SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS

PFP:00001

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

UKS0017I

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

UKS0017J

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

CAUTION:

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

CHECK POINTS FOR USING CONSULT-II

1. Has CONSULT-II been used without connecting CONSULT-II CONVERTER on this vehicle?
   - If YES, GO TO 2.
   - If NO, GO TO 5.
2. Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
   - If YES, GO TO 3.
   - If NO, GO TO 4.
3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
4. Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefore, erase the self-diagnosis results.
5. Diagnose CAN communication system. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

Precautions For Trouble Diagnosis

UKS0017K

CAN SYSTEM

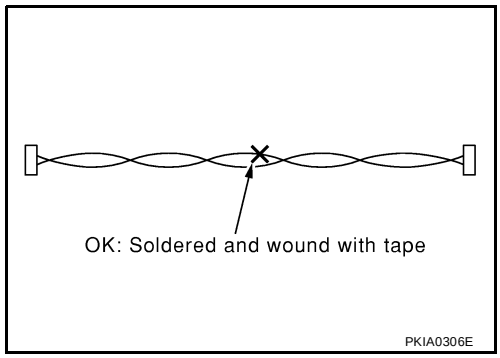
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair

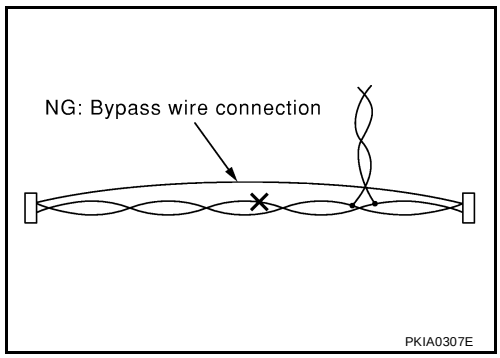
UKS0017L

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

UKS003GH

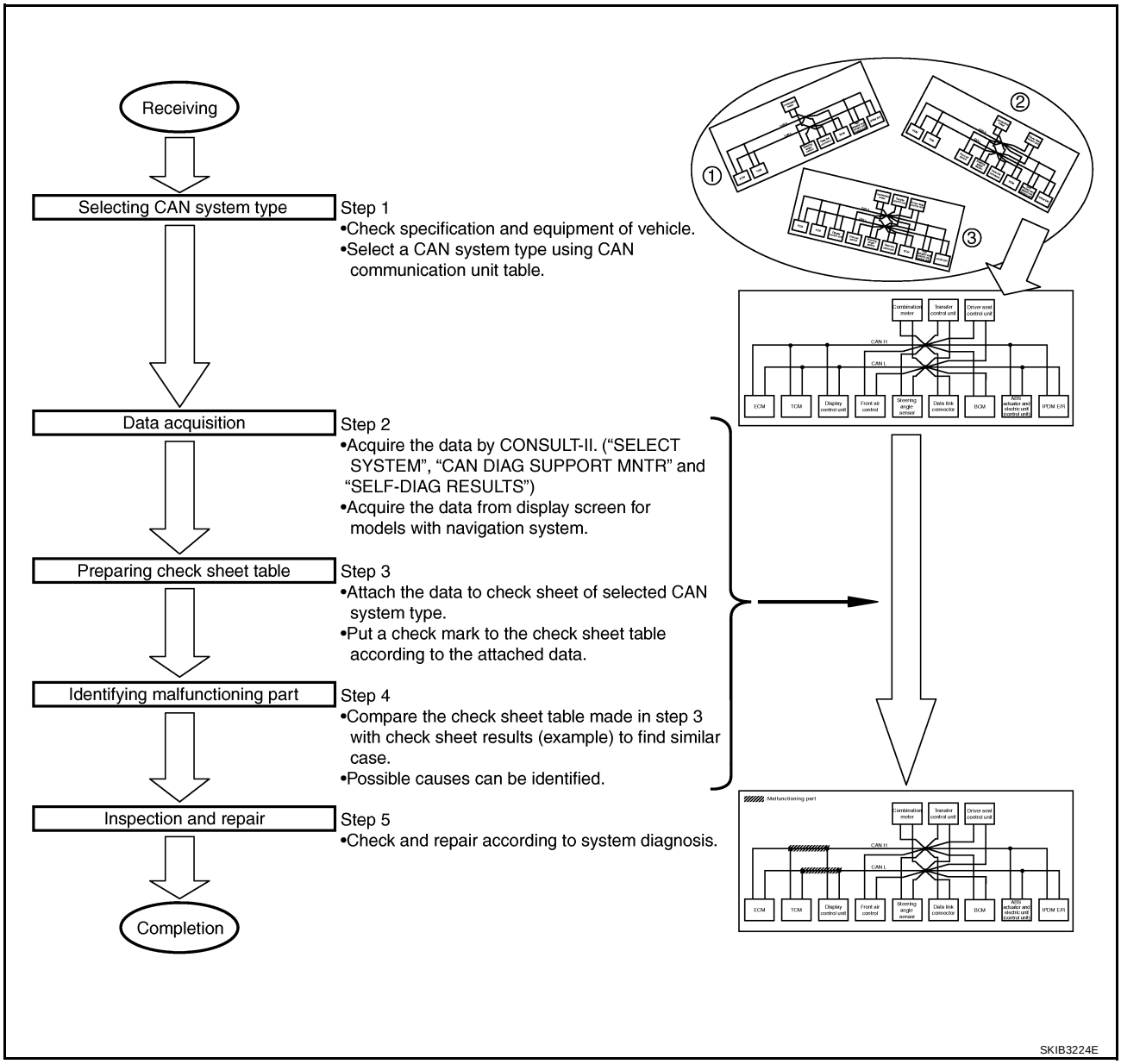
WHEN A MALFUNCTION IS DETECTED BY CAN COMMUNICATION SYSTEM

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

WHEN A MALFUNCTION IS DETECTED EXCEPT CAN COMMUNICATION SYSTEM

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

TROUBLE DIAGNOSIS FLOW CHART



- Step 1 : Refer to LAN-8, "SELECTING CAN SYSTEM TYPE (HOW TO USE SPECIFICATION TABLE)" .
- Step 2 : Refer to LAN-9, "ACQUISITION OF DATA BY CONSULT-II" .
- Step 3 : Refer to LAN-10, "HOW TO USE CHECK SHEET TABLE" .
- Step 4 : Refer to LAN-11, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced" .
- Step 5 : Check and repair according to system diagnosis.

Diagnosis Procedure

UKS003GI

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) Wagon/4WD (All-mode)/VQ40DE/AT/VDC/With automatic air conditioner/With automatic drive positioner/With navigation system

CAN Communication Unit

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

Body type	Wagon								Check basic specification of the vehicle.
Axle	2WD				4WD(Part time)		4WD(All-mode)		
Engine	VQ40DE								
Transmission	A/T								
Brake control	VDC								
Automatic air conditioner		×	×	×		×	×	×	Select " × " if it is model with automatic air conditioner.
Automatic drive positioner			×	×			×	×	Select " × " if it is model with automatic drive positioner.
Navigation system				×				×	Select " × " if it is model with navigation system.
CAN system type	1	2	3	4	5	6	7	8	Which number is selected when sequentially selecting from the top of the specification table? The number is "CAN system type" of the applicable vehicle.
CAN system trouble diagnosis	XX:XX	XX:XX	XX:XX	XX:XX	XX:XX	XX:XX	XX:XX	XX:XX	

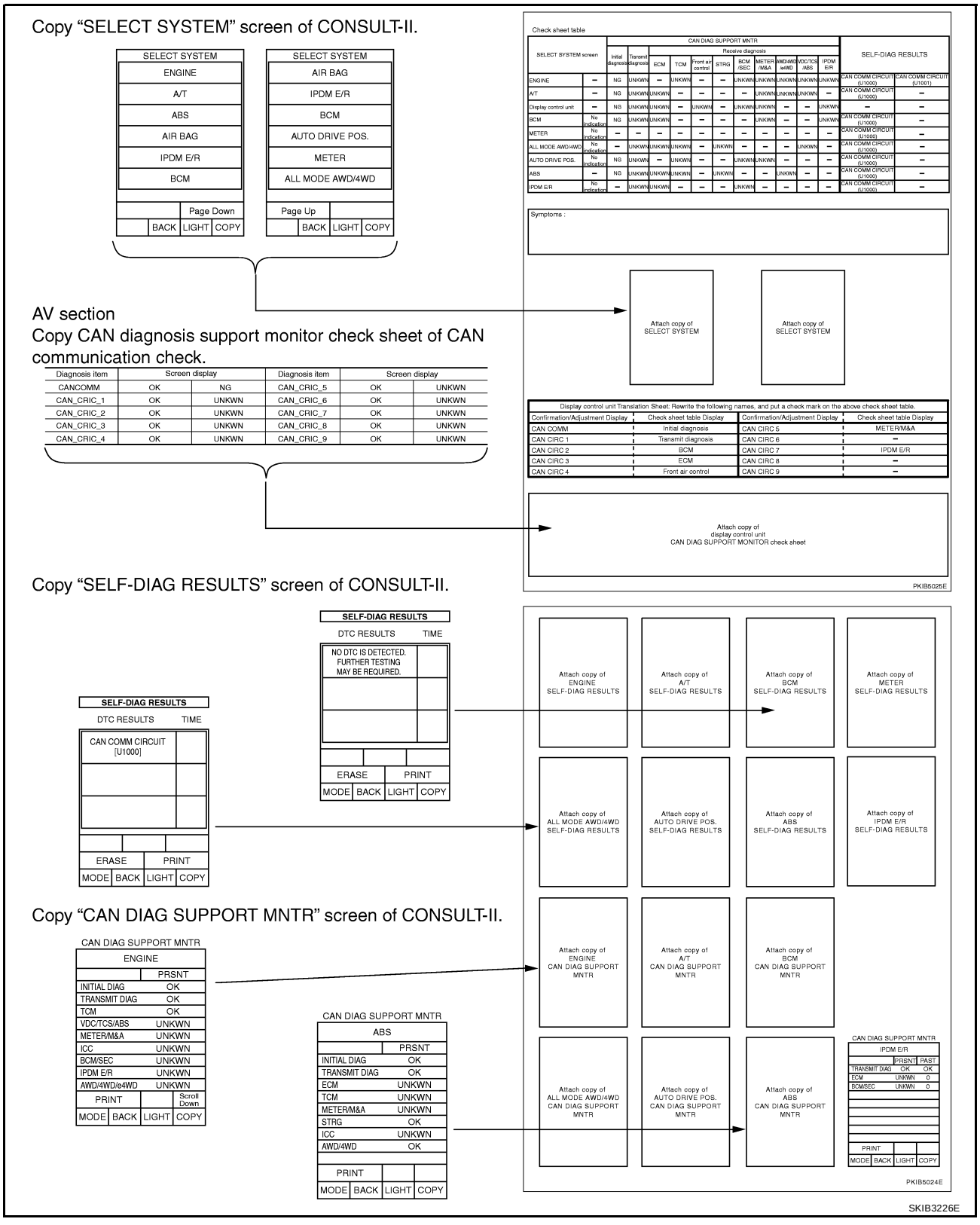
×: Applicable

In the case of this example:
It corresponds to type 8.

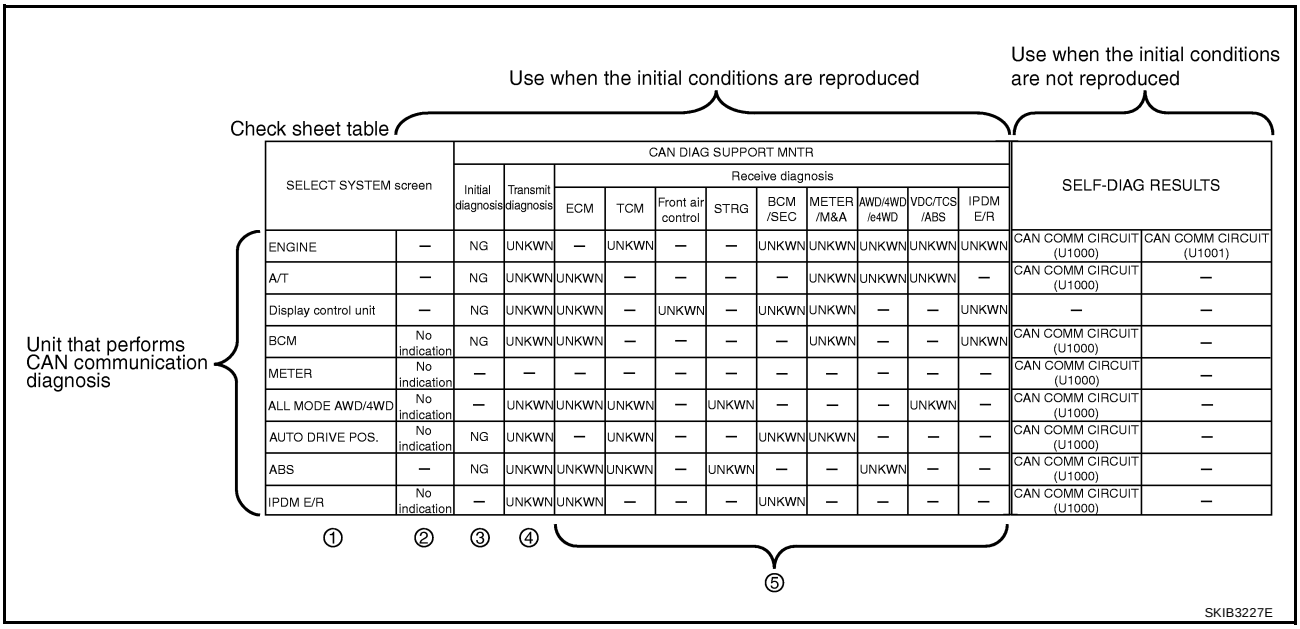
SKIB3225E

ACQUISITION OF DATA BY CONSULT-II

Attach the data acquired by CONSULT-II on the check sheet determined according to CAN system type.(For display control unit, transfer the data from the display screen of the vehicle to the CAN diagnosis support monitor check sheet AV-139, "CAN Communication Line Check" .)



HOW TO USE CHECK SHEET TABLE

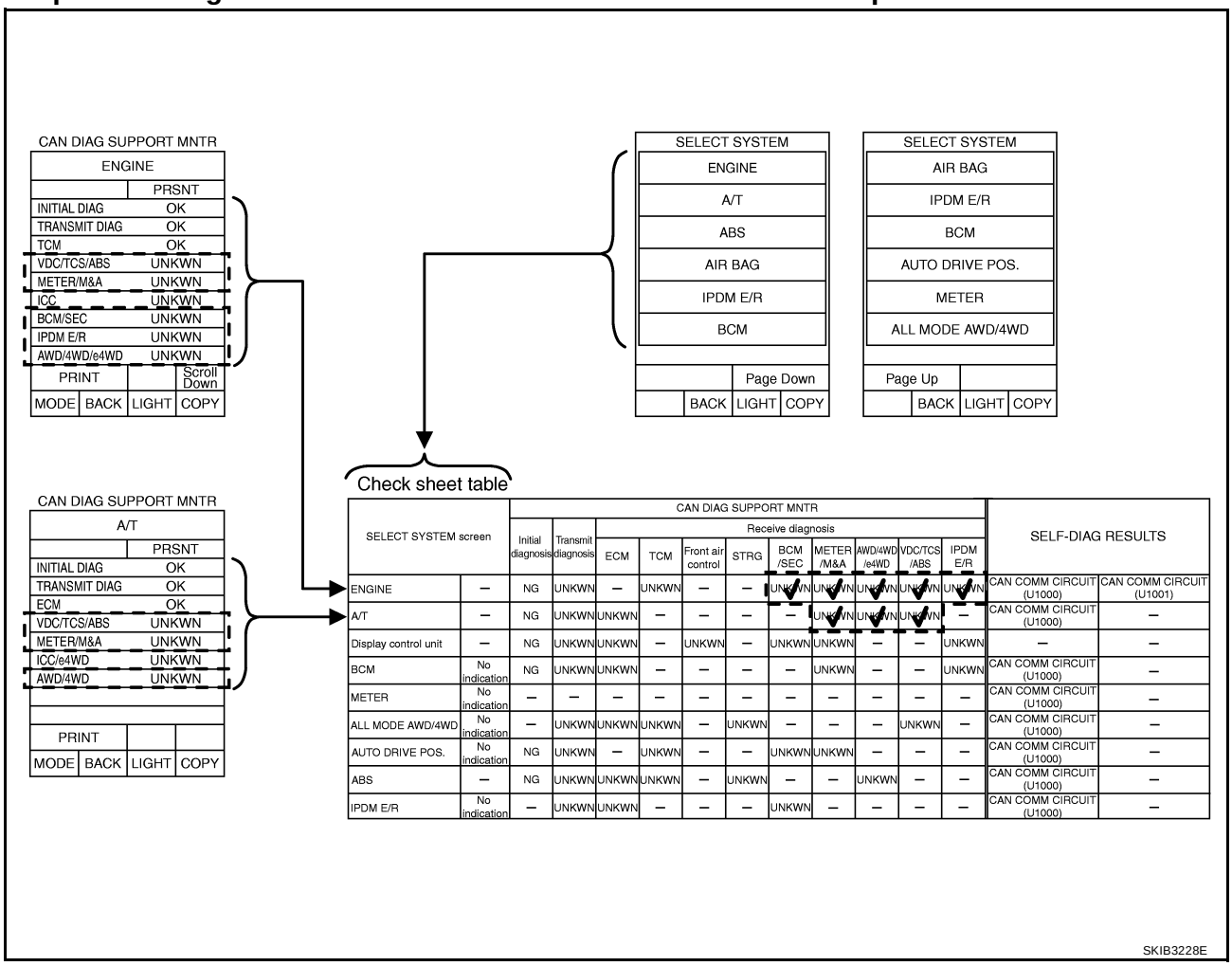


1. Unit names displayed on CONSULT-II
2. “No indication” : Put a check mark to it if the unit name described in step 1 is not displayed on “SELECT SYSTEM” screen of CONSULT-II. (Unit communicating with CONSULT-II via CAN communication line)
   “–” : Column not used (Unit communicating with CONSULT-II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

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

- When the initial conditions are reproduced. Refer to LAN-11, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced" .
- when the initial conditions are not reproduced. Refer to LAN-15, "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.

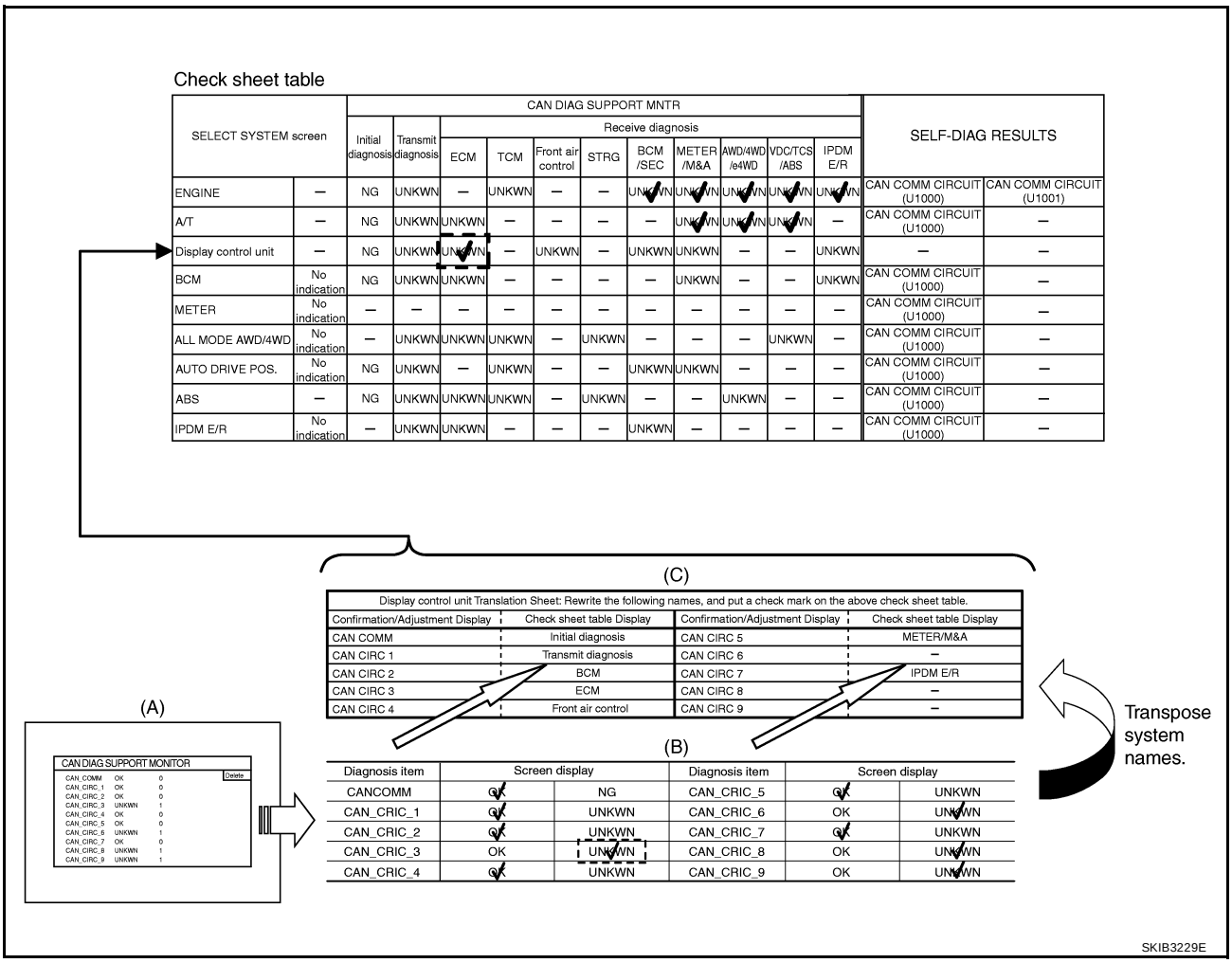
   NOTE:
   Do not put a check mark on items in the column of “No indication” on the check sheet when displaying all items on “SELECT SYSTEM” screen.

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

   NOTE:
   In “CAN DIAG SUPPORT MNTR” screen, “UNKWN” is displayed on “VDC/TCS/ABS”, “METER/M&A”, “ICC”, “BCM/SEC”, “IPDM E/R” and “AWD/4WD/e4WD”. But put a check mark to “VDC/TCS/ABS”, “METER/M&A”, “BCM/SEC”, “IPDM E/R” and “AWD/4WD/e4WD” 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” as well as “ENGINE”. And then, put a check mark to the check sheet table.

   NOTE:
   - For “A/T”, “UNKWN” is displayed on “VDC/TCS/ABS”, “METER/M&A”, “ICC/e4WD” and “AWD/4WD”. But put a check mark to “VDC/TCS/ABS”, “METER/M&A” and “AWD/4WD” because “UNKWN” is listed on the column of reception diagnosis of the check sheet table.



Check sheet table

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

(C)

Display control unit Translation Sheet: Rewrite the following names, and put a check mark on the above check sheet table.

Confirmation/Adjustment Display	Check sheet table Display	Confirmation/Adjustment Display	Check sheet table Display
CAN COMM	Initial diagnosis	CAN CIRC 5	METER/M&A
CAN CIRC 1	Transmit diagnosis	CAN CIRC 6	–
CAN CIRC 2	BCM	CAN CIRC 7	IPDM E/R
CAN CIRC 3	ECM	CAN CIRC 8	–
CAN CIRC 4	Front air control	CAN CIRC 9	–

(A)

CAN DIAG SUPPORT MONITOR

Delete

CAN_COMM	OK	0
CAN_CIRC_1	OK	0
CAN_CIRC_2	OK	0
CAN_CIRC_3	UNKWN	1
CAN_CIRC_4	OK	0
CAN_CIRC_5	OK	0
CAN_CIRC_6	UNKWN	1
CAN_CIRC_7	OK	0
CAN_CIRC_8	UNKWN	1
CAN_CIRC_9	UNKWN	1

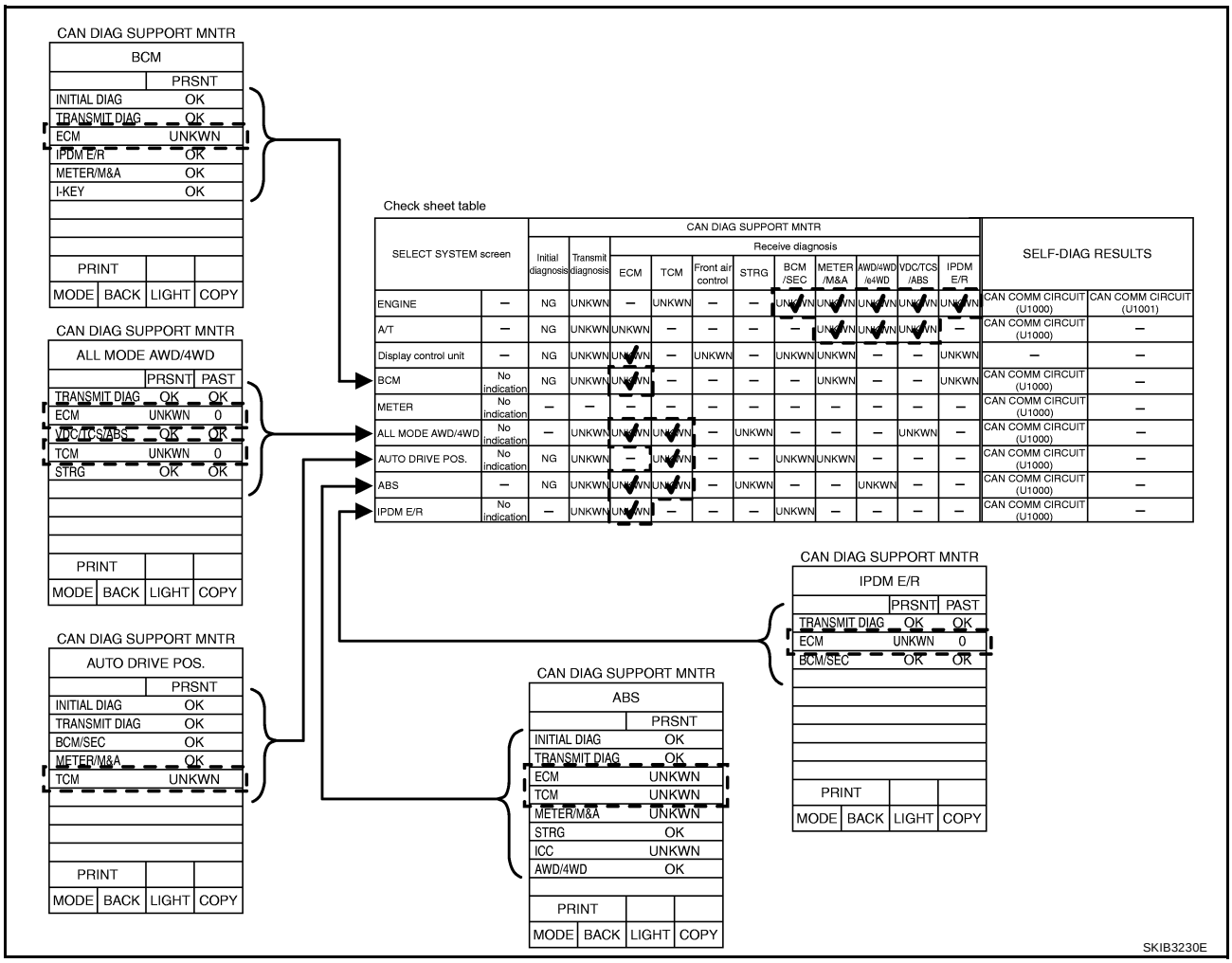
(B)

Diagnosis item	Screen display		Diagnosis item	Screen display	
CANCOMM	OK	NG	CAN_CRIC_5	OK	UNKWN
CAN_CRIC_1	OK	UNKWN	CAN_CRIC_6	OK	UNKWN
CAN_CRIC_2	OK	UNKWN	CAN_CRIC_7	OK	UNKWN
CAN_CRIC_3	OK	UNKWN	CAN_CRIC_8	OK	UNKWN
CAN_CRIC_4	OK	UNKWN	CAN_CRIC_9	OK	UNKWN

4. Display control unit reads the CAN diagnosis support monitor check sheet (B) AV-139, "CAN Communication Line Check" transferred from the display screen (A). The transferred CAN diagnosis support monitor check sheet is copied to the Check sheet, and conversed according to the Display control unit Translation Sheet. And then put a check mark to the check sheet table.

NOTE:

In the CAN diagnosis support monitor check sheet (B), check marks are put to “CAN CIRC 3”, “CAN CIRC 6”, “CAN CIRC 8” and “CAN CIRC 9”. But, in the column of the check sheet table indication in Display control unit Translation Sheet (C), “ECM” is listed only for “CAN CIRC 3”. Therefore, put a check mark to “ECM” because “UNKWN” is listed on the column of reception diagnosis of the check sheet table.



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

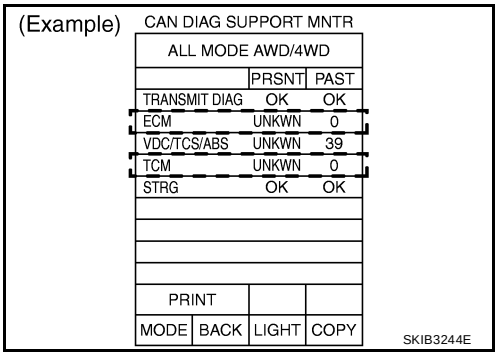
NOTE:

- For “BCM”, “UNKWN” is displayed on “ECM”. Put a check mark to it.
- For “ALL MODE AWD/4WD”, “UNKWN” is displayed on “ECM” and “TCM”. Put a check mark to it.
- For “AUTO DRIVE POS.”, “UNKWN” is displayed on “TCM”. Put a check mark to it.
- For “ABS”, “UNKWN” is displayed on “ECM” and “TCM”. Put a check mark to it.
- For “IPDM E/R”, “UNKWN” is displayed on “ECM”. Put a check mark to it.

CAUTION:

“ALL MODE AWD/4WD” puts a check mark on the check sheet when “Present” is “UNKWN” and “Past” is “0”.

(Example)



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	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	–	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
Display control unit	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–	–	UNKWN	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	–	–	UNKWN	CAN COMM CIRCUIT (U1000)	–
METER	No indication	–	–	–	–	–	–	–	–	–	–	–	CAN COMM CIRCUIT (U1000)	–
ALL MODE AWD/4WD	No indication	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	–	CAN COMM CIRCUIT (U1000)	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	–	–	–	CAN COMM CIRCUIT (U1000)	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–	CAN COMM CIRCUIT (U1000)	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	–	CAN COMM CIRCUIT (U1000)	–

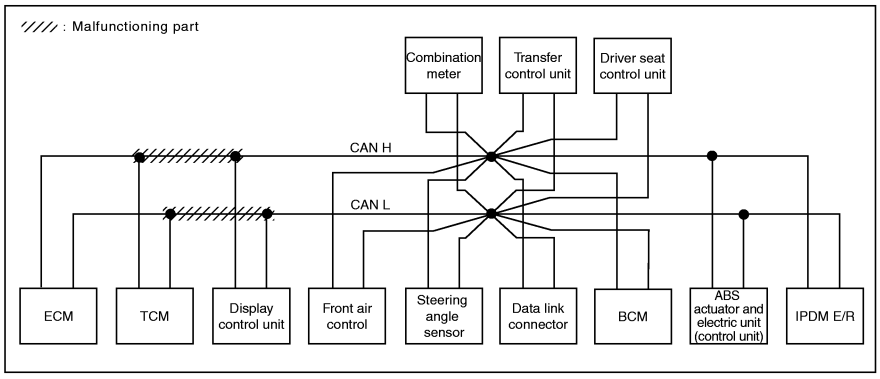
Choose similar indications between the results of CAN diagnosis support monitor and the results of the check sheet. Malfunctioning parts are found.

Case 1

Check harness between TCM and display control unit circuit.

Check sheet results (example)

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



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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.

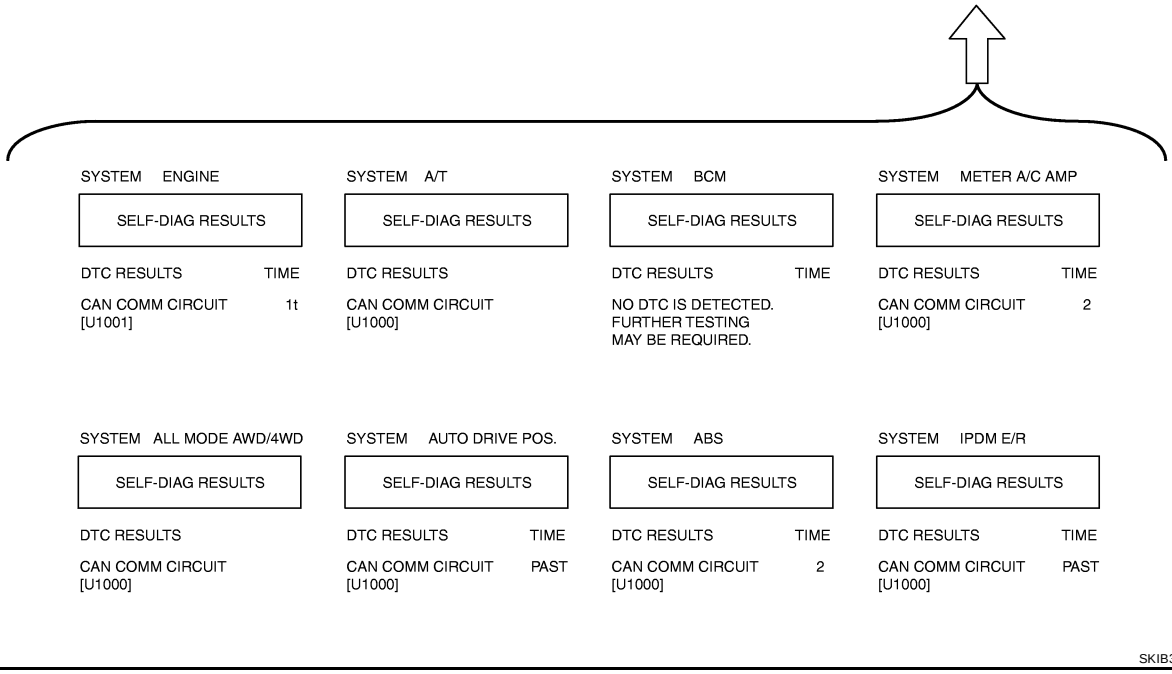
6. Perform system diagnosis for possible causes identified.
7. Perform diagnosis again after inspection and repair. Make sure that repair is completely performed, and then end the procedure.

Start CAN system trouble diagnosis if this procedure can be confirmed. Refer to LAN-24, "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	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—



SKIB3232E

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”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.
- For “BCM”, “NO DTC IS DETECTED” is displayed. Do not put a check mark to it.
- For “METER”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.
- For “ALL MODE AWD/4WD”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.
- For “AUTO DRIVE POS.”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.
- For “ABS”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.
- For “IPDM E/R”, “CAN COMM CIRCUIT [U1000]” is displayed. Put a check mark to it.

The arranged results of self-diagnosis

Check sheet table

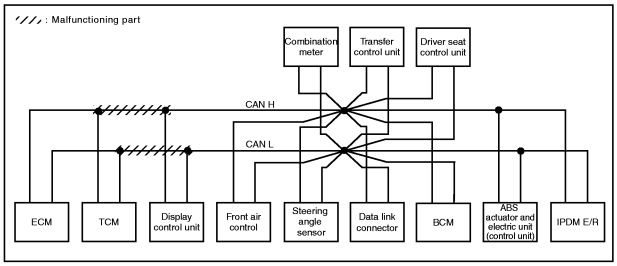
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR: Initial diagnosis	Transmit diagnosis	Receive diagnosis: ECM	TCM	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /eAWD	VDC/TCS /ABS	IPDM E/R	SELF-DIAG RESULTS	
ENGINE	–	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

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

Case 1

Check harness between TCM and display control unit circuit.

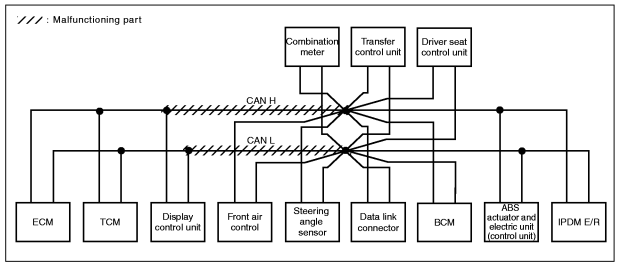
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR: Initial diagnosis	Transmit diagnosis	Receive diagnosis: ECM	TCM	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /eAWD	VDC/TCS /ABS	IPDM E/R	SELF-DIAG RESULTS	
ENGINE	–	NG	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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



Case 2

Check harness between display control unit and data link connector circuit.

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



SKIB3233E

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

UKS003GJ

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR ECM

(Example)

CAN DIAG SUPPORT MNTR

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

PRINT			Scroll Down
MODE	BACK	LIGHT	COPY

CAN DIAG SUPPORT MNTR

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

PRINT		Scroll Up	
MODE	BACK	LIGHT	COPY

SKIB0591E

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

(Example)

CAN DIAG SUPPORT MNTR

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

SKIB0593E

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

Display Results (Present)

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

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

All-mode 4WD models

(Example)

CAN DIAG SUPPORT MNTR

ALL MODE AWD/4WD		
	PRSNT	PAST
TRANSMIT DIAG	OK	OK
ECM	OK	OK
VDC/TCS/ABS	OK	OK
TCM	OK	OK
STRG	OK	OK
PRINT		
MODE / BACK / LIGHT / COPY		

PKIB5220E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present	Past
ALL MODE AWD/ 4WD	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN/–	OK/0/1~39/–
	ECM	Make sure of normal reception from ECM.	OK/UNKWN/–	
	VDC/TCS/ABS	Make sure of normal reception from ABS actuator and electric unit (control unit).	OK/UNKWN/–	
	TCM	Make sure of normal reception from TCM.	OK/UNKWN/–	
	STRG	Make sure of normal reception from steering angle sensor.	OK/UNKWN/–	

Display Results (Present)

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

  CAUTION:

  "UNKWN" is indicated by erasing the self-diagnosis result when any malfunction was detected in past.
- – : 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

CAUTION:

- **"UNKWN" is indicated in "Present" and "0" is indicated in "Past" when any malfunction is detected at present.**
- **"UNKWN" is indicated in "Present" and "1~39" is indicated in "Past" when any malfunction was detected in past.**

(Example)

CAN DIAG SUPPORT MNTR

ALL MODE AWD/4WD		
	PRSNT	PAST
TRANSMIT DIAG	OK	OK
ECM	UNKWN	0
VDC/TCS/ABS	UNKWN	39
TCM	UNKWN	0
STRG	OK	OK
PRINT		
MODE / BACK / LIGHT / COPY		

SKIB3246E

Part time 4WD models

(Example)

CAN DIAG SUPPORT MNTR

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

PKIB5232E

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

Display Results (Present)

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

DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN FOR 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	

PKIB6076E

"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	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 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

(Example)

CAN DIAG SUPPORT MNTR

ABS	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
ECM	OK
TCM	OK
METER/M&A	UNKWN
STRG	OK
ICC	UNKWN
AWD/4WD	OK

PRINT			
MODE	BACK	LIGHT	COPY

PKIB6078E

"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	METER/M&A is not diagnosed.	UNKWN
	STRG	Make sure of normal reception from steering angle sensor.	OK/UNKWN
	ICC	ICC is not diagnosed.	UNKWN
	AWD/4WD	Make sure of normal reception from transfer 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 IPDM E/R

(Example)

CAN DIAG SUPPORT MNTR

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

SKIB0595E

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

Display Results (Present)

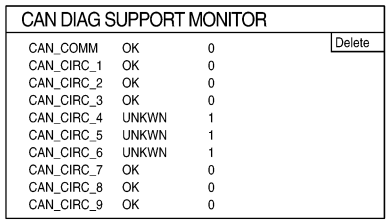
- OK : Normal
- UNKWN : The diagnosed unit does not transmit or receive the applicable data normally.
- – : There is no received unit or the unit is not in the condition that reception diagnosis is performed.

Display Results (Past)

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

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

(Example)



SKIB0645E

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

Display Results (Present)

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

Display Results : Error Counter (Reference)

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

CAN COMMUNICATION

PFP:23710

System Description

UKS000NU

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

UKS000NV

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

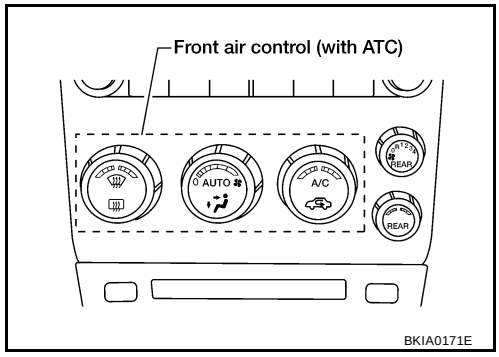
Body type	Wagon							
Axle	2WD				4WD(Part time)		4WD(All-mode)	
Engine	VQ40DE							
Transmission	A/T							
Brake control	VDC							
Automatic air conditioner		×	×	×		×	×	×
Automatic drive positioner			×	×			×	×
Navigation system				×				×
CAN system type	1	2	3	4	5	6	7	8
CAN system trouble diagnosis	LAN-34	LAN-63	LAN-92	LAN-124	LAN-161	LAN-191	LAN-222	LAN-256

×: Applicable

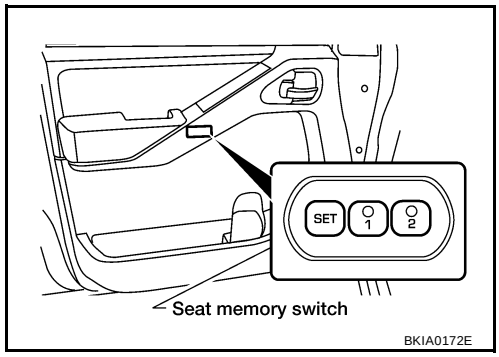
NOTE:

Confirming the presence of the following items helps to identify CAN system type.

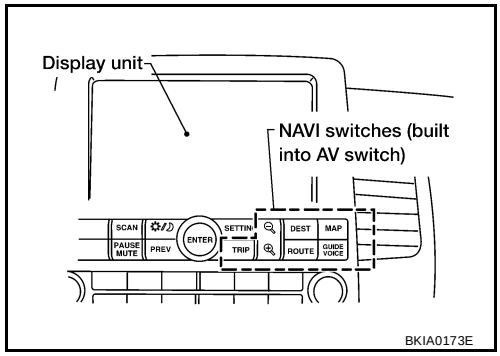
- With automatic air conditioner



- With automatic drive positioner



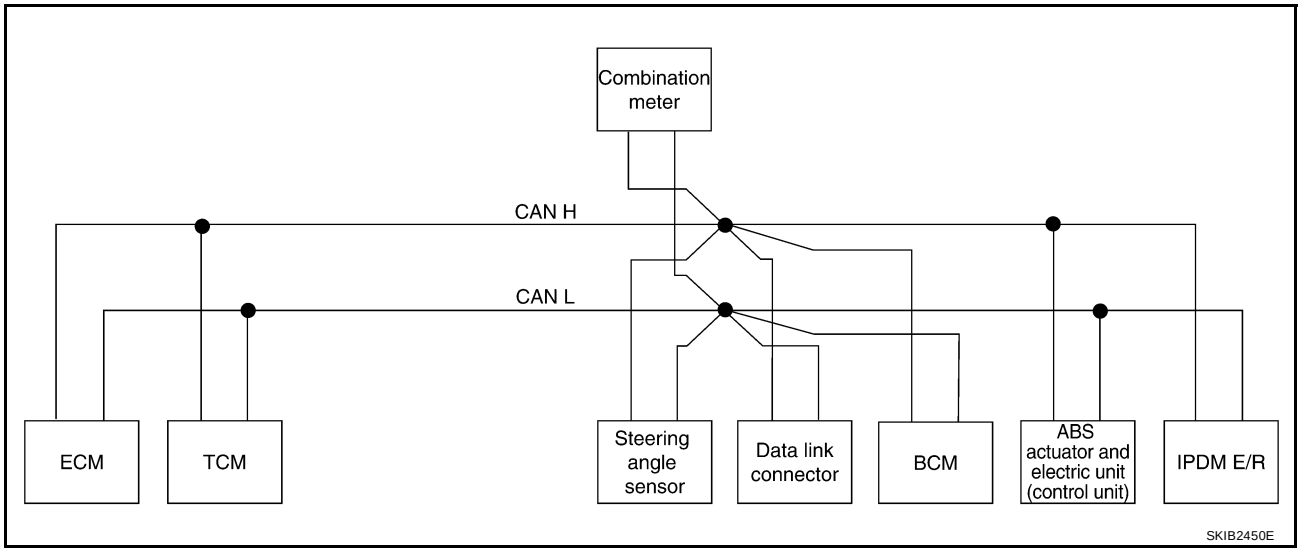
- With navigation system



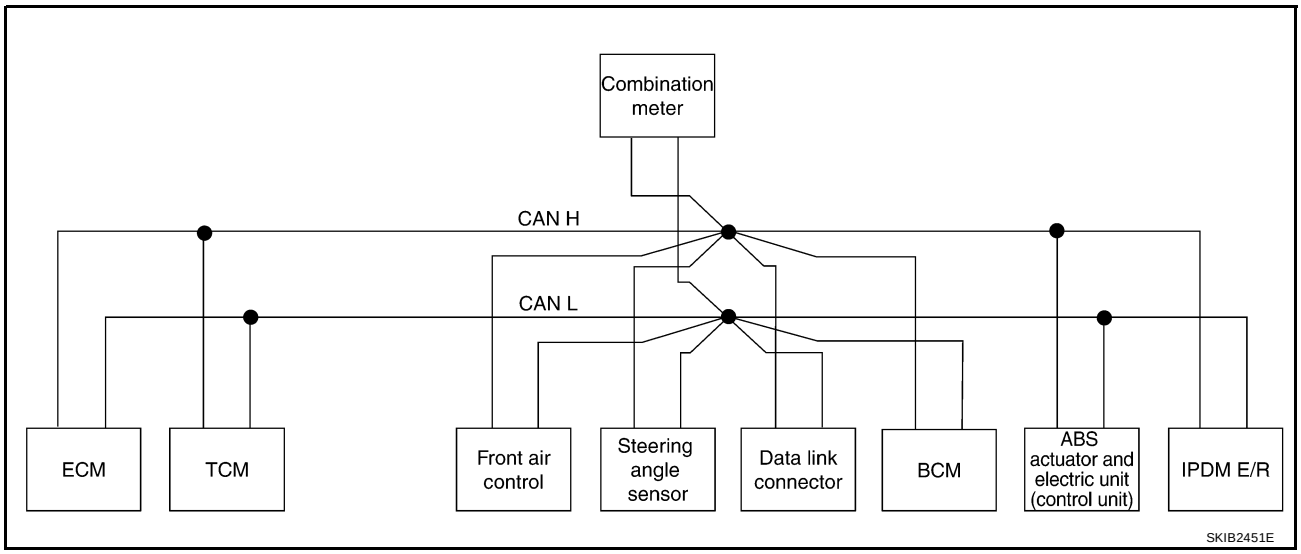
TYPE 1/ TYPE 2/ TYPE 3/ TYPE 4

System diagram

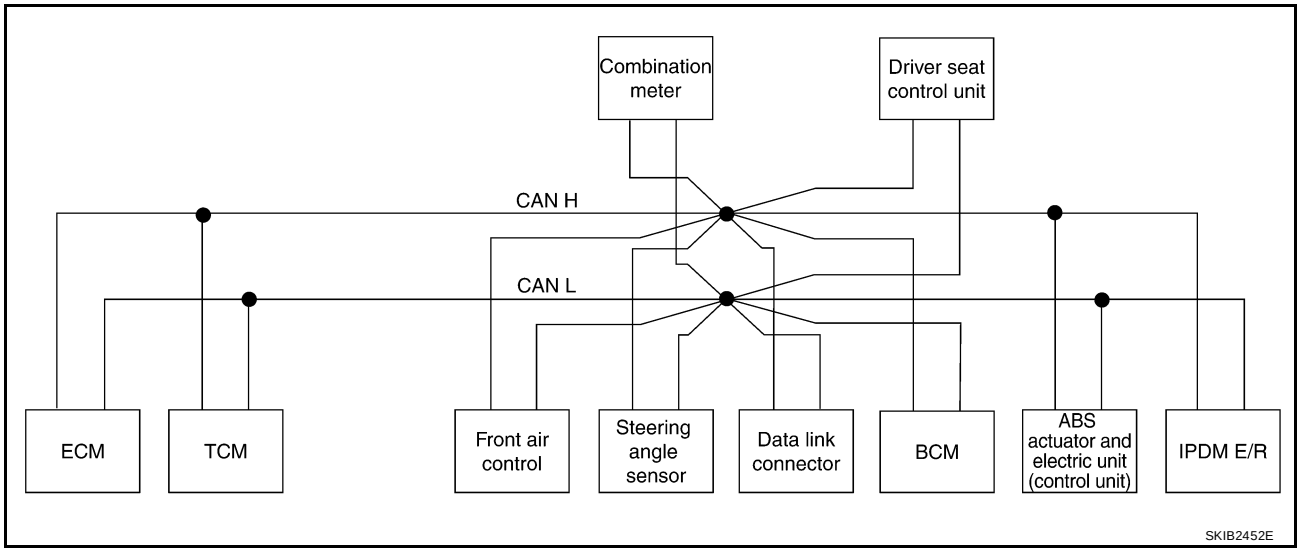
- Type 1



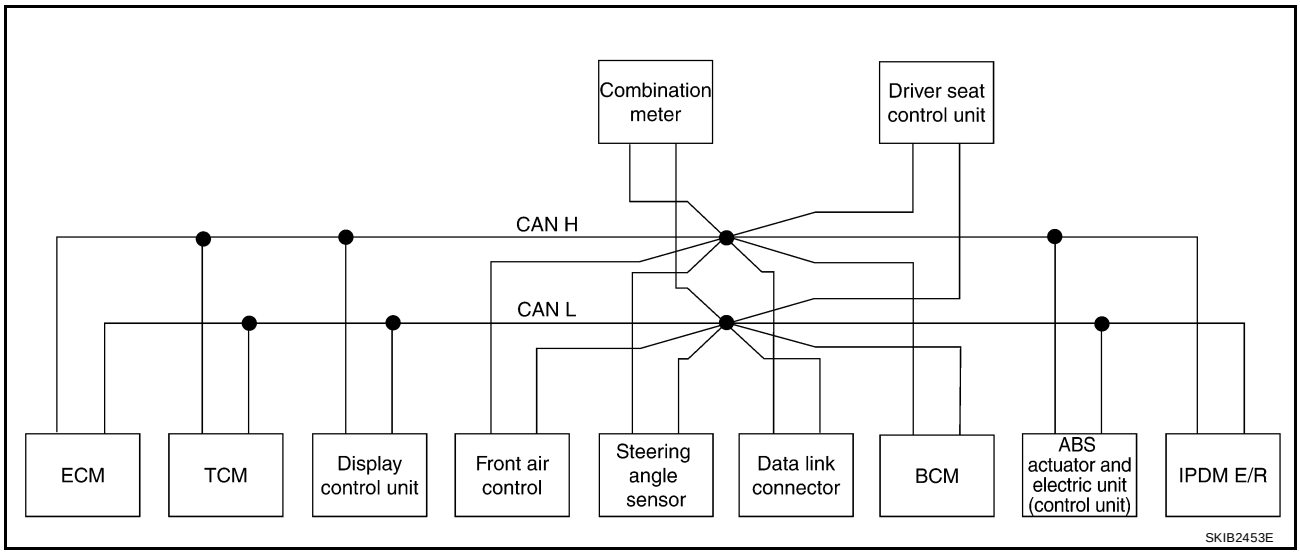
- Type 2



- Type 3



- Type 4



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Front air control	Steering angle sensor	BCM	Combination meter	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R	R			R		R	
Engine status signal	T					R				
Engine coolant temperature signal	T			R			R			
Accelerator pedal position signal	T	R							R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Battery voltage signal	T	R								
A/T self-diagnosis signal	R	T								
Turbine revolution signal	R	T								

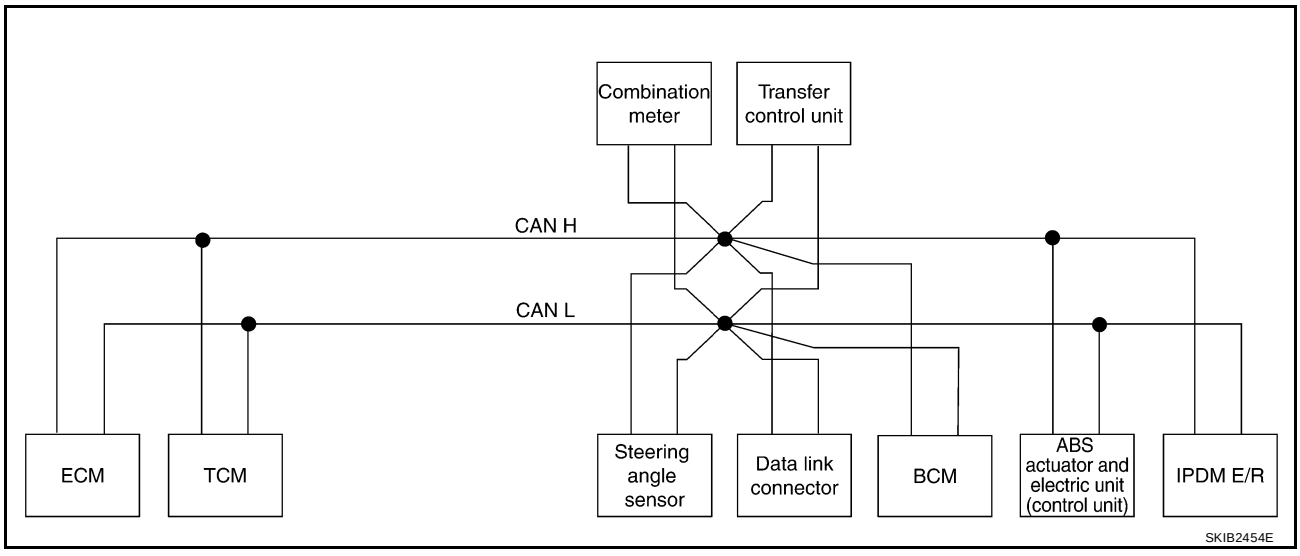
Signals	ECM	TCM	Display control unit	Front air control	Steering angle sensor	BCM	Combination meter	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Output shaft revolution signal	R	T								
A/C switch signal	R			R		T				
A/C compressor request signal	T									R
Blower fan motor switch signal	R					T				
Cooling fan speed request signal	T									R
A/C switch/indicator signal			T	R						
			R	T						
Low beam request signal						T				R
Low beam status signal	R									T
High beam request signal						T	R			R
High beam status signal	R									T
Position light request signal						T	R			R
Front fog light request signal						T	R			R
Day time running light request signal						T	R			R
Sleep wake up signal						T	R	R		R
Door switch signal			R			T	R	R		R
Seat belt buckle switch signal						R	T			
System setting signal			T			R		R		
			R			T		T		
Ignition switch signal						T		R		
Key switch signal						T		R		
Key fob ID signal						T		R		
Key fob door unlock signal						T		R		
Theft warning horn request signal						T				R
Horn chirp signal						T				R
Front wiper request signal						T				R
Front wiper stop position signal						R				T
Rear window defogger switch signal				R		T				R
Rear window defogger control signal	R			R						T
Buzzer output signal						T	R			
Tire pressure signal			R			T	R			
Tire pressure data signal			R			T				
Fuel consumption monitor signal	T						R			
			R				T			
Fuel level sensor signal	R						T			
Fuel level low warning signal			R				T			
Distance to empty signal			R				T			
Turn indicator signal						T	R			
Brake warning lamp signal							R		T	
ABS warning lamp signal							R		T	

Signals	ECM	TCM	Display control unit	Front air control	Steering angle sensor	BCM	Combination meter	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
VDC OFF indicator lamp signal							R		T	
SLIP indicator lamp signal							R		T	
Malfunction indicator lamp signal	T						R			
ASCD CRUISE lamp signal	T						R			
ASCD SET lamp signal	T						R			
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
A/T fluid temperature sensor signal		T					R			
A/T position indicator lamp signal		T					R			
P range signal		T					R	R	R	
O/D OFF indicator signal		T					R			
Overdrive control switch signal		R					T			
1st position switch signal		R					T			
Stop lamp switch signal		R					T			
Vehicle speed signal				R			R		T	
	R	R	R	R		R	T	R		
Steering angle sensor signal					T				R	

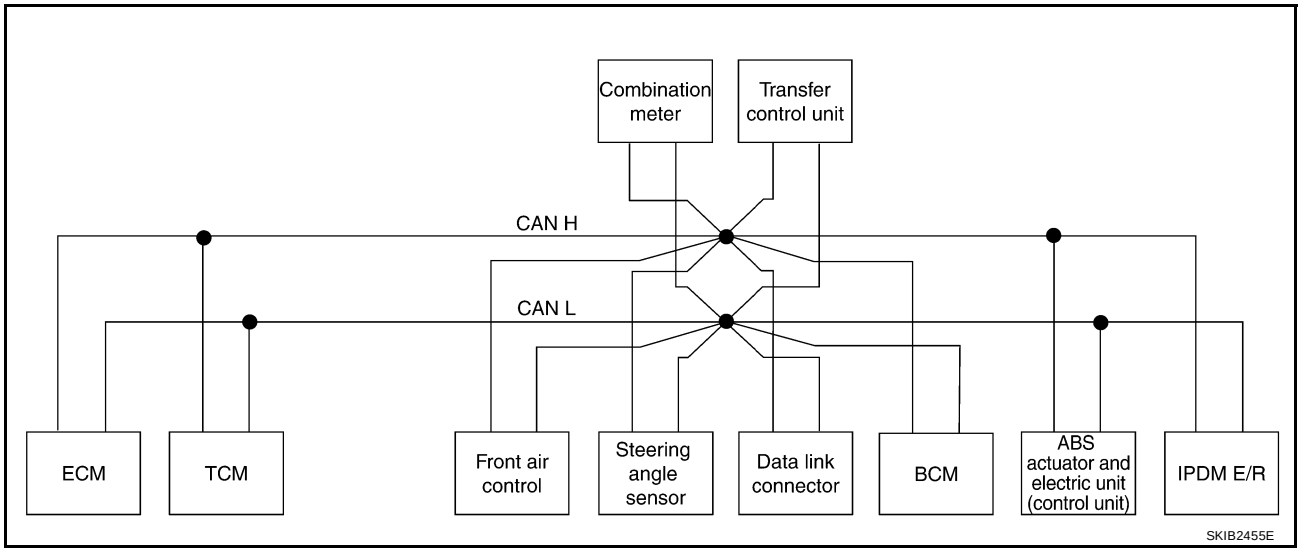
TYPE 5/ TYPE 6

System diagram

- Type 5



- Type 6



Input/output signal chart

T: Transmit R: Receive

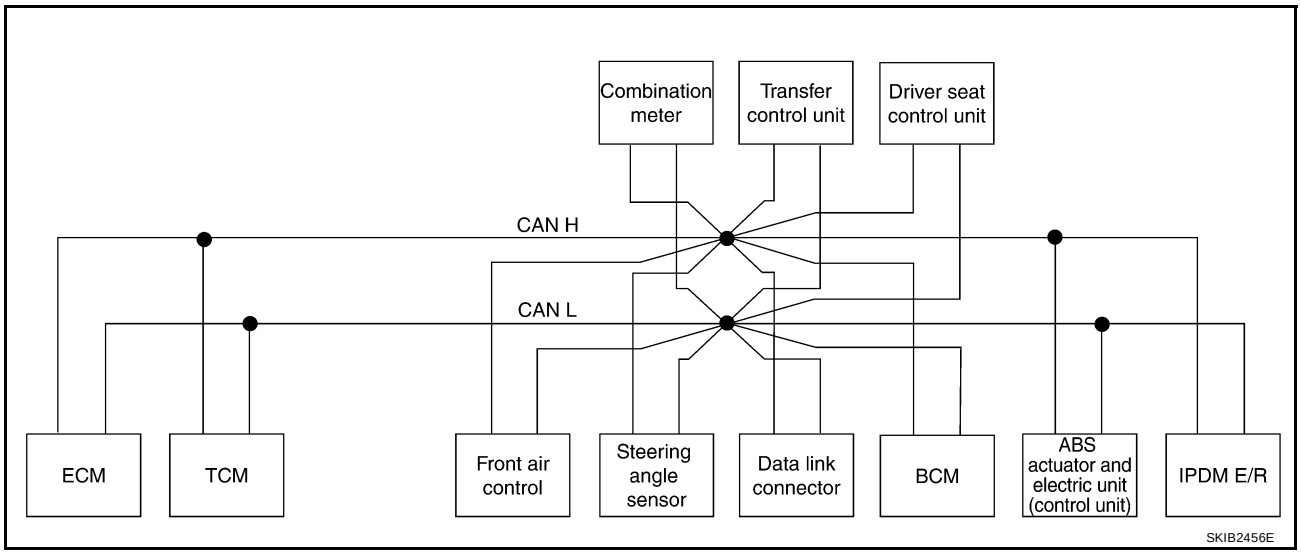
Signals	ECM	TCM	Front air control	Steering angle sensor	BCM	Combination meter	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R			R	R	R	
Engine status signal	T				R				
Engine coolant temperature signal	T		R			R			
Accelerator pedal position signal	T	R						R	
Closed throttle position signal	T	R							
Wide open throttle position signal	T	R							
Battery voltage signal	T	R							
A/T self-diagnosis signal	R	T							
Turbine revolution signal	R	T							
Output shaft revolution signal	R	T					R		
A/C switch signal	R		R		T				
A/C compressor request signal	T								R
Blower fan motor switch signal	R				T				
Cooling fan speed request signal	T								R
Low beam request signal					T				R
Low beam status signal	R								T
High beam request signal					T	R			R
High beam status signal	R								T
Position light request signal					T	R			R
Front fog light request signal					T	R			R
Day time running light request signal					T	R			R
Sleep wake up signal					T	R			R
Door switch signal					T	R			R
Seat belt buckle switch signal					R	T			

Signals	ECM	TCM	Front air control	Steering angle sensor	BCM	Combination meter	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Ignition switch signal					T				R
Theft warning horn request signal					T				R
Horn chirp signal					T				R
Front wiper request signal					T				R
Front wiper stop position signal					R				T
Rear window defogger switch signal			R		T				R
Rear window defogger control signal	R		R						T
Buzzer output signal					T	R			
Tire pressure signal					T	R			
Fuel consumption monitor signal	T					R			
Fuel level sensor signal	R					T			
Turn indicator signal					T	R			
Brake warning lamp signal						R		T	
ABS warning lamp signal						R		T	
VDC OFF indicator lamp signal						R		T	
SLIP indicator lamp signal						R		T	
HDC indicator lamp signal						R		T	
Malfunction indicator lamp signal	T					R			
ASCD CRUISE lamp signal	T					R			
ASCD SET lamp signal	T					R			
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
A/T fluid temperature sensor signal		T				R			
A/T position indicator lamp signal		T				R	R		
O/D OFF indicator signal		T				R			
Overdrive control switch signal		R				T			
1st position switch signal		R				T			
Stop lamp switch signal		R				T			
							R	T	
Vehicle speed signal			R			R	R	T	
	R	R	R		R	T			
Steering angle sensor signal				T				R	

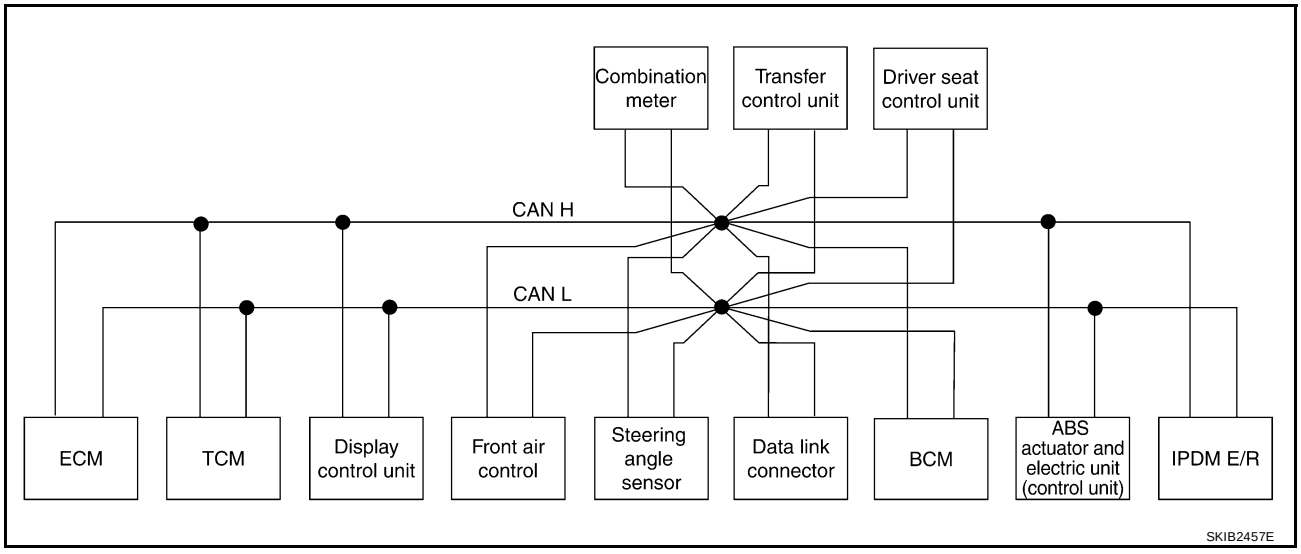
TYPE 7/TYPE 8

System diagram

- Type 7



- Type 8



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Front air control	Steering angle sensor	BCM	Combination meter	Transfer control unit	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R	R			R	R		R	
Engine status signal	T					R					
Engine coolant temperature signal	T			R			R				
Accelerator pedal position signal	T	R						R		R	
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									

Signals	ECM	TCM	Display control unit	Front air control	Steering angle sensor	BCM	Combination meter	Transfer control unit	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Battery voltage signal	T	R									
A/T self-diagnosis signal	R	T									
Turbine revolution signal	R	T									
Output shaft revolution signal	R	T						R			
A/C switch signal	R			R		T					
A/C compressor request signal	T										R
Blower fan motor switch signal	R					T					
Cooling fan speed request signal	T										R
A/C switch/indicator signal			T	R							
			R	T							
Low beam request signal						T					R
Low beam status signal	R										T
High beam request signal						T	R				R
High beam status signal	R										T
Position light request signal						T	R				R
Front fog light request signal						T	R				R
Day time running light request signal						T	R				R
Sleep wake up signal						T	R		R		R
Door switch signal			R			T	R		R		R
Seat belt buckle switch signal						R	T				
System setting signal			T			R			R		
			R			T			T		
Ignition switch signal						T			R		
Key switch signal						T			R		
Key fob ID signal						T			R		
Key fob door unlock signal						T			R		
Theft warning horn request signal						T					R
Horn chirp signal						T					R
Front wiper request signal						T					R
Front wiper stop position signal						R					T
Rear window defogger switch signal				R		T					R
Rear window defogger control signal	R			R							T
Buzzer output signal						T	R				
Tire pressure signal			R			T	R				
Tire pressure data signal			R			T					
Fuel consumption monitor signal	T						R				
			R				T				
Fuel level sensor signal	R						T				

Signals	ECM	TCM	Display control unit	Front air control	Steering angle sensor	BCM	Combination meter	Transfer control unit	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Fuel level low warning signal			R				T				
Distance to empty signal			R				T				
Turn indicator signal						T	R				
Brake warning lamp signal							R			T	
ABS warning lamp signal							R			T	
VDC OFF indicator lamp signal							R			T	
SLIP indicator lamp signal							R			T	
Malfunction indicator lamp signal	T						R				
ASCD CRUISE lamp signal	T						R				
ASCD SET lamp signal	T						R				
ASCD operation signal	T	R									
ASCD OD cancel request	T	R									
A/T fluid temperature sensor signal		T					R				
A/T position indicator lamp signal		T					R	R			
P range signal		T					R		R	R	
O/D OFF indicator signal		T					R				
Overdrive control switch signal		R					T				
1st position switch signal		R					T				
Stop lamp switch signal		R					T				
Vehicle speed signal				R			R	R		T	
	R	R	R	R		R	T		R		
Steering angle sensor signal					T					R	

CAN SYSTEM (TYPE 1)

PFP:23710

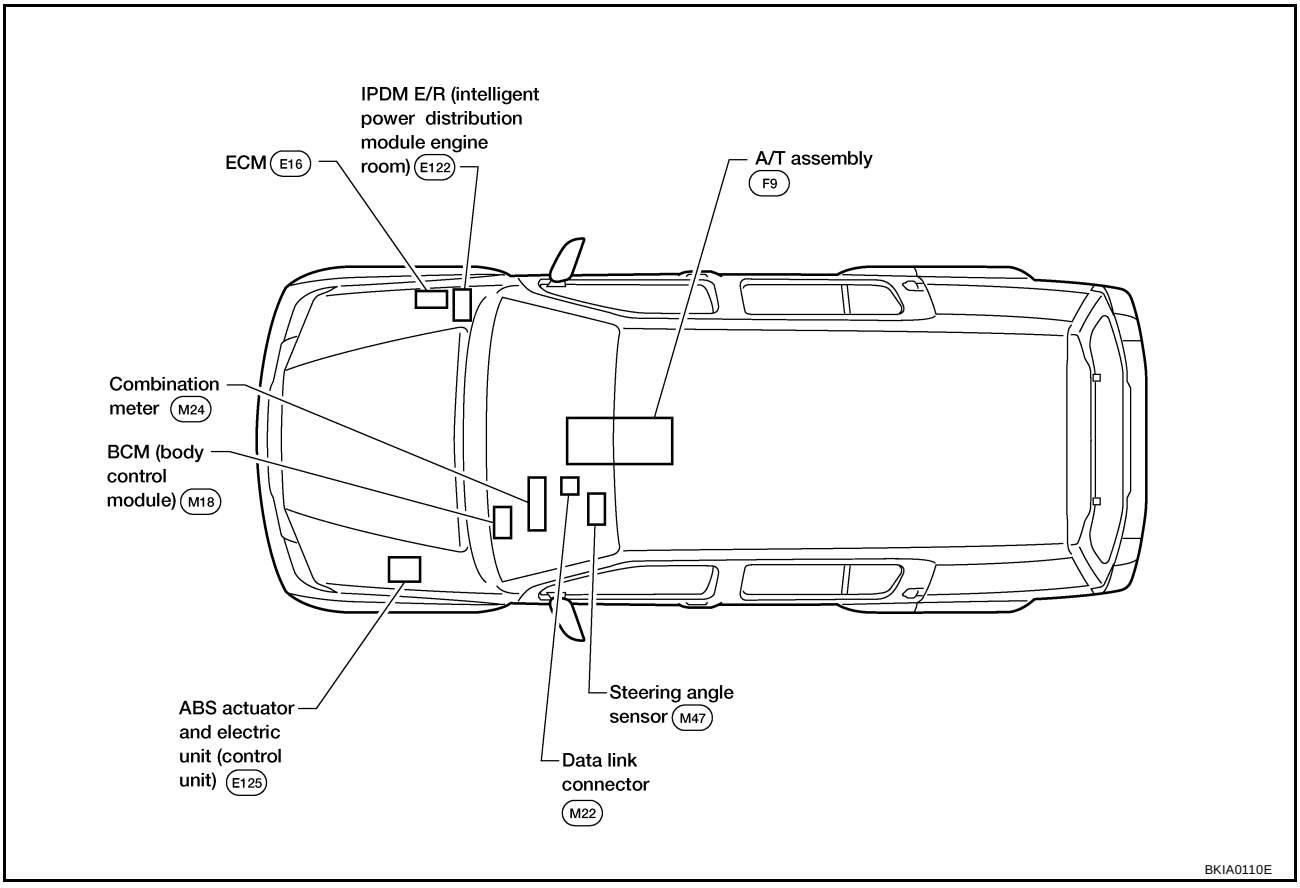
System Description

UKS003G0

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.

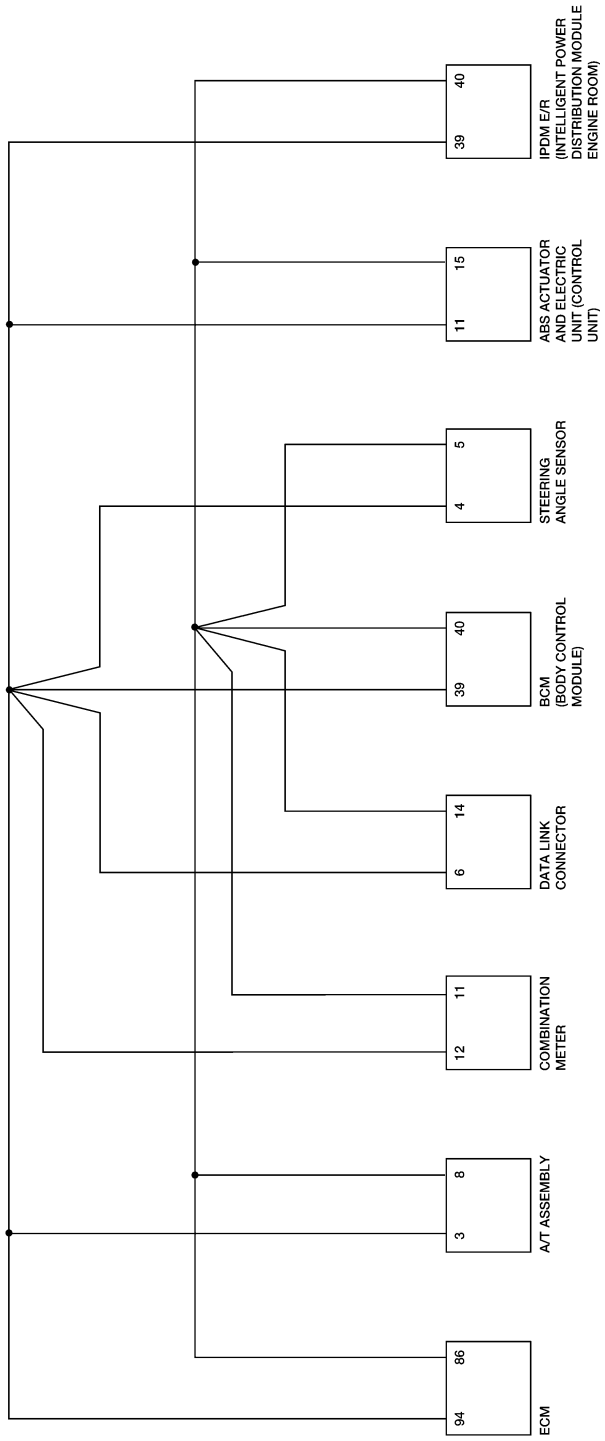
Component Parts and Harness Connector Location

UKS003G1



Schematic

UKS003G2

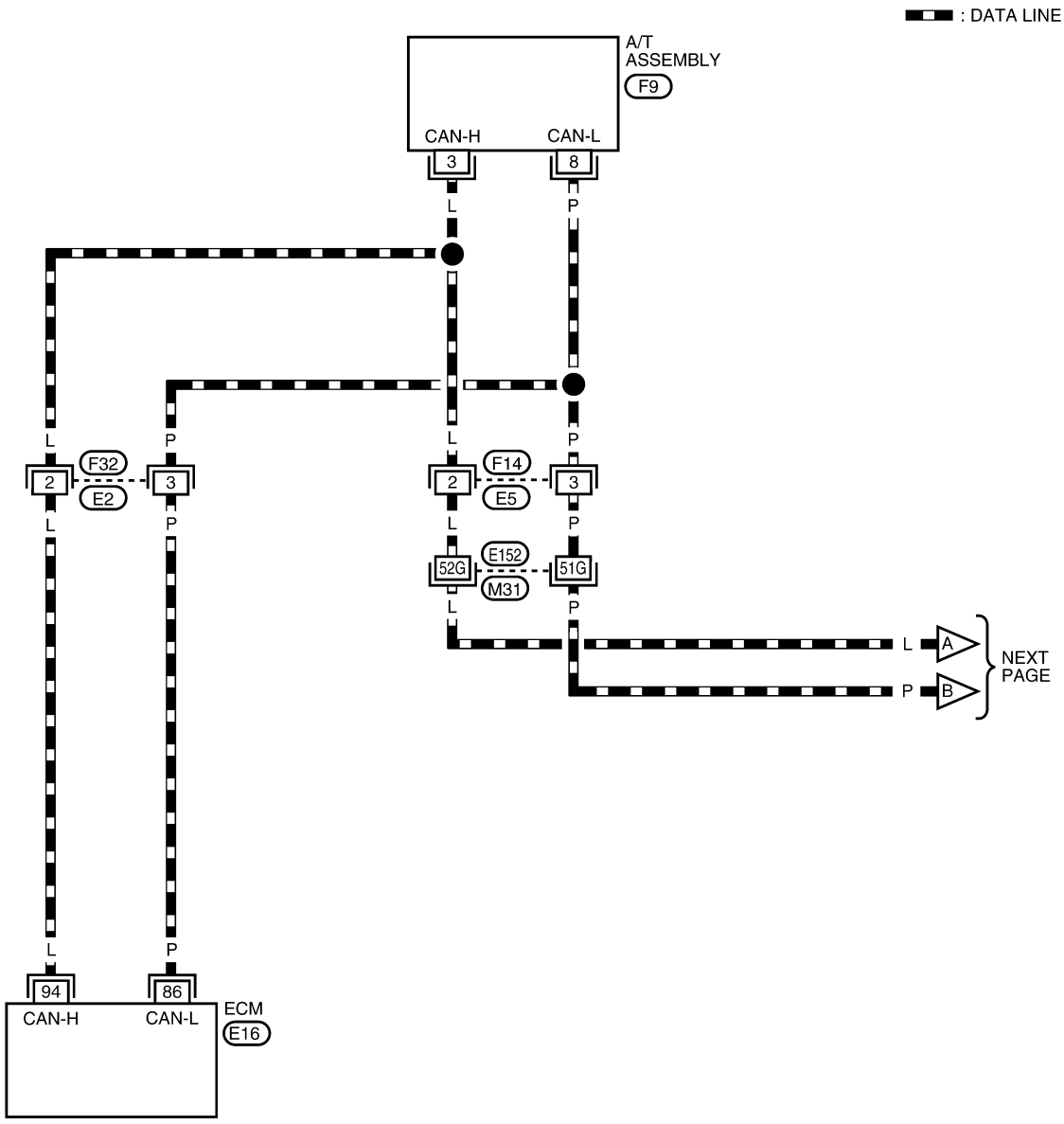


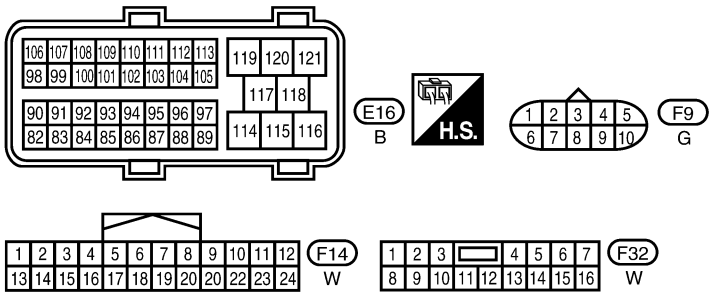
BKWA0605E

Wiring Diagram - CAN -

UKS003G3

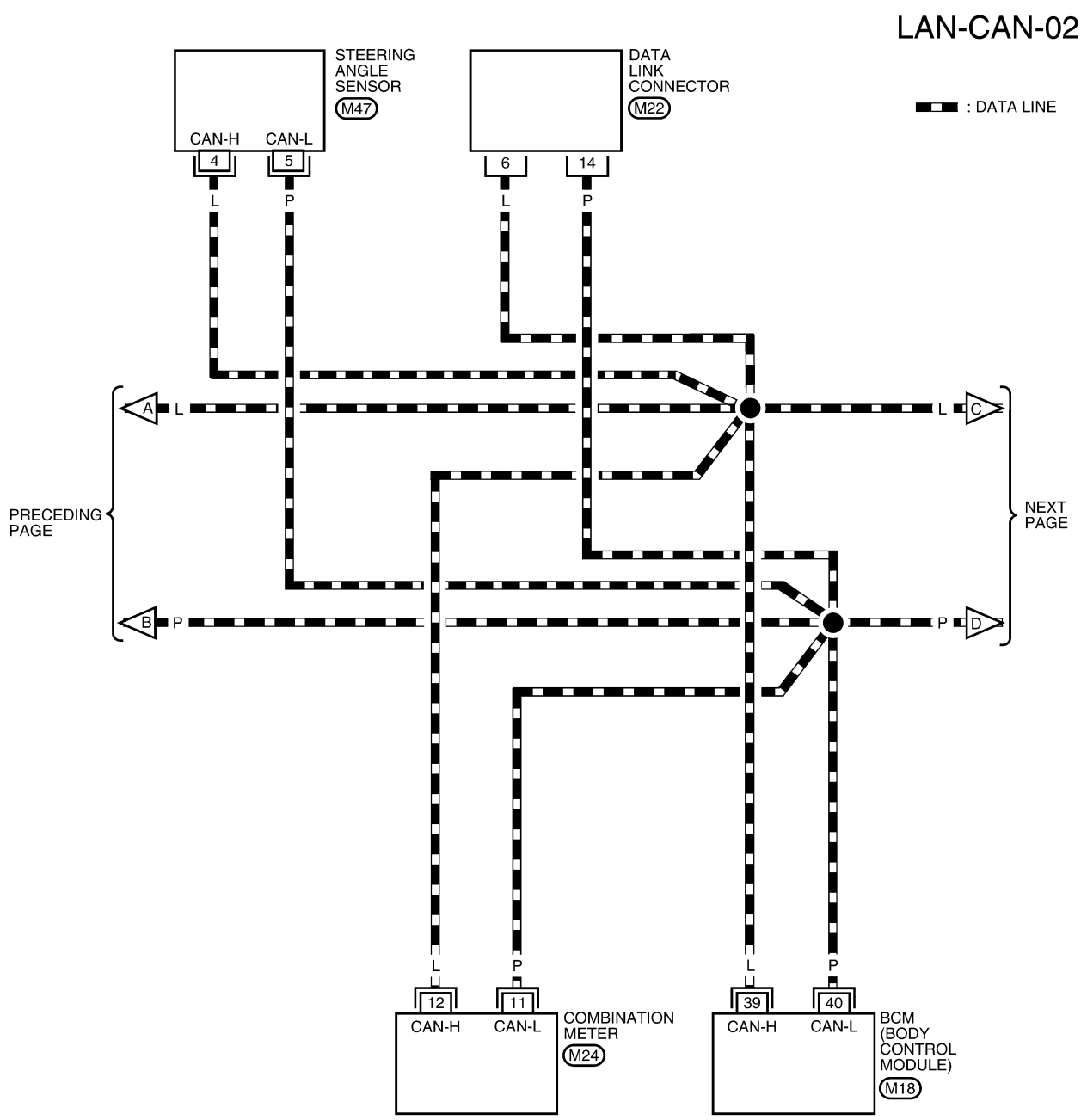
LAN-CAN-01

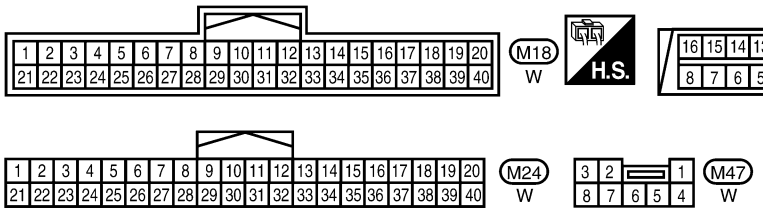




REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0368E

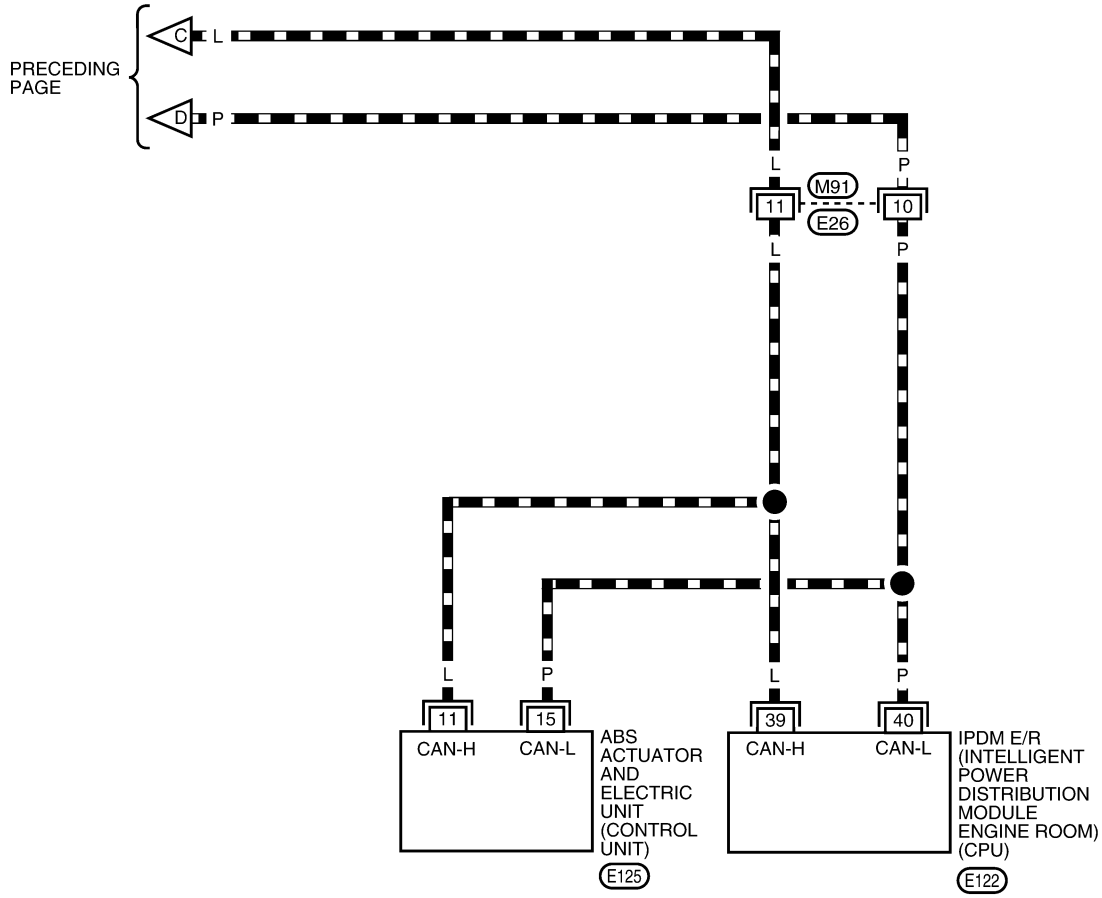

LAN-CAN-02
STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
4
5
DATA LINK CONNECTOR
M22
6
14
: DATA LINE
L
P
A
B
C
D
PRECEDING PAGE
NEXT PAGE
12
11
CAN-H
CAN-L
COMBINATION METER
M24
39
40
BCM (BODY CONTROL MODULE)
M18

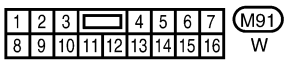

M18
W
H.S.
M22
W
M24
W
M47
W

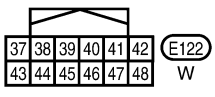
BKWA0606E

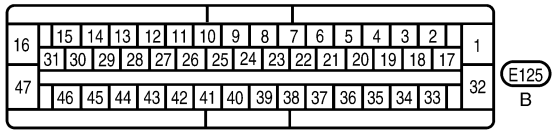
LAN-CAN-03

: DATA LINE









BKWA0370E

CHECK SHEET

UKS003G4

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

Check sheet table

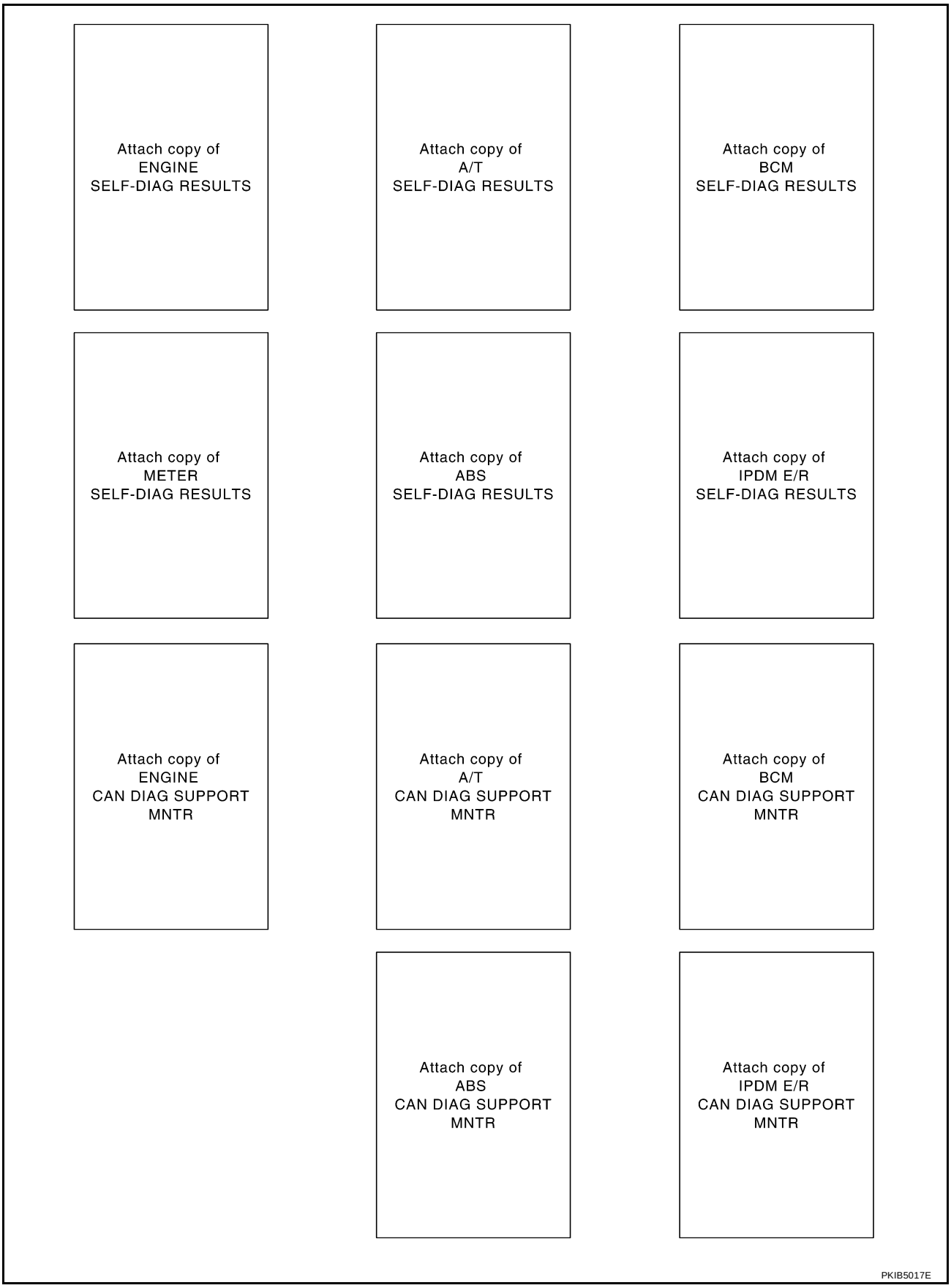
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB5016E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5017E

CHECK SHEET RESULTS (EXAMPLE)

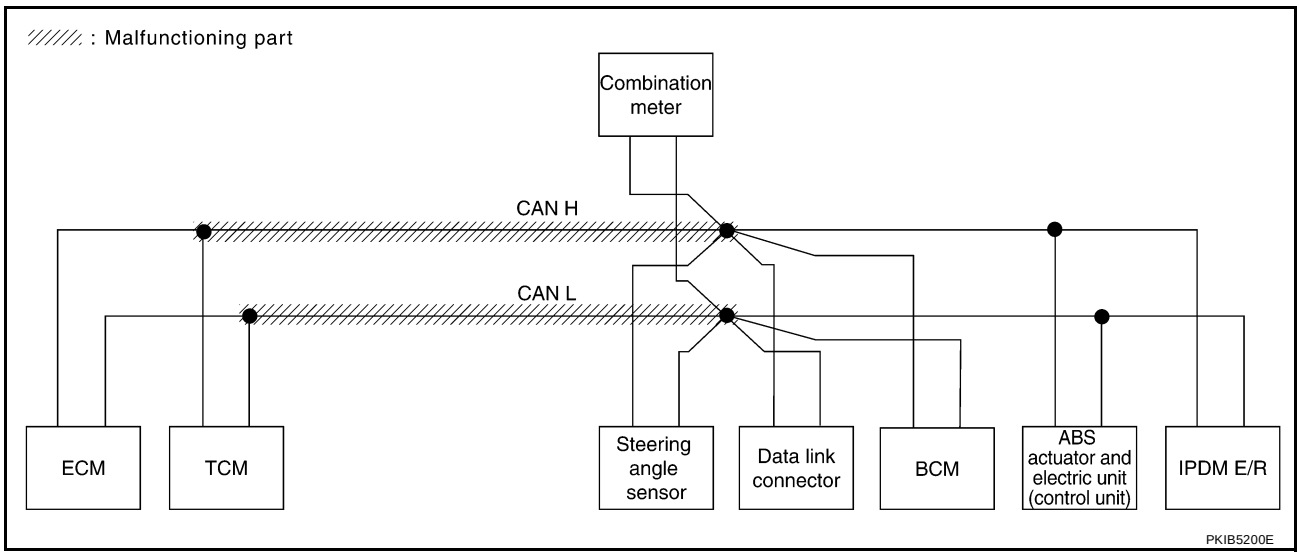
NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector circuit. Refer to LAN-51, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB5083E



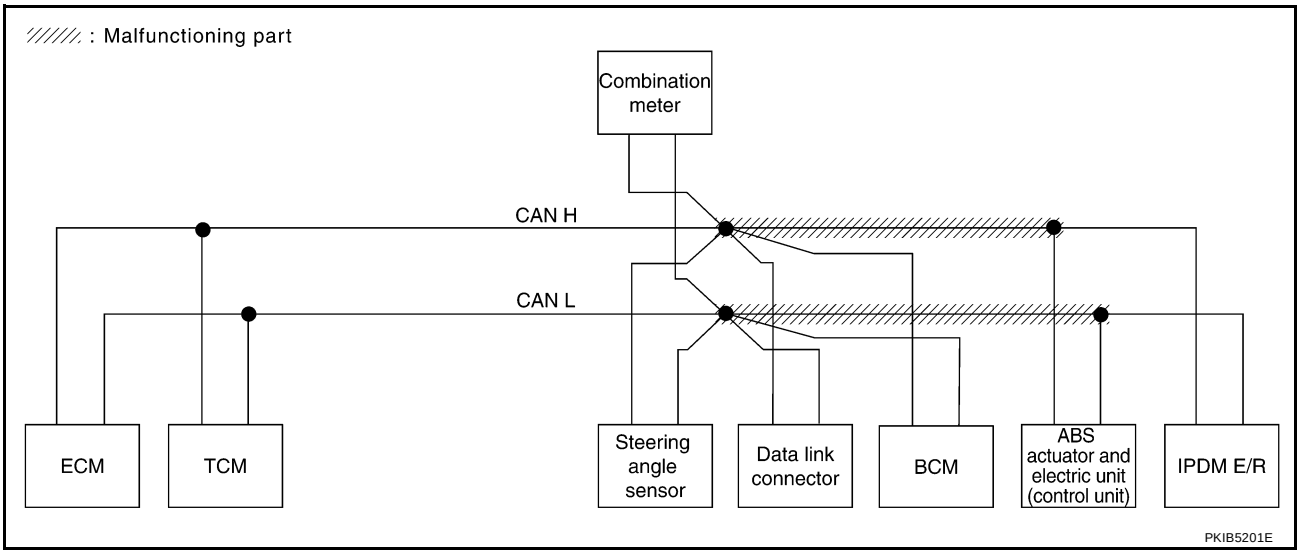
PKIB5200E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-52, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit" .

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

PKIB5084E

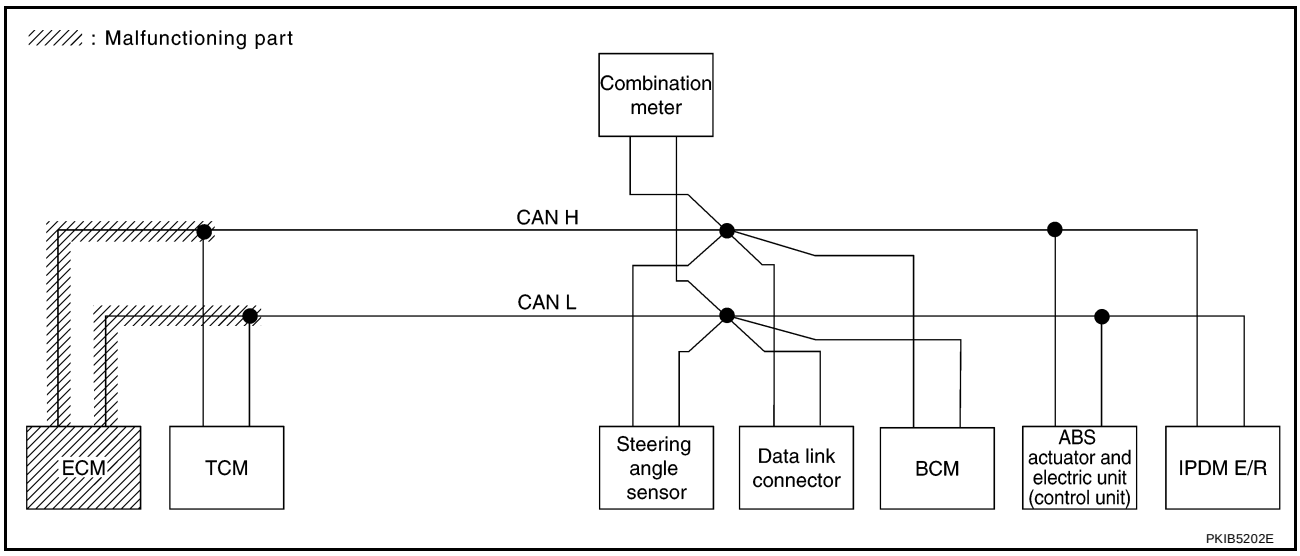


Case 3

Check ECM circuit. Refer to LAN-53, "ECM Circuit Inspection" .

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

PKIB5085E



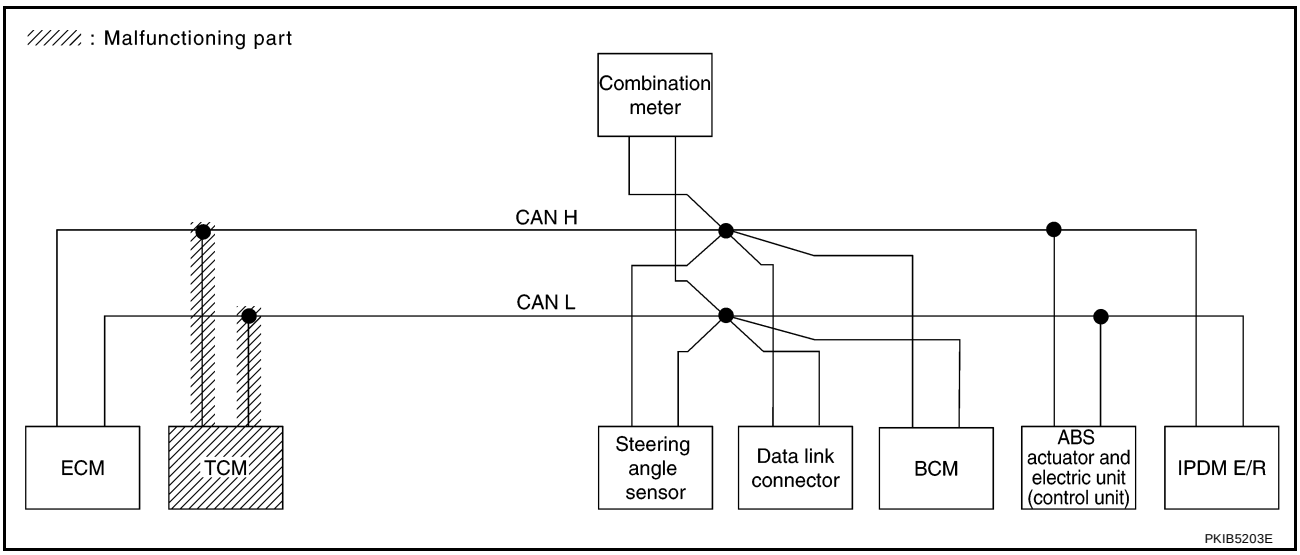
PKIB5202E

Case 4

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

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

PKIB5086E

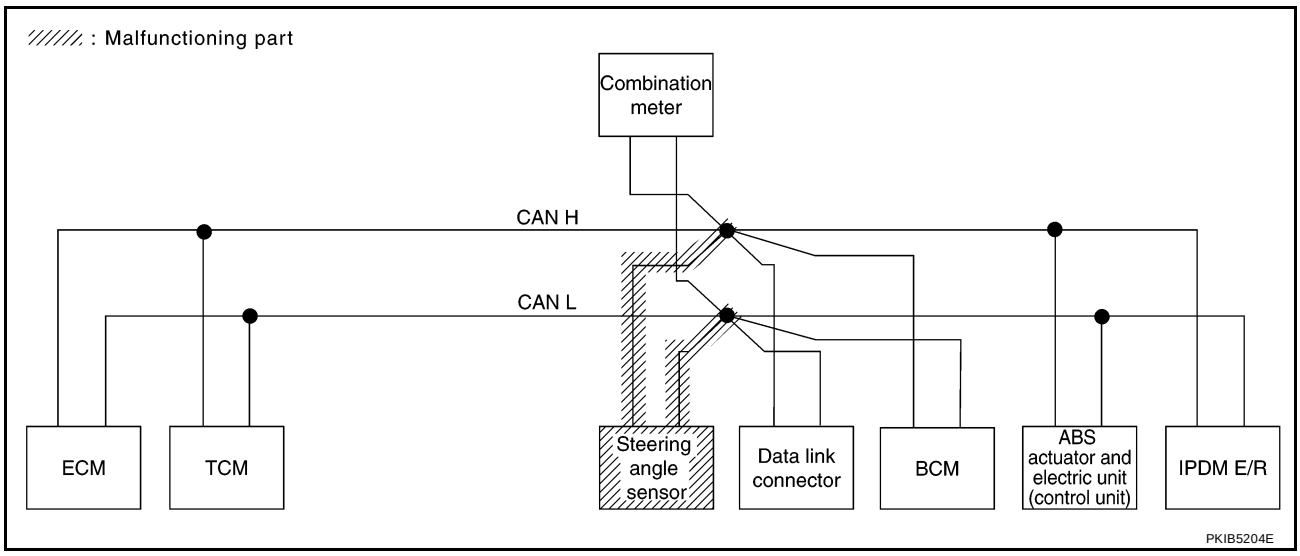


Case 5

Check steering angle sensor circuit. Refer to LAN-54, "Steering Angle Sensor Circuit Inspection" .

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

PKIB5087E

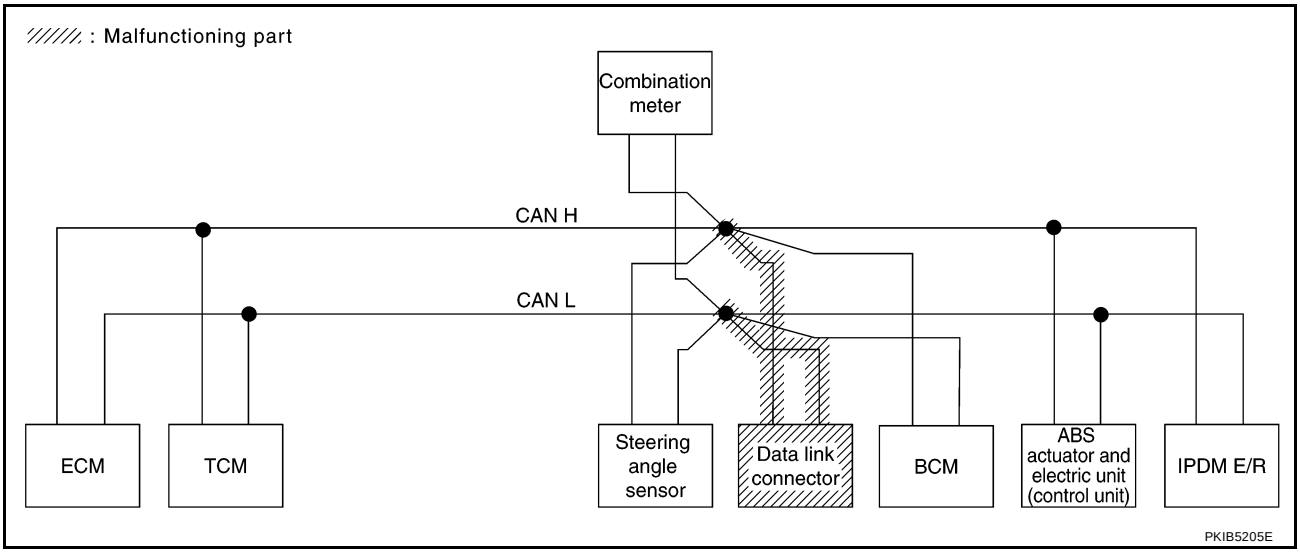


Case 6

Check data link connector circuit. Refer to LAN-55, "Data Link Connector Circuit Inspection" .

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

PKIB5088E



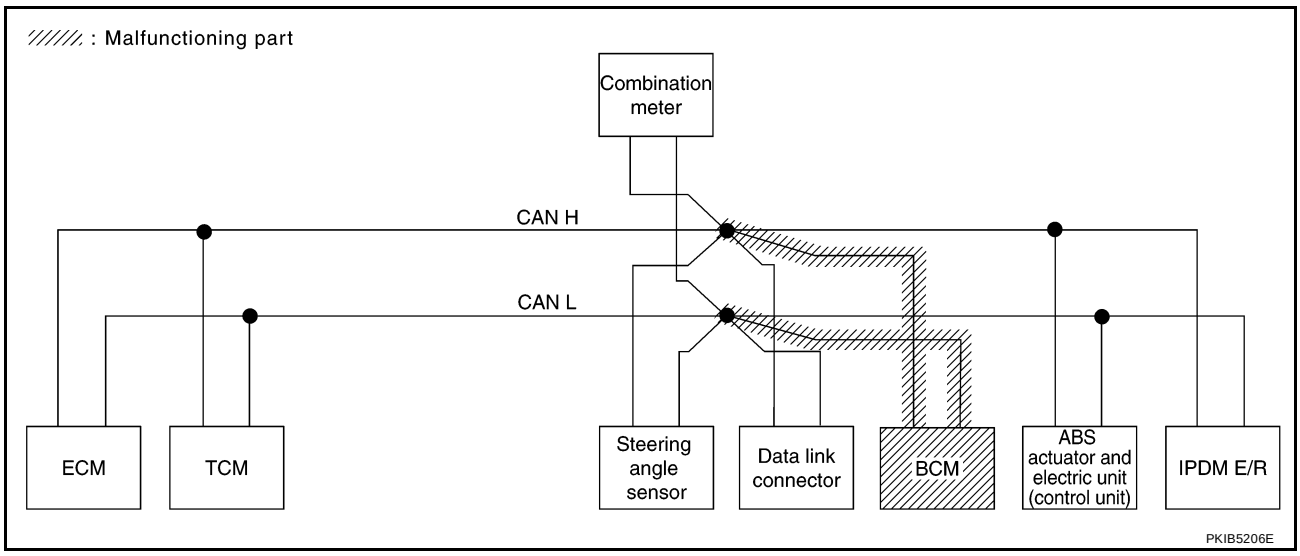
PKIB5205E

Case 7

Check BCM circuit. Refer to LAN-55, "BCM Circuit Inspection" .

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

PKIB5089E

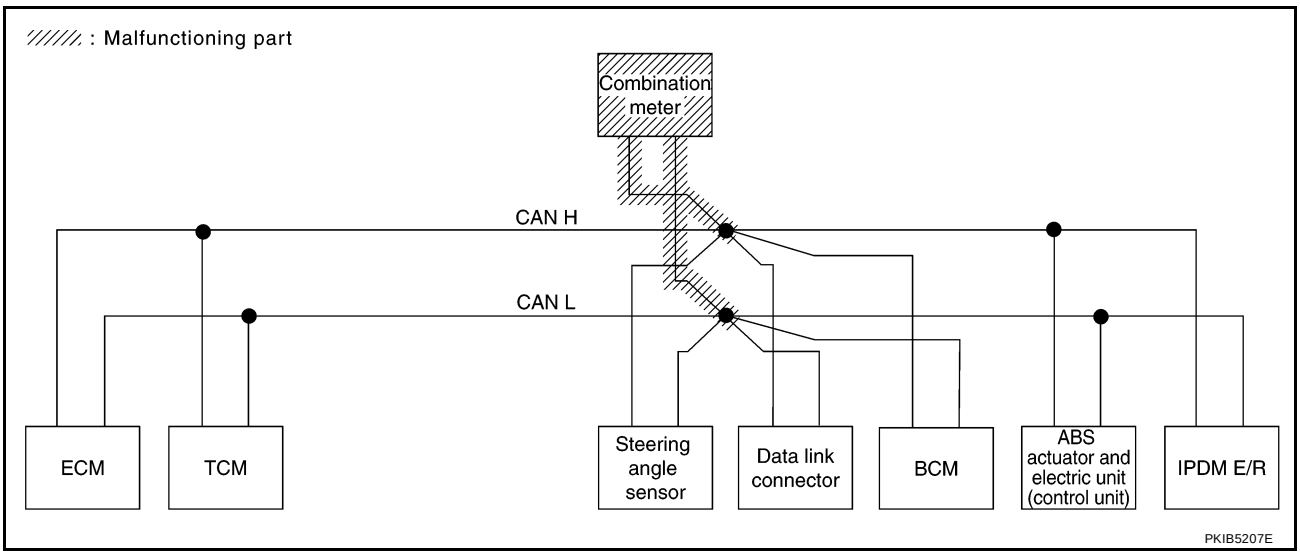


Case 8

Check combination meter circuit. Refer to LAN-56, "Combination Meter Circuit Inspection" .

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

PKIB5090E



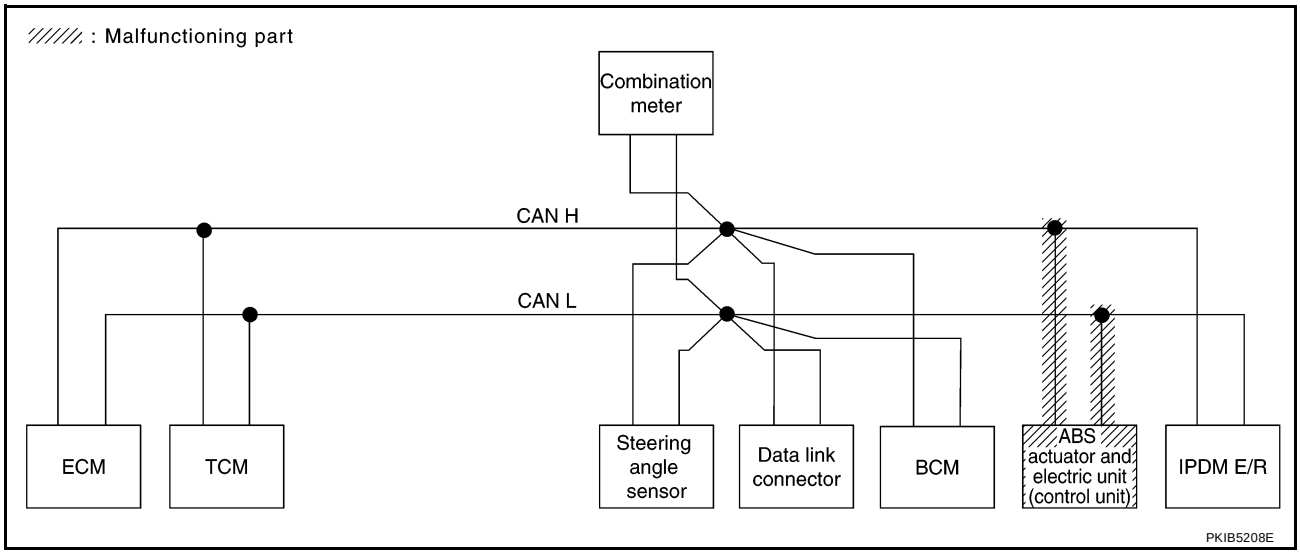
PKIB5207E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-56, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

PKIB5091E

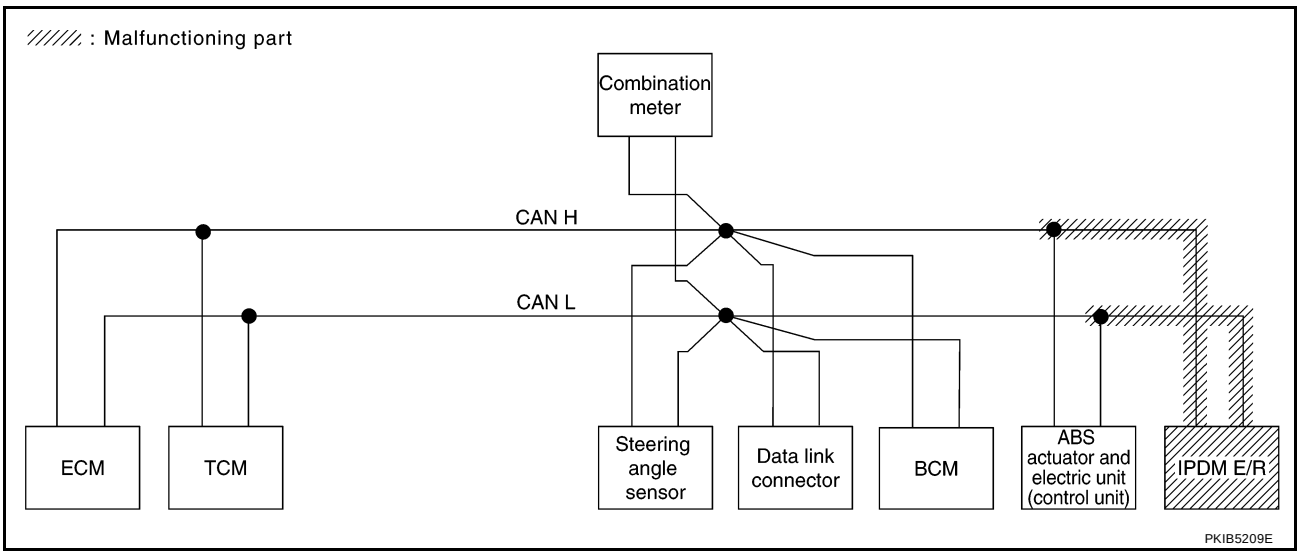


Case 10

Check IPDM E/R circuit. Refer to LAN-57, "IPDM E/R Circuit Inspection" .

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

PKIB5092E



PKIB5209E

Case 11

Check CAN communication circuit. Refer to LAN-58, "CAN Communication Circuit Inspection" .

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

PKIB5093E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-62, "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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5094E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-62, "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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5095E

Inspection Between TCM and Data Link Connector Circuit

UKS003G5

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

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

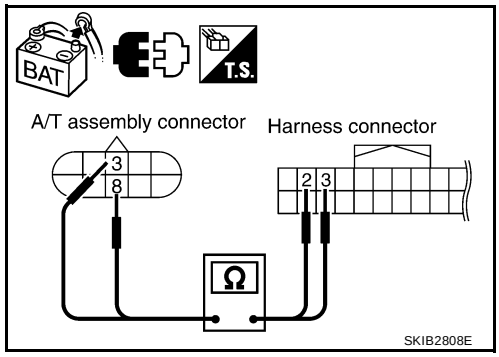
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

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

OK or NG

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



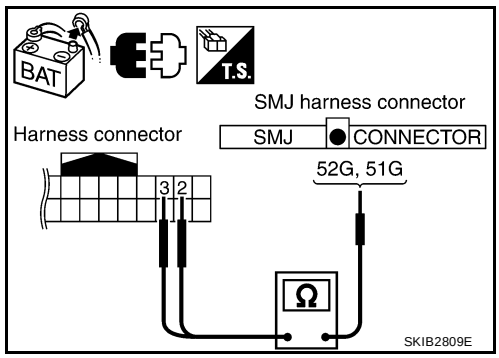
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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

OK or NG

OK >> GO TO 4.
NG >> Repair harness.



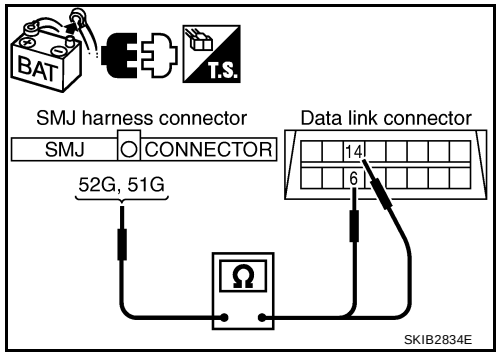
4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

52G (L) – 6 (L) : Continuity should exist.
51G (P) – 14 (P) : Continuity should exist.

OK or NG

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



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

UKS003G6

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 M91
- Harness connector E26

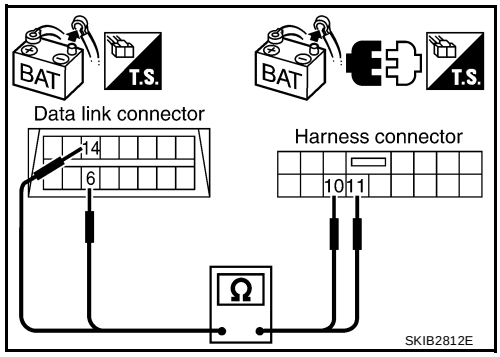
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.
14 (P) – 10 (P) : Continuity should exist.



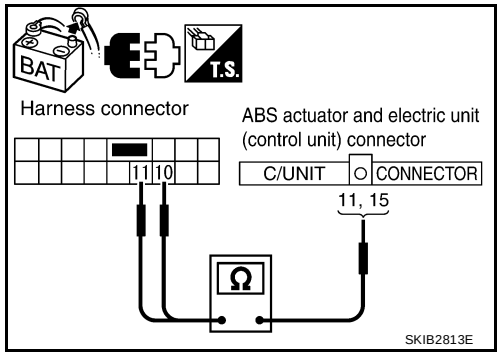
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003G7

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 E2
- Harness connector F32

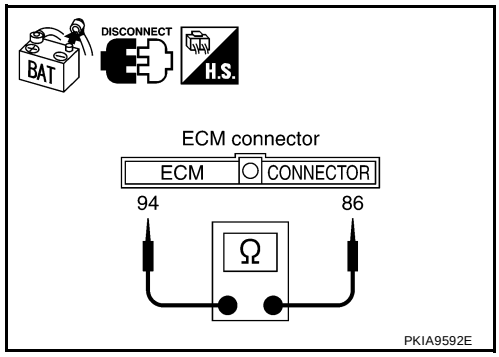
OK or NG

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 E16 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

UKS003G8

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).

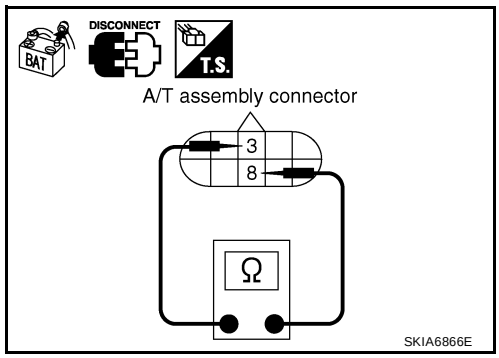
OK or NG

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 F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.

Steering Angle Sensor Circuit Inspection

UKS003G9

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).

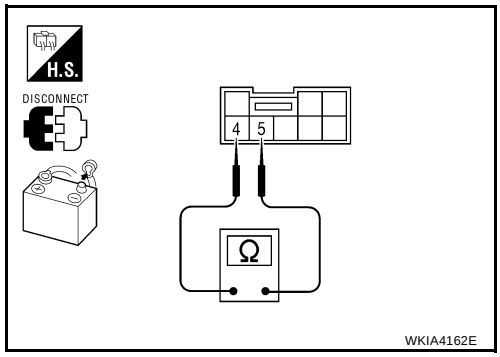
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003GA

1. CHECK CONNECTOR

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

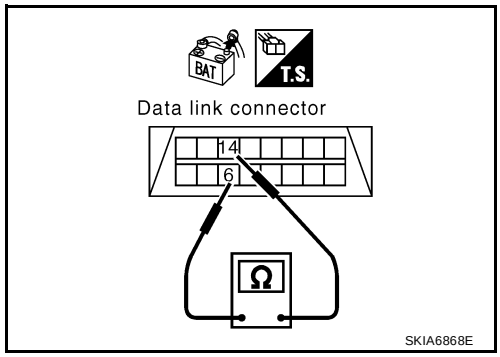
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) –- 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and BCM.

BCM Circuit Inspection

UKS003GB

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).

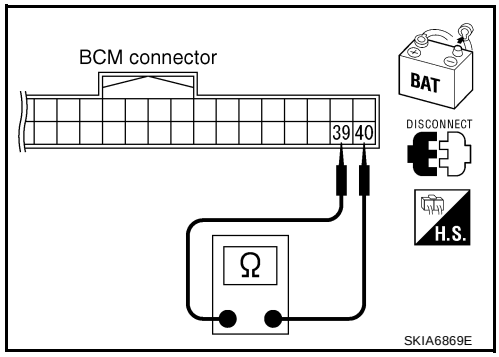
OK or NG

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

Combination Meter Circuit Inspection

UKS003GC

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).

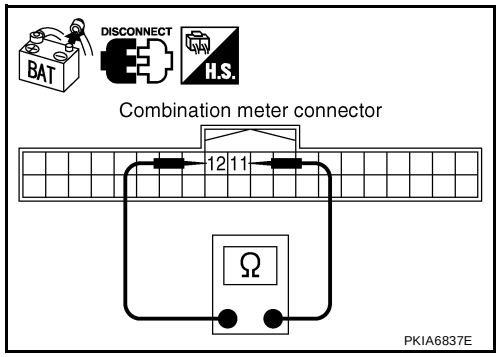
OK or NG

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 M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003GD

1. CHECK CONNECTOR

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

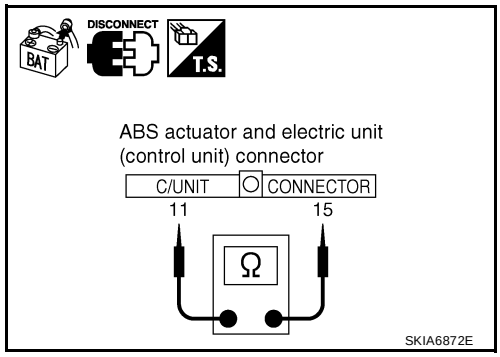
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003GE

1. CHECK CONNECTOR

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

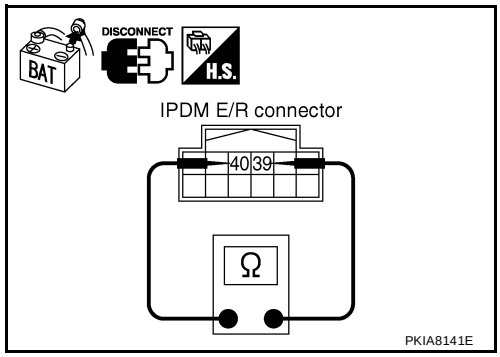
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003GF

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, sensor side, meter side, and harness side).

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

OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

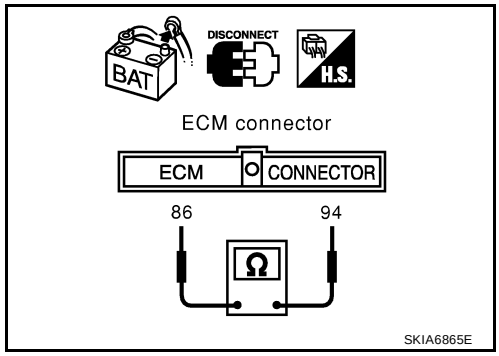
- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 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 E2.



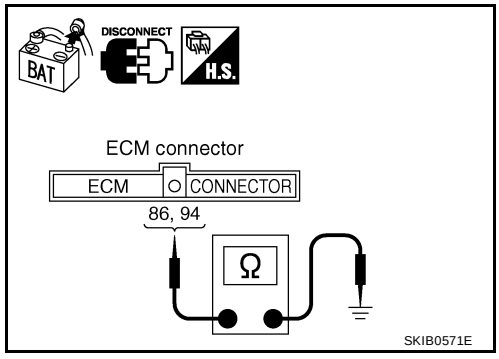
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

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

OK or NG

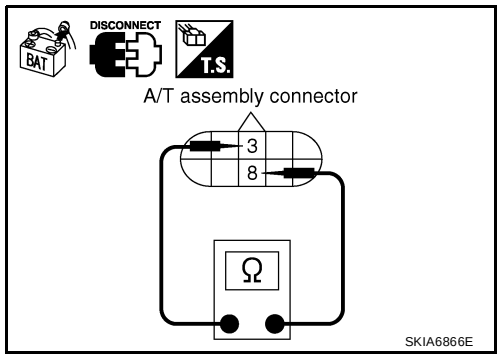
OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E2.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

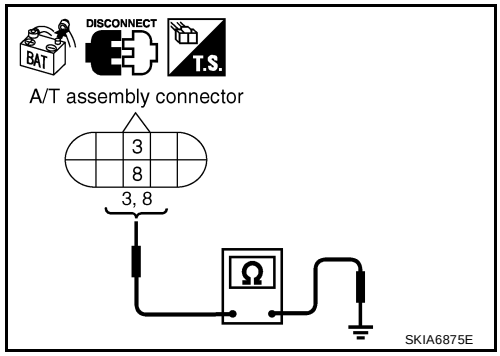
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

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



OK or NG

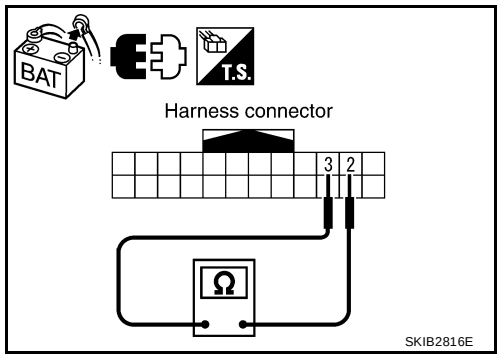
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 7.

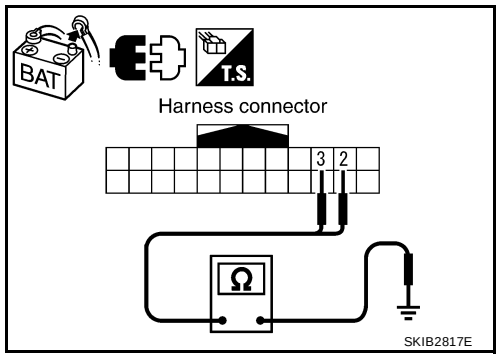
NG >> Repair harness between harness connector E5 and harness connector E152.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

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

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



OK or NG

OK >> GO TO 8.

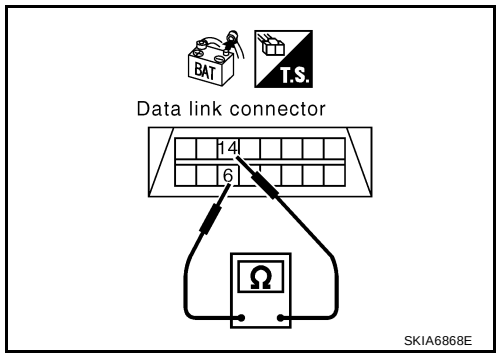
NG >> Repair harness between harness connector E5 and harness connector E152.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

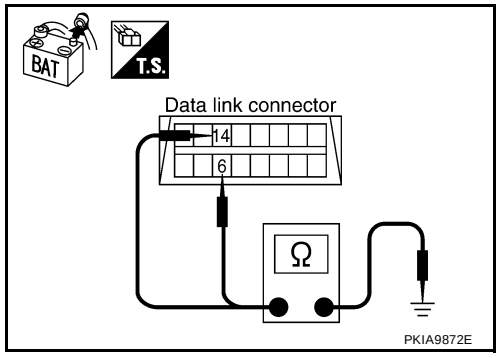
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

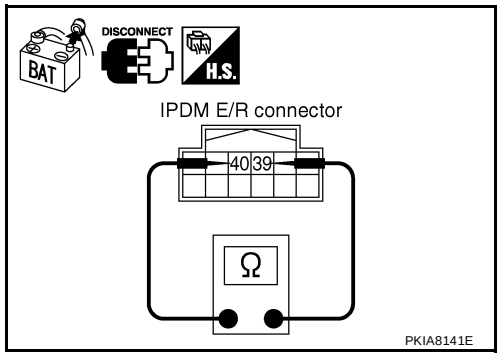
OK >> GO TO 10.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.



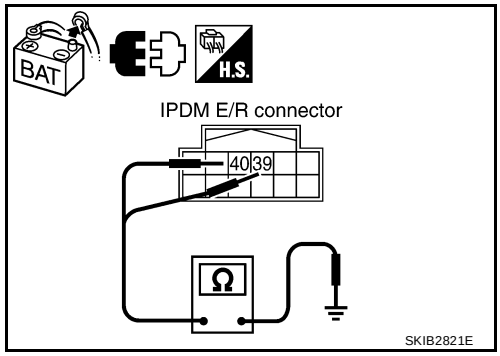
OK or NG

OK >> GO TO 11.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

39 (L) – Ground : Continuity should not exist.
40 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 12.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

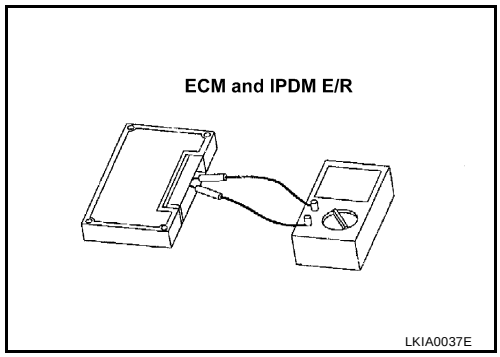
12. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : 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 connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 14.
NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"
.

14. UNIT REPRODUCIBILITY INSPECTION

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.

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

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003GG

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 2)

PFP:23710

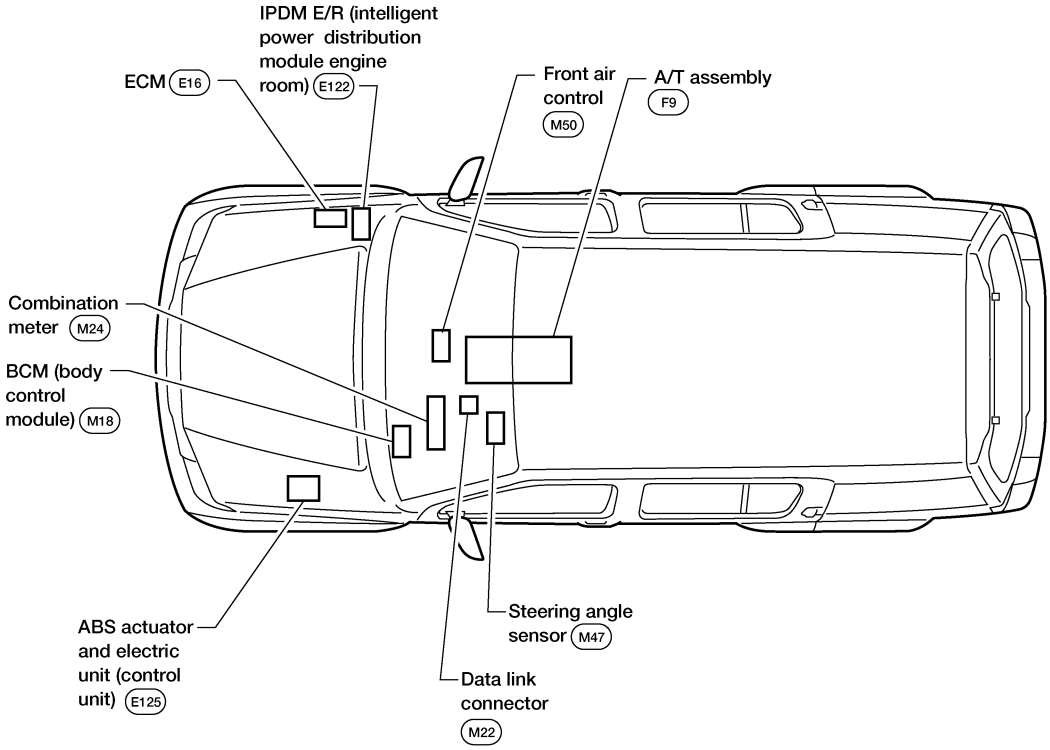
System Description

UKS003FJ

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.

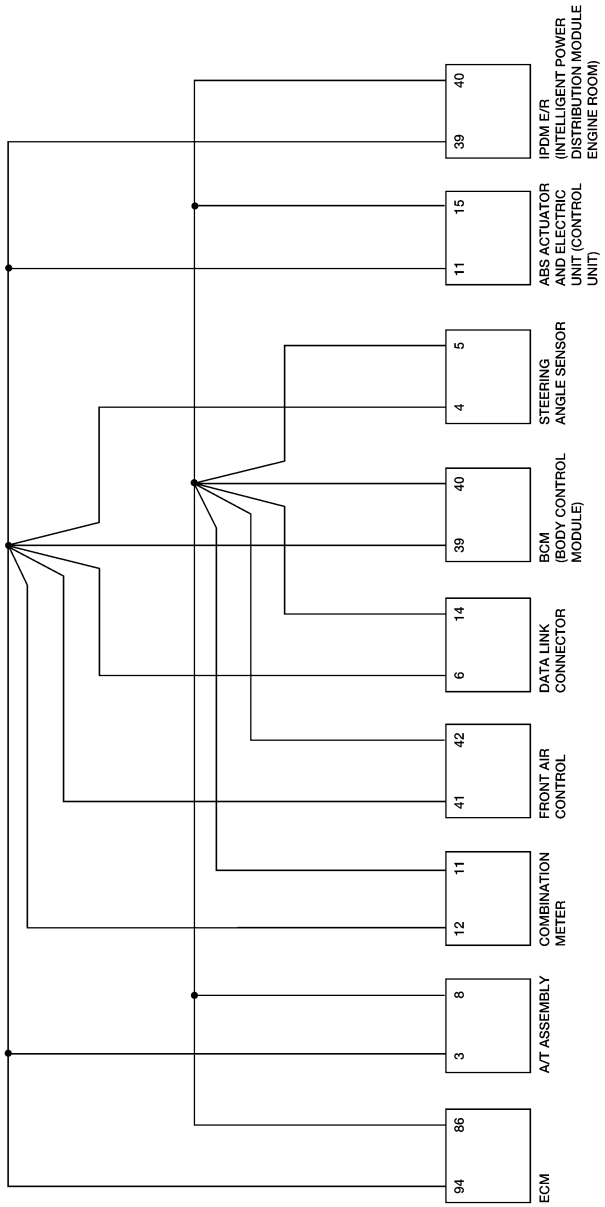
Component Parts and Harness Connector Location

UKS003FK



Schematic

UKS003FL

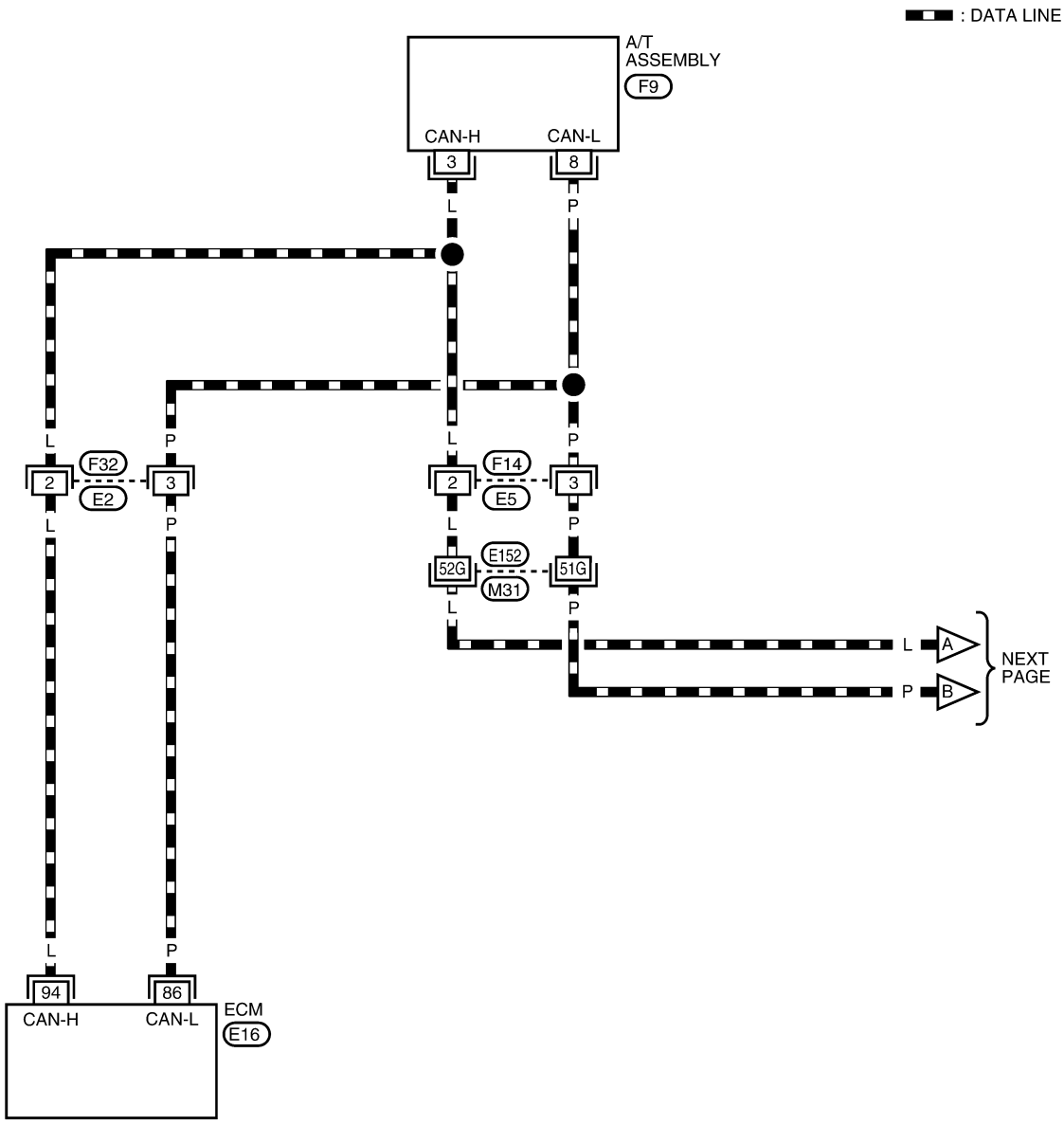


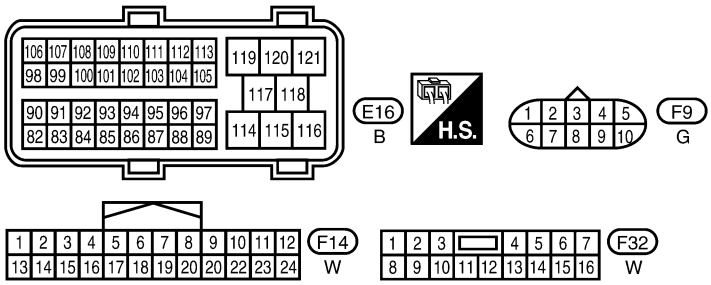
BKWA0607E

Wiring Diagram - CAN -

UKS003FM

LAN-CAN-04

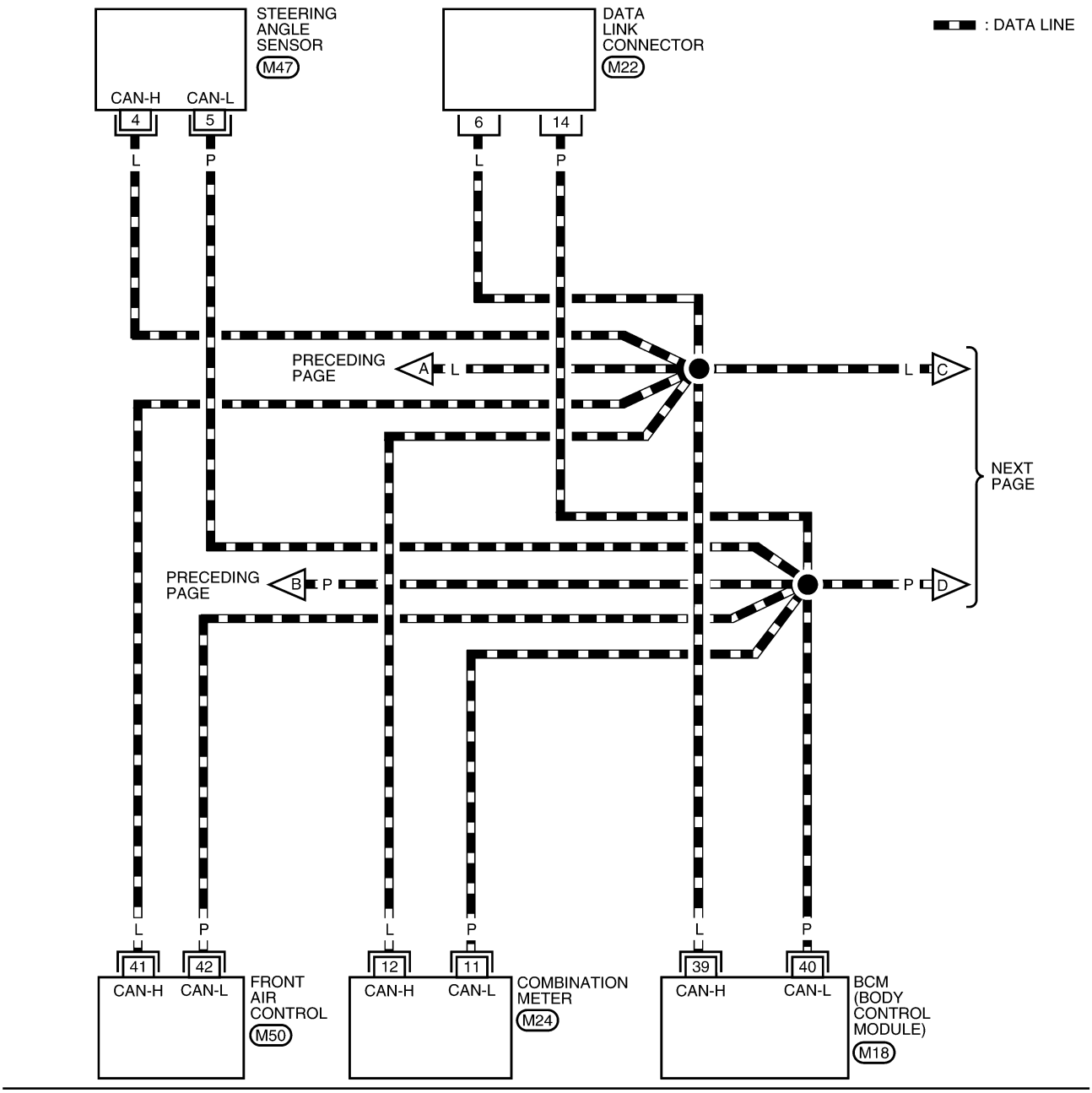


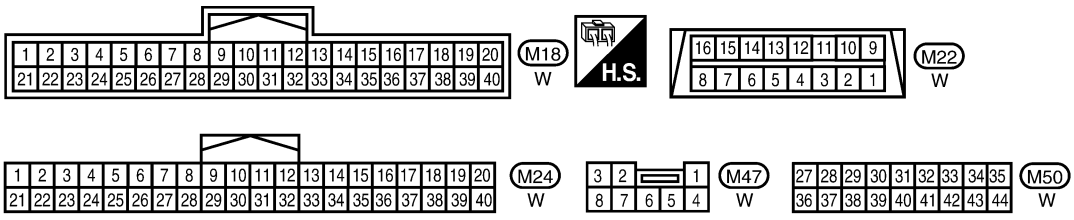


REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0372E

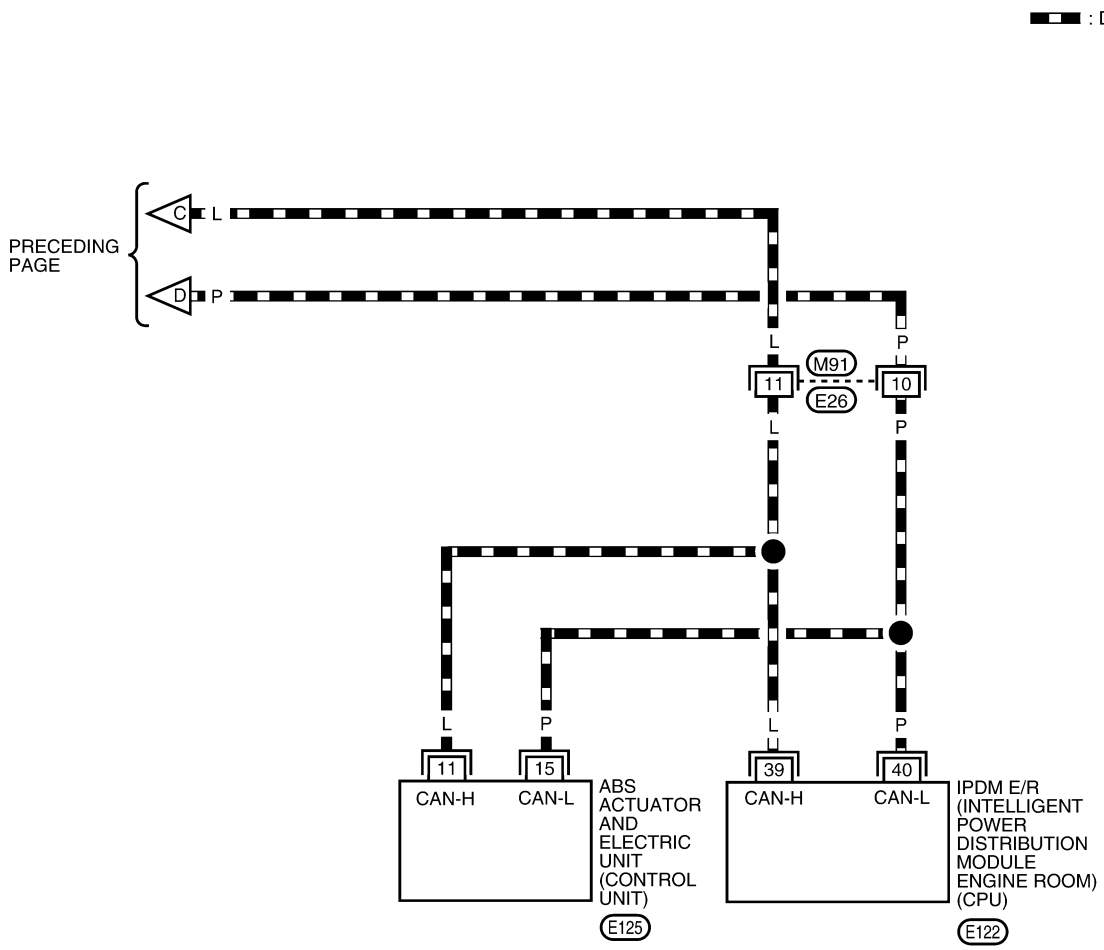
LAN-CAN-05

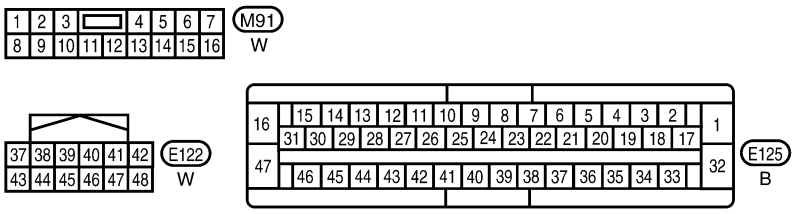




BKWA0608E

LAN-CAN-06





BKWA0374E

CHECK SHEET

UKS003FN

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

Check sheet table

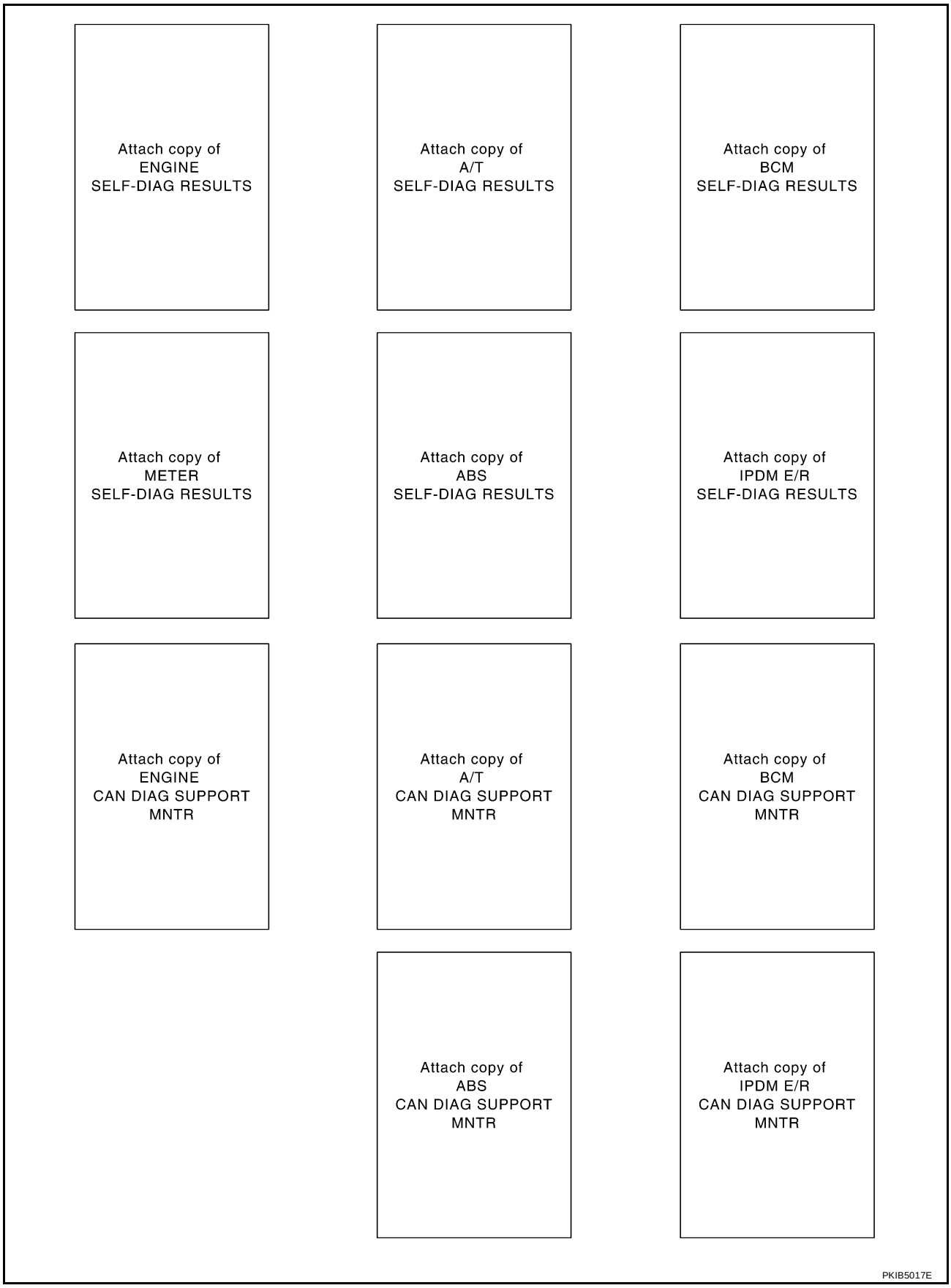
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB5016E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5017E

CHECK SHEET RESULTS (EXAMPLE)

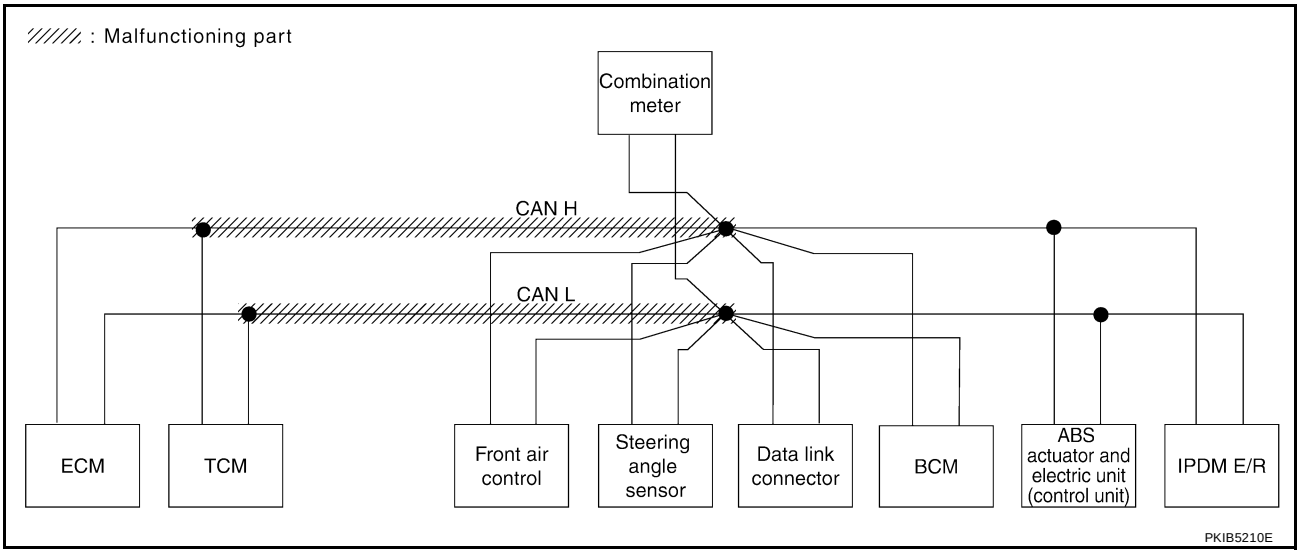
NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector circuit. Refer to LAN-80, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB5083E



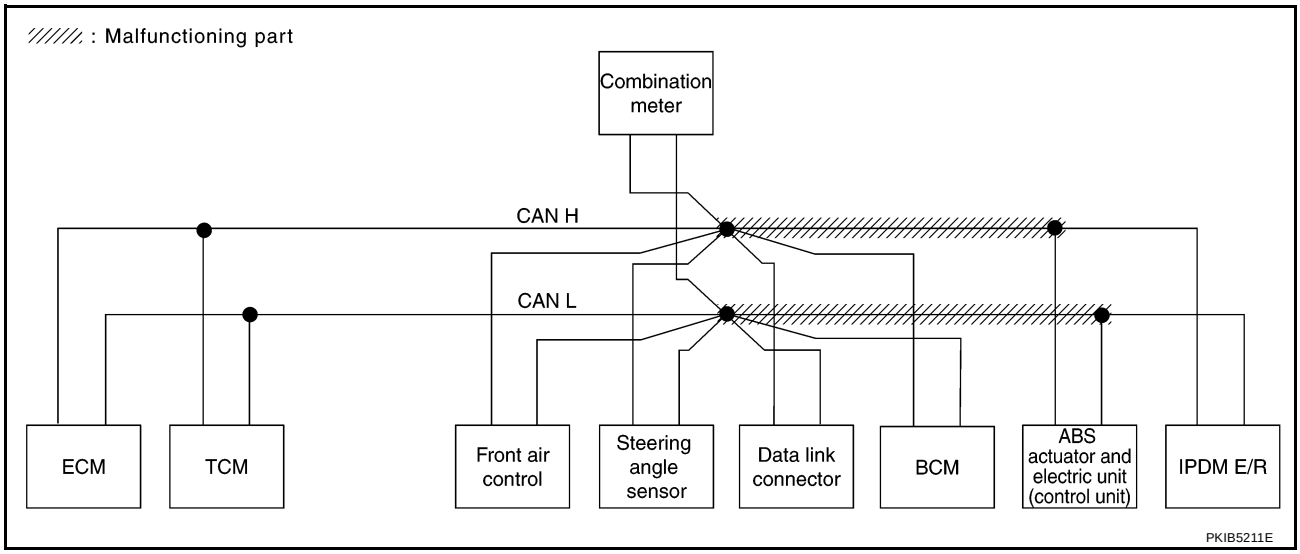
PKIB5210E

Case 2

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

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

PKIB5084E

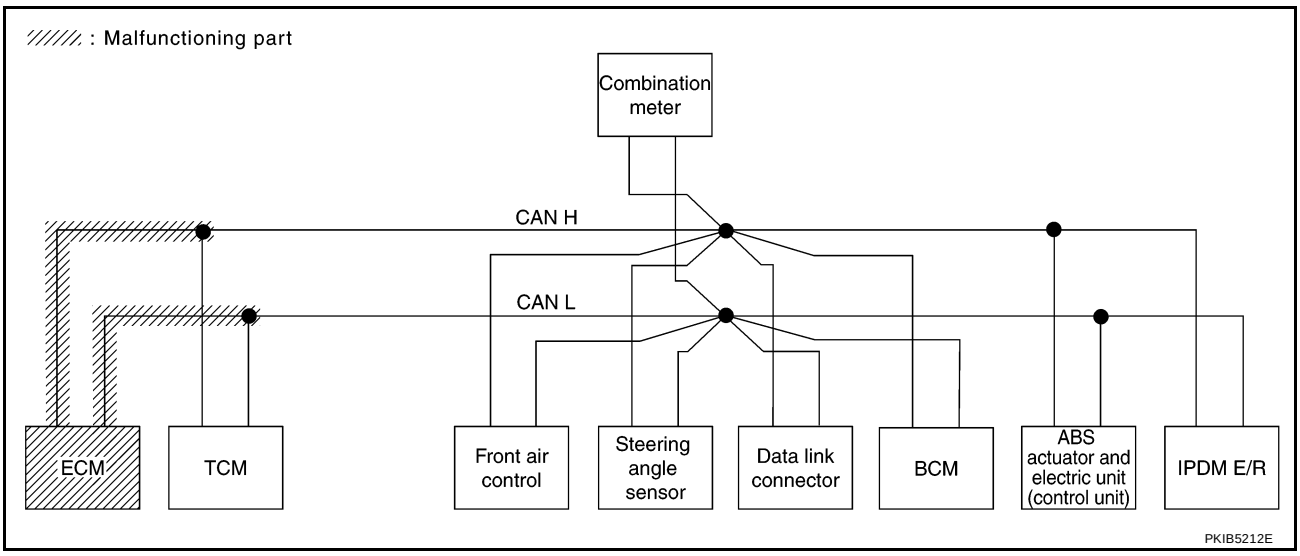


Case 3

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

PKIB5085E



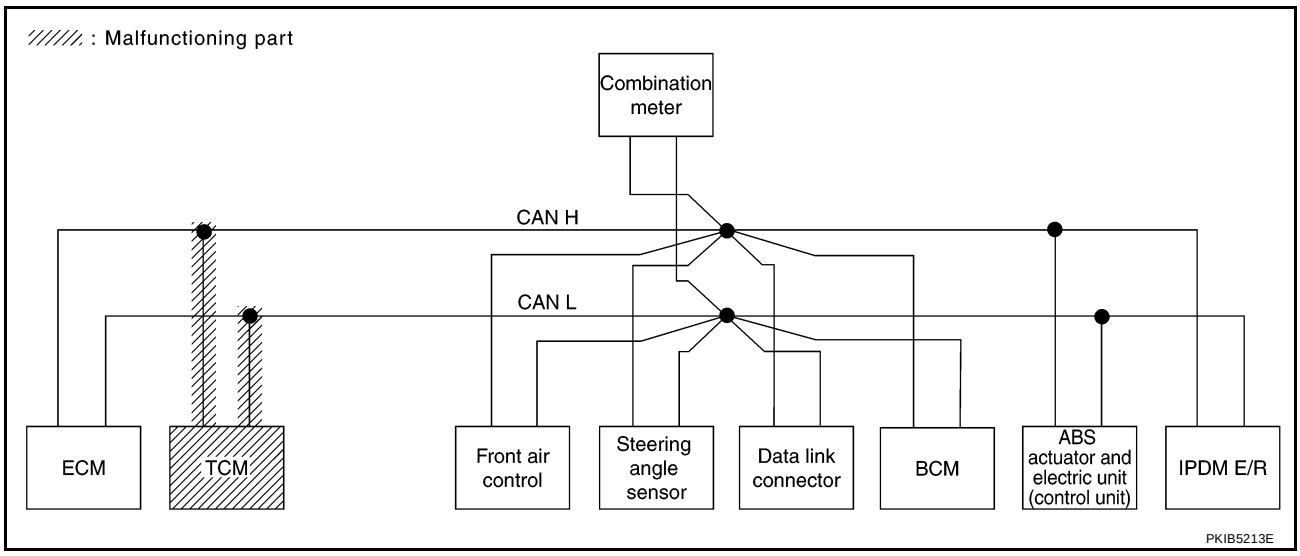
PKIB5212E

Case 4

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

PKIB5086E

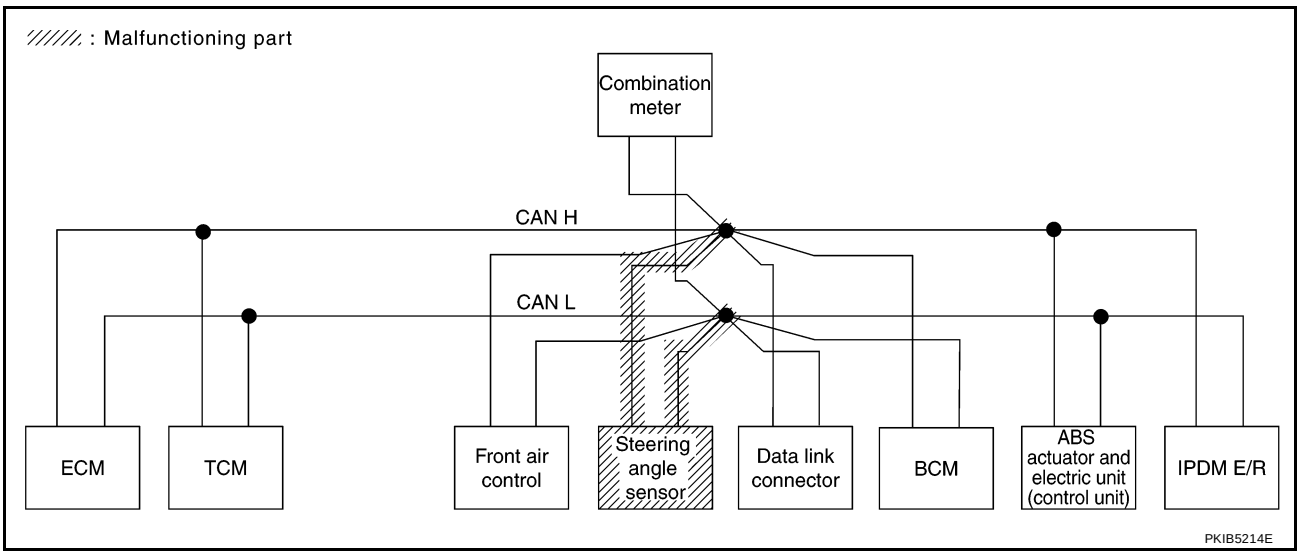


Case 5

Check steering angle sensor circuit. Refer to LAN-83, "Steering Angle Sensor Circuit Inspection" .

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

PKIB5087E

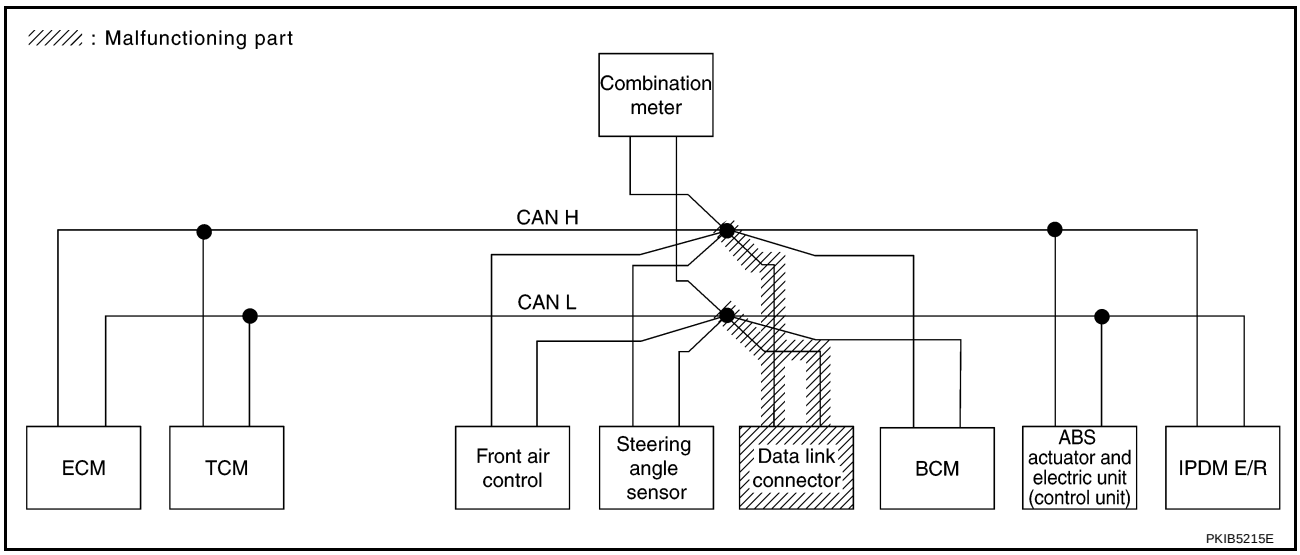


Case 6

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

PKIB5088E

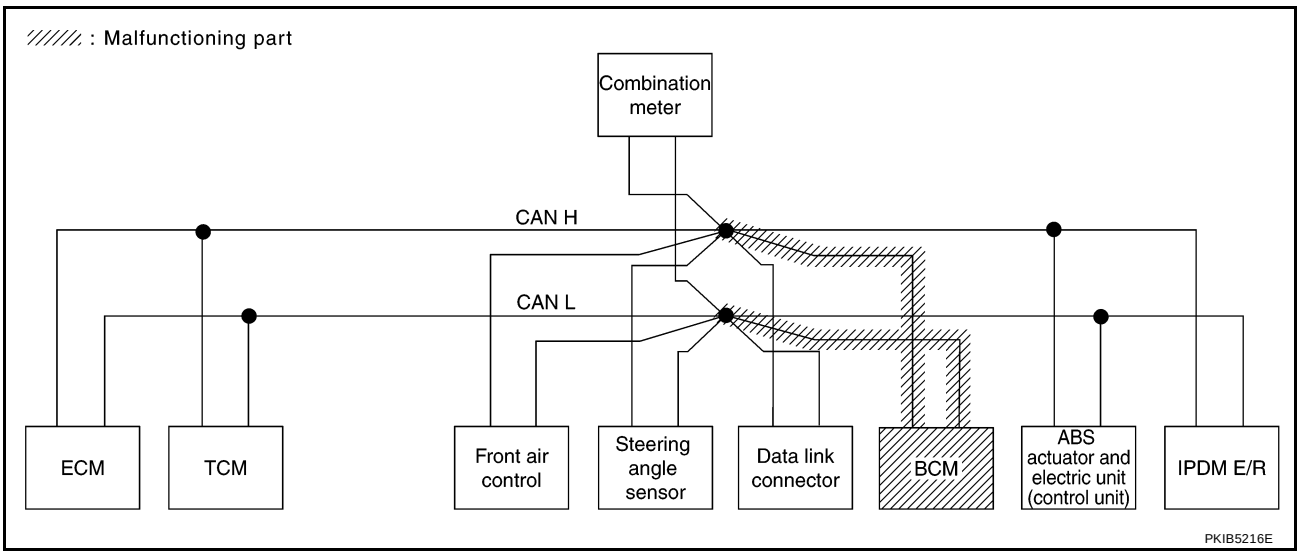


Case 7

Check BCM circuit. Refer to LAN-84, "BCM Circuit Inspection" .

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

PKIB5089E



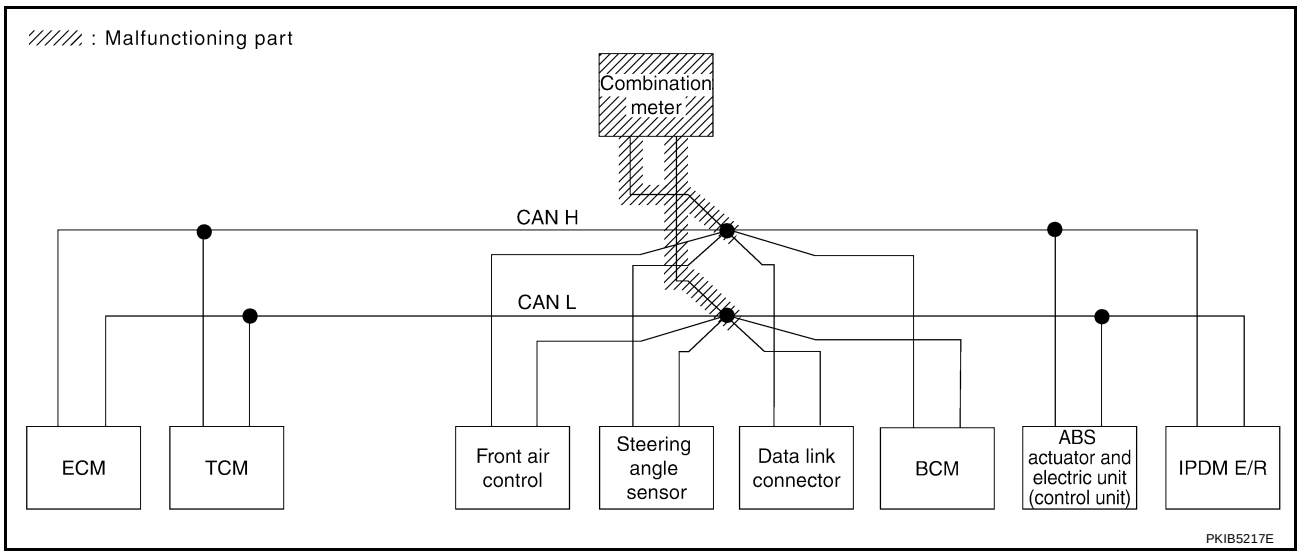
PKIB5216E

Case 8

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

PKIB5090E



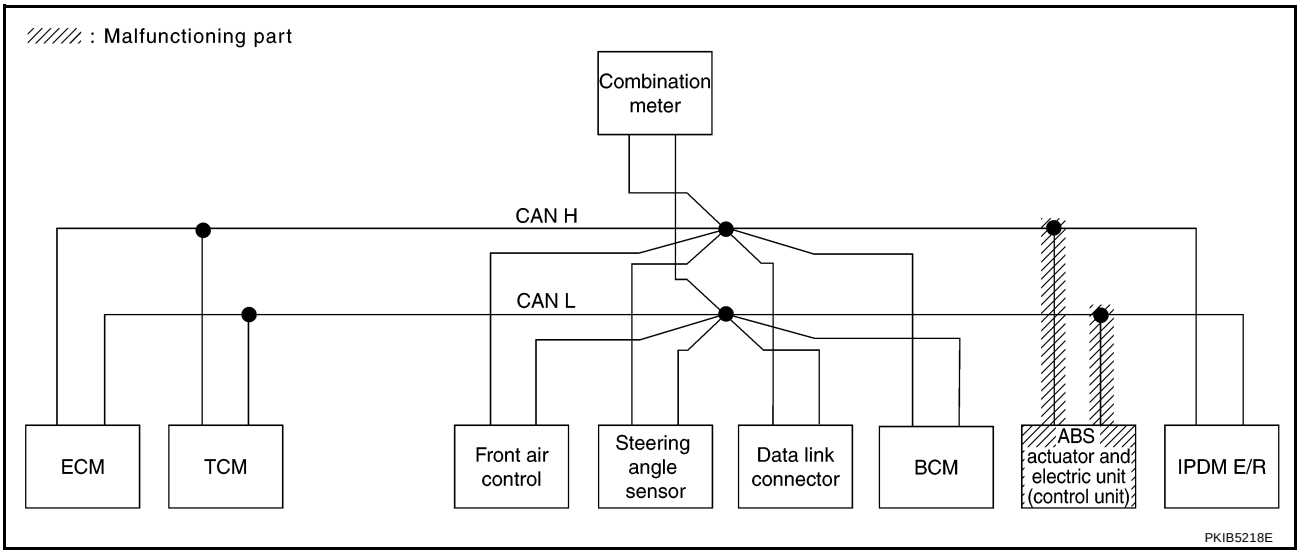
PKIB5217E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-85, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

PKIB5091E

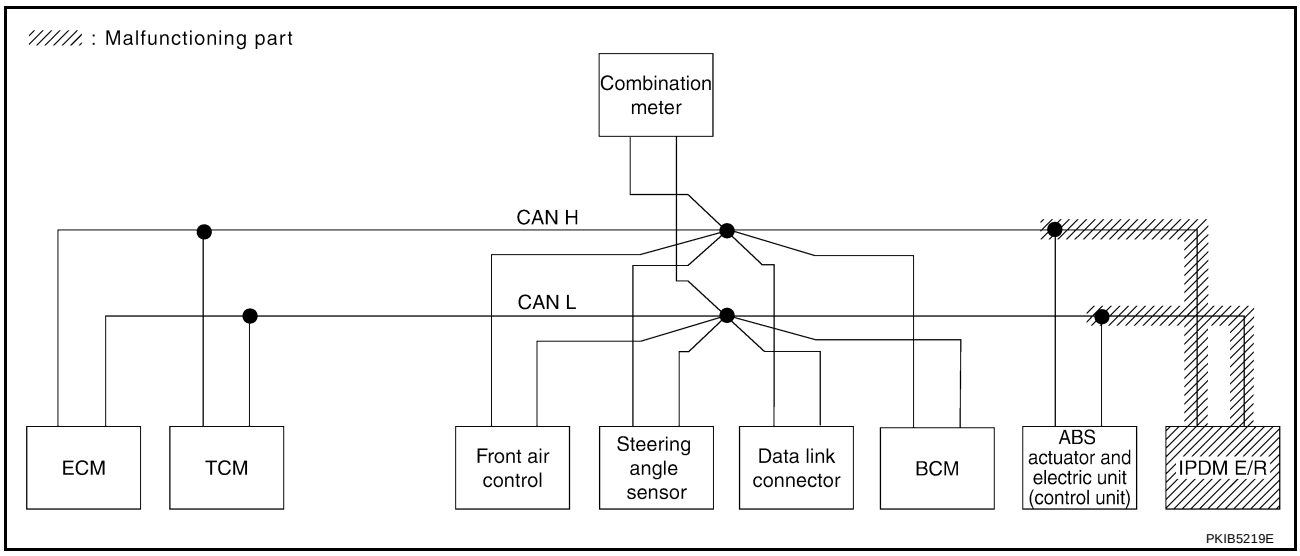


Case 10

Check IPDM E/R circuit. Refer to LAN-86, "IPDM E/R Circuit Inspection" .

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

PKIB5092E



PKIB5219E

Case 11

Check CAN communication circuit. Refer to LAN-87, "CAN Communication Circuit Inspection" .

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

PKIB5093E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-91, "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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5094E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-91, "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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5095E

Inspection Between TCM and Data Link Connector Circuit

UKS003FO

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

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

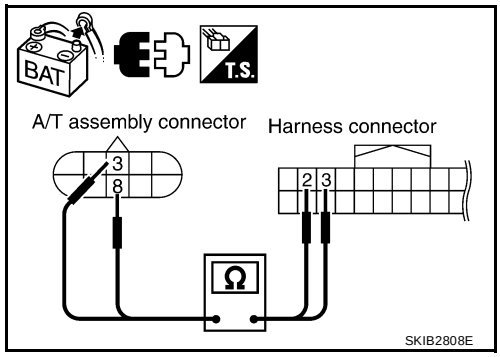
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

3 (L) – 2 (L) : **Continuity should exist.**
8 (P) – 3 (P) : **Continuity should exist.**

OK or NG

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



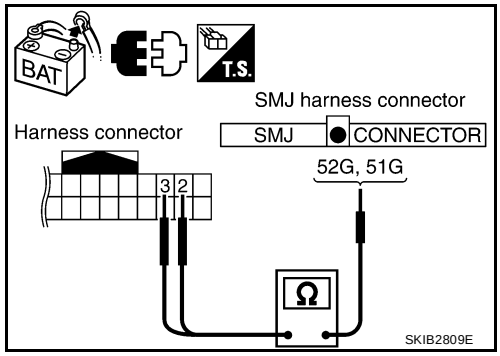
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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

OK or NG

OK >> GO TO 4.
NG >> Repair harness.



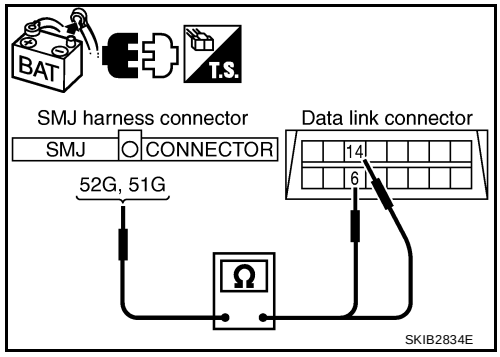
4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

52G (L) – 6 (L) : **Continuity should exist.**
51G (P) – 14 (P) : **Continuity should exist.**

OK or NG

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



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

UKS003FP

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 M91
- Harness connector E26

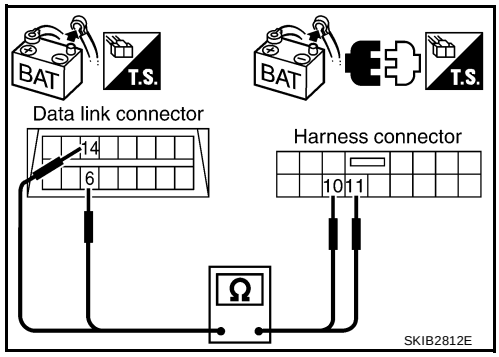
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.
14 (P) – 10 (P) : Continuity should exist.



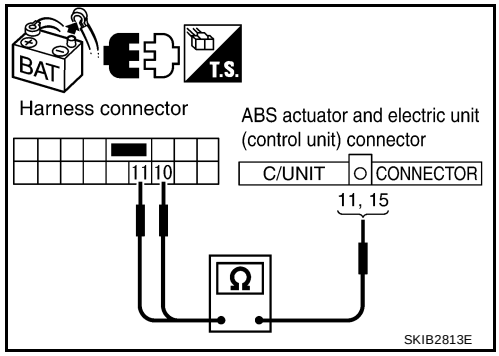
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003FQ

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 E2
- Harness connector F32

OK or NG

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

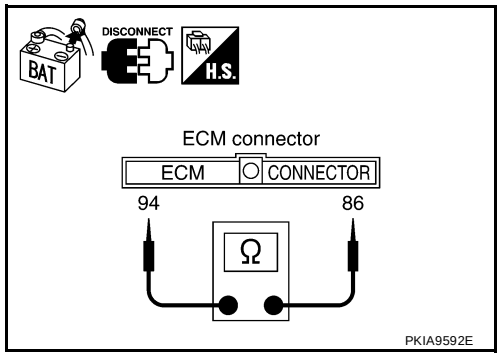
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E16 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

UKS003FR

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.

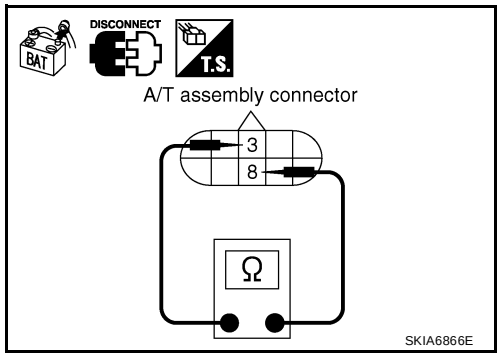
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) **: Approx. 54 – 66 Ω**

OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.



Steering Angle Sensor Circuit Inspection

UKS003FS

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).

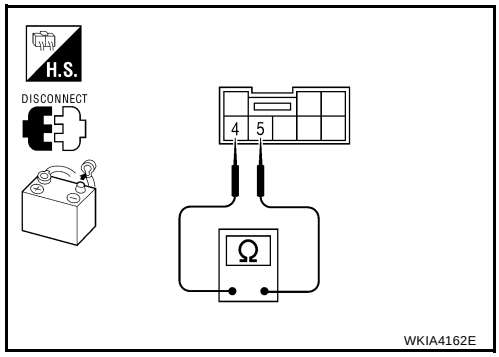
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003FT

1. CHECK CONNECTOR

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

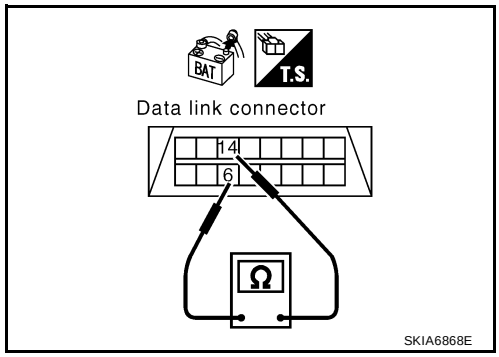
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and BCM.

BCM Circuit Inspection

UKS003FU

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).

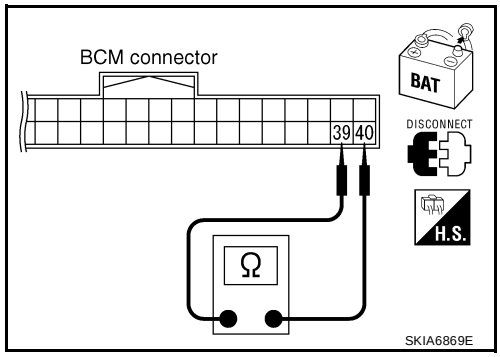
OK or NG

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

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

Combination Meter Circuit Inspection

UKS003FV

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

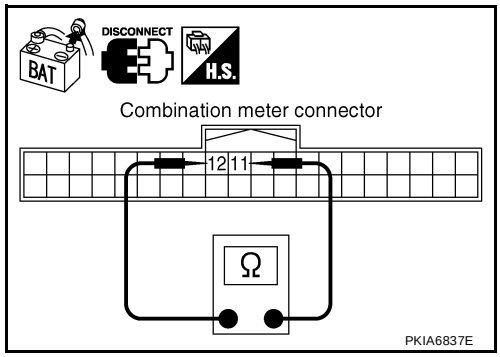
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace combination meter.

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003FW

1. CHECK CONNECTOR

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

OK or NG

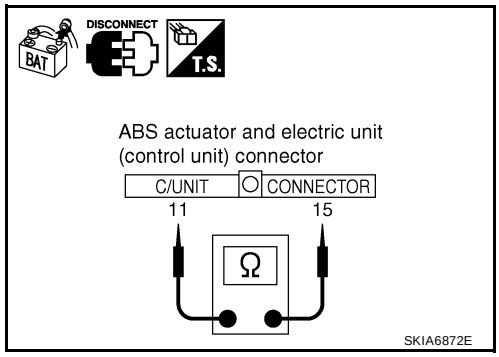
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003FX

1. CHECK CONNECTOR

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

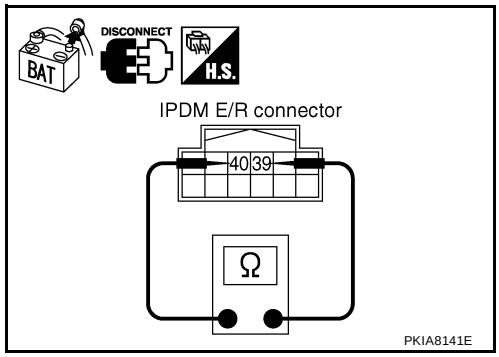
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003FY

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

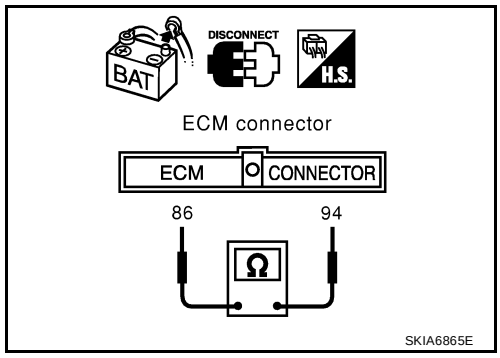
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 terminals 94 (L) and 86 (P).

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



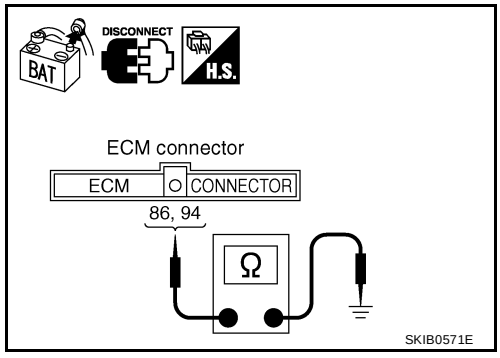
OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector E2.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

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



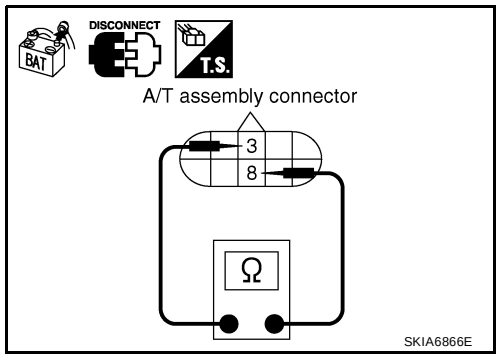
OK or NG

OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E2.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

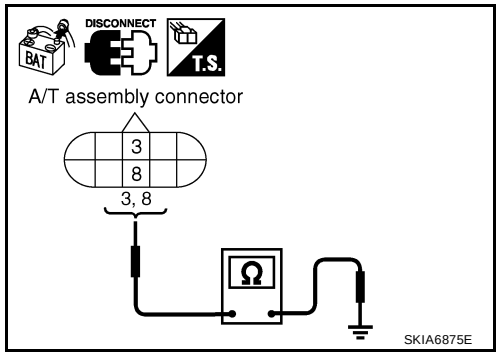
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

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



OK or NG

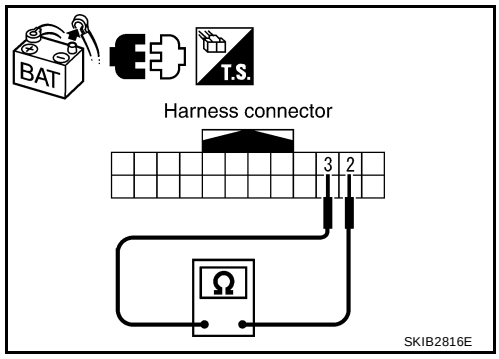
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 7.

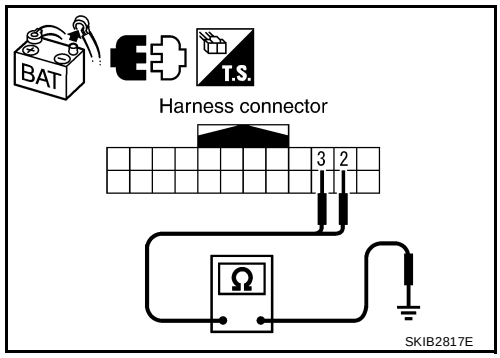
NG >> Repair harness between harness connector E5 and harness connector E152.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

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

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



OK or NG

OK >> GO TO 8.

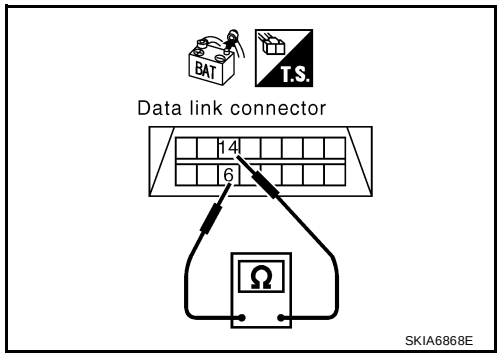
NG >> Repair harness between harness connector E5 and harness connector E152.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

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

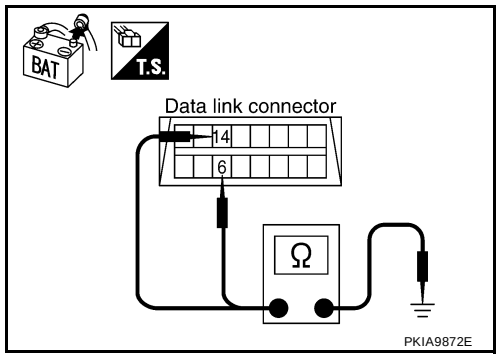
- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 10.

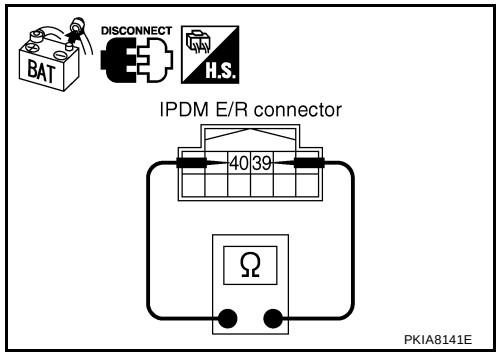
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 11.

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

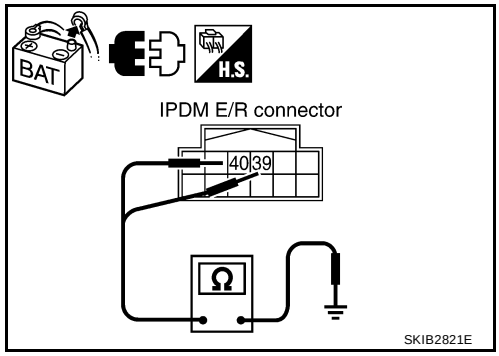
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

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

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



OK or NG

OK >> GO TO 12.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

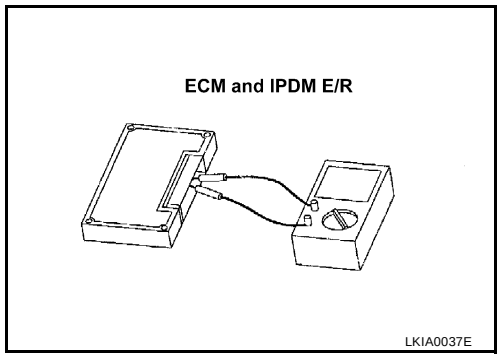
12. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : 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 connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 14.
NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

14. UNIT REPRODUCIBILITY INSPECTION

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.

- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003FZ

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 3)

PFP:23710

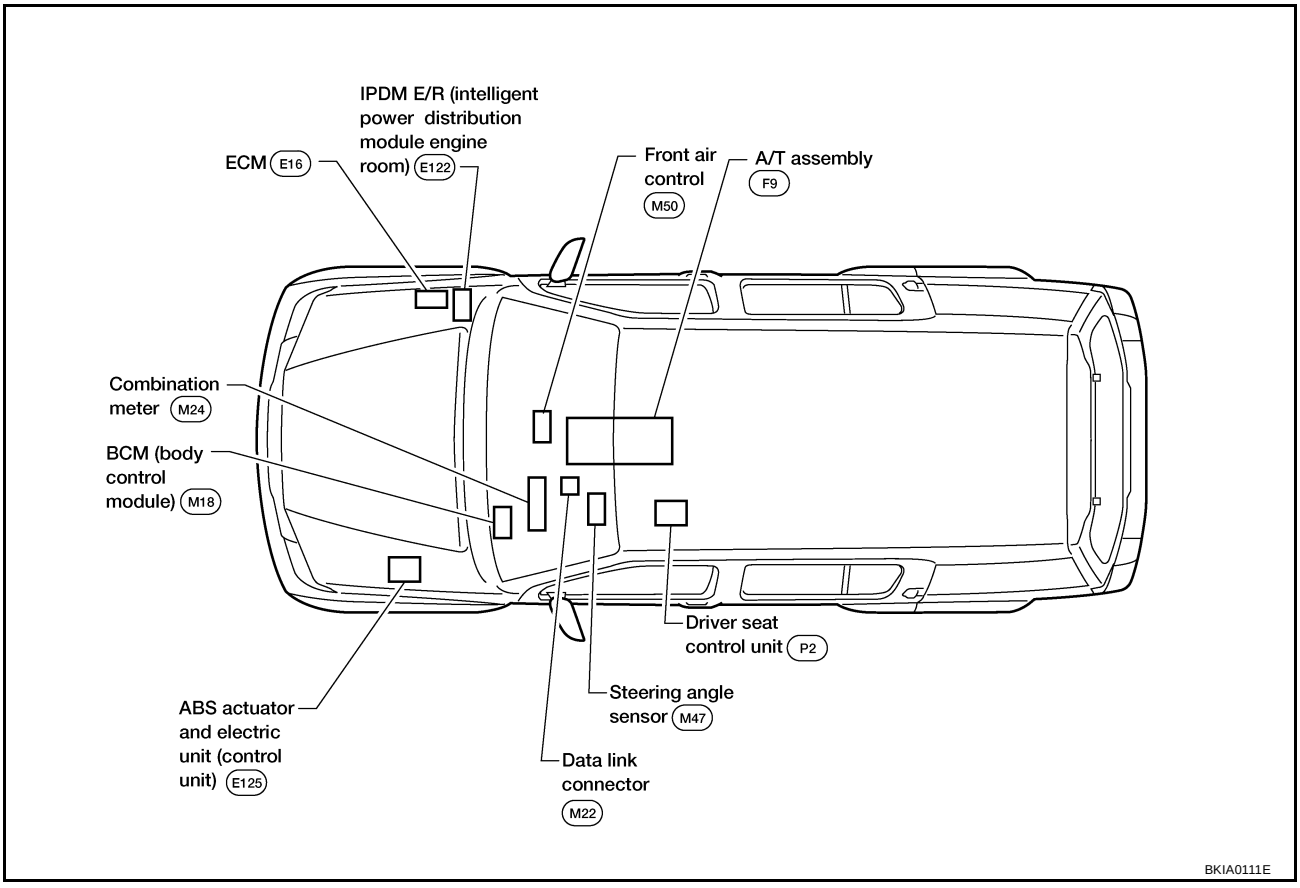
System Description

UKS003F0

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.

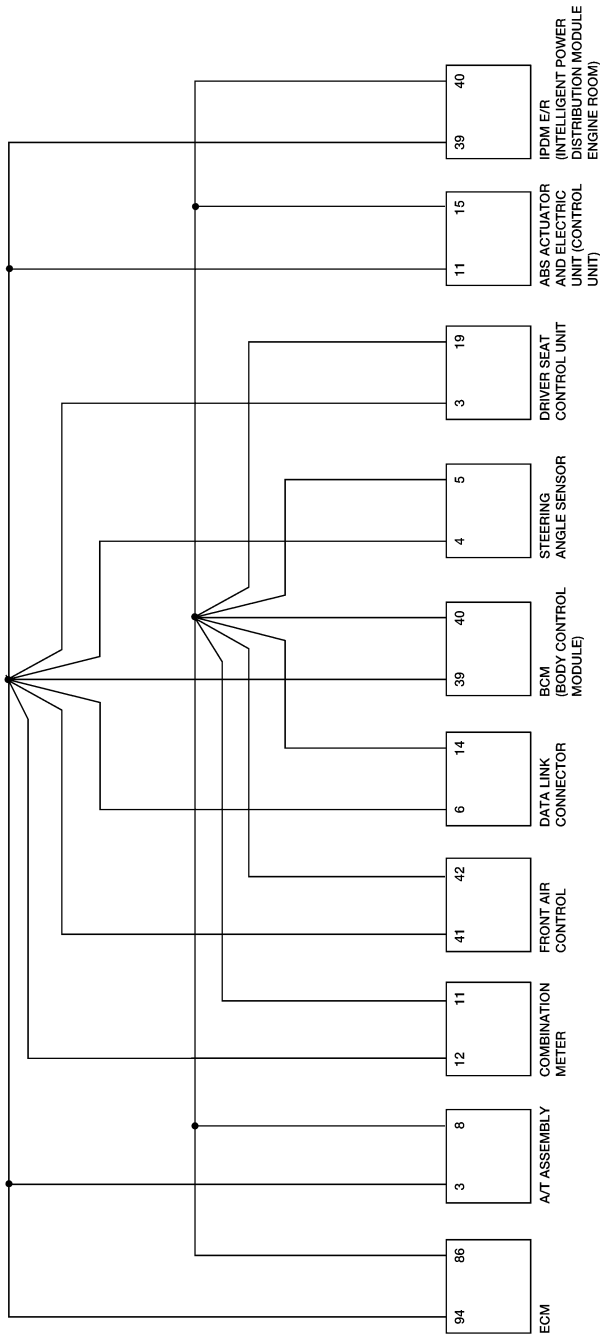
Component Parts and Harness Connector Location

UKS003F1



Schematic

UKS003F2

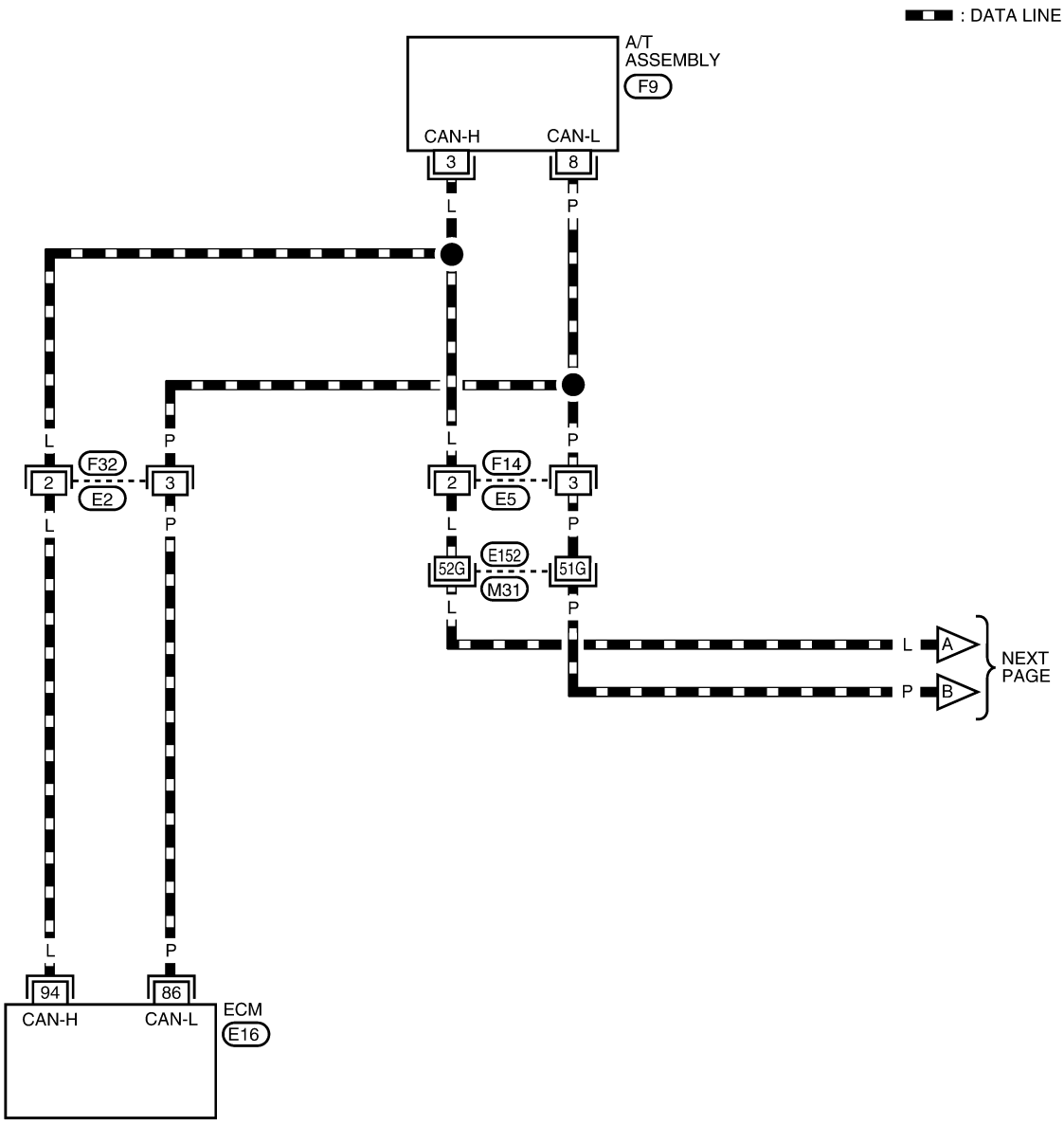


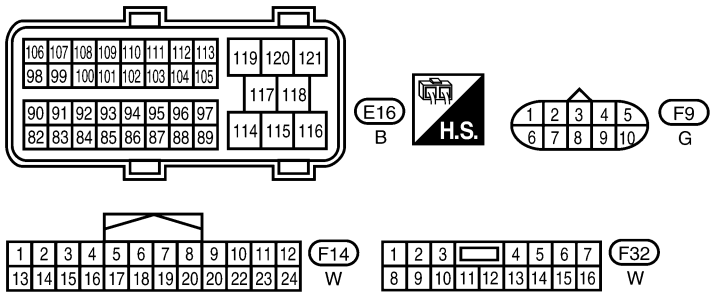
BKWA0609E

Wiring Diagram - CAN -

UKS003F3

LAN-CAN-07

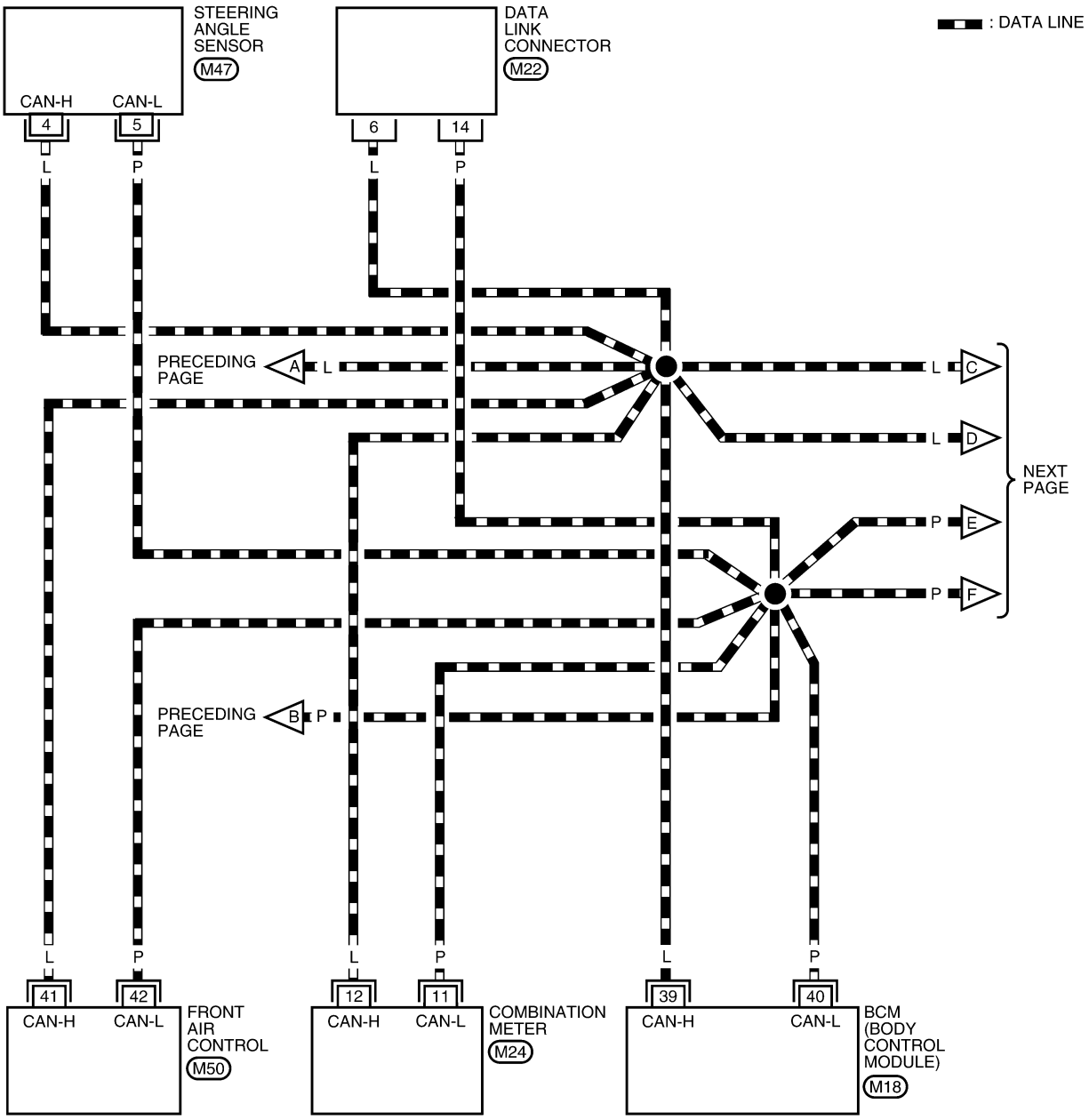


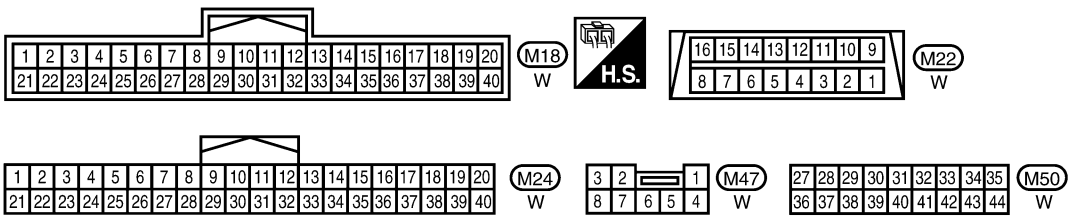


REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0376E

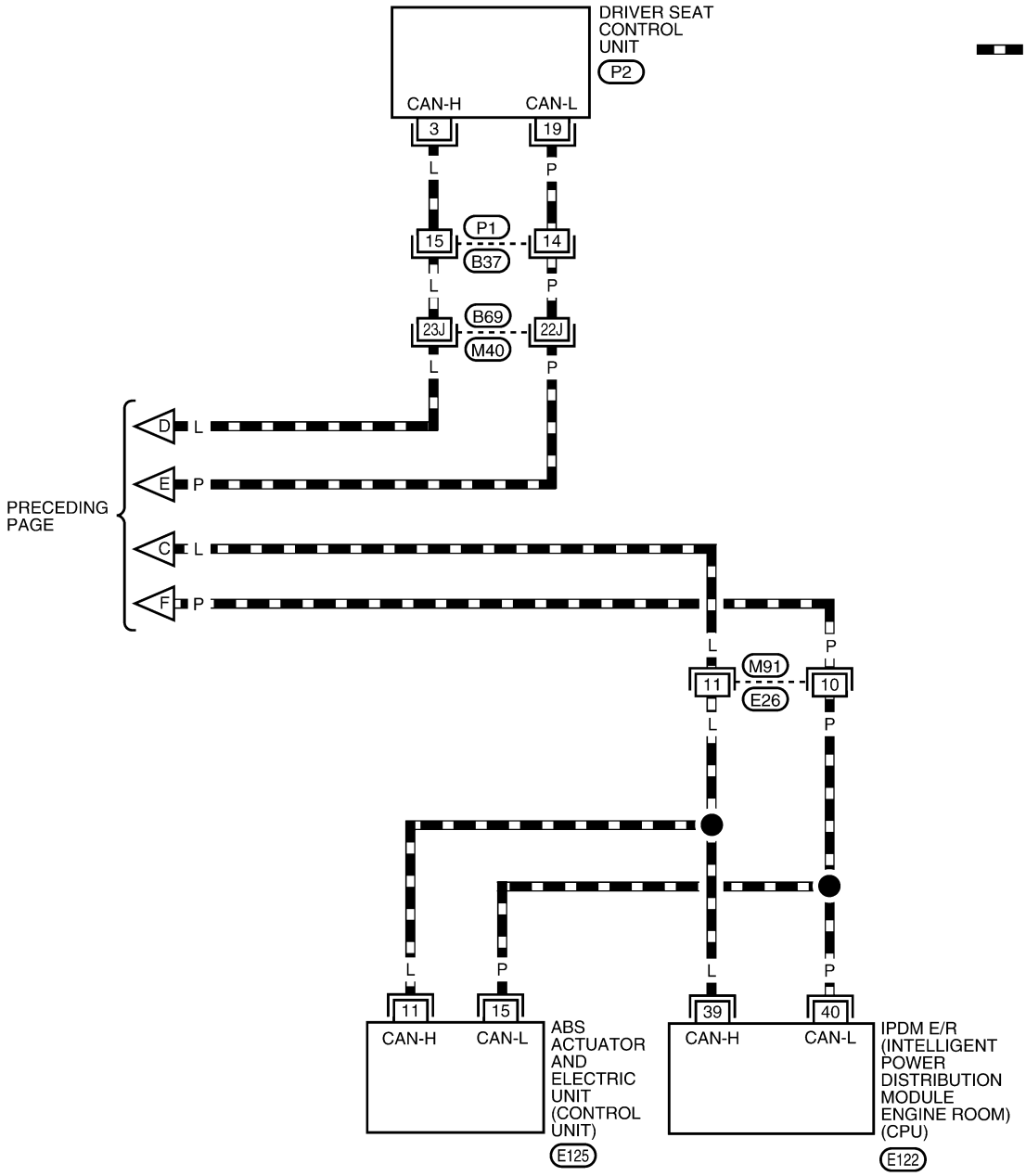
LAN-CAN-08

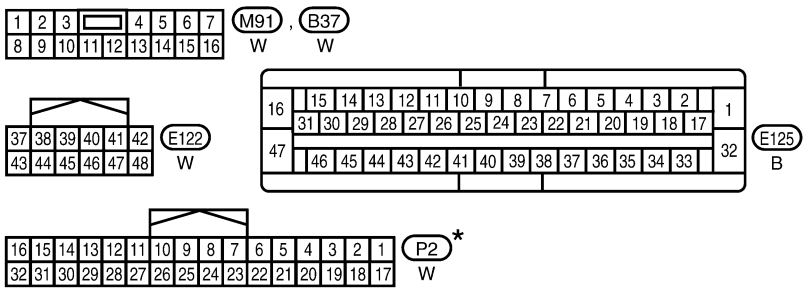




BKWA0610E

LAN-CAN-09





REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

★: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.

BKWA0378E

CHECK SHEET

UKS003F4

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

Check sheet table

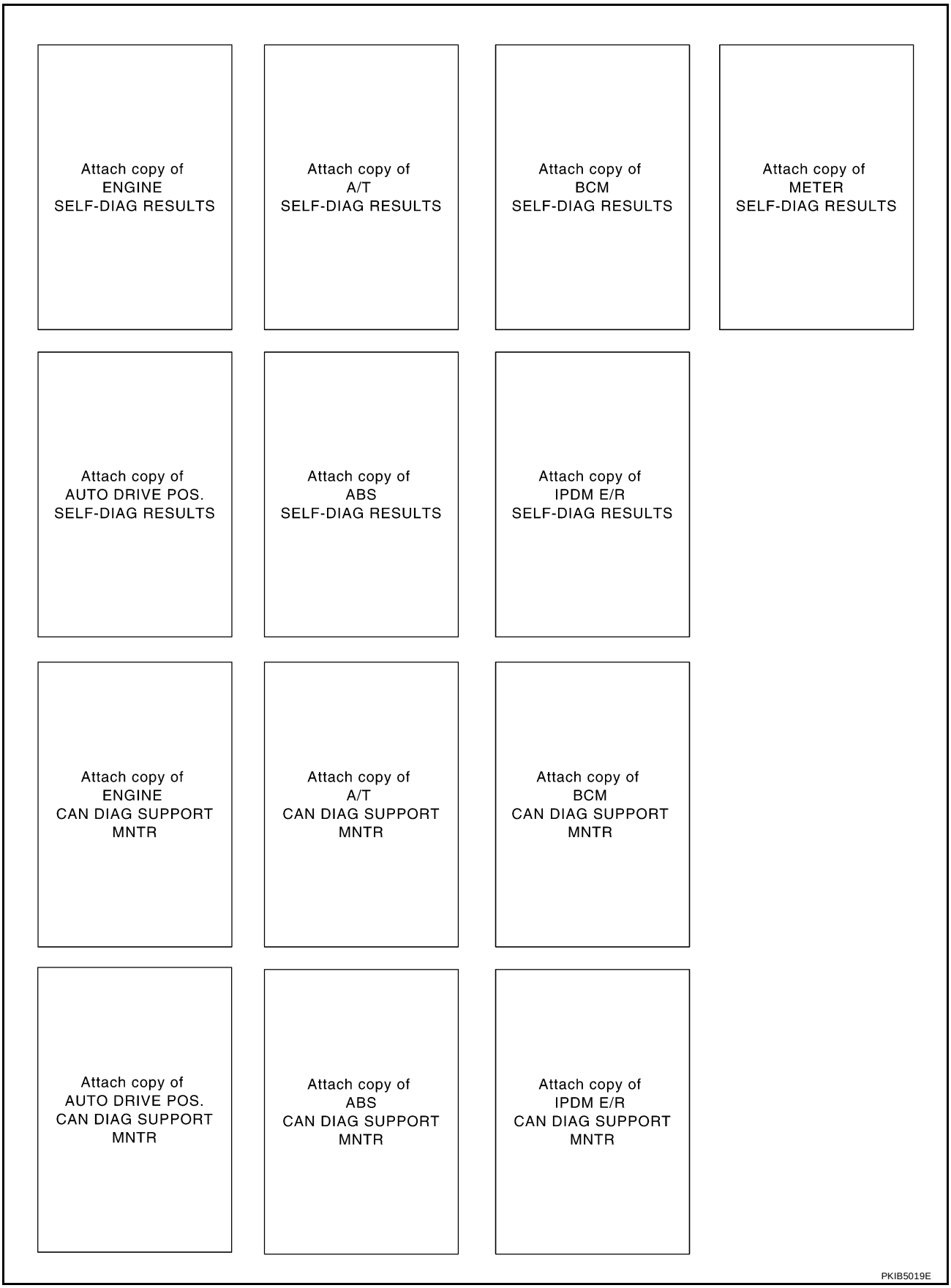
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB5018E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5019E

CHECK SHEET RESULTS (EXAMPLE)

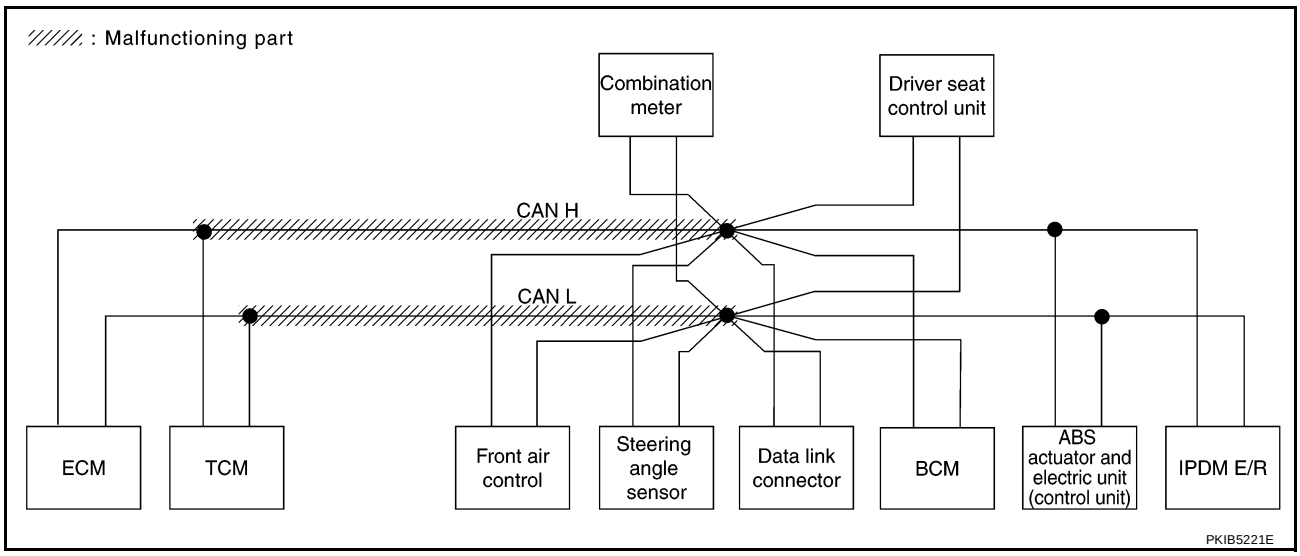
NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector circuit. Refer to LAN-110, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB5096E



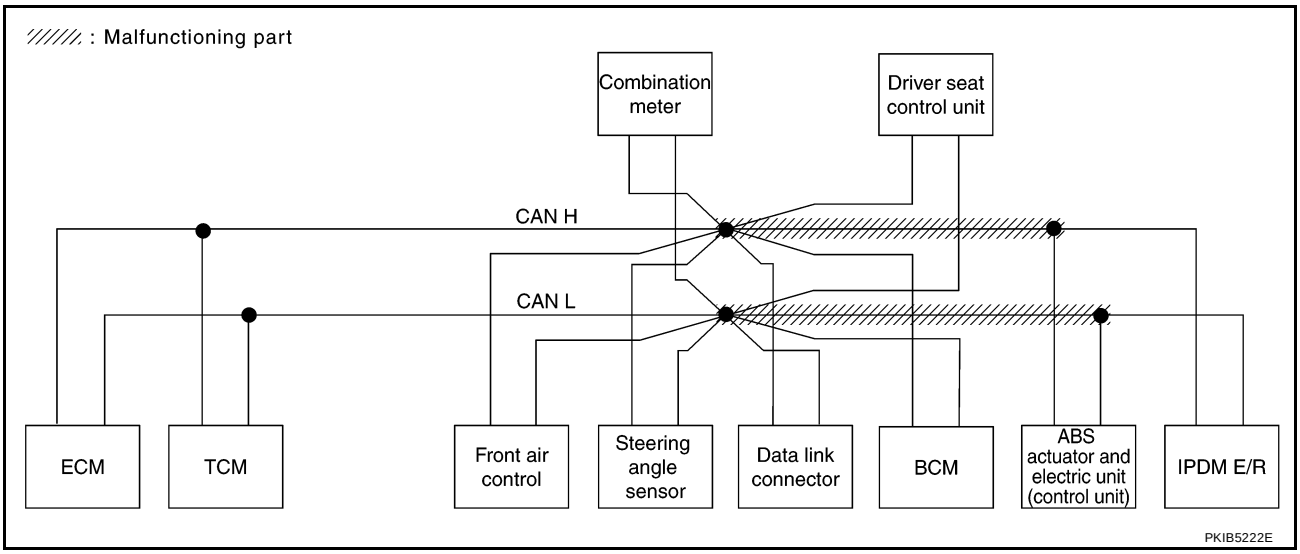
PKIB5221E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-111, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit" .

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

PKIB5097E



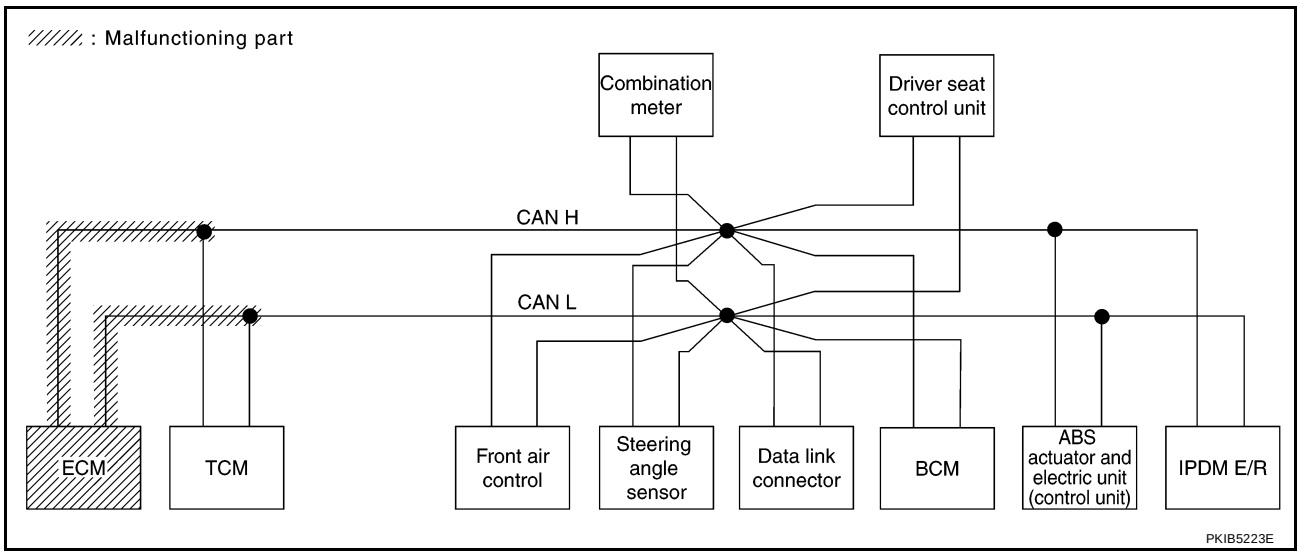
PKIB5222E

Case 3

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

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

PKIB5098E



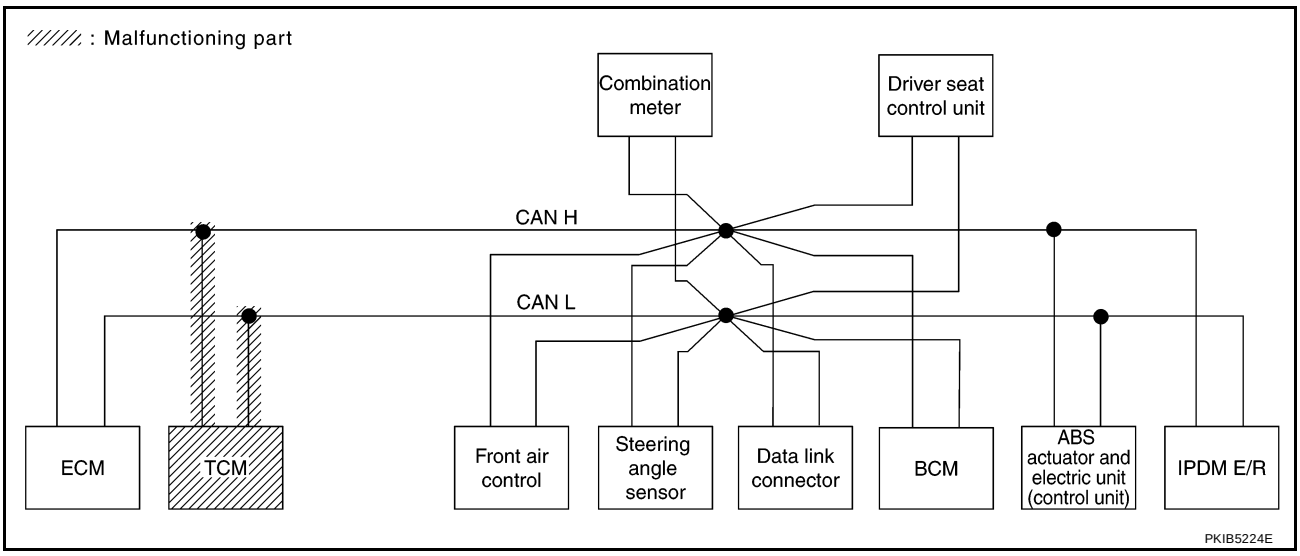
PKIB5223E

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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000) ✓	CAN COMM CIRCUIT (U1001) ✓
A/T	—	NG	UNKWN	UNKWN ✓	—	—	—	UNKWN ✓	UNKWN ✓	—	CAN COMM CIRCUIT (U1000) ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000) ✓	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000) ✓	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5099E



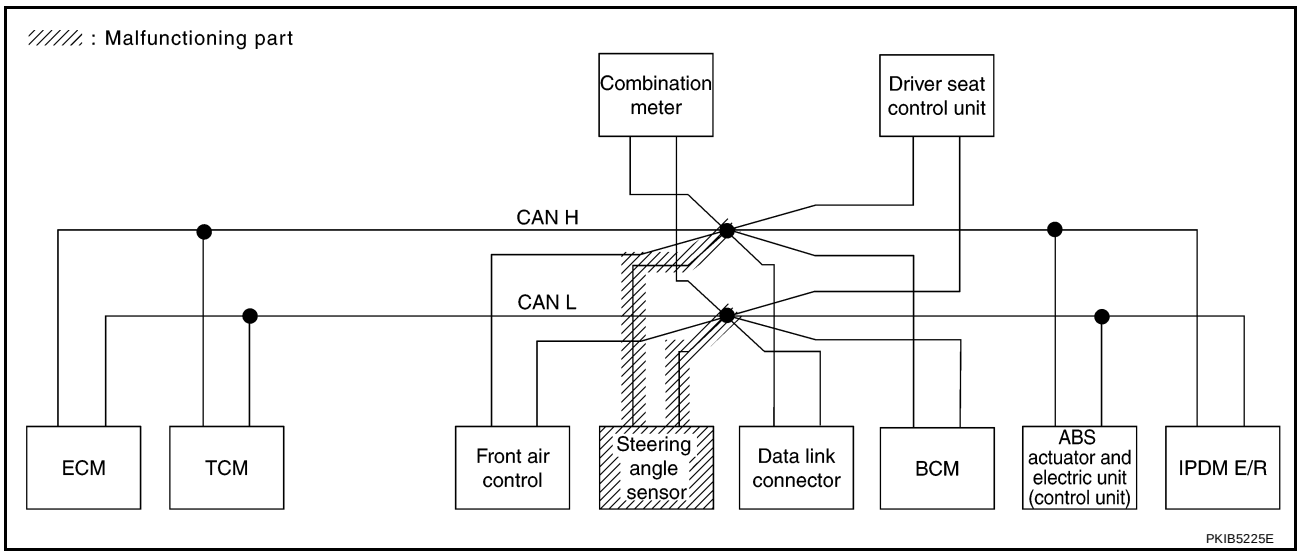
PKIB5224E

Case 5

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

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

PKIB5100E



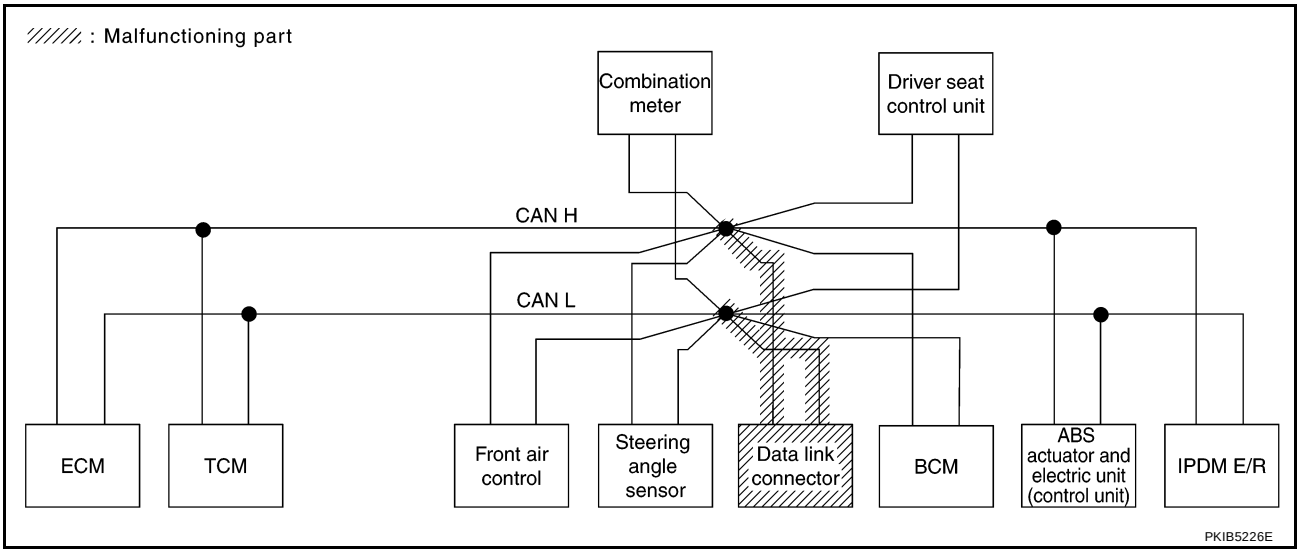
PKIB5225E

Case 6

Check data link connector circuit. Refer to LAN-114, "Data Link Connector Circuit Inspection" .

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

PKIB5101E



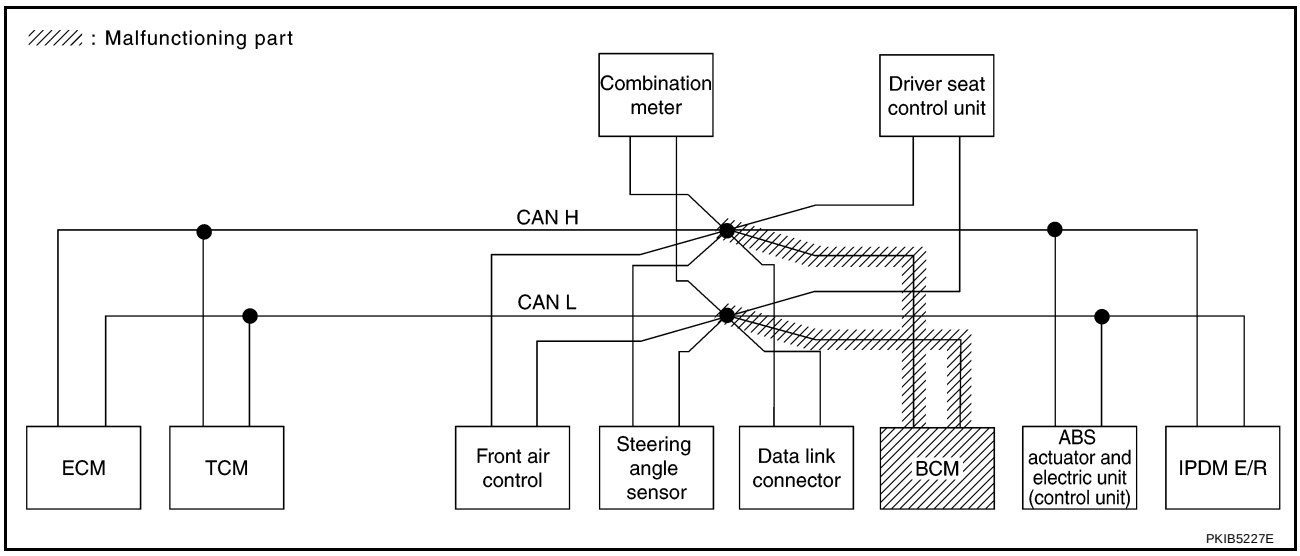
PKIB5226E

Case 7

Check BCM circuit. Refer to LAN-114, "BCM Circuit Inspection" .

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

PKIB5102E



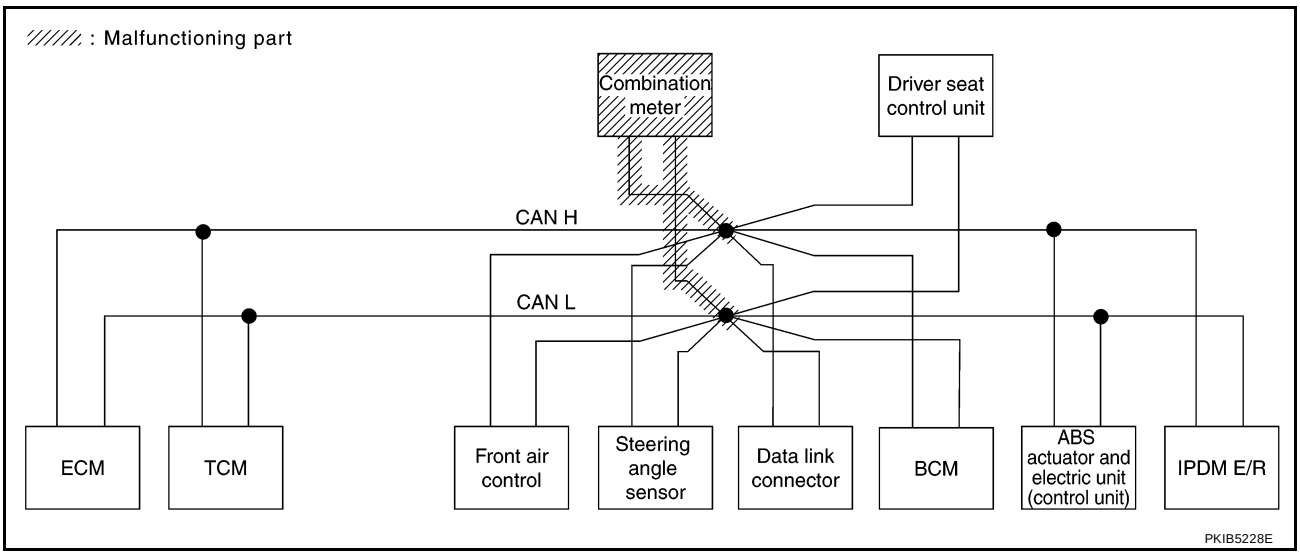
PKIB5227E

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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5103E



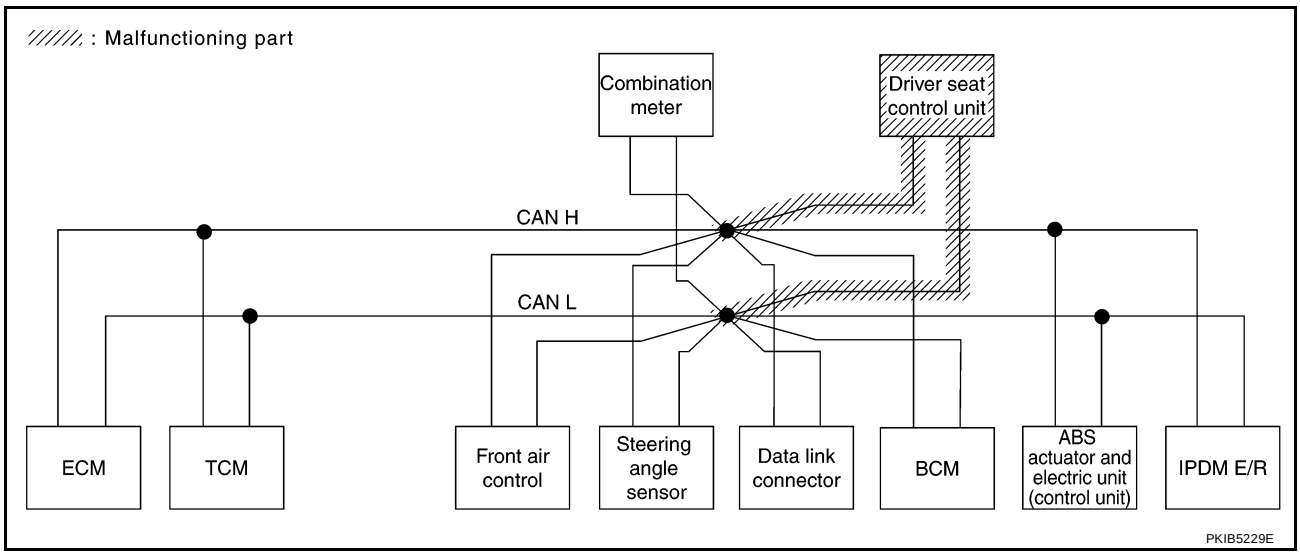
PKIB5228E

Case 9

Check driver seat control unit circuit. Refer to LAN-115, "Driver Seat Control Unit Circuit Inspection" .

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

PKIB5104E



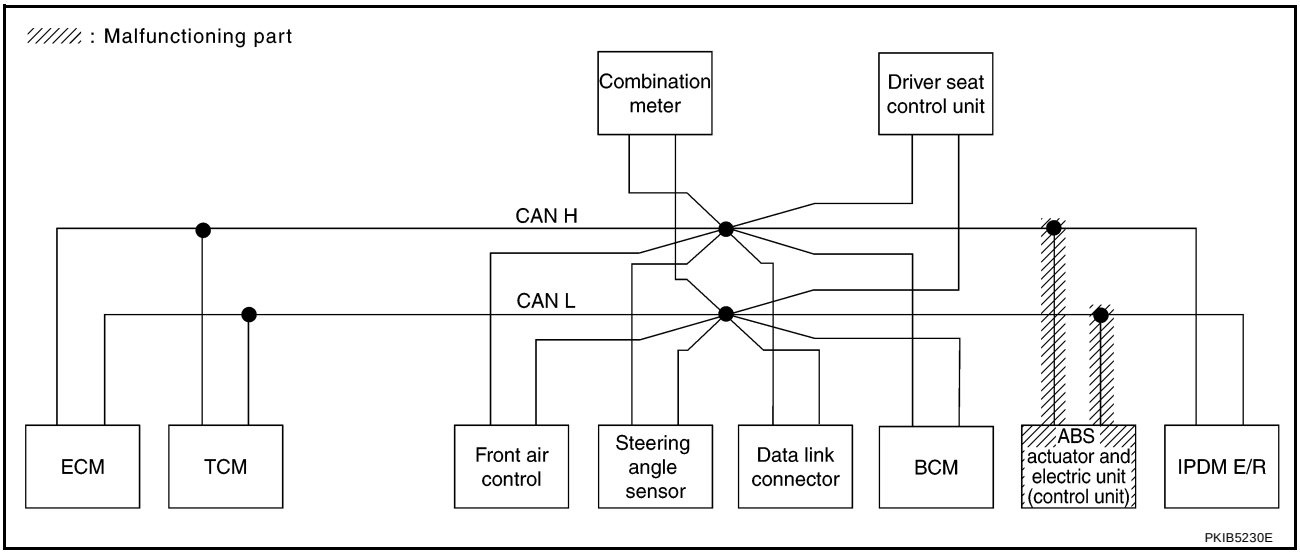
PKIB5229E

Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-116, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

PKIB5105E



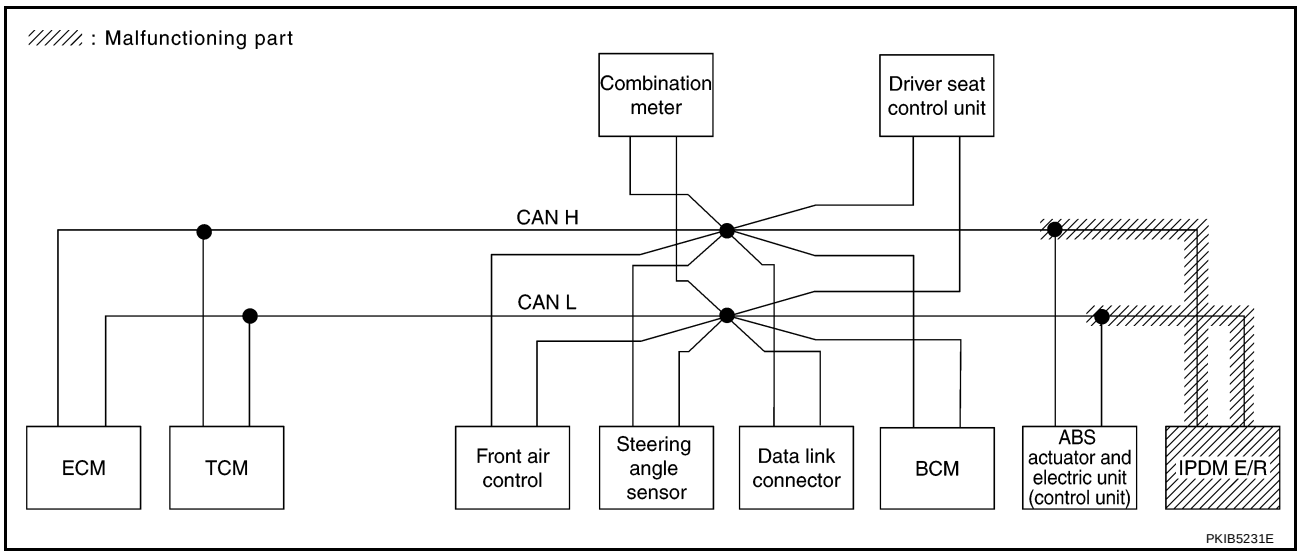
PKIB5230E

Case 11

Check IPDM E/R circuit. Refer to LAN-116, "IPDM E/R Circuit Inspection" .

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

PKIB5106E



PKIB5231E

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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5107E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-123, "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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5108E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-123, "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	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5109E

Inspection Between TCM and Data Link Connector Circuit

UKS003F5

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

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

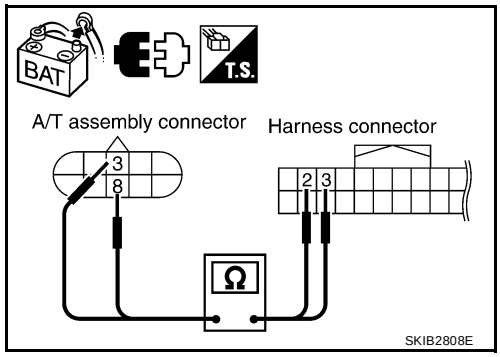
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

3 (L) – 2 (L) : **Continuity should exist.**
8 (P) – 3 (P) : **Continuity should exist.**

OK or NG

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



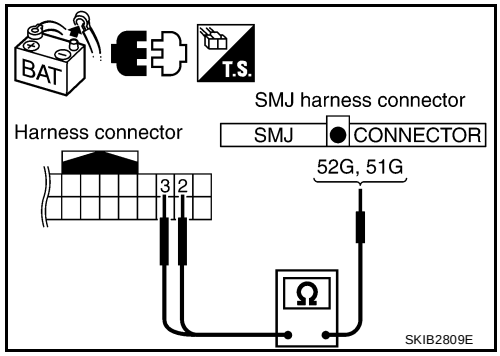
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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

OK or NG

OK >> GO TO 4.
NG >> Repair harness.



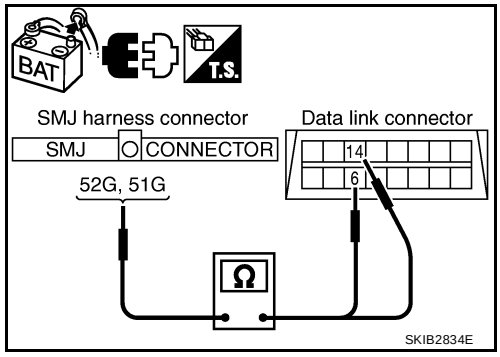
4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

52G (L) – 6 (L) : **Continuity should exist.**
51G (P) – 14 (P) : **Continuity should exist.**

OK or NG

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



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

UKS003F6

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 M91
- Harness connector E26

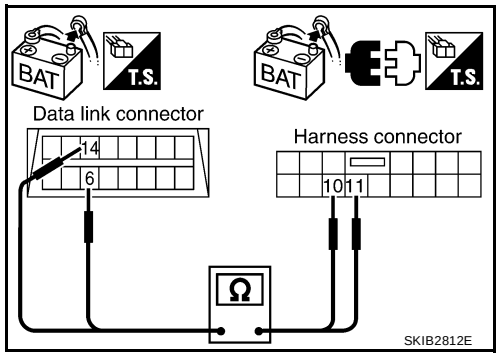
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.
14 (P) – 10 (P) : Continuity should exist.



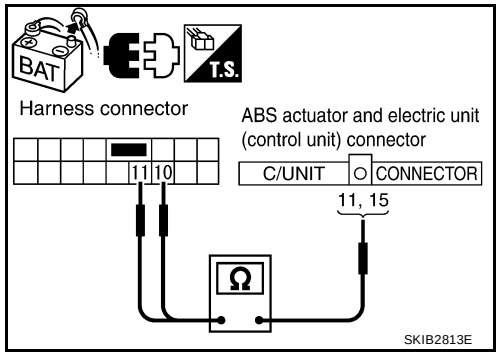
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003F7

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 E2
- Harness connector F32

OK or NG

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

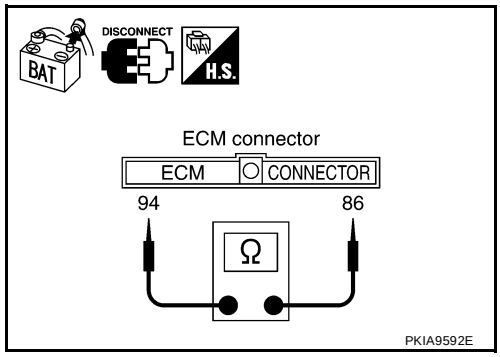
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E16 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.



UKS003F8

TCM Circuit Inspection

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.

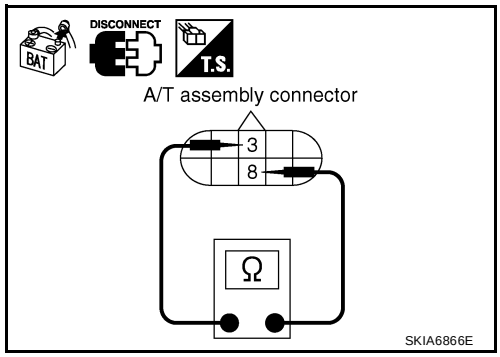
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) **: Approx. 54 – 66 Ω**

OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.



Steering Angle Sensor Circuit Inspection

UKS003FA

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).

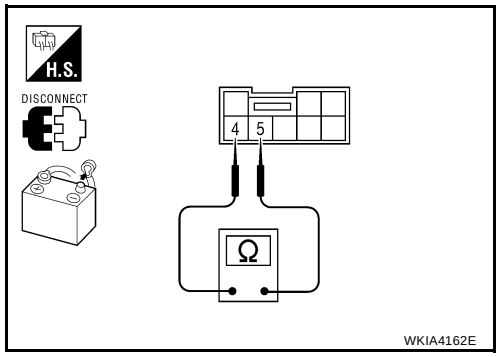
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003FB

1. CHECK CONNECTOR

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

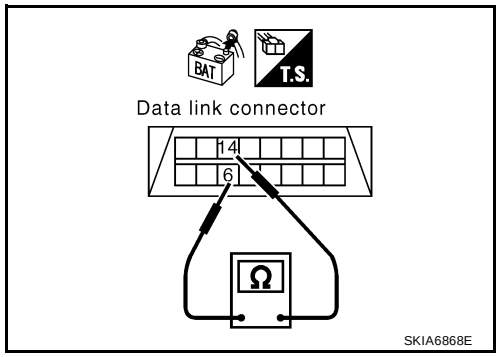
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and BCM.

BCM Circuit Inspection

UKS003FC

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).

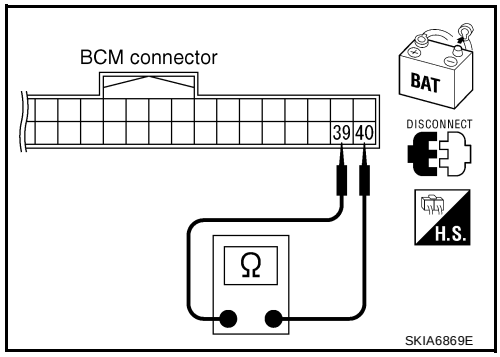
OK or NG

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

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

Combination Meter Circuit Inspection

UKS003FD

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

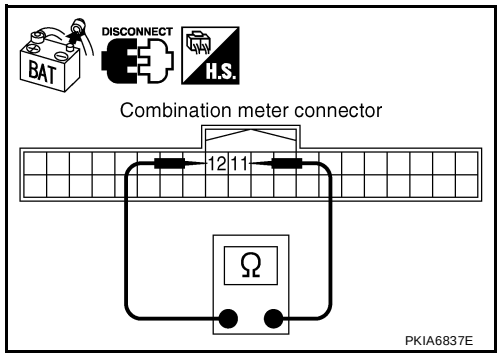
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace combination meter.

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

Driver Seat Control Unit Circuit Inspection

UKS003FE

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 and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37
- Harness connector B69
- Harness connector M40

OK or NG

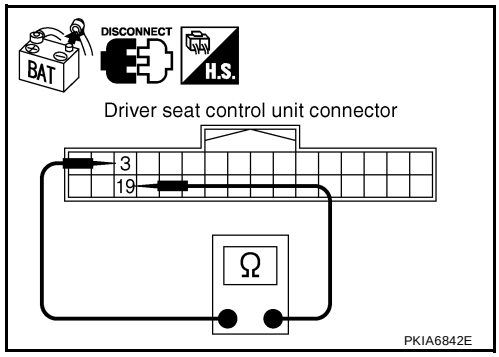
OK >> GO TO 2.

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 P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003FF

1. CHECK CONNECTOR

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

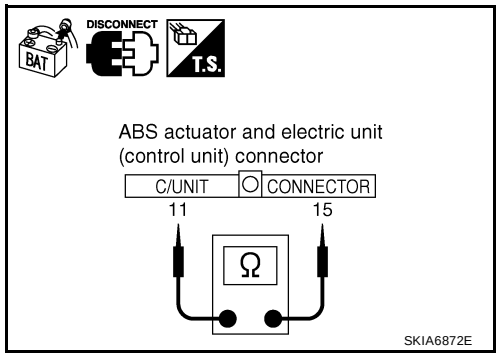
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003FG

1. CHECK CONNECTOR

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

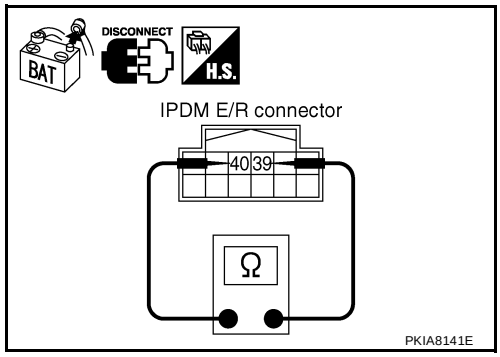
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003FH

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Driver seat control unit
- ABS actuator and electric unit (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.

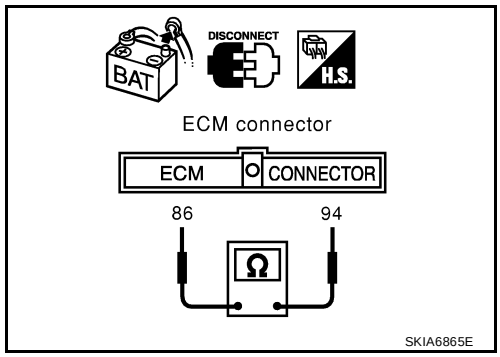
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 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 E2.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

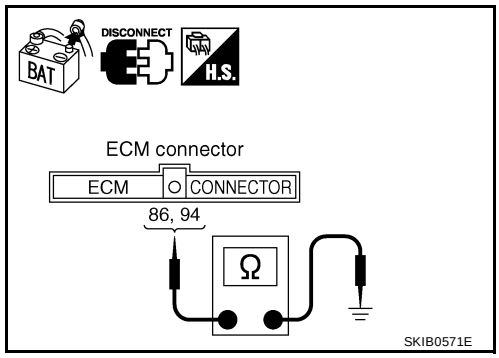
94 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E2.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

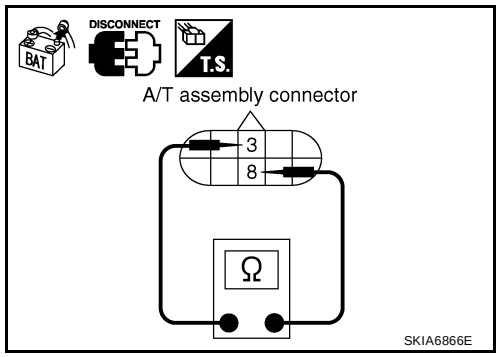
3 (L) – 8 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

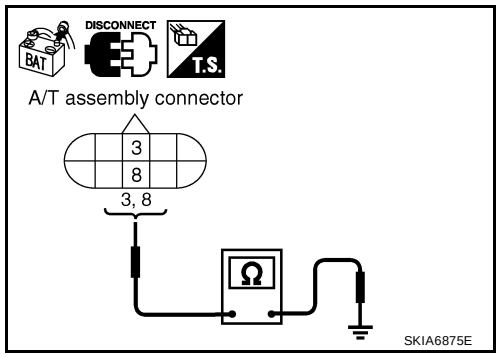
8 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14



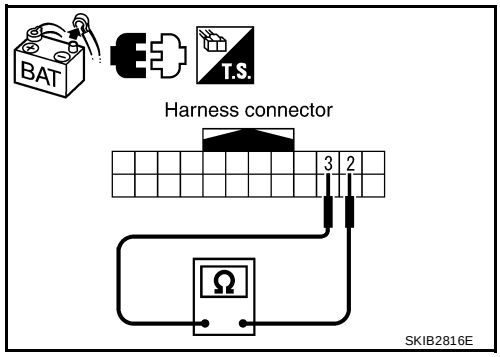
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E5 and harness connector E152.



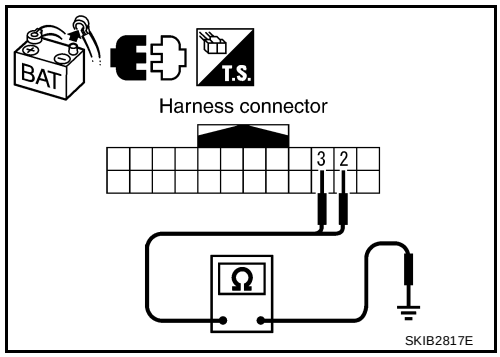
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

2 (L) – Ground : Continuity should not exist.
3 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E5 and harness connector E152.

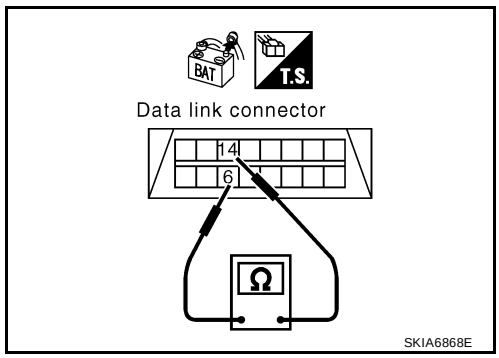


8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Harness connector M40
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

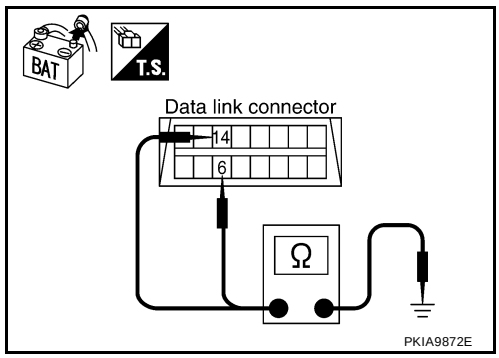
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 10.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

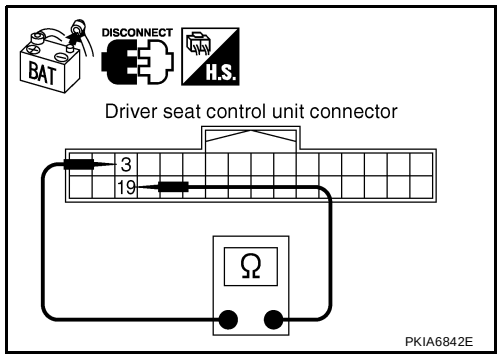
10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Driver seat control unit connector
- Harness connector P1
2. Check continuity between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 11.
NG >> Repair harness between driver seat control unit and harness connector P1.



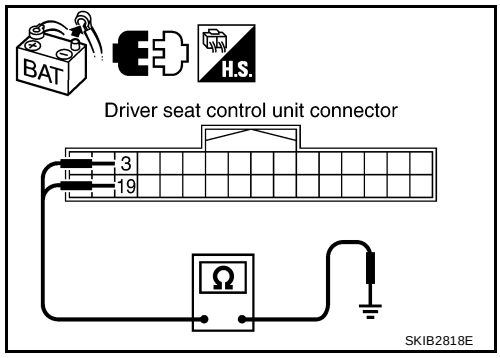
11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between driver seat control unit harness connector P2 terminals 3 (L), 19 (P) and ground.

3 (L) – Ground : Continuity should not exist.
19 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 12.
NG >> Repair harness between driver seat control unit and harness connector P1.



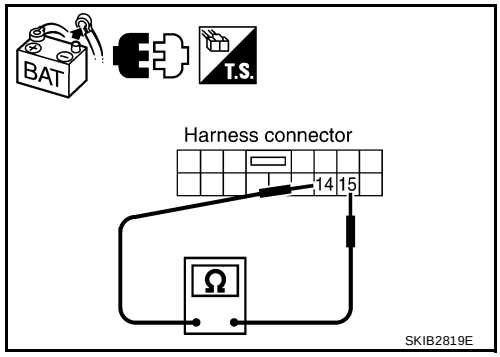
12. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B37 terminals 15 (L) and 14 (P).

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

OK or NG

OK >> GO TO 13.
NG >> Repair harness between harness connector B37 and harness connector B69.



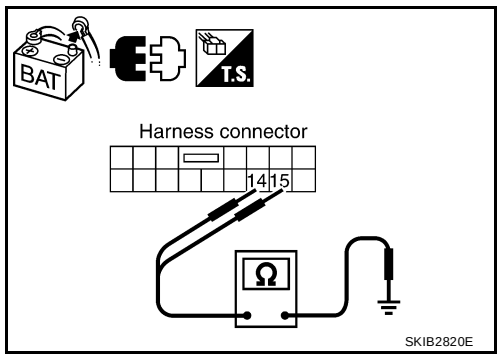
13. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B37 terminals 15 (L), 14 (P) and ground.

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

OK or NG

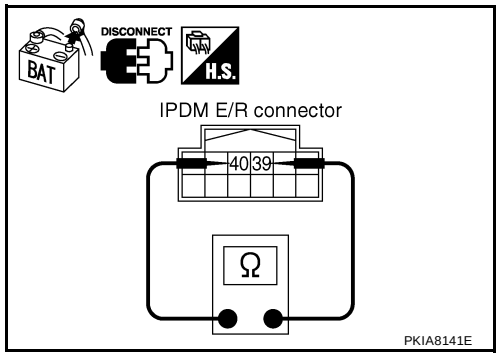
OK >> GO TO 14.
NG >> Repair harness between harness connector B37 and harness connector B69.



14. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.



OK or NG

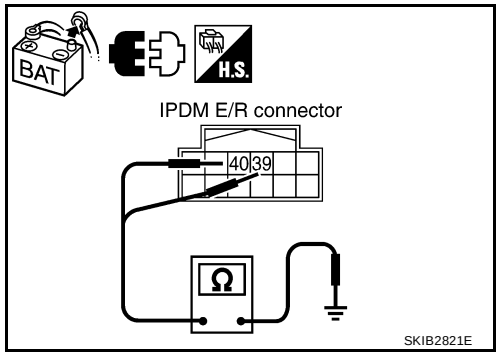
OK >> GO TO 15.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

15. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

39 (L) – Ground : Continuity should not exist.
40 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 16.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

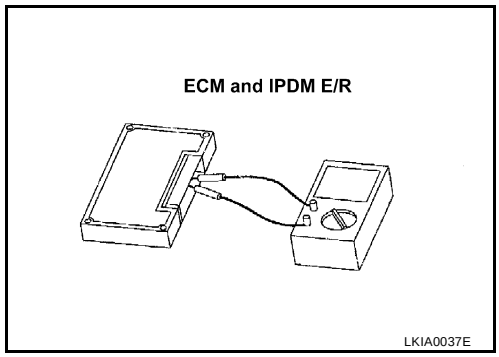
16. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 17.
NG >> Replace ECM and/or IPDM E/R.

17. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 18.
NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

18. UNIT REPRODUCIBILITY INSPECTION

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.

- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003FI

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 4)

PFP:23710

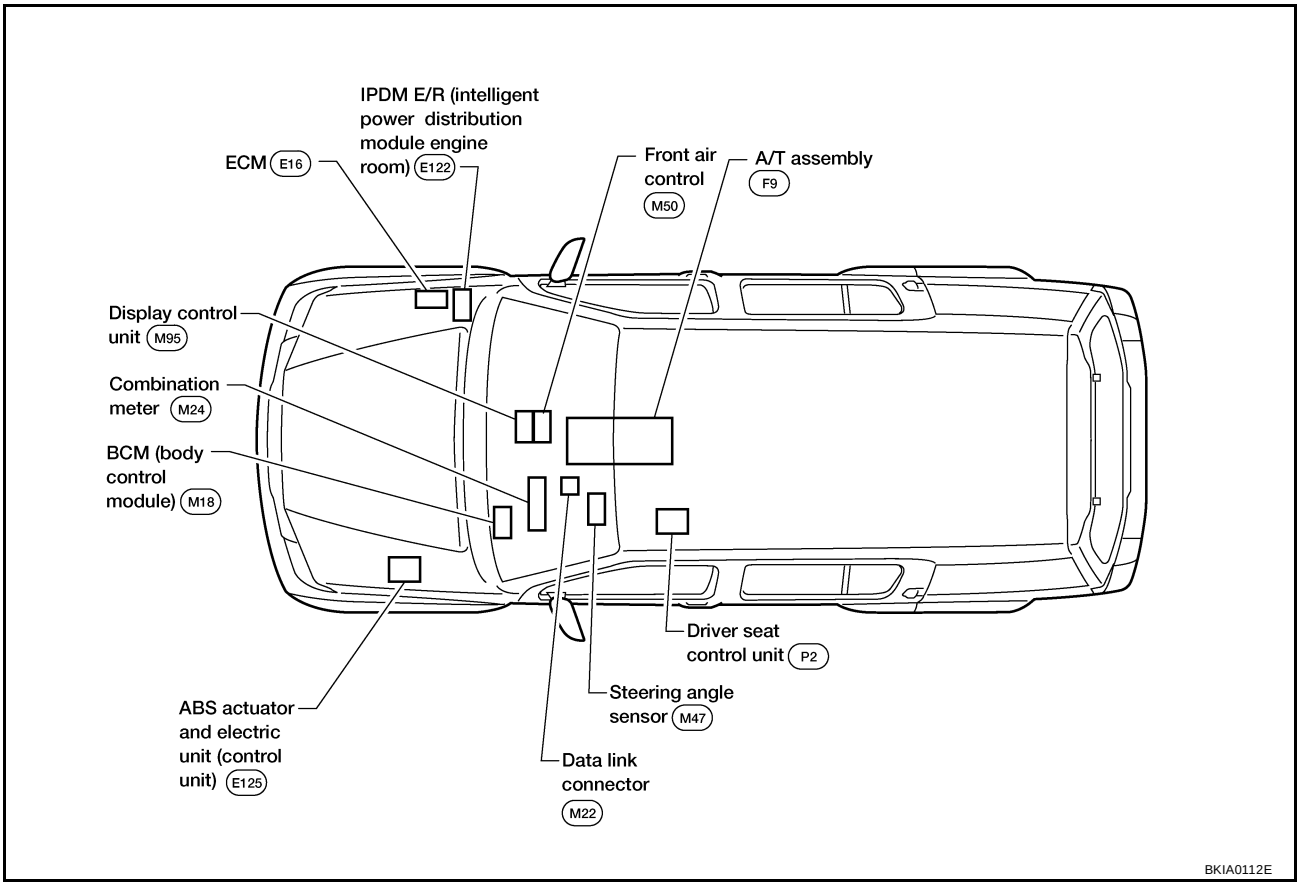
System Description

UKS003EF

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.

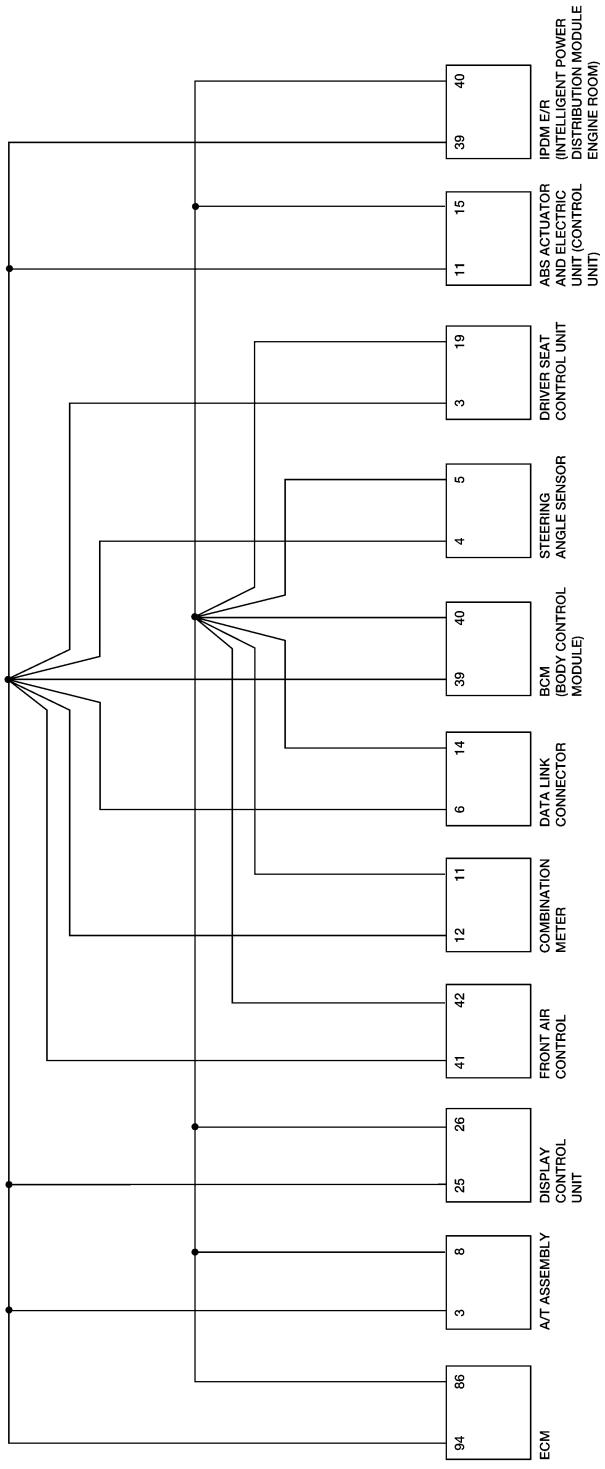
Component Parts and Harness Connector Location

UKS003EG



Schematic

UKS003EH

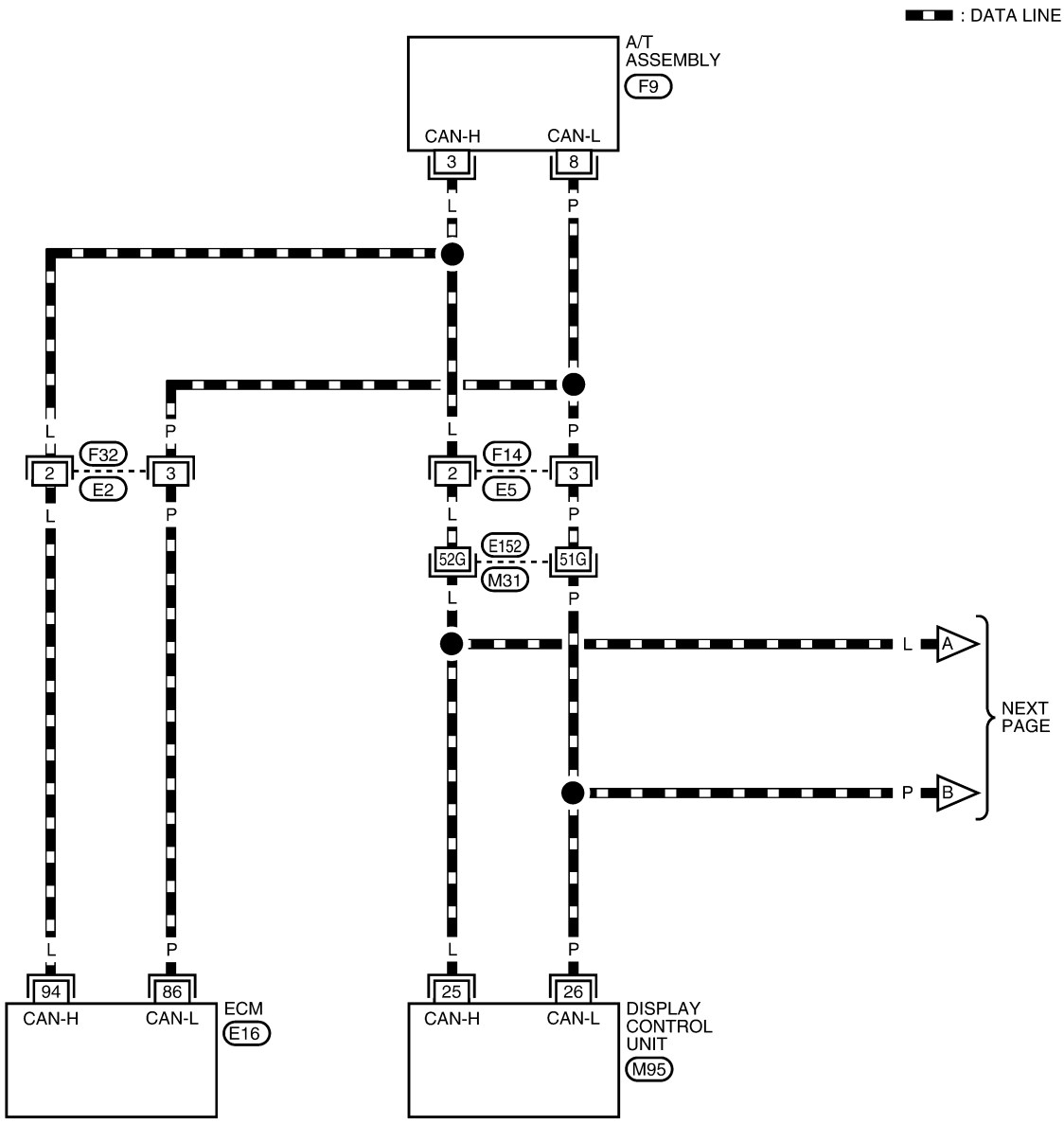


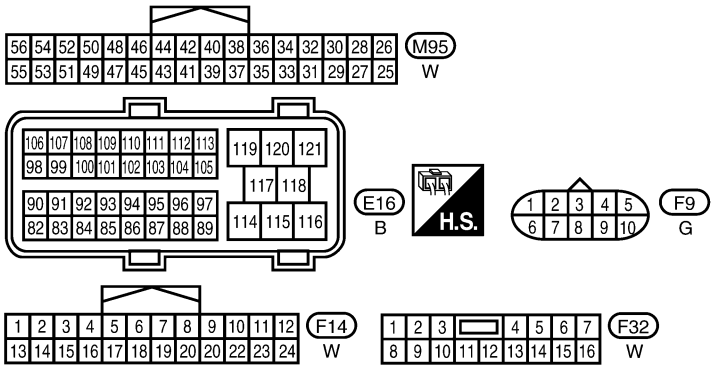
BKWA0611E

Wiring Diagram - CAN -

UKS003EI

LAN-CAN-10

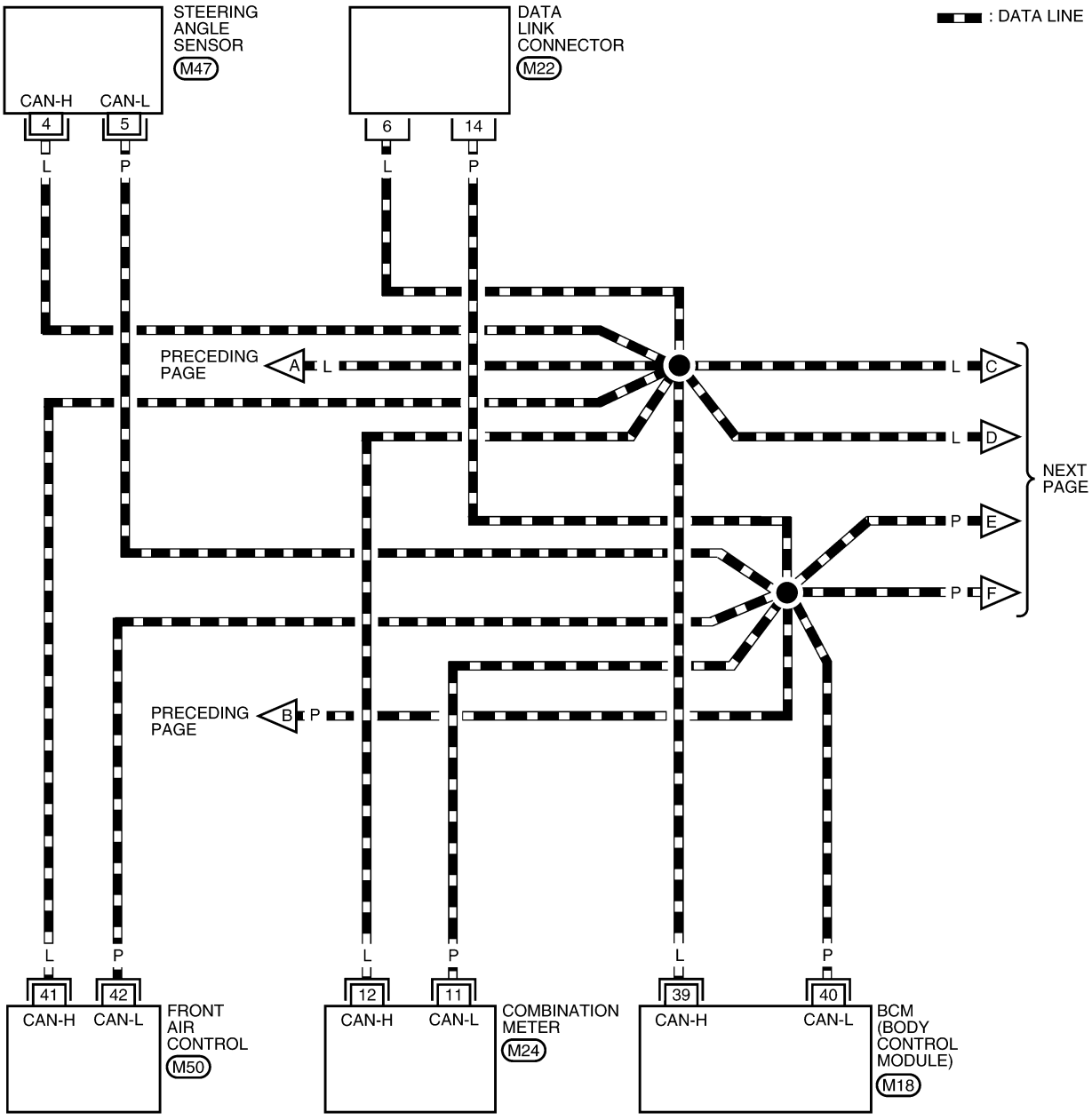


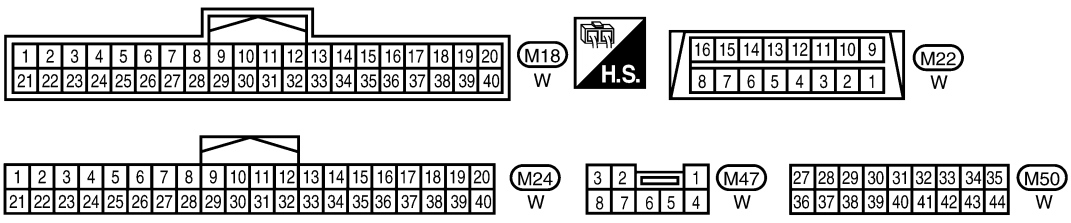


REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0380E

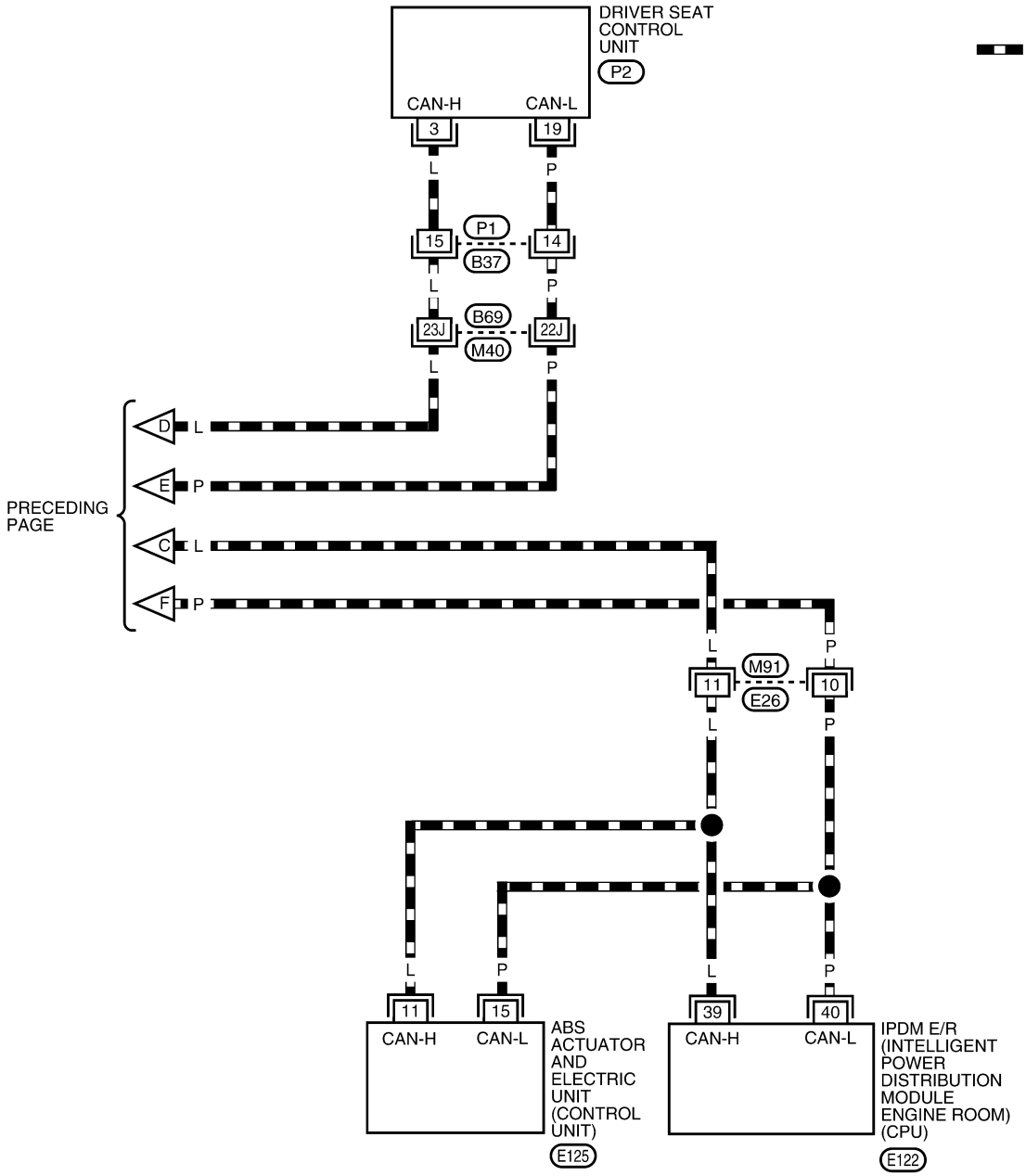
LAN-CAN-11

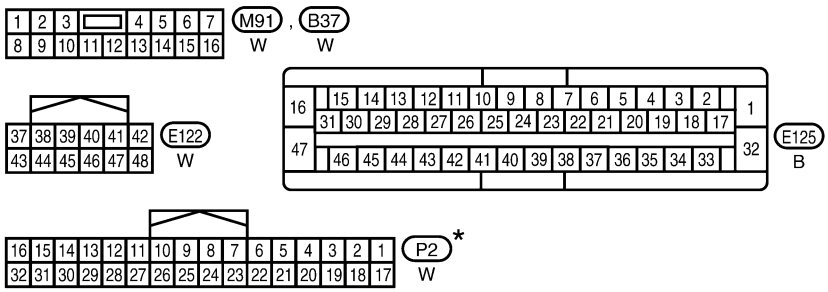




BKWA0612E

LAN-CAN-12





REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

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

BKWA0382E

CHECK SHEET

UKS003EJ

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	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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

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

PKIB5020E

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
METER
SELF-DIAG RESULTS

Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR

Attach copy of
ABS
CAN DIAG SUPPORT
MNTR

Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR

PKIB5019E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

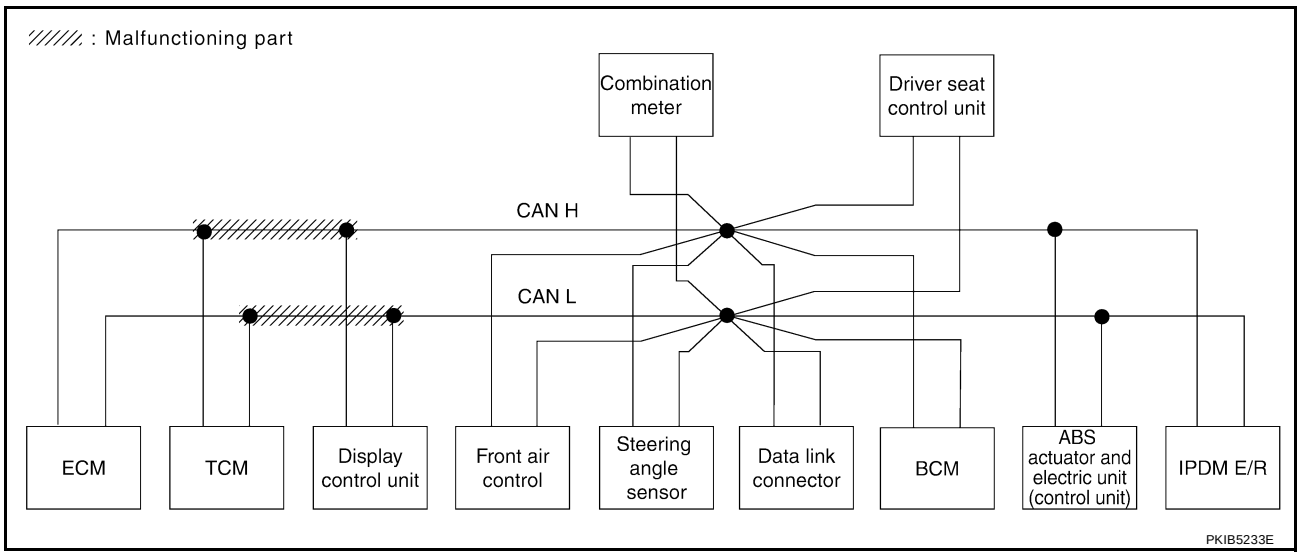
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and display control unit circuit. Refer to LAN-145, "Inspection Between TCM and Display Control Unit Circuit" .

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

PKIB5110E



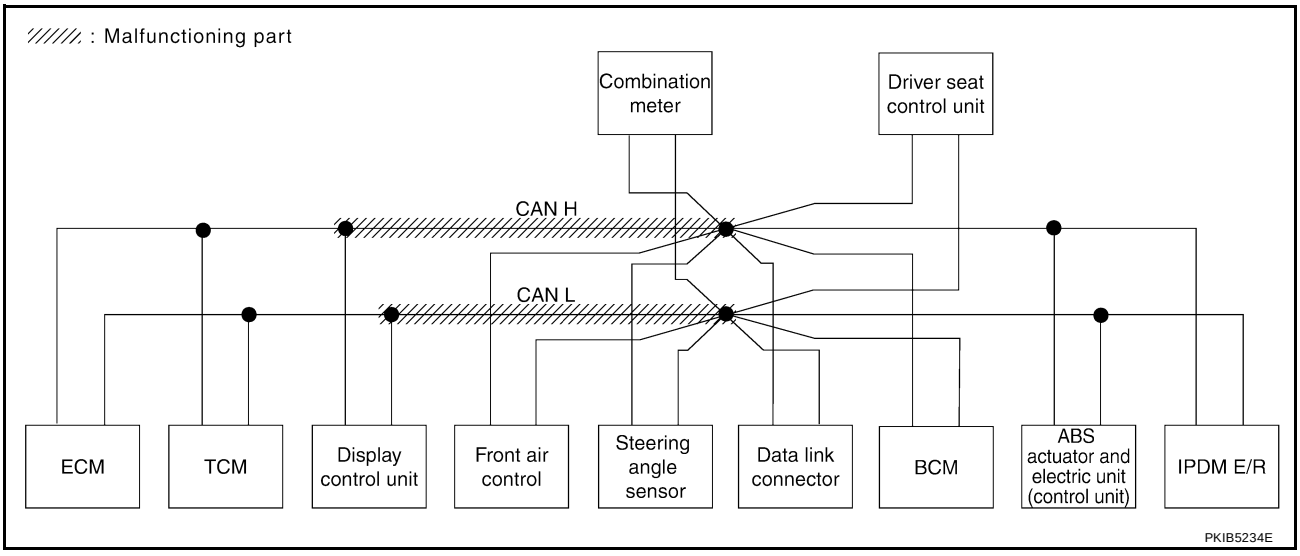
PKIB5233E

Case 2

Check harness between display control unit and data link connector circuit. Refer to LAN-147, "Inspection Between Display 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	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5111E



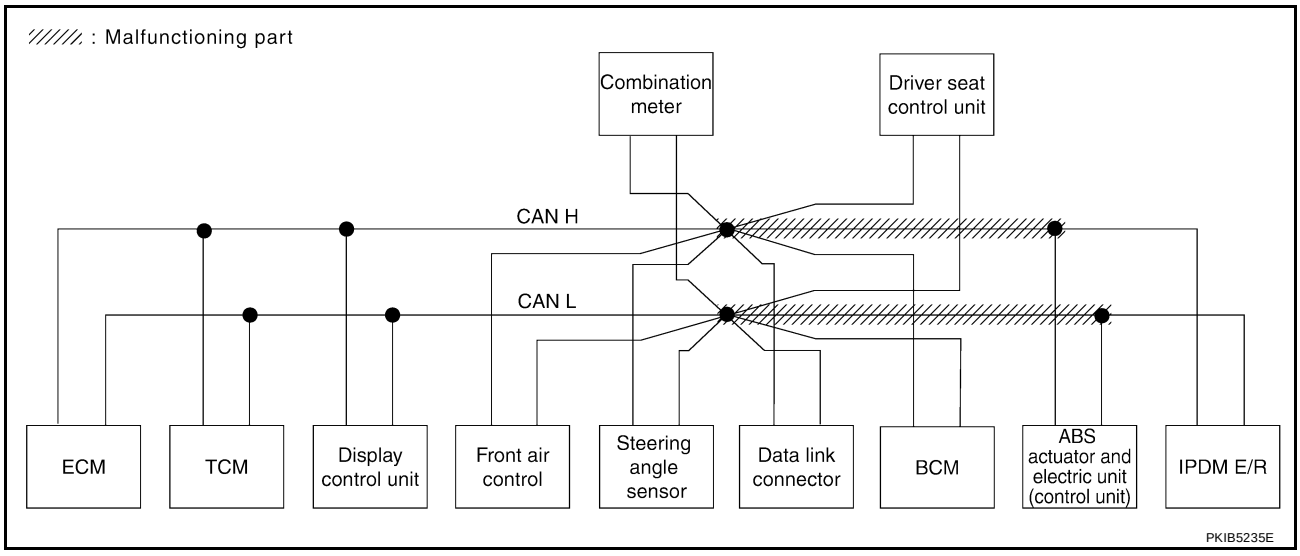
PKIB5234E

Case 3

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-147, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit"
.

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

PKIB5112E



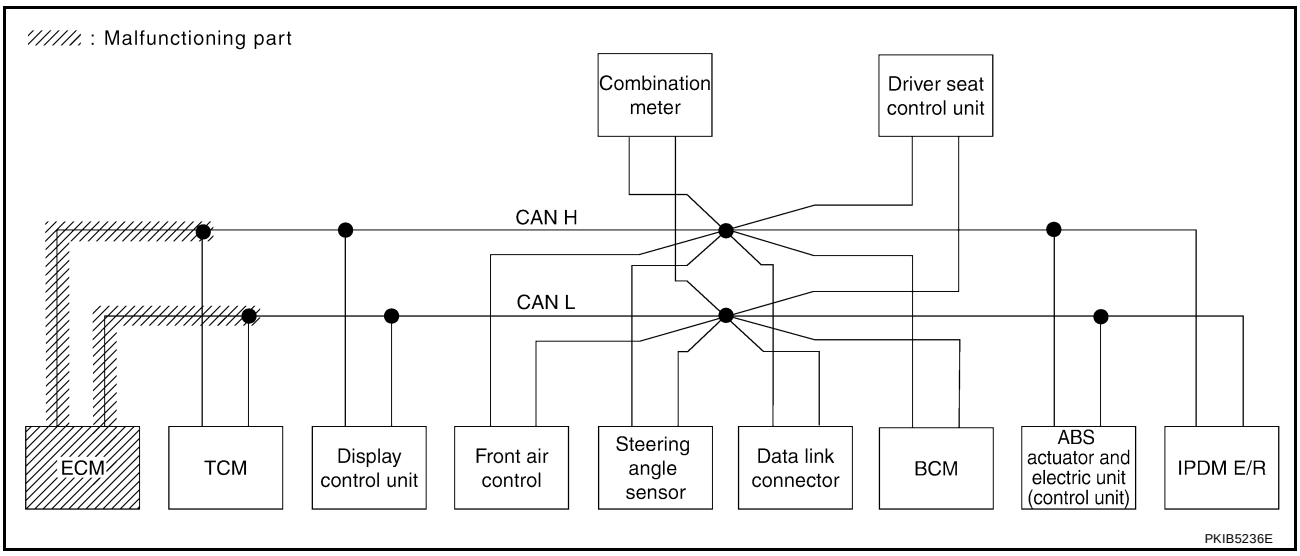
PKIB5235E

Case 4

Check ECM circuit. Refer to LAN-148, "ECM Circuit Inspection" .

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

PKIB5113E



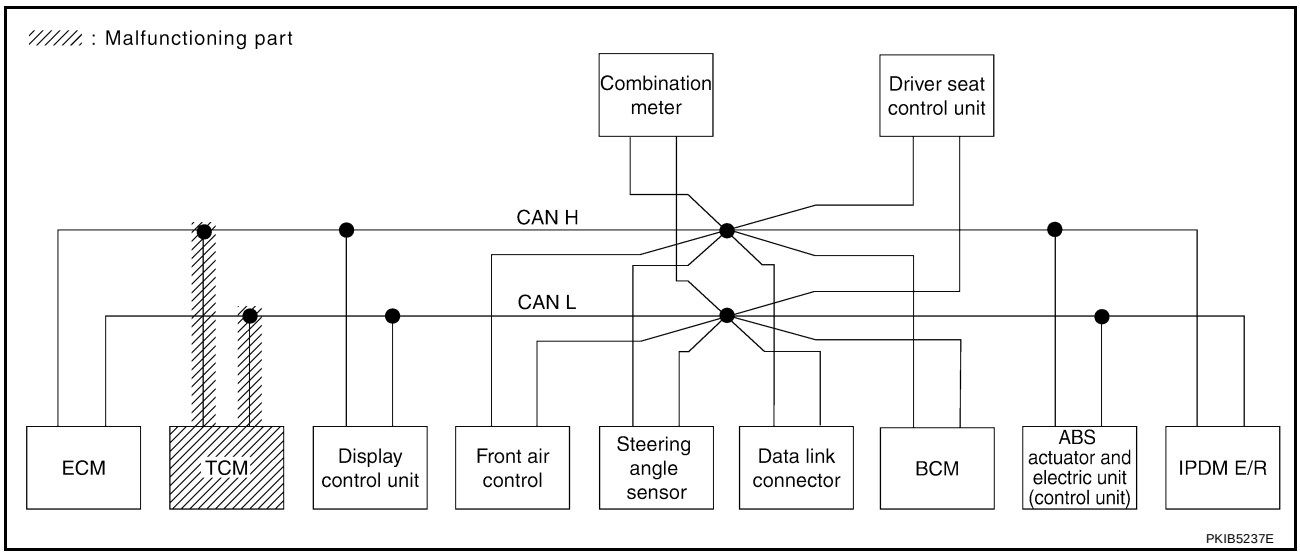
PKIB5236E

Case 5

Check TCM circuit. Refer to LAN-148, "TCM Circuit Inspection" .

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

PKIB5114E

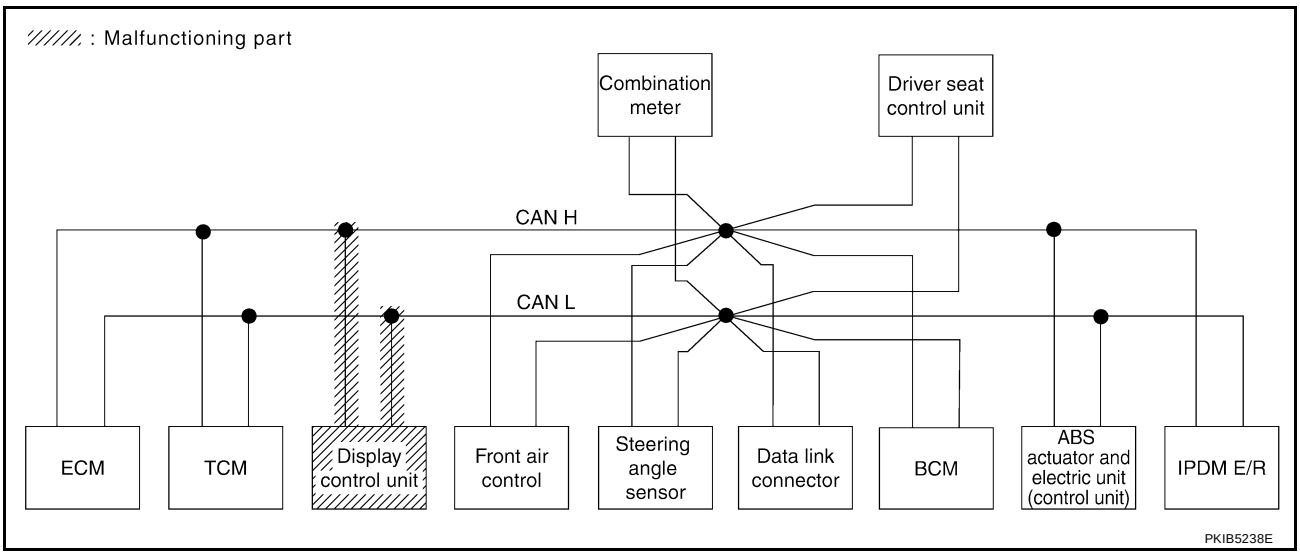


Case 6

Check display control unit circuit. Refer to LAN-149, "Display Control Unit Circuit Inspection" .

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

PKIB5115E



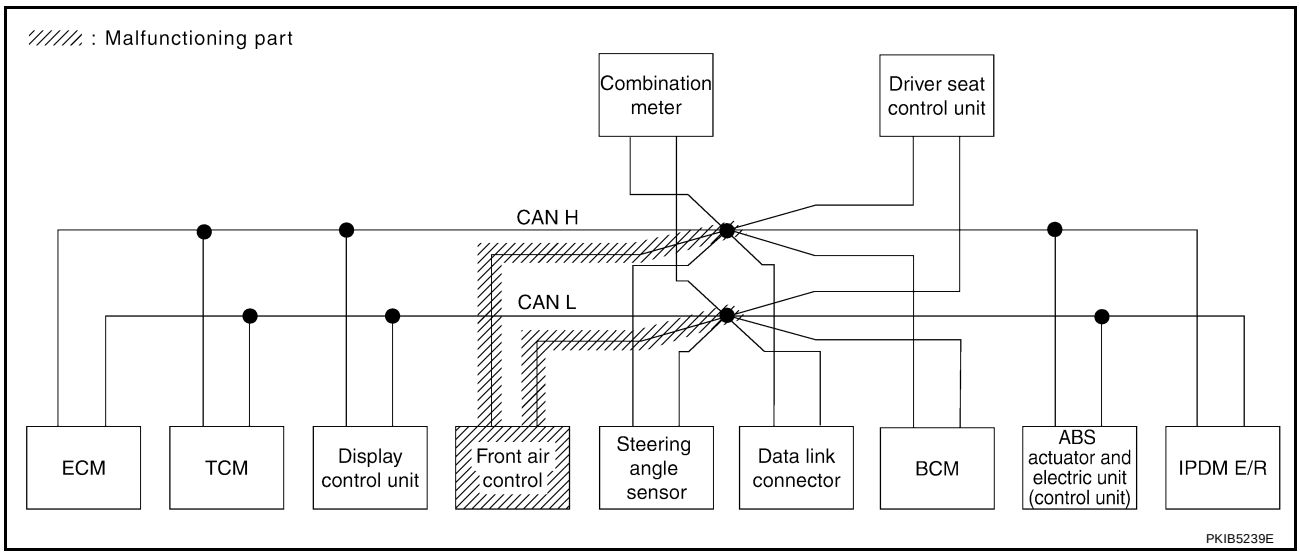
PKIB5238E

Case 7

Check Front air control circuit. Refer to LAN-149, "Front Air Control Circuit Inspection" .

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

PKIB5116E



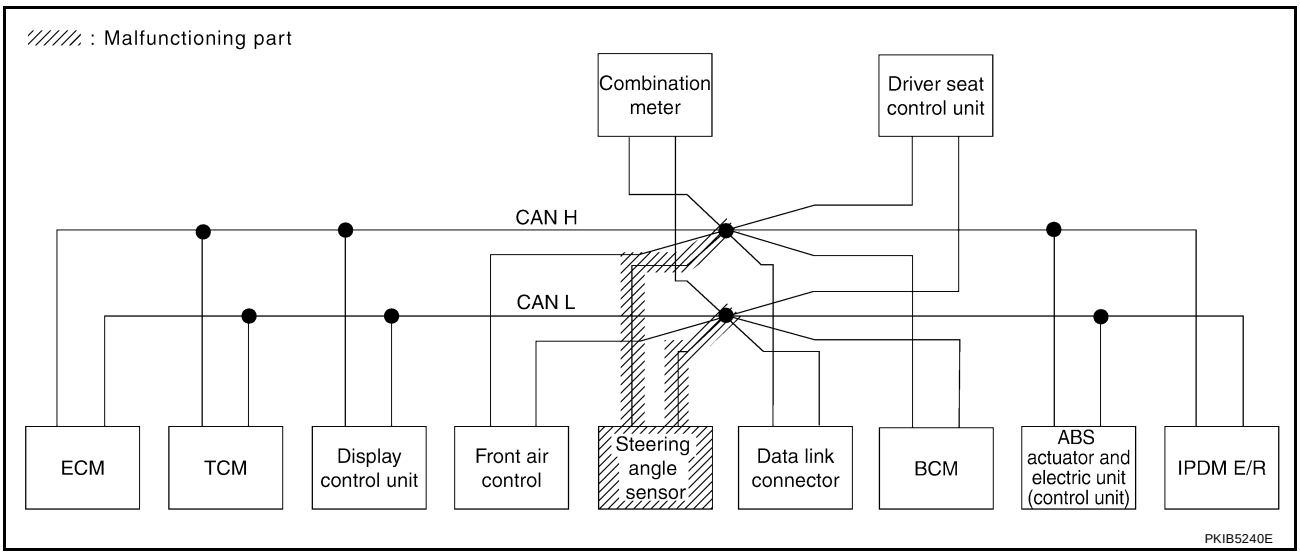
PKIB5239E

Case 8

Check steering angle sensor circuit. Refer to LAN-150, "Steering Angle Sensor Circuit Inspection" .

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

PKIB5117E

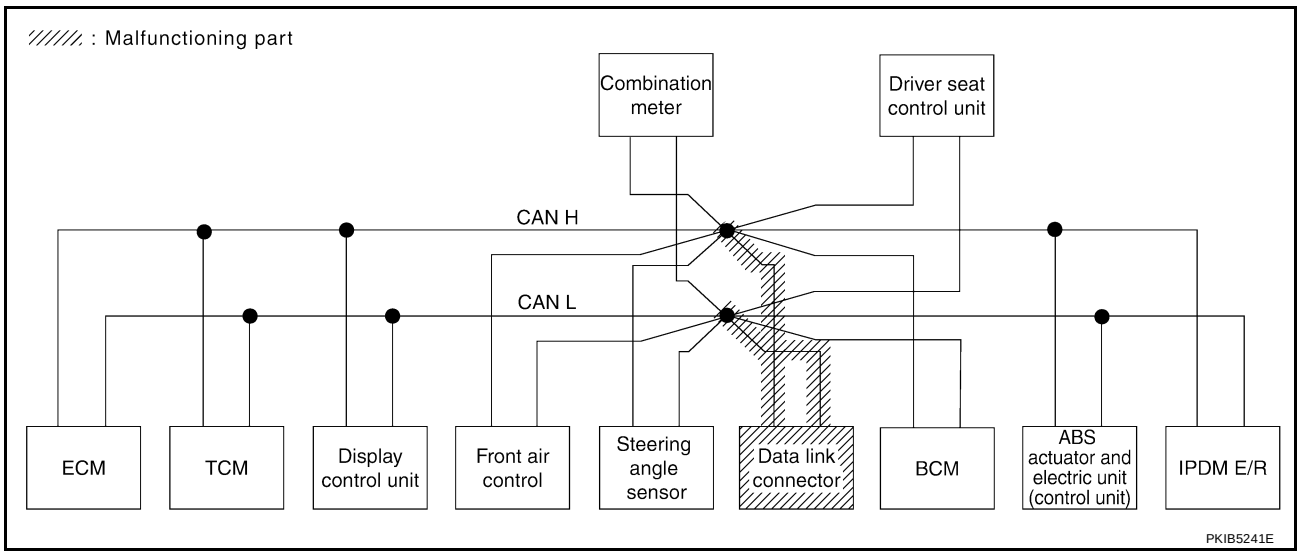


Case 9

Check data link connector circuit. Refer to LAN-150, "Data Link Connector Circuit Inspection" .

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

PKIB5118E

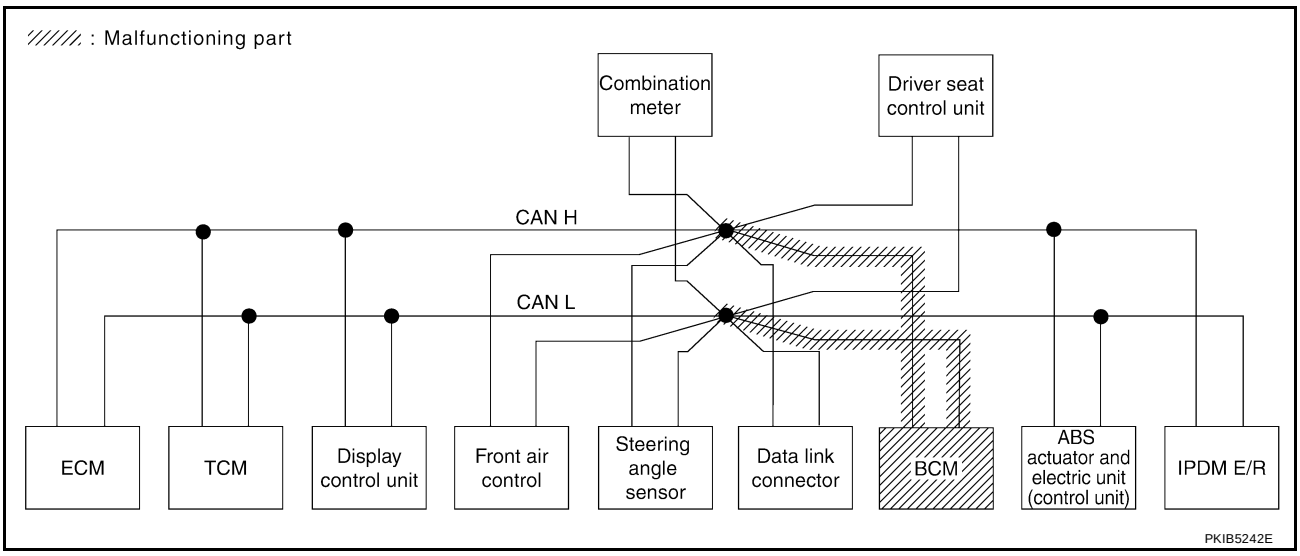


Case 10

Check BCM circuit. Refer to LAN-151, "BCM Circuit Inspection" .

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

PKIB5119E



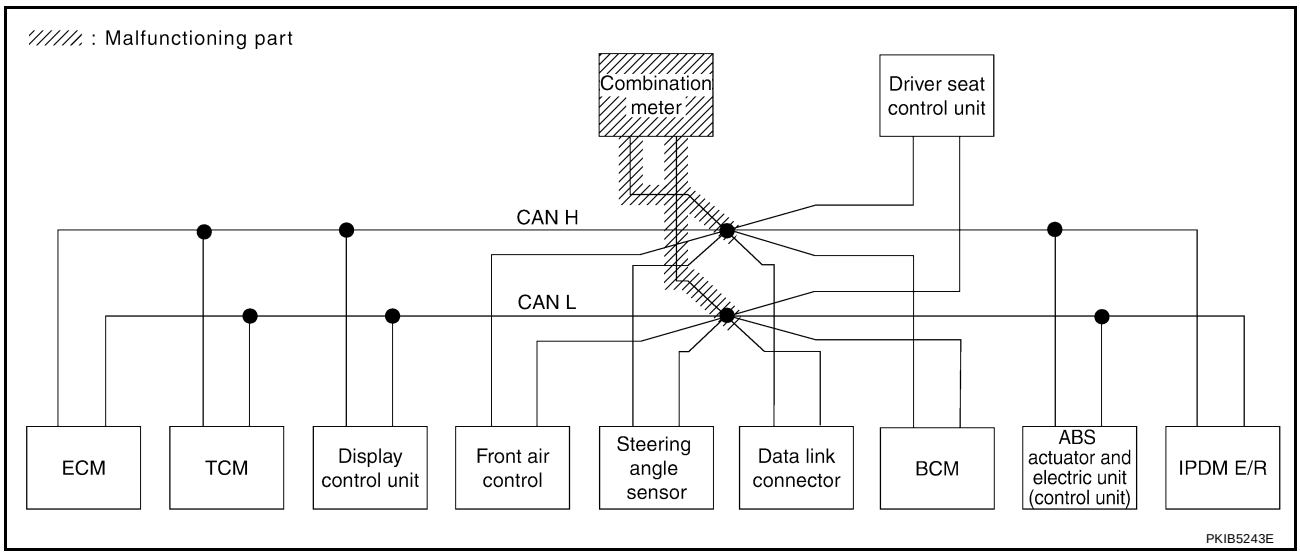
PKIB5242E

Case 11

Check combination meter circuit. Refer to LAN-151, "Combination Meter Circuit Inspection" .

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

PKIB5120E



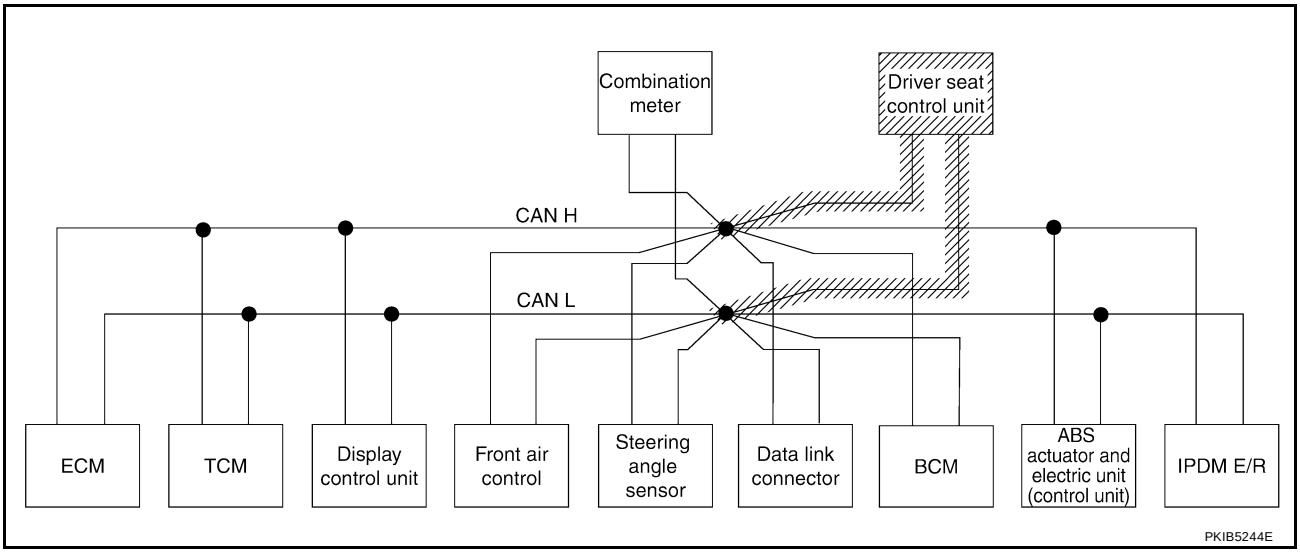
PKIB5243E

Case 12

Check driver seat control unit circuit. Refer to LAN-152, "Driver Seat Control Unit Circuit Inspection" .

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

PKIB5121E



PKIB5244E

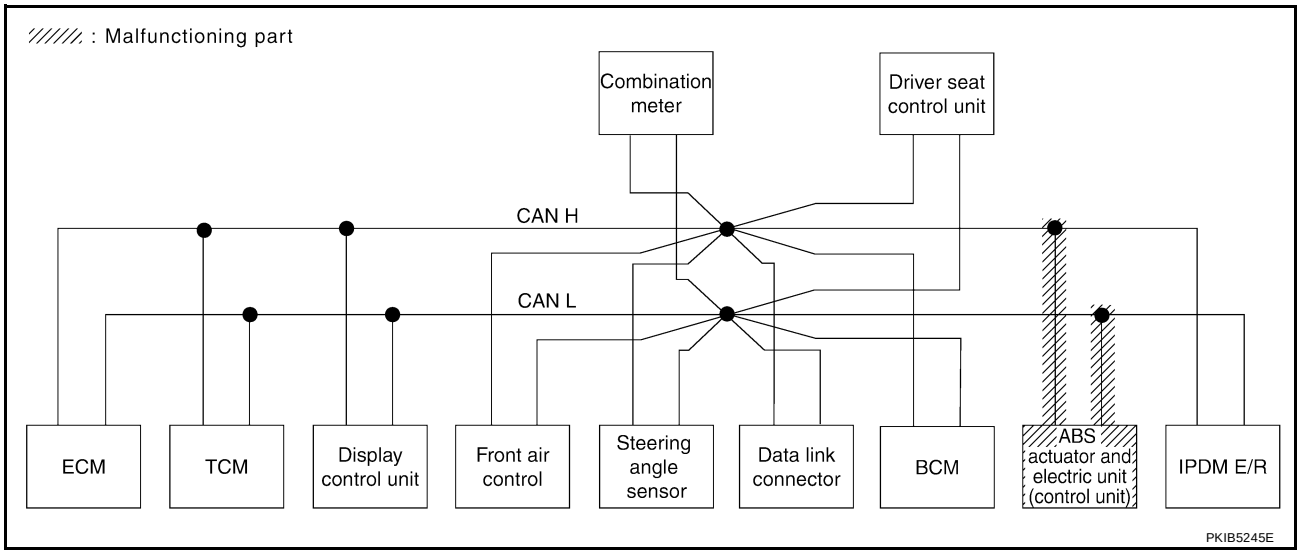
Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-152, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

Check sheet table

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

PKIB5122E

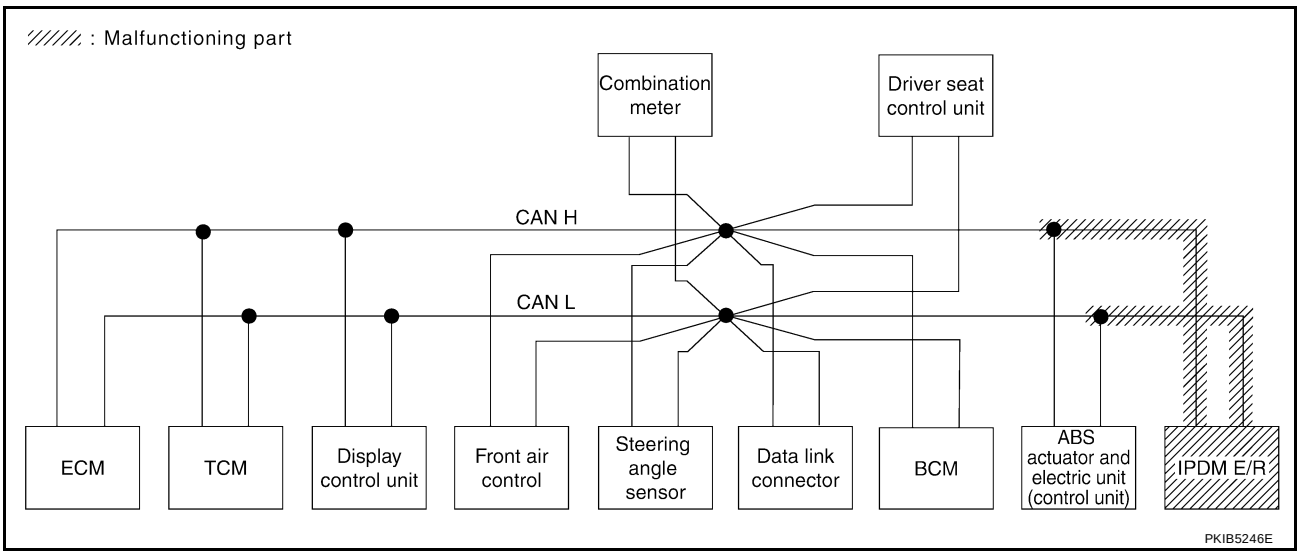


Case 14

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

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

PKIB5123E



PKIB5246E

Case 15

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

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

PKIB5124E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-160, "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	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5125E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-160, "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	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5126E

Inspection Between TCM and Display Control Unit Circuit

UKS003EK

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

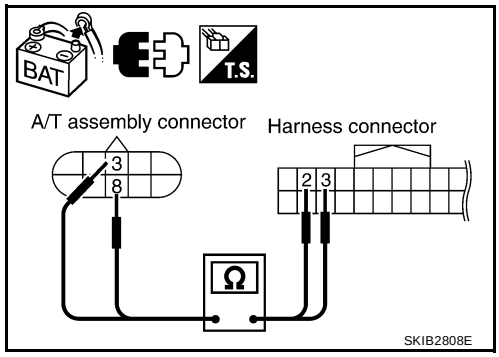
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

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



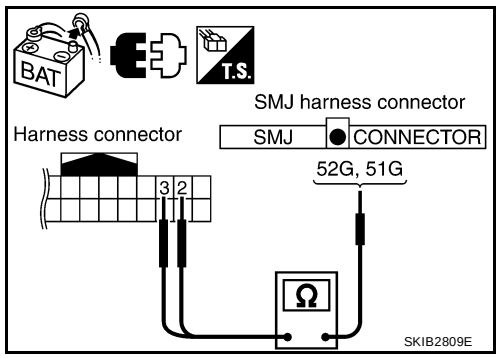
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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



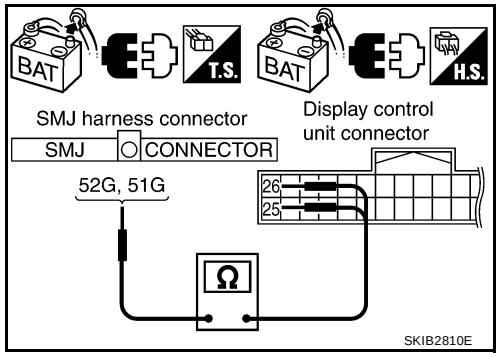
OK or NG

OK >> GO TO 4.
NG >> Repair harness.

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check continuity between harness connector M31 terminals 52G (L), 51G (P) and display control unit harness connector M95 terminals 25 (L), 26 (P).

52G (L) – 25 (L) : Continuity should exist.
51G (P) – 26 (P) : Continuity should exist.



OK or NG

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

Inspection Between Display Control Unit and Data Link Connector Circuit

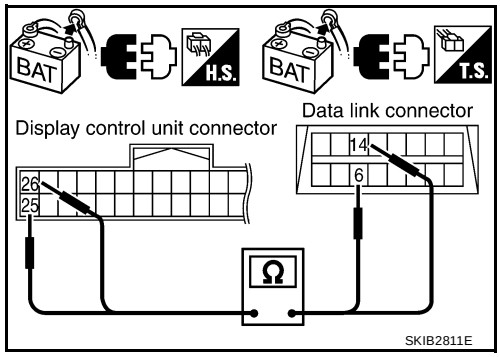
UKS003EL

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 display control unit connector.
4. Check continuity between display control unit harness connector M95 terminals 25 (L), 26 (P) and data link connector M22 terminals 6 (L), 14 (P).

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

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



OK or NG

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

NG >> Repair harness.

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

UKS003EM

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 M91
- Harness connector E26

OK or NG

OK >> GO TO 2.

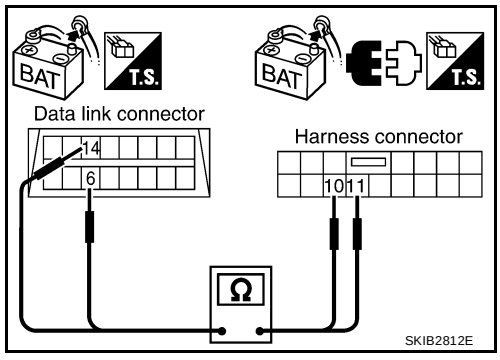
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.

14 (P) – 10 (P) : Continuity should exist.



OK or NG

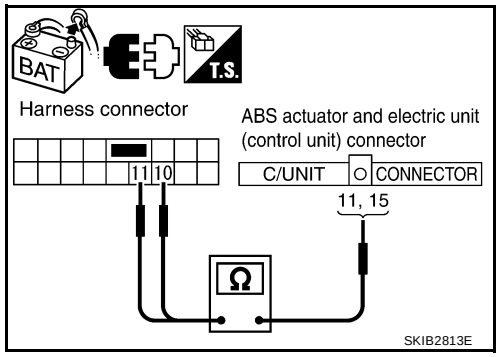
OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003EN

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 E2
- Harness connector F32

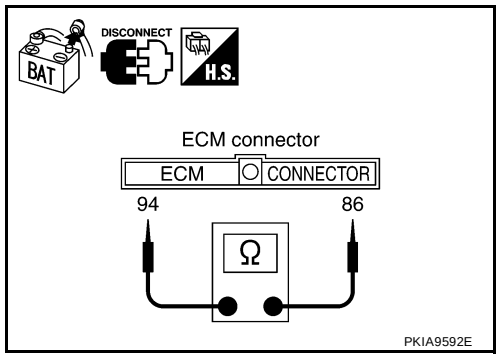
OK or NG

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 E16 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

UKS003EO

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).

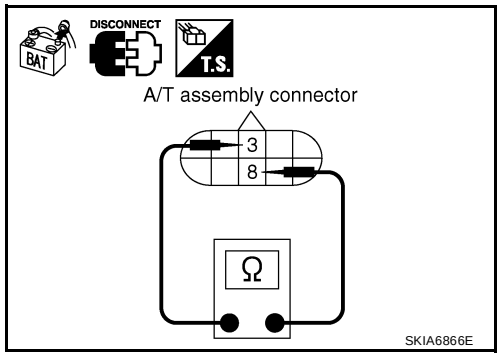
OK or NG

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 F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.

Display Control Unit Circuit Inspection

UKS003EP

1. CHECK CONNECTOR

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

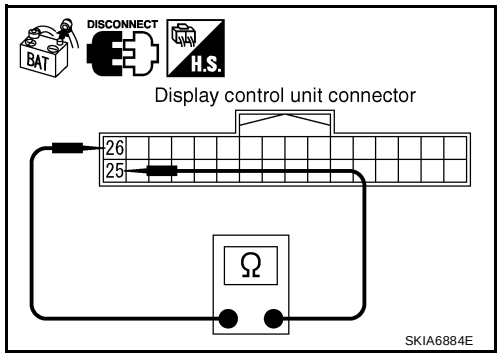
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

25 (L) – 26 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit and harness connector M31.

Front Air Control Circuit Inspection

UKS003EQ

1. CHECK CONNECTOR

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

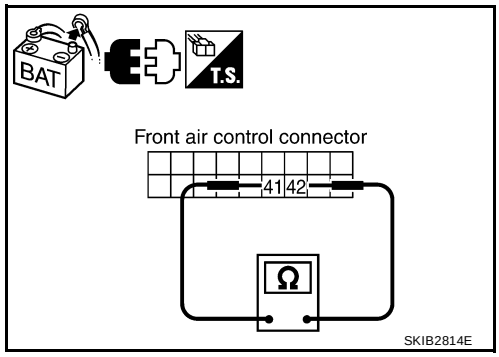
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 41 (L) and 42 (P).

41 (L) – 42 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.

Steering Angle Sensor Circuit Inspection

UKS003ER

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).

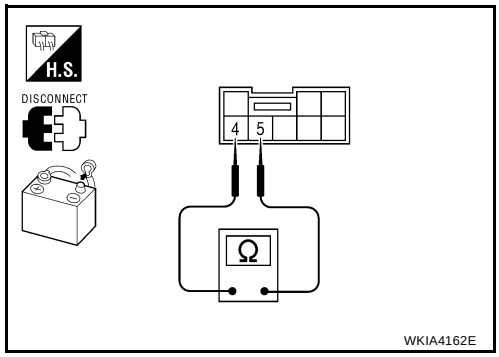
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003ES

1. CHECK CONNECTOR

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

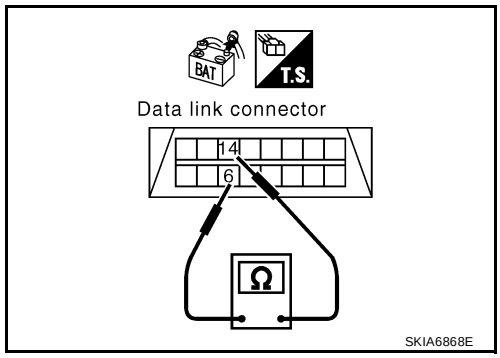
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

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

BCM Circuit Inspection

UKS003ET

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

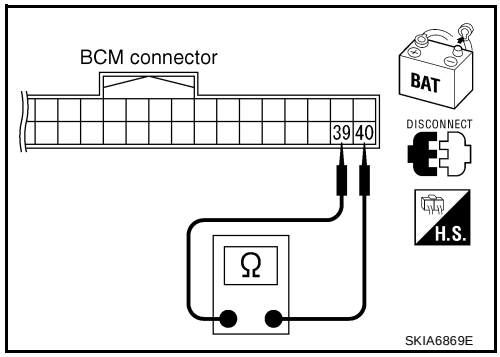
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

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

Combination Meter Circuit Inspection

UKS003EU

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

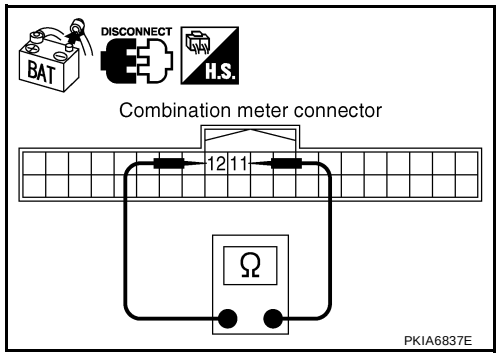
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

Driver Seat Control Unit Circuit Inspection

UKS003EV

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 and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37
- Harness connector B69
- Harness connector M40

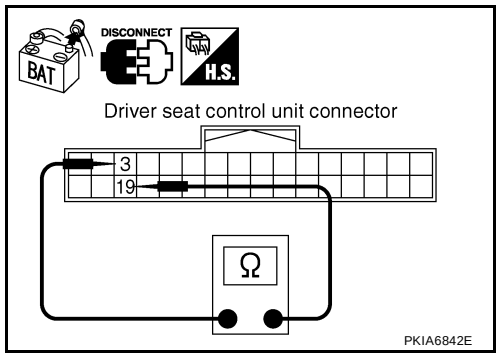
OK or NG

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 P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003EW

1. CHECK CONNECTOR

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

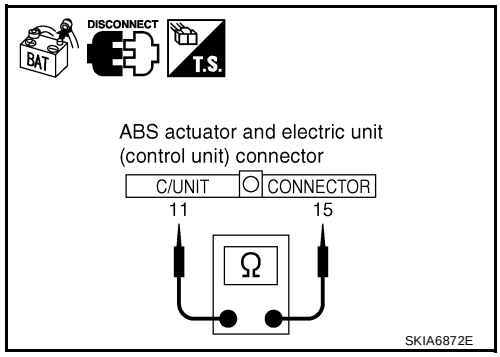
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003EX

1. CHECK CONNECTOR

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

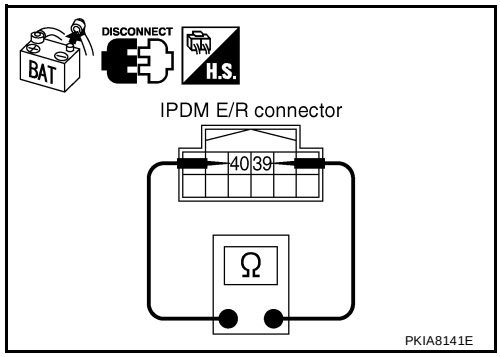
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003EY

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Display control unit
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Driver seat control unit
- ABS actuator and electric unit (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.

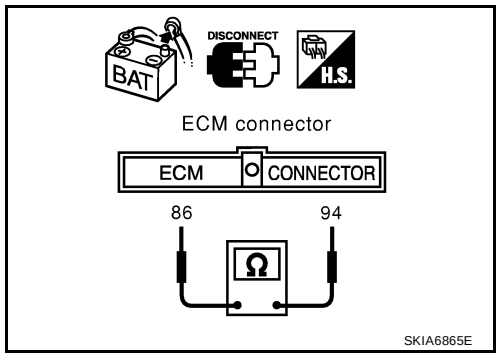
- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 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 E2.



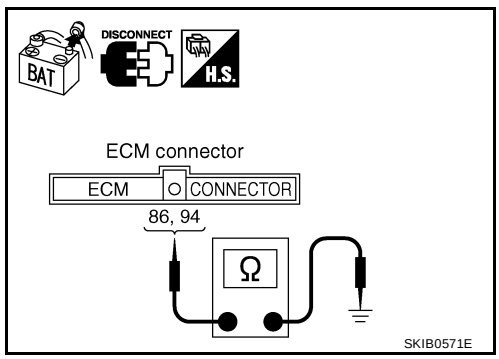
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

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

OK or NG

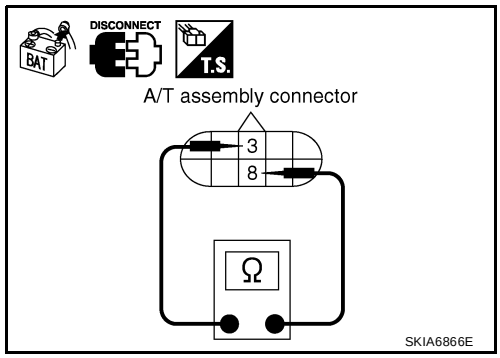
OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E2.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

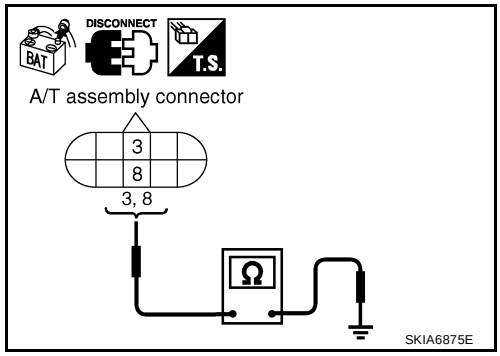
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

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



OK or NG

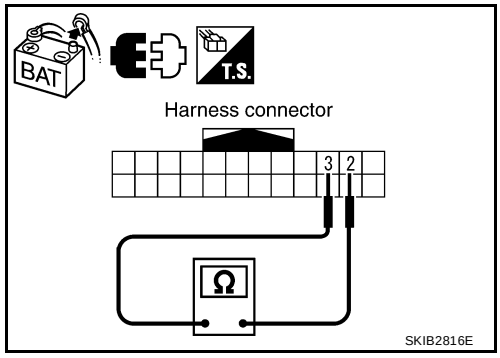
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 7.

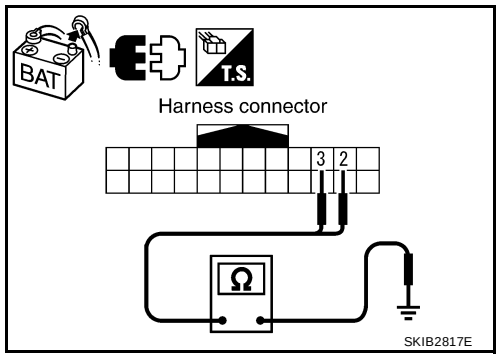
NG >> Repair harness between harness connector E5 and harness connector E152.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

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

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



OK or NG

OK >> GO TO 8.

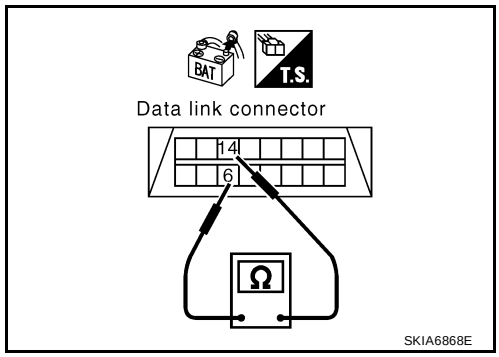
NG >> Repair harness between harness connector E5 and harness connector E152.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Display control unit connector
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Harness connector M40
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

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

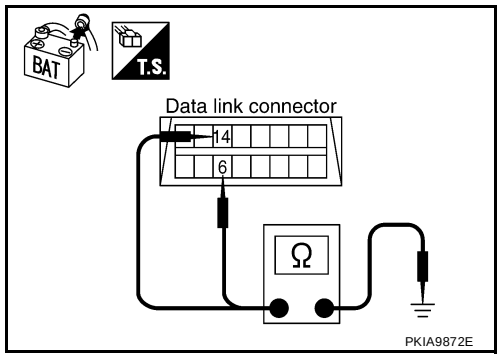
- Harness between data link connector and harness connector M31
- Harness between data link connector and display control unit
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 10.

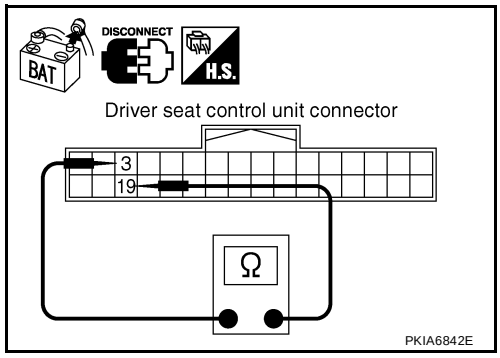
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M31
- Harness between data link connector and display control unit
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
   - Driver seat control unit connector
   - Harness connector P1
2. Check continuity between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 11.

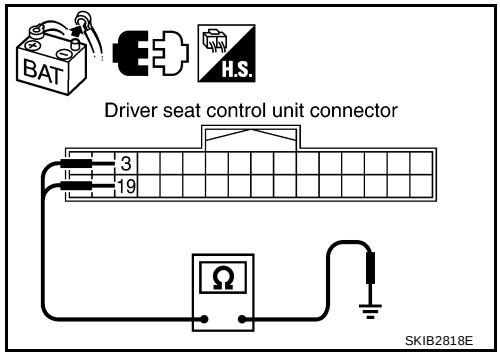
NG >> Repair harness between driver seat control unit and harness connector P1.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between driver seat control unit harness connector P2 terminals 3 (L), 19 (P) and ground.

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

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



OK or NG

OK >> GO TO 12.

NG >> Repair harness between driver seat control unit and harness connector P1.

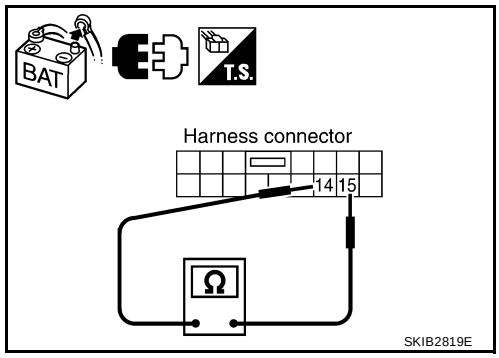
12. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B37 terminals 15 (L) and 14 (P).

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

OK or NG

OK >> GO TO 13.
NG >> Repair harness between harness connector B37 and harness connector B69.



13. CHECK HARNESS FOR SHORT CIRCUIT

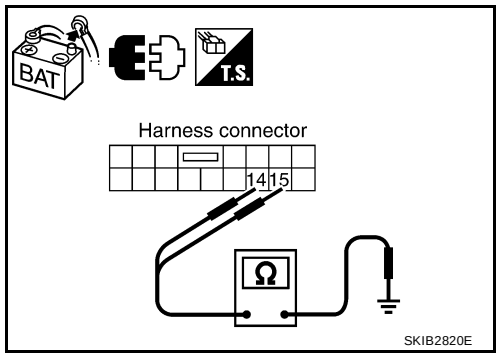
Check continuity between harness connector B37 terminals 15 (L), 14 (P) and ground.

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

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

OK or NG

OK >> GO TO 14.
NG >> Repair harness between harness connector B37 and harness connector B69.



14. CHECK HARNESS FOR SHORT CIRCUIT

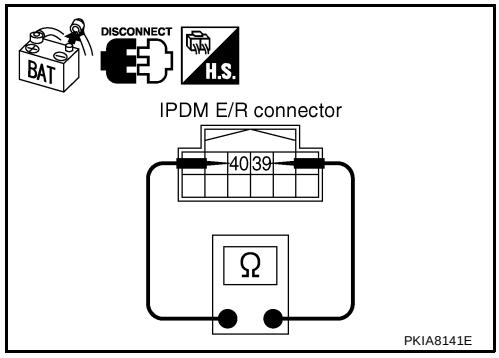
1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 15.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

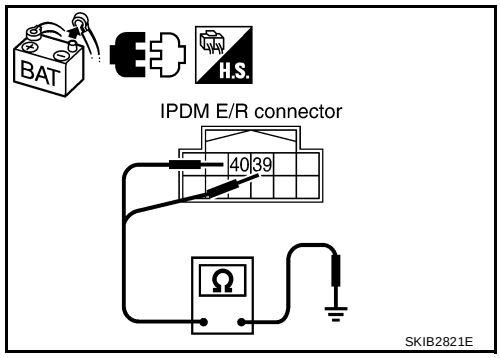


15. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

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

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



OK or NG

OK >> GO TO 16.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

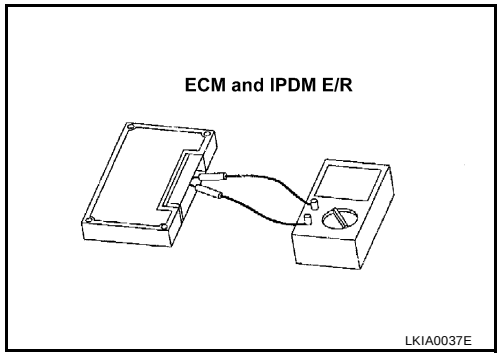
16. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 17.

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

17. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 18.

NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

18. UNIT REPRODUCIBILITY INSPECTION

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.

- TCM
- Display control unit
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003EZ

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 5)

PFP:23710

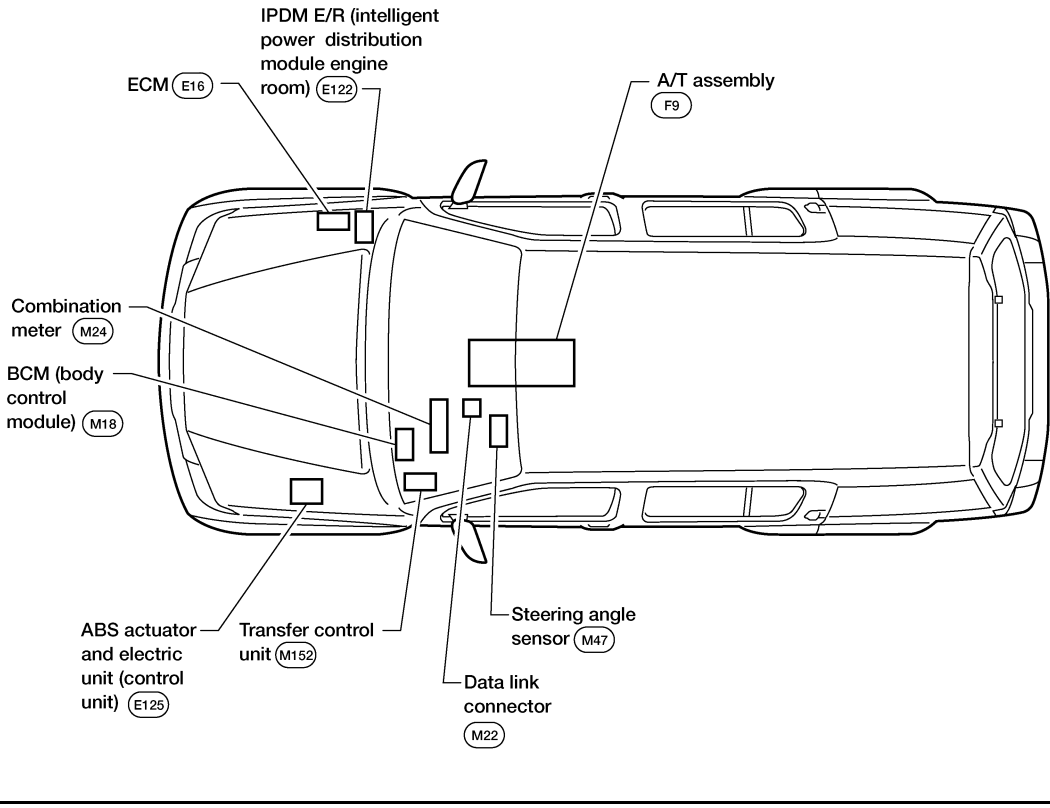
System Description

UKS003DX

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.

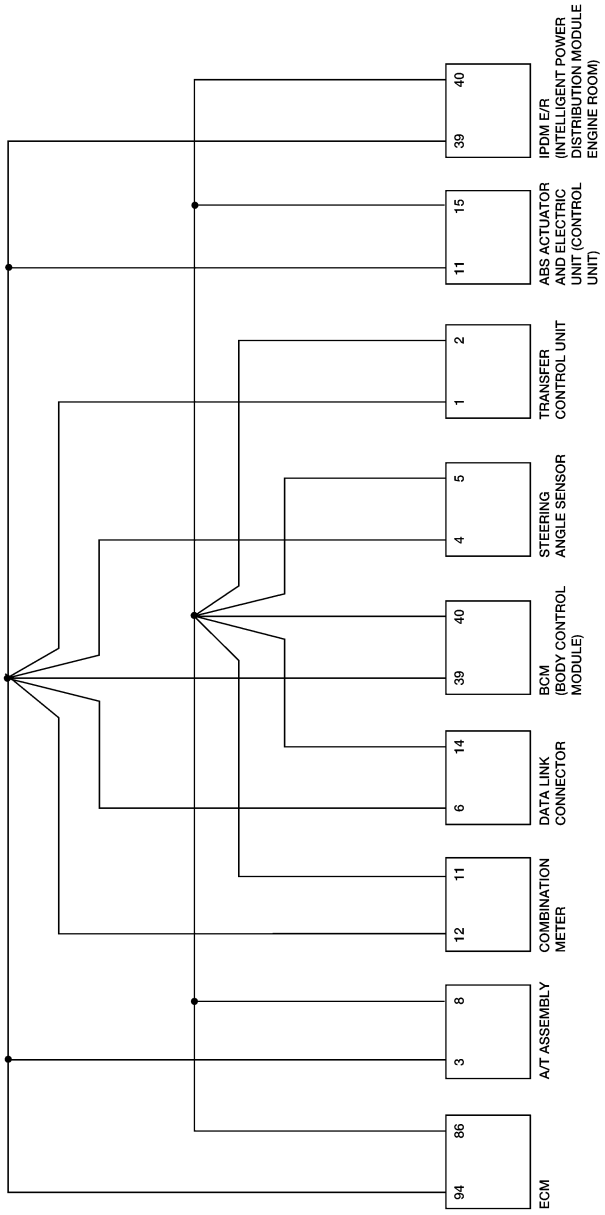
Component Parts and Harness Connector Location

UKS003DY



Schematic

UKS003DZ

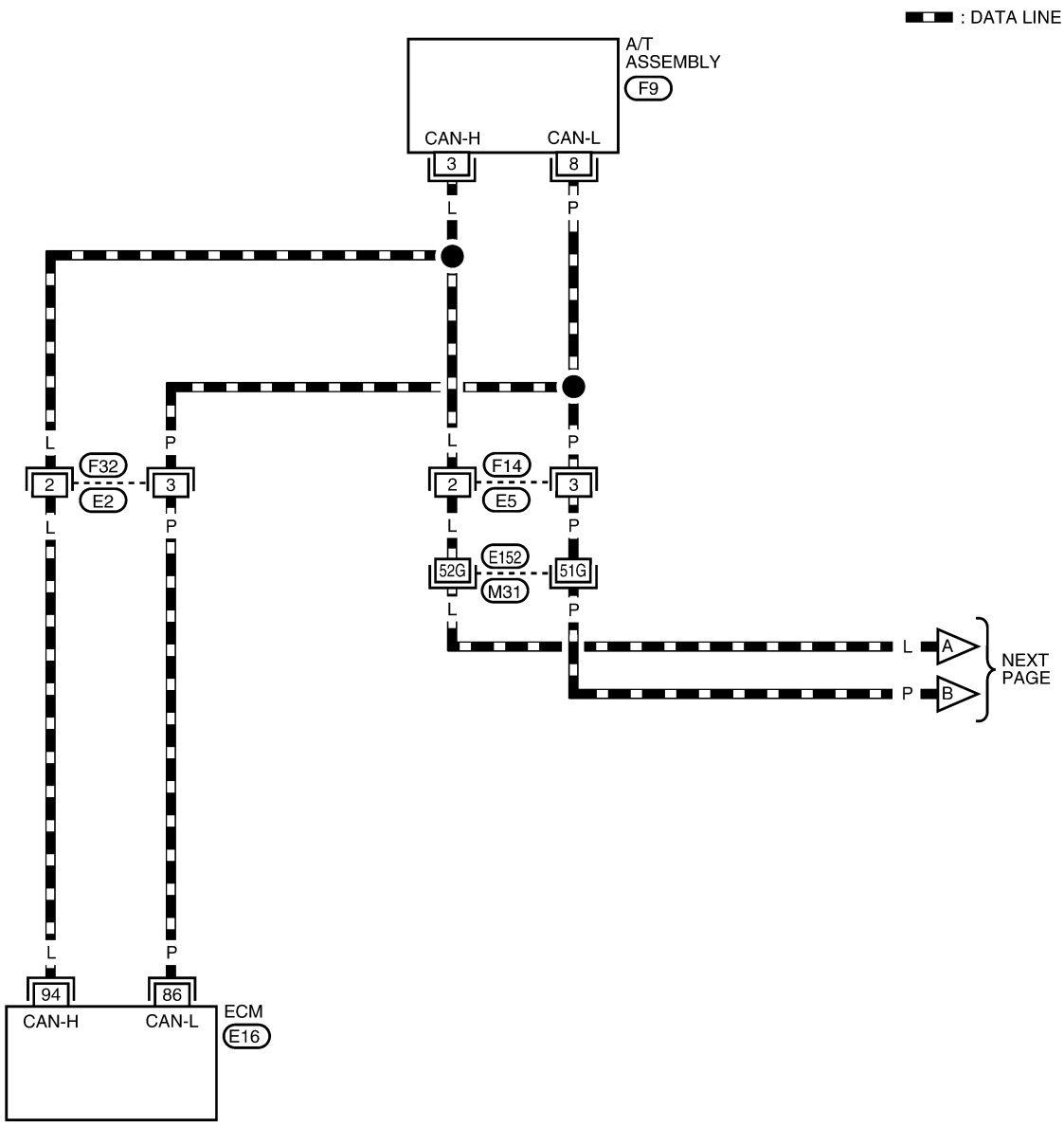


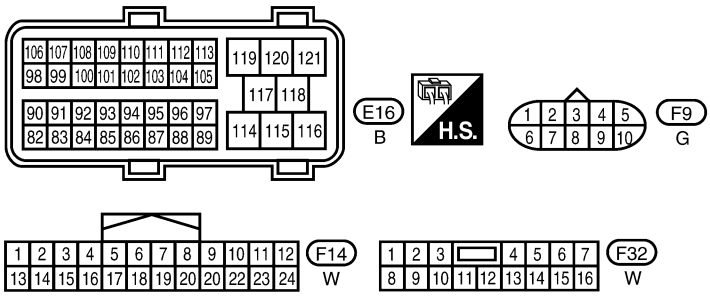
BKWA0613E

Wiring Diagram - CAN -

UKS003E0

LAN-CAN-13

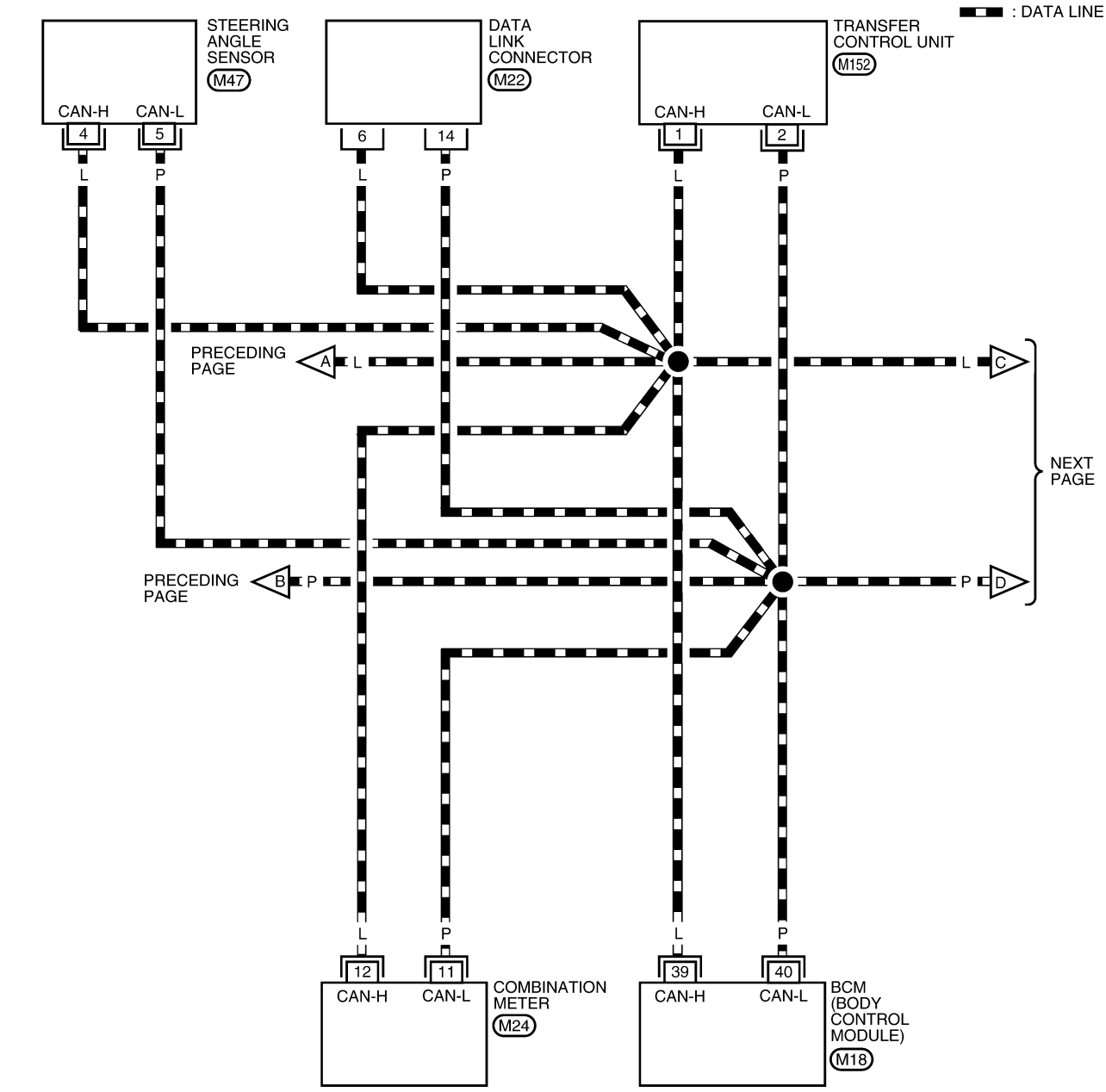


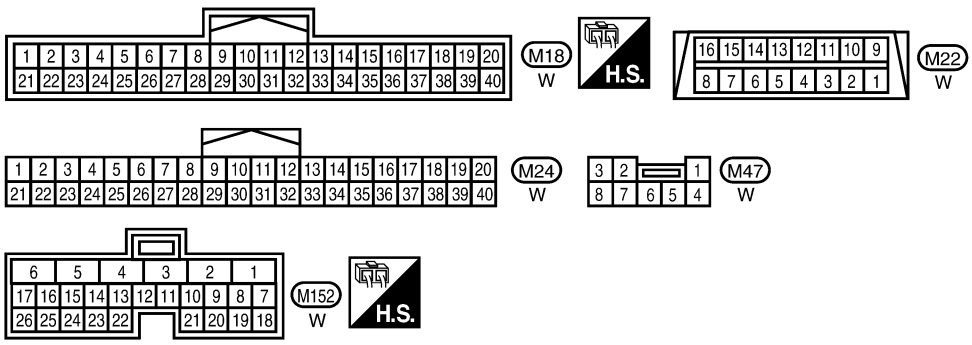


REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

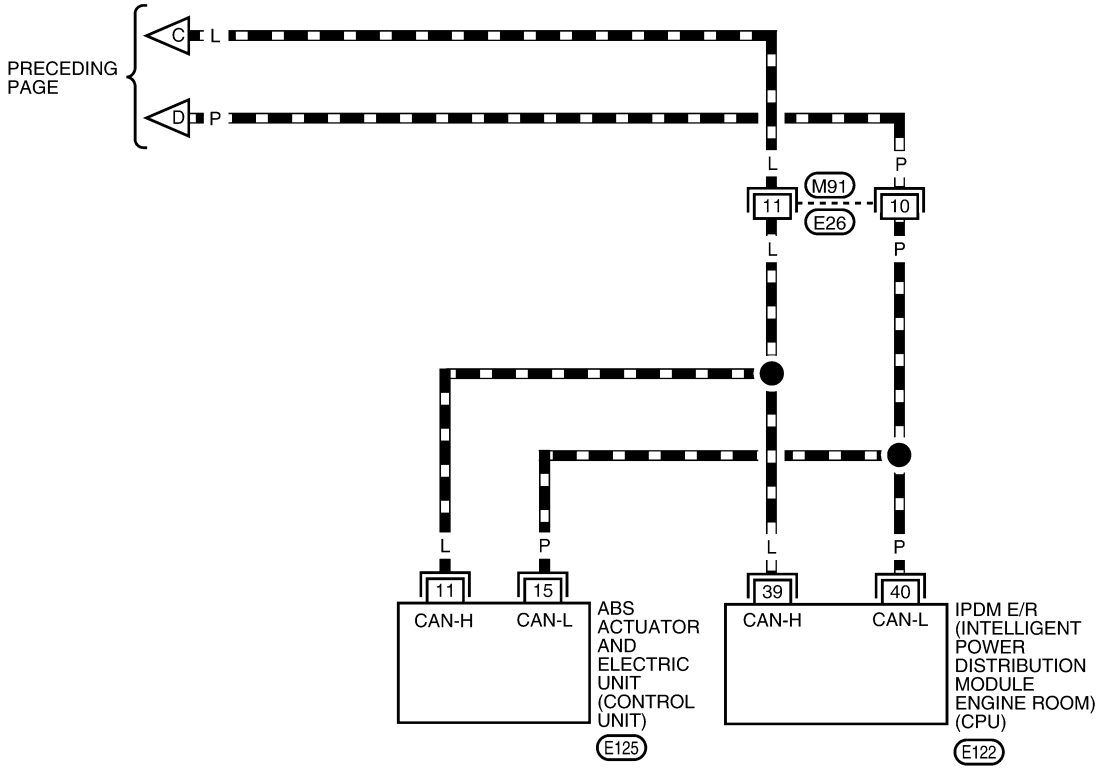
BKWA0384E

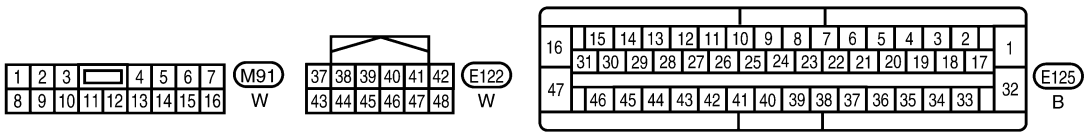
LAN-CAN-14





BKWA0614E


: DATA LINE
PRECEDING PAGE
C
L
D
P
L
P
M91
11
10
E26
L
P
L
P
L
P
11
15
39
40
CAN-H
CAN-L
CAN-H
CAN-L
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E125
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
E122


1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
M91
W
37 38 39 40 41 42
43 44 45 46 47 48
E122
W
16
15 14 13 12 11 10 9 8 7 6 5 4 3 2
1
31 30 29 28 27 26 25 24 23 22 21 20 19 18 17
47
46 45 44 43 42 41 40 39 38 37 36 35 34 33
32
E125
B

BKWA0386E

CHECK SHEET

UKS003E1

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

Check sheet table

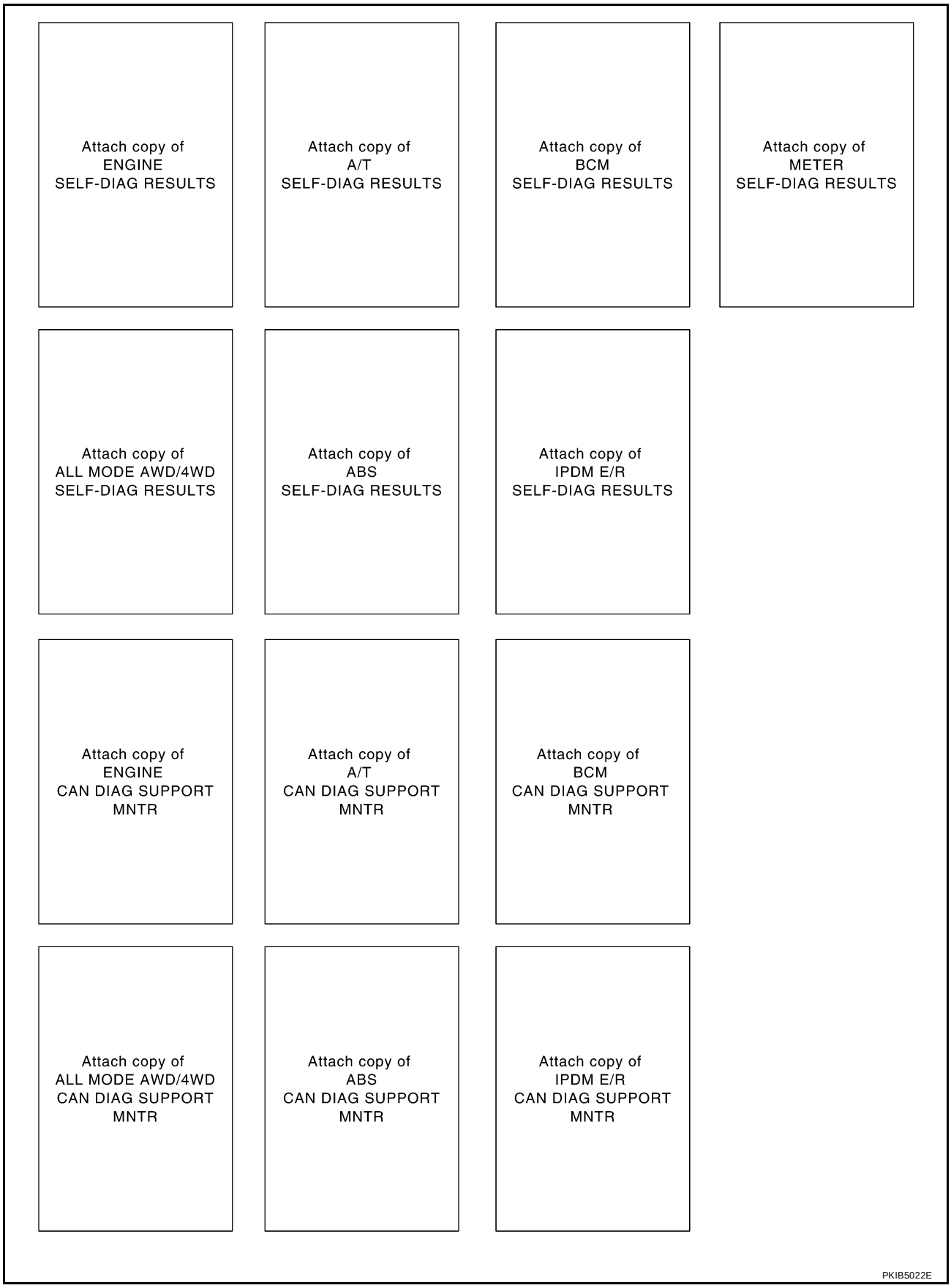
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB5021E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5022E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

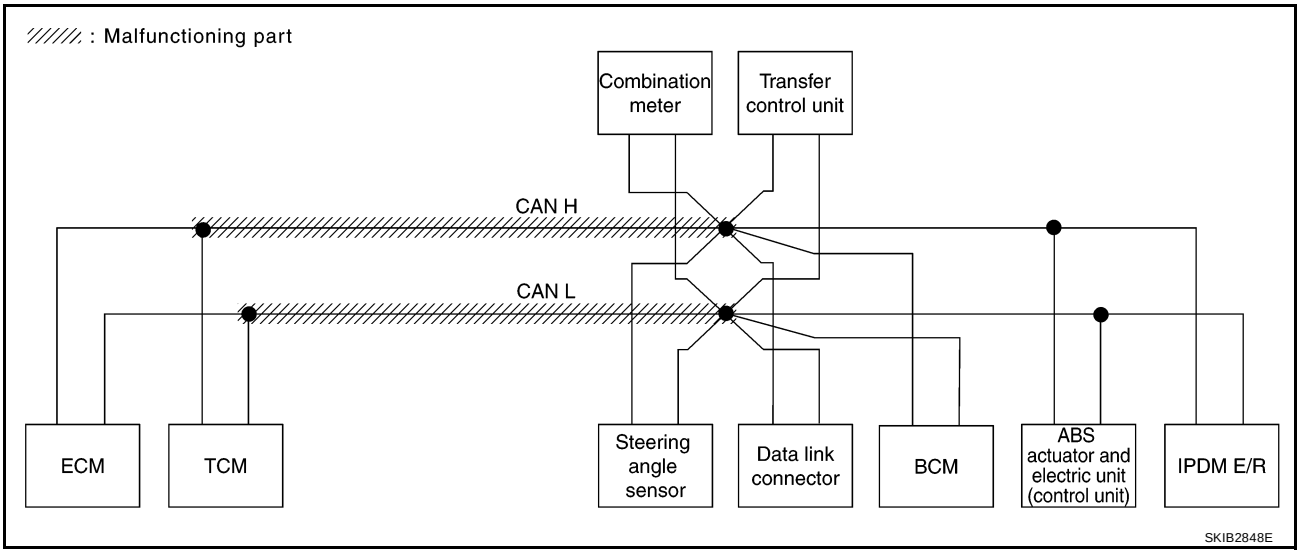
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector circuit. Refer to LAN-179, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB5127E

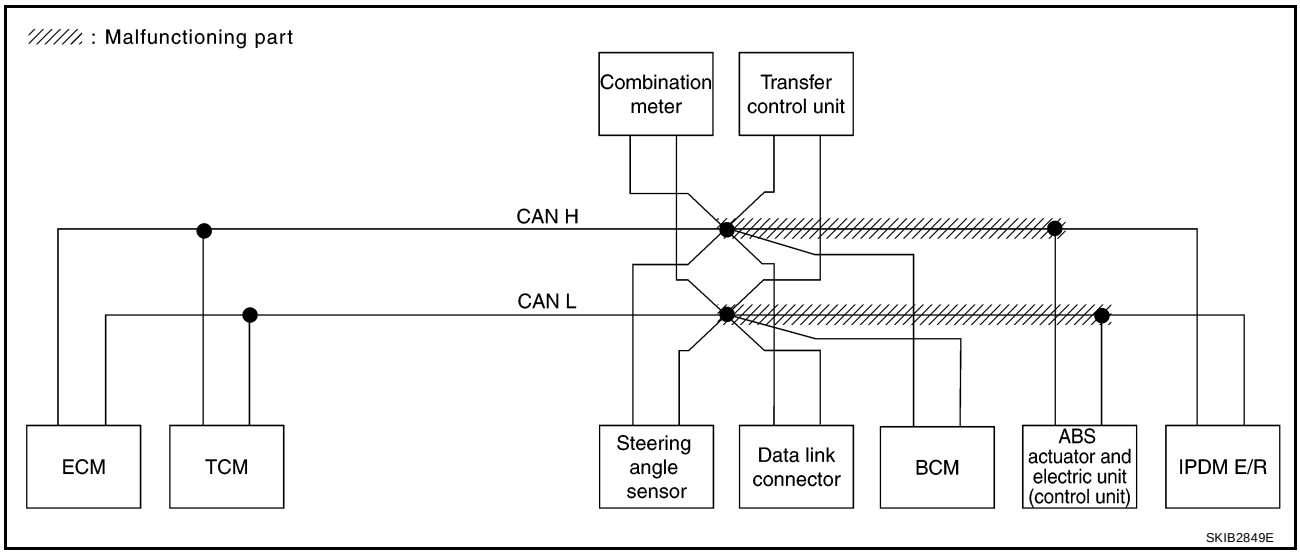


Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-180, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit"
.

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

PKIB5128E

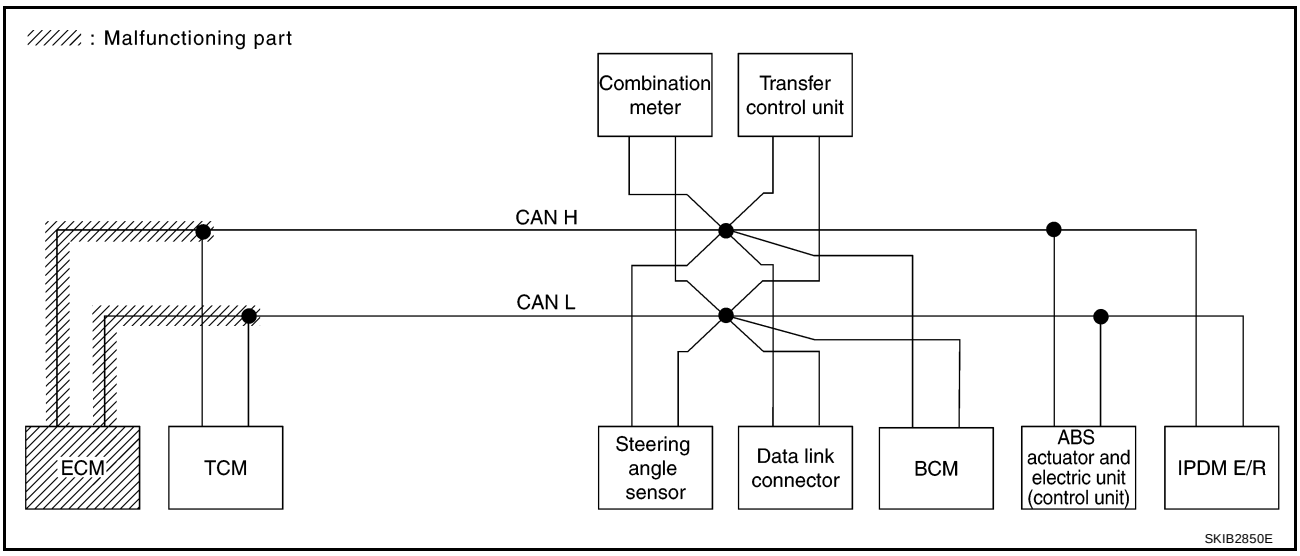


Case 3

Check ECM circuit. Refer to LAN-181, "ECM Circuit Inspection" .

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

PKIB5129E

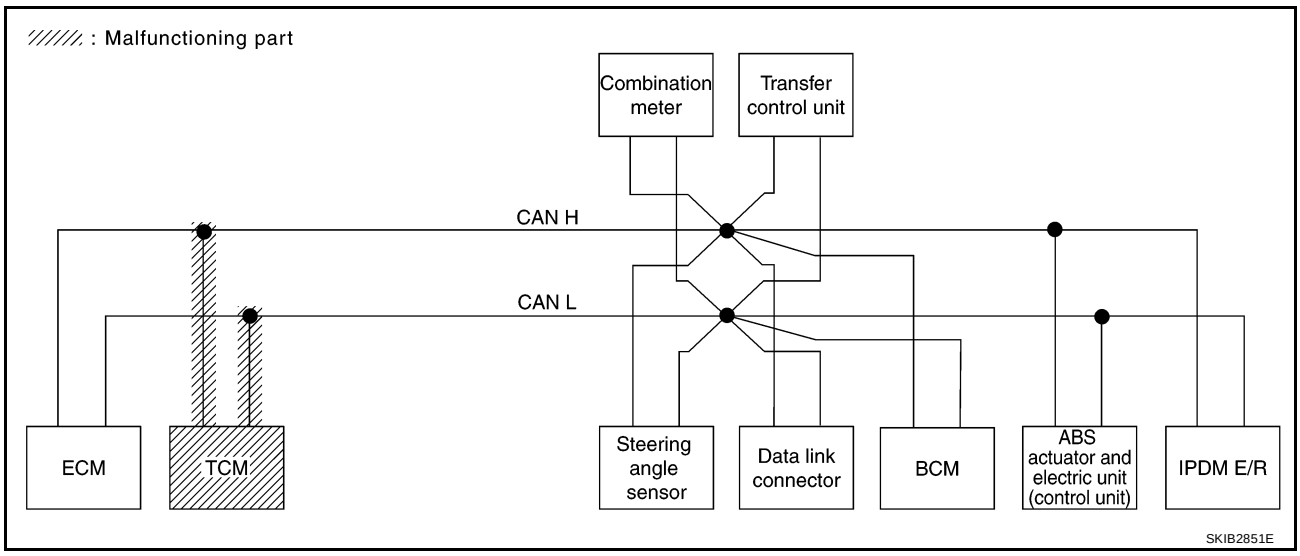


Case 4

Check TCM circuit. Refer to LAN-182, "TCM Circuit Inspection" .

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

PKIB5130E

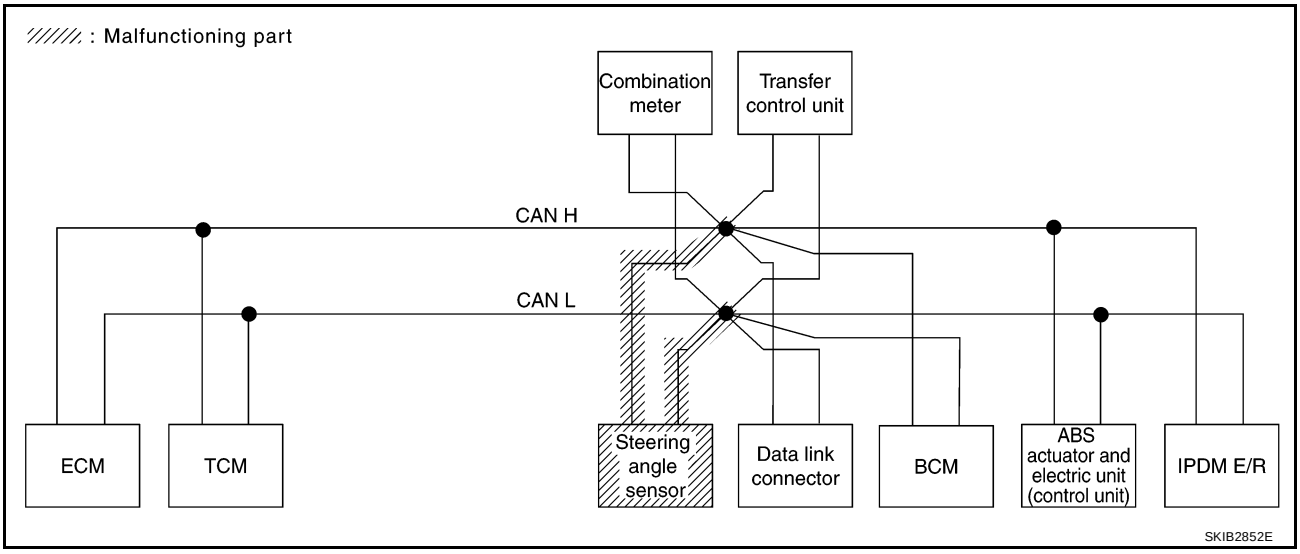


Case 5

Check steering angle sensor circuit. Refer to LAN-182, "Steering Angle Sensor Circuit Inspection" .

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

PKIB5131E

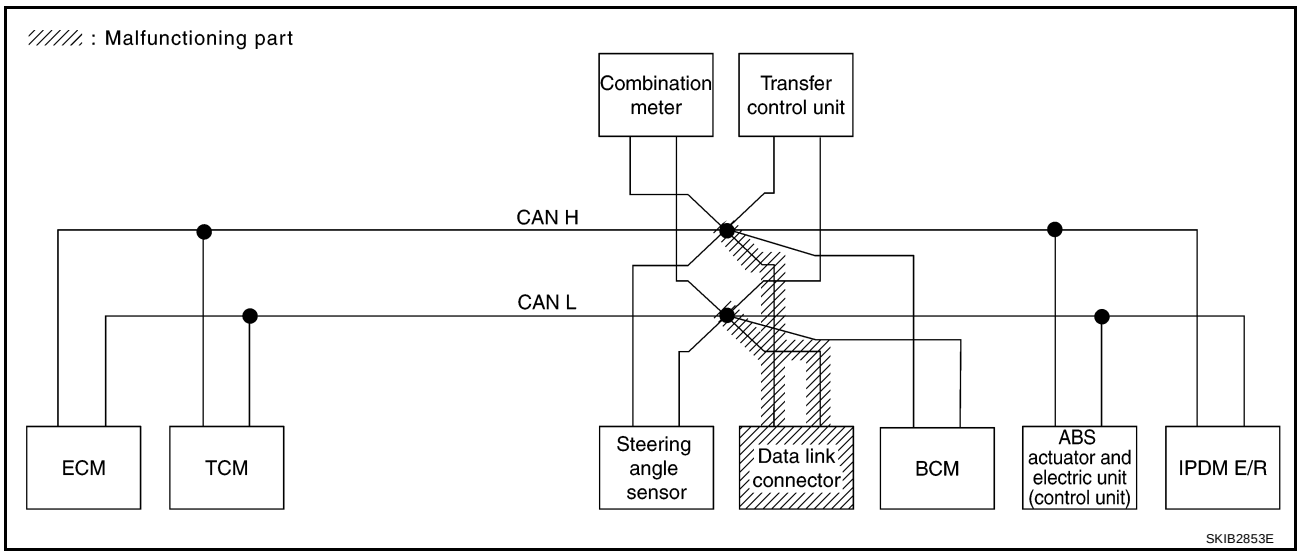


Case 6

Check data link connector circuit. Refer to LAN-183, "Data Link Connector Circuit Inspection" .

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

PKIB5132E

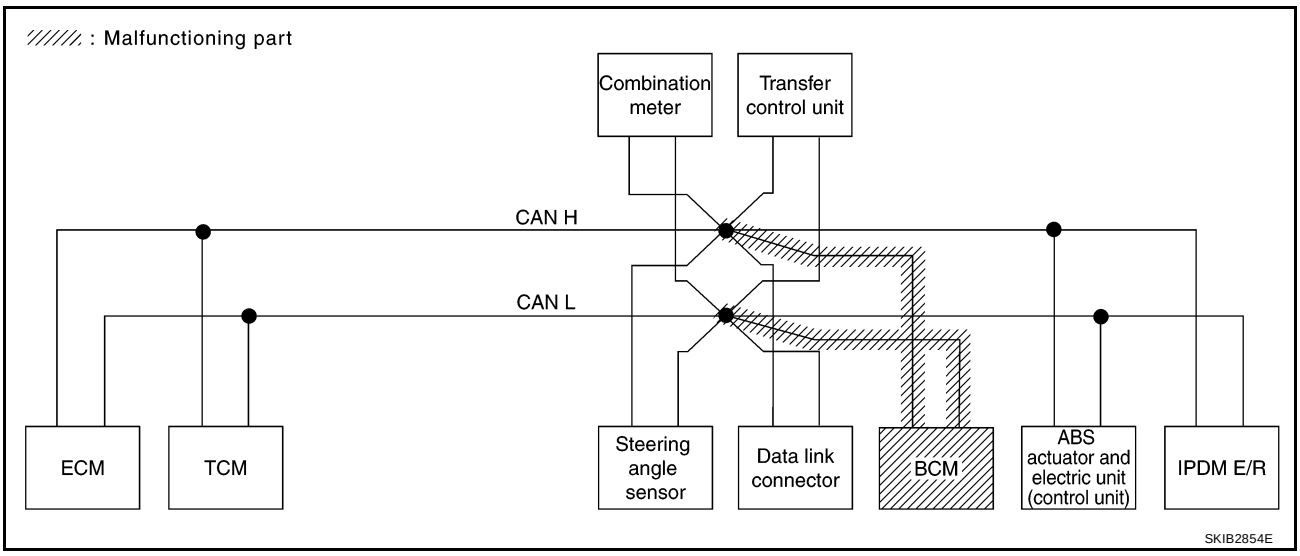


Case 7

Check BCM circuit. Refer to LAN-183, "BCM Circuit Inspection" .

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

PKIB5133E

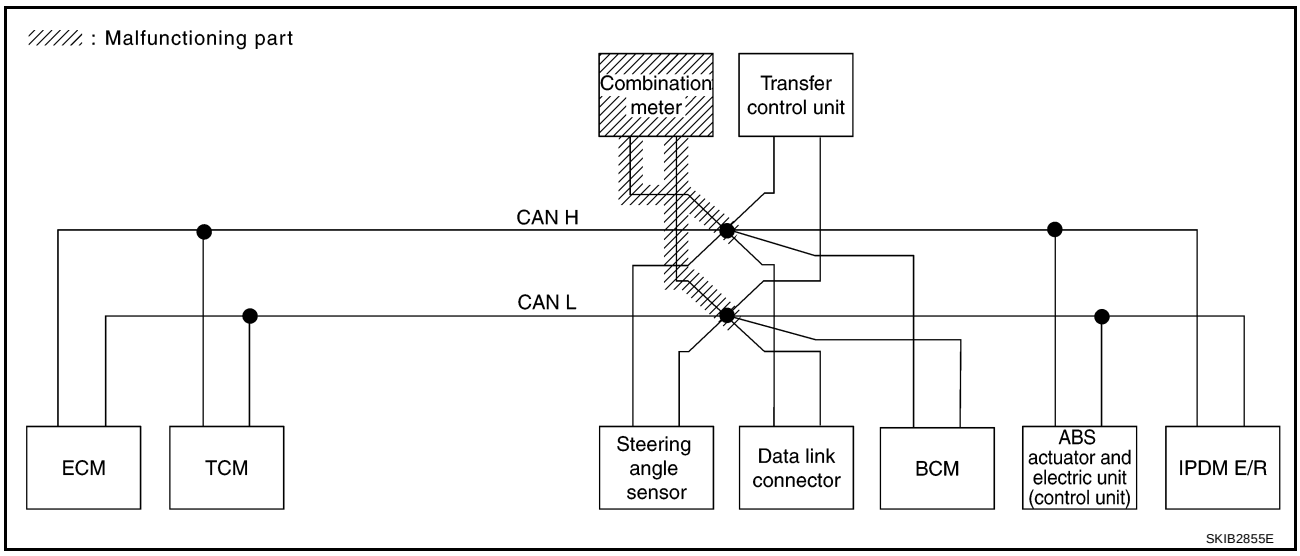


Case 8

Check combination meter circuit. Refer to LAN-184, "Combination Meter Circuit Inspection" .

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

PKIB5134E

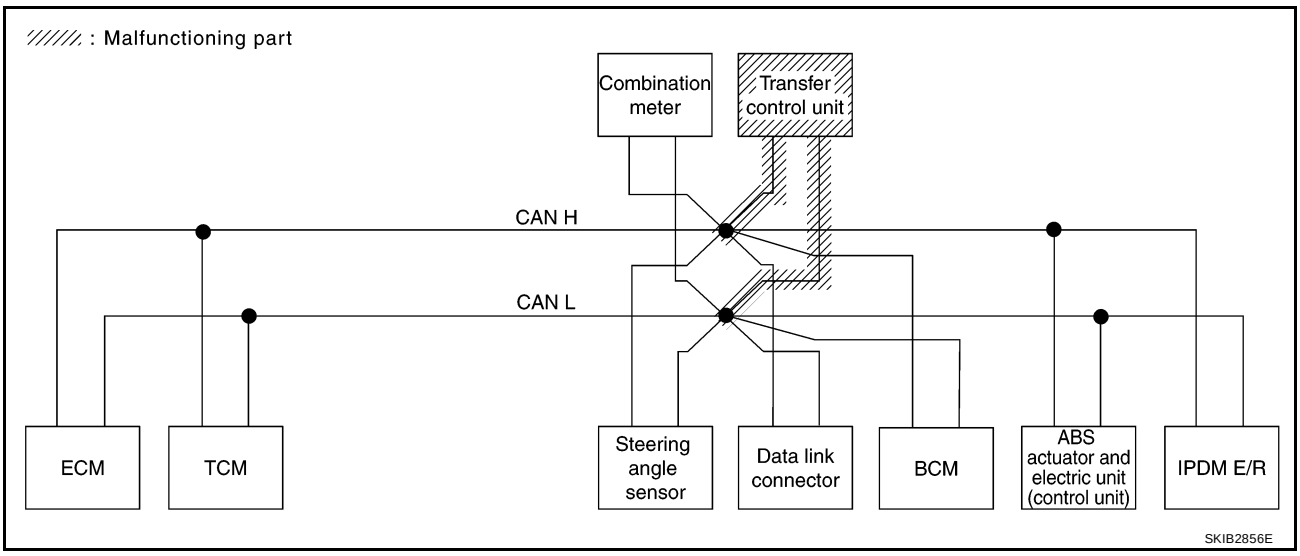


Case 9

Check transfer control unit circuit. Refer to LAN-184, "Transfer Control Unit Circuit Inspection" .

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

PKIB5135E

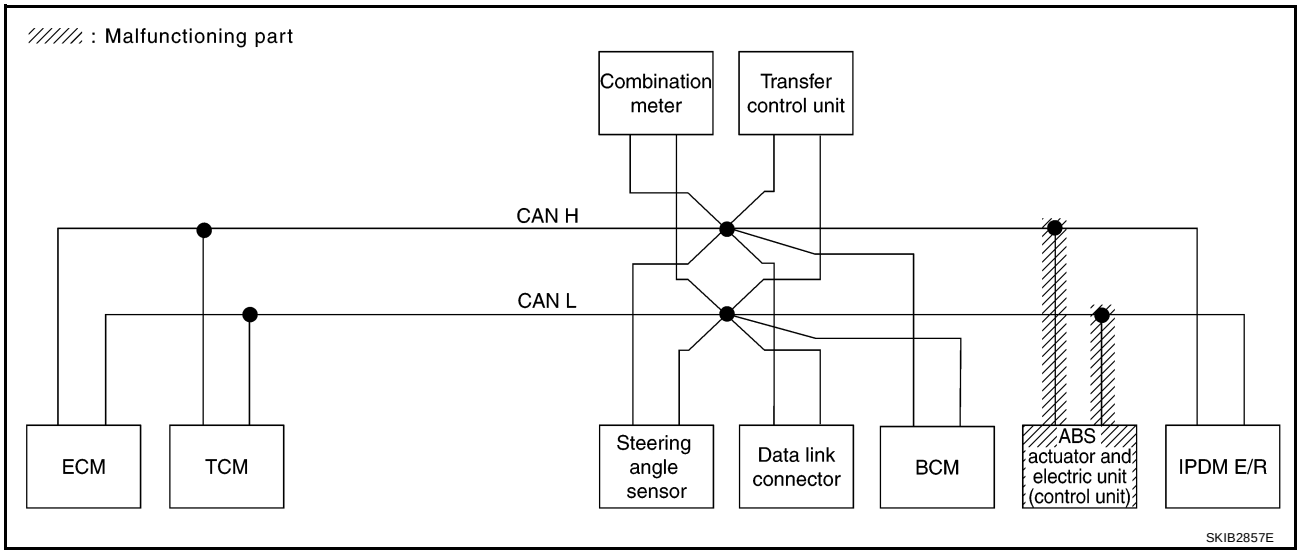


Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-185, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

PKIB5136E

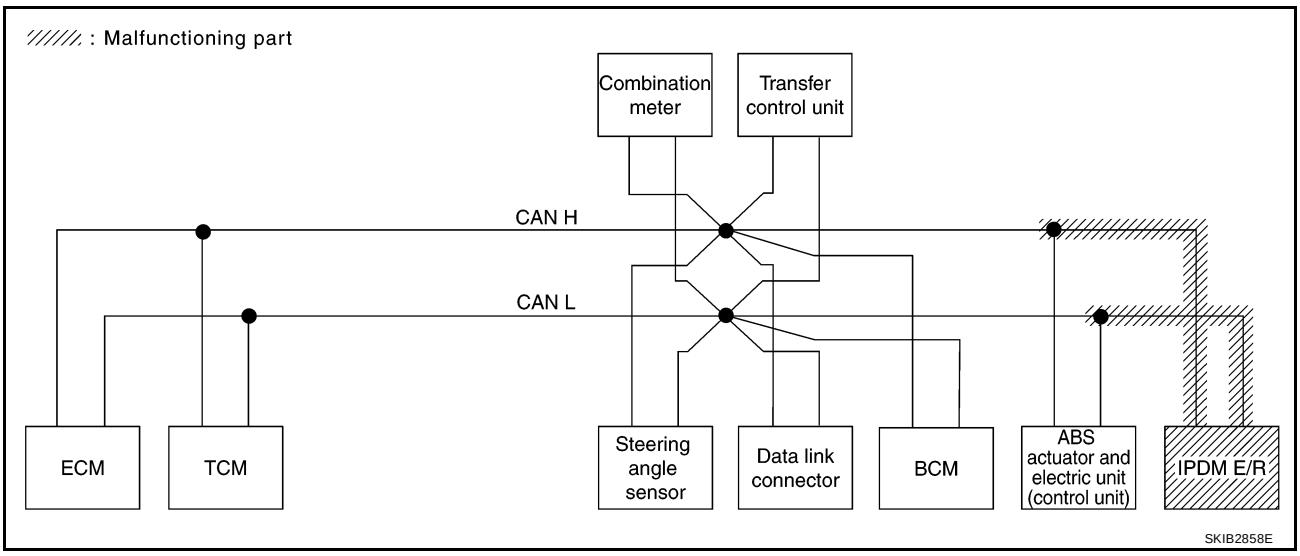


Case 11

Check IPDM E/R circuit. Refer to LAN-185, "IPDM E/R Circuit Inspection" .

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

PKIB5137E



SKIB2858E

Case 12

Check CAN communication circuit. Refer to LAN-186, "CAN Communication Circuit Inspection" .

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

PKIB5138E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-190, "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	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5139E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-190, "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	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5140E

Inspection Between TCM and Data Link Connector Circuit

UKS003E2

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

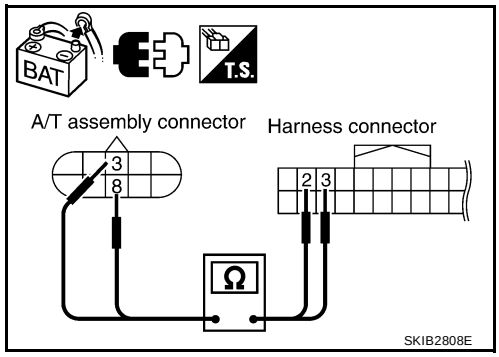
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

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



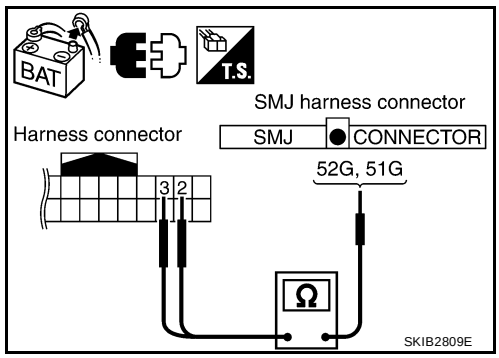
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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



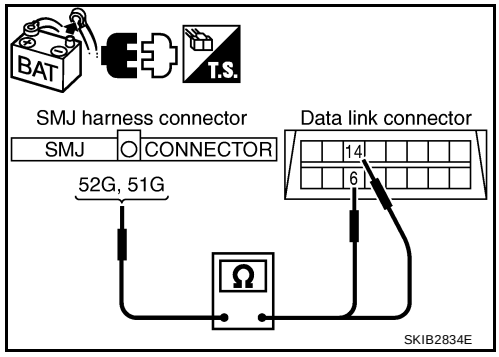
OK or NG

OK >> GO TO 4.
NG >> Repair harness.

4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

52G (L) – 6 (L) : Continuity should exist.
51G (P) – 14 (P) : Continuity should exist.



OK or NG

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

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

UKS003E3

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 M91
- Harness connector E26

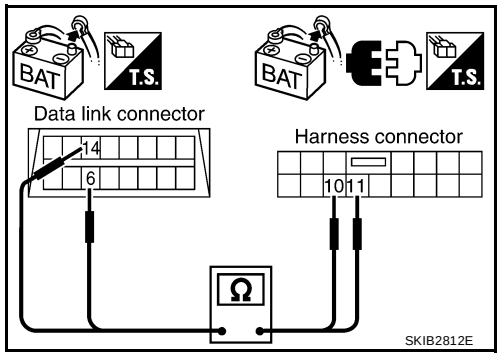
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.
14 (P) – 10 (P) : Continuity should exist.



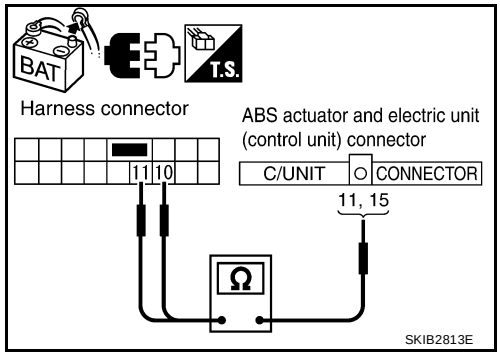
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003E4

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 E2
- Harness connector F32

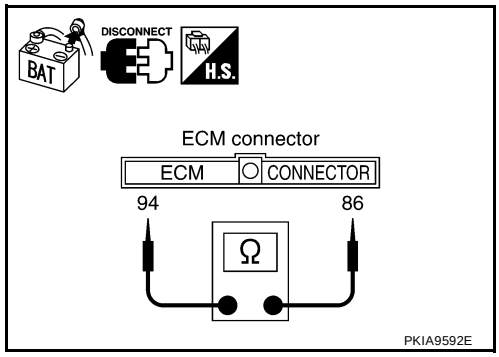
OK or NG

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 E16 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

UKS003E5

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).

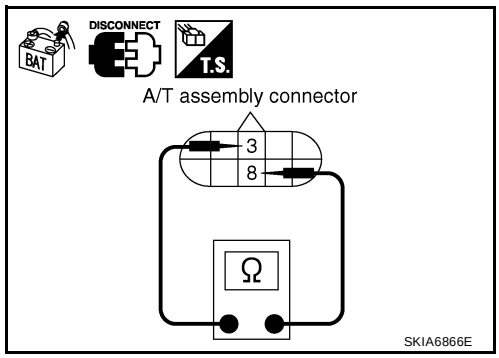
OK or NG

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 F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.

Steering Angle Sensor Circuit Inspection

UKS003E6

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).

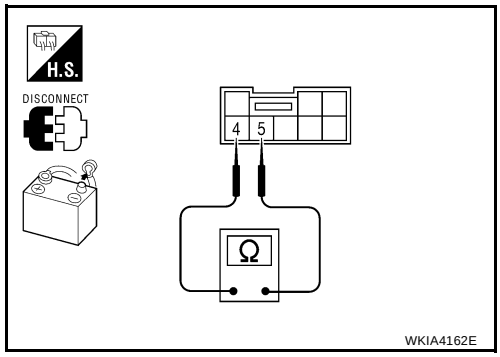
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003E7

1. CHECK CONNECTOR

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

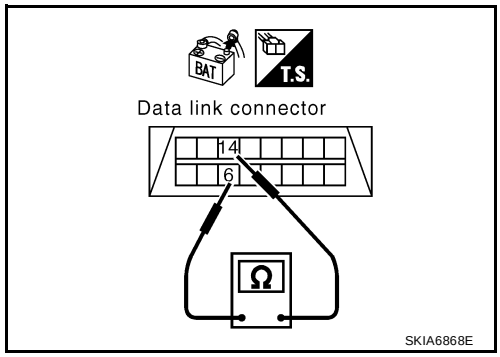
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and BCM.

BCM Circuit Inspection

UKS003E8

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).

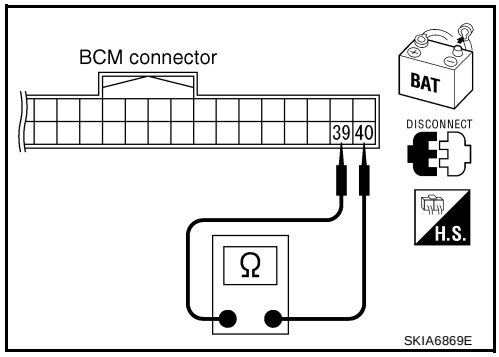
OK or NG

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

Combination Meter Circuit Inspection

UKS003E9

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).

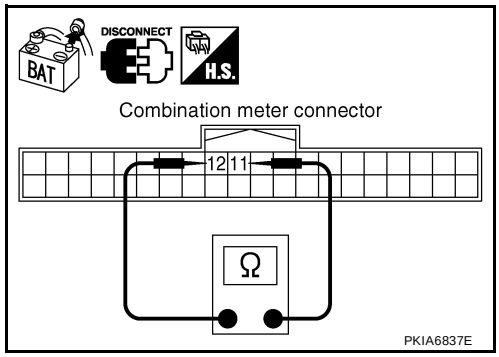
OK or NG

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 M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

Transfer Control Unit Circuit Inspection

UKS003EA

1. CHECK CONNECTOR

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

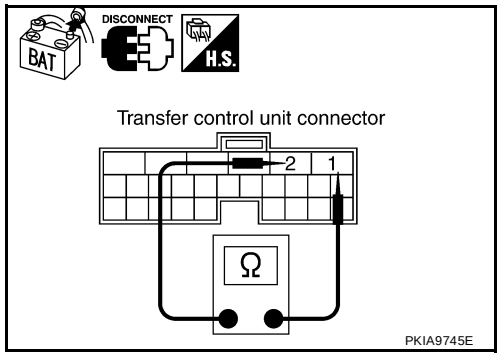
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector M152 terminals 1 (L) and 2 (P).

1 (L) – 2 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003EB

1. CHECK CONNECTOR

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

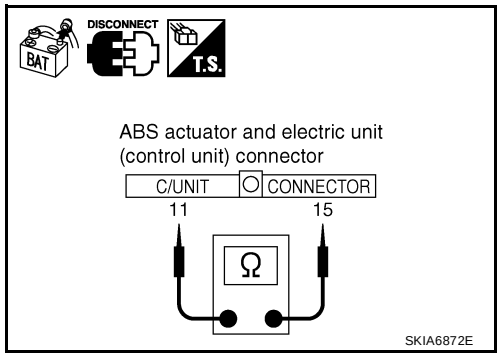
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003EC

1. CHECK CONNECTOR

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

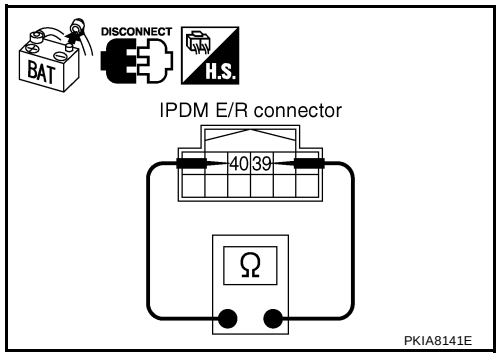
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003ED

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

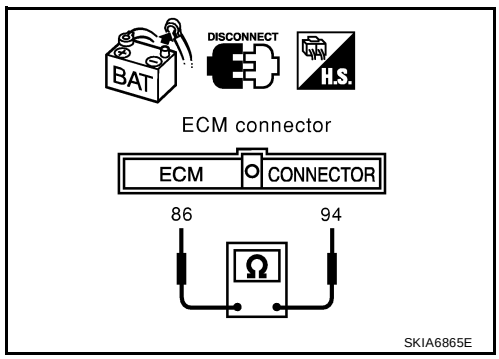
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 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 E2.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

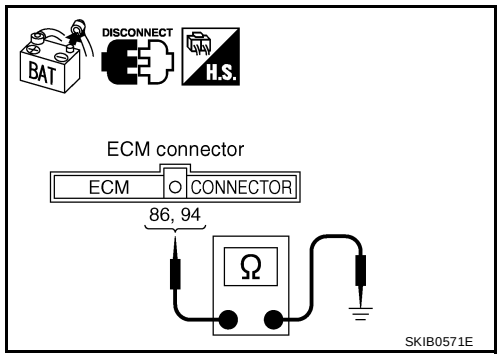
94 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E2.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

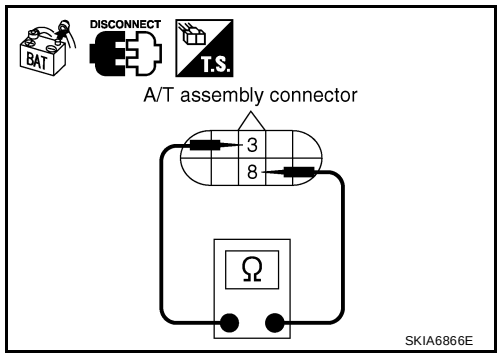
3 (L) – 8 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

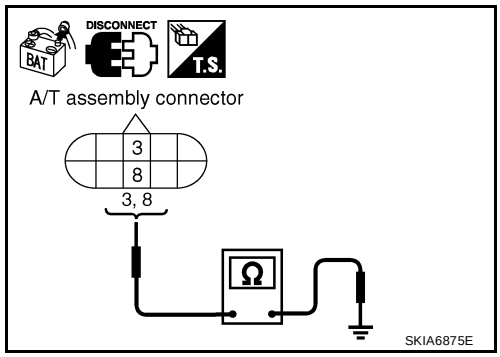
8 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

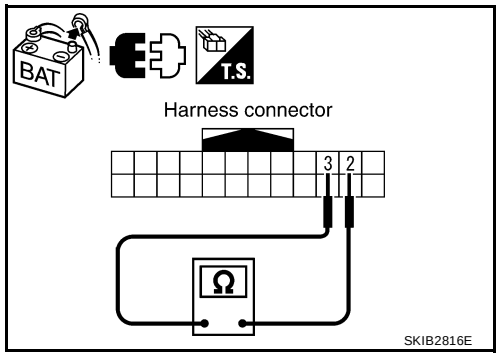
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.



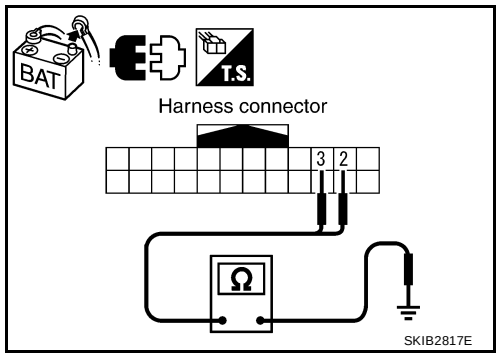
OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E5 and harness connector E152.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

2 (L) – Ground : Continuity should not exist.
3 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E5 and harness connector E152.

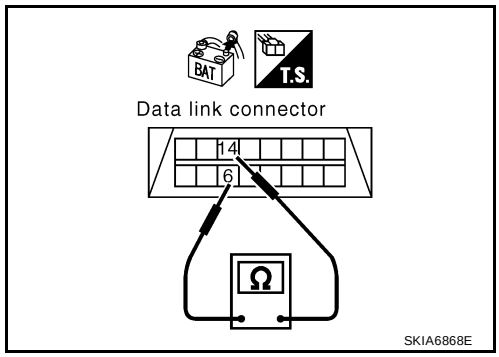
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Transfer control unit connector
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

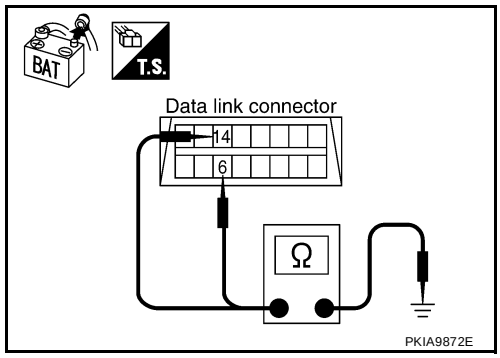
- Harness between data link connector and harness connector M31
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 10.

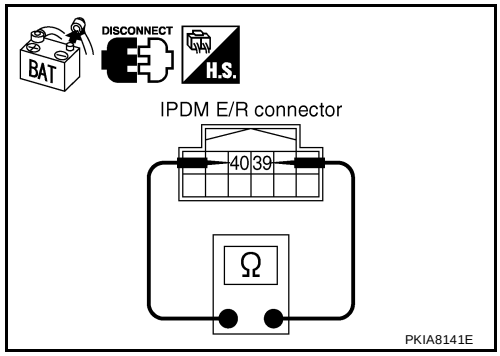
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M31
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 11.

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

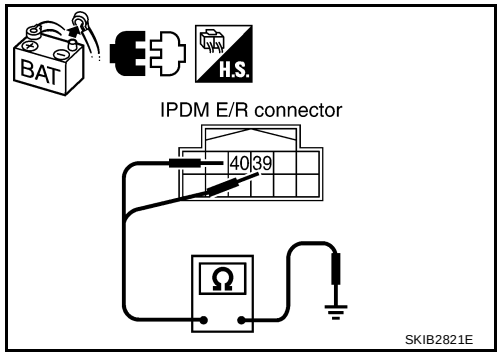
- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

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

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



OK or NG

OK >> GO TO 12.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

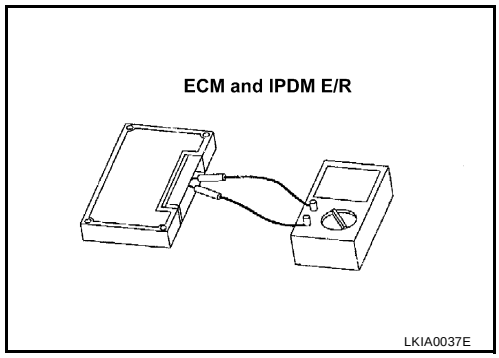
12. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : 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 connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 14.
NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced" .

14. UNIT REPRODUCIBILITY INSPECTION

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.

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

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003EE

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 6)

PFP:23710

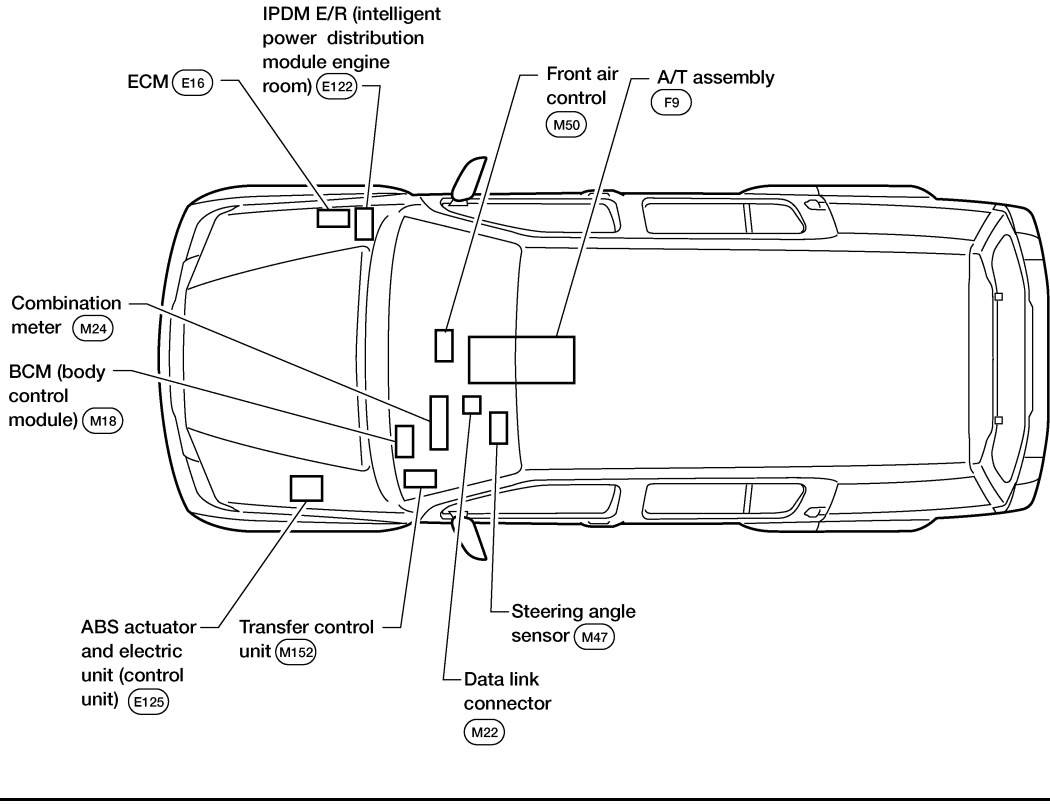
System Description

UKS003DE

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.

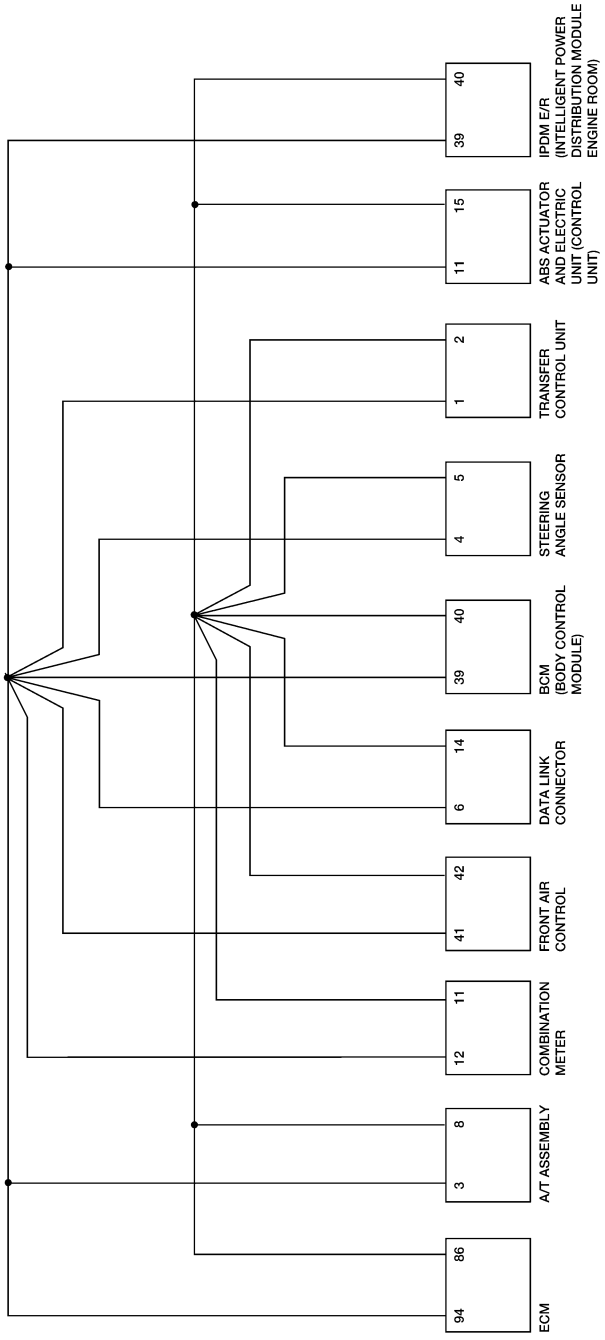
Component Parts and Harness Connector Location

UKS003DF



Schematic

UKS003DG

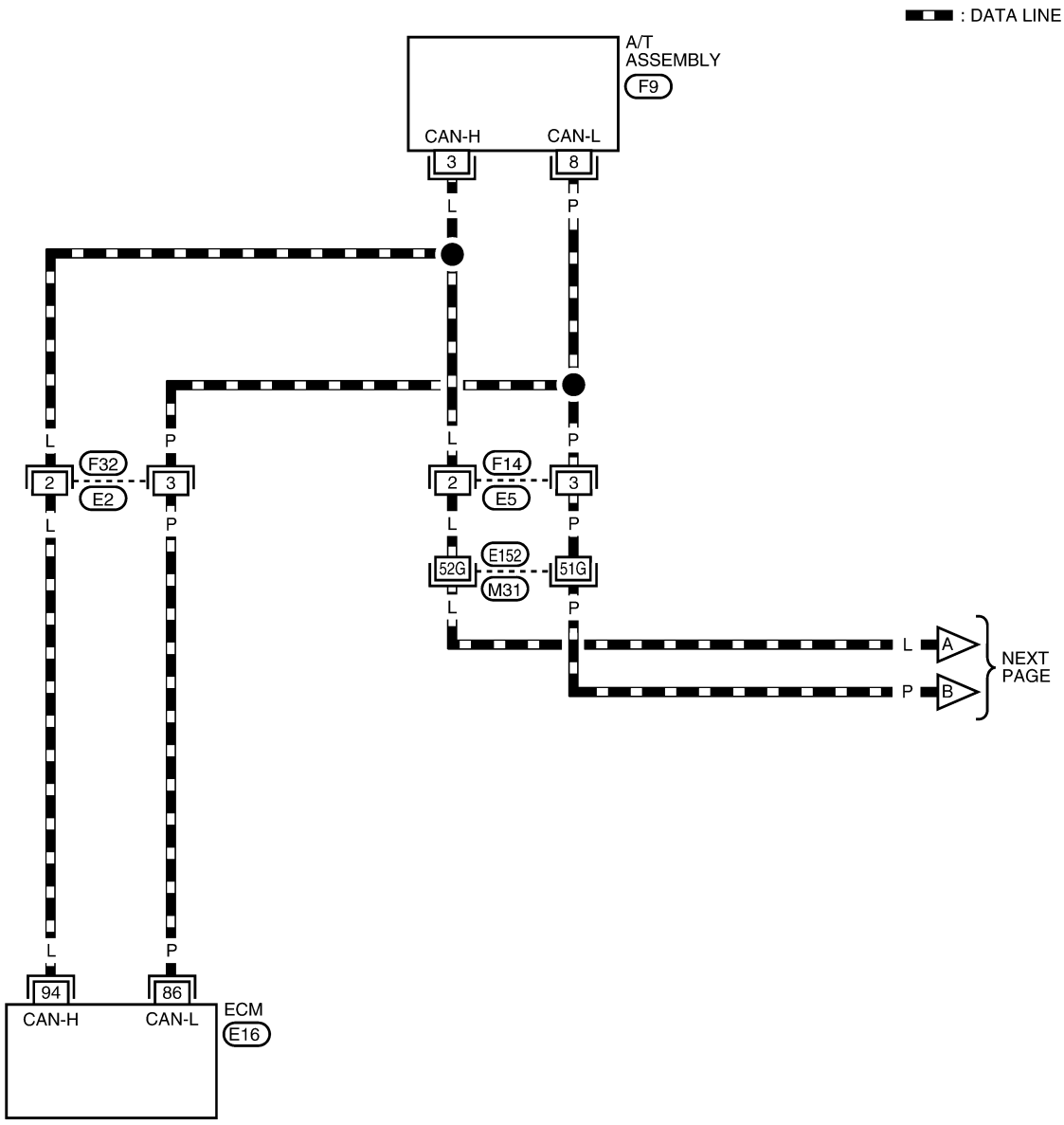


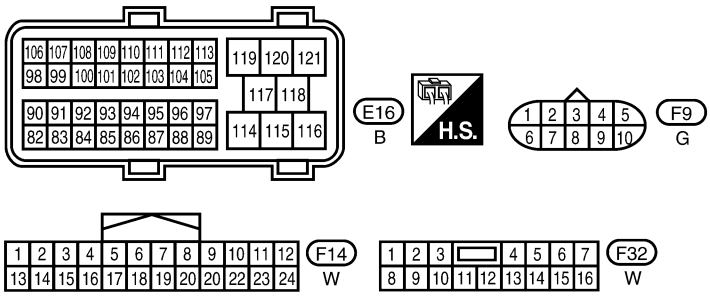
BKWA0615E

Wiring Diagram - CAN -

UKS003DH

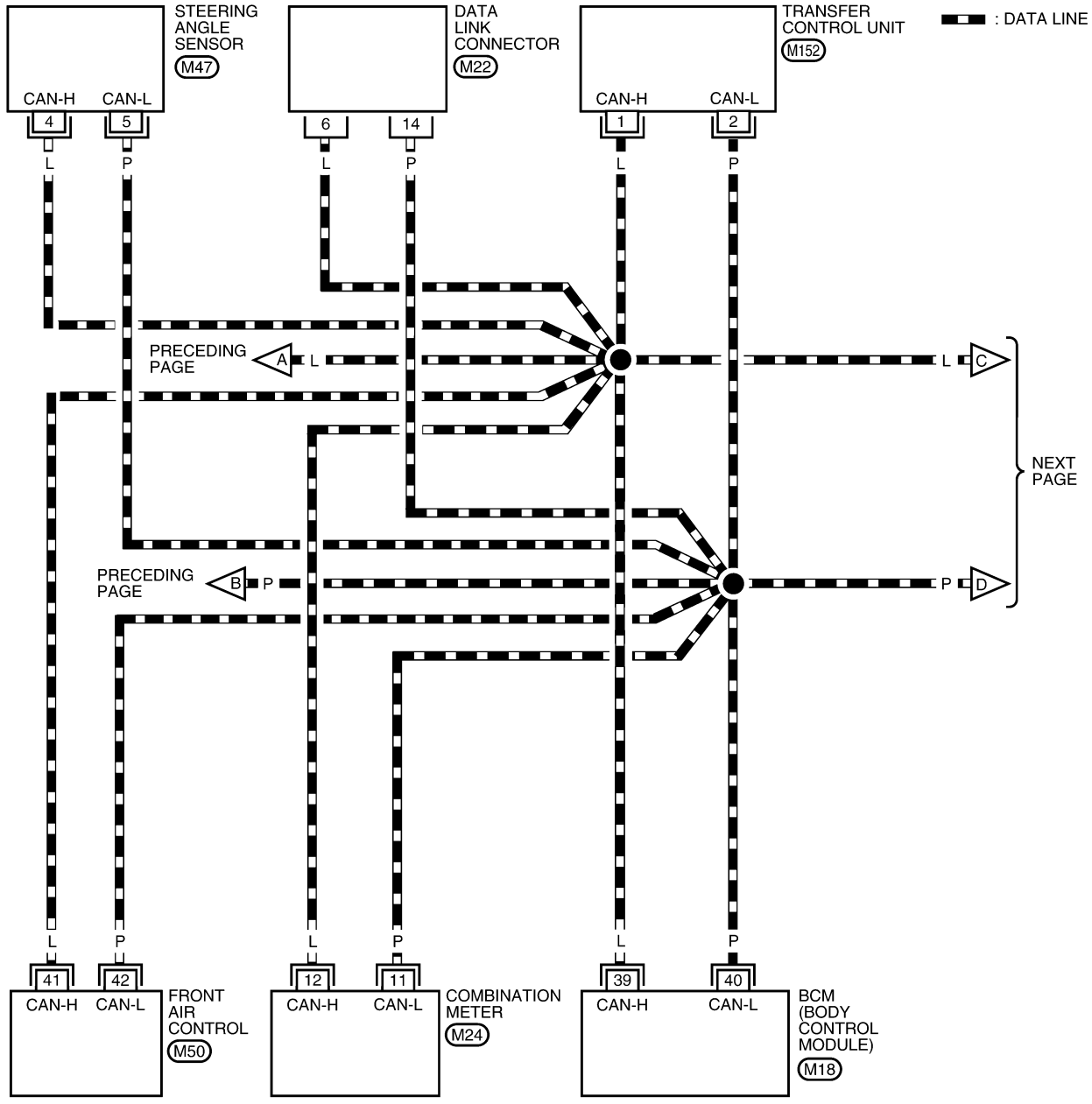
LAN-CAN-16

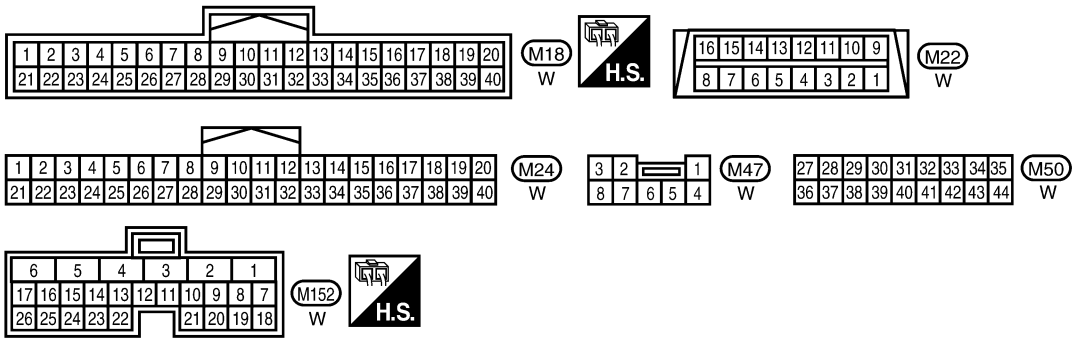




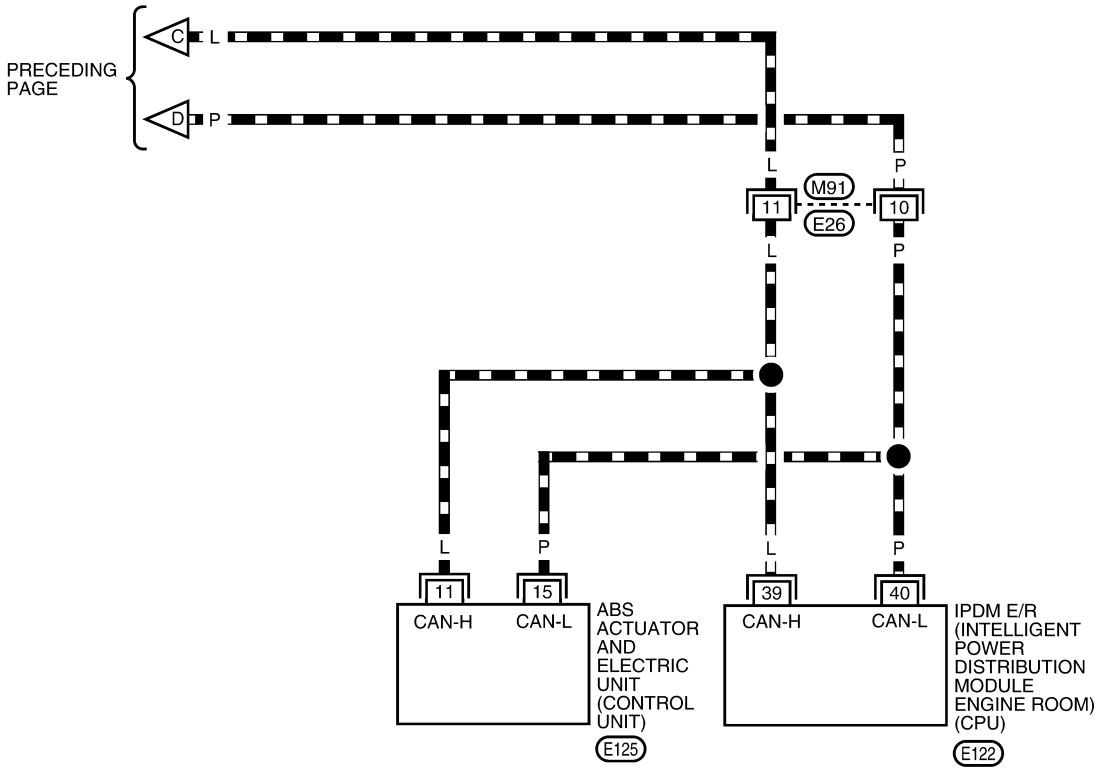
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

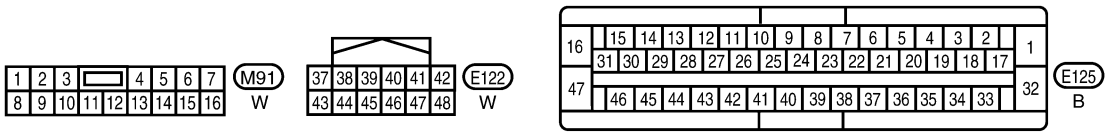
BKWA0388E


STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
4
5
DATA LINK CONNECTOR
M22
6
14
TRANSFER CONTROL UNIT
M152
1
2
: DATA LINE
L
P
PRECEDING PAGE
A
B
C
D
NEXT PAGE
41
42
FRONT AIR CONTROL
M50
12
11
COMBINATION METER
M24
39
40
BCM (BODY CONTROL MODULE)
M18


M18
W
H.S.
M22
W
M24
W
M47
W
M50
W
M152
W
H.S.

BKWA0616E


: DATA LINE
PRECEDING PAGE
C
L
D
P
L
P
M91
11
10
E26
L
P
L
P
L
P
11
15
39
40
CAN-H
CAN-L
CAN-H
CAN-L
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E125
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
E122


1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
M91
W
37 38 39 40 41 42
43 44 45 46 47 48
E122
W
16
15 14 13 12 11 10 9 8 7 6 5 4 3 2
1
31 30 29 28 27 26 25 24 23 22 21 20 19 18 17
47
46 45 44 43 42 41 40 39 38 37 36 35 34 33
32
E125
B

BKWA0390E

CHECK SHEET

UKS003DI

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

Check sheet table

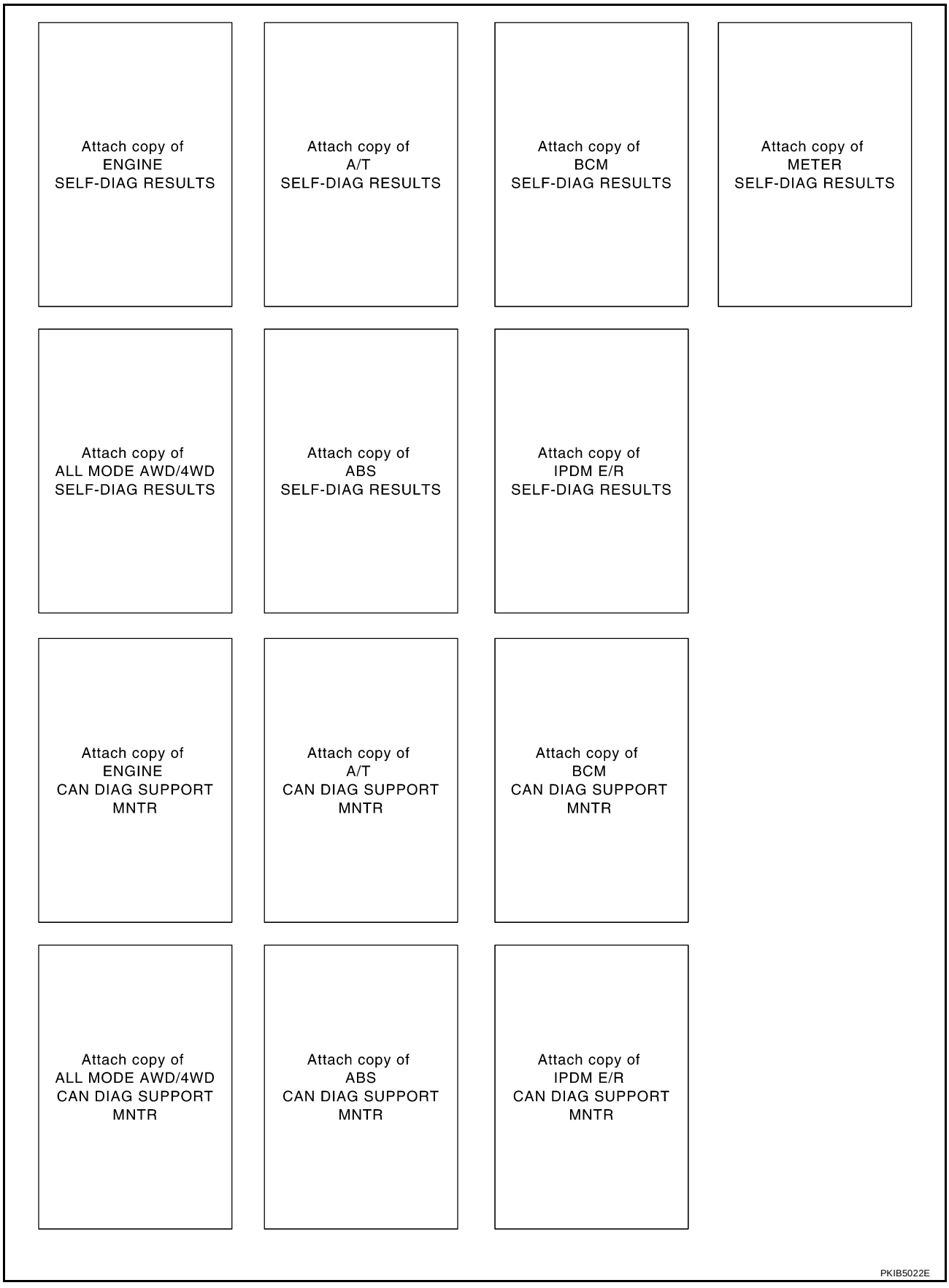
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB5021E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5022E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

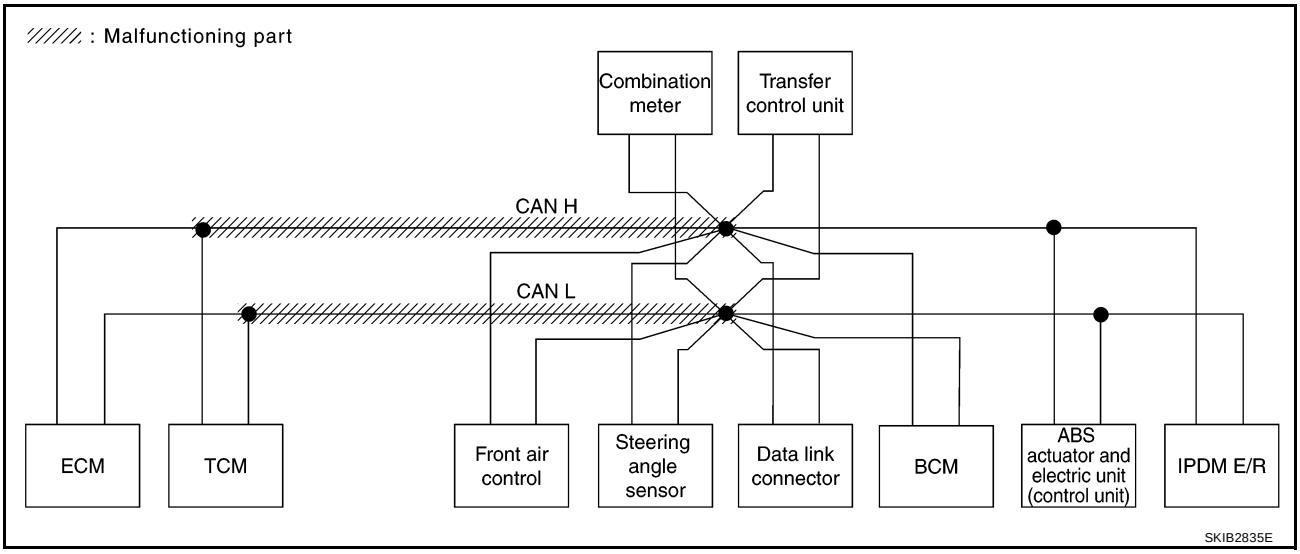
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector circuit. Refer to LAN-209, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB5127E



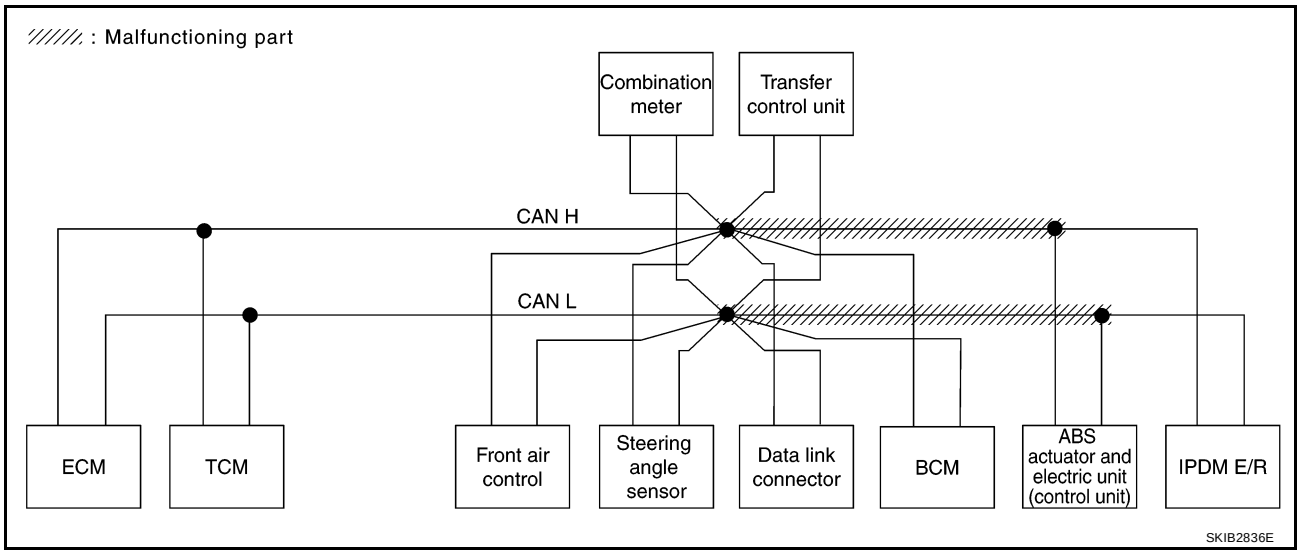
SKIB2835E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-210, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit"
.

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

PKIB5128E



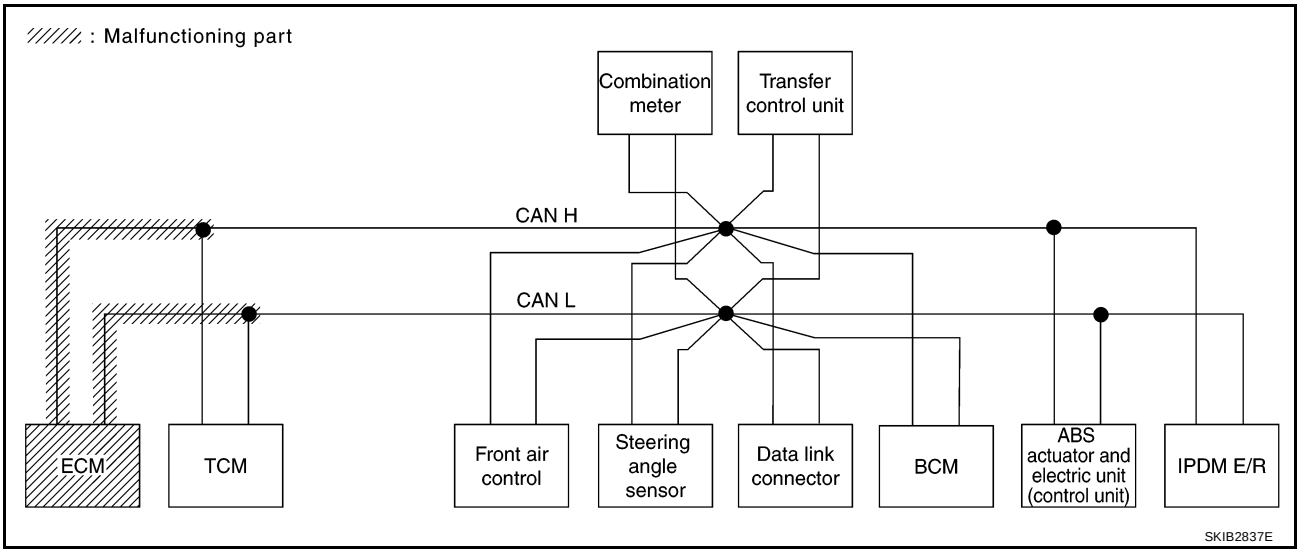
SKIB2836E

Case 3

Check ECM circuit. Refer to LAN-211, "ECM Circuit Inspection" .

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

PKIB5129E



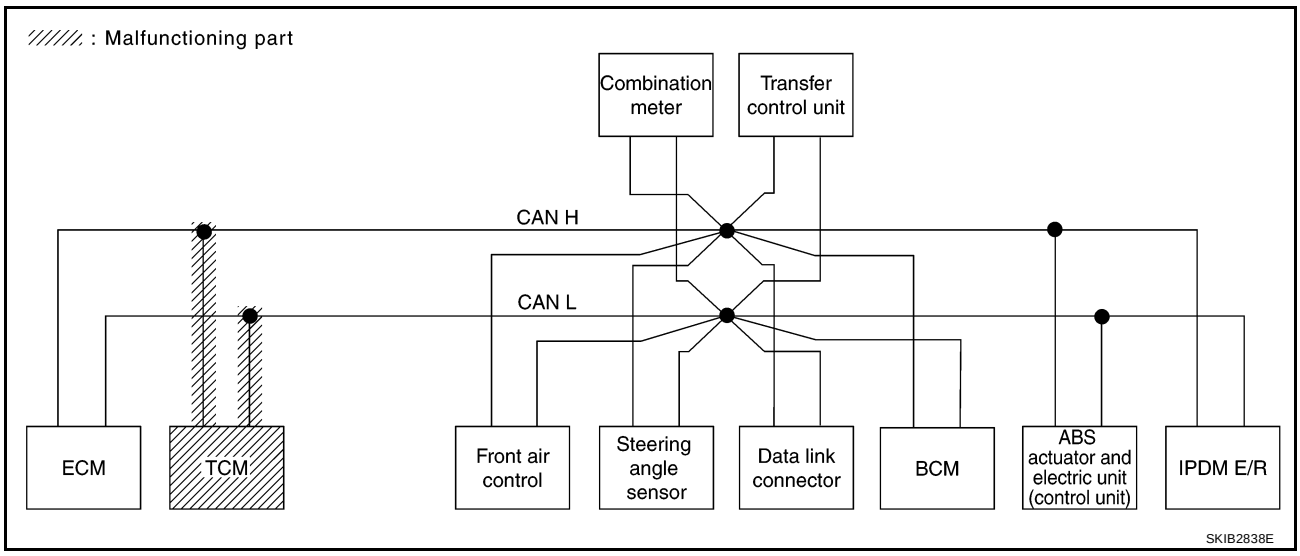
SKIB2837E

Case 4

Check TCM circuit. Refer to LAN-212, "TCM Circuit Inspection" .

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

PKIB5130E



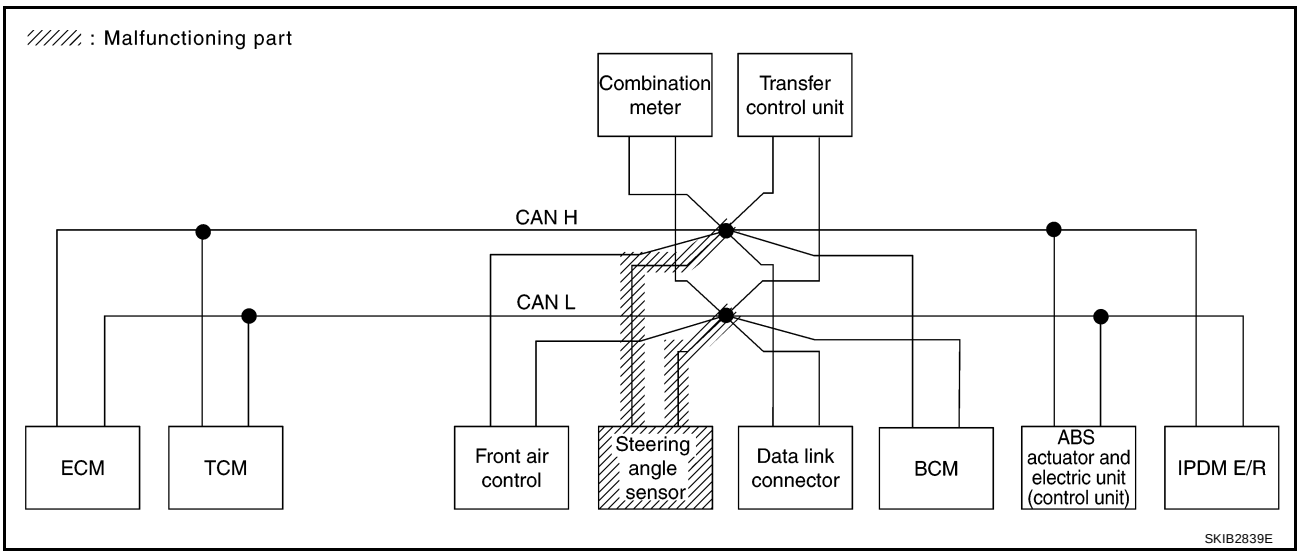
SKIB2838E

Case 5

Check steering angle sensor circuit. Refer to LAN-212, "Steering Angle Sensor Circuit Inspection" .

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

PKIB5131E



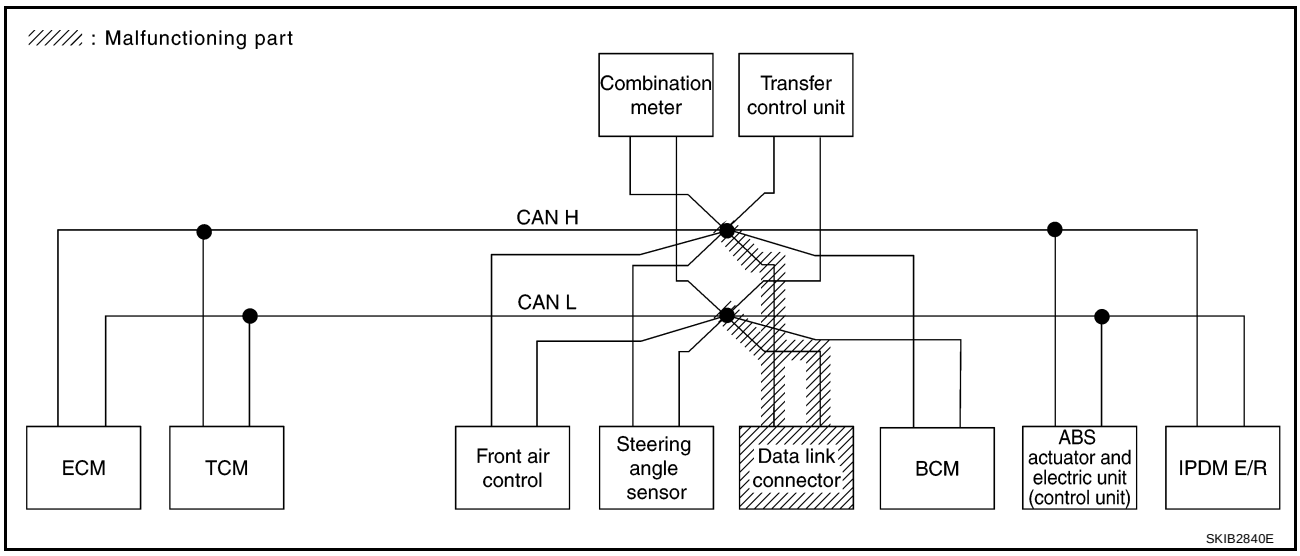
SKIB2839E

Case 6

Check data link connector circuit. Refer to LAN-213, "Data Link Connector Circuit Inspection" .

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

PKIB5132E



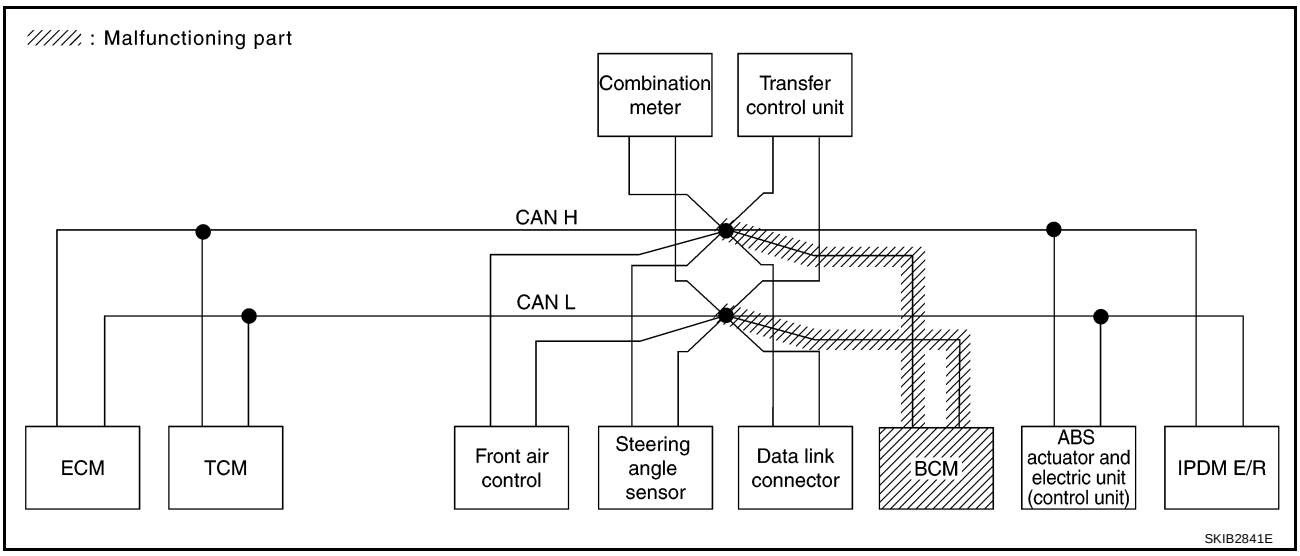
SKIB2840E

Case 7

Check BCM circuit. Refer to LAN-213, "BCM Circuit Inspection" .

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

PKIB5133E



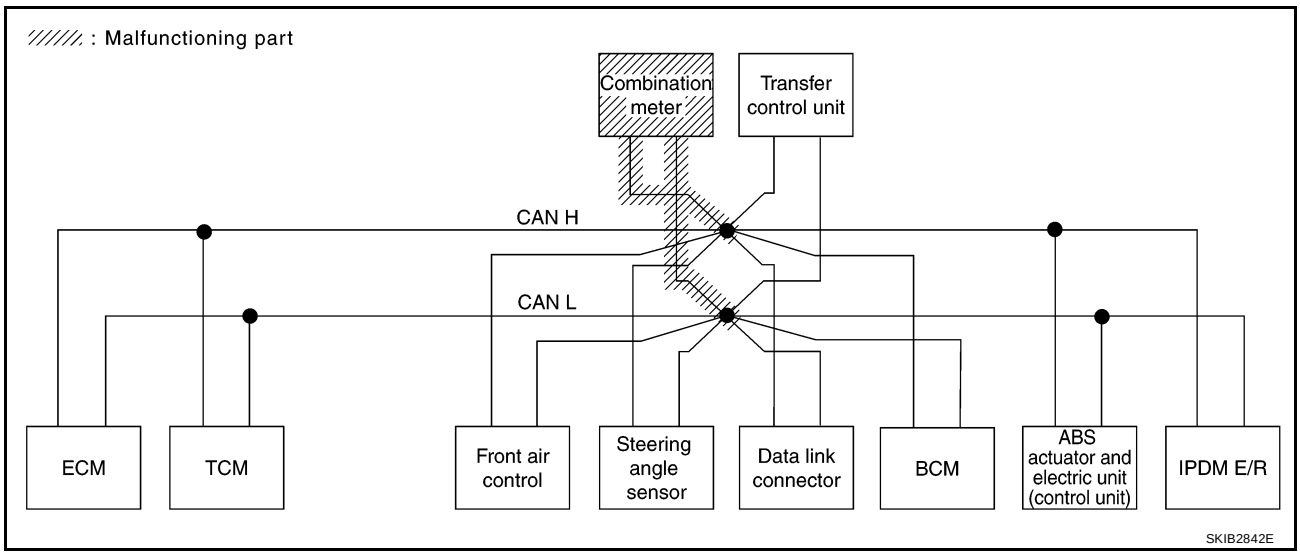
SKIB2841E

Case 8

Check combination meter circuit. Refer to LAN-214, "Combination Meter Circuit Inspection" .

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

PKIB5134E



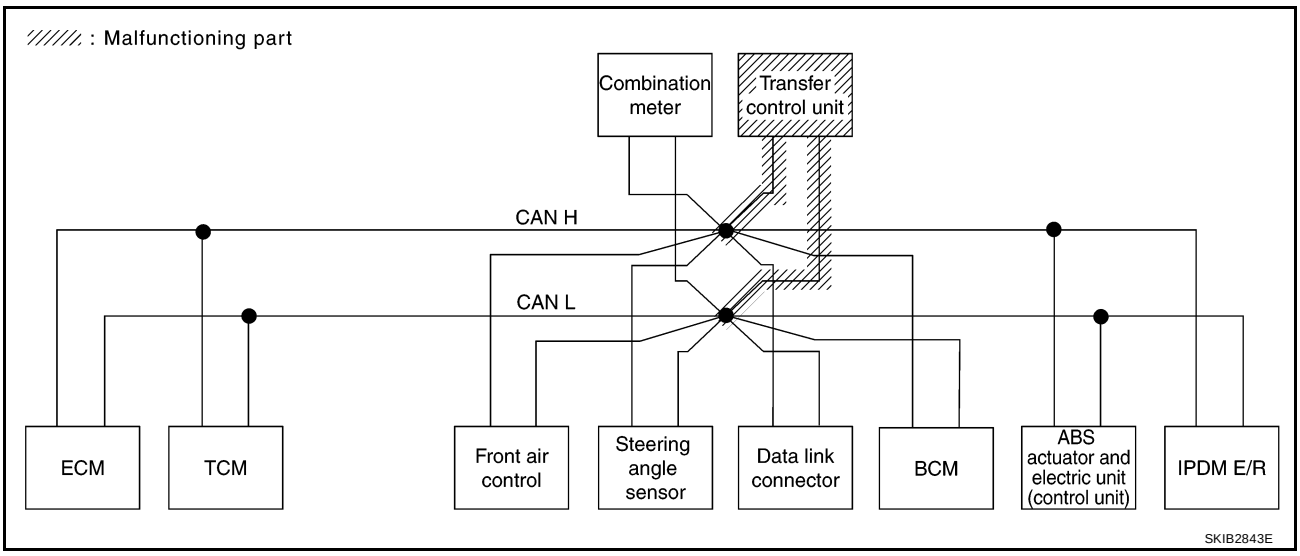
SKIB2842E

Case 9

Check transfer control unit circuit. Refer to LAN-214, "Transfer Control Unit Circuit Inspection" .

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

PKIB5135E



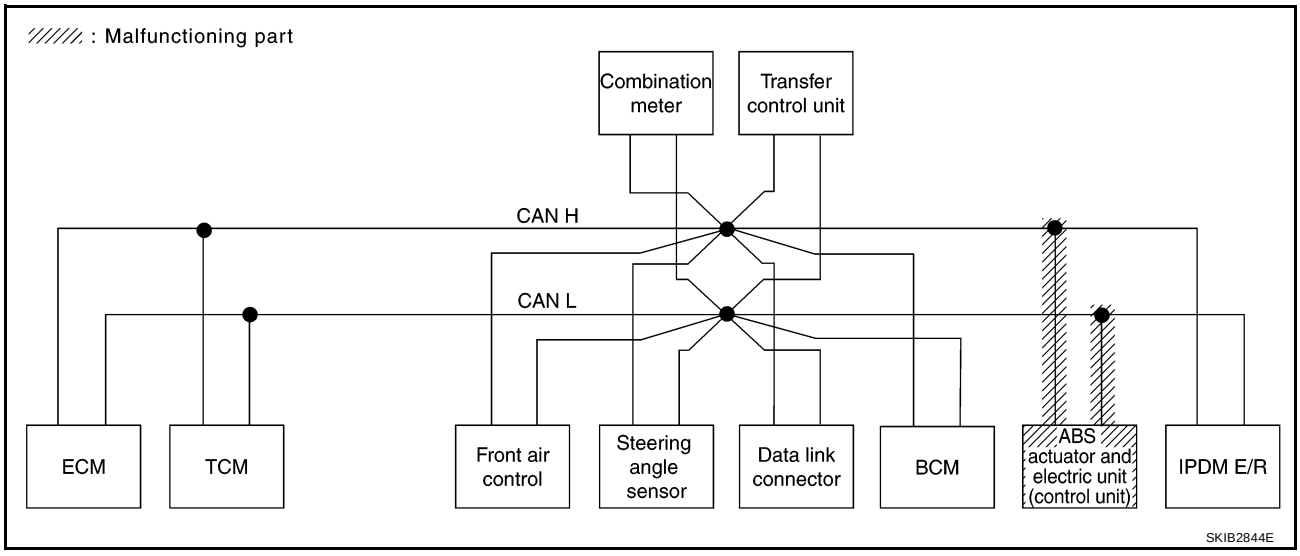
SKIB2843E

Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-215, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

PKIB5136E

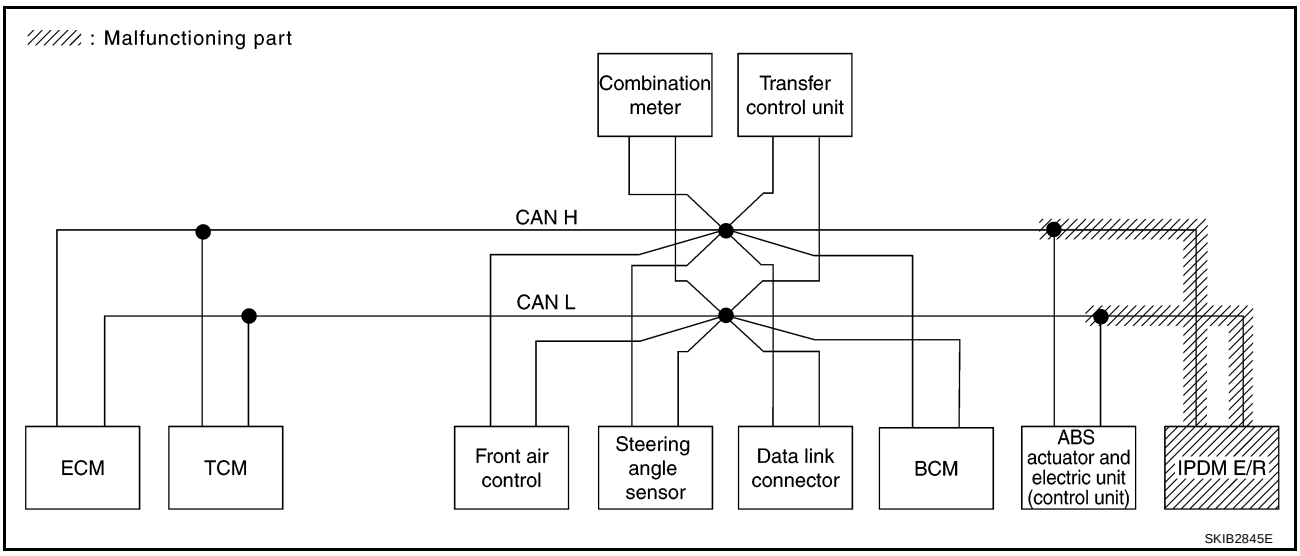


Case 11

Check IPDM E/R circuit. Refer to LAN-215, "IPDM E/R Circuit Inspection" .

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

PKIB5137E



SKIB2845E

Case 12

Check CAN communication circuit. Refer to LAN-216, "CAN Communication Circuit Inspection" .

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

PKIB5138E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-221, "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	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5139E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-221, "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	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5140E

Inspection Between TCM and Data Link Connector Circuit

UKS003DJ

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

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

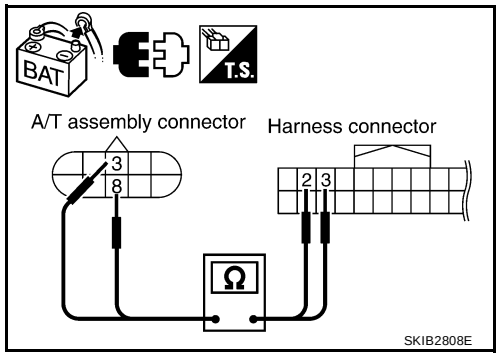
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

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

OK or NG

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



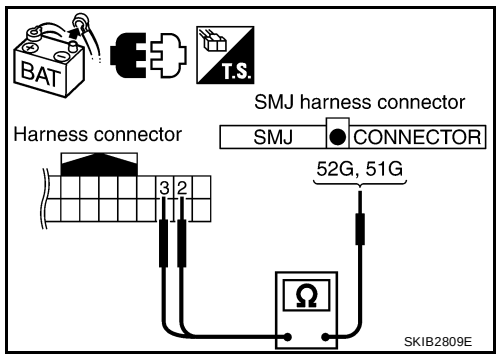
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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

OK or NG

OK >> GO TO 4.
NG >> Repair harness.



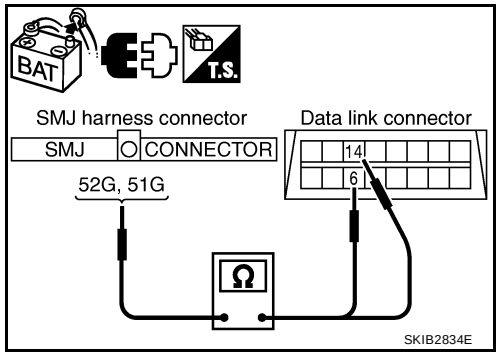
4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

52G (L) – 6 (L) : Continuity should exist.
51G (P) – 14 (P) : Continuity should exist.

OK or NG

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



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

UKS003DK

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 M91
- Harness connector E26

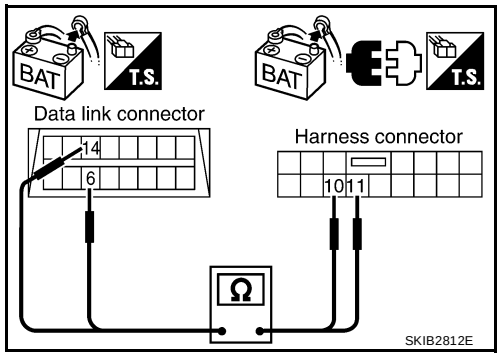
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.
14 (P) – 10 (P) : Continuity should exist.



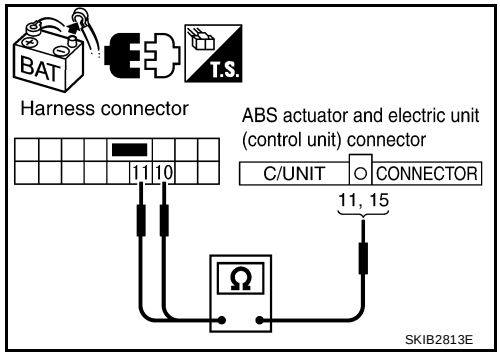
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003DL

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 E2
- Harness connector F32

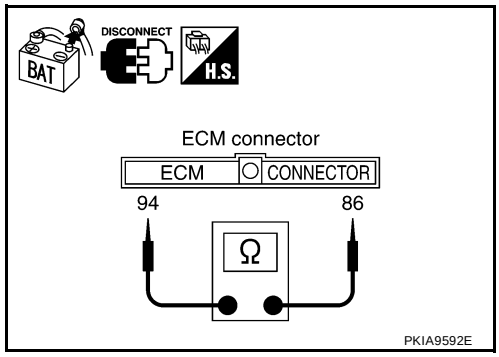
OK or NG

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 E16 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

UKS003DM

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).

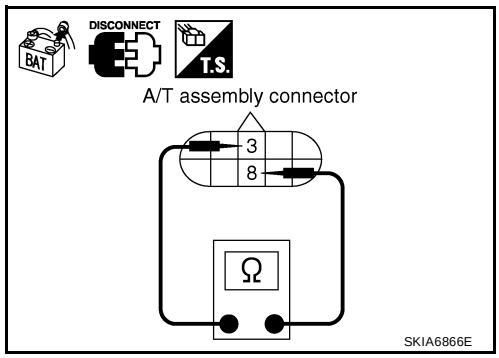
OK or NG

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 F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.

Steering Angle Sensor Circuit Inspection

UKS003DO

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).

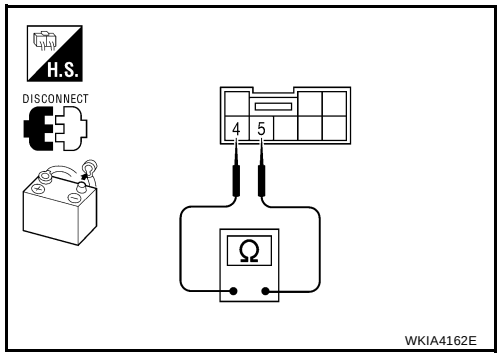
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003DP

1. CHECK CONNECTOR

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

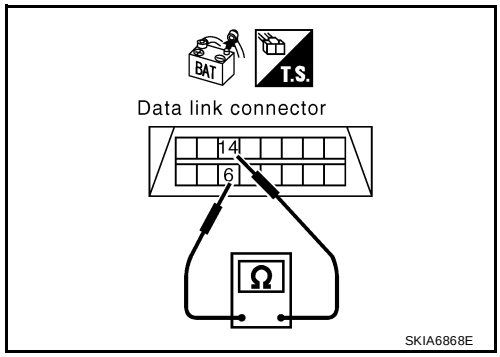
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and BCM.

BCM Circuit Inspection

UKS003DQ

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).

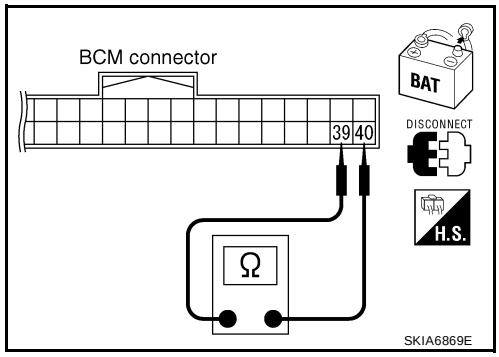
OK or NG

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

Combination Meter Circuit Inspection

UKS003DR

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).

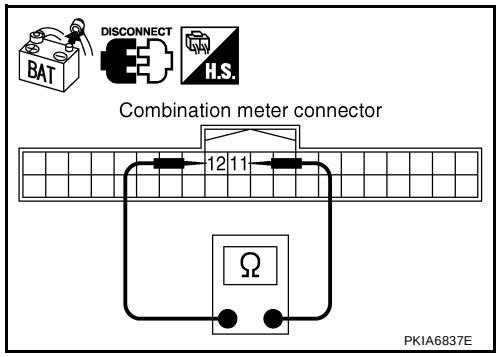
OK or NG

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 M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

Transfer Control Unit Circuit Inspection

UKS003DS

1. CHECK CONNECTOR

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

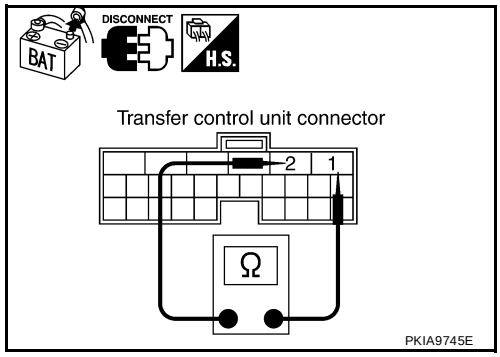
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector M152 terminals 1 (L) and 2 (P).

1 (L) – 2 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003DT

1. CHECK CONNECTOR

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

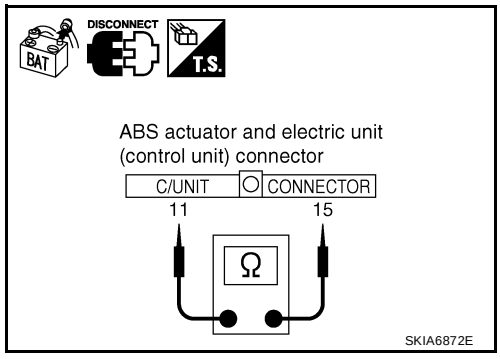
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003DU

1. CHECK CONNECTOR

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

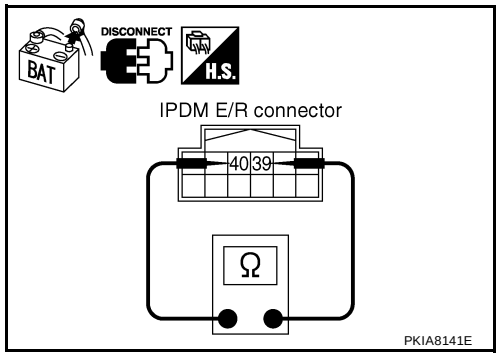
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003DV

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

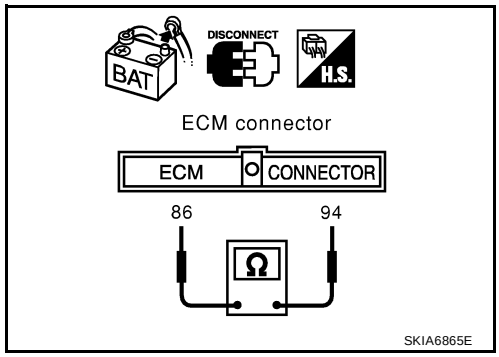
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 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 E2.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

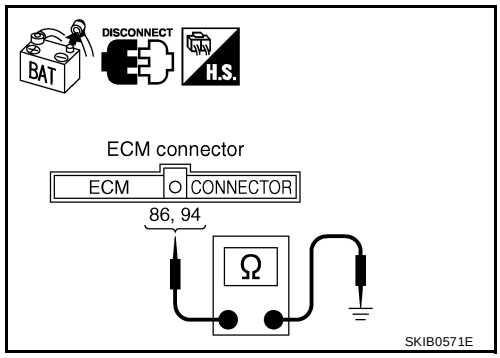
94 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E2.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

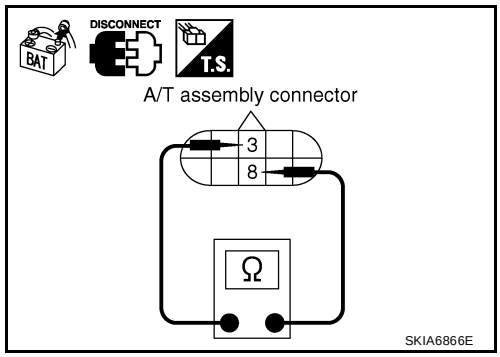
3 (L) - 8 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

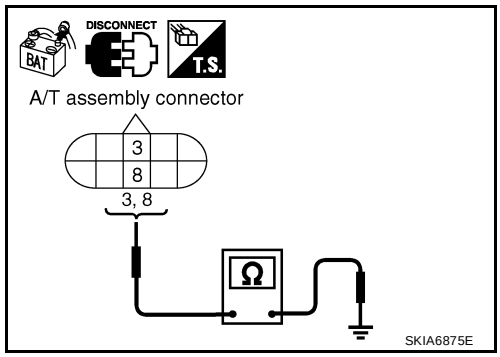
8 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14



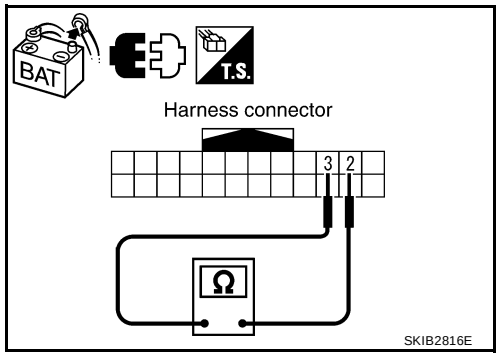
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E5 and harness connector E152.



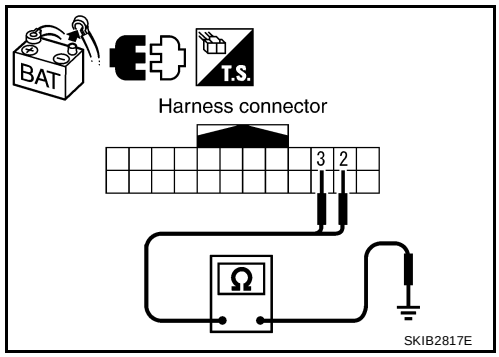
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

2 (L) – Ground : Continuity should not exist.
3 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E5 and harness connector E152.

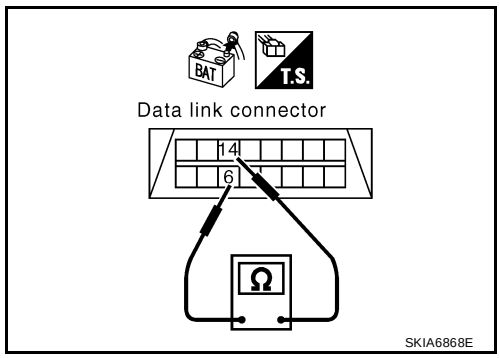


8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Transfer control unit connector
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

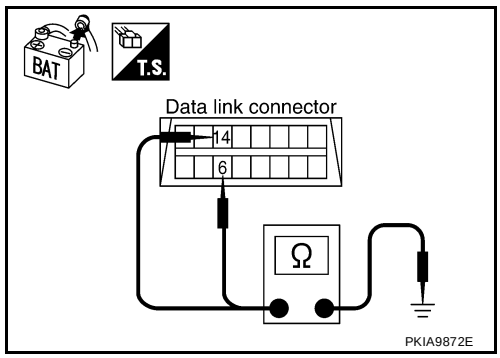
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

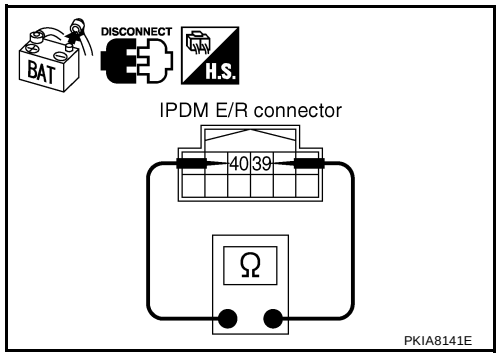
OK >> GO TO 10.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.



OK or NG

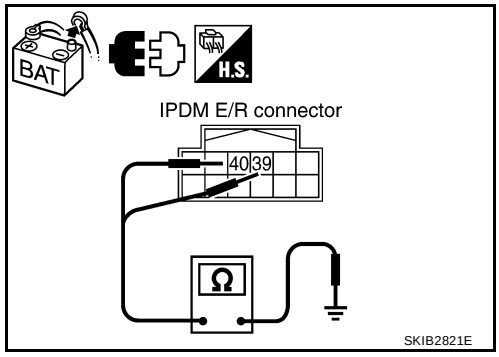
OK >> GO TO 11.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

39 (L) – Ground : Continuity should not exist.
40 (P) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 12.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

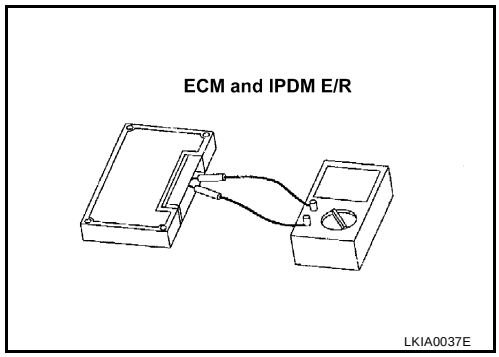
12. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : 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 connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 14.
NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

14. UNIT REPRODUCIBILITY INSPECTION

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.

- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003DW

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 7)

PFP:23710

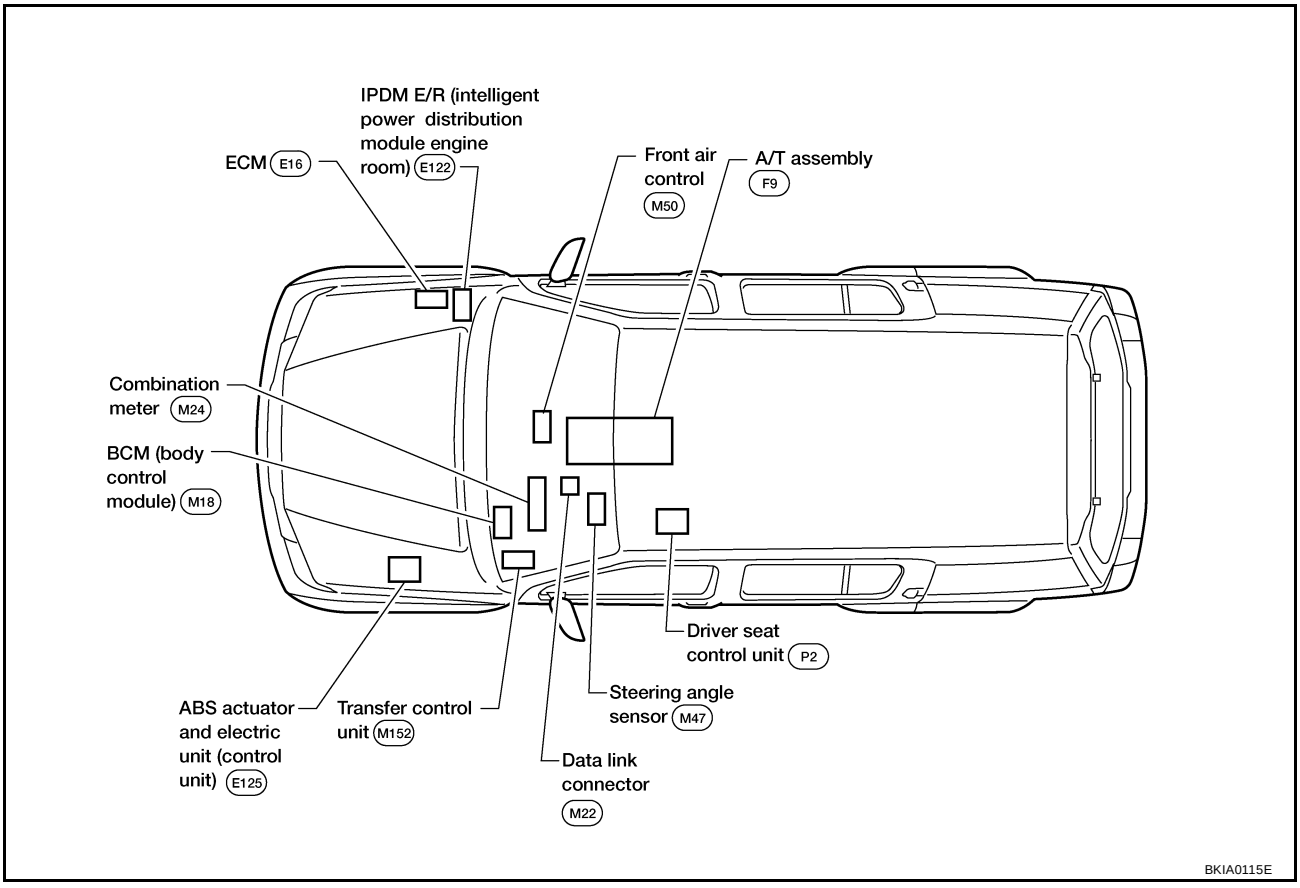
System Description

UKS003CT

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.

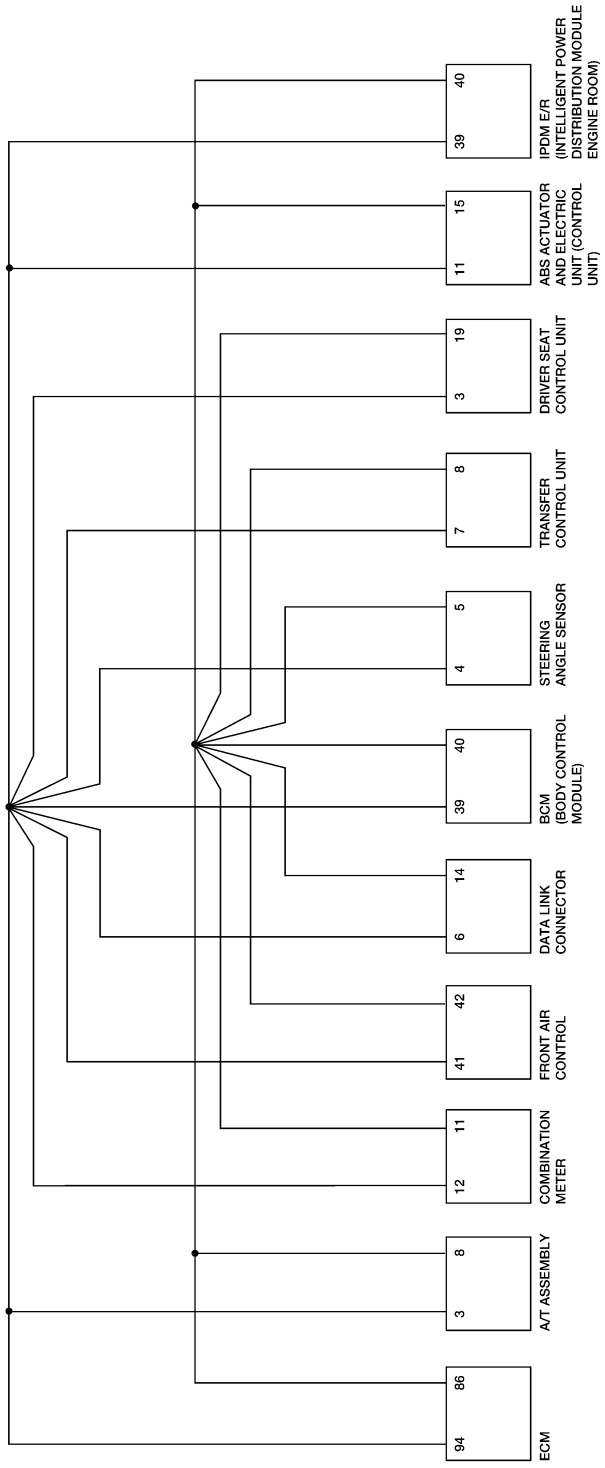
Component Parts and Harness Connector Location

UKS003CU



Schematic

UKS003CV

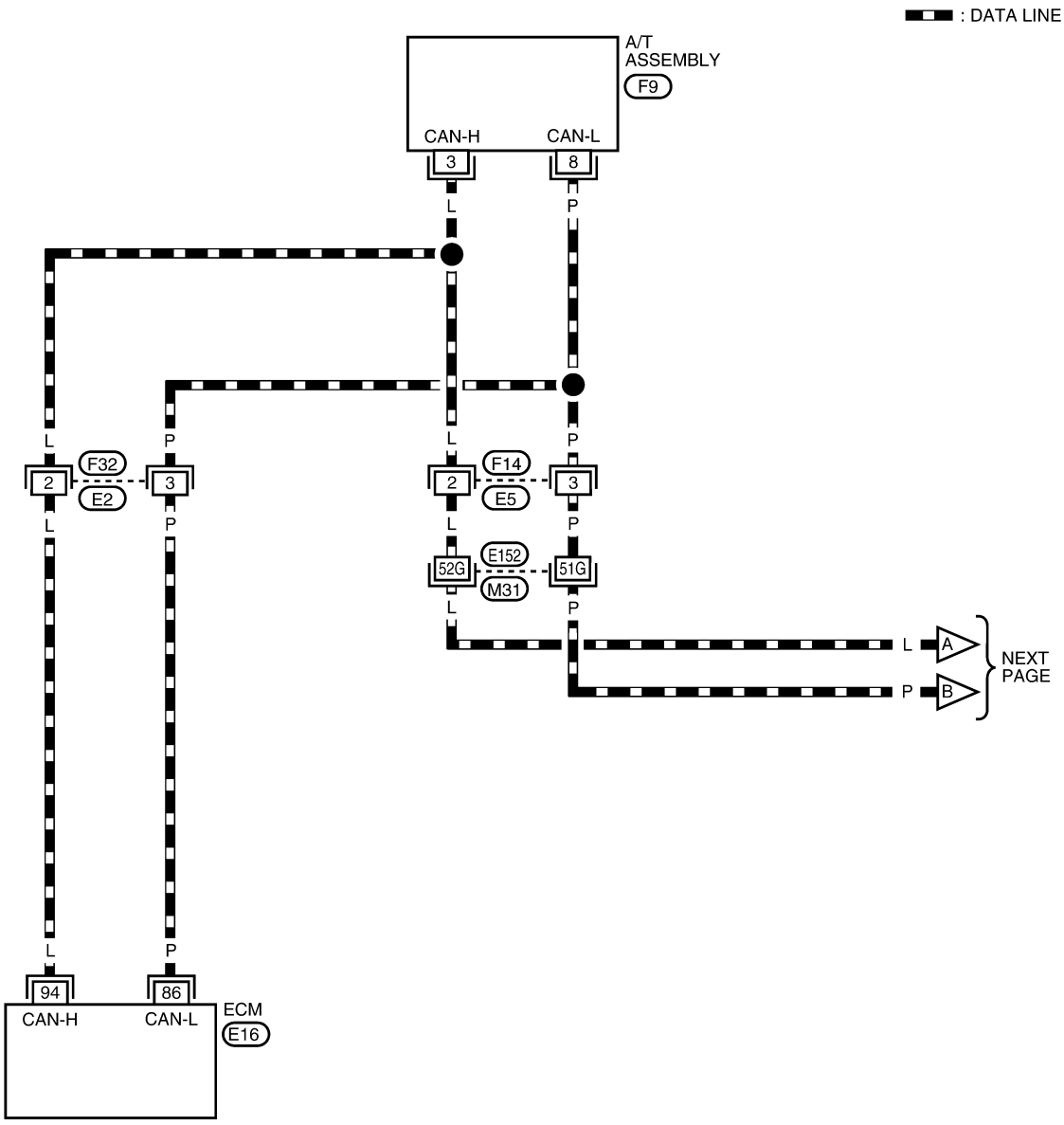


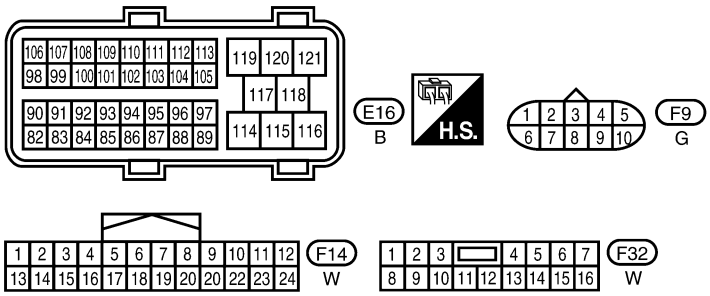
BKWA0617E

Wiring Diagram - CAN -

UKS003CW

LAN-CAN-19

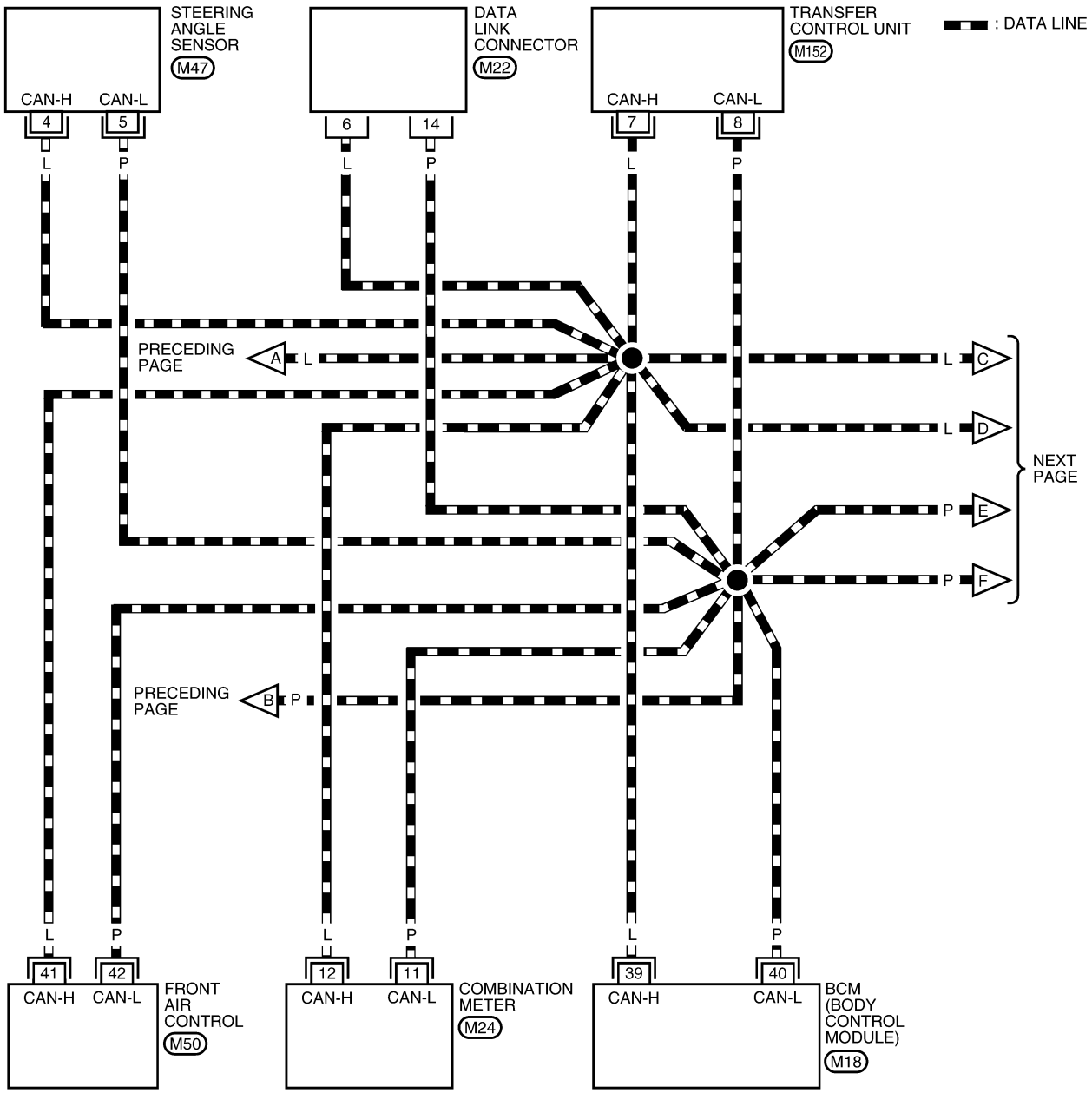


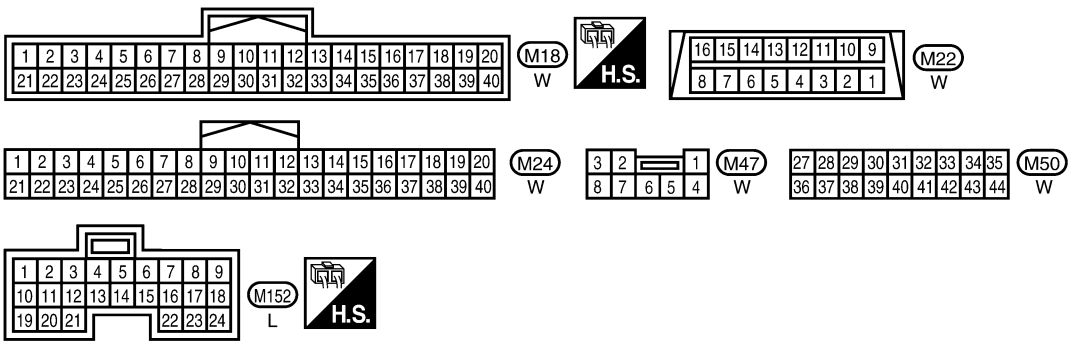


REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0392E

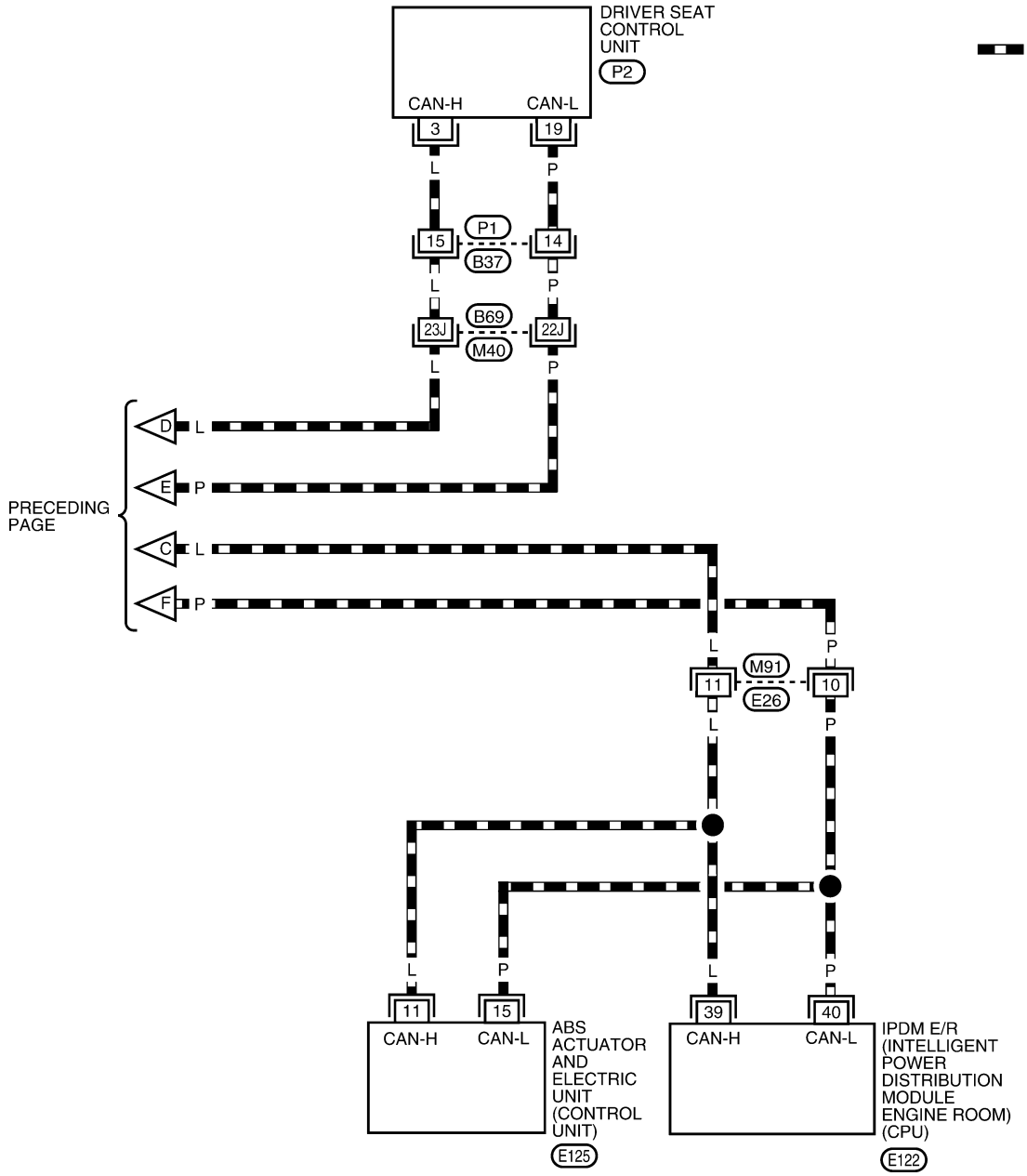
LAN-CAN-20

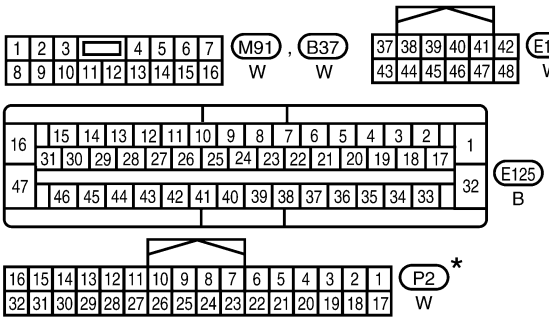




BKWA0618E

LAN-CAN-21





*: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0394E

CHECK SHEET

UKS003CX

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

Check sheet table

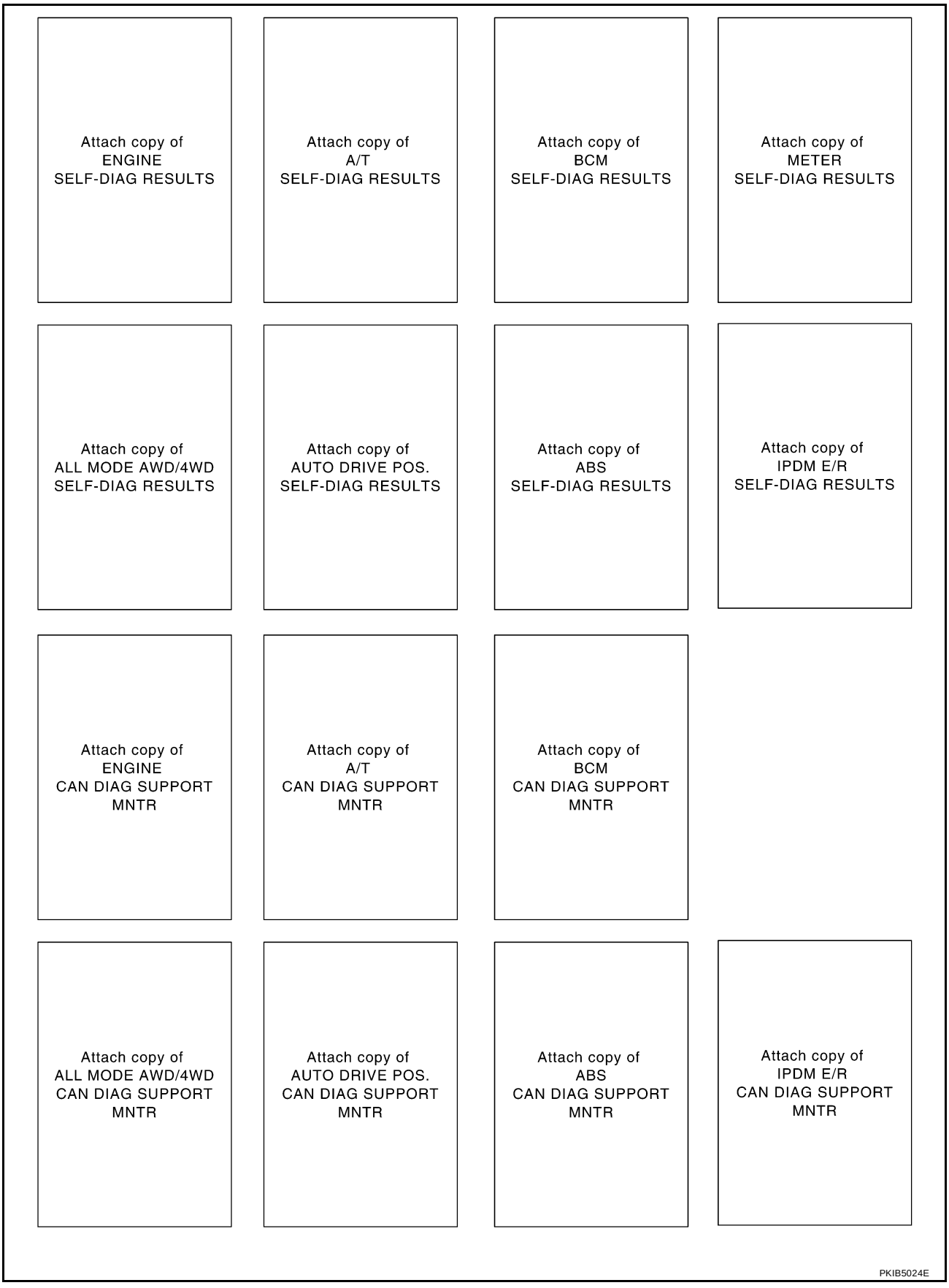
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB5023E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ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
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BCM
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Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
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IPDM E/R
SELF-DIAG RESULTS
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ALL MODE AWD/4WD
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MNTR
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AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5024E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

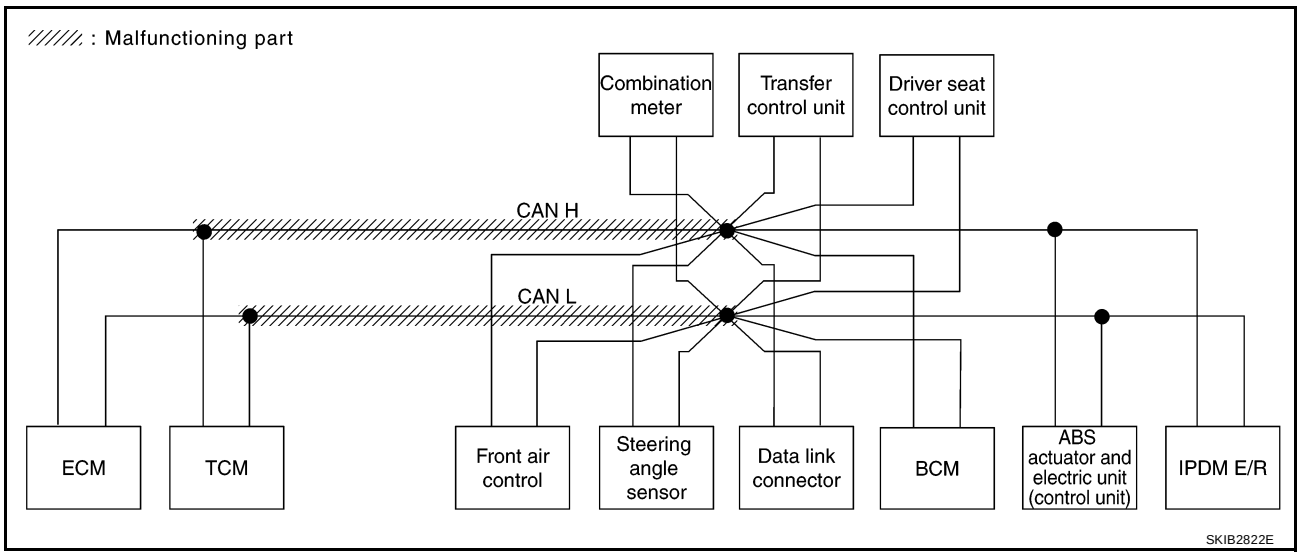
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and data link connector circuit. Refer to LAN-241, "Inspection Between TCM and Data Link Connector Circuit" .

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

PKIB5141E



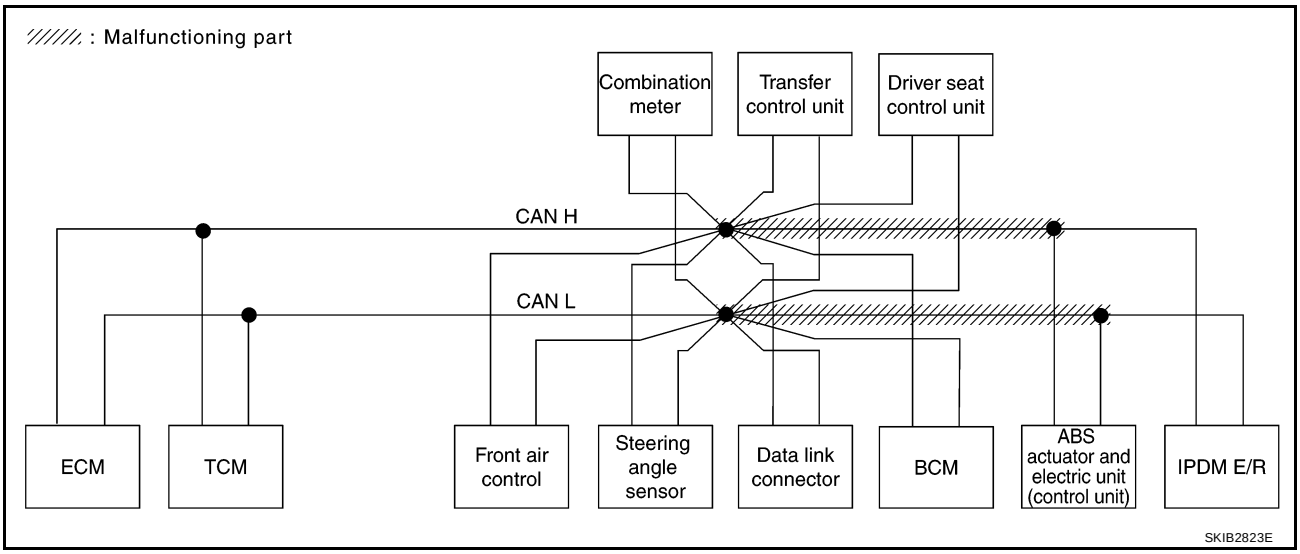
SKIB2822E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-242, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit"
.

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

PKIB5142E

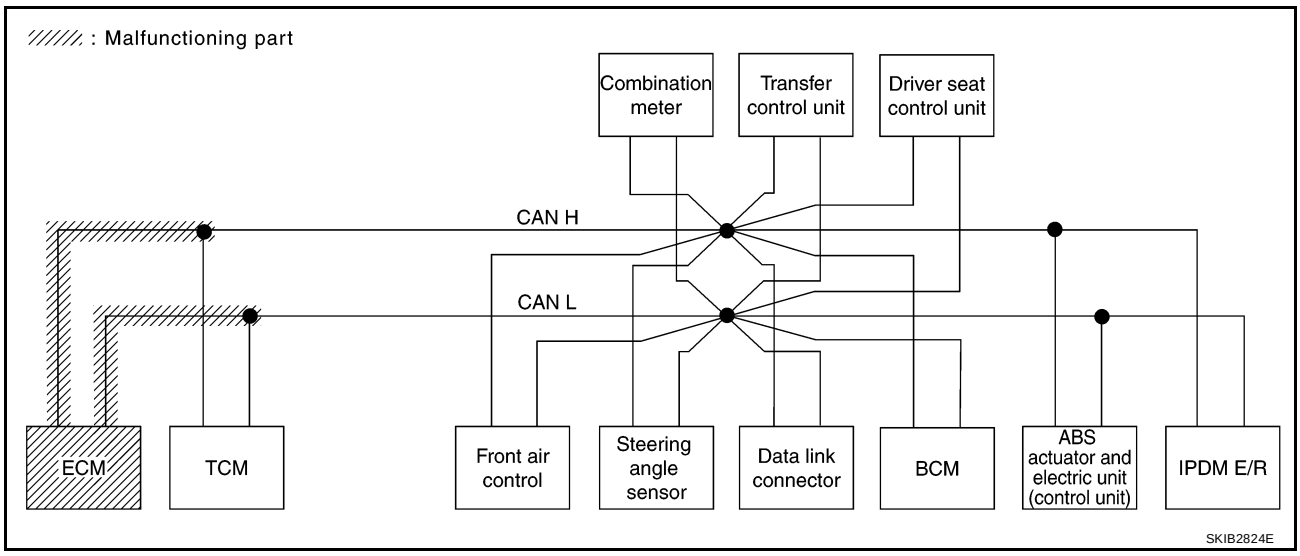


Case 3

Check ECM circuit. Refer to LAN-243, "ECM Circuit Inspection" .

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

PKIB5143E

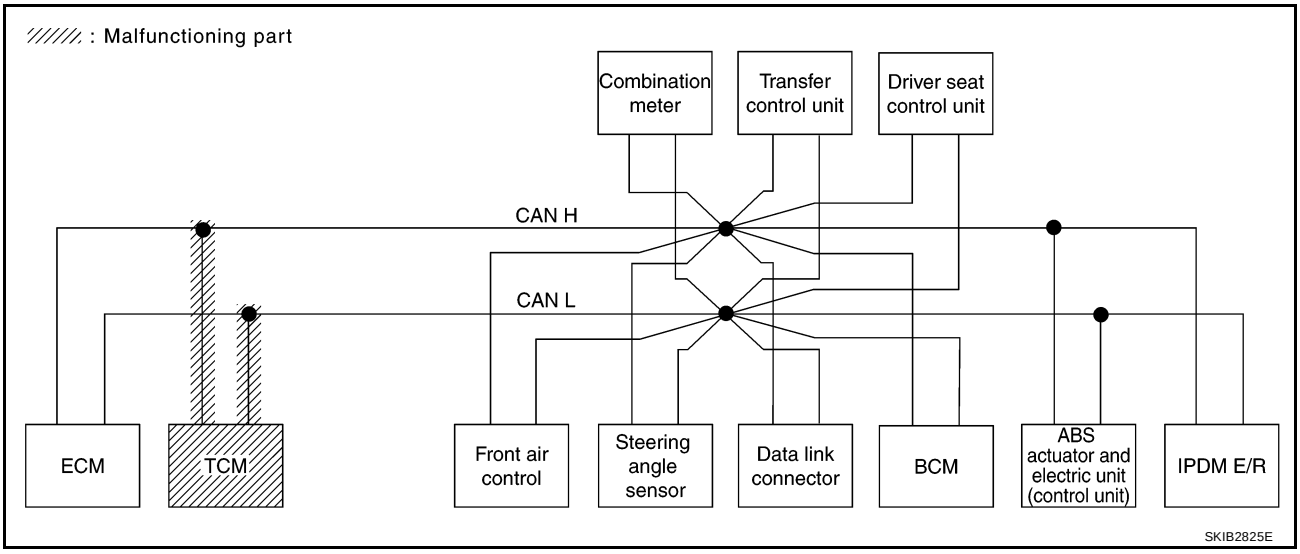


Case 4

Check TCM circuit. Refer to LAN-244, "TCM Circuit Inspection" .

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

PKIB5144E

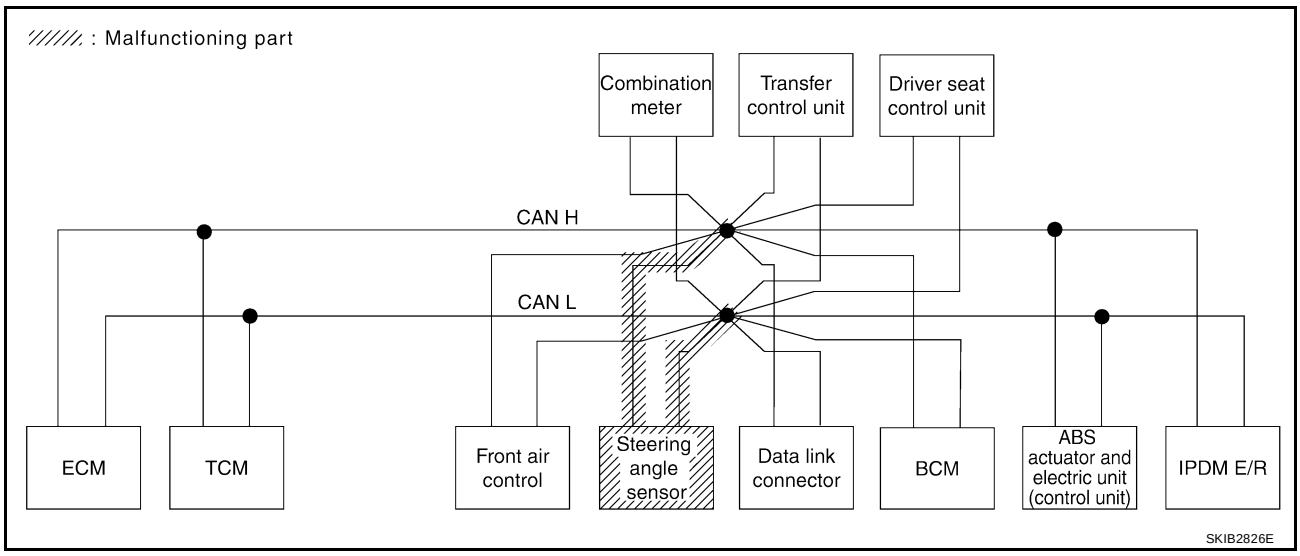


Case 5

Check steering angle sensor circuit. Refer to LAN-244, "Steering Angle Sensor Circuit Inspection" .

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

PKIB5145E



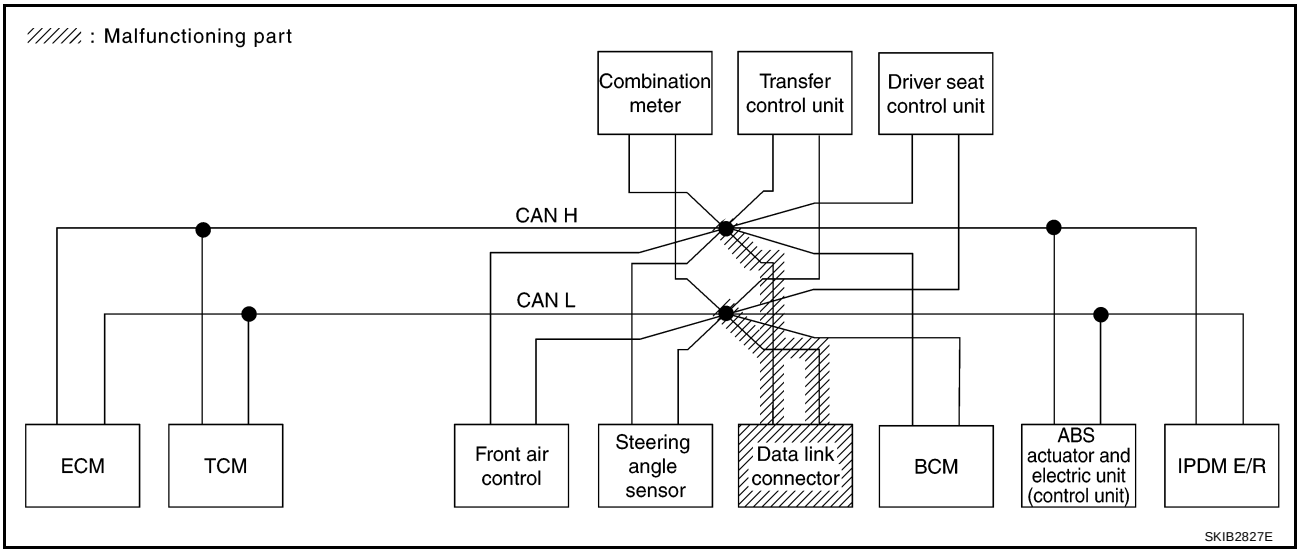
SKIB2826E

Case 6

Check data link connector circuit. Refer to LAN-245, "Data Link Connector Circuit Inspection" .

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

PKIB5146E

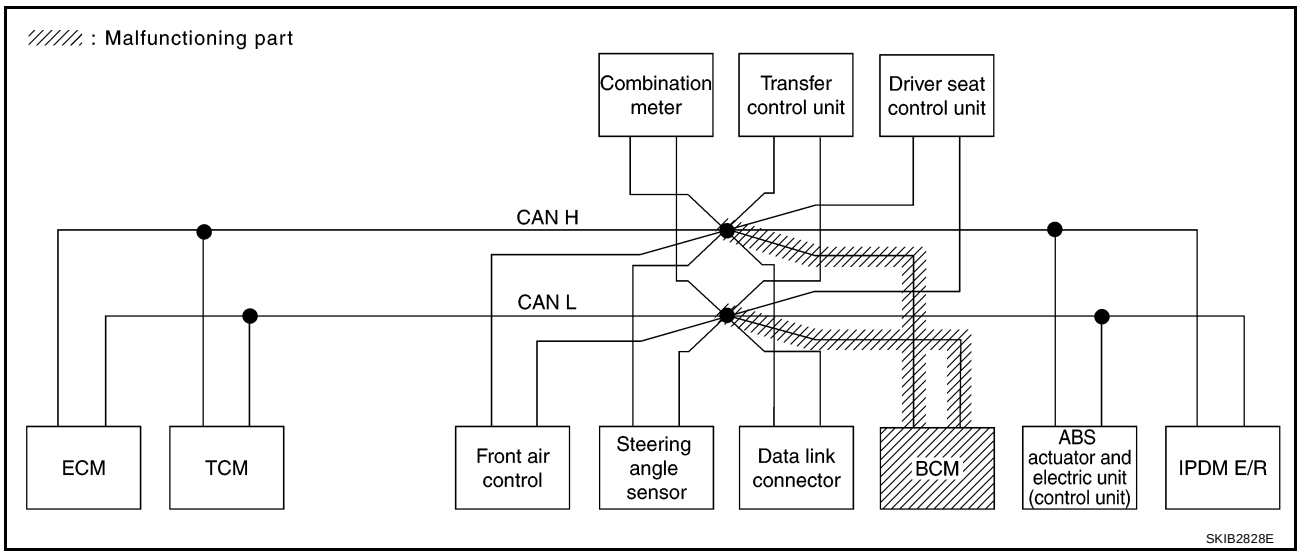


Case 7

Check BCM circuit. Refer to LAN-245, "BCM Circuit Inspection" .

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

PKIB5147E

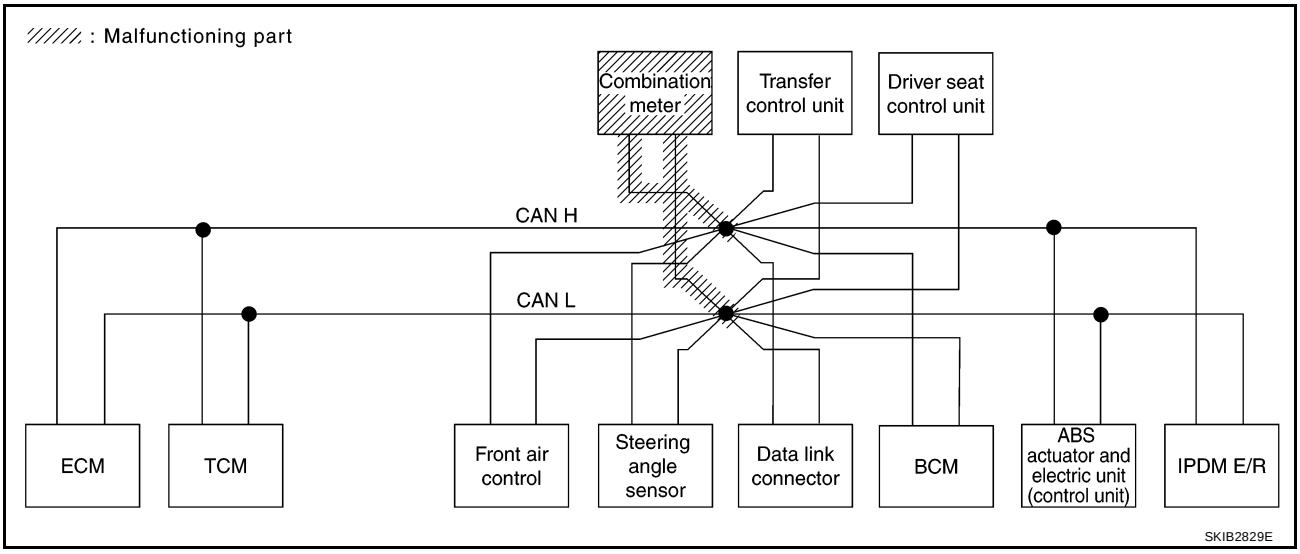


Case 8

Check combination meter circuit. Refer to LAN-246, "Combination Meter Circuit Inspection" .

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

PKIB5148E

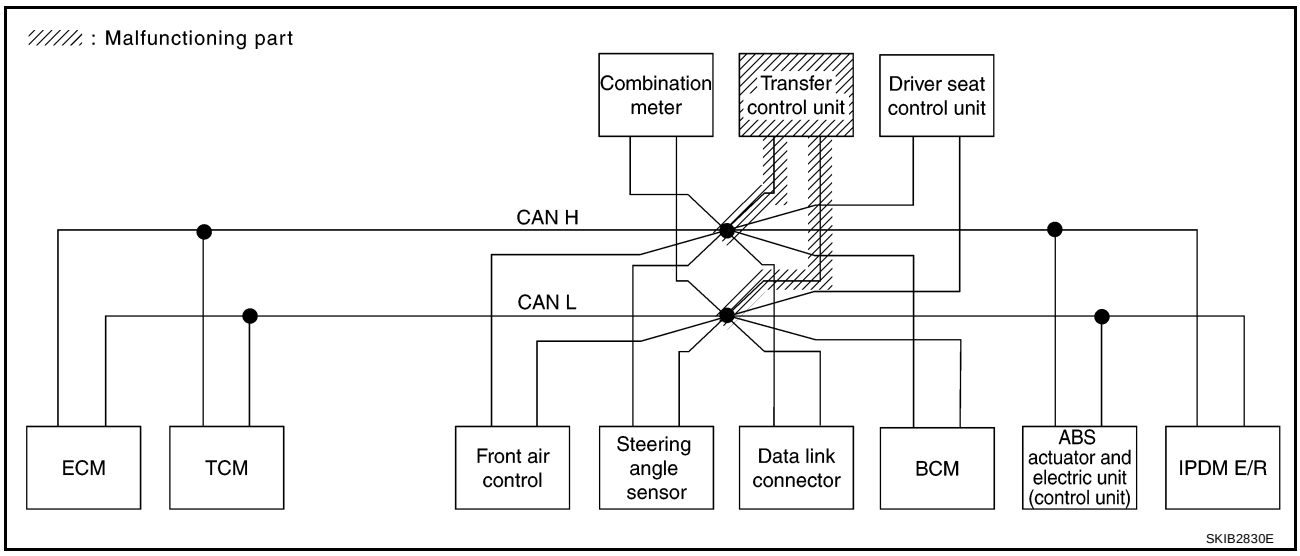


Case 9

Check transfer control unit circuit. Refer to LAN-246, "Transfer Control Unit Circuit Inspection" .

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

PKIB5149E

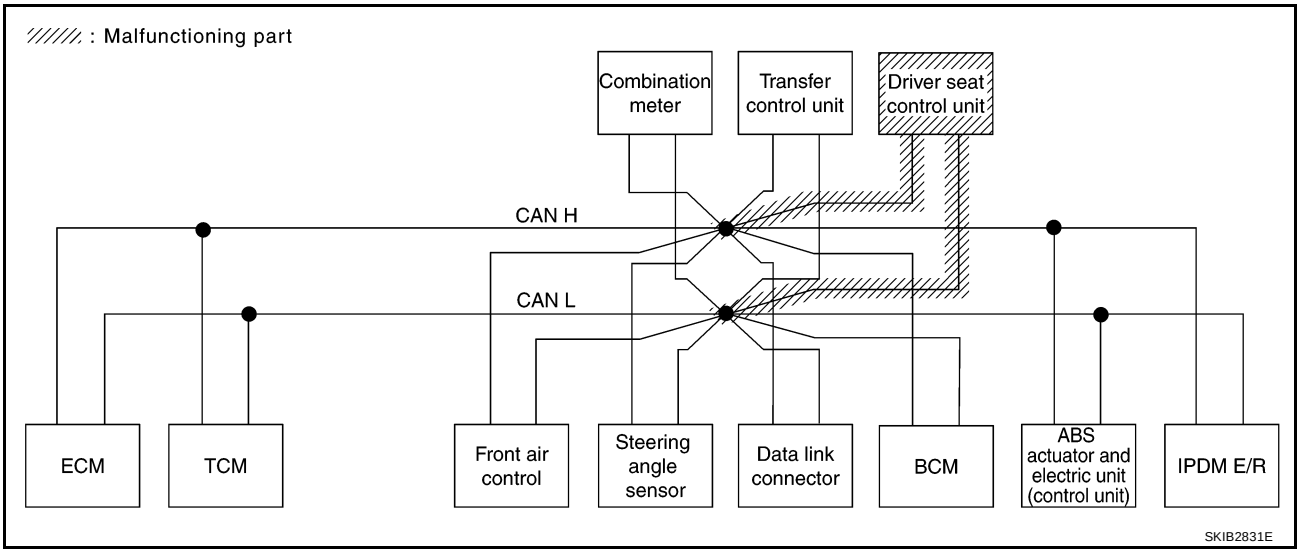


Case 10

Check driver seat control unit circuit. Refer to LAN-247, "Driver Seat Control Unit Circuit Inspection" .

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

PKIB5150E

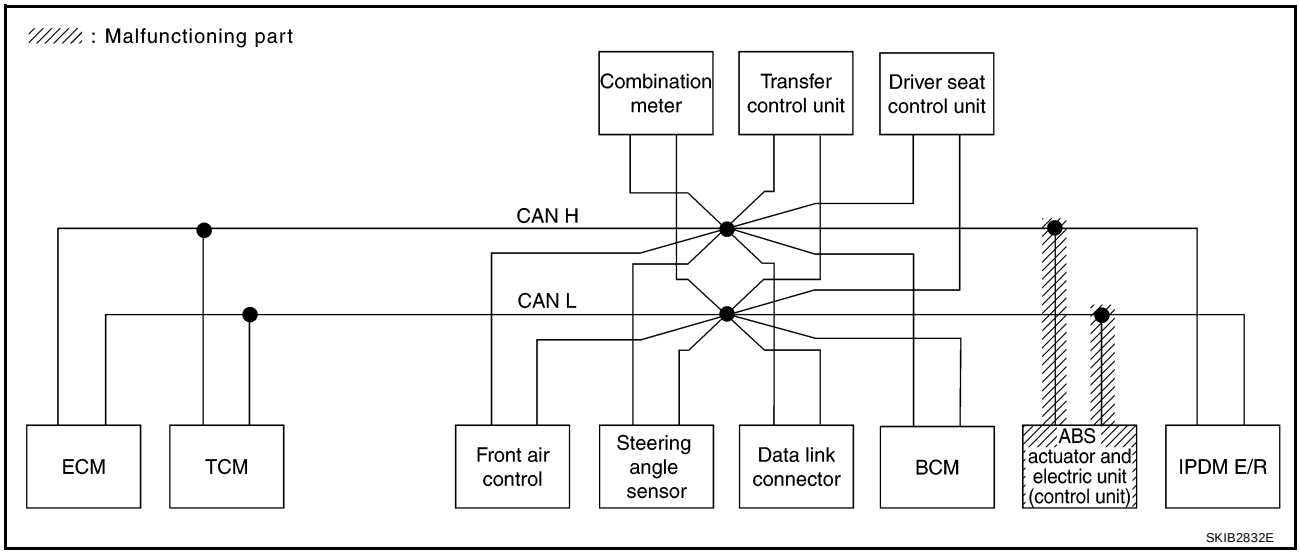


Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-247, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

PKIB5151E



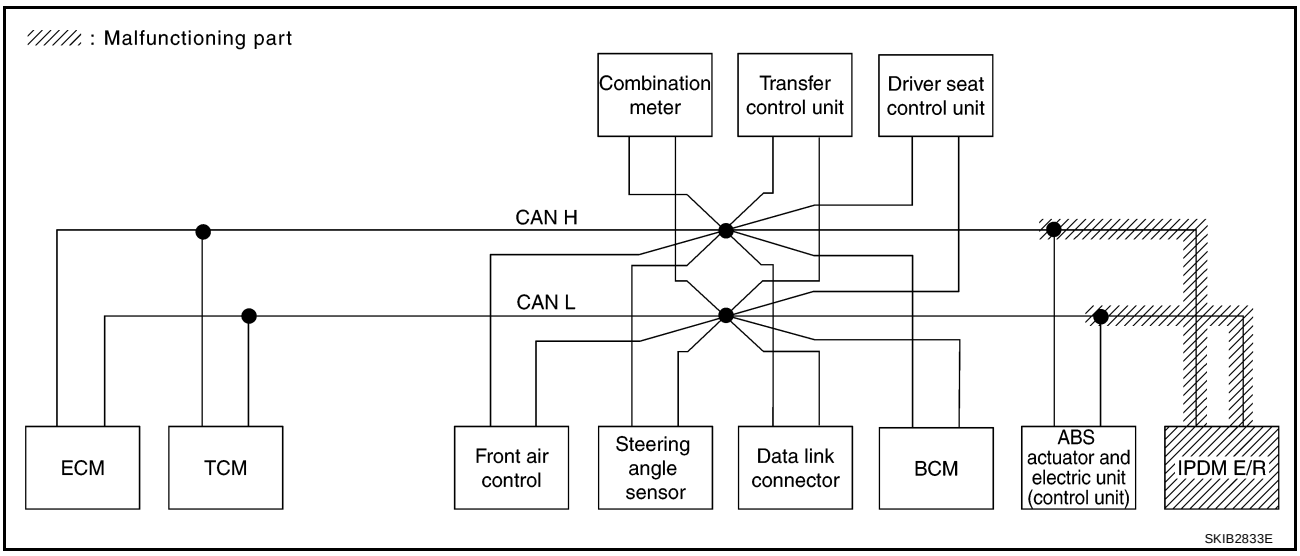
SKIB2832E

Case 12

Check IPDM E/R circuit. Refer to LAN-248, "IPDM E/R Circuit Inspection" .

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

PKIB5152E



SKIB2833E

Case 13

Check CAN communication circuit. Refer to LAN-249, "CAN Communication Circuit Inspection" .

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

PKIB5153E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-255, "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	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5154E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-255, "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	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

PKIB5155E

Inspection Between TCM and Data Link Connector Circuit

UKS003CY

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

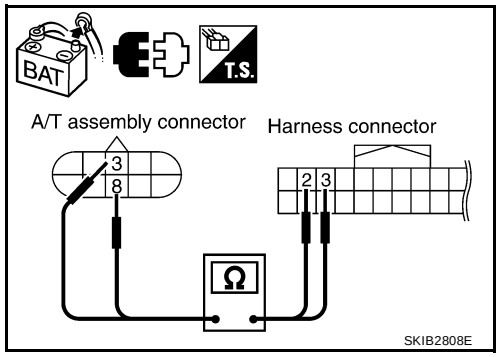
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

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



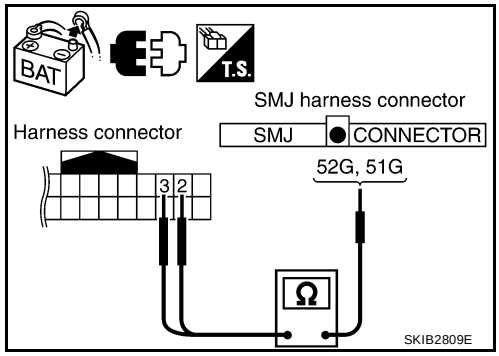
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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



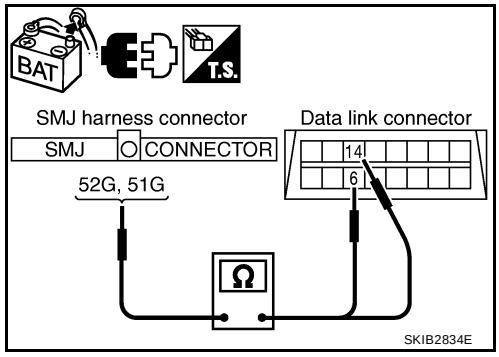
OK or NG

OK >> GO TO 4.
NG >> Repair harness.

4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

52G (L) – 6 (L) : Continuity should exist.
51G (P) – 14 (P) : Continuity should exist.



OK or NG

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

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

UKS003D0

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 M91
- Harness connector E26

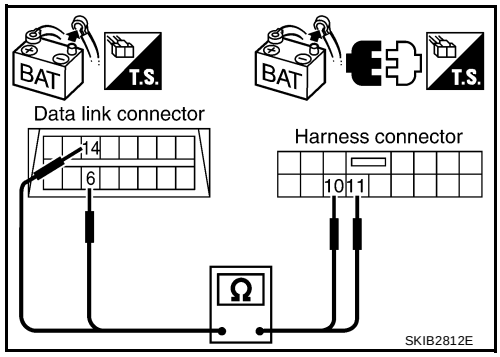
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.
14 (P) – 10 (P) : Continuity should exist.



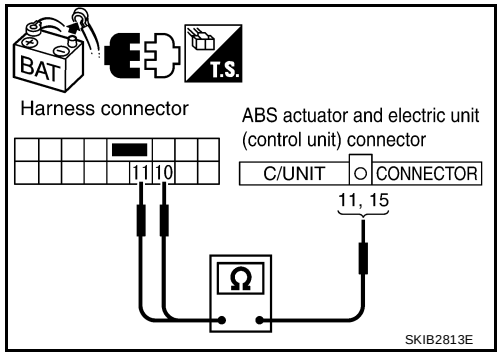
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003D1

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 E2
- Harness connector F32

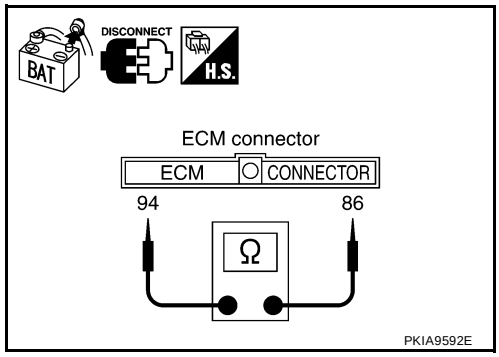
OK or NG

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 E16 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

UKS003D2

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).

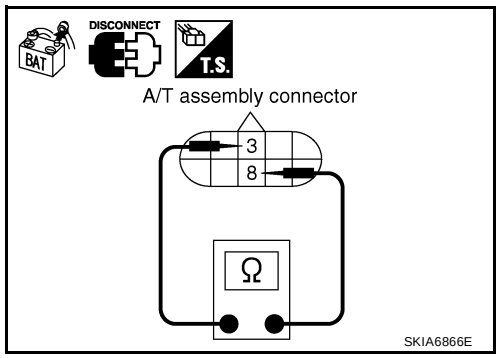
OK or NG

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 F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.

Steering Angle Sensor Circuit Inspection

UKS003D4

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).

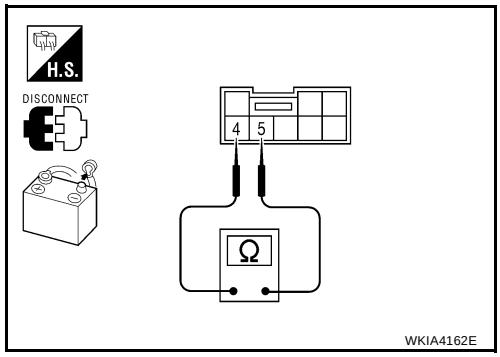
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003D5

1. CHECK CONNECTOR

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

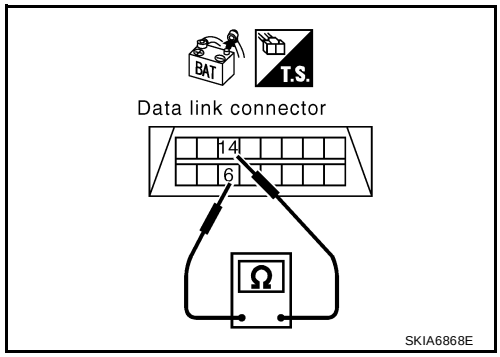
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .
NG >> Repair harness between data link connector and BCM.

BCM Circuit Inspection

UKS003D6

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).

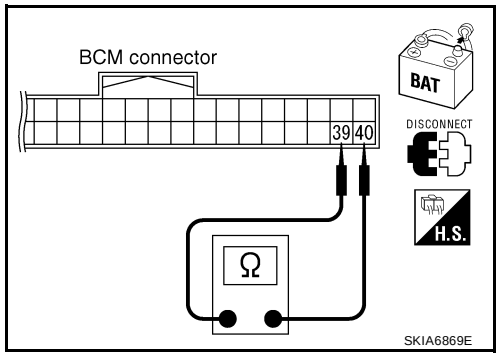
OK or NG

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

Combination Meter Circuit Inspection

UKS003D7

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).

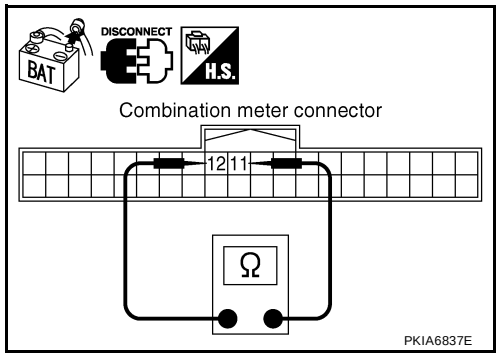
OK or NG

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 M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω



OK or NG

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

Transfer Control Unit Circuit Inspection

UKS003D8

1. CHECK CONNECTOR

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

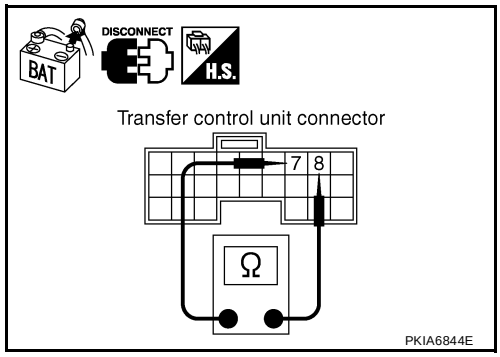
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector M152 terminals 7 (L) and 8 (P).

7 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

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

Driver Seat Control Unit Circuit Inspection

UKS003D9

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 and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37
- Harness connector B69
- Harness connector M40

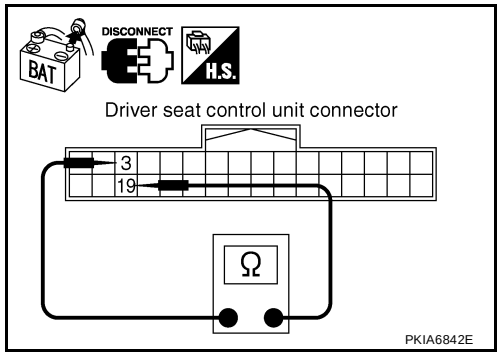
OK or NG

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 P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003DA

1. CHECK CONNECTOR

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

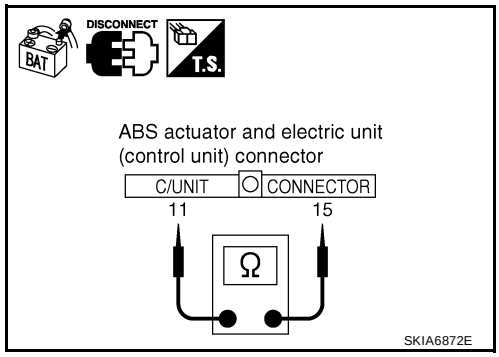
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003DB

1. CHECK CONNECTOR

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

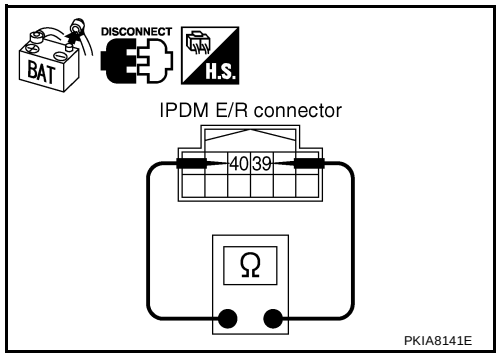
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003DC

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- Driver seat control unit
- ABS actuator and electric unit (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.

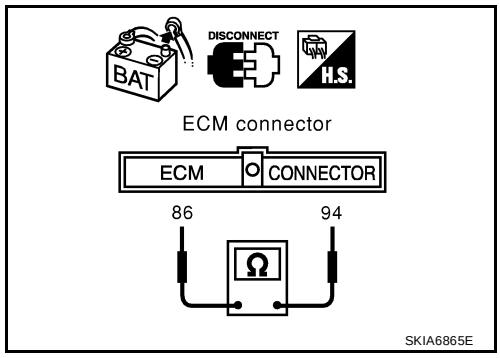
- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 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 E2.



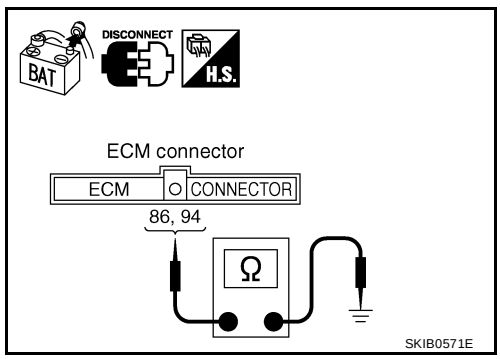
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

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

OK or NG

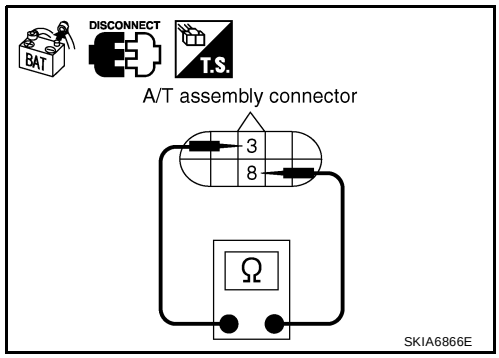
OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E2.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

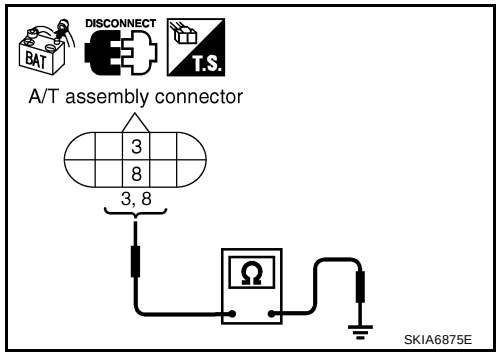
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

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



OK or NG

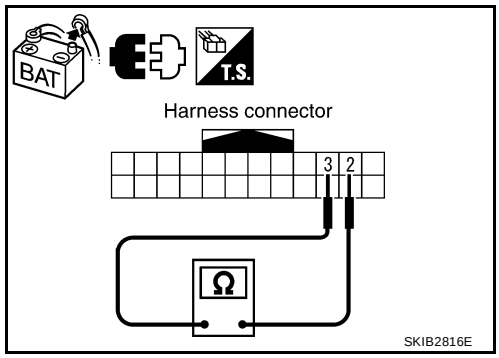
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 7.

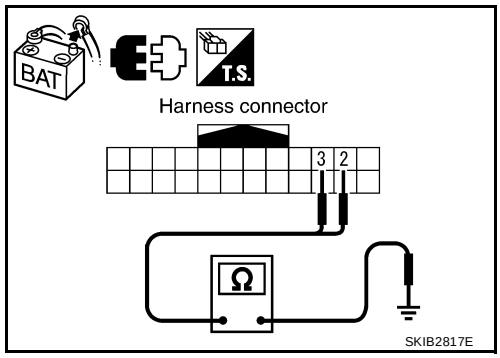
NG >> Repair harness between harness connector E5 and harness connector E152.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

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

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



OK or NG

OK >> GO TO 8.

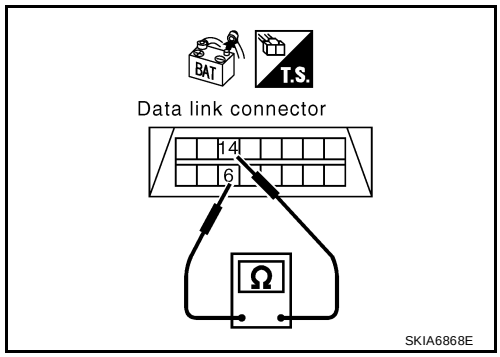
NG >> Repair harness between harness connector E5 and harness connector E152.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Transfer control unit connector
- Harness connector M40
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

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

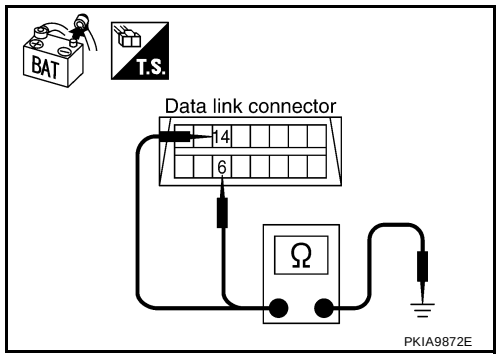
- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 10.

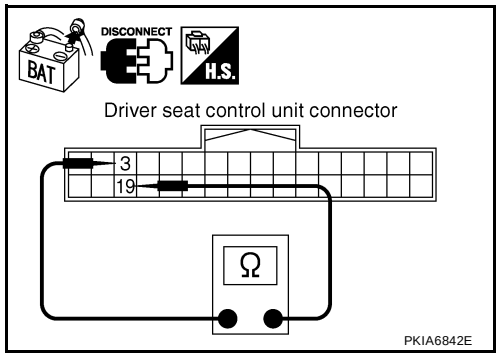
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M31
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Driver seat control unit connector
- Harness connector P1
2. Check continuity between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 11.

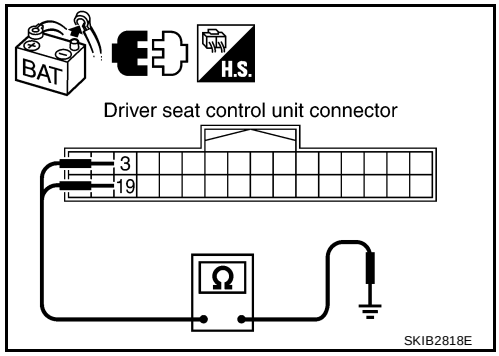
NG >> Repair harness between driver seat control unit and harness connector P1.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between driver seat control unit harness connector P2 terminals 3 (L), 19 (P) and ground.

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

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



OK or NG

OK >> GO TO 12.

NG >> Repair harness between driver seat control unit and harness connector P1.

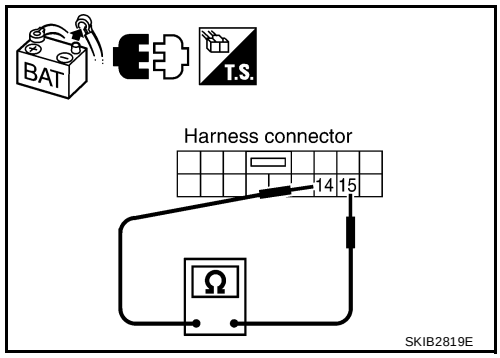
12. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B37 terminals 15 (L) and 14 (P).

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

OK or NG

OK >> GO TO 13.
NG >> Repair harness between harness connector B37 and harness connector B69.



13. CHECK HARNESS FOR SHORT CIRCUIT

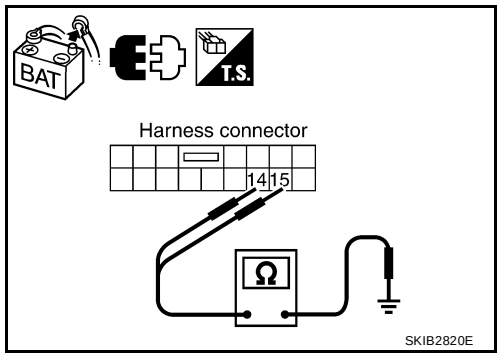
Check continuity between harness connector B37 terminals 15 (L), 14 (P) and ground.

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

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

OK or NG

OK >> GO TO 14.
NG >> Repair harness between harness connector B37 and harness connector B69.



14. CHECK HARNESS FOR SHORT CIRCUIT

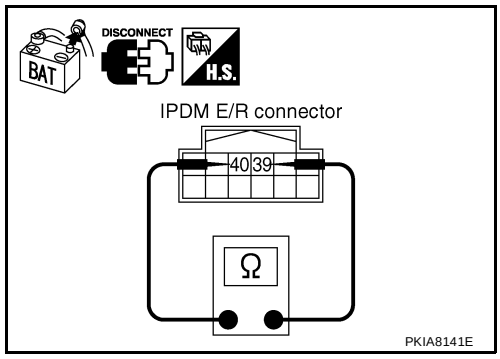
1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 15.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

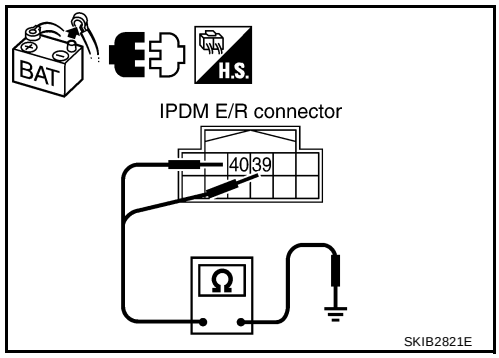


15. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

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

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



OK or NG

OK >> GO TO 16.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

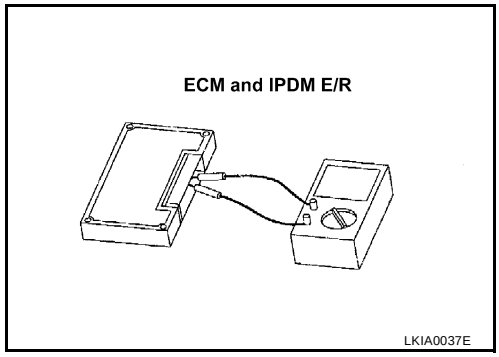
16. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : Approx. 108 - 132 Ω



OK or NG

OK >> GO TO 17.

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

17. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 18.

NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced".

18. UNIT REPRODUCIBILITY INSPECTION

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.

- TCM
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003DD

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

CAN SYSTEM (TYPE 8)

PFP:23710

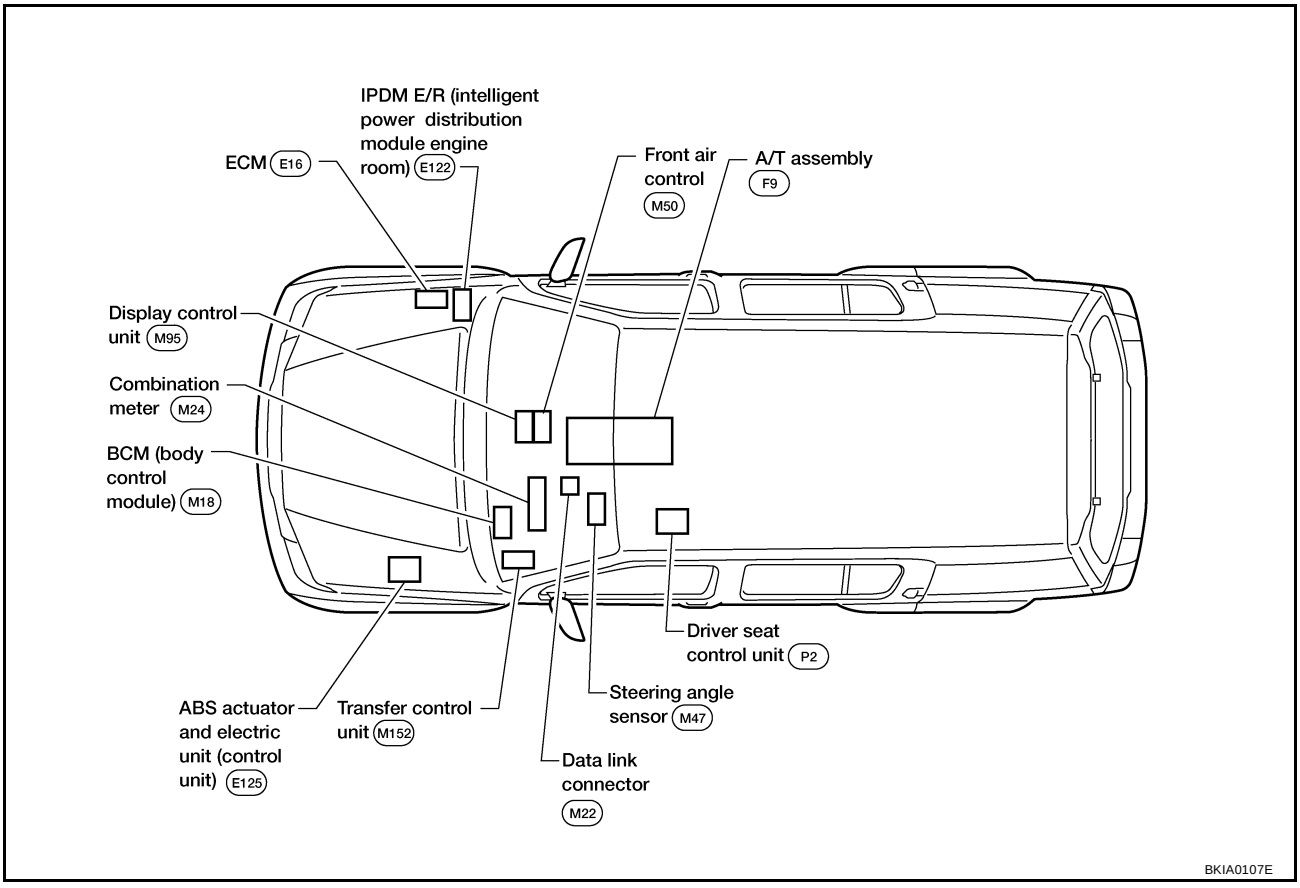
System Description

UKS003B5

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.

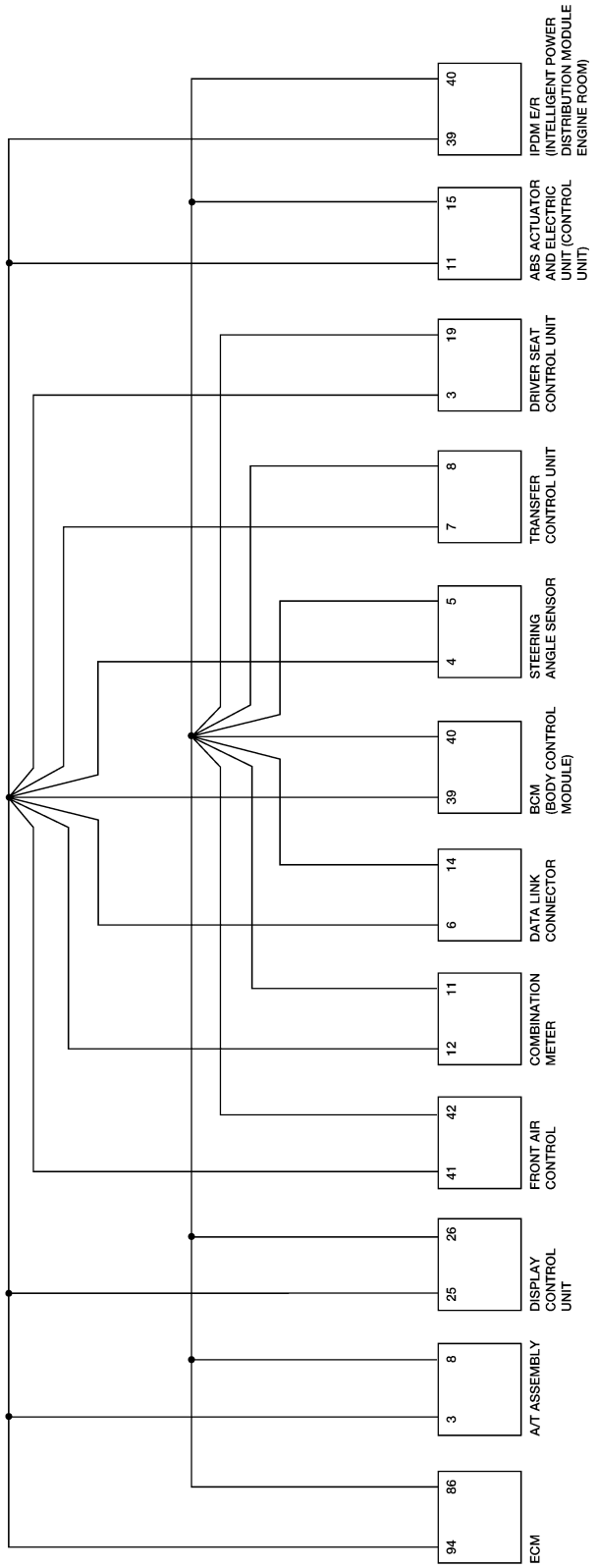
Component Parts and Harness Connector Location

UKS003B6



Schematic

UKS003B7

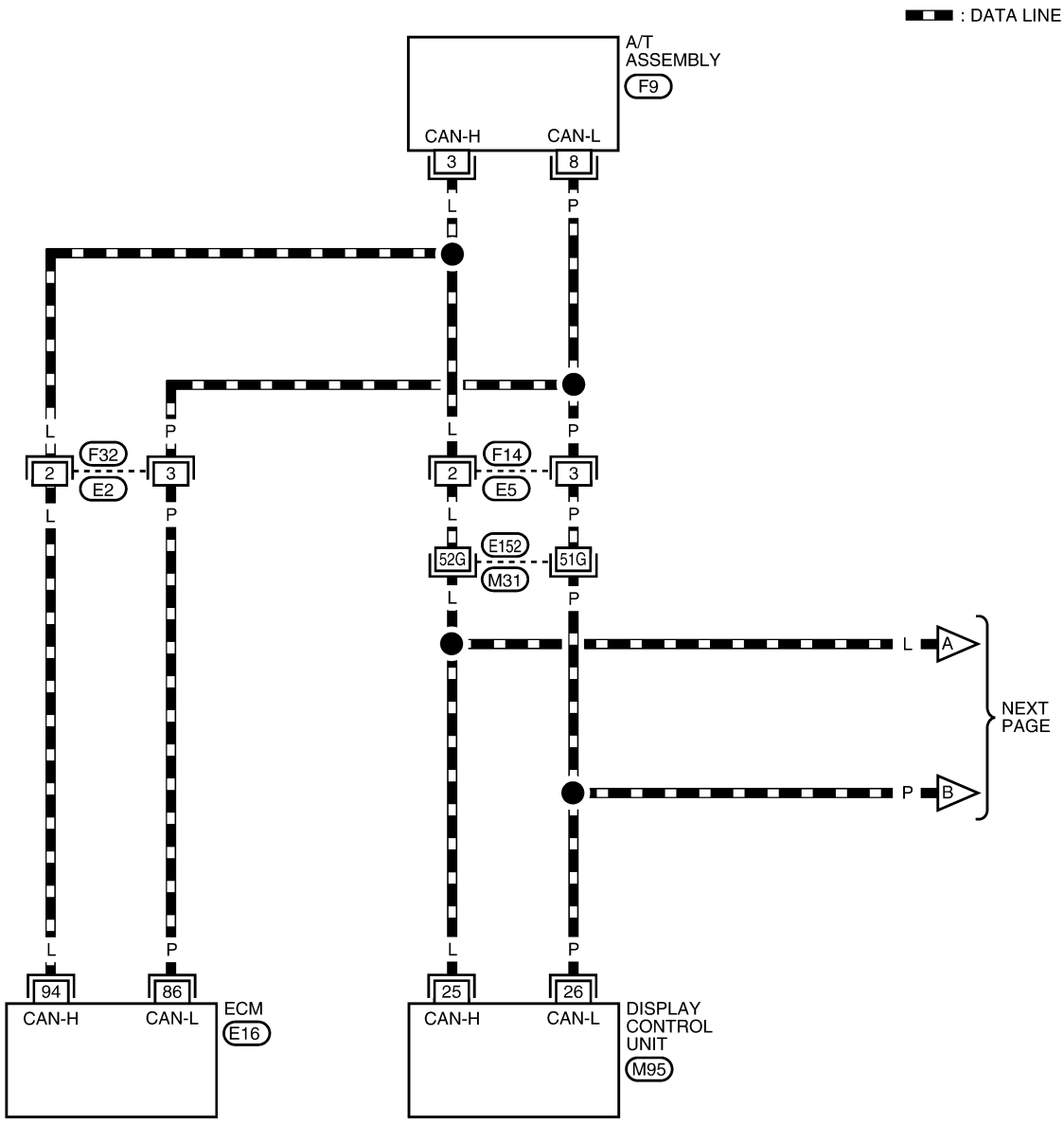


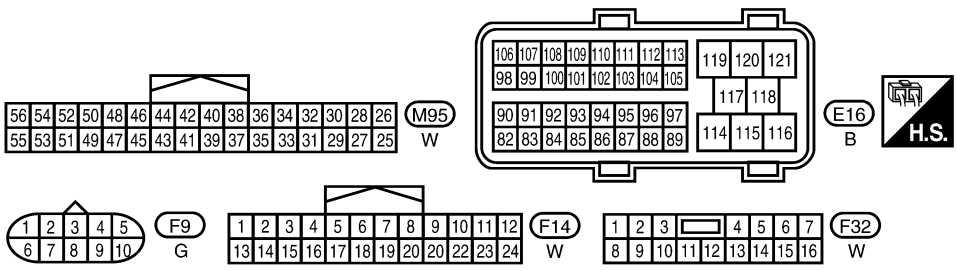
BKWA0619E

Wiring Diagram - CAN -

UKS003B8

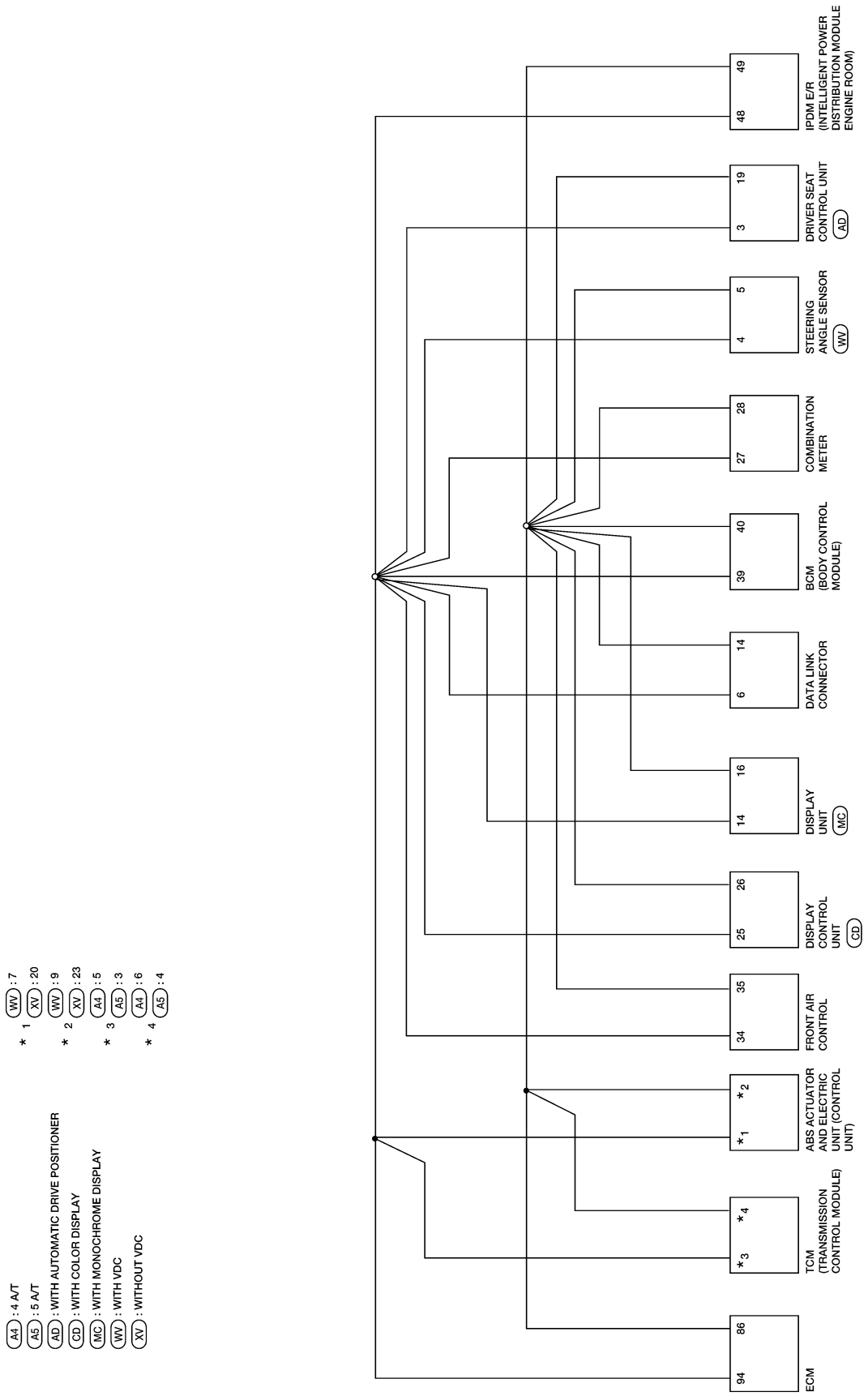
LAN-CAN-22





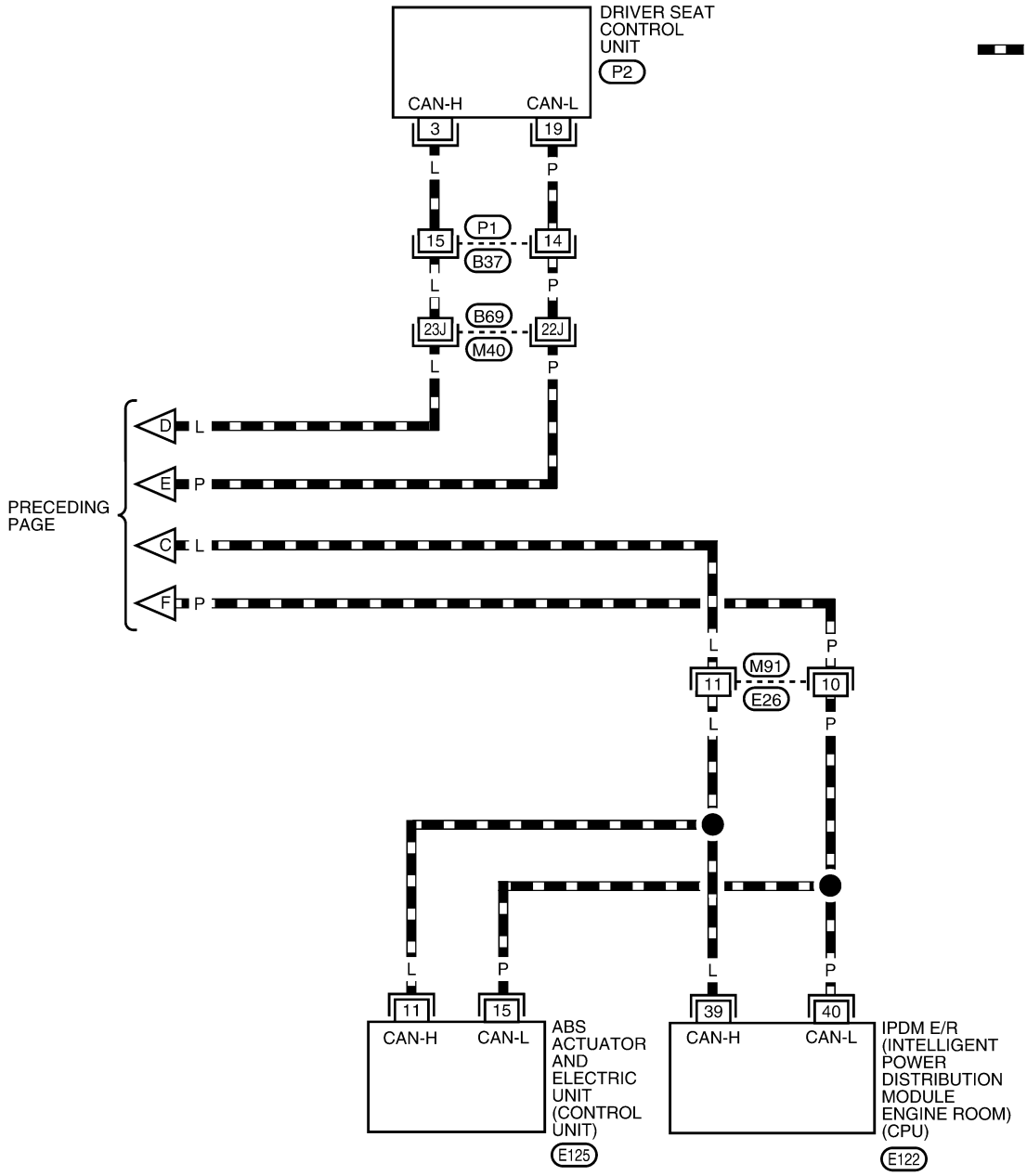
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

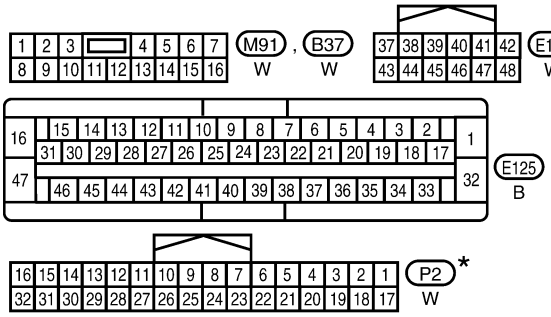
BKWA0354E


IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
DRIVER SEAT CONTROL UNIT (AD)
STEERING ANGLE SENSOR (WV)
COMBINATION METER
BCM (BODY CONTROL MODULE)
DATA LINK CONNECTOR
DISPLAY UNIT (MC)
DISPLAY CONTROL UNIT (CD)
FRONT AIR CONTROL
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
TCM (TRANSMISSION CONTROL MODULE)
ECM
49
48
19
3
5
4
28
27
40
39
14
6
16
14
26
25
35
34
*2
*1
*4
*3
86
94
(WV) : 7
* 1 (XV) : 20
(WV) : 9
* 2 (XV) : 23
(A4) : 5
* 3 (A5) : 3
(A4) : 6
* 4 (A5) : 4
(A4) : 4 A/T
(A5) : 5 A/T
(AD) : WITH AUTOMATIC DRIVE POSITIONER
(CD) : WITH COLOR DISPLAY
(MC) : WITH MONOCHROME DISPLAY
(WV) : WITH VDC
(XV) : WITHOUT VDC

BKWA0620E

LAN-CAN-24





REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

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

BKWA0356E

CHECK SHEET

UKS003B9

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	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

Symptoms :

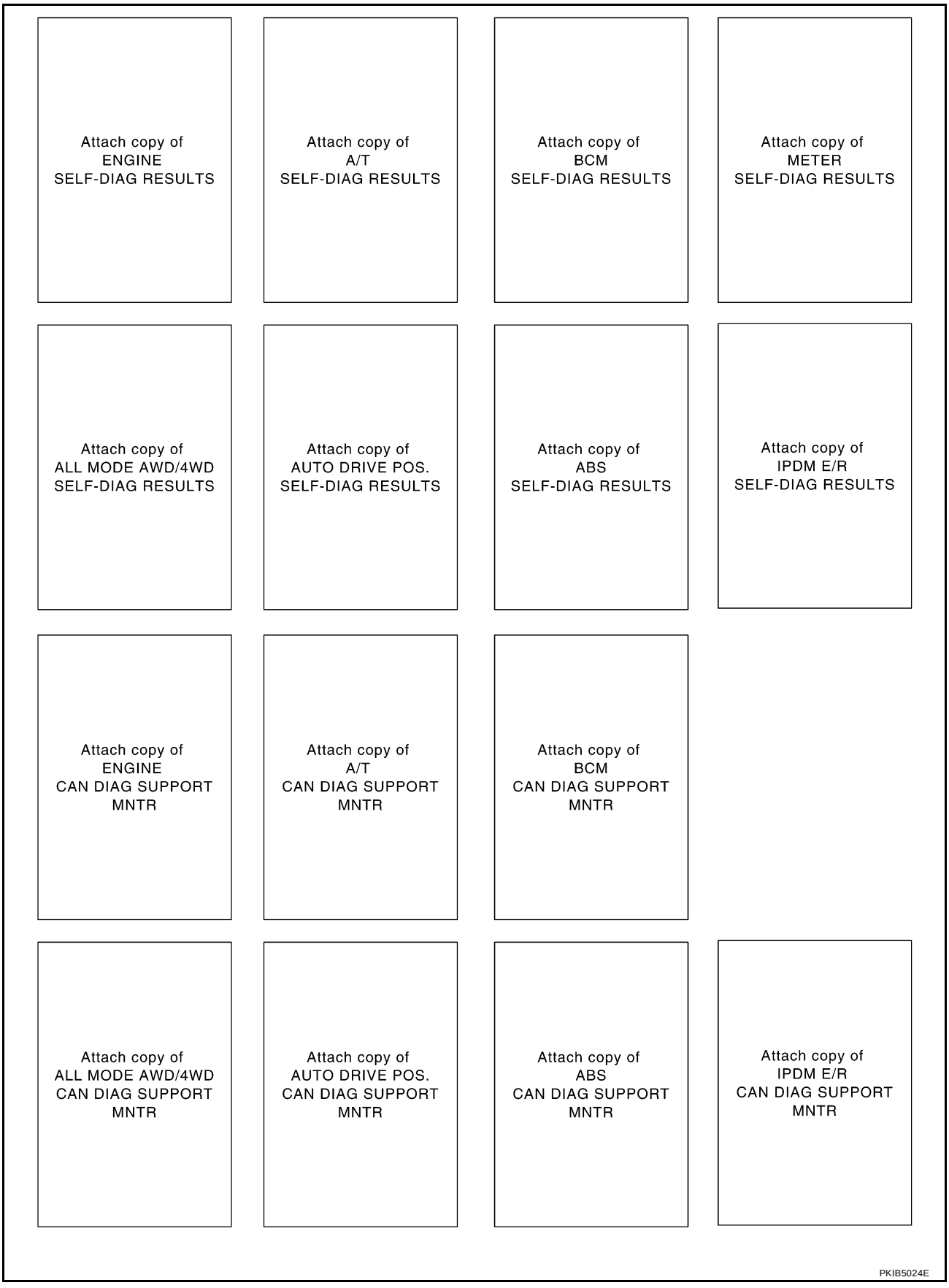
Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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

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

PKIB5025E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
METER
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB5024E

CHECK SHEET RESULTS (EXAMPLE)

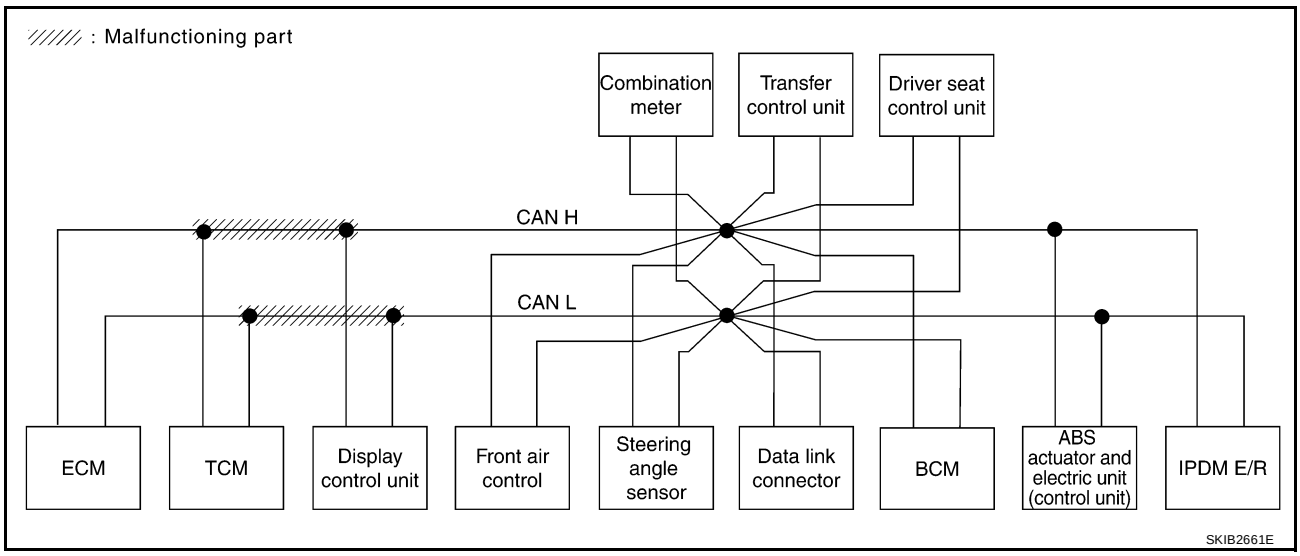
NOTE:
If a check mark is put on “NG” on “INITIAL DIAG (Initial diagnosis)”, replace the control unit.

Case 1

Check harness between TCM and display control unit circuit. Refer to LAN-278, "Inspection Between TCM and Display Control Unit Circuit" .

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

SKIB2643E

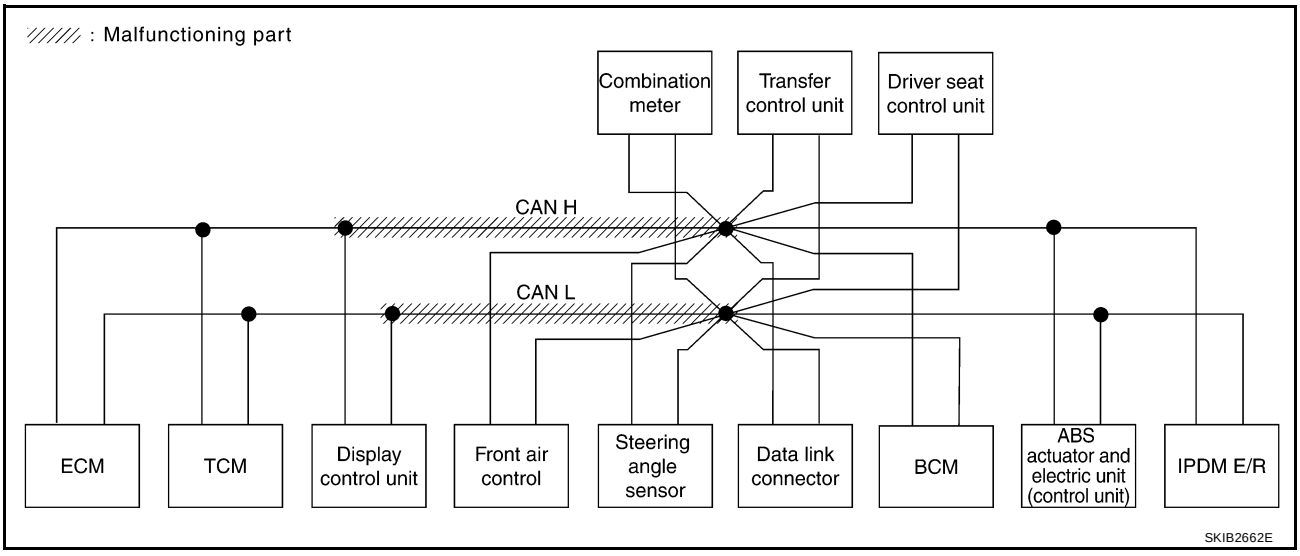


Case 2

Check harness between display control unit and data link connector circuit. Refer to LAN-280, "Inspection Between Display 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	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

SKIB2644E



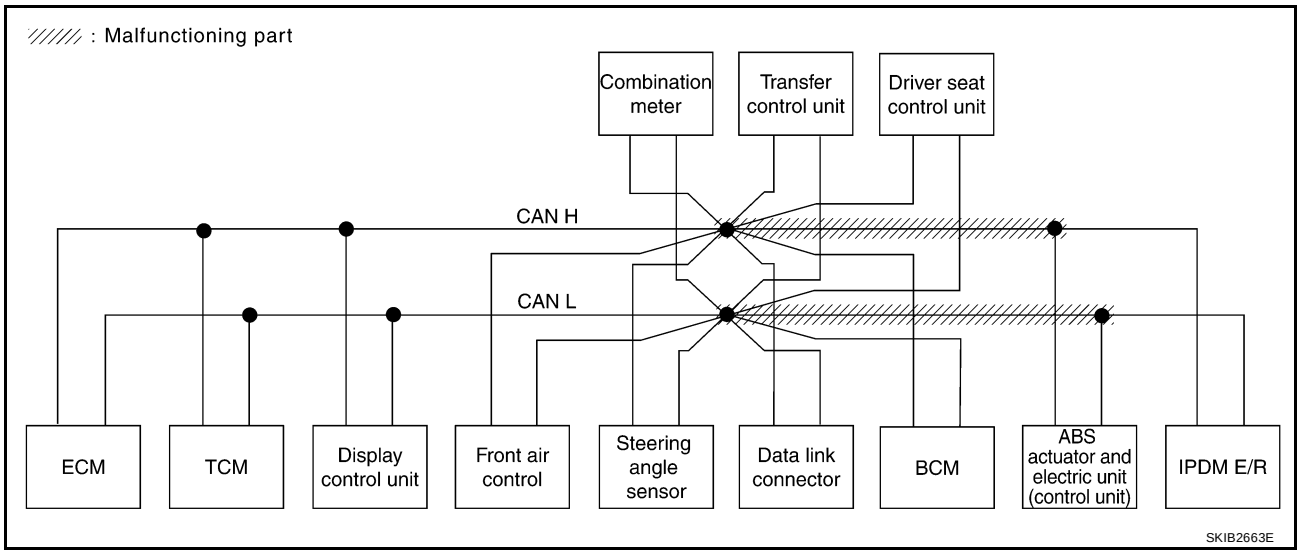
Case 3

Check harness between data link connector and ABS actuator and electric unit (control unit) circuit. Refer to LAN-280, "Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit"
.

Check sheet table

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

SKIB2645E

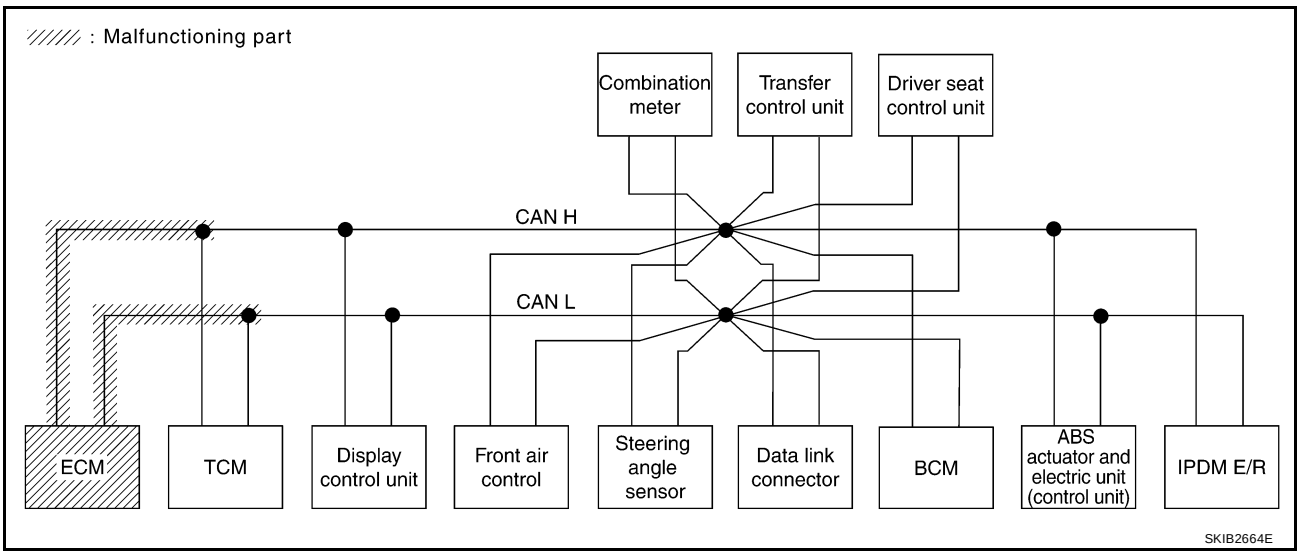


Case 4

Check ECM circuit. Refer to LAN-281, "ECM Circuit Inspection" .

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

SKIB2646E

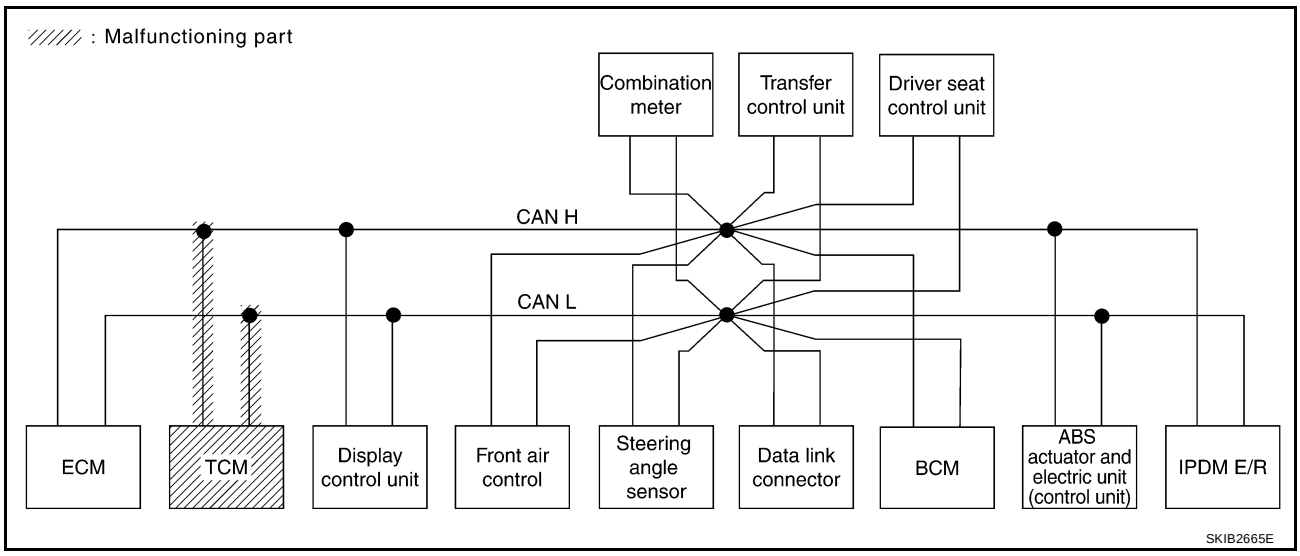


Case 5

Check TCM circuit. Refer to LAN-281, "TCM Circuit Inspection" .

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

SKIB2647E

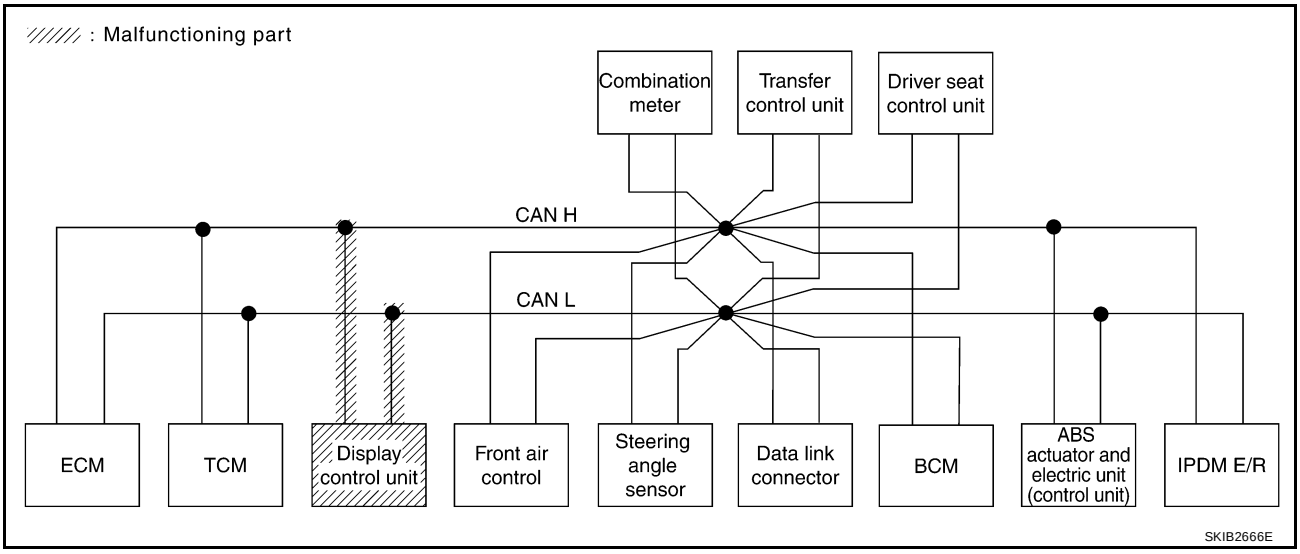


Case 6

Check display control unit circuit. Refer to LAN-282, "Display Control Unit Circuit Inspection" .

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

SKIB2648E

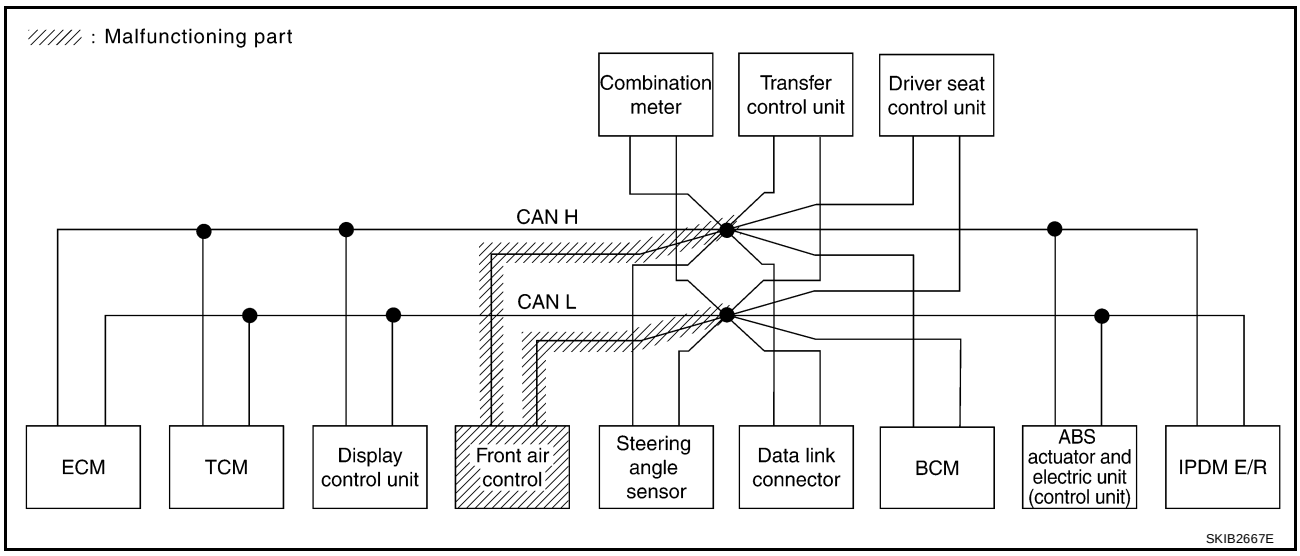


Case 7

Check Front air control circuit. Refer to LAN-282, "Front Air Control Circuit Inspection" .

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

SKIB2649E



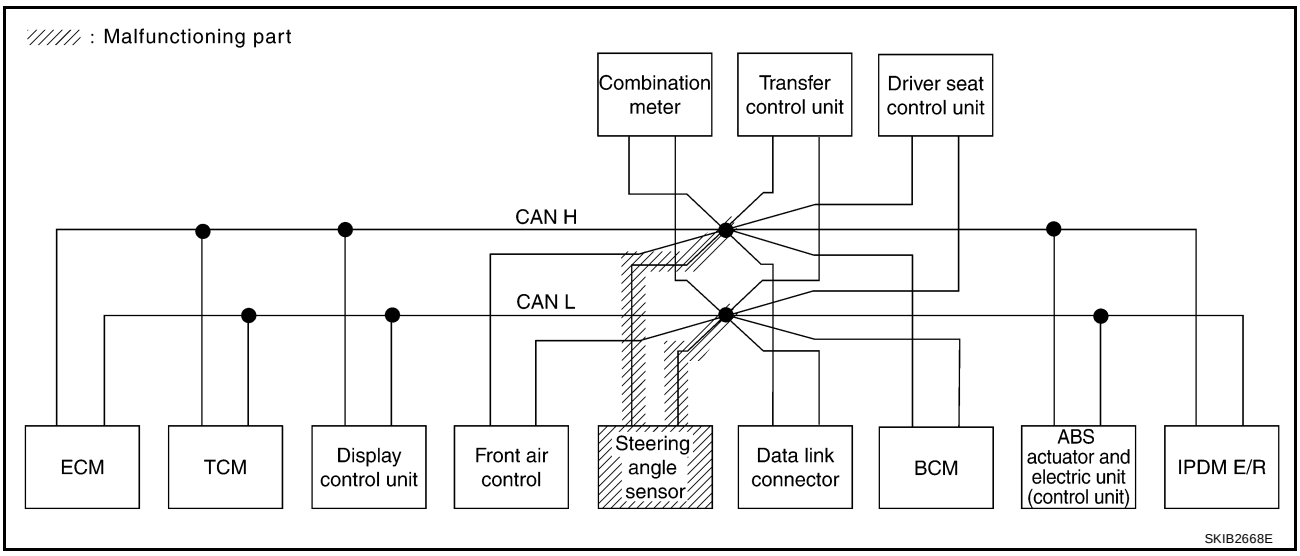
SKIB2667E

Case 8

Check steering angle sensor circuit. Refer to LAN-283, "Steering Angle Sensor Circuit Inspection" .

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

SKIB2650E

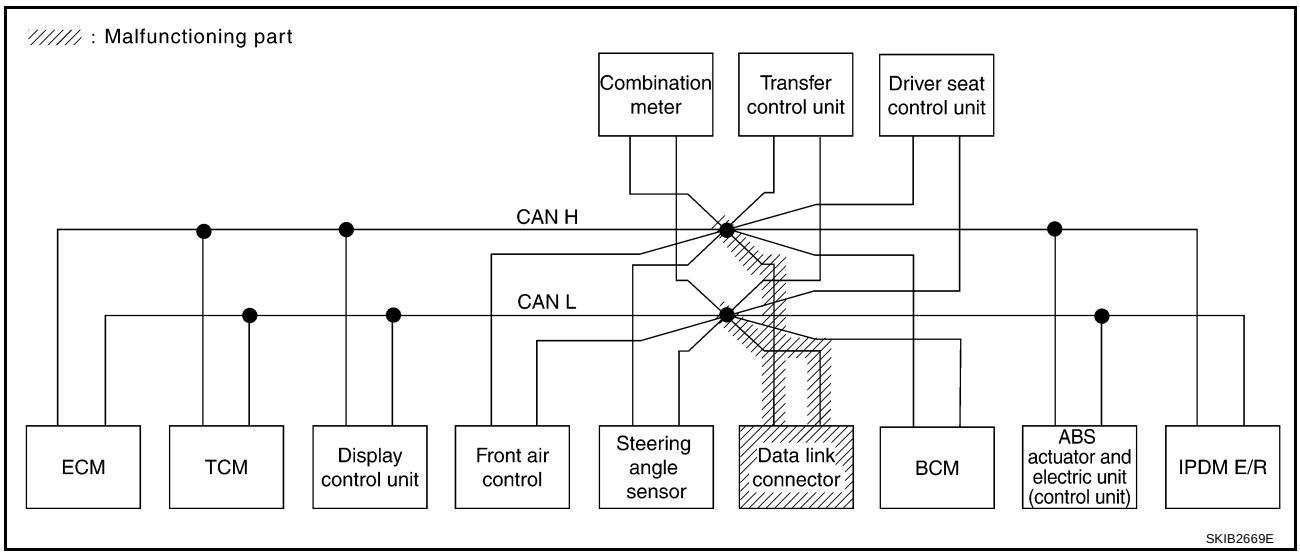


Case 9

Check data link connector circuit. Refer to LAN-283, "Data Link Connector Circuit Inspection" .

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

SKIB2651E



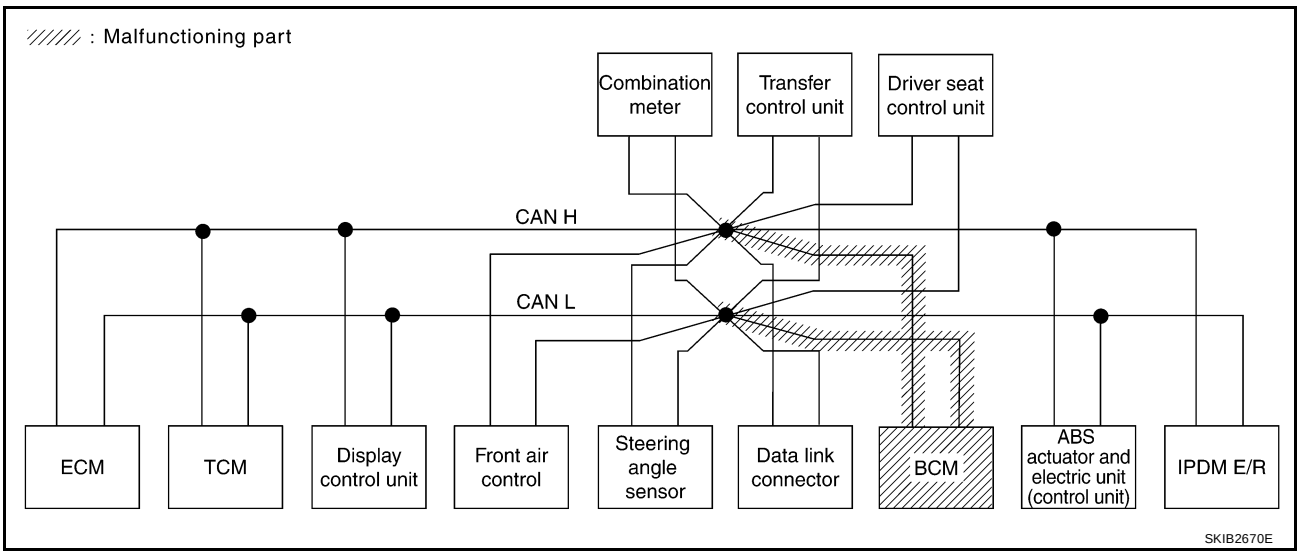
SKIB2669E

Case 10

Check BCM circuit. Refer to LAN-284, "BCM Circuit Inspection" .

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

SKIB2652E

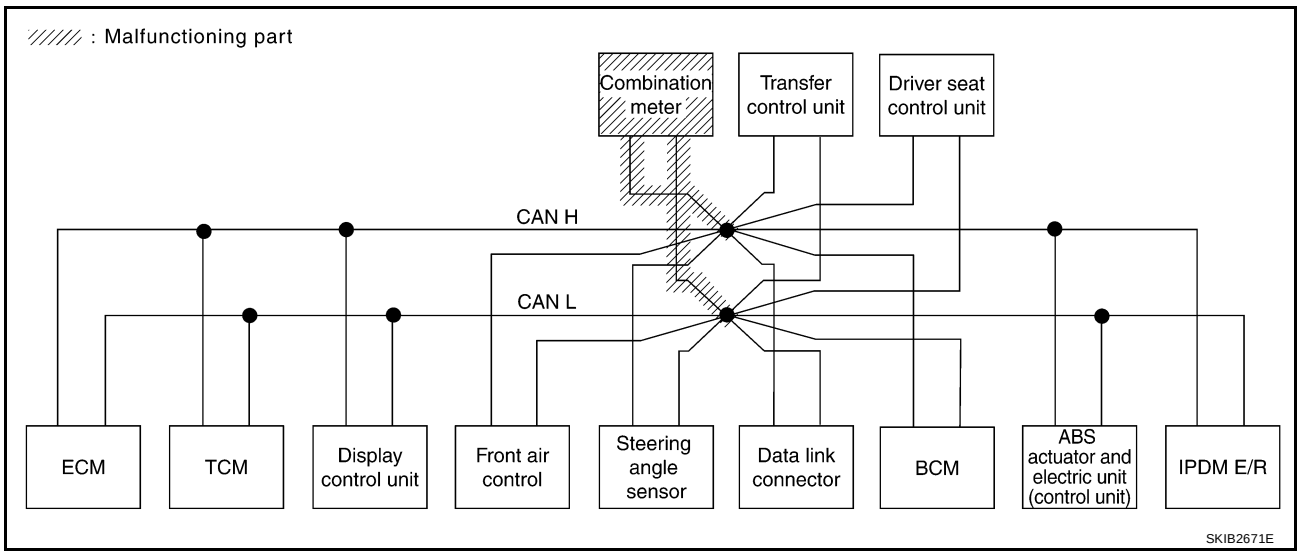


Case 11

Check combination meter circuit. Refer to LAN-284, "Combination Meter Circuit Inspection" .

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

SKIB2653E



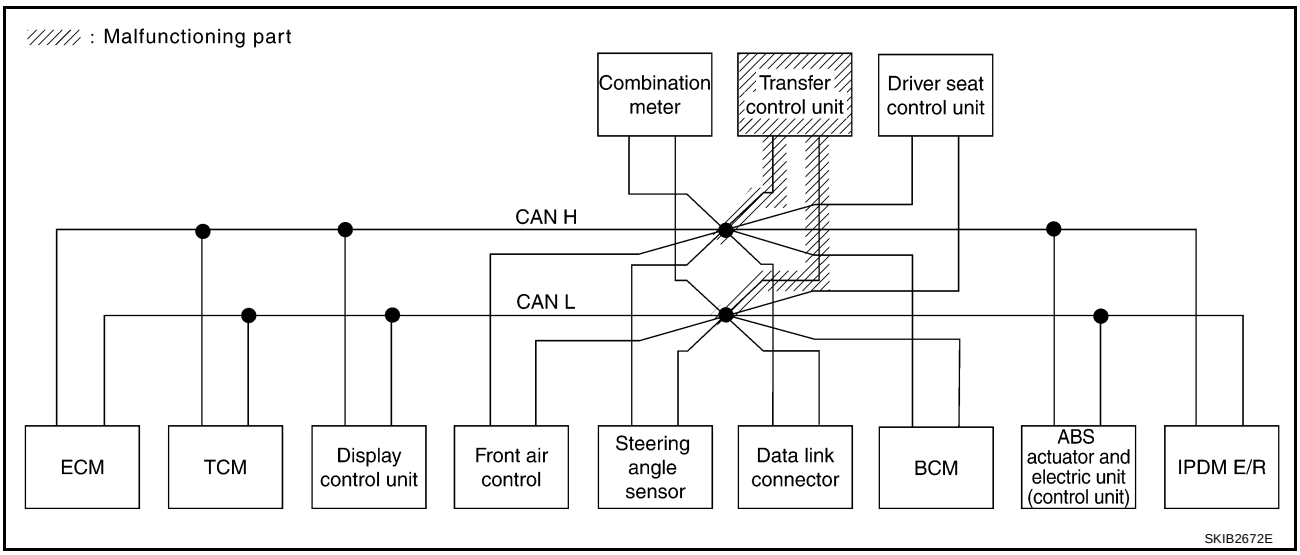
SKIB2671E

Case 12

Check transfer control unit circuit. Refer to LAN-285, "Transfer Control Unit Circuit Inspection" .

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

SKIB2654E

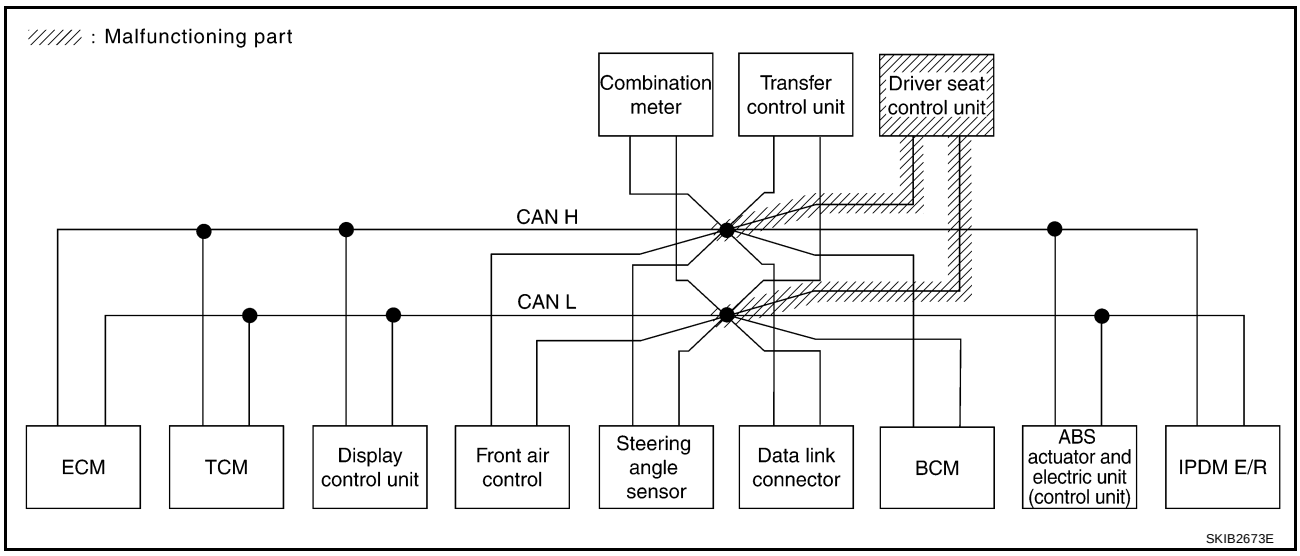


Case 13

Check driver seat control unit circuit. Refer to LAN-285, "Driver Seat Control Unit Circuit Inspection" .

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

SKIB2655E



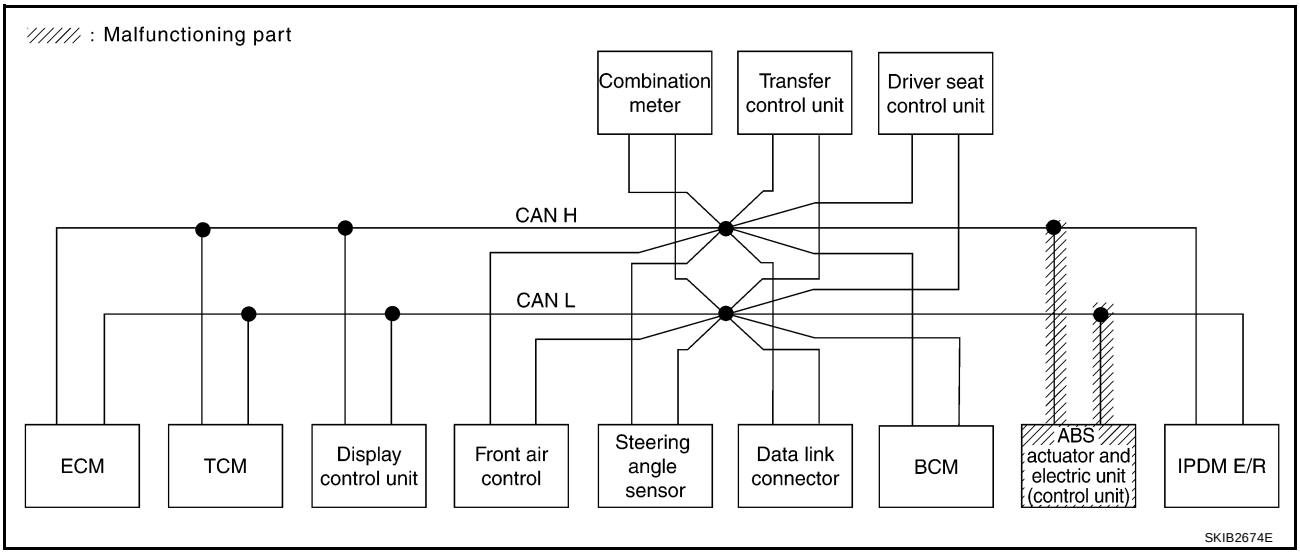
SKIB2673E

Case 14

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-286, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection" .

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

SKIB2656E

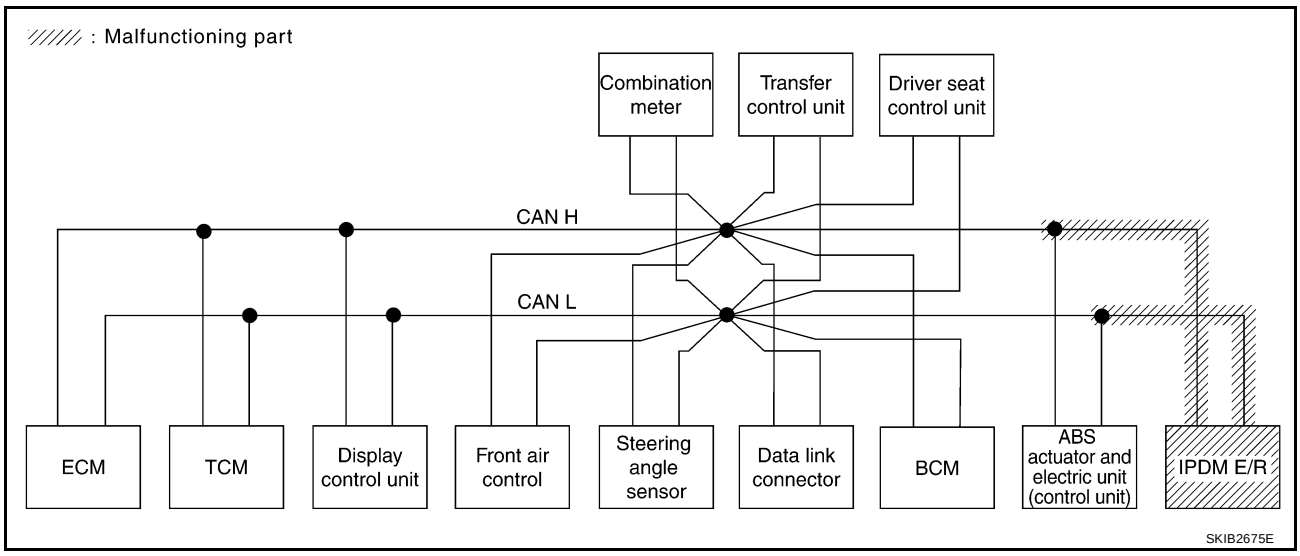


Case 15

Check IPDM E/R circuit. Refer to LAN-286, "IPDM E/R Circuit Inspection" .

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

SKIB2657E



SKIB2675E

Case 16

Check CAN communication circuit. Refer to LAN-287, "CAN Communication Circuit Inspection" .

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

SKIB2658E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-294, "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	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

SKIB2659E

Case 18

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-294, "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	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	—	—	—	—	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
Display control unit	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
METER	No indication	—	—	—	—	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—	CAN COMM CIRCUIT (U1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—
ABS	—	NG	UNKWN	—	UNKWN	—	—	—	—	—	—	—	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—	CAN COMM CIRCUIT (U1000)	—

SKIB2660E

Inspection Between TCM and Display Control Unit Circuit

UKS003BB

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 F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

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

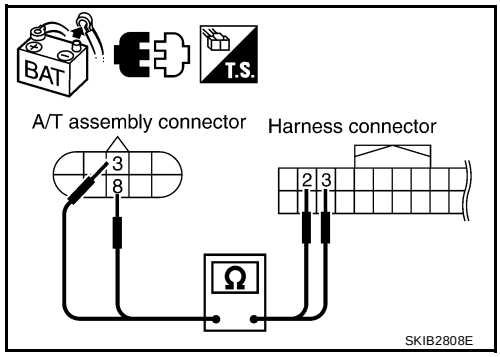
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F14.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F14 terminals 2 (L), 3 (P).

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

OK or NG

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



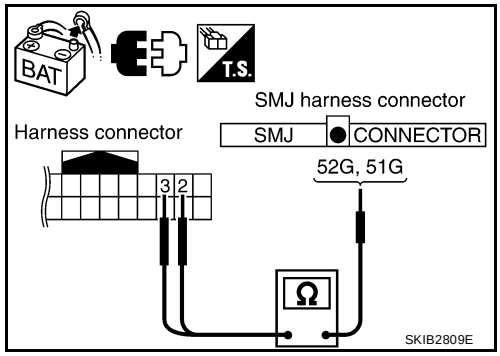
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).

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

OK or NG

OK >> GO TO 4.
NG >> Repair harness.



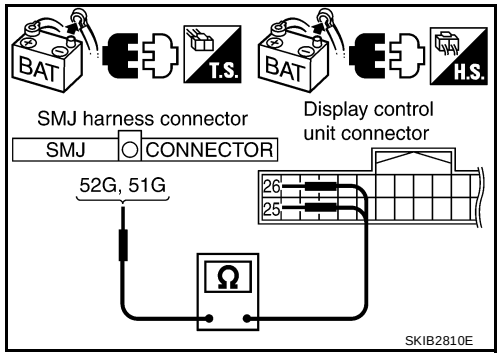
4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check continuity between harness connector M31 terminals 52G (L), 51G (P) and display control unit harness connector M95 terminals 25 (L), 26 (P).

52G (L) – 25 (L) : Continuity should exist.
51G (P) – 26 (P) : Continuity should exist.

OK or NG

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



Inspection Between Display Control Unit and Data Link Connector Circuit

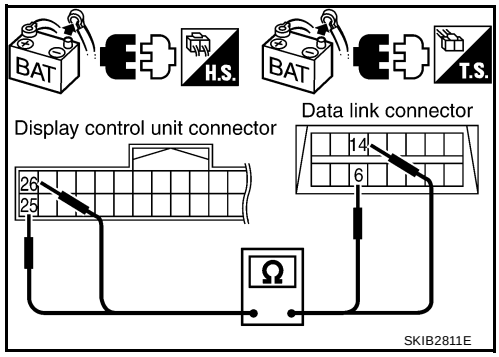
UKS003BC

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 display control unit connector.
4. Check continuity between display control unit harness connector M95 terminals 25 (L), 26 (P) and data link connector M22 terminals 6 (L), 14 (P).

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

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



OK or NG

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

NG >> Repair harness.

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

UKS003BD

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 M91
- Harness connector E26

OK or NG

OK >> GO TO 2.

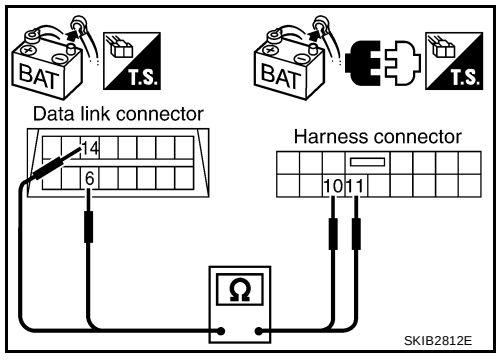
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M91.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M91 terminals 11 (L), 10 (P).

6 (L) – 11 (L) : Continuity should exist.

14 (P) – 10 (P) : Continuity should exist.



OK or NG

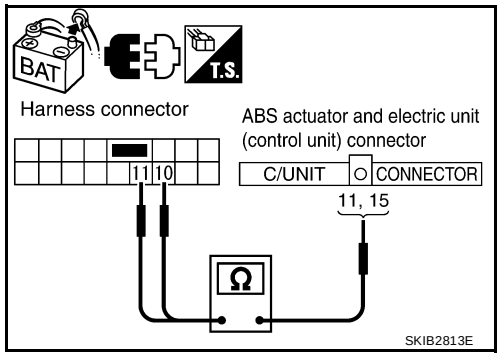
OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E26 terminals 11 (L), 10 (P) and ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L), 15 (P).

11 (L) – 11 (L) : Continuity should exist.
10 (P) – 15 (P) : Continuity should exist.



OK or NG

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

ECM Circuit Inspection

UKS003BE

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 E2
- Harness connector F32

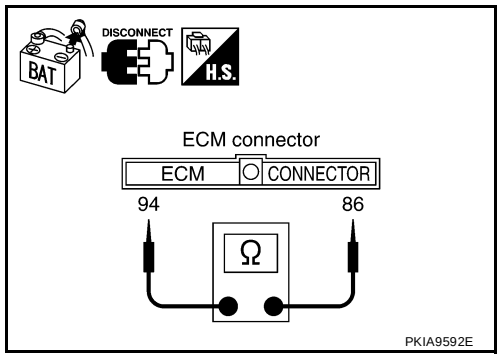
OK or NG

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 E16 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

UKS003BF

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).

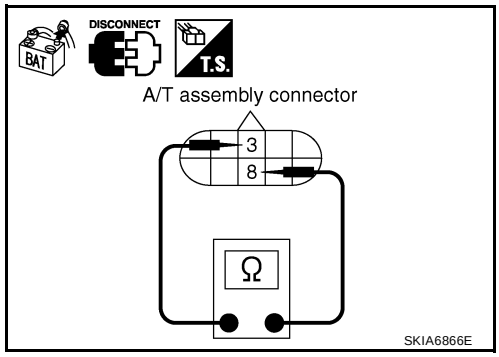
OK or NG

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 F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace control valve with TCM.
NG >> Repair harness between A/T assembly and harness connector F14.

Display Control Unit Circuit Inspection

UKS003BG

1. CHECK CONNECTOR

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

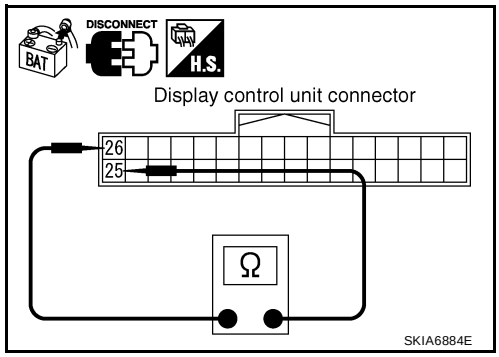
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

25 (L) – 26 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit and harness connector M31.

Front Air Control Circuit Inspection

UKS003BH

1. CHECK CONNECTOR

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

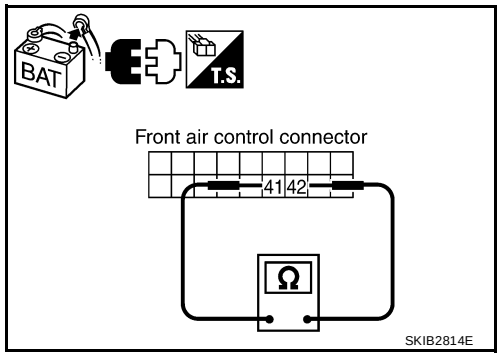
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 41 (L) and 42 (P).

41 (L) – 42 (P) : Approx. 54 – 66 Ω



OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.

Steering Angle Sensor Circuit Inspection

UKS003BI

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).

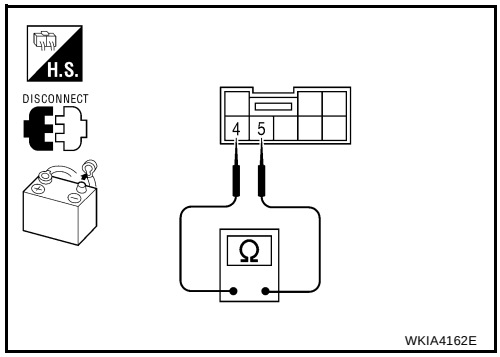
OK or NG

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 M47 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.

Data Link Connector Circuit Inspection

UKS003BJ

1. CHECK CONNECTOR

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

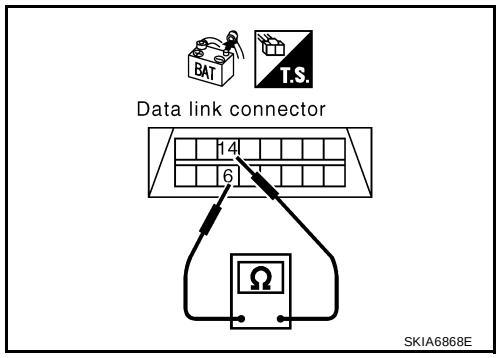
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAGNOSES WORK FLOW" .

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

BCM Circuit Inspection

UKS003BK

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

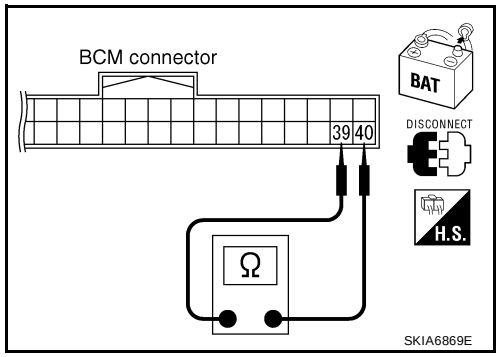
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) – 40 (P) : Approx. 54 – 66 Ω



OK or NG

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

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

Combination Meter Circuit Inspection

UKS003BL

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.

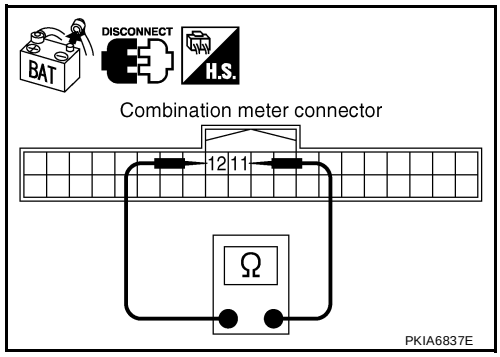
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

12 (L) – 11 (P) : Approx. 54 – 66 Ω

OK or NG

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



Transfer Control Unit Circuit Inspection

UKS003BM

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check terminals and connector of transfer 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.

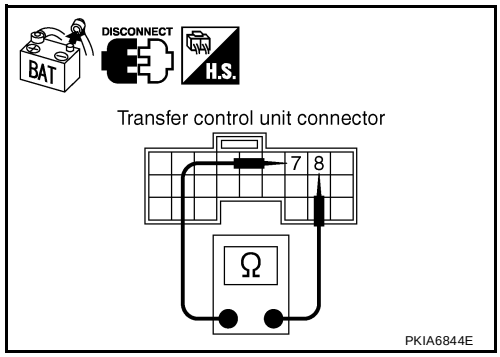
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector M152 terminals 7 (L) and 8 (P).

7 (L) – 8 (P) : Approx. 54 – 66 Ω

OK or NG

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



Driver Seat Control Unit Circuit Inspection

UKS003BN

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 and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37
- Harness connector B69
- Harness connector M40

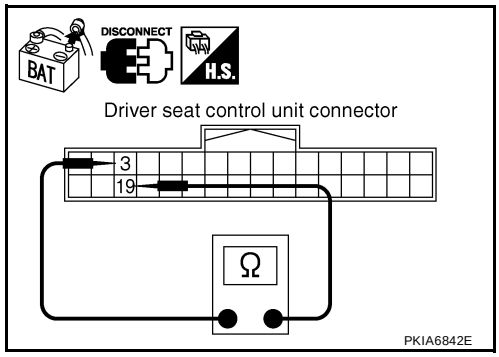
OK or NG

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 P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Approx. 54 – 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Inspection

UKS003BO

1. CHECK CONNECTOR

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

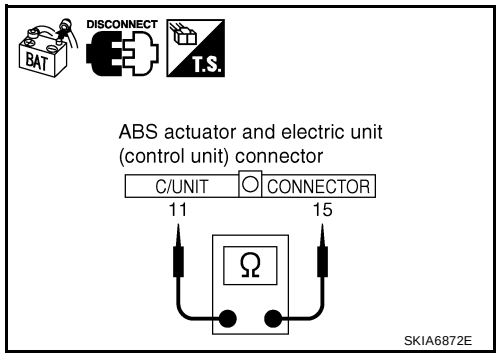
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) – 15 (P) : Approx. 54 – 66 Ω



OK or NG

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

IPDM E/R Circuit Inspection

UKS003BP

1. CHECK CONNECTOR

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

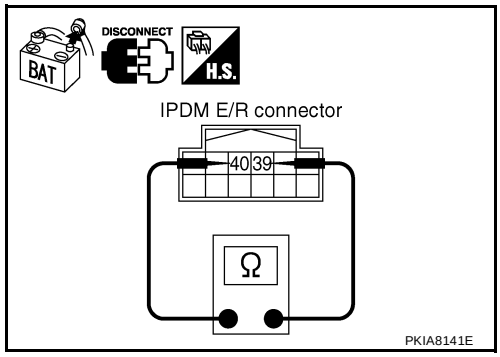
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 108 – 132 Ω



OK or NG

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

CAN Communication Circuit Inspection

UKS003BQ

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, sensor side, meter side, and harness side).

- ECM
- TCM
- Display control unit
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- Driver seat control unit
- ABS actuator and electric unit (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.

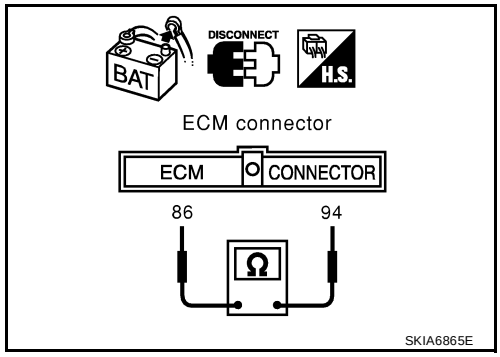
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ECM connector
- Harness connector E2

2. Check continuity between ECM harness connector E16 terminals 94 (L) and 86 (P).

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



OK or NG

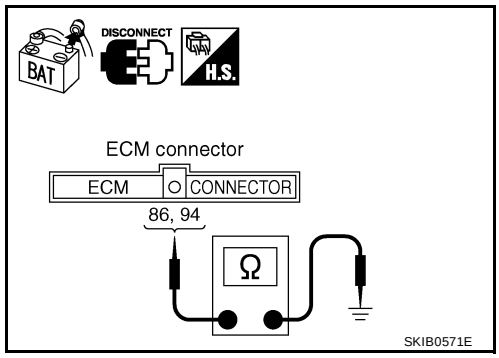
OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector E2.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

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

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



OK or NG

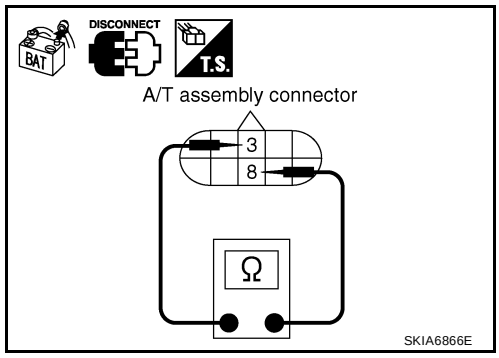
OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E2.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) – 8 (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.

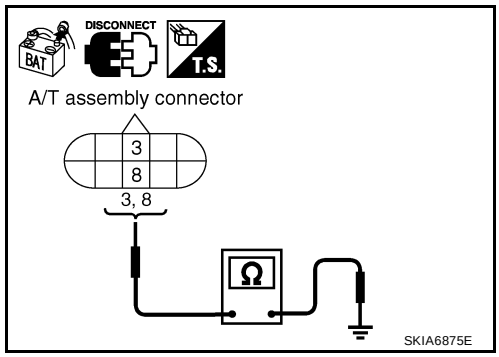
- Harness between A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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

8 (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 A/T assembly and harness connector F32
- Harness between A/T assembly and harness connector F14

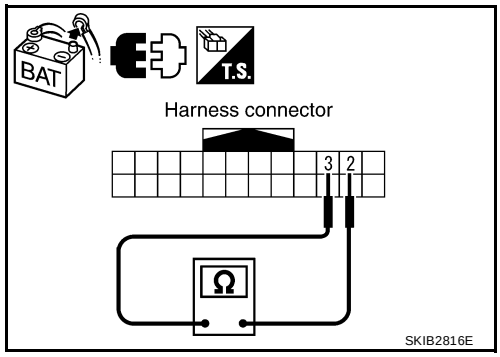
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E152.
2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

2 (L) – 3 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E5 and harness connector E152.



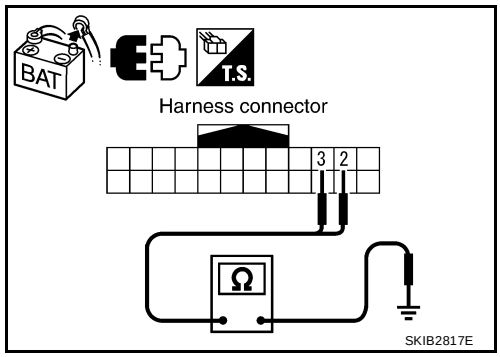
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

2 (L) – Ground : Continuity should not exist.
3 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E5 and harness connector E152.

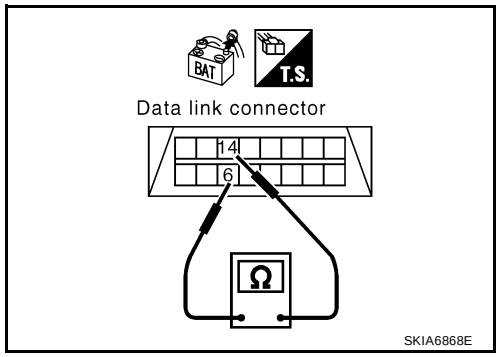


8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Display control unit connector
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Transfer control unit connector
- Harness connector M40
- Harness connector M91

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

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



OK or NG

OK >> GO TO 9.

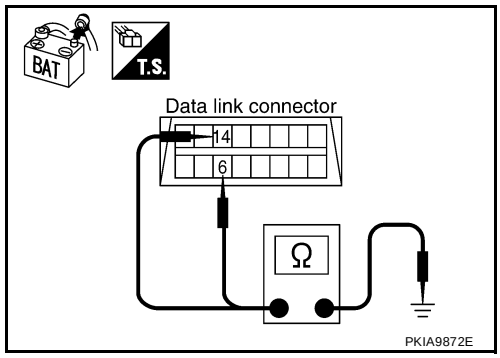
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M31
- Harness between data link connector and display control unit
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> GO TO 10.

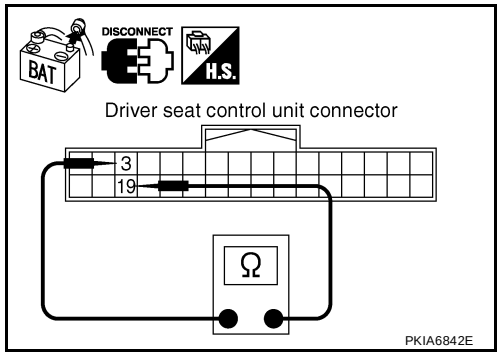
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M31
- Harness between data link connector and display control unit
- Harness between data link connector and front air control
- Harness between data link connector and steering angle sensor
- Harness between data link connector and BCM
- Harness between data link connector and combination meter
- Harness between data link connector and transfer control unit
- Harness between data link connector and harness connector M40
- Harness between data link connector and harness connector M91

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
   - Driver seat control unit connector
   - Harness connector P1
2. Check continuity between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P) : Continuity should not exist.



OK or NG

OK >> GO TO 11.

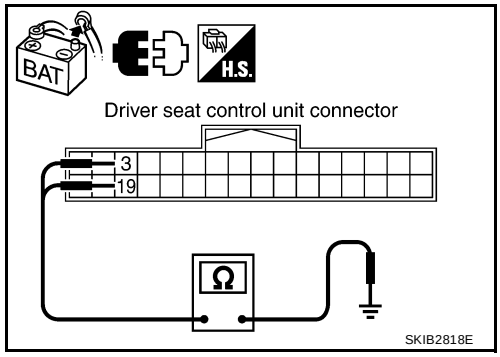
NG >> Repair harness between driver seat control unit and harness connector P1.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between driver seat control unit harness connector P2 terminals 3 (L), 19 (P) and ground.

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

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



OK or NG

OK >> GO TO 12.

NG >> Repair harness between driver seat control unit and harness connector P1.

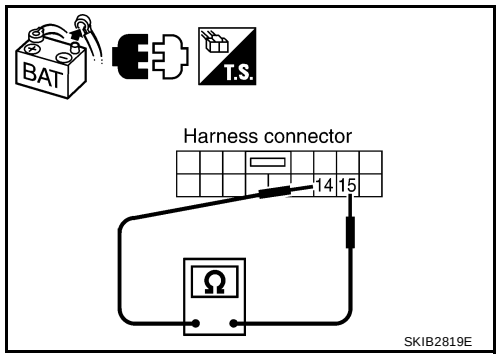
12. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B37 terminals 15 (L) and 14 (P).

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

OK or NG

OK >> GO TO 13.
NG >> Repair harness between harness connector B37 and harness connector B69.



13. CHECK HARNESS FOR SHORT CIRCUIT

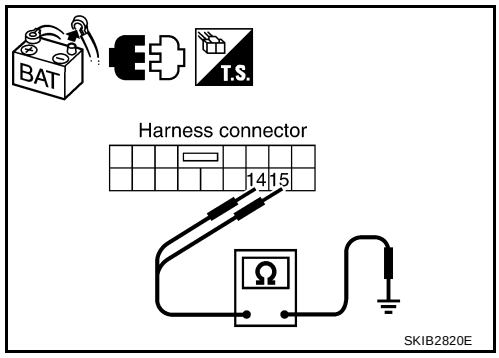
Check continuity between harness connector B37 terminals 15 (L), 14 (P) and ground.

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

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

OK or NG

OK >> GO TO 14.
NG >> Repair harness between harness connector B37 and harness connector B69.



14. CHECK HARNESS FOR SHORT CIRCUIT

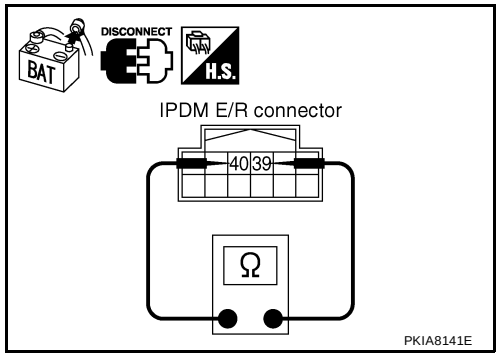
1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 15.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

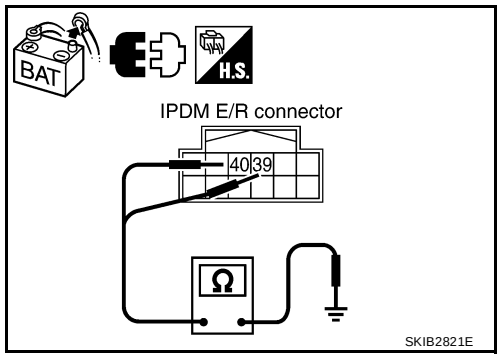


15. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

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

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



OK or NG

OK >> GO TO 16.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E26

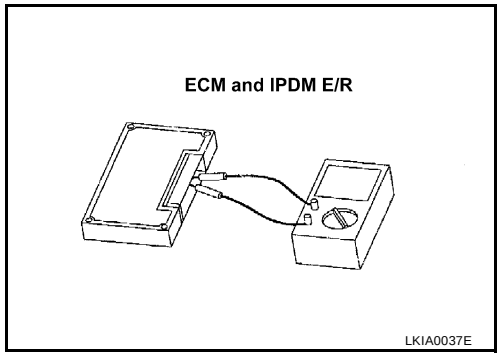
16. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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 39 and 40.

39 – 40 : Approx. 108 – 132 Ω



OK or NG

OK >> GO TO 17.

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

17. CHECK SYMPTOM

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

OK or NG

OK >> GO TO 18.

NG >> Refer to LAN-15, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"
.

18. UNIT REPRODUCIBILITY INSPECTION

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.

- TCM
- Display control unit
- Front air control
- Steering angle sensor
- BCM
- Combination meter
- Transfer control unit
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- ECM
- IPDM E/R

Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

UKS003BS

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

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .