SECTION LAN SYSTEM

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PRECAUTIONS

PRECAUTIONS

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

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

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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 CAN SYSTEM

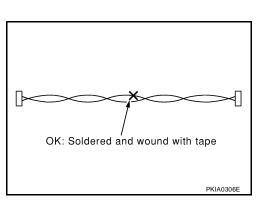
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- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

PRECAUTIONS

Precautions For Harness Repair CAN SYSTEM

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



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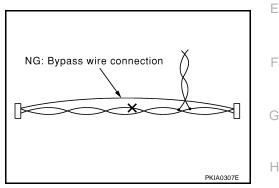
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• Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



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When Displaying CAN Communication System Errors 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

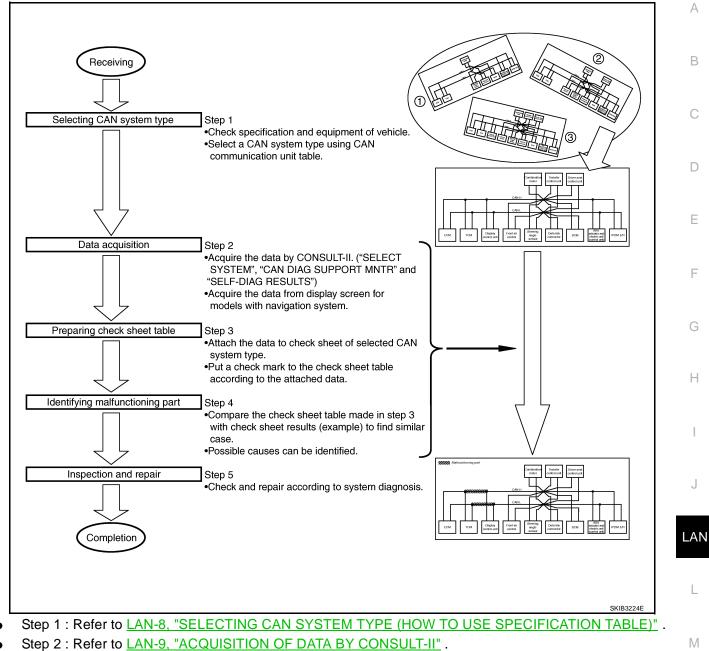
- Removal and installation of parts : When the units that perform CAN communication or the sensors related to CAN communication are removed and installed, malfunction may be detected (or DTC other than CAN communication may be detected).
- Fuse blown out (removed): CAN communication of the unit may be 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.

Revision: November 2005

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TROUBLE DIAGNOSIS FLOW CHART



- 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.

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Diagnosis Procedure 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-mod	de)/VQ40[DE/AT/VI	DC/With	automa	tic air co	nditione	r/With au	utomatic	c drive positioner/With navigation system
Go to CAN system, when select	ting your C	CAN syst	tem type	from the	e followir	ng table.			
Body type				Wa	gon				-)
Axle		2V	VD		4WD(Pa	art time)	4WD(A	ll-mode)	_
Engine				VQ4	ODE				Check basic specification of the vehicle.
Transmission				A	/Т				_
Brake control				V	00)
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
CAN system trouble diagnosis	XX:XX	XX:XX	XX:XX	XX:XX	XX:XX	23:22	XX:XX	XXXX	sequentially selecting from the top of the specification table?
×: Applicable									The number is "CAN system type" of the applicable vehicle.
									In the case of this example: It corresponds to type 8. SKIB3225E

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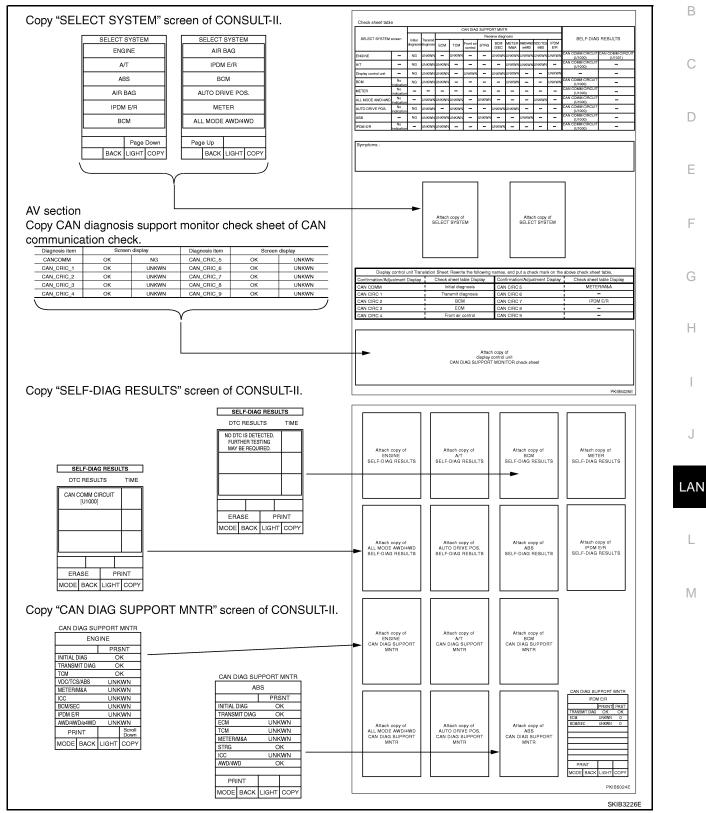
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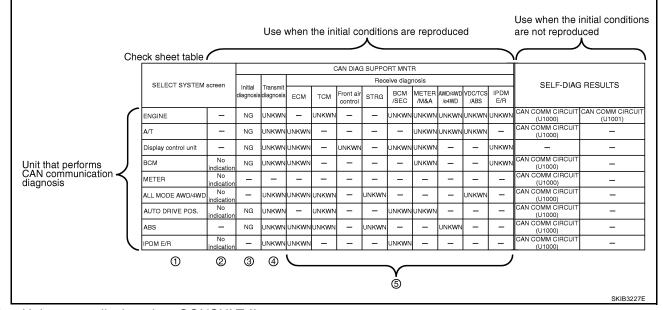
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ACQUISITION OF DATA BY CONSULT-II

А 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



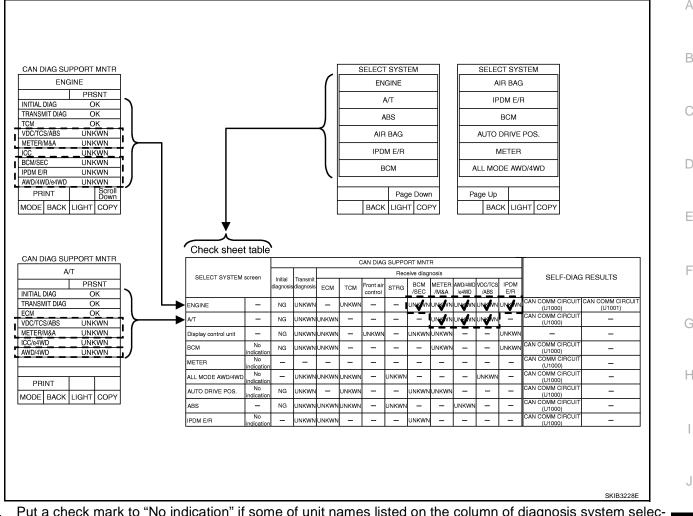
- 1. Unit names displayed on CONSULT-II
- "No indication" : Put a check mark to it if the unit name described in step 1 is not displayed on "SELECT SYSTEM" screen of CONSULT-II. (Unit communicating with CONSULT-II via CAN communication line)
 "-" : Column not used (Unit communicating with CONSULT-II 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 <u>LAN-11</u>, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced".
- when the initial conditions are not reproduced. Refer to <u>LAN-15</u>, "Example of Filling in Check Sheet When <u>Initial Conditions Are Not Reproduced</u>".

Example of Filling in Check Sheet When Initial Conditions Are Reproduced



Put a check mark to "No indication" if some of unit names listed on the column of diagnosis system selec-1. tion 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.

Confirm the unit name that "UNKWN" is displayed from the copy of "CAN DIAG SUPPORT MNTR" screen 2. 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.

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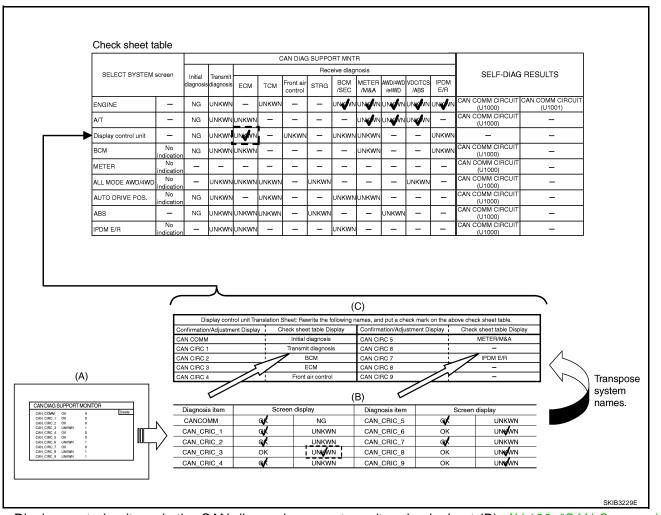
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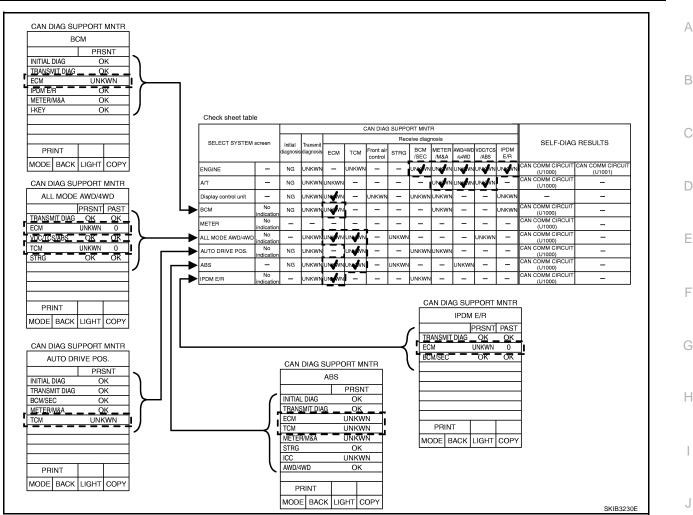
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4. Display control unit reads the CAN diagnosis support monitor check sheet (B) <u>AV-139</u>, "CAN Communication Line Check" transferred from the display screen (A). The transferred CAN diagnosis support monitor check sheet is copied to the Check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

NOTE:

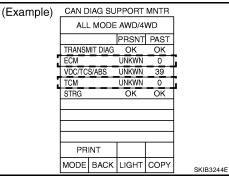
In the CAN diagnosis support monitor check sheet (B), check marks are put to "CAN CIRC 3", "CAN CIRC 6", "CAN CIRC 8" and "CAN CIRC 9". But, in the column of the check sheet table indication in Display control unit Translation Sheet (C), "ECM" is listed only for "CAN CIRC 3". Therefore, put a check mark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



- 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:

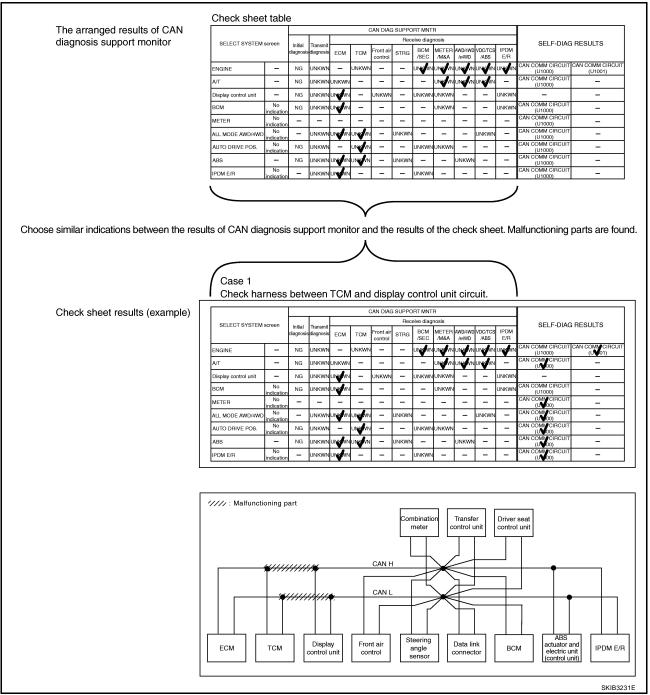
"ALL MODE AWD/4WD" puts a check mark on the check sheet when "Present" is "UNKWN" and "Past" is "0".



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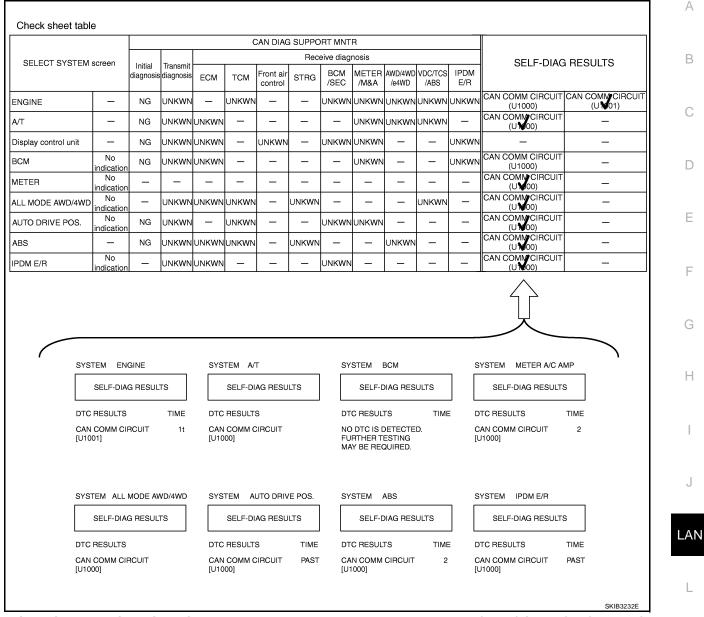
NOTE:

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 <u>LAN-24</u>, "CAN Communication Unit".

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

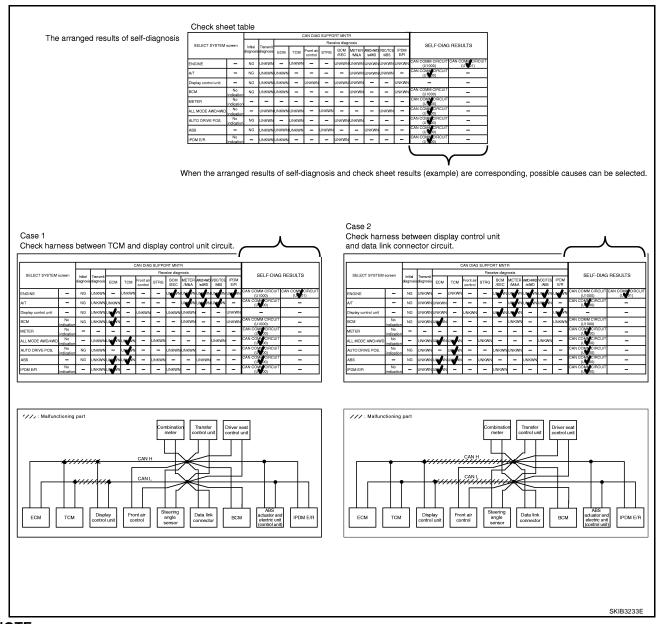


 See "SELF-DIAG RESULTS" of all units attached to the check sheet. If "CAN COMM CIRCUIT", "CAN COMM CIRCUIT [U1000]" or "CAN COMM CIRCUIT [U1001]" is displayed, put a check mark to the applicable column of self-diagnostic results of the check sheet table.

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.

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NOTE:

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

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

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CAN Diagnostic Support Monitor DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN FOR ECM

(Example)	CAN DIAG SUPPORT MNTR	CAN DIAG SUPPORT MNTR
、 · · /	ENGINE	ENGINE
	PRSNT	PRSNT
	INITIAL DIAG OK	TRANSMIT DIAG OK
	TRANSMIT DIAG OK	TCM OK
	TCM OK	VDC/TCS/ABS OK
	VDC/TCS/ABS OK	METER/M&A OK
	METER/M&A OK	ICC UNKWN
	ICC UNKWN	BCM/SEC OK
	BCM/SEC OK	IPDM E/R OK
	IPDM E/R OK	AWD/4WD/e4WD UNKWN
	AWD/4WD/e4WD UNKWN	EPS UNKWN
	PRINT Scroll Down	PRINT Scroll Up
	MODE BACK LIGHT COPY	MODE BACK LIGHT COPY SKIB0591E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present	
	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG	
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN	
	ТСМ	Make sure of normal reception from TCM.	OK/UNKWN	
ENGINE	VDC/TCS/ABS Make sure of normal reception from ABS actuator and electric unit (control unit).			
	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.

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DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN (Example to the second sec

mple)	CAN D	IAG SU			
		A	/т		
			PR	SNT	
	INITIAL	DIAG	C	ĸ	1
	TRANS	/IT DIAG	С	ĸ	
	ECM		С	ĸ	
	VDC/TC	S/ABS	C		
	METER/	M&A	С		
	ICC/e4W	/D	UNF	(WN	
	AWD/4W	/D	С	ĸ	
	PR	INT			
	MODE	BACK	LIGHT	COPY	SKIB2335E

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present				
	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG				
A/T	TRANSMIT DIAG Make sure of normal transmission.						
	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	(Example)	CAN DIAG SUPPORT MNTR				
FOR BCM		BCM				
				PR	SNT	
		INITIAL	DIAG	С	Ж	
		TRANS	MIT DIAG	С	ж	
		ECM OK				
		IPDM E/	'R	С	ж	
		METER/	/M&A	UN	(WN	
		I-KEY		С	ĸ	
		PR	INT			
		MODE	BACK	LIGHT	COPY	SKIB0593E

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

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DESCRIPTION OF "CAN DIAG SUPPORT MNTR" SCREEN FOR TRANSFER CONTROL UNIT All-mode 4WD models

(Example)	CAN DIAG SU	PPORT	MNTR	
	ALL MODE	AWD/4	WD	
		PRSNT	PAST	
	TRANSMIT DIAG	OK	ОК	
	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	F
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN/-		
	ECM	Make sure of normal reception from ECM.	OK/UNKWN/-		
ALL MODE AWD/ 4WD	VDC/TCS/ABS	Make sure of normal reception from ABS actua- tor and electric unit (control unit).	OK/UNKWN/-	OK/0/1~39/-	F
	ТСМ	Make sure of normal reception from TCM.	OK/UNKWN/-		
	STRG	Make sure of normal reception from steering angle sensor.	OK/UNKWN/-		G

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.

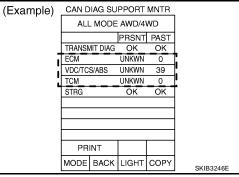
• -: There is no received unit or the unit is not in the condition that reception diagnosis is performed.

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.



Part time 4WD models

(Example)	CAN E	IAG SU			
· · · ·	ALL MODE AWD/4WD				
			PR	SNT	
	INITIAL	DIAG	0	к	
	TRANS	/IT DIAG	0	к	
	ECM		0	ĸ	
	VDC/TC	S/ABS	OK		
	TCM		UNKWN		
	METER/	M&A	0	ĸ	
	PR	INT			
	MODE	BACK	LIGHT	COPY	PKIB5232E

[CAN]

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description			
	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG		
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN		
ALL MODE AWD/ 4WD	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		
	ТСМ	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	(Example)	CAN DIAG SUF	PORT MNTR
FOR DRIVER SEAT CONTROL UNIT		AUTO DRI	IVE POS.
			PRSNT
		INITIAL DIAG	OK
		TRANSMIT DIAG	OK
		BCM/SEC	OK
		METER/M&A	OK
		TCM	OK

INITIAL E TRANSM BCM/SEG METER/I TCM	IIT DIAG C		SNT K K K K		
TRANSN BCM/SEG METER/I	IIT DIAG C	0 0 0	ж Ж		
BCM/SE	0	C C	к		
METER/N	-	C			
	A%N		ĸ		
тсм					
		C	к		
PRI	NT				
NODE	BACK	LIGHT	COPY	Pł	KIB6076E
~		PRINT IODE BACK			

"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present
	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
AUTO DRIVE POS.	BCM	Make sure of normal reception from BCM.	OK/UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	OK/UNKWN
	ТСМ	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 DI	AG SU	PPORT	MNTR	
· · /		AE			
			PR	SNT	
	INITIAL D	0	ιK		
	TRANSMIT DIAG OK				
	ECM OK				
	TCM		OK		
	METER/M	&A	UNKWN		
	STRG		OK		
	ICC	UNK	(WN		
	AWD/4WD OK				
	PRIN	NT T			
	MODE	BACK	LIGHT	COPY	PKIB6078E
					TRIBOOTOE

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"SELECT SYSTEM" screen	"CAN DIAG SUPPORT MNTR" screen	Description	Present
	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
ABS TCM METER/M&A	ТСМ	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.

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

ample)	CAN DIA	AG SU	PPORT	MNTR	
. ,		IPDN			
			PRSNT	PAST	
	TRANSMI	T DIAG	OK	OK	
	ECM		OK	OK	
	BCM/SEC		ОК	ОК	
	PRIN				
	MODE E	BACK	LIGHT	COPY	SKIB0595E

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

N	(Ex	ample)				
		CAN DIAG S	SUPPORT	MONITOR		
		CAN_COMM CAN_CIRC_1 CAN_CIRC_2 CAN_CIRC_2 CAN_CIRC_4 CAN_CIRC_5 CAN_CIRC_6 CAN_CIRC_6 CAN_CIRC_7 CAN_CIRC_8 CAN_CIRC_9	ok Unkwn Unkwn Unkwn Ok	0 0 0 1 1 1 1 0 0 0	Delete	
					SKIB06	645E
			SU MC	N DIAG PPORT NITOR"	Error cou (Referer	

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

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CAN COMMUNICATION

System Description

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

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

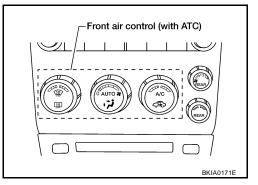
Body type		Wagon												
Axle		2۱	VD		4WD(P	art time)	4WD(A	ll-mode)						
Engine				VQ4	10DE									
Transmission		A/T												
Brake control		VDC												
Automatic air conditioner		×	×	×		×	×	×						
Automatic drive positioner			×	×			×	×						
Navigation system				×				×						
CAN system 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						

 \times : Applicable

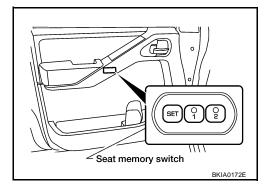
NOTE:

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

• With automatic air conditioner



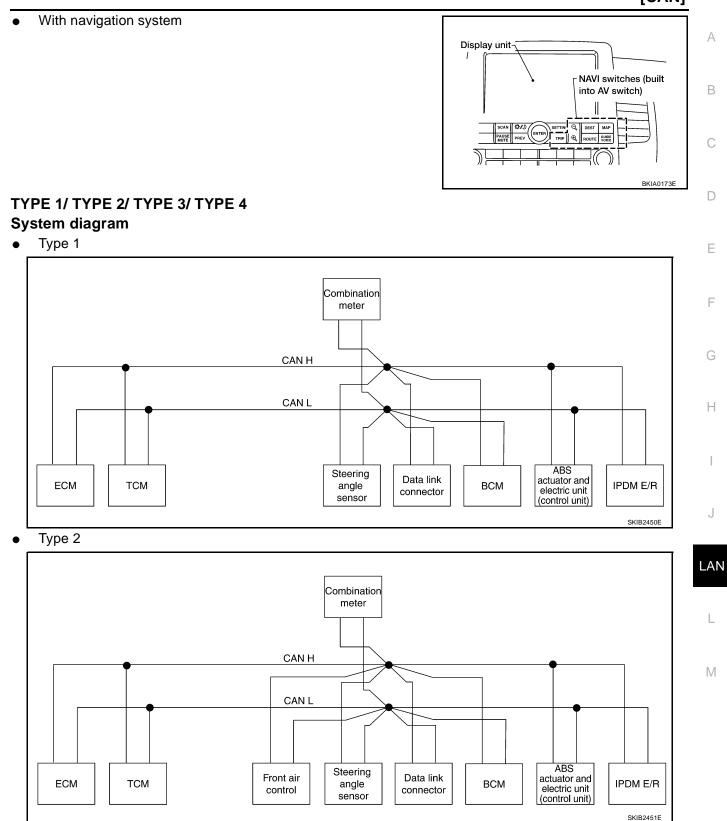


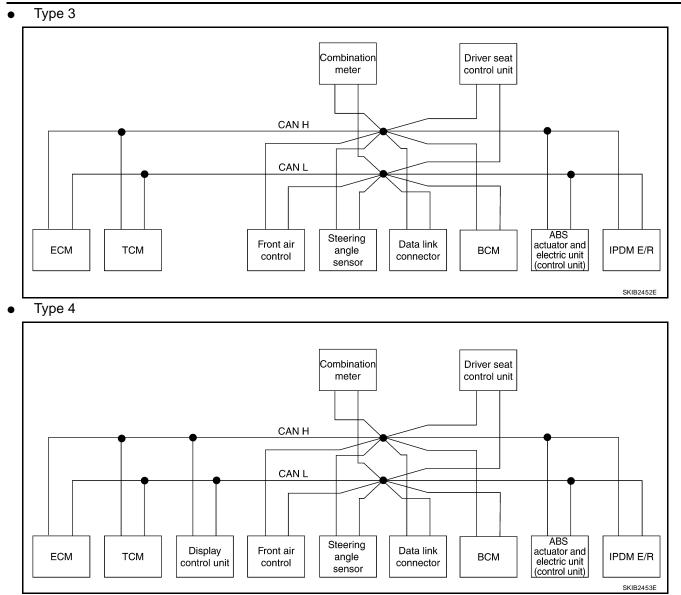


[CAN] PFP:23710

UKS000NU

UKS000NV





Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ТСМ	Dis- play control unit	Front air con- trol	Steer- ing angle sensor	BCM	Combi- nation meter	Driver seat control unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Engine speed signal	Т	R	R	R			R		R	
Engine status signal	Т					R				
Engine coolant temperature signal	Т			R			R			
Accelerator pedal position signal	Т	R							R	
Closed throttle position signal	Т	R								
Wide open throttle position signal	Т	R								
Battery voltage signal	Т	R								
A/T self-diagnosis signal	R	Т								
Turbine revolution signal	R	Т								

Revision: November 2005

										[0/]	
Signals	ECM	тсм	Dis- play control unit	Front air con- trol	Steer- ing angle sensor	BCM	Combi- nation meter	Driver seat control unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A
Output shaft revolution signal	R	Т									С
A/C switch signal	R			R		Т					
A/C compressor request signal	Т									R	
Blower fan motor switch signal	R					Т					D
Cooling fan speed request signal	Т									R	
A/C switch/indicator signal			T R	R T							E
Low beam request signal						Т				R	
Low beam status signal	R									т	F
High beam request signal						Т	R			R	
High beam status signal	R									Т	G
Position light request signal						т	R			R	G
Front fog light request signal						т	R			R	
Day time running light request signal						т	R			R	F
Sleep wake up signal						т	R	R		R	
Door switch signal			R			т	R	R		R	
Seat belt buckle switch signal						R	т				I
			т			R		R			
System setting signal			R			т		Т			J
Ignition switch signal						Т		R			
Key switch signal						т		R			
Key fob ID signal						т		R			LA
Key fob door unlock signal						т		R			
Theft warning horn request signal						т				R	L
Horn chirp signal						т				R	
Front wiper request signal						т				R	
Front wiper stop position signal						R				т	N
Rear window defogger switch signal				R		Т				R	
Rear window defogger control signal	R			R						т	
Buzzer output signal						т	R				
Tire pressure signal			R			т	R				
Tire pressure data signal			R			т					
Fuel consumption monitor signal	Т		R				R T				
Fuel level sensor signal	R						т				
Fuel level low warning signal			R				Т				
Distance to empty signal			R				Т				
Turn indicator signal						Т	R				
Brake warning lamp signal							R		Т		
ABS warning lamp signal							R		т		

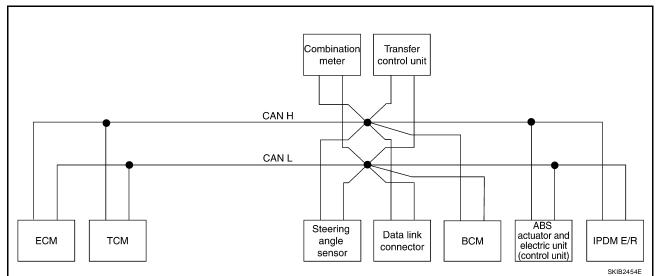
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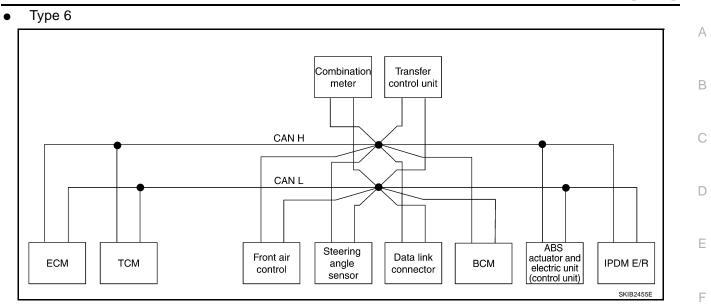
2005 Pathfinder

SignalsECMTCMcontrol unitair con- trolair con- trolBCMnation metercontrol unittric unit (con- trol unit)EFVDC OFF indicator lamp signalRTSLIP indicator lamp signalTRTMalfunction indicator lamp signalTRASCD CRUISE lamp signalTRASCD SET lamp signalTRASCD Operation signalTR </th <th></th>											
SLIP indicator lamp signalTRTMalfunction indicator lamp signalTRRCASCD CRUISE lamp signalTRRCASCD SET lamp signalTRRCASCD operation signalTRCCASCD Ob cancel requestTRCCA/T fluid temperature sensor signalTRCCA/T fluid temperature sensor signalTRCCA/T position indicator lamp signalTRRCP range signalTRRCCO/D OFF indicator signalTRRCOverdrive control switch signalRTCCStop lamp switch signalRTCCVehicle speed signalRRRTRRRRRT	Signals	ECM	ТСМ	play control	air con-	ing angle	BCM	nation	seat control	actua- tor and elec- tric unit (con- trol	IPDM E/R
Malfunction indicator lamp signalTIRIASCD CRUISE lamp signalTIRIASCD SET lamp signalTRRIASCD operation signalTRIIASCD OD cancel requestTRIIASCD OD cancel requestTRIIAT fluid temperature sensor signalTRIIAT position indicator lamp signalTRIIP range signalTRRIO/D OFF indicator signalTRRIOverdrive control switch signalRTIIRRTIIIStop lamp switch signalRTIIVehicle speed signalRRRTRRRRRTRRRRIRRRRIRRRRI	VDC OFF indicator lamp signal							R		Т	
ASCD CRUISE lamp signalTRRASCD SET lamp signalTRRIASCD operation signalTRIIASCD OD cancel requestTRIIASCD OD cancel requestTRIIAT fluid temperature sensor signalTRIIAT position indicator lamp signalTRRIP range signalTIRIO/D OFF indicator signalTIRIOverdrive control switch signalRIIIRRITIIStop lamp switch signalRITIVehicle speed signalRRRTRRRRRTRRRRIRRRRIIt position signalRIIRRRIIRRRIIRRRIIRRRRIIt position switch signalRIIRRRRIIt position switch signalRIIRRRRRIRRRRIIIt position switch signalRIIRRRRIIIt position st	SLIP indicator lamp signal							R		Т	
ASCD SET lamp signalTRRASCD operation signalTRIASCD operation signalTRIASCD OD cancel requestTRIA/T fluid temperature sensor signalTRIA/T position indicator lamp signalTRIP range signalTRRIO/D OFF indicator signalTRRI st position switch signalRTIRRTIStop lamp switch signalRTVehicle speed signalRRTRRRRRRRTRRRTRRRTRRRTRRRTRR <td>Malfunction indicator lamp signal</td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>R</td> <td></td> <td></td> <td></td>	Malfunction indicator lamp signal	Т						R			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ASCD CRUISE lamp signal	Т						R			
ASCD OD cancel requestTRIRIRA/T fluid temperature sensor signalTIRIA/T position indicator lamp signalTIRIP range signalTIRRIO/D OFF indicator signalTIRRIOverdrive control switch signalRIIIIStop lamp switch signalRIRIIVehicle speed signalRRRTIRRRRIIIVehicle speed signalRRRII	ASCD SET lamp signal	Т						R			
A/T fluid temperature sensor signalTRRA/T position indicator lamp signalTRRP range signalTRRRO/D OFF indicator signalTRRRO/D OFF indicator signalRTRROverdrive control switch signalRTIIStop lamp switch signalRTIIVehicle speed signalRRRTRRRRRI	ASCD operation signal	Т	R								
A/T position indicator lamp signalTRRP range signalTIRRO/D OFF indicator signalTIRRO/D OFF indicator signalTIIROverdrive control switch signalRIII1st position switch signalRIIIStop lamp switch signalRIIIVehicle speed signalRRRTRRRRII	ASCD OD cancel request	Т	R								
P range signalTRRRO/D OFF indicator signalTRROverdrive control switch signalRT1st position switch signalRTStop lamp switch signalRTVehicle speed signalRRTRRRRT	A/T fluid temperature sensor signal		Т					R			
O/D OFF indicator signalTRRO/D OFF indicator signalRTImage: control switch signalROverdrive control switch signalRTImage: control switch signal1st position switch signalRTImage: control switch signalStop lamp switch signalRTImage: control switch signalVehicle speed signalRRR<	A/T position indicator lamp signal		Т					R			
Overdrive control switch signalRTT1st position switch signalRTTStop lamp switch signalRTTVehicle speed signalRRTRRRR	P range signal		Т					R	R	R	
Ist position switch signal R T 1st position switch signal R T Stop lamp switch signal R T Vehicle speed signal R R R R R	O/D OFF indicator signal		Т					R			
Stop lamp switch signal R R T Vehicle speed signal R R R R	Overdrive control switch signal		R					Т			
Vehicle speed signal R R R T R R R R T	1st position switch signal		R					Т			
Vehicle speed signal R R R R R T R	Stop lamp switch signal		R					Т			
R R R R T R	Vahiala apaged signal				R			R		Т	
Steering angle sensor signal	venicie speed signal	R	R	R	R		R	Т	R		
	Steering angle sensor signal					Т				R	

TYPE 5/ TYPE 6 System diagram

• Type 5





Input/output signal chart

T: Transmit R: Receive

								i anomiti i	1. INECCIVE	
Signals	ECM	ТСМ	Front air con- trol	Steer- ing angle sensor	BCM	Combi- nation meter	Trans- fer con- trol unit	ABS actua- tor and electric unit (control unit)	IPDM E/R	G
Engine speed signal	Т	R	R			R	R	R		
Engine status signal	Т				R					
Engine coolant temperature signal	Т		R			R				
Accelerator pedal position signal	Т	R						R		J
Closed throttle position signal	Т	R								
Wide open throttle position signal	Т	R								LAN
Battery voltage signal	Т	R								
A/T self-diagnosis signal	R	Т								
Turbine revolution signal	R	Т								L
Output shaft revolution signal	R	Т					R			
A/C switch signal	R		R		Т					Μ
A/C compressor request signal	Т								R	
Blower fan motor switch signal	R				Т					
Cooling fan speed request signal	Т								R	
Low beam request signal					Т				R	
Low beam status signal	R								Т	
High beam request signal					Т	R			R	
High beam status signal	R								Т	
Position light request signal					Т	R			R	
Front fog light request signal					Т	R			R	
Day time running light request signal					Т	R			R	
Sleep wake up signal					Т	R			R	
Door switch signal					Т	R			R	
Seat belt buckle switch signal					R	т				

Signals	ECM	ТСМ	Front air con- trol	Steer- ing angle sensor	BCM	Combi- nation meter	Trans- fer con- trol unit	ABS actua- tor and electric unit (control unit)	IPDM E/R
Ignition switch signal					Т				R
Theft warning horn request signal					Т				R
Horn chirp signal					Т				R
Front wiper request signal					Т				R
Front wiper stop position signal					R				Т
Rear window defogger switch signal			R		Т				R
Rear window defogger control signal	R		R						т
Buzzer output signal					Т	R			
Tire pressure signal					Т	R			
Fuel consumption monitor signal	Т					R			
Fuel level sensor signal	R					Т			
Turn indicator signal					Т	R			
Brake warning lamp signal						R		Т	
ABS warning lamp signal						R		Т	
VDC OFF indicator lamp signal						R		Т	
SLIP indicator lamp signal						R		Т	
HDC indicator lamp signal						R		Т	
Malfunction indicator lamp signal	Т					R			
ASCD CRUISE lamp signal	Т					R			
ASCD SET lamp signal	Т					R			
ASCD operation signal	Т	R							
ASCD OD cancel request	Т	R							
A/T fluid temperature sensor signal		Т				R			
A/T position indicator lamp signal		Т				R	R		
O/D OFF indicator signal		Т				R			
Overdrive control switch signal		R				Т			
1st position switch signal		R				т			
Stop lamp switch signal		R				Т	R	Т	
			R			R	R	T	
Vehicle speed signal	R	R	R		R	к Т	r.	1	
Steering angle sensor signal				Т				R	

TYPE 7/TYPE 8 System diagram



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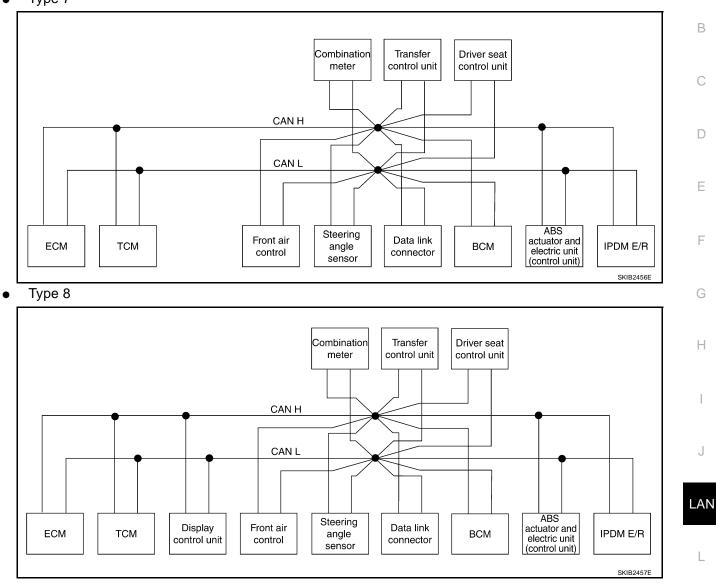
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Type 7 •



Input/output signal chart

T: Transmit R: Receive Μ

Signals	ECM	тсм	Dis- play con- trol unit	Front air con- trol	Steer- ing angle sen- sor	BCM	Com- bina- tion meter	Trans- fer con- trol unit	Driver seat con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Engine speed signal	Т	R	R	R			R	R		R	
Engine status signal	Т					R					
Engine coolant temperature signal	Т			R			R				
Accelerator pedal position signal	Т	R						R		R	
Closed throttle position signal	Т	R									
Wide open throttle position signal	Т	R									

Revision: November 2005

CAN COMMUNICATION													
Signals	ECM	тсм	Dis- play con- trol unit	Front air con- trol	Steer- ing angle sen- sor	всм	Com- bina- tion meter	Trans- fer con- trol unit	Driver seat con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDN E/R		
Battery voltage signal	Т	R											
A/T self-diagnosis signal	R	Т											
Turbine revolution signal	R	Т											
Output shaft revolution signal	R	Т						R					
A/C switch signal	R			R		Т							
A/C compressor request signal	Т										R		
Blower fan motor switch signal	R					Т							
Cooling fan speed request signal	Т										R		
A/C switch/indicator signal			T R	R T									
Low beam request signal						Т					R		
Low beam status signal	R										Т		
High beam request signal						Т	R				R		
High beam status signal	R										Т		
Position light request signal						Т	R				R		
Front fog light request signal						Т	R				R		
Day time running light request signal						Т	R				R		
Sleep wake up signal						Т	R		R		R		
Door switch signal			R			Т	R		R		R		
Seat belt buckle switch signal						R	Т						
System setting signal			T R			R T			R T				
Ignition switch signal						Т			R				
Key switch signal						т			R				
Key fob ID signal						Т			R				
Key fob door unlock signal						Т			R				
Theft warning horn request signal						Т					R		
Horn chirp signal						Т					R		
Front wiper request signal						Т					R		
Front wiper stop position signal						R					т		
Rear window defogger switch signal				R		Т					R		
Rear window defogger control signal	R			R							Т		
Buzzer output signal						Т	R						
Tire pressure signal			R			Т	R						
Tire pressure data signal			R			Т							
Fuel consumption monitor signal	Т		R				R T						
Fuel level sensor signal	R						T						

Signals	ECM	тсм	Dis- play con- trol unit	Front air con- trol	Steer- ing angle sen- sor	BCM	Com- bina- tion meter	Trans- fer con- trol unit	Driver seat con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A B C
Fuel level low warning signal			R				Т					
Distance to empty signal			R				Т					D
Turn indicator signal						Т	R					
Brake warning lamp signal							R			Т		
ABS warning lamp signal							R			Т		E
VDC OFF indicator lamp signal							R			Т		
SLIP indicator lamp signal							R			Т		F
Malfunction indicator lamp signal	Т						R					
ASCD CRUISE lamp signal	Т						R					
ASCD SET lamp signal	Т						R					G
ASCD operation signal	Т	R										
ASCD OD cancel request	Т	R										. Н
A/T fluid temperature sensor signal		Т					R					
A/T position indicator lamp signal		Т					R	R				
P range signal		Т					R		R	R		I
O/D OFF indicator signal		Т					R					
Overdrive control switch signal		R					Т					
1st position switch signal		R					Т					J
Stop lamp switch signal		R					Т					
Vehicle speed signal			6	R			R	R		Т		LAN
Steering angle sensor signal	R	R	R	R	Т	R	Т		R	R		

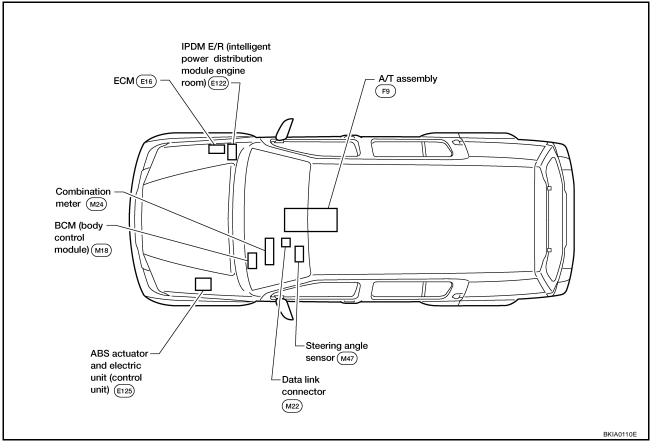
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CAN SYSTEM (TYPE 1)

System Description

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



[CAN]

UKS003G1

CAN SYSTEM (TYPE 1)

Schematic



UKS003G2

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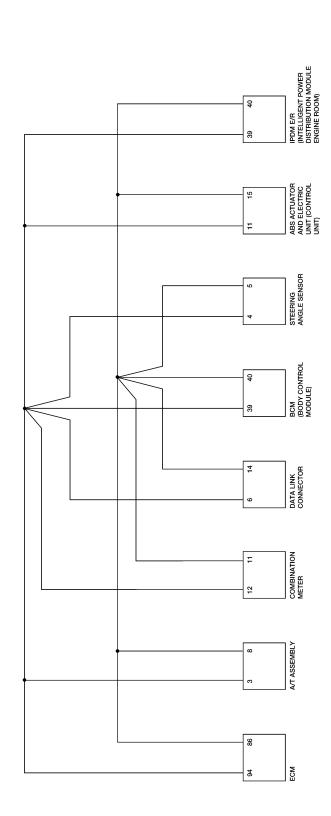
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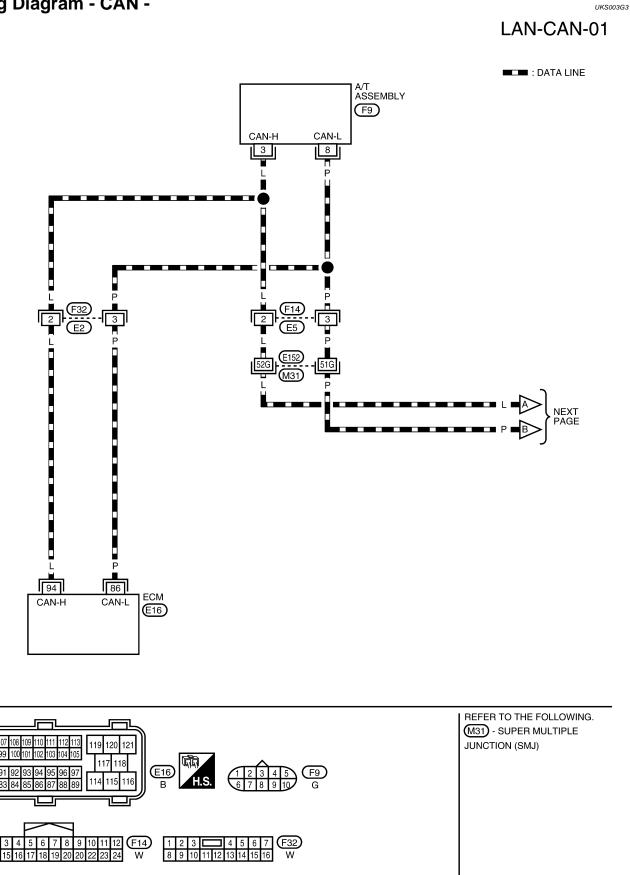
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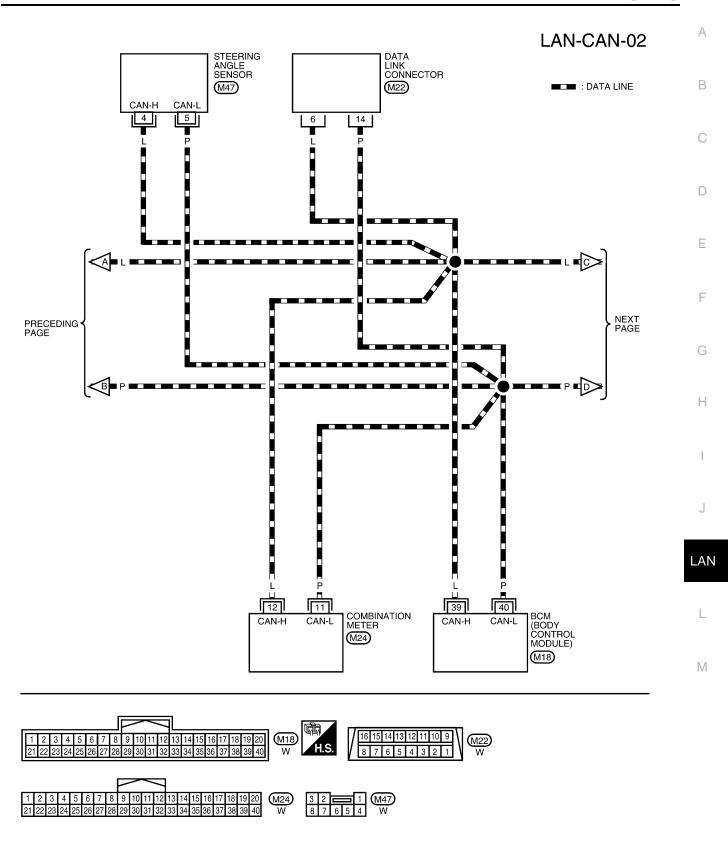
BKWA0605E



BKWA0368E

CAN SYSTEM (TYPE 1)

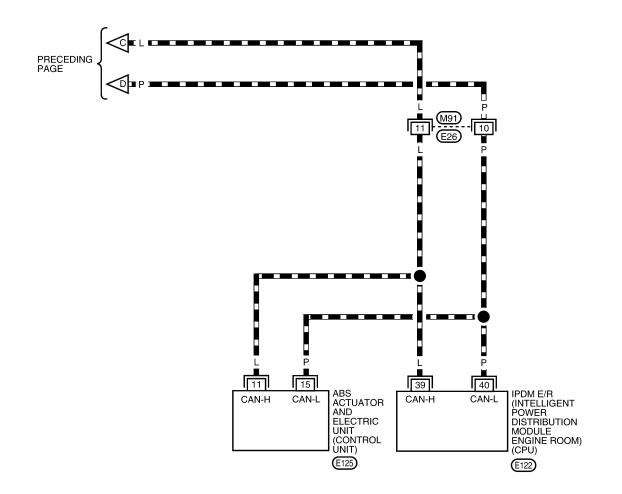
[CAN]



BKWA0606E

LAN-CAN-03

E : DATA LINE



1 2 3 4 5 6 7 M91 8 9 10 11 12 13 14 15 16 W



BKWA0370E

CHECK SHEET

UKS003G4

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NOTE:

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

SELECT SYSTEM scient Tandent segret Tenche dispositi Rester dispositi (Control String) Sele String) Sele String (String) Sele						CAN DIA	G SUPPO	RT MNTR					
diagnosis ECM TCM STRG ECM METER VDC/TCS IPDM INGINE - NG UNKWN - UNKWN UNKWN UNKWN UNKWN CAN COMM CIRCUIT (U1000) - VT - NG UNKWN UNKWN - - UNKWN UNKWN UNKWN - CAN COMM CIRCUIT (U1000) - ICM NG UNKWN UNKWN - - - UNKWN UNKWN - CAN COMM CIRCUIT (U1000) - ICM No - - - - UNKWN UNKWN - CAN COMM CIRCUIT (U1000) - IRETER No - - - - - CAN COMM CIRCUIT (U1000) - IRETR No - - - - - CAN COMM CIRCUIT (U1000) - PDM E/R No - - - - CAN COMM CIRCUIT (U1000) - rymptoms : - NO - - - - CAN COM CIRCUIT (U1000) -	SELECT SYST	EM screen	Initial	Transmit			Re					SELF-DIAG	RESULTS
Name Image Image <thi< th=""><th></th><th></th><th></th><th>diagnosis</th><th>ECM</th><th>тсм</th><th>STRG</th><th>BCM /SEC</th><th></th><th>VDC/TCS /ABS</th><th></th><th></th><th></th></thi<>				diagnosis	ECM	тсм	STRG	BCM /SEC		VDC/TCS /ABS			
VT NG UNKWN UNKWN UNKWN UNKWN CAN COMM CIRCUT SCM No NG UNKWN UNKWN UNKWN UNKWN UNKWN CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT Image: CAN COMM CIRCUT	NGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT	CAN COMM CIRCUIT
MCM NO UNKWN UNKWN - - - UNKWN - UNKWN CAN COMM CIRCUIT - METER No - - - - - - - CAN COMM CIRCUIT - METER No - NG UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT - MBS - NG UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT - PDM E/R No - UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT - PDM E/R No - UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT - Symptoms : - - UNKWN UNKWN - - - CAN COMM CIRCUIT -	/Т		NG	UNKWN	UNKWN	_	_	_	UNKWN	UNKWN	_	CAN COMM CIRCUIT	
Interer No - - - - - - - CAN COMM CIRCUIT (U1000) - BS - NG UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) - PDM E/R No - UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) - PDM E/R Indication - UNKWN UNKWN - - UNKWN CAN COMM CIRCUIT (U1000) - ymptoms : - - UNKWN - - UNKWN - - - CAN COMM CIRCUIT (U1000) - ymptoms : - - UNKWN - - - - CAN COMM CIRCUIT (U1000) - Ymptoms : - - - UNKWN - - - CAN COMM CIRCUIT (U1000) - Ymptoms : - - - - - - - - - - - - - - - - - - <td>СМ</td> <td></td> <td>NG</td> <td>UNKWN</td> <td>UNKWN</td> <td>_</td> <td>_</td> <td>_</td> <td>UNKWN</td> <td>_</td> <td>UNKWN</td> <td>CAN COMM CIRCUIT</td> <td>_</td>	СМ		NG	UNKWN	UNKWN	_	_	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT	_
NBS - NG UNKWN UNKWN UNKWN UNKWN - - - - CAN COMM CIRCUIT (U1000) - PDM E/R No indication - UNKWN UNKWN - - UNKWN - - CAN COMM CIRCUIT (U1000) - Symptoms : - - UNKWN UNKWN - - UNKWN - - - CAN COMM CIRCUIT (U1000) - Symptoms : - - UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) - Attach copy of - - - UNKWN - - - - CAN COMM CIRCUIT (U1000) -	IETER	No		_	_	_	_	_	_	_	_	CAN COMM CIRCUIT	_
PDM E/R No - UNKWN UNKWN UNKWN CAN COMM CIRCUIT - ymptoms :	BS		NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	_	CAN COMM CIRCUIT	_
ymptoms :	PDM E/R		_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT	_
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CAN SYSTEM (TYPE 1)

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

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CAN SYSTEM (TYPE 1)

CHECK SHEET RESULTS (EXAMPLE)

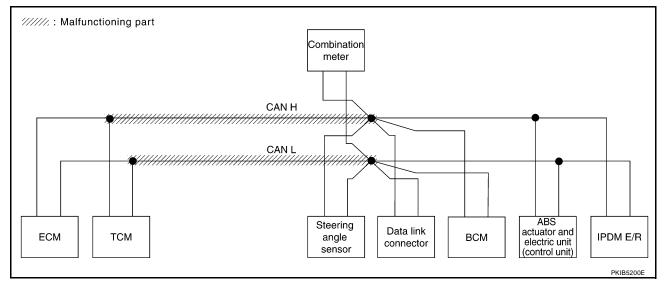
NOTE:

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 <u>LAN-51</u>, "Inspection Between TCM and <u>Data Link Connector Circuit</u>".

SELECT SYSTEM scre		Initial	Transmit			Rec	eive diagn					
							erve ulagn	osis			SELF-DIAG	BESULTS
		diagnosis	diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	—		UNKWN		UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UV01)
A/T	-	NG	UNKWN	UNKWN	-	-	Ι	UNKWN		_	CAN COMIC CIRCUIT (U 1000)	_
BCM	No lication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No lication	-	-	-	-	-	_	-	-	_	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN			UNKWN	-	Ι	_	-	CAN COMIN CIRCUIT (U 1000)	_
	No lication	-	UNKWN	UNKWN	-	-	UNKWN	_	-	-	CAN COMIN CIRCUIT (U 1000)	—



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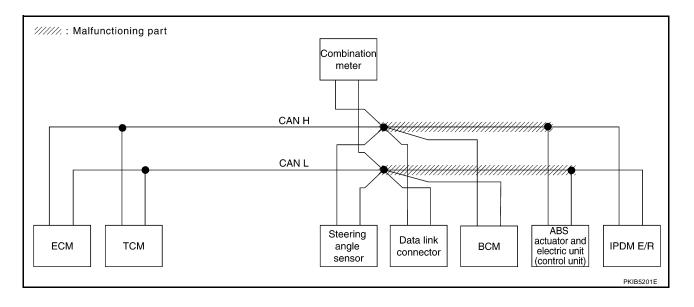
Case 2

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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".

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	Iscreen		T			Red	ceive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	_	_	-	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	—	-	-	—	-	CAN COMM CIRCUIT (U 100)	_
ABS	-	NG	UNKWN			UNKWN	-	_	_	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indivation	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U 1000)	_





CAN SYSTEM (TYPE 1)

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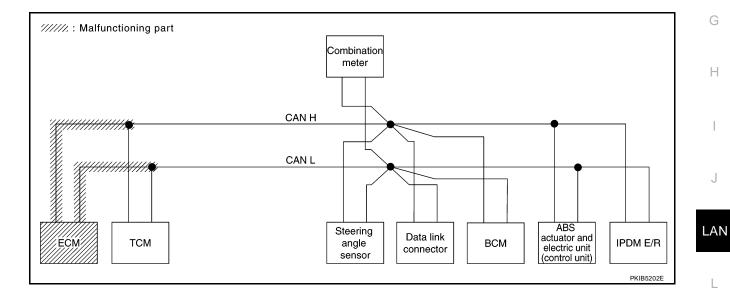
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Case 3

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	Iscreen	Initial	Treasurit		-	Rec	ceive diagn	osis			SELF-DIAG	BESULTS
		diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG		-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (U 101)
A/T	-	NG	UNKWN		_	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN		_	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	_	—	-	-		-	_	CAN COMM CIRCUIT (U 1000)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	—	-	-	CAN COMM CIRCUIT (U 1000)	_

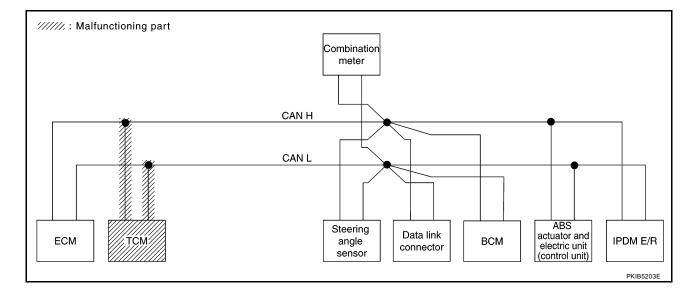


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Case 4

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTE	M screen	luitial	Turnersit			Rec	ceive diagn	osis			SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (UV00)	CAN COMM CIRCUI (UN01)
A/T	_	NG	UNKWN		-	-	-	UNK	UNKIN	—	CAN COMIN CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN		-	_	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	_	-	-	-	-	—	—	_	CAN COMIN CIRCUIT (U 100)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	-	CAN COMIN CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	-



CAN SYSTEM (TYPE 1)

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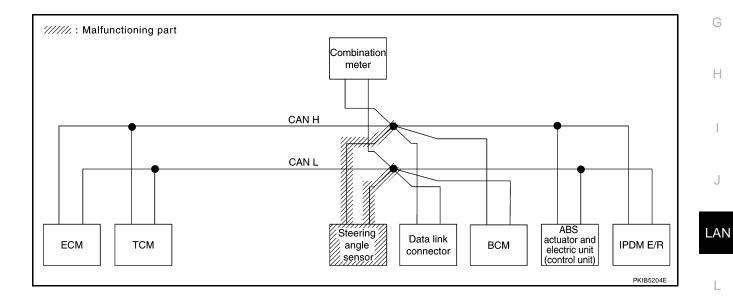
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Case 5

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	1 screen					Rec	eive diagn	osis			SELF-DIAG	BESHITS
SELECT STOLEN	i scieen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	
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	-	-	-	Ι	-	—	_	-	-	CAN COMM CIRCUIT (U1000)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	_	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	-	_	_	CAN COMM CIRCUIT (U1000)	_

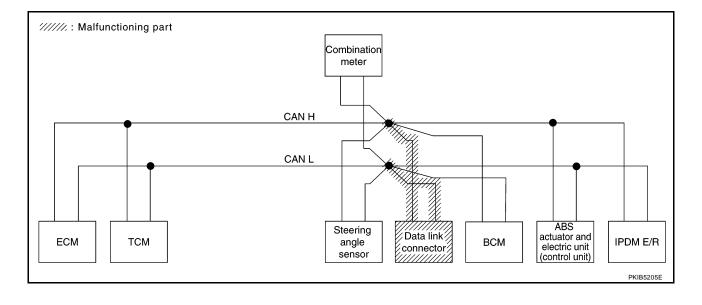


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Case 6

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTE	Miscreen	1	-			Rec	eive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (U1001)
A/T	_	NG	UNKWN	UNKWN	—	-	_	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
BCM	No individuation	NG	UNKWN	UNKWN	—	-		UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	Ι
METER	No ind Ation	-	-	-	—	-		-	—	-	CAN COMM CIRCUIT (U1000)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	1		—	—	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	Ng ind ation	-	UNKWN	UNKWN	_	-	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	-
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CAN SYSTEM (TYPE 1)

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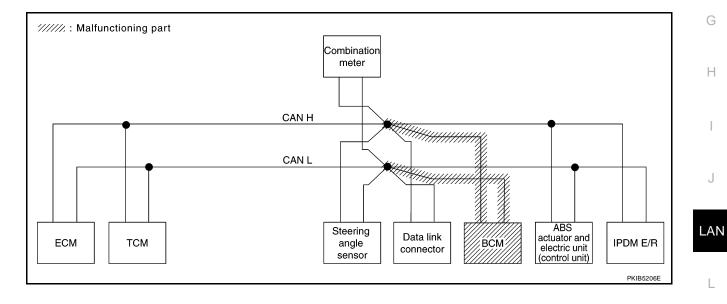
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Case 7

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

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	screen					Red	ceive diagn	osis			SELF-DIAG	BESHITS
OLLEOT OTOTEN		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
ENGINE	-	NG	UNKWN	_	UNKWN	_		UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	_
BCM	No indvation	NG	UNKWN	UNKWN	_	-	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	—
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_		-	-	_	CAN COMM CIRCUIT (U 1000)	-

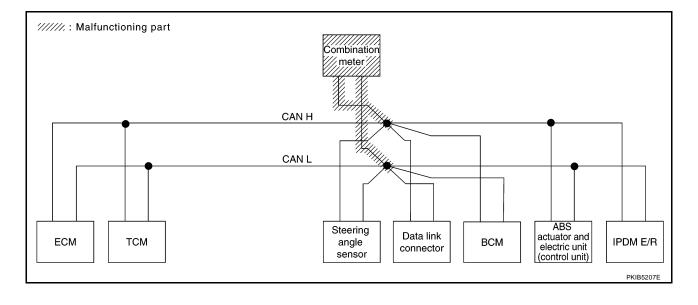


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Case 8

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTE	M screen	1.00.1				Red	ceive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	_	CAN COMIN CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN		-	—	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	Ι
METER	Not individual individual	-	-	-	-	-	-	—	-	-	CAN COMICIRCUIT (U 100)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	—	UNKWN	UNKWN	-	-	UNKWN	-	-	—	CAN COMM CIRCUIT (U1000)	-



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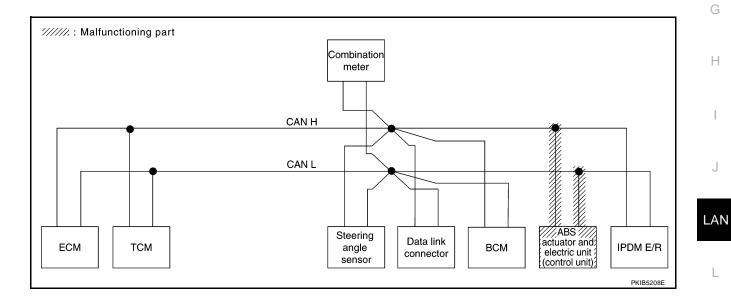
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Case 9

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

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTE	Ascroon					Red	ceive diagn	osis			SELF-DIAG	REGULTS
	W SCIECH	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		THEODERS
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UV01)
A/T	_	NG	UNKWN	UNKWN	_	_	_	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	_	_	-	_	_	_	-	-	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	V	UNKWN		UNKWN	UNKWN	_	_	-	-	CAN COMM CIRCUIT (U 000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	-	CAN COMM CIRCUIT (U1000)	_



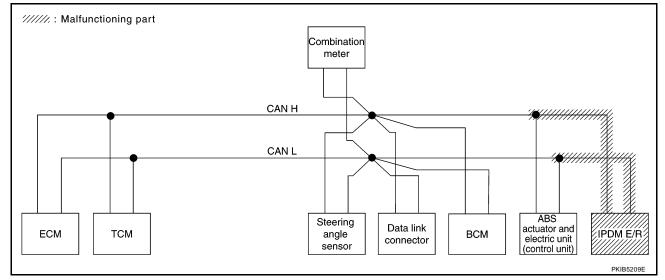
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Case 10

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	1 screen					Red	ceive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	_	UNKIN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	—	-	-	-	_	-	-	CAN COMM CIRCUIT (U 100)	—
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN		_	-	CAN COMM CIRCUIT (UV000)	-
		•										



Case 11

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTE	Miscreen	1.00.1	T			Red	ceive diagn	osis			SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	-	NG		-		_		UNKWN			CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UV01)
A/T	-	NG	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	_
BCM	No indvation	NG	UNKWN	UNKWN	_	_	_	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No individuation	-	-	-	-	-	-	_	-	_	CAN COMM CIRCUIT (U 1000)	—
ABS	-	V			UNK	UNKWN	_	_	-	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indvation	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U 000)	_
												PKIB5093E

[CAN]

PKIB5094E

Case 12

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-62, "IPDM E/R Ignition Relay</u> <u>A</u> <u>Circuit Inspection"</u>.

					CAN DIA								
SELECT SYSTEM	1 screen			Receive diagnosis								RESULTS	
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	TILOULIU	
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UV01)	
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 (U 1000)	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_	

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-62, "IPDM E/R Ignition Relay Circuit Inspection".

					CAN DIA								
	SYSTEM screen		ECT SYSTEM screen					Red	SELF-DIAG RESULTS				
	a sereen	Initial diagnosis	Transmit diagnosis	ECM	тсм	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 (U 1000)	_	
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-	
METER	No indication	-	-	-	Ι	—	-	_	-	Ι	CAN COMM CIRCUIT (U1000)	-	
ABS	-	NG	UNKWN	-	UNKWN	_	_	_	-	-	CAN COMM CIRCUIT (U 1000)	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	-	CAN COMM CIRCUIT (U1000)	_	

Inspection Between TCM and Data Link Connector Circuit 1. CHECK CONNECTOR

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- 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.

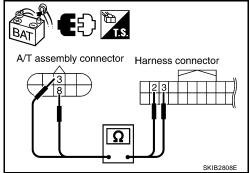
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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)8 (P) - 3 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

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



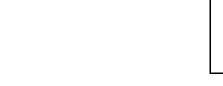
$3.\,$ check harness for open circuit

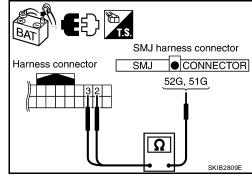
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).
 - 2 (L) 52G (L) 3 (P) – 51G (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

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





4. CHECK HARNESS FOR OPEN CIRCUIT

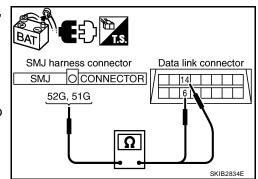
Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

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

: 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

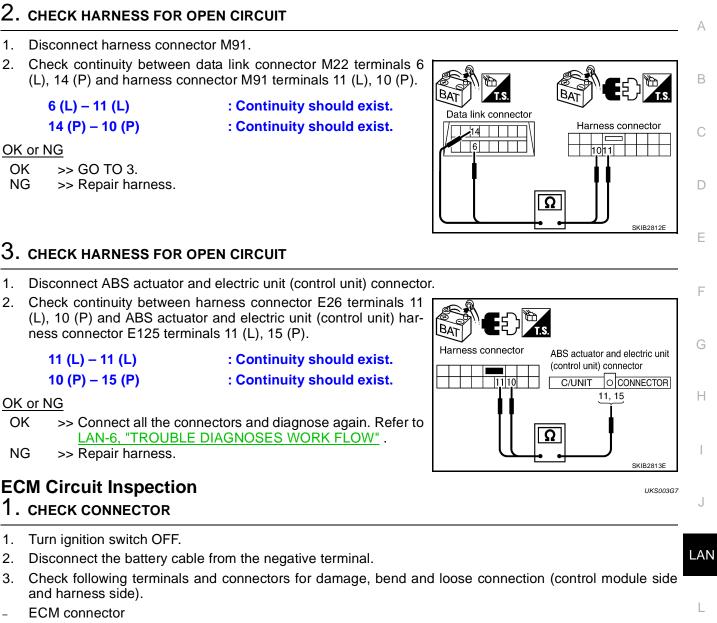
- 1. CHECK CONNECTOR
- 1. Turn ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side).
- Harness connector M91
- Harness connector E26

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

[CAN]



- Harness connector E2
- Harness connector F32

OK or NG

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

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2. CHECK HARNESS FOR OPEN CIRCUIT

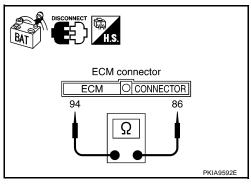
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

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.

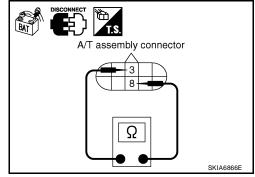
NG >> Repair terminal or connector.

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)

OK or NG

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



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Steering Angle Sensor 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 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.

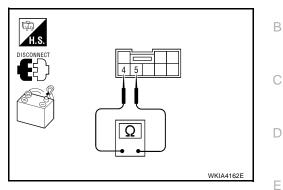
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 5 (P).

: **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 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 termi

G >> 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 DIAG-NOSES WORK FLOW". NG >> Repair harness between data link connector and BCM.

BCM 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 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.

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2. CHECK HARNESS FOR OPEN CIRCUIT

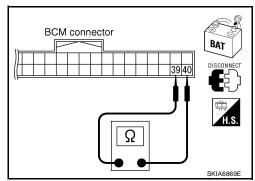
- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 – 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-20, "Removal and Installa-</u> tion of <u>BCM"</u>
- NG >> Repair harness between BCM and data link connector.



Combination Meter 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 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).

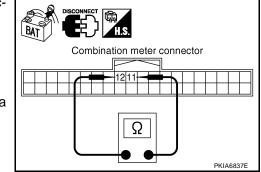
12 (L) – 11 (P)

: **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

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

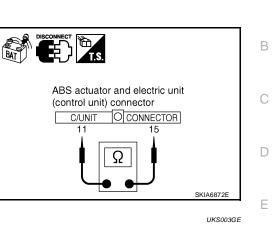
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

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

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

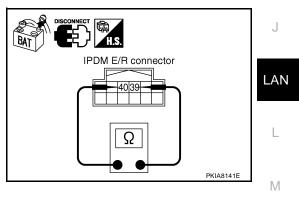
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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).



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CAN Communication Circuit Inspection

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

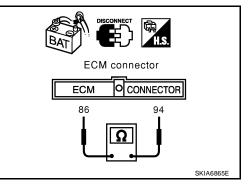
- 1. Disconnect following connectors.
- ECM connector
- Harness connector E2
- Check continuity between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

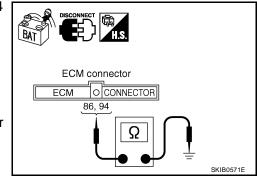
Check continuity between ECM harness connector E16 terminals 94 (L), 86 (P) and ground.

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

round : Continuity should not exist.

OK or NG

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



CAN SYSTEM (TYPE 1)

4. CHECK HARNESS FOR SHORT CIRCUIT

- 1. Disconnect following connectors.
- A/T assembly connector _
- Harness connector F14

3 (L) – 8 (P)

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

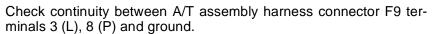
: Continuity should not exist.

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



- 3 (L) Ground
- 8 (P) Ground

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

: Continuity should not exist.

: Continuity should not exist.

6. CHECK HARNESS FOR SHORT CIRCUIT

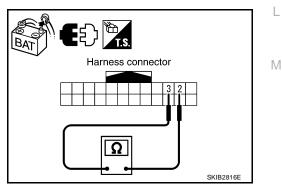
- Disconnect harness connector E152. 1.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

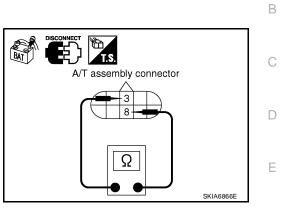
2(L) - 3(P)

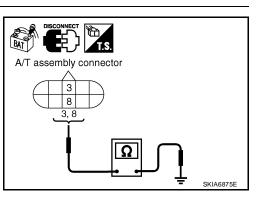
: Continuity should not exist.

OK or NG

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







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7. CHECK HARNESS FOR SHORT CIRCUIT

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

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

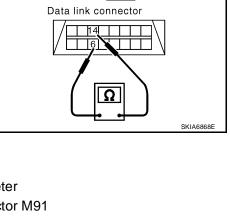
- 6 (L) Ground
- : Continuity should not exist. : Continuity should not exist.

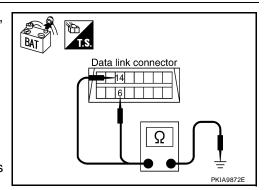
14 (P) – Ground

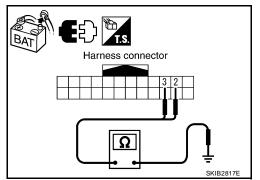
OK or NG

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)

nals 39 (L), 40 (P) and ground. 39 (L) – Ground

40 (P) – Ground

>> GO TO 12.

: Continuity should not exist.

OK or NG

OK or NG

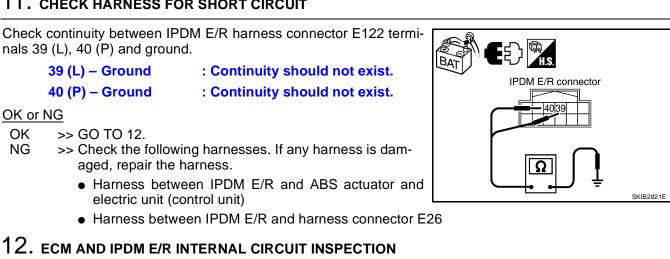
OK

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



1. Remove ECM and IPDM E/R from vehicle.

aged, repair the harness.

electric unit (control unit)

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.

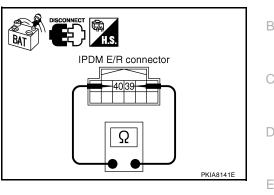
13. снеск сумртом

- 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.

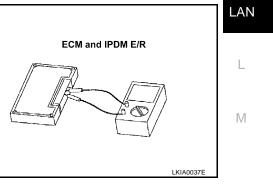
OK or NG

OK >> GO TO 14.

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







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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

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

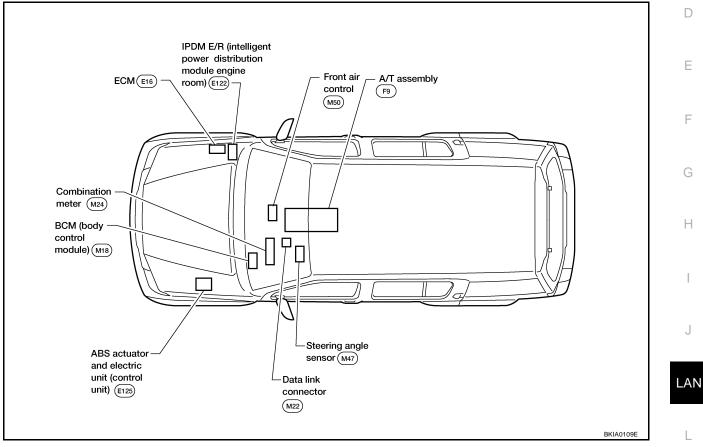
- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to <u>PG-14</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

CAN SYSTEM (TYPE 2)

System Description

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



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PFP:23710

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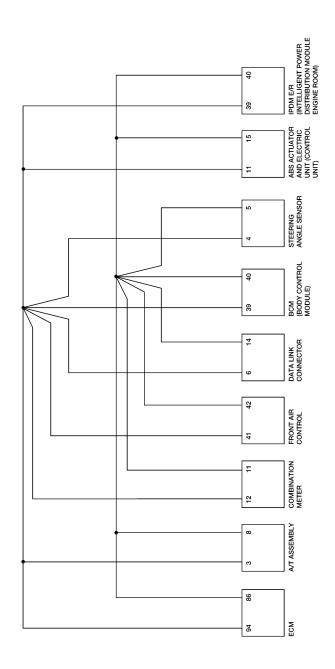
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CAN SYSTEM (TYPE 2)

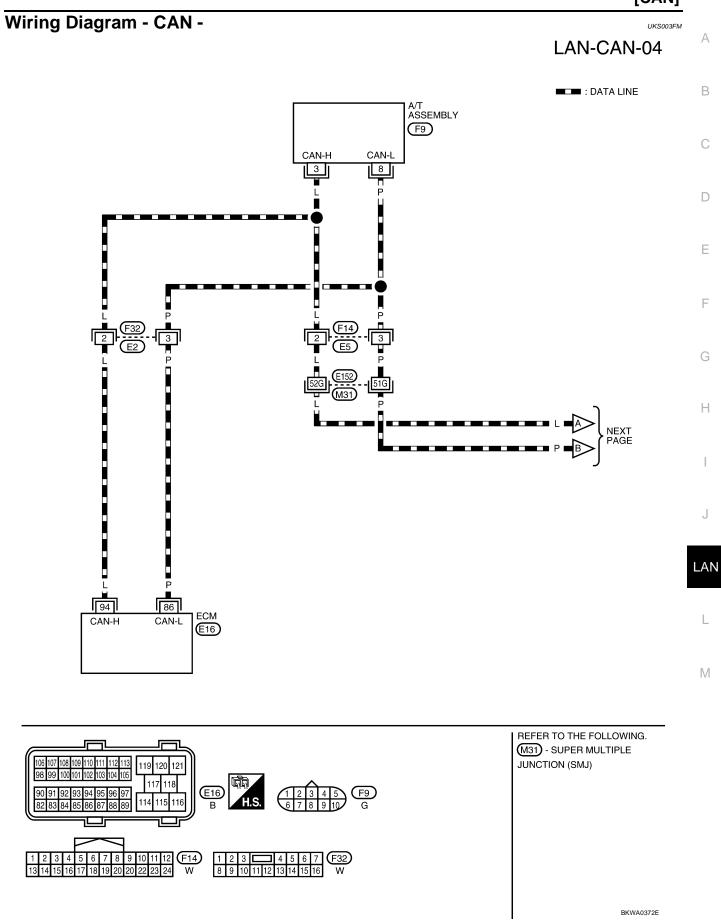
Schematic

UKS003FL

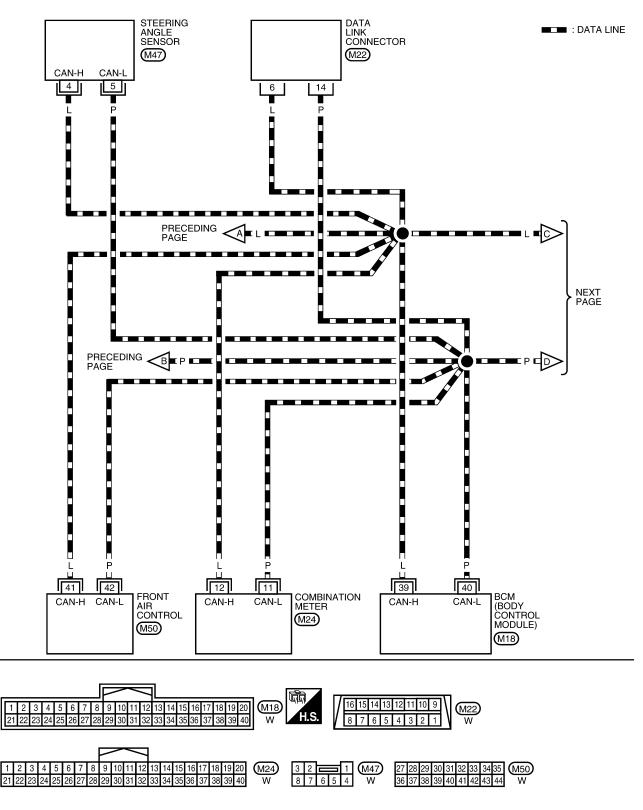


BKWA0607E

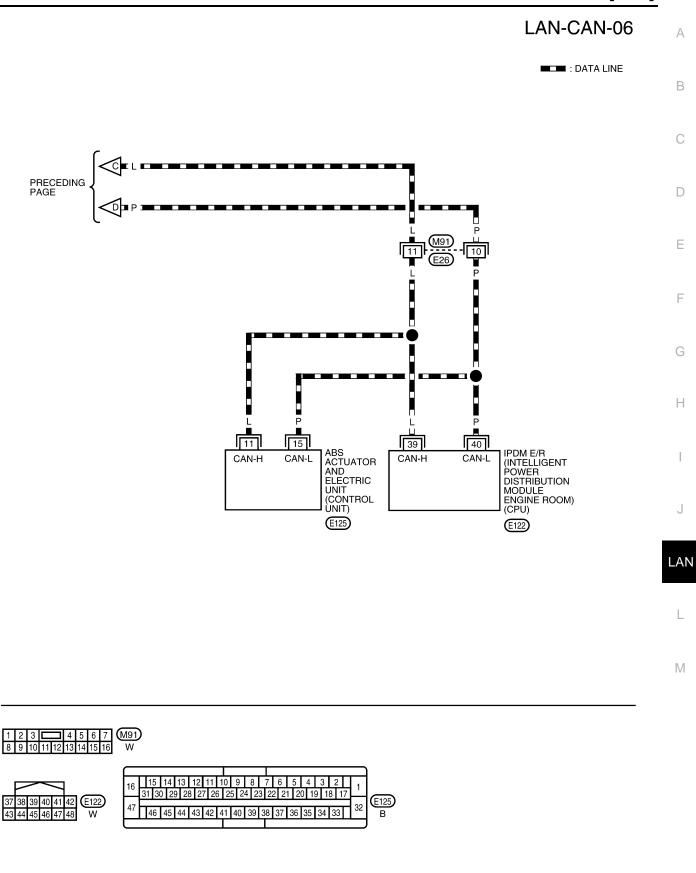
[CAN]



LAN-CAN-05



BKWA0608E



BKWA0374E

CHECK SHEET

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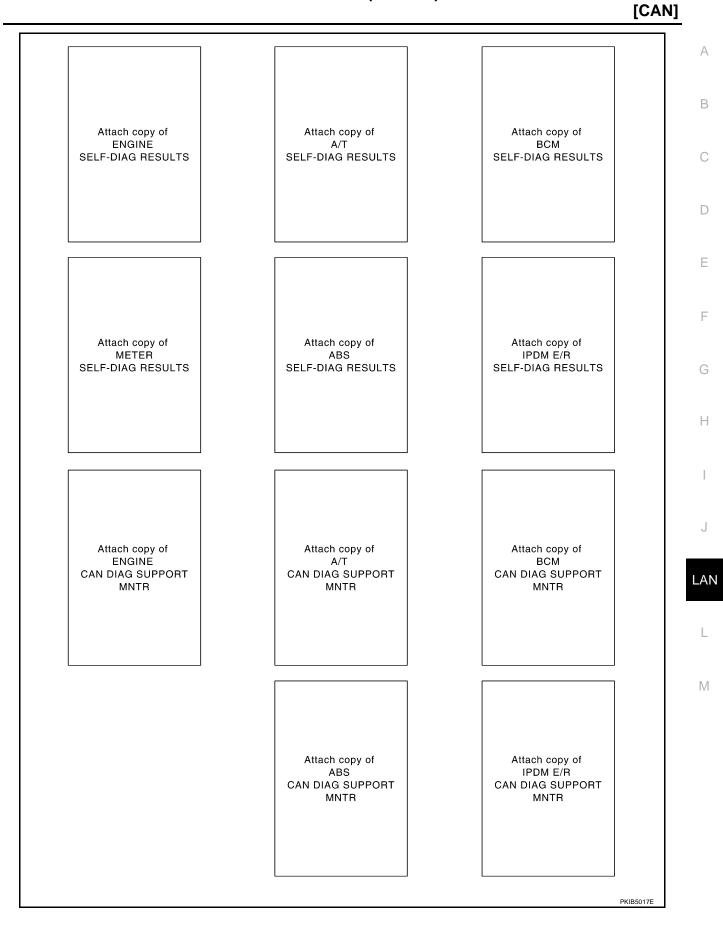
NOTE:

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

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diagnosis ECM TCM STRG //SEC //M&A //MAS E/R NGINE - NG UNKWN - UNKWN - CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) CAN COMM CIRC	SULTS	G RES	SELF-DIAG					eive diagn	Red			Transmit	Initial	screen	SELECT SYSTEM
NGINE - NG UNKWN - UNKWN - CAN COMM CIRCUIT (U1000) (U1000) (U CM No NG UNKWN UNKWN - - - UNKWN - CAN COMM CIRCUIT (U1000) (U1000) (U CM indication - - - - - UNKWN - CAN COMM CIRCUIT (U1000) (U1000) (U1									STRG	тсм	ЕСМ			1	
No ON UNKWN UNKWN - - - UNKWN UNKWN CAN COMM CIRCUIT (U1000) RETER No - - - - - UNKWN CAN COMM CIRCUIT (U1000) (U1000) BS - NG UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) BS - NG UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) PDM E/R No - UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000)	(U1001)		(U1000)		UNKWI	UNKWN	UNKWN	UNKWN	-	UNKWN	-	UNKWN	NG	—	INGINE
CM Indication NG UNKWN UNKWN I I I UNKWN I/(1000) IETER NO - - - - - - - CAN COMM CIRCUIT (U1000) IBS - NG UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) IBS - NG UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) 2DM E/R No - UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) 2DM E/R No - UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) symptoms : - - UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) Attach copy of - - - - - - CAN COMM CIRCUIT (U1000)	-			C	-	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	NG	—	VT
No - - - - - - - - - CAN COMM CIRCUIT (U1000) BS - NG UNKWN UNKWN UNKWN - - - - CAN COMM CIRCUIT (U1000) PDM E/R No - UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) PDM E/R No - UNKWN UNKWN - - - - CAN COMM CIRCUIT (U1000) rymptoms : - UNKWN UNKWN - - - - CAN COMM CIRCUIT (U1000) rymptoms : - - UNKWN - - - - CAN COMM CIRCUIT (U1000)	_			VN C	UNKWI	_	UNKWN	_	_	_	UNKWN	UNKWN	NG		BCM
BS - NG UNKWN UNKWN UNKWN - - - - CAN COMM CIRCUIT (U1000) PDM E/R No indication - UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (U1000) Pymptoms : - - UNKWN - - - - CAN COMM CIRCUIT (U1000) - Attach copy of Attach copy of Attach copy of Attach copy of -	_		OMM CIRCUIT	C	-	_	_	_	_	-	_	_	_	No	IETER
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ymptoms :	_	-	OMM CIRCUIT	C	-	_	_	UNKWN	_	_	UNKWN	UNKWN	_		PDM E/R
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CAN SYSTEM (TYPE 2)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

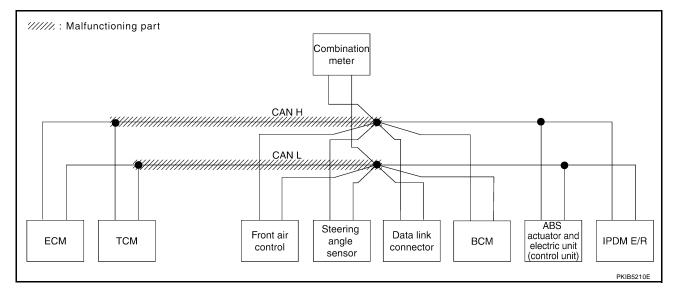
If a check mark is put on "NG" on "INITIAL DIAG (Initial diagnosis)", replace the control unit.

Case 1

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

Receive diagn RG BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELF-DIAG	RESULTS
RG /SEC	/M&A	/ABS			I LOOLIO
- UNKWN					
	UNKWN		UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UV01)
- –			_	CAN COMIL CIRCUIT (U 1000)	_
	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
	-	-	_	CAN COMM CIRCUIT (U 100)	-
(WN –	-	_	_	CAN COMIN CIRCUIT (U 1000)	-
– UNKWN	_	_	—	CAN COMIL CIRCUIT (U 1000)	-
	- <u> </u>	UNKWN (WN	- – UNKWN – - – – – – SWN – – – –	UNKWN - UNKWN SWN	UNKWN - UNKWN - (UM00) UNKWN - UNKWN CAN COMM CIRCUIT (U1000) CAN COMM CIRCUIT (UM00) (WN CAN COMM CIRCUIT (UM00) CAN COMM CIRCUIT



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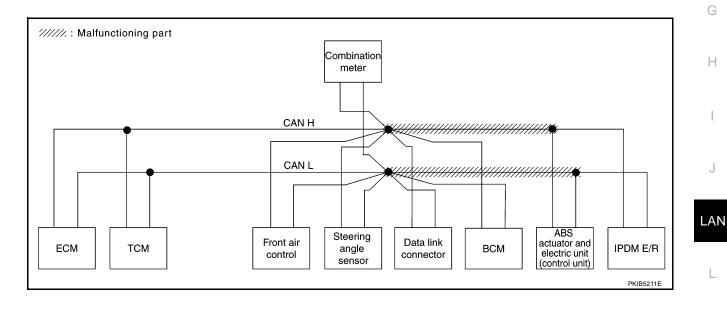
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Case 2

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

					CAN DIA								
SELECT SYSTEM	Ascroon		_			Red	Receive diagnosis				SELF-DIAG RESULTS		
	N SCIEEN	Initial diagnosis	Transmit diagnosis	ECM	тсм	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 (U 101)	
A/T	-	NG	UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_	
BCM	No indication	NG	UNKWN	UNKWN	_	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	—	
METER	No indication	-	-	—	-	-	-	-	-	—	CAN COMM CIRCUIT (U 1000)	—	
ABS	-	NG	UNKWN	UNKWN		UNKWN	_	_	-	_	CAN COMM CIRCUIT (U 1000)	_	
IPDM E/R	No individuation	_	UNKWN	UNKWN	_	_	UNKWN	_	-	-	CAN COMM CIRCUIT (U 1000)	_	

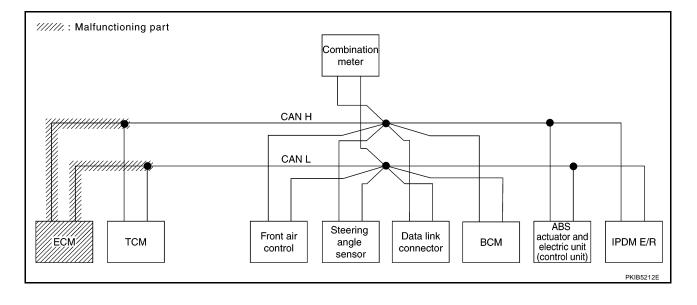


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Case 3

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

			CAN DIA									
SELECT SYSTEM screen		en Initial				Rec	ceive diagn		SELF-DIAG RESULTS			
			Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	_			UNKWN		CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUI (UN01)
A/T	_	NG	UNKWN		-	-	-	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	_	-	-	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	—	-	-	-	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	_	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	—	UNKWN		-	-	UNKWN	_	_	_	CAN COMM CIRCUIT (U 1000)	-
	indication		UNKWIN				ONIXWIN				(U ₩ 00)	



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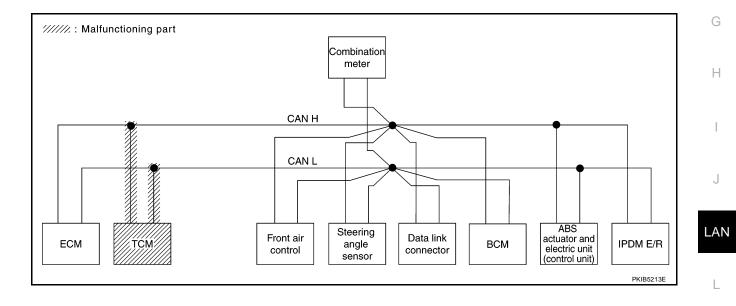
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Case 4

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	Iscreen	Initial	Treastit			Rec	ceive diagn	osis			SELF-DIAG	BESULTS
			Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UV01)
A/T	-	NG	UNKWN		_	-	_			-	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	_	_	_	_	-	_	_	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-	CAN COMM CIRCUIT (U1000)	_



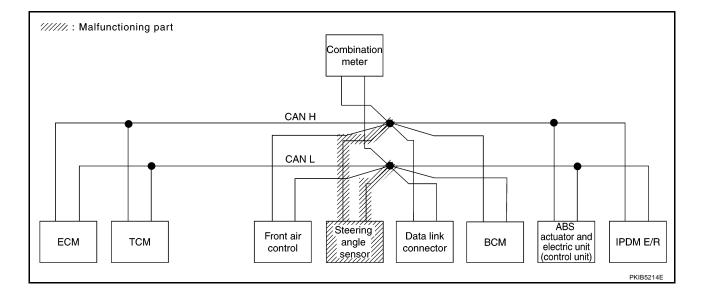
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Case 5

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	l screen					Red	ceive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (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)	_



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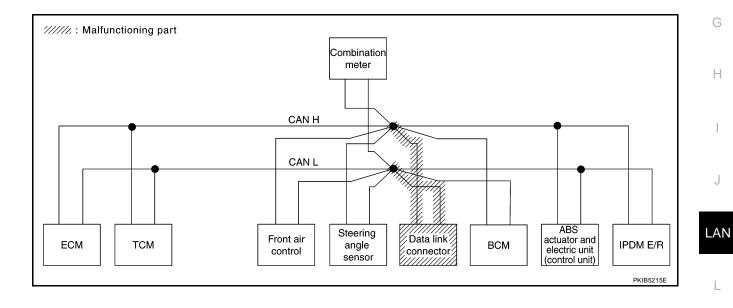
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Case 6

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	l screen		_			Rec	eive diagn	osis				RESULTS
SELECTION	1 SCIECTI	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	THEODERS
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 individuation	NG	UNKWN	UNKWN	_	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No individuation	-	-	-	—	-	-	_	-	-	CAN COMM CIRCUIT (U1000)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	-	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indiviation	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_	CAN COMM CIRCUIT (U1000)	_

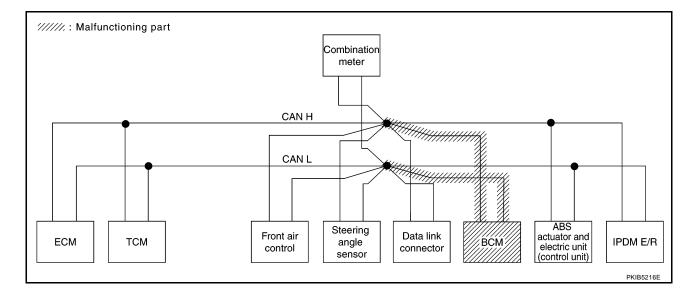


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Case 7

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	A screen	Initial	Turneratio			Rec	ceive diagn	osis			SELF-DIAG	BESUITS
			Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	—		UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMIN CIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	-
BCM	Ng ind ation	NG	UNKWN	UNKWN	—	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	-	_	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-		_	-	_	CAN COMM CIRCUIT (U 1000)	_
		1			1		_		1	1		

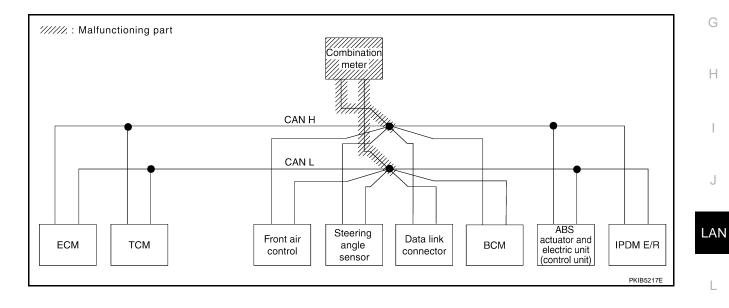


Case 8

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	screen	luciti e l	Tresserit			Rec	ceive diagn	osis			SELF-DIAG	BESULTS
011101 01011.		Initial diagnosis	Transmit diagnosis	ECM	тсм	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 (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	_	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	-
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indivation	_	-	_	-	-	_	-	_	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	_	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	-	CAN COMM CIRCUIT (U1000)	-



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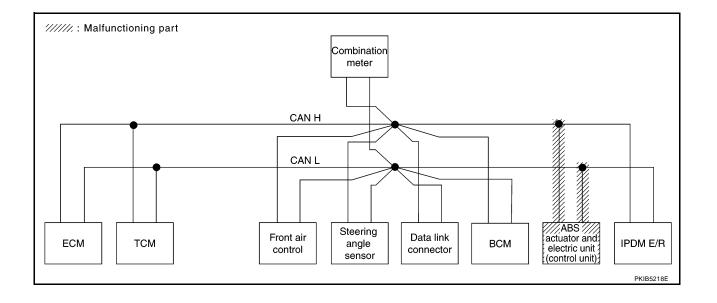
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Case 9

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	l scroon		_			Red	eive diagn	osis			SELF-DIAG	
SELECTION	i scieen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	THEODERS
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	-	_	_	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 000)	_
BCM	No indication	NG	UNKWN	UNKWN	-	-		UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	—	-	-	Ι	-	-	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	V		UNKWN		UNKWN	-	_	-	_	CAN COMM CIRCUIT (UN000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_



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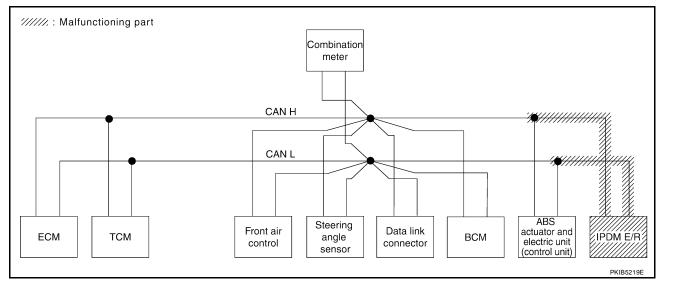
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Case 10

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

					CAN DIA	G SUPPOI						
SELECT SYSTEM	l screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELF-DIAG	RESULTS
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
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 (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	-	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	Ng ind ation	-	UNKWN	UNKWN	_	_	UNKWN	—	-	-	CAN COMM CIRCUIT (UN000)	—



Case 11

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

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTE	Miscreen	1.000.0	T			Red	ceive diagn	osis			SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	-	NG		-	UNKWN	-		UNKWN			CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN		_	-	-	UNKWN		-	CAN COMM CIRCUIT (U 000)	_
BCM	Ng ind ation	NG	UNKWN	UNKWN	-	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No individuation	_	-	_	-	-	-	_	_	_	CAN COMM CIRCUIT (U 1000)	_
ABS	-	₩		UNKWN	UNKWN	UNKWN	-	_	_	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	Ng indivation	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U 000)	_
												PKIB5093E

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Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-91, "IPDM E/R Ignition Relay Circuit Inspection" .

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	creen					Red	ceive diagn	osis			SELF-DIAG	BESHITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN		UNKWN	CAN COMM CIRCUIT (U 100)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
всм	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	-	_	-	Ι	CAN COMM CIRCUIT (U 100)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	—	UNKWN	-	_	Ι	CAN COMM CIRCUIT (U1000)	-

Case 13

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-91, "IPDM E/R Ignition Relay Circuit Inspection".

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	screen	1.00.1	T			Red	ceive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	-	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (U1001)
A/T	-	NG	UNKWN	-	_	_	-	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN		—	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	—		—	-	_	—	Ι	CAN COMM CIRCUIT (U1000)	—
ABS	-	NG	UNKWN	Ι	UNKWN	—	-		-	Ι	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	—	UNKWN	-	-	Ι	CAN COMM CIRCUIT (U1000)	_

Inspection Between TCM and Data Link Connector Circuit 1. CHECK CONNECTOR

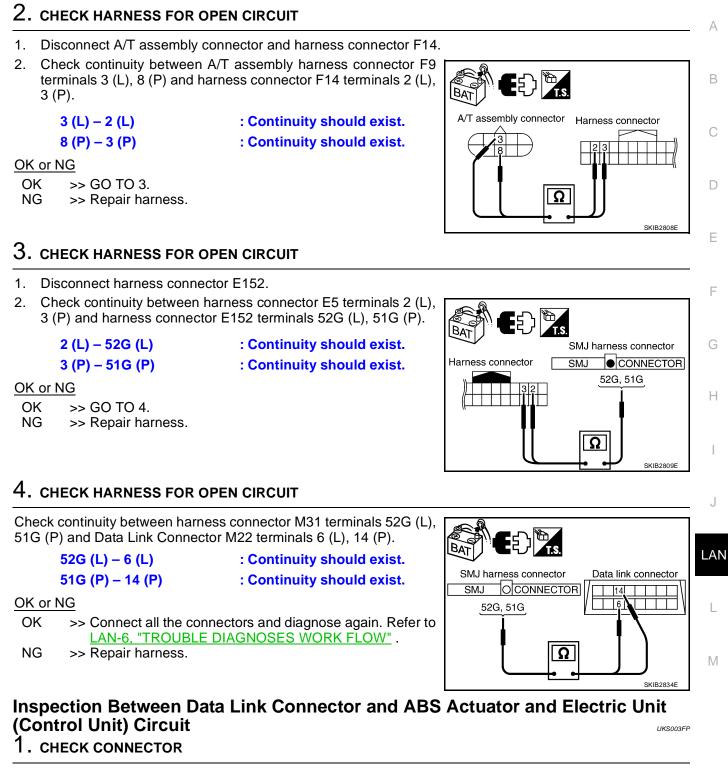
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- Turn ignition switch OFF. 1.
- Disconnect the battery cable from the negative terminal. 2.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

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



- 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.

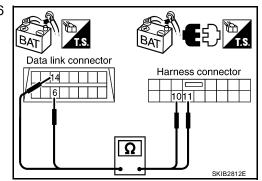
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M91.
- 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) 14 (P) – 10 (P)

: Continuity should exist. : 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.
- 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)
 - 10 (P) 15 (P)
- : Continuity should exist.

: 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.

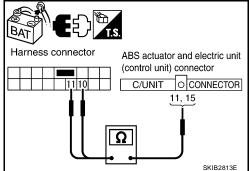
ECM Circuit Inspection

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.



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LAN-83

Revision: November 2005

2. CHECK HARNESS FOR OPEN CIRCUIT

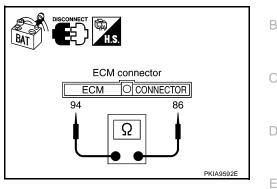
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

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).

: Approx. 54 – 66
$$\Omega$$

OK or NG

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

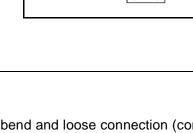


1. CHECK CONNECTOR

- 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.



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2. CHECK HARNESS FOR OPEN CIRCUIT

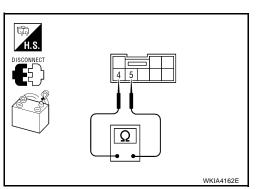
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 5 (P).

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

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Data Link Connector Circuit Inspection

1. CHECK CONNECTOR

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[CAN]

- 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

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 – 66 Ω

<u>OK or NG</u>

OK >> Diagnose again. Refer to <u>LAN-6</u>, "TROUBLE DIAG-<u>NOSES WORK FLOW"</u>.

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

BCM 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 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.

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Revision: November 2005

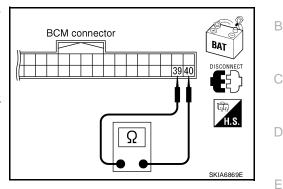
2. CHECK HARNESS FOR OPEN CIRCUIT

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

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).

BAT

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

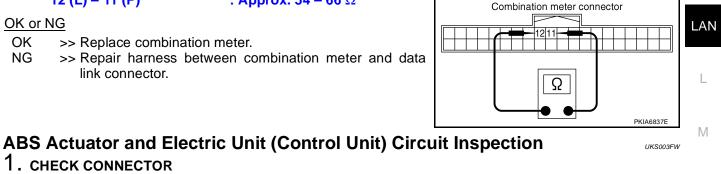
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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.



1. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 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.

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2. CHECK HARNESS FOR OPEN CIRCUIT

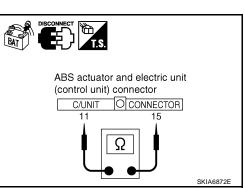
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

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

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[CAN]

1. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 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

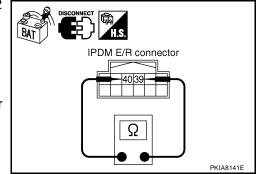
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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] **CAN Communication Circuit Inspection** UKS003FY А **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. В 2. Disconnect the battery cable from the negative terminal. Check following terminals and connectors for damage, bend and loose connection (control module side, 3. control unit side, sensor side, meter side, and harness side). ECM TCM Front air control Steering angle sensor BCM Combination meter Е ABS actuator and electric unit (control unit) IPDM E/R Between ECM and IPDM E/R F OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR SHORT CIRCUIT Н 1. Disconnect following connectors. ECM connector _ Harness connector E2 Check continuity between ECM harness connector E16 termi-2. nals 94 (L) and 86 (P). 臣) 94 (L) - 86 (P) : Continuity should not exist. ECM connector OK or NG **CONNECTOR** ECM OK >> GO TO 3. LAN NG >> Repair harness between ECM and harness connector 86 94 E2. L SKIA6865E 3. CHECK HARNESS FOR SHORT CIRCUIT Μ

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 $OK \Rightarrow GO TO 4$. NG $\Rightarrow Repair harness between ECM and harness connector$

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

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A/T assembly connector

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- 1. Disconnect following connectors.
- A/T assembly connector _
- Harness connector F14

3 (L) – 8 (P)

2. Check continuity between A/T assembly harness connector F9 terminals 3 (L) and 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
- 8 (P) Ground

: Continuity should not exist. : 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

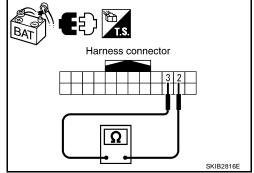
- Disconnect harness connector E152. 1.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

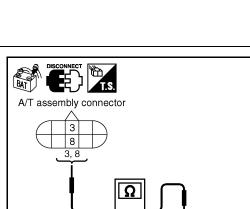
2(L) - 3(P)

: Continuity should not exist.

OK or NG

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







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7. CHECK HARNESS FOR SHORT CIRCUIT

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

- 2 (L) Ground
- 3 (P) Ground

: Continuity should not exist.

: 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



- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Harness connector M91
- Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

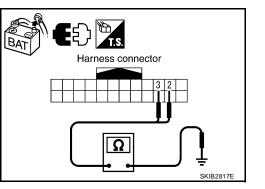
6 (L) – 14 (P)

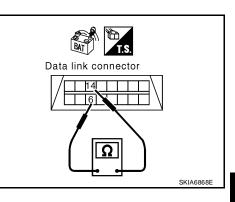
: Continuity should not exist.

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





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9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

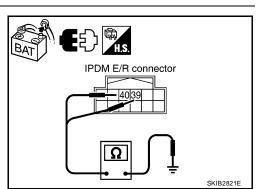
- 39 (L) Ground
- : Continuity should not exist.
- 40 (P) Ground

: Continuity should not exist.

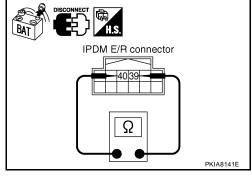
OK or NG

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



Data link connector	
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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.

: Approx. 108 – 132 Ω

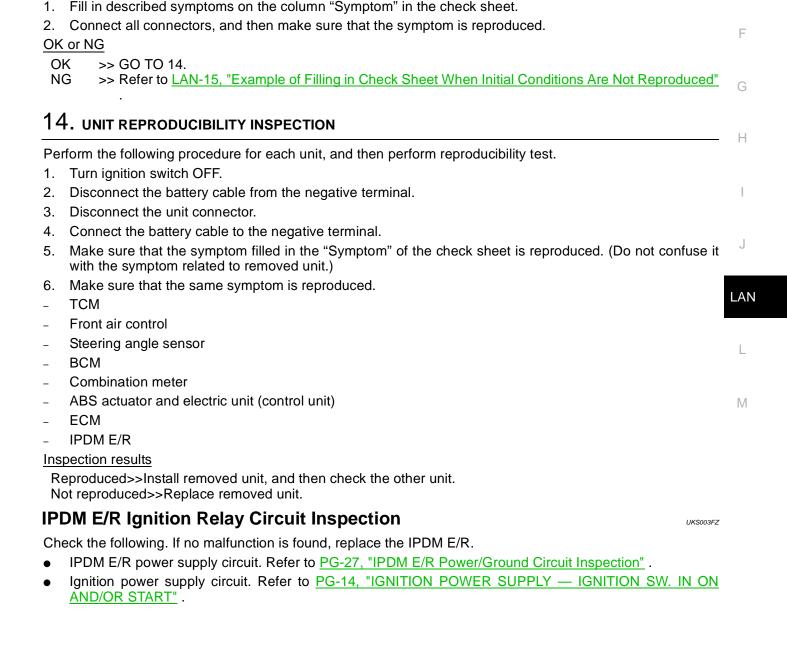
OK or NG

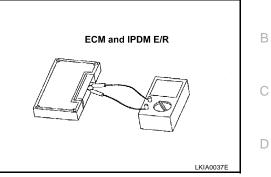
OK >> GO TO 13.

39 - 40

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

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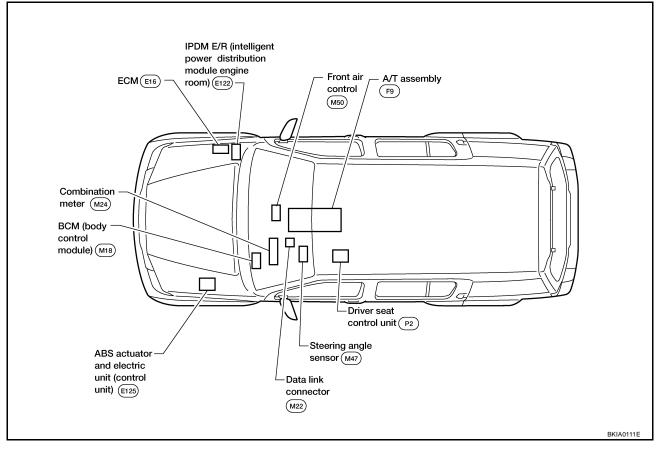
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2005 Pathfinder

System Description

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



PFP:23710

[CAN]

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UKS003F1

Schematic



UKS003F2

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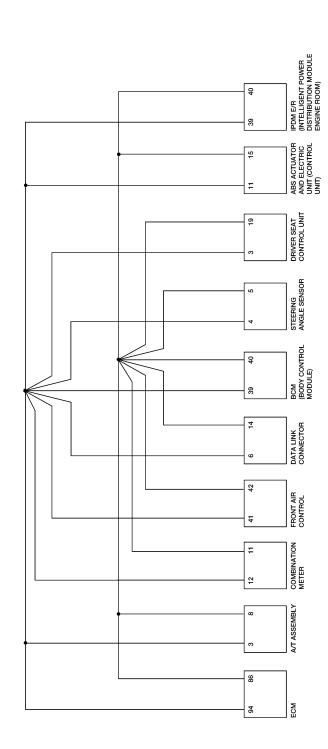
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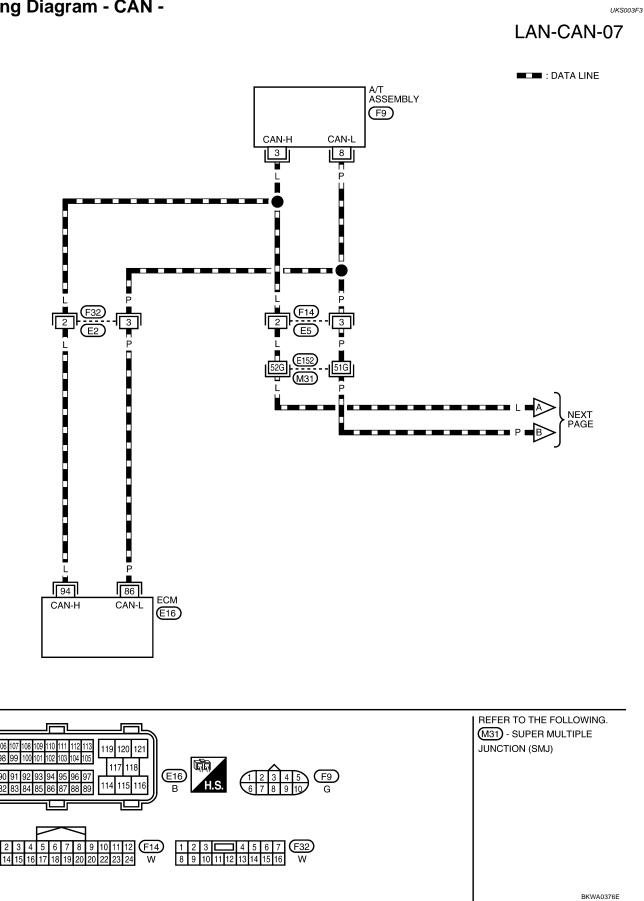
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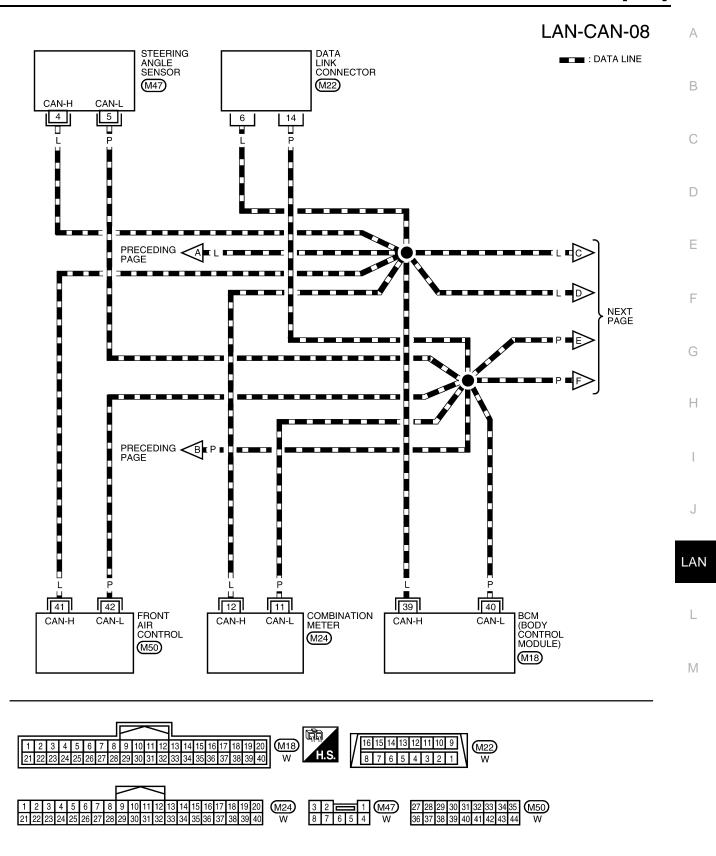


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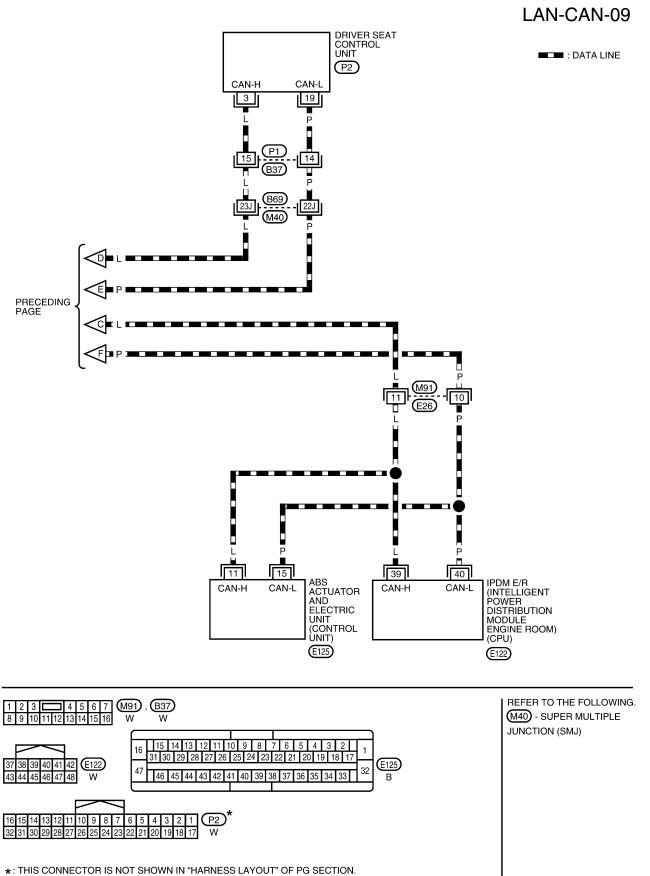
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[CAN]



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[CAN]



BKWA0378E

CHECK SHEET

[CAN]

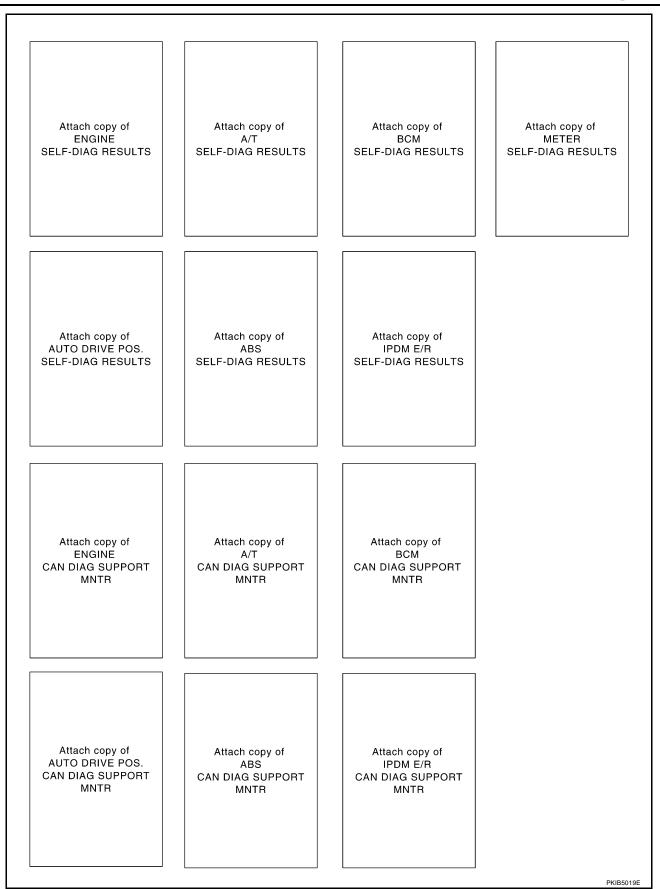
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NOTE:

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

SELLCT SYSTEM werene Image: Adapting the state of the st						CAN DIA	G SUPPO	RT MNTR					
diagnosis diagnosis ECM TCM STRG BCM /SEC MAX /ABA /ABA /ABA /ABA NGINE - NG UNKWN - UNKWN UNIKWN UN	SELECT SYSTEM	l screen	Initial	Transmit		1	Re	ceive diagn	osis	1		SELF-DIAG	RESULTS
NACHAE - ING DINVIN - ONKVN ONKVN ONKVN ONKVN OUNKVN OUNKVN <tho< th=""><th></th><th></th><th></th><th></th><th>ECM</th><th>тсм</th><th>STRG</th><th>BCM /SEC</th><th></th><th>VDC/TCS /ABS</th><th></th><th></th><th></th></tho<>					ECM	тсм	STRG	BCM /SEC		VDC/TCS /ABS			
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CHECK SHEET RESULTS (EXAMPLE)

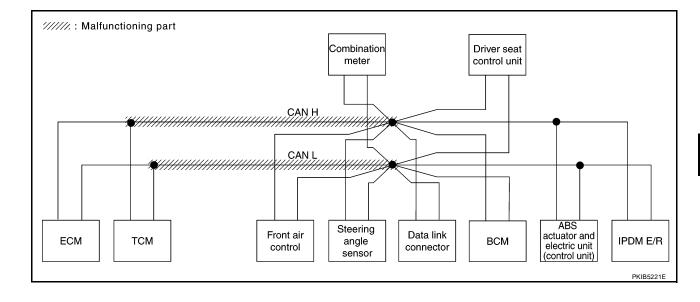
NOTE:

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 <u>LAN-110</u>, "Inspection Between TCM and Data Link Connector Circuit".

					CAN DIA	G SUPPOF	RT MNTR							
SELECT SYSTEM	screen	1.111.1	-			Rec	eive diagn	osis			SELE-DIAG	RESULTS		
	0010011	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	I LEGOLIO		
ENGINE	-	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)		
A/T	-	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 000)	_		
BCM	No indication	NG	UNKWN	UNKWN	_	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-		
METER	No indication				- –	_	_	_	_	_	-	-	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indication	ng unkwn		-		-	UNKWN	JNKWN UNKWN	N UNKWN —	-	CAN COMM CIRCUIT (U 1000)	_		
ABS	-	NG	UNKWN	UNKWN		UNKWN	_	-	-	_	CAN COMM CIRCUIT (U 1000)	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	—	-	-	CAN COMM CIRCUIT (U 1000)	—		



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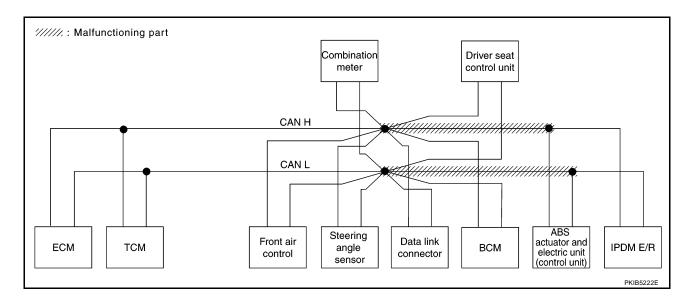
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Case 2

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"

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	l screen					Red	ceive diagn	osis			SELF-DIAG	BESHITS
	1 Scicen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		THEODERS
ENGINE	-	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (U 01)
A/T	-	NG	UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	-	CAN COMIC CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	-	-	_	_	CAN COMM CIRCUIT (U 100)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	_	-	CAN COMM CIRCUIT (U1000)	_
ABS	-	NG	UNKWN	UNKWN		UNKWN	_	_	_	_	CAN COMIN CIRCUIT (U 1000)	_
IPDM E/R	No indiviation	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMIN CIRCUIT (U 1000)	_



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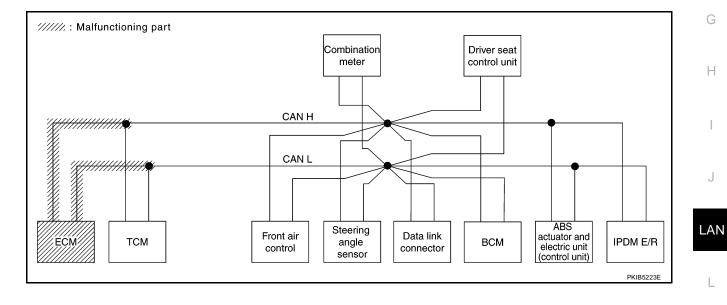
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Case 3

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	screen	1.00.01	T			Rec	eive diagn	osis			SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	I NEODERO
ENGINE	-	NG		-		-		UNKWN			CAN COMM CIRCUIT (U 000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN		_	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication		-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	-	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_	_	CAN COMM/CIRCUIT (UN00)	_

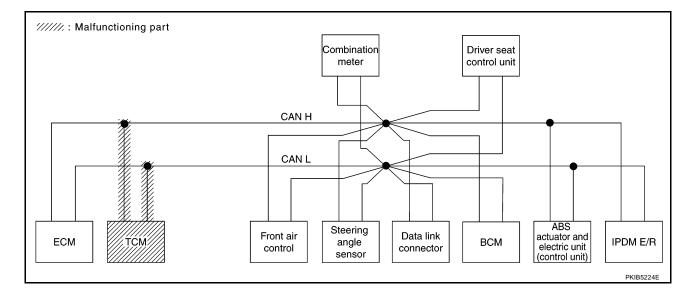


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Case 4

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

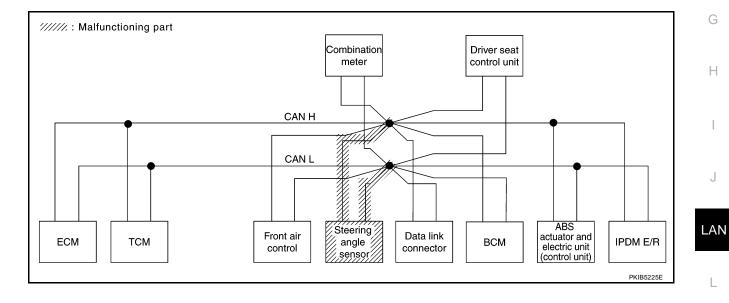
					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	Looroon		_			Red	ceive diagn	osis			SELF-DIAG	
SELECT STSTEM	rscreen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAG	I RESOLIS
ENGINE	-	NG	UNKWN	-		_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 000)	CAN COMM CIRCU (UN01)
A/T	-	NG	UNKWN		-	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	—
BCM	No indication	NG	UNKWN	UNKWN	-	-	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN			-	UNKWN	UNKWN	-	-	CAN COMIC CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN		UNKWN	-	—	-	-	CAN COMM CIRCUIT (U 1000)	—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	—	—	—	CAN COMM CIRCUIT (U1000)	—



Case 5

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

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	l screen					Red	ceive diagn	osis			SELF-DIAG	BESHITS
	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	
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		-	—	-	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_



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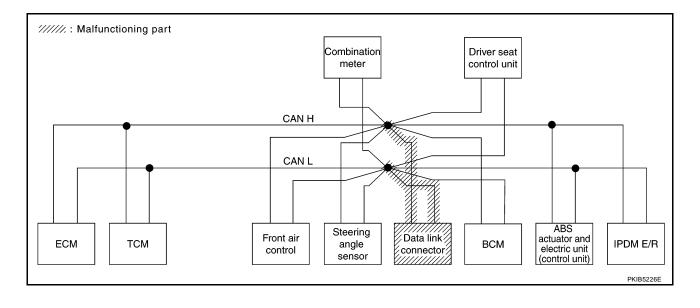
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Case 6

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

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	l screen					Red	ceive diagn	osis			SELF-DIAG	BESUITS
	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIAC	I LOOLIO
ENGINE	-	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (U1001)
A/T	-	NG	UNKWN	UNKWN	_	-	_	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
BCM	No individuation	NG	UNKWN	UNKWN	_	-	_	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No individuation	-	-	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U1000)	_
AUTO DRIVE POS.	No ind ation	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	_	_	CAN COMM CIRCUIT (U1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	_	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No individuation	_	UNKWN	UNKWN	_	-	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_



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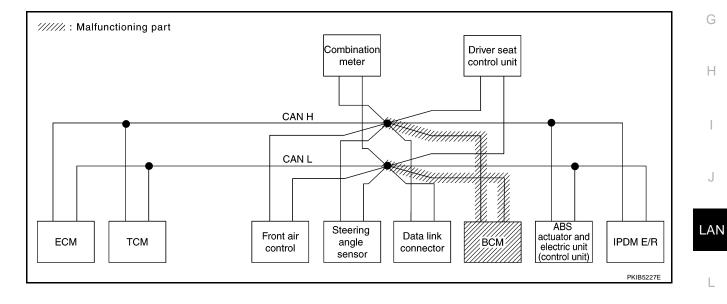
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Case 7

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	screen	1.000.01	T			Rec	eive diagn	osis			SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	HEODEIO
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
BCM	increation	NG	UNKWN	UNKWN	_	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication		-	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indication	ng unkwn		_	UNKWN	-	UNKWN		и —	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	—	-	_	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	—	_	_	CAN COMM CIRCUIT (U 1000)	_



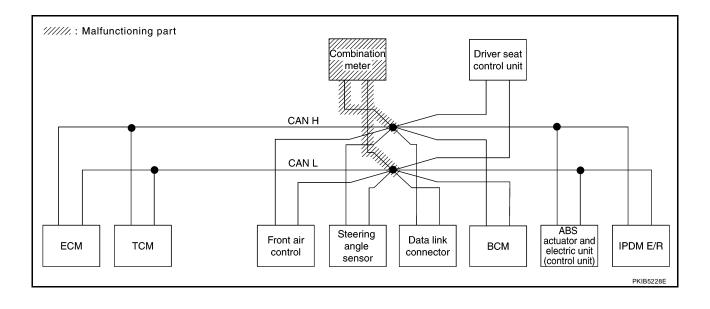
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Case 8

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	l screen					Rec	eive diagn	osis			SELF-DIAG	BESUITS
SEELOT STOTEW	i scieen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		THEODERS
ENGINE	-	NG	UNKWN	-	UNKWN	—	UNKWN		UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCL (UN01)
A/T	-	NG	UNKWN	UNKWN	—	—	-	UNKWN	UNKWN		CAN COMMCIRCUIT (UN00)	_
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	inchation	-	-	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 100)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN		-	-	CAN COMICIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	-	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	_	_	-	CAN COMM CIRCUIT (U1000)	_



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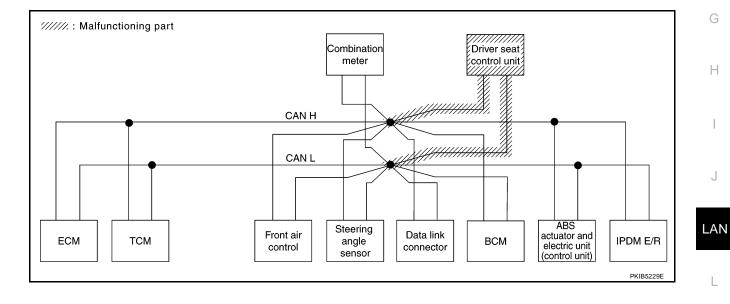
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Check driver seat control unit circuit. Refer to LAN-115, "Driver Seat Control Unit Circuit Inspection" .

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	l screen					Rec	eive diagn	osis			SELF-DIAG	BESHITS
	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SEE -DIAC	THEODERS
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 individualion	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	-	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	-	-	-	CAN COMM CIRCUIT (U1000)	_

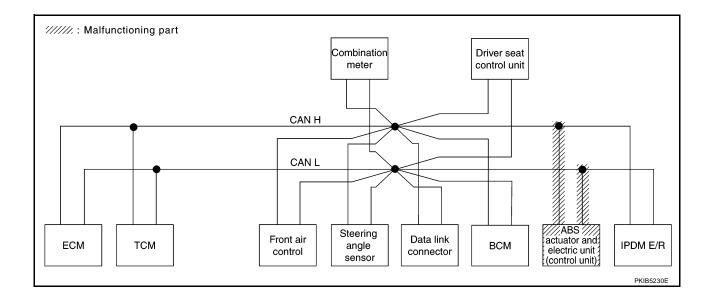


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Case 10

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

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	screen					Red	ceive diagn	osis			SELF-DIAG	BESUITS
SELECTOTOTEN	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIAC	
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMINCIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	-	_	-	-	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	CAN COMM CIRCUIT (U1000)	-
ABS	-	V	UNKWN	UNKWN		UNKWN	-	-	-	-	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	CAN COMM CIRCUIT (U1000)	_



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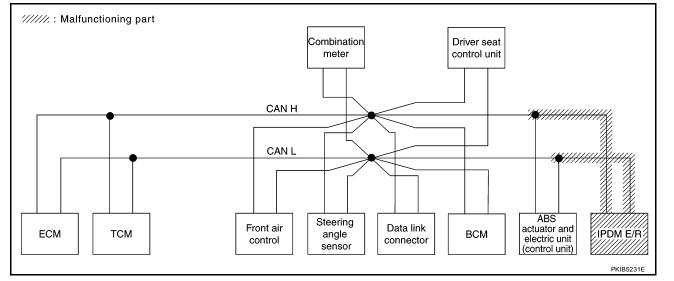
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Case 11

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTEM	l screen					Rec	eive diagn	osis			SELF-DIAG	BESHITS
GELEOTOTOTEN	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
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 (U 100)	_
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 inclusion	_	UNKWN	UNKWN	-	_	UNKWN	_	-	-	CAN COMM CIRCUIT (U 1000)	_



Case 12

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

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYSTE	/ screen	1	T			Rec	eive diagn	osis			SELE-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG				-			UNKWN		CAN COMM CIRCUIT (U 1000)	CAN COMIN CIRCUIT (UN01)
A/T	-	NG	UNKWN		—	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	
BCM	No. inclusion	NG	UNKWN	UNKWN	—	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	indivation	-	_	_	_	_	-	-	-	-	CAN COMM CIRCUIT (U 100)	_
AUTO DRIVE POS.	No individuation	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-	-	CAN COMICIRCUIT (U 100)	_
ABS	-	V		UNKWN		UNKWN	-	-	-	-	CAN COMM CIRCUIT (U 000)	_
IPDM E/R	No individualion	-	UNKWN	UNKWN	-	—	UNKWN	-	-	-	CAN COMIN CIRCUIT (U 1000)	_

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Case 13

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-123</u>, "IPDM E/R Ignition Relay <u>Circuit Inspection</u>".

					CAN DIA	G SUPPOR	RT MNTR					
SELECT SYSTEM	screen					Red	ceive diagn	osis			SELF-DIAG	BESUITS
	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	
ENGINE	-	NG	UNKWN	-		-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUI (UN01)
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 (U 100)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-		_	UNKWN	UNKWN	_	_	CAN COMICIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	-	CAN COMM CIRCUIT (U1000)	_

Case 14

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-123</u>, "IPDM E/R Ignition Relay <u>Circuit Inspection</u>".

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM	screen	1.00.1	T			Red	ceive diagn	osis			SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (U1001)
A/T	-	NG	UNKWN		—	1	-	1	UNKWN		CAN COMM CIRCUIT (U 000)	-
BCM	No indication	NG	UNKWN	UNKWN	—	I	-	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	-	—	1	-	1	—	-	CAN COMM CIRCUIT (U1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	1	UNKWN	UNKWN	_	-	CAN COMM CIRCUIT (U1000)	-
ABS	-	NG	UNKWN	-	UNKWN	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-	CAN COMM CIRCUIT (U1000)	_

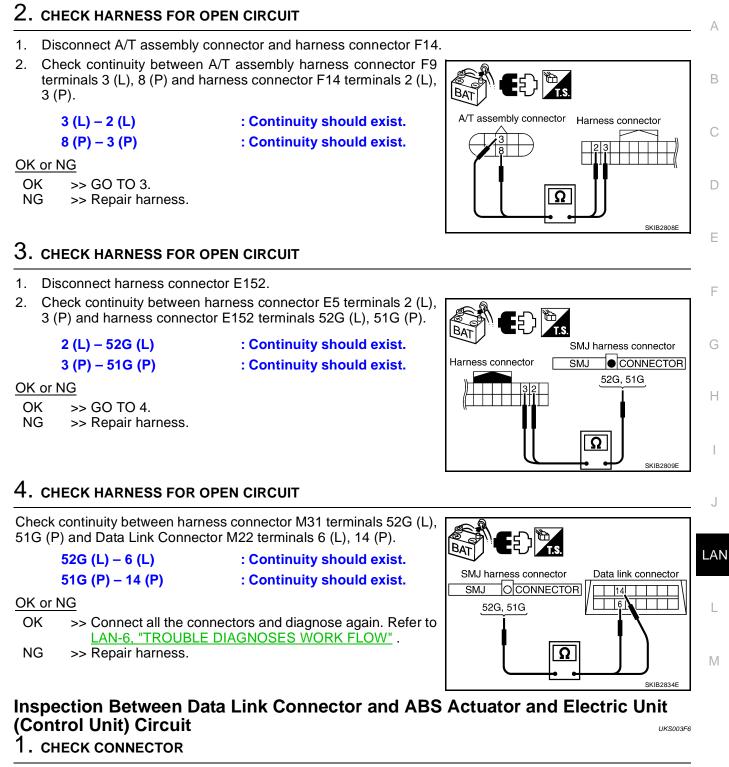
Inspection Between TCM and Data Link Connector Circuit 1. CHECK CONNECTOR

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- 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.



- 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.

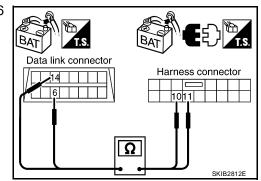
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M91.
- 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) 14 (P) – 10 (P)

: Continuity should exist. : 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.
- 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)
 - 10 (P) 15 (P)
- : Continuity should exist.

: 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.

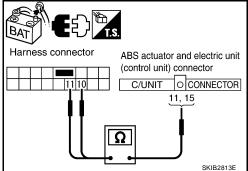
ECM Circuit Inspection

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.



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2. CHECK HARNESS FOR OPEN CIRCUIT

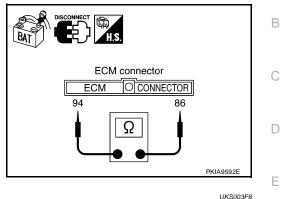
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

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).

: Approx. 54 – 66 Ω

OK or NG

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



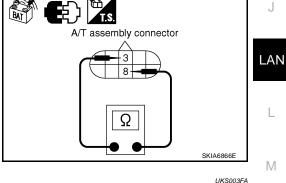
1. CHECK CONNECTOR

- 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.



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2. CHECK HARNESS FOR OPEN CIRCUIT

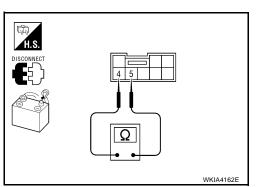
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 5 (P).

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

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Data Link Connector Circuit Inspection 1. CHECK CONNECTOR

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- 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 – 66 Ω

OK or NG

OK >> Diagnose again. Refer to <u>LAN-6</u>, "TROUBLE DIAG-<u>NOSES WORK FLOW"</u>.

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

BCM 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 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.

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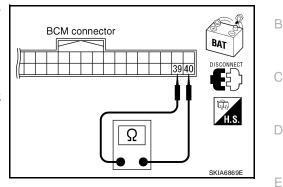
2. CHECK HARNESS FOR OPEN CIRCUIT

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



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Combination Meter 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 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.

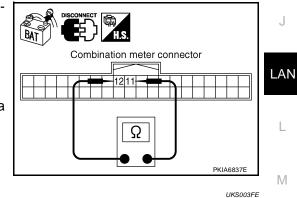
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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

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.

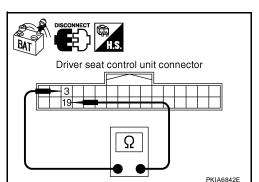
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 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

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.

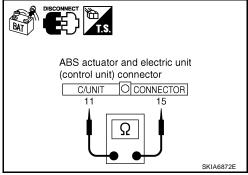


1. CHECK CONNECTOR

- 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

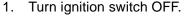
- OK >> GO TO 2.
- NG >> Repair terminal or connector.



UKS003FG

UKS003FF

: Approx. 108 – 132 Ω



1. CHECK CONNECTOR

2. Disconnect the battery cable from the negative terminal.

and electric unit (control unit).

CAN Communication Circuit Inspection

- Check following terminals and connectors for damage, bend and loose connection (control module side, 3. control unit side, sensor side, meter side, and harness side).
- ECM

1.

2.

OK or NG

OK

NG

- 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.

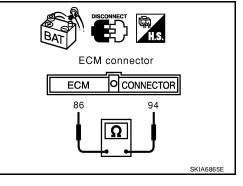
2. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors. 1.
- ECM connector
- Harness connector E2
- 2. Check continuity between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

OK or NG

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



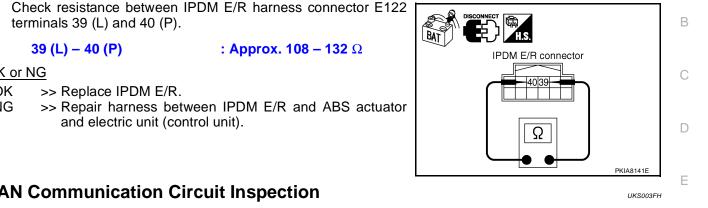
Turn ignition switch OFF.

Disconnect IPDM E/R connector.

>> Replace IPDM E/R.

terminals 39 (L) and 40 (P).

39 (L) - 40 (P)



2. CHECK HARNESS FOR OPEN CIRCUIT

: Continuity should not exist.

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

- 94 (L) Ground
- 86 (P) Ground

: Continuity should not exist.

: 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
- 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

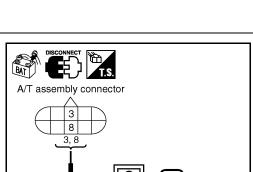
5. CHECK HARNESS FOR SHORT CIRCUIT

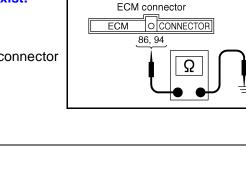
Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

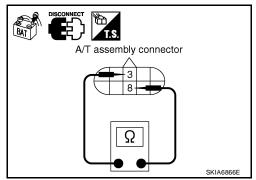
- 3 (L) Ground 8 (P) – Ground
- : Continuity should not exist. : Continuity should not exist.

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







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SKIB0571E

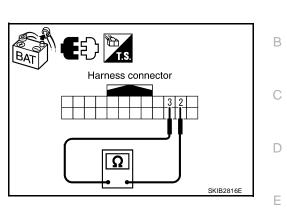
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

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.



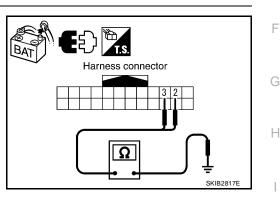
7. CHECK HARNESS FOR SHORT CIRCUIT

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.



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Revision: November 2005

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

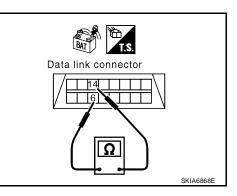
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

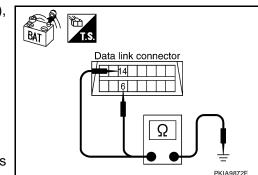
6 (L) – Ground 14 (P) – Ground

: Continuity should not exist. : 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	
 Disconnect following connectors. Driver seat control unit connector Harness connector P1 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. 	Driver seat control unit connector
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.	BAT ED Its Driver seat control unit connector

OK or NG

OK >> GO TO 12.

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



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

: Continuity should not exist.

OK or NG

OK >> GO TO 13.

15 (L) – 14 (P)

NG >> Repair harness between harness connector B37 and harness connector B69.

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13. CHECK HARNESS FOR SHORT CIRCUIT

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

15 (L) – Ground

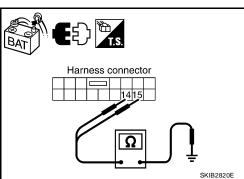
14 (P) – Ground

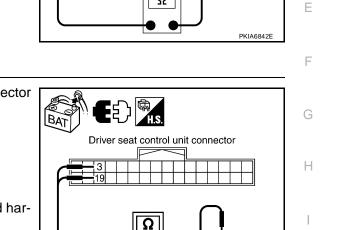
: Continuity should not exist. : Continuity should not exist.

OK or NG

OK >> GO TO 14.

NG >> Repair harness between harness connector B37 and harness connector B69.





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- 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

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: Approx. 108 – 132 Ω
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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.

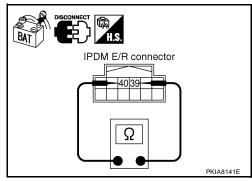
17. снеск сумртом

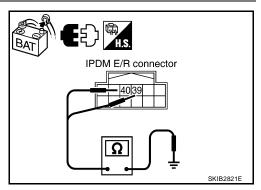
- 1. Fill in described symptoms on the column "Symptom" in the check sheet.
- 2. Connect all connectors, and then make sure that the symptom is reproduced.

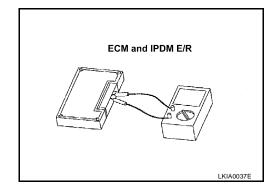
OK or NG

OK >> GO TO 18.

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







18	B. UNIT REPRODUCIBILITY INSPECTION	
Pe	rform the following procedure for each unit, and then perform reproducibility test.	A
1.	Turn ignition switch OFF.	
2.	Disconnect the battery cable from the negative terminal.	В
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.)	С
6.	Make sure that the same symptom is reproduced.	D
-	TCM	D
-	Front air control	
-	Steering angle sensor	Е
-	BCM	
-	Combination meter	
-	Driver seat control unit	F
-	ABS actuator and electric unit (control unit)	
-	ECM	
-	IPDM E/R	G
Ins	spection results	
	eproduced>>Install removed unit, and then check the other unit. lot reproduced>>Replace removed unit.	Н
IP	DM E/R Ignition Relay Circuit Inspection	
Ch	eck the following. If no malfunction is found, replace the IPDM E/R.	1
•	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"	J

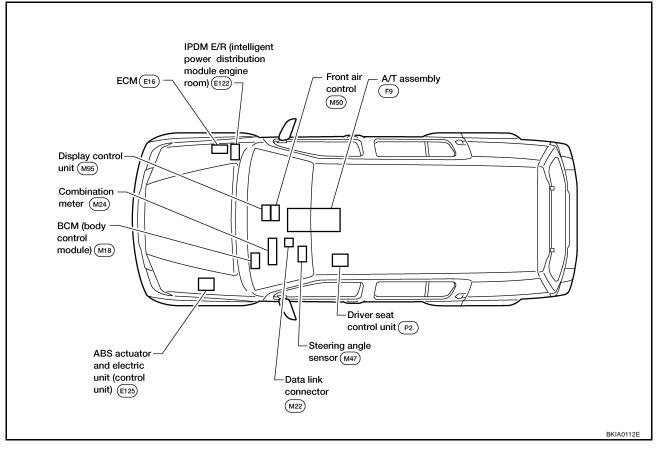
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System Description

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



PFP:23710

[CAN]

UKS003EF

UKS003EG

Schematic



UKS003EH

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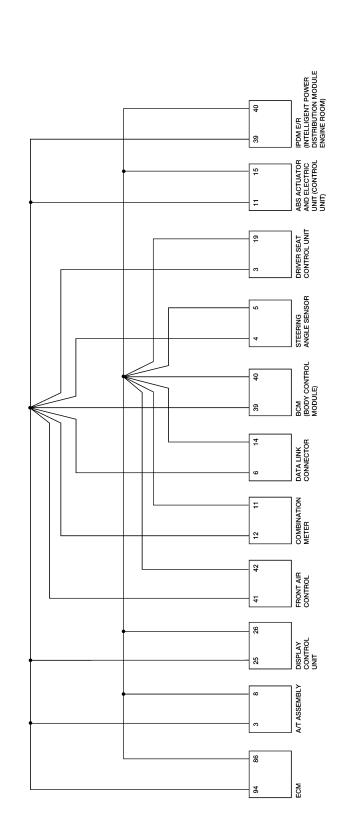
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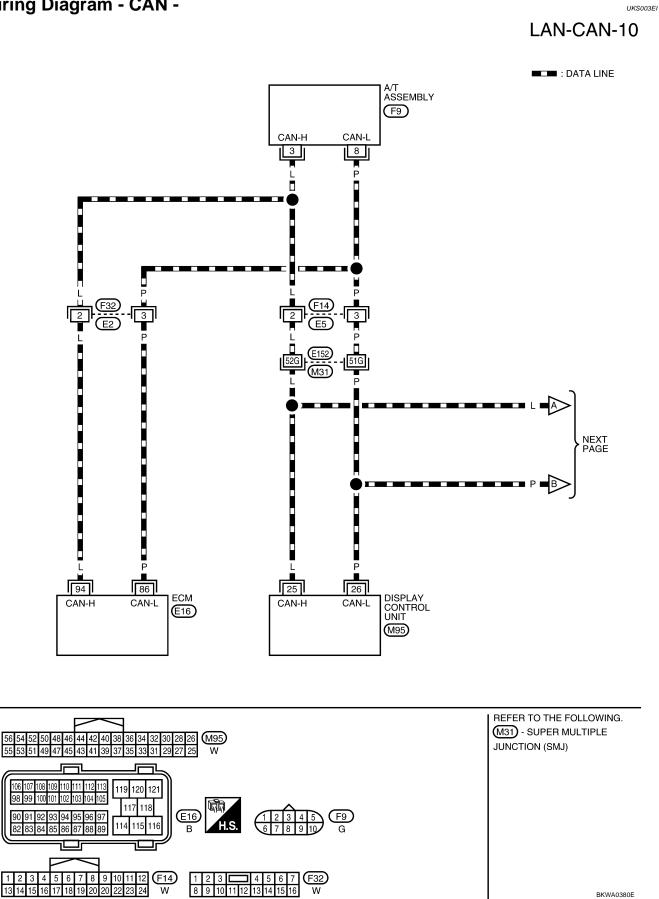
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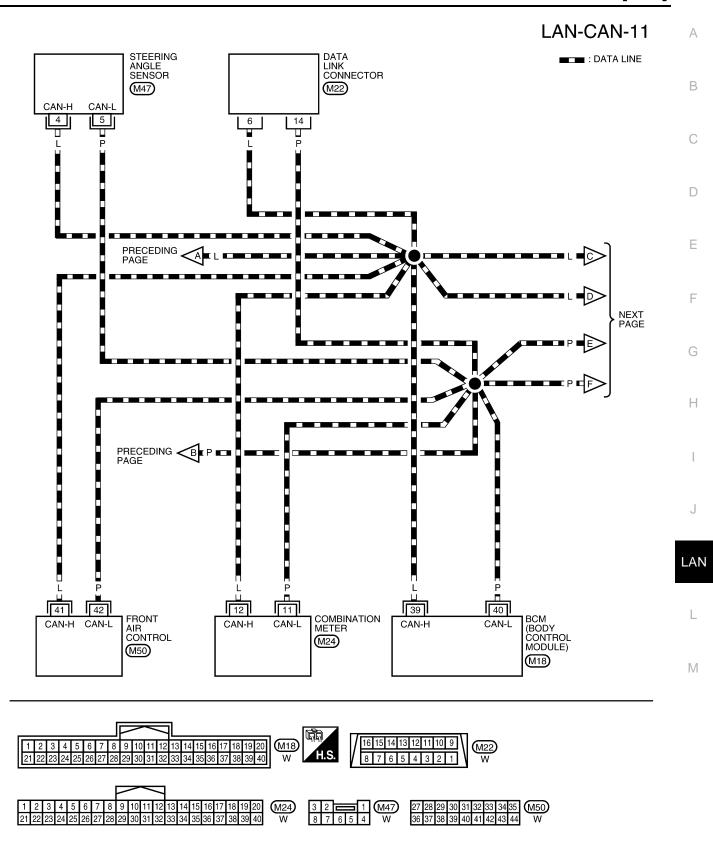
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BKWA0611E

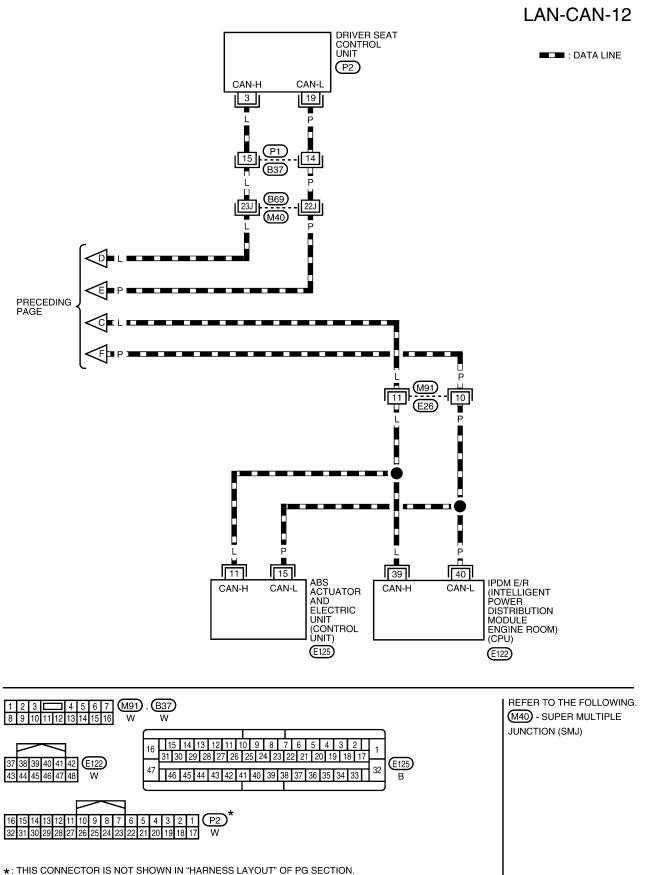


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BKWA0612E

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BKWA0382E

CHECK SHEET

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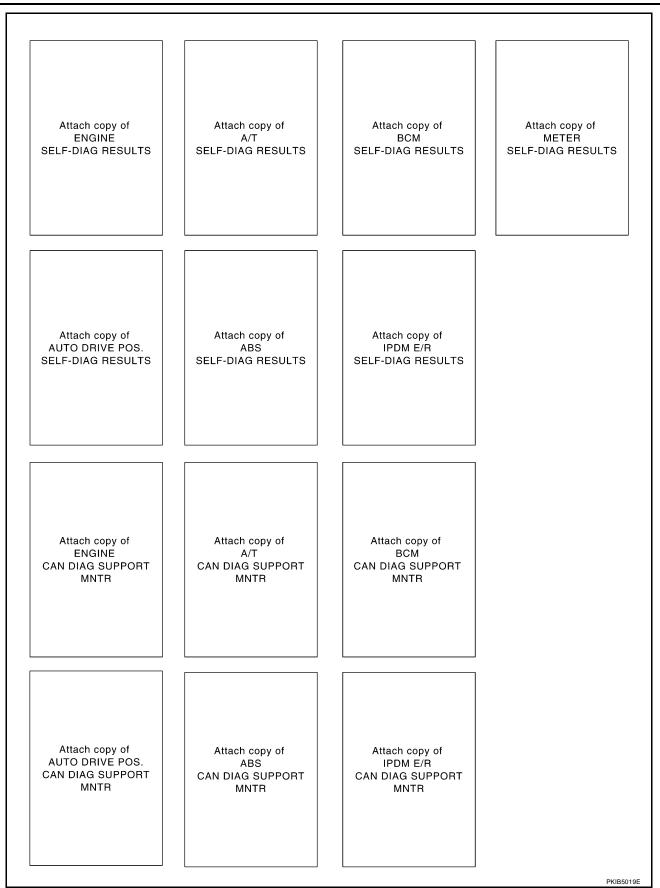
NOTE:

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM sc	reen	Initial	Transmit				Receive	diagnosis				SELF-DIAG	G RESULTS
			diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		
NGINE	-	NG	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (U1001)
т	-	NG	UNKWN	UNKWN	_	_	-	-	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	
splay control unit	-	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	_
м	No	NG	UNKWN	UNKWN	_	_	_	-	UNKWN	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
TED	ndication No ndication	_	_	_	_	_	_	_	_	_	_	CAN COMM CIRCUIT (U1000)	
ITO DRIVE POS	No	NG	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	_	_	CAN COMM CIRCUIT	_
38	ndication	NG	UNKWN	UNKWN		_	UNKWN		_	_	_	(U1000) CAN COMM CIRCUIT	_
	No		UNKWN			_	_	UNKWN	_	_	_	(U1000) CAN COMM CIRCUIT	
in in	ndication		UNKWIN	UNKWIN	_	_			_			(U1000)	_
				tach co ECT SY						ich copy CT SYS			
												above check shee	
Confirmation/Adjust	tment Di	splay	Ch							ustment	Display		
AN COMM AN CIRC 1					diagnos nit diagn			AN CIR				METE	R/M&A
AN CIRC 1					BCM	0010						IPDN	
AN CIRC 2					ECM			AN CIR				-	—
AN CIRC 4					air cont	rol							_

LAN-129

PKIB5020E



[CAN]

CHECK SHEET RESULTS (EXAMPLE)

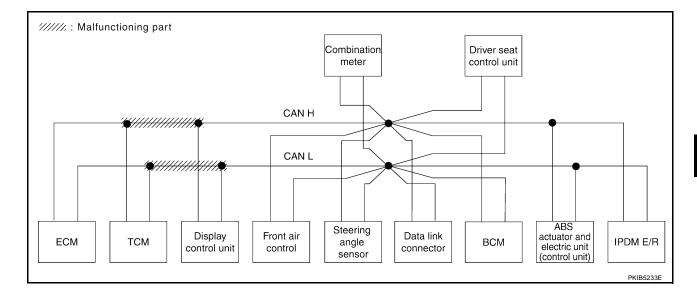
NOTE:

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 <u>LAN-145</u>, "Inspection Between TCM and Display Control Unit Circuit".

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	1 screen						Receive	diagnosis				SELF-DIAG	BESHITS
SELECTION	Scieen	Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	/M&A	VDC/TCS /ABS	E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	-	-	UNKWN	UNKWN			CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	_	-	_		UNKWN	_	CAN COMM CIRCUIT (U 100)	_
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 (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	_	_	CAN COMM CIRCUIT (U 100)	_
ABS	_	NG	UNKWN	UNKWN		_	UNKWN	_	-	_	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	CAN COMIN CIRCUIT (U 100)	_



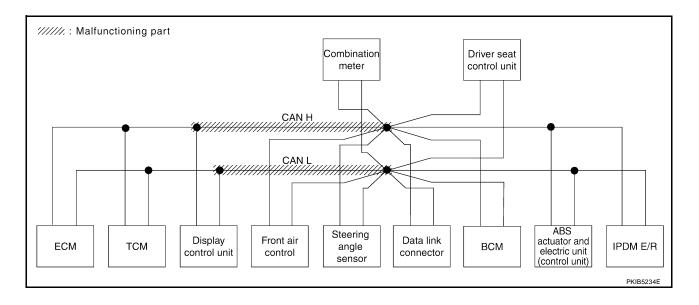
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Case 2

Check harness between display control unit and data link connector circuit. Refer to <u>LAN-147</u>, "Inspection <u>Between Display Control Unit and Data Link Connector Circuit</u>".

					CAN	DIAG SU	PPORT M	1NTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG	UNKWN	—	UNKWN	-	—		UNKWN			CAN COMM CIRCUIT (U1000)	CAN COMINCIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	_	-	UNKWN	UNKWN	_	CAN COMIC CIRCUIT (U 1000)	_
Display control unit	-	NG	UNKWN	UNKWN	-	UNKWN	_	UNKWN	UNIWN	-	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	-	-	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	_	_	-	_	-	_	-	-	CAN COMM CIRCUIT (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	-	_	-	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	CAN COMIN CIRCUIT (U 1000)	_



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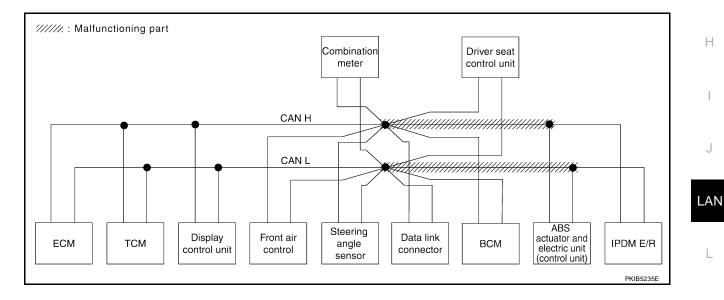
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Case 3

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"

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	1 screen						Receive	diagnosis				SELF-DIAG	
SELECT STOLEN	I SCIEEII	Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	THEODERS
ENGINE	-	NG	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN			CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	_	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	-
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	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	-	UNKWN	UNKWN	-	_	CAN COMM CIRCUIT (U1000)	-
ABS	-	NG	UNKWN	UNKWN		-		-	-	_	_	CAN COMM CIRCUIT	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U 000)	_

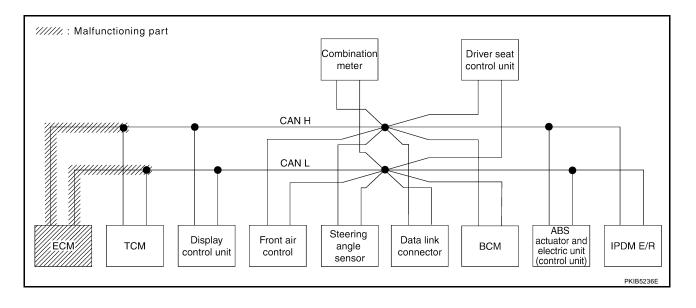


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Case 4

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	Iscreen		-				Receive	diagnosis				SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG		_	UNKWN	-	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCU (U 001)
A/T	-	NG	UNKWN	UNK	_	-	-		UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 1000)	-
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 (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN		_	-	_	UNKWN	_	_	_		_



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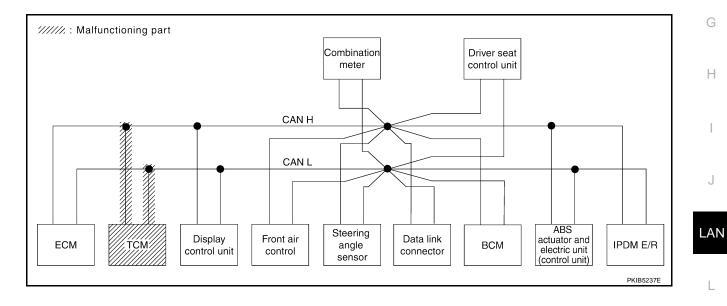
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Case 5

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
SELECTOTOTEN	1 Sercen	Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
ENGINE	-	NG	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	_	-	_	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	_
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 (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_		-	-	UNKWN	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN		I	UNKWN	_		_	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	-	_	UNKWN	-	_	_	CAN COMM CIRCUIT (U1000)	_

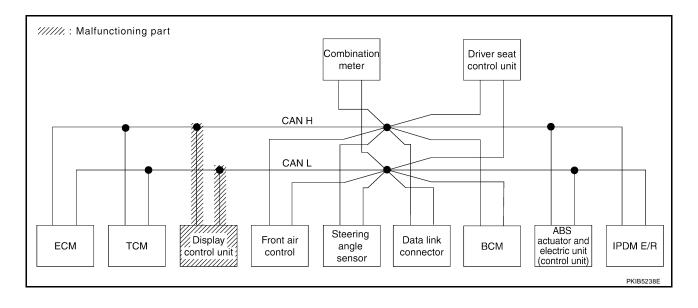


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Case 6

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

					CAN	DIAG SU	PPORT N	1NTR					
SELECT SYSTEM	Iscreen	1.00.1	T				Receive	diagnosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	-	NG	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCL (U1001)
A/T	-	NG	UNKWN	UNKWN	_	_	_	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	_
Display control unit	-	NG	UNKWN	UNKWN	_	UNIWN	_		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)	_

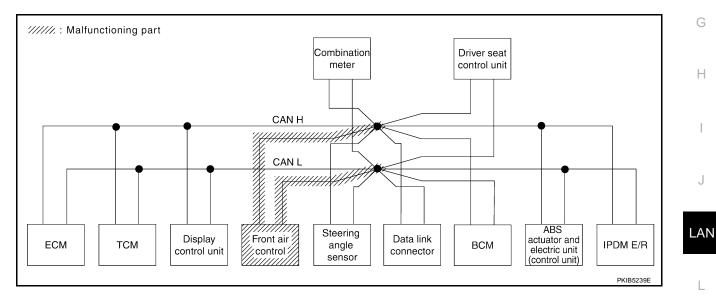


Case 7

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	Iscreen	1	-				Receive	diagnosis				SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
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)	_



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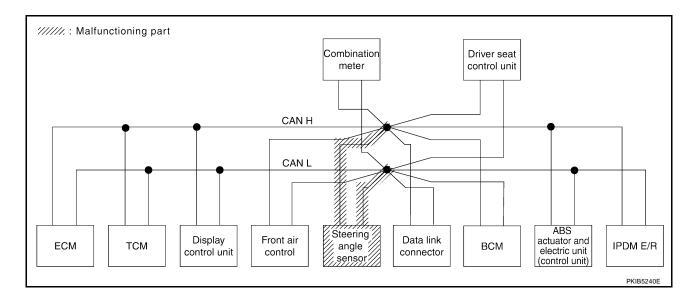
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Case 8

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

					CAN	DIAG SU	PPORT N	1NTR					
SELECT SYSTEM	Iscreen	1.00.1	T				Receive	diagnosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis		тсм	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 CIRCUI (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	_		_	-	-	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_

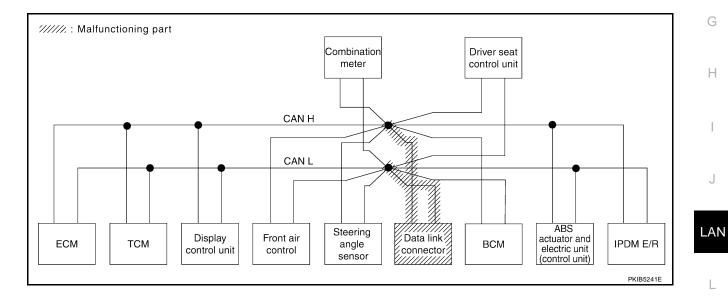


Case 9

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

					CAN	DIAG SU	PPORT M	INTR						
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS	
GELEOTOTOTEN		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC		
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 indivation	NG	UNKWN	UNKWN	-	_	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_	
METER	No inditation	-	-	-	-	-	-	-	_	-	_	CAN COMM CIRCUIT (U1000)	_	
AUTO DRIVE POS.	No indivation	NG	UNKWN	-	UNKWN	_	-	UNKWN	UNKWN	-	_	CAN COMM CIRCUIT (U1000)	-	
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	-	-	CAN COMM CIRCUIT (U1000)	_	
IPDM E/R	No individuation	-	UNKWN	UNKWN	_	_	-	UNKWN	_	-	_	CAN COMM CIRCUIT (U1000)	_	



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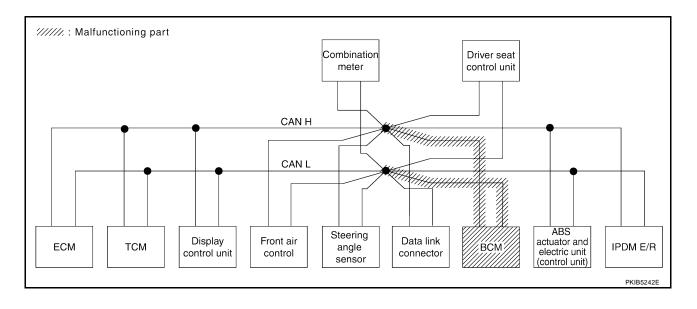
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Case 10

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	Iscreen	1.00.1	T				Receive	diagnosis				SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	I LOOLIO
ENGINE	-	NG	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (U 101)
A/T	-	NG	UNKWN	UNKWN	—	_	-	—	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
Display control unit	-	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	_
BCM	increation	NG	UNKWN	UNKWN	_	-	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	_	_	_	_	-	-	-	_	CAN COMM CIRCUIT (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	_	UNK	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	-	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_		_

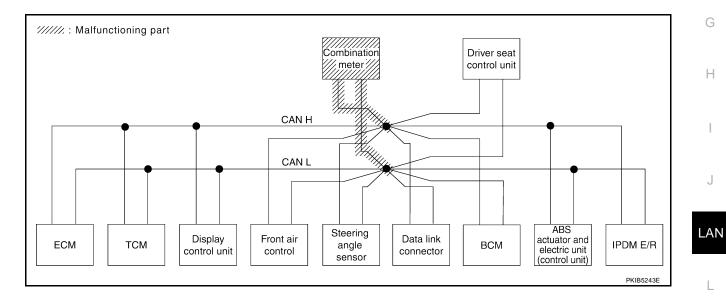


Case 11

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
SELECTOTOTEN		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
ENGINE	-	NG	UNKWN	_	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	_	-	_	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 000)	_
Display control unit	-	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN	_	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	Ng ind w ation	-	-	-	-	-	-	_	-	-	-	CAN COMM CIRCUIT (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	-	UNKWN	UNKWN	_	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	UNKWN	-	_	_	-	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	-	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_



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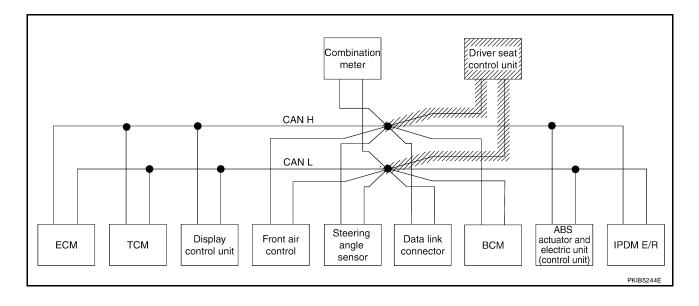
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Case 12

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
	1 Sercen	Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
ENGINE	-	NG	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (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 COMICIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	UNKWN	_	-	_	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	_	UNKWN	_	_	-	CAN COMM CIRCUIT (U1000)	_



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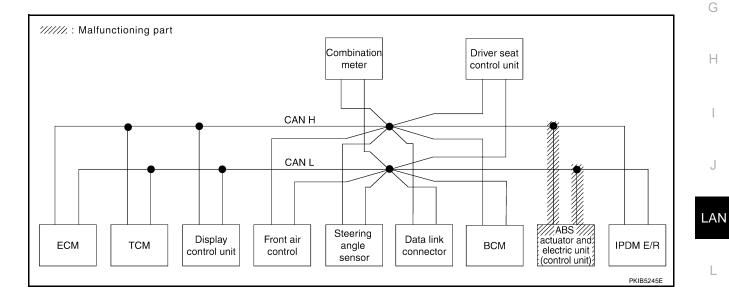
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Case 13

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
SELECTION		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R		THEODERS
ENGINE	-	NG	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN		UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
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 (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	-	UNKWN	UNKWN	—	-	CAN COMM CIRCUIT (U1000)	_
ABS	-	V		UNKWN		-			_	-	-	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_



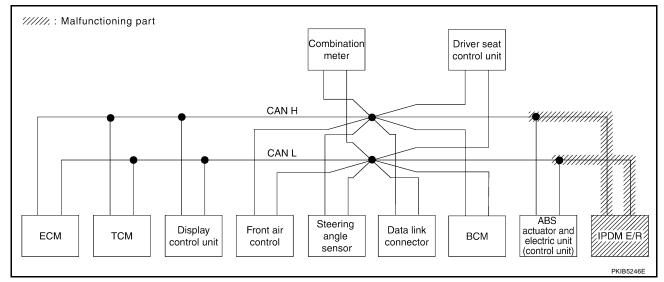
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Case 14

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	_	NG	UNKWN	-	UNKWN	_	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMINCIRCU (UN01)
A/T	-	NG	UNKWN	UNKWN	_	_	_	—	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
Display control unit	-	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN			-	-
BCM	No indication	NG	UNKWN	UNKWN	_	_	_	_	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	_	-	_	_	-	_	-	-	-	CAN COMM CIRCUIT (U 000)	_
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	Ng ind ation	_	UNKWN	UNKWN	-	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U 000)	_



Case 15



					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen	1.00.01	T				Receive	diagnosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	/M&A	VDC/TCS /ABS	E/R		
ENGINE	-	NG		-	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNK	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (U 101)
A/T	_	NG	UNKWN	UNKWN	—	-	_	_	UNKWN	UNKWN	-	CAN COMIN CIRCUIT (UN00)	_
Display control unit	-	NG	UNKWN		—	UNIWN	-		UNKWN	-	UNKWN	_	—
BCM	No indivation	NG	UNKWN	UNKWN	_	-	_	-	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No ind N ation	-	Ι	Ι	_	-	-	-	-	-	-	CAN COMM CIRCUIT (U 000)	—
AUTO DRIVE POS.	No indivation	NG	UNKWN	-	UNKWN	-	_	UNKWN	UNKWN	-	-	CAN COMM CIRCUIT (UN00)	_
ABS	-	₩	UNKWN	UNKWN		-	UNKINN	_	-	-	-	CAN COMM CIRCUIT (U 100)	_
IPDM E/R	ind ation	-	UNKWN	UNKWN	_	-	_	UNKWN	_	-	-	CAN COMM CIRCUIT (U 100)	_

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Case 16

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А Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-160, "IPDM E/R Ignition Relay Circuit Inspection" .

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	scroon		_				Receive	diagnosis				SELF-DIAG	BESINTS
SELECTION		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	
ENGINE	-	NG	UNKWN	-	UNKWN	_	_	UNKWN	UNKWN	UNK	UNKWN	CAN COMM CIRCUIT (U 000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	—	_	_	1	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 (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	_	UNKWN	UNKWN	—	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	UNKWN		_	-	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_

Case 17

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-160, "IPDM E/R Ignition Relay Circuit Inspection".

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	-	NG	UNKWN	_	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	-	NG	UNKWN	_	-	-	_	-	-	UNKWN	-	CAN COMM CIRCUIT (U 000)	-
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 (U 1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	_	UNKWN	_	_	_	CAN COMM CIRCUIT (U1000)	_

Inspection Between TCM and Display Control Unit Circuit 1. CHECK CONNECTOR

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- Turn ignition switch OFF. 1.
- 2. Disconnect the battery cable from the negative terminal.
- Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side).
- Harness connector F14
- Harness connector E5
- Harness connector E152
- Harness connector M31

OK or NG

OK >> GO TO 2.

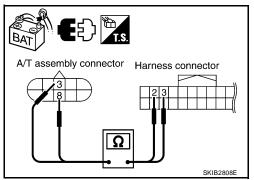
NG >> Repair terminal or connector.

- 1. Disconnect A/T assembly connector and harness connector F14.
- 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) 8 (P) – 3 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

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



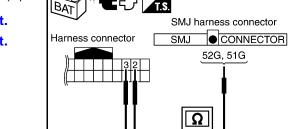
3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E152.
- Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).
 - 2 (L) 52G (L) 3 (P) – 51G (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

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



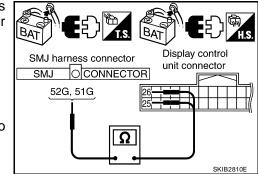
4. CHECK HARNESS FOR OPEN CIRCUIT

- 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) 51G (P) – 26 (P)

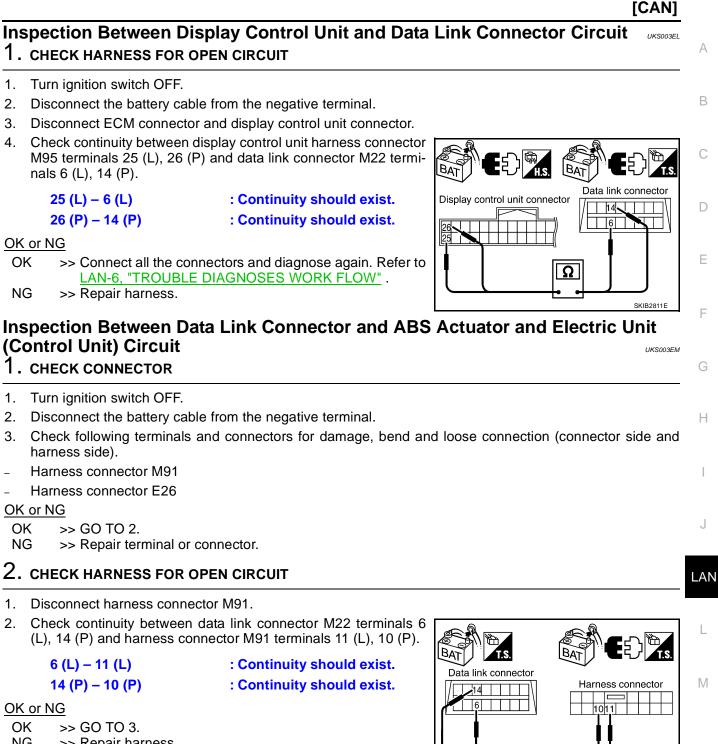
: Continuity should exist. : Continuity should exist.

OK or NG

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



SKIB2809E



NG >> Repair harness.

SKIB2812E

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Harness connector

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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 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) 10 (P) – 15 (P)
- : Continuity should exist.
- : 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

1. CHECK CONNECTOR



- 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

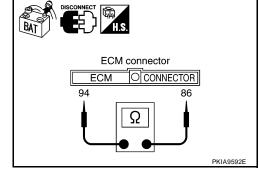
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: **Approx. 108 – 132** Ω

OK or NG

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



UKS003EO

TCM Circuit Inspection

1. CHECK CONNECTOR

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

ABS actuator and electric unit

C/UNIT O CONNECTOR 11, 15

SKIB2813E

UKS003EN

(control unit) connector

Ω

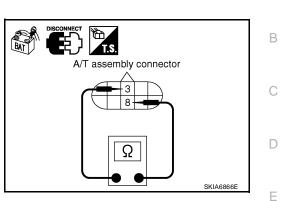
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: **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 connector

Ω

[CAN]

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Display Control Unit 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 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).

OK or NG

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



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UKS003EQ

Front Air Control 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 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

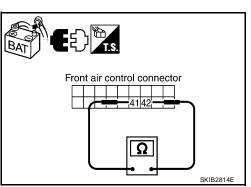
- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 41 (L) and 42 (P).

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.



UKS003ER

[CAN]

Steering Angle Sensor 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 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

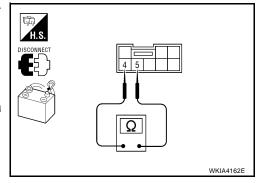
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 5 (P).

: Approx. 54 – 66 Ω

OK or NG

OK >> Replace steering angle sensor.

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



UKS003ES

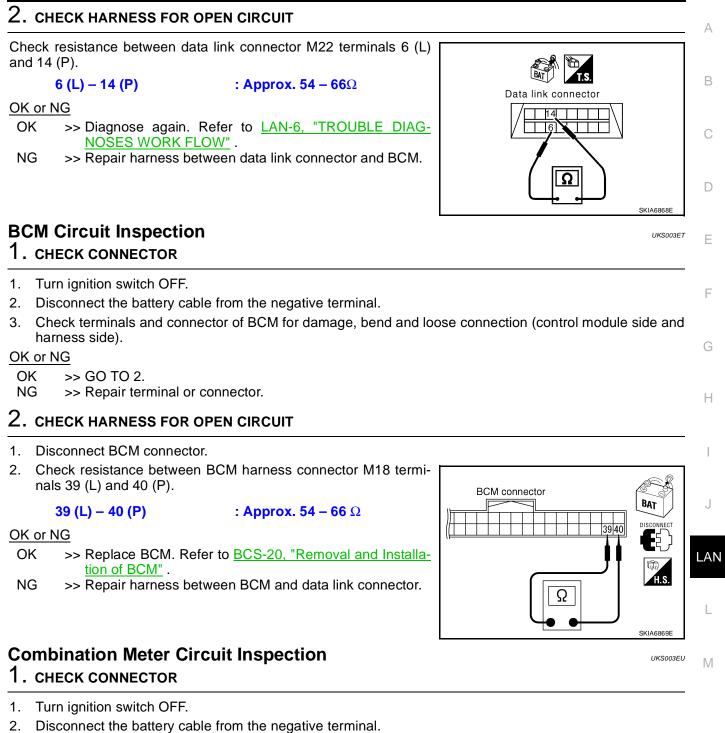
Data Link Connector Circuit Inspection

1. CHECK CONNECTOR

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



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

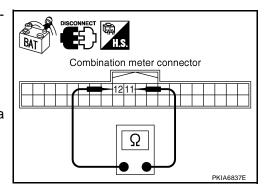
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

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 1. CHECK CONNECTOR

UKS003EV

- 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

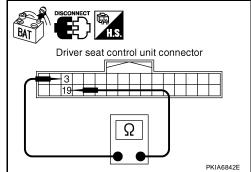
- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

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 1. CHECK CONNECTOR

UKS003EW

- 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

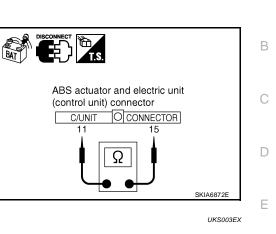
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

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.



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IPDM E/R 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 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

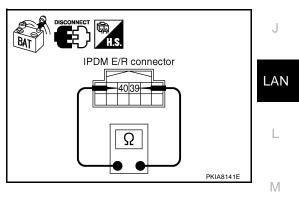
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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

1. CHECK CONNECTOR

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

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

2. CHECK HARNESS FOR SHORT CIRCUIT

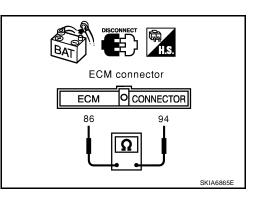
- Disconnect following connectors. 1.
- ECM connector
- Harness connector E2
- Check continuity between ECM harness connector E16 termi-2. nals 94 (L) and 86 (P).

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.

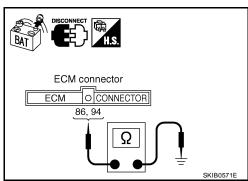
- 94 (L) Ground
- : Continuity should not exist.
- 86 (P) Ground

: Continuity should not exist.

OK or NG

OK >> GO TO 4.

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



[CAN]

CAN SYSTEM (TYPE 4)

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

3 (L) – 8 (P)

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

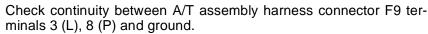
: Continuity should not exist.

: Continuity should not exist.

: Continuity should not exist.

Harness between A/T assembly and harness connector F14

5. CHECK HARNESS FOR SHORT CIRCUIT



- 3 (L) Ground
- 8 (P) Ground

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

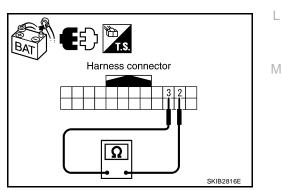
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

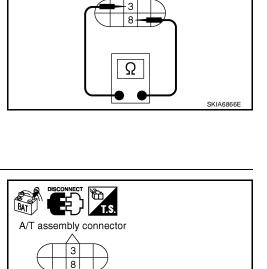
2 (L) – 3 (P)

: Continuity should not exist.

OK or NG

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





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A/T assembly connector

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7. CHECK HARNESS FOR SHORT CIRCUIT

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

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



- Display control unit connector
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Harness connector M40
- Harness connector M91

6 (L) – 14 (P)

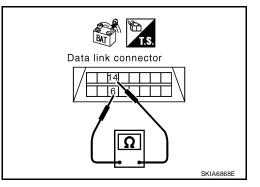
 Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

: Continuity should not exist.

<u>OK or NG</u>

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



Harness connector

SKIB2817E

CAN SYSTEM (TYPE 4)

9. CHECK HARNESS FOR SHORT CIRCUIT

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

- 6 (L) Ground 14 (P) – Ground
- : Continuity should not exist.
- : 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
- Check continuity between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) – 19 (P)

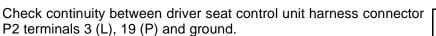
: Continuity should not exist.

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



3 (L) – Ground

: Continuity should not exist. : Continuity should not exist.

LAN-157

19 (P) – Ground

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



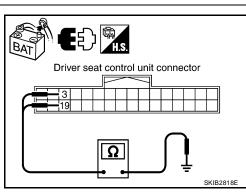
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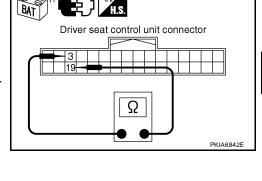
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Data link connector

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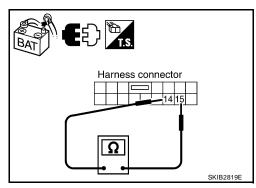
12. CHECK HARNESS FOR SHORT CIRCUIT

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

Harness connector

14. CHECK HARNESS FOR SHORT CIRCUIT

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

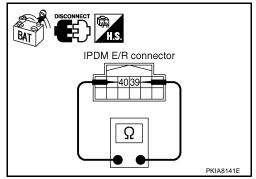
39 (L) – 40 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 15.

Revision: November 2005

- 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
- 40 (P) Ground

: Continuity should not exist.

: 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

: Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 39 and 40.

39 - 40

OK or NG

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

17. снеск сумртом

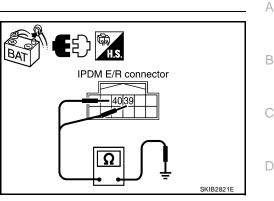
- Fill in described symptoms on the column "Symptom" in the check sheet. 1.
- 2. Connect all connectors, and then make sure that the symptom is reproduced.

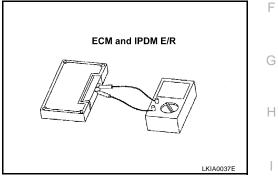
OK or NG

OK >> GO TO 18.

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









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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

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 <u>PG-14</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

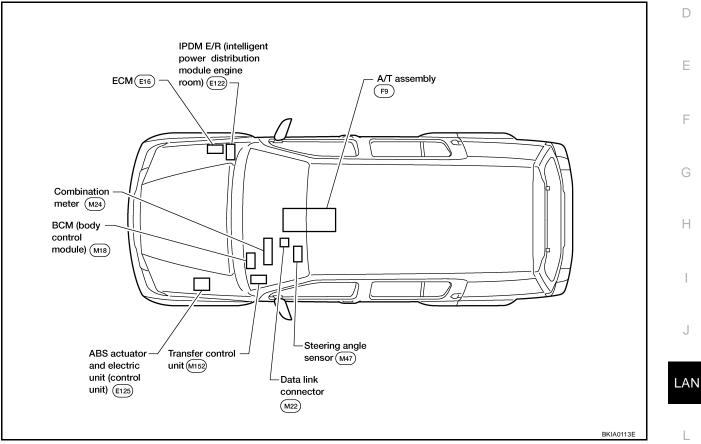
UKS003FZ

CAN SYSTEM (TYPE 5)

System Description

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



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CAN SYSTEM (TYPE 5)

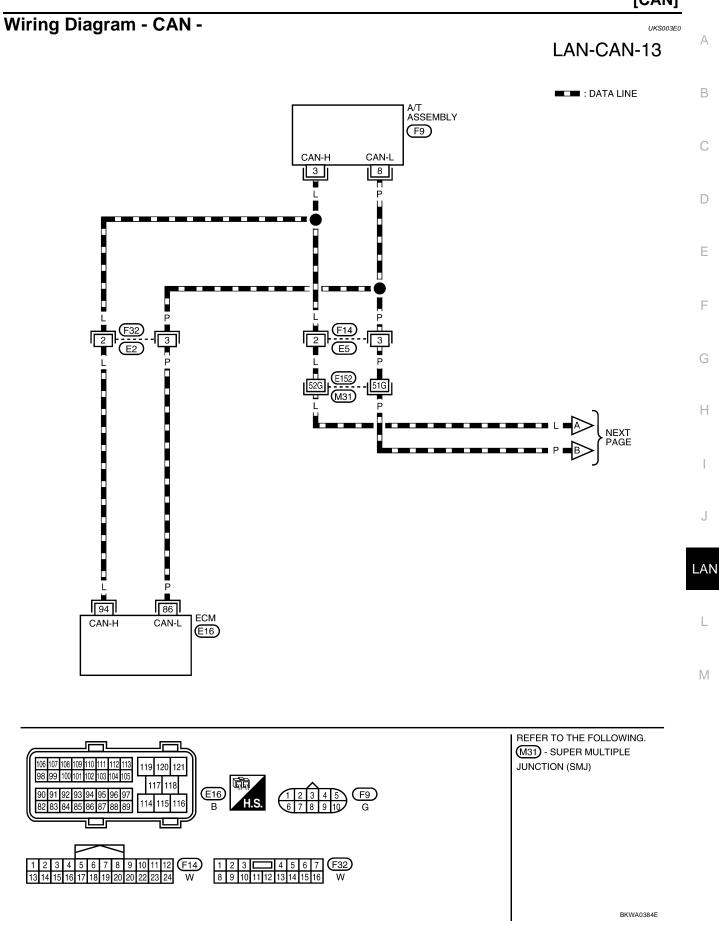
Schematic

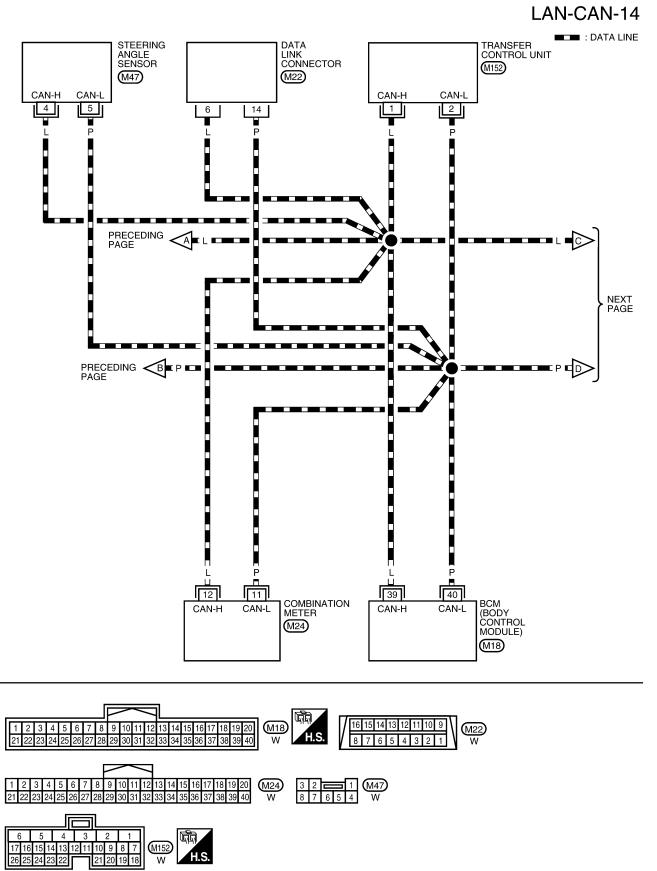
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) 40 39 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) 15 ÷ TRANSFER CONTROL UNIT 2 -STEERING ANGLE SENSOR ŝ 4 BCM (BODY CONTROL MODULE) \$ 39 4 DATA LINK CONNECTOR 9 COMBINATION METER ÷ 12 A/T ASSEMBLY 8 ო 86 ECM 94

BKWA0613E



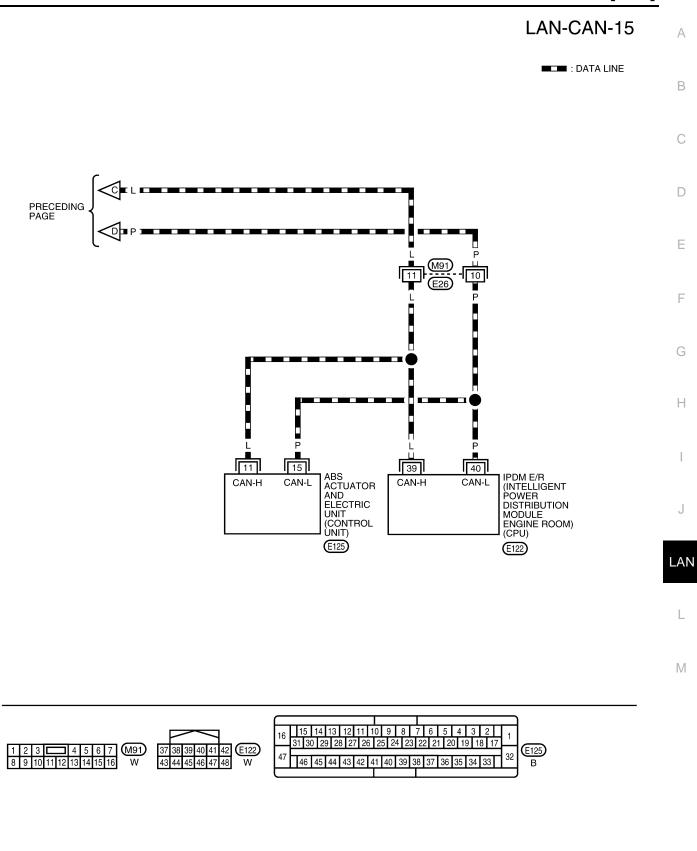
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BKWA0614E

[CAN]



BKWA0386E

CHECK SHEET

UKS003E1

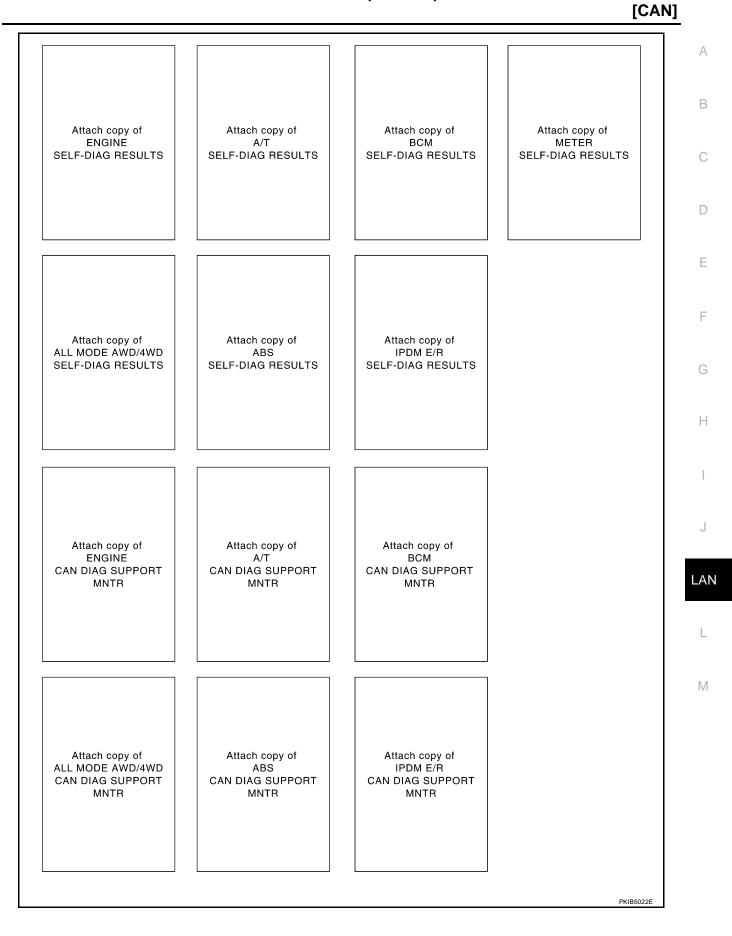
[CAN]

NOTE:

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	Initial	Transmit				Receive	diagnosis	1			SELF-DIAG	RESULTS
		diagnosis	diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
NGINE	—	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	(U1001)
/T	-	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
СМ	No indication	NG	UNKWN	UNKWN	_	_	_	UNKWN	_	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
ETER	No	-	_	_	_	_	_	_	_	_	_	CAN COMM CIRCUIT (U1000)	_
LL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
BS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	_	CAN COMM CIRCUIT (U1000)	_
DM E/R	No	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT	_
	indication											(U1000)	
										ch copy CT SYS			
			Attach copy of SELECT SYSTEM										

CAN SYSTEM (TYPE 5)



CHECK SHEET RESULTS (EXAMPLE)

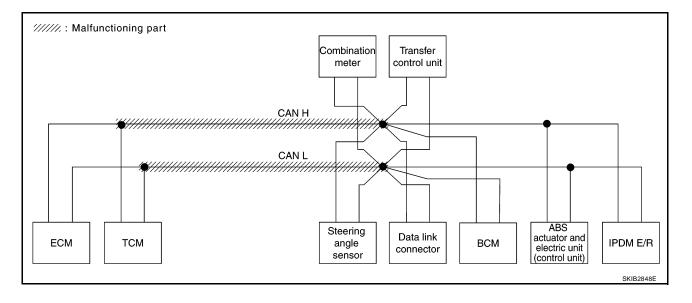
NOTE:

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" .

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1	-				Receive	diagnosis				SELF-DIAG	BESULTS
	borbon	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN		UNKWN	_		UNK	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	-		UNKWN		-	CAN COMIC CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN		-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	_	_	-	-	-	-	-	-	-	CAN COMM CIRCUIT (U 100)	_
ALL MODE AWD/4WD	_	NG	UNKWN			-	-	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	-	_	_	CAN COMM CIRCUIT (U 1000)	_



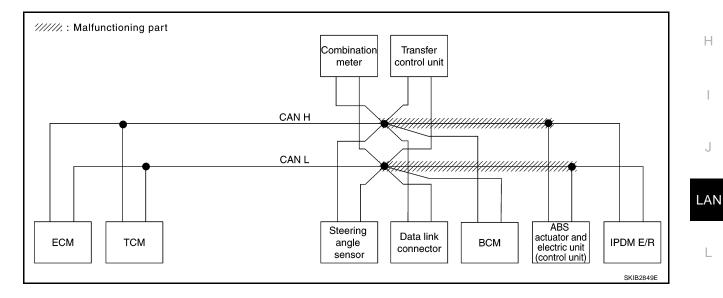
CAN SYSTEM (TYPE 5)

[CAN]

Case 2

А 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"

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis					RESULTS
	coroon	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	_	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN		UNK	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	—	NG	UNKWN	UNKWN	—	—	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	-	UNKWN	_	-		CAN COMM CIRCUIT (U1000)	—
METER	No indication	-	—	—	-	—	-	-	—	—	-	CAN COMM CIRCUIT (U 1000)	—
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
ABS	—	NG	UNKWN	UNKWN	UNK	UNKWN	-	_	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No individuation	-	UNKWN	UNKWN	_	_	UNKWN	-	_	_	-	CAN COMM CIRCUIT (U 000)	_

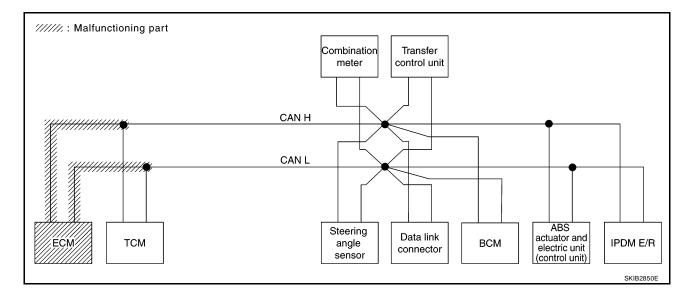


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Case 3

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	Initial	Transmit				Receive	diagnosis				SELF-DIAG	BESULTS
			diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG		I		-						(0,000)	CAN COMM CIRCUI (UN01)
A/T	—	NG	UNKWN		-	-	-	UNKWN	UNKWN	UNKWN	Ι	CAN COMIN CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN		-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	—	-	1	_	-	—	-	-	-	CAN COMM CIRCUIT (U 100)	_
ALL MODE AWD/4WD	—	NG	UNKWN		UNKWN	-	-	UNKWN	-	UNKWN	Ι	CAN COMICIRCUIT (U 1000)	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	Ι	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	-	_	_	CAN COMM CIRCUIT (U 1000)	_



CAN SYSTEM (TYPE 5)

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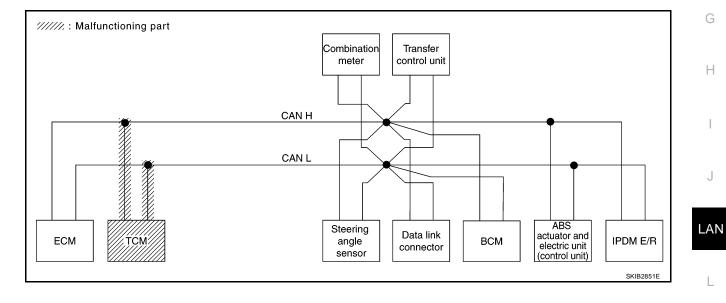
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Case 4

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1.000.01	+				Receive	diagnosis					RESULTS
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	-	NG	UNKWN UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (U 001)
A/T	-	NG	UNKWN		-		-	UNKWN	UNIOWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	Ι	-	-	-	-	-	-	CAN COMM CIRCUIT (U 1000)	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_	_	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-		UNKWN	-	_	_	_	CAN COMM CIRCUIT (U1000)	-

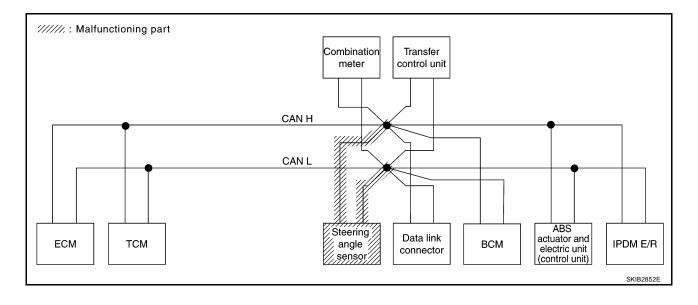


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Case 5

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESUITS
	Scieccii	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		TILOULIU
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (U1001)
A/T	—	NG	UNKWN	UNKWN	Ι	-	-	UNKWN	UNKWN	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	-
BCM	No indication	NG	UNKWN	UNKWN	Ι	-	-	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	—	—	-	-	-	_	-	-	-	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-		UNKWN	-	1	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	Ι	-	UNKWN	_		-	Ι	CAN COMM CIRCUIT (U1000)	—



CAN SYSTEM (TYPE 5)

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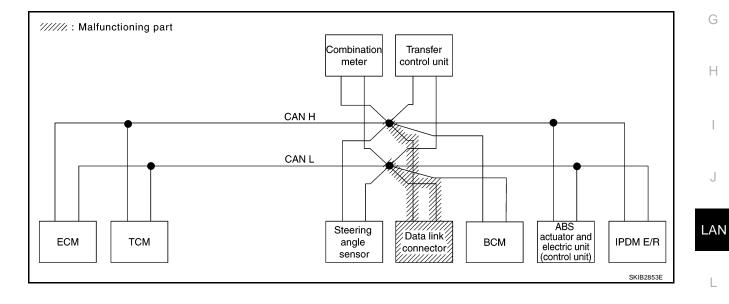
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Case 6

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	creen		-				Receive	diagnosis					RESULTS
SELECT CTOTEMS		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
INGINE	_	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
VT	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
3CM	indNation	NG	UNKWN	UNKWN	-	-	-	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
IETER	indivation	NG UNKWN	-	-	-	-	-	_	_	-	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)	_
PDM E/R	No individualition	-	UNKWN	UNKWN	I	-	UNKWN	-	-	-	_	CAN COMM CIRCUIT (U1000)	_

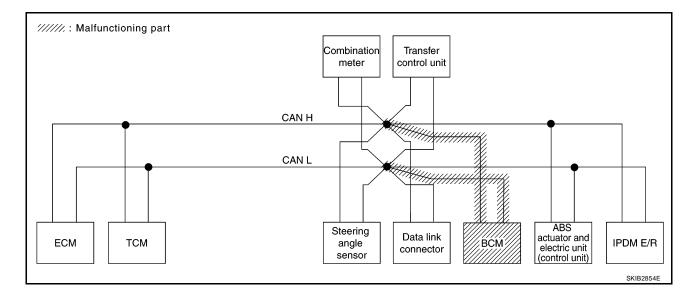


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Case 7

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	INCOULIO
ENGINE	_	NG	UNKWN	_	UNKWN	-		UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (U 01)
A/T	_	NG	UNKWN	UNKWN	-	-	_	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	_
BCM	Notion Notion	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	_	-	-	-	_	_	-	-	_	CAN COMM CIRCUIT (U 100)	_
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	_	_	UNK	_	-	_	_	CAN COMM CIRCUIT (U 1000)	_



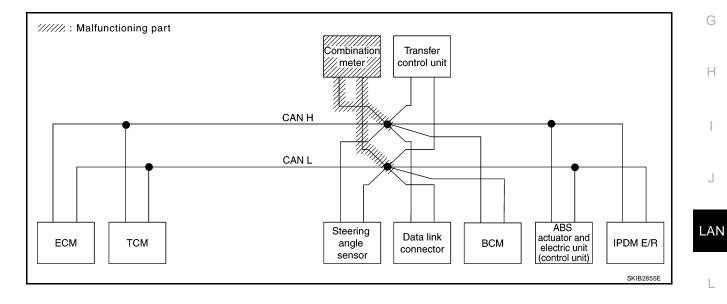
CAN SYSTEM (TYPE 5)

Case 8

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen		_				Receive	diagnosis				SELF-DIAG	BESHITS
SELECT STOTEM		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	INEGOLIS
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMIN CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 000)	_
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	UNKWN	_	_	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	ind Nation	_	-	-	-	-	-	-	_	-	-	CAN COMM CIRCUIT (U 100)	_
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)	_



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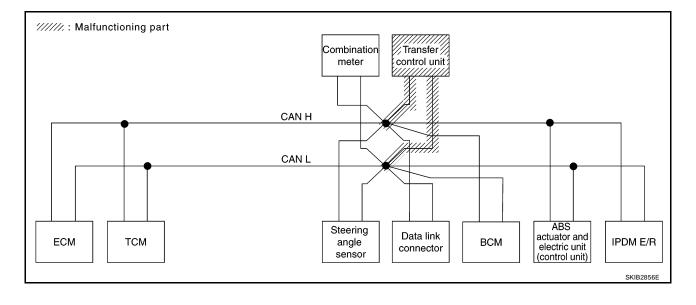
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Case 9

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	Initial	Transmit				Receive	diagnosis				SELF-DIAG	BESULTS
	0010011		diagnosis		тсм	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 (UN01)
A/T	—	NG	UNKWN	UNKWN	Ι	-	-	UNKWN	UNIWN	UNKWN	I	CAN COMIN CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	—	—	-	_	-	—	—	-	Ι	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	-	NG				-	_	UNKWN	-		-	CAN COMICIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_		-	-	CAN COMIN CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_



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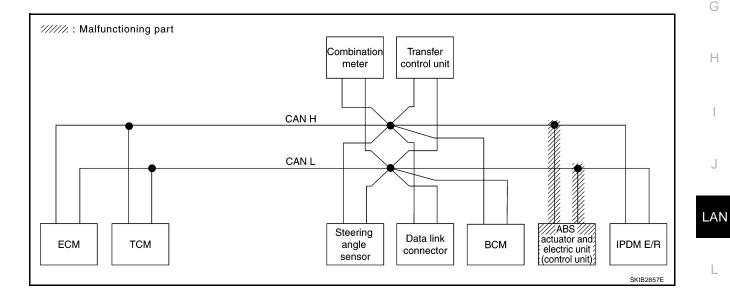
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Case 10

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

					CAN	DIAG SU	PPORT N							
SELECT SYSTEM screen		Initial	Transmit sdiagnosis	Receive diagnosis								SELF-DIAG RESULTS		
					тсм	STRG	BCM /SEC	/M&A	AWD/4WD /e4WD	/ABS	E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMIN CIRCUIT (UN01)	
A/T	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_	
BCM	No indication	NG	UNKWN	UNKWN	-	-	_	UNKWN	-	_	UNKWN	CAN COMM CIRCUIT (U1000)	_	
METER	No indication	—	-	-	-	—	-	-	_	—	_	CAN COMM CIRCUIT (U 1000)	—	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (U 000)	—	
ABS	-	V	UNKWN	UNKWN		UNKWN	-	-		-	-	CAN COMM CIRCUIT (U 000)	—	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	—	

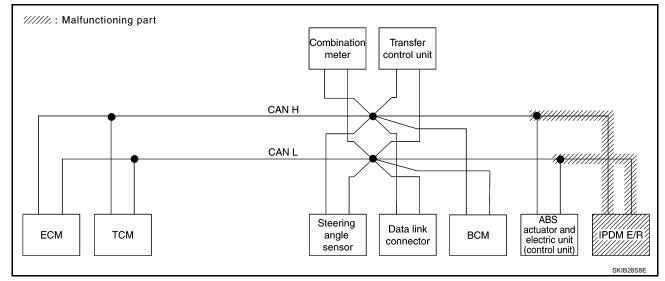


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Case 11

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

					CAN								
SELECT SYSTEM screen		creen Initial					Receive		SELF-DIAG RESULTS				
			Transmit diagnosis		тсм	STRG	BCM /SEC	/M&A	/e4WD	VDC/TCS /ABS	E/R		
ENGINE	_	NG	UNKWN		UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (UN01)
A/T	—	NG	UNKWN	UNKWN	-	_	-		UNKWN		_	CAN COMM CIRCUIT (U1000)	_
BCM	No indication	NG	UNKWN	UNKWN	Ι	-	-	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	_	—	1	Ι	-	-	_	1	_	I	CAN COMICIRCUIT (U 100)	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	1	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	Ng indivation	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U 1000)	_



Case 12

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

				CAN										
SELECT SYSTEM screen		Initial		Receive diagnosis								SELF-DIAG RESULTS		
			Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	/M&A	/e4WD	VDC/TCS /ABS	E/R			
ENGINE	-	NG		-		-			UNKWN	UNKWN		CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UN01)	
A/T	—	NG	UNKWN		-	-	_		UNKWN			CAN COMIN CIRCUIT (U 1000)	_	
BCM	No individuation	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_	
METER	No indication	-	-	-	Ι	-			1	-	_	CAN COMIN CIRCUIT (U 100)	-	
ALL MODE AWD/4WD	_	NG				_	_	UNKWN	-	UNKWN	_	CAN COMM CIRCUIT (UN00)	_	
ABS	—	V								-	_	CAN COMM CIRCUIT (U 100)	_	
IPDM E/R	Ng ind ation	-	UNKWN	UNKWN	-		UNKWN	_	-	-	I	CAN COMIN CIRCUIT (U 1000)	—	

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Case 13

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-190, "IPDM E/R Ignition Relay</u> <u>A</u> <u>Circuit Inspection"</u>.

		CAN	DIAG SU	PPORT N									
SELECT SYSTEM screen							Receive	SELF-DIAG RESULTS					
		Initial diagnosis	Transmit is diagnosis	ECM	тсм	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 (U 1000)	CAN COMM CIRCUIT (UN01)
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 (U 1000)	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN		Ι	-	UNKWN	1	UNKWN	-	CAN COMM CIRCUIT (U 1000)	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	_	_	_	CAN COMM CIRCUIT (U1000)	—

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-190</u>, "IPDM E/R Ignition Relay <u>Circuit Inspection</u>".

					CAN	PPORT M	NTR							
SELECT SYSTEM	SELECT SYSTEM screen Initia diagno			Receive diagnosis								SELF-DIAG RESULTS		
			Transmit diagnosis	ECM	ТСМ	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	WD VDC/TCS D /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 (U 1000)	—	
ВСМ	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 (U 1000)	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	_	—	_	CAN COMM CIRCUIT (U1000)	_	

Inspection Between TCM and Data Link Connector Circuit 1. CHECK CONNECTOR

UKS003E2

PKIB5140E

- 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.

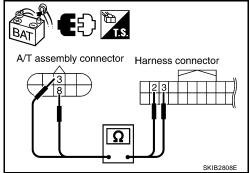
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F14.
- 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) 8 (P) – 3 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

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



SMJ harness connector

52G, 51G

SMJ

[CAN]

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E152.
- Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).
 - 2 (L) 52G (L) 3 (P) – 51G (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

L), SMJ harness connector

BA

Harness connector

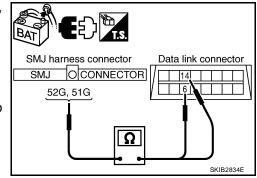
Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

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

: 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.



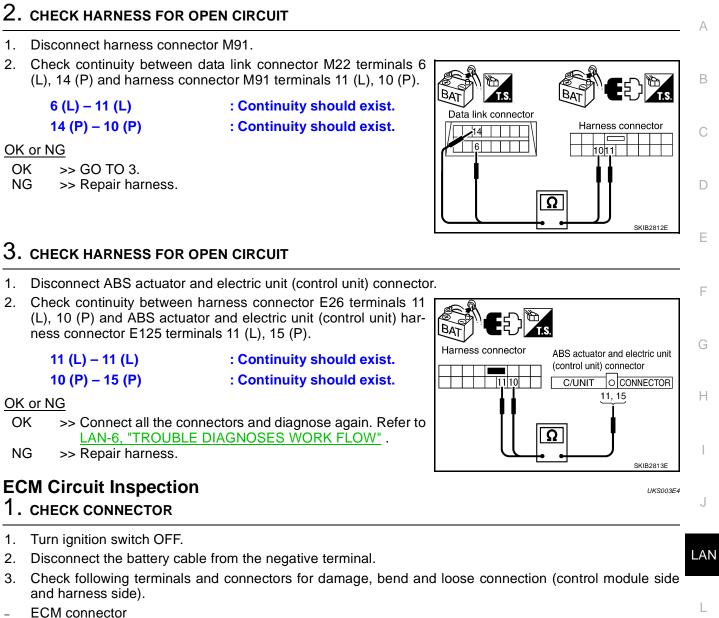
Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit

- 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.



- Harness connector E2
- Harness connector F32

OK or NG

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

UKS003E5

2. CHECK HARNESS FOR OPEN CIRCUIT

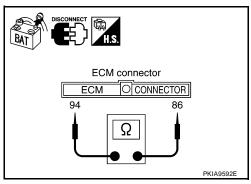
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

1. CHECK CONNECTOR

.

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

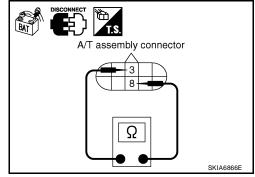
NG >> Repair terminal or connector.

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)

OK or NG

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



UKS003E6

Steering Angle Sensor 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 steering angle sensor for damage, bend and loose connection (sensor side and harness side).

OK or NG

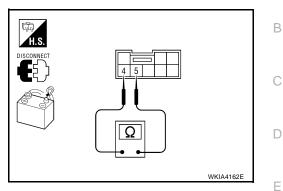
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 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.



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Data Link Connector Circuit Inspection 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 termi

G >> 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 – 66 Ω OK or NG OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAG-NOSES WORK FLOW". NG >> Repair harness between data link connector and BCM.

BCM 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 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.

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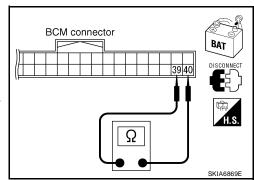
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-20, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Combination Meter 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 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

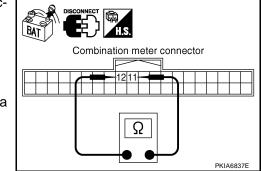
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

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.



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Transfer Control Unit 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 transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

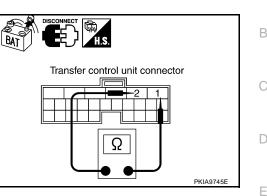
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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

1. CHECK CONNECTOR

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

: 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

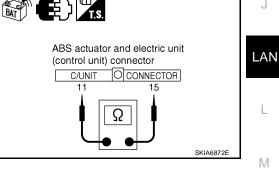
1. CHECK CONNECTOR

- Turn ignition switch OFF. 1.
- 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.



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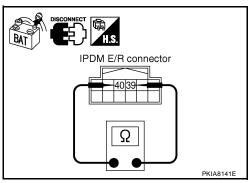
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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

1. CHECK CONNECTOR

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- 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

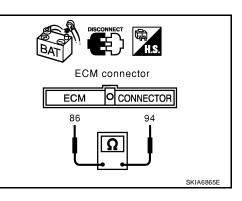
- 1. Disconnect following connectors.
- ECM connector
- Harness connector E2
- 2. Check continuity between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) – 86 (P)

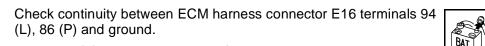
: Continuity should not exist.

OK or NG

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



CAN SYSTEM (TYPE 5)



- 94 (L) Ground
- 86 (P) Ground

: Continuity should not exist.

: 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

3. 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)

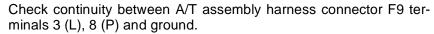
: Continuity should not exist.

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

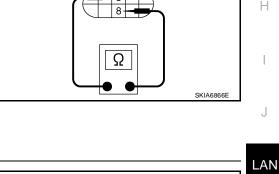


- 3 (L) Ground
- 8 (P) Ground

: Continuity should not exist. : 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

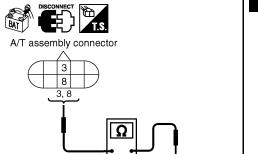


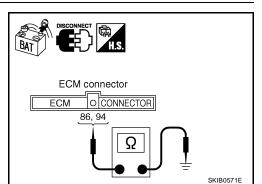
T.S.

A/T assembly connector

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6. CHECK HARNESS FOR SHORT CIRCUIT

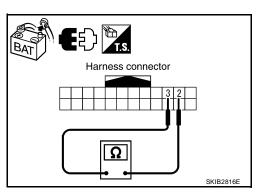
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

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.

Harness connector

8. CHECK HARNESS FOR SHORT CIRCUIT

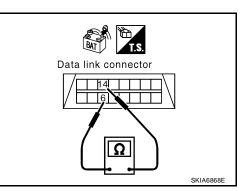
- 1. Disconnect following connectors.
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Transfer control unit connector
- Harness connector M91
- Check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



CAN SYSTEM (TYPE 5)

9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

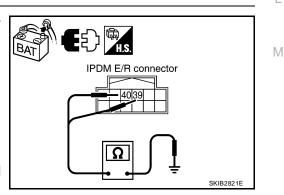
Check continuity between IPDM E/R harness connector E122 terminals 39 (L), 40 (P) and ground.

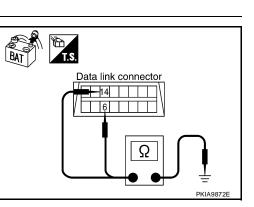
- 39 (L) Ground
- : Continuity should not exist.
- 40 (P) Ground
- : Continuity should not exist.

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



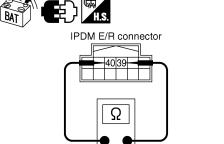


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12. ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

- 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.

: **Approx. 108 – 132** Ω

OK or NG

OK >> GO TO 13.

39 - 40

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

13. снеск зумртом

- 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

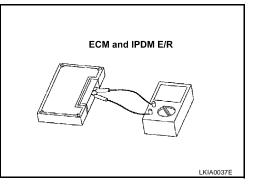
Inspection results

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

IPDM E/R Ignition Relay Circuit Inspection

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 <u>PG-14</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".



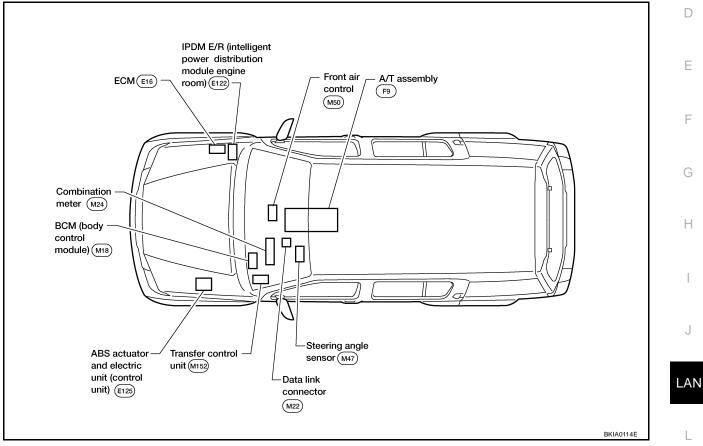
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CAN SYSTEM (TYPE 6)

System Description

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



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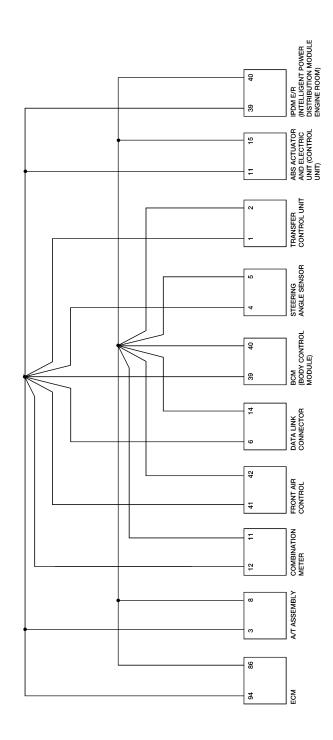
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CAN SYSTEM (TYPE 6)

Schematic

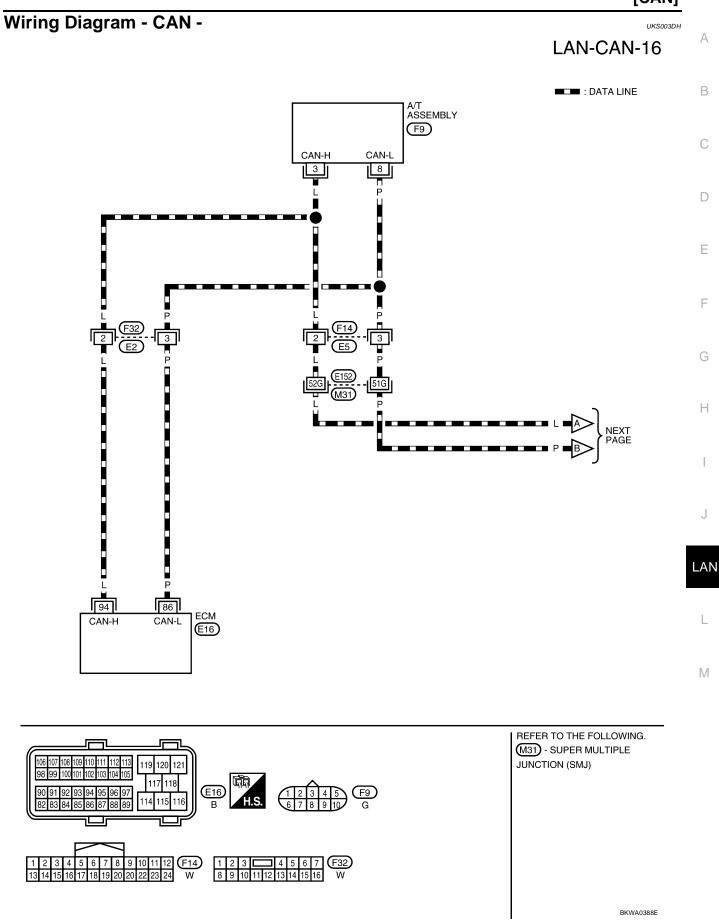
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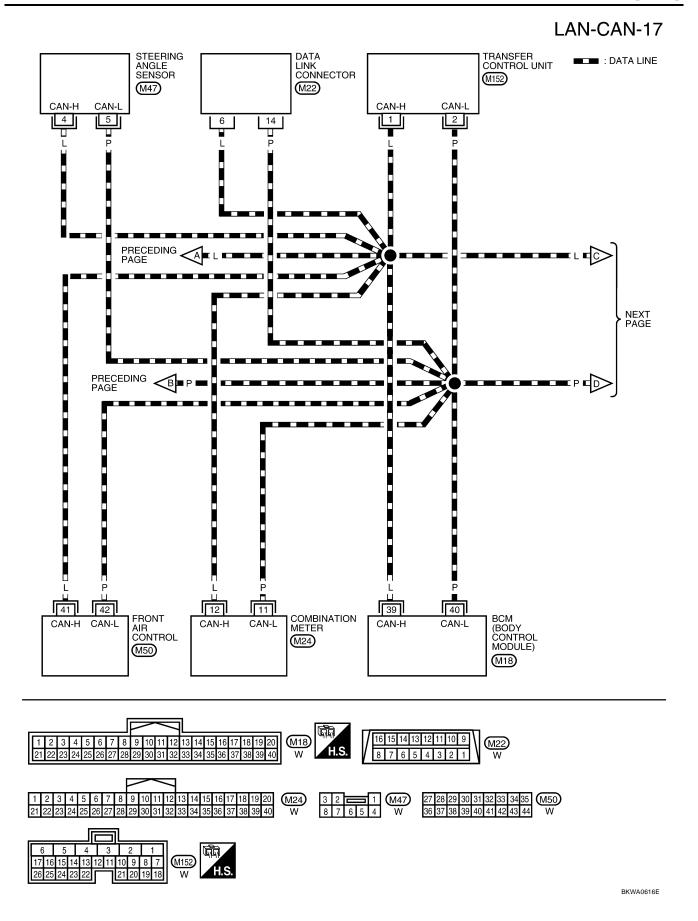
[CAN]

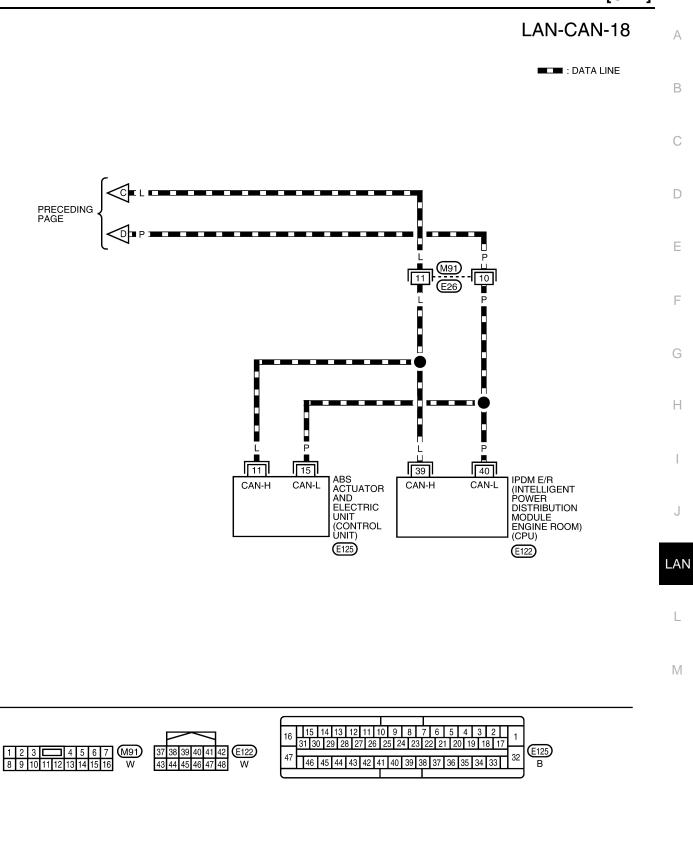


BKWA0615E









BKWA0390E

CHECK SHEET

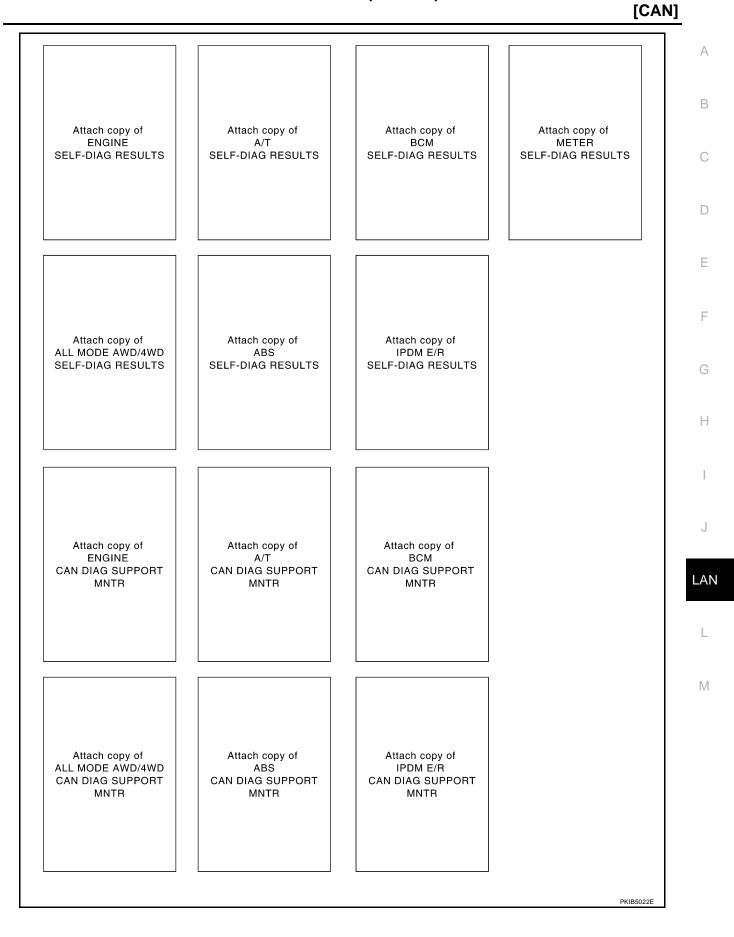
[CAN]

NOTE:

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

A/T - NG UNKWN UNKWN - - UNKWN UNKWN UNKWN - CAN COMM CIRCUIT (U1000) . BCM No indication NG UNKWN UNKWN - - UNKWN - CAN COMM CIRCUIT (U1000) . METER No indication - - - - - - UNKWN CAN COMM CIRCUIT (U1000) . ALL MODE AWD/4WD - NG UNKWN UNKWN - - - - CAN COMM CIRCUIT (U1000) . ABS - NG UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT (U1000) .						CAN	DIAG SU	PPORT M	INTR					
Indiagram Indiagram ECM TCM STRG ECM METER AvpD/AvpD CASS ECM CAN STRG RCM MRETER AvpD/AvpD CASS EFR ECM CAN	SELECT SYSTEM	screen	Initial	Tranamit		1	1	Receive	diagnosis	1			SELE-DIAC	BESULTS
Endine Image ONKWN Image ONKWN ONKWN <t< td=""><td></td><td>Coroch</td><td></td><td></td><td>ECM</td><td>тсм</td><td>STRG</td><td></td><td>METER /M&A</td><td>AWD/4WD /e4WD</td><td></td><td></td><td></td><td></td></t<>		Coroch			ECM	тсм	STRG		METER /M&A	AWD/4WD /e4WD				
A/1 - NG UNKWN UNKWN - - - UNKWN UNKWN UNKWN - - (U1000) - BCM Indication NG UNKWN UNKWN - - UNKWN UNKWN CAN COMM CIRCUIT . METER No - - - - - - - CAN COMM CIRCUIT ALL MODE AWD/4WD - NG UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT . ALL MODE AWD/4WD - NG UNKWN UNKWN UNKWN - - UNKWN - CAN COMM CIRCUIT . ABS - NG UNKWN UNKWN UNKWN - - UNKWN - CAN COMM CIRCUIT CAN COMM CIRCUIT .<	NGINE	Ι	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	(U1000)	(U1001)
BUM Indication NG UNKWN - CAN COMM CIRCUIT (U1000) - - - - - - - - - - - - CAN COMM CIRCUIT (U1000) - - - - - - - - - - - - CAN COMM CIRCUIT -	/т	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	(U1000)	_
METER Indication Image: Constraint of the second seco	СМ		NG	UNKWN	UNKWN	-	_	-	UNKWN	-	—	UNKWN		_
ALL MODE AWD/4WD - NG UNKWN UNKWN UNKWN - - UNKWN - CAN COMM CIRCUIT - ABS - NG UNKWN UNKWN UNKWN - - - UNKWN - - CAN COMM CIRCUIT - - CAN COMM CIRCUIT - - Indication - - - - - - CAN COMM CIRCUIT - - - - - CAN COMM CIRCUIT - - - - - - CAN COMM CIRCUIT - - - - - - - CAN COMM CIRCUIT - - - - - CAN COMM CIRCUIT - </td <td>ETER</td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>_</td> <td>_</td> <td></td> <td>_</td>	ETER		-	-	-	-	-	-	-	-	_	_		_
ABS - NG UNKWN UNKWN UNKWN - - - (U1000) - IPDM E/R No - UNKWN UNKWN - - - - CAN COMM CIRCUIT - Symptoms : - UNKWN - - - - CAN COMM CIRCUIT - Attach copy of -	LL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	_	(U1000)	-
IPDM E/R indication ONKWN ONKWN ONKWN OUNKWN OUNK	BS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_	_	(U1000)	_
Symptoms :	DM E/R		_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_		_

CAN SYSTEM (TYPE 6)



CHECK SHEET RESULTS (EXAMPLE)

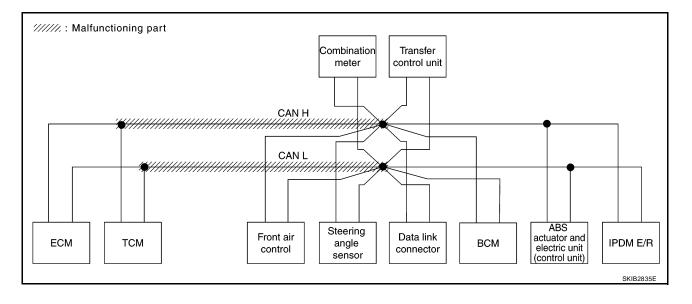
NOTE:

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" .

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1	-				Receive	diagnosis				SELE-DIAG	RESULTS
	borbon	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	/M&A	AWD/4WD /e4WD	/ABS	E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	_		UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN		-	CAN COMM CIRCUIT (U 000)	_
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	_	_	-	_	-	_	-	-	-	CAN COMIN CIRCUIT (U 1000)	_
ALL MODE AWD/4WD	—	NG	UNKWN			-	-	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	-
ABS	_	NG	UNKWN	UNKWN		UNKWN	-	_	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	-	-	_	CAN COMM CIRCUIT (U 1000)	_



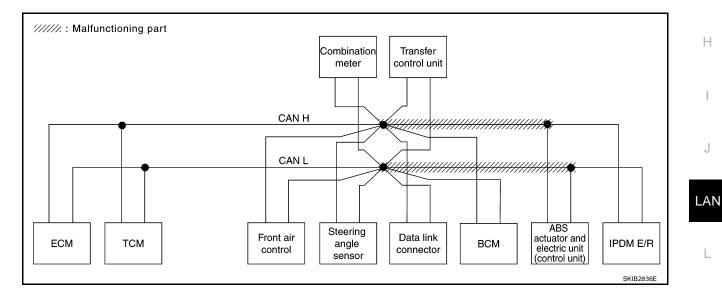
CAN SYSTEM (TYPE 6)

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Case 2

А 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"

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	scroop						Receive	diagnosis					RESULTS
SELECT STOTEM	Screen	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	TILOUEIO
ENGINE	-	NG	UNKWN	—	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNK	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UV01)
A/T	_	NG	UNKWN	UNKWN	-	_	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	-	_	-	UNKWN	-	_	UNK	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	—	-	—	-	—			—	CAN COMM CIRCUIT (U 1000)	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN		UNKWN	-	-		-	-	CAN COMM CIRCUIT (U 1000)	—
IPDM E/R	No individuation	-	UNKWN	UNKWN	_	_	UNKWN	_	-	-	_	CAN COMM CIRCUIT (U 100)	_

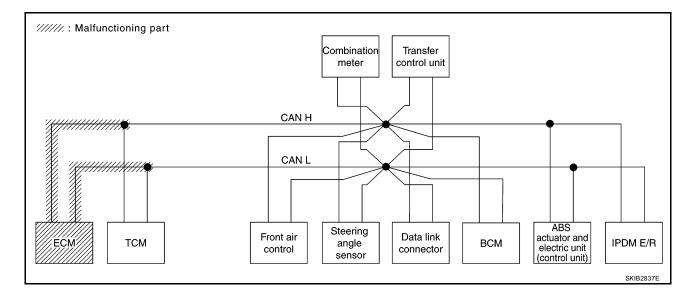


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Case 3

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	Initial	Transmit				Receive	diagnosis				SELF-DIAG	BESULTS
			diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG		-		-			UNKWN	UNKWN		CAN COMM CIRCUIT (UV00)	CAN COMINCIRCUI (UN01)
A/T	—	NG	UNKWN		Ι	-	-	UNKWN	UNKWN	UNKWN	Ι	CAN COMIN CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN		-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	—	-	Ι	-	I	_	I	-	1	CAN COMIN CIRCUIT (U 100)	-
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	Ι	CAN COMICIRCUIT (UN00)	-
ABS	_	NG	UNKWN		UNKWN	UNKWN	-	_	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	-	UNKWN		_	_	UNKWN	_	-	_	_	CAN COMIN CIRCUIT (U 100)	_



CAN SYSTEM (TYPE 6)

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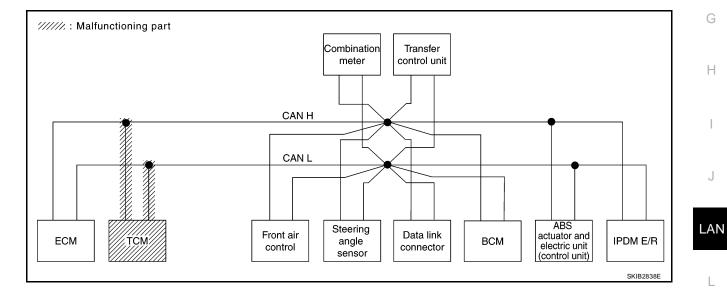
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Case 4

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

					CAN	DIAG SU	PPORT N	NTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis	ECM	ТСМ	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	I LOOLIO
ENGINE	-	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U 000)	CAN COMM CIRCUIT (U 101)
A/T	_	NG	UNKWN	UNKWN	-	_	-	UNKWN	UNIOWN	UNKWN	_	CAN COMM CIRCUIT (U 000)	-
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	NG UNKWN	Ι	I	—	-	_		-	_	CAN COMM CIRCUIT (U 1000)	-	
ALL MODE AWD/4WD	_	NG		UNKWN		_	-	UNKWN	1	UNKWN	_	CAN COMM CIRCUIT (U 000)	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	-	-	_	CAN COMM CIRCUIT (U1000)	-

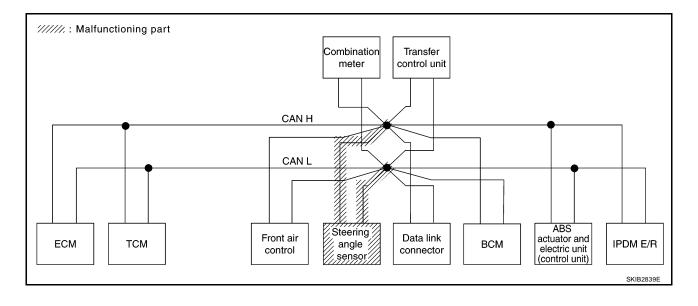


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Case 5

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen						Receive of	diagnosis				SELF-DIAG	BESHITS
	3010011	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	TILOULIU
ENGINE	_	NG	UNKWN	I	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (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	Ι	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)	_



CAN SYSTEM (TYPE 6)

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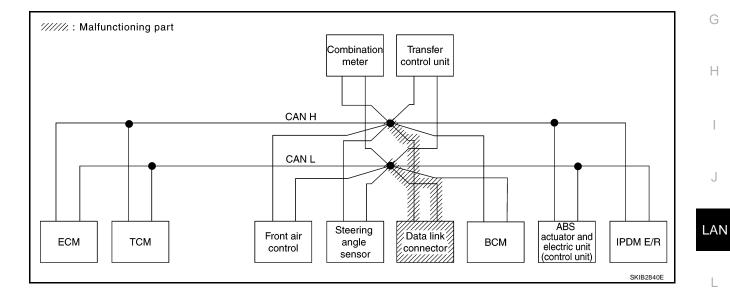
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Case 6

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	I LOOLIO
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	Ind Nation	NG	UNKWN	UNKWN	-	-	_	UNKWN	-	_	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	N ind ation	-	-	_	-	-	_	-	-	_	_	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	_		UNKWN	UNKWN	-	-	UNKWN	_	UNKWN	-	CAN COMM CIRCUIT (U1000)	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	_	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	Ng ind ation	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	—

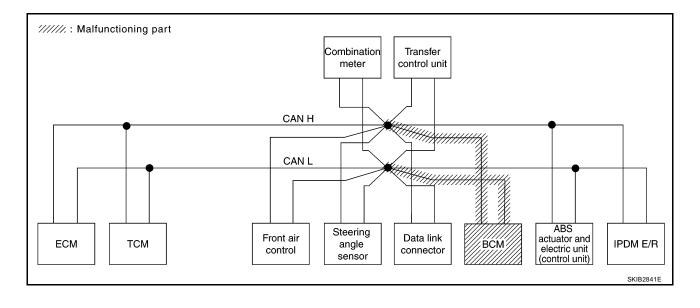


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Case 7

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	TILOULIU
ENGINE	_	NG	UNKWN	_	UNKWN	-		UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCL (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	_	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	—
BCM	Notice individual indi	NG	UNKWN	UNKWN		-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	—	-	1	-	-	—	-	-	-	CAN COMM CIRCUIT (U 100)	_
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	Ι	UNKWN	1	UNKWN	1	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 (U 1000)	_



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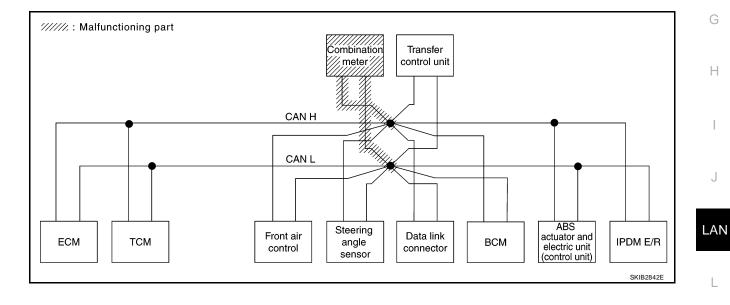
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Case 8

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	scroop		_				Receive	diagnosis				SELF-DIAG	BESHITS
SELECT STOLEM		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		THEODERS
ENGINE	_	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U 001)
A/T	_	NG	UNKWN	UNKWN	-	-	_	UNKWN	UNKWN	UNKWN	-	CAN COMICIRCUIT (U 1000)	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	-	_	UNKWN	-	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	Notind Nation	-	-	-	-	-	-	-	-	_	-	CAN COMM CIRCUIT (U 1000)	—
ALL MODE AWD/4WD	_		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)	_

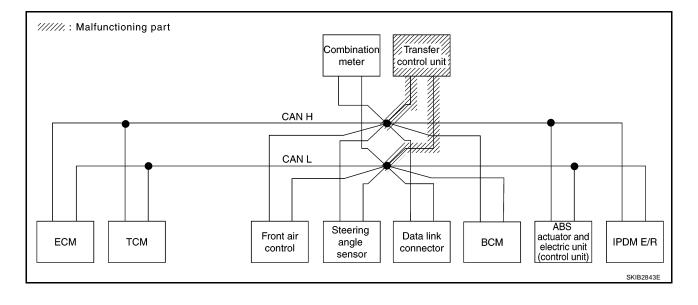


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Case 9

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

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	Initial	Transmit				Receive	diagnosis				SELF-DIAG	BESULTS
	0010011		diagnosis		тсм	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 (U 01)
A/T	—	NG	UNKWN	UNKWN	Ι	-	-	UNKWN	UNIWN	UNKWN	I	CAN COMIN CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	—	—	-	-	-	—	—	-	Ι	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	-	NG				-	_	UNKWN	-		-	CAN COMICIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_		-	-	CAN COMIN CIRCUIT (U 1000)	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_



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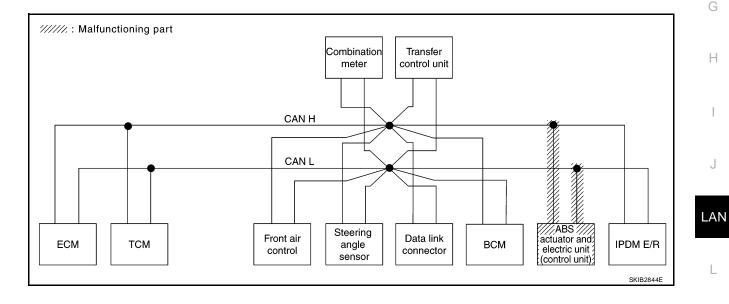
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Case 10

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESUITS
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	/M&A	AWD/4WD /e4WD	/ABS	E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	I	UNKWN	UNKWN	UNKWN		UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	_	UNKWN	UNKWN	UNKWN	-	CAN COMICIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	_	-	_	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	_	-	-	-	_	_	_	_	_	-	CAN COMM CIRCUIT (U 1000)	_
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_		-	CAN COMIL CIRCUIT (U 100)	_
ABS	-	V		UNKWN		UNKWN	_	_		_	-	CAN COMICIRCUIT (U 1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	1	UNKWN		_		_	CAN COMM CIRCUIT (U1000)	_



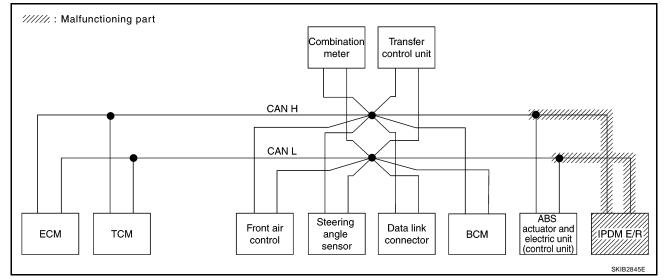
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Case 11

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

					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	screen	Initial	Transmit				Receive of	diagnosis		-		SELF-DIAG	BESULTS
011101010101		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	/M&A	AWD/4WD /e4WD	/ABS	E/R		
ENGINE	—	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMIC CIRCUIT (UN01)
A/T	_	NG	UNKWN	UNKWN	_	-	-		UNKWN	UNKWN	_	CAN COMM CIRCUIT	_
BCM	No indication	NG	UNKWN	UNKWN	_	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	1	-	_	-	1	_	I	-	-	CAN COMICIRCUIT (U 100)	—
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (U1000)	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	Ι	UNKWN	-	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	Ng indivation	-	UNKWN	UNKWN	_	-	UNKWN	-	_	-	-	CAN COMIN CIRCUIT (U 1000)	—



Case 12



				CAN									
SELECT SYSTEM screen			Transmit diagnosis				Receive of	SELF-DIAG BESULTS					
		Initial diagnosis		ECM	тсм	STRG	BCM /SEC	/M&A	/e4WD	VDC/TCS /ABS	E/R		
ENGINE	_	NG	UNKWN	-		-	UNKIN		UNK	UNKWN	UNKWN	CAN COMIN CIRCUIT (UN00)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN		-	-	_		UNKWN	UNKWN	-	CAN COMIN CIRCUIT (U 1000)	—
BCM	No individuation	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	_	—	-	-		_	-	-	1	CAN COMIN CIRCUIT (U 100)	Ι
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		_	_	UNKWN	-	UNKWN	-	CAN COMM CIRCUIT (UN00)	-
ABS	_	V	UNKWN			UNKWN	-	_		-	-	CAN COMM CIRCUIT (U 100)	_
IPDM E/R	No individuation	-	UNKWN	UNKWN	-	-	UNKWN	-	-	-	-	CAN COMM CIRCUIT (U 1000)	-

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Case 13

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-221</u>, "IPDM E/R Ignition Relay <u>A</u> <u>Circuit Inspection</u>".

					CAN	DIAG SU	PPORT N						
SELECT SYSTEM screen		reen					Receive	SELF-DIAG RESULTS					
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN	CAN COMM CIRCUIT (U 1000)	CAN COMM CIRCUIT (UN01)
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 (U 1000)	—
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		-	-	UNKWN	_		-	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_	_	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-221</u>, "IPDM E/R Ignition Relay <u>Circuit Inspection</u>".

SELECT SYSTEM screen							Receive of	SELE-DIAG BESULTS					
		Initial diagnosis	Transmit s diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	1200210
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 (U 1000)	_
ВСМ	No indication	NG	UNKWN	UNKWN	-	_	-	UNKWN	_	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	Ι	Ι	_	-	-	-	-	Ι	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 (U 1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	-	_	_	-	CAN COMM CIRCUIT (U1000)	_

Inspection Between TCM and Data Link Connector Circuit 1. CHECK CONNECTOR

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PKIB5140E

- 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

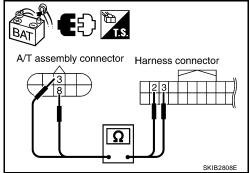
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

- 1. Disconnect A/T assembly connector and harness connector F14.
- 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) 8 (P) – 3 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

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



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E152.
- Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).
 - 2 (L) 52G (L) 3 (P) – 51G (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

SMJ harness connector Harness connector Harness connector 52G, 51G SKIB2809E

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

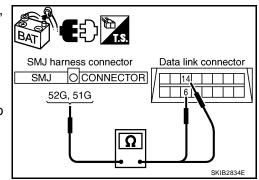
52G (L) – 6 (L) 51G (P) – 14 (P) : Continuity should exist.

: Continuity should exist.

OK or NG

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





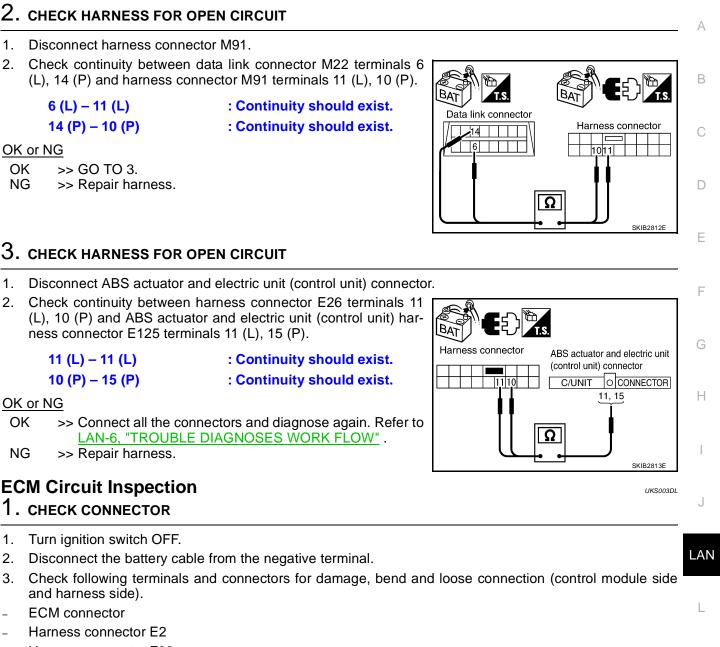
Inspection Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Circuit

- 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.



- Harness connector F32

OK or NG

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

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2. CHECK HARNESS FOR OPEN CIRCUIT

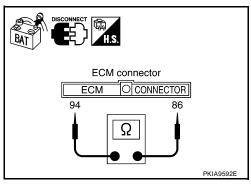
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

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.

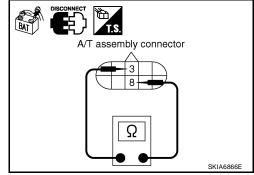
NG >> Repair terminal or connector.

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)

OK or NG

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



UKS003DO

Steering Angle Sensor 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 steering angle sensor for damage, bend and loose connection (sensor side and harness side).

OK or NG

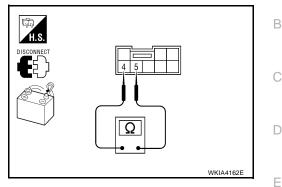
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 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 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the battery cable from the negative terminal.
- 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 termin

G >> 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 – 66 Ω OK or NG OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAG-<u>NOSES WORK FLOW"</u>. NG >> Repair harness between data link connector and BCM.

BCM 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 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.

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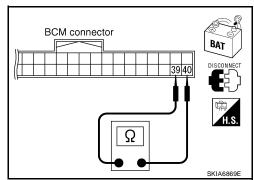
- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) – 40 (P)

: Approx. 54 – 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-20, "Removal and Installa-</u> tion of <u>BCM"</u>
- NG >> Repair harness between BCM and data link connector.



Combination Meter 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 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

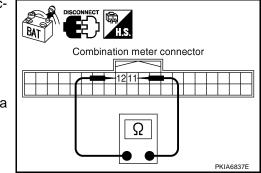
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

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.



UKS003DS

Transfer Control Unit 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 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.

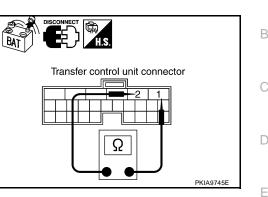
UKS003DR

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

1. CHECK CONNECTOR

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

: 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

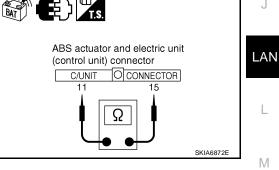
1. CHECK CONNECTOR

- Turn ignition switch OFF. 1.
- 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.



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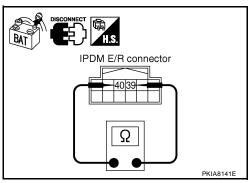
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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

1. CHECK CONNECTOR

UKS003DV

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

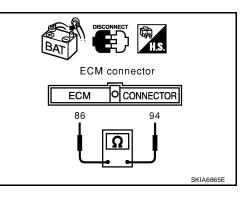
94 (L) – 86 (P)

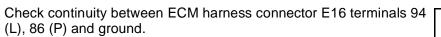
: Continuity should not exist.

OK or NG

OK >> GO TO 3.

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





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

: Continuity should not exist.

OK or NG

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



3. 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)

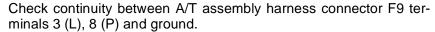
: Continuity should not exist.

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

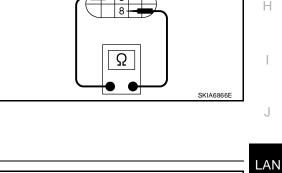
5. CHECK HARNESS FOR SHORT CIRCUIT



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

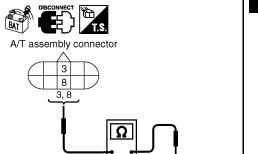


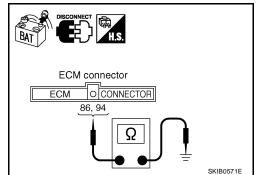
T.S.

A/T assembly connector

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6. CHECK HARNESS FOR SHORT CIRCUIT

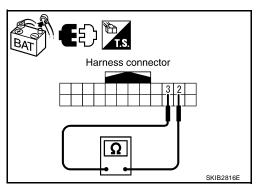
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

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.



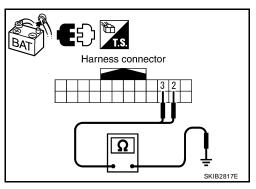
7. CHECK HARNESS FOR SHORT CIRCUIT

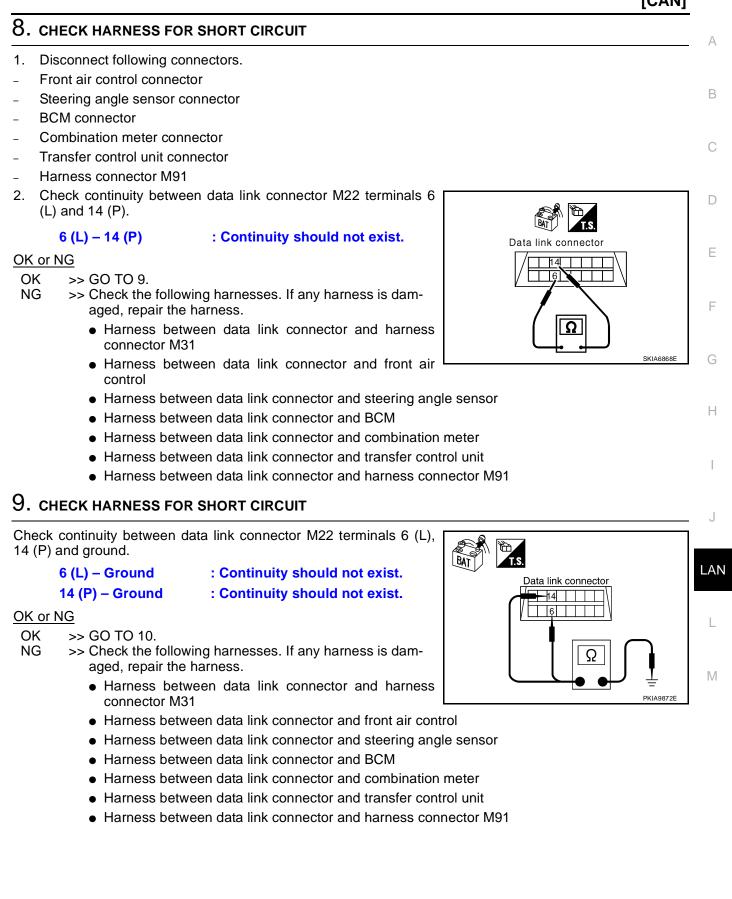
Check continuity between harness connector E5 terminals 2 (L), 3 (P) and ground.

- 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.





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)

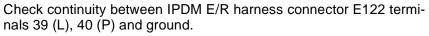
: Continuity should not exist.

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



- 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.

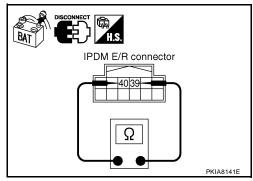
13. снеск сумртом

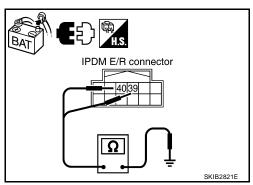
- 1. Fill in described symptoms on the column "Symptom" in the check sheet.
- 2. Connect all connectors, and then make sure that the symptom is reproduced.

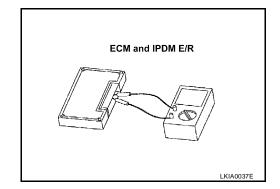
OK or NG

OK >> GO TO 14.

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







14	1. UNIT REPRODUCIBILITY INSPECTION	А
Pe	rform 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.	В
3.	Disconnect the unit connector.	
4.	Connect the battery cable to the negative terminal.	С
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.)	C
6.	Make sure that the same symptom is reproduced.	D
-	ТСМ	D
-	Front air control	
-	Steering angle sensor	Е
-	BCM	
-	Combination meter	
-	Transfer control unit	F
-	ABS actuator and electric unit (control unit)	
-	ECM	
-	IPDM E/R	G
Ins	pection results	
	eproduced>>Install removed unit, and then check the other unit. ot reproduced>>Replace removed unit.	Н
IP	DM E/R Ignition Relay Circuit Inspection	
Ch	eck 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 <u>PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON</u> <u>AND/OR START"</u> .	J

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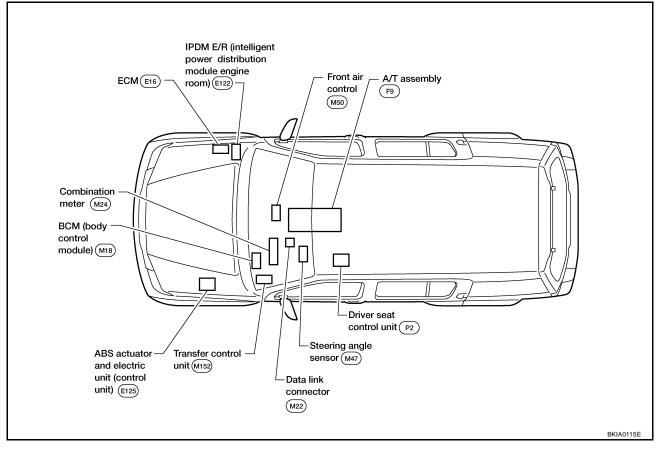
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System Description

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



PFP:23710

[CAN]

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UKS003CU

Schematic



UKS003CV

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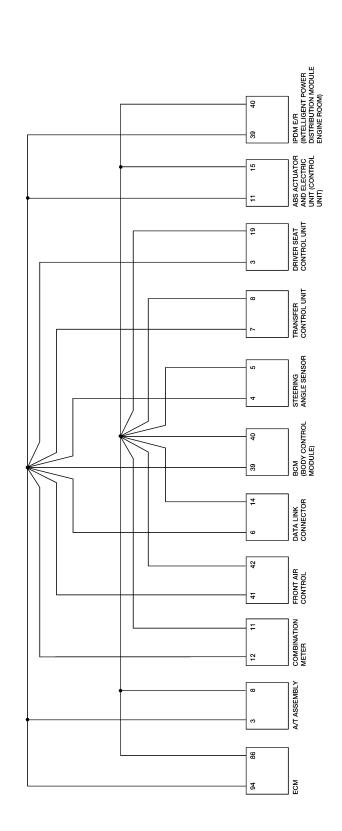
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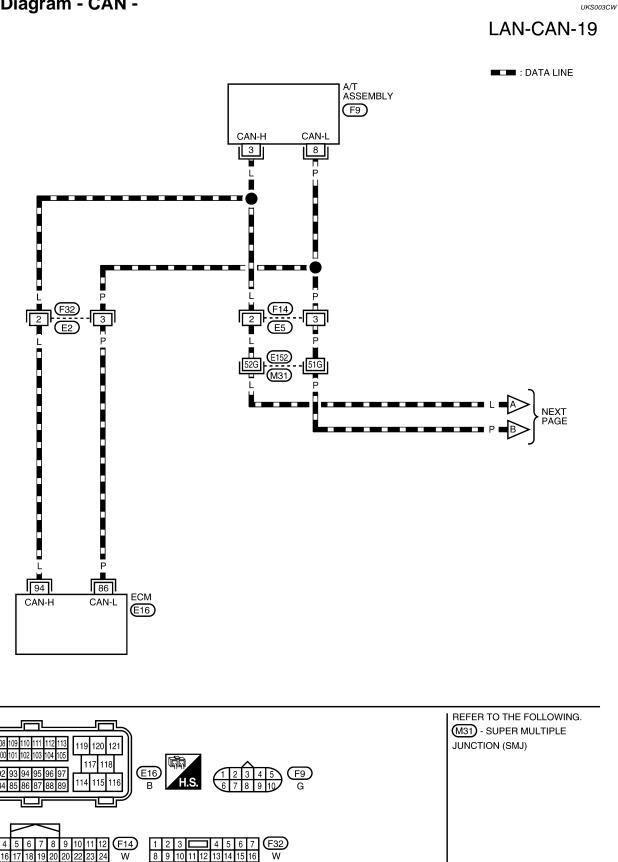
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BKWA0617E



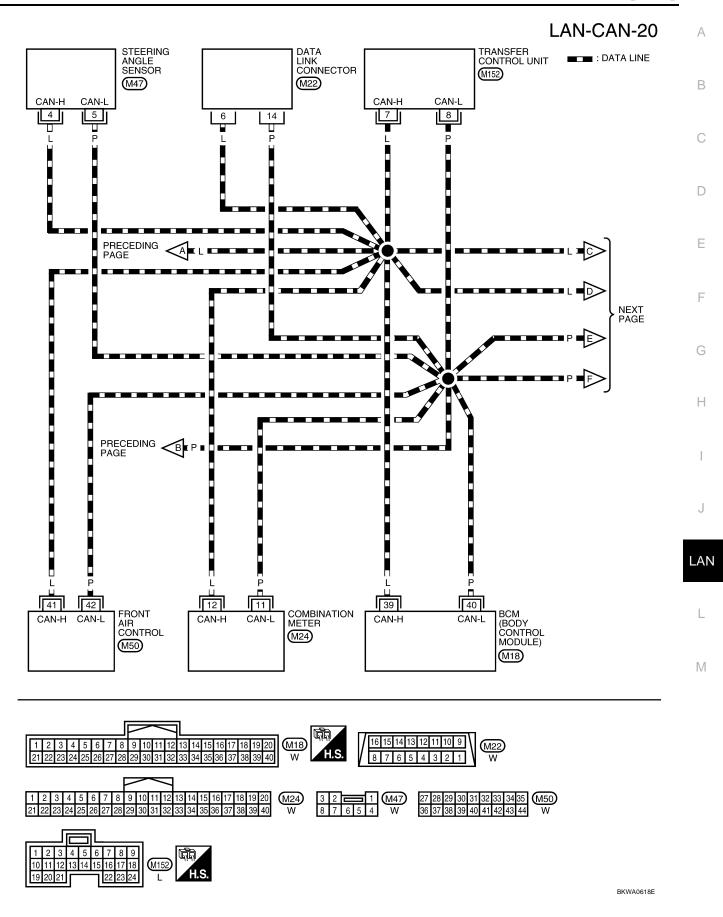
BKWA0392E

14 15 16 17 18 19 20 20 22 23 24

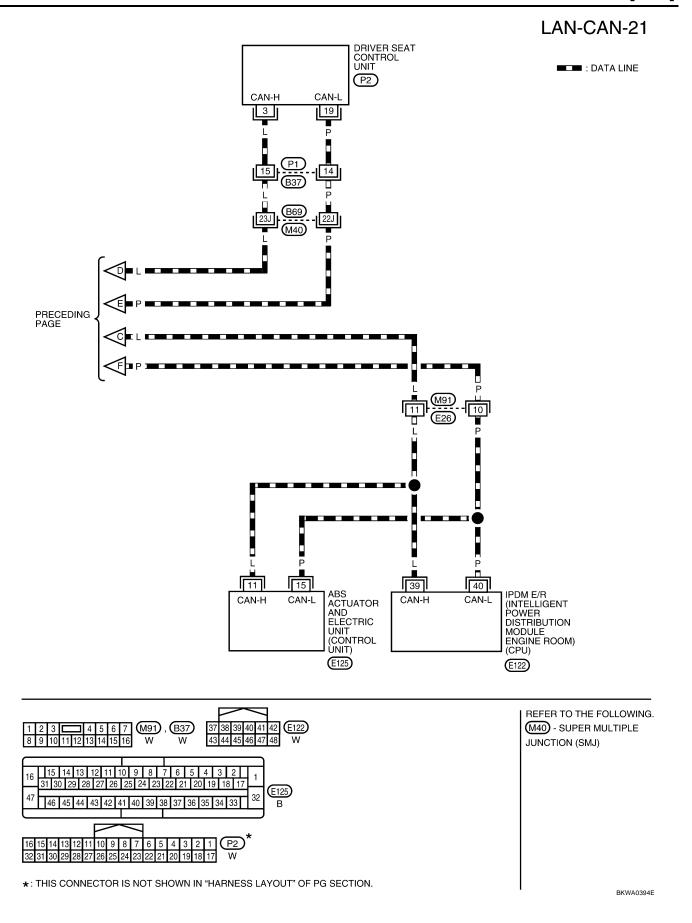
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[CAN]



[CAN]



Revision: November 2005

CHECK SHEET

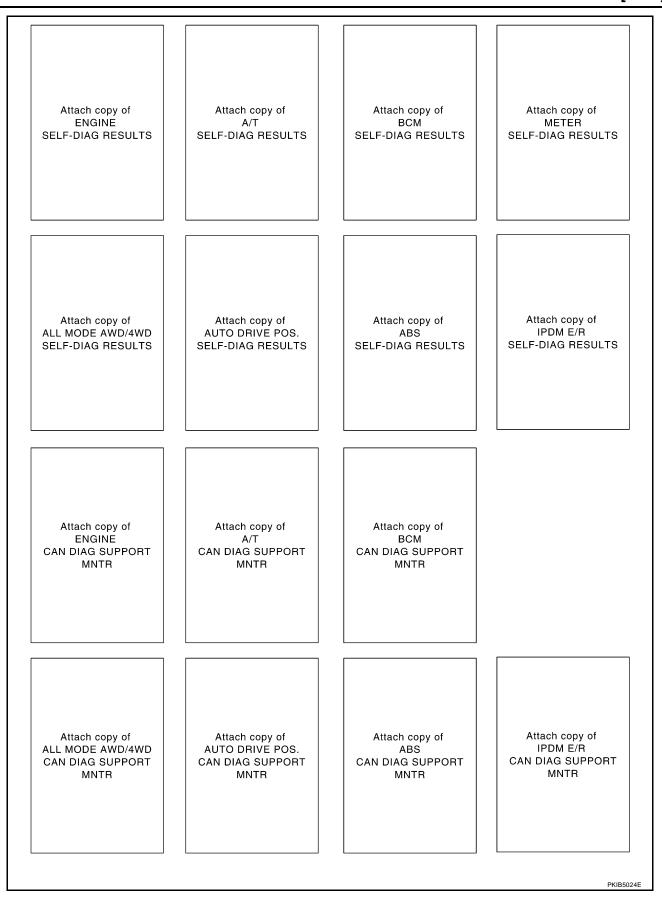
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NOTE:

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

SELECT SYSTEM screen Initial Transmit diagnosis Tecm TCM SEC INCOME SELF-DIAG RESULTS GINE - NG UNKWN CM TCM SEC METER AWD4WD VDC/TCS IPID GINE - NG UNKWN CAN COMM CIRCUIT CAN COMM CIRCUIT - - UNKWN UNKWN UNKWN UNKWN CAN COMM CIRCUIT CAN COM CIRCUIT - CAN COM CIRCUIT ING
diagnosis ECM TCM STRG BCM METER Mode Vol VOCTCS IPDM GINE - NG UNKWN - UNKWN CAN COM CIRCUIT CAN COM CIRCUIT
GINE C No DIKKIN C DIKKIN DIKKIN <th< th=""></th<>
- NG UNKWN UNKWN - - - UNKWN UNKWN - - (U1000) - M No - - - UNKWN UNKWN - - UNKWN CAN COMM CIRCUIT - TER No - - - - - - - CAN COMM CIRCUIT - LMODE AWD/4WD No - - - - - - - CAN COMM CIRCUIT - LMODE AWD/4WD No - UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT - LMODE AWD/4WD NG UNKWN UNKWN UNKWN UNKWN - - - CAN COMM CIRCUIT - (U1000) - CAN COM CIRCUIT - (U1000) - - - CAN COM CIRCUIT - (U1000) - - CAN COM CIRCUIT - CAN COM CIRCUIT - CAN COM CIRCUIT<
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S - NG UNKWN UNKWN UNKWN - - - OUNKWN - - M E/R No - UNKWN UNKWN - - - CAN COMM CIRCUIT - mptoms : - - UNKWN UNKWN - - - - CAN COMM CIRCUIT -
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Revision: November 2005

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CHECK SHEET RESULTS (EXAMPLE)

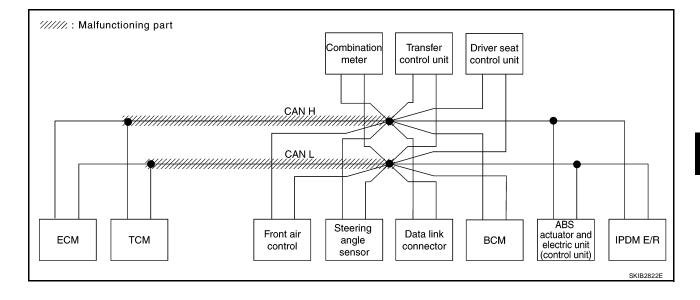
NOTE:

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 <u>LAN-241</u>, "Inspection Between TCM and Data Link Connector Circuit".

					CAN	DIAG SU	IPPORT M	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	GELI -DIAC	
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN	UNKWN	-	—	-	UNKWN	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	-	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	_	-	_	-	-	_	CAN COMM CIRCUIT (U 1000)	_
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN		UNKWN	-	-	-	UNKWN	_	CAN COMM CIRCUIT (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	-	_	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN		UNKWN	-	_	UNKWN	_	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	-	UNKWN		_	_	UNKWN	-	-	_	_	CAN COMIN CIRCUIT	_



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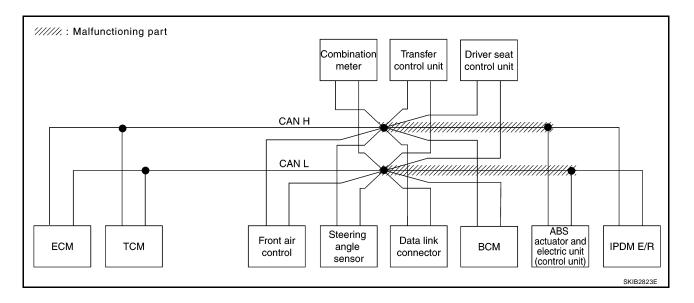
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Case 2

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"

					CAN	DIAG SU	PPORT M	1NTR					
SELECT SYSTEM	screen		_				Receive	diagnosis				SELF-DIAG	BESHITS
	3010011	Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	INEGOEI O
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMIN CIRCU (UN01)
A/T	_	NG	UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	UNKWN	_	CAN COMIN CIRCUIT (U 000)	-
BCM	No indication	NG	UNKWN	UNKWN	_	-	—	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	-	-	-	-	_	CAN COMICIRCUIT (U 1000)	-
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	_	_	-		_	CAN COMM CIRCUIT (U 000)	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	_	CAN COMM CIRCUIT (U1000)	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	-	-	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	Ng increation	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_		_



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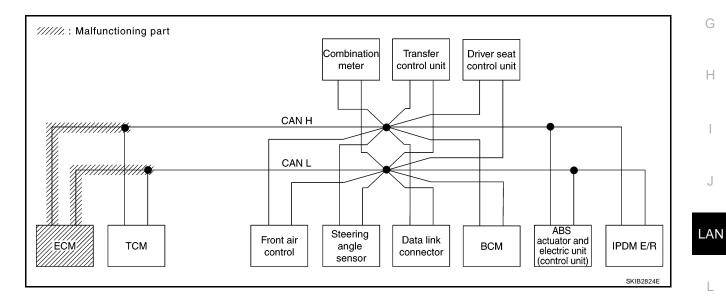
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Case 3

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Check ECM circuit. Refer to LAN-243, "ECM Circuit Inspection" .

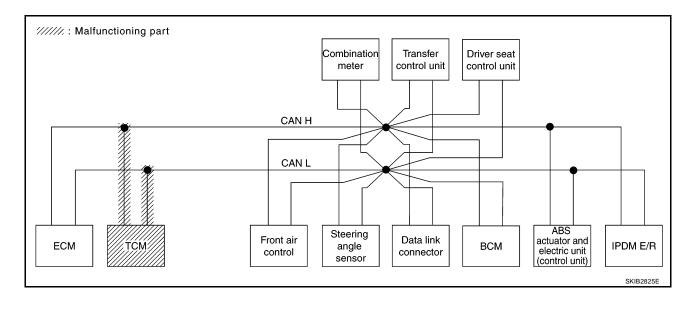
					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG		-	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN	CAN COMICIRCUIT (U 1000)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN		-		-	UNKWN	UNKWN	UNKWN	-	CAN COMIL CIRCUIT (U 1000)	_
BCM	No indication	NG	UNKWN	UNKWN	_		_	UNKWN	_	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	_	-	-	-	_	-	_	_	_	-	CAN COMM CIRCUIT (U 100)	_
ALL MODE AWD/4WD	No indication	_	UNKWN		UNKWN	UNKWN	-	_	-	UNKWN	_	CAN COMM CIRCUIT (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	-	CAN COMM CIRCUIT (U 1000)	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN		_	-	UNKWN	-	_	_	_	CAN COMIL CIRCUIT (U 100)	_



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Check TCM circuit. Refer to LAN-244, "TCM Circuit Inspection" .

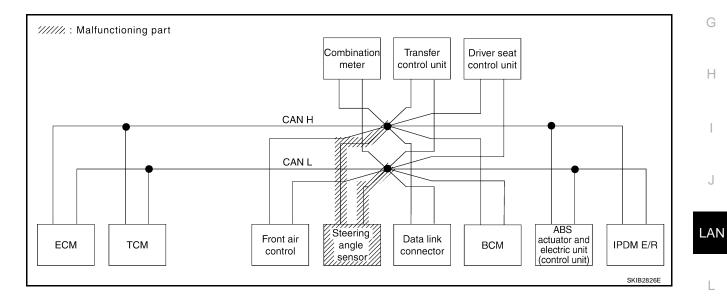
					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELF-DIAG	BESULTS
	0010011	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMIN CIRCUIT (U 1000)	CAN COMM CIRCU (U 01)
A/T	-	NG	UNKWN		-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMIN CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	_	—	—	1	—	—	—	-	-		CAN COMM CIRCUIT (U 100)	_
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	Ι	CAN COMM CIRCUIT (U 000)	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_		_	UNKWN	UNKWN	_	1	I	CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN		UNKWN	—	-	UNKWN	-	Ι	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_



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Check steering angle sensor circuit. Refer to LAN-244, "Steering Angle Sensor Circuit Inspection" .

					CAN	DIAG SU	PPORT M	1NTR					
SELECT SYSTEM	scroop		_				Receive	diagnosis				SELF-DIAG	BESHITS
SELECT STOTEM		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		INEGOLIS
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)	_



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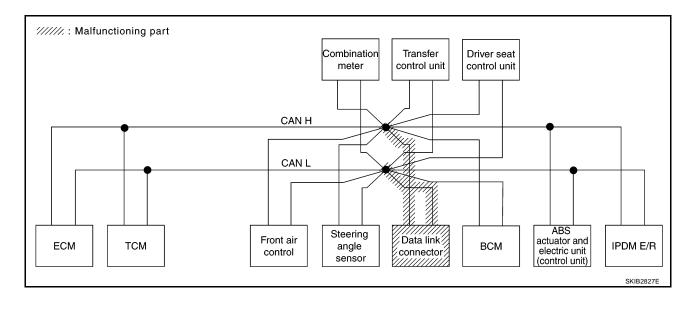
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Check data link connector circuit. Refer to LAN-245, "Data Link Connector Circuit Inspection" .

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen	1.00.1	-				Receive	diagnosis				SELF-DIAG	BESULTS
	0010011	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DINC	
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (U1001)
A/T	_	NG	UNKWN	UNKWN	-	_	_	UNKWN	UNKWN	UNKWN	_	CAN COMM CIRCUIT (U1000)	_
BCM	No indiviation	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	-	-	-	-	-	-	-	_	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	No indiviation	-	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	-
AUTO DRIVE POS.	Ng ind ation	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	-	_	-	CAN COMM CIRCUIT (U1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	1	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indiviation	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_	-	CAN COMM CIRCUIT (U1000)	_



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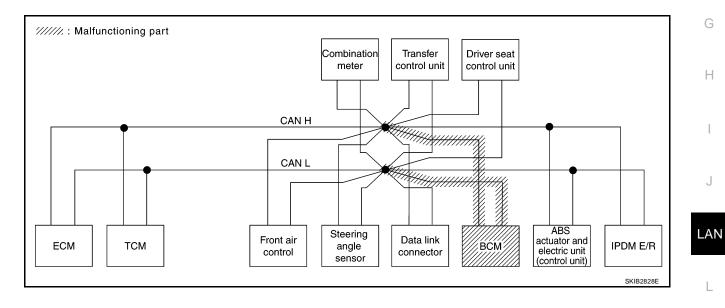
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Case 7

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Check BCM circuit. Refer to LAN-245, "BCM Circuit Inspection" .

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	
ENGINE	_	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
BCM	Ng indivation	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	Ι	-	-	-	Ι	-		CAN COMM CIRCUIT (U 100)	_
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 COMICIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_	-	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_		UNKWN		_	_	_	CAN COMM CIRCUIT (U 1000)	_

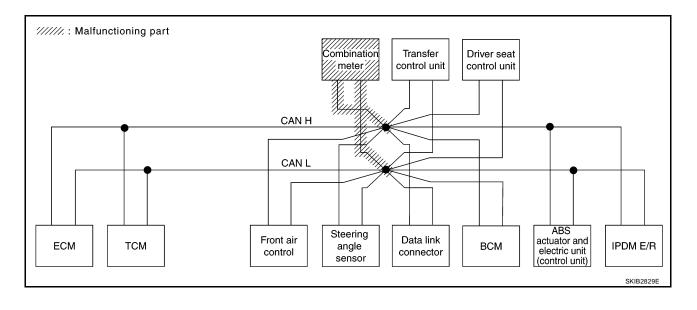


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Case 8

Check combination meter circuit. Refer to LAN-246, "Combination Meter Circuit Inspection" .

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
	3010011	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI -DIAC	TILOULIU
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNK	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMIN CIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	_	_	_		-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	-	-	-	-	-	-	-	Ι	CAN COMM CIRCUIT (U 100)	_
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	_	_	-	UNKWN	-	CAN COMM CIRCUIT (U1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN		-	-	-	CAN COMICIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	Ι	CAN COMM CIRCUIT (U1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_



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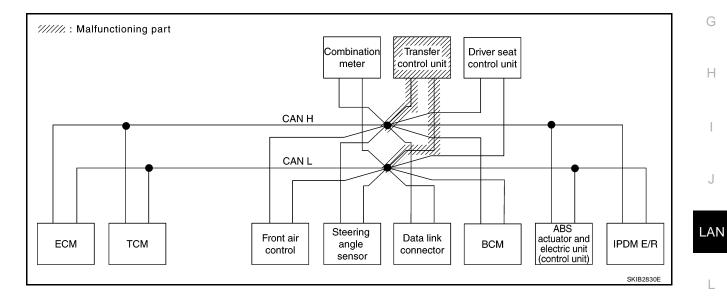
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Case 9

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Check transfer control unit circuit. Refer to LAN-246, "Transfer Control Unit Circuit Inspection" .

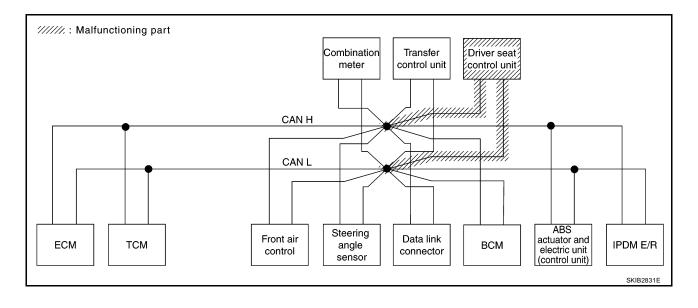
					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM	scroop		_				Receive	diagnosis				SELF-DIAG	BESHITS
	Scieen	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		THEODERS
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	_	NG	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN	UNKWN	-	CAN COMICIRCUIT (U 1000)	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	_	UNKWN	-	_	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	-	-	-	-	_	_	-	-	_	-	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	Ng indivation	-	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	-	CAN COMM CIRCUIT (U 000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	_	_	-	CAN COMM CIRCUIT (U1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNK	_	-	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication		UNKWN	_	-	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_	



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Check driver seat control unit circuit. Refer to LAN-247, "Driver Seat Control Unit Circuit Inspection" .

					CAN	DIAG SU	PPORT N	INTR					
SELECT SYSTEM	screen						Receive	diagnosis				SELF-DIAG	BESHITS
	3010011	Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		INCOULIO
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (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	-	—	—	1	—	_	_	-	-	-	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	-
AUTO DRIVE POS.	Ng ind ation	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	_		CAN COMM CIRCUIT (U 1000)	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	Ι	CAN COMM CIRCUIT (U1000)	—
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_



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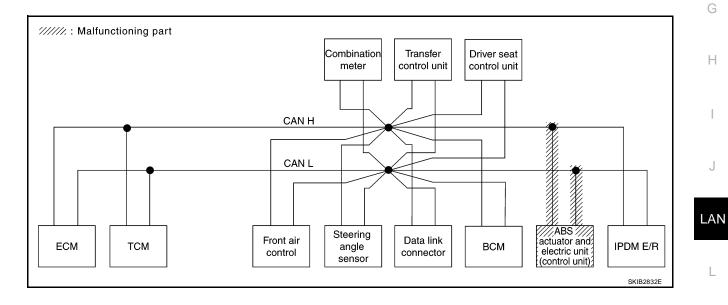
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Case 11

А Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-247, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection".

					CAN									
SELECT SYSTEM	scroop						Receive		SELF-DIAG RESULTS					
SELECT SYSTEM screen		Initial diagnosis	Transmit sdiagnosis	ECM	тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	SELF-DIAG RESULIS		
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U 001)	
A/T	-	NG	UNKWN	UNKWN	-	_	-	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_	
BCM	No indication	NG	UNKWN	UNKWN	-	_	-	UNKWN	-	_	UNKWN	CAN COMM CIRCUIT (U1000)	_	
METER	No indication	-	-	-	-	_	-	-	-	_	-	CAN COMM CIRCUIT (U 1000)	_	
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-	CAN COMM CIRCUIT (U 000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	-	—	-	CAN COMM CIRCUIT (U1000)	_	
ABS	_	V		UNKWN	UNKWN	UNKWN	-	-		-	-	CAN COMM CIRCUIT (U 1000)	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_	

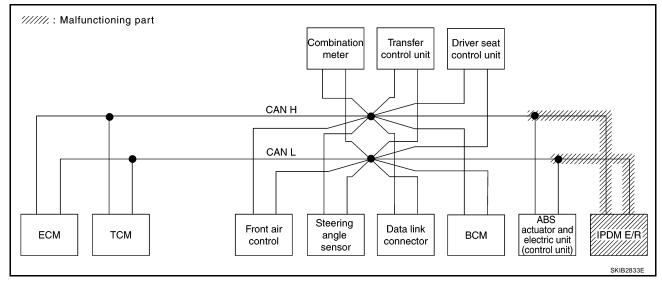


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Case 12

Check IPDM E/R circuit. Refer to LAN-248, "IPDM E/R Circuit Inspection" .

SELECT SYSTEM	screen	1	-				Receive	diagnosis				SELF-DIAG RESULTS		
SELECT STSTEM SCIENT		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	/M&A	/e4WD	VDC/TCS /ABS	E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCU (UN01)	
A/T	_	NG	UNKWN	UNKWN	-	-	_		UNKWN	UNKWN		CAN COMM CIRCUIT	-	
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-		CAN COMM CIRCUIT (U1000)	-	
METER	No indication	-	-	-	-	-	-	-	-	-	_	CAN COMM CIRCUIT (U 100)	_	
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	-	Ι	CAN COMM CIRCUIT (U1000)	-	
IPDM E/R	No indvation	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_		_	



Case 13



					CAN	DIAG SU	PPORT M	INTR					
SELECT SYSTEM screen							Receive of		SELF-DIAG RESULTS				
		Initial diagnosis	Transmit diagnosis	ECM	тсм	STRG	BCM /SEC	/M&A	/e4WD	VDC/TCS /ABS	E/R		
ENGINE	—	NG				-						CAN COMM CIRCUIT (UV00)	CAN COMM CIRCUIT (UN01)
A/T	—	NG	UNKWN		_	-	-		UNKWN		-	CAN COMIN CIRCUIT (U 1000)	-
BCM	No individualion	NG	UNKWN	UNKWN	_	-	-	UNKWN	-	Ι	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	N ind ation	_	1	-	_	-	Ι	_	I	-	-	CAN COMIN CIRCUIT (U 100)	-
ALL MODE AWD/4WD	Ng indivation	_	UNKWN	UNKWN	UNKWN	UNKWN	Ι	-	1	UNKWN	Ι	CAN COMM CIRCUIT (UN00)	-
AUTO DRIVE POS.	No indivation	NG	UNKWN	Ι	UNKWN	-	UNKWN	UNKWN	I	-		CAN COMICIRCUIT (UN00)	_
ABS	_	₩					-	Ι		_	-	CAN COMIN CIRCUIT (U 100)	_
IPDM E/R	Ng indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	CAN COMIN CIRCUIT (U 1000)	_

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Case 14

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А Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-255, "IPDM E/R Ignition Relay Circuit Inspection" .

					CAN	DIAG SU	PPORT M	1NTR						
SELECT SYSTEM screen			_	Receive diagnosis							SELF-DIAG RESULTS			
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	SELI-DIAC		
ENGINE	_	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN		UNKWN	CAN COMM CIRCUIT (U 000)	CAN COMM CIRCUI (U 101)	
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 (U 1000)	_	
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN		UNKWN	-	-	-	UNKWN	-	CAN COMM CIRCUIT (U 000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	_	_	-	CAN COMM CIRCUIT (U 1000)	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	-	CAN COMM CIRCUIT (U1000)	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-	_	CAN COMM CIRCUIT (U1000)	_	

Case 15

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-255, "IPDM E/R Ignition Relay Circuit Inspection".

					CAN	DIAG SU	PPORT N	NTR						
SELECT SYSTEM screen			-	Receive diagnosis								SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis		тсм	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	DVDC/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 (U 000)	-	
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 (U 000)	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_	

Inspection Between TCM and Data Link Connector Circuit 1. CHECK CONNECTOR

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- Turn ignition switch OFF. 1.
- 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

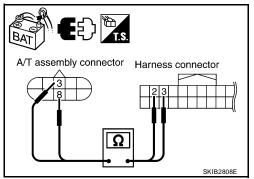
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

- 1. Disconnect A/T assembly connector and harness connector F14.
- 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) 8 (P) – 3 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

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



SMJ harness connector

52G, 51G

SKIB2809E

SMJ

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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E152.
- Check continuity between harness connector E5 terminals 2 (L), 3 (P) and harness connector E152 terminals 52G (L), 51G (P).
 - 2 (L) 52G (L) 3 (P) – 51G (P)
- : Continuity should exist.

BA

Harness connector

: Continuity should exist.

OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

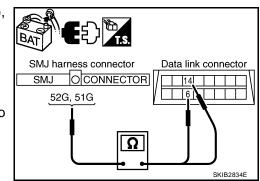
Check continuity between harness connector M31 terminals 52G (L), 51G (P) and Data Link Connector M22 terminals 6 (L), 14 (P).

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

: 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

- 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

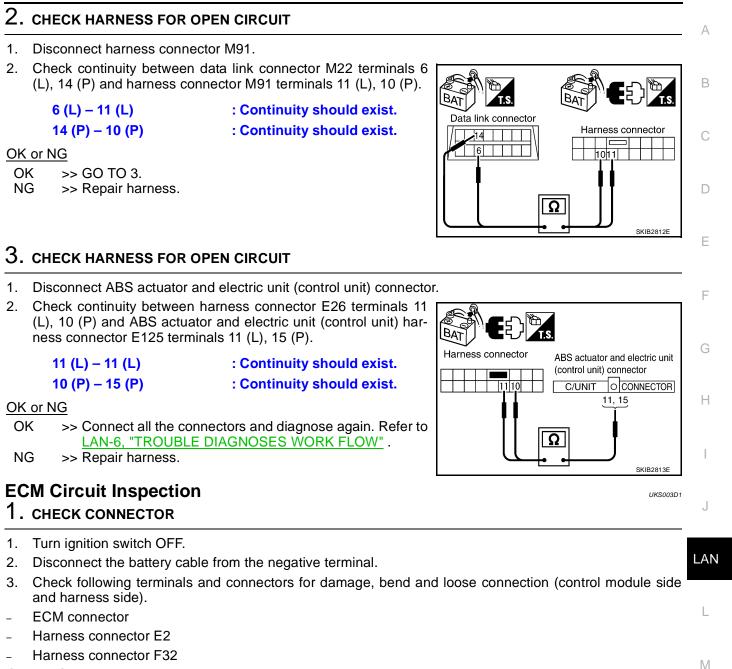
OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

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OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

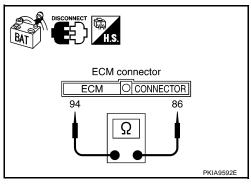
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

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.

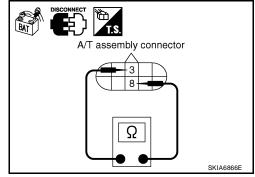
NG >> Repair terminal or connector.

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)

OK or NG

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



UKS003D4

Steering Angle Sensor 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 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.

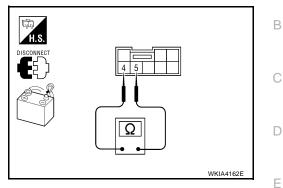
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 4 (L) and 5 (P).

: Approx. 54 – 66 Ω

OK or NG

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



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Data Link Connector Circuit Inspection 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 termin

G >> 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 – 66 Ω OK or NG OK >> Diagnose again. Refer to LAN-6, "TROUBLE DIAG-NOSES WORK FLOW". NG >> Repair harness between data link connector and BCM.

BCM 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 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.

UKS003D7

2. CHECK HARNESS FOR OPEN CIRCUIT

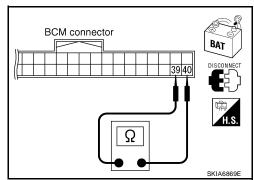
- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 – 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-20, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Combination Meter 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 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

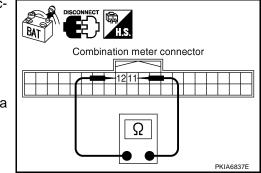
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 12 (L) and 11 (P).

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.



UKS003D8

Transfer Control Unit 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 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

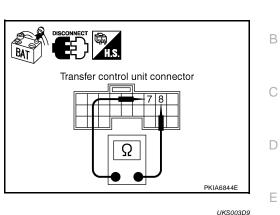
- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector M152 terminals 7 (L) and 8 (P).

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

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

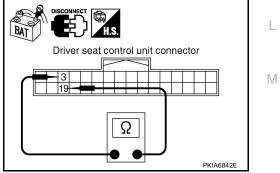
- 1. Disconnect driver seat control unit connector.
- 2. Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

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 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.

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2. CHECK HARNESS FOR OPEN CIRCUIT

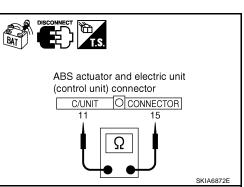
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

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

[CAN]

1. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 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

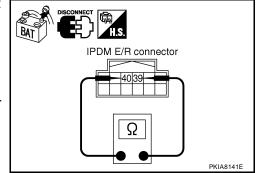
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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).



4		KS003DC
	gnition switch OFF.	
-	nect the battery cable from the negative terminal.	
3. Check	following terminals and connectors for damage, bend and loose connection (control module s I unit side, sensor side, meter side, and harness side).	side,
- ECM		
- TCM		
- Front a	air control	
- Steerin	ng angle sensor	
BCM		
- Combi	nation meter	
- Transfe	er control unit	
- Driver	seat control unit	
- ABS a	ctuator and electric unit (control unit)	
- IPDM I	E/R	
- Betwee	en ECM and IPDM E/R	
- Betwee	en ECM and driver seat control unit	
OK or NG		
••••	> GO TO 2.	
NG >>	> Repair terminal or connector.	
2. снесі	K HARNESS FOR SHORT CIRCUIT	
1. Discon	nect following connectors.	

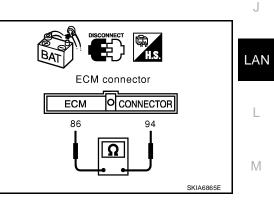
- ECM connector
- Harness connector E2
- 2. Check continuity between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Continuity should not exist.

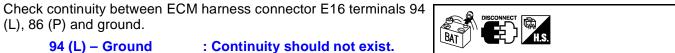
OK or NG

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



[CAN]

3. CHECK HARNESS FOR SHORT CIRCUIT



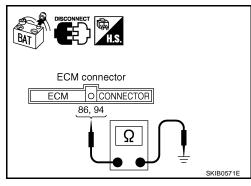
- 86 (P) Ground

: Continuity should not exist.

OK or NG

ΟK >> GO TO 4.

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



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4. CHECK HARNESS FOR SHORT CIRCUIT

- 1. Disconnect following connectors.
- A/T assembly connector
- Harness connector F14

3 (L) – 8 (P)

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

: Continuity should not exist.

: 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
- 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

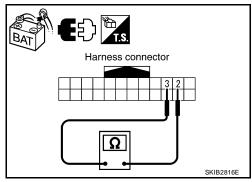
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

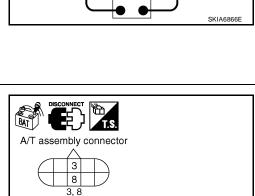
2 (L) – 3 (P)

: Continuity should not exist.

OK or NG

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





A/T assembly connector

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1. CHECK HARNESS FOR SHORT CIRCUIT

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

- 2 (L) Ground
- 3 (P) Ground

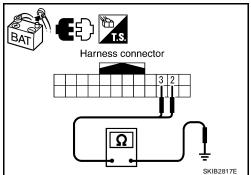
: Continuity should not exist.

: Continuity should not exist.

OK or NG

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





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- 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).

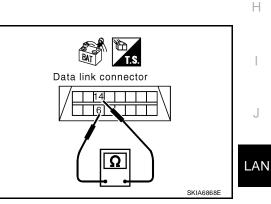
6 (L) – 14 (P)

: 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





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9. CHECK HARNESS FOR SHORT CIRCUIT

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

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

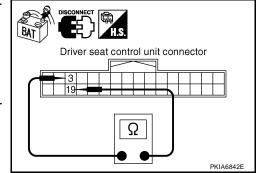
3 (L) – 19 (P)

: 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

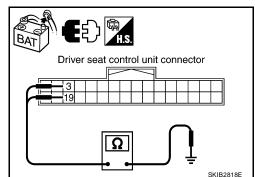
Check continuity between driver seat control unit harness connector P2 terminals 3 (L), 19 (P) and ground.

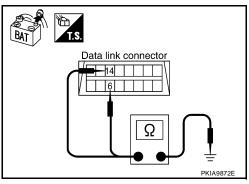
3 (L) – Ground

: Continuity should not exist. : Continuity should not exist.

19 (P) – Ground

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





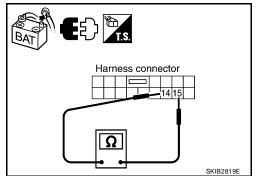
Check continuity between harness connector B37 terminals 15 (L) and 14 (P).

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. : Continuity should not exist.
- 14 (P) Ground
- OK or NG
- OK >> GO TO 14.
- NG >> Repair harness between harness connector B37 and harness connector B69.

Harness connector

14. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.

: Continuity should not exist.

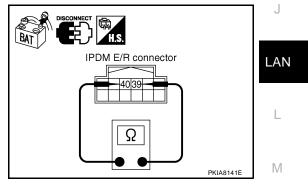
2. Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) – 40 (P)

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



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

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

: Approx. 108 - 132 Ω

3. Check resistance between IPDM E/R terminals 39 and 40.

39 – 40

OK or NG

OK >> GO TO 17.

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

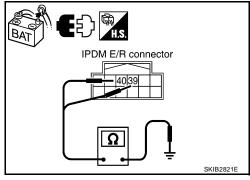


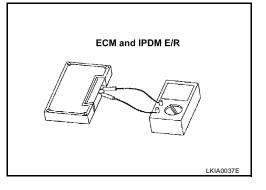
- 1. Fill in described symptoms on the column "Symptom" in the check sheet.
- 2. Connect all connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 18.

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





CAN SYSTEM (TYPE 7)

18	3. UNIT REPRODUCIBILITY INSPECTION	А
Pe	form 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.	В
3.	Disconnect the unit connector.	
4.	Connect the battery cable to the negative terminal.	\sim
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.)	С
6.	Make sure that the same symptom is reproduced.	D
-	ТСМ	D
-	Front air control	
-	Steering angle sensor	Е
-	BCM	
-	Combination meter	
-	Transfer control unit	F
-	Driver seat control unit	
-	ABS actuator and electric unit (control unit)	-
-	ECM	G
-	IPDM E/R	
Ins	pection results	Н
	eproduced>>Install removed unit, and then check the other unit. ot reproduced>>Replace removed unit.	
IPI	DM E/R Ignition Relay Circuit Inspection	
Ch	eck 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 <u>PG-14, "IGNITION POWER SUPPLY — IGNITION SW. IN ON</u> <u>AND/OR START"</u> .	J

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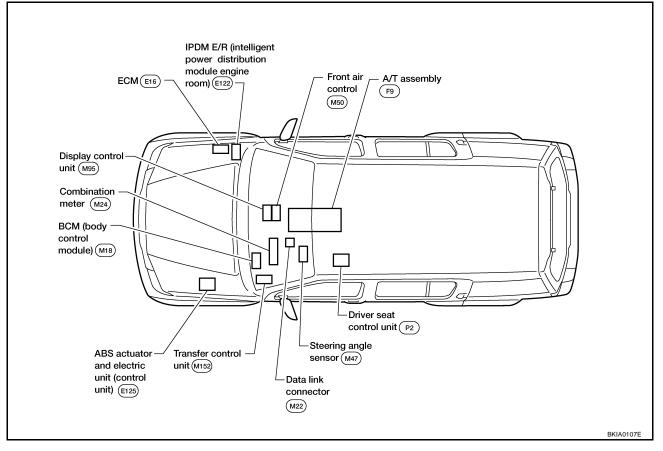
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CAN SYSTEM (TYPE 8)

System Description

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



PFP:23710

[CAN]

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UKS003B6

CAN SYSTEM (TYPE 8)

Schematic



UKS003B7

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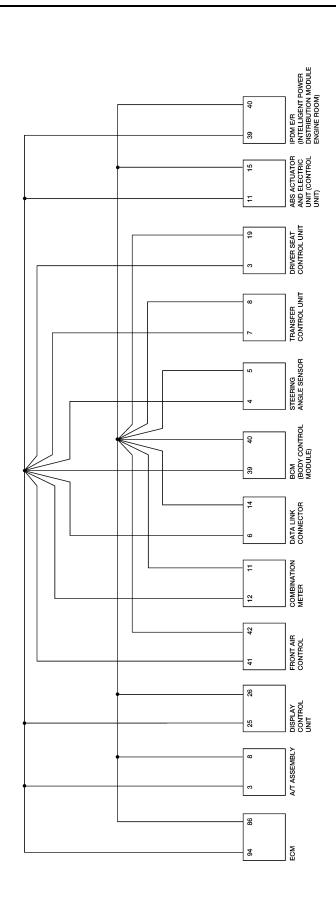
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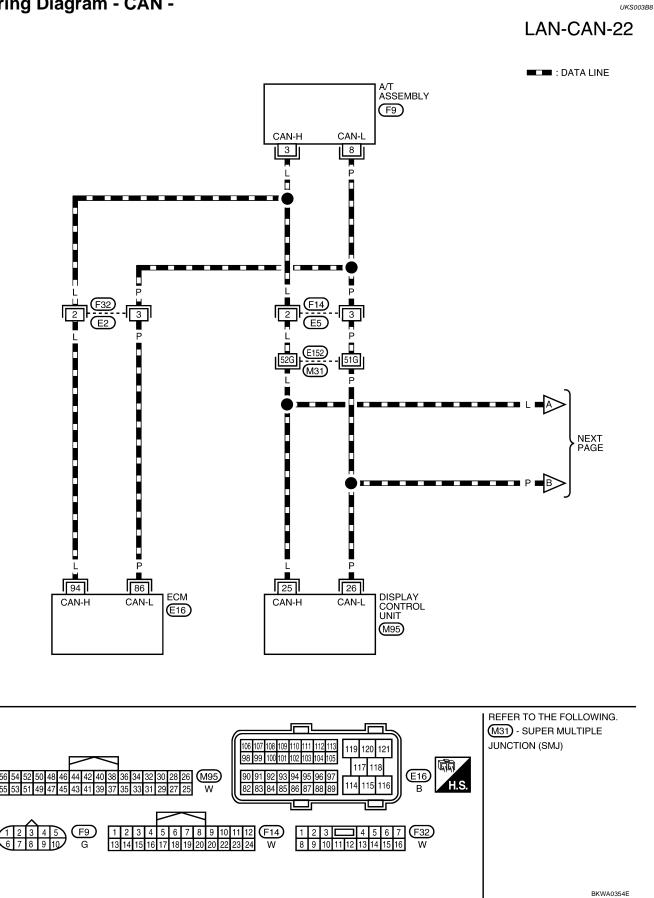
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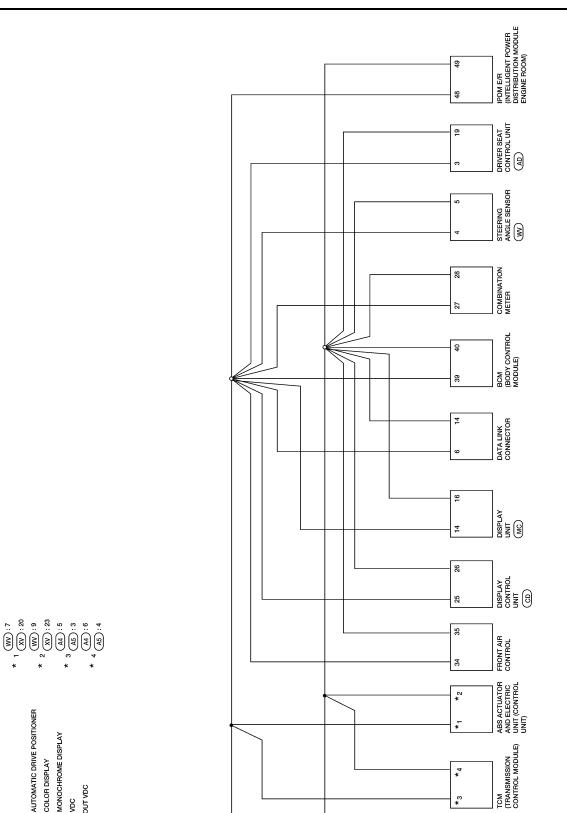
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 (A1): 1 AT

 (A5): 15 AT

 (A5): 15 AT

 (A5): 10 TH AUTOMATIC DRIVE POSITIONER

 (D5): WITH AUTOMATIC DRIVE POSITIONER

 (D5): WITH AUTOMATIC DRIVE POSITIONER

 (D6): WITH AUTOMATIC DRIVE DISPLAY

 (W0): WITH VDC

 (X7): WITH HOUT VDC

ECM

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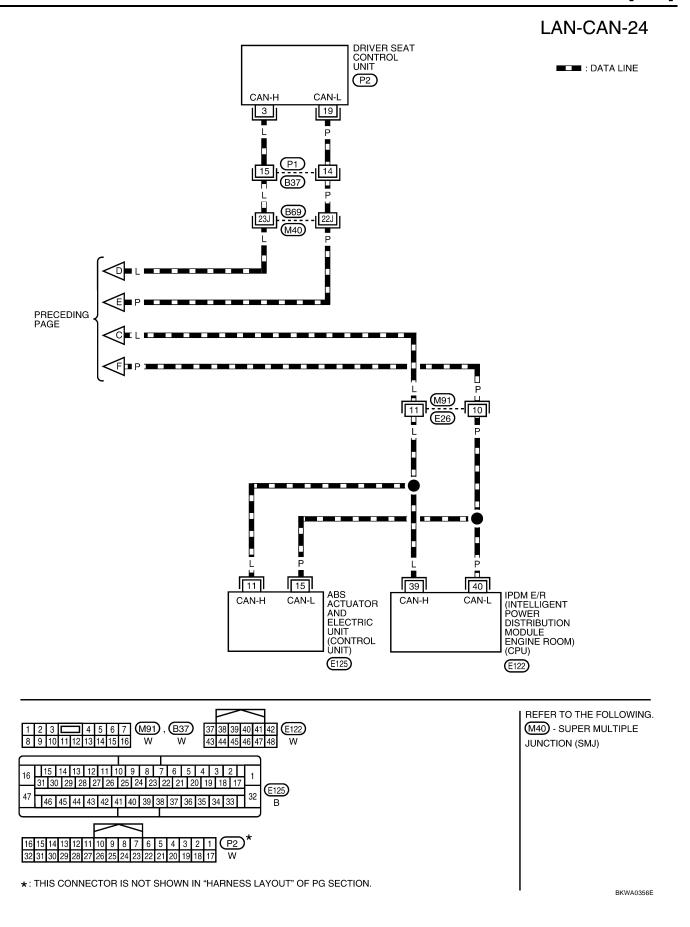
94

CAN SYSTEM (TYPE 8)

BKWA0620E

CAN SYSTEM (TYPE 8)

[CAN]



CHECK SHEET

[CAN]

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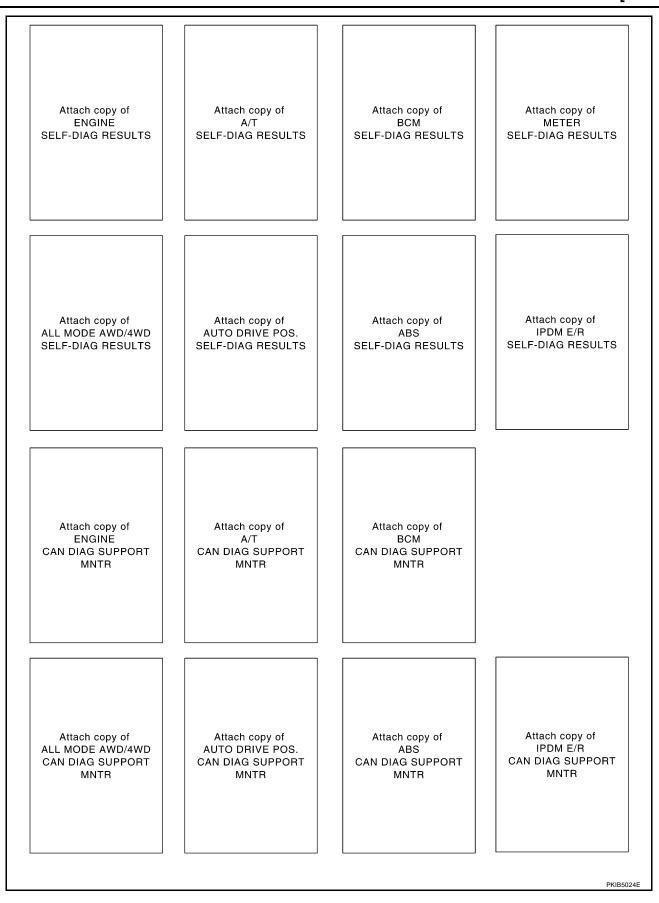
NOTE:

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

- No Idication No Idication No Idication No Idication No No	diagnosis NG NG NG NG NG NG	UNKWN UNKWN UNKWN — UNKWN	UNKWN	TCM UNKWN — — —	_			METER /M&A	/e4WD	VDC/TCS /ABS	IPDM E/R		RESULTS	
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CAN SYSTEM (TYPE 8)



[CAN]

CAN SYSTEM (TYPE 8)

CHECK SHEET RESULTS (EXAMPLE)

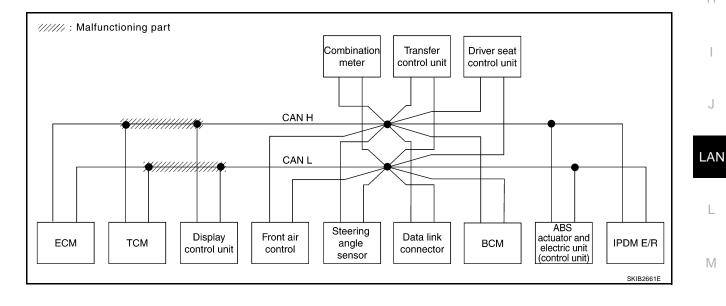
NOTE:

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" .

					C	CAN DIAG	SUPPC	ORT MNT	R					
SELECT SYSTEM	screen		- "				Rec	eive diag	nosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	-	UNKWN	_	_	UNKWN		UNK		UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	—	NG	UNKWN	UNKWN	Ι	_	-	-				—	CAN COMIN CIRCUIT (U 100)	-
Display control unit	—	NG	UNKWN	UNKWN	_	UNKWN	—	UNKWN	UNKWN	—	_	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNK	_	_	_	-	UNKWN	_	_	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	-	-	-	-	-	-	Ι	-	CAN COMM CIRCUIT (U 000)	_
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN		_	UNKWN	-	_	—	UNKWN	_	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-		—	-	UNKWN	UNKWN	_	Ι	Ι	CAN COMICIRCUIT (UN00)	-
ABS	_	NG	UNKWN	UNKWN		-	UNKWN	-	-	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	-	_	UNKWN	_	_	-	-	CAN COMM CIRCUIT (U 1000)	_



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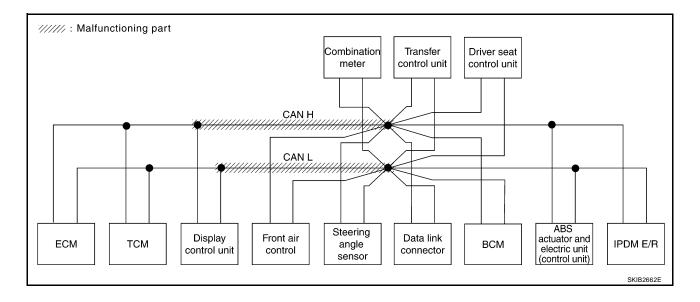
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Check harness between display control unit and data link connector circuit. Refer to <u>LAN-280</u>, "Inspection <u>Between Display Control Unit and Data Link Connector Circuit</u>".

					C	CAN DIAC	SUPPC	RT MNT	R					
SELECT SYSTEM	screen	1.292.1	-				Rec	eive diagi	nosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	/M&A	AWD/4WD /e4WD	/ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	_	_	UNK		UNK			CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	—	NG	UNKWN	UNKWN		—	_	—	UNKWN			—	CAN COMIN CIRCUIT (UN00)	-
Display control unit	-	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-		UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	ļ	-	-	-	UNKWN	—	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
METER	No indication	_	_	Ι	l	_	_	—	-	—	I	-	CAN COMM CIRCUIT (U 1000)	_
ALL MODE AWD/4WD	No indication	_	UNKWN	UNKWN		—	UNKWN	—	_	—	UNKWN	-	CAN COMM CIRCUIT (U 100)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	Ι		_	_	UNKWN	UNKWN	—	I	—	CAN COMM CIRCUIT (UN00)	_
ABS	-	NG	UNKWN			—	UNKWN	—	-	UNKWN	Ι	_	CAN COMM CIRCUIT (U 100)	_
IPDM E/R	No indication	_	UNKWN		-	_	-	UNKWN	_	-	_	-	CAN COMM CIRCUIT (U 100)	_

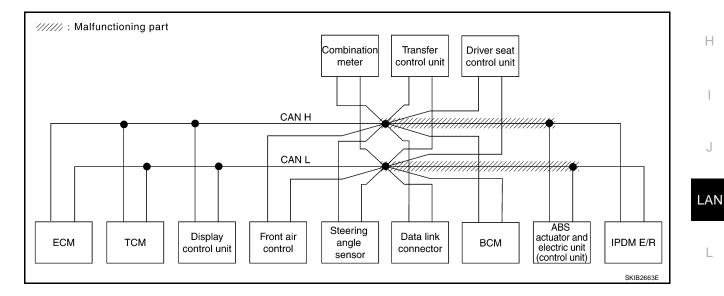


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Case 3

А 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"

					C	AN DIAC	G SUPPC	ORT MNT	R					
SELECT SYSTEM scre		1.00.1	-				Rec	eive diag	nosis				SELE-DIAG	RESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	SING	/SEC	/M&A	/e4WD	VDC/TCS /ABS	E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	_	-	UNKWN	UNKWN	UNKWN		UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN	UNKWN	-	_	-	-			UNK		CAN COMM CIRCUIT (U 1000)	_
Display control unit	-	NG	UNKWN	UNKWN	-	UNKWN	—	UNKWN	UNKWN	-	-	UNKWN		_
	No lication	NG	UNKWN	UNKWN	-	_	-	-	UNKWN	-	-	UNK	CAN COMM CIRCUIT (U1000)	_
METER	No lication	-	-	_	-	_	-	-	_	—	-	_	CAN COMM CIRCUIT (U 000)	_
$\Delta I I M() \rightarrow \Delta V I / \Delta V I $	No lication	-	UNKWN	UNKWN	UNKWN	_	UNKWN	-	_	-		-	CAN COMM CIRCUIT (U 1000)	-
AUTO DRIVE POS T	No lication	NG	UNKWN		UNKWN	_	-	UNKWN	UNKWN	-	-	_	CAN COMM CIRCUIT (U1000)	_
ABS	-	NG	UNKWN	UNKWN		—	UNK	-	_	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	_
	No In ation	-	UNKWN	UNKWN	_	_	-	UNKWN	_	_	-	-	CAN COMM CIRCUIT (U 1000)	_



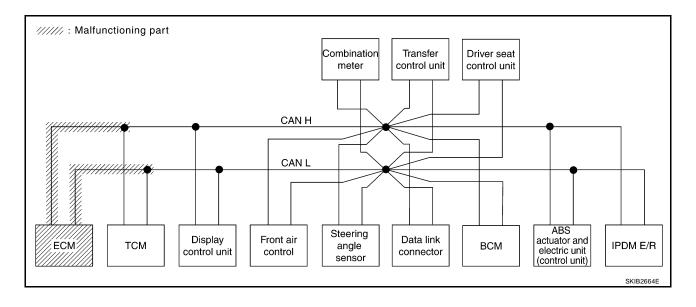
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Check ECM circuit. Refer to LAN-281, "ECM Circuit Inspection" .

					C	CAN DIAG	SUPPC	RT MNT	R					
SELECT SYSTEM	soroon						Rec	eive diag	nosis				SELF-DIAG	
SELECTOTOTOTEM		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	
ENGINE	—	NG	UNKWN	_	UNK	—	_	UNK		UNKWN		UNK	CAN COMM CIRCUIT (UV00)	CAN COMM CIRCUI (UN01)
A/T	_	NG	UNKWN		-	—	1	—	UNKWN	UNKWN	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
Display control unit	_	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	UNKWN	_	—
BCM	No indication	NG	UNKWN	UNK	-	_	-	_	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	_	—	—	_	_	-	-	-	-	CAN COMM CIRCUIT (U 000)	_
ALL MODE AWD/4WD	No indication	—	UNKWN	UNK	UNKWN	—	UNKWN	—	—	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	1	UNKWN	UNKWN	-	_	—	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	_	UNKWN	Ι	_	CAN COMM CIRCUIT (U 1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	-	_	_	_	CAN COMM CIRCUIT	_



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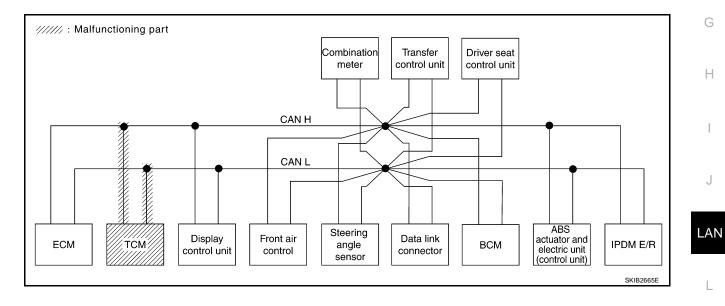
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Case 5

Check TCM circuit. Refer to LAN-281, "TCM Circuit Inspection" .

					C	CAN DIAG	SUPPC	RT MNT	7					
SELECT SYSTEM	screen	1.00.1	-				Rec	eive diagı	nosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DIAC	I LOOLIO
ENGINE	_	NG	UNKWN	-		-	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (UV00)	CAN COMM CIRCUIT (UN01)
A/T	—	NG			-	-	-	-			UNK	-	CAN COMM CIRCUIT (U 1000)	_
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	—	Ι	Ι	-	-		—		—	—	-	CAN COMM CIRCUIT (U 000)	_
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN			UNKWN	—		—	UNKWN	Ι	CAN COMM CIRCUIT (U 1000)	—
AUTO DRIVE POS.	No indication	NG	UNKWN	1		-	—	UNKWN	UNKWN	—	—	_	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN		-	UNKWN	_	_	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_

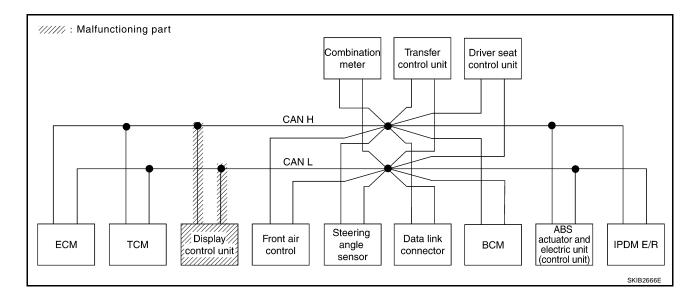


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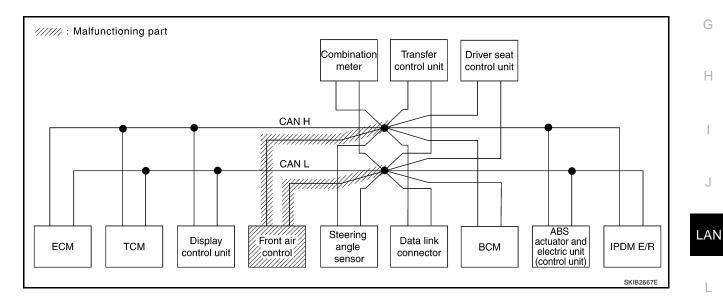
Check display control unit circuit. Refer to LAN-282, "Display Control Unit Circuit Inspection" .

					C	CAN DIAG	SUPPO	RT MNT	R					
SELECT SYSTEM	scroon		-				Rece	eive diag	nosis				SELF-DIAG	BESHITS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	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	I	-	1	Ι	UNKWN	UNKWN	UNKWN	—	CAN COMM CIRCUIT (U1000)	_
Display control unit	_	NG	UNKWN		I	UNK	Ι			-	Ι	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	1	-	-	Ι	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	-	-	-	Ι		-		-	Ι	Ι	_	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	Ι	UNKWN	Ι	I	Ι	UNKWN	-	CAN COMM CIRCUIT (U1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	_	I	UNKWN	UNKWN	_	-	—	CAN COMM CIRCUIT (U1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	Ι	UNKWN	I	_	UNKWN	Ι	_	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_



Check Front air control circuit. Refer to LAN-282, "Front Air Control Circuit Inspection" .

					C	CAN DIAG	SUPPO	RT MNT	R					
SELECT SYSTEM	screen	1	-				Rece	eive diag	nosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	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	_	I	-	_	—		—			—	-	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	No indication	_	UNKWN	UNKWN	UNKWN	—	UNKWN	-			UNKWN	Ι	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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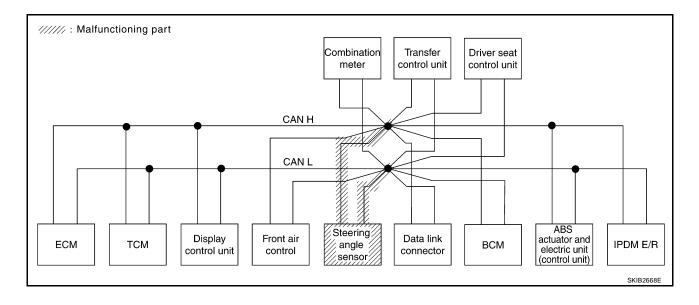
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Check steering angle sensor circuit. Refer to LAN-283, "Steering Angle Sensor Circuit Inspection" .

					C	AN DIAG	SUPPC	RT MNT	R					
SELECT SYSTEM	screen	1.00.1	+				Rec	eive diagi	nosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	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 CIRCUI (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	-	Ι	I	—	-	—	—	-	—	Ι	-	CAN COMM CIRCUIT (U1000)	-
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	Ι	UNK	—	-	—	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
AUTO DRIVE POS.	No indication	NG	UNKWN	Ι	UNKWN	1	—	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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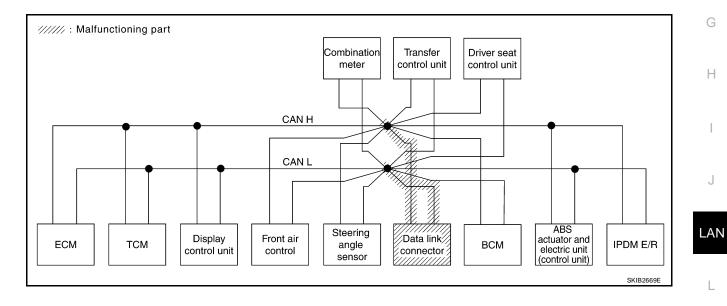
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Case 9

Check data link connector circuit. Refer to LAN-283, "Data Link Connector Circuit Inspection" .

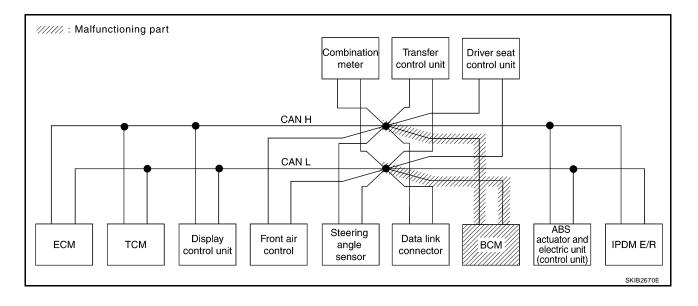
					C	CAN DIAG	G SUPPC	RT MNT	R					
SELECT SYSTEM	screen	1.00.1	-				Rec	eive diag	nosis				SELF-DIAG	BESULTS
		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DIVIC	
ENGINE	—	NG	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	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 indivation	NG	UNKWN	UNKWN	-	_	_	-	UNKWN	—	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indivation	-	_	—	_	—	—	-	_	_	-	_	CAN COMM CIRCUIT (U1000)	_
ALL MODE AWD/4WD	No inditation	-	UNKWN	UNKWN	UNKWN	-	UNKWN	-	_		UNKWN	1	CAN COMM CIRCUIT (U1000)	-
AUTO DRIVE POS.	No inditiation	NG	UNKWN	—	UNKWN	-	_	UNKWN	UNKWN	—	—	_	CAN COMM CIRCUIT (U1000)	
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	—		UNKWN	_	Ι	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indivation	_	UNKWN	UNKWN	_	_	-	UNKWN	_	_	-	-	CAN COMM CIRCUIT (U1000)	_



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Check BCM circuit. Refer to LAN-284, "BCM Circuit Inspection" .

					C	CAN DIAC	G SUPPC	RT MNT	R					
SELECT SYSTEM	screen						Rec	eive diag	nosis				SELF-DIAG	BESUITS
SELECTOTOTOTEM		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	SELI-DIAC	THEODERS
ENGINE	_	NG	UNKWN	_	UNKWN	_	-	UNK	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUI (UN01)
A/T	-	NG	UNKWN	UNKWN	_	-	-	—	UNKWN	UNKWN	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	_
Display control unit	_	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	Ι	UNKWN	—	_
BCM	No inditation	NG	UNKWN	UNKWN	_	-	-	_	UNKWN	_	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indication	_	-	-	_	—	-	_	-	-	_	-	CAN COMM CIRCUIT (U 000)	_
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	—	-	—	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	—	UNKWN	UNKWN	-	I	I	CAN COMM CIRCUIT (U 1000)	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	_	UNKWN	1	_	CAN COMM CIRCUIT (U1000)	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	-	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U 1000)	_



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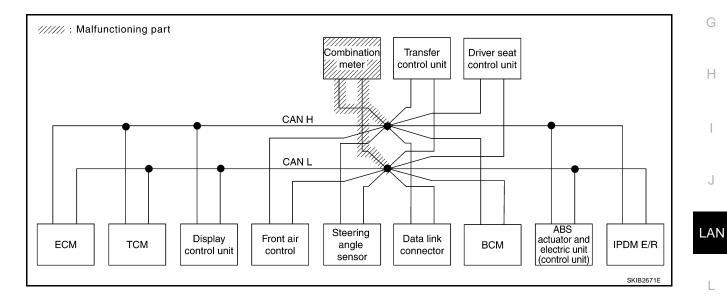
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Case 11

Check combination meter circuit. Refer to LAN-284, "Combination Meter Circuit Inspection" .

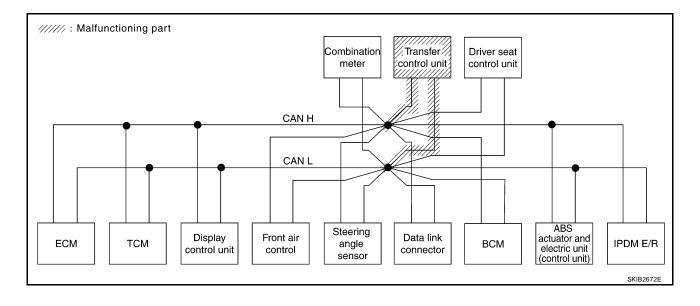
					C	CAN DIAG	G SUPPC	RT MNT	R						
SELECT SYSTEM	screen	1.00.1	-				Rec	eive diag	nosis				SELF-DIAG	BESULTS	
		Initial diagnosis	Transmit diagnosis		тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	-	_	UNKWN		UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)	
A/T	-	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	UNKWN	Ι	CAN COMIN CIRCUIT (U 1000)	—	
Display control unit	-	NG	UNKWN	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	_	UNKWN	—	-	UNKWN	CAN COMM CIRCUIT (U1000)	-	
METER	No indivation	—	—	-	_	—	-	-	—	_	—	Ι	CAN COMM CIRCUIT (U 000)	_	
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	-	_	-	UNKWN	1	CAN COMM CIRCUIT (U1000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	—	UNKWN	UNK	—	—	_	CAN COMICIRCUIT (UN00)	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	_	UNKWN	-	Ι	CAN COMM CIRCUIT (U1000)	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	-	_	-	CAN COMM CIRCUIT (U1000)	_	



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Check transfer control unit circuit. Refer to LAN-285, "Transfer Control Unit Circuit Inspection" .

					C	CAN DIAC	G SUPPC	DRT MNT	R						
							Rec	eive diag	nosis				SELF-DIAG RESULTS		
SELECTOTOTEM			Transmit diagnosis	ECM	тсм	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 COMIN CIRCUI (U 101)	
A/T	—	NG	UNKWN	UNKWN	—	—	-	-	UNKWN	UNKWN	UNKWN	I	CAN COMM CIRCUIT (U 1000)	_	
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 indivation	-	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	-	UNKWN	Ι	CAN COMM CIRCUIT (U 000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	-	UNKWN	UNKWN	-	_	I	CAN COMM CIRCUIT (U1000)	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	_	_	UNKWN	-	Ι	CAN COMM CIRCUIT (U 000)	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	-	UNKWN	_	-	_	-	CAN COMM CIRCUIT (U1000)	_	



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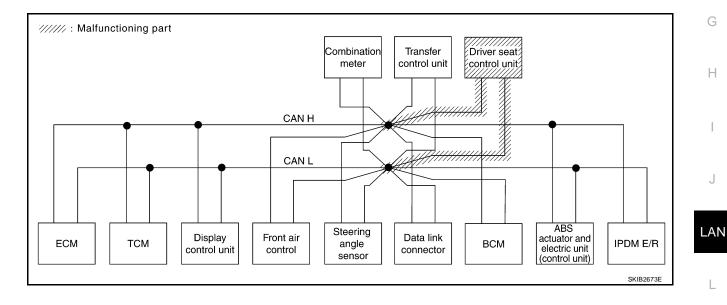
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Check driver seat control unit circuit. Refer to LAN-285, "Driver Seat Control Unit Circuit Inspection" .

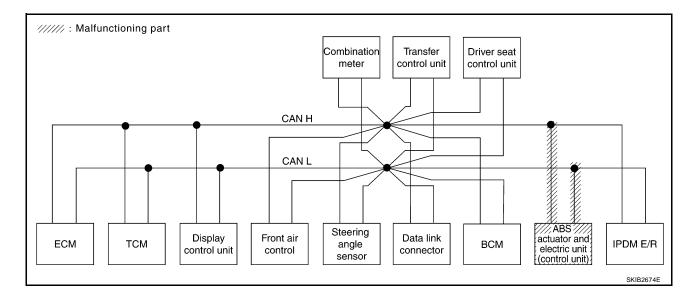
					C	CAN DIAG	G SUPPC	ORT MNT	R						
SELECT SYSTEM	screen						Rec	eive diag	nosis				SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	-	NG	UNKWN	—	UNKWN	-	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)	
A/T	-	NG	UNKWN	UNKWN	—	—	—	-	UNKWN	UNKWN	UNKWN	Ι	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	—	-	-	_	-	-	-	—	—		Ι	CAN COMM CIRCUIT (U1000)	—	
ALL MODE AWD/4WD	No indication	—	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	—	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	_	
AUTO DRIVE POS.	No indivation	NG	UNKWN	_	UNKWN	—	_	UNKWN	UNKWN	—	_	—	CAN COMICIRCUIT (U 1000)	_	
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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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-286</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Inspection".

					C	AN DIAG	SUPPO	RT MNT	R						
SELECT SYSTEM	screen	Initial	-				Rece	eive diagi	nosis				SELF-DIAG RESULTS		
	diagno		Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	-	NG	UNKWN	_	UNKWN	1	1	UNKWN	UNKWN	UNKWN	UNK	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)	
A/T	-	NG	UNKWN	UNKWN	—	-	-	—	UNKWN	UNKWN	UNK	-	CAN COMM CIRCUIT (UV00)	-	
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	—		I	—	-	-	—	Ι	—	I	-	CAN COMICIRCUIT (U 000)	_	
ALL MODE AWD/4WD	No indication	_	UNKWN	UNKWN	UNKWN		UNKWN	—	-	—	UNK	-	CAN COMM CIRCUIT (UN00)	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	Ι	UNKWN	1	I	UNKWN	UNKWN	—	-	—	CAN COMM CIRCUIT (U1000)		
ABS	-	V				Ι		—		UNKWN	Ι	_	CAN COMM CIRCUIT (U 100)	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	_	UNKWN	_	-	-	-	CAN COMM CIRCUIT (U1000)	_	



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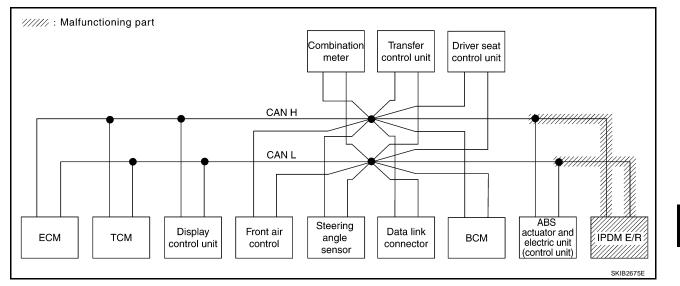
F

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Case 15

Check IPDM E/R circuit. Refer to LAN-286, "IPDM E/R Circuit Inspection" .

					C	CAN DIAG	SUPPC	RT MNT	R						
SELECT SYSTEM	screen	1.00.1	+				Rec	eive diag	nosis				SELF-DIAG RESULTS		
		Initial diagnosis	Transmit s diagnosis	ECM	тсм	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		CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (UN01)	
A/T	-	NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	_	
Display control unit	-	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	Ι		_	-	
BCM	No indication	NG	UNKWN	UNKWN	-	_	_	_	UNKWN	—	_		CAN COMM CIRCUIT (U1000)	-	
METER	No indication	-	Ι	-	Ι	—	-	-	—	—	I	Ι	CAN COMM CIRCUIT (U 000)	—	
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	-	_	-	UNKWN	Ι	CAN COMM CIRCUIT (U1000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—	Ι	_	CAN COMM CIRCUIT (U1000)	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN	-	_	CAN COMM CIRCUIT (U1000)	-	
IPDM E/R	No indivation	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	-	CAN COMIC CIRCUIT (U 1000)	_	



Case 16



					C	CAN DIAC	G SUPPC	RT MNT	R					
SELECT SYSTEM	scroop		_				Rec	eive diag	nosis				SELF-DIAG RESULTS	
OLLEOT OTOTEM	Screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		I LOOLIO
ENGINE	-	NG	UNKWN	1		_	-	UNK	UNK	UNKWN			CAN COMM CIRCUIT (UV00)	CAN COMM CIRCUIT (UN01)
A/T	-	NG	UNKWN		_	-	-	-	UNKIN	UNKWN	UNK	Ι	CAN COMM CIRCUIT (U 100)	_
Display control unit	-	NG	UNKWN		-	UNKWN	—	UNKWN	UNKWN	-	-	UNK	_	_
BCM	No indivation	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	_
METER	No indivation	-	-	_	_	_	-	-	-	-	-	_	CAN COMM CIRCUIT (U 000)	_
ALL MODE AWD/4WD	No indivation	-	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	-	UNKWN	1	CAN COMM CIRCUIT (U 1000)	_
AUTO DRIVE POS.	No indivation	NG	UNKWN	1	UNKWN	-	-	UNKWN	UNKWN	-	—	-	CAN COMM CIRCUIT (U 1000)	—
ABS	-	V	UNKWN	UNKWN		-	UNKWN	_	-	UNKWN	-	_	CAN COMM CIRCUIT (U 1000)	-
IPDM E/R	No indivation	-	UNKWN	UNKWN	_	_	-	UNKWN	—	-	-	-	CAN COMM CIRCUIT (U 000)	-

J

LAN

L

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-294</u>, "IPDM E/R Ignition Relay <u>Circuit Inspection</u>".

					C	CAN DIAG	SUPPC	RT MNT	R						
SELECT SYSTEM	screen	Initial					Rec	eive diagi	nosis				SELF-DIAG RESULTS		
			Transmit diagnosis	ECM	тсм	Front air control	STRG	BCM /SEC	METER /M&A	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	OLLI DIAC		
ENGINE	_	NG	UNKWN	_		-	-	UNKWN	UNKWN	UNKWN	UNK	UNKWN	CAN COMM CIRCUIT (UV00)	CAN COMM CIRCUI (U 101)	
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	ļ	—	—	_	UNKWN	_	_	UNKWN	CAN COMM CIRCUIT (U1000)	_	
METER	No indication	-	-	—	l	-	—	—	_	_	_	_	CAN COMM CIRCUIT (U 000)	_	
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN		—	UNKWN	_	_	_	UNKIN	-	CAN COMICIRCUIT (UN00)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_		—	_	UNKWN	UNKWN	-	_	—	CAN COMM CIRCUIT (UN00)	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	_	UNKWN	Ι	_	CAN COMM CIRCUIT (U1000)	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_	CAN COMM CIRCUIT (U1000)	_	

Case 18

Г

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-294</u>, "IPDM E/R Ignition Relay <u>Circuit Inspection</u>".

					C	CAN DIAG	SUPPC	RT MNT	R						
SELECT SYSTEM	screen		-				Rec	eive diagi	nosis				SELF-DIAG RESULTS		
SELECT CTOTEM	3010011	Initial diagnosis	Transmit diagnosis	ECM	тсм	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 CIRCUI (U1001)	
A/T	—	NG	UNKWN	_	_	_	_	_	_	-	UNKWN	-	CAN COMM CIRCUIT (U 1000)	_	
Display control unit	_	NG	UNKWN	UNKWN	Ι	UNKWN	-	UNKWN	UNKWN	-	-	UNKWN	—	-	
BCM	No indication	NG	UNKWN	UNKWN	-	-	-		UNKWN	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-	
METER	No indication	_	-	Ι	Ι	—	—		-	-		-	CAN COMM CIRCUIT (U1000)	-	
ALL MODE AWD/4WD	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	1	-	-	UNKWN	-	CAN COMM CIRCUIT (U1000)	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	1	UNKWN	—	—	UNKWN	UNKWN	—	_	-	CAN COMM CIRCUIT (U1000)	_	
ABS	_	NG	UNKWN	-	UNKWN	_	_	_	_	-	-	-	CAN COMM CIRCUIT (U 100)	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	I	_	_	UNKWN	-	_	_	-	CAN COMM CIRCUIT (U1000)	_	

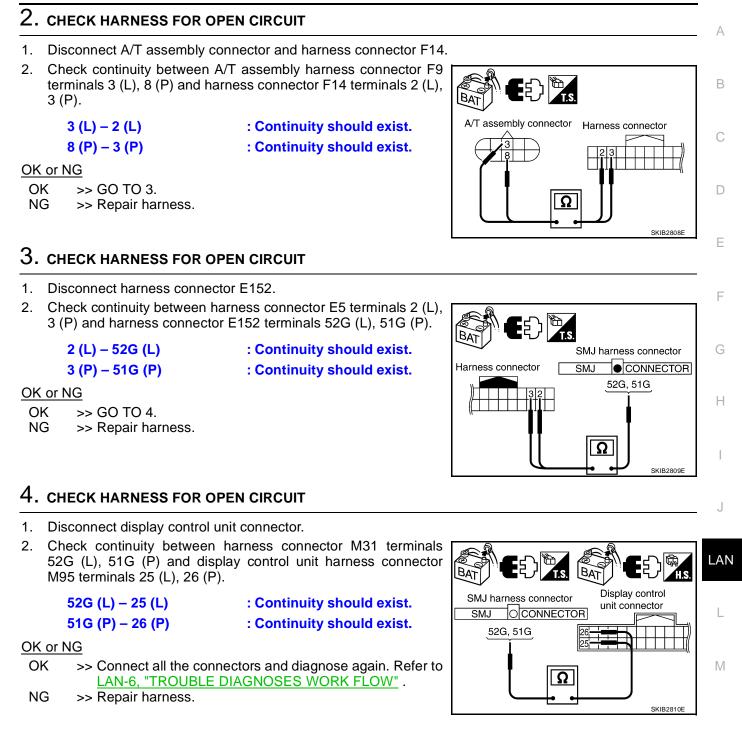
Inspection Between TCM and Display Control Unit Circuit 1. CHECK CONNECTOR

UKS003BB

- 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.



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Data link connector

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Inspection Between Display Control Unit and Data Link Connector Circuit UKS003BC 1. CHECK HARNESS FOR OPEN CIRCUIT

BA

Display control unit connector

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).

: Continuity should exist.

: 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



SKIB2811E

- 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.

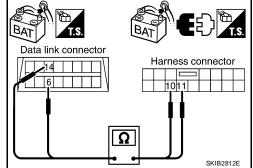
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect harness connector M91. 1.
- 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) 14 (P) – 10 (P)
- : Continuity should exist. : Continuity should exist.

OK or NG

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



BAT

Harness connector

11 10

$3. \ \mathsf{CHECK} \ \mathsf{HARNESS} \ \mathsf{FOR} \ \mathsf{OPEN} \ \mathsf{CIRCUIT}$

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 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) 10 (P) – 15 (P)
- : Continuity should exist.
- : 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

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

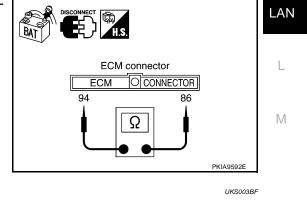
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

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

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.

ABS actuator and electric unit

C/UNIT O CONNECTOR 11, 15

SKIB2813E

UKS003BE

(control unit) connector

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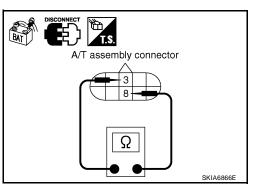
- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

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.



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Display Control Unit 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 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.

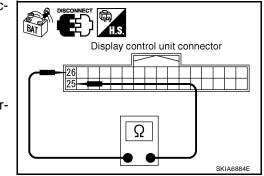


1. CHECK CONNECTOR

- 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.



UKS003BH

: Approx. 54 – 66 Ω

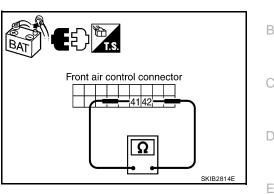
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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)

OK or NG

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



Steering Angle Sensor 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 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.



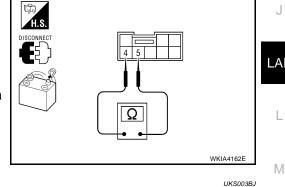
1. CHECK CONNECTOR

- 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.



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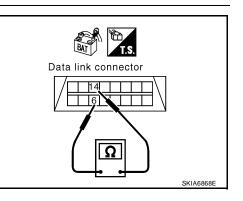
: Approx. 54 – 66 Ω

2. CHECK HARNESS FOR OPEN CIRCUIT

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

OK or NG

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



BCM 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 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 <u>BCS-20</u>, "Removal and Installation of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.

Combination Meter Circuit Inspection

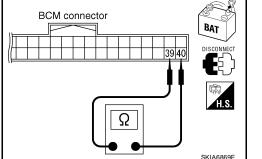
1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check terminals and connector of 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.



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UKS003BK

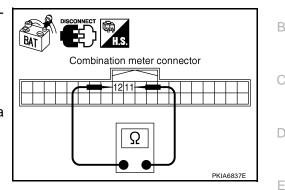
2. CHECK HARNESS FOR OPEN CIRCUIT

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

12 (L) – 11 (P)

OK or NG

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



Transfer Control Unit 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 transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

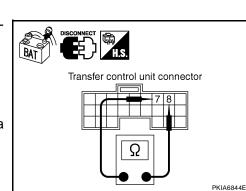
NG >> Repair terminal or connector.

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).

OK or NG

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



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Driver Seat Control Unit Circuit Inspection

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.

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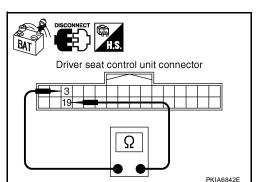
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 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

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).

: 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.

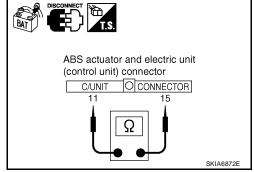


1. CHECK CONNECTOR

- 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.



UKS003BP

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CAN SYSTEM (TYPE 8)

$\overline{2.}$ check harness for open circuit

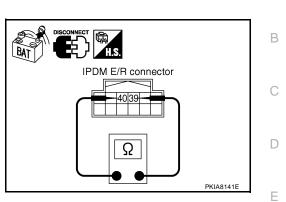
- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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

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).

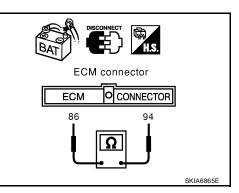
94 (L) - 86 (P)

: Continuity should not exist.

OK or NG

OK >> GO TO 3.

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



2005 Pathfinder

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

- 94 (L) Ground
- 86 (P) Ground

: Continuity should not exist.

: 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
- 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

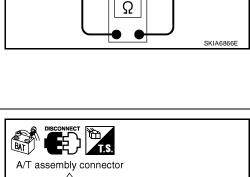
5. CHECK HARNESS FOR SHORT CIRCUIT

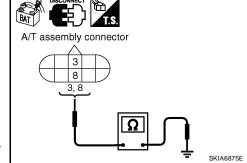
Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and ground.

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





SKIB0571E



BAT

ECM connector

86, 94

T.S.

A/T assembly connector

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O CONNECTOR

ECM

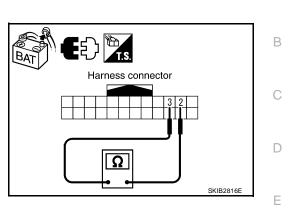
- 1. Disconnect harness connector E152.
- 2. Check continuity between harness connector E5 terminals 2 (L) and 3 (P).

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.



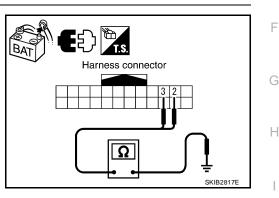
7. CHECK HARNESS FOR SHORT CIRCUIT

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.



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Revision: November 2005



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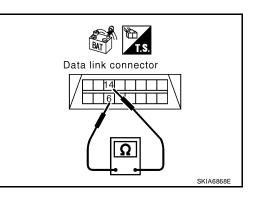
- 1. Disconnect following connectors.
- Display control unit connector
- Front air control connector
- Steering angle sensor connector
- BCM connector
- Combination meter connector
- Transfer control unit connector
- Harness connector M40
- Harness connector M91
- Check continuity between data link connector 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



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

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

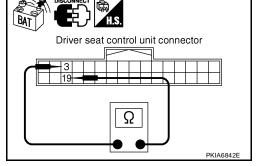
10. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

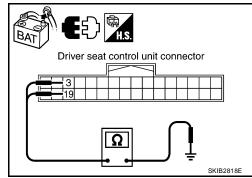
- 3 (L) Ground
- : Continuity should not exist. : Continuity should not exist.

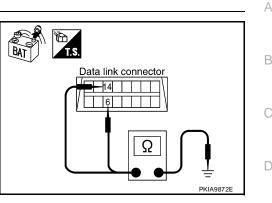
19 (P) – Ground

OK or NG

OK

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





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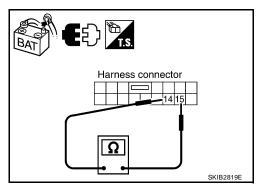
Check continuity between harness connector B37 terminals 15 (L) and 14 (P).

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.



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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.

Harness connector

14. CHECK HARNESS FOR SHORT CIRCUIT

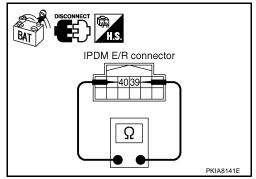
- 1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
- Check continuity between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

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



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

- 39 (L) Ground
- 40 (P) Ground

: Continuity should not exist.

: 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

: Approx. 108 – 132 Ω

3. Check resistance between IPDM E/R terminals 39 and 40.

39 - 40

OK or NG

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

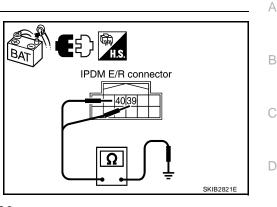
17. снеск сумртом

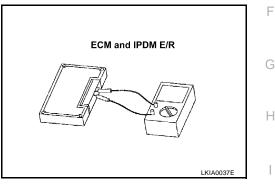
- Fill in described symptoms on the column "Symptom" in the check sheet. 1.
- 2. Connect all connectors, and then make sure that the symptom is reproduced.

OK or NG

OK >> GO TO 18.

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







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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 <u>PG-14</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".