

SECTION **LAN**
LAN SYSTEM

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PRECAUTIONS

PFP:00001

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

AKS00AAG

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

AKS00ABN

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-4, "CAN Communication Unit"](#) .

**Precautions For Trouble Diagnosis
CAN SYSTEM**

AKS000BF

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

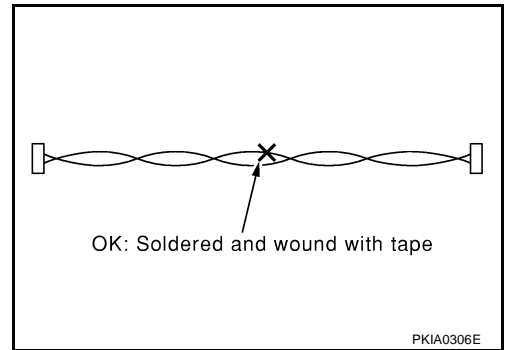
PRECAUTIONS

[CAN]

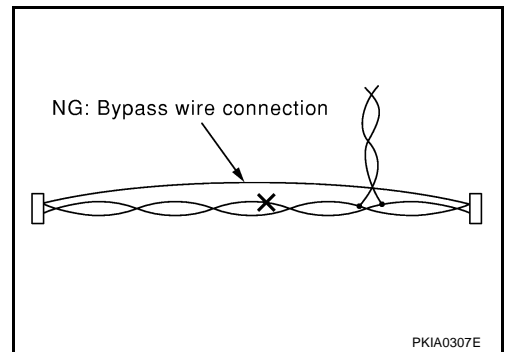
Precautions For Harness Repair CAN SYSTEM

AKS000BG

- 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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CAN COMMUNICATION

PFP:23710

System Description

AKS000D9

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

CAN Communication Unit

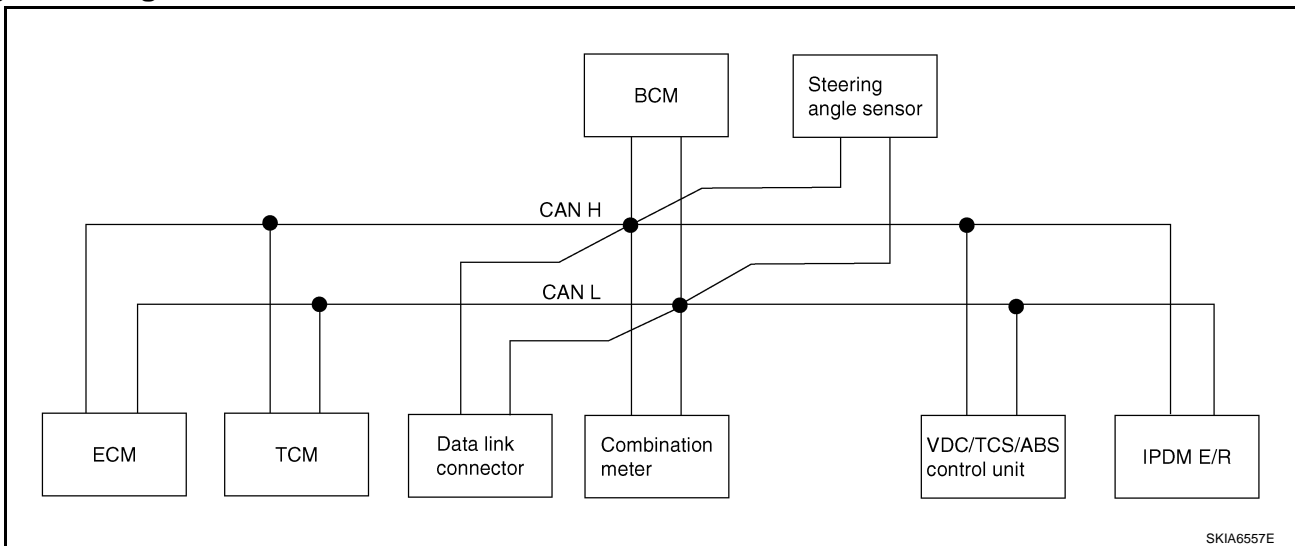
AKS000DA

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

Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
Brake control	VDC	
CAN system type	1	2
CAN system trouble diagnosis	LAN-8	LAN-36

TYPE 1

System Diagram



SKIA6557E

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					

CAN COMMUNICATION

[CAN]

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R	
A/T CHECK indicator lamp signal		T	R					A
A/T position indicator signal		T	R			R		B
ABS operation signal		R				T		
A/T shift schedule change demand signal		R				T		C
A/C switch signal	R			T				
A/C compressor request signal	T						R	D
A/C compressor feedback signal	T		R					
Blower fan motor switch signal	R			T				
Cooling fan motor operation signal	T						R	E
Position lights request signal			R	T			R	
Low beam request signal				T			R	
Low beam status signal	R						T	F
High beam request signal			R	T			R	
High beam status signal	R						T	G
Front fog lights request signal				T			R	
Vehicle speed signal			R			T		
	R	R	T	R				H
Sleep request 1 signal			R	T				
Sleep request 2 signal				T			R	I
Wake up request 1 signal				T			R	
Wake up request 2 signal				T			R	
Door switch signal (without navigation system)			R	T			R	J
Door switch signal (with navigation system)			T	R				LAN
Turn indicator signal			R	T				
Seat belt buckle switch signal			T	R				
Oil pressure switch signal			R				T	L
Buzzer output signal			R	T				
ASCD SET lamp signal	T		R					M
ASCD CRUISE lamp signal	T		R					
ASCD OD cancel request signal	T	R						
ASCD operation signal	T	R						
Output shaft revolution signal	R	T						
Front wiper request signal				T			R	
Front wiper stop position signal				R			T	
Rear window defogger switch signal				T			R	
Rear window defogger control signal	R						T	
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					

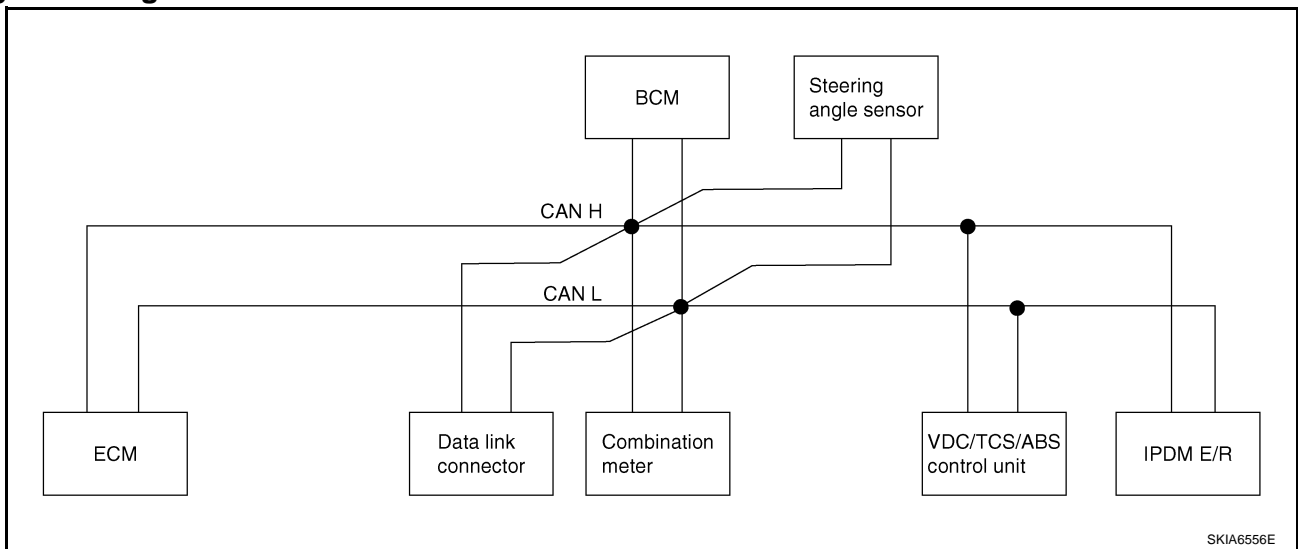
CAN COMMUNICATION

[CAN]

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	
Malfunction indicator lamp signal	T		R				
Fuel level sensor signal	R		T				
Turbine revolution signal	R	T					
Tire pressure signal			R	T			

TYPE 2

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
A/C switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T

CAN COMMUNICATION

[CAN]

Signals	ECM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	
Tire pressure signal		R	T			

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CAN SYSTEM (TYPE 1)

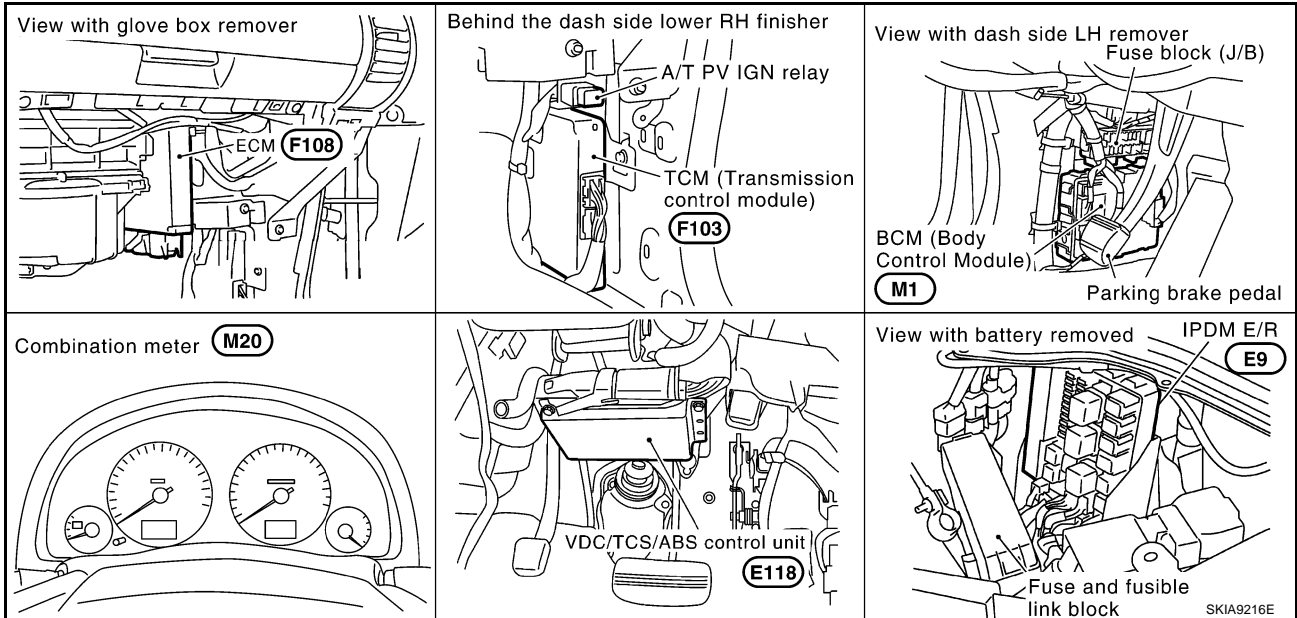
System Description

AKS0092B

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

Component Parts and Harness Connector Location

AKS0092C

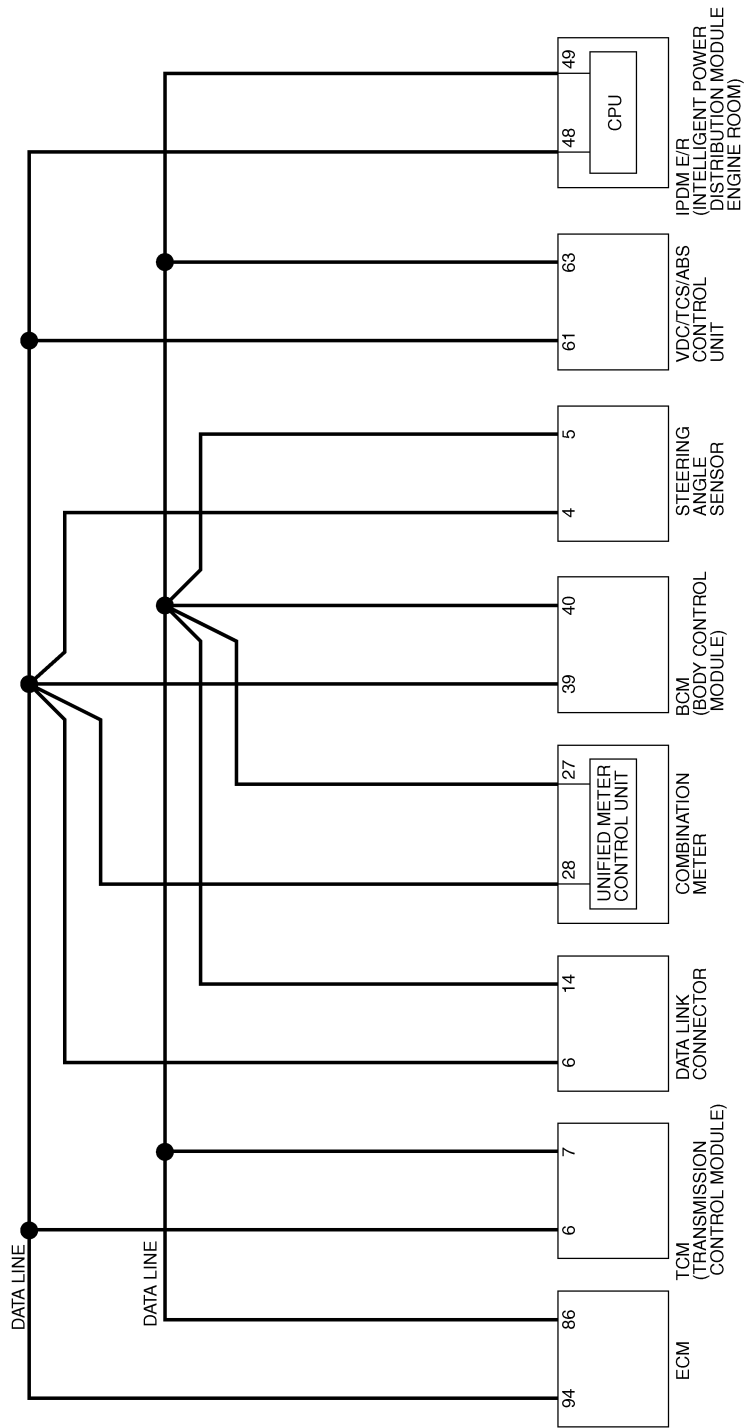


CAN SYSTEM (TYPE 1)

[CAN]

Schematic

AKS0092D



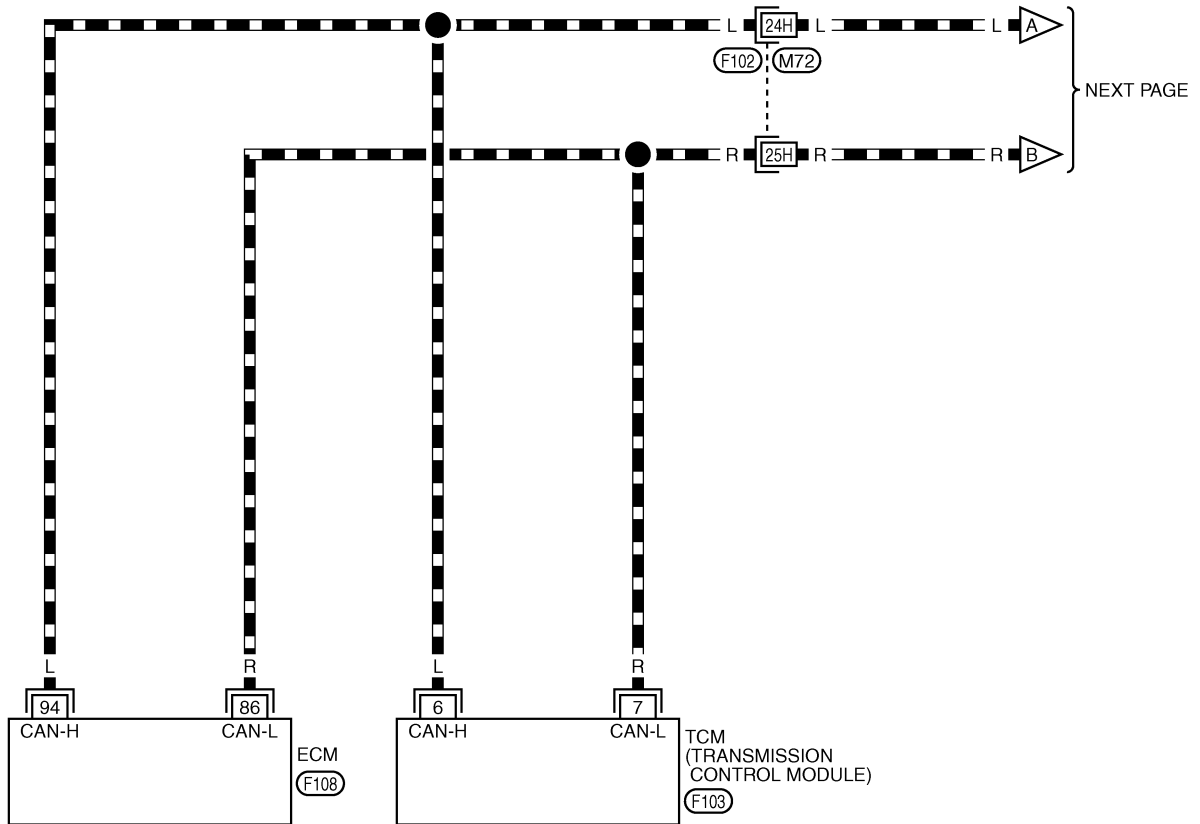
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Wiring Diagram - CAN -

AKS0092E

LAN-CAN-01

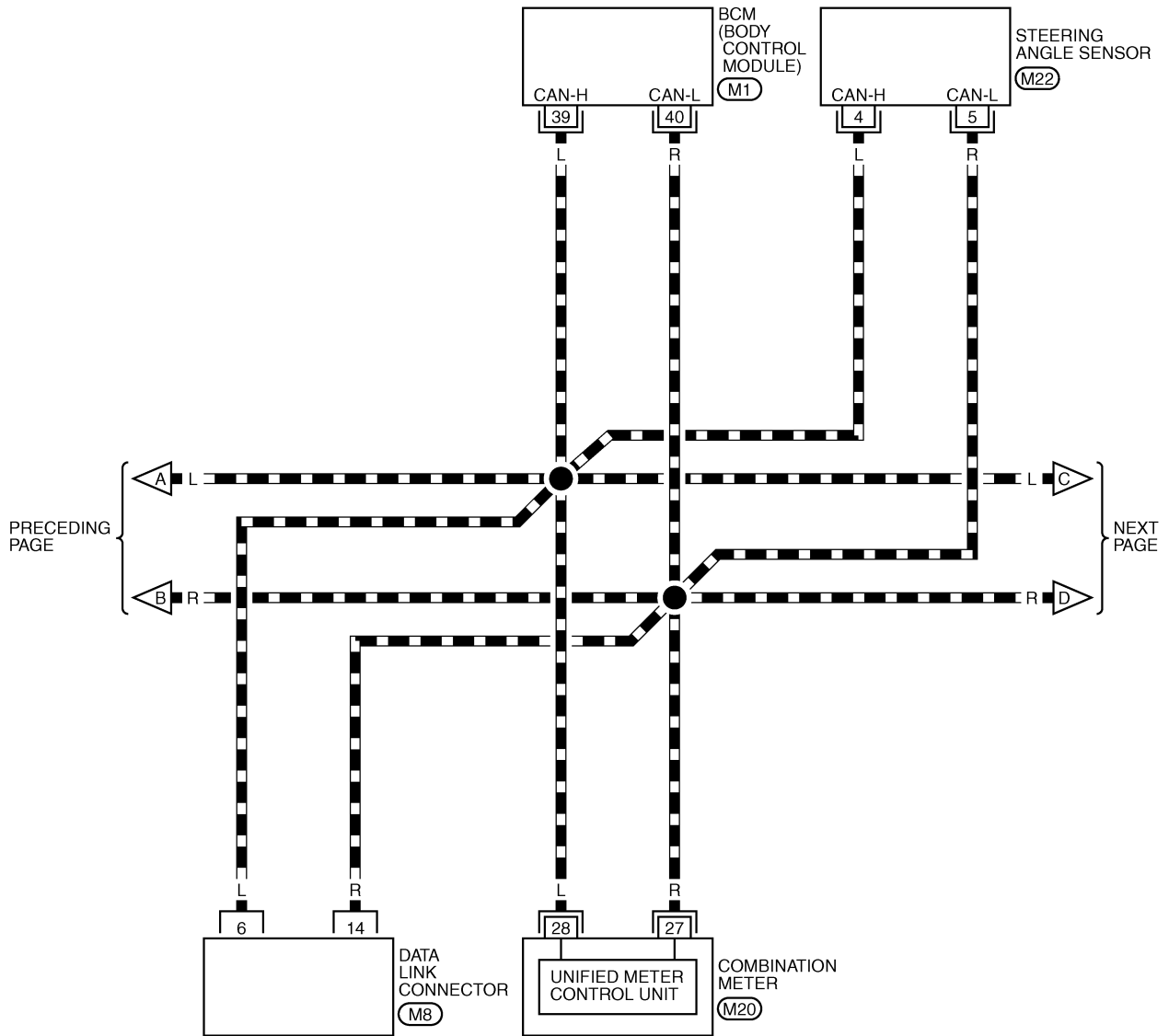
▬ : DATA LINE



REFER TO THE FOLLOWING.
 (F102) -SUPER MULTIPLE JUNCTION (SMJ)
 (F103), (F108) -ELECTRICAL UNITS

LAN-CAN-02

▬ : DATA LINE



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

(M8)
W

25	26	27	28	29	30	31	32	33	34	35		
36	37	38	39	40	41	42	43	44	45	46	47	48

(M20)
W

3	2	1		
8	7	6	5	4

(M22)
W

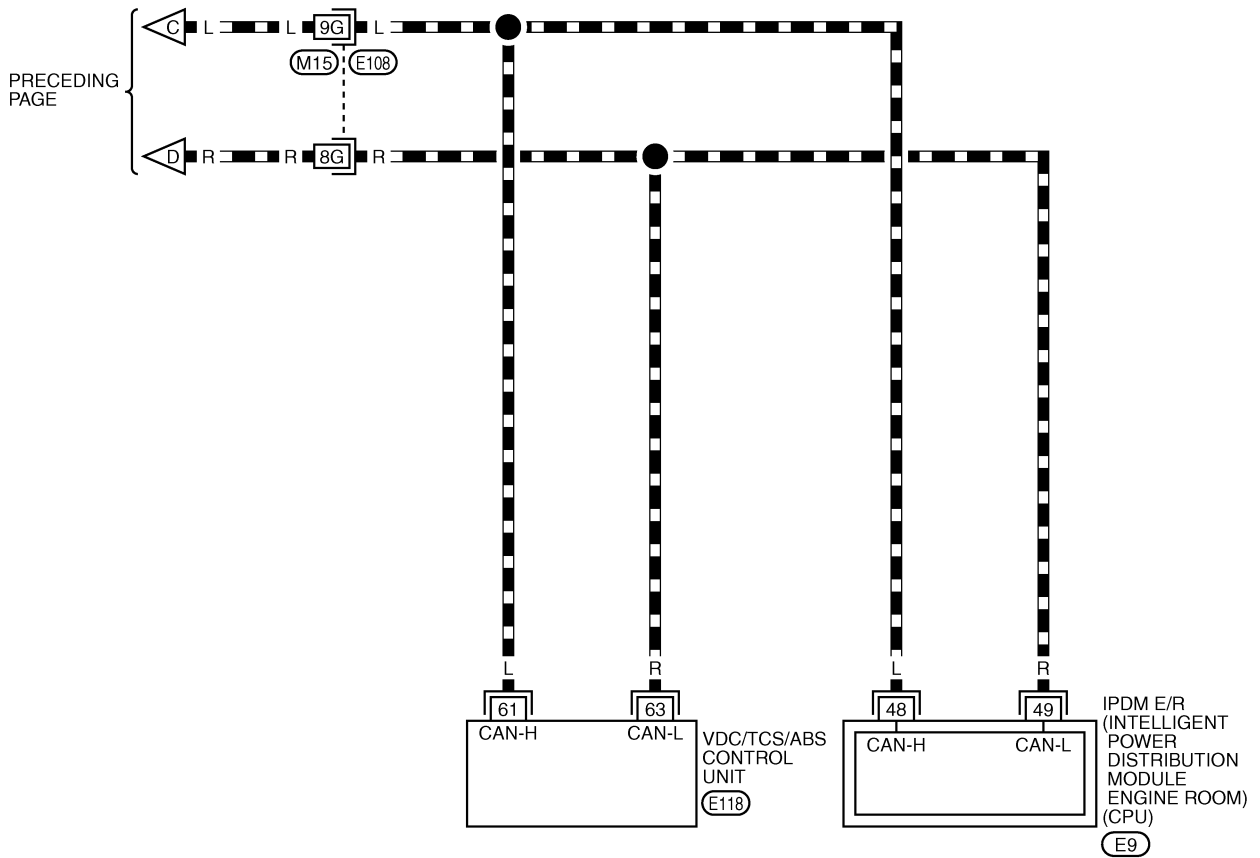
REFER TO THE FOLLOWING.
(M1) -ELECTRICAL UNITS

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LAN-CAN-03

▬ : DATA LINE



52	51	50	49	48	47	46	45
60	59	58	57	56	55	54	53

E9
W



REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

E118 -ELECTRICAL UNITS

Work Flow

- When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">NISSAN</td></tr> <tr><td colspan="4" style="text-align: center;">CONSULT-II</td></tr> <tr><td colspan="4" style="text-align: center;">ENGINE</td></tr> <tr><td colspan="4" style="text-align: center;">START (NISSAN BASED VHCL)</td></tr> <tr><td colspan="4" style="text-align: center;">START (RENAULT BASED VHCL)</td></tr> <tr><td colspan="4" style="text-align: center;">SUB MODE</td></tr> <tr><td></td><td></td><td>LIGHT</td><td>COPY</td></tr> </table>	NISSAN				CONSULT-II				ENGINE				START (NISSAN BASED VHCL)				START (RENAULT BASED VHCL)				SUB MODE						LIGHT	COPY	➔	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">SELECT SYSTEM</td></tr> <tr><td colspan="4" style="text-align: center;">ENGINE</td></tr> <tr><td colspan="4" style="text-align: center;">A/T</td></tr> <tr><td colspan="4" style="text-align: center;">ABS</td></tr> <tr><td colspan="4" style="text-align: center;">AIR BAG</td></tr> <tr><td colspan="4" style="text-align: center;">BCM</td></tr> <tr><td colspan="4" style="text-align: center;">METER A/C AMP</td></tr> <tr><td colspan="4" style="text-align: center;"> </td></tr> <tr><td colspan="4" style="text-align: center;"> </td></tr> <tr><td></td><td></td><td>BACK</td><td>LIGHT</td><td>COPY</td></tr> </table>	SELECT SYSTEM				ENGINE				A/T				ABS				AIR BAG				BCM				METER A/C AMP														BACK	LIGHT	COPY	PKIA2093E
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- Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">SELECT DIAG MODE</td></tr> <tr><td colspan="4" style="text-align: center;">WORK SUPPORT</td></tr> <tr><td colspan="4" style="text-align: center;">SELF-DIAG RESULTS</td></tr> <tr><td colspan="4" style="text-align: center;">DATA MONITOR</td></tr> <tr><td colspan="4" style="text-align: center;">DATA MONITOR (SPEC)</td></tr> <tr><td colspan="4" style="text-align: center;">CAN DIAG SUPPORT MNTR</td></tr> <tr><td colspan="4" style="text-align: center;">ACTIVE TEST</td></tr> <tr><td colspan="4" style="text-align: center;"> </td></tr> <tr><td colspan="4" style="text-align: center;"> </td></tr> <tr><td colspan="4" style="text-align: center;">Scroll Down</td></tr> <tr><td></td><td></td><td>BACK</td><td>LIGHT</td><td>COPY</td></tr> </table>	SELECT DIAG MODE				WORK SUPPORT				SELF-DIAG RESULTS				DATA MONITOR				DATA MONITOR (SPEC)				CAN DIAG SUPPORT MNTR				ACTIVE TEST												Scroll Down						BACK	LIGHT	COPY	➔	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">SELF-DIAG RESULTS</td></tr> <tr><td colspan="2" style="text-align: center;">DTC RESULTS</td><td colspan="2" style="text-align: center;">TIME</td></tr> <tr><td colspan="2" style="text-align: center;">CAN COMM CIRCUIT [U1000]</td><td colspan="2" style="text-align: center;">0</td></tr> <tr><td colspan="2" style="text-align: center;"> </td><td colspan="2" style="text-align: center;"> </td></tr> <tr><td colspan="2" style="text-align: center;"> </td><td colspan="2" style="text-align: center;"> </td></tr> <tr><td colspan="4" style="text-align: center;"> </td></tr> <tr><td colspan="4" style="text-align: center;">F.F.DATA</td></tr> <tr><td colspan="2" style="text-align: center;">ERASE</td><td colspan="2" style="text-align: center;">PRINT</td></tr> <tr><td>MODE</td><td>BACK</td><td>LIGHT</td><td>COPY</td></tr> </table>	SELF-DIAG RESULTS				DTC RESULTS		TIME		CAN COMM CIRCUIT [U1000]		0														F.F.DATA				ERASE		PRINT		MODE	BACK	LIGHT	COPY	PKIA8260E
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- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-14, "CHECK SHEET"](#) .
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWVN" in the check sheet table. Refer to [LAN-14, "CHECK SHEET"](#) .

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual. So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-16, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 1)

[CAN]

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Attach copy of
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SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

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ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

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MNTR

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CAN DIAG SUPPORT
MNTR

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BCM
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ABS
CAN DIAG SUPPORT
MNTR

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IPDM E/R
CAN DIAG SUPPORT
MNTR

PKIA7899E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

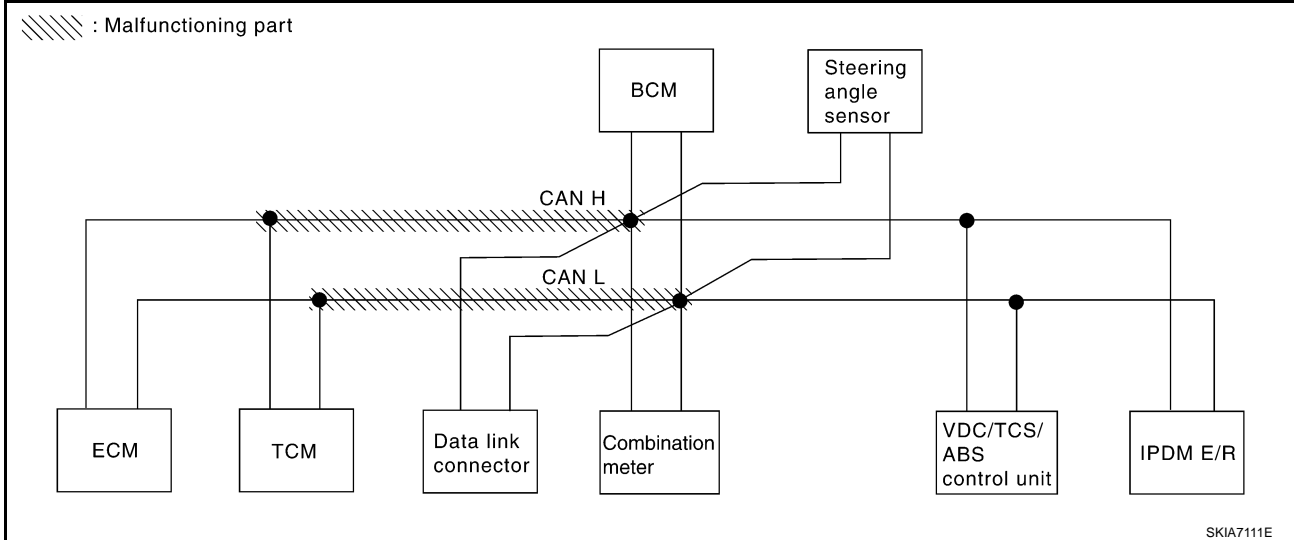
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case1

Check harness between TCM and data link connector. Refer to [LAN-27, "Circuit Check Between TCM and Data Link Connector"](#).

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						IPDM E/R
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	
ENGINE	—	NG	UNKWN	—	UNKWN	✓	✓	—	✓	✓
A/T	—	NG	UNKWN	UNKWN	—	✓	—	—	✓	—
BCM	No indication	NG	UNKWN	✓	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	✓	✓	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	UNKWN	—	—	—

PKIA7900E



SKIA7111E

CAN SYSTEM (TYPE 1)

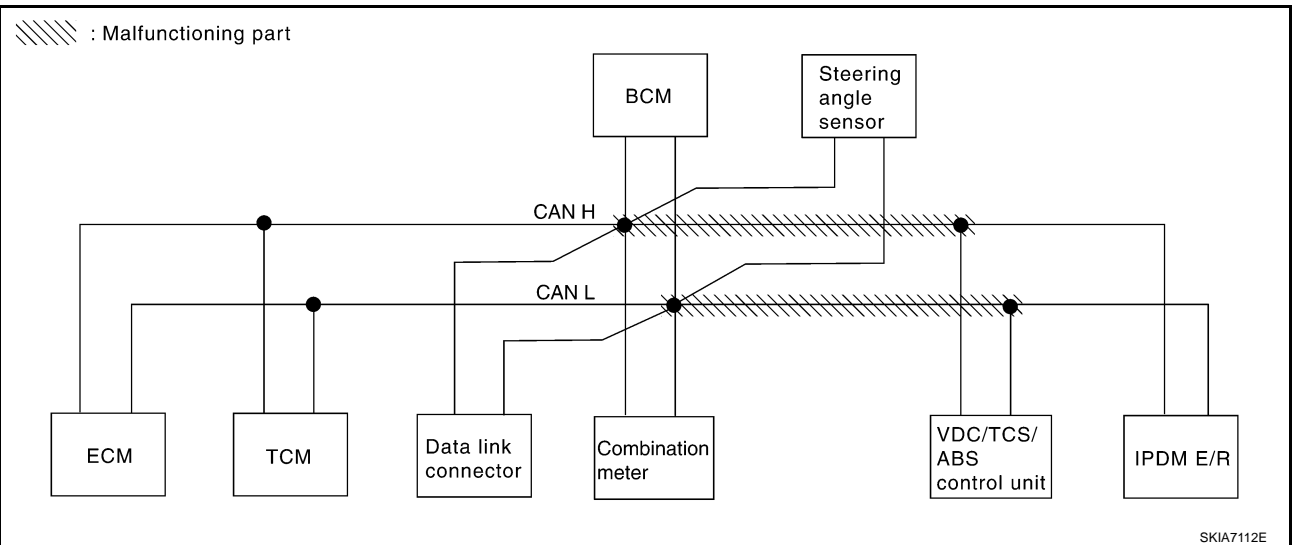
[CAN]

Case2

Check harness between data link connector and VDC/TCS/ABS control unit. Refer to [LAN-28, "Circuit Check Between Data Link Connector and VDC/TCS/ABS Control Unit"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7901E



SKIA7112E

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CAN SYSTEM (TYPE 1)

[CAN]

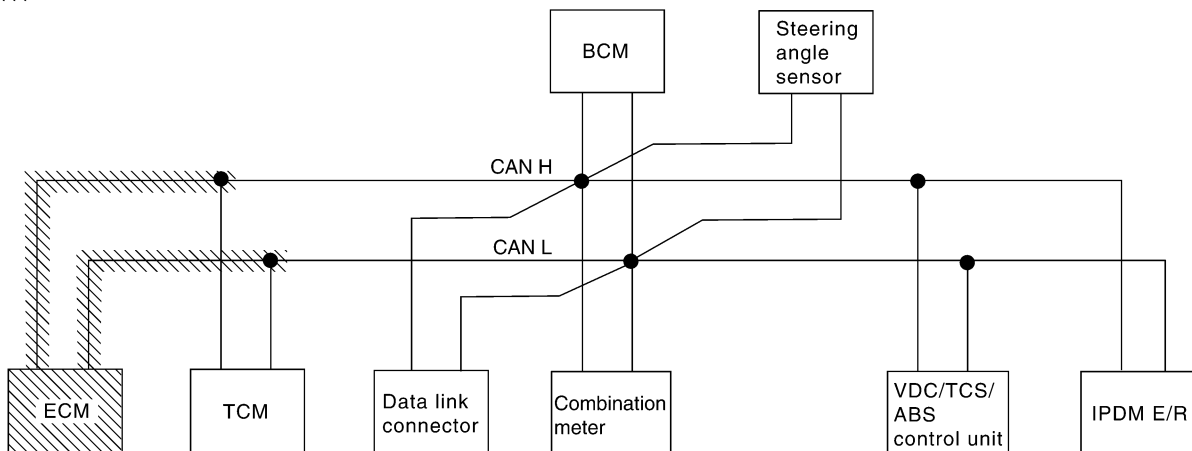
Case3

Check ECM circuit. Refer to [LAN-29, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—

PKIA7902E

▨ : Malfunctioning part



SKIA7113E

CAN SYSTEM (TYPE 1)

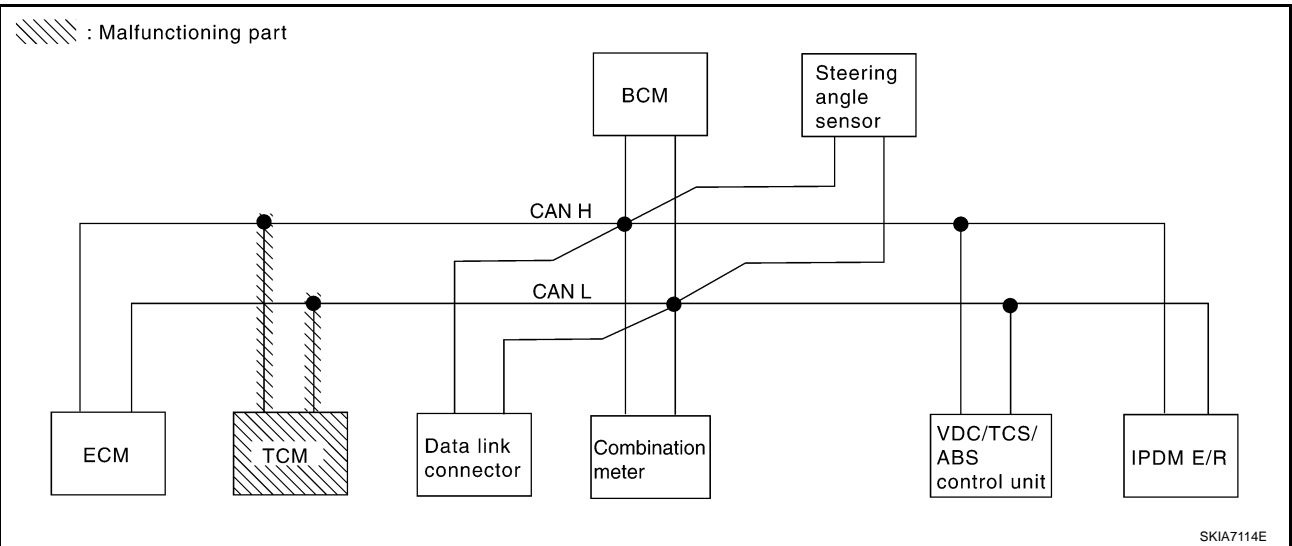
[CAN]

Case4

Check TCM circuit. Refer to [LAN-29, "TCM Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						IPDM E/R
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7903E



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CAN SYSTEM (TYPE 1)

[CAN]

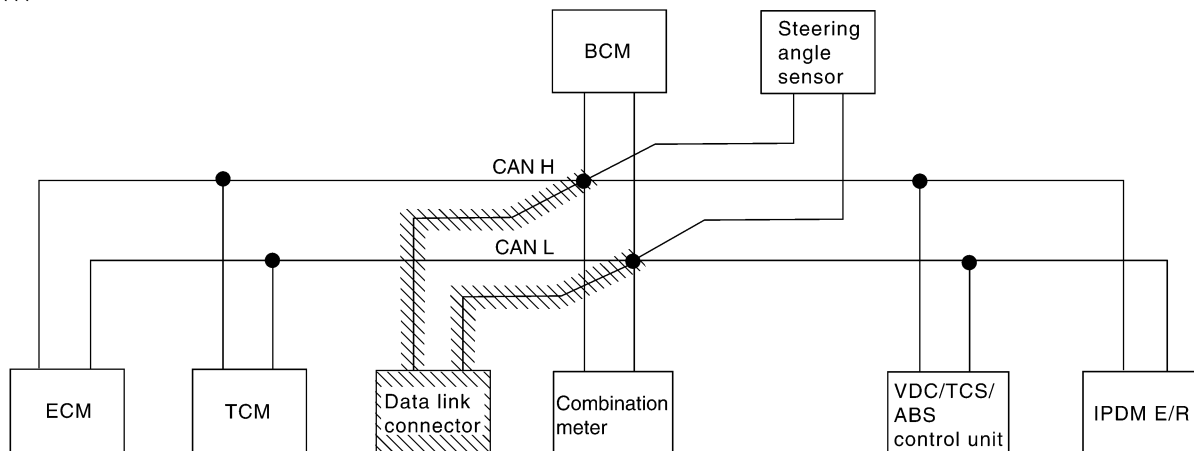
Case5

Check data link connector circuit. Refer to [LAN-30, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	

PKIA7904E

▨ : Malfunctioning part



PKIA4657E

CAN SYSTEM (TYPE 1)

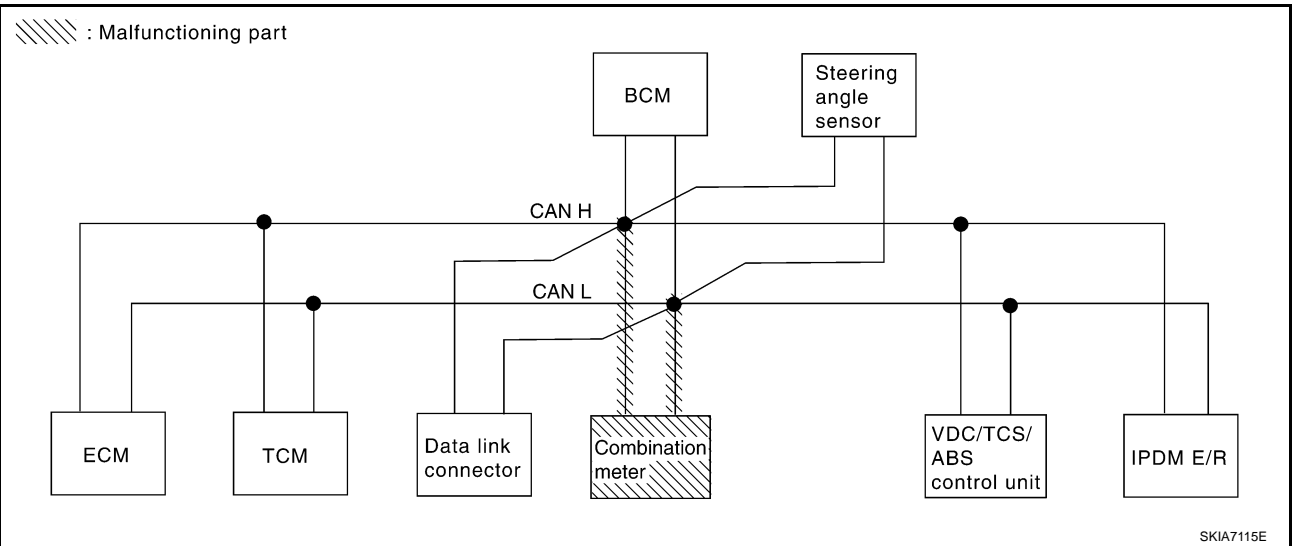
[CAN]

Case6

Check combination meter circuit. Refer to [LAN-30, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						IPDM E/R
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7905E



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CAN SYSTEM (TYPE 1)

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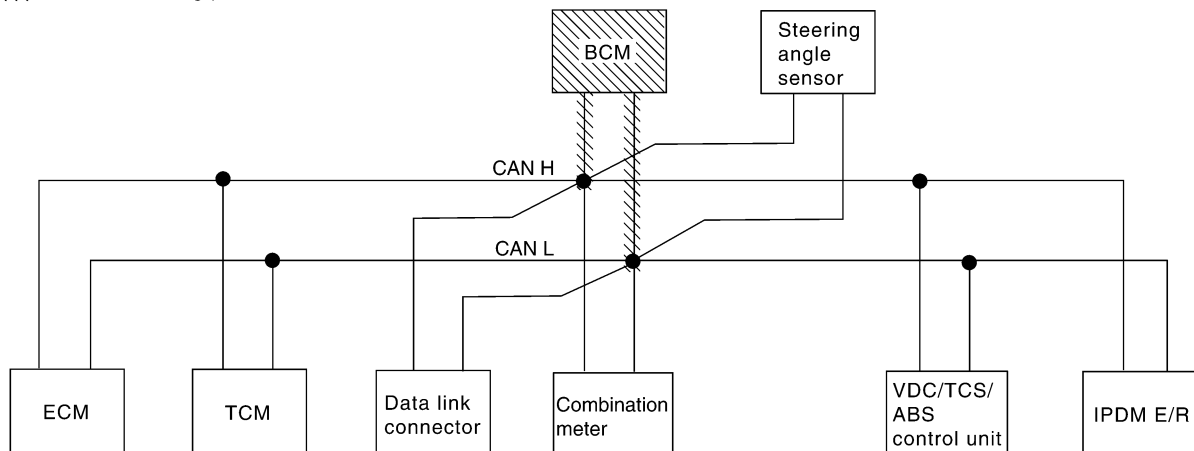
Case7

Check BCM circuit. Refer to [LAN-31, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	—	

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▨ : Malfunctioning part



SKIA7116E

CAN SYSTEM (TYPE 1)

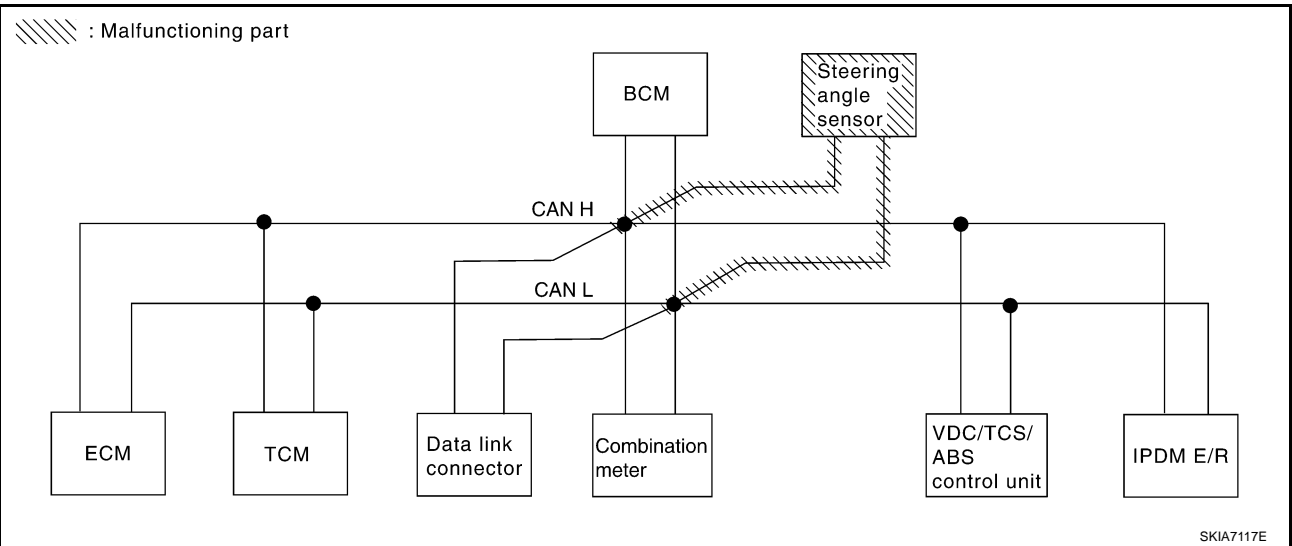
[CAN]

Case8

Check steering angle sensor circuit. Refer to [LAN-31, "Steering Angle Sensor Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						IPDM E/R
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7907E



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CAN SYSTEM (TYPE 1)

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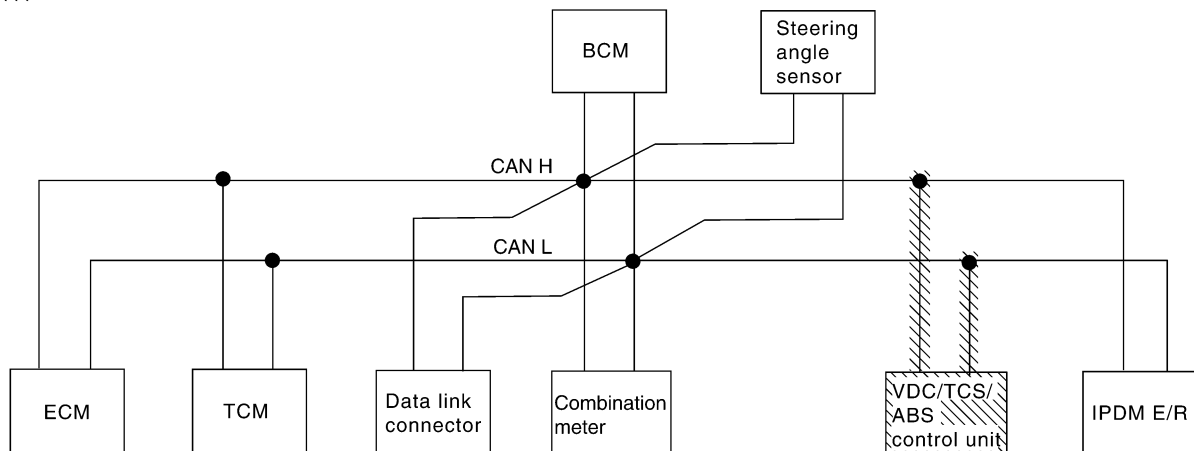
Case9

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-32, "VDC/TCS/ABS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7908E

//// : Malfunctioning part



SKIA7118E

CAN SYSTEM (TYPE 1)

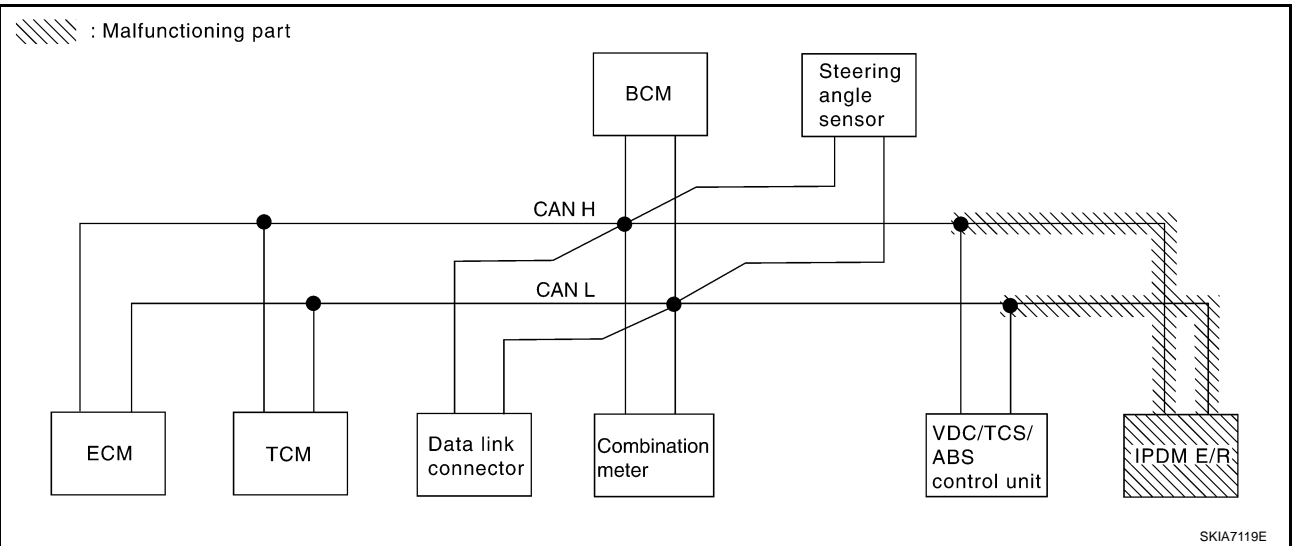
[CAN]

Case10

Check IPDM E/R circuit. Refer to [LAN-32. "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7909E



SKIA7119E

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CAN SYSTEM (TYPE 1)

[CAN]

Case11

Check CAN communication circuit. Refer to [LAN-33, "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						IPDM E/R
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	
ENGINE	—	NG	UNKW N	—	UNKW N	UNKW N	UNKW N	—	UNKW N	UNKW N
A/T	—	NG	UNKW N	UNKW N	—	UNKW N	—	—	UNKW N	—
BCM	No indication	NG	UNKW N	UNKW N	—	UNKW N	—	—	—	UNKW N
ABS	—	NG	UNKW N	UNKW N	UNKW N	UNKW N	—	UNKW N	—	—
IPDM E/R	No indication	—	UNKW N	UNKW N	—	—	UNKW N	—	—	—

PKIA7910E

Case12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-35, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						IPDM E/R
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	
ENGINE	—	NG	UNKW N	—	UNKW N	UNKW N	UNKW N	—	UNKW N	UNKW N
A/T	—	NG	UNKW N	UNKW N	—	UNKW N	—	—	UNKW N	—
BCM	No indication	NG	UNKW N	UNKW N	—	UNKW N	—	—	—	UNKW N
ABS	—	NG	UNKW N	UNKW N	UNKW N	UNKW N	—	UNKW N	—	—
IPDM E/R	No indication	—	UNKW N	UNKW N	—	—	UNKW N	—	—	—

PKIA7911E

Case13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-35, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA7912E

Circuit Check Between TCM and Data Link Connector

AKS0092G

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector F102
 - Harness connector M72

OK or NG

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

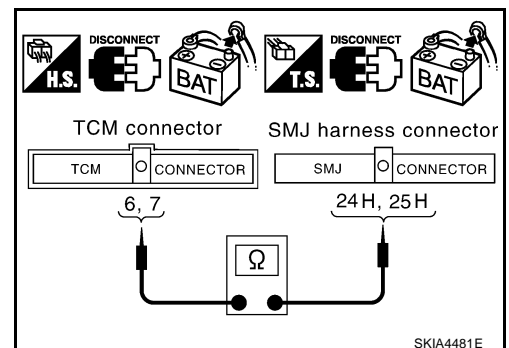
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F102.
2. Check continuity between TCM harness connector F103 terminals 6 (L), 7 (R) and harness connector F102 terminals 24H (L), 25H (R).

6 (L) - 24H (L) : Continuity should exist.
7 (R) - 25H (R) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

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

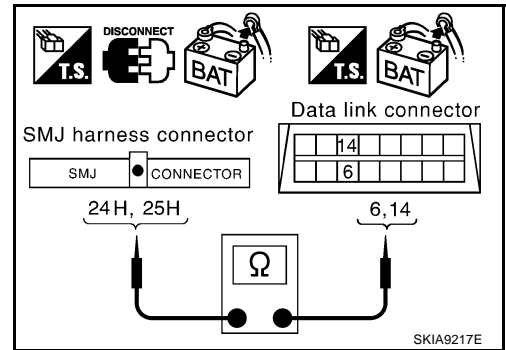
24H (L) - 6 (L) : Continuity should exist.

25H (R) - 14 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-13, "Work Flow"](#).

NG >> Repair harness.



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

AKS0092H

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M15
 - Harness connector E108

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (R) and harness connector M15 terminals 9G (L), 8G (R).

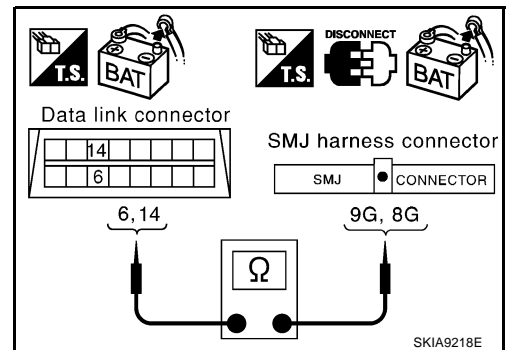
6 (L) - 9G (L) : Continuity should exist.

14 (R) - 8G (R) : 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 E108 terminals 9G (L), 8G (R) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (R).

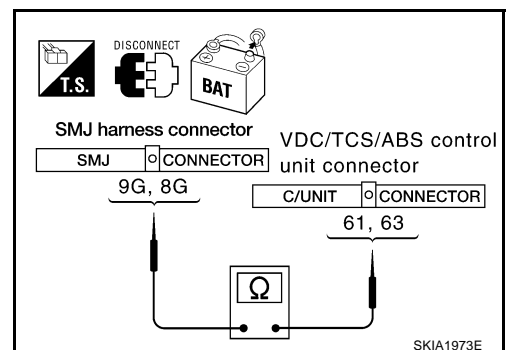
9G (L) - 61 (L) : Continuity should exist.

8G (R) - 63 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-13, "Work Flow"](#).

NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

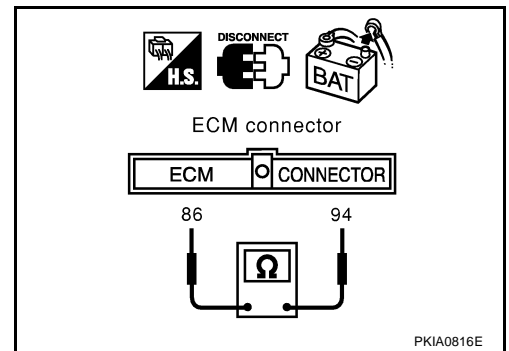
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (R) : Approx. 108 - 132Ω

OK or NG

- OK >> Replace ECM.
 NG >> Repair harness between harness connector F102 and ECM.

**TCM Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

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

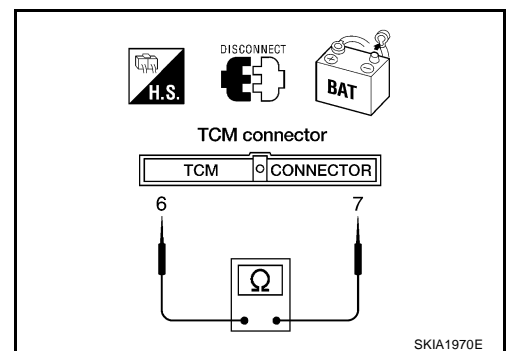
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 6 (L) and 7 (R).

6 (L) - 7 (R) : Approx. 54 - 66Ω

OK or NG

- OK >> Replace TCM.
 NG >> Repair harness between harness connector F102 and TCM.



Data Link Connector Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

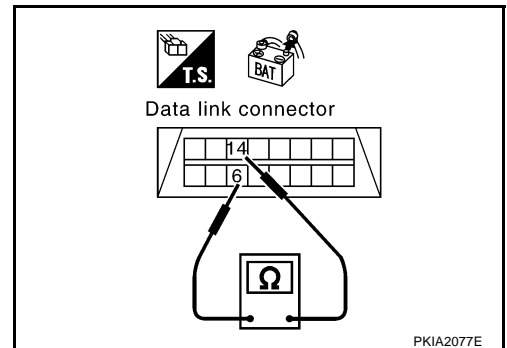
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (R) : Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-13. "Work Flow"](#) .
 NG >> Repair harness between data link connector and combination meter.



AKS0092K

Combination Meter Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery 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.

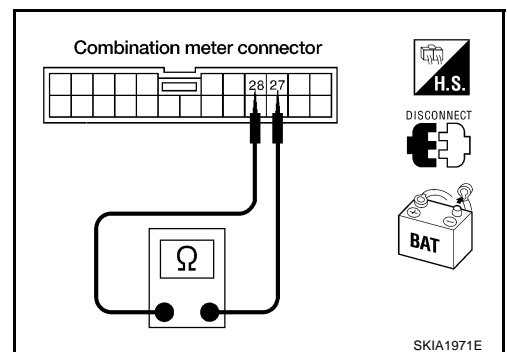
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M20 terminals 28 (L) and 27 (R).

28 (L) - 27 (R) : Approx. 54 - 66Ω

OK or NG

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



BCM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

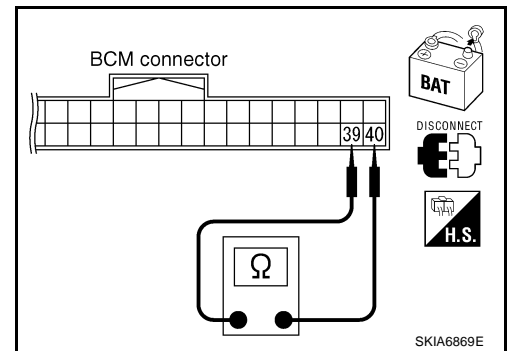
2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (R) : Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between data link connector and BCM.

**Steering Angle Sensor Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

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

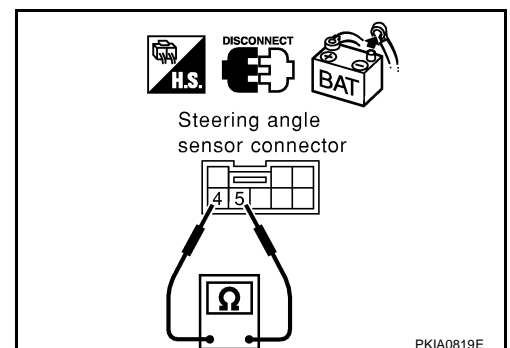
2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) - 5 (R) : Approx. 54 - 66Ω

OK or NG

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



VDC/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery 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.

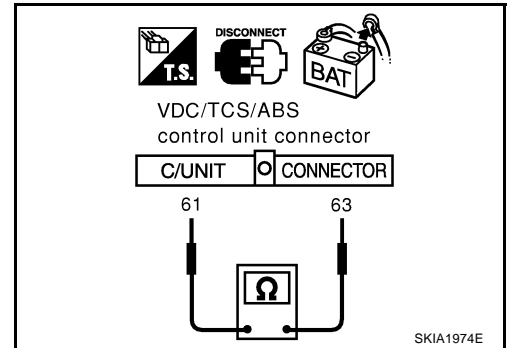
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector E118 terminals 61 (L) and 63 (R).

61 (L) - 63 (R) : Approx. 54 - 66Ω

OK or NG

- OK >> Replace VDC/TCS/ABS control unit.
 NG >> Repair harness between harness connector E108 and VDC/TCS/ABS control unit.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

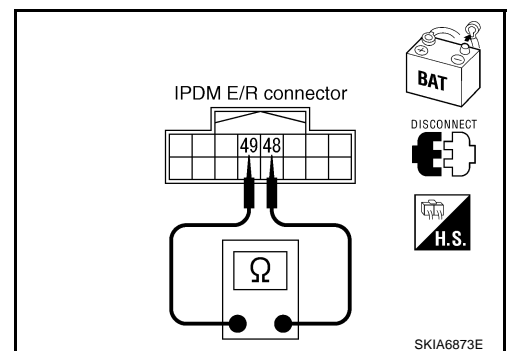
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) - 49 (R) : Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
 NG >> Repair harness between harness connector E108 and IPDM E/R.



CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, control unit side, meter side, sensor side and harness side).
 - ECM
 - TCM
 - Combination meter
 - BCM
 - Steering angle sensor
 - VDC/TCS/ABS control unit
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

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

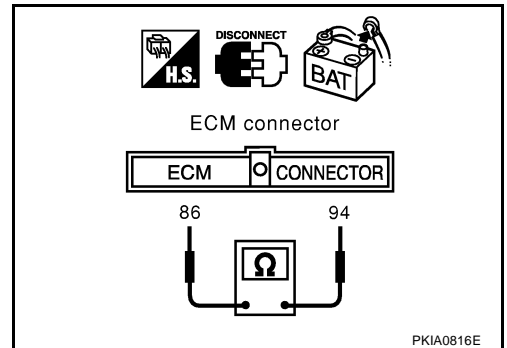
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ECM connector
 - TCM connector
 - Harness connector F102
2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (R).

94 (L) - 86 (R) : 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 harness connector F102
 - Harness between TCM and harness connector F102



3. CHECK HARNESS FOR SHORT CIRCUIT

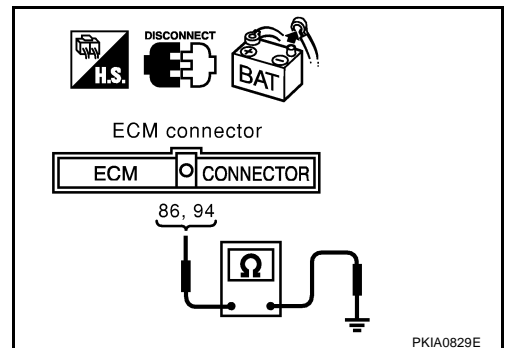
Check continuity between ECM harness connector F108 terminals 94 (L), 86 (R) and ground.

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

86 (R) - 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 harness connector F102
 - Harness between TCM and harness connector F102



4. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - Combination meter connector
 - BCM connector
 - Steering angle sensor connector
 - Harness connector M15
- Check continuity between data link connector M8 terminals 6 (L) and 14 (R).

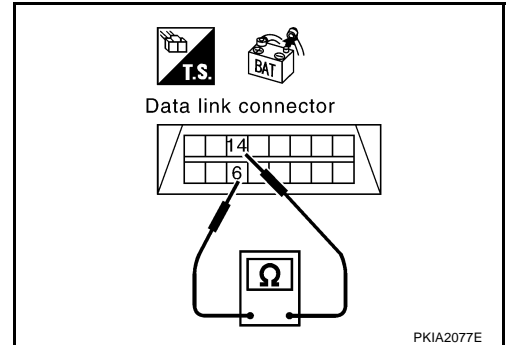
6 (L) - 14 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between harness connector M72 and harness connector M15
- Harness between harness connector M72 and combination meter
- Harness between harness connector M72 and data link connector
- Harness between harness connector M72 and BCM
- Harness between harness connector M72 and steering angle sensor



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

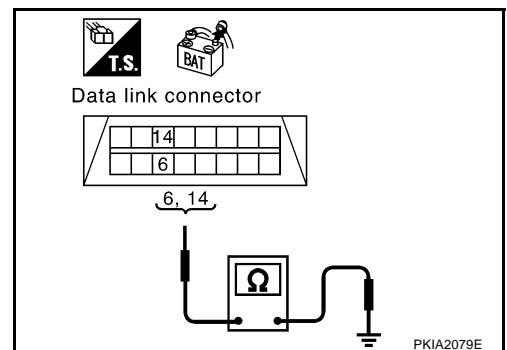
14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between harness connector M72 and harness connector M15
- Harness between harness connector M72 and combination meter
- Harness between harness connector M72 and data link connector
- Harness between harness connector M72 and BCM
- Harness between harness connector M72 and steering angle sensor



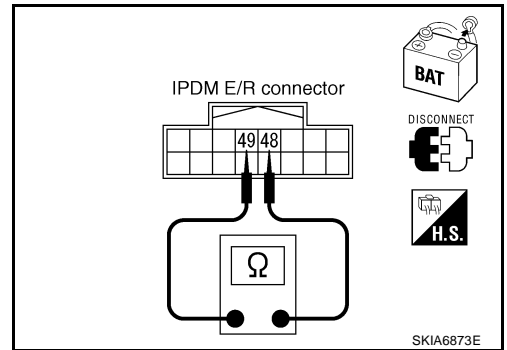
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (R).

48 (L) - 49 (R) : Continuity should not exist.

OK or NG

- OK >> GO TO 7.
 NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E108 and VDC/TCS/ABS control unit
 - Harness between harness connector E108 and IPDM E/R



7. CHECK HARNESS FOR SHORT CIRCUIT

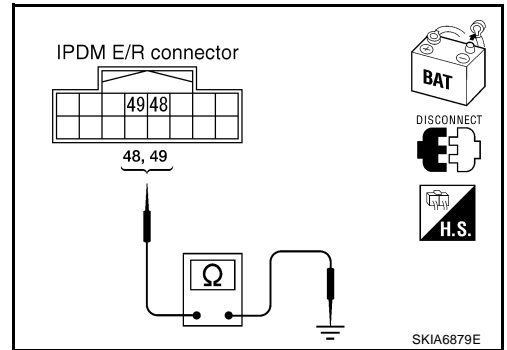
Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (R) and ground.

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

49 (R) - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 8.
 NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between harness connector E108 and VDC/TCS/ABS control unit
 - Harness between harness connector E108 and IPDM E/R



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-35, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-13, "Work Flow"](#).
 NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

AKS0092Q

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

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

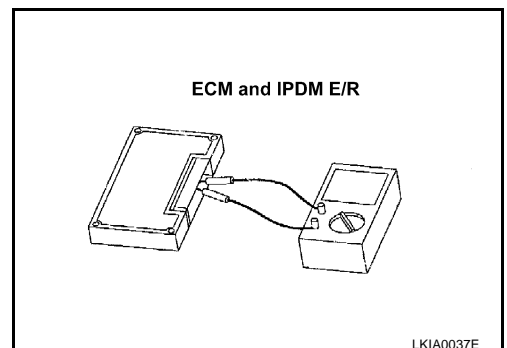
Component Inspection

AKS0092R

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	



CAN SYSTEM (TYPE 2)

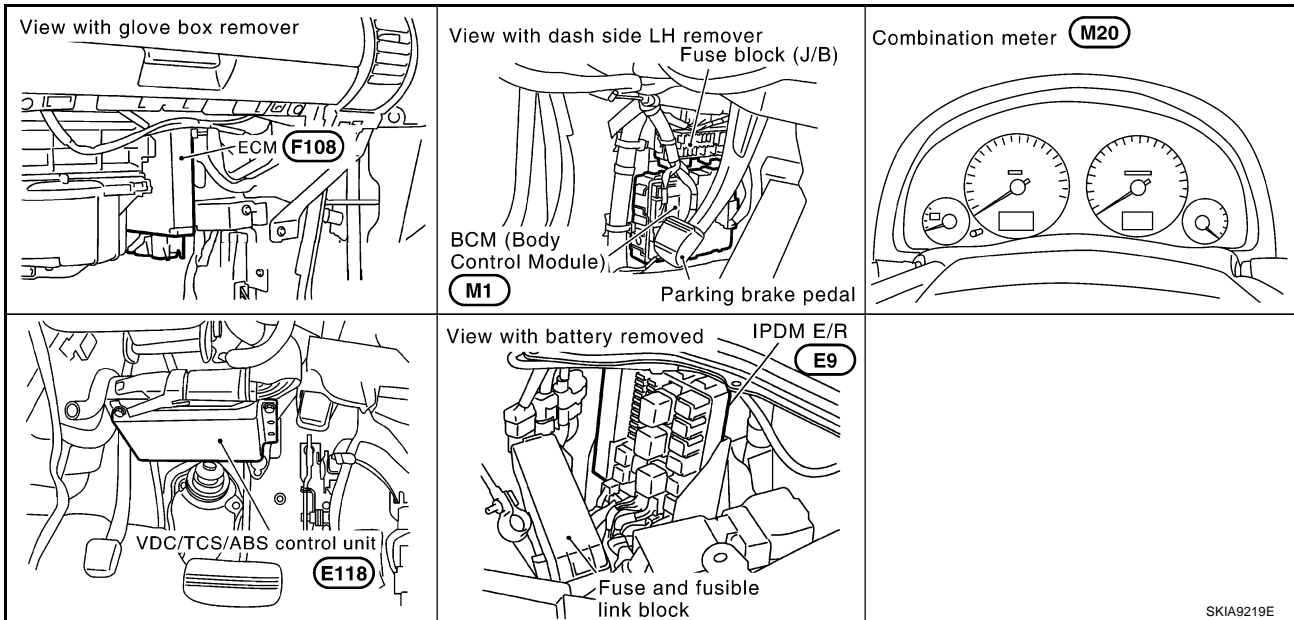
System Description

AKS007V0

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

Component Parts and Harness Connector Location

AKS007V1



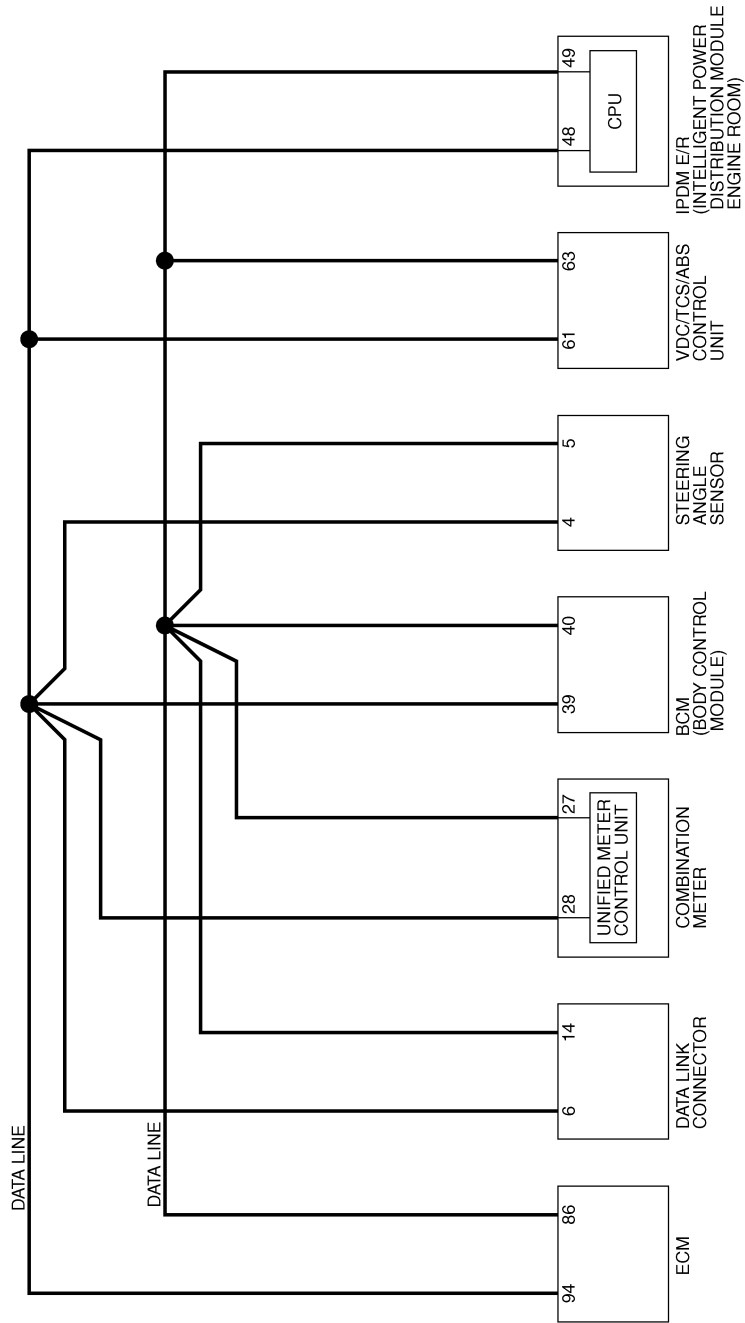
SKIA9219E

CAN SYSTEM (TYPE 2)

[CAN]

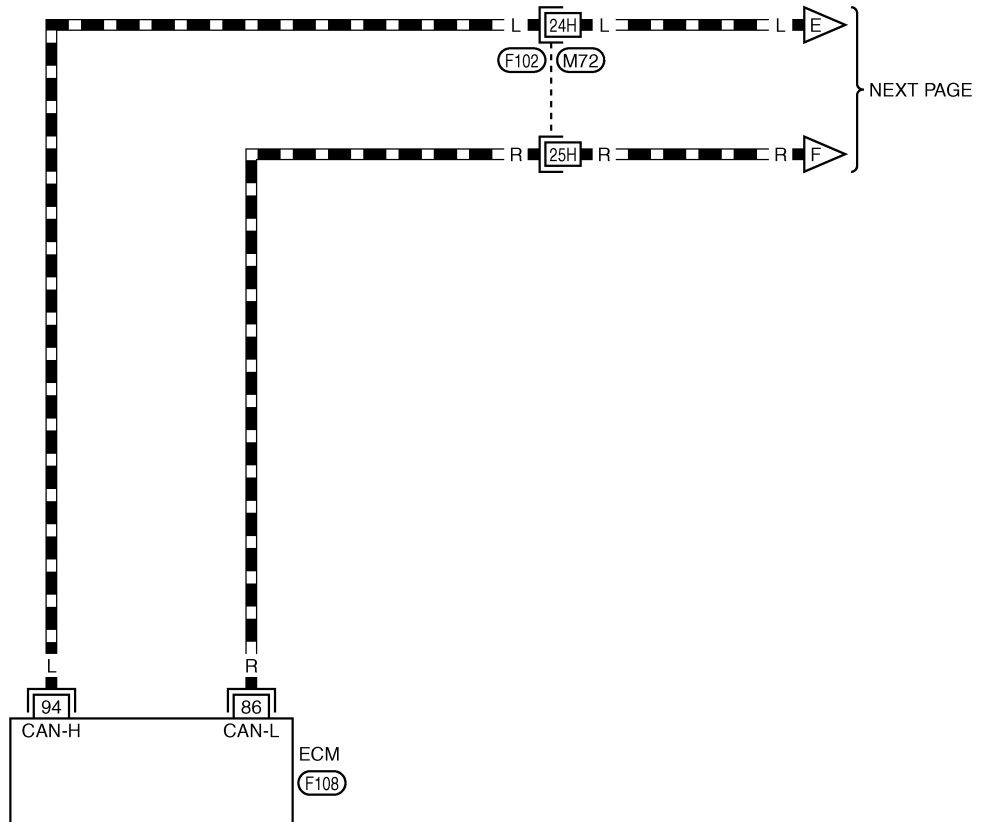
Schematic

AKS007V2



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DATA LINE

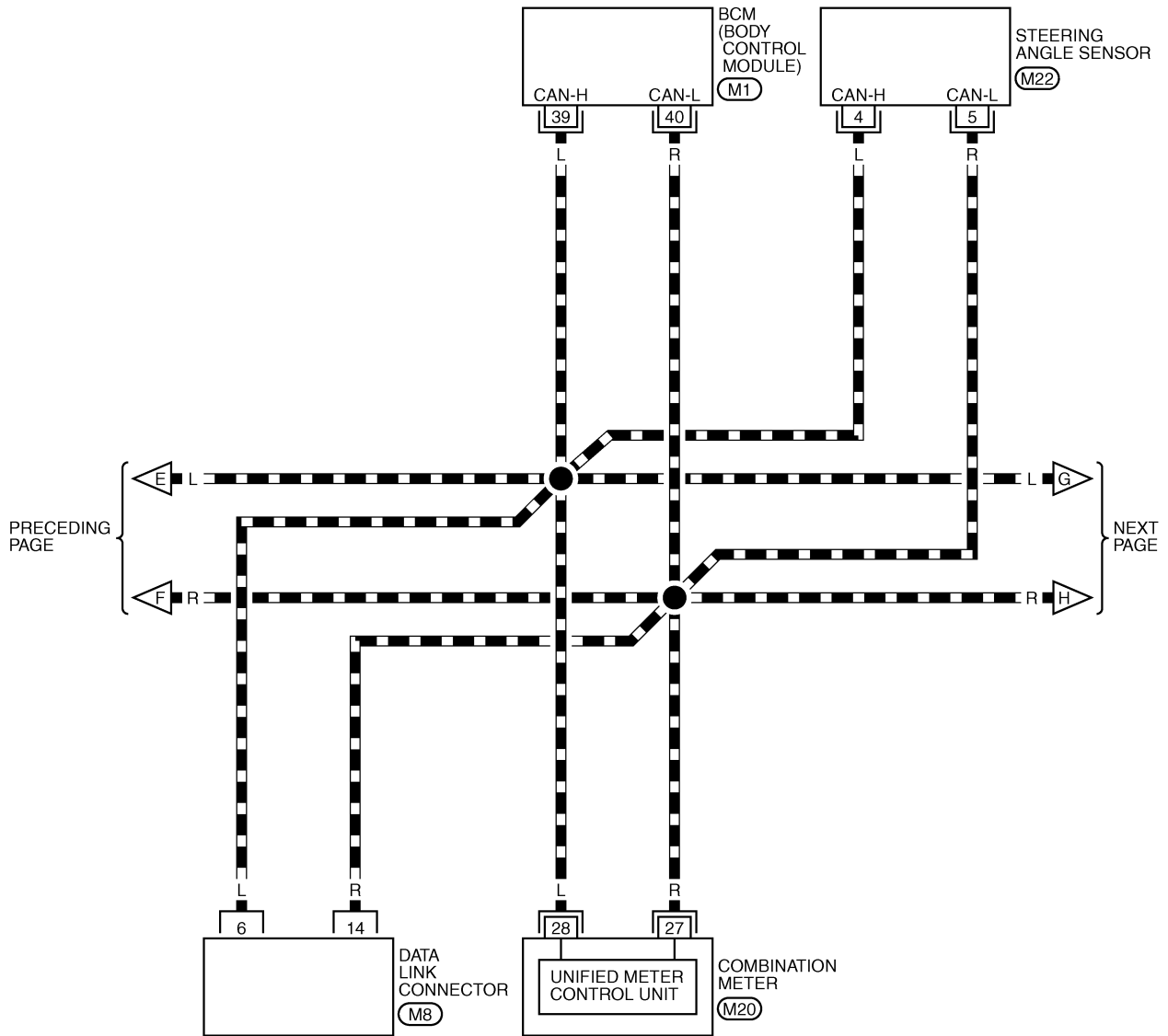


REFER TO THE FOLLOWING.

(F102) -SUPER MULTIPLE JUNCTION (SMJ)

(F108) -ELECTRICAL UNITS

▬ : DATA LINE



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

(M8)
W

25	26	27	28	29	30	31	32	33	34	35		
36	37	38	39	40	41	42	43	44	45	46	47	48

(M20)
W

3	2	1		
8	7	6	5	4

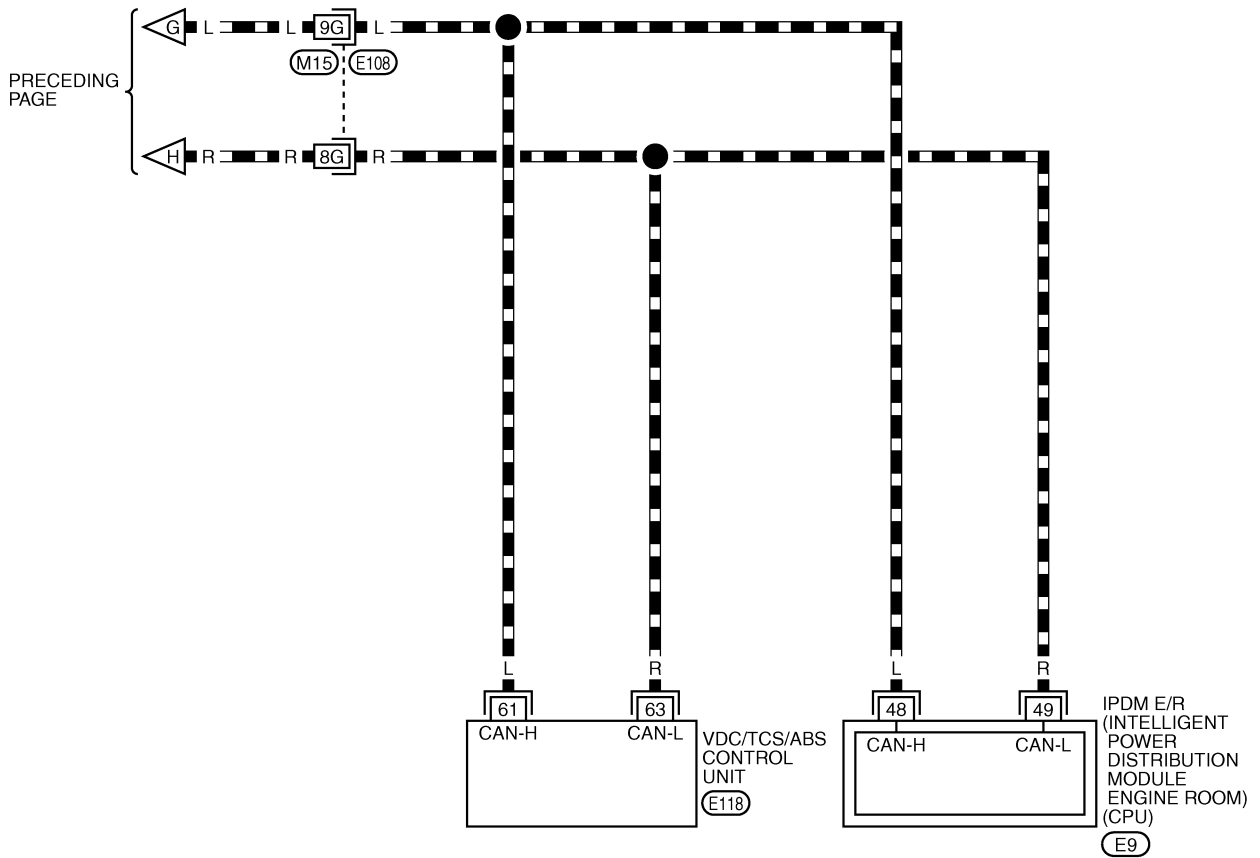
(M22)
W

REFER TO THE FOLLOWING.
(M1) -ELECTRICAL UNITS

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LAN

▬ : DATA LINE



52	51	50	49	48	47	46	45
60	59	58	57	56	55	54	53

E9
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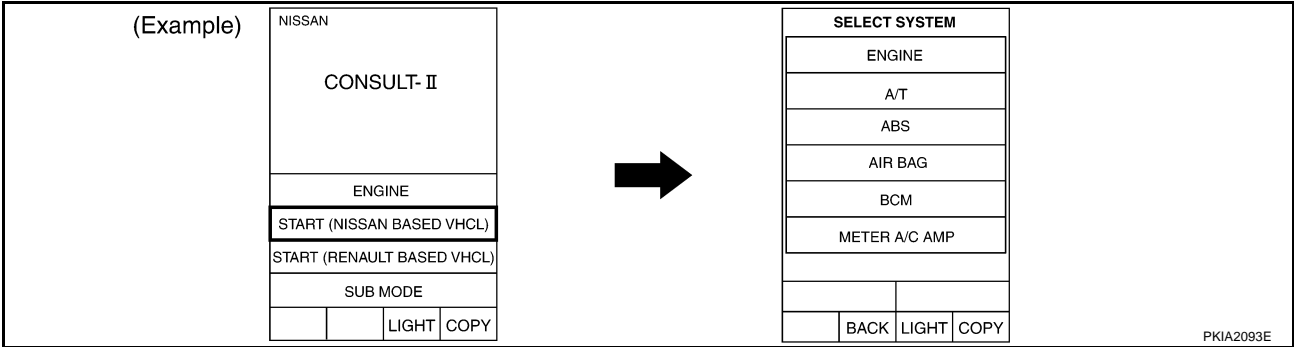
REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

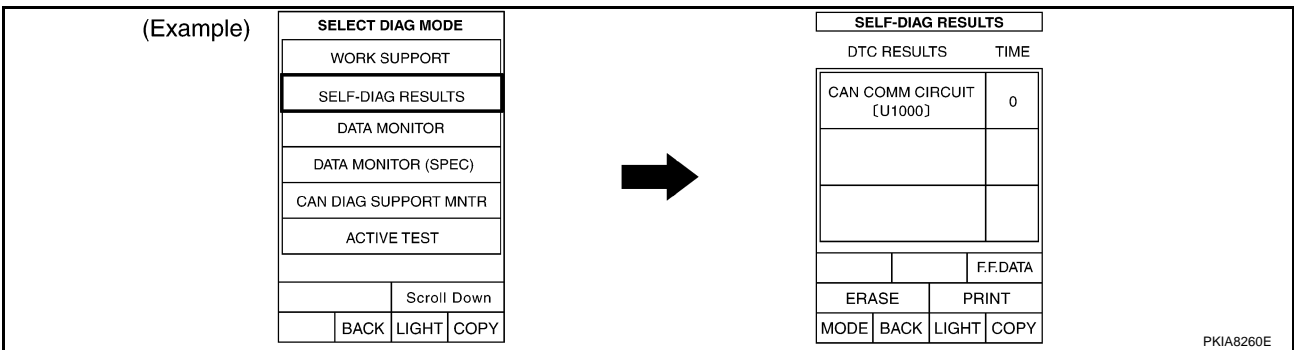
(E118) -ELECTRICAL UNITS

Work Flow

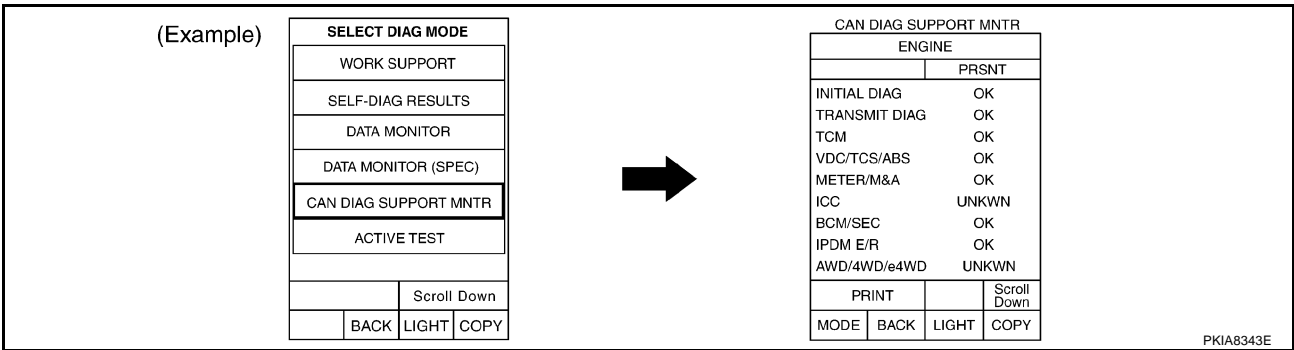
- When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-42, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-42, "CHECK SHEET"](#).

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual. So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-44, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 2)

[CAN]

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 2)

[CAN]

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

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

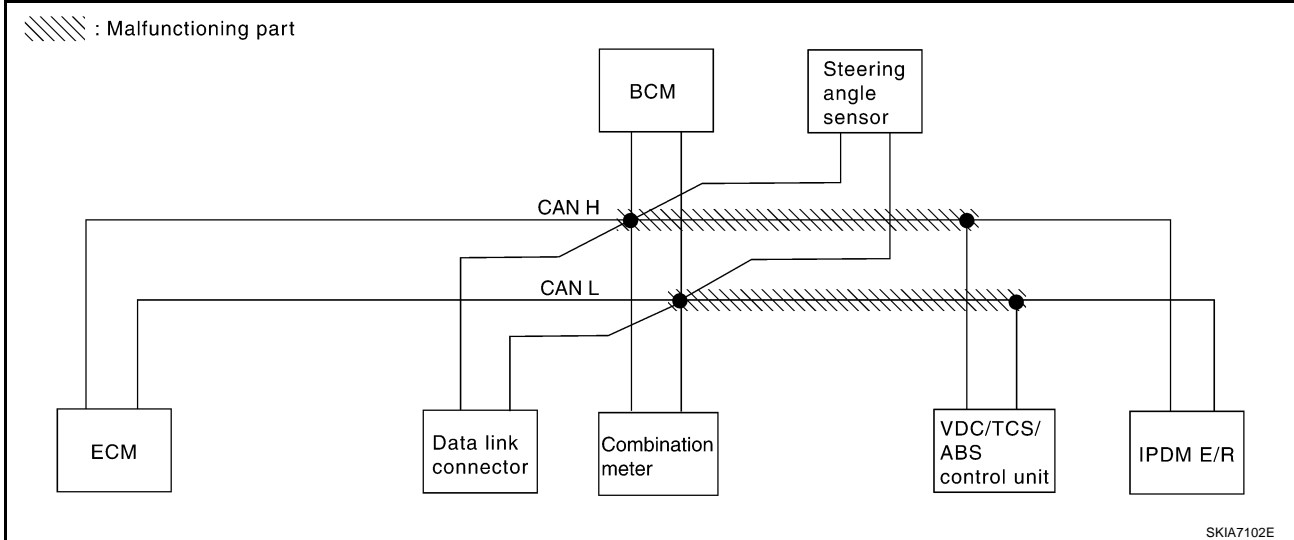
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case1

Check harness between data link connector and VDC/TCS/ABS control unit. Refer to [LAN-53, "Circuit Check Between Data Link Connector and VDC/TCS/ABS Control Unit"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN ✓	UNKWN ✓
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN ✓
ABS	-	NG	UNKWN	UNKWN ✓	UNKWN ✓	-	UNKWN ✓	-	-
IPDM E/R	No indication ✓	-	UNKWN	UNKWN	-	UNKWN	-	-	-

PKIA7915E



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CAN SYSTEM (TYPE 2)

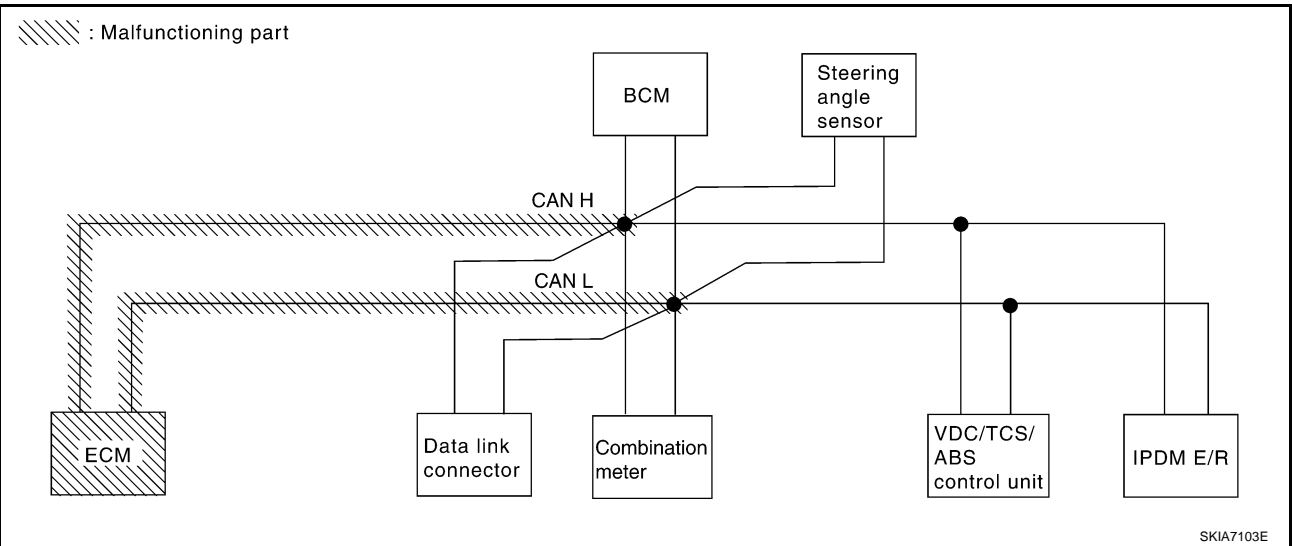
[CAN]

Case2

Check ECM circuit. Refer to [LAN-54, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKW/N	—	UNKW/N	UNKW/N	—	UNKW/N	UNKW/N
BCM	No indication	NG	UNKW/N	UNKW/N	UNKW/N	—	—	—	UNKW/N
ABS	—	NG	UNKW/N	UNKW/N	UNKW/N	—	UNKW/N	—	—
IPDM E/R	No indication	—	UNKW/N	UNKW/N	—	UNKW/N	—	—	—

PKIA7916E



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CAN SYSTEM (TYPE 2)

[CAN]

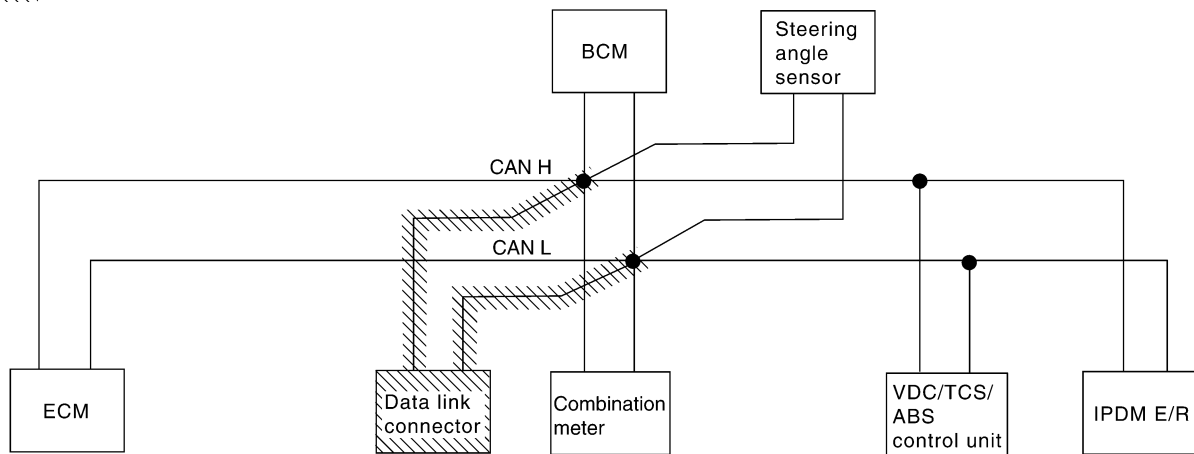
Case3

Check data link connector circuit. Refer to [LAN-54, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN
BCM	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	UNKWN	—	—	—

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//// : Malfunctioning part



PKIA4658E

CAN SYSTEM (TYPE 2)

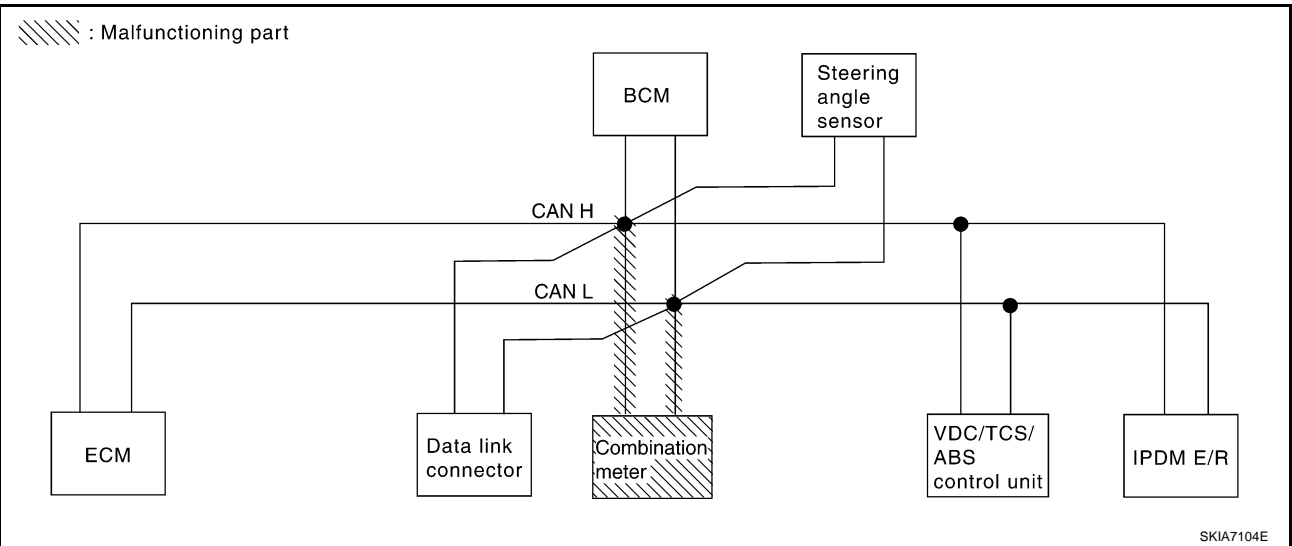
[CAN]

Case4

Check combination meter circuit. Refer to [LAN-55, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	—	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—

PKIA7918E



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CAN SYSTEM (TYPE 2)

[CAN]

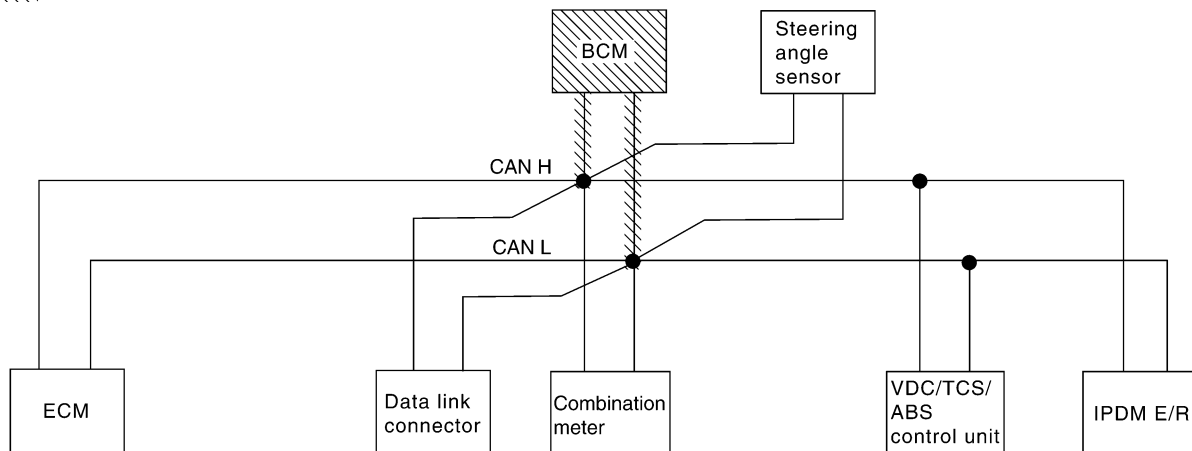
Case5

Check BCM circuit. Refer to [LAN-55, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	—	UNKWN	UNKWN
BCM	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN ✓	—	—	—

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//// : Malfunctioning part



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CAN SYSTEM (TYPE 2)

[CAN]

Case6

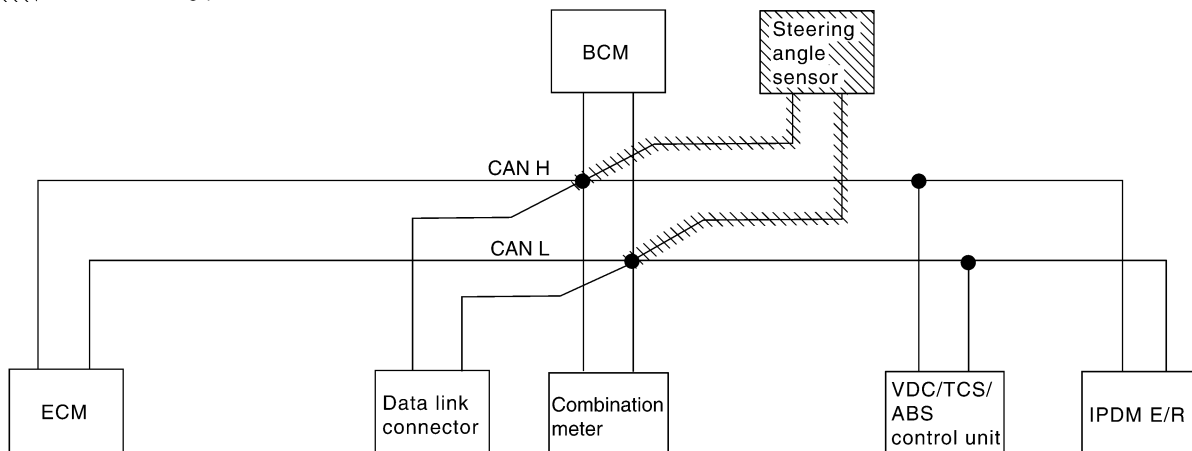
Check steering angle sensor circuit. Refer to [LAN-56. "Steering Angle Sensor Circuit Check"](#) .

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SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—

PKIA7920E

▨ : Malfunctioning part



SKIA7106E

CAN SYSTEM (TYPE 2)

[CAN]

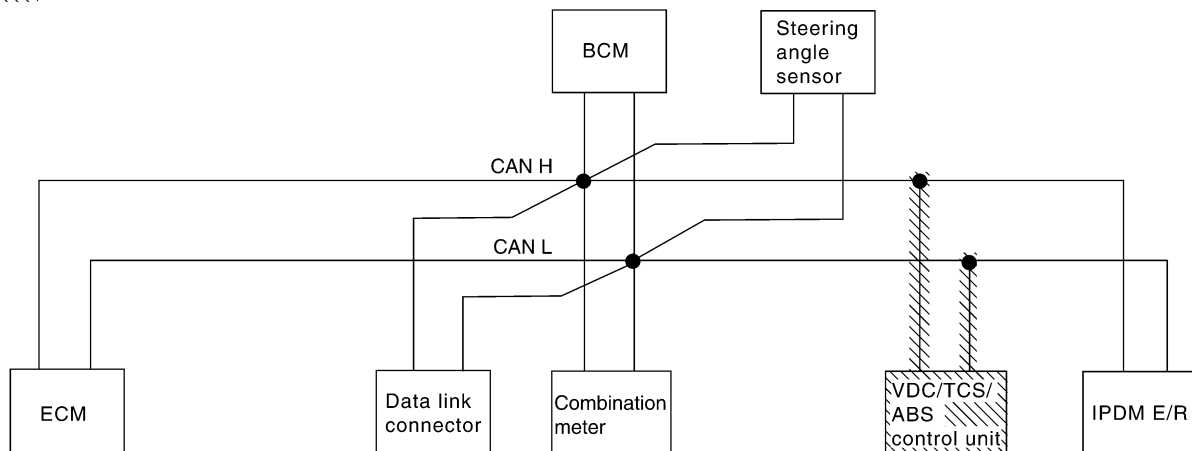
Case7

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-56, "VDC/TCS/ABS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—

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//// : Malfunctioning part



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CAN SYSTEM (TYPE 2)

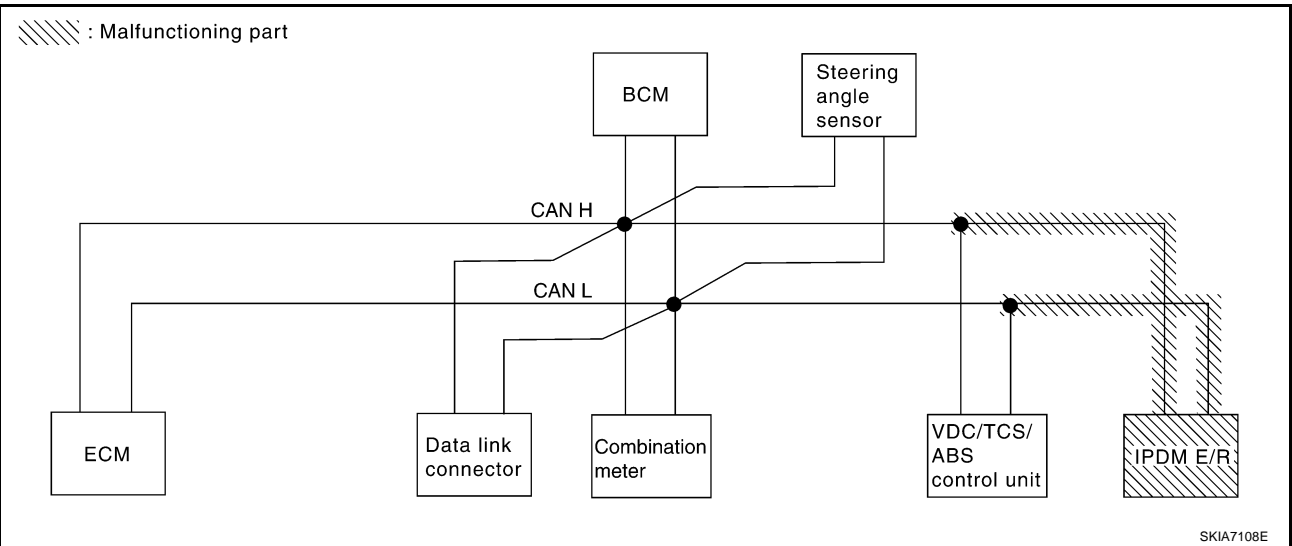
[CAN]

Case8

Check IPDM E/R circuit. Refer to [LAN-57, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN ✓
BCM	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN ✓
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	UNKWN	—	—	—

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CAN SYSTEM (TYPE 2)

[CAN]

Case9

Check CAN communication circuit. Refer to [LAN-58, "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKW N	—	UNKW N	UNKW N	—	UNKW N	UNKW N
BCM	No indicat ion	NG	UNKW N	UNKW N	UNKW N	—	—	—	UNKW N
ABS	—	NG	UNKW N	UNKW N	UNKW N	—	UNKW N	—	—
IPDM E/R	No indicat ion	—	UNKW N	UNKW N	—	UNKW N	—	—	—

PKIA7923E

Case10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-60, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKW N	—	UNKW N	UNKW N	—	UNKW N	UNKW N
BCM	No indicat ion	NG	UNKW N	UNKW N	UNKW N	—	—	—	UNKW N
ABS	—	NG	UNKW N	UNKW N	UNKW N	—	UNKW N	—	—
IPDM E/R	No indicat ion	—	UNKW N	UNKW N	—	UNKW N	—	—	—

PKIA7924E

Case11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-60, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	—	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	UNKWN	—	—	—

PKIA7925E

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

AKS00AAK

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M15
 - Harness connector E108

OK or NG

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

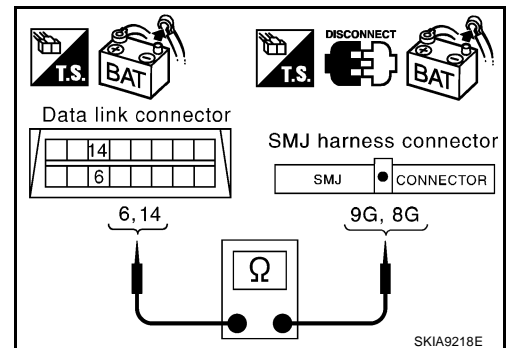
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (R) and harness connector M15 terminals 9G (L), 8G (R).

6 (L) - 9G (L) : Continuity should exist.
14 (R) - 8G (R) : Continuity should exist.

OK or NG

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



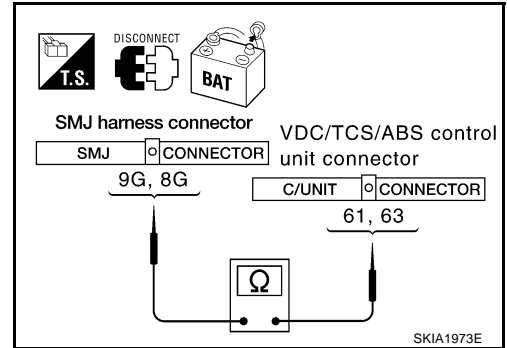
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E108 terminals 9G (L), 8G (R) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (R).

9G (L) - 61 (L) : Continuity should exist.
8G (R) - 63 (R) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-41, "Work Flow"](#) .
 NG >> Repair harness.



AKS00AAL

ECM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

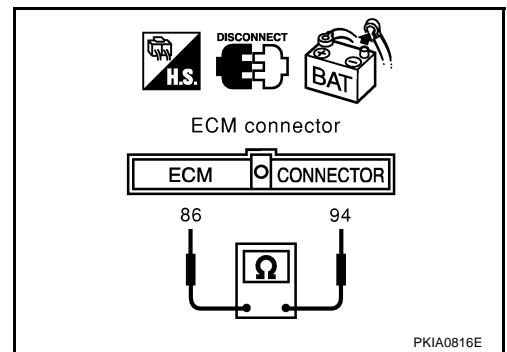
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (R) : Approx. 108 - 132Ω

OK or NG

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



AKS00AAM

Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

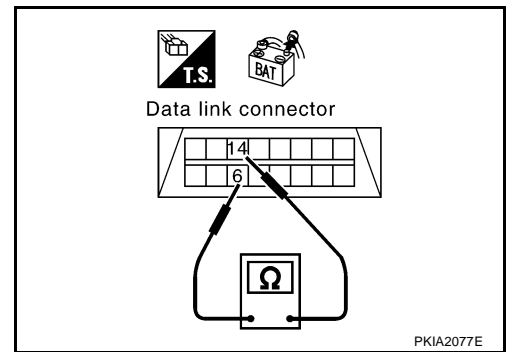
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (R) : Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-41, "Work Flow"](#) .
 NG >> Repair harness between data link connector and combination meter.



AKS00AAN

Combination Meter Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery 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.

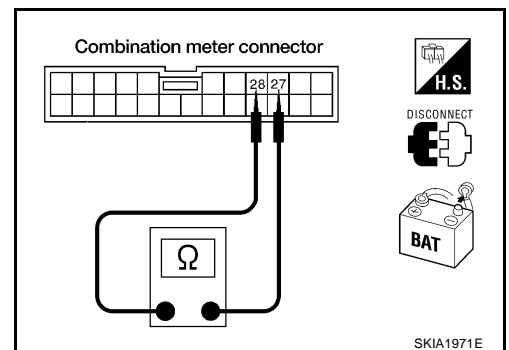
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M20 terminals 28 (L) and 27 (R).

28 (L) - 27 (R) : Approx. 54 - 66Ω

OK or NG

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



AKS00AAO

BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

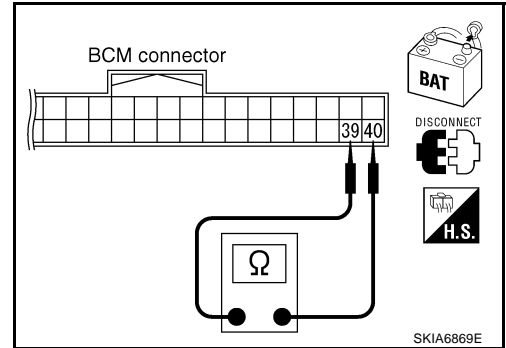
2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (R) : Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#).
- NG >> Repair harness between data link connector and BCM.



SKIA6869E

Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

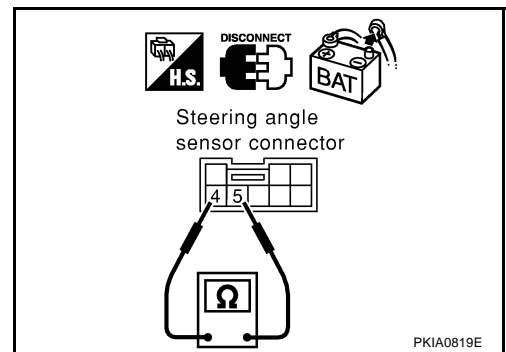
2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) - 5 (R) : Approx. 54 - 66Ω

OK or NG

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



PKIA0819E

VDC/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery 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.

AKS00AAQ

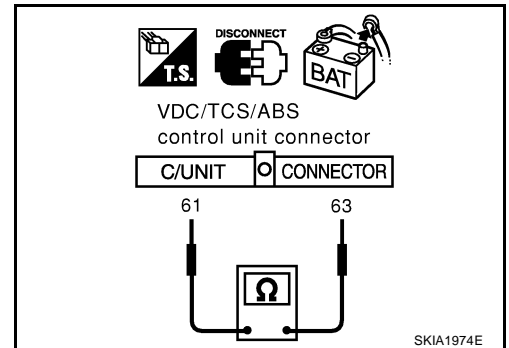
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check resistance between VDC/TCS/ABS control unit harness connector E118 terminals 61 (L) and 63 (R).

61 (L) - 63 (R) : Approx. 54 - 66Ω

OK or NG

- OK >> Replace VDC/TCS/ABS control unit.
 NG >> Repair harness between harness connector E108 and VDC/TCS/ABS control unit.



AKS00AAR

IPDM E/R Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

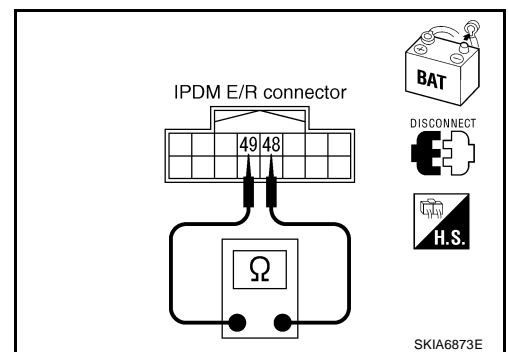
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) - 49 (R) : Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
 NG >> Repair harness between harness connector E108 and IPDM E/R.



SKIA6873E

CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, control unit side, meter side, sensor side and harness side).
 - ECM
 - Combination meter
 - BCM
 - Steering angle sensor
 - VDC/TCS/ABS control unit
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

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

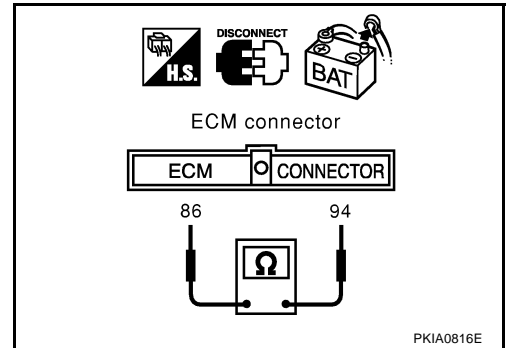
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ECM connector
 - Harness connector F102
2. Check continuity between ECM harness connector F108 terminals 94 (L) and 86 (R).

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

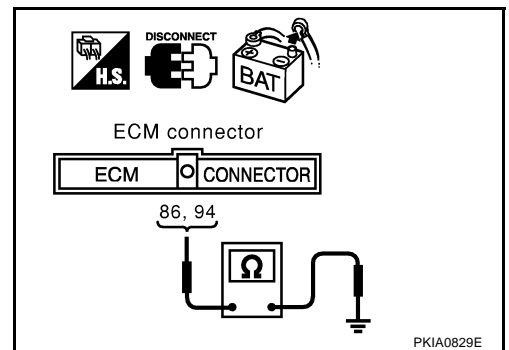
Check continuity between ECM harness connector F108 terminals 94 (L), 86 (R) and ground.

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

86 (R) - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector F102.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - BCM connector
 - Steering angle sensor connector
 - Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (R).

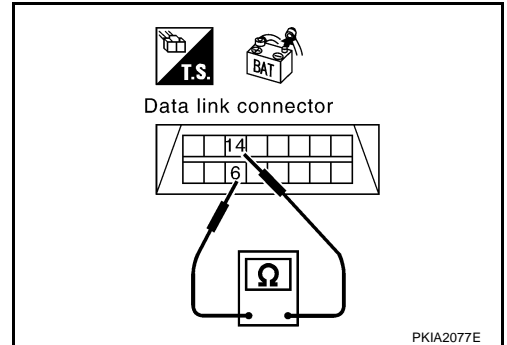
6 (L) - 14 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between harness connector M72 and harness connector M15
- Harness between harness connector M72 and combination meter
- Harness between harness connector M72 and data link connector
- Harness between harness connector M72 and BCM
- Harness between harness connector M72 and steering angle sensor



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

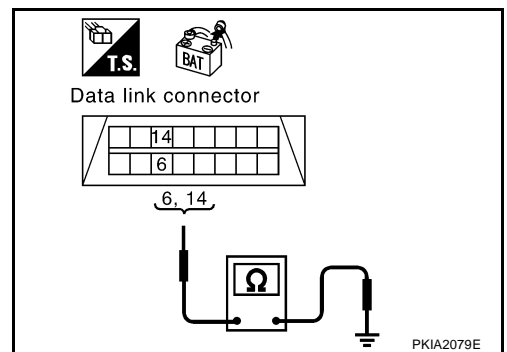
14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between harness connector M72 and harness connector M15
- Harness between harness connector M72 and combination meter
- Harness between harness connector M72 and data link connector
- Harness between harness connector M72 and BCM
- Harness between harness connector M72 and steering angle sensor



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E9 terminals 48 (L) and 49 (R).

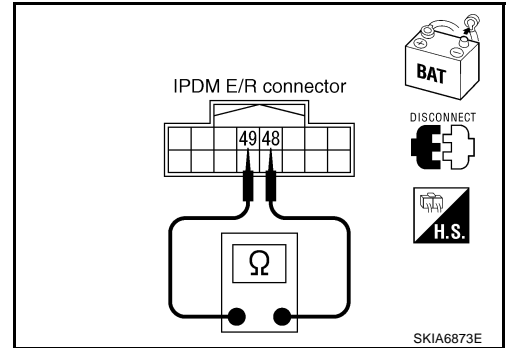
48 (L) - 49 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between harness connector E108 and VDC/TCS/ABS control unit
- Harness between harness connector E108 and IPDM E/R



7. CHECK HARNESS FOR SHORT CIRCUIT

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

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

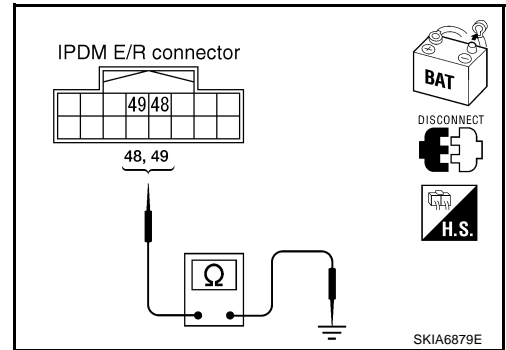
49 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between harness connector E108 and VDC/TCS/ABS control unit
- Harness between harness connector E108 and IPDM E/R



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-60, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-41, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

AKS00AAT

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

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

Component Inspection

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

AKS00AAU

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	48 - 49	

