

SECTION **LAN**
LAN SYSTEM

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PRECAUTIONS

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

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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.

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IVMS (LAN)

Overall Description OUTLINE

The In-Vehicle Multiplexing System, IVMS (LAN system), consists of a BCM (Body Control Module) and four LCUs (Local Control Units). Some switches and electrical loads are connected to each LCU. Some electrical systems are directly connected to the BCM. Control of each LCU (which is provided by a switch and electrical load), is accomplished by the BCM, via multiplex data lines (A-1, A-2 or A-3) connected between them.

BCM (BODY CONTROL MODULE)

The BCM, which is a master unit of the IVMS (LAN), consists of microprocessor, memory and communication LSI sections and has communication and control functions. It receives data signals from the LCUs and sends electrical load data signals to them.

LCU (LOCAL CONTROL UNIT)

The LCUs, which are slave units of the BCM, have only a communication function and consist of communication LSI and input-output interface circuits. They receive data signals from the BCM, control the ON/OFF operations of electrical loads and the sleep operation, as well as send switch signals to the BCM.

CONTROLLED SYSTEMS

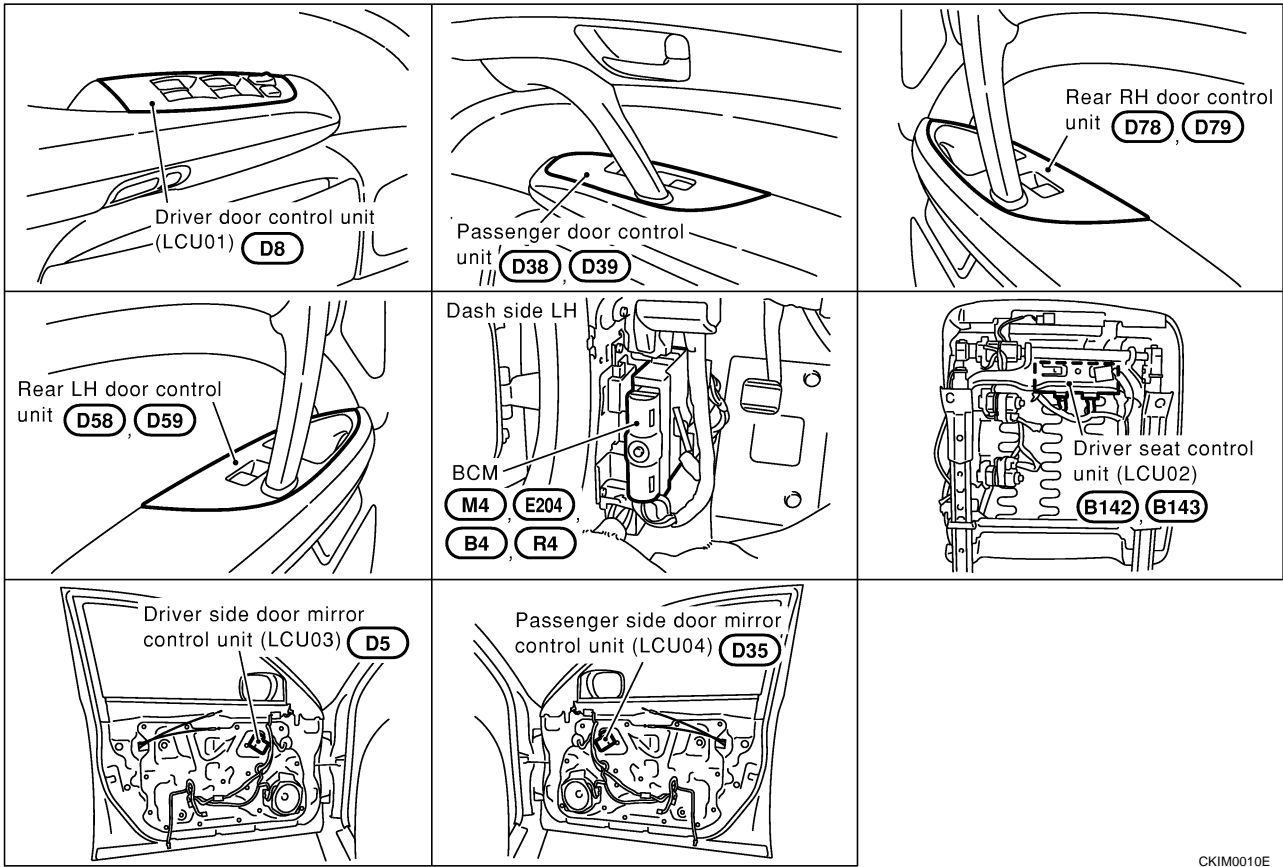
The IVMS controls several body-electrical systems. The systems included in the IVMS are as follows:

- Power window system (Refer to [GW-16, "POWER WINDOW SYSTEM"](#) .)
- Power door lock system (Refer to [BL-19, "POWER DOOR LOCK SYSTEM"](#) .)
- Remote keyless entry system (Refer to [BL-53, "REMOTE KEYLESS ENTRY SYSTEM"](#) .)
- Vehicle security (Theft warning) system (Refer to [BL-155, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#) .)
- Reverse interlock door mirror system (Refer to [GW-81, "REVERSE INTERLOCK DOOR MIRROR SYSTEM"](#) .)
- Interior room lamp (Refer to [LT-115, "INTERIOR ROOM LAMP"](#) .)
- Step lamp (Refer to [LT-143, "STEP LAMP"](#) .)
- Illumination (Refer to [LT-165, "ILLUMINATION"](#) .)
- Automatic drive positioner (Refer to [SE-13, "AUTOMATIC DRIVE POSITIONER"](#) .)
- Auto light (Refer to [LT-6, "HEADLAMP \(FOR USA\)"](#) .)
- Door warning lamp (Refer to [DI-30, "WARNING LAMPS"](#) .)
- Ignition key warning chime (Refer to [DI-55, "WARNING CHIME"](#) .)
- Light warning chime (Refer to [DI-55, "WARNING CHIME"](#) .)
- Seat belt warning chime (Refer to [DI-55, "WARNING CHIME"](#) .)
- Front wiper and washer system (Refer to [WW-4, "FRONT WIPER AND WASHER SYSTEM \(WITH RAIN SENSOR\)"](#) .)
- Rear window defogger (Refer to [GW-61, "REAR WINDOW DEFOGGER"](#) .)
- Trouble diagnosis system
 - With CONSULT-II
 - On board

Also, IVMS has the "sleep/wake-up control" function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to [LAN-5, "Sleep/Wake-up Control"](#) .

Component Parts and Harness Connector Location

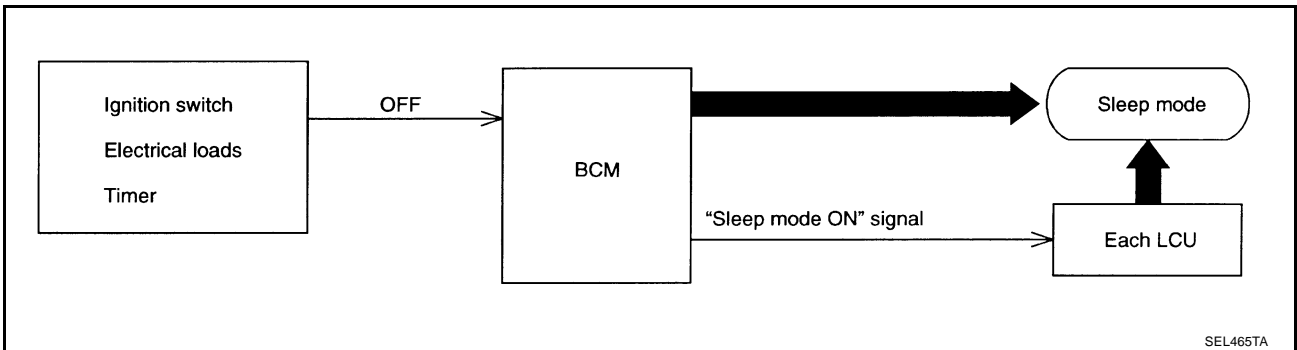
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CKIM0010E

Sleep/Wake-up Control
SLEEP CONTROL

EKS001PF

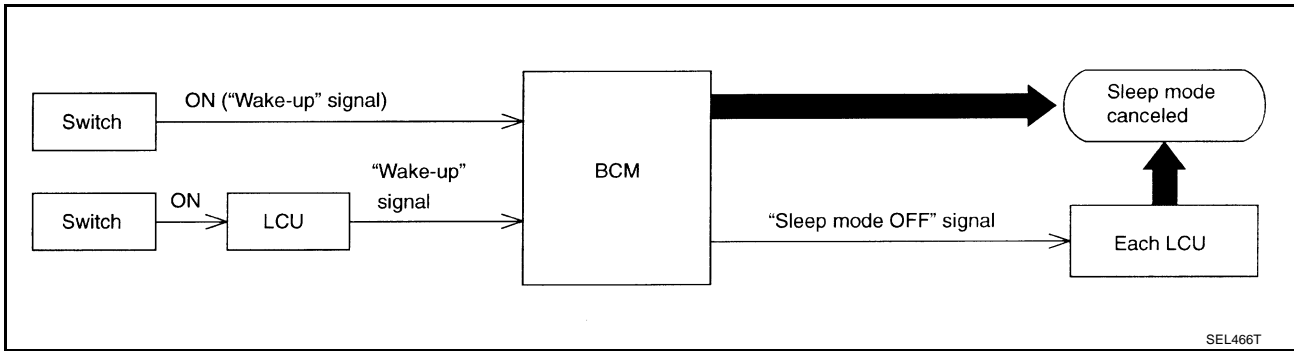


“Sleep control” prevents unnecessary power consumption. After the following conditions are met, the BCM suspends the communication between itself and all LCUs. The whole IVMS is set in the “sleep” mode.

- Ignition switch “OFF”
- All electrical loads (in the IVMS) “OFF”
- Timer “OFF”

LAN

WAKE-UP CONTROL



As shown above, when the BCM detects a “wake-up” signal, it wakes up the whole system and starts communicating again. When the “sleep” mode of all LCUs is canceled, the BCM returns to the normal control mode. When any one of the following switches are turned ON, the “sleep” mode is canceled:

- All switches combined or connected with BCM.
- All switches combined or connected with LCU.

Fail-safe System

EKS001PG

Fail-safe system operates when the signal from LCU is judged to be malfunctioning by BCM. If LCU sends no signal or an irregular signal to BCM a certain number of times in succession, the IVMS is set in a fail-safe condition. In the fail-safe condition, the electrical loads controlled by the switch on the questionable LCU will be operated at fail-safe mode.

CONSULT-II Function

EKS001R9

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. IVMS communication inspection, work support (only function setting of seats and steering wheel), self-diagnosis, data monitor, and active test display.

DIAGNOSTIC ITEMS DESCRIPTION

IVMS diagnosis position	Diagnosis mode	Description
IVMS-comm check	IVMS-COMM DIAGNOSIS	Diagnoses continuity in the communication line(s), and of the function of the IVMS-communication interface between the body control module and the local control units, accomplished by transmitting a signal from the body control module to the local control units.
	WAKE-UP DIAGNOSIS	Diagnose the “wake-up” function of local control units by having a technician input the switch data into the local control unit that is in the temporary “sleep” condition.
Each system inspection	WORK SUPPORT	Changes the setting for each function.
	SELF-DIAGNOSIS RESULTS	Carries out self-diagnosis.
	DATA MONITOR	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
	ACTIVE TEST	Turns on/off actuators, relay and according to the commands transmitted by the CONSULT-II unit.
BCM PART NUMBER		Displays BCM part No.

DIAGNOSTIC ITEMS APPLICATION

Test item	Diagnosed system	Diagnosis mode					
		IVMS COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	WORK SUPPORT	SELF DIAGNOSTIC RESULTS	DATA MONITOR	ACTIVE TEST
IVMS-COMM CHECK	IVMS communication and wake-up function	×	×				
DOOR LOCK	Power door lock system				×	×	×

Test item	Diagnosed system	Diagnosis mode					
		IVMS COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	WORK SUPPORT	SELF DIAGNOSTIC RESULTS	DATA MONITOR	ACTIVE TEST
AUTO DRIVE POSITIONER	<ul style="list-style-type: none"> ● Automatic drive positioner ● Reverse interlock door mirror system 			×	×	×	×
WIPER	Front wiper and washer system			×		×	×
REAR DEFOGGER	Rear window defogger					×	×
IGN KEY WARN ALM	Warning chime					×	×
LIGHT WARN ALM	Warning chime					×	×
SEAT BELT TIMER	Warning chime					×	×
THEFT WARNING SYSTEM	Vehicle security (Theft warning) system			×		×	×
STEP LAMP	Step lamps					×	×
MULTI-REMOTE CONTSYS	Remote keyless entry system			×		×	×
INTERIOR ILLUMINATION	Interior room lamp			×		×	×
SUNROOF RELAY	Sunroof					×	×
DOOR OPEN WARNING	Warning lamps					×	×
AUTO LIGHT SYSTEM	Headlamp			×		×	×

X: Applicable

For diagnostic item in each control system, read the CONSULT-II Operation Manual.

On Board Diagnosis ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

EKS001RA

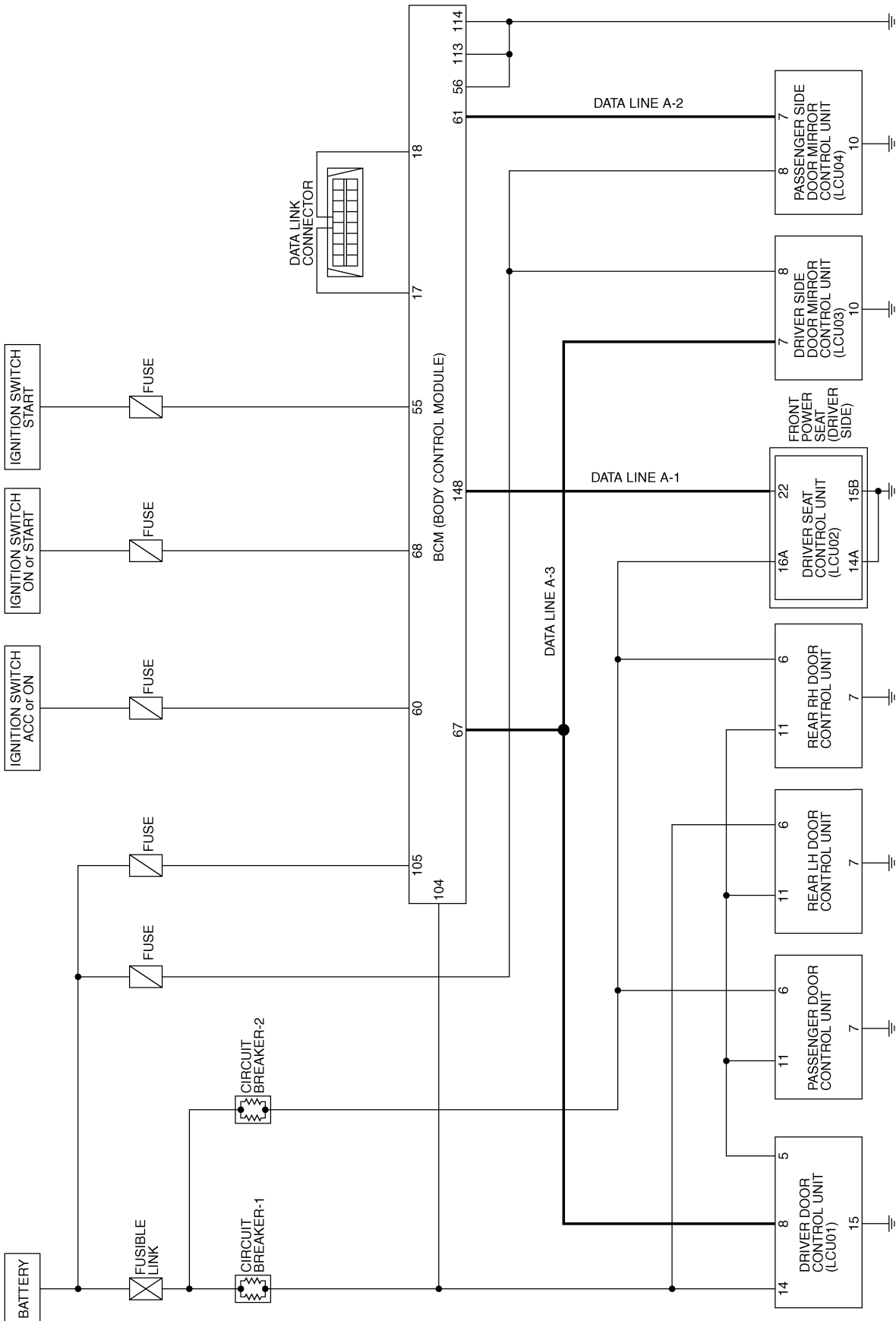
Front map lamps and step lamps (all seats) act as the indicators for the on board diagnosis.

DIAGNOSIS ITEM

Diagnosis item	Description
IVMS communication diagnosis	Diagnoses any error or inability of communication between BCM and LCUs.
Switch monitor	Monitors conditions of switches connected to BCM, LCUs and door control units.
Power door lock system self-diagnosis	Diagnoses malfunctions in the each door lock actuator system.
Auto drive positioner self-diagnosis	Diagnoses malfunctions in the each motor and sensor in the electrical load parts of the driver power seat system (sliding, reclining, and lifter [front/rear]), of the steering wheel system (tilt, telescoping) and of door mirror.

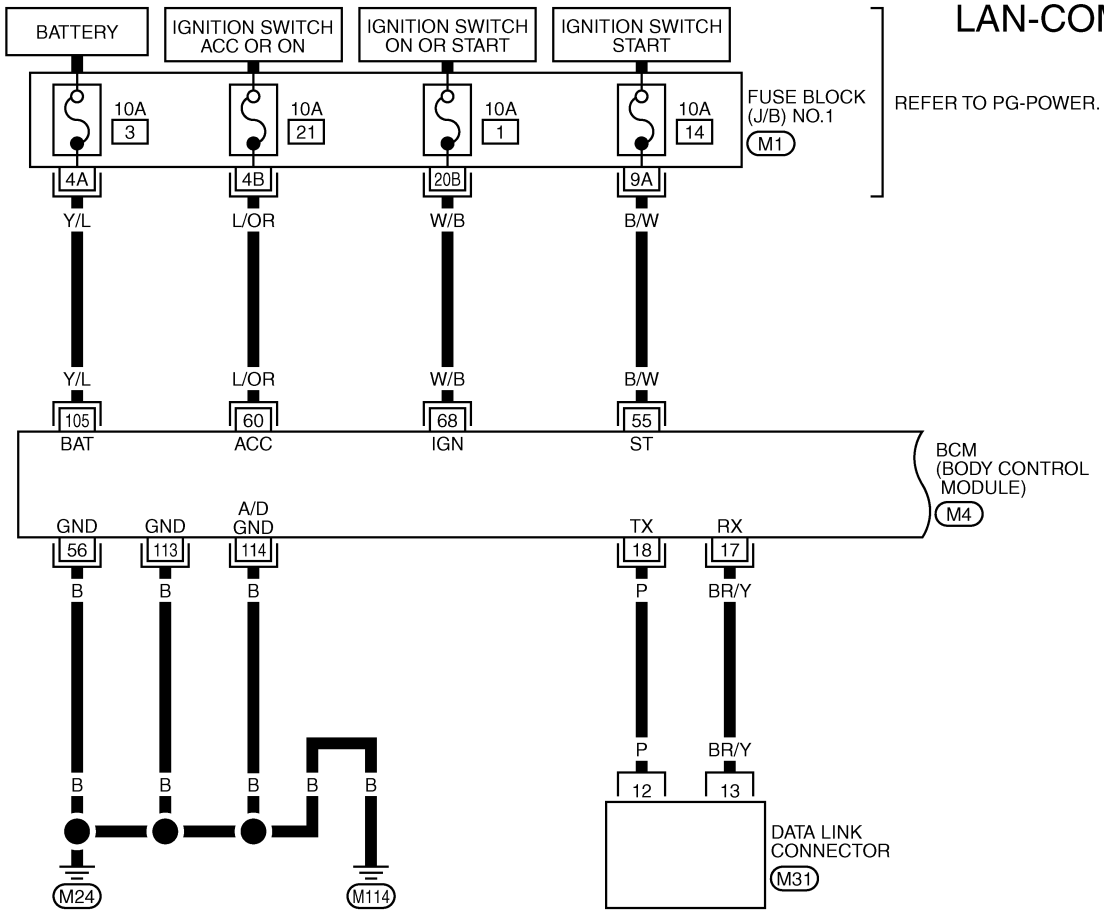
Schematic

POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS



**Wiring Diagram - COMM -
POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS**

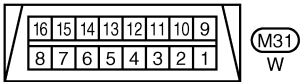
LAN-COMM-01



REFER TO PG-POWER.

BCM (BODY CONTROL MODULE) (M4)

DATA LINK CONNECTOR (M31)

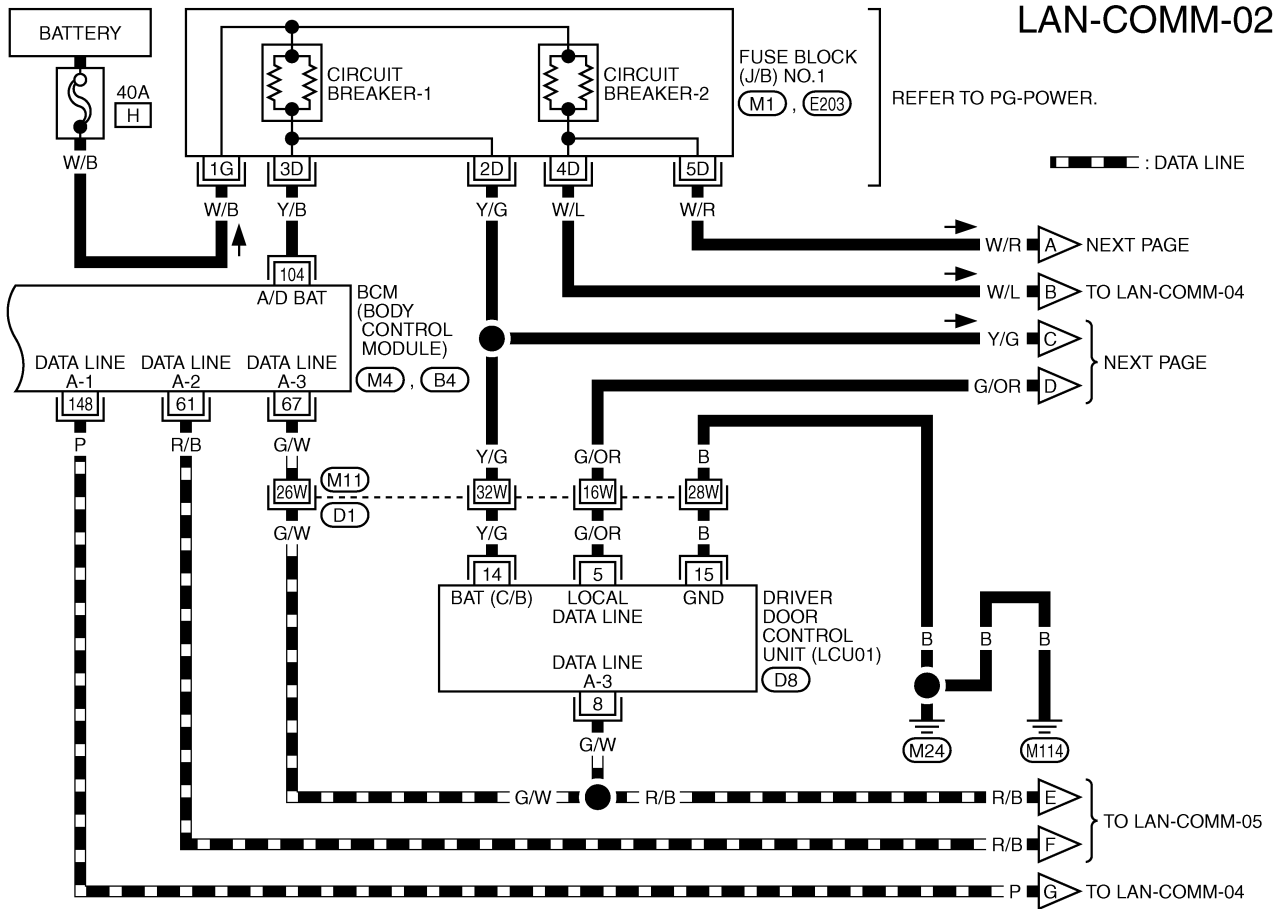


REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1
 (M4) - ELECTRICAL UNITS

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LAN-COMM-02



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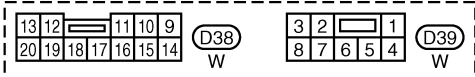
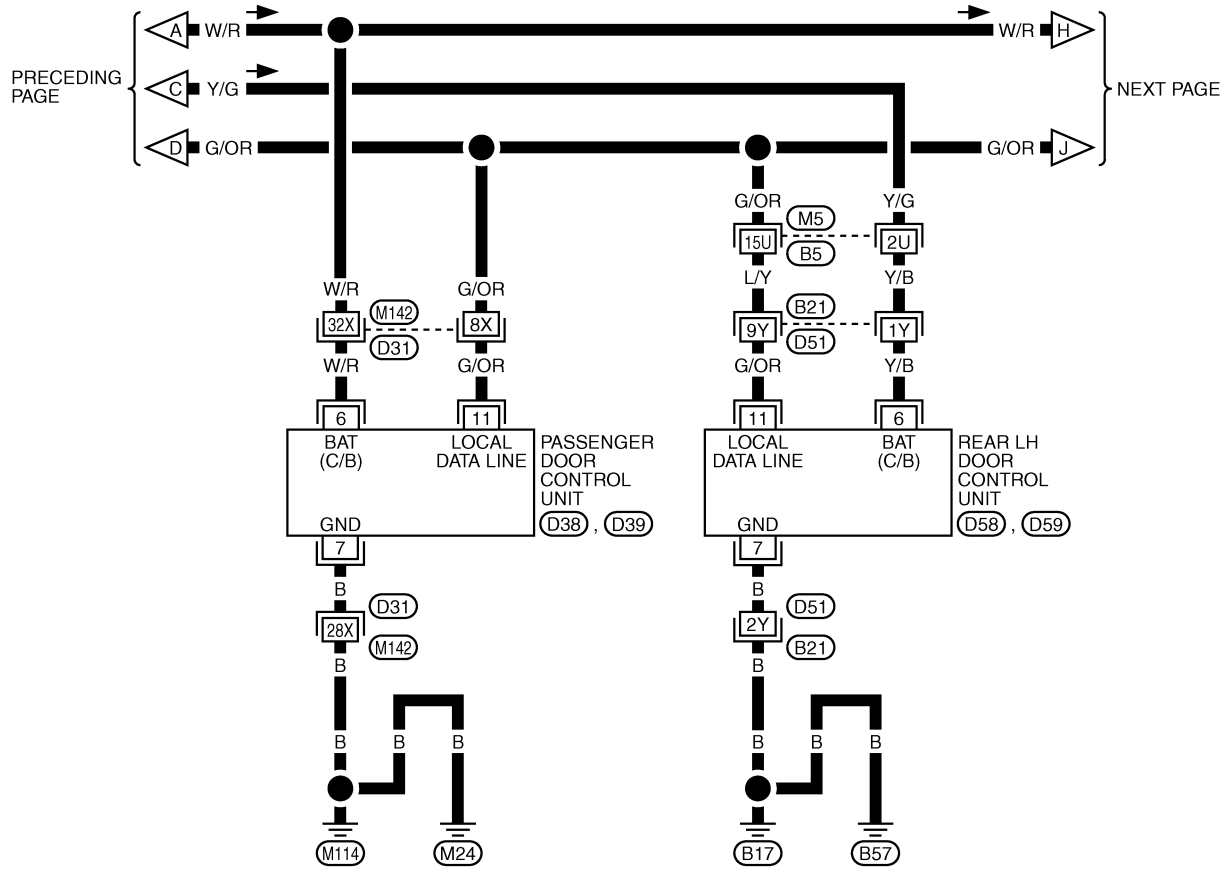
(D8) W

REFER TO THE FOLLOWING.

- (D1) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (E203) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
- (M4), (B4) -ELECTRICAL UNITS

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LAN-COMM-03



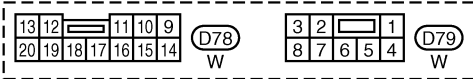
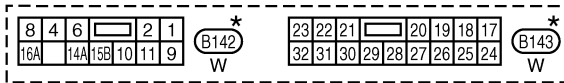
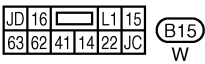
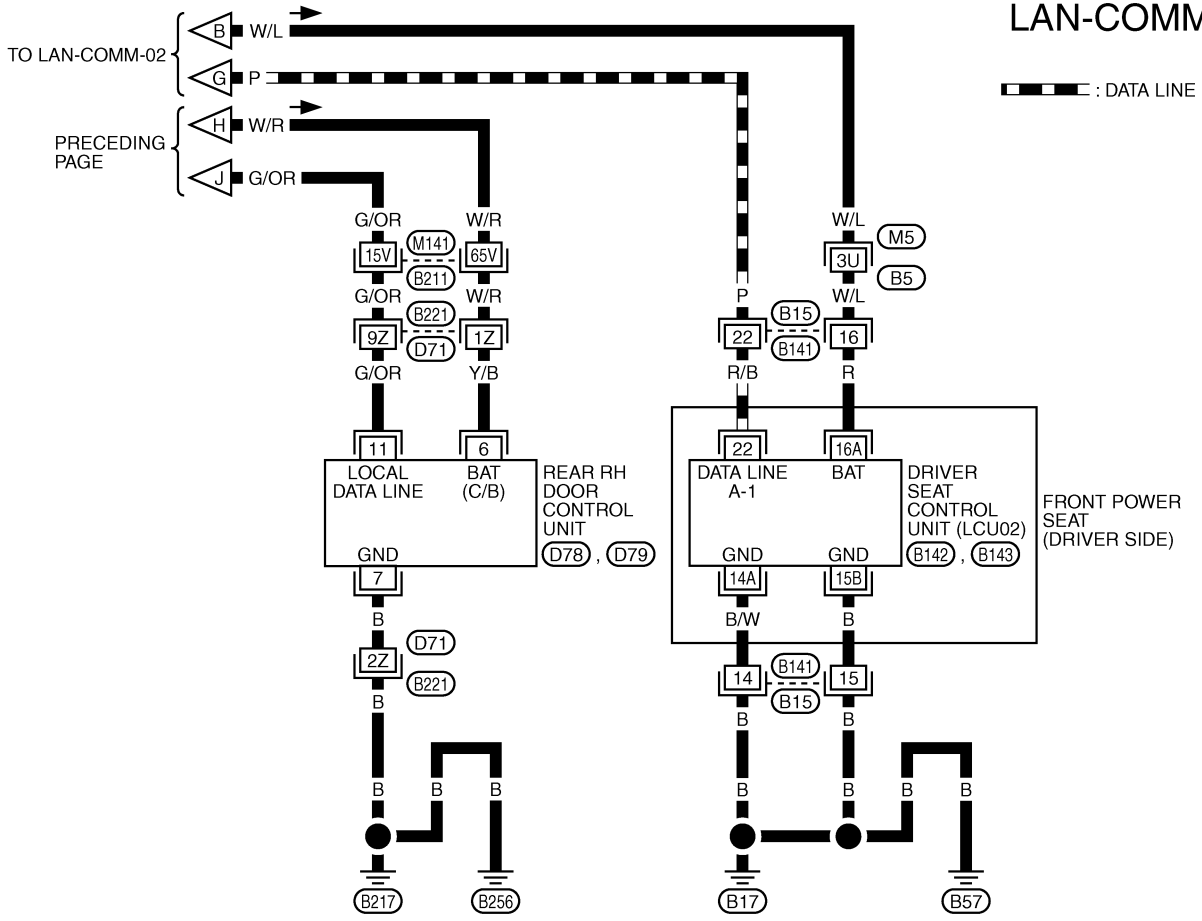
REFER TO THE FOLLOWING.
 (M5), (B21), (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)

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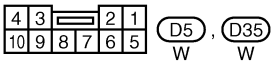
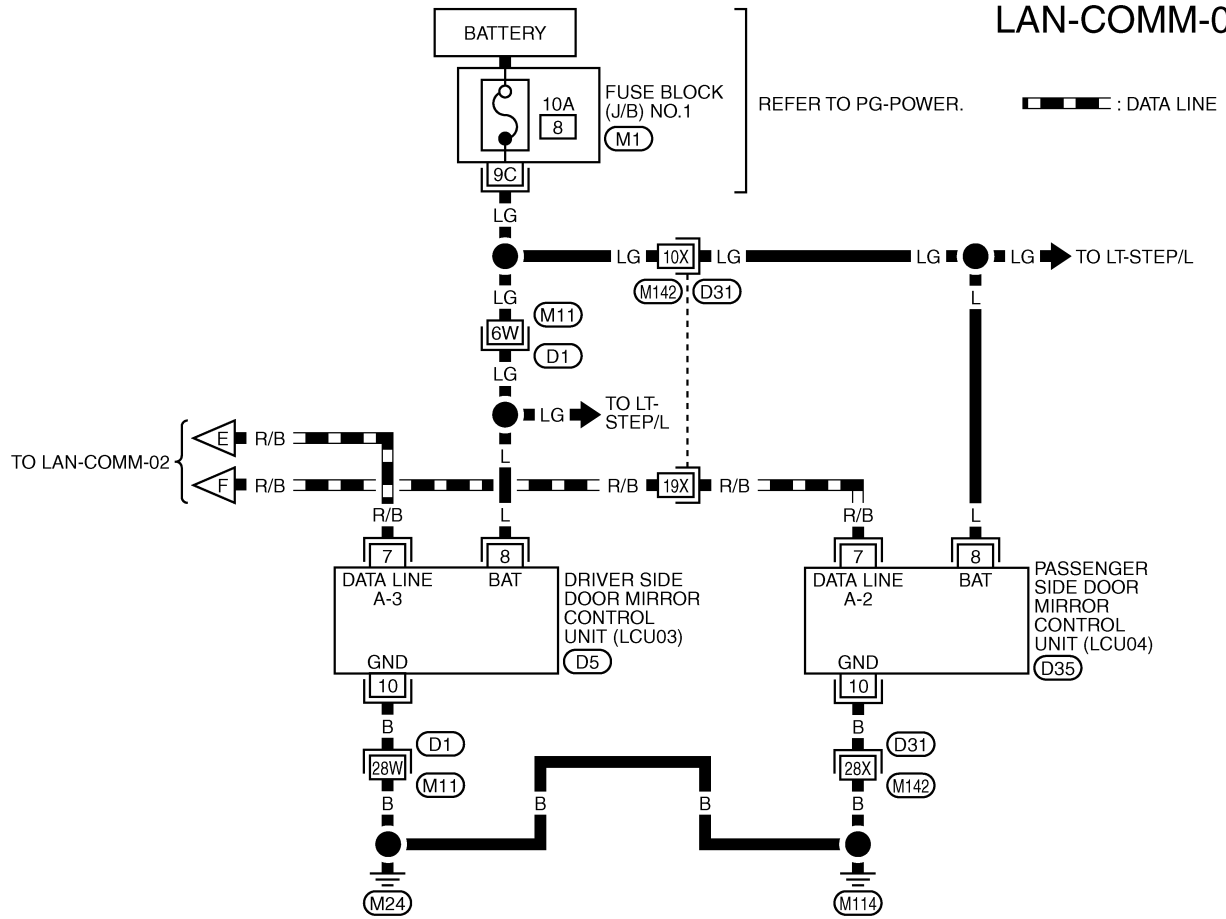


REFER TO THE FOLLOWING.
 (M5), (B211), (B221) -SUPER
 MULTIPLE JUNCTION (SMJ)

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

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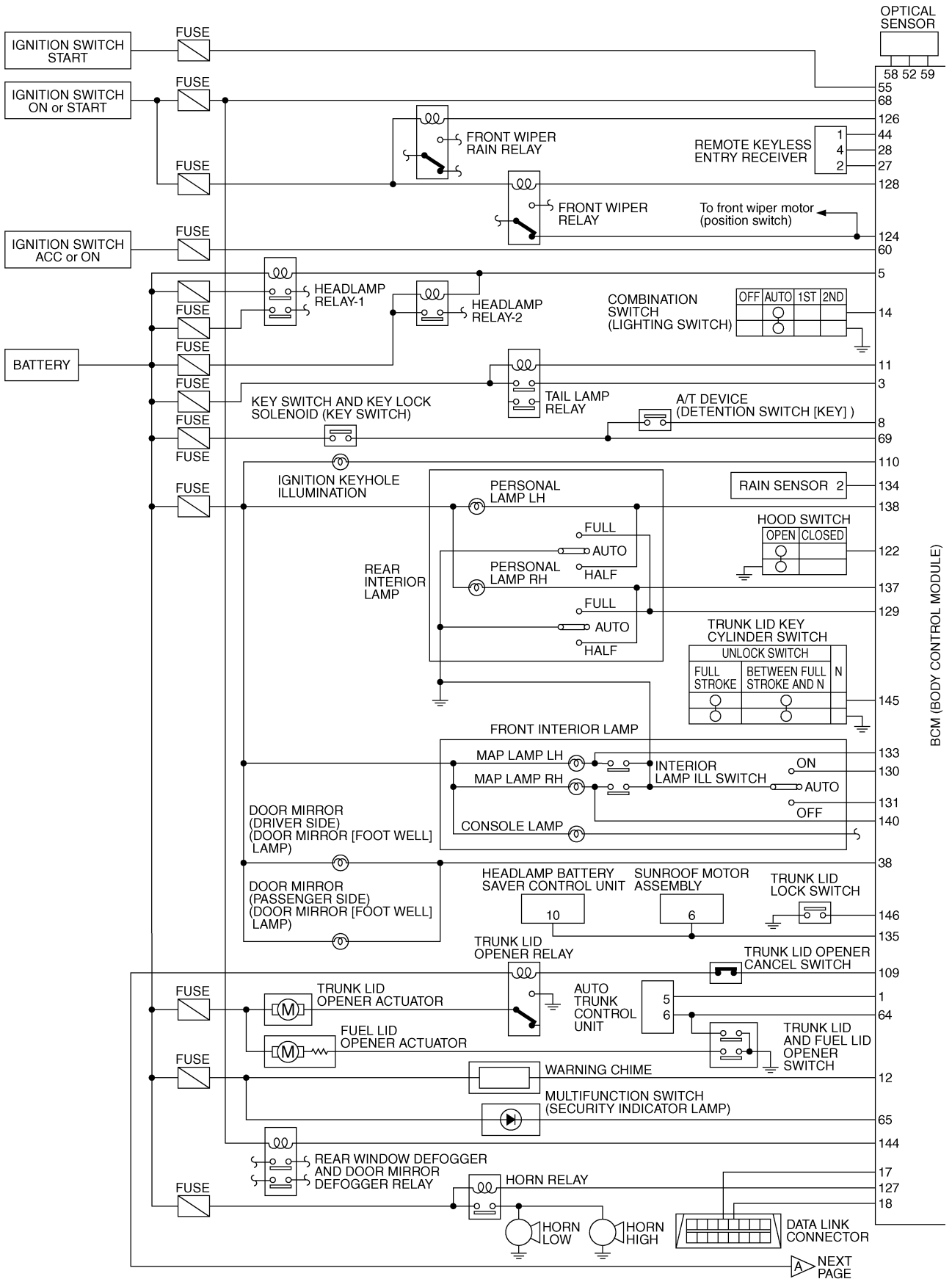


REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

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Schematic - BCM -

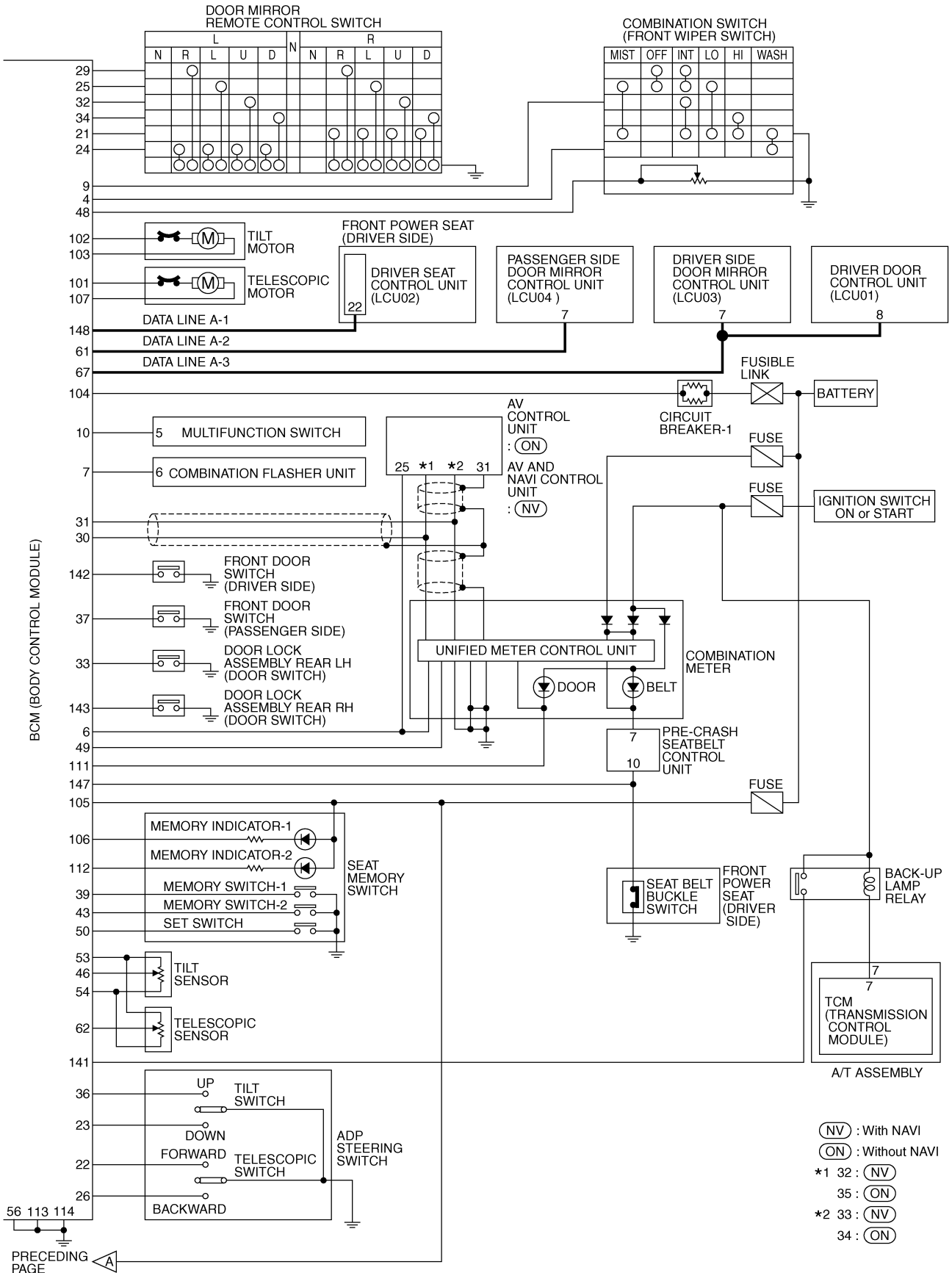
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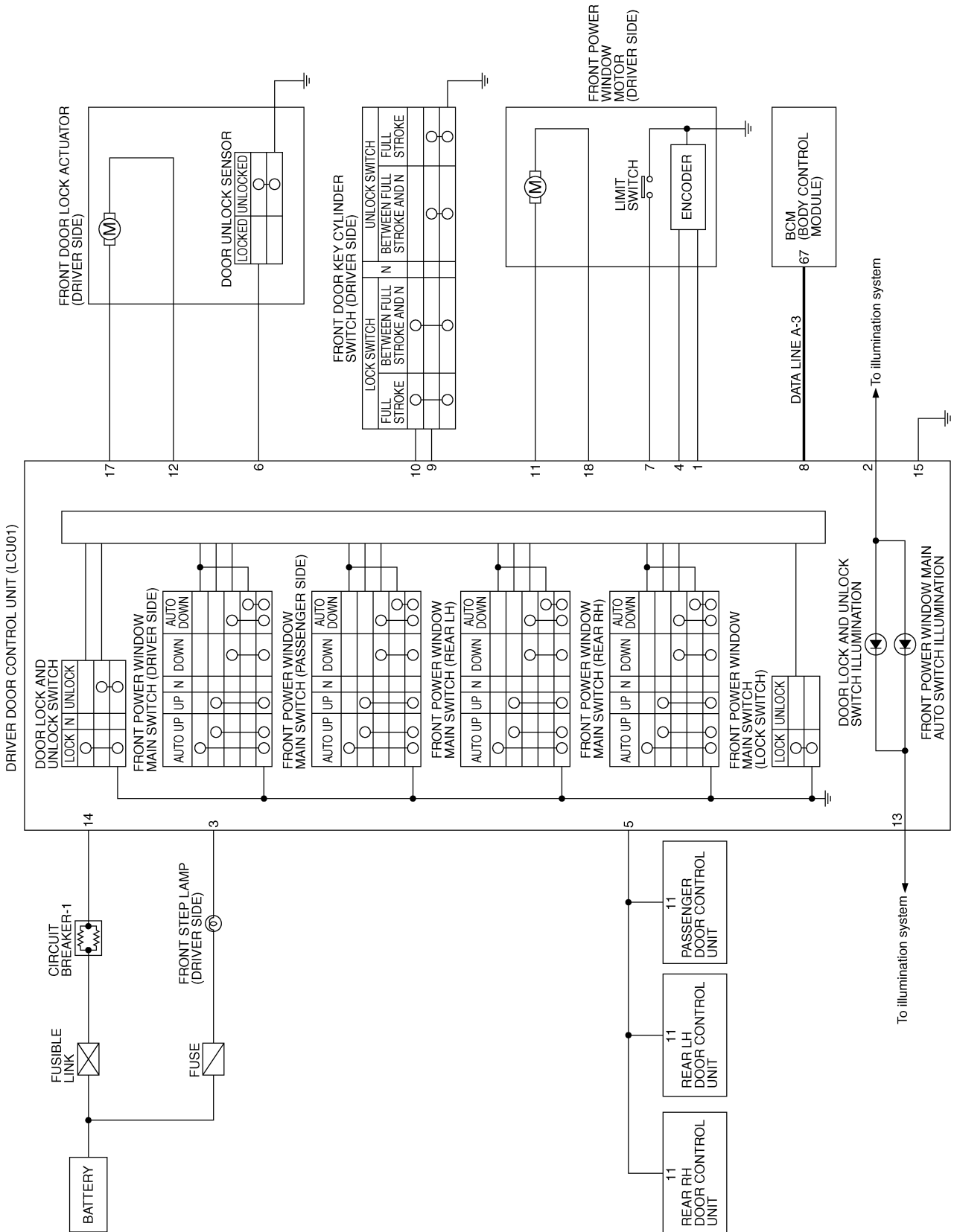


- (NV) : With NAVI
- (ON) : Without NAVI
- *1 32: (NV)
- 35: (ON)
- *2 33: (NV)
- 34: (ON)

TKWM1341E

**Schematic - LCU01 -
DRIVER DOOR CONTROL UNIT**

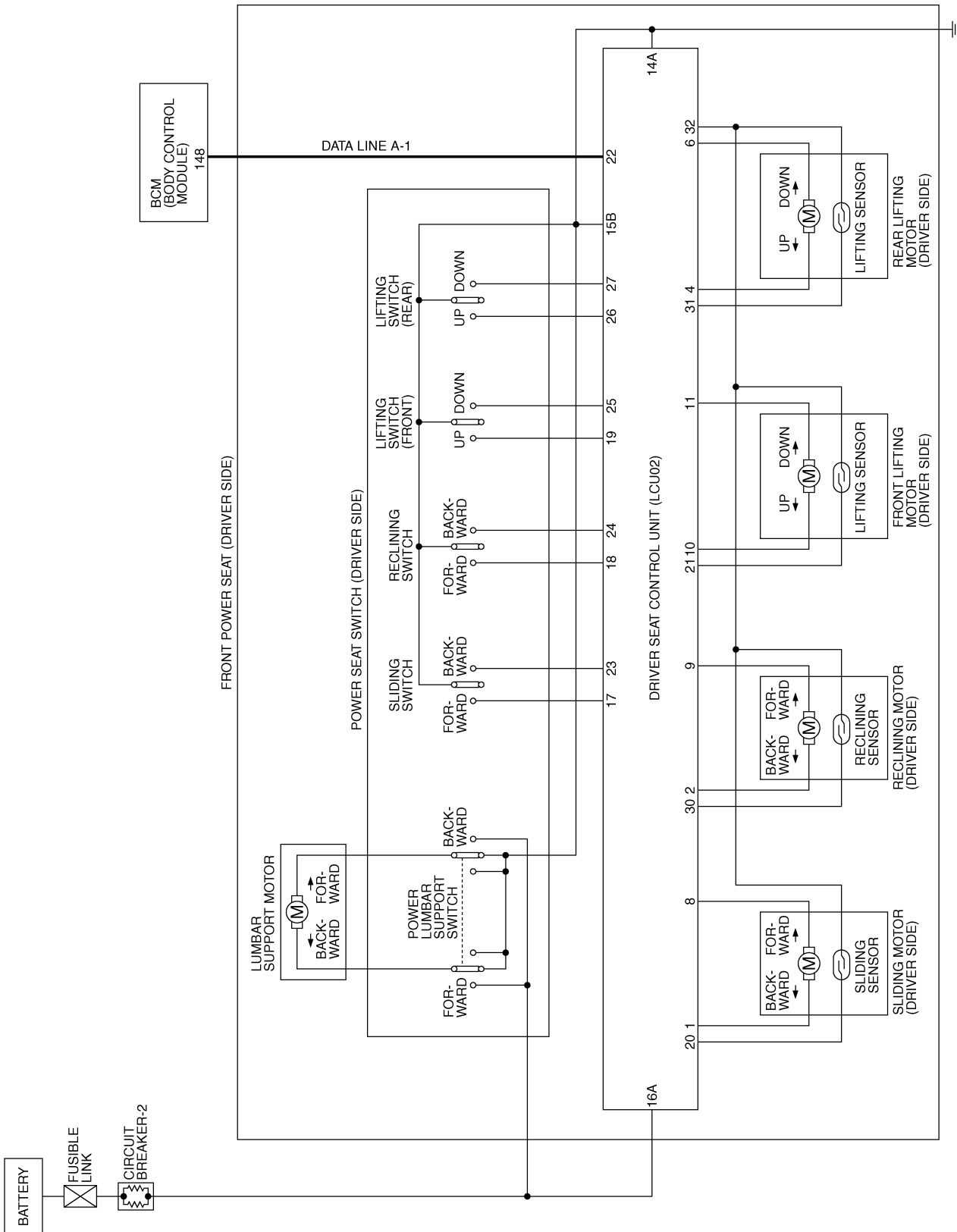
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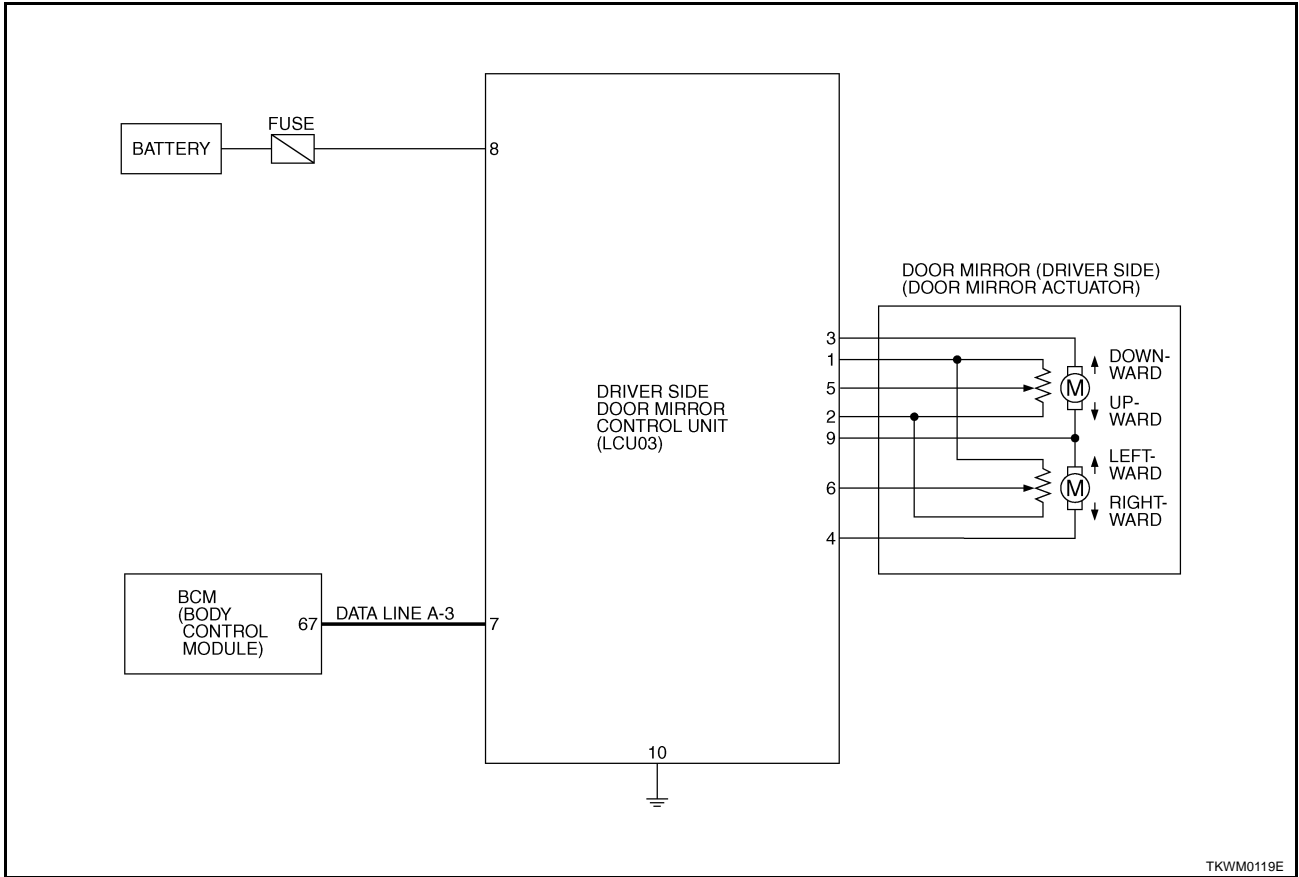
**Schematic - LCU02 -
DRIVER SEAT CONTROL UNIT**

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**Schematic - LCU03 -
DRIVER SIDE DOOR MIRROR CONTROL UNIT**

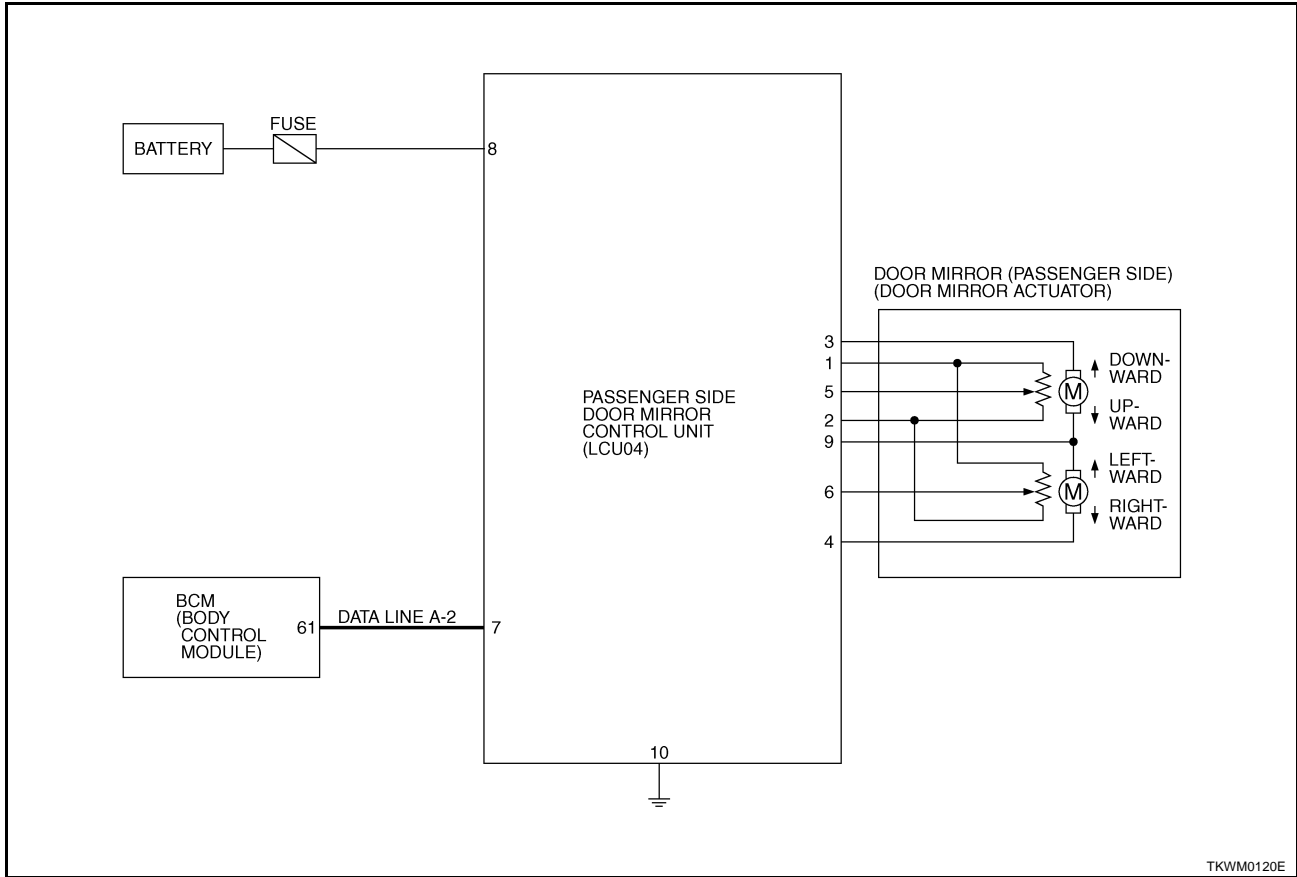
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**Schematic - LCU04 -
PASSENGER SIDE DOOR MIRROR CONTROL UNIT**

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PRECAUTIONS

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

EKS0011A

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-22. "TROUBLE DIAGNOSES WORK FLOW"](#) .

**Precautions For Trouble Diagnosis
CAN SYSTEM**

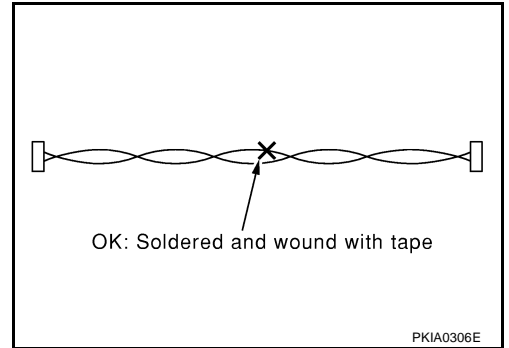
EKS00GZX

- 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.

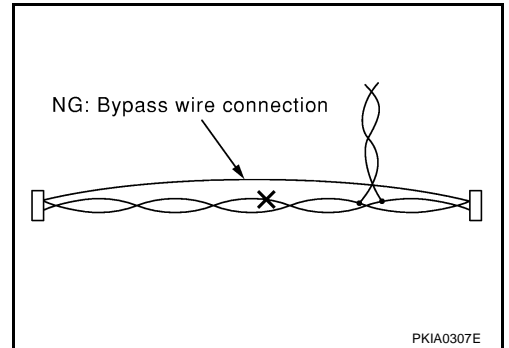
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Precautions For Harness Repair CAN SYSTEM

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



- 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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TROUBLE DIAGNOSES WORK FLOW

PFP:00004

When Displaying CAN Communication System Errors

WHEN A MALFUNCTION IS DETECTED BY CAN COMMUNICATION SYSTEM

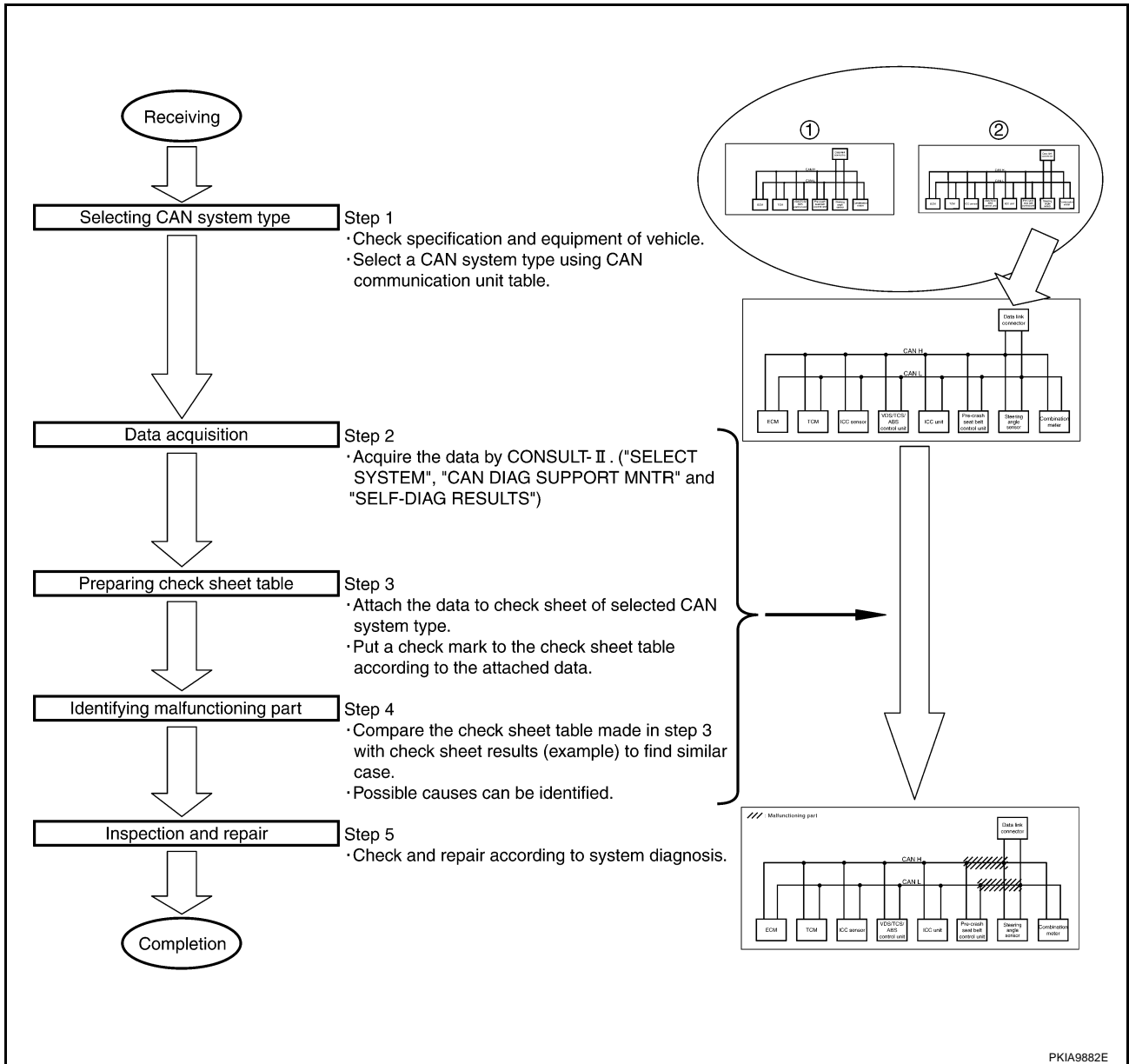
EKS00GZZ

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

WHEN A MALFUNCTION IS DETECTED EXCEPT CAN COMMUNICATION SYSTEM

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

TROUBLE DIAGNOSIS FLOW CHART



- Step 1 : Refer to [LAN-24, "SELECTING CAN SYSTEM TYPE \(HOW TO USE SPECIFICATION TABLE\)"](#) .
- Step 2 : Refer to [LAN-25, "ACQUISITION OF DATA BY CONSULT-II"](#) .
- Step 3 : Refer to [LAN-26, "HOW TO USE CHECK SHEET TABLE"](#) .
- Step 4 : Refer to [LAN-27, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced"](#) .
- Step 5 : Check and repair according to system diagnosis.

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) Sedan/2WD/VK45DE/AT/VDC/With ICC system

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

Body type	Sedan	
Axle	2WD	
Engine	VK45DE	
Transmission	A/T	
Brake control	VDC	
ICC system		x
CAN system type	1	2
CAN system trouble diagnosis	XXXX	XXXX

x: Applicable

Check basic specification of the vehicle.

Select "x" if it is model with ICC system.

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

In the case of this example:
It corresponds to type 2.

PKIA9883E

TROUBLE DIAGNOSES WORK FLOW

[CAN]

ACQUISITION OF DATA BY CONSULT-II

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

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Copy "SELECT SYSTEM" screen of CONSULT-II.

SELECT SYSTEM			SELECT SYSTEM		
ENGINE			ICC		
A/T			AIR PRESSURE MONITOR		
MULTI AV			AIR BAG		
IVMS					
ACT D/SUS					
VDC					
	Page Down		Page Up		
BACK	LIGHT	COPY	BACK	LIGHT	COPY

Check sheet table

SELECT SYSTEM screen	Initial diagnose	Transfer diagnose	CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS		
			ECM	TCM	Receive diagnosis			METER /M/A				
					ICD SENSOR	ICD/CS/ABS	ICD e4WD		STRG			
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
VDC	-	NG	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indicator	-	-	UNKWN	UNKWN	-	-	-	-	-	CAN COMM CIRCUIT (U1500)	-

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

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

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

Attach copy of ENGINE SELF-DIAG RESULTS

Attach copy of A/T SELF-DIAG RESULTS

Attach copy of VDC SELF-DIAG RESULTS

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

CAN DIAG SUPPORT MNTR			
ENGINE		ICC	
PRSN	PRSN	PRSN	PRSN
INITIAL DIAG	OK	LANE KEEP	UNKWN
TRANSMIT DIAG	OK	ECM(I)	OK
TCM	OK	ICD SENSOR	OK
VDC/TC/ABS	OK	STRG	UNKWN
METER/M&A	UNKWN	METER/M&A(I)	OK
ICC	OK	ERROR(I)	OK
BCM/SEC	UNKWN	LANE DETECTOR	UNKWN
IPDM E/R	UNKWN	TCM(I)	UNKWN
AWD/4WD/e4WD	UNKWN	ICD SENSOR	UNKWN
		BCM/SEC	UNKWN
PRINT	Scroll Down	PRINT	Scroll Up
MODE	BACK LIGHT COPY	MODE	BACK LIGHT COPY

Attach copy of SELF-DIAG RESULTS

Attach copy of ICC SELF-DIAG RESULTS

Attach copy of ENGINE CAN DIAG SUPPORT MNTR

Attach copy of VDC CAN DIAG SUPPORT MNTR

Attach copy of ICC CAN DIAG SUPPORT MNTR

Attach copy of PRECRASH SEATBELT CAN DIAG SUPPORT MNTR

PKIA9884E

HOW TO USE CHECK SHEET TABLE

Check sheet table		Use when the initial conditions are reproduced										Use when the initial conditions are not reproduced	
		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS	
		SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis								
ECM	TCM				ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG	METER /M&A				
ENGINE	—	NG	UNKW	—	UNKW	—	UNKW	UNKW	—	UNKW	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)	
A/T	—	NG	UNKW	UNKW	—	—	UNKW	UNKW	—	UNKW	CAN COMM CIRCUIT (U1000)	—	
VDC	—	NG	UNKW	UNKW	UNKW	—	—	UNKW	UNKW	UNKW	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKW	UNKW	UNKW	UNKW	UNKW	—	—	UNKW	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKW	UNKW	—	—	—	—	UNKW	CAN COMM CIRCUIT (U1000)	—	

① ② ③ ④ ⑤

PKIA9885E

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

NOTE:

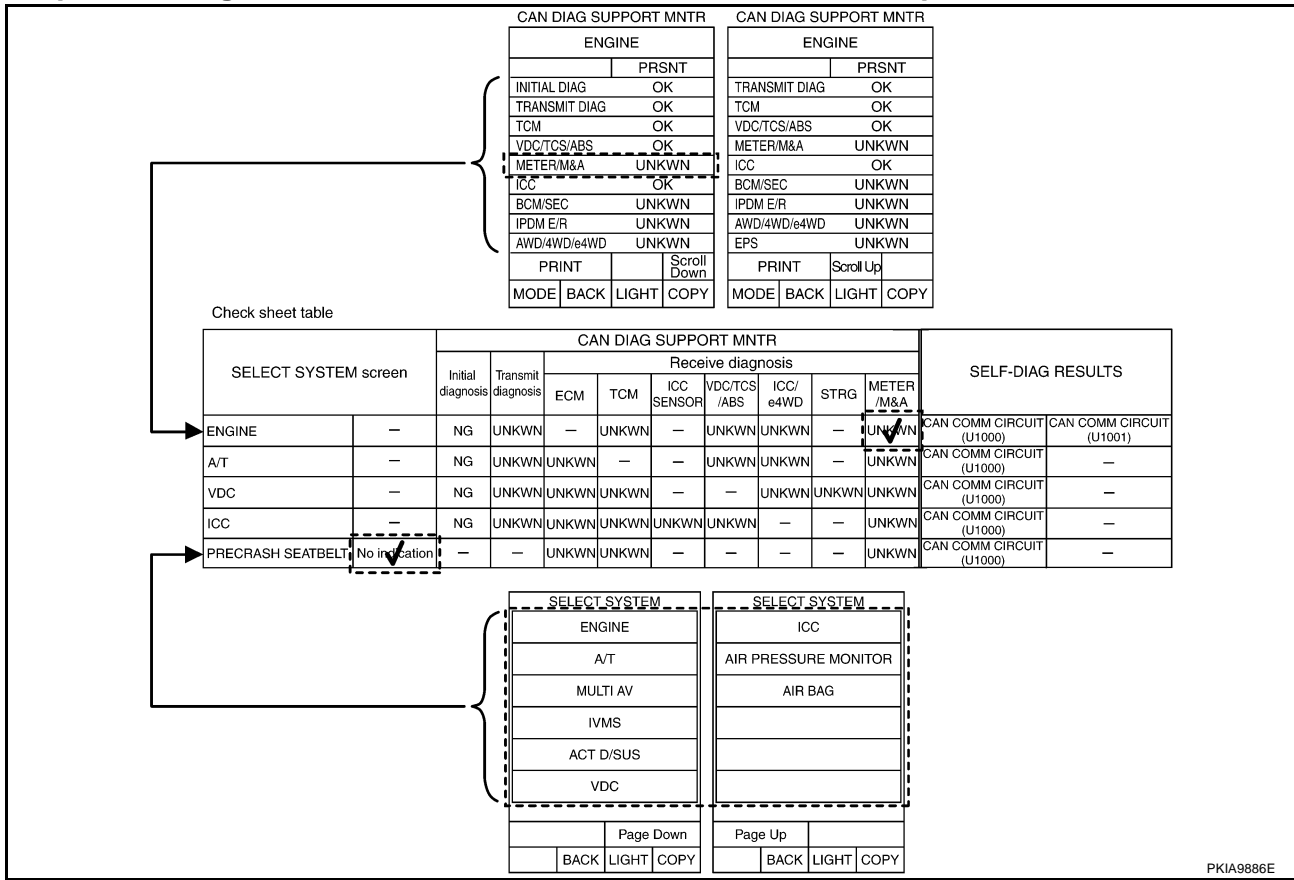
CAN communication diagnosis checks if CAN communication works normally. (Contents of data are not diagnosed.)

- When the initial conditions are reproduced. Refer to [LAN-27, "Example of Filling in Check Sheet When Initial Conditions Are Reproduced"](#) .
- When the initial conditions are not reproduced. Refer to [LAN-30, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"](#) .

TROUBLE DIAGNOSES WORK FLOW

[CAN]

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 selection screen of a check sheet table are not displayed on “SELECT SYSTEM” screen attached to the check sheet.

NOTE:

Put a check mark to “No indication” of PRECRASH SEATBELT because PRECRASH SEATBELT is not displayed on “SELECT SYSTEM” screen.

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

NOTE:

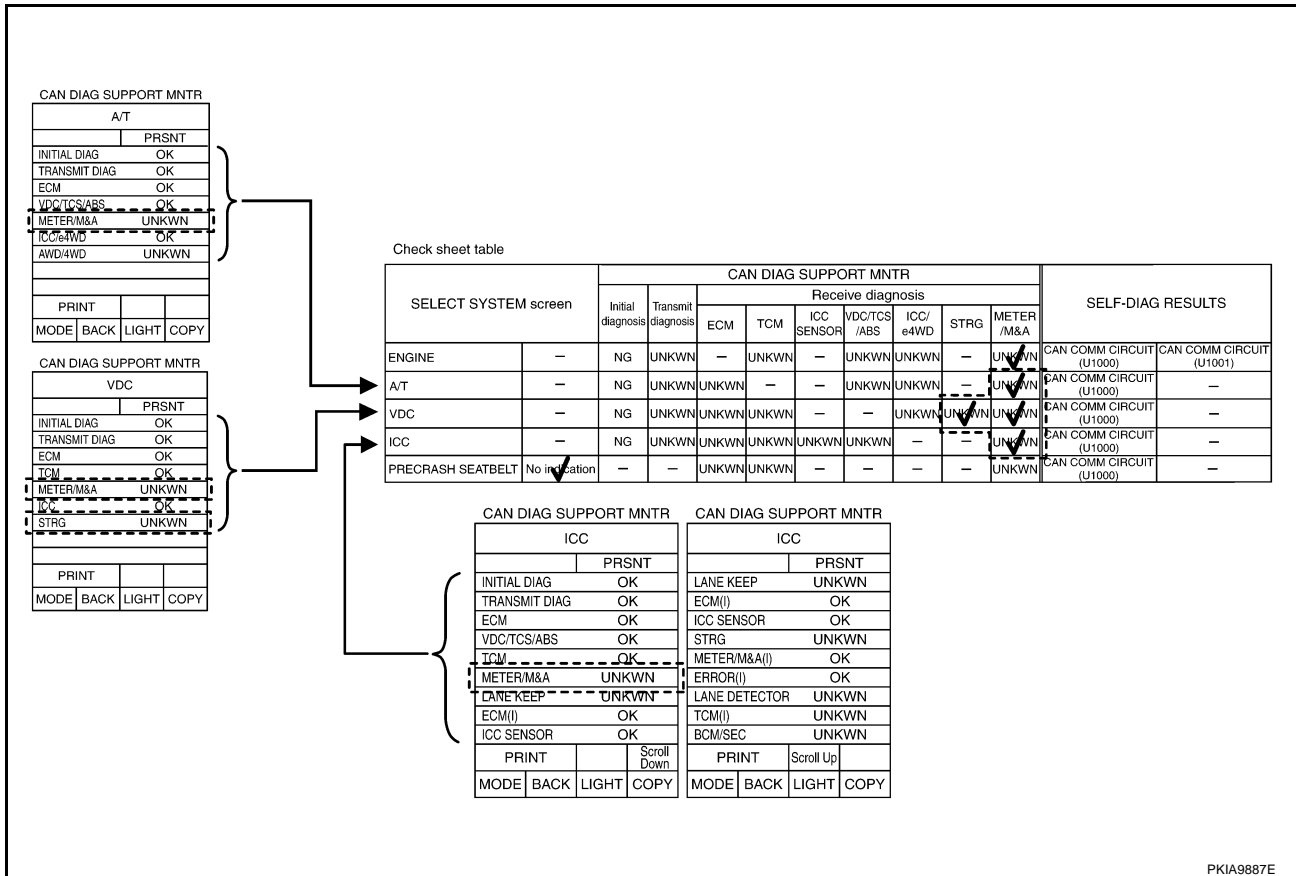
In “CAN DIAG SUPPORT MNTR” screen, “UNKWN” is displayed on “METER/M&A”, “BCM/SEC”, “IPDM E/R”, “AWD/4WD/e4WD” and “EPS”. But put a check mark to “METER/M&A” because “UNKWN” is listed on the column of reception diagnosis of the check sheet table.

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TROUBLE DIAGNOSES WORK FLOW

[CAN]



- Confirm the unit name that “UNKWN” is displayed on the copy of “CAN DIAG SUPPORT MNTR” screen of “A/T”, “VDC” and “ICC” as well as “ENGINE”. And then, put a check mark to the check sheet table.

NOTE:

- For “A/T”, “UNKWN” is displayed on “METER/M&A” and “AWD/4WD”. But put a check mark to “METER/M&A” because “UNKWN” is listed on the column of reception diagnosis on the check sheet table.
- For “VDC”, “UNKWN” is displayed on “METER/M&A” and “STRG”. Put a check mark to it.
- For “ICC”, “UNKWN” is displayed on “METER/M&A”, “LANE KEEP”, “STRG”, “LANE DETECTOR”, “TCM(I)” and “BCM/SEC”. But put a check mark to “METER/M&A” because “UNKWN” is listed on the column of reception diagnosis on the check sheet table.

TROUBLE DIAGNOSES WORK FLOW

[CAN]

The arranged results of CAN diagnosis support monitor

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							METER /M&A			
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG					
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	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
VDC	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indication	-	-	UNKWN	UNKWN	-	-	-	-	-	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-

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

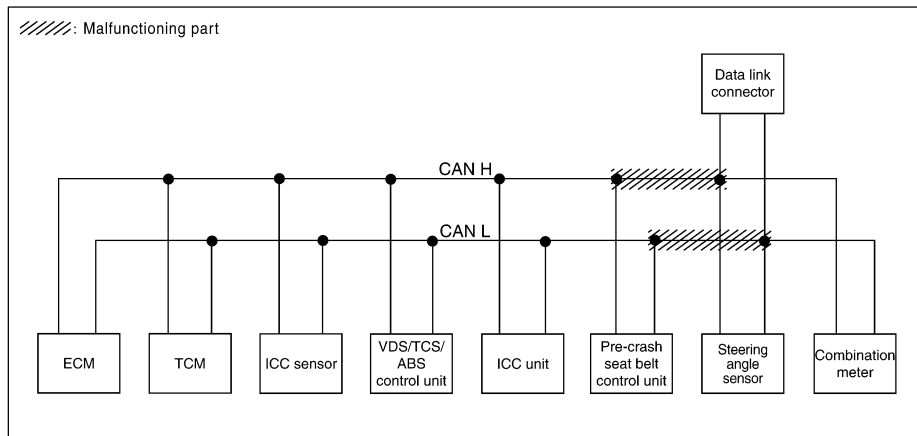
Case 5

Check harness between pre-crash seat belt control unit and data link connector.

Check sheet results (example)

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							METER /M&A			
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG					
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	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
VDC	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indication	-	-	UNKWN	UNKWN	-	-	-	-	-	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-

////: Malfunctioning part



PKIA9888E

NOTE:

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

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

Start CAN system trouble diagnosis if this procedure can be confirmed. Refer to [LAN-36, "CAN Communication Unit"](#).

TROUBLE DIAGNOSES WORK FLOW

[CAN]

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

SYSTEM ENGINE

SELF-DIAG RESULTS

DTC RESULTS TIME

CAN COMM CIRCUIT [U1001] 1t

SYSTEM A/T

SELF-DIAG RESULTS

DTC RESULTS TIME

CAN COMM CIRCUIT [U1000]

SYSTEM VDC

SELF-DIAG RESULTS

DTC RESULTS TIME

NO DTC IS DETECTED.
FURTHER TESTING
MAY BE REQUIRED.

SYSTEM ICC

SELF-DIAG RESULTS

DTC RESULTS TIME

NO DTC IS DETECTED.
FURTHER TESTING
MAY BE REQUIRED.

SYSTEM PRECRASH

SELF-DIAG RESULTS

DTC RESULTS TIME

CAN COMM CIRCUIT [U1000] PAST

PKIA9889E

- 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]" is displayed. Put a check mark to it.
- For "A/T", "CAN COMM CIRCUIT [U1000]" is displayed. Put a check mark to it.
- For "VDC", "NO DTC IS DETECTED" is displayed. Do not put a check mark to it.
- For "ICC", "NO DTC IS DETECTED" is displayed. Do not put a check mark to it.
- For "PRECRASH SEATBELT", "CAN COMM CIRCUIT [U1000]" is displayed. Put a check mark to it.

TROUBLE DIAGNOSES WORK FLOW

[CAN]

The arranged results of self-diagnosis

Check sheet table

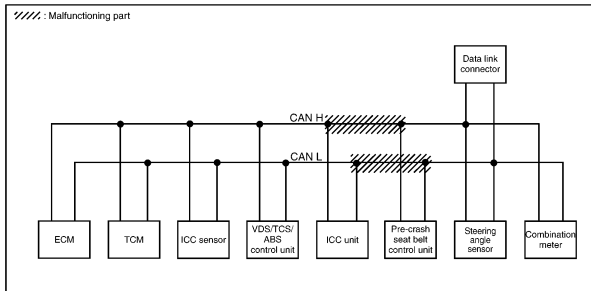
SELECT SYSTEM screen	Initial diagnosis	Transfer diagnosis	CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
			Receive diagnosis									
			ECM	TCM	ICC SENSOR	VDC/TCS/ABS	ICC/e4WD	STRG	METER/M&A			
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
VDC	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indication	-	-	UNKWN	UNKWN	-	-	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-

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

Case 4

Check harness between ICC unit and pre-crash seat belt control unit.

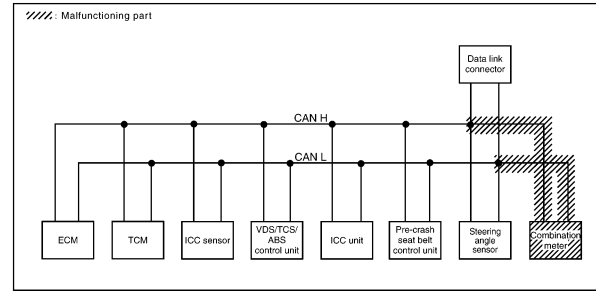
SELECT SYSTEM screen	Initial diagnosis	Transfer diagnosis	CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
			Receive diagnosis									
			ECM	TCM	ICC SENSOR	VDC/TCS/ABS	ICC/e4WD	STRG	METER/M&A			
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN	CAN COMM CIRCUIT (U1000)	-
VDC	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indication	-	-	UNKWN	UNKWN	-	-	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-



Case 14

Check combination meter circuit.

SELECT SYSTEM screen	Initial diagnosis	Transfer diagnosis	CAN DIAG SUPPORT MNTR								SELF-DIAG RESULTS	
			Receive diagnosis									
			ECM	TCM	ICC SENSOR	VDC/TCS/ABS	ICC/e4WD	STRG	METER/M&A			
ENGINE	-	NG	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)	-
VDC	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indication	-	-	UNKWN	UNKWN	-	-	-	-	UNKWN	CAN COMM CIRCUIT (U1000)	-



PKIA9890E

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.

TROUBLE DIAGNOSES WORK FLOW

[CAN]

CAN Diagnostic Support Monitor

EKS00H01

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		OK	
	ICC		OK		BCM/SEC		UNKWN	
	BCM/SEC		UNKWN		IPDM E/R		UNKWN	
	IPDM E/R		UNKWN		AWD/4WD/e4WD		UNKWN	
	AWD/4WD/e4WD		UNKWN		EPS		UNKWN	
	PRINT				PRINT		Scroll Up	
	MODE		BACK		LIGHT		COPY	
			Scroll Down					
			COPY					
	PKIA9891E							

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

Display Results (Present)

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

TROUBLE DIAGNOSES WORK FLOW

[CAN]

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR TCM

(Example)

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

PKIA9892E

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

Display Results (Present)

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

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR VDC/TCS/ABS CONTROL UNIT

(Example)

CAN DIAG SUPPORT MNTR			
VDC			
		PRSNT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
ECM		OK	
TCM		OK	
METER/M&A		OK	
ICC		OK	
STRG		OK	
PRINT			
MODE	BACK	LIGHT	COPY

PKIA9893E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
VDC	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWN
	ECM	Make sure of normal reception from ECM.	OK/UNKWN
	TCM	Make sure of normal reception from TCM.	OK/UNKWN
	METER/M&A	Make sure of normal reception from combination meter.	OK/UNKWN
	ICC	Make sure of normal reception from ICC unit.	OK/UNKWN
	STRG	Make sure of normal reception from steering angle sensor.	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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TROUBLE DIAGNOSES WORK FLOW

[CAN]

DESCRIPTION OF “CAN DIAG SUPPORT MNTR” SCREEN FOR ICC CONTROL UNIT

(Example)	CAN DIAG SUPPORT MNTR	CAN DIAG SUPPORT MNTR																																																																																																							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">ICC</td></tr> <tr><td colspan="2"></td><td colspan="2" style="text-align: center;">PRSNT</td></tr> <tr><td>INITIAL DIAG</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>TRANSMIT DIAG</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>ECM</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>VDC/TCS/ABS</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>TCM</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>METER/M&A</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>LANE KEEP</td><td></td><td colspan="2" style="text-align: center;">UNKWVN</td></tr> <tr><td>ECM(I)</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>ICC SENSOR</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td colspan="2" style="text-align: center;">PRINT</td><td colspan="2" style="text-align: center;">Scroll Up</td></tr> <tr><td>MODE</td><td>BACK</td><td>LIGHT</td><td>COPY</td></tr> </table>	ICC						PRSNT		INITIAL DIAG		OK		TRANSMIT DIAG		OK		ECM		OK		VDC/TCS/ABS		OK		TCM		OK		METER/M&A		OK		LANE KEEP		UNKWVN		ECM(I)		OK		ICC SENSOR		OK		PRINT		Scroll Up		MODE	BACK	LIGHT	COPY	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">ICC</td></tr> <tr><td colspan="2"></td><td colspan="2" style="text-align: center;">PRSNT</td></tr> <tr><td>LANE KEEP</td><td></td><td colspan="2" style="text-align: center;">UNKWVN</td></tr> <tr><td>ECM(I)</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>ICC SENSOR</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>STRG</td><td></td><td colspan="2" style="text-align: center;">UNKWVN</td></tr> <tr><td>METER/M&A(I)</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>ERROR(I)</td><td></td><td colspan="2" style="text-align: center;">OK</td></tr> <tr><td>LANE DETECTOR</td><td></td><td colspan="2" style="text-align: center;">UNKWVN</td></tr> <tr><td>TCM(I)</td><td></td><td colspan="2" style="text-align: center;">UNKWVN</td></tr> <tr><td>BCM/SEC</td><td></td><td colspan="2" style="text-align: center;">UNKWVN</td></tr> <tr><td colspan="2" style="text-align: center;">PRINT</td><td colspan="2" style="text-align: center;">Scroll Down</td></tr> <tr><td>MODE</td><td>BACK</td><td>LIGHT</td><td>COPY</td></tr> </table>	ICC						PRSNT		LANE KEEP		UNKWVN		ECM(I)		OK		ICC SENSOR		OK		STRG		UNKWVN		METER/M&A(I)		OK		ERROR(I)		OK		LANE DETECTOR		UNKWVN		TCM(I)		UNKWVN		BCM/SEC		UNKWVN		PRINT		Scroll Down		MODE	BACK	LIGHT
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PKIA9894E

“SELECT SYSTEM” screen	“CAN DIAG SUPPORT MNTR” screen	Description	Present
ICC	INITIAL DIAG	Make sure that microcomputer in ECU works normally.	OK/NG
	TRANSMIT DIAG	Make sure of normal transmission.	OK/UNKWVN
	ECM	Make sure of normal reception from ECM.	OK/UNKWVN
	VDC/TCS/ABS	Make sure of normal reception from VDC/TCS/ABS control unit.	OK/UNKWVN
	TCM	Make sure of normal reception from TCM.	OK/UNKWVN
	METER/M&A	Make sure of normal reception from combination meter.	OK/UNKWVN
	LANE KEEP	LANE KEEP is not diagnosed.	UNKWVN
	ECM(I)	Make sure of normal reception from ECM (as a laser radar sensor). (Not available for CAN system diagnosis.)	OK/UNKWVN
	ICC SENSOR	Make sure of normal reception from ICC sensor.	OK/UNKWVN
	STRG	STRG is not diagnosed.	UNKWVN
	METER/M&A(I)	Make sure of normal reception from combination meter (as a laser radar sensor). (Not available for CAN system diagnosis.)	OK/UNKWVN
	ERROR(I)	Make sure that the initial diagnosis and transmit diagnosis of laser radar sensor work normally. (Not available for CAN system diagnosis.)	OK/UNKWVN
	LANE DETECTOR	LANE DETECTOR is not diagnosed.	UNKWVN
	TCM(I)	TCM(I) is not diagnosed.	UNKWVN
BCM/SEC	BCM/SEC is not diagnosed.	UNKWVN	

Display Results (Present)

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

CAN COMMUNICATION

PFP:23710

System Description

EKS001PT

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

EKS00J0U

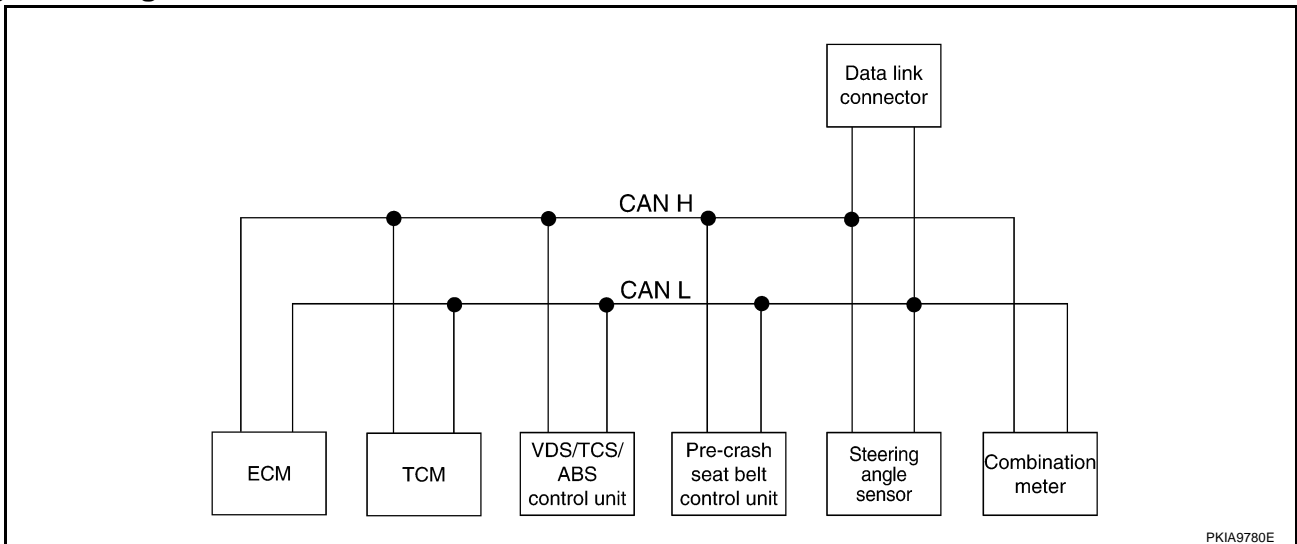
Go to CAN system, when selecting your CAN system type from the following table.

Body type	Sedan	
Axle	2WD	
Engine	VK45DE	
Transmission	A/T	
Brake control	VDC	
ICC system		×
CAN system type	1	2
CAN system trouble diagnosis	LAN-40	LAN-66

×: Applicable

TYPE 1

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	VDC/TCS/ ABS control unit	Pre-crash seat belt control unit	Steering angle sen- sor	Combina- tion meter
Engine speed signal	T	R	R			R
Engine coolant temperature signal	T					R
Accelerator pedal position signal	T	R	R			
Battery voltage signal	T	R				
Closed throttle position signal	T	R				
Wide open throttle position signal	T	R				
Fuel consumption monitor signal	T					R

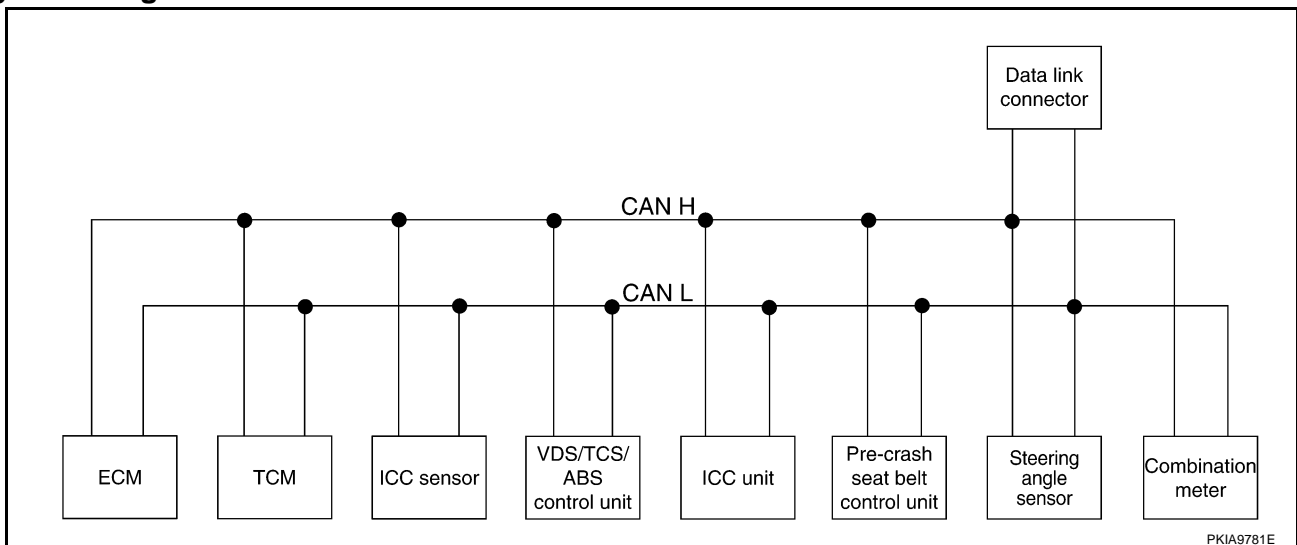
CAN COMMUNICATION

[CAN]

Signals	ECM	TCM	VDC/TCS/ ABS control unit	Pre-crash seat belt control unit	Steering angle sen- sor	Combina- tion meter
Current gear position signal	R	T	R			R
Next gear position signal	R	T	R			
Shift change signal	R	T	R			
Shift pattern signal	R	T				
Steering wheel angle sensor signal			R		T	
Stop lamp switch signal		R				T
Vehicle speed signal			T			R
	R	R		R		T
A/T position indicator lamp signal		T		R*		R
Manual mode signal		R				T
Not Manual mode signal		R				T
Manual mode shift up signal		R				T
Manual mode shift down signal		R				T
Manual mode indicator signal		T				R
A/T self-diagnosis signal	R	T				
Output shaft revolution signal	R	T				
Turbine revolution signal	R	T				
A/T CHECK indicator lamp signal		T				R
Fuel level sensor signal	R					T
Malfunction indicator lamp signal	T					R
ASCD SET lamp signal	T					R
ASCD CRUISE lamp signal	T					R
ABS warning lamp signal			T			R
SLIP indicator lamp signal			T			R
VDC OFF indicator lamp signal			T			R

*: R range signal only

TYPE 2 System Diagram



CAN COMMUNICATION

[CAN]

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	ICC sensor	VDC/TCS/ABS control unit	ICC unit	Pre-crash seat belt control unit	Steering angle sensor	Combination meter
ICC system display signal					T			R
ICC sensor signal			T		R			
Engine speed signal	T	R		R	R			R
Engine coolant temperature signal	T							R
Accelerator pedal position signal	T	R		R	R			
Battery voltage signal	T	R						
Closed throttle position signal	T	R			R			
Wide open throttle position signal	T	R						
Fuel consumption monitor signal	T							R
Current gear position signal	R	T		R	R			R
Next gear position signal	R	T		R				
Shift change signal	R	T		R				
Shift pattern signal	R	T						
Steering wheel angle sensor signal				R			T	
Stop lamp switch signal		R						T
Vehicle speed signal				T	R			R
	R	R	R			R		T
A/T position indicator lamp signal		T			R	R*		R
Manual mode signal		R						T
Not Manual mode signal		R						T
Manual mode shift up signal		R						T
Manual mode shift down signal		R						T
Manual mode indicator signal		T						R
A/T self-diagnosis signal	R	T						
Output shaft revolution signal	R	T			R			
Turbine revolution signal	R	T			R			
A/T CHECK indicator lamp signal		T						R
Fuel level sensor signal	R							T
Malfunction indicator lamp signal	T							R
ABS operation signal				T	R			
TCS operation signal				T	R			
VDC operation signal				T	R			
ABS malfunction signal				T	R			
TCS malfunction signal				T	R			
VDC malfunction signal				T	R			
ABS warning lamp signal				T				R
SLIP indicator lamp signal				T				R
VDC OFF indicator lamp signal				T				R
VDC OFF switch signal				T	R			
ICC warning lamp signal					T			R

CAN COMMUNICATION

[CAN]

Signals	ECM	TCM	ICC sensor	VDC/TCS/ABS control unit	ICC unit	Pre-crash seat belt control unit	Steering angle sensor	Combination meter
ICC operation signal	R				T			
ICC OD cancel request signal	R				T			
	T	R						
ICC steering switch signal	T				R			
P range signal		T			R			

*: R range signal only

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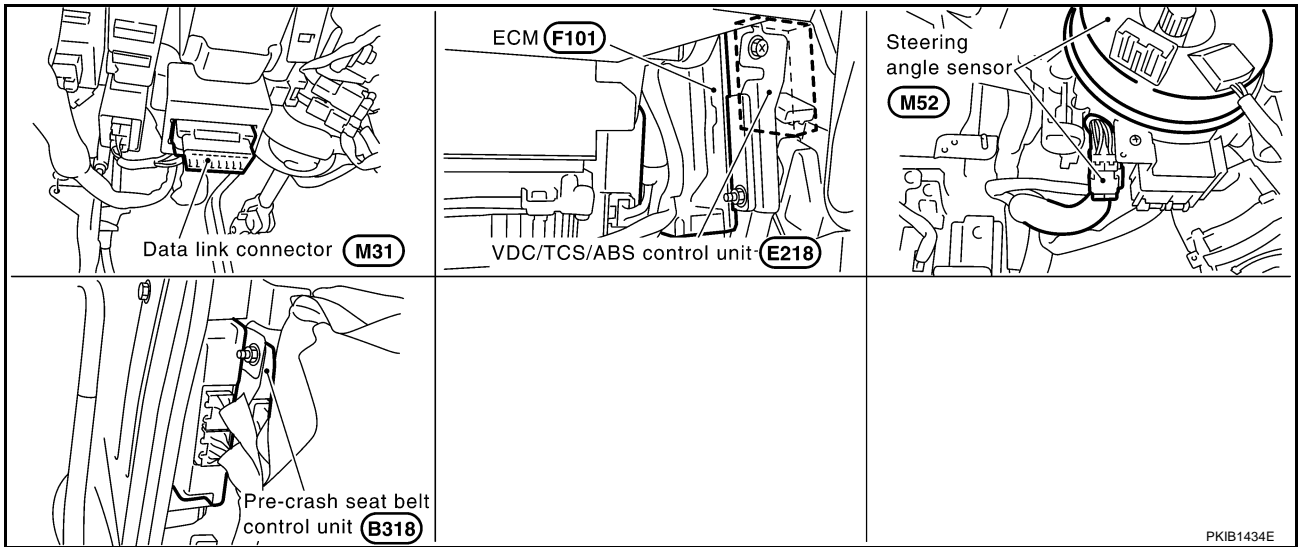
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CAN SYSTEM (TYPE 1)

Component Parts and Harness Connector Location

EKS003L8



PKIB1434E

CAN SYSTEM (TYPE 1)

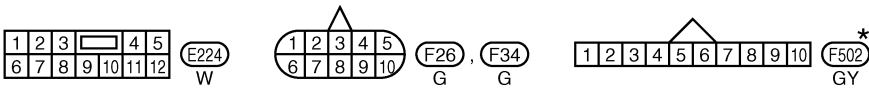
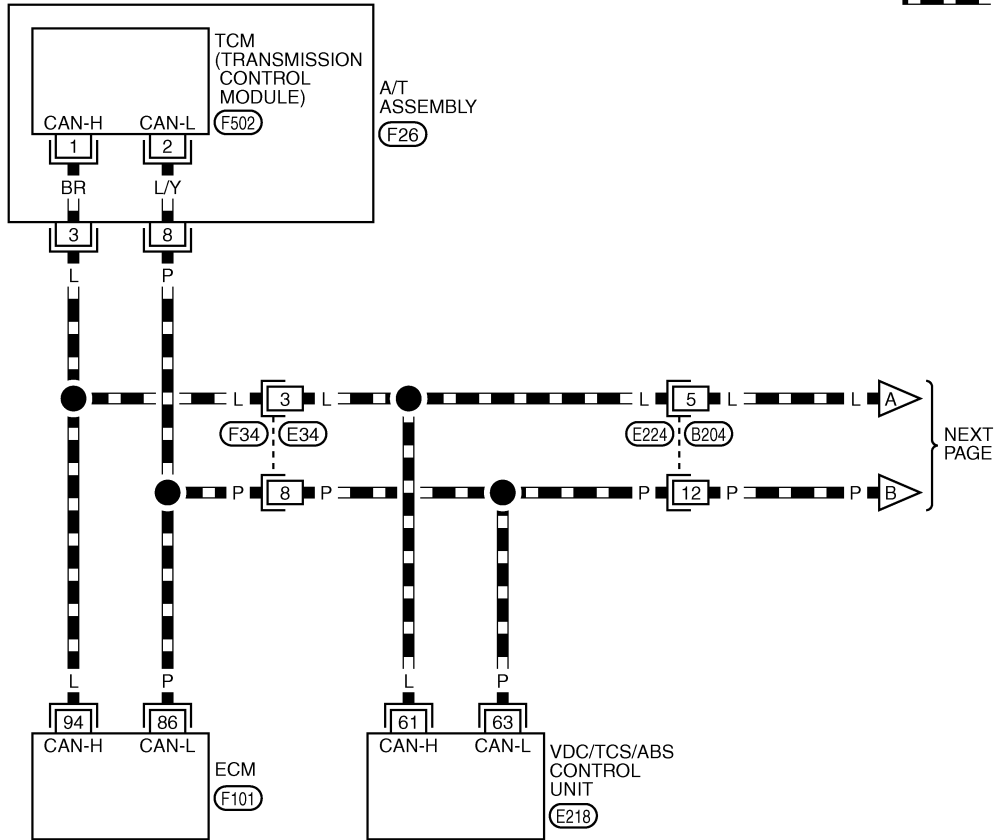
[CAN]

EKS003L9

Wiring Diagram — CAN —

LAN-CAN-01

▬ : DATA LINE



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

REFER TO THE FOLLOWING.
 (E218), (F101) -ELECTRICAL UNITS

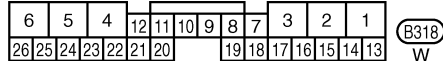
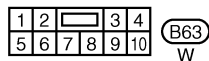
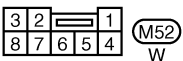
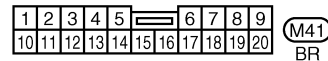
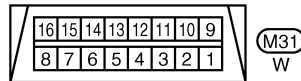
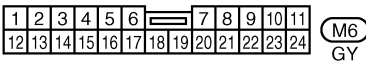
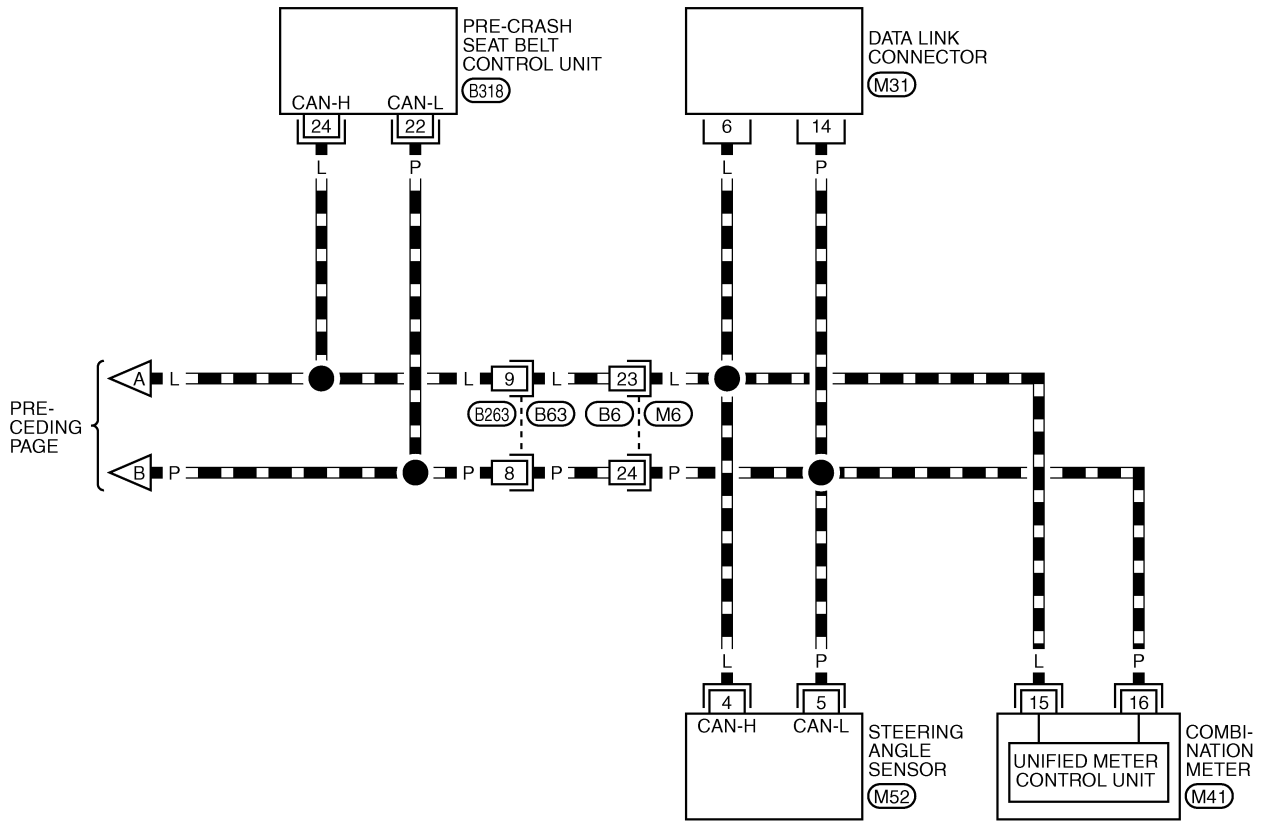
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CAN SYSTEM (TYPE 1)

[CAN]

LAN-CAN-02

▬ : DATA LINE



TKWM1345E

CAN SYSTEM (TYPE 1)

[CAN]

EKS003LA

CHECK SHEET

NOTE:

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

Check sheet table

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

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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CAN SYSTEM (TYPE 1)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
VDC
SELF-DIAG RESULTS

Attach copy of
PRECRASH SEATBELT
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
VDC
CAN DIAG SUPPORT
MNTR

Attach copy of
PRECRASH SEATBELT
CAN DIAG SUPPORT
MNTR

PKIA9751E

CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

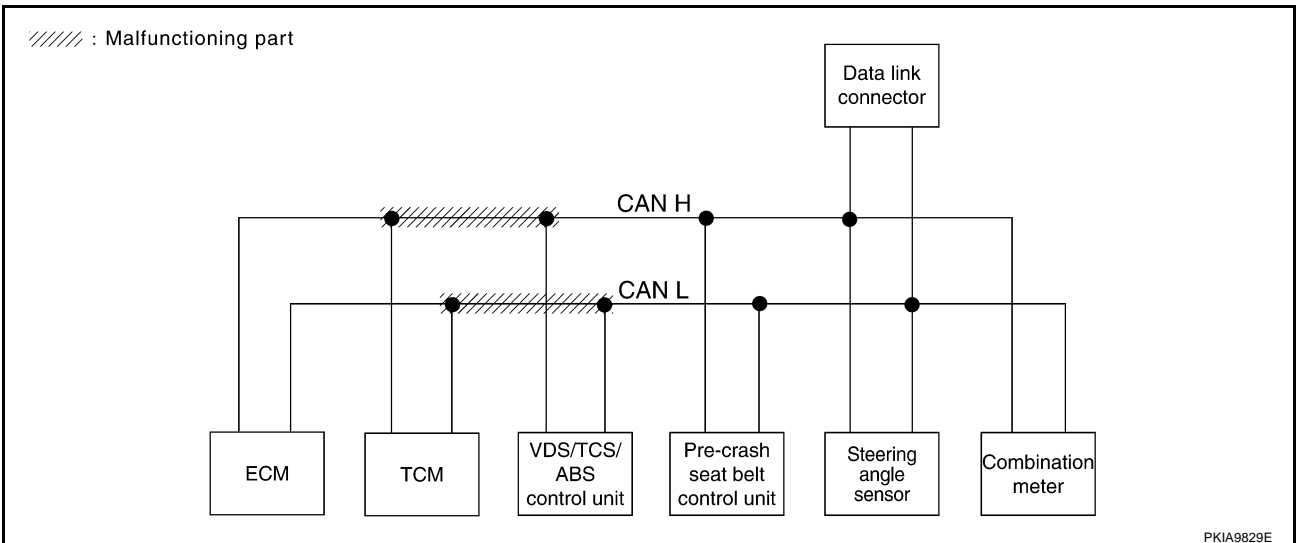
If a check mark is put on "NG" on "INITIAL DIAG (Initial diagnosis)", replace the control unit.

Case 1

Check harness between TCM and VDC/TCS/ABS control unit. Refer to [LAN-55. "Between TCM and VDC/TCS/ABS Control Unit Circuit Inspection"](#).

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

PKIA9752E



LAN

CAN SYSTEM (TYPE 1)

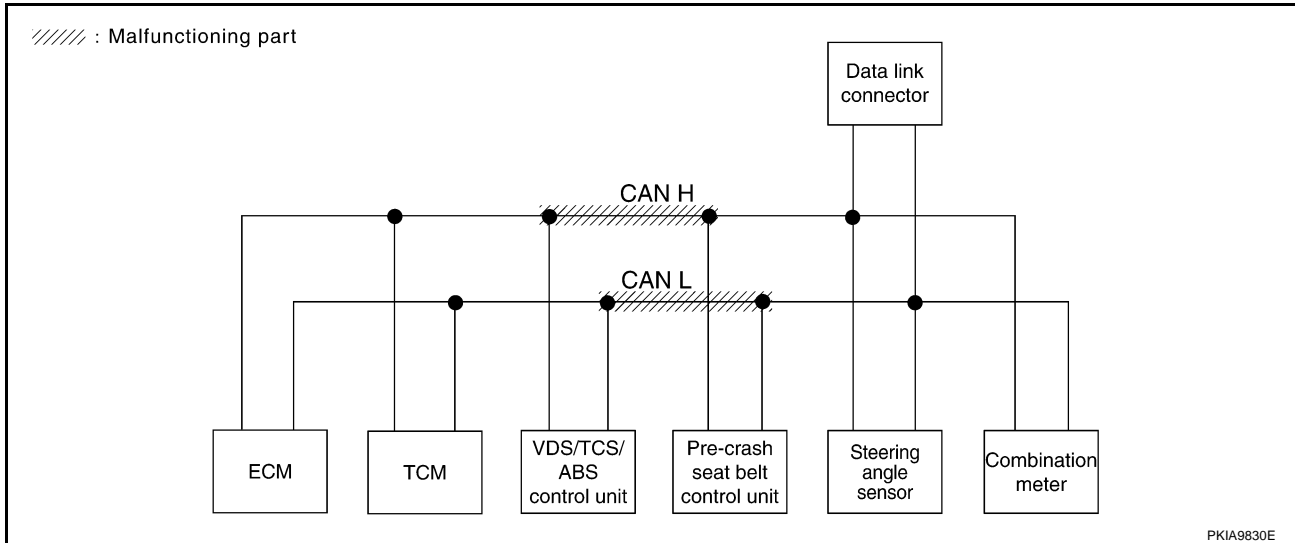
[CAN]

Case 2

Check harness between VDC/TCS/ABS control unit and pre-crash seat belt control unit. Refer to [LAN-55, "Between VDC/TCS/ABS Control Unit and Pre-Crash Seat Belt Control Unit Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	VDC/TCS /ABS	STRG	METER /M&A		
ENGINE	—	NG	UNKW	—	UNKW	UNKW	—	UNKW	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U101)
A/T	—	NG	UNKW	UNKW	—	UNKW	—	UNKW	CAN COMM CIRCUIT (U100)	—
VDC	—	NG	UNKW	UNKW	UNKW	—	UNKW	UNKW	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication	—	—	UNKW	UNKW	—	—	UNKW	CAN COMM CIRCUIT (U100)	—

PKIA9753E



PKIA9830E

CAN SYSTEM (TYPE 1)

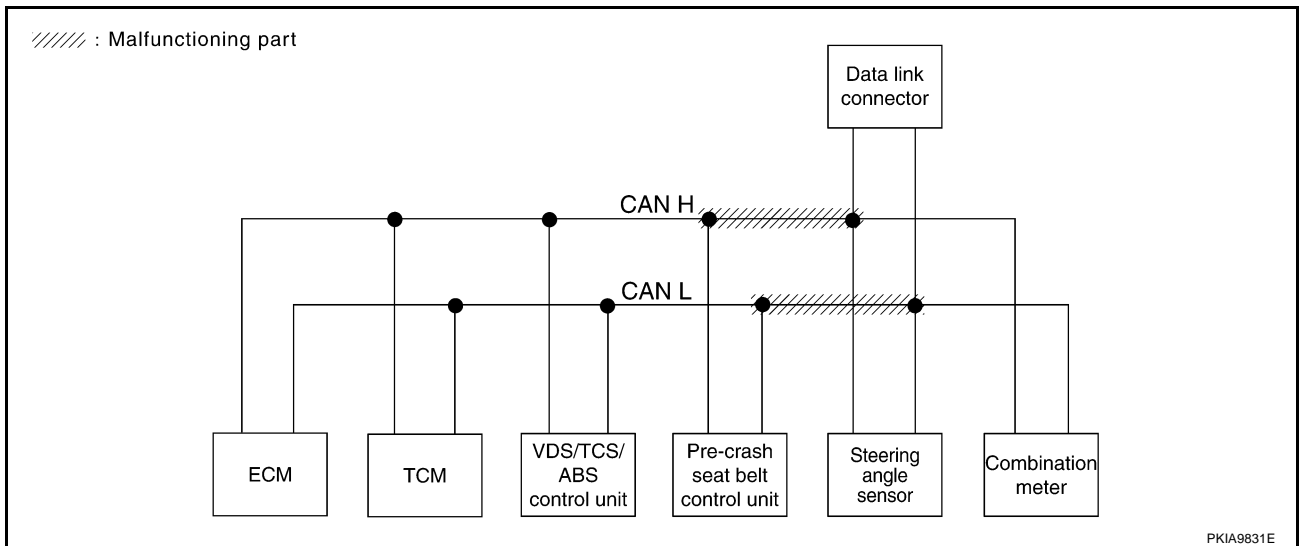
[CAN]

Case 3

Check harness between pre-crash seat belt control unit and data link connector. Refer to [LAN-56, "Between Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection"](#) .

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

PKIA9754E



LAN

CAN SYSTEM (TYPE 1)

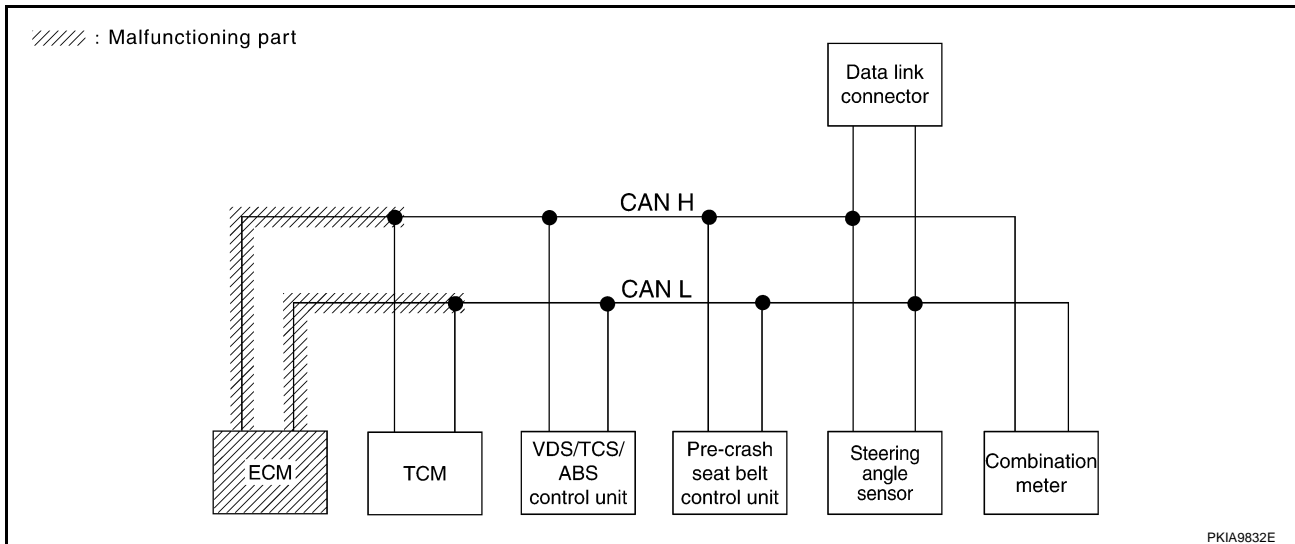
[CAN]

Case 4

Check ECM circuit. Refer to [LAN-57, "ECM Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	VDC/TCS /ABS	STRG	METER /M&A		
ENGINE	—	NG	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	CAN COMM CIRCUIT (U100) ✓	CAN COMM CIRCUIT (U101) ✓
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—
VDC	—	NG	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U100) ✓	—
PRECRASH SEATBELT	No indication	—	—	UNKWN ✓	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—

PKIA9755E



PKIA9832E

CAN SYSTEM (TYPE 1)

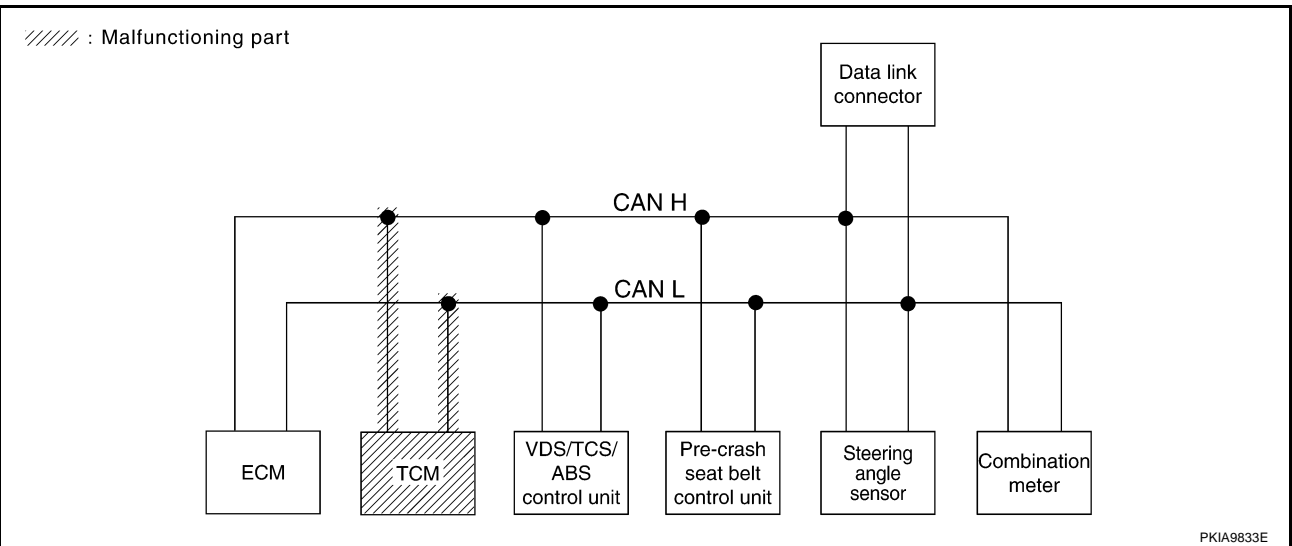
[CAN]

Case 5

Check TCM circuit. Refer to [LAN-58, "TCM Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	VDC/TCS/ABS	STRG	METER/M&A		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	CAN COMM CIRCUIT (U101) ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—

PKIA9756E



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CAN SYSTEM (TYPE 1)

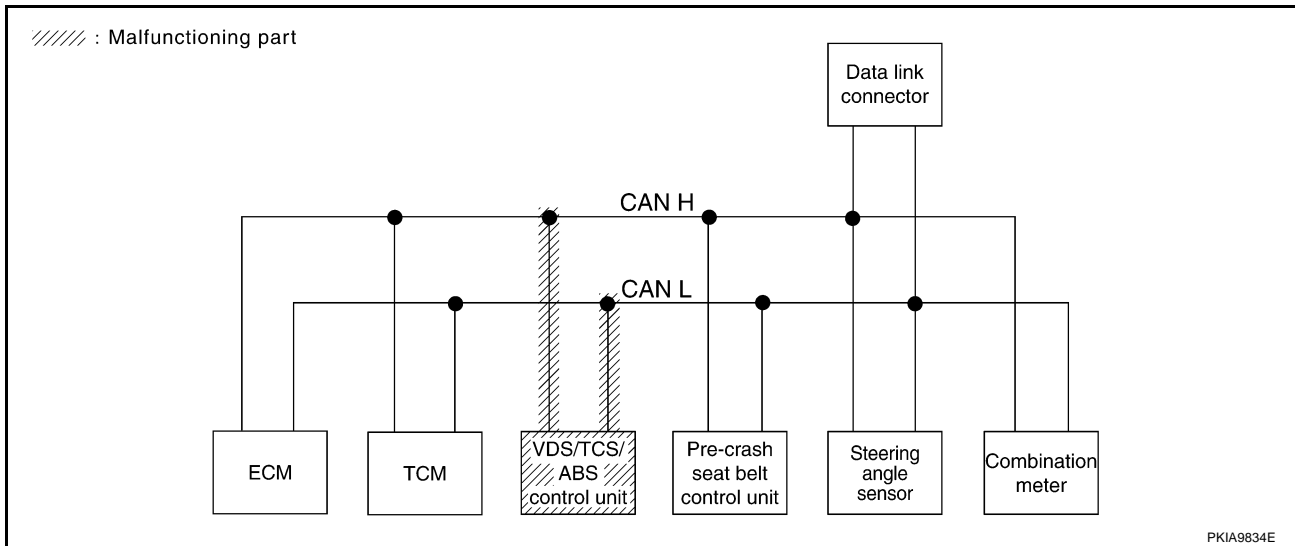
[CAN]

Case 6

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-58, "VDC/TCS/ABS Control Unit Circuit Inspection"](#) .

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

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PKIA9834E

CAN SYSTEM (TYPE 1)

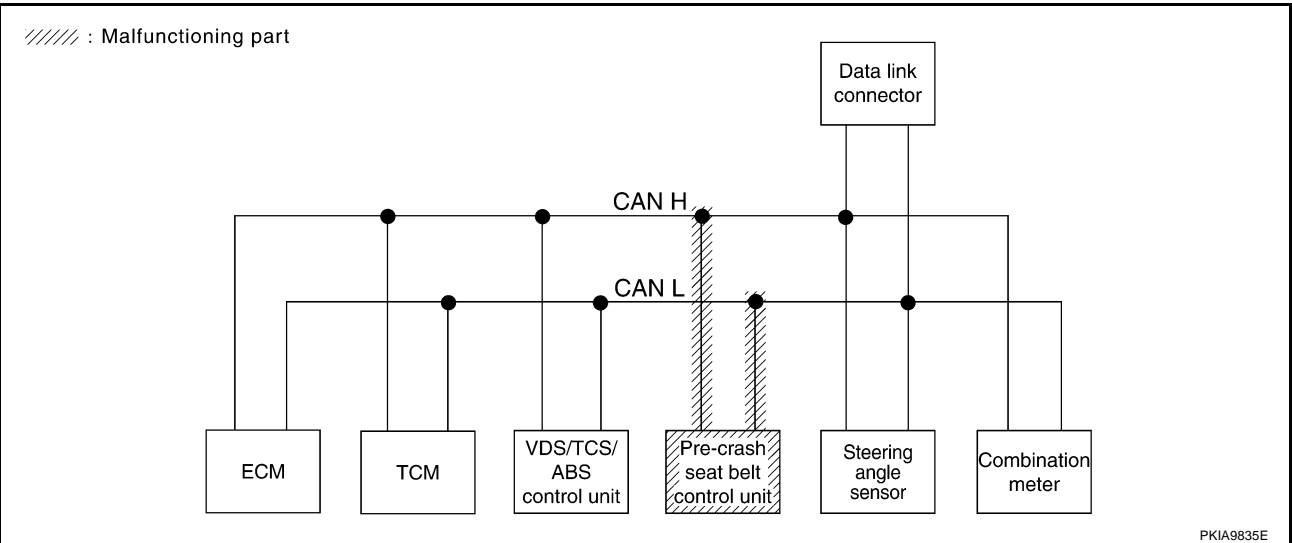
[CAN]

Case 7

Check pre-crash seat belt control unit circuit. Refer to [LAN-59, "Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection"](#).

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

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CAN SYSTEM (TYPE 1)

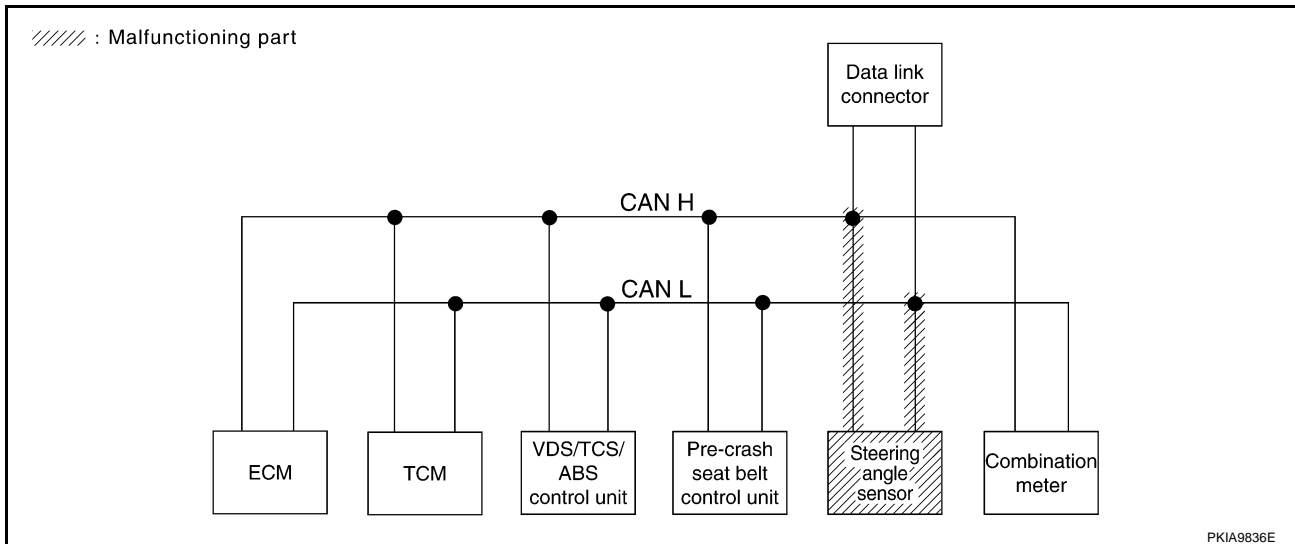
[CAN]

Case 8

Check steering angle sensor circuit. Refer to [LAN-60, "Steering Angle Sensor Circuit Inspection"](#) .

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

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CAN SYSTEM (TYPE 1)

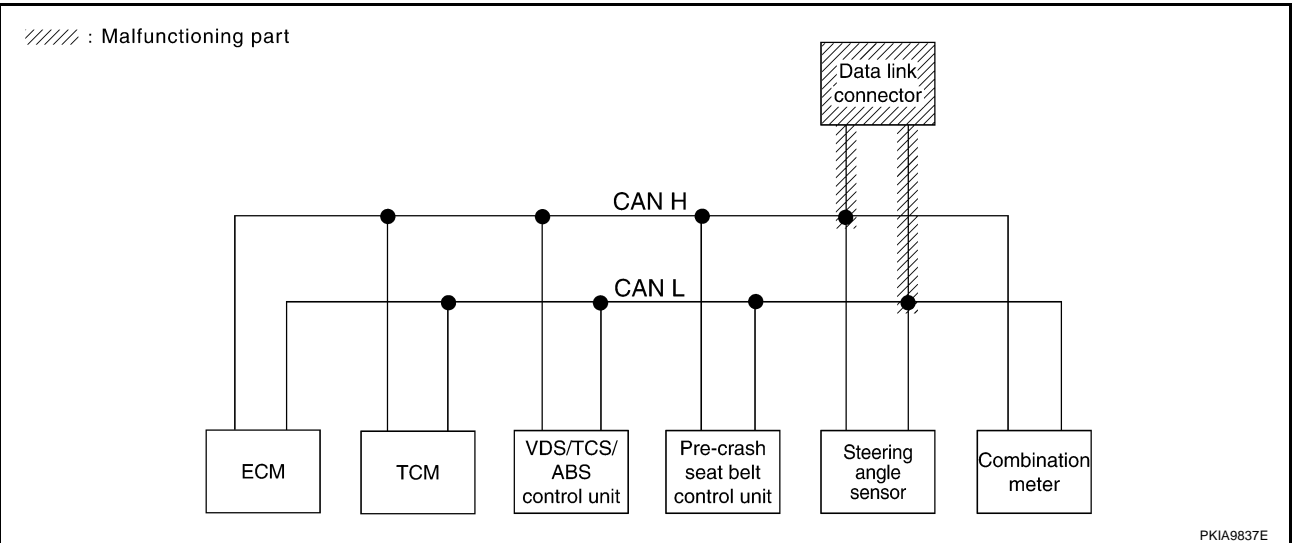
[CAN]

Case 9

Check data link connector circuit. Refer to [LAN-59, "Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection"](#) .

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

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CAN SYSTEM (TYPE 1)

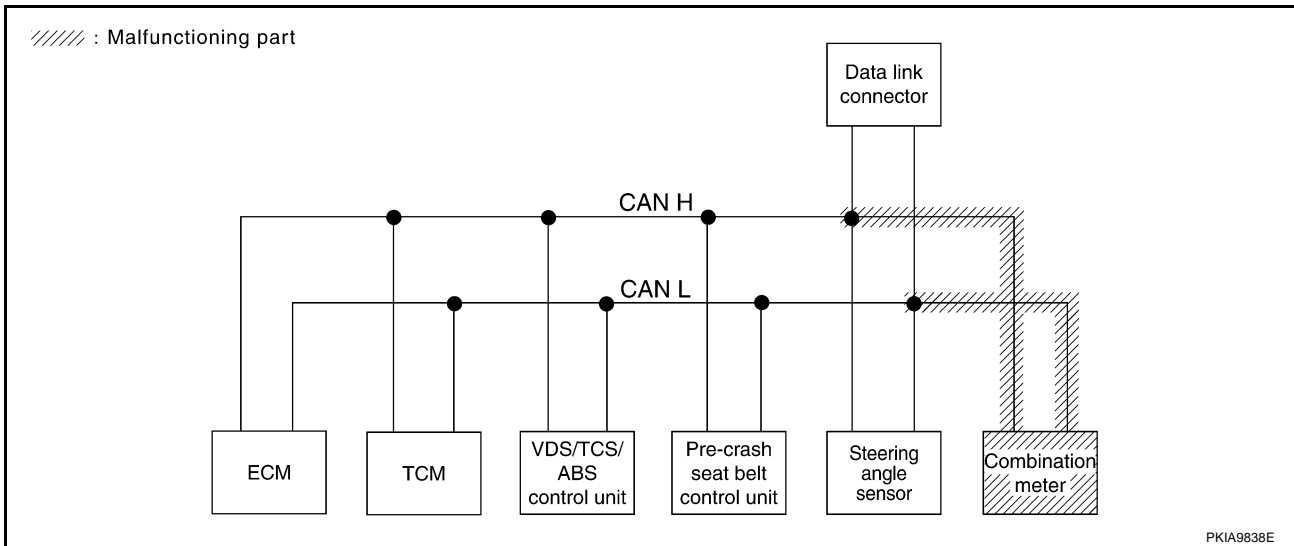
[CAN]

Case 10

Check combination meter circuit. Refer to [LAN-60, "Combination Meter Circuit Inspection"](#) .

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

PKIA9761E



Case 11

Check CAN communication circuit. Refer to [LAN-61, "CAN Communication Circuit Inspection"](#) .

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

PKIA9762E

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

EKS003LB

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 F34
 - Harness connector E34

OK or NG

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

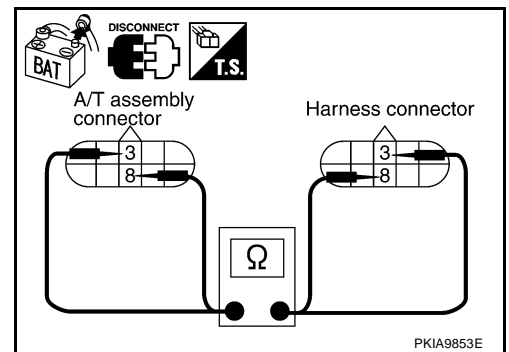
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F34.
2. Check continuity between A/T assembly harness connector F26 terminals 3 (L), 8 (P) and harness connector F34 terminals 3 (L), 8 (P).

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

OK or NG

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

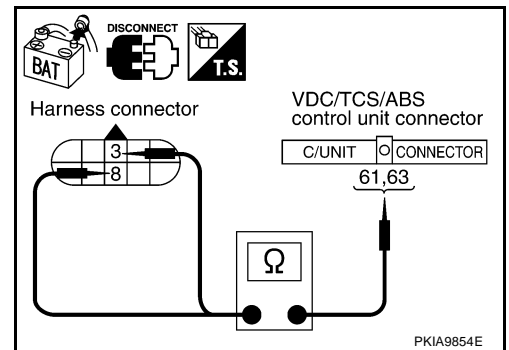
**3. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E34 terminals 3 (L), 8 (P) and VDC/TCS/ABS control unit harness connector E218 terminals 61 (L), 63 (P).

3 (L) – 61 (L) : Continuity should exist.
8 (P) – 63 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#).
 NG >> Repair harness.

**Between VDC/TCS/ABS Control Unit and Pre-Crash Seat Belt Control Unit Circuit Inspection**

EKS003LC

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 E224
 - Harness connector B204

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector and harness connector E224.
2. Check continuity between VDC/TCS/ABS control unit harness connector E218 terminals 61 (L), 63 (P) and harness connector E224 terminals 5 (L), 12 (P).

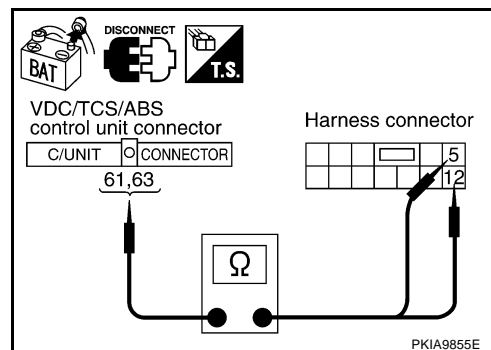
61 (L) – 5 (L) : Continuity should exist.

63 (P) – 12 (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect pre-crash seat belt control unit connector.
2. Check continuity between harness connector B204 terminals 5 (L), 12 (P) and pre-crash seat belt control unit harness connector B318 terminals 24 (L), 22 (P).

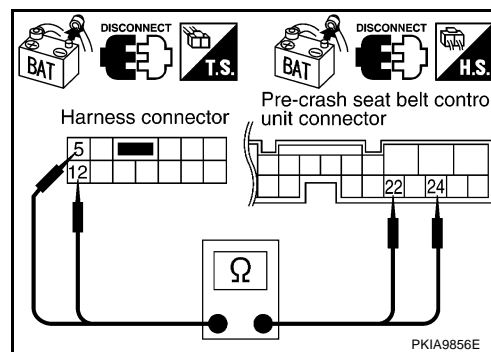
5 (L) – 24 (L) : Continuity should exist.

12 (P) – 22 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#).

NG >> Repair harness.



Between Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection

EKS00H03

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 B263
 - Harness connector B63
 - Harness connector B6
 - Harness connector M6

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

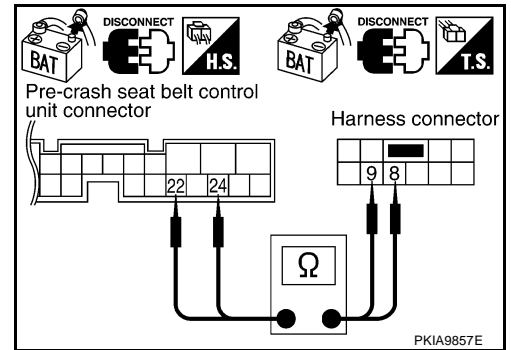
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect pre-crash seat belt control unit connector and harness connector B263.
2. Check continuity between pre-crash seat belt control unit harness connector B318 terminals 24 (L), 22 (P) and harness connector B263 terminals 9 (L), 8 (P).

24 (L) – 9 (L) : Continuity should exist.
22 (P) – 8 (P) : Continuity should exist.

OK or NG

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



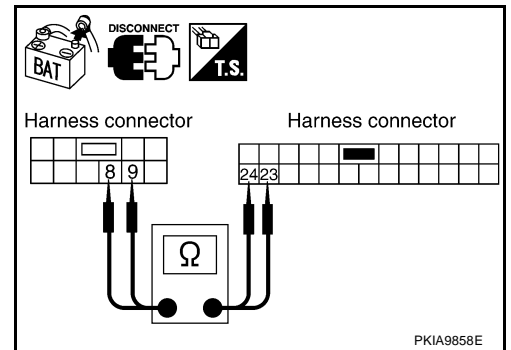
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B6.
2. Check continuity between harness connector B63 terminals 9 (L), 8 (P) and harness connector B6 terminals 23 (L), 24 (P).

9 (L) – 23 (L) : Continuity should exist.
8 (P) – 24 (P) : Continuity should exist.

OK or NG

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



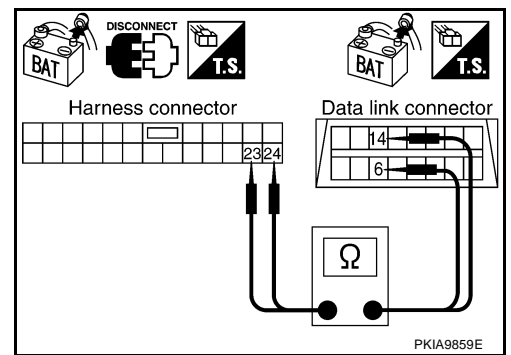
4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M6 terminals 23 (L), 24 (P) and data link connector M31 terminals 6 (L), 14 (P).

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

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#) .
 NG >> Repair harness.



LAN

ECM 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 ECM for damage, bend and loose connection (control module side and harness side).

OK or NG

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

EKS003LD

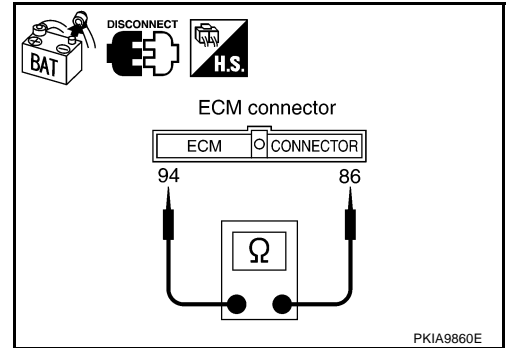
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132Ω

OK or NG

- OK >> Replace ECM.
 NG >> Repair harness between ECM and 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.

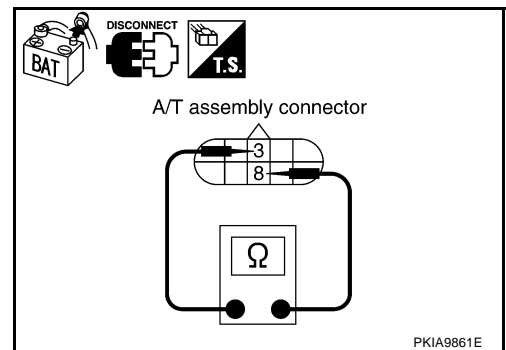
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F26 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace control valve with TCM.
 NG >> Repair harness between A/T assembly and harness connector F34.



VDC/TCS/ABS 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 VDC/TCS/ABS control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

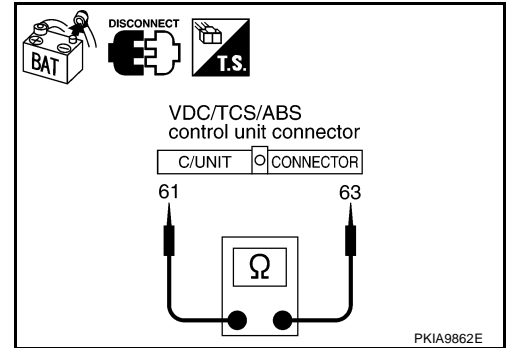
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector E218 terminals 61 (L) and 63 (P).

61 (L) – 63 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace VDC/TCS/ABS control unit.
 NG >> Repair harness between VDC/TCS/ABS control unit and harness connector E224.



Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection

EKS00H04

1. CHECK CONNECTOR

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

OK or NG

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

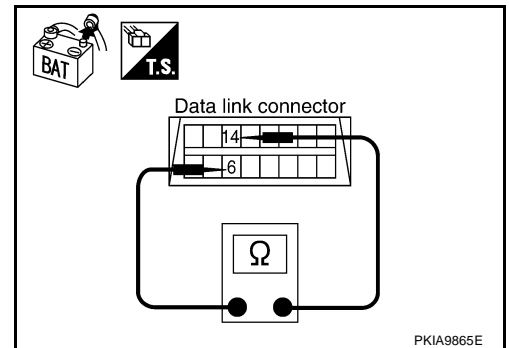
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M31 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between data link connector and steering angle sensor.



3. CHECK CONNECTOR

Check terminals and connector of pre-crash seat belt control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

- OK >> GO TO 4.
 NG >> Repair terminal or connector.

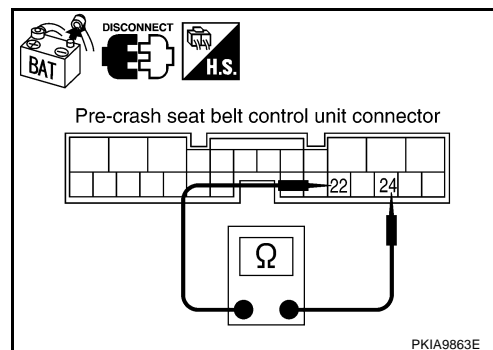
4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect pre-crash seat belt control unit connector.
2. Check resistance between pre-crash seat belt control unit harness connector B318 terminals 24 (L) and 22 (P).

24 (L) – 22 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace pre-crash seat belt control unit.
 NG >> Repair harness between pre-crash seat belt control unit and harness connector B263.



EKS003LF

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.

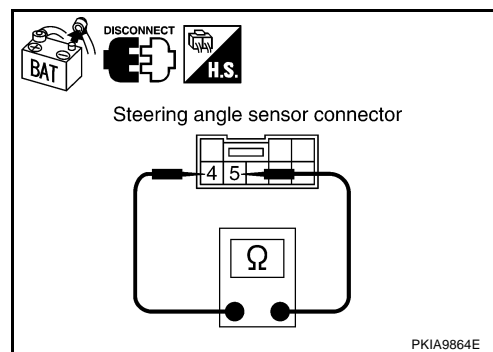
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M52 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66Ω

OK or NG

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



EKS003LG

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.

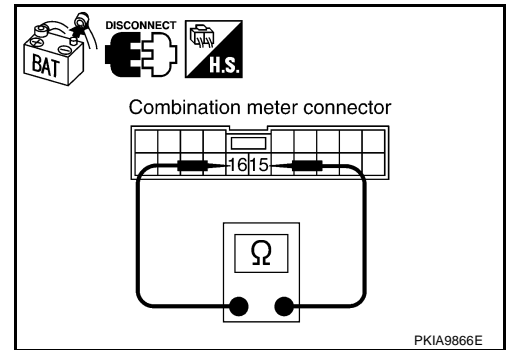
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M41 terminals 15 (L) and 16 (P).

15 (L) – 16 (P) : Approx. 108 – 132Ω

OK or NG

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



EKS003LI

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, connector side and harness side).
 - ECM
 - A/T assembly
 - VDC/TCS/ABS control unit
 - Pre-crash seat belt control unit
 - Steering angle sensor
 - Combination meter
 - Between ECM and combination meter

OK or NG

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

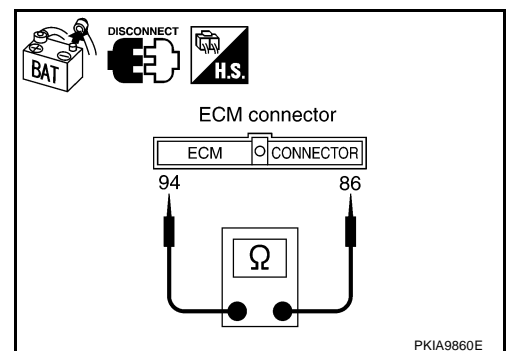
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ECM connector
 - A/T assembly connector
 - Harness connector F34
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

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

OK or NG

- OK >> GO TO 3.
- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
 - Harness between ECM and A/T assembly
 - Harness between ECM and harness connector F34



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3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

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

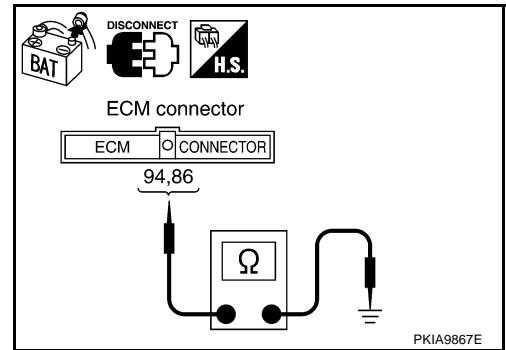
86 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.

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

- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F34



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector and harness connector E224.

2. Check continuity between VDC/TCS/ABS control unit harness connector E218 terminals 61 (L) and 63 (P).

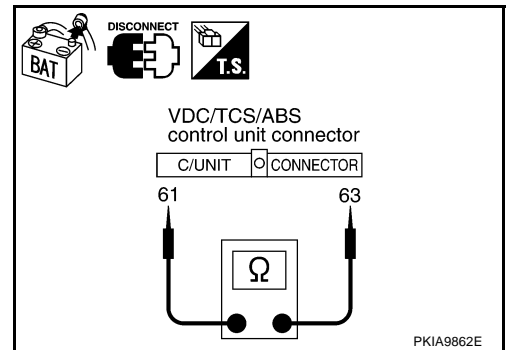
61 (L) – 63 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between VDC/TCS/ABS control unit and harness connector E34
- Harness between VDC/TCS/ABS control unit and harness connector E224



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between VDC/TCS/ABS control unit harness connector E218 terminals 61 (L), 63 (P) and ground.

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

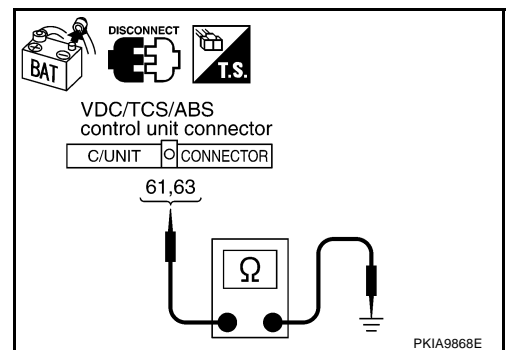
63 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between VDC/TCS/ABS control unit and harness connector E34
- Harness between VDC/TCS/ABS control unit and harness connector E224



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect pre-crash seat belt control unit connector and harness connector B263.
2. Check continuity between pre-crash seat belt control unit harness connector B318 terminals 24 (L) and 22 (P).

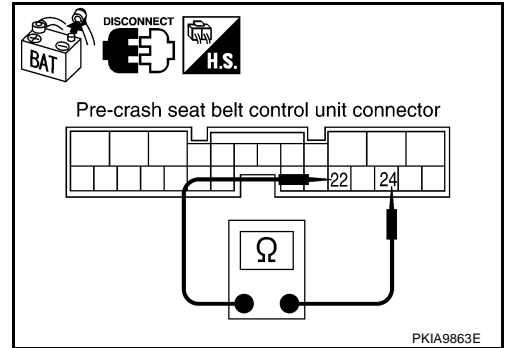
24 (L) – 22 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between pre-crash seat belt control unit and harness connector B204
- Harness between pre-crash seat belt control unit and harness connector B263



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between pre-crash seat belt control unit harness connector B318 terminals 24 (L), 22 (P) and ground.

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

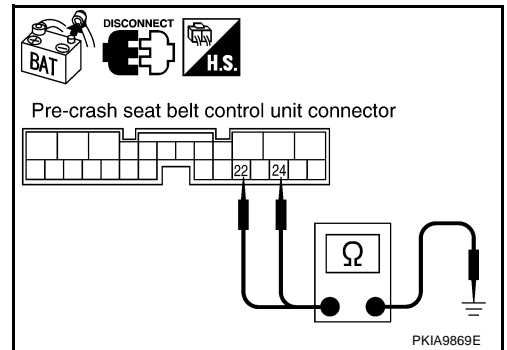
22 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between pre-crash seat belt control unit and harness connector B204
- Harness between pre-crash seat belt control unit and harness connector B263



8. CHECK HARNESS FOR SHORT CIRCUIT

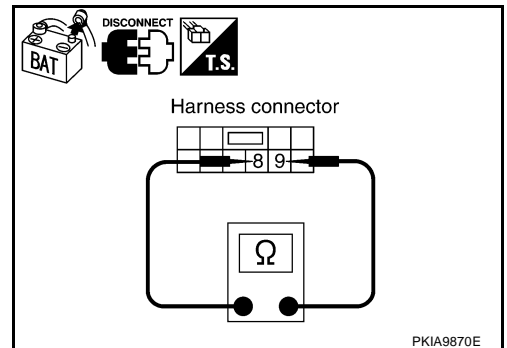
1. Disconnect harness connector B6.
2. Check continuity between harness connector B63 terminals 9 (L) and 8 (P).

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

OK or NG

OK >> GO TO 9.

NG >> Repair harness between harness connector B63 and harness connector B6.



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9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B63 terminals 9 (L), 8 (P) and ground.

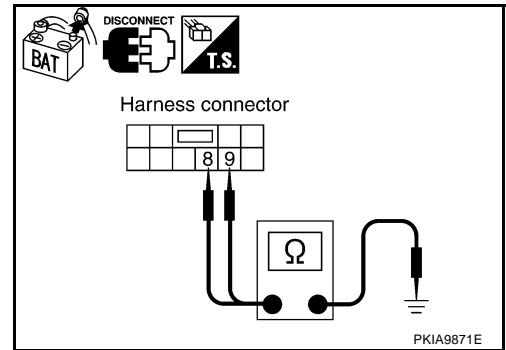
9 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 10.

NG >> Repair harness between harness connector B63 and harness connector B6.



10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect steering angle sensor connector and combination meter connector.
2. Check continuity between data link connector M31 terminals 6 (L) and 14 (P).

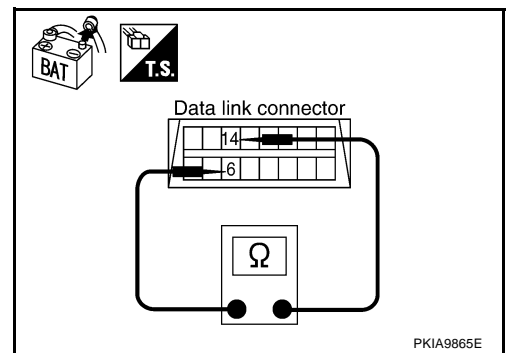
6 (L) – 14 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 11.

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

- Harness between data link connector and harness connector M6
- Harness between data link connector and steering angle sensor
- Harness between data link connector and combination meter



11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M31 terminals 6 (L), 14 (P) and ground.

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

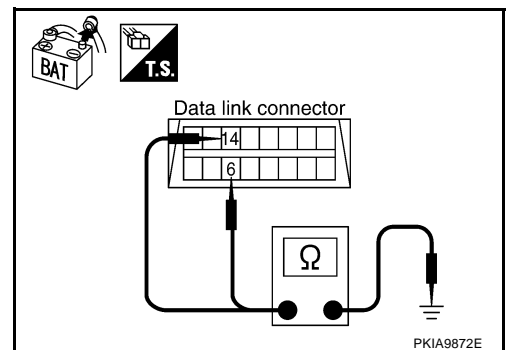
14 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 12.

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

- Harness between data link connector and harness connector M6
- Harness between data link connector and steering angle sensor
- Harness between data link connector and combination meter



12. CHECK ECM AND COMBINATION METER INTERNAL CIRCUIT

1. Remove ECM and combination meter from vehicle.
2. Check resistance between ECM terminals 94 and 86.

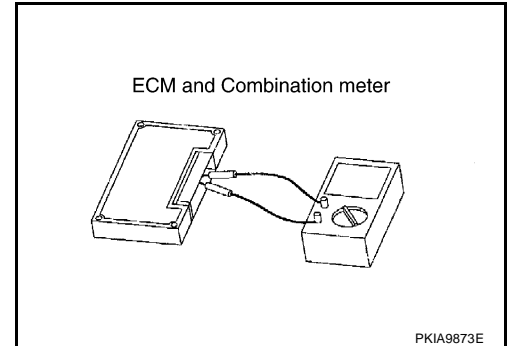
94 – 86 : Approx. 108 – 132Ω

3. Check resistance between combination meter terminals 15 and 16.

15 – 16 : Approx. 108 – 132Ω

OK or NG

- OK >> GO TO 13.
 NG >> Replace ECM and/or combination meter.



13. CHECK SYMPTOM

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

OK or NG

- OK >> GO TO 14.
 NG >> Refer to [LAN-30, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"](#)

14. CHECK UNIT REPRODUCIBILITY

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

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the unit connector.
4. Connect the battery cable from the negative terminal.
5. Make sure that the symptom filled in the "Symptom" of the check sheet is reproduced. (Do not confuse it with the symptom related to removed unit.)
6. Make sure that the same symptom is reproduce.
 - A/T assembly
 - VDC/TCS/ABS control unit
 - Pre-crash seat belt control unit
 - Steering angle sensor
 - ECM
 - Combination meter

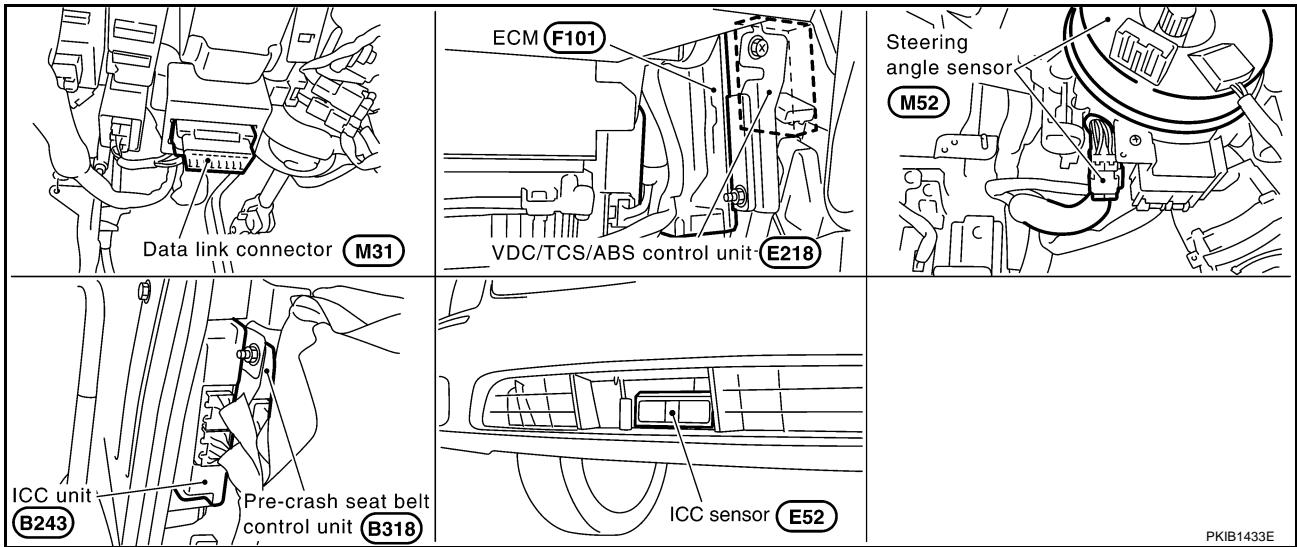
Check results

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

CAN SYSTEM (TYPE 2)

Component Parts and Harness Connector Location

EKS003LY



CAN SYSTEM (TYPE 2)

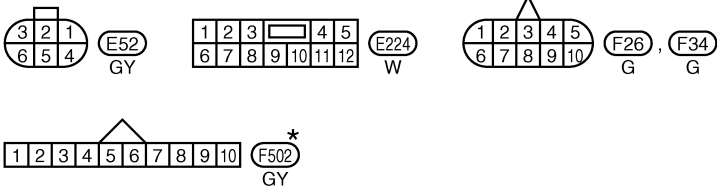
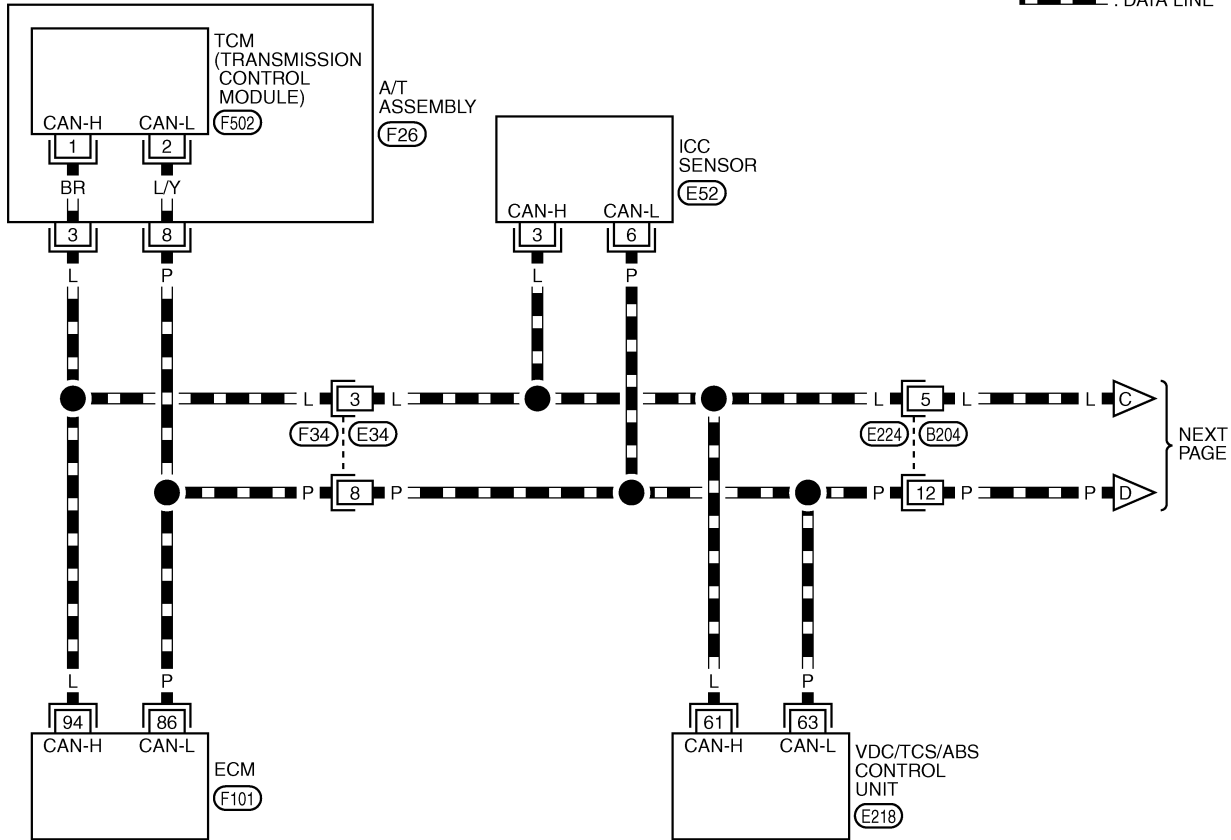
[CAN]

EKS003LZ

Wiring Diagram — CAN —

LAN-CAN-03

▬ : DATA LINE



REFER TO THE FOLLOWING.
E218, F101 -ELECTRICAL
UNITS

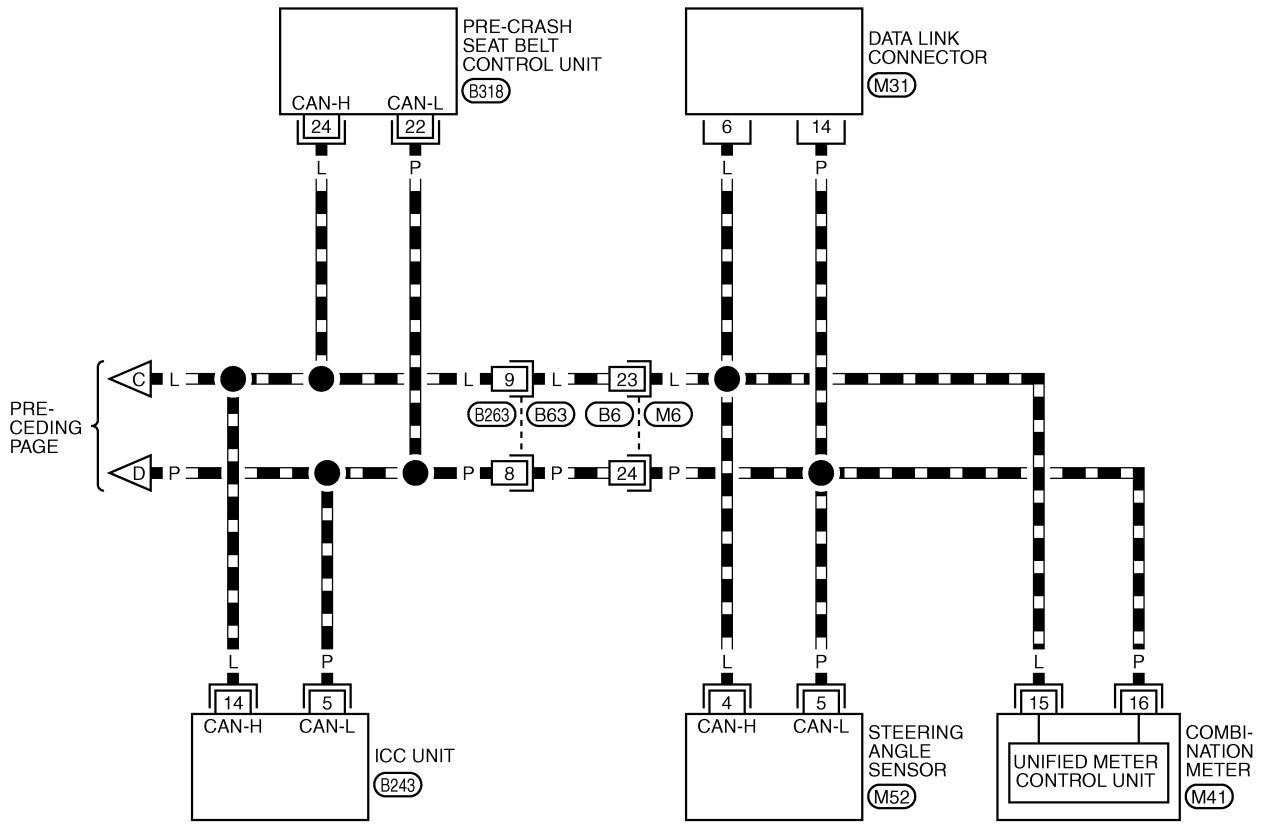
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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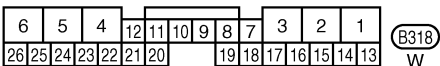
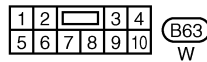
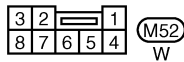
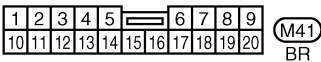
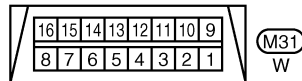
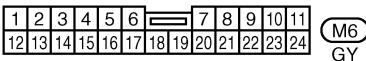
LAN-CAN-04

▬ : DATA LINE



REFER TO THE FOLLOWING.

(B243) -ELECTRICAL UNITS



TKWM1732E

CAN SYSTEM (TYPE 2)

[CAN]

EKS003M0

CHECK SHEET

NOTE:

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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CAN SYSTEM (TYPE 2)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
VDC
SELF-DIAG RESULTS

Attach copy of
ICC
SELF-DIAG RESULTS

Attach copy of
PRECRASH SEATBELT
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

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A/T
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PRECRASH SEATBELT
CAN DIAG SUPPORT
MNTR

PKIA9764E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

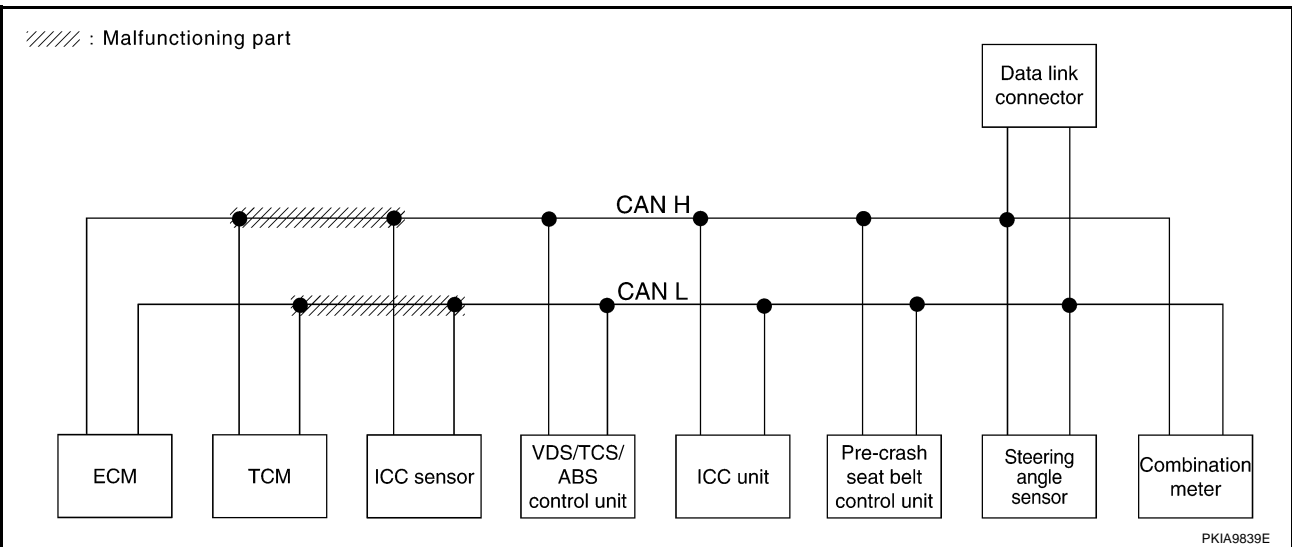
If a check mark is put on "NG" on "INITIAL DIAG (Initial diagnosis)", replace the control unit.

Case 1

Check harness between TCM and ICC sensor. Refer to [LAN-85, "Between TCM and ICC Sensor Circuit Inspection"](#).

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						METER /M&A		
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG			
ENGINE	-	NG	UNKW	-	UNKW	-	✓	✓	-	✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
AT	-	NG	UNKW	UNKW	-	-	✓	✓	-	✓	CAN COMM CIRCUIT (U1000)	-
VDC	-	NG	UNKW	✓	✓	-	-	UNKW	UNKW	UNKW	CAN COMM CIRCUIT (U1000)	-
ICC	-	NG	UNKW	✓	✓	UNKW	UNKW	-	-	UNKW	CAN COMM CIRCUIT (U1000)	-
PRECRASH SEATBELT	No indication	-	-	✓	✓	-	-	-	-	UNKW	CAN COMM CIRCUIT (U1000)	-

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CAN SYSTEM (TYPE 2)

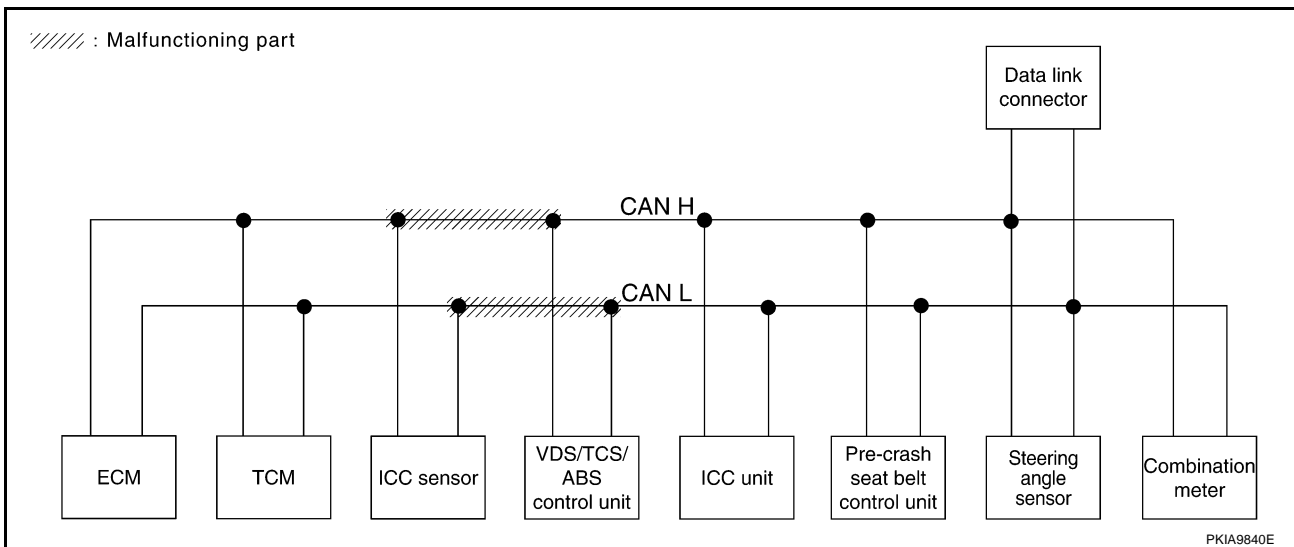
[CAN]

Case 2

Check harness between ICC sensor and VDC/TCS/ABS control unit. Refer to [LAN-86, "Between ICC Sensor and VDC/TCS/ABS Control Unit Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	UNKWN	—	UNKWN	—	✓	✓	—	✓	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)	
A/T	—	NG	UNKWN	UNKWN	—	—	✓	✓	—	✓	CAN COMM CIRCUIT (U1000)	—	
VDC	—	NG	UNKWN	✓	✓	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	✓	✓	✓	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	✓	✓	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

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CAN SYSTEM (TYPE 2)

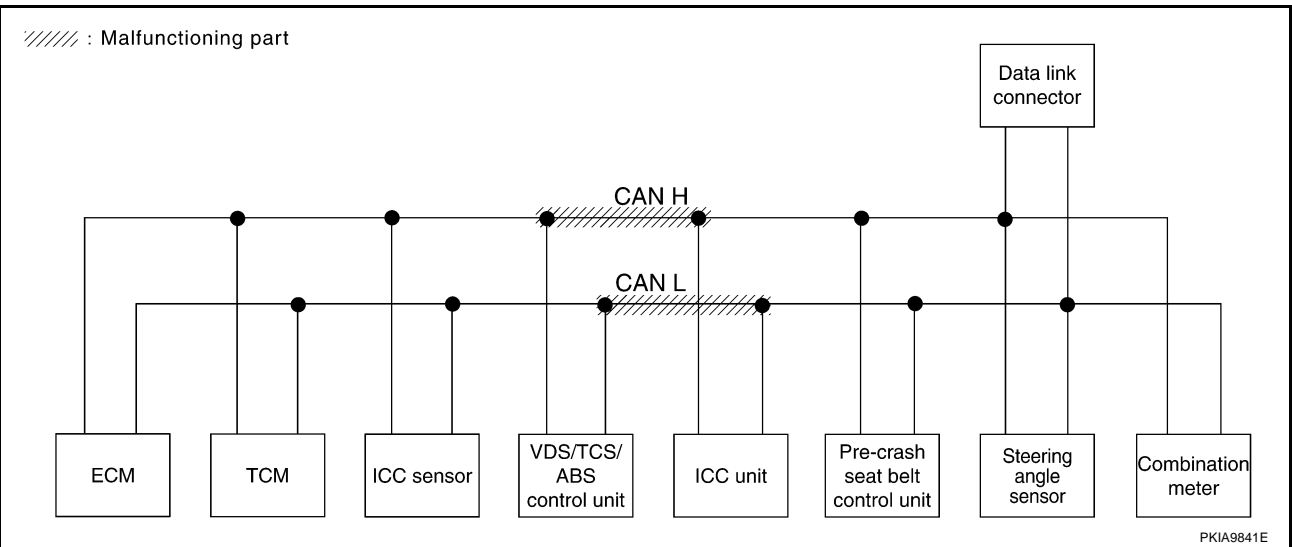
[CAN]

Case 3

Check harness between VDC/TCS/ABS control unit and ICC unit. Refer to [LAN-86, "Between VDC/TCS/ABS Control Unit and ICC Unit Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

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CAN SYSTEM (TYPE 2)

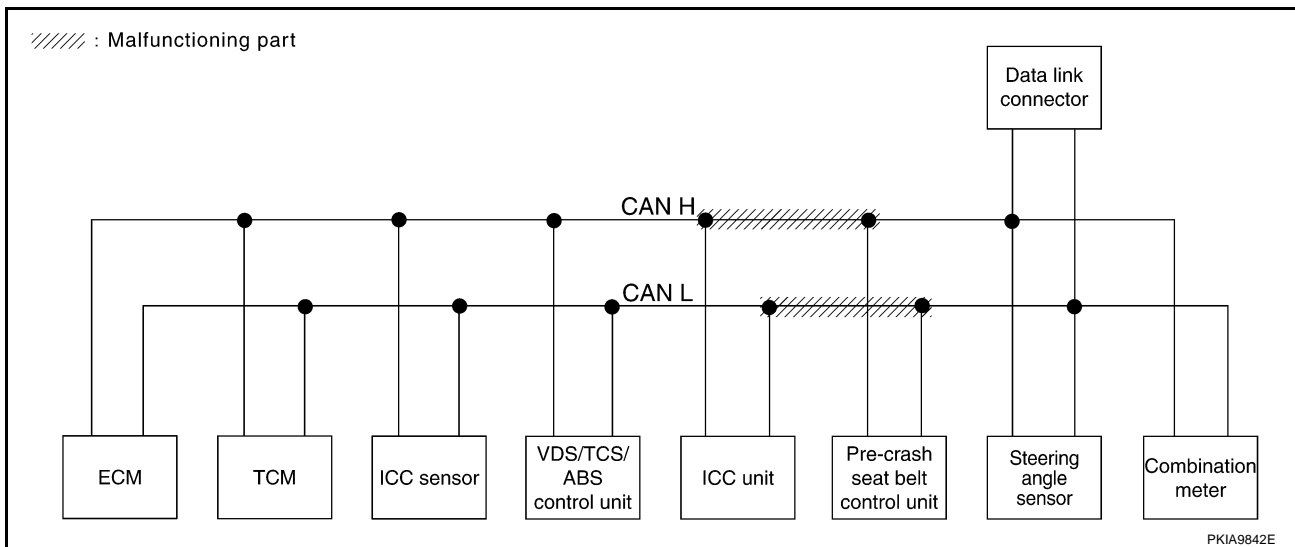
[CAN]

Case 4

Check harness between ICC unit and pre-crash seat belt control unit. Refer to [LAN-87, "Between ICC Unit and Pre-Crash Seat Belt Control Unit Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

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CAN SYSTEM (TYPE 2)

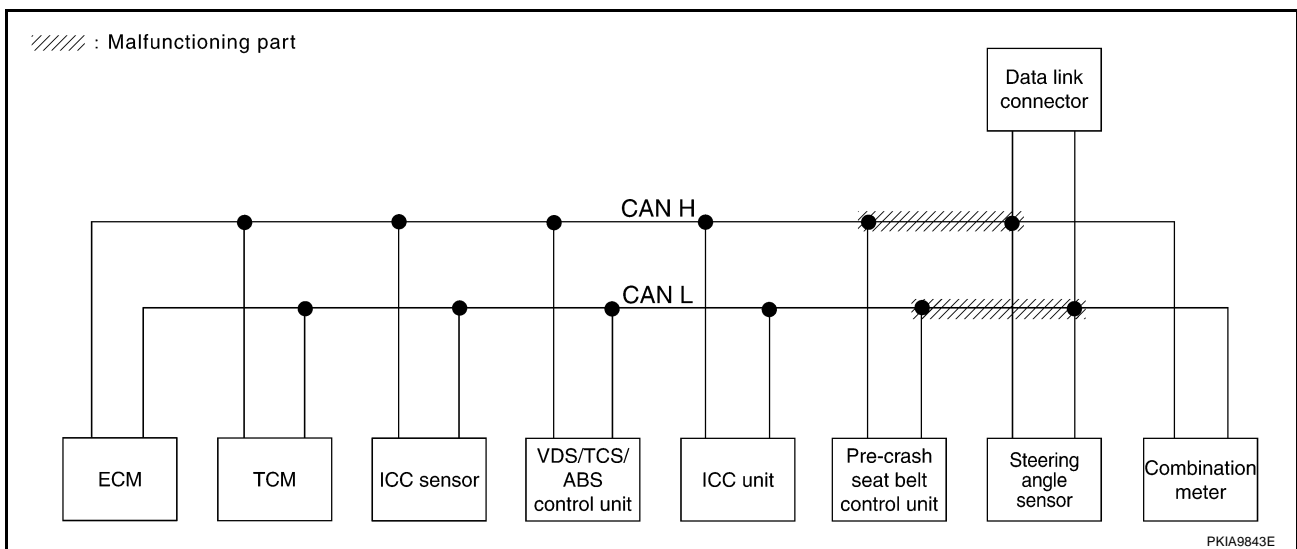
[CAN]

Case 5

Check harness between pre-crash seat belt control unit and data link connector. Refer to [LAN-87, "Between Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication ✓	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

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CAN SYSTEM (TYPE 2)

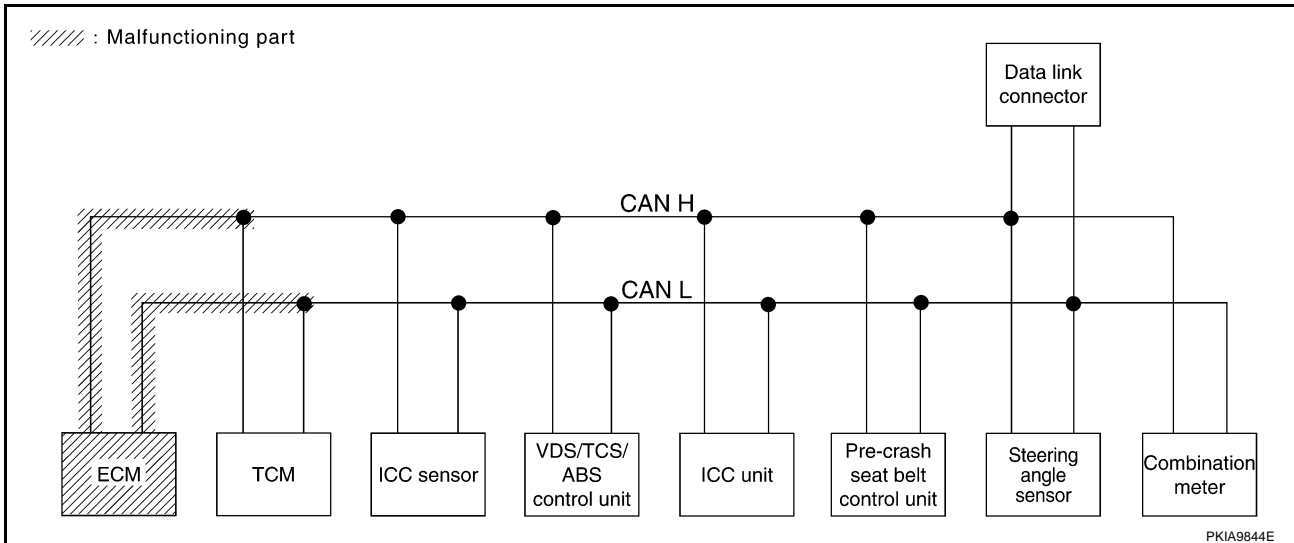
[CAN]

Case 6

Check ECM circuit. Refer to [LAN-88, "ECM Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	UNKWN ✓	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	CAN COMM CIRCUIT (U100) ✓	CAN COMM CIRCUIT (U101) ✓	
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—	
VDC	—	NG	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U100) ✓	—	
ICC	—	NG	UNKWN	UNKWN ✓	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN ✓	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U100) ✓	—	

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CAN SYSTEM (TYPE 2)

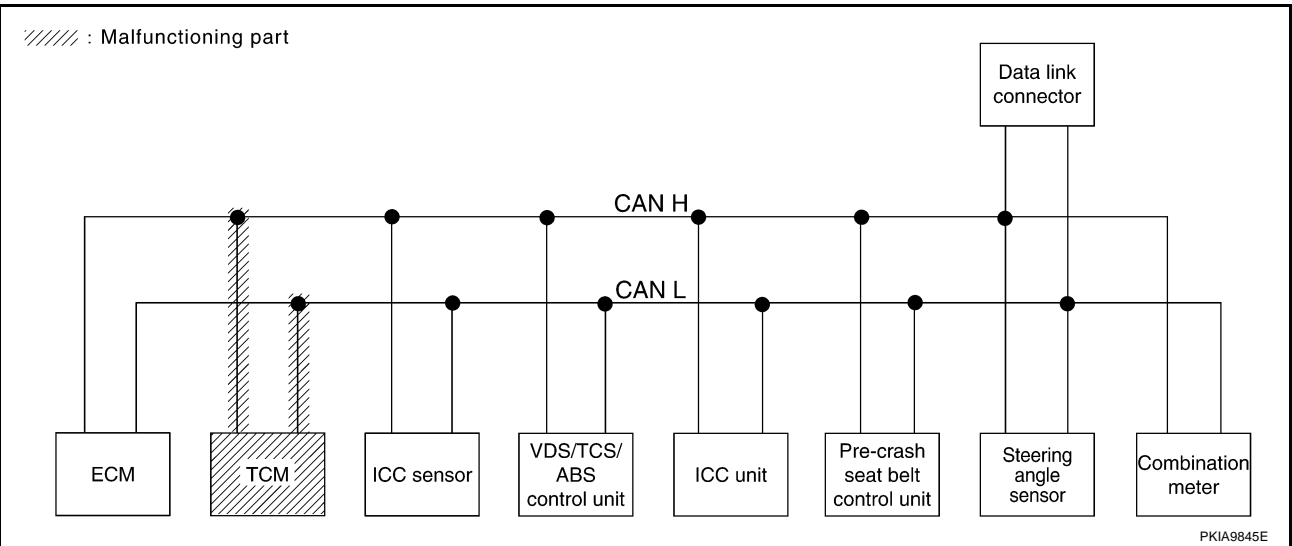
[CAN]

Case 7

Check TCM circuit. Refer to [LAN-89, "TCM Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U100)	CAN COMM CIRCUIT (U101)	
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	CAN COMM CIRCUIT (U100)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U100)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U100)	—	

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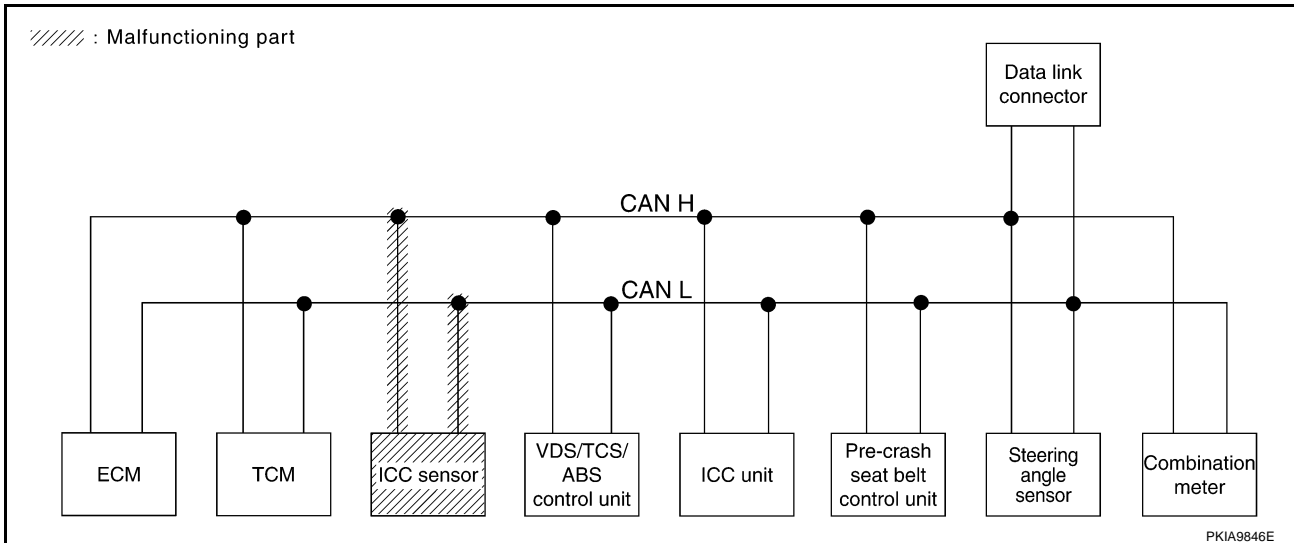
[CAN]

Case 8

Check ICC sensor circuit. Refer to [LAN-89, "ICC Sensor Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

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CAN SYSTEM (TYPE 2)

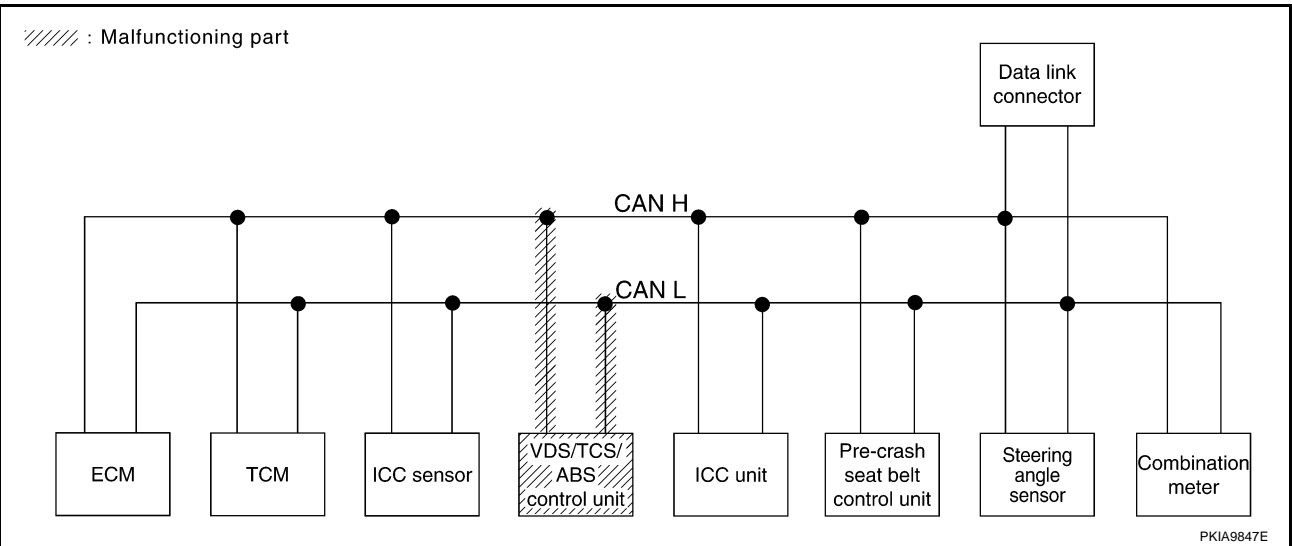
[CAN]

Case 9

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-90, "VDC/TCS/ABS Control Unit Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

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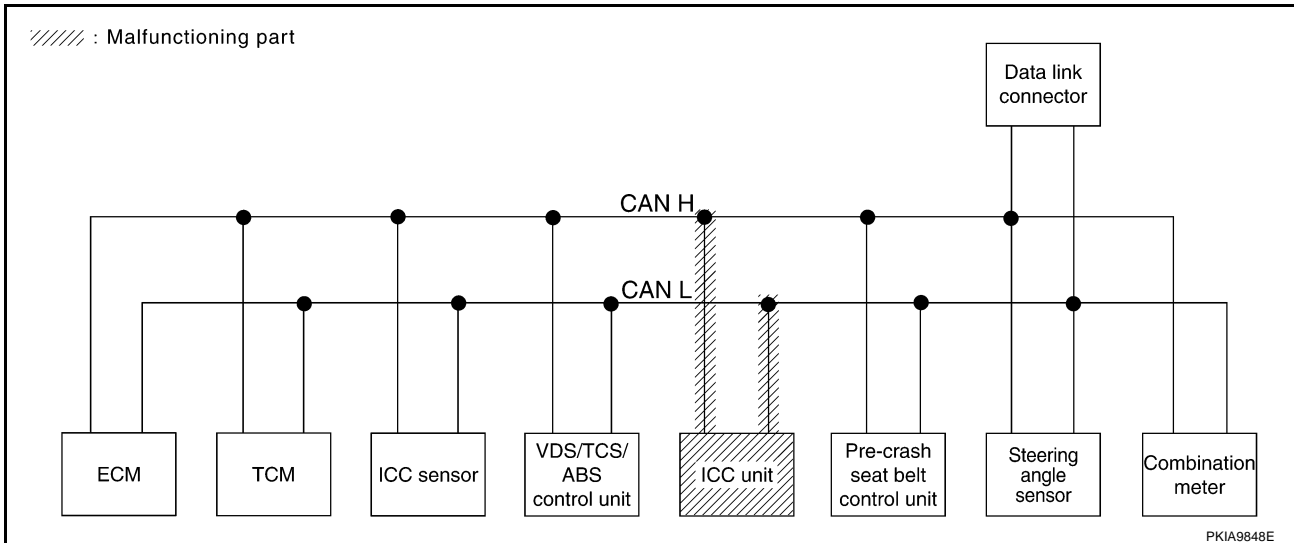
[CAN]

Case 10

Check ICC unit circuit. Refer to [LAN-90, "ICC Unit Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						METER /M&A		
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG			
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UN KN W N	—	UNKWN	CAN COMM CIRCUIT (U1000)	CAN COMM CIRCUIT (U1001)
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	UN KN W N	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UN KN W N	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—
ICC	—	NG	UN KN W N	UN KN W N	UN KN W N	UN KN W N	UN KN W N	—	—	UN KN W N	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—

PKIA9774E



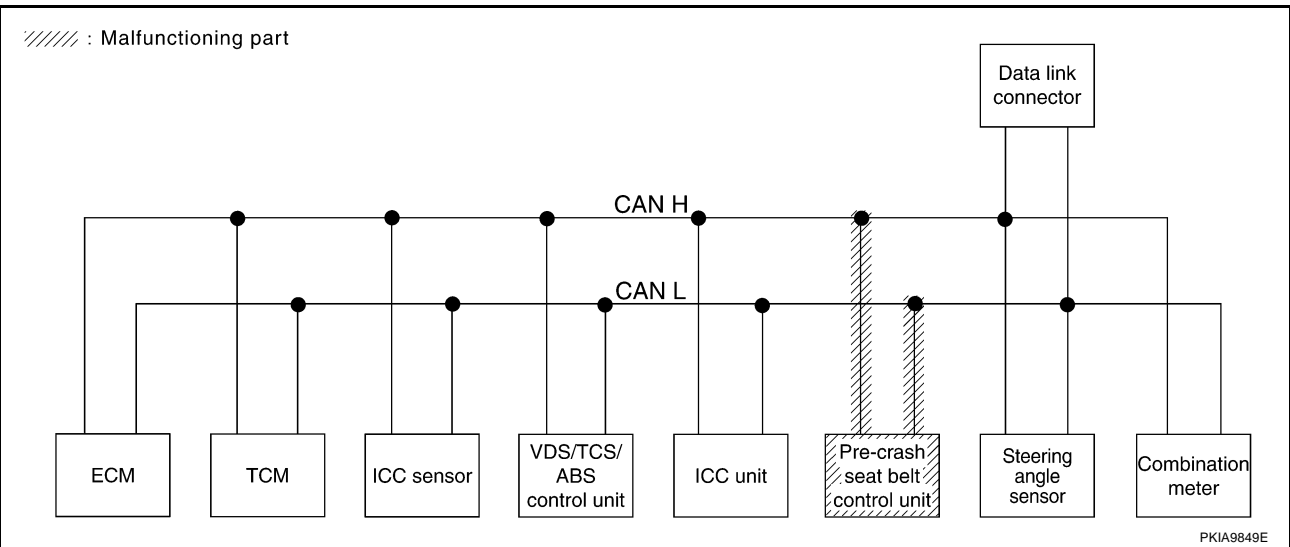
PKIA9848E

Case 11

Check pre-crash seat belt control unit circuit. Refer to [LAN-91, "Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection"](#).

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG	METER /M&A		
ENGINE	—	NG	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)	—
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication ✓	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000) ✓	—

PKIA9775E



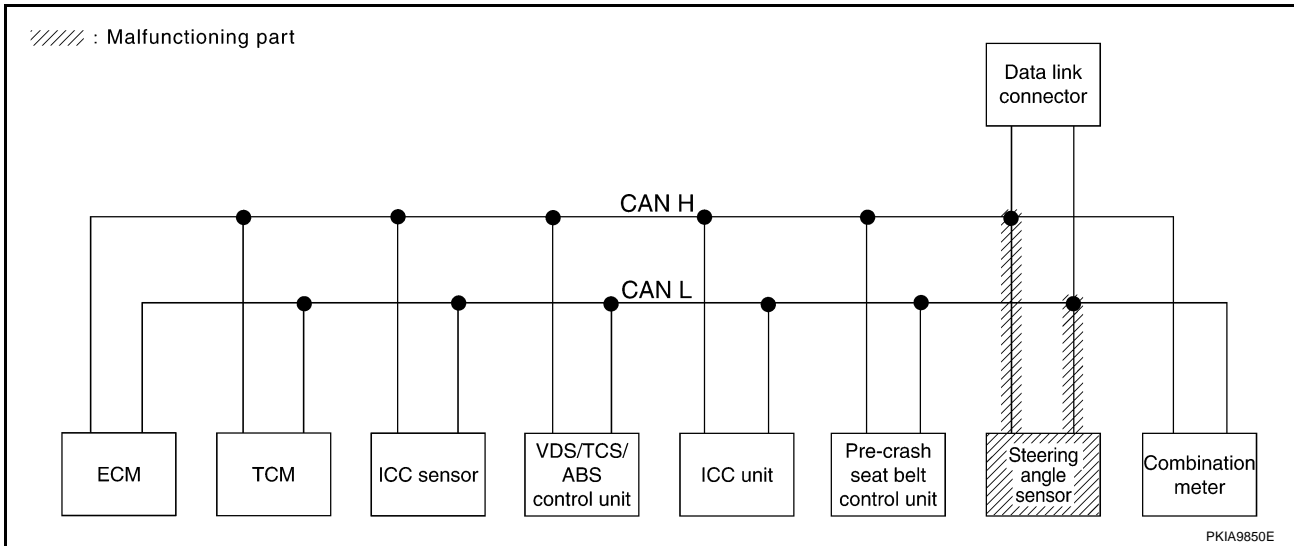
LAN

Case 12

Check steering angle sensor circuit. Refer to [LAN-92, "Steering Angle Sensor Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS	
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						METER /M&A		
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG			
ENGINE	—	NG	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)	—
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—

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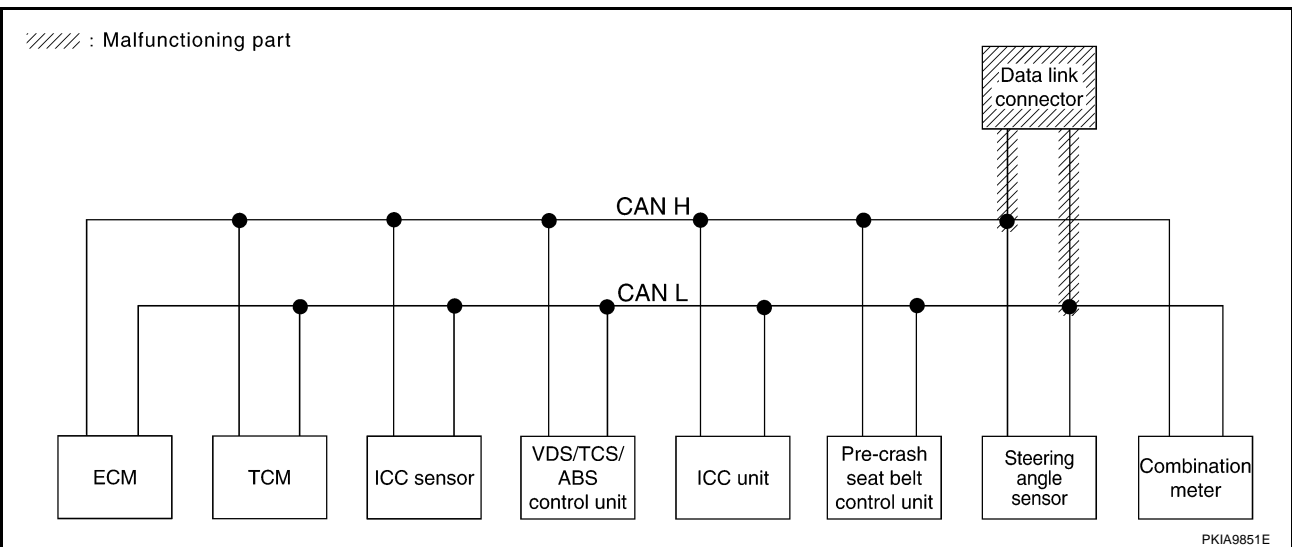


Case 13

Check data link connector circuit. Refer to [LAN-91, "Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—	
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	CAN COMM CIRCUIT (U1000)	—	
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	
PRECRASH SEATBELT	No indication ✓	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	CAN COMM CIRCUIT (U1000)	—	

PKIA977E



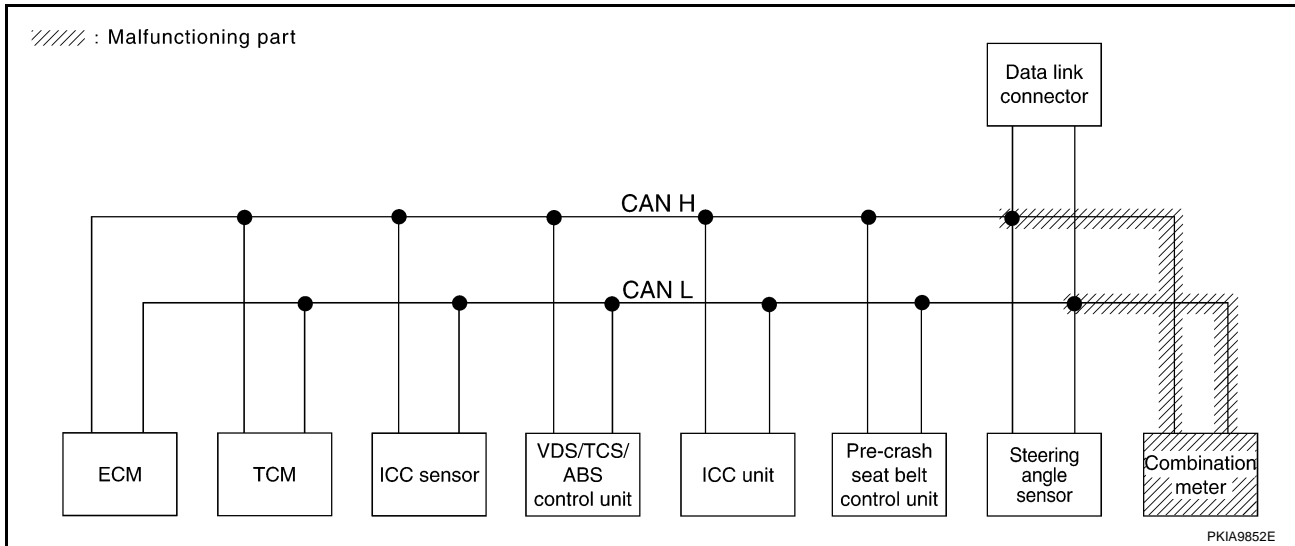
LAN

Case 14

Check combination meter circuit. Refer to [LAN-92, "Combination Meter Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	✓	CAN COMM CIRCUIT (U1000)	—
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	✓	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	✓	CAN COMM CIRCUIT (U1000)	—

PKIA9778E



Case 15

Check CAN communication circuit. Refer to [LAN-93, "CAN Communication Circuit Inspection"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									SELF-DIAG RESULTS		
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									METER /M&A
				ECM	TCM	ICC SENSOR	VDC/TCS /ABS	ICC/ e4WD	STRG				
ENGINE	—	NG	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)	—
VDC	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN	✓	CAN COMM CIRCUIT (U1000)	—
ICC	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	✓	CAN COMM CIRCUIT (U1000)	—
PRECRASH SEATBELT	No indication	—	—	UNKWN	UNKWN	—	—	—	—	UNKWN	✓	CAN COMM CIRCUIT (U1000)	—

PKIA9779E

Between TCM and ICC Sensor 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 (connector side and harness side).
 - Harness connector F34
 - Harness connector E34

OK or NG

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

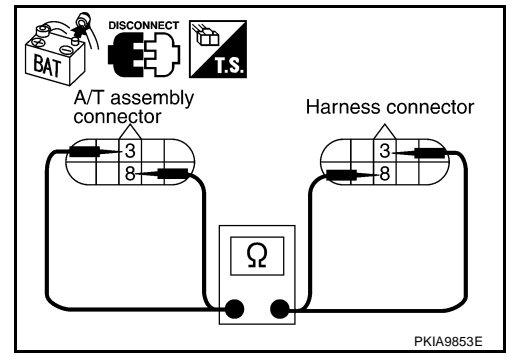
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F34.
2. Check continuity between A/T assembly harness connector F26 terminals 3 (L), 8 (P) and harness connector F34 terminals 3 (L), 8 (P).

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

OK or NG

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



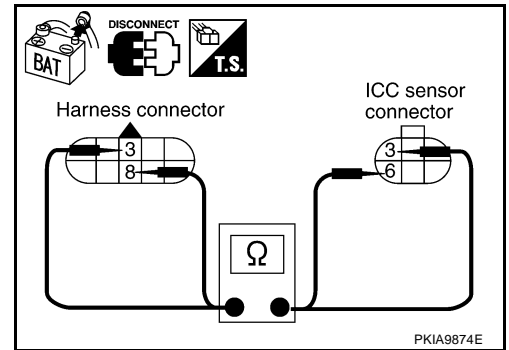
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check continuity between harness connector E34 terminals 3 (L), 8 (P) and ICC sensor harness connector E52 terminals 3 (L), 6 (P).

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

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#).
 NG >> Repair harness.



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Between ICC Sensor and VDC/TCS/ABS Control Unit Circuit Inspection

EKS003M9

1. CHECK CONNECTOR

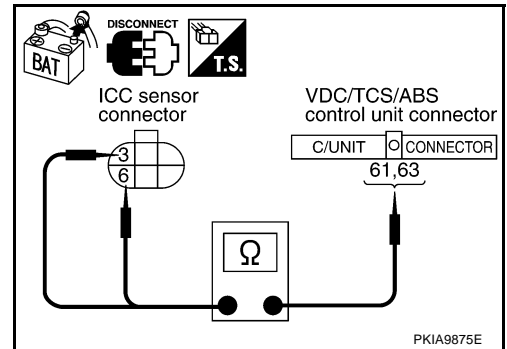
1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect following connectors.
 - ECM connector
 - ICC sensor connector
 - VDC/TCS/ABS control unit connector
4. Check continuity between ICC sensor harness connector E52 terminals 3 (L), 6 (P) and VDC/TCS/ABS control unit harness connector E218 terminals 61 (L), 63 (P).

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

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

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#).
- NG >> Repair harness.



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

EKS003M1

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 E224
 - Harness connector B204

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

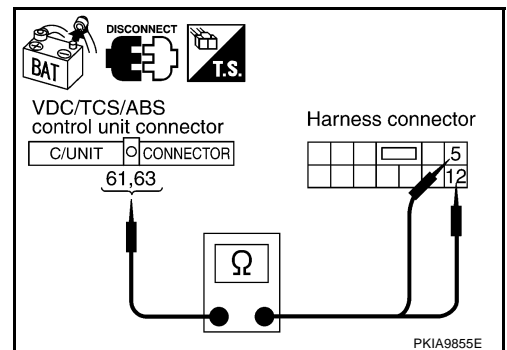
1. Disconnect VDC/TCS/ABS control unit connector and harness connector E224.
2. Check continuity between VDC/TCS/ABS control unit harness connector E218 terminals 61 (L), 63 (P) and harness connector E224 terminals 5 (L), 12 (P).

61 (L) – 5 (L) : Continuity should exist.

63 (P) – 12 (P) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

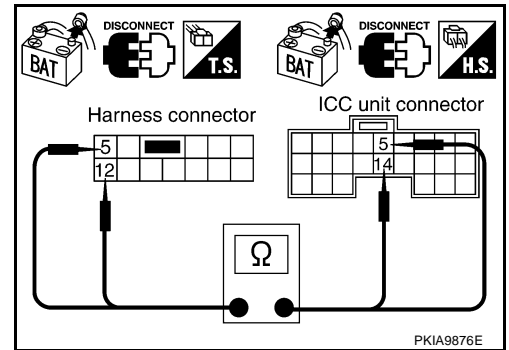
1. Disconnect ICC unit connector.
2. Check continuity between harness connector B204 terminals 5 (L), 12 (P) and ICC unit harness connector B243 terminals 14 (L), 5 (P).

5 (L) – 14 (L) : Continuity should exist.

12 (P) – 5 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#).
- NG >> Repair harness.



Between ICC Unit and Pre-Crash Seat Belt Control Unit Circuit Inspection

EKS003M2

1. CHECK CONNECTOR

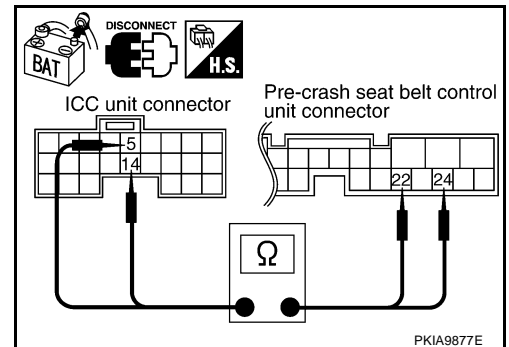
1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect following connectors.
 - ECM connector
 - ICC unit connector
 - Pre-crash seat belt control unit connector
4. Check continuity between ICC unit harness connector B243 terminals 14 (L), 5 (P) and pre-crash seat belt control unit harness connector B318 terminals 24 (L), 22 (P).

14 (L) – 24 (L) : Continuity should exist.

5 (P) – 22 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "TROUBLE DIAGNOSES WORK FLOW"](#).
- NG >> Repair harness.



Between Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection

EKS00H0E

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 B263
 - Harness connector B63
 - Harness connector B6
 - Harness connector M6

OK or NG

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

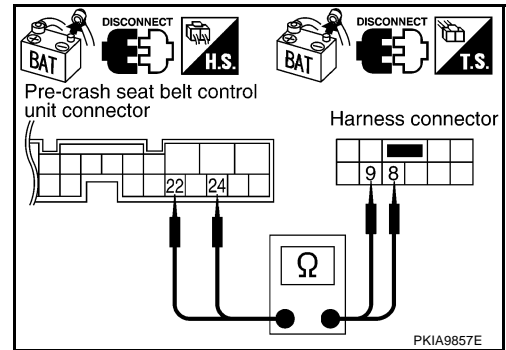
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect pre-crash seat belt control unit connector and harness connector B263.
2. Check continuity between pre-crash seat belt control unit harness connector B318 terminals 24 (L), 22 (P) and harness connector B263 terminals 9 (L), 8 (P).

24 (L) – 9 (L) : Continuity should exist.
22 (P) – 8 (P) : Continuity should exist.

OK or NG

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



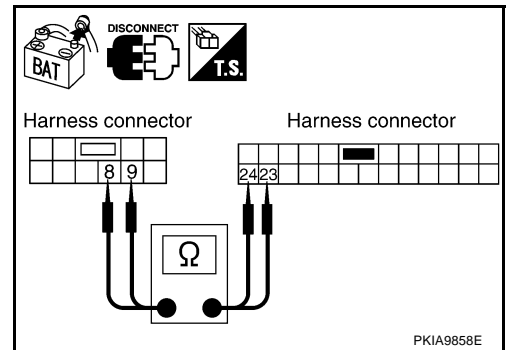
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B6.
2. Check continuity between harness connector B63 terminals 9 (L), 8 (P) and harness connector B6 terminals 23 (L), 24 (P).

9 (L) – 23 (L) : Continuity should exist.
8 (P) – 24 (P) : Continuity should exist.

OK or NG

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



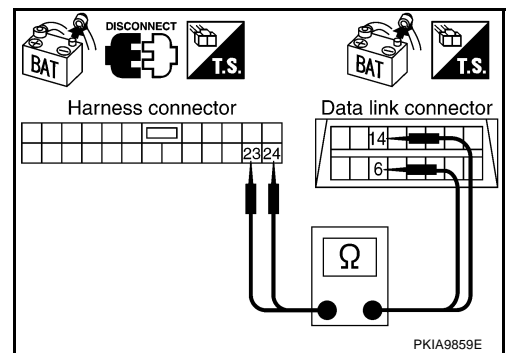
4. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M6 terminals 23 (L), 24 (P) and data link connector M31 terminals 6 (L), 14 (P).

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

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-22, "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 terminals and connector of ECM for damage, bend and loose connection (control module side and harness side).

OK or NG

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

EKS003M3

2. CHECK HARNESS FOR OPEN CIRCUIT

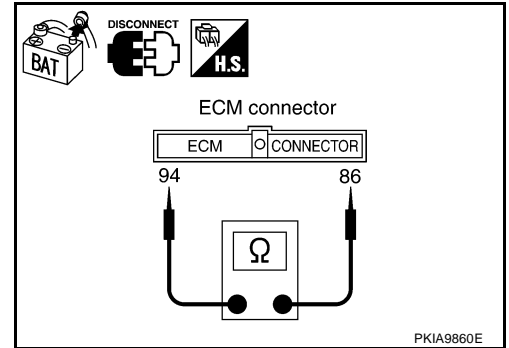
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P)

: Approx. 108 – 132Ω

OK or NG

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



EKS003M7

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

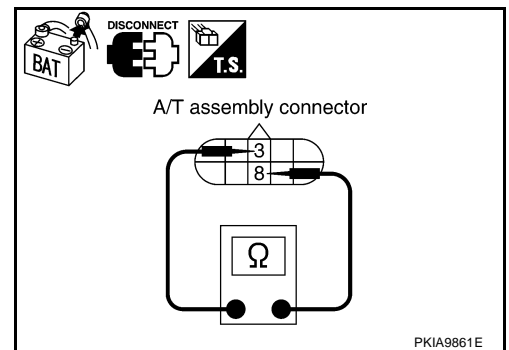
1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F26 terminals 3 (L) and 8(P).

3 (L) – 8 (P)

: Approx. 54 – 66Ω

OK or NG

- OK >> Replace control valve with TCM.
 NG >> Repair harness TCM and harness connector F34.



EKS003NB

ICC 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 ICC 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

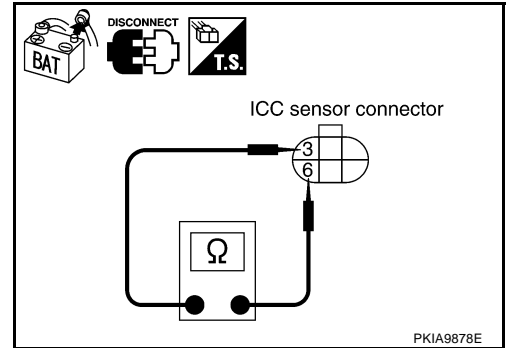
1. Disconnect ICC sensor connector.
2. Check resistance between ICC sensor harness connector E52 terminals 3 (L) and 6 (P).

3 (L) – 6 (P)

: Approx. 54 – 66Ω

OK or NG

- OK >> Replace ICC sensor.
 NG >> Repair harness between ICC sensor and VDC/TCS/ABS control unit.



VDC/TCS/ABS Control Unit Circuit Inspection

EKS003M4

1. CHECK CONNECTOR

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

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

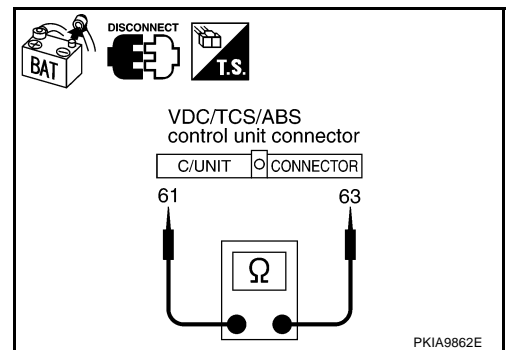
1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector E218 terminals 61 (L) and 63 (P).

61 (L) – 63 (P)

: Approx. 54 – 66Ω

OK or NG

- OK >> Replace VDC/TCS/ABS control unit.
 NG >> Repair harness between VDC/TCS/ABS control unit and harness connector E224.



ICC Unit Circuit Inspection

EKS003NC

1. CHECK CONNECTOR

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

OK or NG

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

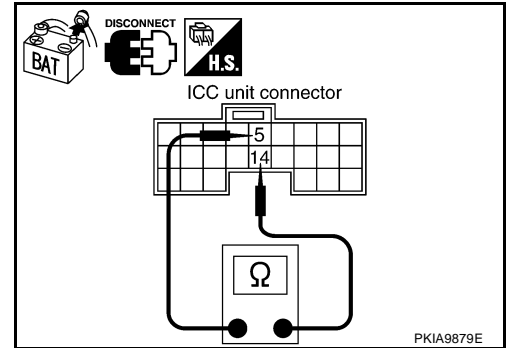
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector.
2. Check resistance between ICC unit harness connector B243 terminals 14 (L) and 5 (P).

14 (L) – 5 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace ICC unit.
 NG >> Repair harness between ICC unit and pre-crash seat belt control unit.



Pre-Crash Seat Belt Control Unit and Data Link Connector Circuit Inspection

EKS00H0F

1. CHECK CONNECTOR

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

OK or NG

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

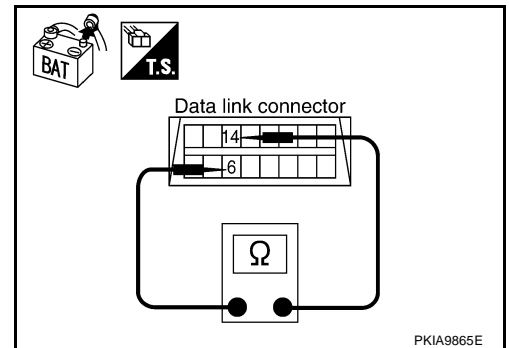
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M31 terminals 6 (L) and 14 (P).

6 (L) – 14 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between data link connector and steering angle sensor.



3. CHECK CONNECTOR

Check terminals and connector of pre-crash seat belt control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

- OK >> GO TO 4.
 NG >> Repair terminal or connector.

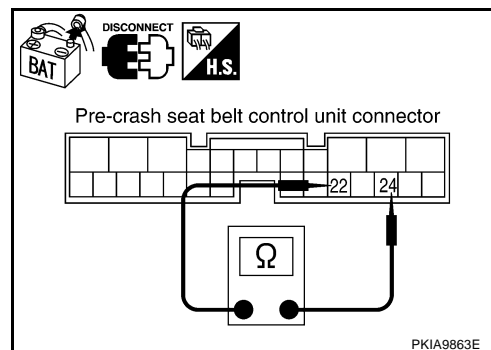
4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect pre-crash seat belt control unit connector.
2. Check resistance between pre-crash seat belt control unit harness connector B318 terminals 24 (L) and 22 (P).

24 (L) – 22 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace pre-crash seat belt control unit.
 NG >> Repair harness between pre-crash seat belt control unit and harness connector B263.



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.

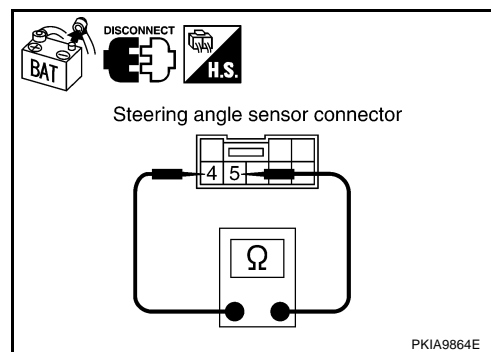
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M52 terminals 4 (L) and 5 (P).

4 (L) – 5 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace steering angle sensor.
 NG >> Repair harness between steering angle sensor 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.

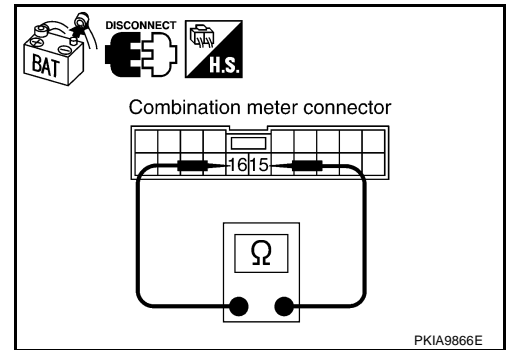
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M41 terminals 15 (L) and 16 (P).

15 (L) – 16 (P) : Approx. 108 – 132Ω

OK or NG

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



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, sensor side, control unit side, unit side, meter side, connector side and harness side).
 - ECM
 - A/T assembly
 - ICC sensor
 - VDC/TCS/ABS control unit
 - ICC unit
 - Pre-crash seat belt control unit
 - Steering angle sensor
 - Combination meter
 - Between ECM and combination meter

OK or NG

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

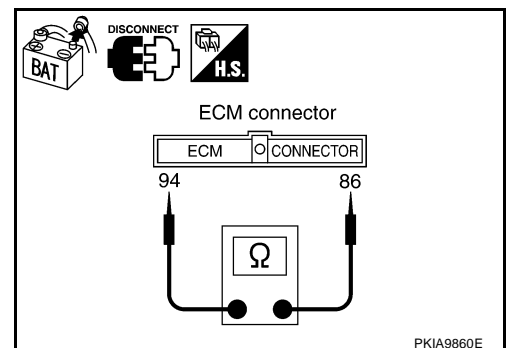
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ECM connector
 - A/T assembly connector
 - Harness connector F34
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

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

OK or NG

- OK >> GO TO 3.
- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
 - Harness between ECM and A/T assembly
 - Harness between ECM and harness connector F34



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

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

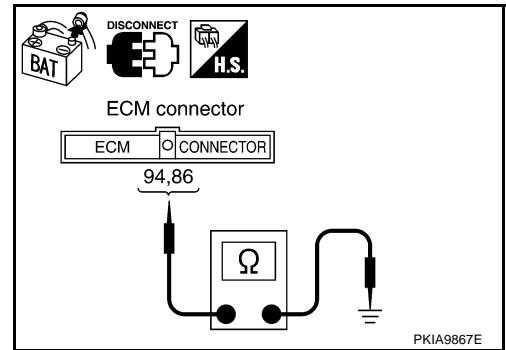
86 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.

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

- Harness between ECM and A/T assembly
- Harness between ECM and harness connector F34



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.

- ICC sensor connector
- VDC/TCS/ABS control unit connector
- Harness connector E224

2. Check continuity between ICC sensor harness connector E52 terminals 3 (L) and 6 (P).

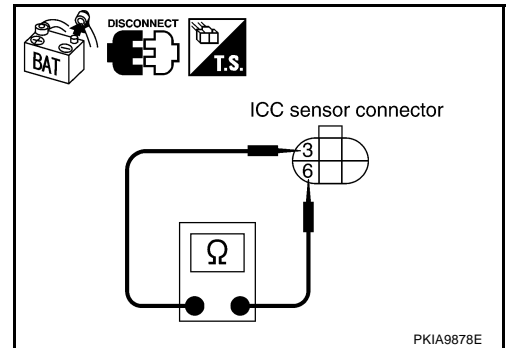
3 (L) – 6 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ICC sensor and harness connector E34
- Harness between ICC sensor and VDC/TCS/ABS control unit
- Harness between ICC sensor and harness connector E224



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC sensor harness connector E52 terminals 3 (L), 6 (P) and ground.

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

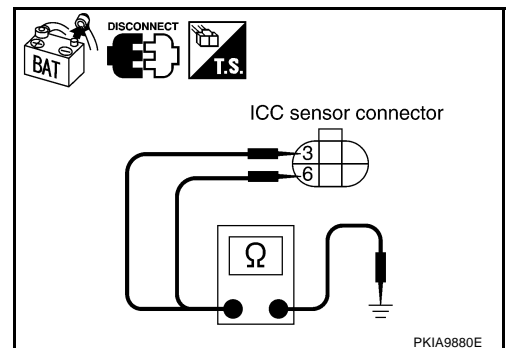
6 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ICC sensor and harness connector E34
- Harness between ICC sensor and VDC/TCS/ABS control unit
- Harness between ICC sensor and harness connector E224



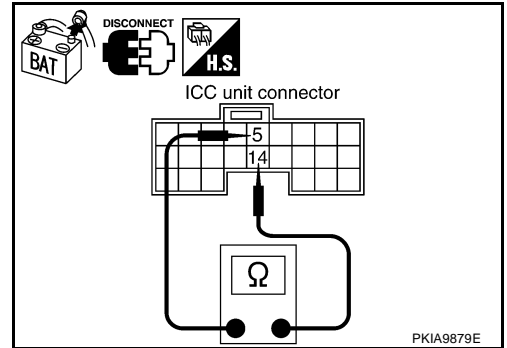
6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - ICC unit connector
 - Pre-crash seat belt control unit connector
 - Harness connector B263
- Check continuity between ICC unit harness connector B243 terminals 14 (L) and 5 (P).

14 (L) – 5 (P) : Continuity should not exist.

OK or NG

- OK >> GO TO 7.
 NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ICC unit and harness connector B204
 - Harness between ICC unit and pre-crash seat belt control unit
 - Harness between ICC unit and harness connector B263



7. CHECK HARNESS FOR SHORT CIRCUIT

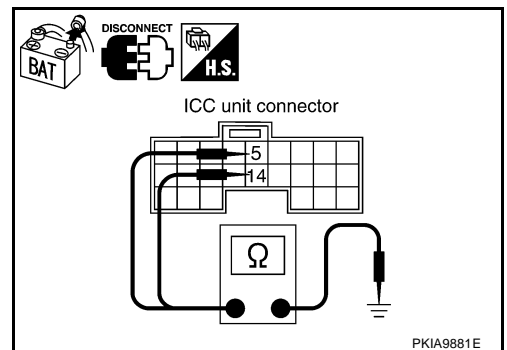
Check continuity between ICC unit harness connector B243 terminals 14 (L), 5 (P) and ground.

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

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

OK or NG

- OK >> GO TO 8.
 NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ICC unit and harness connector B204
 - Harness between ICC unit and pre-crash seat belt control unit
 - Harness between ICC unit and harness connector B263



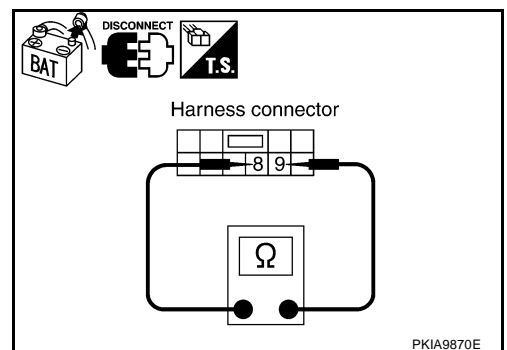
8. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect harness connector B6.
- Check continuity between harness connector B63 terminals 9 (L) and 8 (P).

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

OK or NG

- OK >> GO TO 9.
 NG >> Repair harness between harness connector B63 and harness connector B6.



9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B63 terminals 9 (L), 8 (P) and ground.

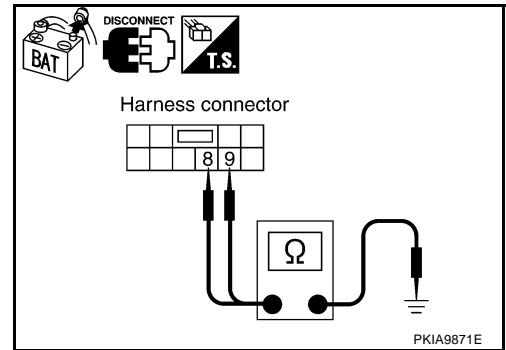
9 (L) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 10.

NG >> Repair harness between harness connector B63 and harness connector B6.



10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect steering angle sensor connector and combination meter connector.
2. Check continuity between data link connector M31 terminals 6 (L) and 14(P).

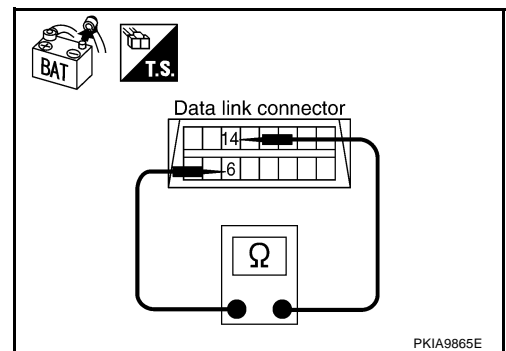
6 (L) – 14 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 11.

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

- Harness between data link connector and harness connector M6
- Harness between data link connector and steering angle sensor
- Harness between data link connector and combination meter



11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M31 terminals 6 (L), 14 (P) and ground.

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

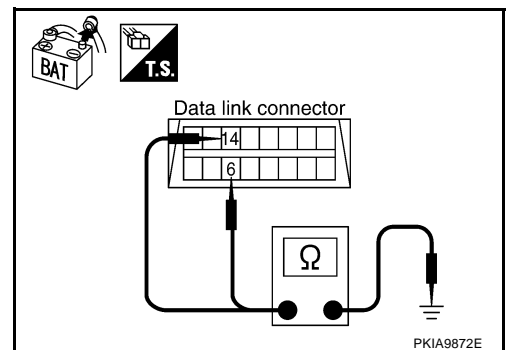
14 (P) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 12.

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

- Harness between data link connector and harness connector M6
- Harness between data link connector and steering angle sensor
- Harness between data link connector and combination meter



12. CHECK ECM AND COMBINATION METER INTERNAL CIRCUIT

1. Remove ECM and combination meter from vehicle.
2. Check resistance between ECM terminals 94 and 86.

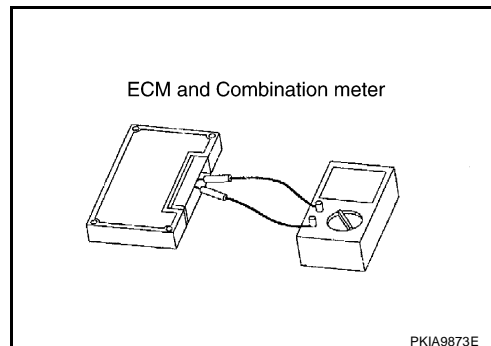
94 – 86 : Approx. 108 – 132Ω

3. Check resistance between combination meter terminals 15 and 16.

15 – 16 : Approx. 108 – 132Ω

OK or NG

- OK >> GO TO 13.
 NG >> Replace ECM and/or combination meter.



13. CHECK SYMPTOM

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

OK or NG

- OK >> GO TO 14.
 NG >> Refer to [LAN-30, "Example of Filling in Check Sheet When Initial Conditions Are Not Reproduced"](#)

14. CHECK UNIT REPRODUCIBILITY

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

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the unit connector.
4. Connect the battery cable from 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 same symptom is reproduce.
 - A/T assembly
 - ICC sensor
 - VDC/TCS/ABS control unit
 - ICC unit
 - Pre-crash seat belt control unit
 - Steering angle sensor
 - ECM
 - Combination meter

Check results

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

