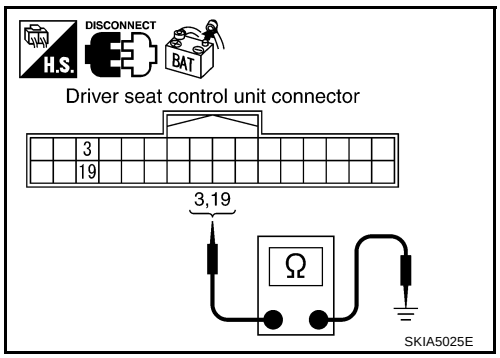
3 (OR) – Ground : Continuity should not exist.

19 (LG) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.

NG >> Repair harness between driver seat control unit and harness connector B321.



10. CHECK HARNESS FOR SHORT CIRCUIT

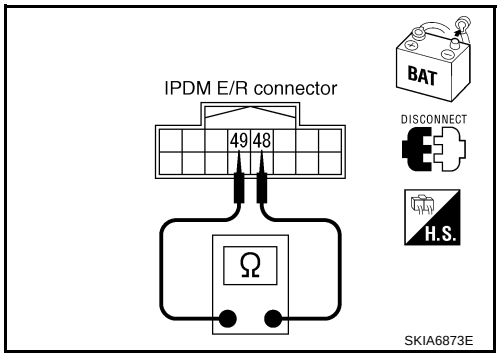
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

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

OK or NG

OK >> GO TO 11.

NG >> Repair harness between IPDM E/R and harness connector E106.



11. CHECK HARNESS FOR SHORT CIRCUIT

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

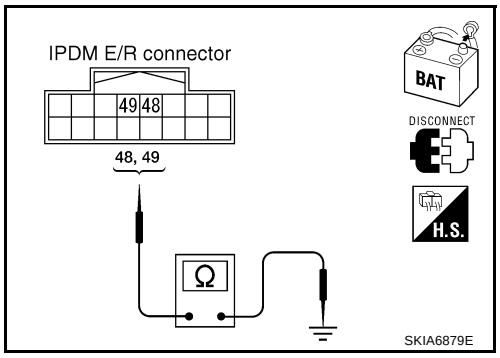
48 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 12.

NG >> Repair harness between IPDM E/R and harness connector E106.



12. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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

94 – 86 : Approx. 108 – 132 Ω

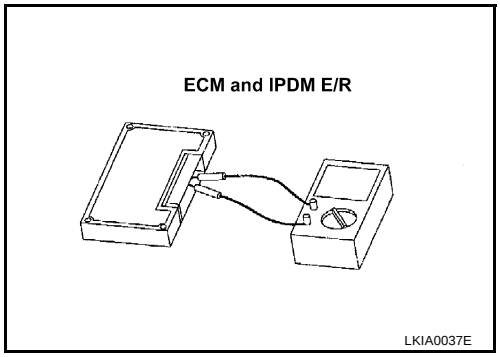
3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω

OK or NG

OK >> GO TO 13.

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



13. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 14.
NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

14. CHECK UNIT REPRODUCIBILITY

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

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

- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- Intelligent Key unit
- VDC/TCS/ABS control unit
- Driver seat control unit
- ECM
- IPDM E/R

Check results

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

IPDM E/R Ignition Relay Circuit Inspection

AKS00CA1

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-10, "IGNITION POWER SUPPLY - IGNITION SW. IN “ON” AND/OR “START”" .

CAN SYSTEM (TYPE 3)

PFP:23710

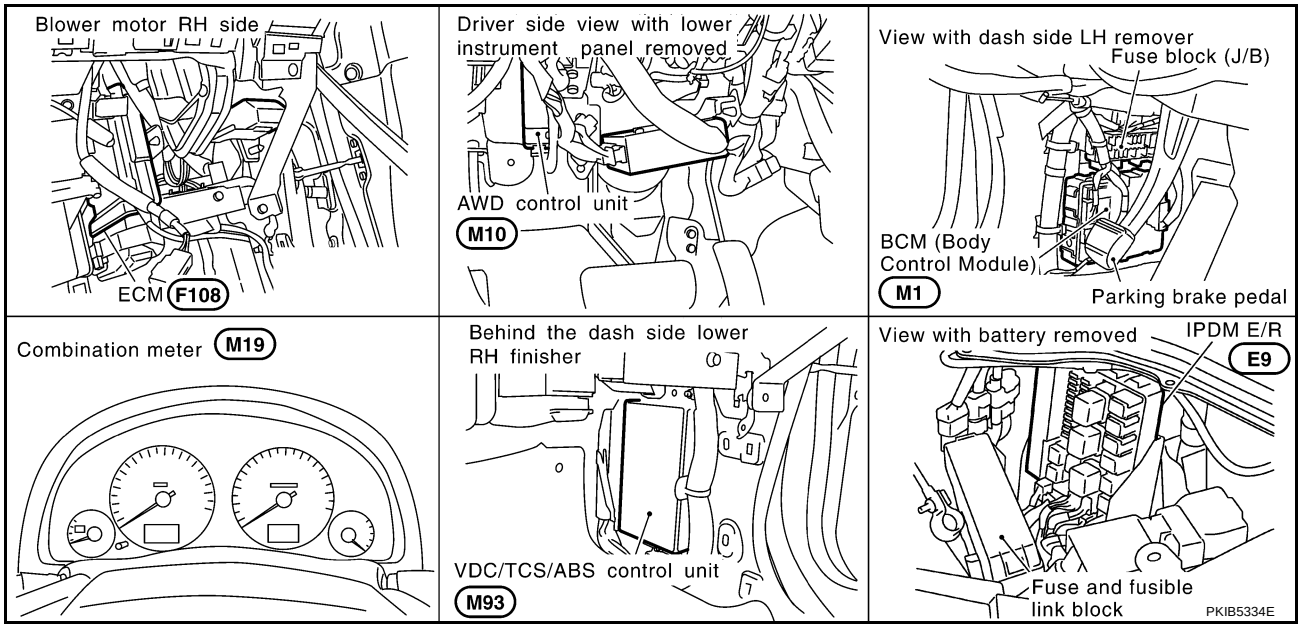
System Description

AKS00AU3

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

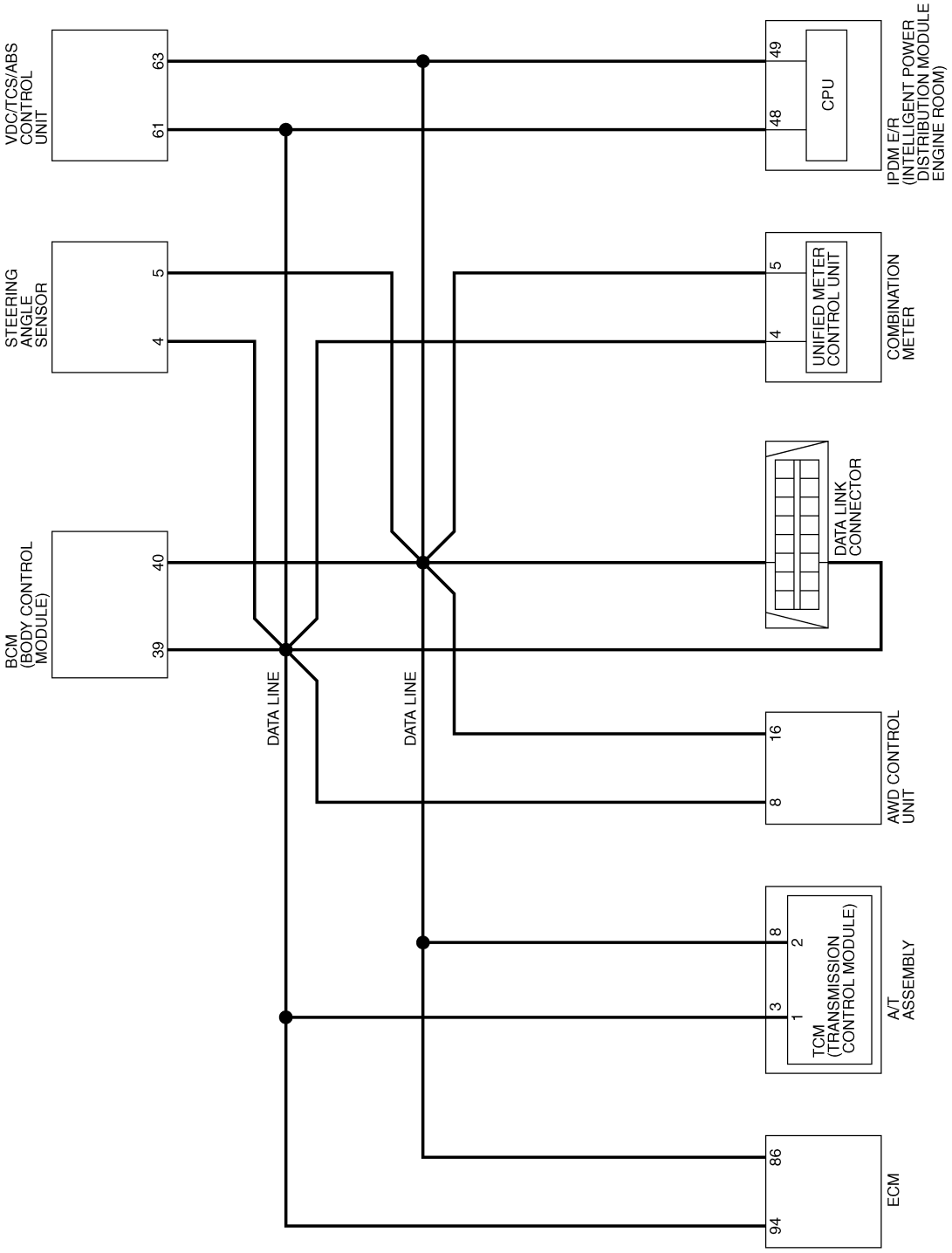
Component Parts and Harness Connector Location

AKS00AU4



Schematic

AKS00AU5

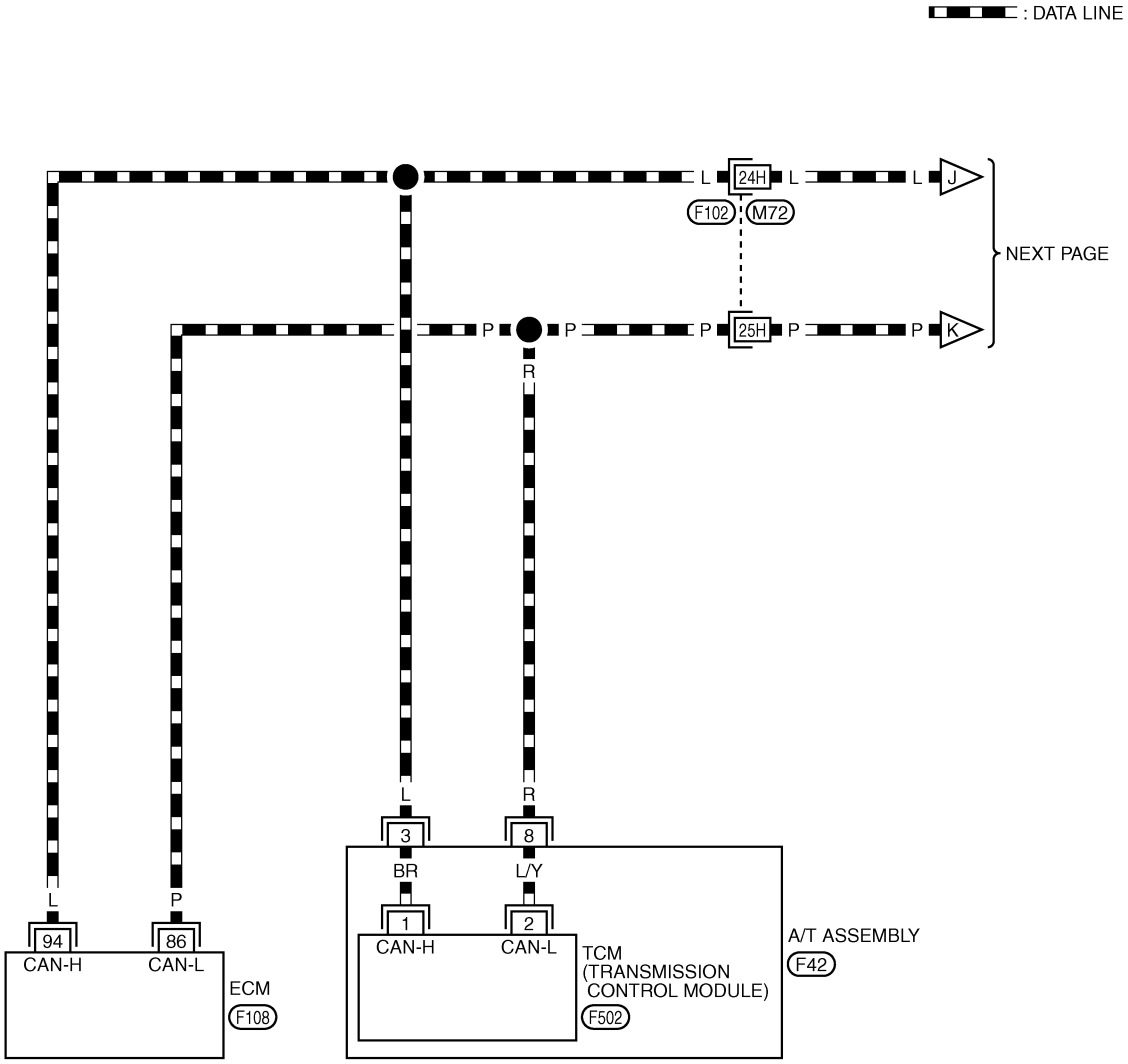


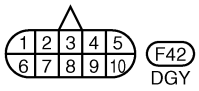
TKWM2469E

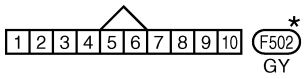
Wiring Diagram - CAN -

AKS00AU6

LAN-CAN-07





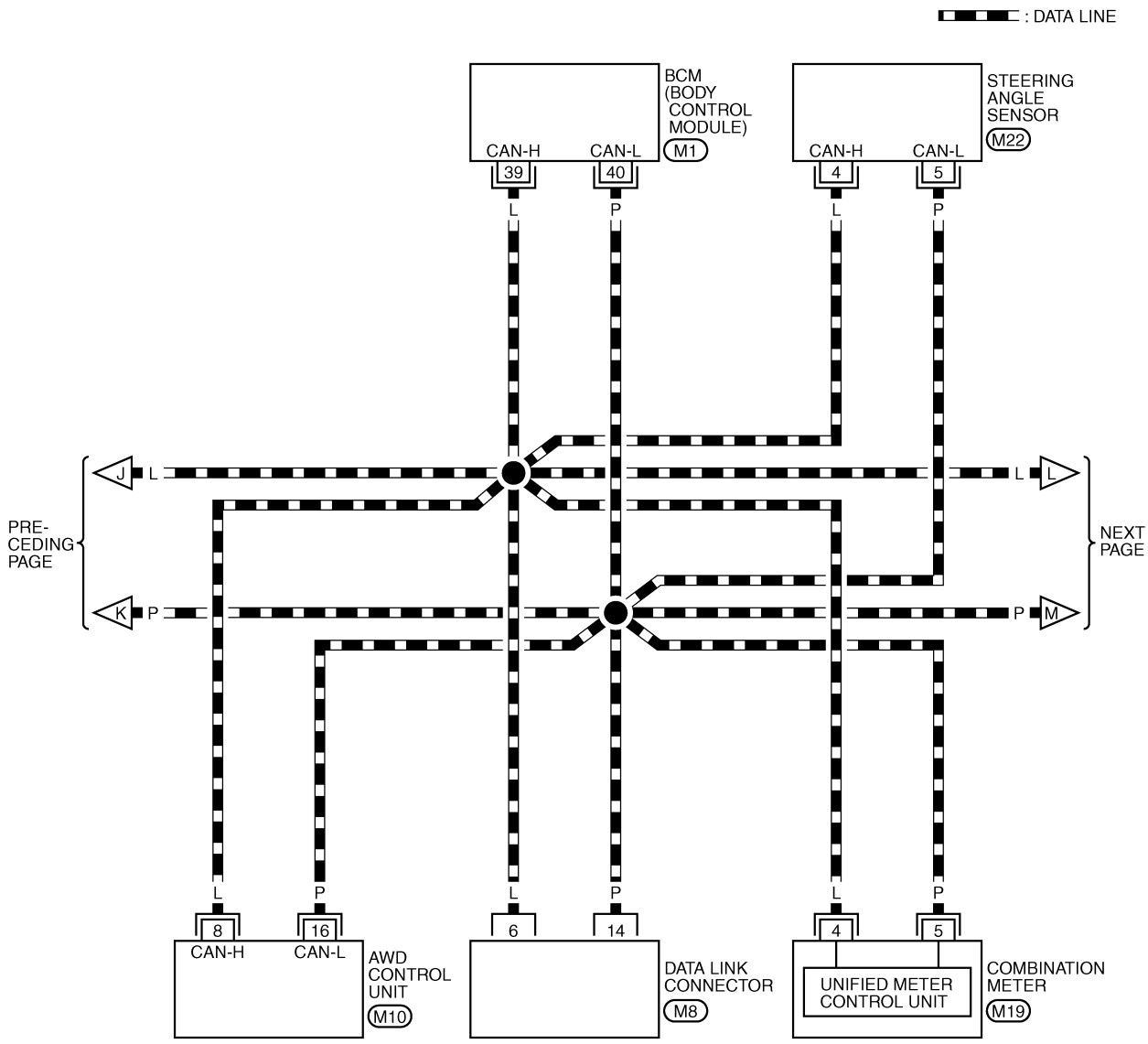


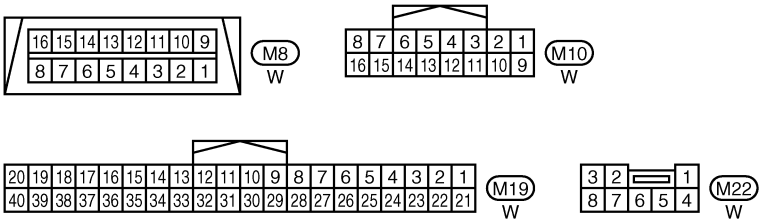
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
F108 -ELECTRICAL UNITS

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

TKWM2470E

LAN-CAN-08

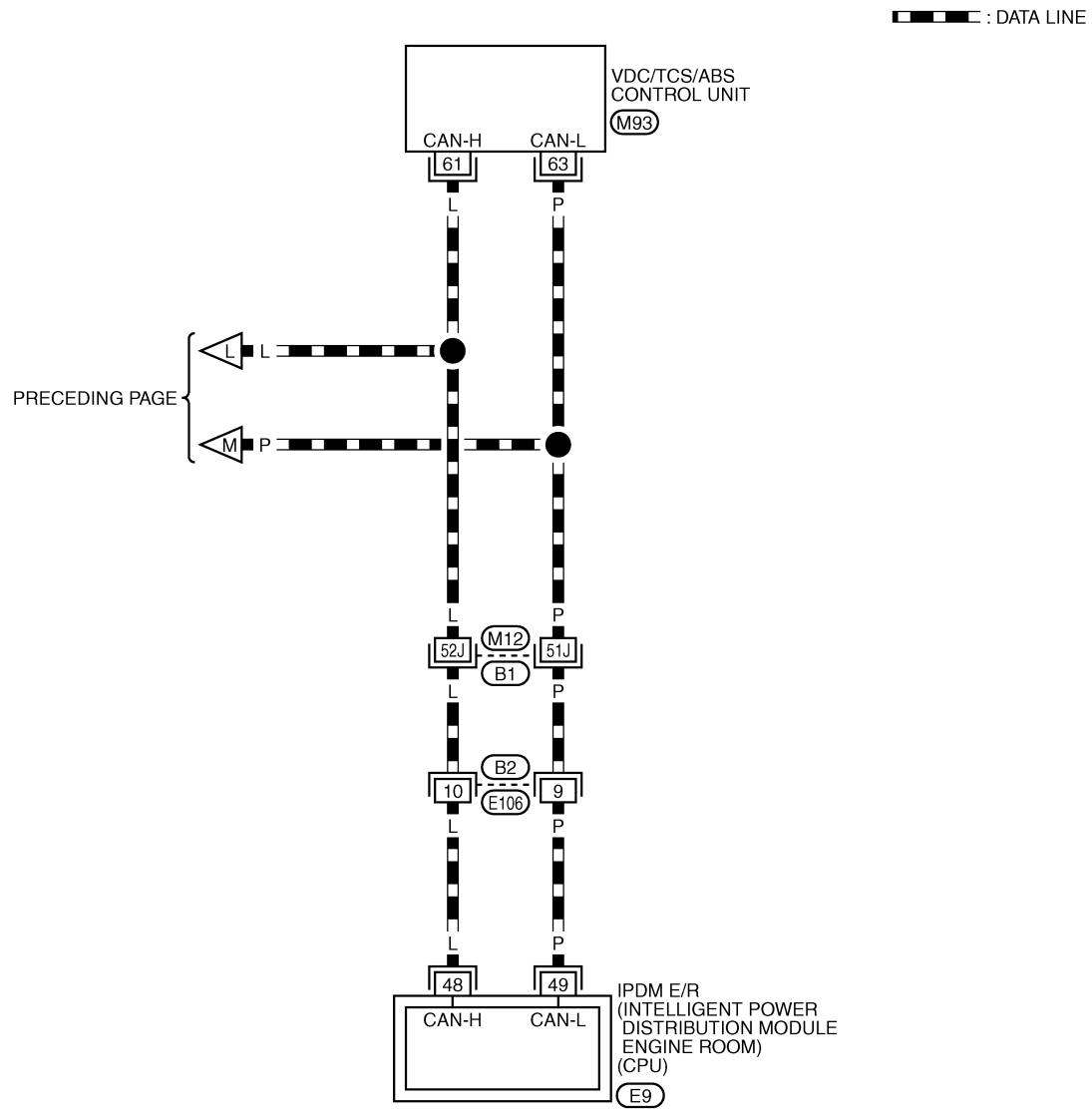


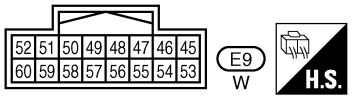


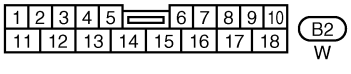
REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2471E

LAN-CAN-09







REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M93 -ELECTRICAL UNITS

TKWM2472E

CHECK SHEET

AKS00AU7

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

Check sheet table

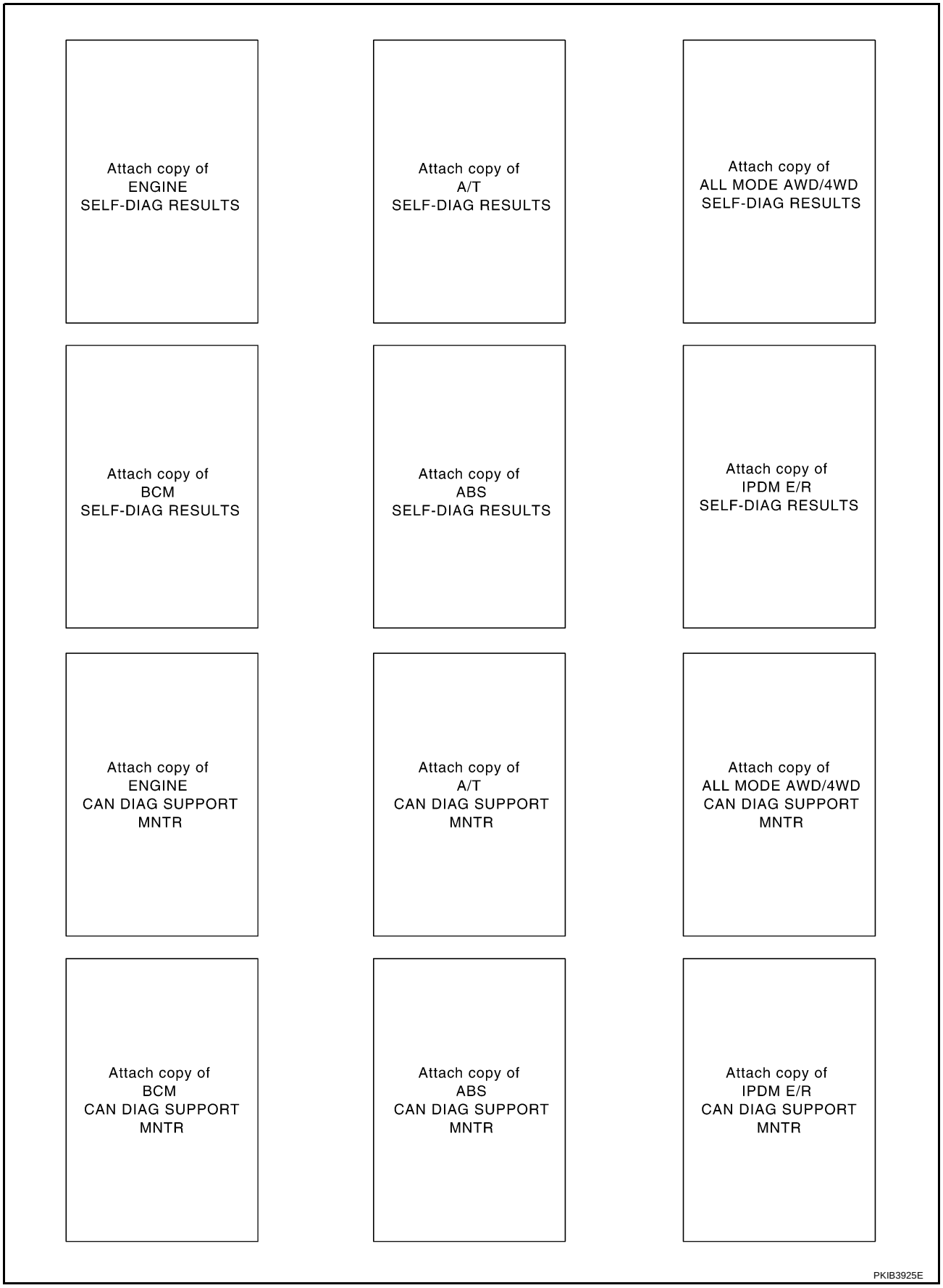
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	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

PKIB3924E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
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
PKIB3925E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

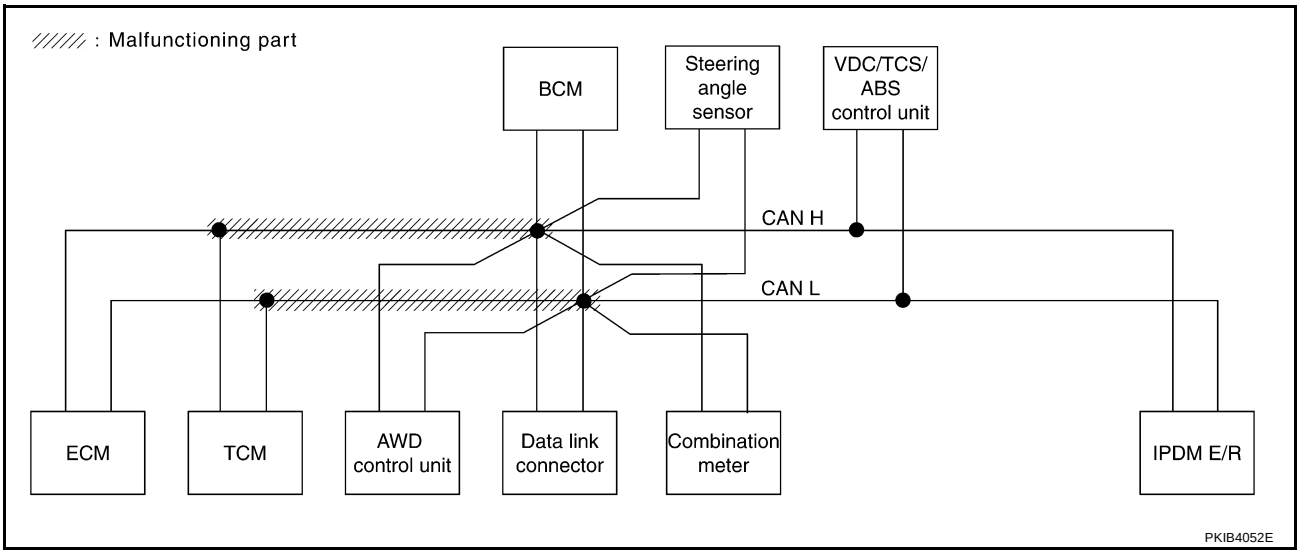
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-108, "Inspection Between TCM and Data Link Connector Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	✓	✓	✓	—	✓	✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	✓	✓	—	—	✓	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	✓	—	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	✓	✓	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—

PKIB3926E



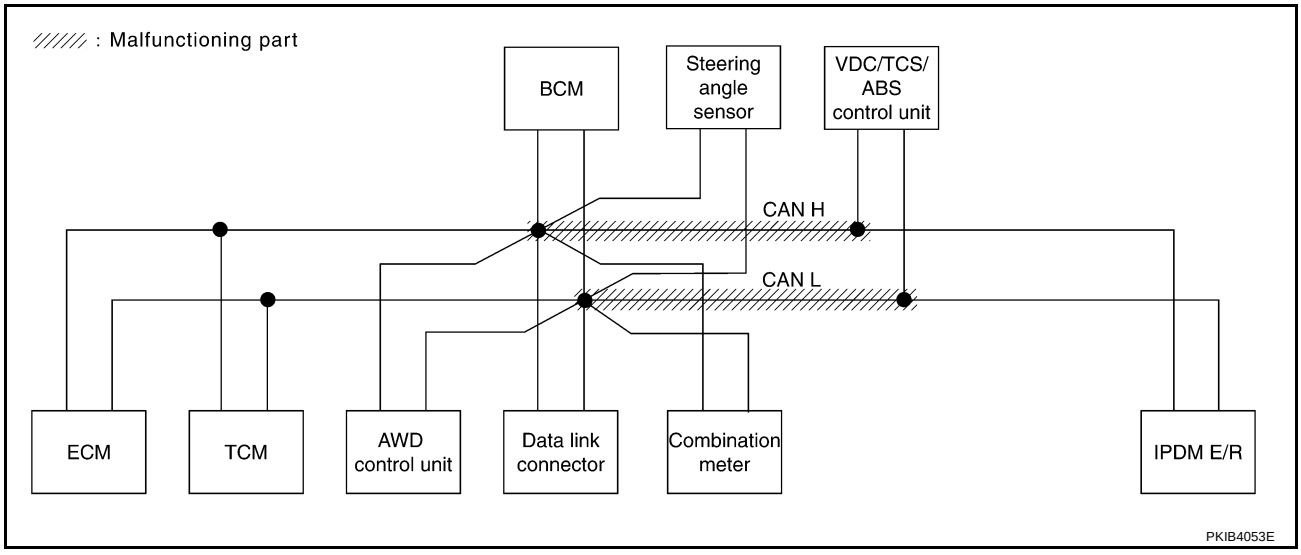
PKIB4052E

Case 2

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3927E

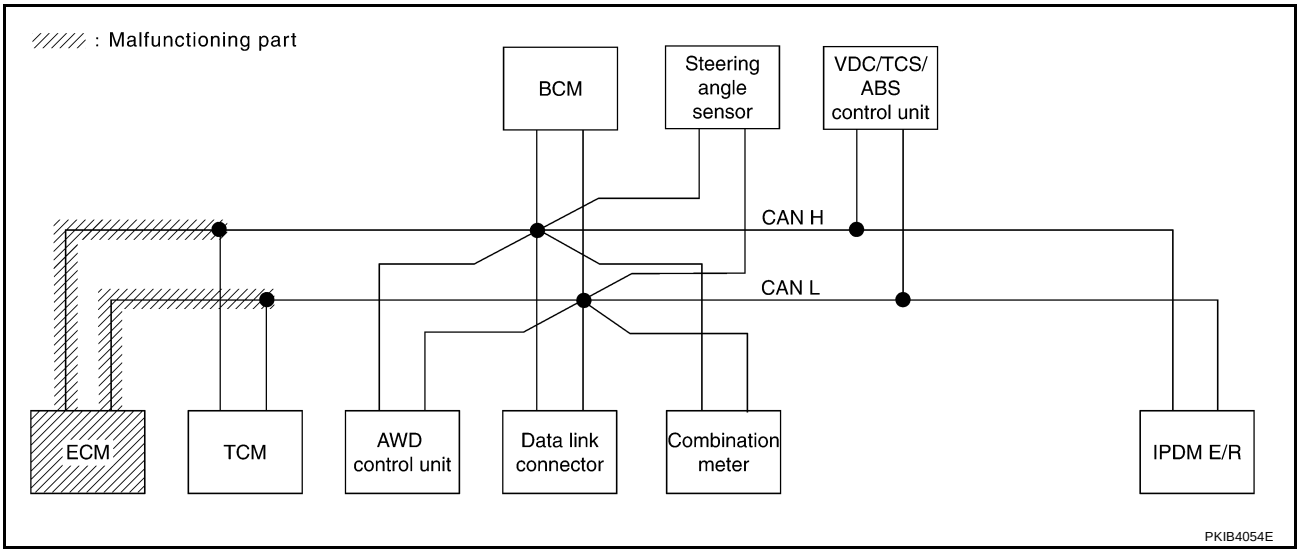


Case 3

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3928E



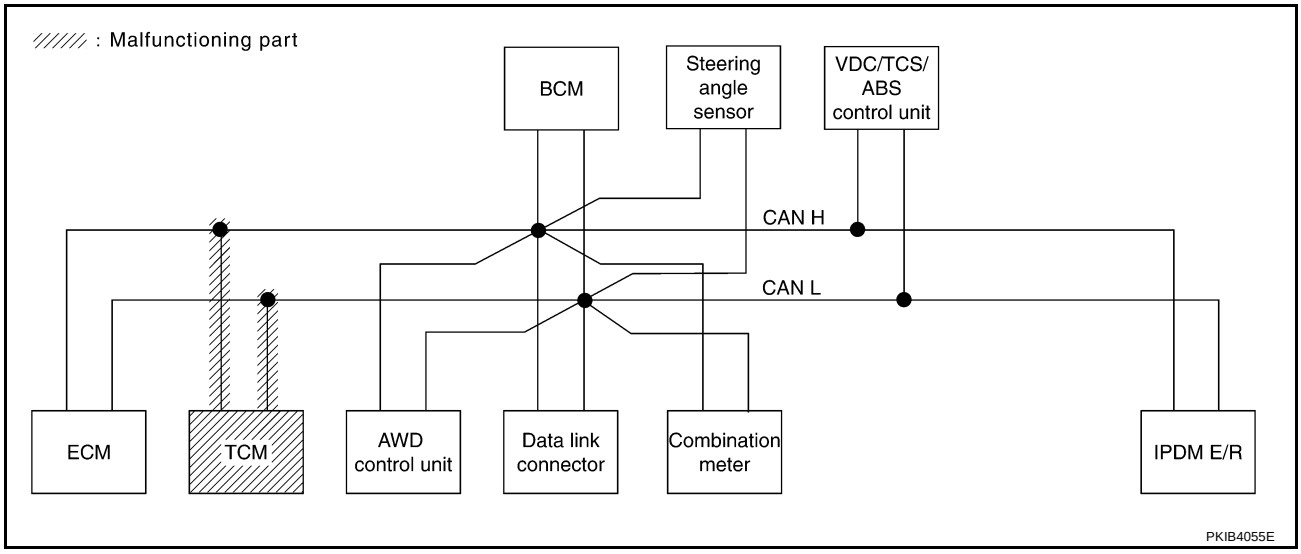
PKIB4054E

Case 4

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	—	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 ✓	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3929E



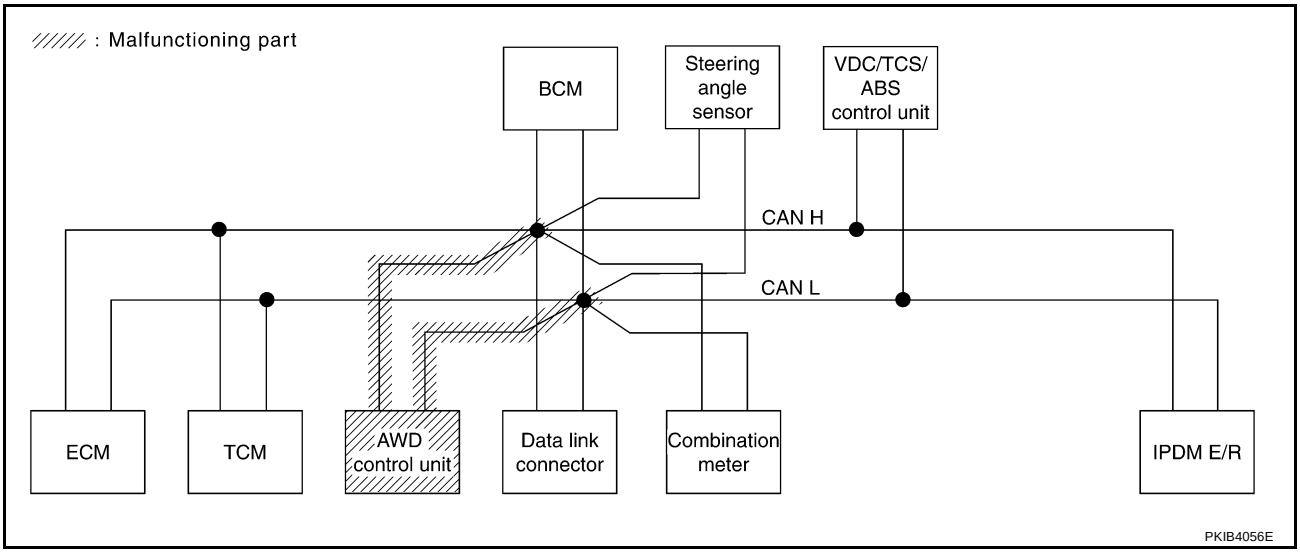
PKIB4055E

Case 5

Check AWD control unit circuit. Refer to LAN-111, "AWD Control Unit Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN ✓	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3930E

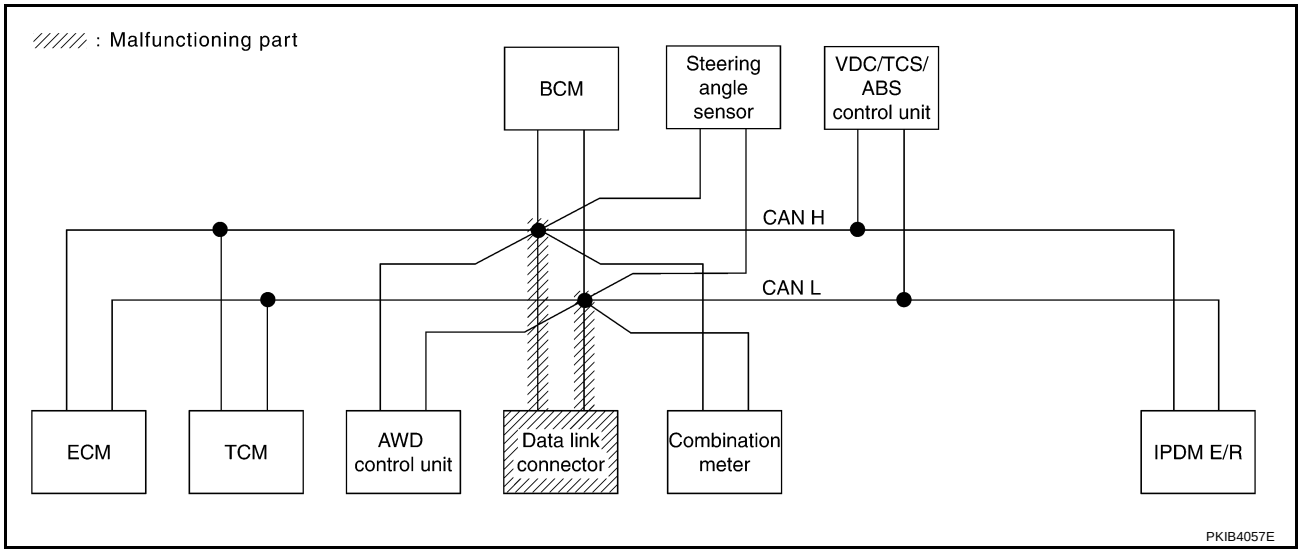


Case 6

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3931E



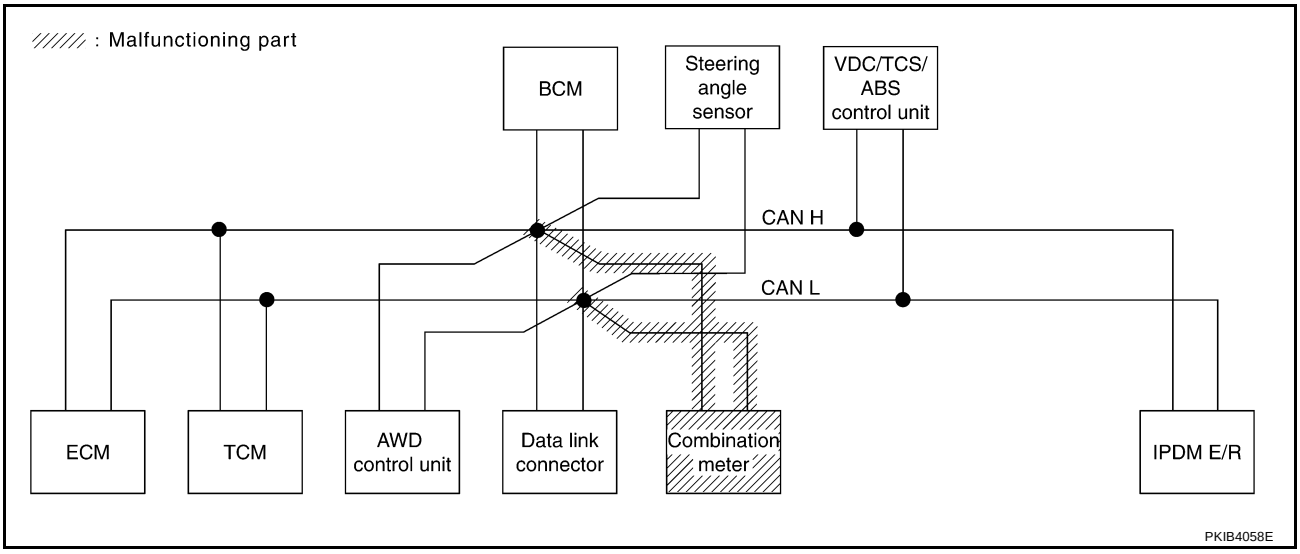
PKIB4057E

Case 7

Check combination meter circuit. Refer to LAN-112, "Combination Meter Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3932E

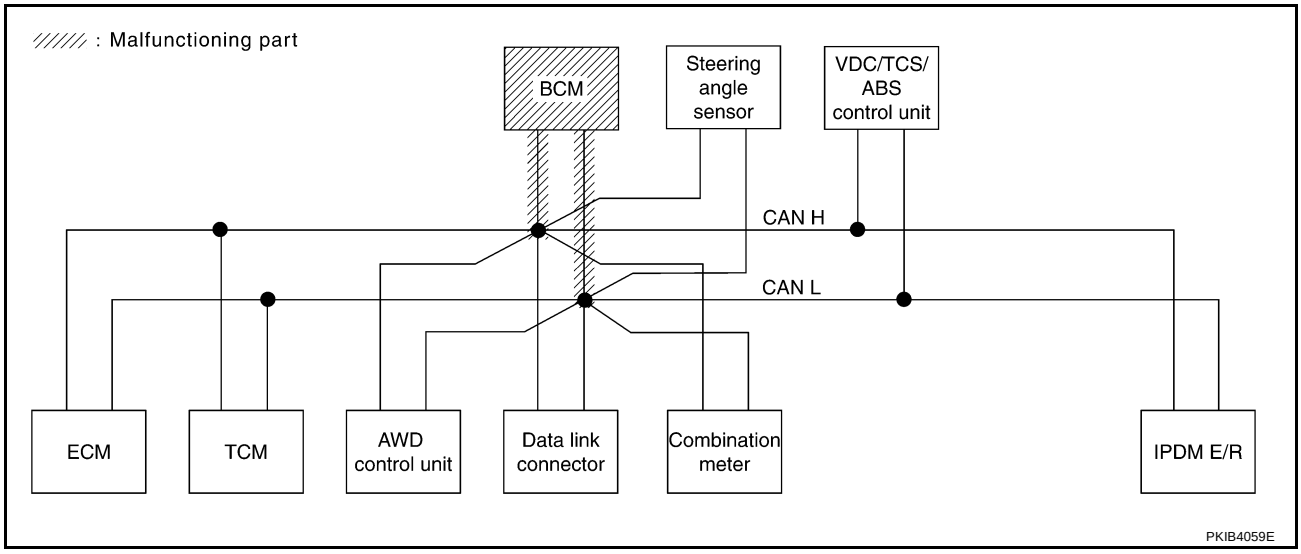


Case 8

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3933E



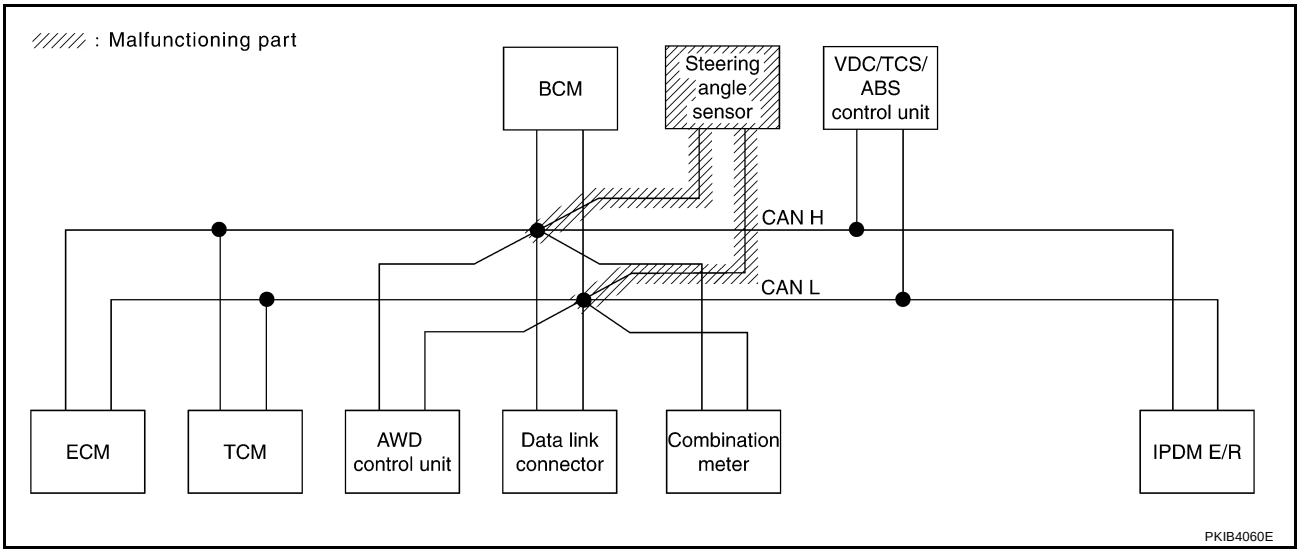
PKIB4059E

Case 9

Check steering angle sensor circuit. Refer to LAN-113, "Steering Angle Sensor Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3934E



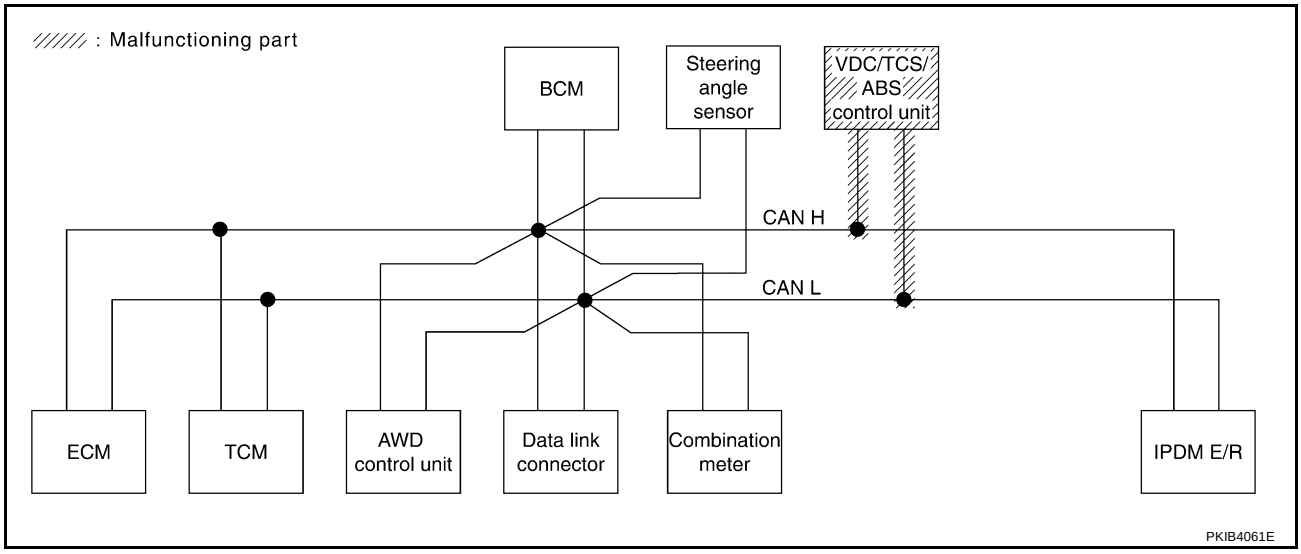
PKIB4060E

Case 10

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	—	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 ✓	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3935E



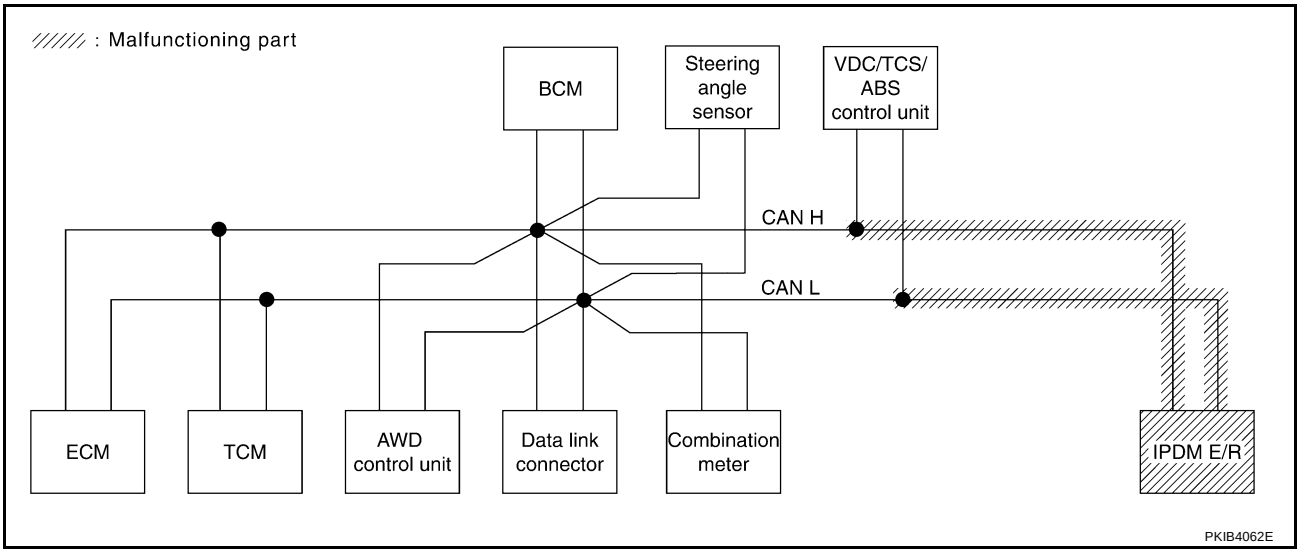
PKIB4061E

Case 11

Check IPDM E/R circuit. Refer to LAN-114, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3936E



PKIB4062E

Case 12

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3937E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-118, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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	UNKWN	UNKWN	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB3938E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-118, "IPDM E/R Ignition Relay Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	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)	—

PKIB3939E

Inspection Between TCM and Data Link Connector Circuit

AKS00AU8

1. CHECK CONNECTOR

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

- Harness connector F102
- Harness connector M72

OK or NG

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

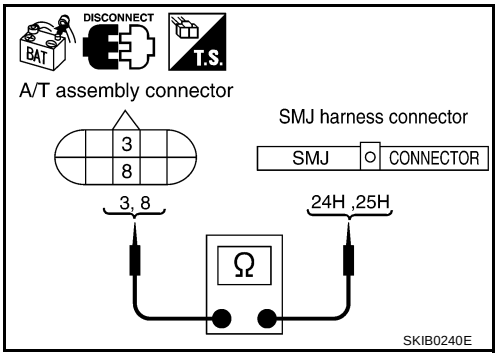
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F42 terminals 3 (L), 8 (R) and harness connector F102 terminals 24H (L), 25H (P).

3 (L) – 24H (L) : Continuity should exist.
8 (R) – 25H (P) : Continuity should exist.

OK or NG

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



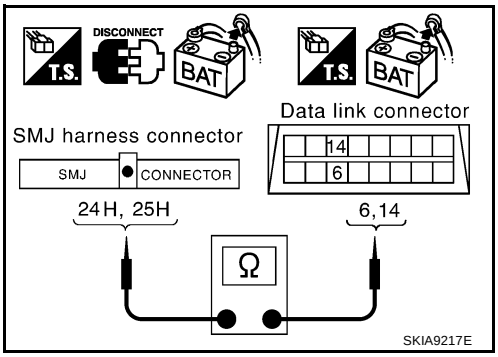
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 24H (L), 25H (P) and data link connector M8 terminals 6 (L), 14 (P).

24H (L) – 6 (L) : Continuity should exist.
25H (P) – 14 (P) : Continuity should exist.

OK or NG

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



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

AKS00AU9

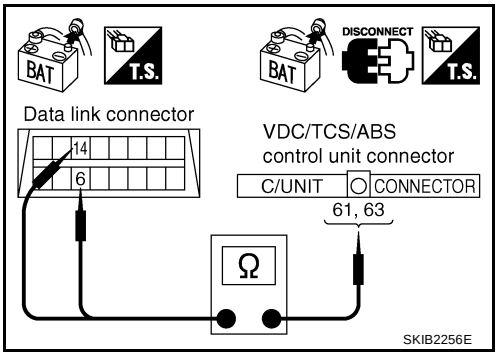
1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect ECM connector and VDC/TCS/ABS control unit connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and VDC/TCS/ABS control unit harness connector M93 terminals 61 (L), 63 (P).

6 (L) – 61 (L) : Continuity should exist.
14 (P) – 63 (P) : Continuity should exist.

OK or NG

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



ECM Circuit Inspection

AKS00AUA

1. CHECK CONNECTOR

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

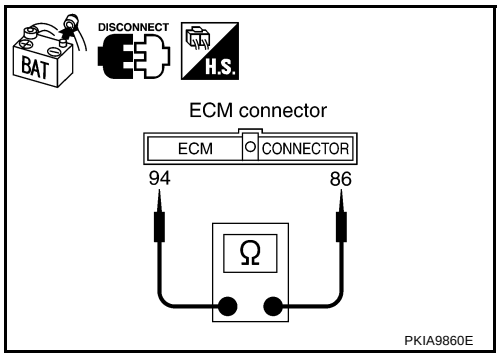
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F108 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω



OK or NG

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

TCM Circuit Inspection

AKS00AUB

1. CHECK CONNECTOR

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

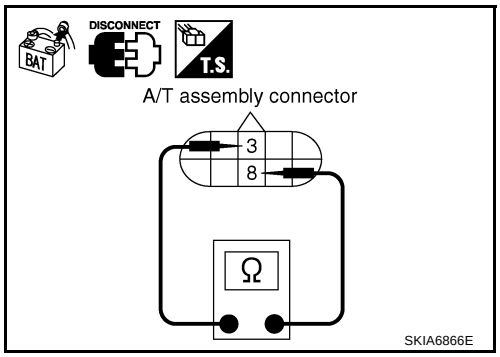
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F42 terminals 3 (L) and 8 (R).

3 (L) – 8 (R) : Approx. 54 – 66 Ω



OK or NG

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

AWD Control Unit Circuit Inspection

AKS00AUN

1. CHECK CONNECTOR

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

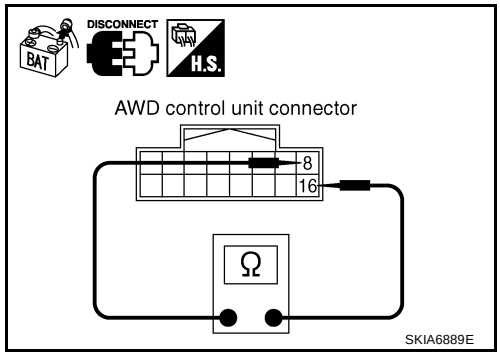
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect AWD control unit connector.
2. Check resistance between AWD control unit harness connector M10 terminals 8 (L) and 16 (P).

8 (L) – 16 (P) : Approx. 54 – 66 Ω



OK or NG

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

Data Link Connector Circuit Inspection

AKS00AUC

1. CHECK CONNECTOR

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

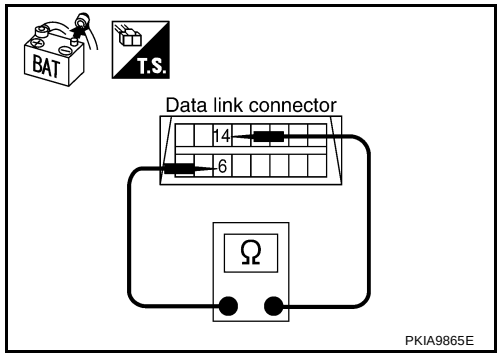
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

Combination Meter Circuit Inspection

AKS00AUD

1. CHECK CONNECTOR

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

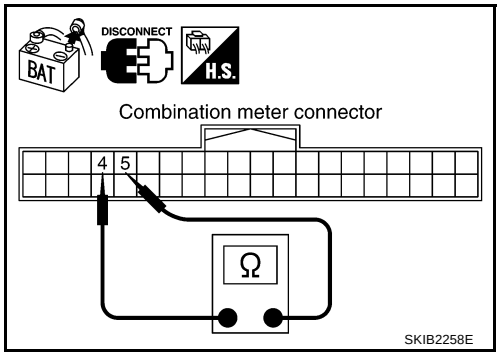
OK or NG

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 M19 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS00AUE

1. CHECK CONNECTOR

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

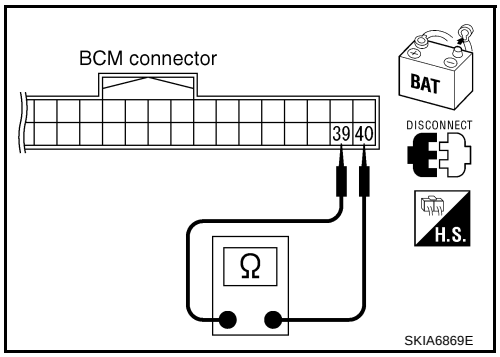
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M1 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Steering Angle Sensor Circuit Inspection

AKS00AUF

1. CHECK CONNECTOR

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

OK or NG

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

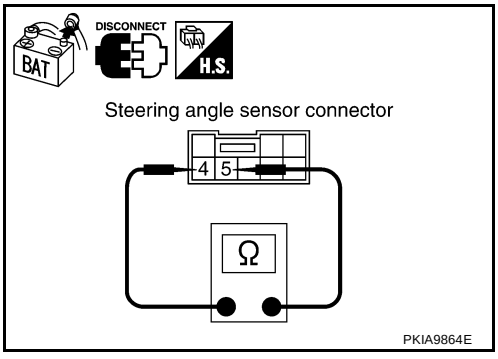
2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) – 5 (P) : Approx. 54 – 66 Ω

OK or NG

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



VDC/TCS/ABS Control Unit Circuit Inspection

AKS00AUG

1. CHECK CONNECTOR

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

OK or NG

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

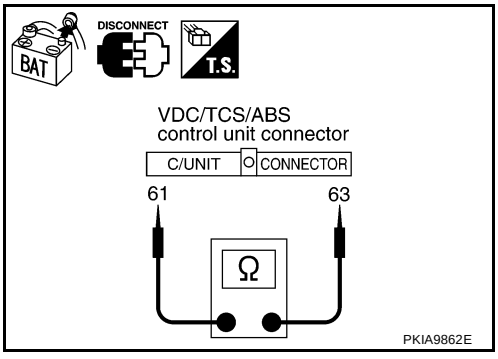
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector M93 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66 Ω

OK or NG

OK >> Replace VDC/TCS/ABS control unit.
NG >> Repair harness between VDC/TCS/ABS control unit and harness connector M12.



IPDM E/R Circuit Inspection

AKS00AUH

1. CHECK CONNECTOR

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

- IPDM E/R
- Harness connector B2
- Harness connector E106
- Harness connector M12
- Harness connector B1

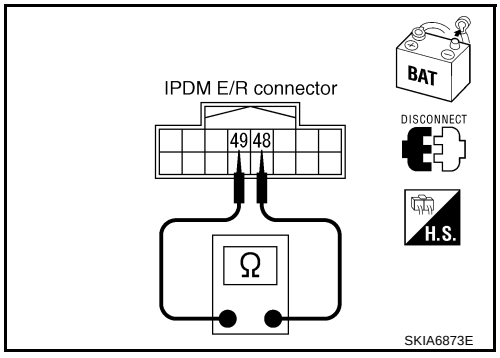
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

AKS00AUI

1. CHECK CONNECTOR

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

- ECM
- A/T assembly
- AWD control unit
- Combination meter
- BCM
- Steering angle sensor
- VDC/TCS/ABS control unit
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

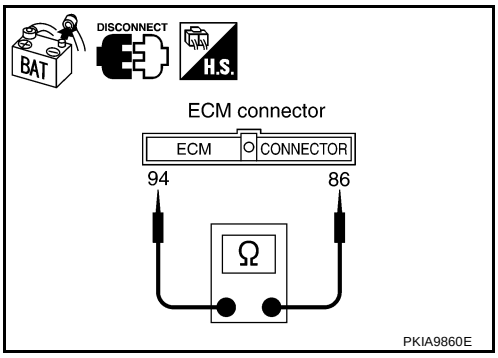
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ECM connector
- A/T assembly connector
- Harness connector F102

2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (P).

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



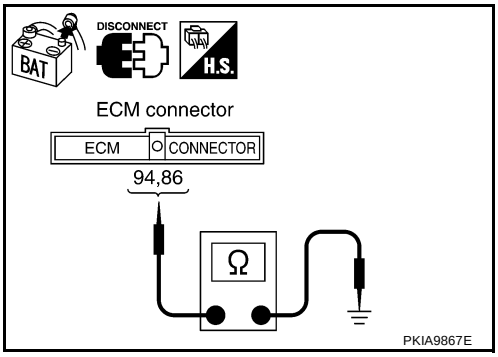
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F108 terminals 94 (L), 86 (P) and ground.

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



OK or NG

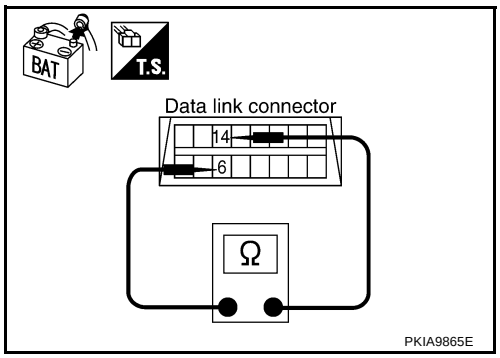
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- AWD control unit connector
- Combination meter connector
- BCM connector
- Steering angle sensor connector
- VDC/TCS/ABS control unit connector
- Harness connector M12

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

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



OK or NG

OK >> GO TO 5.

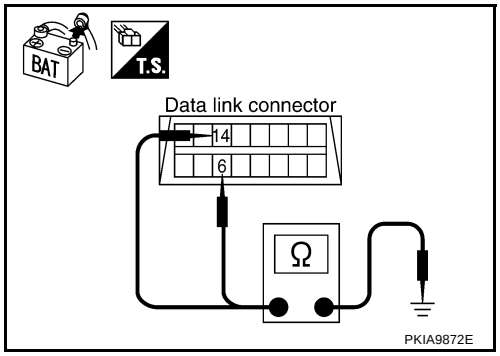
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and AWD control unit
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and AWD control unit
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

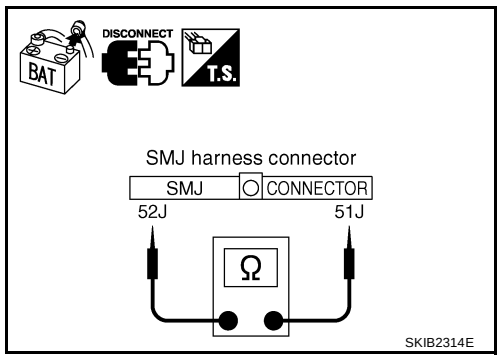
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B2.
2. Check continuity between harness connector B1 terminals 52J (L) and 51J (P).

52J (L) – 51J (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector B1 and harness connector B2.



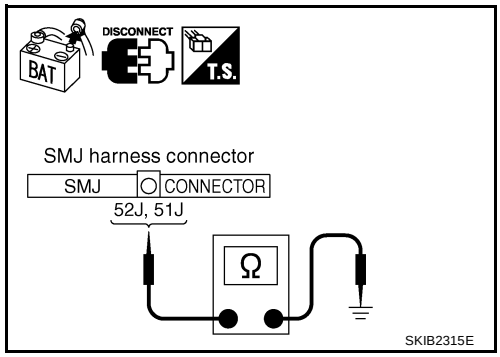
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B1 terminals 52J (L), 51J (P) and ground.

52J (L) – Ground : Continuity should not exist.
51J (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector B1 and harness connector B2.



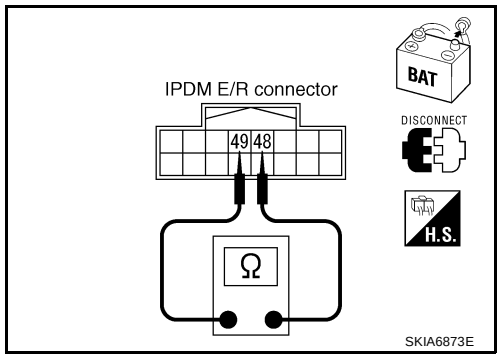
8. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 9.
NG >> Repair harness between IPDM E/R and harness connector E106.



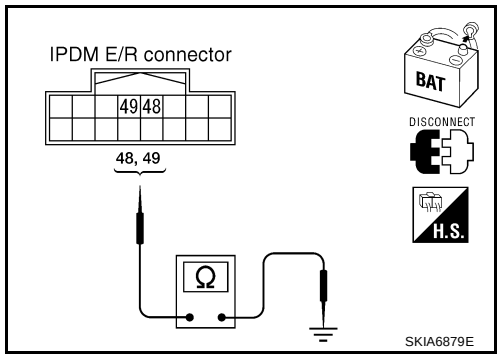
9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 10.
NG >> Repair harness between IPDM E/R and harness connector E106.



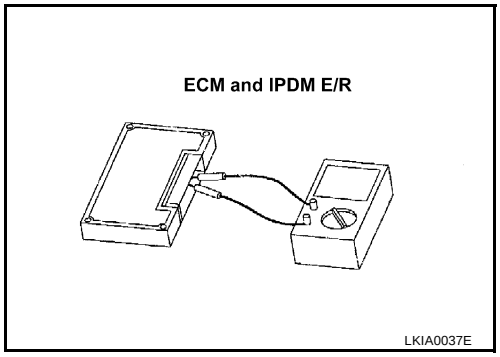
10. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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

94 – 86 : Approx. 108 – 132 Ω

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

48 – 49 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 11.
NG >> Replace ECM and/or IPDM E/R.

11. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 12.
NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

12. CHECK UNIT REPRODUCIBILITY

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

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

- A/T assembly
- AWD control unit
- Combination meter
- BCM
- Steering angle sensor
- VDC/TCS/ABS control unit
- ECM
- IPDM E/R

Check results

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

IPDM E/R Ignition Relay Circuit Inspection

AKS00AUJ

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-10, "IGNITION POWER SUPPLY - IGNITION SW. IN “ON” AND/OR “START”" .

CAN SYSTEM (TYPE 4)

PFP:23710

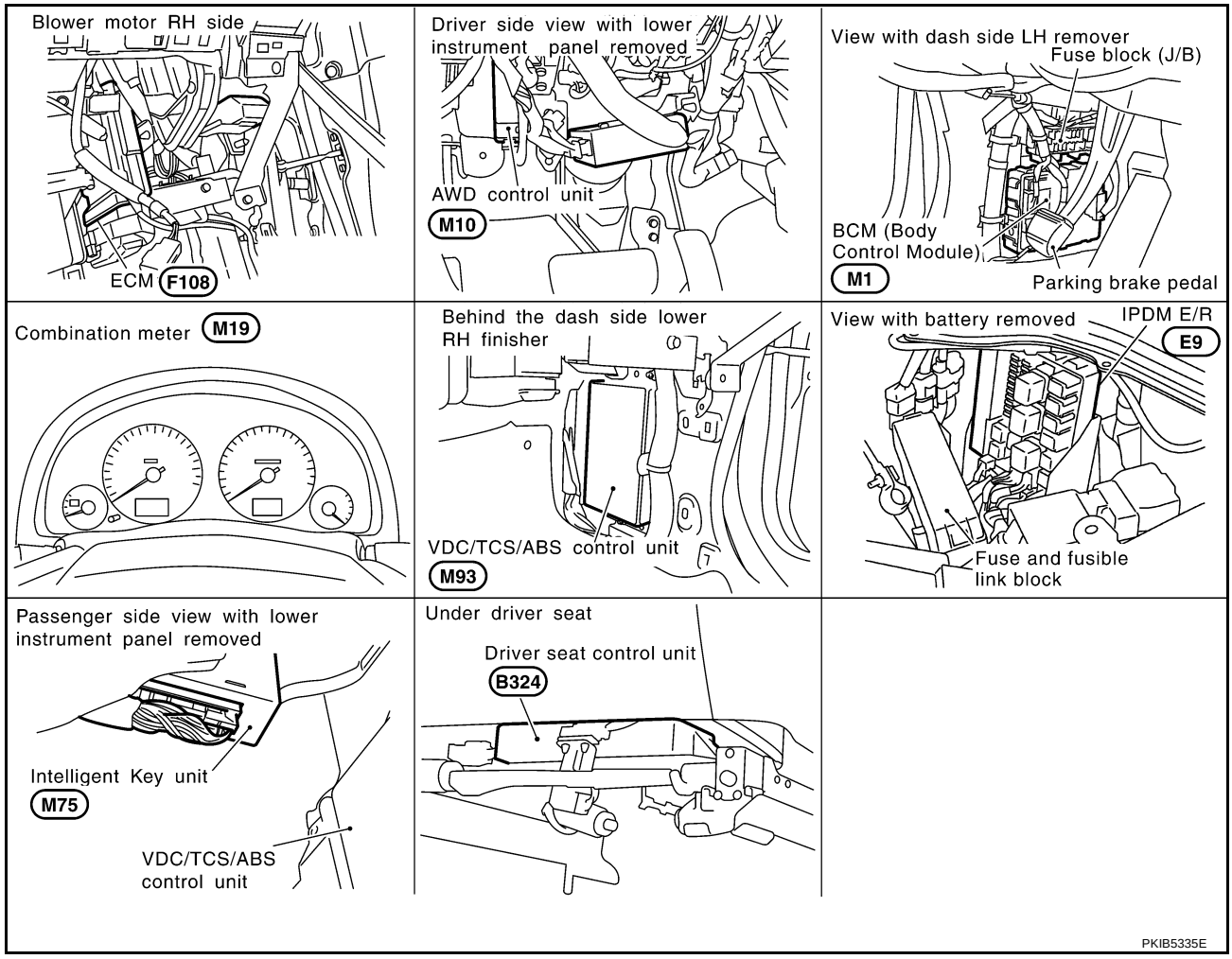
System Description

AKS00CA3

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

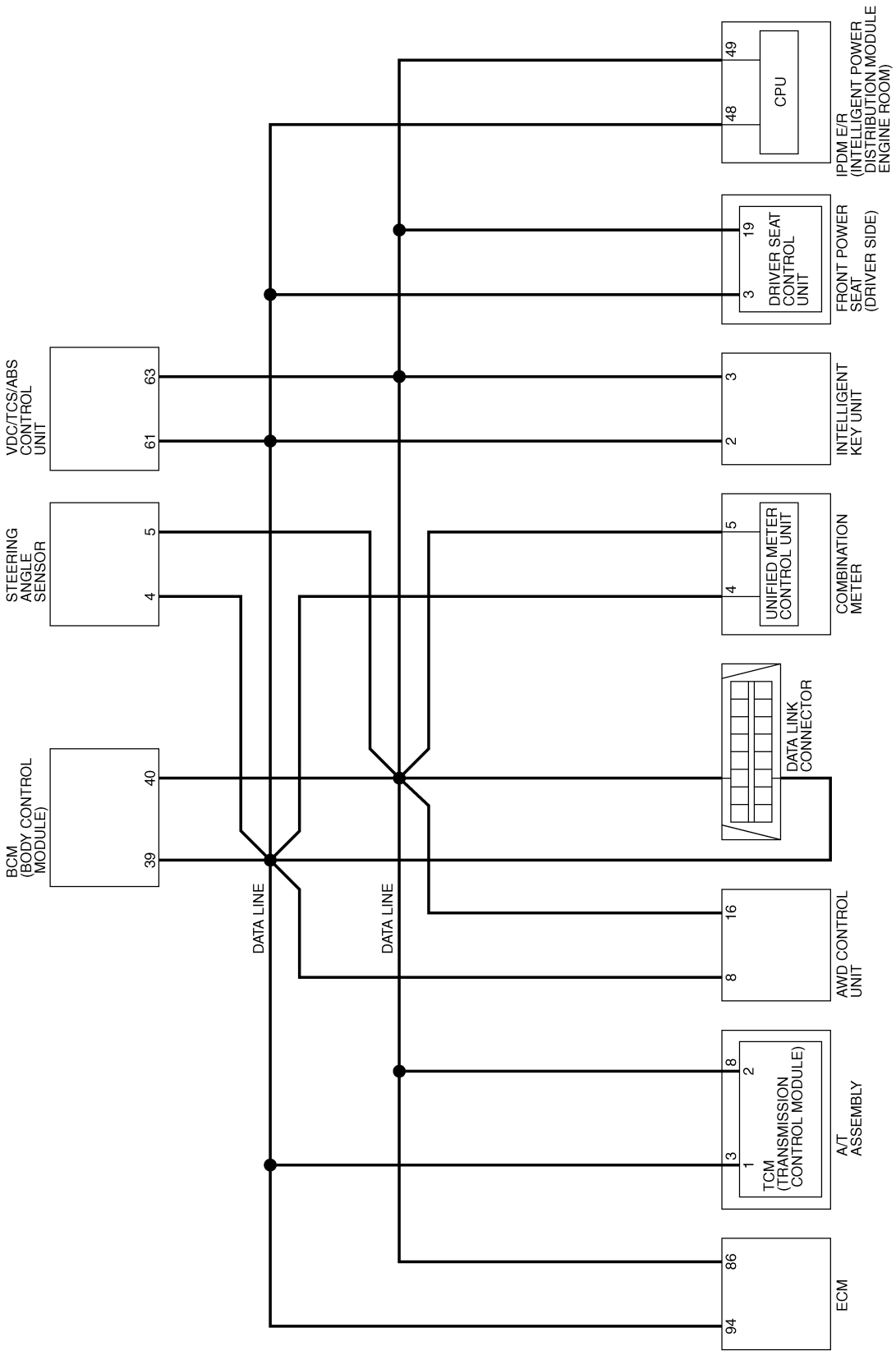
Component Parts and Harness Connector Location

AKS00CA4



Schematic

AKS00CA5

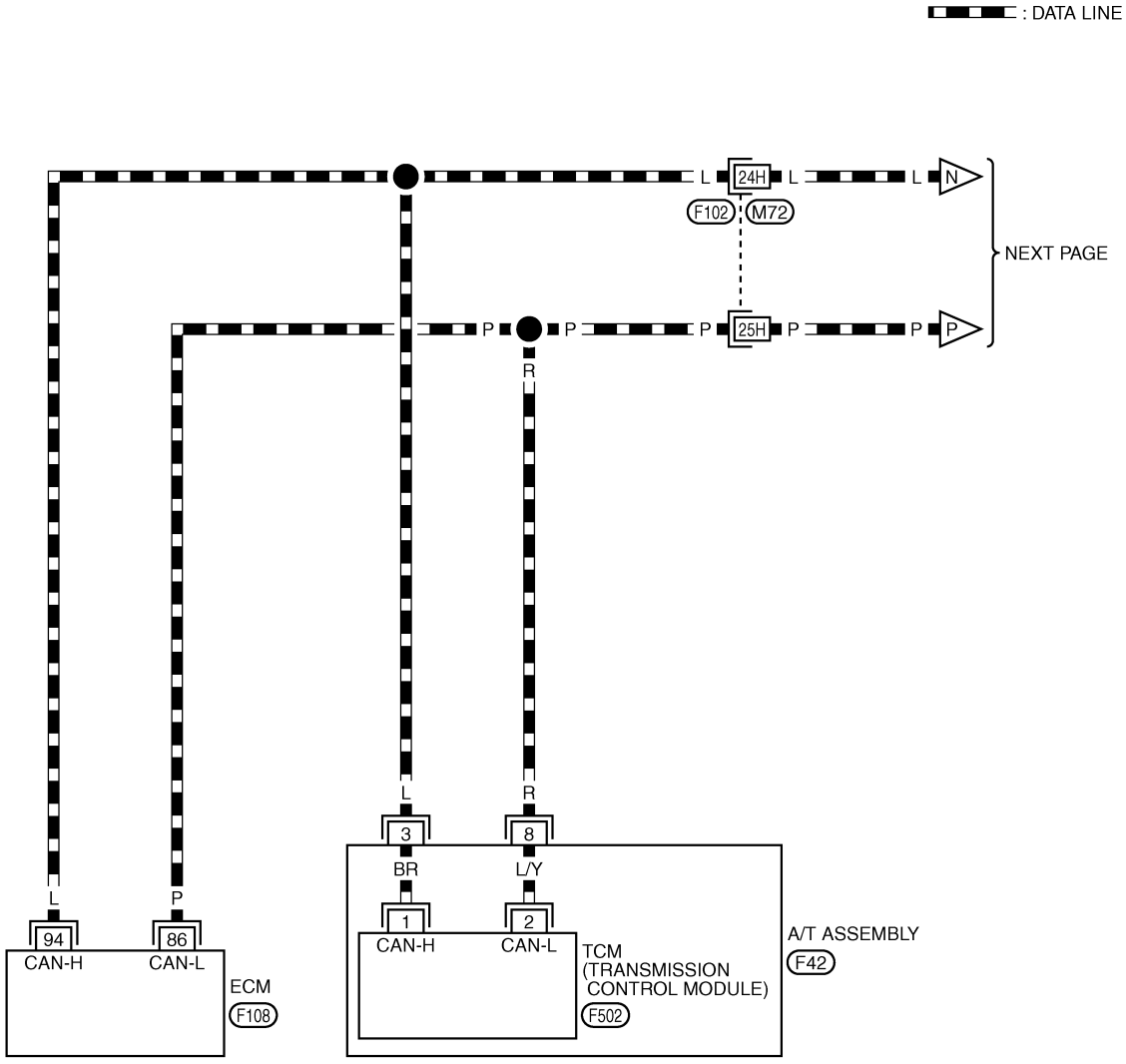


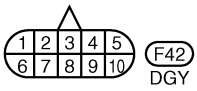
TKWM2473E

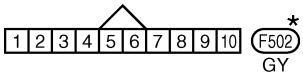
Wiring Diagram - CAN -

AKS00CA6

LAN-CAN-10





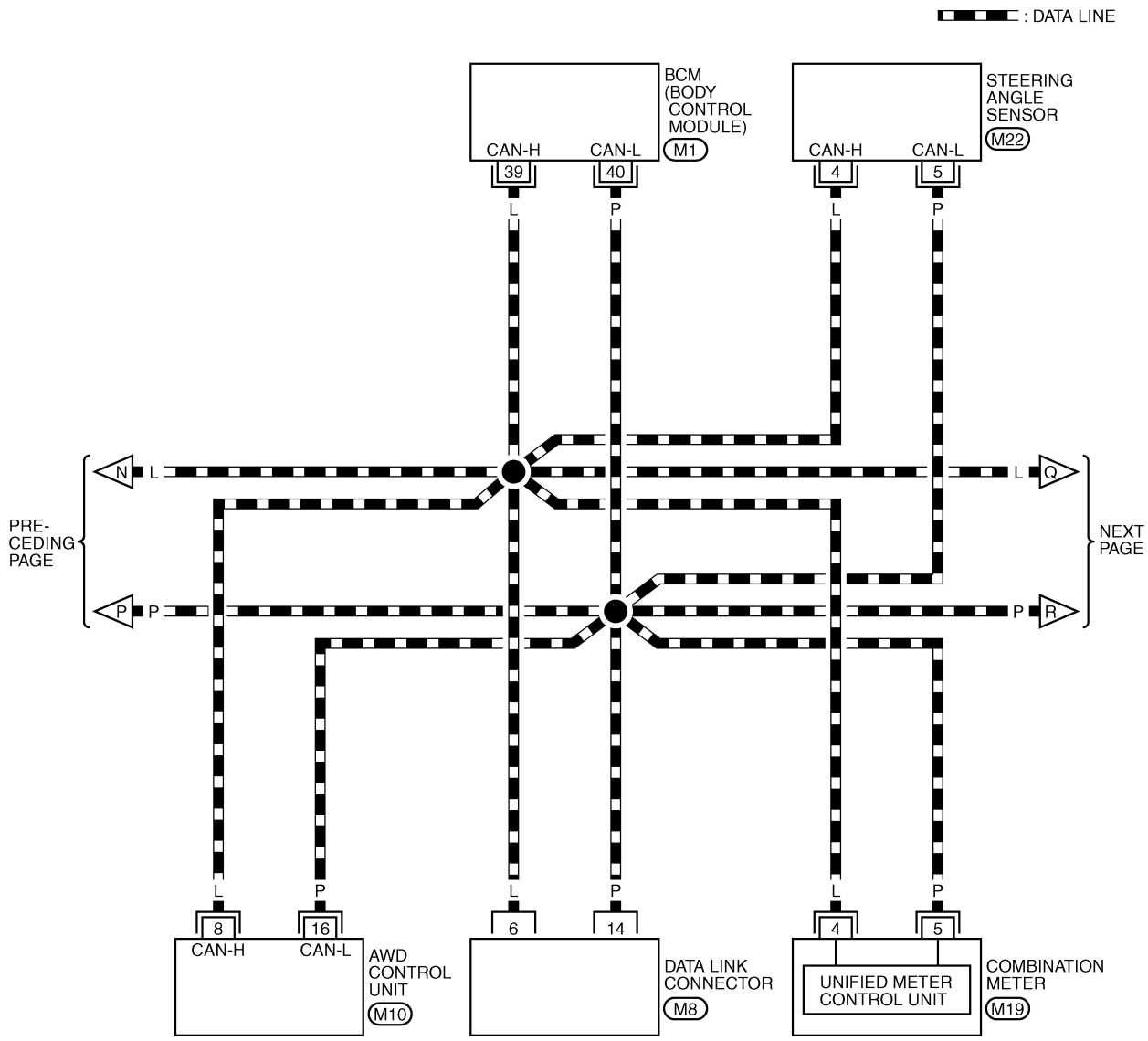


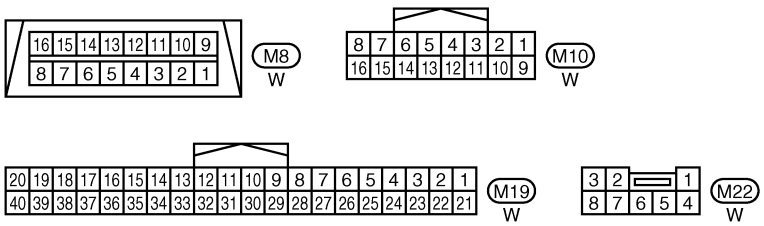
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
F108 -ELECTRICAL UNITS

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

TKWM2474E

LAN-CAN-11

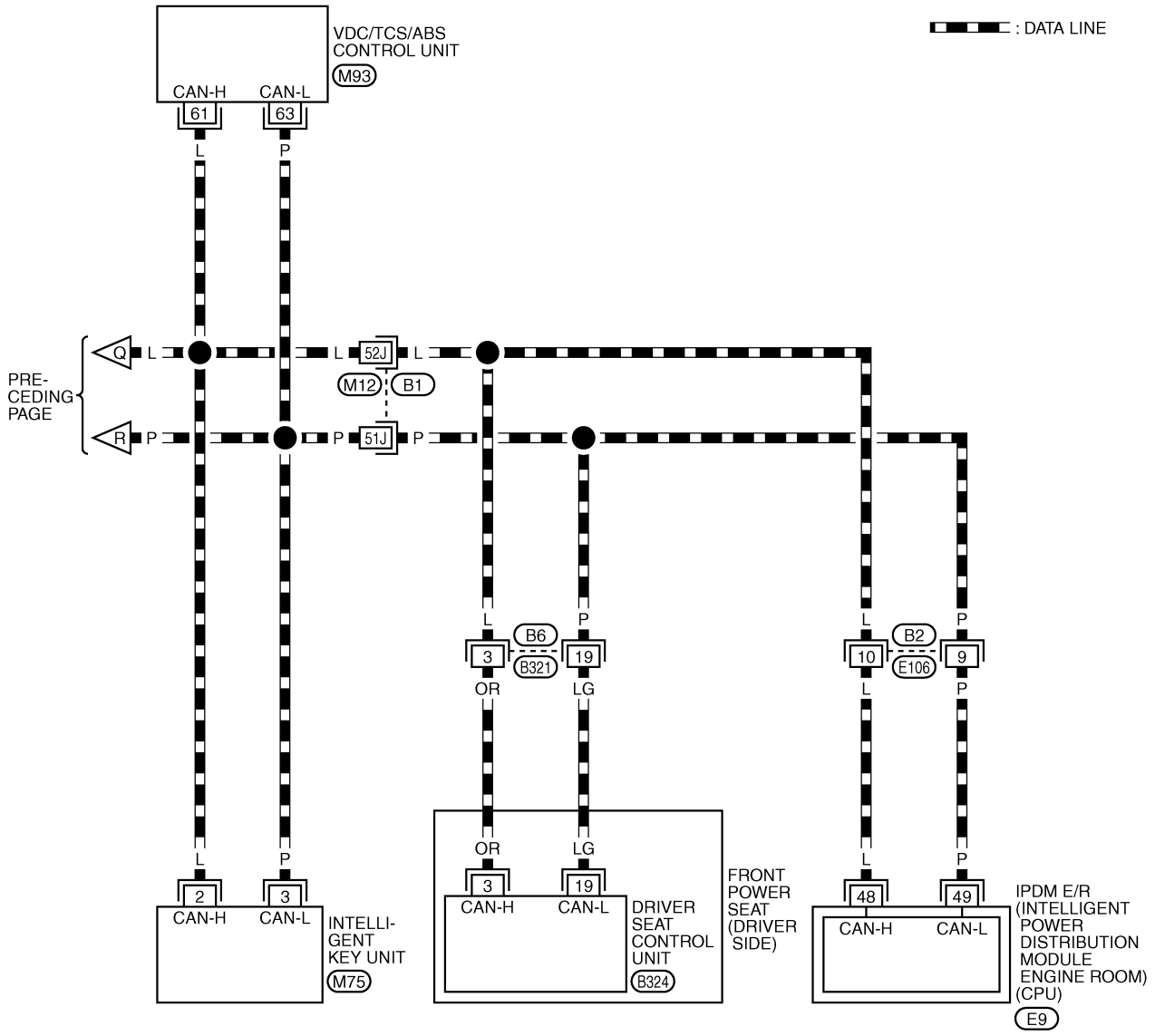


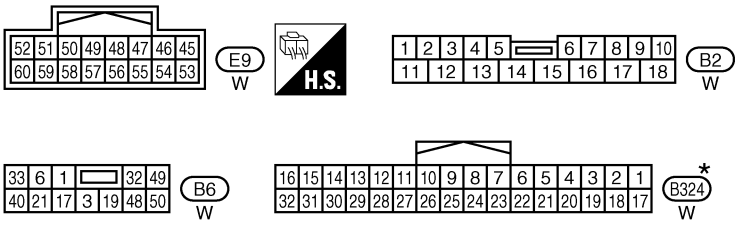


REFER TO THE FOLLOWING.

M1 -ELECTRICAL UNITS

TKWM2475E





REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

M75 , M93 -ELECTRICAL UNITS

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

TKWM2476E

CHECK SHEET

AKS00CA7

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

Check sheet table

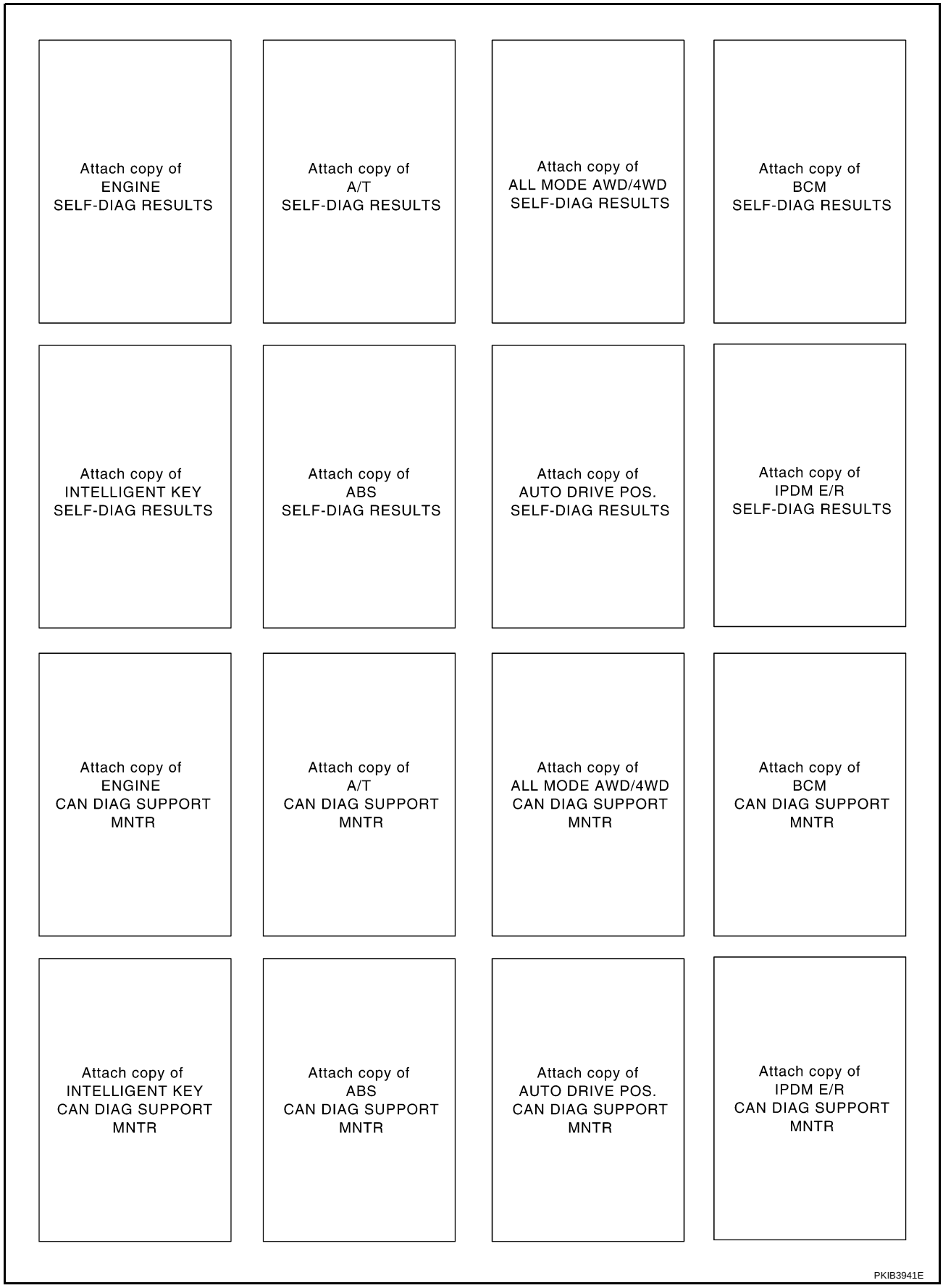
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	I-KEY	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)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

PKIB3906E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
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
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
INTELLIGENT KEY
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB3941E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

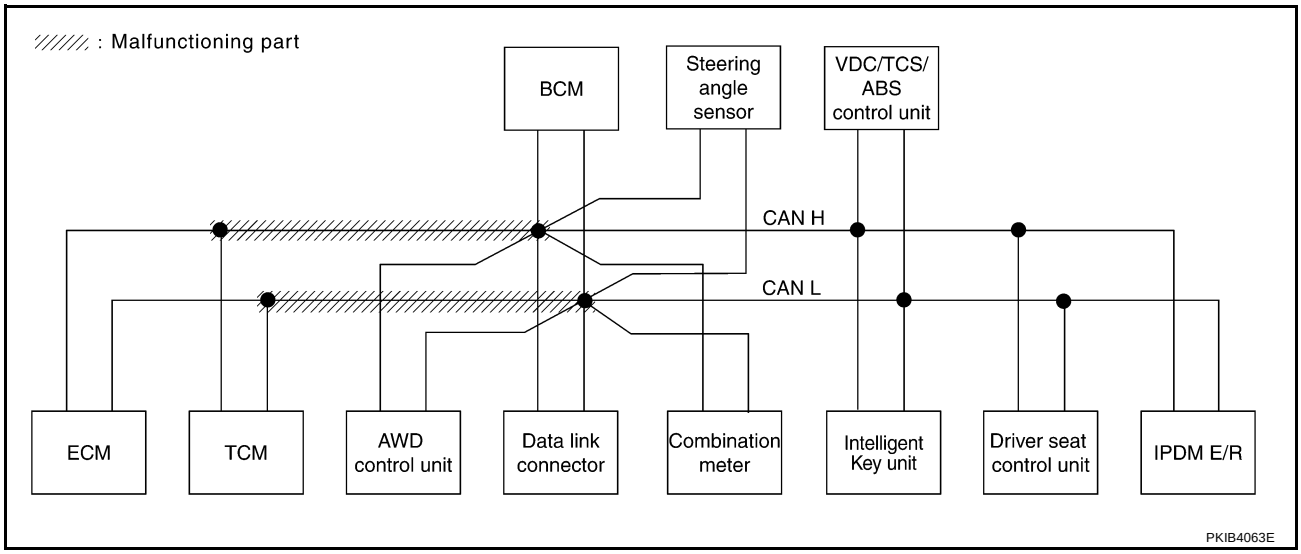
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-140, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB3942E



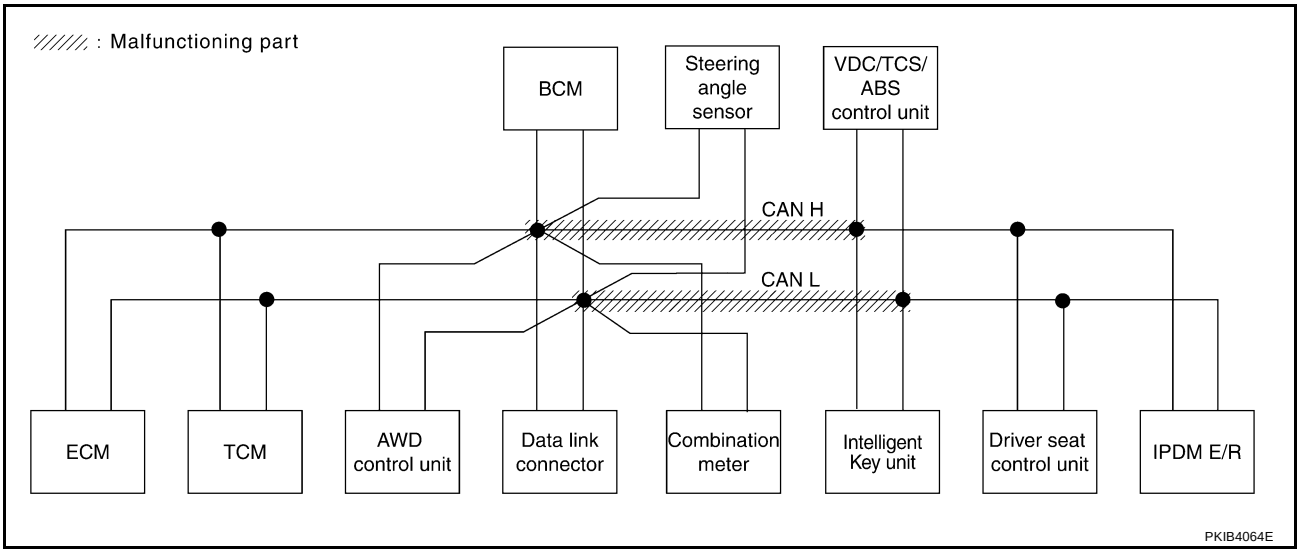
PKIB4063E

Case 2

Check harness between data link connector and Intelligent Key unit. Refer to LAN-141, "Inspection Between Data Link Connector and Intelligent Key Unit Circuit" .

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

PKIB3943E



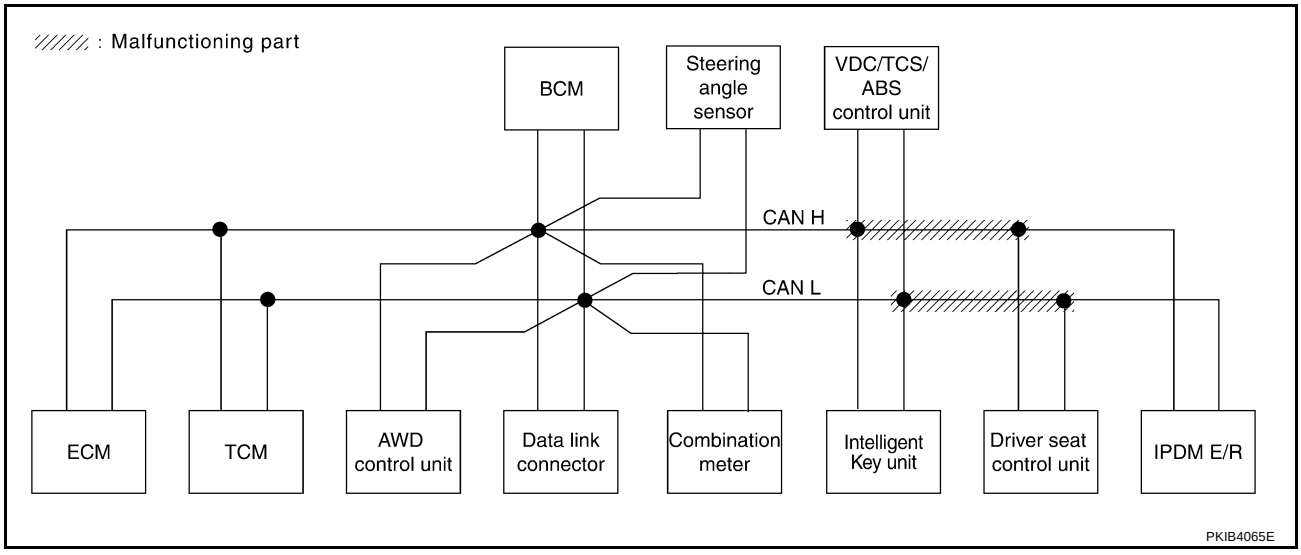
PKIB4064E

Case 3

Check harness between Intelligent Key unit and driver seat control unit. Refer to LAN-142, "Inspection Between Intelligent Key Unit and Driver Seat Control Unit Circuit" .

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

PKIB3944E



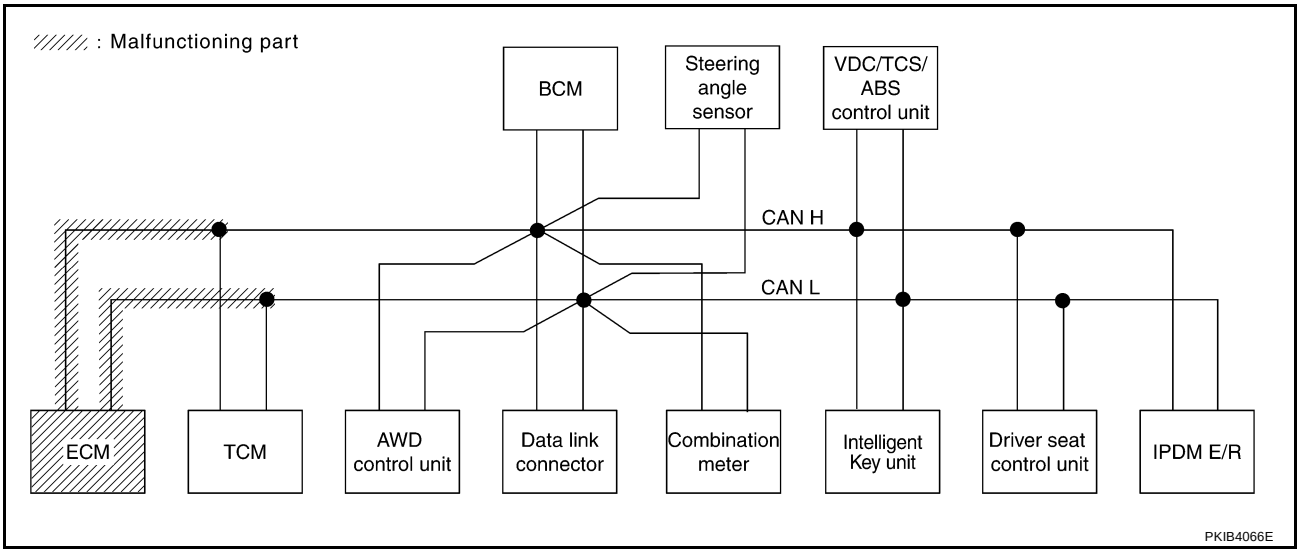
PKIB4065E

Case 4

Check ECM circuit. Refer to LAN-142, "ECM Circuit Inspection" .

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

PKIB3945E



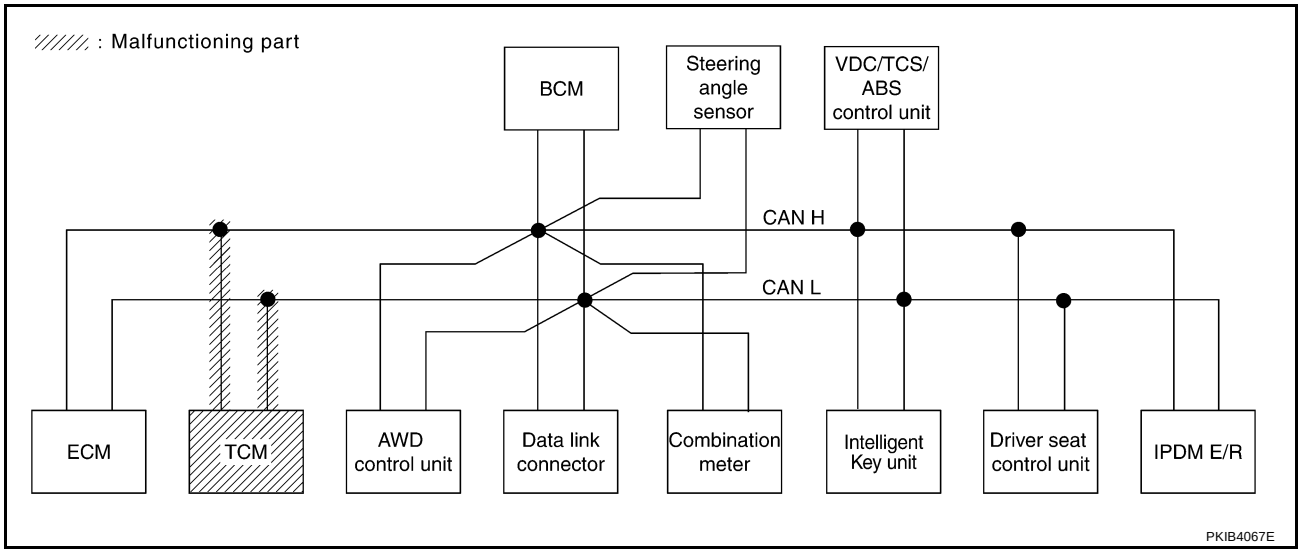
PKIB4066E

Case 5

Check TCM circuit. Refer to LAN-143, "TCM Circuit Inspection" .

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

PKIB3946E



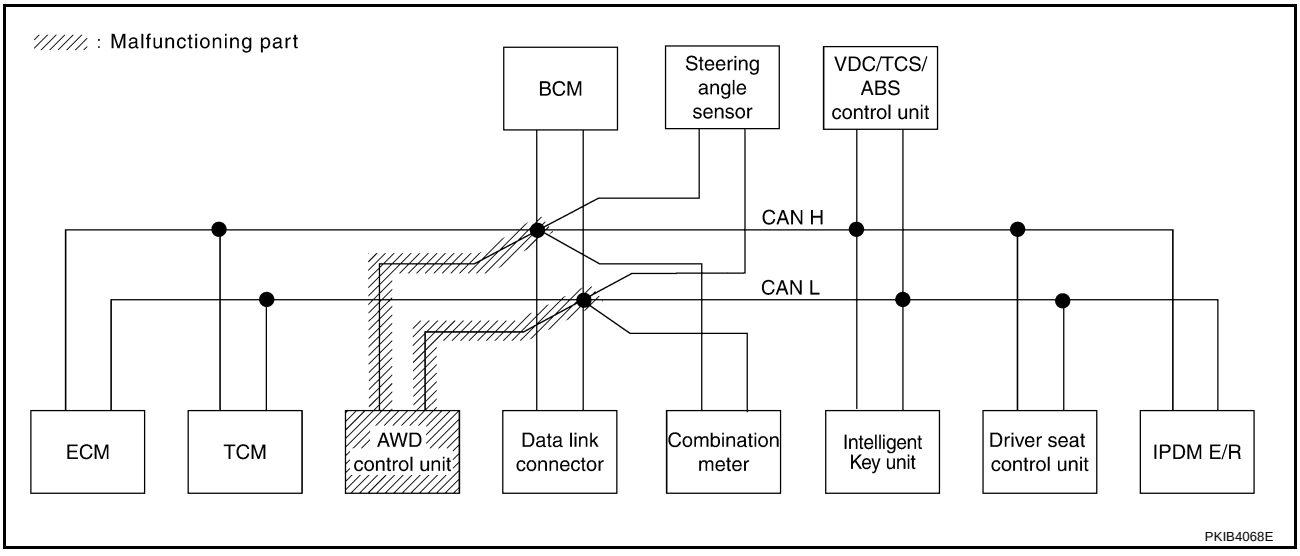
PKIB4067E

Case 6

Check AWD control unit circuit. Refer to LAN-143, "AWD Control Unit Circuit Inspection" .

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

PKIB3947E



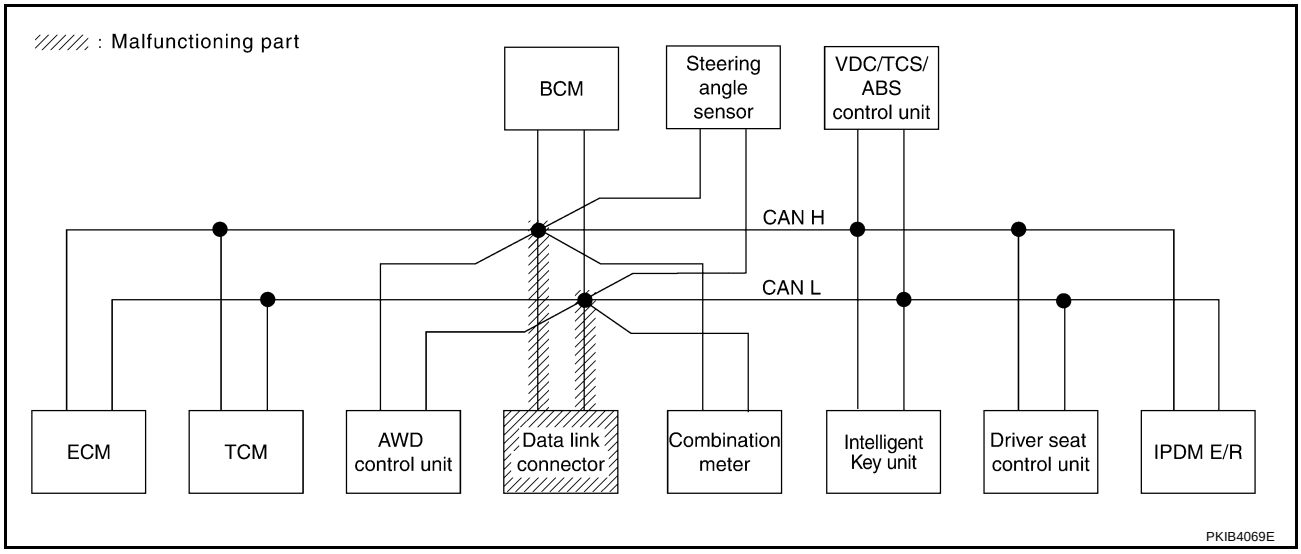
PKIB4068E

Case 7

Check data link connector circuit. Refer to LAN-144, "Data Link Connector Circuit Inspection" .

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

PKIB3948E



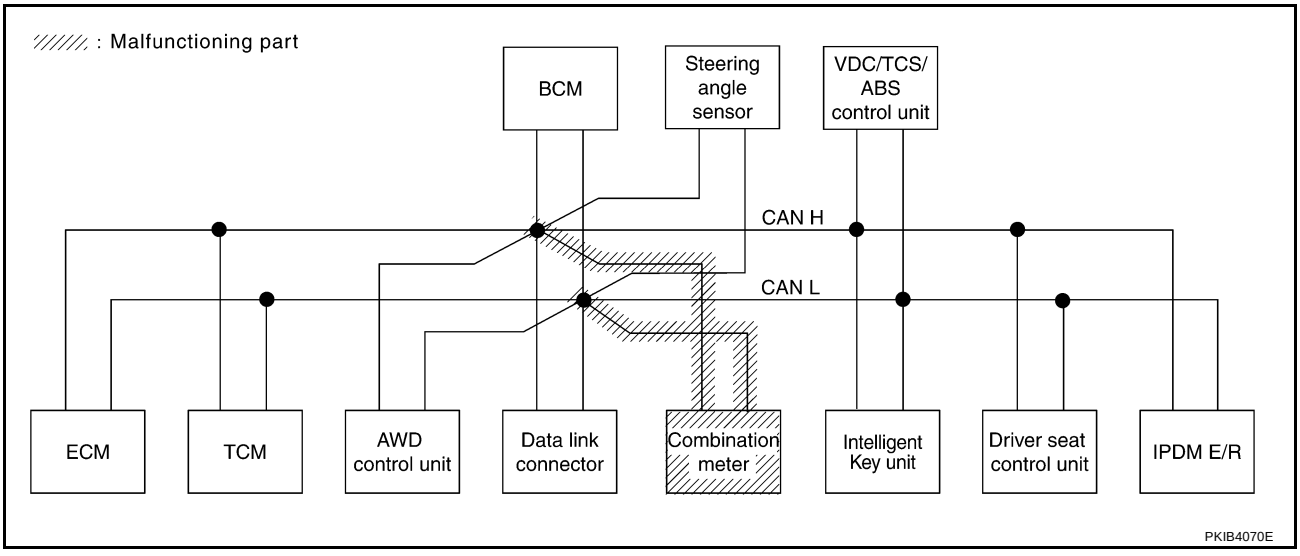
PKIB4069E

Case 8

Check combination meter circuit. Refer to LAN-144, "Combination Meter Circuit Inspection" .

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

PKIB3949E



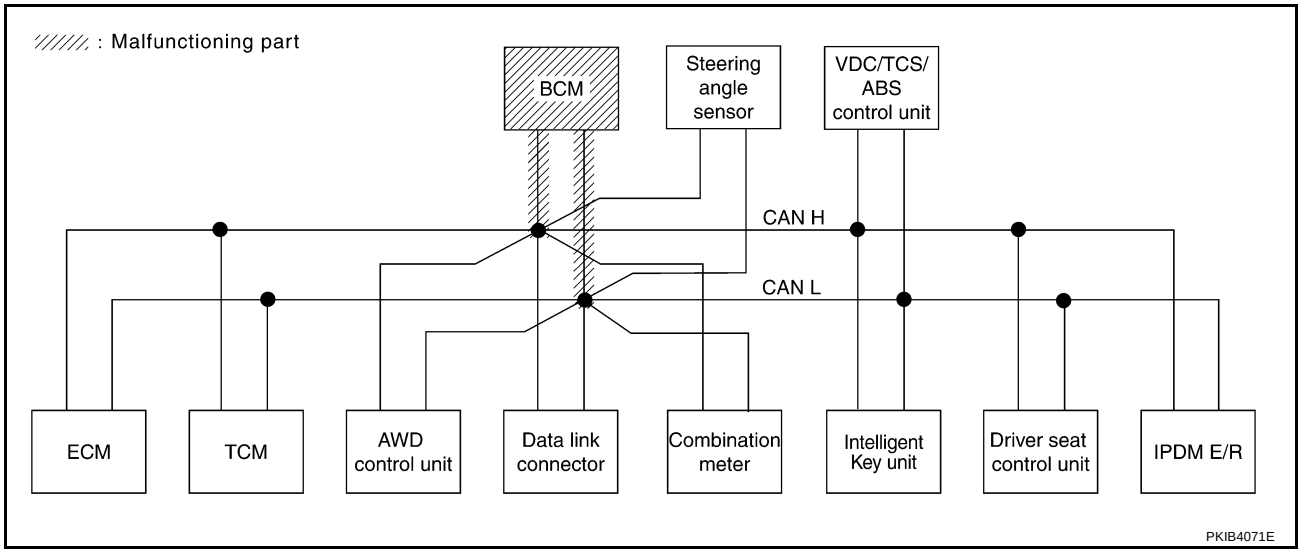
PKIB4070E

Case 9

Check BCM circuit. Refer to LAN-145, "BCM Circuit Inspection" .

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

PKIB3950E



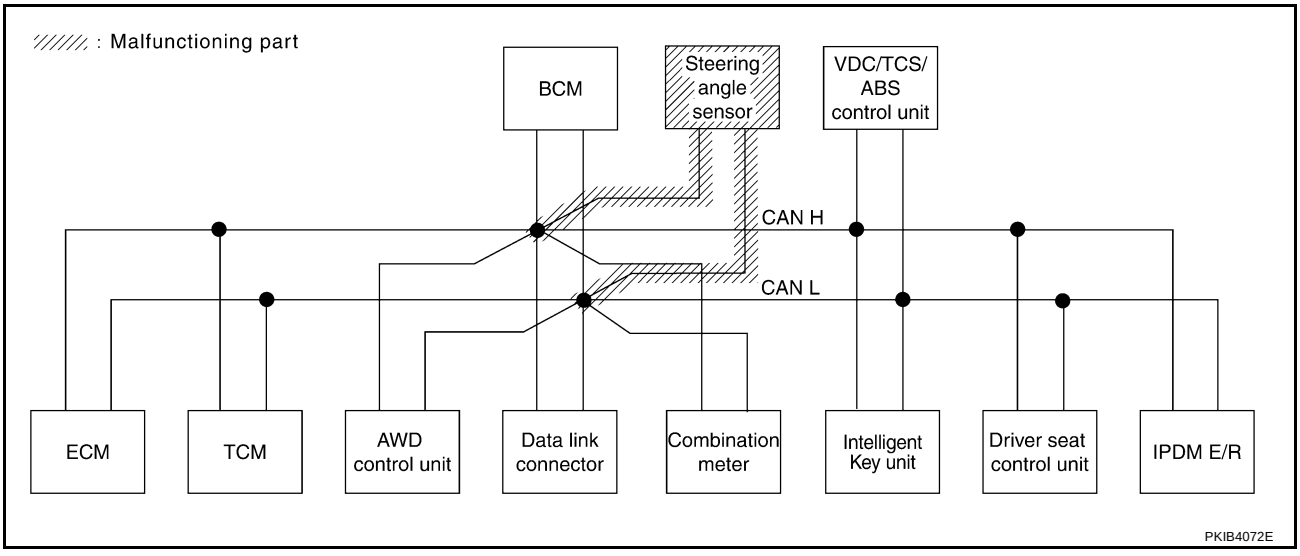
PKIB4071E

Case 10

Check steering angle sensor circuit. Refer to LAN-145, "Steering Angle Sensor Circuit Inspection" .

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

PKIB3951E



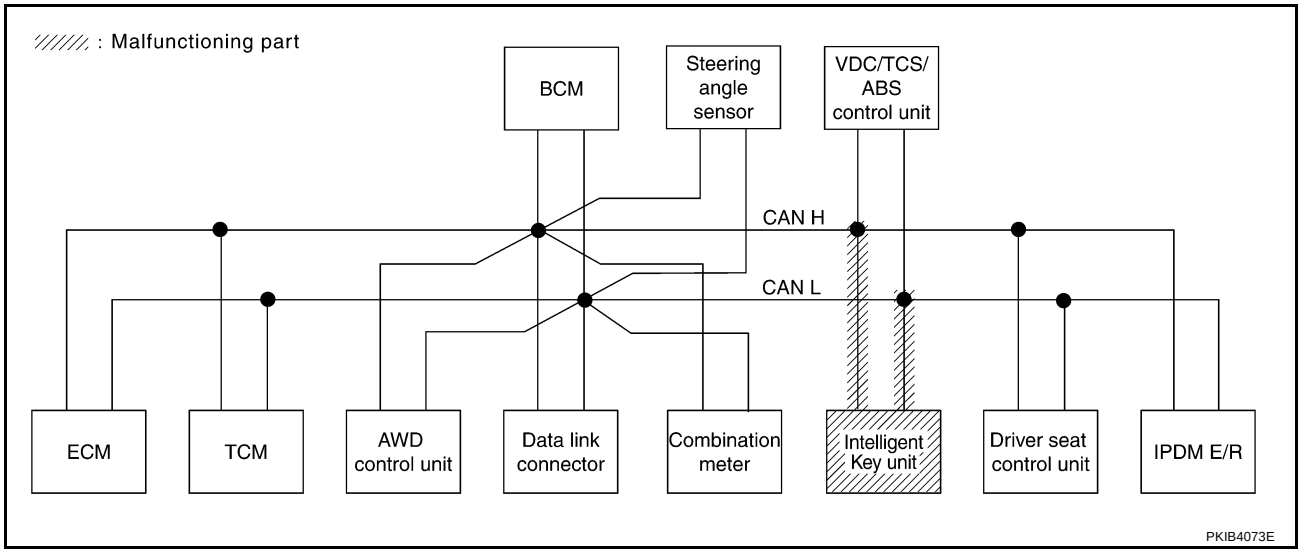
PKIB4072E

Case 11

Check Intelligent Key unit circuit. Refer to LAN-146, "Intelligent Key Unit Circuit Inspection" .

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

PKIB3952E



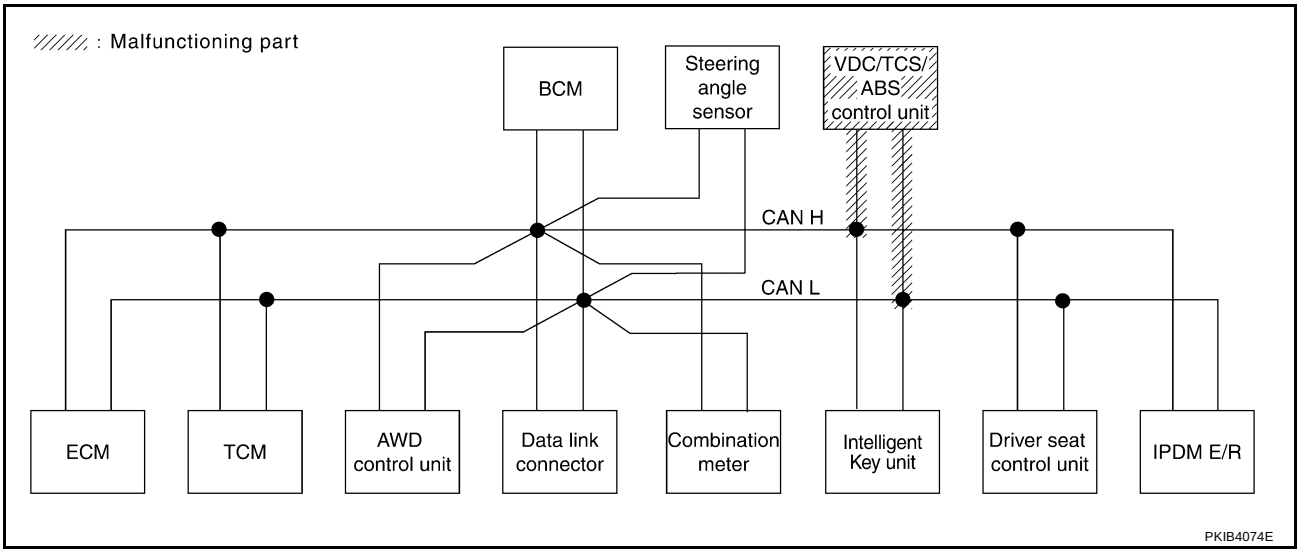
PKIB4073E

Case 12

Check VDC/TCS/ABS control unit circuit. Refer to LAN-146, "VDC/TCS/ABS Control Unit Circuit Inspection" .

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

PKIB3953E



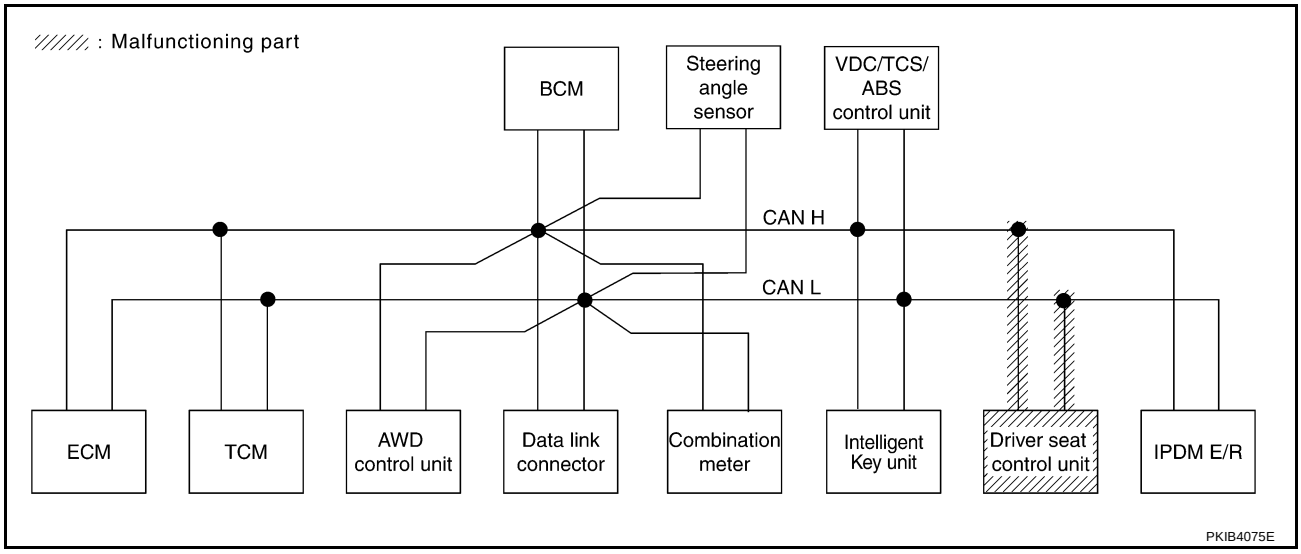
PKIB4074E

Case 13

Check driver seat control unit circuit. Refer to LAN-147, "Driver Seat Control Unit Circuit Inspection" .

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

PKIB3954E

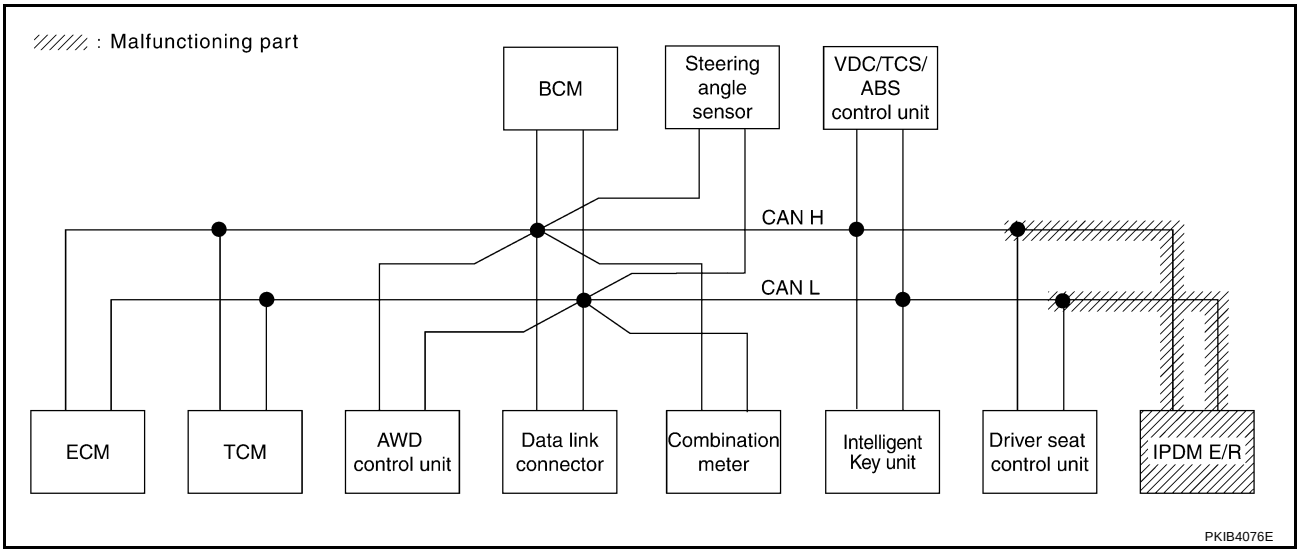


Case 14

Check IPDM E/R circuit. Refer to LAN-148, "IPDM E/R Circuit Inspection" .

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

PKIB3955E



PKIB4076E

Case 15

Check CAN communication circuit. Refer to LAN-148, "CAN Communication Circuit Inspection" .

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

PKIB3956E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-153, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIB3957E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-153, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIB3958E

Inspection Between TCM and Data Link Connector Circuit

AKS00CA8

1. CHECK CONNECTOR

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

- Harness connector F102
- Harness connector M72

OK or NG

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

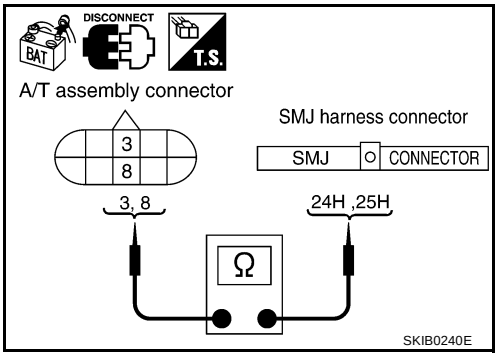
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F42 terminals 3 (L), 8 (R) and harness connector F102 terminals 24H (L), 25H (P).

3 (L) – 24H (L) : Continuity should exist.
8 (R) – 25H (P) : Continuity should exist.

OK or NG

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



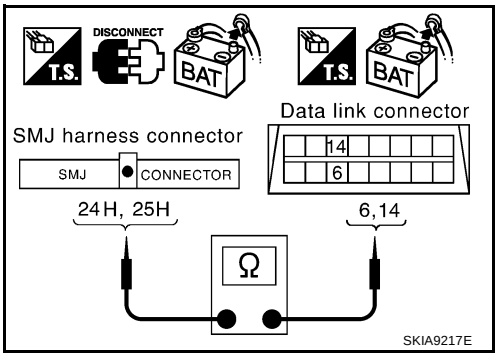
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 24H (L), 25H (P) and data link connector M8 terminals 6 (L), 14 (P).

24H (L) – 6 (L) : Continuity should exist.
25H (P) – 14 (P) : Continuity should exist.

OK or NG

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



Inspection Between Data Link Connector and Intelligent Key Unit Circuit

AKS00CAP

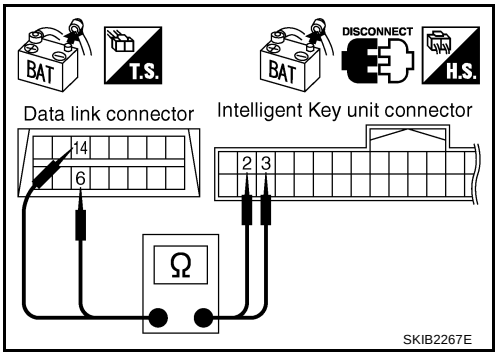
1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect ECM connector and Intelligent Key unit connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and Intelligent Key unit harness connector M75 terminals 2 (L), 3 (P).

6 (L) – 2 (L) : Continuity should exist.
14 (P) – 3 (P) : Continuity should exist.

OK or NG

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



Inspection Between Intelligent Key Unit and Driver Seat Control Unit Circuit

AKS00CAQ

1. CHECK CONNECTOR

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

- Harness connector M12
- Harness connector B1

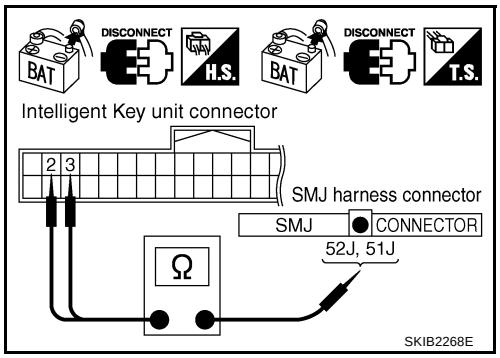
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector and harness connector M12.
2. Check continuity between Intelligent Key unit harness connector M75 terminals 2 (L), 3 (P) and harness connector M12 terminals 52J (L), 51J (P).

2 (L) – 52J (L) : Continuity should exist.
3 (P) – 51J (P) : Continuity should exist.



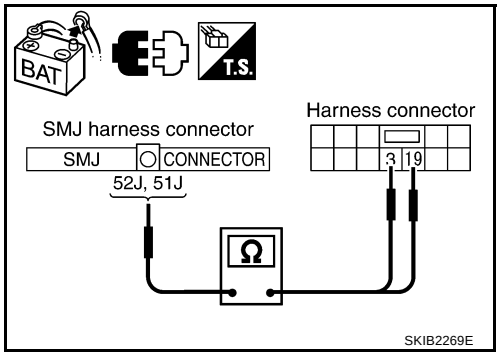
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B6.
2. Check continuity between harness connector B1 terminals 52J (L), 51J (P) and harness connector B6 terminals 3 (L), 19 (P).

52J (L) – 3 (L) : Continuity should exist.
51J (P) – 19 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

AKS00CAA

1. CHECK CONNECTOR

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

OK or NG

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

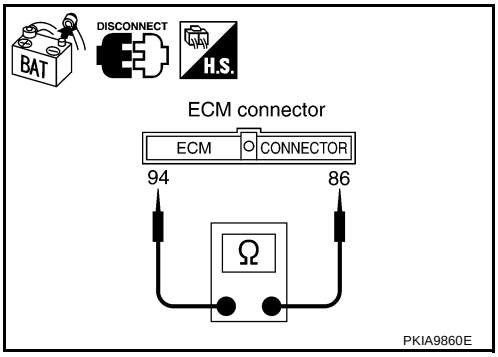
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F108 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132 Ω

OK or NG

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



TCM Circuit Inspection

AKS00CAC

1. CHECK CONNECTOR

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

OK or NG

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

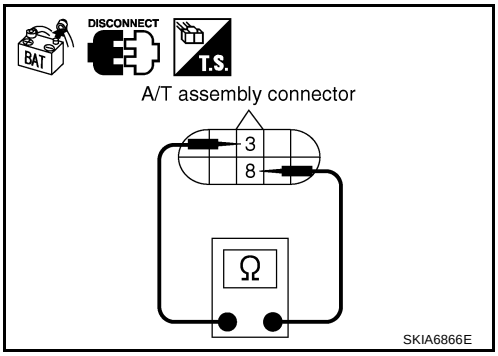
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F42 terminals 3 (L) and 8 (R).

3 (L) – 8 (R) : Approx. 54 – 66 Ω

OK or NG

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



AWD Control Unit Circuit Inspection

AKS00CAB

1. CHECK CONNECTOR

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

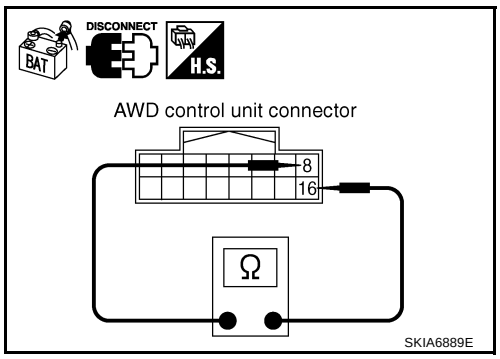
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect AWD control unit connector.
2. Check resistance between AWD control unit harness connector M10 terminals 8 (L) and 16 (P).

8 (L) – 16 (P) : Approx. 54 – 66 Ω



OK or NG

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

Data Link Connector Circuit Inspection

AKS00CAD

1. CHECK CONNECTOR

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

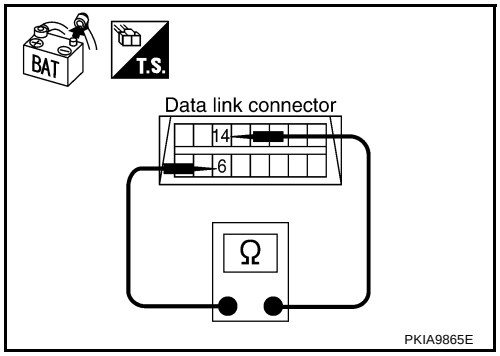
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-5, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and combination meter.

Combination Meter Circuit Inspection

AKS00CAE

1. CHECK CONNECTOR

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

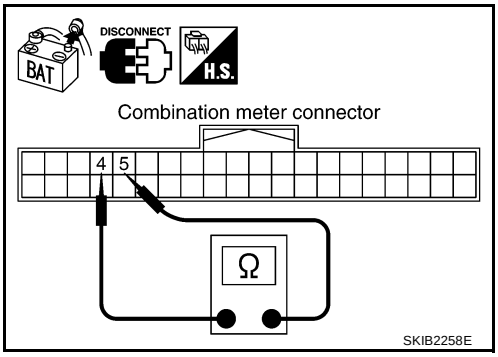
OK or NG

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 M19 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66 Ω



OK or NG

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

BCM Circuit Inspection

AKS00CAF

1. CHECK CONNECTOR

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

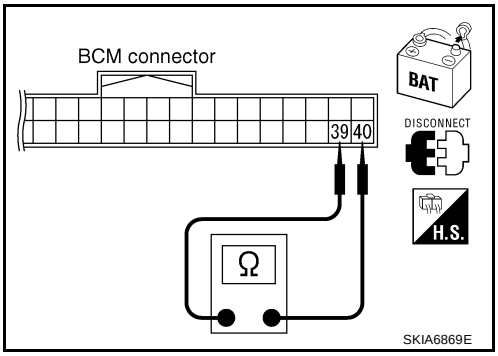
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M1 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Steering Angle Sensor Circuit Inspection

AKS00CAG

1. CHECK CONNECTOR

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

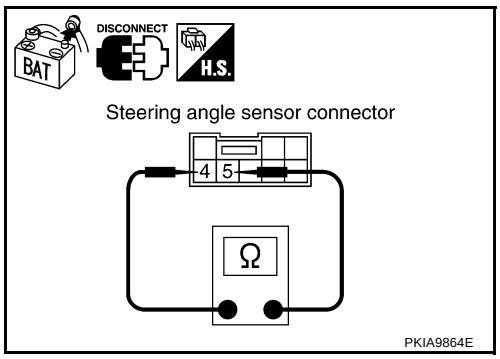
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) – 5 (P) **: Approx. 54 – 66 Ω**



OK or NG

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

Intelligent Key Unit Circuit Inspection

AKS00CAR

1. CHECK CONNECTOR

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

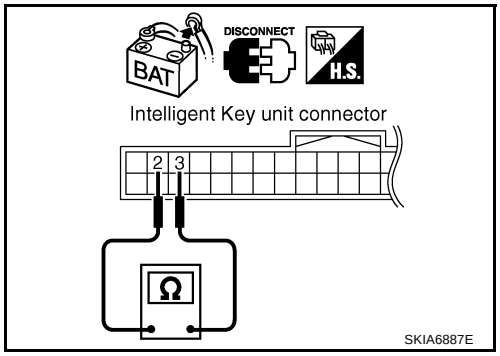
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M75 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) **: Approx. 54 – 66 Ω**



OK or NG

OK >> Replace Intelligent Key unit.
NG >> Repair harness between Intelligent Key unit and VDC/TCS/ABS control unit.

VDC/TCS/ABS Control Unit Circuit Inspection

AKS00CAH

1. CHECK CONNECTOR

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

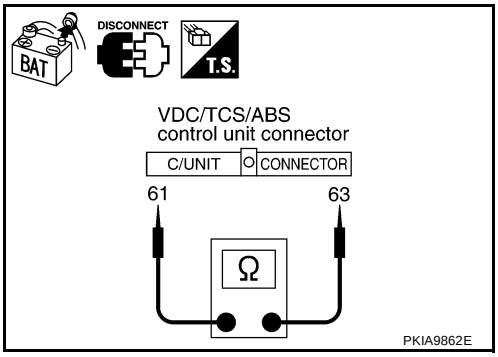
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector M93 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace VDC/TCS/ABS control unit.
NG >> Repair harness between VDC/TCS/ABS control unit and harness connector M12.

Driver Seat Control Unit Circuit Inspection

AKS00CAS

1. CHECK CONNECTOR

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

- Driver seat control unit connector
- Harness connector B6
- Harness connector B321

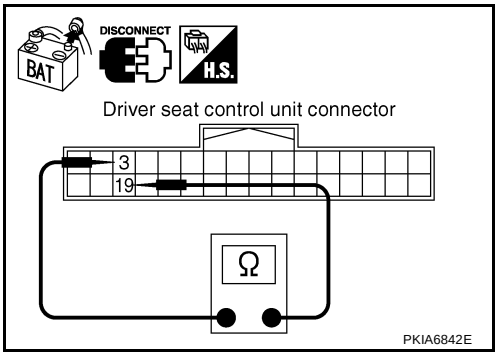
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector B324 terminals 3 (OR) and 19 (LG).

3 (OR) – 19 (LG) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B2.

IPDM E/R Circuit Inspection

AKS00CAI

1. CHECK CONNECTOR

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

– IPDM E/R
– Harness connector B2
– Harness connector E106

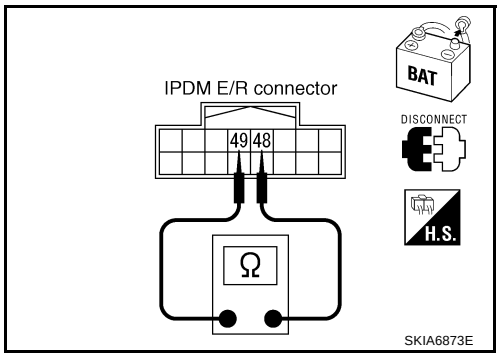
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : Approx. 108 – 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector B6.

CAN Communication Circuit Inspection

AKS00CAJ

1. CHECK CONNECTOR

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

– ECM
– A/T assembly
– AWD control unit
– Combination meter
– BCM
– Steering angle sensor
– Intelligent Key unit
– VDC/TCS/ABS control unit
– Driver seat control unit
– IPDM E/R
– Between ECM and IPDM E/R

OK or NG

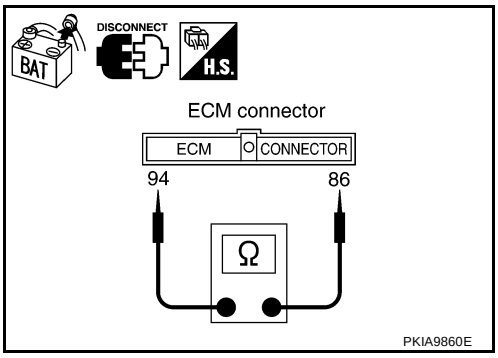
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ECM connector
- A/T assembly connector
- Harness connector F102

2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (P).

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



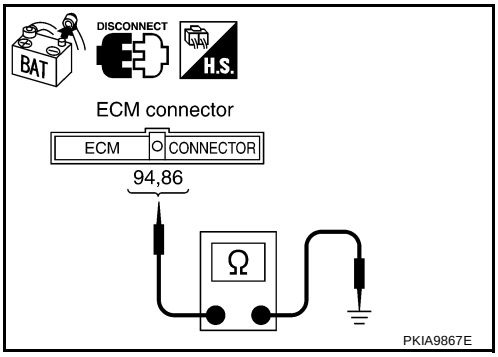
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F108 terminals 94 (L), 86 (P) and ground.

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



OK or NG

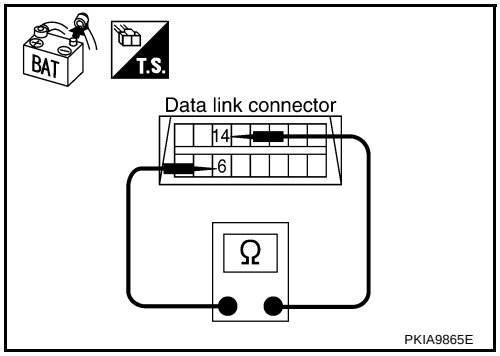
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- AWD control unit
- Combination meter connector
- BCM connector
- Steering angle sensor connector
- Intelligent Key unit
- VDC/TCS/ABS control unit
- Harness connector M12

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

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



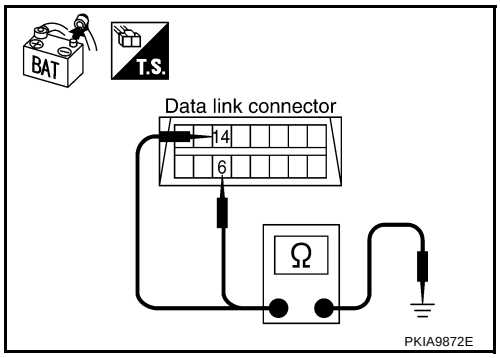
OK or NG

OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and AWD control unit
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

5. CHECK HARNESS FOR SHORT CIRCUIT

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

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



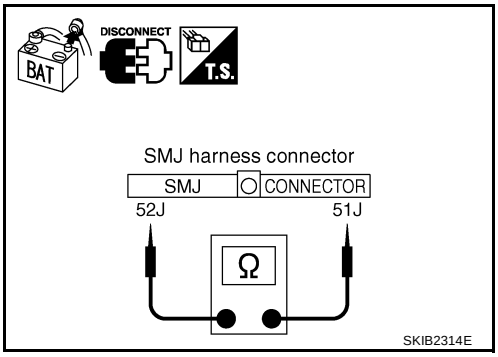
OK or NG

OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and AWD control unit
- Harness between data link connector and combination meter
- Harness between data link connector and BCM
- Harness between data link connector and steering angle sensor
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and harness connector M12

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B6 and harness connector B2.
2. Check continuity between harness connector B1 terminals 52J (L) and 51J (P).

52J (L) – 51J (P) : Continuity should not exist.



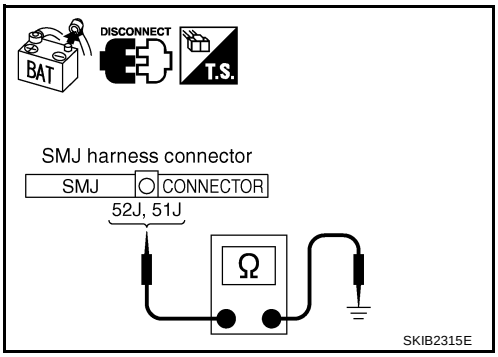
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector B1 and harness connector B6
- Harness between harness connector B1 and harness connector B2

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B1 terminals 52J (L), 51J (P) and ground.

52J (L) – Ground : Continuity should not exist.
51J (P) – Ground : Continuity should not exist.



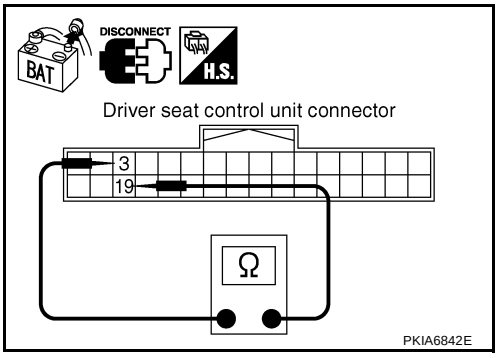
OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector B1 and harness connector B6
- Harness between harness connector B1 and harness connector B2

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check continuity between driver seat control unit harness connector B324 terminals 3 (OR) and 19 (LG).

3 (OR) – 19 (LG) : Continuity should not exist.



OK or NG

OK >> GO TO 9.
NG >> Repair harness between Driver seat control unit and harness connector B321.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between driver seat control unit harness connector B324 terminals 3 (OR), 19 (LG) and ground.

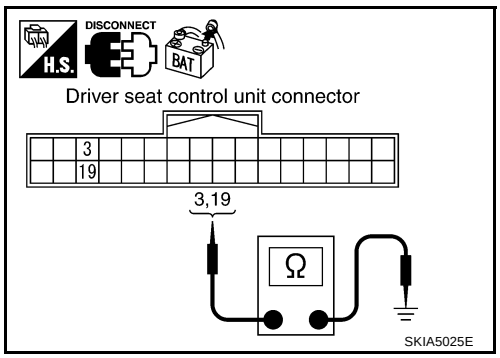
3 (OR) – Ground : Continuity should not exist.

19 (LG) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.

NG >> Repair harness between Driver seat control unit and harness connector B321.



10. CHECK HARNESS FOR SHORT CIRCUIT

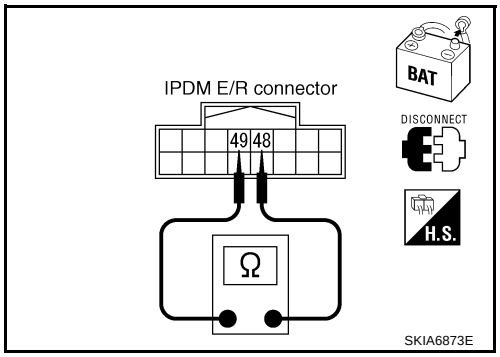
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

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

OK or NG

OK >> GO TO 11.

NG >> Repair harness between IPDM E/R harness connector E106.



11. CHECK HARNESS FOR SHORT CIRCUIT

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

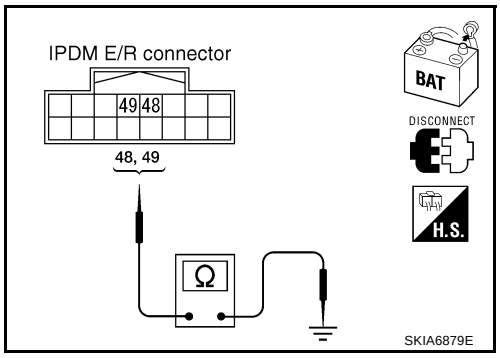
48 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 12.

NG >> Repair harness between IPDM E/R harness connector E106.



12. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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

94 – 86 : Approx. 108 – 132 Ω

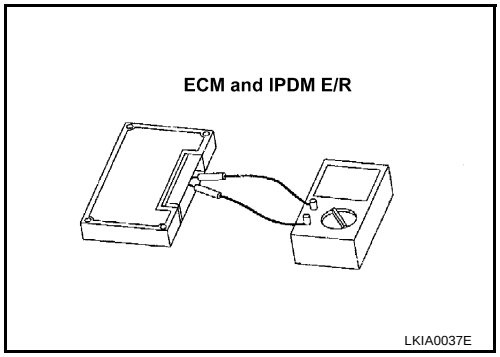
3. Check resistance between IPDM E/R terminals 48 and 49.

48 – 49 : Approx. 108 – 132 Ω

OK or NG

OK >> GO TO 13.

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



13. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 14.
NG >> Refer to LAN-13, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

14. CHECK UNIT REPRODUCIBILITY

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

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

- A/T assembly
- AWD control unit
- Combination meter
- BCM
- Steering angle sensor
- Intelligent Key unit
- VDC/TCS/ABS control unit
- Driver seat control unit
- ECM
- IPDM E/R

Check results

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

IPDM E/R Ignition Relay Circuit Inspection

AKS00CAK

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-10, "IGNITION POWER SUPPLY - IGNITION SW. IN “ON” AND/OR “START”" .