SECTION LAN

LAN SYSTEM

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PRECAUTIONS

PFP:00001

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

UKS0025K

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

UKS002MT

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.

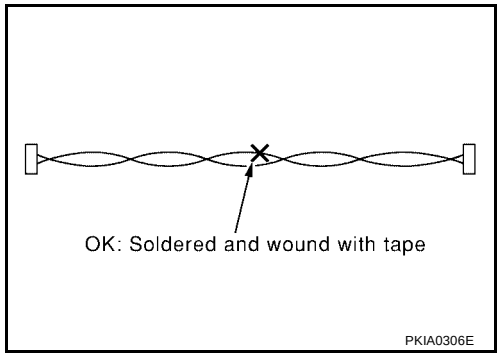
CHECK POINTS FOR USING CONSULT-II

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-7, "CAN Communication Unit" .

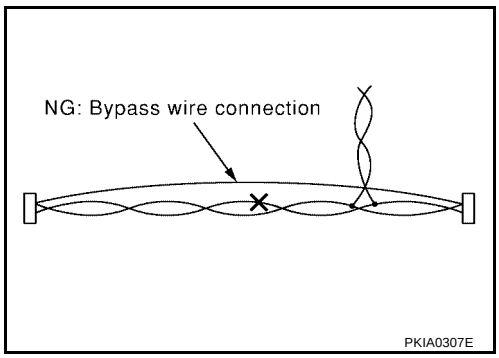
Precautions for CAN System

UKS0025L

- Do not apply voltage of 7.0 V or higher to terminal to be measured.
- Maximum open terminal voltage of tester in use must be less than 7.0 V.
- Before checking harnesses, turn ignition switch OFF and disconnect battery negative cable.
- Area to be repaired must be soldered and wrapped with tape. Make sure that fraying of twisted wire is within 110 mm (4.33 in).



- Do not make a bypass connection to repaired area. (If the circuit is bypassed, characteristics of twisted wire will be lost.)



Wiring Diagrams and Trouble Diagnosis

UKS0025M

When you read wiring diagrams, refer to the following:

- GI-13, "How to Read Wiring Diagrams"
- PG-4, "POWER SUPPLY ROUTING CIRCUIT"

When you perform trouble diagnosis, refer to the following:

- GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"
- GI-25, "How to Perform Efficient Diagnosis for an Electrical Incident"

CAN COMMUNICATION

PFP:23710

System Description

UKS0025N

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

UKS0025O

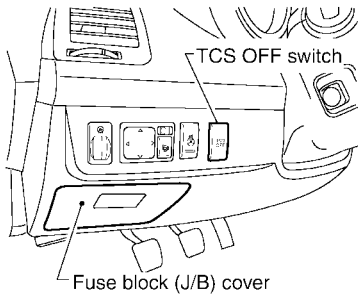
Go to CAN system, when selecting your CAN system type from the following table.

Body type	Sedan															
Axle	2WD															
Engine	VQ35DE															
Transmission	M/T						5A/T									
Brake control	ABS			TCS			ABS				TCS				VDC	
Navigation system			x			x			×	×			x	x		×
Automatic drive positioner		x	x		x	x		x		x		x		x	×	x
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CAN system trouble diagnosis	LAN-23	LAN-43	LAN-66	LAN-89	LAN-109	LAN-132	LAN-155	LAN-180	LAN-208	LAN-233	LAN-261	LAN-286	LAN-314	LAN-339	LAN-367	LAN-396

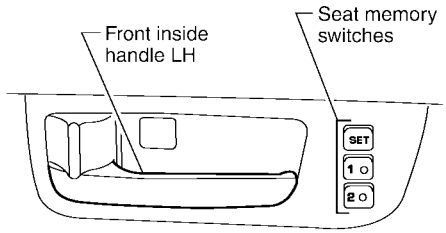
x: Applicable

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

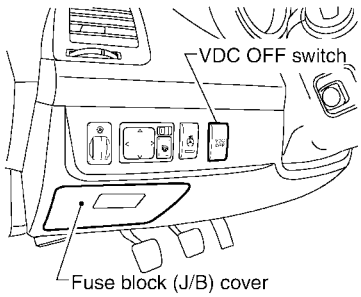
With TCS



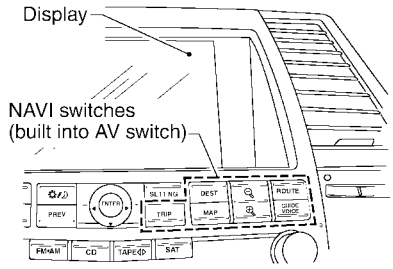
With automatic drive positioner



With VDC



With navigation system

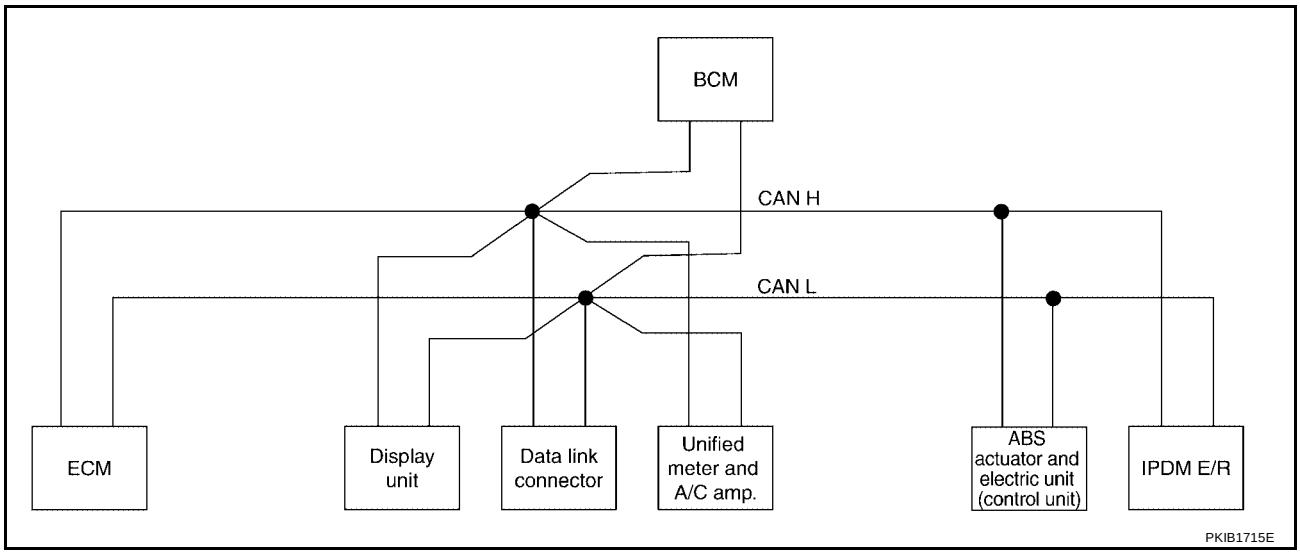


Input/Output Signal Chart

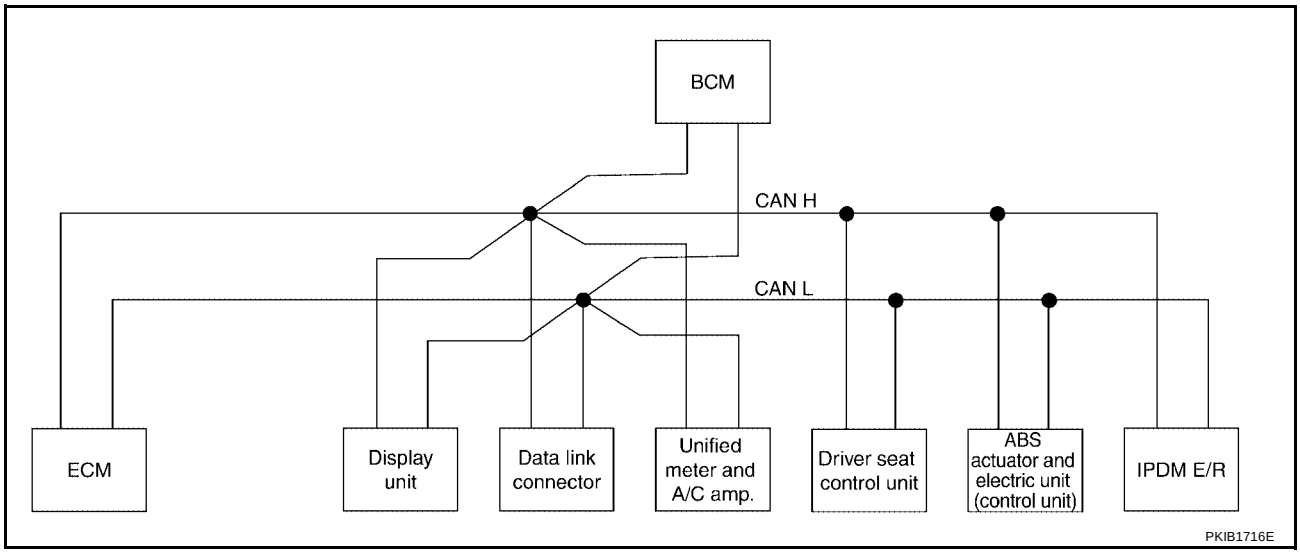
UKS0025P

TYPE 1/TYPE 2/TYPE 3

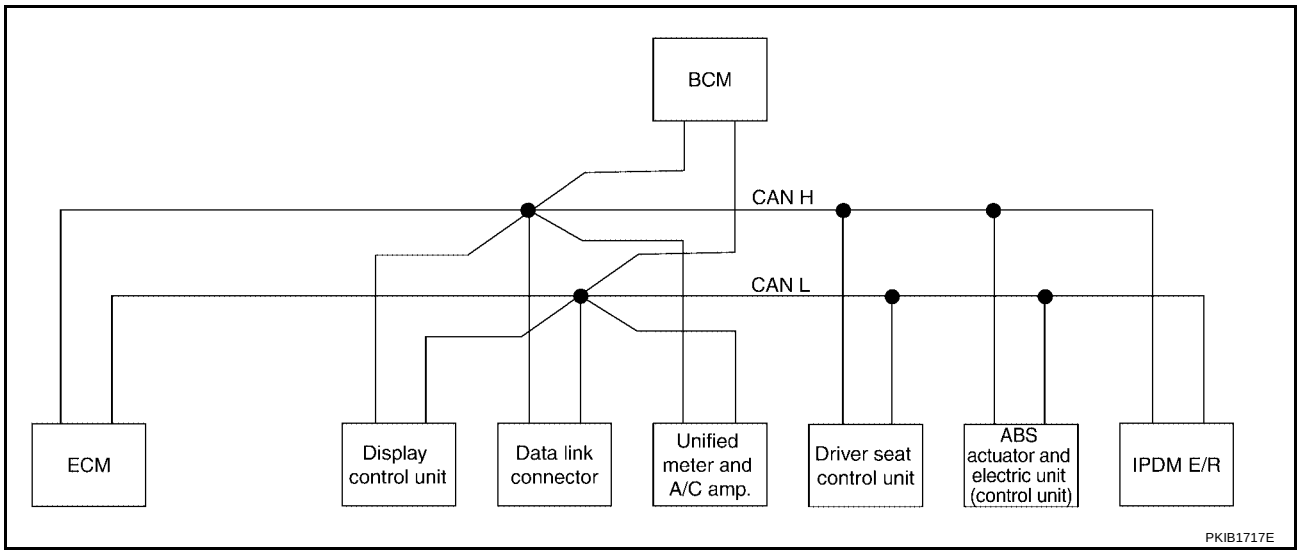
- Type 1



- Type 2



- Type 3



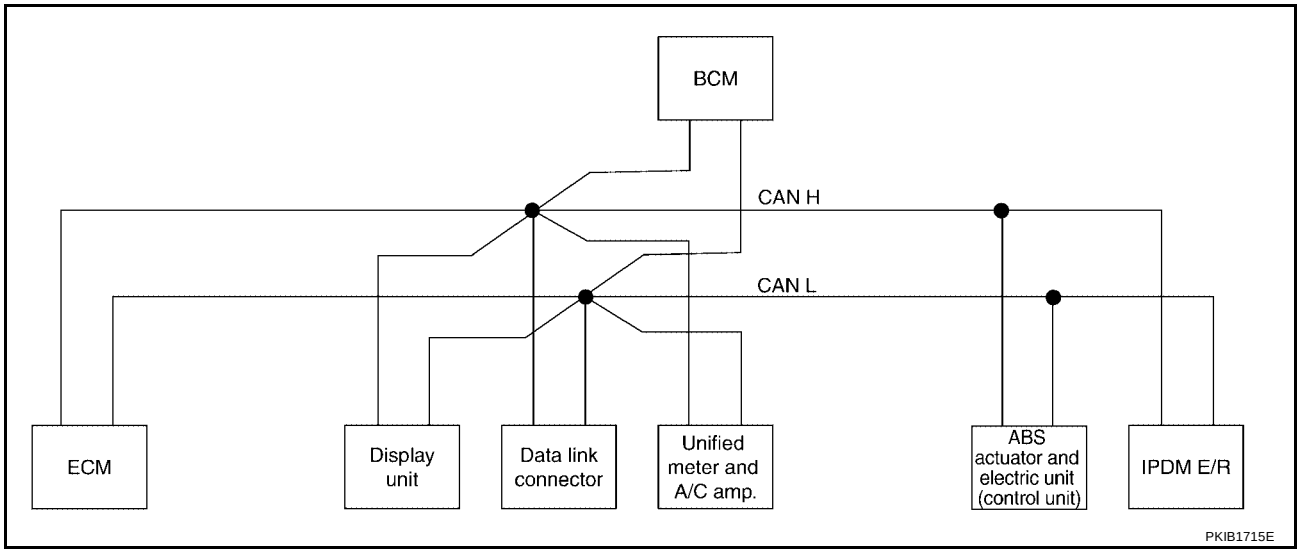
T: Transmit R: Receive

Signals	ECM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T		R	R				
Engine status signal	T				R			
Engine coolant temperature signal	T			R				
Key switch signal					T	R		
Ignition switch signal					T	R		R
Fuel consumption monitor signal	T			R				
		R	R	T				
A/C switch signal	R				T			
A/C compressor request signal	T							R
Blower fan motor switch signal	R				T			
A/C control signal		T	T	R				
		R	R	T				
Cooling fan speed request signal	T							R
Cooling fan speed signal	R							T
Position light request signal				R	T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal				R	T			R
High beam status signal	R							T
Front fog light request signal					T			R
Day time running light request signal				R	T			
Vehicle speed signal				R			T	
	R		R	T	R	R		
Sleep wake up signal				R	T	R		
Door switch signal		R	R	R	T	R		R
Trunk switch signal				R	T			
Turn indicator signal				R	T			
Cornering lamp request signal					T			R
Key fob ID signal					T	R		
Key fob door unlock signal					T	R		
Oil pressure switch signal					R			T
				R	T			
Buzzer output signal				R	T			
Fuel level sensor signal	R			T				
ASCD SET indicator signal	T			R				
ASCD CRUISE indicator signal	T			R				
Malfunction indicator lamp signal	T			R				
Front wiper request signal					T			R
Front wiper stop position signal					R			T
Rear window defogger switch signal					T			R

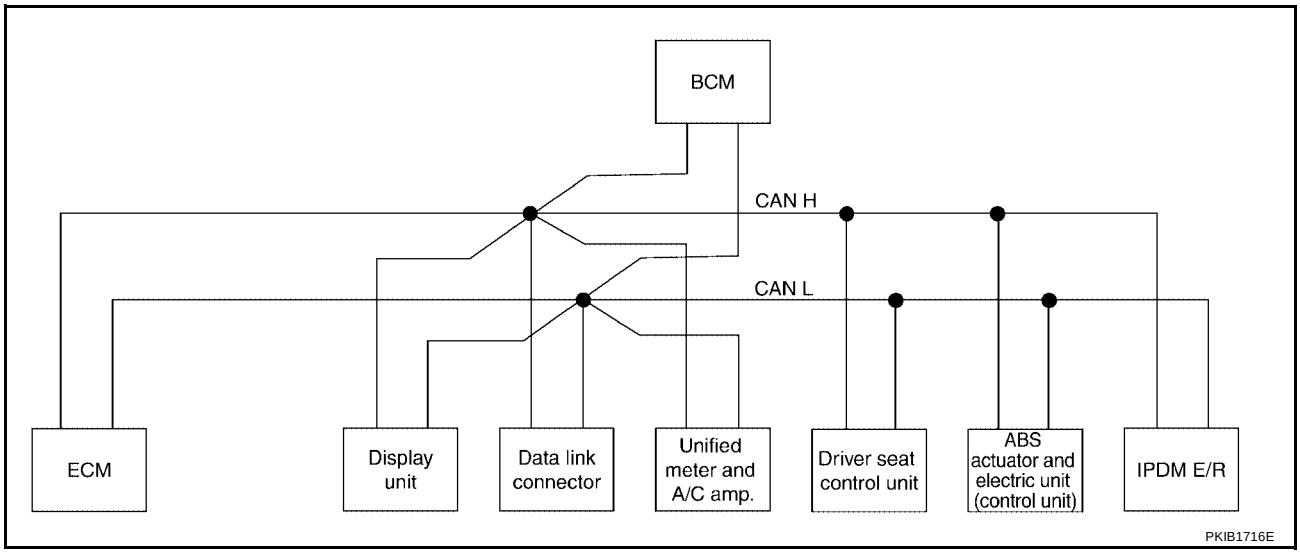
Signals	ECM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Rear window defogger control signal	R	R	R					T
Hood switch signal					R			T
Theft warning horn request signal					T			R
Horn chirp signal					T			R
ABS warning lamp signal				R			T	
Brake warning lamp signal				R			T	
System setting signal		T	T		R	R		
		R	R		T	T		
Distance to empty signal		R	R	T				
Seat belt buckle switch signal				T	R			
Parking brake switch signal				T	R	R		

TYPE 4/TYPE 5/TYPE 6

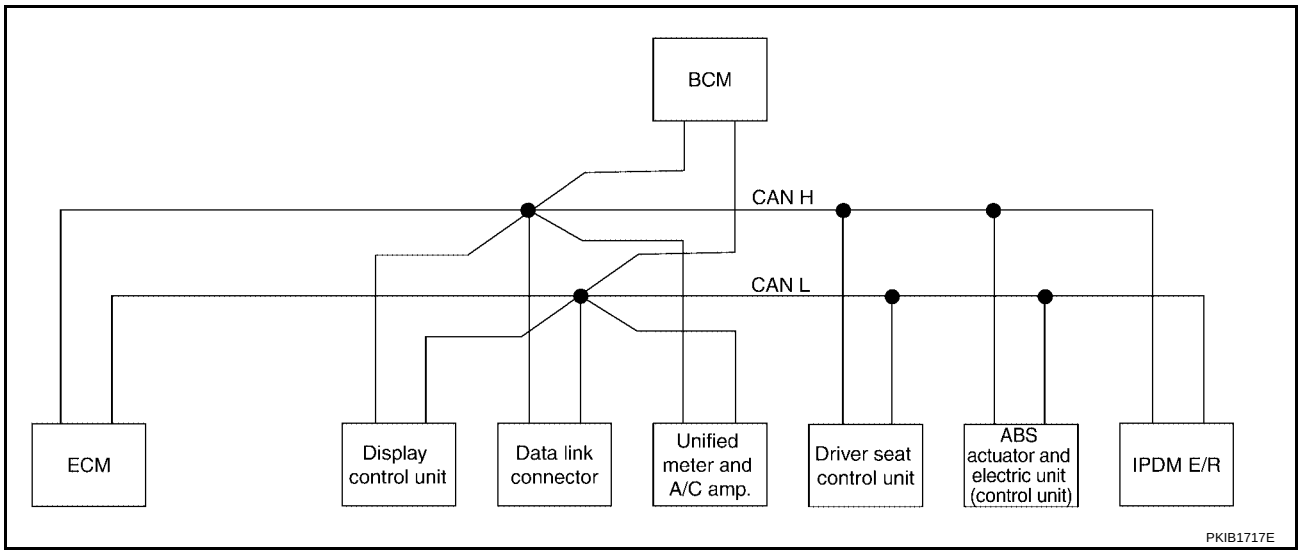
- Type 4



- Type 5



- Type 6



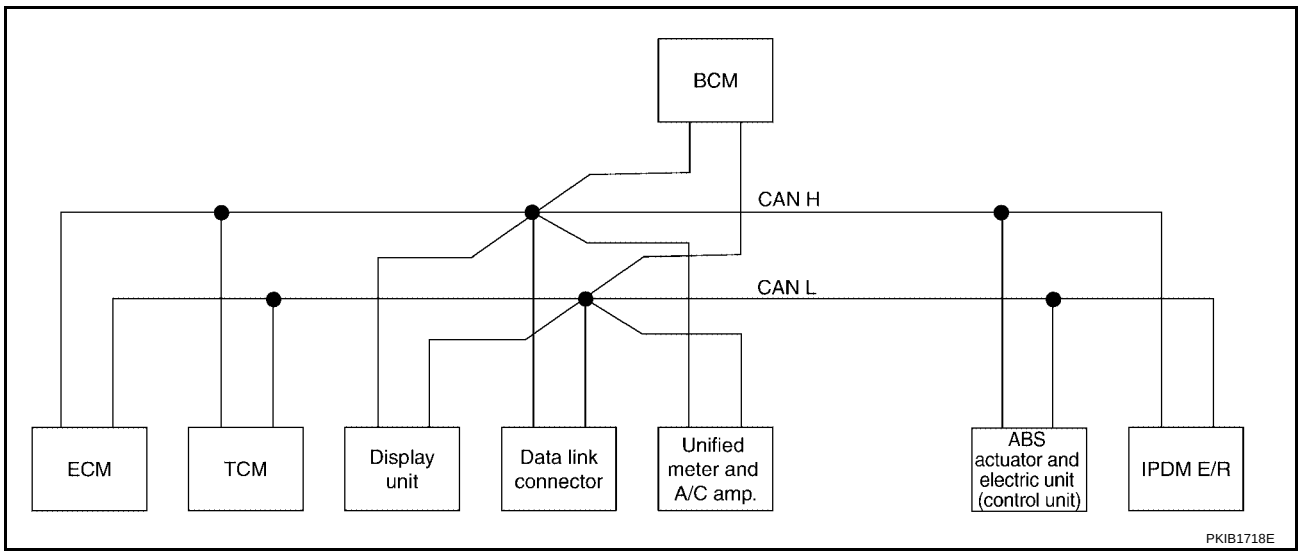
T: Transmit R: Receive

Signals	ECM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T		R	R			R	
Engine status signal	T				R			
Engine coolant temperature signal	T			R				
Key switch signal					T	R		
Ignition switch signal					T	R		R
Fuel consumption monitor signal	T			R				
		R	R	T				
A/C switch signal	R				T			
A/C compressor request signal	T							R
Blower fan motor switch signal	R				T			
A/C control signal		T	T	R				
		R	R	T				
Cooling fan speed request signal	T							R
Cooling fan speed signal	R							T
Position light request signal				R	T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal				R	T			R
High beam status signal	R							T
Front fog light request signal					T			R
Day time running light request signal				R	T			
Vehicle speed signal				R			T	
	R		R	T	R	R		
Sleep wake up signal				R	T	R		R
Door switch signal		R	R	R	T	R		R
Trunk switch signal				R	T			

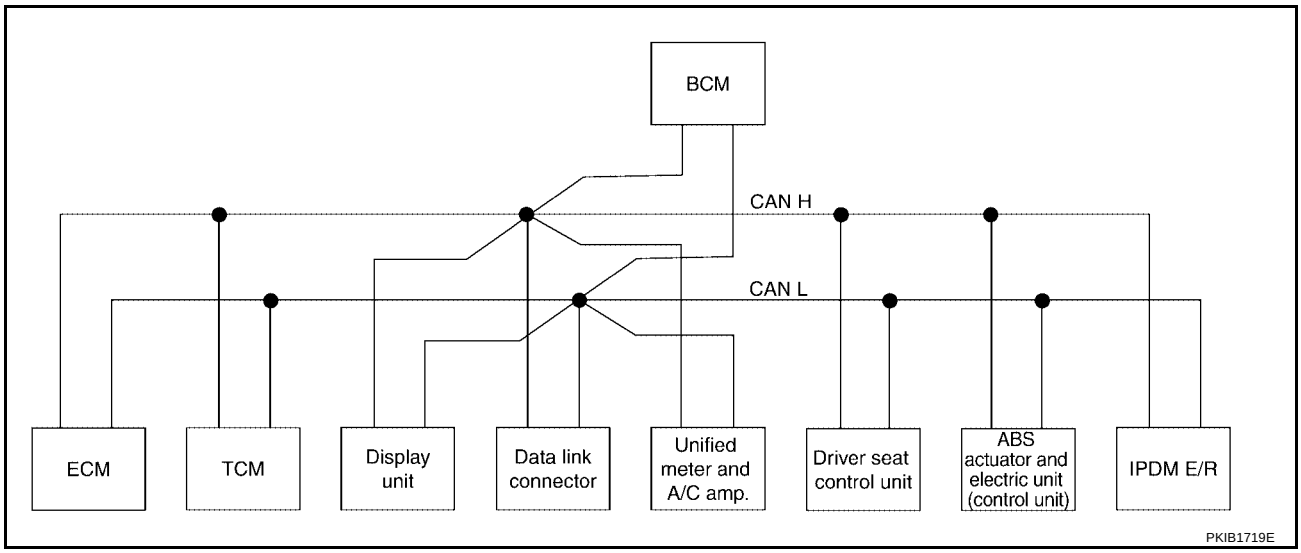
Signals	ECM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal				R	T			
Cornering lamp request signal					T			R
Key fob ID signal					T	R		
Key fob door unlock signal					T	R		
Oil pressure switch signal					R			T
				R	T			
Buzzer output signal				R	T			
Fuel level sensor signal	R			T				
ASCD SET indicator signal	T			R				
ASCD CRUISE indicator signal	T			R				
Malfunction indicator lamp signal	T			R				
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	R					T
Hood switch signal					R			T
Theft warning horn request signal					T			R
Horn chirp signal					T			R
ABS warning lamp signal				R			T	
Brake warning lamp signal				R			T	
SLIP indicator lamp signal				R			T	
Accelerator pedal position signal	T						R	
System setting signal		T	T		R	R		
		R	R		T	T		
Distance to empty signal		R	R	T				
Seat belt buckle switch signal				T	R			
Parking brake switch signal				T	R	R		

TYPE 7/TYPE 8/TYPE 9/TYPE 10

- Type 7



- Type 8



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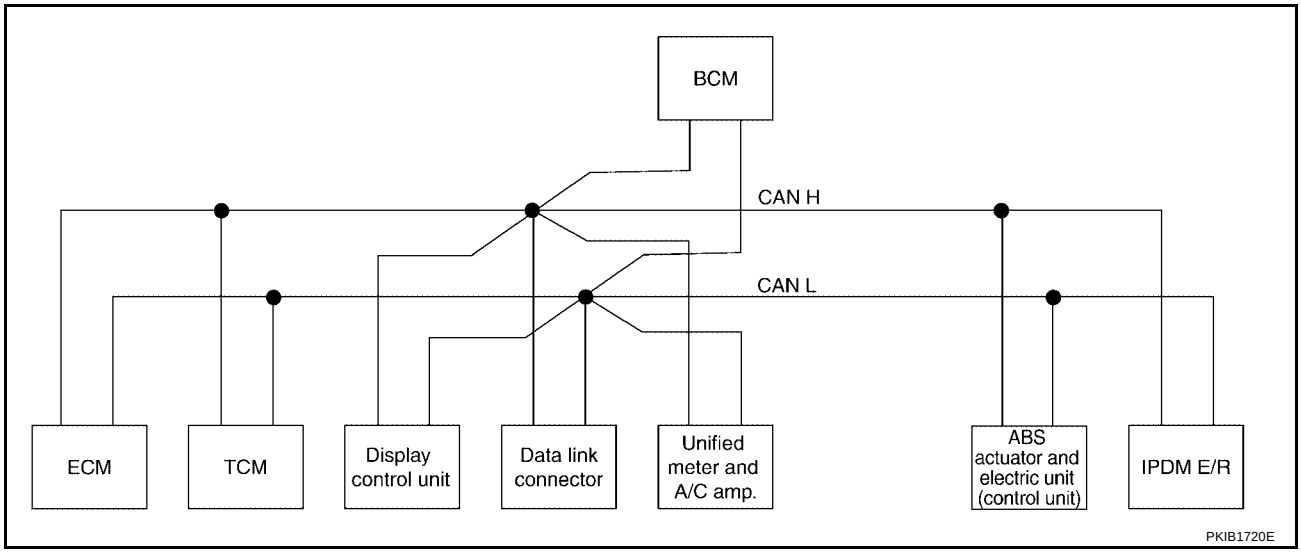

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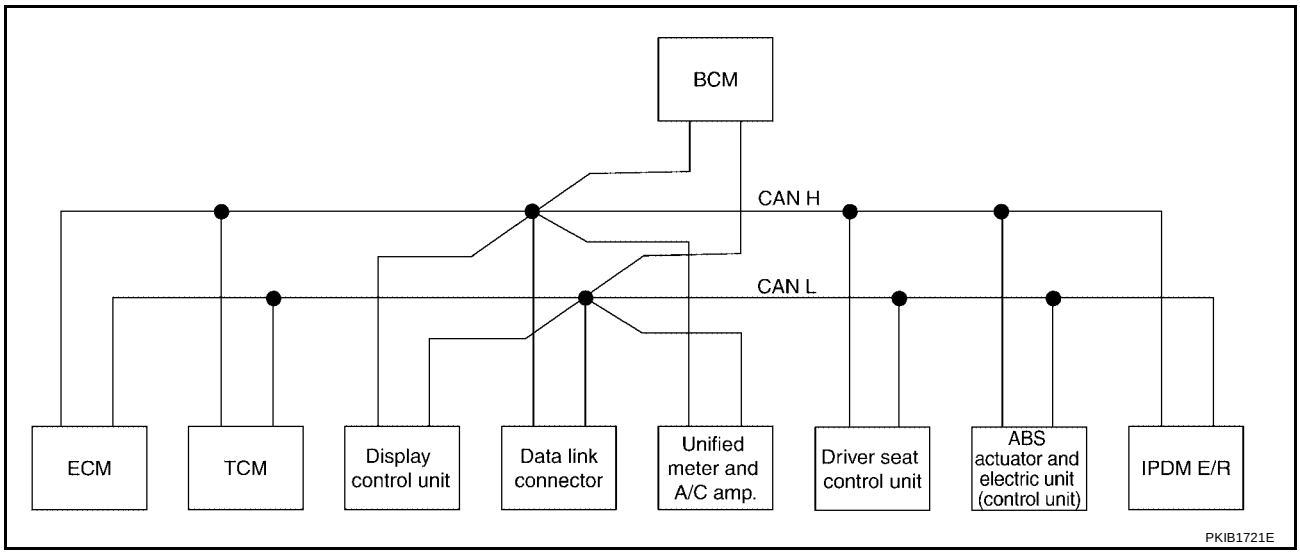


T: Transmit R: Receive

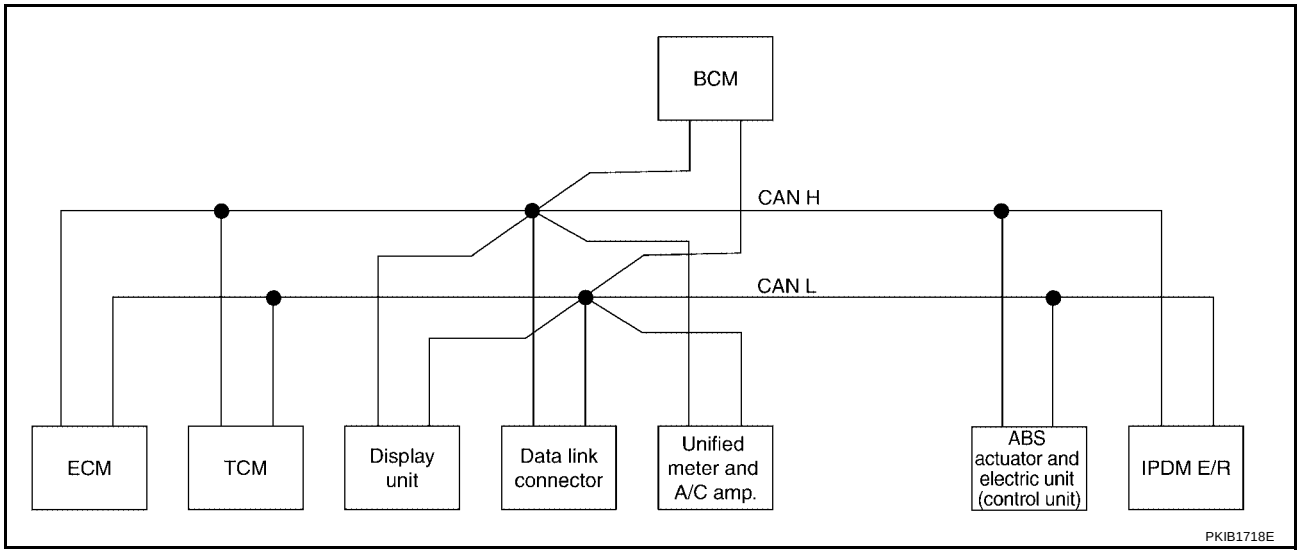
Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R				
Engine status signal	T					R			
Engine coolant temperature signal	T	R			R				
Key switch signal						T	R		
Ignition switch signal						T	R		R
Closed throttle position signal	T	R							
ABS operation signal		R						T	
Fuel consumption monitor signal	T				R				
			R	R	T				
A/C switch signal	R					T			
A/C compressor request signal	T								R
Blower fan motor switch signal	R					T			
A/C control signal			T	T	R				
			R	R	T				
Cooling fan speed request signal	T								R
Cooling fan speed signal	R								T
Position light request signal					R	T			R
Low beam request signal						T			R
Low beam status signal	R								T
High beam request signal					R	T			R
High beam status signal	R								T
Front fog light request signal						T			R
Day time running light request signal					R	T			
Vehicle speed signal					R			T	
	R	R		R	T	R	R		

Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Sleep wake up signal					R	T	R		
Door switch signal			R	R	R	T	R		R
Trunk switch signal					R	T			
Turn indicator signal					R	T			
Cornering lamp request signal						T			R
Key fob ID signal						T	R		
Key fob door unlock signal						T	R		
Oil pressure switch signal						R			T
					R	T			
Buzzer output signal					R	T			
Fuel level sensor signal	R				T				
ASCD SET indicator signal	T				R				
ASCD CRUISE indicator signal	T				R				
Malfunction indicator lamp signal	T				R				
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	R					T
Hood switch signal						R			T
Theft warning horn request signal						T			R
Horn chirp signal						T			R
ABS warning lamp signal					R			T	
Brake warning lamp signal					R			T	
System setting signal			T	T		R	R		
			R	R		T	T		
Distance to empty signal			R	R	T				
Seat belt buckle switch signal					T	R			
Parking brake switch signal					T	R	R		
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
A/T CHECK indicator lamp signal		T			R				
A/T position indicator lamp signal		T			R				
Manual mode indicator signal		T			R				
A/T self-diagnosis signal	R	T							
Electric throttle control signal	T	R							
Engine and A/T integrated control signal	T	R							
	R	T							
P range signal		T					R	R	
R range signal		T					R		
Stop lamp switch signal		R			T				

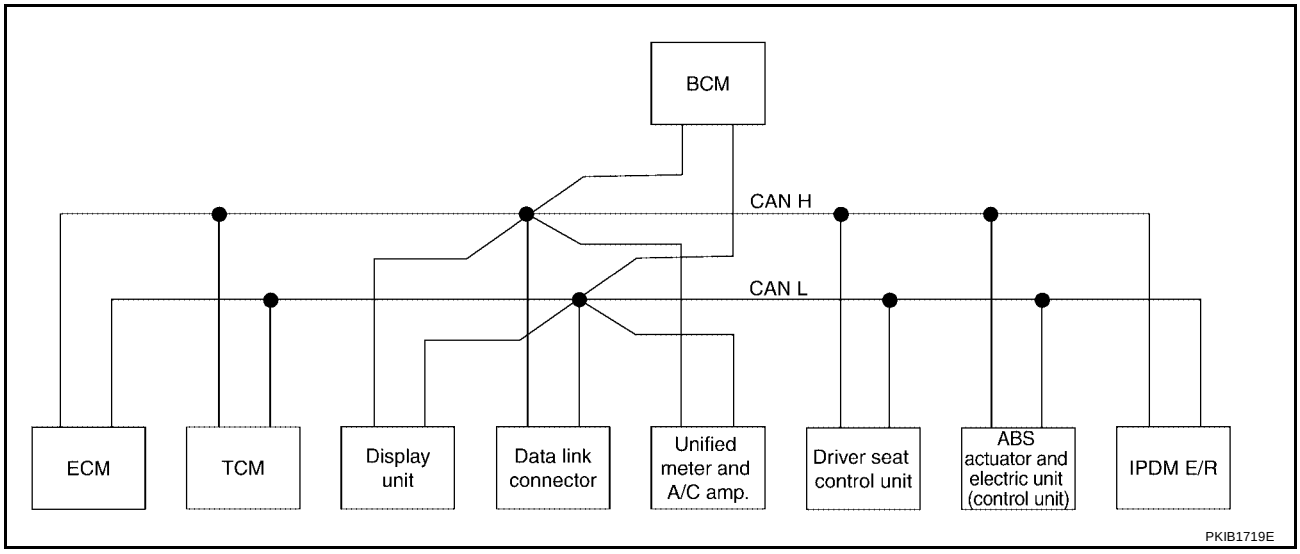
Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Input shaft revolution signal	R	T							
Output shaft revolution signal	R	T							

TYPE 11/TYPE 12/TYPE 13/TYPE 14

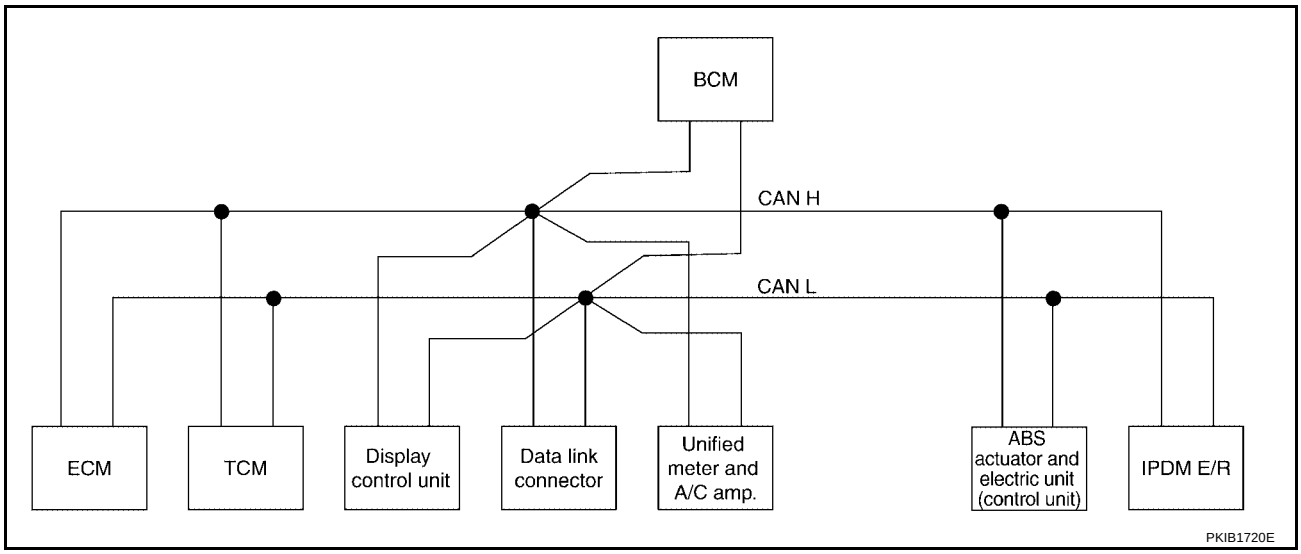
- Type 11



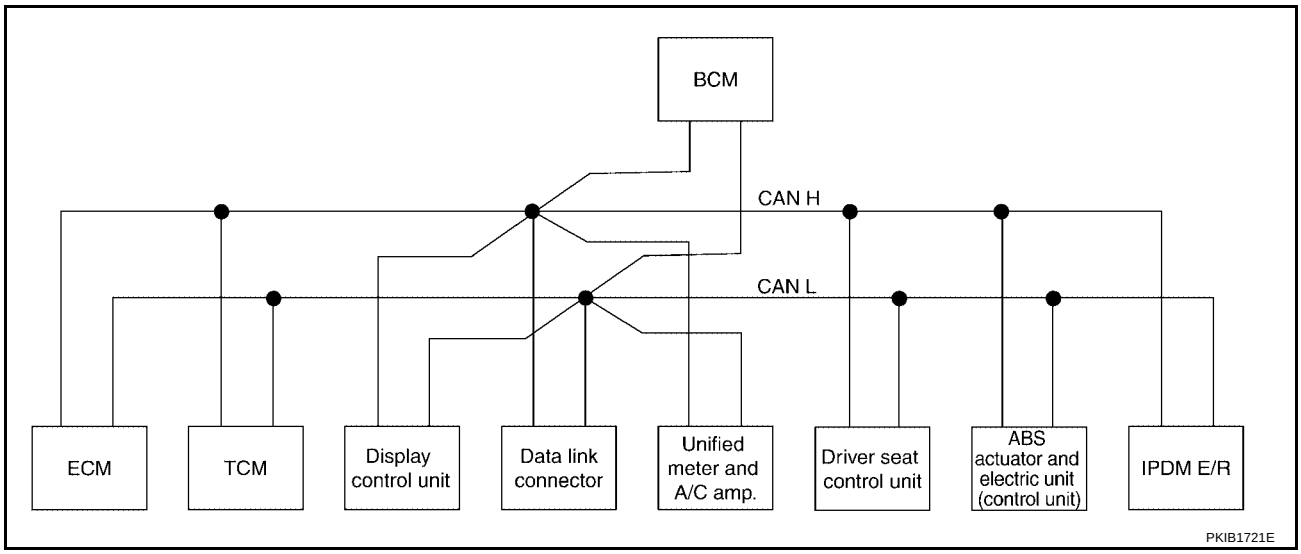
- Type 12



- Type 13



- Type 14



T: Transmit R: Receive

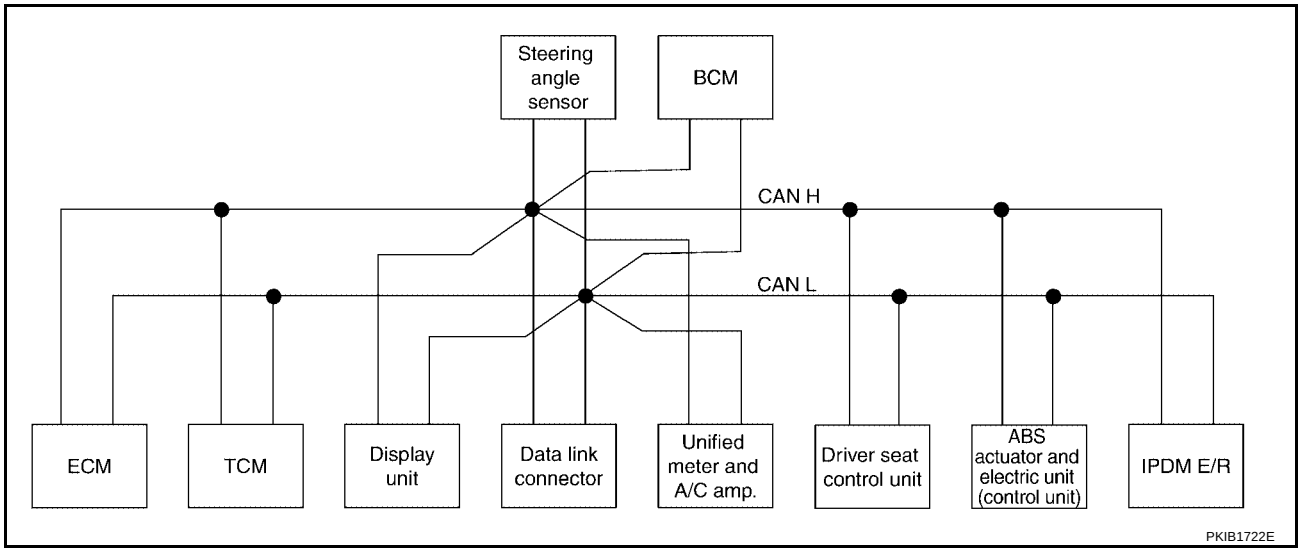
Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			R	
Engine status signal	T					R			
Engine coolant temperature signal	T	R			R				
Key switch signal						T	R		
Ignition switch signal						T	R		R
Closed throttle position signal	T	R							
ABS operation signal		R						T	
Fuel consumption monitor signal	T				R				
			R	R	T				
A/C switch signal	R					T			
A/C compressor request signal	T								R

Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Blower fan motor switch signal	R					T			
A/C control signal			T	T	R				
			R	R	T				
Cooling fan speed request signal	T								R
Cooling fan speed signal	R								T
Position light request signal					R	T			R
Low beam request signal						T			R
Low beam status signal	R								T
High beam request signal					R	T			R
High beam status signal	R								T
Front fog light request signal						T			R
Day time running light request signal					R	T			
Vehicle speed signal					R			T	
	R	R		R	T	R	R		
Sleep wake up signal					R	T	R		R
Door switch signal			R	R	R	T	R		R
Trunk switch signal					R	T			
Turn indicator signal					R	T			
Cornering lamp request signal						T			R
Key fob ID signal						T	R		
Key fob door unlock signal						T	R		
Oil pressure switch signal						R			T
					R	T			
Buzzer output signal					R	T			
Fuel level sensor signal	R				T				
ASCD SET indicator signal	T				R				
ASCD CRUISE indicator signal	T				R				
Malfunction indicator lamp signal	T				R				
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	R					T
Hood switch signal						R			T
Theft warning horn request signal						T			R
Horn chirp signal						T			R
ABS warning lamp signal					R			T	
Brake warning lamp signal					R			T	
System setting signal			T	T		R	R		
			R	R		T	T		
Distance to empty signal			R	R	T				

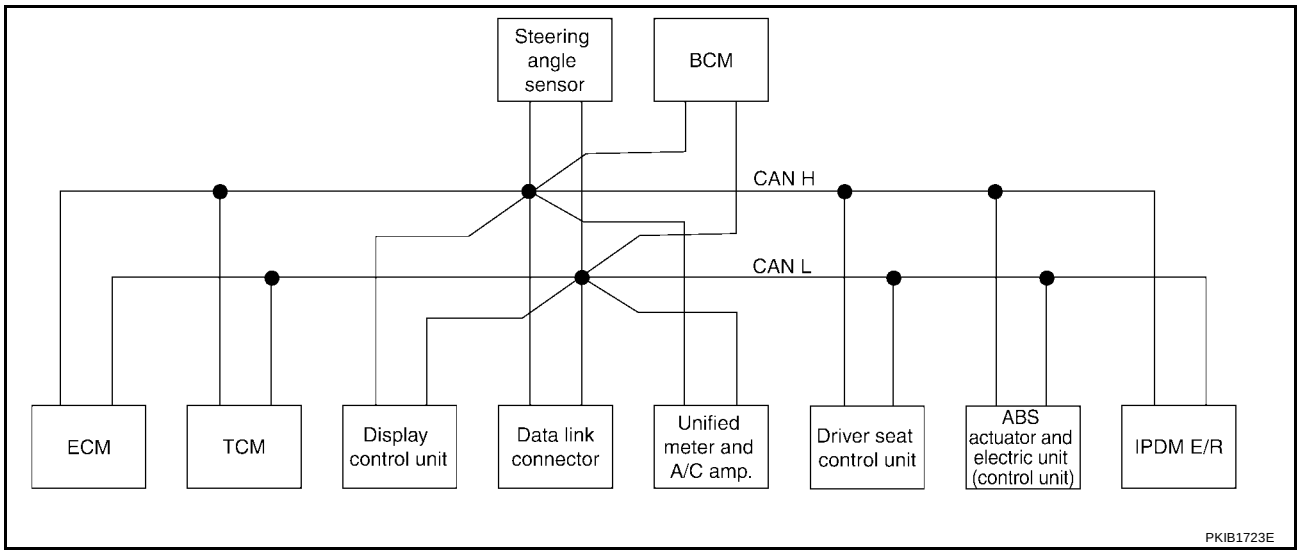
Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Seat belt buckle switch signal					T	R			
Parking brake switch signal					T	R	R		
A/T self-diagnosis signal	R	T							
Electric throttle control signal	T	R							
Engine and A/T integrated control signal	T	R							
	R	T							
Accelerator pedal position signal	T							R	
P range signal		T					R	R	
R range signal		T					R		
Stop lamp switch signal		R			T				
TCS operation signal	R	R						T	
Input shaft revolution signal	R	T							
Output shaft revolution signal	R	T							
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
SLIP indicator lamp signal					R			T	
A/T CHECK indicator lamp signal		T			R				
A/T position indicator lamp signal		T			R				
A/T shift schedule change demand signal		R						T	
Manual mode indicator signal		T			R				

TYPE 15/TYPE 16

- Type 15



- Type 16



T: Transmit R: Receive

Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	Steering angle sensor	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R				R	
Engine status signal	T						R			
Engine coolant temperature signal	T	R			R					
Key switch signal							T	R		
Ignition switch signal							T	R		R
Closed throttle position signal	T	R								
ABS operation signal		R							T	
Fuel consumption monitor signal	T				R					
			R	R	T					
A/C switch signal	R						T			
A/C compressor request signal	T									R
Blower fan motor switch signal	R						T			
A/C control signal			T	T	R					
			R	R	T					
Cooling fan speed request signal	T									R
Cooling fan speed signal	R									T
Position light request signal					R		T			R
Low beam request signal							T			R
Low beam status signal	R									T
High beam request signal					R		T			R
High beam status signal	R									T
Front fog light request signal							T			R
Day time running light request signal					R		T			

Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	Steering angle sensor	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Vehicle speed signal					R				T	
	R	R		R	T		R	R		
Sleep wake up signal					R		T	R		R
Door switch signal			R	R	R		T	R		R
Trunk switch signal					R		T			
Turn indicator signal					R		T			
Cornering lamp request signal							T			R
Key fob ID signal							T	R		
Key fob door unlock signal							T	R		
Oil pressure switch signal							R			T
					R		T			
Buzzer output signal					R		T			
Fuel level sensor signal	R				T					
ASCD SET indicator signal	T				R					
ASCD CRUISE indicator signal	T				R					
Malfunction indicator lamp signal	T				R					
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	R						T
Hood switch signal							R			T
Theft warning horn request signal							T			R
Horn chirp signal							T			R
ABS warning lamp signal					R				T	
Brake warning lamp signal					R				T	
System setting signal			T	T			R	R		
			R	R			T	T		
Distance to empty signal			R	R	T					
Seat belt buckle switch signal					T		R			
Parking brake switch signal					T		R	R		
A/T self-diagnosis signal	R	T								
Electric throttle control signal	T	R								
Engine and A/T integrated control signal	T	R								
	R	T								
Accelerator pedal position signal	T								R	
P range signal		T						R	R	
R range signal		T						R		
Stop lamp switch signal		R			T					
TCS operation signal	R	R							T	

Signals	ECM	TCM	Display unit	Display control unit	Unified meter and A/C amp.	Steering angle sensor	BCM	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
VDC operation signal	R	R							T	
Input shaft revolution signal	R	T								
Output shaft revolution signal	R	T								
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
Steering angle sensor signal						T			R	
VDC OFF indicator lamp signal					R				T	
SLIP indicator lamp signal					R				T	
A/T CHECK indicator lamp signal		T			R					
A/T position indicator lamp signal		T			R					
A/T shift schedule change demand signal		R							T	
Manual mode indicator signal		T			R					

CAN SYSTEM (TYPE 1)

PFP:23710

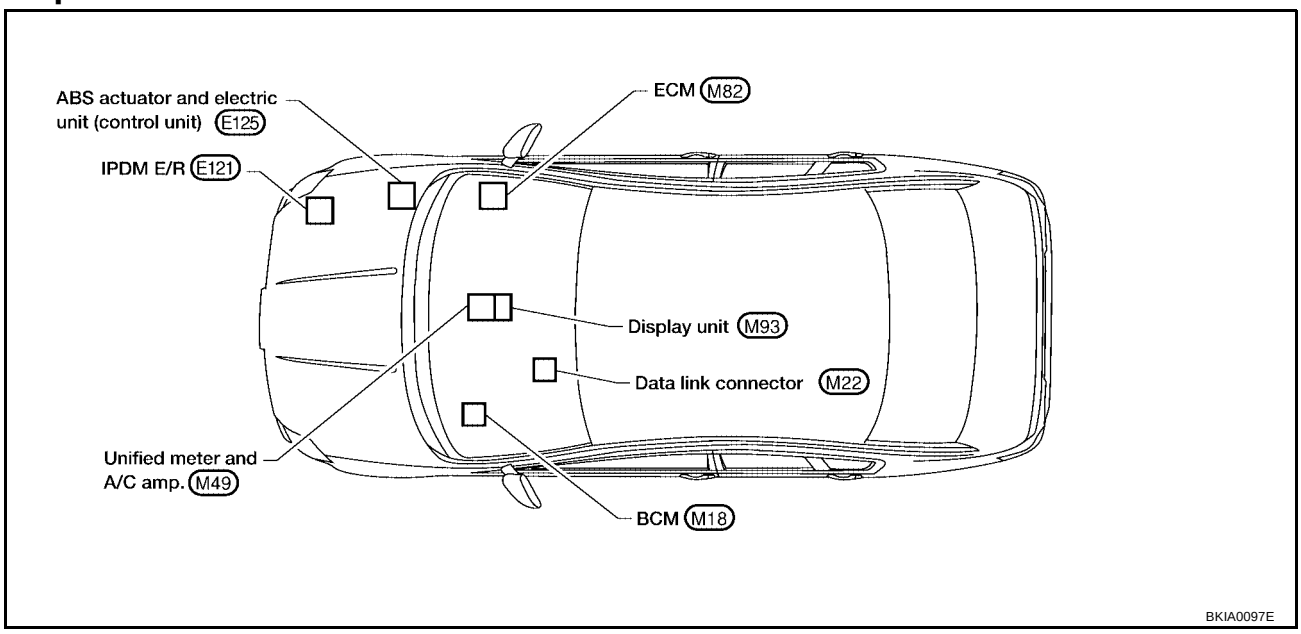
System Description

UKS0025Q

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.

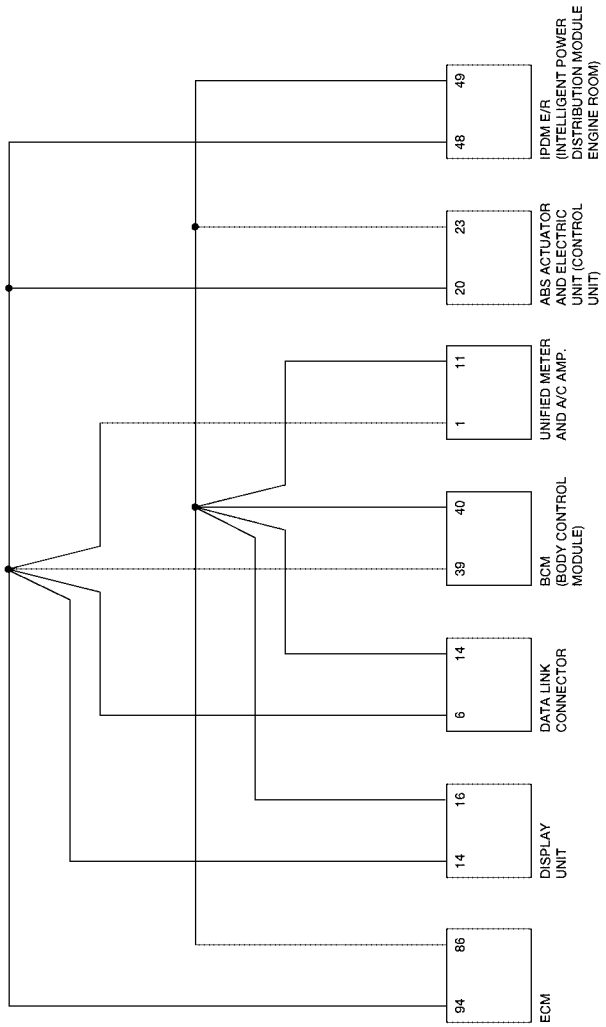
Component Parts and Harness Connector Location

UKS0025R



Schematic

UKS0025S

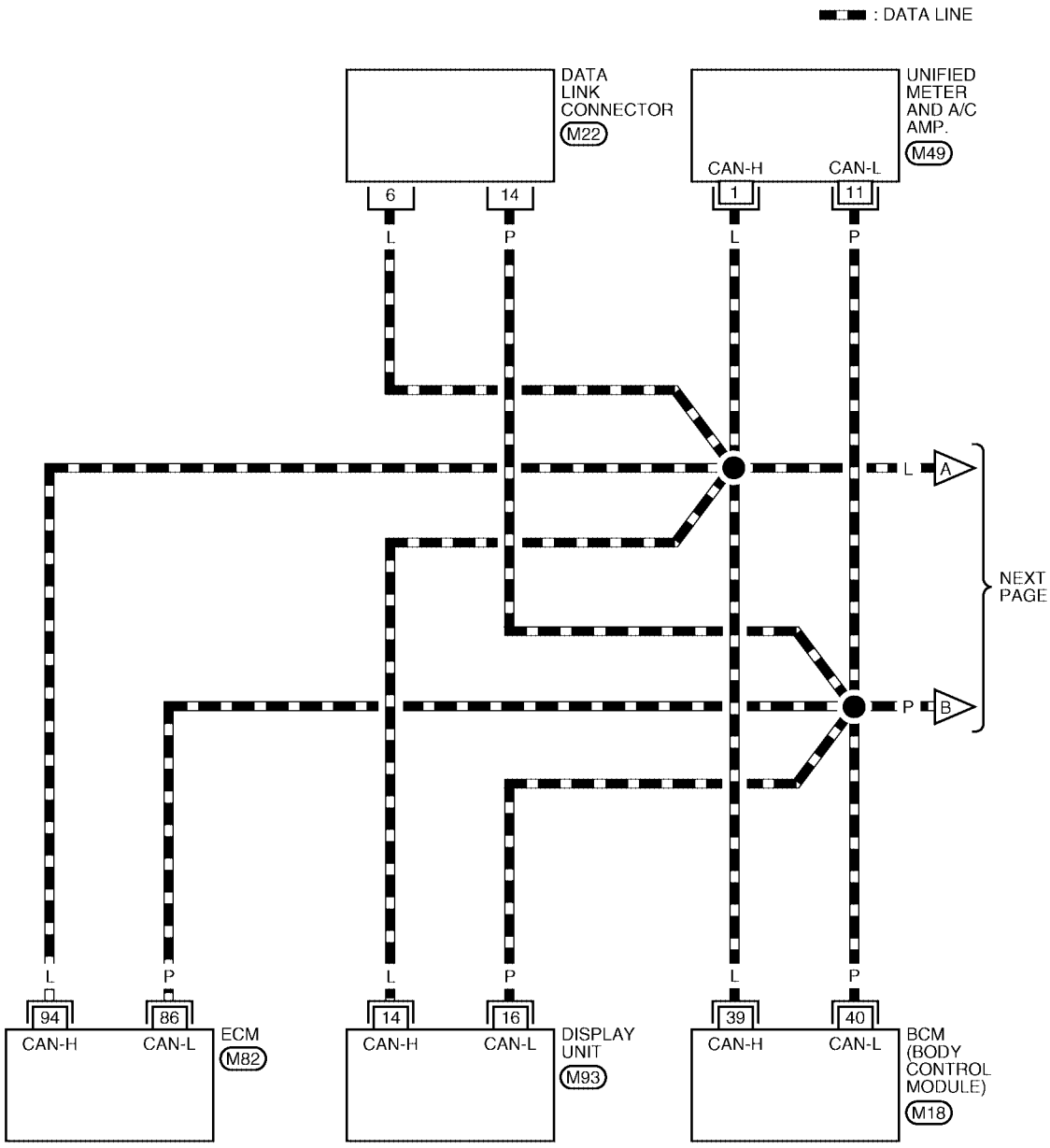


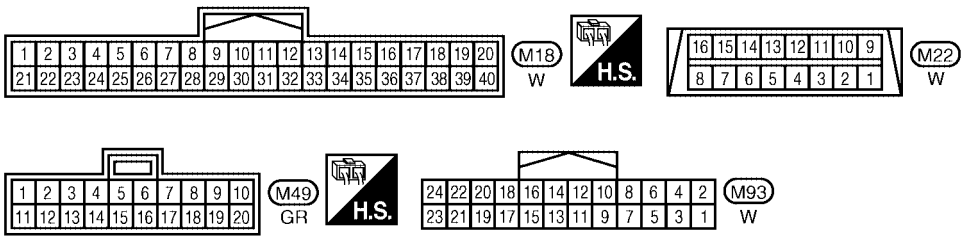
BKWA0258E

Wiring Diagram - CAN -

UKS0025T

LAN-CAN-01

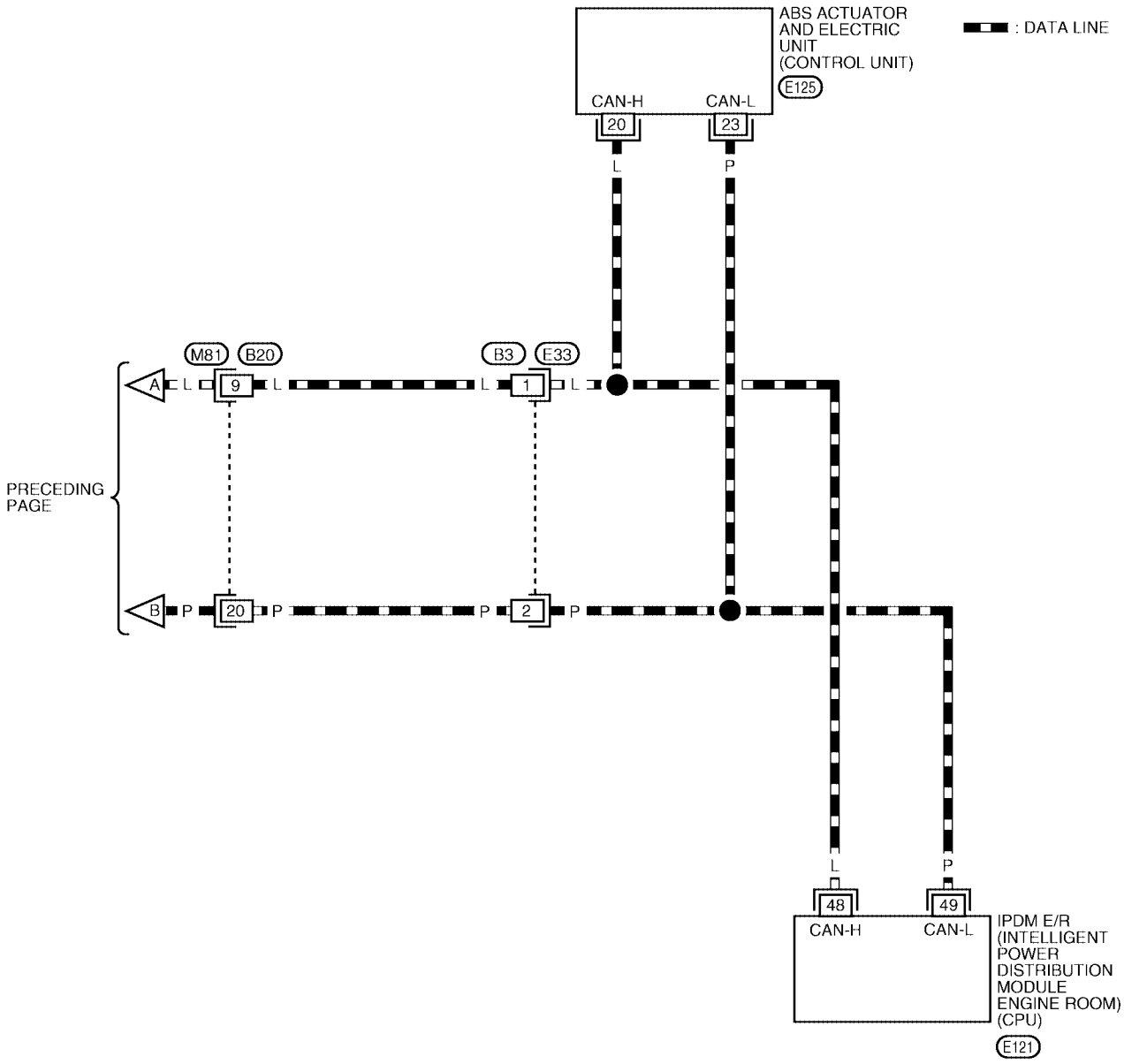




REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

BKWA0260E

LAN-CAN-02



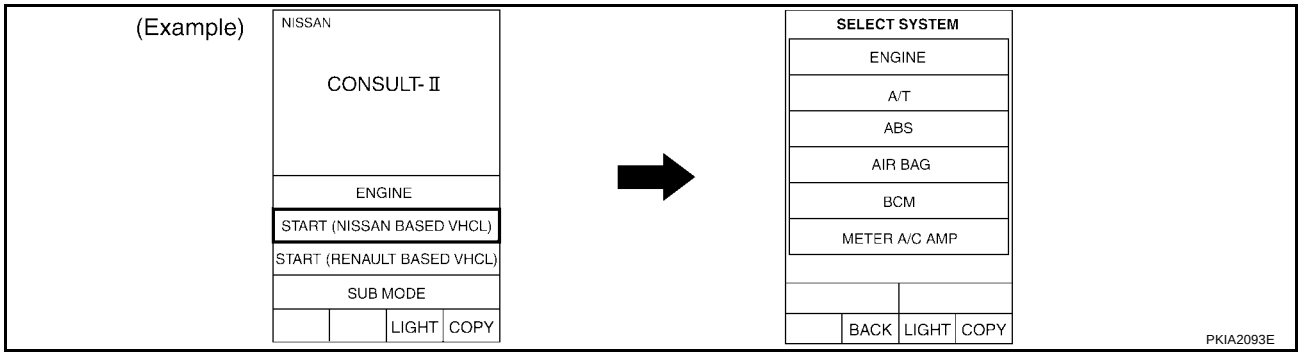
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0261E

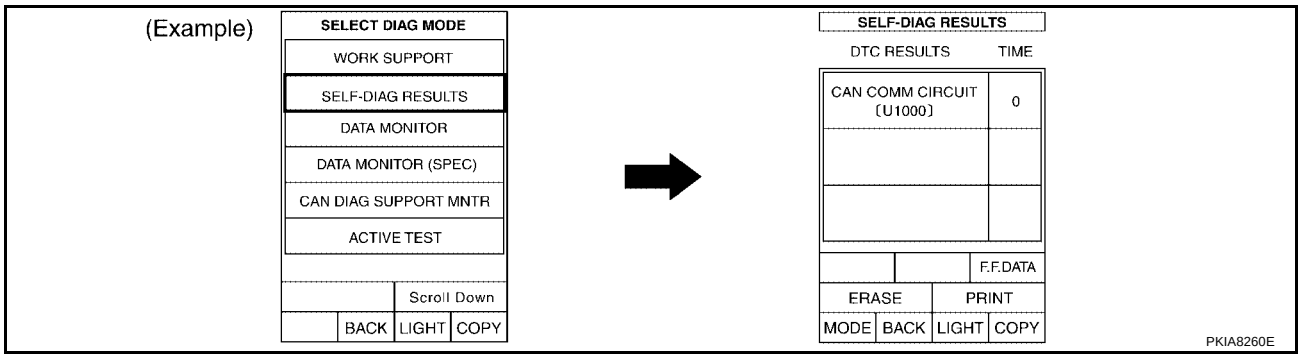
Work Flow

UKS0025U

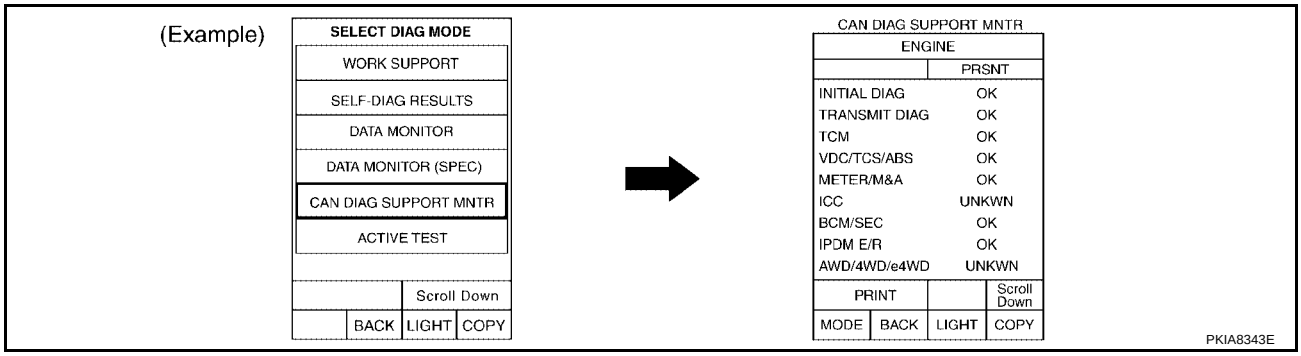
1. When there are no indications of “METER A/C AMP”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



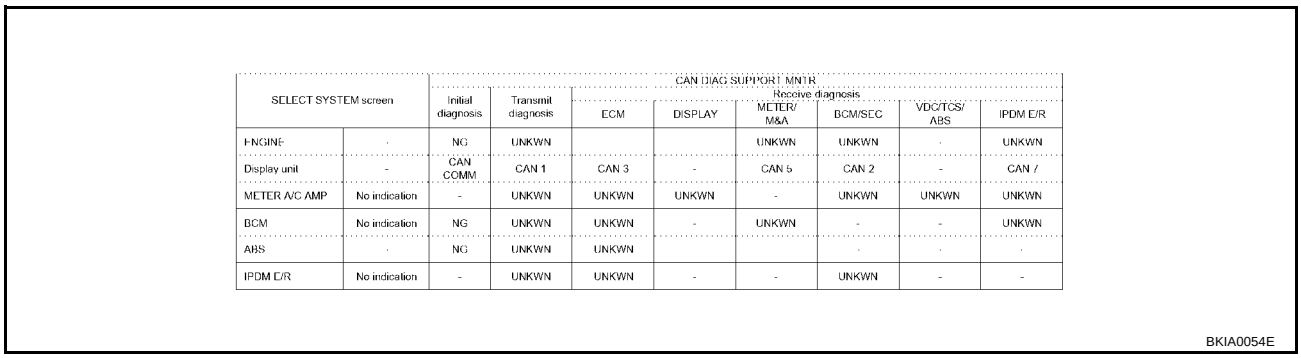
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN			UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN			-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

BKIA0054E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

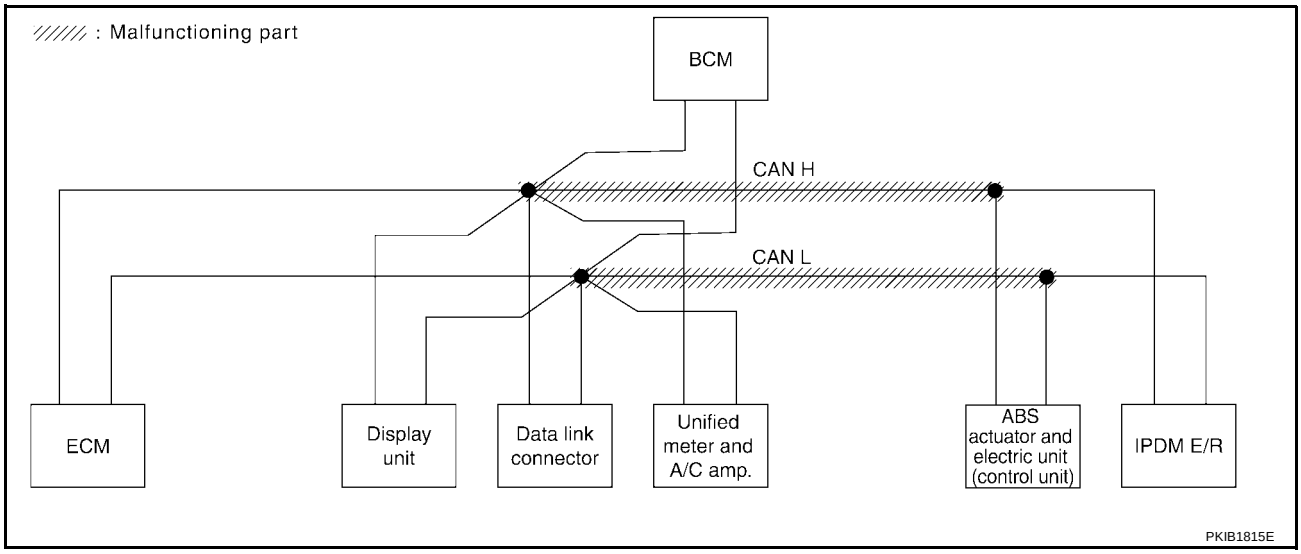
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-37, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2124E



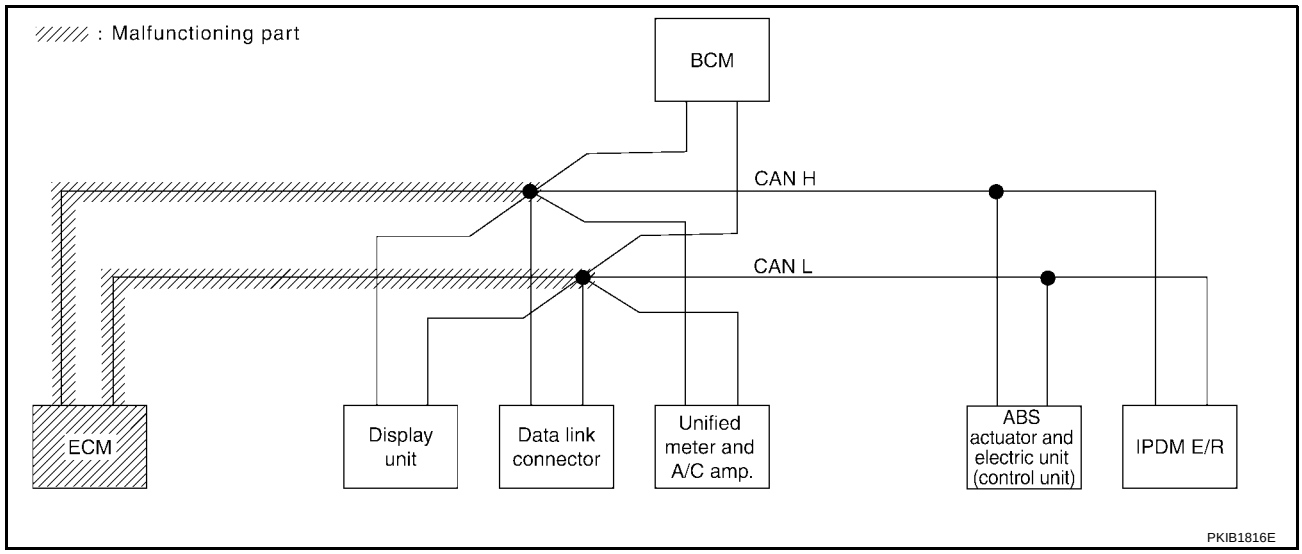
PKIB1815E

Case 2

Check ECM circuit. Refer to LAN-38, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2125E



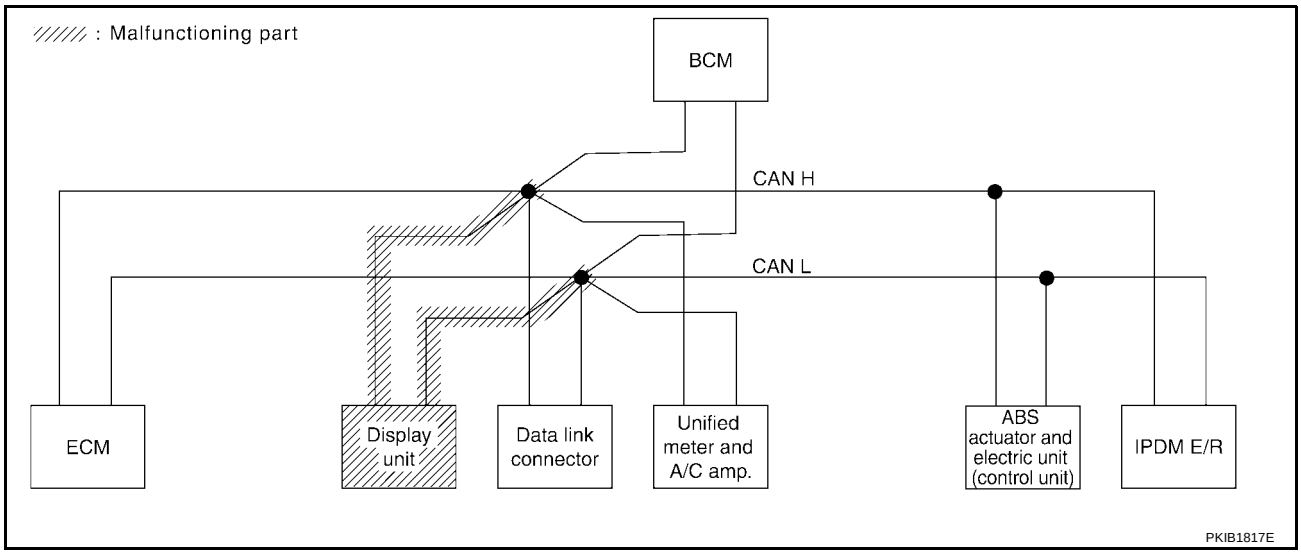
PKIB1816E

Case 3

Check display unit circuit. Refer to LAN-38, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	✓ CAN 1	✓ CAN 3	-	✓ CAN 5	✓ CAN 2	-	✓ CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2126E



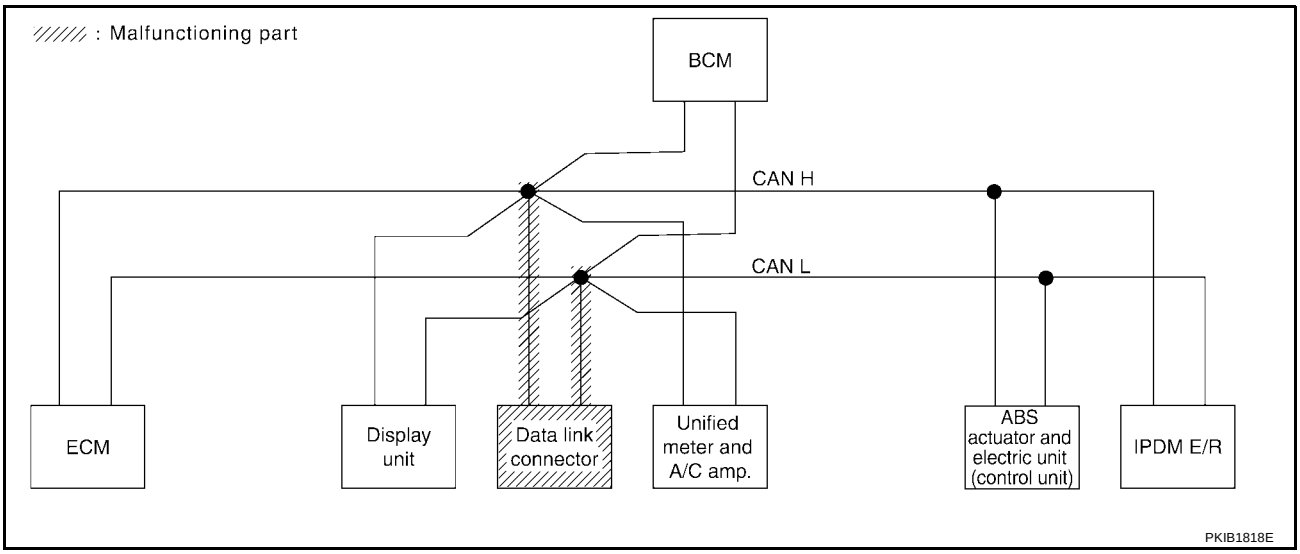
PKIB1817E

Case 4

Check data link connector circuit. Refer to LAN-39, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2127E



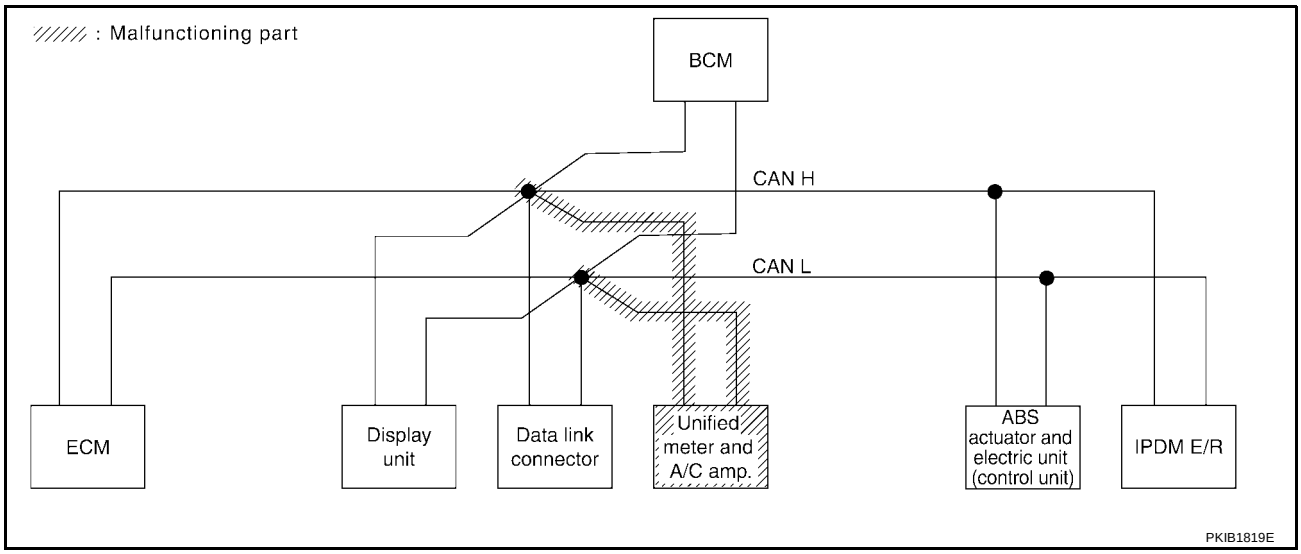
PKIB1818E

Case 5

Check unified meter and A/C amp. circuit. Refer to LAN-39, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2129E



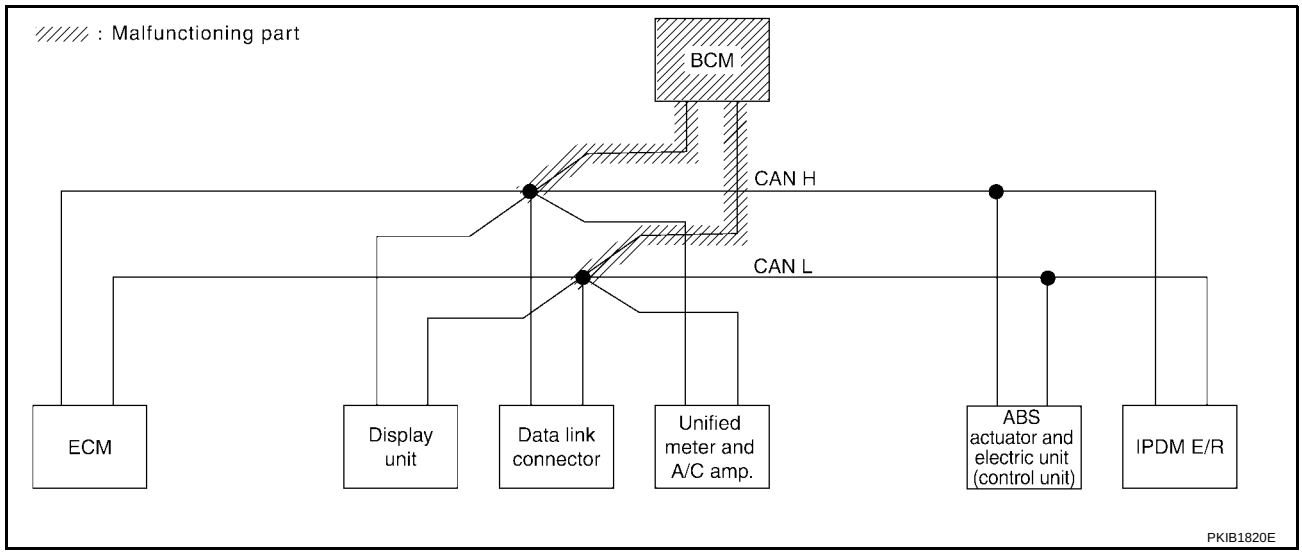
PKIB1819E

Case 6

Check BCM circuit. Refer to LAN-40, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2823E



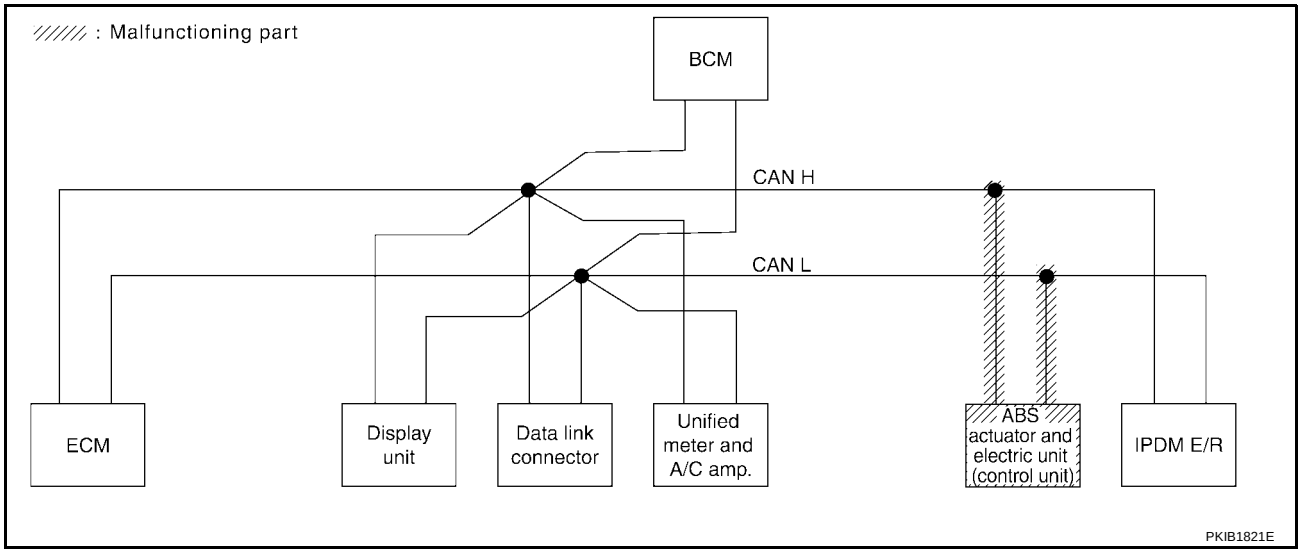
PKIB1820E

Case 7

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-40, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2130E



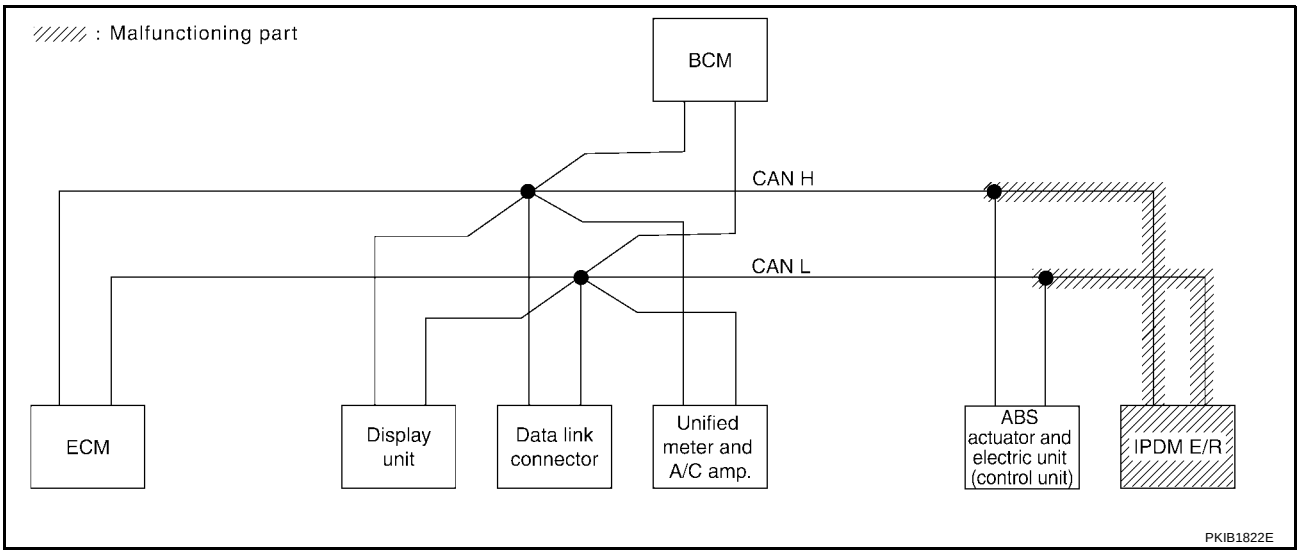
PKIB1821E

Case 8

Check IPDM E/R circuit. Refer to LAN-41, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2131E



PKIB1822E

Case 9

Check CAN communication circuit. Refer to LAN-41, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2132E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-42, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2134E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-42, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2133E

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

UKS0025V

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

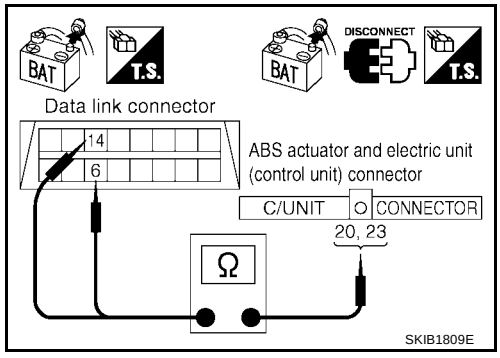
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

6 (L) - 20 (L) : Continuity should exist.
14 (P) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-27, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS0025W

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

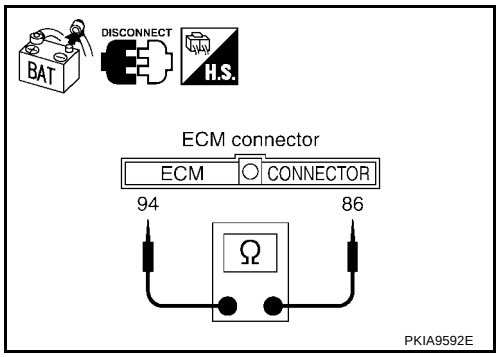
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and data link connector M22.



Display Unit Circuit Check

UKS0025X

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

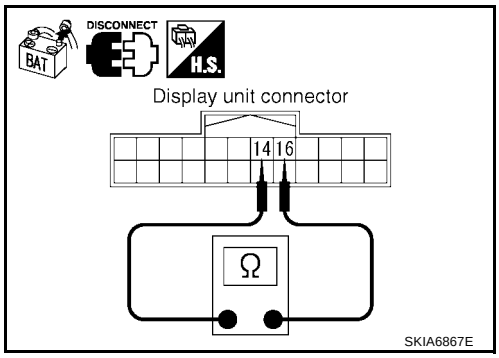
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.



Data Link Connector Circuit Check

UKS0025Y

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

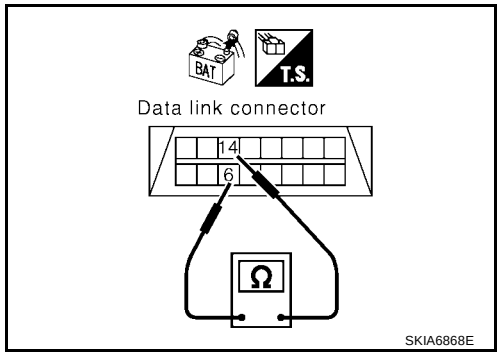
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-27, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS00260

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

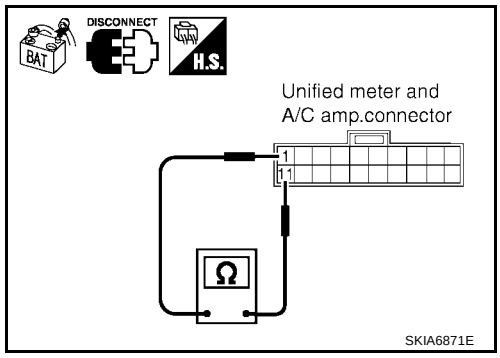
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS0025Z

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

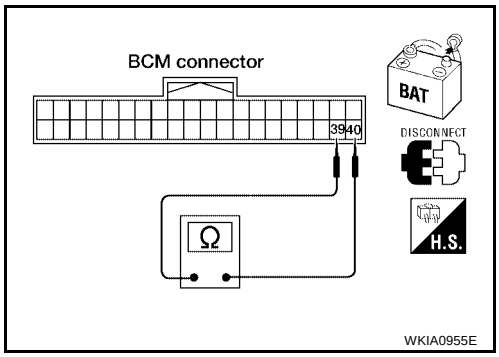
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS00261

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

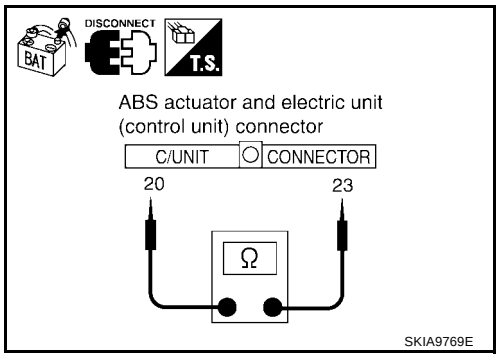
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS00262

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

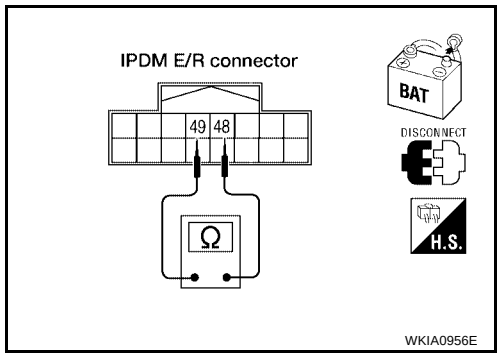
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS00263

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

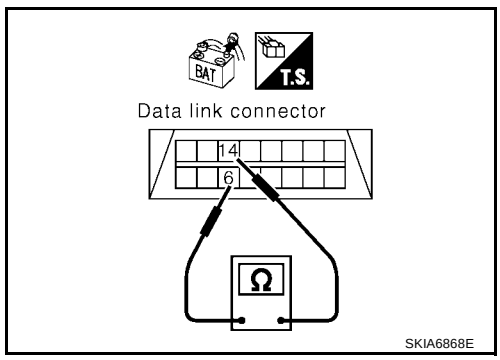
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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

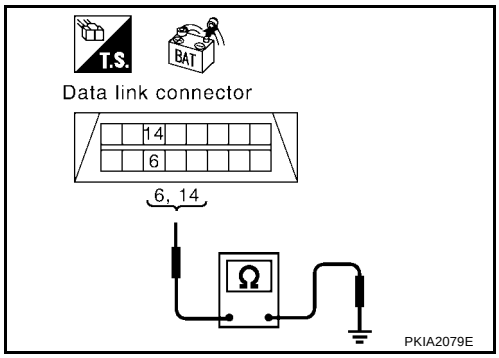


3. CHECK HARNESS FOR SHORT TO GROUND

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-42, "Component Inspection" .

NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS00264

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS00265

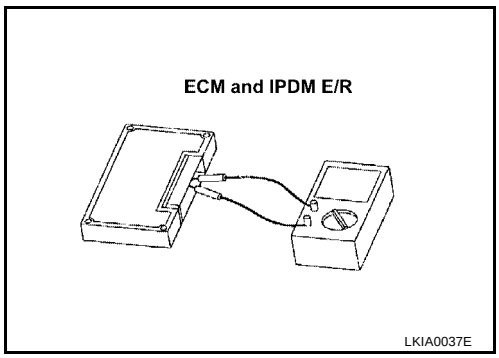
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 2)

PFP:23710

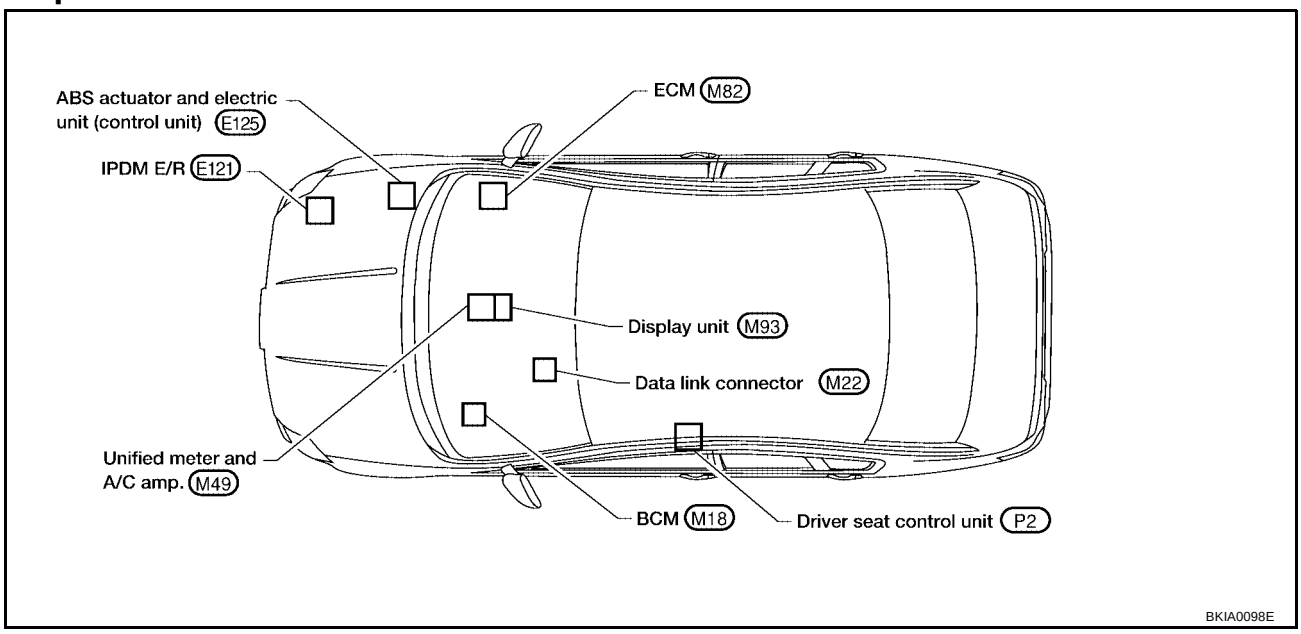
System Description

UKS00266

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.

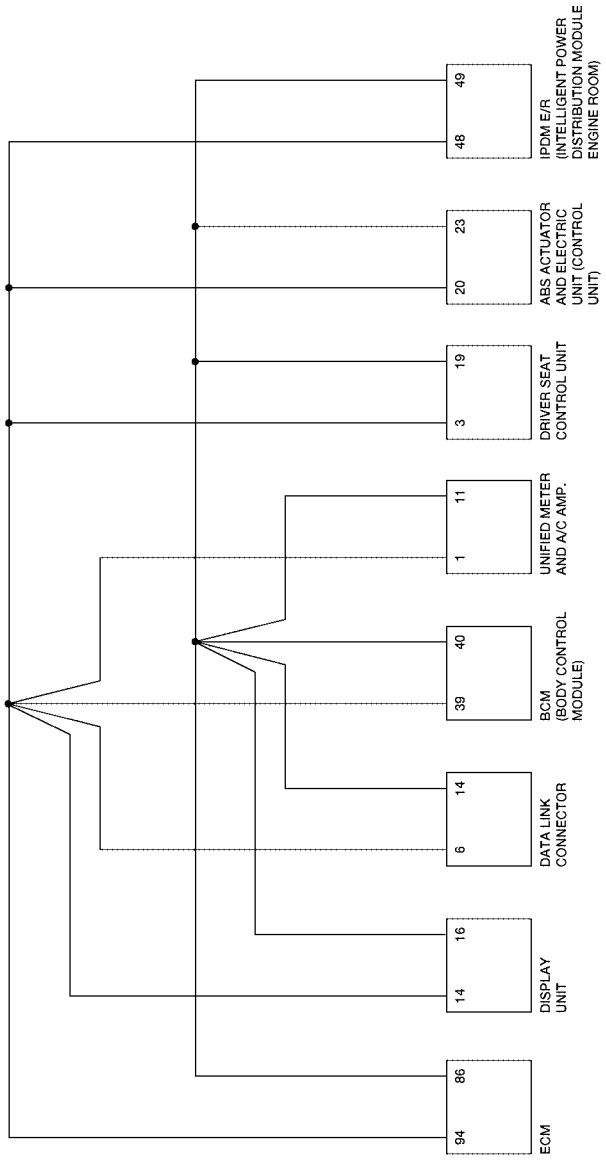
Component Parts and Harness Connector Location

UKS00267



Schematic

UKS00268

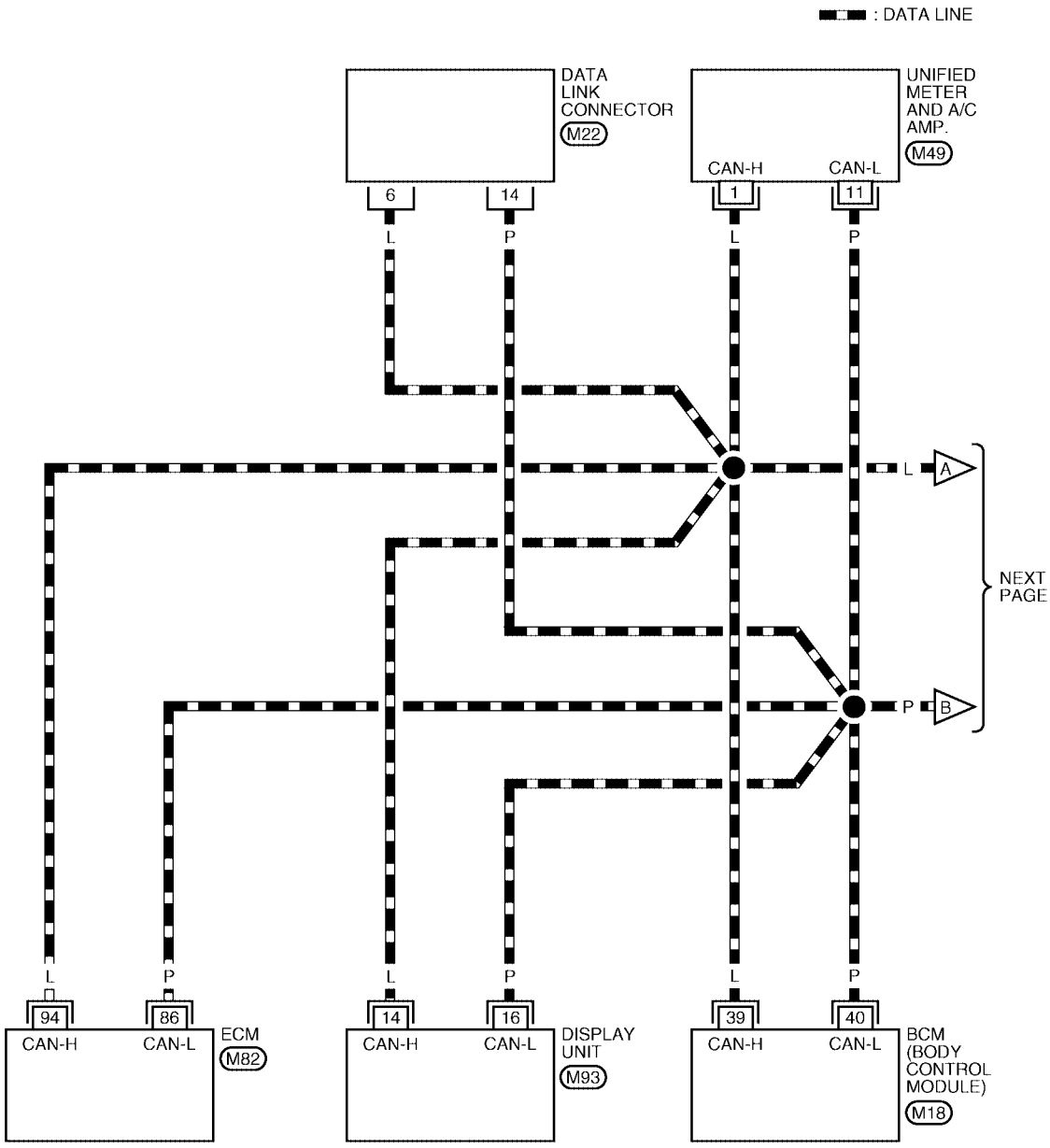


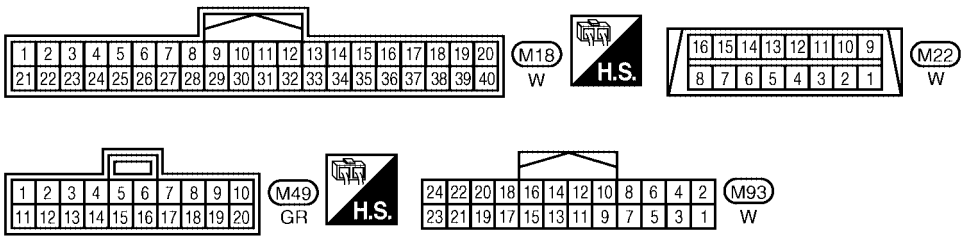
BKWA0262E

Wiring Diagram - CAN -

UKS00269

LAN-CAN-03

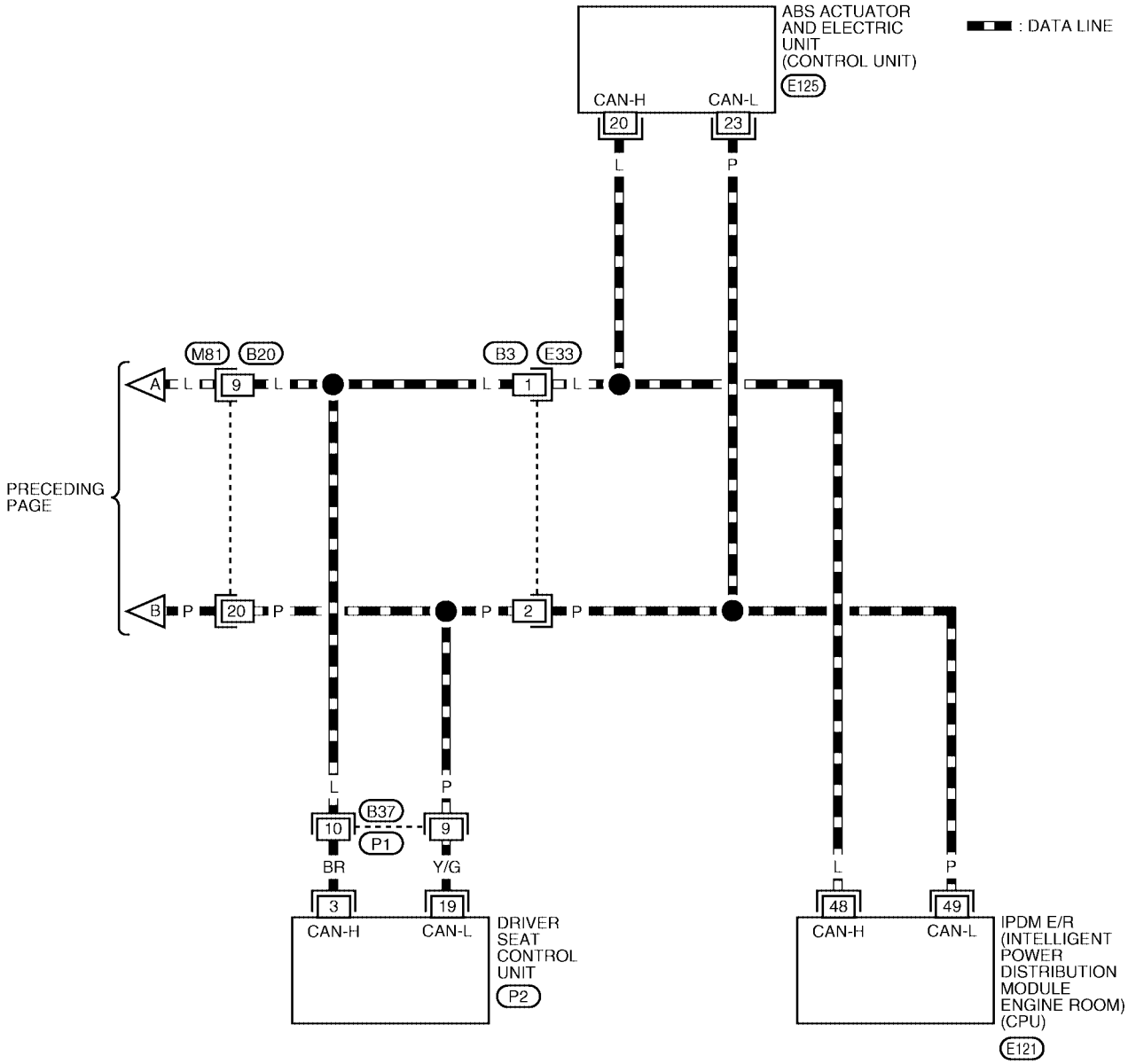


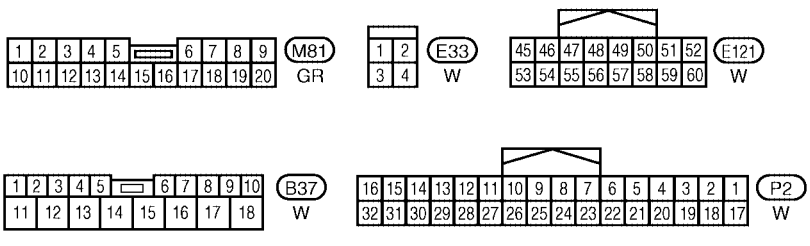


REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

BKWA0263E

LAN-CAN-04





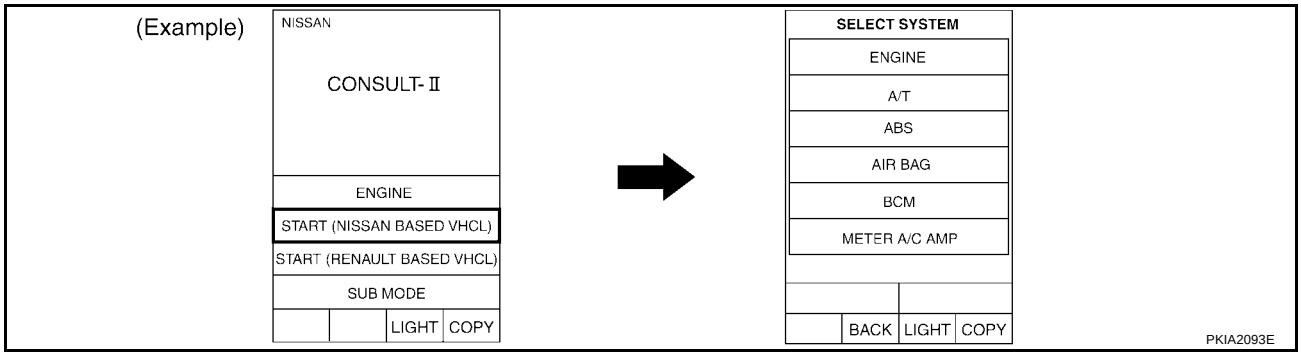
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0265E

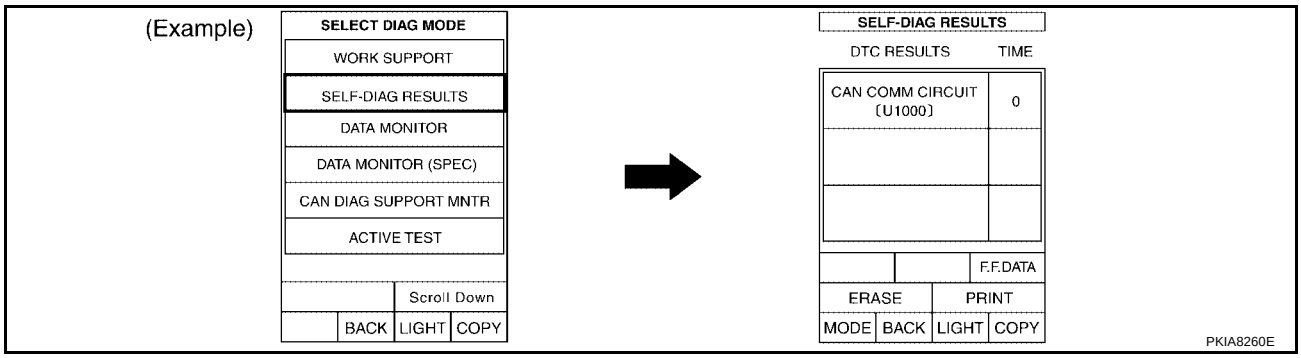
Work Flow

UKS0026A

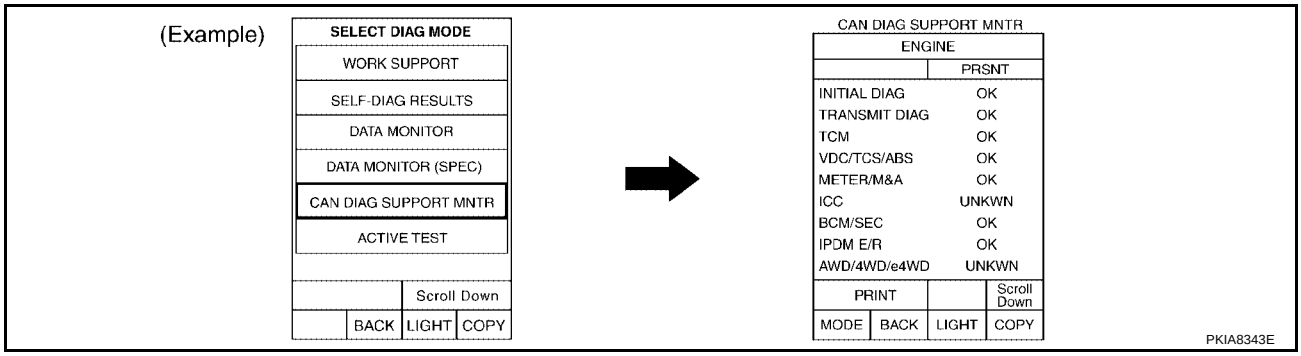
1. When there are no indications of “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

BKIA0055E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

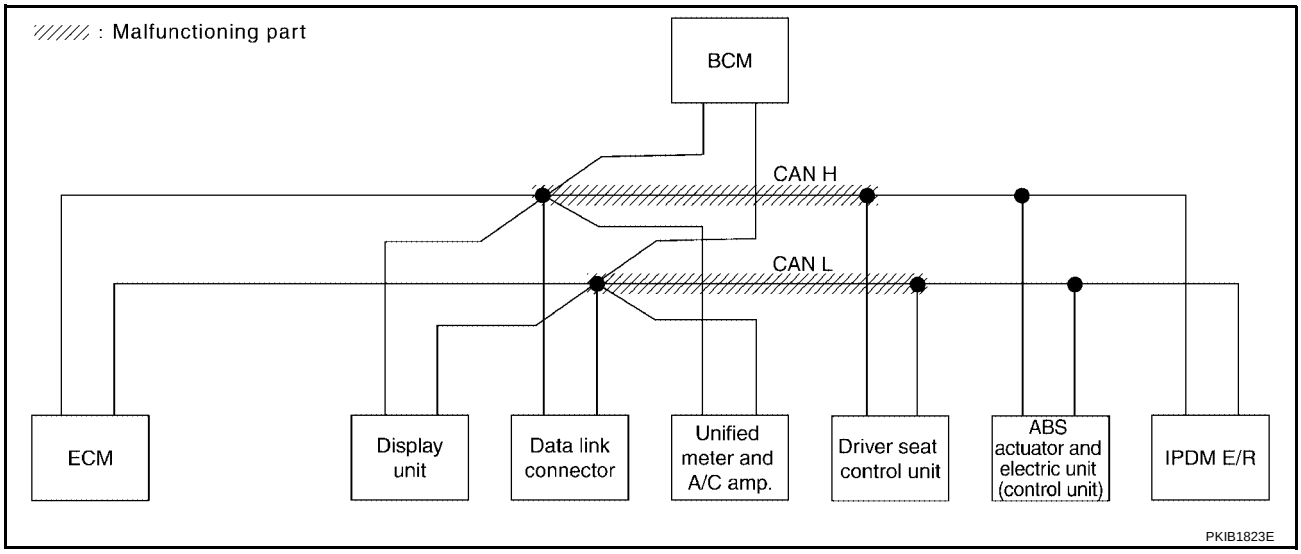
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and driver seat control unit. Refer to LAN-59, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2194E



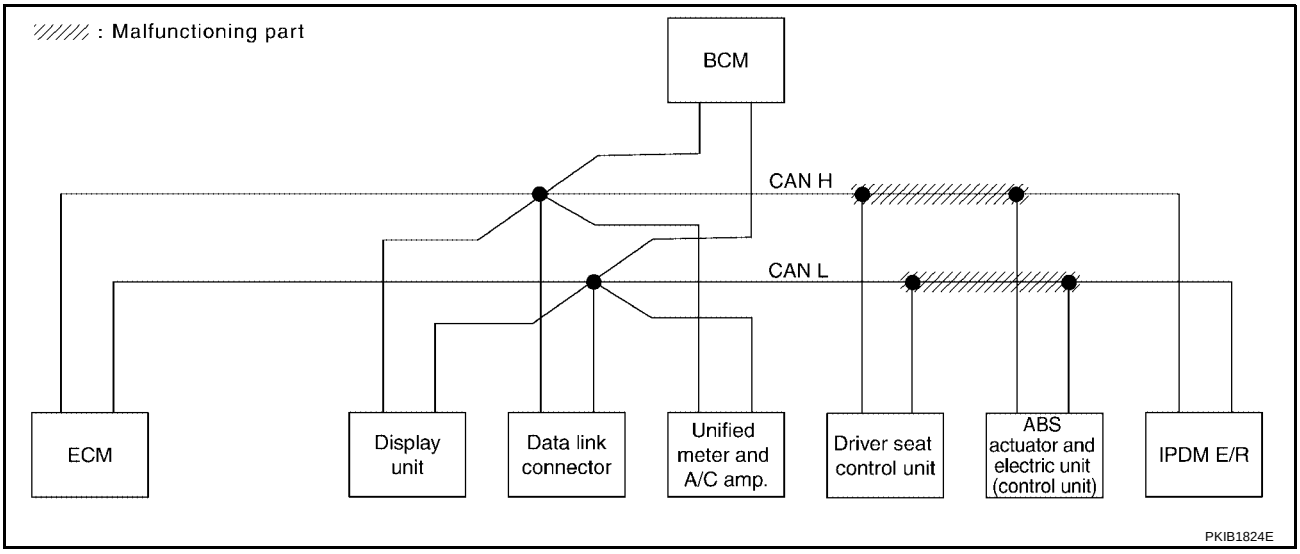
PKIB1823E

Case 2

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-60, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2200E



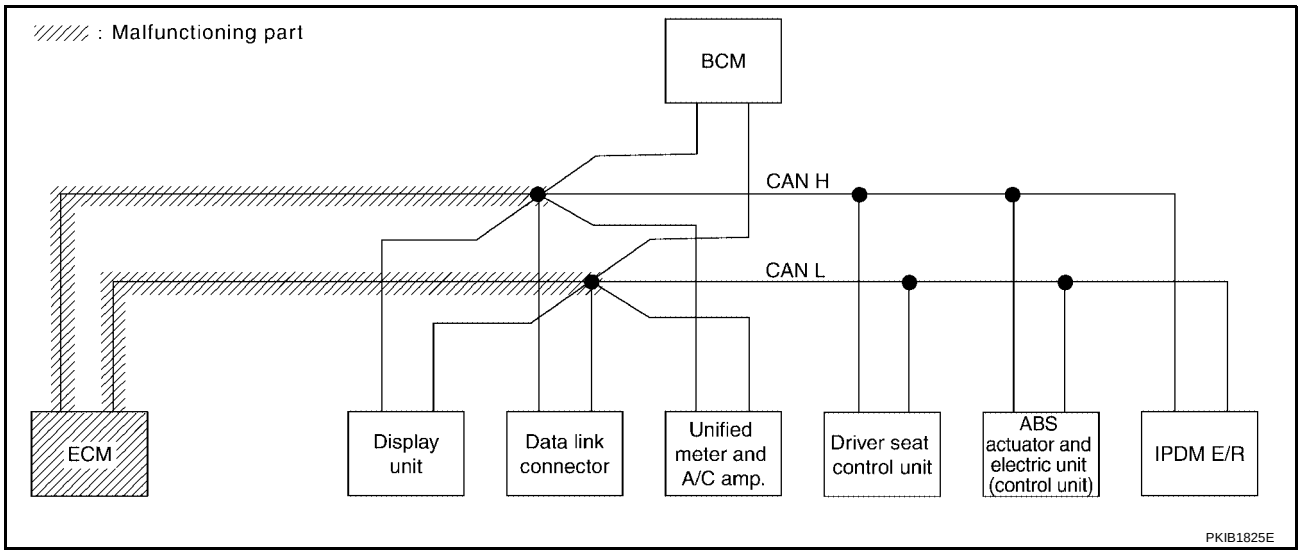
PKIB1824E

Case 3

Check ECM circuit. Refer to LAN-60, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2203E



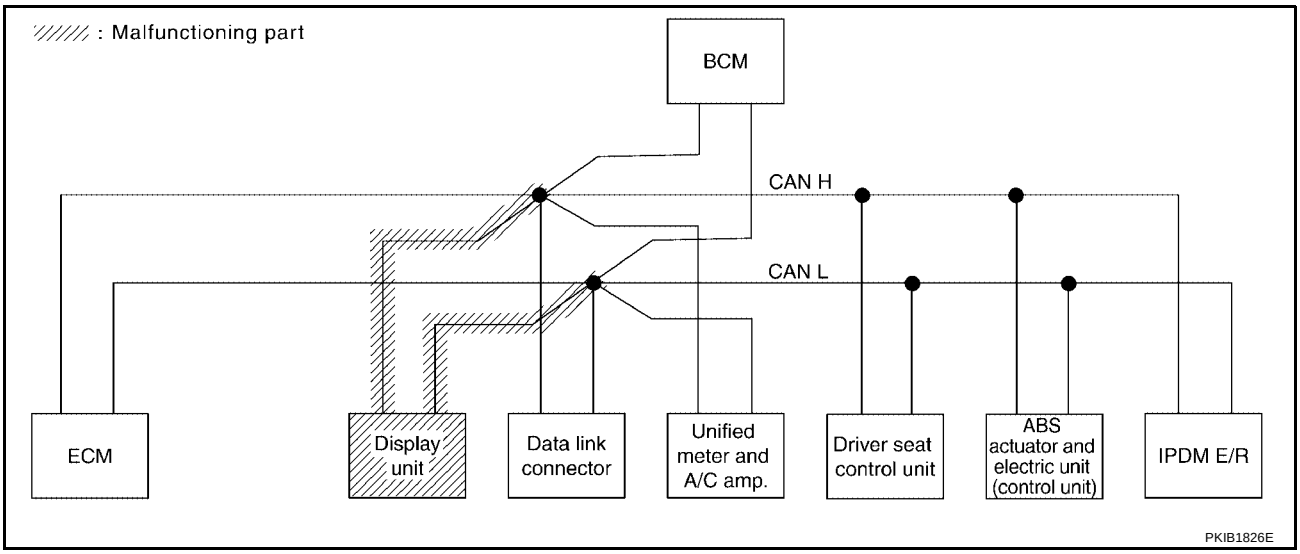
PKIB1825E

Case 4

Check display unit circuit. Refer to LAN-61, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	✓	✓	-	✓	✓	-	✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2207E

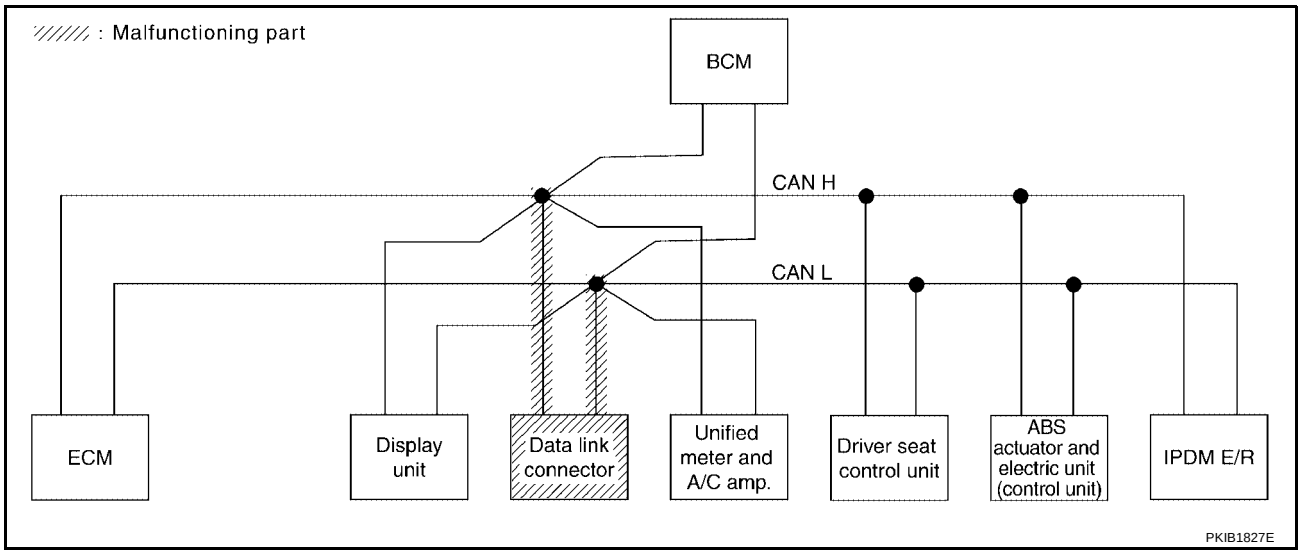


Case 5

Check data link connector circuit. Refer to LAN-61, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	Notification ✓		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Notification ✓	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	Notification ✓	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	Notification ✓	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2209E



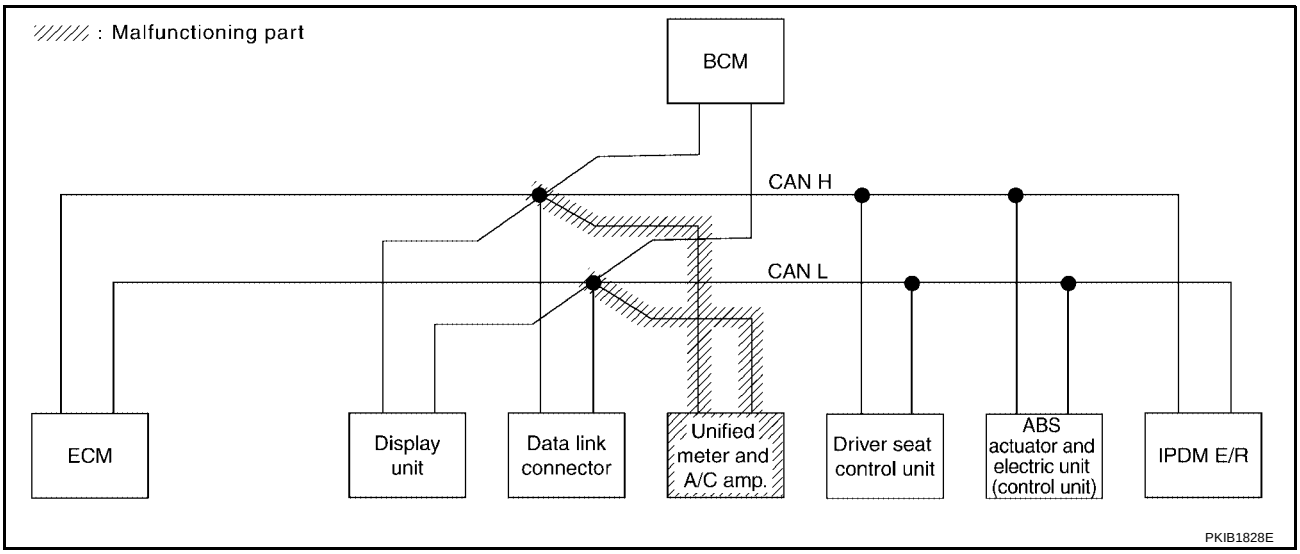
PKIB1827E

Case 6

Check unified meter and A/C amp. circuit. Refer to LAN-62, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2211E



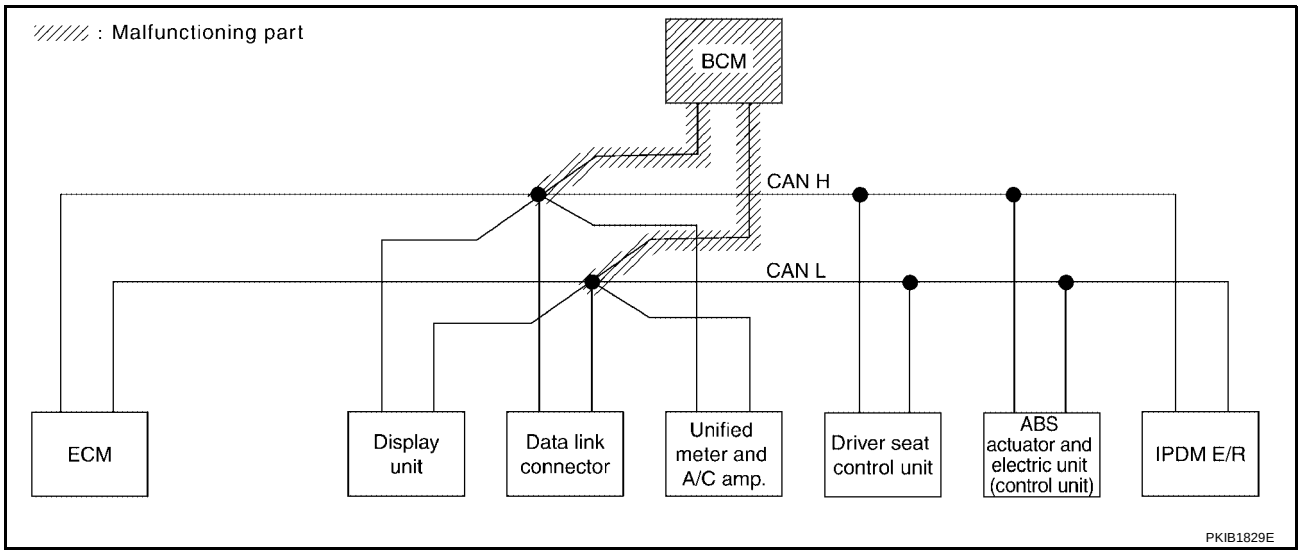
PKIB1828E

Case 7

Check BCM circuit. Refer to LAN-62, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2210E



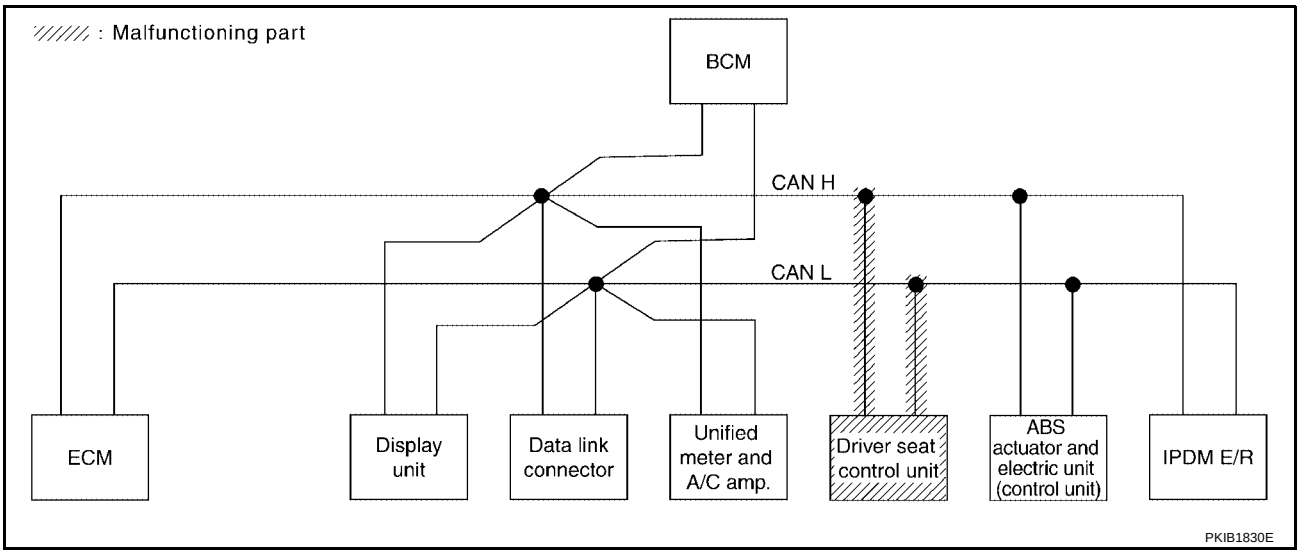
PKIB1829E

Case 8

Check driver seat control unit circuit. Refer to LAN-63, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2212E



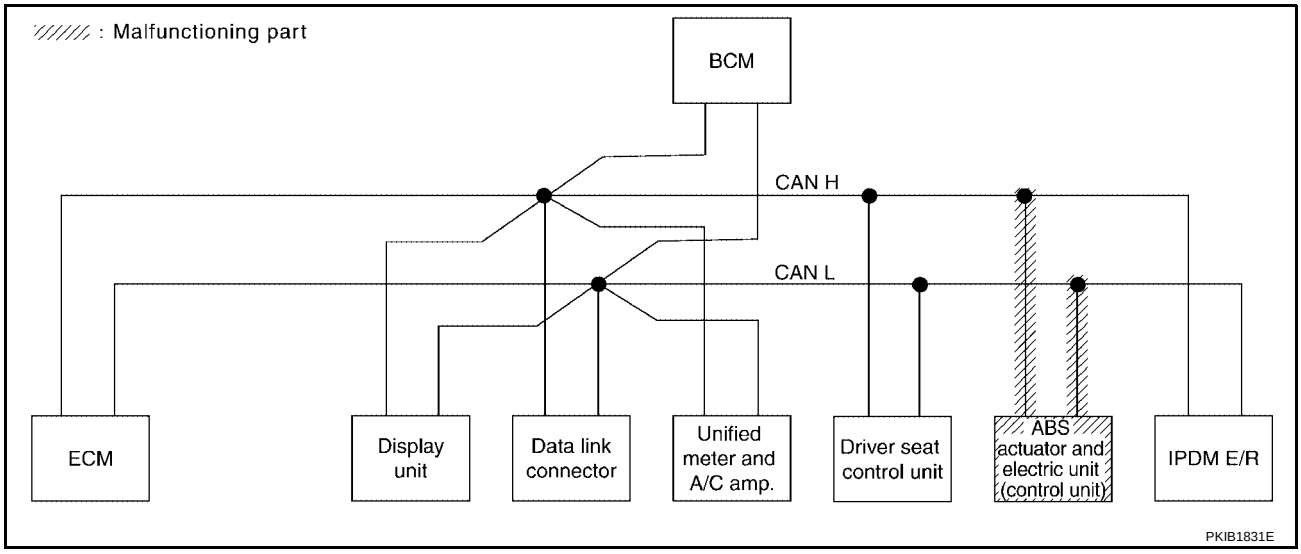
PKIB1830E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-63, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN ✓	UNKWN ✓	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2213E



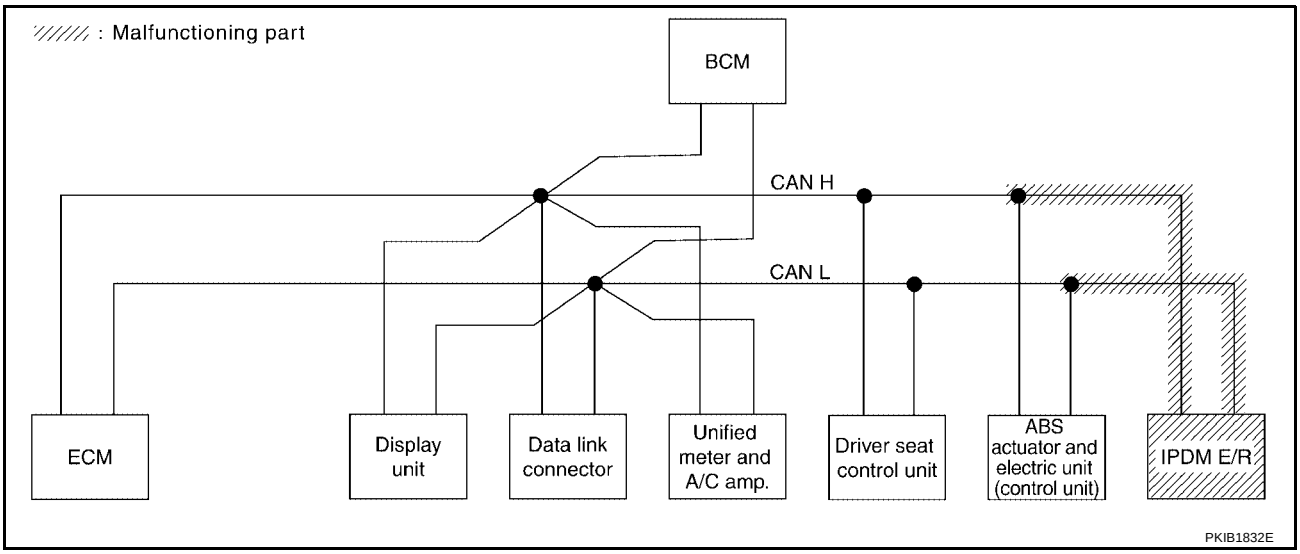
PKIB1831E

Case 10

Check IPDM E/R circuit. Refer to LAN-64, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2214E



PKIB1832E

Case 11

Check CAN communication circuit. Refer to LAN-64, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2215E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-65, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2220E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-65, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	✓	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2217E

Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS0026B

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

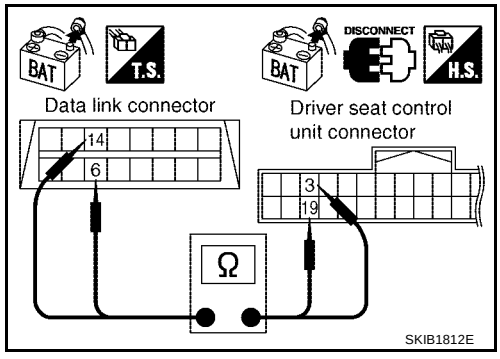
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-47, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS0026C

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

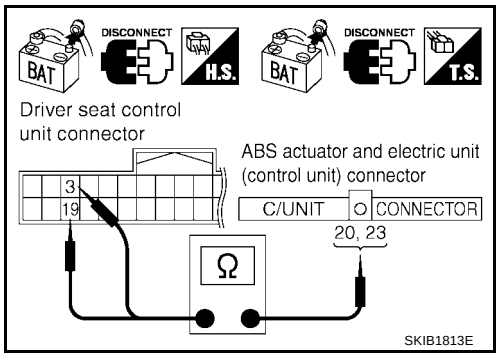
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-47, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS0026D

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

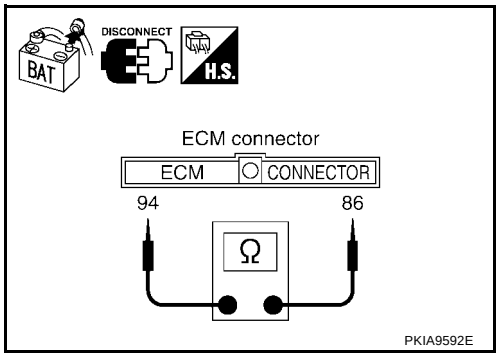
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and data link connector M22.

Display Unit Circuit Check

UKS0026E

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

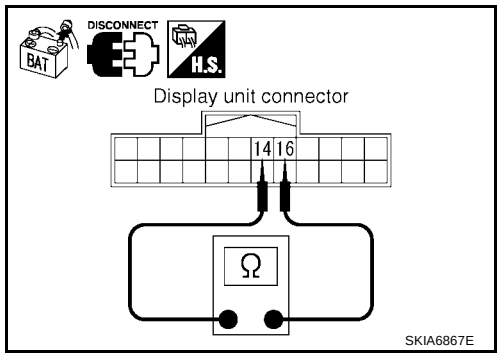
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.

Data Link Connector Circuit Check

UKS0026F

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

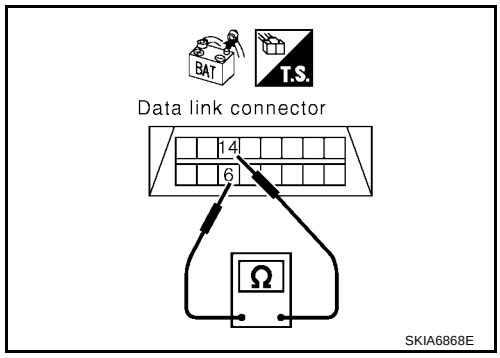
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-47, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.

Unified Meter and A/C Amp. Circuit Check

UKS0026H

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

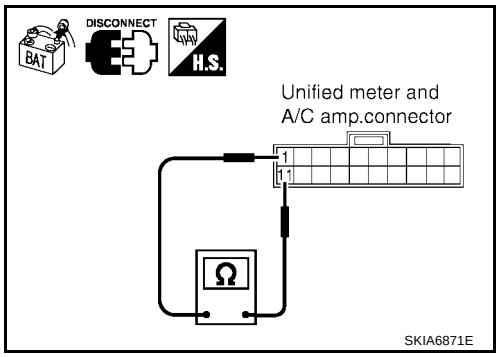
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS0026G

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

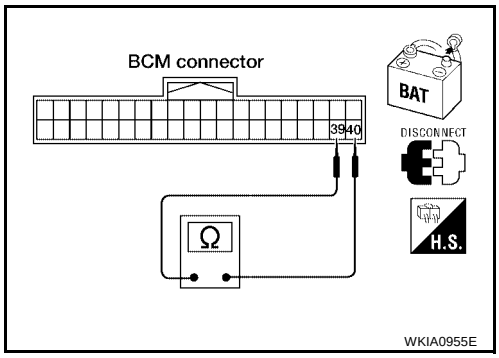
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS0026I

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

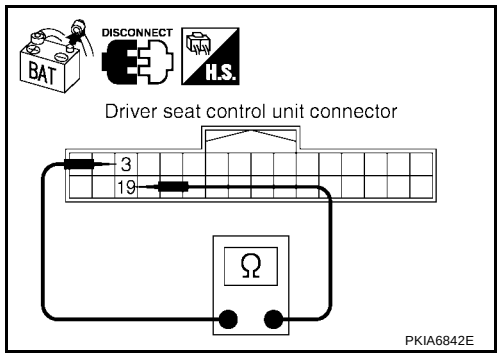
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0026J

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

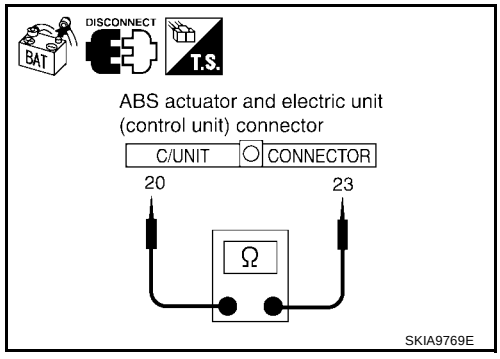
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS0026K

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

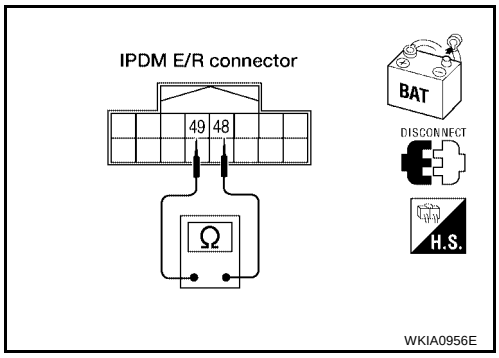
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS0026L

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

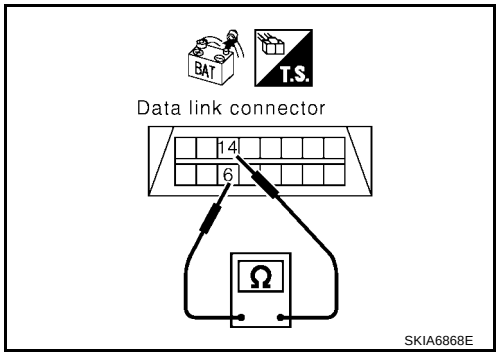
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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

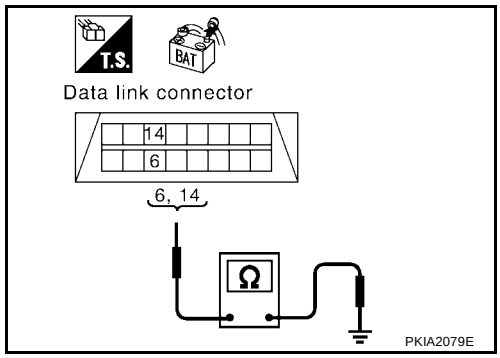


3. CHECK HARNESS FOR SHORT TO GROUND

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-65, "Component Inspection" .

NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS0026M

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS0026N

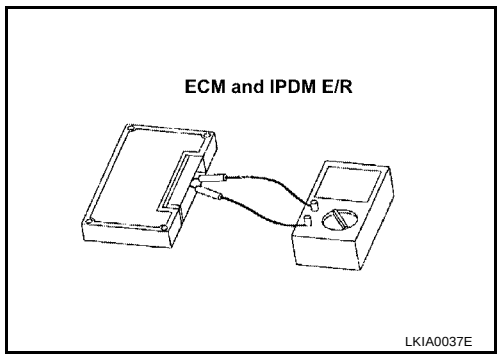
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 3)

PFP:23710

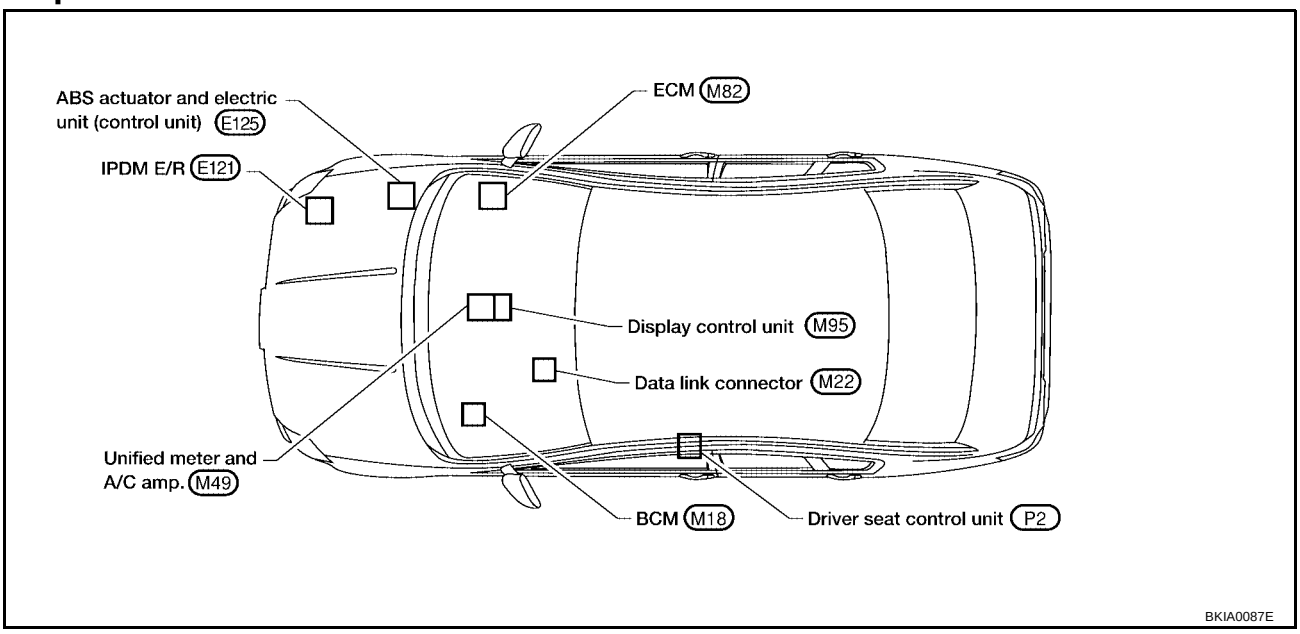
System Description

UKS0026O

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.

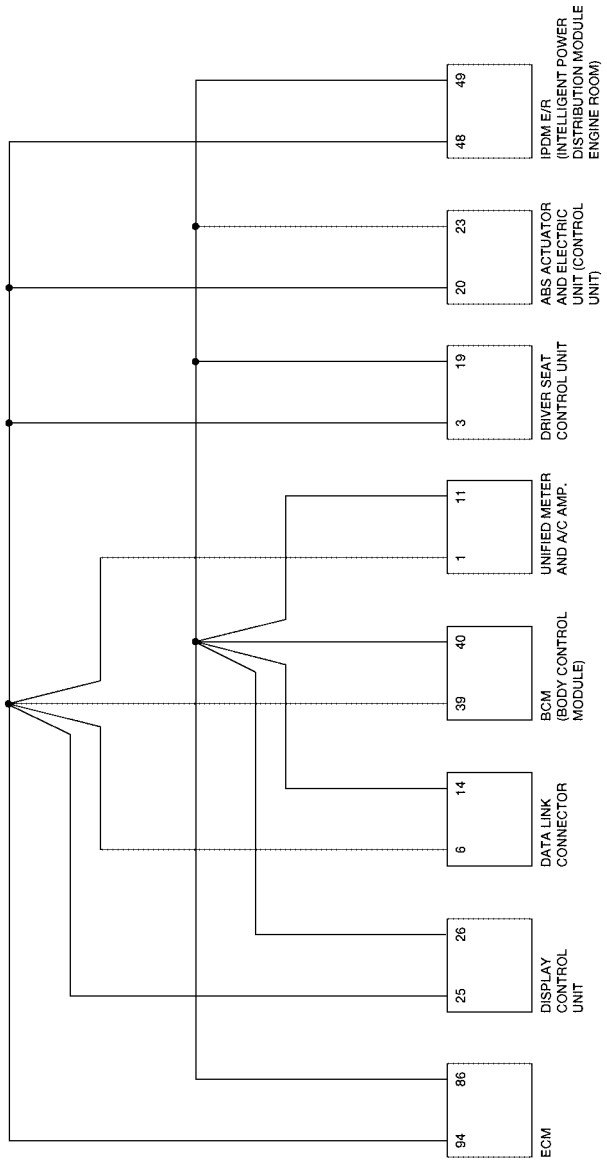
Component Parts and Harness Connector Location

UKS0026P



Schematic

UKS0026Q

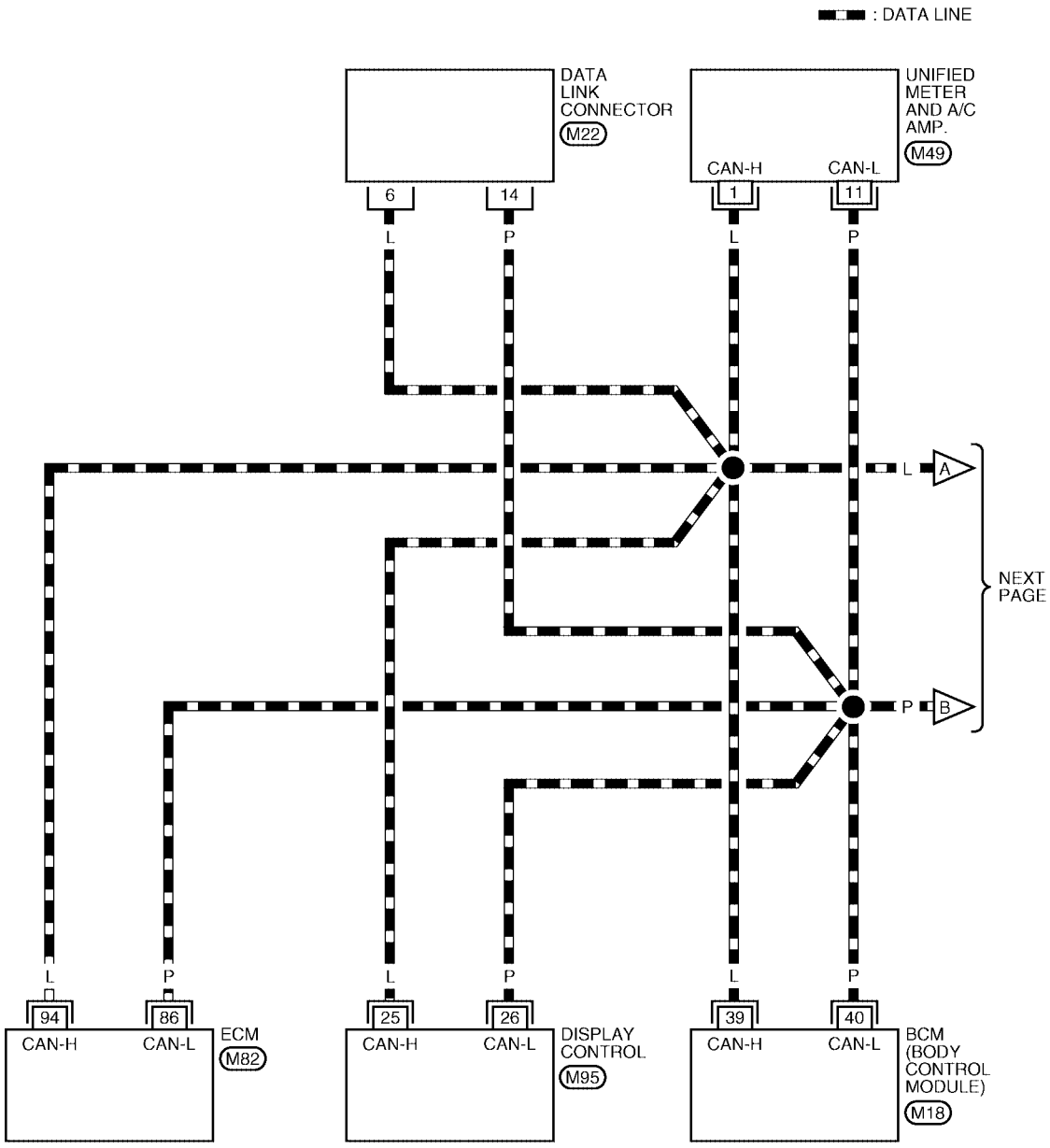


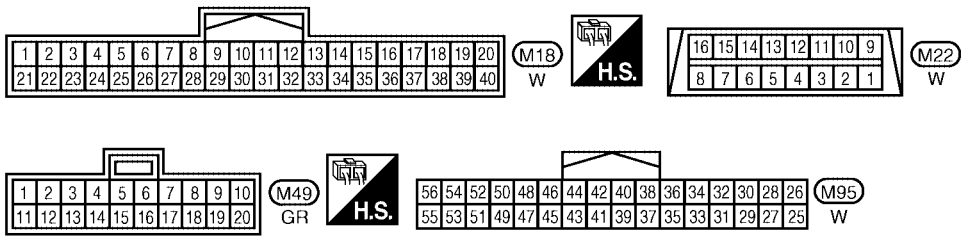
BKWA0270E

Wiring Diagram - CAN -

UKS0026R

LAN-CAN-05

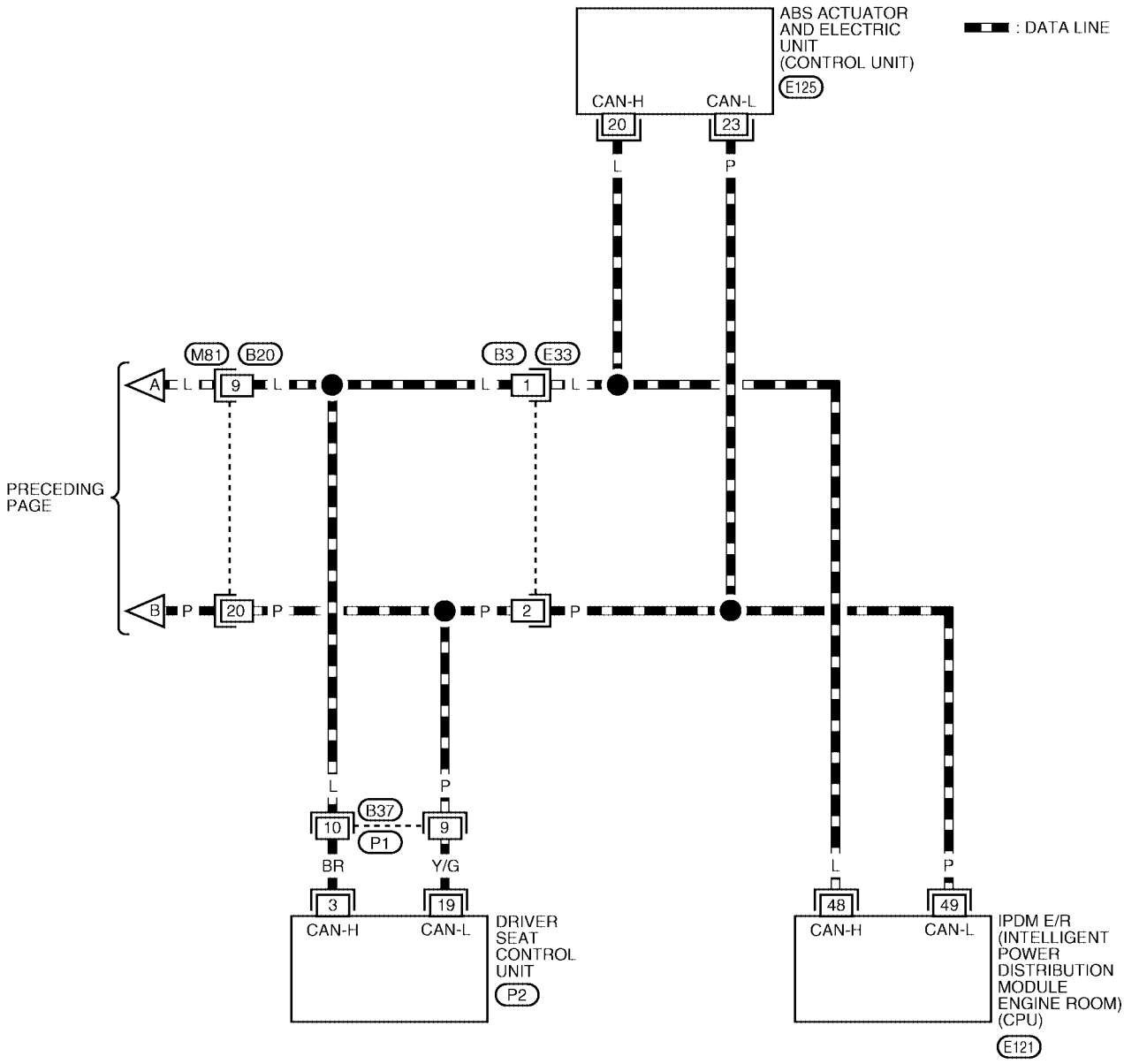


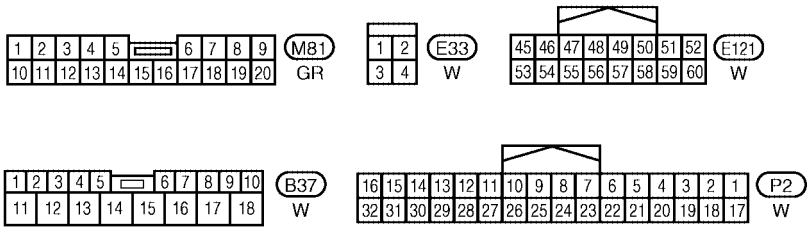


REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

BKWA0271E

LAN-CAN-06





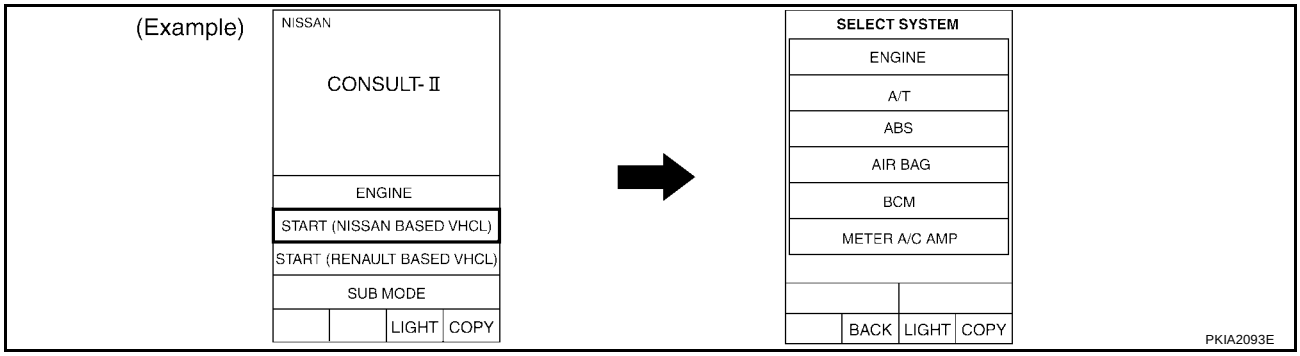
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0273E

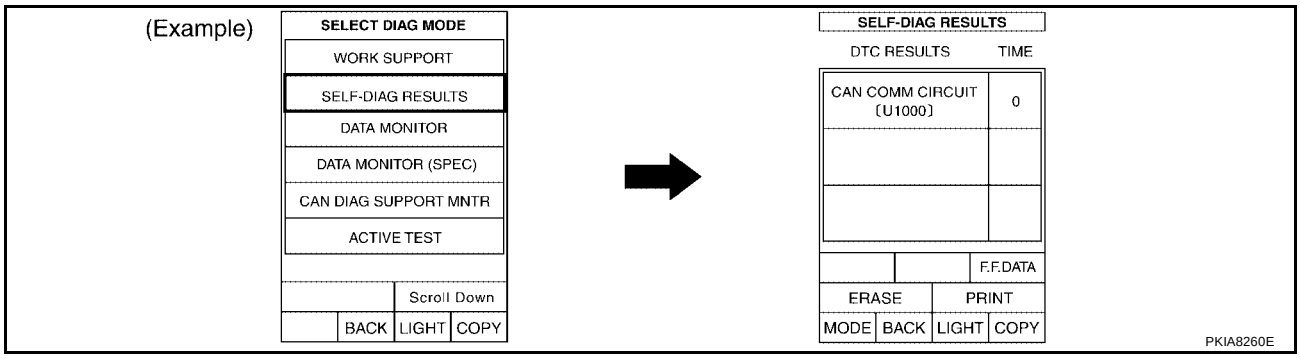
Work Flow

UKS0026S

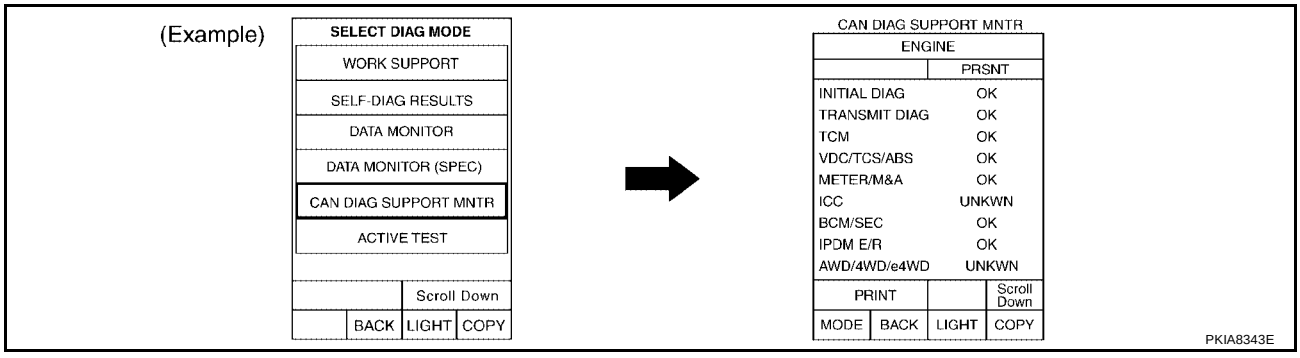
1. When there are no indications of “METER A/C AMP”, "BCM", "AUTO DRIVE POS." or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, "ABS" and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, "ABS" and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

BKIA0056E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

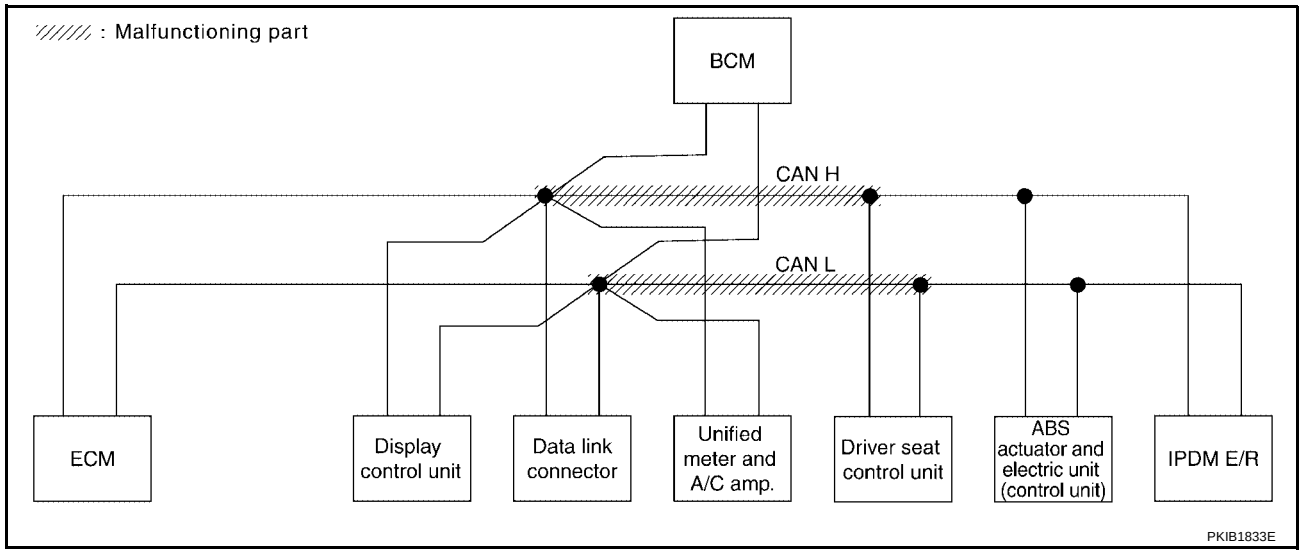
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2271E



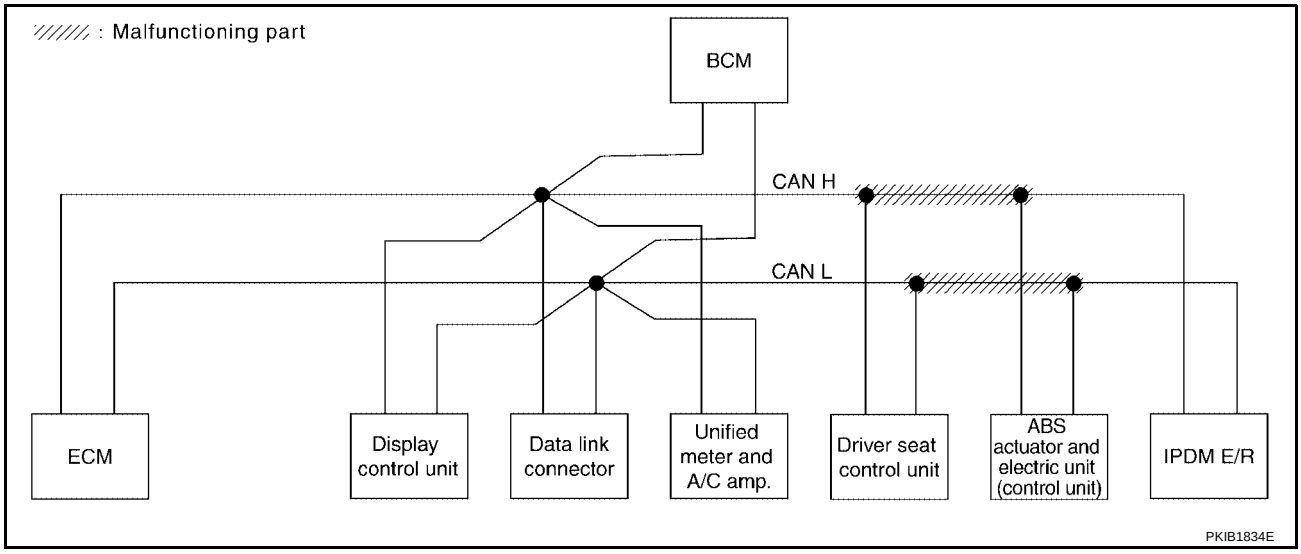
PKIB1833E

Case 2

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-83, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2279E



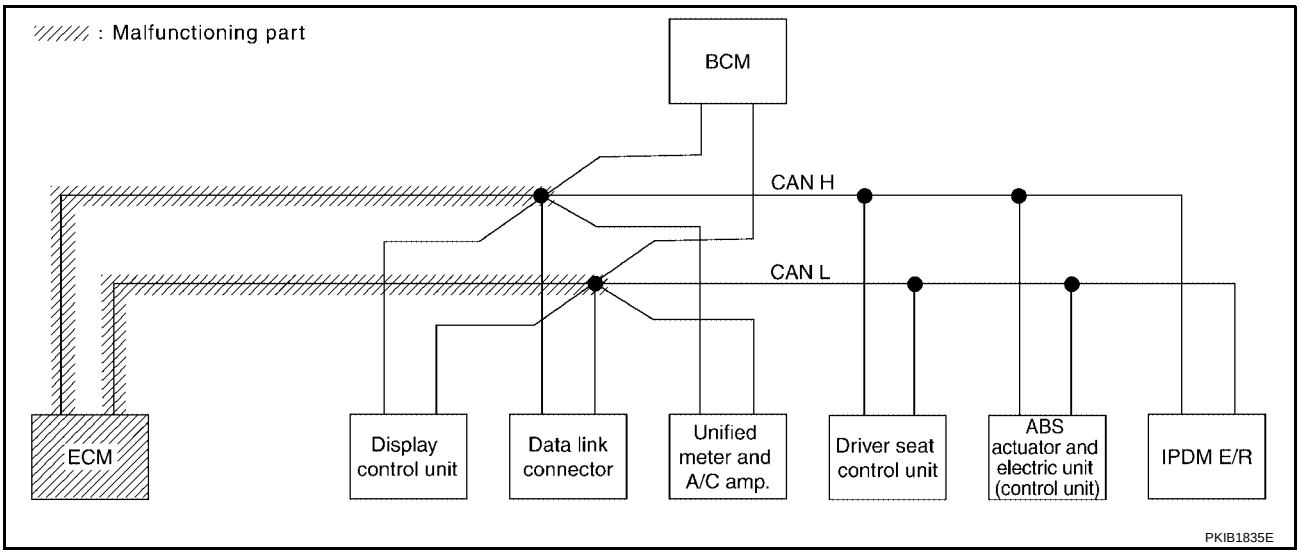
PKIB1834E

Case 3

Check ECM circuit. Refer to LAN-83, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN ✓	-	-	UNKWN ✓	UNKWN ✓	-	UNKWN ✓
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN ✓	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN ✓	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN ✓	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN ✓	-	-	UNKWN	-	-

WKIA2283E



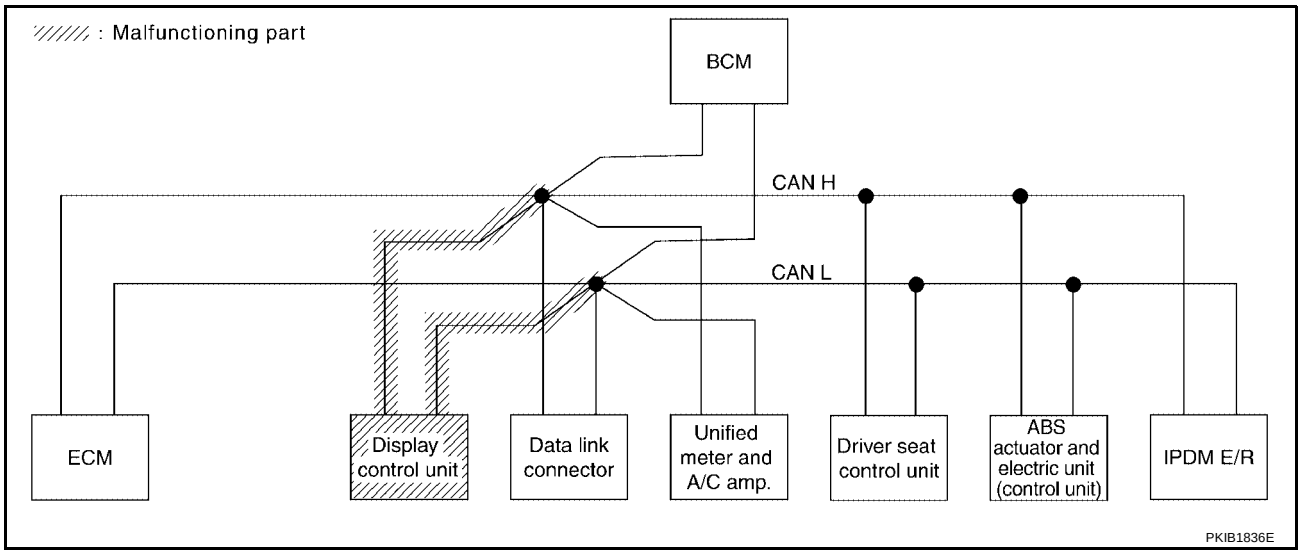
PKIB1835E

Case 4

Check display control unit circuit. Refer to LAN-84, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	-	CAN CIRC 5 ✓	CAN CIRC 2 ✓	-	CAN CIRC 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2291E



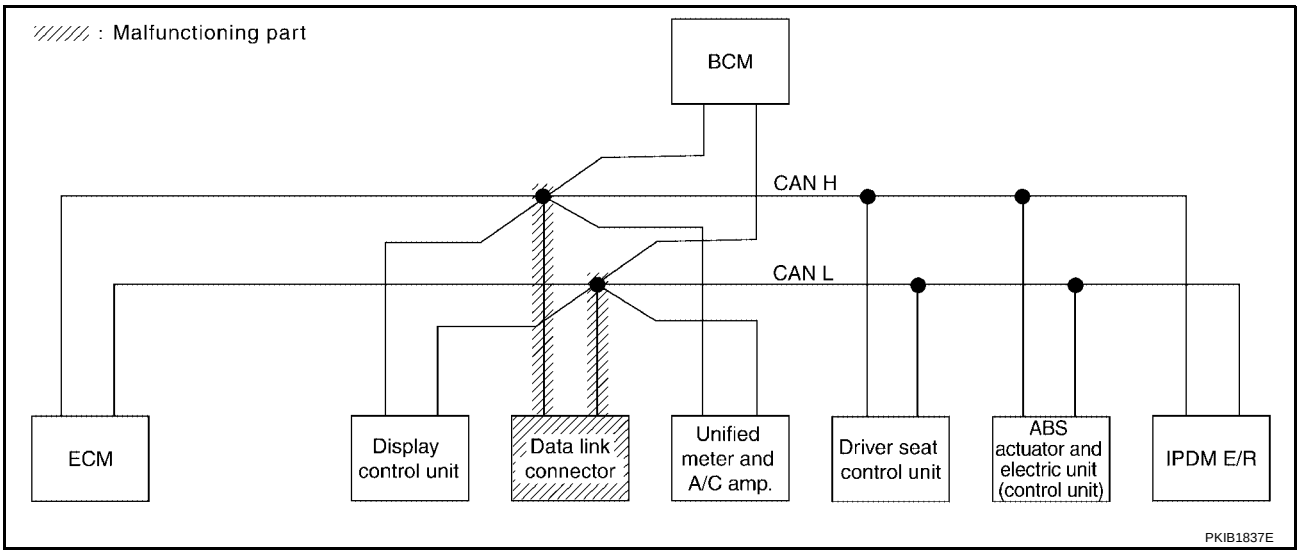
PKIB1836E

Case 5

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2297E



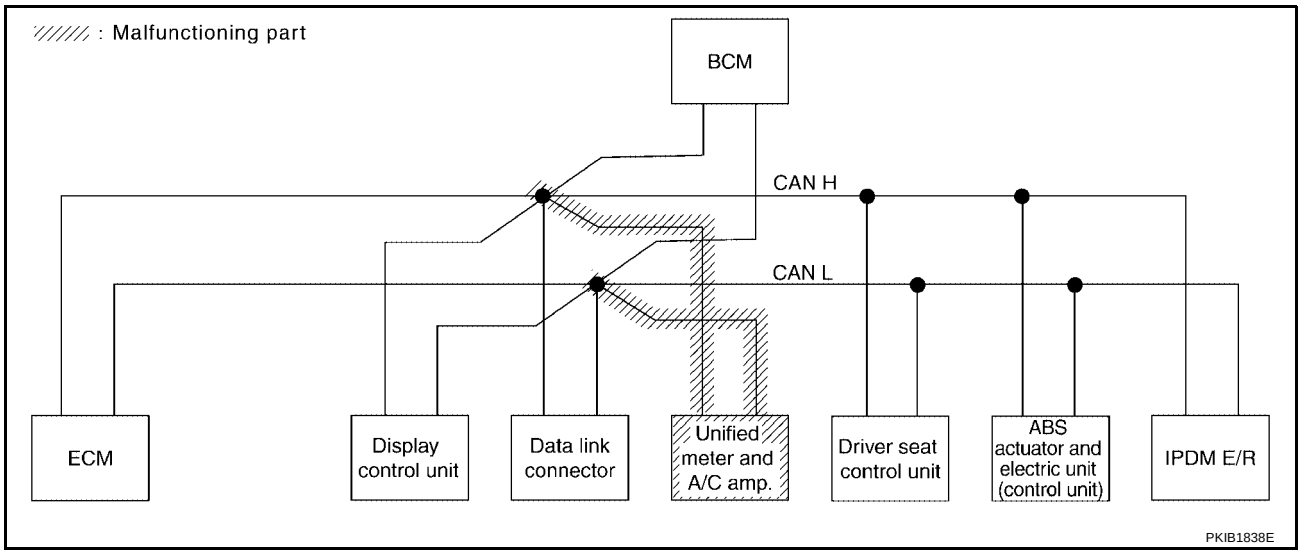
PKIB1837E

Case 6

Check unified meter and A/C amp. circuit. Refer to LAN-85, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2314E

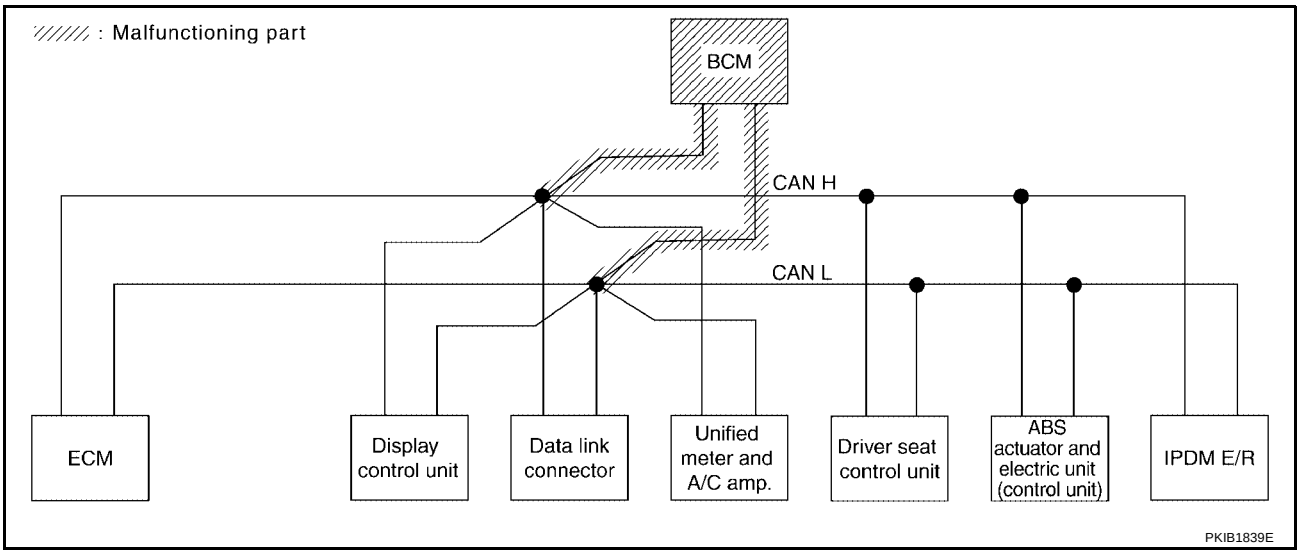


Case 7

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2307E



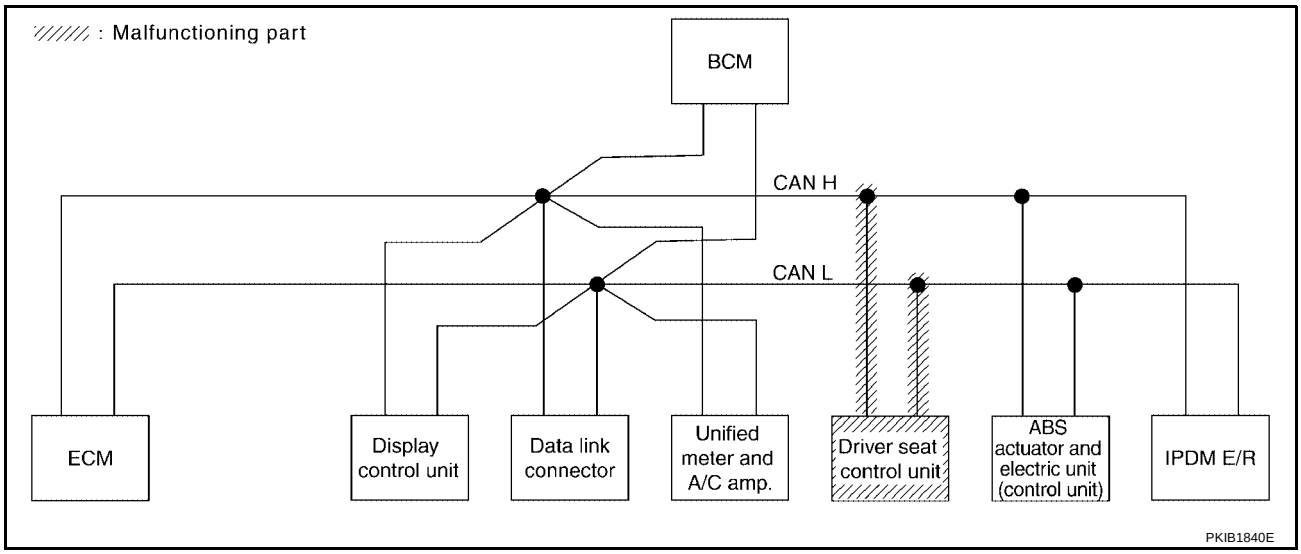
PKIB1839E

Case 8

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2322E

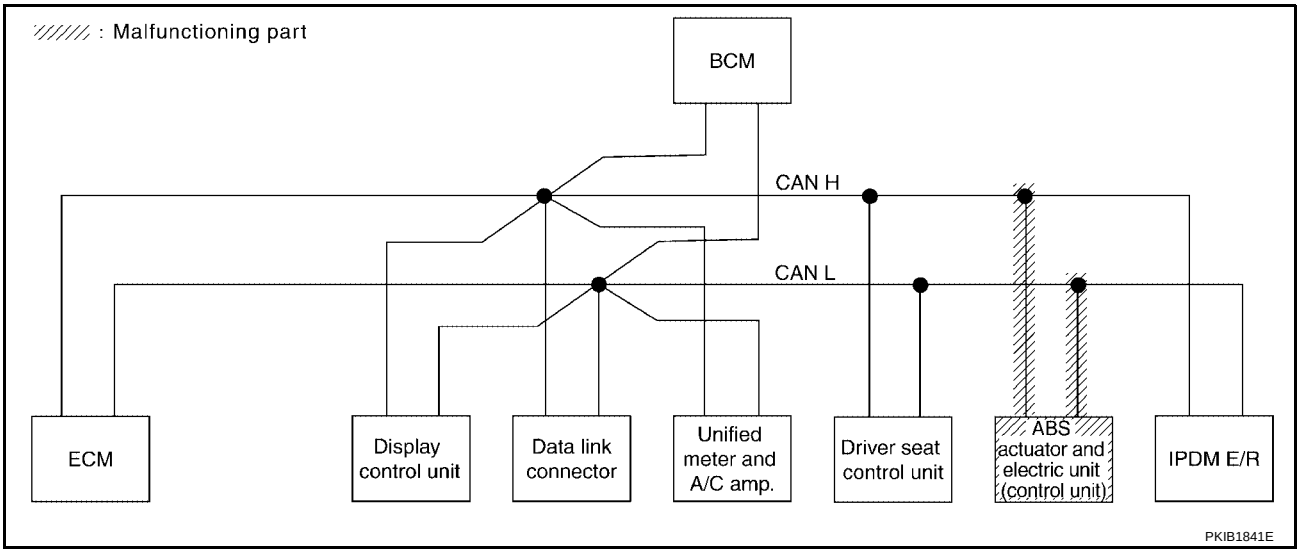


Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-86, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2326E



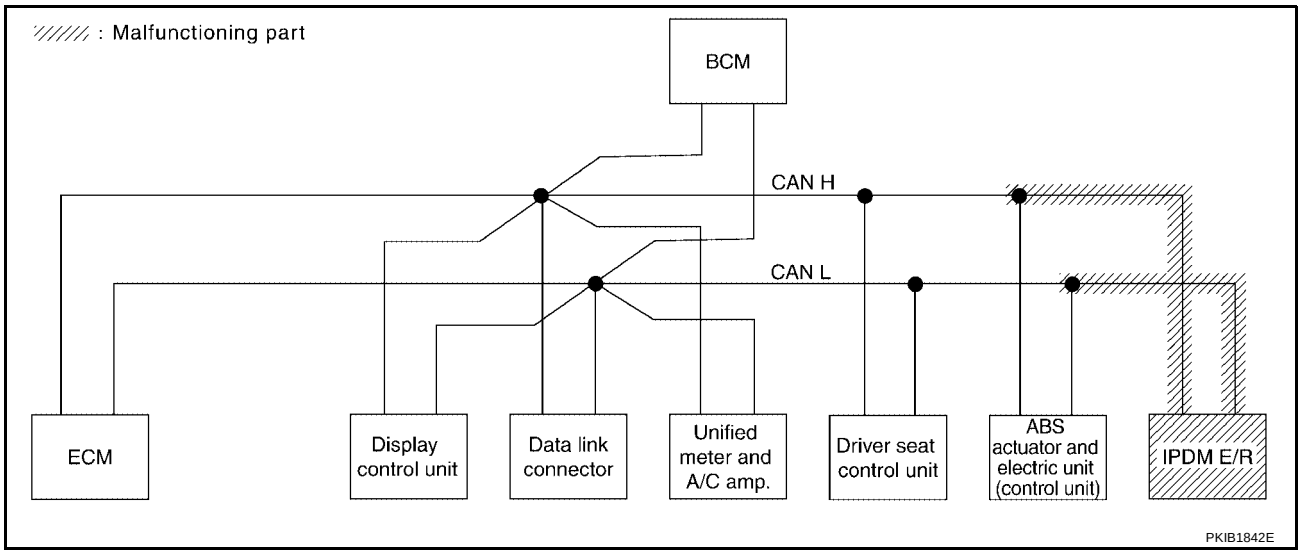
PKIB1841E

Case 10

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2333E



PKIB1842E

Case 11

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2824E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-88, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2346E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-88, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	-	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

WKIA2343E

Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS0026T

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

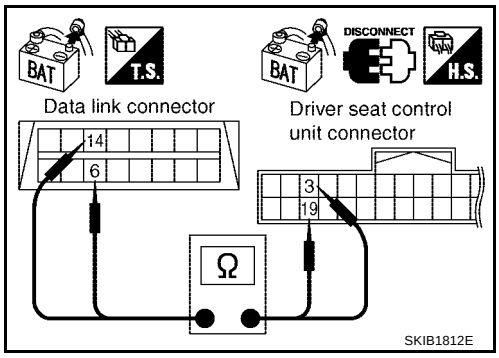
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-70, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS0026U

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

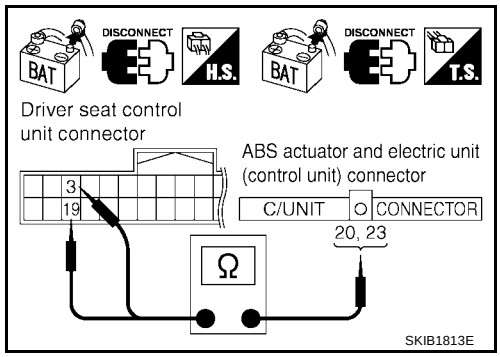
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-70, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS0026V

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

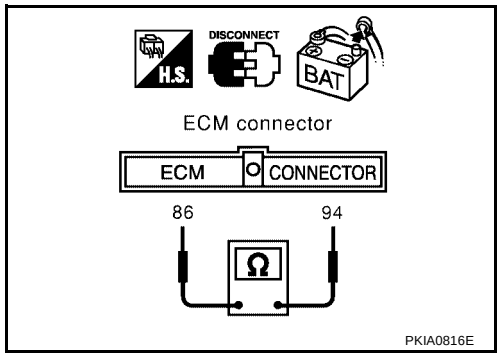
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and data link connector M22.

Display Control Unit Circuit Check

UKS0026W

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

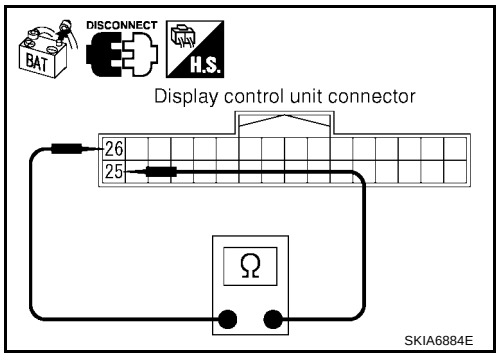
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.



Data Link Connector Circuit Check

UKS0026X

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

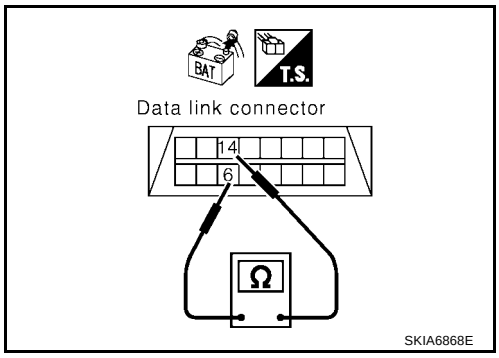
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-70, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS0026Z

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

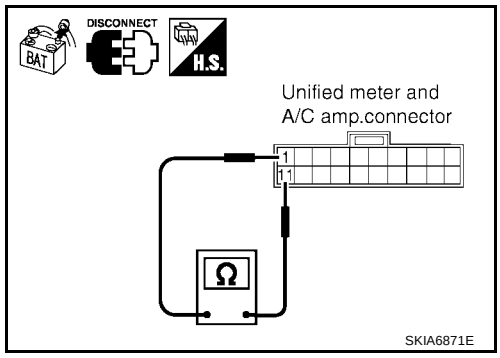
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS0026Y

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

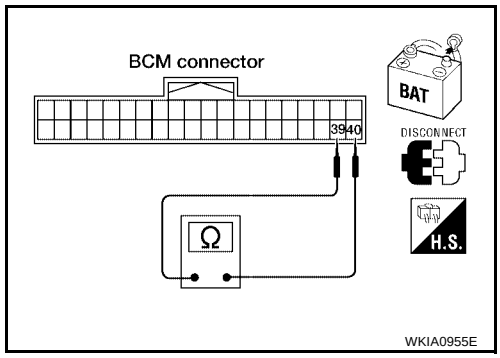
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS00270

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

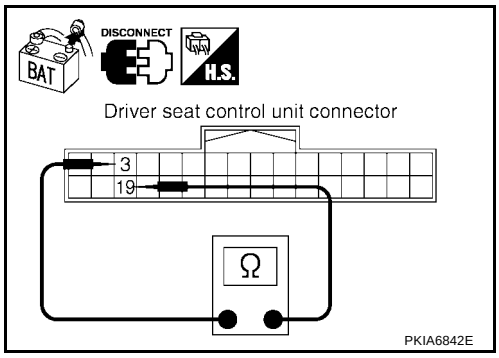
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS00271

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

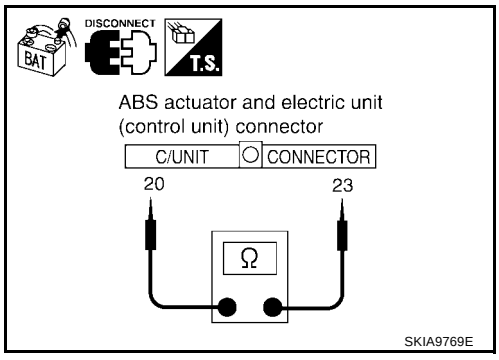
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS00272

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

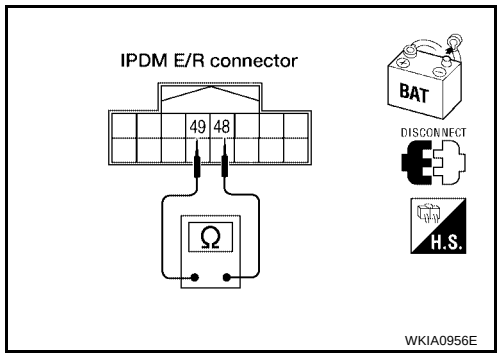
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS00273

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display control unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

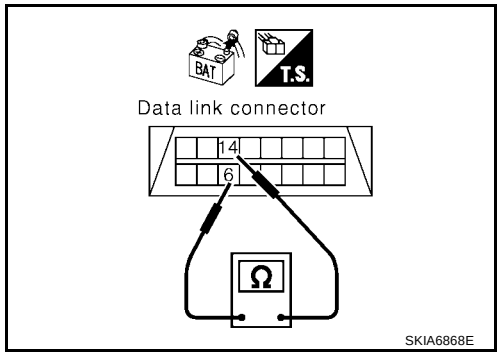
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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

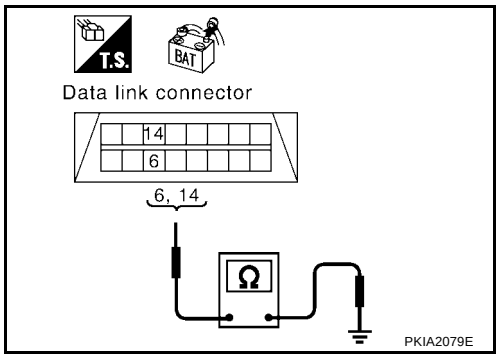


3. CHECK HARNESS FOR SHORT TO GROUND

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-88, "Component Inspection" .

NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS00274

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS00275

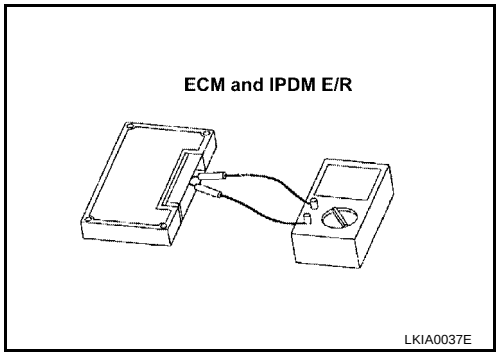
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 4)

PFP:23710

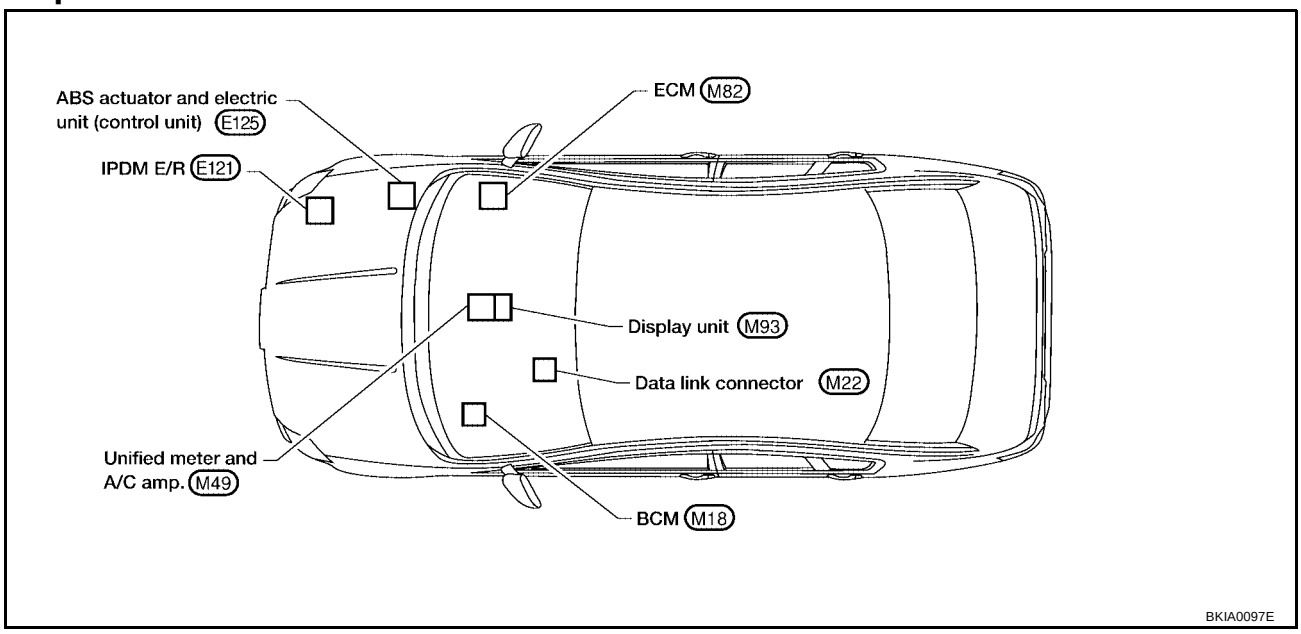
System Description

UKS00276

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.

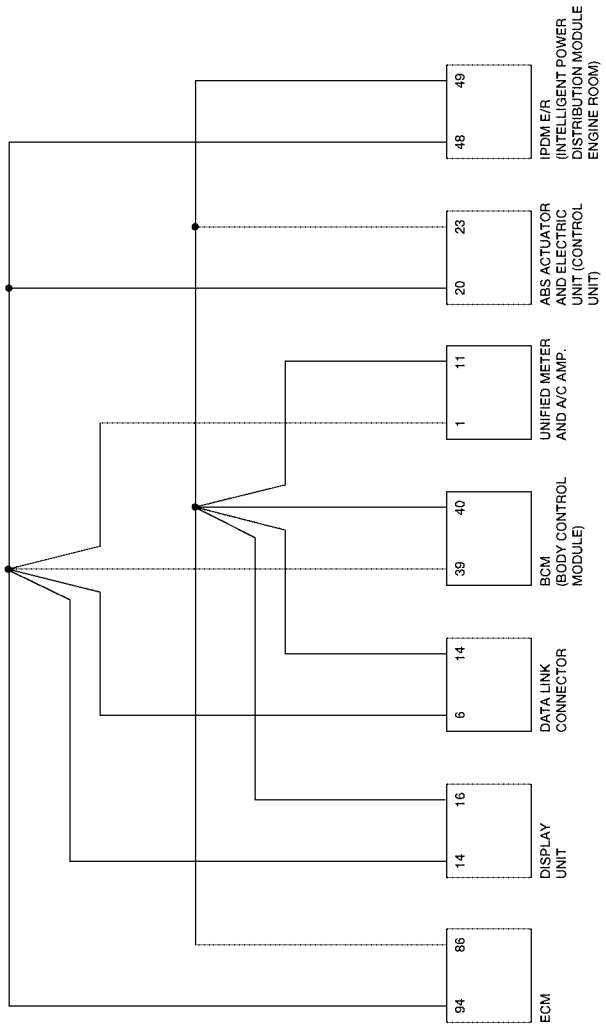
Component Parts and Harness Connector Location

UKS00277



Schematic

UKS00278

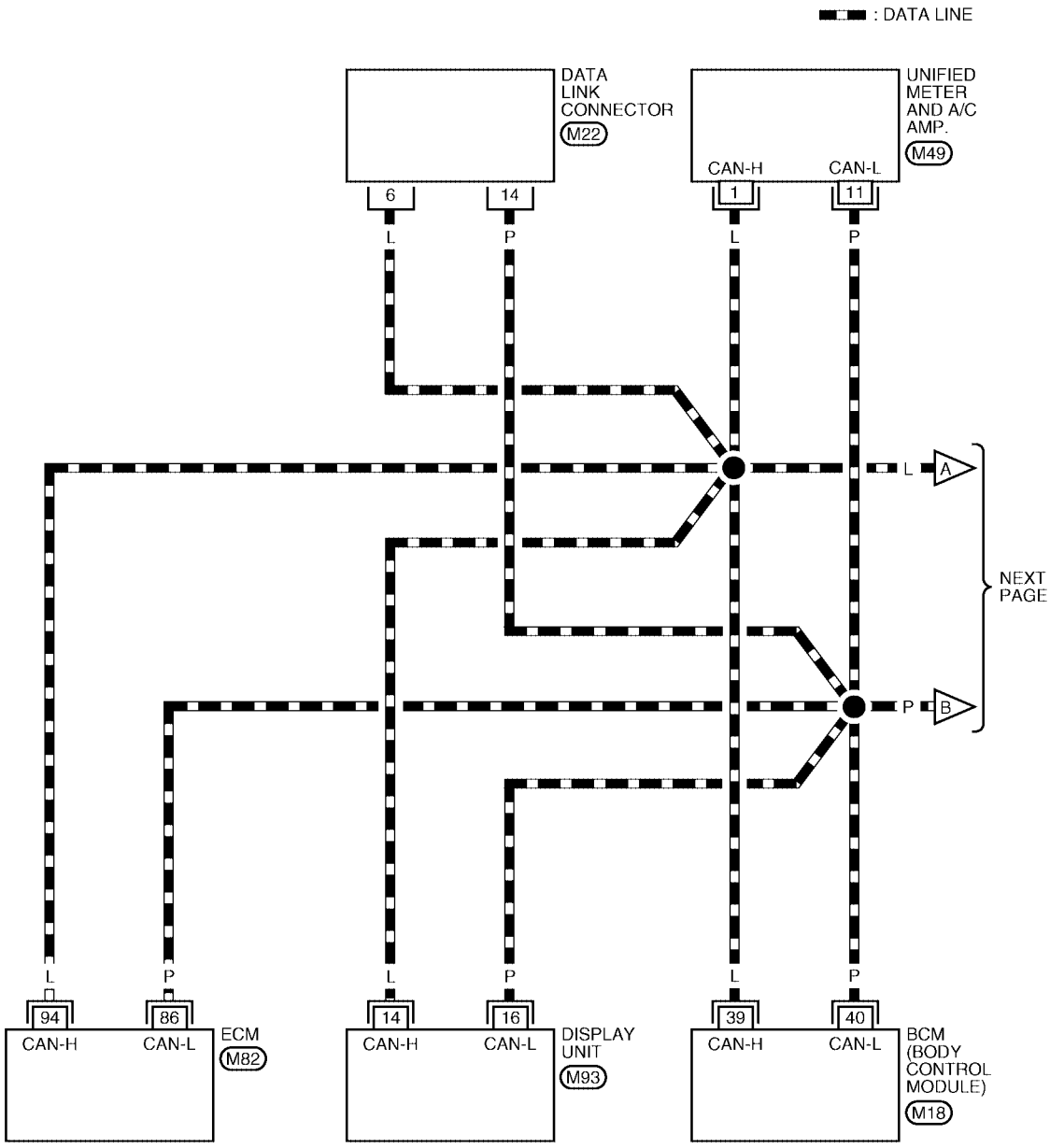


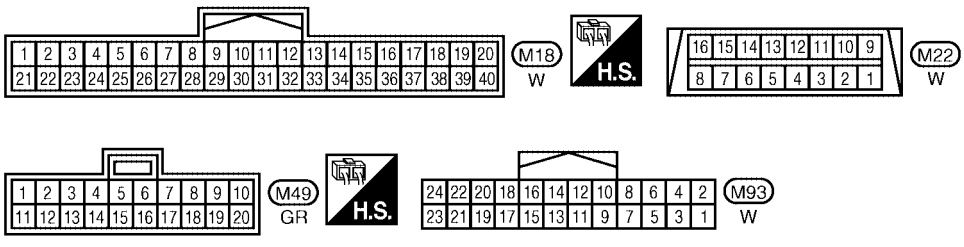
BKWA0258E

Wiring Diagram - CAN -

UKS00279

LAN-CAN-07

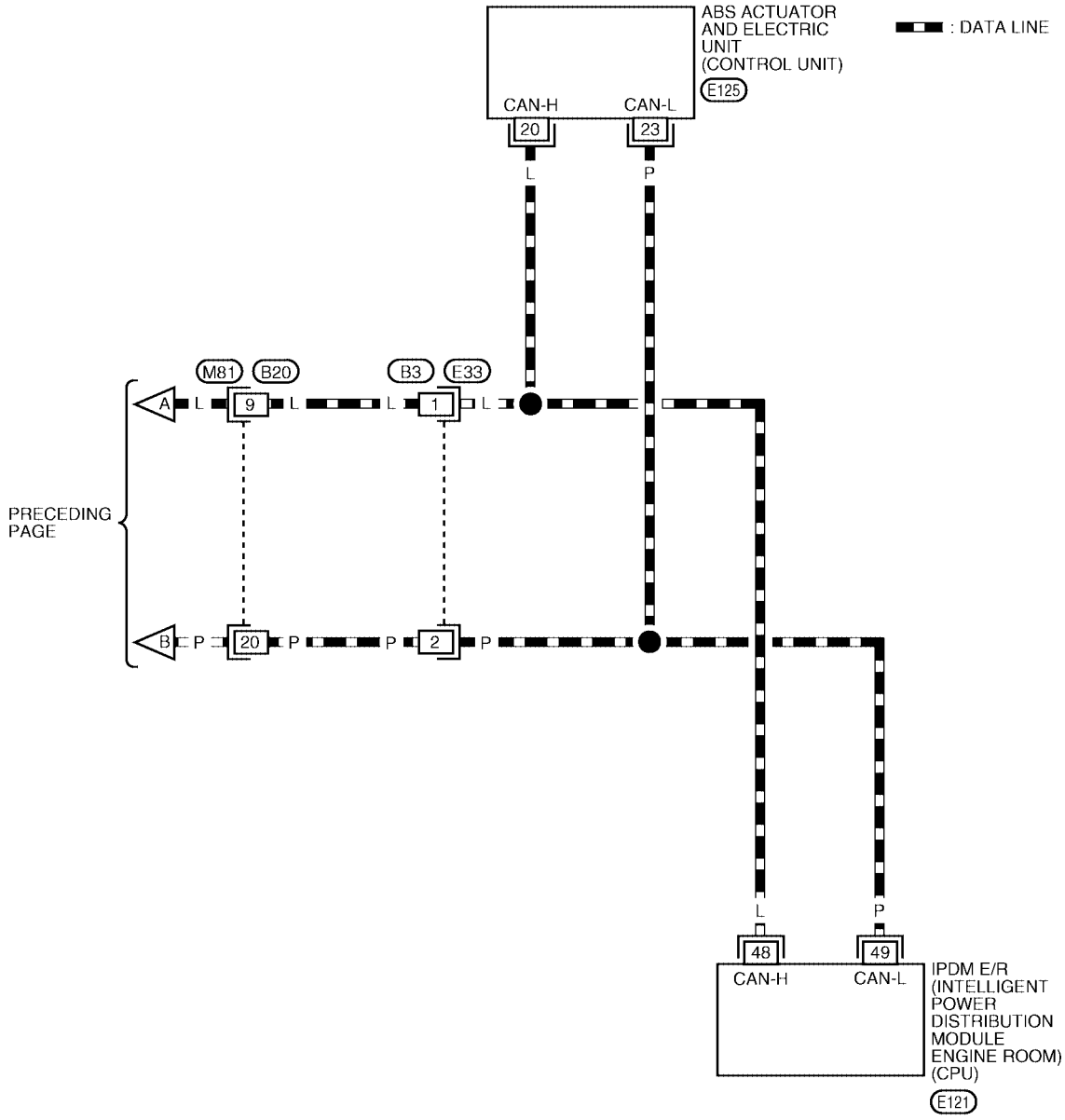


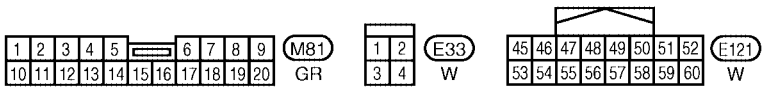


REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

BKWA0274E

LAN-CAN-08





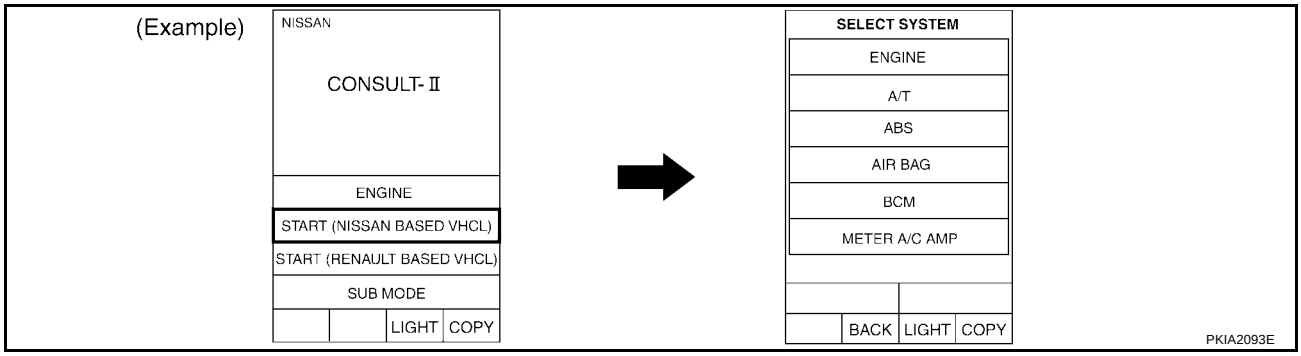
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0276E

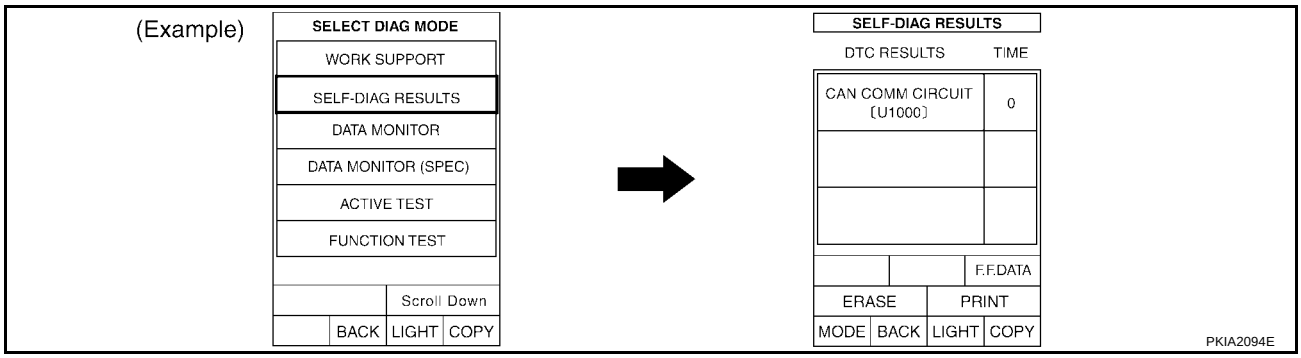
Work Flow

UKS002MB

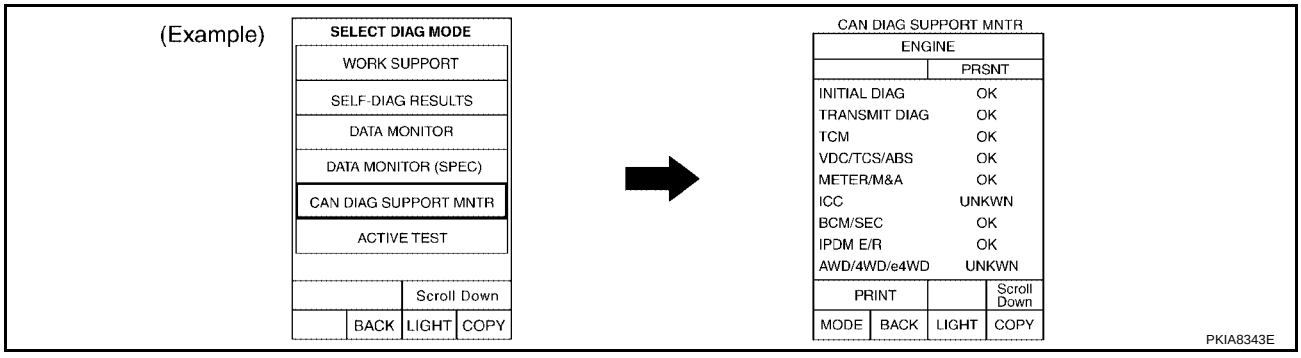
1. When there are no indications of “METER A/C AMP”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



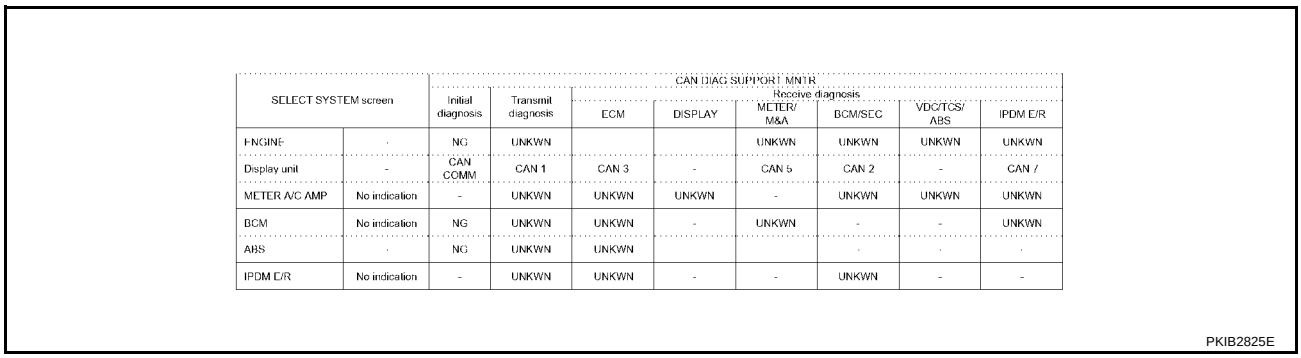
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN			UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN			-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2825E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

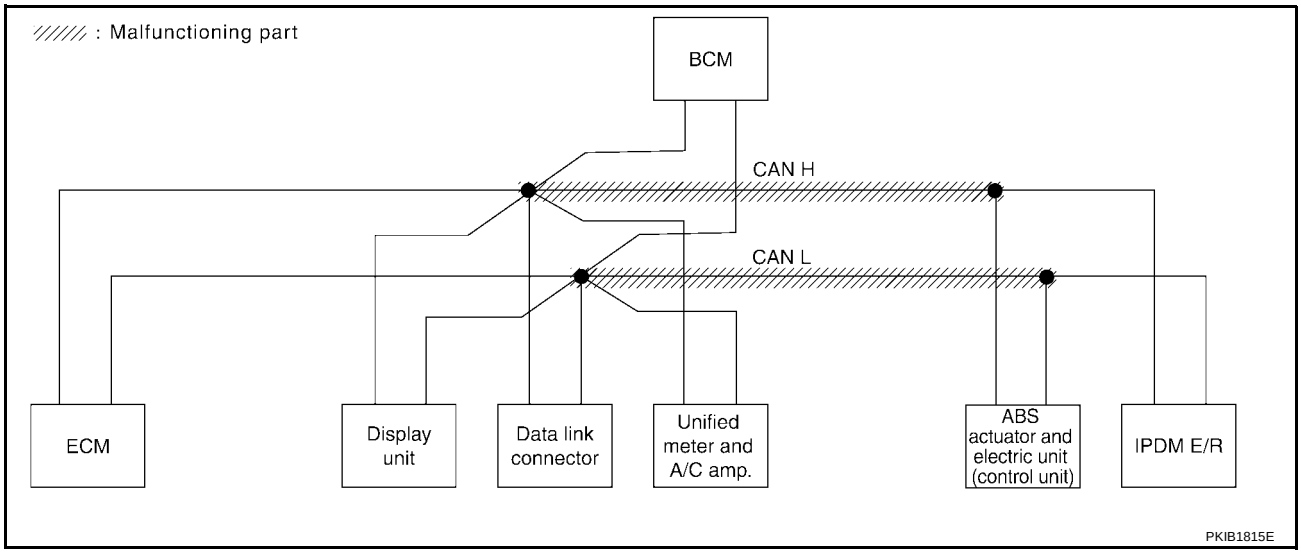
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-103, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2826E



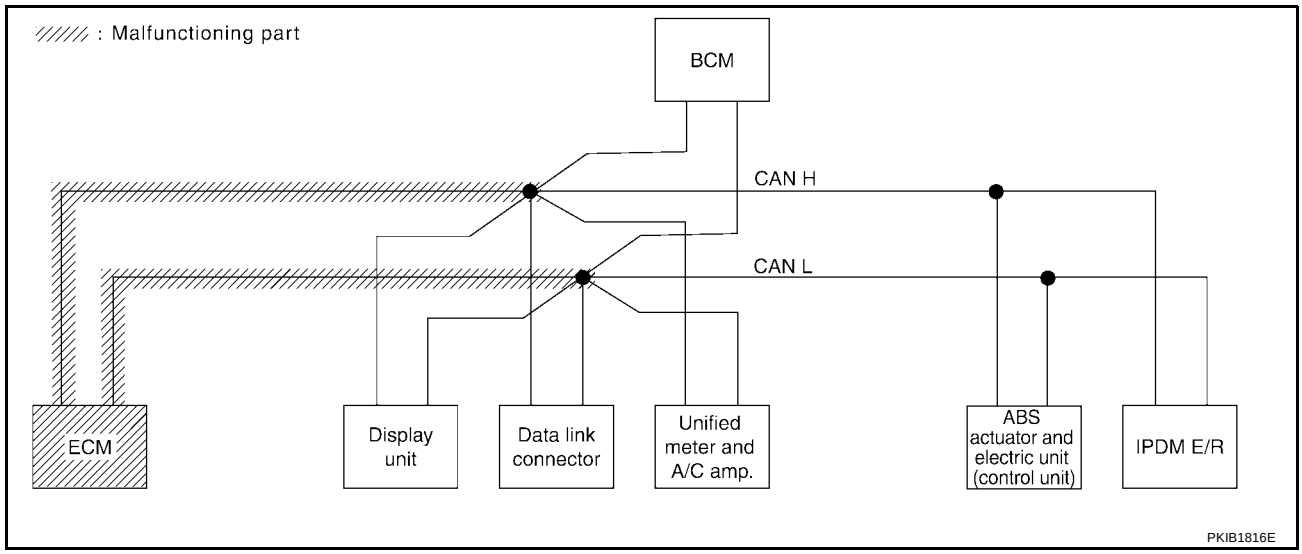
PKIB1815E

Case 2

Check ECM circuit. Refer to LAN-104, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2827E



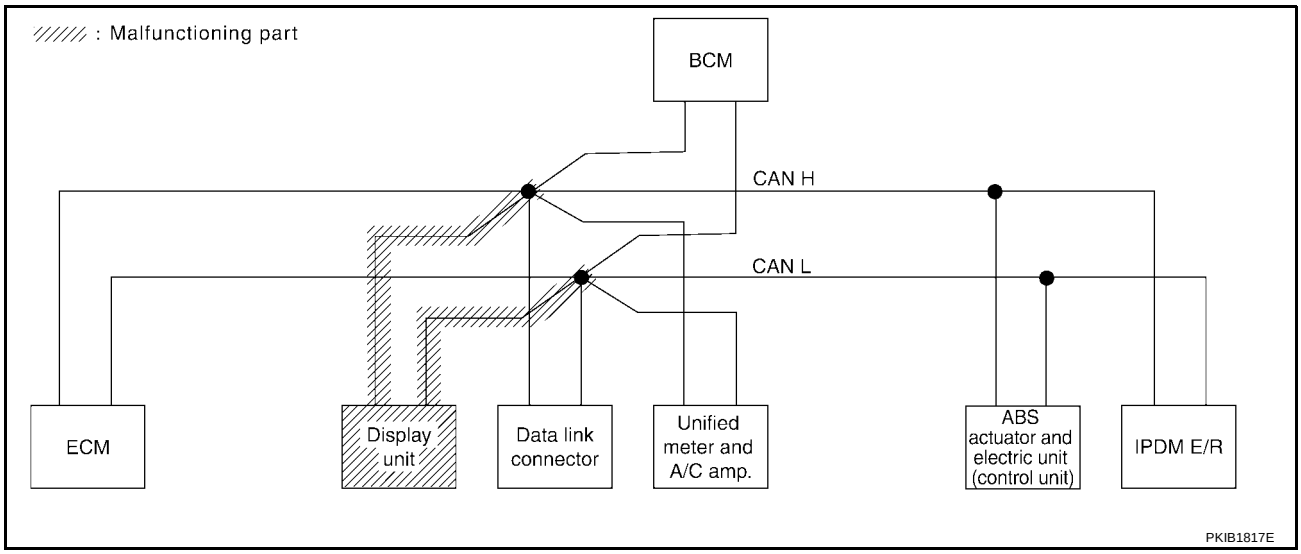
PKIB1816E

Case 3

Check display unit circuit. Refer to LAN-104, "Display Unit Circuit Check" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2828E



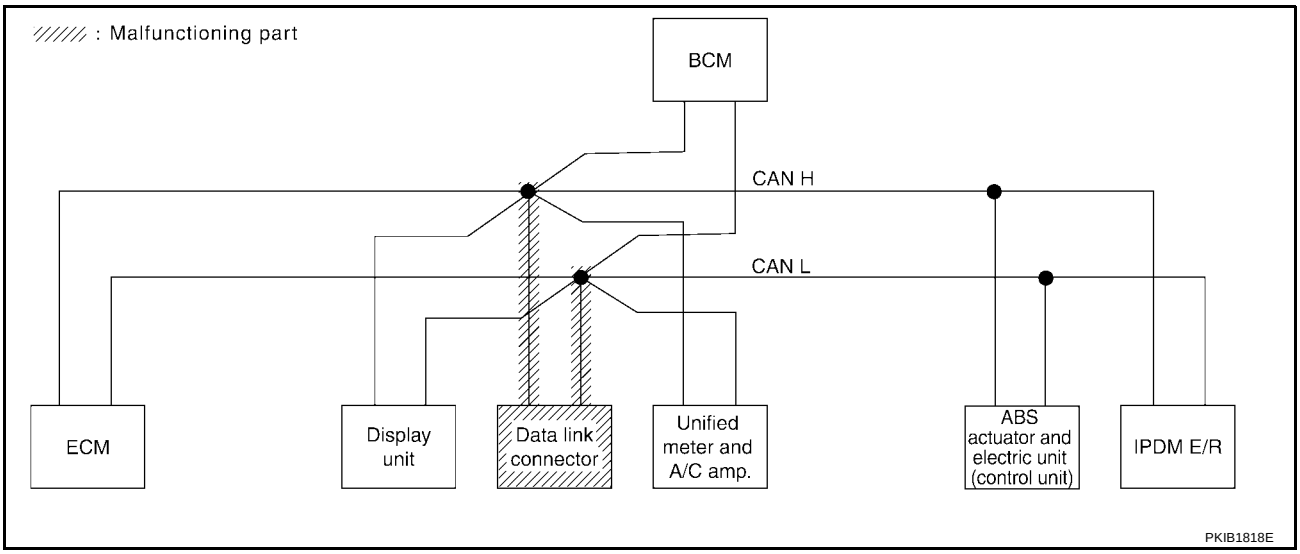
PKIB1817E

Case 4

Check data link connector circuit. Refer to LAN-105, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	Notification ✓	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Notification ✓	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	Notification ✓	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2829E



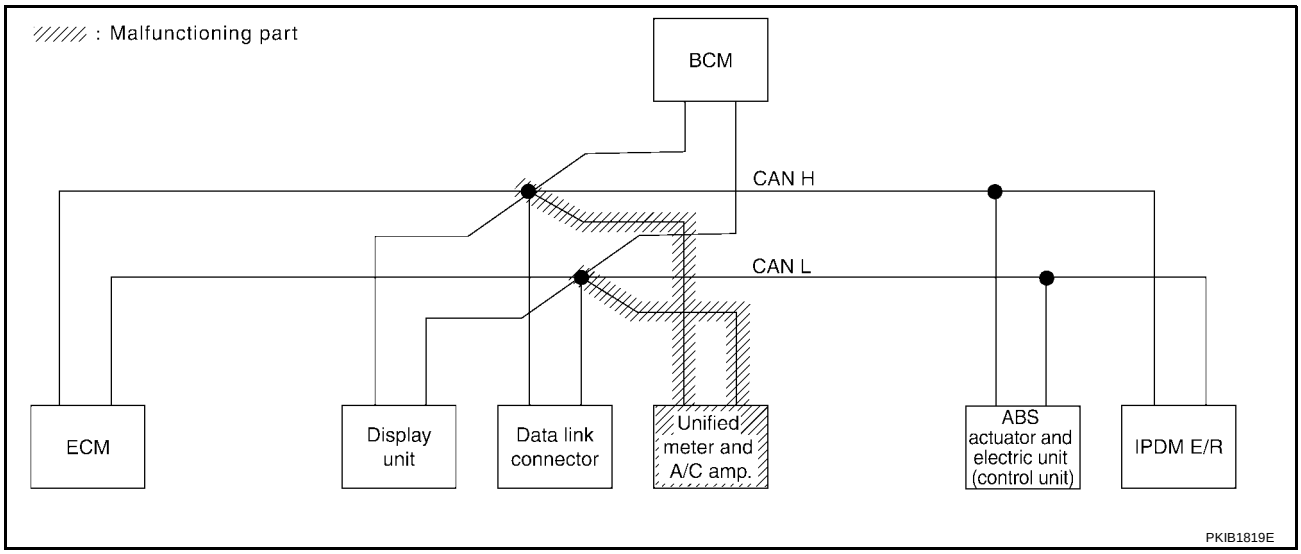
PKIB1818E

Case 5

Check unified meter and A/C amp. circuit. Refer to LAN-105, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit		CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2830E

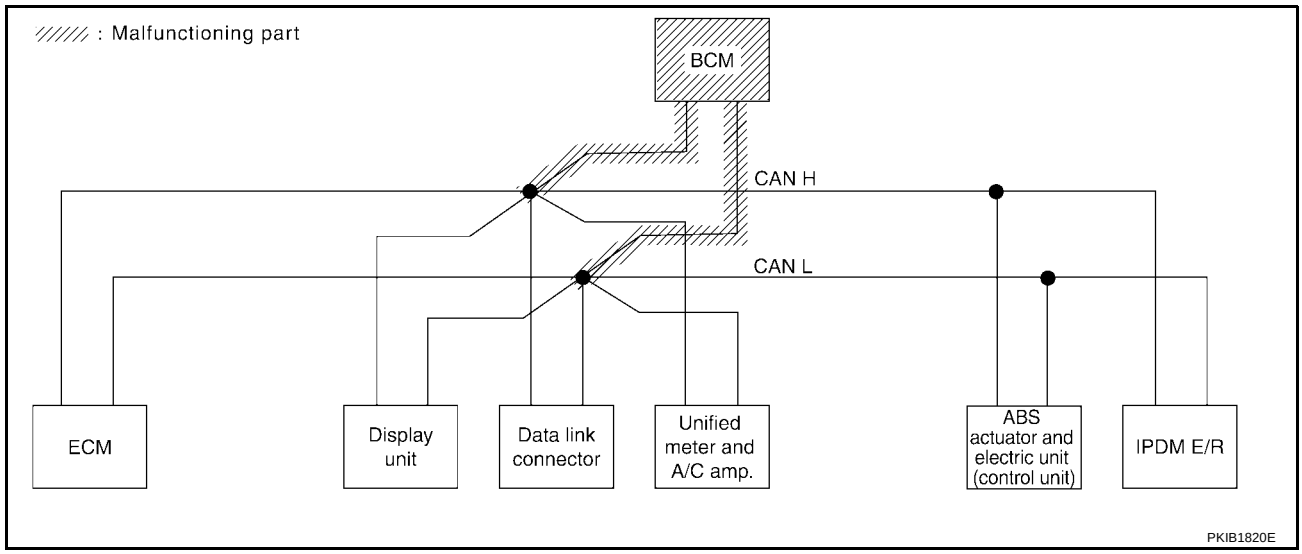


Case 6

Check BCM circuit. Refer to LAN-106, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2831E



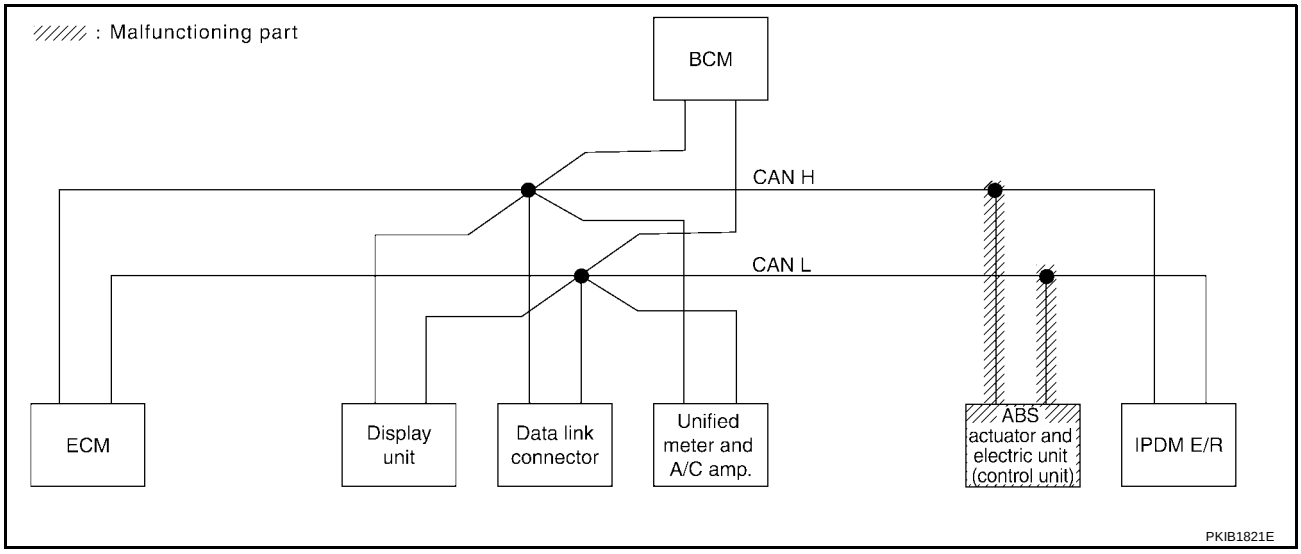
PKIB1820E

Case 7

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-106, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN ✓	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN ✓	UNKWN ✓	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2832E



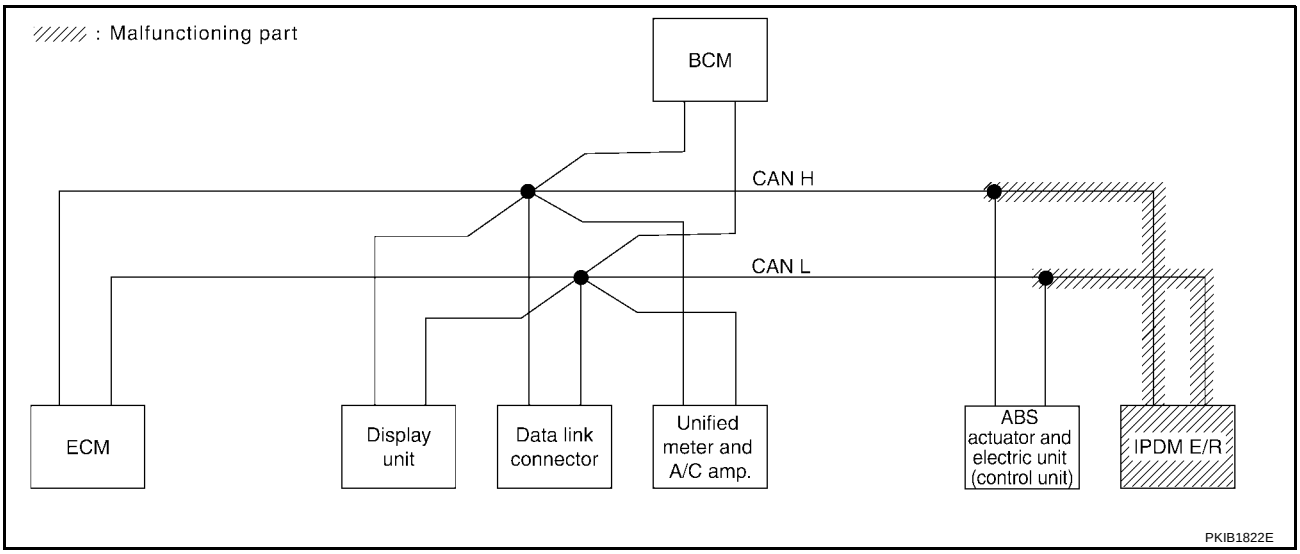
PKIB1821E

Case 8

Check IPDM E/R circuit. Refer to LAN-107, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2833E



PKIB1822E

Case 9

Check CAN communication circuit. Refer to LAN-107, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2834E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-108, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit		CAN COMM	CAN 1	CAN 3		CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2835E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-108, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2836E

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

UKS002ME

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

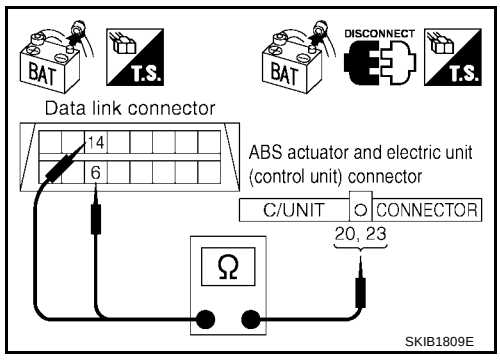
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

6 (L) - 20 (L) : Continuity should exist.
14 (P) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-93, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS002MF

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

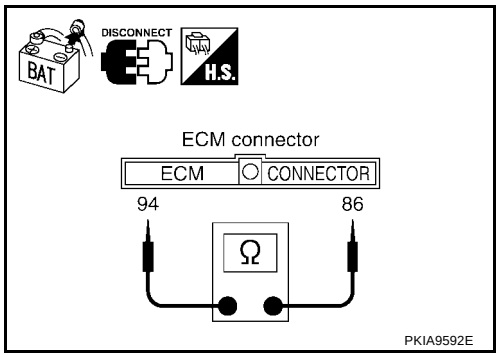
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and data link connector M22.



Display Unit Circuit Check

UKS002MH

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

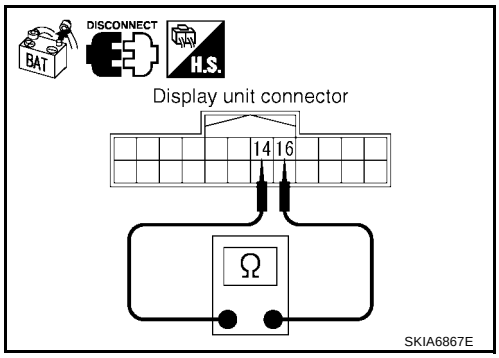
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.



Data Link Connector Circuit Check

UKS002MI

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

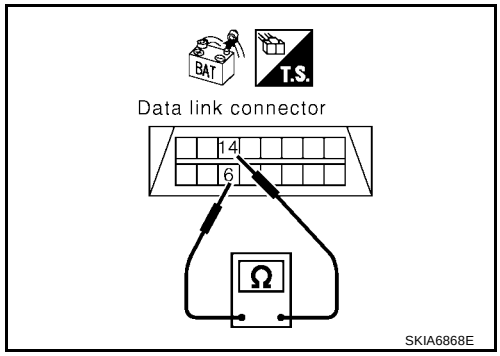
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-93, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002MK

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

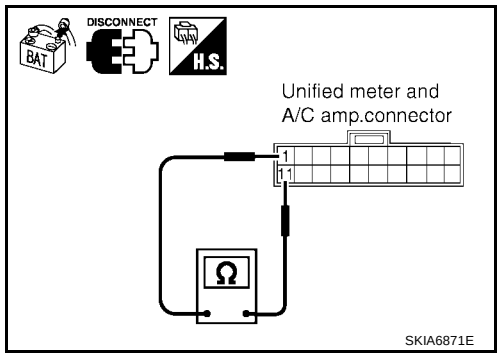
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002MJ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

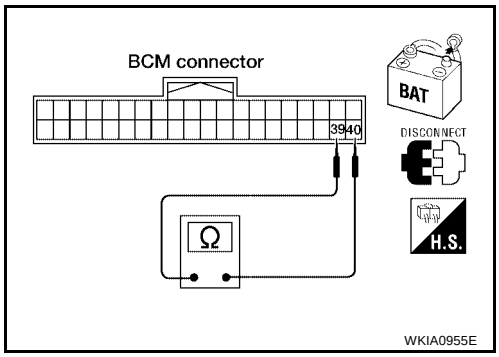
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002ML

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

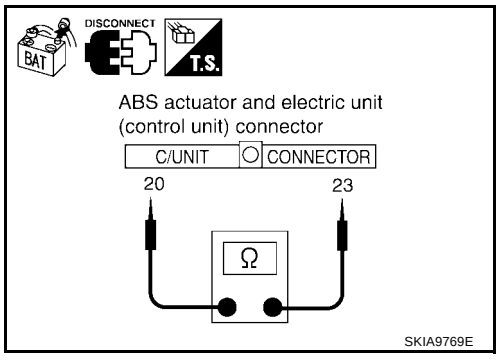
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002MM

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

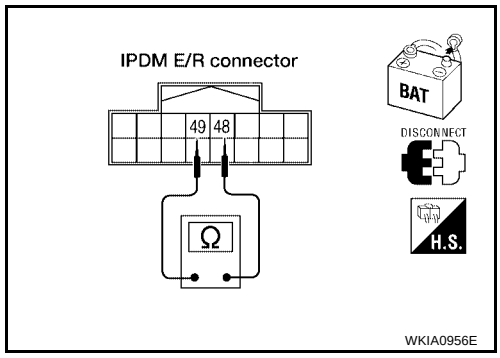
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002MN

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

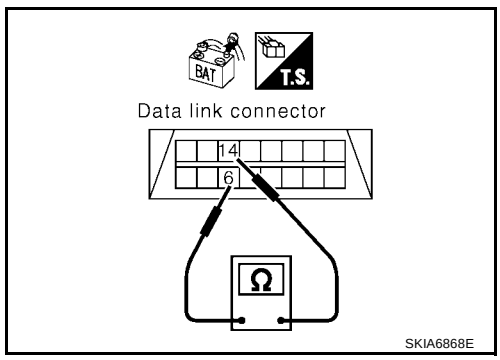
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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

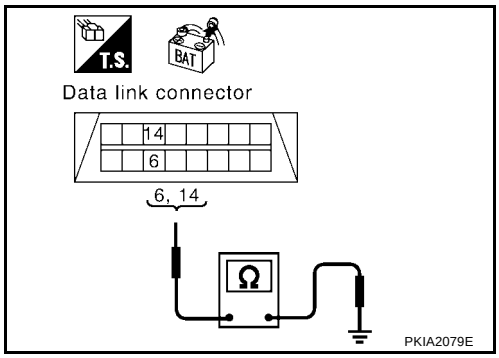


3. CHECK HARNESS FOR SHORT TO GROUND

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-108, "Component Inspection" .

NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002MO

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002MP

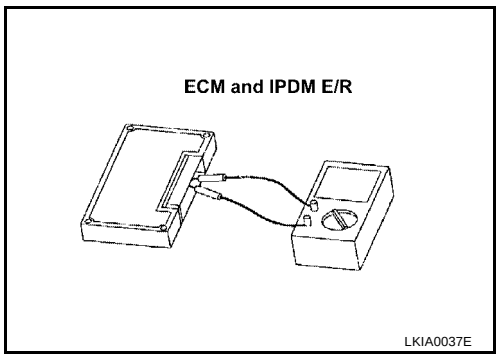
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 5)

PFP:23710

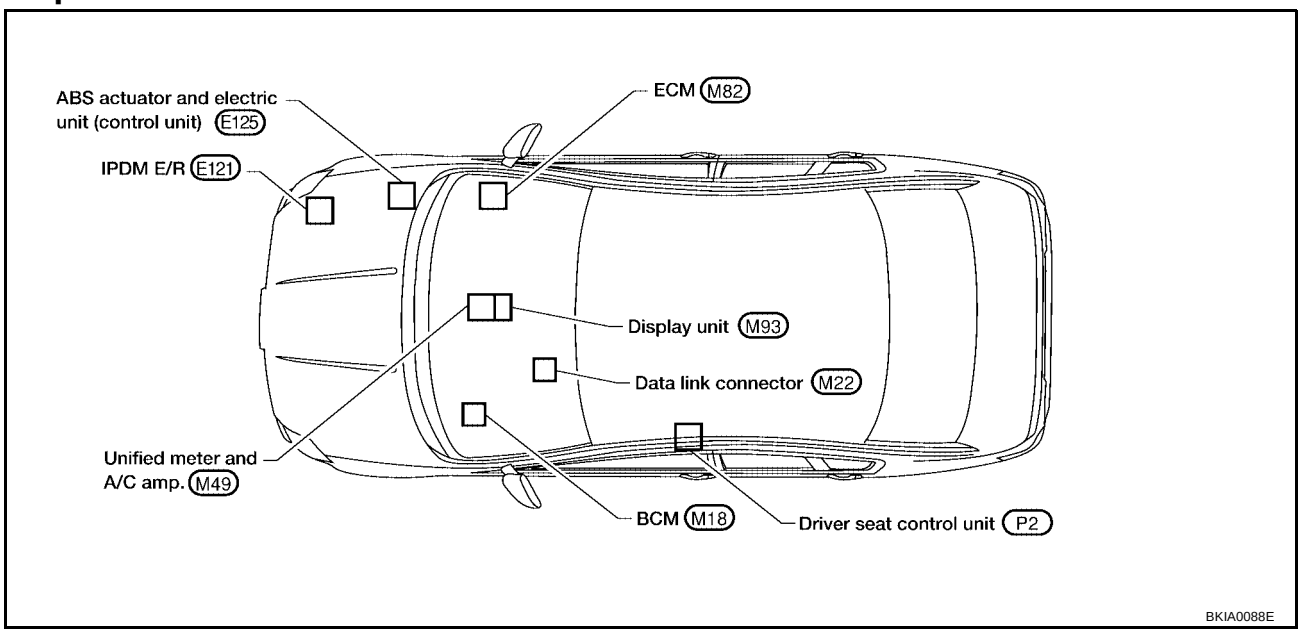
System Description

UKS0027O

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.

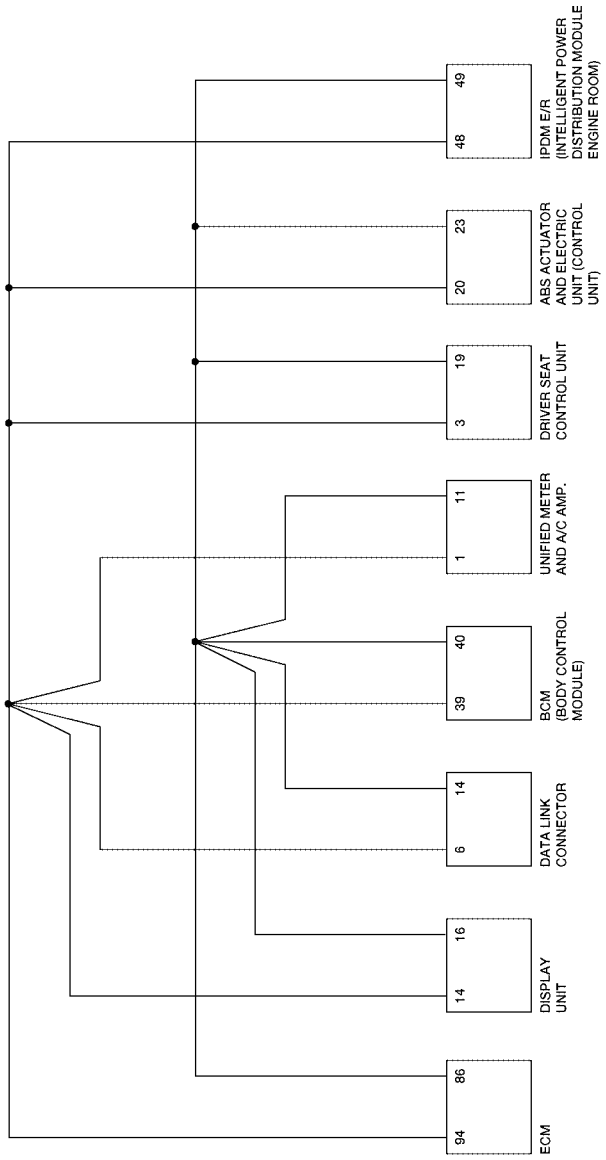
Component Parts and Harness Connector Location

UKS0027P



Schematic

UKS0027Q

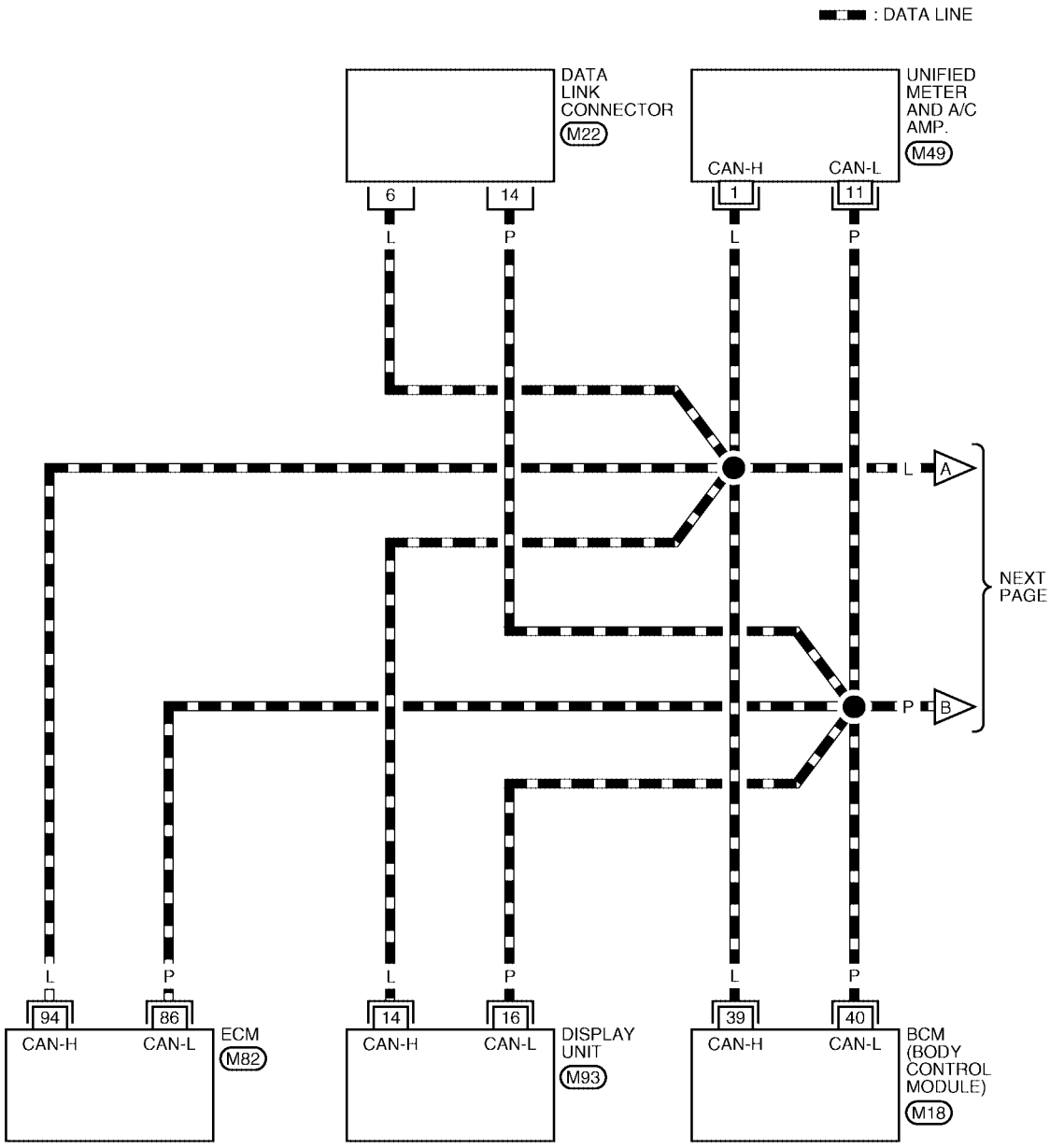


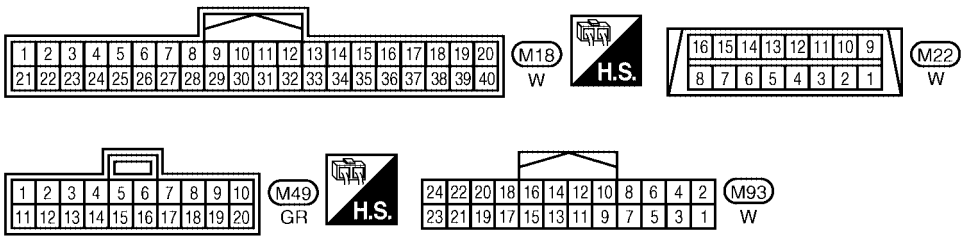
BKWA0262E

Wiring Diagram - CAN -

UKS0027R

LAN-CAN-09

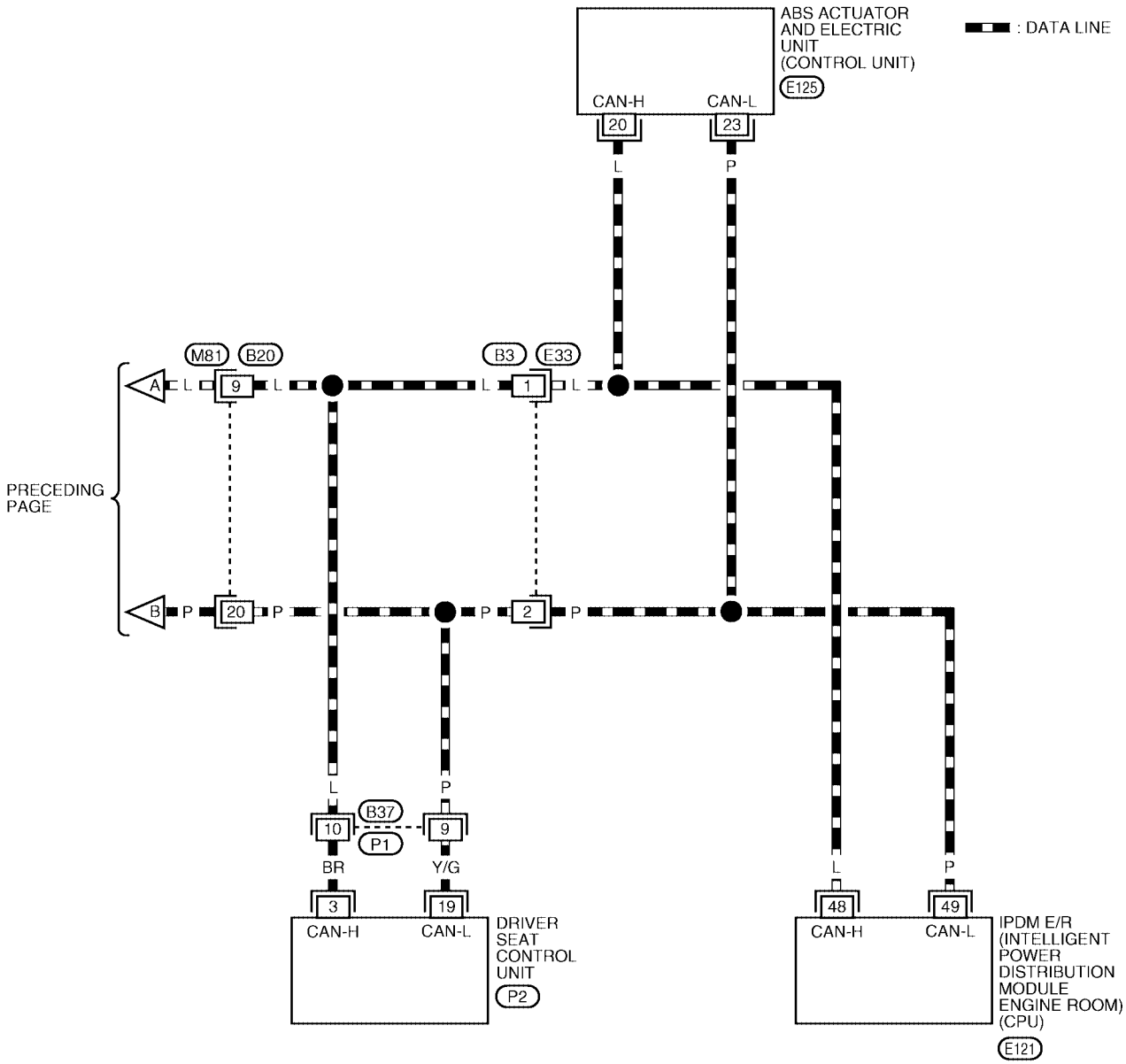


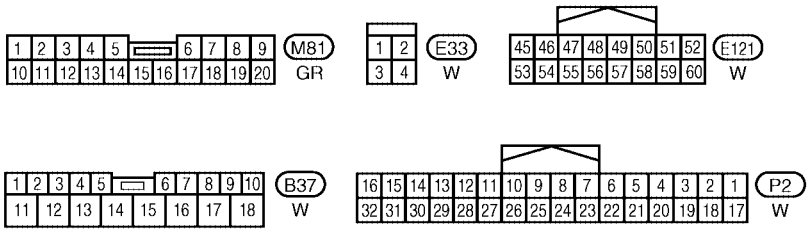


REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

BKWA0277E

LAN-CAN-10





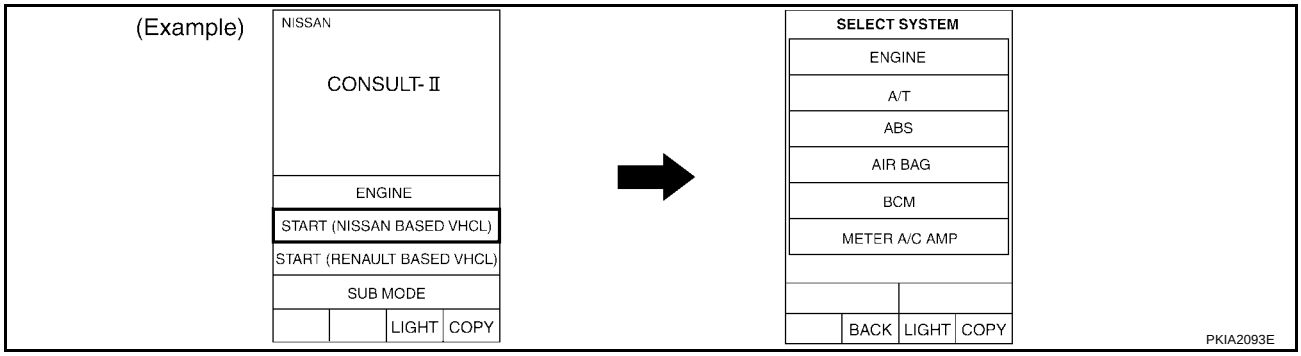
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0279E

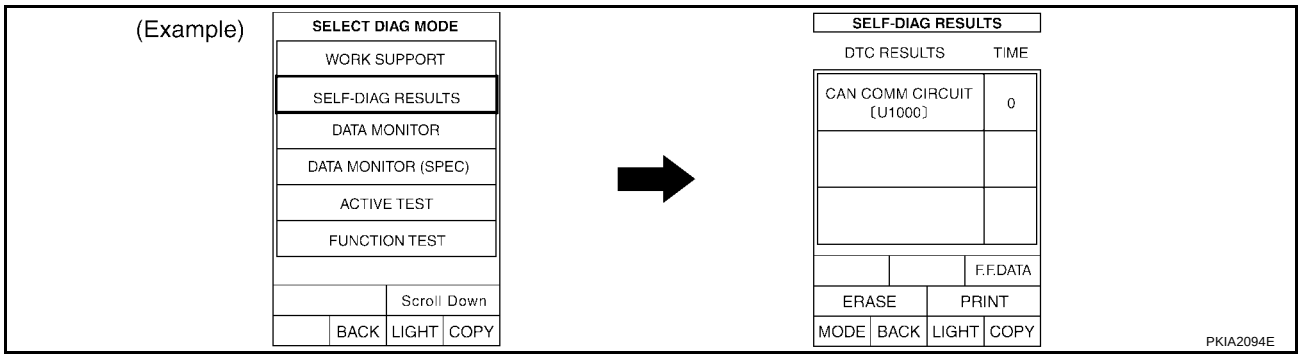
Work Flow

UKS002LU

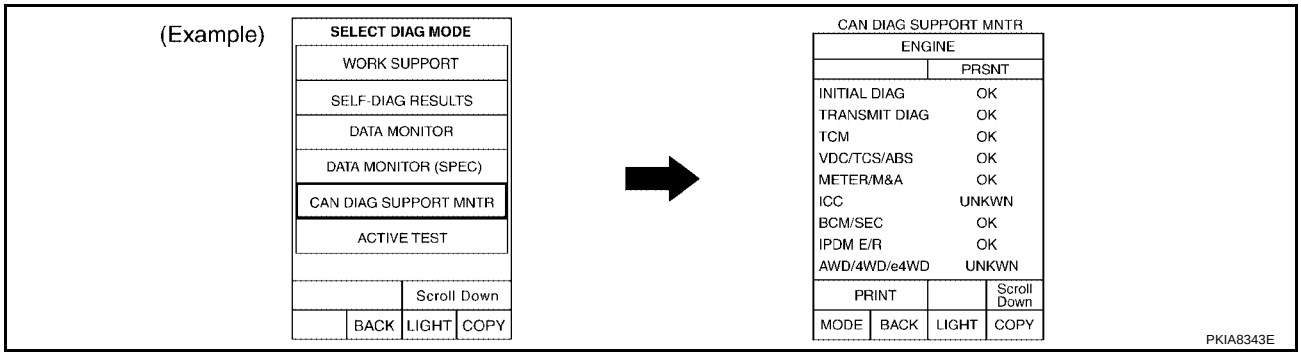
1. When there are no indications of “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



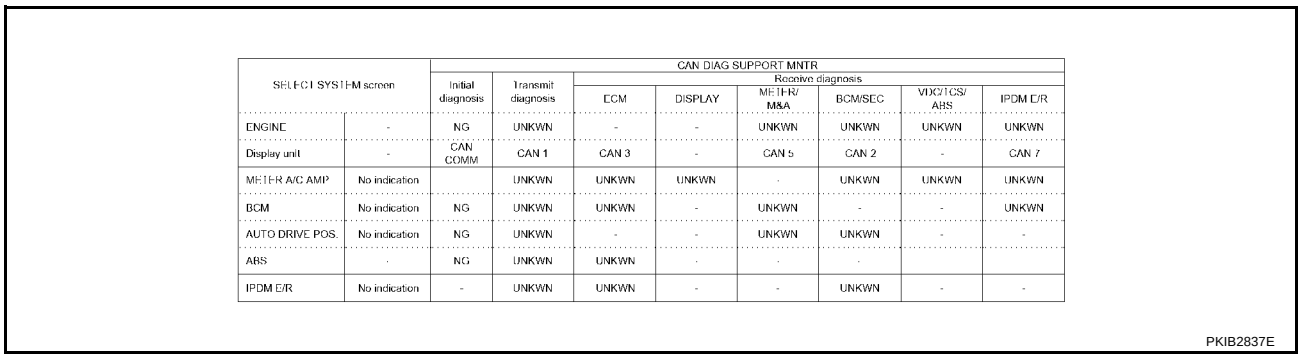
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2837E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

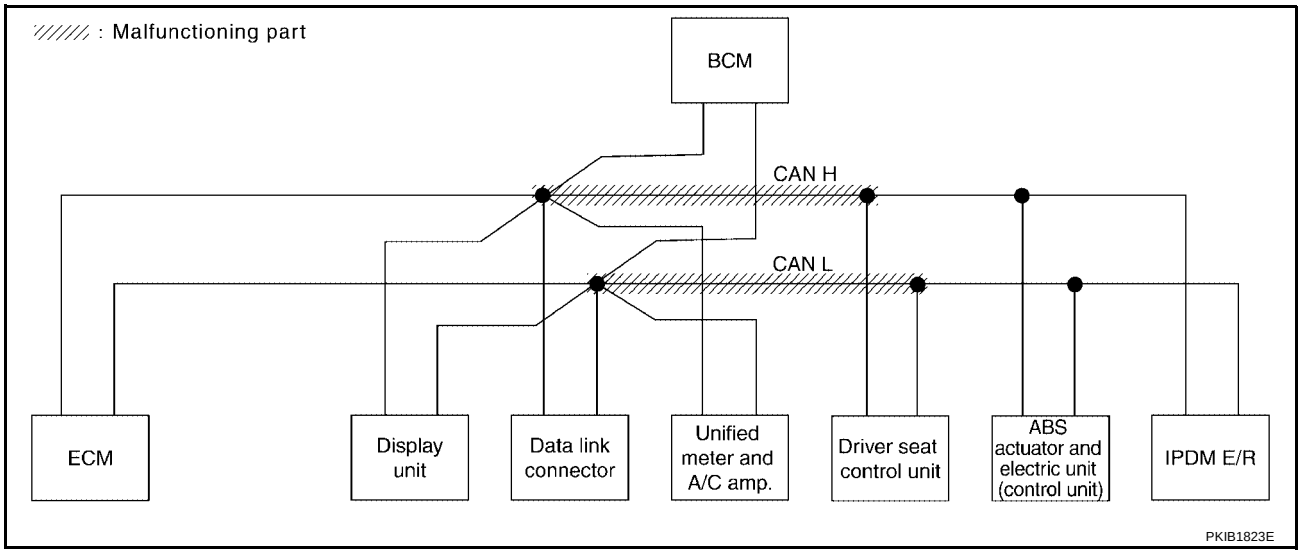
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and driver seat control unit. Refer to LAN-125, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2838E



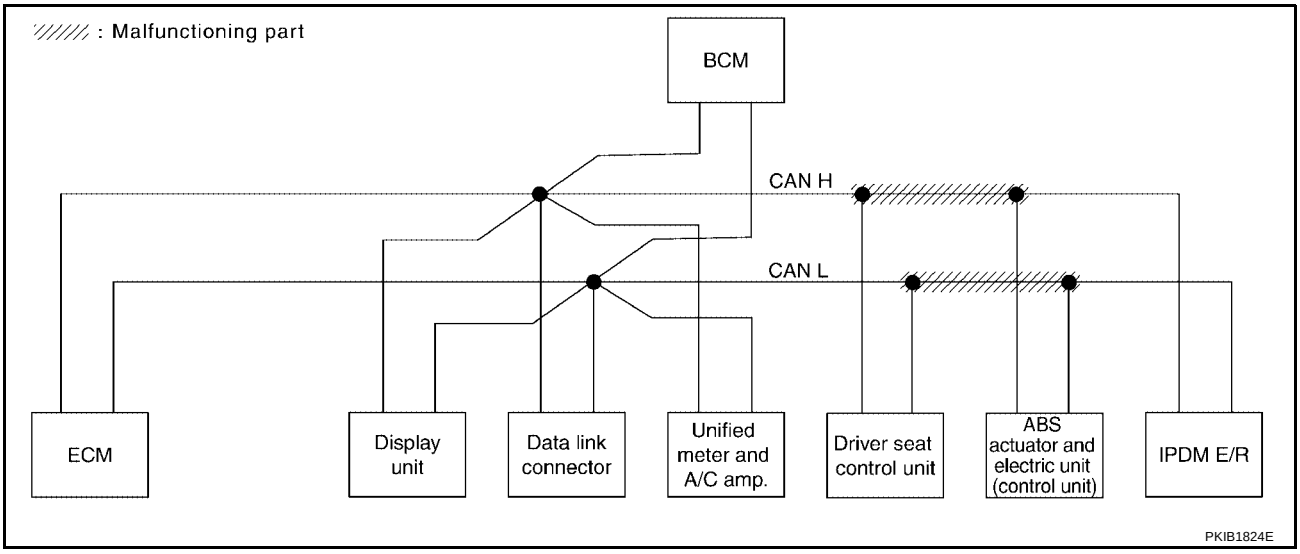
PKIB1823E

Case 2

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-126, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2839E

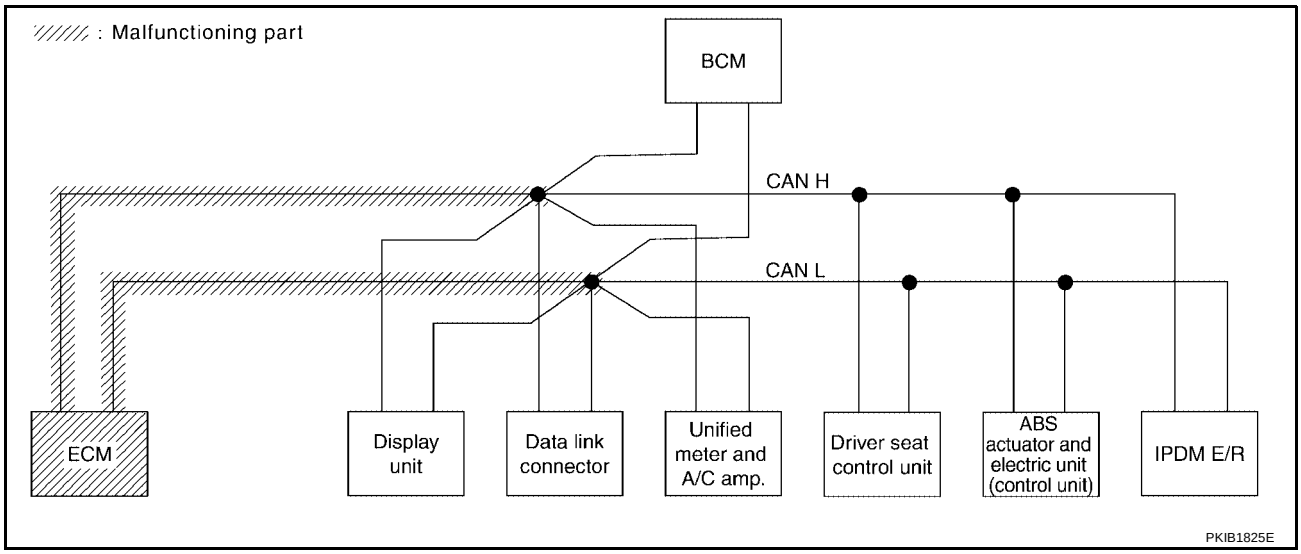


Case 3

Check ECM circuit. Refer to LAN-126, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2840E



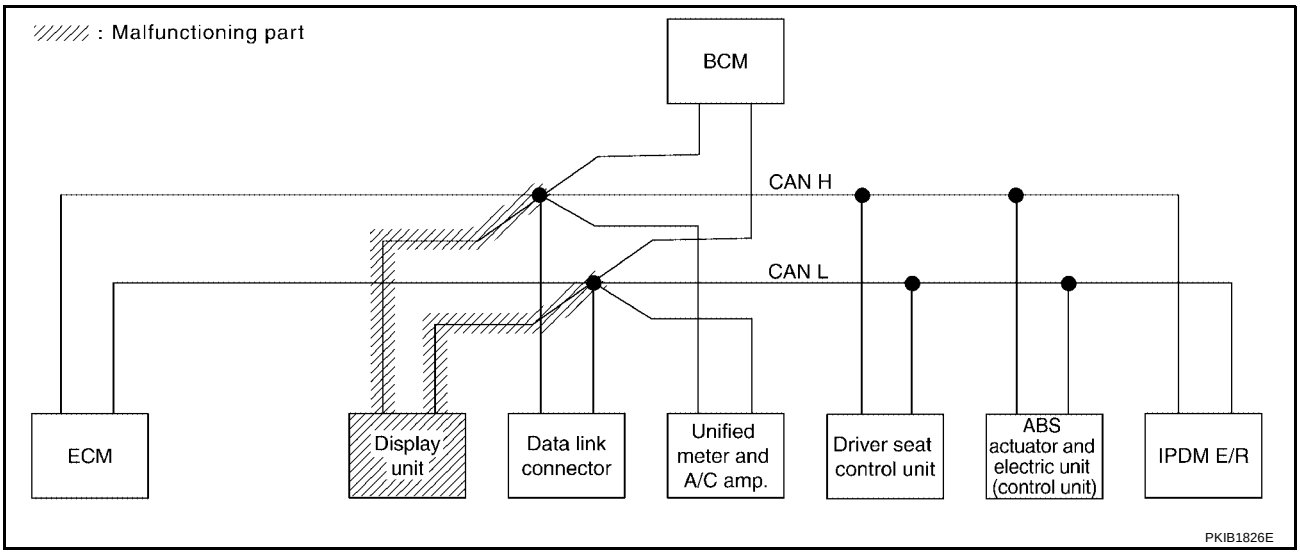
PKIB1825E

Case 4

Check display unit circuit. Refer to LAN-127, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	✓ CAN 1	✓ CAN 3	-	✓ CAN 5	✓ CAN 2	-	✓ CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	✓ UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2841E



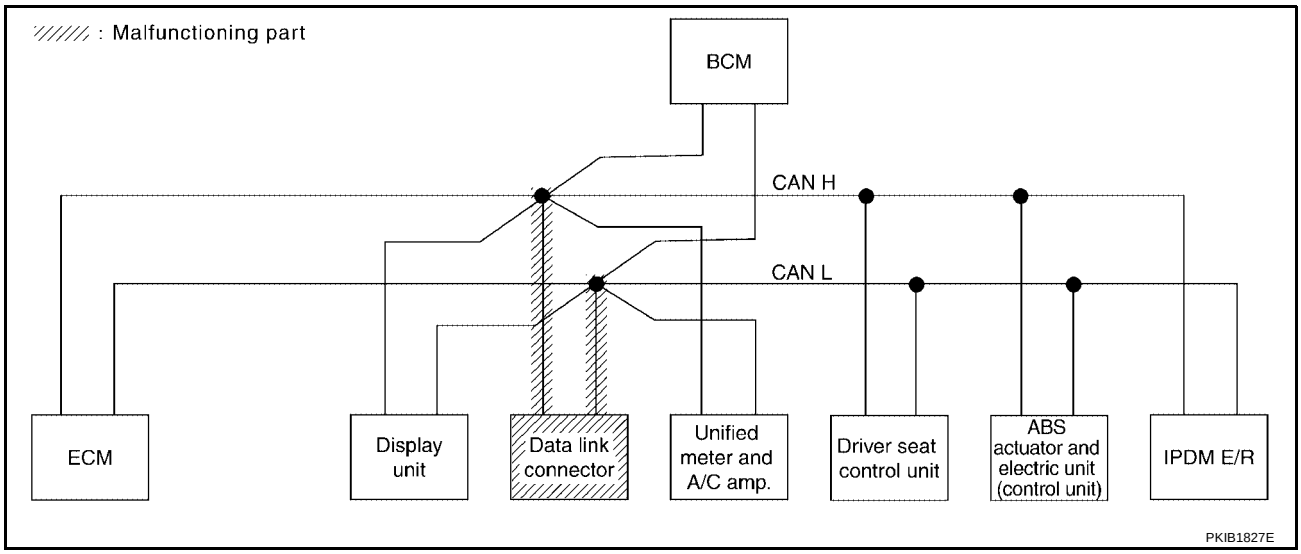
PKIB1826E

Case 5

Check data link connector circuit. Refer to LAN-127, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	Non-application		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Non-application	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	Non-application	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	Non-application	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2842E



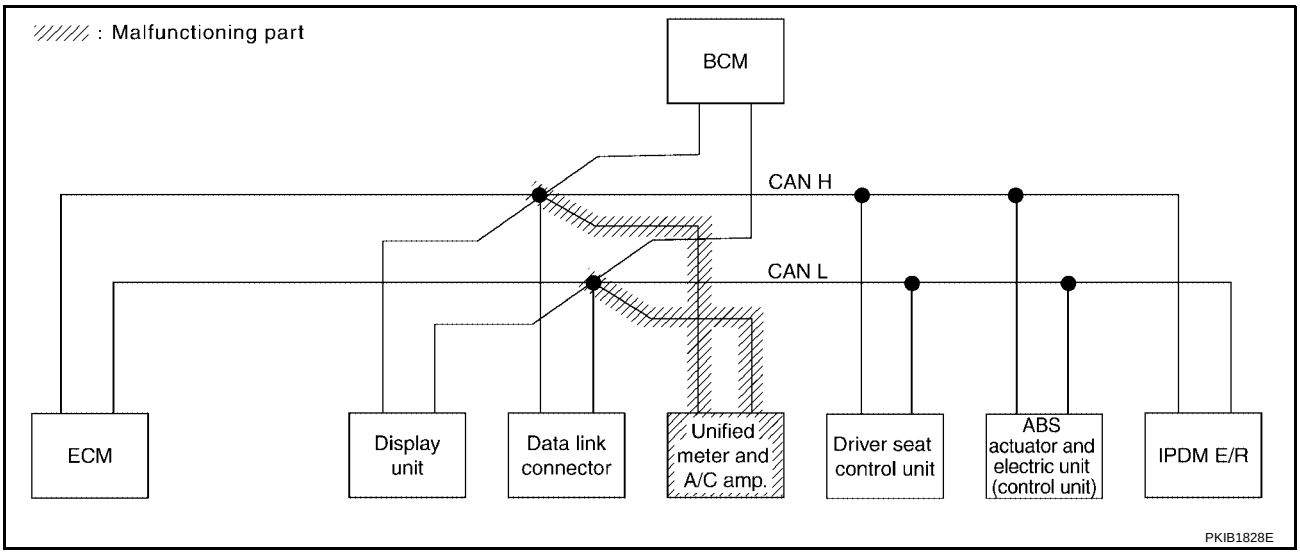
PKIB1827E

Case 6

Check unified meter and A/C amp. circuit. Refer to LAN-128, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2843E



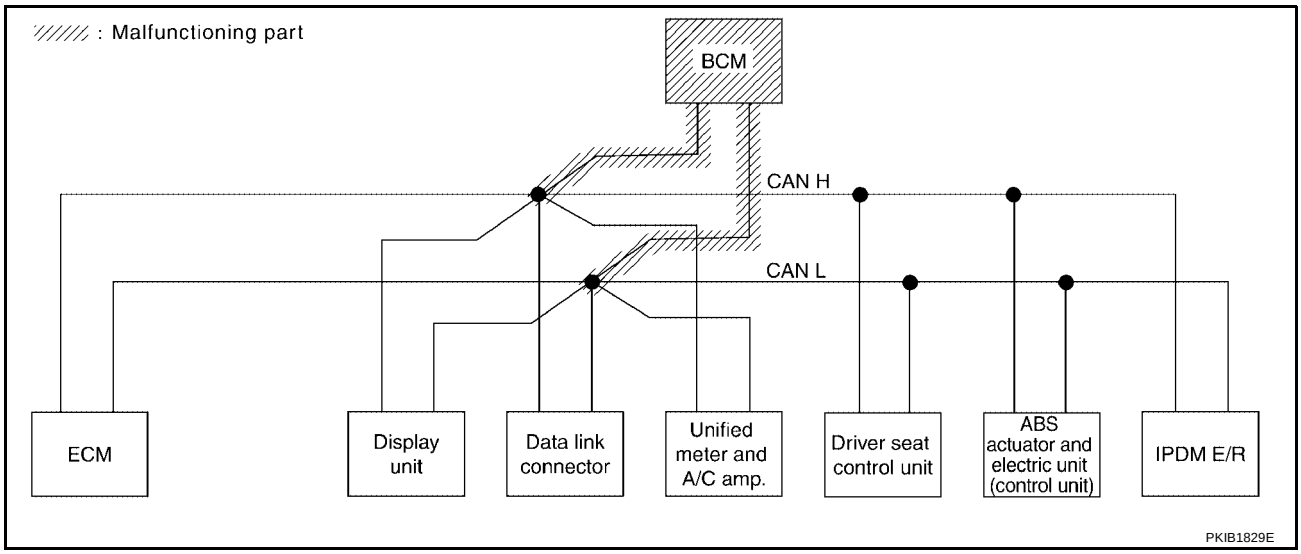
PKIB1828E

Case 7

Check BCM circuit. Refer to LAN-128, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2844E



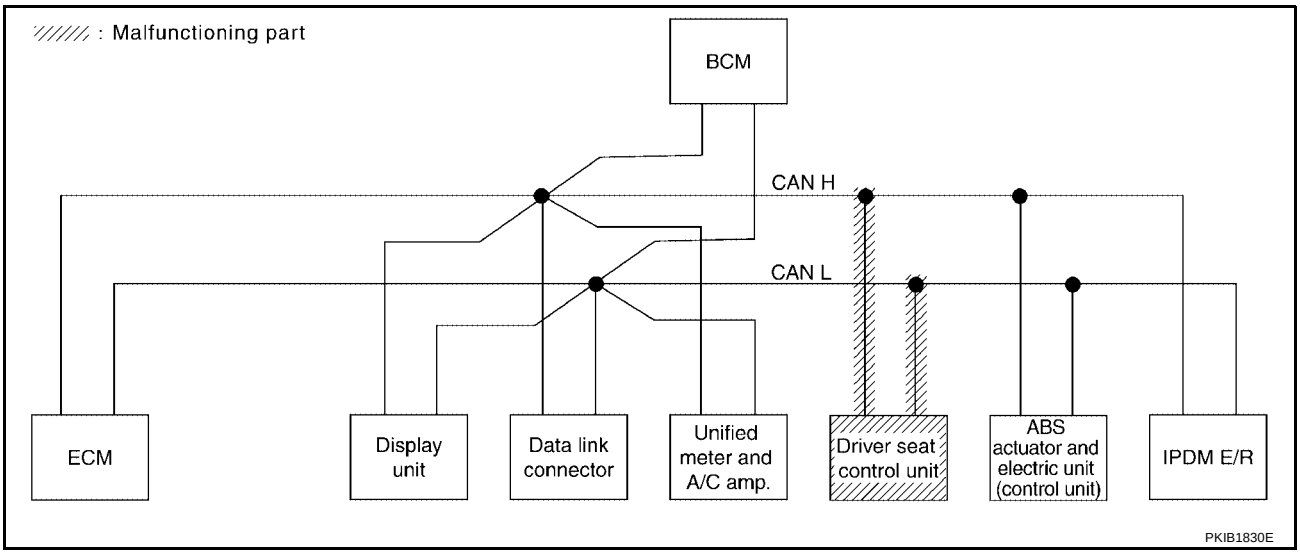
PKIB1829E

Case 8

Check driver seat control unit circuit. Refer to LAN-129, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2845E



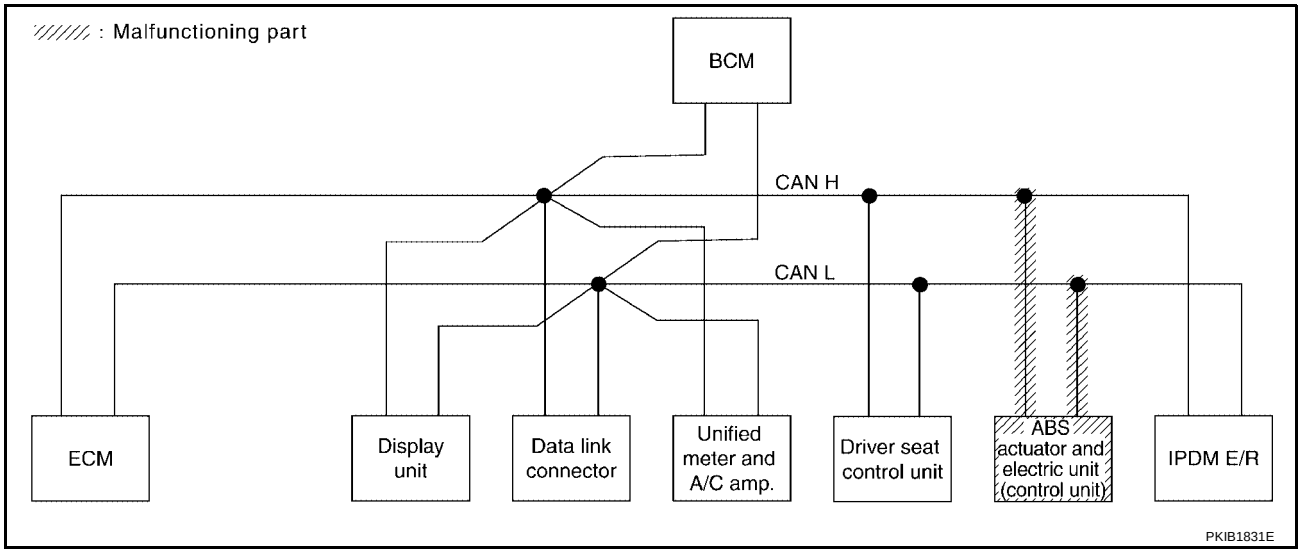
PKIB1830E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-129, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2846E



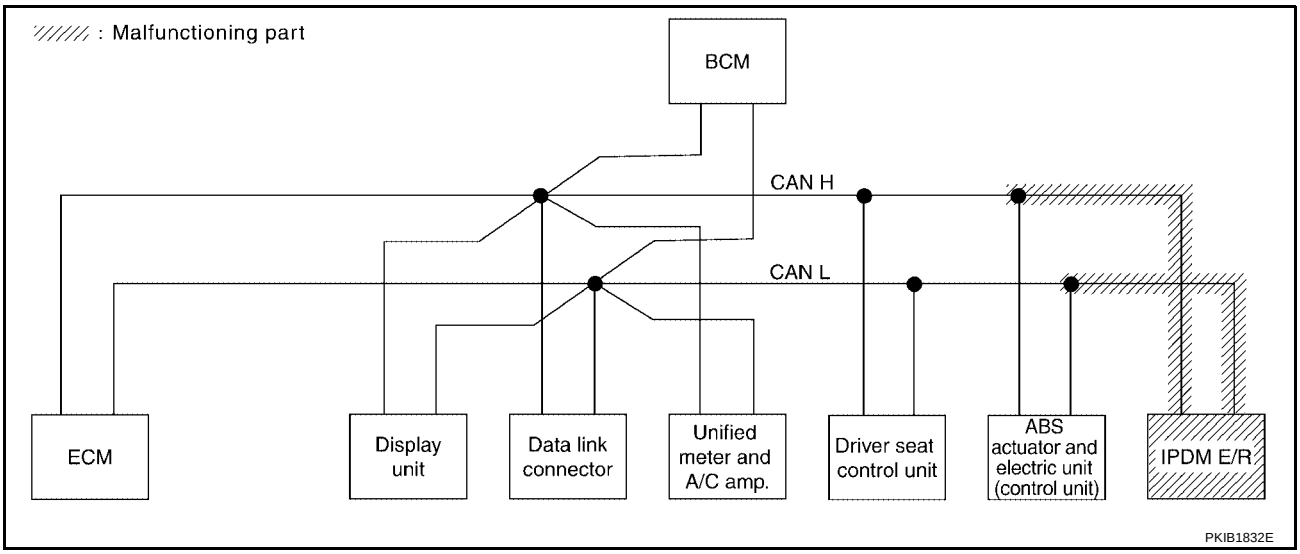
PKIB1831E

Case 10

Check IPDM E/R circuit. Refer to LAN-130, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2847E



PKIB1832E

Case 11

Check CAN communication circuit. Refer to LAN-130, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2848E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-131, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN ✓	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2849E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-131, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display unit	-	CAN COMM	CAN 1	CAN 3	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN ✓	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2850E

Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS002LX

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

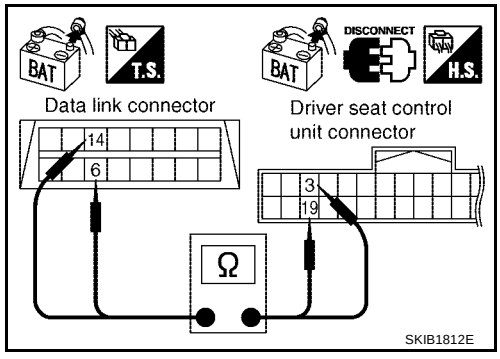
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-113, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS002LY

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

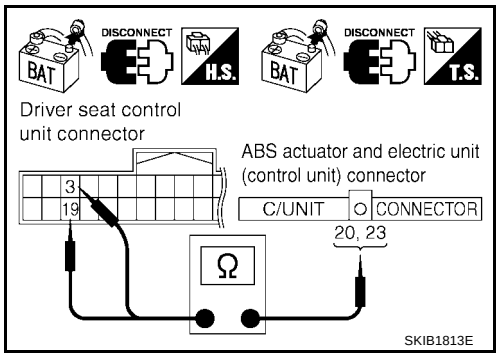
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-113, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS002LZ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

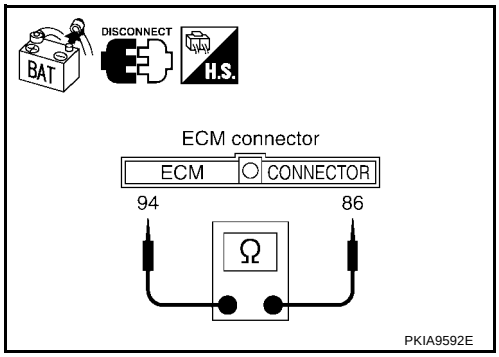
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and data link connector M22.

Display Unit Circuit Check

UKS002M1

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

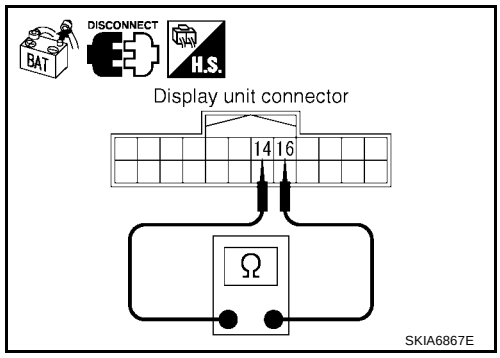
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.



Data Link Connector Circuit Check

UKS002M2

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

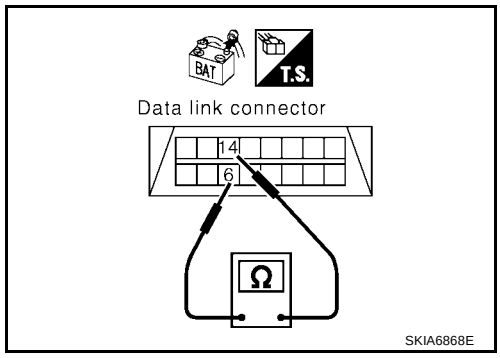
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-113, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002M4

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

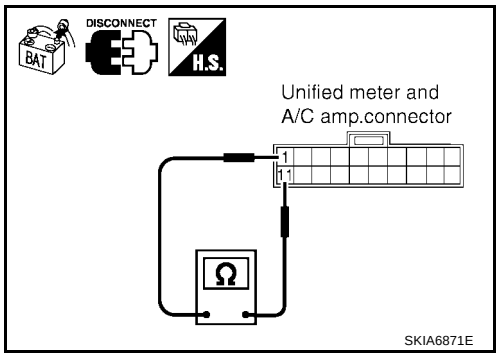
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002M3

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

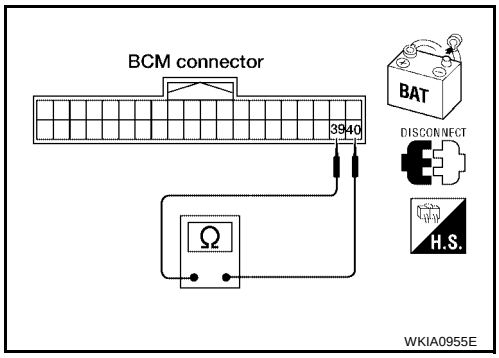
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS002M5

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

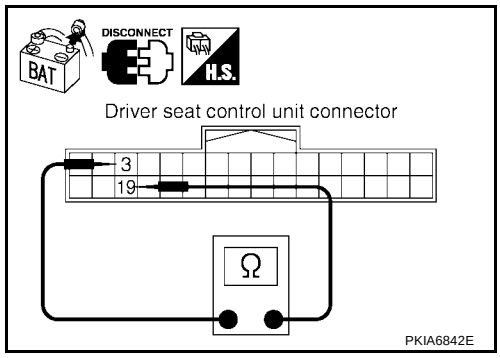
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002M6

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

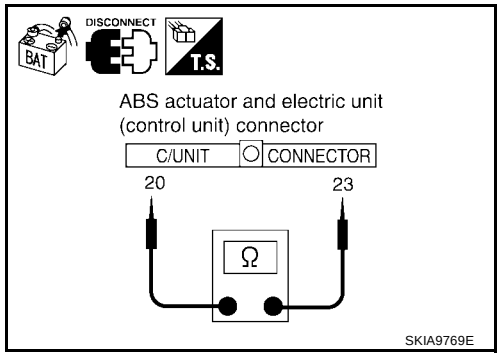
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002M7

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

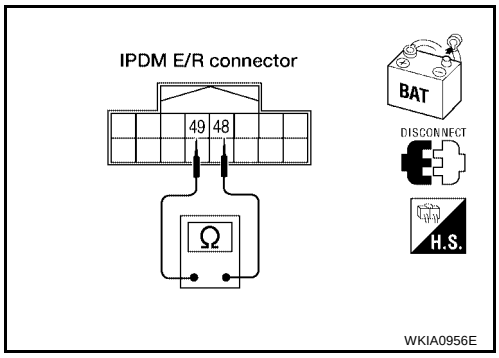
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002M8

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

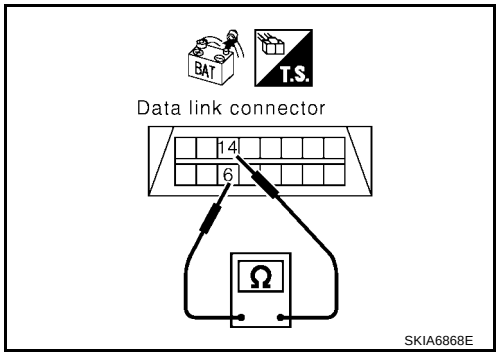
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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

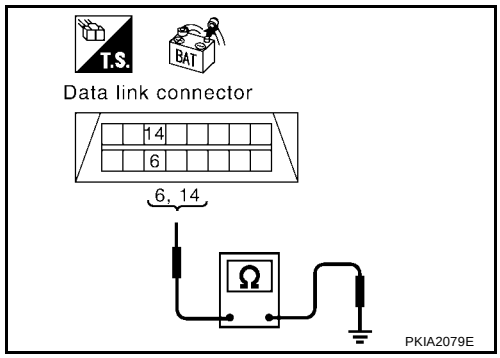


3. CHECK HARNESS FOR SHORT TO GROUND

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-131, "Component Inspection" .

NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002M9

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002MA

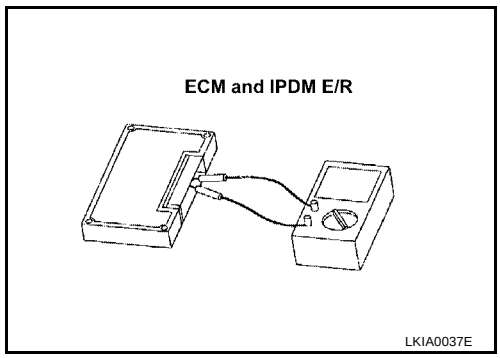
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 6)

PFP:23710

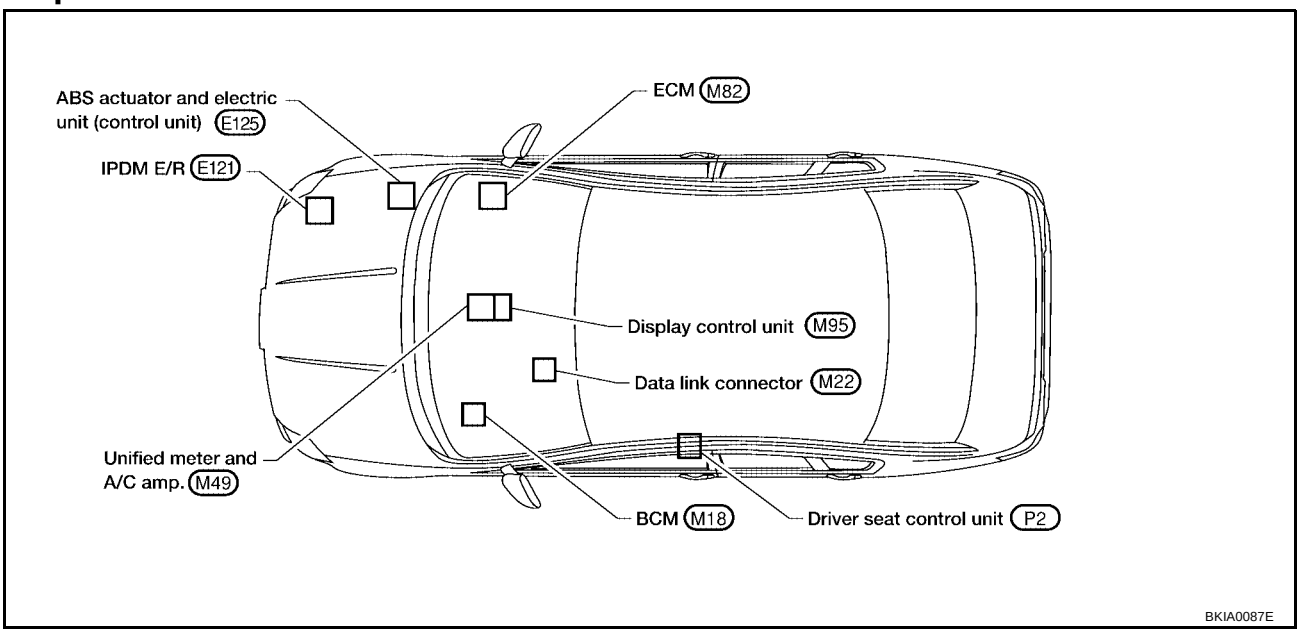
System Description

UKS00288

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.

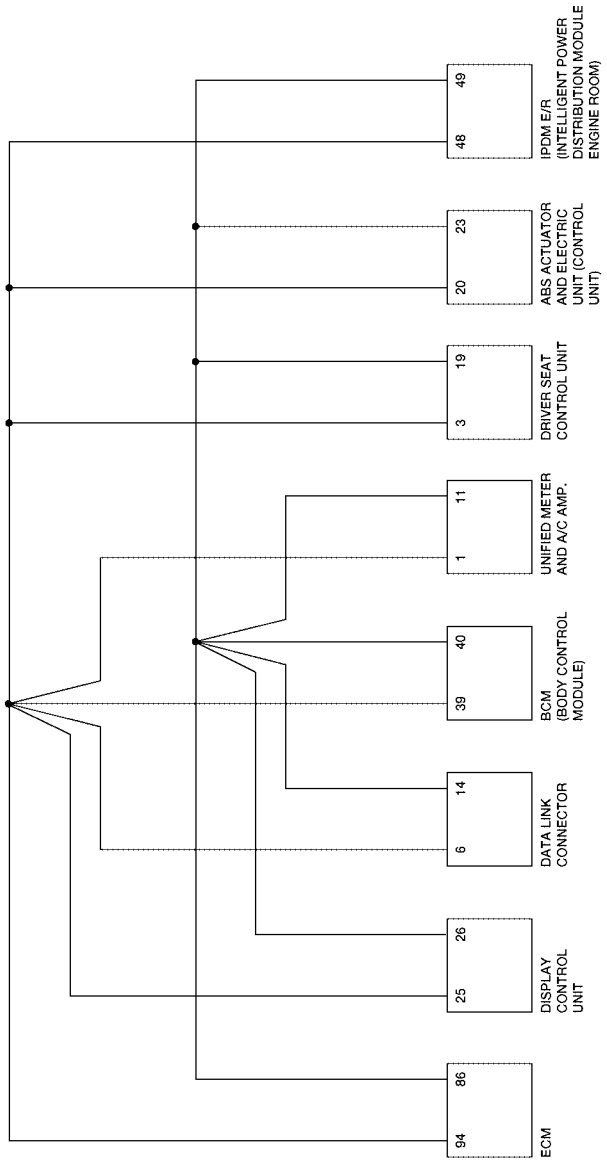
Component Parts and Harness Connector Location

UKS00289



Schematic

UKS0028A

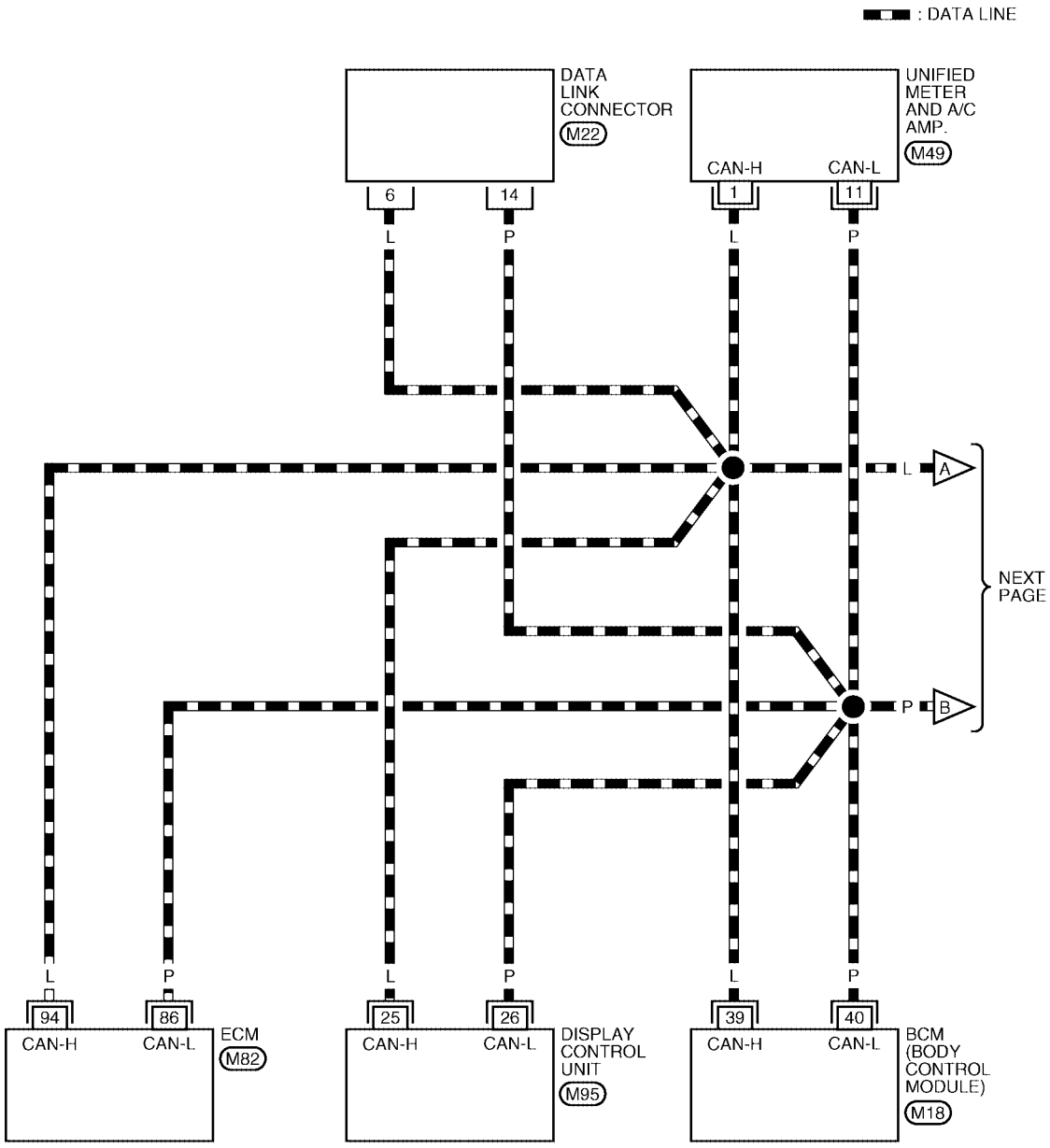


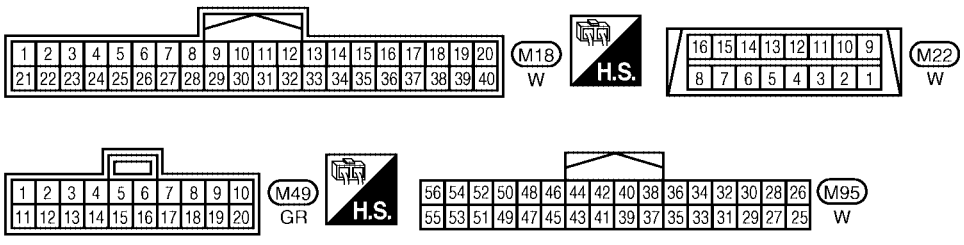
BKWA0270E

Wiring Diagram - CAN -

UKS0028B

LAN-CAN-11

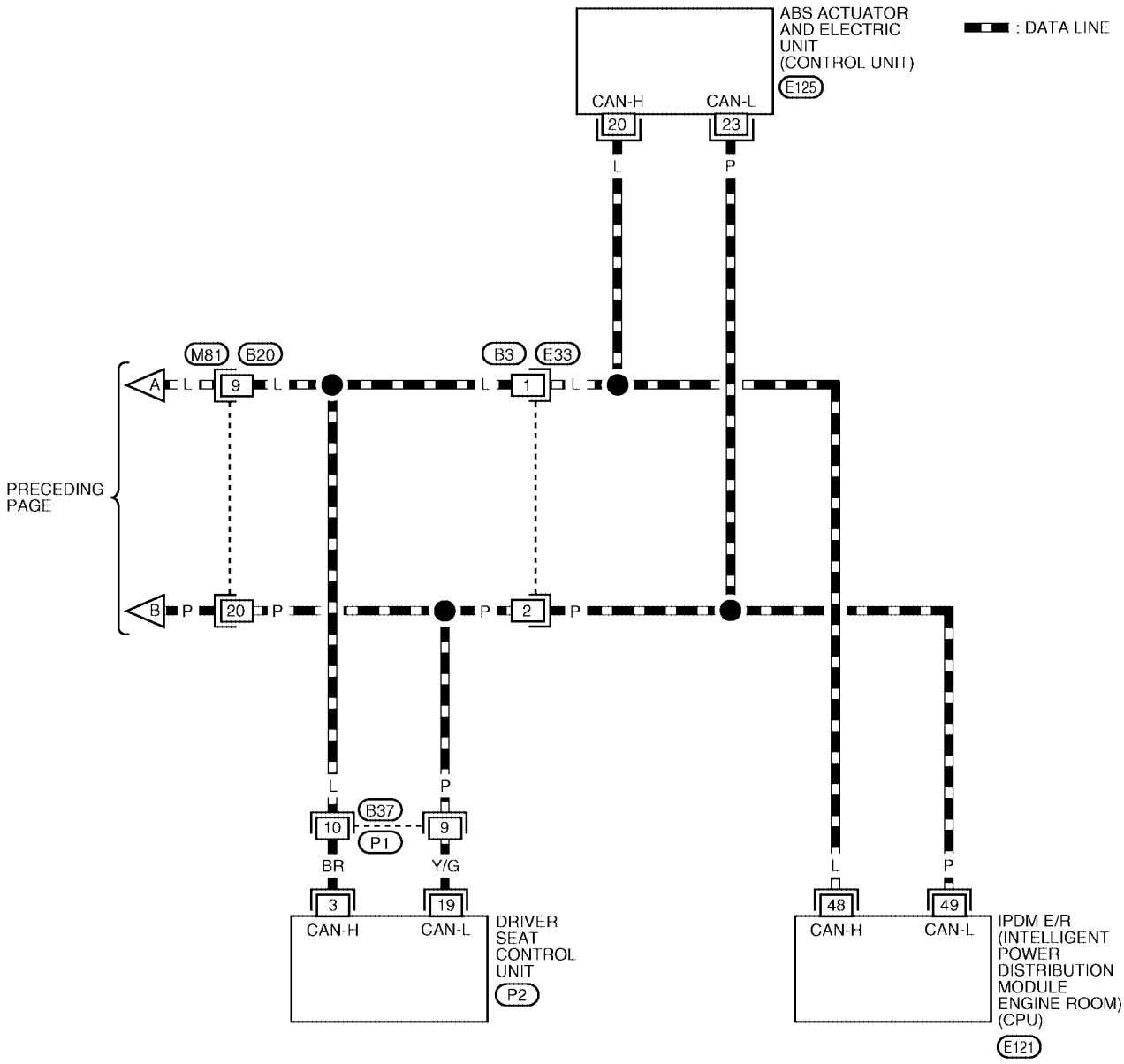


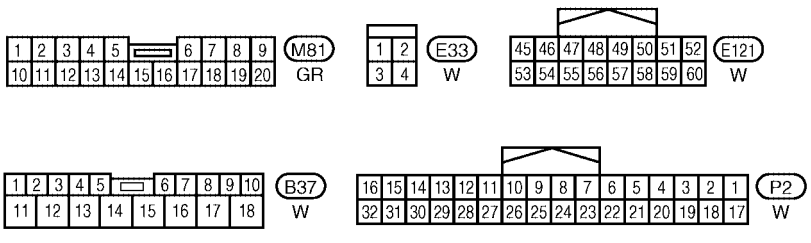


REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

BKWA0283E

LAN-CAN-12





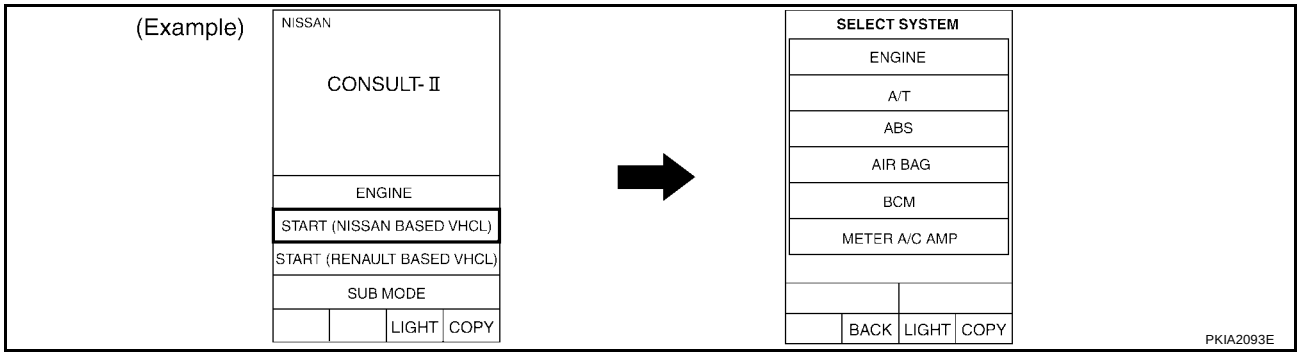
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0285E

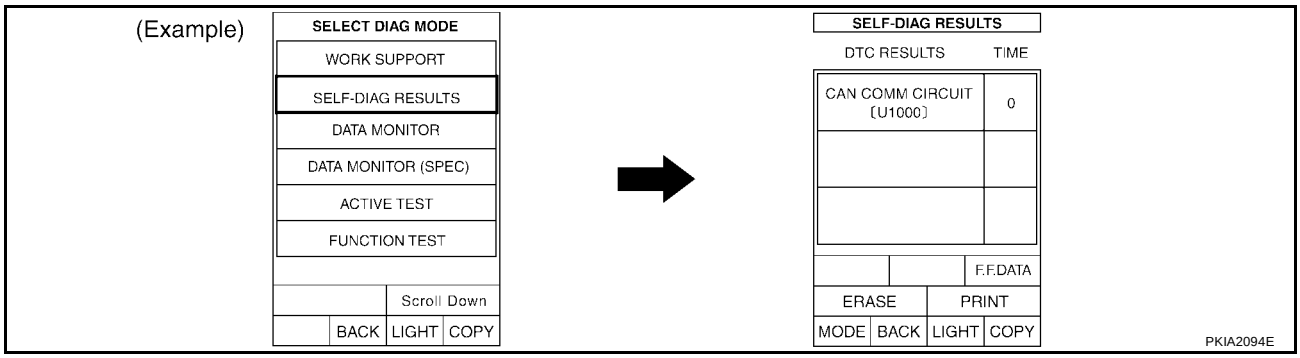
Work Flow

UKS002LD

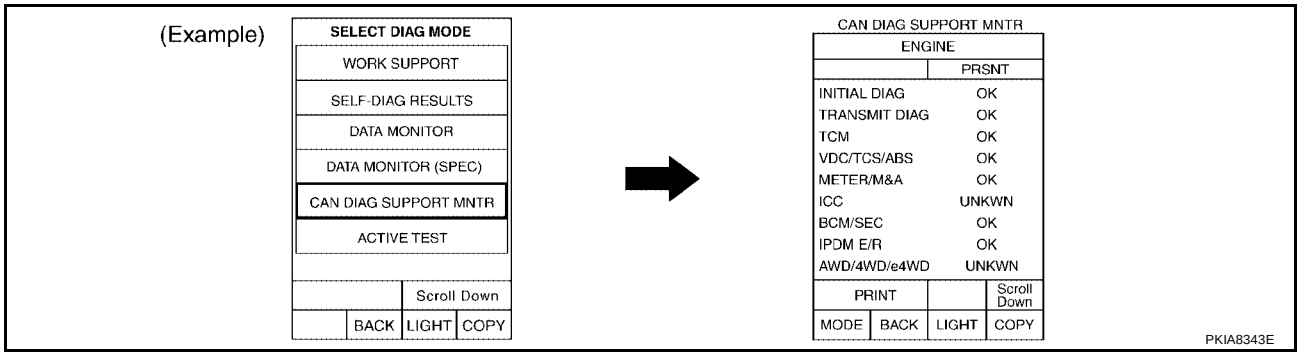
1. When there are no indications of “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



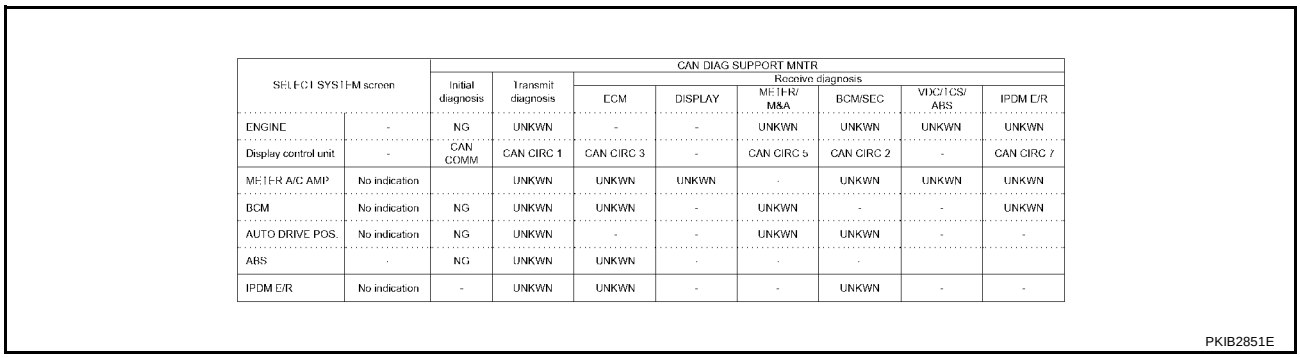
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2851E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

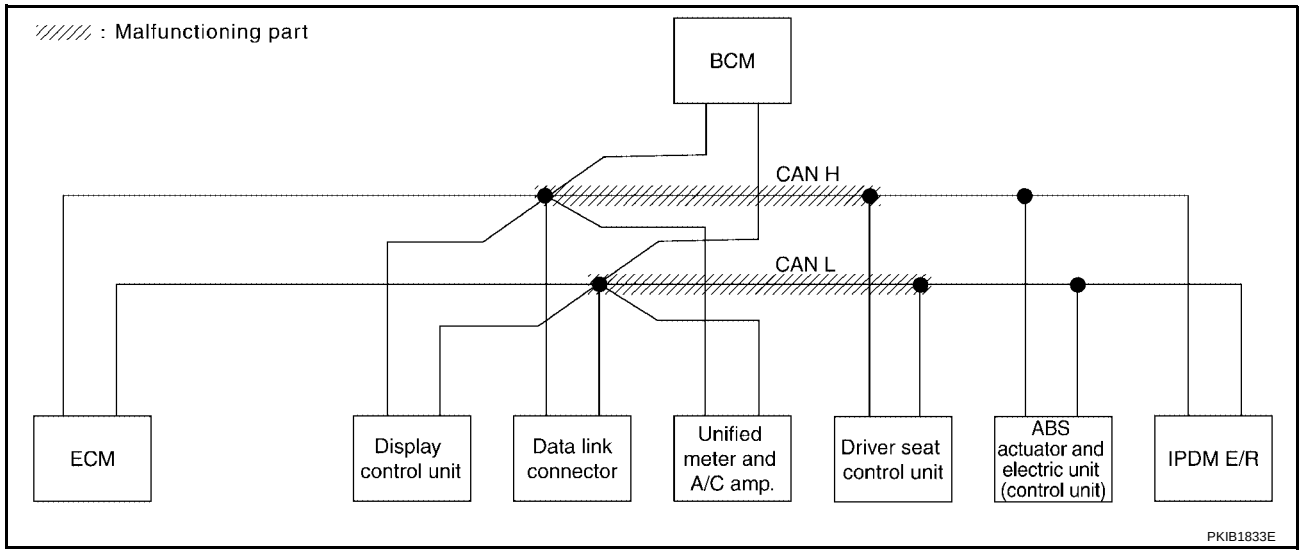
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and driver seat control unit. Refer to LAN-148, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2852E



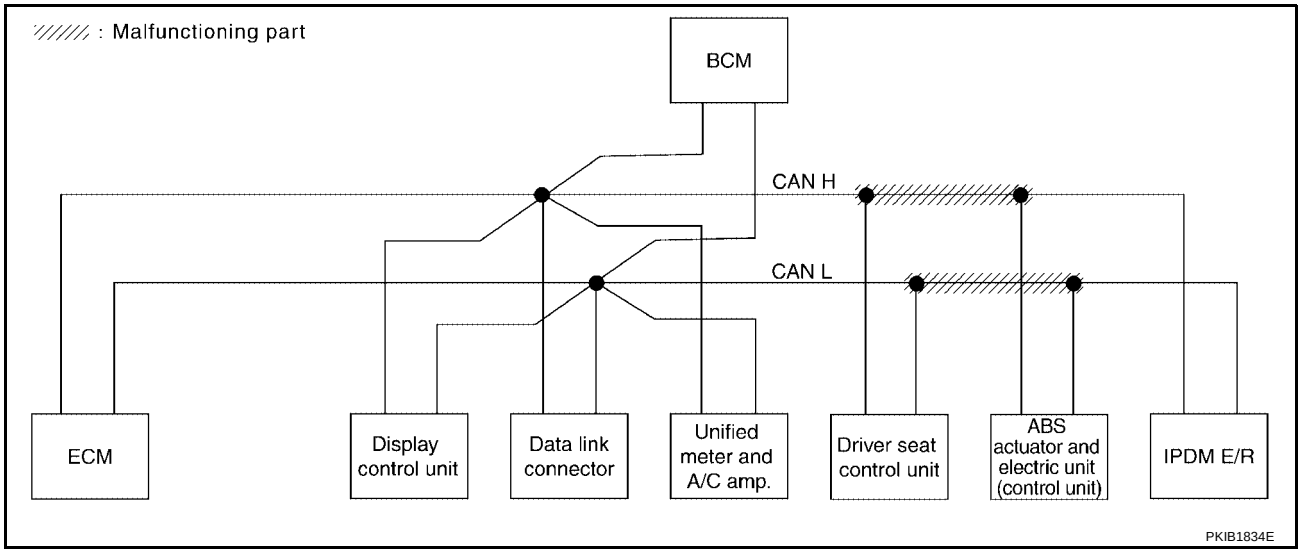
PKIB1833E

Case 2

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-149, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2853E



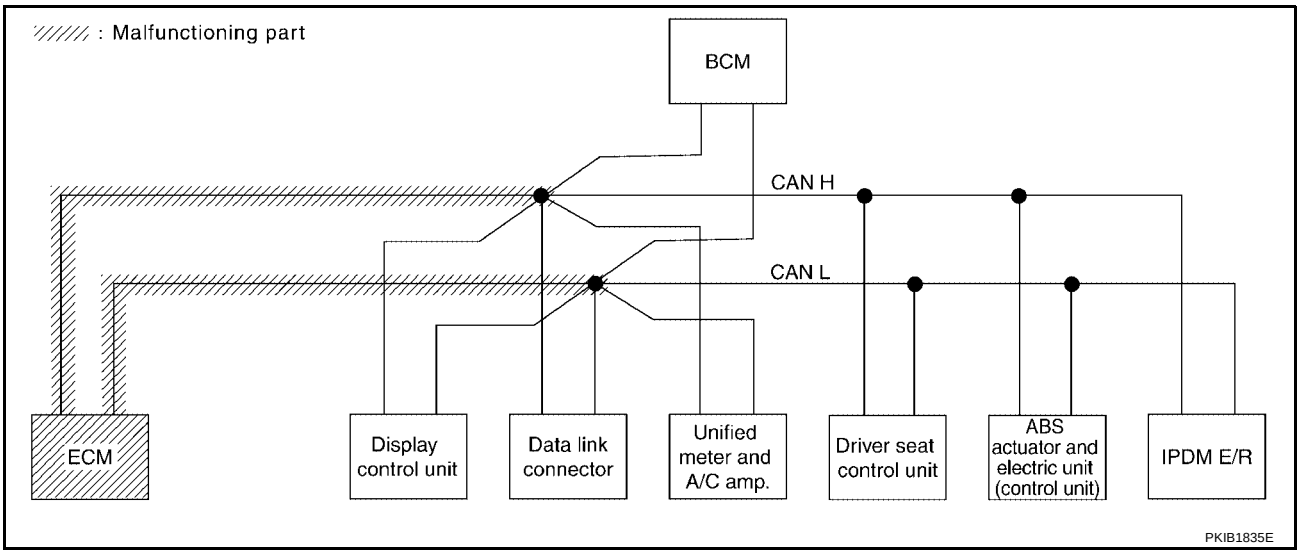
PKIB1834E

Case 3

Check ECM circuit. Refer to LAN-149, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2854E



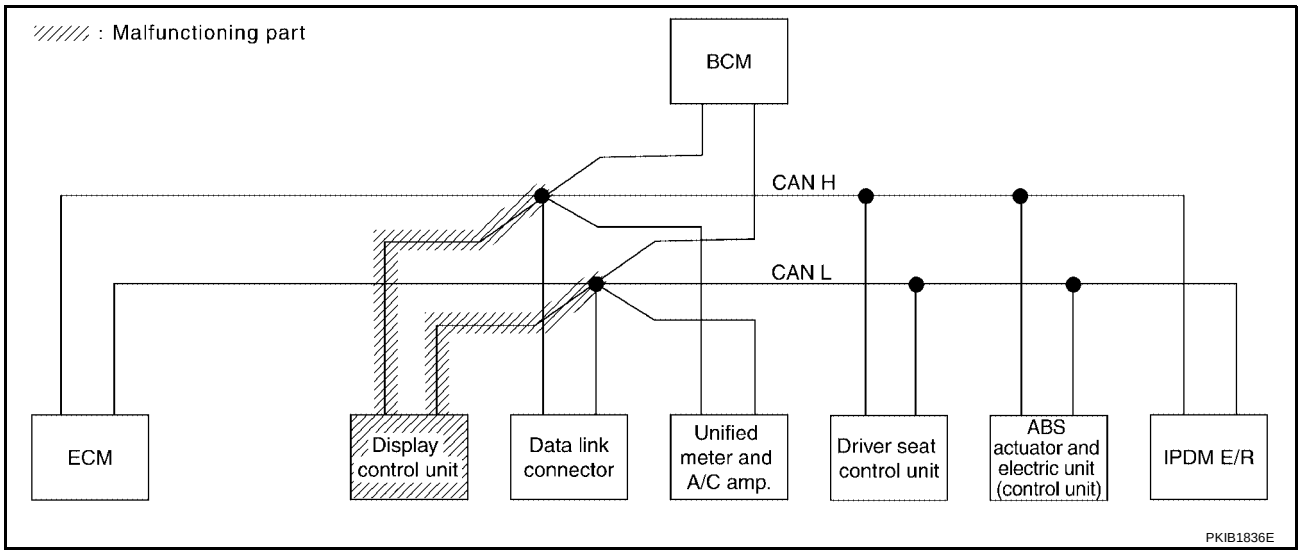
PKIB1835E

Case 4

Check display control unit circuit. Refer to LAN-150, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	-	CAN CIRC 5 ✓	CAN CIRC 2 ✓	-	CAN CIRC 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2855E



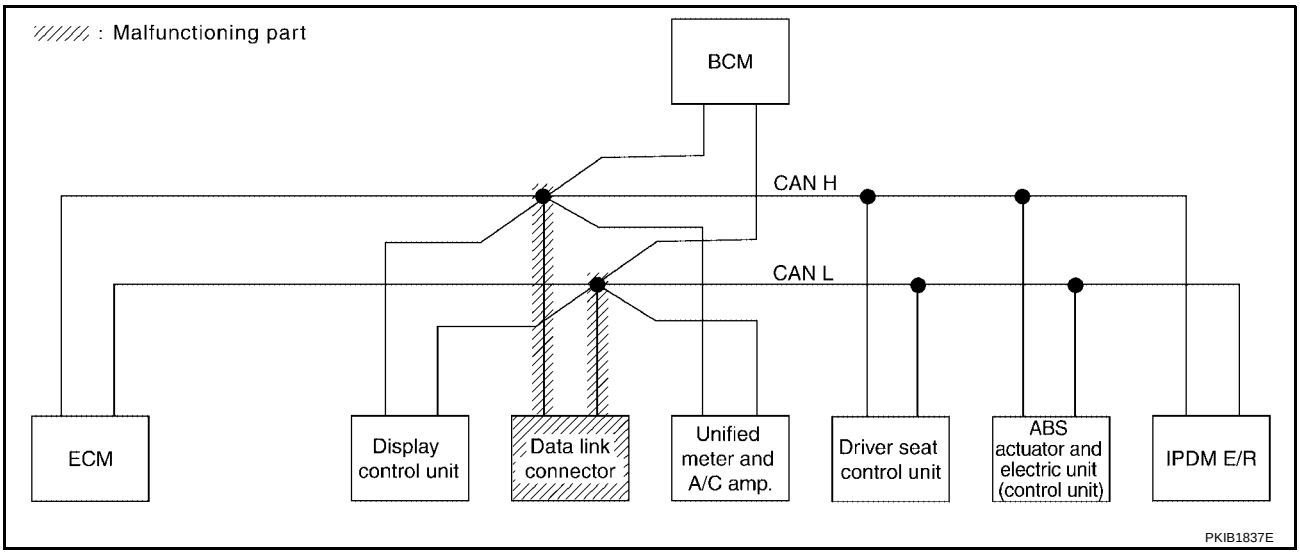
PKIB1836E

Case 5

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2856E

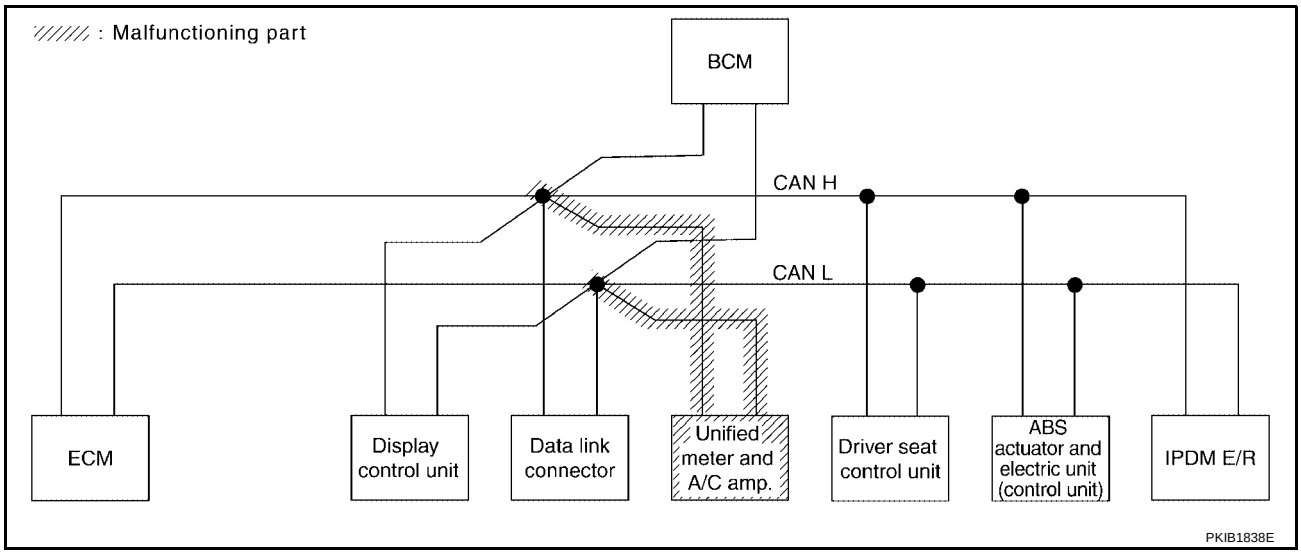


Case 6

Check unified meter and A/C amp. circuit. Refer to LAN-151, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2857E



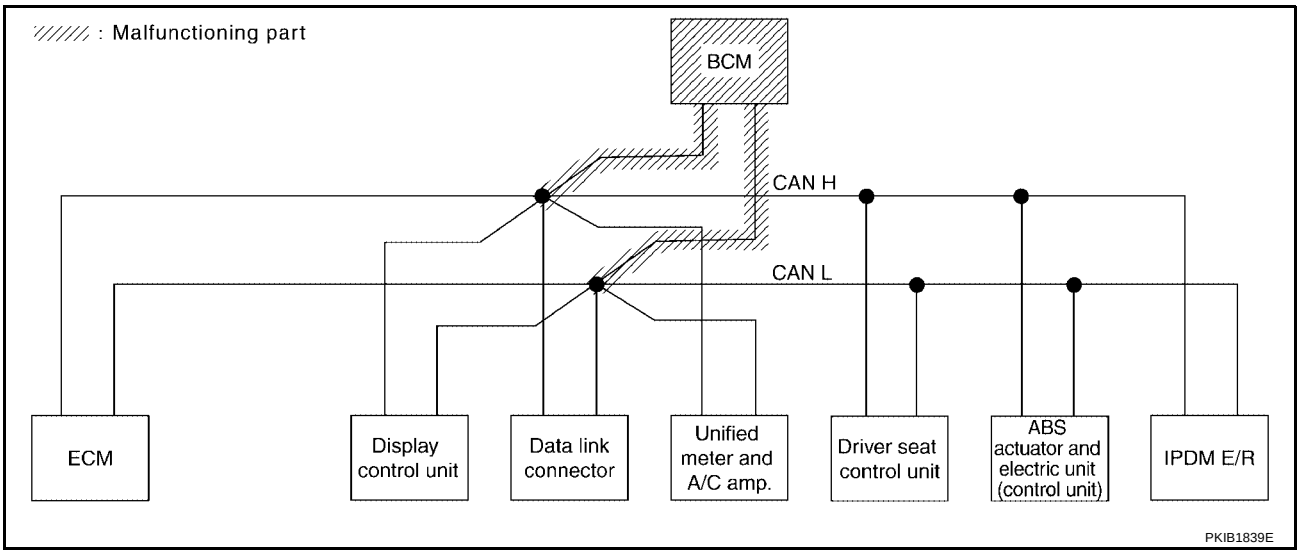
PKIB1838E

Case 7

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2858E

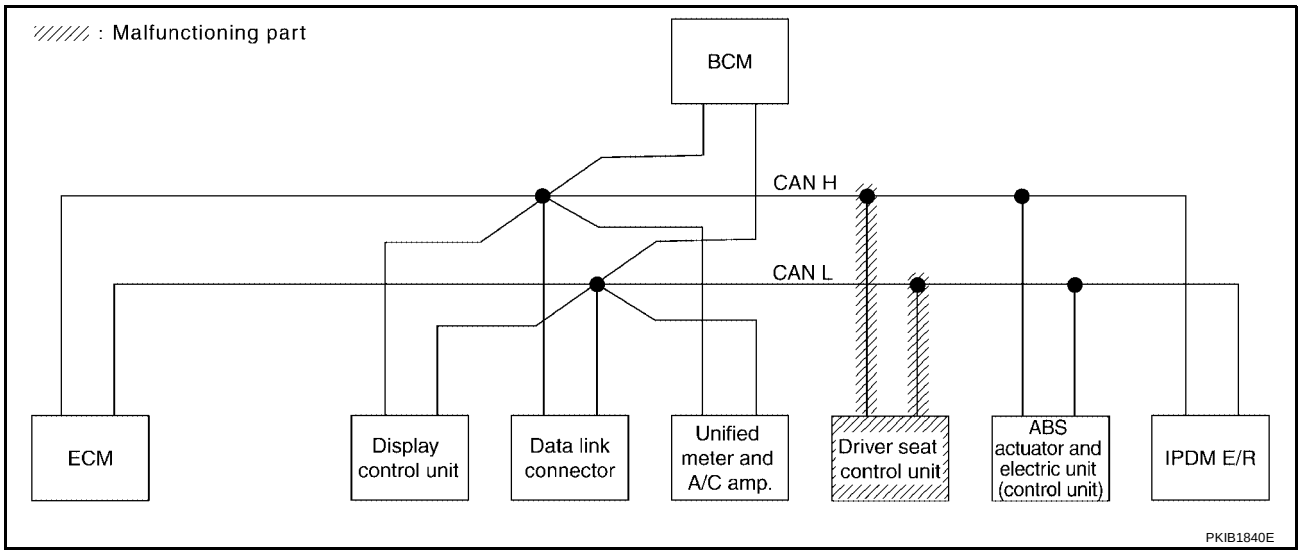


Case 8

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2859E



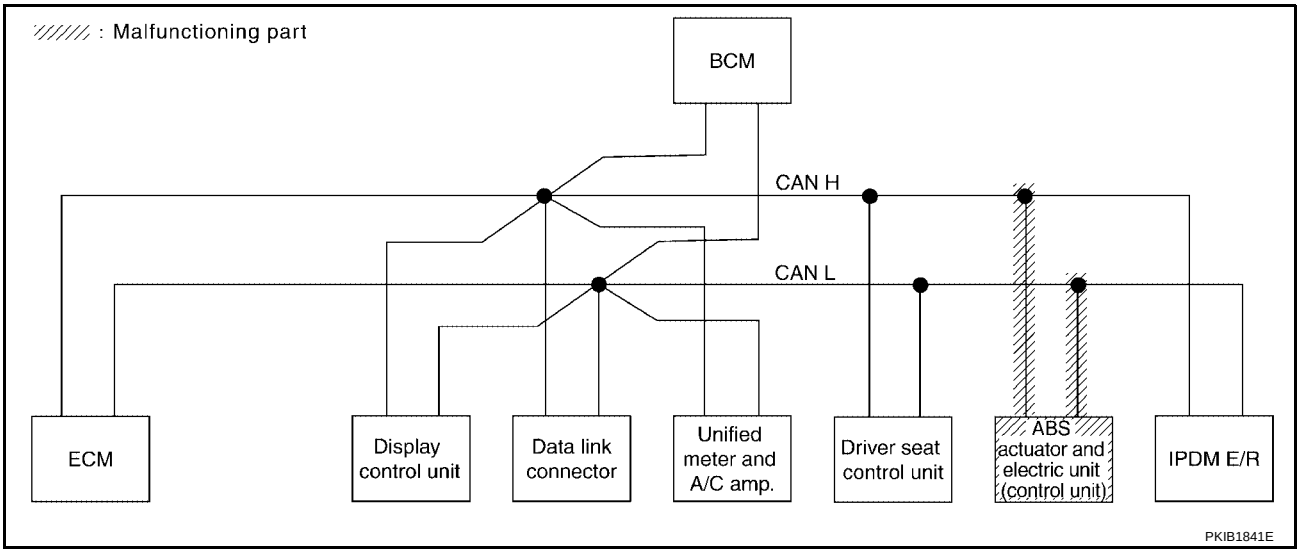
PKIB1840E

Case 9

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2860E



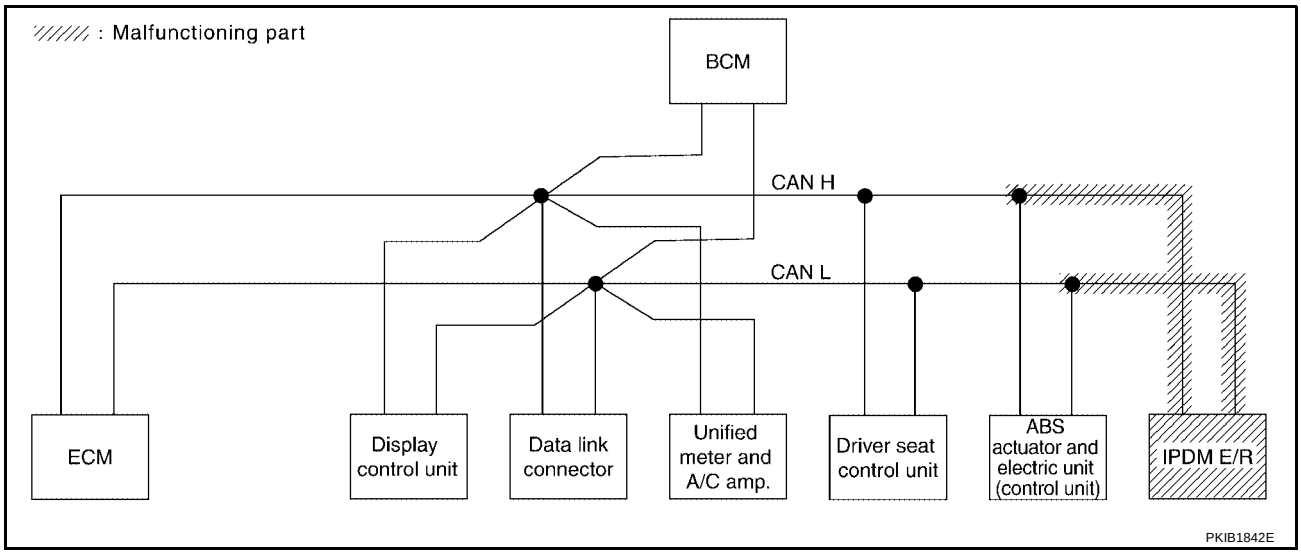
PKIB1841E

Case 10

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2861E



PKIB1842E

Case 11

Check CAN communication circuit. Refer to LAN-153, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2862E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-154, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN ✓	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2863E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-154, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	-	UNKWN	UNKWN	UNKWN	UNKWN
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	-	UNKWN	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN ✓	-	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-

PKIB2864E

Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS002LG

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

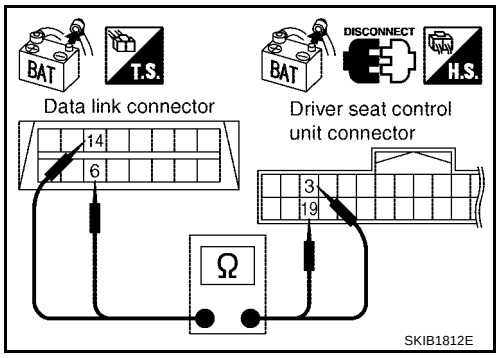
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-136, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS002LH

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

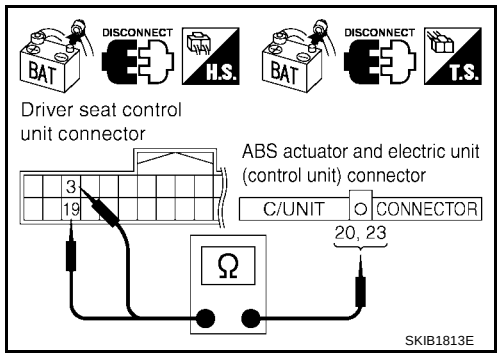
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-136, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS002LI

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

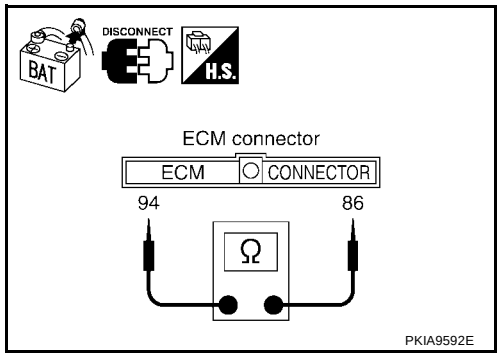
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and data link connector M22.

Display Control Unit Circuit Check

UKS002LK

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

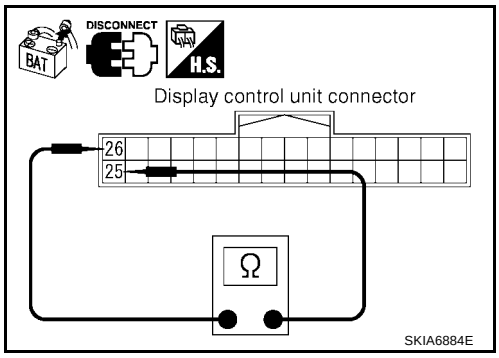
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.



Data Link Connector Circuit Check

UKS002LL

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

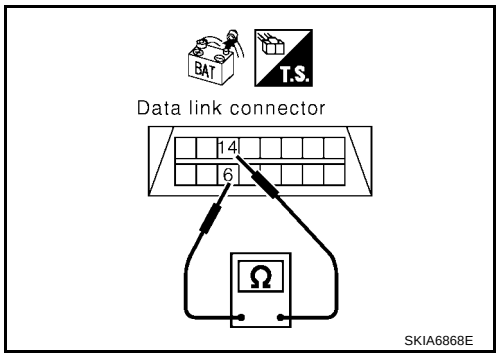
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-136, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002LN

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

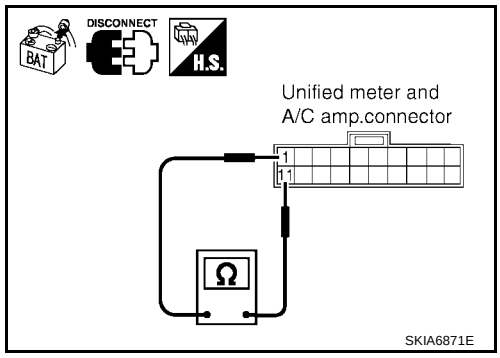
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002LM

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

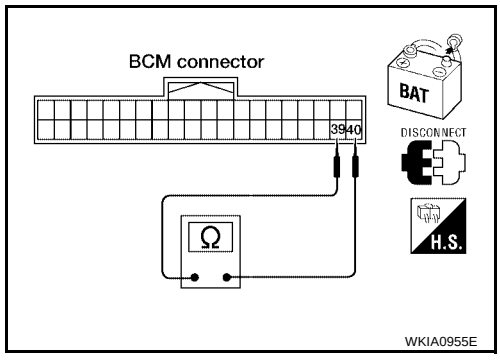
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS002LO

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

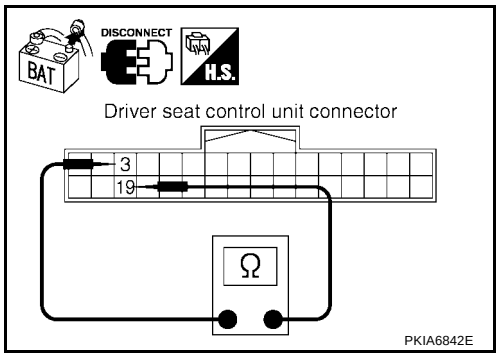
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002LP

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

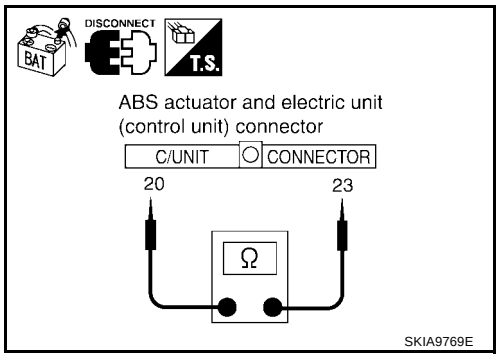
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002LQ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

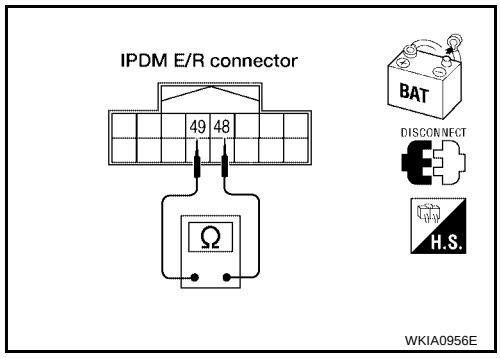
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002LR

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- Display control unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

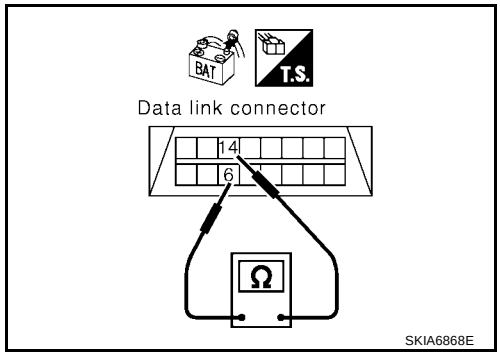
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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

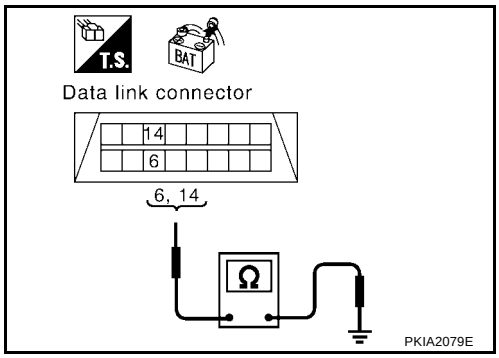


3. CHECK HARNESS FOR SHORT TO GROUND

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-154, "Component Inspection" .

NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002LS

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002LT

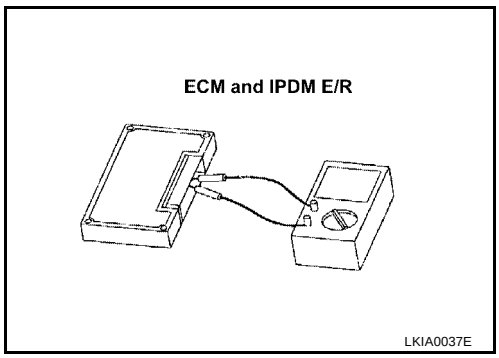
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 7)

PFP:23710

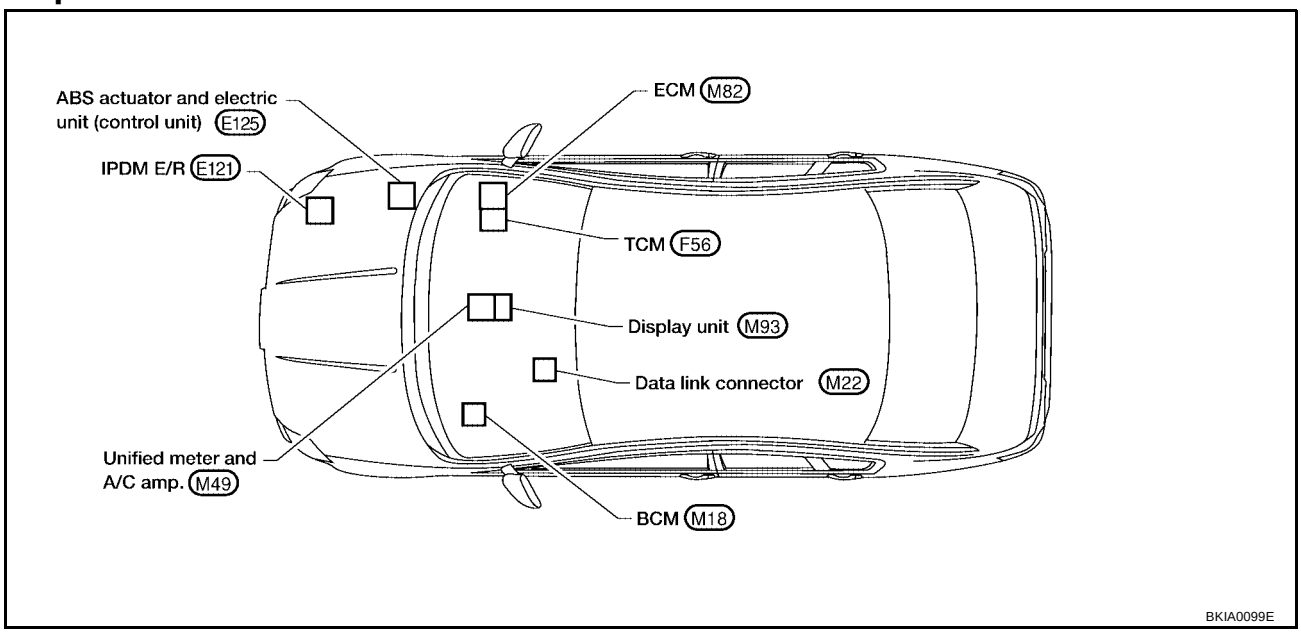
System Description

UKS0028S

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.

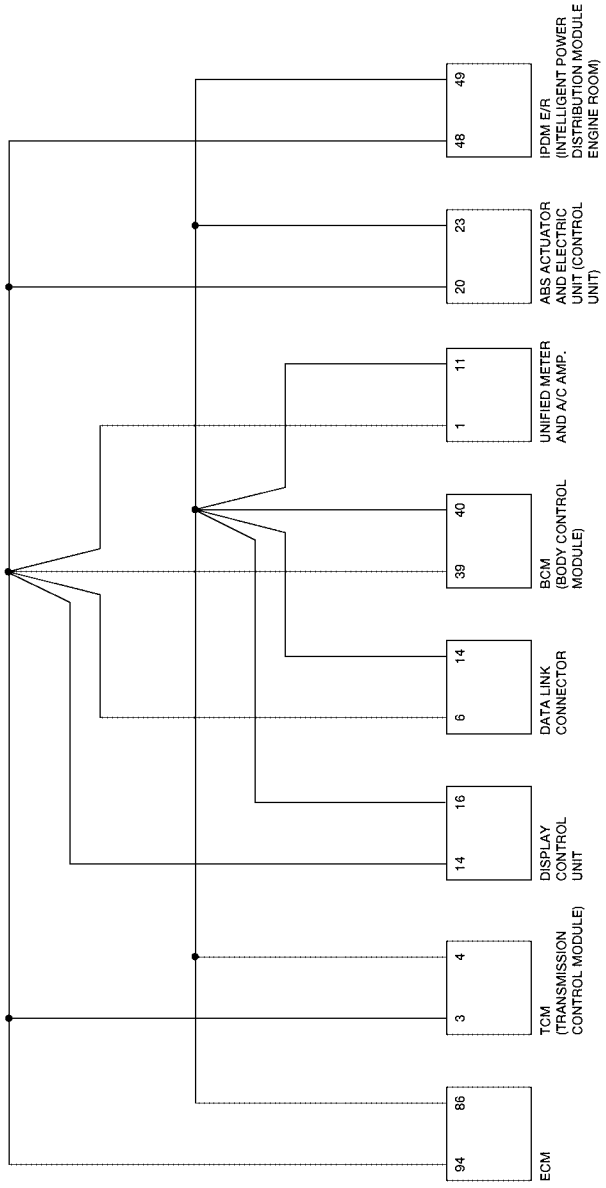
Component Parts and Harness Connector Location

UKS0028T



Schematic

UKS0028U



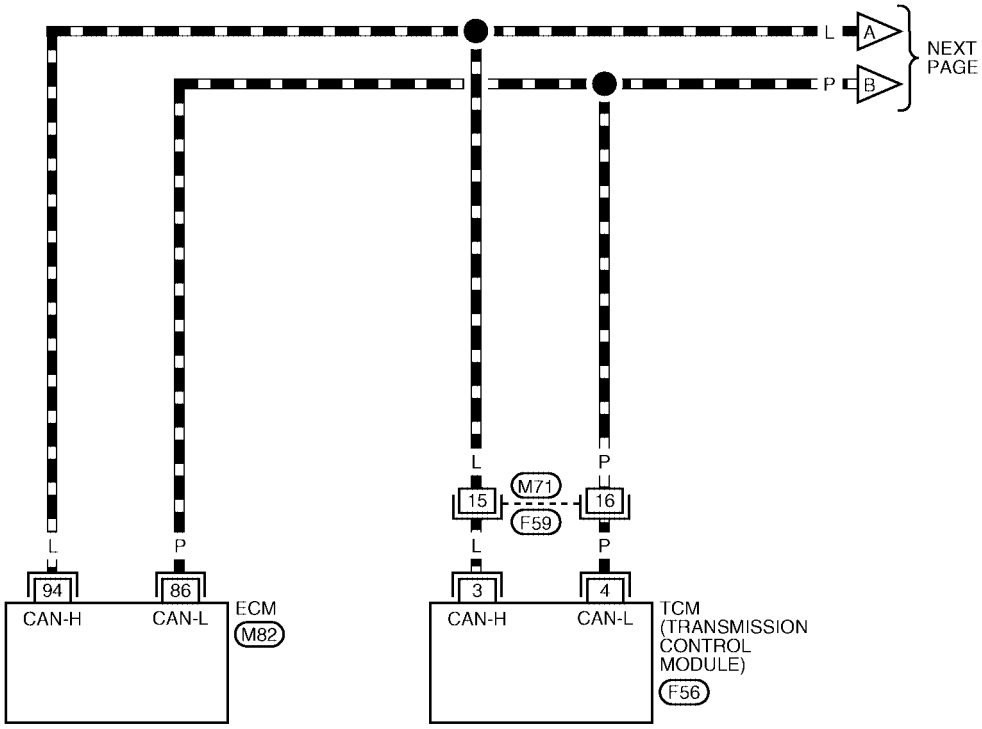
BKWA0286E

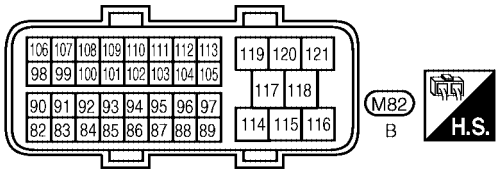
Wiring Diagram - CAN -

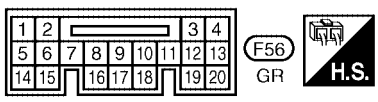
UKS0028V

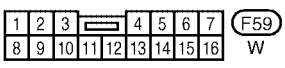
LAN-CAN-13

: DATA LINE

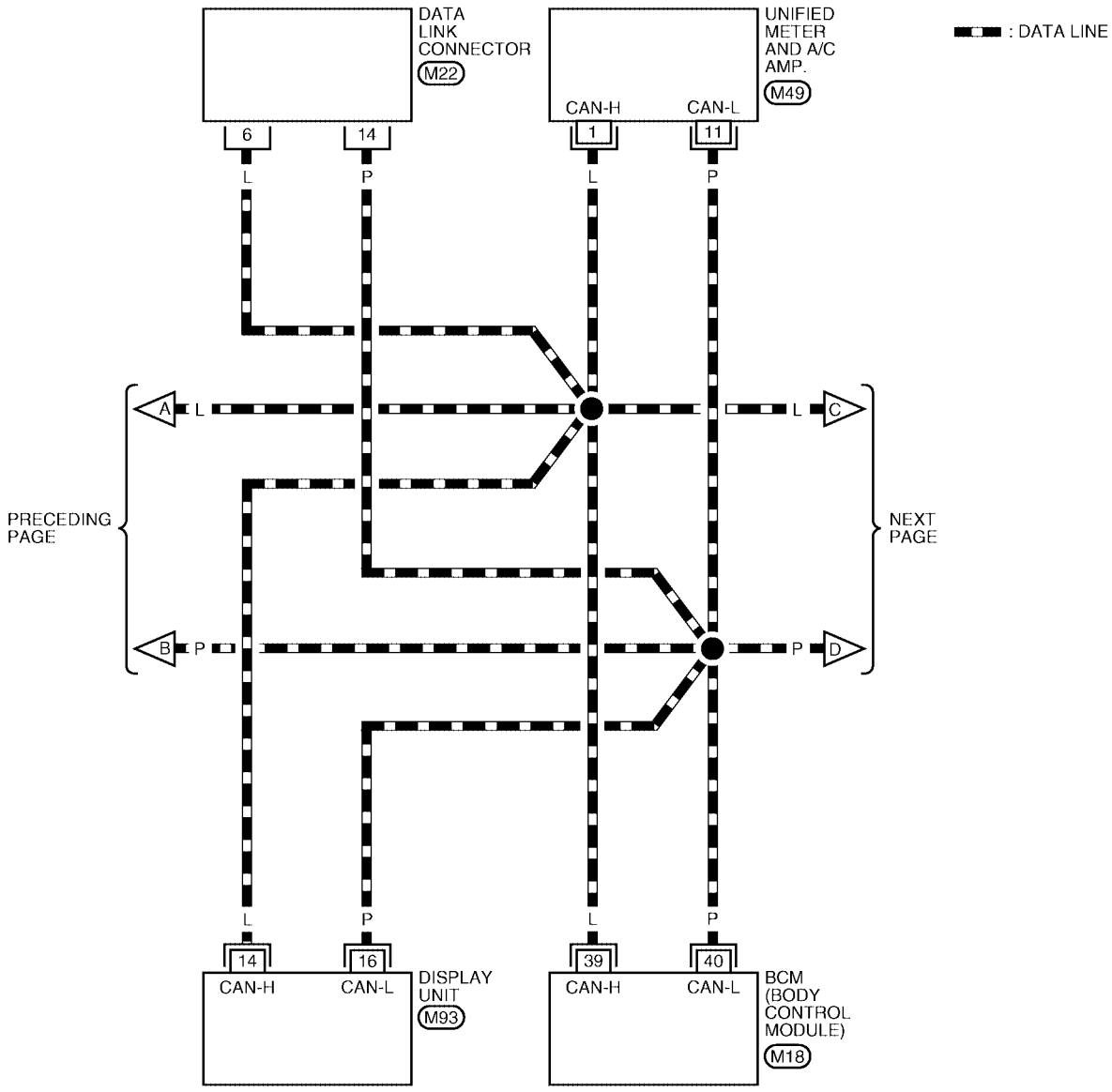


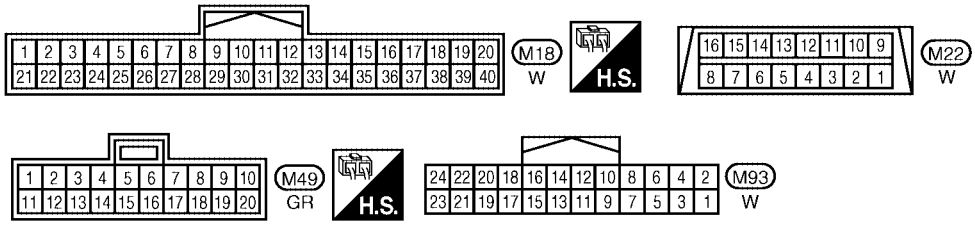




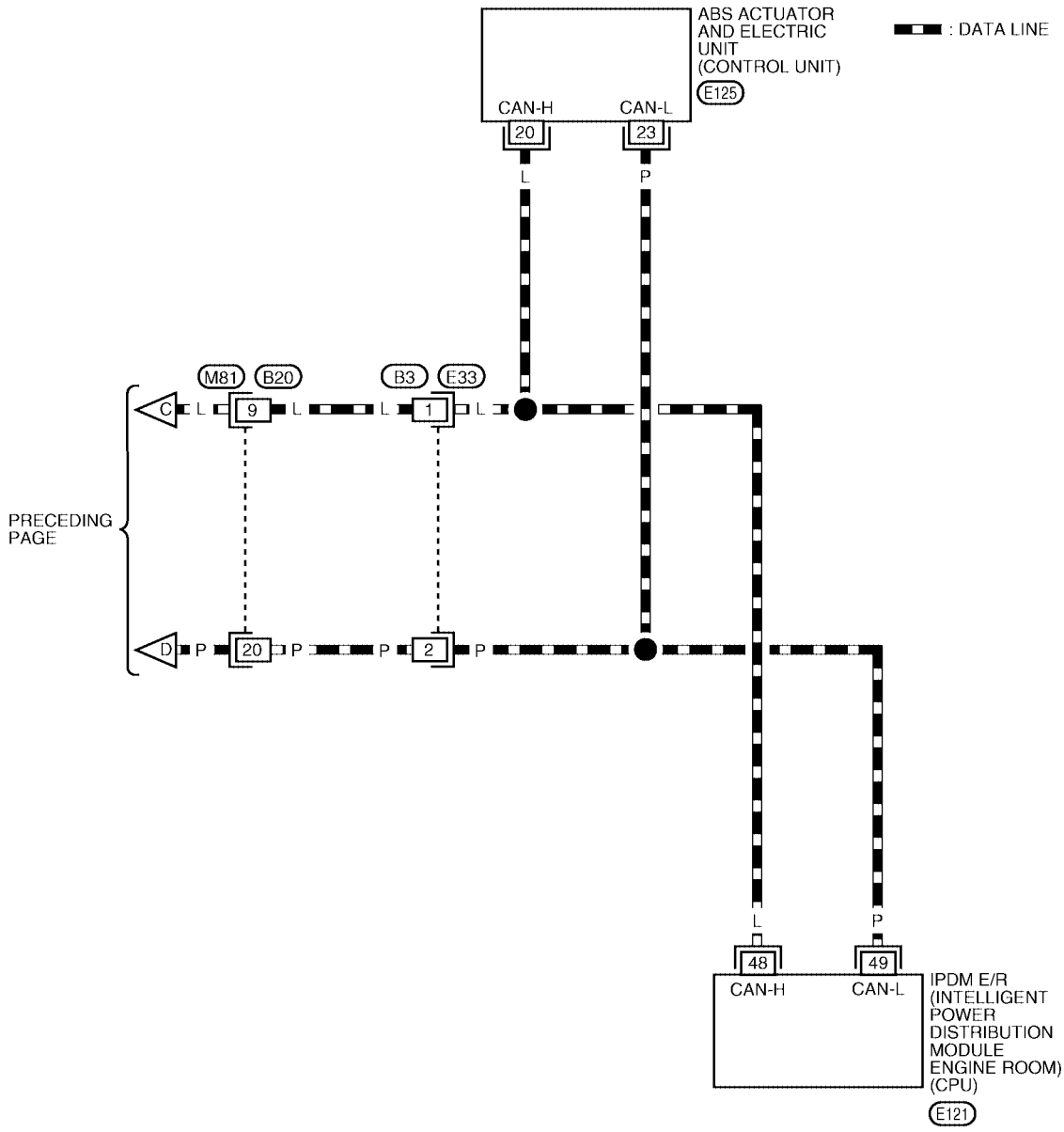


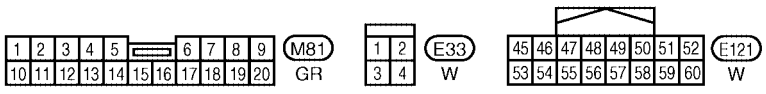
BKWA0287E


DATA LINK CONNECTOR
M22
6
14
L
P
UNIFIED METER AND A/C AMP.
M49
CAN-H
CAN-L
1
11
L
P
: DATA LINE
A
L
B
P
C
L
D
P
PRECEDING PAGE
NEXT PAGE
L
P
14
16
CAN-H
CAN-L
DISPLAY UNIT
M93
L
P
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
M18
W
H.S.
16 15 14 13 12 11 10 9
8 7 6 5 4 3 2 1
M22
W
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
M49
GR
H.S.
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M93
W

BKWA0288E





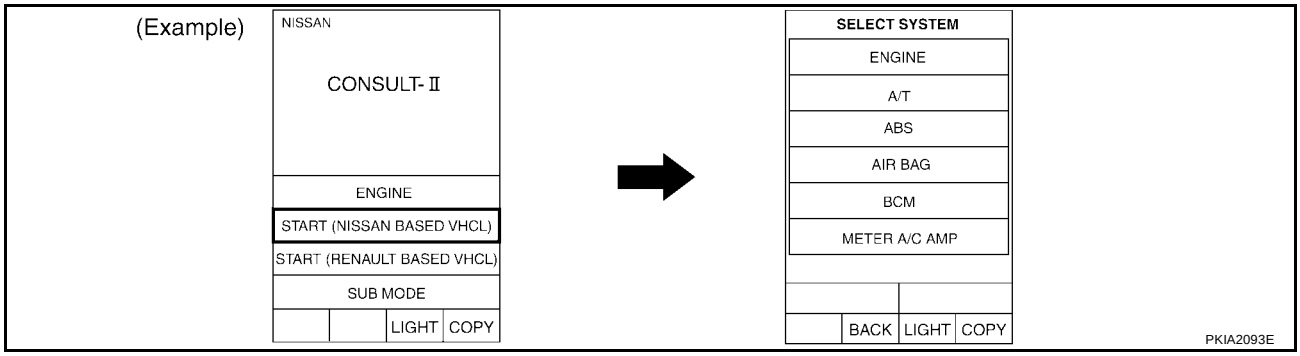
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0289E

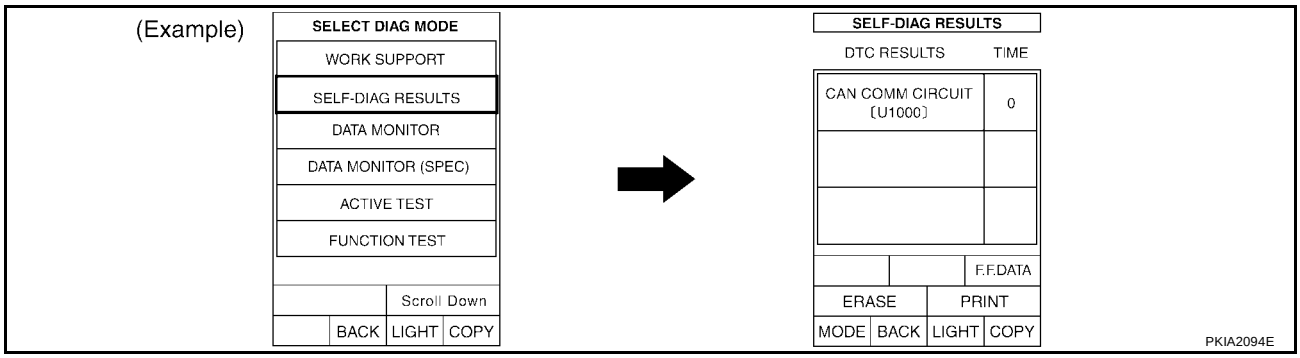
Work Flow

UKS002KY

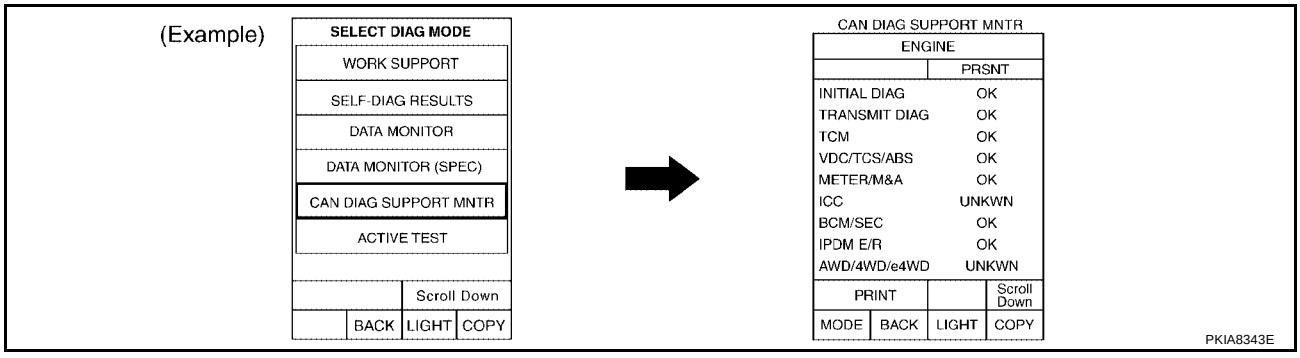
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

BKIA0062E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

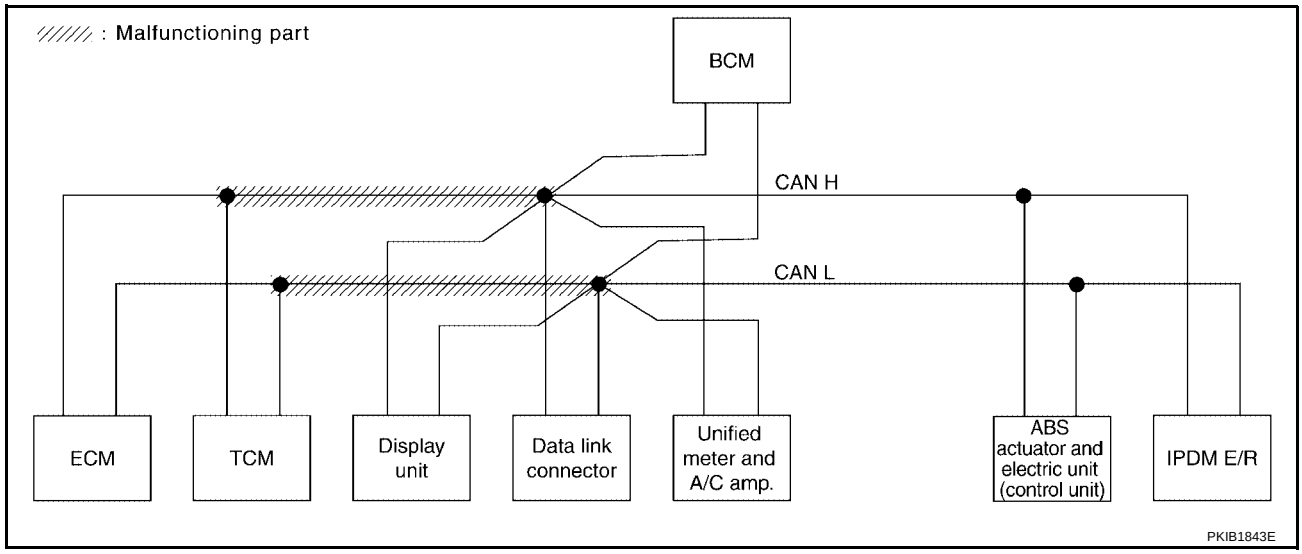
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-173, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2903E



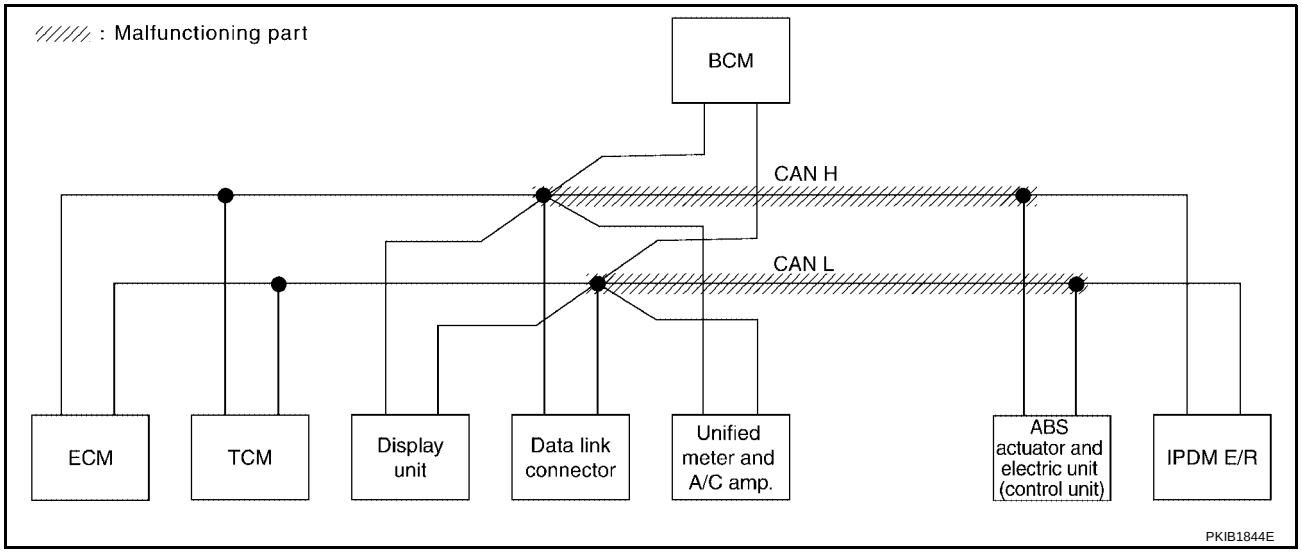
PKIB1843E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-173, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2542E



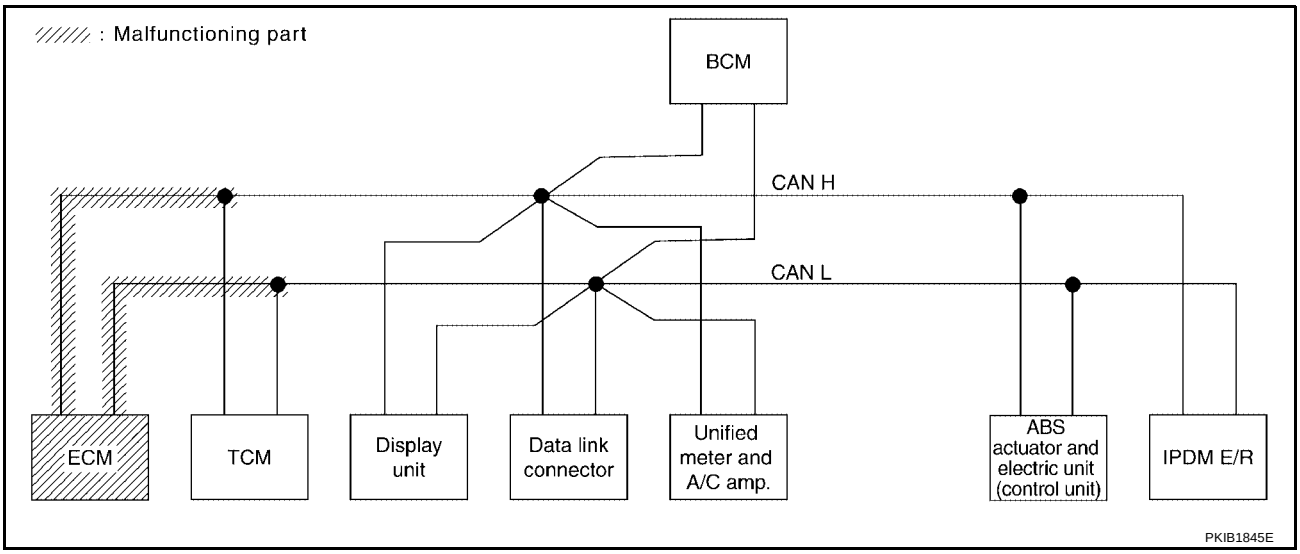
PKIB1844E

Case 3

Check ECM circuit. Refer to LAN-174, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2865E

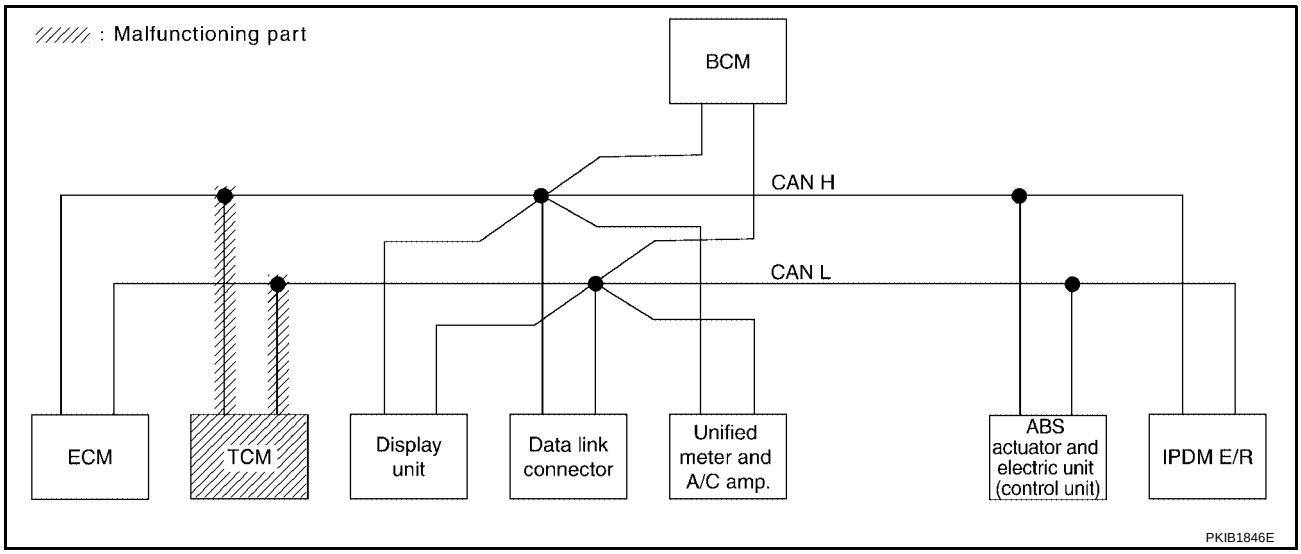


Case 4

Check TCM circuit. Refer to LAN-174, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2544E



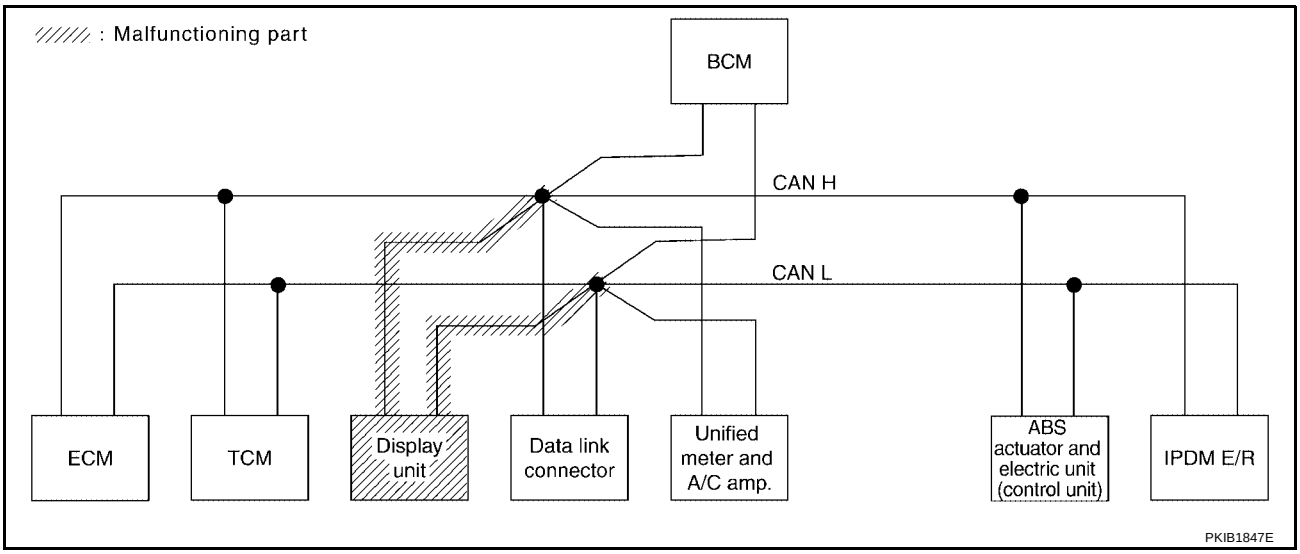
PKIB1846E

Case 5

Check display unit circuit. Refer to LAN-175, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	✓ CAN 1	✓ CAN 3	-	-	✓ CAN 5	✓ CAN 7		✓ CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2545E

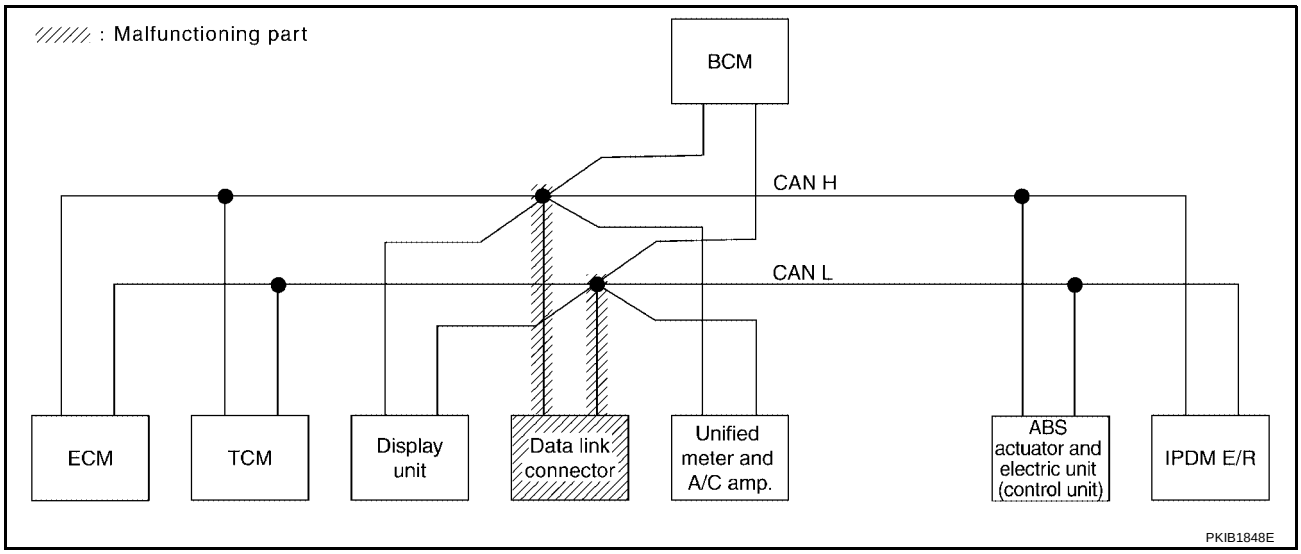


Case 6

Check data link connector circuit. Refer to LAN-175, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No application	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No application		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No application	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No application	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2546E



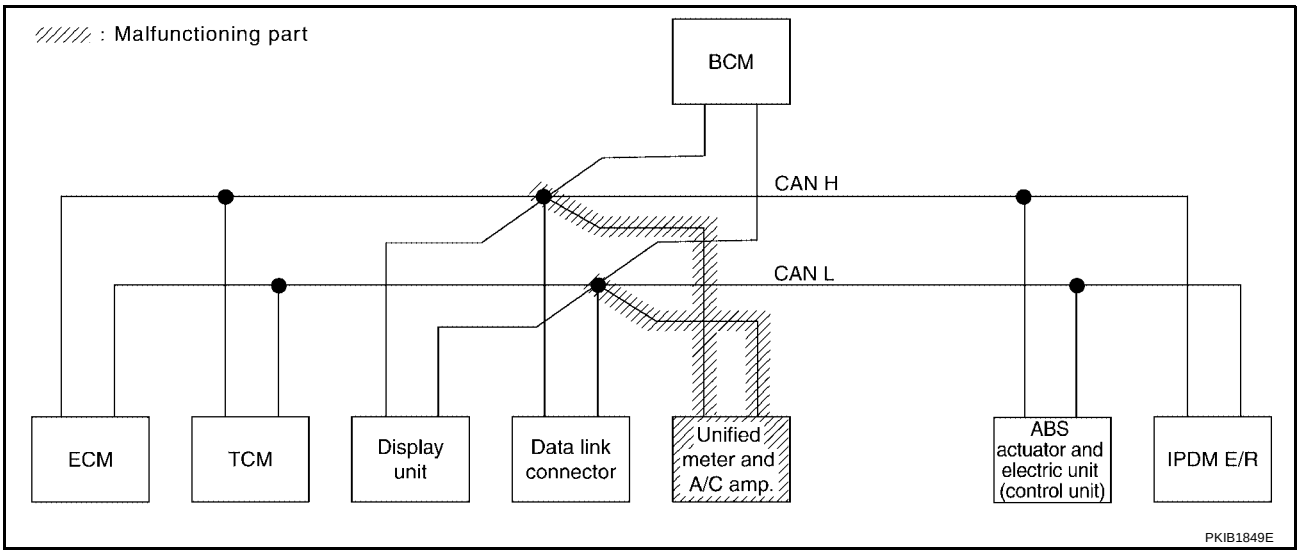
PKIB1848E

Case 7

Check unified meter and A/C amp. circuit. Refer to LAN-176, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2548E



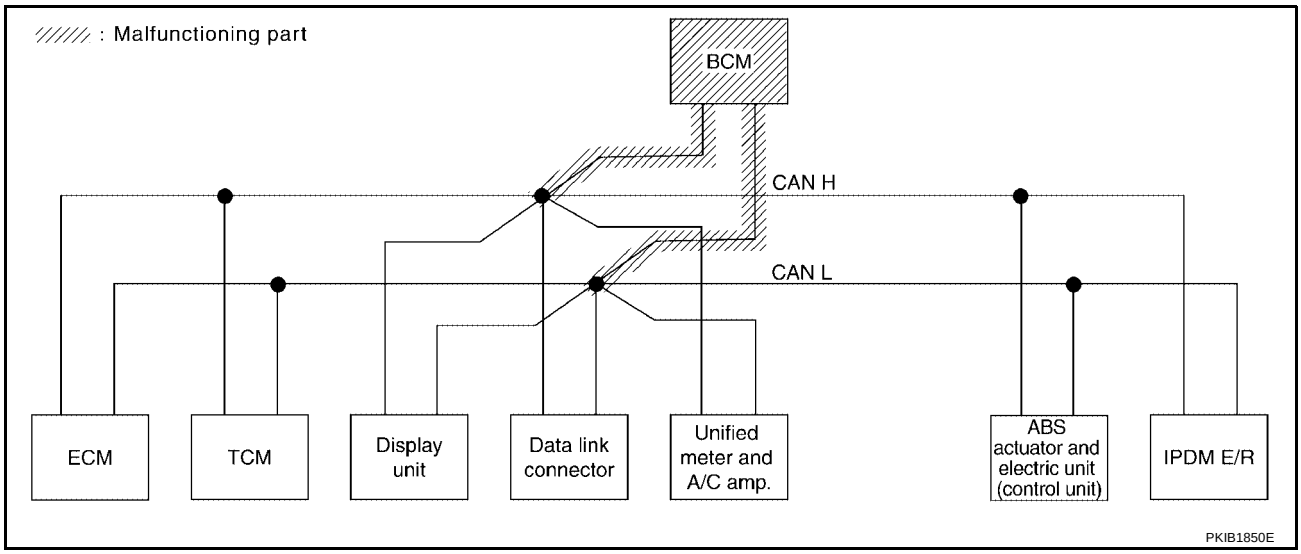
PKIB1849E

Case 8

Check BCM circuit. Refer to LAN-176, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2547E



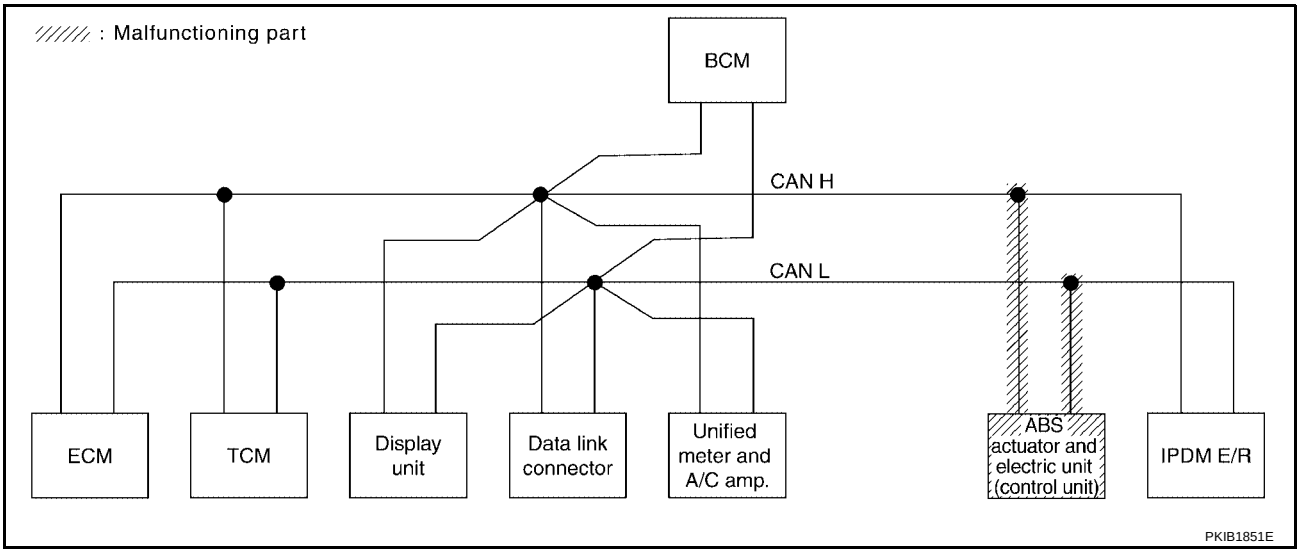
PKIB1850E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-177, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN ✓	UNKWN ✓	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2549E



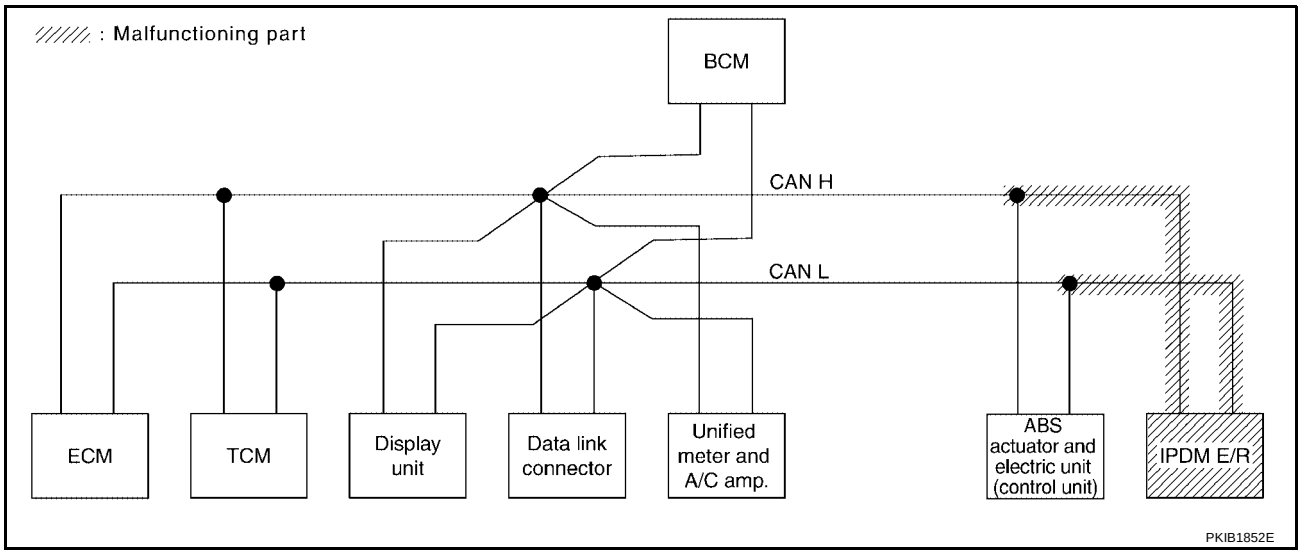
PKIB1851E

Case 10

Check IPDM E/R circuit. Refer to LAN-177, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2550E



PKIB1852E

Case 11

Check CAN communication circuit. Refer to LAN-178, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2866E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-178, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2553E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-178, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2552E

Circuit Check Between TCM and Data Link Connector

UKS002L0

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

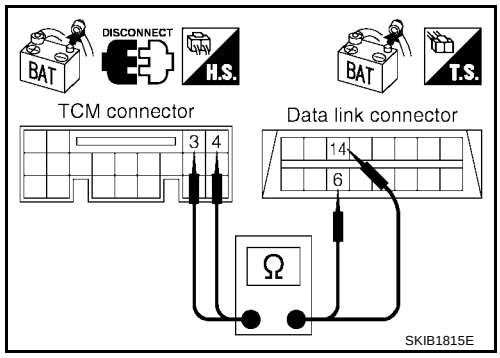
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-160, "Work Flow" .
NG >> Repair harness.



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

UKS002L1

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

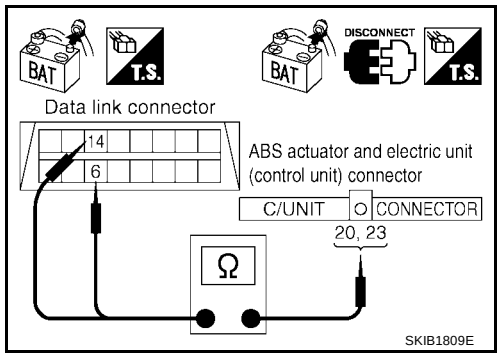
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

6 (L) - 20 (L) : Continuity should exist.
14 (P) - 23 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-160, "Work Flow" .
NG >> Repair harness.



ECM Circuit Check

UKS002L2

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

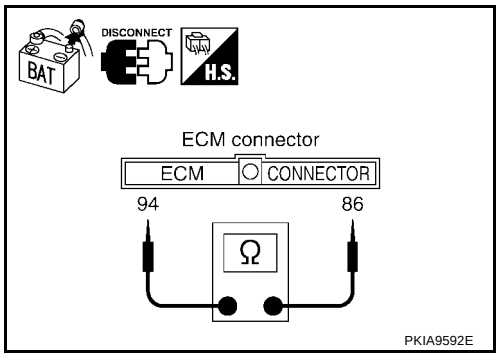
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.



TCM Circuit Check

UKS002L3

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

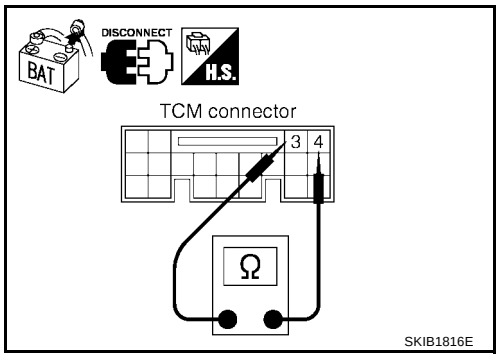
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.



Display Unit Circuit Check

UKS002L4

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

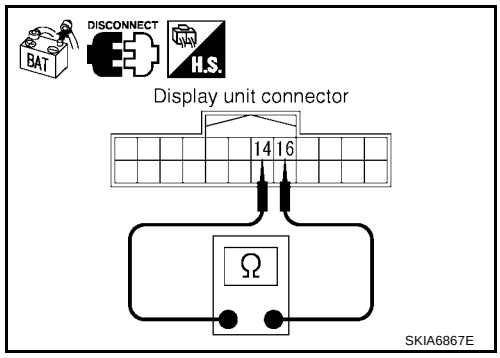
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.

Data Link Connector Circuit Check

UKS002L5

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

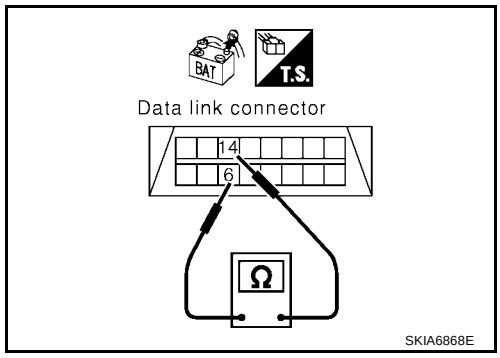
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-160, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.

Unified Meter and A/C Amp. Circuit Check

UKS002L7

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

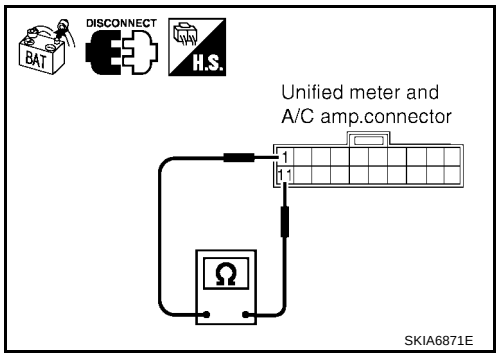
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002L6

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

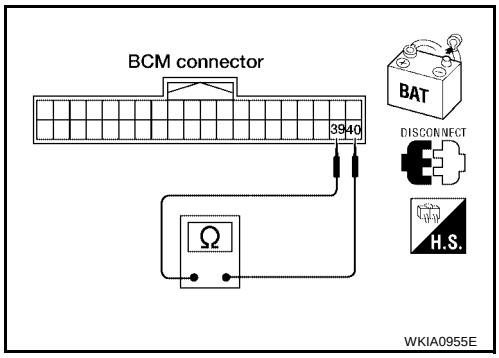
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002L8

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

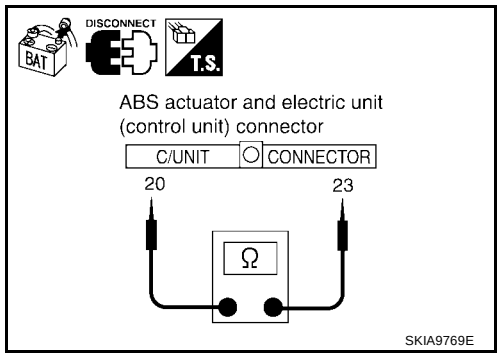
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002L9

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

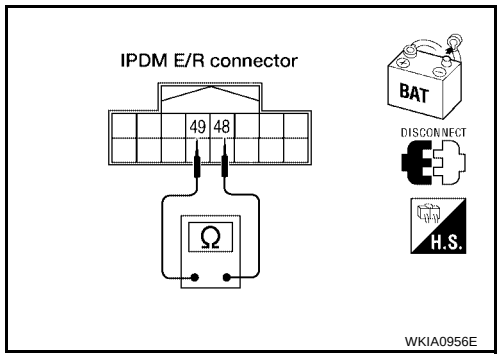
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002LA

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

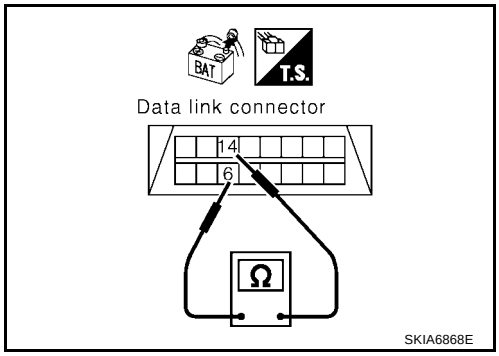
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



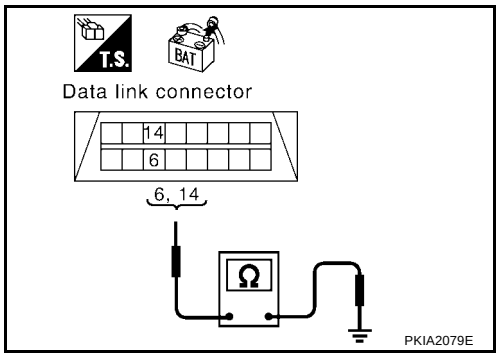
OK or NG

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

3. CHECK HARNESS FOR SHORT TO GROUND

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-179, "Component Inspection" .
NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002LB

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002LC

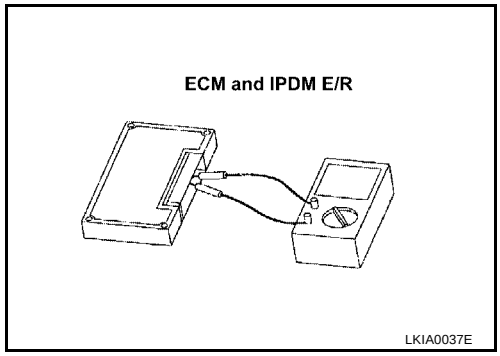
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 8)

PFP:23710

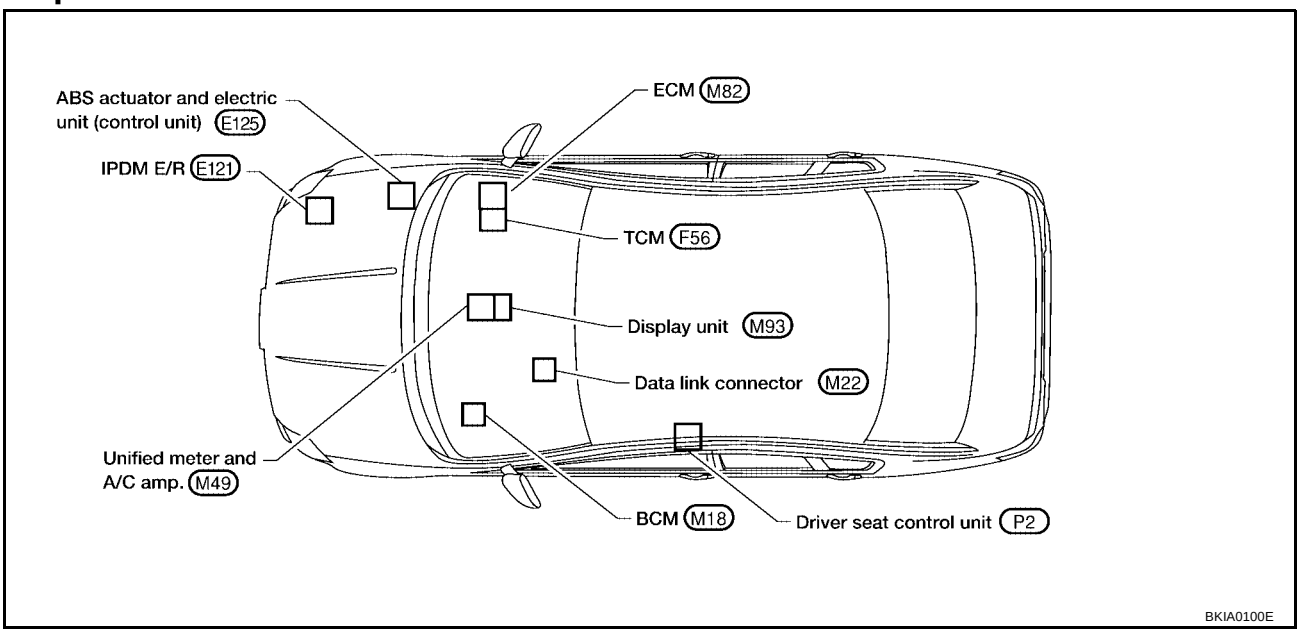
System Description

UKS0029D

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.

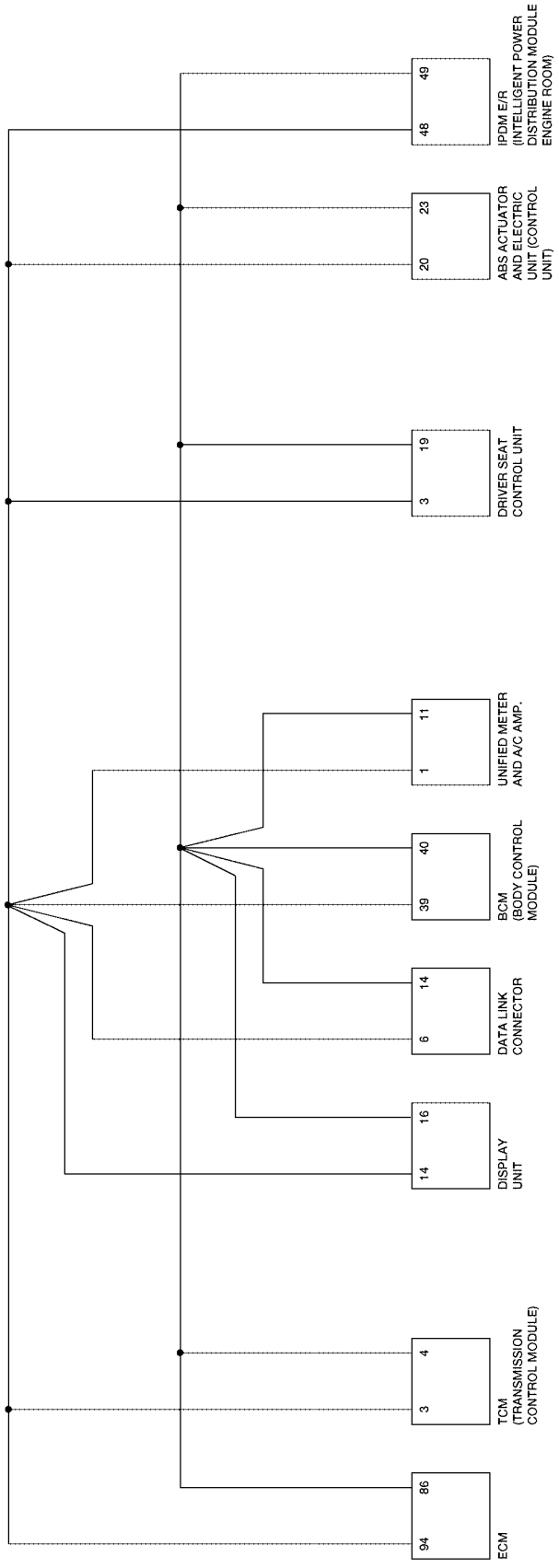
Component Parts and Harness Connector Location

UKS0029E



Schematic

UKS0029F

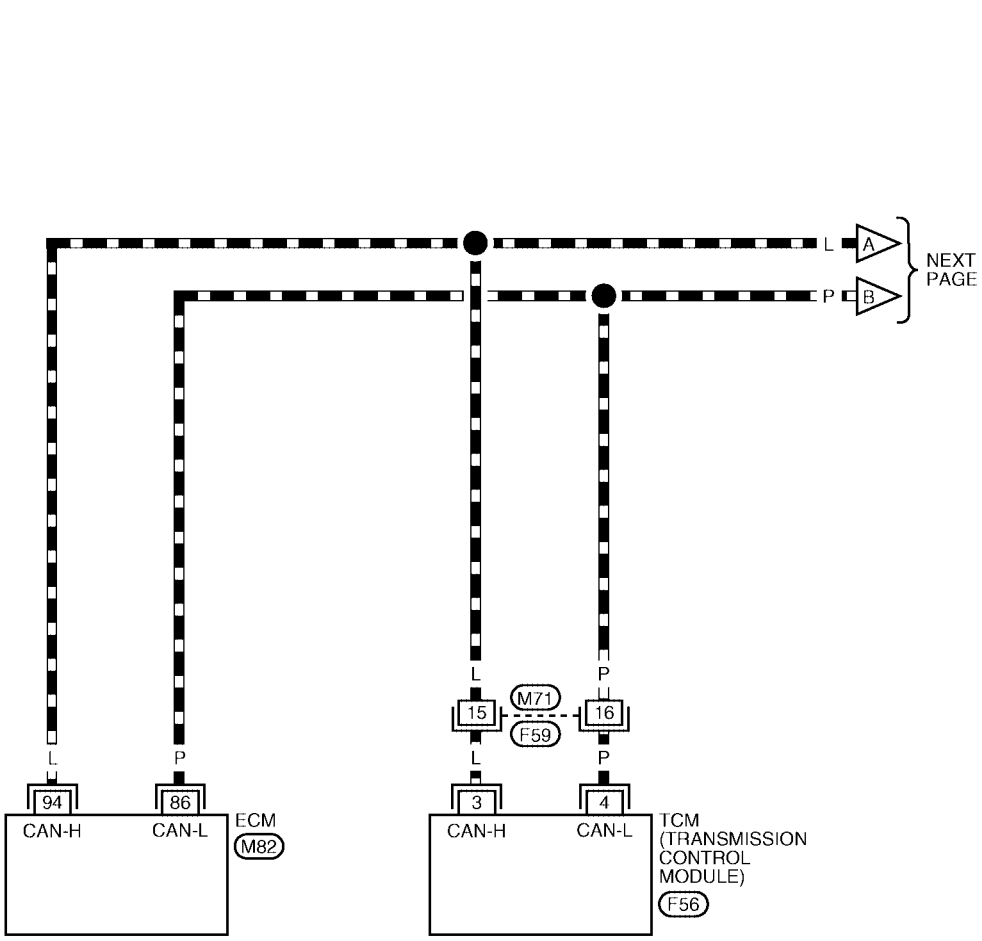


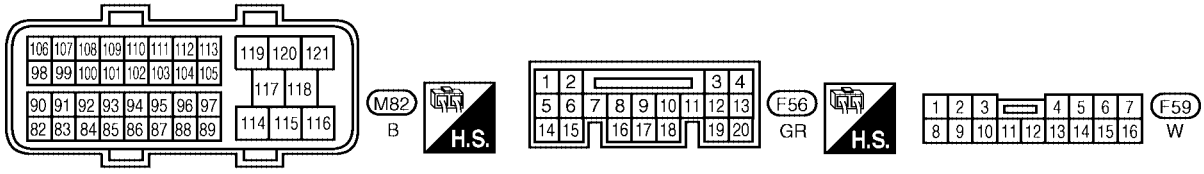
BKWA0290E

Wiring Diagram - CAN -

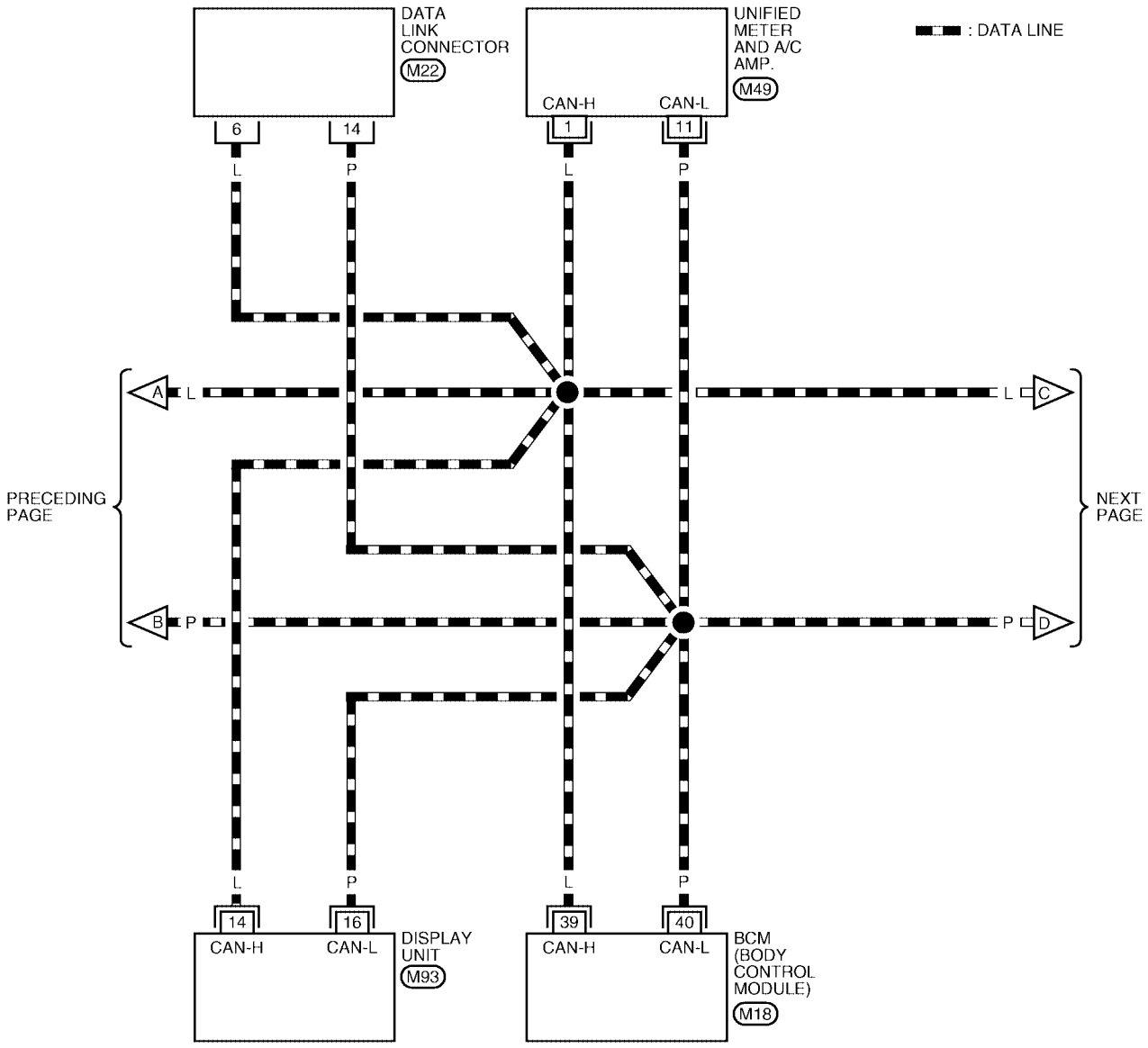
UKS0029G

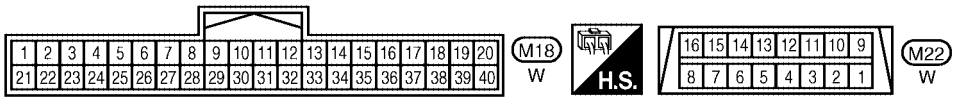
LAN-CAN-16

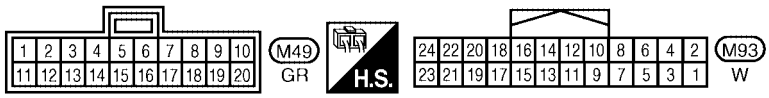




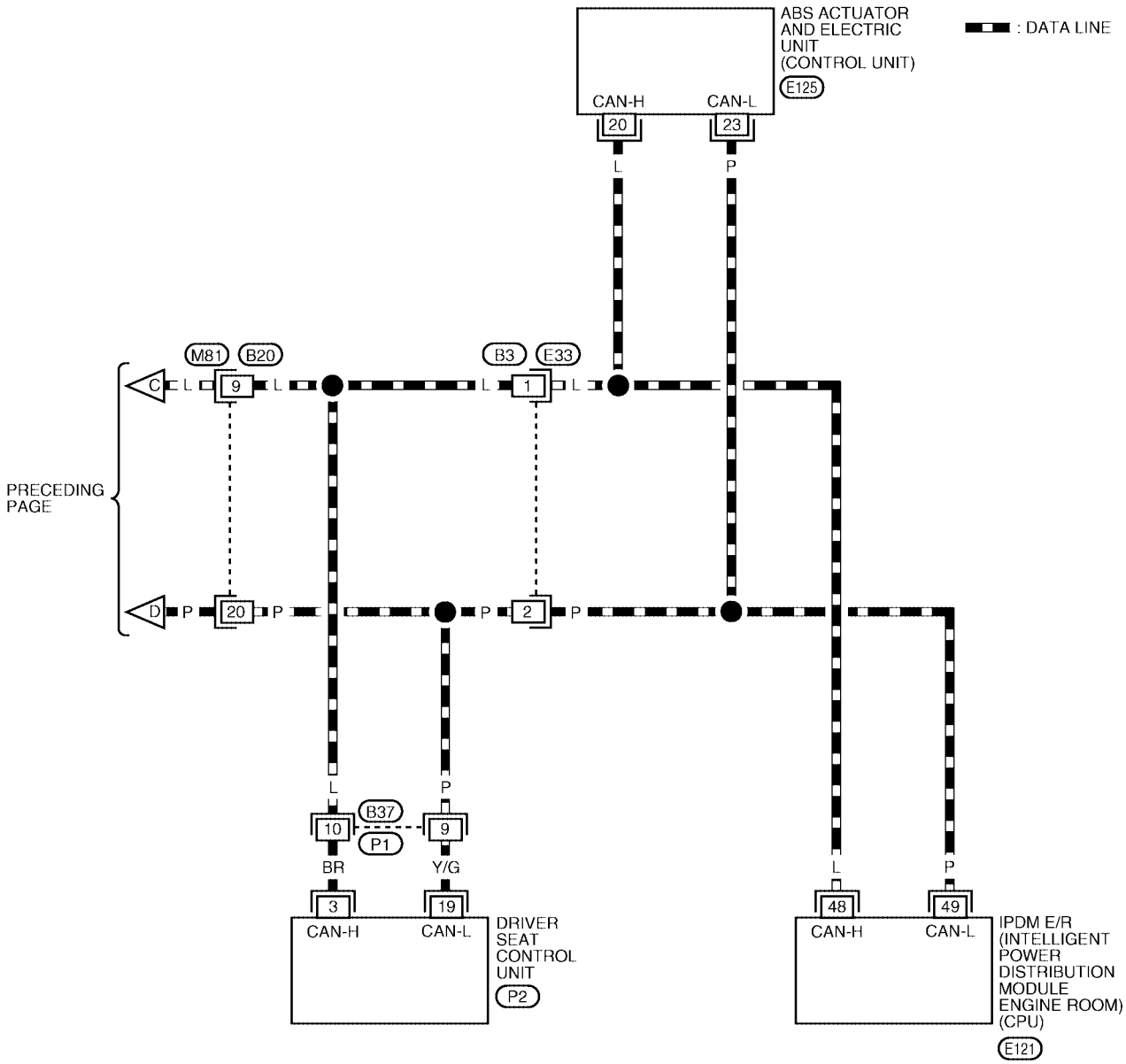
BKWA0291E

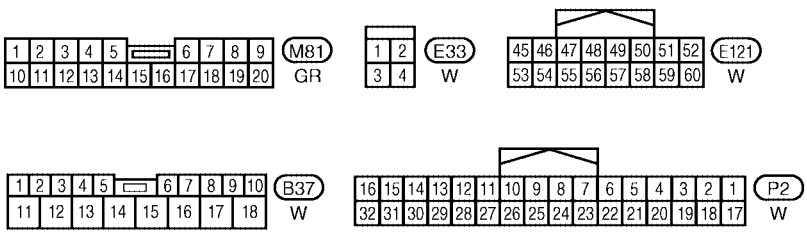

DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
DISPLAY UNIT
M93
BCM (BODY CONTROL MODULE)
M18
14
16
39
40


M18
W
H.S.
M22
W


M49
GR
H.S.
M93
W

BKWA0292E





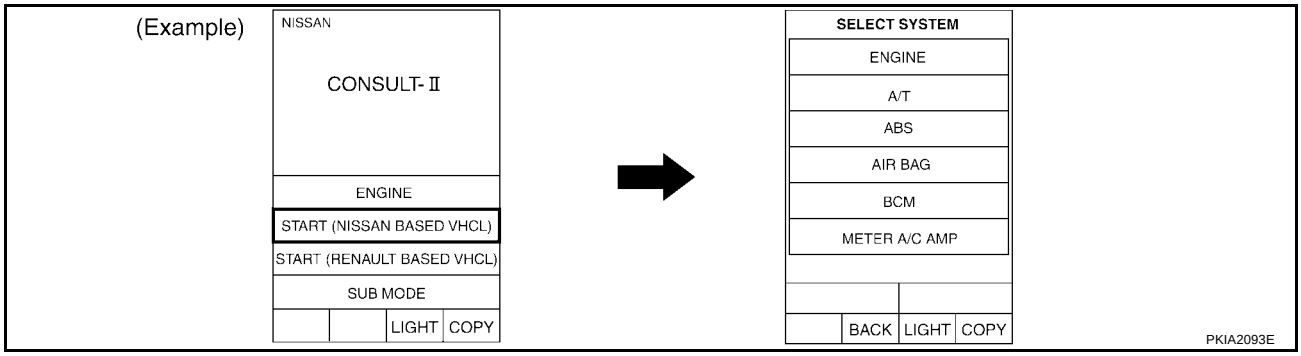
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0293E

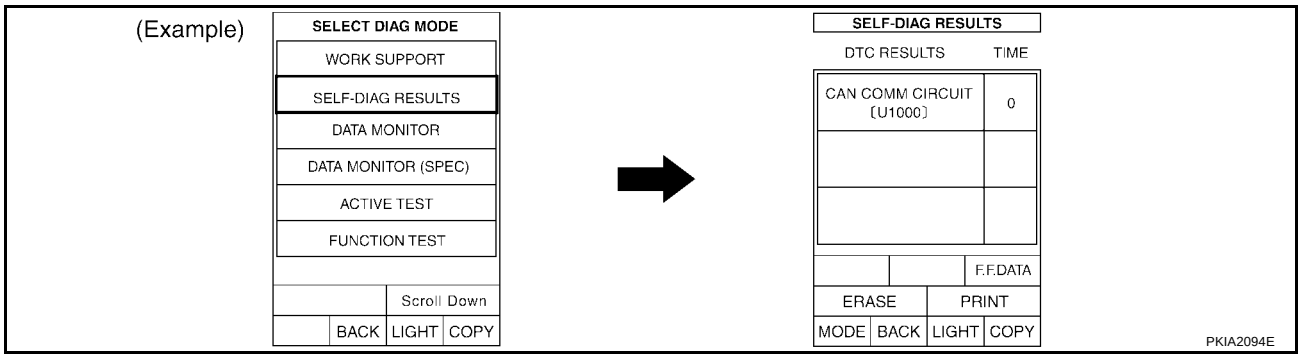
Work Flow

UKS002KH

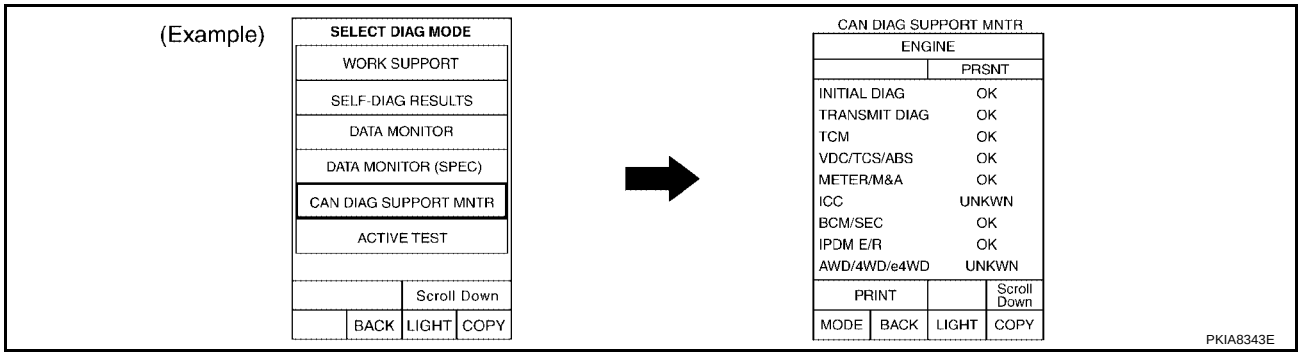
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

BKIA0063E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

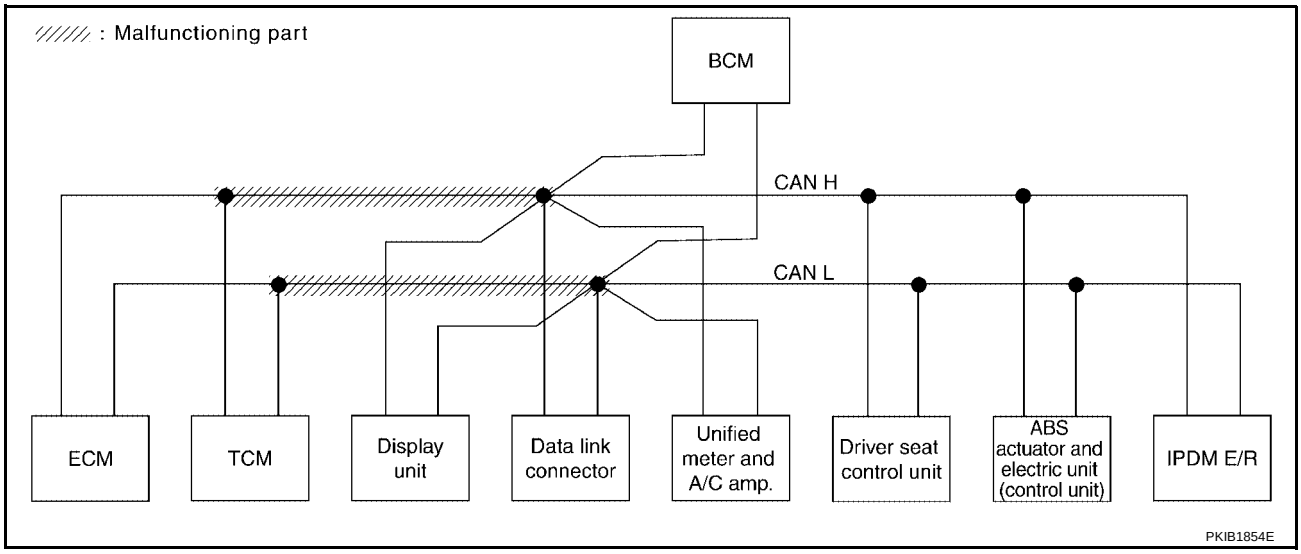
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-200, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	✓	NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2150E



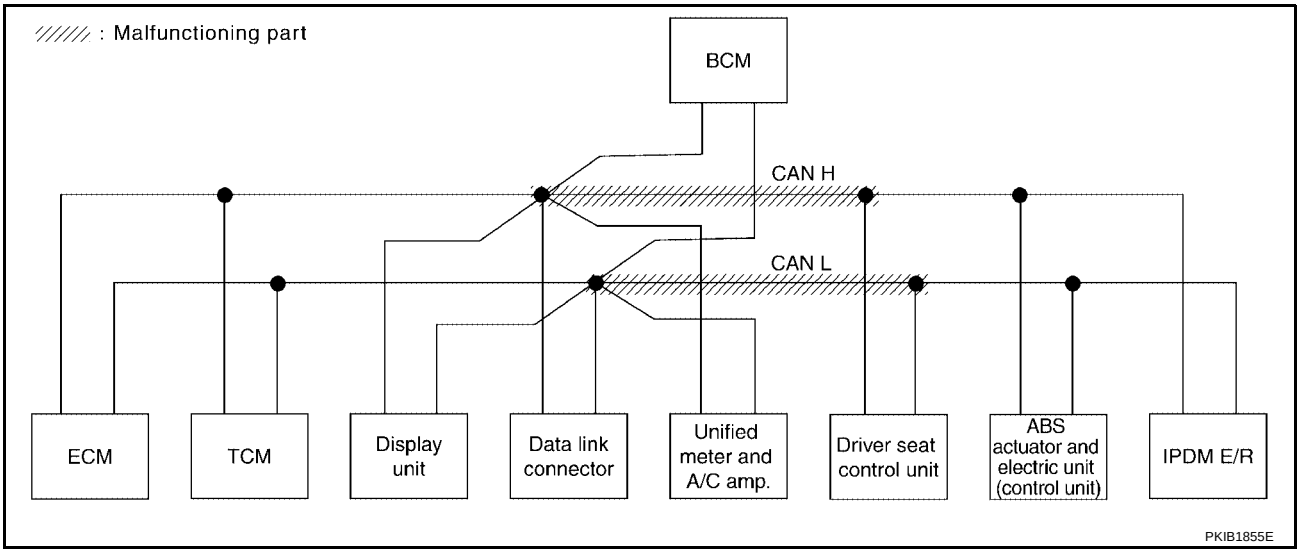
PKIB1854E

Case 2

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2151E



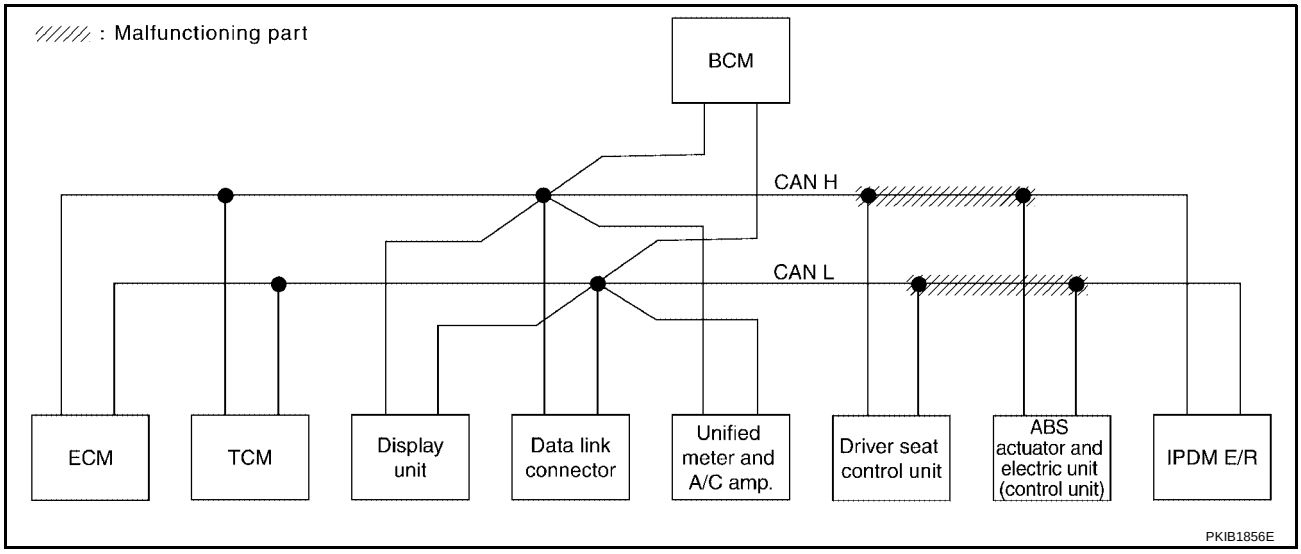
PKIB1855E

Case 3

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-201, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2152E



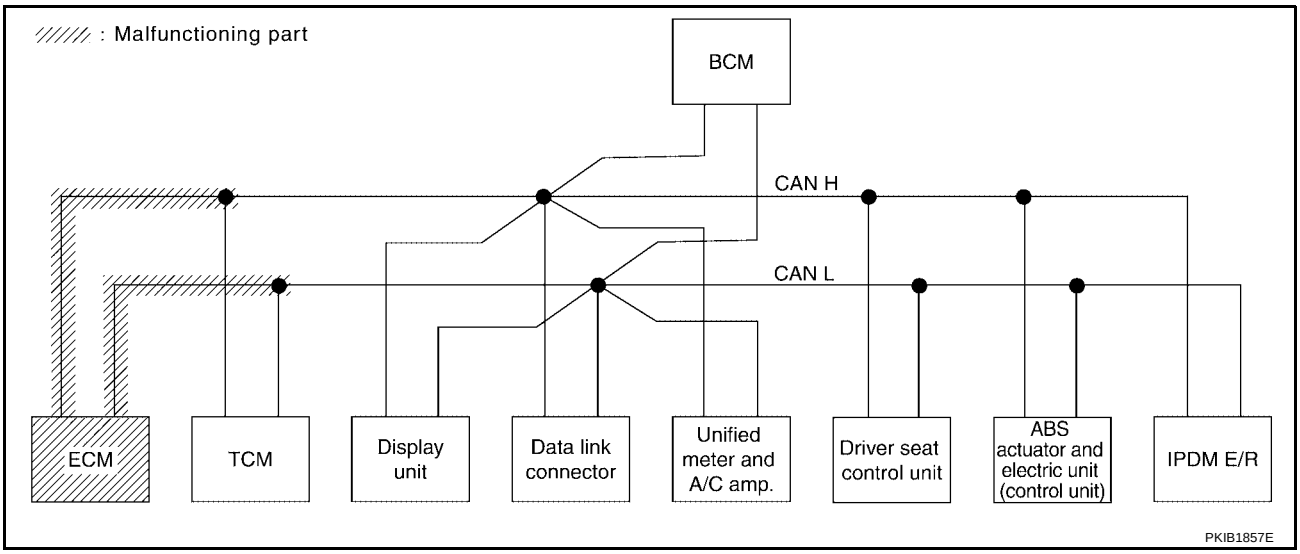
PKIB1856E

Case 4

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	✓	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2154E



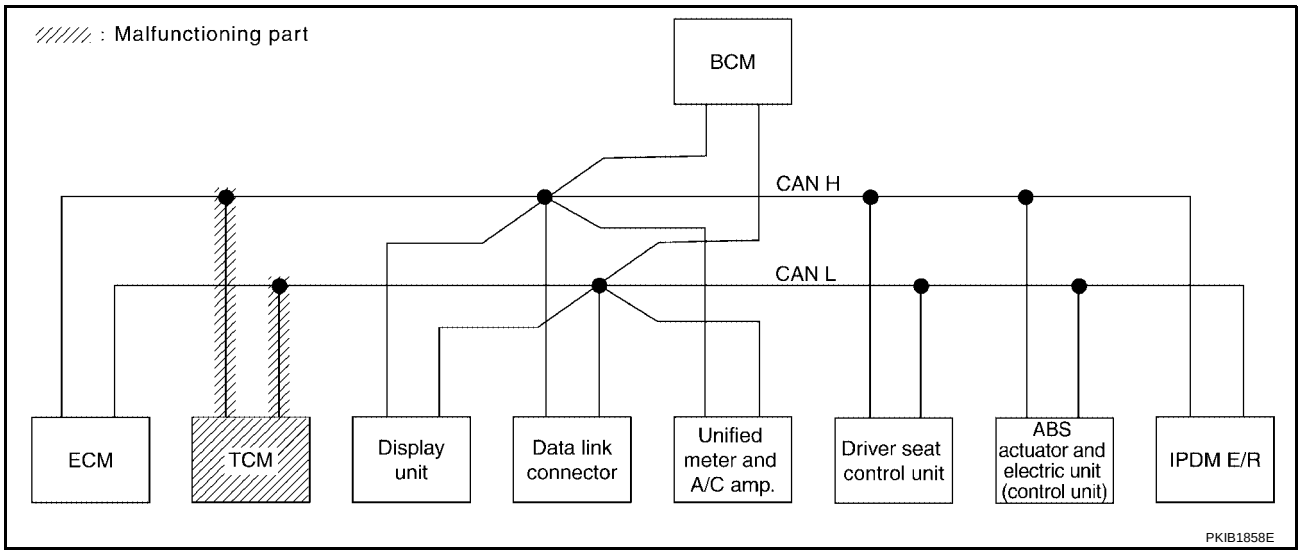
PKIB1857E

Case 5

Check TCM circuit. Refer to LAN-202, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2155E



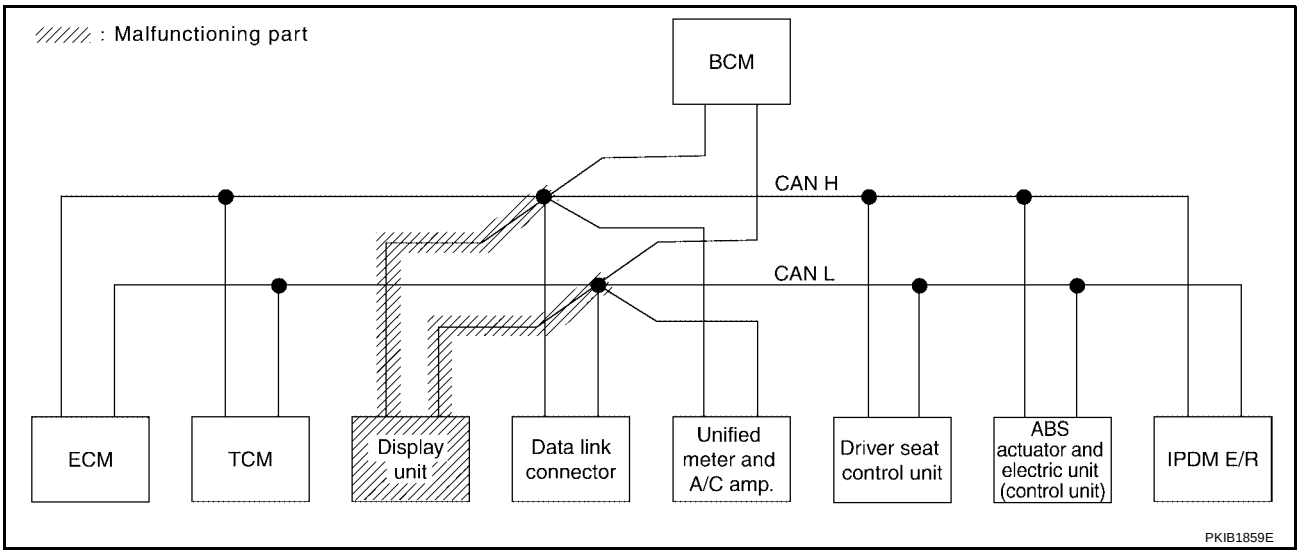
PKIB1858E

Case 6

Check display unit circuit. Refer to LAN-202, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 7		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2156E



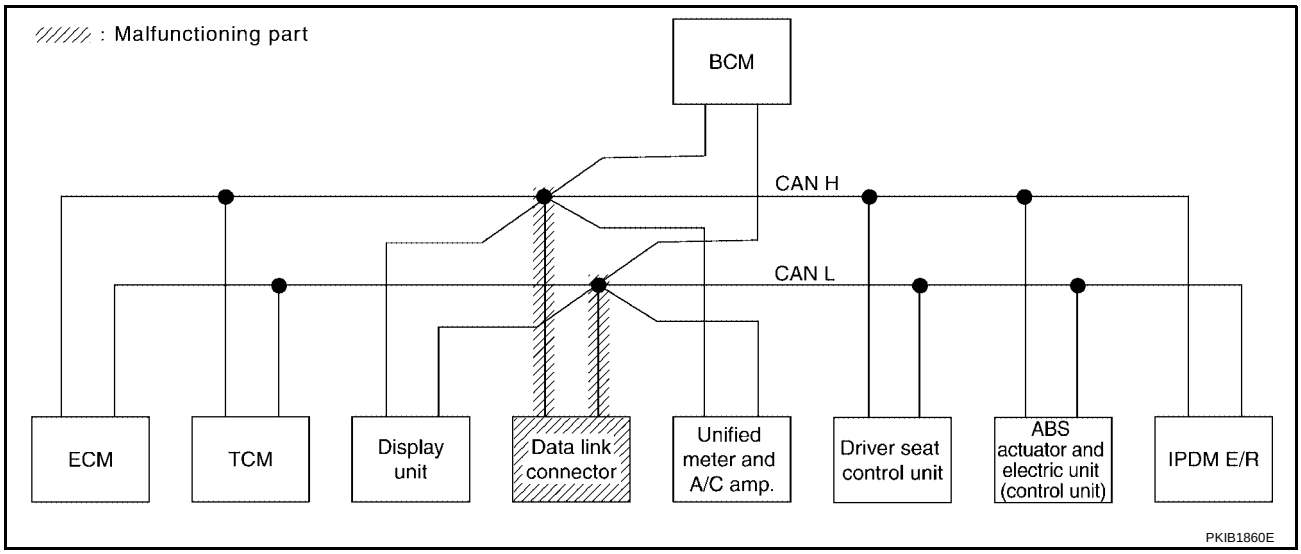
PKIB1859E

Case 7

Check data link connector circuit. Refer to LAN-203, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication ✓	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication ✓	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2157E



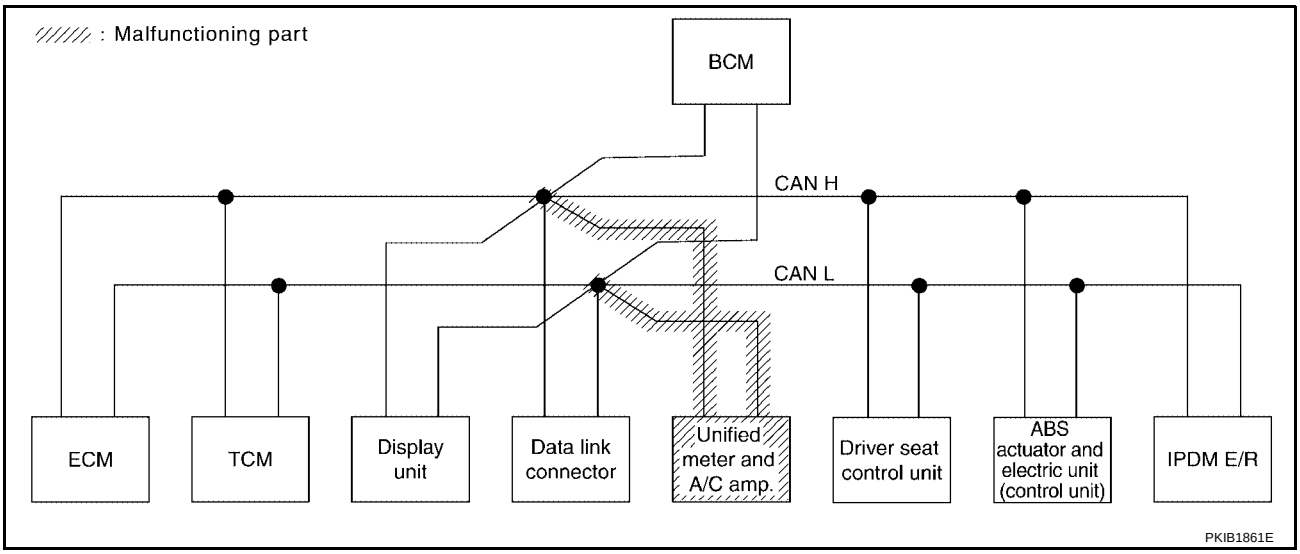
PKIB1860E

Case 8

Check unified meter and A/C amp. circuit. Refer to LAN-203, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2160E



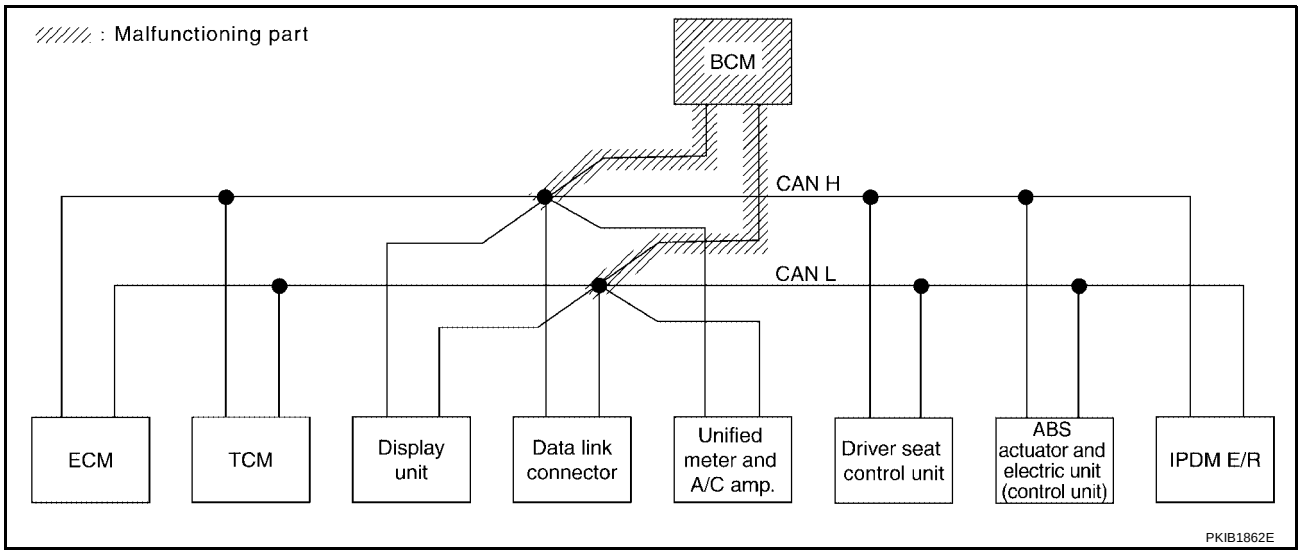
PKIB1861E

Case 9

Check BCM circuit. Refer to LAN-204, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2867E



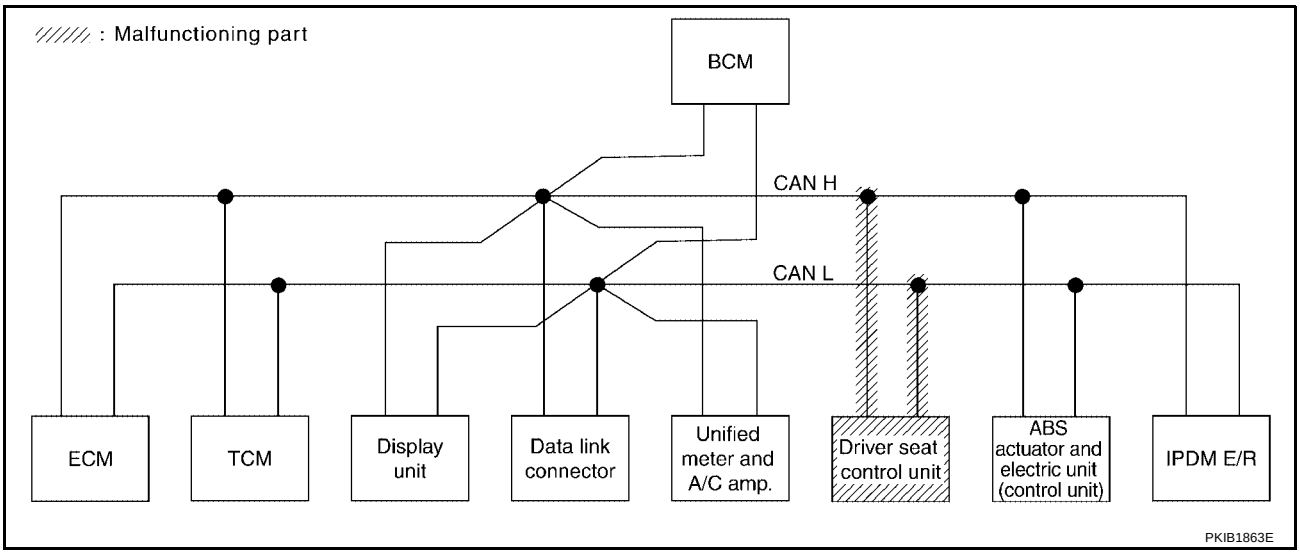
PKIB1862E

Case 10

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2161E



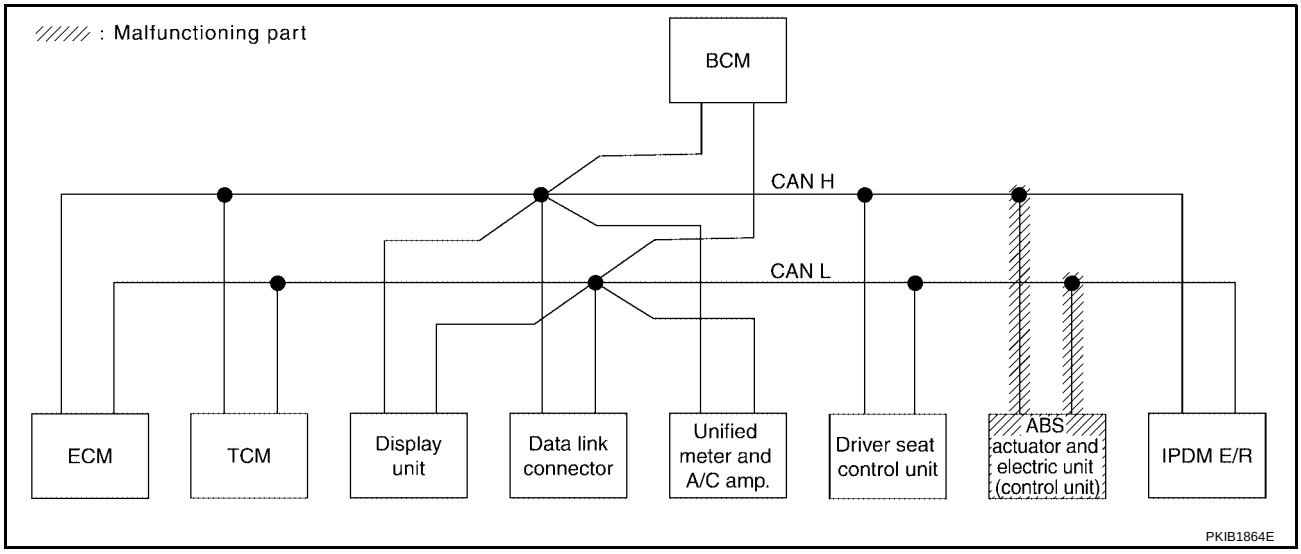
PKIB1863E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-205, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2162E



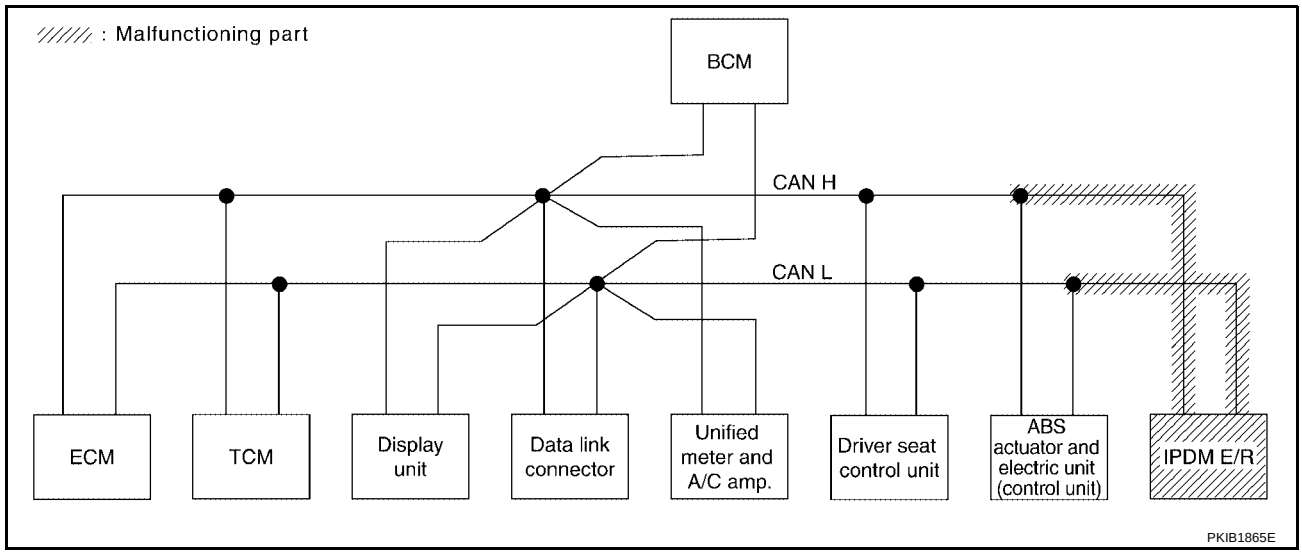
PKIB1864E

Case 12

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2163E



PKIB1865E

Case 13

Check CAN communication circuit. Refer to LAN-206, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2164E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-206, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2166E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-206, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2165E

Circuit Check Between TCM and Data Link Connector

UKS002KJ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

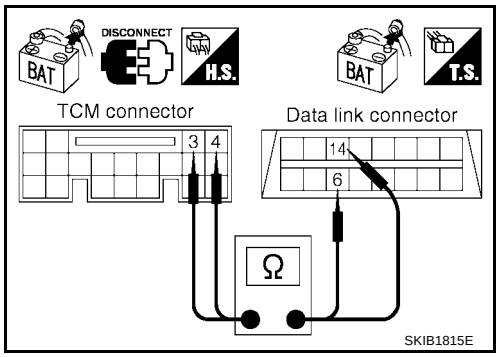
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-185, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS002KK

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

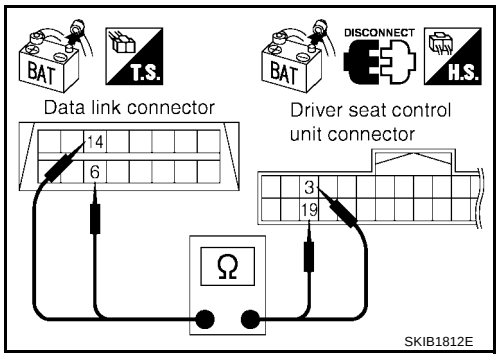
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-185, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS002KL

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

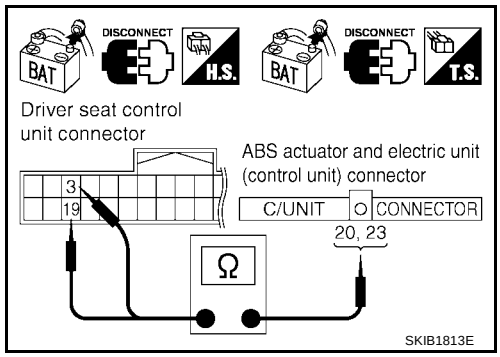
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-185, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS002KM

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

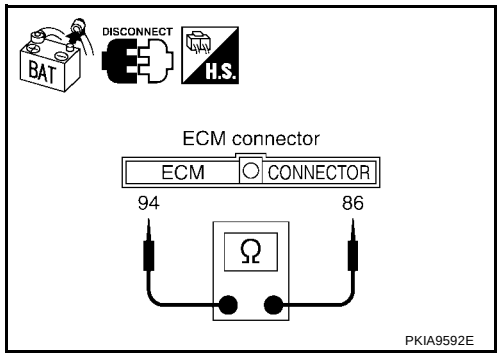
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.

TCM Circuit Check

UKS002KN

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

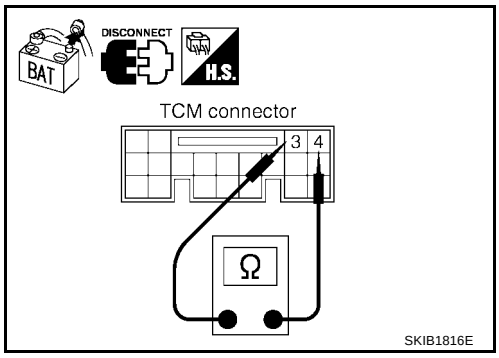
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.

Display Unit Circuit Check

UKS002KO

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

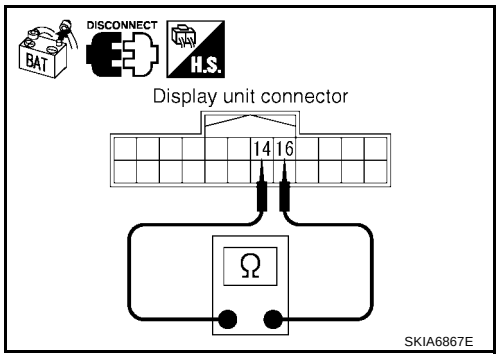
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.

Data Link Connector Circuit Check

UKS002KP

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

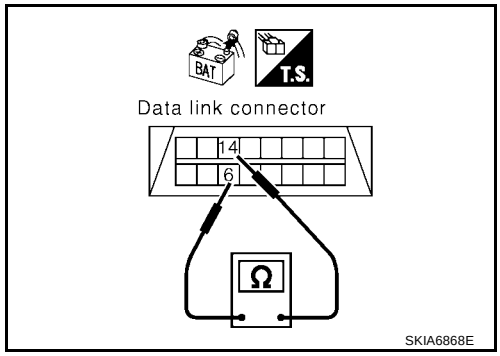
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-185, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002KR

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

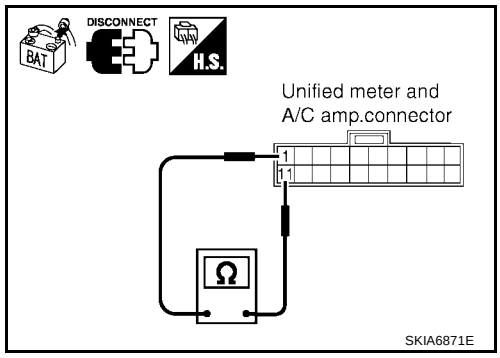
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002KQ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

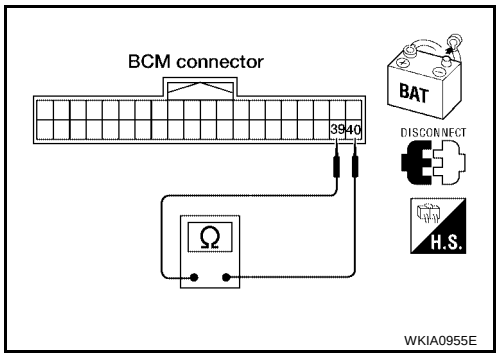
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS002KS

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

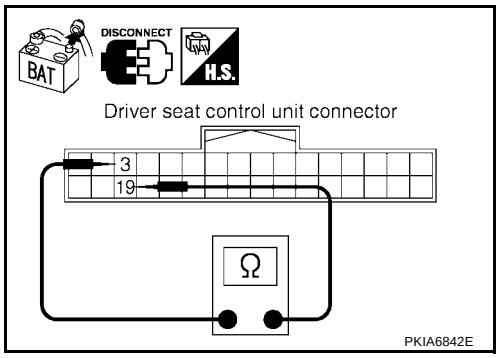
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002KT

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

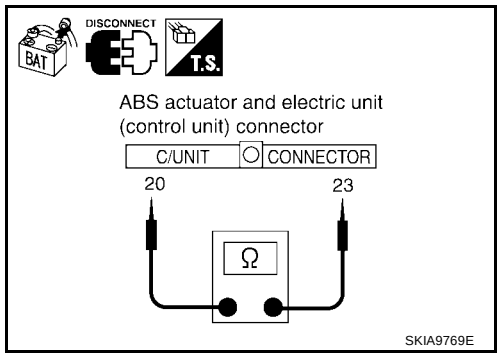
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002KU

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

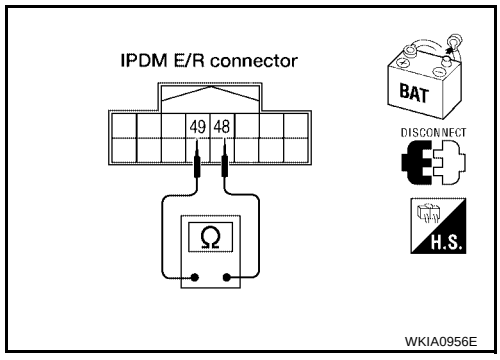
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002KV

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

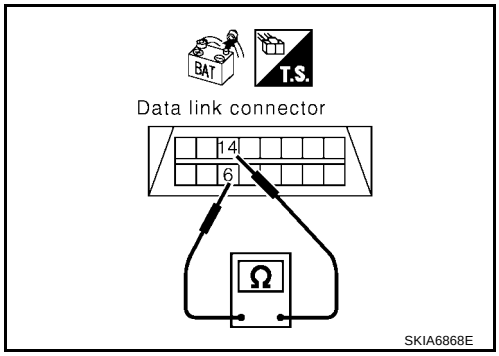
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



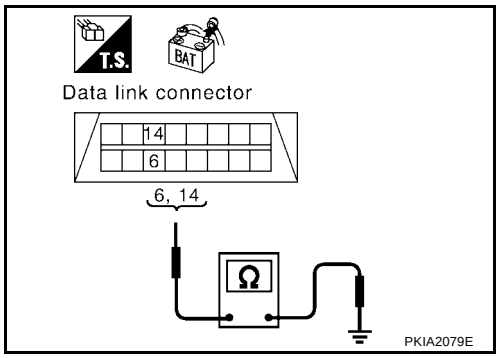
OK or NG

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

3. CHECK HARNESS FOR SHORT TO GROUND

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-207, "Component Inspection" .
NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002KW

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002KX

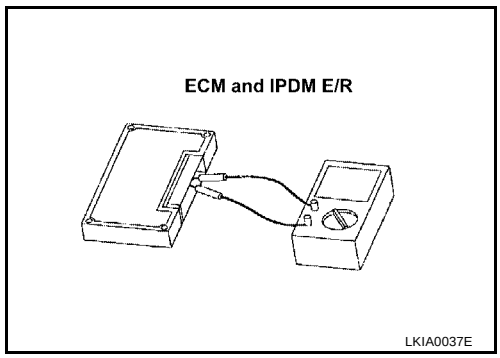
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 9)

PFP:23710

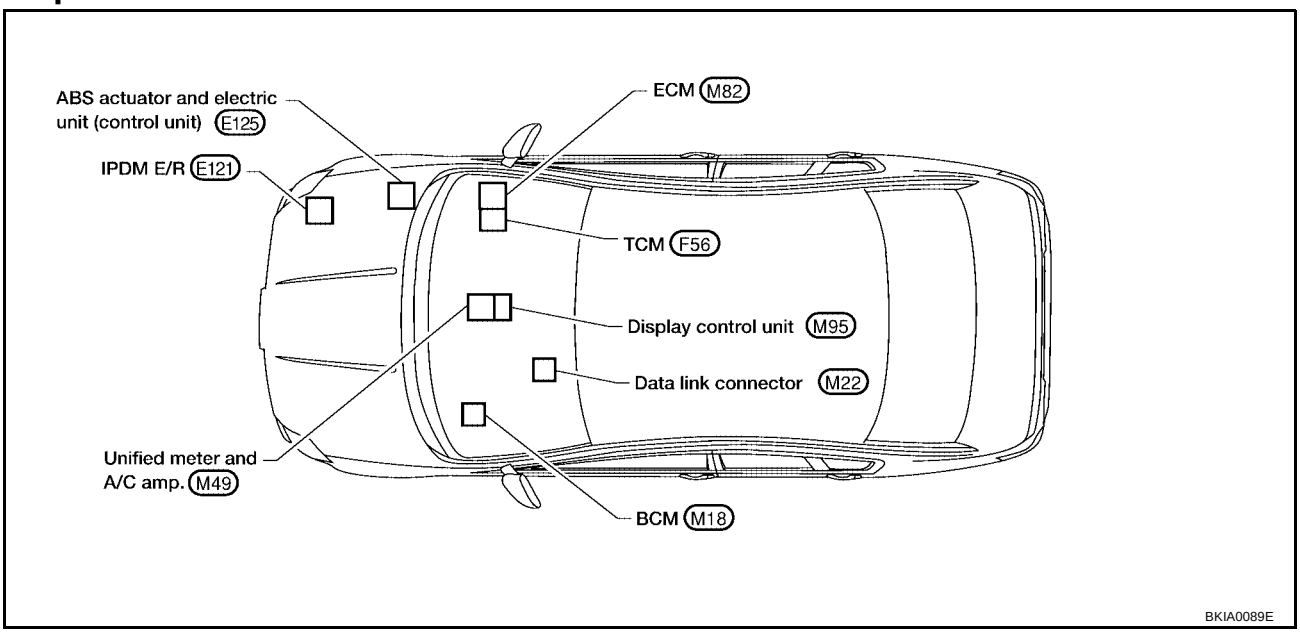
System Description

UKS0029Y

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.

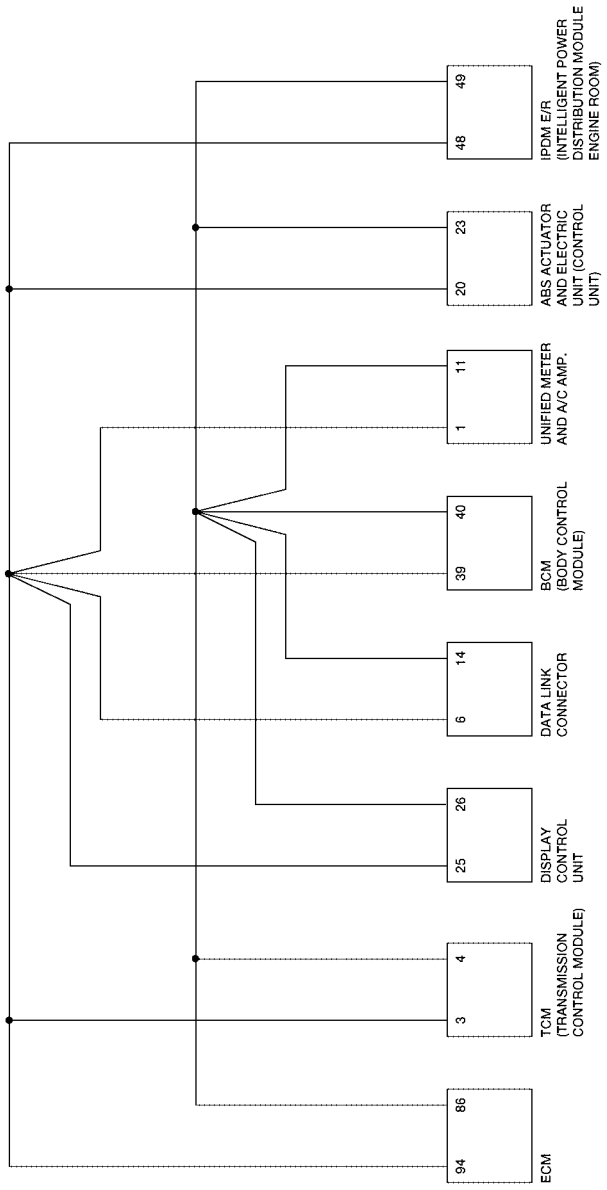
Component Parts and Harness Connector Location

UKS0029Z



Schematic

UKS002A0

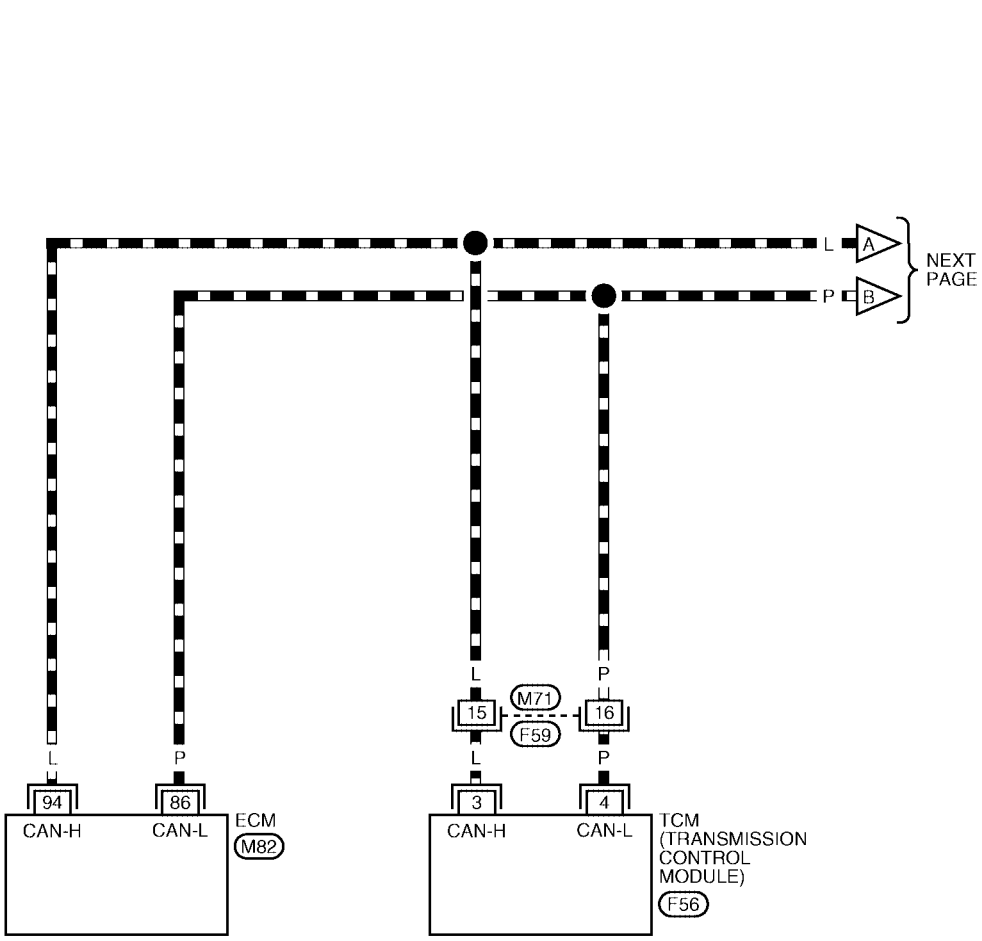


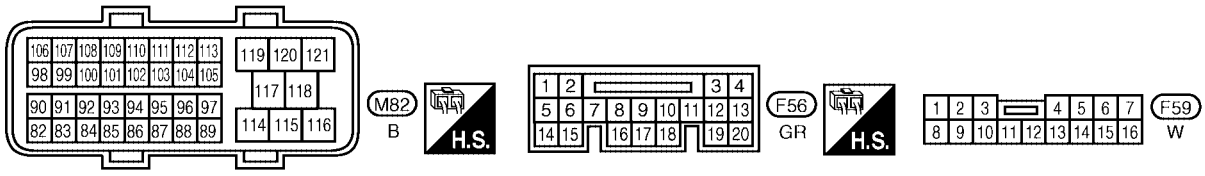
BKWA0294E

Wiring Diagram - CAN -

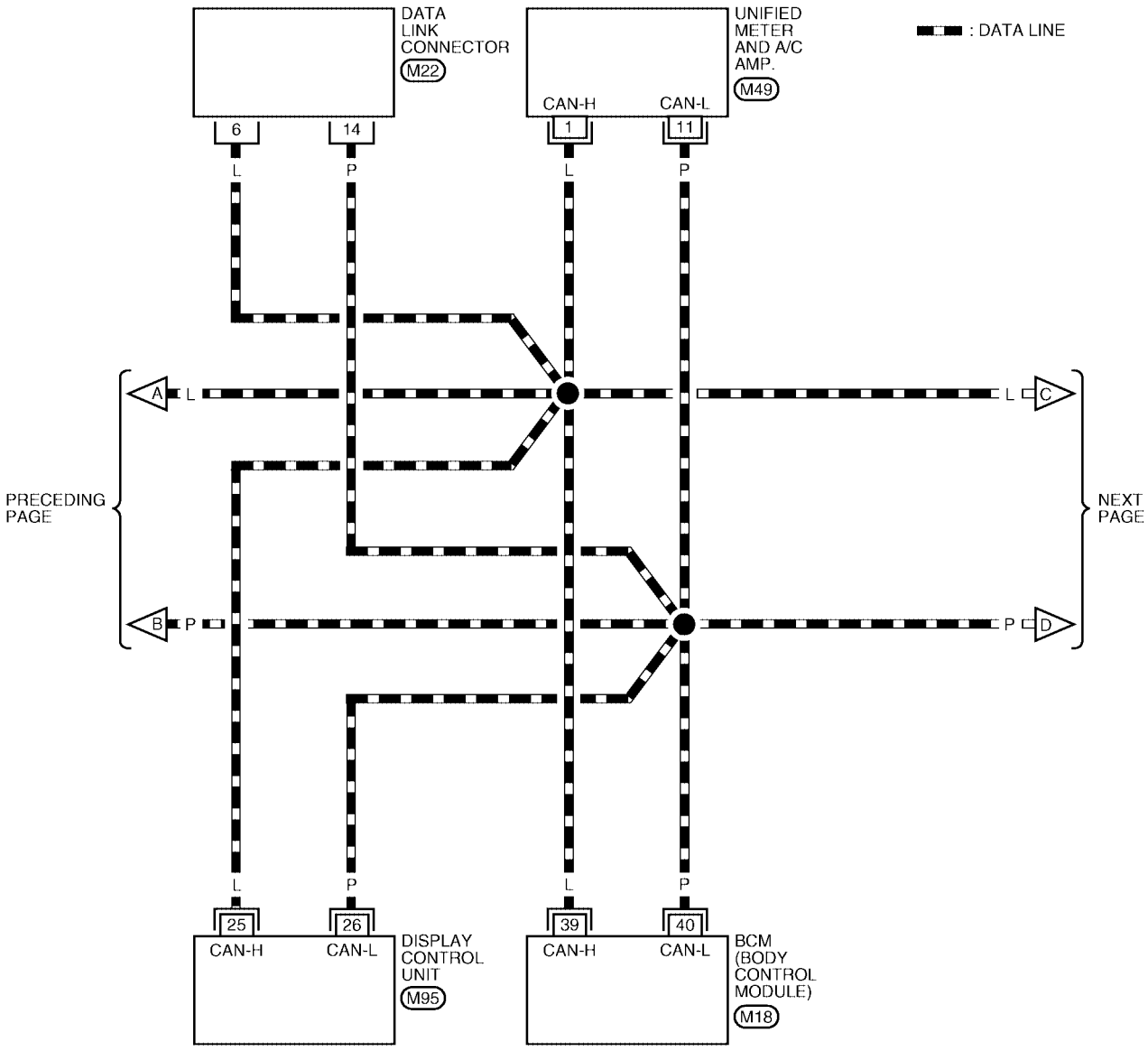
UKS002A1

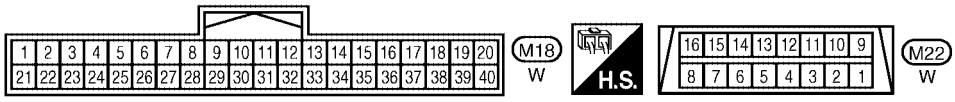
LAN-CAN-19

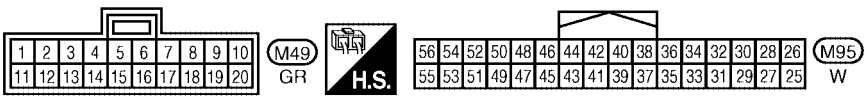




BKWA0295E

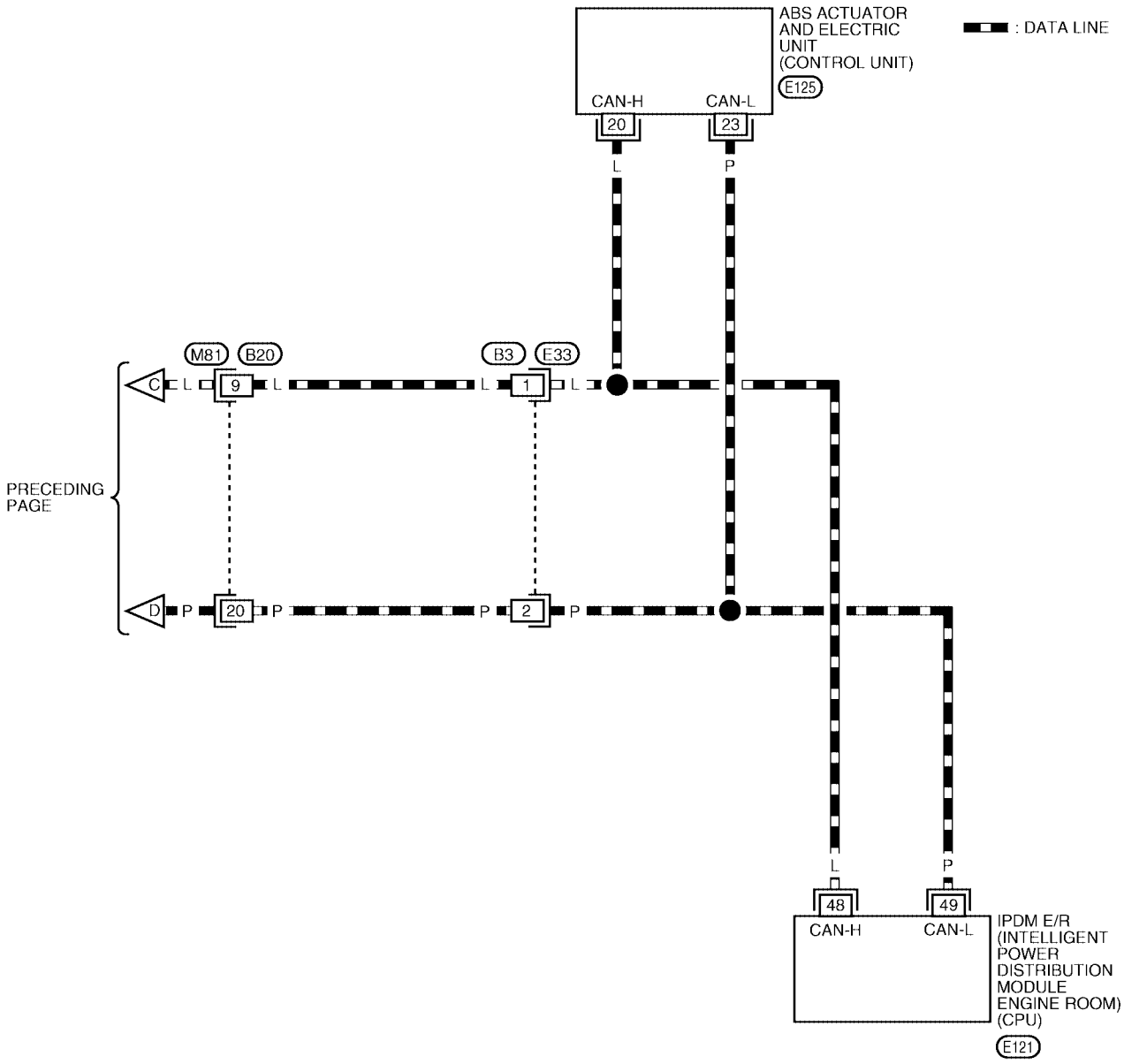

DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
25
26
39
40
DISPLAY CONTROL UNIT
M95
BCM (BODY CONTROL MODULE)
M18

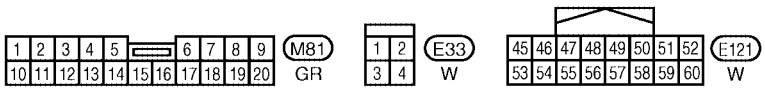

M18
W
H.S.
M22
W


M49
GR
H.S.
M95
W

BKWA0296E

LAN-CAN-21





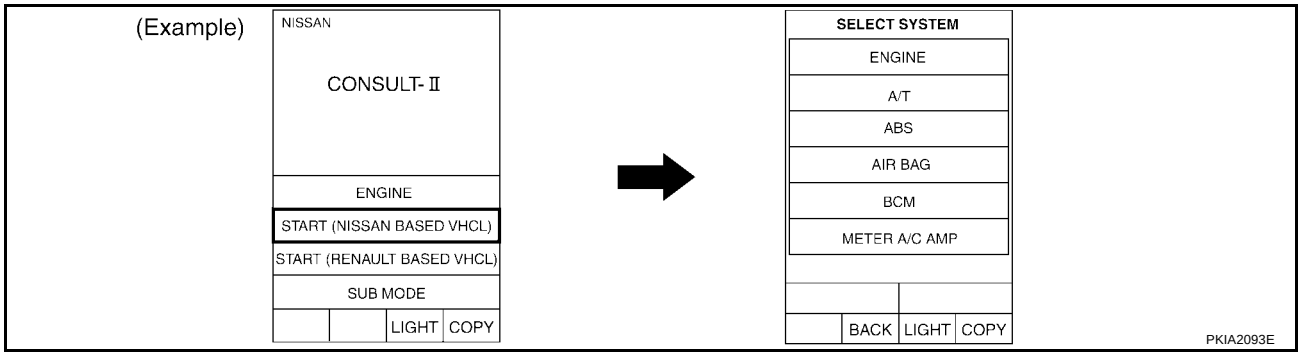
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0297E

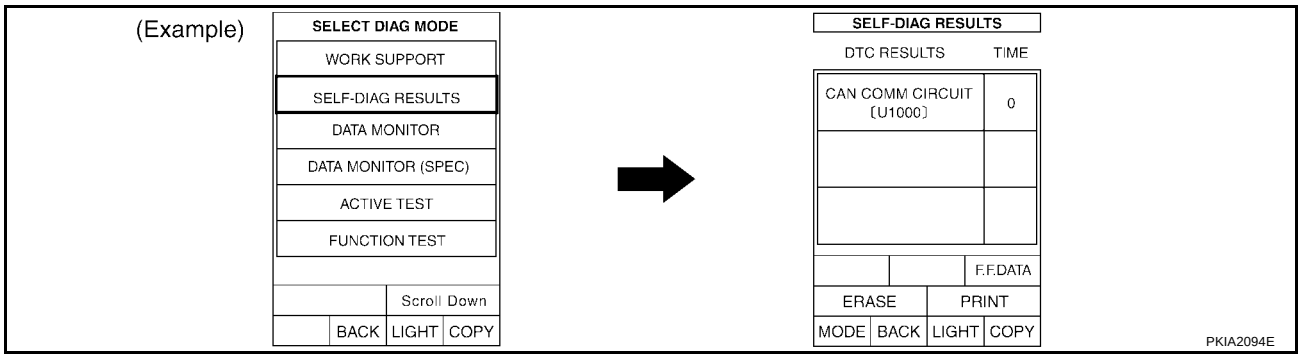
Work Flow

UKS002K0

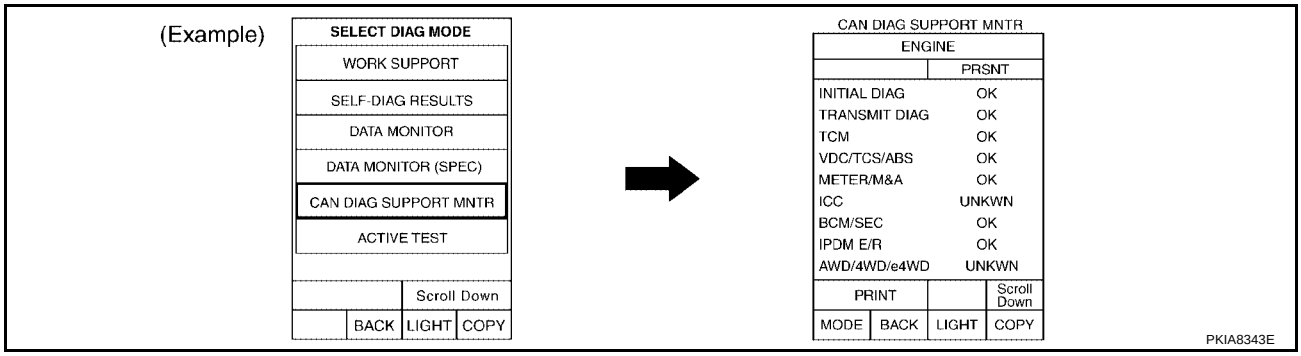
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



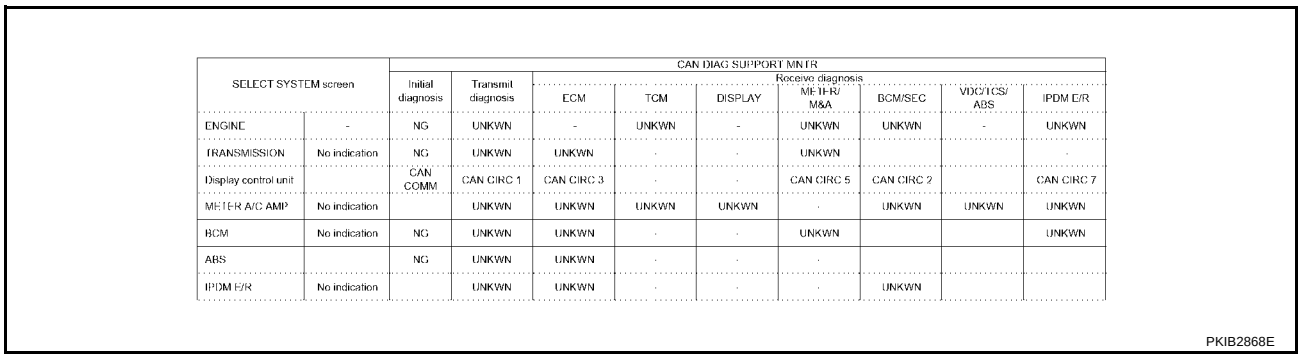
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	·	·	UNKWN			·
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	·	·	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	·	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	·	·	UNKWN			UNKWN
ABS		NG	UNKWN	UNKWN	·	·	·			
IPDM E/R	No indication		UNKWN	UNKWN	·	·	·	UNKWN		

PKIB2868E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

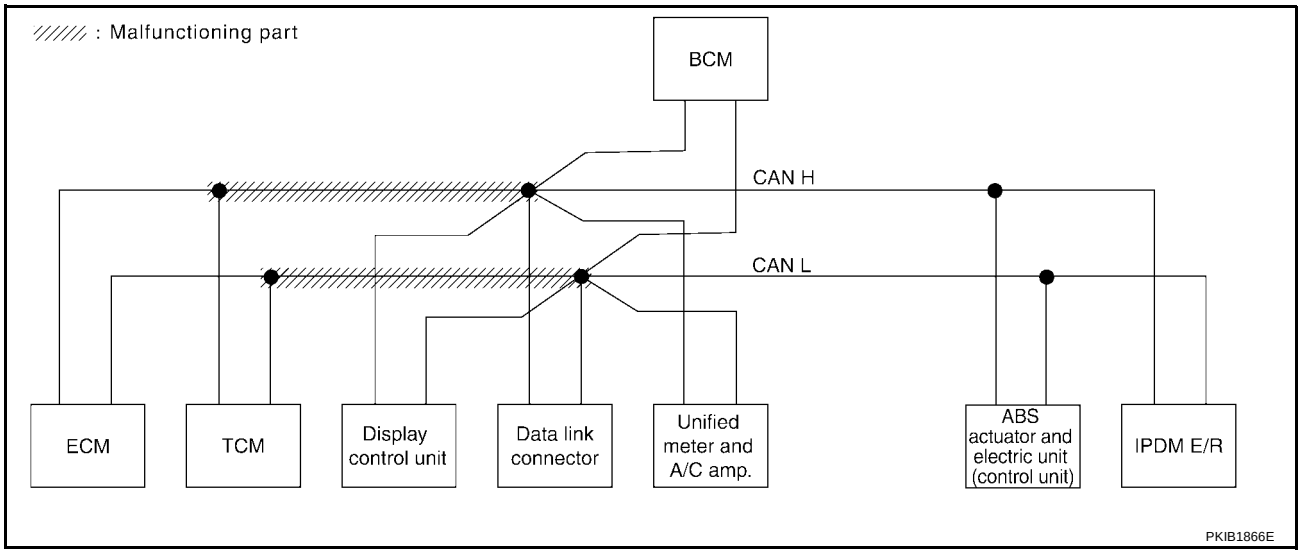
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-226, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2869E



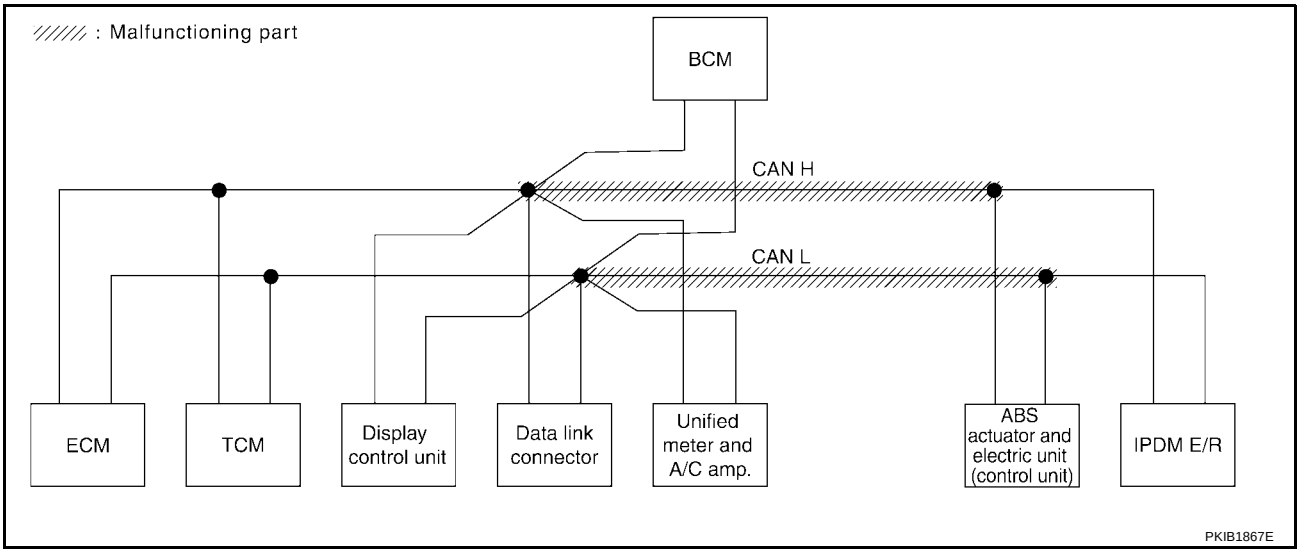
PKIB1866E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-226, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2870E



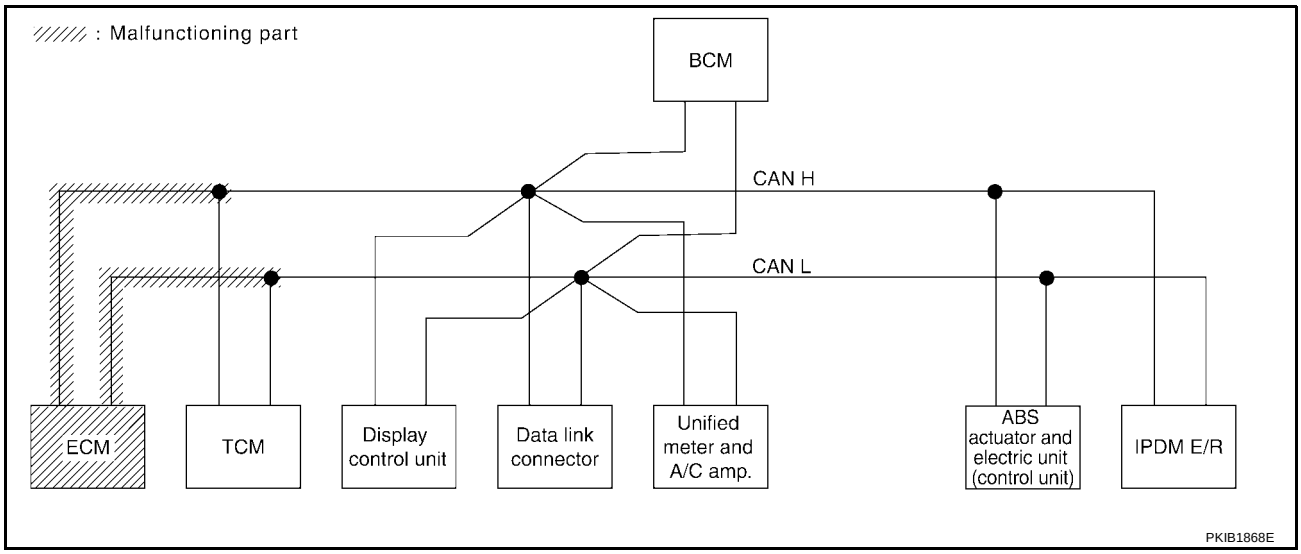
PKIB1867E

Case 3

Check ECM circuit. Refer to LAN-227, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2871E



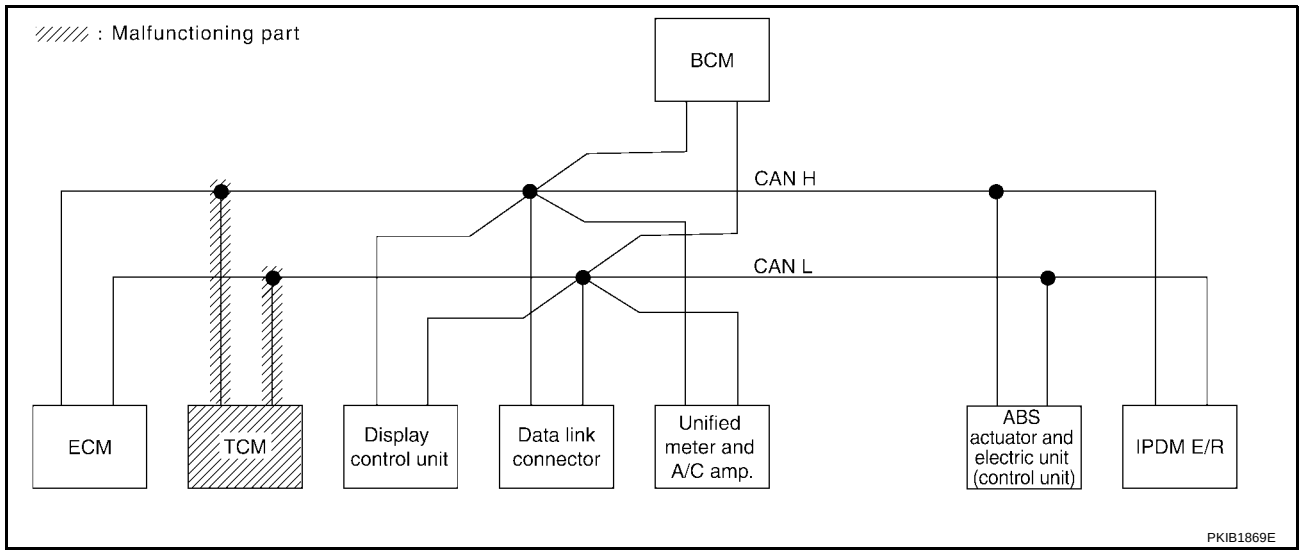
PKIB1868E

Case 4

Check TCM circuit. Refer to LAN-227, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2872E



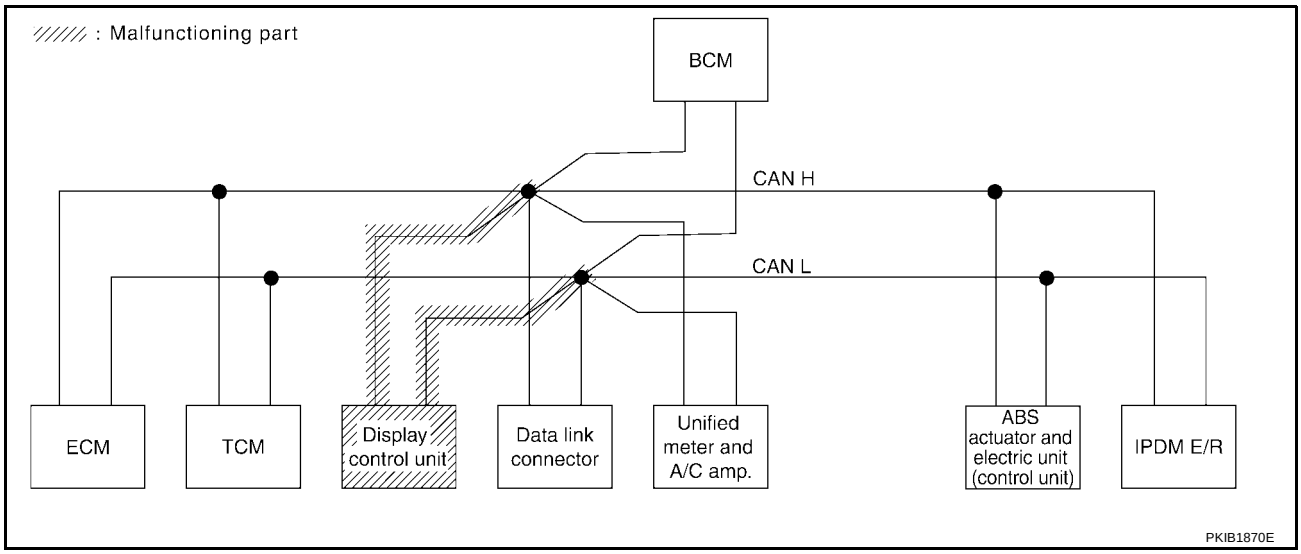
PKIB1869E

Case 5

Check display control unit circuit. Refer to LAN-228, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2873E



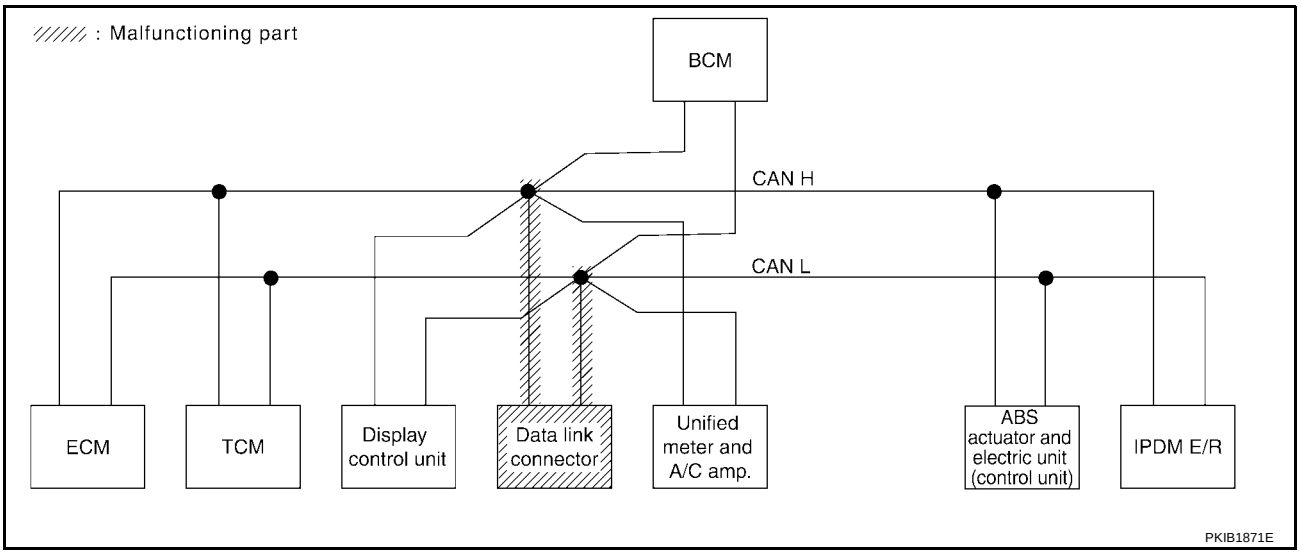
PKIB1870E

Case 6

Check data link connector circuit. Refer to LAN-228, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	Not applicable	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	Not applicable		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Not applicable	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	Not applicable	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2874E



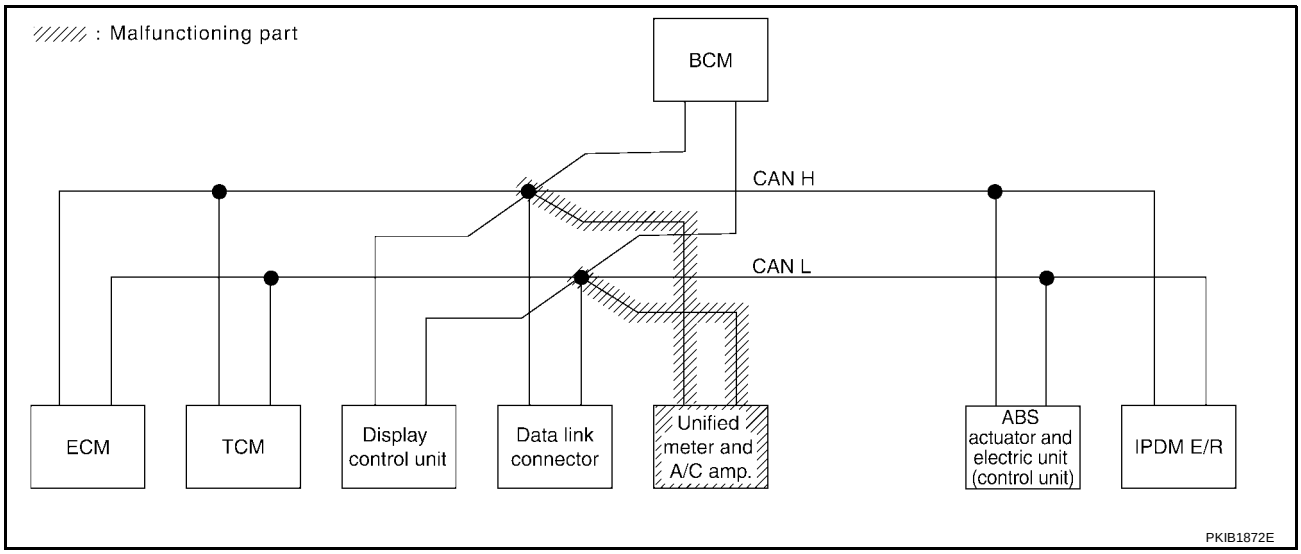
PKIB1871E

Case 7

Check unified meter and A/C amp. circuit. Refer to LAN-229, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2875E



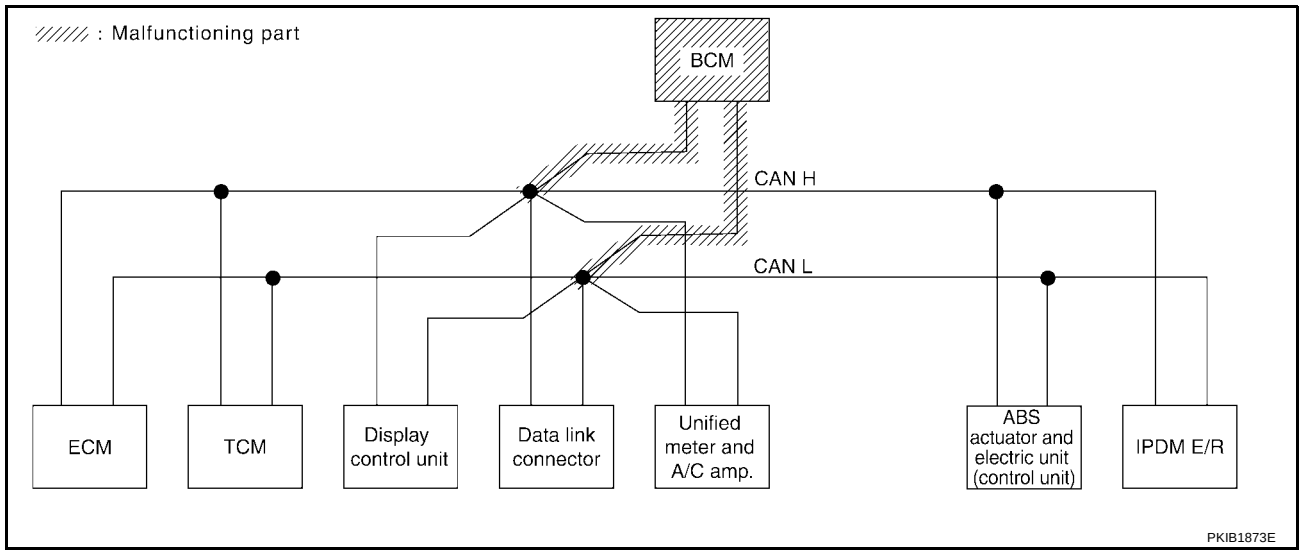
PKIB1872E

Case 8

Check BCM circuit. Refer to LAN-229, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2876E



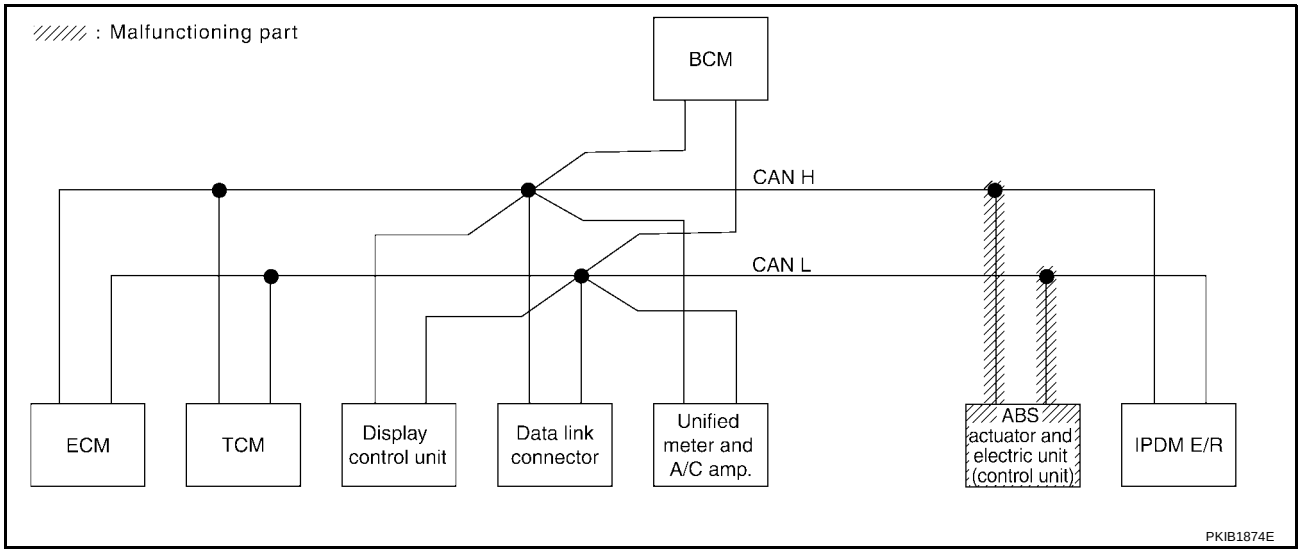
PKIB1873E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-230, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2877E



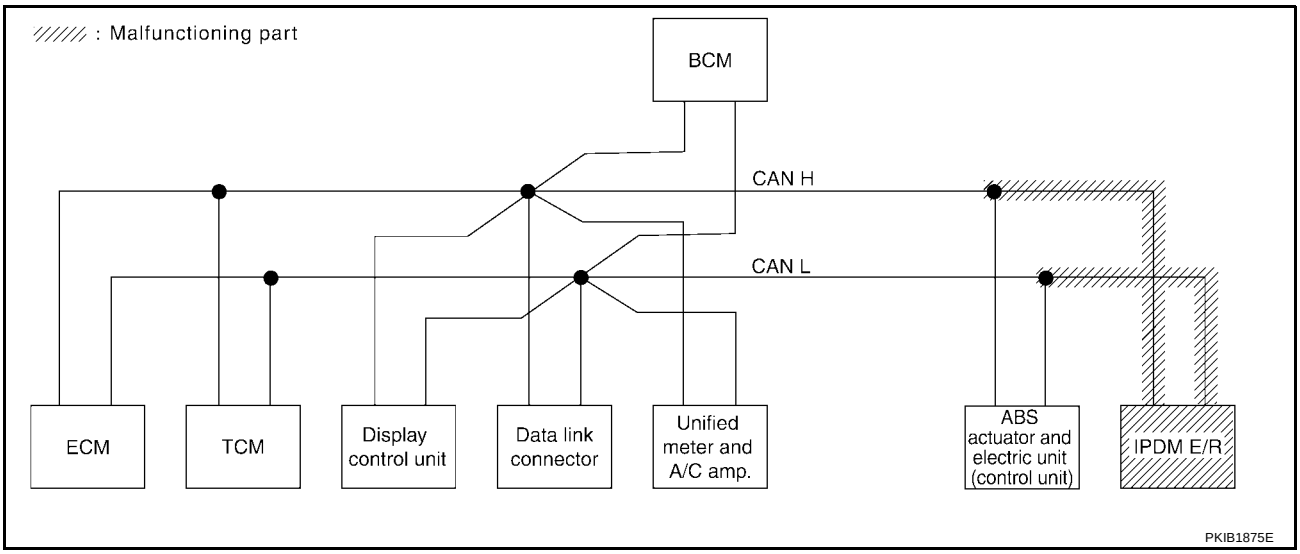
PKIB1874E

Case 10

Check IPDM E/R circuit. Refer to LAN-230, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2878E



PKIB1875E

Case 11

Check CAN communication circuit. Refer to LAN-231, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS		NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2879E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-231, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2880E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-231, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

PKIB2881E

Circuit Check Between TCM and Data Link Connector

UKS002K2

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

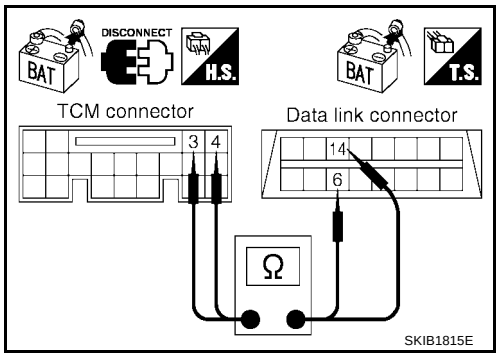
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-213, "Work Flow" .
NG >> Repair harness.



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

UKS002K4

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

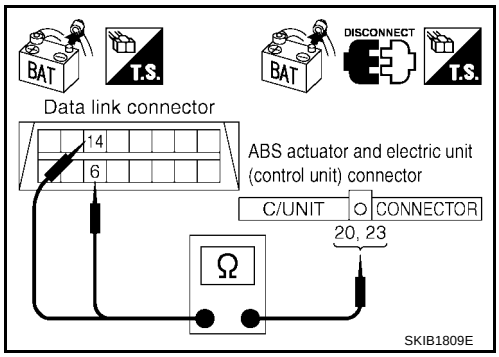
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

6 (L) - 20 (L) : Continuity should exist.
14 (P) - 23 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-213, "Work Flow" .
NG >> Repair harness.



ECM Circuit Check

UKS002K5

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

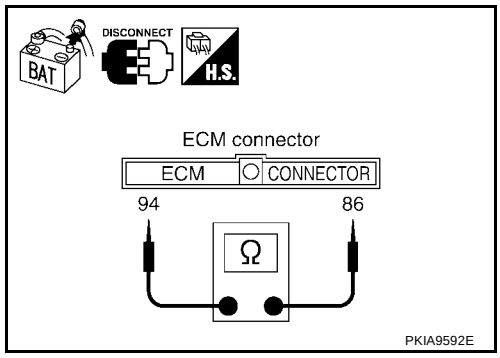
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.



TCM Circuit Check

UKS002K6

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

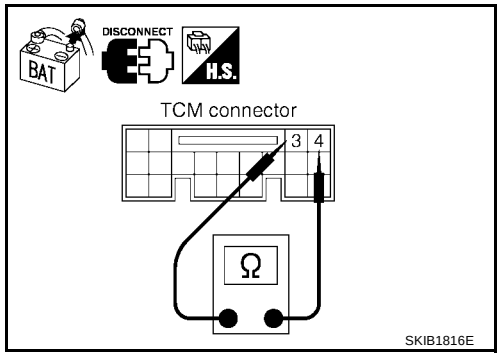
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.



Display Control Unit Circuit Check

UKS002K7

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

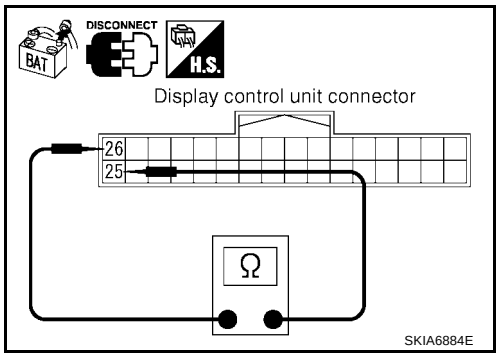
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.



Data Link Connector Circuit Check

UKS002K8

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

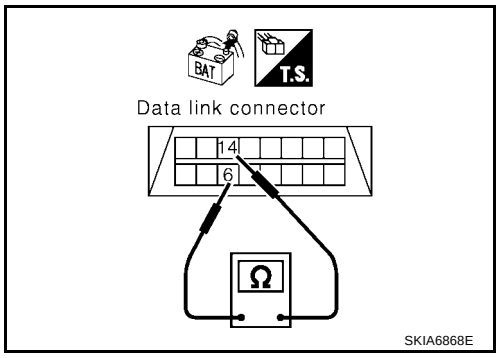
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-213, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002KA

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

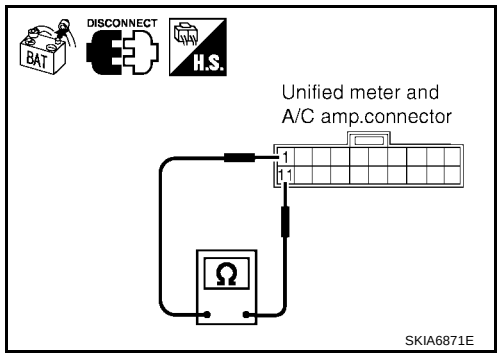
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002K9

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

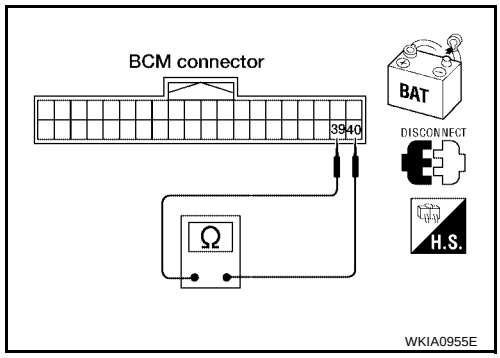
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002KC

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

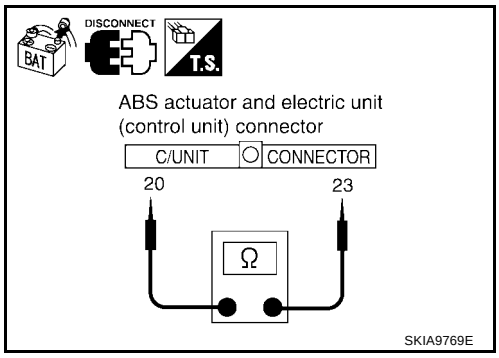
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002KD

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

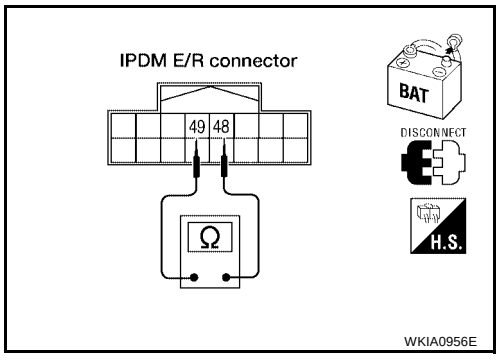
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002KE

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display control unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

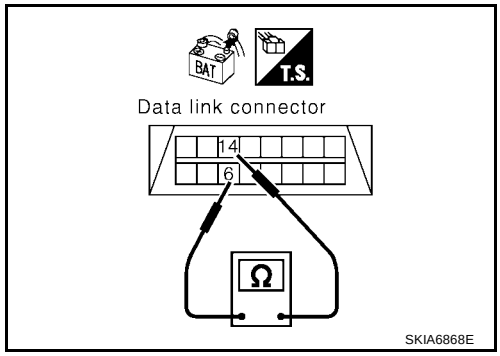
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



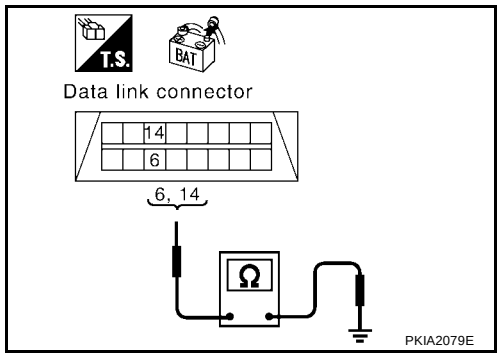
OK or NG

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

3. CHECK HARNESS FOR SHORT TO GROUND

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-232, "Component Inspection" .
NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002KF

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002KG

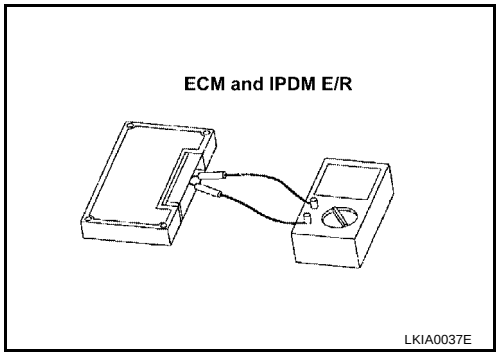
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 10)

PFP:23710

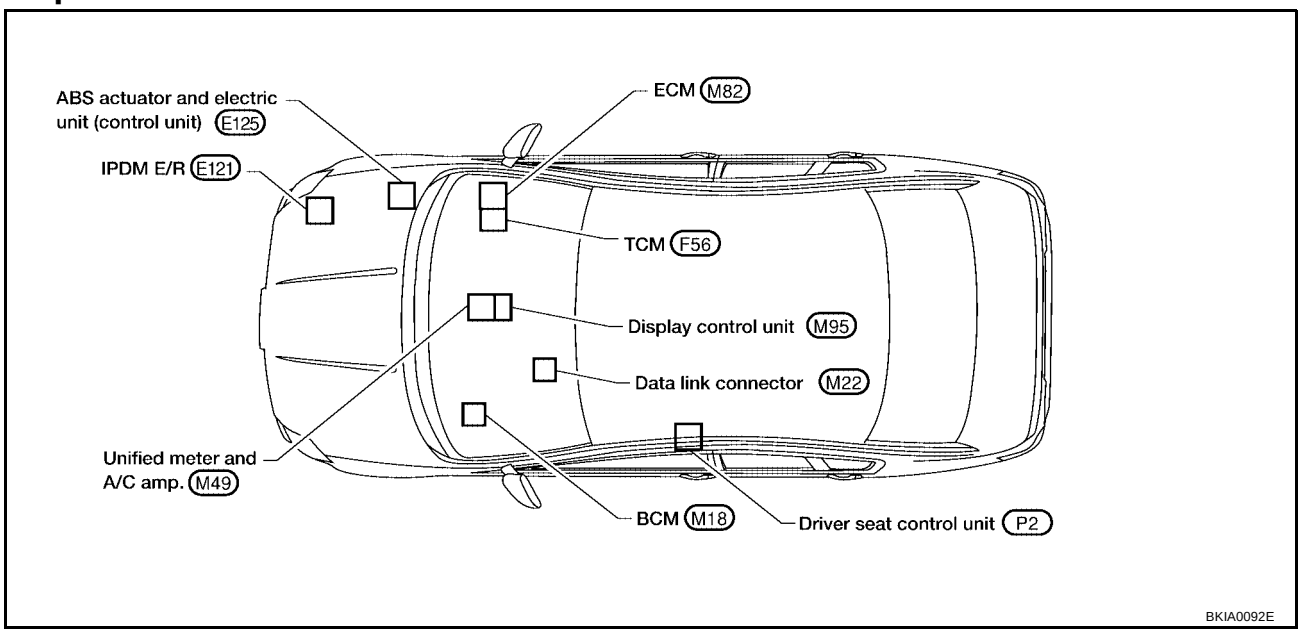
System Description

UKS002AG

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.

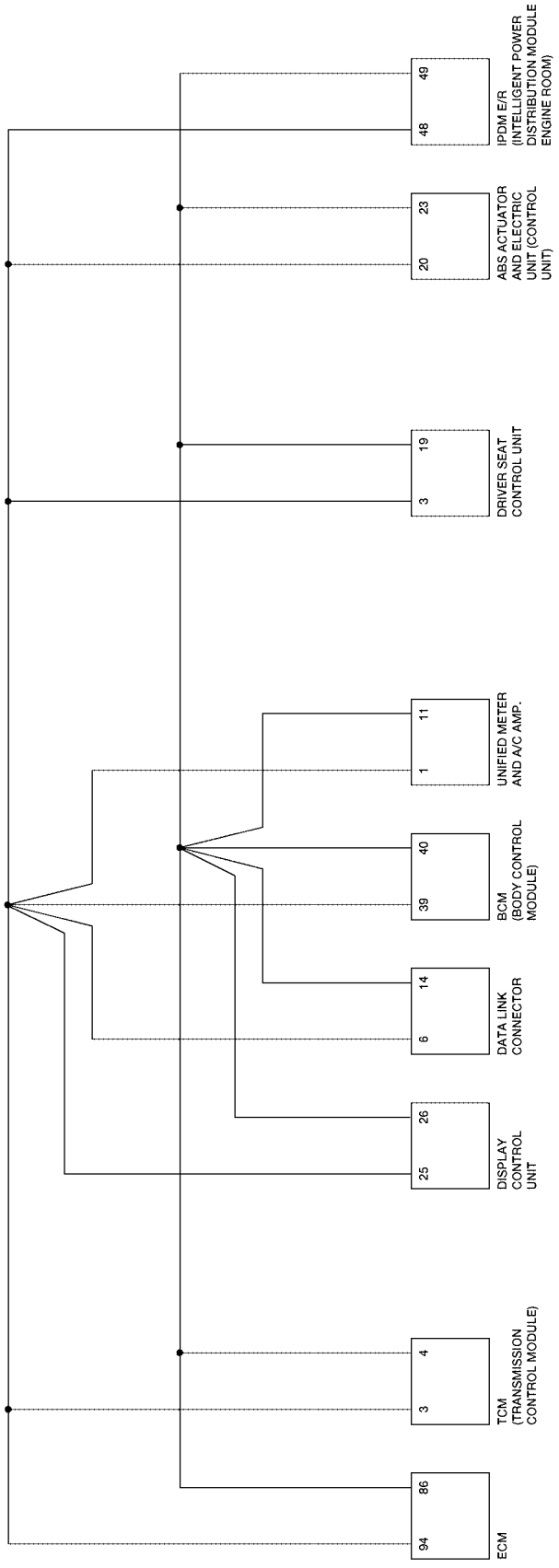
Component Parts and Harness Connector Location

UKS002AH



Schematic

UKS002AI

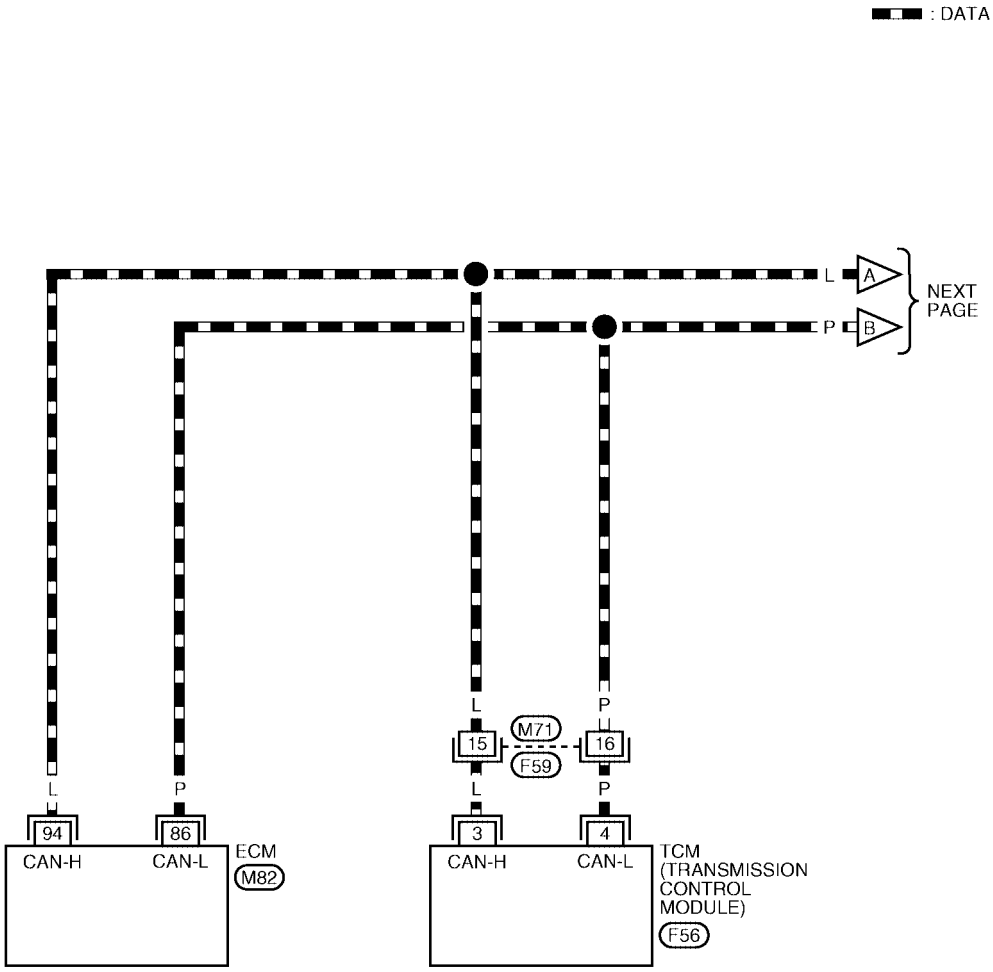


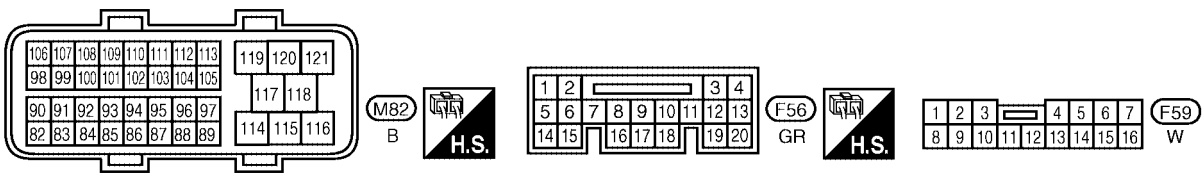
BKWA0298E

Wiring Diagram - CAN -

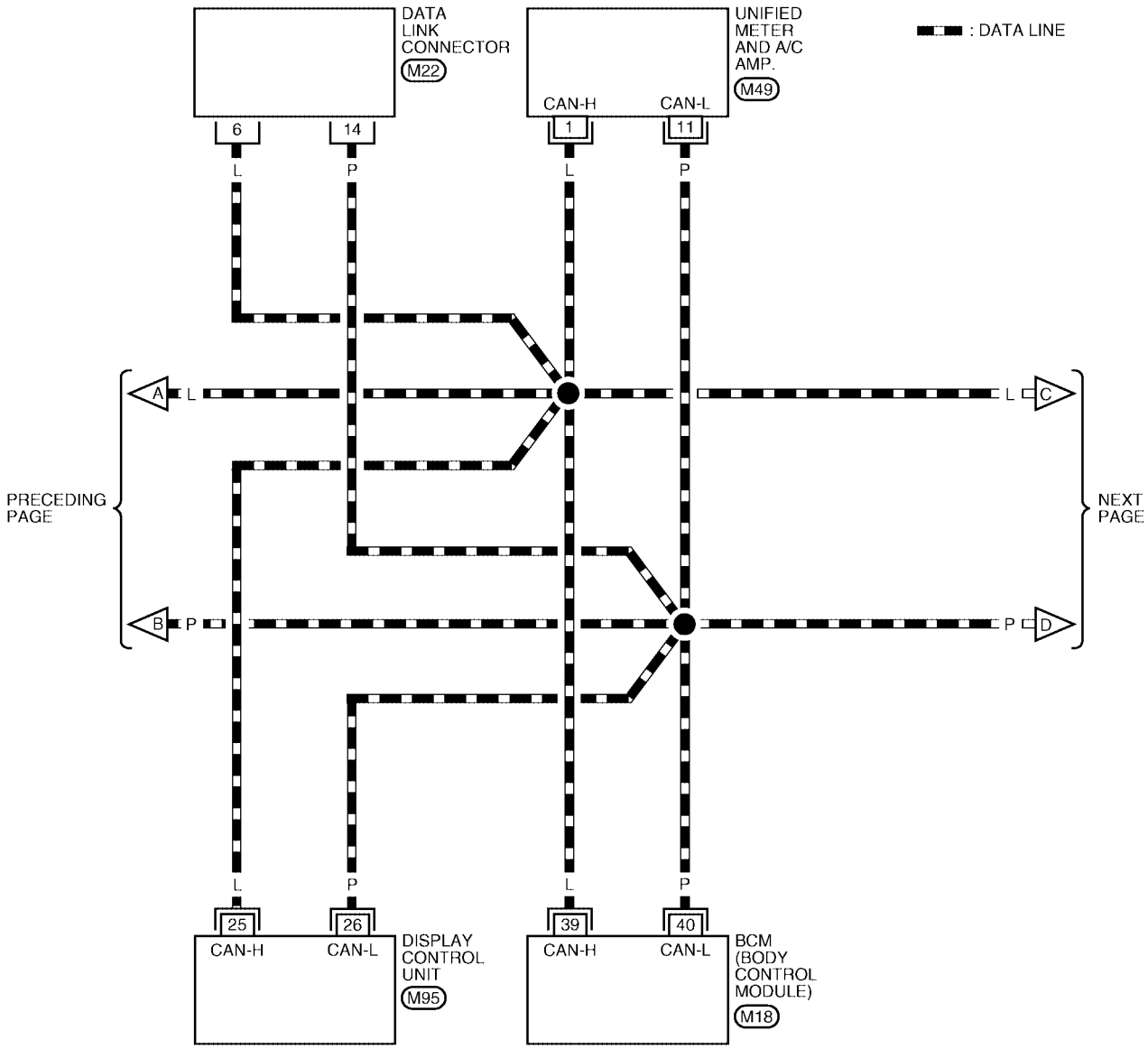
UKS002AJ

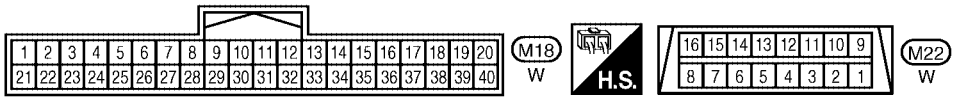
LAN-CAN-22

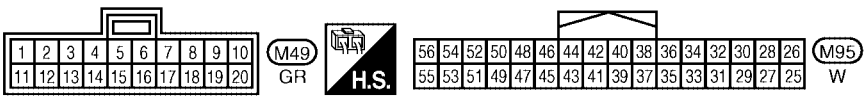




BKWA0299E

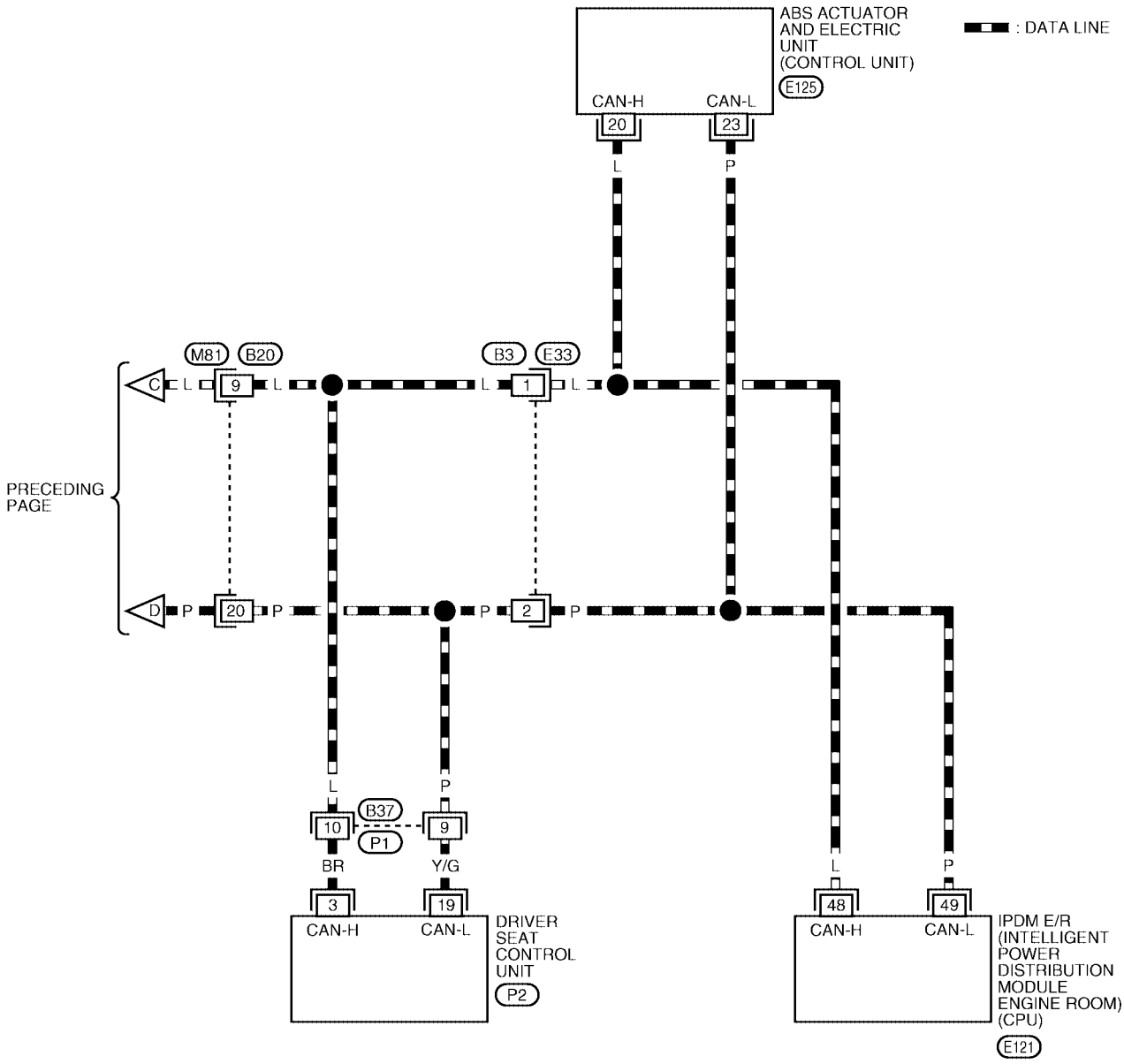

DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
A
B
C
D
PRECEDING PAGE
NEXT PAGE
25
26
39
40
DISPLAY CONTROL UNIT
M95
BCM (BODY CONTROL MODULE)
M18

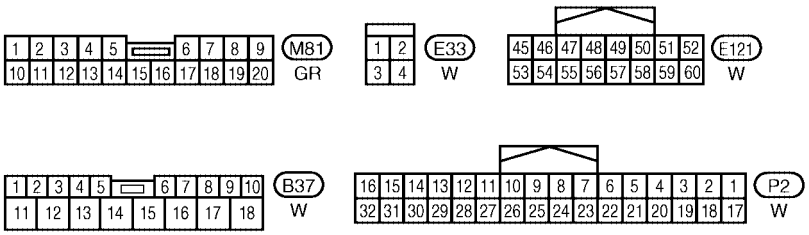

M18
W
H.S.
M22
W


M49
GR
H.S.
M95
W

BKWA0300E

LAN-CAN-24





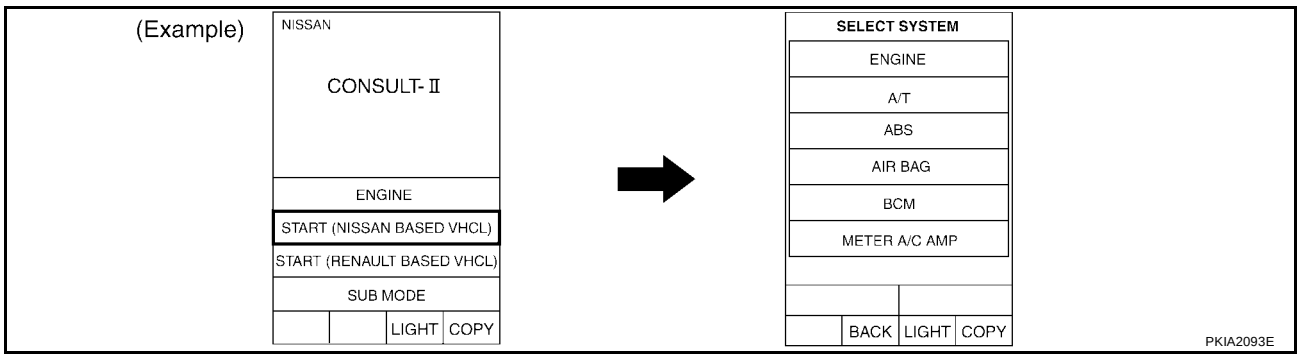
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0301E

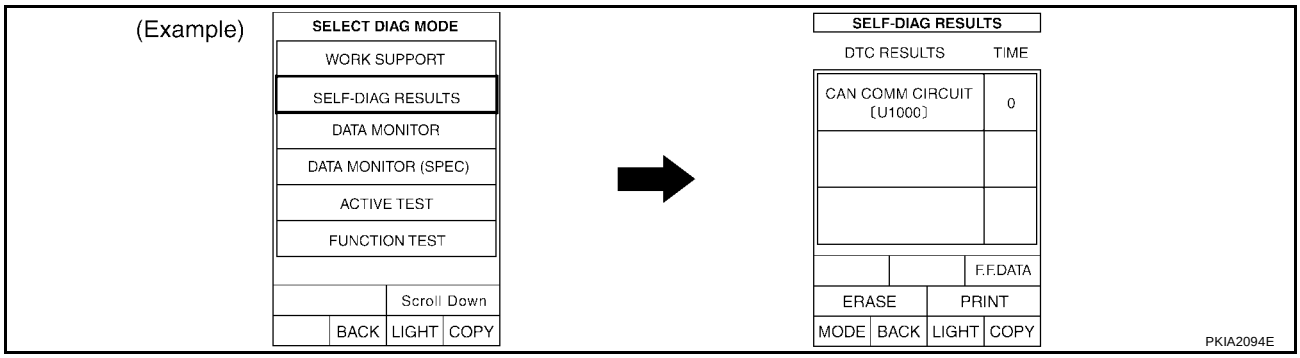
Work Flow

UKS002JJ

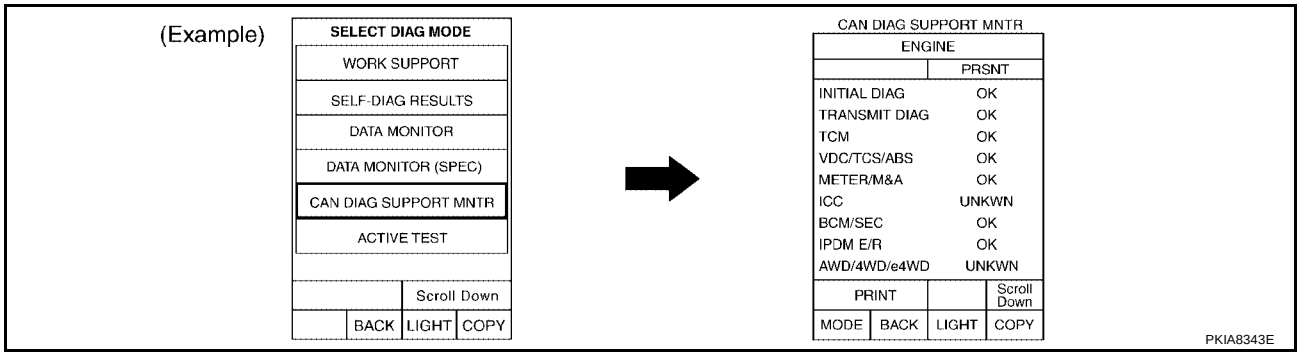
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

BKIA0064E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

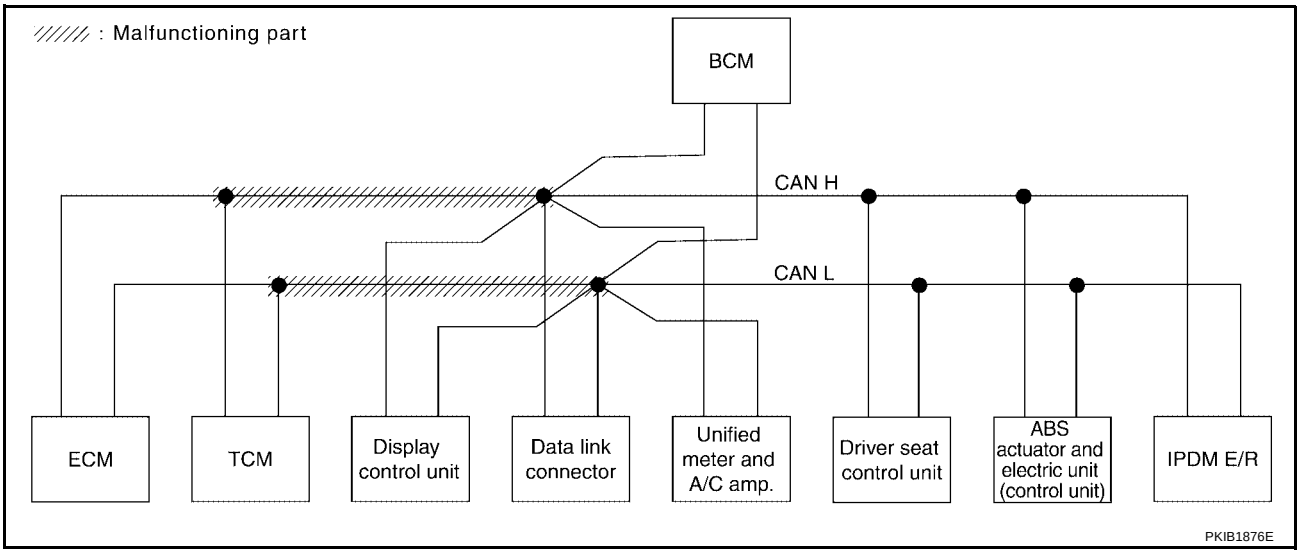
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-253, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2189E



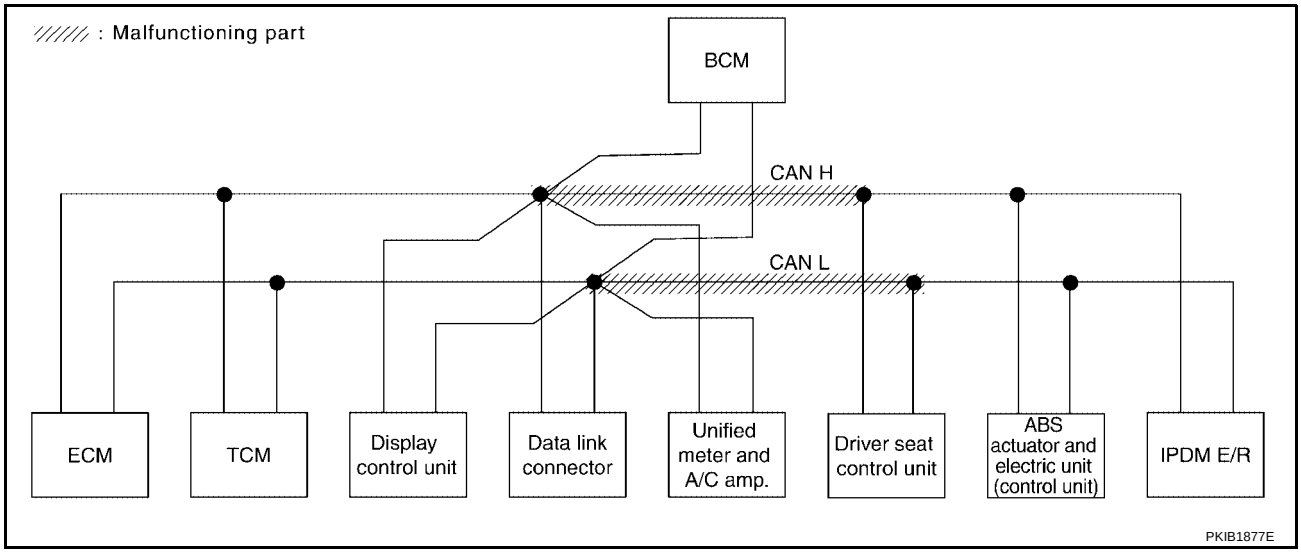
PKIB1876E

Case 2

Check harness between data link connector and driver seat control unit. Refer to LAN-253, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2190E



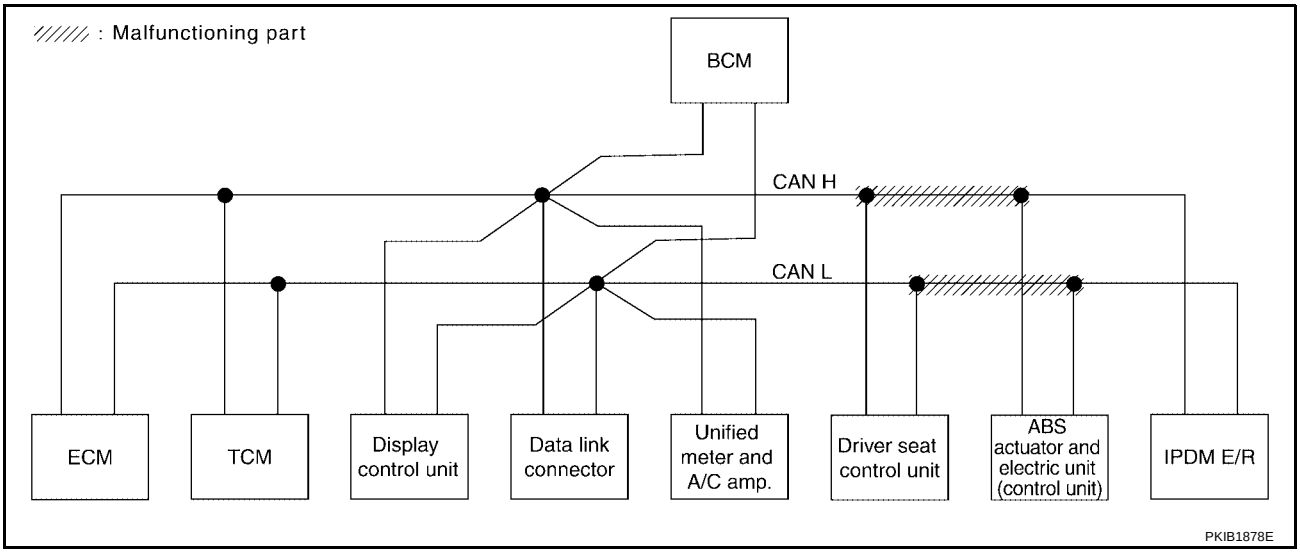
PKIB1877E

Case 3

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-254, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2192E



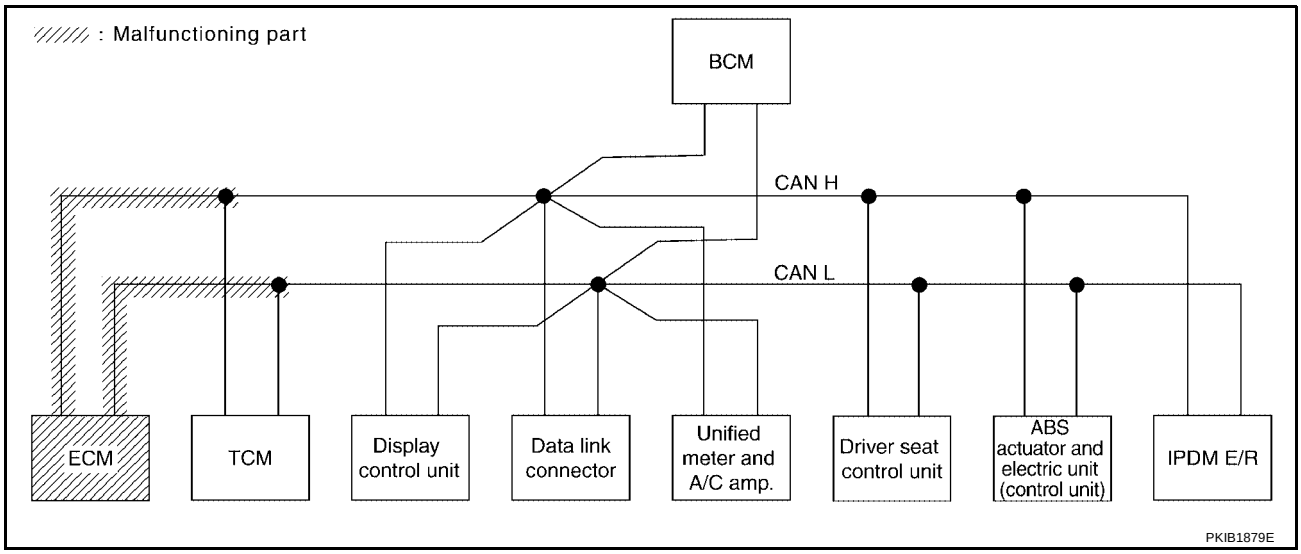
PKIB1878E

Case 4

Check ECM circuit. Refer to LAN-254, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2193E



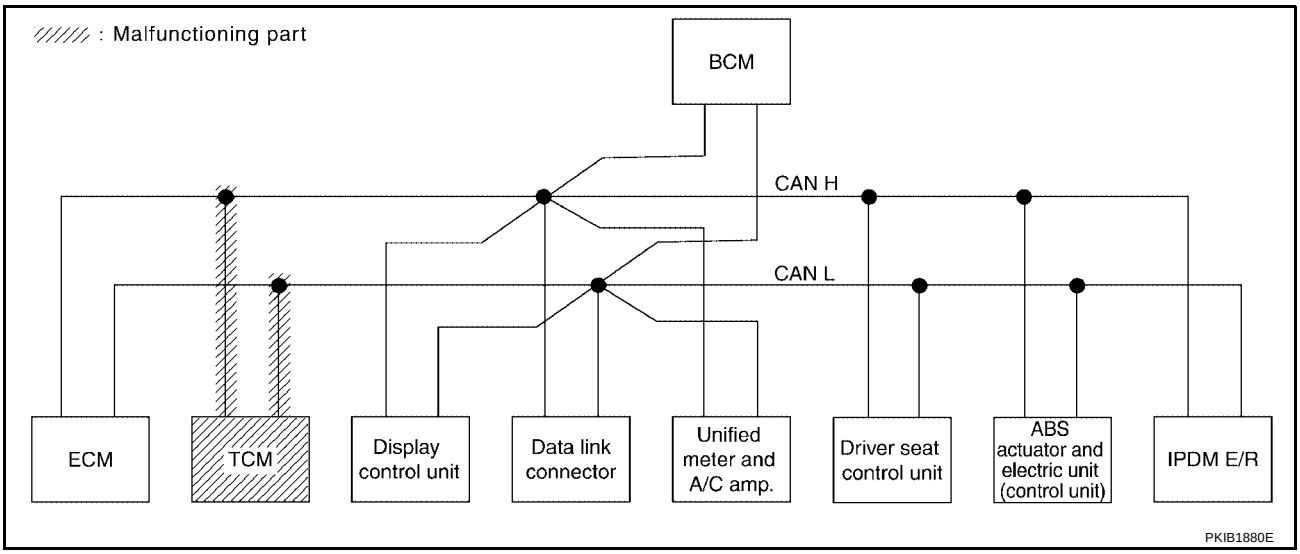
PKIB1879E

Case 5

Check TCM circuit. Refer to LAN-255, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2195E



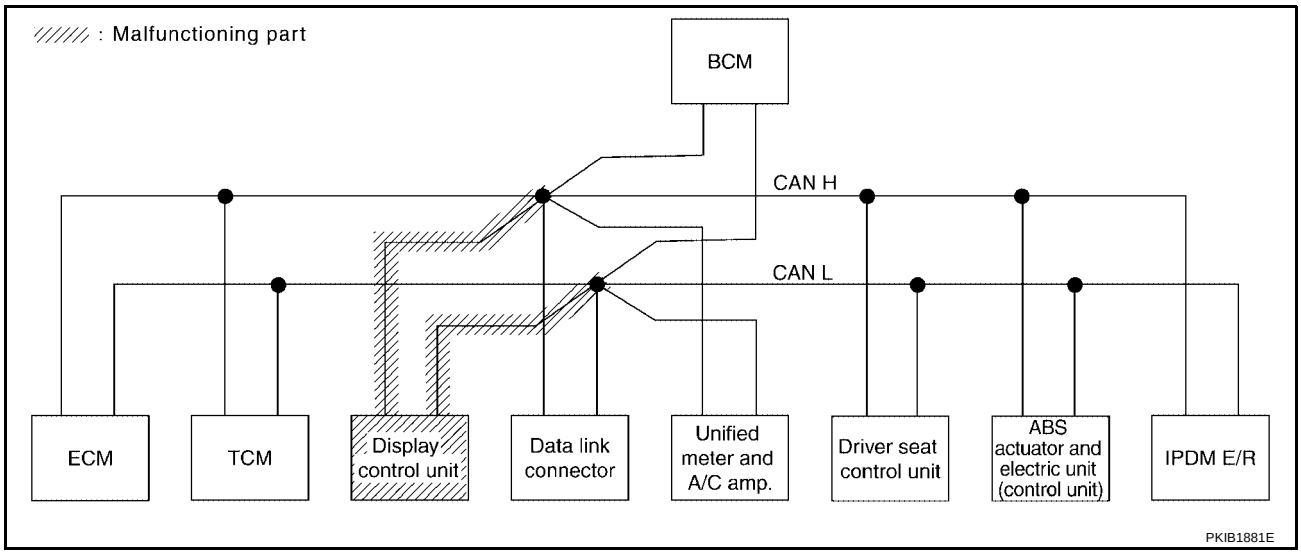
PKIB1880E

Case 6

Check display control unit circuit. Refer to LAN-255, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	-	-	CAN CIRC 5 ✓	CAN CIRC 2 ✓		CAN CIRC 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2196E



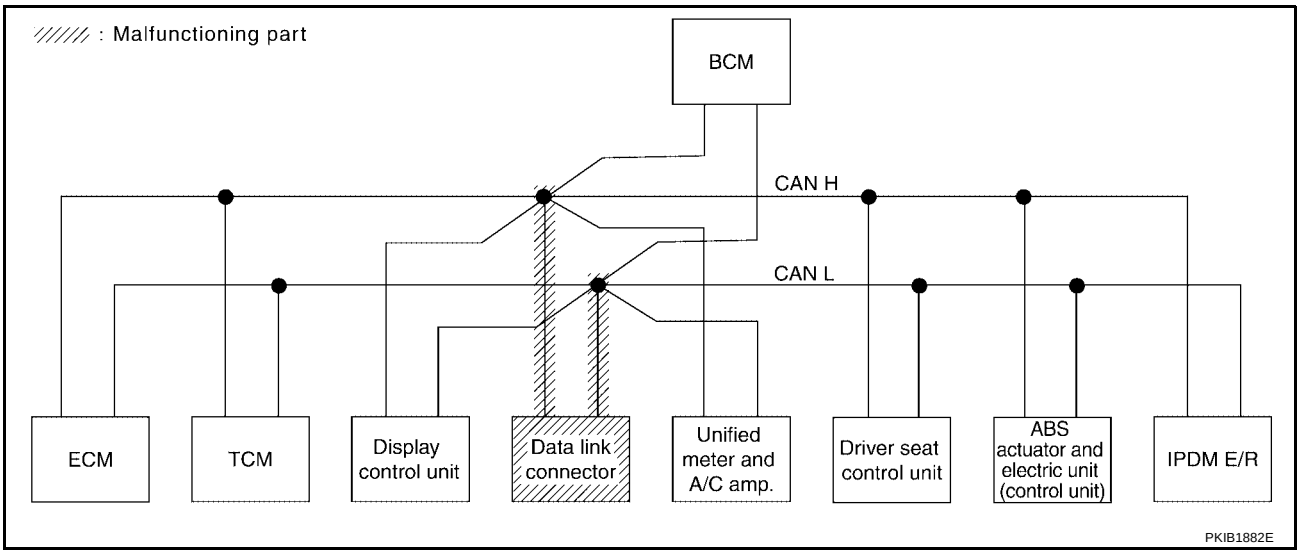
PKIB1881E

Case 7

Check data link connector circuit. Refer to LAN-256, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	Not indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit	✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	Not indication ✓		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Not indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	Not indication ✓	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	Not indication ✓		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2197E



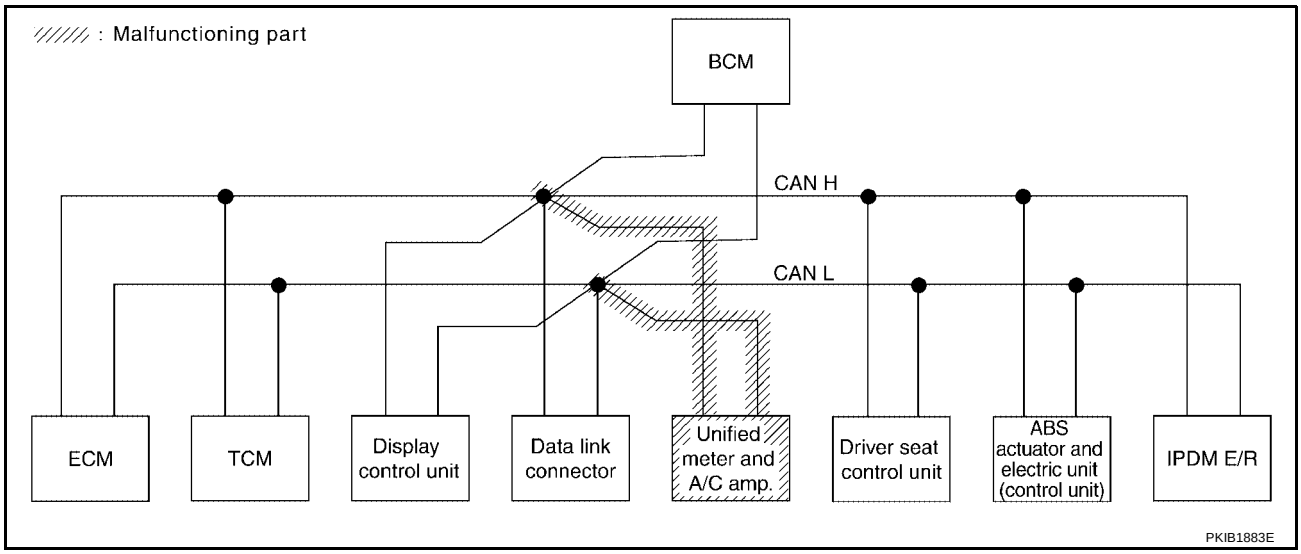
PKIB1882E

Case 8

Check unified meter and A/C amp. circuit. Refer to LAN-256, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2882E



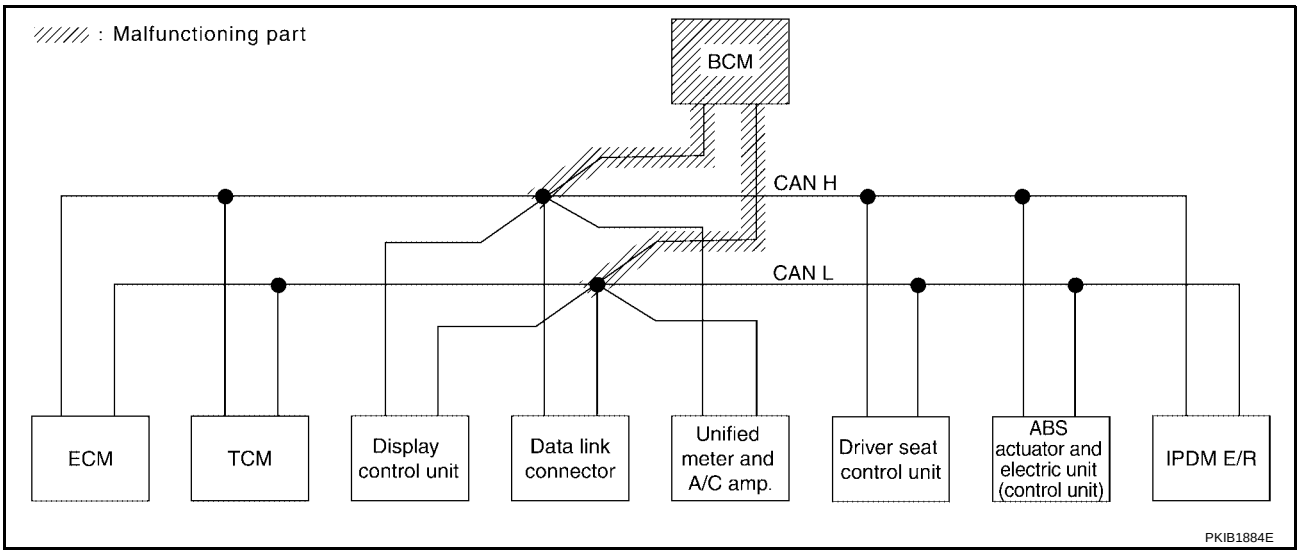
PKIB1883E

Case 9

Check BCM circuit. Refer to LAN-257, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2198E



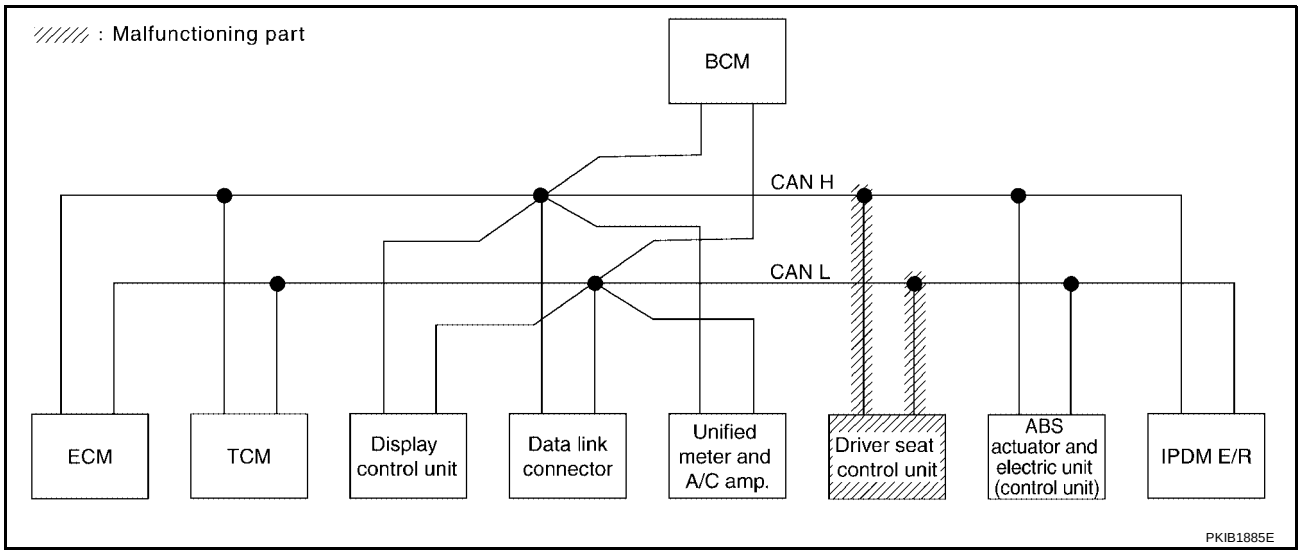
PKIB1884E

Case 10

Check driver seat control unit circuit. Refer to LAN-257, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2201E



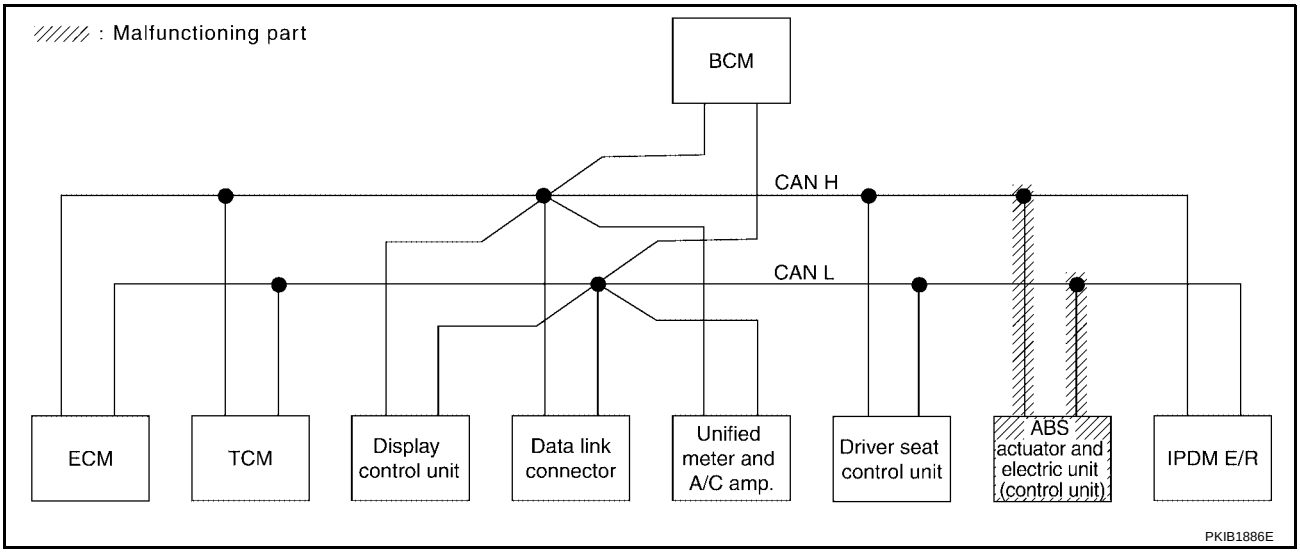
PKIB1885E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-258, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2202E



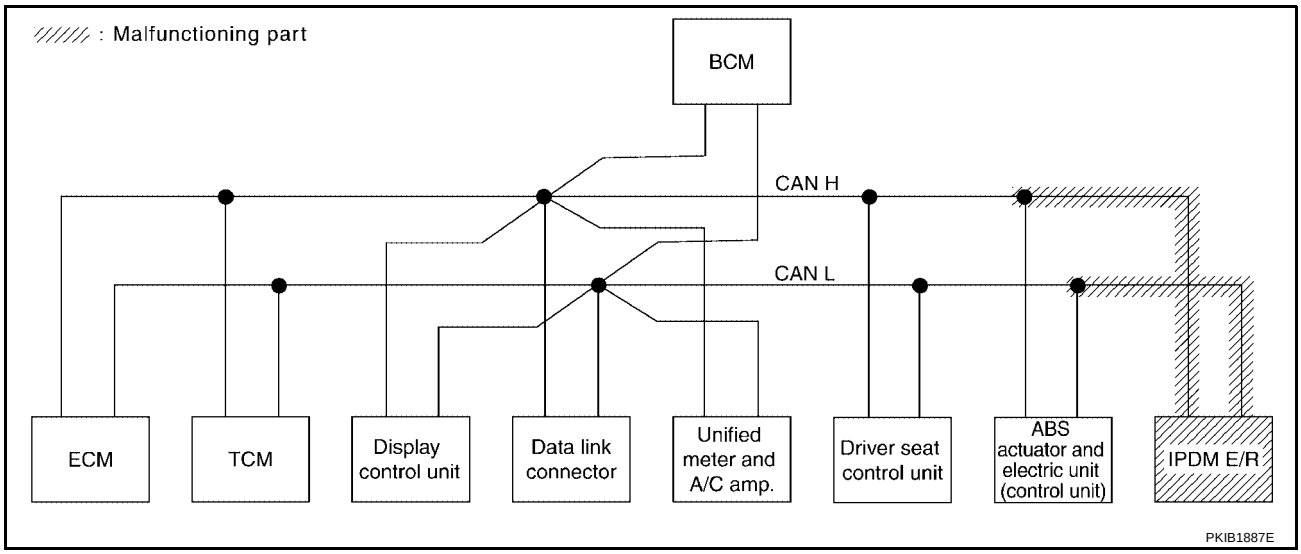
PKIB1886E

Case 12

Check IPDM E/R circuit. Refer to LAN-258, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2204E



PKIB1887E

Case 13

Check CAN communication circuit. Refer to LAN-259, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2205E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-259, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2208E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-259, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	-	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2206E

Circuit Check Between TCM and Data Link Connector

UKS002JL

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

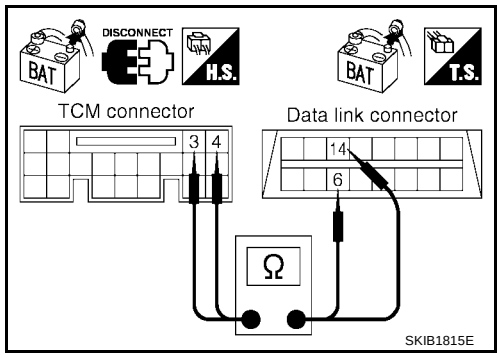
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-238, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS002JM

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

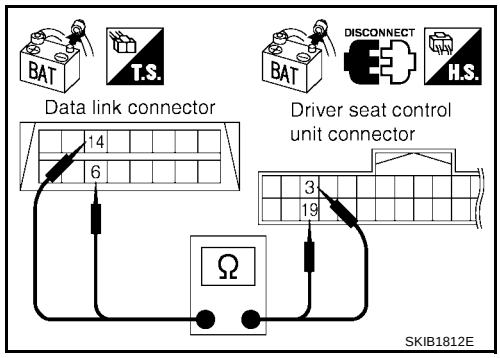
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-238, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS002JN

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

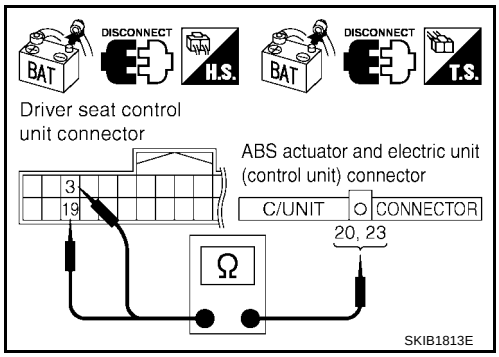
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-238, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS002JO

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

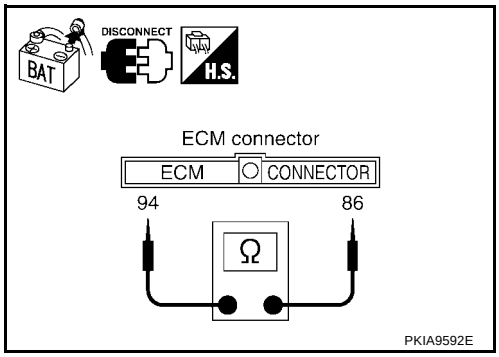
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.

TCM Circuit Check

UKS002JP

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

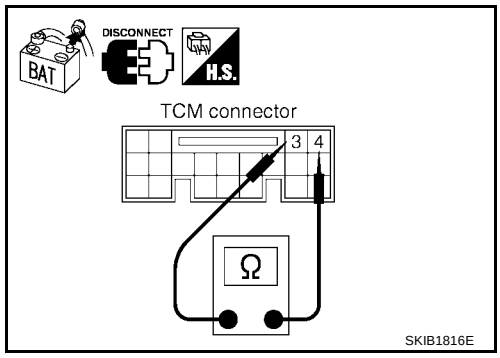
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.

Display Control Unit Circuit Check

UKS002JQ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

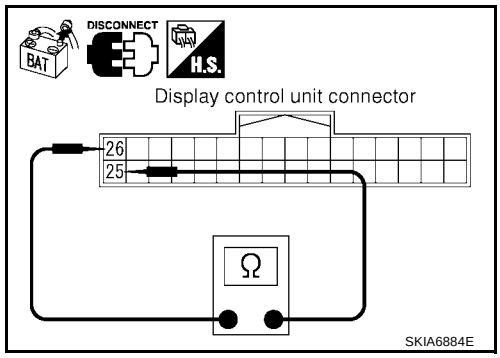
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.

Data Link Connector Circuit Check

UKS002JR

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

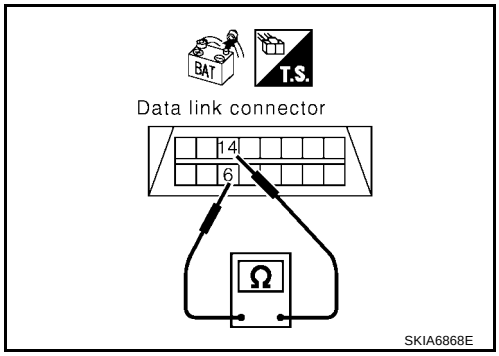
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-238, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002JT

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

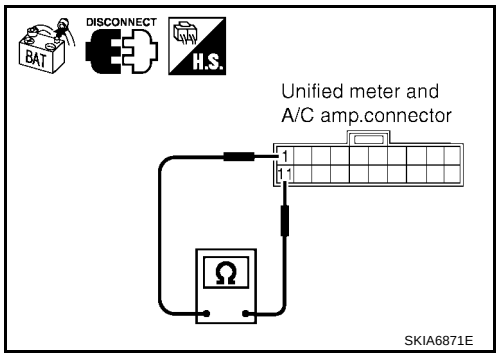
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002JS

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

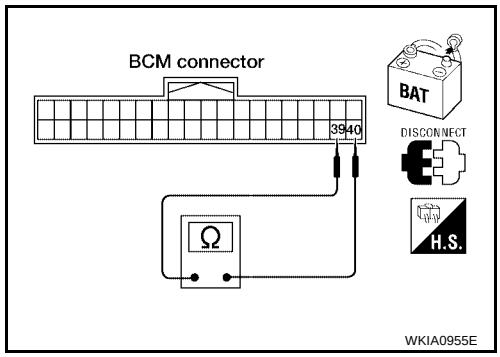
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS002JU

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

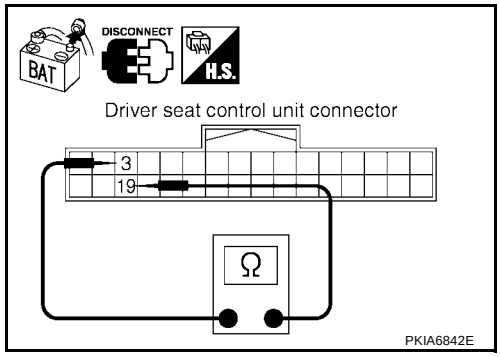
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002JV

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

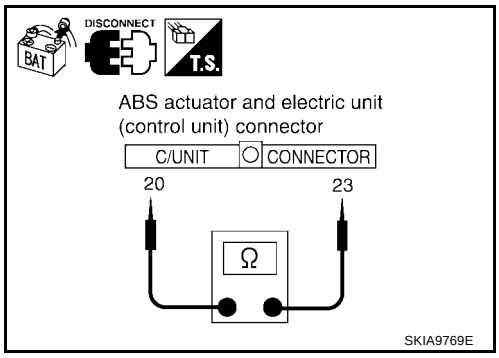
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002JW

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

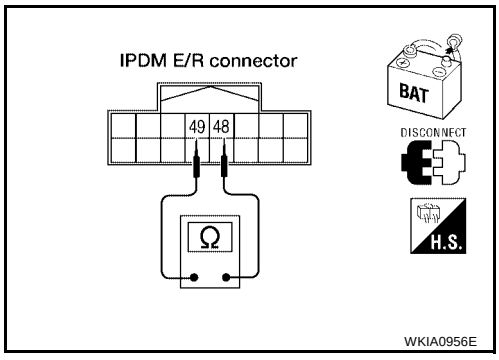
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002JX

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display control unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

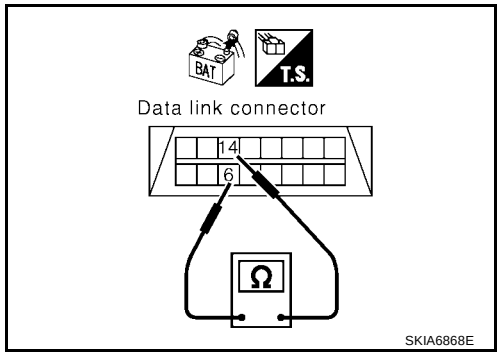
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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



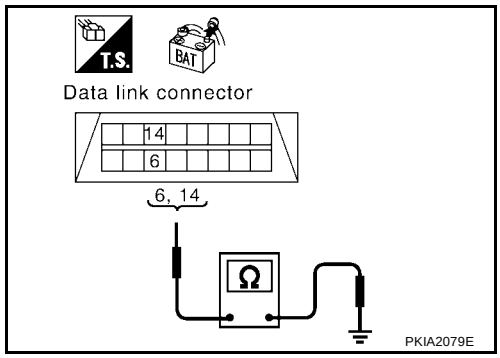
3. CHECK HARNESS FOR SHORT TO GROUND

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-260, "Component Inspection" .
NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

UKS002JY

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002JZ

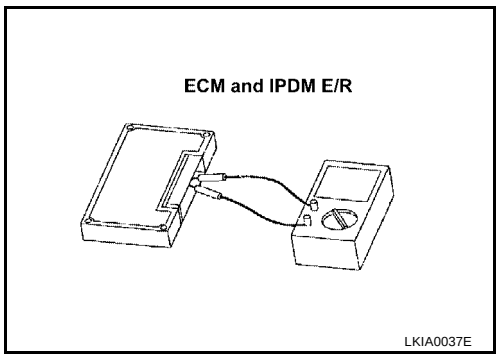
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 11)

PFP:23710

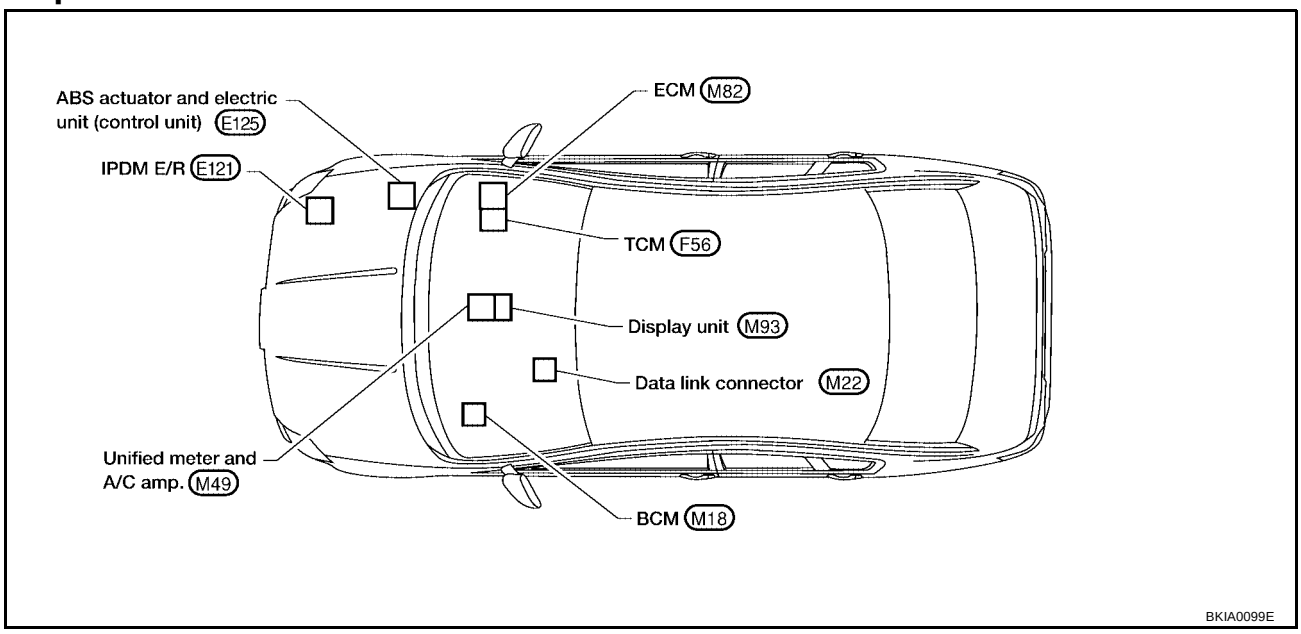
System Description

UKS002B0

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.

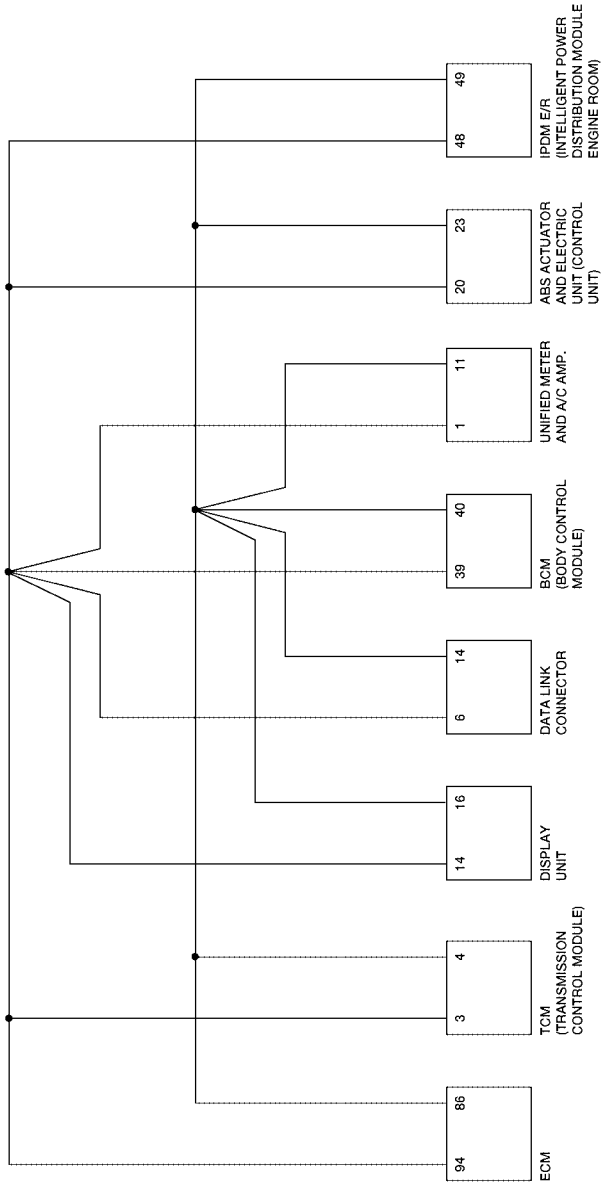
Component Parts and Harness Connector Location

UKS002B1



Schematic

UKS002B2



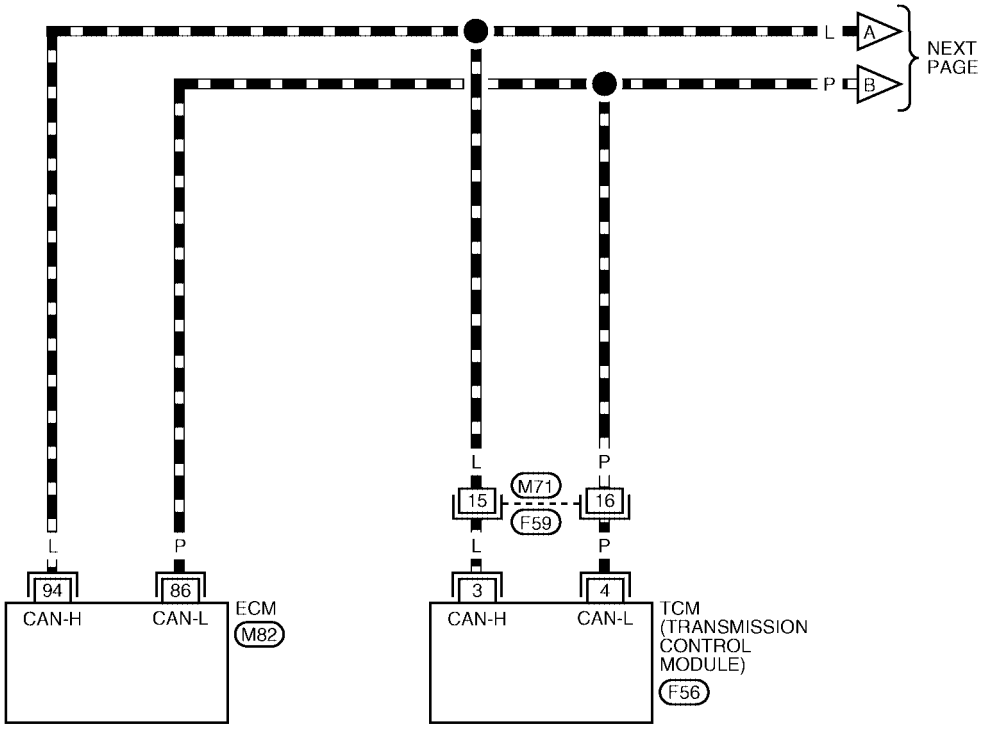
BKWA0302E

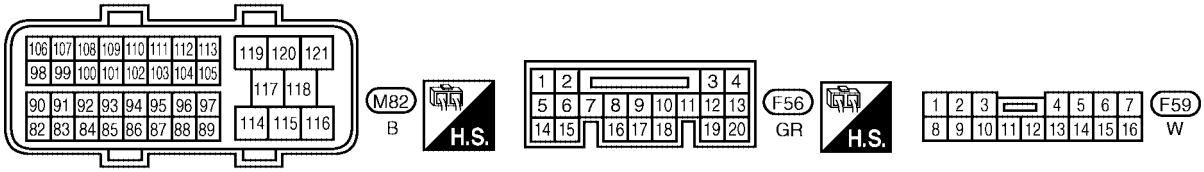
Wiring Diagram - CAN -

UKS002B3

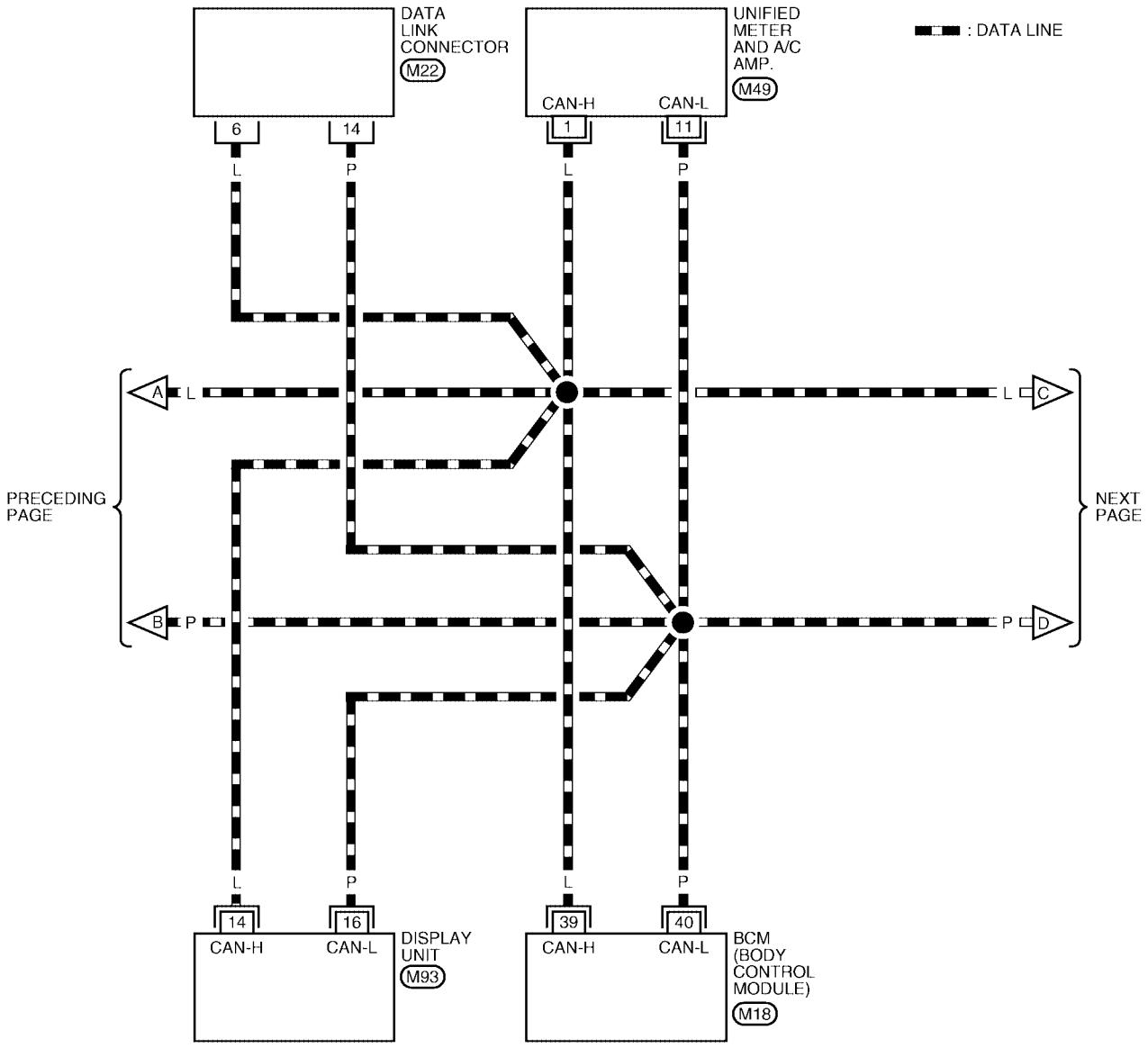
LAN-CAN-25

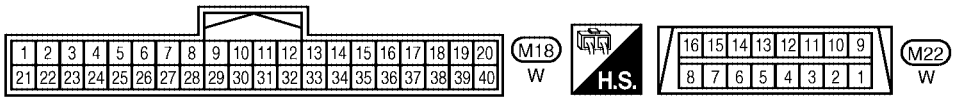
: DATA LINE

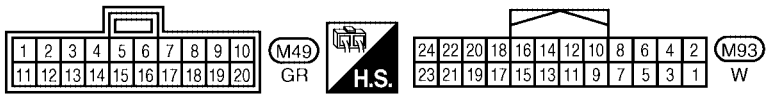




BKWA0303E

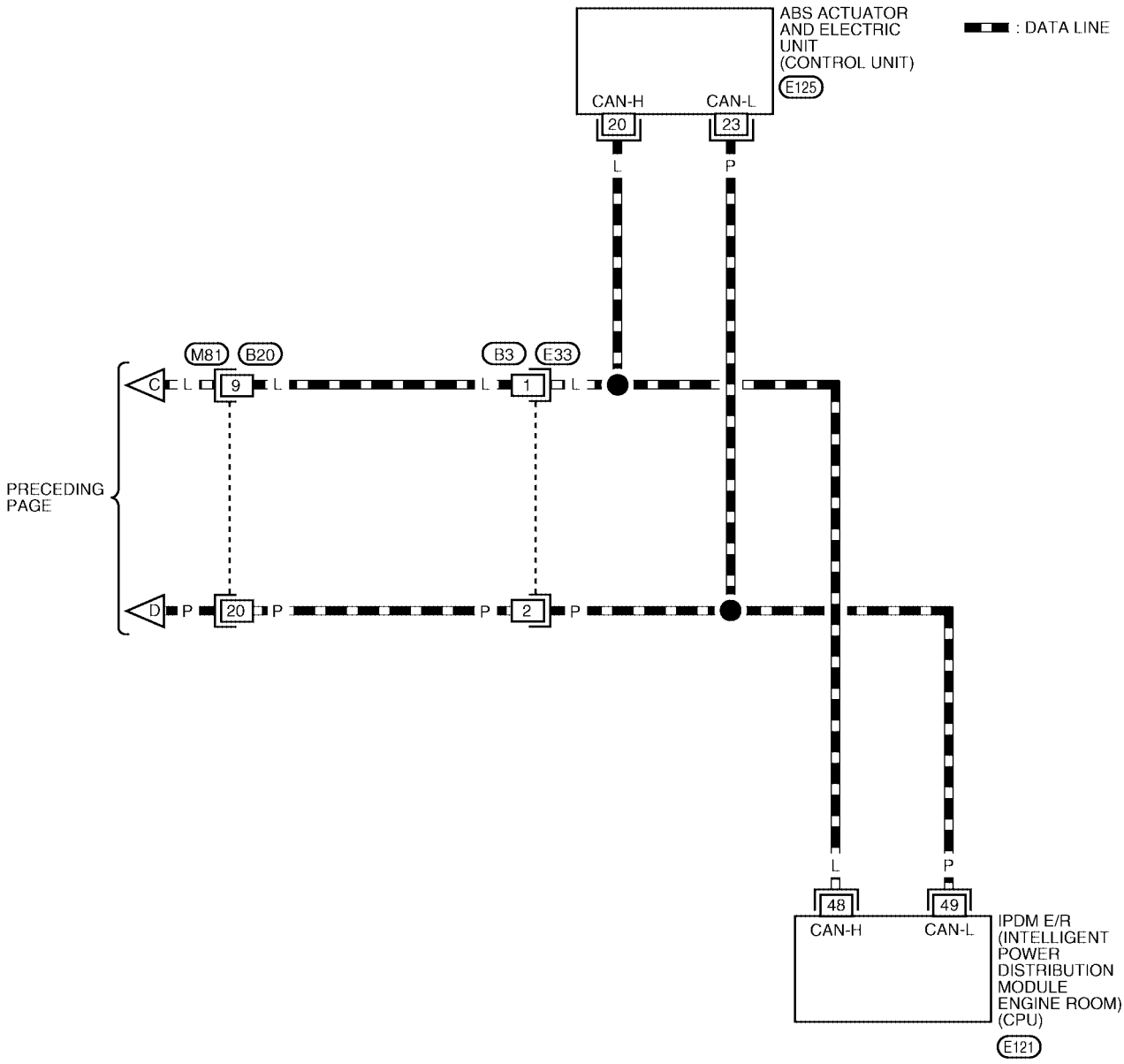

DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
A
B
C
D
PRECEDING PAGE
NEXT PAGE
14
16
39
40
DISPLAY UNIT
M93
BCM (BODY CONTROL MODULE)
M18

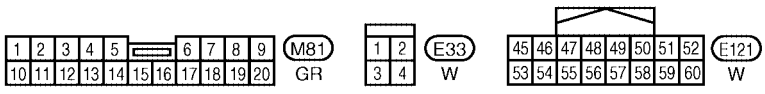

M18
W
H.S.
M22
W


M49
GR
H.S.
M93
W

BKWA0304E

LAN-CAN-27





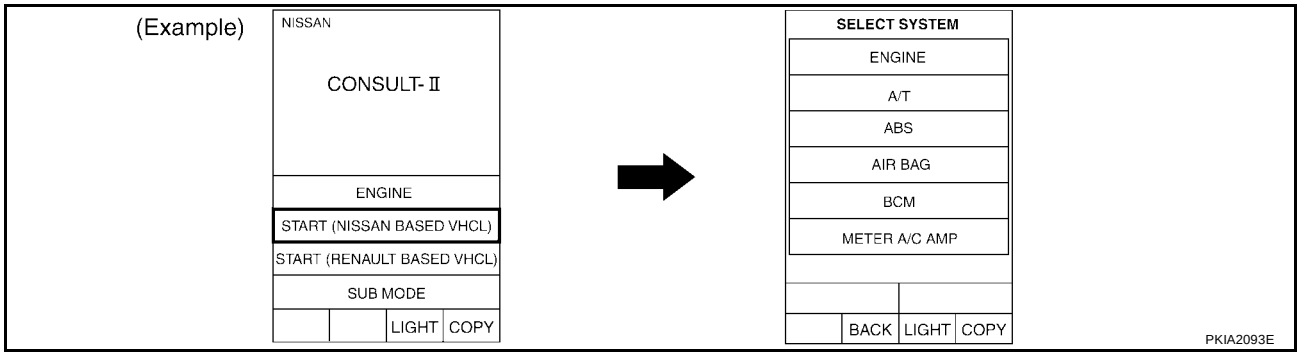
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0305E

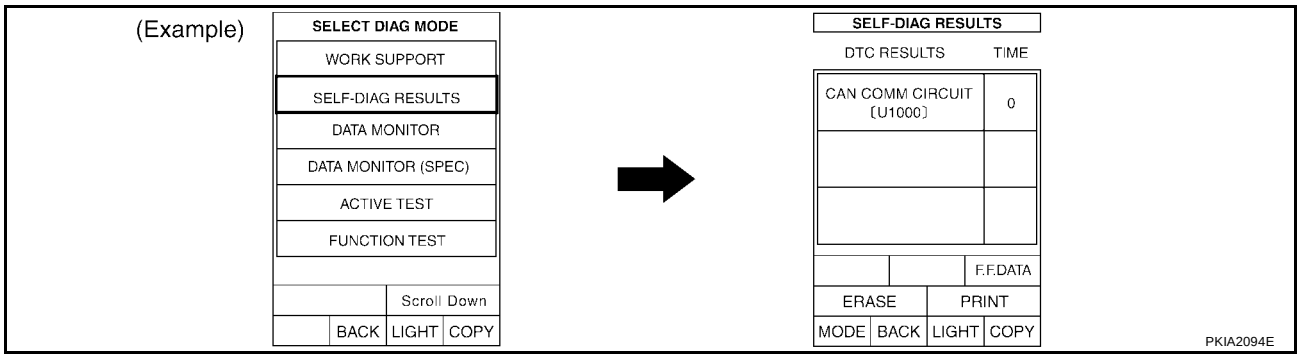
Work Flow

UKS002J4

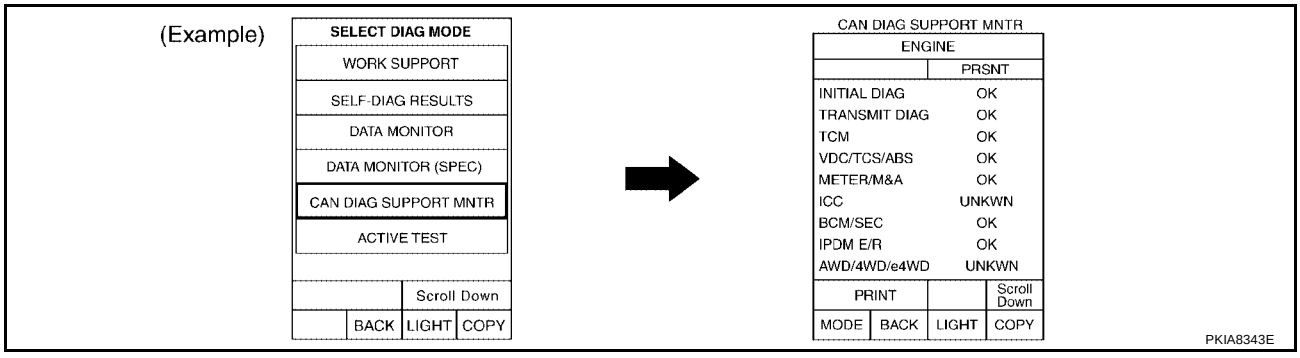
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

BKIA0067E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

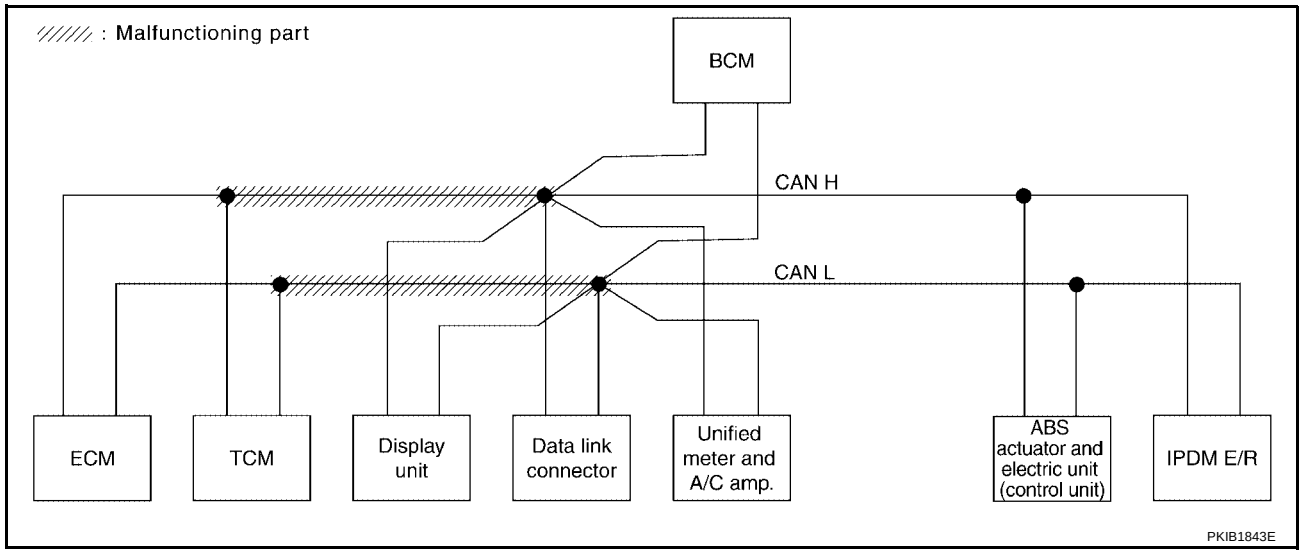
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-279, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2308E



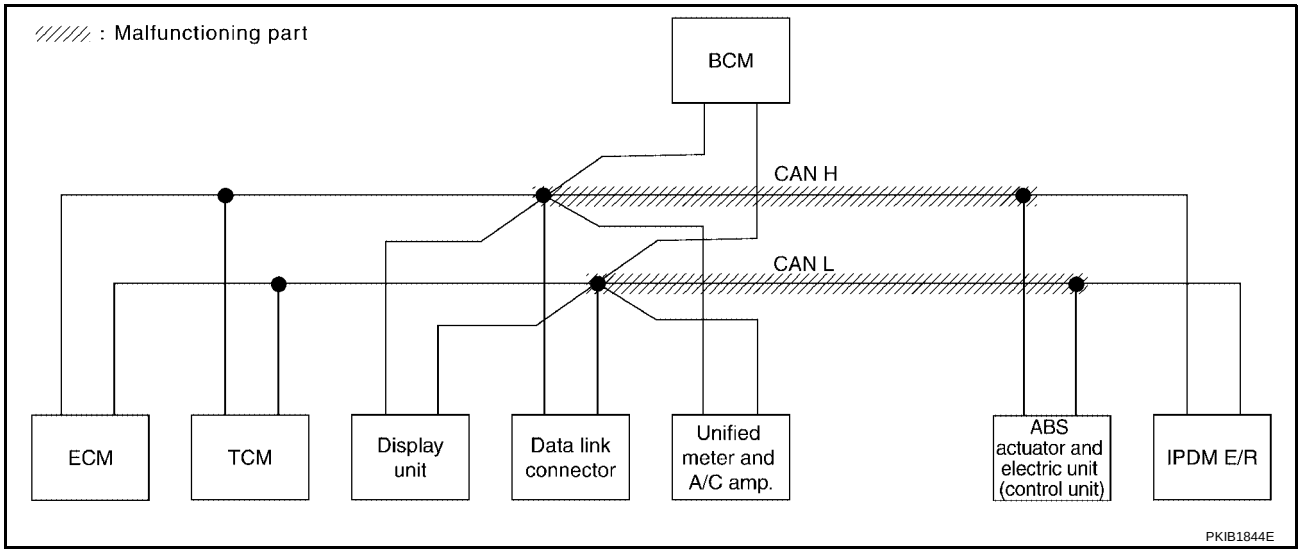
PKIB1843E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-279, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2309E



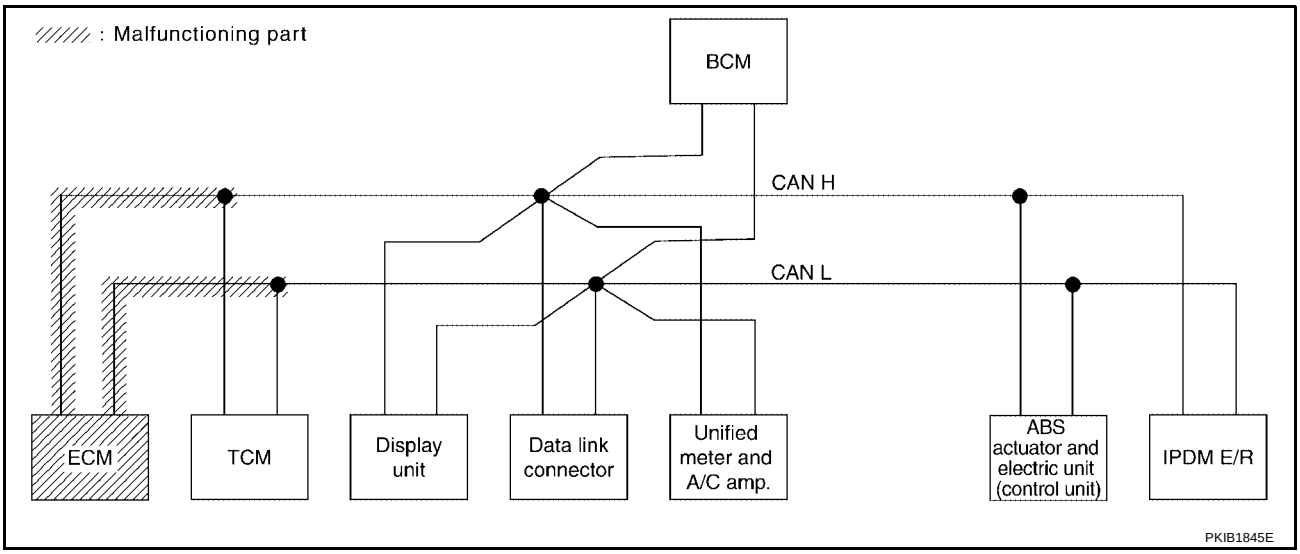
PKIB1844E

Case 3

Check ECM circuit. Refer to LAN-280, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2310E



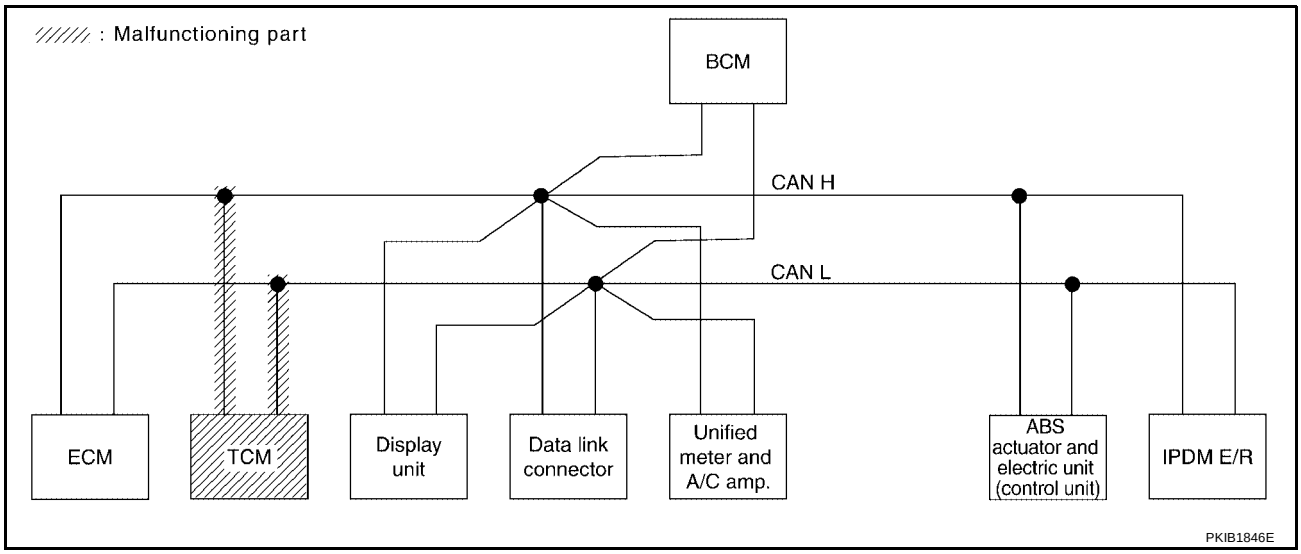
PKIB1845E

Case 4

Check TCM circuit. Refer to LAN-280, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2311E



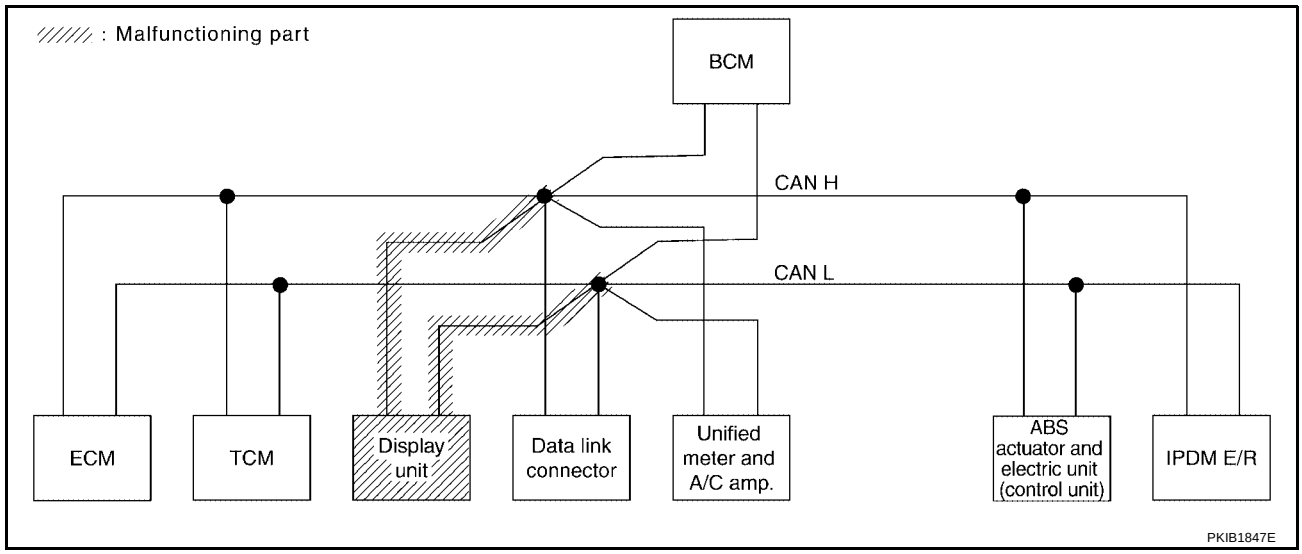
PKIB1846E

Case 5

Check display unit circuit. Refer to LAN-281, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	✓ CAN 1	✓ CAN 3	-	-	✓ CAN 5	✓ CAN 7		✓ CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	✓ UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2312E

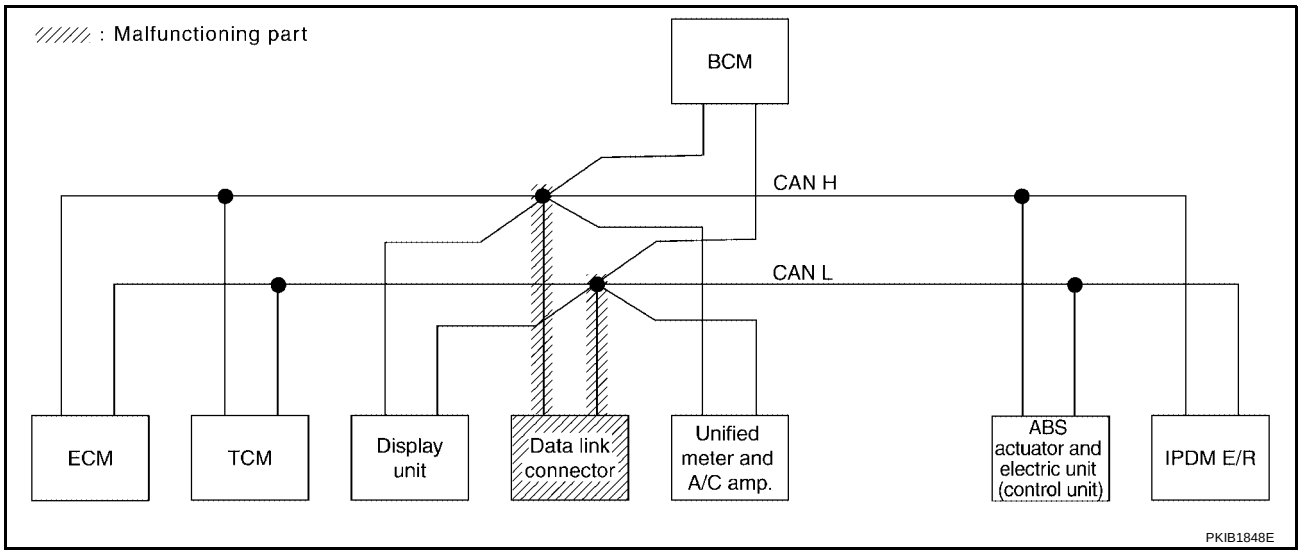


Case 6

Check data link connector circuit. Refer to LAN-281, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	Non-application	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	Non-application		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	Non-application	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	Non-application	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2313E



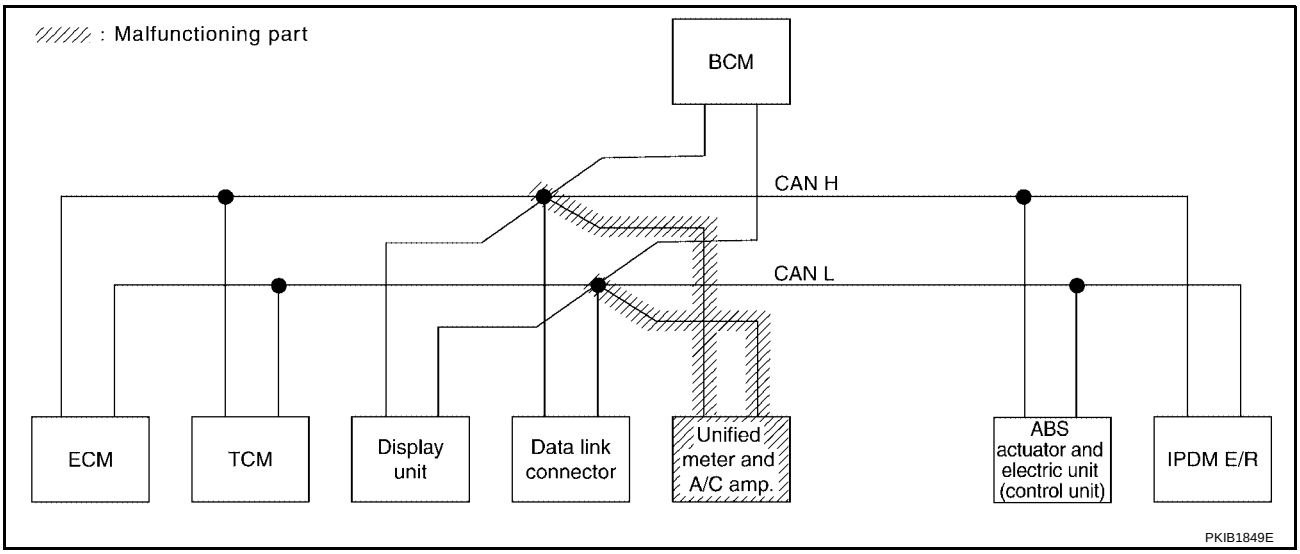
PKIB1848E

Case 7

Check unified meter and A/C amp. circuit. Refer to LAN-282, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2316E



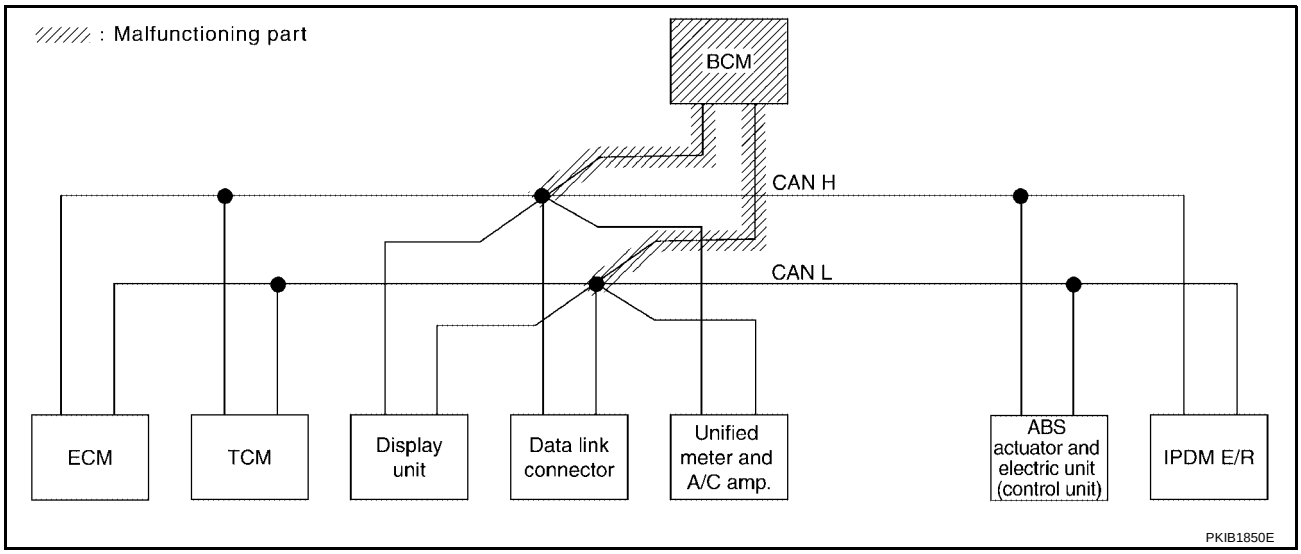
PKIB1849E

Case 8

Check BCM circuit. Refer to LAN-282, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	✓	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	✓		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	✓	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	✓	-	-

WKIA2315E



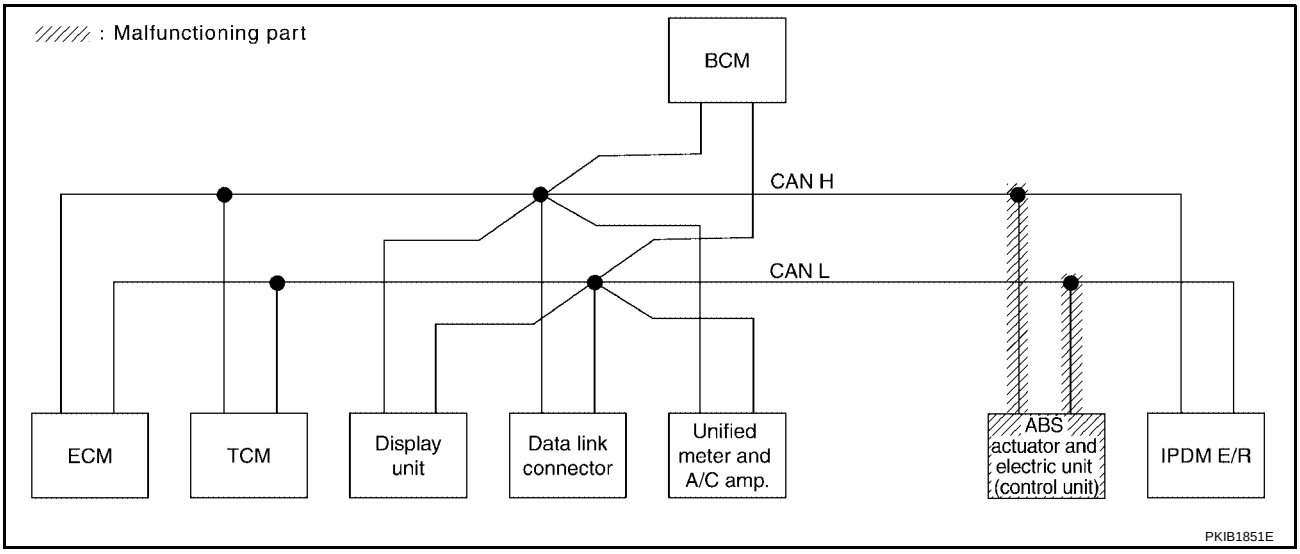
PKIB1850E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-283, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN ✓	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN ✓	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2317E



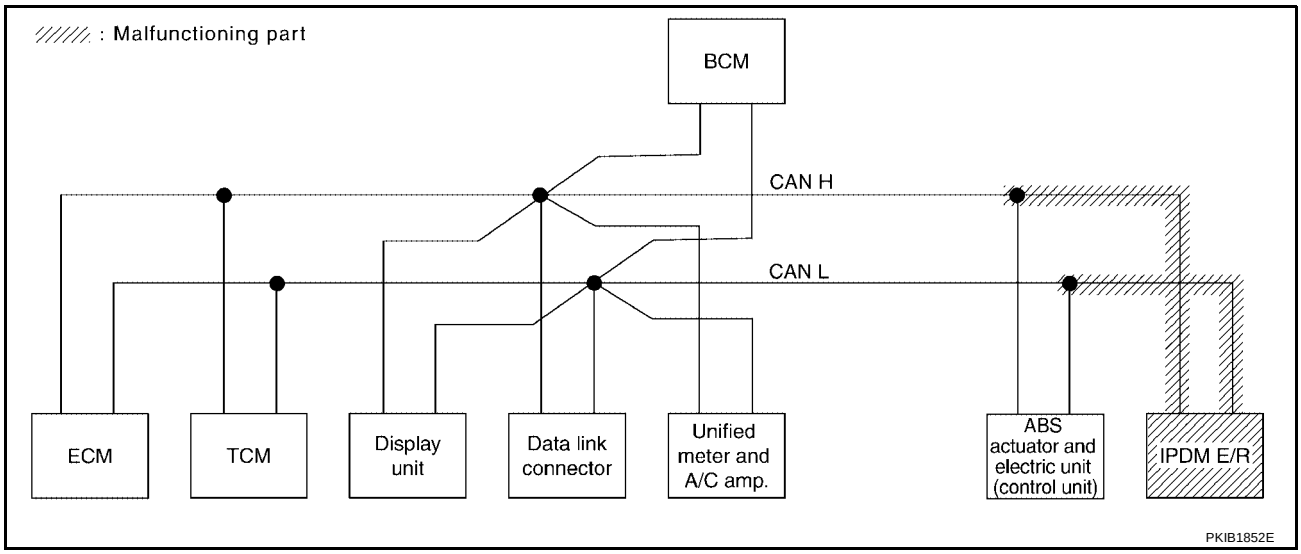
PKIB1851E

Case 10

Check IPDM E/R circuit. Refer to LAN-283, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2318E



PKIB1852E

Case 11

Check CAN communication circuit. Refer to LAN-284, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2319E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-284, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2321E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-284, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2320E

Circuit Check Between TCM and Data Link Connector

UKS002J6

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

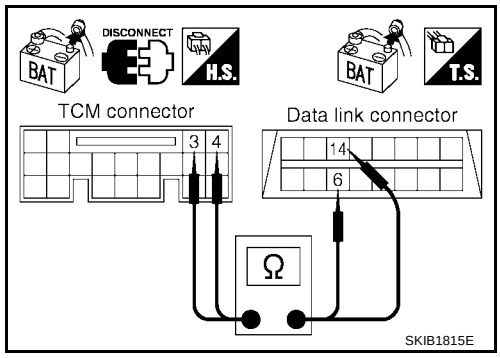
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-266, "Work Flow" .
NG >> Repair harness.



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

UKS002J7

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

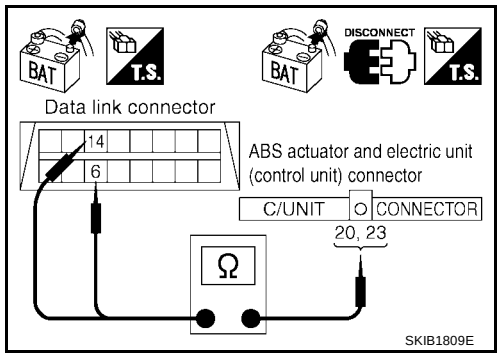
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

6 (L) - 20 (L) : Continuity should exist.
14 (P) - 23 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-266, "Work Flow" .
NG >> Repair harness.



ECM Circuit Check

UKS002J8

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

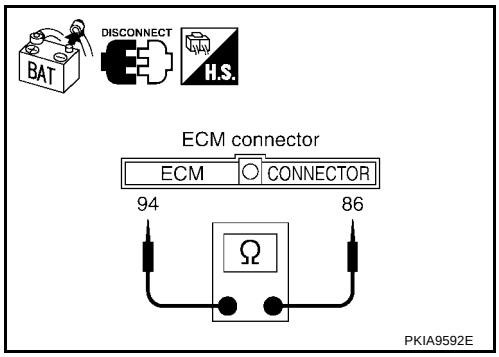
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.



TCM Circuit Check

UKS002J9

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

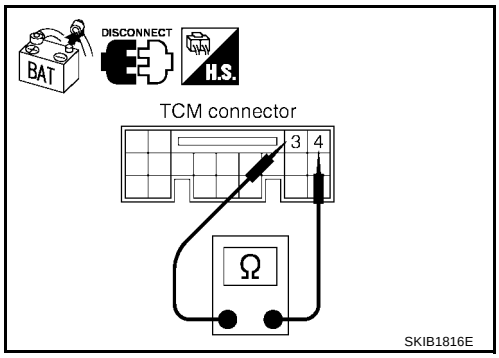
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.



Display Unit Circuit Check

UKS002JA

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

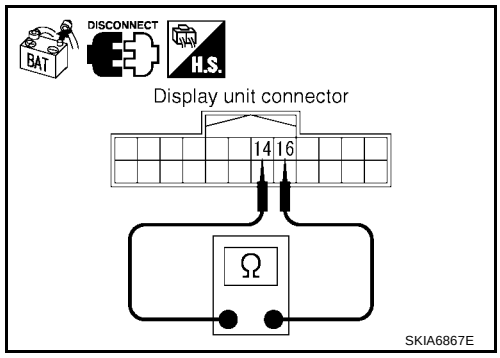
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.



Data Link Connector Circuit Check

UKS002JB

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

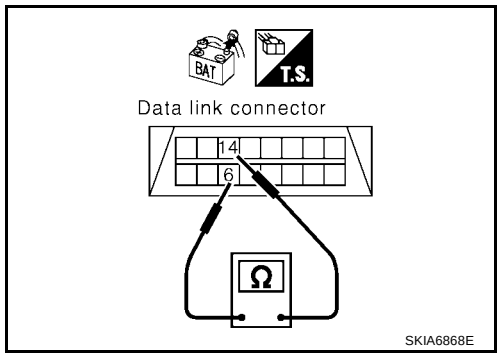
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-266, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002JD

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

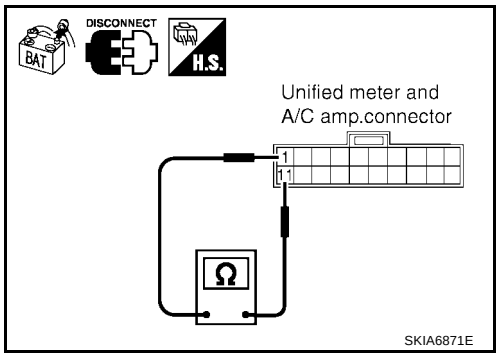
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002JC

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

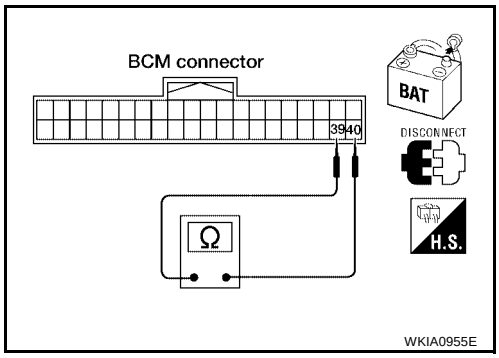
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002JE

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

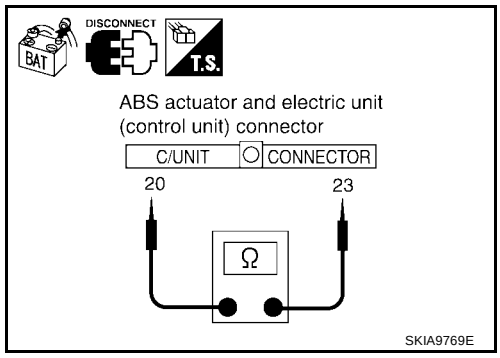
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002JF

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

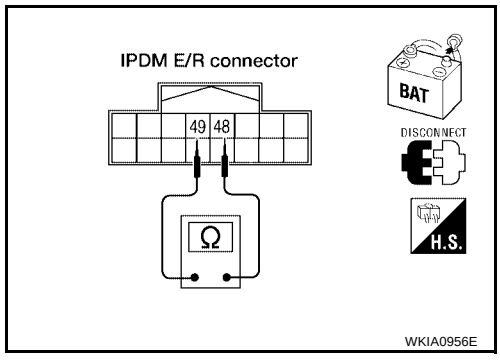
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002JG

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

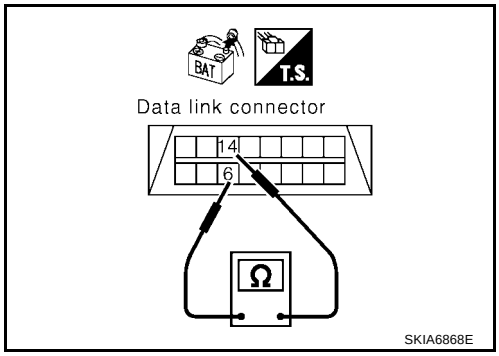
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



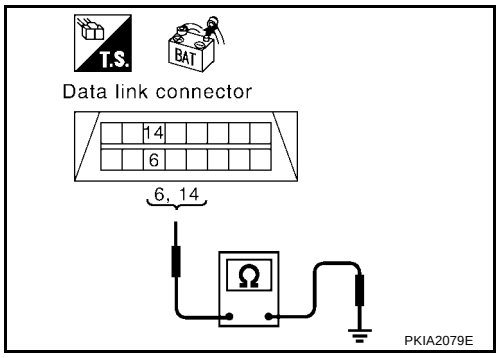
OK or NG

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

3. CHECK HARNESS FOR SHORT TO GROUND

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-285, "Component Inspection" .
NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002JH

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002JI

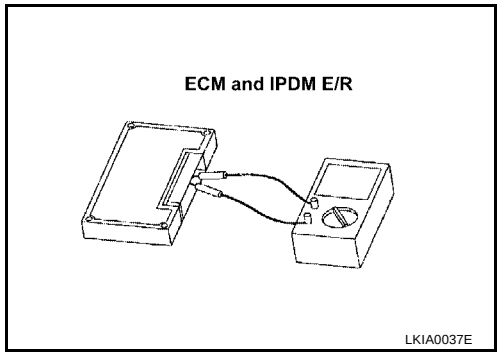
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 12)

PFP:23710

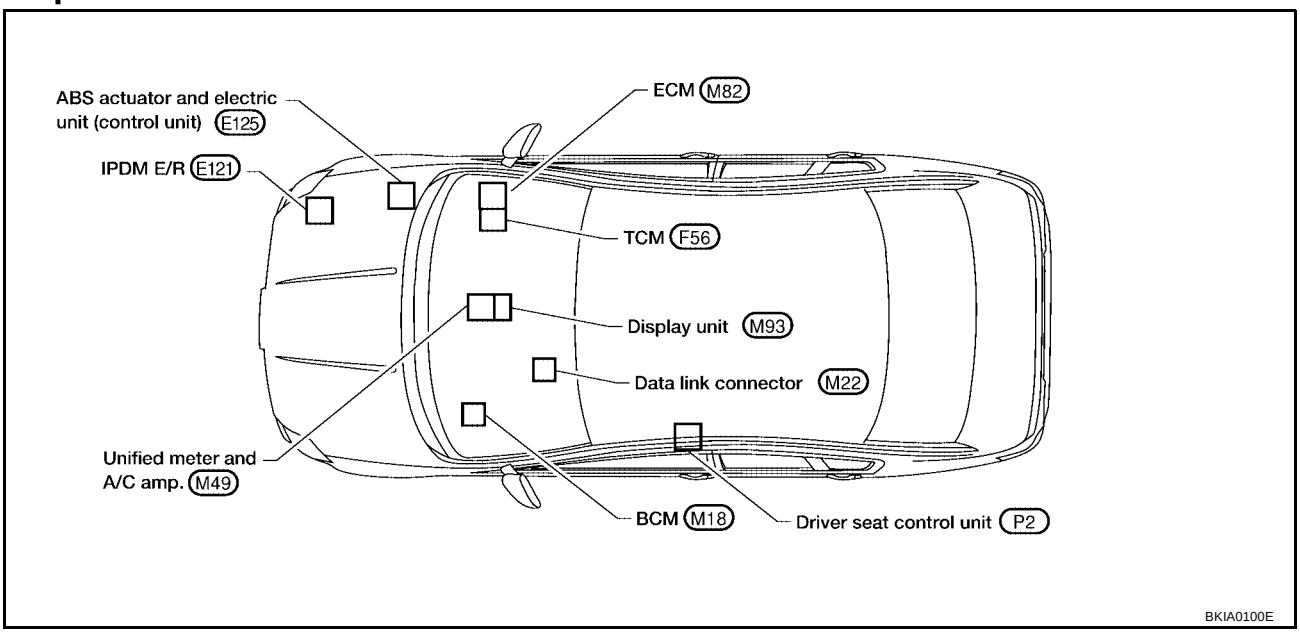
System Description

UKS002BK

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.

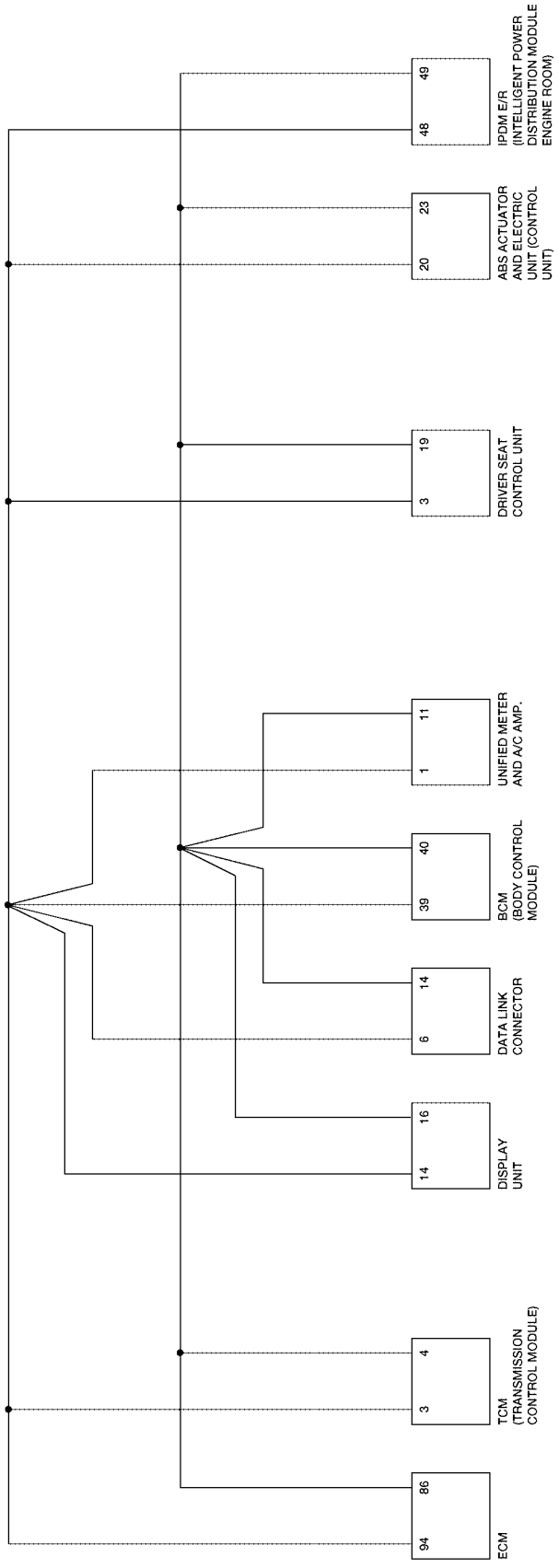
Component Parts and Harness Connector Location

UKS002BL



Schematic

UKS002BM

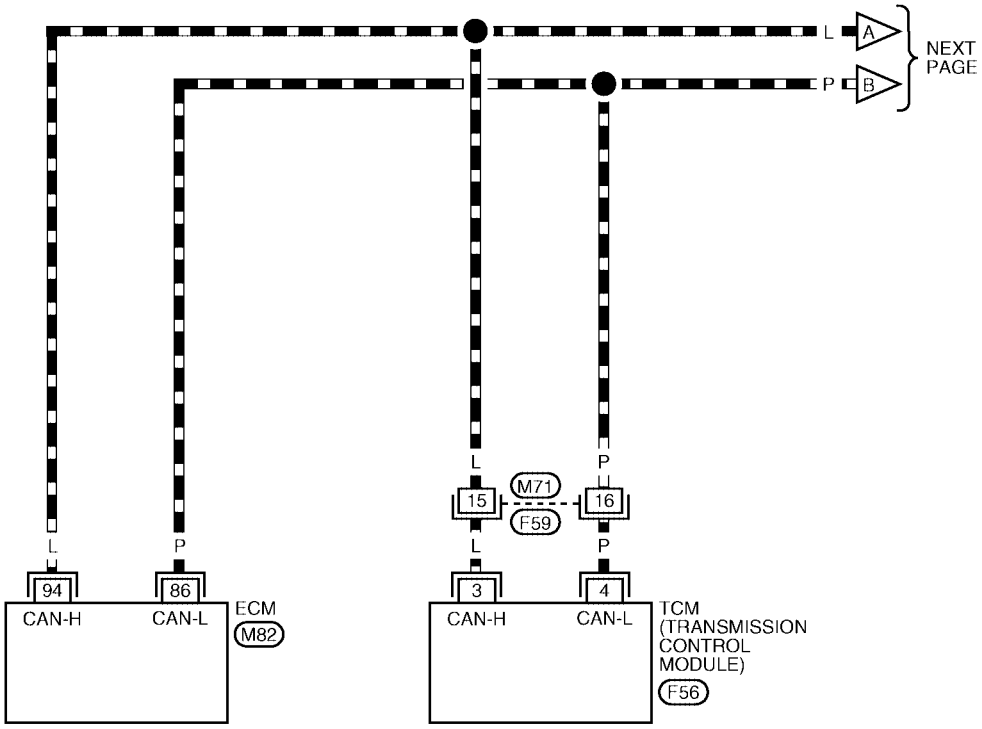


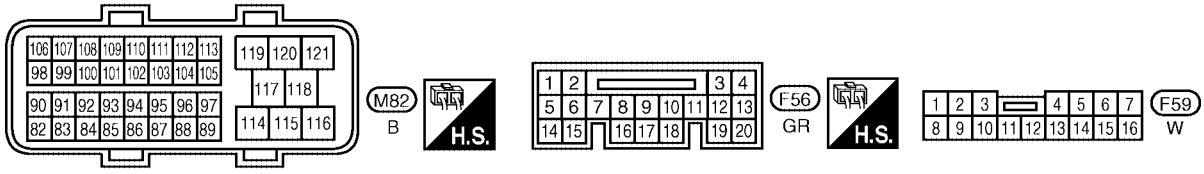
BKWA0290E

Wiring Diagram - CAN -

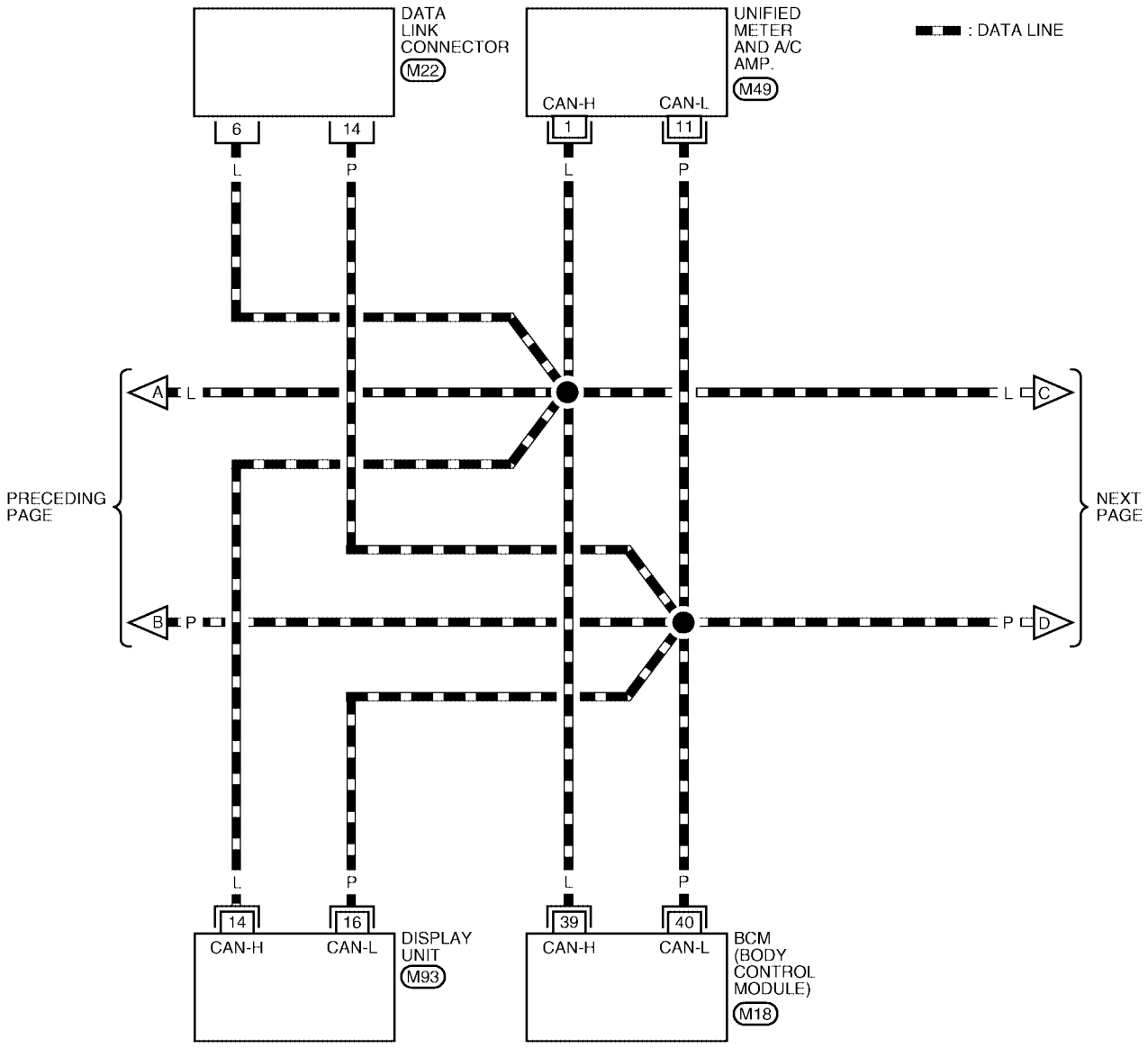
UKS002BN

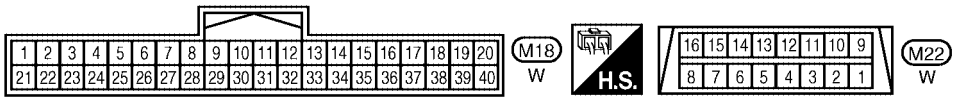
LAN-CAN-28

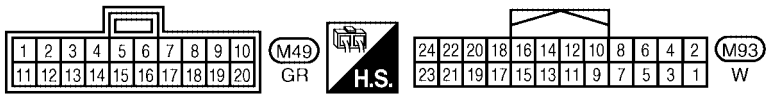




BKWA0306E

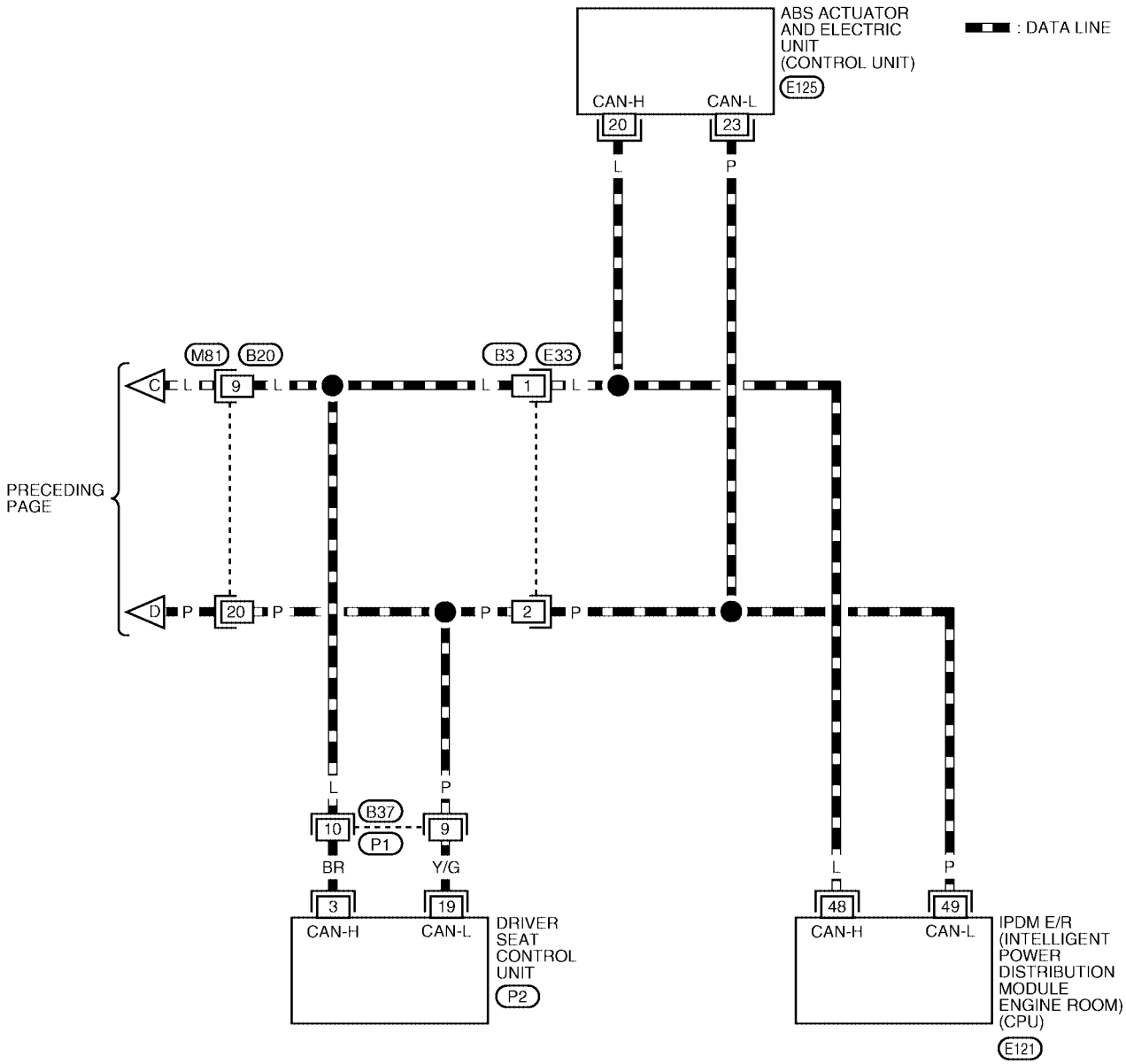

DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
DISPLAY UNIT
M93
BCM (BODY CONTROL MODULE)
M18
14
16
39
40

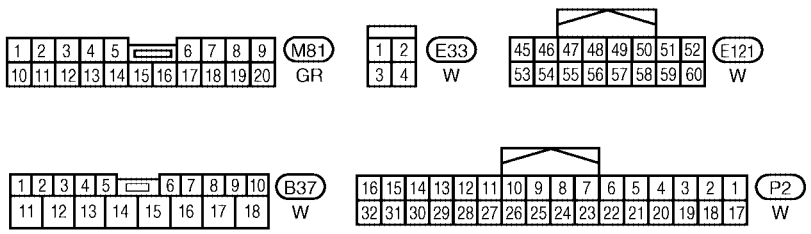

M18
W
H.S.
M22
W


M49
GR
H.S.
M93
W

BKWA0307E

LAN-CAN-30





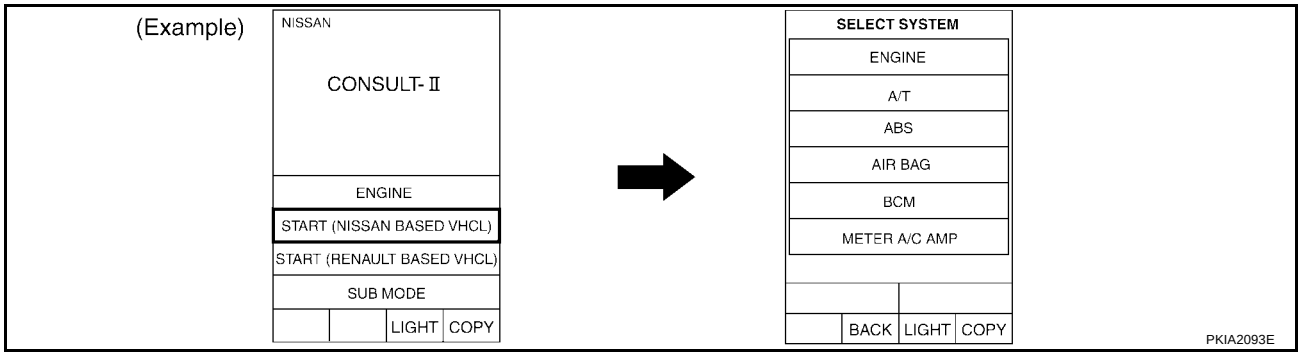
REFER TO THE FOLLOWING.
E125 - ELECTRICAL UNITS

BKWA0308E

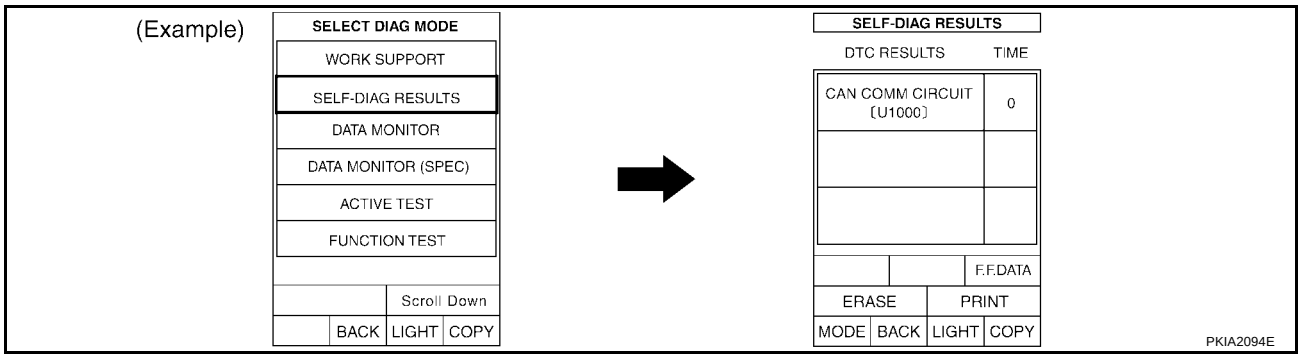
Work Flow

UKS002IN

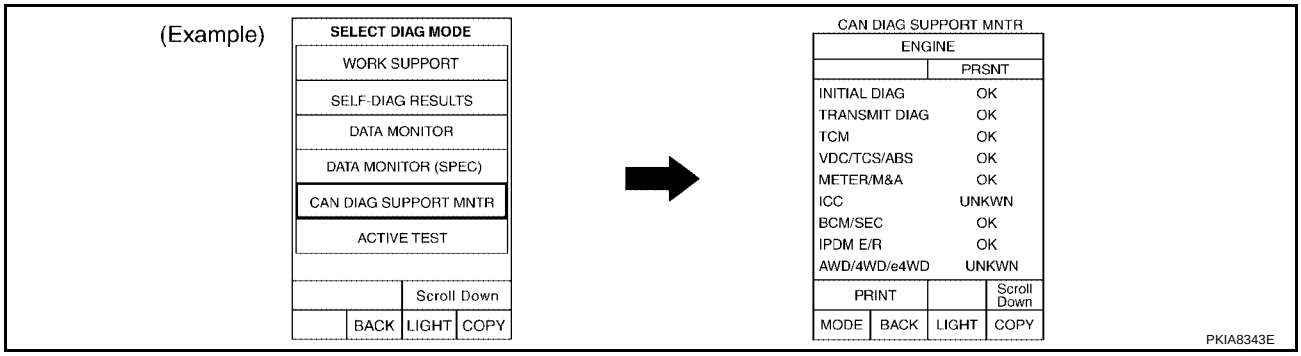
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



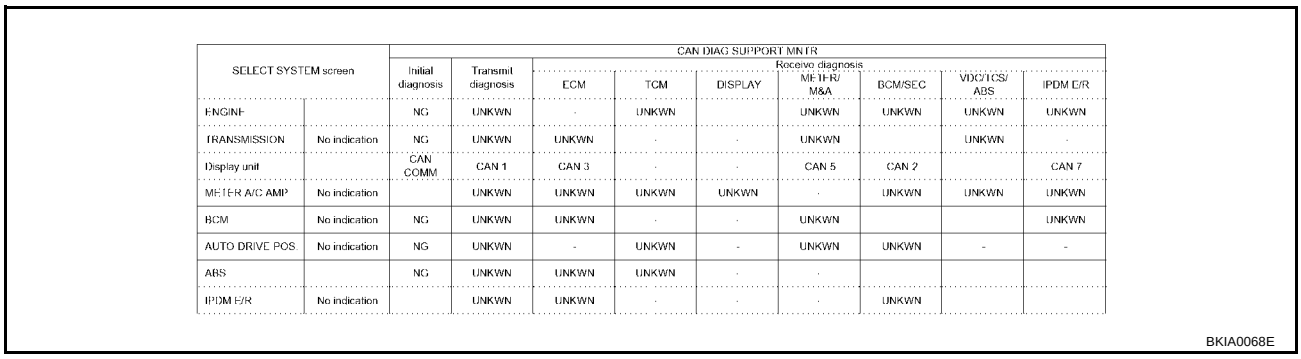
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

BKIA0068E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

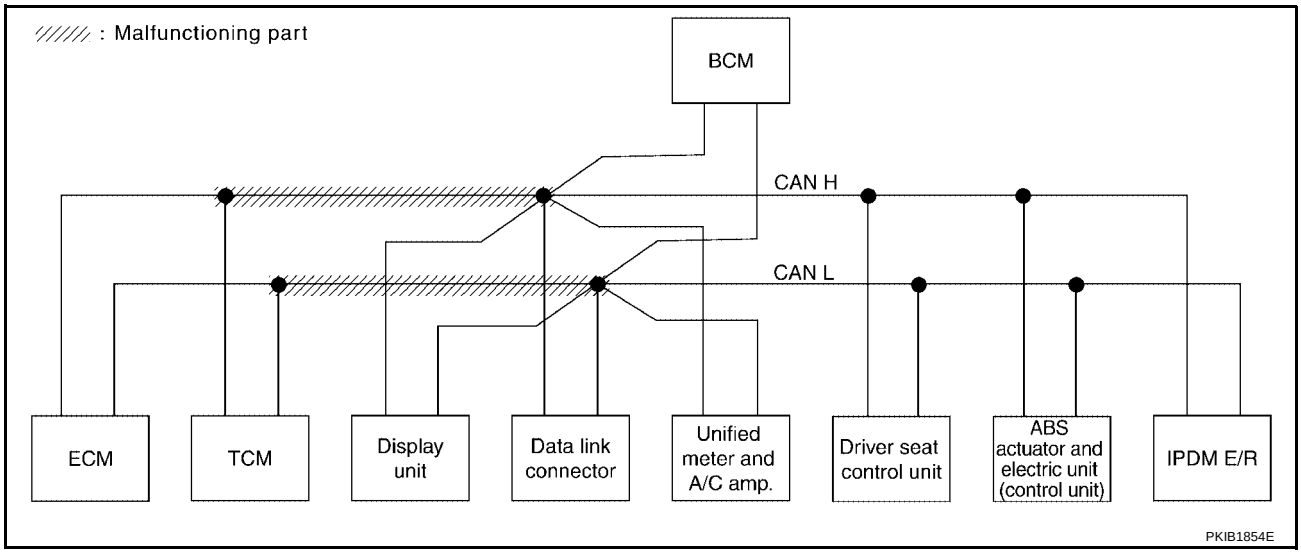
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-306, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2340E



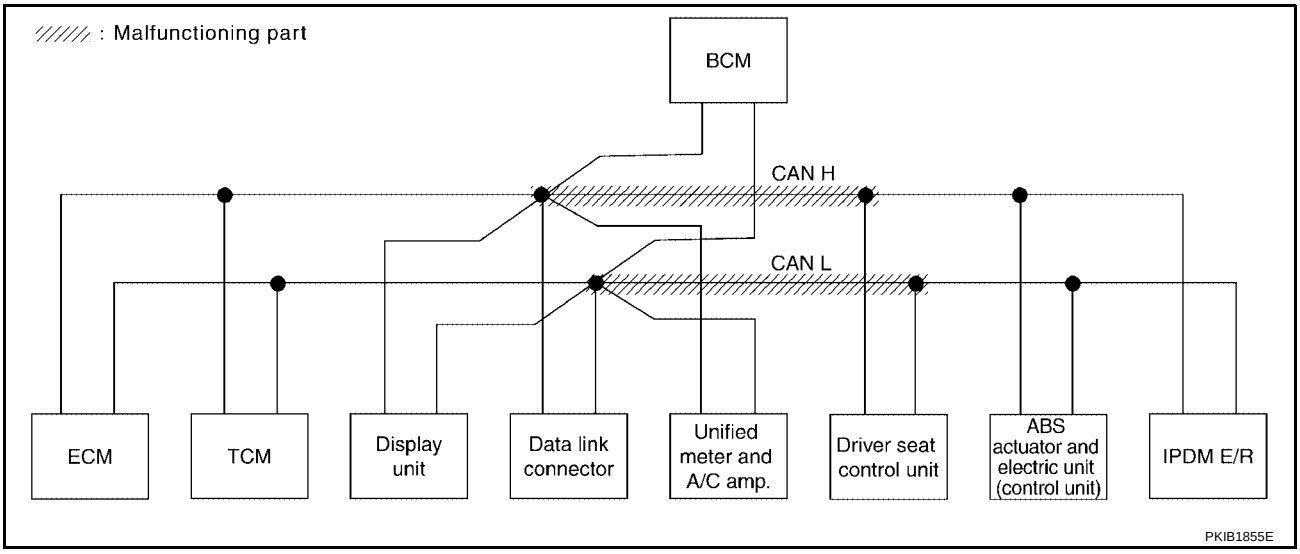
PKIB1854E

Case 2

Check harness between data link connector and driver seat control unit. Refer to LAN-306, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2341E



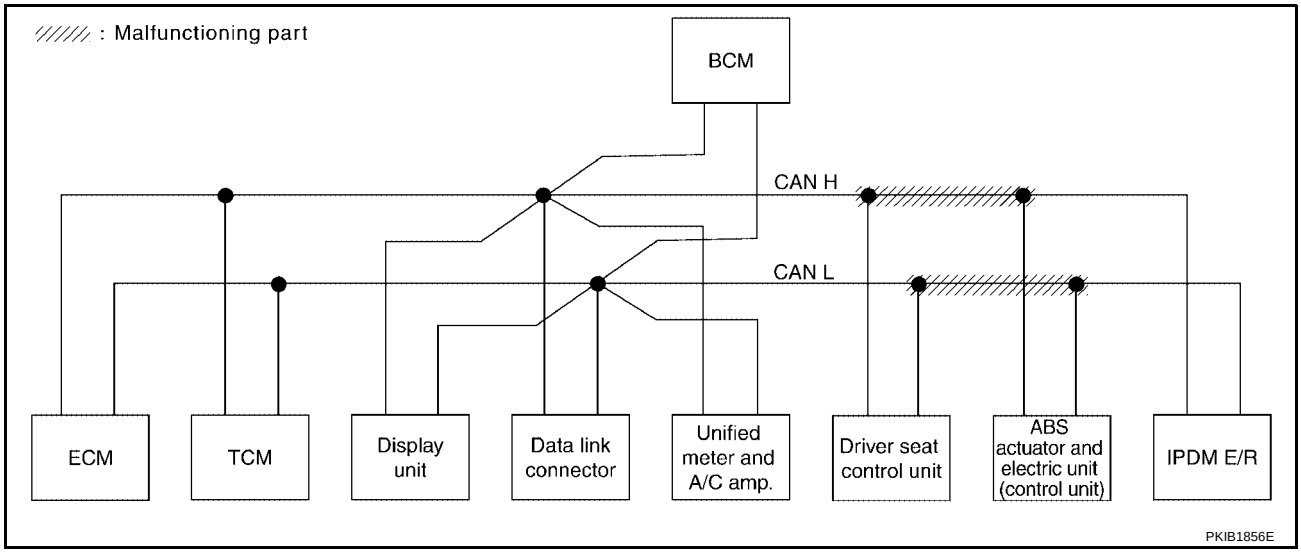
PKIB1855E

Case 3

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-307, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2342E



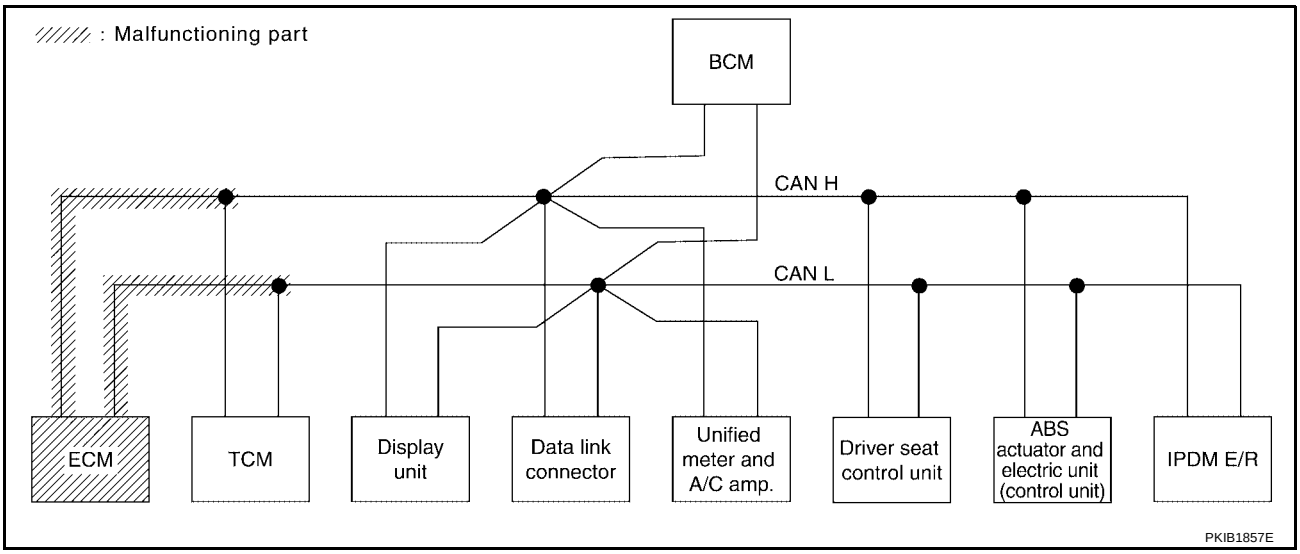
PKIB1856E

Case 4

Check ECM circuit. Refer to LAN-307, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2344E



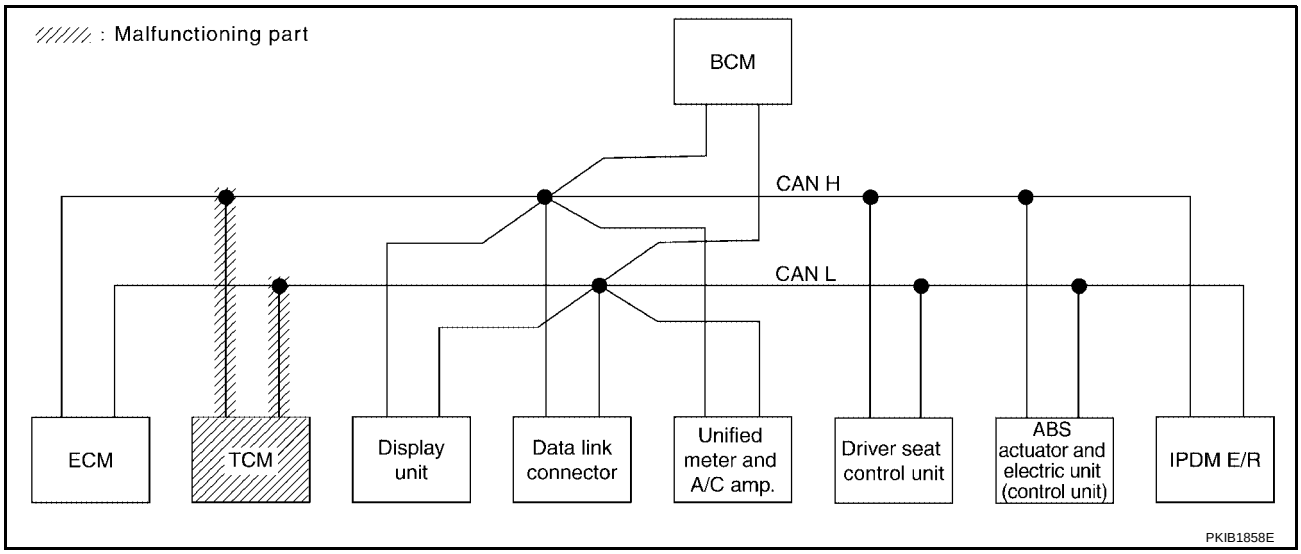
PKIB1857E

Case 5

Check TCM circuit. Refer to LAN-308, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2345E



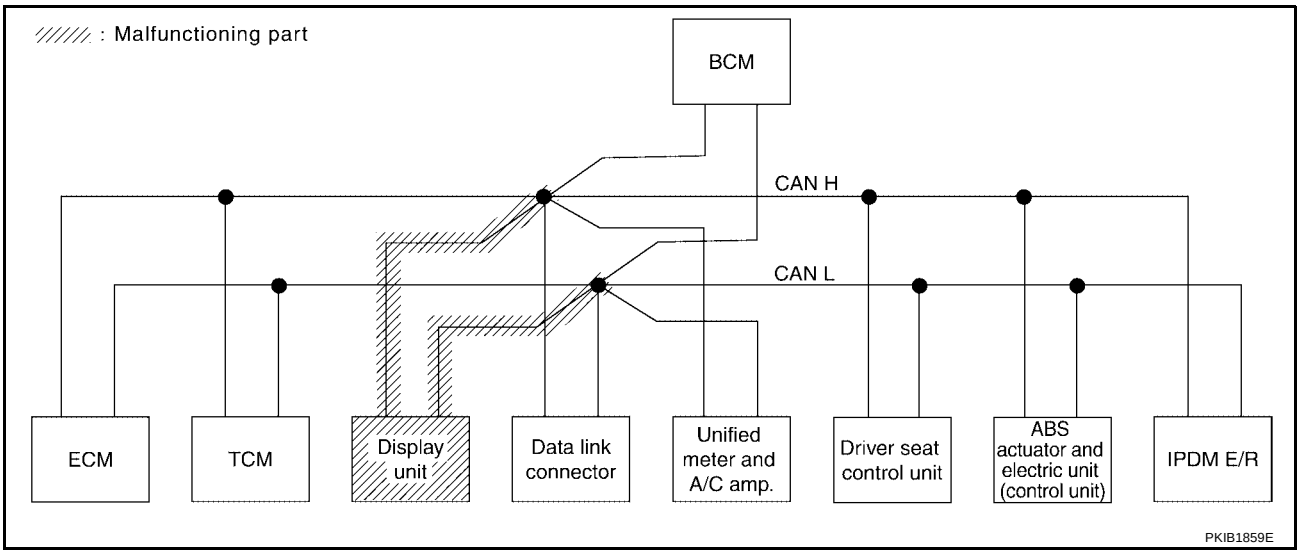
PKIB1858E

Case 6

Check display unit circuit. Refer to LAN-308, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit		CAN COMM	✓ CAN 1	✓ CAN 3	-	-	✓ CAN 5	✓ CAN 7	-	✓ CAN 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	✓ UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2347E



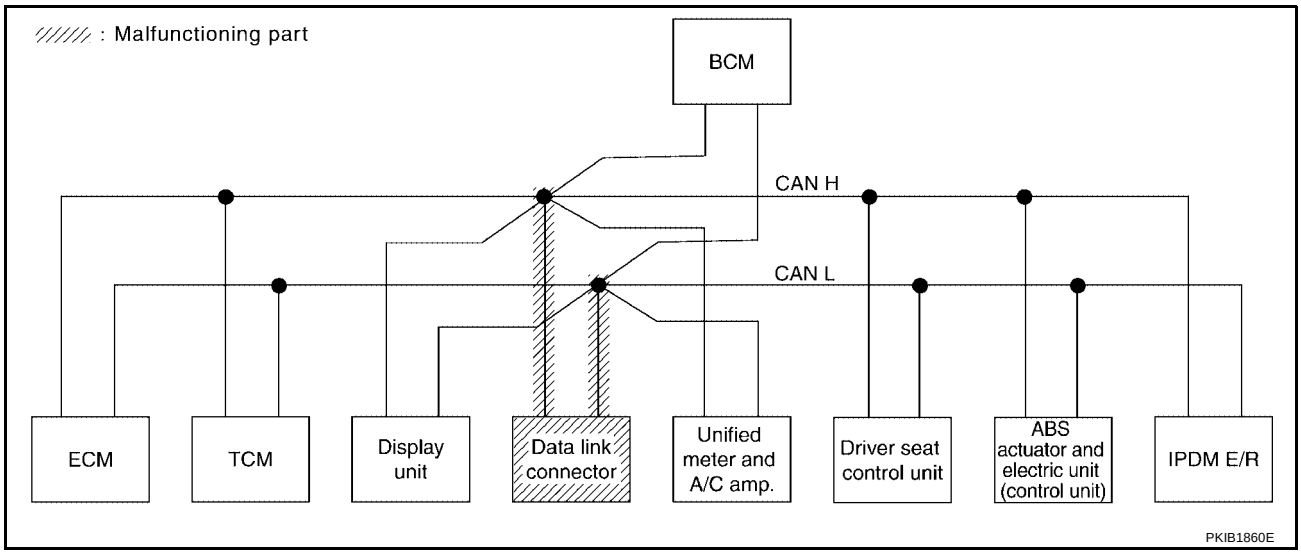
PKIB1859E

Case 7

Check data link connector circuit. Refer to LAN-309, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2	-	CAN 7
METER A/C AMP	No indication ✓	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication ✓	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA2348E



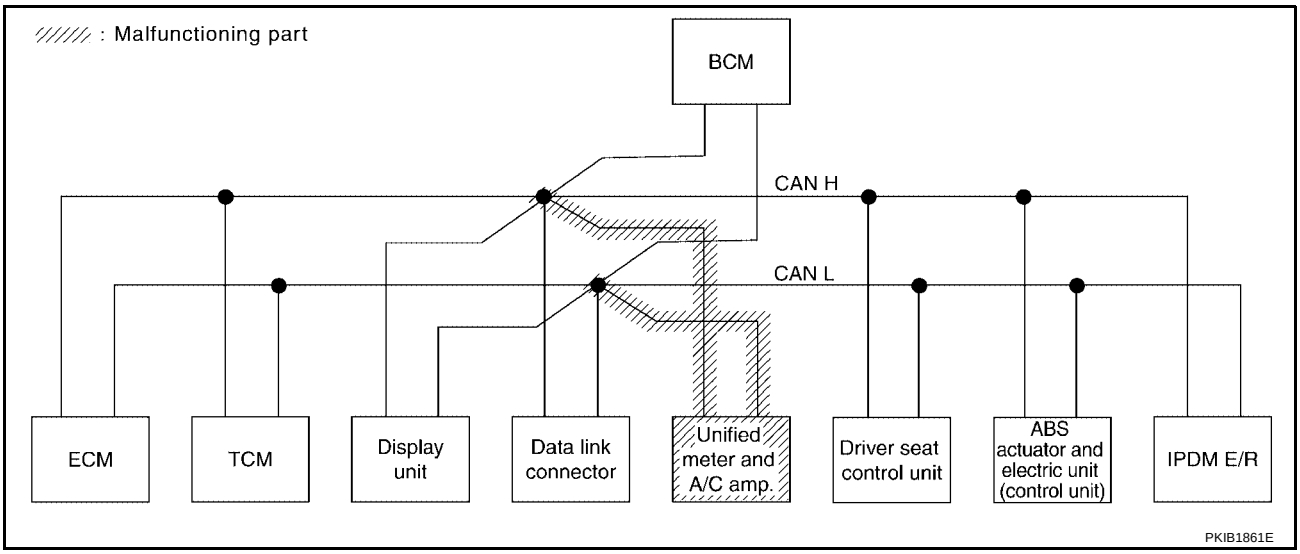
PKIB1860E

Case 8

Check unified meter and A/C amp. circuit. Refer to LAN-309, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2350E



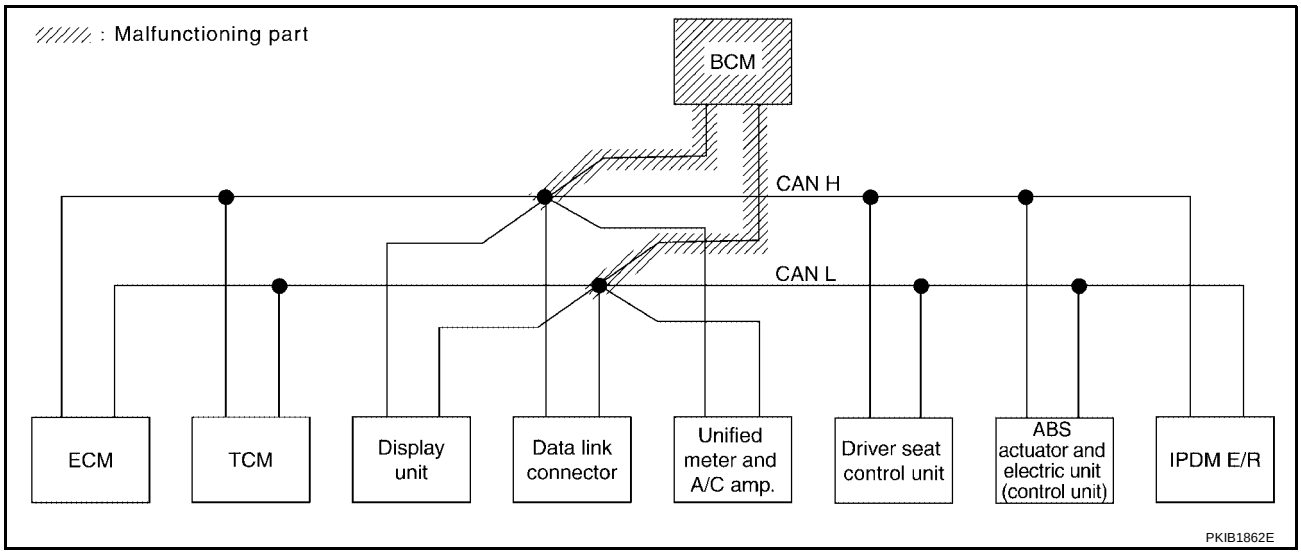
PKIB1861E

Case 9

Check BCM circuit. Refer to LAN-310, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2349E



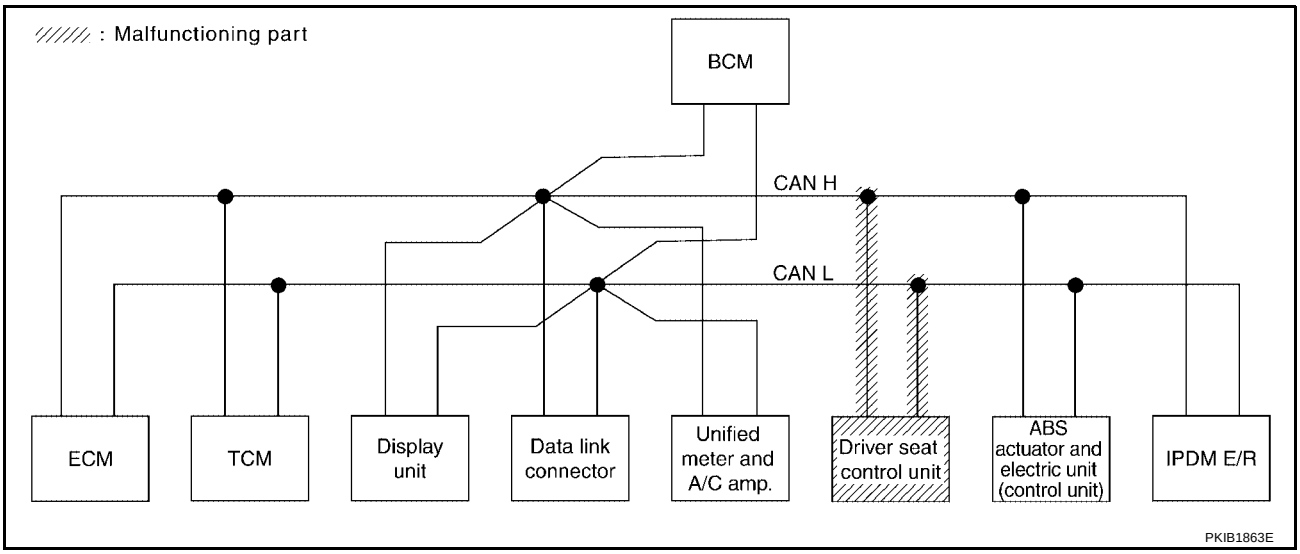
PKIB1862E

Case 10

Check driver seat control unit circuit. Refer to LAN-310, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2351E



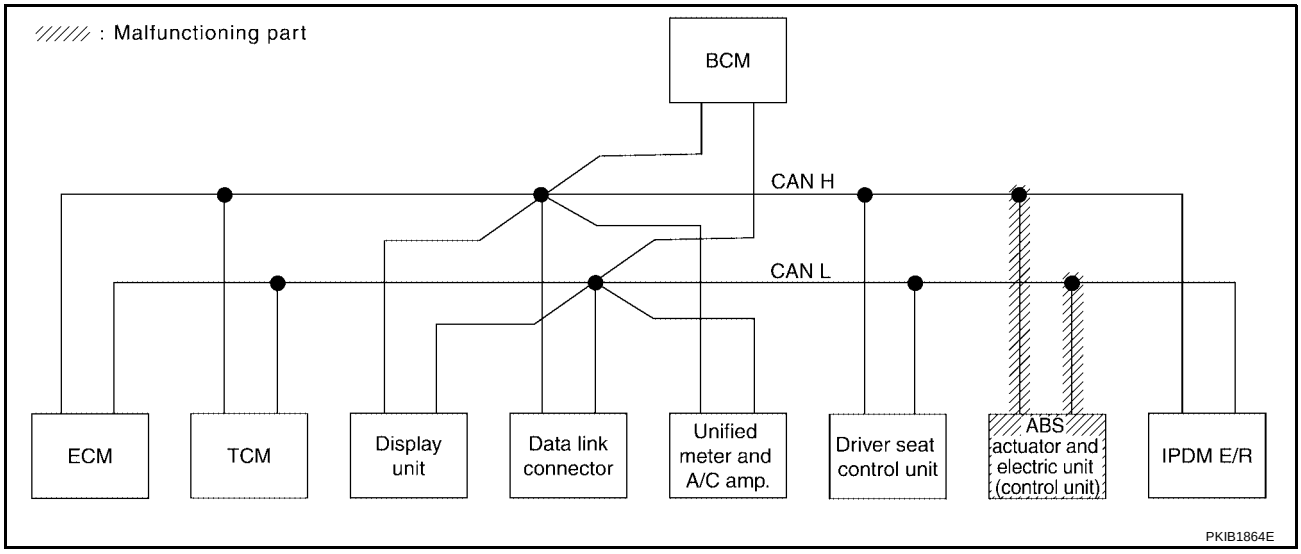
PKIB1863E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-311, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2352E



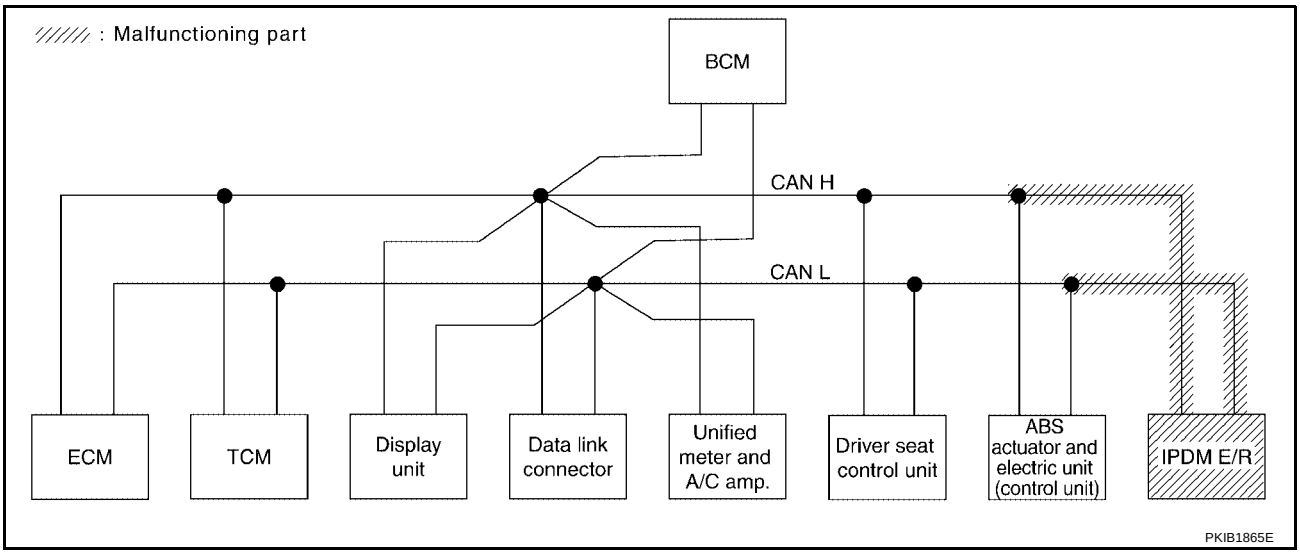
PKIB1864E

Case 12

Check IPDM E/R circuit. Refer to LAN-311, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2353E



PKIB1865E

Case 13

Check CAN communication circuit. Refer to LAN-312, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2883E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-312, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2356E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-312, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display unit		CAN COMM	CAN 1	CAN 3	-	-	CAN 5	CAN 2		CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

PKIB2884E

Circuit Check Between TCM and Data Link Connector

UKS002IP

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

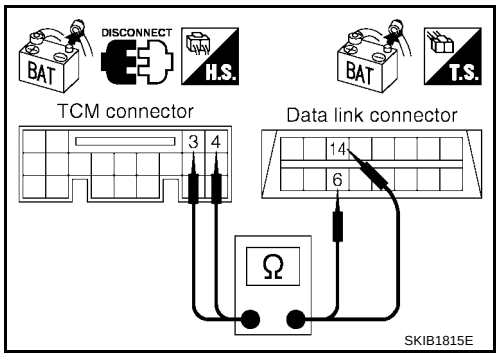
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-291, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and Driver Seat Control Unit

UKS002IQ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

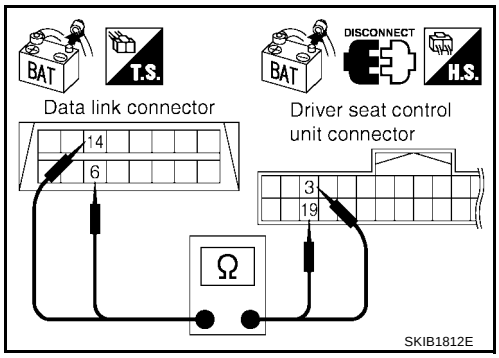
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-291, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

UKS002IR

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

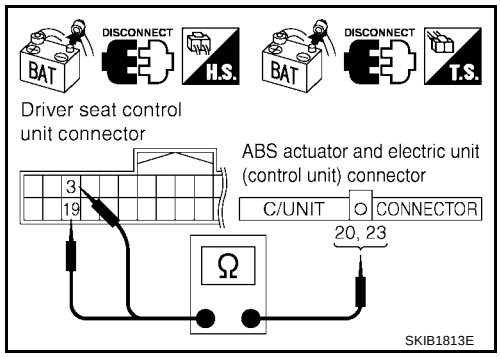
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-291, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS002IS

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

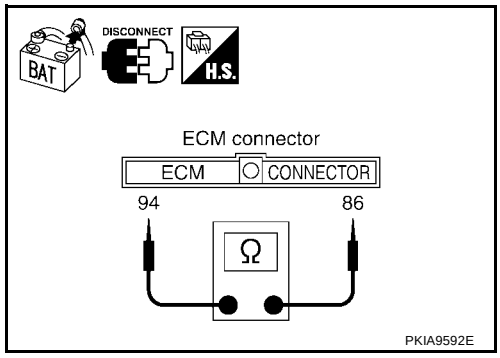
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.

TCM Circuit Check

UKS002IT

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

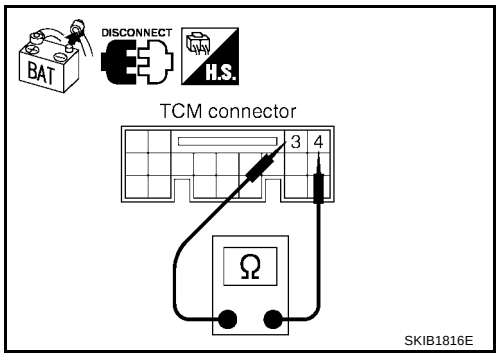
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.

Display Unit Circuit Check

UKS002IU

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

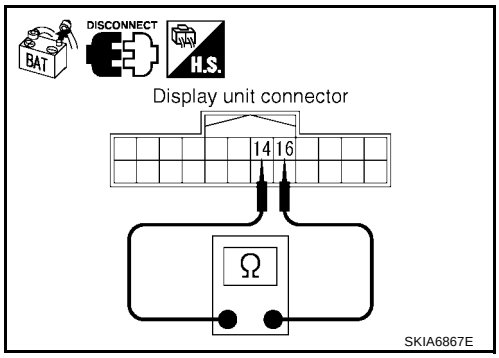
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.

Data Link Connector Circuit Check

UKS002IV

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

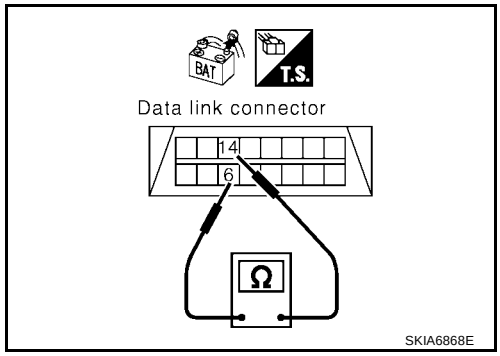
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-291, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002IX

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

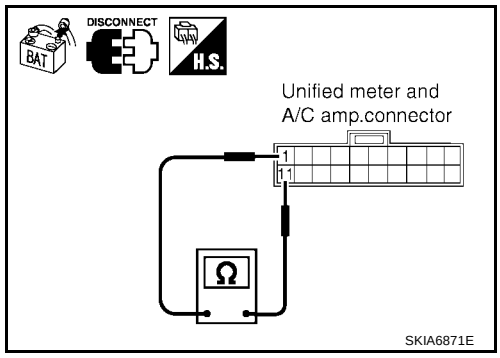
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002IW

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

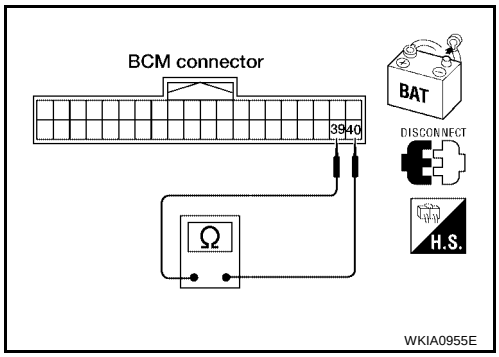
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

UKS002IY

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

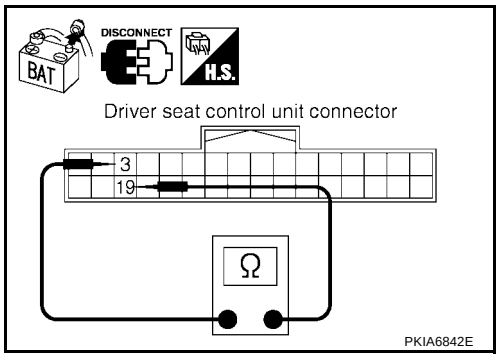
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002IZ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

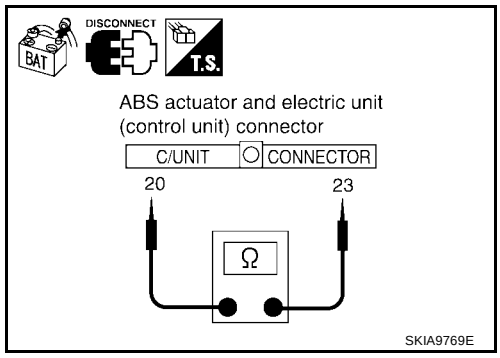
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002J0

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

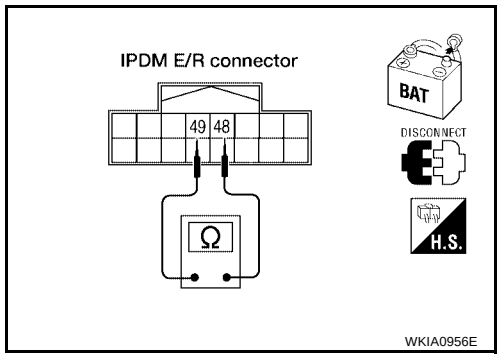
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002J1

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

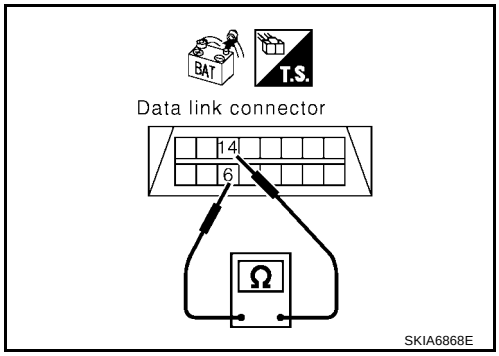
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



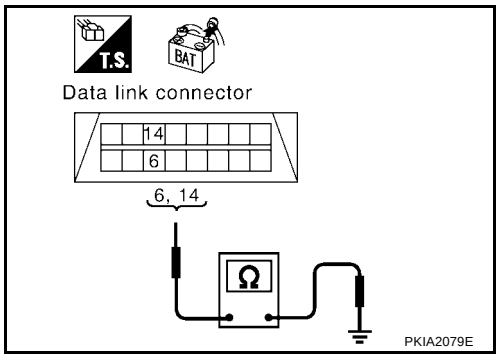
OK or NG

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

3. CHECK HARNESS FOR SHORT TO GROUND

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-313, "Component Inspection" .
NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002J2

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002J3

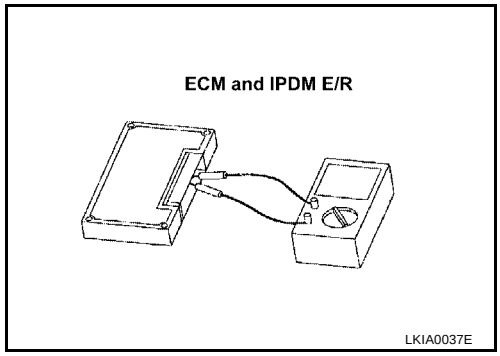
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 13)

PFP:23710

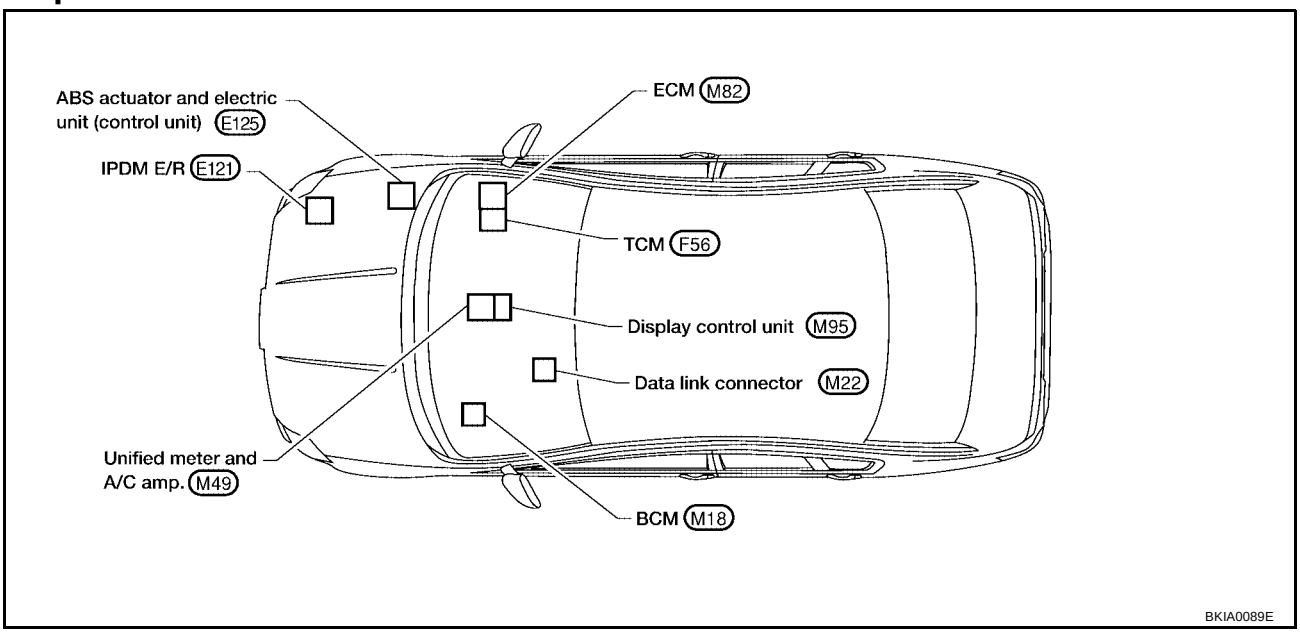
System Description

UKS002C5

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.

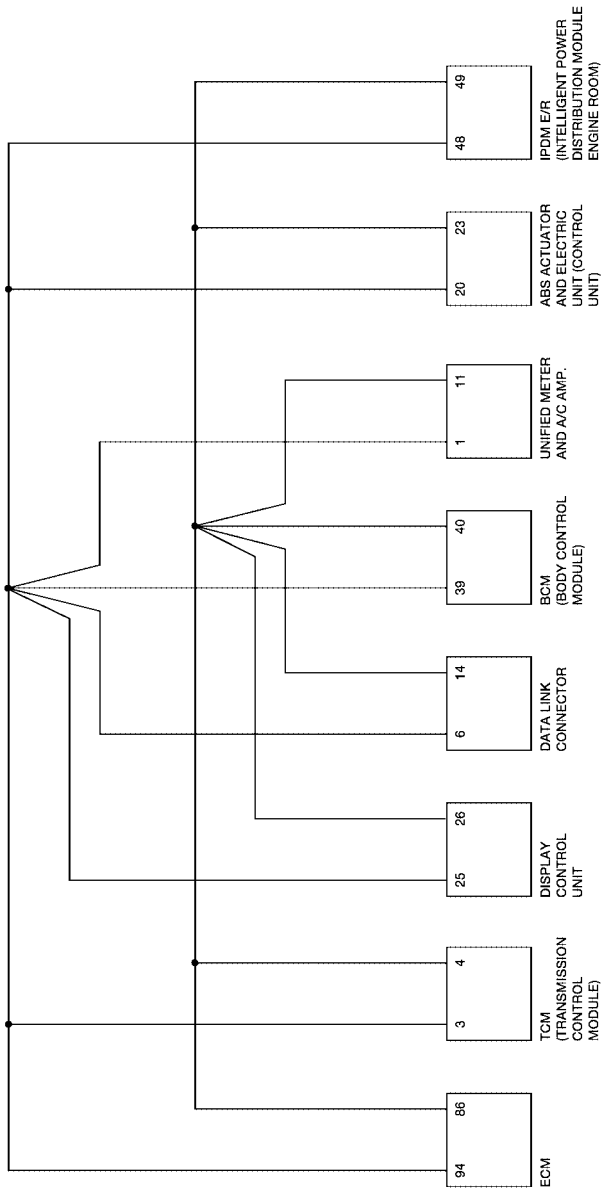
Component Parts and Harness Connector Location

UKS002C6



Schematic

UKS002C7



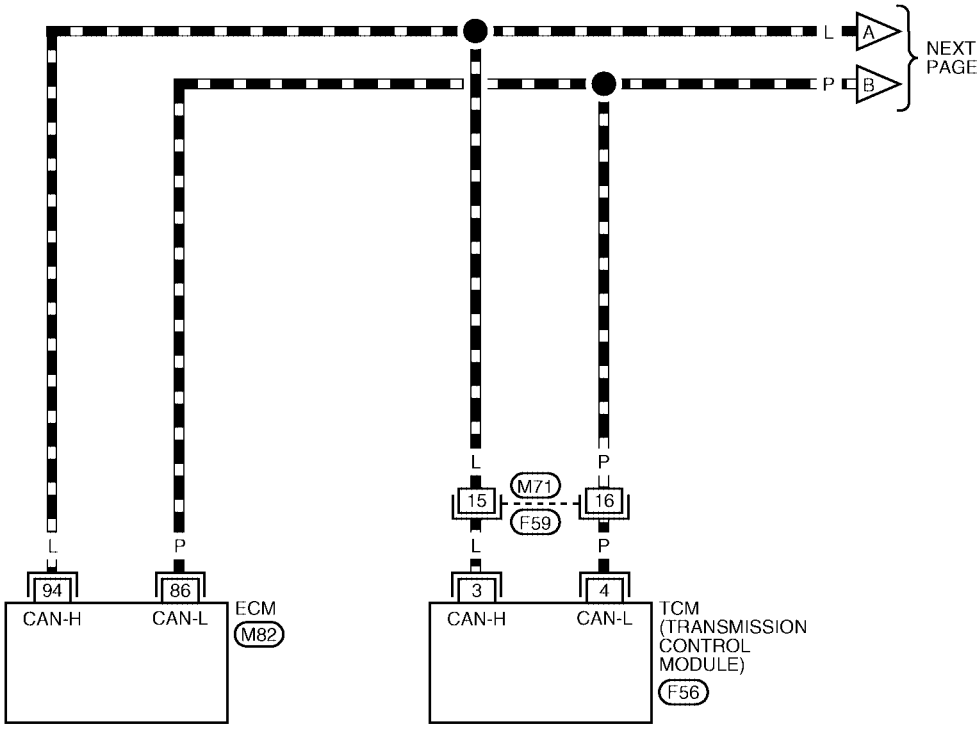
BKWA0624E

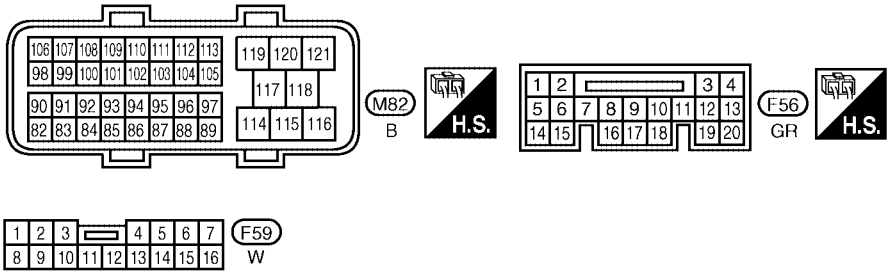
Wiring Diagram - CAN -

UKS002C8

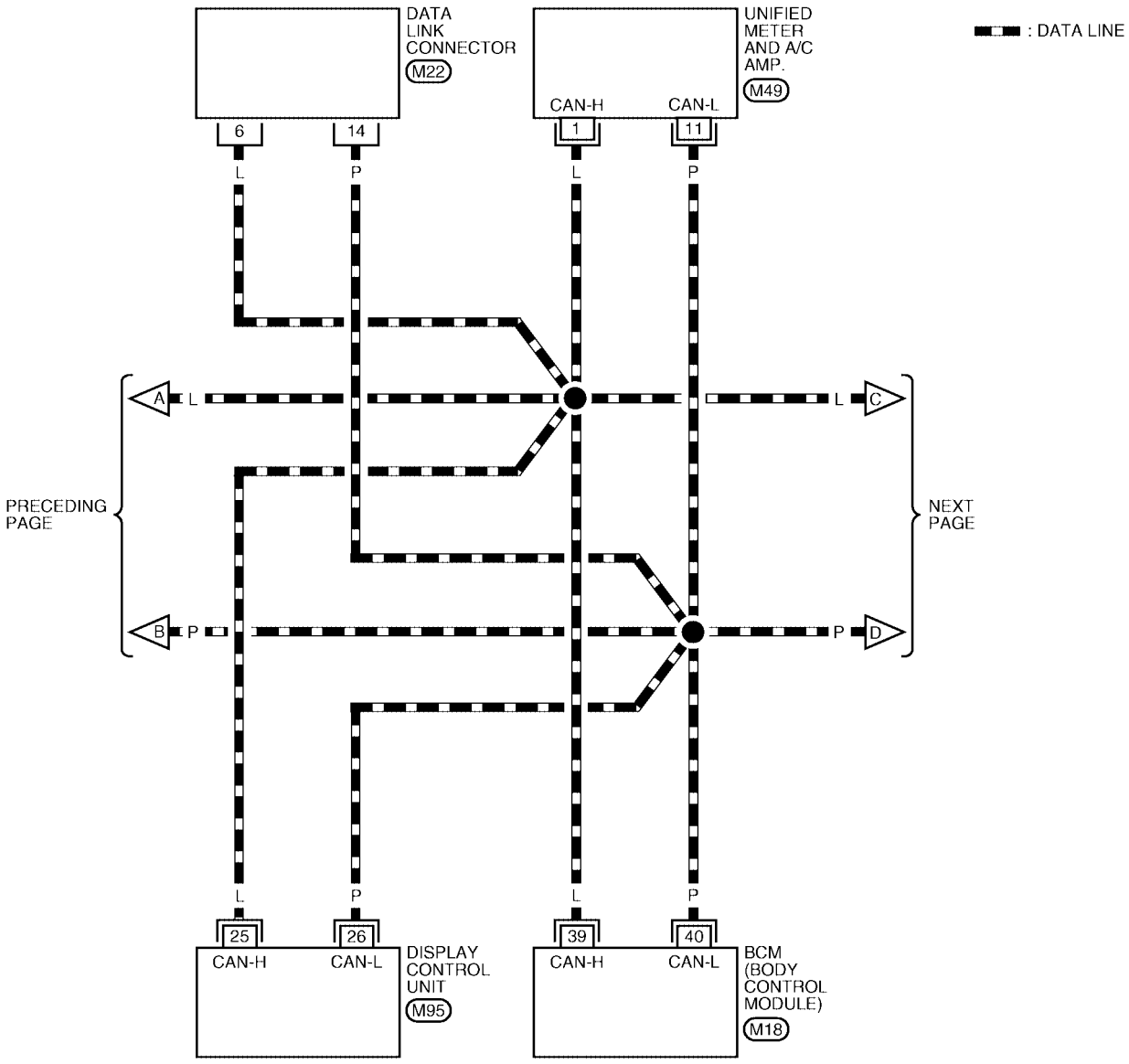
LAN-CAN-31

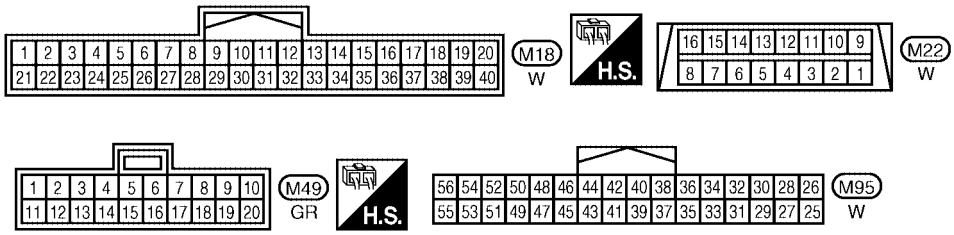
: DATA LINE



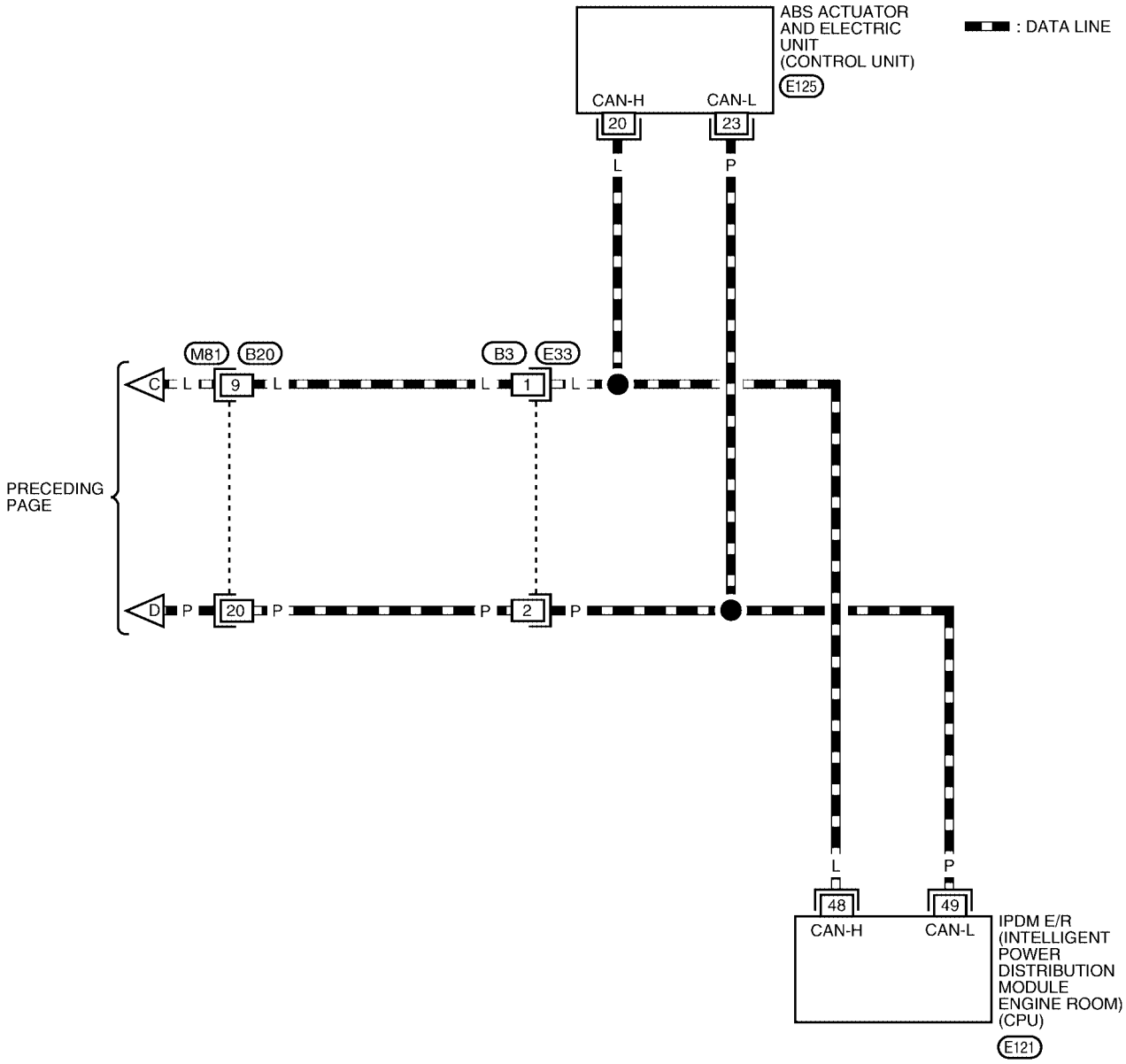


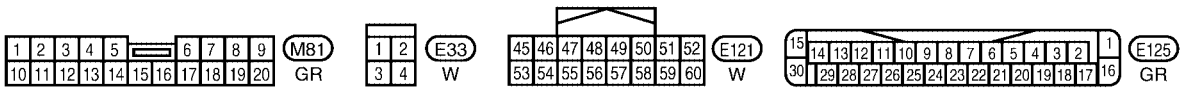
BKWA0312E


DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
25
26
39
40
DISPLAY CONTROL UNIT
M95
BCM (BODY CONTROL MODULE)
M18


M18
W
H.S.
M22
W
M49
GR
M95
W

BKWA0313E


ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E125
CAN-H
CAN-L
20
23
: DATA LINE
L
P
M81
B20
B3
E33
C
D
9
1
2
PRECEDING PAGE
48
49
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
E121

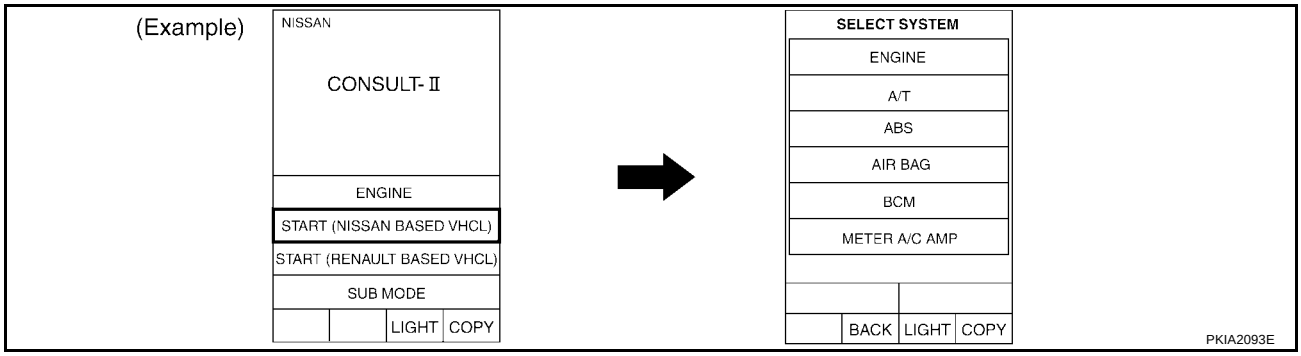

M81
GR
E33
W
E121
W
E125
GR

BKWA0625E

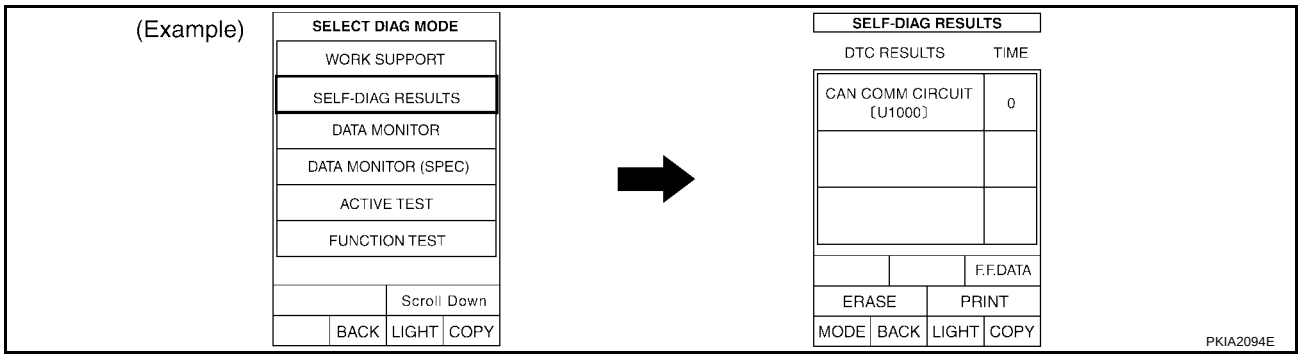
Work Flow

UKS002I6

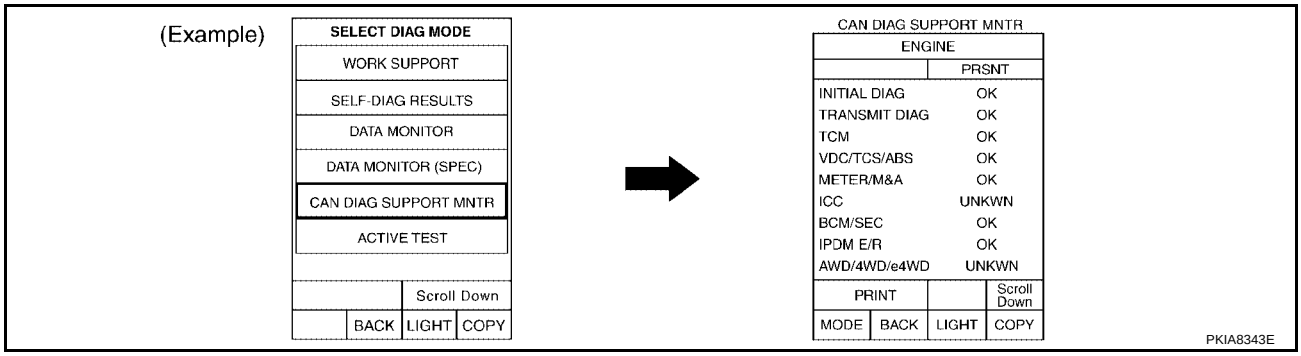
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



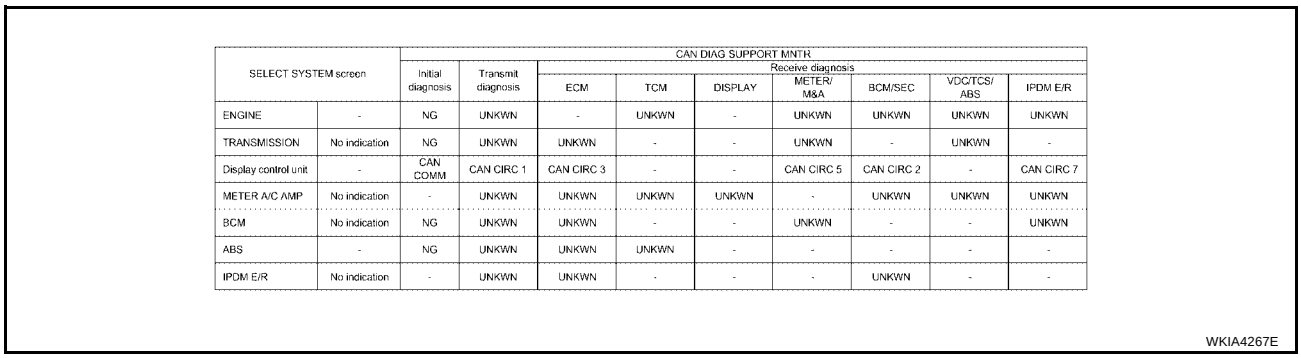
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4267E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

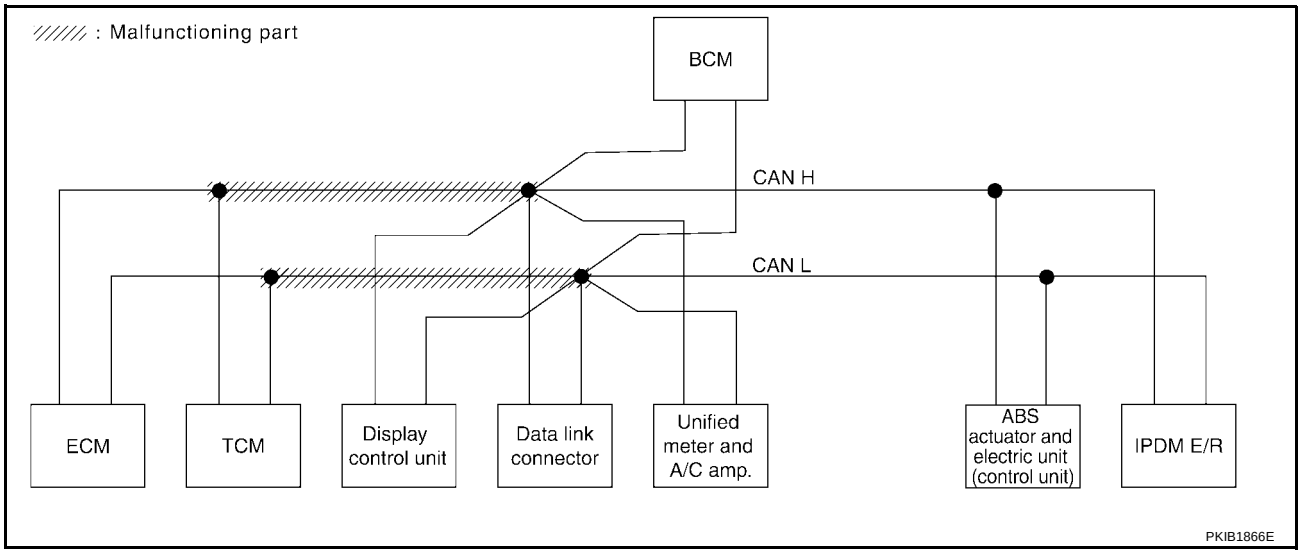
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-332, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR Receive diagnosis: ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
TRANSMISSION	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN ✓	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN ✓	UNKWN ✓	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN ✓	-	-	-	UNKWN	-	-

WKIA4268E



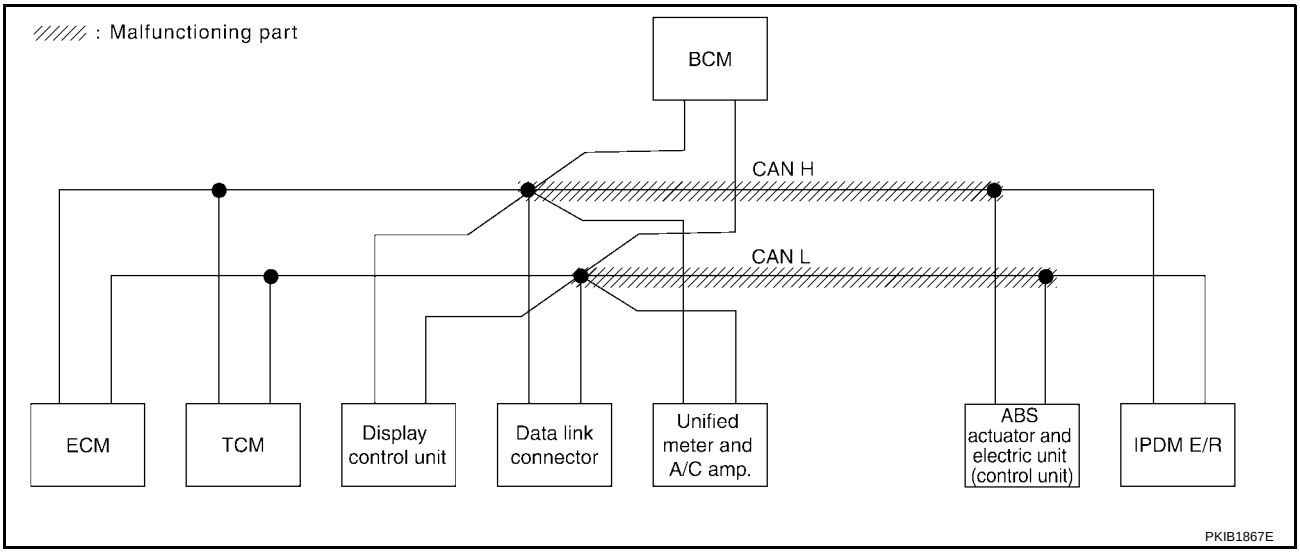
PKIB1866E

Case 2

Check harness between data link connector and ABS actuator and electric unit (control unit). Refer to LAN-332, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4269E



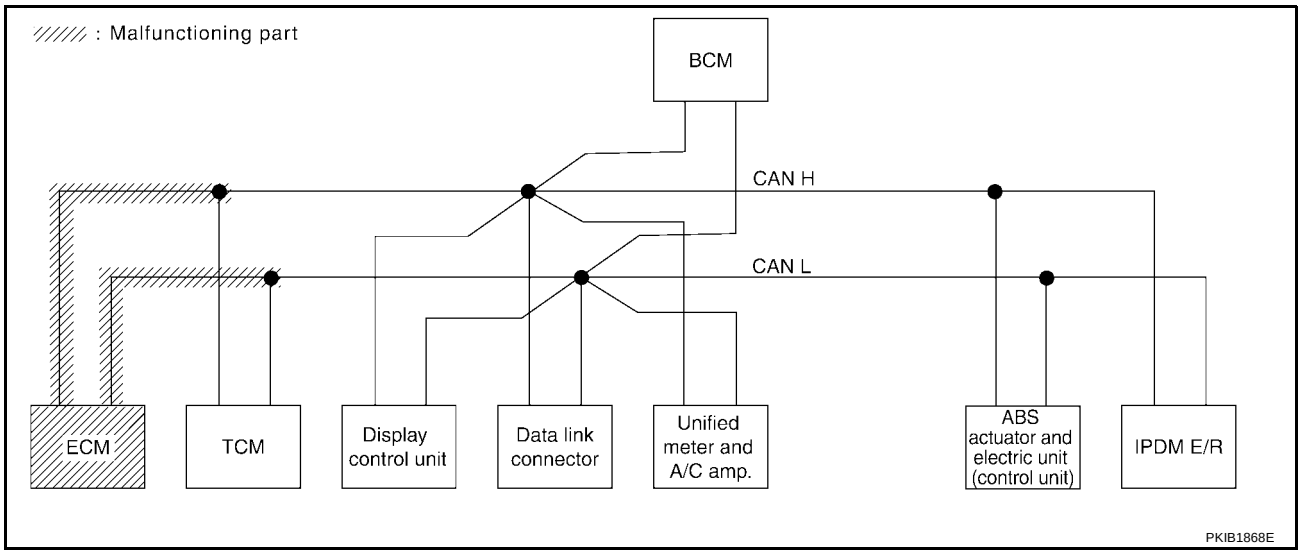
PKIB1867E

Case 3

Check ECM circuit. Refer to LAN-333, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4270E



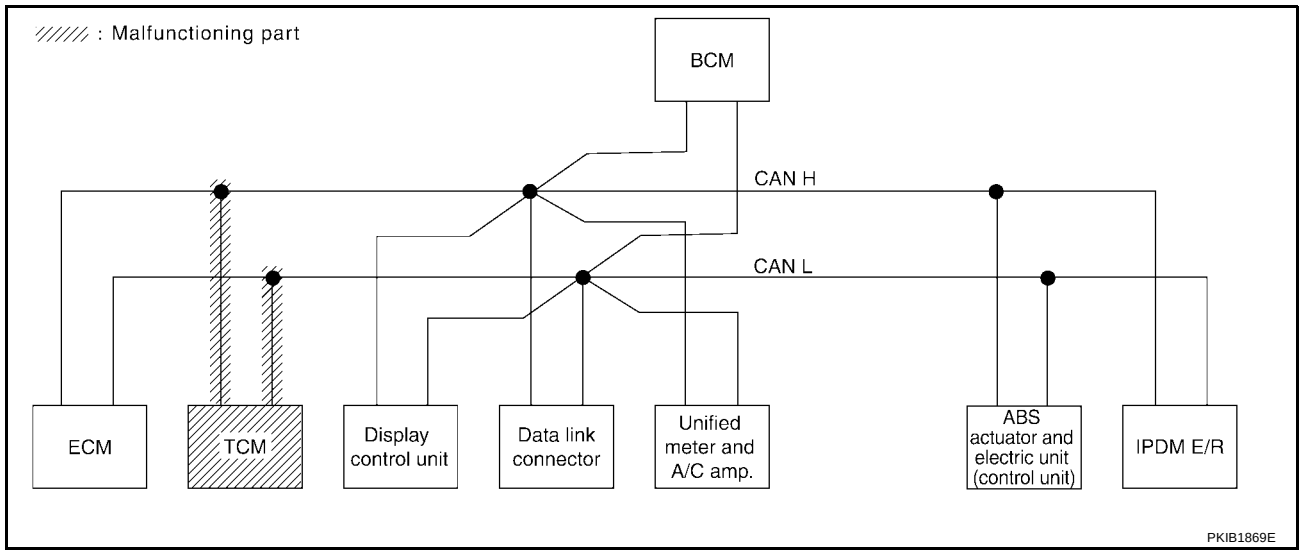
PKIB1868E

Case 4

Check TCM circuit. Refer to LAN-333, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN ✓	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN ✓	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN ✓	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4271E



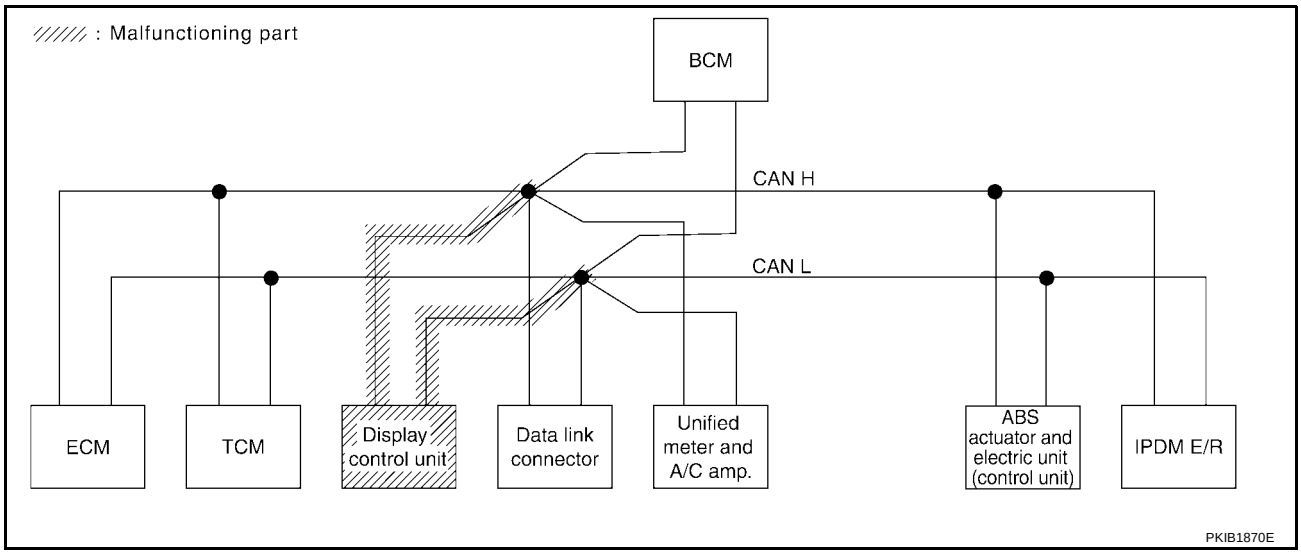
PKIB1869E

Case 5

Check display control unit circuit. Refer to LAN-334, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CRC 1 ✓	CAN CRC 3 ✓	-	-	CAN CRC 5 ✓	CAN CRC 2 ✓	-	CAN CRC 7 ✓
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4272E



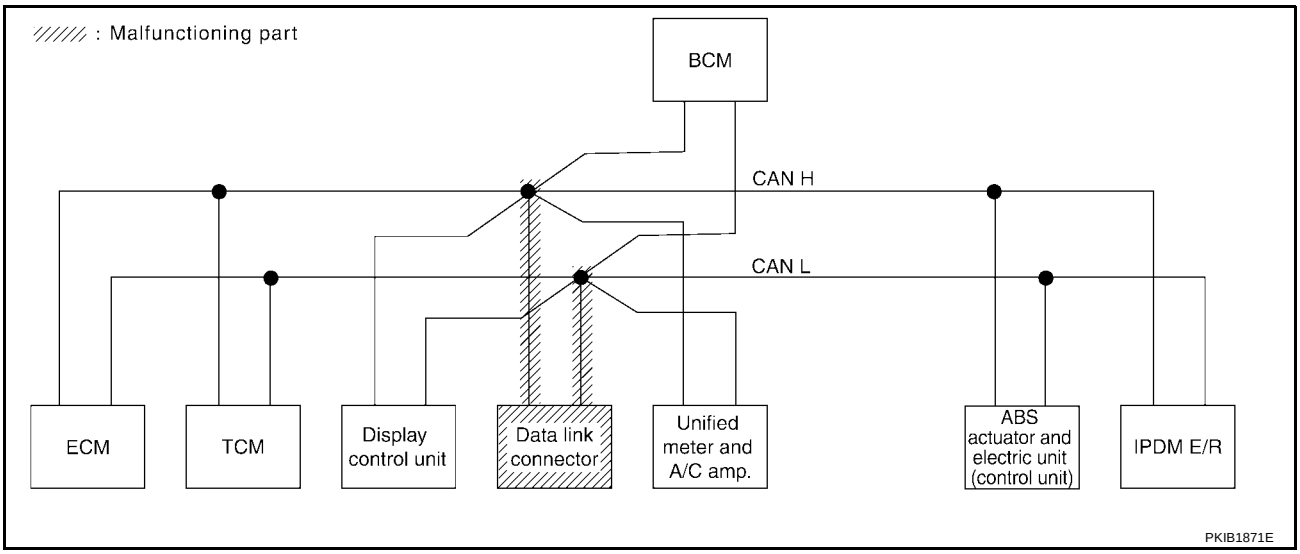
PKIB1870E

Case 6

Check data link connector circuit. Refer to LAN-334, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication ✓	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication ✓	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4274E



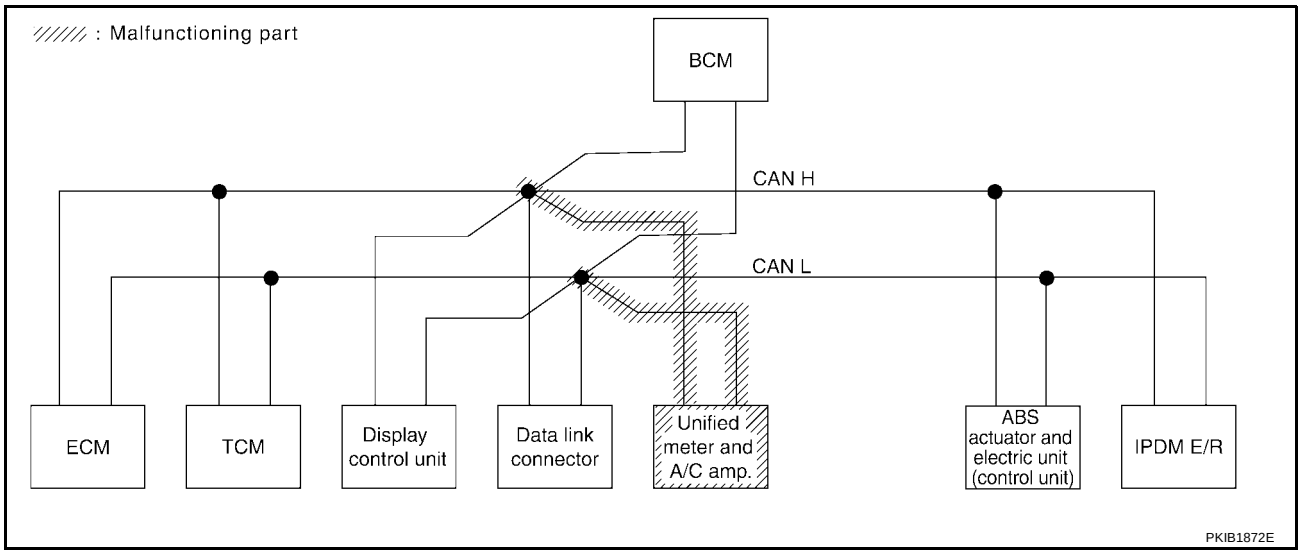
PKIB1871E

Case 7

Check unified meter and A/C amp. circuit. Refer to LAN-335, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4275E



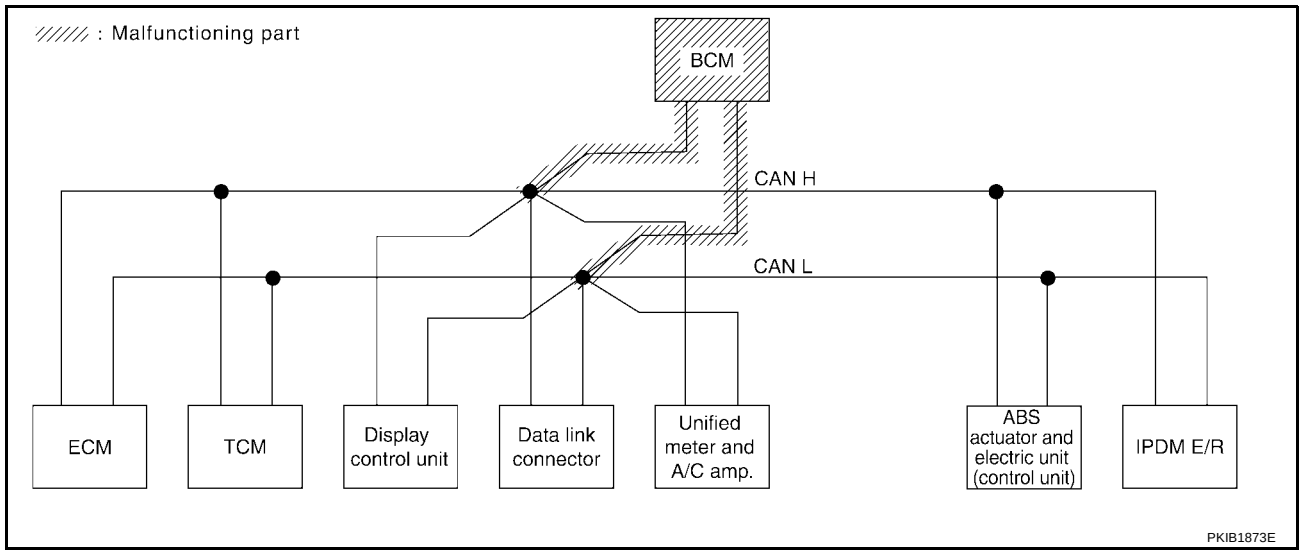
PKIB1872E

Case 8

Check BCM circuit. Refer to LAN-335, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4276E



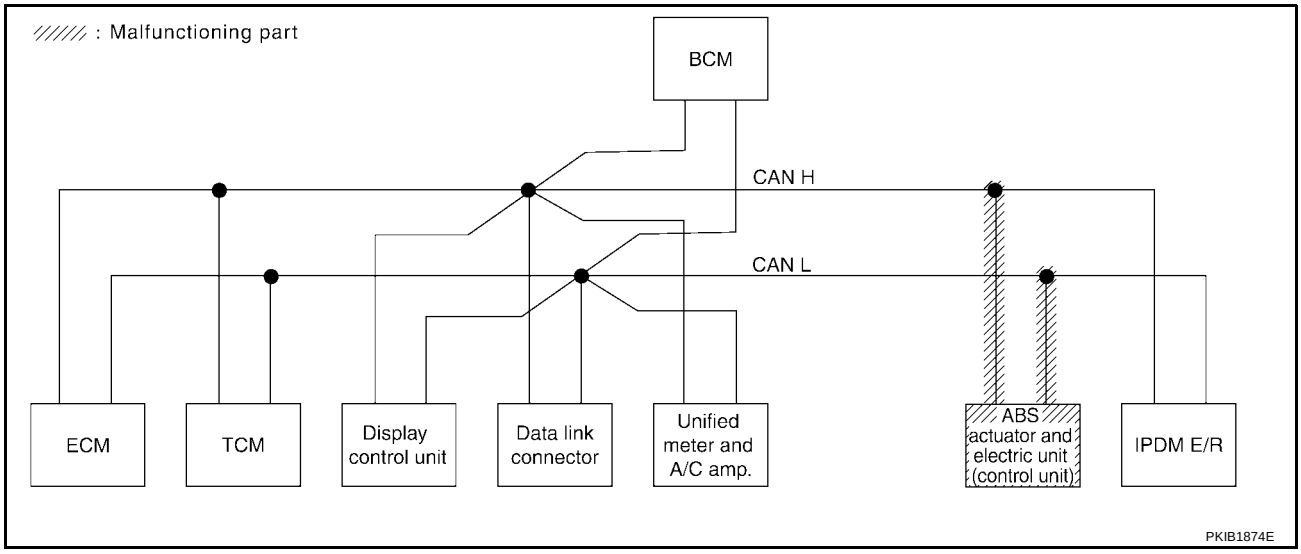
PKIB1873E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-336, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN ✓	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN ✓	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4277E



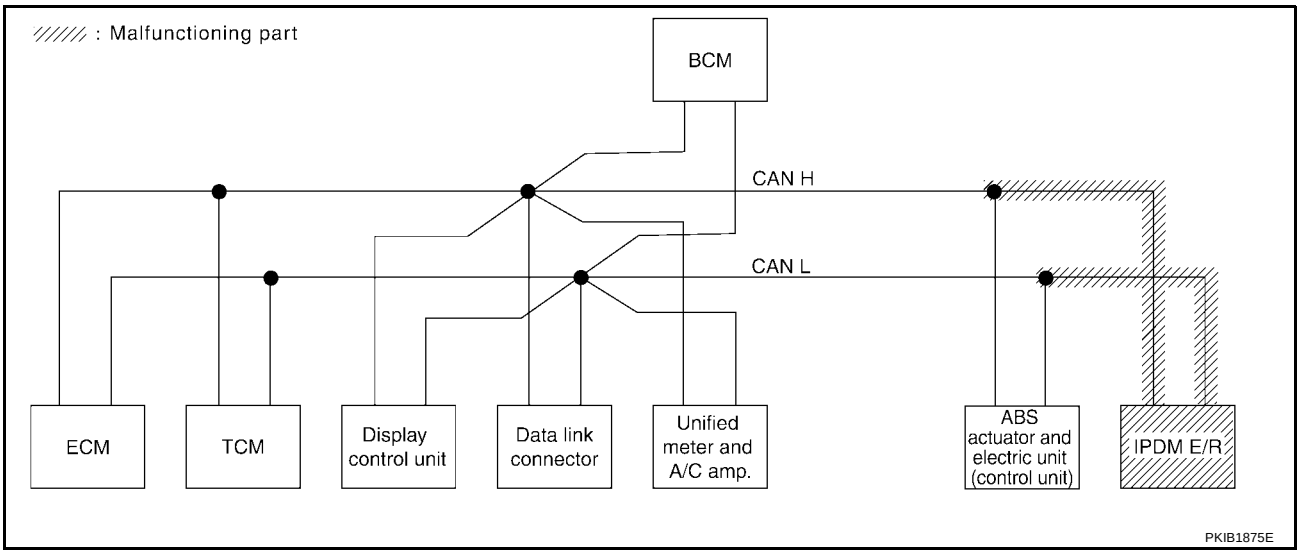
PKIB1874E

Case 10

Check IPDM E/R circuit. Refer to LAN-336, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4278E



PKIB1875E

Case 11

Check CAN communication circuit. Refer to LAN-337, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4279E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-337, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN ✓	-	UNKWN	UNKWN	UNKWN ✓	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN ✓	UNKWN	-	UNKWN	UNKWN ✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4280E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-337, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN ✓	-	-	UNKWN ✓	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN
ABS	-	NG	UNKWN	UNKWN ✓	UNKWN	-	-	-	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

WKIA4281E

Circuit Check Between TCM and Data Link Connector

UKS002I8

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

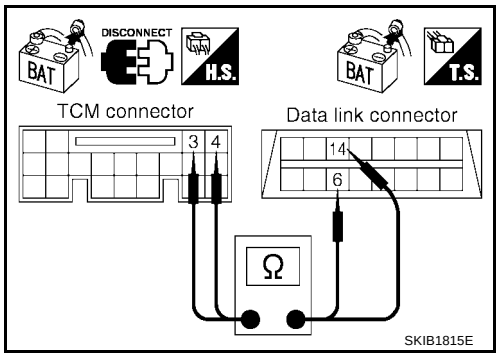
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-319, "Work Flow" .
NG >> Repair harness.



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

UKS002I9

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

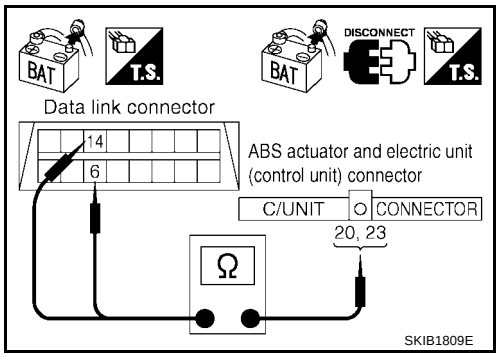
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

6 (L) - 20 (L) : Continuity should exist.
14 (P) - 23 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-319, "Work Flow" .
NG >> Repair harness.



ECM Circuit Check

UKS002IB

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

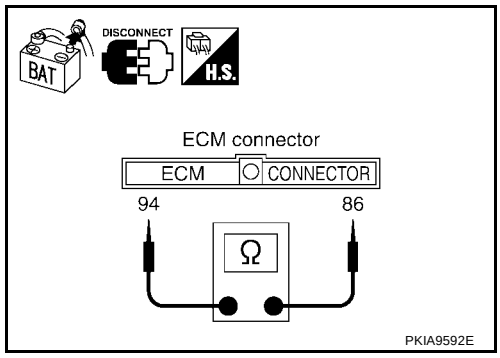
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.



TCM Circuit Check

UKS002IC

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

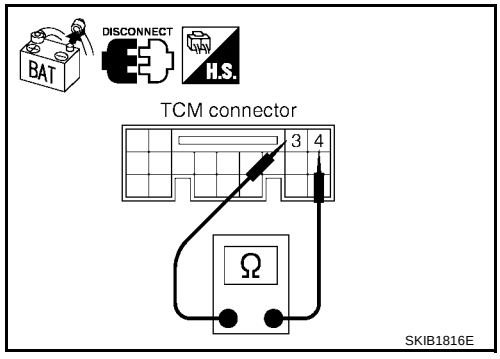
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.



Display Control Unit Circuit Check

UKS002ID

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

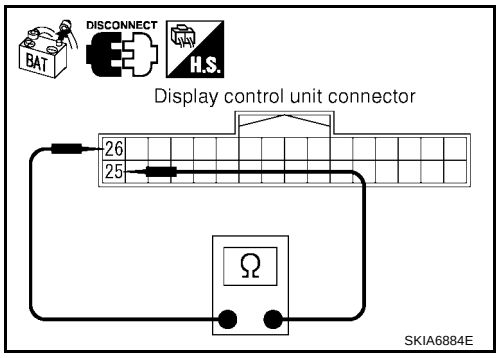
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.



Data Link Connector Circuit Check

UKS002IE

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

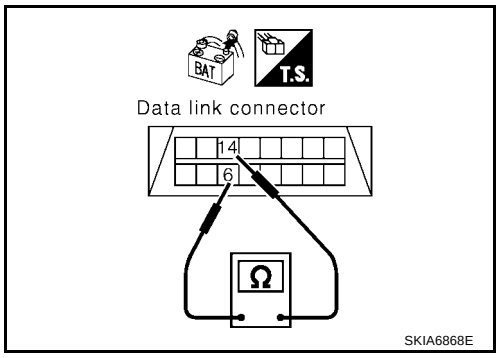
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-319, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

UKS002IG

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

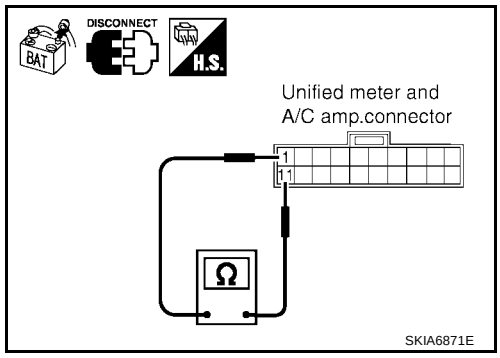
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

UKS002IF

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

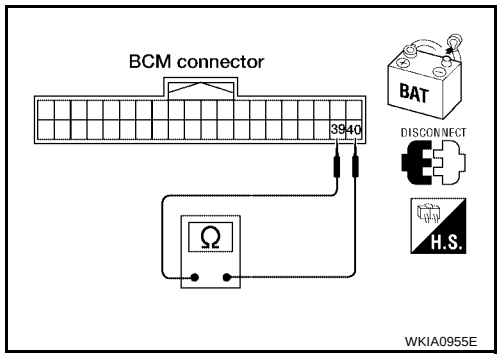
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS002II

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

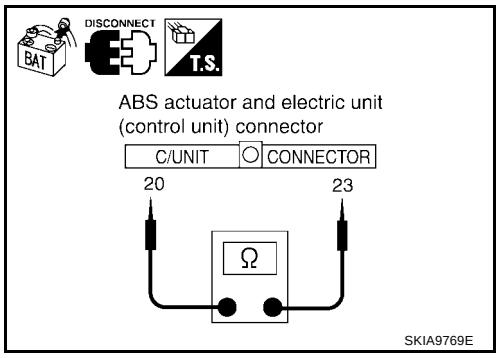
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

UKS002IJ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

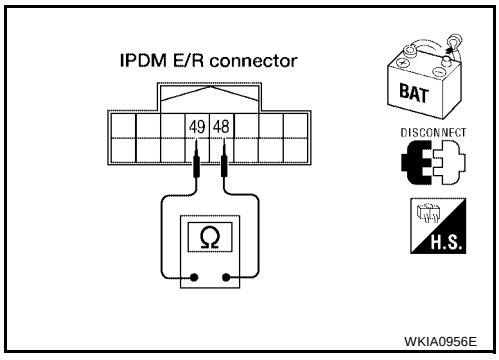
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

UKS002IK

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display control unit
- Unified meter and A/C amp.
- BCM (Body control module)
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

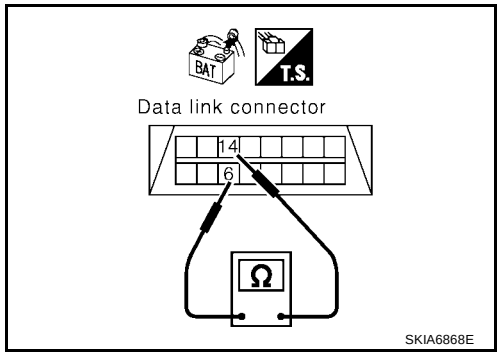
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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



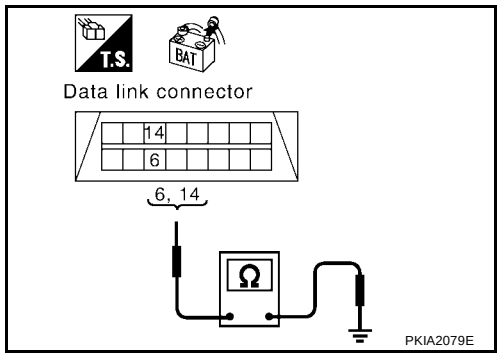
OK or NG

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

3. CHECK HARNESS FOR SHORT TO GROUND

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-338, "Component Inspection" .
NG >> Repair the harness.

IPDM E/R Ignition Relay Circuit Check

UKS002IL

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS002IM

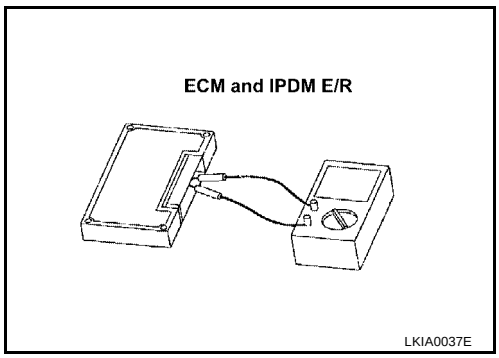
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 14)

PFP:23710

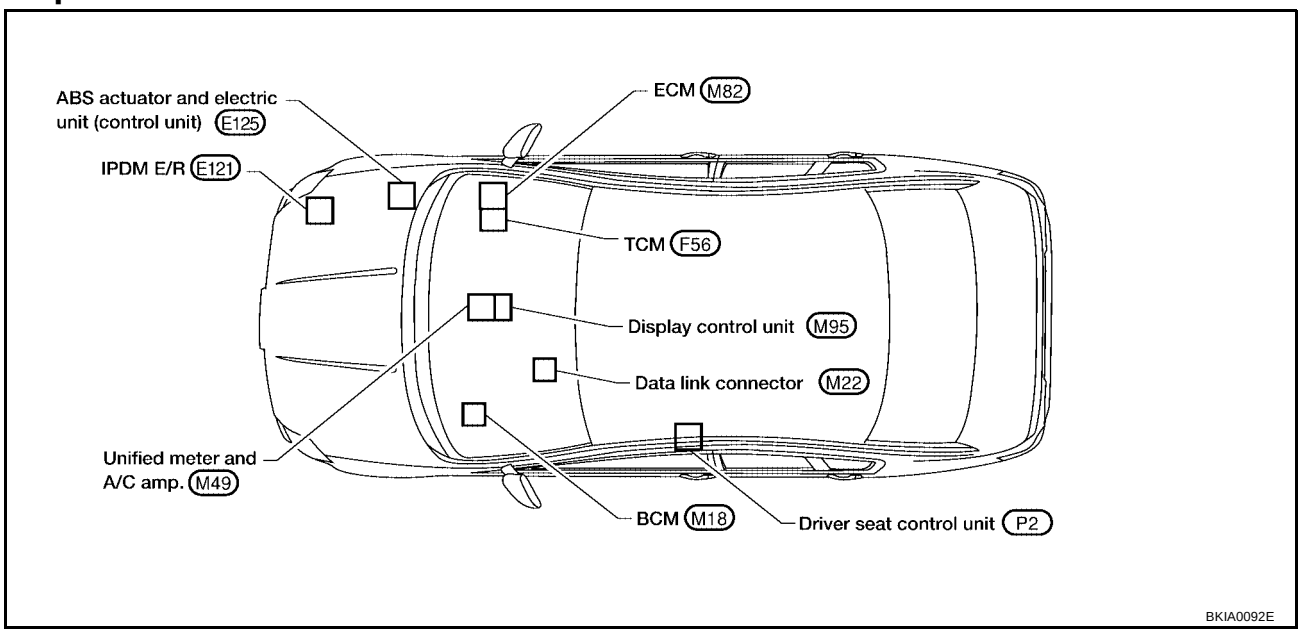
System Description

EKS00FRX

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.

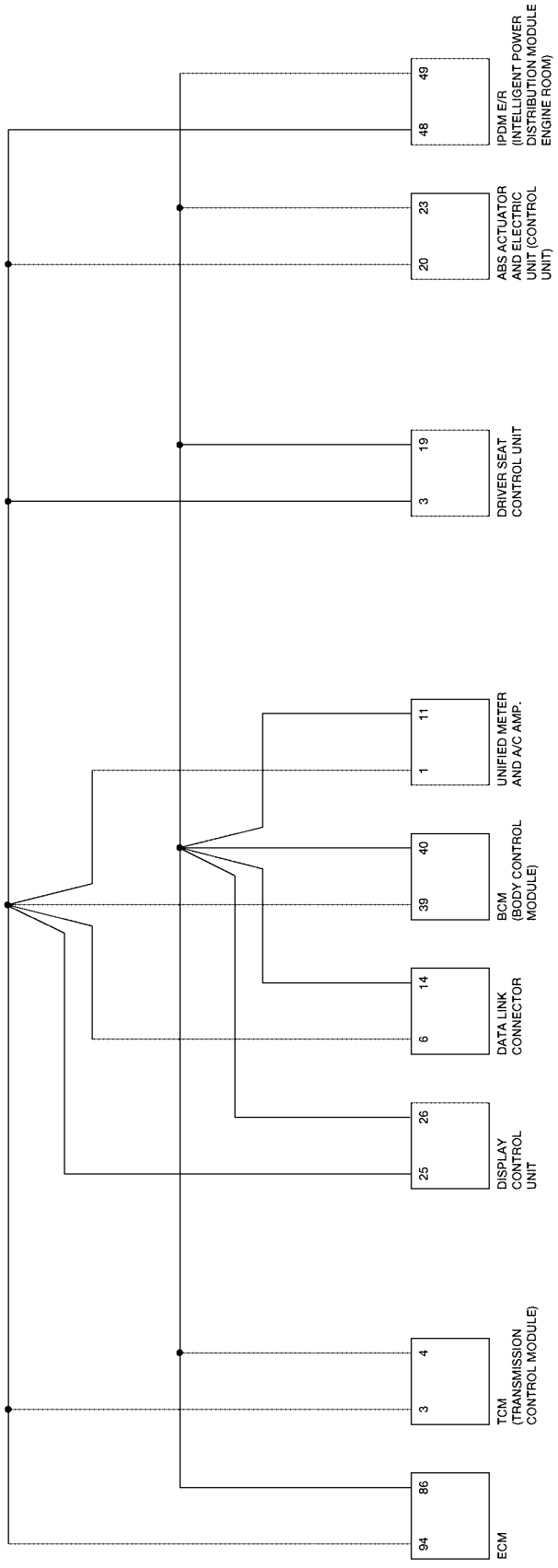
Component Parts and Harness Connector Location

EKS00FRY



Schematic

EKS00FRZ



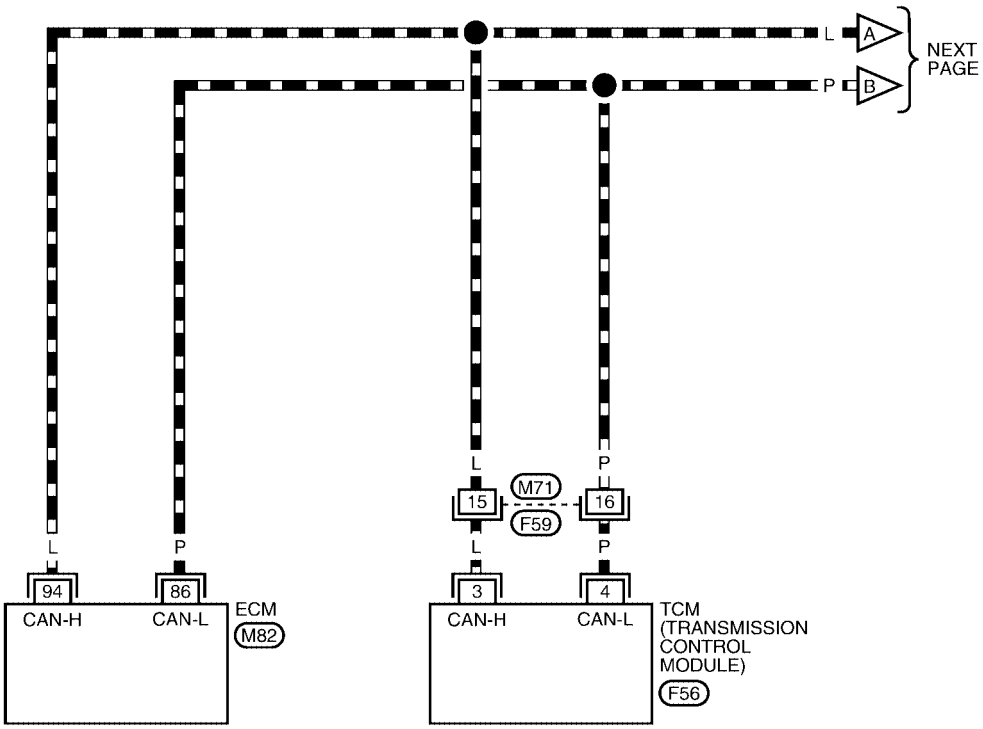
BKWA0298E

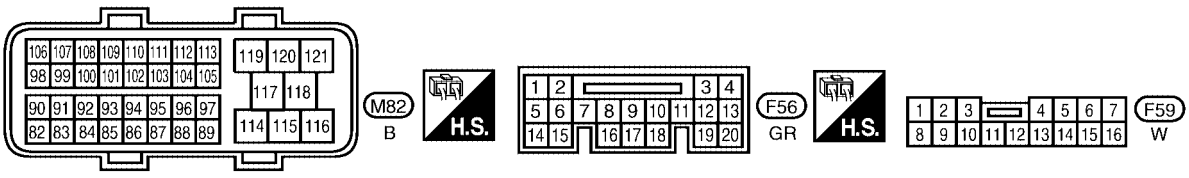
Wiring Diagram - CAN -

EKS00FS0

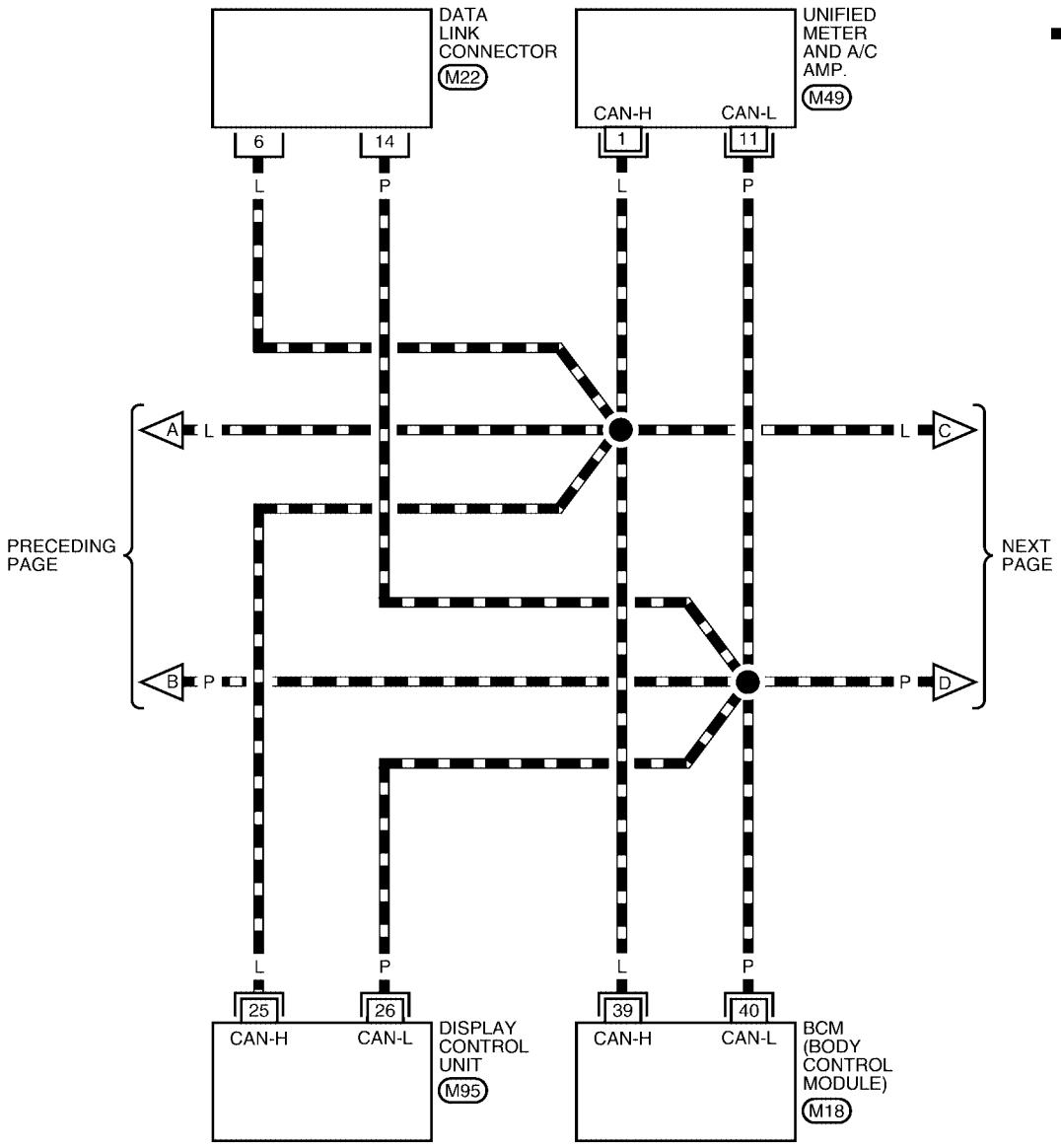
LAN-CAN-34

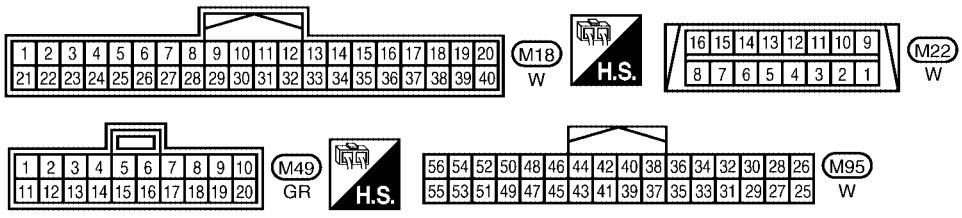
: DATA LINE



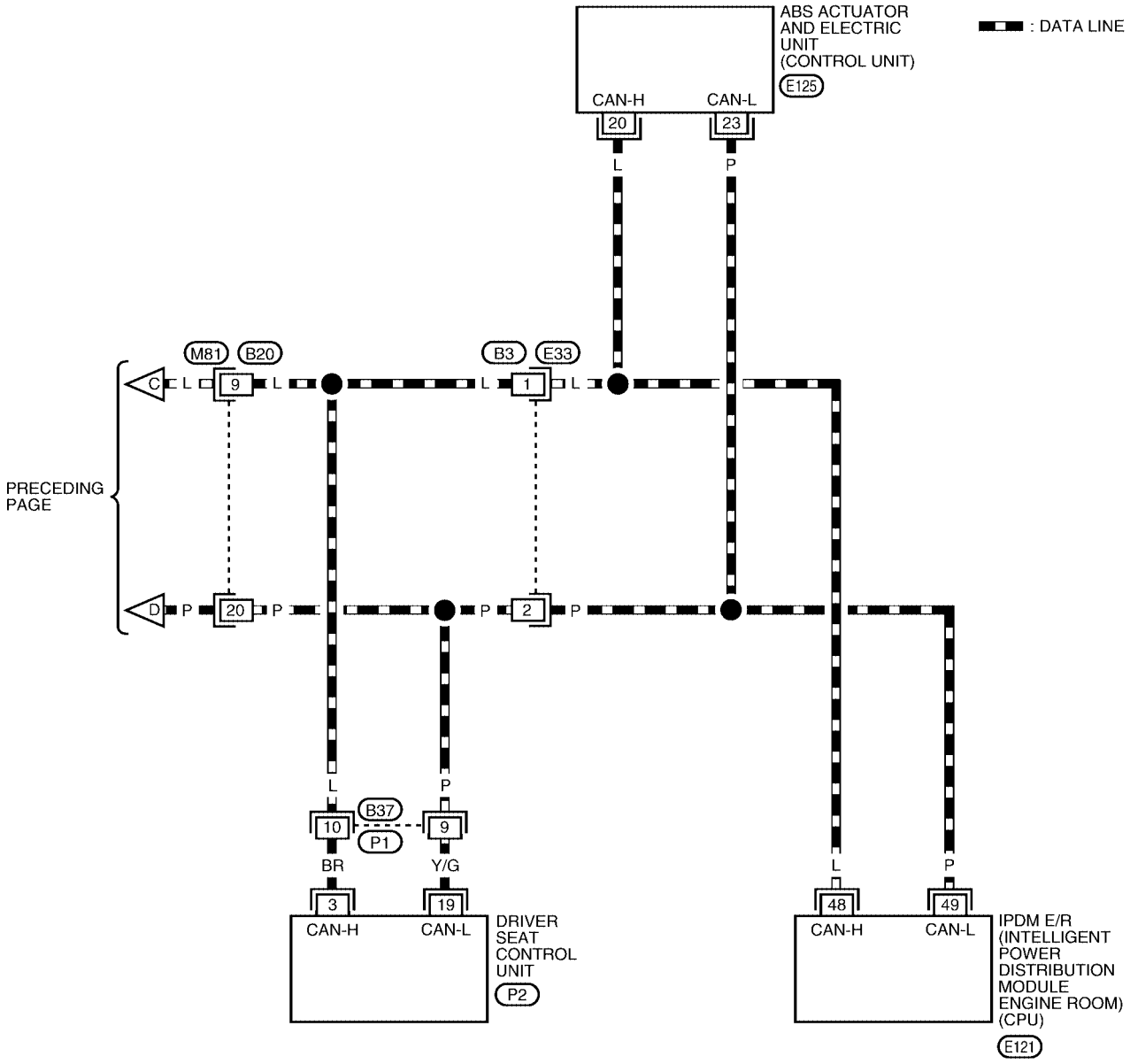


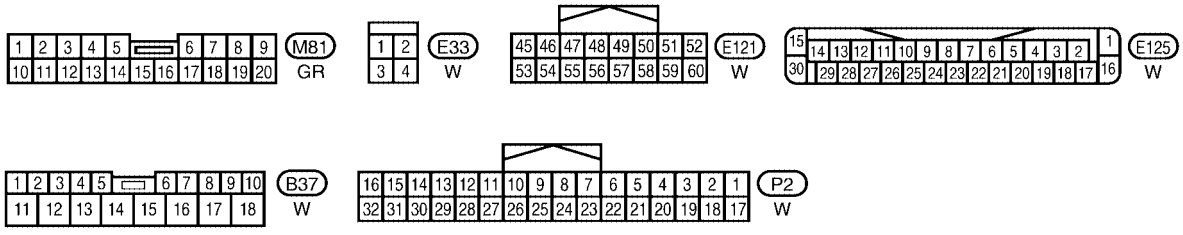
BKWA0626E


DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
A
B
C
D
PRECEDING PAGE
NEXT PAGE
25
26
39
40
DISPLAY CONTROL UNIT
M95
BCM (BODY CONTROL MODULE)
M18


M18
W
H.S.
M22
W
M49
GR
H.S.
M95
W

BKWA0627E


ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E125
CAN-H
CAN-L
20
23
: DATA LINE
L
P
M81
B20
B3
E33
C
L
9
L
L
1
L
PRECEDING PAGE
D
P
20
P
P
2
P
L
P
B37
10
P1
9
BR
Y/G
3
19
CAN-H
CAN-L
DRIVER SEAT CONTROL UNIT
P2
L
P
48
49
CAN-H
CAN-L
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
E121

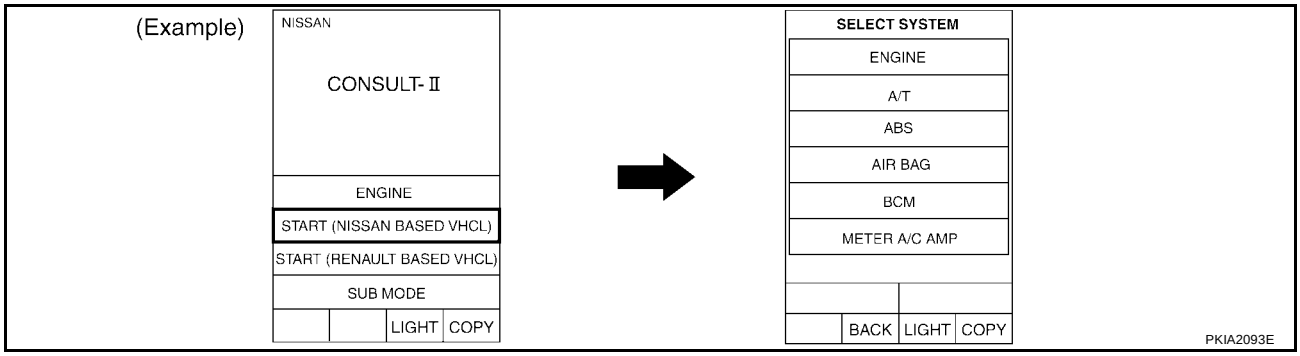

M81
GR
E33
W
E121
W
E125
W
B37
W
P2
W

BKWA0628E

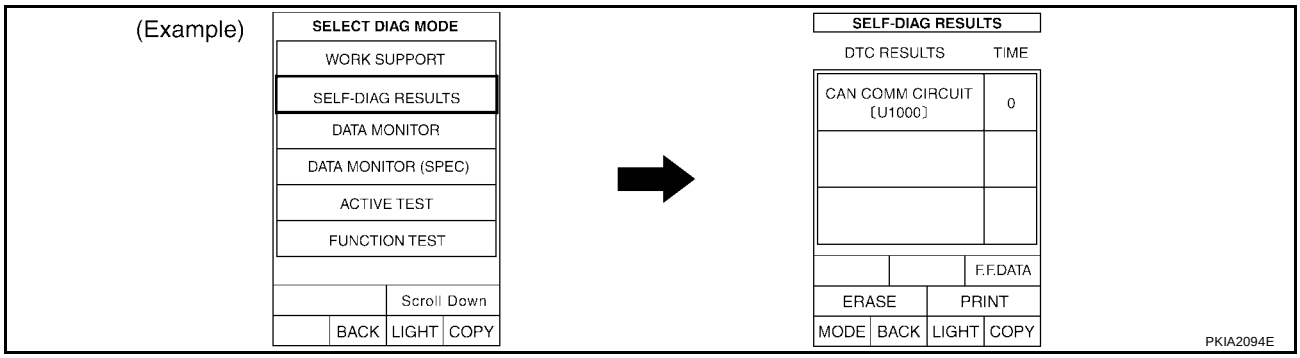
Work Flow

EKS00FS1

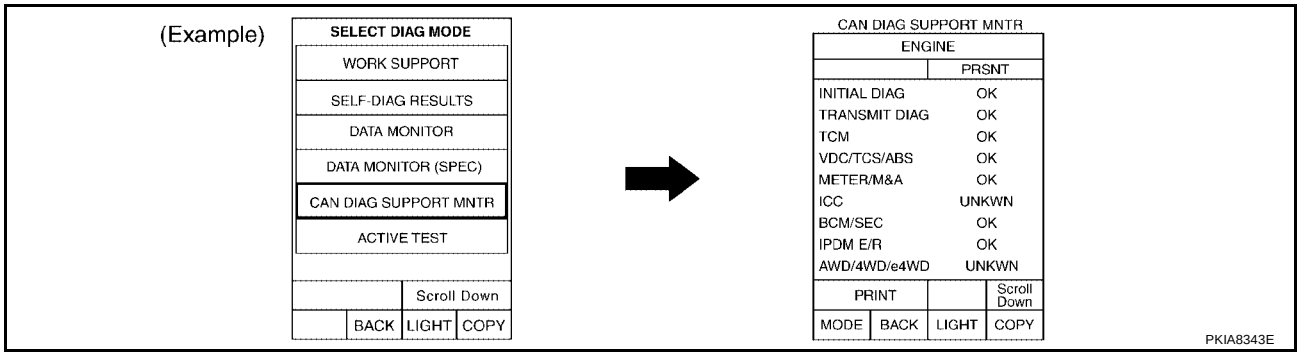
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

BKIA0069E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

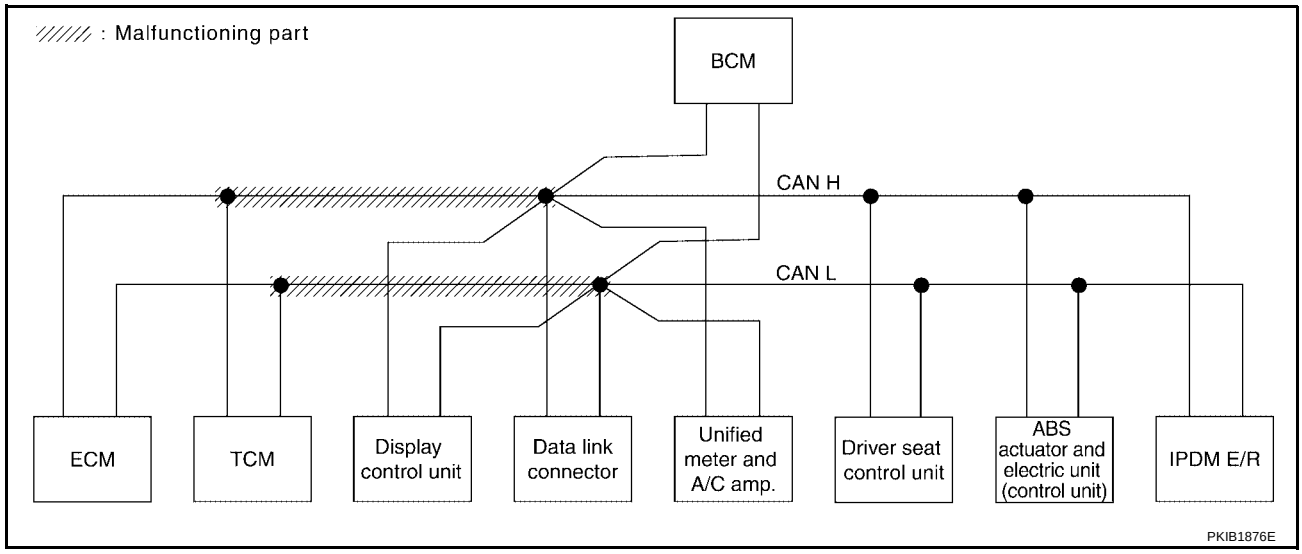
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-359, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
TRANSMISSION	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN ✓	UNKWN ✓	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN ✓	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN ✓	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN ✓	UNKWN ✓	-	-			
IPDM E/R	No indication		UNKWN	UNKWN ✓	-	-	-	UNKWN		

WKIA2371E



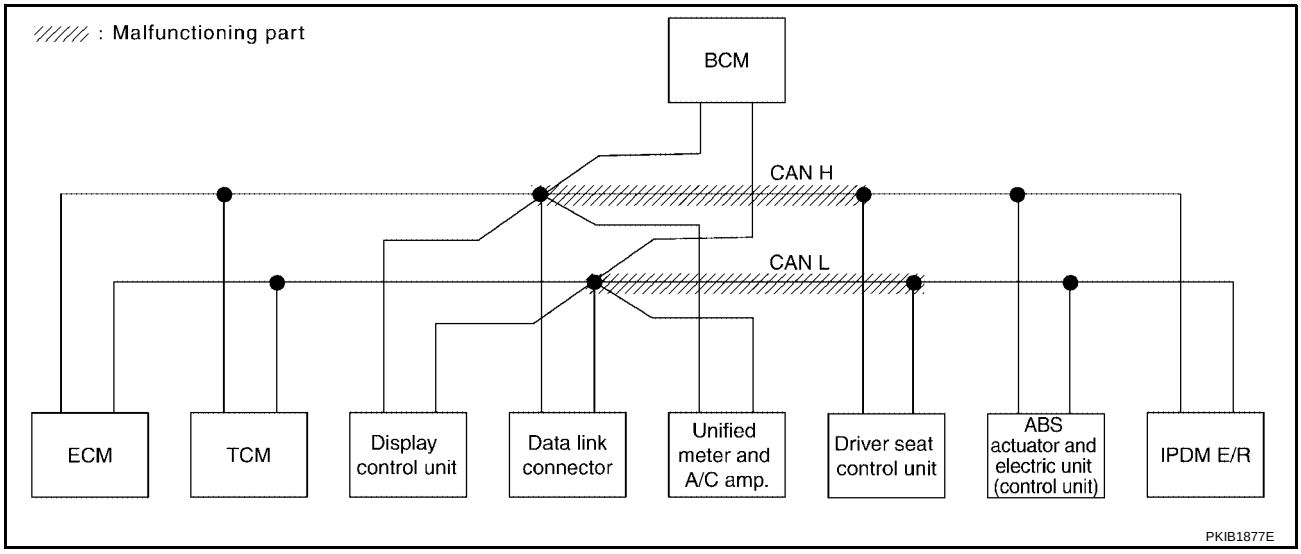
PKIB1876E

Case 2

Check harness between data link connector and driver seat control unit. Refer to LAN-359, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2372E



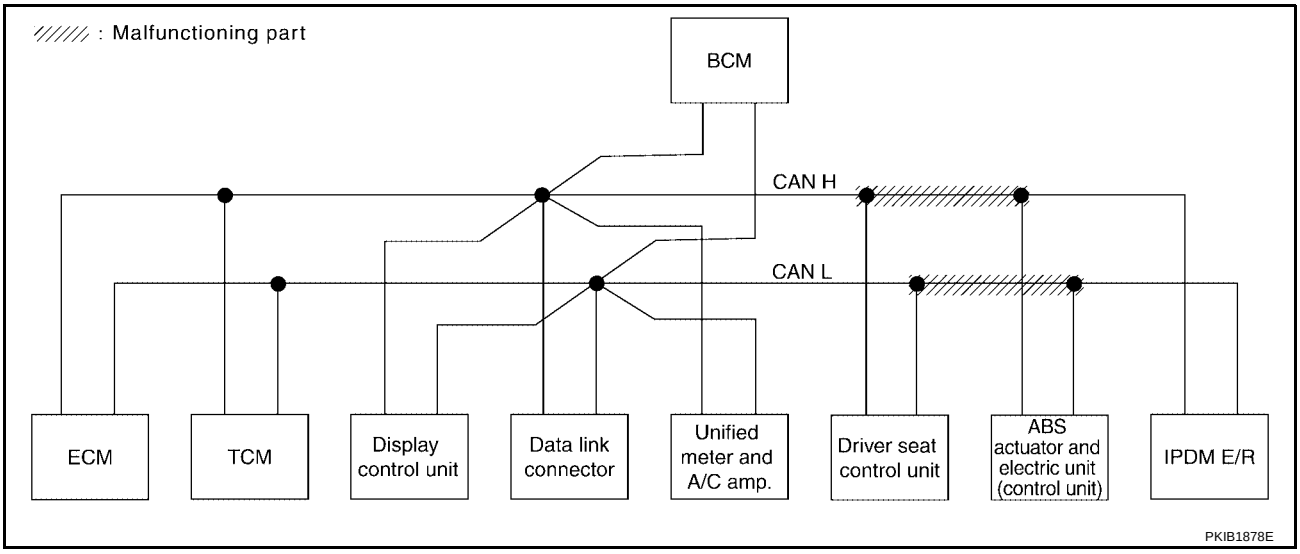
PKIB1877E

Case 3

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-360, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2373E



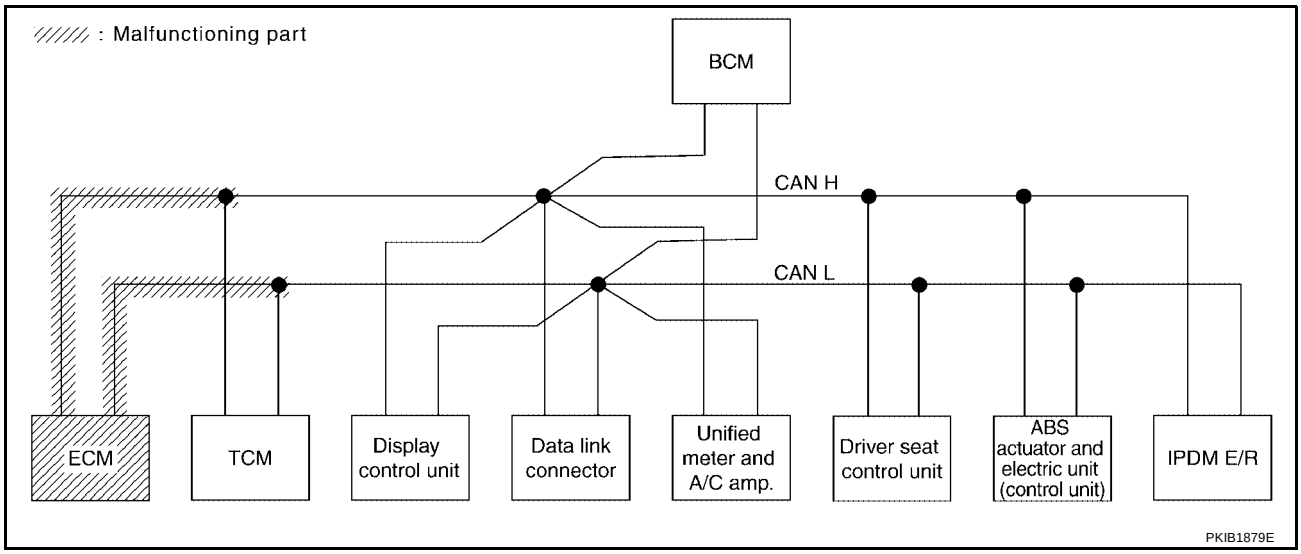
PKIB1878E

Case 4

Check ECM circuit. Refer to LAN-360, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2374E



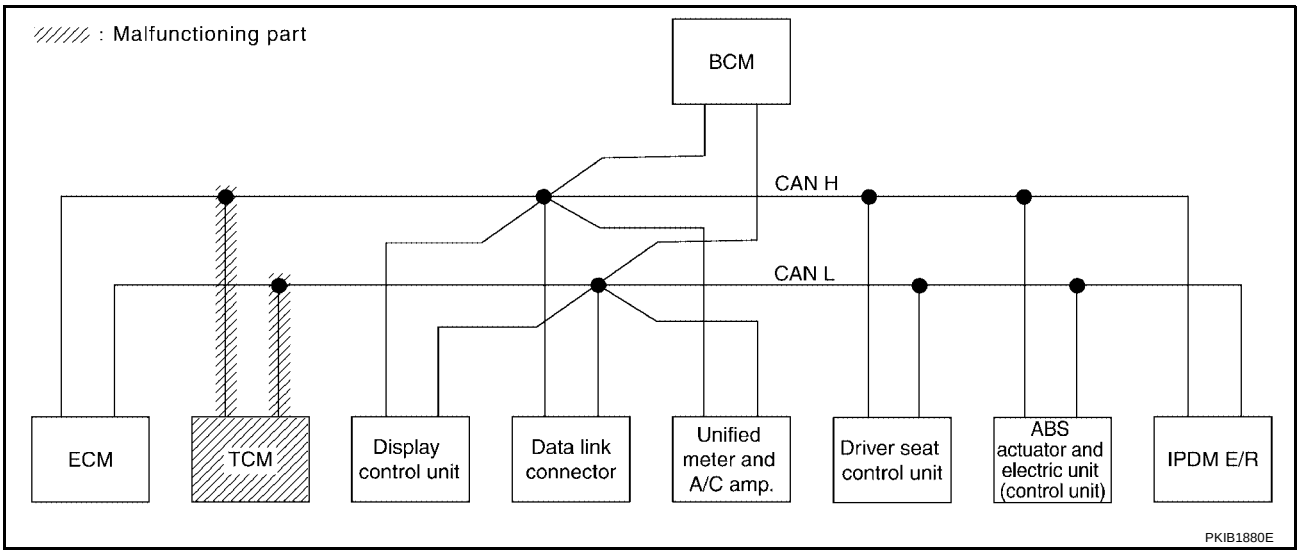
PKIB1879E

Case 5

Check TCM circuit. Refer to LAN-361, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2375E



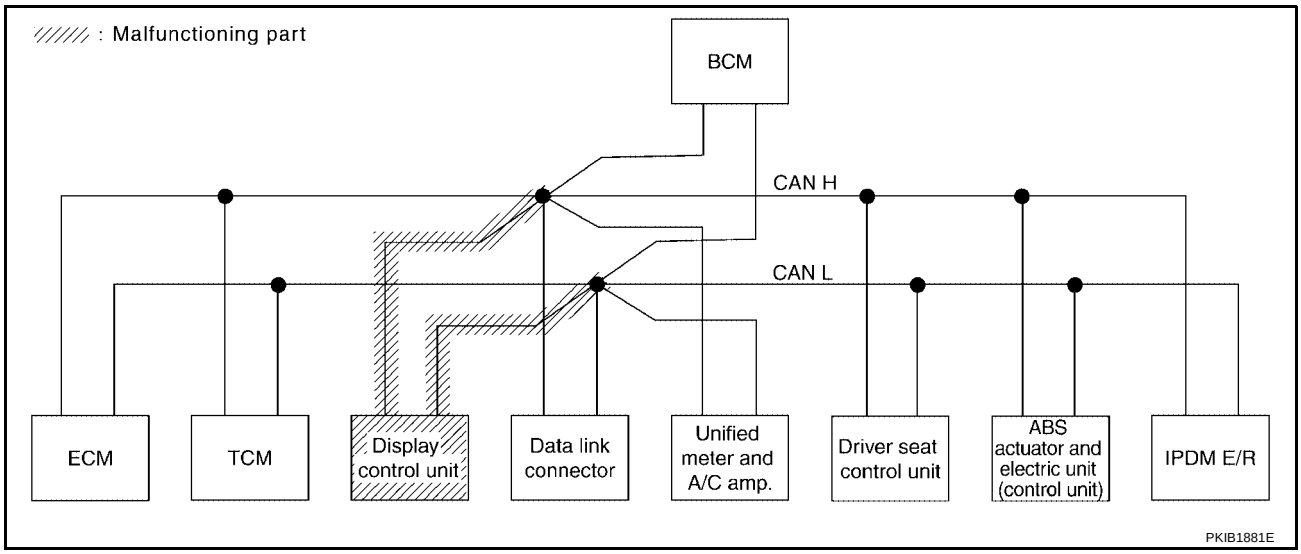
PKIB1880E

Case 6

Check display control unit circuit. Refer to LAN-361, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	-	-	CAN CIRC 5 ✓	CAN CIRC 2 ✓		CAN CIRC 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN ✓	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2376E



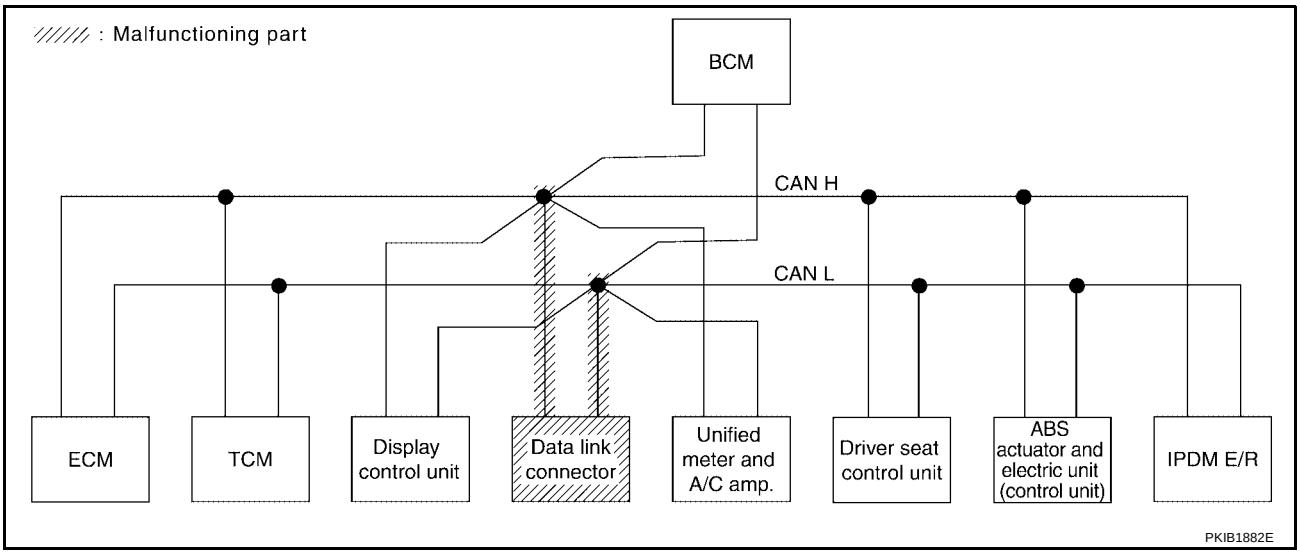
PKIB1881E

Case 7

Check data link connector circuit. Refer to LAN-362, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit	✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	✓ No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	✓ No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS	✓	NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2377E



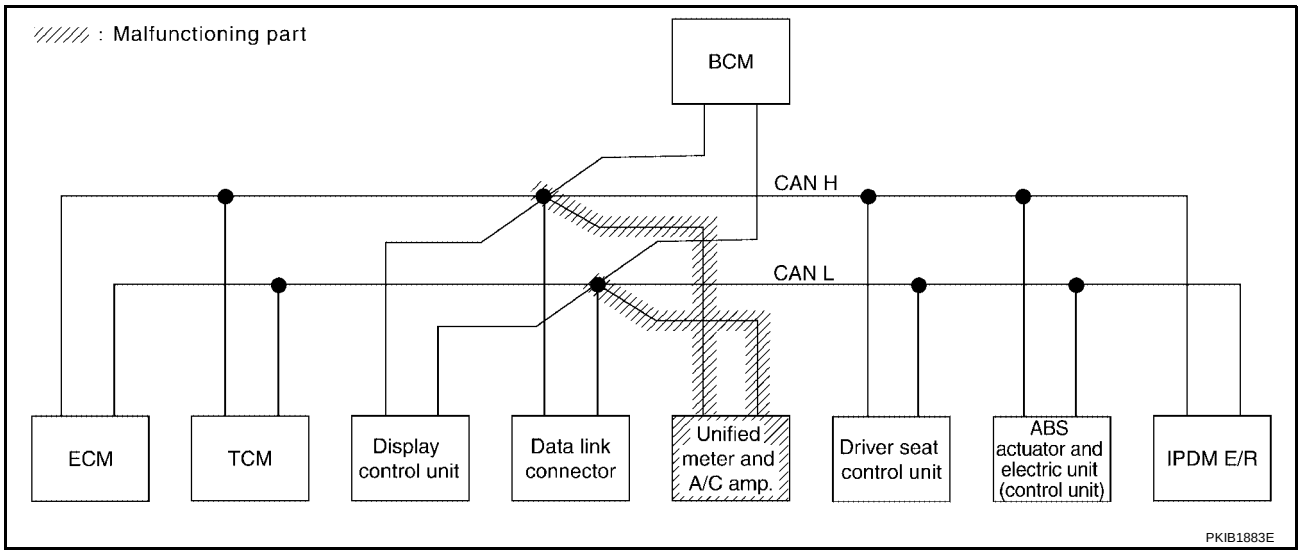
PKIB1882E

Case 8

Check unified meter and A/C amp. circuit. Refer to LAN-362, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2379E



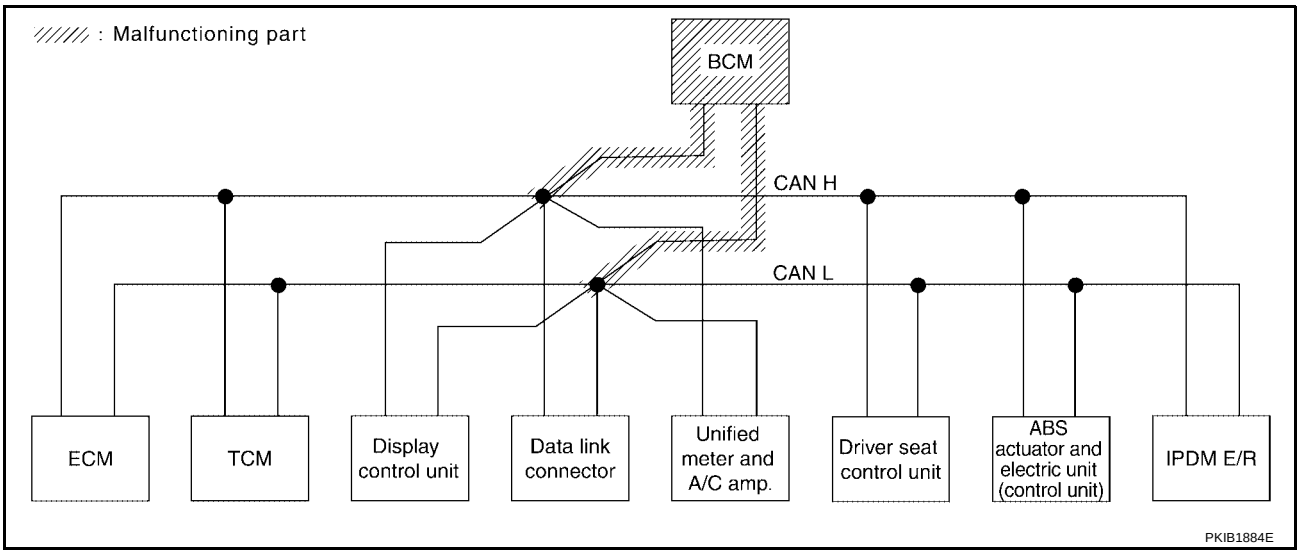
PKIB1883E

Case 9

Check BCM circuit. Refer to LAN-363, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2378E



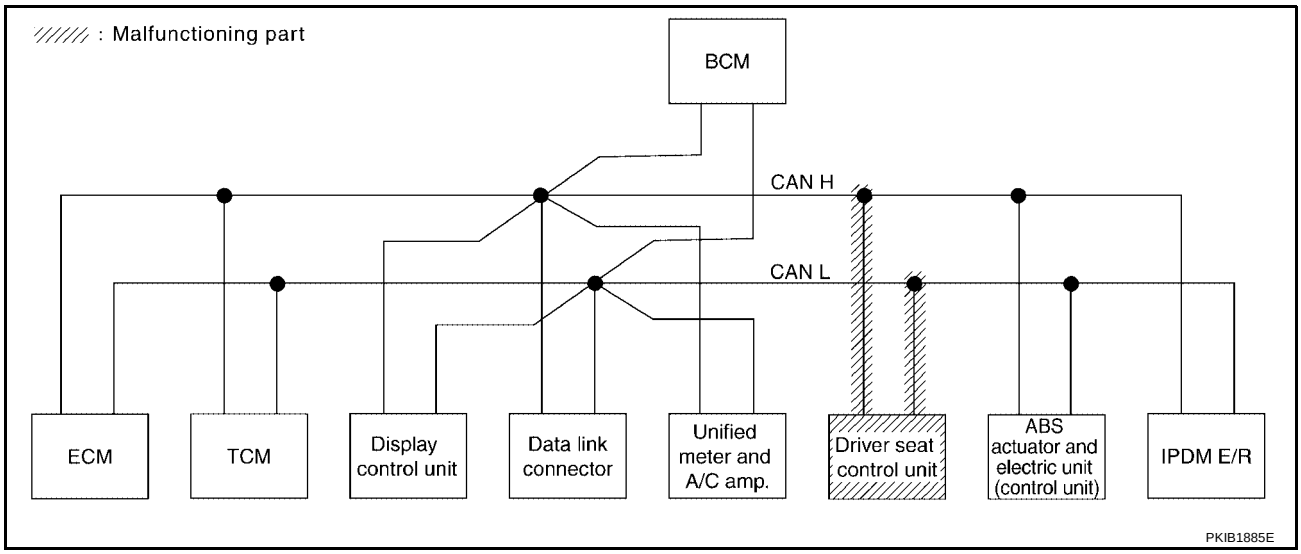
PKIB1884E

Case 10

Check driver seat control unit circuit. Refer to LAN-363, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2380E



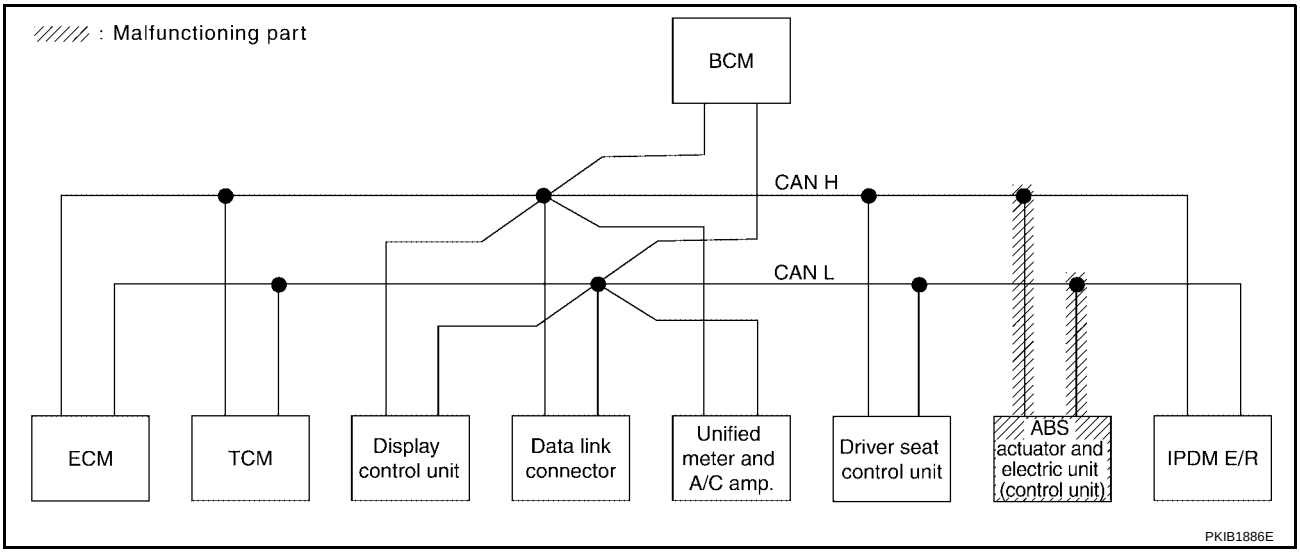
PKIB1885E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-364, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2381E



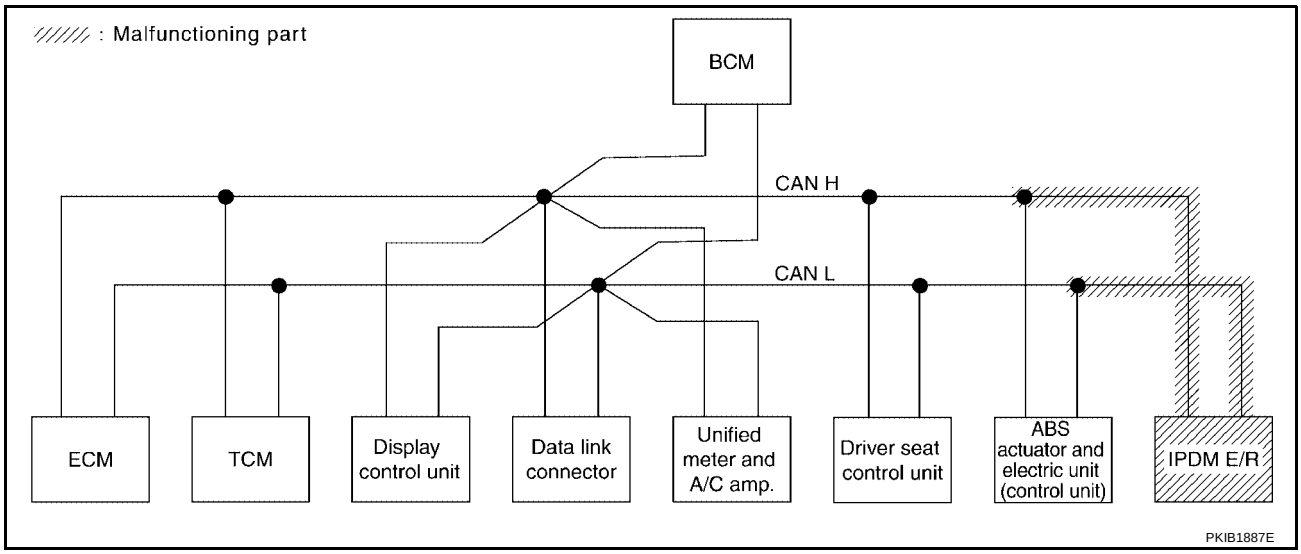
PKIB1886E

Case 12

Check IPDM E/R circuit. Refer to LAN-364, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2382E



PKIB1887E

Case 13

Check CAN communication circuit. Refer to LAN-365, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2383E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-365, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2385E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-365, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	DISPLAY	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	-	UNKWN		UNKWN	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	CAN CIRC 2		CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN			UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN		

WKIA2384E

Circuit Check Between TCM and Data Link Connector

EKS00FS2

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

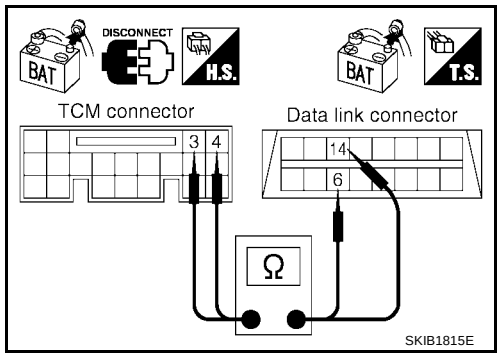
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-344, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and Driver Seat Control Unit

EKS00FS3

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

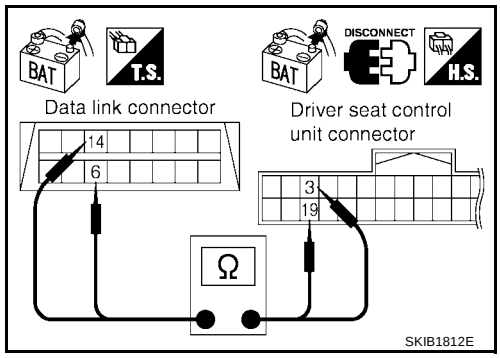
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-344, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

EKS00FS4

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

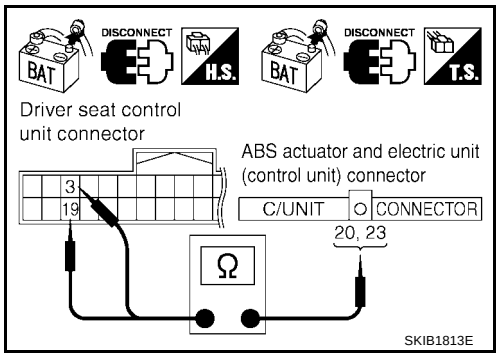
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 20 (L), 23 (P).

3 (BR) - 20 (L) : Continuity should exist.
19 (Y/G) - 23 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-344, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

EKS00FS5

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

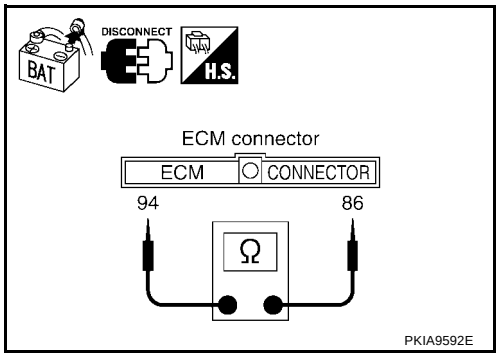
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.

TCM Circuit Check

EKS00FS6

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

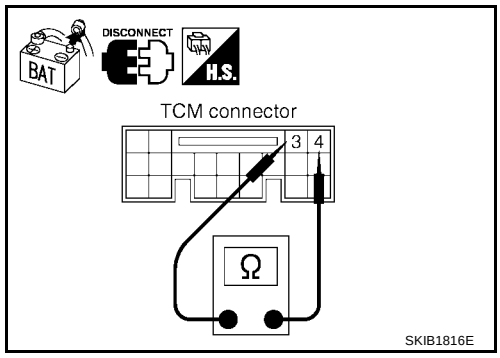
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.



Display Control Unit Circuit Check

EKS00FS7

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

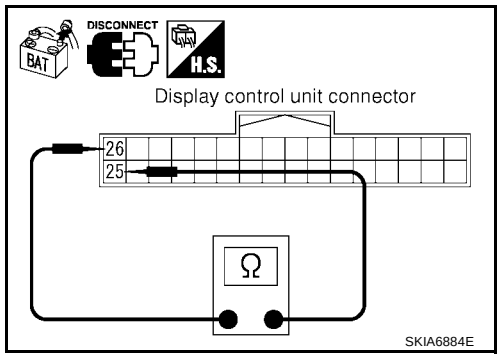
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.



Data Link Connector Circuit Check

EKS00FS8

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

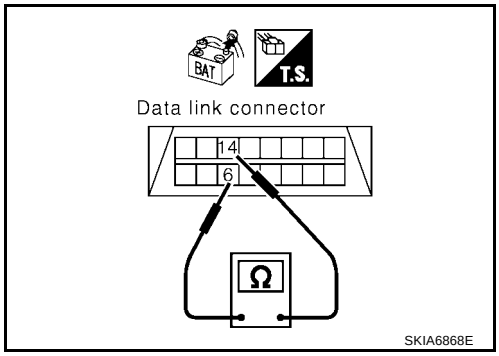
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-344, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

EKS00FS9

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

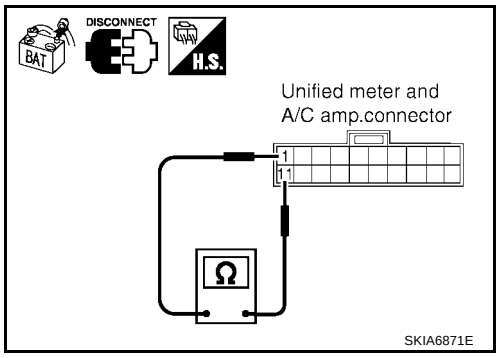
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



BCM Circuit Check

EKS00FSA

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

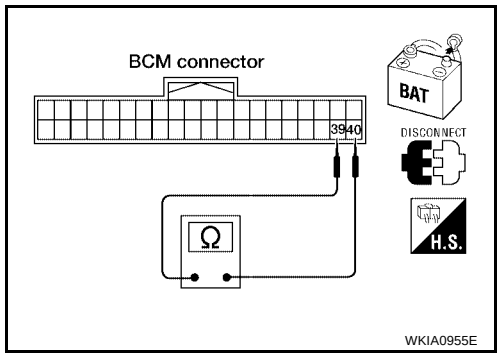
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

EKS00FSB

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

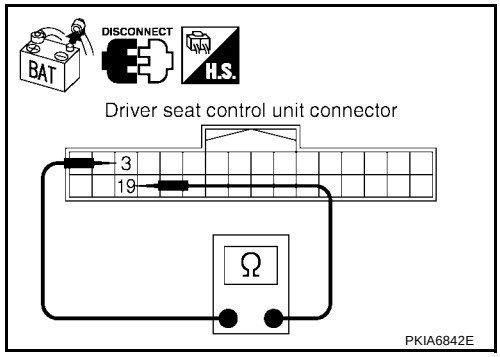
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00FSC

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

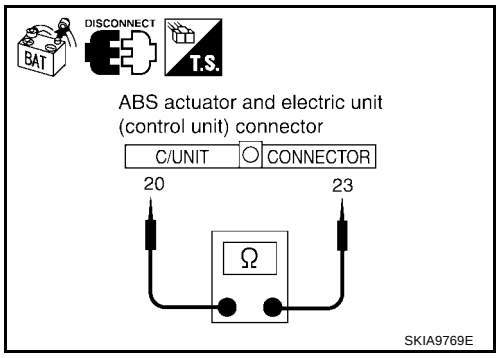
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

EKS00FSD

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

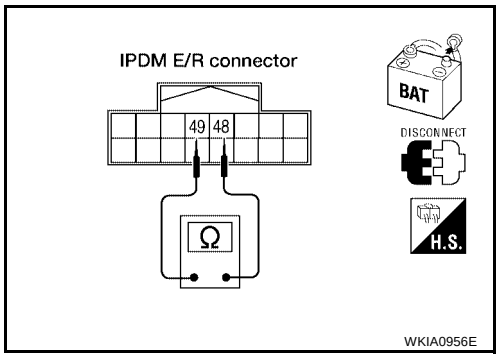
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

EKS00FSE

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display control unit
- Unified meter and A/C amp.
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

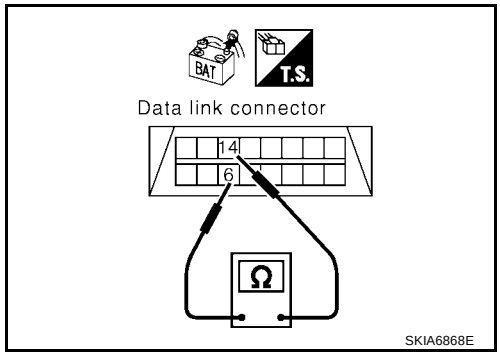
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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



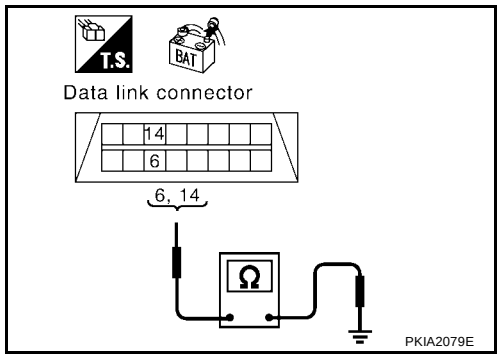
3. CHECK HARNESS FOR SHORT TO GROUND

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-366, "Component Inspection" .
NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

EKS00FSF

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

EKS00FSG

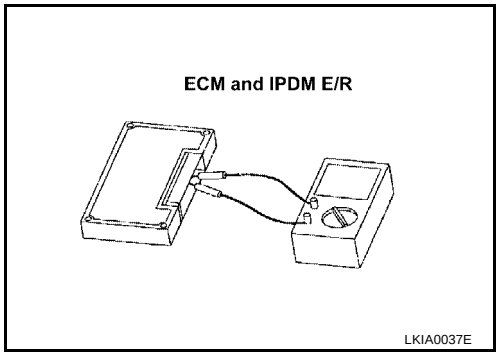
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 15)

PFP:23710

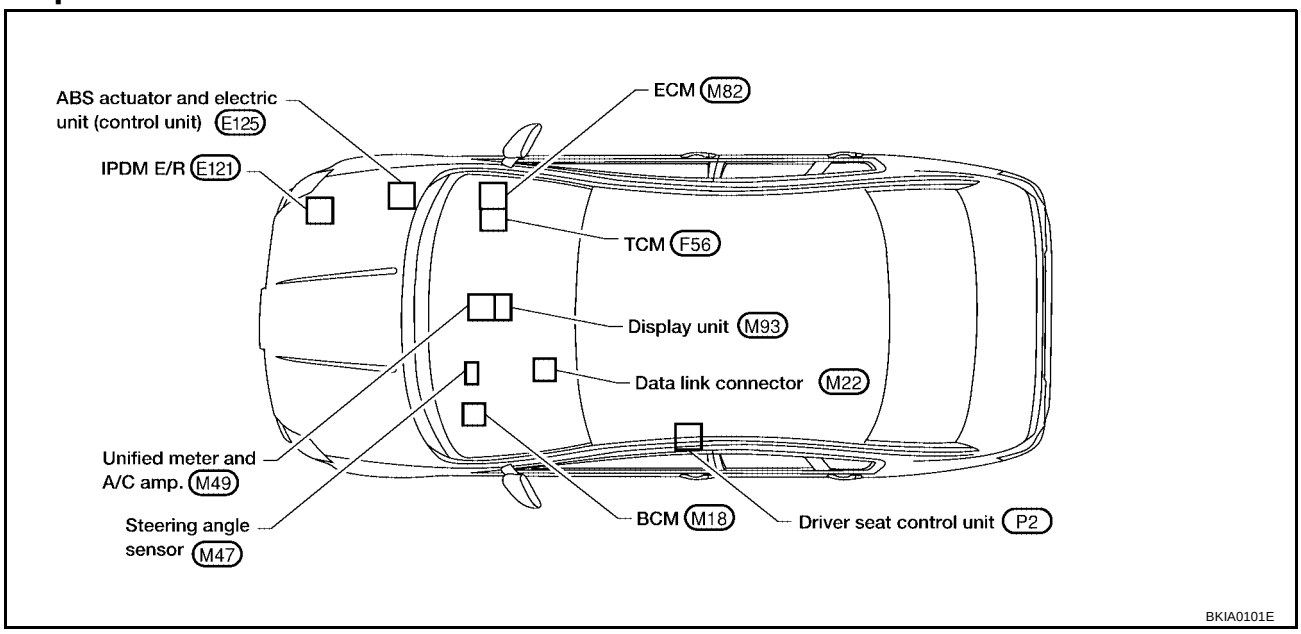
System Description

EKS00FRC

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.

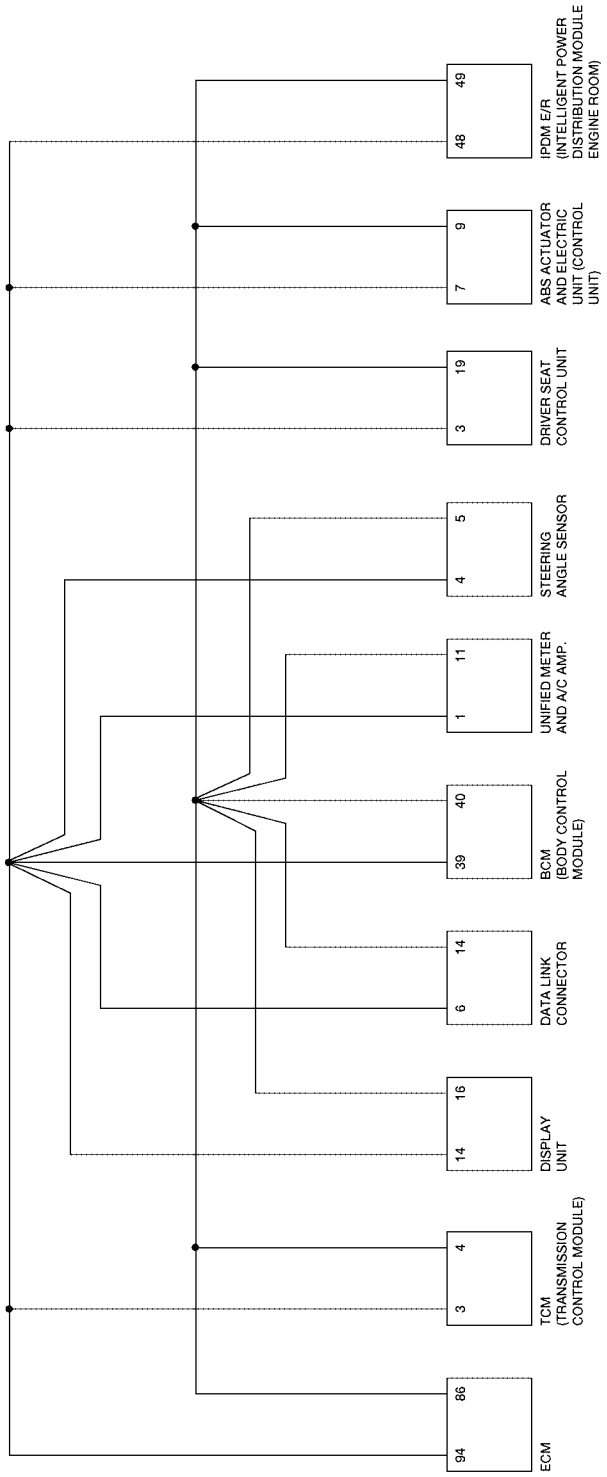
Component Parts and Harness Connector Location

EKS00FRD



Schematic

EKS00FRE

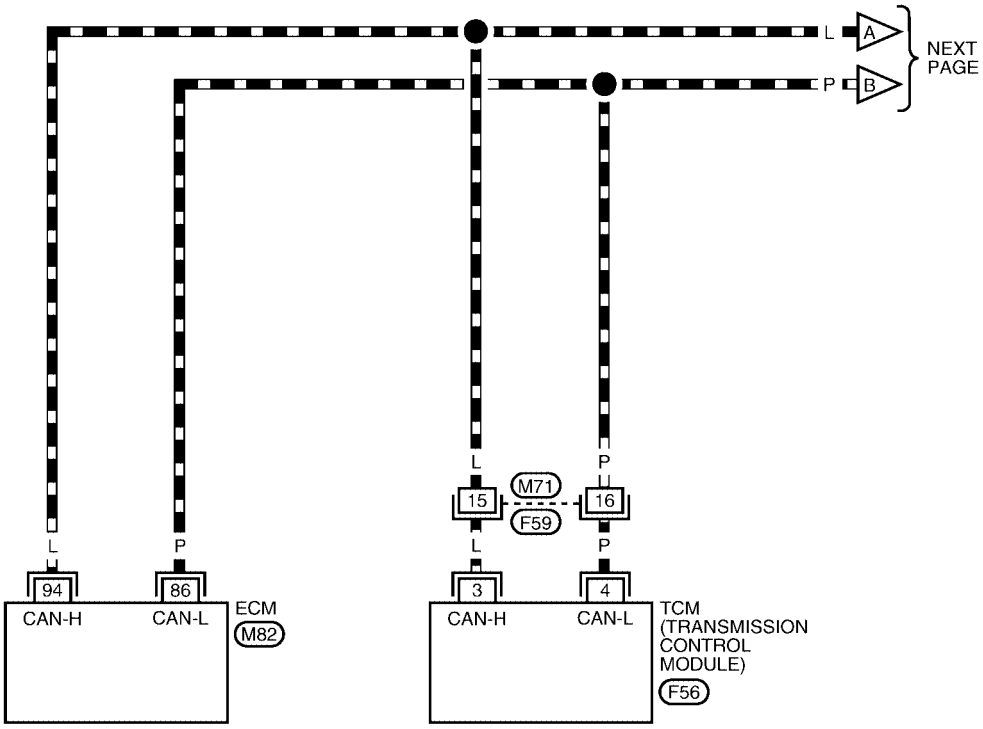


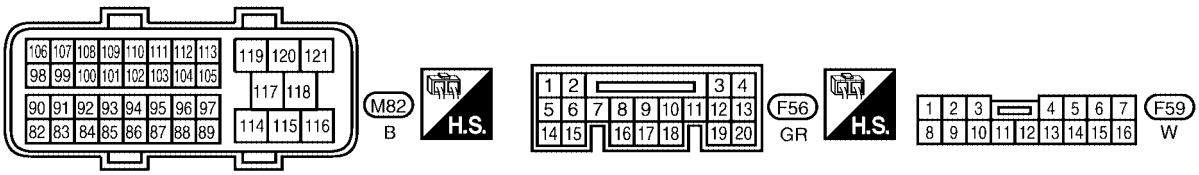
BKWA0640E

Wiring Diagram - CAN -

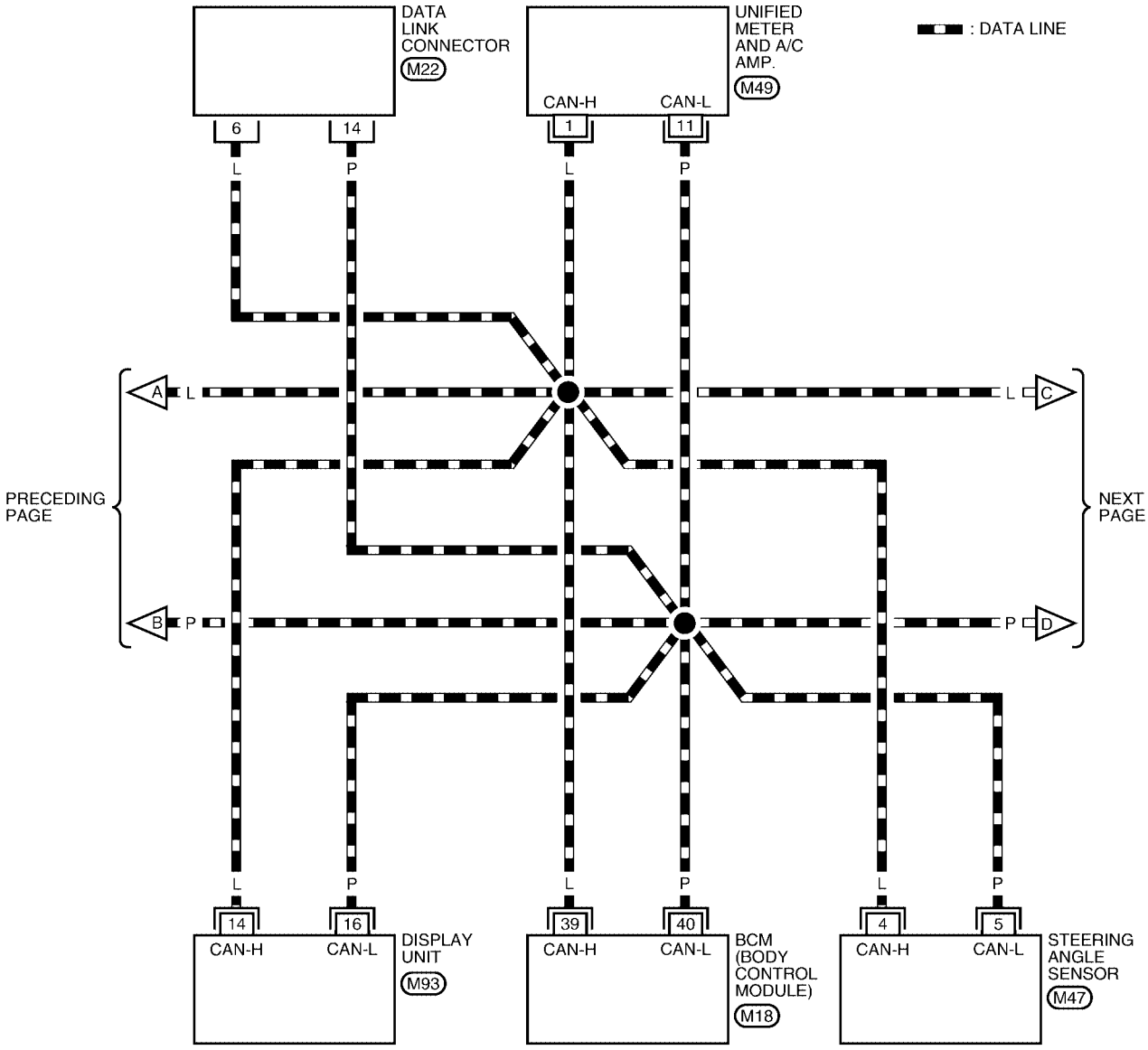
EKS00FRF

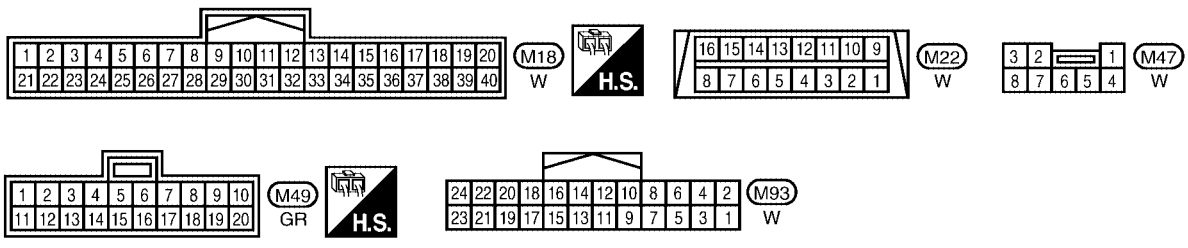
LAN-CAN-37



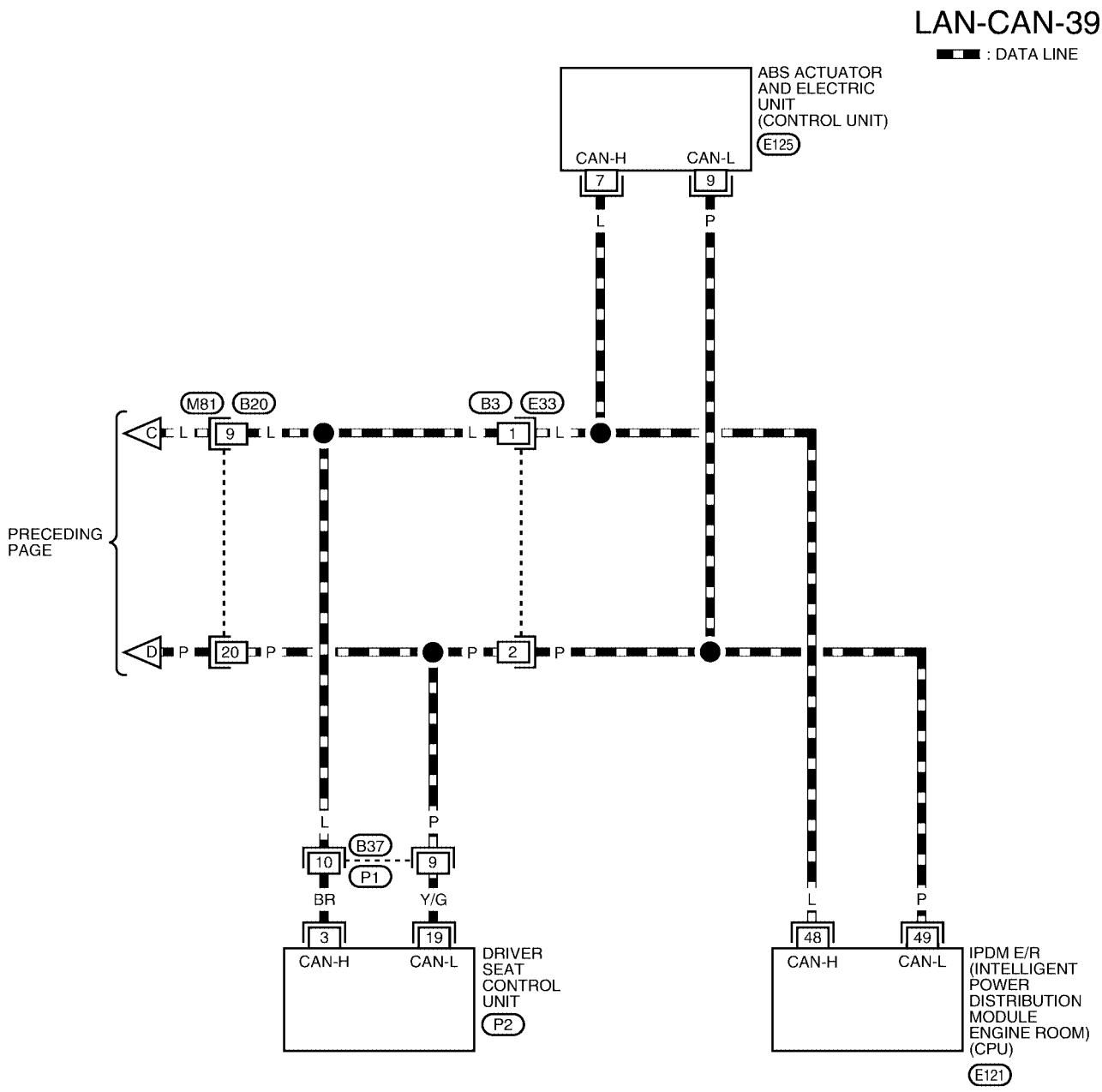


BKWA0629E


DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
DISPLAY UNIT
M93
BCM (BODY CONTROL MODULE)
M18
STEERING ANGLE SENSOR
M47
16
39
40
4
5


M18
W
H.S.
M22
W
M47
W
M49
GR
M93
W

BKWA0630E

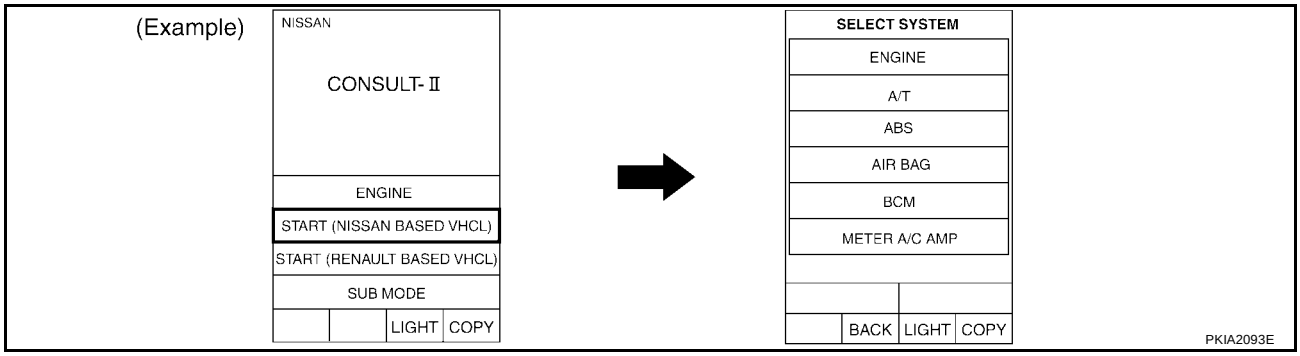

LAN-CAN-39
: DATA LINE
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E125
CAN-H
CAN-L
7
9
L
P
M81
B20
B3
E33
C
L
9
L
L
1
L
PRECEDING PAGE
D
P
20
P
P
2
P
L
P
B37
10
9
P1
BR
Y/G
3
19
CAN-H
CAN-L
DRIVER SEAT CONTROL UNIT
P2
L
P
48
49
CAN-H
CAN-L
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
E121
M81
GR
E33
W
E121
W
E125
W
B37
W
P2
W

BKWA0631E

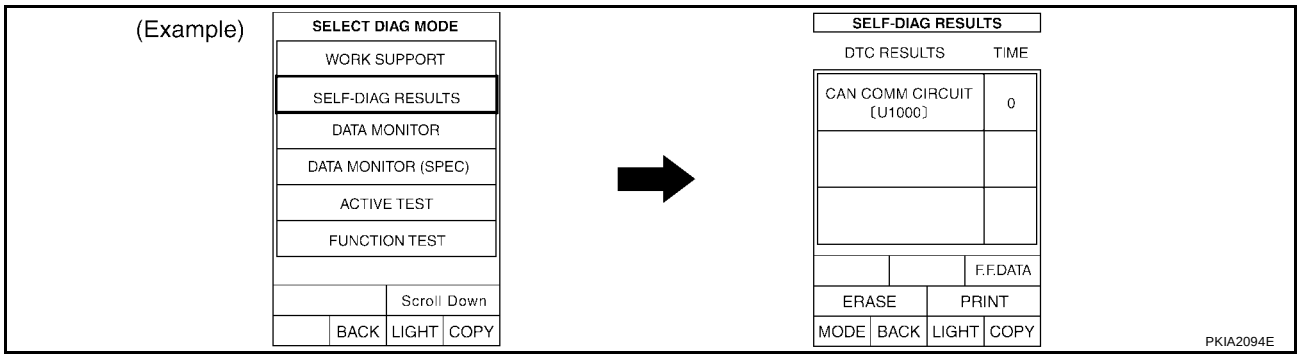
Work Flow

EKS00FRG

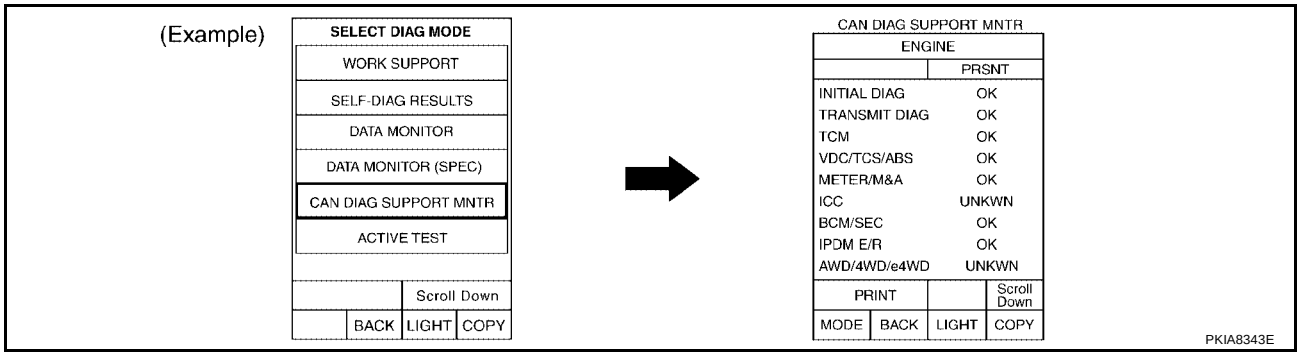
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



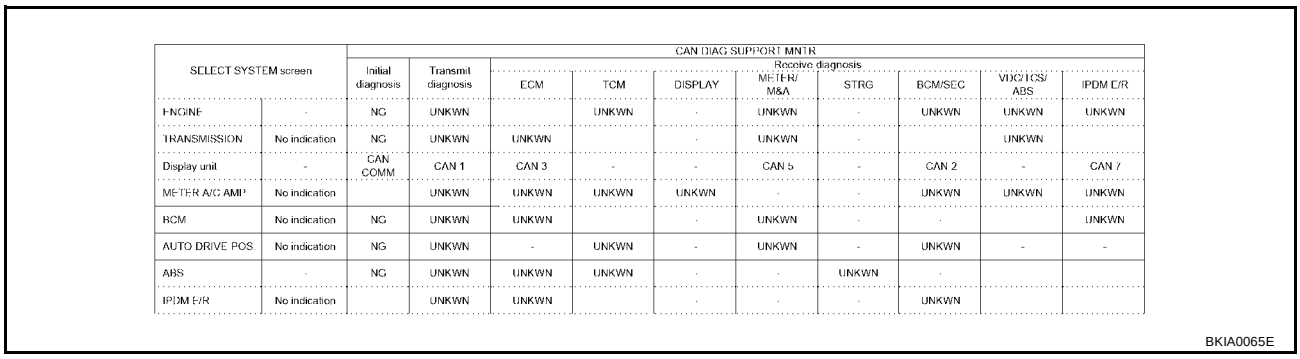
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

BKIA0065E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the integrated display system. Refer to AV-90, "AV Communication Line Check" .
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

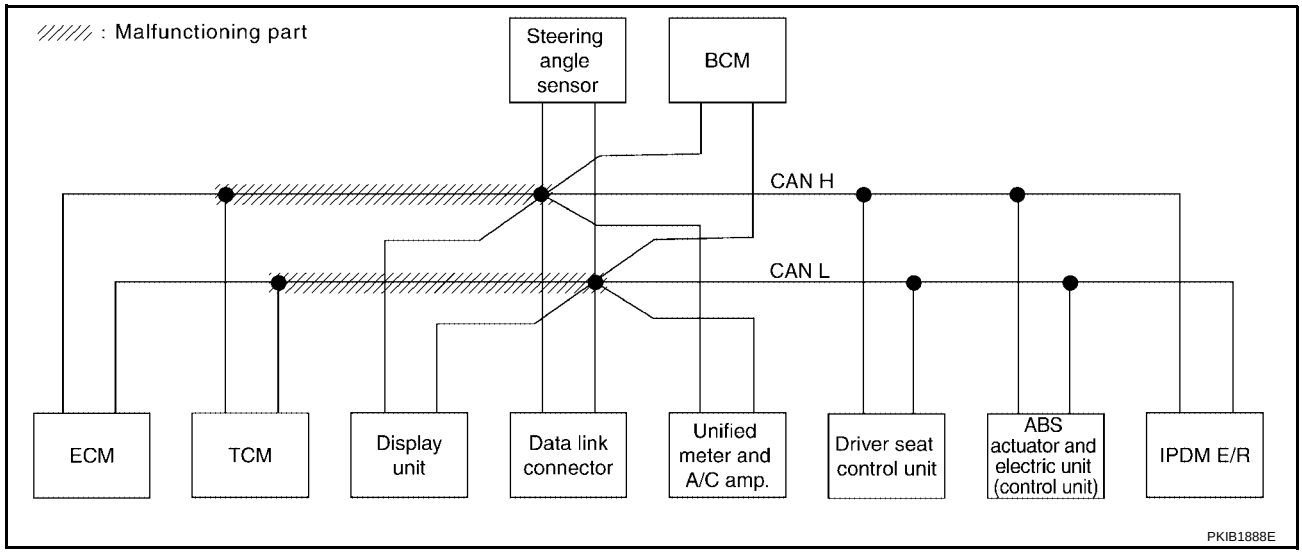
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-388, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2232E



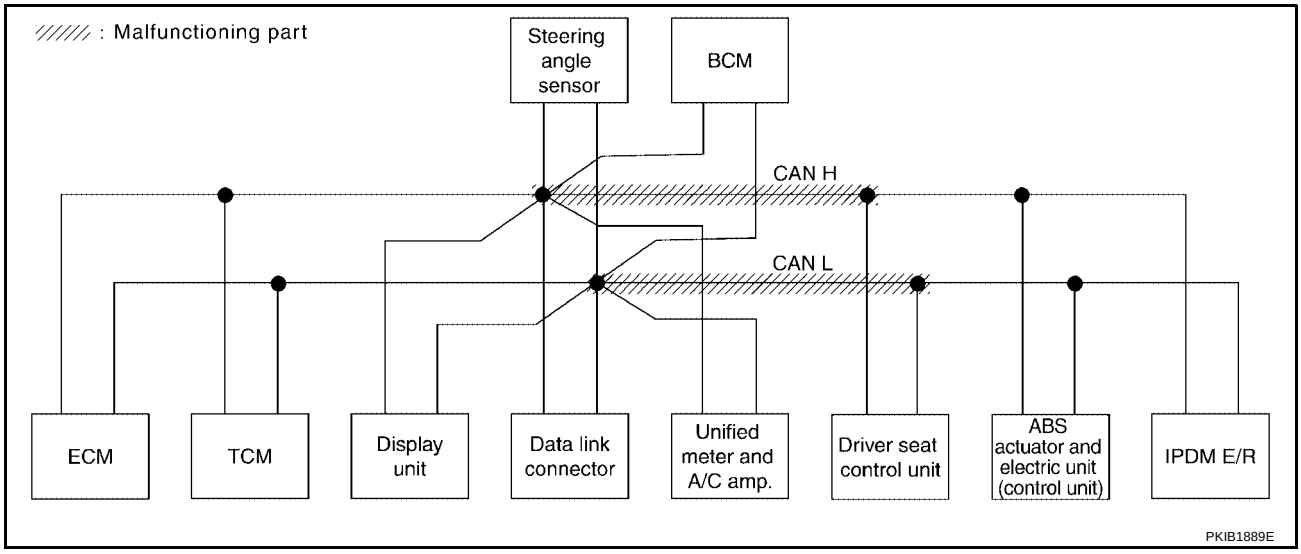
PKIB1888E

Case 2

Check harness between data link connector and driver seat control unit. Refer to LAN-388, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2233E



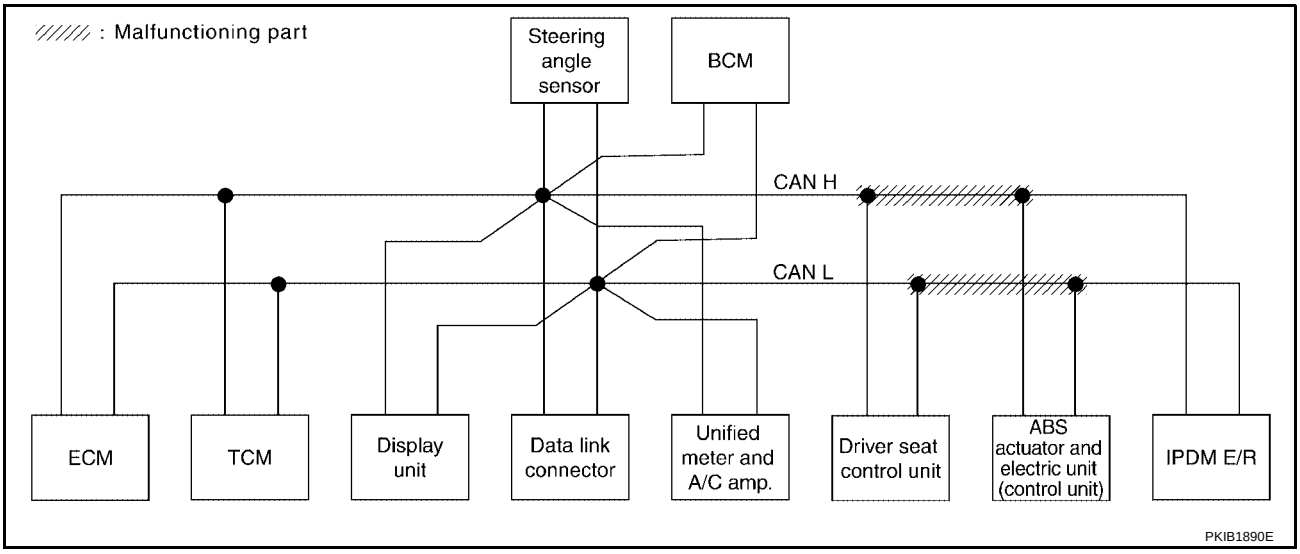
PKIB1889E

Case 3

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-389, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2234E

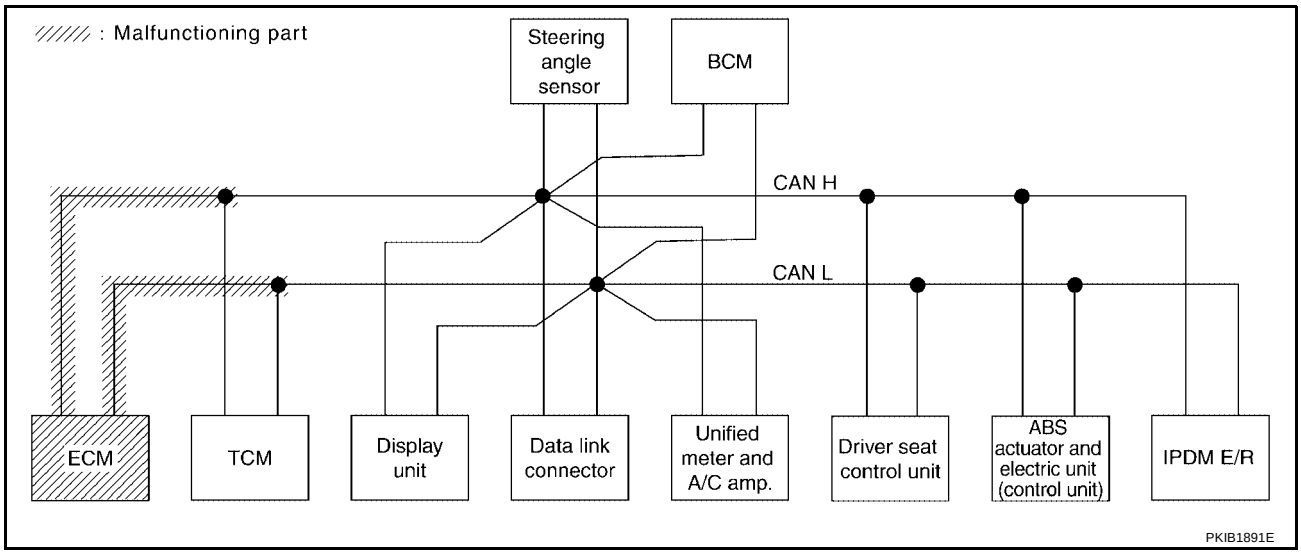


Case 4

Check ECM circuit. Refer to LAN-389, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2235E



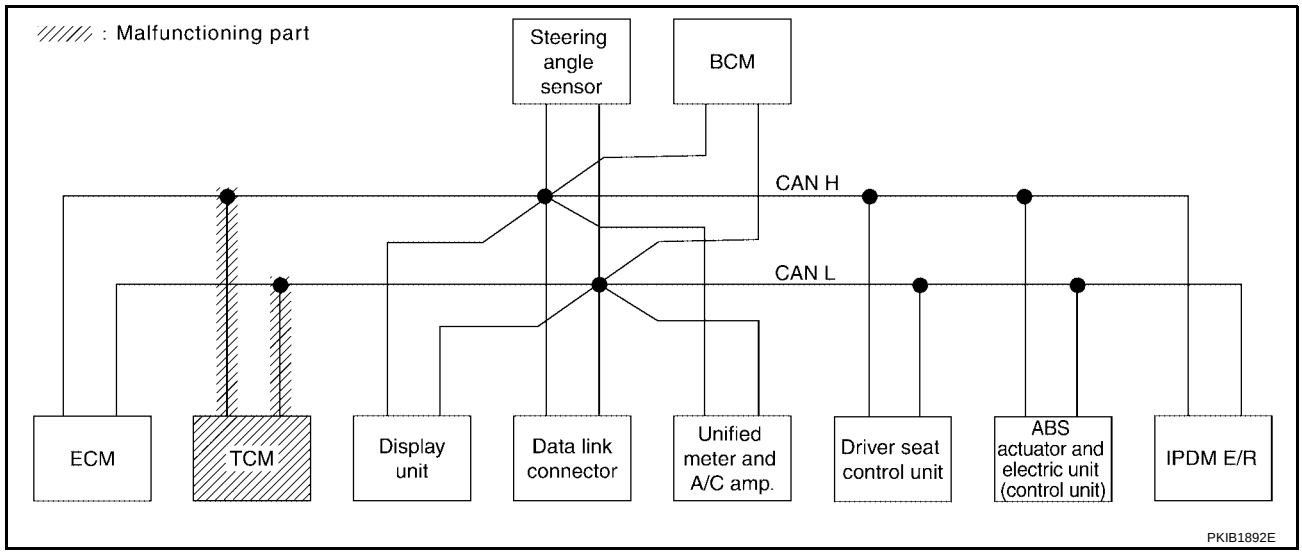
PKIB1891E

Case 5

Check TCM circuit. Refer to LAN-390, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

PKIB2885E



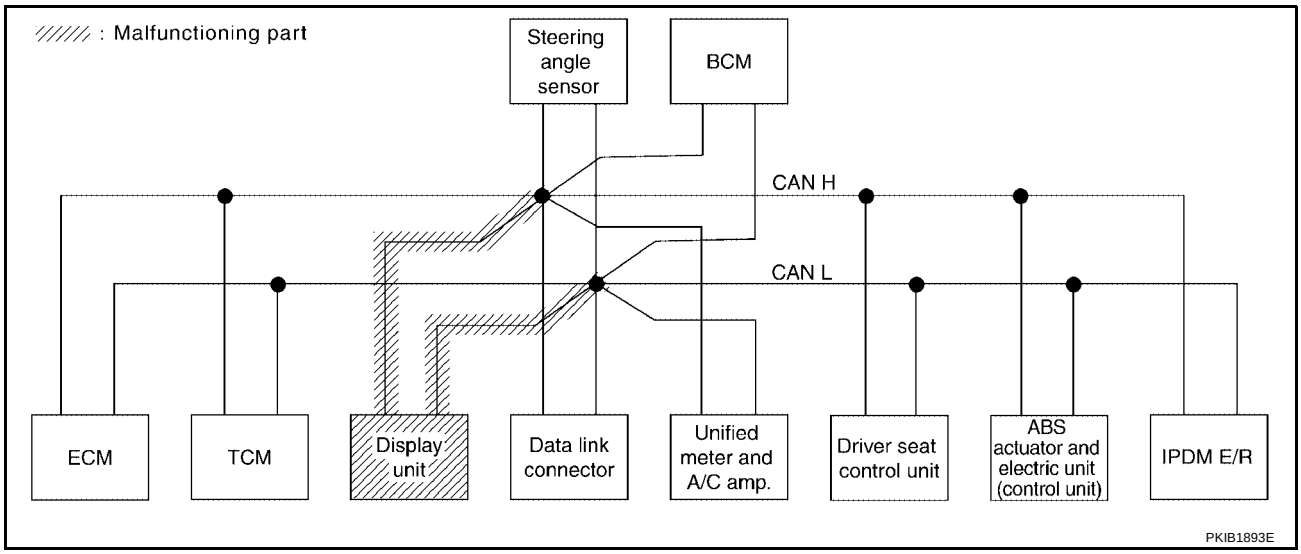
PKIB1892E

Case 6

Check display unit circuit. Refer to LAN-390, "Display Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2237E

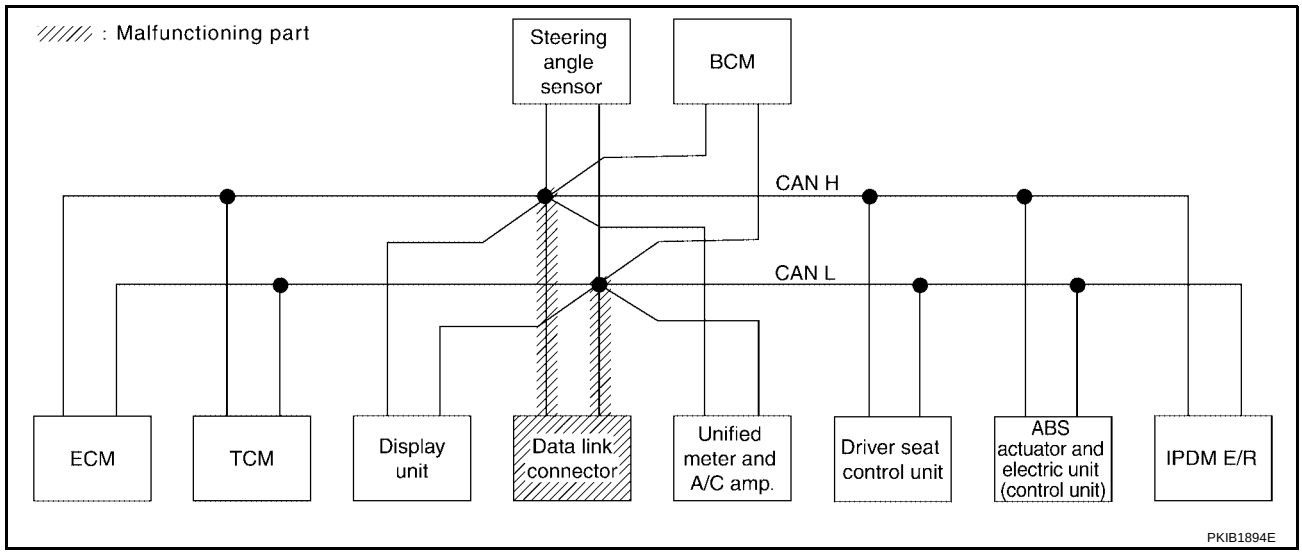


Case 7

Check data link connector circuit. Refer to LAN-391, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2238E



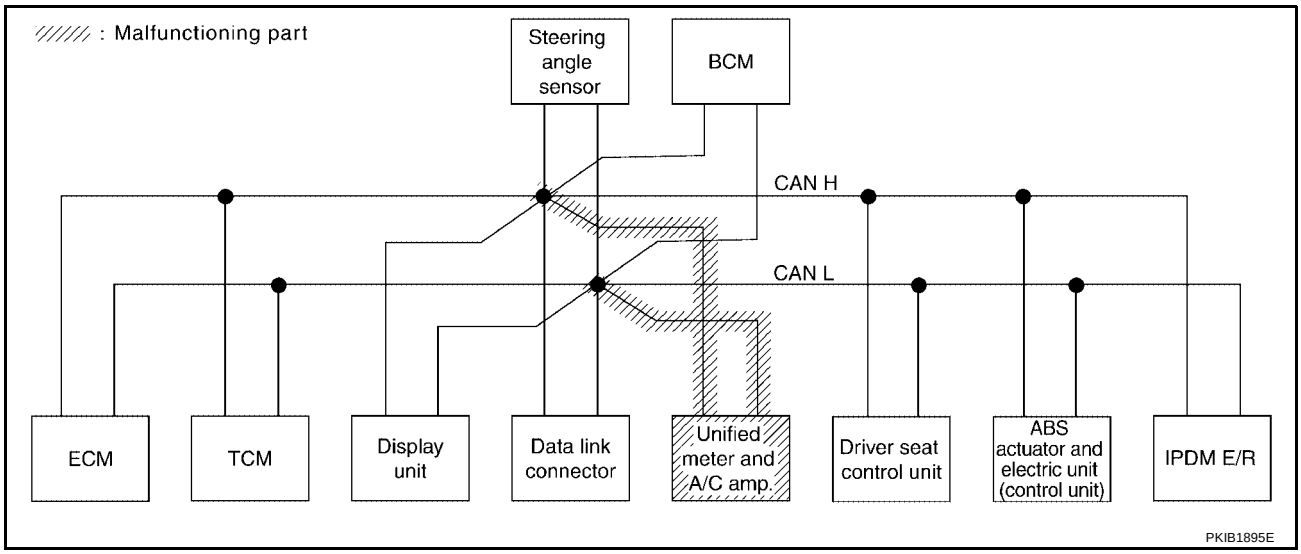
PKIB1894E

Case 8

Check unified meter and A/C amp. circuit. Refer to LAN-391, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2240E



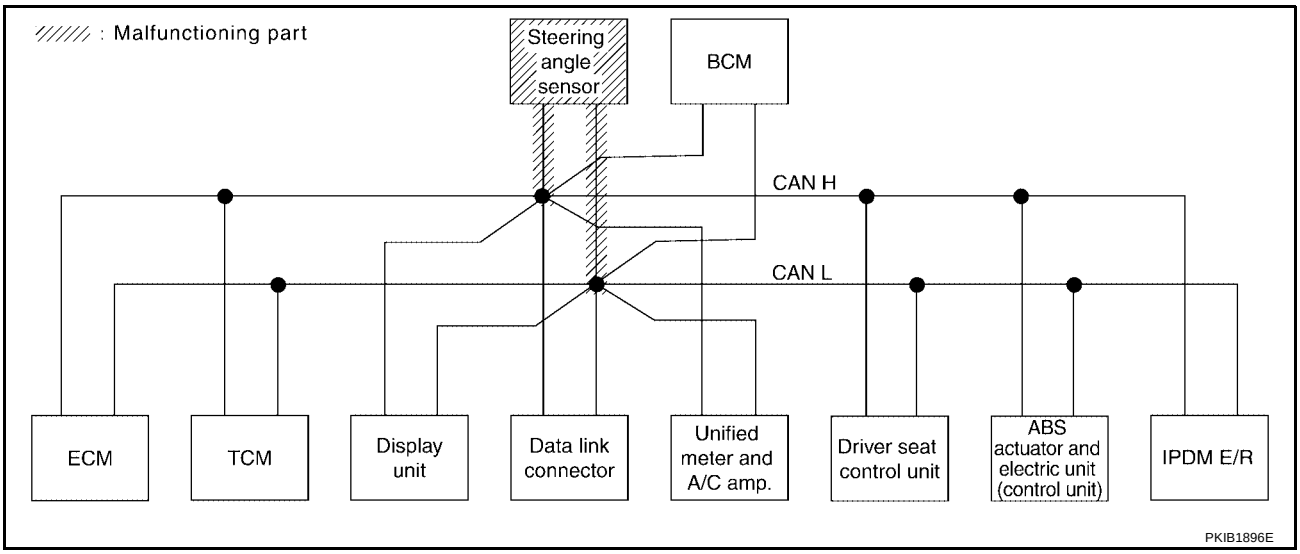
PKIB1895E

Case 9

Check steering angle sensor circuit. Refer to LAN-392, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2241E



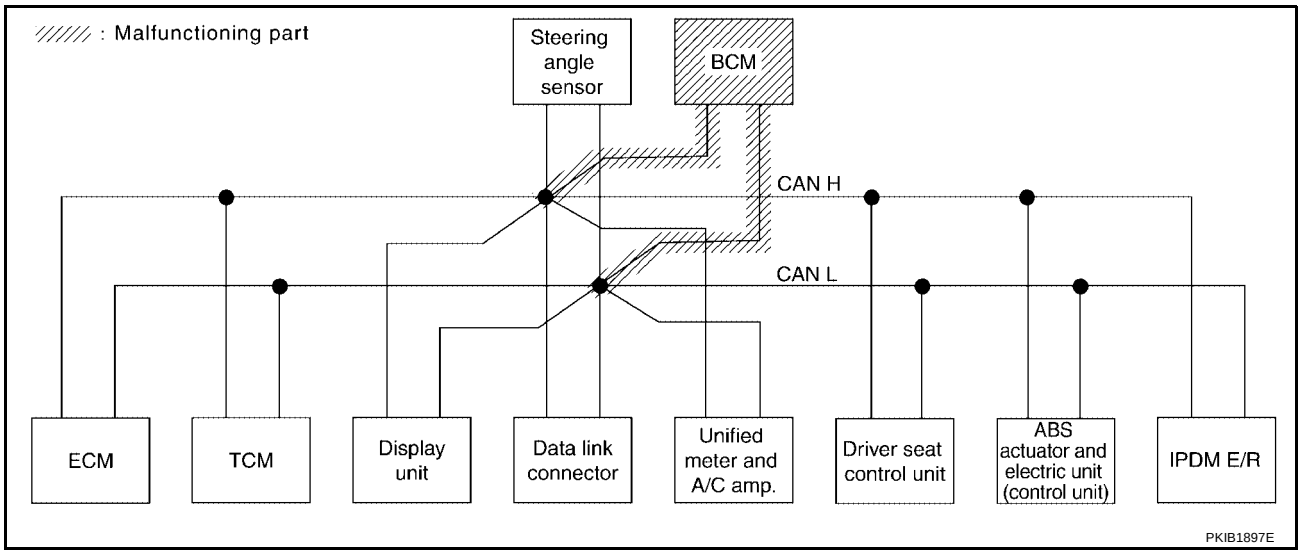
PKIB1896E

Case 10

Check BCM circuit. Refer to LAN-392, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN		UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2239E



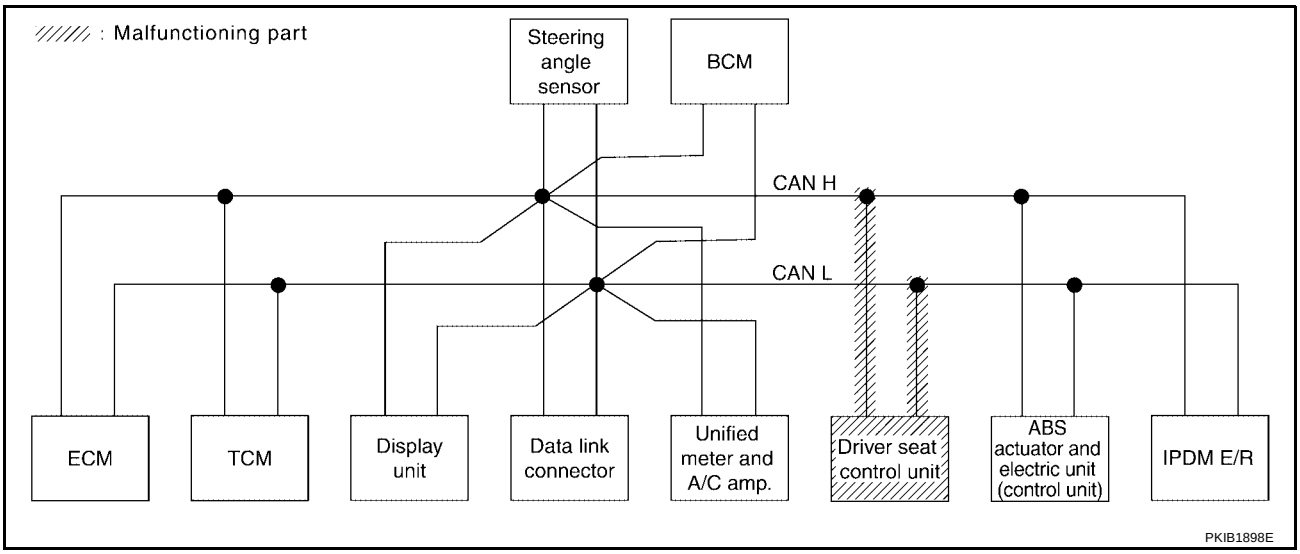
PKIB1897E

Case 11

Check driver seat control unit circuit. Refer to LAN-393, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2242E



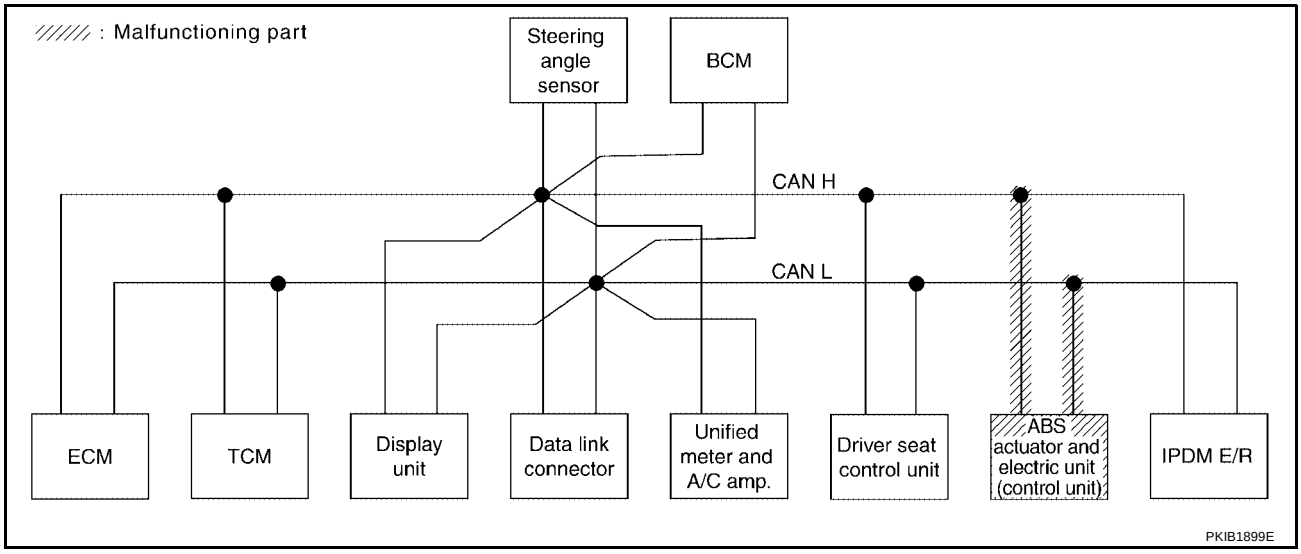
PKIB1898E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-393, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

PKIB2886E



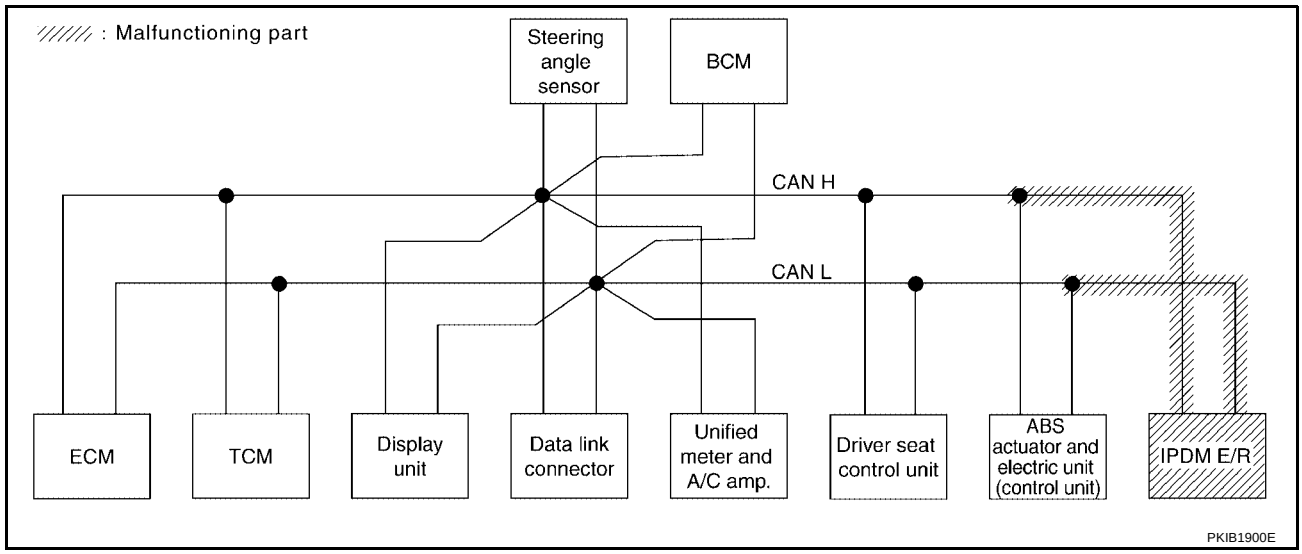
PKIB1899E

Case 13

Check IPDM E/R circuit. Refer to LAN-394, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2244E



PKIB1900E

Case 14

Check CAN communication circuit. Refer to LAN-394, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2245E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-395, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2247E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-395, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 5	-	CAN 2	-	CAN 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2246E

Circuit Check Between TCM and Data Link Connector

EKS00FRH

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

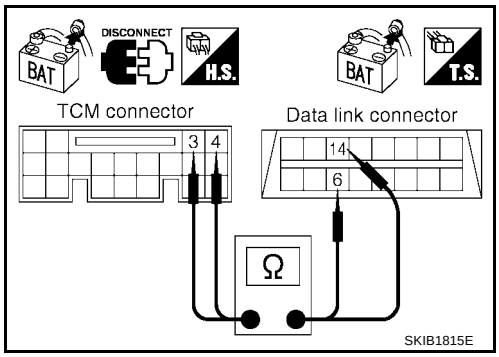
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-372, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and Driver Seat Control Unit

EKS00FRI

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

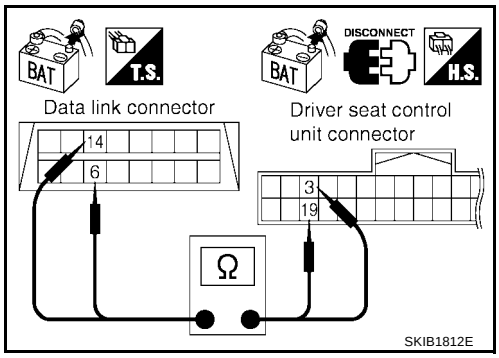
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-372, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

EKS00FRJ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

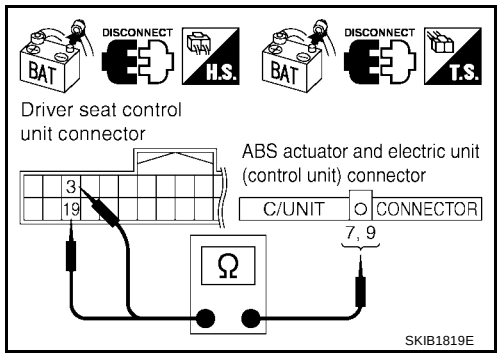
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 7 (L), 9 (P).

3 (BR) - 7 (L) : Continuity should exist.
19 (Y/G) - 9 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-372, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

EKS00FRK

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

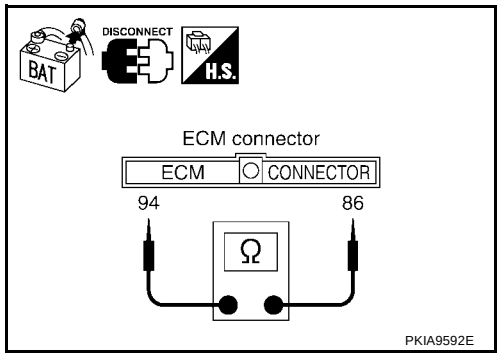
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.

TCM Circuit Check

EKS00FRL

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

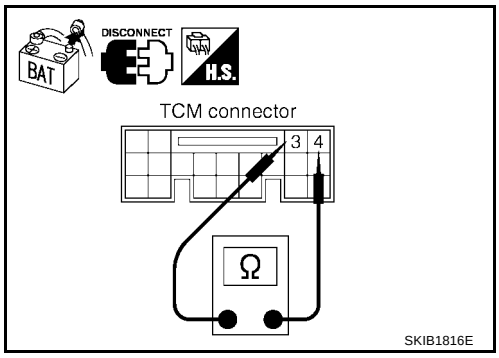
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.

Display Unit Circuit Check

EKS00FRM

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display unit connector M93.
4. Check the terminals for deformation, disconnection, looseness or damage.

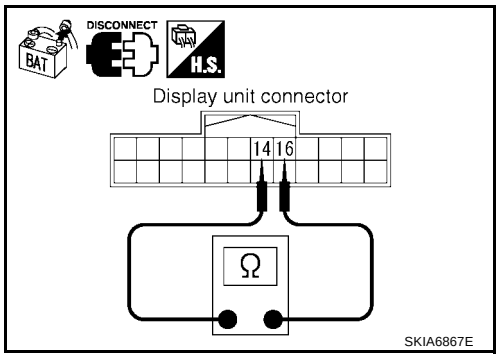
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace display unit.
NG >> Repair harness between display unit connector M93 and data link connector M22.

Data Link Connector Circuit Check

EKS00FRN

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

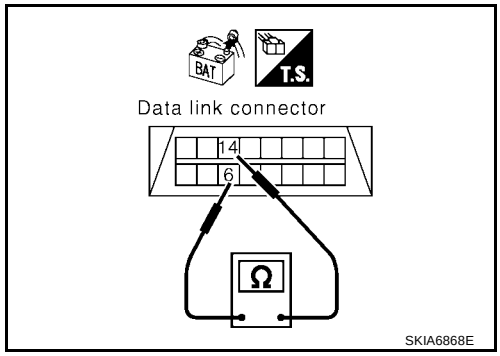
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-372, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

EKS00FRO

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

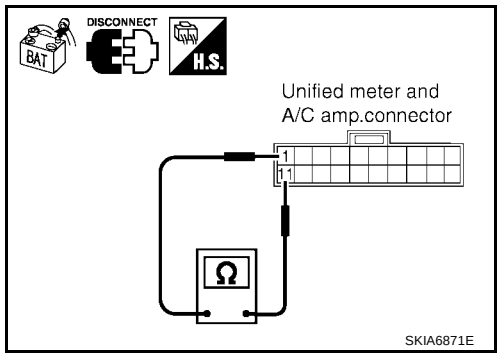
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



Steering Angle Sensor Circuit Check

EKS00FRP

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect steering angle sensor connector M47.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

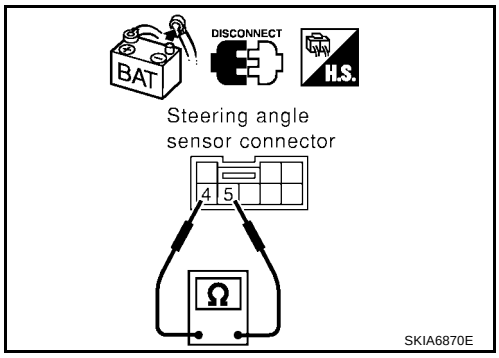
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between steering angle sensor connector M47 terminal 4 (L) and terminal 5 (P).

4 (L) - 5 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor connector M47 and data link connector M22.



BCM Circuit Check

EKS00FRQ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

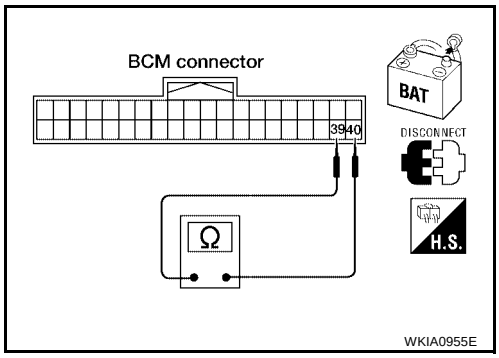
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

EKS00FRR

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

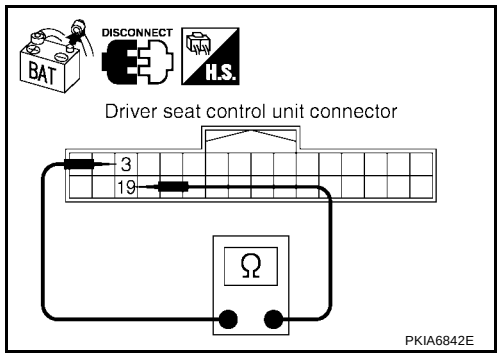
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00FRS

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

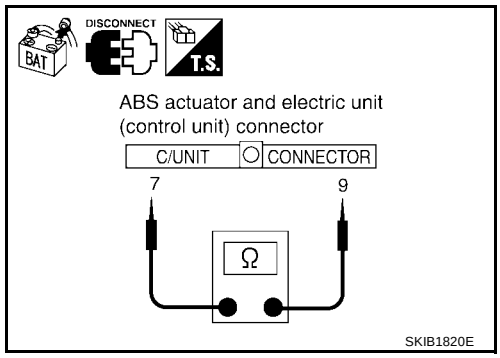
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 7 (L) and terminal 9 (P).

7 (L) - 9 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.

IPDM E/R Circuit Check

EKS00FRT

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

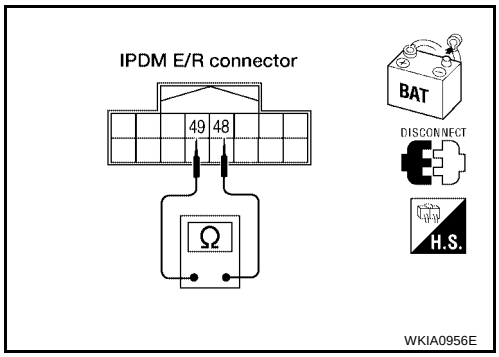
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.



CAN Communication Circuit Check

EKS00FRU

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display unit
- Unified meter and A/C amp.
- Steering angle sensor
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

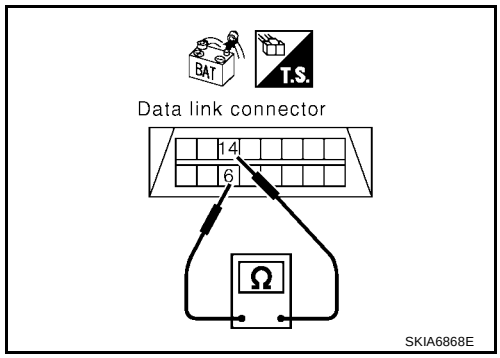
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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



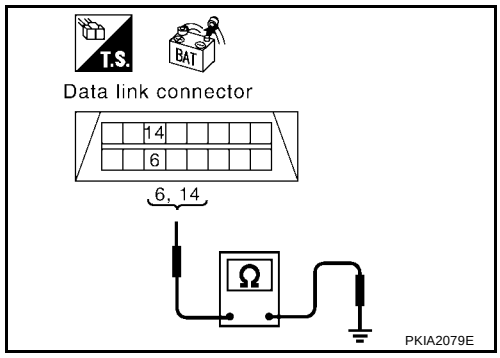
3. CHECK HARNESS FOR SHORT TO GROUND

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-395, "Component Inspection"
NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

EKS00FRV

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

EKS00FRW

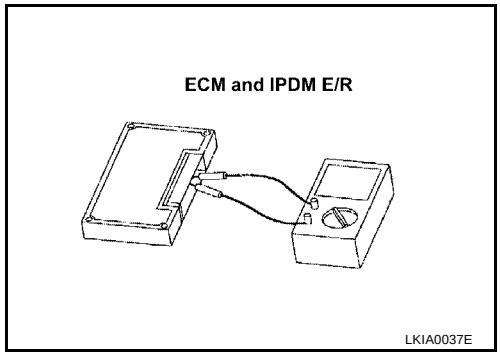
ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω



CAN SYSTEM (TYPE 16)

PFP:23710

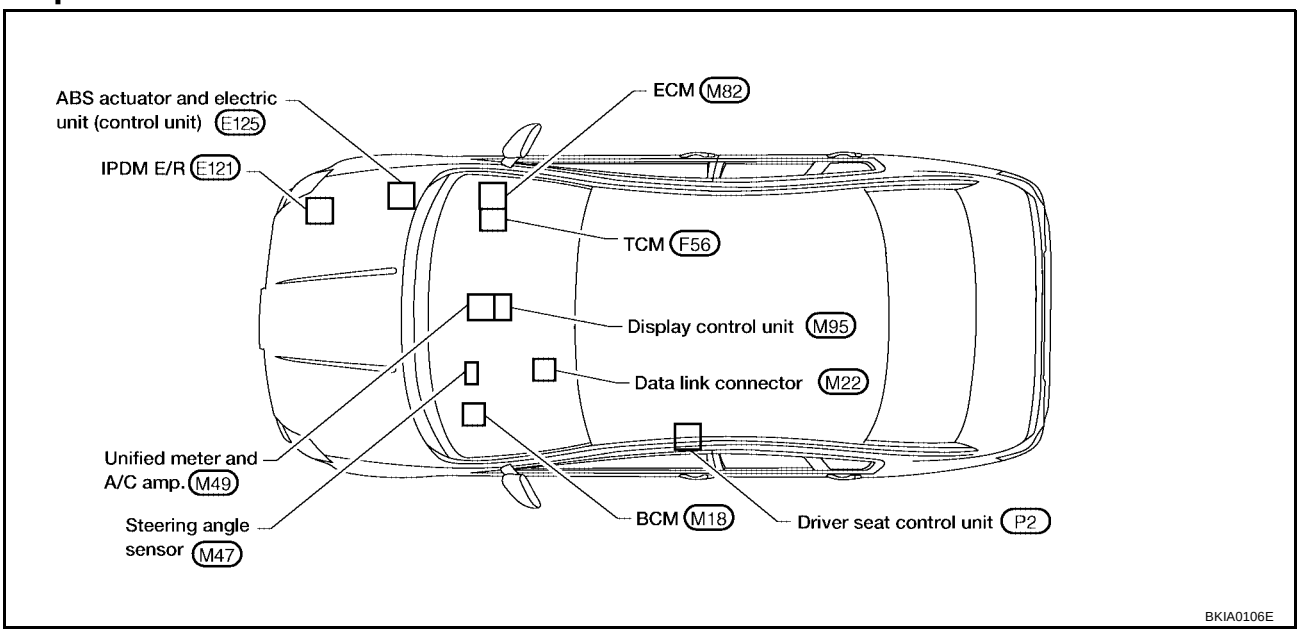
System Description

EKS00FQP

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.

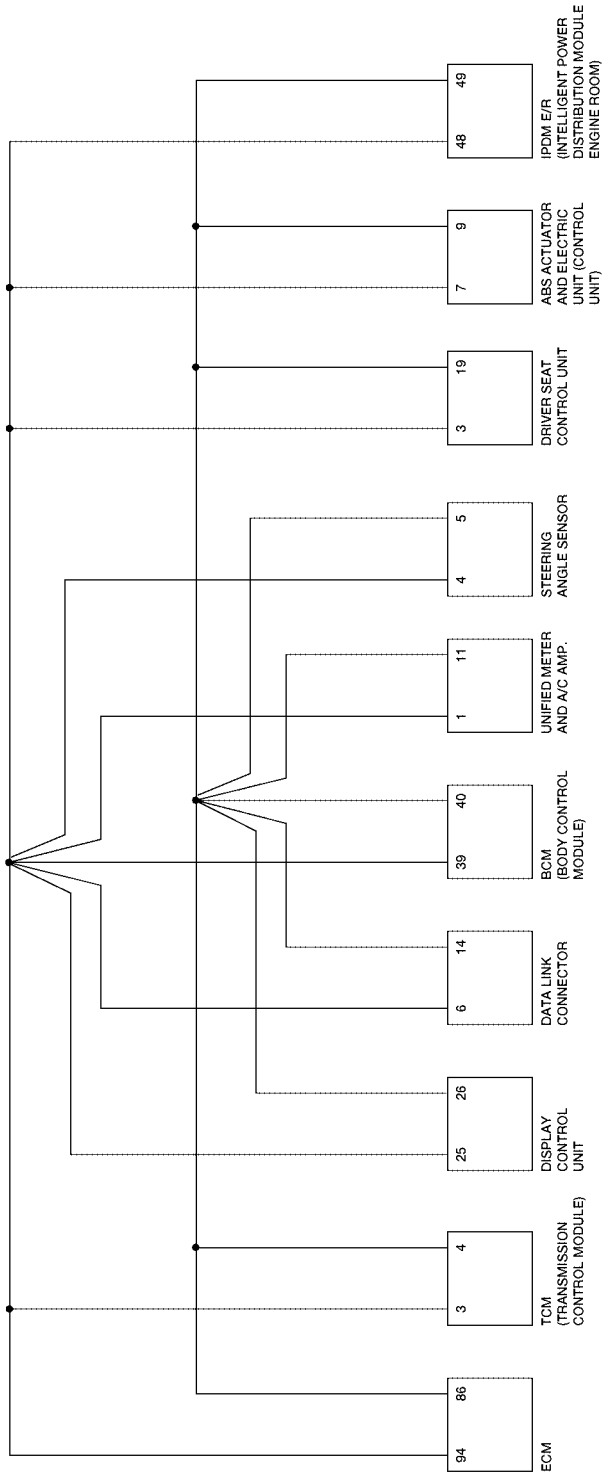
Component Parts and Harness Connector Location

EKS00FQQ



Schematic

EKS00FQR



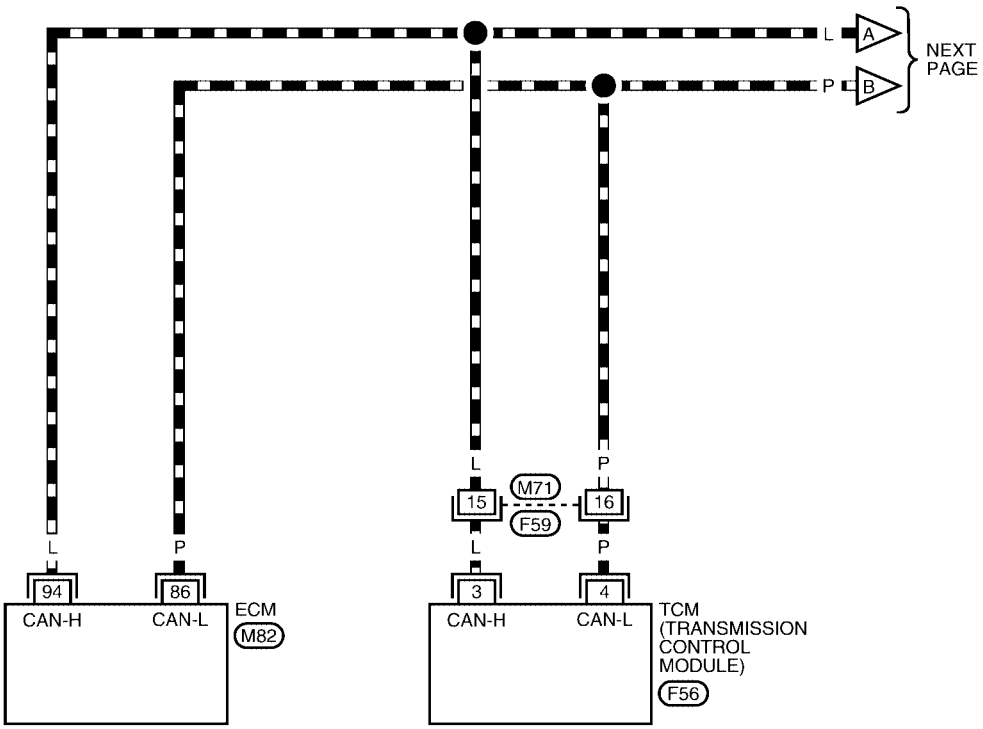
BKWA0327E

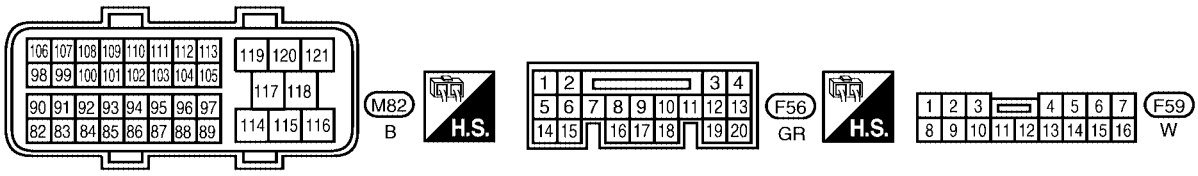
Wiring Diagram - CAN -

EKS00FQS

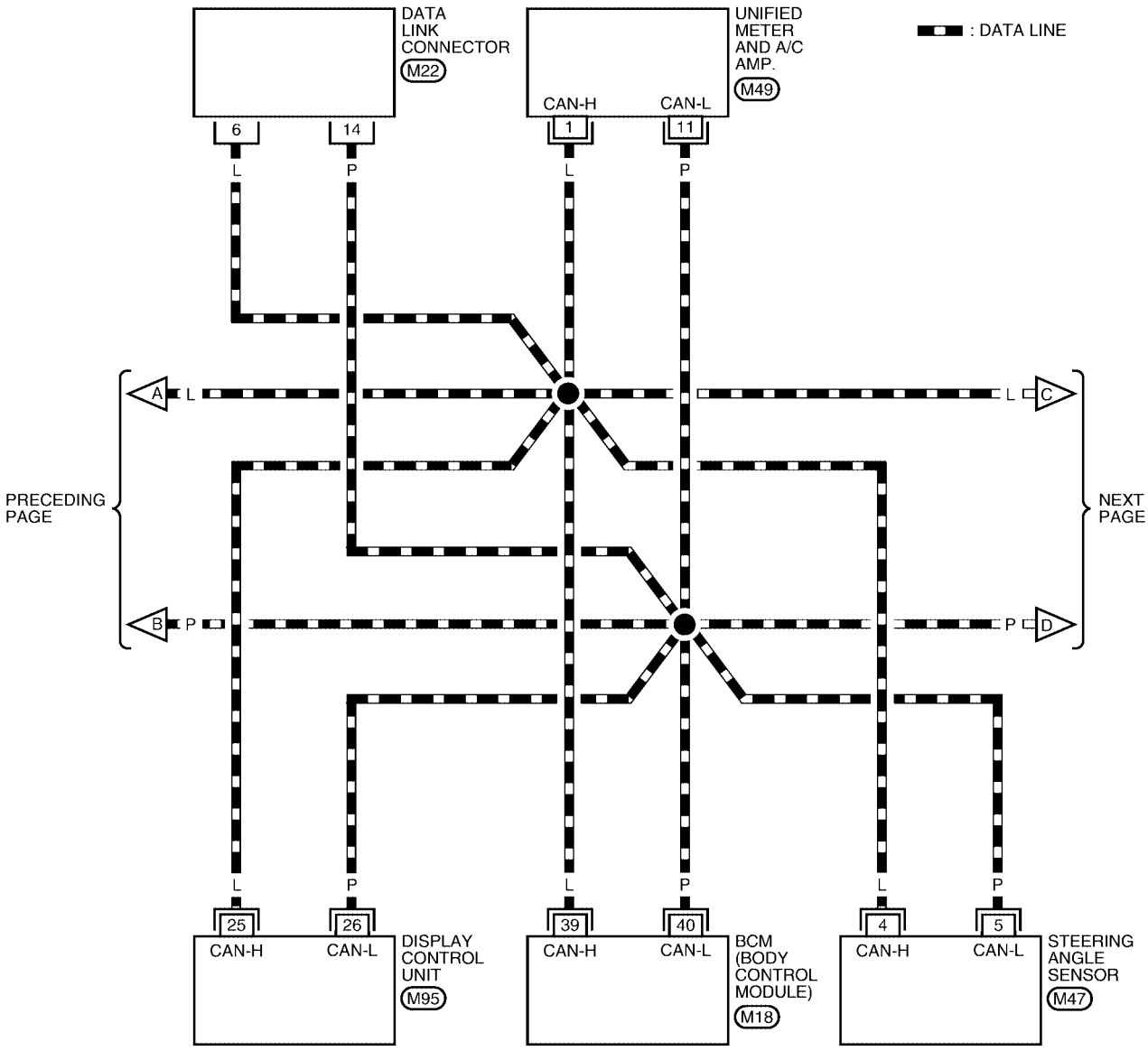
LAN-CAN-40

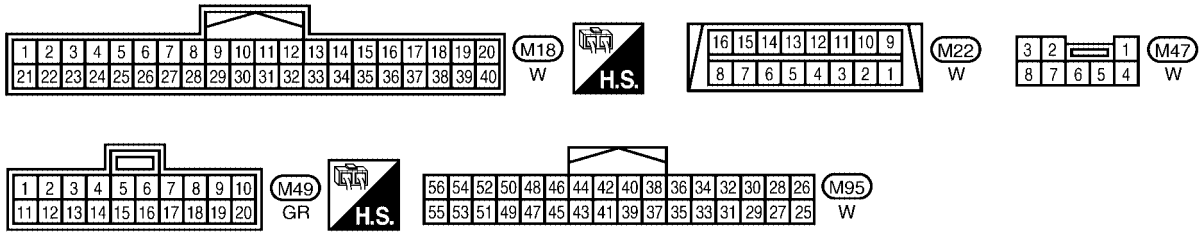
: DATA LINE





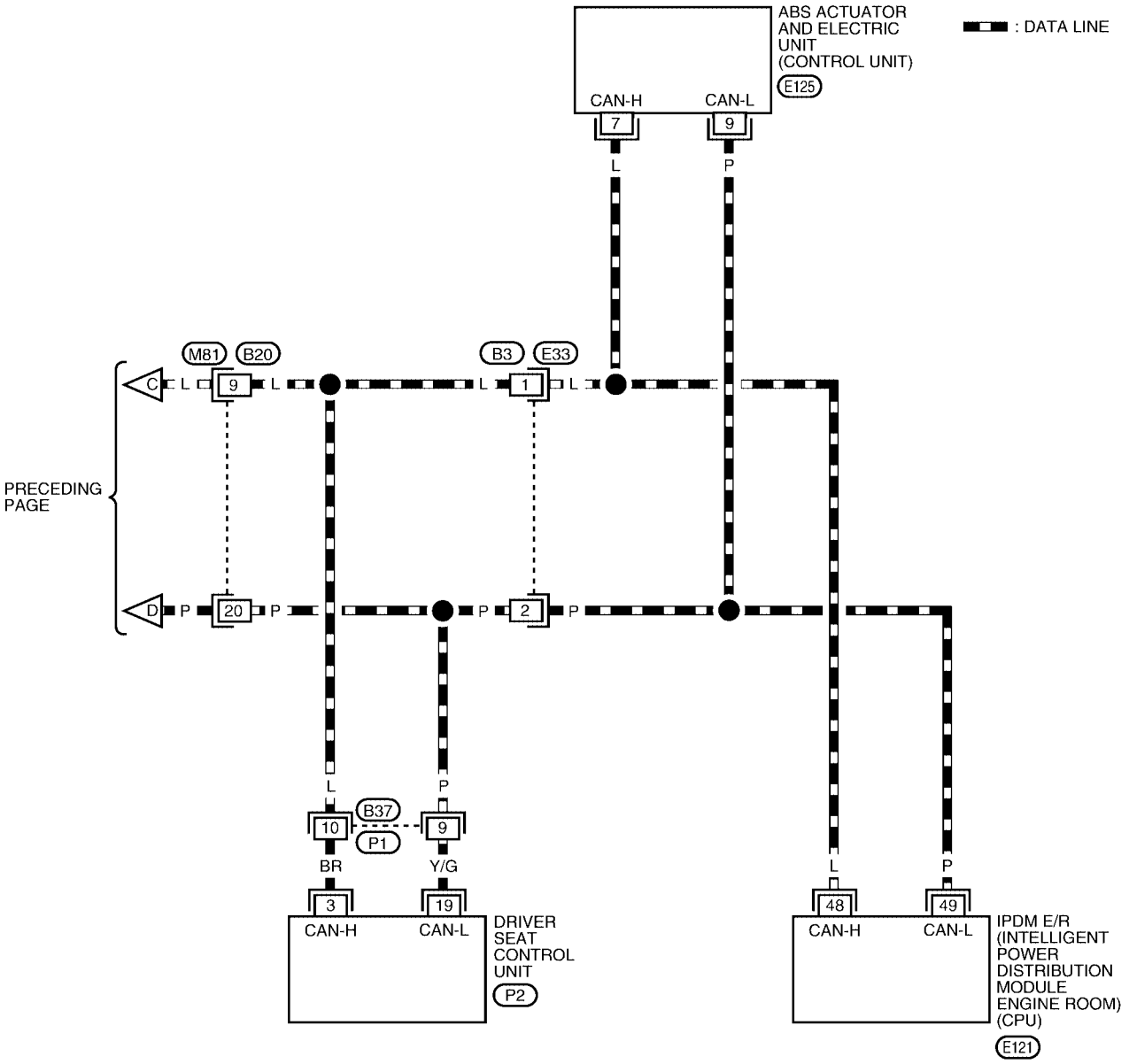
BKWA0632E

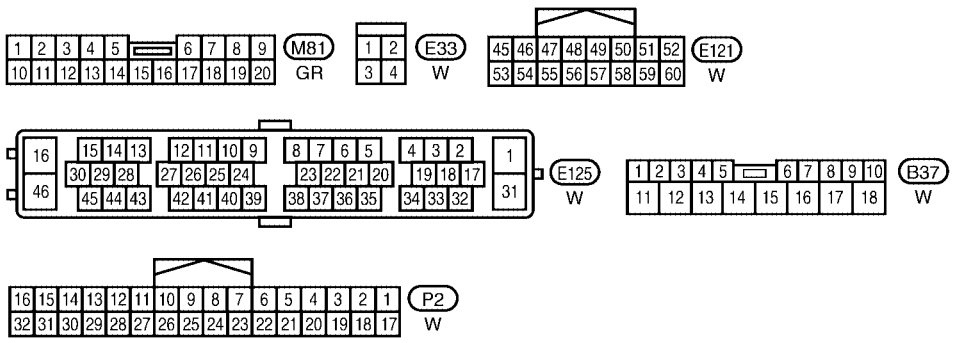

DATA LINK CONNECTOR
M22
UNIFIED METER AND A/C AMP.
M49
: DATA LINE
CAN-H
CAN-L
6
14
1
11
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
25
26
39
40
4
5
DISPLAY CONTROL UNIT
M95
BCM (BODY CONTROL MODULE)
M18
STEERING ANGLE SENSOR
M47


M18
W
H.S.
M22
W
M47
W
M49
GR
M95
W

BKWA0633E

LAN-CAN-42



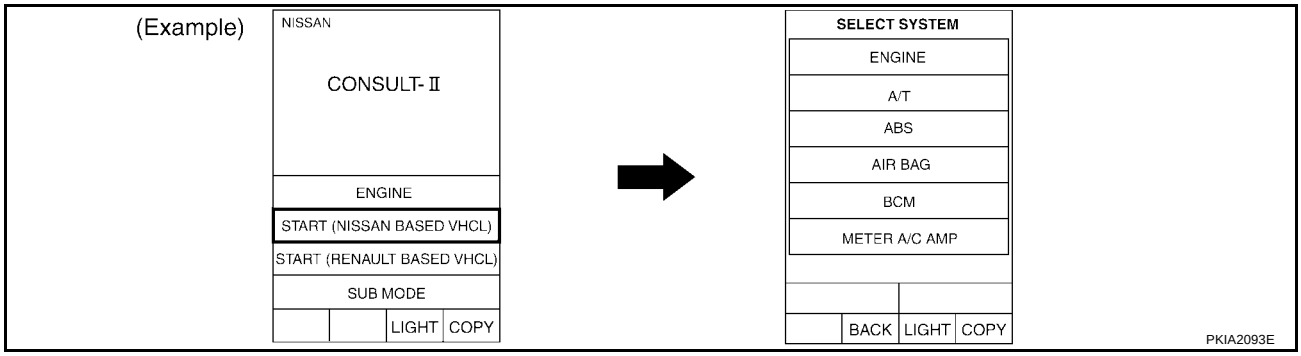


BKWA0634E

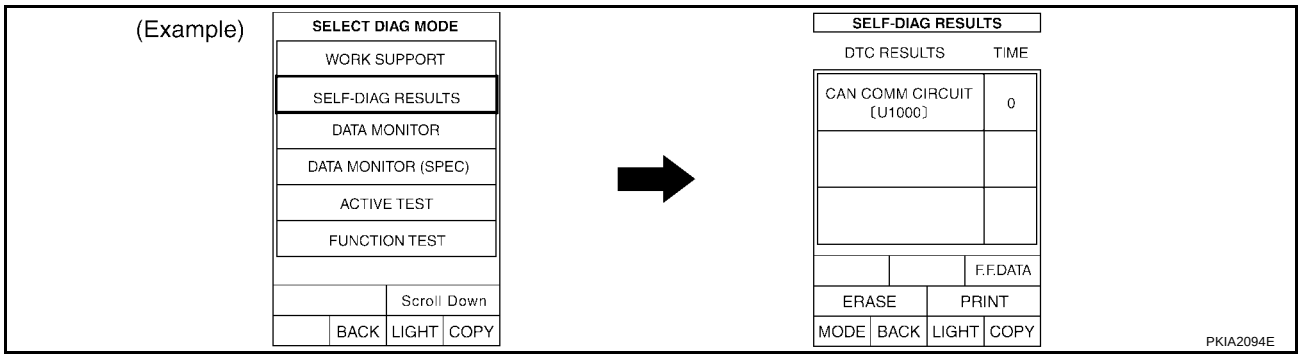
Work Flow

EKS00FQT

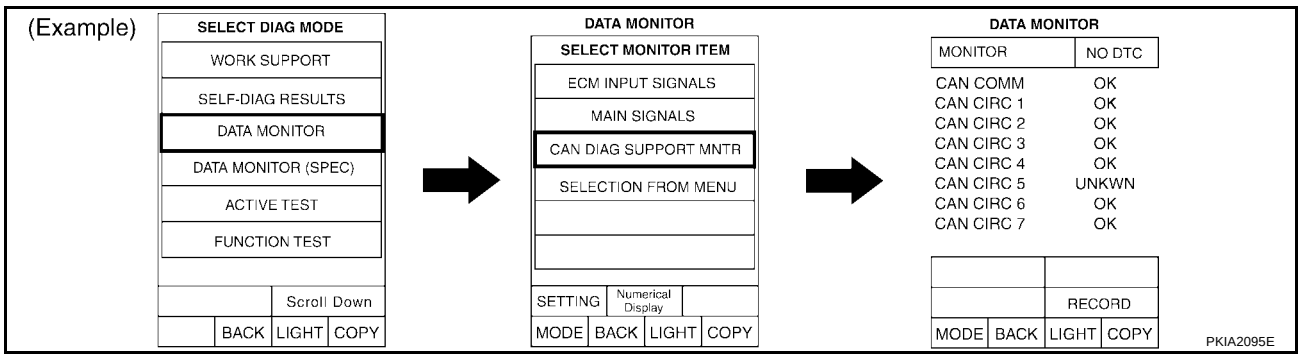
1. When there are no indications of “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



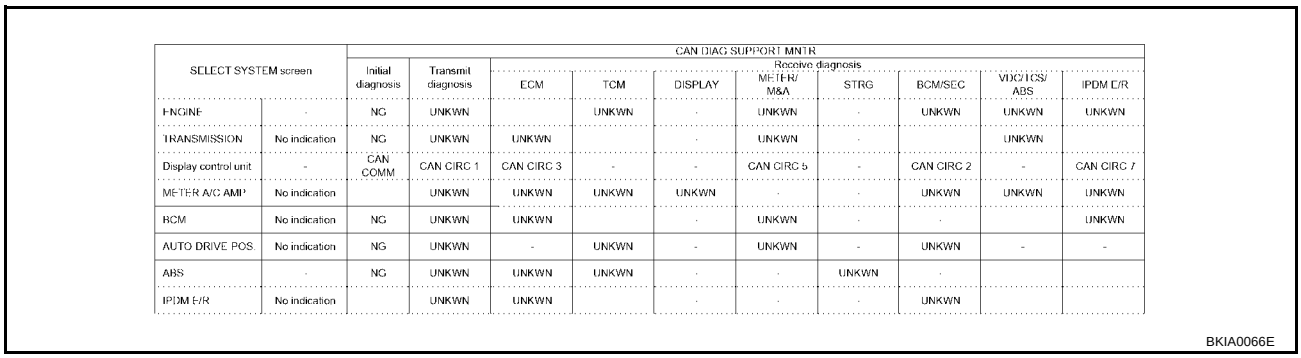
2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “TRANSMISSION”, “METER A/C AMP”, “BCM”, “AUTO DRIVE POS.”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table.



SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN		-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

BKIA0066E

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.
  Therefore, it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.

5. Check CAN communication line of the navigation system.
6. Mark the “NG” or “UNKWN” item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
7. According to the Check Sheet Results, start inspection.

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

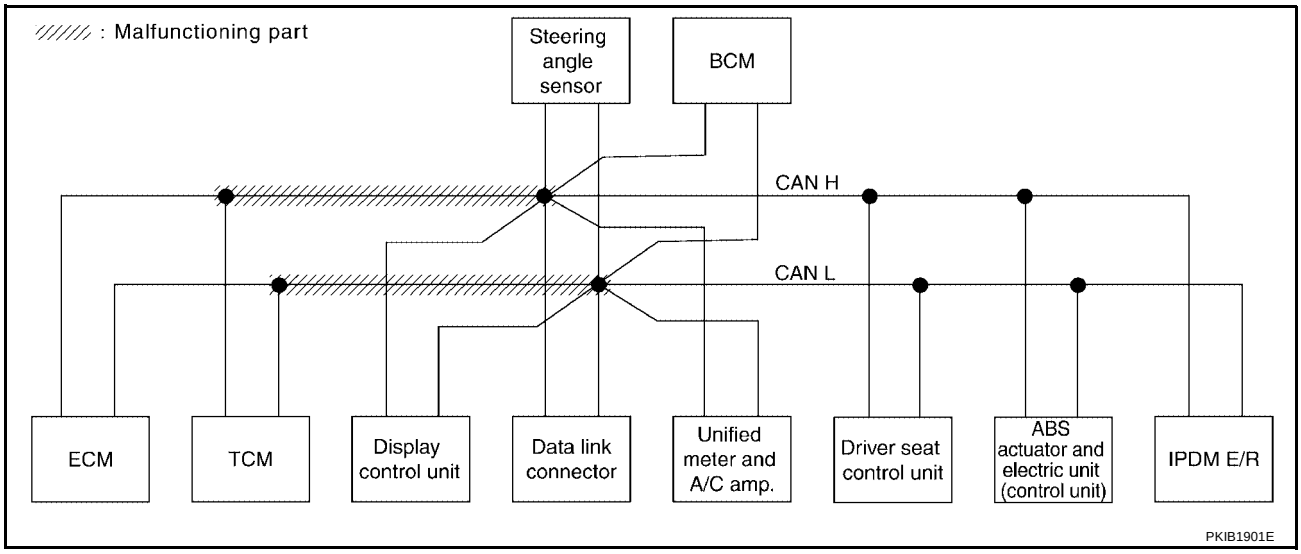
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-417, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2275E



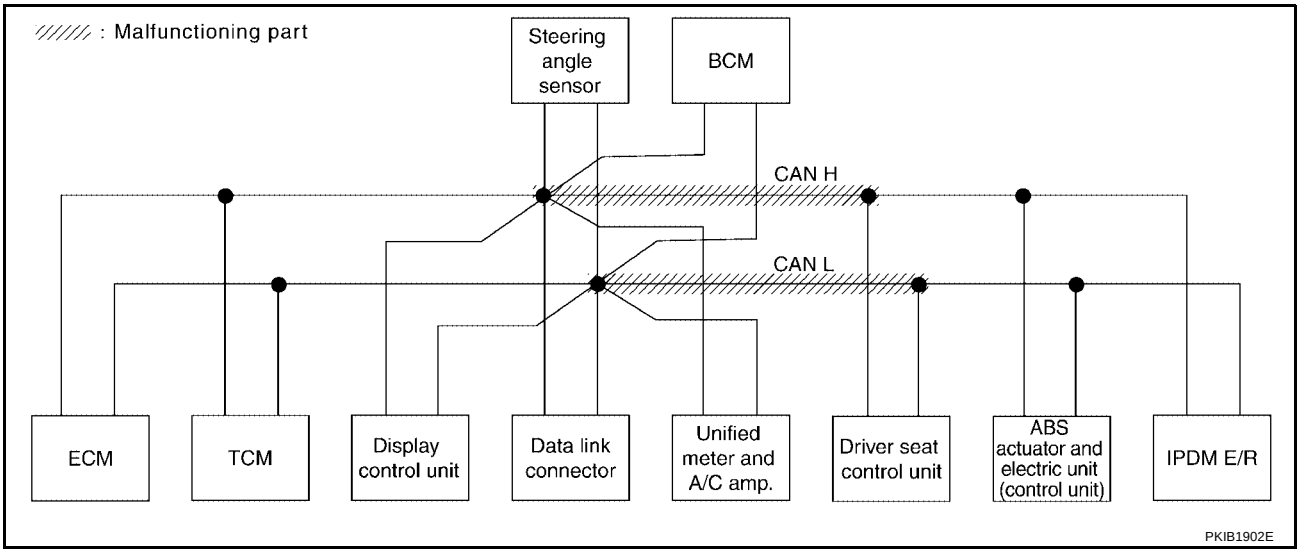
PKIB1901E

Case 2

Check harness between data link connector and driver seat control unit. Refer to LAN-417, "Circuit Check Between Data Link Connector and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2276E



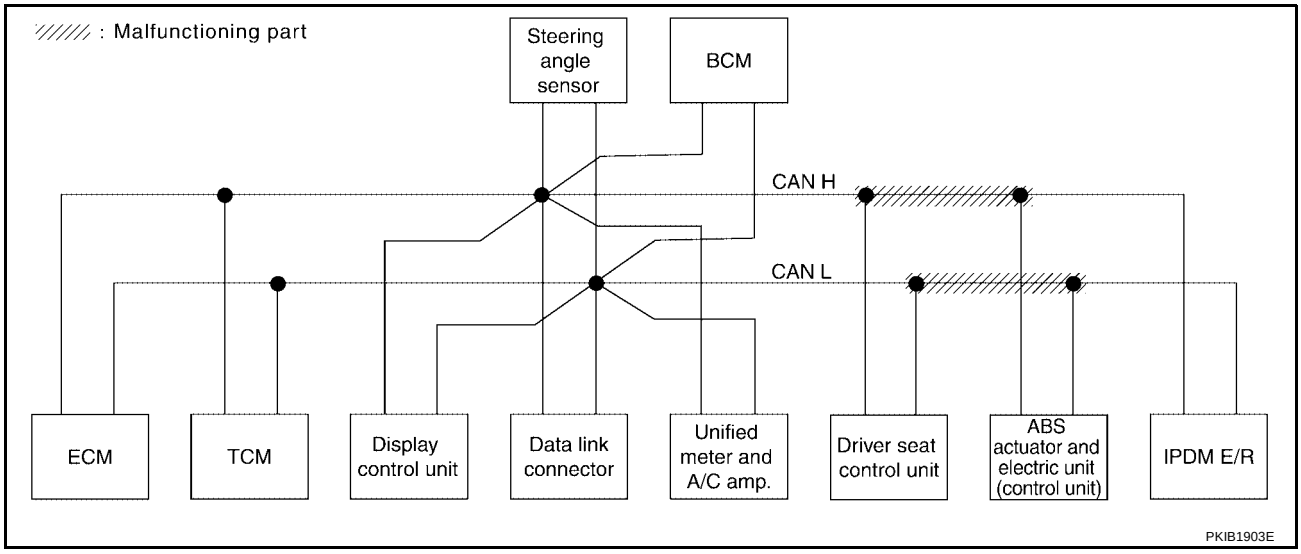
PKIB1902E

Case 3

Check harness between driver seat control unit and ABS actuator and electric unit (control unit). Refer to LAN-418, "Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN ✓	UNKWN ✓
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN ✓	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN ✓	UNKWN ✓
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN ✓
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN ✓	UNKWN ✓	-	-	UNKWN ✓	-		
IPDM E/R	No indication ✓		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2277E



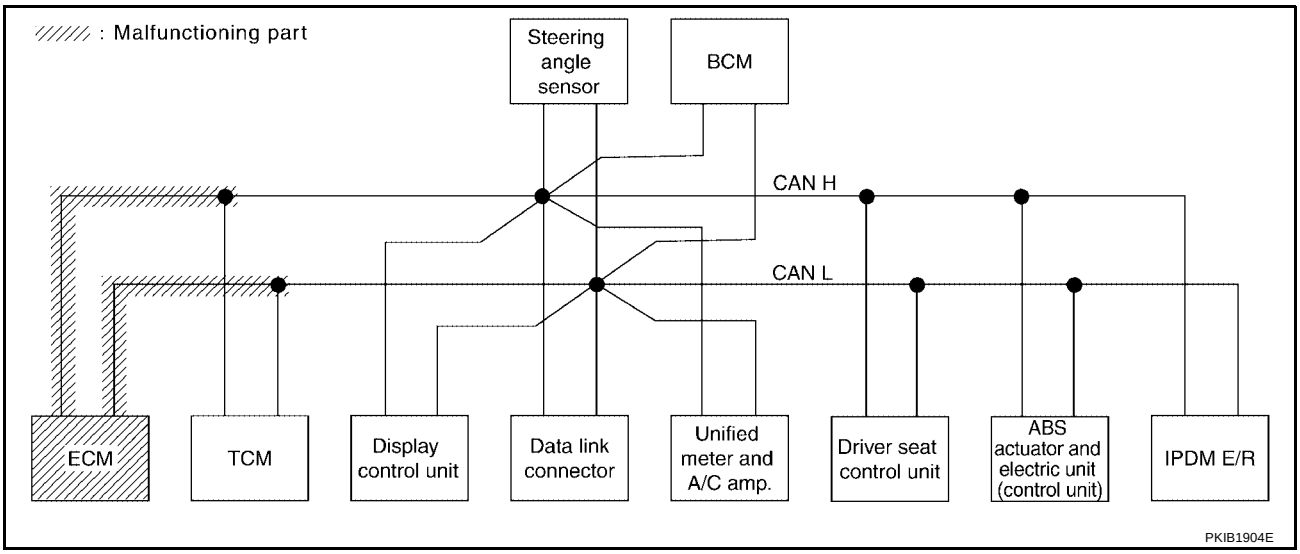
PKIB1903E

Case 4

Check ECM circuit. Refer to LAN-418, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2278E

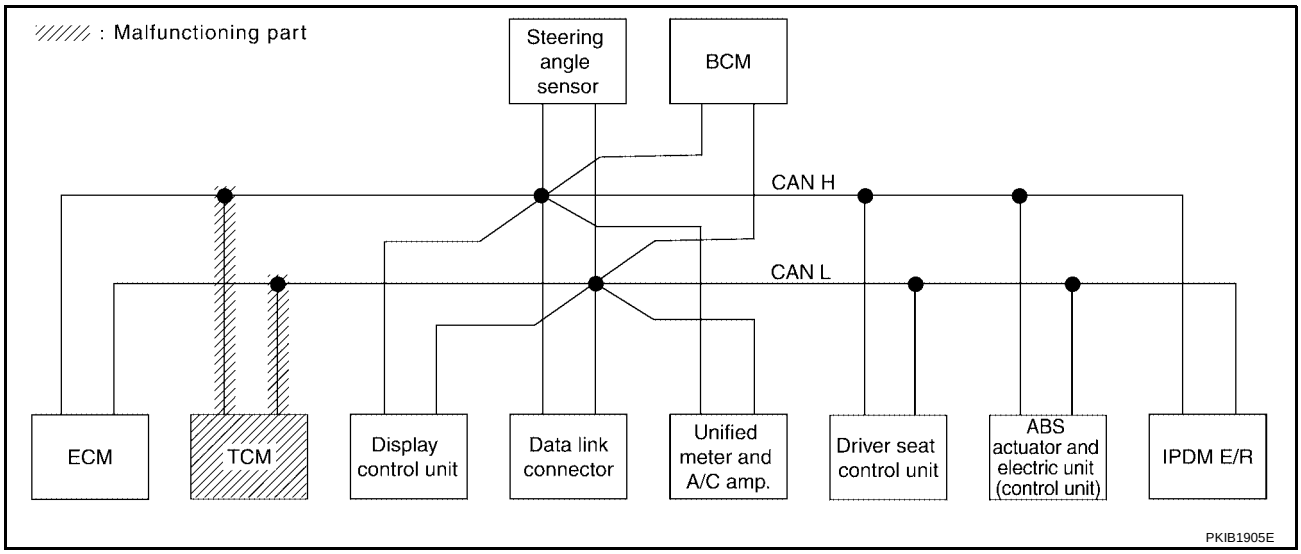


Case 5

Check TCM circuit. Refer to LAN-419, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2280E



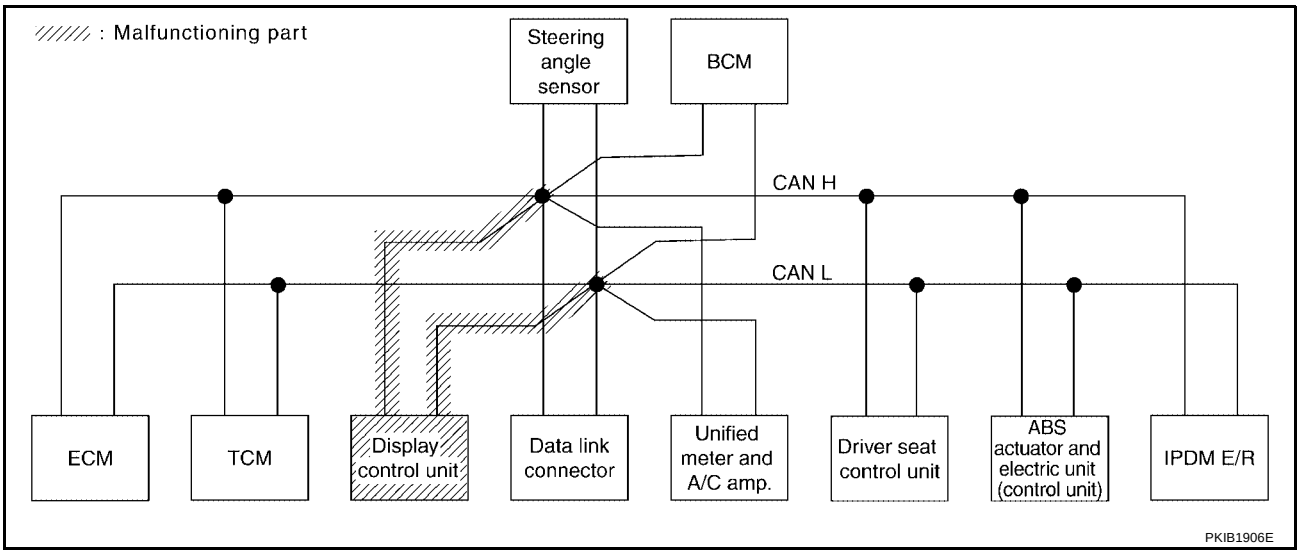
PKIB1905E

Case 6

Check display control unit circuit. Refer to LAN-419, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN DIAG 1 ✓	CAN DIAG 3 ✓	-	-	CAN DIAG 5 ✓	-	CAN DIAG 2 ✓	-	CAN DIAG 7 ✓
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN ✓	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2281E



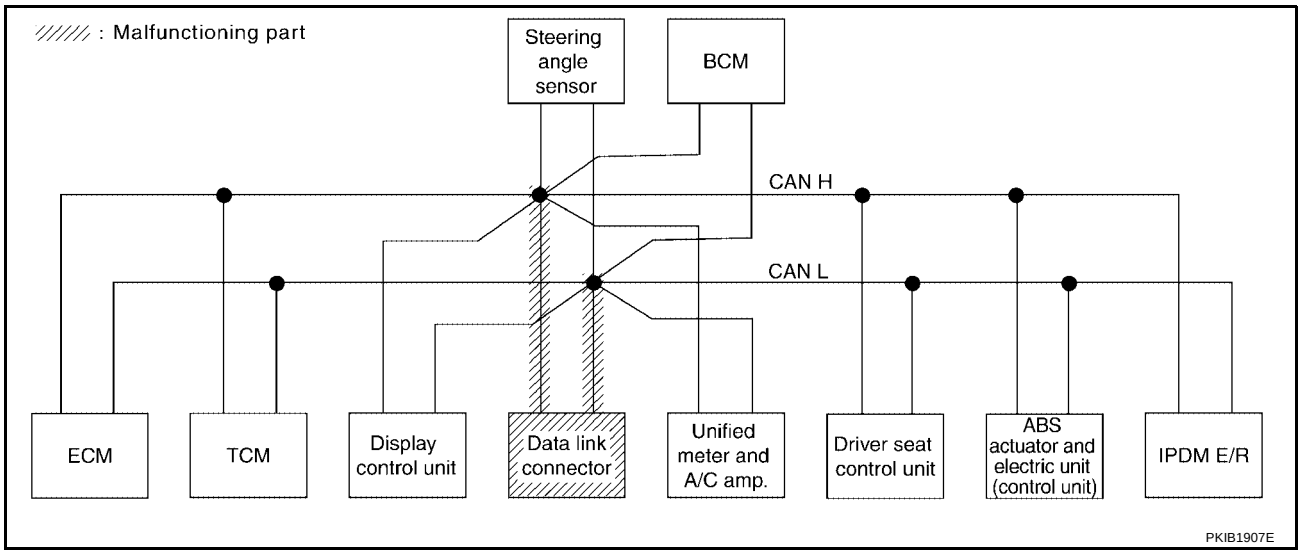
PKIB1906E

Case 7

Check data link connector circuit. Refer to LAN-420, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2282E



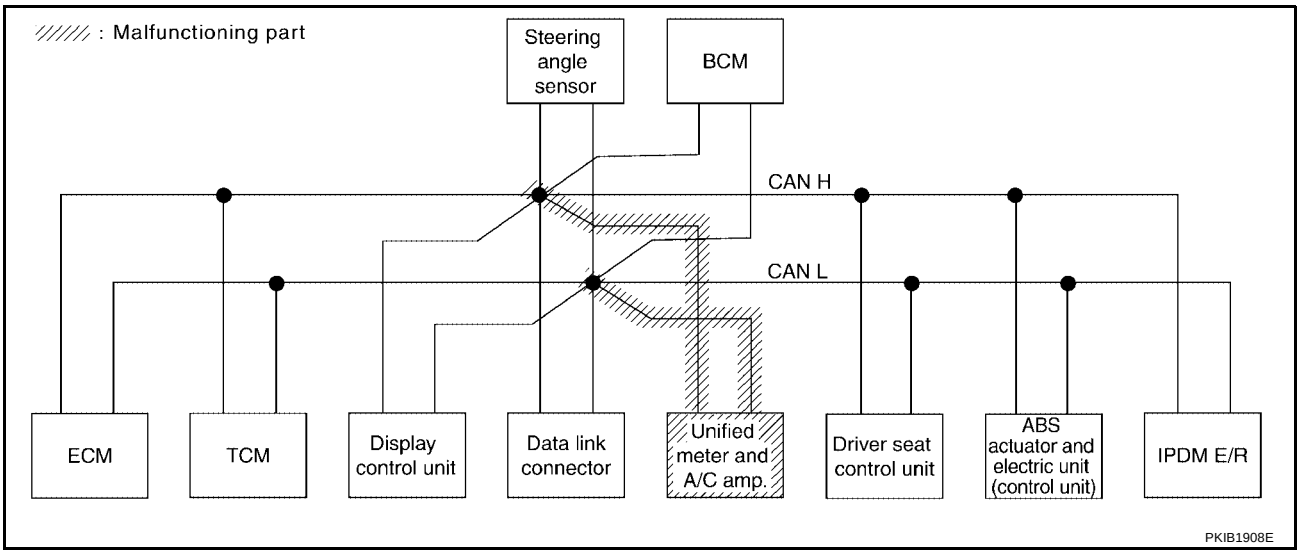
PKIB1907E

Case 8

Check unified meter and A/C amp. circuit. Refer to LAN-420, "Unified Meter and A/C Amp. Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2285E



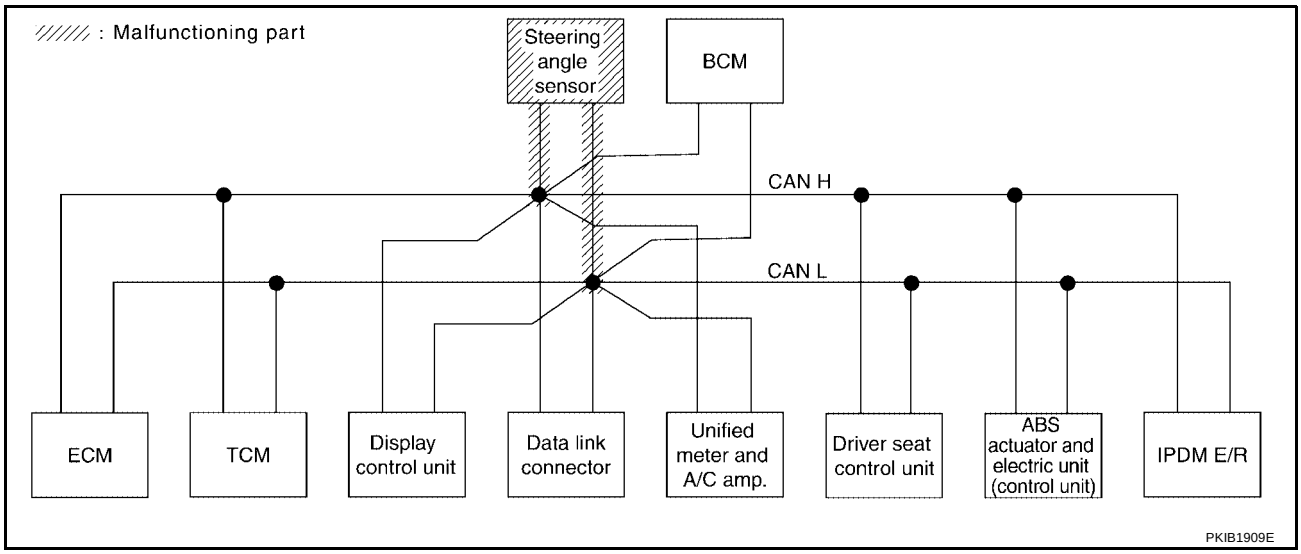
PKIB1908E

Case 9

Check steering angle sensor circuit. Refer to LAN-421, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2286E



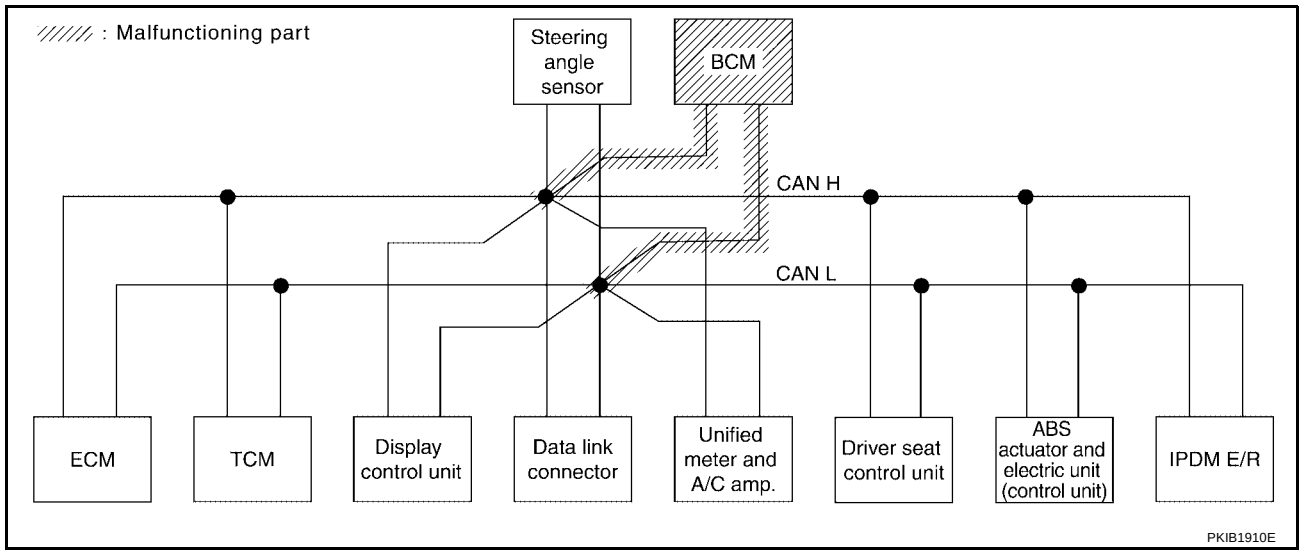
PKIB1909E

Case 10

Check BCM circuit. Refer to LAN-421, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2284E



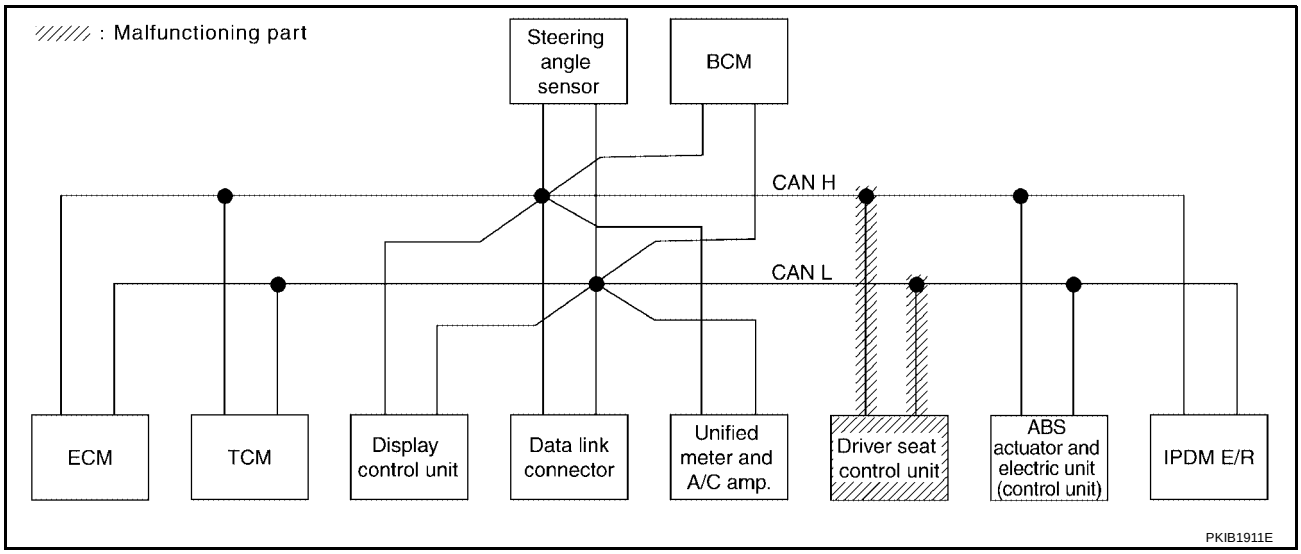
PKIB1910E

Case 11

Check driver seat control unit circuit. Refer to LAN-422, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2287E



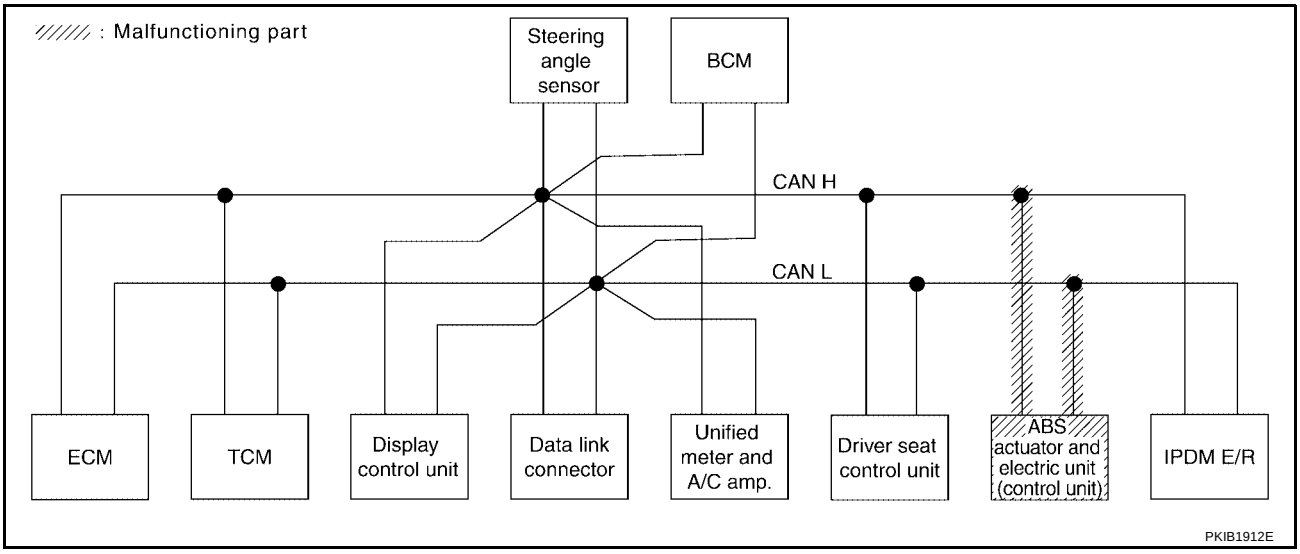
PKIB1911E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-422, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2288E



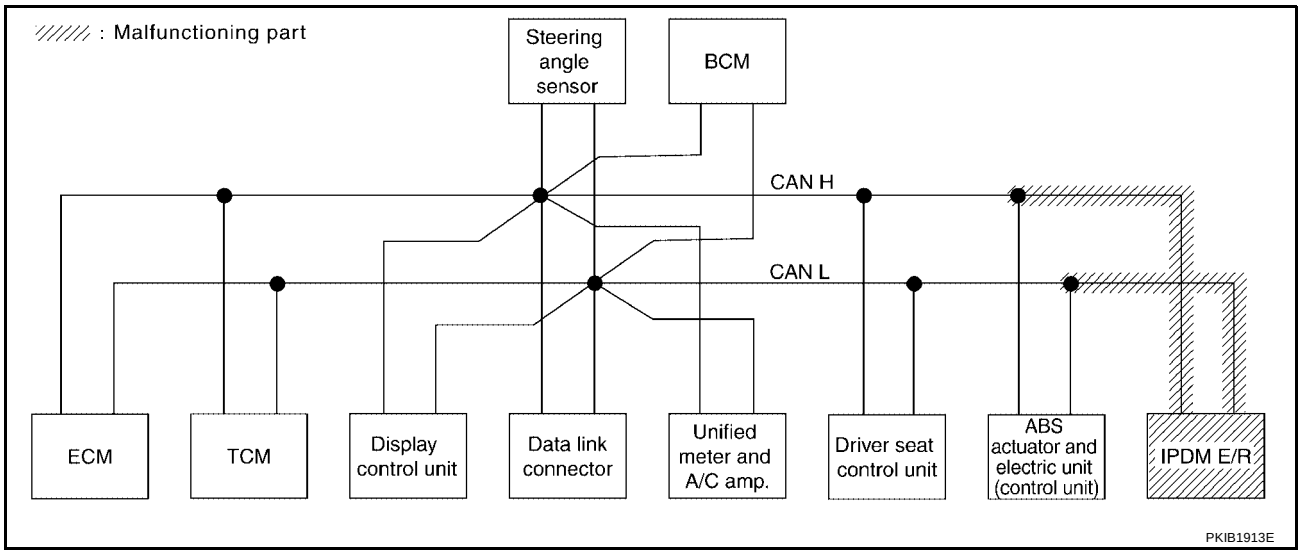
PKIB1912E

Case 13

Check IPDM E/R circuit. Refer to LAN-423, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2289E



PKIB1913E

Case 14

Check CAN communication circuit. Refer to LAN-423, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2290E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-424, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/ TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		✓	-	UNKWN	-	UNKWN	✓	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN		-	UNKWN	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	✓	UNKWN	-	-	UNKWN	✓	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	✓	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2293E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-424, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	METER/ M&A	STRG	BCM/SEC	VDC/ TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	✓		-	✓	-		UNKWN	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 7
METER A/C AMP	No indication		UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
BCM	No indication	NG	UNKWN	UNKWN		-	UNKWN	-	-		UNKWN
AUTO DRIVE POS	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-
ABS	-	NG	UNKWN	✓	UNKWN	-	-	✓	-		
IPDM E/R	No indication		UNKWN	UNKWN		-	-	-	UNKWN		

WKIA2292E

Circuit Check Between TCM and Data Link Connector

EKS00FQU

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

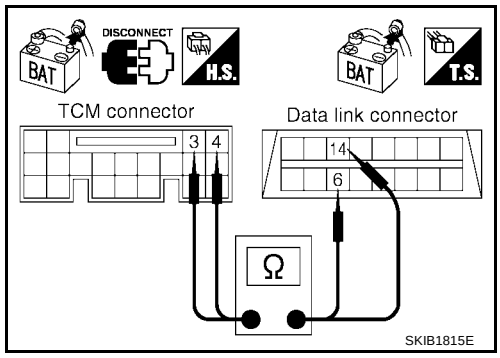
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector F56 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-401, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and Driver Seat Control Unit

EKS00FQV

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

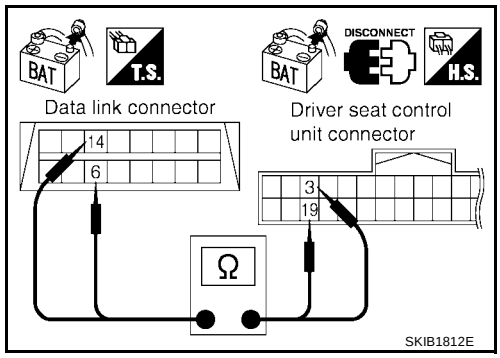
2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 14 (P) and driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G).

6 (L) - 3 (BR) : Continuity should exist.
14 (P) - 19 (Y/G) : Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-401, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and ABS Actuator and Electric Unit (Control Unit)

EKS00FQW

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2, ABS actuator and electric unit (control unit) connector E125 and ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

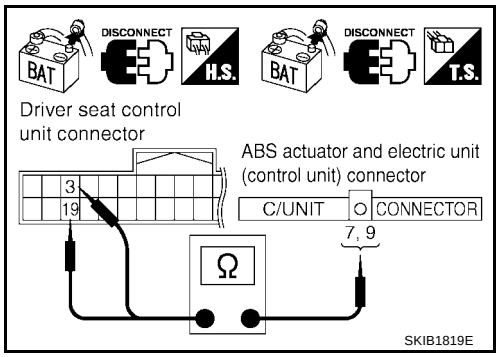
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between driver seat control unit connector P2 terminals 3 (BR), 19 (Y/G) and ABS actuator and electric unit (control unit) connector E125 terminals 7 (L), 9 (P).

3 (BR) - 7 (L) : Continuity should exist.
19 (Y/G) - 9 (P) : Continuity should exist.



OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-401, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

EKS00FQX

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector M82.
4. Check the terminals for deformation, disconnection, looseness or damage.

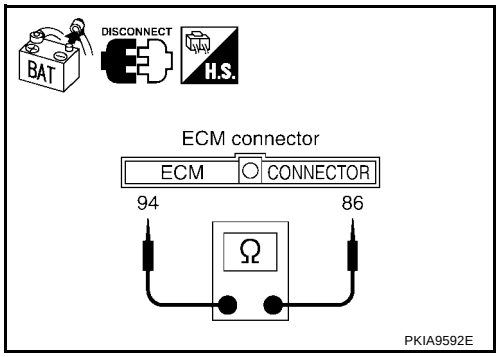
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector M82 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM connector M82 and TCM connector F56.

TCM Circuit Check

EKS00FQY

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect TCM connector F56.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

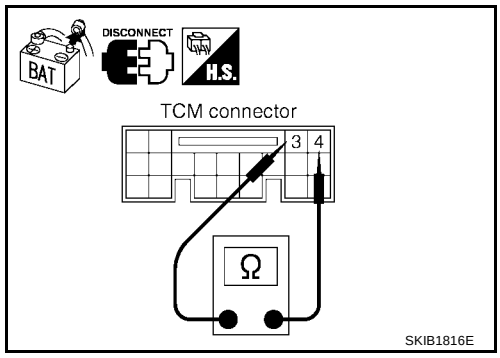
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between TCM connector F56 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM connector F56 and ECM connector M82.



Display Control Unit Circuit Check

EKS00FQZ

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect display control unit connector M95.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

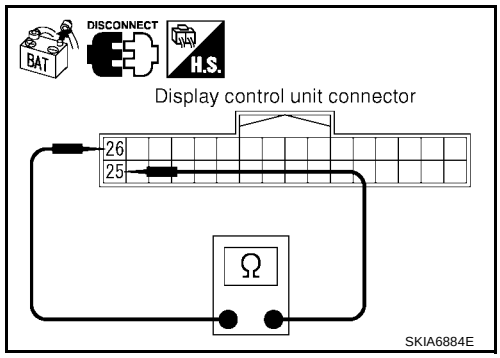
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.
NG >> Repair harness between display control unit connector M95 and data link connector M22.



Data Link Connector Circuit Check

EKS00FR0

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

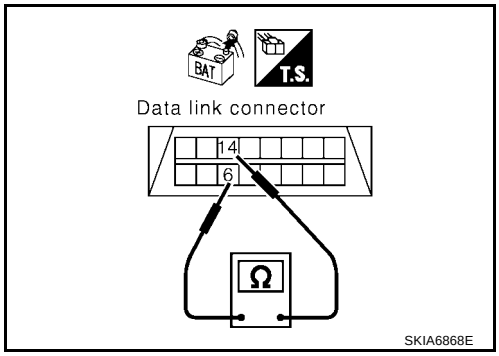
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-401, "Work Flow" .
NG >> Repair harness between data link connector M22 and BCM connector M18.



Unified Meter and A/C Amp. Circuit Check

EKS00FR1

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect unified meter and A/C amp. connector M49.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

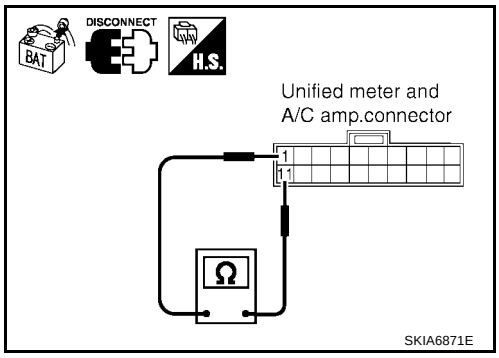
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between unified meter and A/C amp. connector M49 terminal 1 (L) and terminal 11 (P).

1 (L) - 11 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. connector M49 and data link connector M22.



Steering Angle Sensor Circuit Check

EKS00FR2

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect steering angle sensor connector M47.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

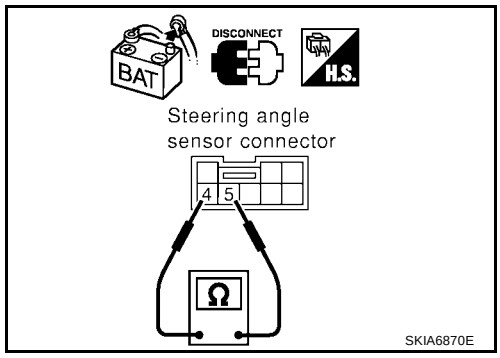
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between steering angle sensor connector M47 terminal 4 (L) and terminal 5 (P).

4 (L) - 5 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor connector M47 and data link connector M22.



BCM Circuit Check

EKS00FR3

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect BCM connector M18.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

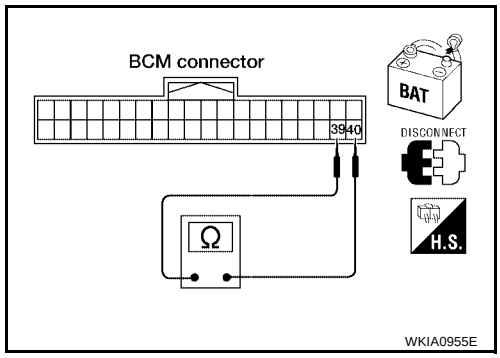
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM.
NG >> Repair harness between BCM connector M18 and data link connector M22.



Driver Seat Control Unit Circuit Check

EKS00FR4

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect driver seat control unit connector P2.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

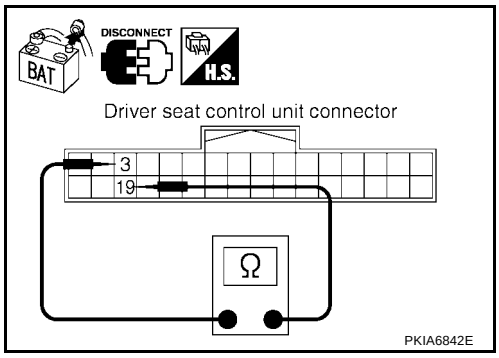
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between driver seat control unit connector P2 terminal 3 (BR) and terminal 19 (Y/G).

3 (BR) - 19 (Y/G) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00FR5

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ABS actuator and electric unit (control unit) connector E125.
4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

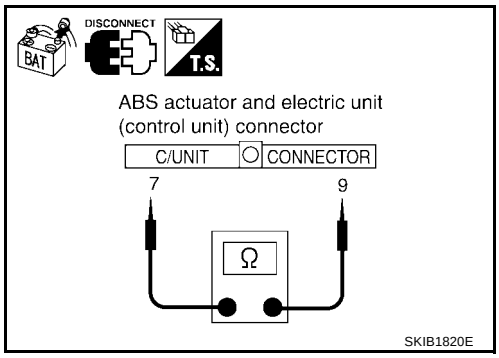
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 7 (L) and terminal 9 (P).

7 (L) - 9 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and IPDM E/R connector E121.



IPDM E/R Circuit Check

EKS00FR6

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect IPDM E/R connector E121.
4. Check the terminals for deformation, disconnection, looseness or damage.

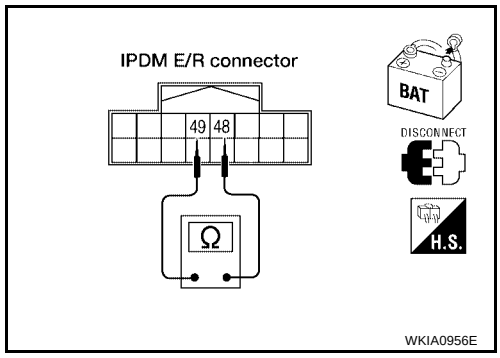
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R connector E121 and ABS actuator and electric unit (control unit) connector E125.

CAN Communication Circuit Check

EKS00FR7

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- TCM (Transmission control module)
- Display control unit
- Unified meter and A/C amp.
- Steering angle sensor
- BCM (Body control module)
- Driver seat control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

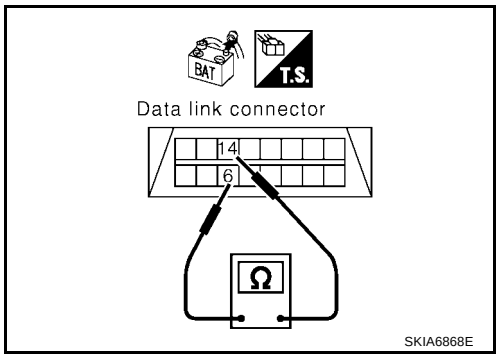
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

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

OK or NG

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



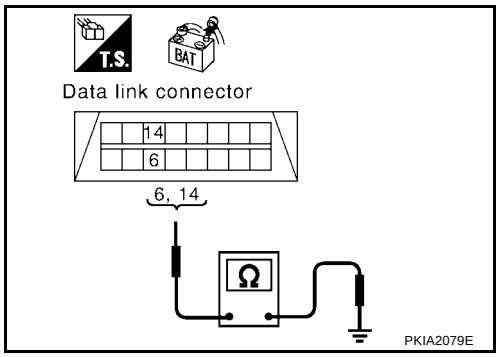
3. CHECK HARNESS FOR SHORT TO GROUND

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-424, "Component Inspection" .
NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

EKS00FR8

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

- IPDM E/R power supply circuit. Refer to PG-25, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

EKS00FR9

ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

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

94 - 86 : Approx. 108 - 132 Ω

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

48 - 49 : Approx. 108 - 132 Ω