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-5, "TROUBLE DIAGNOSES WORK FLOW" .

Precautions for Trouble Diagnosis

AKS000BF

CAN SYSTEM

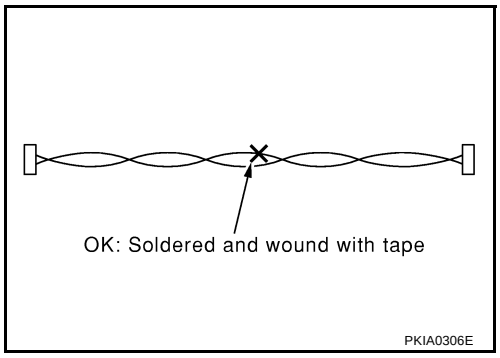
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precautions for Harness Repair

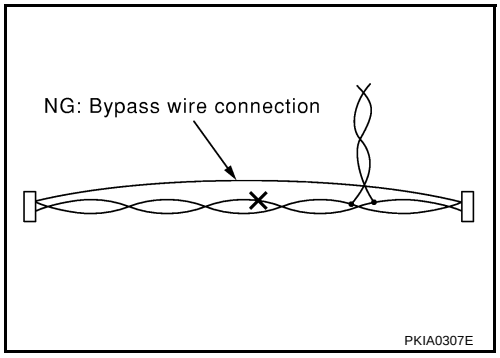
AKS000BG

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

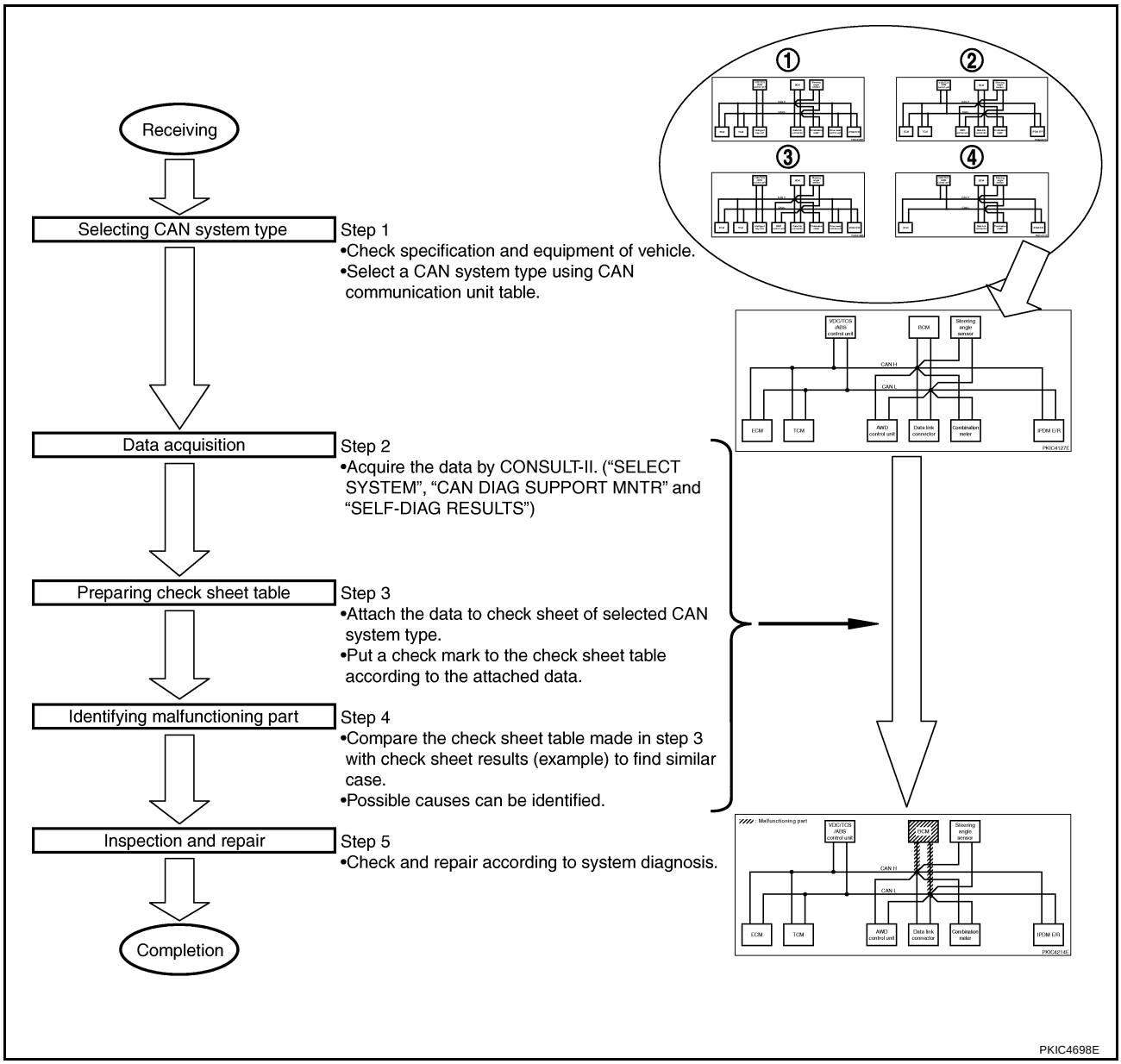
- CAN communication line is open. (CAN H, CAN L, or both)
- CAN communication line is shorted. (Ground, between CAN lines, or other harnesses)
- The areas related to CAN communication of unit is malfunctioning.

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/AWD/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					
Axle	2WD		AWD		2WD	
Engine	VQ35DE					
Transmission	A/T				M/T	
Brake control	VDC					
Intelligent Key system		×		×		
Automatic drive positioner		×		×		×
CAN system type	1	2	3	4	5	6
CAN system trouble diagnosis	XX-XX	XX-XX	XX-XX	XX-XX	XX-XX	XX-XX

× : Applicable

Check basic specification of the vehicle.

Select "×" if it is model with Intelligent Key system.

Select "×" if it is model with Automatic drive positioner system.

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

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

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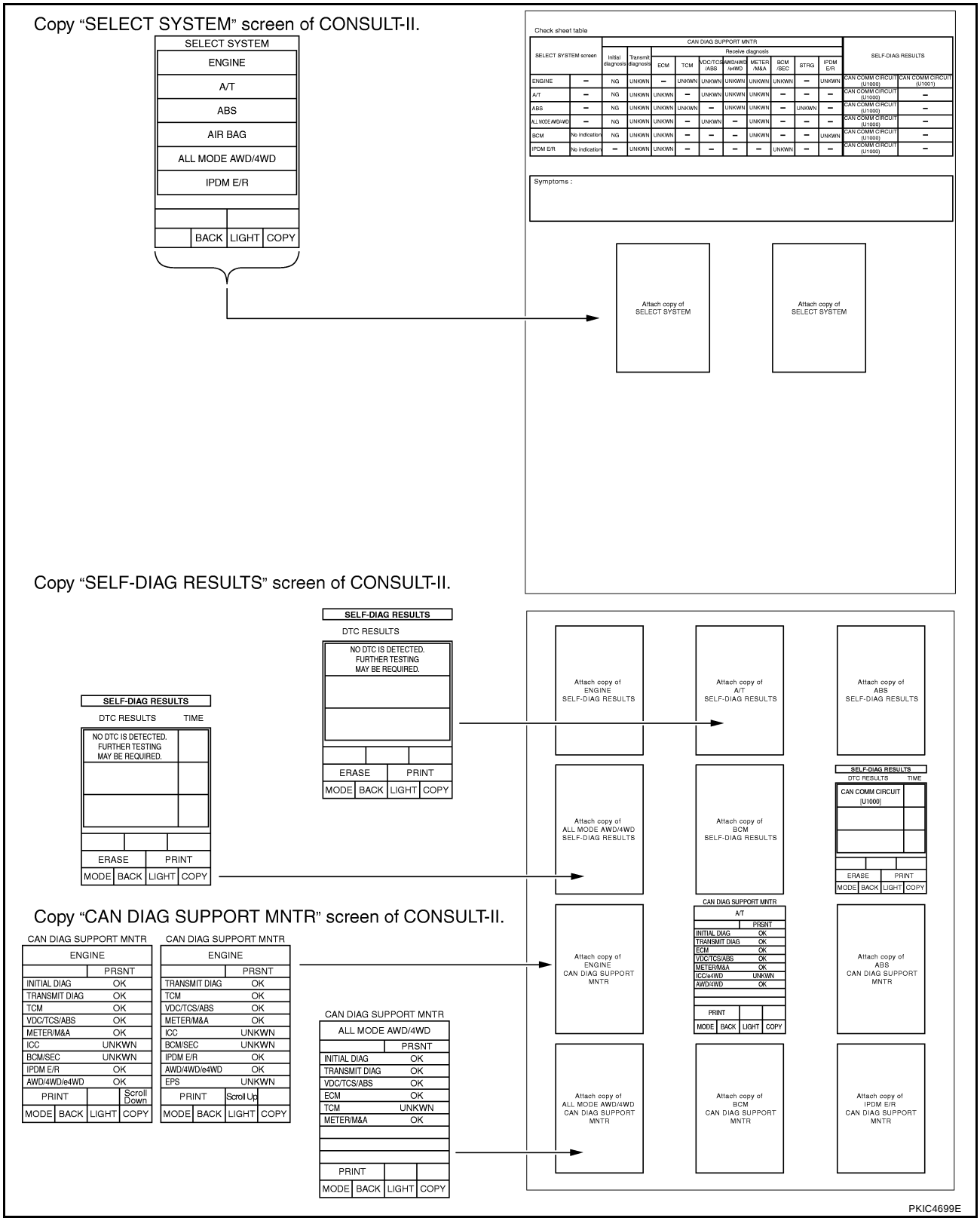
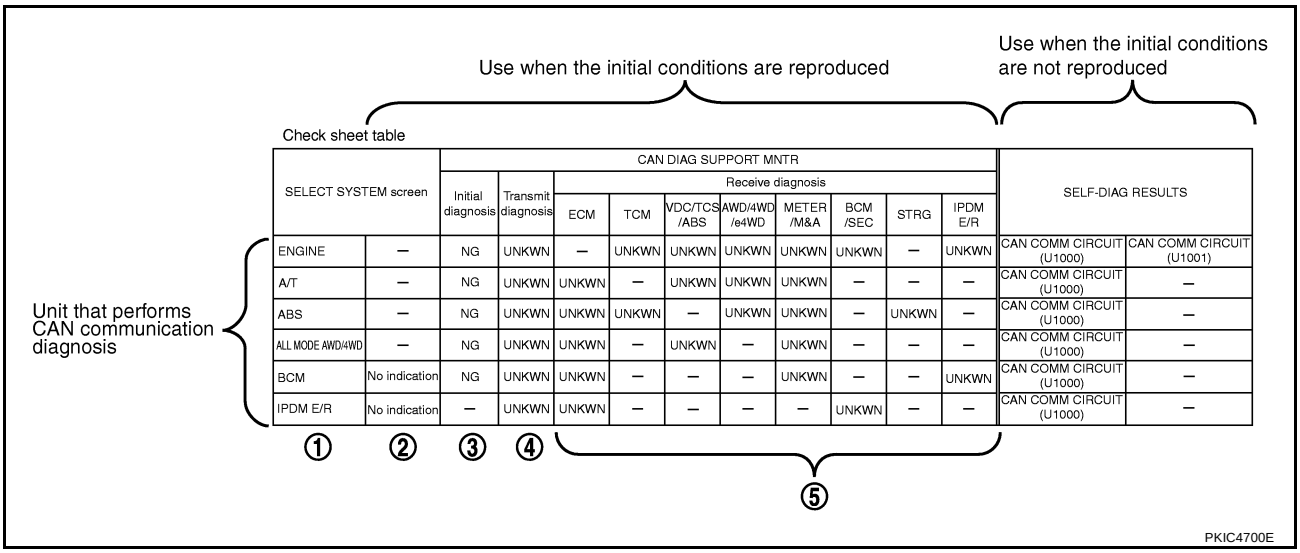
ACQUISITION OF DATA BY CONSULT-II

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



HOW TO USE CHECK SHEET TABLE



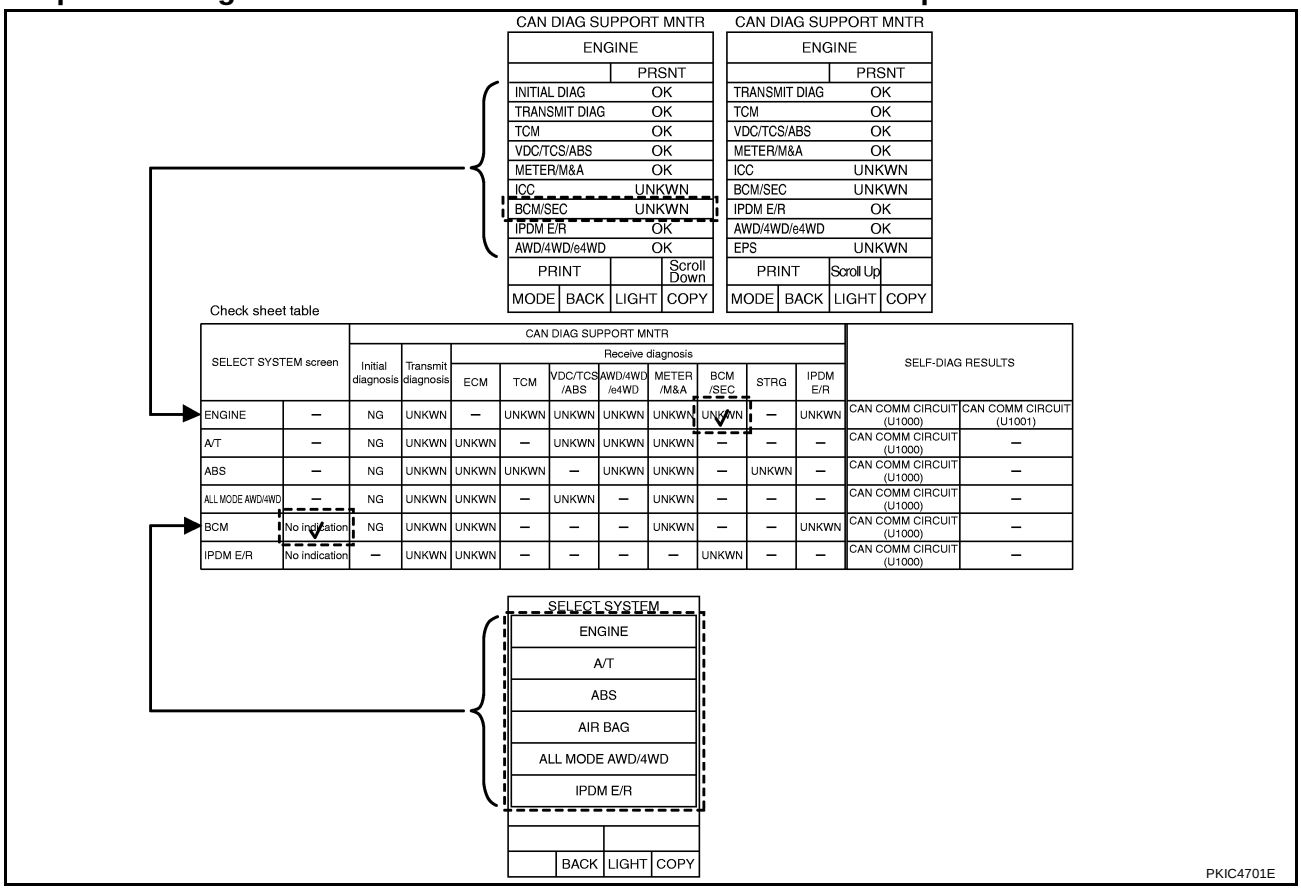
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

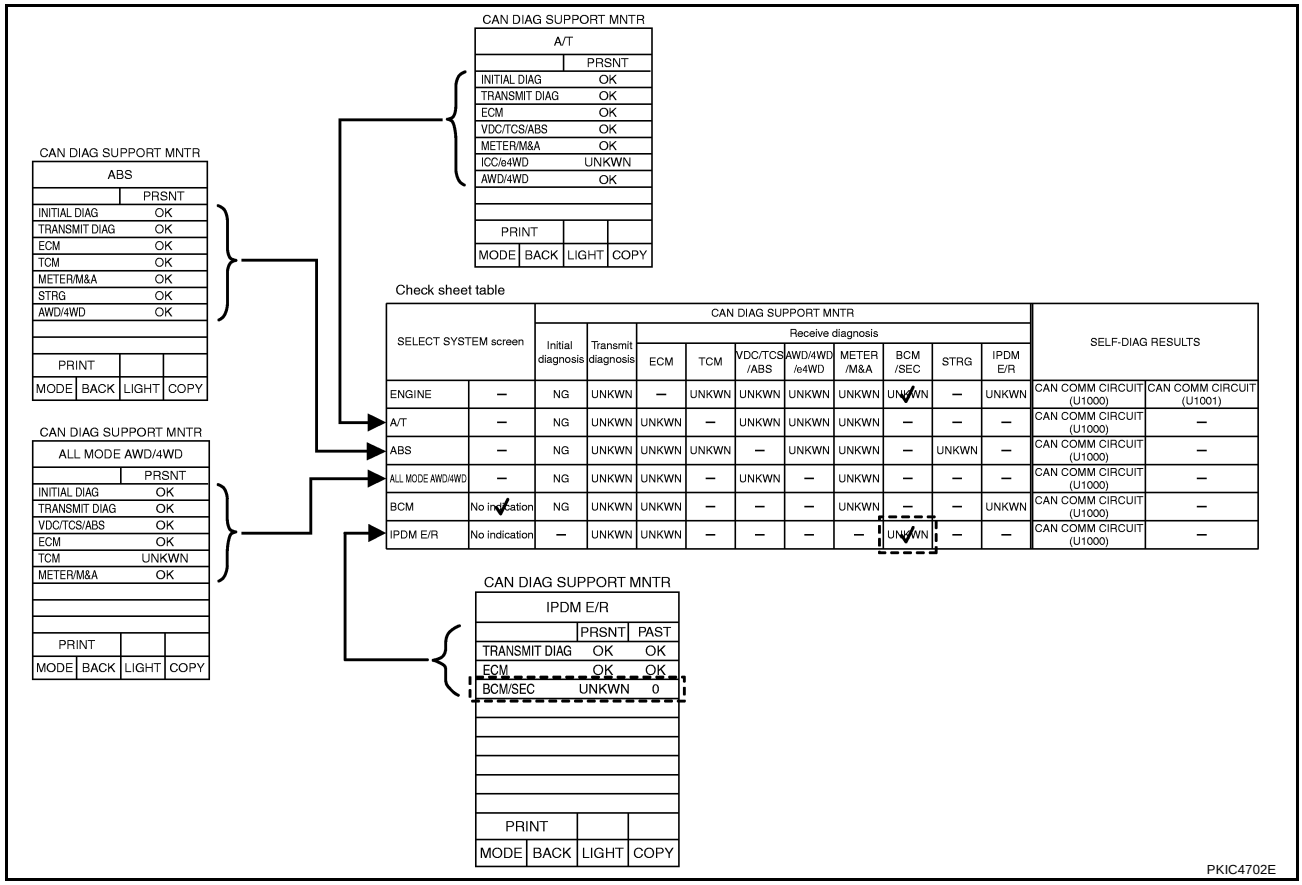


1. Put a check mark to “No indication” if some of unit names listed on the column of diagnosis system selection screen of a check sheet table are not displayed on “SELECT SYSTEM” screen attached to the check sheet.

   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”, “ABS”, “ALL MODE AWD/4WD” 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 “ABS”, “UNKWN” is not displayed. Do not put a check to it.
- 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 “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

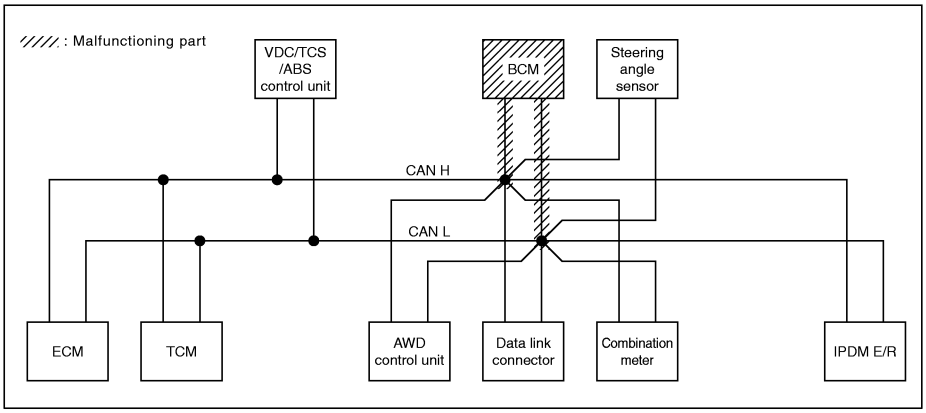
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	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)	–
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 9
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	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	–
ABS	–	NG	UNKWN	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)	–
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	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
ABS	—	NG	UNKWN	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)	—
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 ABS
SELF-DIAG RESULTS
DTC RESULTS TIME
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 IPDM E/R
SELF-DIAG RESULTS
DTC RESULTS TIME
CAN COMM CIRCUIT [U1000] PAST

PKIC4704E

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 “ABS”, “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 “IPDM E/R”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.

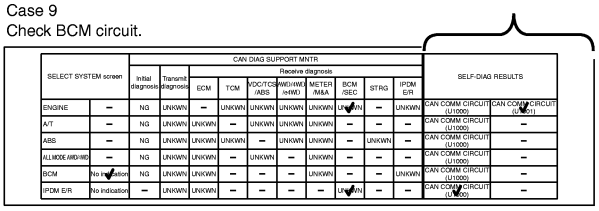
The arranged results of self-diagnosis

Check sheet table

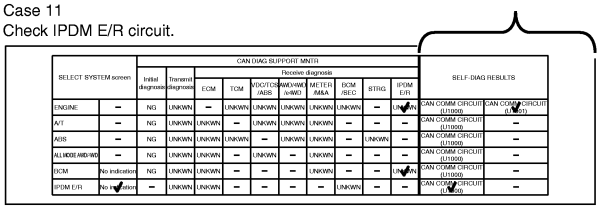
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

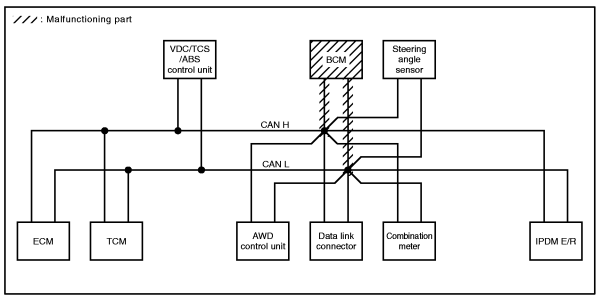
When the arranged results of self-diagnosis and check sheet results (example) are corresponding, possible causes can be selected.

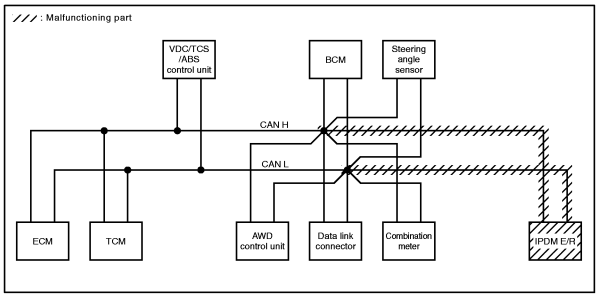
Case 9
Check BCM circuit.



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 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

AWD models

(Example)

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	

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.

2WD models

(Example)

CAN DIAG SUPPORT MNTR

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

PKIB8720E

“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
	ICC	ICC 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 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 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

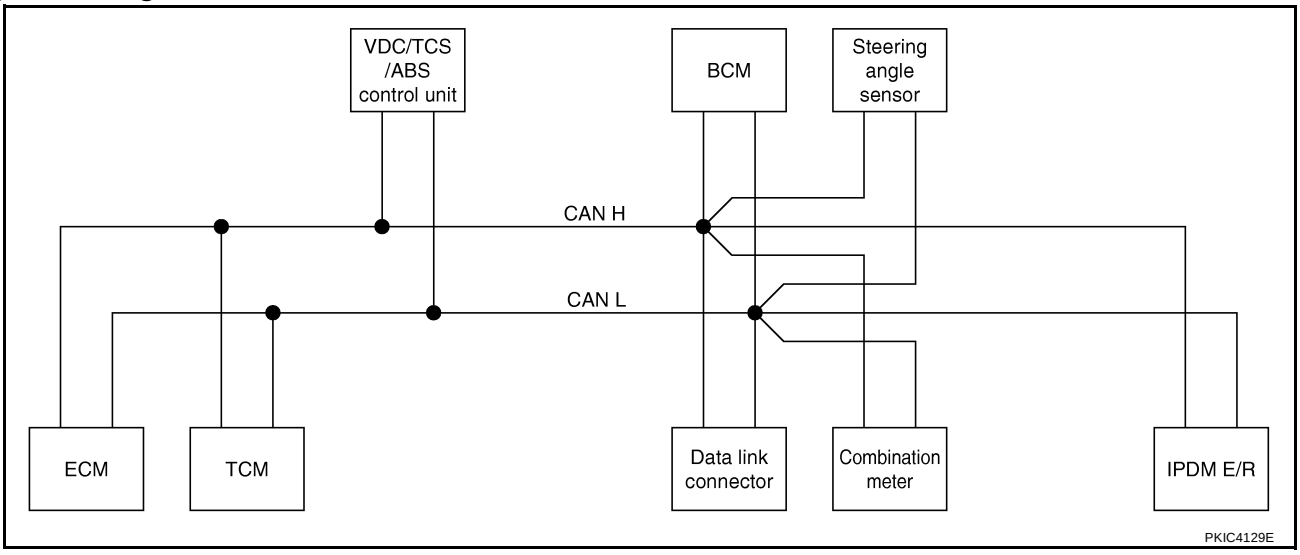
Go to CAN system, when selecting your CAN system type from the following table.

Body type	Sedan					
Axle	2WD		AWD		2WD	
Engine	VQ35DE					
Transmission	A/T				M/T	
Brake control	VDC					
Intelligent Key system		×		×		
Automatic drive positioner		×		×		×
CAN system type	1	2	3	4	5	6
CAN system trouble diagnosis	LAN-33	LAN-60	LAN-93	LAN-122	LAN-157	LAN-182

×:Applicable

TYPE 1

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

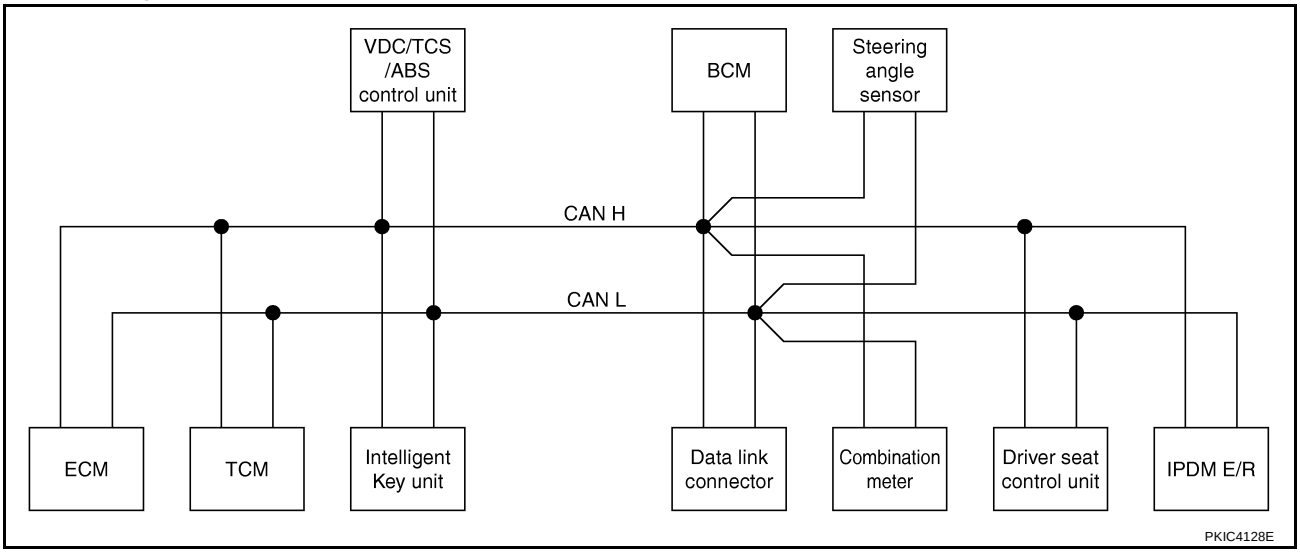
Signals	ECM	TCM	VDC/TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	IPDM E/R
A/C compressor request signal	T						R
A/C switch signal	R				T		
A/T CHECK indicator lamp signal		T		R			
A/T position indicator signal		T	R	R			
A/T self-diagnosis signal	R	T					
Accelerator pedal position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

Signals	ECM	TCM	VDC/TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	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			R			T	
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	VDC/TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	IPDM E/R
Turn indicator signal				R	T		
Vehicle speed signal			T	R			
	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	Intelligent Key unit	VDC/ TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	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			R			T			

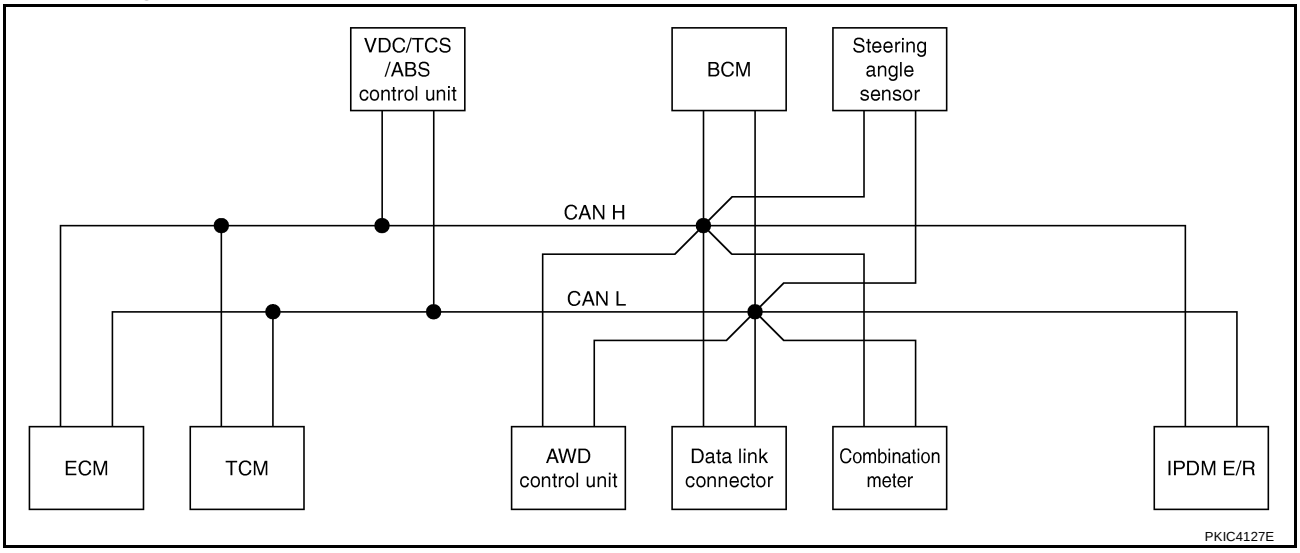
Signals	ECM	TCM	Intelligent Key unit	VDC/ TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	Driver seat control unit	IPDM E/R
Door lock/unlock/trunk open request signal			T			R			
Door switch signal			R		R	T		R	R
Engine coolant temperature signal	T				R				
Engine speed signal	T	R	R	R	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			T			R			
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			T			R			
Position lights request signal					R	T			R
Power window open request signal			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				
Starter permission signal			T			R			
Steering angle sensor signal				R			T		
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	Intelligent Key unit	VDC/TCS/ABS control unit	Combination meter	BCM	Steering angle sensor	Driver seat control unit	IPDM E/R
Turn indicator signal					R	T			
Vehicle speed signal				T	R				
	R	R	R		T	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

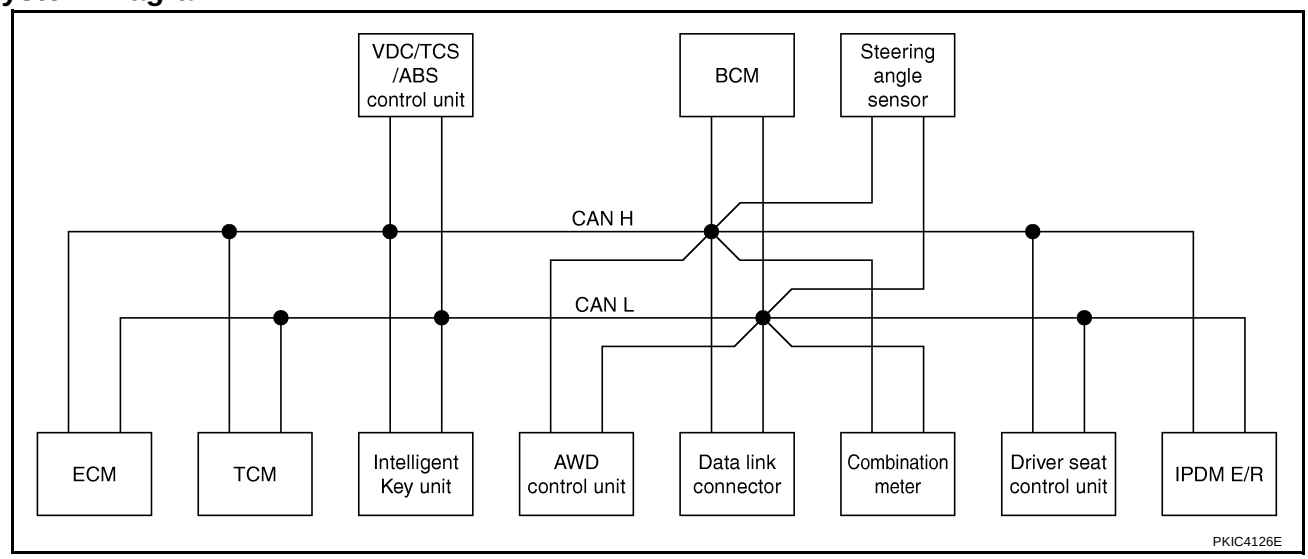
Signals	ECM	TCM	VDC/TCS/ABS control unit	AWD control unit	Combination meter	BCM	Steering angle sensor	IPDM E/R
A/C compressor request signal	T							R
A/C switch signal	R					T		
A/T CHECK indicator lamp signal		T			R			
A/T position indicator signal		T	R		R			
A/T self-diagnosis signal	R	T						
Accelerator 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	VDC/ TCS/ABS control unit	AWD control unit	Combination meter	BCM	Steering angle sensor	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			R				T	
Stop lamp switch signal		R			T			
			T	R				
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			T	R	R			
	R	R			T	R		
Wake up request 1 signal						T		R

Signals	ECM	TCM	VDC/ TCS/ABS control unit	AWD control unit	Combination meter	BCM	Steering angle sensor	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	Intelligent Key unit	VDC/ TCS/ ABS control unit	AWD control unit	Combination meter	BCM	Steering angle sensor	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								

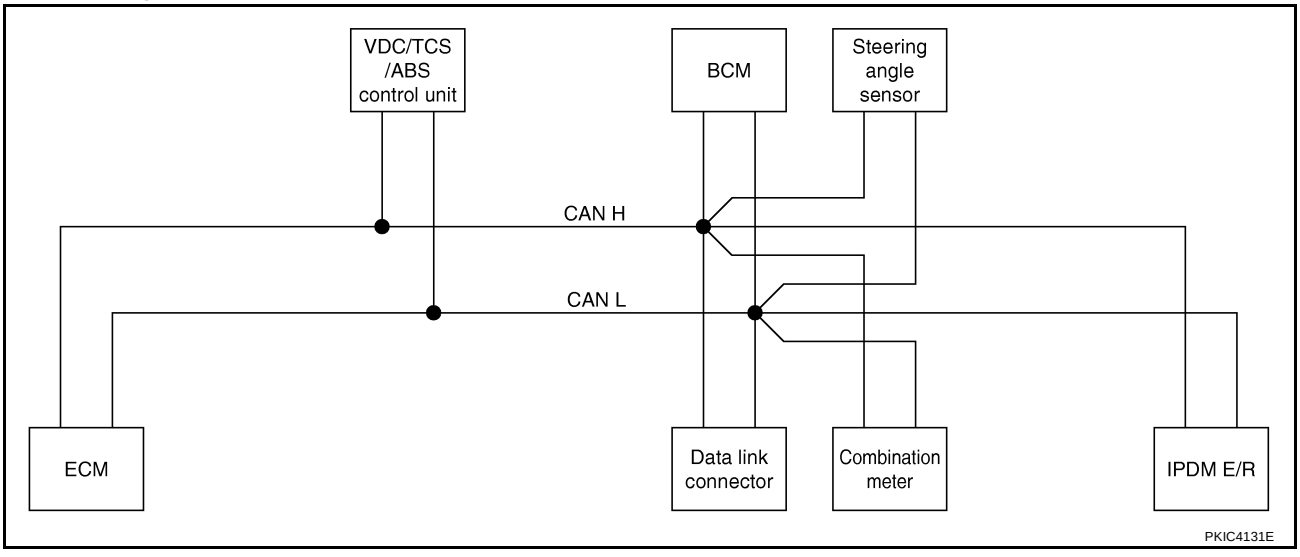
Signals	ECM	TCM	Intelligent Key unit	VDC/ TCS/ ABS control unit	AWD control unit	Combination meter	BCM	Steering angle sensor	Driver seat control unit	IPDM E/R
Cooling fan motor operation signal	T									R
Door lock/unlock status signal			R				T			
Door lock/unlock/trunk open request signal			T				R			
Door switch signal			R			R	T		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			T				R			
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			T				R			
Parking brake switch signal					R	T				
Position lights request signal						R	T			R
Power window open request signal			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			

Signals	ECM	TCM	Intelli-gent Key unit	VDC/ TCS/ ABS control unit	AWD control unit	Combi-nation meter	BCM	Steer-ing angle sensor	Driver seat control unit	IPDM E/R
Sleep request 2 signal							T			R
SNOW mode switch signal	R				R	T				
Starter permission signal			T				R			
Steering angle sensor signal				R				T		
Stop lamp switch signal		R				T				
				T	R					
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				T	R	R				
	R	R	R			T	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 5

System Diagram



Input/output Signal Chart

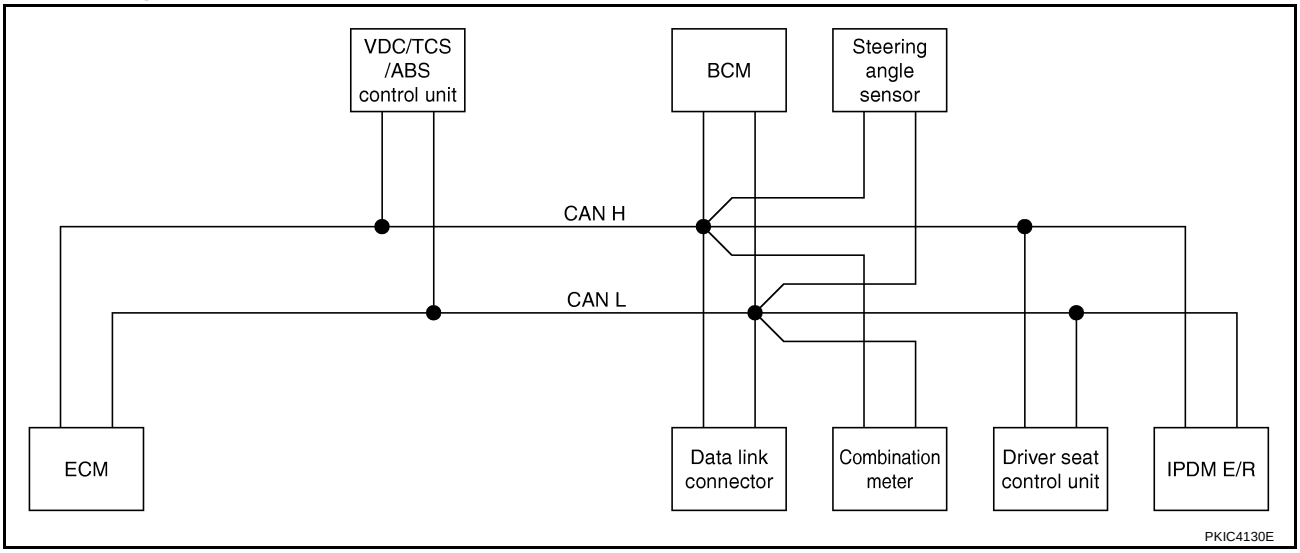
T: Transmit R: Receive

Signals	ECM	VDC/TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	IPDM E/R
A/C compressor request signal	T					R
A/C switch signal	R			T		
Accelerator pedal position signal	T	R				
ASCD CRUISE lamp signal	T		R			
ASCD SET lamp signal	T		R			

Signals	ECM	VDC/TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	IPDM E/R
Blower fan motor switch signal	R			T		
Buzzer output signal			R	T		
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			
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			
Oil pressure 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
Steering angle sensor signal		R			T	
Theft warning horn request signal				T		R
Tire pressure signal			R	T		
Turn indicator signal			R	T		
Vehicle speed signal		T	R			
	R		T	R		
Wake up request 1 signal				T		R
Wake up request 2 signal				T		R

TYPE 6

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	VDC/TCS/ ABS control unit	Combination meter	BCM	Steering angle sensor	Driver seat control unit	IPDM E/R
A/C compressor request signal	T						R
A/C switch signal	R			T			
Accelerator pedal position signal	T	R					
ASCD CRUISE lamp signal	T		R				
ASCD SET lamp signal	T		R				
Blower fan motor switch signal	R			T			
Buzzer output signal			R	T			
Cooling fan motor operation signal	T						R
Door lock/unlock/trunk open request signal				R			
Door switch signal			R	T		R	R
Engine coolant temperature signal	T		R				
Engine speed signal	T	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
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				

Signals	ECM	VDC/TCS/ ABS control unit	Combina-tion meter	BCM	Steering angle sensor	Driver seat con-trol unit	IPDM E/R
Oil pressure 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
Steering angle sensor signal		R			T		
Theft warning horn request signal				T			R
Tire pressure signal			R	T			
Turn indicator signal			R	T			
Vehicle speed signal		T	R				
	R		T	R		R	
Wake up request 1 signal				T			R
Wake up request 2 signal				T			R

*: P range and R range only

CAN SYSTEM (TYPE 1)

PFP:23710

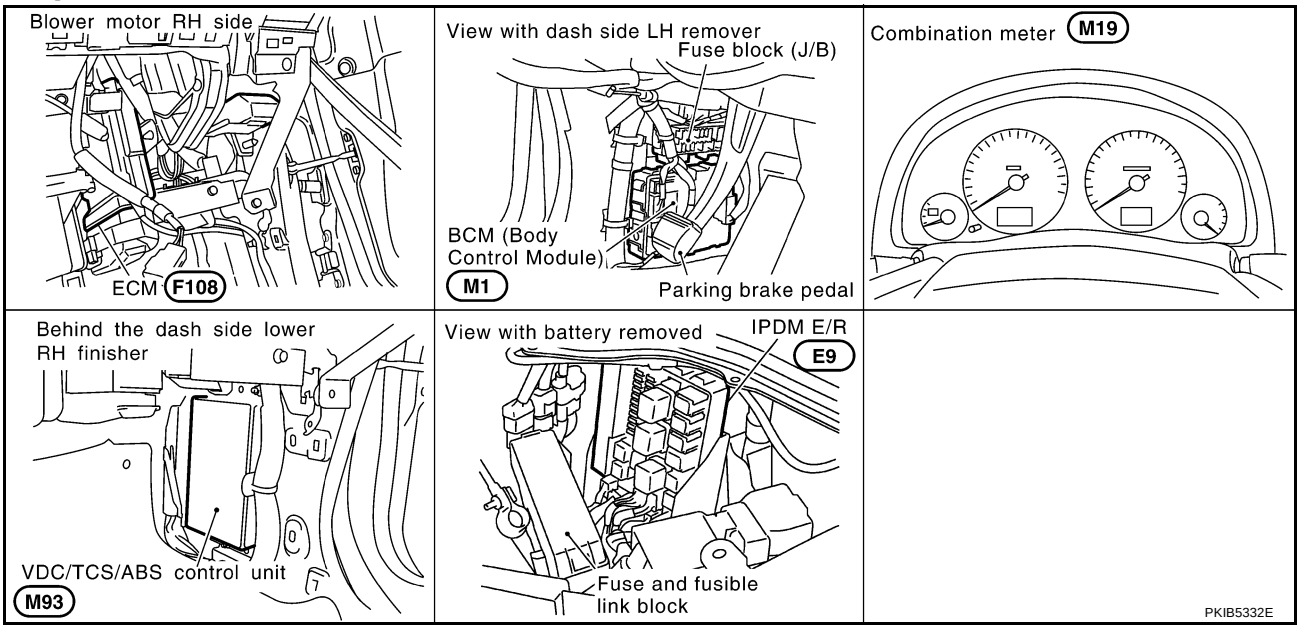
System Description

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.

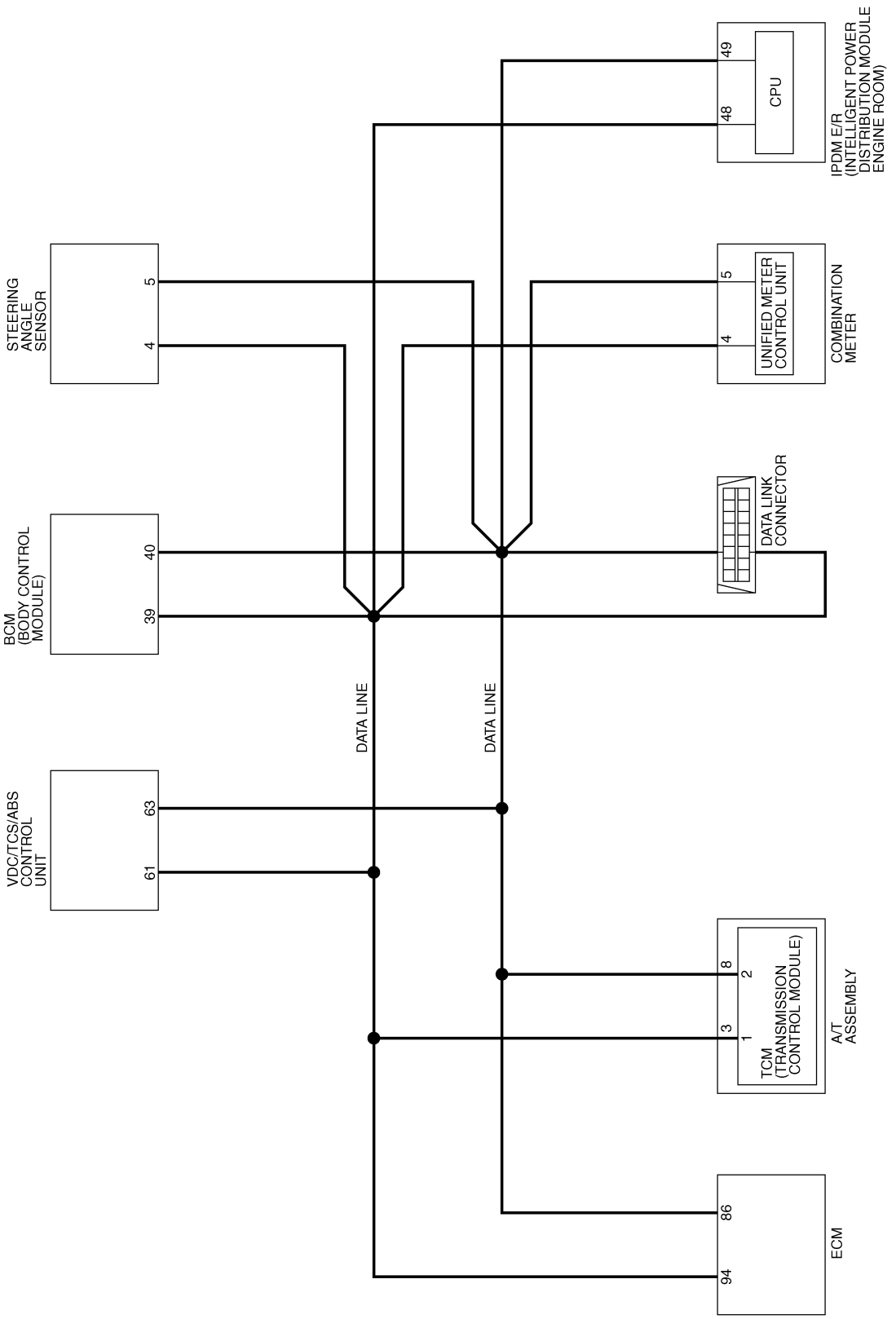
Component Parts and Harness Connector Location

AKS0092C



Schematic

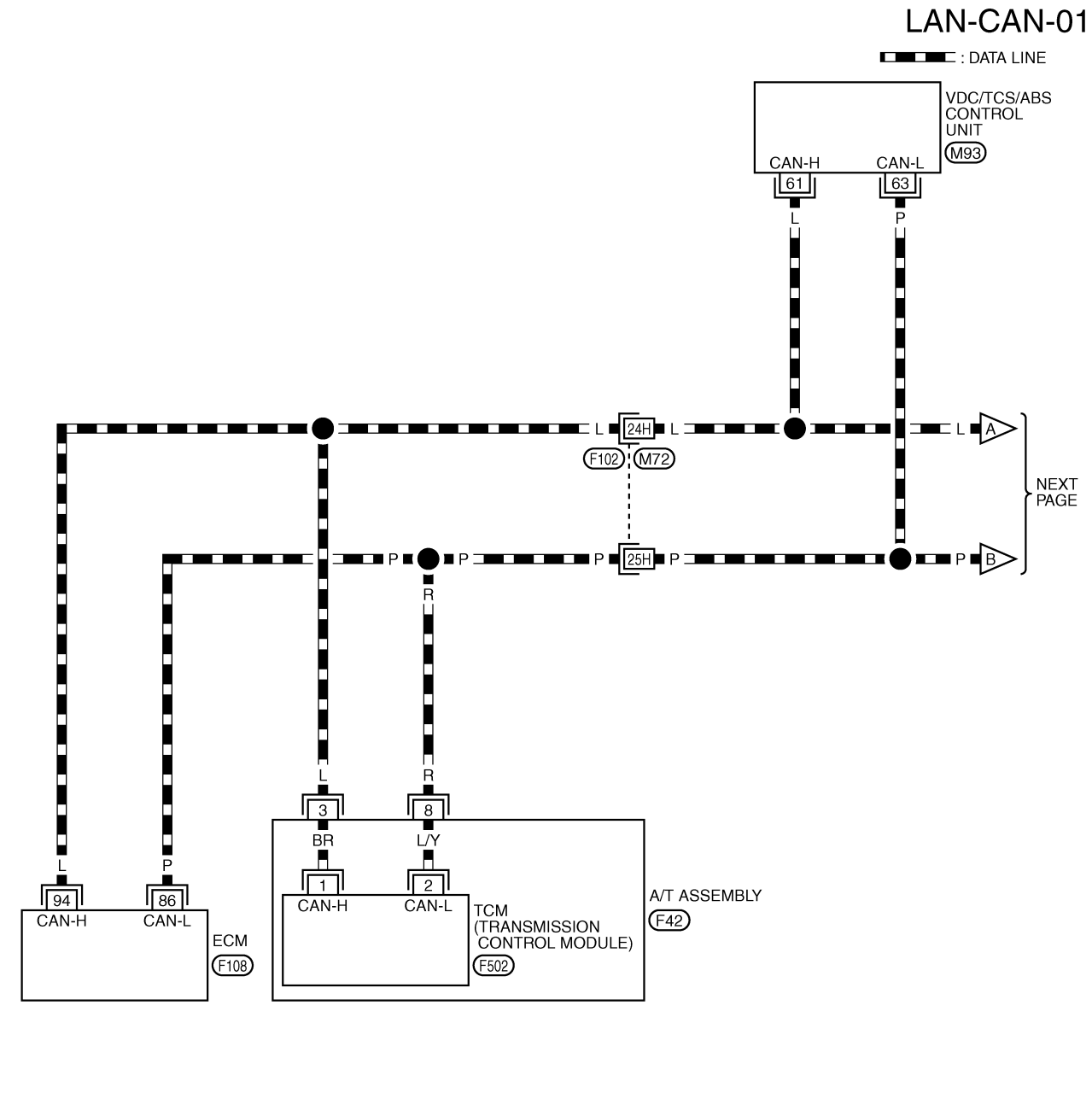
AKS0092D

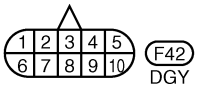


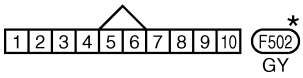
TKWM3871E

Wiring Diagram — CAN —

AKS0092E





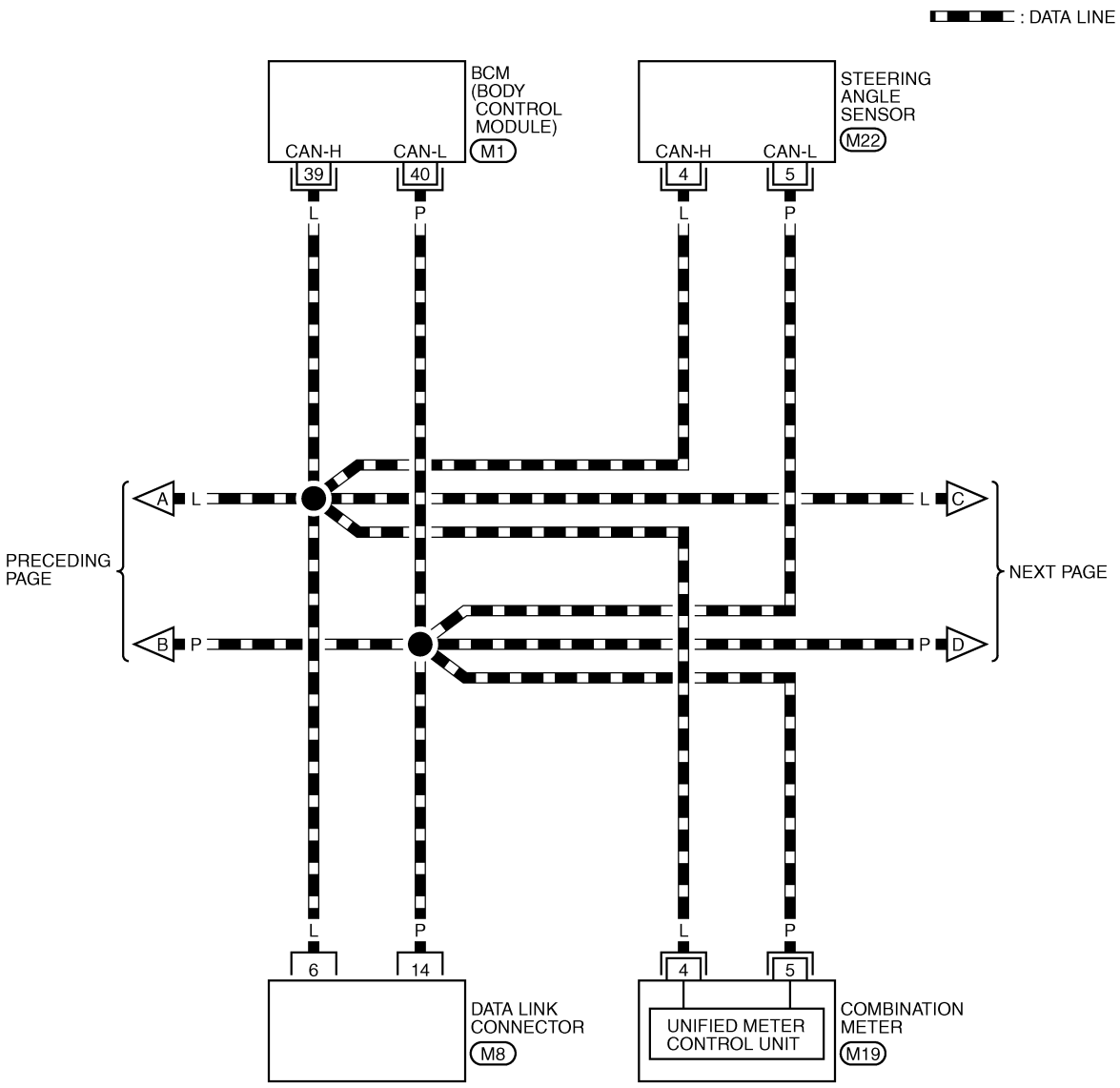


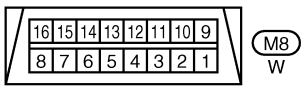
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M93, F108 -ELECTRICAL UNITS

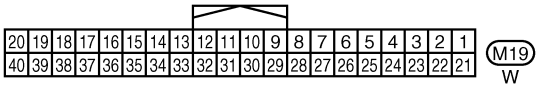
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

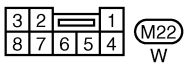
TKWM3872E

LAN-CAN-02



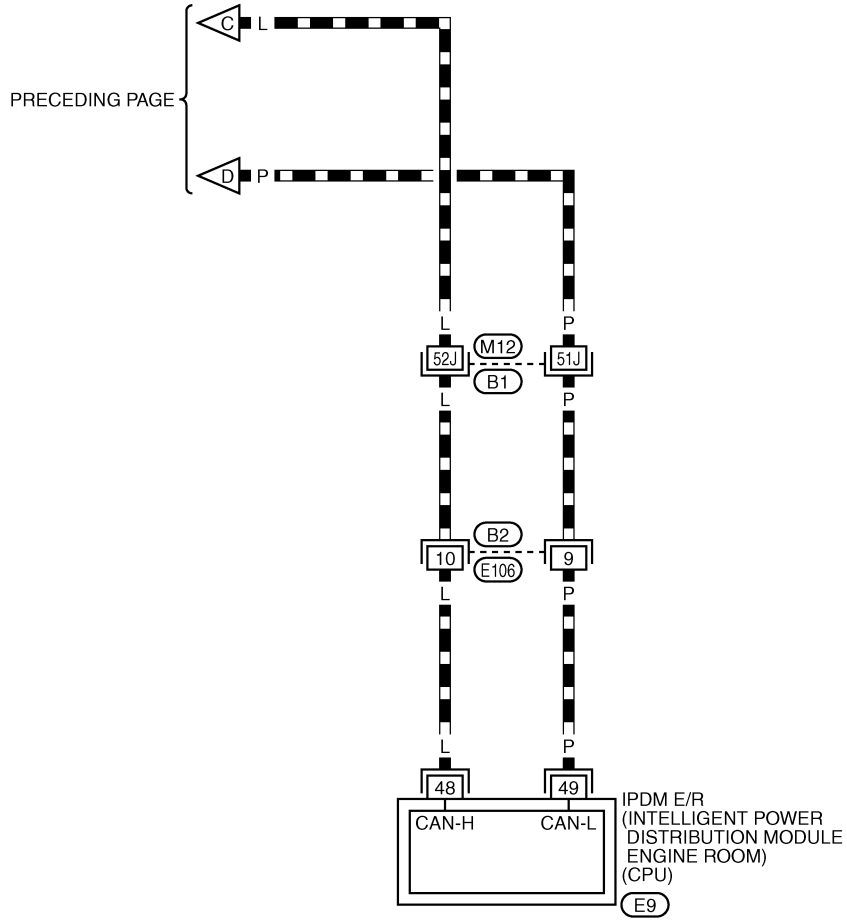


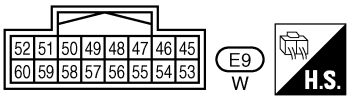


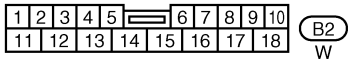


REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2113E







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

TKWM3873E

Check Sheet

AKS0092F

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

Check sheet table

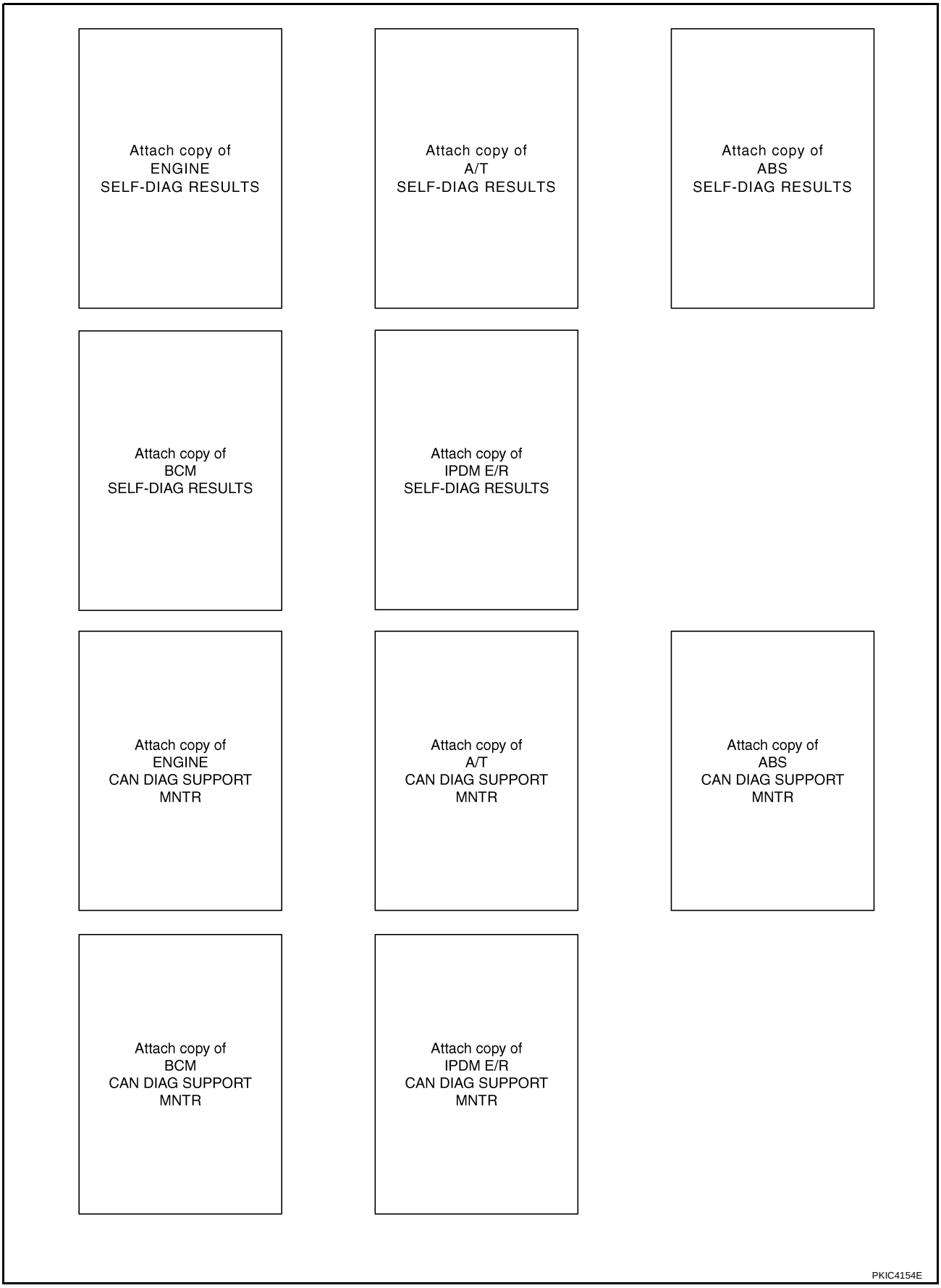
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIC4382E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIC4154E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

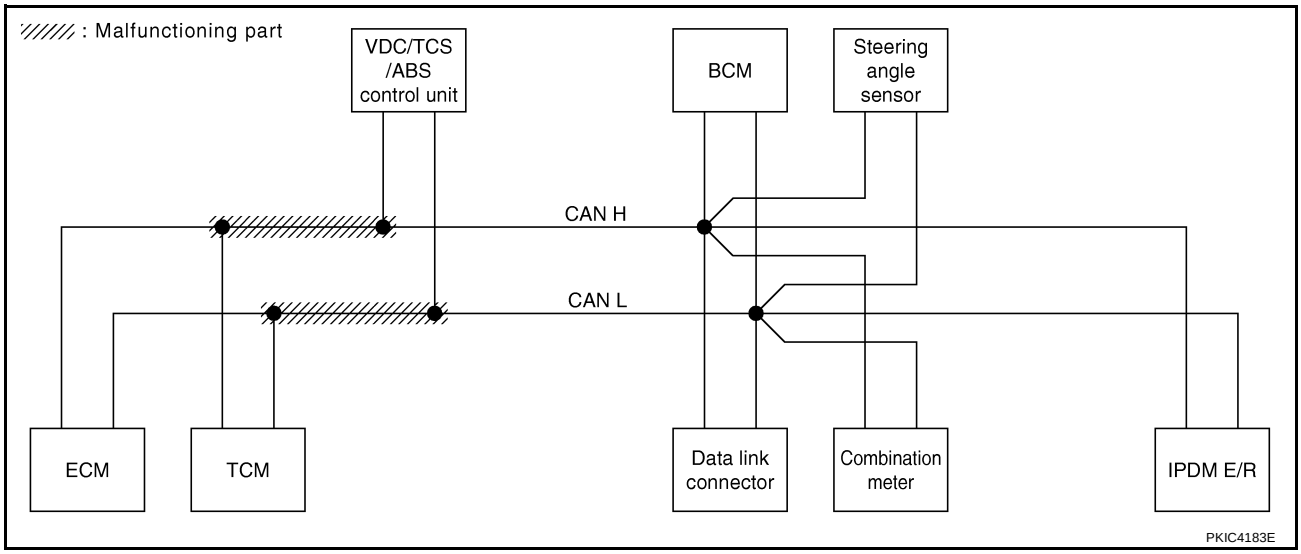
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and VDC/TCS/ABS control unit. Refer to LAN-50, "Inspection Between TCM 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	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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) ✓	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—

PKIC4557E

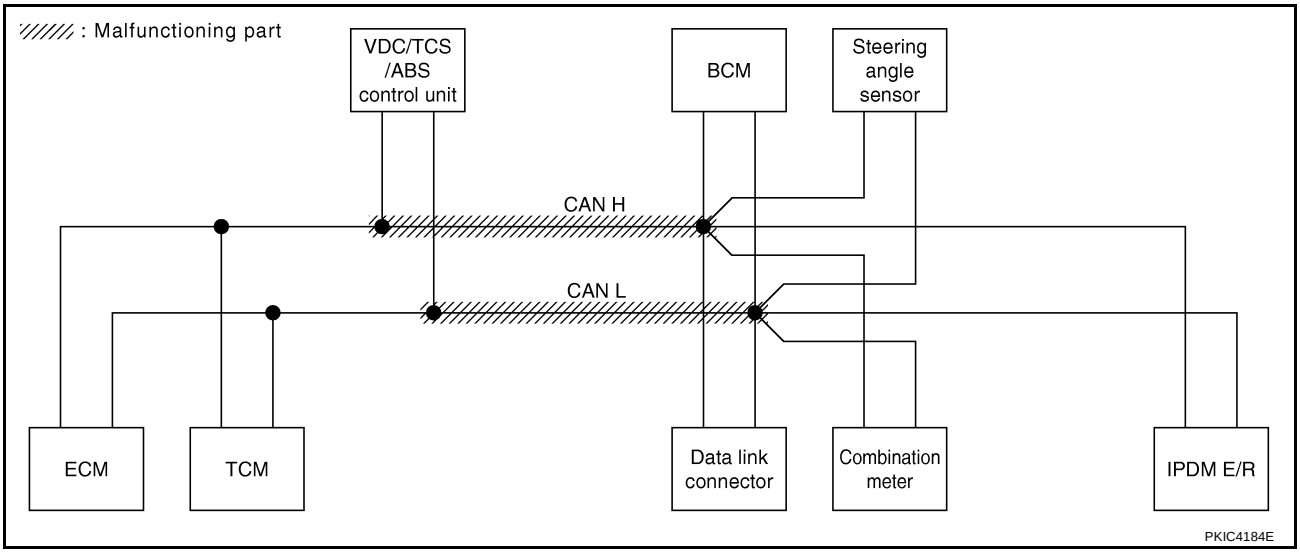


Case 2

Check harness between VDC/TCS/ABS control unit and data link connector. Refer to LAN-51, "Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit" .

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

PKIC4558E



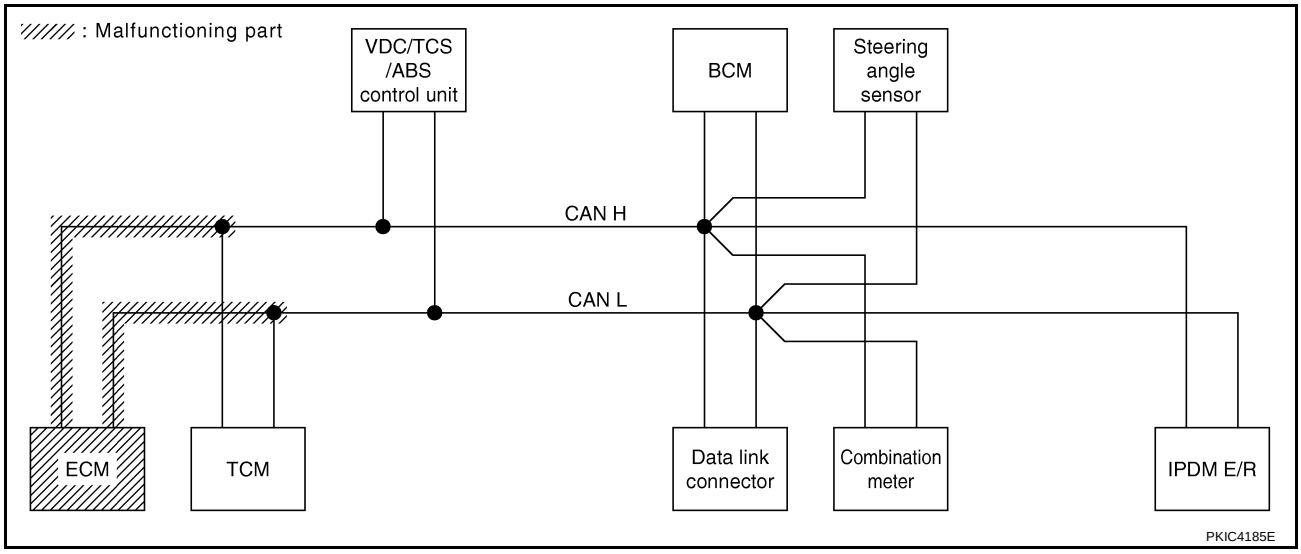
PKIC4184E

Case 3

Check ECM circuit. Refer to LAN-52, "ECM Circuit Inspection" .

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

PKIC4559E



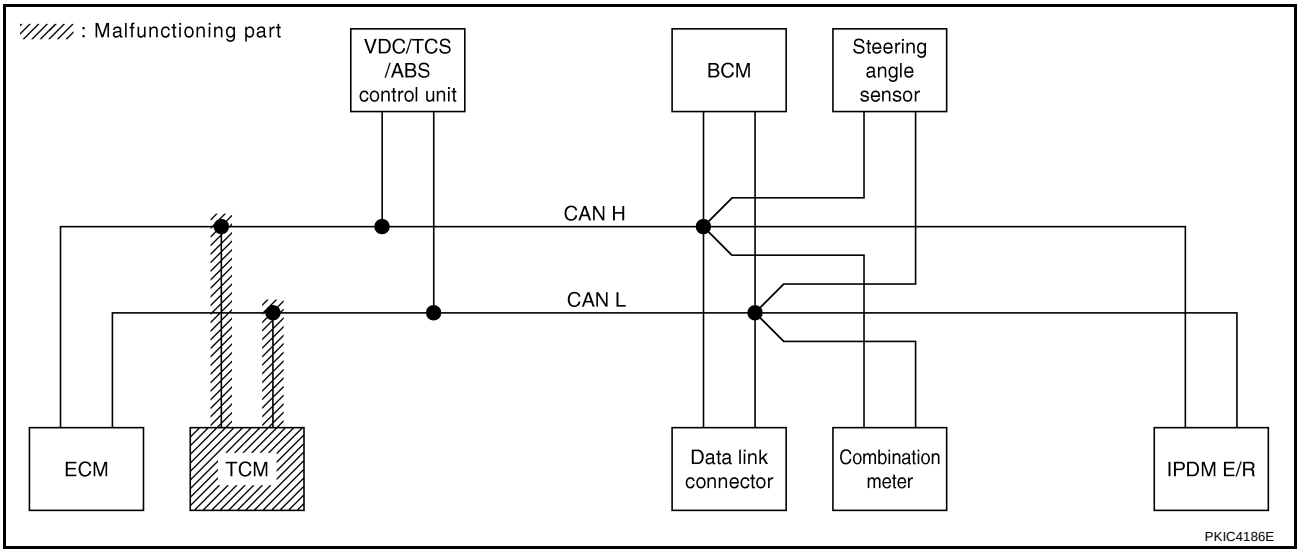
PKIC4185E

Case 4

Check TCM circuit. Refer to LAN-52, "TCM Circuit Inspection" .

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

PKIC4560E



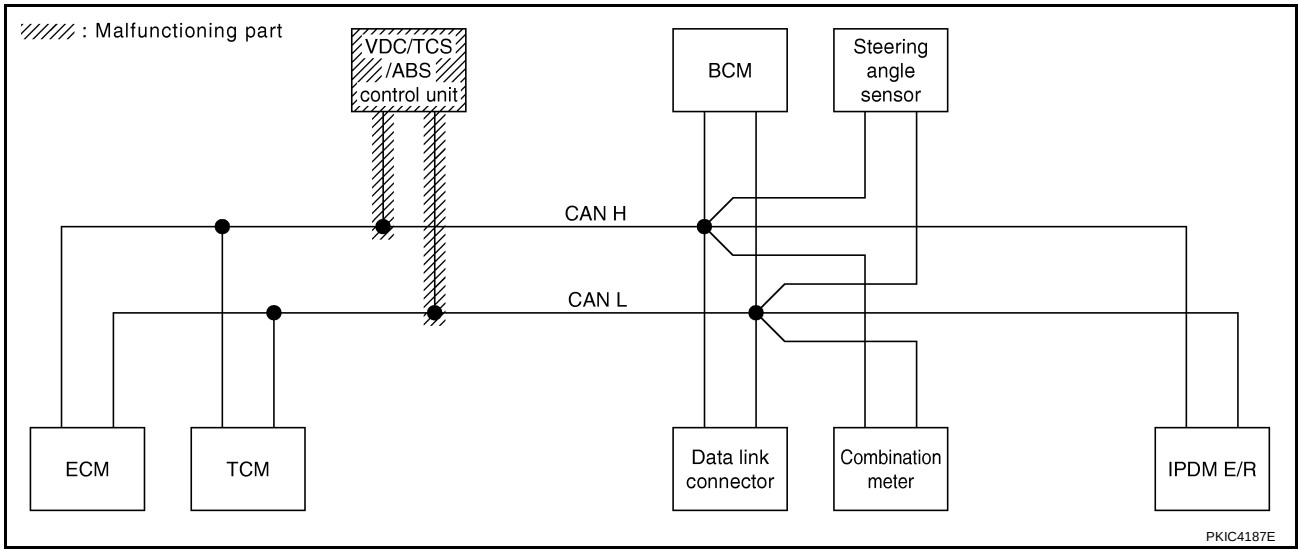
PKIC4186E

Case 5

Check VDC/TCS/ABS control unit circuit. Refer to LAN-53, "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	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIC4561E



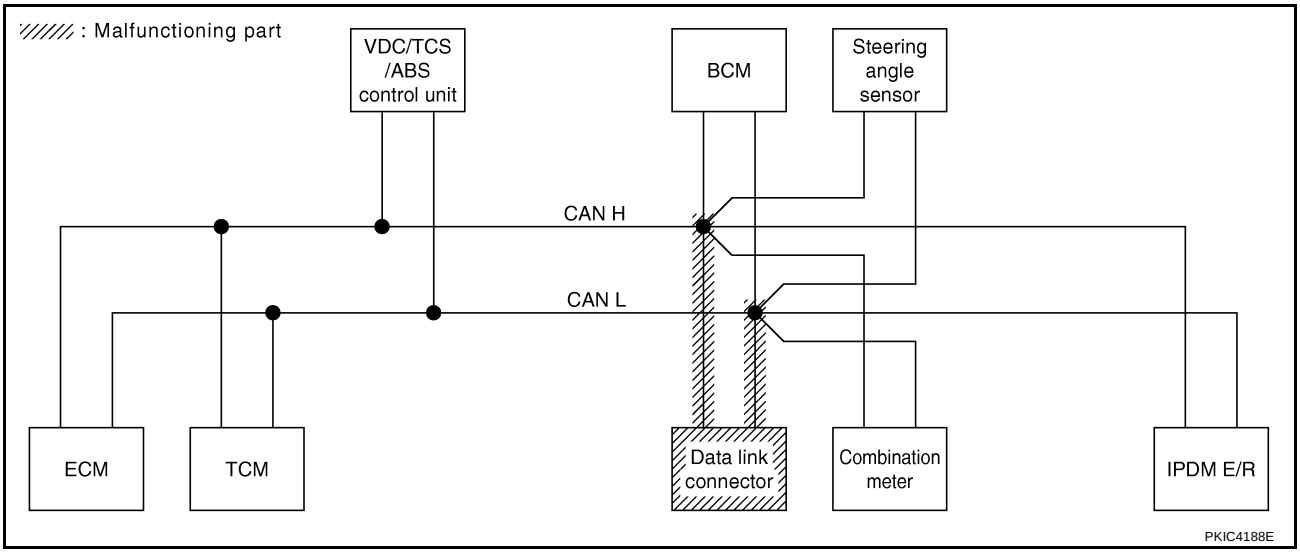
PKIC4187E

Case 6

Check data link connector circuit. Refer to LAN-53, "Data Link Connector Circuit Inspection" .

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

PKIC4562E



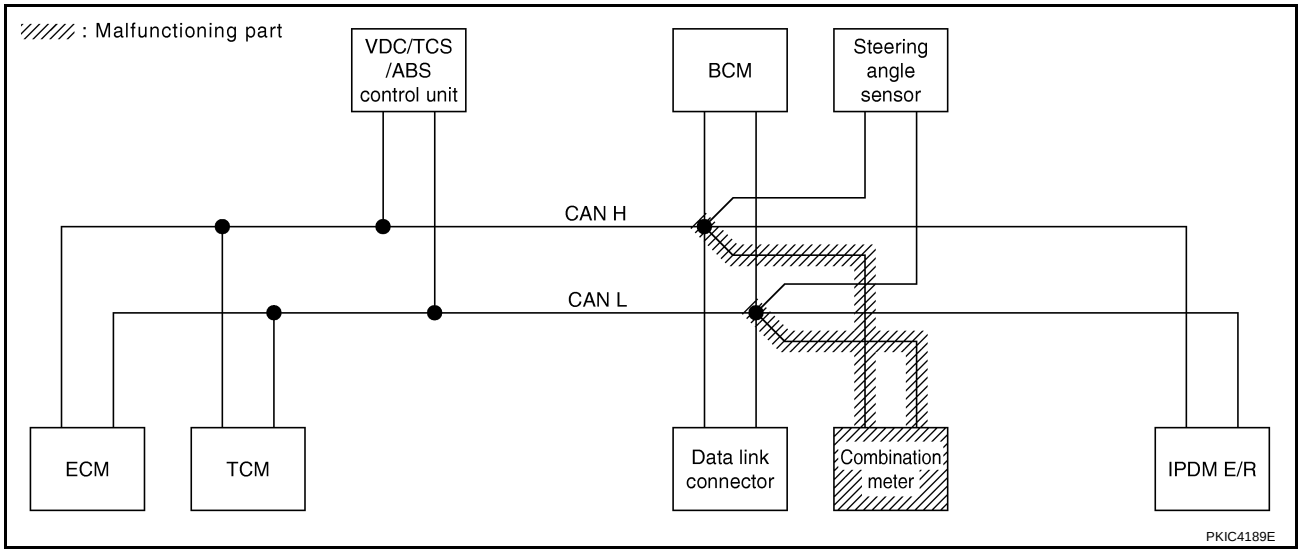
PKIC4188E

Case 7

Check combination meter circuit. Refer to LAN-54, "Combination Meter Circuit Inspection" .

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

PKIC4563E

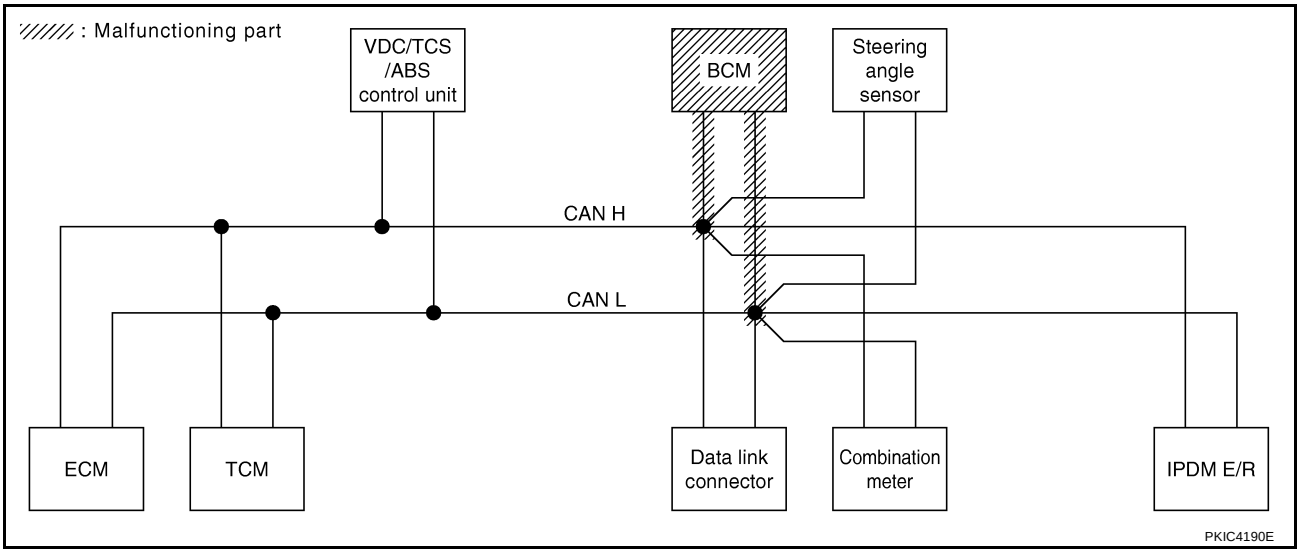


Case 8

Check BCM circuit. Refer to LAN-54, "BCM Circuit Inspection" .

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

PKIC4564E

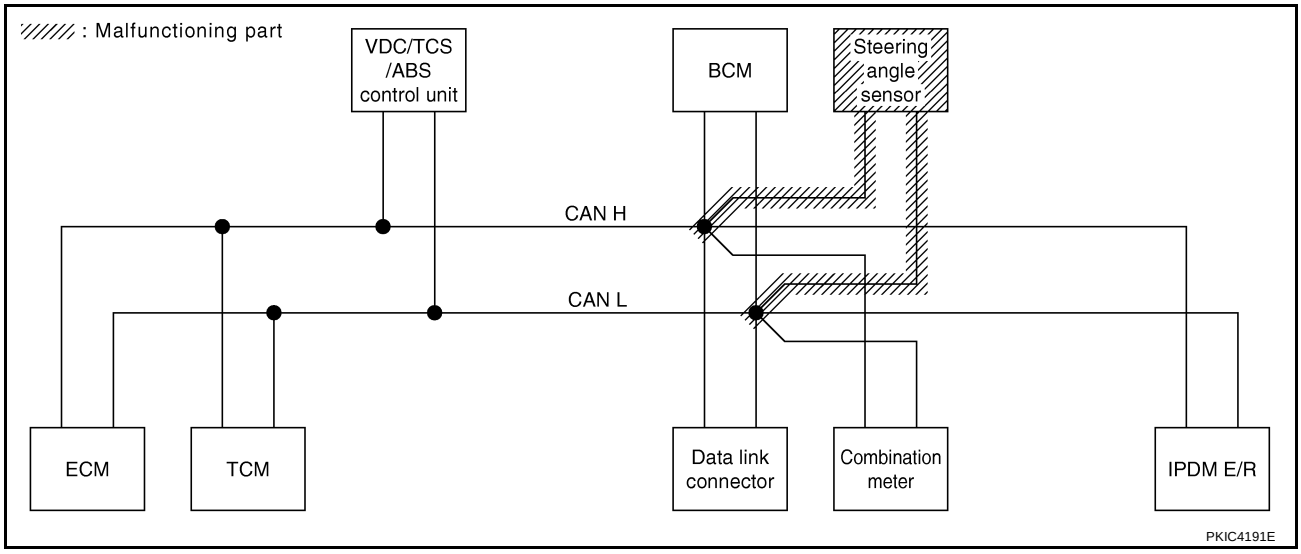


Case 9

Check steering angle sensor circuit. Refer to LAN-55, "Steering Angle Sensor Circuit Inspection" .

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

PKIC4565E



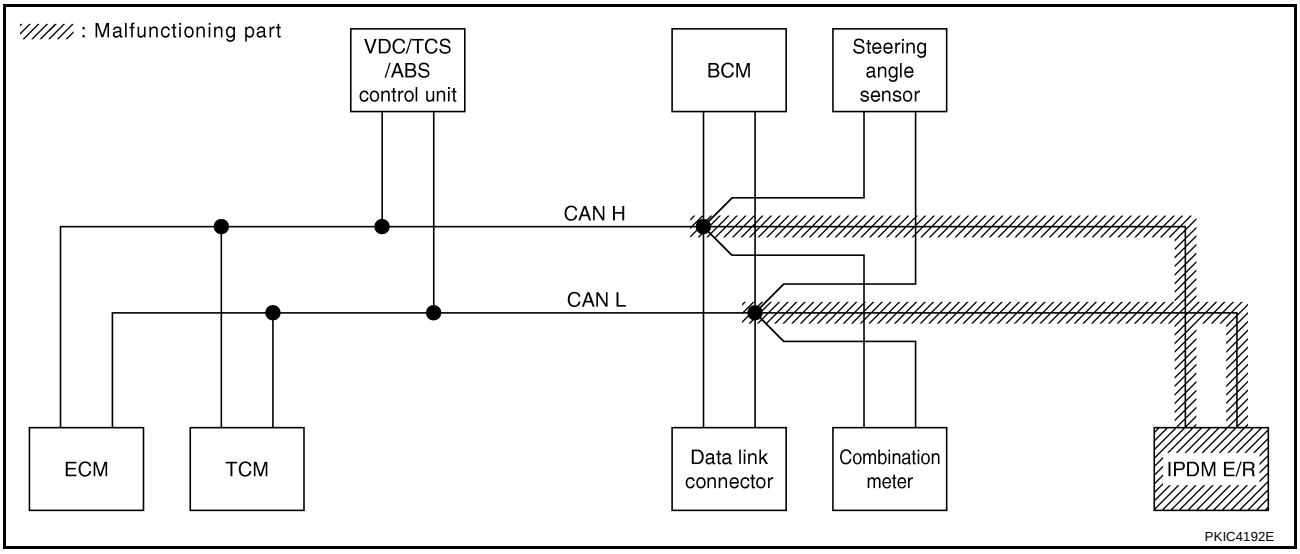
PKIC4191E

Case 10

Check IPDM E/R circuit. Refer to LAN-55, "IPDM E/R Circuit Inspection" .

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

PKIC4566E



PKIC4192E

Case 11

Check CAN communication circuit. Refer to LAN-56, "CAN Communication Circuit Inspection" .

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

PKIC4567E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-59, "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	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIC4568E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-59, "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	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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) ✓	–
ABS	–	NG	UNKWN	–	UNKWN	–	–	–	–	–	CAN COMM CIRCUIT (U1000) ✓	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–

PKIC4569E

Inspection Between TCM and VDC/TCS/ABS Control Unit 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

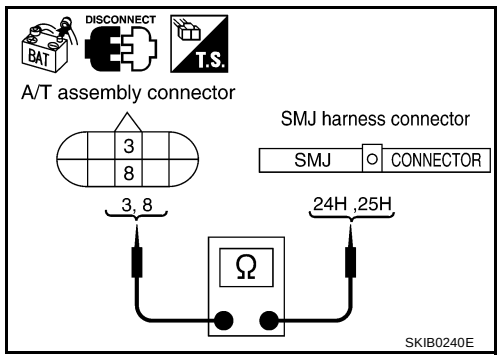
OK or NG

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.



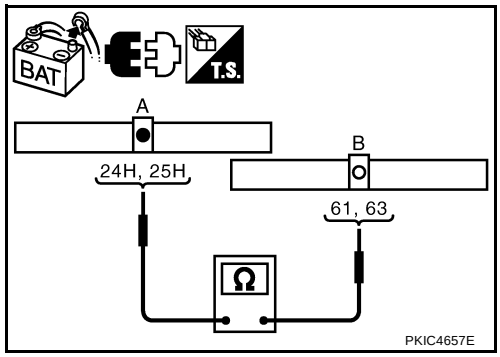
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector (A) and VDC/TCS/ABS control unit harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M72	24H (L)	M93	61 (L)	Yes
	25H (P)		63 (P)	Yes



OK or NG

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

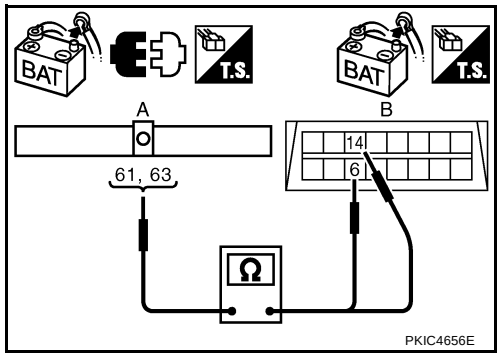
Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit

AKS0092H

1. CHECK HARNESS FOR OPEN CIRCUIT

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 VDC/TCS/ABS control unit harness connector (A) and data link connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M93	61 (L)	M8	6 (L)	Yes
	63 (P)		14 (P)	Yes



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).

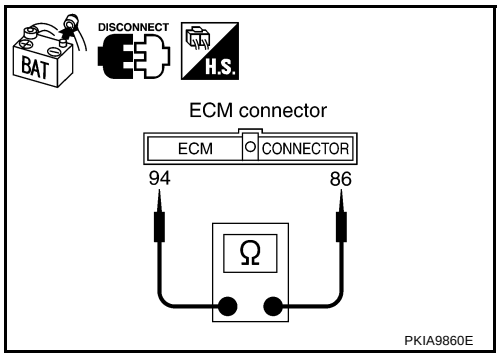
OK or NG

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).

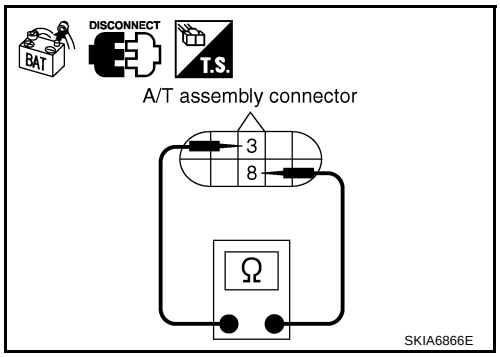
OK or NG

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.

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.

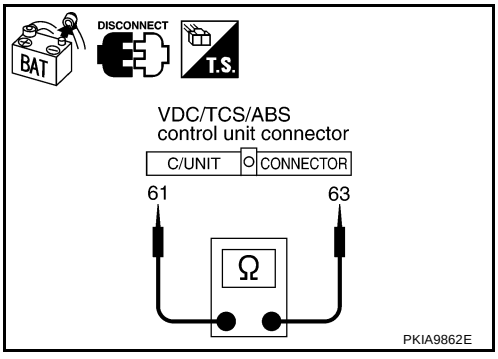
2. CHECK HARNESS FOR OPEN CIRCUIT

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 data link connector.



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.

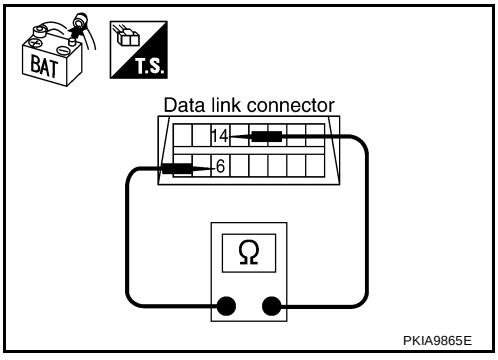
2. CHECK HARNESS FOR OPEN CIRCUIT

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).

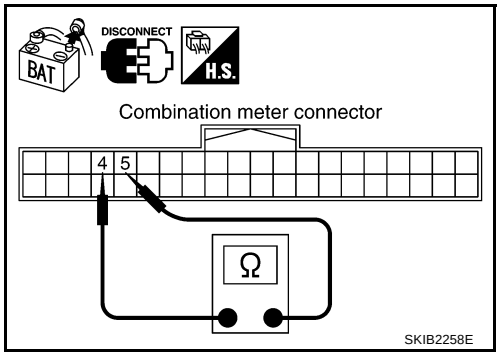
OK or NG

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).

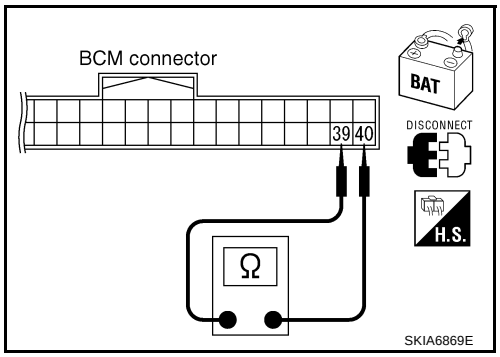
OK or NG

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.

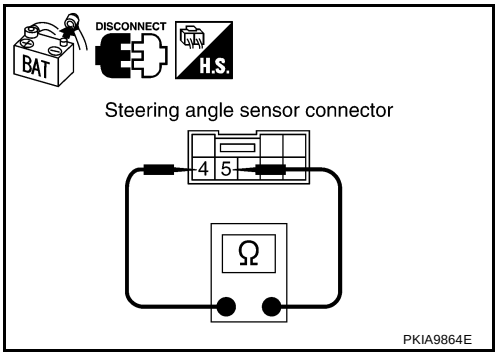
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



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.

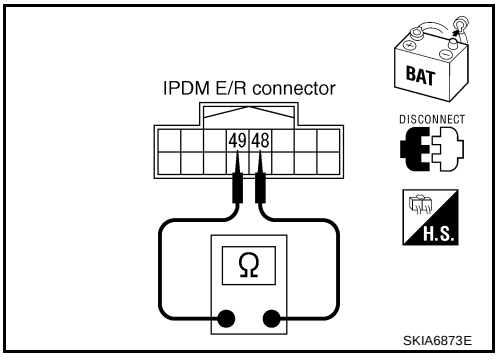
2. CHECK HARNESS FOR OPEN CIRCUIT

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 data link connector.



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

OK or NG

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

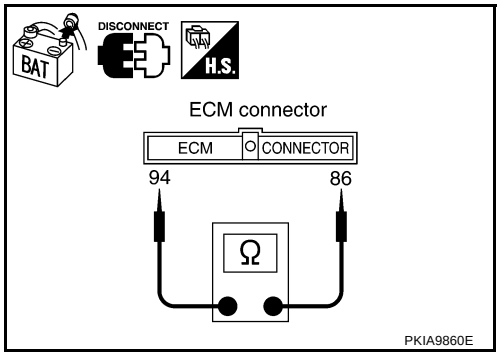
2. CHECK HARNESS FOR SHORT CIRCUIT

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

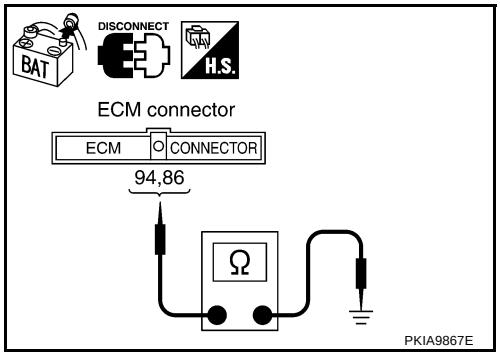
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- 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.

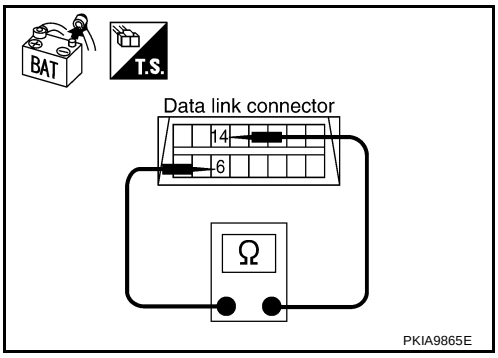
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

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



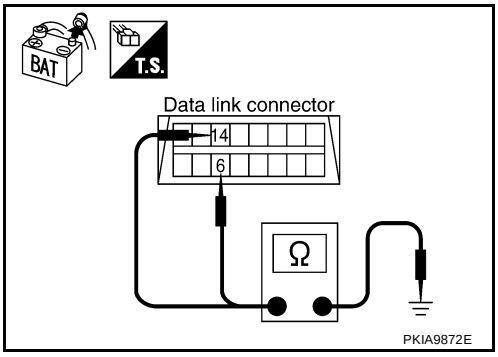
OK or NG

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 VDC/TCS/ABS 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 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 VDC/TCS/ABS 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 harness connector M12

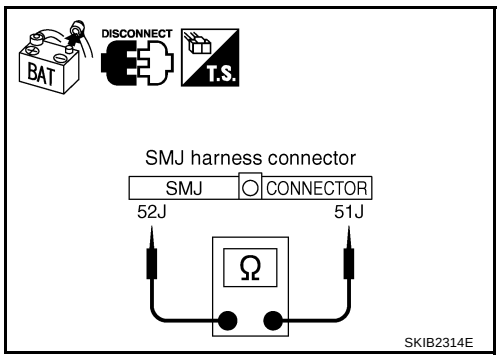
6. CHECK HARNESS FOR SHORT CIRCUIT

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.



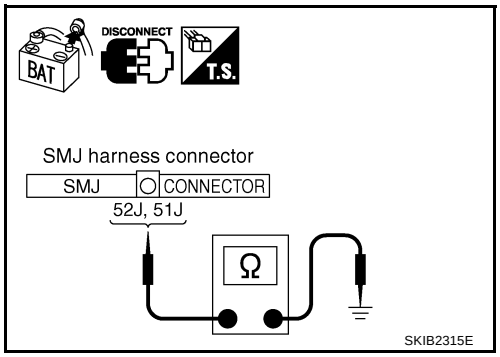
7. CHECK HARNESS FOR SHORT CIRCUIT

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.



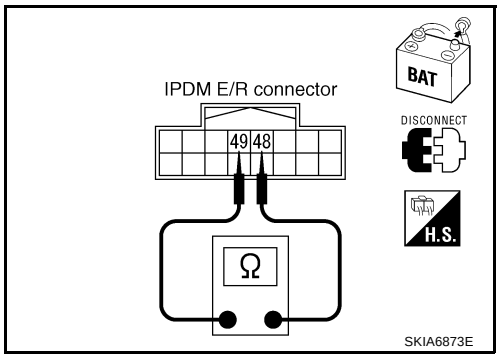
8. CHECK HARNESS FOR SHORT CIRCUIT

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.



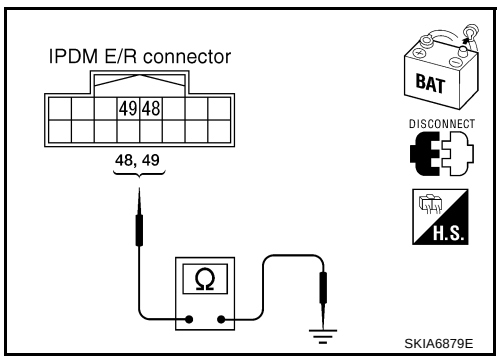
9. CHECK HARNESS FOR SHORT CIRCUIT

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.



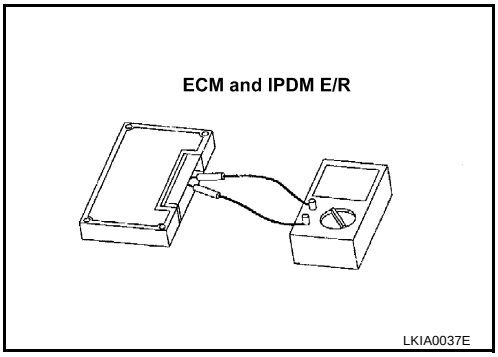
10. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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 reproduced.

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

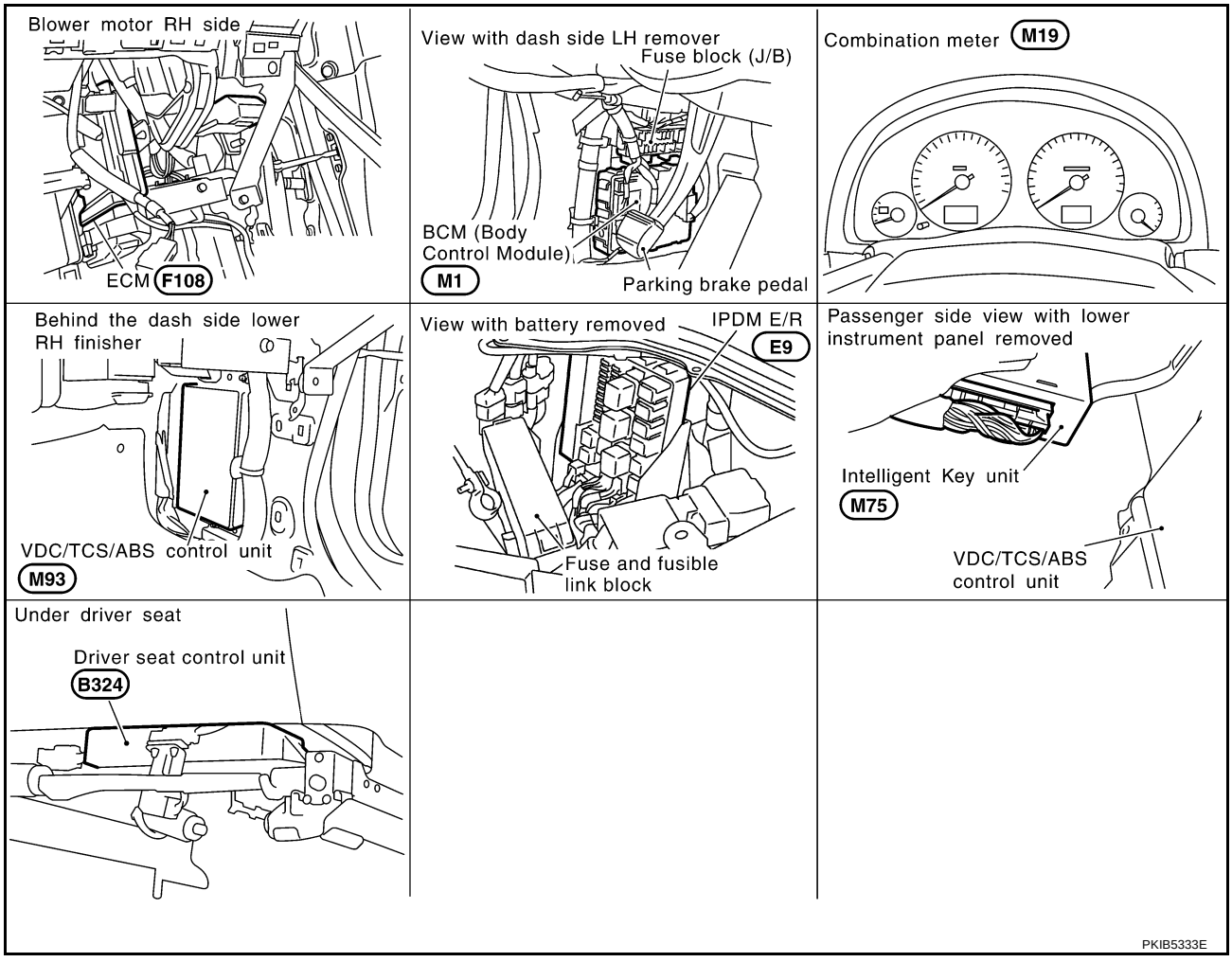
System Description

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.

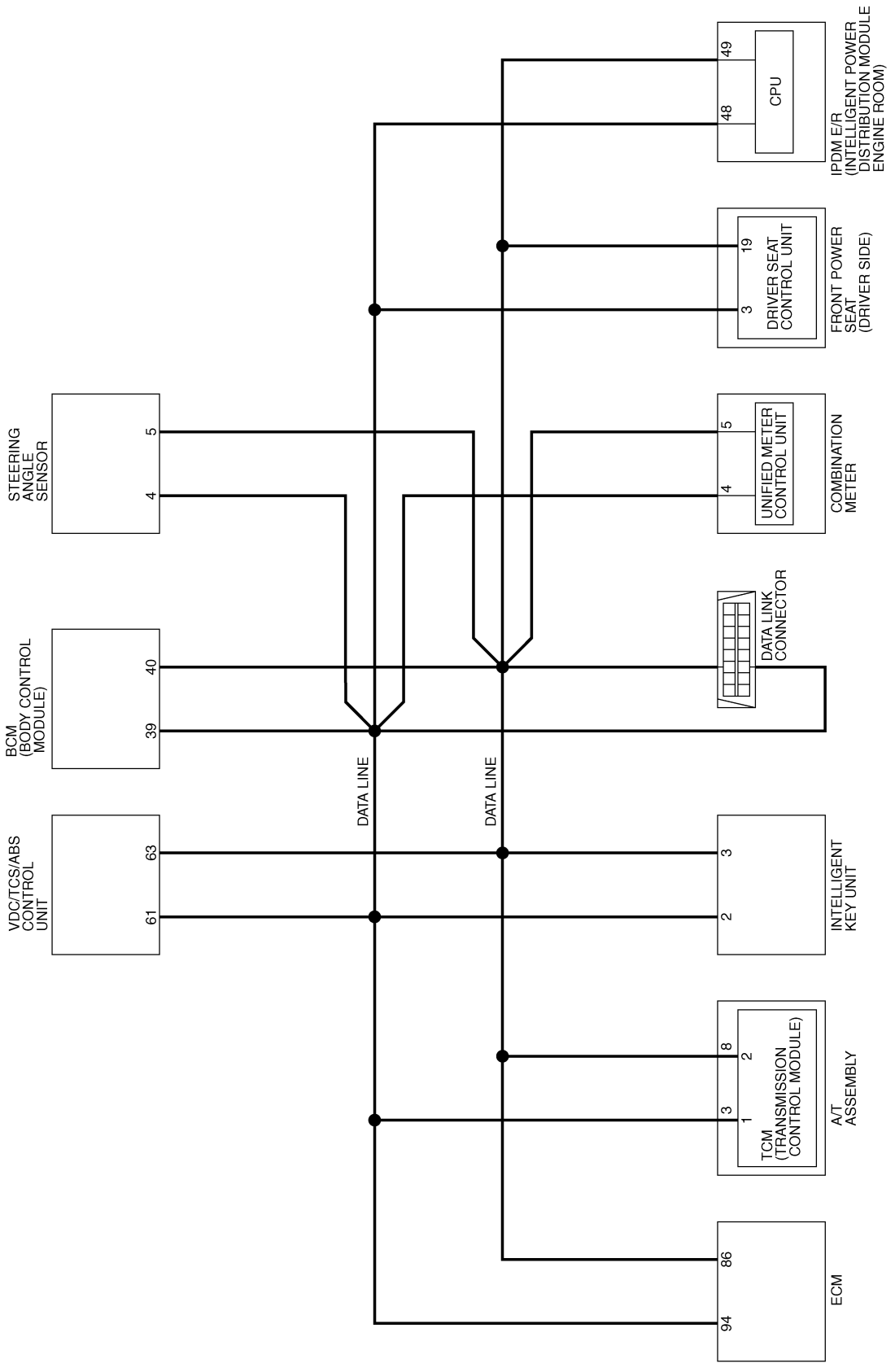
Component Parts and Harness Connector Location

AKS00C9M



Schematic

AKS00C9N

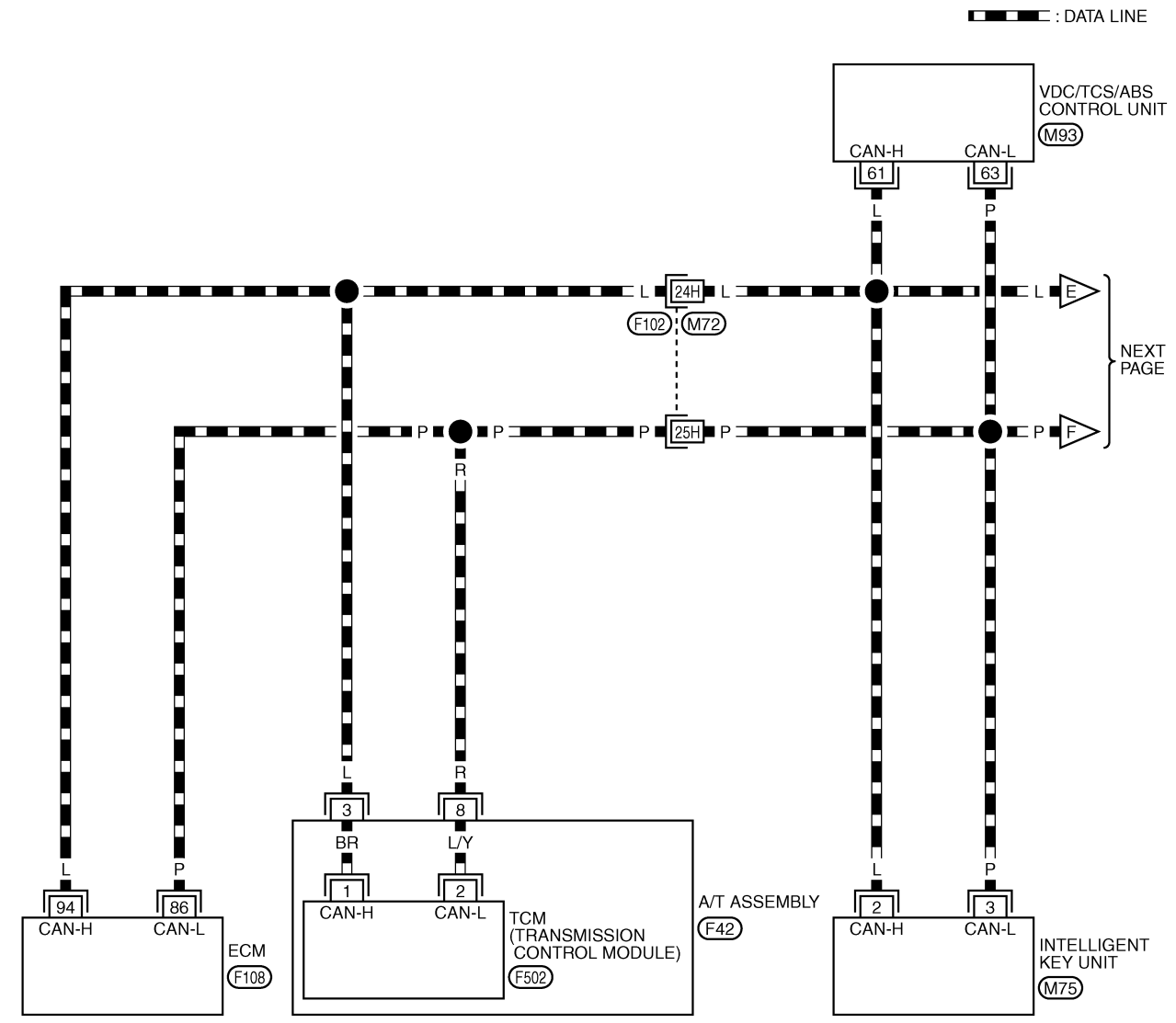


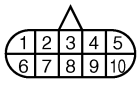
TKWM3874E

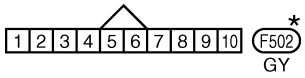
Wiring Diagram — CAN —

AKS00C9O

LAN-CAN-04





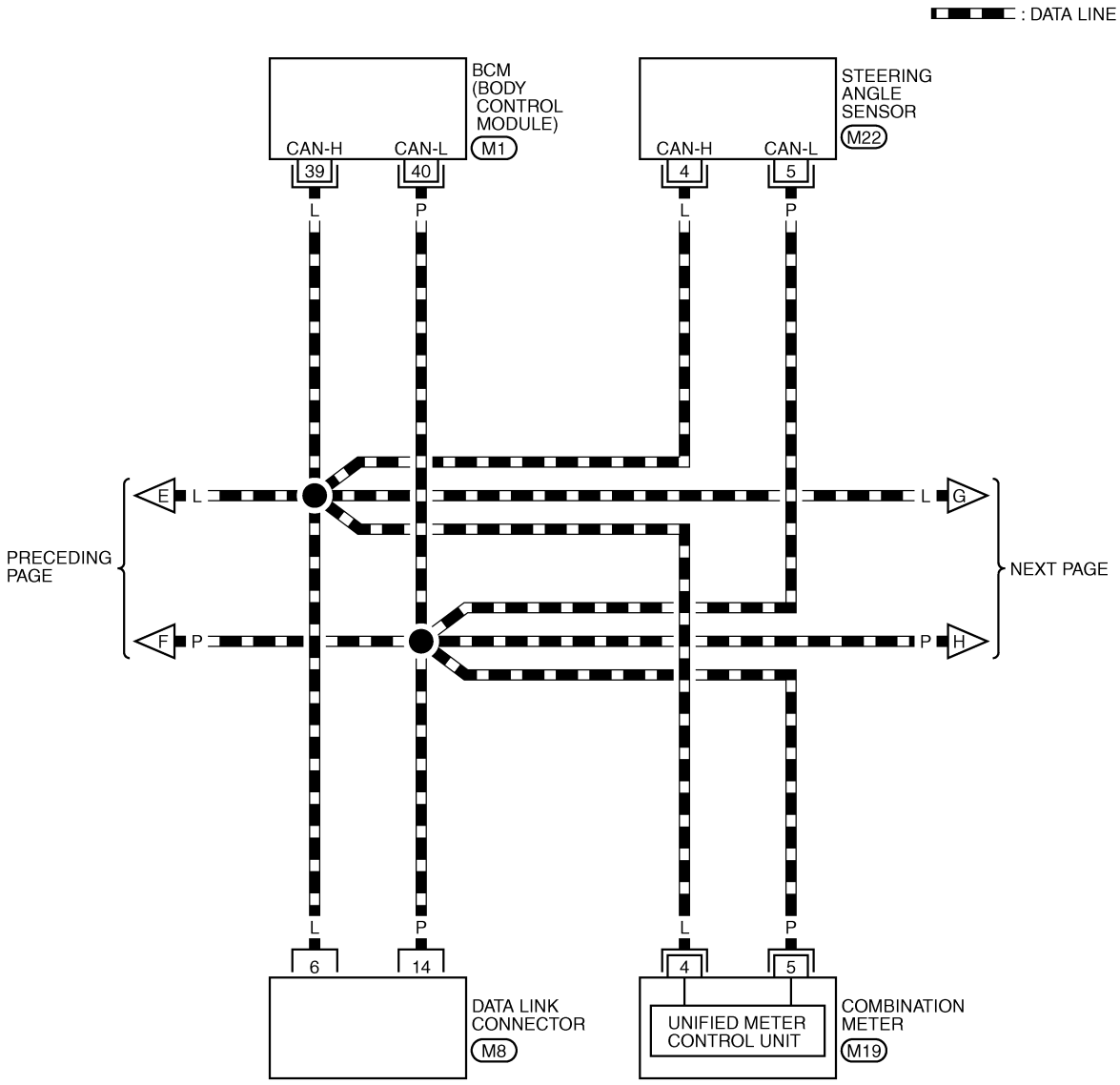


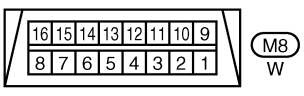
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M75 , M93 , F108 -ELECTRICAL UNITS

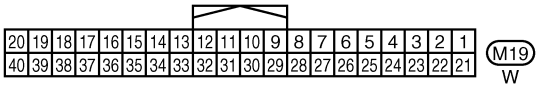
∗: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

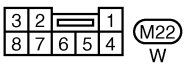
TKWM3875E

LAN-CAN-05









REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2467E

LAN-CAN-06

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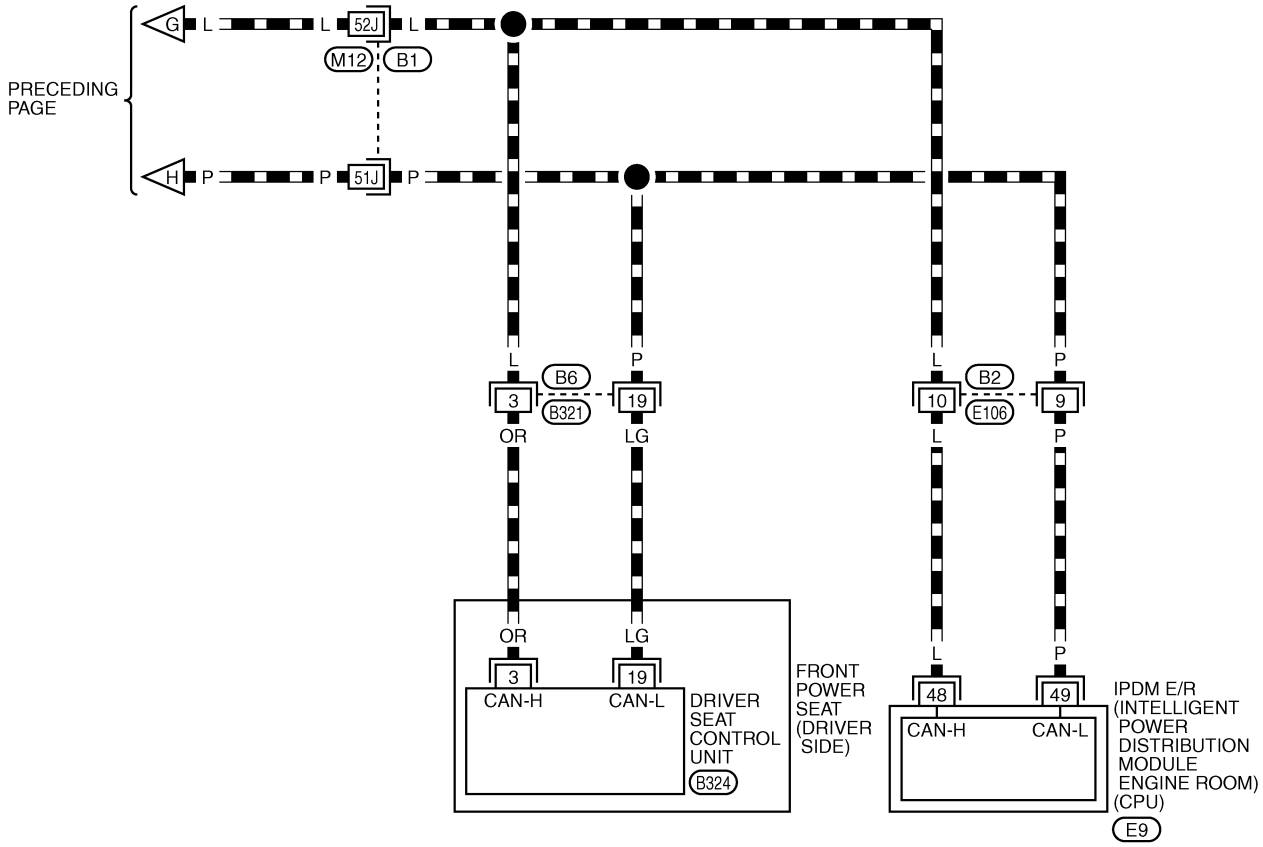

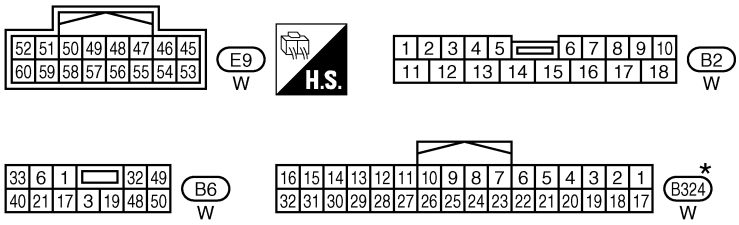

REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM3876E

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	I-KEY	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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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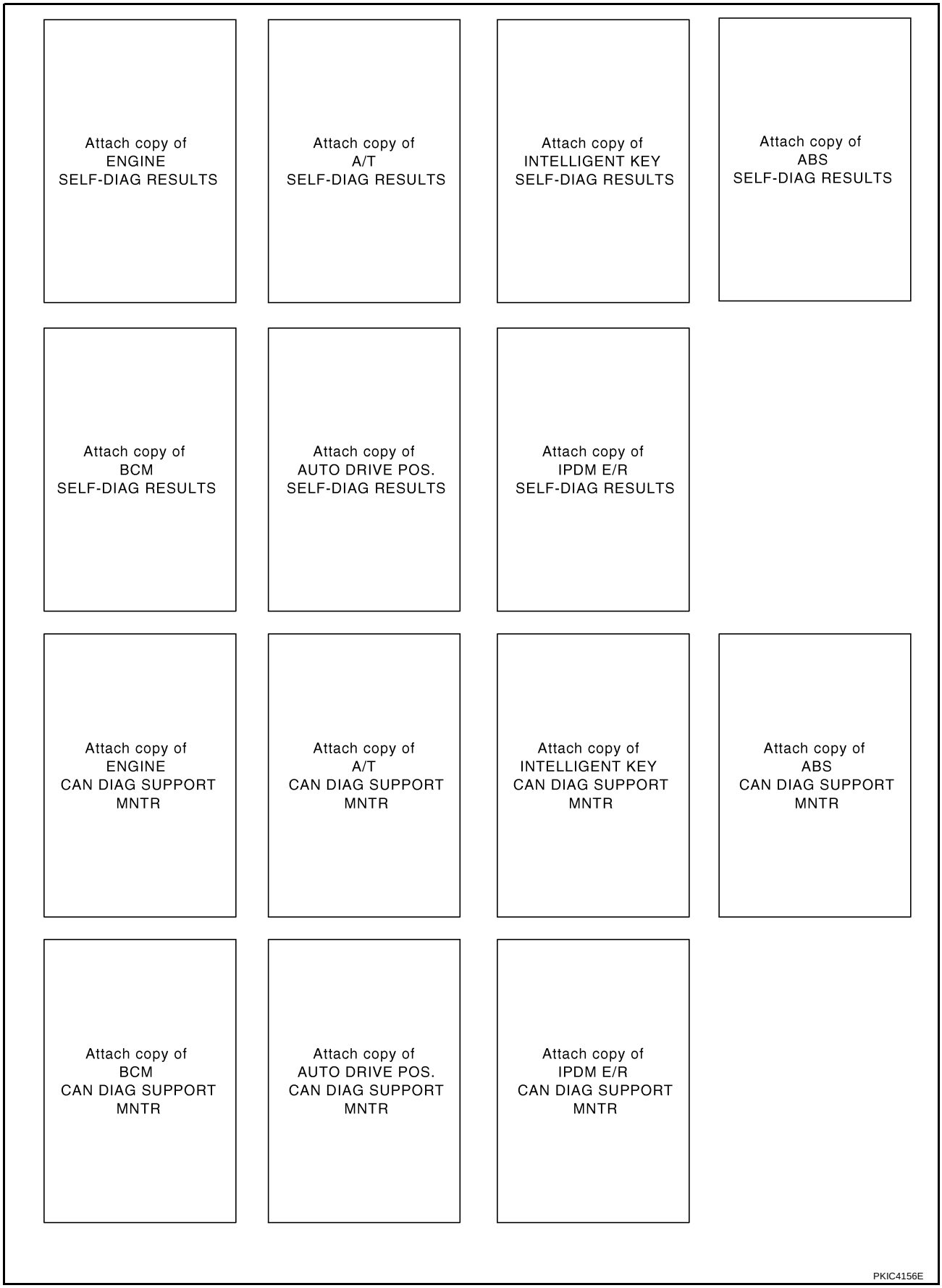
Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
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CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIC4156E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

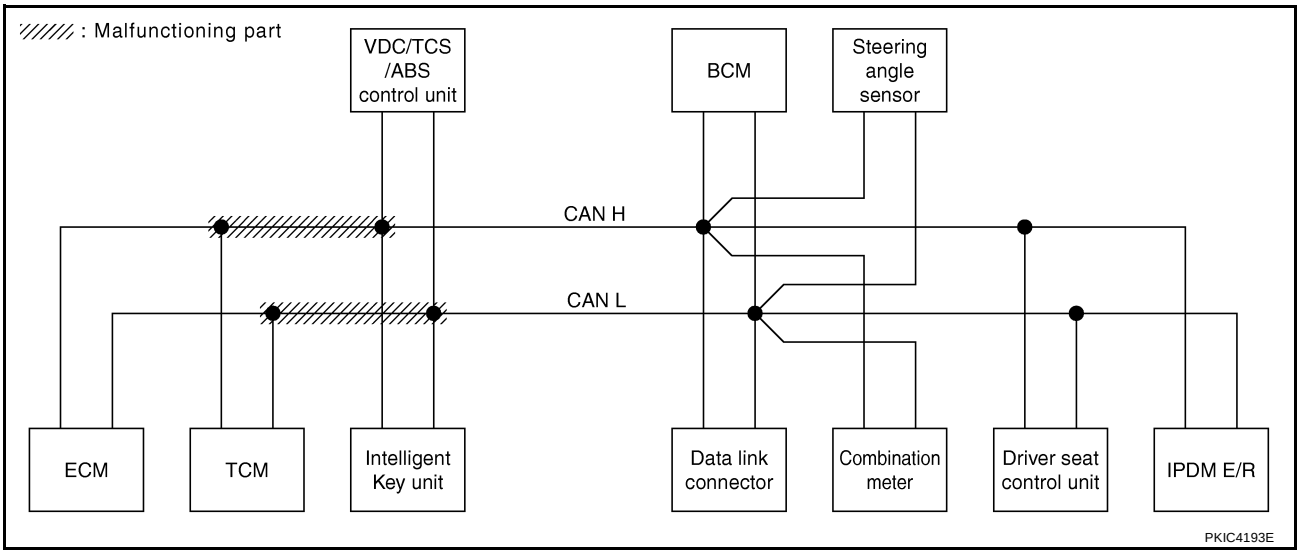
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and VDC/TCS/ABS control unit. Refer to LAN-80, "Inspection Between TCM 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	I-KEY	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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) ✓	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN ✓	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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) ✓	—

PKIC4570E

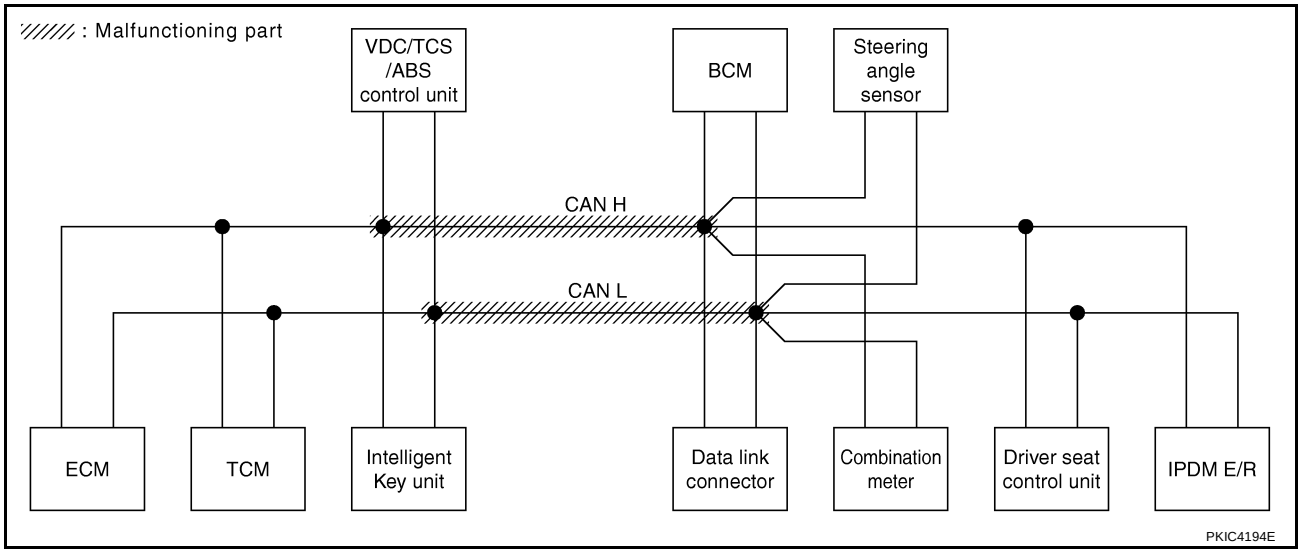


Case 2

Check harness between VDC/TCS/ABS control unit and data link connector. Refer to LAN-81, "Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit" .

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

PKIC4571E



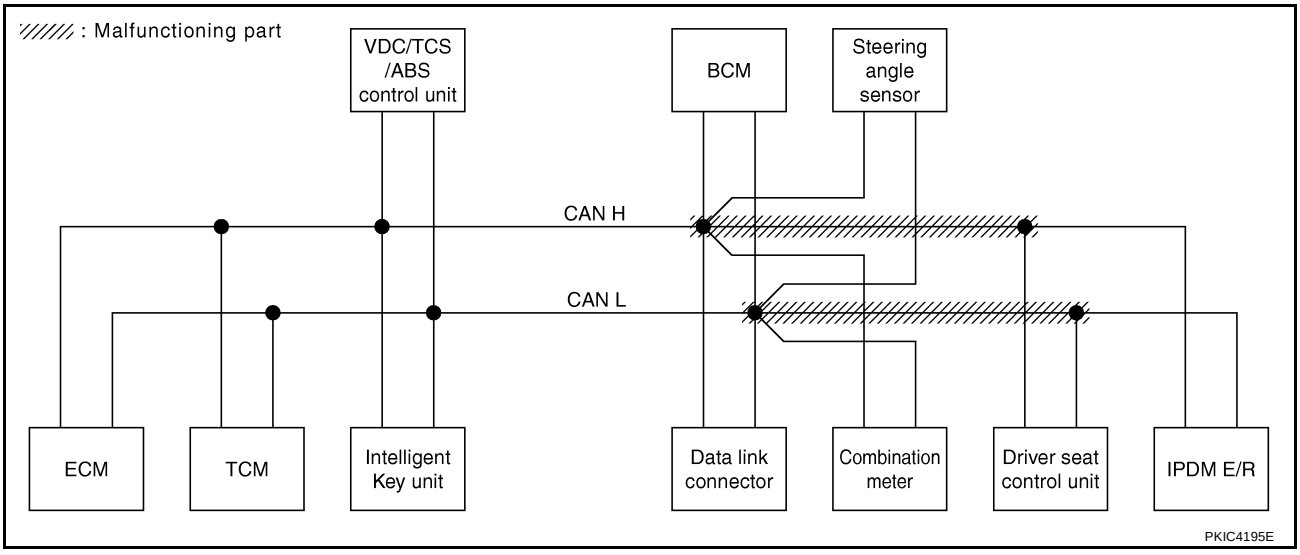
PKIC4194E

Case 3

Check harness between data link connector and driver seat control unit. Refer to LAN-82, "Inspection Between Data Link Connector and Driver Seat Control Unit Circuit" .

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

PKIC4572E



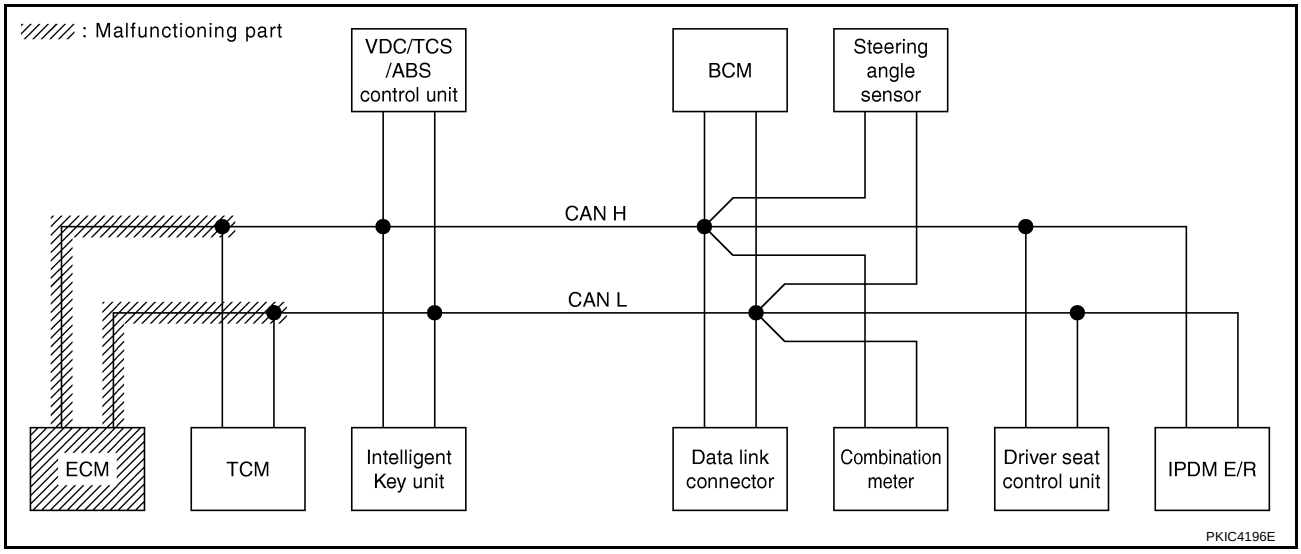
PKIC4195E

Case 4

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

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

PKIC4573E



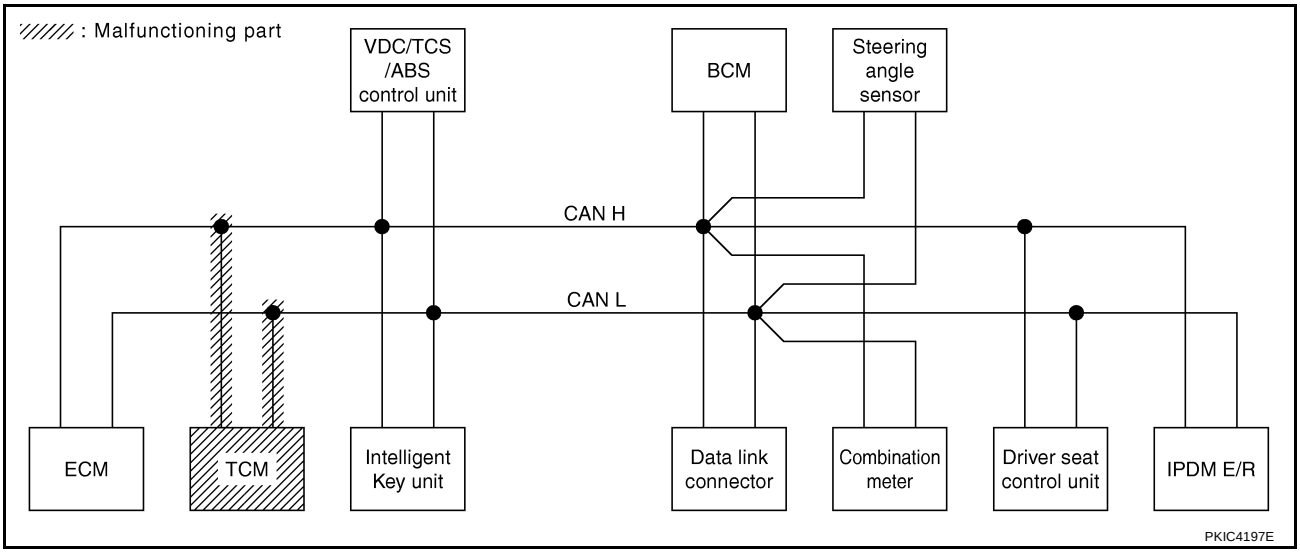
PKIC4196E

Case 5

Check TCM circuit. Refer to LAN-83, "TCM Circuit Inspection" .

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

PKIC4574E

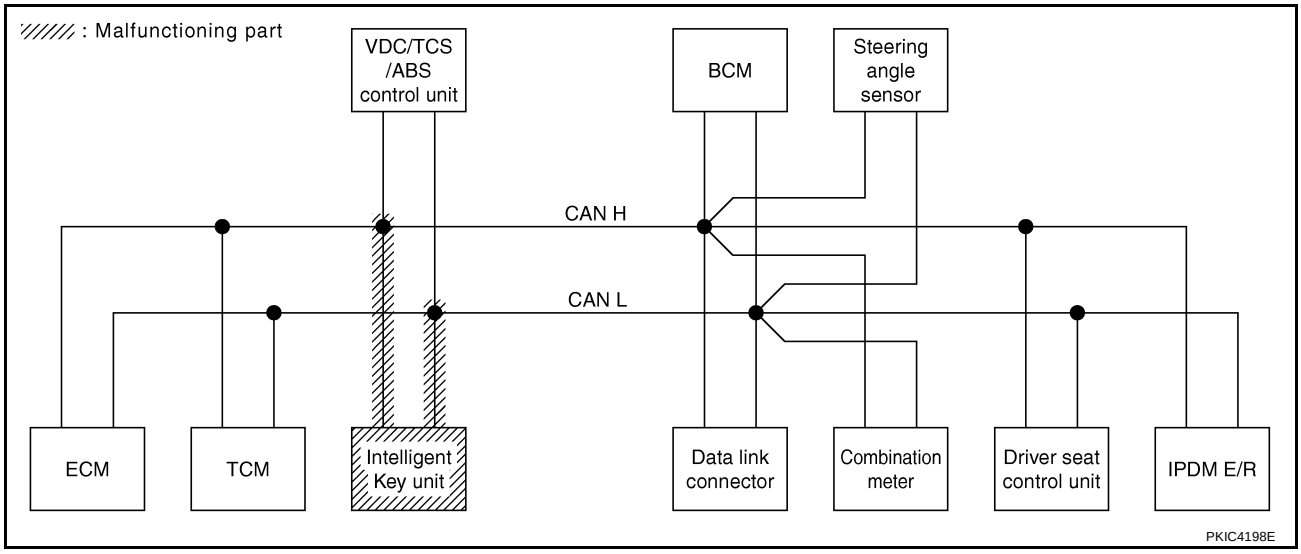


Case 6

Check Intelligent Key unit circuit. Refer to LAN-83, "Intelligent Key Unit Circuit Inspection" .

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

PKIC4575E



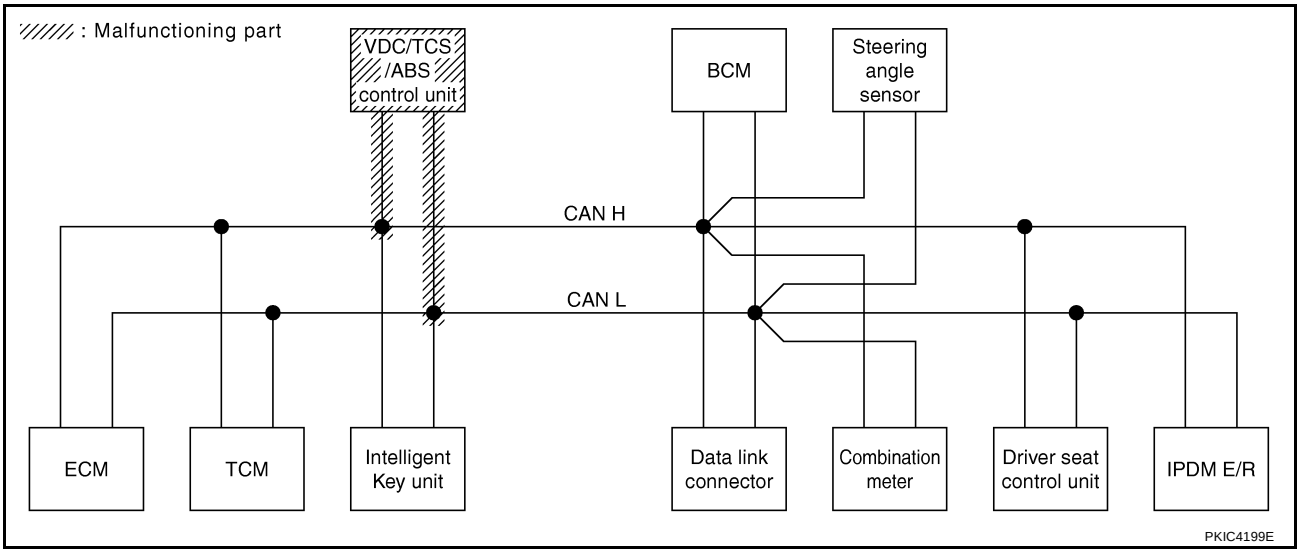
PKIC4198E

Case 7

Check VDC/TCS/ABS control unit circuit. Refer to LAN-84, "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	I-KEY	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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) ✓	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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)	—

PKIC4576E



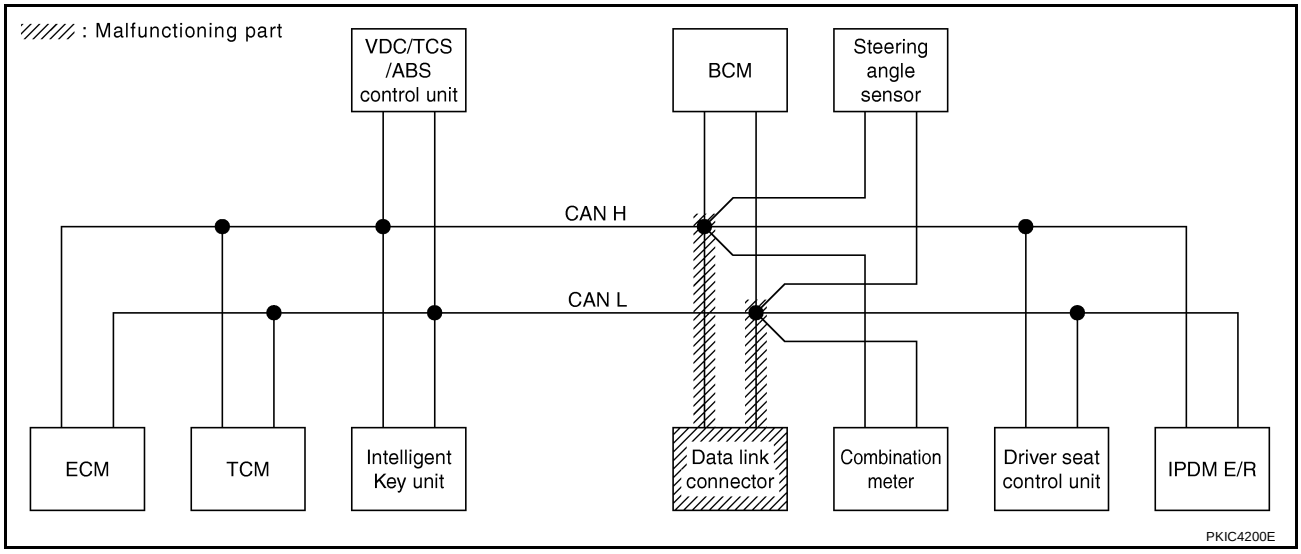
PKIC4199E

Case 8

Check data link connector circuit. Refer to LAN-84, "Data Link Connector Circuit Inspection" .

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

PKIC4577E

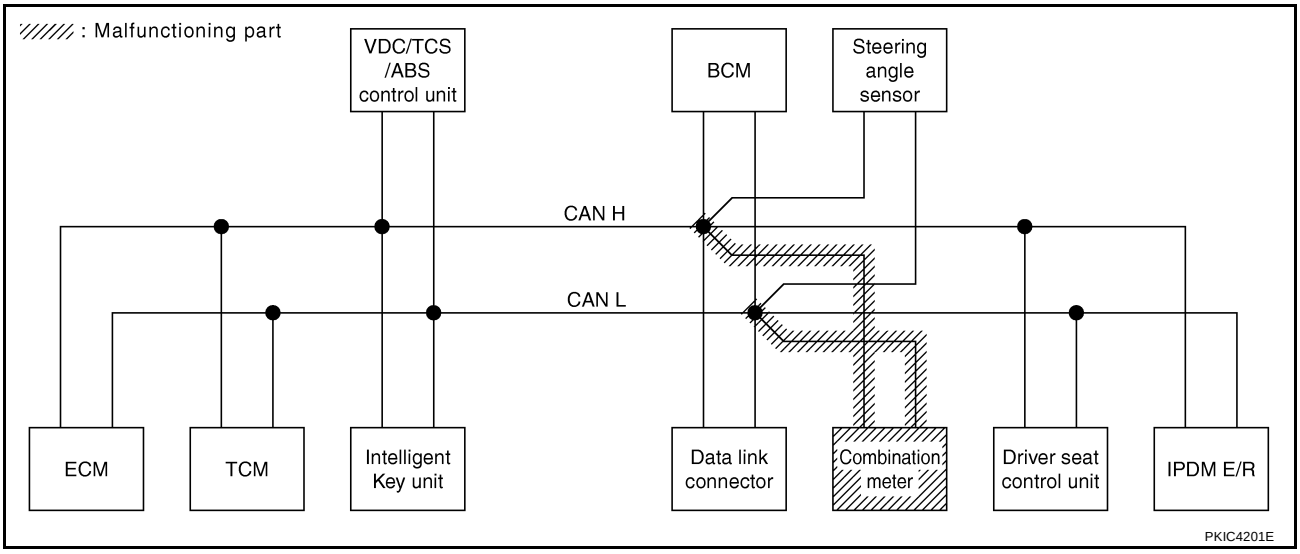


Case 9

Check combination meter circuit. Refer to LAN-85, "Combination Meter Circuit Inspection" .

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

PKIC4578E

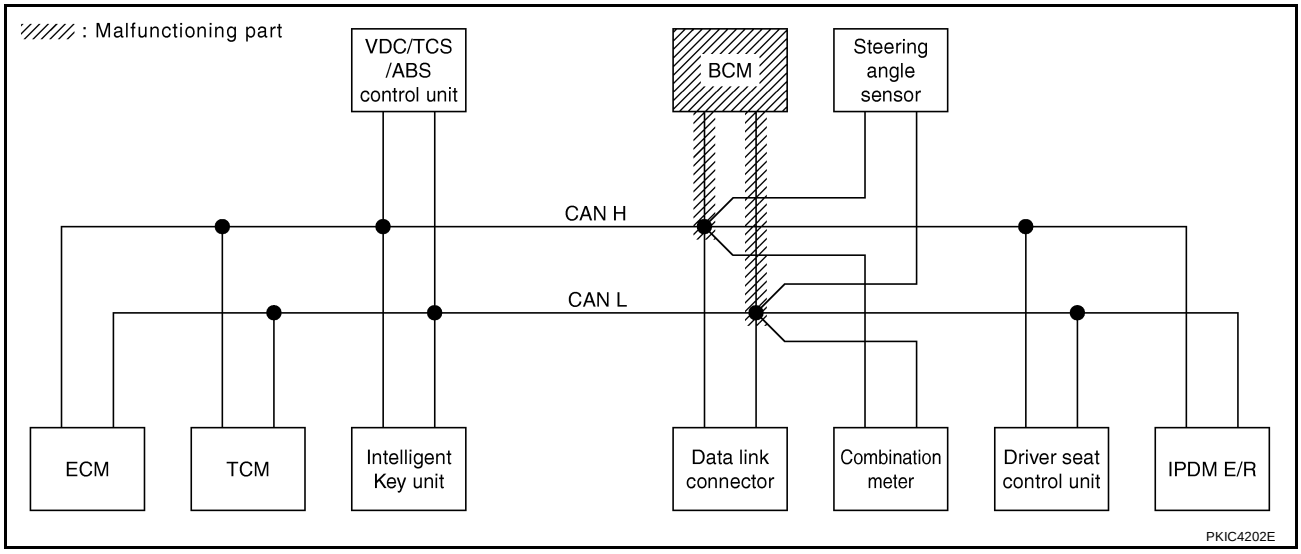


Case 10

Check BCM circuit. Refer to LAN-85, "BCM Circuit Inspection" .

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

PKIC4579E



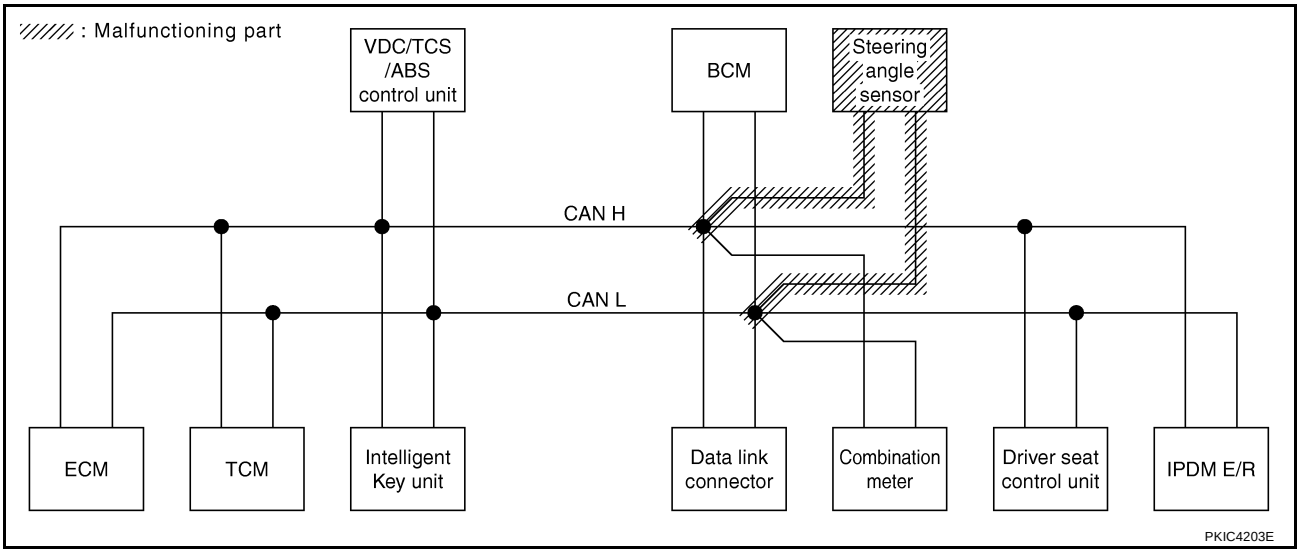
PKIC4202E

Case 11

Check steering angle sensor circuit. Refer to LAN-86, "Steering Angle Sensor Circuit Inspection" .

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

PKIC4580E



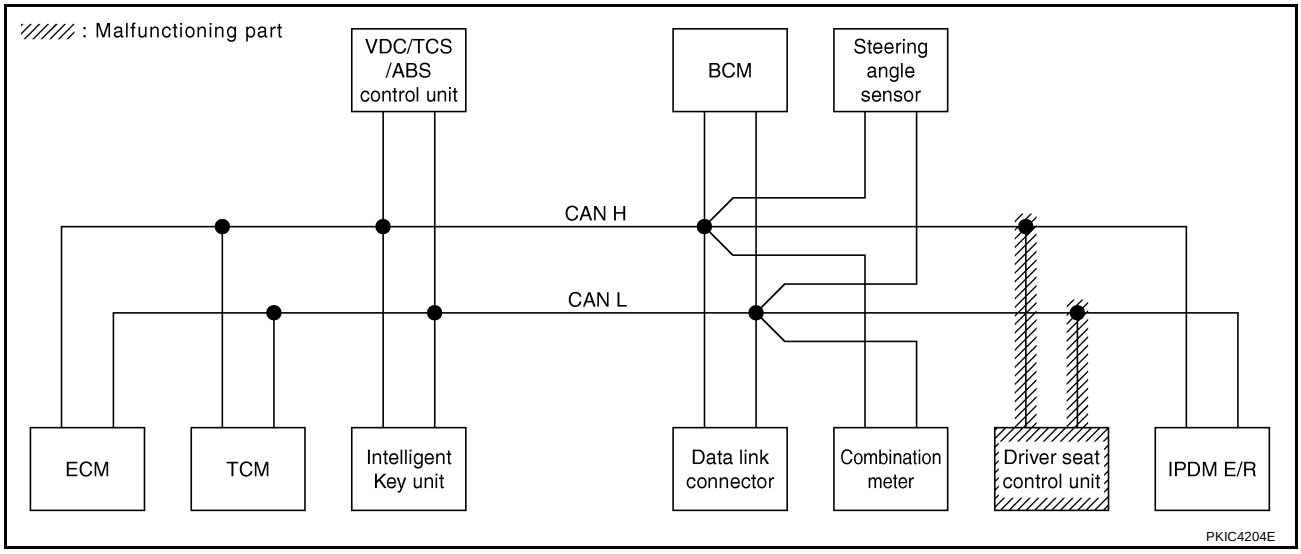
PKIC4203E

Case 12

Check driver seat control unit circuit. Refer to LAN-86, "Driver Seat Control Unit Circuit Inspection" .

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

PKIC4581E



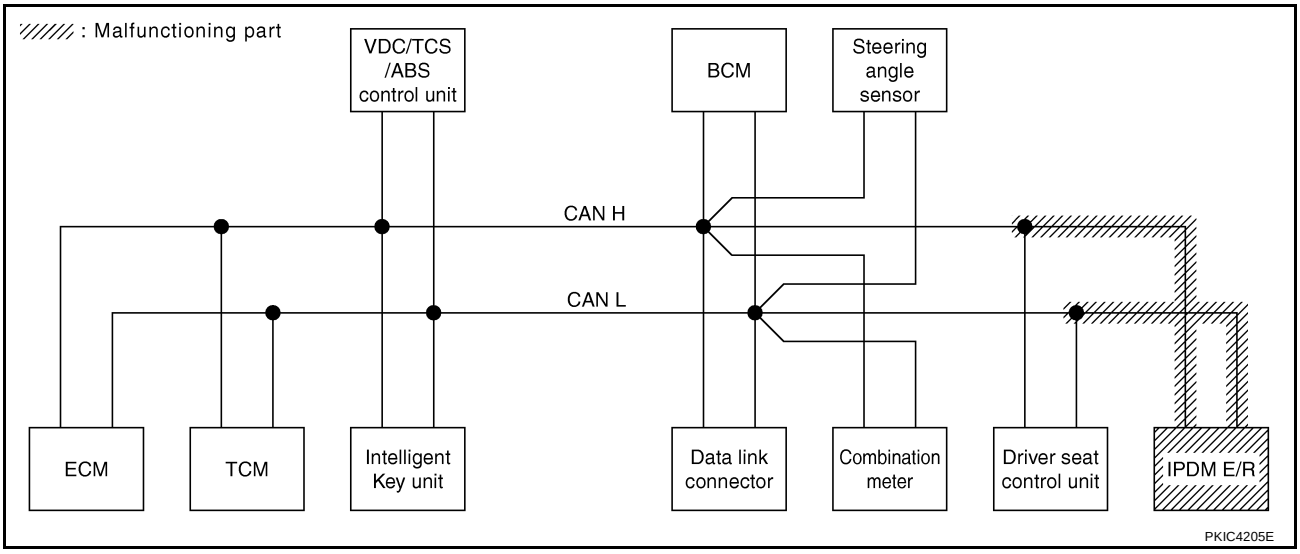
PKIC4204E

Case 13

Check IPDM E/R circuit. Refer to LAN-87, "IPDM E/R Circuit Inspection" .

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

PKIC4582E



PKIC4205E

Case 14

Check CAN communication circuit. Refer to LAN-88, "CAN Communication Circuit Inspection" .

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

PKIC4583E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-92, "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	I-KEY	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIC4584E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-92, "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	I-KEY	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIC4585E

Inspection Between TCM and VDC/TCS/ABS Control Unit Circuit

AKS00G8G

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

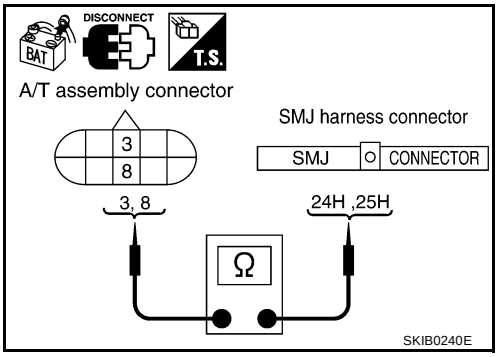
OK or NG

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.



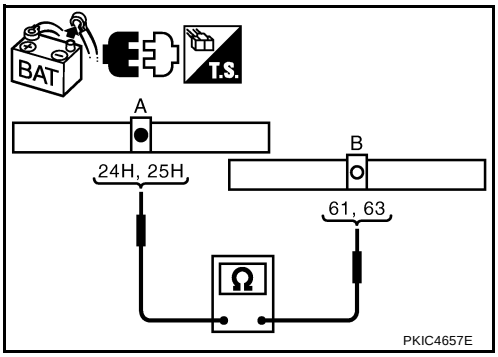
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector (A) and VDC/TCS/ABS control unit harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M72	24H (L)	M93	61 (L)	Yes
	25H (P)		63 (P)	Yes



OK or NG

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

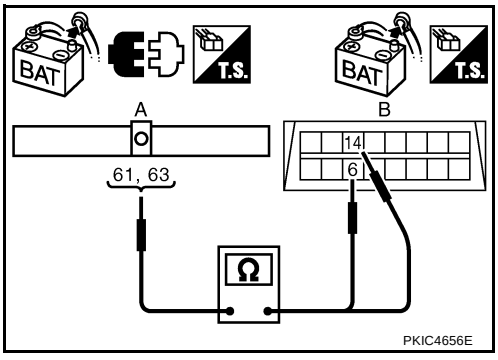
Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit

AKS00G8H

1. CHECK HARNESS FOR OPEN CIRCUIT

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 VDC/TCS/ABS control unit harness connector (A) and data link connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M93	61 (L)	M8	6 (L)	Yes
	63 (P)		14 (P)	Yes



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 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

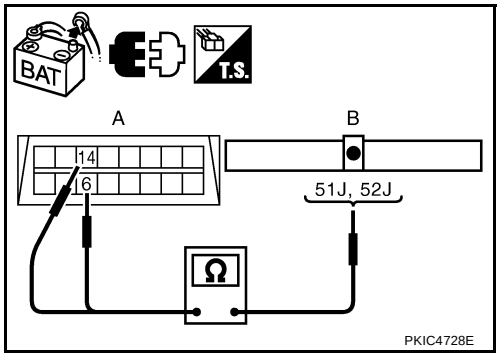
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M12.
2. Check continuity between data link connector (A) and harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M8	6 (L)	M12	52J (L)	Yes
	14 (P)		51J (P)	Yes



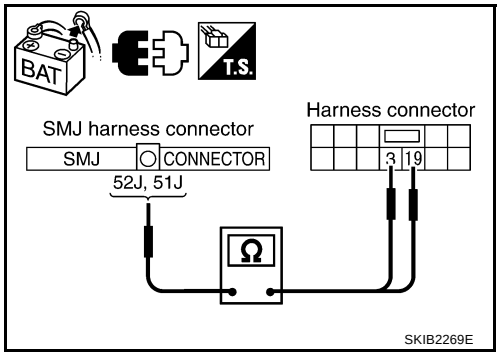
OK or NG

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.

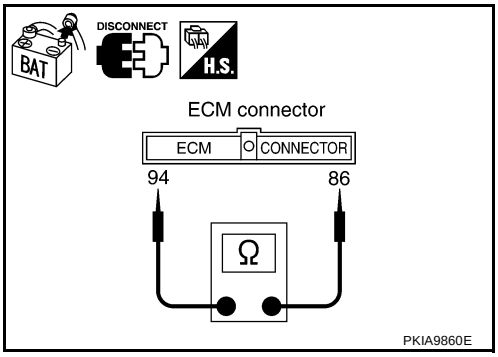
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

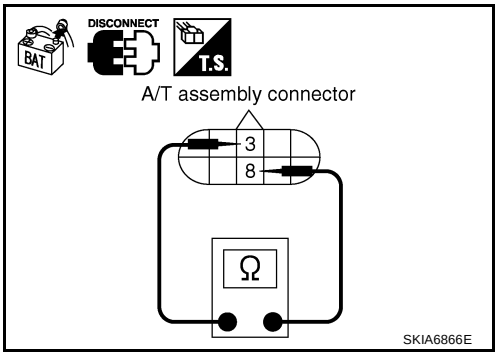
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



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).

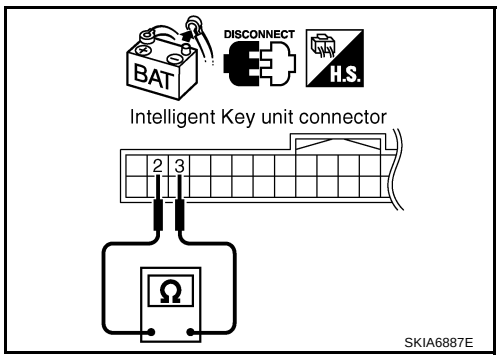
OK or NG

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).

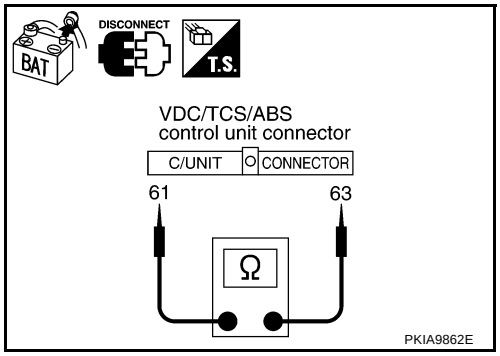
OK or NG

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 data link connector.

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

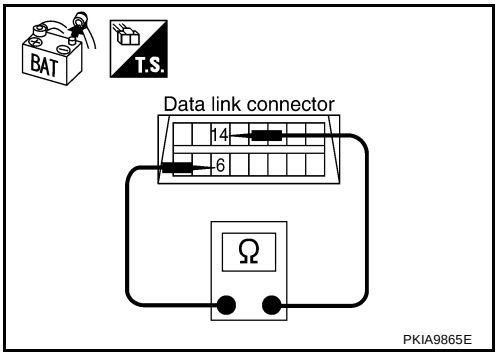
Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

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

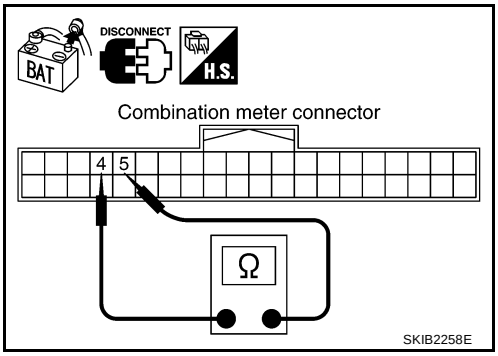
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M19 terminals 4 (L) and 5 (P).

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.

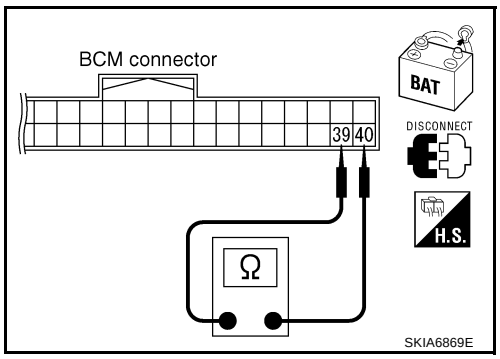
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

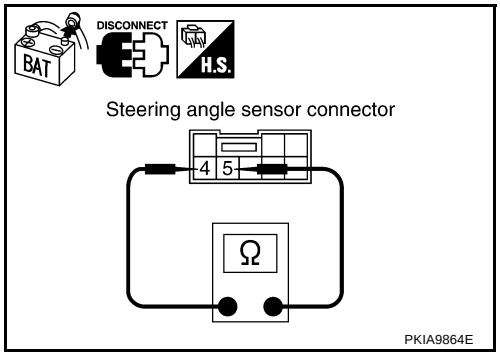
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



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.

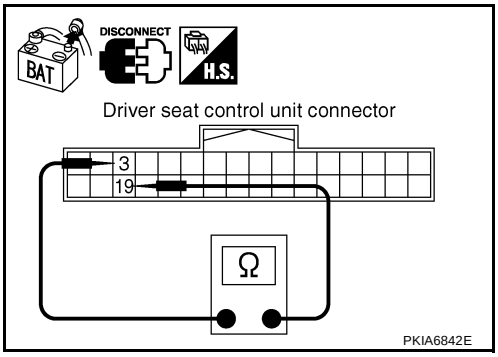
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

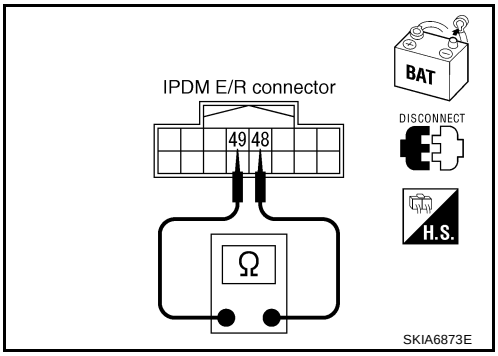
2. CHECK HARNESS FOR OPEN CIRCUIT

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

OK or NG

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

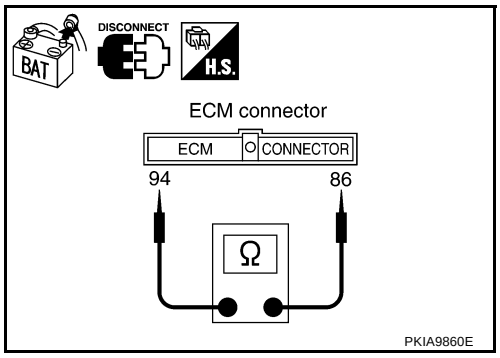
2. CHECK HARNESS FOR SHORT CIRCUIT

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

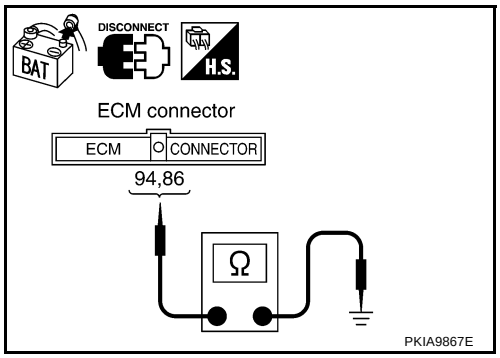
OK >> GO TO 3.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- 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.

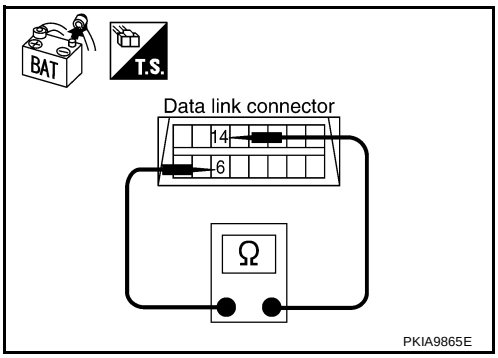
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

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

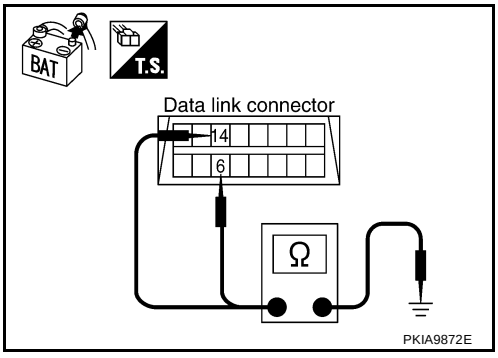
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data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

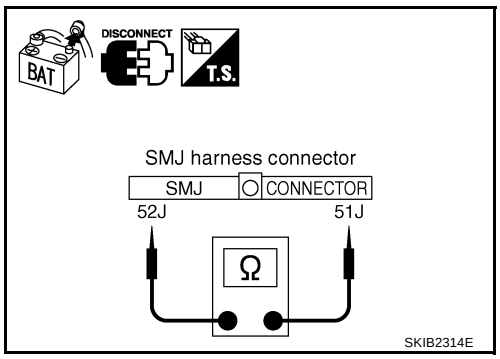
OK >> GO TO 6.

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 Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS 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 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.

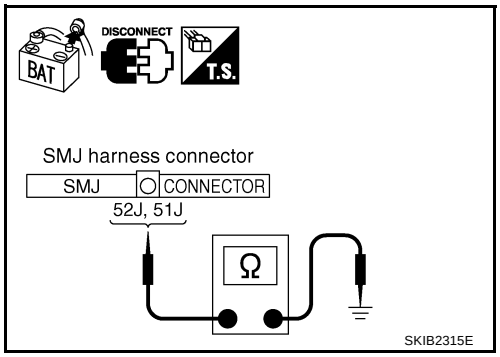
- Harness between harness connector B1 and harness connector B6
- Harness between harness connector B1 and harness connector B2

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.

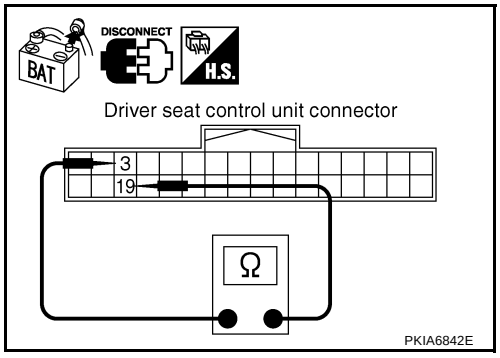
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- 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.

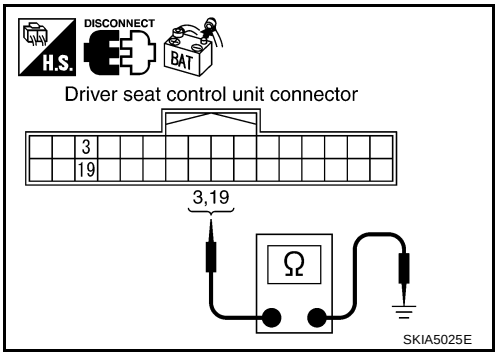
3 (OR) – Ground : Continuity should not exist.

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

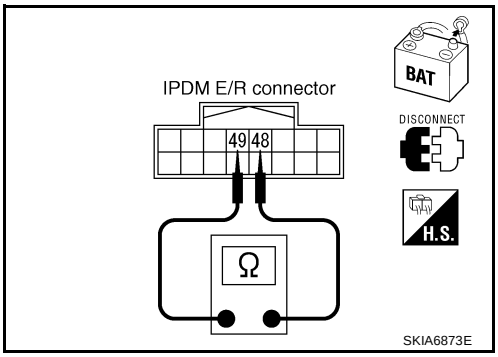
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (P).

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

OK or NG

OK >> GO TO 11.

NG >> Repair harness between IPDM E/R 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.

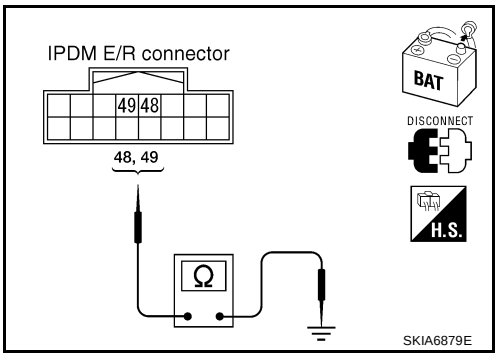
48 (L) – Ground : Continuity should not exist.

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

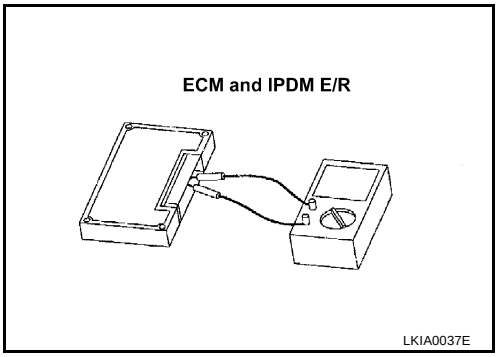
3. Check resistance between IPDM E/R terminals 48 and 49.

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 reproduced.

- A/T assembly
- Intelligent Key unit
- VDC/TCS/ABS control unit
- Combination meter
- BCM
- Steering angle sensor
- 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

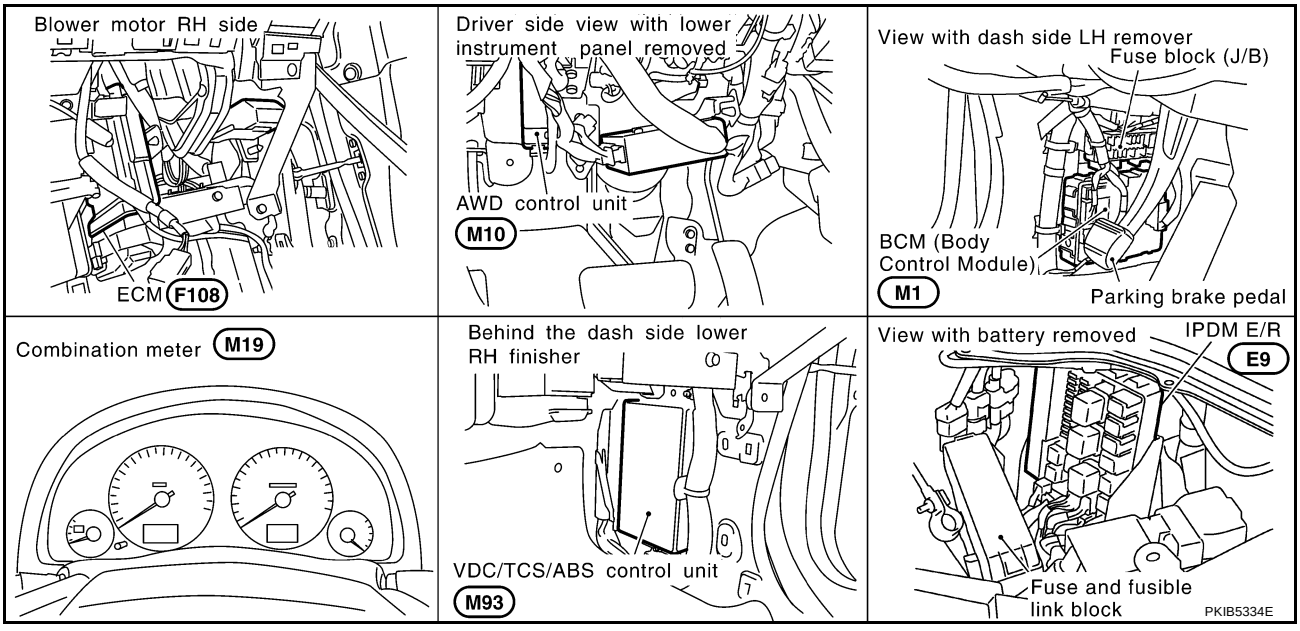
System Description

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.

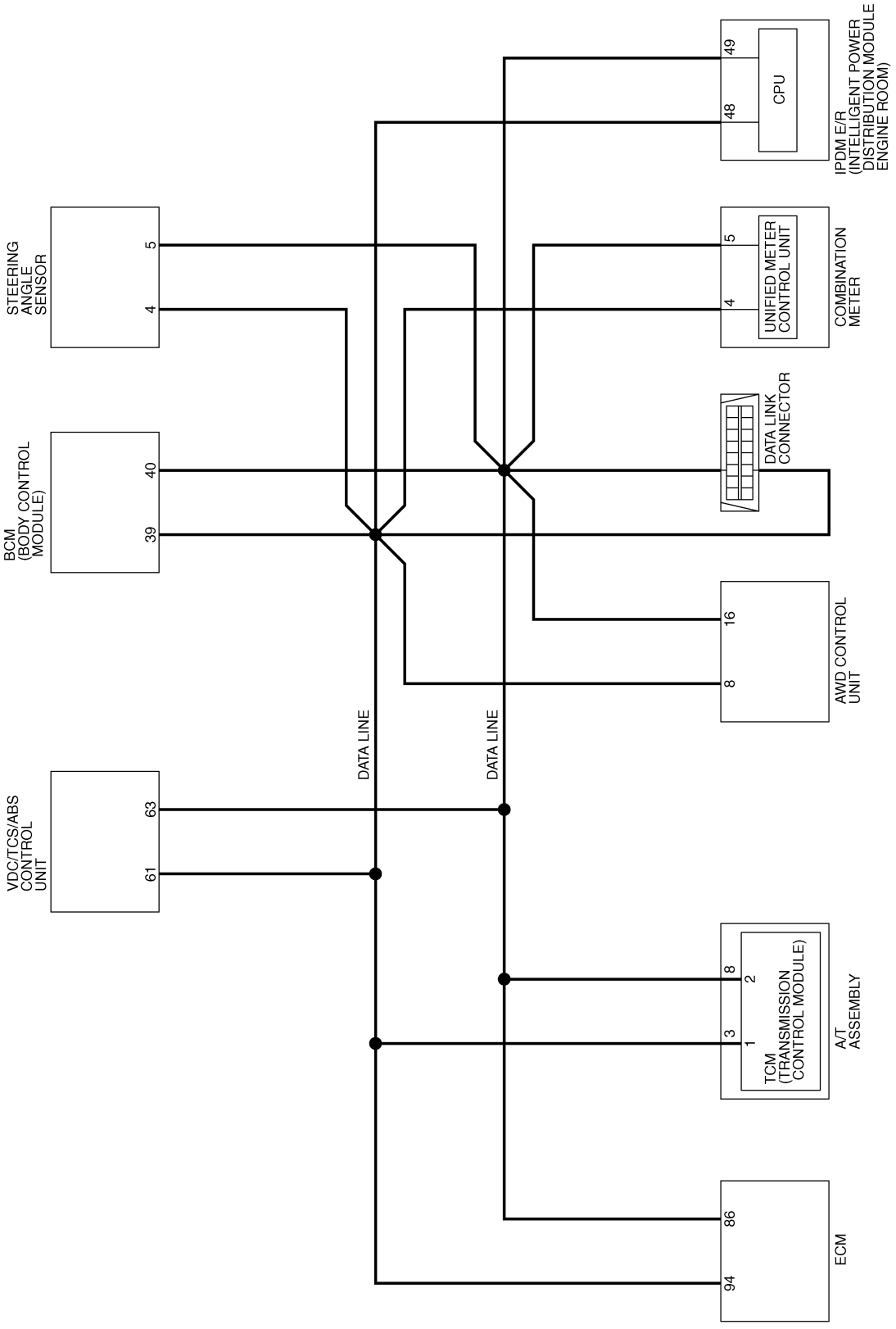
Component Parts and Harness Connector Location

AKS00AU4



Schematic

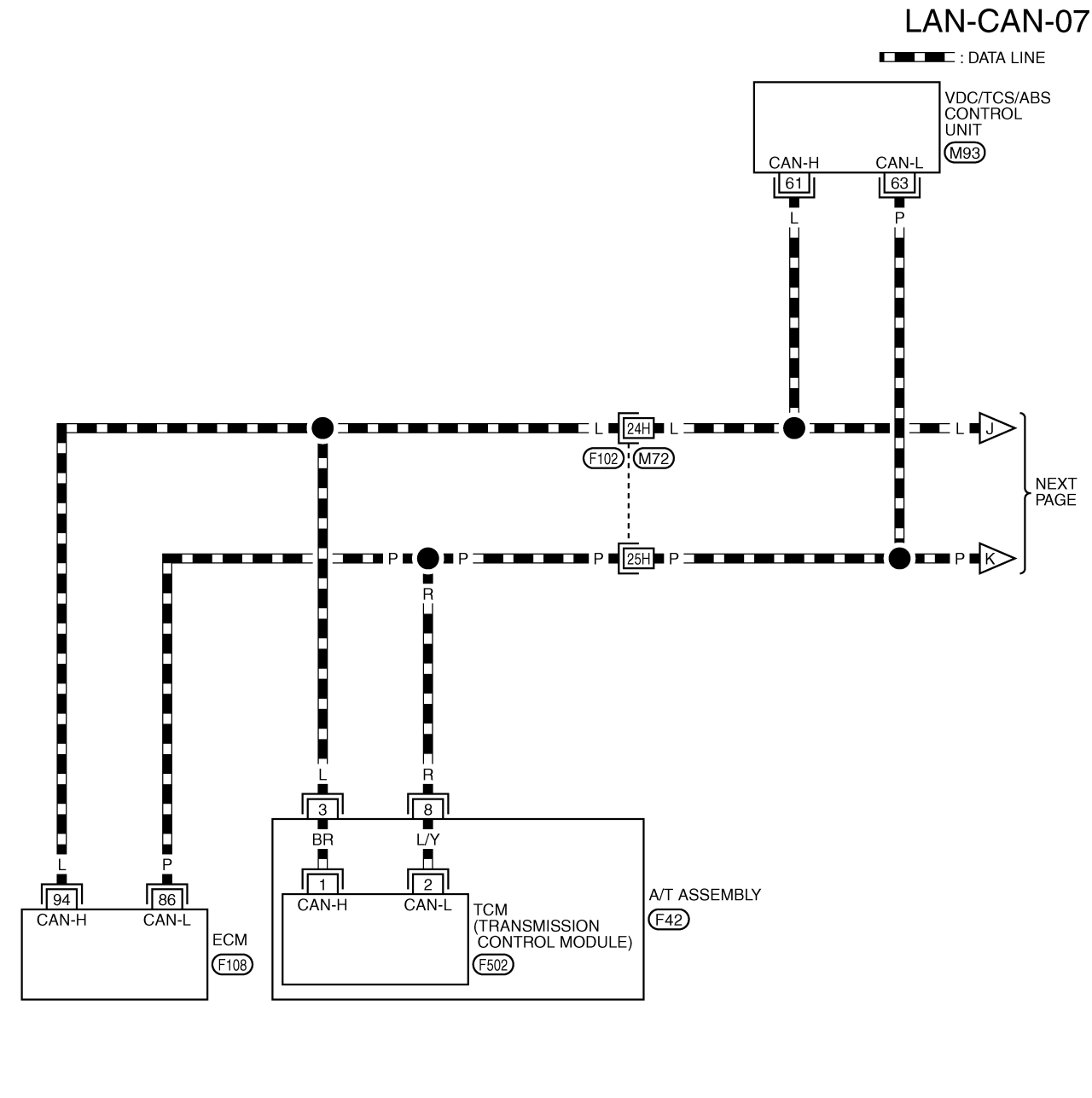
AKS00AU5

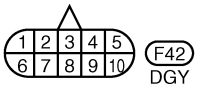


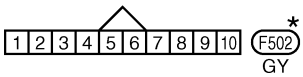
TKWM3877E

Wiring Diagram — CAN —

AKS00AU6





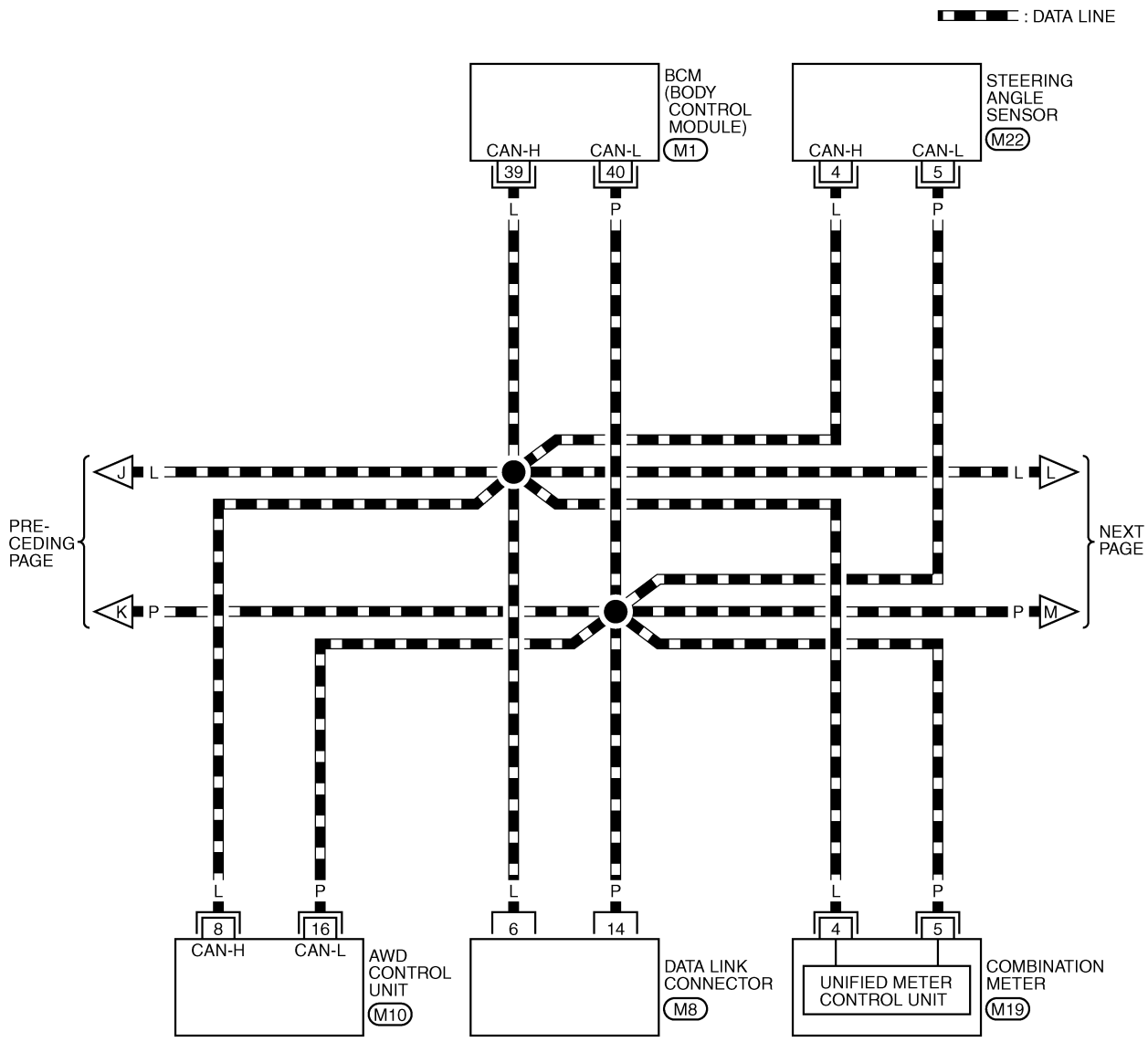


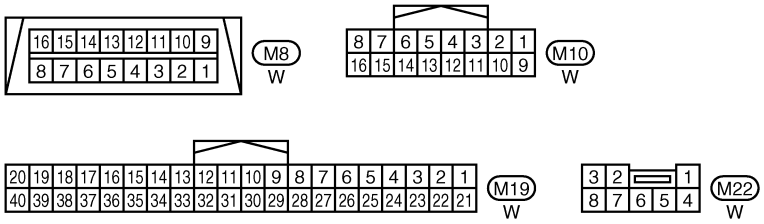
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M93, F108 -ELECTRICAL UNITS

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

TKWM3878E

LAN-CAN-08

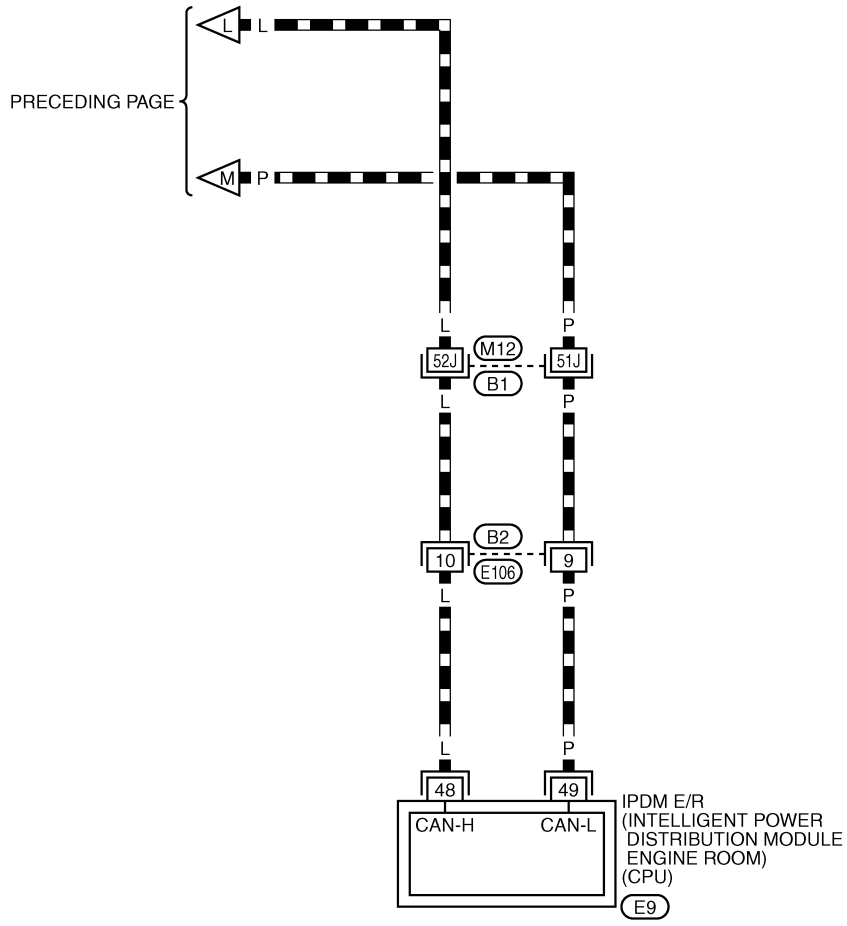


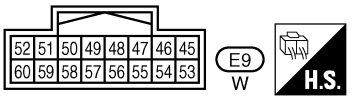


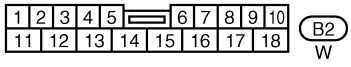
REFER TO THE FOLLOWING.

M1 -ELECTRICAL UNITS

TKWM2471E







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

TKWM3879E

Check Sheet

AKS00AU7

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

Check sheet table

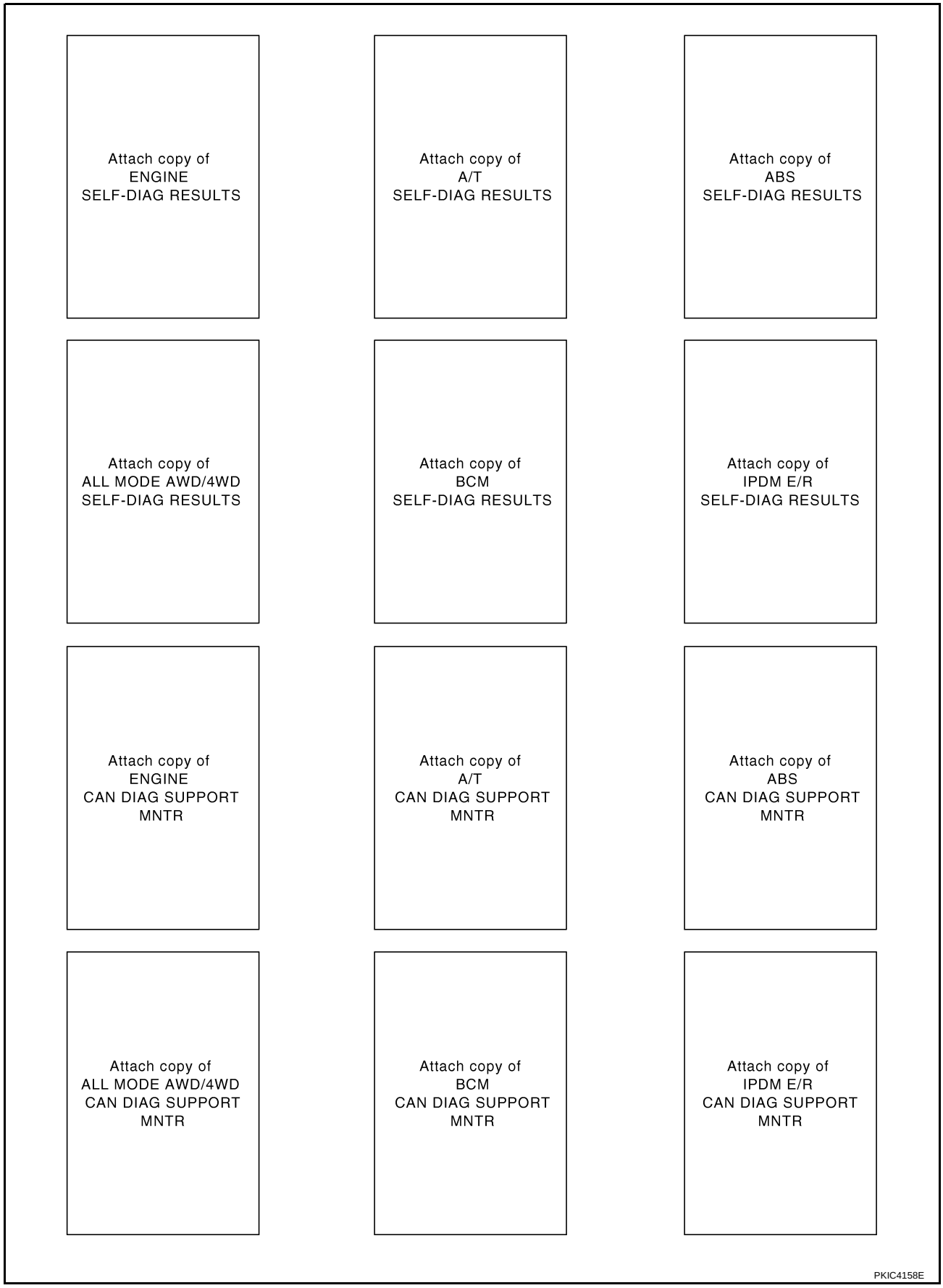
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIC4384E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
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
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIC4158E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

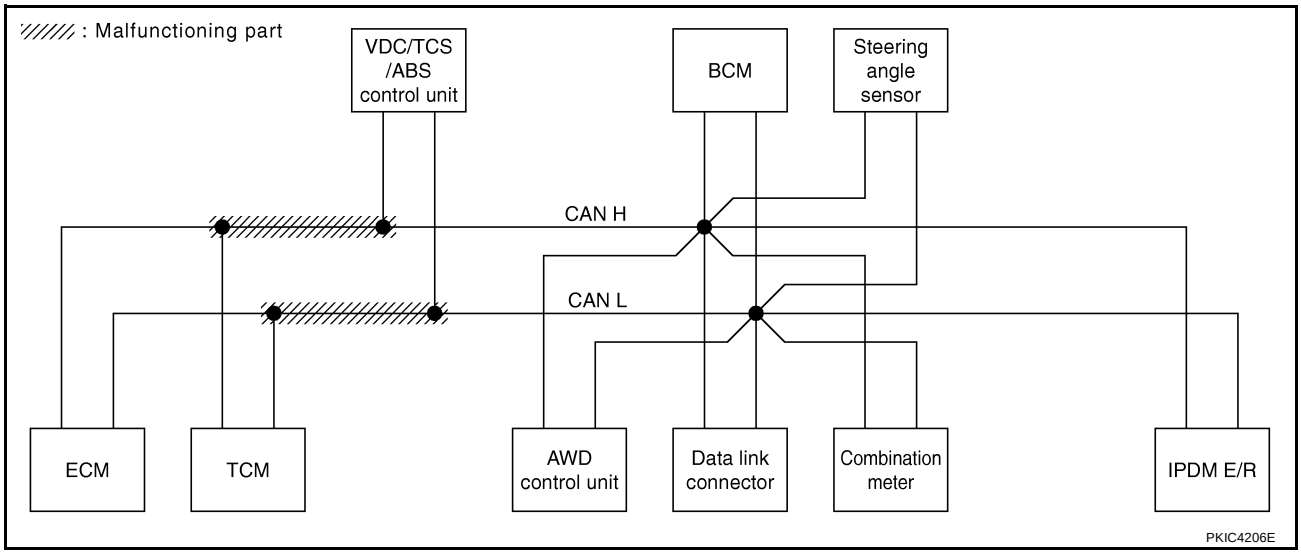
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and VDC/TCS/ABS control unit. Refer to LAN-111, "Inspection Between TCM 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	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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) ✓	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	—	—	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—

PKIC4586E

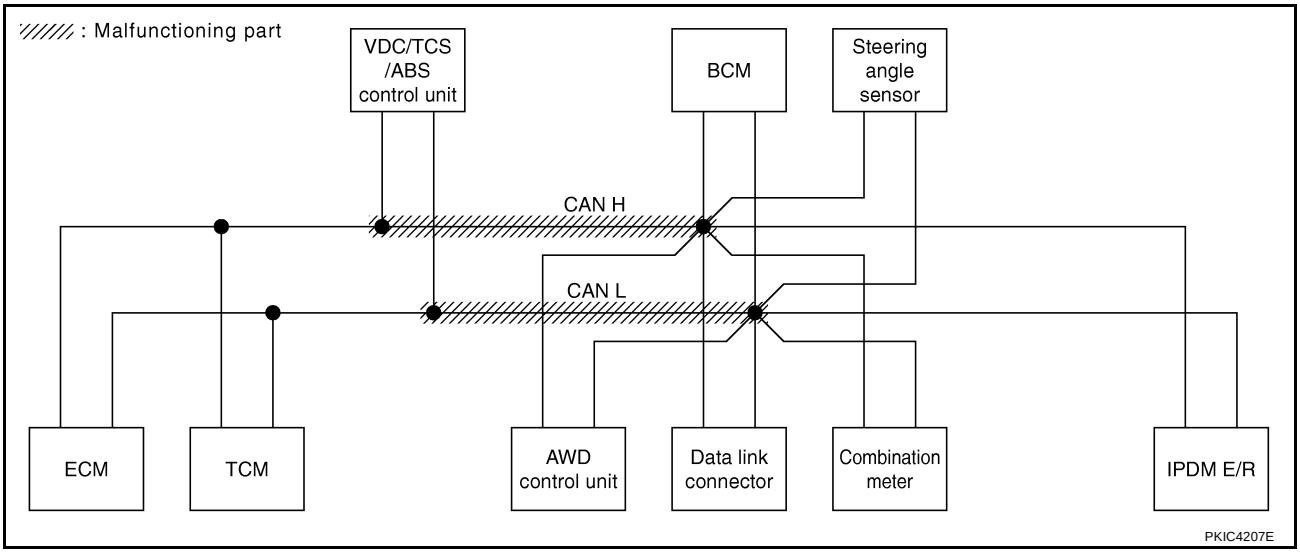


Case 2

Check harness between VDC/TCS/ABS control unit and data link connector. Refer to LAN-112, "Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit" .

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

PKIC4587E

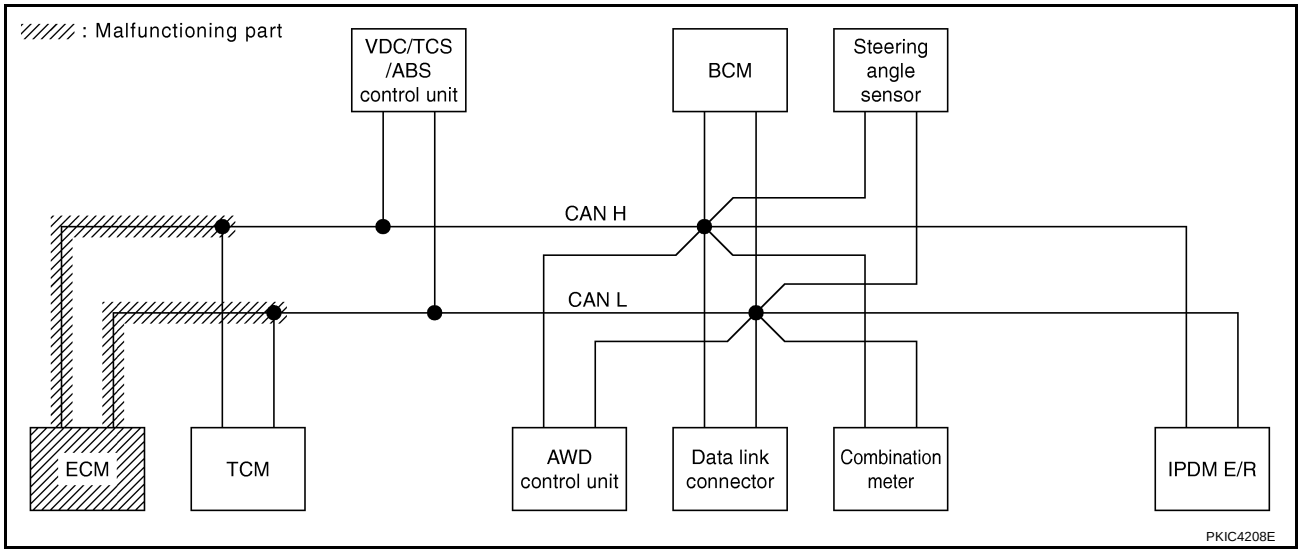


Case 3

Check ECM circuit. Refer to LAN-113, "ECM Circuit Inspection" .

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

PKIC4588E



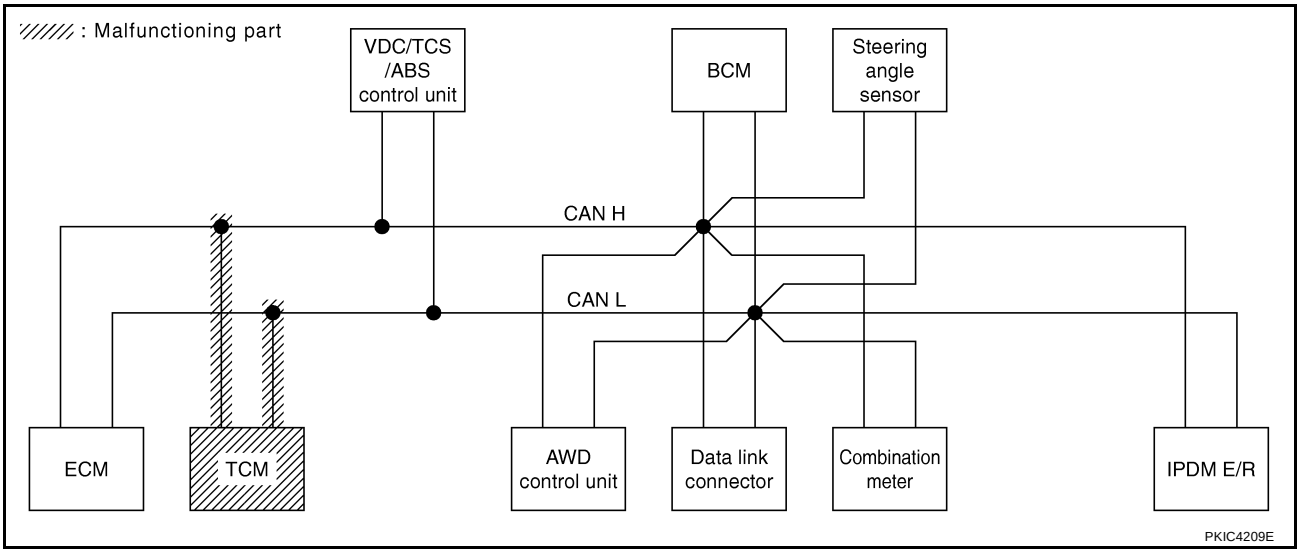
PKIC4208E

Case 4

Check TCM circuit. Refer to LAN-113, "TCM Circuit Inspection" .

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

PKIC4589E



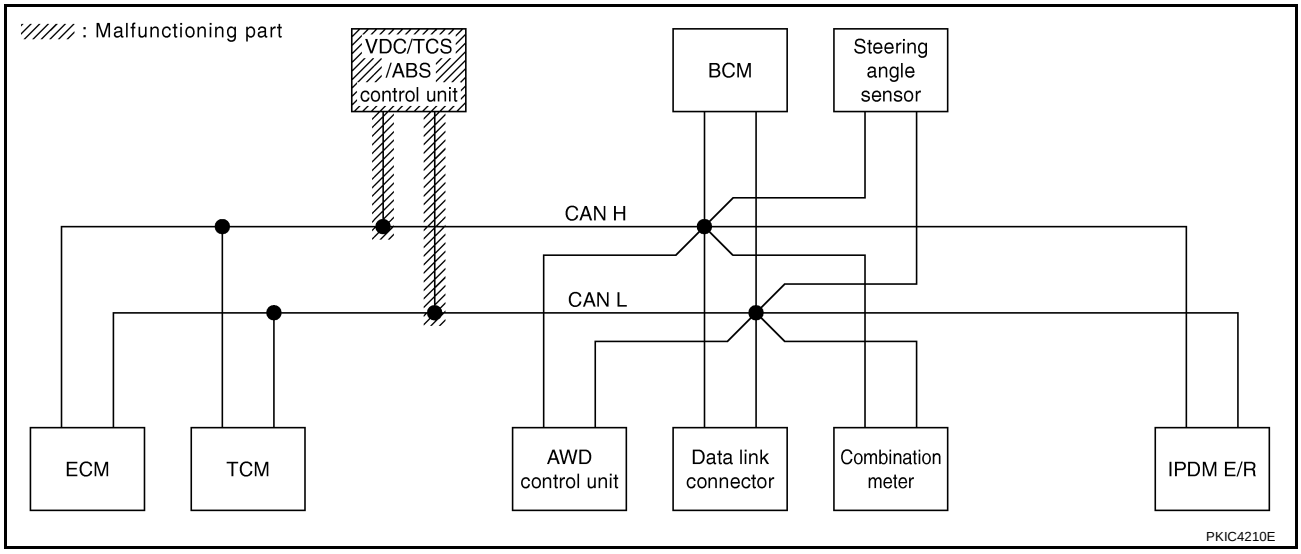
PKIC4209E

Case 5

Check VDC/TCS/ABS control unit circuit. Refer to LAN-114, "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	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
ABS	—	NG	UNKWN	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)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIC4590E



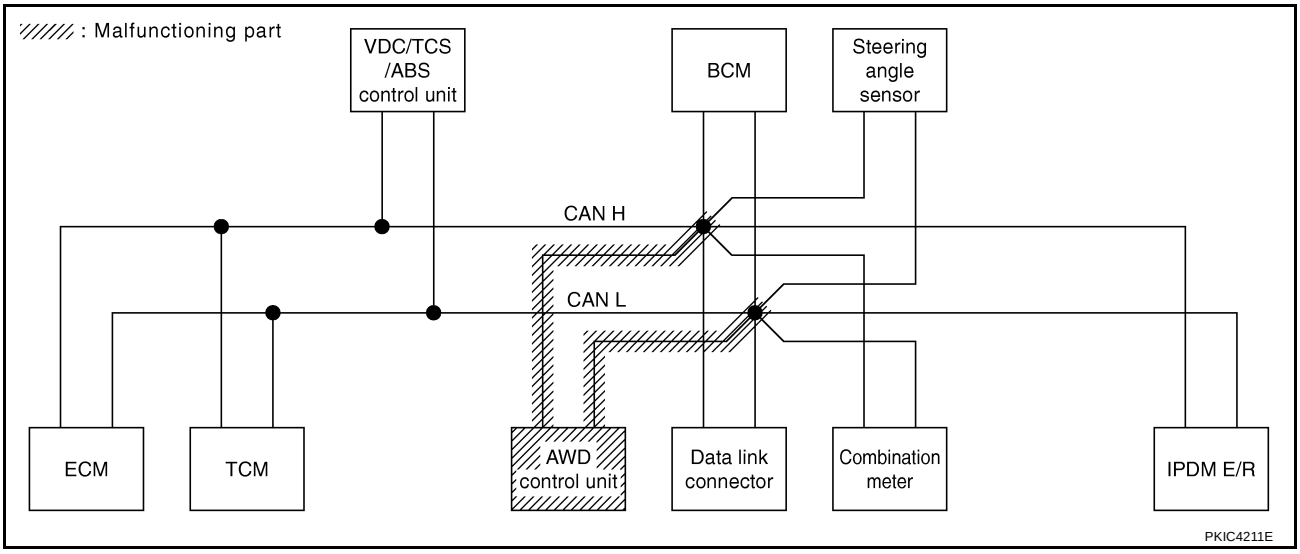
PKIC4210E

Case 6

Check AWD control unit circuit. Refer to LAN-114, "AWD Control Unit Circuit Inspection" .

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

PKIC4591E



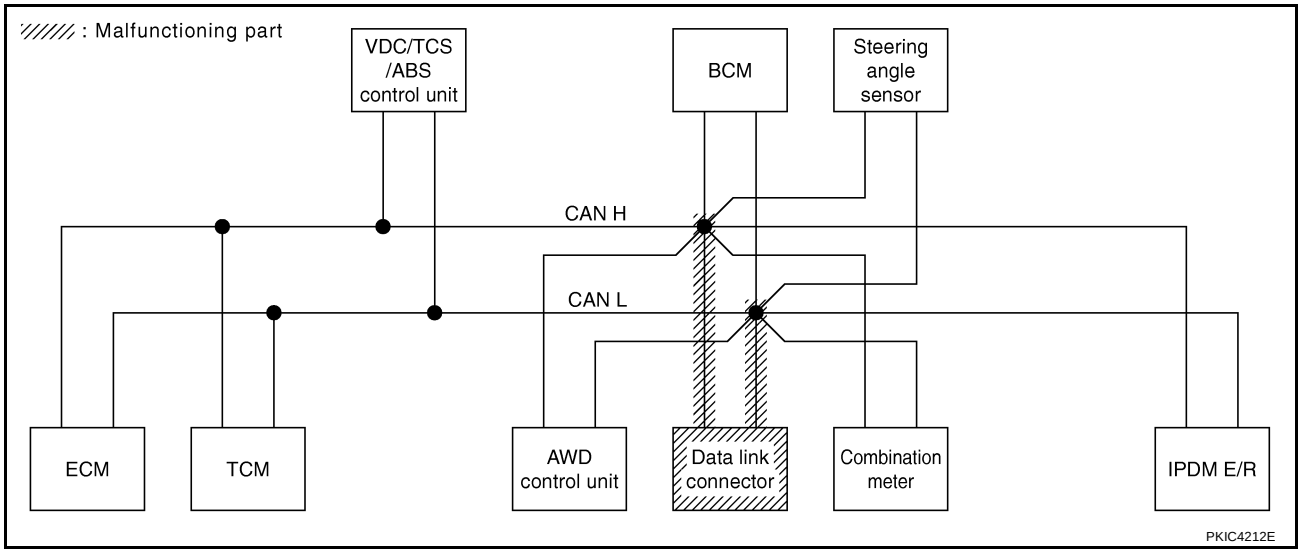
PKIC4211E

Case 7

Check data link connector circuit. Refer to LAN-115, "Data Link Connector Circuit Inspection" .

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

PKIC4592E



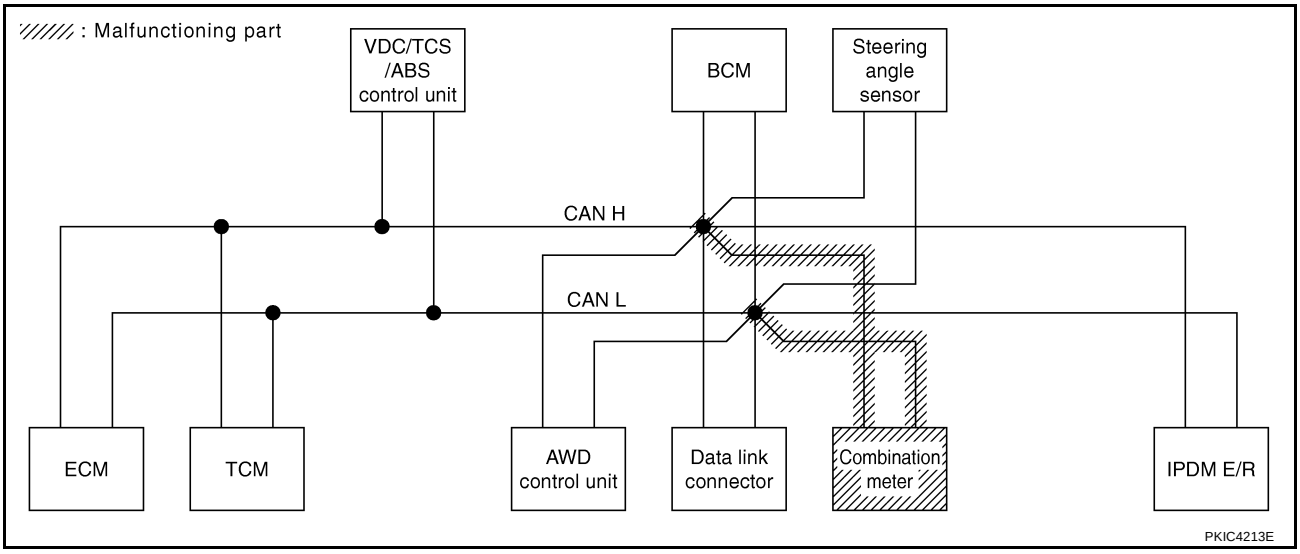
PKIC4212E

Case 8

Check combination meter circuit. Refer to LAN-115, "Combination Meter Circuit Inspection" .

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

PKIC4593E

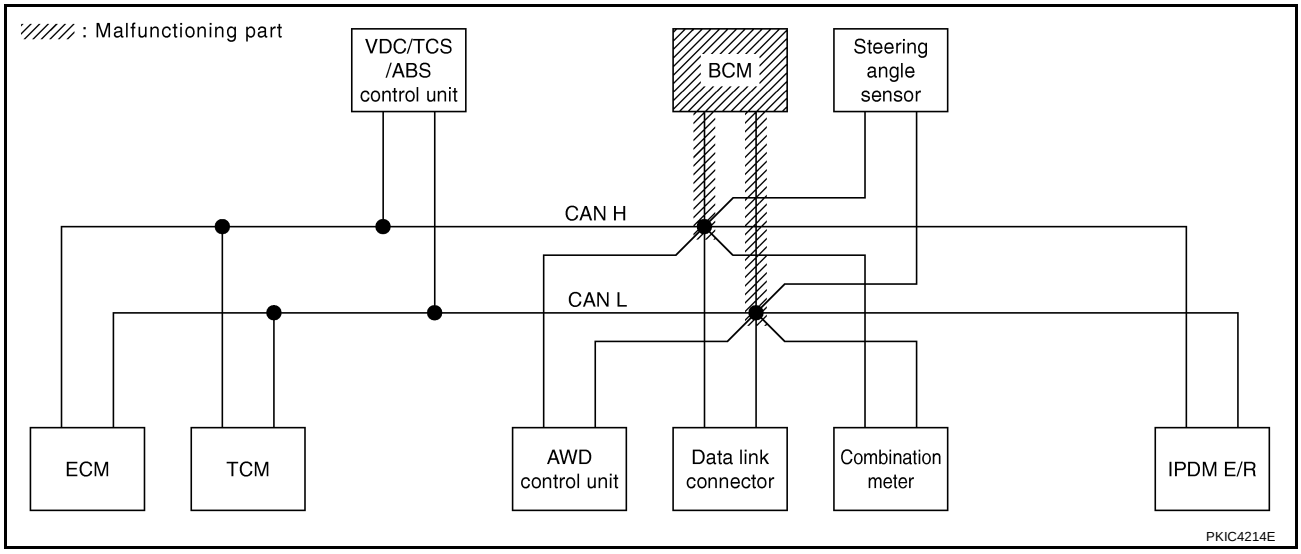


Case 9

Check BCM circuit. Refer to LAN-116, "BCM Circuit Inspection" .

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

PKIC4594E



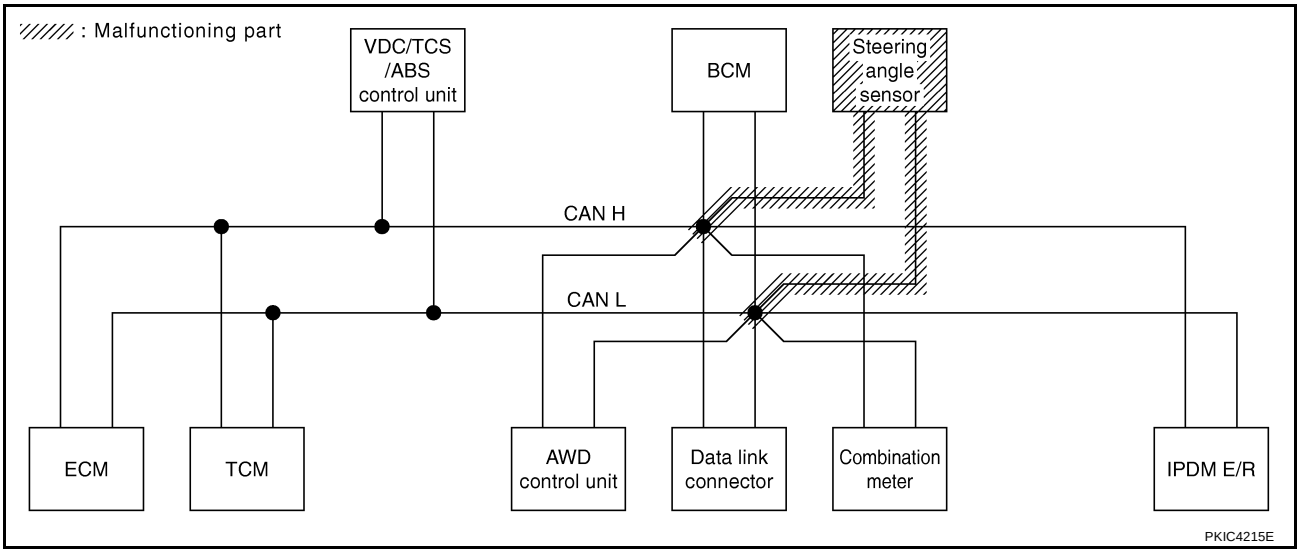
PKIC4214E

Case 10

Check steering angle sensor circuit. Refer to LAN-116, "Steering Angle Sensor Circuit Inspection" .

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

PKIC4595E



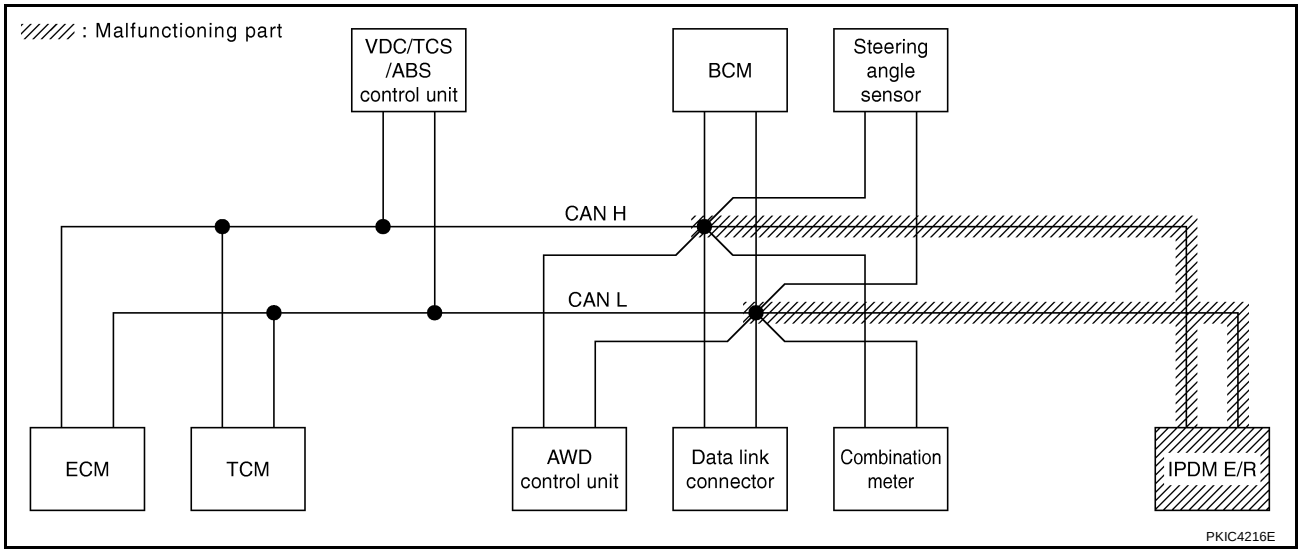
PKIC4215E

Case 11

Check IPDM E/R circuit. Refer to LAN-117, "IPDM E/R Circuit Inspection" .

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

PKIC4596E



PKIC4216E

Case 12

Check CAN communication circuit. Refer to LAN-117, "CAN Communication Circuit Inspection" .

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

PKIC4597E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-121, "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	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
ABS	—	NG	UNKWN	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)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIC4598E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-121, "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	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	—	—	UNKWN	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—

PKIC4599E

Inspection Between TCM and VDC/TCS/ABS Control Unit Circuit

AKS00G8I

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

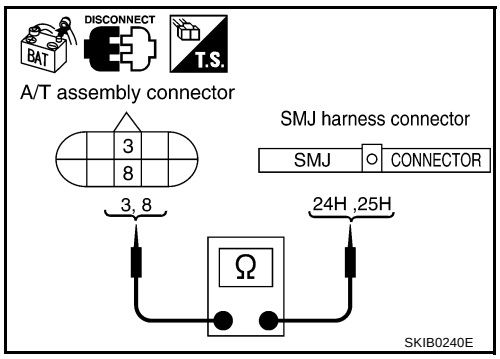
OK or NG

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.



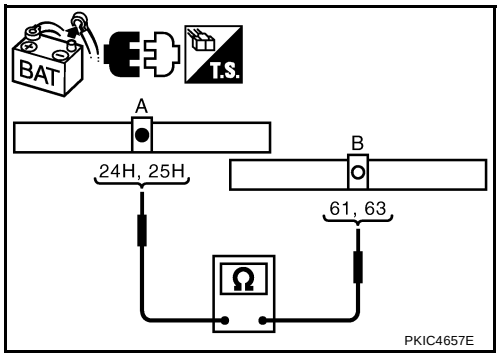
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector (A) and VDC/TCS/ABS control unit harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M72	24H (L)	M93	61 (L)	Yes
	25H (P)		63 (P)	Yes



OK or NG

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

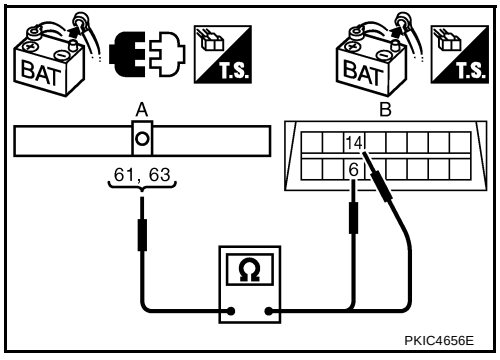
Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit

AKS00G8J

1. CHECK HARNESS FOR OPEN CIRCUIT

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 VDC/TCS/ABS control unit harness connector (A) and data link connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M93	61 (L)	M8	6 (L)	Yes
	63 (P)		14 (P)	Yes



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).

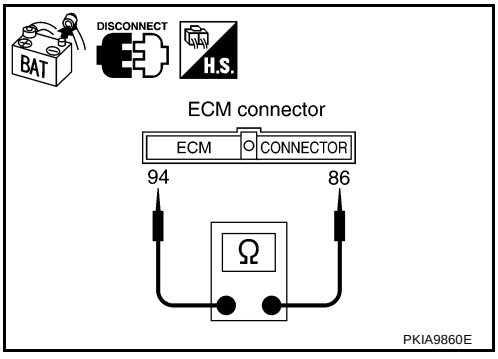
OK or NG

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).

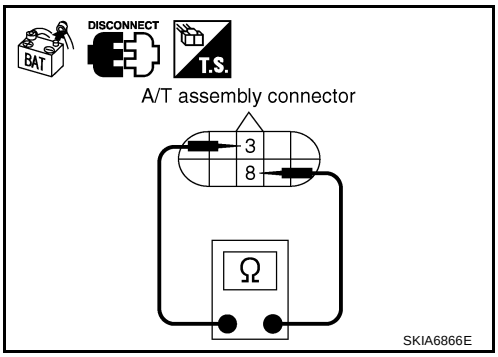
OK or NG

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.

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.

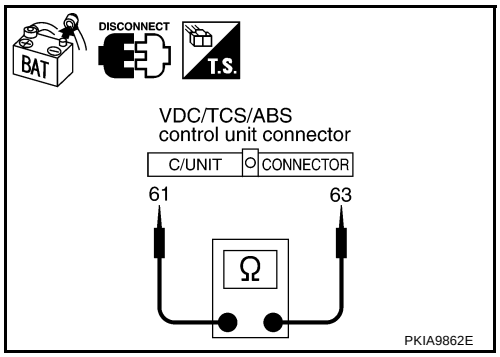
2. CHECK HARNESS FOR OPEN CIRCUIT

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 data link connector.



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.

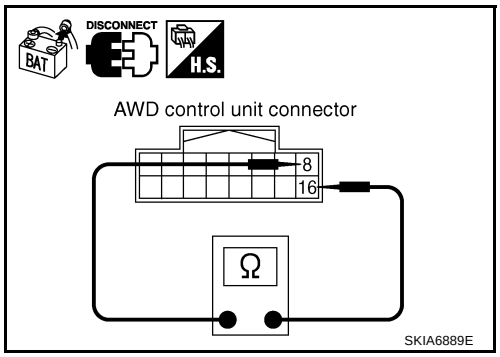
2. CHECK HARNESS FOR OPEN CIRCUIT

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).

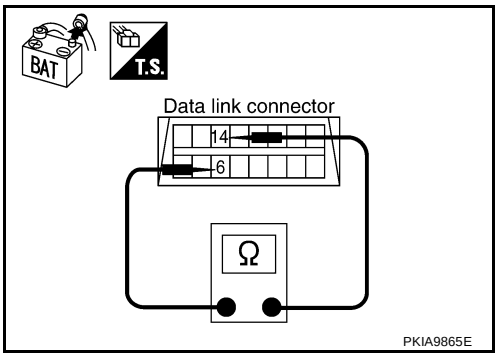
OK or NG

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).

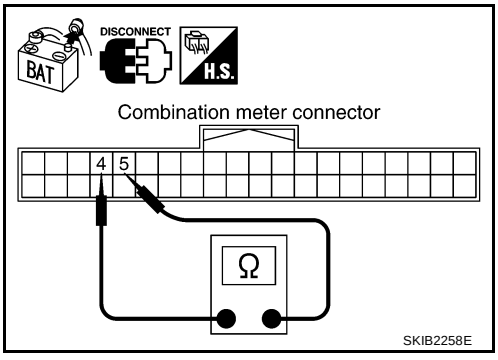
OK or NG

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).

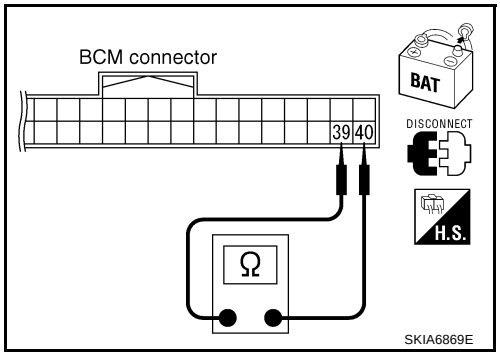
OK or NG

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).

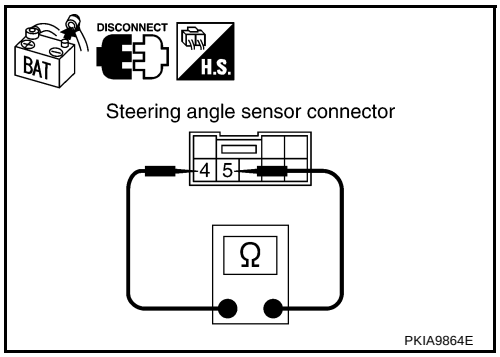
OK or NG

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.

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 connector
- Harness connector B2
- Harness connector E106
- Harness connector M12
- Harness connector B1

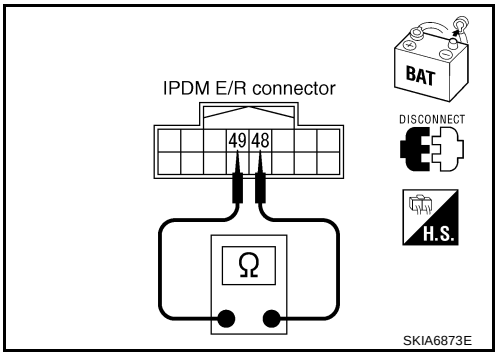
OK or NG

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

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

OK or NG

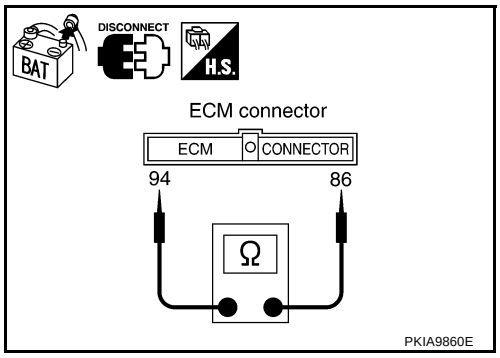
OK >> GO TO 2.
NG >> Repair terminal or connector.

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.

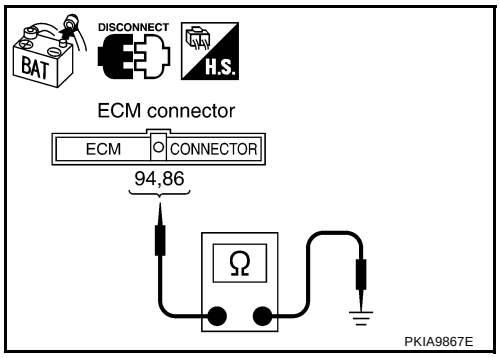
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

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.

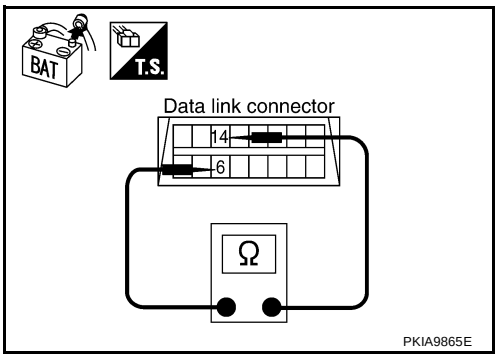
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

4. CHECK HARNESS FOR SHORT CIRCUIT

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

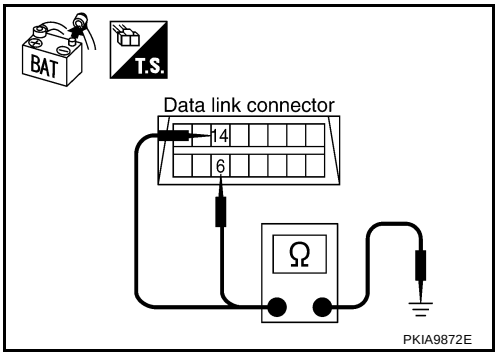
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M72
- Harness between data link connector and VDC/TCS/ABS control unit
- Harness between data link connector and AWD control unit
- Harness between data link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

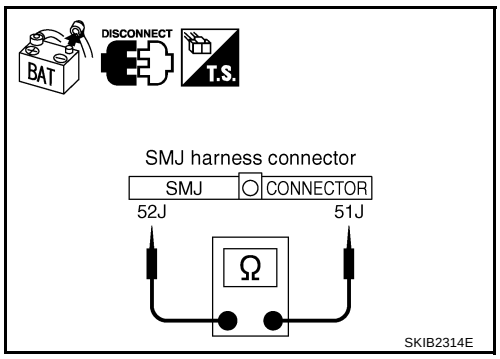
6. CHECK HARNESS FOR SHORT CIRCUIT

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.



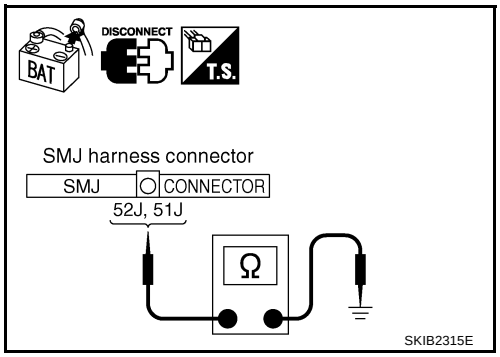
7. CHECK HARNESS FOR SHORT CIRCUIT

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.



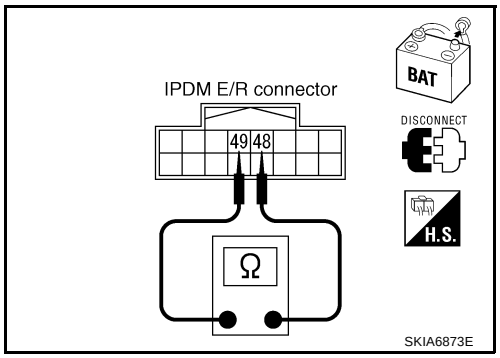
8. CHECK HARNESS FOR SHORT CIRCUIT

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.



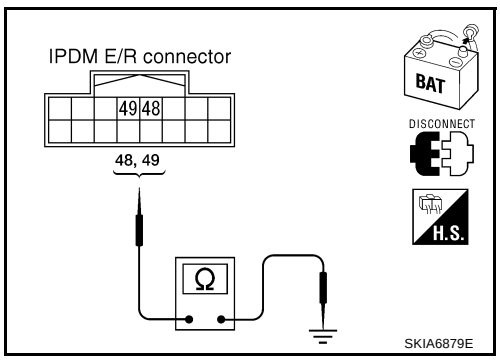
9. CHECK HARNESS FOR SHORT CIRCUIT

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.



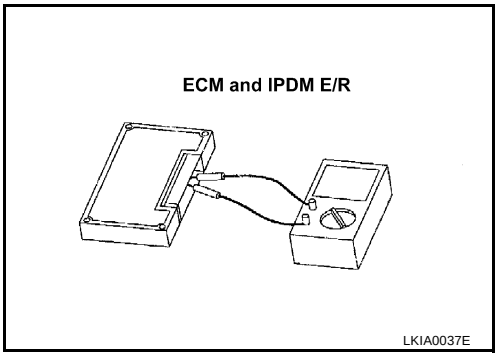
10. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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 reproduced.

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

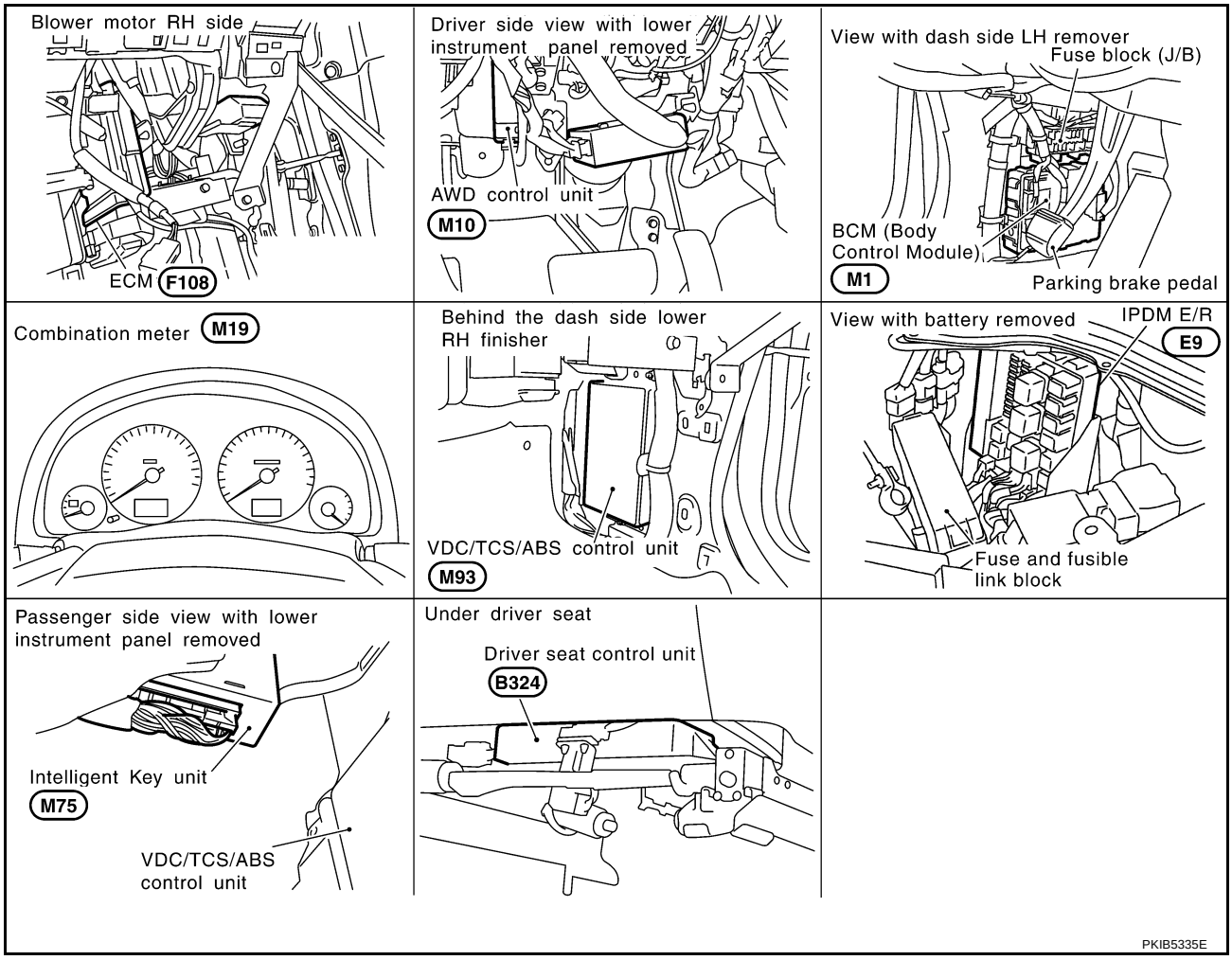
System Description

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.

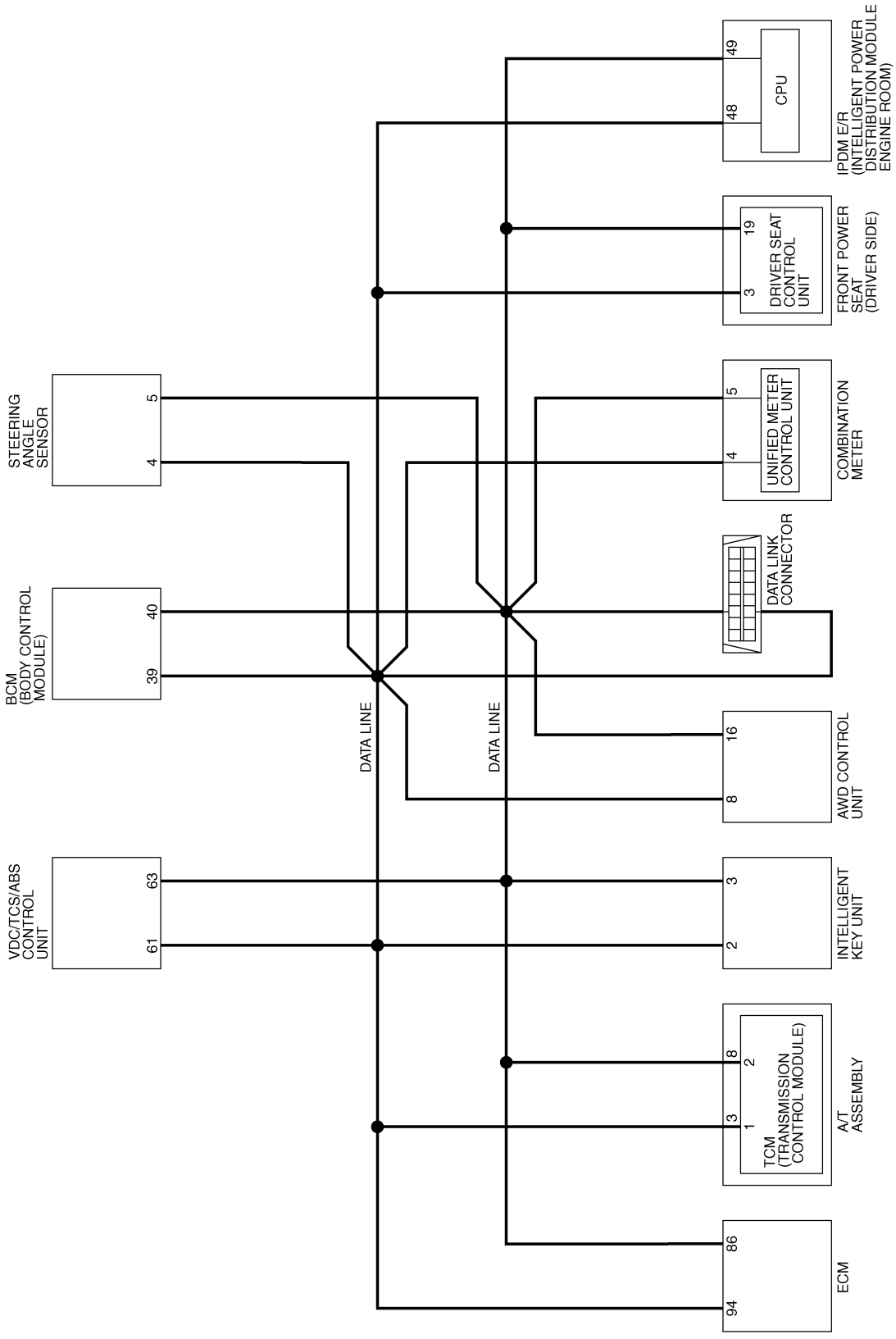
Component Parts and Harness Connector Location

AKS00CA4



Schematic

AKS00CA5

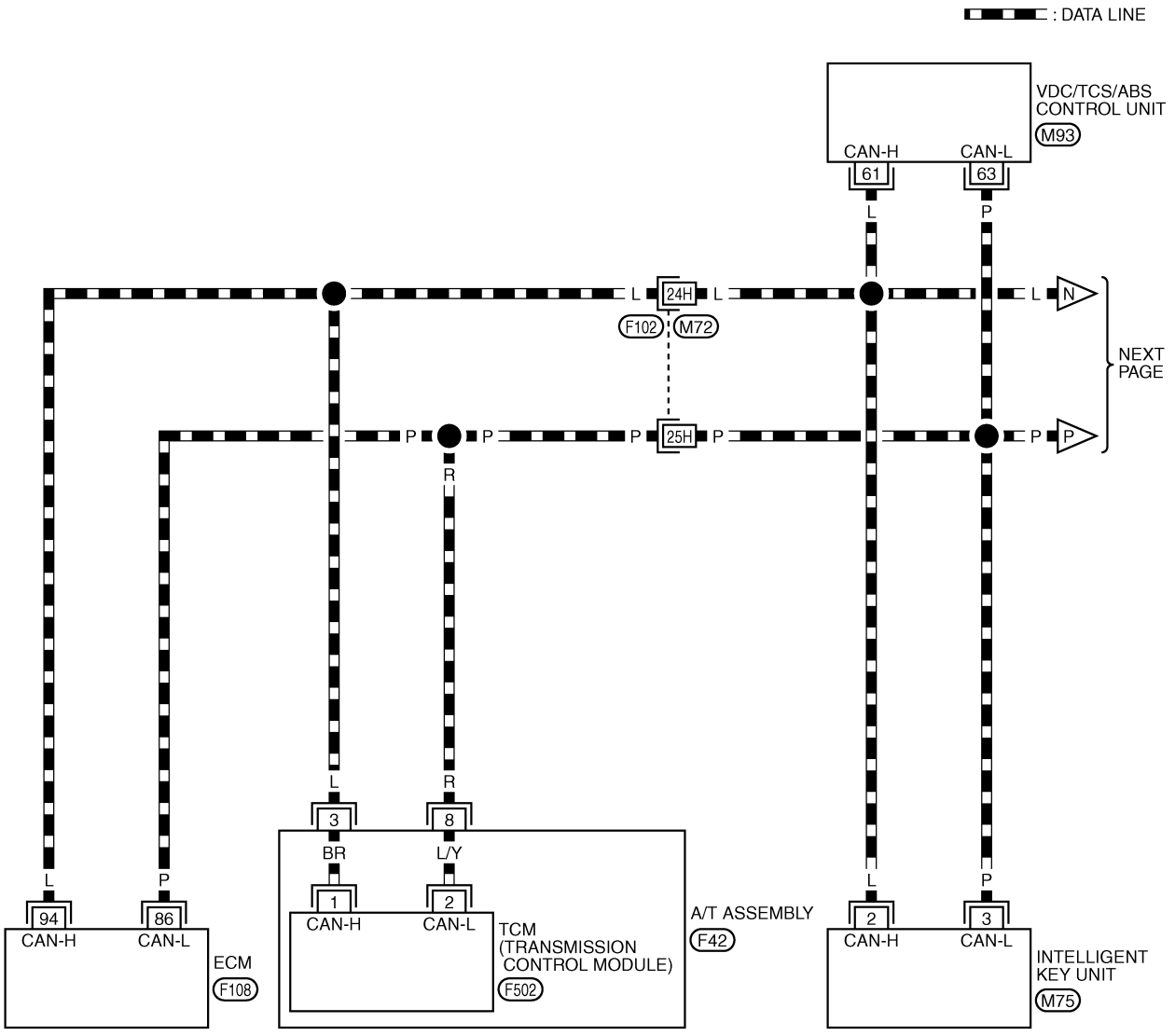


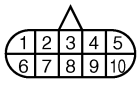
TKWM3880E

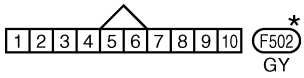
Wiring Diagram — CAN —

AKS00CA6

LAN-CAN-10





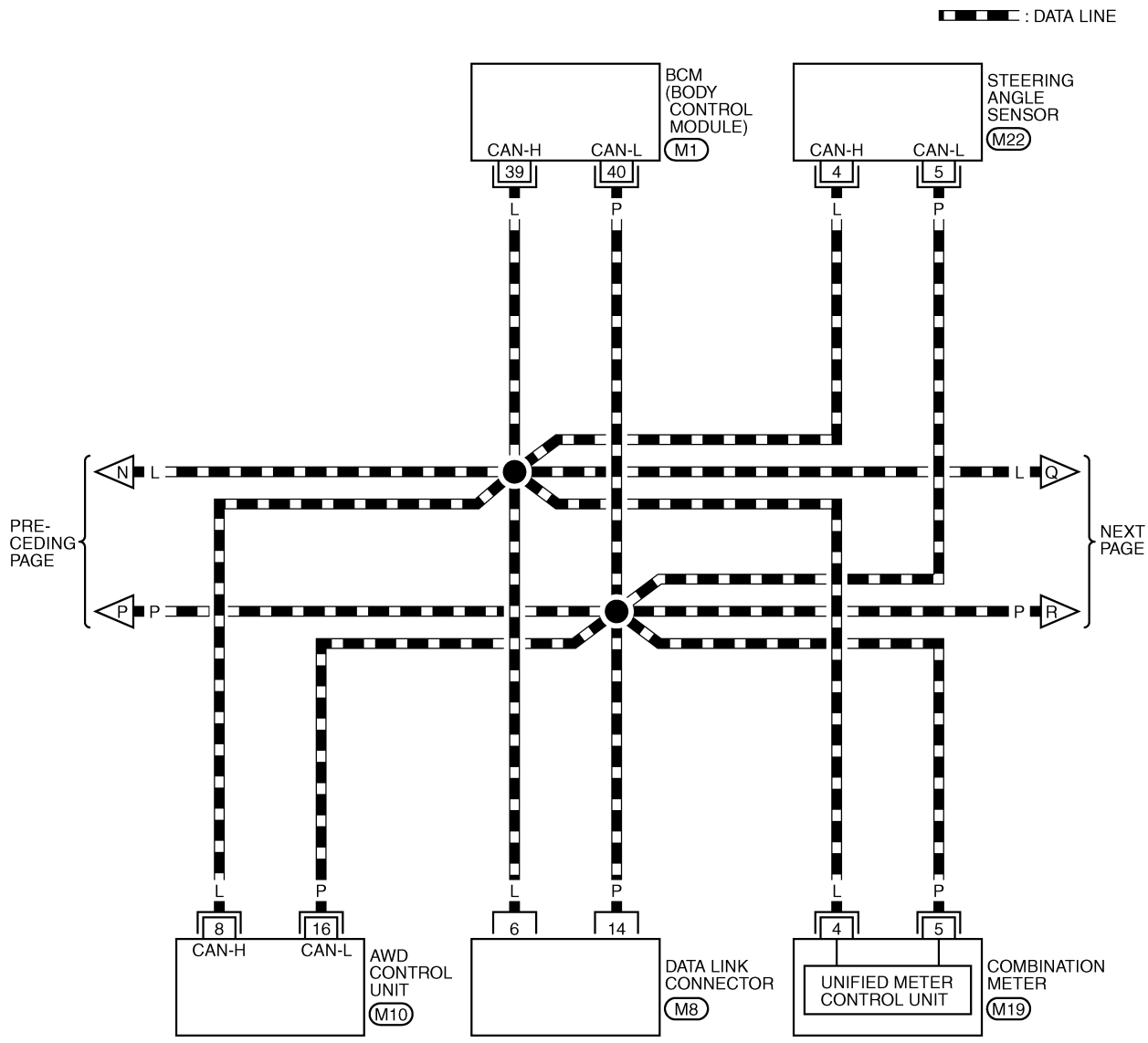


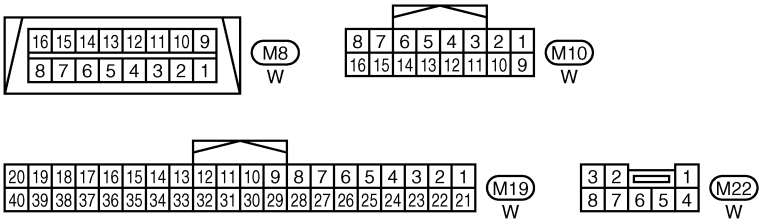
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M75, M93, F108 -ELECTRICAL UNITS

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

TKWM3881E

LAN-CAN-11



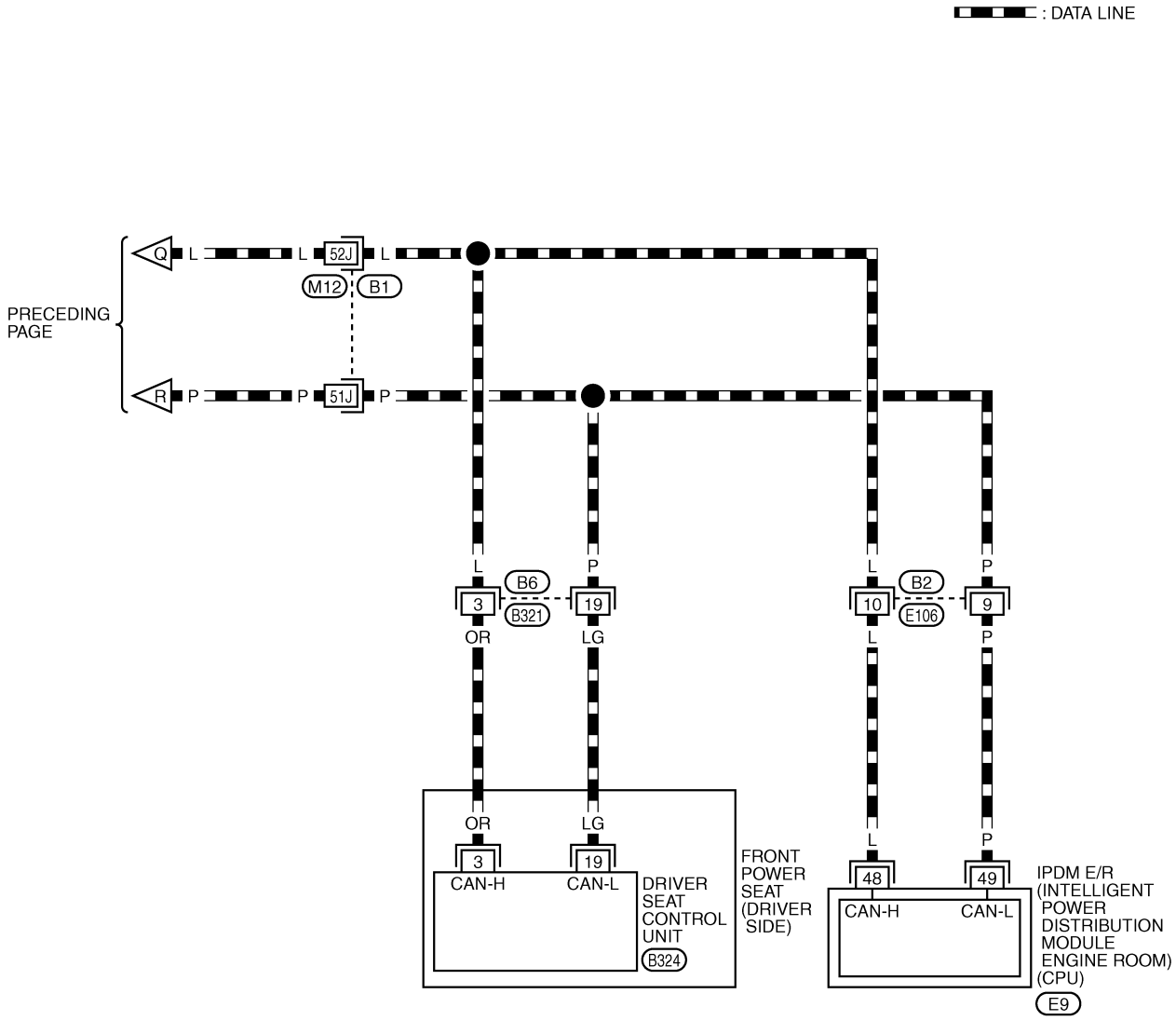


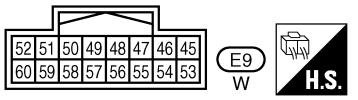
REFER TO THE FOLLOWING.

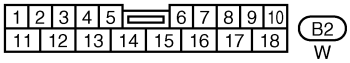
M1 -ELECTRICAL UNITS

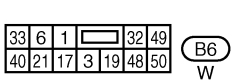
TKWM2475E

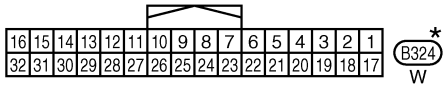
LAN-CAN-12











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

REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3882E

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	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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

PKIC4385E

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

PKIC4160E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

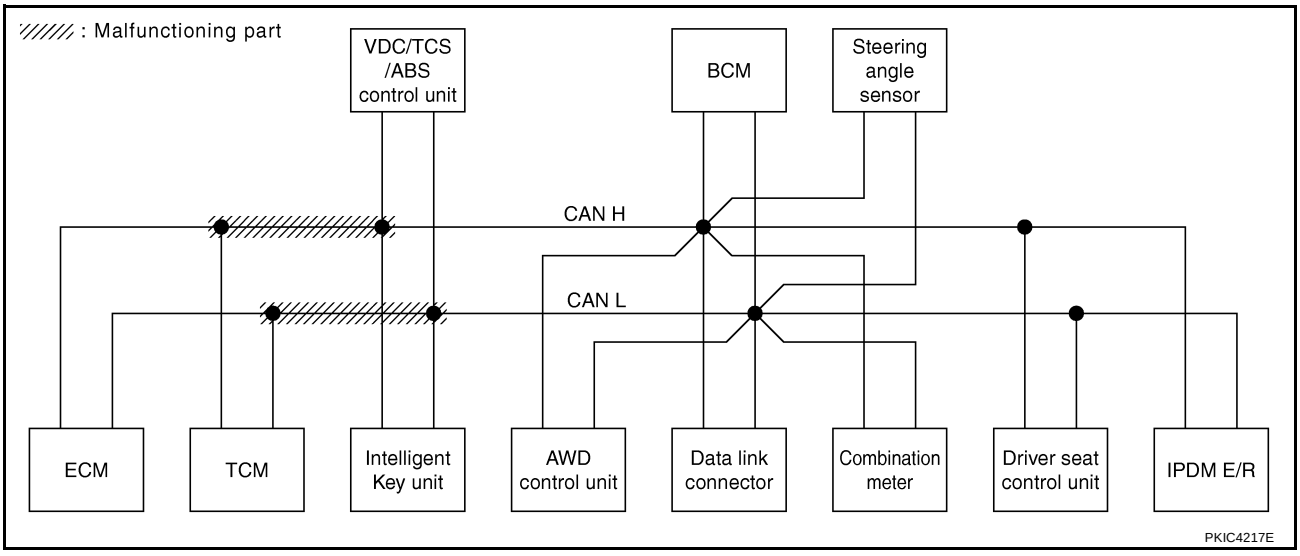
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and VDC/TCS/ABS control unit. Refer to LAN-143, "Inspection Between TCM 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	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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) ✓	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	—	—	—	UNKWN	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	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) ✓	—

PKIC4600E

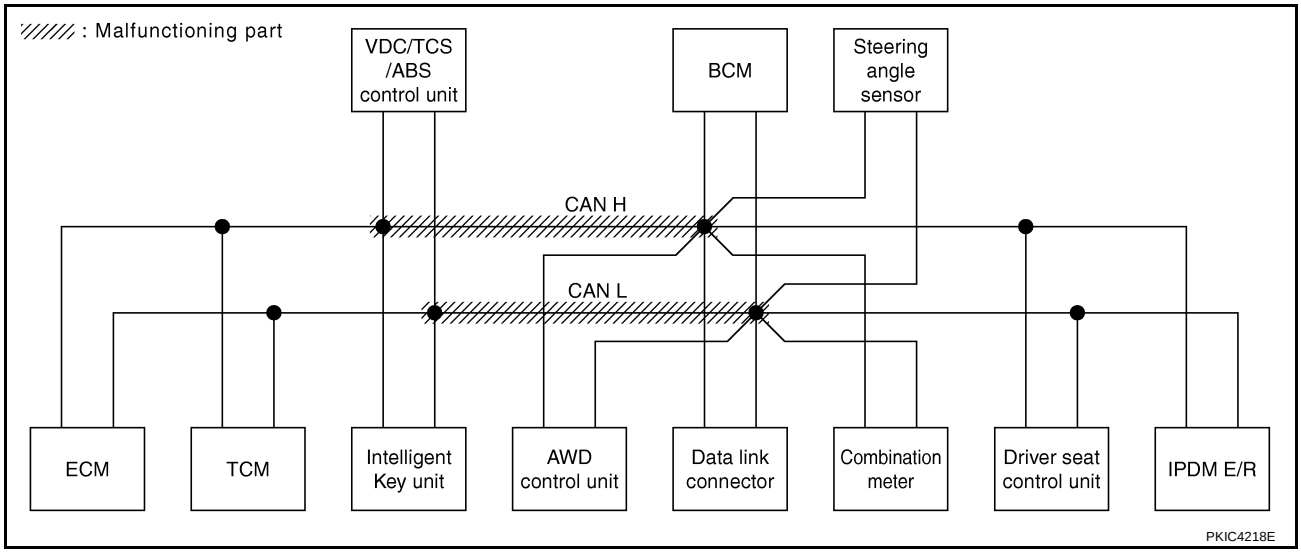


Case 2

Check harness between VDC/TCS/ABS control unit and data link connector. Refer to LAN-144, "Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit" .

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

PKIC4601E

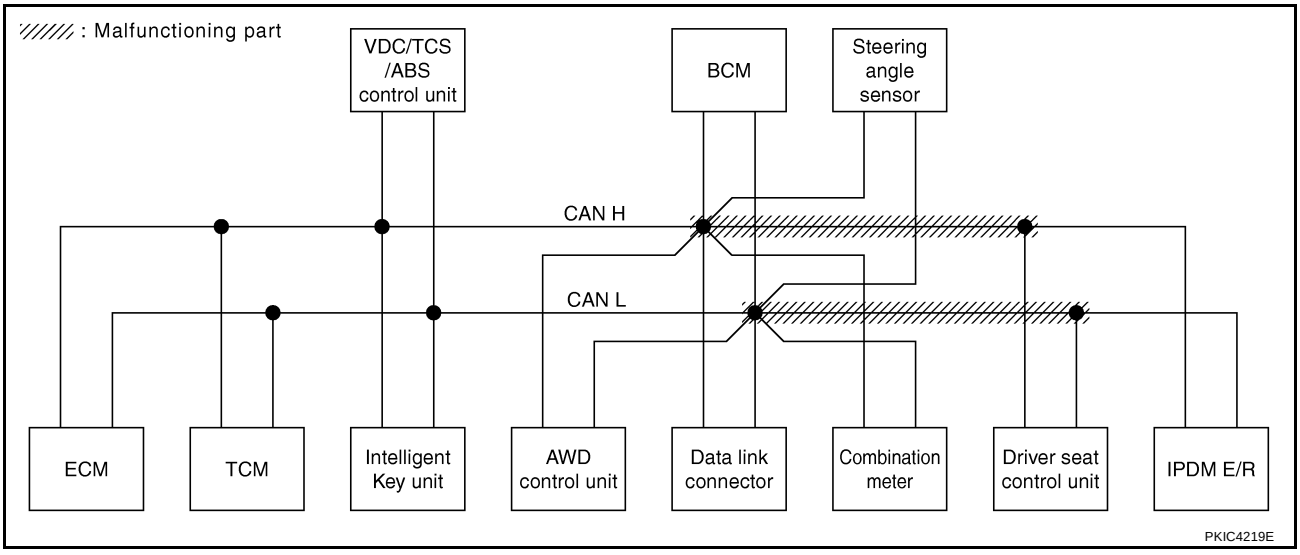


Case 3

Check harness between data link connector and driver seat control unit. Refer to LAN-145, "Inspection Between Data Link Connector and Driver Seat Control Unit Circuit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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) ✓	—

PKIC4602E

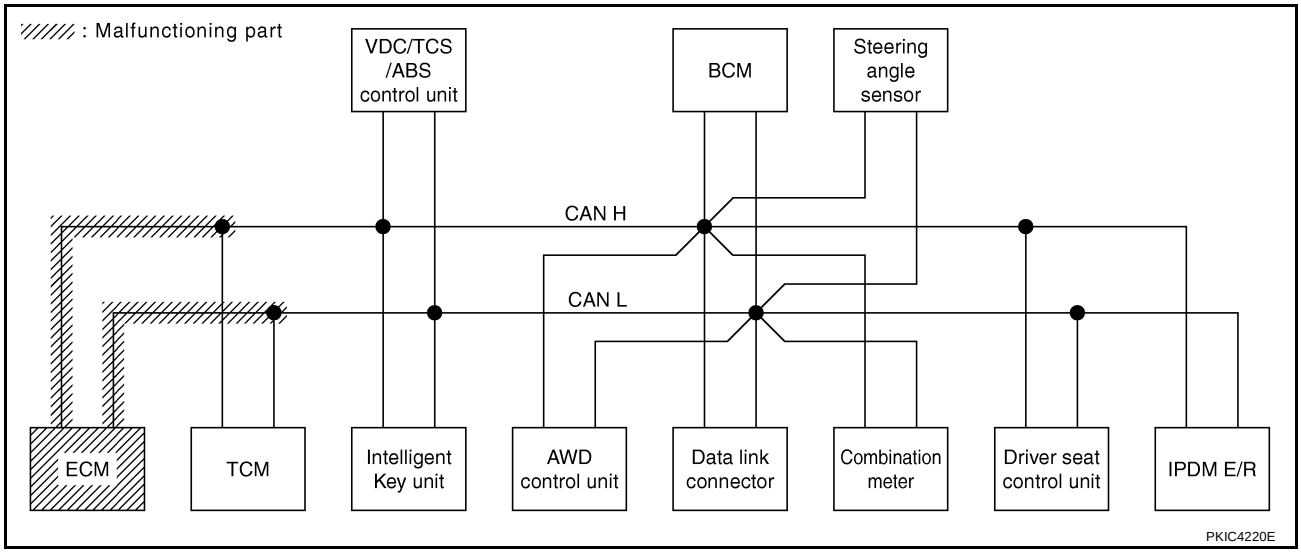


Case 4

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4603E

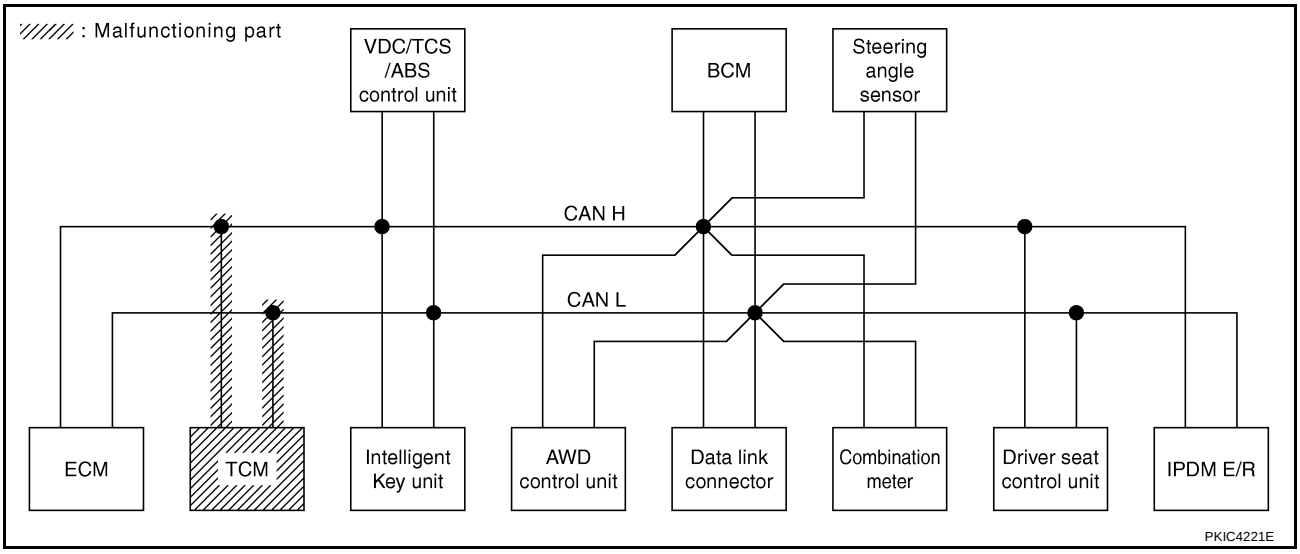


Case 5

Check TCM circuit. Refer to LAN-146, "TCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4604E

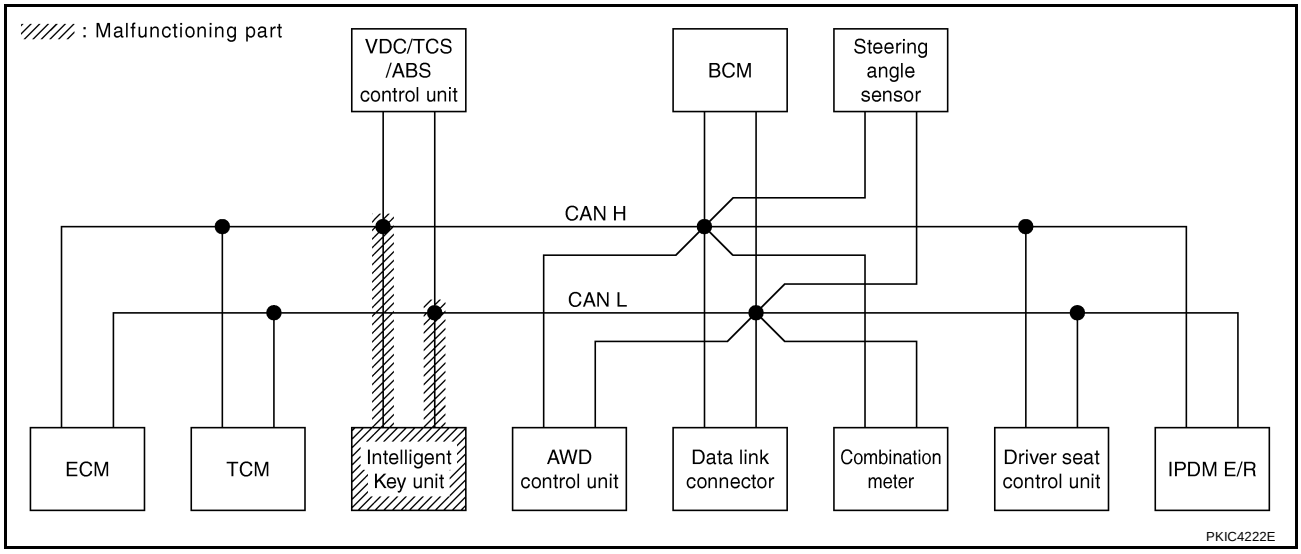


Case 6

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	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4605E

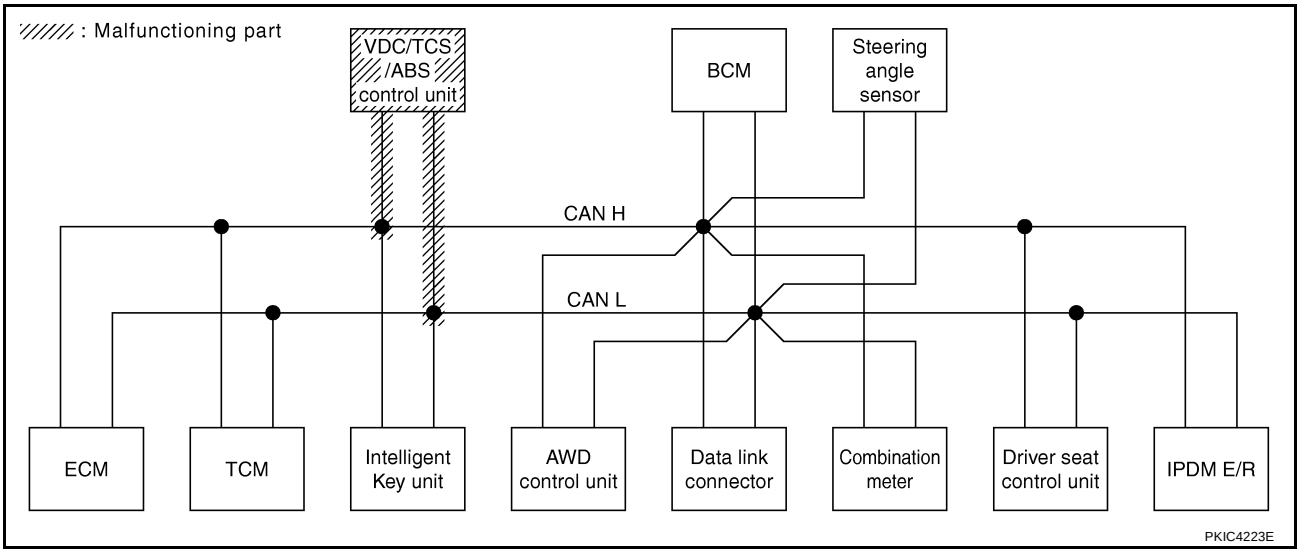


Case 7

Check VDC/TCS/ABS control unit circuit. Refer to LAN-147, "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	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4606E

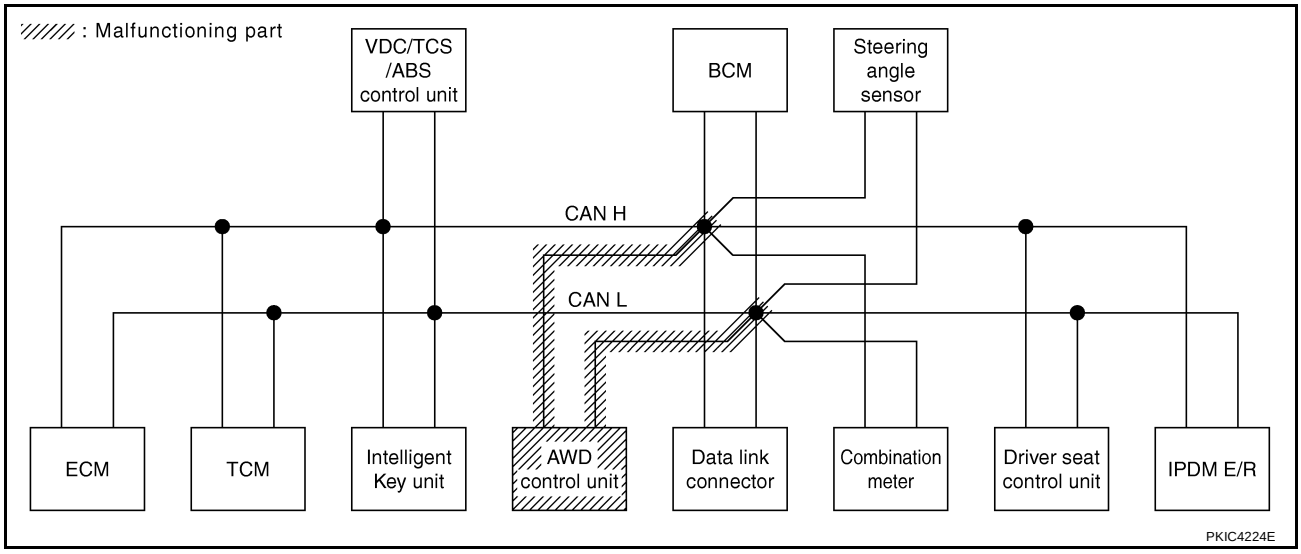


Case 8

Check AWD control unit circuit. Refer to LAN-147, "AWD Control Unit Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4607E

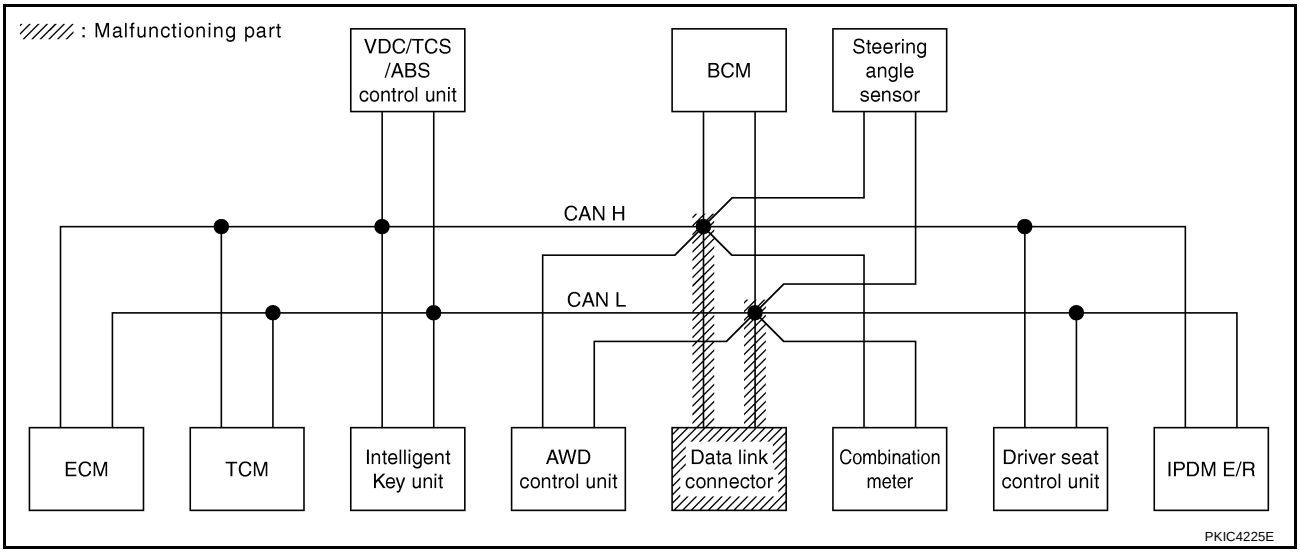


Case 9

Check data link connector circuit. Refer to LAN-148, "Data Link Connector Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4608E

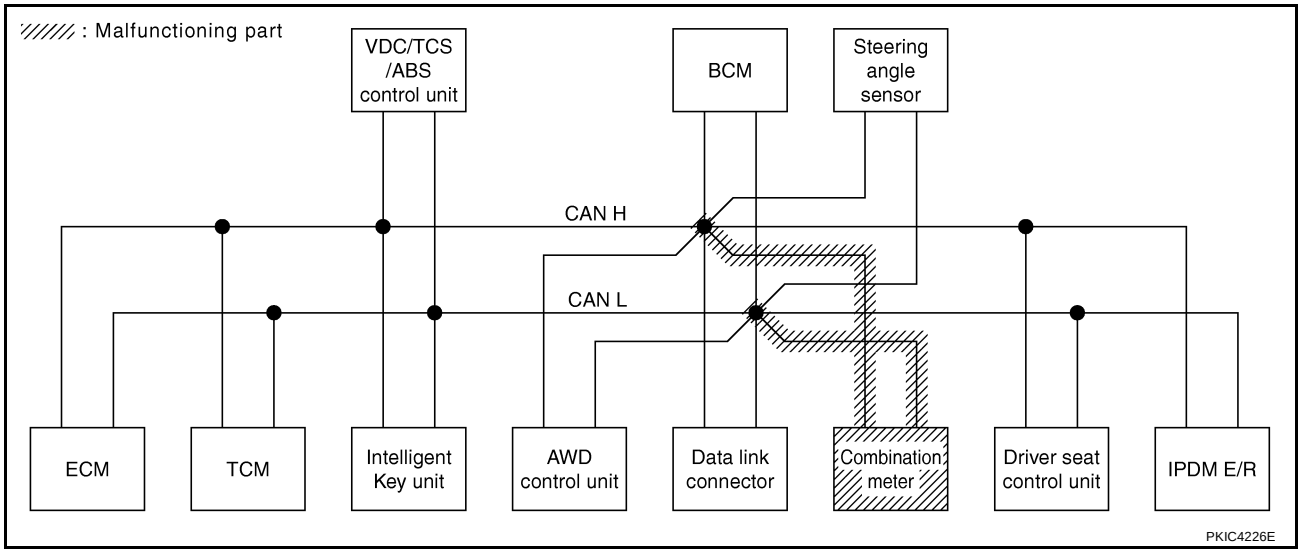


Case 10

Check combination meter circuit. Refer to LAN-148, "Combination Meter Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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) ✓	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN ✓	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4609E

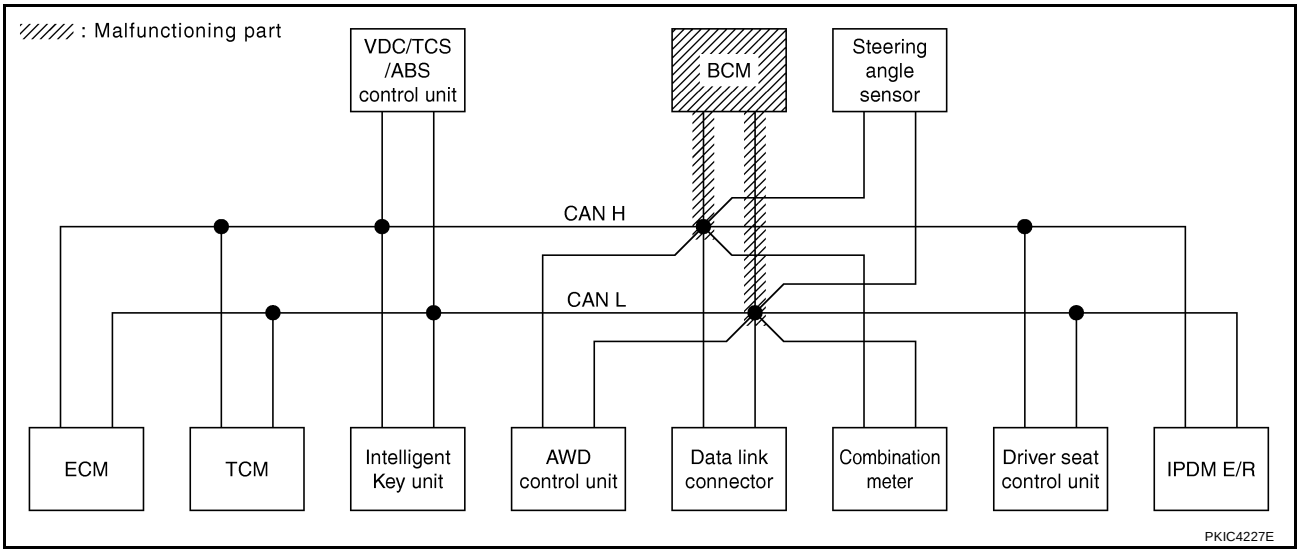


Case 11

Check BCM circuit. Refer to LAN-149, "BCM Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4610E

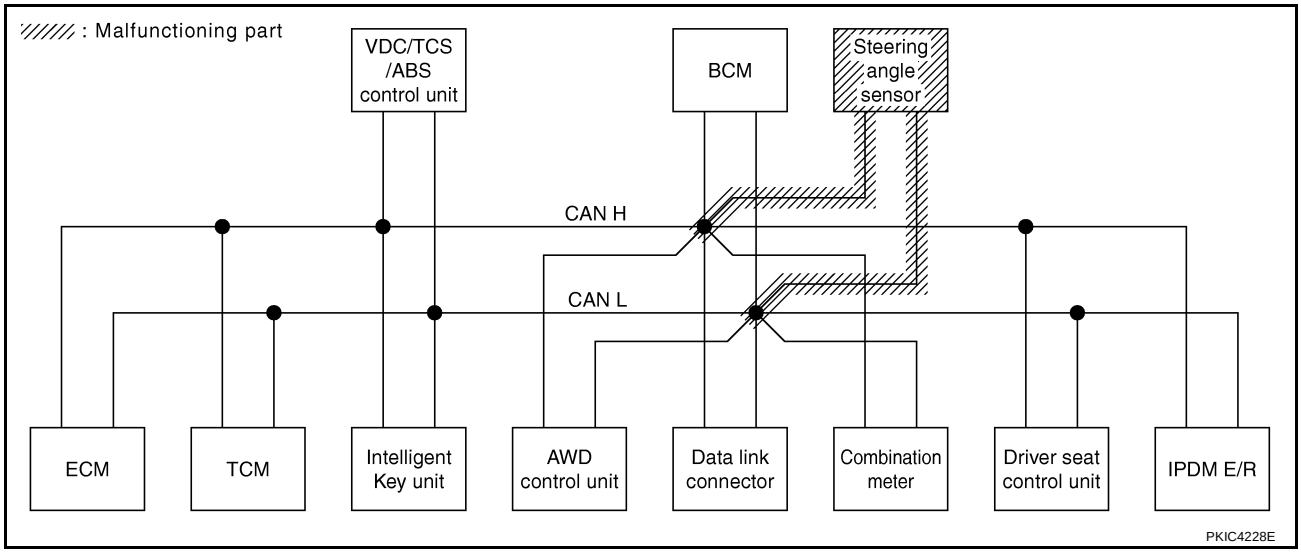


Case 12

Check steering angle sensor circuit. Refer to LAN-149, "Steering Angle Sensor Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4611E

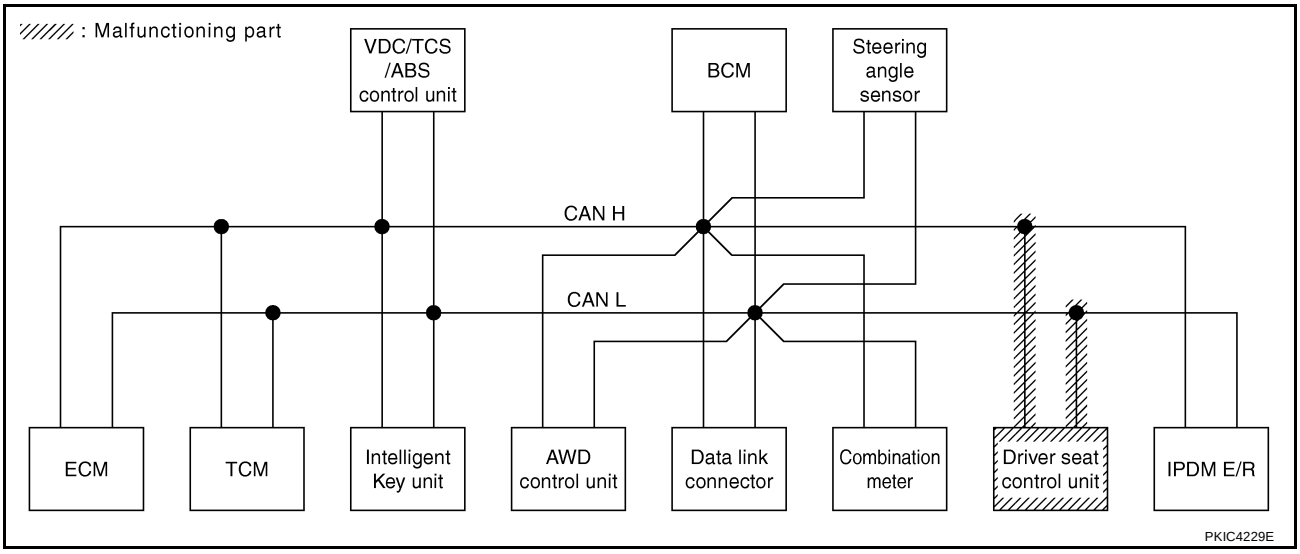


Case 13

Check driver seat control unit circuit. Refer to LAN-150, "Driver Seat Control Unit Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4612E



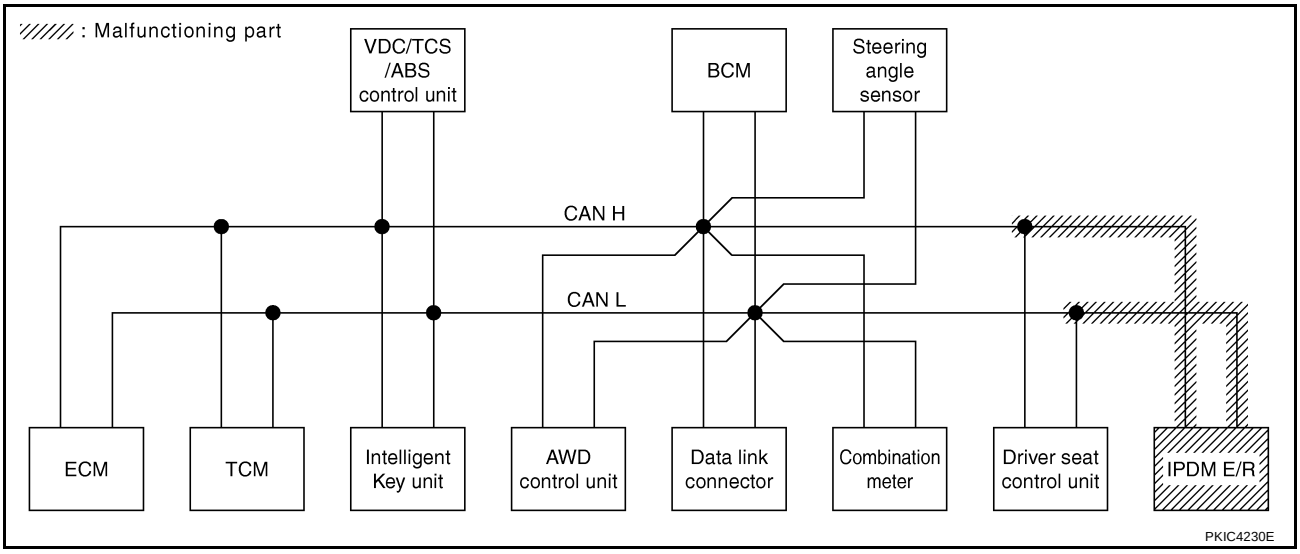
PKIC4229E

Case 14

Check IPDM E/R circuit. Refer to LAN-151, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4613E



PKIC4230E

Case 15

Check CAN communication circuit. Refer to LAN-151, "CAN Communication Circuit Inspection" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	TCM	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4614E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-156, "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	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	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)	—
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)	—

PKIC4615E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-156, "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	I-KEY	VDC/TCS /ABS	AWD/4WD /e4WD	METER /M&A	BCM /SEC	STRG	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	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
INTELLIGENT KEY	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	—	—	—	UNKWN	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	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)	—

PKIC4616E

Inspection Between TCM and VDC/TCS/ABS Control Unit Circuit

AKS00G8K

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

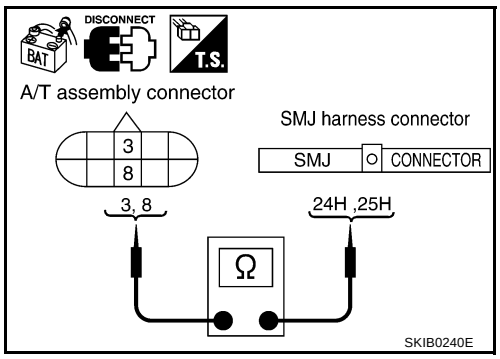
OK or NG

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.



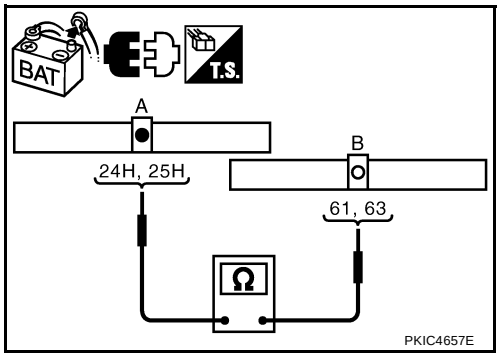
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector (A) and VDC/TCS/ABS control unit harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M72	24H (L)	M93	61 (L)	Yes
	25H (P)		63 (P)	Yes



OK or NG

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

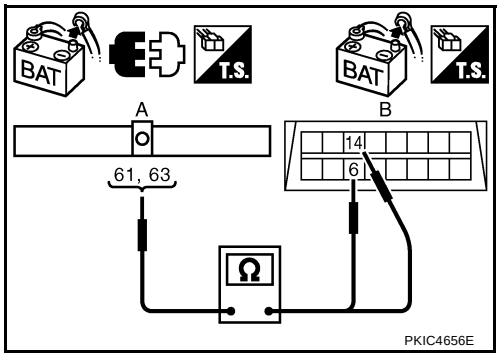
Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit

AKS00G8L

1. CHECK HARNESS FOR OPEN CIRCUIT

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 VDC/TCS/ABS control unit harness connector (A) and data link connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M93	61 (L)	M8	6 (L)	Yes
	63 (P)		14 (P)	Yes



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 Driver Seat Control Unit Circuit

AKS00G5K

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

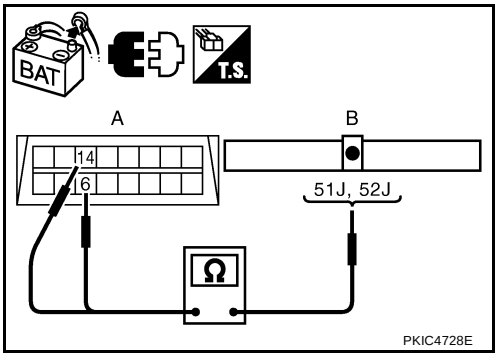
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M12.
2. Check continuity between data link connector (A) and harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M8	6 (L)	M12	52J (L)	Yes
	14 (P)		51J (P)	Yes



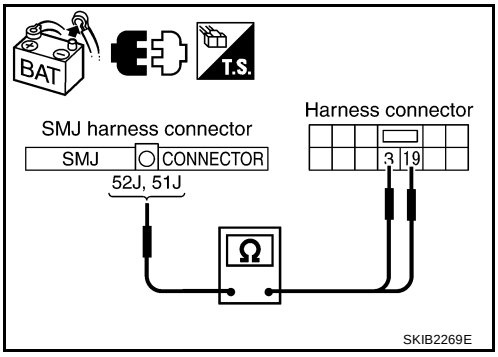
OK or NG

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).

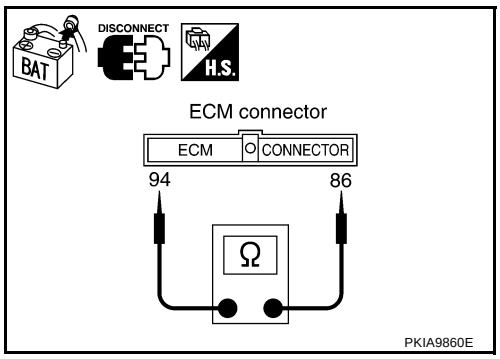
OK or NG

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).

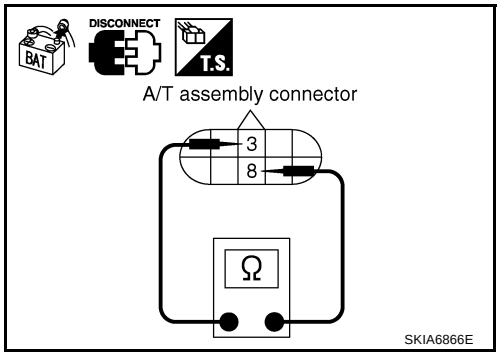
OK or NG

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.

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).

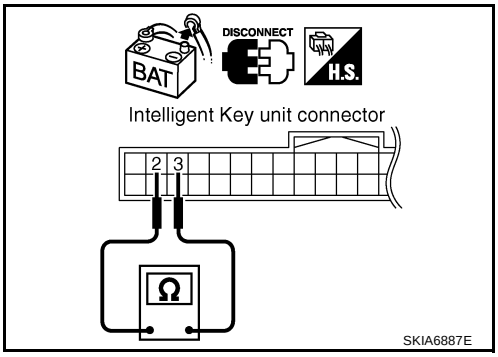
OK or NG

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).

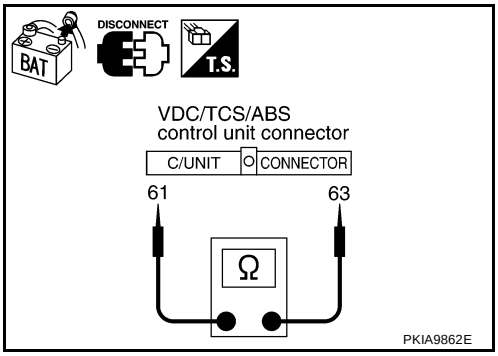
OK or NG

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 data link connector.

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.

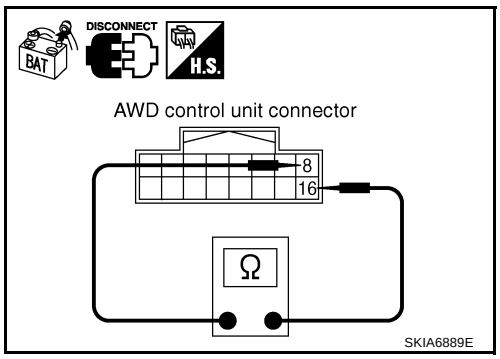
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

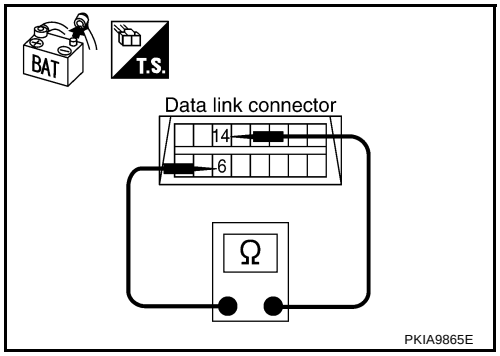
2. CHECK HARNESS FOR OPEN CIRCUIT

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).

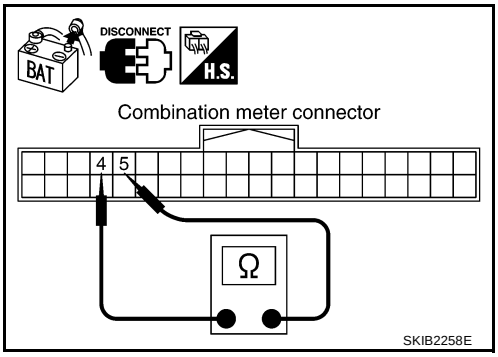
OK or NG

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).

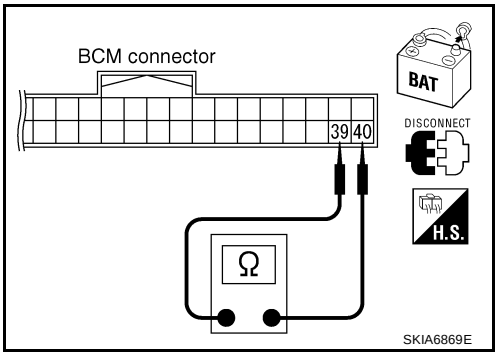
OK or NG

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).

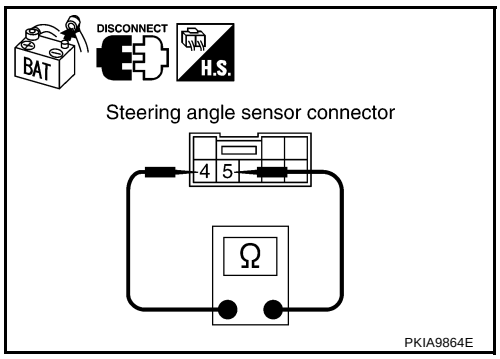
OK or NG

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.

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

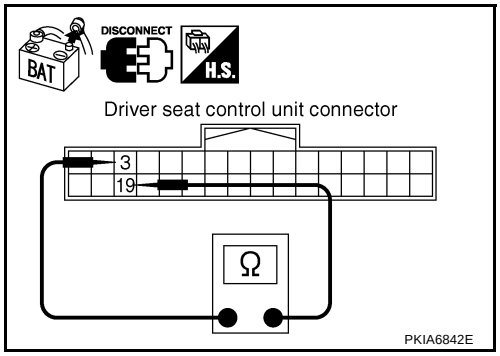
OK or NG

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 connector
- Harness connector B2
- Harness connector E106

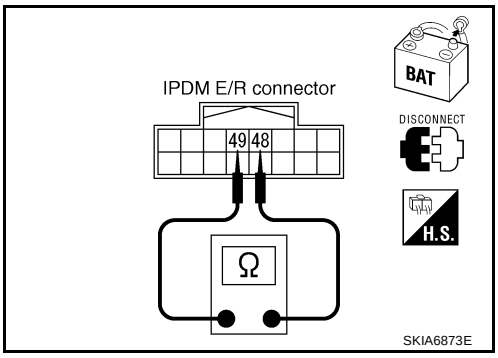
OK or NG

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

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

OK or NG

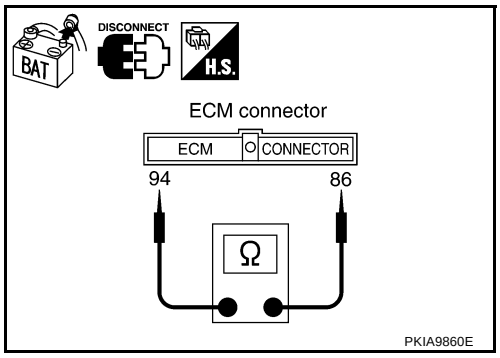
OK >> GO TO 2.
NG >> Repair terminal or connector.

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.

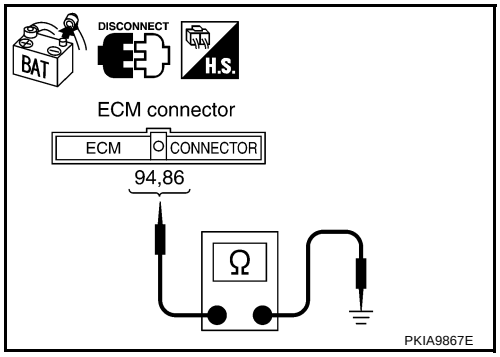
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F102

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

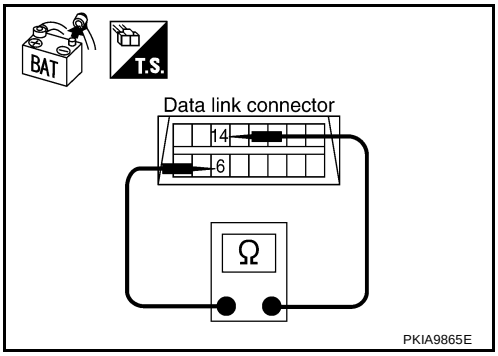
OK >> GO TO 4.

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

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



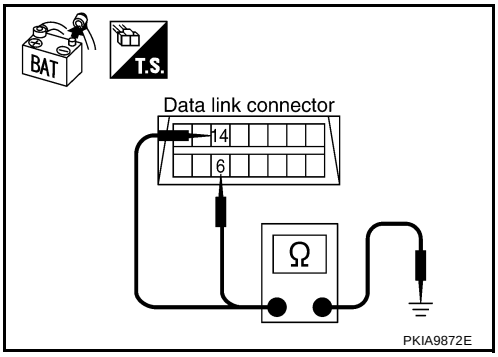
6 (L) – 14 (P) : Continuity should not exist.

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 Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- 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 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.

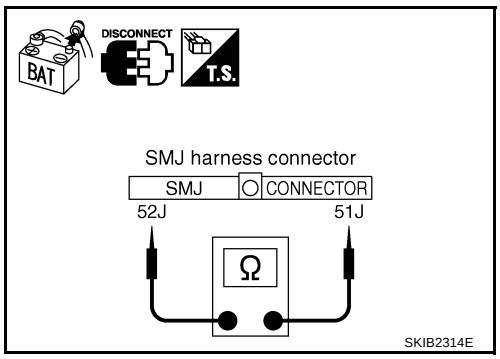
OK or NG

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 Intelligent Key unit
- Harness between data link connector and VDC/TCS/ABS control unit
- 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 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.

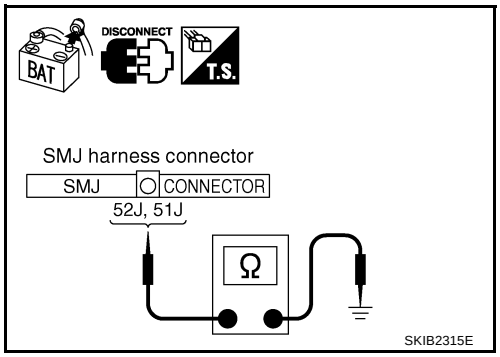
- Harness between harness connector B1 and harness connector B6
- Harness between harness connector B1 and harness connector B2

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.

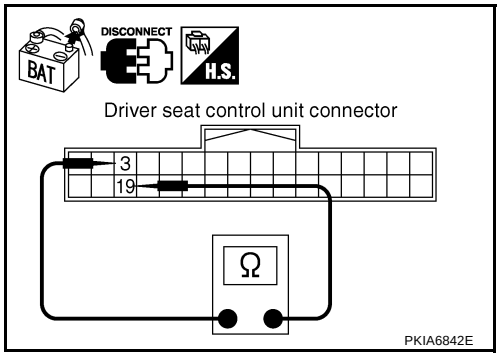
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- 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.

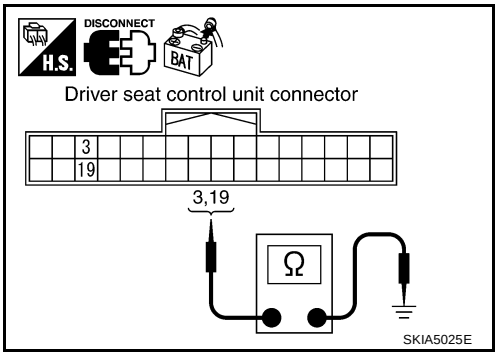
9. CHECK HARNESS FOR SHORT CIRCUIT

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.



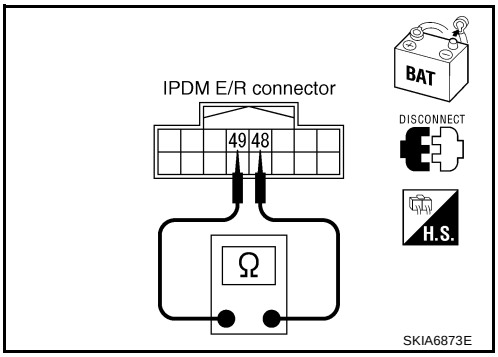
10. CHECK HARNESS FOR SHORT CIRCUIT

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 and harness connector E106.



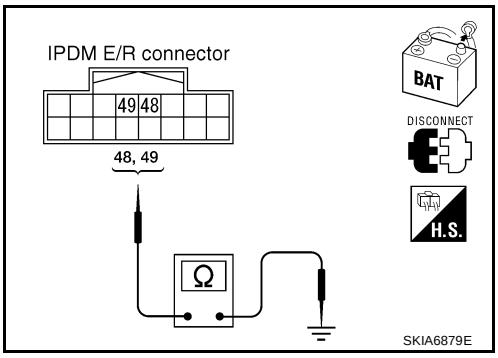
11. CHECK HARNESS FOR SHORT CIRCUIT

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.

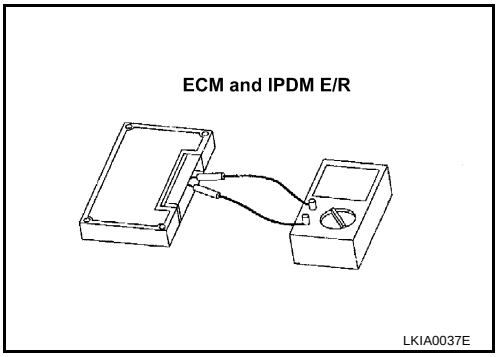
94 – 86 : Approx. 108 – 132 Ω

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 reproduced.

- A/T assembly
- Intelligent Key unit
- VDC/TCS/ABS control unit
- AWD control unit
- Combination meter
- BCM
- Steering angle sensor
- 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”" .

CAN SYSTEM (TYPE 5)

PFP:23710

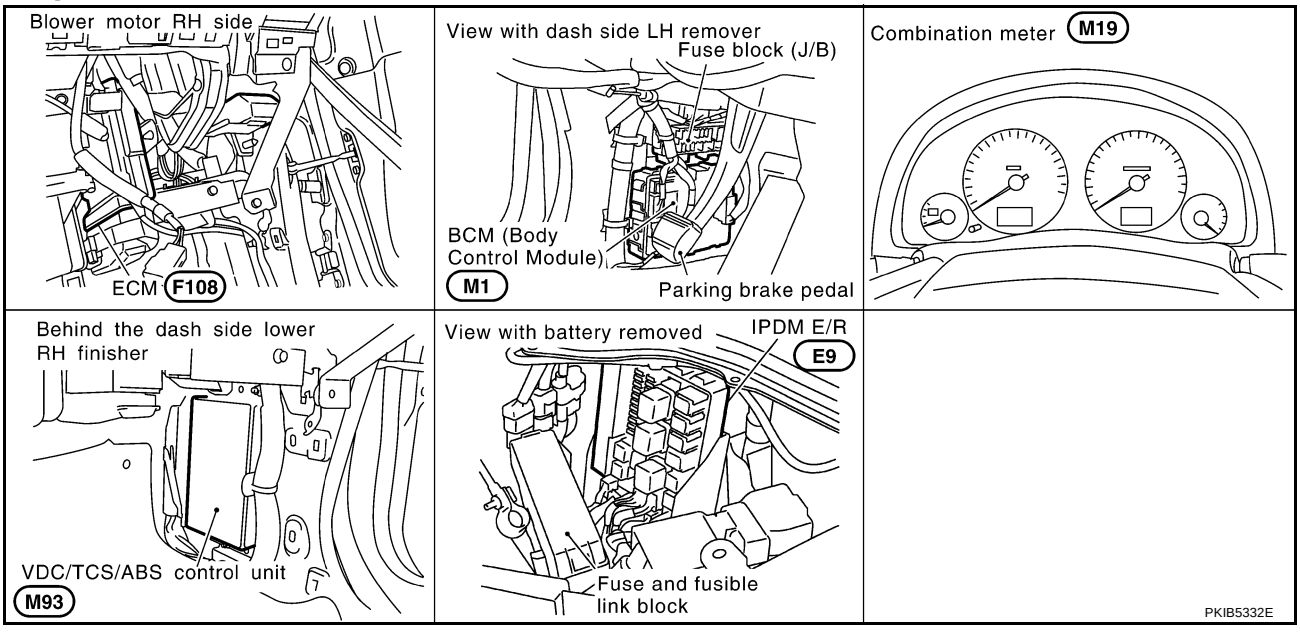
System Description

AKS00D8C

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.

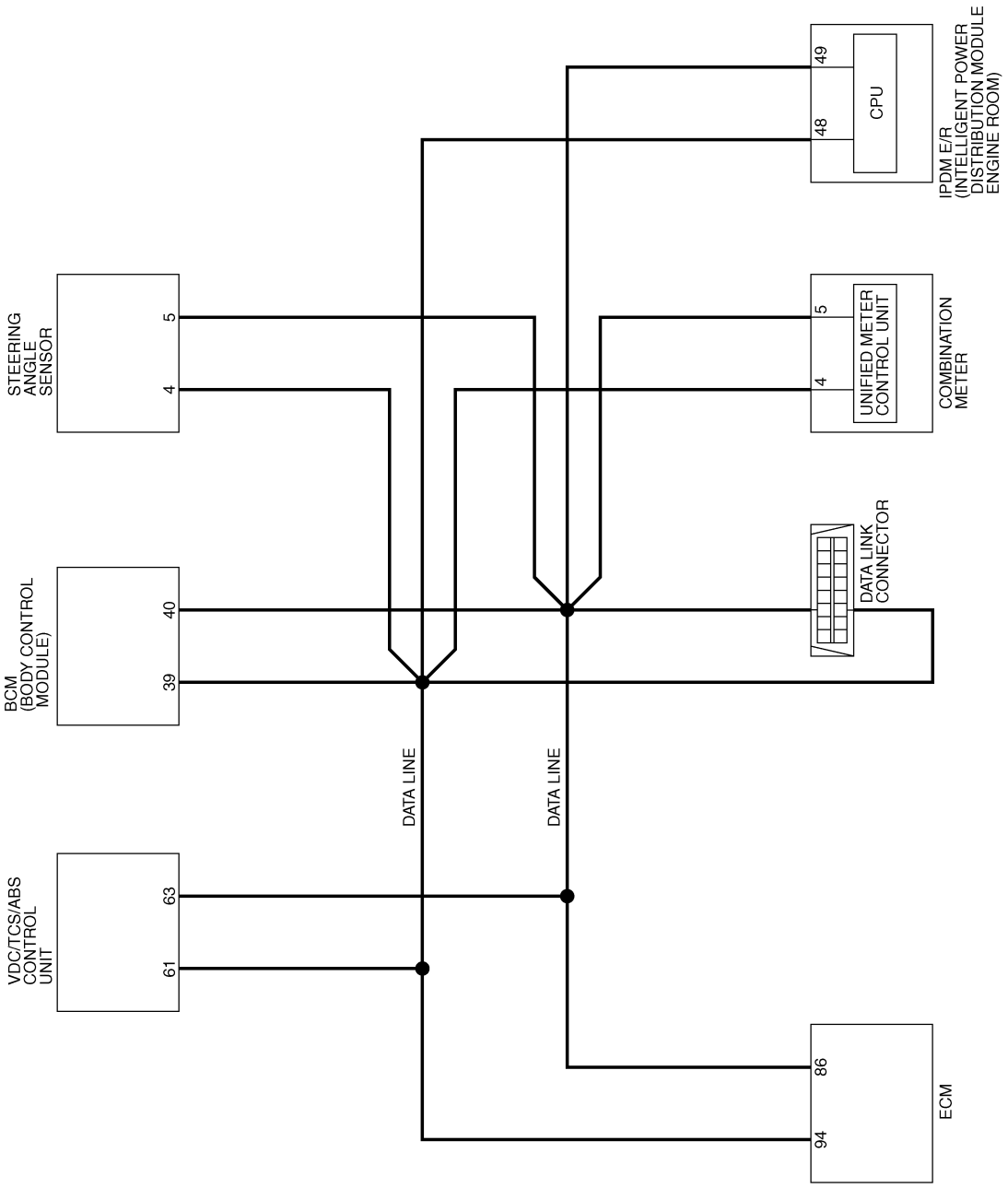
Component Parts and Harness Connector Location

AKS00D8D



Schematic

AKS00D8E

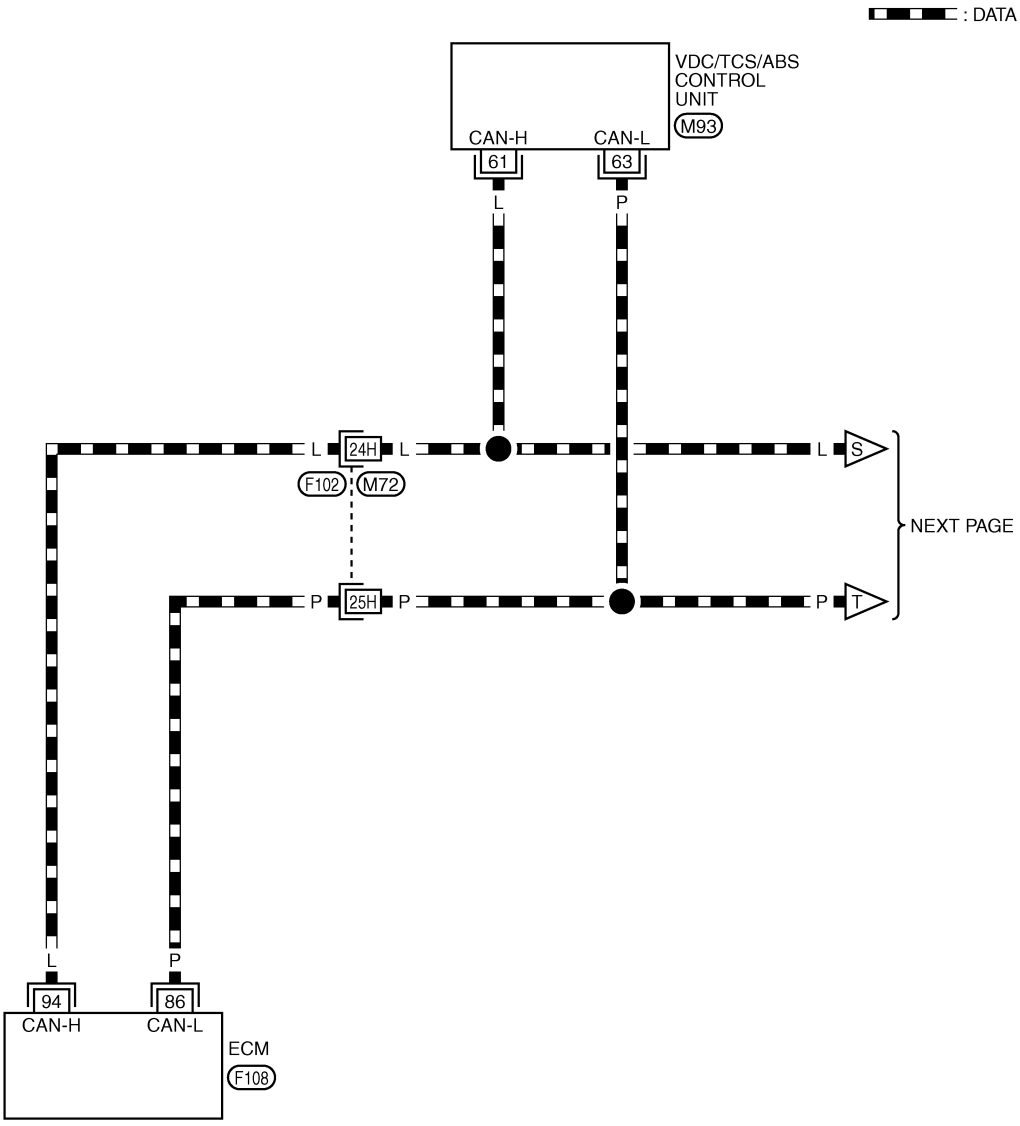


TKWM3883E

Wiring Diagram — CAN —

AKS00D8F

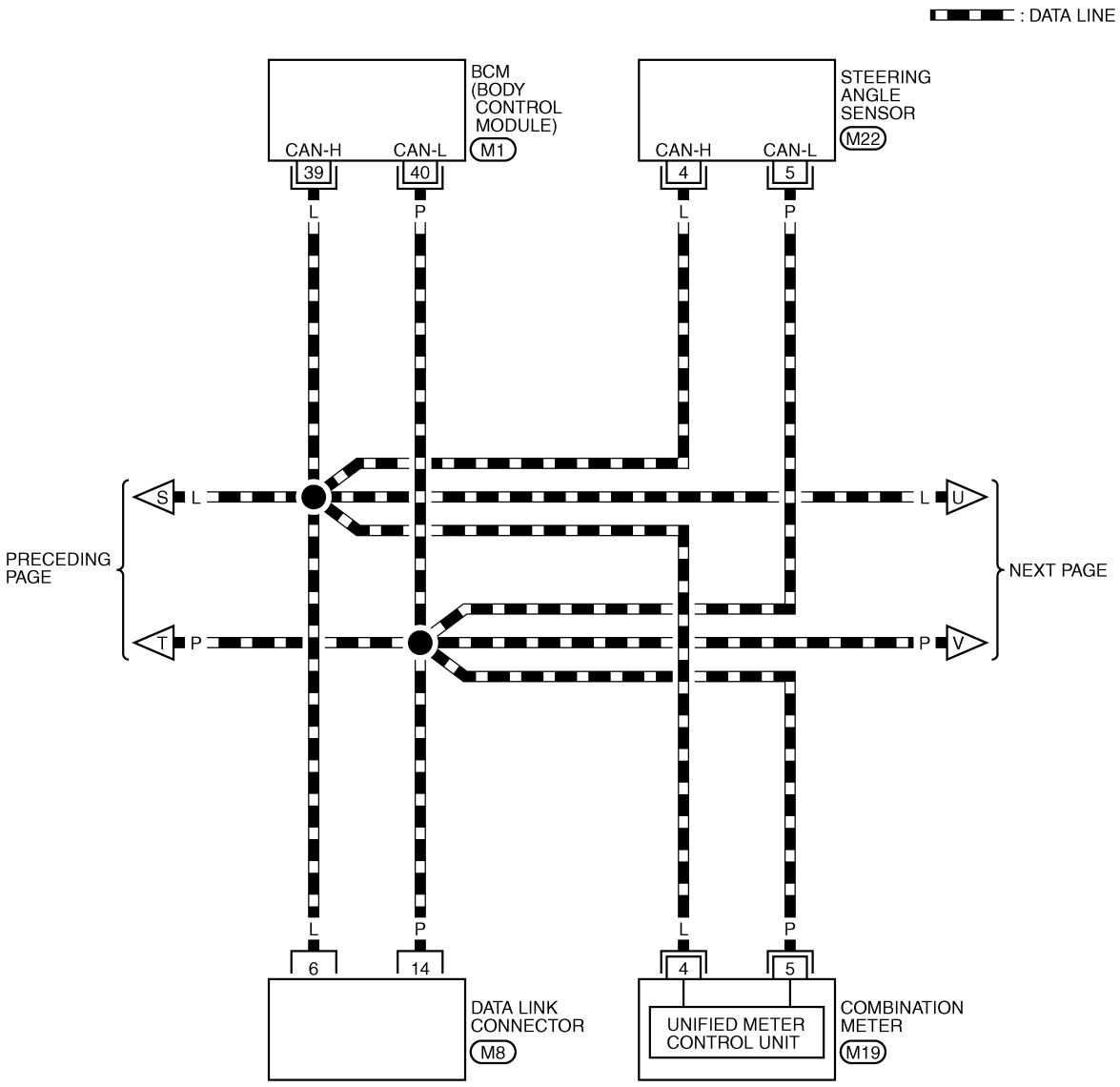
LAN-CAN-13

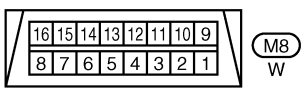


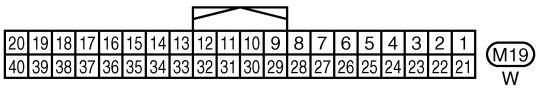
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M93, F108 -ELECTRICAL UNITS

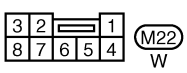
TKWM3884E

LAN-CAN-14



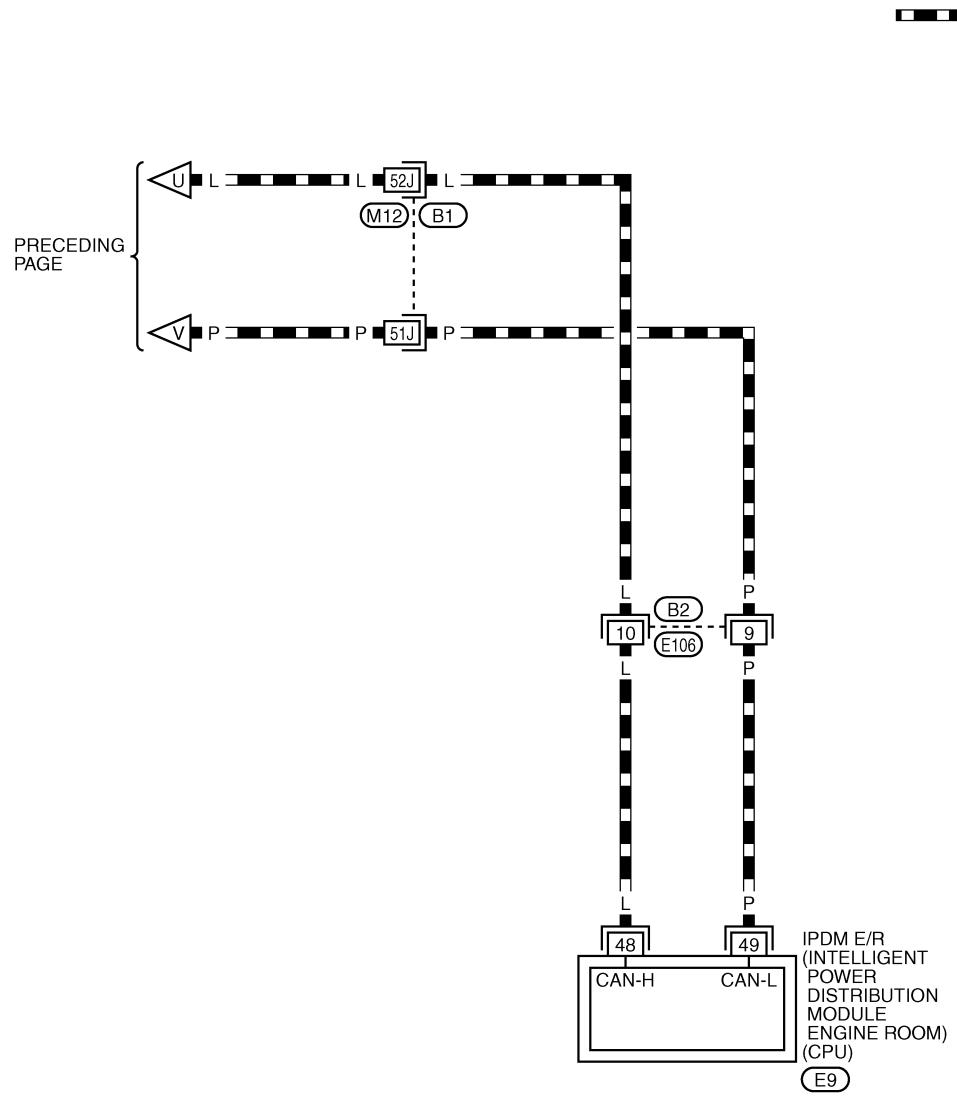


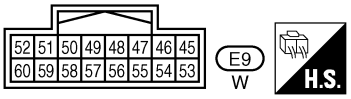


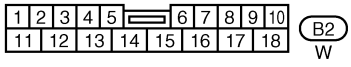


REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2747E







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

TKWM3885E

Check Sheet

AKS00D8G

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

Check sheet table

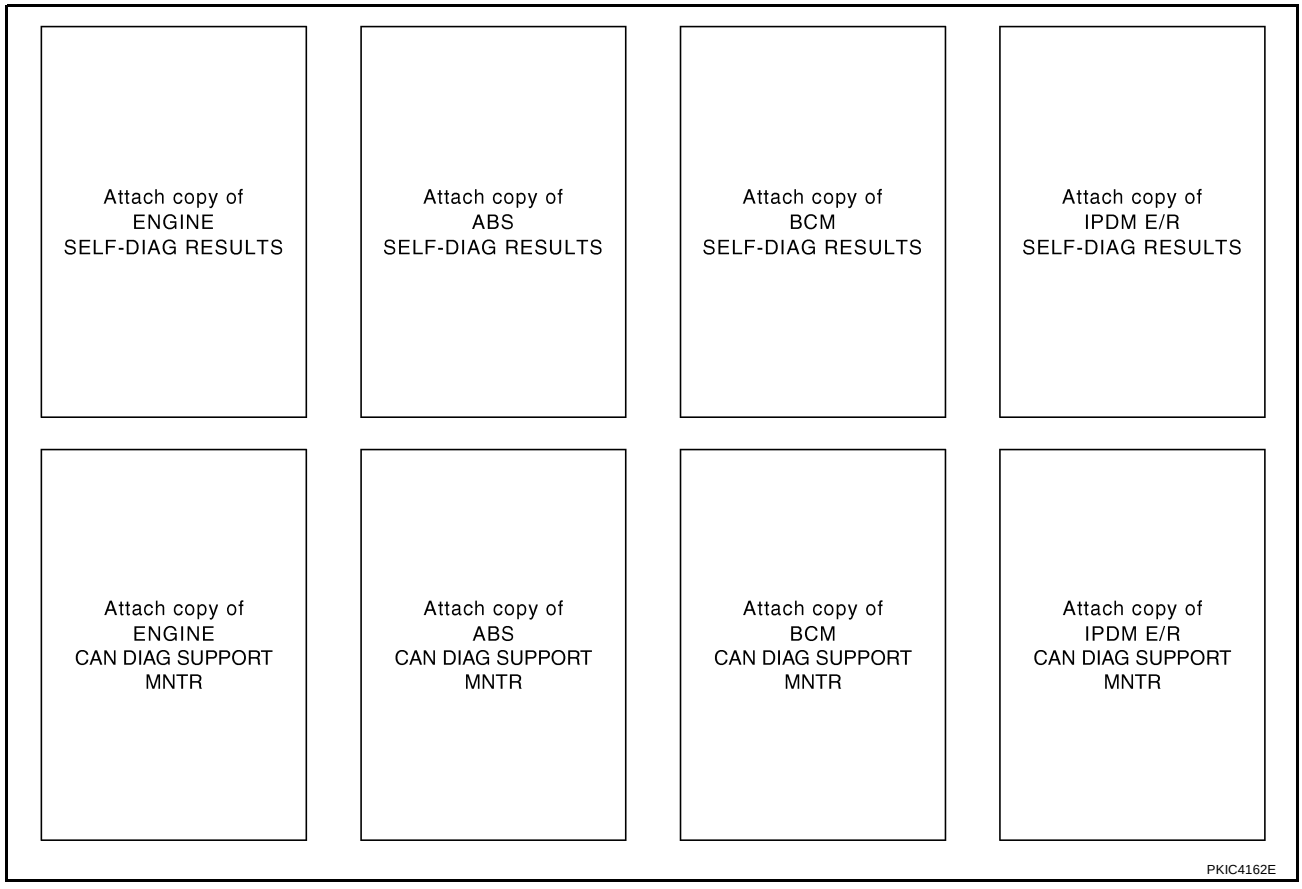
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
ABS	—	NG	UNKWN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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIC4386E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIC4162E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

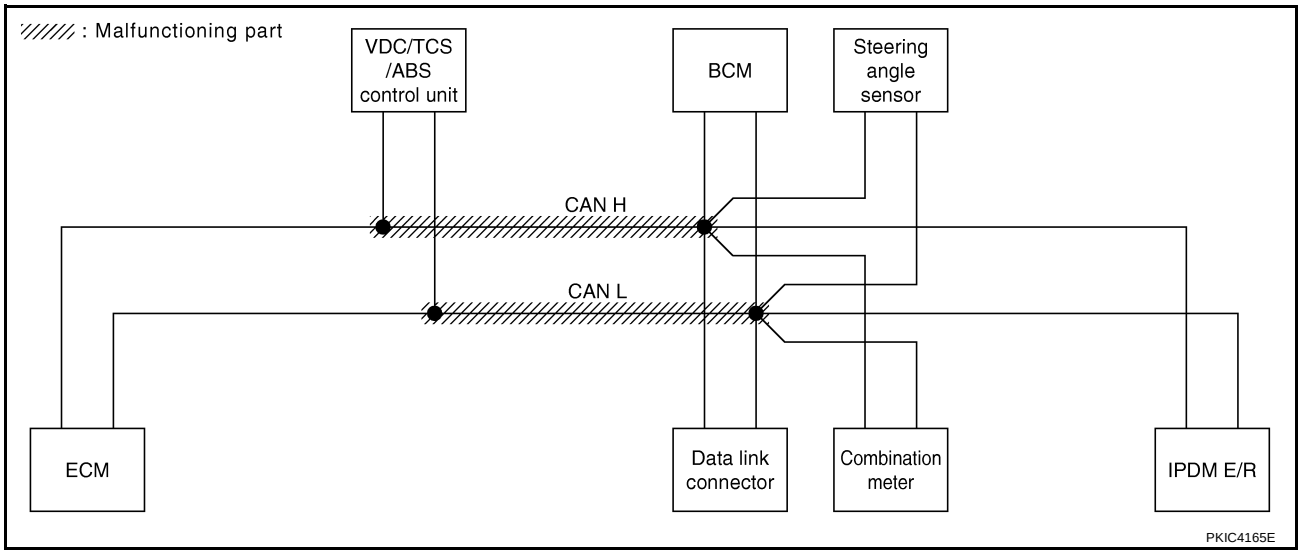
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between VDC/TCS/ABS control unit and data link connector. Refer to LAN-173, "Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit" .

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

PKIC4617E

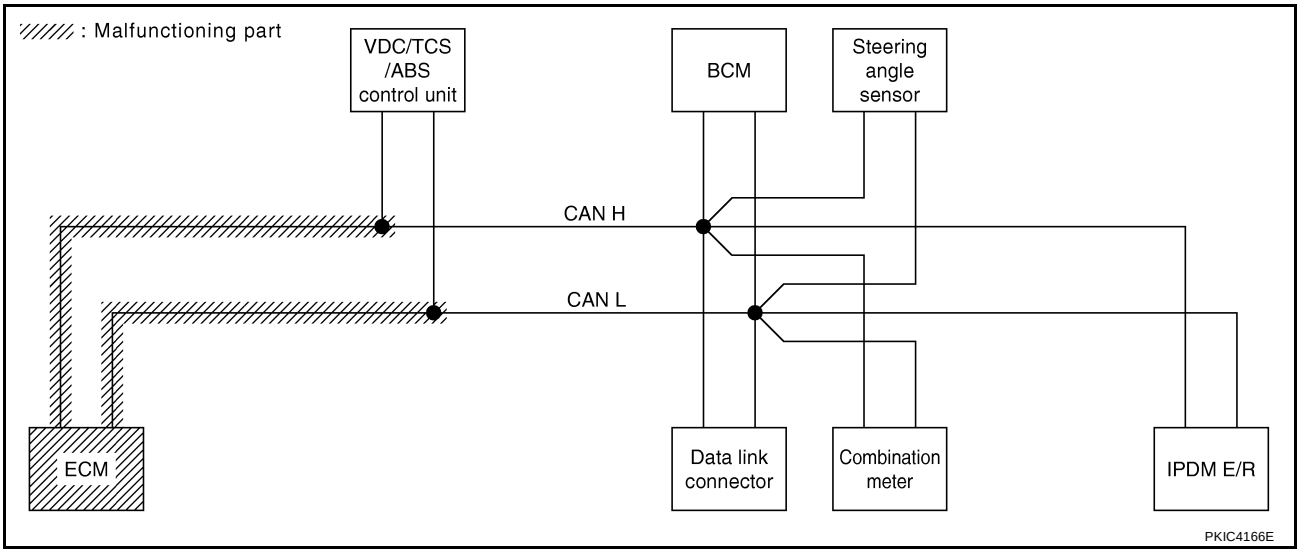


Case 2

Check ECM circuit. Refer to LAN-173, "ECM Circuit Inspection" .

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

PKIC4618E



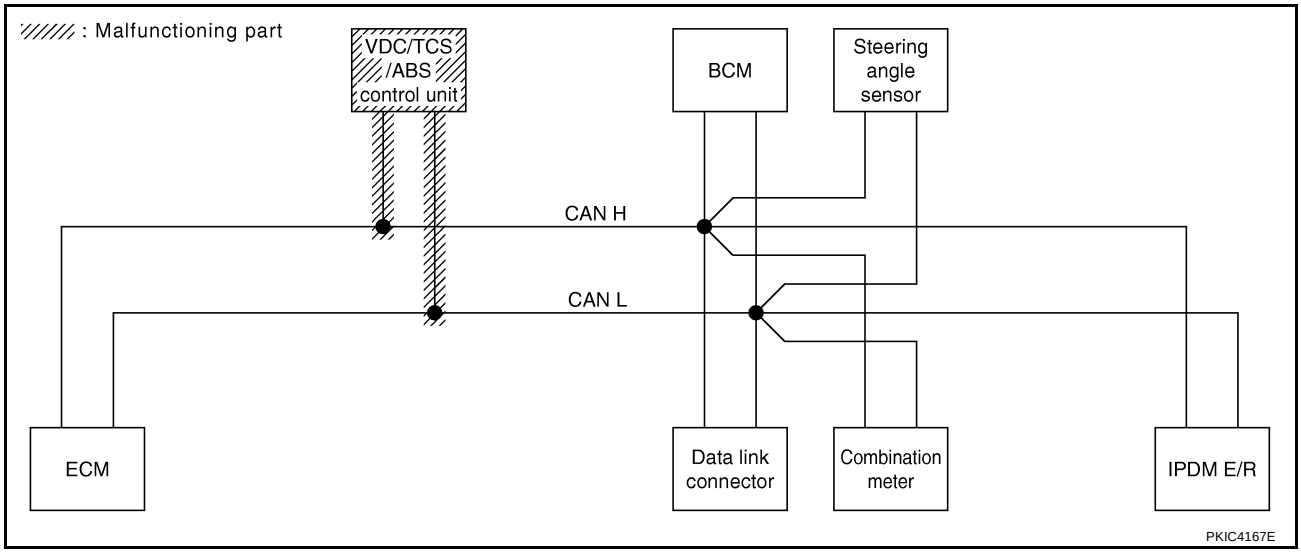
PKIC4166E

Case 3

Check VDC/TCS/ABS control unit circuit. Refer to LAN-174, "VDC/TCS/ABS Control Unit Circuit Inspection" .

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

PKIC4619E



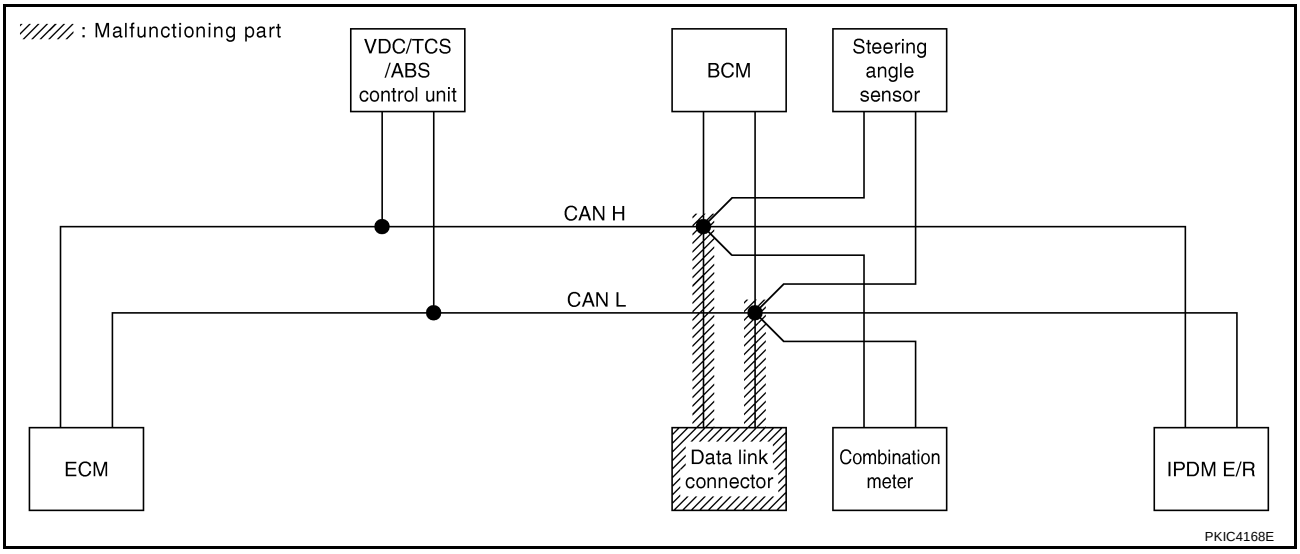
PKIC4167E

Case 4

Check data link connector circuit. Refer to LAN-174, "Data Link Connector Circuit Inspection" .

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

PKIC4620E



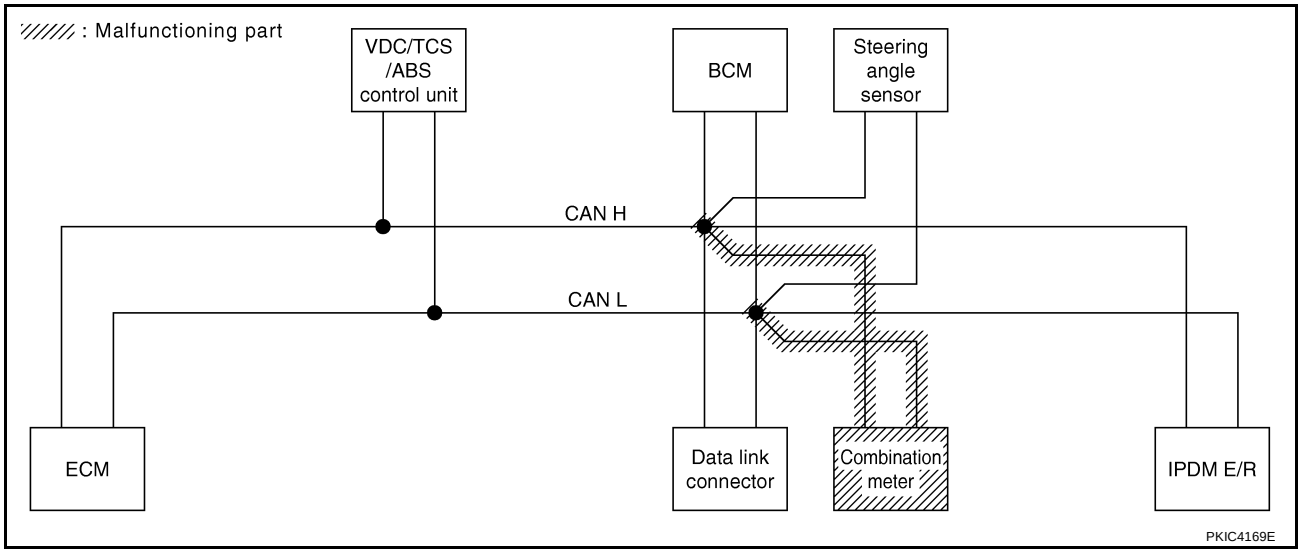
PKIC4168E

Case 5

Check combination meter circuit. Refer to LAN-175, "Combination Meter Circuit Inspection" .

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

PKIC4621E



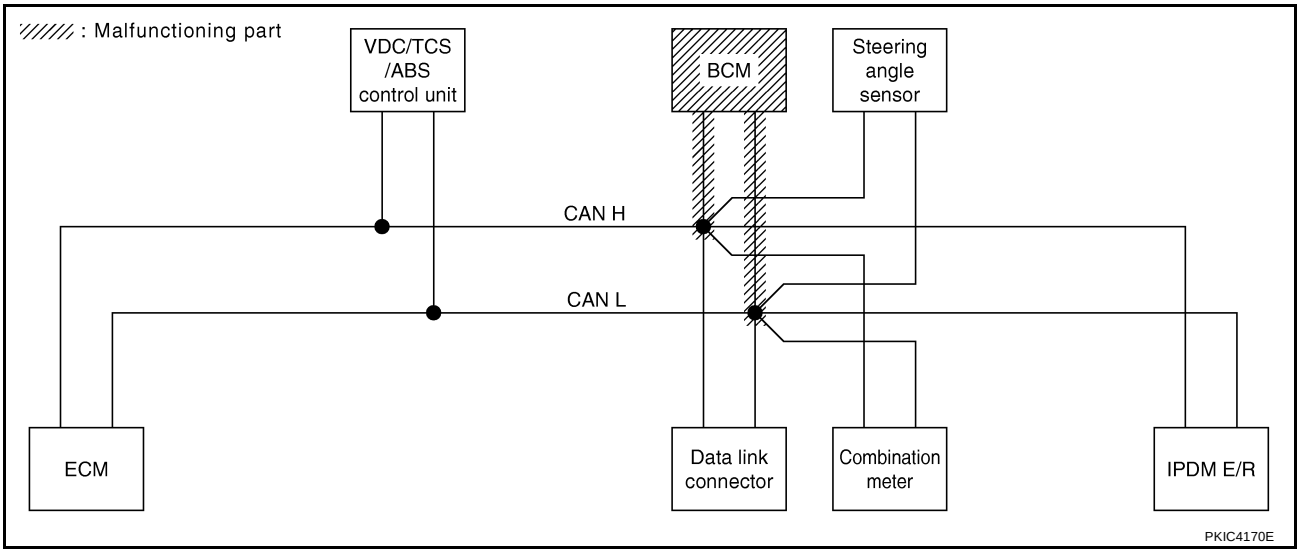
PKIC4169E

Case 6

Check BCM circuit. Refer to LAN-175, "BCM Circuit Inspection" .

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

PKIC4622E

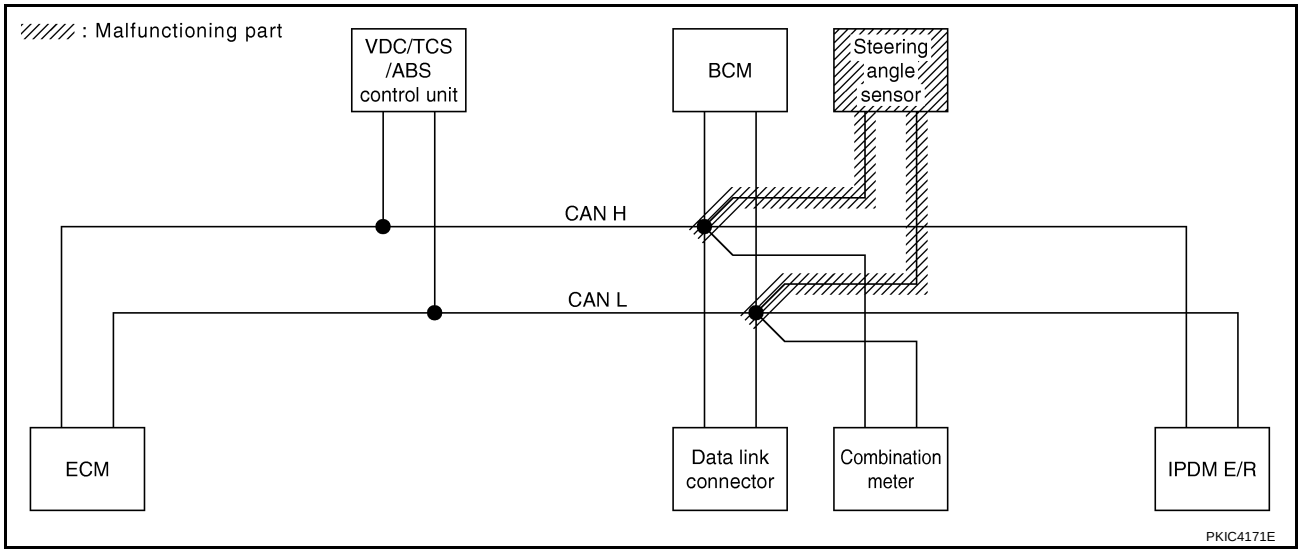


Case 7

Check steering angle sensor circuit. Refer to LAN-176, "Steering Angle Sensor Circuit Inspection" .

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

PKIC4623E



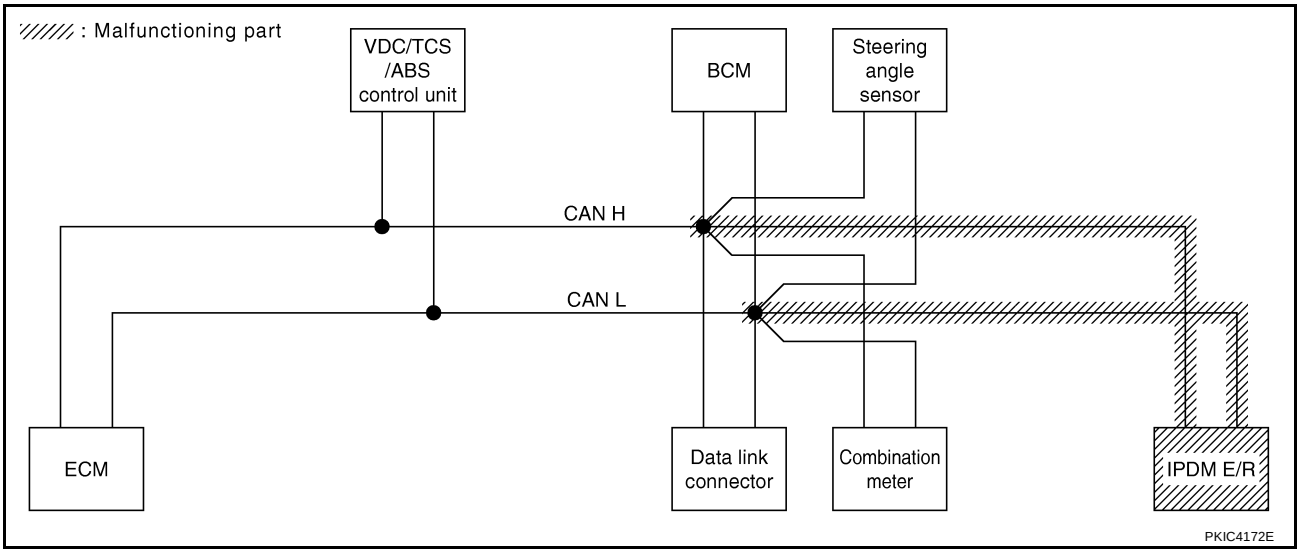
PKIC4171E

Case 8

Check IPDM E/R circuit. Refer to LAN-176, "IPDM E/R Circuit Inspection" .

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

PKIC4624E



Case 9

Check CAN communication circuit. Refer to LAN-177, "CAN Communication Circuit Inspection" .

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

PKIC4625E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-181, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIC4626E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-181, "IPDM E/R Ignition Relay Circuit Inspection" .

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

PKIC4627E

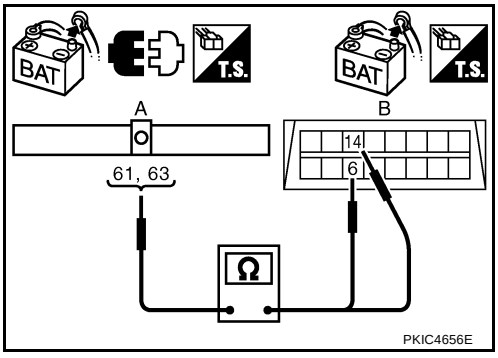
Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit

AKS00G8M

1. CHECK HARNESS FOR OPEN CIRCUIT

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 VDC/TCS/ABS control unit harness connector (A) and data link connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M93	61 (L)	M8	6 (L)	Yes
	63 (P)		14 (P)	Yes



PKIC4656E

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

AKS00D8I

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).

- ECM connector
- Harness connector F102
- Harness connector M72

OK or NG

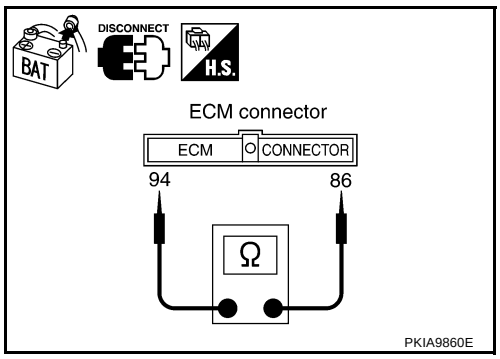
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector 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 VDC/TCS/ABS Control Unit.

VDC/TCS/ABS Control Unit Circuit Inspection

AKS00D8N

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).

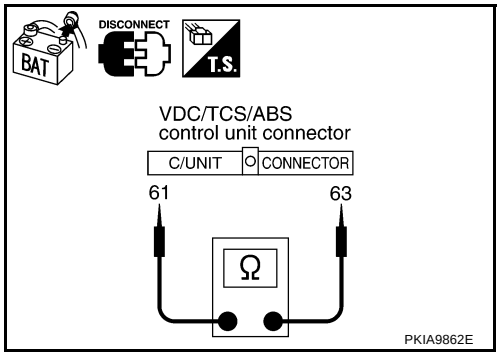
OK or NG

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 data link connector.

Data Link Connector Circuit Inspection

AKS00D8J

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

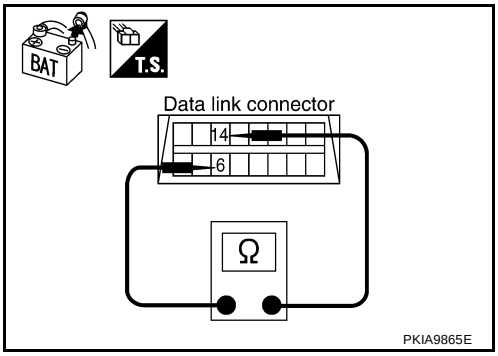
Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

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

AKS00D8K

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

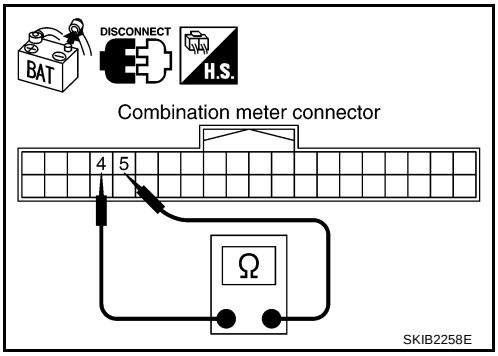
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M19 terminals 4 (L) and 5 (P).

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

AKS00D8L

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.

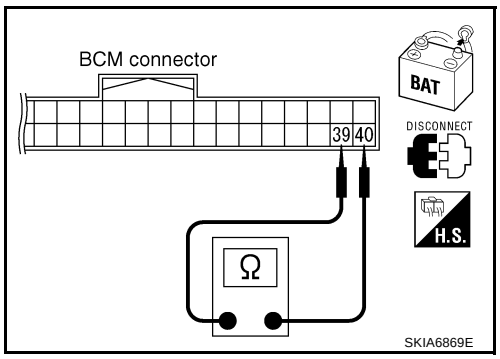
2. CHECK HARNESS FOR OPEN CIRCUIT

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

AKS00D8M

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.

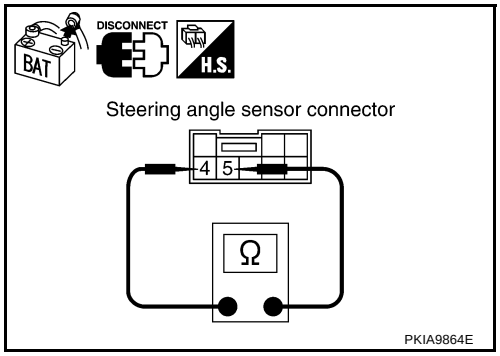
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



IPDM E/R Circuit Inspection

AKS00D8O

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.

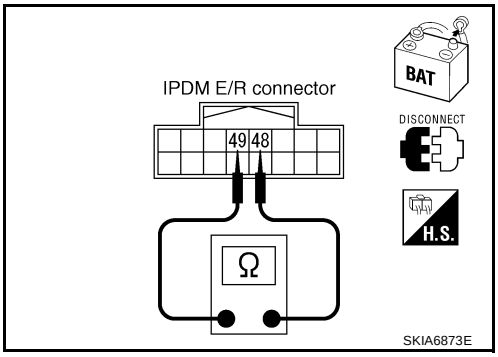
2. CHECK HARNESS FOR OPEN CIRCUIT

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 data link connector.



CAN Communication Circuit Inspection

AKS00D8P

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

OK or NG

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

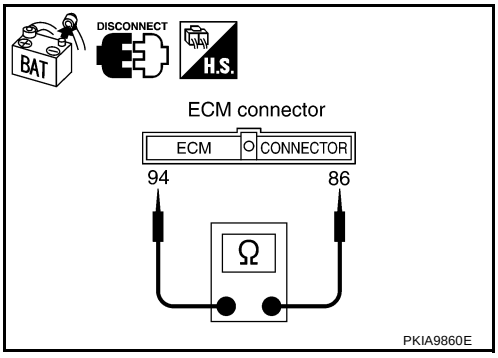
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (P).

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

OK or NG

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

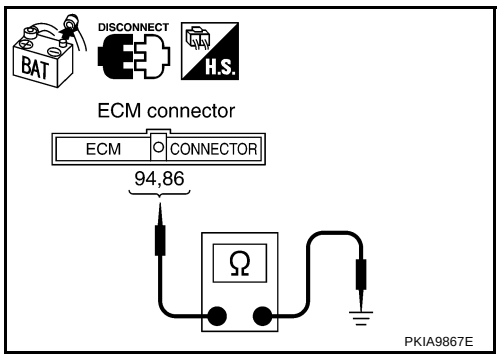


3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector 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

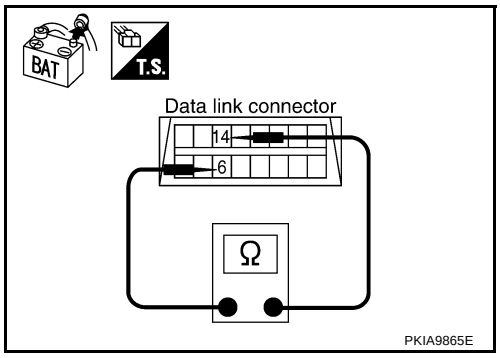
OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector F102.

4. CHECK HARNESS FOR SHORT CIRCUIT

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

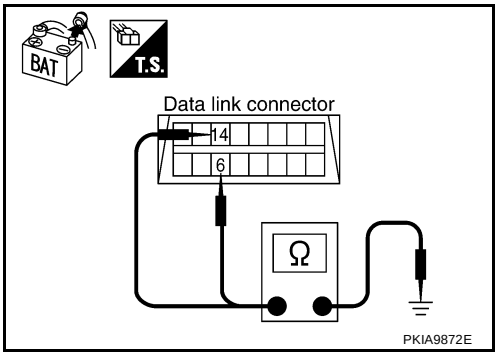
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M72
- Harness between data link connector and VDC/TCS/ABS 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 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

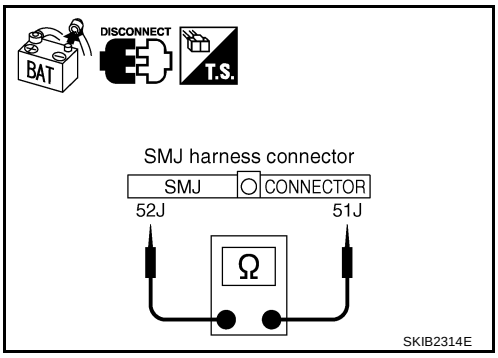
OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M72
- Harness between data link connector and VDC/TCS/ABS 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 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.



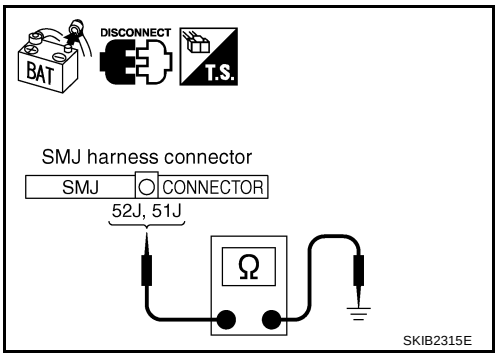
OK or NG

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.

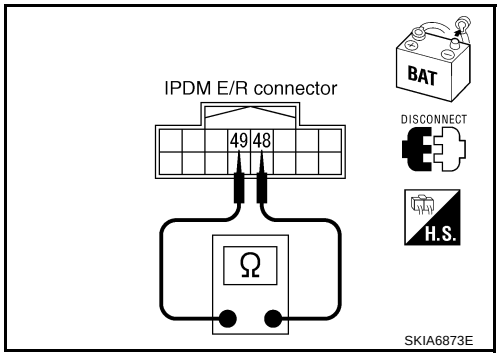
8. CHECK HARNESS FOR SHORT CIRCUIT

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.



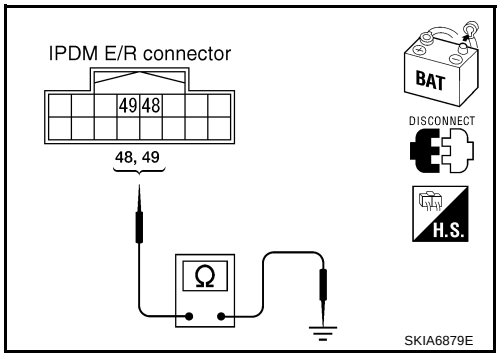
9. CHECK HARNESS FOR SHORT CIRCUIT

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.

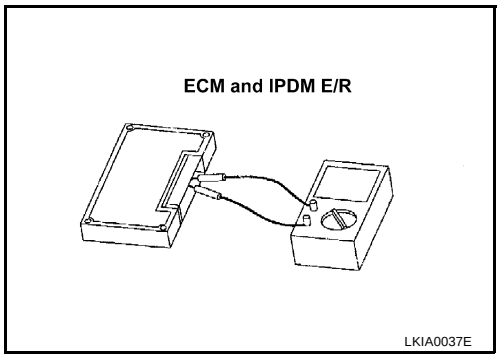
94 – 86 : Approx. 108 – 132 Ω

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 reproduced.

- VDC/TCS/ABS control unit
- Combination meter
- BCM
- Steering angle sensor
- 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

AKS00D8Q

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 6)

PFP:23710

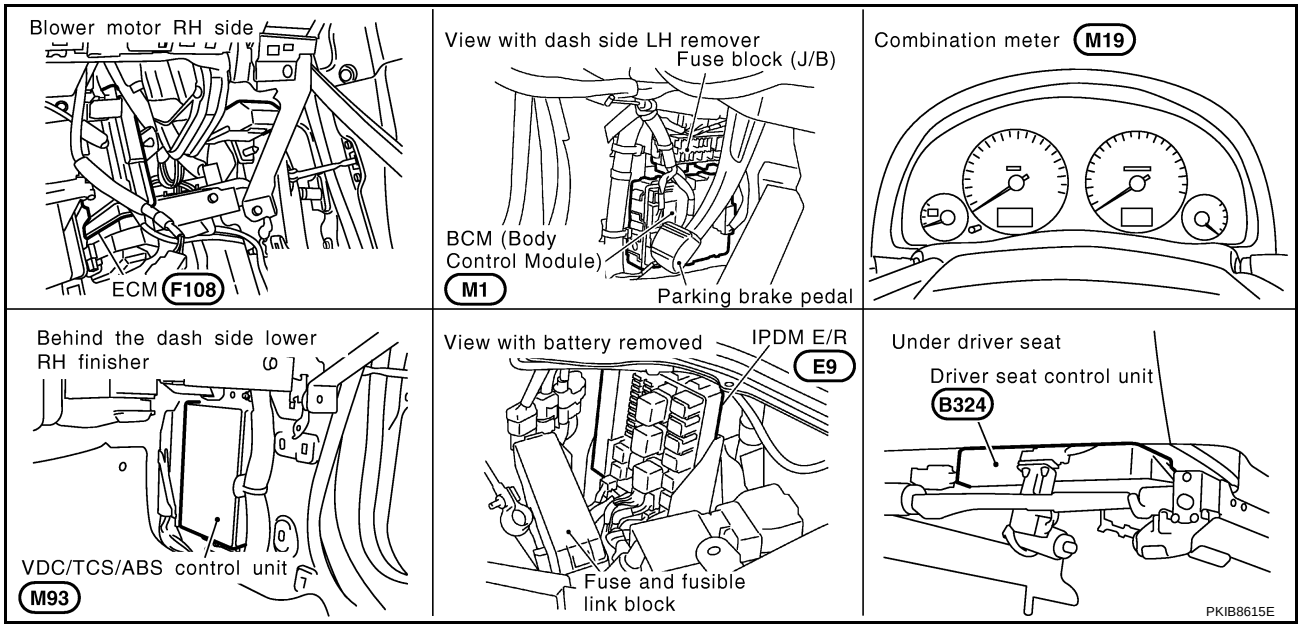
System Description

AKS00D8R

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.

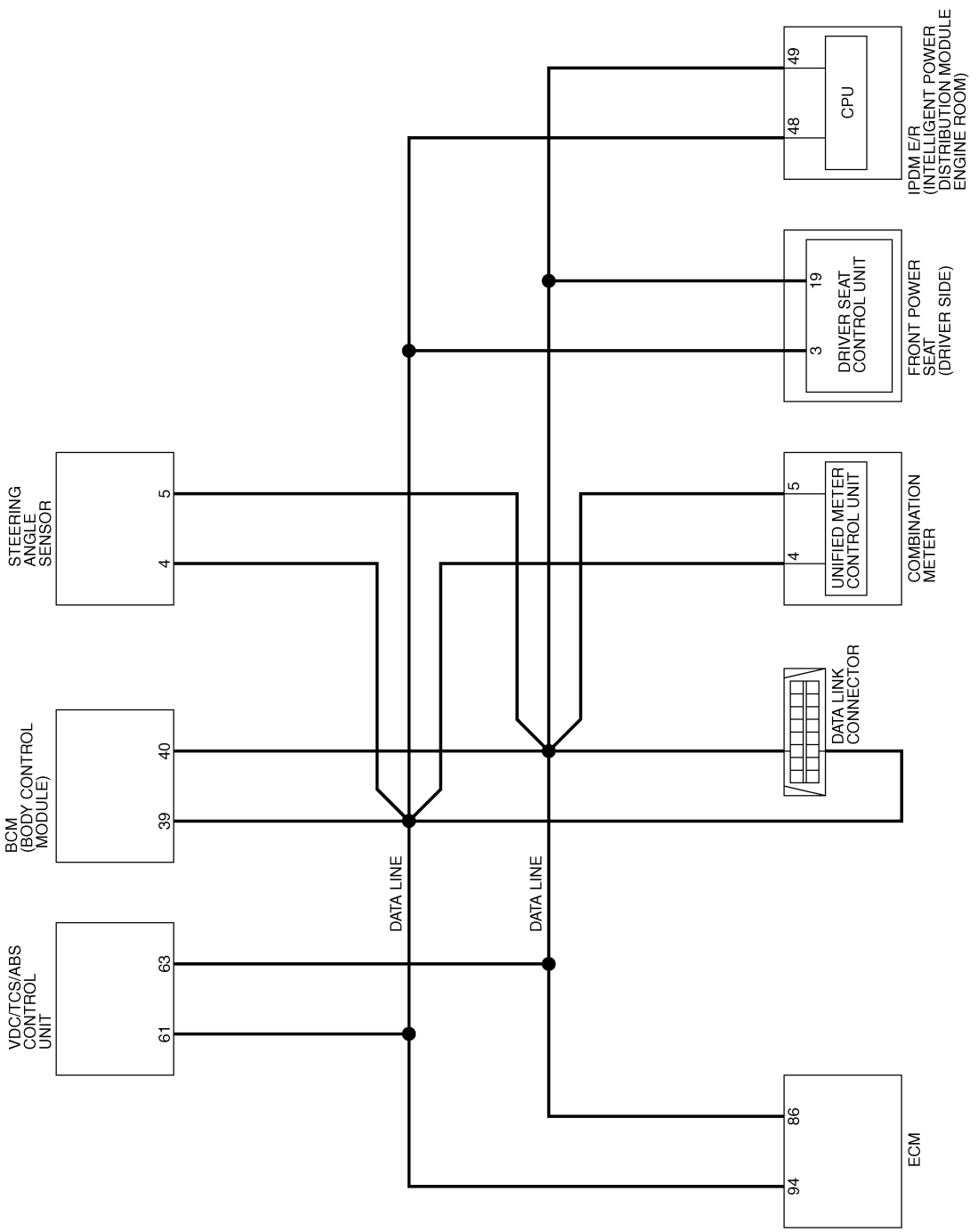
Component Parts and Harness Connector Location

AKS00D8S



Schematic

AKS00D8T

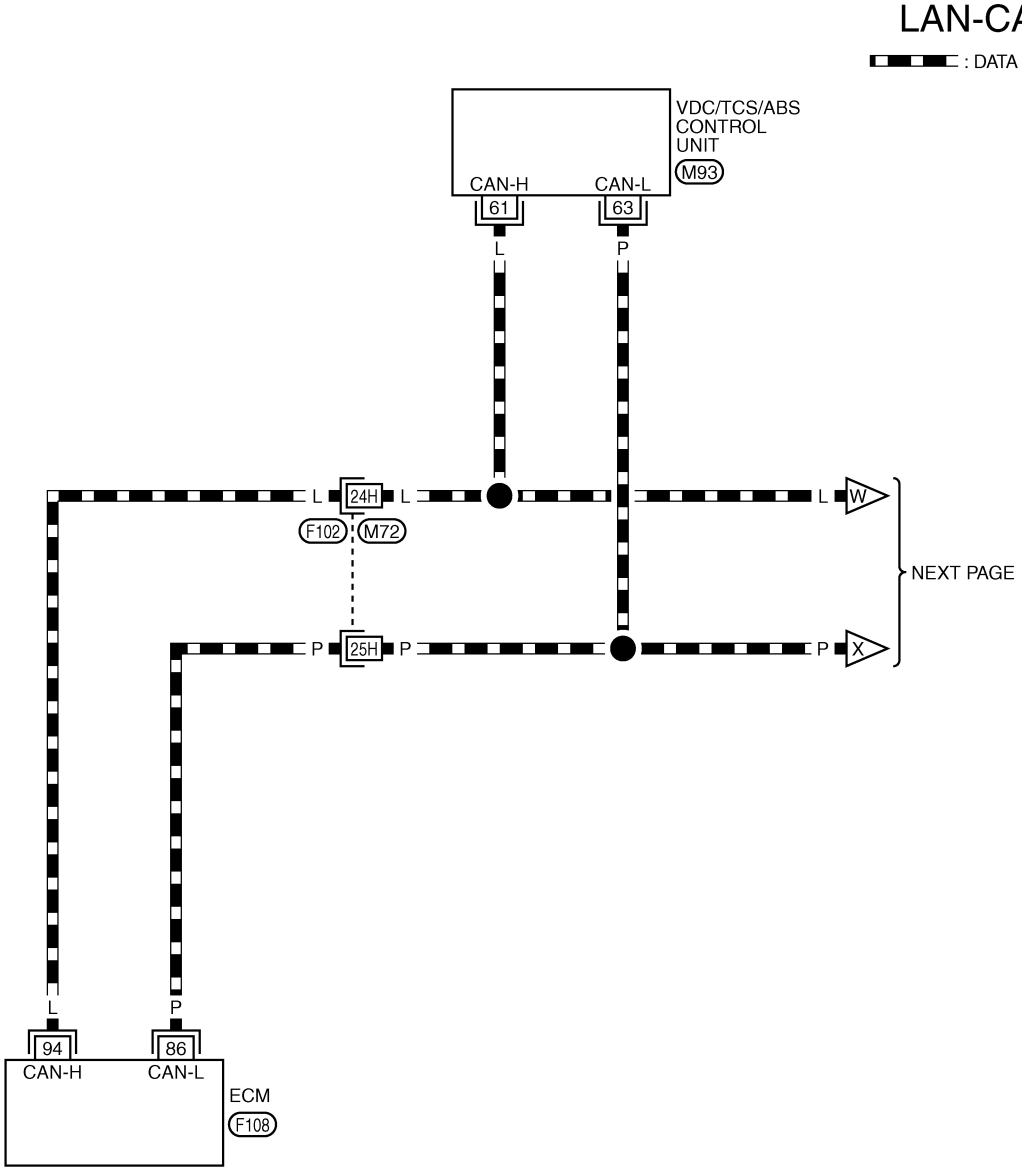


TKWM3886E

Wiring Diagram — CAN —

AKS00D8U

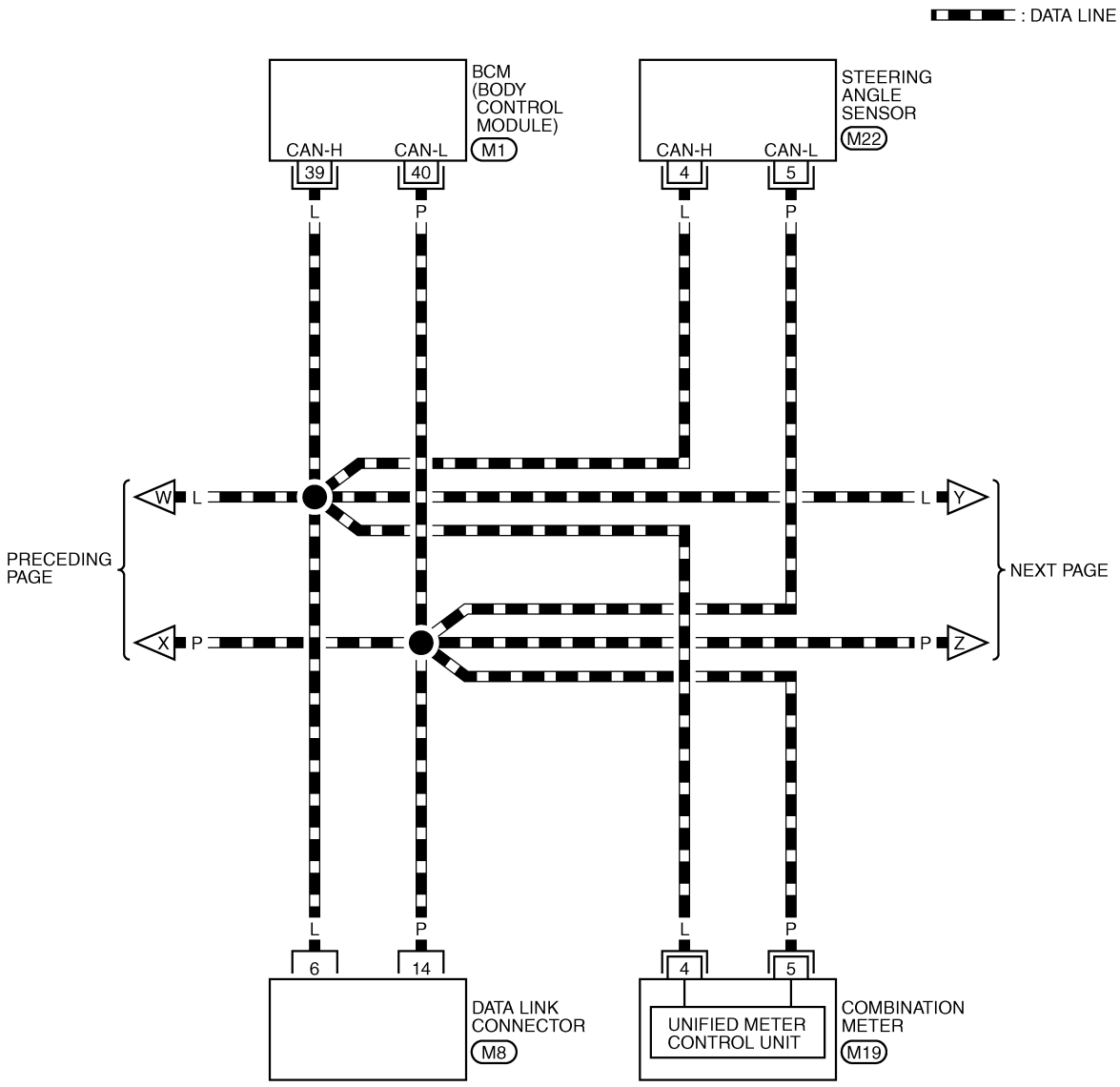
LAN-CAN-16

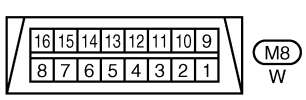


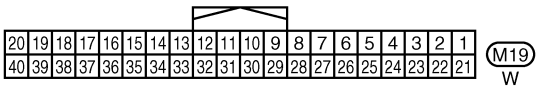
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M93, F108 -ELECTRICAL UNITS

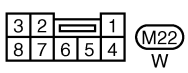
TKWM3887E

LAN-CAN-17



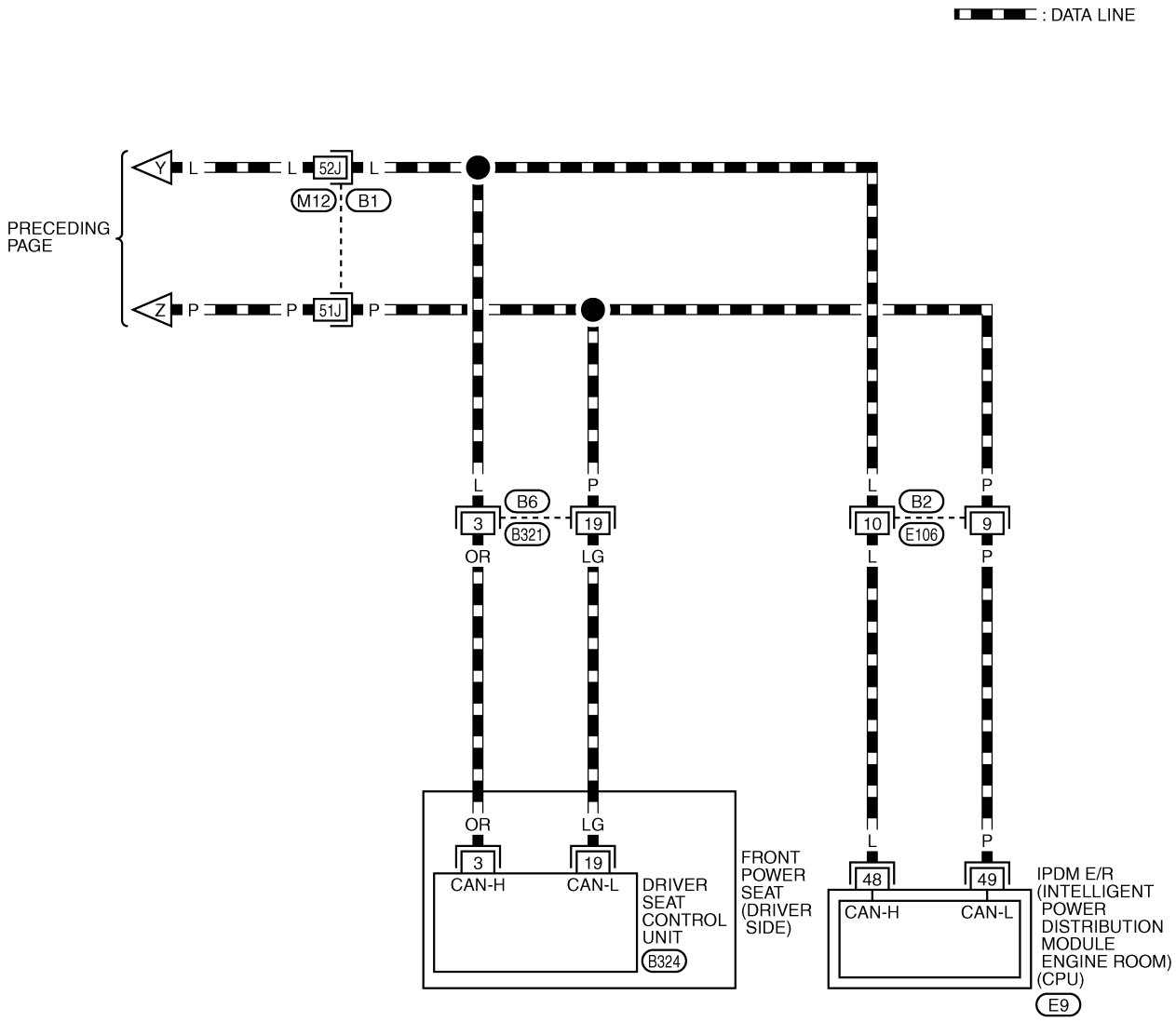


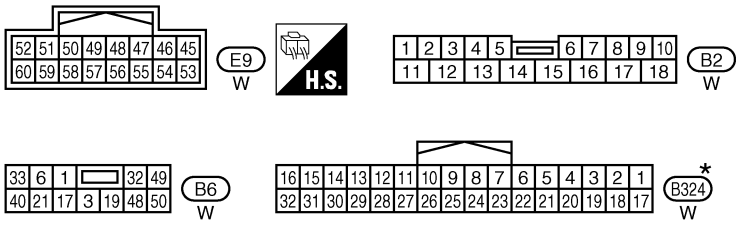




REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWM2879E





REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM3888E

Check Sheet

AKS00D8V

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

Check sheet table

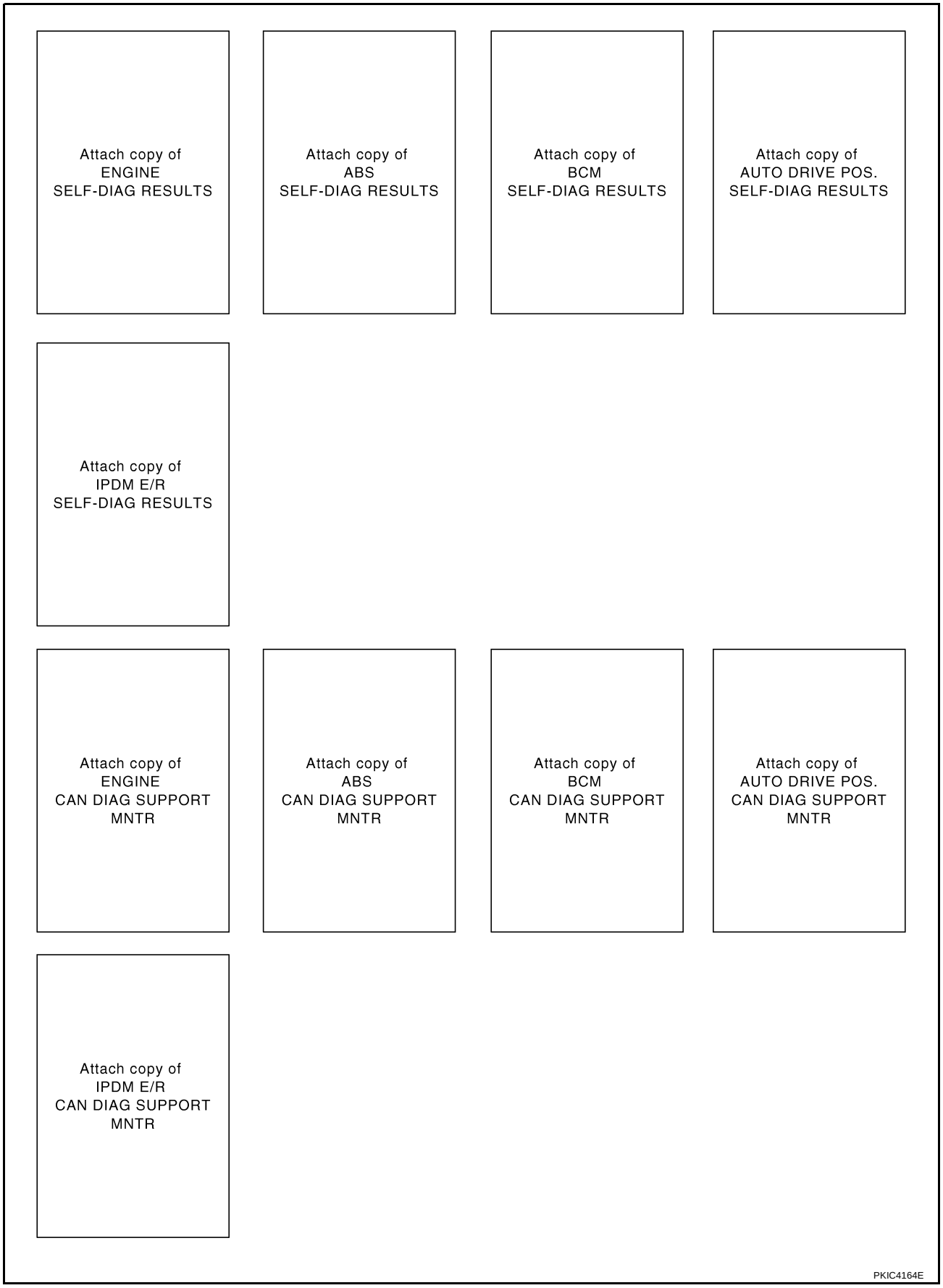
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	VDC/TCS /ABS	METER /M&A	BCM /SEC	STRG	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
ABS	—	NG	UNKWN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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIC4387E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
BCM
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
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIC4164E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

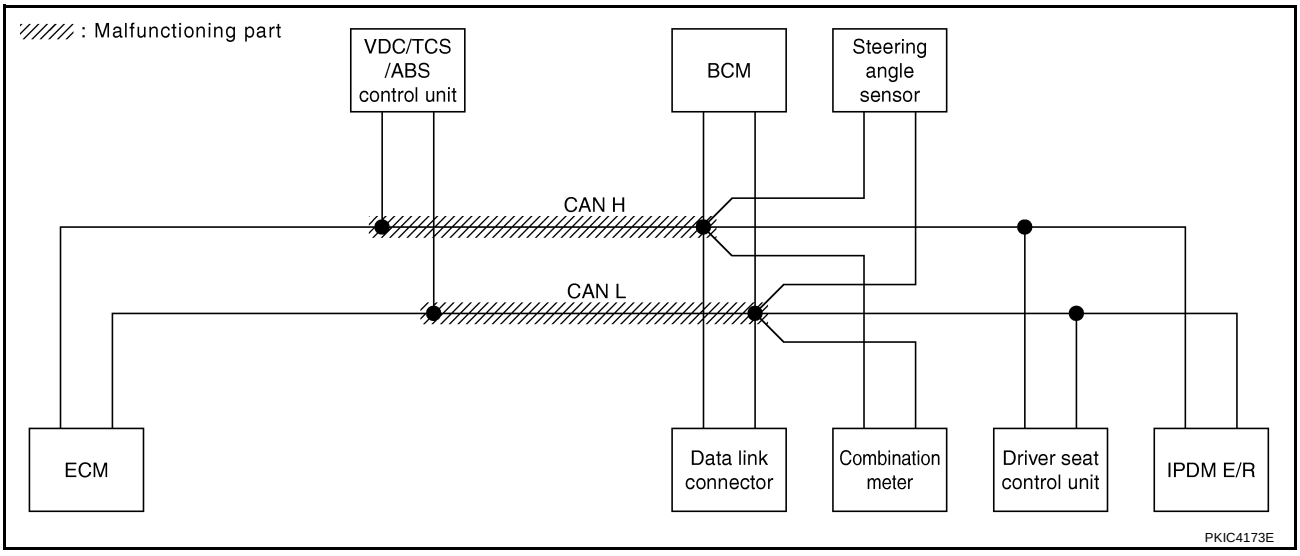
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between VDC/TCS/ABS control unit and data link connector. Refer to LAN-200, "Inspection Between VDC/TCS/ABS Control Unit and Data Link Connector Circuit" .

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

PKIC4628E

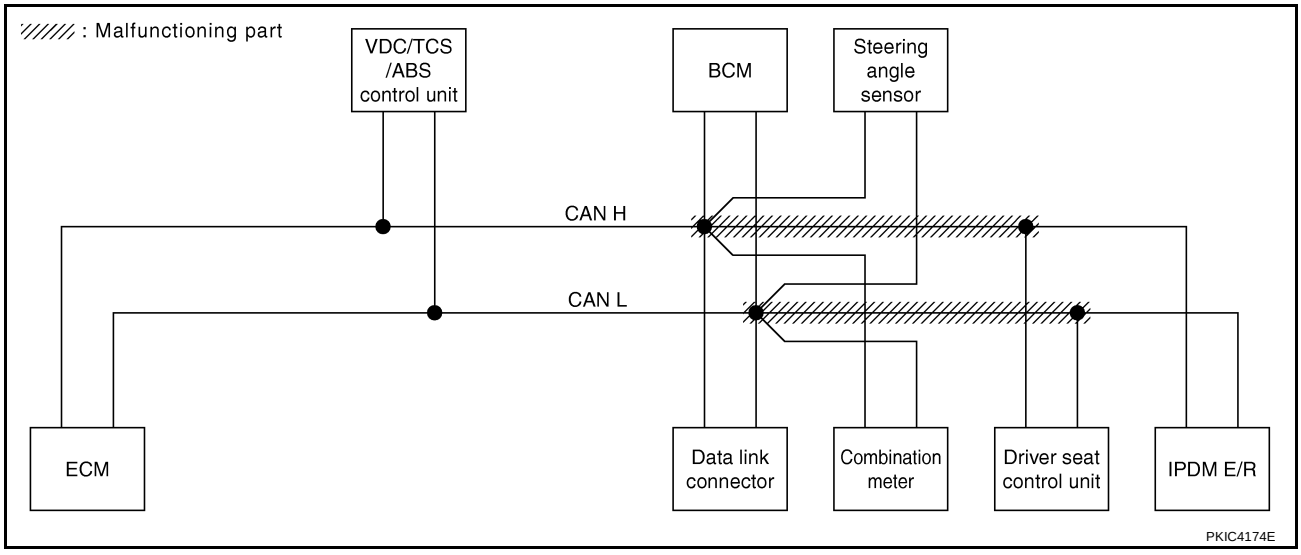


Case 2

Check harness between data link connector and driver seat control unit. Refer to LAN-200, "Inspection Between Data Link Connector and Driver Seat Control Unit Circuit" .

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

PKIC4629E



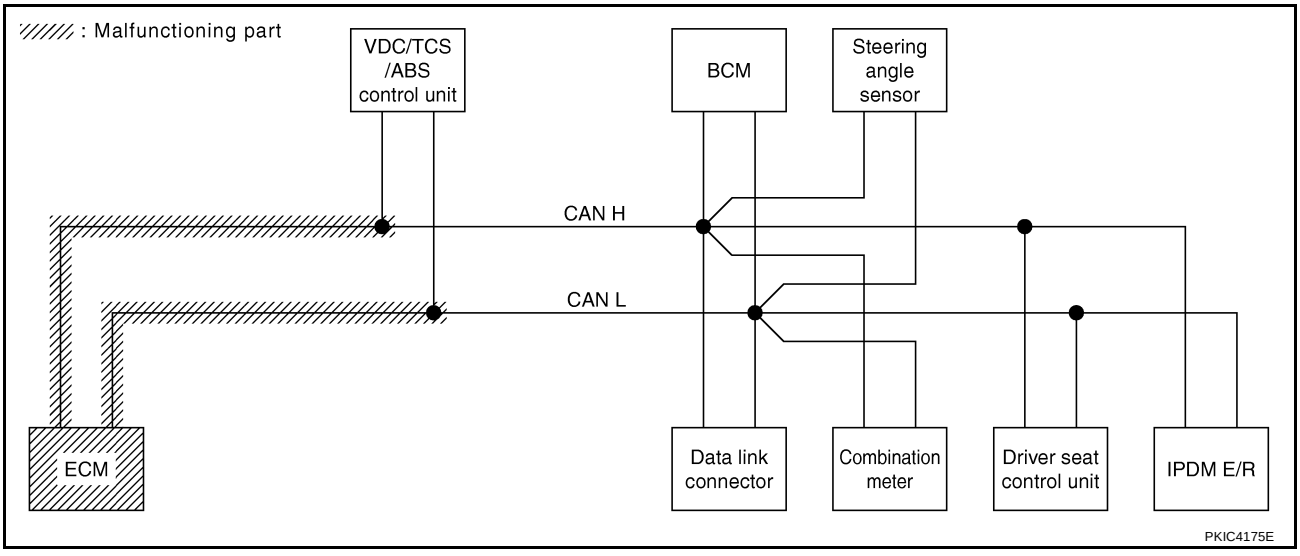
PKIC4174E

Case 3

Check ECM circuit. Refer to LAN-201, "ECM Circuit Inspection" .

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

PKIC4630E

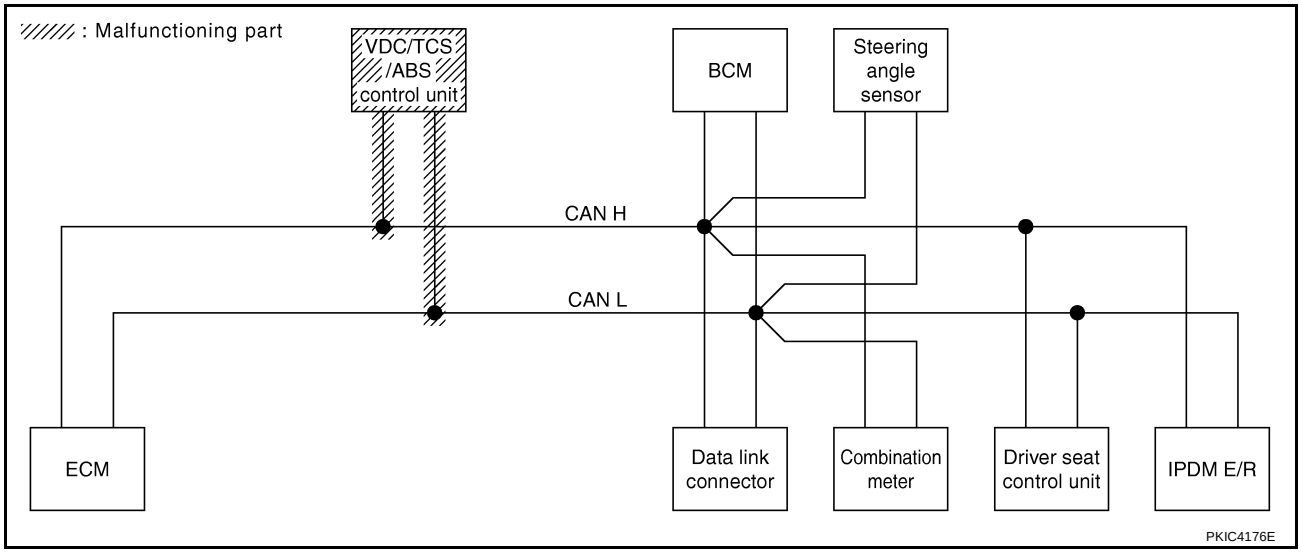


Case 4

Check VDC/TCS/ABS control unit circuit. Refer to LAN-201, "VDC/TCS/ABS Control Unit Circuit Inspection" .

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

PKIC4631E



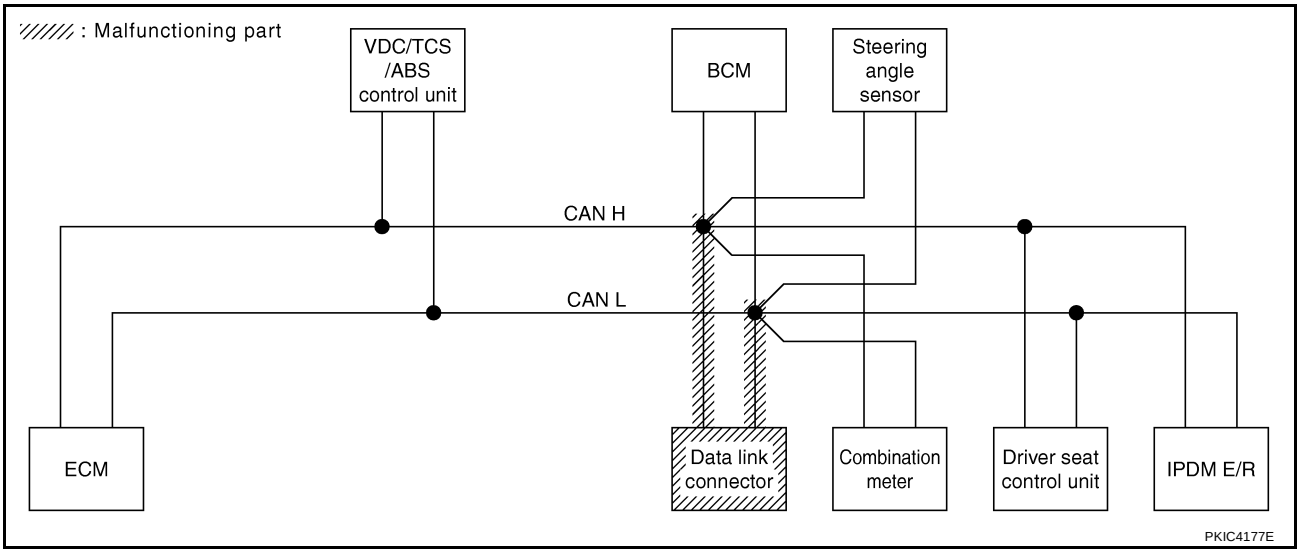
PKIC4176E

Case 5

Check data link connector circuit. Refer to LAN-202, "Data Link Connector Circuit Inspection" .

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

PKIC4632E

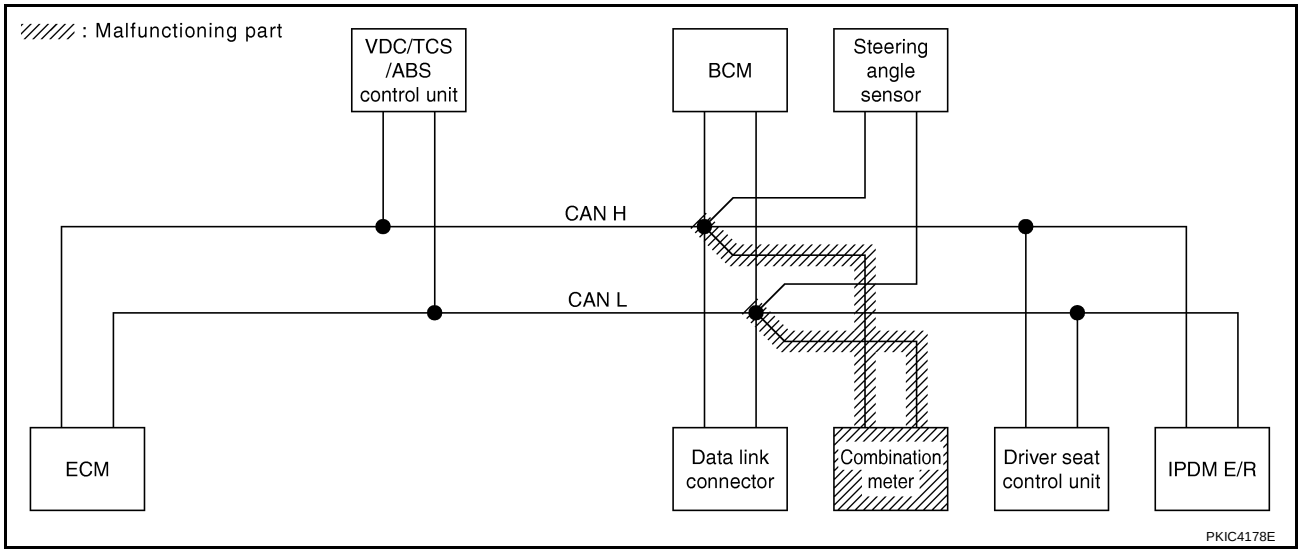


Case 6

Check combination meter circuit. Refer to LAN-202, "Combination Meter Circuit Inspection" .

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

PKIC4633E



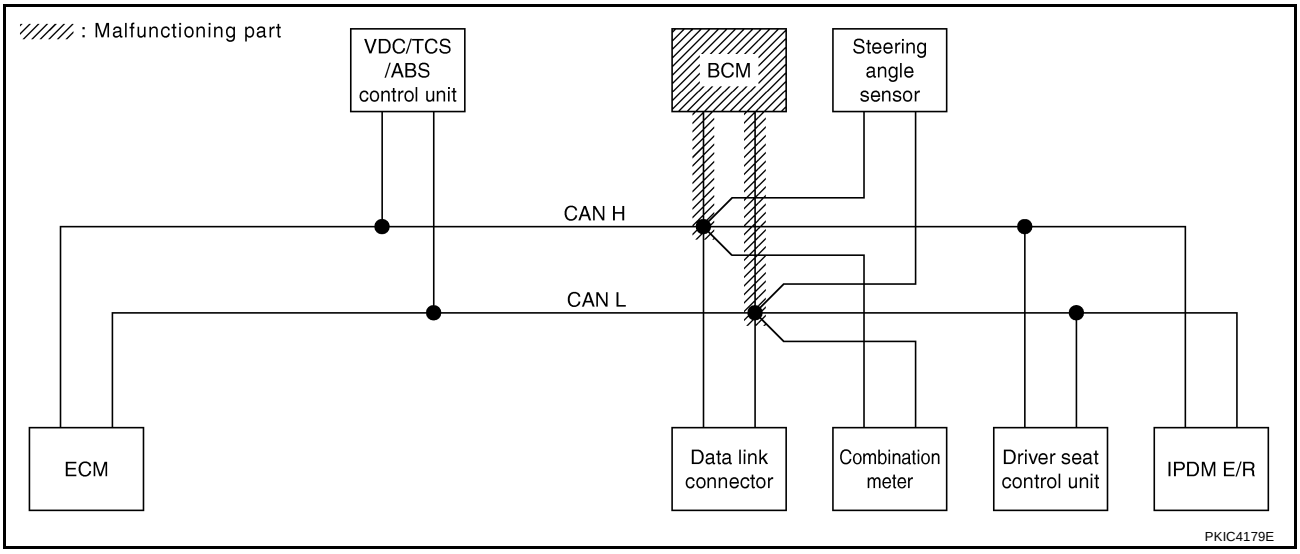
PKIC4178E

Case 7

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

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

PKIC4634E

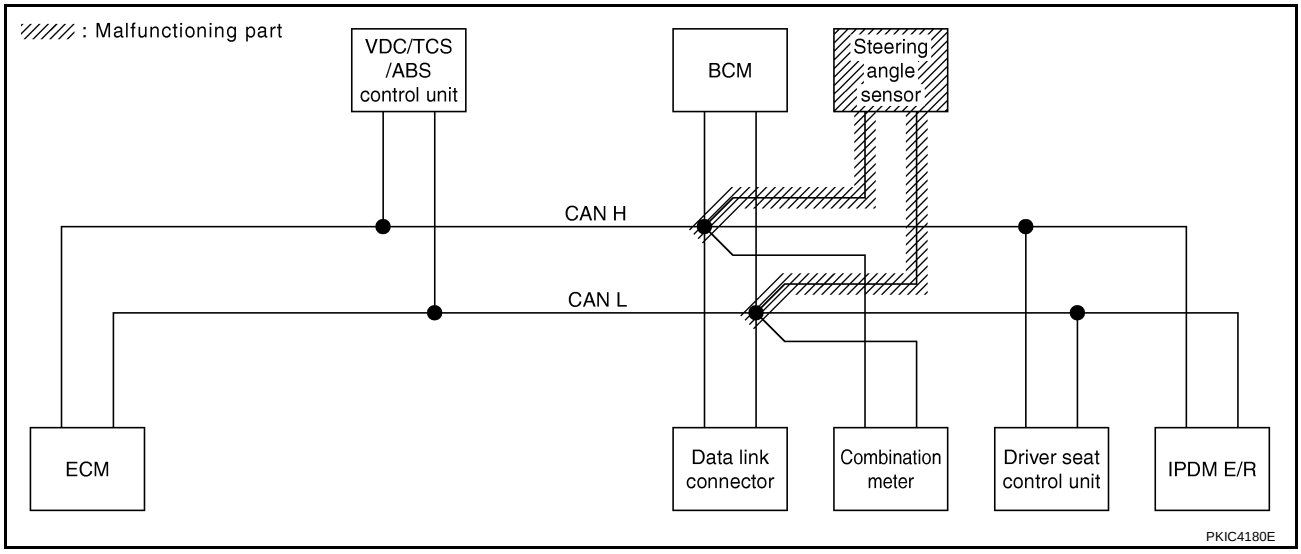


Case 8

Check steering angle sensor circuit. Refer to LAN-203, "Steering Angle Sensor Circuit Inspection" .

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

PKIC4635E



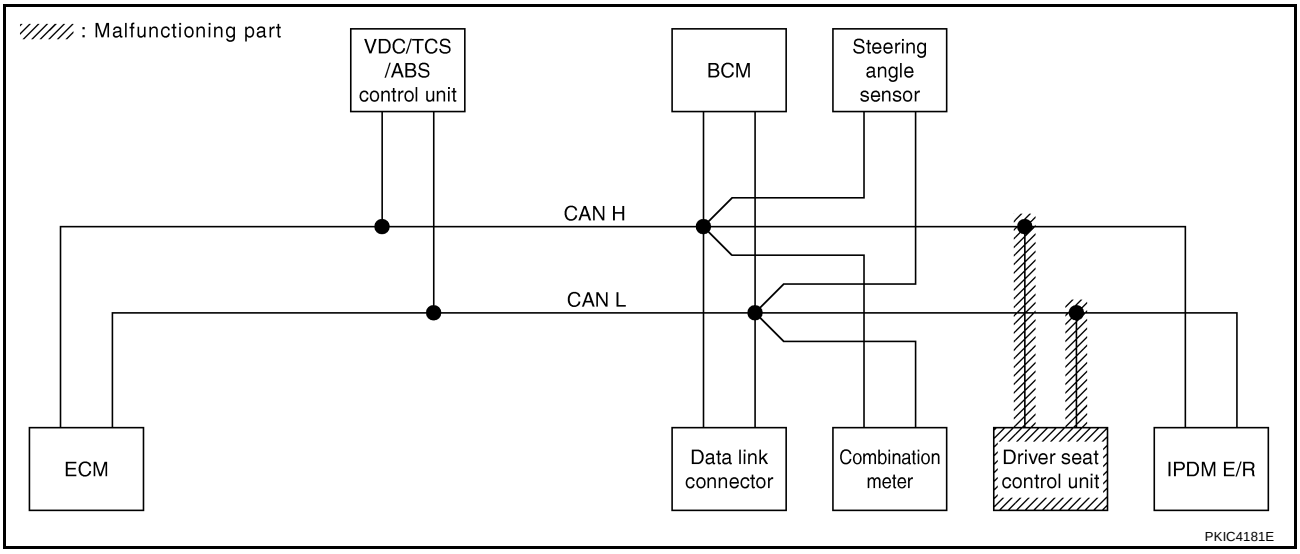
PKIC4180E

Case 9

Check driver seat control unit circuit. Refer to LAN-204, "Driver Seat Control Unit Circuit Inspection" .

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

PKIC4636E

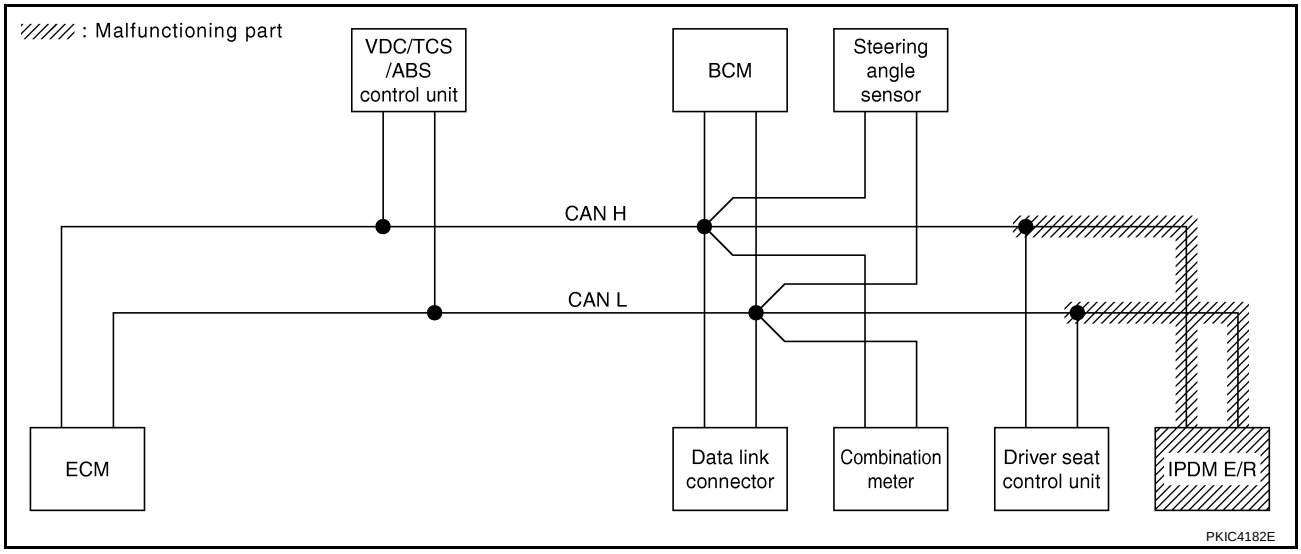


Case 10

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

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

PKIC4637E



PKIC4182E

Case 11

Check CAN communication circuit. Refer to LAN-205, "CAN Communication Circuit Inspection" .

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

PKIC4638E

Case 12

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

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

PKIC4639E

Case 13

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

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

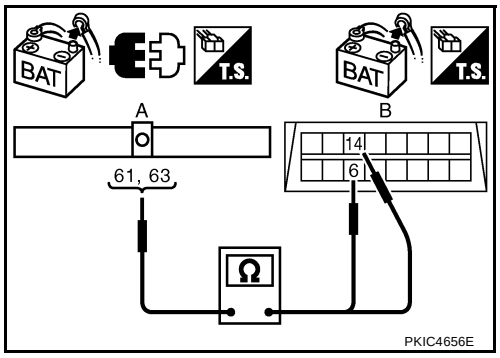
PKIC4640E

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

AKS00G8N

1. CHECK HARNESS FOR OPEN CIRCUIT

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 VDC/TCS/ABS control unit harness connector (A) and data link connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M93	61 (L)	M8	6 (L)	Yes
	63 (P)		14 (P)	Yes

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 Driver Seat Control Unit Circuit

AKS00G5M

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

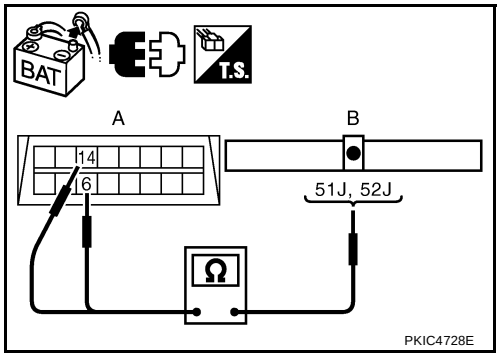
OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M12.
2. Check continuity between data link connector (A) and harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M8	6 (L)	M12	52J (L)	Yes
	14 (P)		51J (P)	Yes

OK or NG

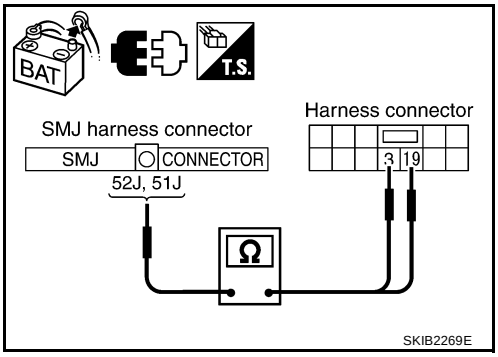
OK >> GO TO 3.

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

AKS00D8Y

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).

- ECM connector
- Harness connector F102
- Harness connector M72

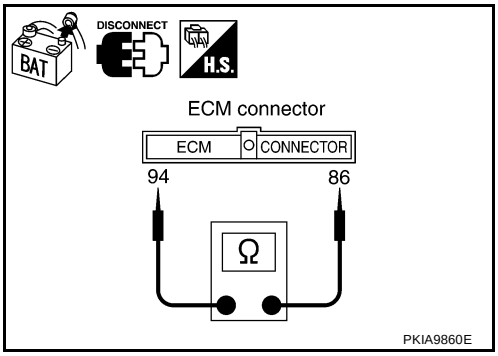
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector 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 VDC/TCS/ABS control unit.

VDC/TCS/ABS Control Unit Circuit Inspection

AKS00D93

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).

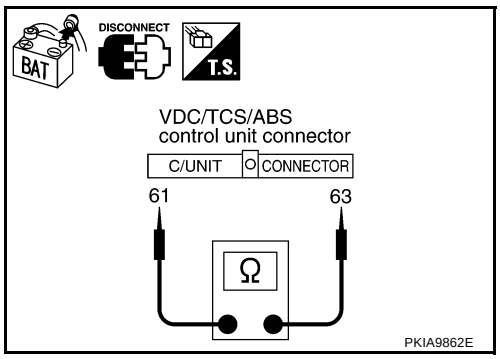
OK or NG

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 data link connector.

Data Link Connector Circuit Inspection

AKS00D8Z

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).

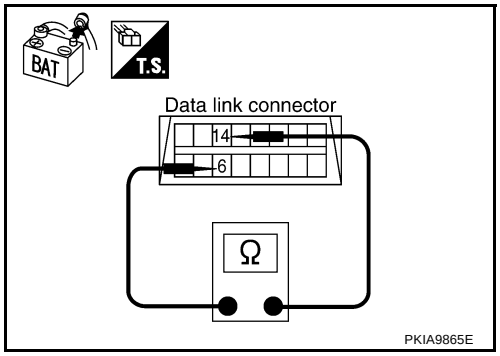
OK or NG

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

AKS00D90

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).

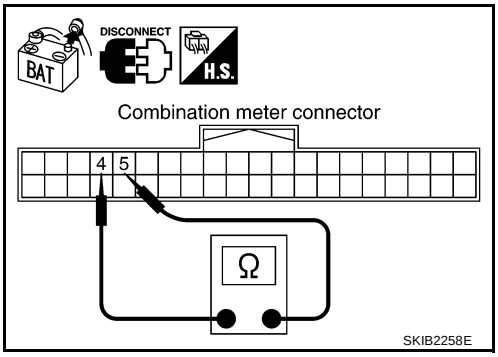
OK or NG

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

AKS00D91

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).

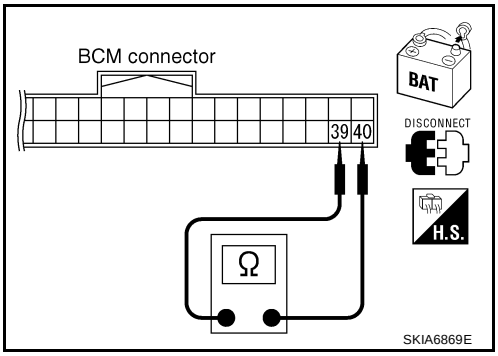
OK or NG

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

AKS00D92

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).

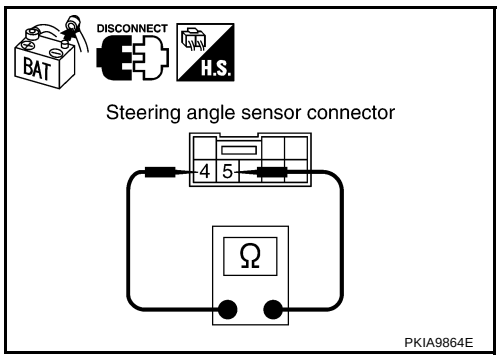
OK or NG

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.

Driver Seat Control Unit Circuit Inspection

AKS00D94

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

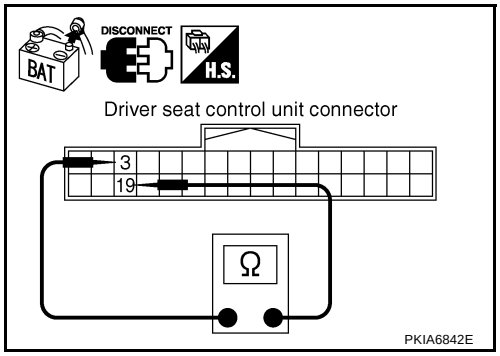
OK or NG

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

AKS00D95

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

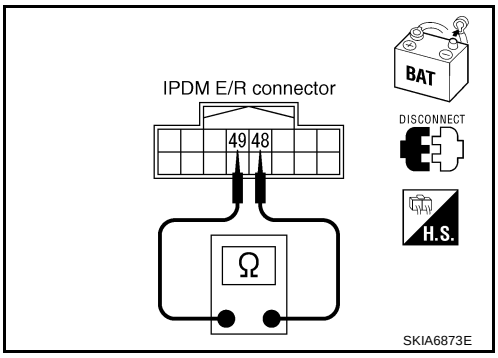
OK or NG

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

AKS00D96

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
- VDC/TCS/ABS control unit
- Combination meter
- BCM
- Steering angle sensor
- Driver seat control unit
- IPDM E/R
- Between ECM and IPDM E/R
- Between ECM and driver seat control unit

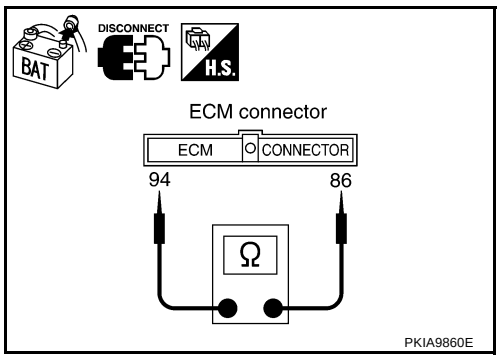
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (P).

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



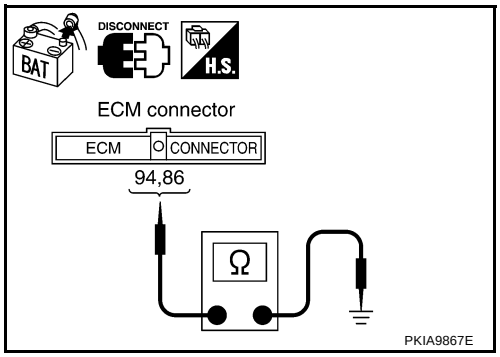
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector 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 >> Repair harness between ECM and harness connector F102.

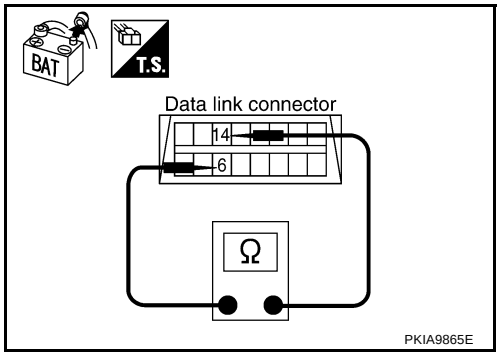
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- VDC/TCS/ABS control unit connector
- Combination meter connector
- BCM connector
- Steering angle sensor 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

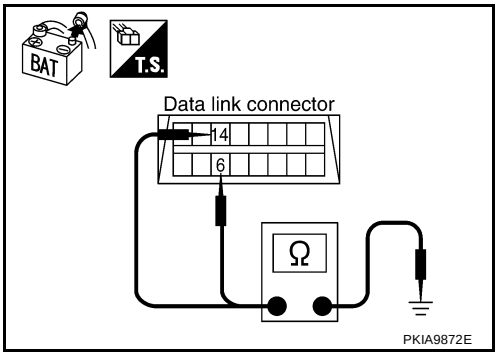
OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M72
- Harness between data link connector and VDC/TCS/ABS 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 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

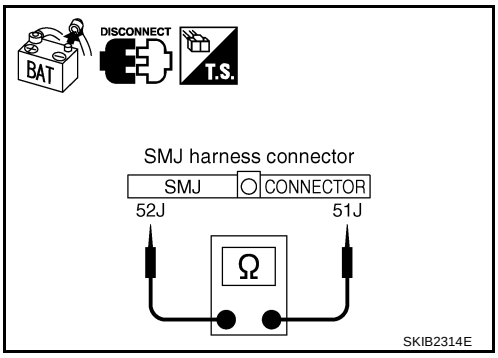
OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M72
- Harness between data link connector and VDC/TCS/ABS 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 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

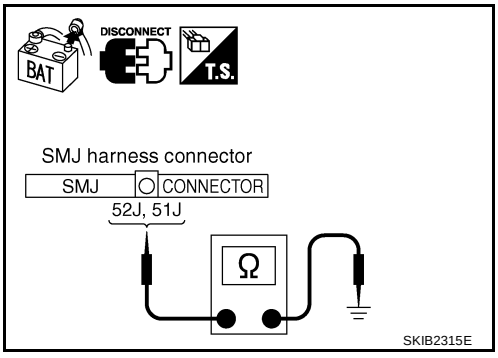
OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- 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

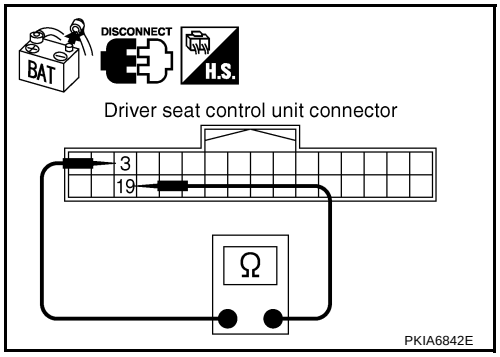
8. CHECK HARNESS FOR SHORT CIRCUIT

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.



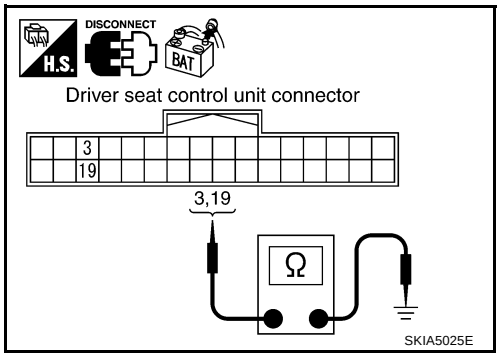
9. CHECK HARNESS FOR SHORT CIRCUIT

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.



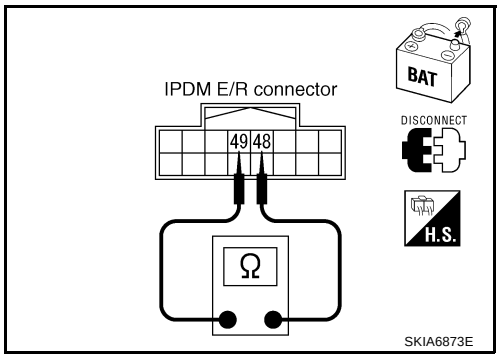
10. CHECK HARNESS FOR SHORT CIRCUIT

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 and harness connector E106.



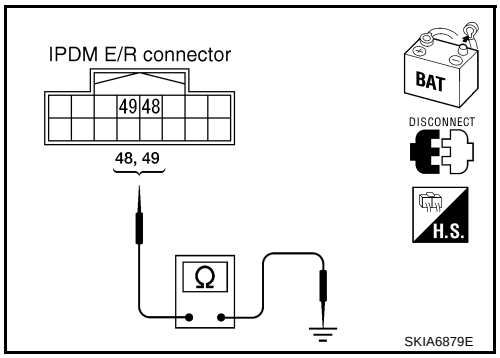
11. CHECK HARNESS FOR SHORT CIRCUIT

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.



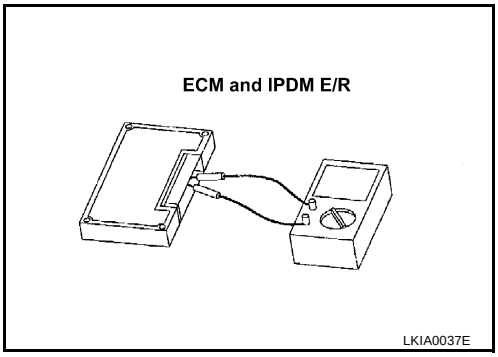
12. CHECK ECM AND IPDM E/R INTERNAL CIRCUIT

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 reproduced.

- VDC/TCS/ABS control unit
- Combination meter
- BCM
- Steering angle sensor
- 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

AKS00D97

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”" .