SECTION LAN

LAN SYSTEM

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PRECAUTIONS

PFP:00001

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

UKS001AE

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

UKS001AF

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 Trouble Diagnosis

UKS001AG

CAN SYSTEM

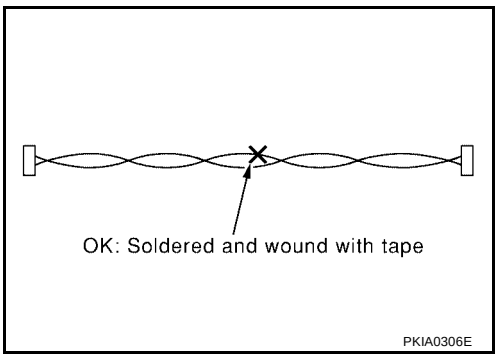
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair

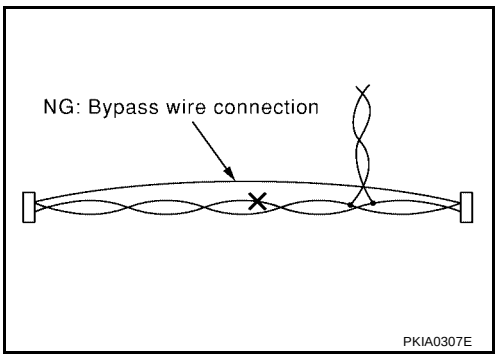
UKS001AH

CAN SYSTEM

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



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



CAN COMMUNICATION

PFP:23710

System Description

UKS001AI

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

UKS001AJ

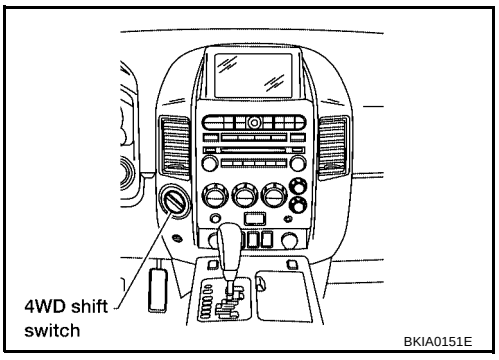
Go to CAN system, when selecting your CAN system type from the following table.

Body type	Truck												
Axle	2WD						4WD						
Engine	VK56DE												
Transmission	A/T												
Brake control	ABS	ABLS			VDC		ABLS						VDC
Electronic locking rear differential										×	×	×	
Automatic drive positioner			×	×		×		×	×		×	×	×
Navigation system				×		×			×			×	
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13
CAN system trouble diagnosis	LAN-24	LAN-52	LAN-80	LAN-110	LAN-143	LAN-172	LAN-206	LAN-235	LAN-267	LAN-301	LAN-333	LAN-369	LAN-408

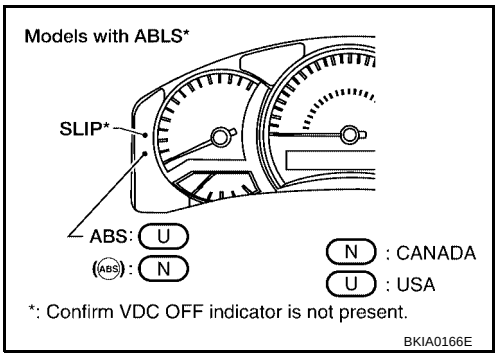
×: Applicable

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

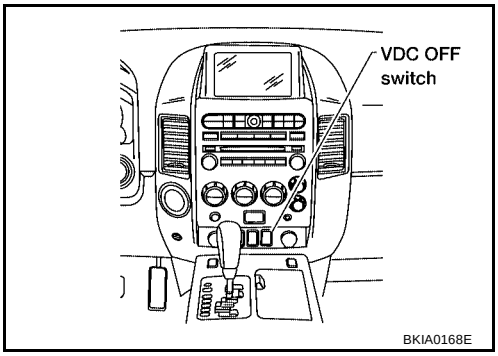
- Models with 4WD



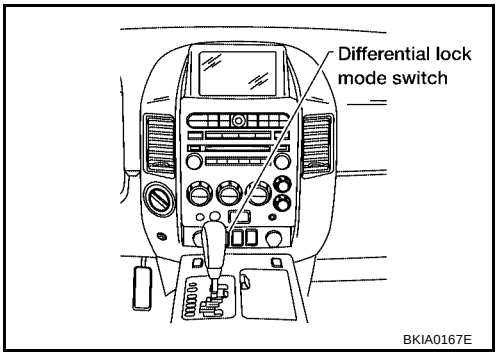
- Models with ABLS



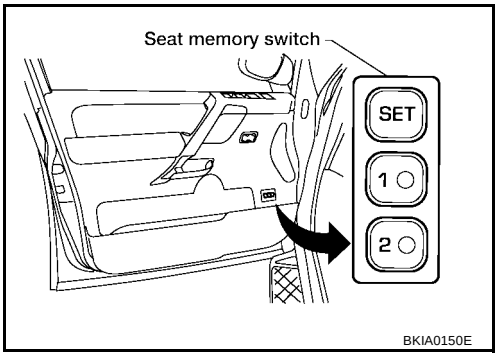
- Models with VDC



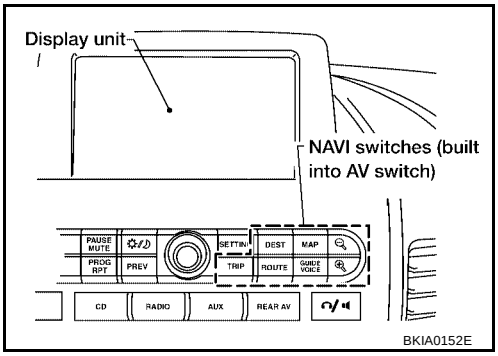
- Models with electronic locking rear differential



- Models with automatic drive positioner



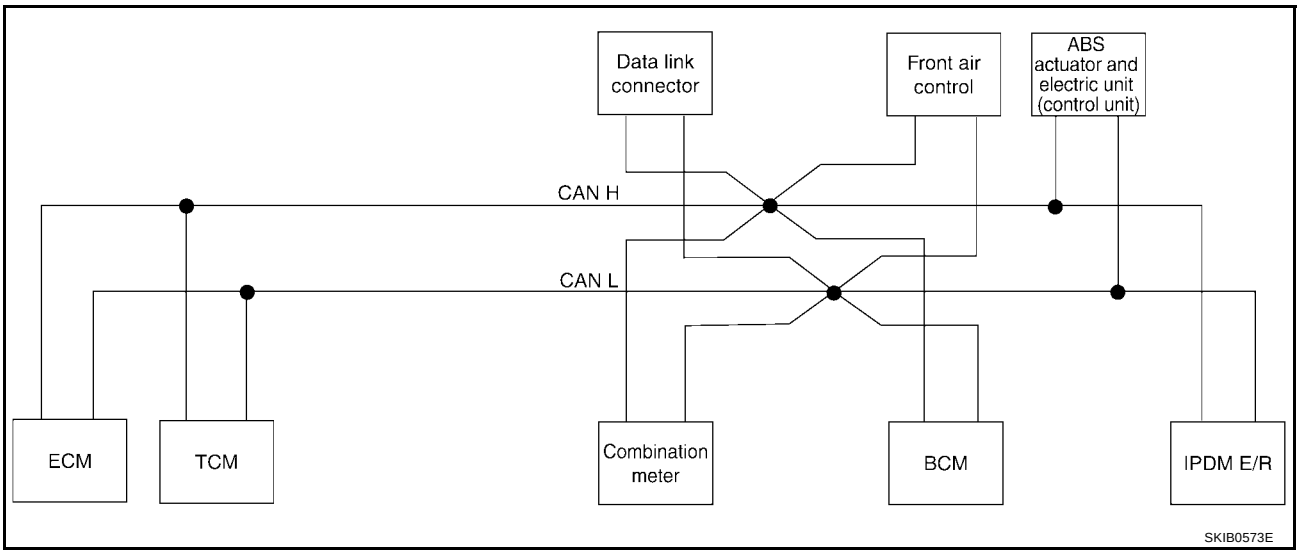
- Models with navigation system



TYPE 1

System diagram

- Type 1



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R		R		
Engine status signal	T			R	R		
Engine coolant temperature signal	T	R	R		R		
A/T self-diagnosis signal	R	T					
Accelerator pedal position signal	T	R					
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Ignition switch signal				T			R
Stop lamp switch signal		R	T				
Fuel consumption monitor signal	T		R				
			T				
Turbine revolution signal	R	T					
Output shaft revolution signal	R	T					
A/C switch signal	R			T	R		
A/C compressor request signal	T						R
Blower fan motor switch signal	R			T	R		
Cooling fan speed request signal	T				R		R
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

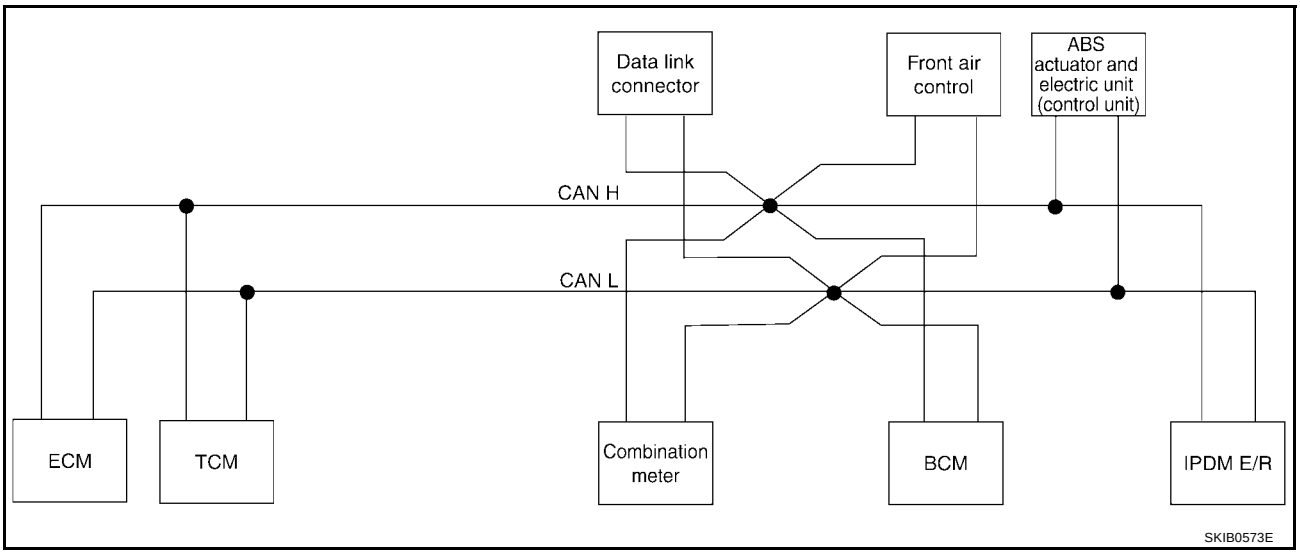
Signals	ECM	TCM	Combination meter	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Day time running light request signal				T			R
Rear window defogger request signal				T	R		R
Rear window defogger status signal				R			T
Vehicle speed signal			R		R	T	
	R	R	T	R	R		
Sleep wake up signal			R	T			R
Door switch signal			R	T			R
Turn indicator signal			R	T			
Buzzer output signal			R	T			
Fuel level sensor signal	R		T				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Malfunction indicator lamp signal	T		R				
Front wiper request signal				T			R
Front wiper stop position 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	
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				
Tire pressure signal			R	T			
1st position switch signal*1		R	T				
4th position switch signal*1		R	T				
Manual mode switch signal*2		R	T				
Not manual mode switch signal*2		R	T				
Manual mode shift up signal*2		R	T				
Manual mode shift down signal*2		R	T				
Tow mode switch signal		R	T				
A/T fluid temperature sensor signal		T	R				
Seat belt buckle switch signal			T	R			

*1: Floor shift model only.
*2: Column shift model only.

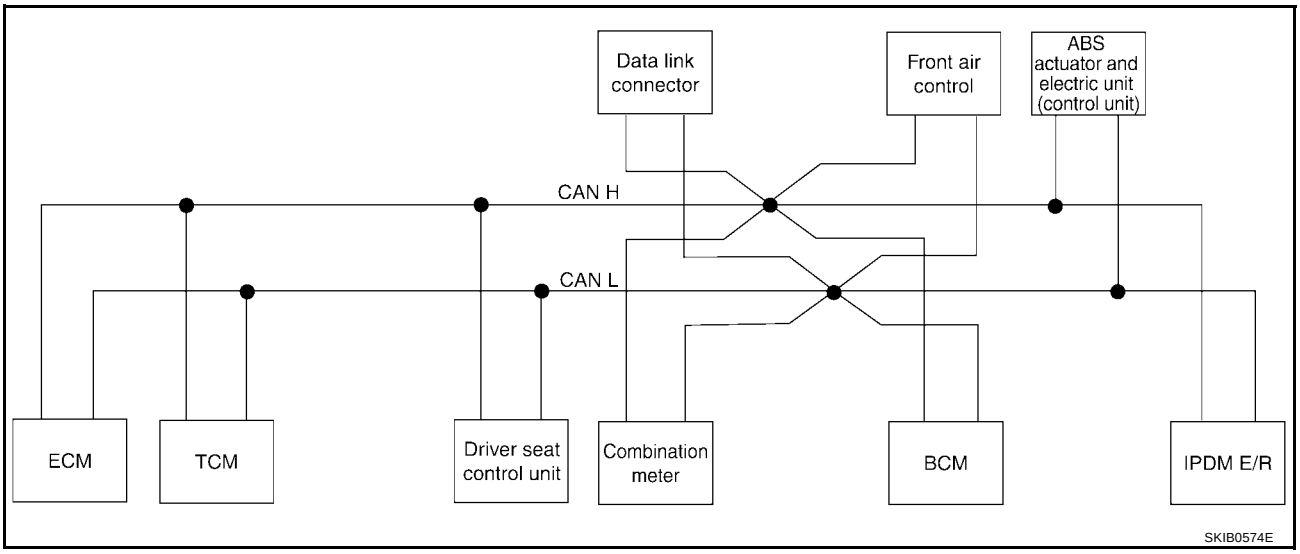
TYPE 2/TYPE 3/TYPE 4

System diagram

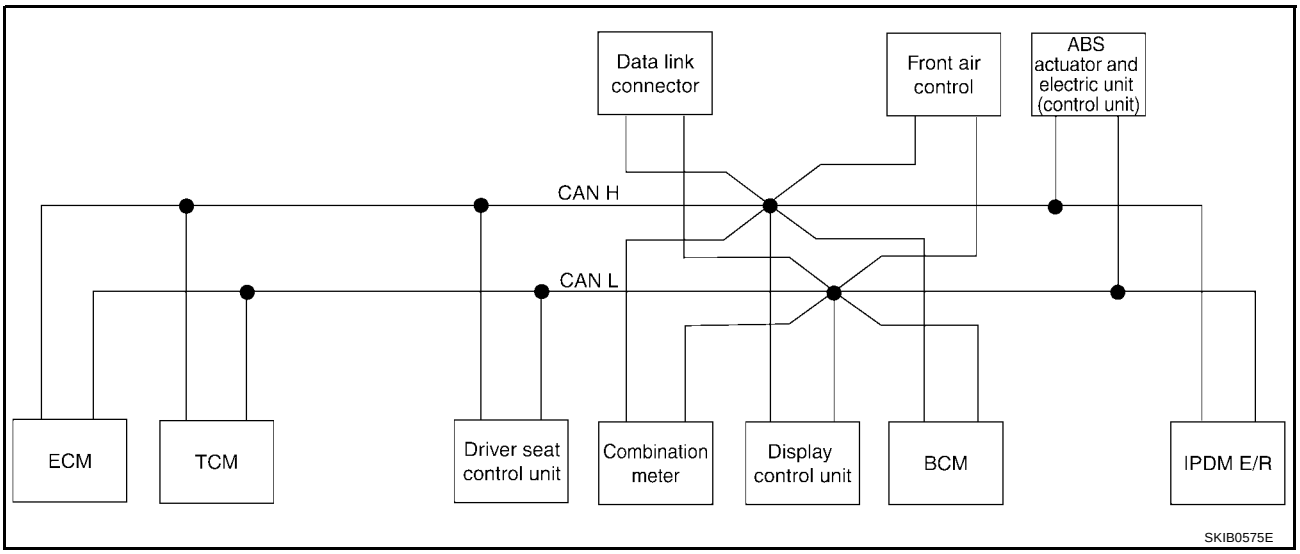
- Type 2



- Type 3



- Type 4



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R		R	R	
Engine status signal	T					R	R		
Engine coolant temperature signal	T	R		R			R		
A/T self-diagnosis signal	R	T							
Accelerator pedal position signal	T	R						R	
Closed throttle position signal	T	R							
Wide open throttle position signal	T	R							
Battery voltage signal	T	R							
Key switch signal			R			T			
Ignition switch signal			R			T			R
P range signal		T	R					R	
Stop lamp switch signal		R		T					
Fuel consumption monitor signal	T			R					
				T	R				
Turbine revolution signal	R	T							
Output shaft revolution signal	R	T							
A/C switch signal	R					T			
A/C compressor request signal	T								R
Blower fan motor switch signal	R					T	R		
A/C switch/indicator signal					T		R		
					R		T		
Cooling fan speed request signal	T						R		R
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						T			R
Rear window defogger request signal						T	R		R
Rear window defogger status signal						R			T
Vehicle speed signal				R			R	T	
	R	R	R	T	R	R	R		
Sleep wake up signal			R	R		T			R
Door switch signal			R	R	R	T			R
Turn indicator signal				R		T			
Key fob ID signal			R			T			
Key fob door unlock signal			R			T			
Buzzer output signal				R		T			

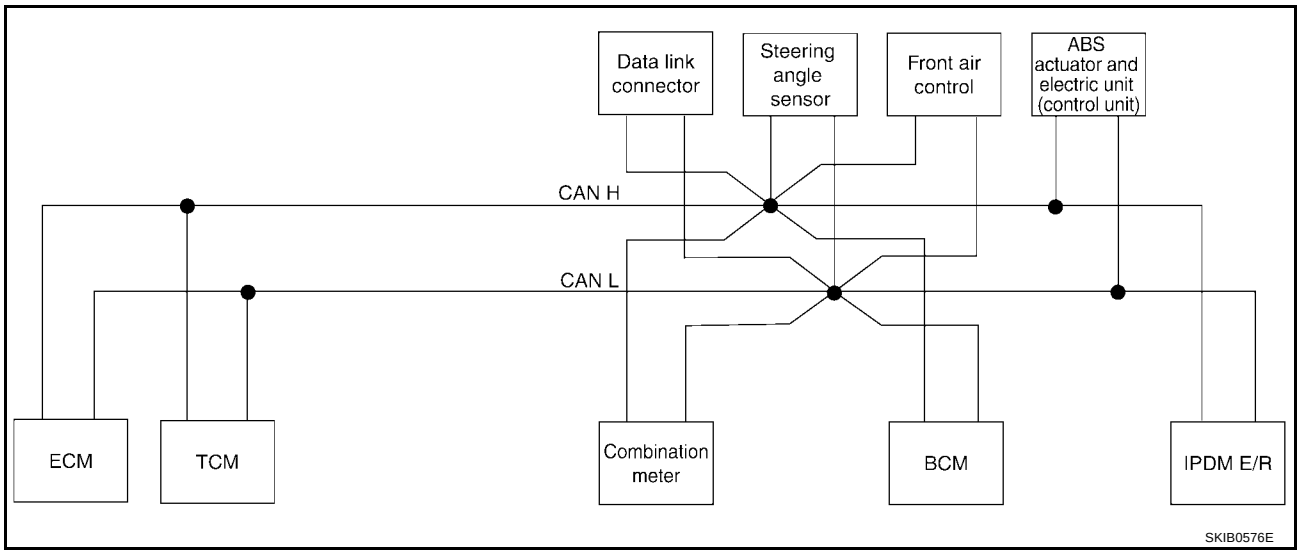
Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Fuel level sensor signal	R			T					
Fuel level low warning signal				T	R				
ASCD SET lamp signal	T			R					
ASCD CRUISE lamp signal	T			R					
Malfunction indicator lamp signal	T			R					
Front wiper request signal						T			R
Front wiper stop position 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	
System setting signal			R		T				
			T		R				
Distance to empty signal				T	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					
Tire pressure signal				R		T			
Tire pressure data signal					R	T			
1st position switch signal*1		R		T					
4th position switch signal*1		R		T					
Manual mode switch signal*2		R		T					
Not manual mode switch signal*2		R		T					
Manual mode shift up signal*2		R		T					
Manual mode shift down signal*2		R		T					
Tow mode switch signal		R		T					
A/T fluid temperature sensor signal		T		R					
Seat belt buckle switch signal				T		R			

*1: Floor shift model only.
*2: Column shift model only.

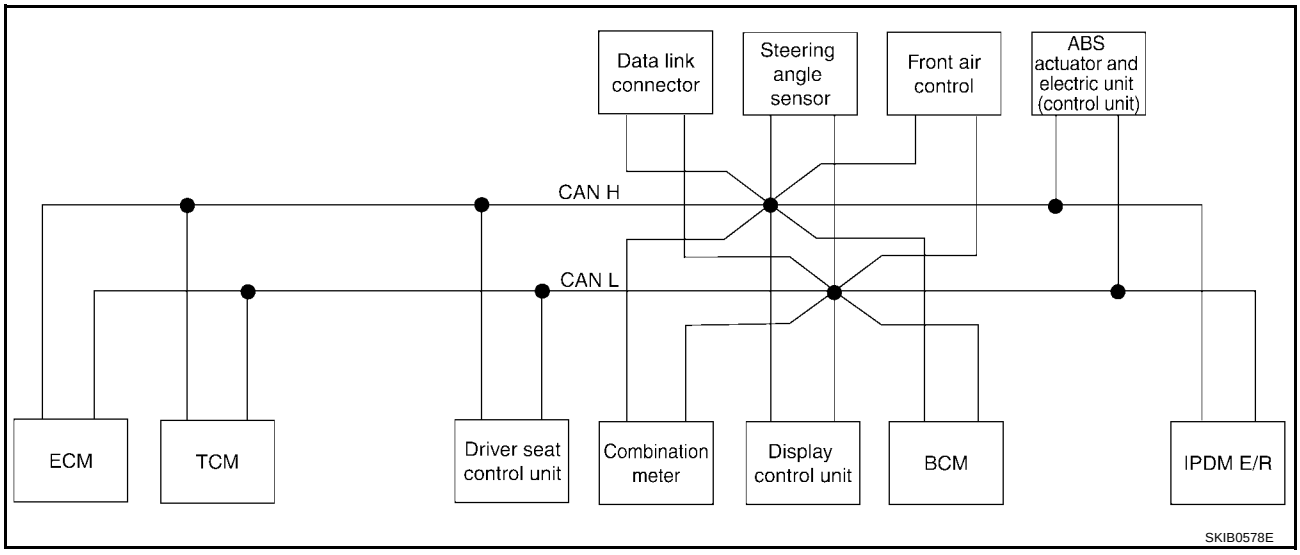
TYPE 5/TYPE 6

System diagram

- Type 5



- Type 6



Input/output signal chart

T: Transmit R: Receive

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

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Battery voltage signal	T	R								
Key switch signal			R			T				
Ignition switch signal			R			T				R
P range signal		T	R						R	
Stop lamp switch signal		R		T						
Fuel consumption monitor signal	T			R						
				T	R					
Turbine revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R					T				
A/C compressor request signal	T									R
Blower fan motor switch signal	R					T		R		
A/C switch/indicator signal					T			R		
					R			T		
Cooling fan speed request signal	T							R		R
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						T				R
Rear window defogger request signall						T		R		R
Rear window defogger status signal						R				T
Vehicle speed signal				R				R	T	
	R	R	R	T	R	R		R		
Sleep wake up signal			R	R		T				R
Door switch signal			R	R	R	T				R
Turn indicator signal				R		T				
Key fob ID signal			R			T				
Key fob door unlock signal			R			T				
Buzzer output signal				R		T				
Fuel level sensor signal	R			T						
Fuel level low warning signal				T	R					
ASCD SET lamp signal	T			R						
ASCD CRUISE lamp signal	T			R						
Malfunction indicator lamp signal	T			R						
Front wiper request signal						T				R
Front wiper stop position signal						R				T
Theft warning horn request signal						T				R

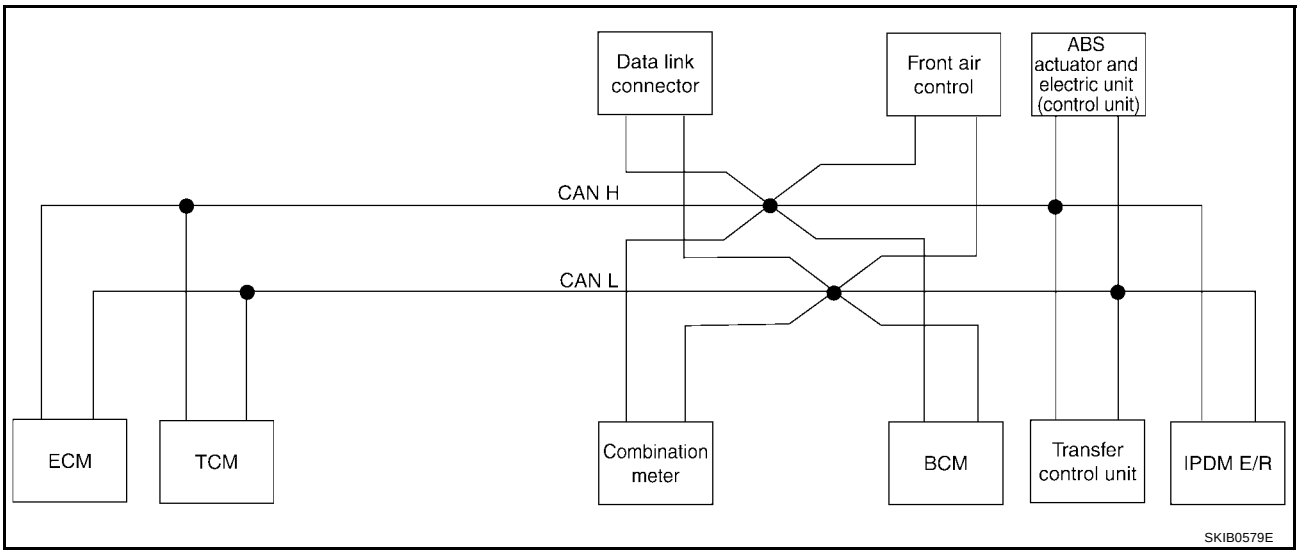
Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Horn chirp signal						T				R
Steering angle sensor signal							T		R	
ABS warning lamp signal				R					T	
VDC OFF indicator lamp signal				R					T	
SLIP indicator lamp signal				R					T	
Brake warning lamp signal				R					T	
System setting signal			R		T					
			T		R					
Distance to empty signal				T	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						
Tire pressure signal				R		T				
Tire pressure data signal					R	T				
1st position switch signal*1		R		T						
4th position switch signal*1		R		T						
Manual mode switch signal*2		R		T						
Not manual mode switch signal*2		R		T						
Manual mode shift up signal*2		R		T						
Manual mode shift down signal*2		R		T						
Tow mode switch signal		R		T						
A/T fluid temperature sensor signal		T		R						
Seat belt buckle switch signal				T		R				

*1: Floor shift model only.
*2: Column shift model only.

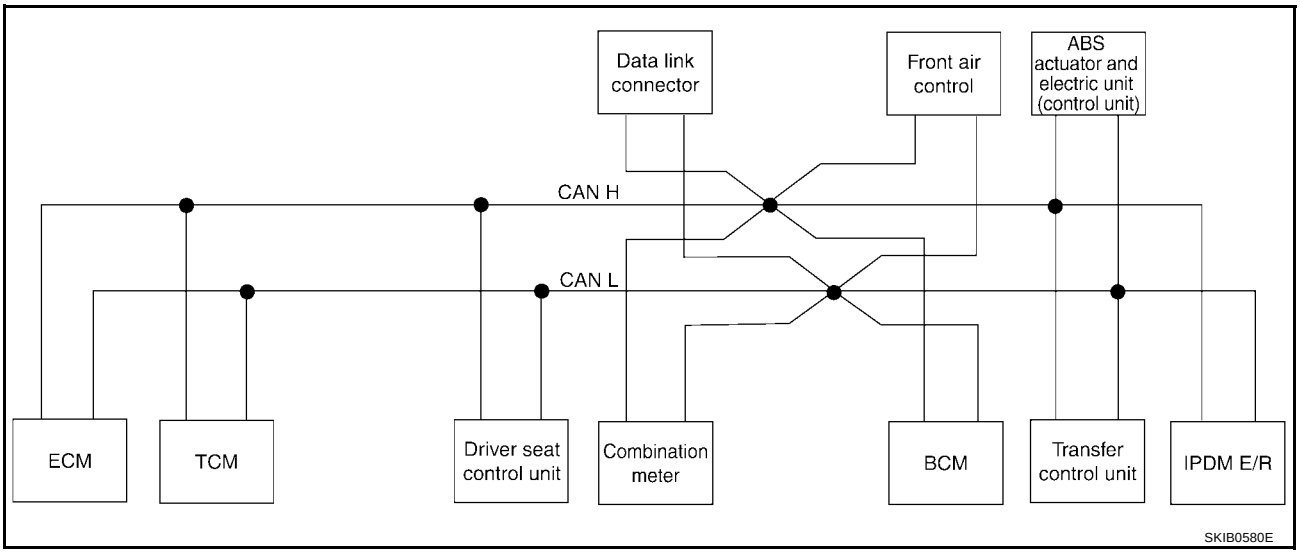
TYPE 7/TYPE 8/TYPE 9/TYPE 10/TYPE 11/TYPE 12

System diagram

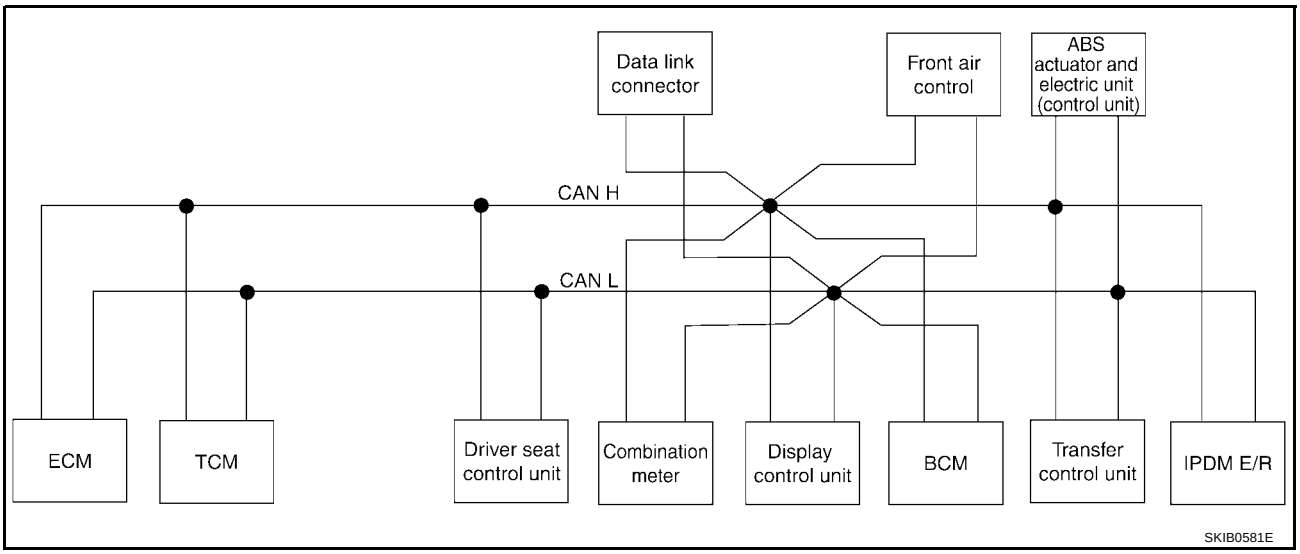
- Type 7



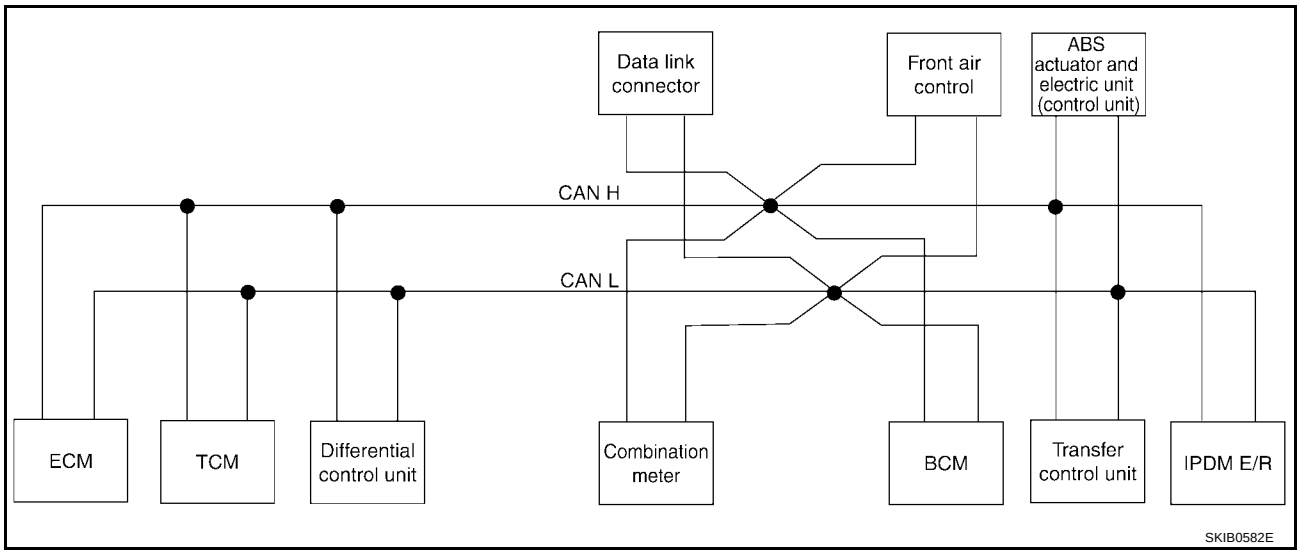
- Type 8



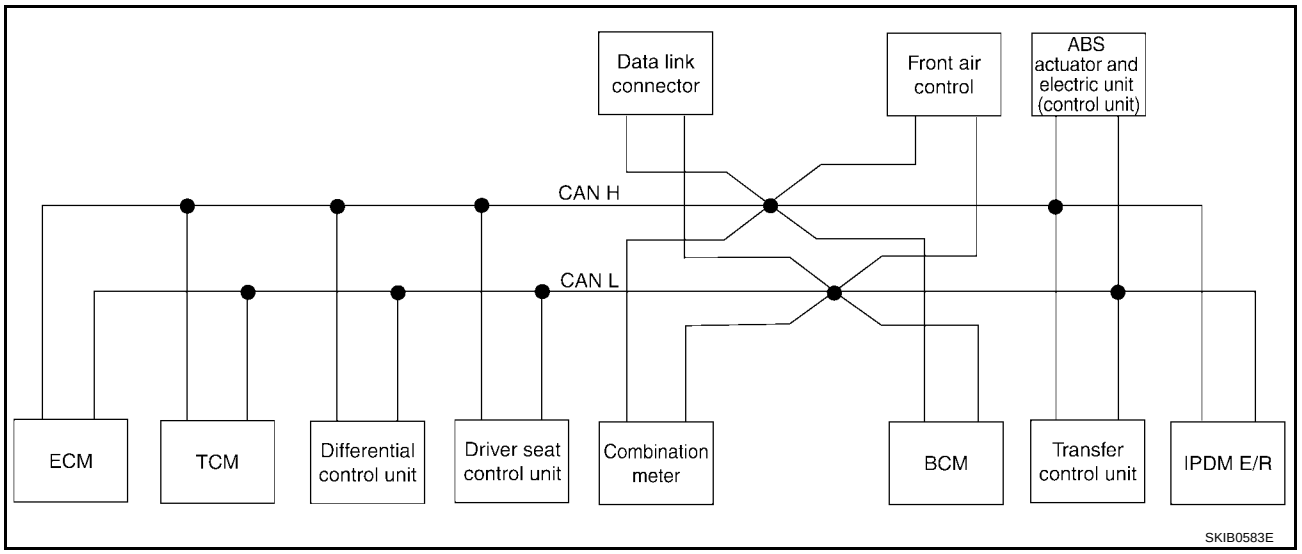
- Type 9



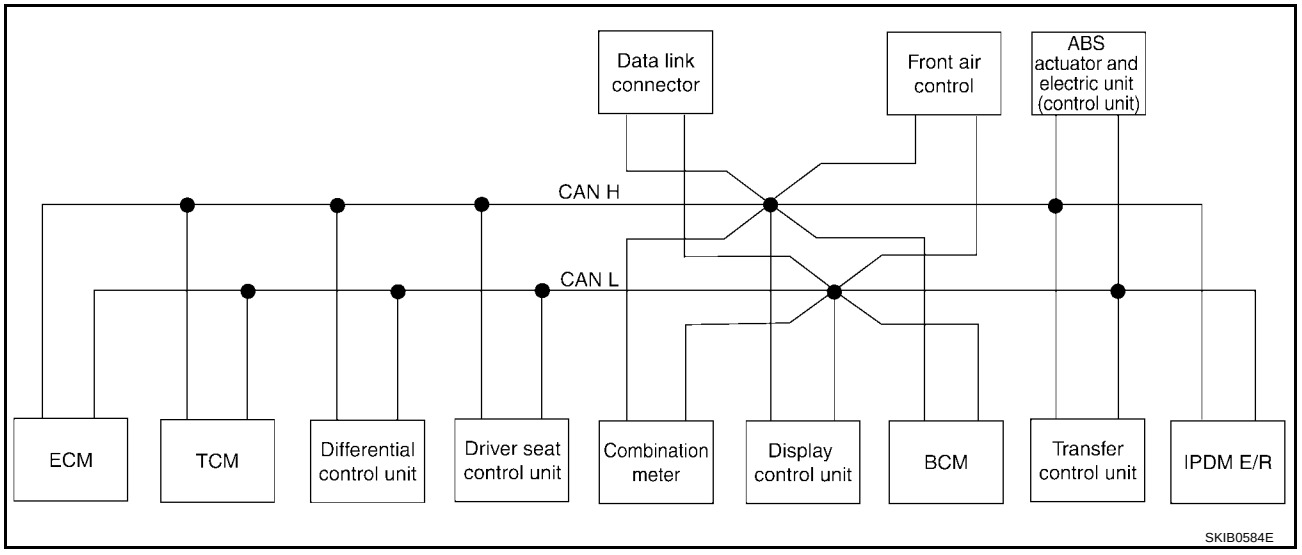
- Type 10



- Type 11



- Type 12



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Differential lock control unit	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
A/T self-diagnosis signal	R	T									
Stop lamp switch signal		R			T						
									R	T	
Battery voltage signal	T	R									
Key switch signal				R			T				
Ignition switch signal				R			T				R
P range signal		T		R						R	
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									
Engine speed signal	T	R			R	R		R	R	R	
Engine status signal	T						R	R			
Engine coolant temperature signal	T				R			R			
Accelerator pedal position signal	T	R								R	
Fuel consumption monitor signal	T				R						
					T	R					
Turbine revolution signal	R	T									
Output shaft revolution signal	R	T									
A/C switch signal	R						T				
A/C compressor request signal	T										R
Blower fan motor switch signal	R						T	R			
A/C switch/indicator signal						T		R			
						R		T			
Cooling fan speed request signal	T							R			R
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							T				R
Rear window defogger request signal							T	R			R
Rear window defogger status signal							R				T
Vehicle speed signal			R		R			R	R	T	
	R	R		R	T	R	R	R			
Sleep wake up signal				R	R		T				R
Door switch signal				R	R	R	T				R
Key fob ID signal				R			T				

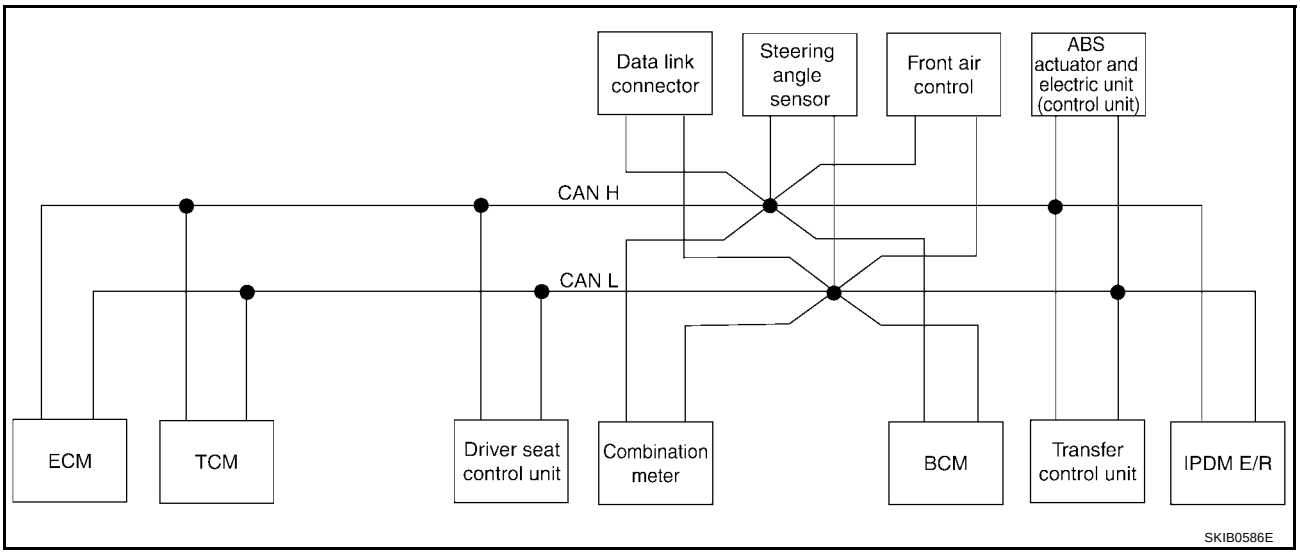
Signals	ECM	TCM	Differential lock control unit	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Key fob door unlock signal				R			T				
Buzzer output signal					R		T				
Fuel level sensor signal	R				T						
ASCD SET lamp signal	T				R						
ASCD CRUISE lamp signal	T				R						
Malfunction indicator lamp signal	T				R						
Fuel level low warning signal					T	R					
Front wiper request signal							T				R
Front wiper stop position signal							R				T
Theft warning horn request signal							T				R
Horn chirp signal							T				R
ABS warning lamp signal					R					T	
SLIP indicator lamp signal					R					T	
Brake warning lamp signal					R					T	
System setting signal				R		T					
				T		R					
Distance to empty signal					T	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				R		
Tire pressure signal					R		T				
Tire pressure data signal						R	T				
1st position switch signal*1		R			T						
4th position switch signal*1		R			T						
Manual mode switch signal*2		R			T						
Not manual mode switch signal*2		R			T						
Manual mode shift up signal*2		R			T						
Manual mode shift down signal*2		R			T						
Tow mode switch signal		R			T						
A/T fluid temperature sensor signal		T			R						
4WD shift switch signal	R		R						T		
Seat belt buckle switch signal					T		R				
Differential lock switch signal			T							R	
Differential lock indicator signal			T							R	

*1: Floor shift model only.
*2: Column shift model only.

TYPE 13

System diagram

- Type 13



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Driver seat control unit	Combination meter	BCM	Steering angle sensor	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
A/T self-diagnosis signal	R	T								
Stop lamp switch signal		R		T						
								R	T	
Battery voltage signal	T	R								
Key switch signal			R		T					
Ignition switch signal			R		T					R
P range signal		T	R						R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Engine speed signal	T	R		R			R	R	R	
Engine status signal	T				R		R			
Engine coolant temperature signal	T			R			R			
Accelerator pedal position signal	T	R							R	
Fuel consumption monitor signal	T			R						
Turbine revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R				T		R			
A/C compressor request signal	T									R
Blower fan motor switch signal	R				T		R			
Cooling fan speed request signal	T						R			R
Position light request signal				R	T					R

Signals	ECM	TCM	Driver seat control unit	Combination meter	BCM	Steering angle sensor	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/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					T					R
Rear window defogger request signal					T		R			R
Rear window defogger status signal					R					T
Vehicle speed signal				R			R	R	T	
	R	R	R	T	R		R			
Sleep wake up signal			R	R	T					R
Door switch signal			R	R	T					R
Key fob ID signal			R		T					
Key fob door unlock signal			R		T					
Buzzer output signal				R	T					
Fuel level sensor signal	R			T						
ASCD SET lamp signal	T			R						
ASCD CRUISE lamp signal	T			R						
Malfunction indicator lamp signal	T			R						
Fuel level low warning signal				T						
Front wiper request signal					T					R
Front wiper stop position signal					R					T
Theft warning horn request signal					T					R
Horn chirp signal					T					R
Steering angle sensor signal						T			R	
ABS warning lamp signal				R					T	
VDC OFF indicator lamp signal				R					T	
SLIP indicator lamp signal				R					T	
Brake warning lamp signal				R					T	
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				R		
Tire pressure signal				R	T					
1st position switch signal[*1]		R		T						
4th position switch signal[*1]		R		T						
Manual mode switch signal[*2]		R		T						
Not manual mode switch signal[*2]		R		T						

Signals	ECM	TCM	Driver seat control unit	Combination meter	BCM	Steering angle sensor	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Manual mode shift up signal*2		R		T						
Manual mode shift down signal*2		R		T						
Tow mode switch signal		R		T						
A/T fluid temperature sensor signal		T		R						
4WD shift switch signal	R							T		
Seat belt buckle switch signal				T	R					

*1: Floor shift model only.
*2: Column shift model only.

CAN SYSTEM (TYPE 1)

PFP:23710

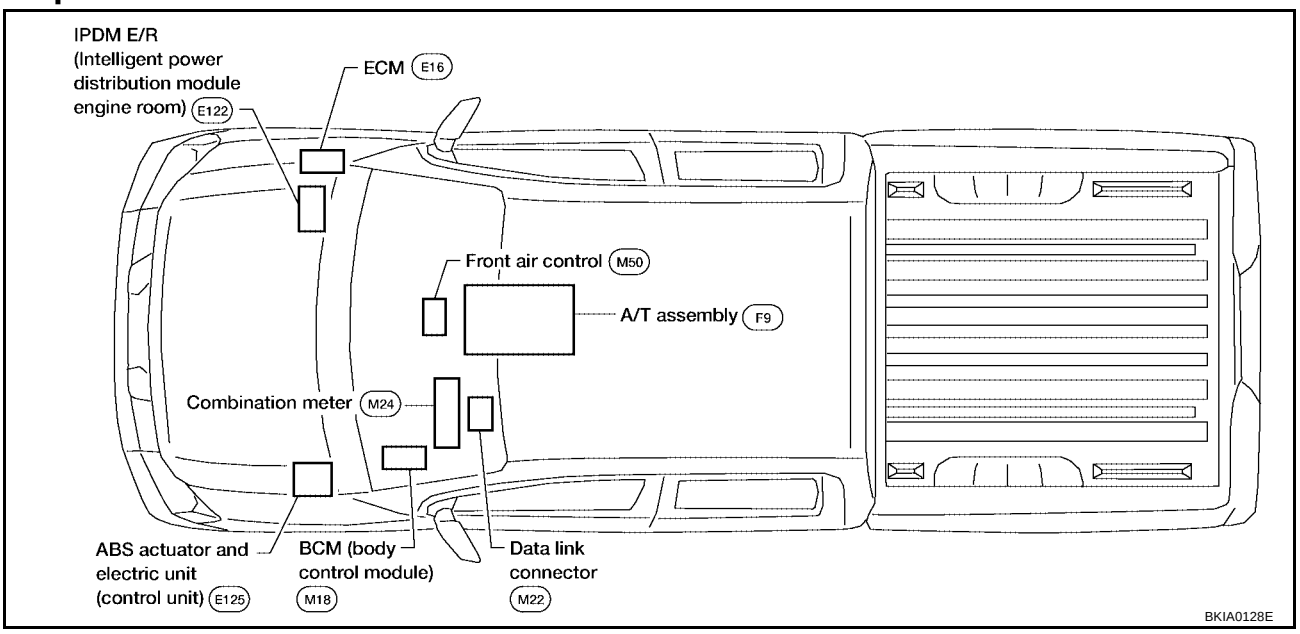
System Description

UKS001AK

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.

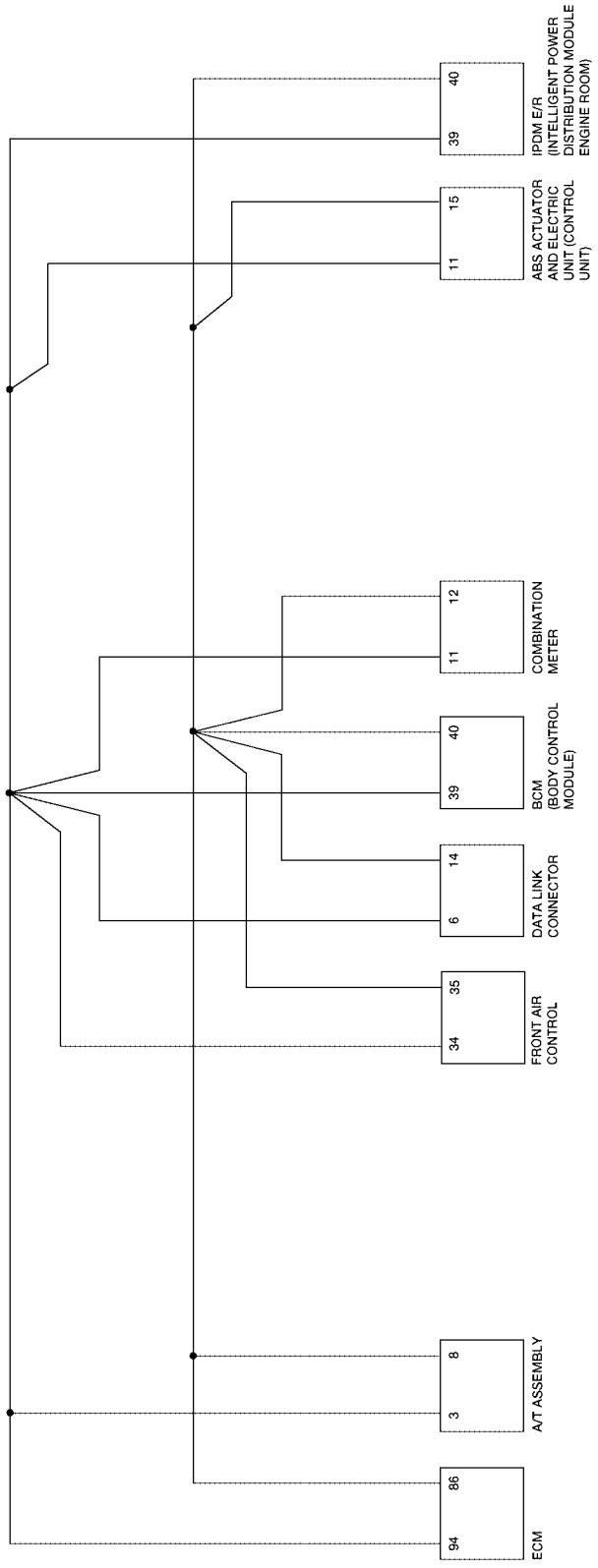
Component Parts and Harness Connector Location

UKS001AL



Schematic

UKS001AM

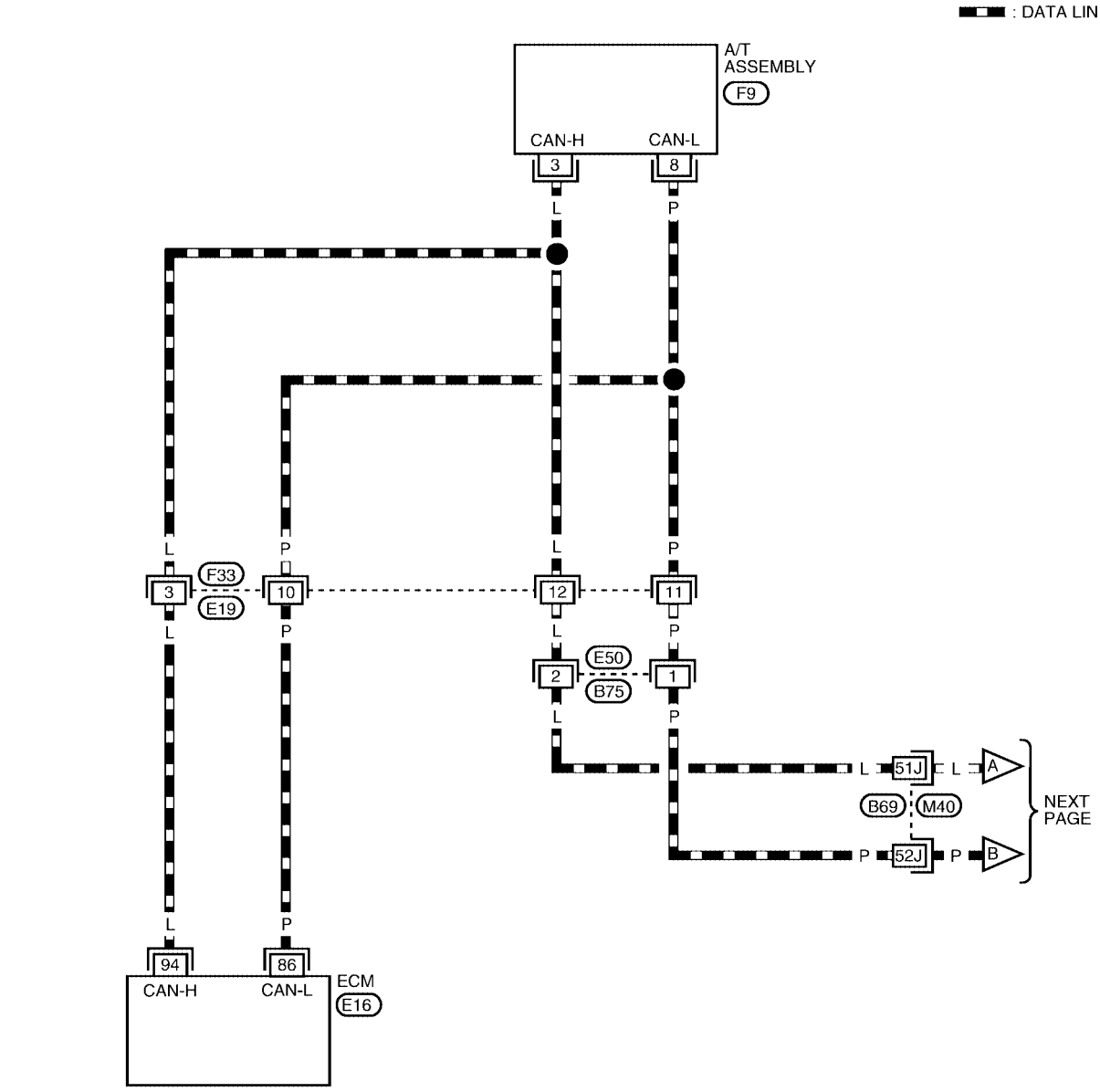


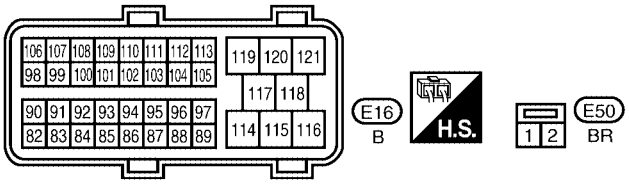
BKWA0130E

Wiring Diagram - CAN -

UKS001AN

LAN-CAN-01

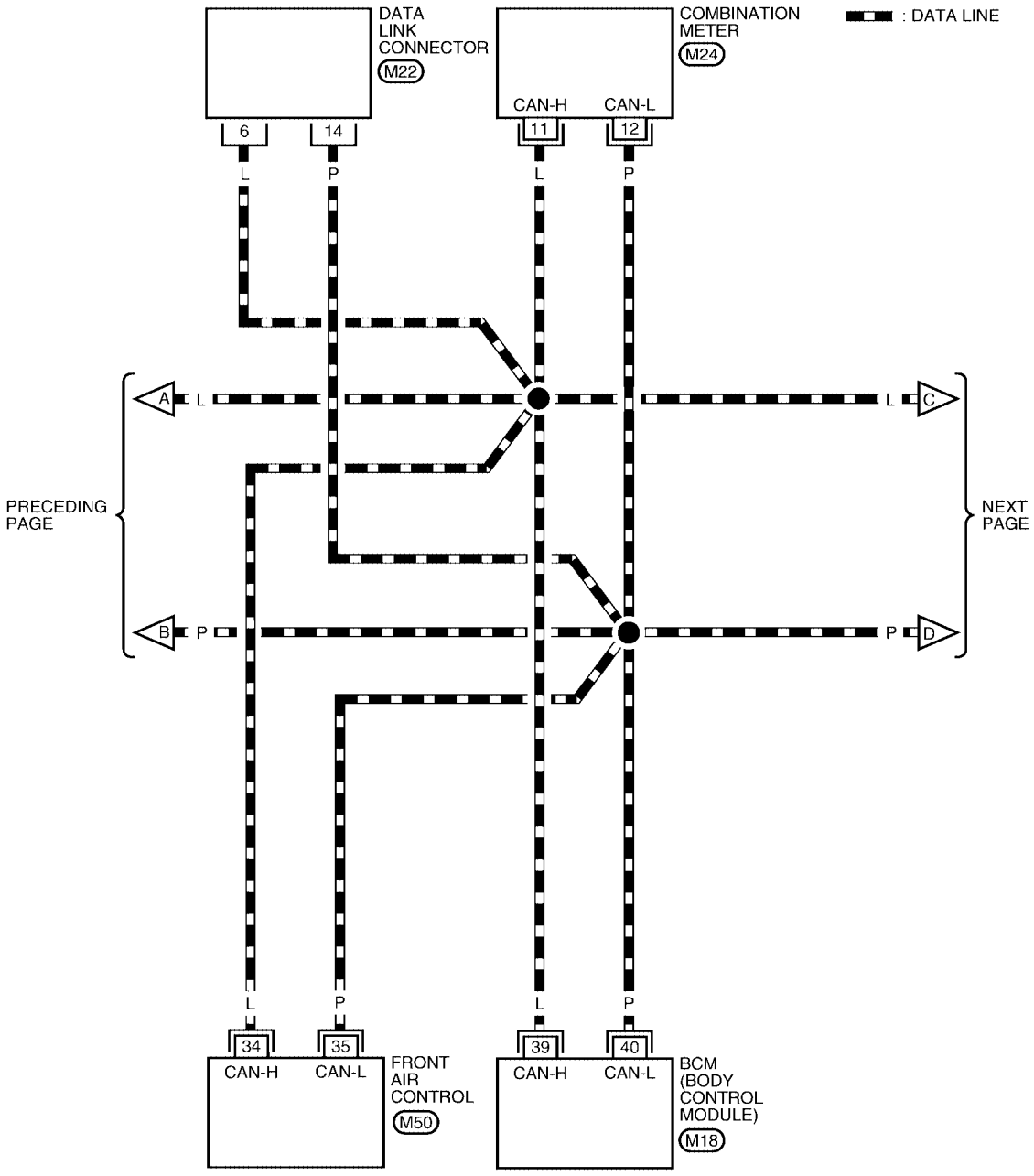


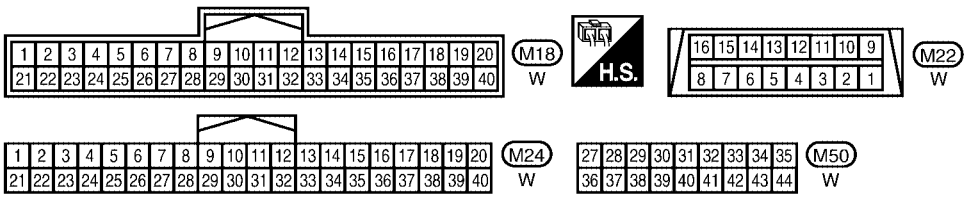


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0425E

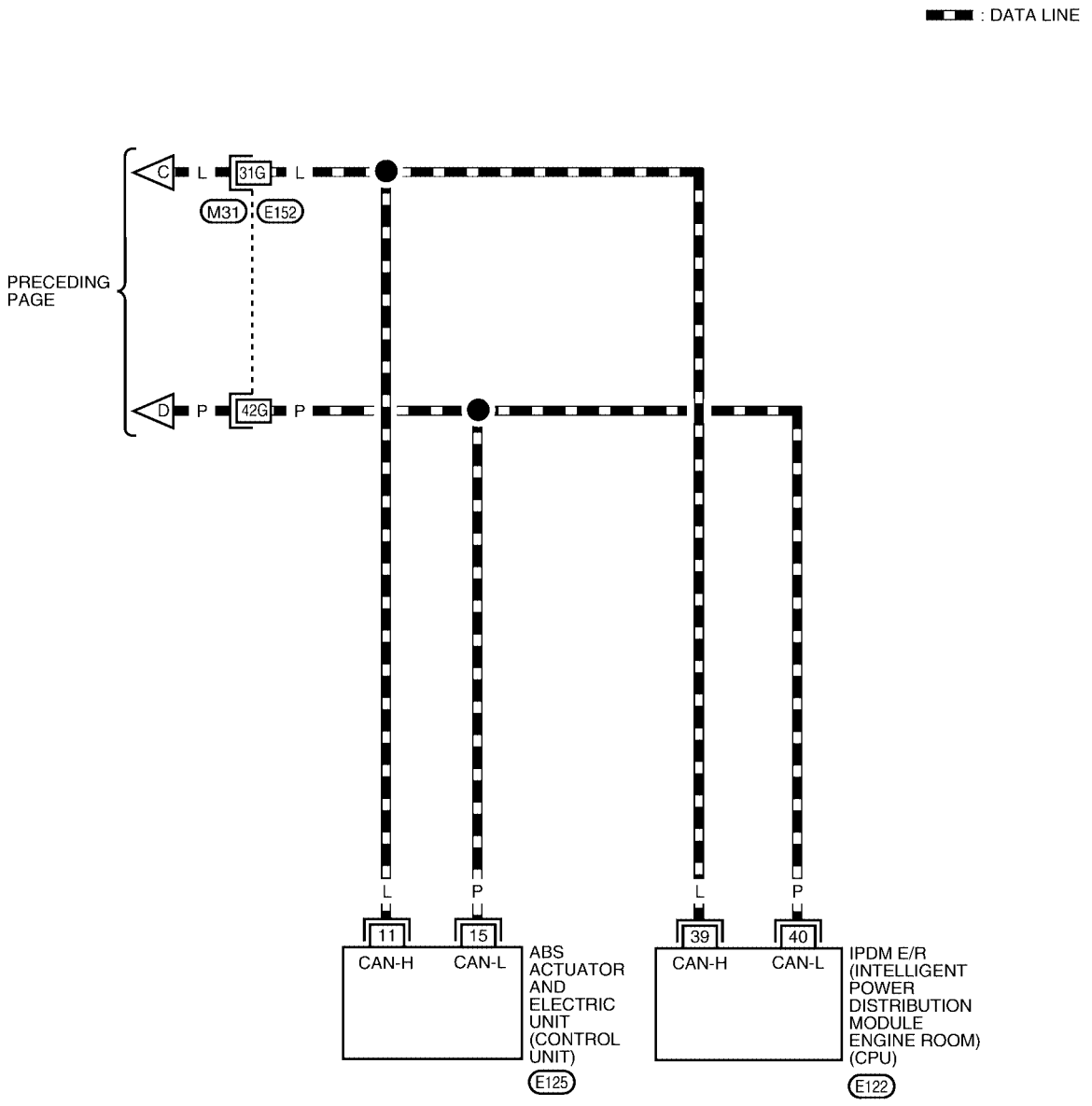
LAN-CAN-02

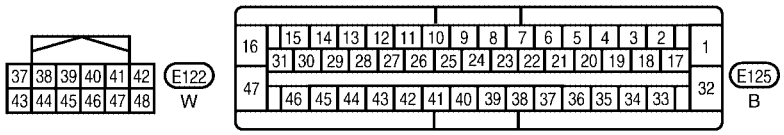




BKWA0426E

LAN-CAN-03





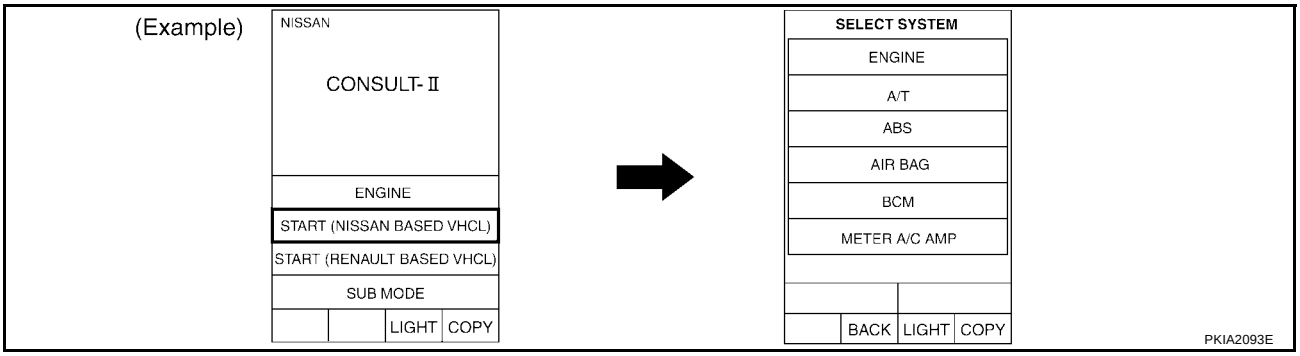
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0427E

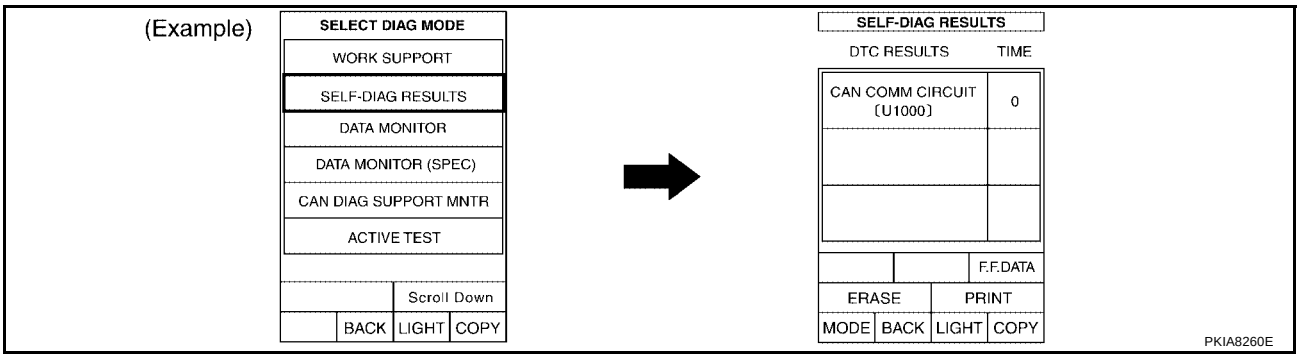
Work Flow

UKS001AO

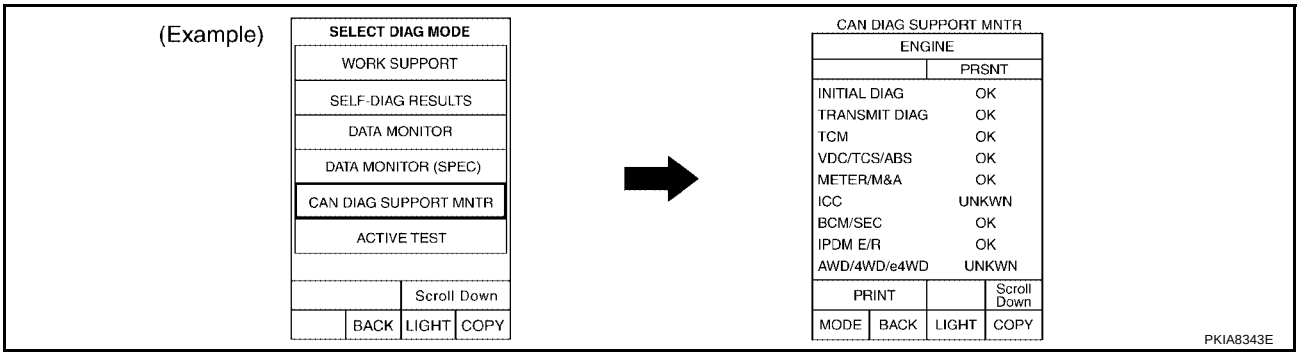
1. When there are no indications of “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-30, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-30, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-32, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

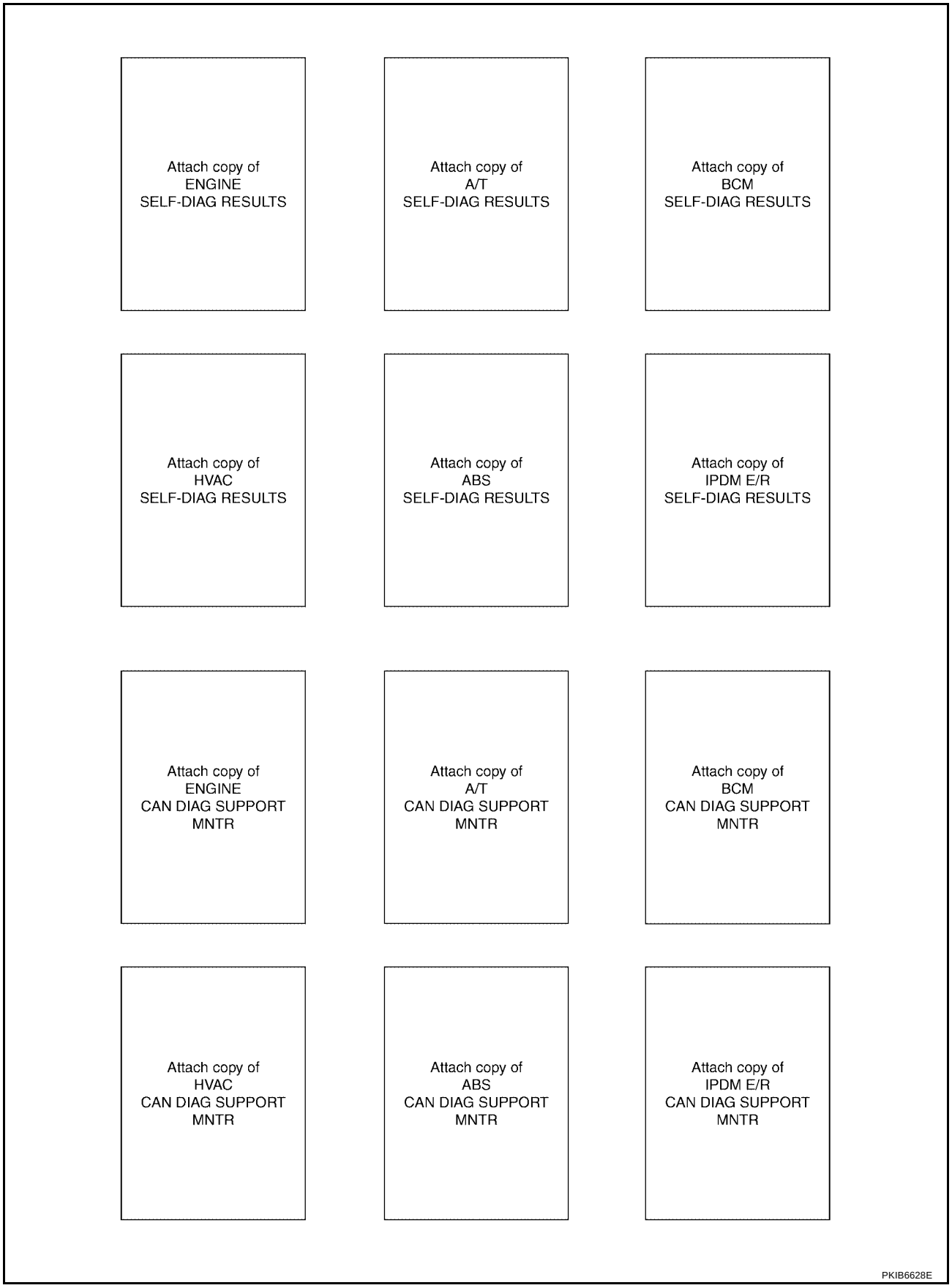
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
HVAC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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB6627E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
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A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6628E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

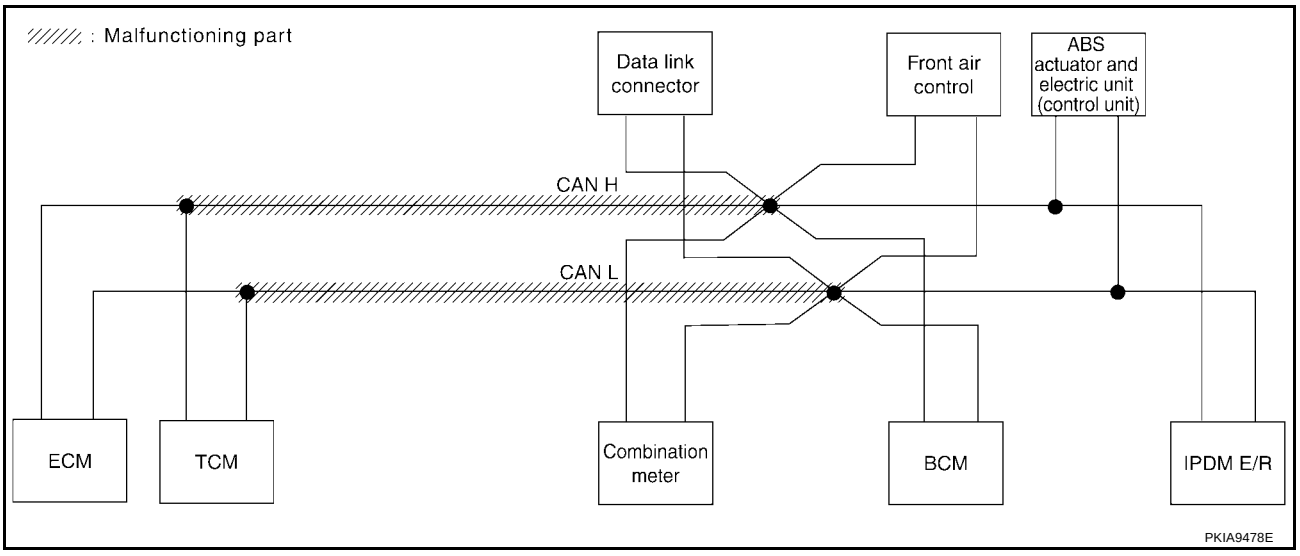
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-43, "Circuit Check Between TCM and Data Link Connector" .

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

PKIB6629E



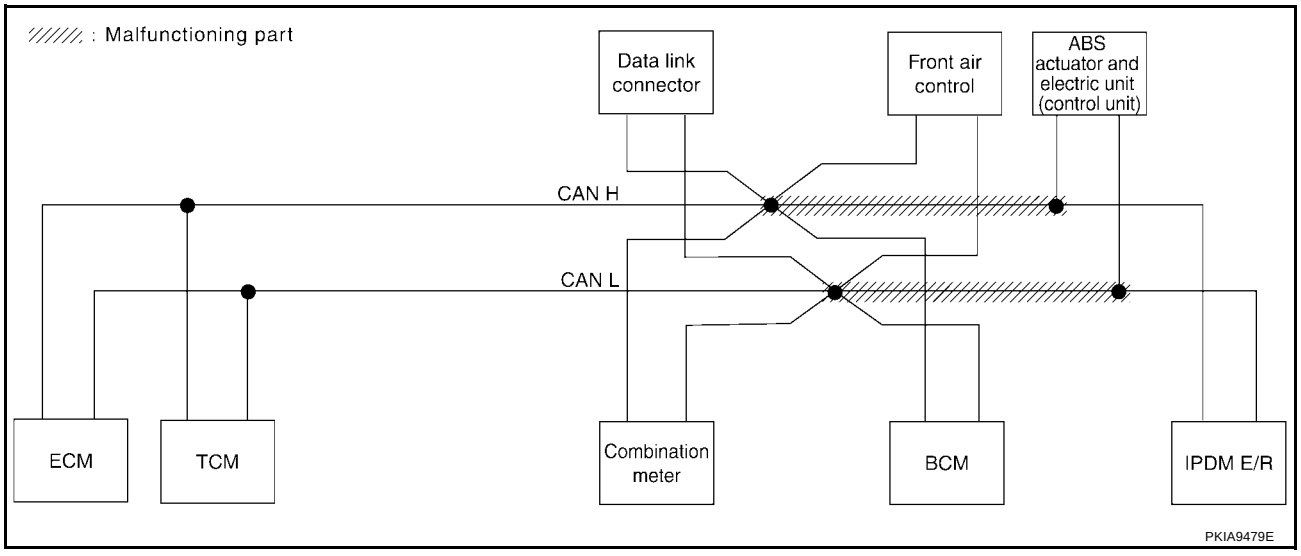
PKIA9478E

Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-44, "Circuit Check Between Data Link Connector and IPDM E/R" .

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

PKIB6630E

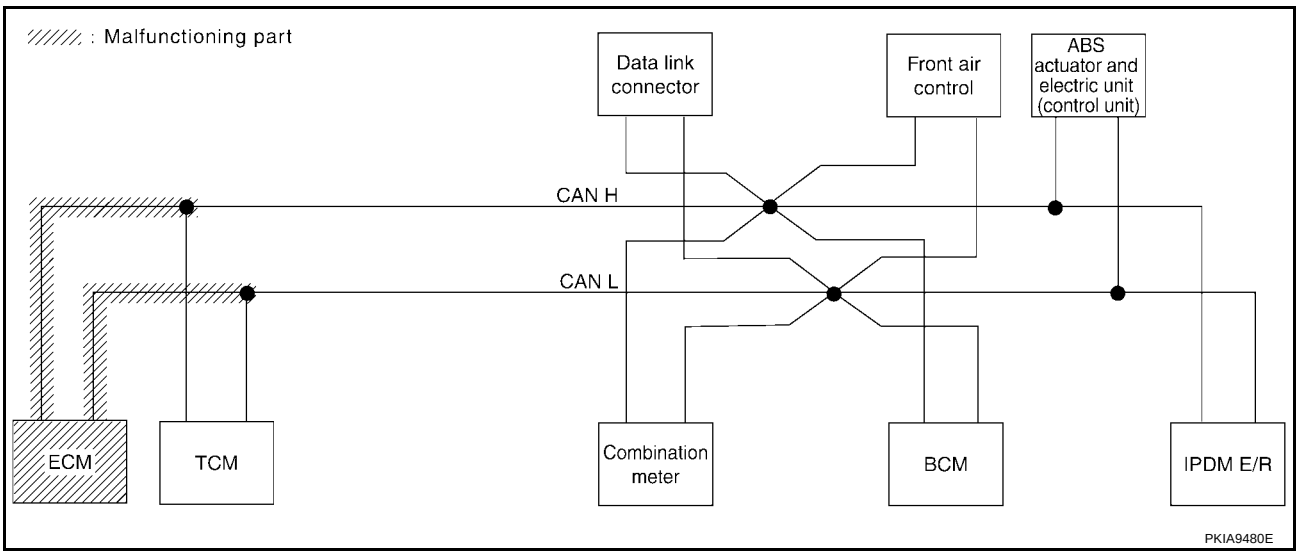


Case 3

Check ECM circuit. Refer to LAN-45, "ECM Circuit Check" .

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

PKIB6631E

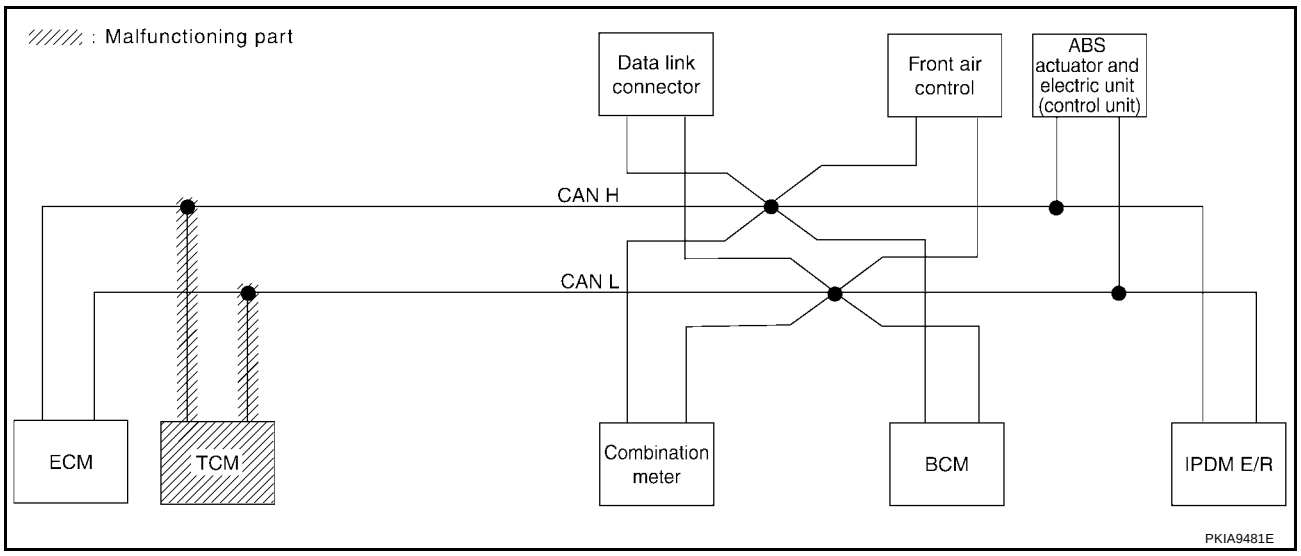


Case 4

Check TCM circuit. Refer to LAN-46, "TCM Circuit Check" .

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

PKIB6632E

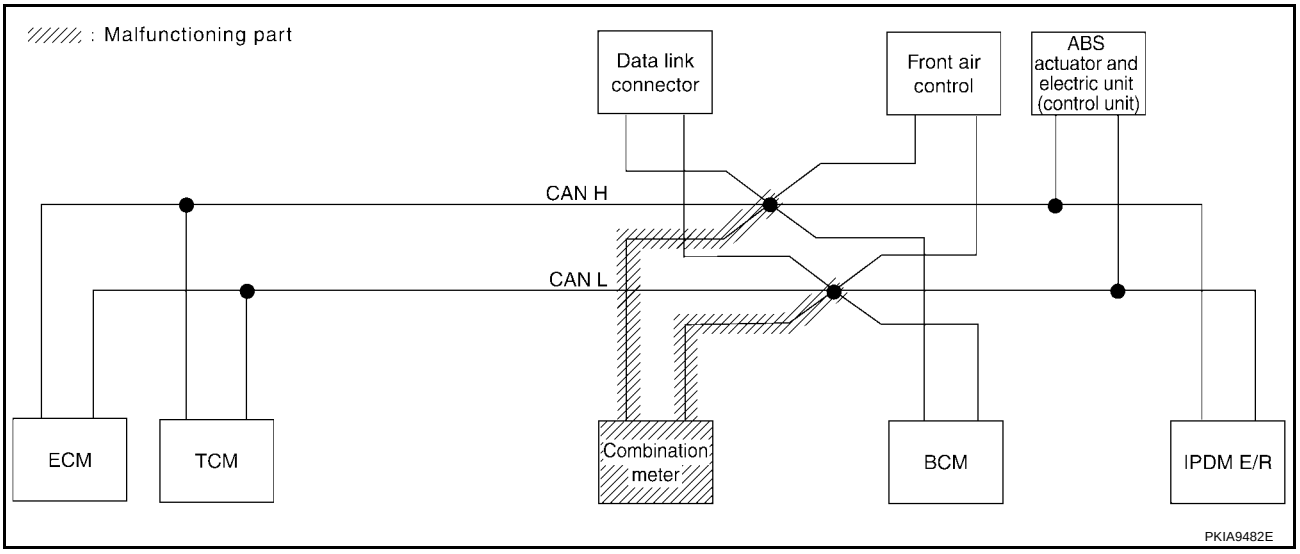


Case 5

Check combination meter circuit. Refer to LAN-46, "Combination Meter Circuit Check" .

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

PKIB6633E

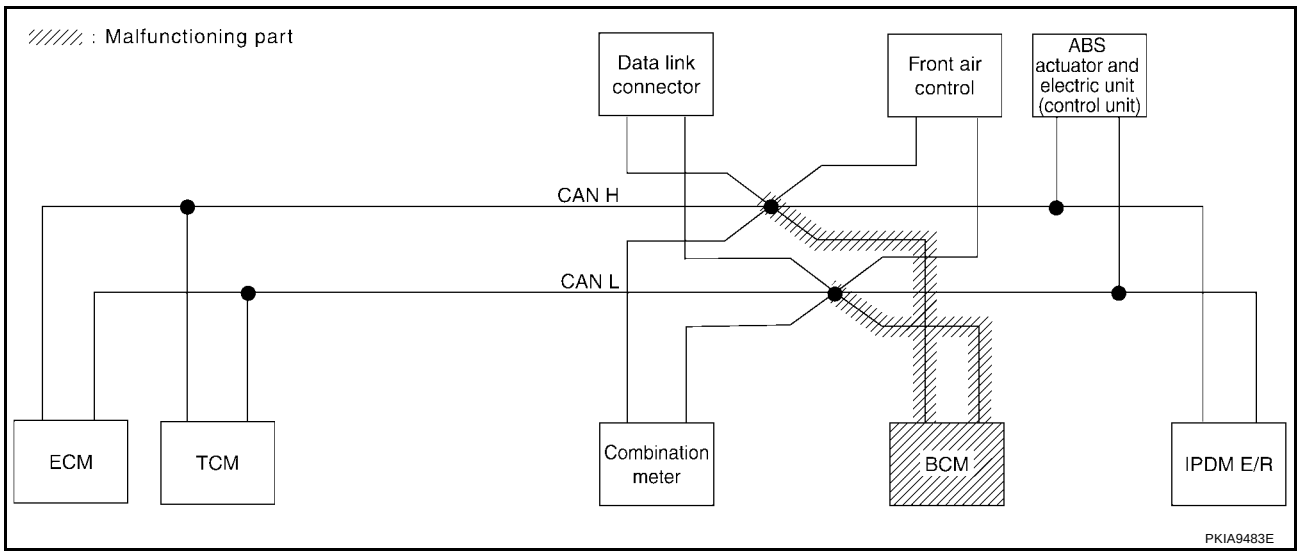


Case 6

Check BCM circuit. Refer to LAN-47, "BCM Circuit Check" .

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

PKIB6634E



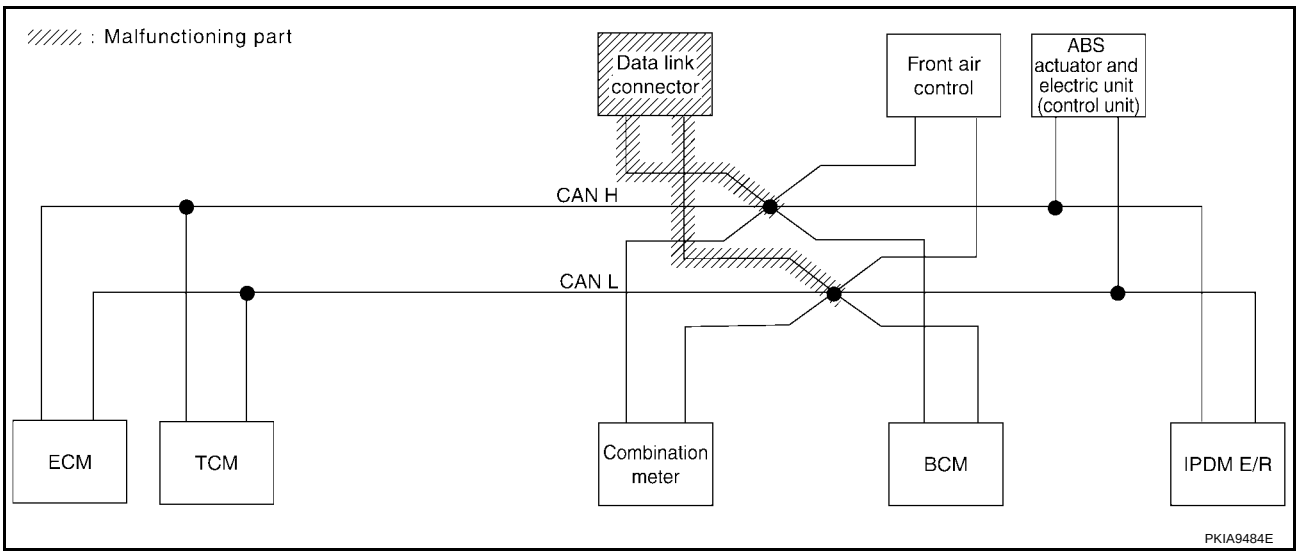
PKIA9483E

Case 7

Check data link connector circuit. Refer to LAN-47, "Data Link Connector Circuit Check" .

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

PKIB6635E



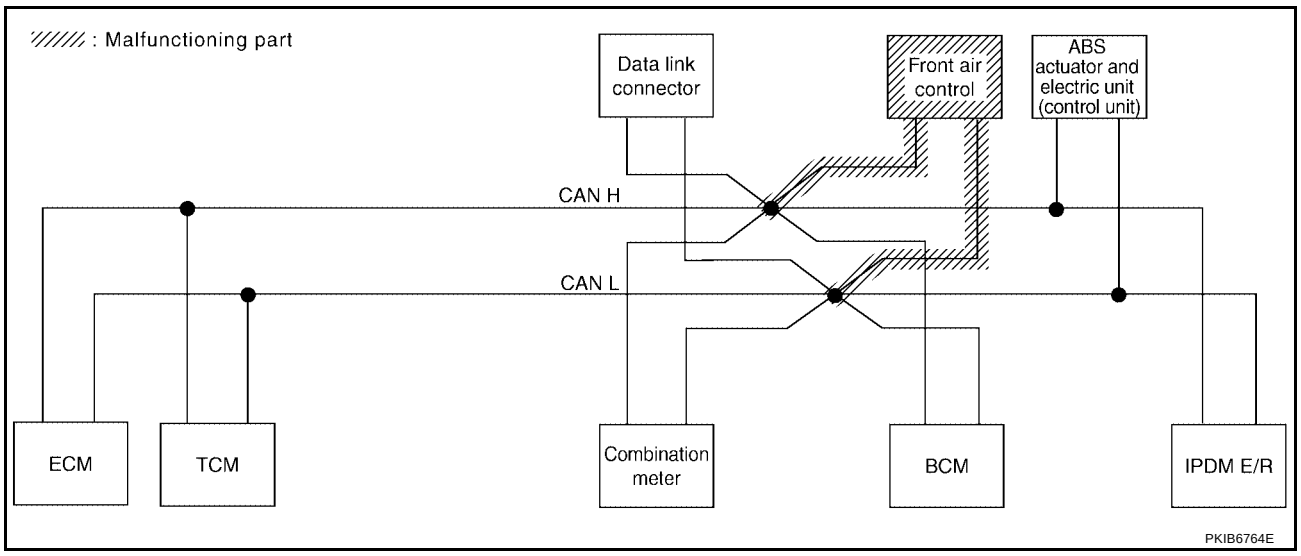
PKIA9484E

Case 8

Check front air control circuit. Refer to LAN-48, "Front Air Control Circuit Check" .

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

PKIB6636E

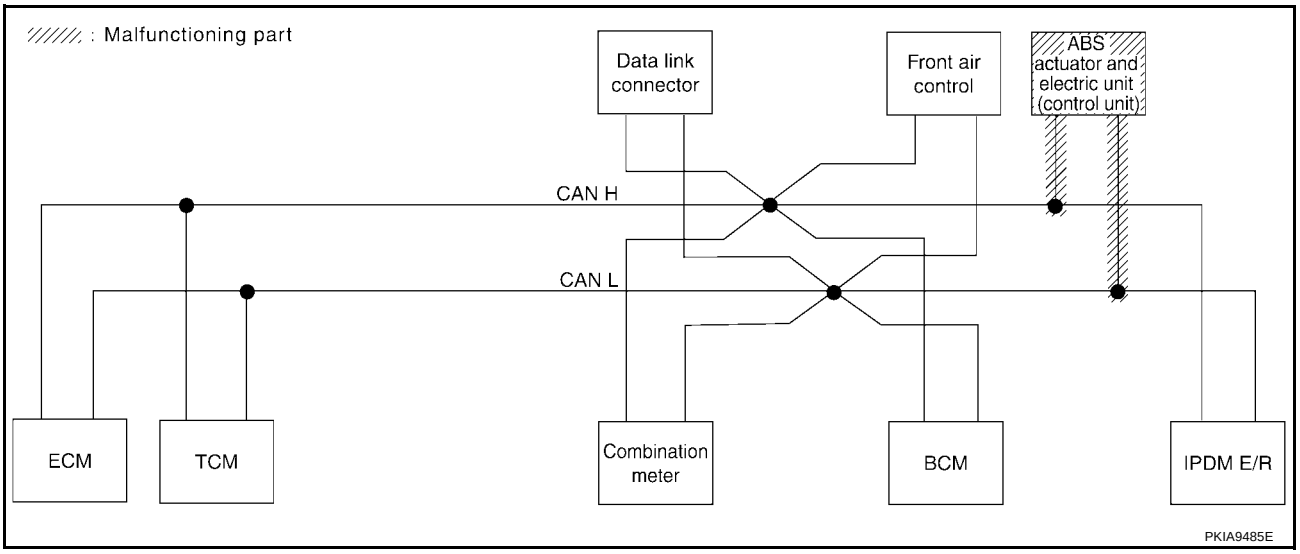


Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-48, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

PKIB6637E

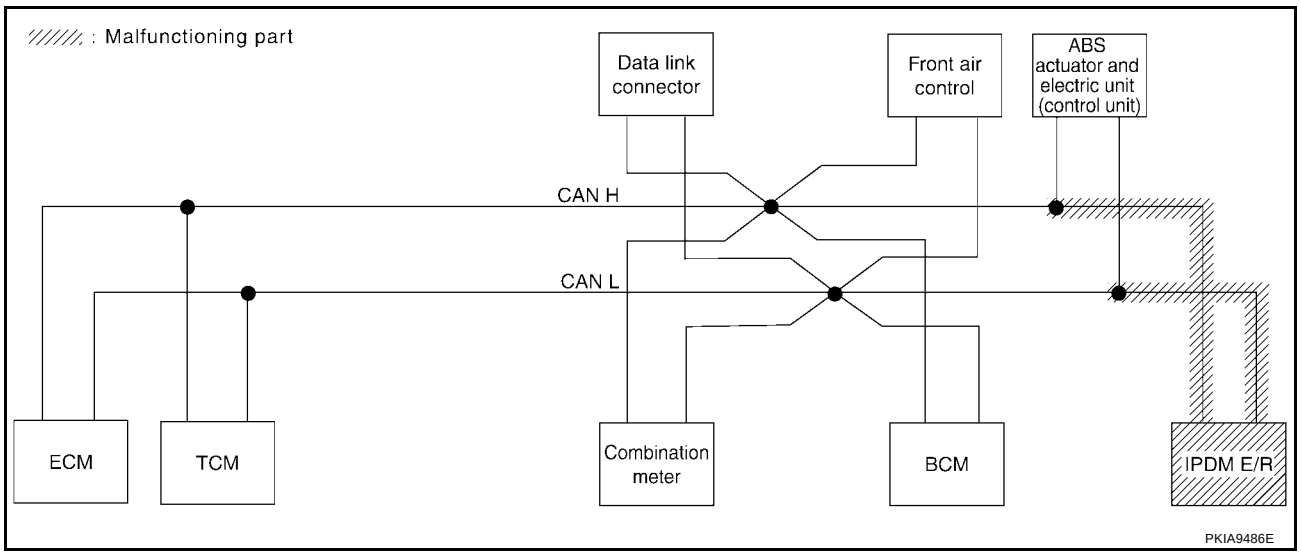


Case 10

Check IPDM E/R circuit. Refer to LAN-49, "IPDM E/R Circuit Check" .

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

PKIB6638E



PKIA9486E

Case 11

Check CAN communication circuit. Refer to LAN-50, "CAN Communication Circuit Check" .

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

PKIB6639E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-50, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIB6640E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-50, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIB6641E

Circuit Check Between TCM and Data Link Connector

UKS001AP

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

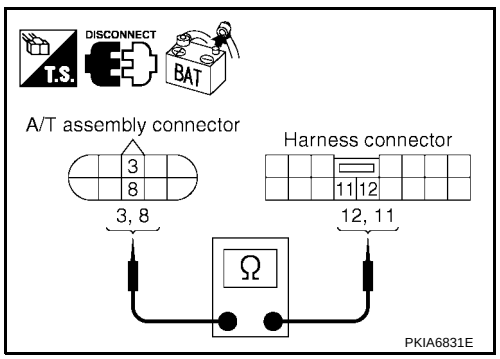
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



OK or NG

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

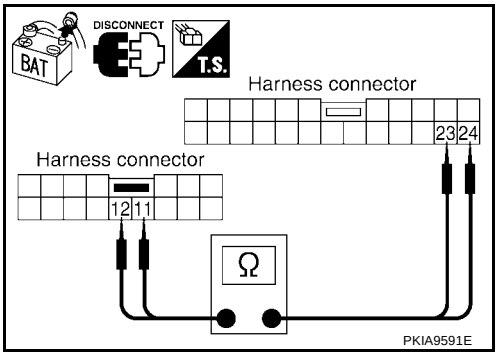
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E34.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E34 terminals 24 (L), 23 (P).

12 (L) - 24 (L) : Continuity should exist.
11 (P) - 23 (P) : Continuity should exist.

OK or NG

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



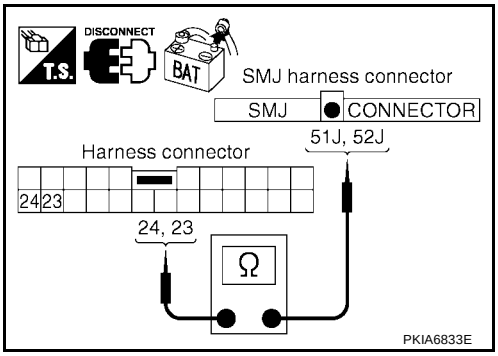
4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B40 terminals 24 (L), 23 (P) and harness connector B69 terminals 51J (L), 52J (P).

24 (L) - 51J (L) : Continuity should exist.
23 (P) - 52J (P) : Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> Repair harness.



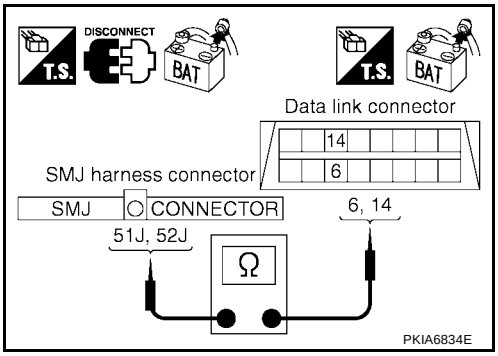
5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-29, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001AQ

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

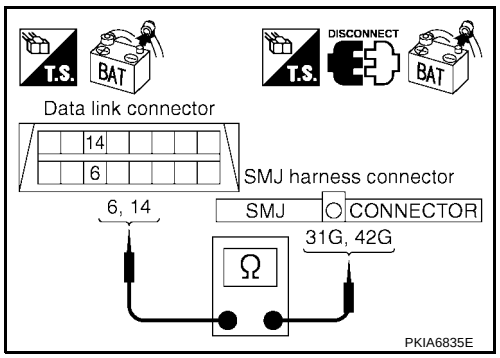
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.



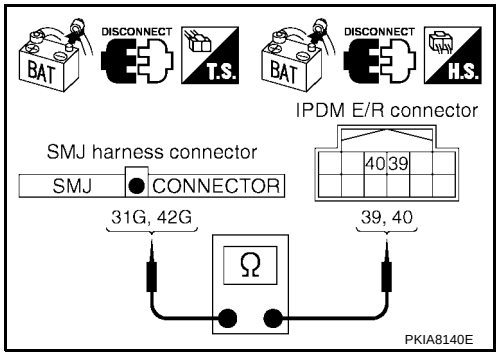
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-29, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001AR

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

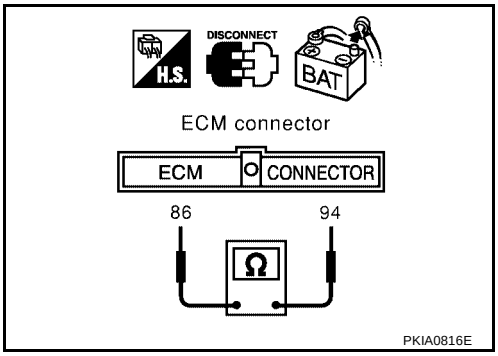
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS001AS

1. CHECK CONNECTOR

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

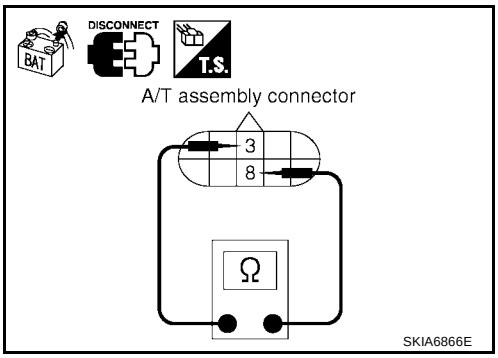
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Combination Meter Circuit Check

UKS001AT

1. CHECK CONNECTOR

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

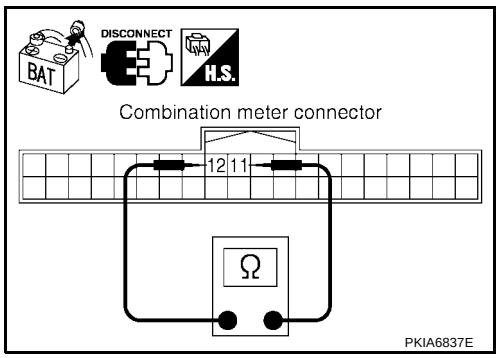
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS001AU

1. CHECK CONNECTOR

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

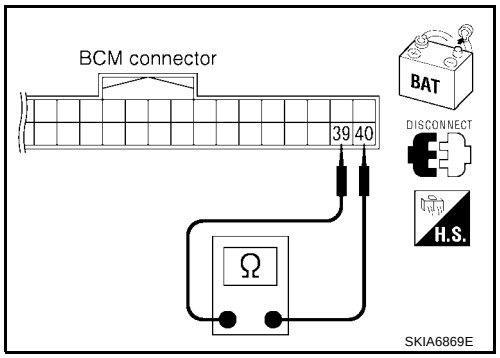
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001AV

1. CHECK CONNECTOR

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

OK or NG

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

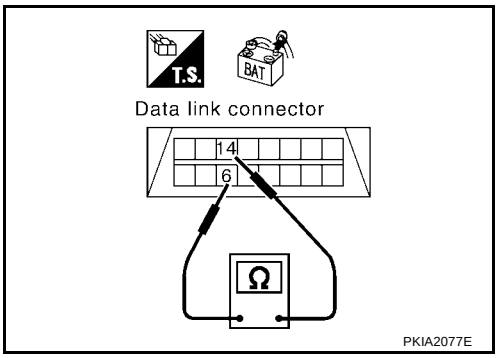
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Diagnose again. Refer to LAN-29, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.



Front Air Control Circuit Check

UKS003KM

1. CHECK CONNECTOR

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

OK or NG

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

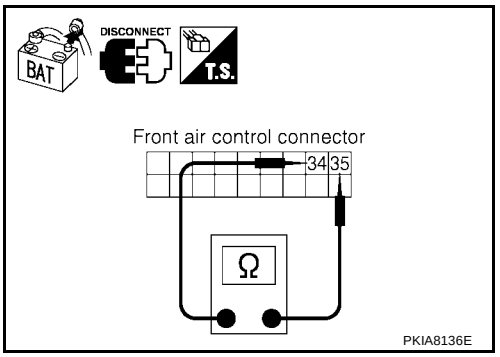
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω

OK or NG

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



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001AX

1. CHECK CONNECTOR

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

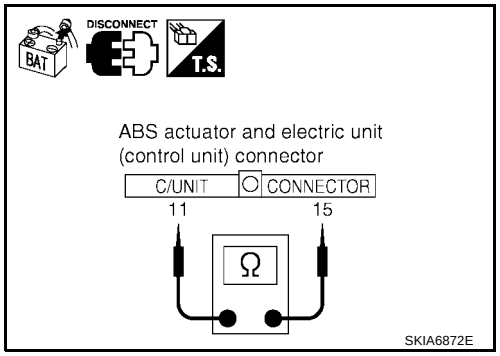
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001AY

1. CHECK CONNECTOR

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

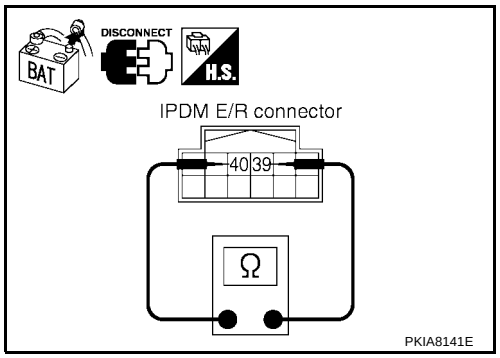
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001AZ

1. CHECK CONNECTOR

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
- A/T assembly
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

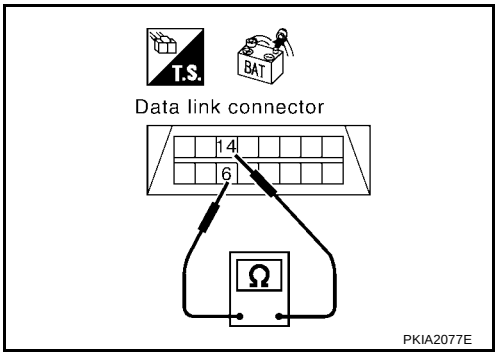
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



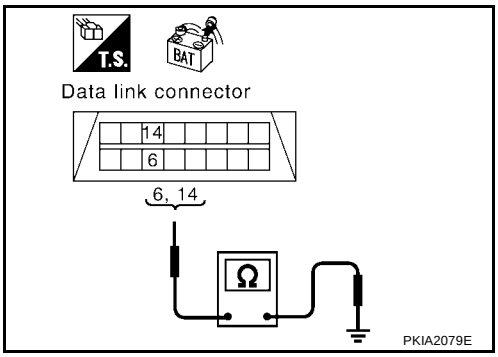
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-51, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001B0

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

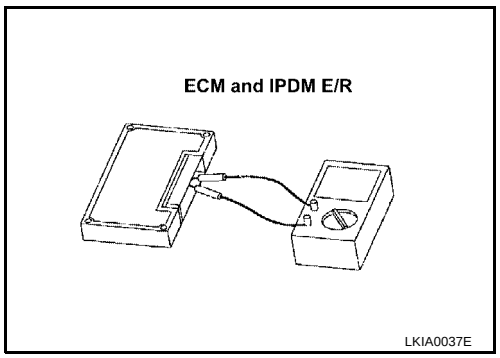
Component Inspection

UKS001B1

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 2)

PFP:23710

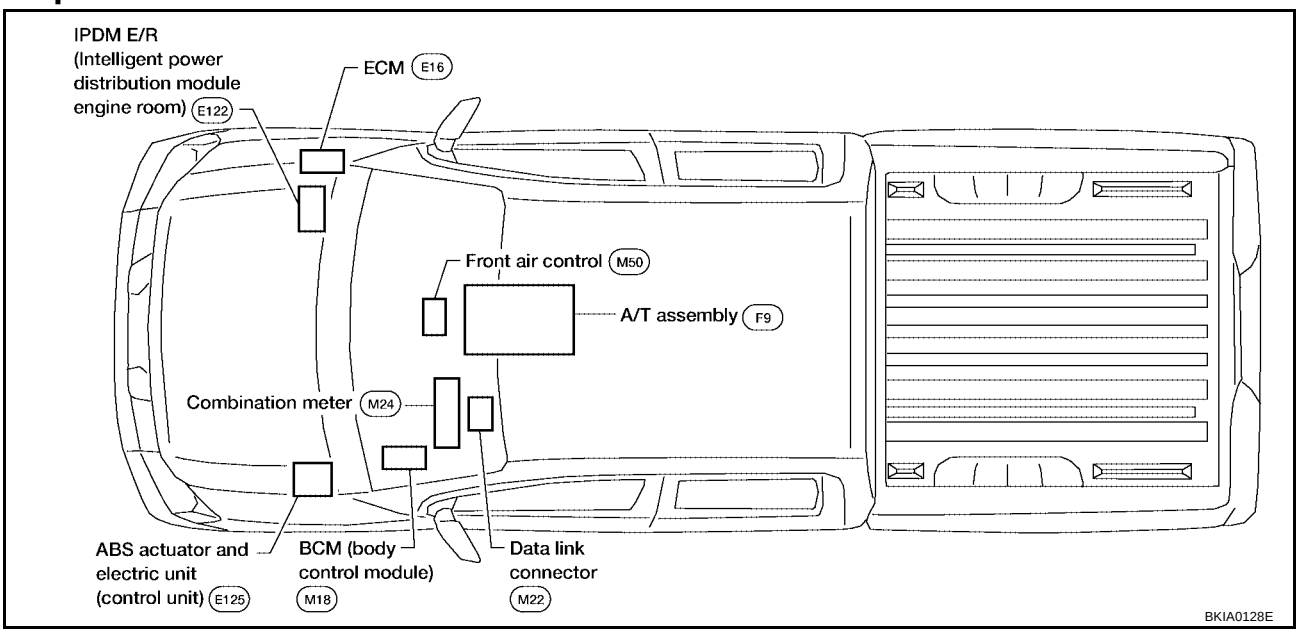
System Description

UKS003AO

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.

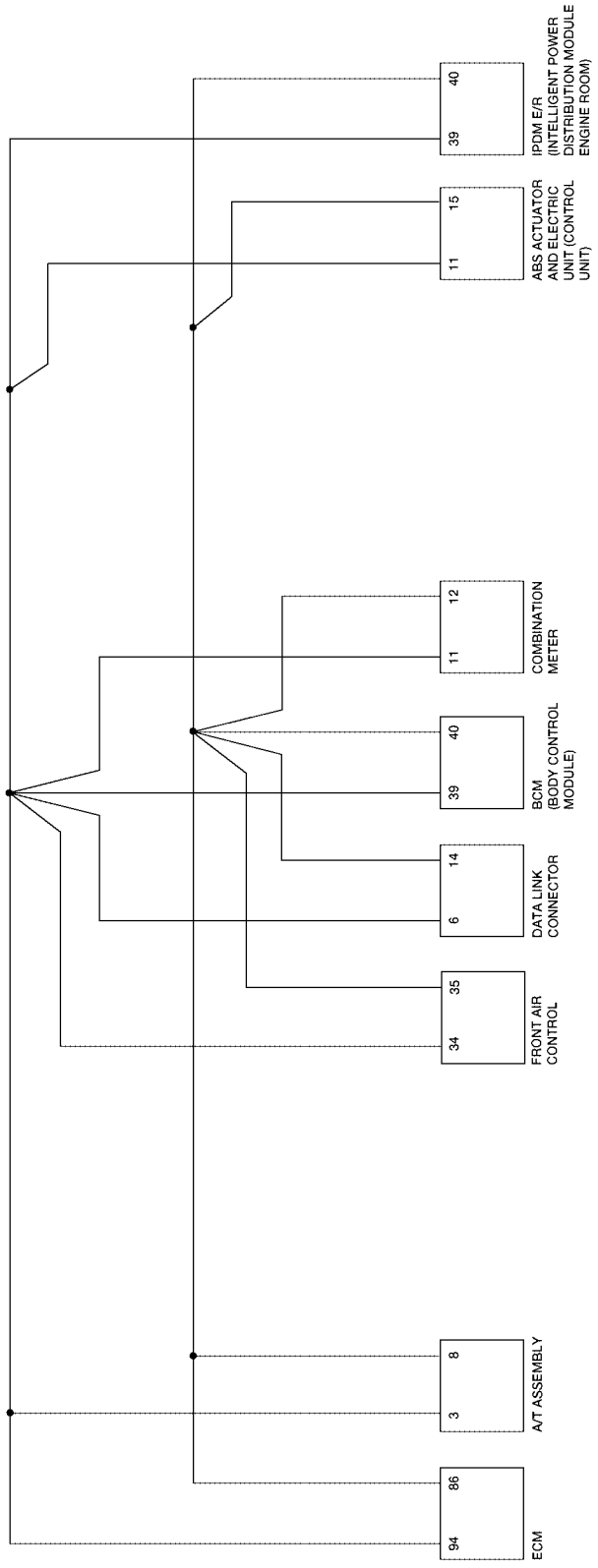
Component Parts and Harness Connector Location

UKS003AP



Schematic

UKS003AQ

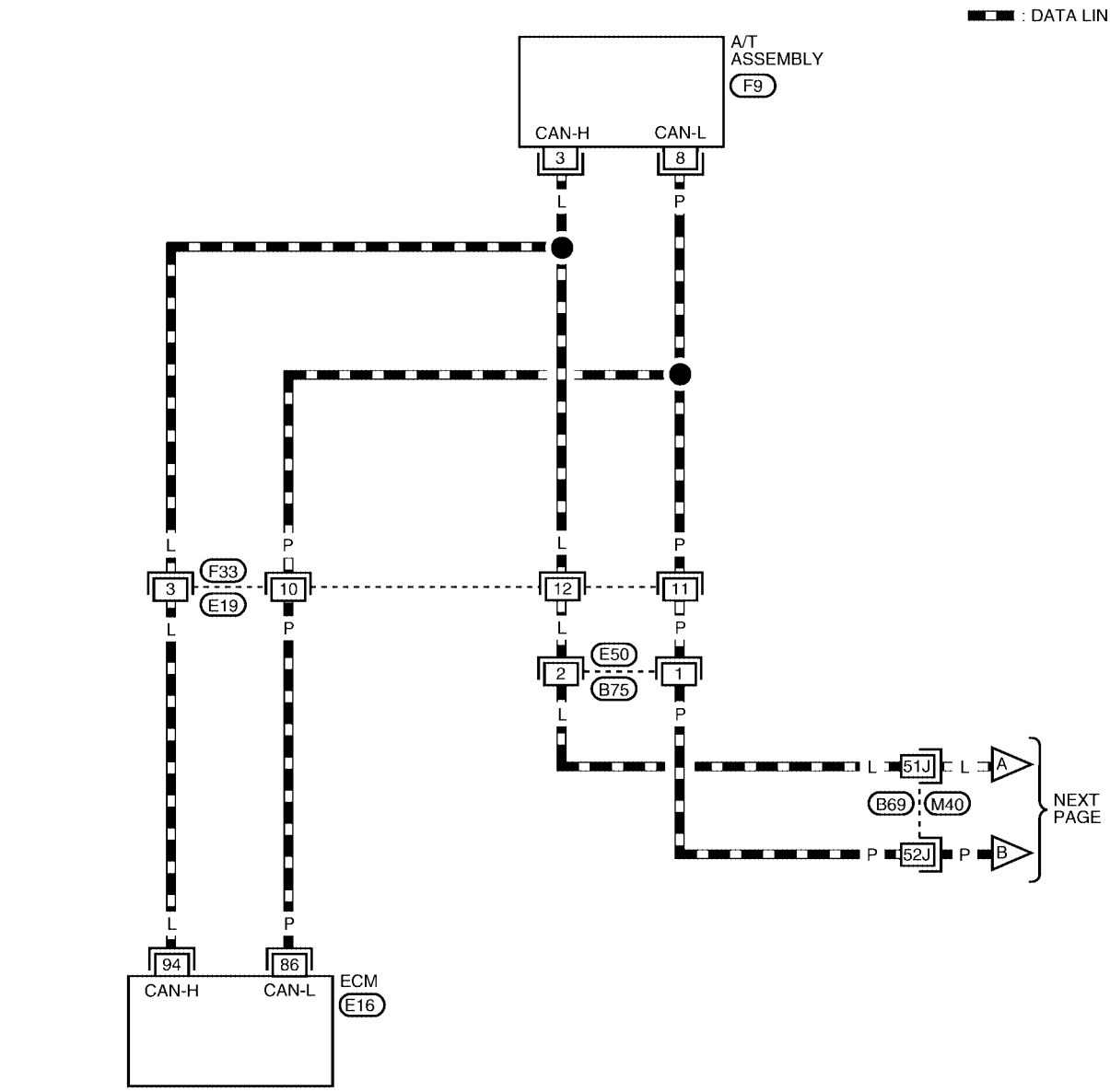


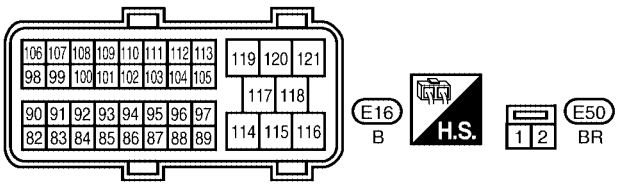
BKWA0130E

Wiring Diagram - CAN -

UKS003AR

LAN-CAN-04

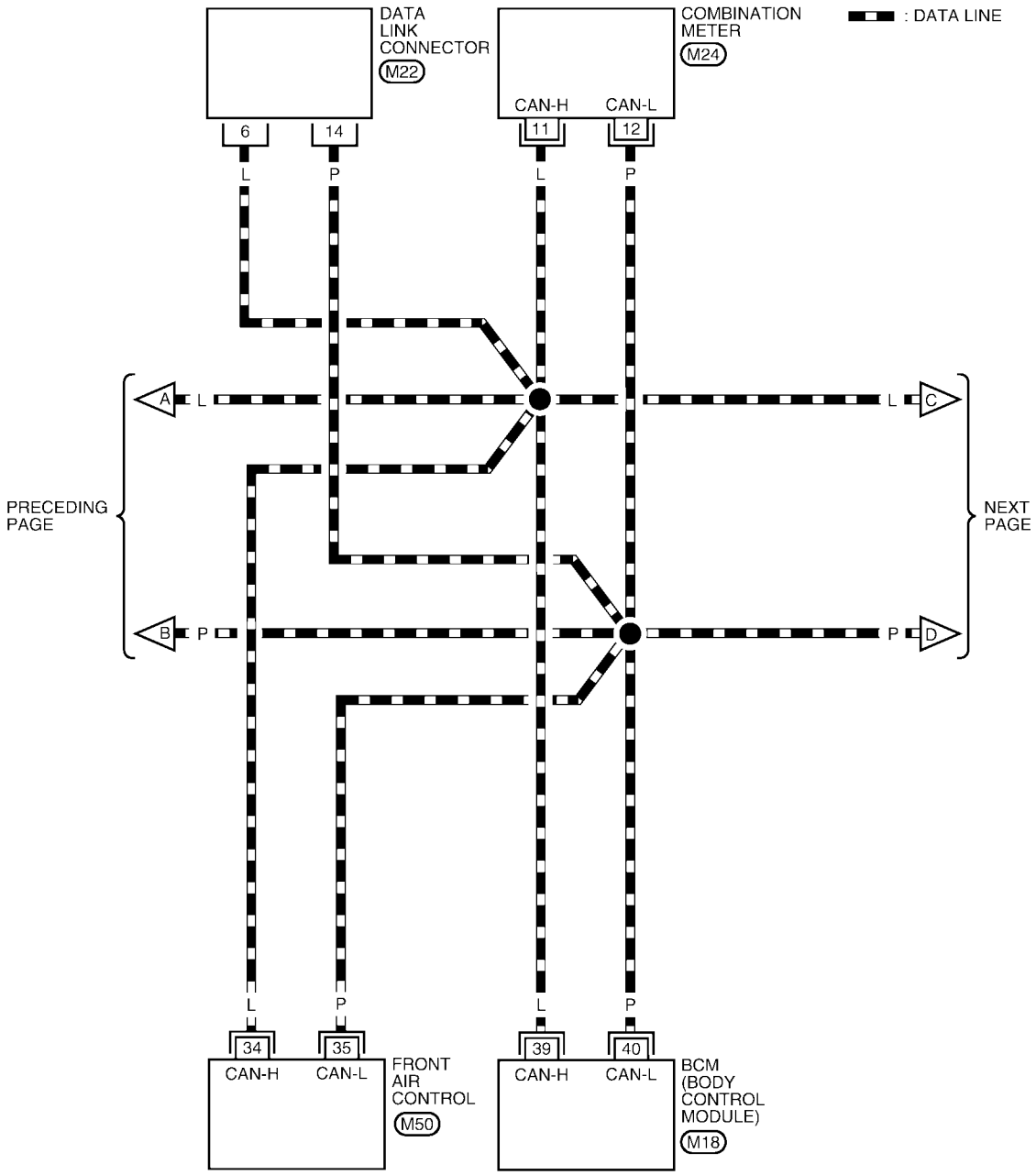


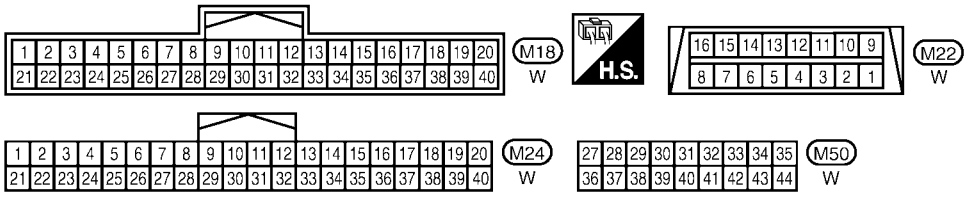


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0535E

LAN-CAN-05

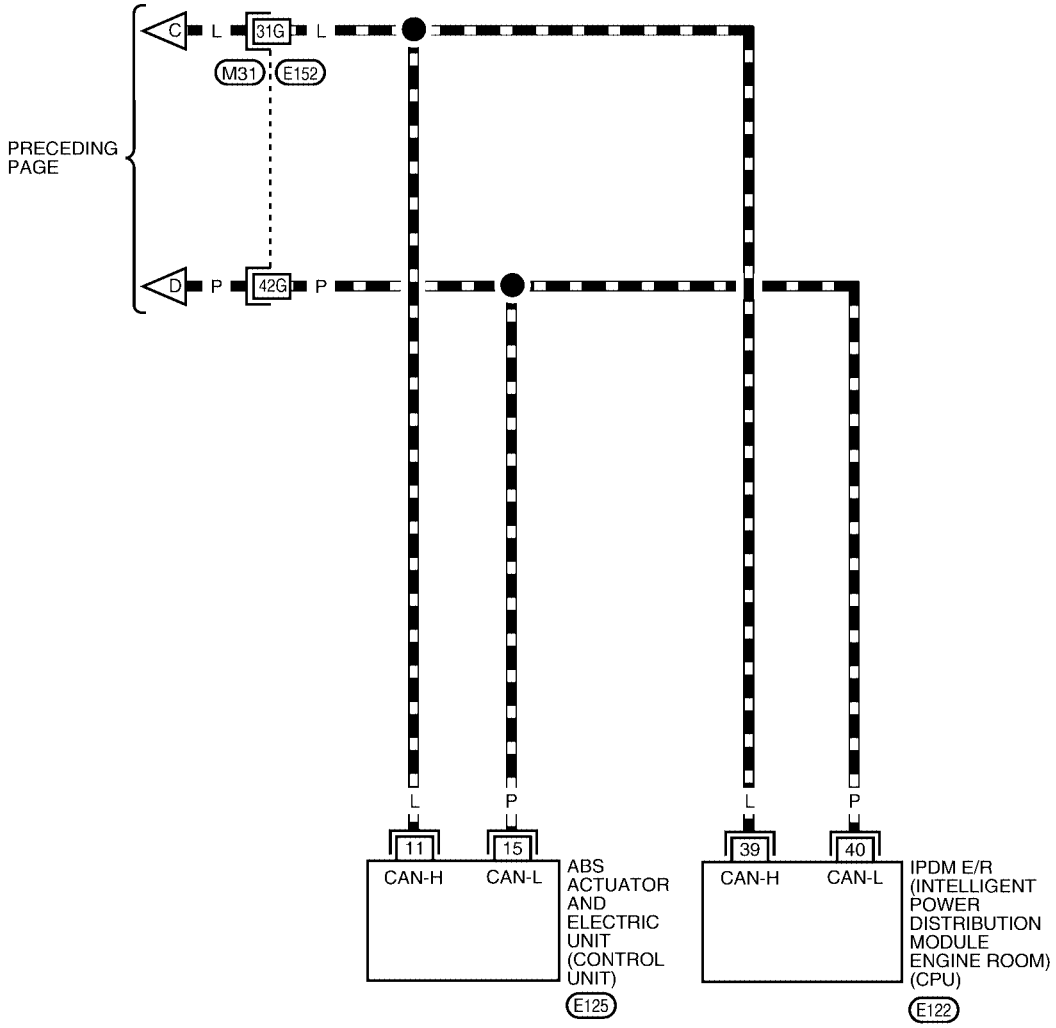


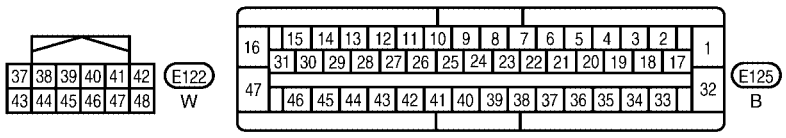


BKWA0536E

LAN-CAN-06

: DATA LINE





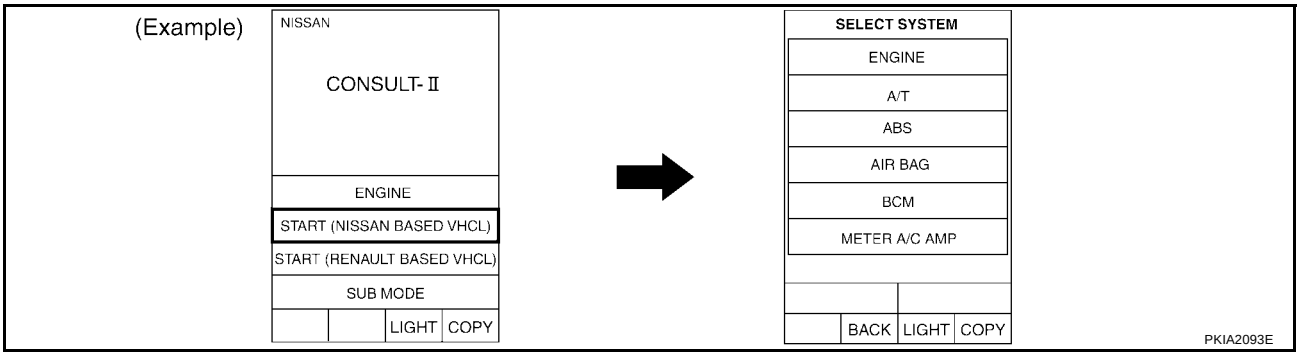
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0537E

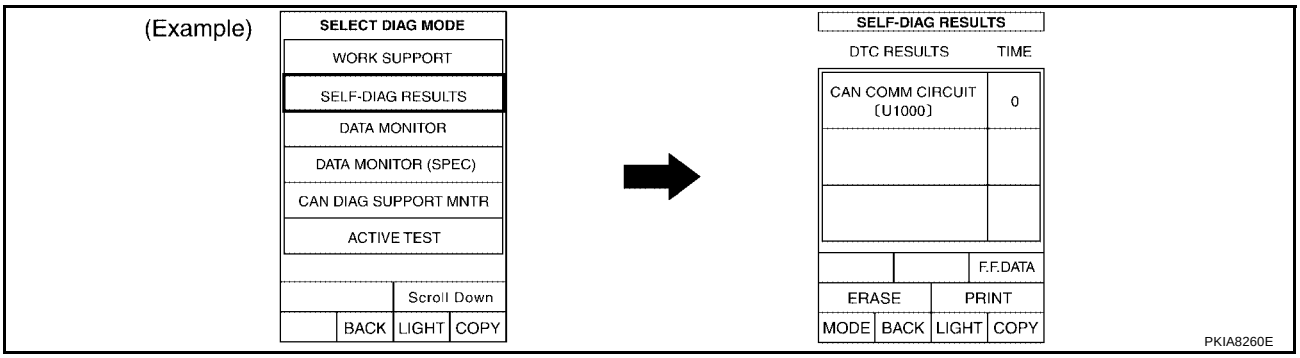
Work Flow

UKS003AS

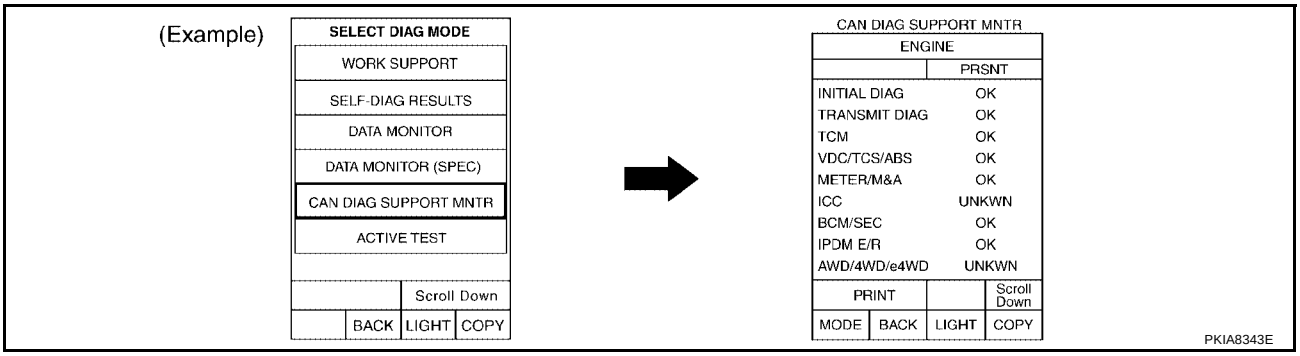
1. When there are no indications of “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-58, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-58, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-60, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

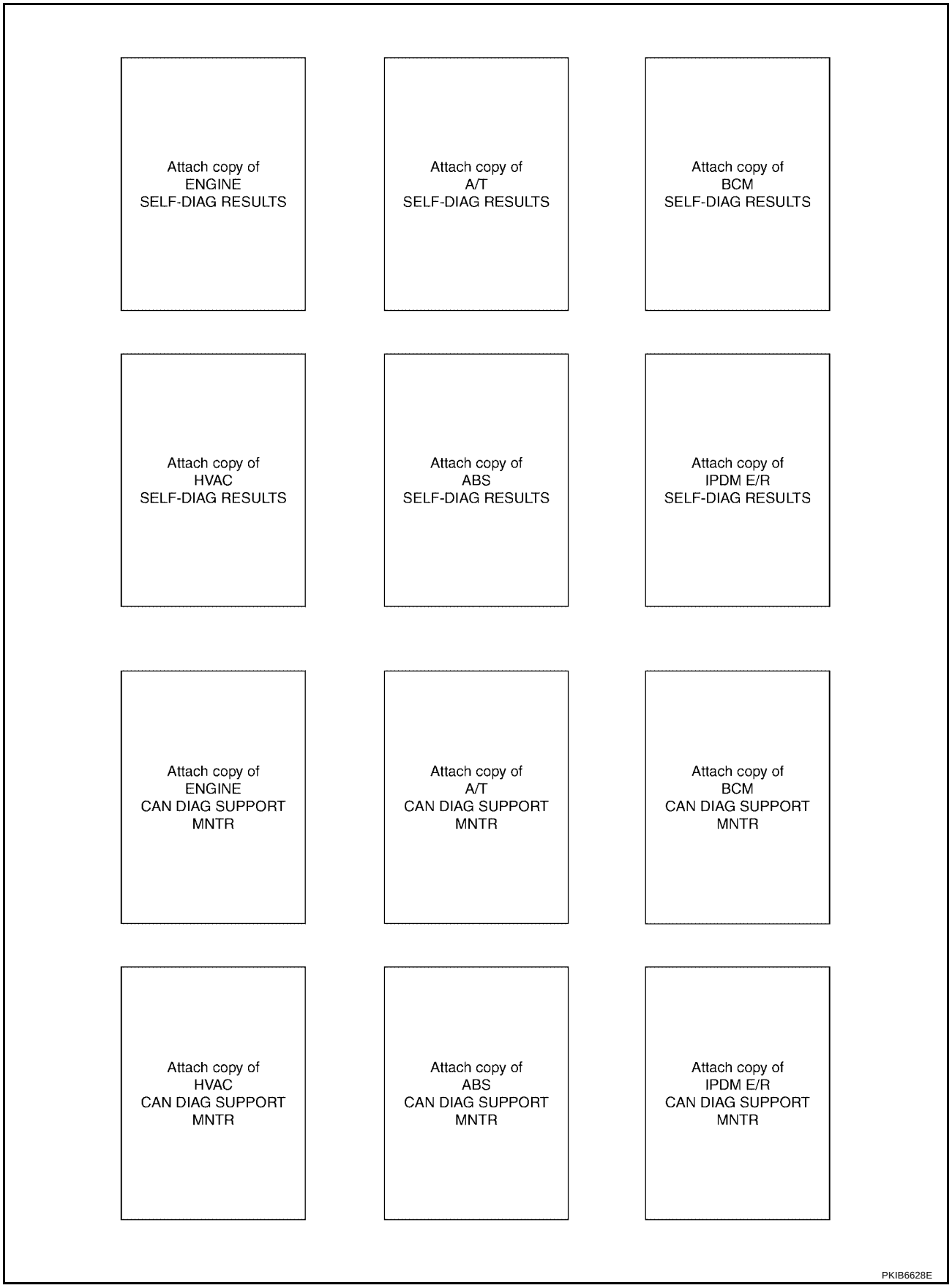
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

SKIB2703E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
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ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
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BCM
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HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6628E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

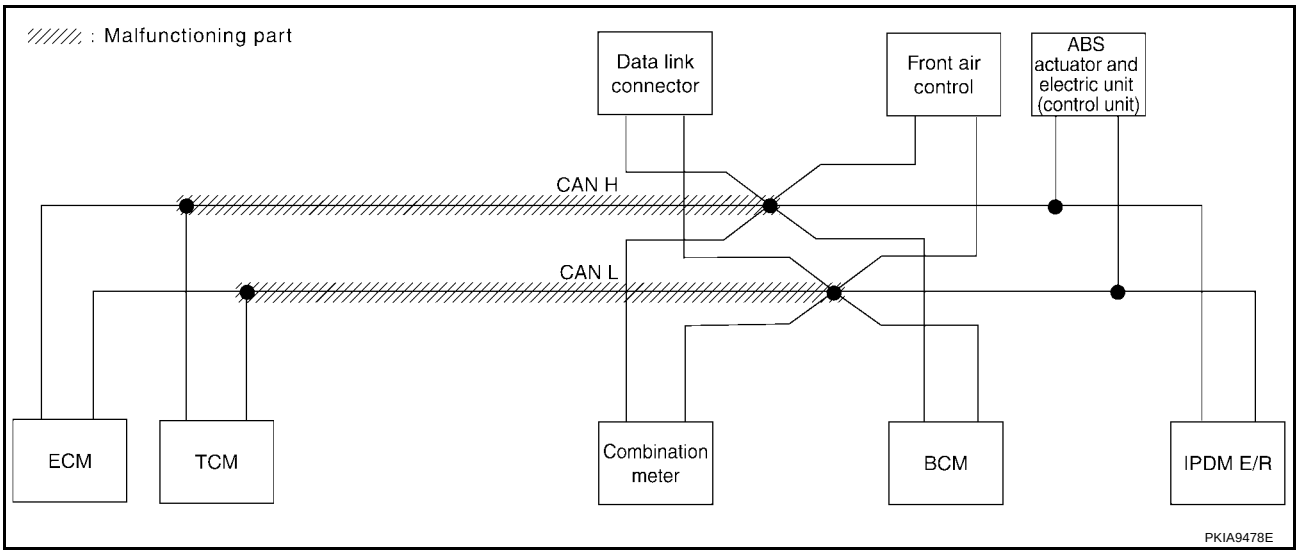
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-71, "Circuit Check Between TCM and Data Link Connector" .

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

SKIB2704E

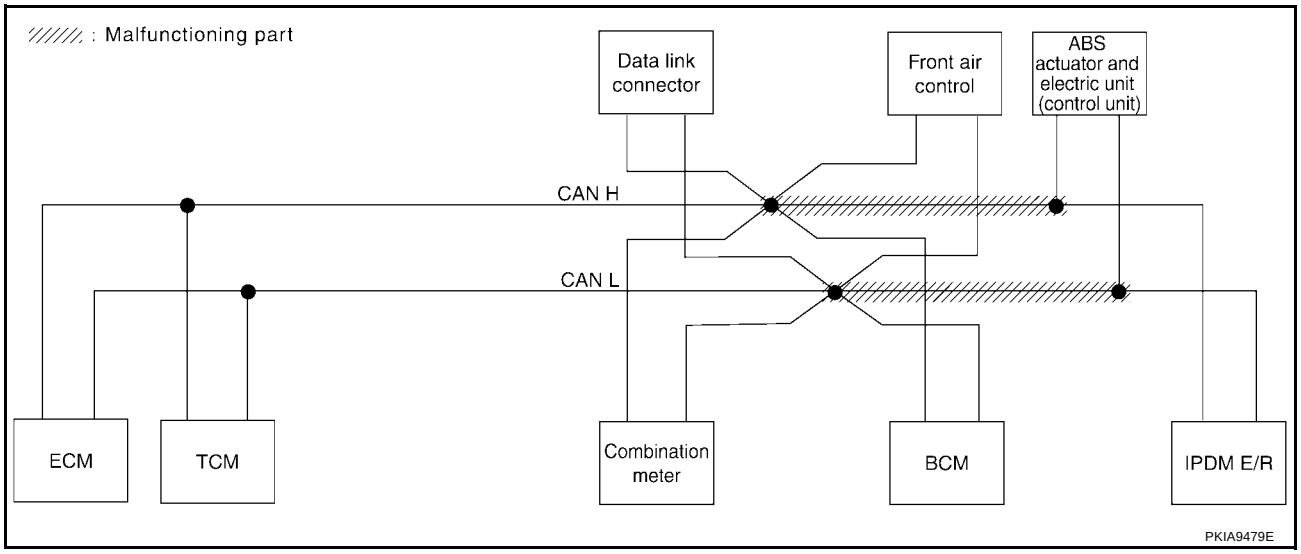


Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-72, "Circuit Check Between Data Link Connector and IPDM E/R" .

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

SKIB2705E

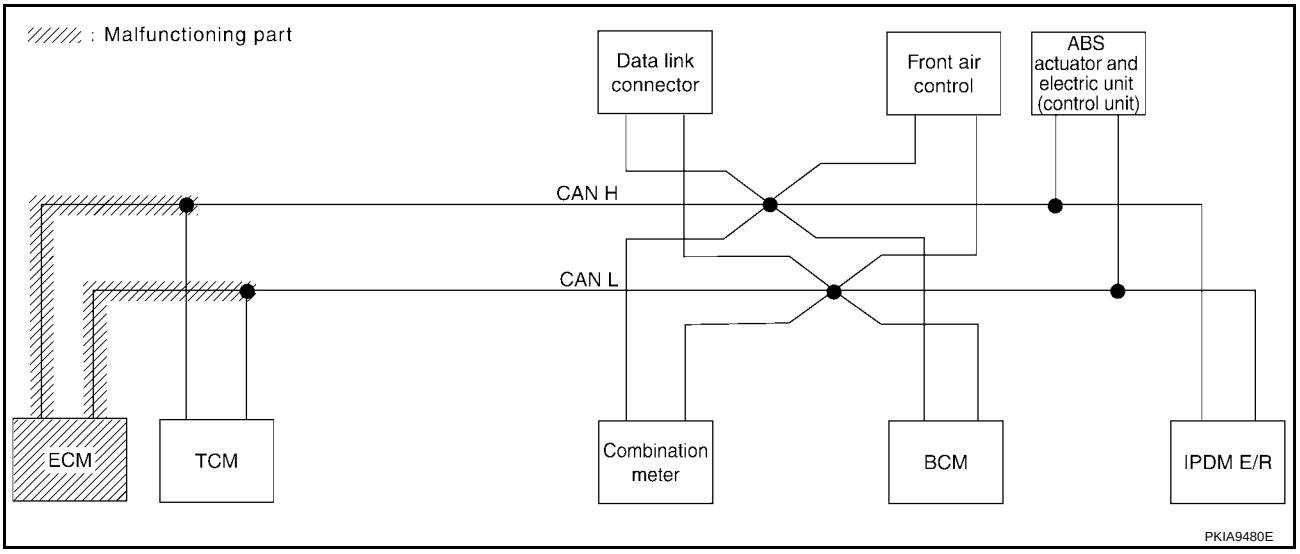


Case 3

Check ECM circuit. Refer to LAN-73, "ECM Circuit Check" .

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

SKIB2706E



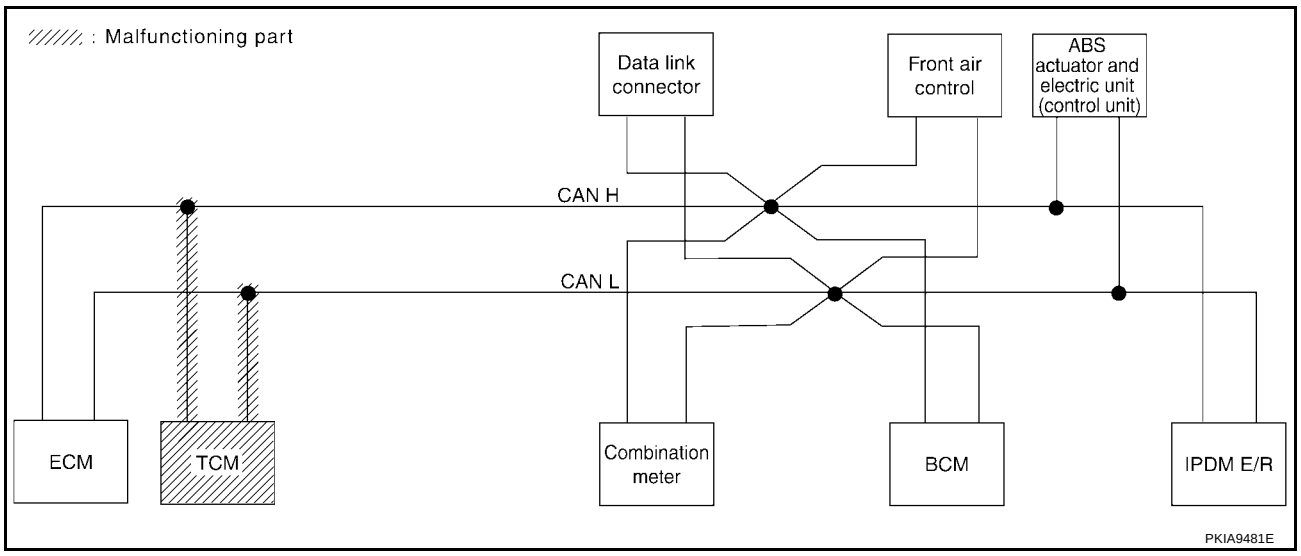
PKIA9480E

Case 4

Check TCM circuit. Refer to LAN-74, "TCM Circuit Check" .

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

SKIB2707E

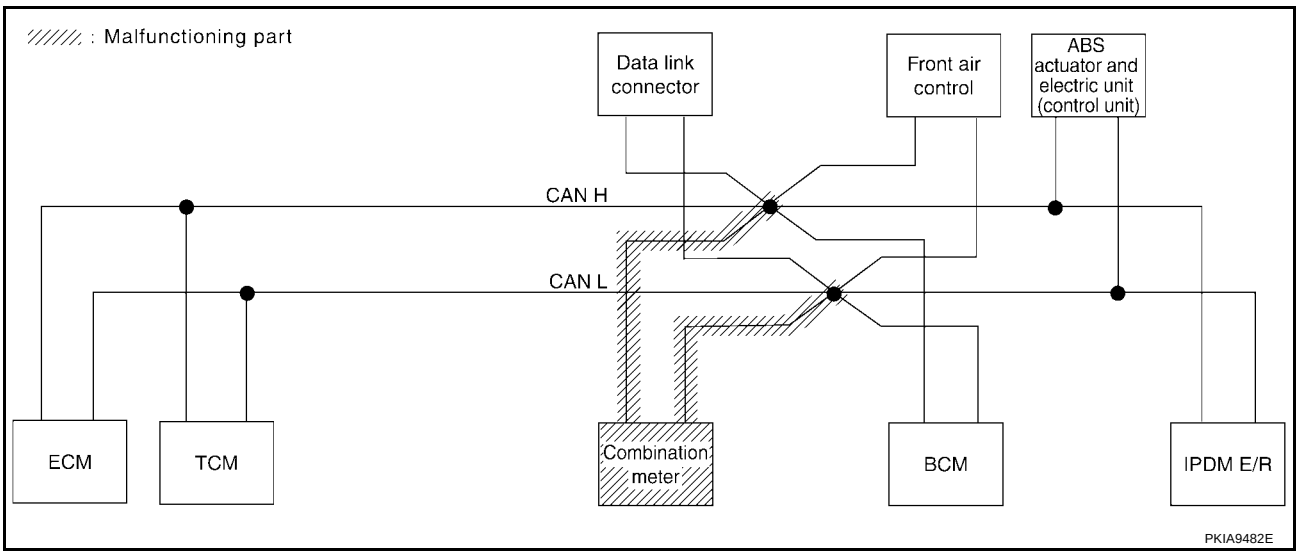


Case 5

Check combination meter circuit. Refer to LAN-74, "Combination Meter Circuit Check" .

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

SKIB2708E

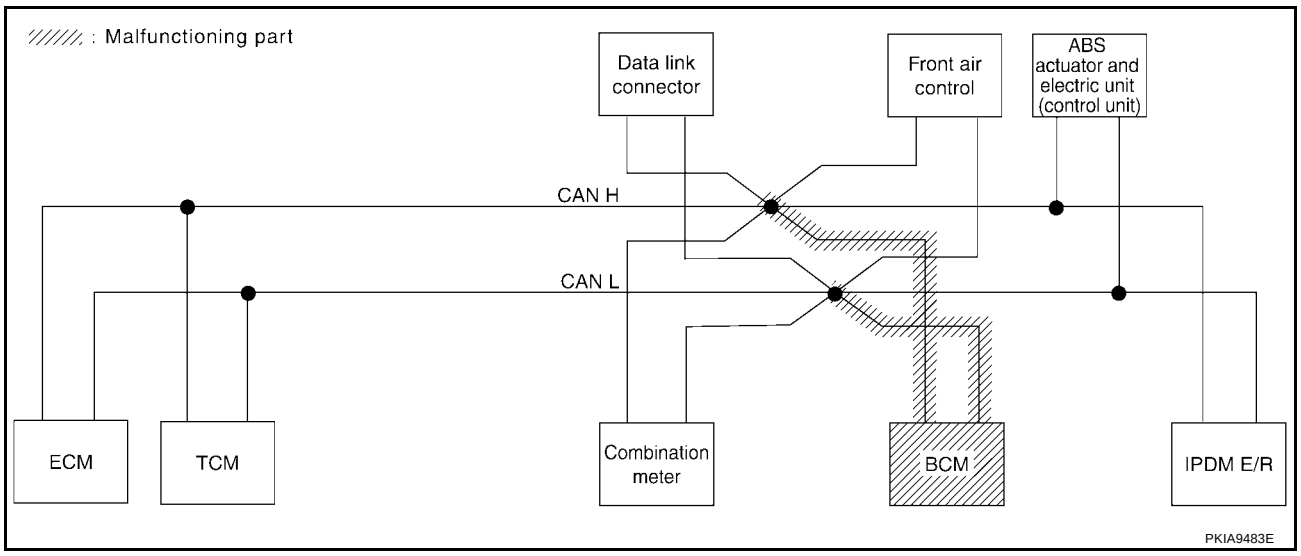


Case 6

Check BCM circuit. Refer to LAN-75, "BCM Circuit Check" .

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

SKIB2709E

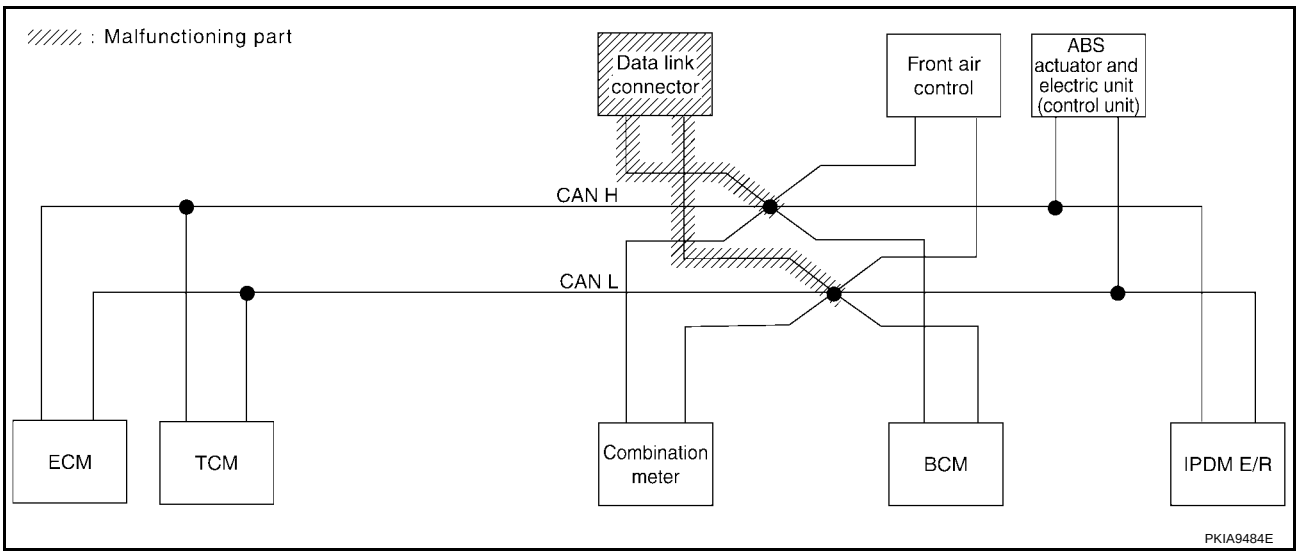


Case 7

Check data link connector circuit. Refer to LAN-75, "Data Link Connector Circuit Check" .

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

SKIB2710E

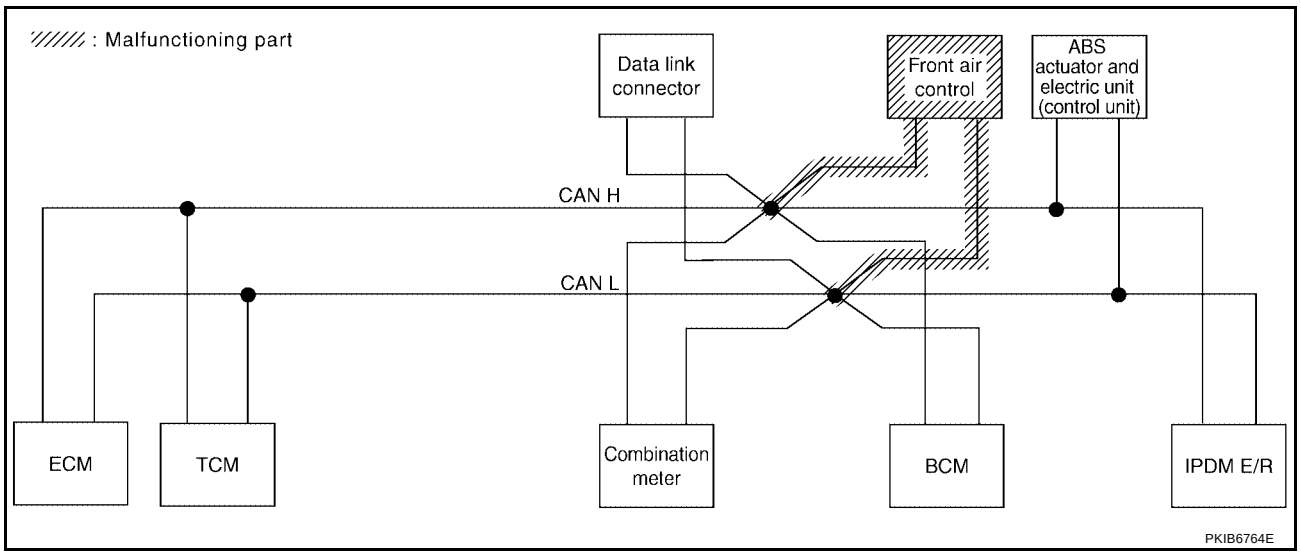


Case 8

Check front air control circuit. Refer to LAN-76, "Front Air Control Circuit Check" .

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

PKIB6774E

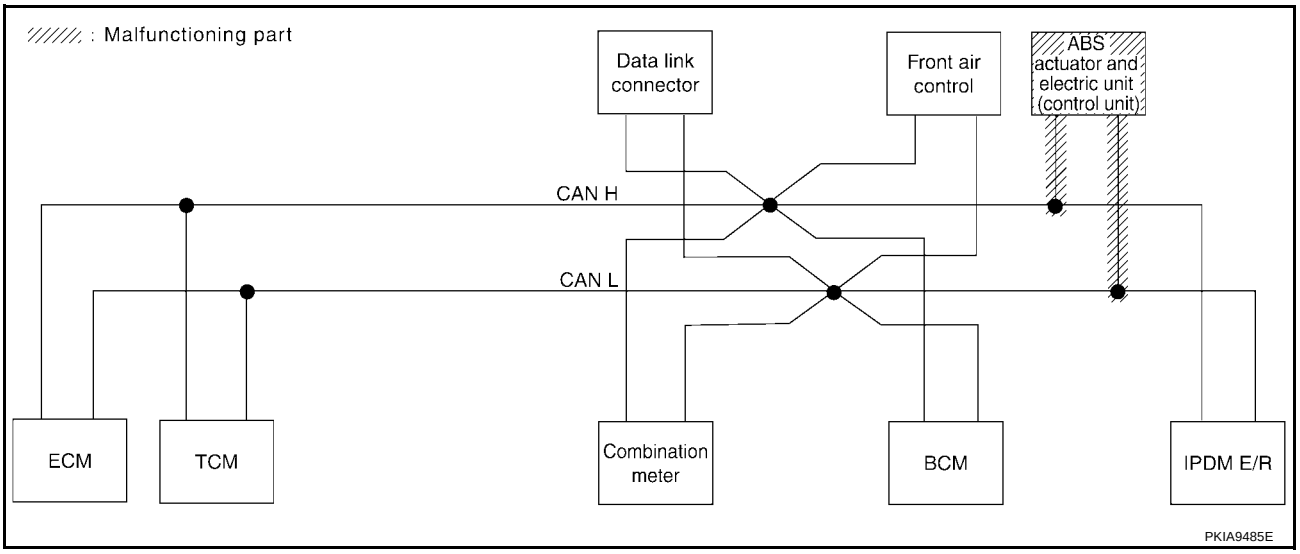


Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-76, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

SKIB2711E

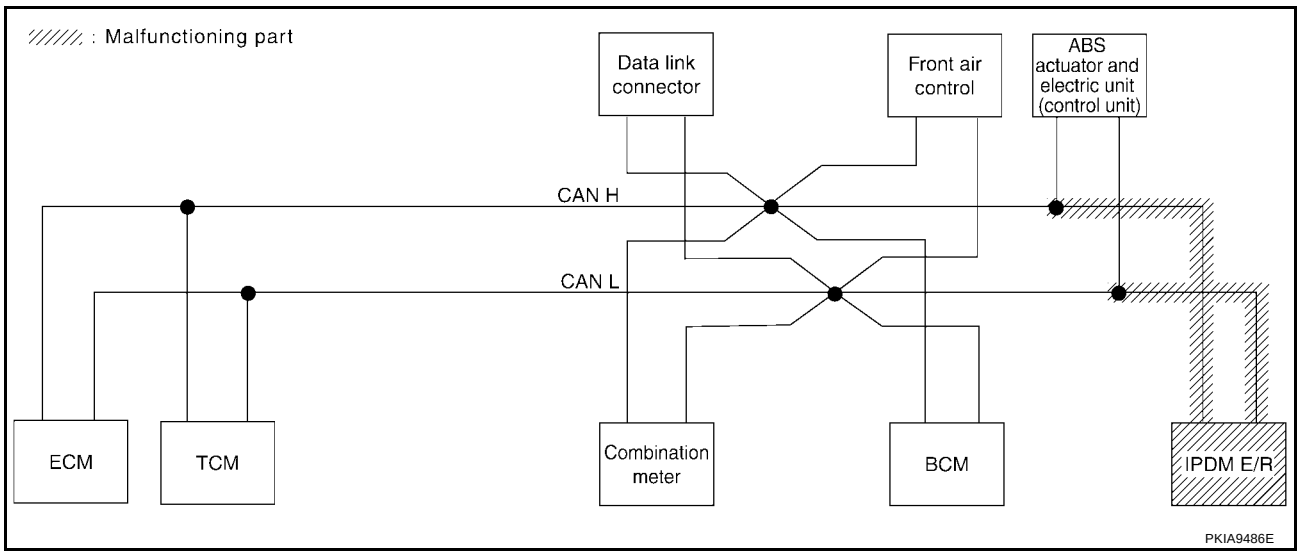


Case 10

Check IPDM E/R circuit. Refer to LAN-77, "IPDM E/R Circuit Check" .

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

SKIB2712E



PKIA9486E

Case 11

Check CAN communication circuit. Refer to LAN-78, "CAN Communication Circuit Check" .

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

SKIB2713E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-78, "IPDM E/R Ignition Relay Circuit Check" .

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

SKIB2714E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-78, "IPDM E/R Ignition Relay Circuit Check" .

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

SKIB2715E

Circuit Check Between TCM and Data Link Connector

UKS003AT

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

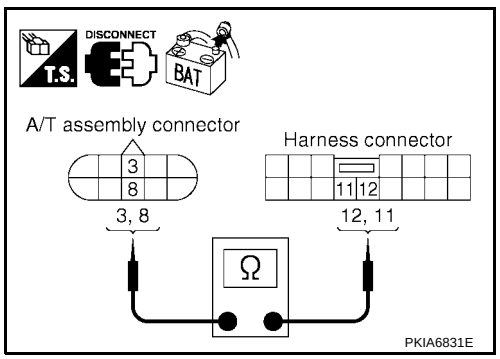
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



OK or NG

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

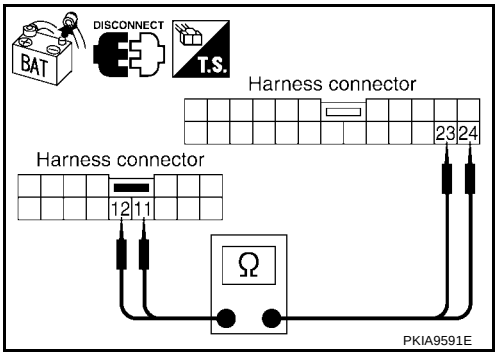
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E34.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E34 terminals 24 (L), 23 (P).

12 (L) - 24 (L) : Continuity should exist.
11 (P) - 23 (P) : Continuity should exist.

OK or NG

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



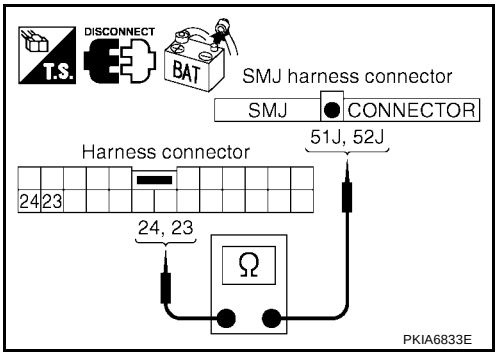
4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B40 terminals 24 (L), 23 (P) and harness connector B69 terminals 51J (L), 52J (P).

24 (L) - 51J (L) : Continuity should exist.
23 (P) - 52J (P) : Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> Repair harness.



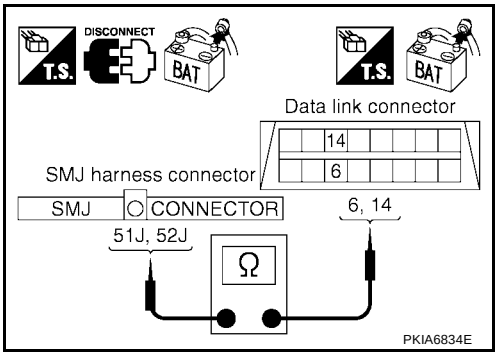
5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-57, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS003AU

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

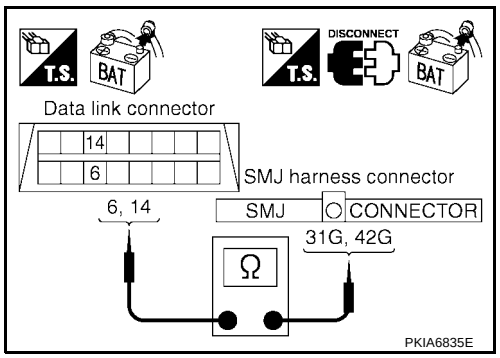
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.



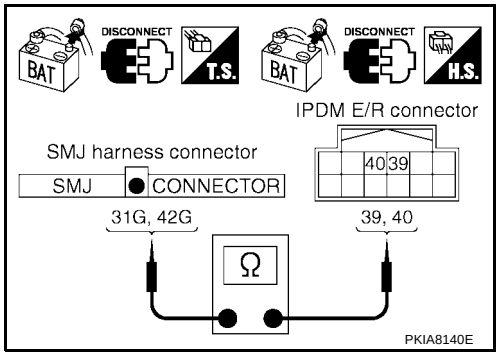
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-57, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS003AV

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

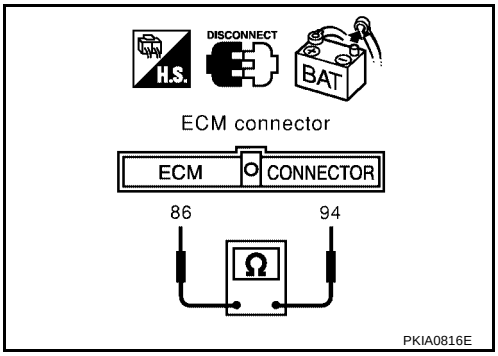
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS003AW

1. CHECK CONNECTOR

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

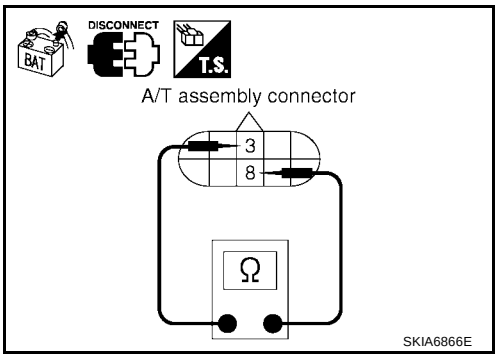
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Combination Meter Circuit Check

UKS003AX

1. CHECK CONNECTOR

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

OK or NG

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

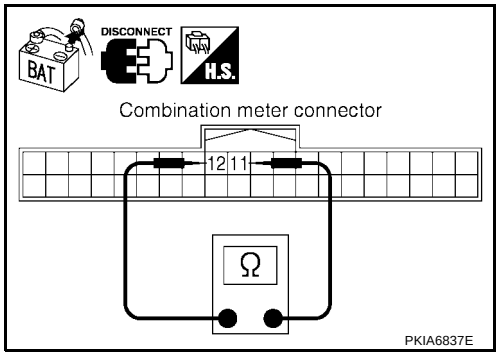
2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω

OK or NG

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



UKS003AY

BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

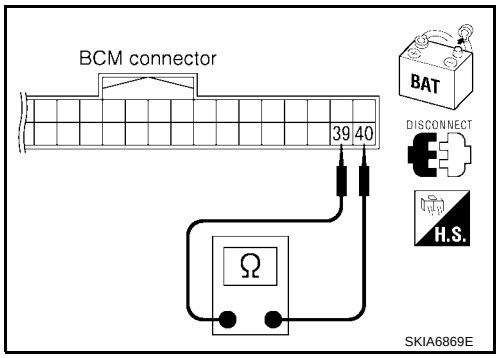
2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.



UKS003AZ

Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

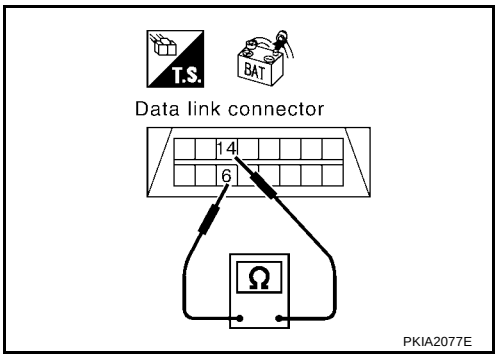
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-57, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS003KN

1. CHECK CONNECTOR

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

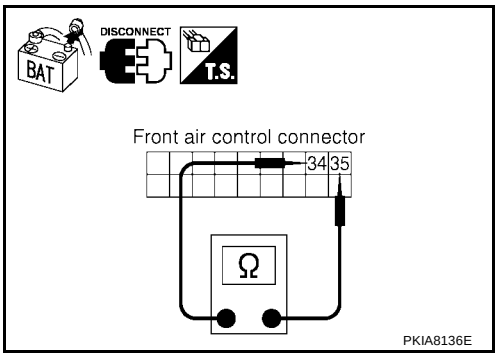
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS003B0

1. CHECK CONNECTOR

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

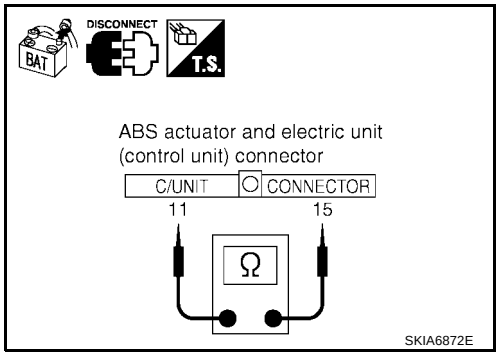
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS003B1

1. CHECK CONNECTOR

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

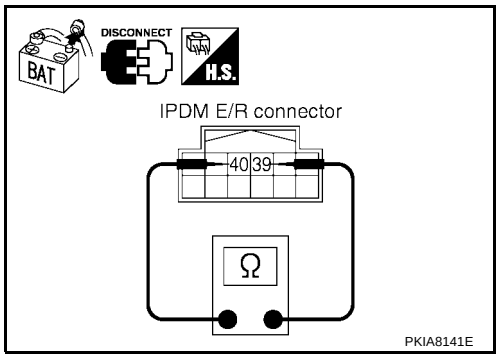
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS003B2

1. CHECK CONNECTOR

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
- A/T assembly
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

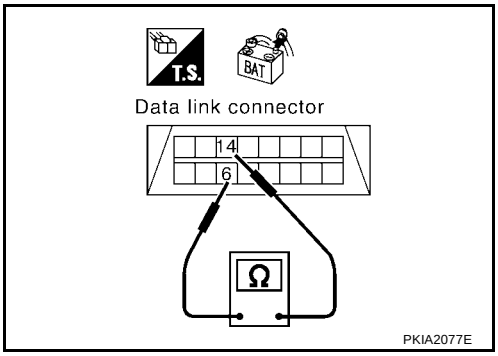
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



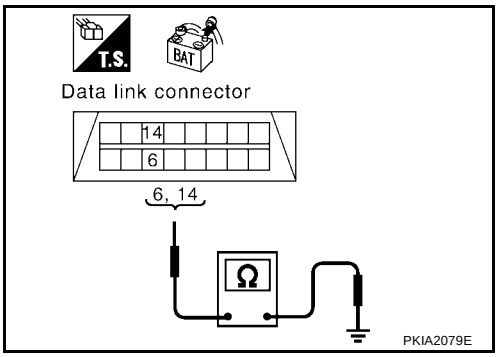
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-79, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS003B3

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

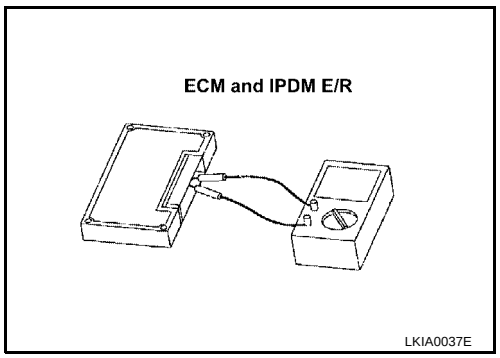
Component Inspection

UKS003B4

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 3)

PFP:23710

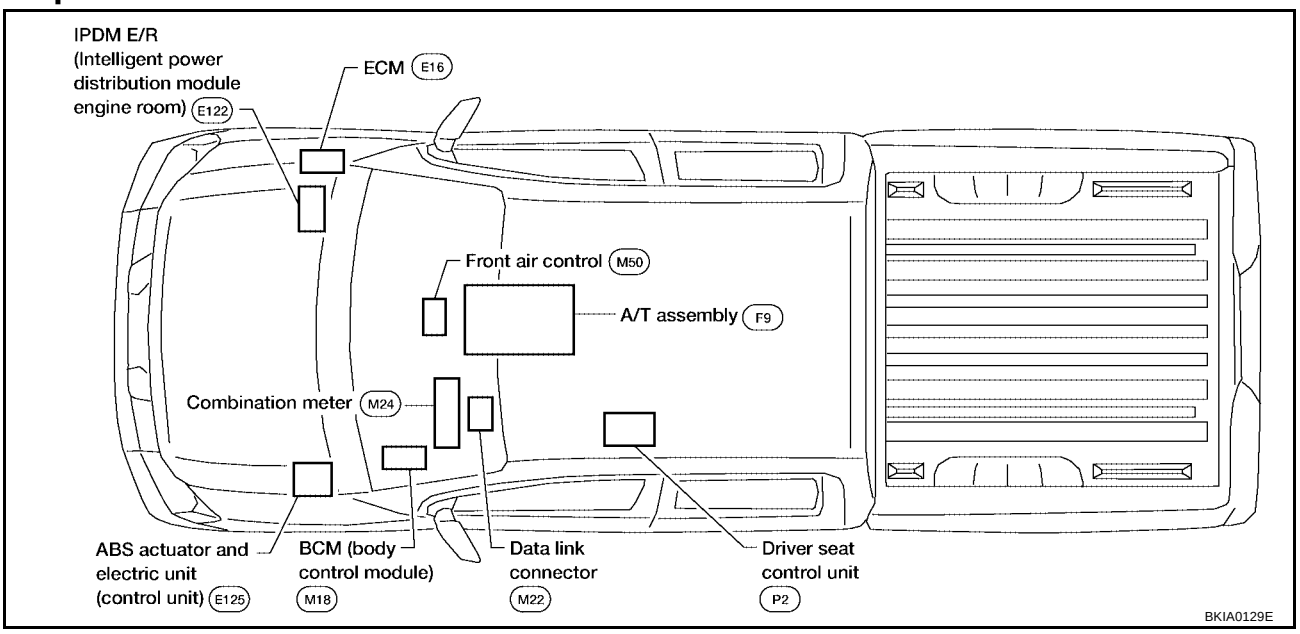
System Description

UKS003A5

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.

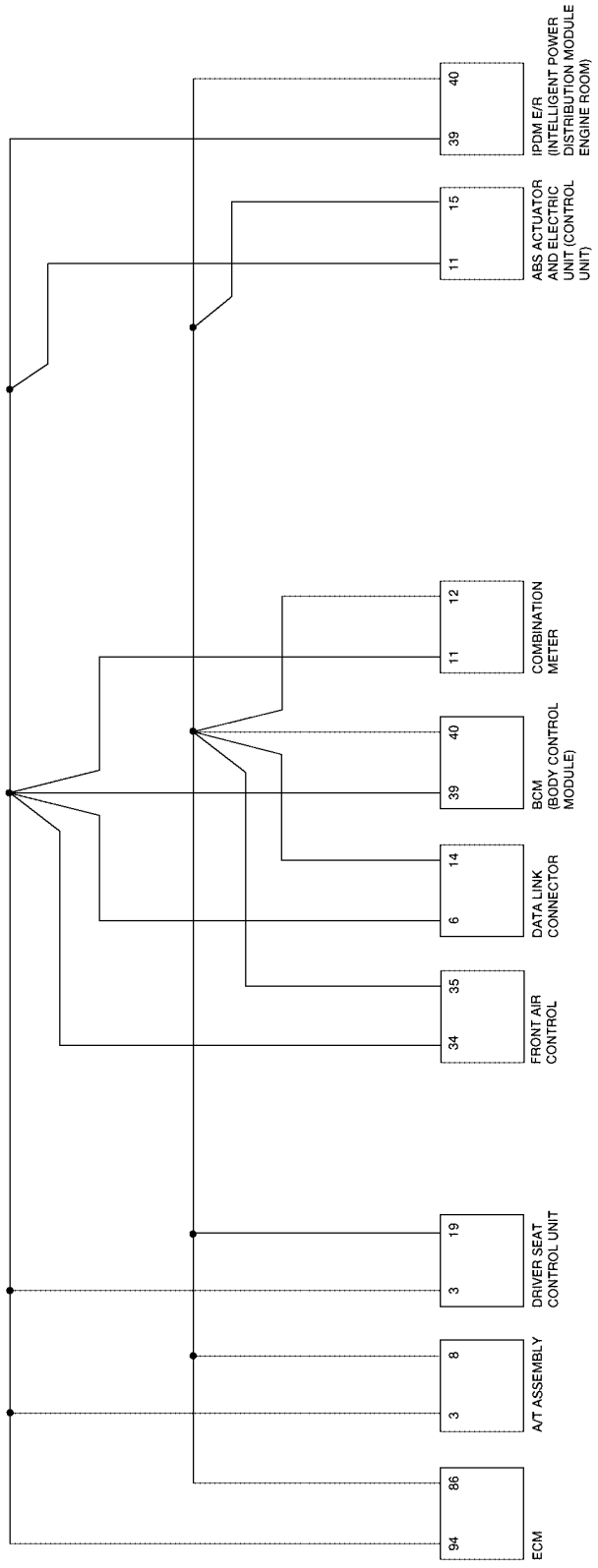
Component Parts and Harness Connector Location

UKS003A6



Schematic

UKS003A7

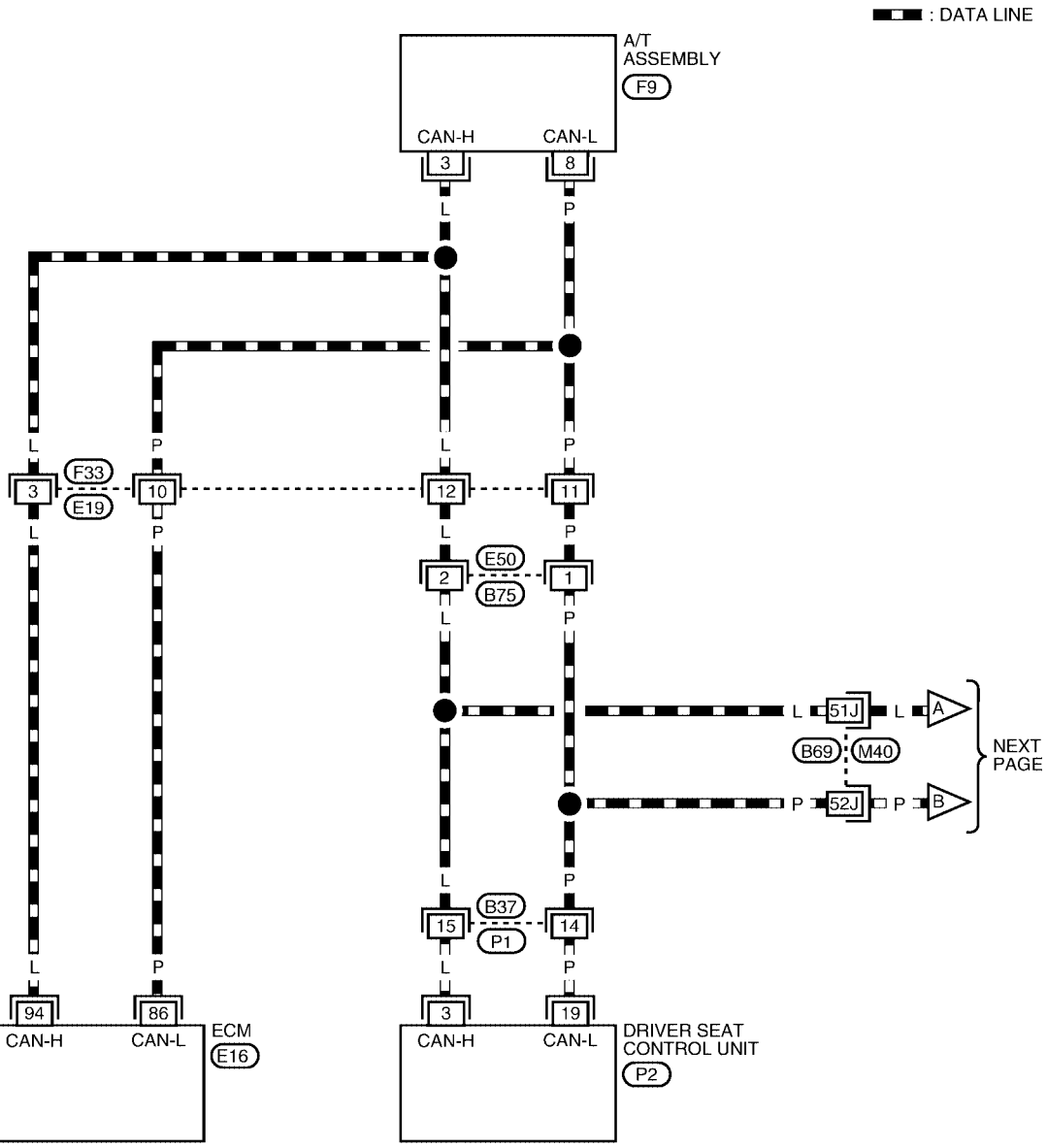


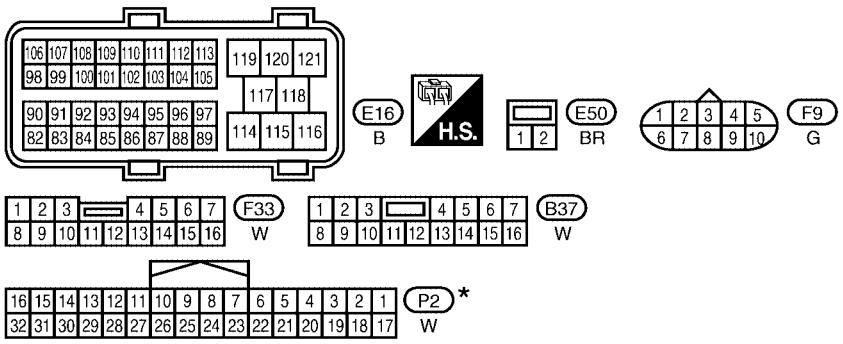
BKWA0132E

Wiring Diagram - CAN -

UKS003A8

LAN-CAN-07



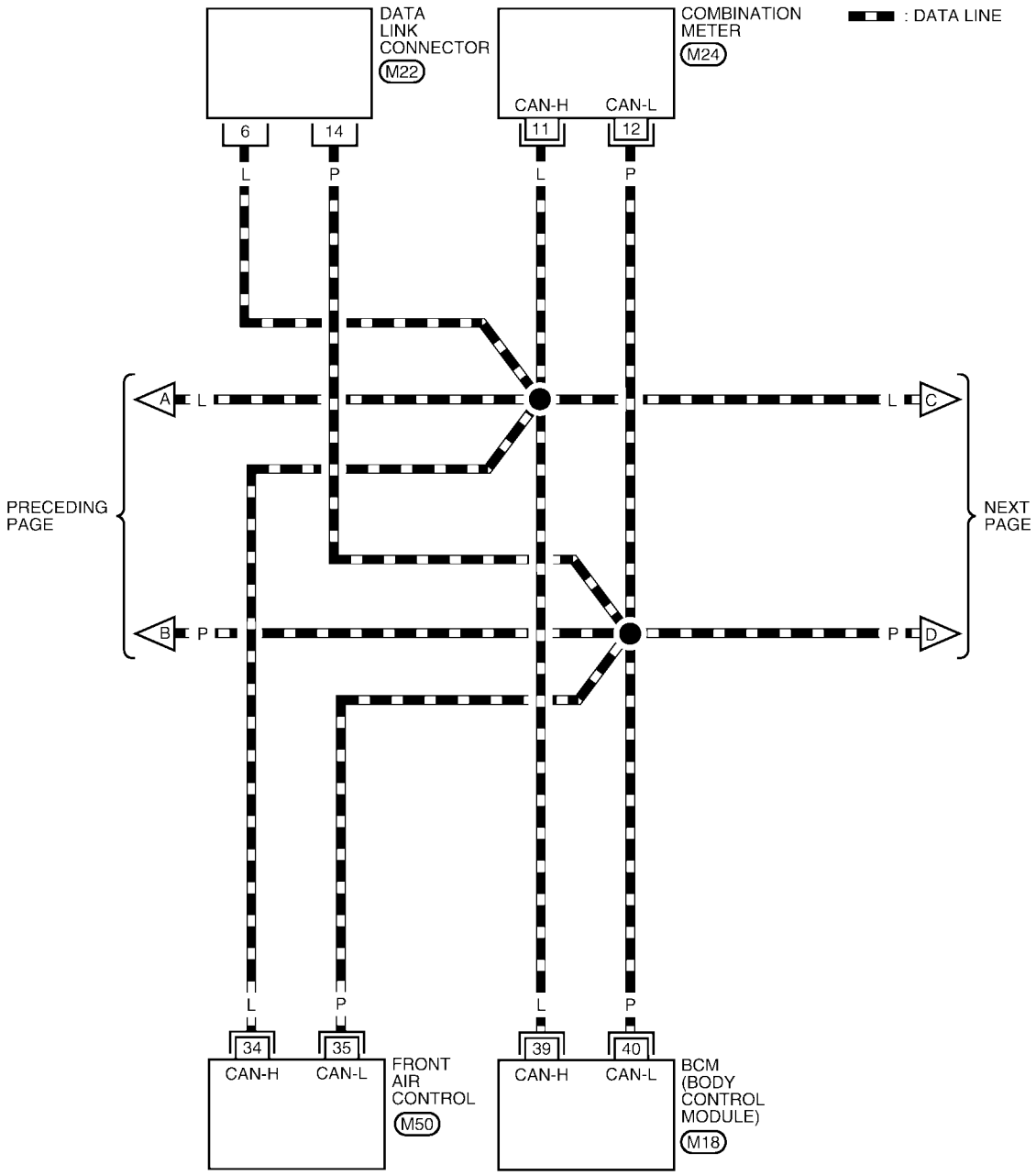


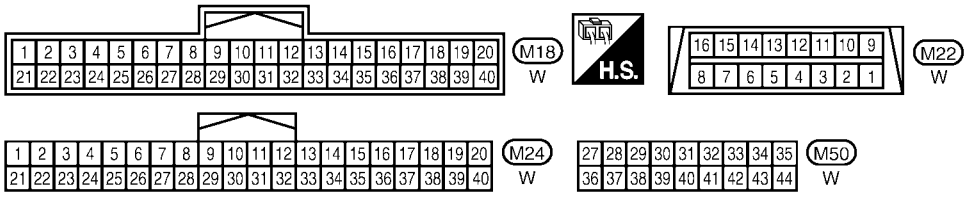
REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

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

BKWA0428E

LAN-CAN-08

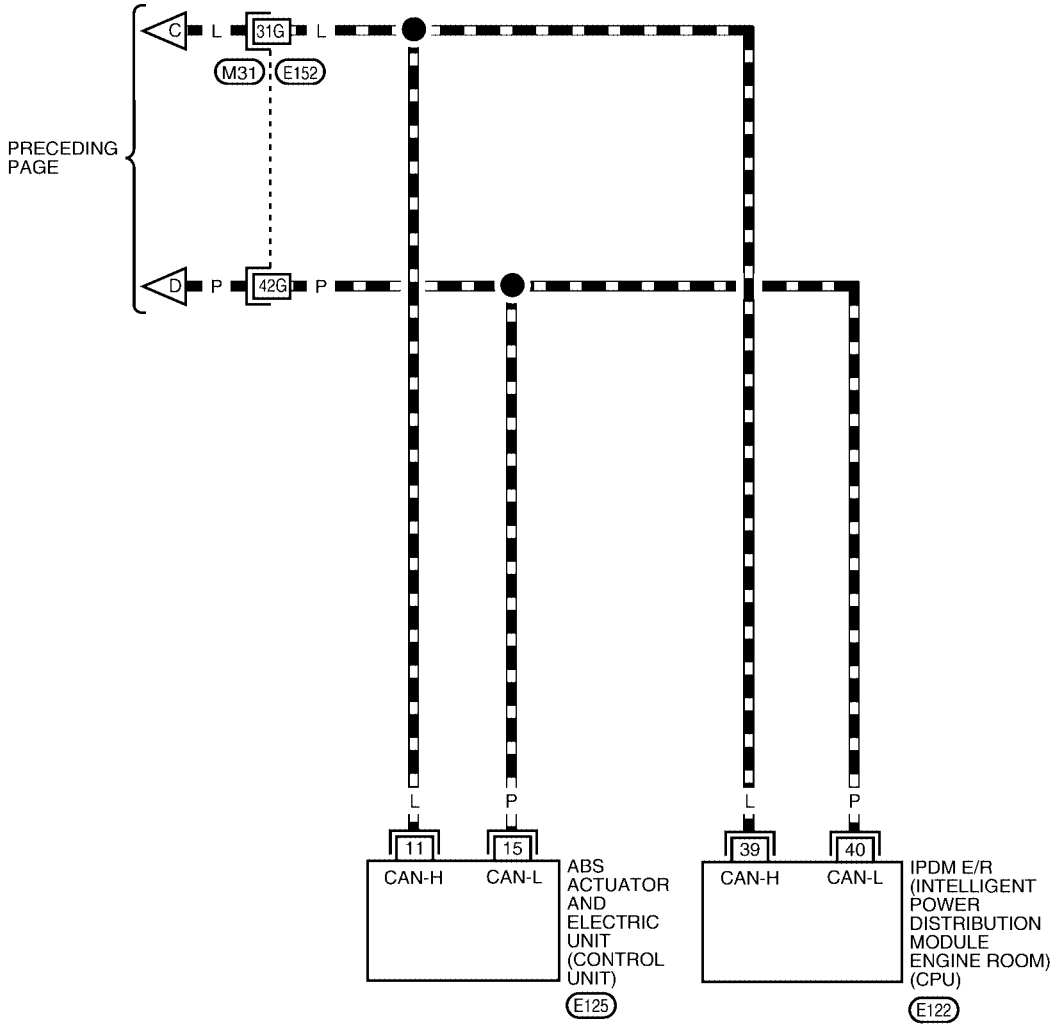


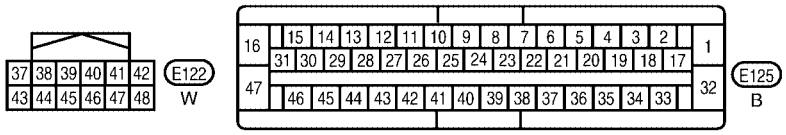


BKWA0429E

LAN-CAN-09

: DATA LINE





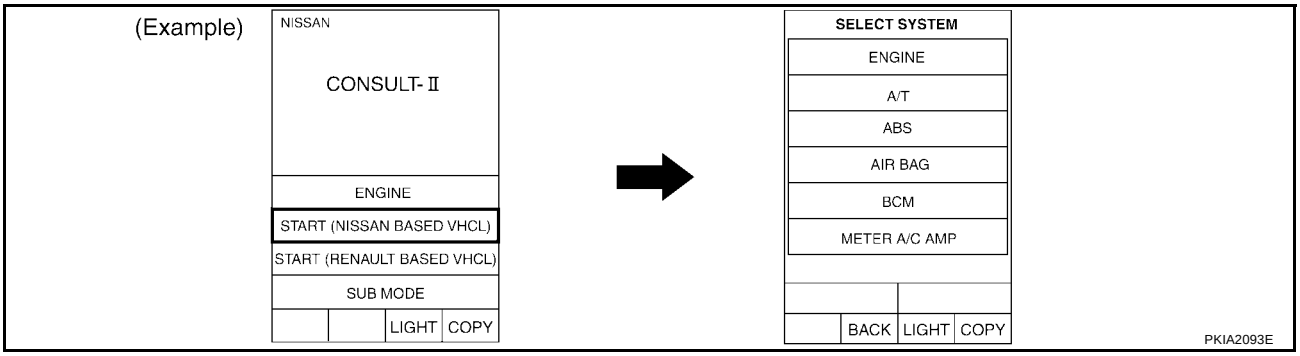
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0430E

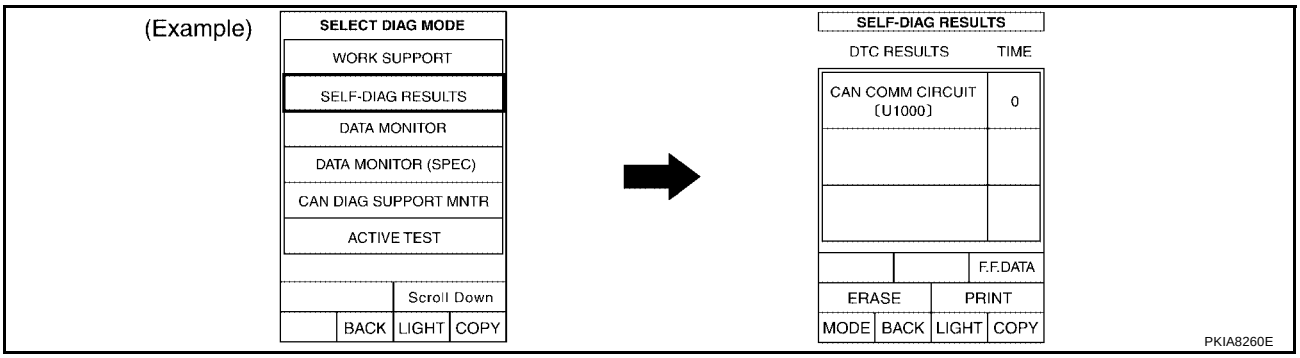
Work Flow

UKS003A9

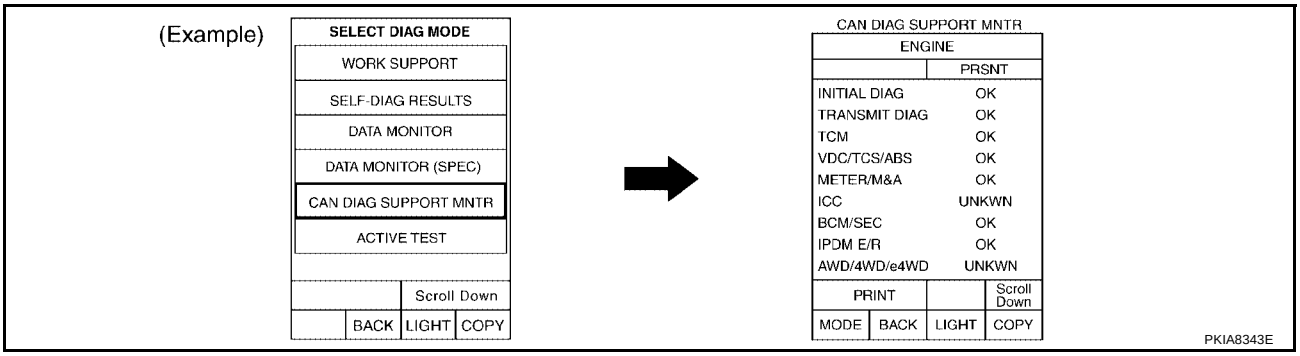
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-86, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-86, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-88, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

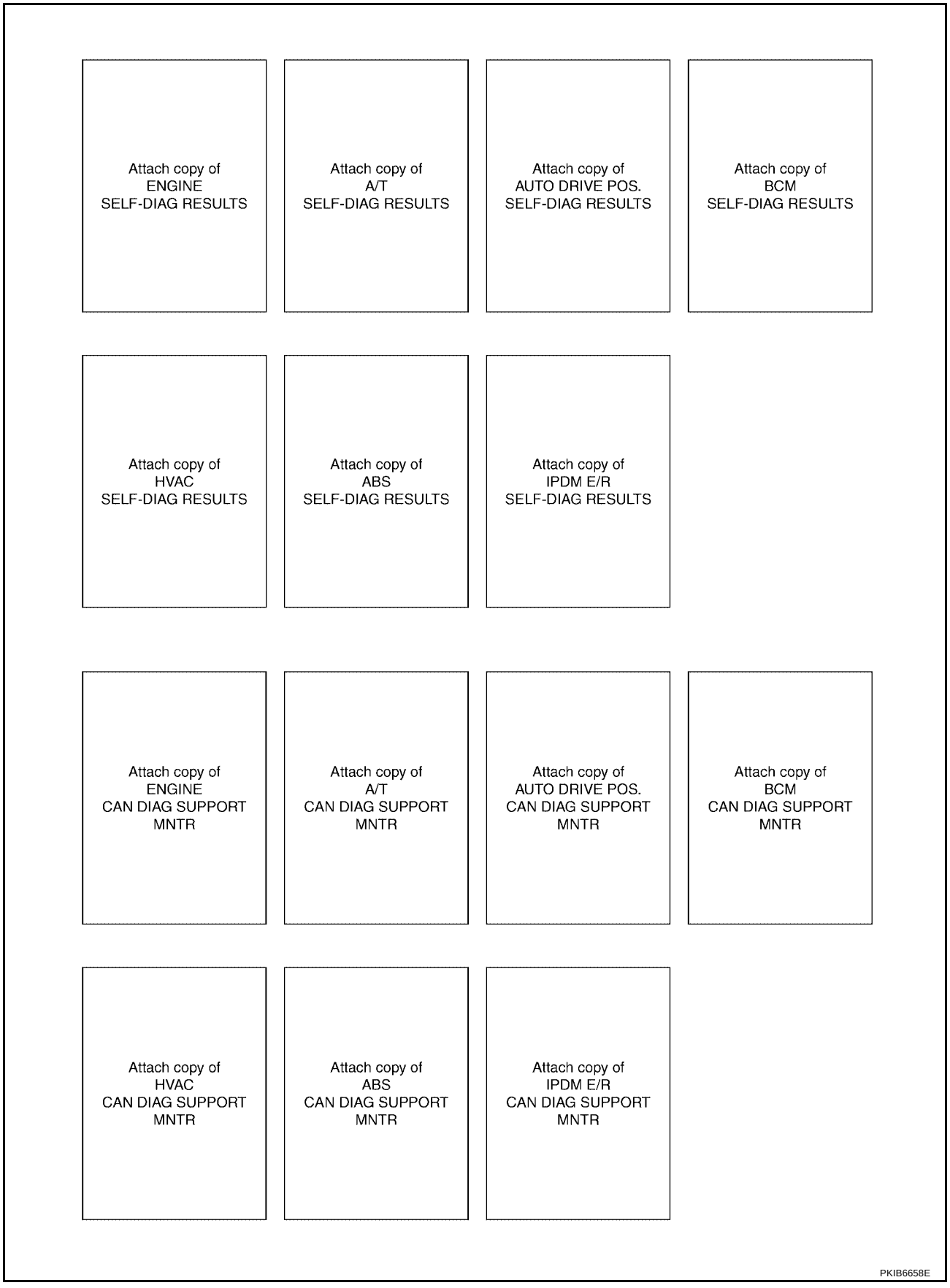
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

SKIB2716E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6658E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

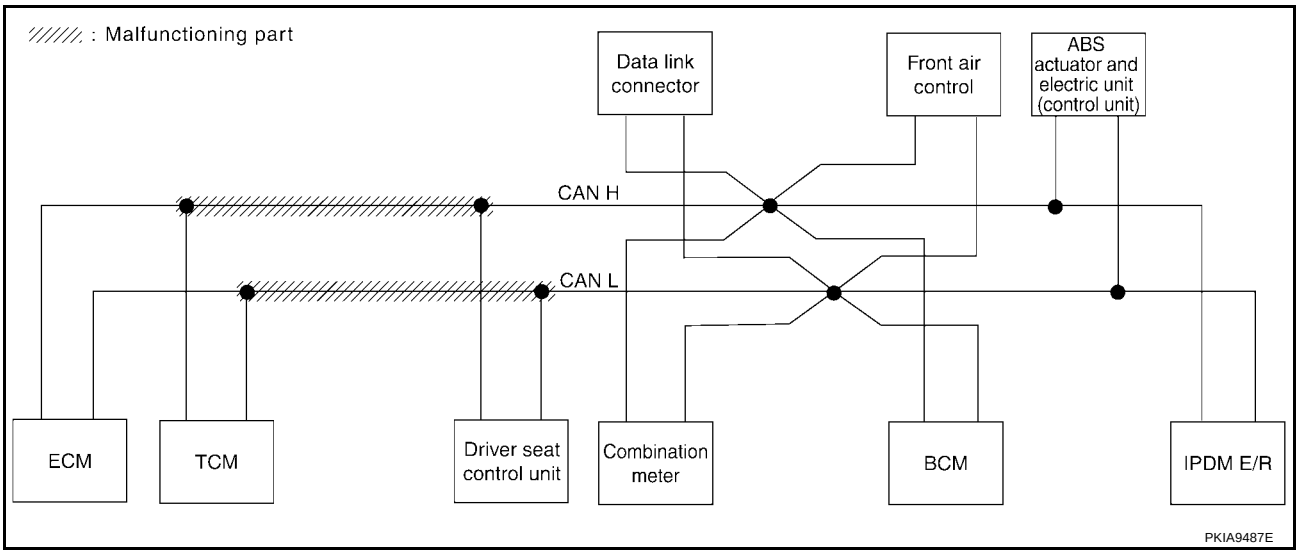
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-101, "Circuit Check Between TCM and Driver Seat Control Unit" .

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

SKIB2717E



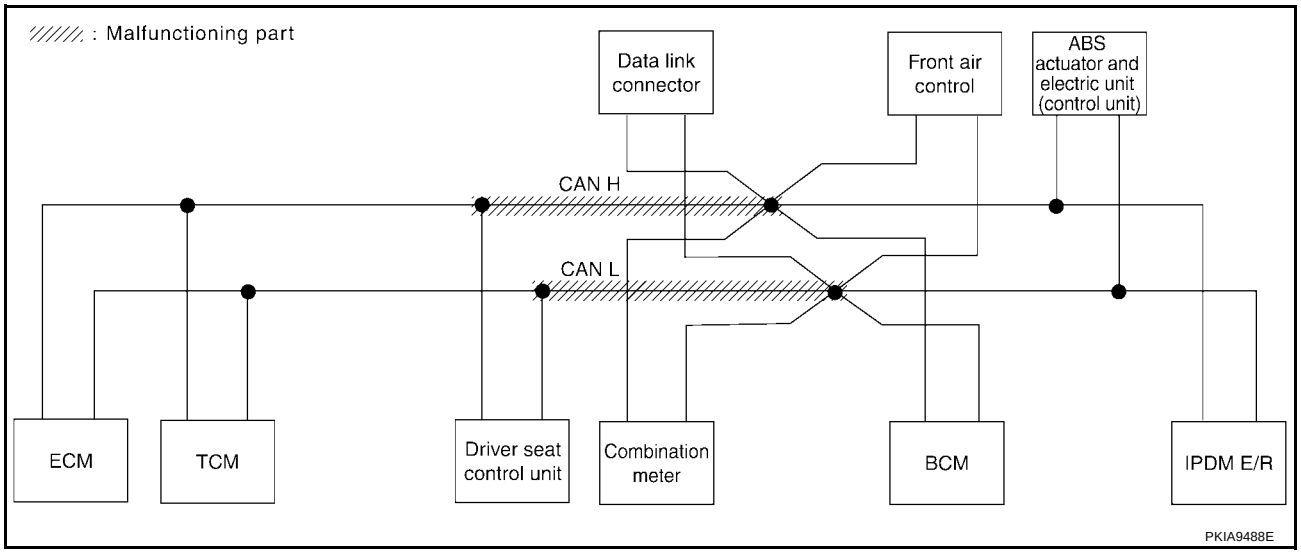
PKIA9487E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-102, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

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

SKIB2718E

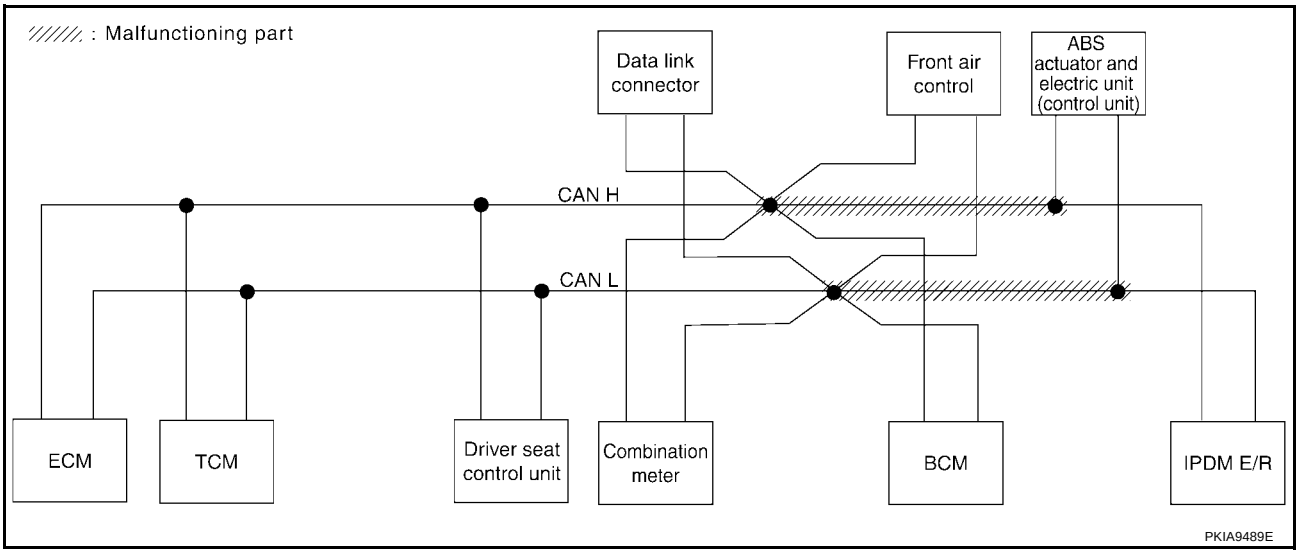


Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-103, "Circuit Check Between Data Link Connector and IPDM E/R" .

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

SKIB2719E

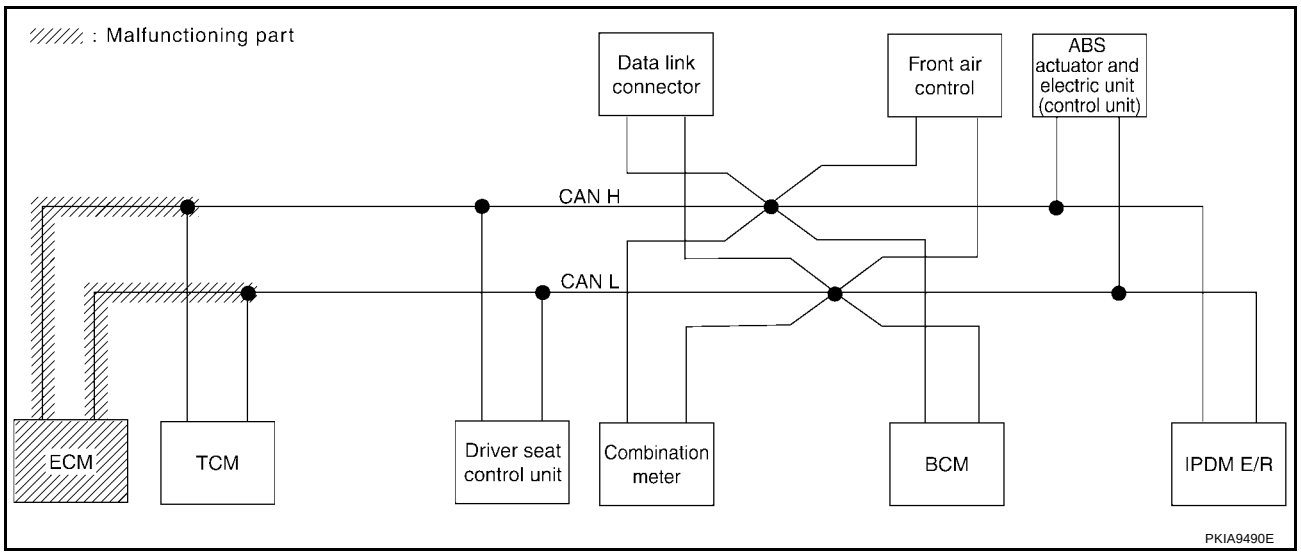


Case 4

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

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

SKIB2720E

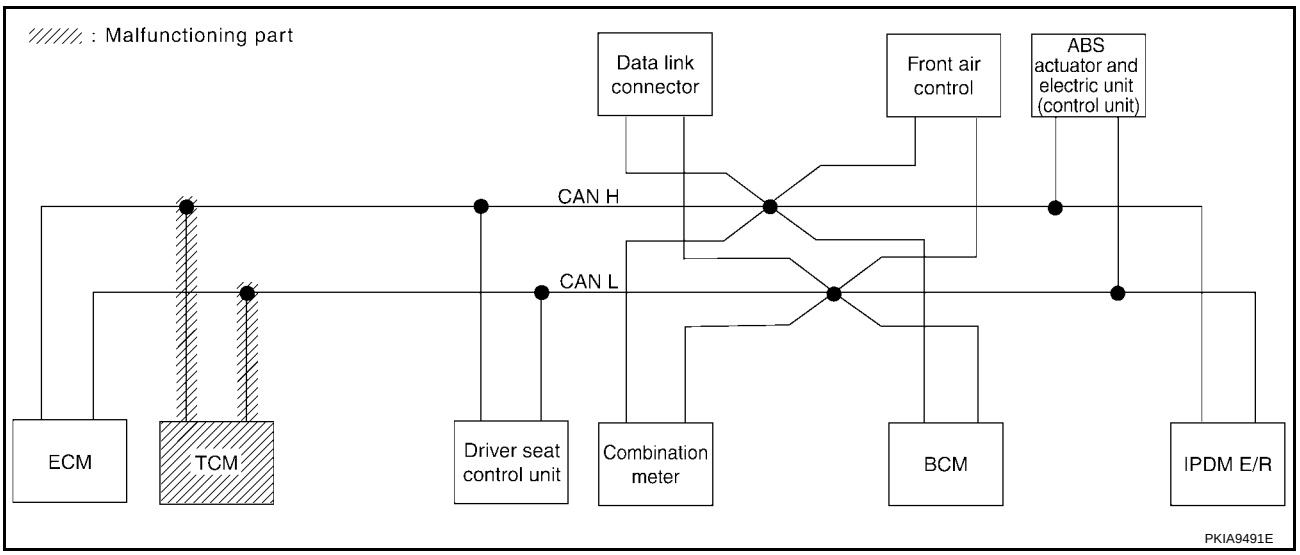


Case 5

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

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

SKIB2721E

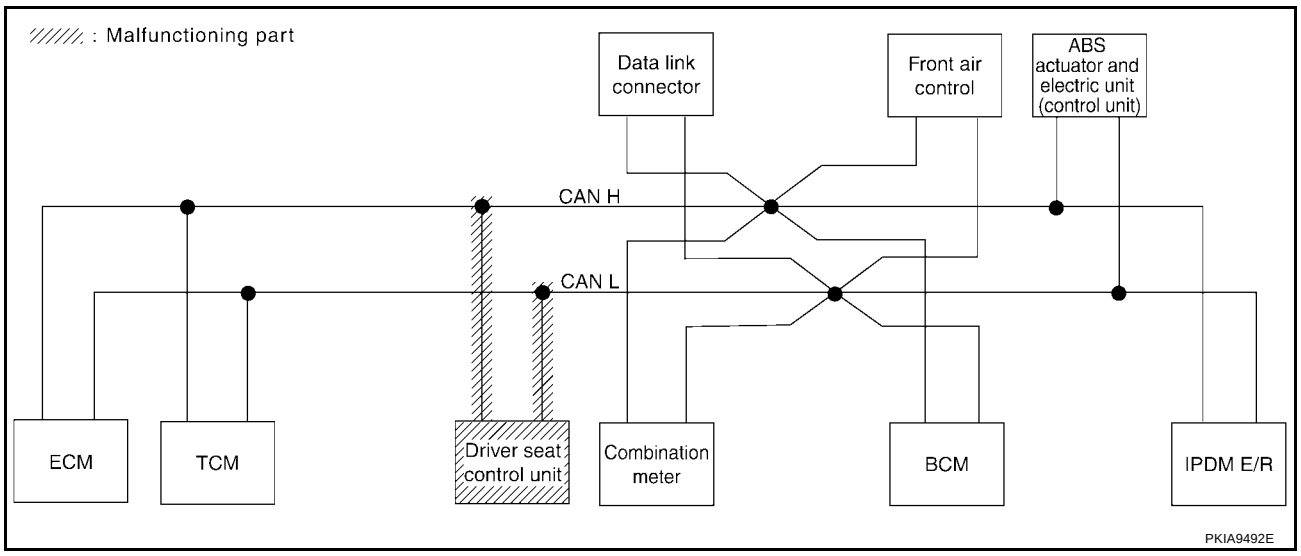


Case 6

Check driver seat control unit circuit. Refer to LAN-105, "Driver Seat Control Unit Circuit Check" .

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

SKIB2722E



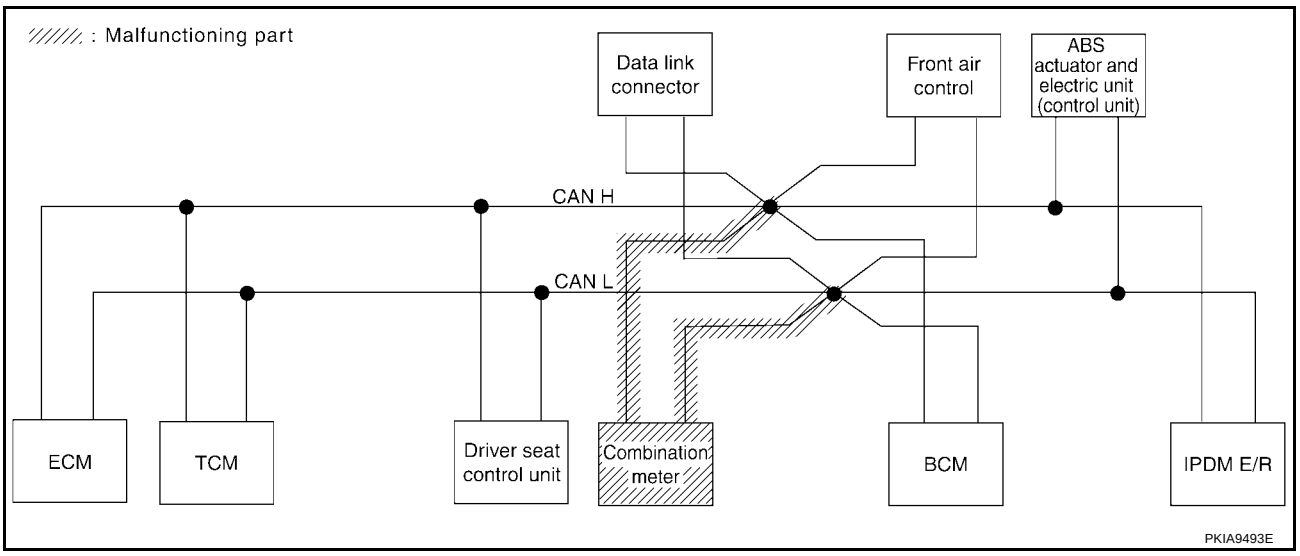
PKIA9492E

Case 7

Check combination meter circuit. Refer to LAN-105, "Combination Meter Circuit Check" .

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

SKIB2723E

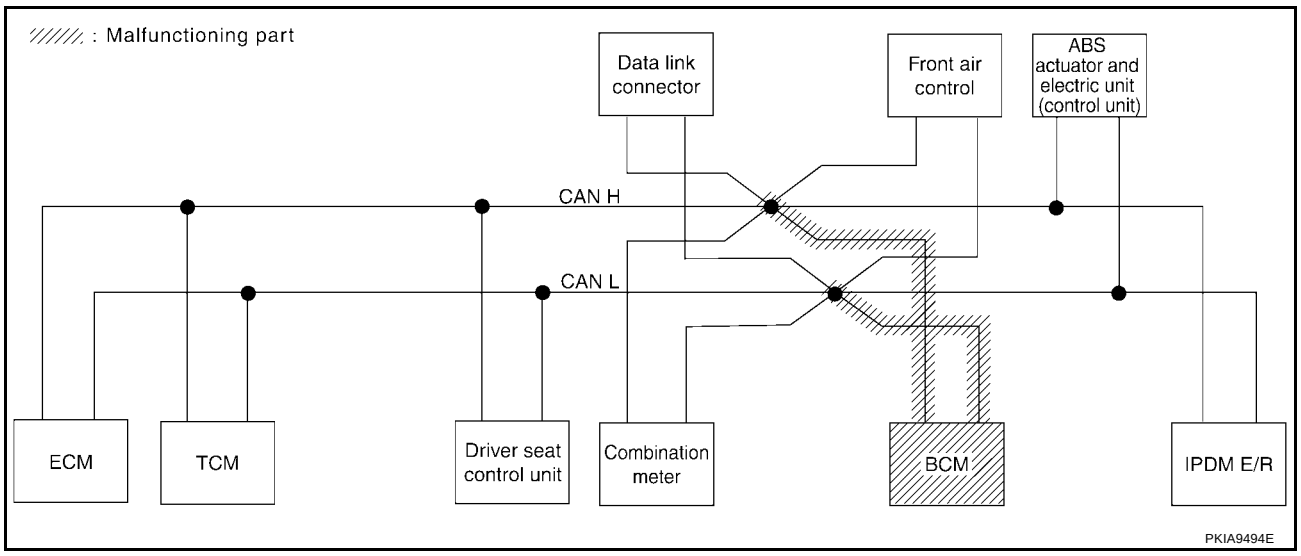


Case 8

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

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

SKIB2724E

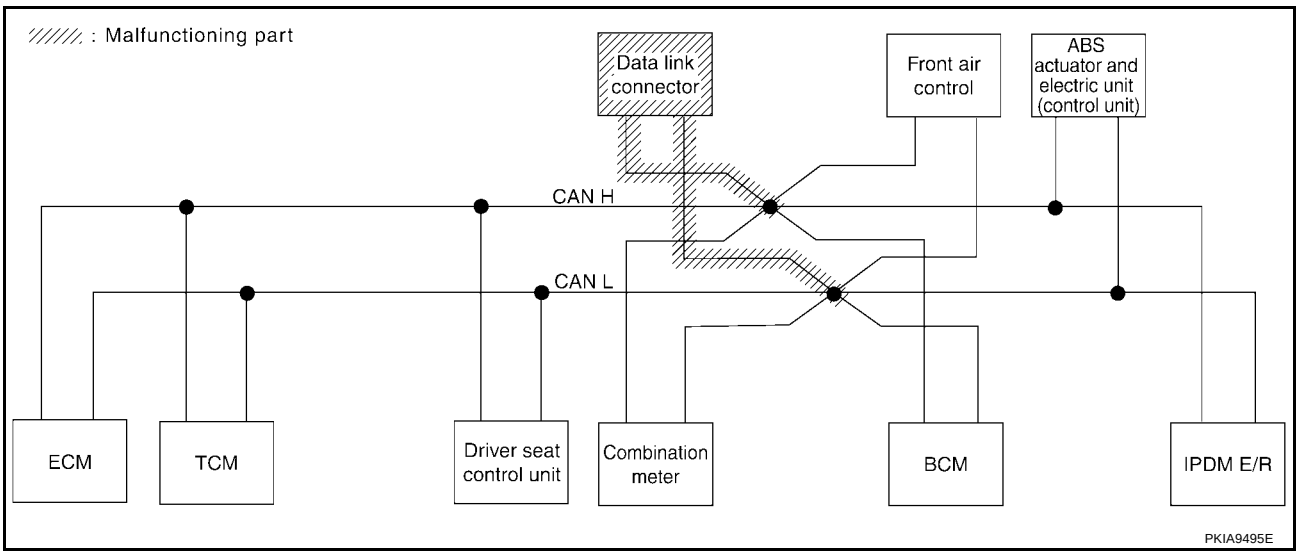


Case 9

Check data link connector circuit. Refer to LAN-106, "Data Link Connector Circuit Check" .

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

SKIB2725E

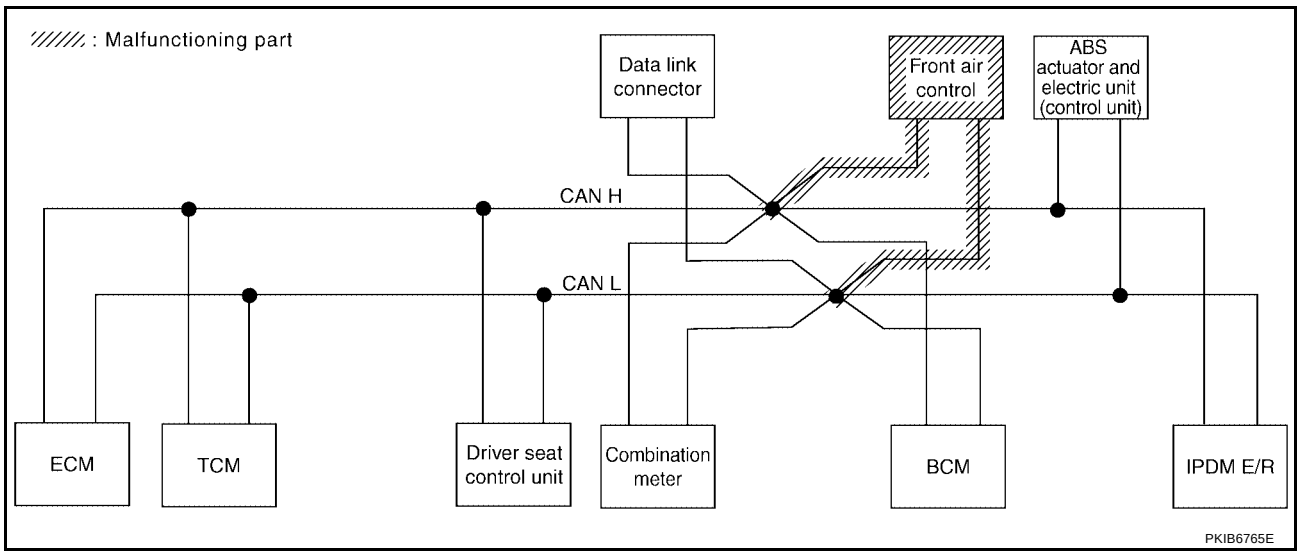


Case 10

Check front air control circuit. Refer to LAN-107, "Front Air Control Circuit Check" .

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

PKIB6775E



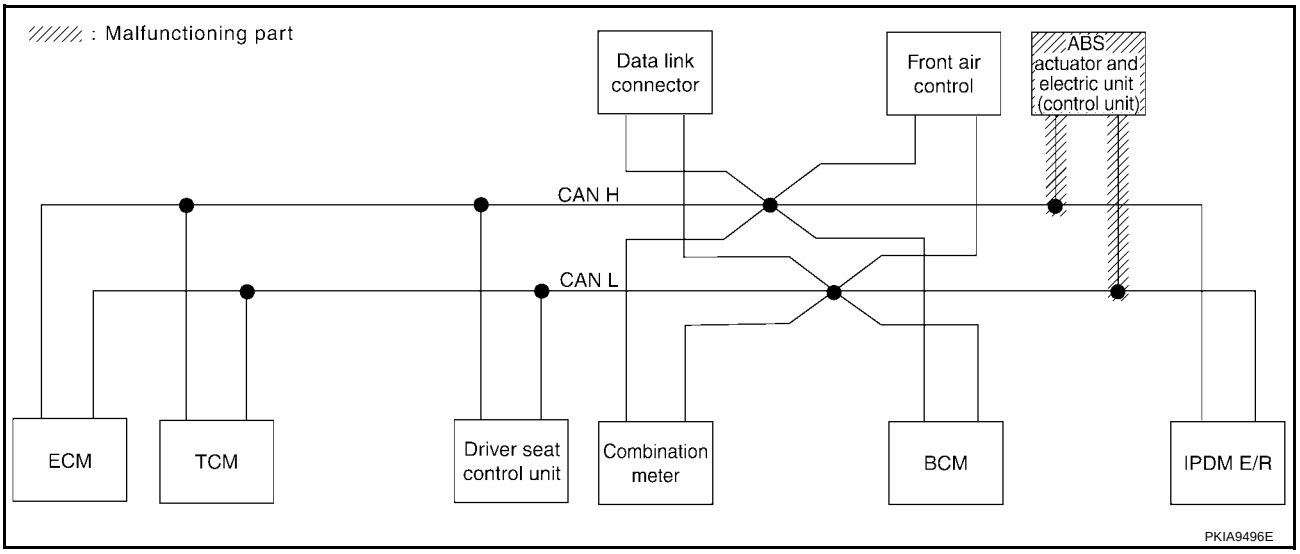
PKIB6765E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-107, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

SKIB2726E

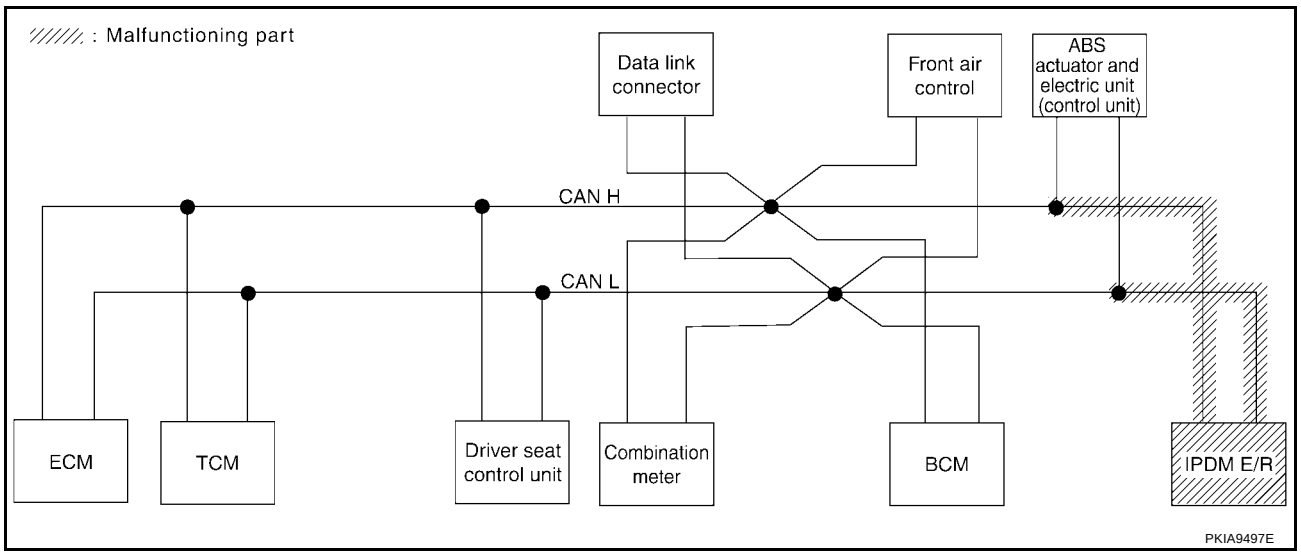


Case 12

Check IPDM E/R circuit. Refer to LAN-108, "IPDM E/R Circuit Check" .

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

SKIB2727E



PKIA9497E

Case 13

Check CAN communication circuit. Refer to LAN-108, "CAN Communication Circuit Check" .

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

SKIB2728E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-109, "IPDM E/R Ignition Relay Circuit Check" .

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

SKIB2729E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-109, "IPDM E/R Ignition Relay Circuit Check" .

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

SKIB2730E

Circuit Check Between TCM and Driver Seat Control Unit

UKS003AA

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

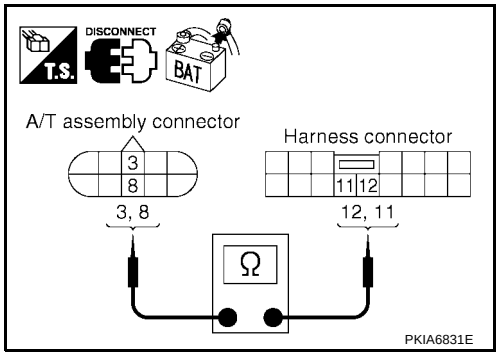
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



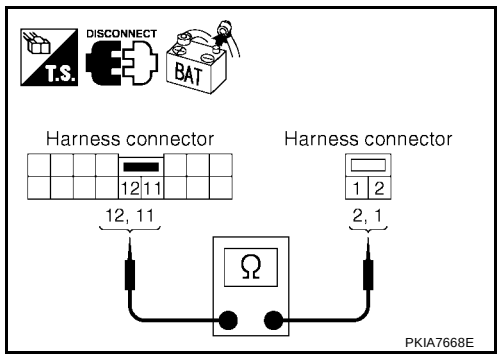
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



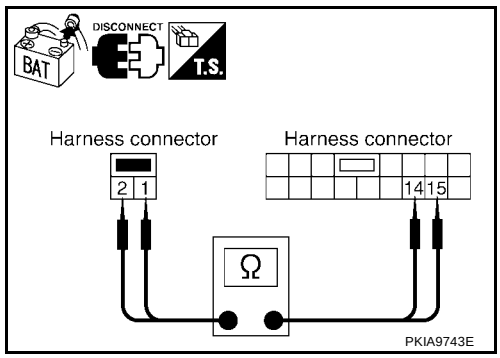
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).

2 (L) - 15 (L) : Continuity should exist.
1 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-85, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS003AB

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

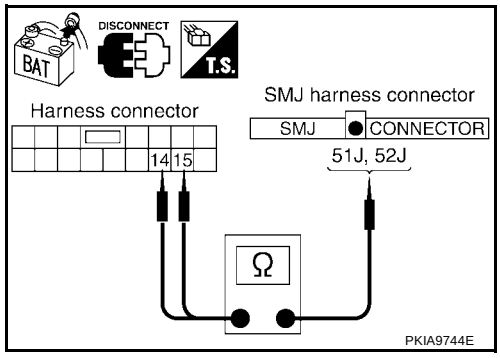
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

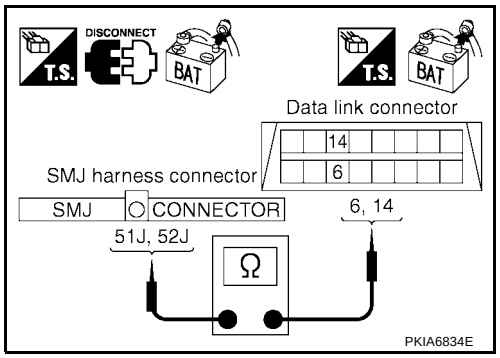
51J (L) - 6 (L) : Continuity should exist.

52J (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-85, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS003AC

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

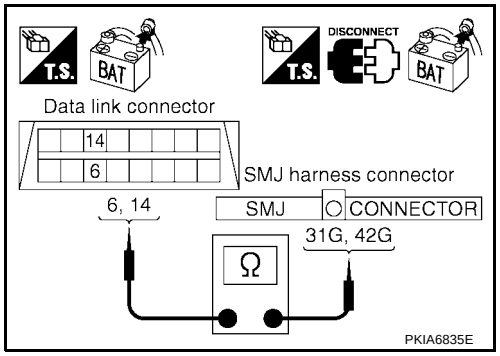
6 (L) - 31G (L) : Continuity should exist.

14 (P) - 42G (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

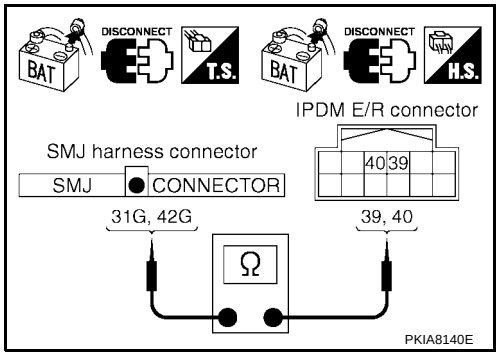
31G (L) - 39 (L) : Continuity should exist.

42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-85, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS003AD

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

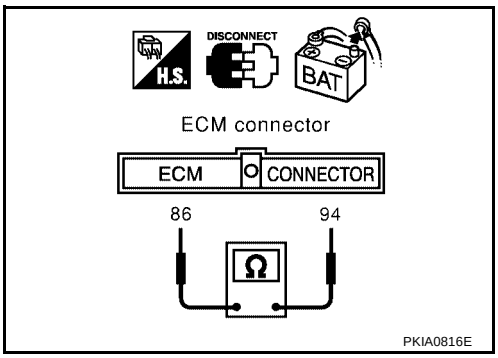
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS003AE

1. CHECK CONNECTOR

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

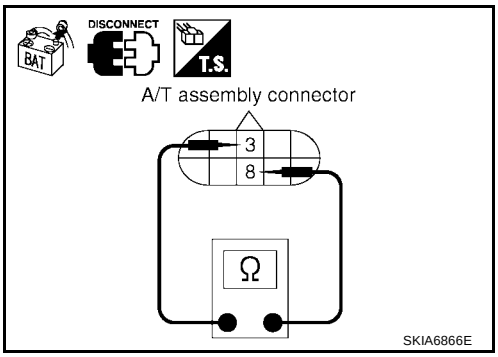
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS003AF

1. CHECK CONNECTOR

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

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

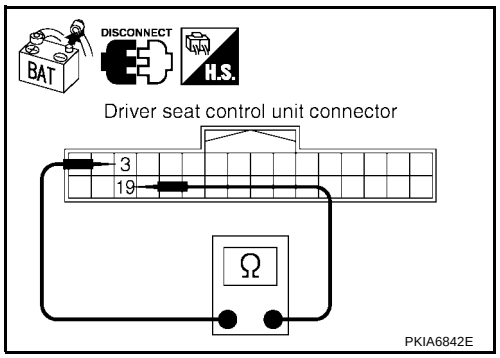
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS003AG

1. CHECK CONNECTOR

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

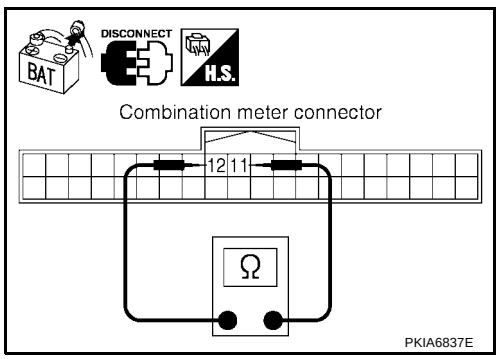
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS003AH

1. CHECK CONNECTOR

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

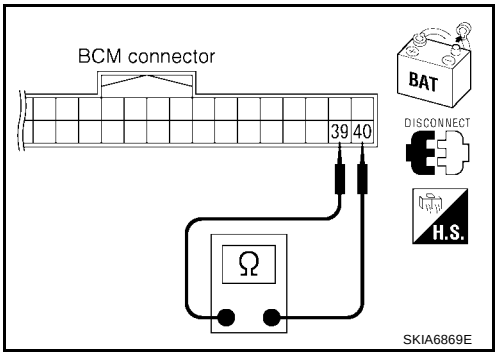
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS003AI

1. CHECK CONNECTOR

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

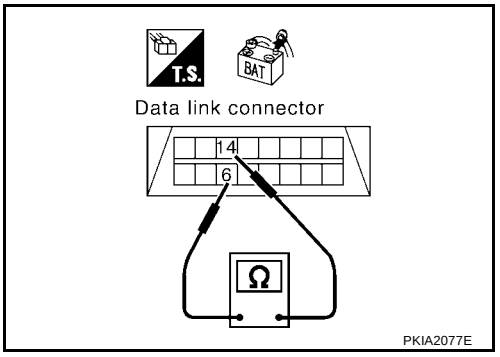
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-85, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS003KO

1. CHECK CONNECTOR

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

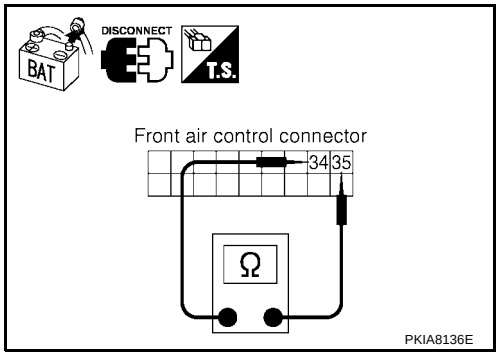
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS003AJ

1. CHECK CONNECTOR

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

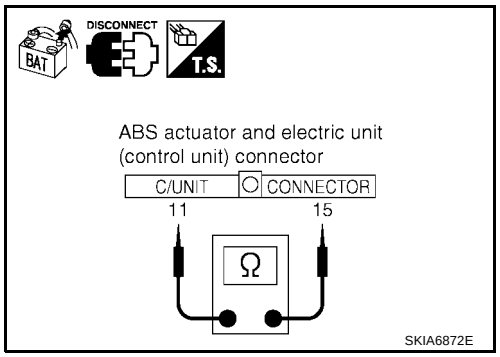
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS003AK

1. CHECK CONNECTOR

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

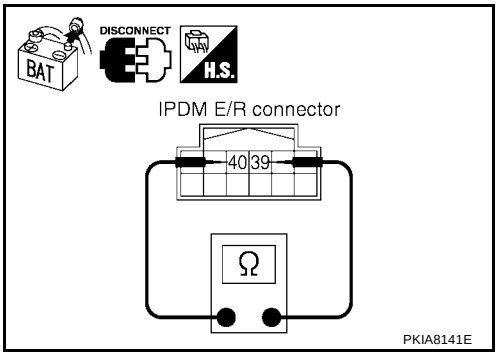
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS003AL

1. CHECK CONNECTOR

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
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

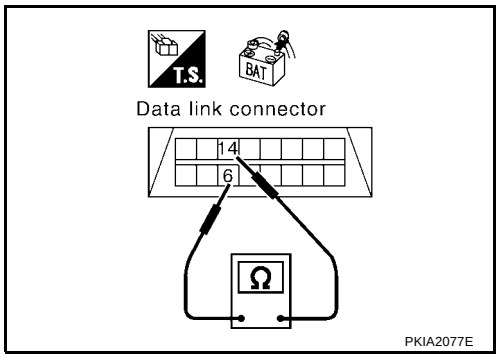
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



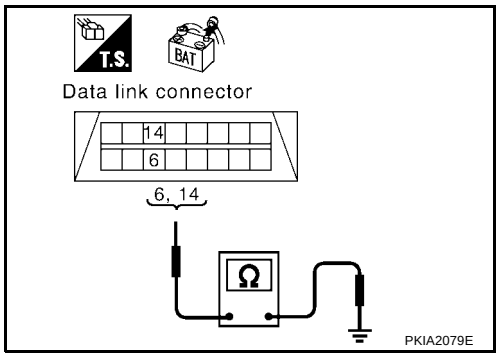
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-109, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS003AM

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

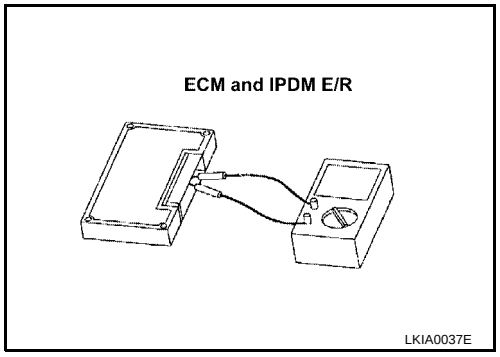
Component Inspection

UKS003AN

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 4)

PFP:23710

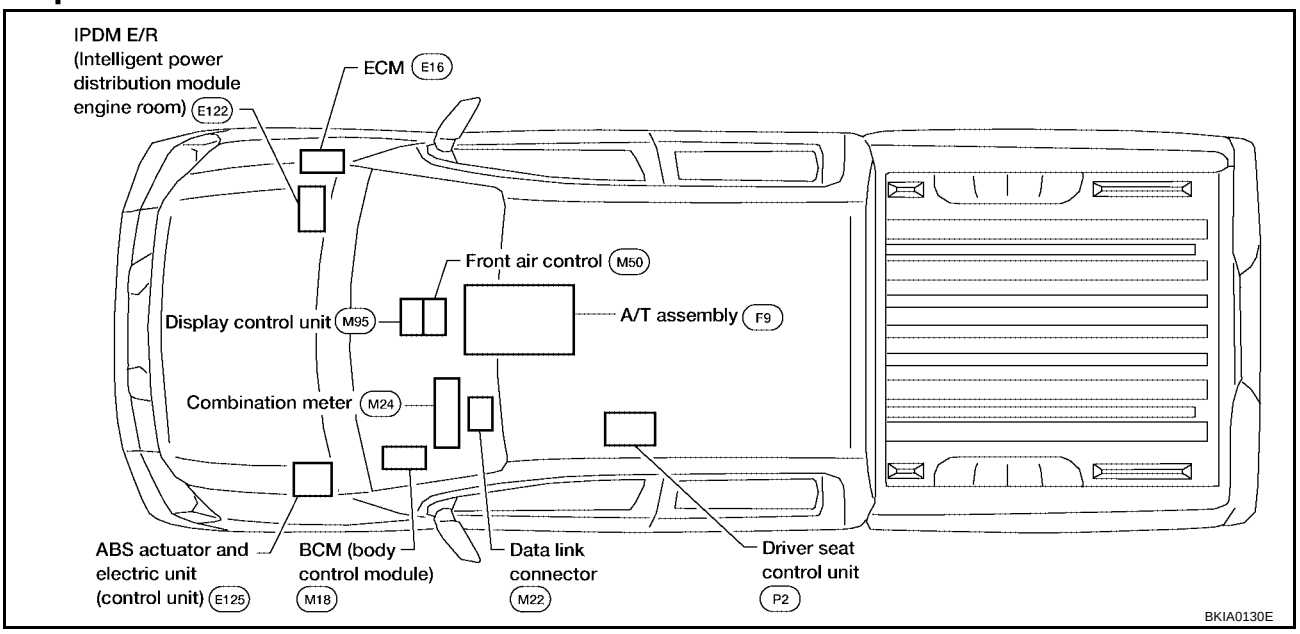
System Description

UKS0039K

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.

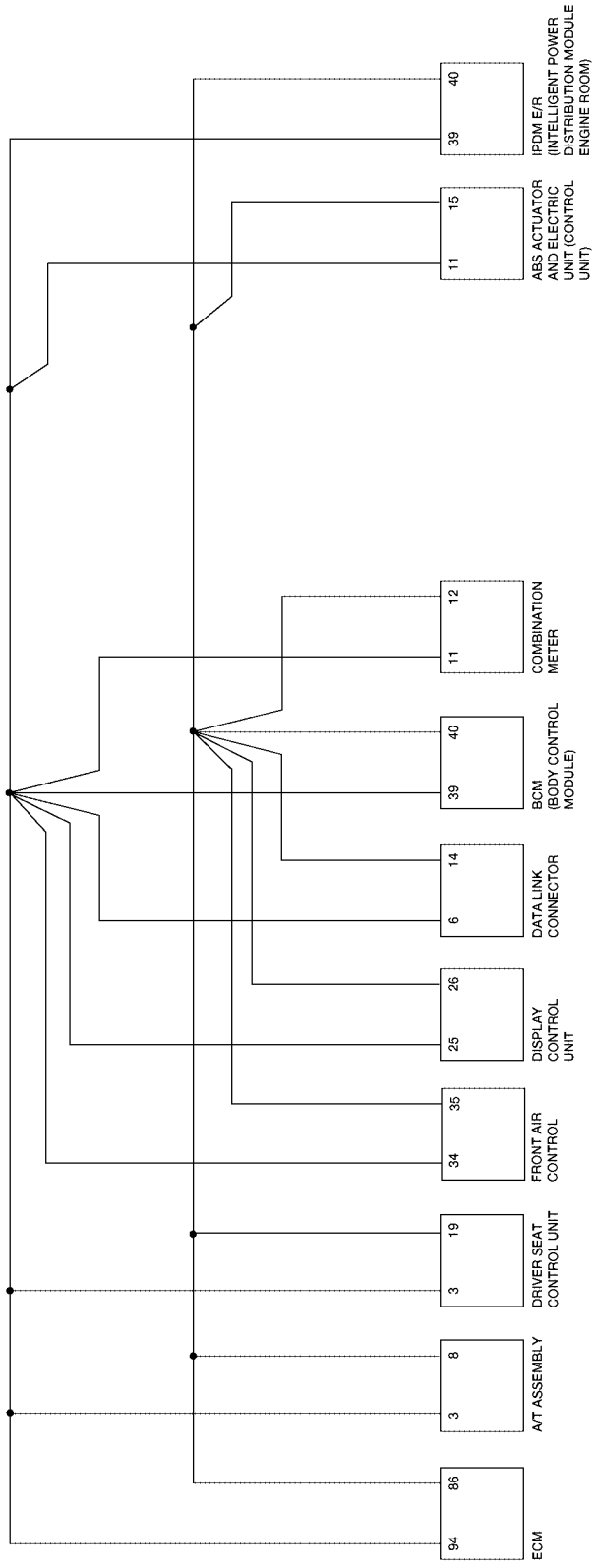
Component Parts and Harness Connector Location

UKS0039L



Schematic

UKS0039M

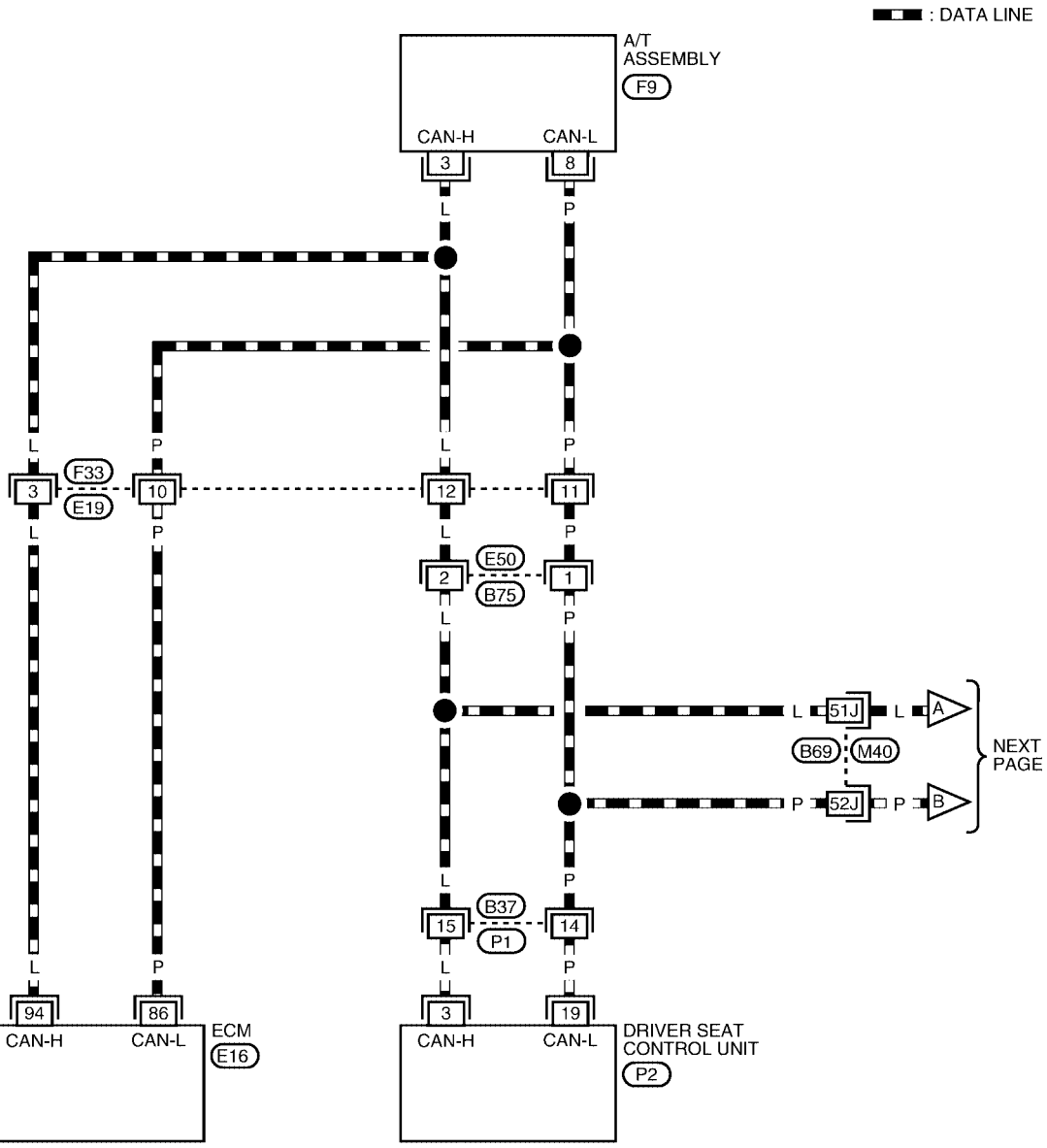


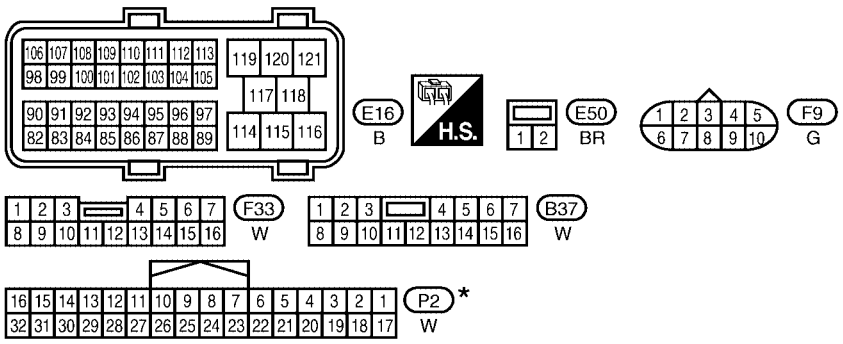
BKWA0134E

Wiring Diagram - CAN -

UKS0039N

LAN-CAN-10



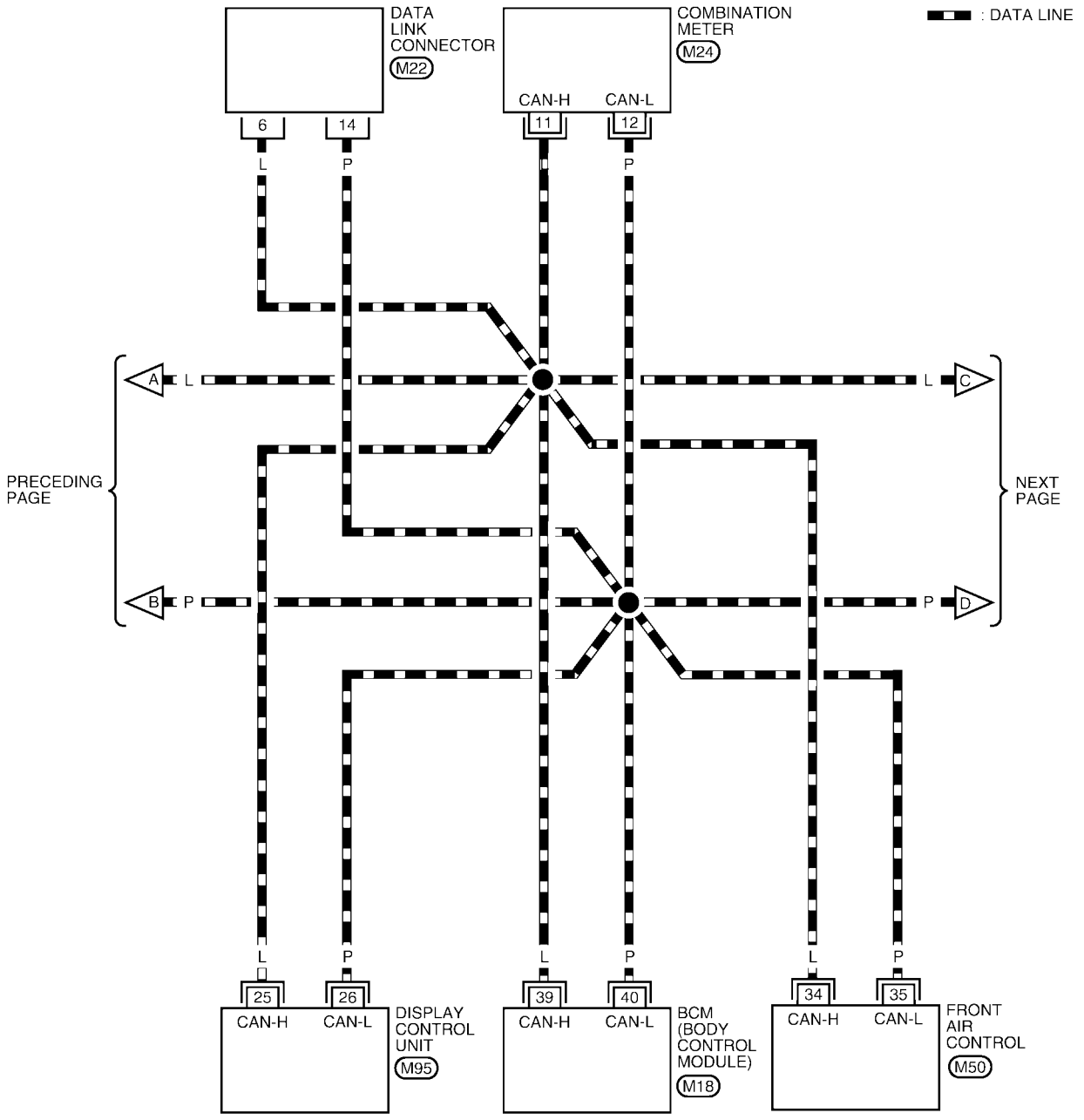


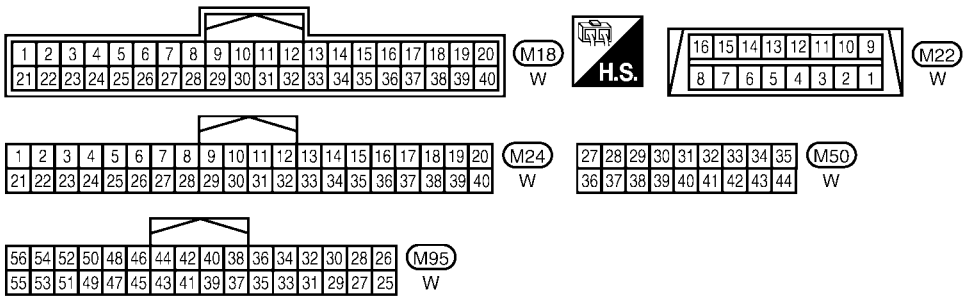
REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

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

BKWA0431E

LAN-CAN-11

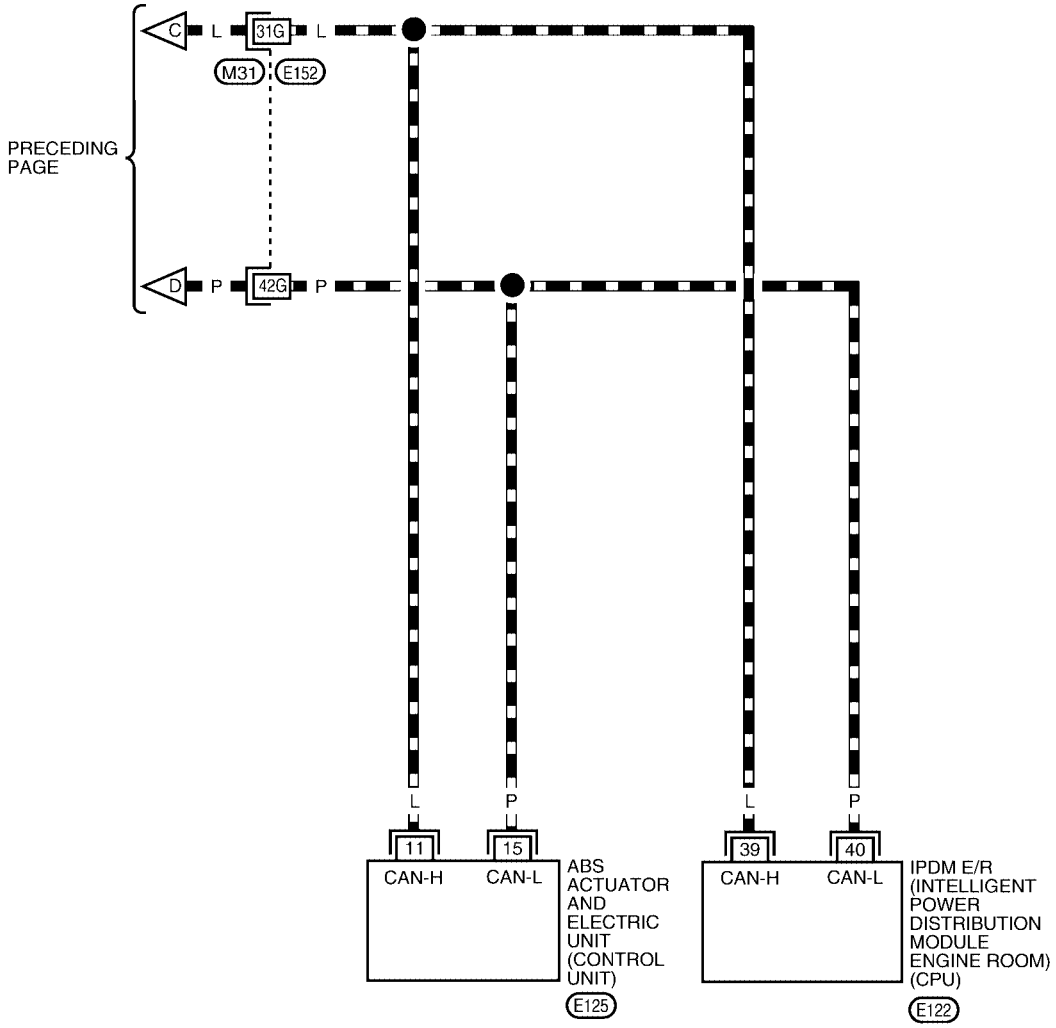


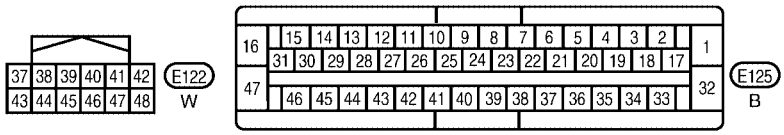


BKWA0432E

LAN-CAN-12

: DATA LINE





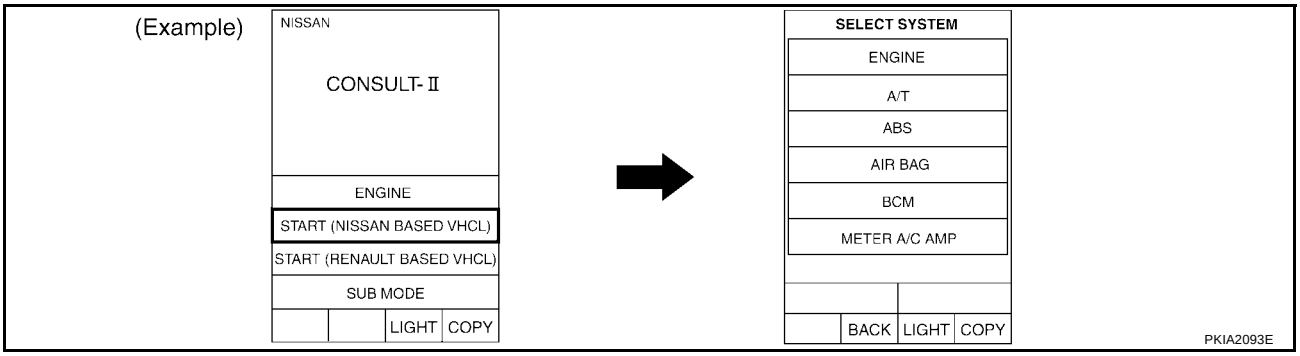
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0433E

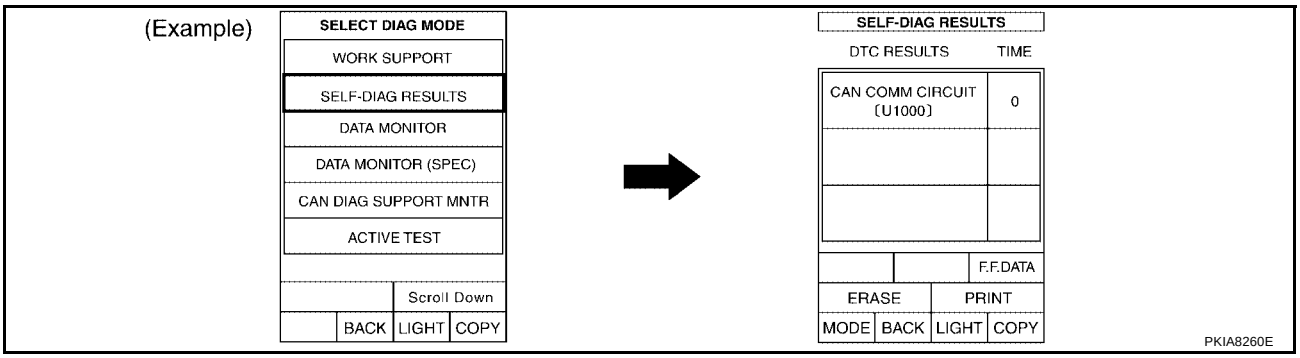
Work Flow

UKS0039O

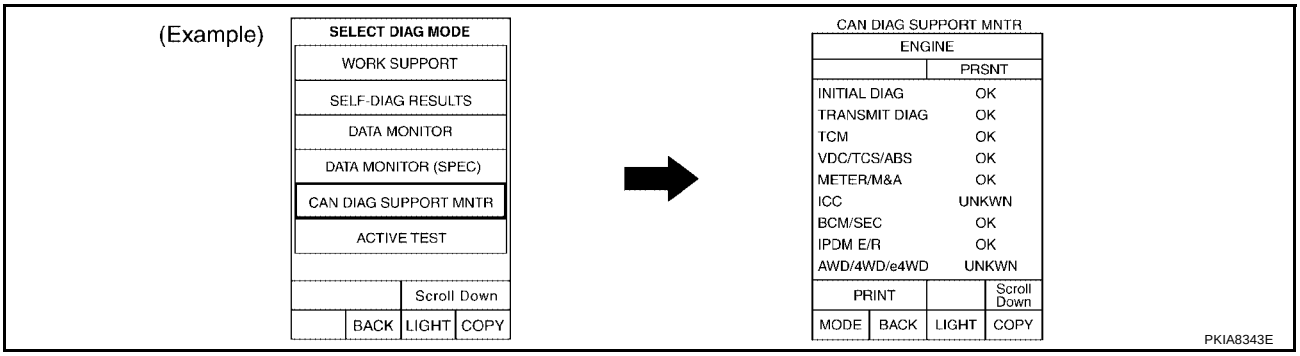
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-117, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-117, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-148, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-117, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-117, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-148, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-119, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

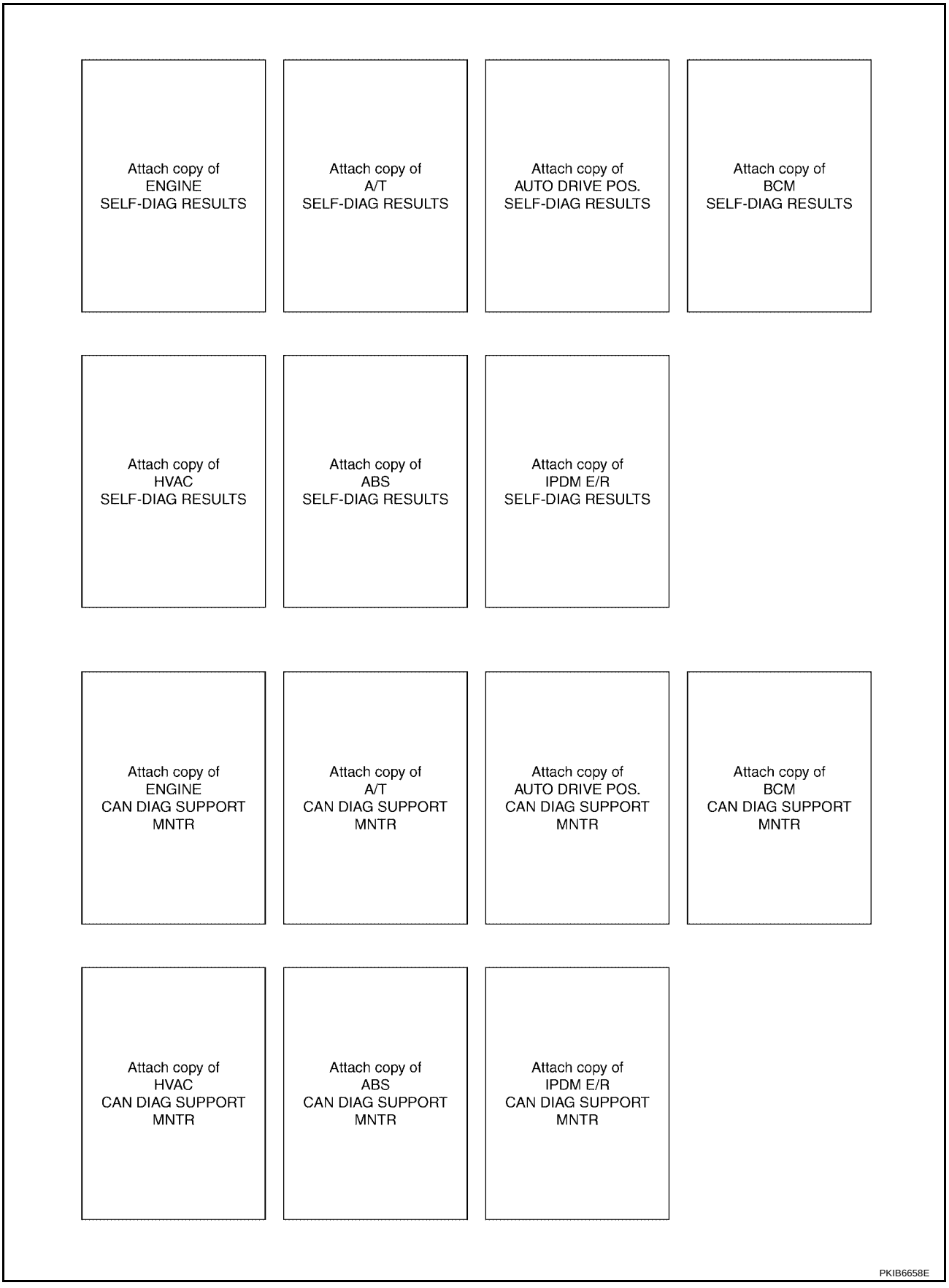
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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

SKIB2731E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
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ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
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MNTR
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MNTR
Attach copy of
ABS
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MNTR
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IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6658E

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 driver seat control unit. Refer to LAN-133, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	—	—

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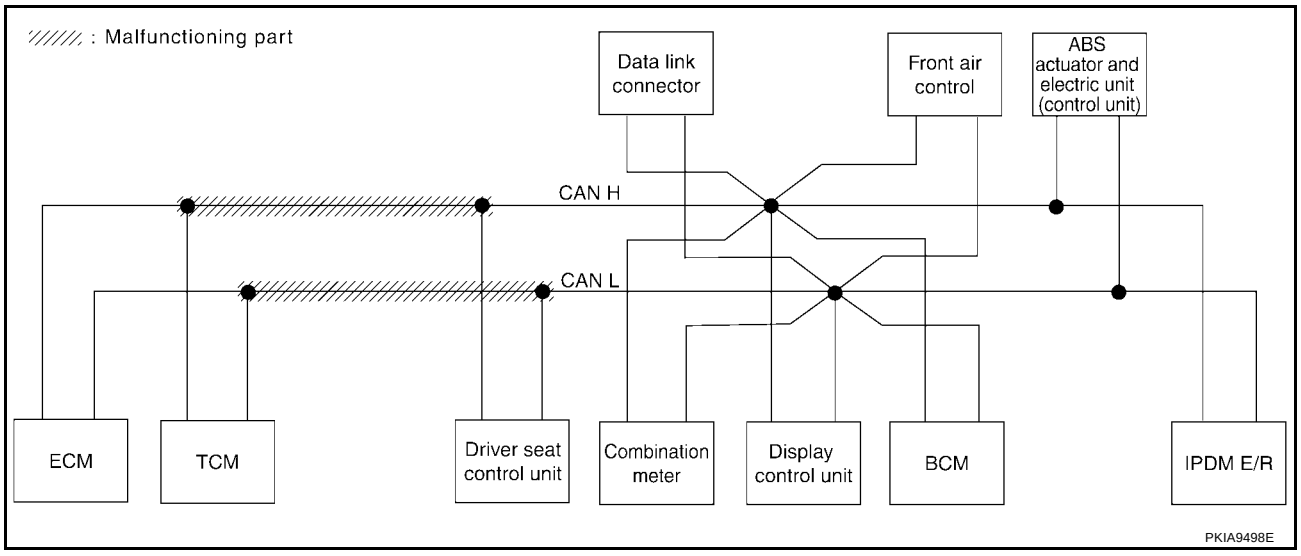

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-134, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	–
AUTO DRIVE POS.	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 4	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

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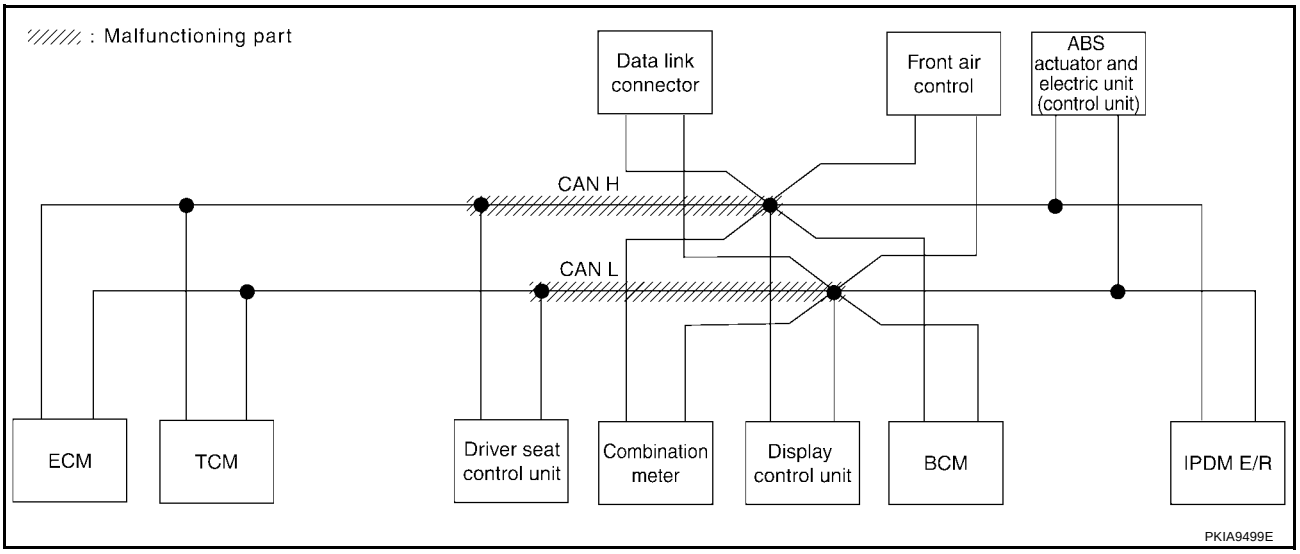

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-135, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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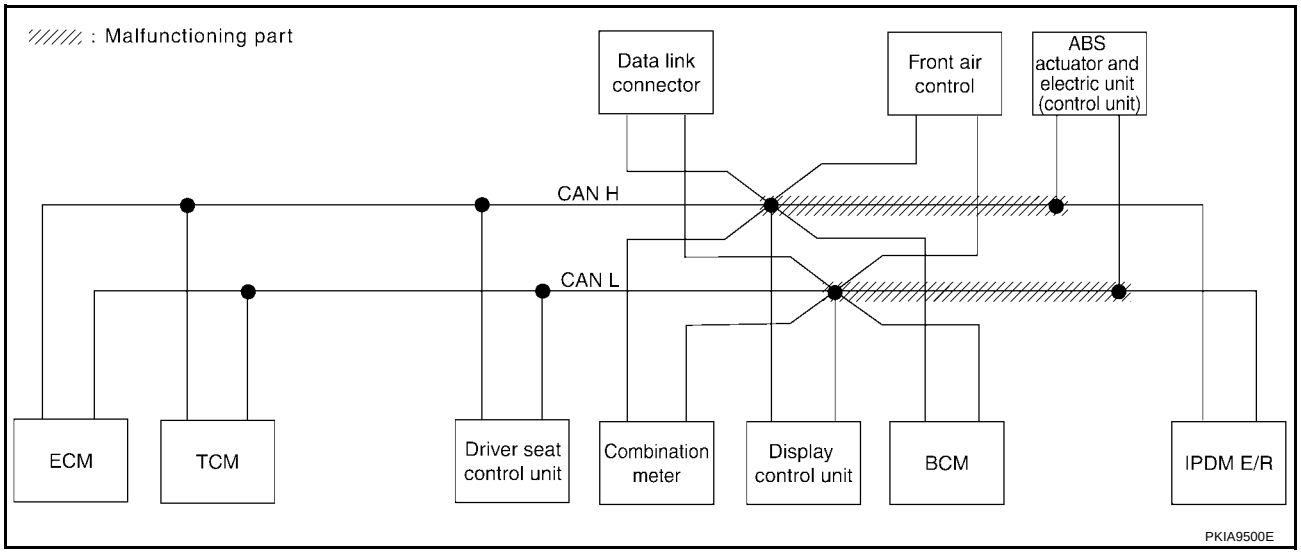

PKIA9500E

Case 4

Check ECM circuit. Refer to LAN-136, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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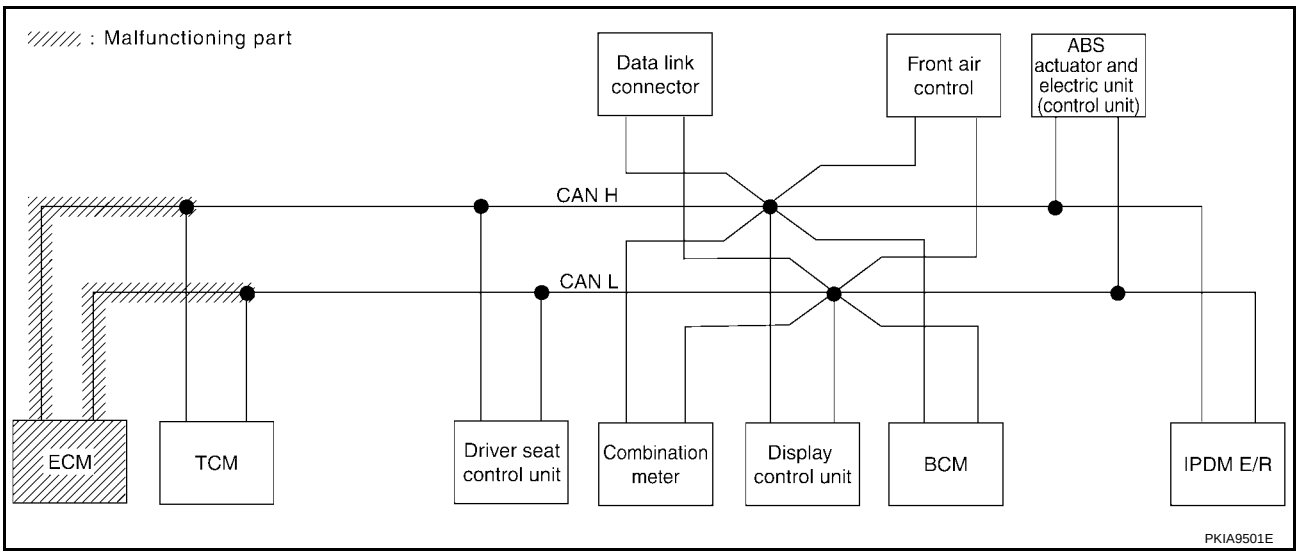


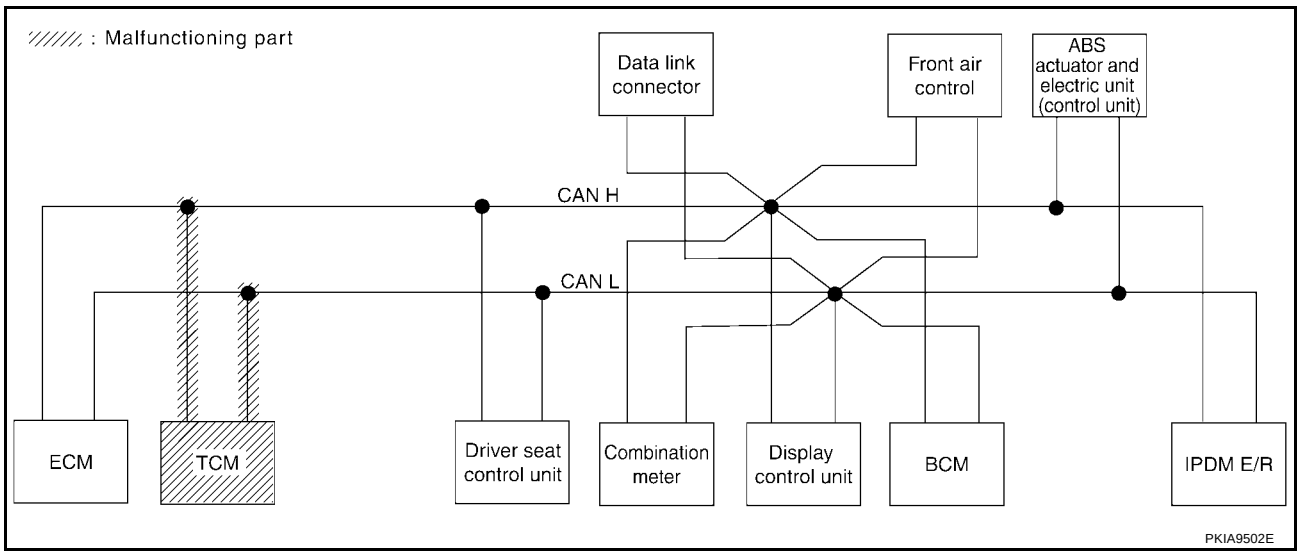
PKIA9501E

Case 5

Check TCM circuit. Refer to LAN-136, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2736E



PKIA9502E

Case 6

Check driver seat control unit circuit. Refer to LAN-137, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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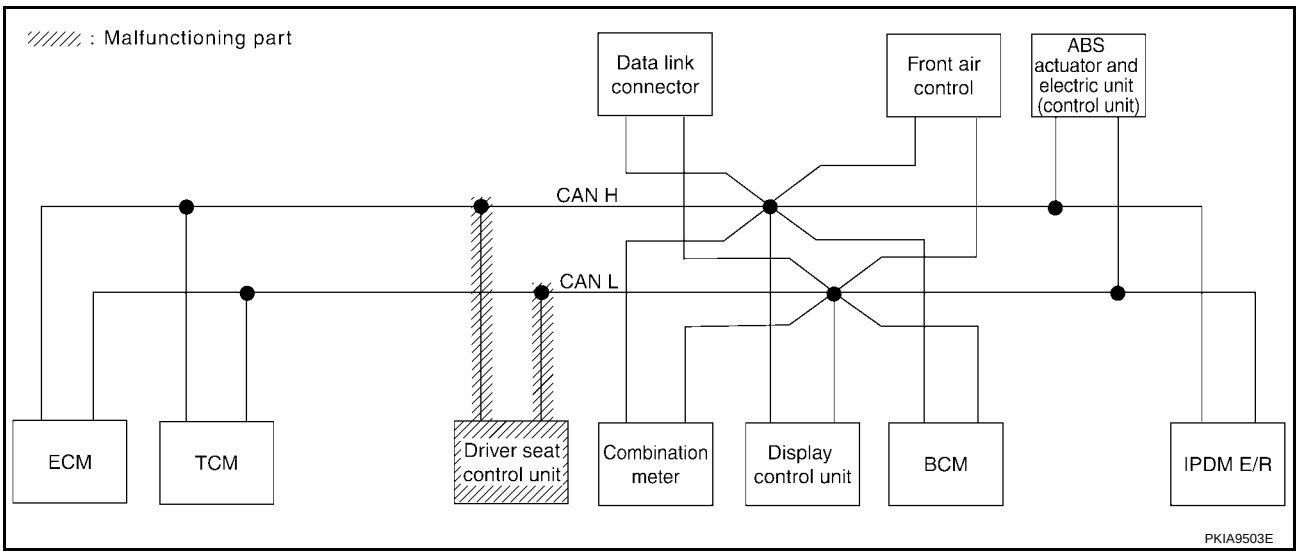


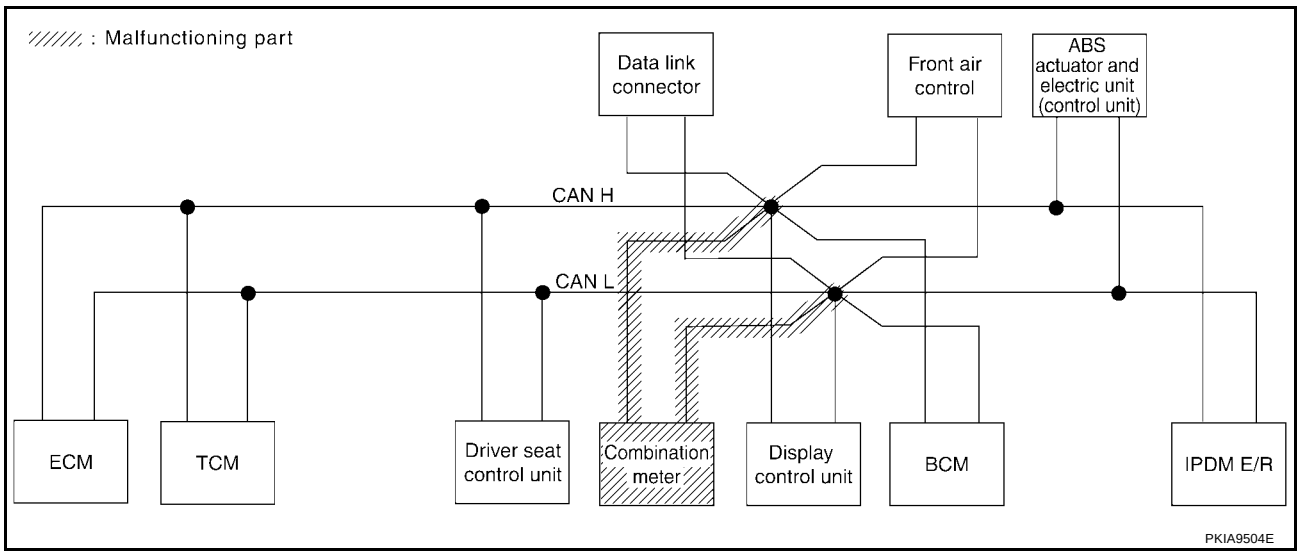
PKIA9503E

Case 7

Check combination meter circuit. Refer to LAN-137, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2738E



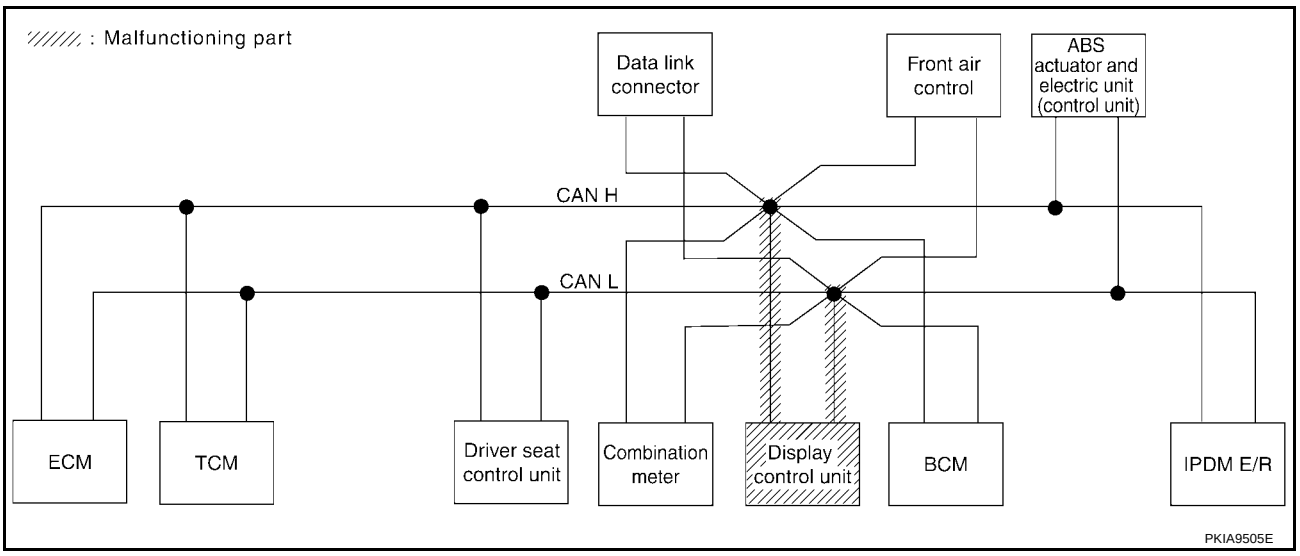
PKIA9504E

Case 8

Check display control unit circuit. Refer to LAN-138, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4 ✓	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2739E

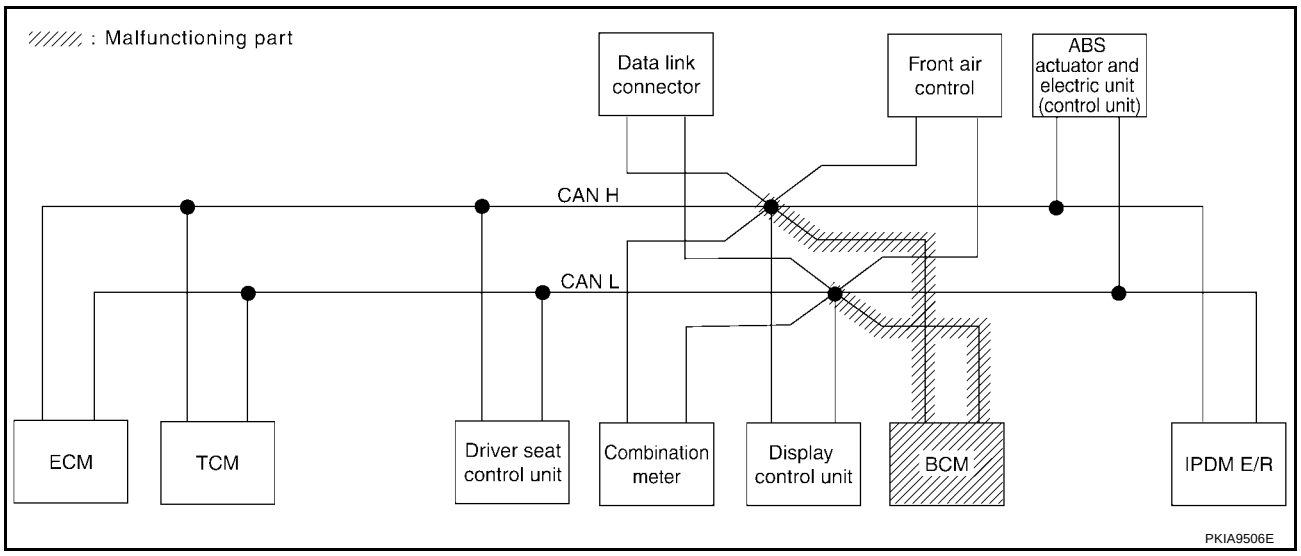


Case 9

Check BCM circuit. Refer to LAN-138, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2740E



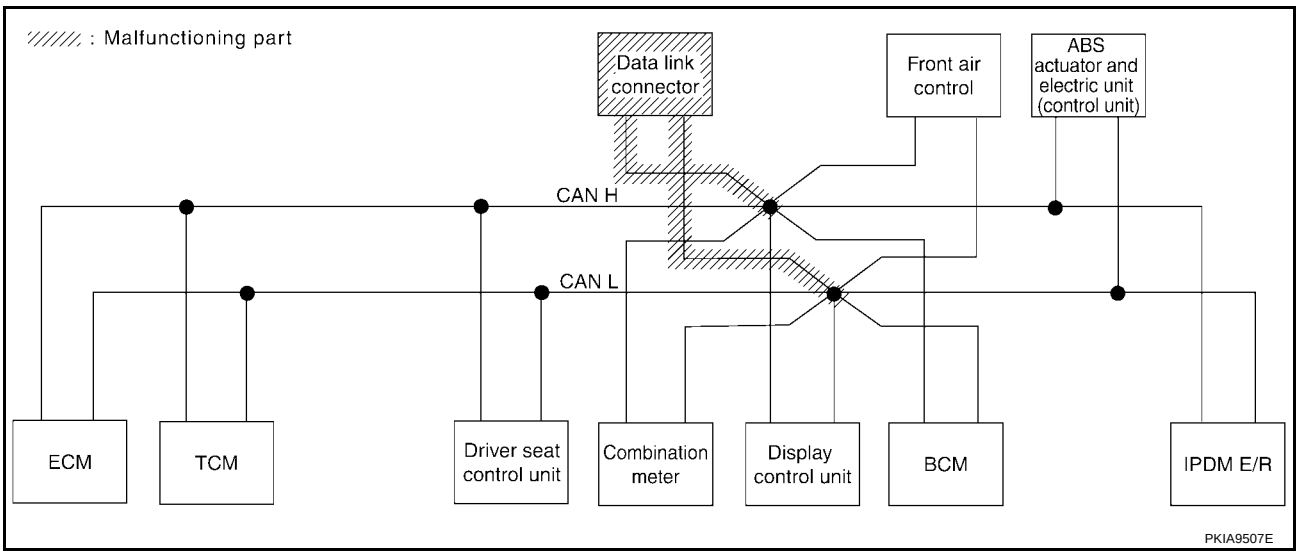
PKIA9506E

Case 10

Check data link connector circuit. Refer to LAN-139, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	–
AUTO DRIVE POS.	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 4	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

SKIB2742E

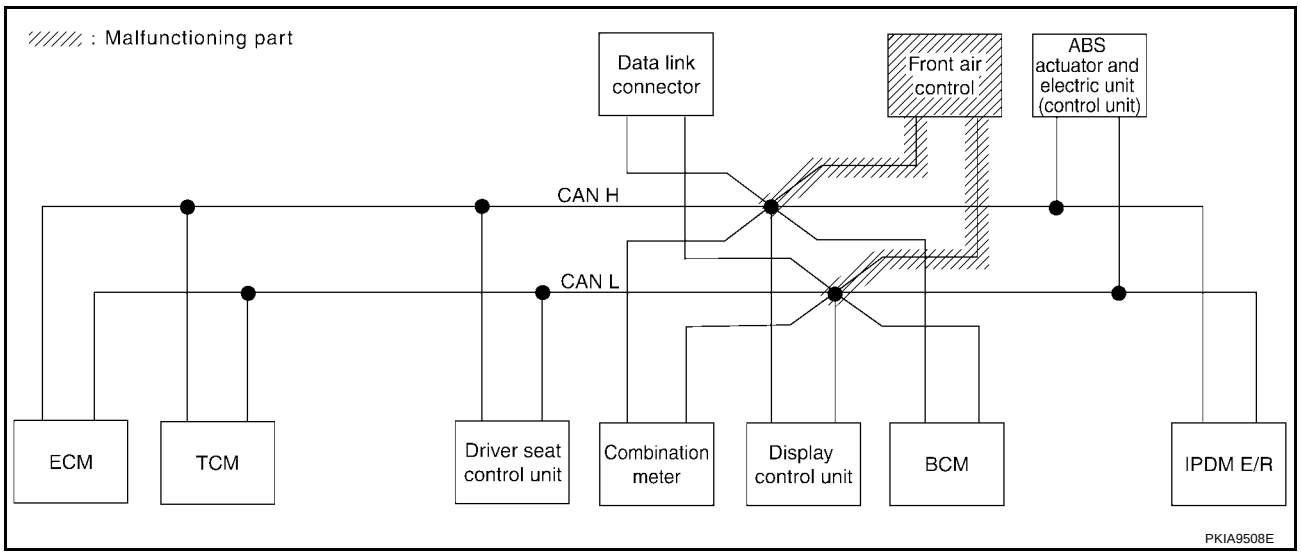


Case 11

Check front air control circuit. Refer to LAN-139, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2743E



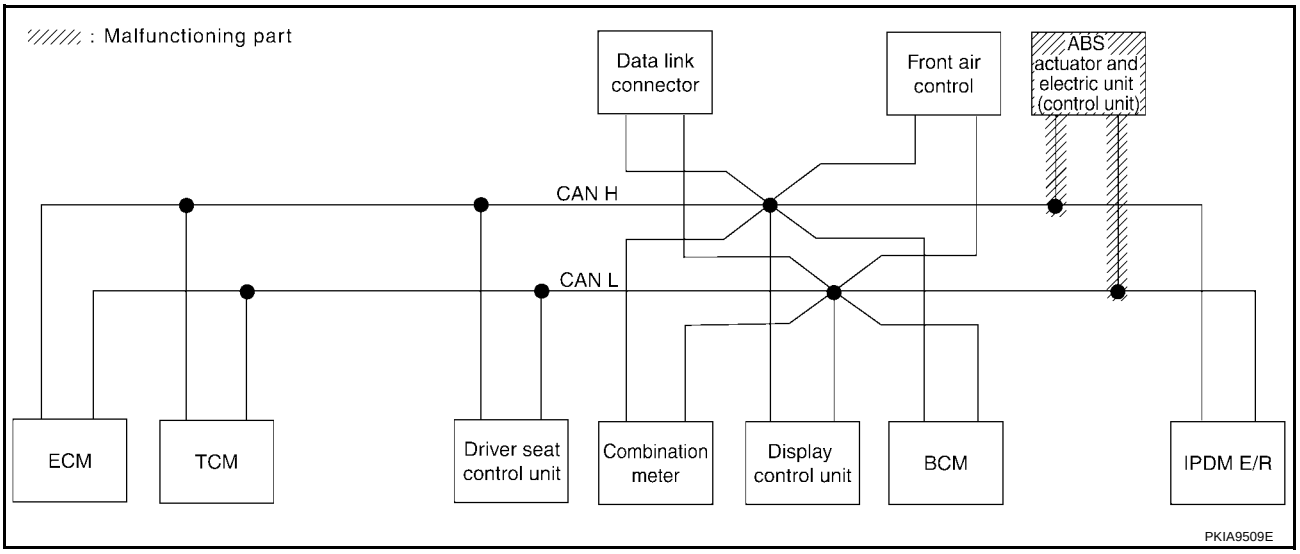
PKIA9508E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-140, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2744E

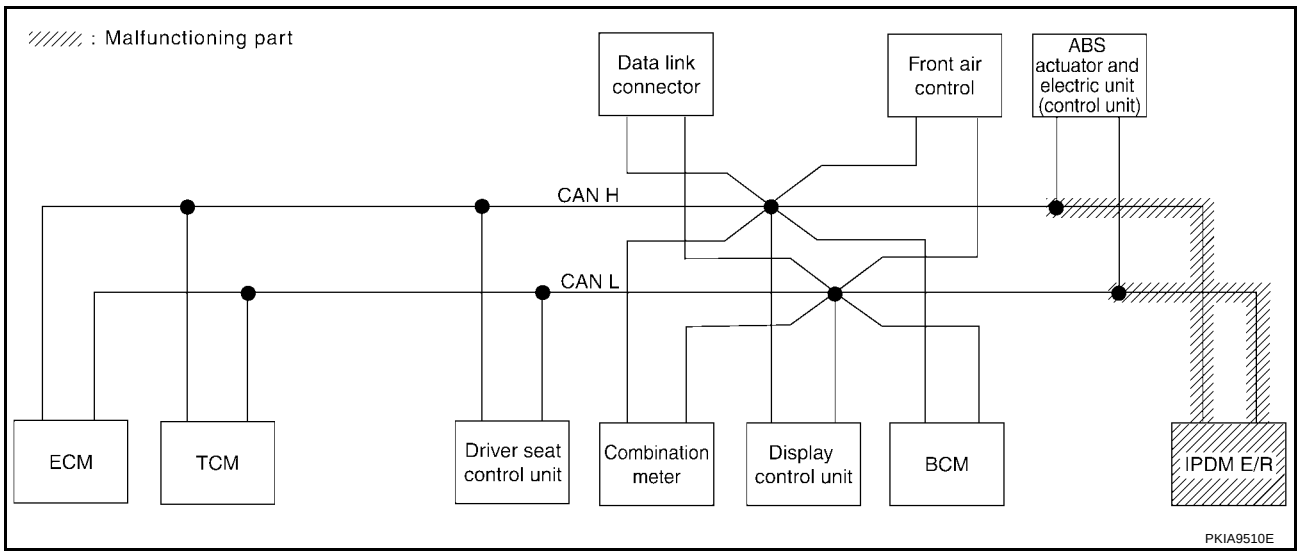


Case 13

Check IPDM E/R circuit. Refer to LAN-140, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

SKIB2745E



PKIA9510E

Case 14

Check CAN communication circuit. Refer to LAN-141, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	–
AUTO DRIVE POS.	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 4	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

SKIB2746E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-141, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	–
AUTO DRIVE POS.	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 4	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

SKIB2747E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-141, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	–
AUTO DRIVE POS.	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 4	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

SKIB2748E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0039P

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

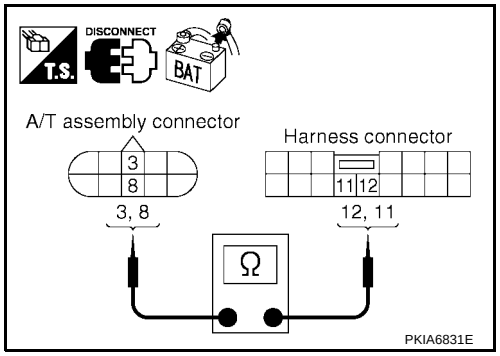
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



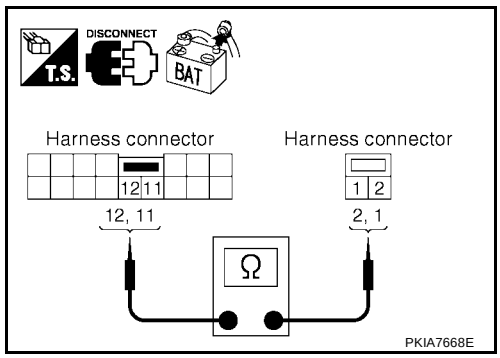
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



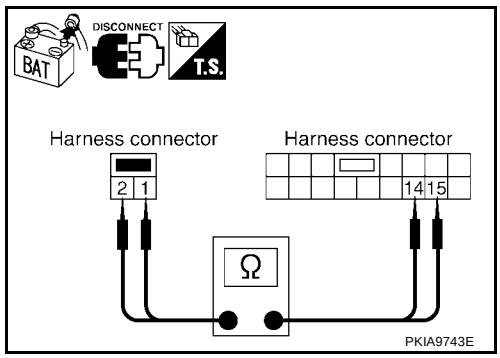
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).

2 (L) - 15 (L) : Continuity should exist.
1 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-115, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0039Q

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

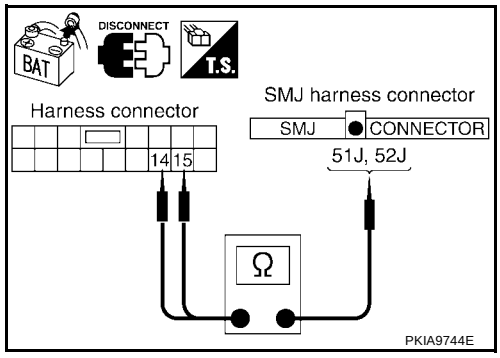
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

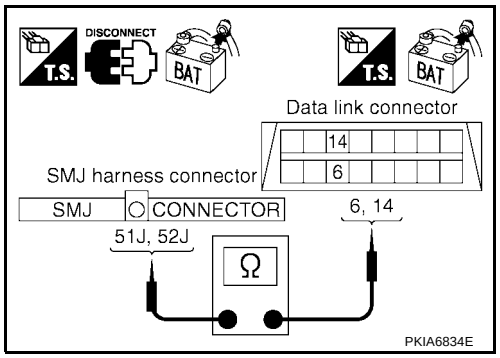
51J (L) - 6 (L) : Continuity should exist.

52J (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-115, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS0039R

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

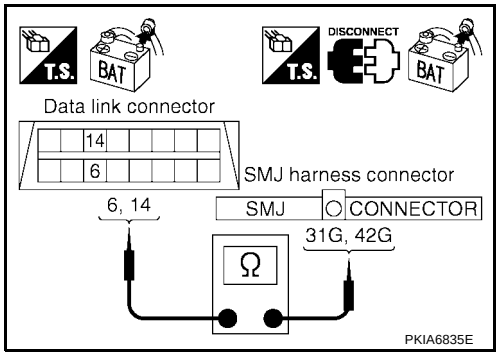
6 (L) - 31G (L) : Continuity should exist.

14 (P) - 42G (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

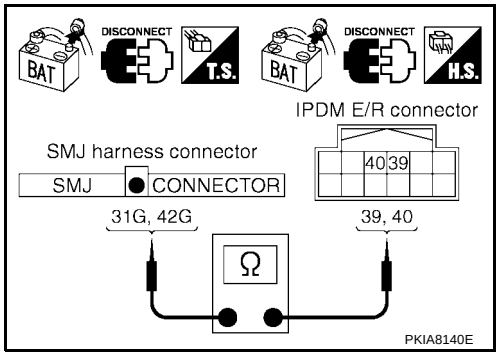
31G (L) - 39 (L) : Continuity should exist.

42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-115, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS0039S

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

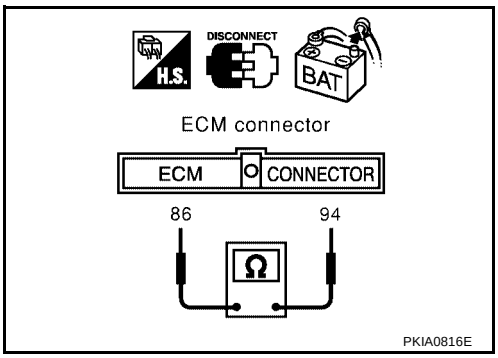
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS0039T

1. CHECK CONNECTOR

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

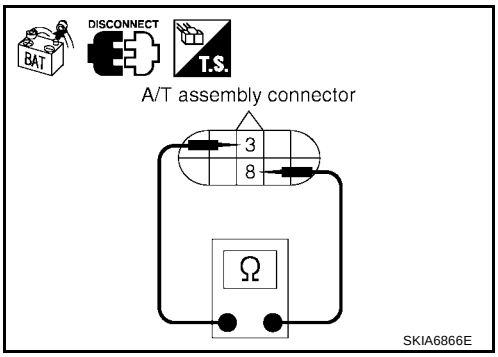
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS0039U

1. CHECK CONNECTOR

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

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

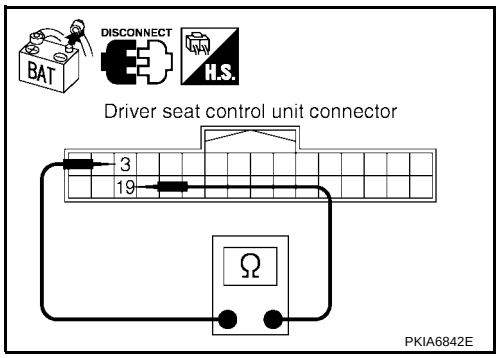
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS0039V

1. CHECK CONNECTOR

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

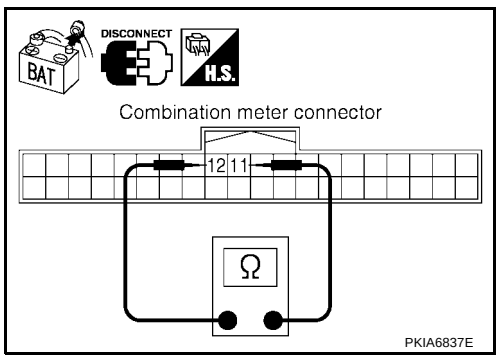
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

Display Control Unit Circuit Check

UKS0039W

1. CHECK CONNECTOR

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

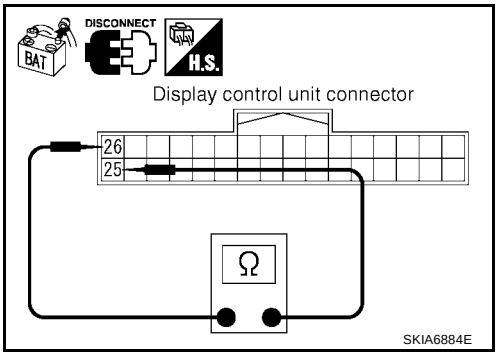
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

25 (L) - 26 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS0039X

1. CHECK CONNECTOR

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

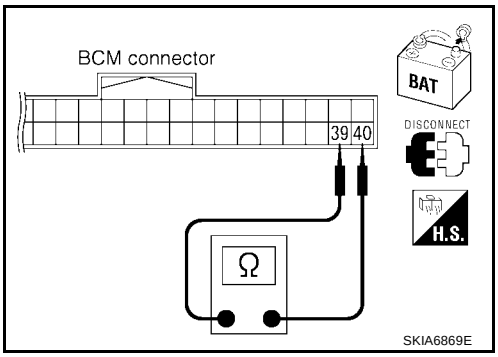
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0039Y

1. CHECK CONNECTOR

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

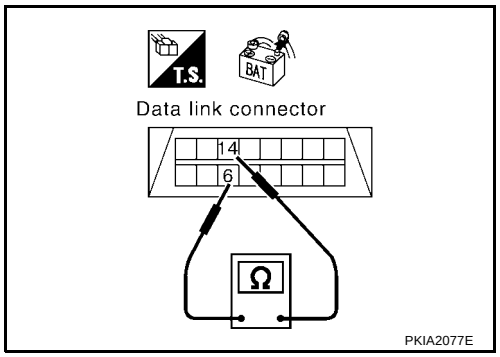
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-115, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS0039Z

1. CHECK CONNECTOR

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

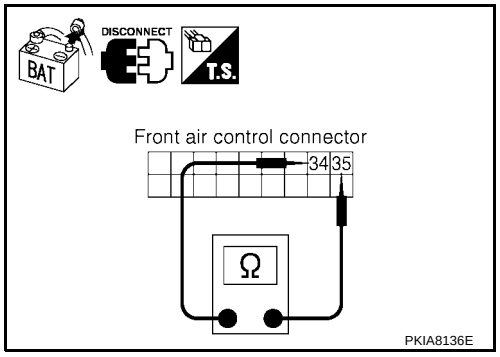
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS003A0

1. CHECK CONNECTOR

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

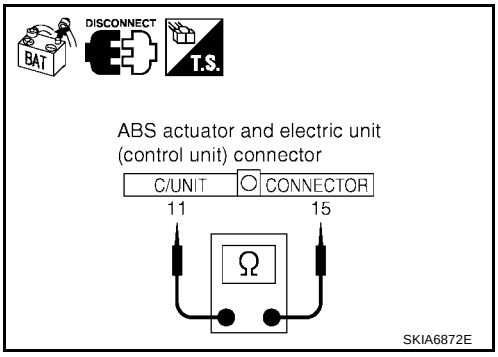
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS003A1

1. CHECK CONNECTOR

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

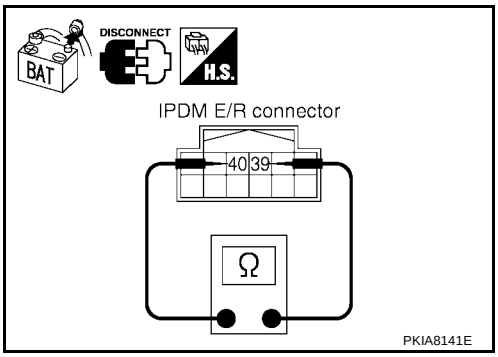
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS003A2

1. CHECK CONNECTOR

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
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

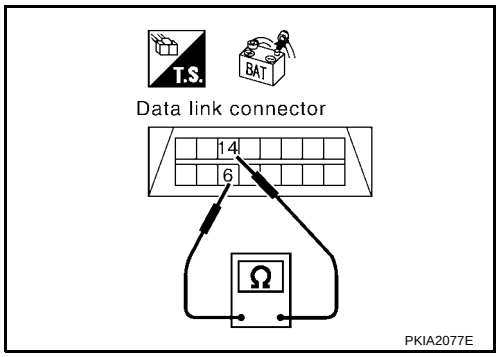
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



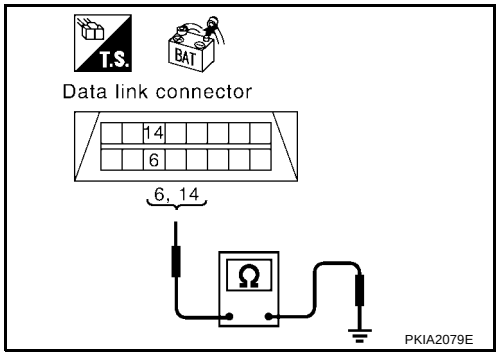
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-142, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS003A3

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

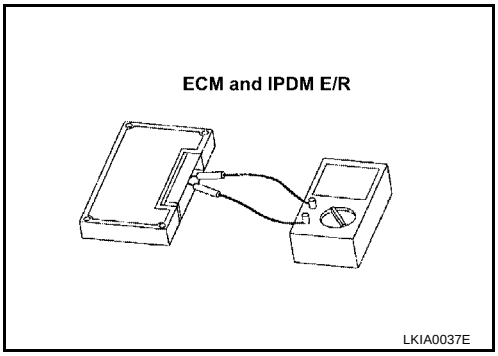
Component Inspection

UKS003A4

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 5)

PFP:23710

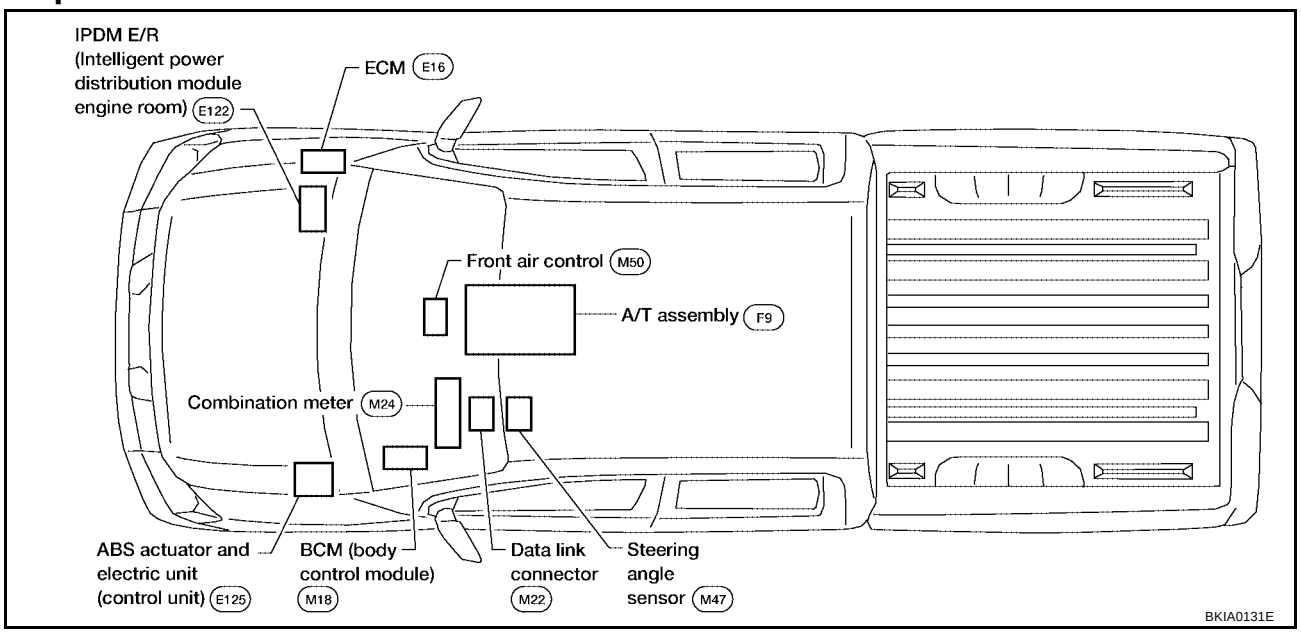
System Description

UKS00392

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.

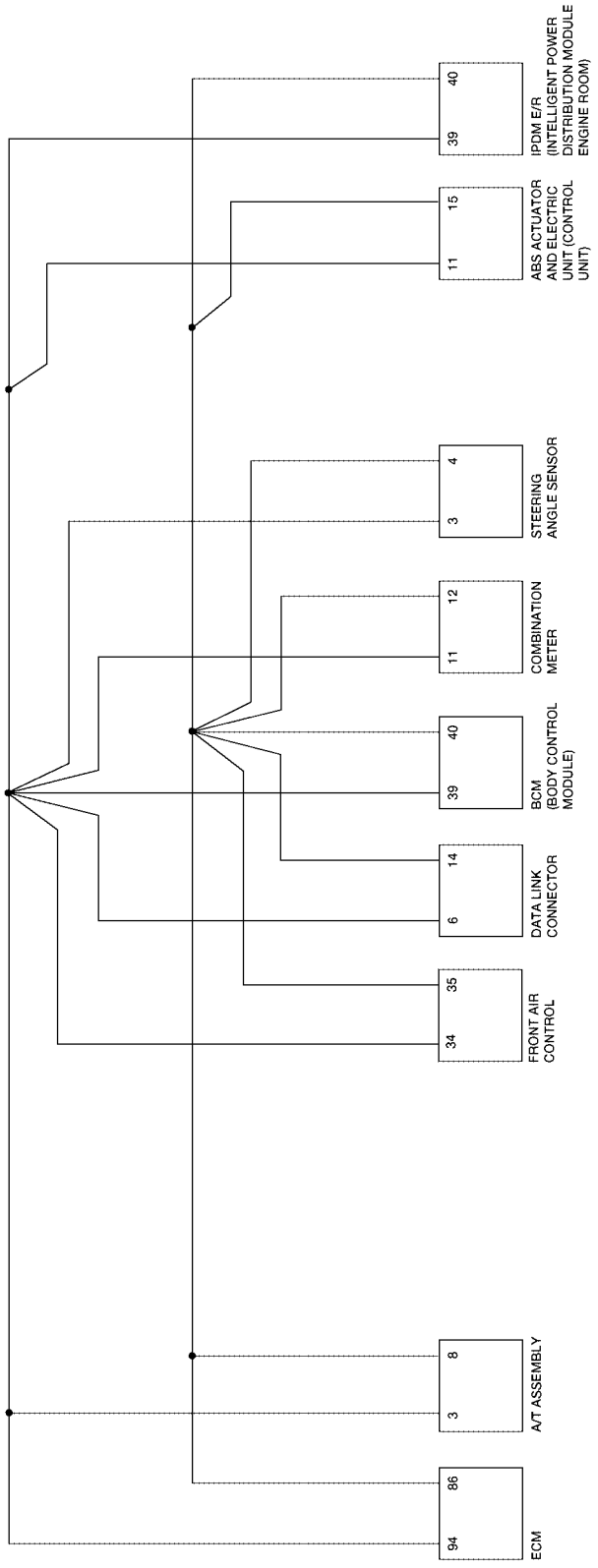
Component Parts and Harness Connector Location

UKS00393



Schematic

UKS00394

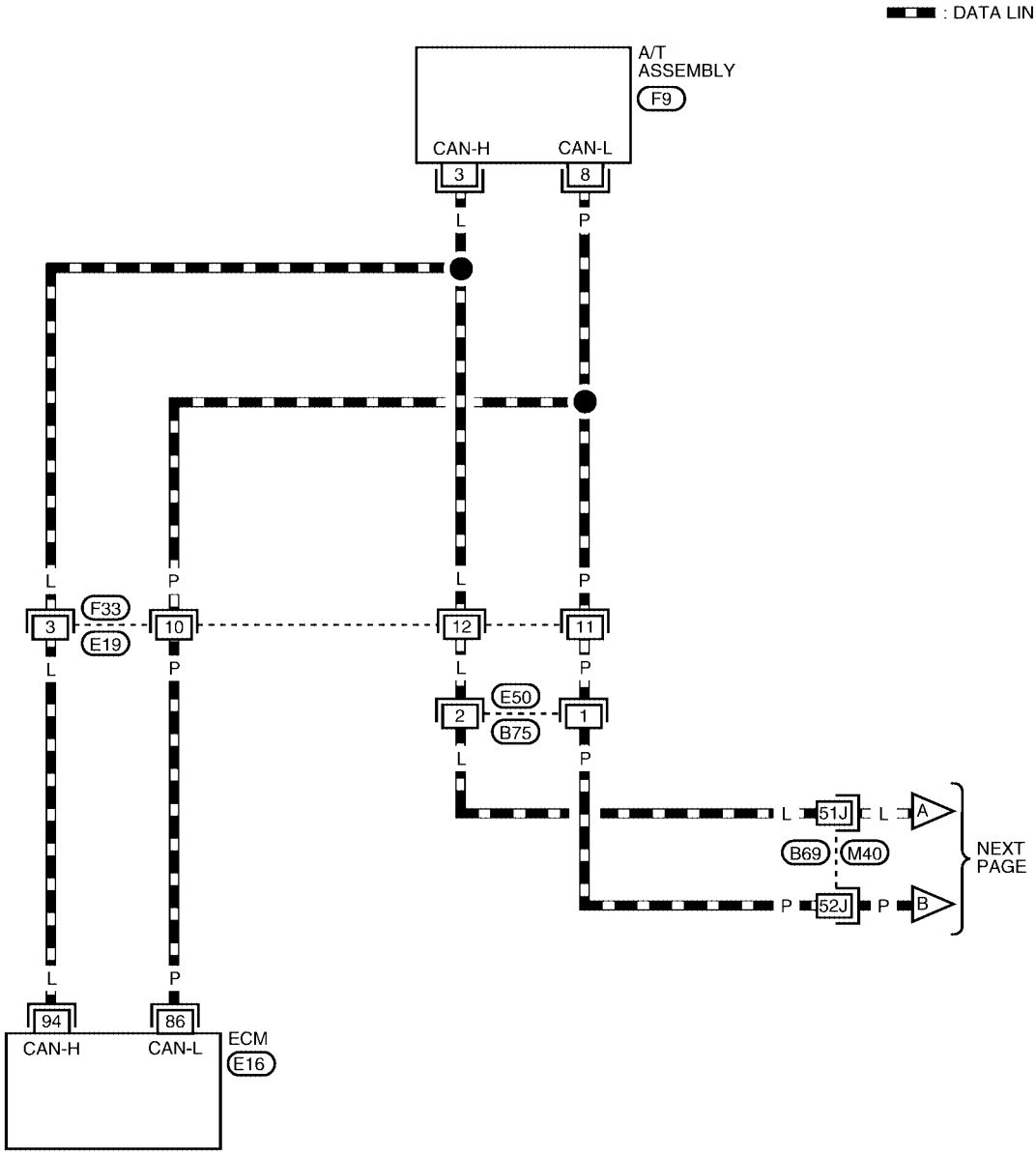


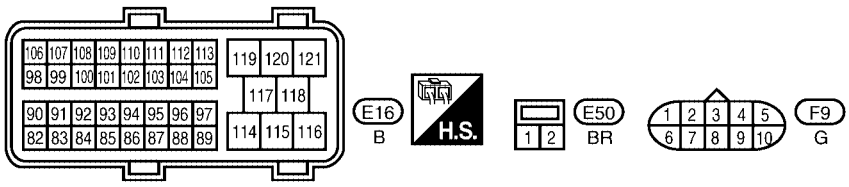
BKWA0136E

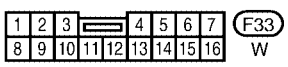
Wiring Diagram - CAN -

UKS00395

LAN-CAN-13

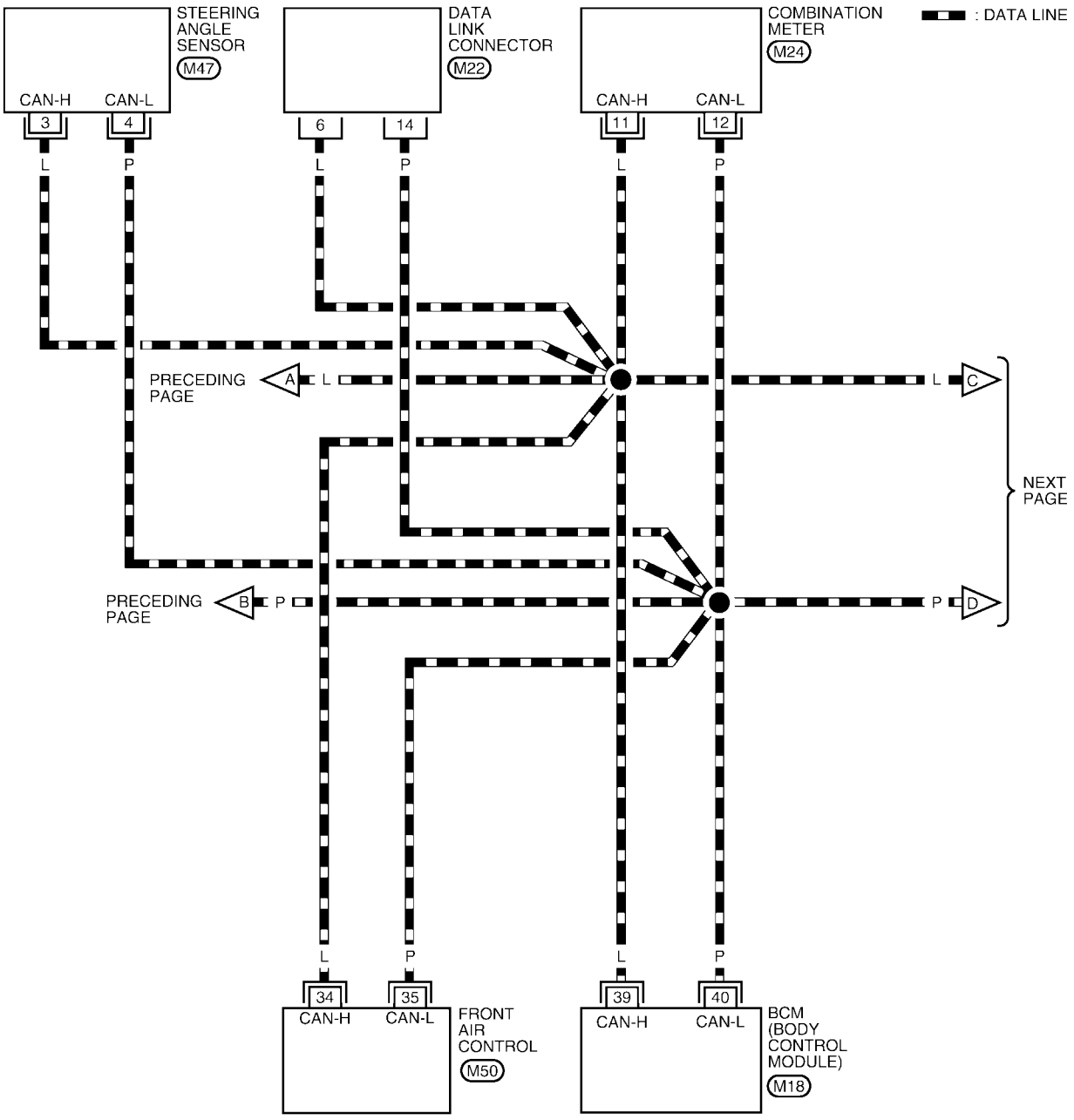


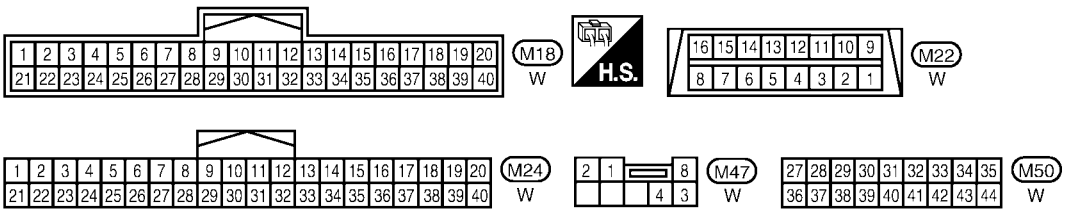




REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

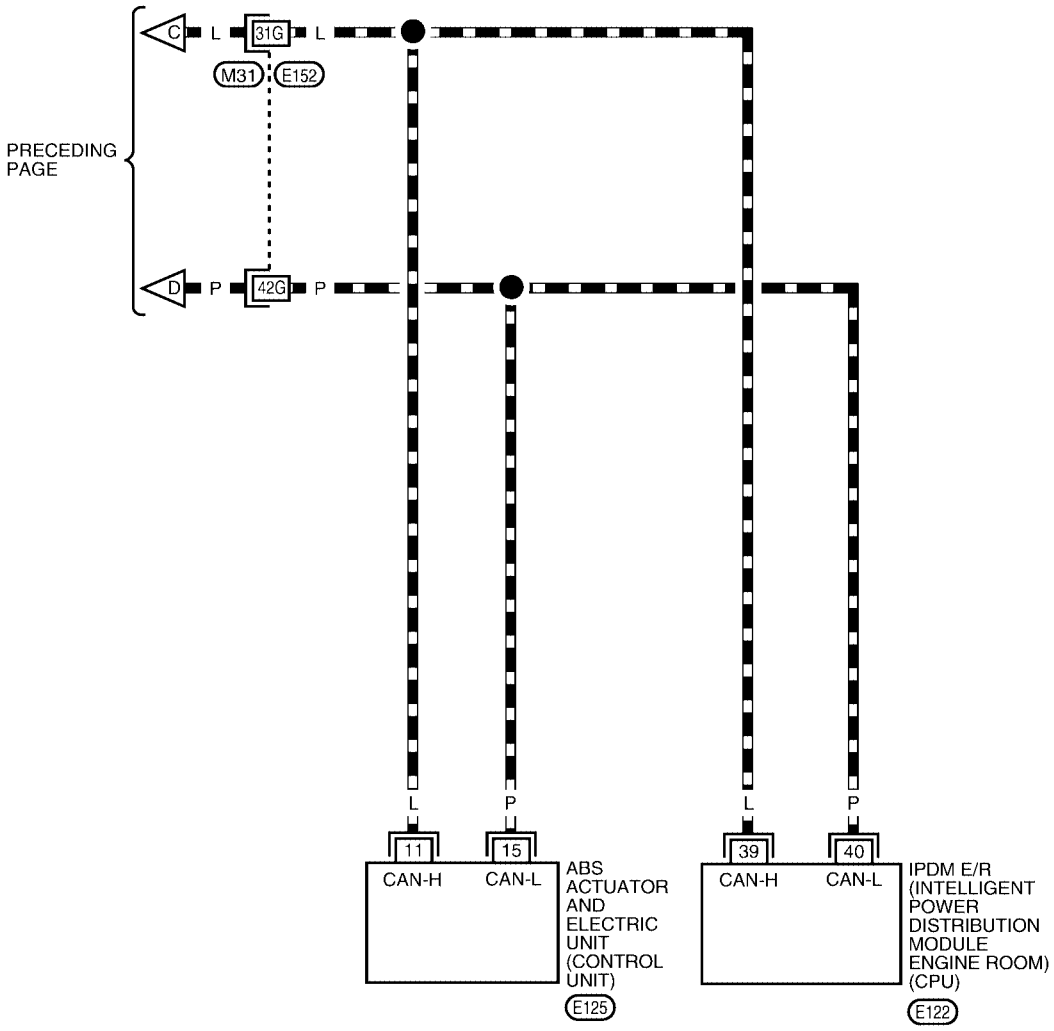
BKWA0434E

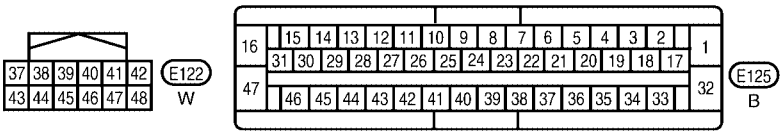

STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
3
4
DATA LINK CONNECTOR
M22
6
14
COMBINATION METER
M24
CAN-H
CAN-L
11
12
: DATA LINE
L
P
PRECEDING PAGE
A
L
L
C
NEXT PAGE
PRECEDING PAGE
B
P
P
D
34
35
CAN-H
CAN-L
FRONT AIR CONTROL
M50
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18


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

BKWA0435E

LAN-CAN-15





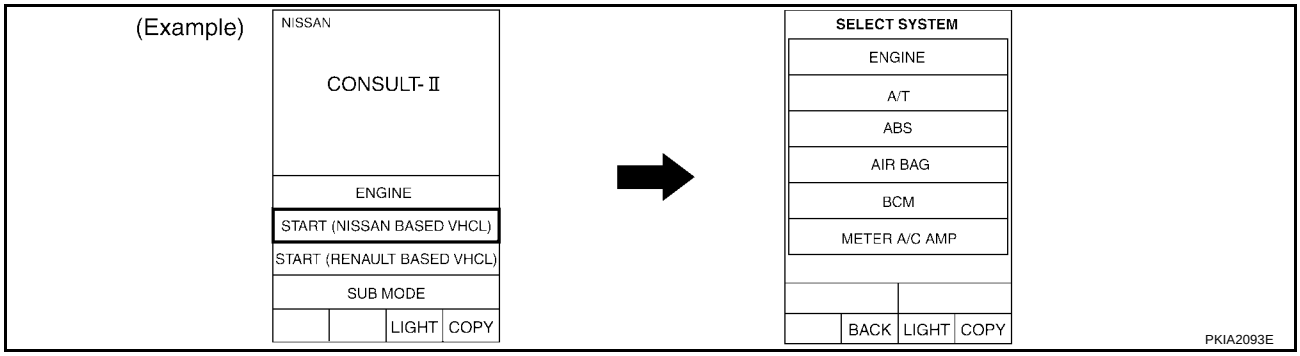
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0436E

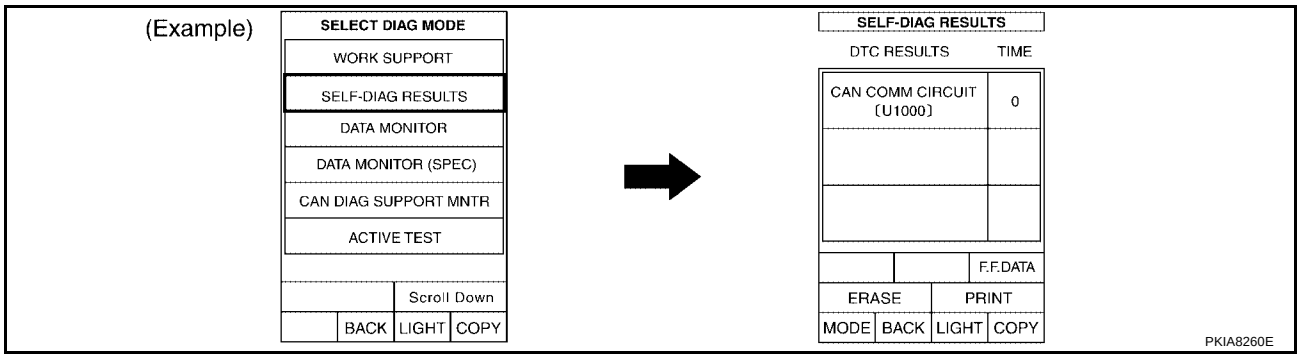
Work Flow

UKS00396

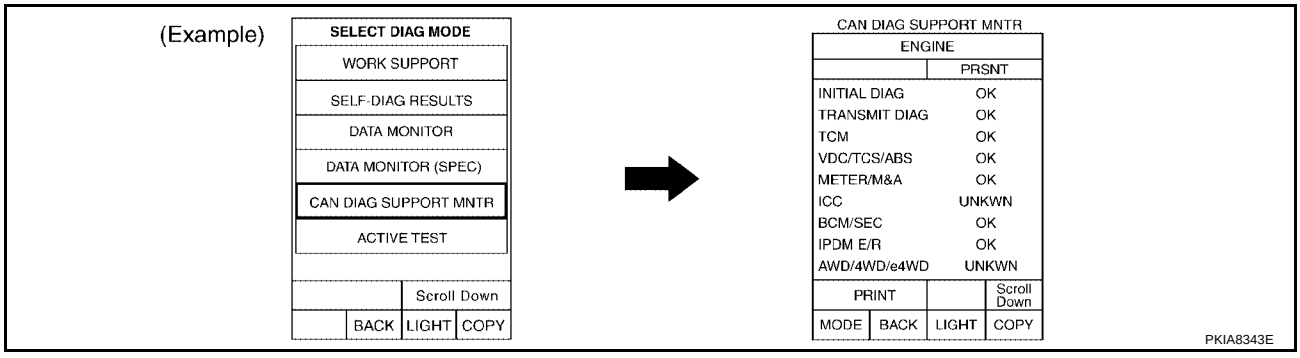
1. When there are no indications of “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-149, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-149, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-151, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

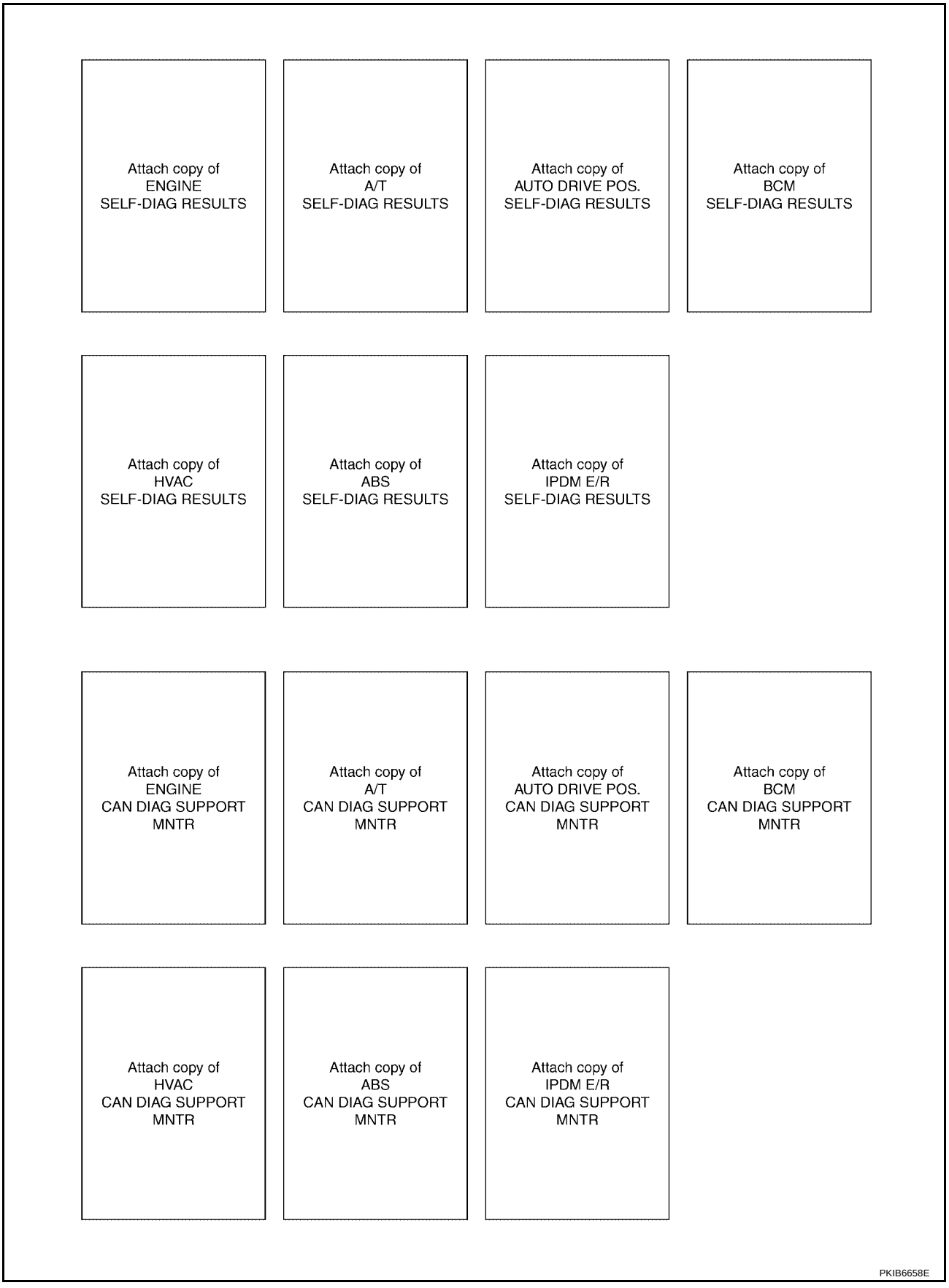
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—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

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB6642E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6658E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

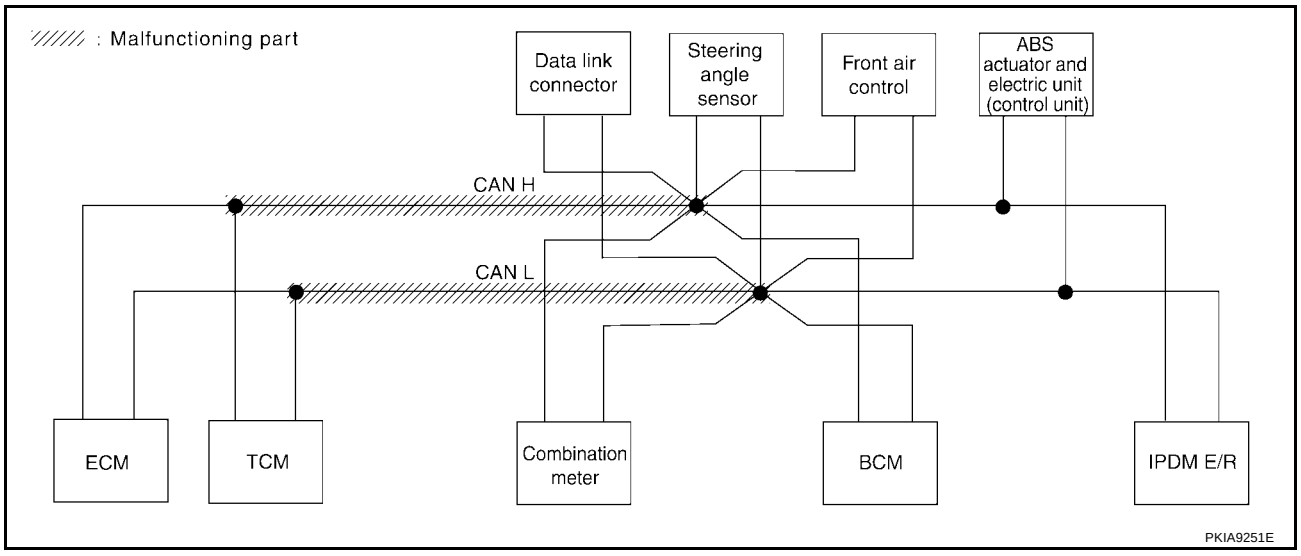
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-163, "Circuit Check Between TCM and Data Link Connector" .

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

PKIB6643E



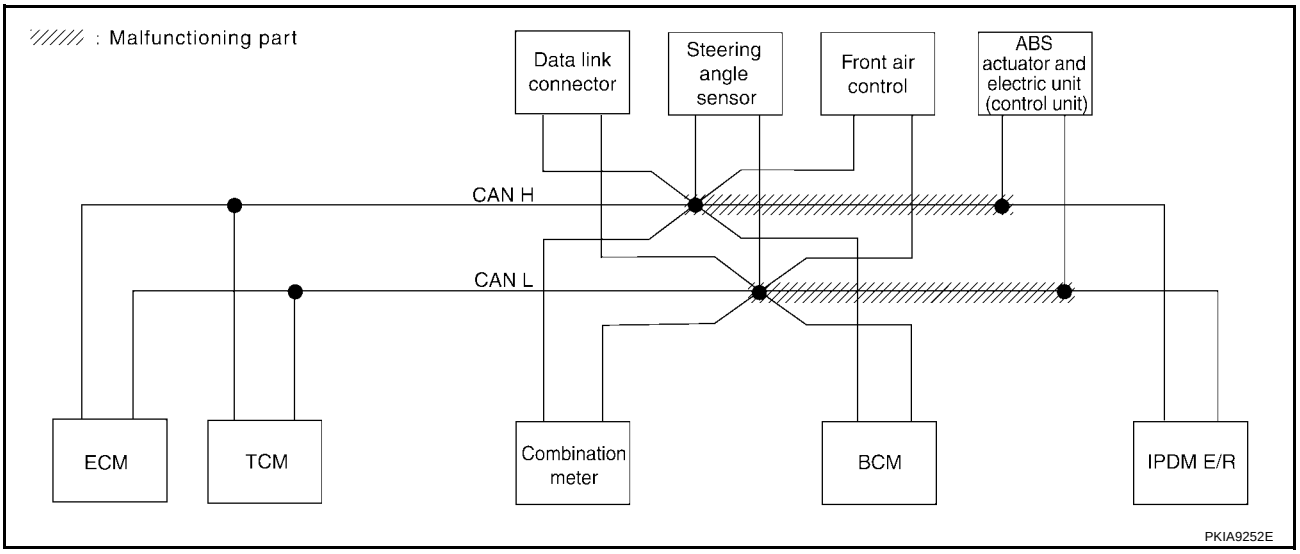
PKIA9251E

Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-164, "Circuit Check Between Data Link Connector and IPDM E/R" .

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

PKIB6644E



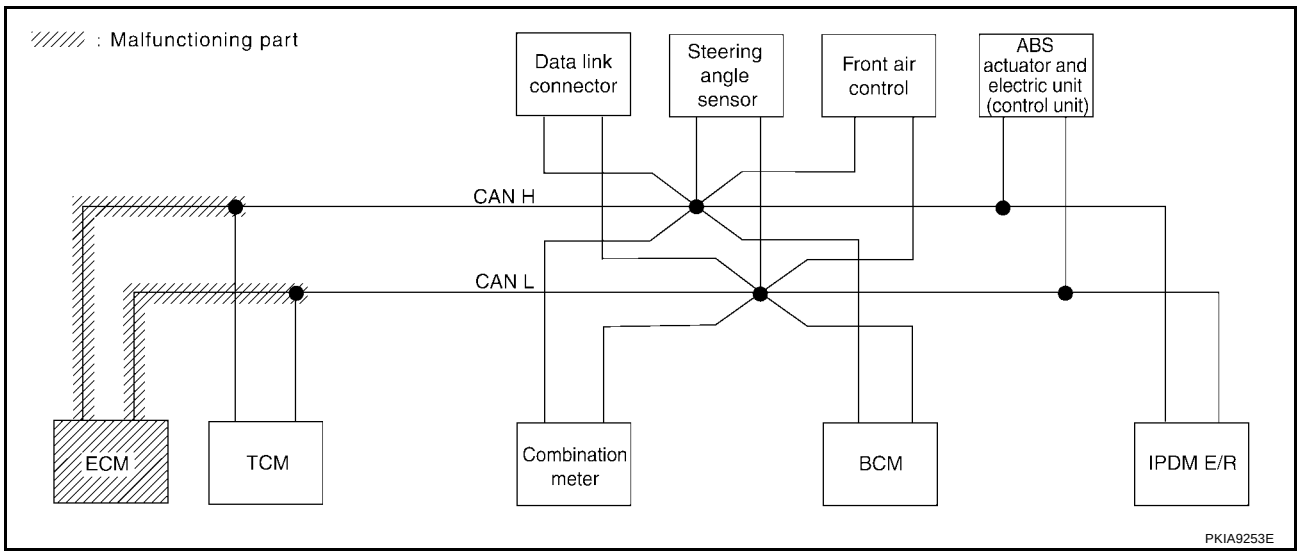
PKIA9252E

Case 3

Check ECM circuit. Refer to LAN-165, "ECM Circuit Check" .

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

PKIB6645E



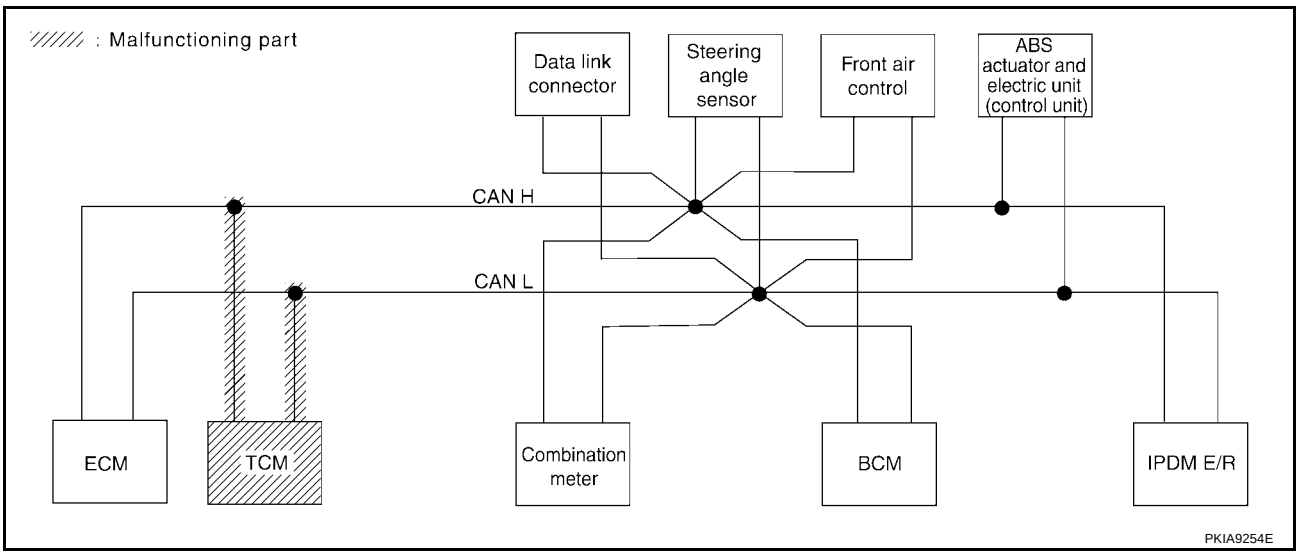
PKIA9253E

Case 4

Check TCM circuit. Refer to LAN-166, "TCM Circuit Check" .

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

PKIB6646E



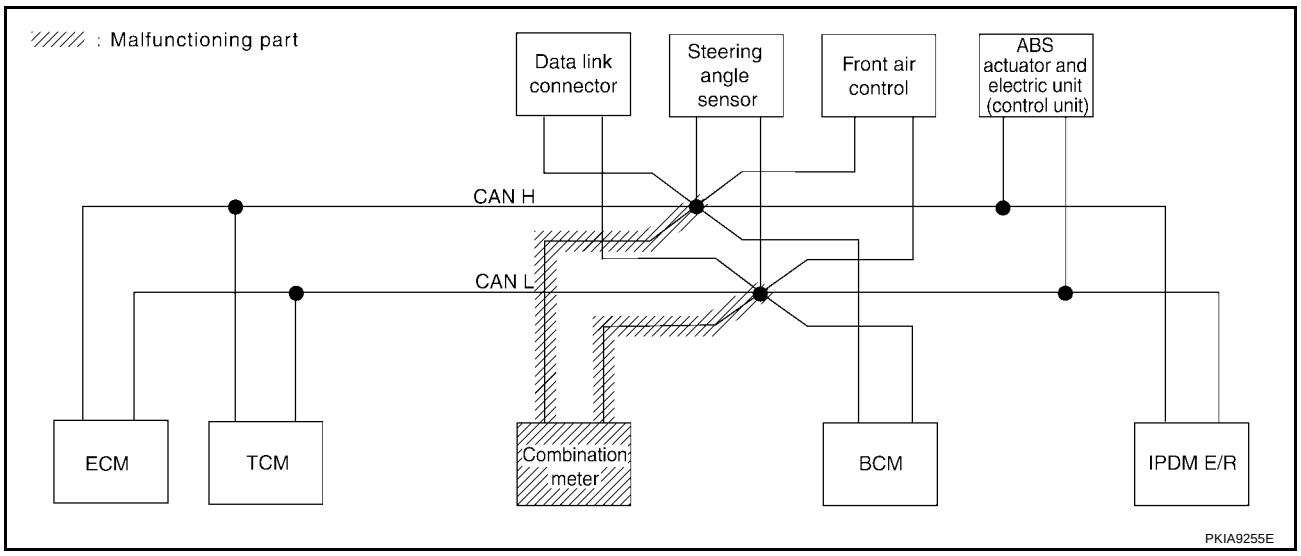
PKIA9254E

Case 5

Check combination meter circuit. Refer to LAN-166, "Combination Meter Circuit Check" .

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

PKIB6647E



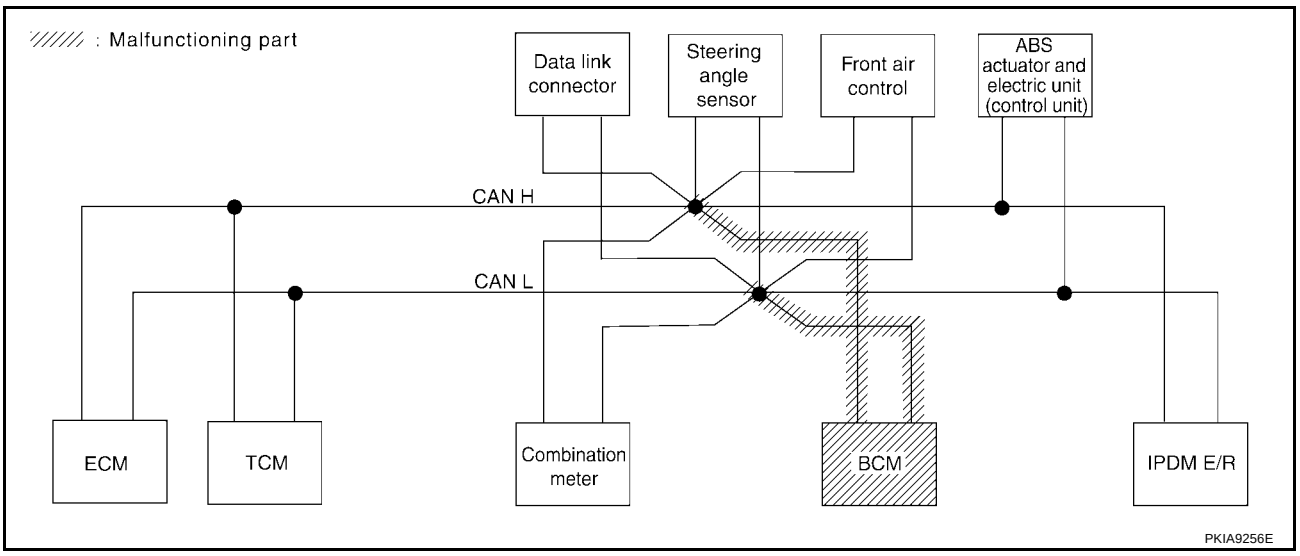
PKIA9255E

Case 6

Check BCM circuit. Refer to LAN-167, "BCM Circuit Check" .

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

PKIB6648E



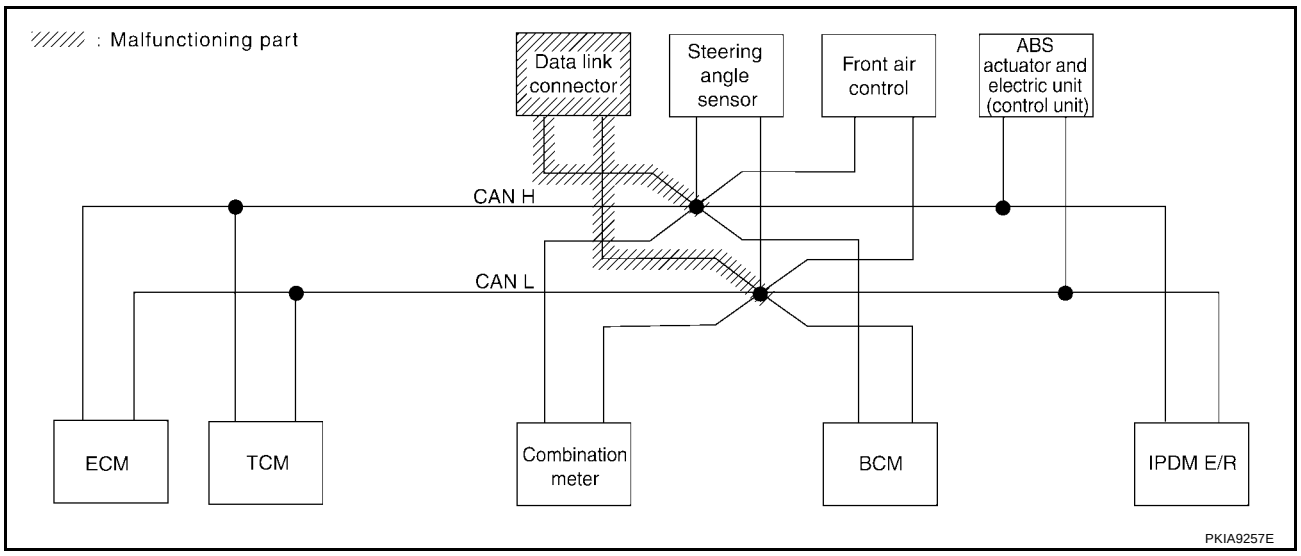
PKIA9256E

Case 7

Check data link connector circuit. Refer to LAN-167, "Data Link Connector Circuit Check" .

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

PKIB6649E



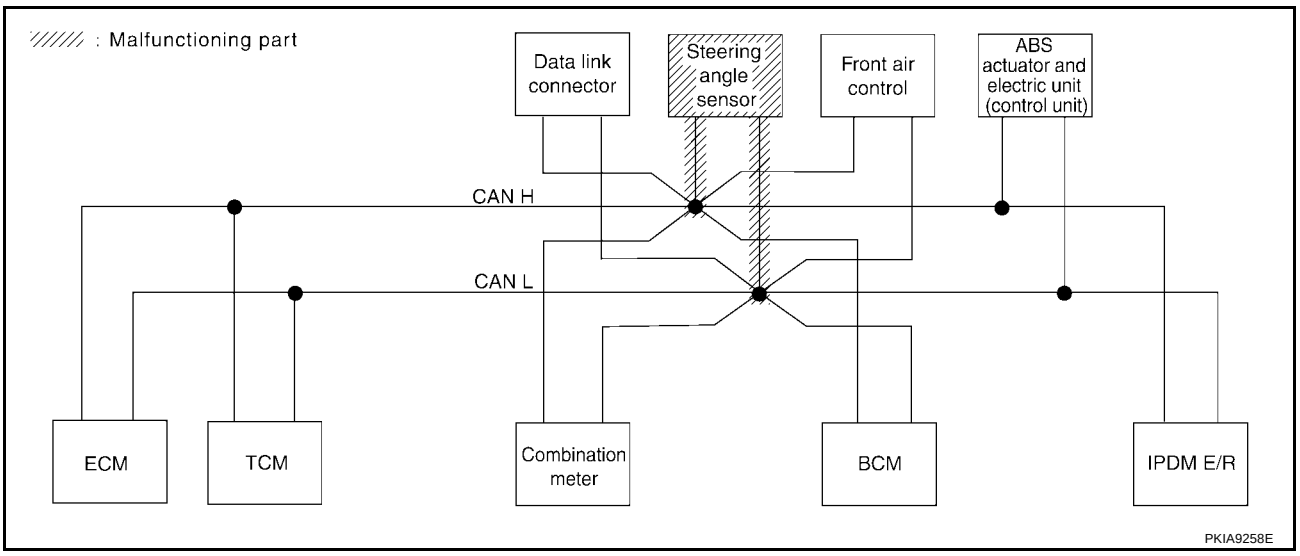
PKIA9257E

Case 8

Check steering angle sensor circuit. Refer to LAN-168, "Steering Angle Sensor Circuit Check" .

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

PKIB6650E



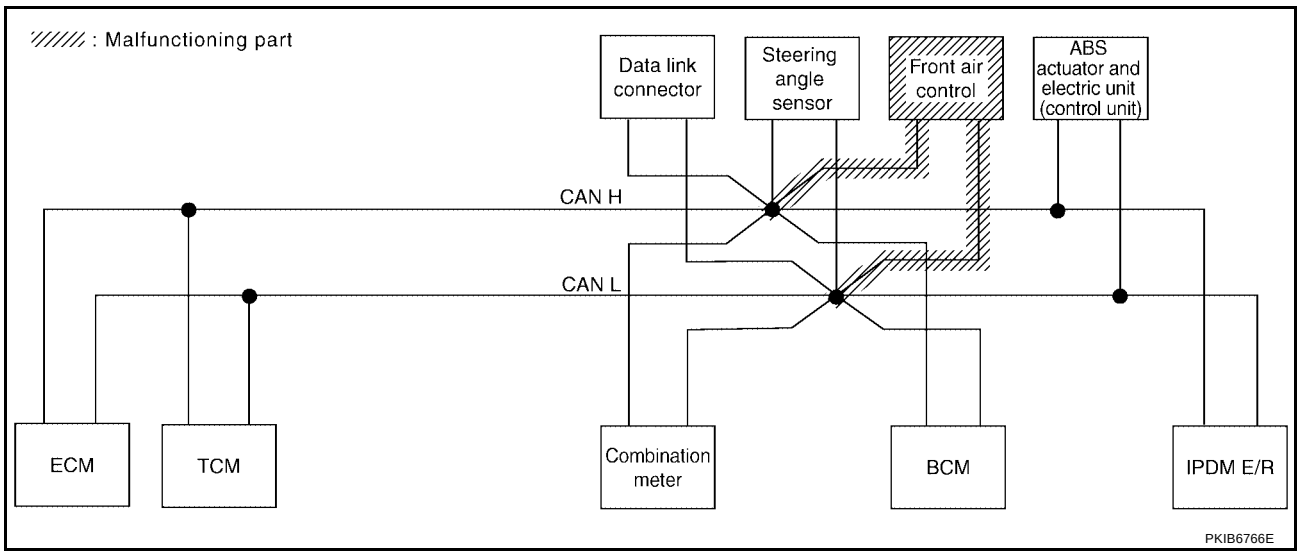
PKIA9258E

Case 9

Check front air control circuit. Refer to LAN-168, "Front Air Control Circuit Check" .

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

PKIB6651E

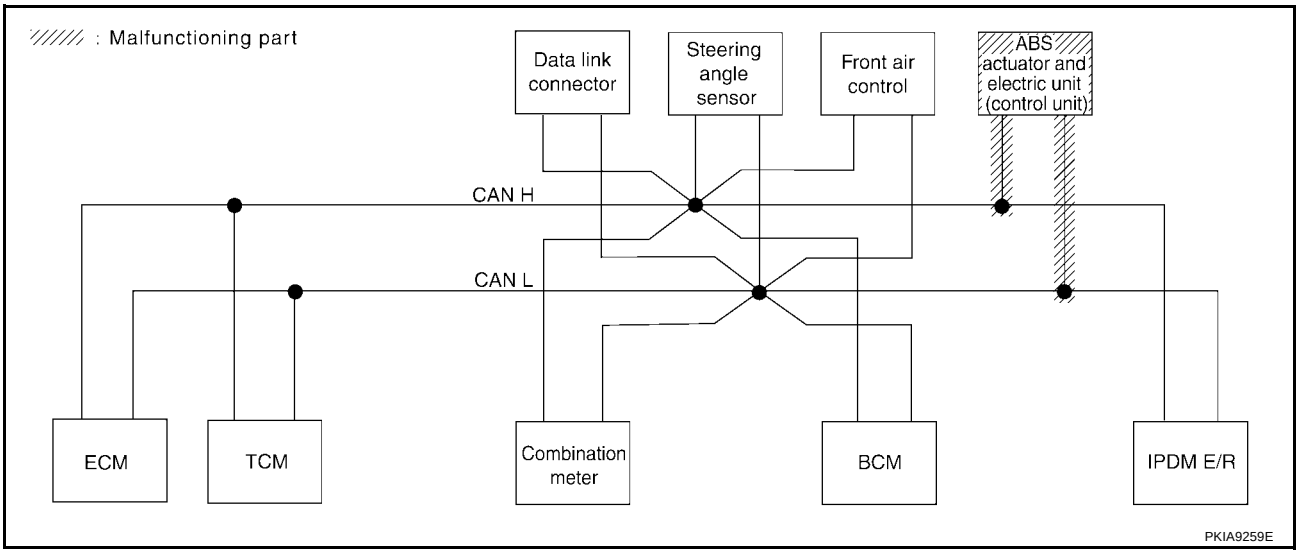


Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-169, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

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

PKIB6652E



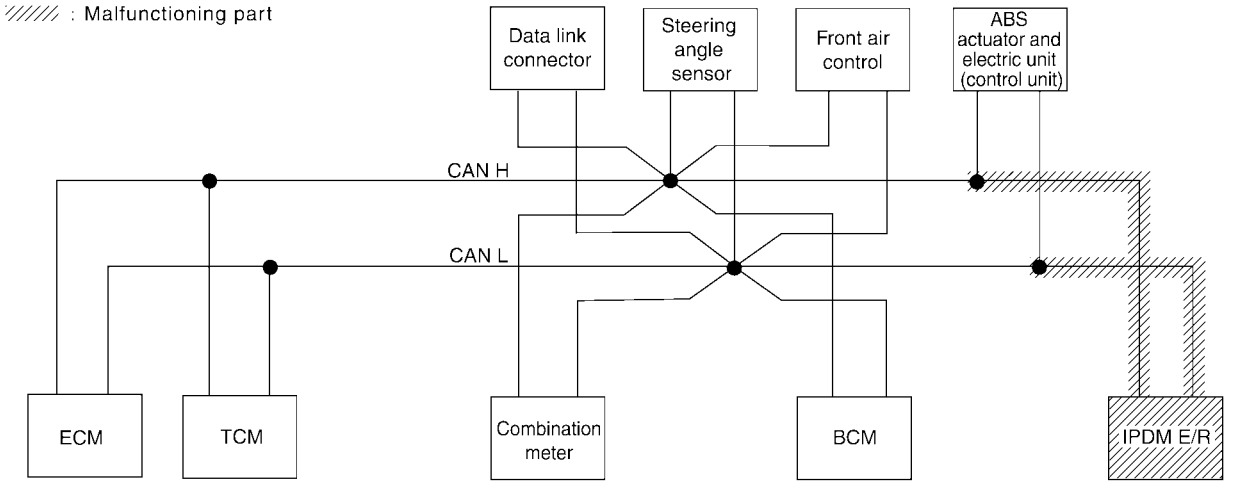
PKIA9259E

Case 11

Check IPDM E/R circuit. Refer to LAN-169, "IPDM E/R Circuit Check" .

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

PKIB6653E



PKIA9260E

Case 12

Check CAN communication circuit. Refer to LAN-170, "CAN Communication Circuit Check" .

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

PKIB6654E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-171, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIB6655E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-171, "IPDM E/R Ignition Relay Circuit Check" .

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

PKIB6656E

Circuit Check Between TCM and Data Link Connector

UKS00397

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

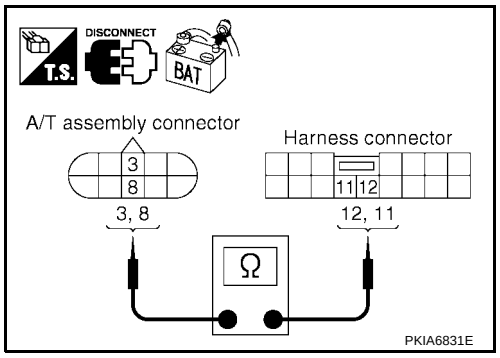
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



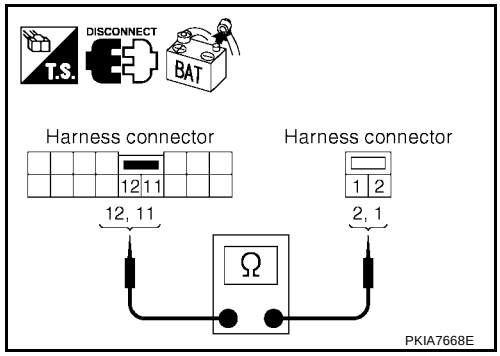
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



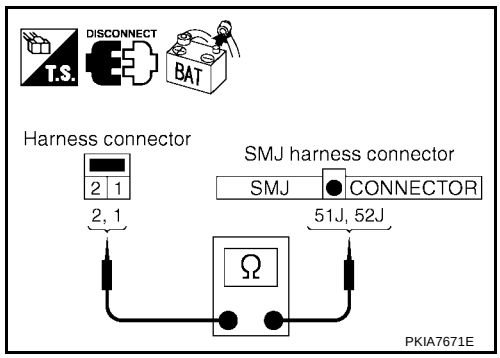
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B69 terminals 51J (L), 52J (P).

2 (L) - 51J (L) : Continuity should exist.
1 (P) - 52J (P) : Continuity should exist.



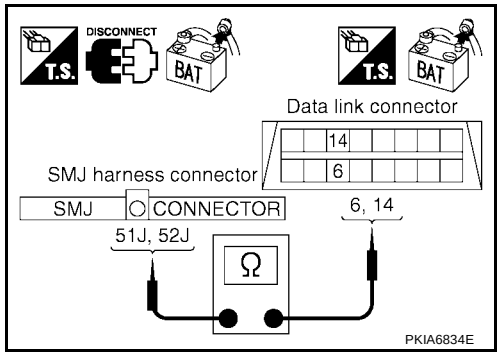
OK or NG

OK >> GO TO 5.
NG >> Repair harness.

5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-148, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS00398

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

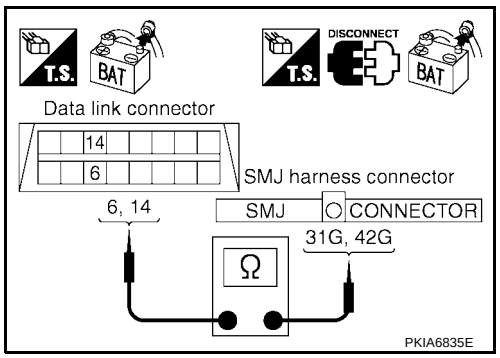
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.



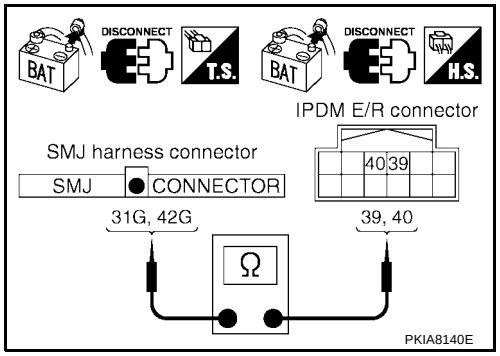
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-148, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS00399

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

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

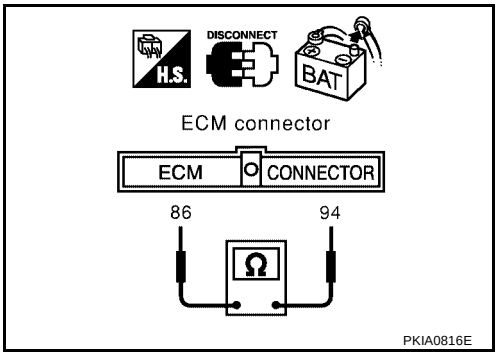
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

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



TCM Circuit Check

UKS0039A

1. CHECK CONNECTOR

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

OK or NG

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

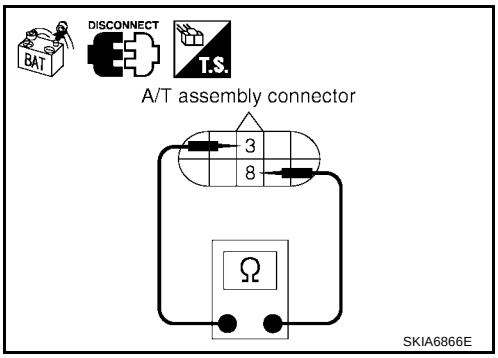
2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.



Combination Meter Circuit Check

UKS0039B

1. CHECK CONNECTOR

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

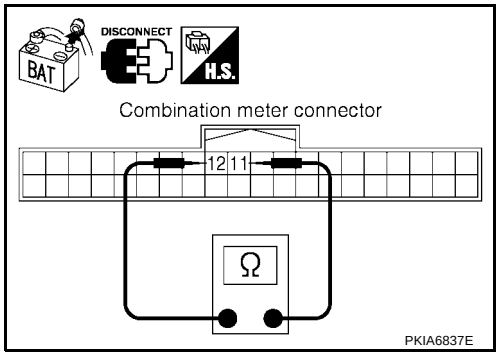
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

UKS0039C

BCM Circuit Check

1. CHECK CONNECTOR

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

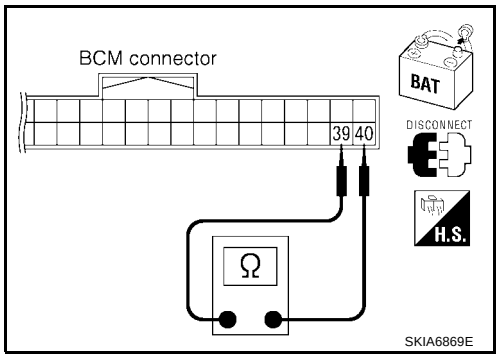
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

UKS0039D

Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

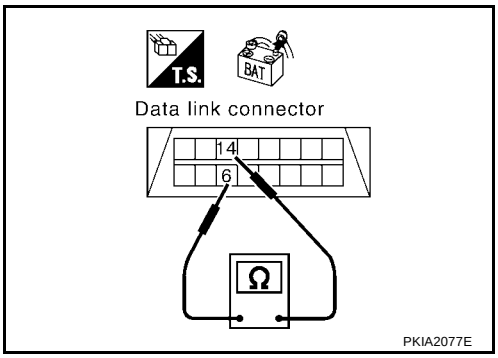
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-148, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS0039E

1. CHECK CONNECTOR

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

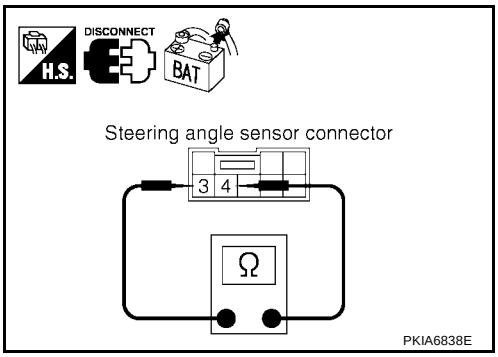
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω



OK or NG

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

Front Air Control Circuit Check

UKS003KP

1. CHECK CONNECTOR

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

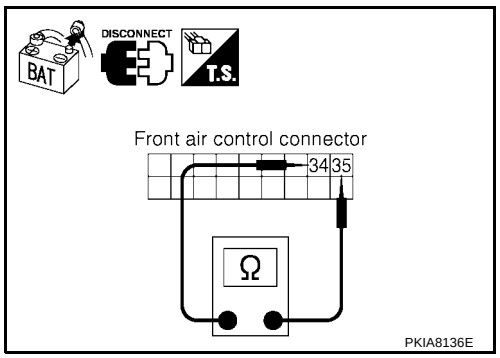
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

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

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0039F

1. CHECK CONNECTOR

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

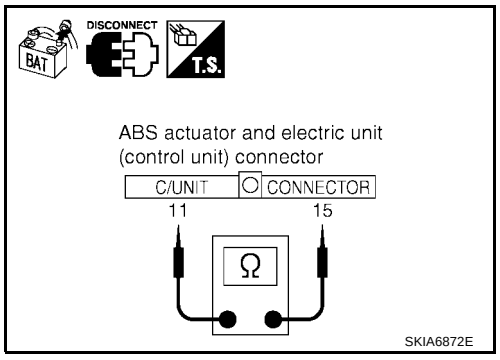
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS0039G

1. CHECK CONNECTOR

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

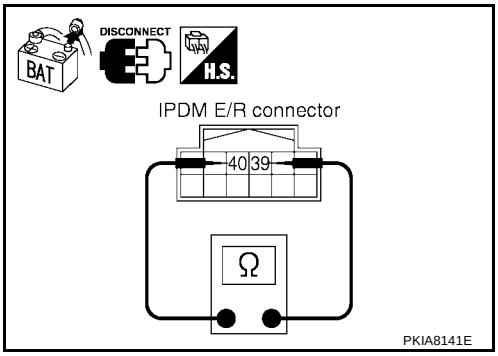
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS0039H

1. CHECK CONNECTOR

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

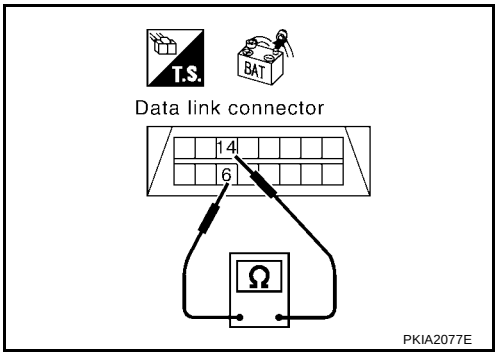
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

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

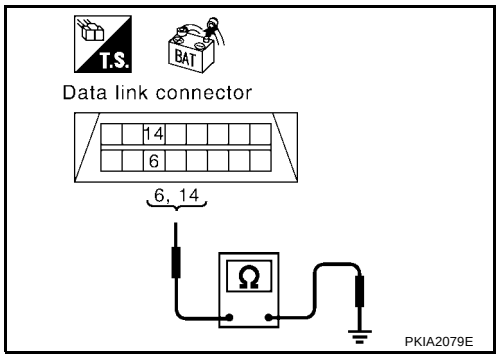
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-171, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS0039I

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

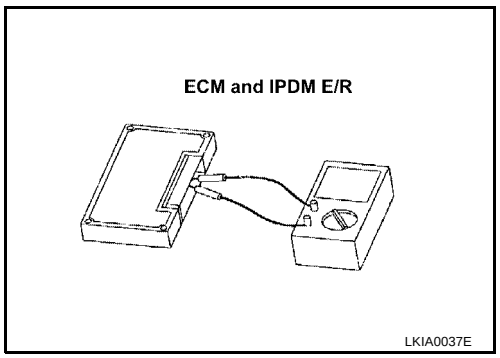
Component Inspection

UKS0039J

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 6)

PFP:23710

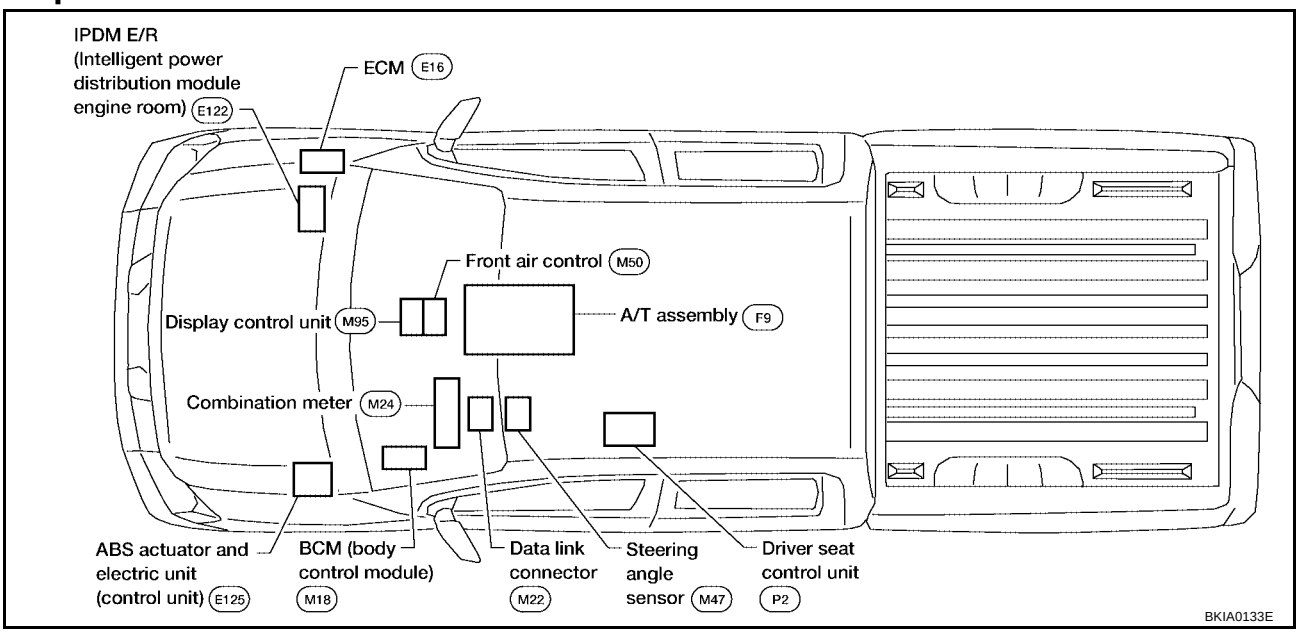
System Description

UKS001F1

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.

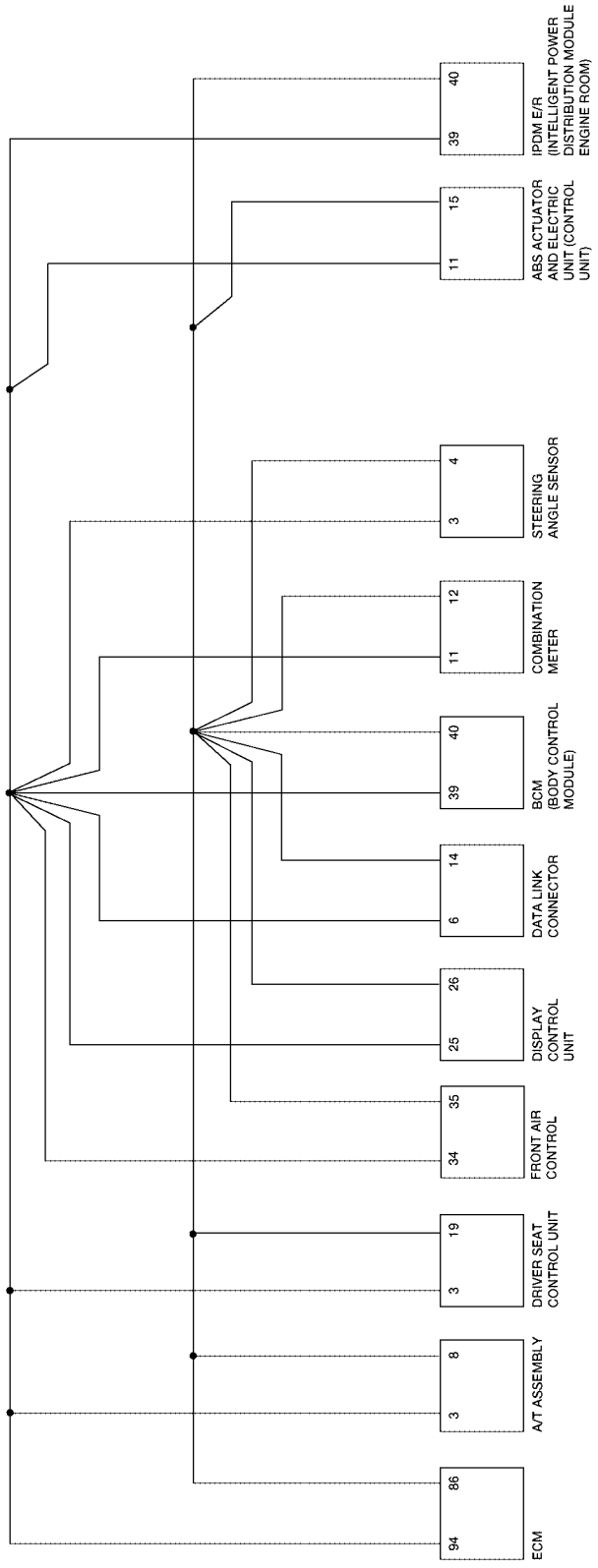
Component Parts and Harness Connector Location

UKS001F2



Schematic

UKS001F3

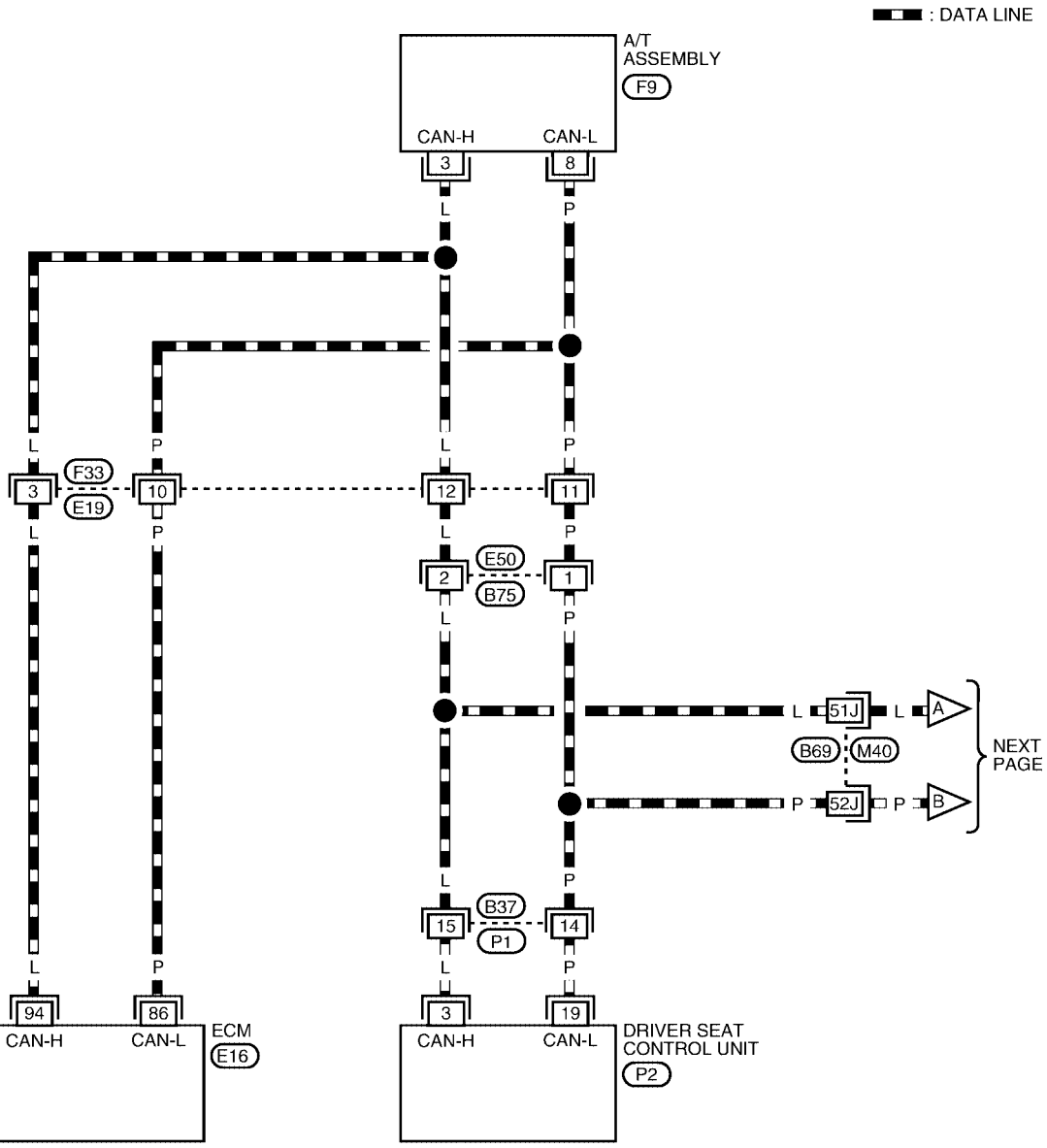


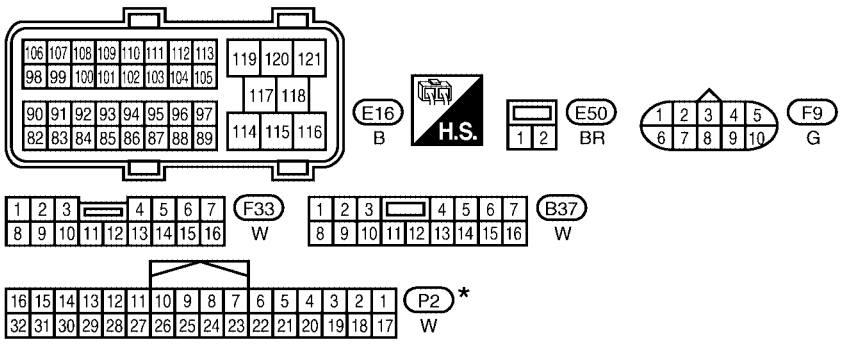
BKWA0140E

Wiring Diagram - CAN -

UKS001F4

LAN-CAN-16



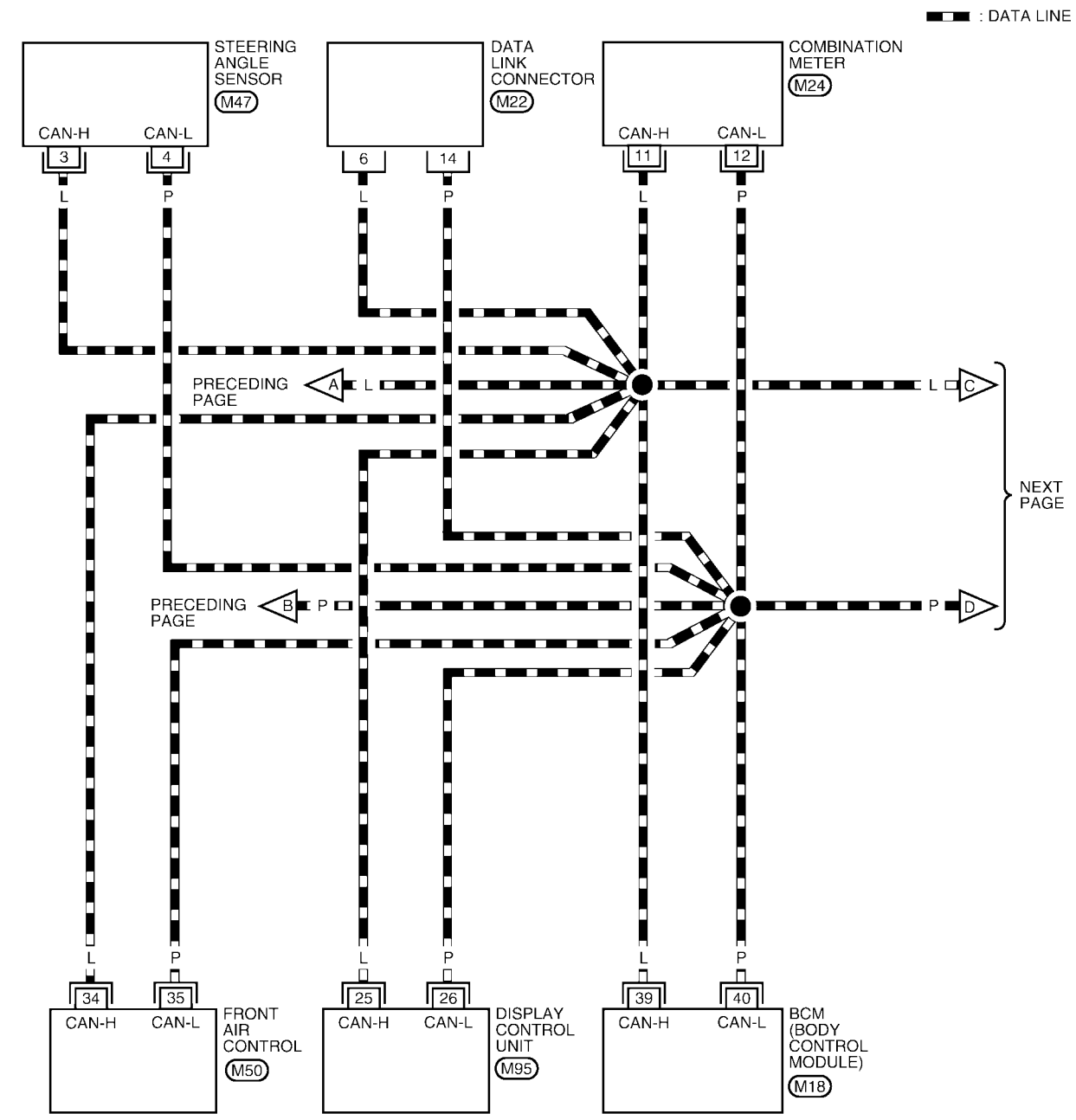


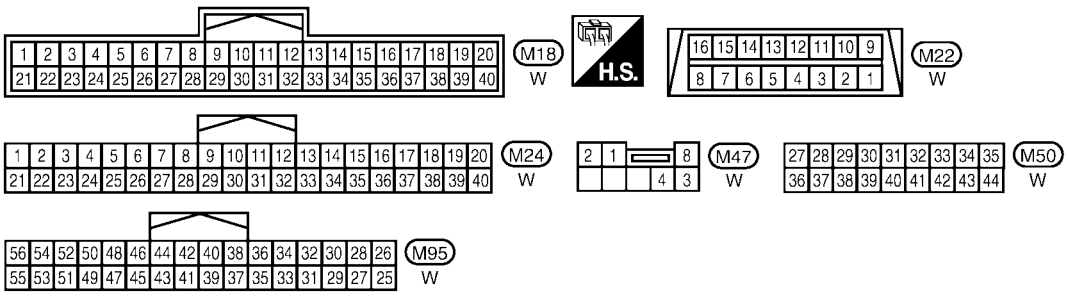
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

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

BKWA0440E

LAN-CAN-17

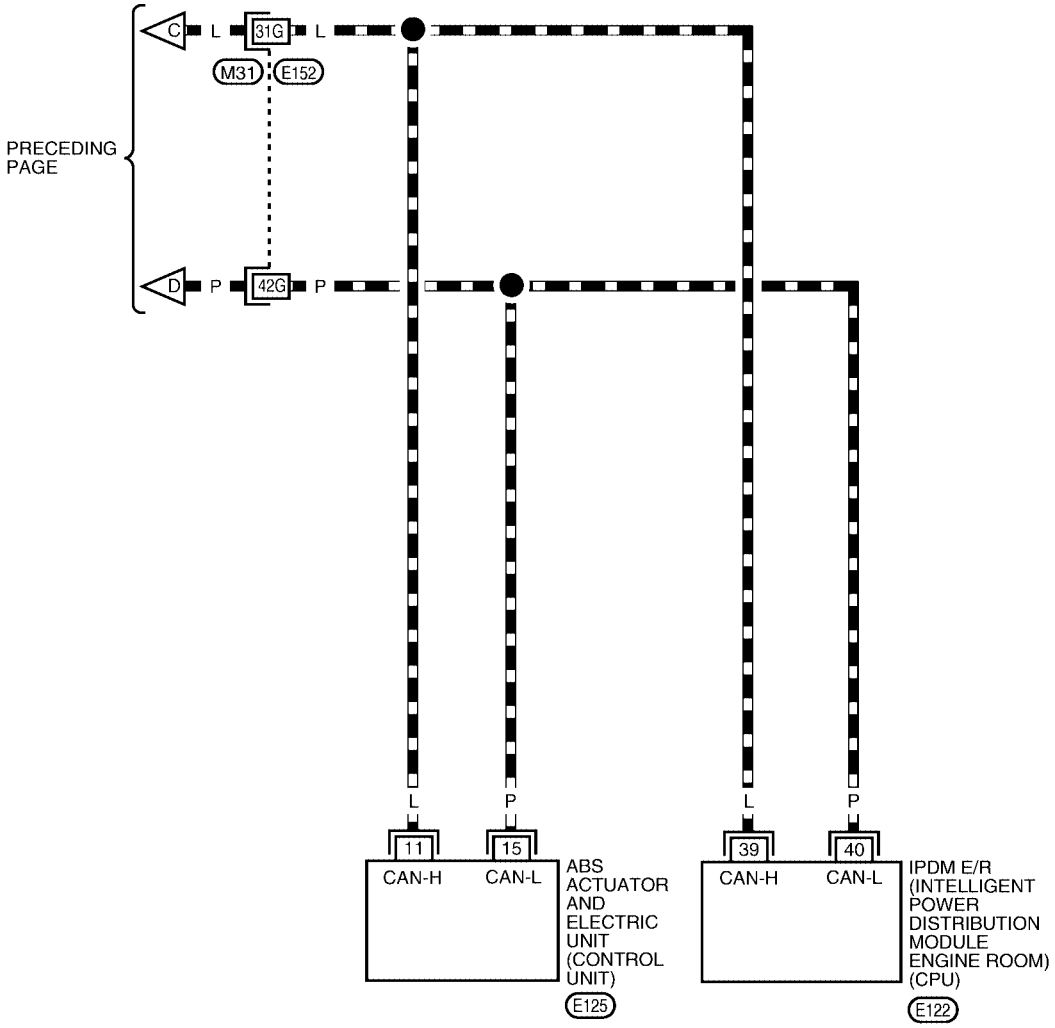


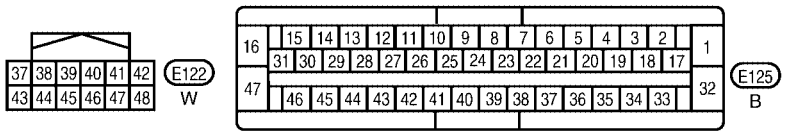


BKWA0441E

LAN-CAN-18

: DATA LINE





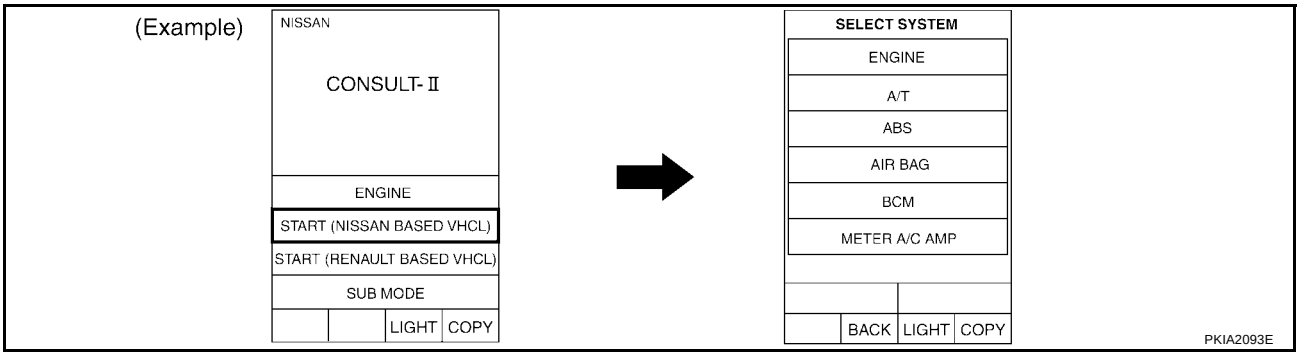
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0442E

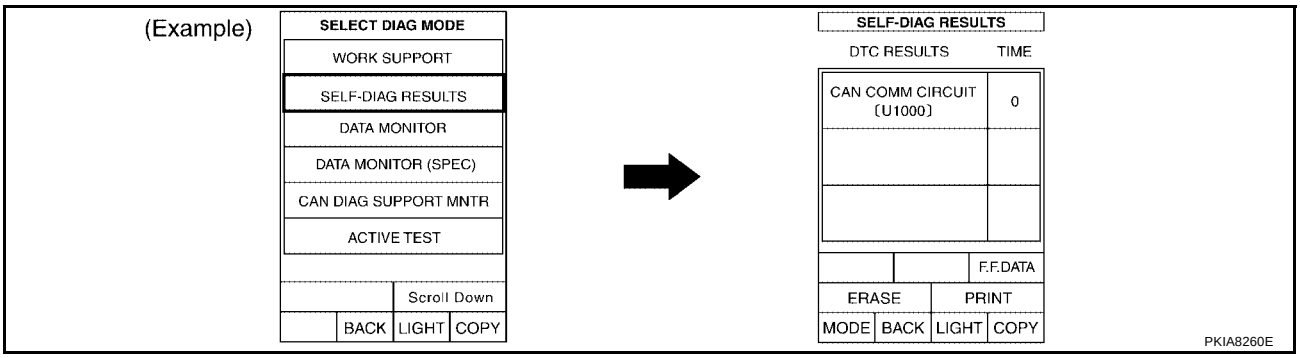
Work Flow

UKS001F5

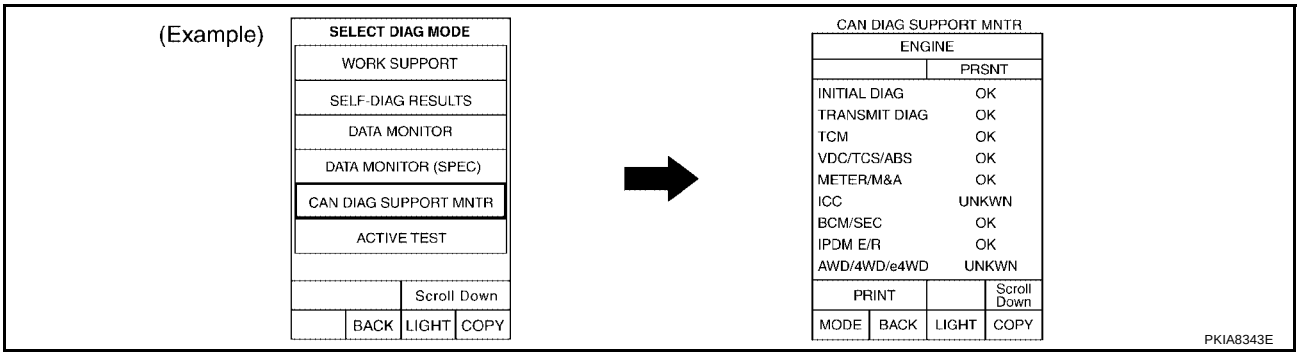
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-179, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-179, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-148, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-179, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-179, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-148, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-181, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

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

PKIB6657E

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

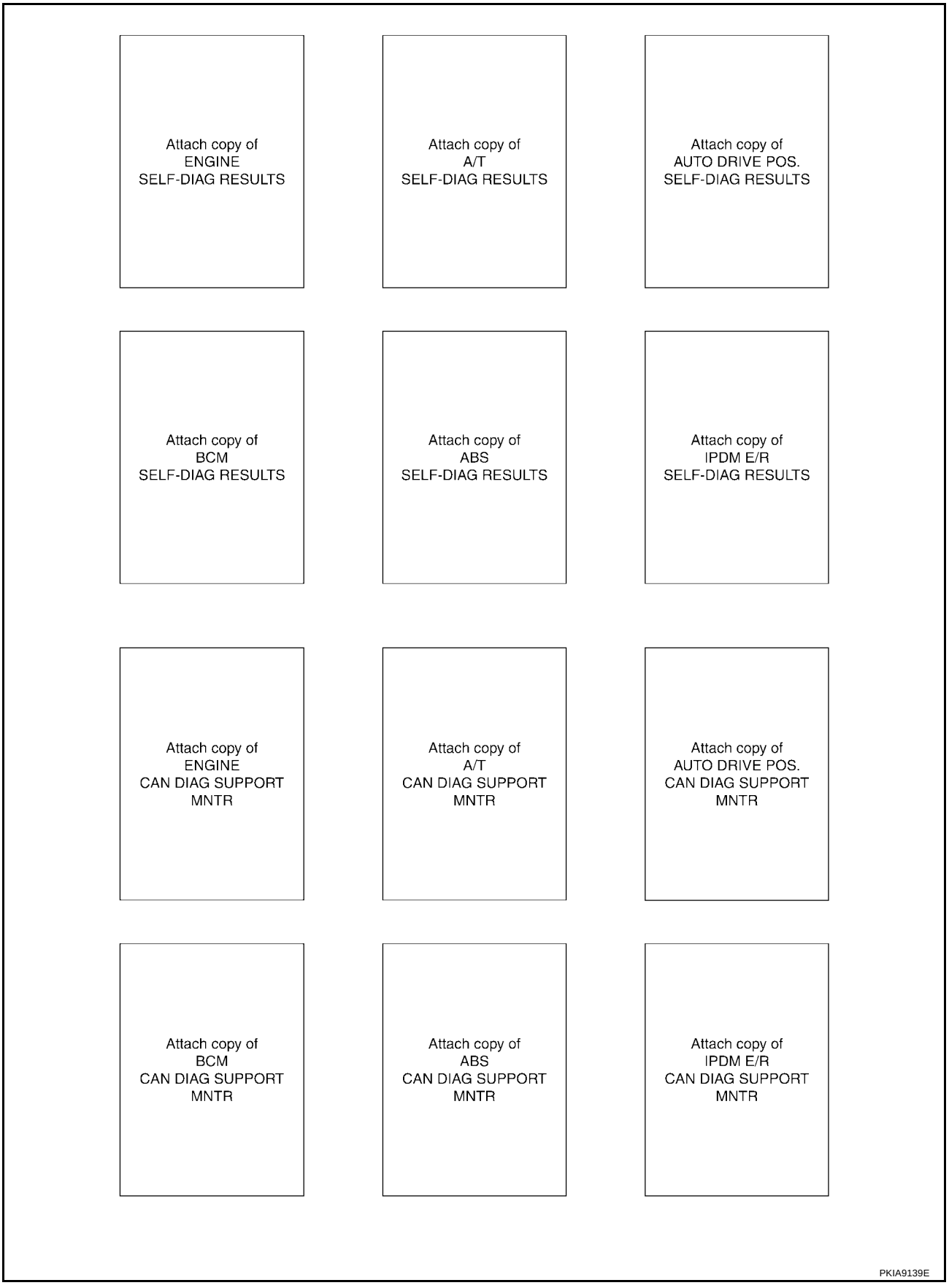
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

Attach copy of
ABS
CAN DIAG SUPPORT
MNTR

Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR



PKIA9139E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

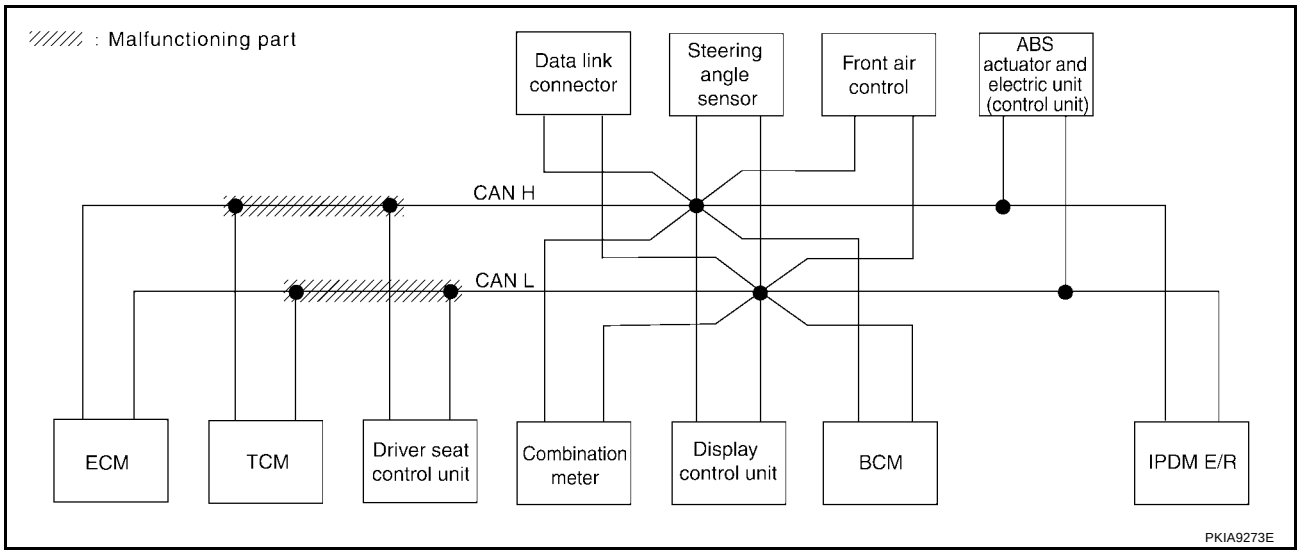
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-196, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6659E



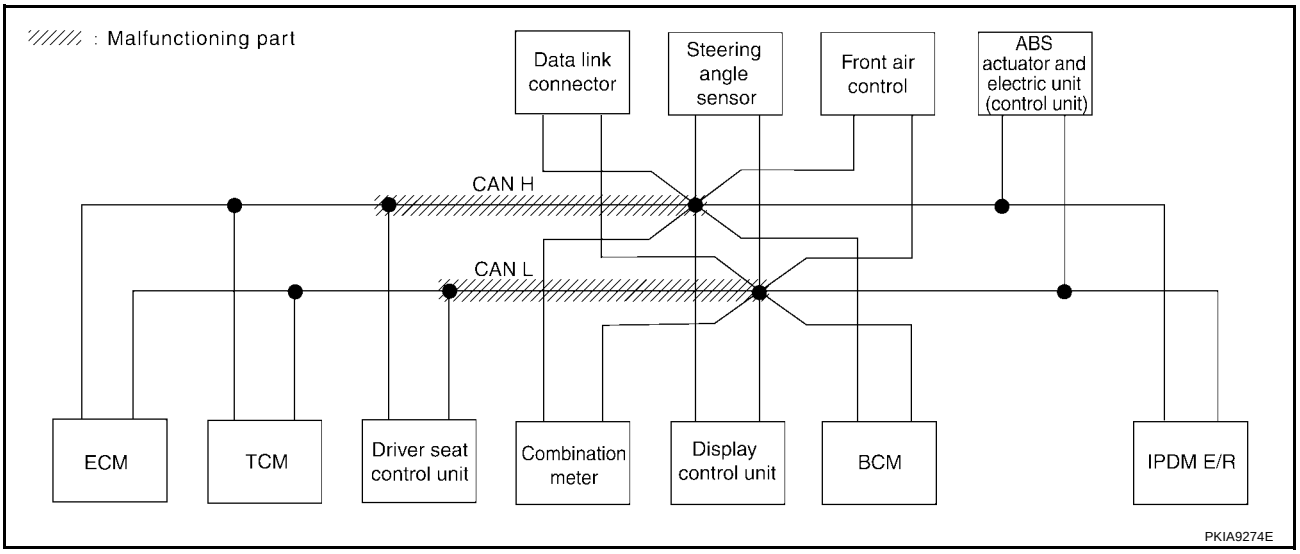
PKIA9273E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-197, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	✓ UNKWN	—	✓ UNKWN	—	—	✓ UNKWN	✓ UNKWN
A/T	—	NG	UNKWN	UNKWN	—	✓ UNKWN	—	—	—	—	✓ UNKWN	—
AUTO DRIVE POS.	✓ 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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	✓ UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	✓ UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	✓ UNKWN	✓ UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	✓ UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6660E



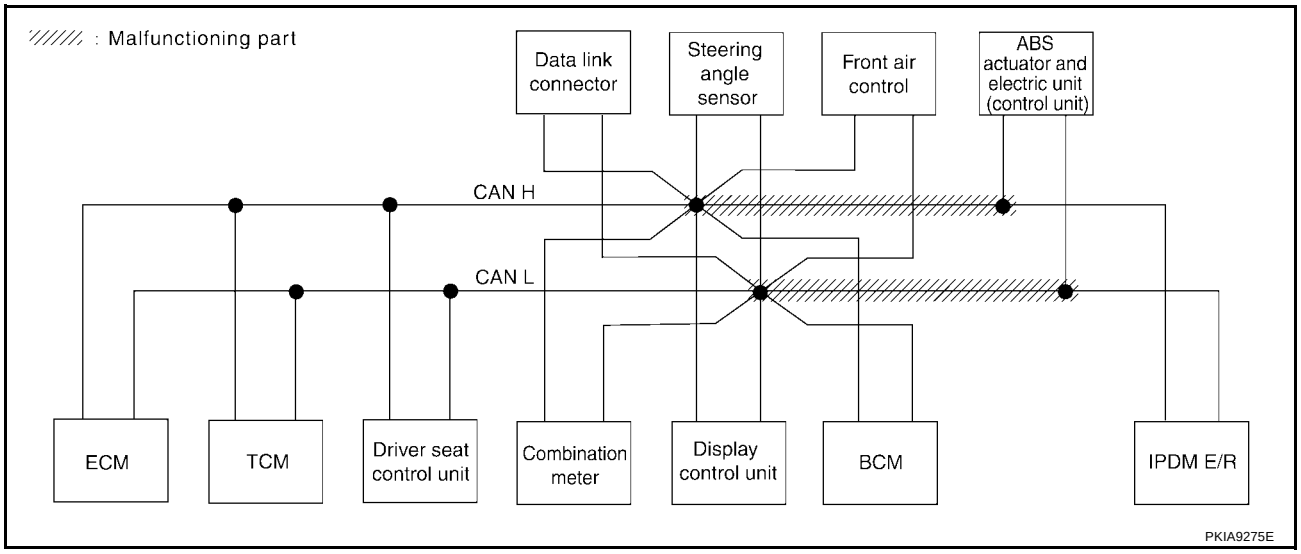
PKIA9274E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-198, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN ✓	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN ✓	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6661E



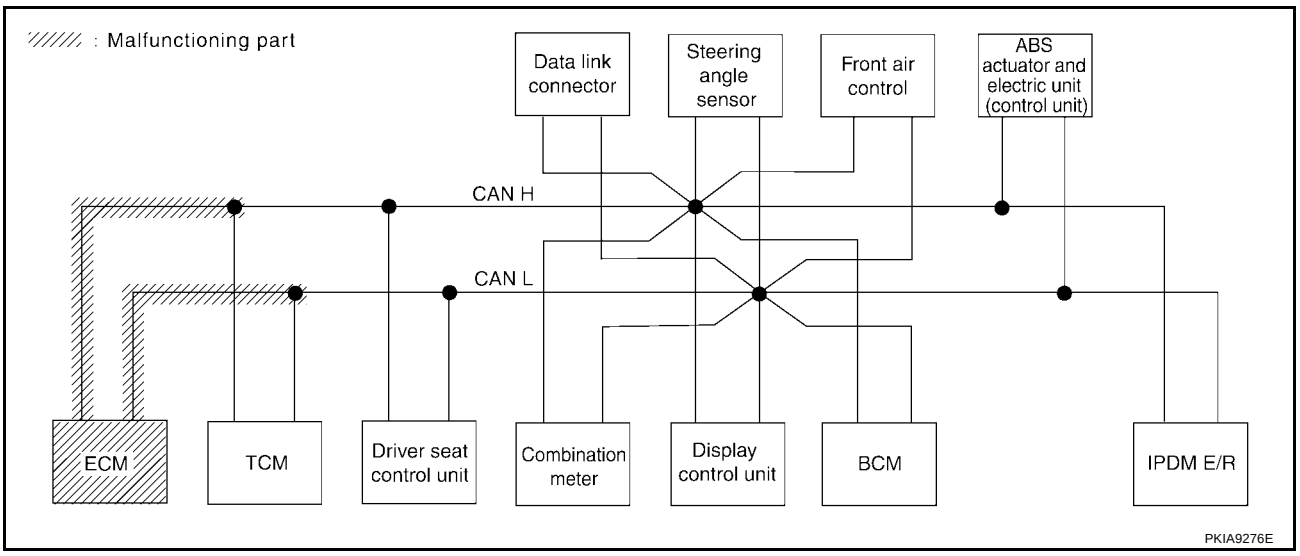
PKIA9275E

Case 4

Check ECM circuit. Refer to LAN-199, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6662E



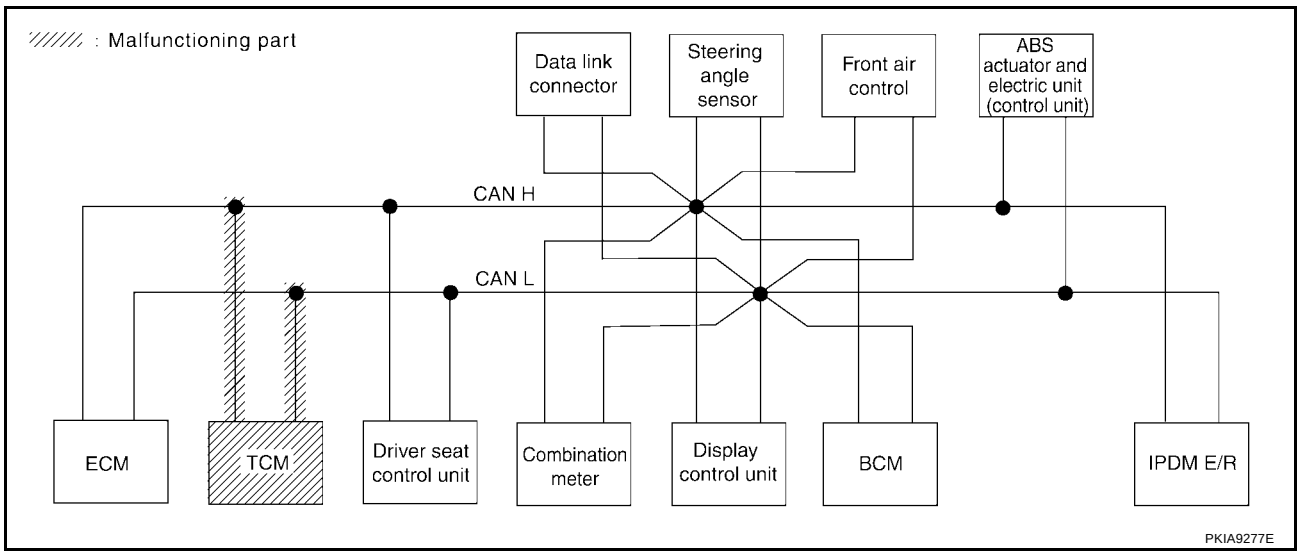
PKIA9276E

Case 5

Check TCM circuit. Refer to LAN-199, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	—	—	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6663E



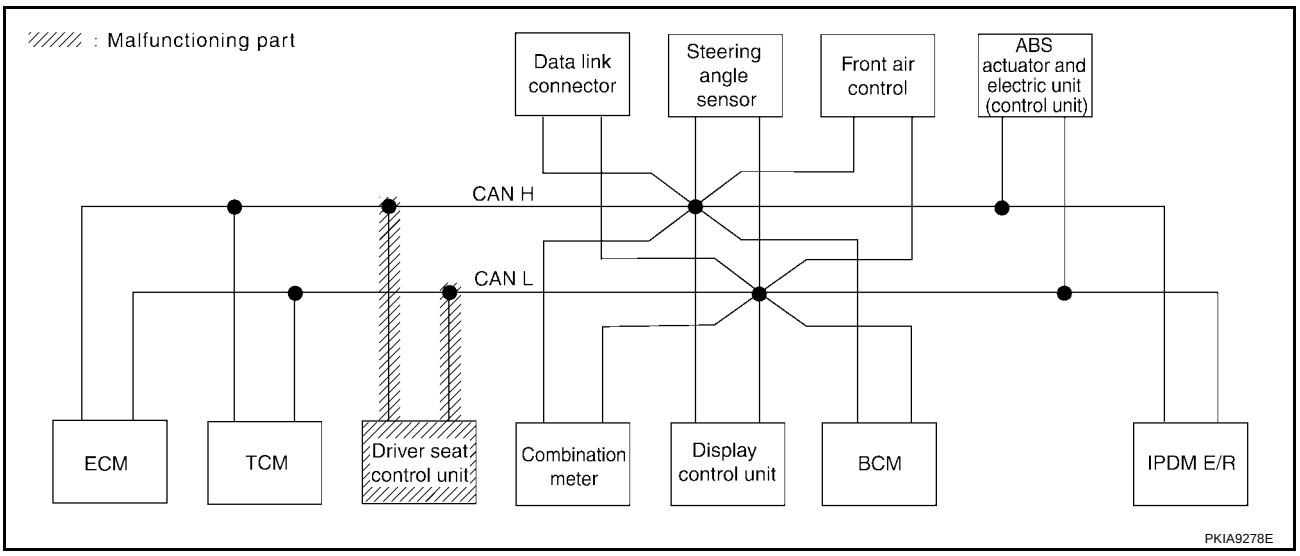
PKIA9277E

Case 6

Check driver seat control unit circuit. Refer to LAN-200, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6664E



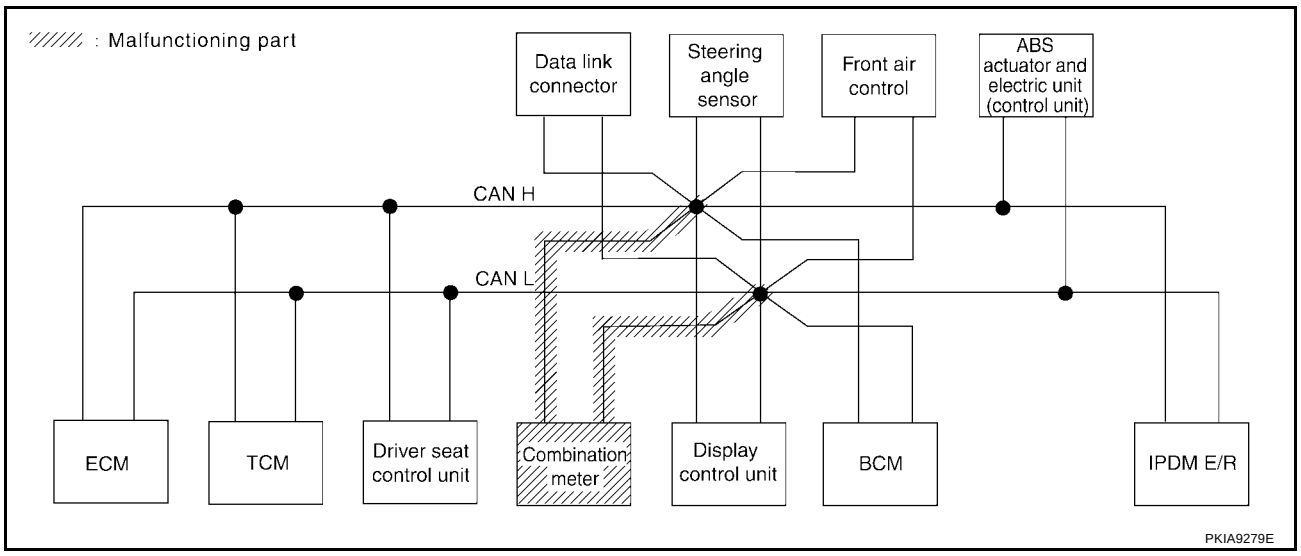
PKIA9278E

Case 7

Check combination meter circuit. Refer to LAN-200, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6665E



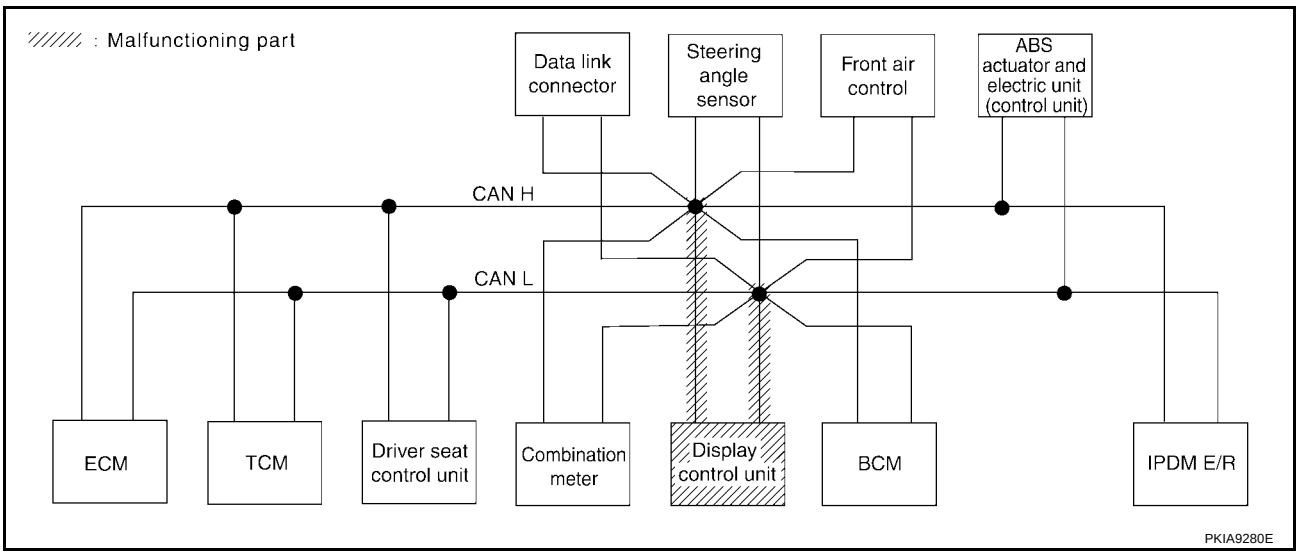
PKIA9279E

Case 8

Check display control unit circuit. Refer to LAN-201, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4 ✓	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6666E



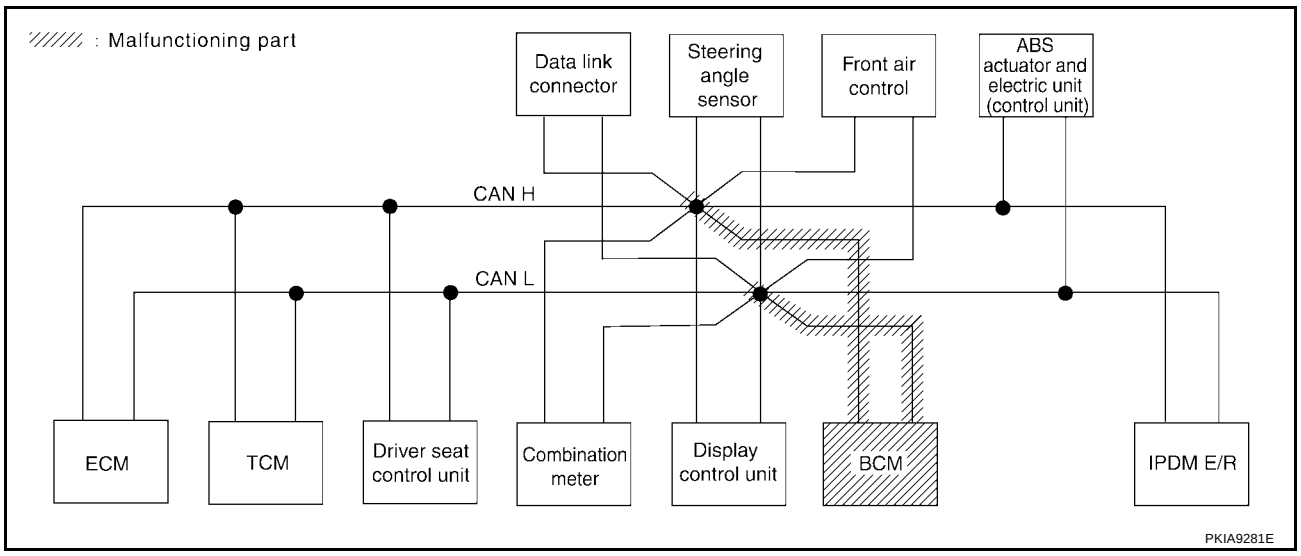
PKIA9280E

Case 9

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6667E



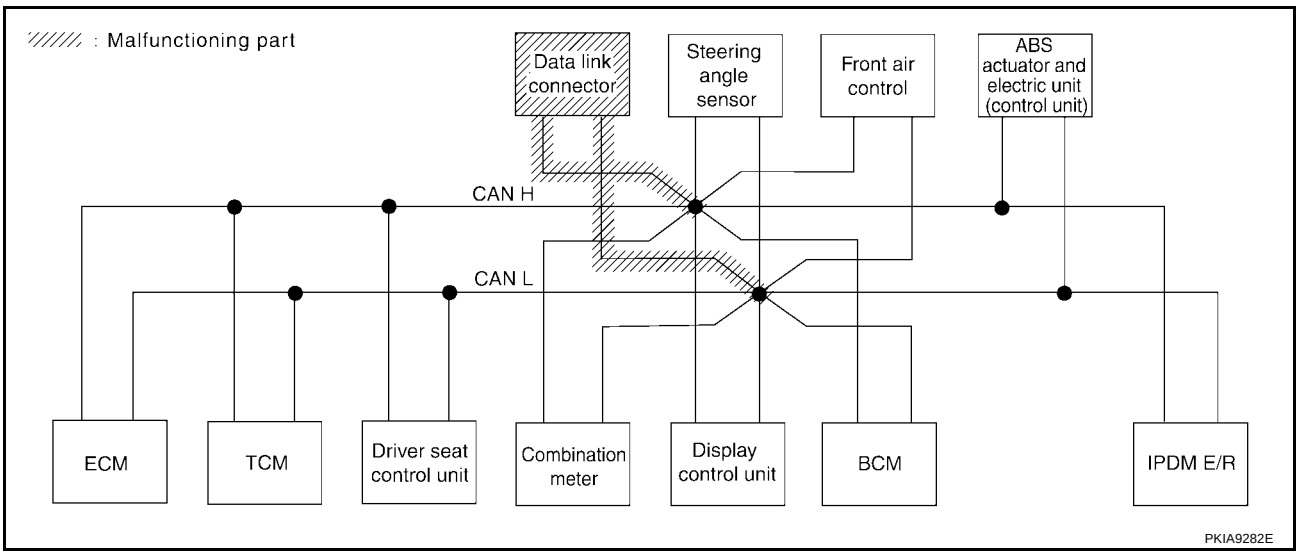
PKIA9281E

Case 10

Check data link connector circuit. Refer to LAN-202, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6668E



PKIA9282E

Case 11

Check steering angle sensor circuit. Refer to LAN-202, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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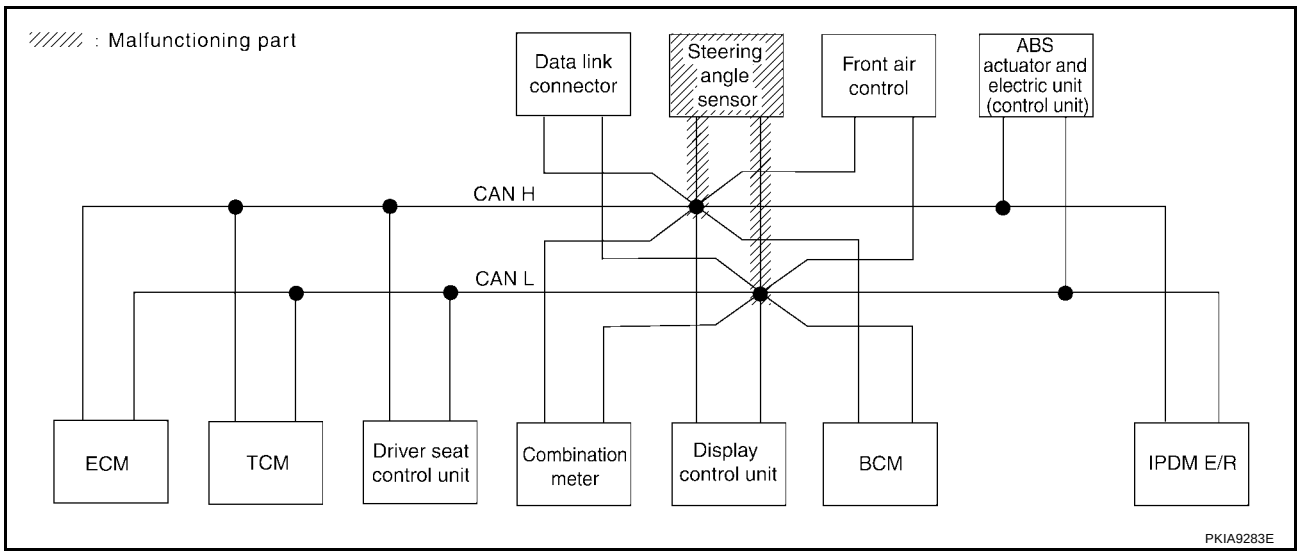

PKIA9283E

Case 12

Check front air control circuit. Refer to LAN-203, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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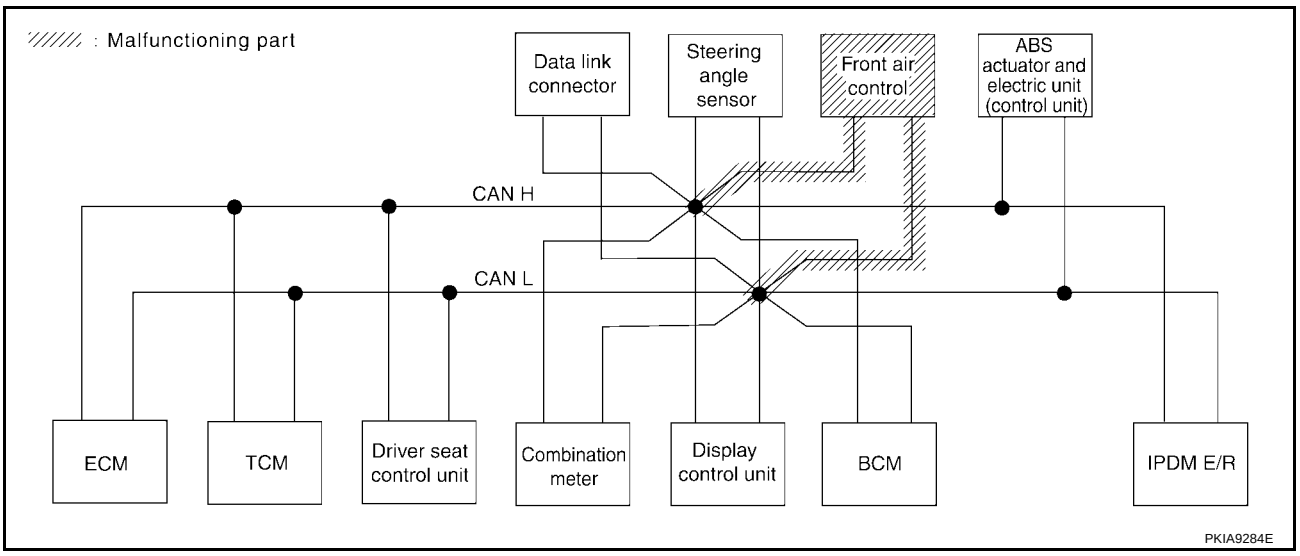


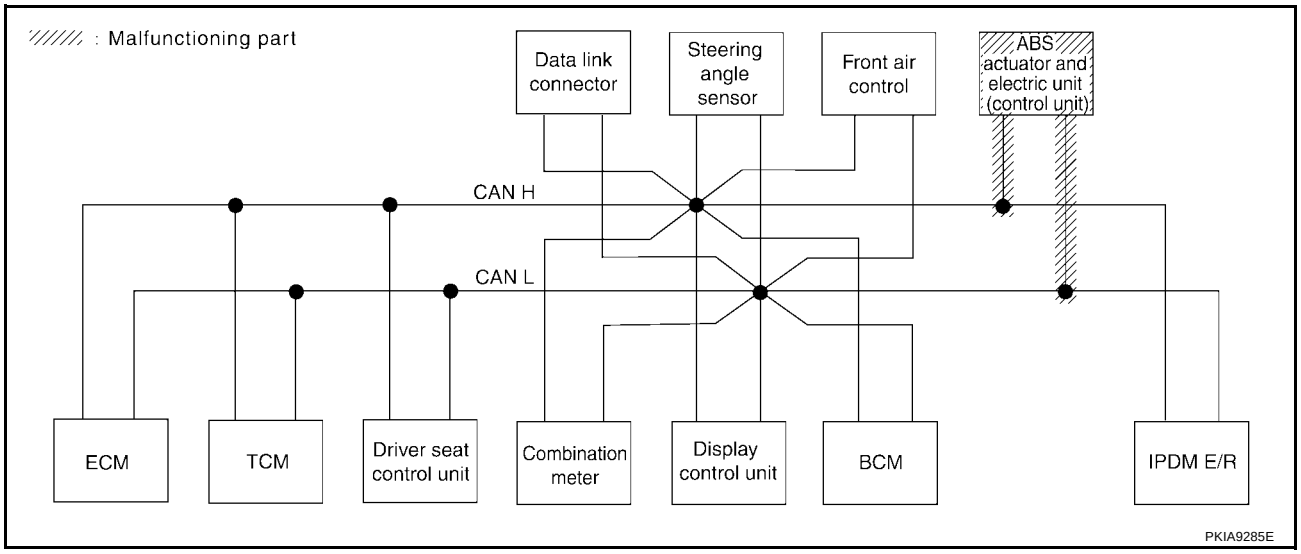
PKIA9284E

Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-203, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN ✓	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6671E



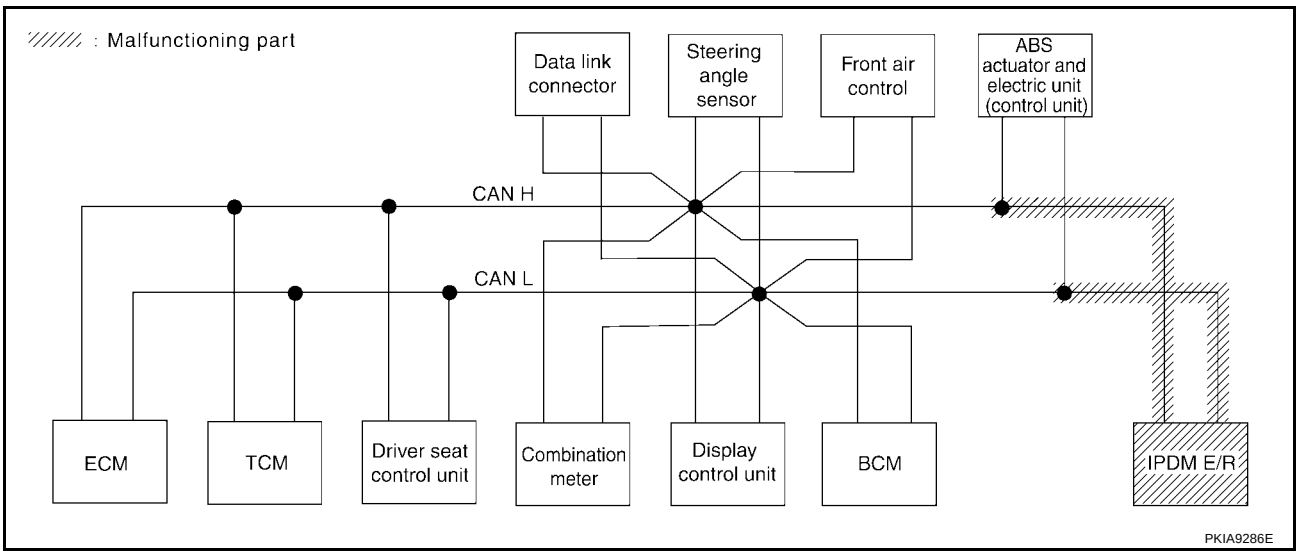
PKIA9285E

Case 14

Check IPDM E/R circuit. Refer to LAN-204, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6672E



PKIA9286E

Case 15

Check CAN communication circuit. Refer to LAN-204, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6673E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-205, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6674E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-205, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	—	—	UNKWN	—
AUTO DRIVE POS.	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 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	—	—	—	UNKWN ✓	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIB6675E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0023H

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

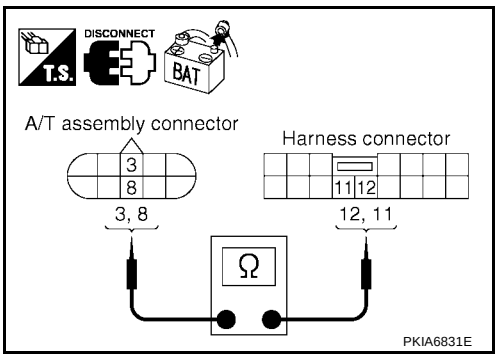
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



PKIA6831E

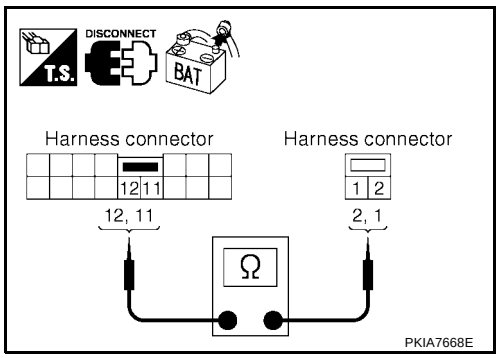
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



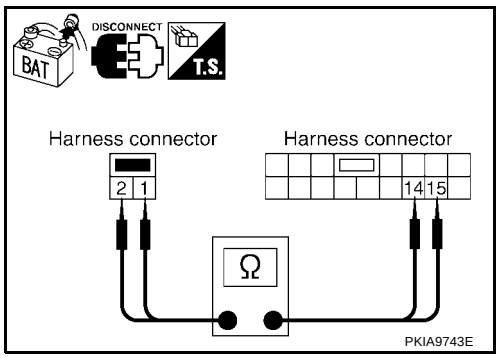
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).

2 (L) - 15 (L) : Continuity should exist.
1 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-177, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0023I

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

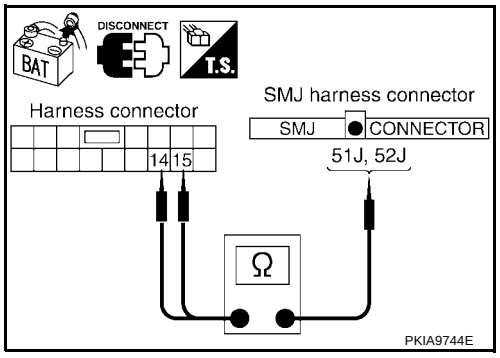
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

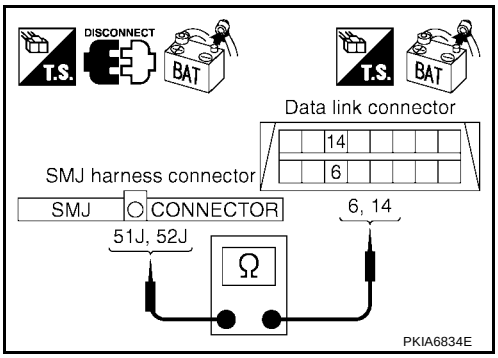
51J (L) - 6 (L) : Continuity should exist.

52J (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-177, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS0023J

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

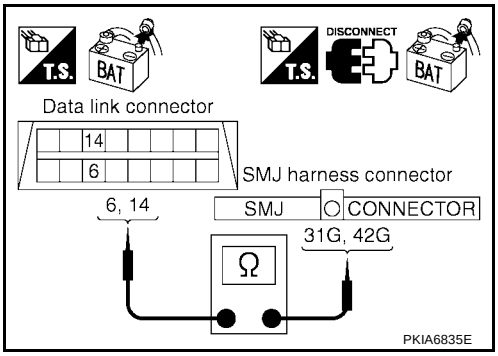
6 (L) - 31G (L) : Continuity should exist.

14 (P) - 42G (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

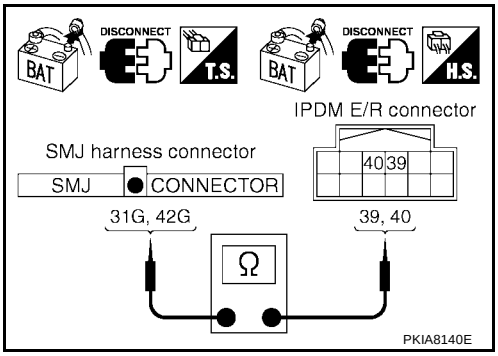
31G (L) - 39 (L) : Continuity should exist.

42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-177, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS0023K

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

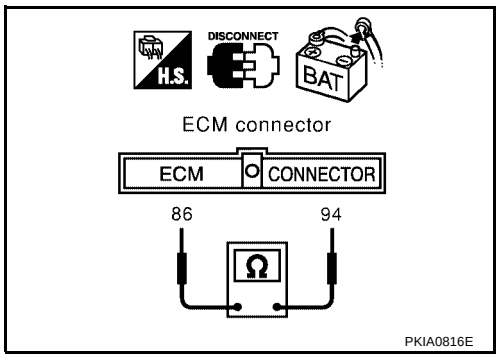
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS0023L

1. CHECK CONNECTOR

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

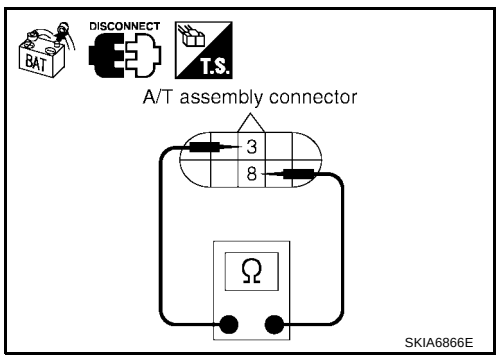
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001FB

1. CHECK CONNECTOR

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

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

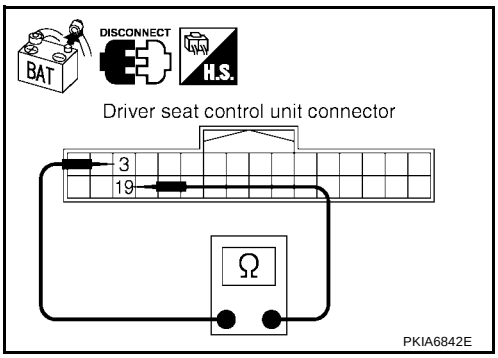
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS0023M

1. CHECK CONNECTOR

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

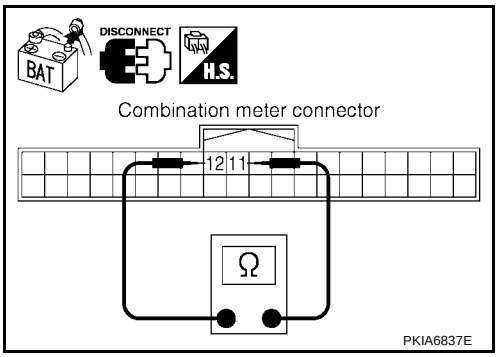
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

Display Control Unit Circuit Check

UKS0023N

1. CHECK CONNECTOR

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

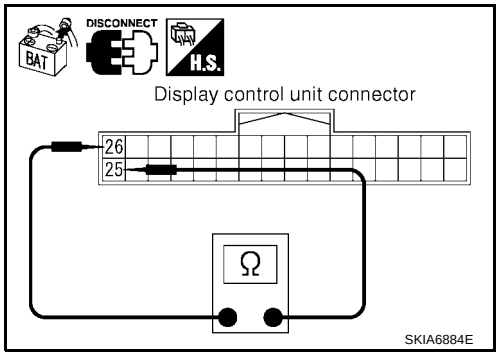
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

25 (L) - 26 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS0023O

1. CHECK CONNECTOR

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

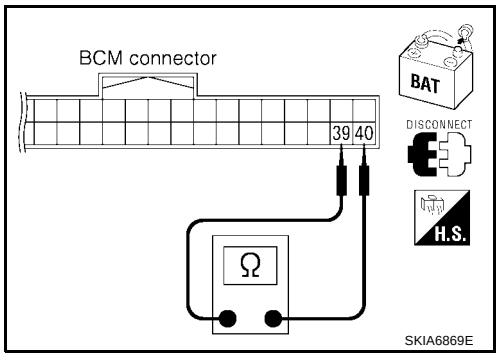
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0023P

1. CHECK CONNECTOR

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

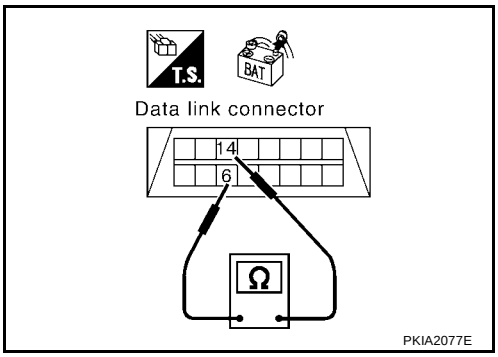
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-177, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS0023Q

1. CHECK CONNECTOR

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

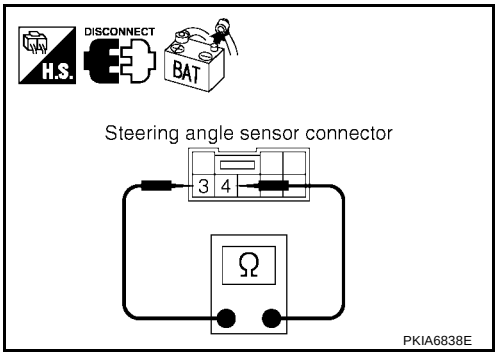
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω



OK or NG

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

Front Air Control Circuit Check

UKS0023R

1. CHECK CONNECTOR

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

OK or NG

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

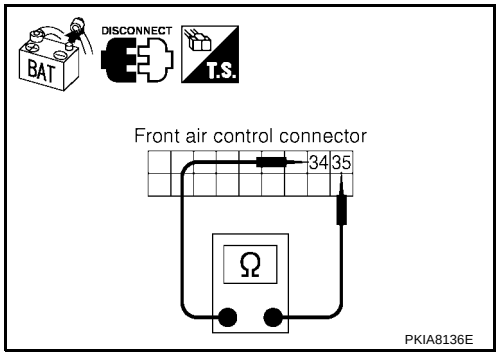
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω

OK or NG

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



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0023S

1. CHECK CONNECTOR

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

OK or NG

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

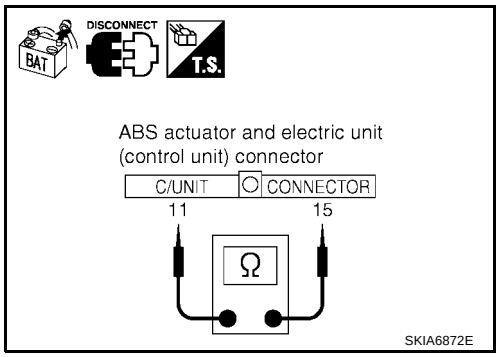
2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



IPDM E/R Circuit Check

UKS0023T

1. CHECK CONNECTOR

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

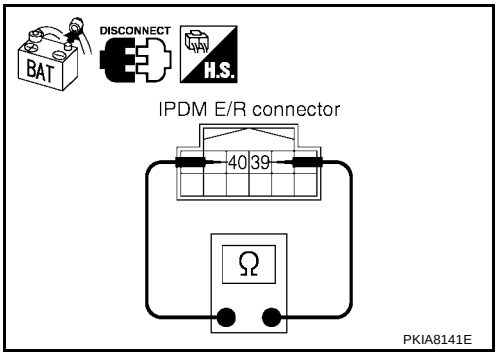
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS0023U

1. CHECK CONNECTOR

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

OK or NG

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

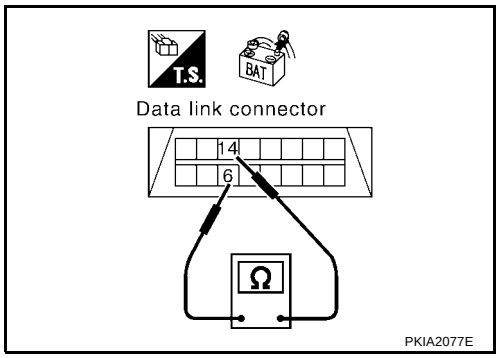
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



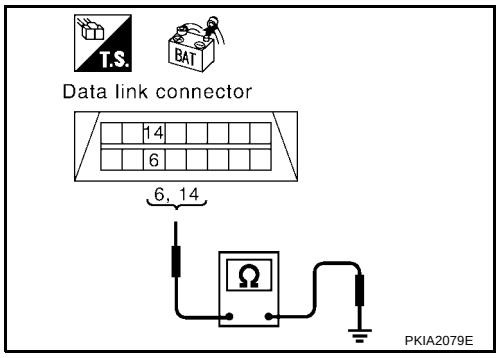
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-205, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS0023V

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

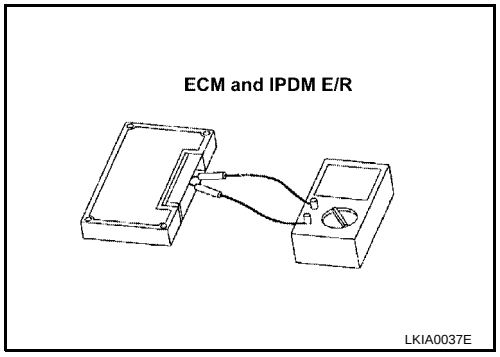
Component Inspection

UKS0023W

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 7)

PFP:23710

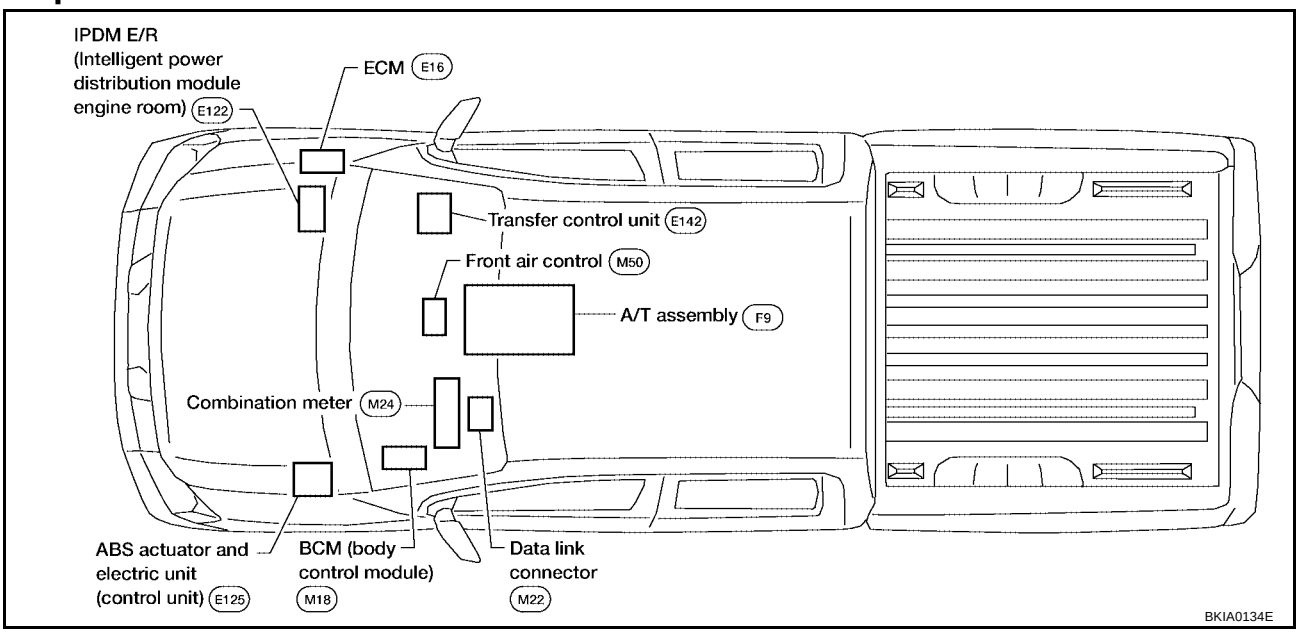
System Description

UKS001FN

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.

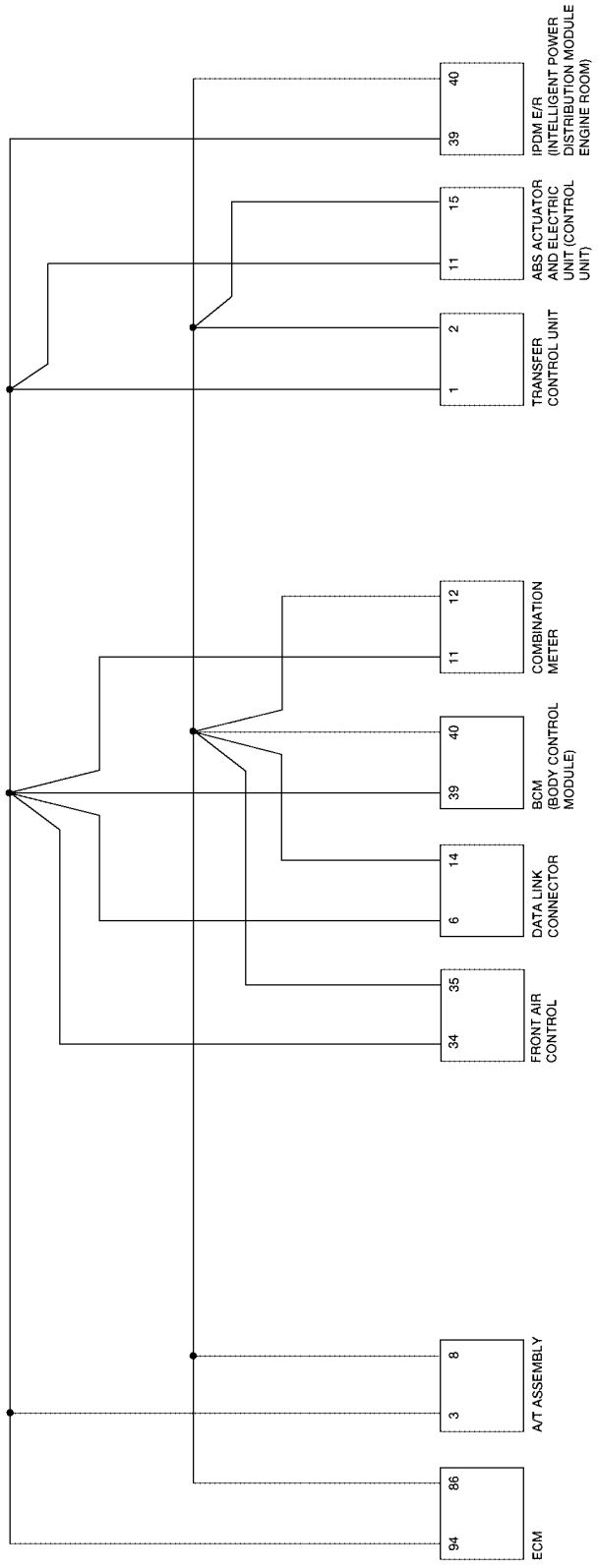
Component Parts and Harness Connector Location

UKS001FO



Schematic

UKS001FP

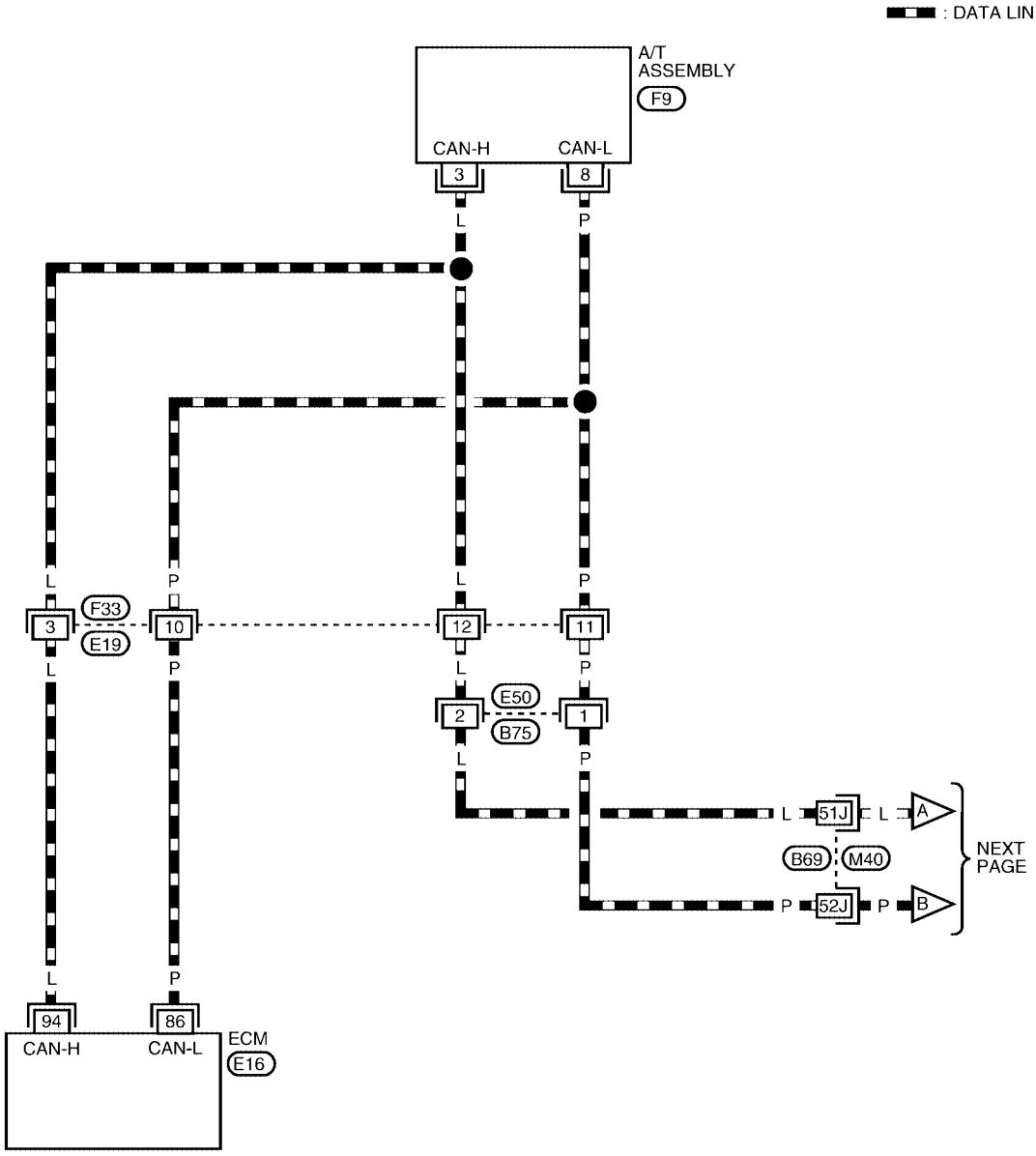


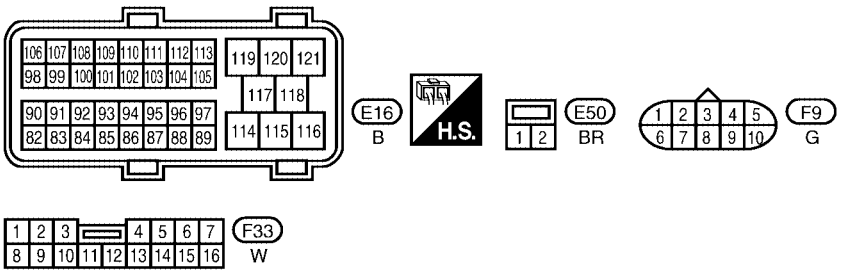
BKWA0142E

Wiring Diagram - CAN -

UKS001FQ

LAN-CAN-19

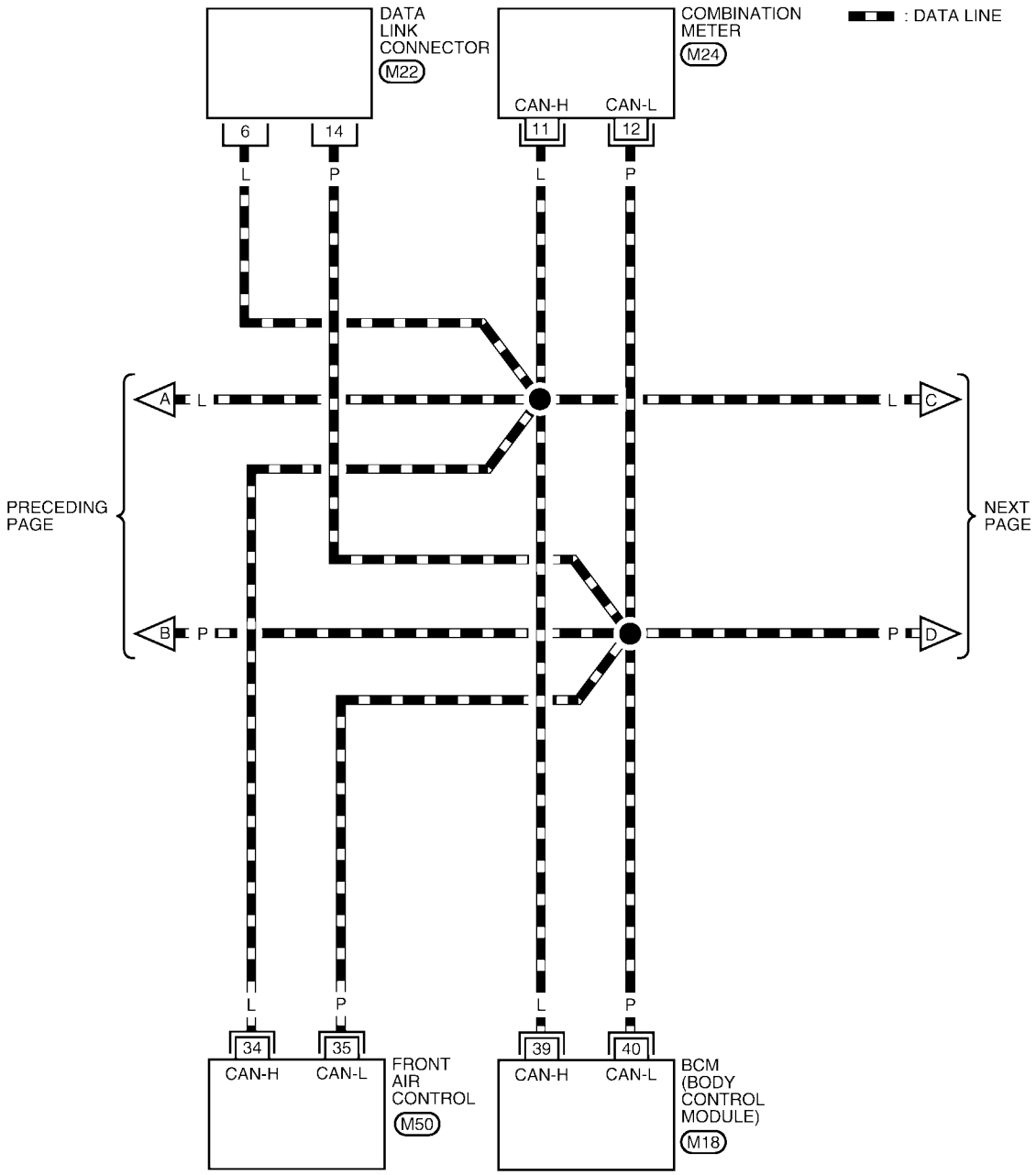


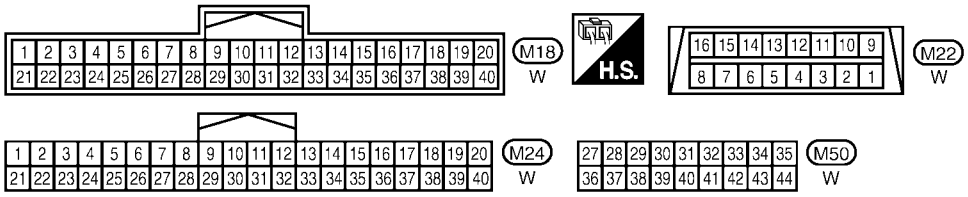


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0443E

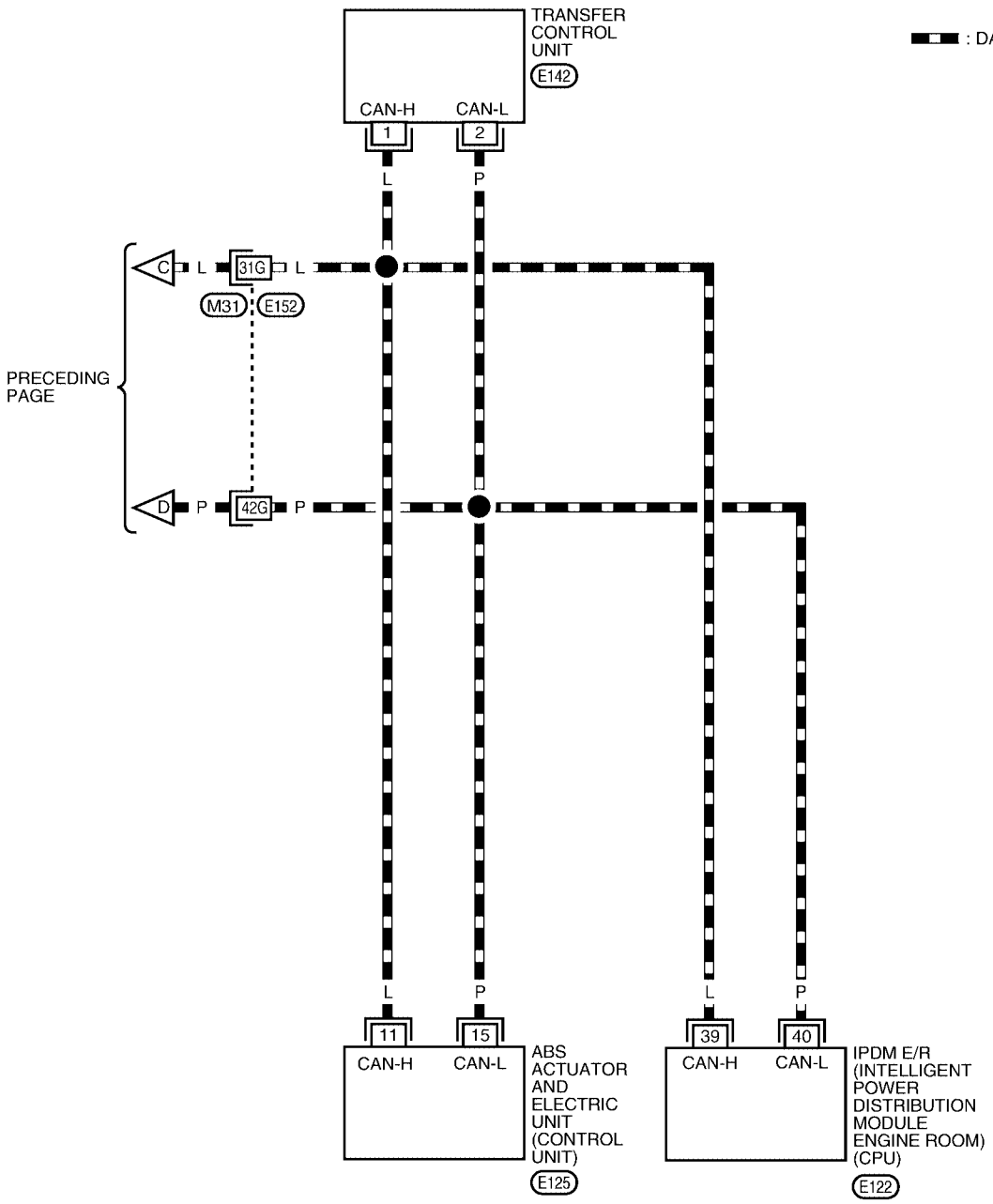
LAN-CAN-20

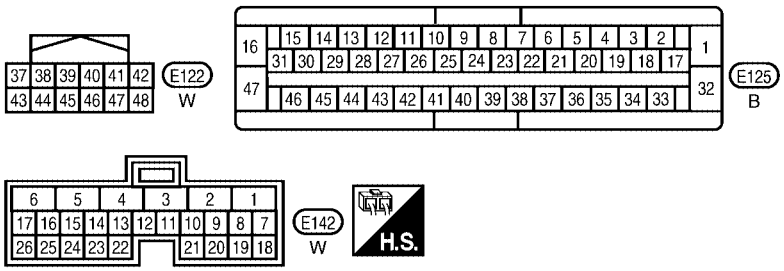




BKWA0444E

LAN-CAN-21





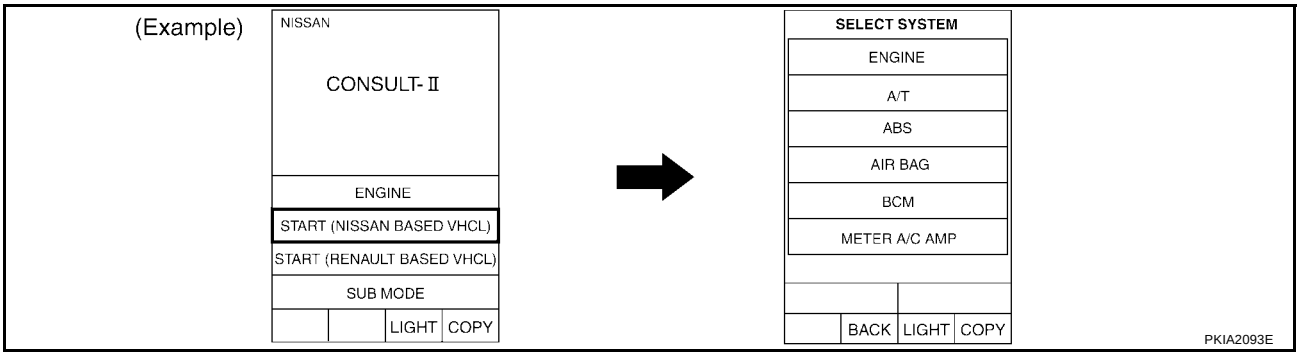
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0445E

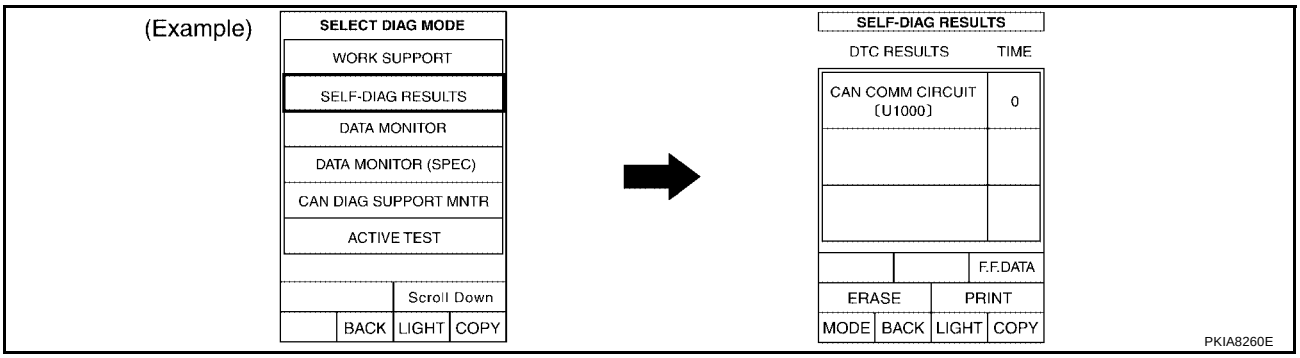
Work Flow

UKS001FR

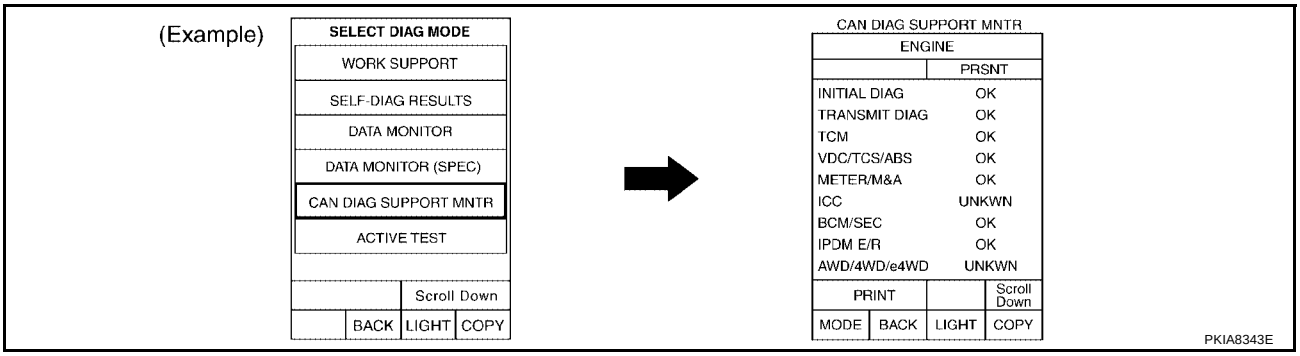
1. When there are no indications of “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-212, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-212, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-214, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

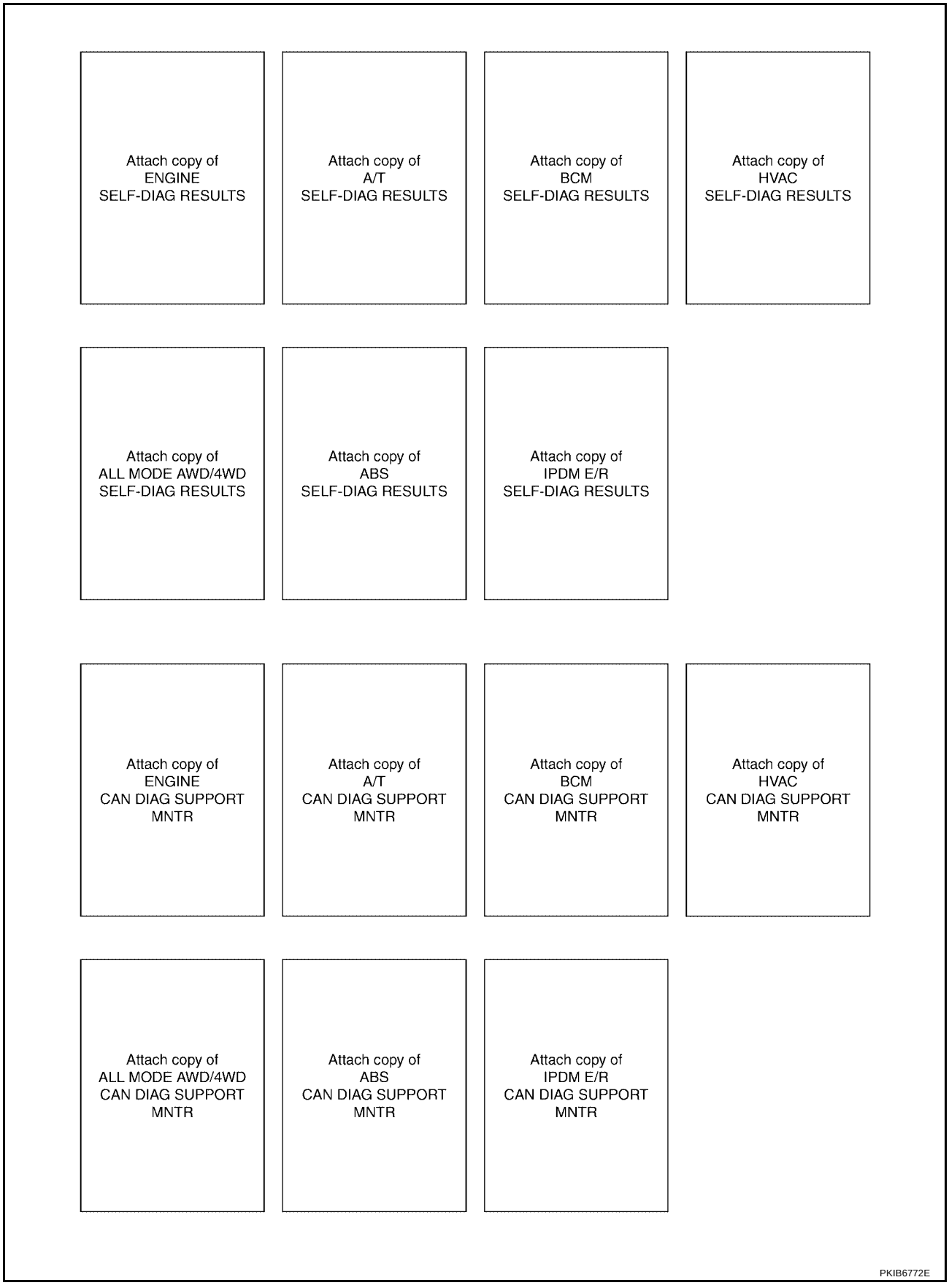
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

SKIB2749E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
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ABS
SELF-DIAG RESULTS
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IPDM E/R
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ENGINE
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MNTR
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A/T
CAN DIAG SUPPORT
MNTR
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BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6772E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

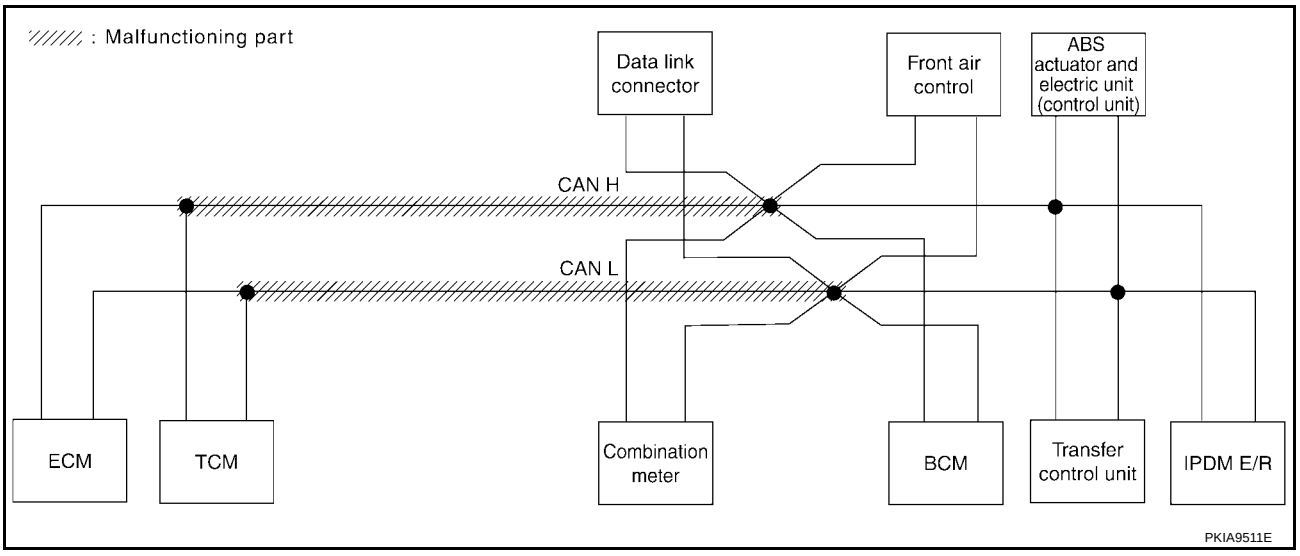
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

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	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—

SKIB2750E

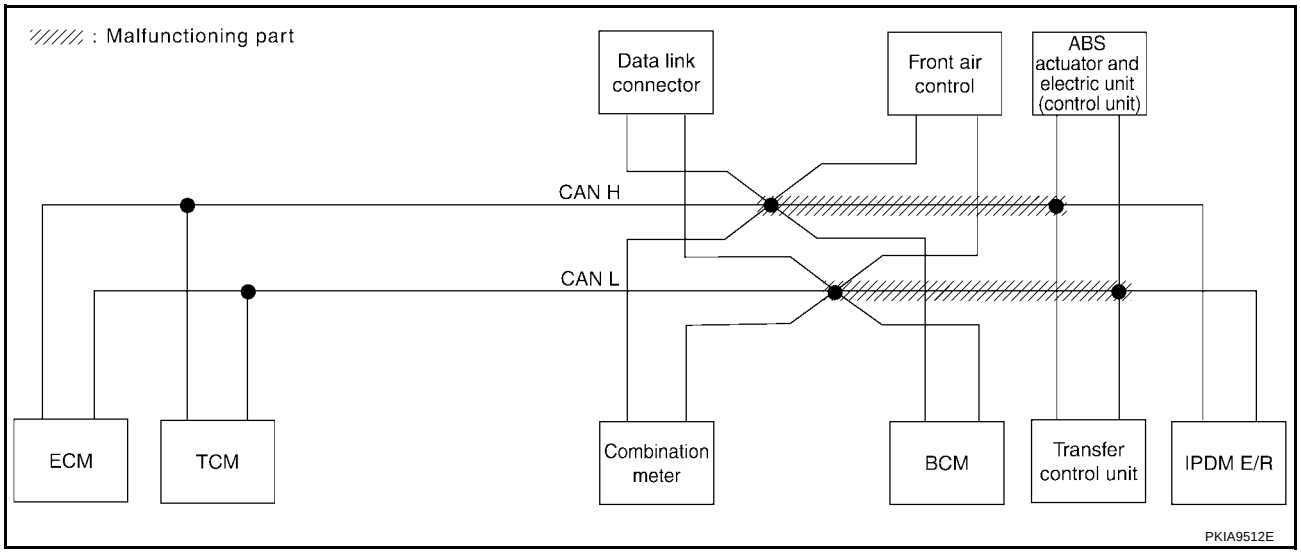


Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-227, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2751E



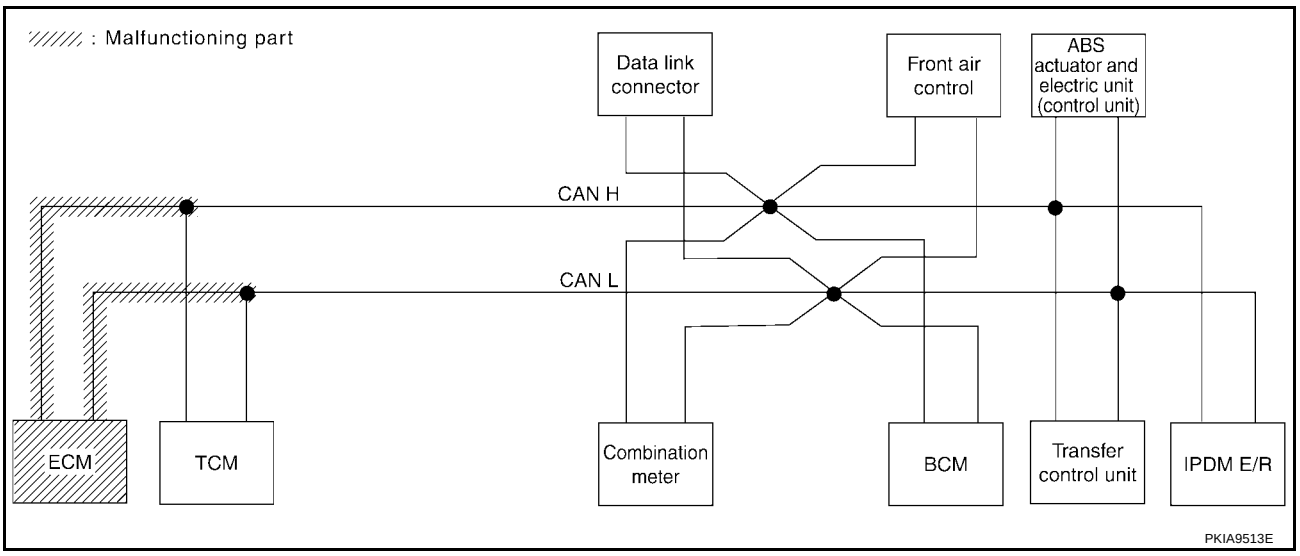
PKIA9512E

Case 3

Check ECM circuit. Refer to LAN-228, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2752E

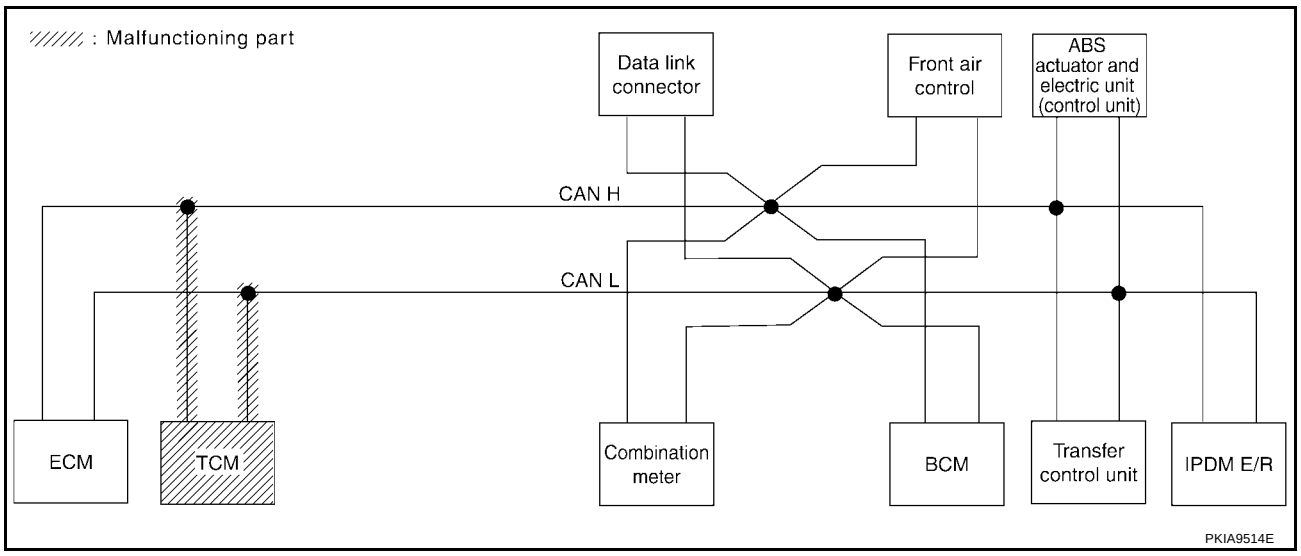


Case 4

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

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2753E

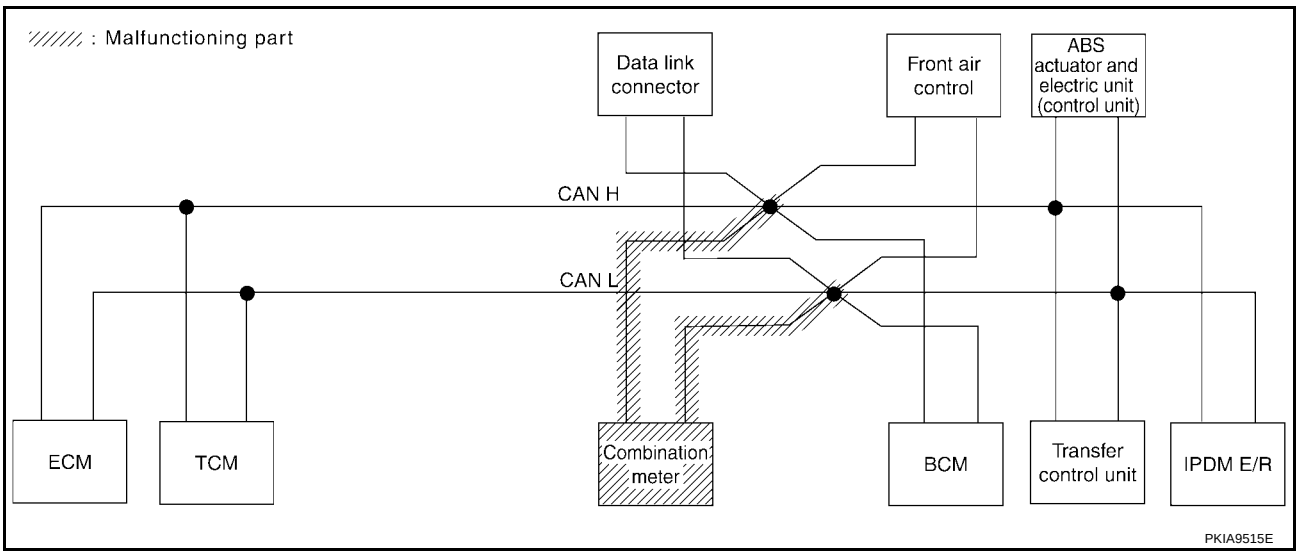


Case 5

Check combination meter circuit. Refer to LAN-229, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2754E



PKIA9515E

Case 6

Check BCM circuit. Refer to LAN-230, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

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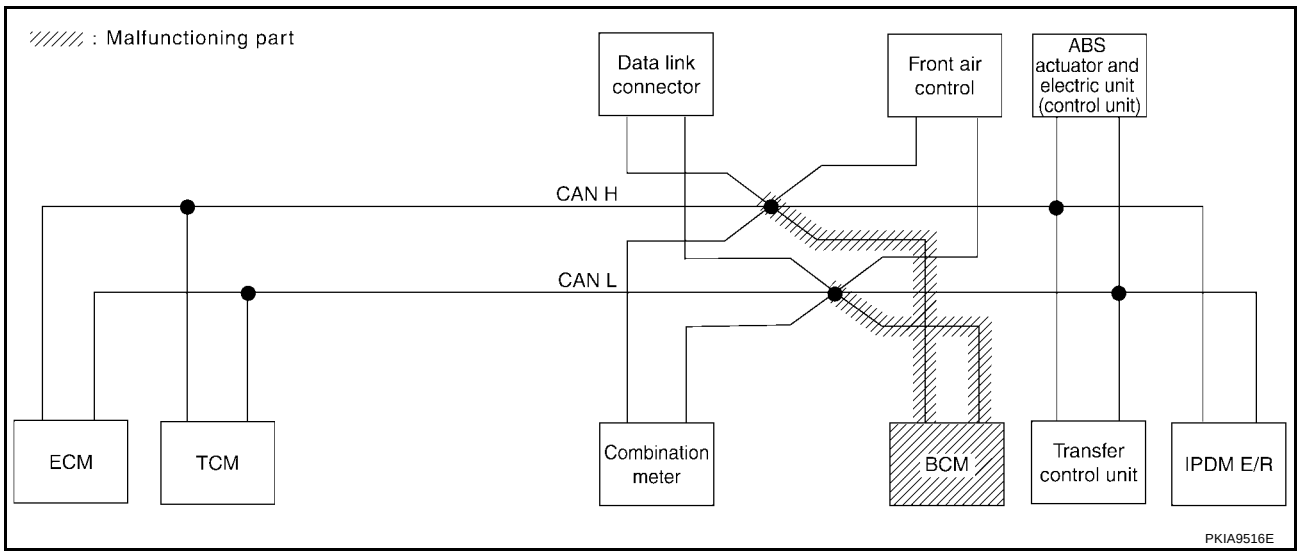


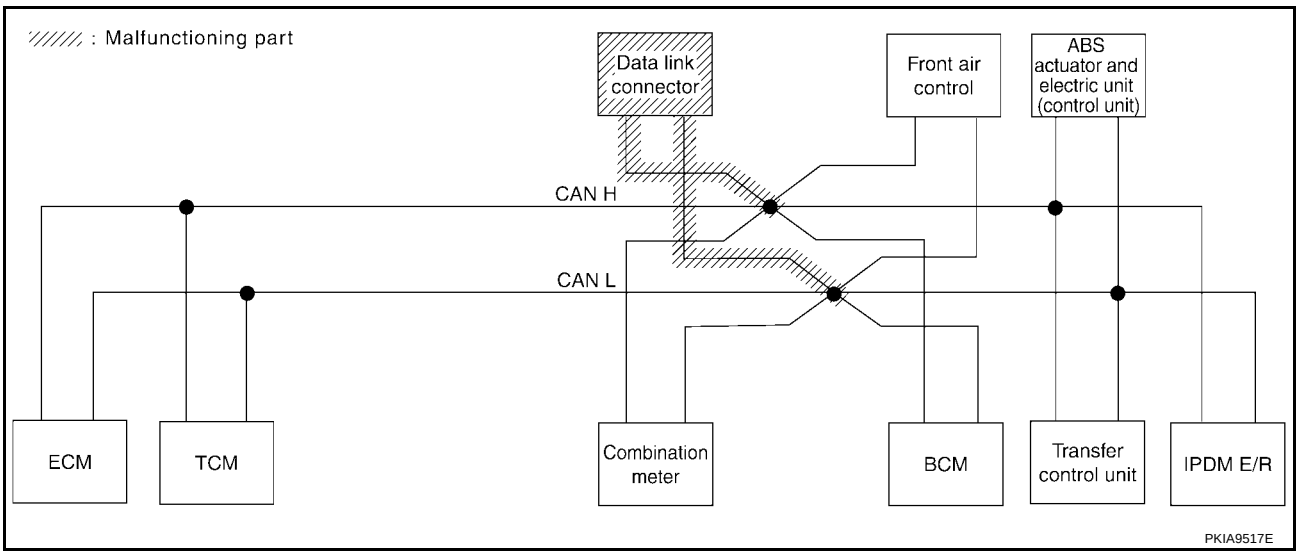
PKIA9516E

Case 7

Check data link connector circuit. Refer to LAN-230, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2756E

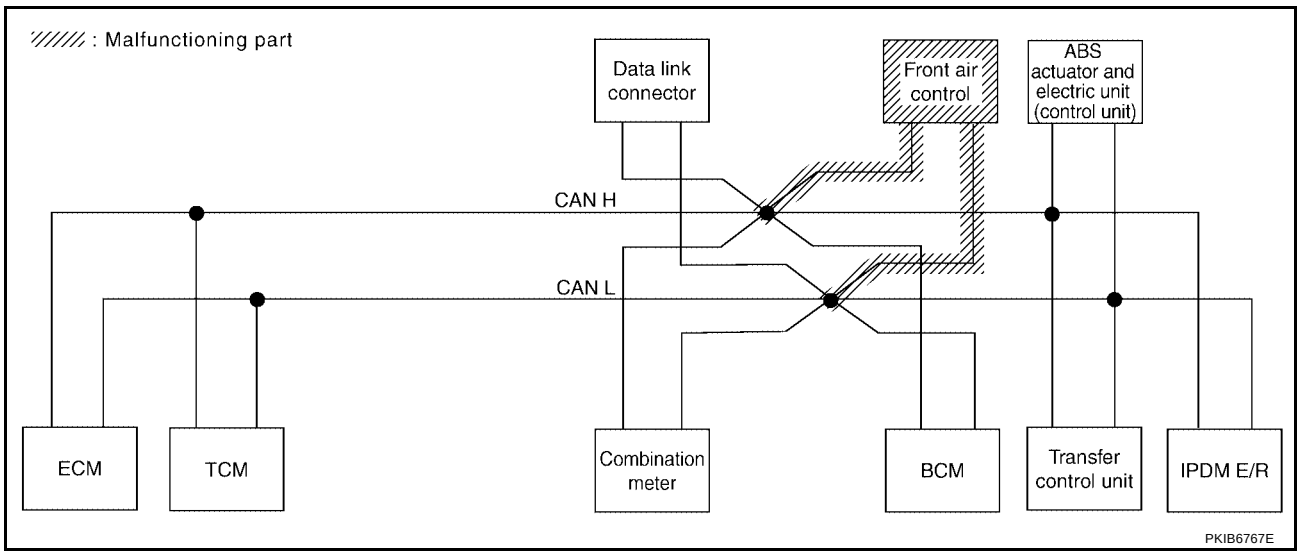


Case 8

Check front air control circuit. Refer to LAN-231, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIB6776E



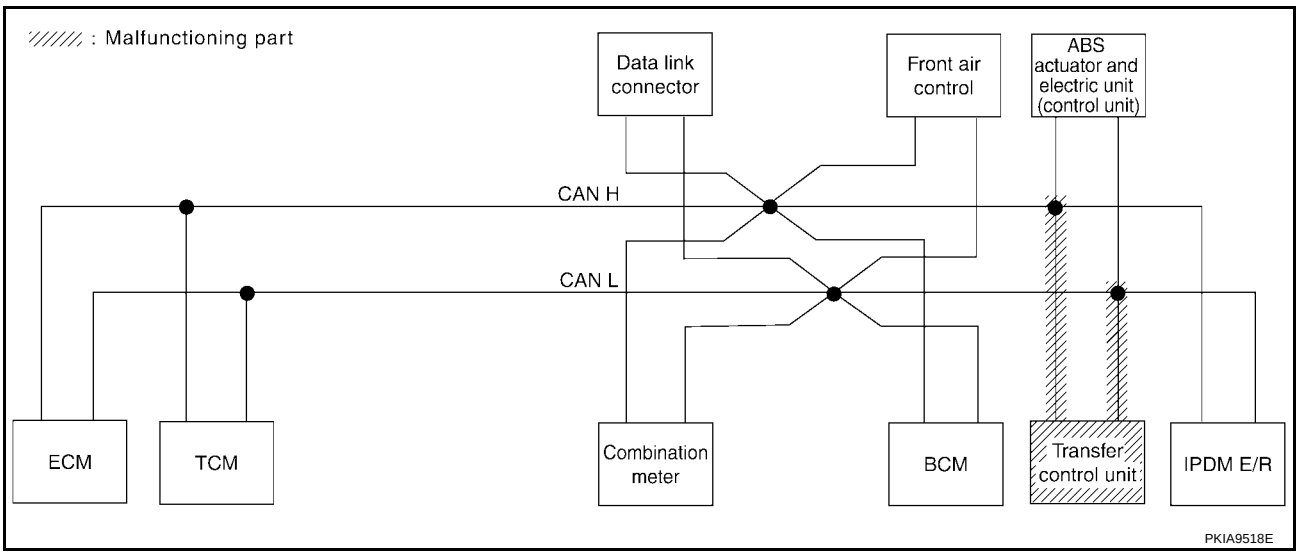
PKIB6767E

Case 9

Check transfer control unit circuit. Refer to LAN-231, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2757E

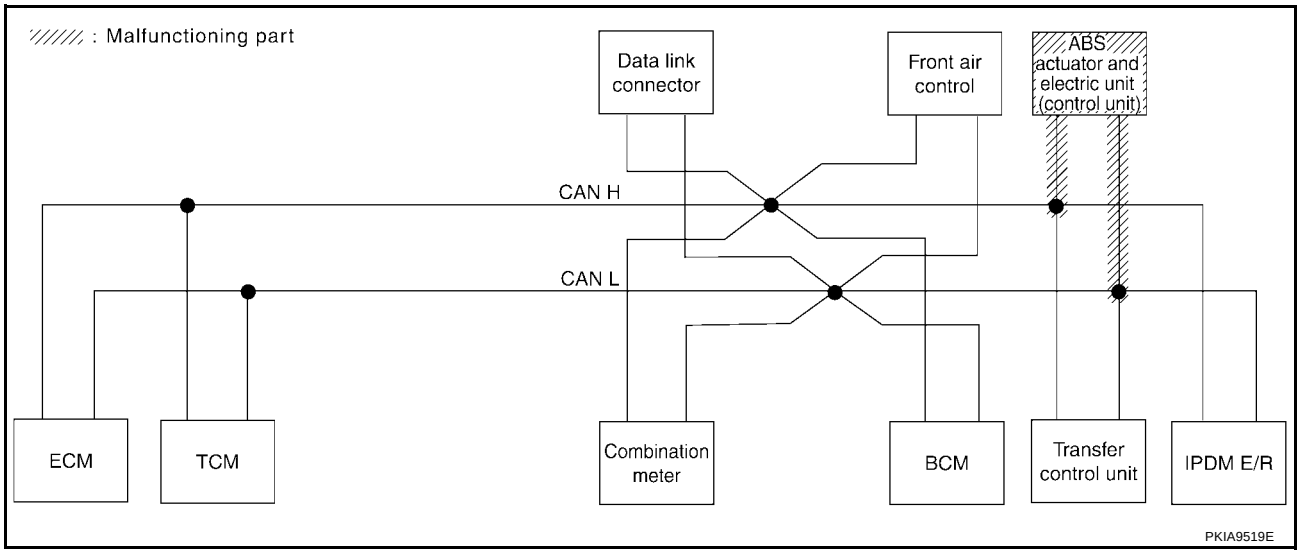


Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-232, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2758E



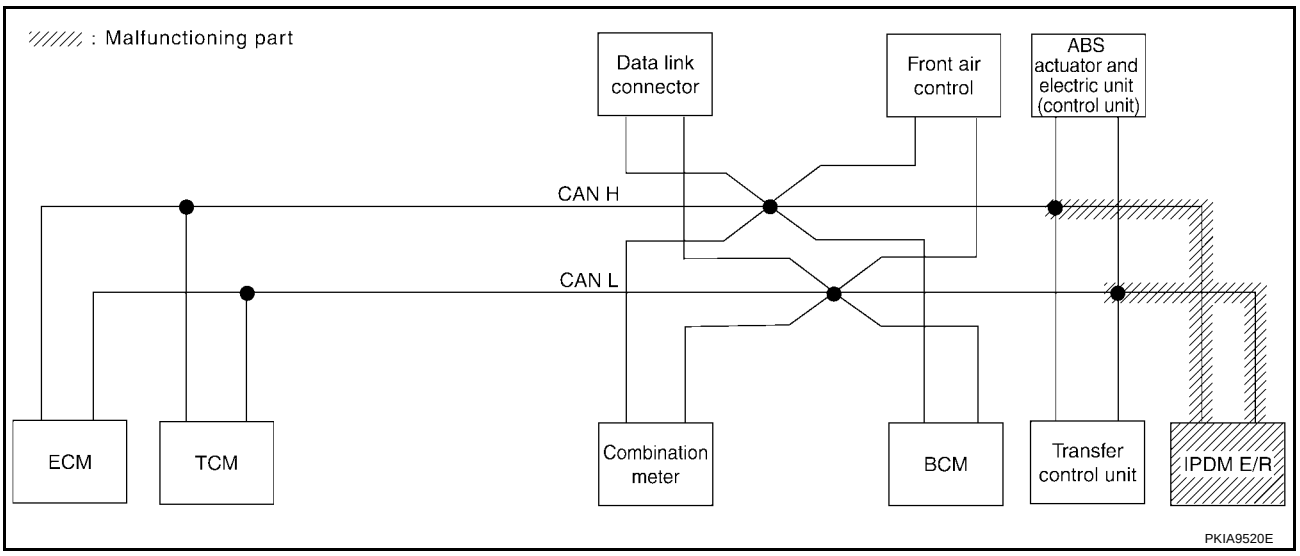
PKIA9519E

Case 11

Check IPDM E/R circuit. Refer to LAN-232, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2759E



PKIA9520E

Case 12

Check CAN communication circuit. Refer to LAN-233, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2760E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-234, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2761E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-234, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2762E

Circuit Check Between TCM and Data Link Connector

UKS001FS

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

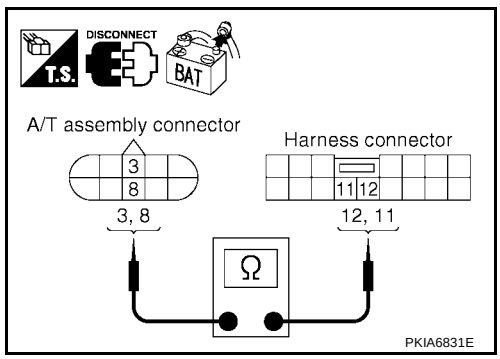
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



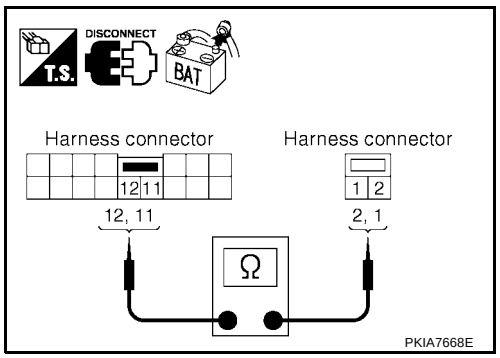
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



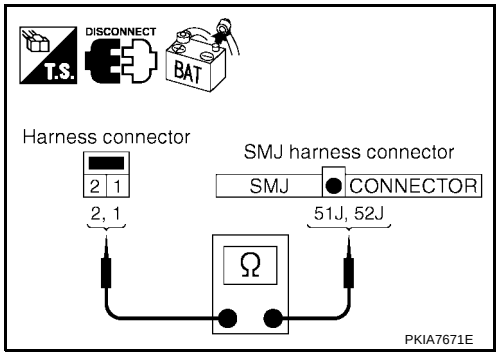
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B69 terminals 51J (L), 52J (P).

2 (L) - 51J (L) : Continuity should exist.
1 (P) - 52J (P) : Continuity should exist.



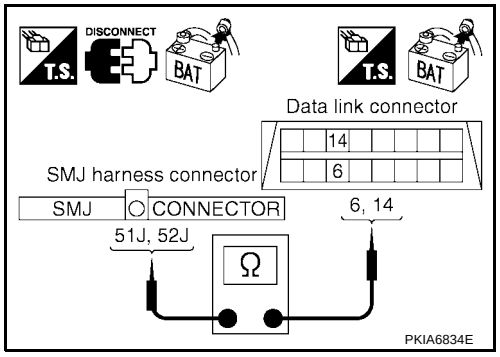
OK or NG

OK >> GO TO 5.
NG >> Repair harness.

5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-211, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001FT

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

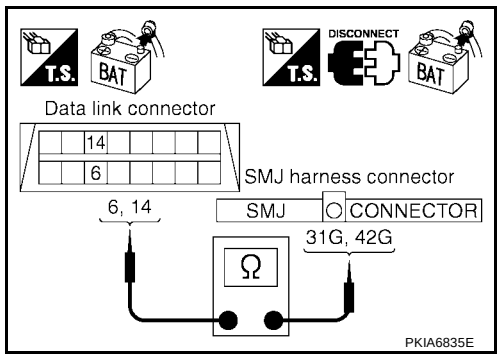
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.



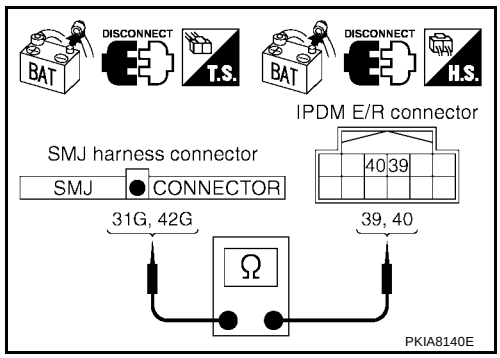
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-211, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001FU

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

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

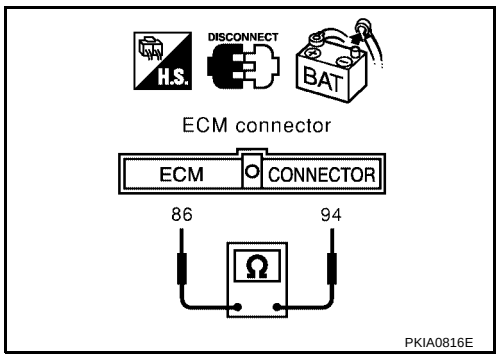
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

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



TCM Circuit Check

UKS001FV

1. CHECK CONNECTOR

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

OK or NG

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

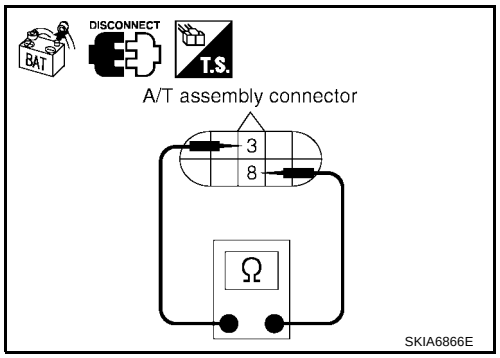
2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.



Combination Meter Circuit Check

UKS001FW

1. CHECK CONNECTOR

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

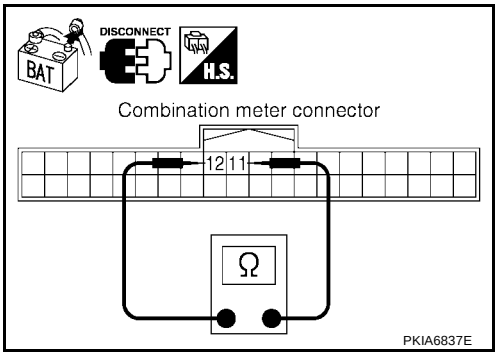
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS001FX

1. CHECK CONNECTOR

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

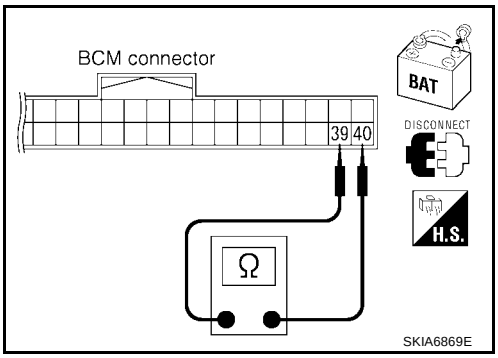
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001FY

1. CHECK CONNECTOR

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

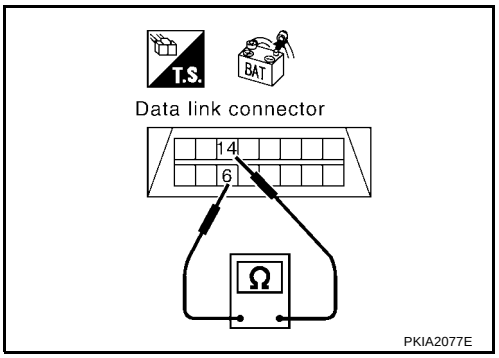
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-211, "Work Flow" .

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

Front Air Control Circuit Check

UKS003KQ

1. CHECK CONNECTOR

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

OK or NG

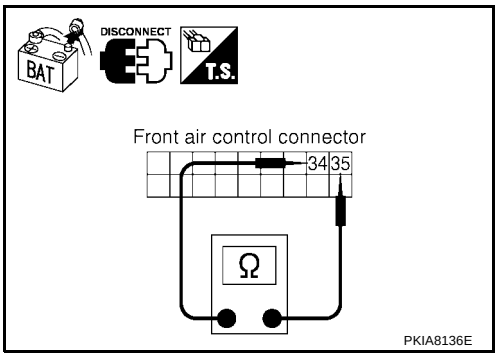
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace front air control.

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

Transfer Control Unit Circuit Check

UKS001G0

1. CHECK CONNECTOR

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

OK or NG

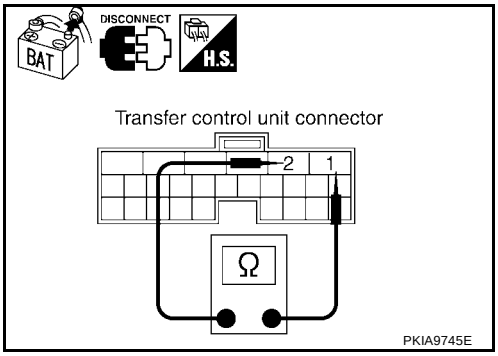
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001G1

1. CHECK CONNECTOR

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

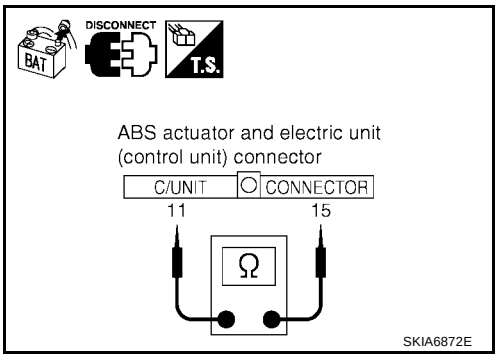
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001G2

1. CHECK CONNECTOR

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

OK or NG

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

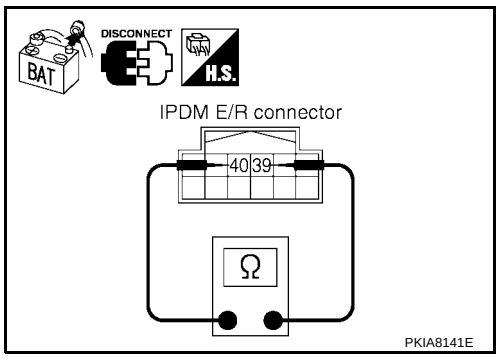
2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



UKS001G3

CAN Communication Circuit Check

1. CHECK CONNECTOR

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
- A/T assembly
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

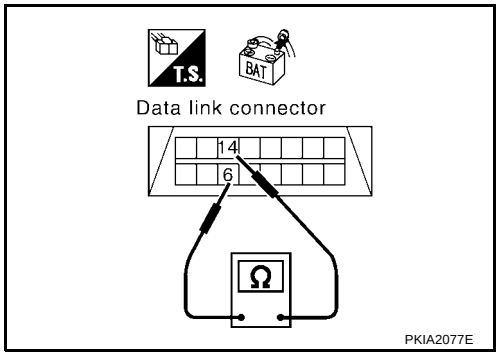
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.

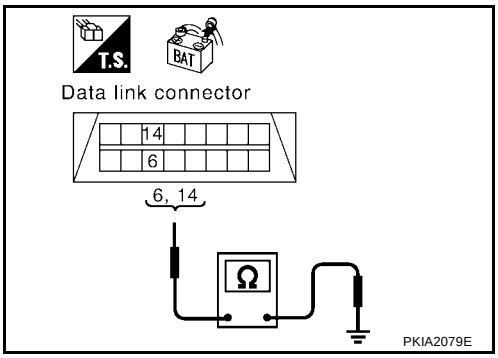


3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-234, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001G4

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

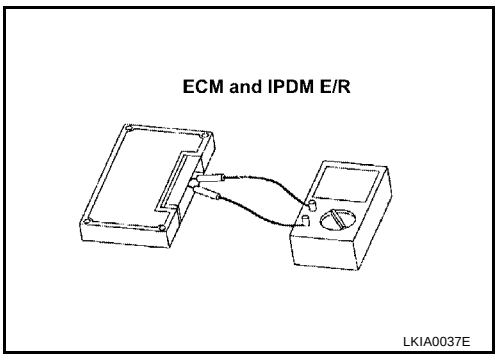
Component Inspection

UKS001G5

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 8)

PFP:23710

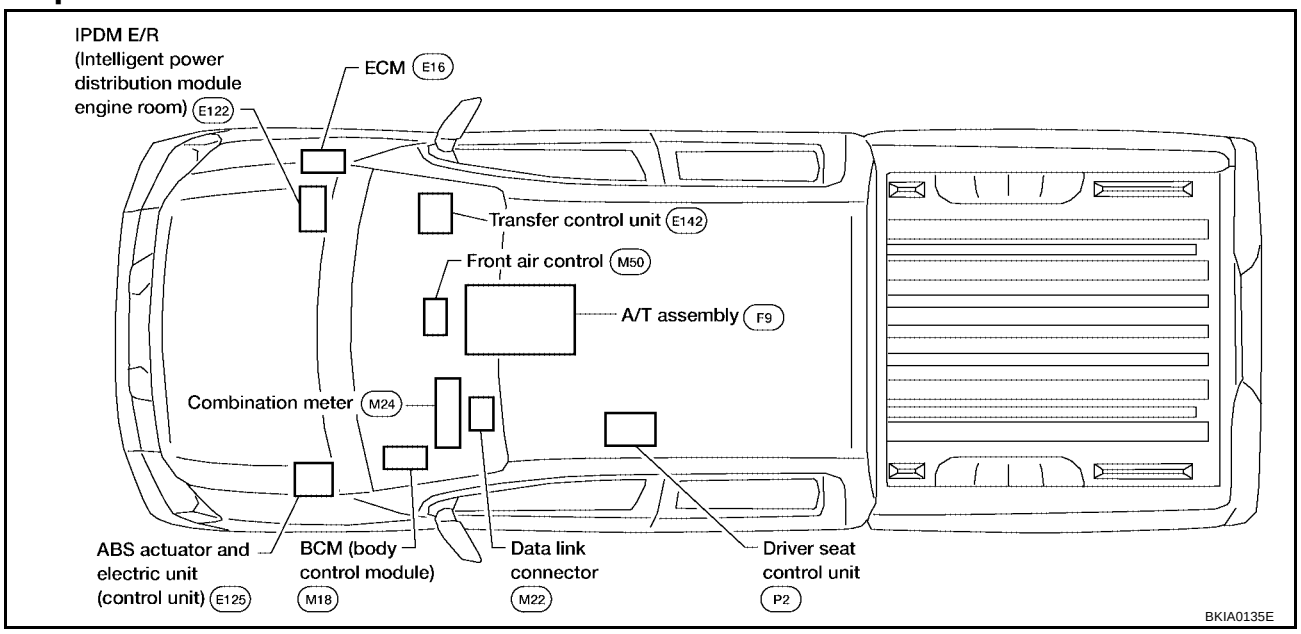
System Description

UKS001G6

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.

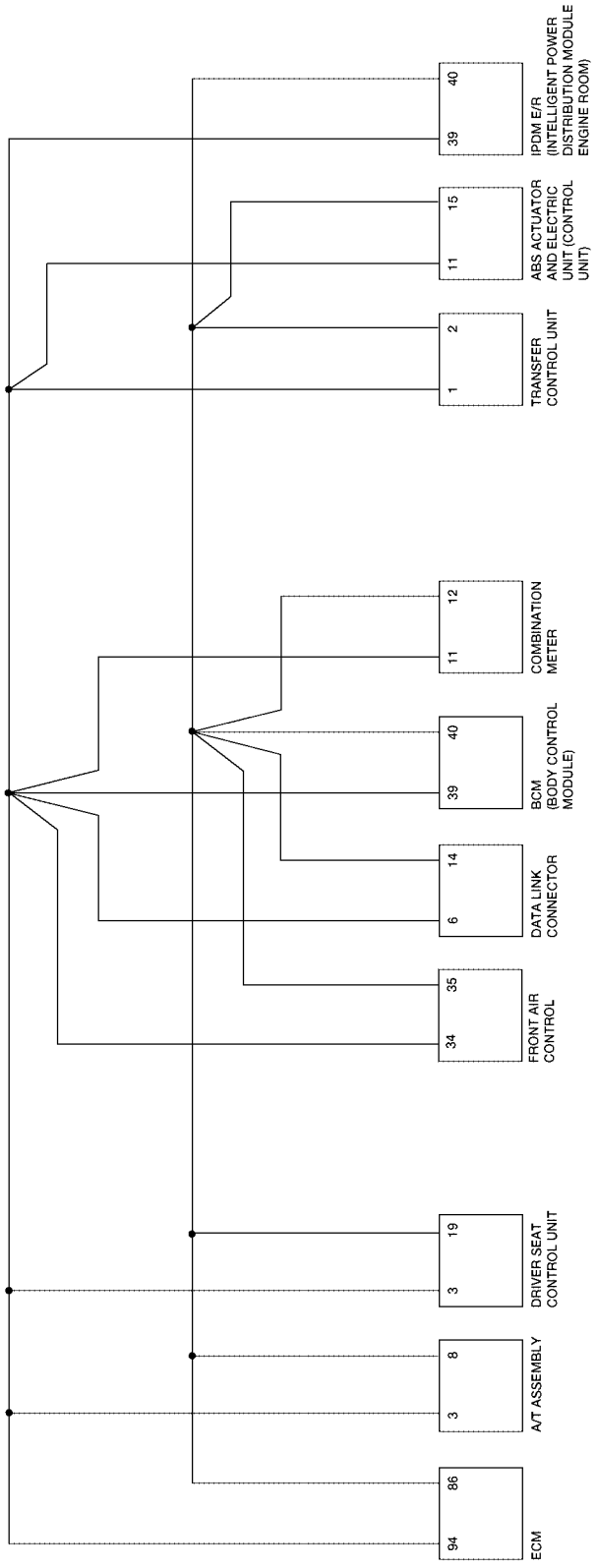
Component Parts and Harness Connector Location

UKS001G7



Schematic

UKS001G8

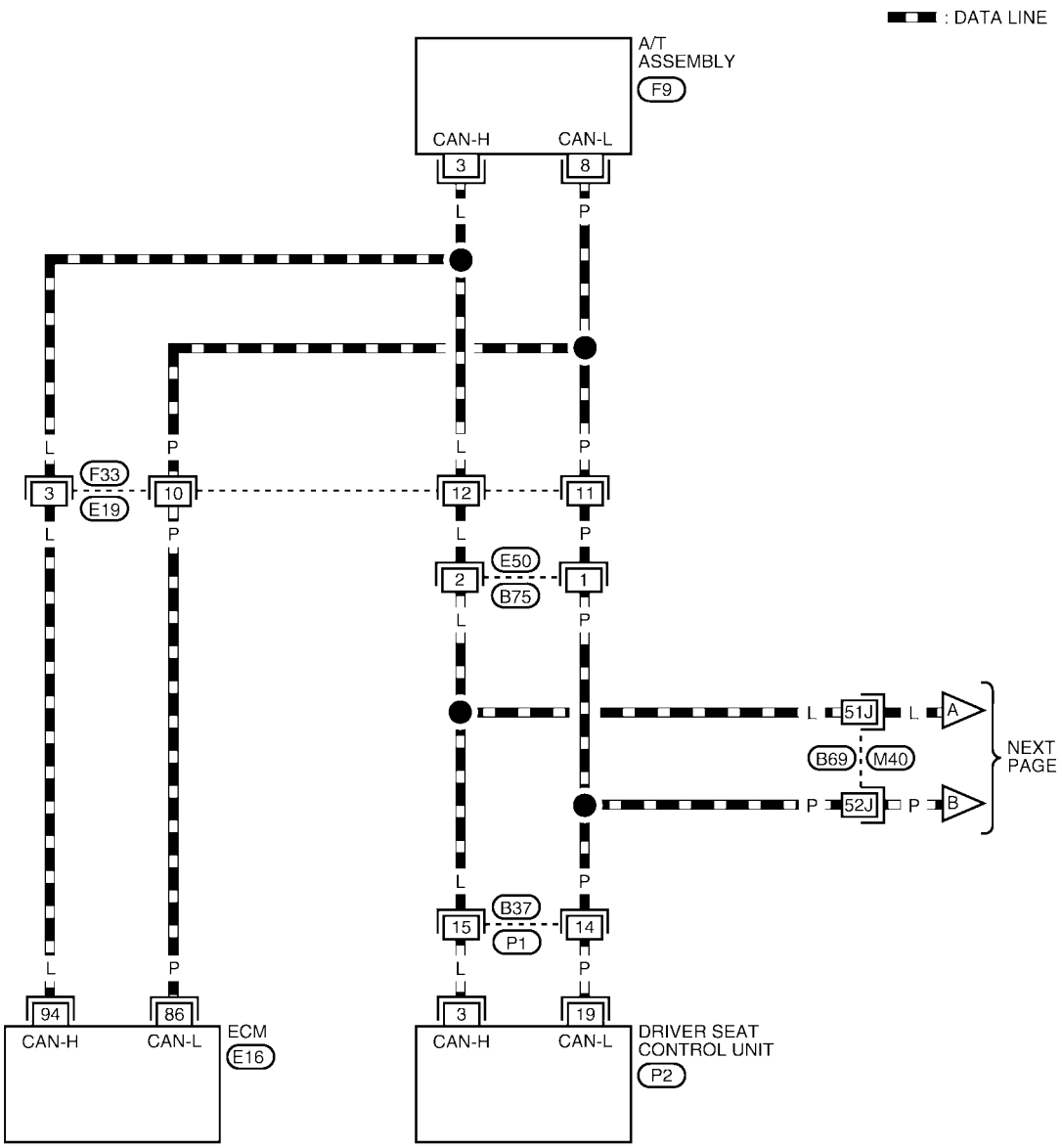


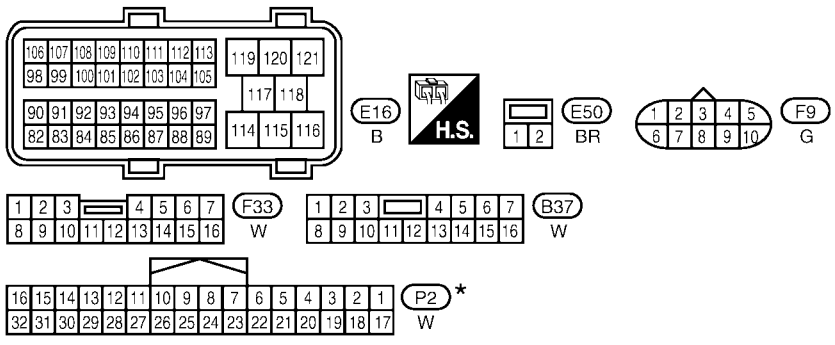
BKWA0144E

Wiring Diagram - CAN -

UKS001G9

LAN-CAN-22

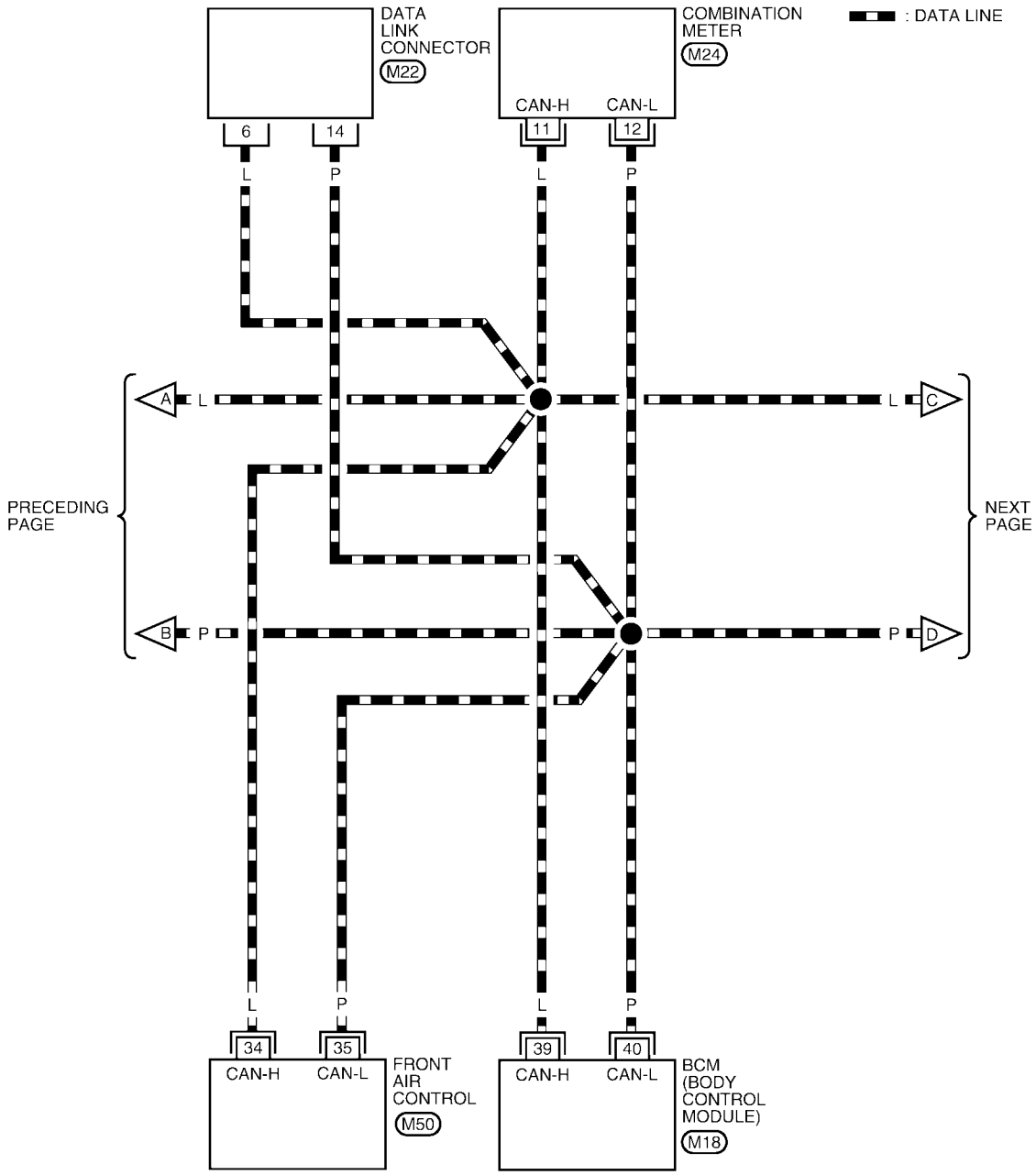


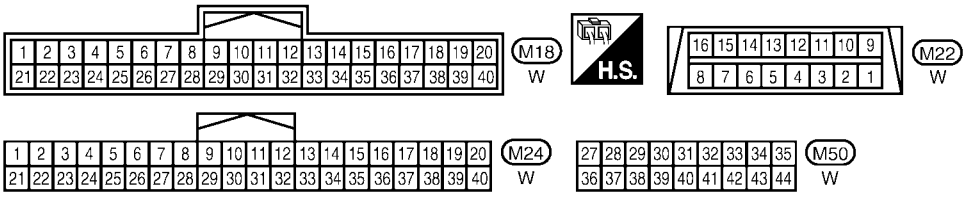


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

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

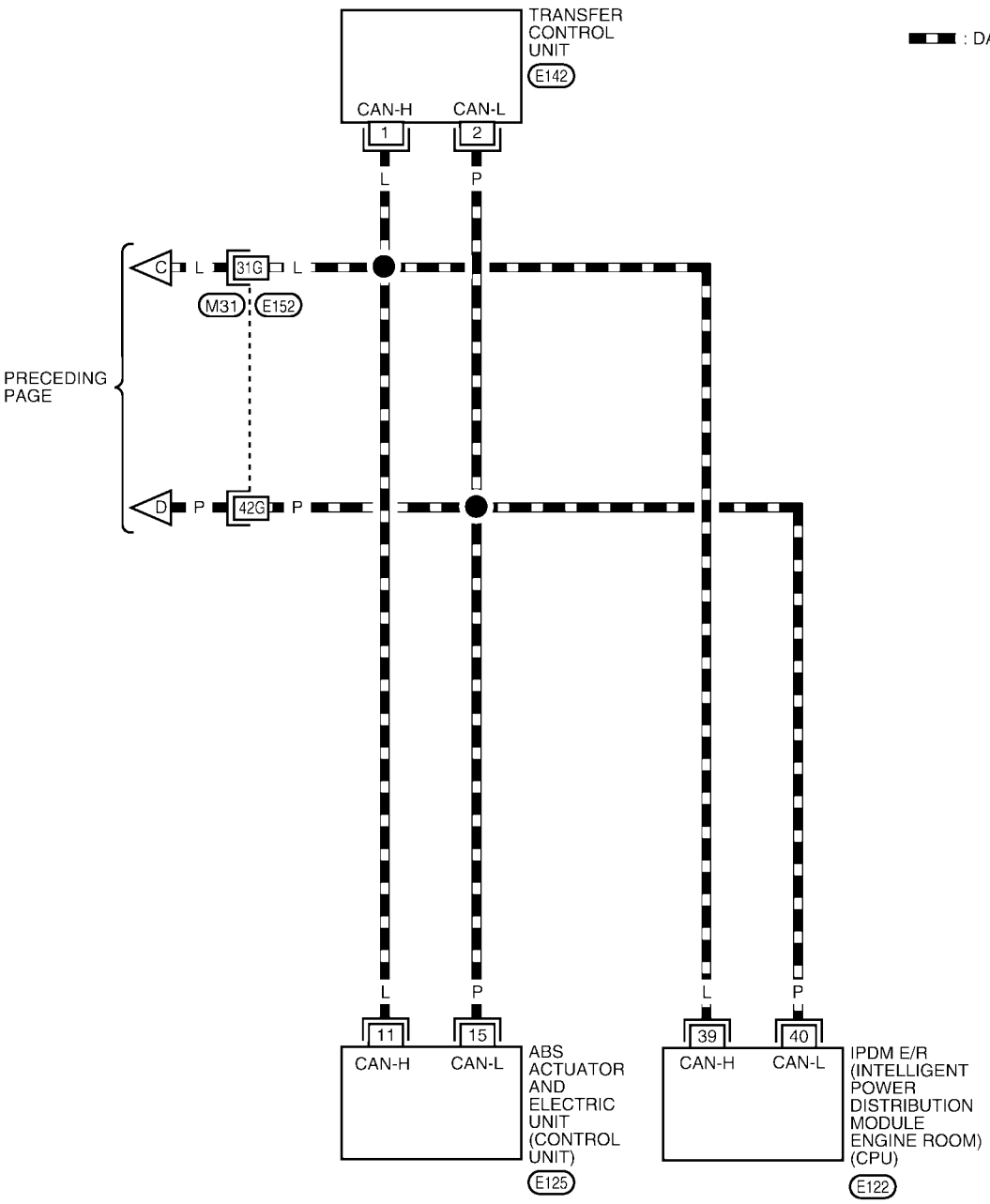
BKWA0446E

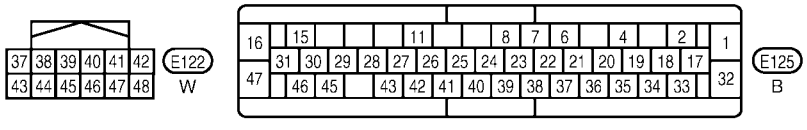

DATA LINK CONNECTOR
M22
COMBINATION METER
M24
: DATA LINE
CAN-H
CAN-L
6
14
11
12
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
34
35
39
40
FRONT AIR CONTROL
M50
BCM (BODY CONTROL MODULE)
M18

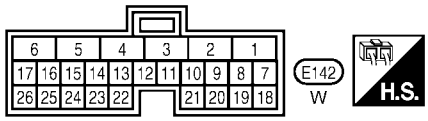

M18
W
H.S.
M22
W
M24
W
M50
W

BKWA0447E

LAN-CAN-24







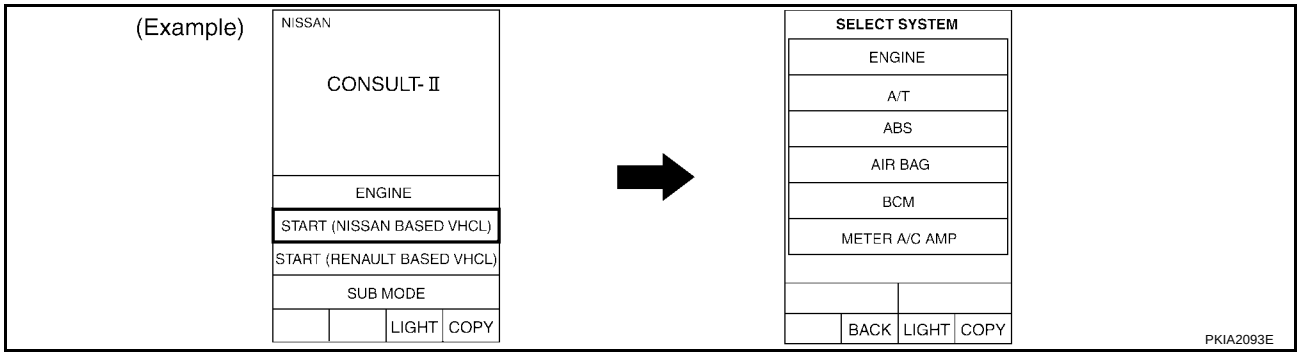
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0448E

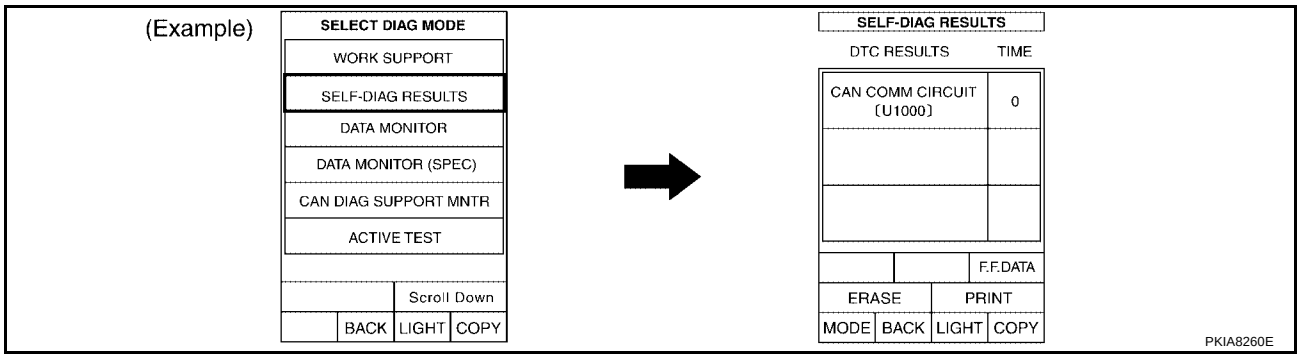
Work Flow

UKS001GA

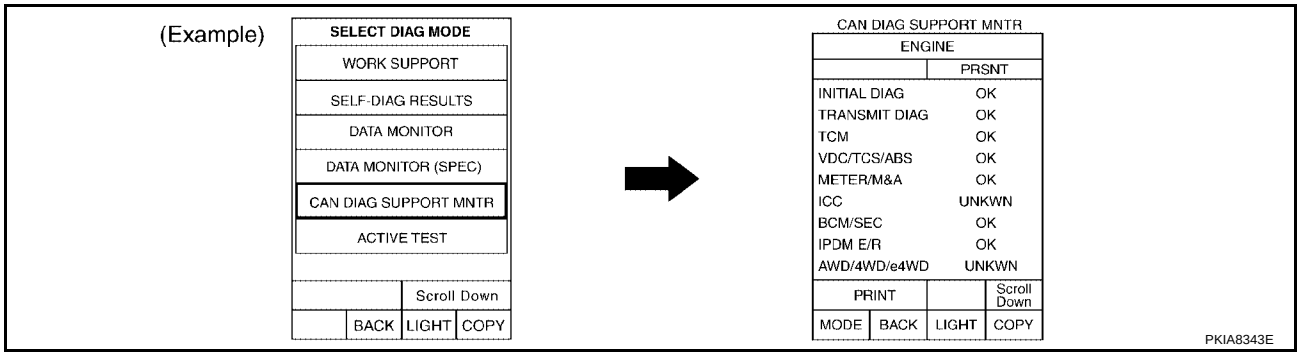
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-241, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-241, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-243, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

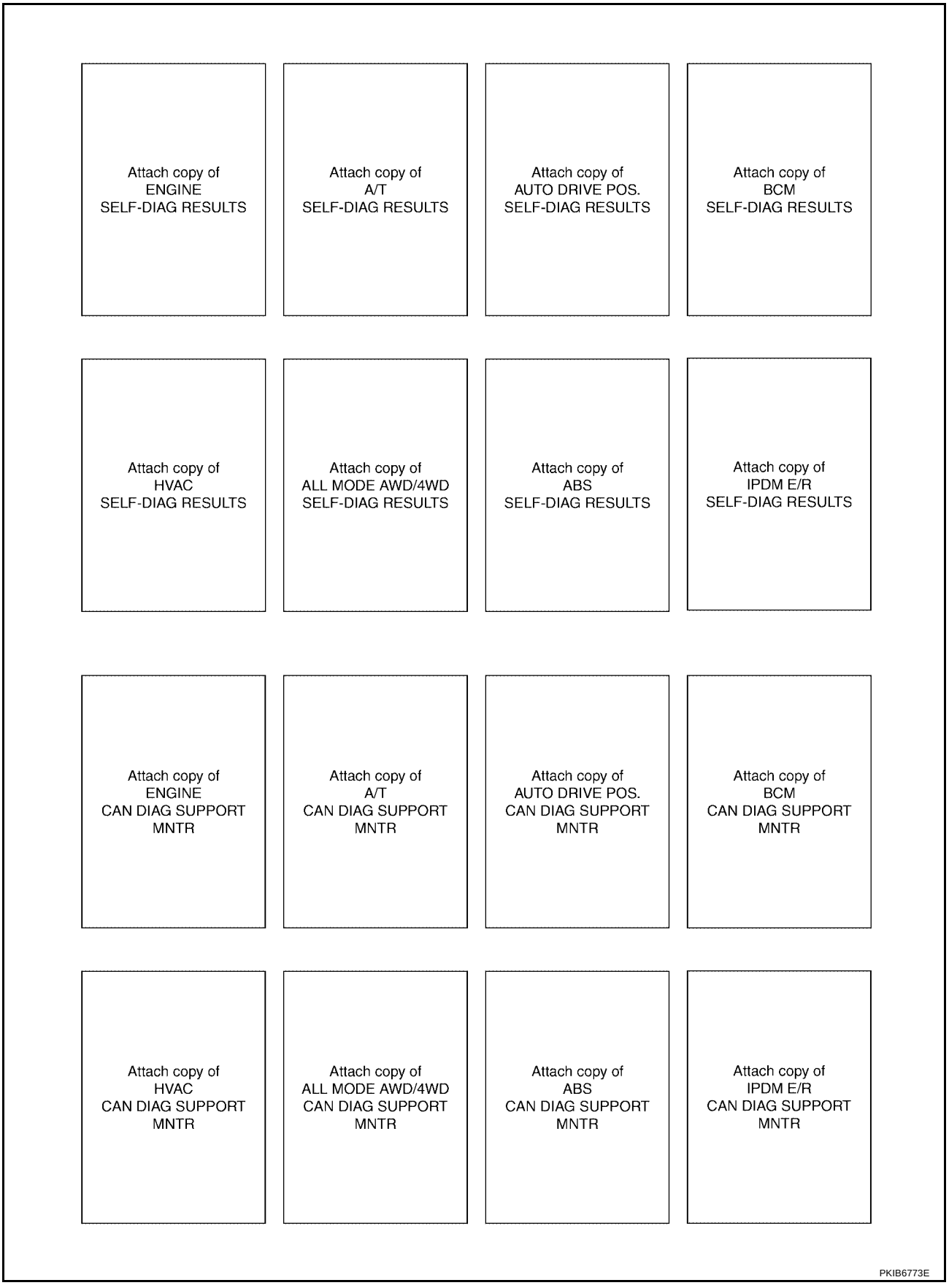
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

SKIB2765E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6773E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

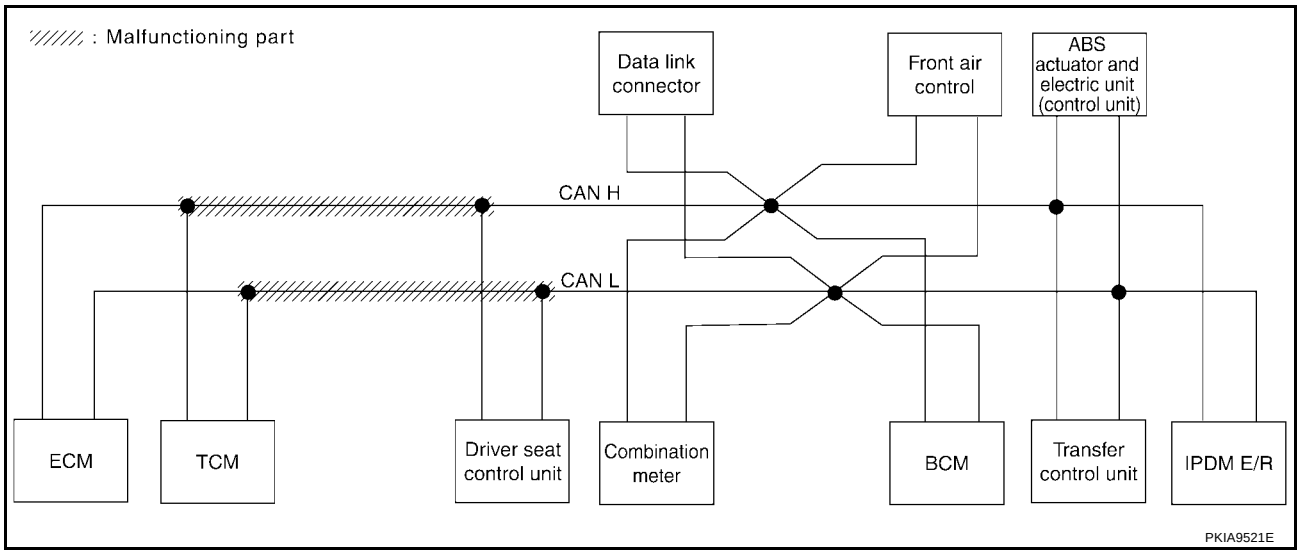
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-257, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2766E



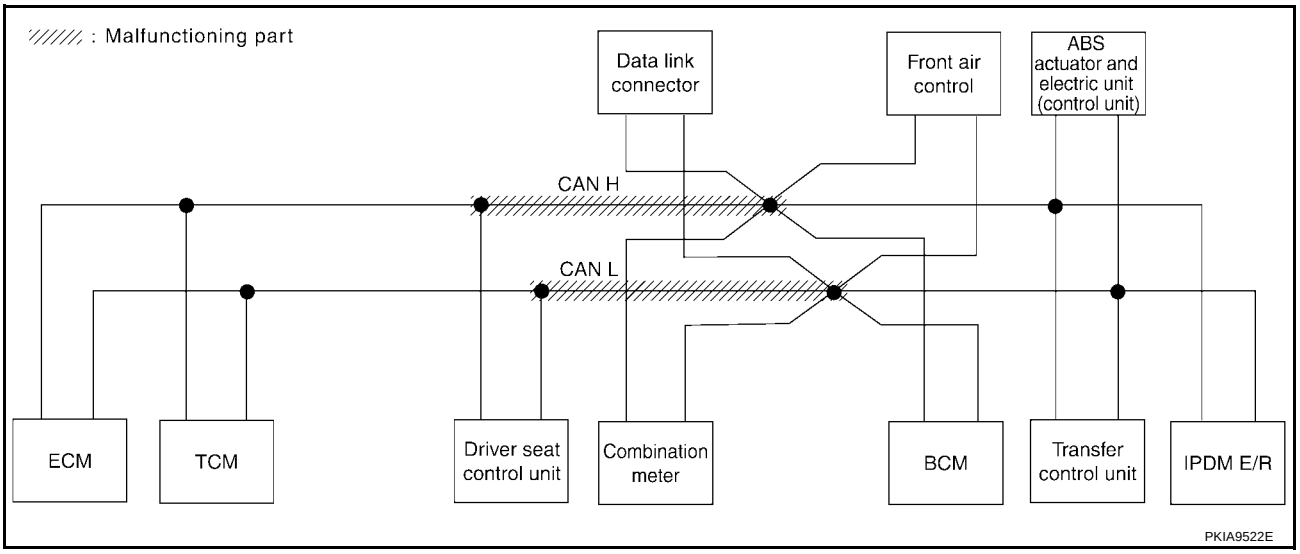
PKIA9521E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-258, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2767E



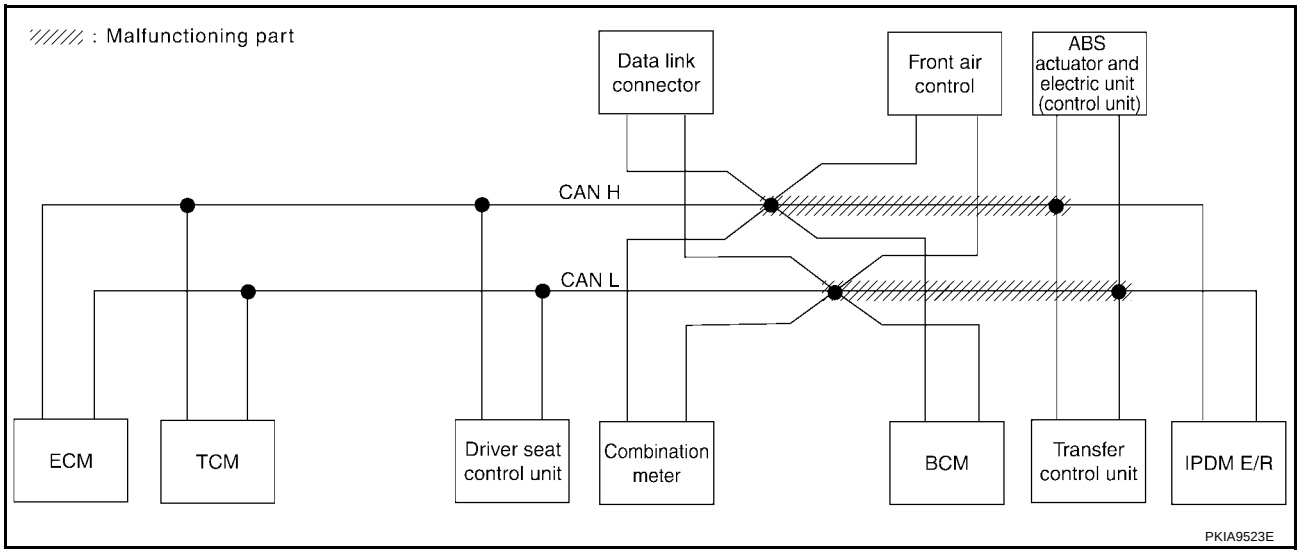
PKIA9522E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-259, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2768E



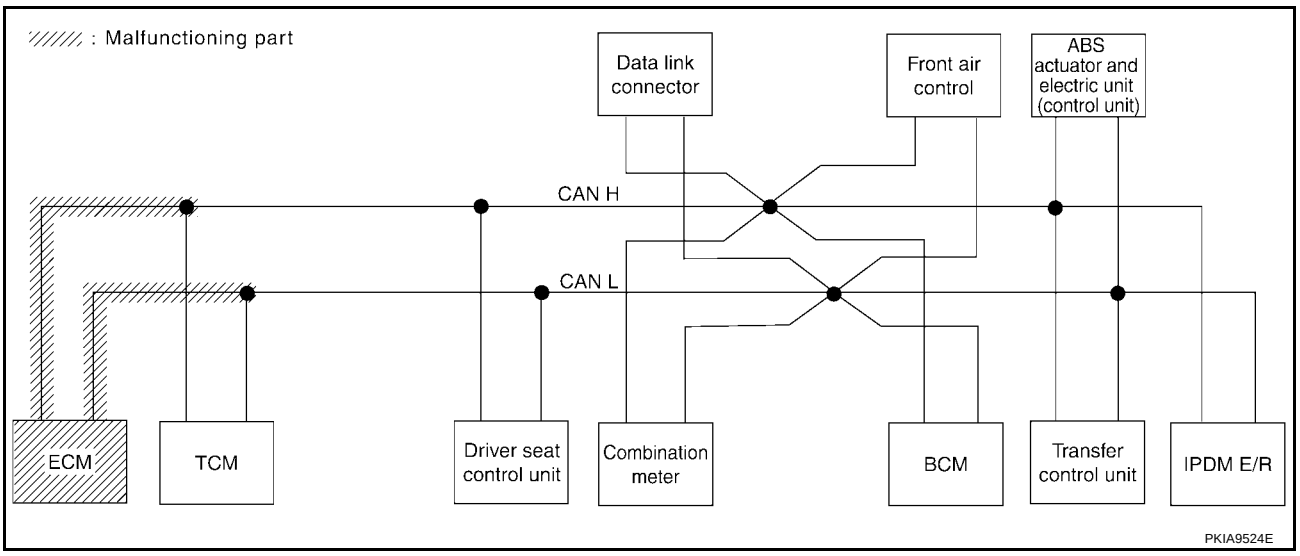
PKIA9523E

Case 4

Check ECM circuit. Refer to LAN-260, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2769E

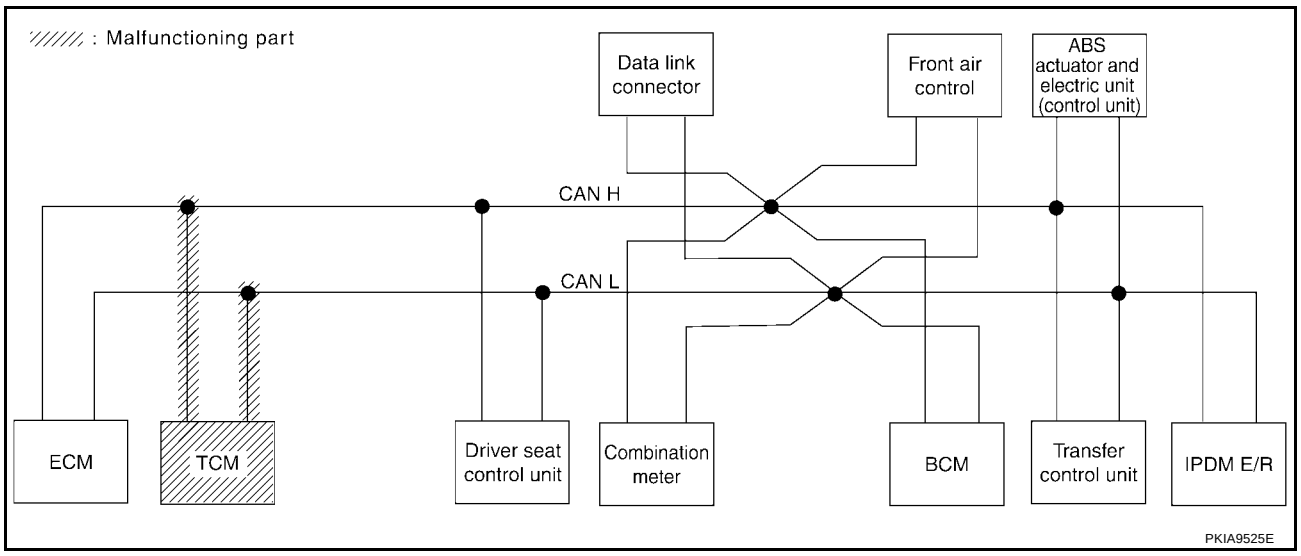


Case 5

Check TCM circuit. Refer to LAN-260, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2770E



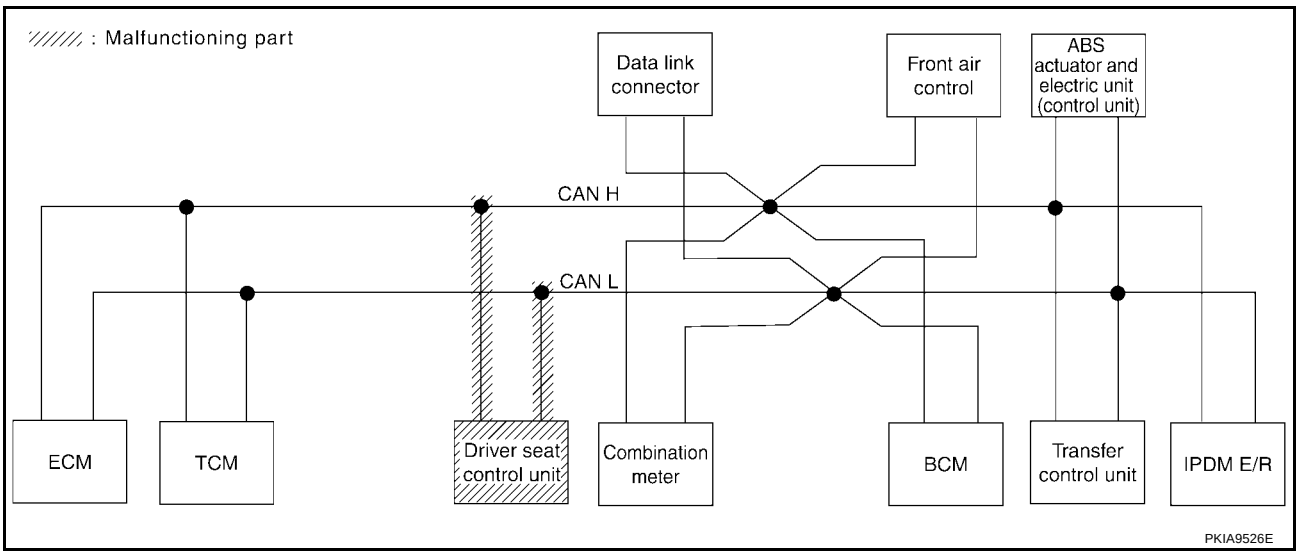
PKIA9525E

Case 6

Check driver seat control unit circuit. Refer to LAN-261, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2771E



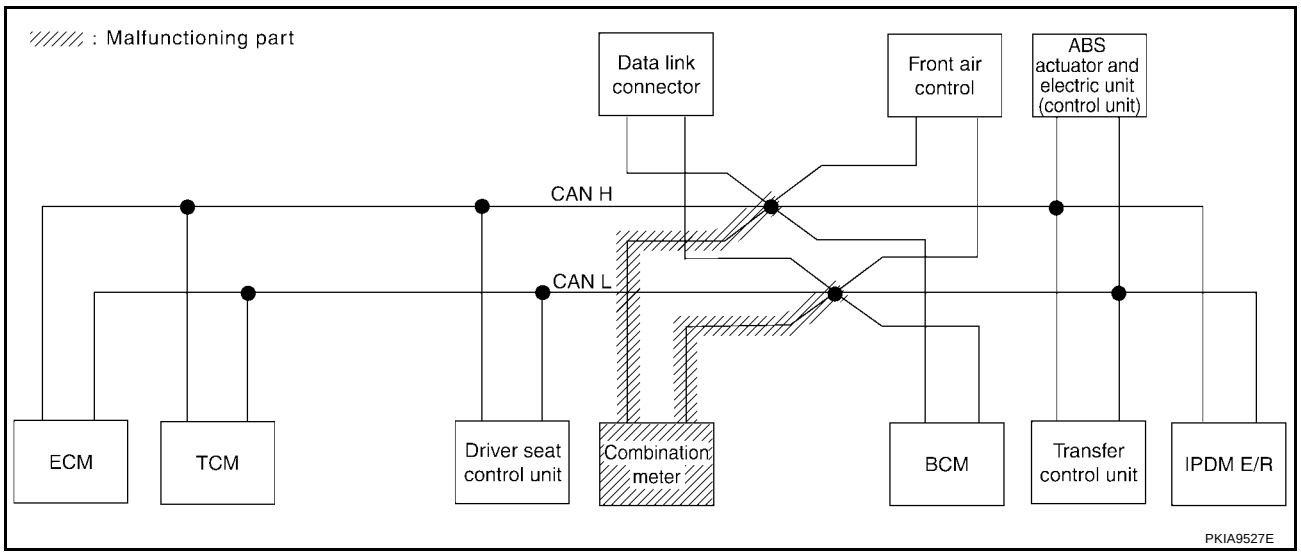
PKIA9526E

Case 7

Check combination meter circuit. Refer to LAN-261, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2773E



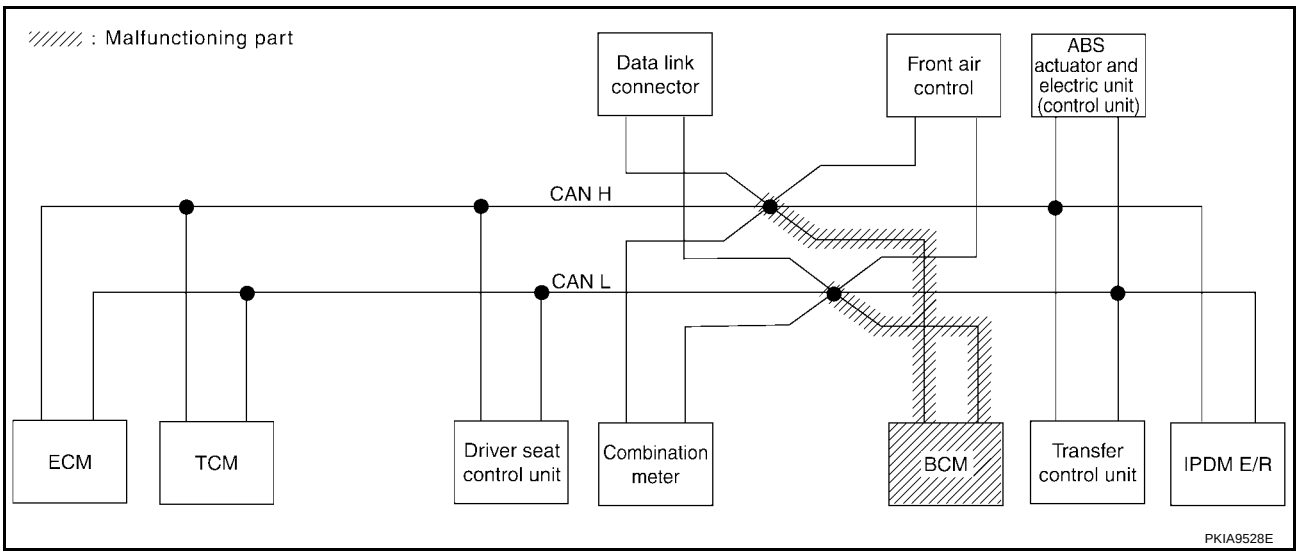
PKIA9527E

Case 8

Check BCM circuit. Refer to LAN-262, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2774E



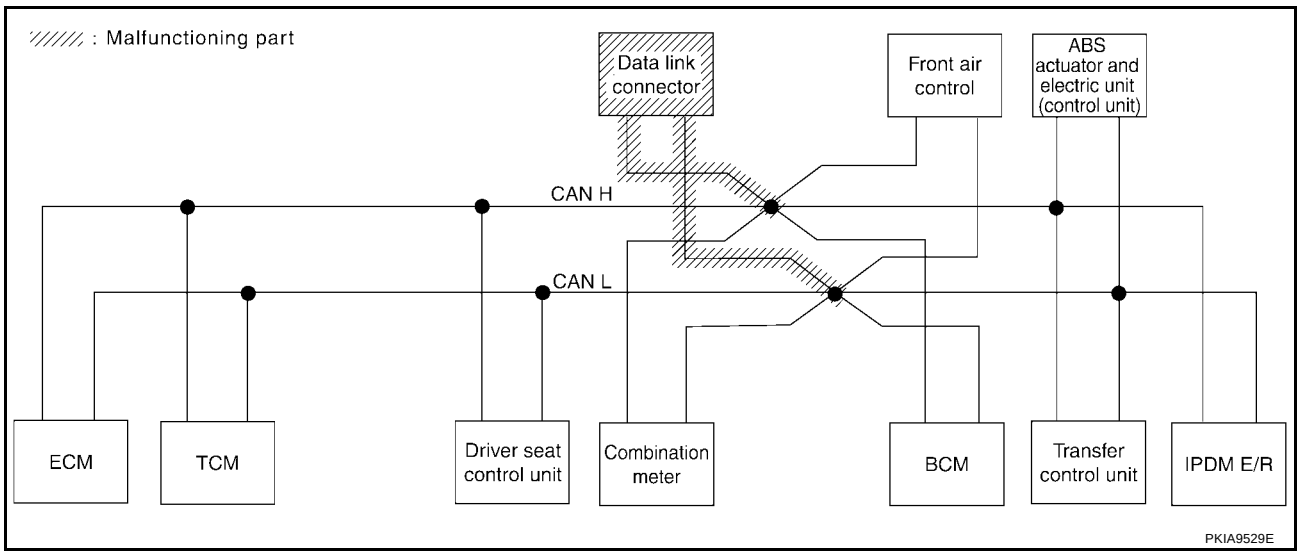
PKIA9528E

Case 9

Check data link connector circuit. Refer to LAN-262, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication ✓	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication ✓	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2775E



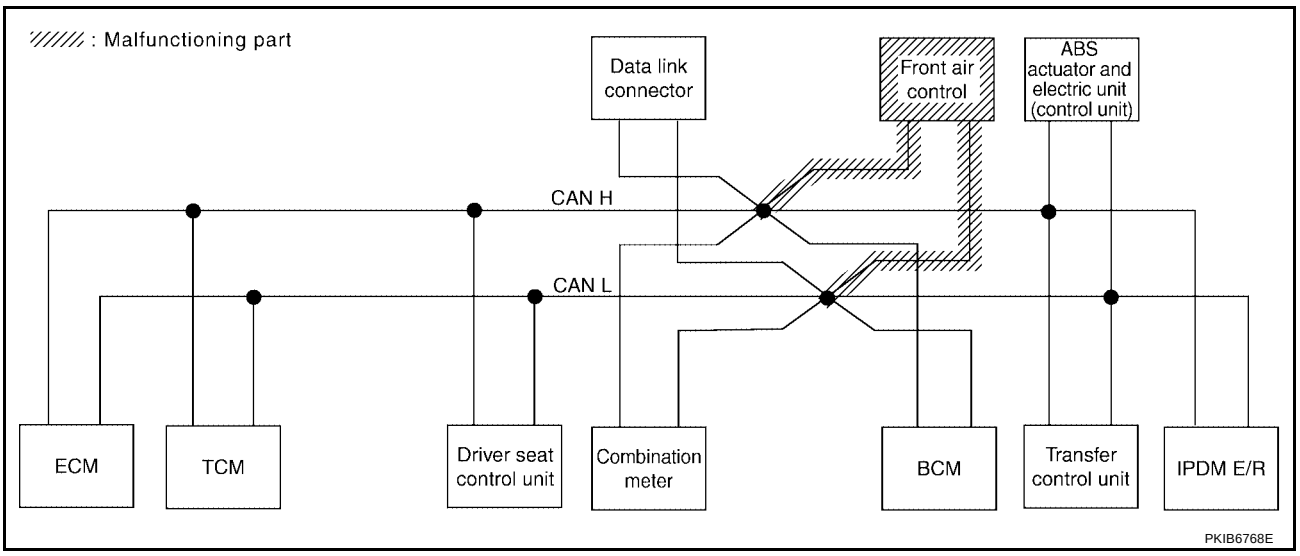
PKIA9529E

Case 10

Check front air control circuit. Refer to LAN-263, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIB6777E



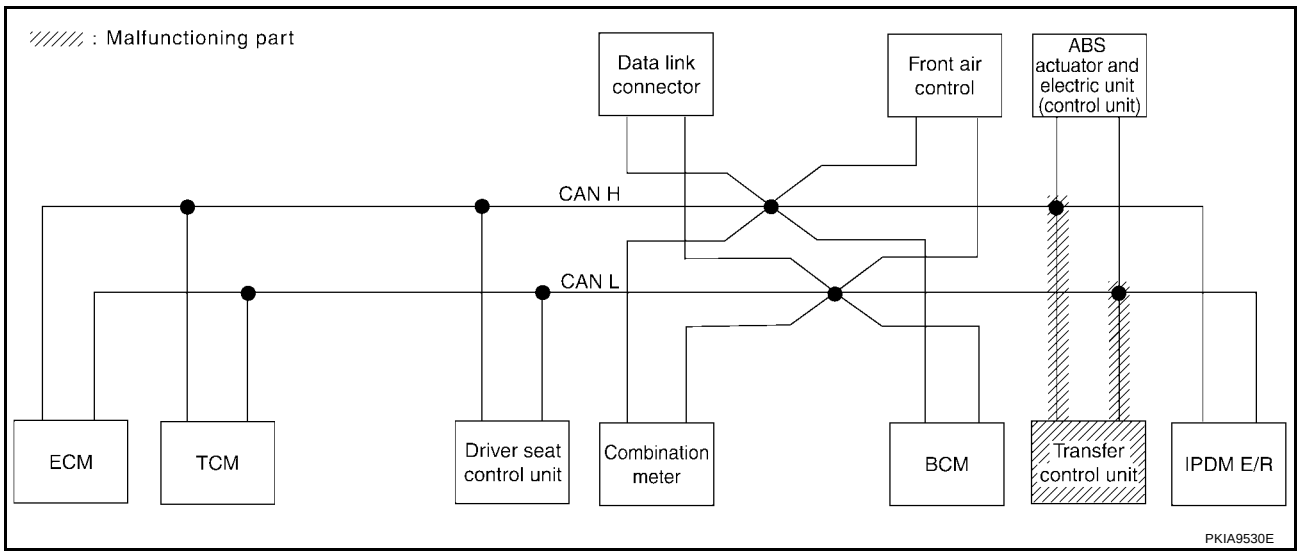
PKIB6768E

Case 11

Check transfer control unit circuit. Refer to LAN-263, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2776E



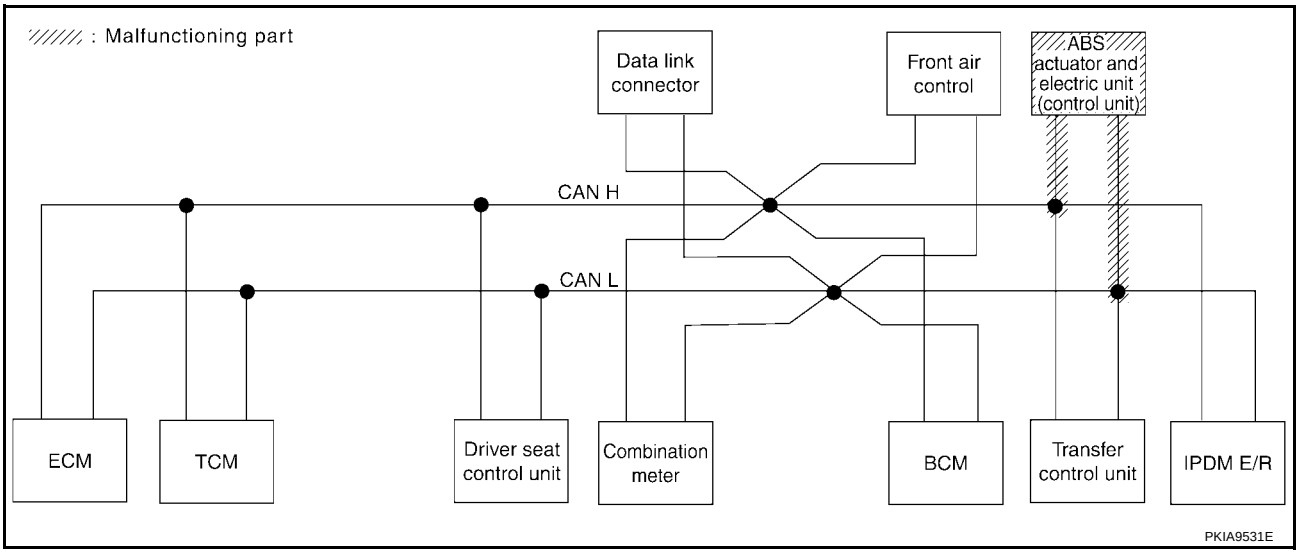
PKIA9530E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-264, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2777E



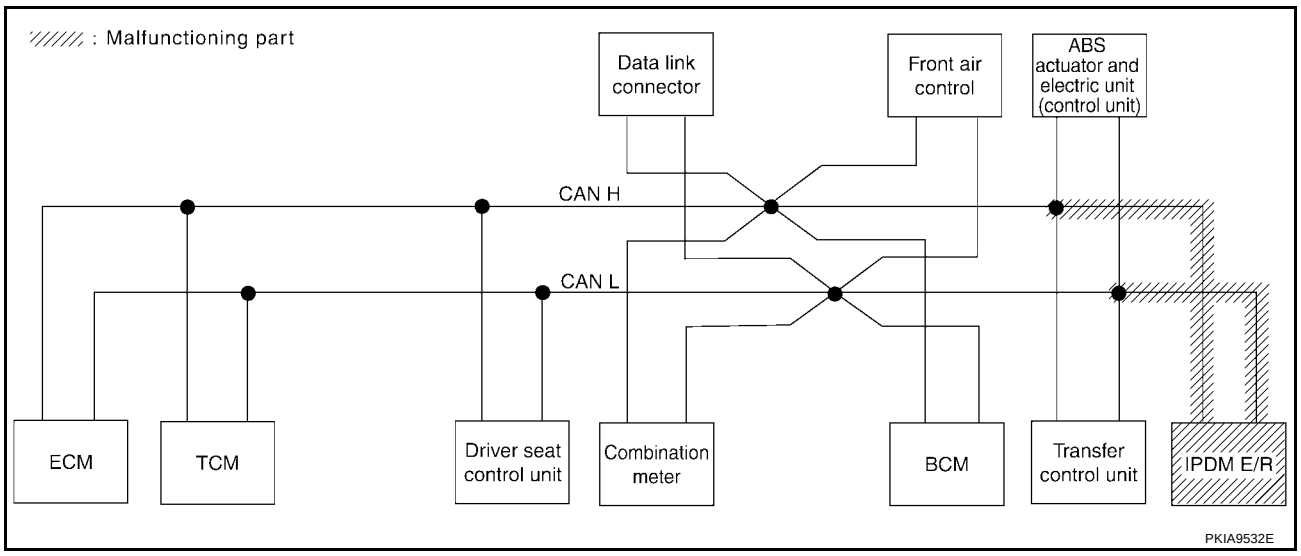
PKIA9531E

Case 13

Check IPDM E/R circuit. Refer to LAN-264, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

SKIB2778E



PKIA9532E

Case 14

Check CAN communication circuit. Refer to LAN-265, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2779E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-265, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2780E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-265, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN ✓	–	UNKWN ✓	–	UNKWN ✓	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN ✓	UNKWN	–	–	UNKWN ✓	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

SKIB2781E

Circuit Check Between TCM and Driver Seat Control Unit

UKS001GB

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

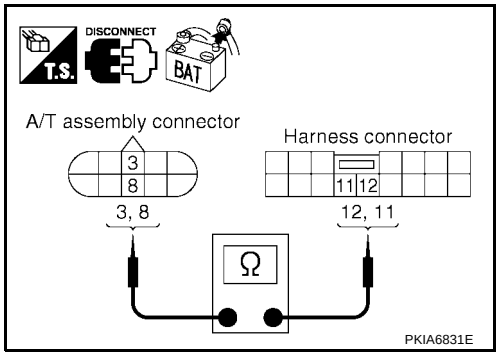
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



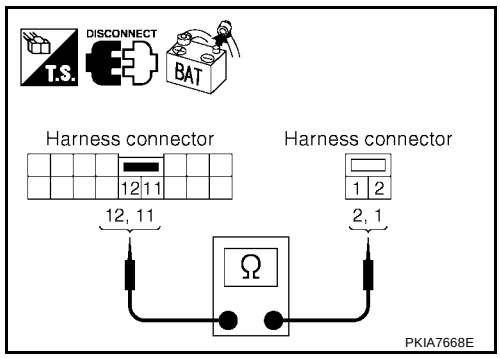
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



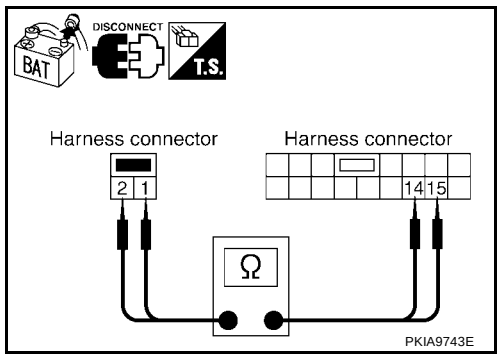
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).

2 (L) - 15 (L) : Continuity should exist.
1 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-240, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001GC

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

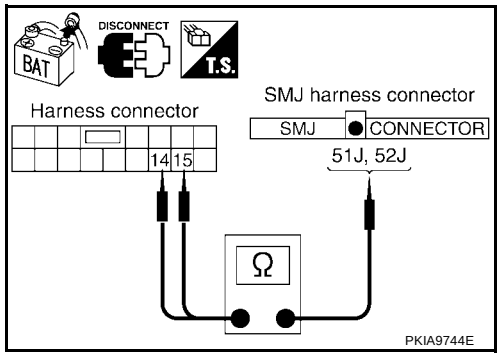
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

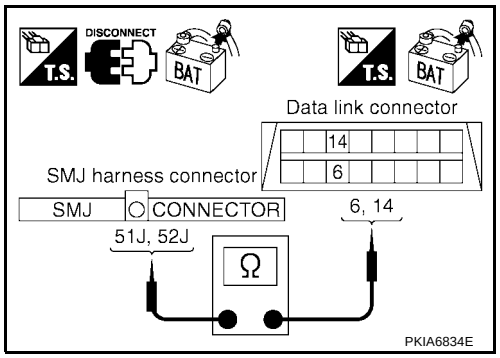
51J (L) - 6 (L) : Continuity should exist.

52J (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-240, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001GD

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

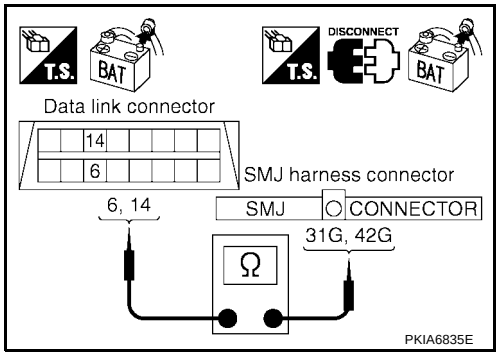
6 (L) - 31G (L) : Continuity should exist.

14 (P) - 42G (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

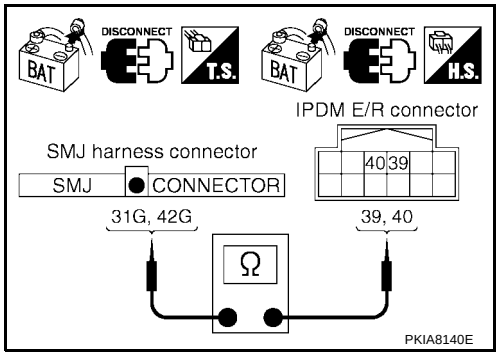
31G (L) - 39 (L) : Continuity should exist.

42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-240, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS001GE

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

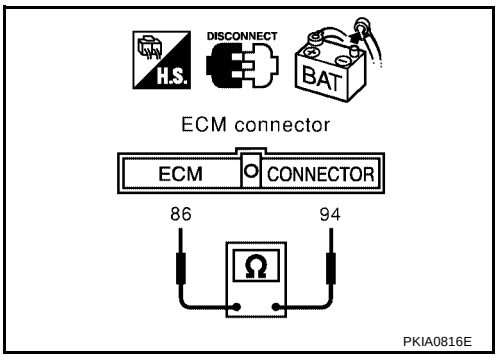
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS001GF

1. CHECK CONNECTOR

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

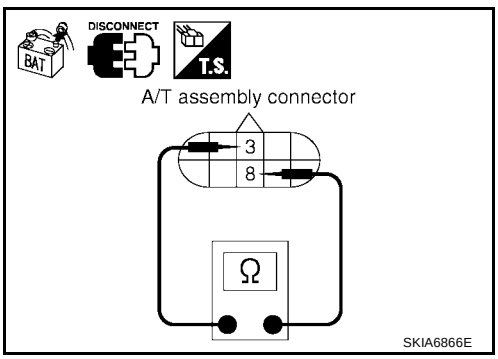
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001GG

1. CHECK CONNECTOR

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

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

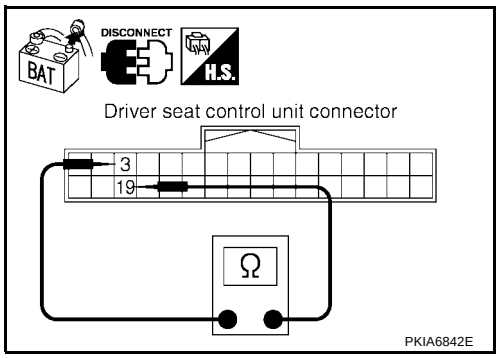
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS001GH

1. CHECK CONNECTOR

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

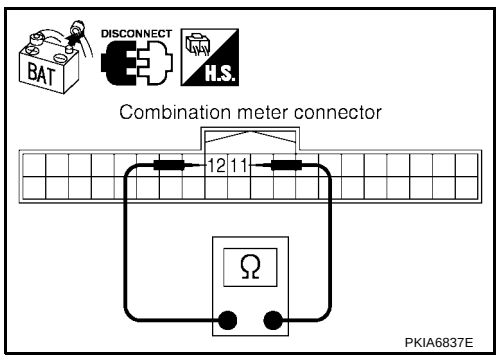
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS001GI

1. CHECK CONNECTOR

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

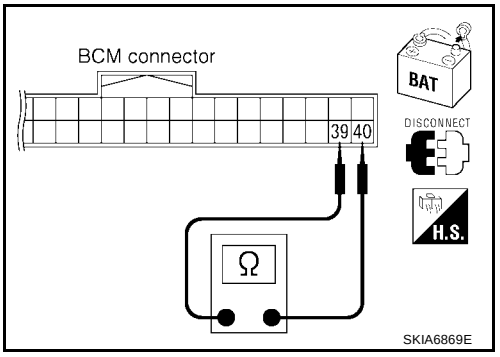
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001GJ

1. CHECK CONNECTOR

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

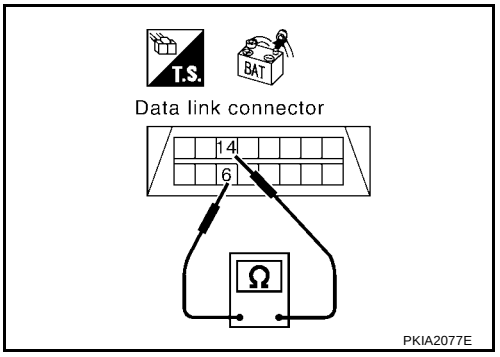
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-240, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS003KR

1. CHECK CONNECTOR

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

OK or NG

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

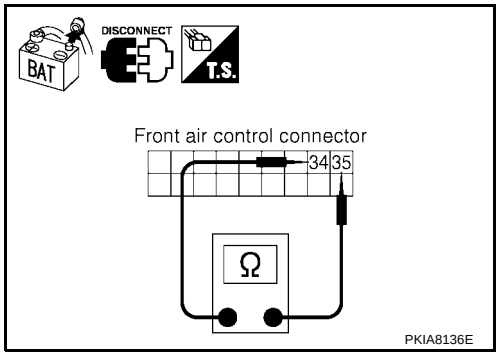
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω

OK or NG

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



Transfer Control Unit Circuit Check

UKS001GL

1. CHECK CONNECTOR

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

OK or NG

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

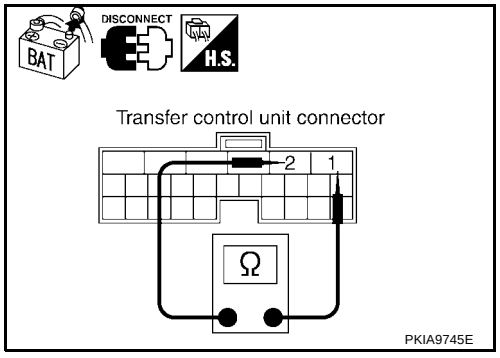
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001GM

1. CHECK CONNECTOR

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

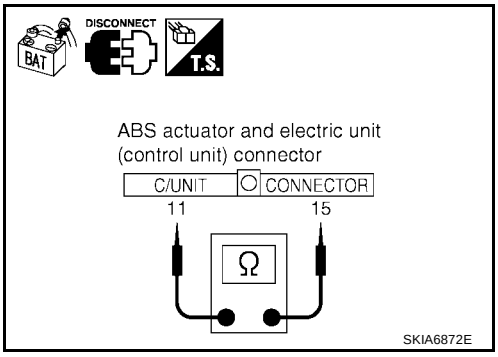
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001GN

1. CHECK CONNECTOR

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

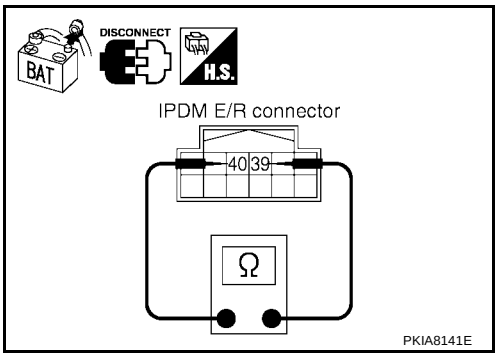
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001GO

1. CHECK CONNECTOR

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
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

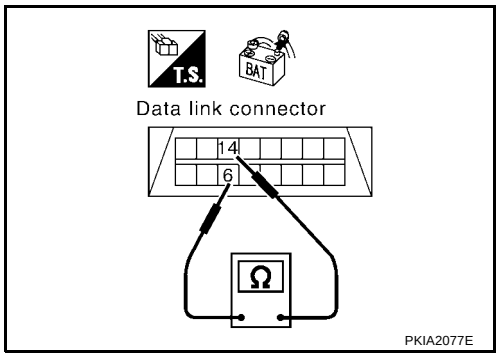
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



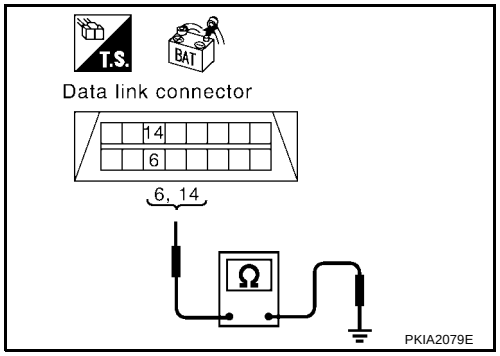
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-266, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001GP

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

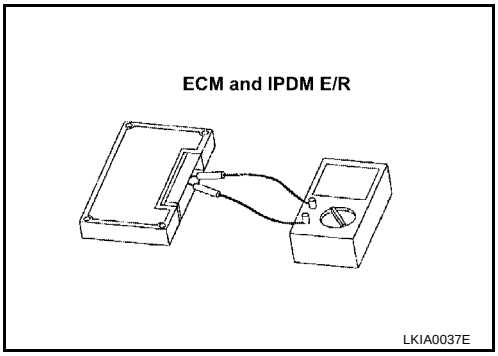
Component Inspection

UKS001GQ

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 9)

PFP:23710

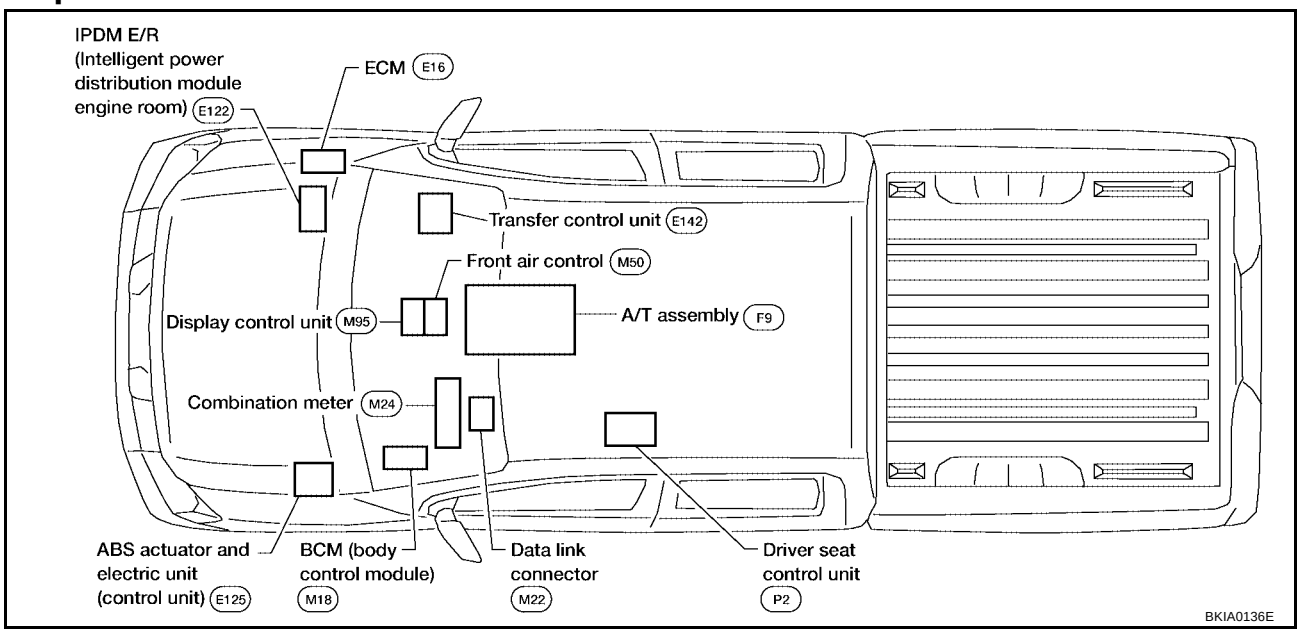
System Description

UKS001GR

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.

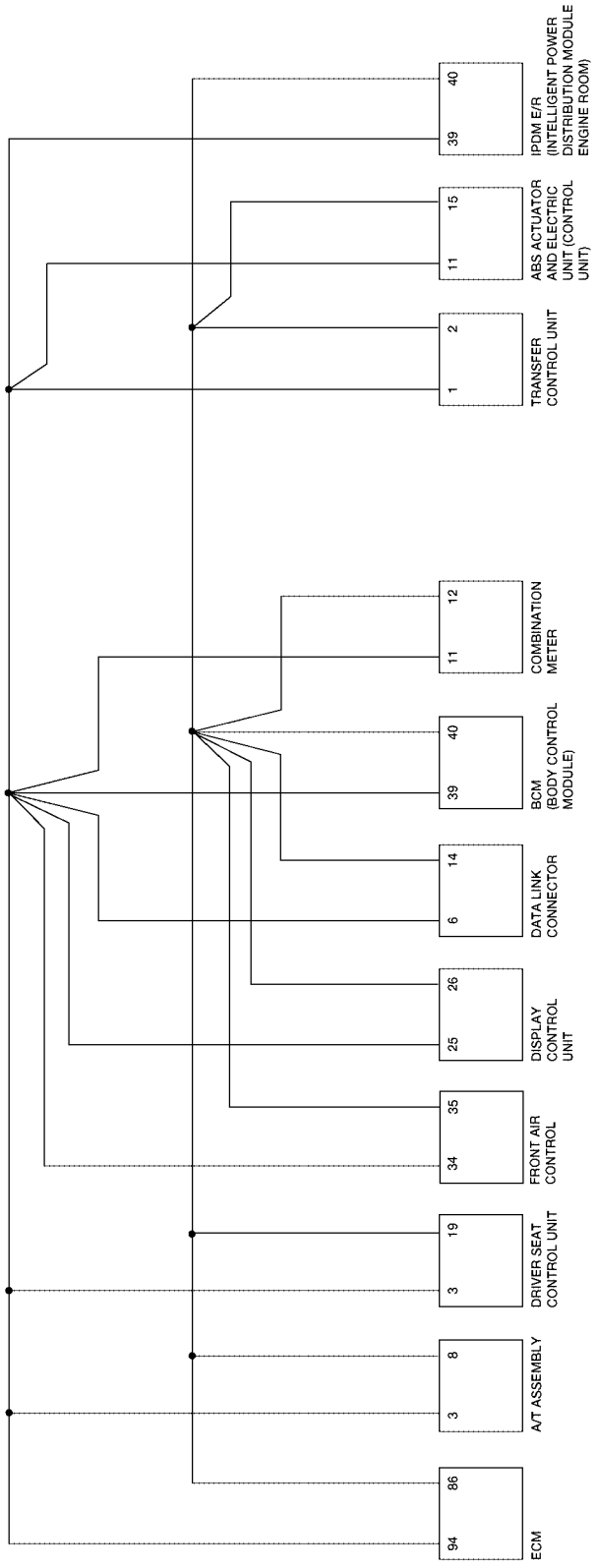
Component Parts and Harness Connector Location

UKS001GS



Schematic

UKS001GT

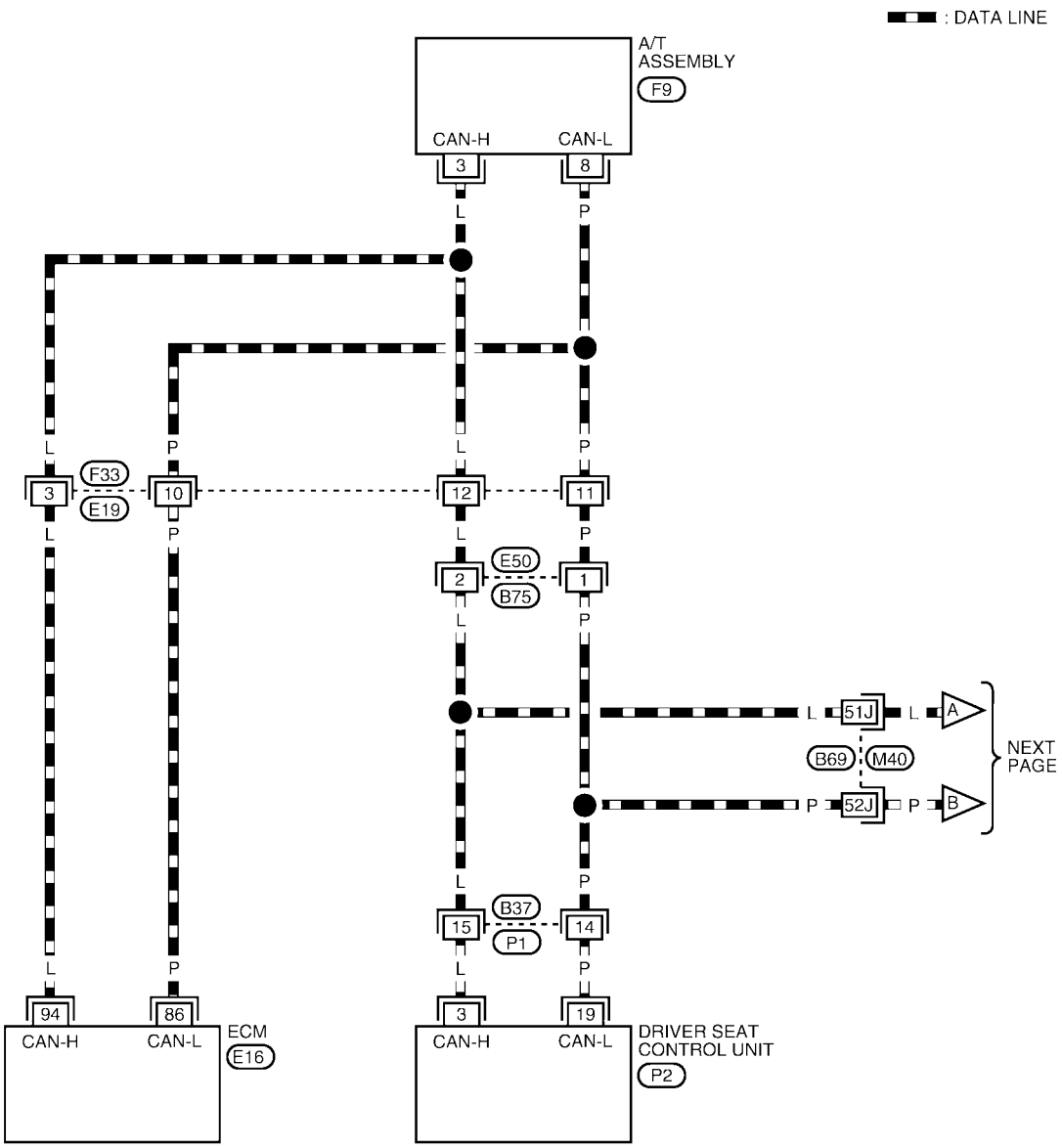


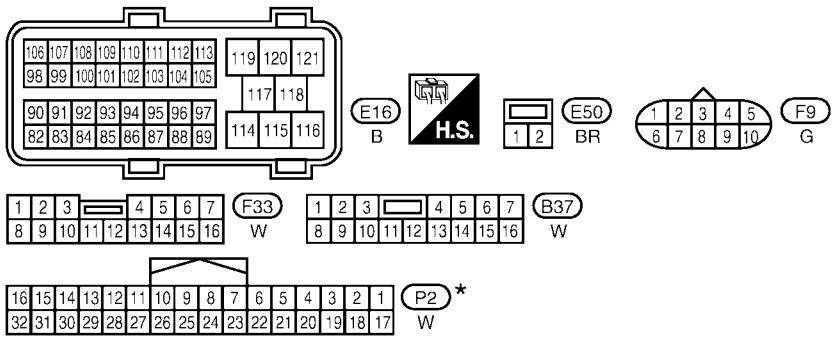
BKWA0146E

Wiring Diagram - CAN -

UKS001GU

LAN-CAN-25



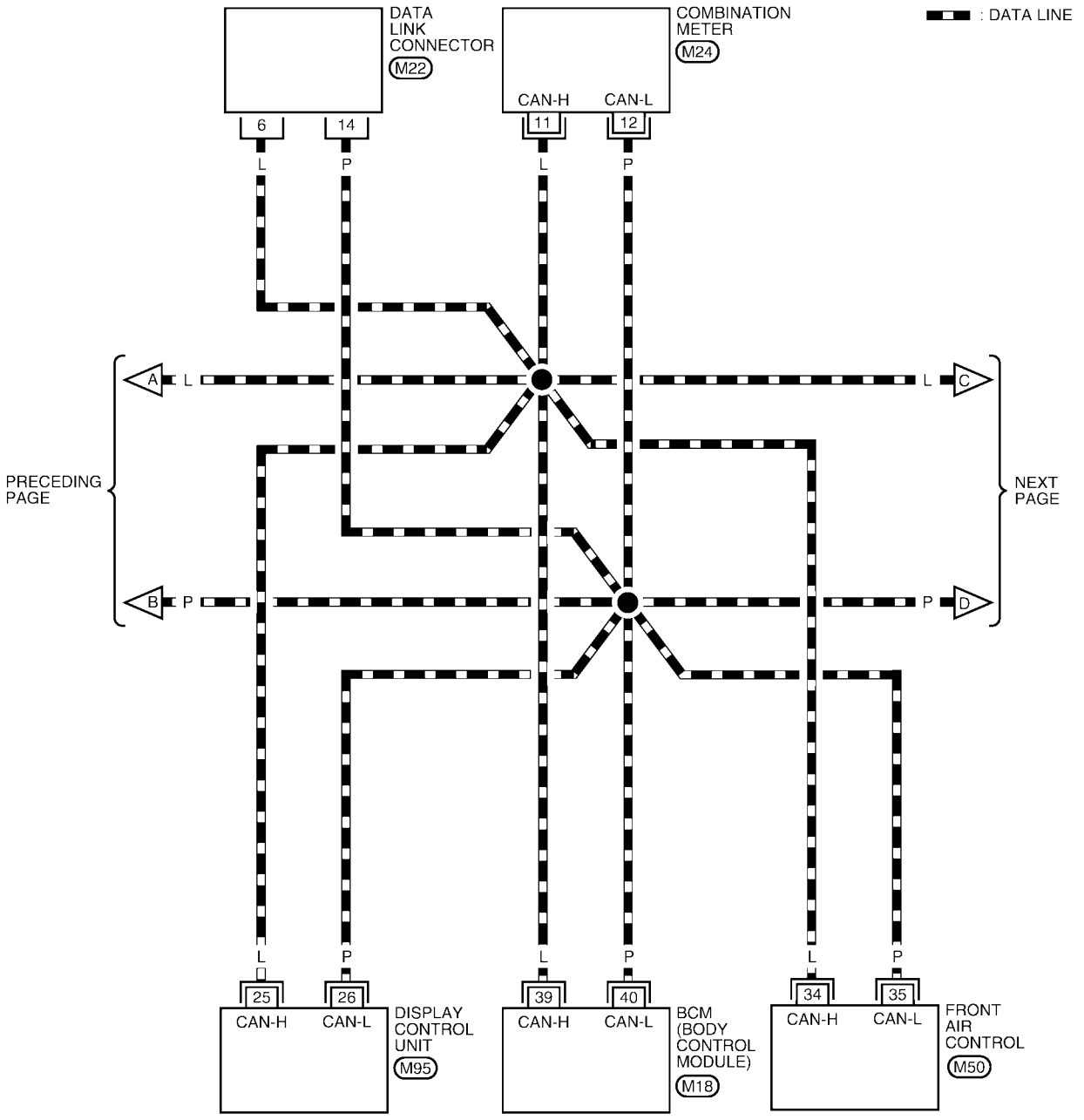


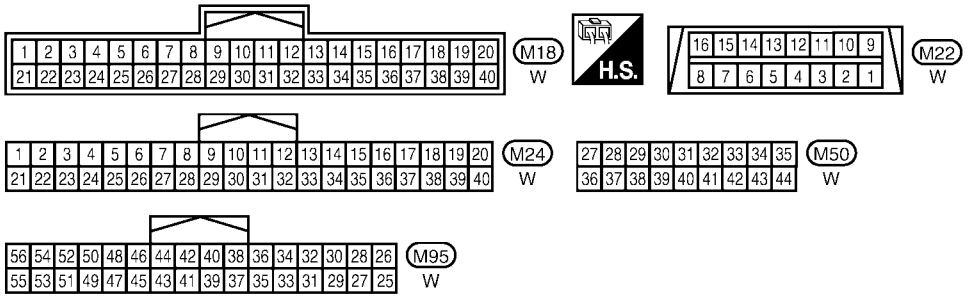
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

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

BKWA0449E

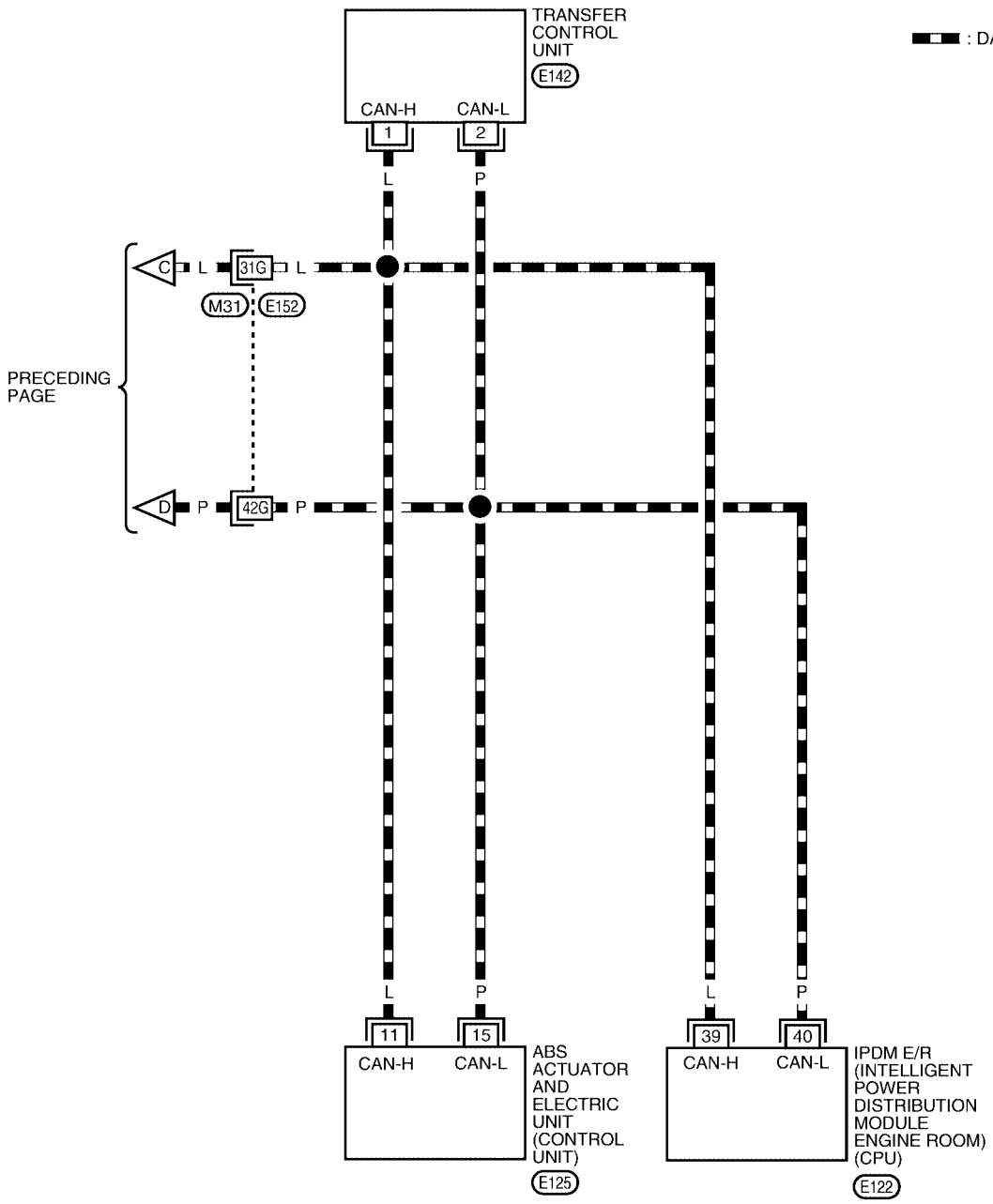
LAN-CAN-26

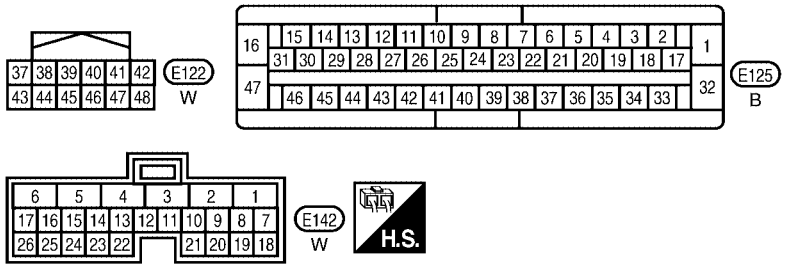




BKWA0450E

LAN-CAN-27





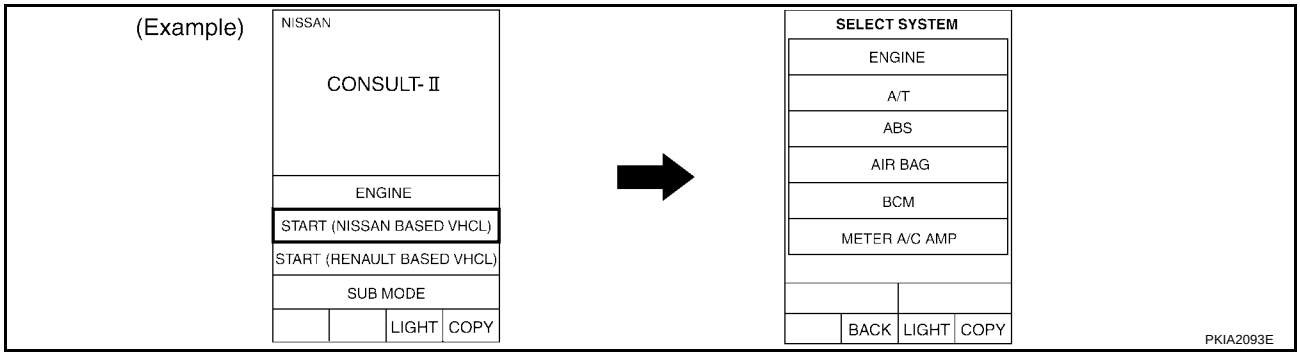
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0451E

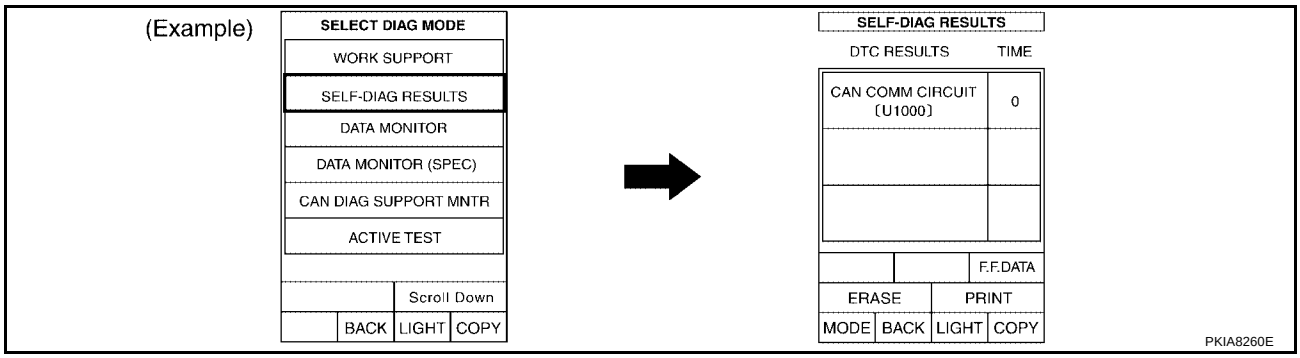
Work Flow

UKS001GV

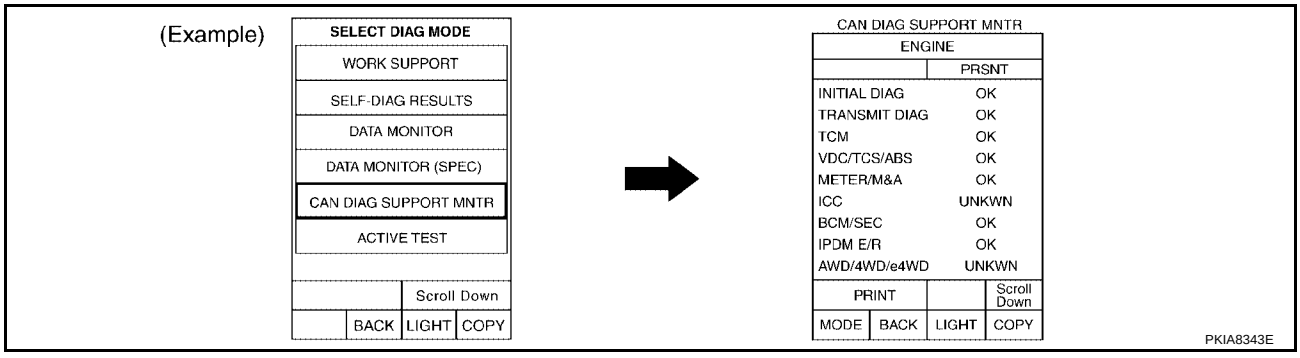
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-274, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-274, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-148, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-274, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-274, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-148, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-276, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

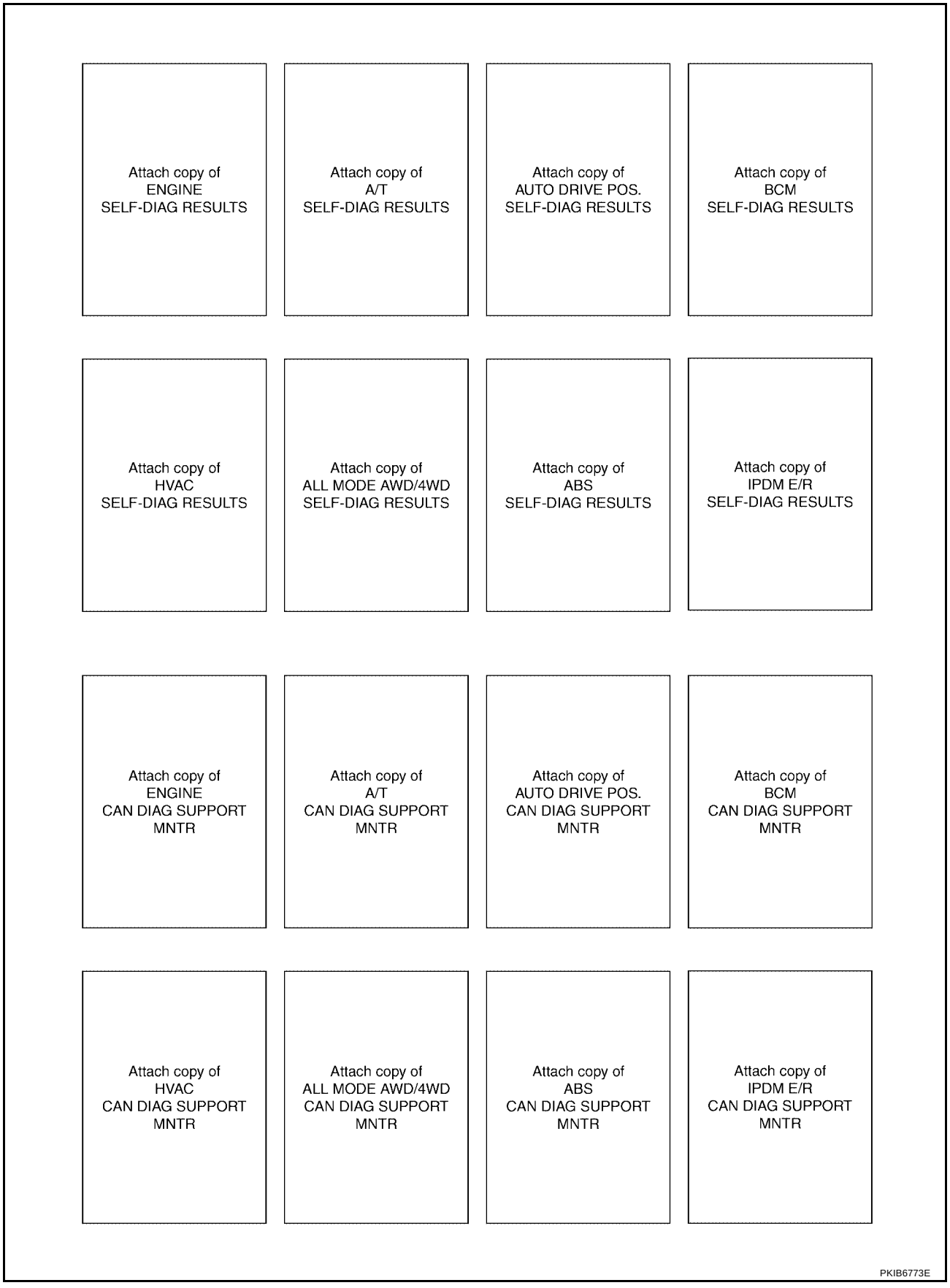
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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

SKIB2782E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
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SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
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BCM
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MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6773E

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 driver seat control unit. Refer to LAN-291, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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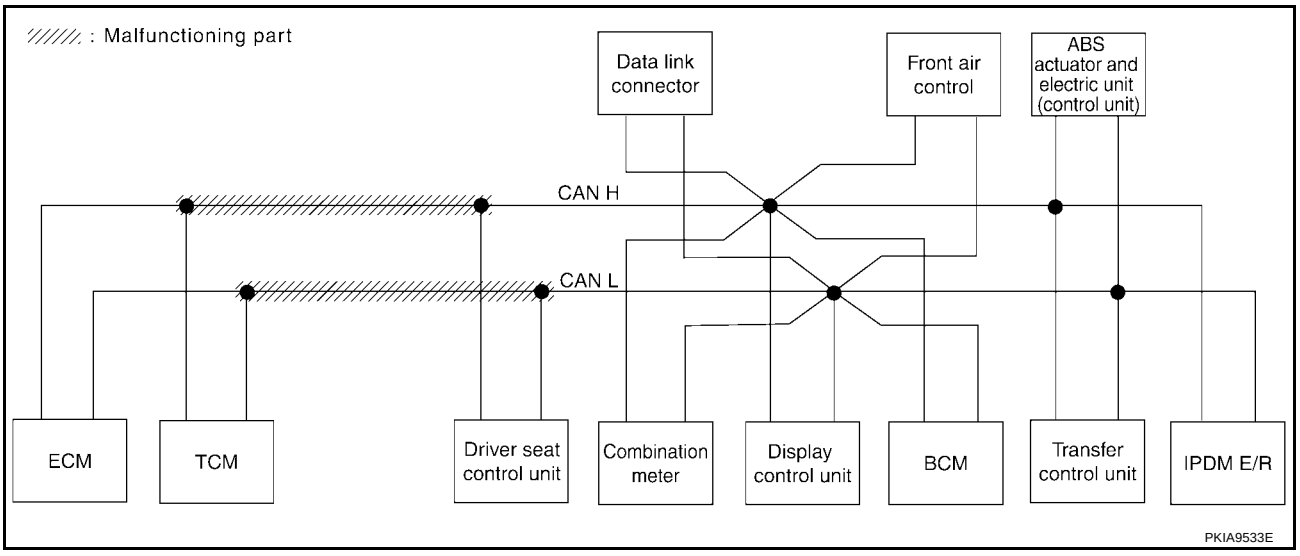

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-292, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	✓ UNKWN	—	✓ UNKWN	—	✓ UNKWN	✓ UNKWN	✓ UNKWN
A/T	—	NG	UNKWN	UNKWN	—	✓ UNKWN	—	—	—	✓ UNKWN	✓ UNKWN	—
AUTO DRIVE POS.	✓ 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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	✓ UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	✓ UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	✓ UNKWN	✓ UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	✓ UNKWN	✓ UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	✓ UNKWN	—	—	—	UNKWN	—	—	—	—

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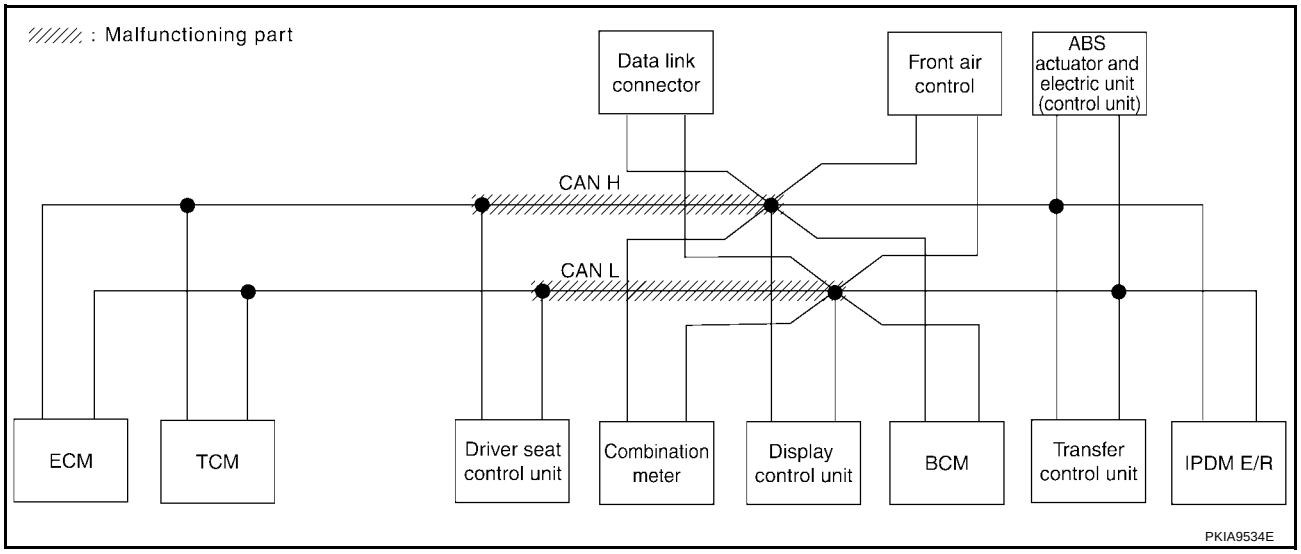

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-293, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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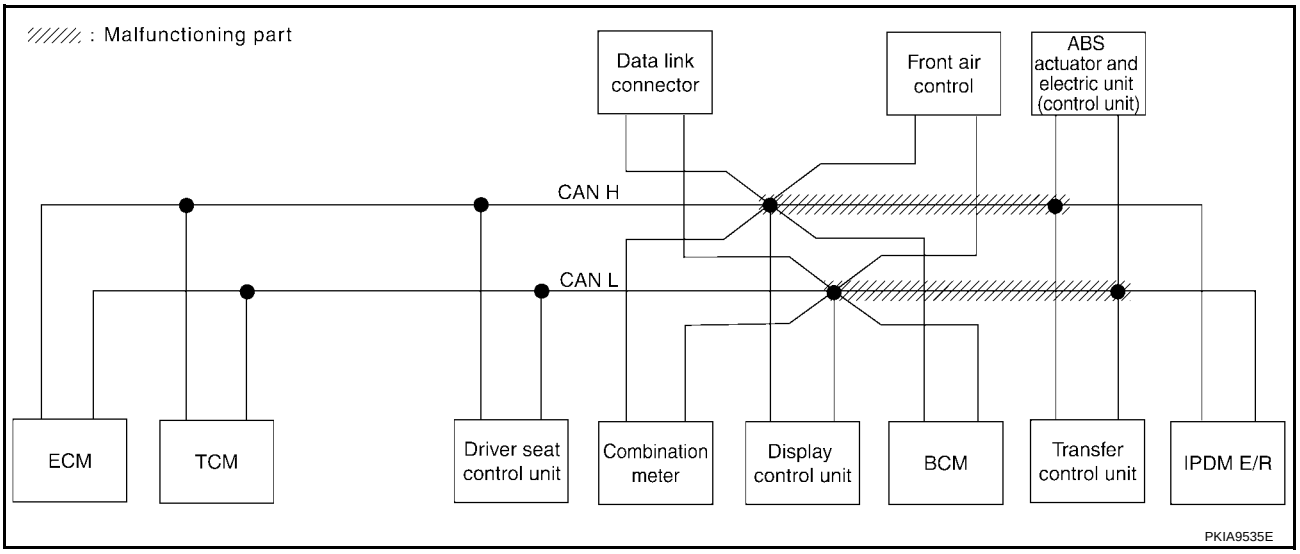

Case 4

Check ECM circuit. Refer to LAN-294, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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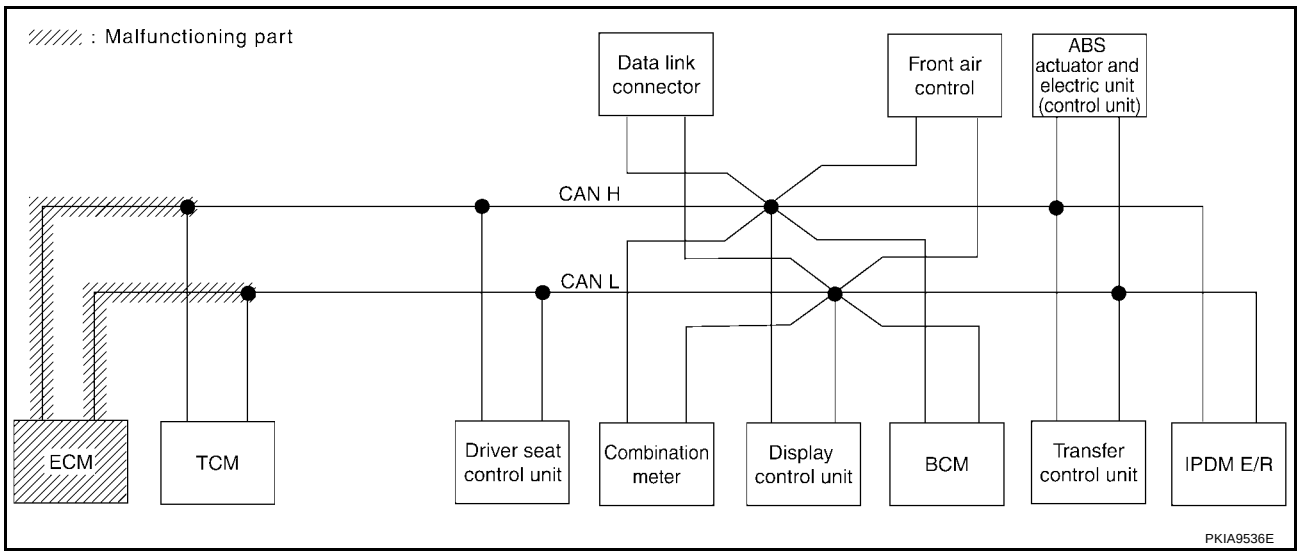

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Case 5

Check TCM circuit. Refer to LAN-294, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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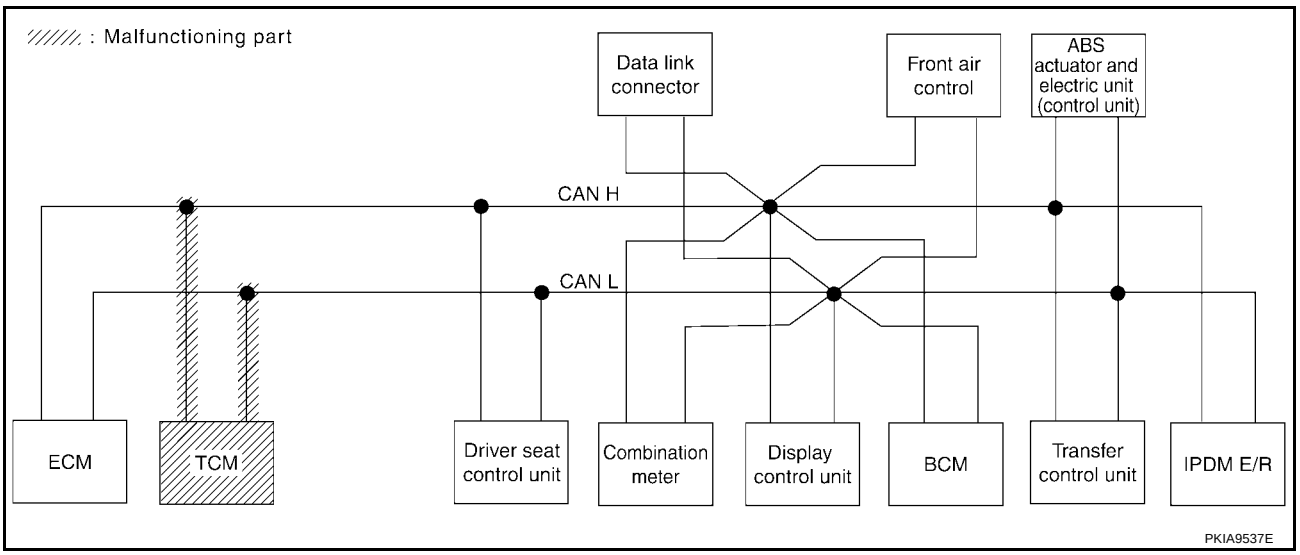

PKIA9537E

Case 6

Check driver seat control unit circuit. Refer to LAN-295, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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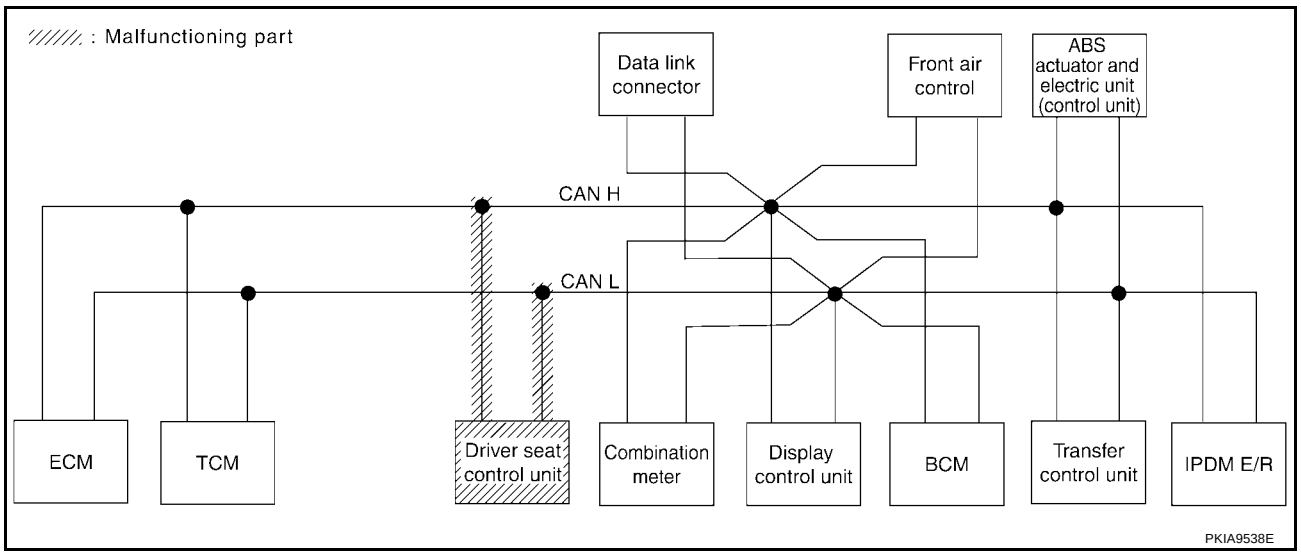

PKIA9538E

Case 7

Check combination meter circuit. Refer to LAN-295, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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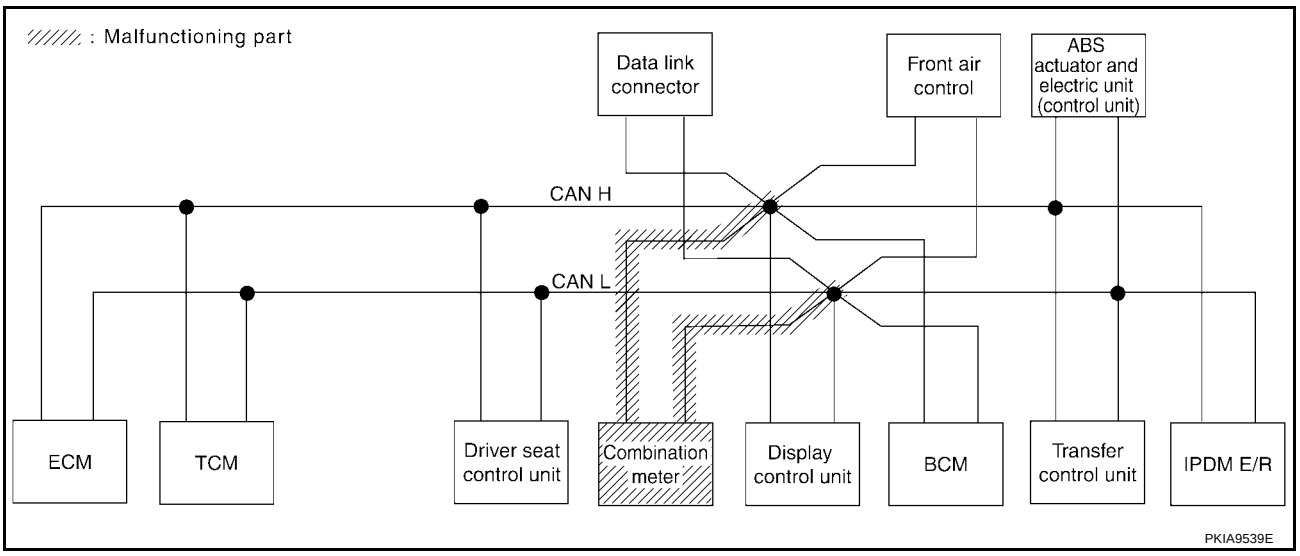

PKIA9539E

Case 8

Check display control unit circuit. Refer to LAN-296, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4 ✓	—	—	CAN CRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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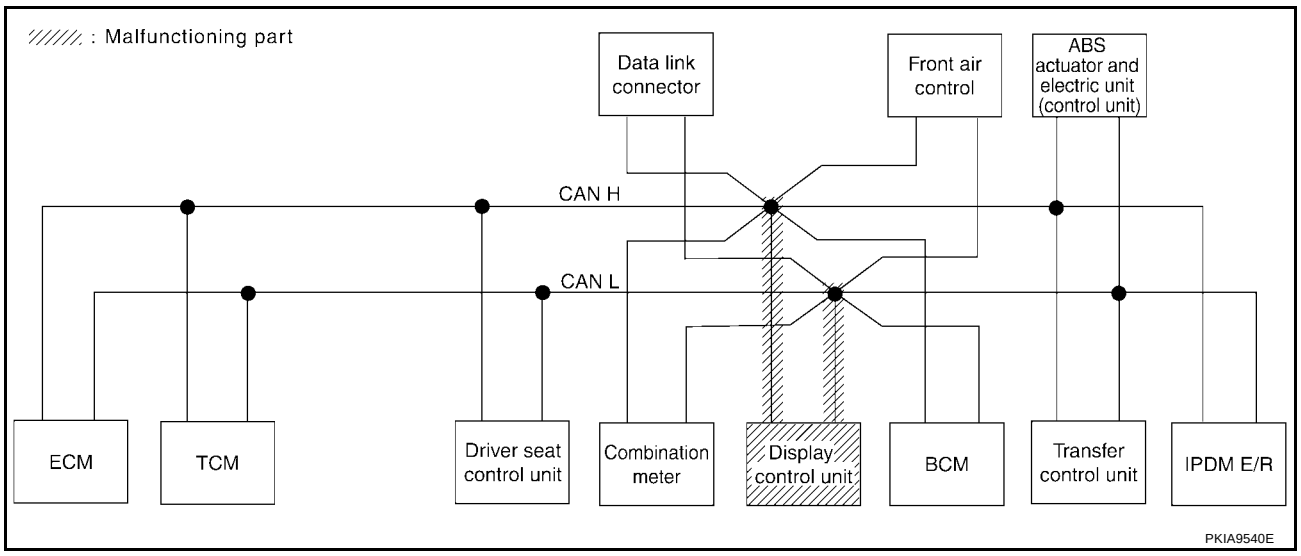

PKIA9540E

Case 9

Check BCM circuit. Refer to LAN-296, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

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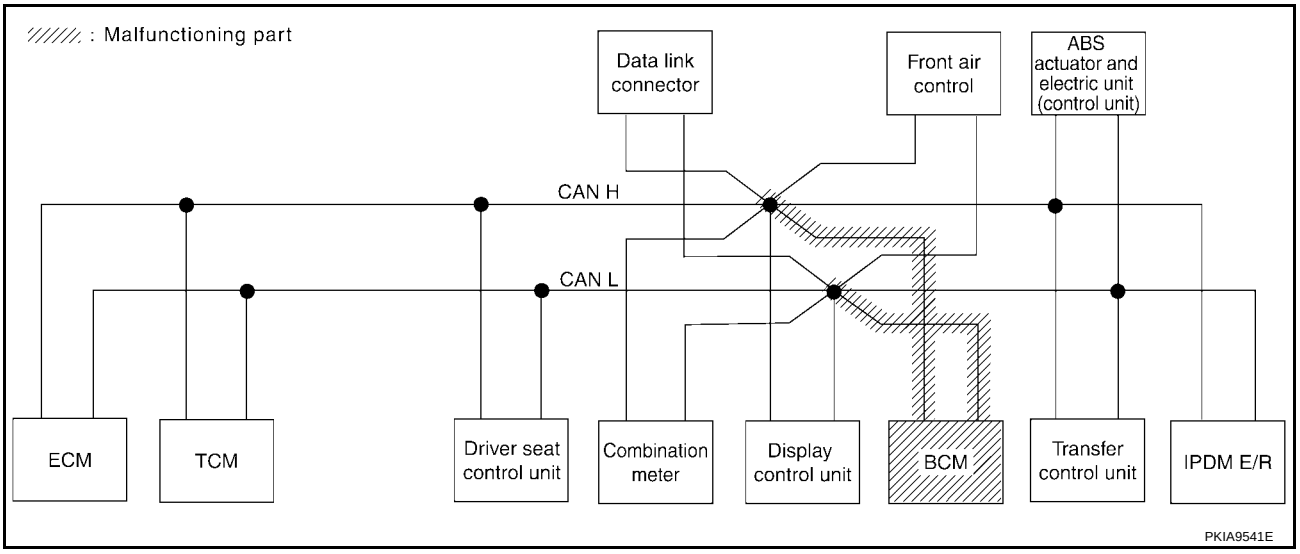


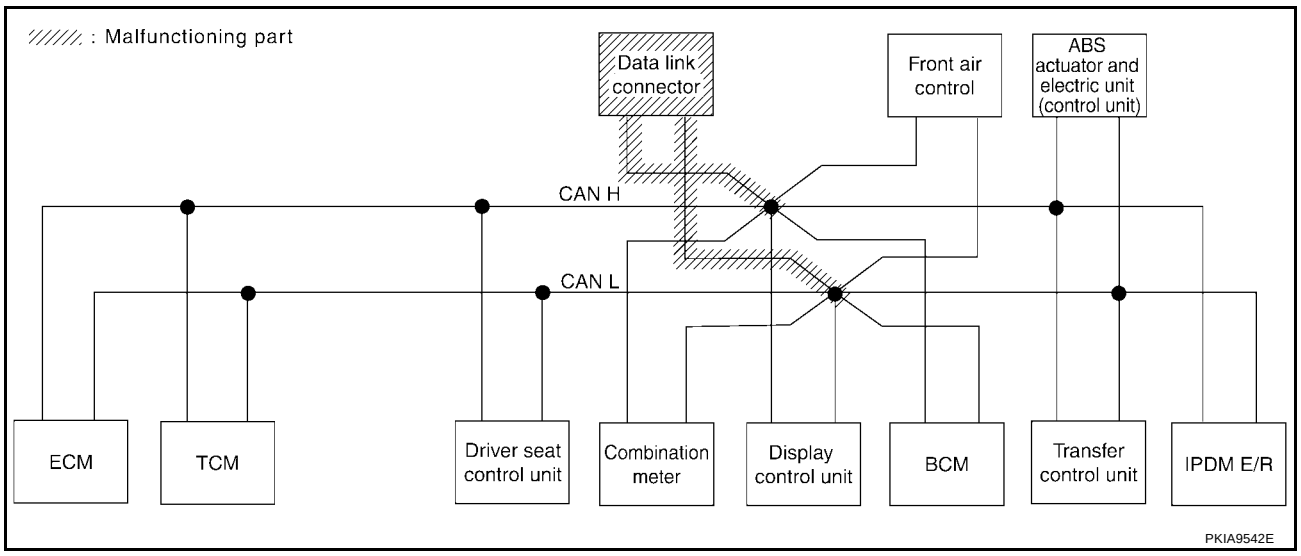
PKIA9541E

Case 10

Check data link connector circuit. Refer to LAN-297, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—		—

SKIB2792E



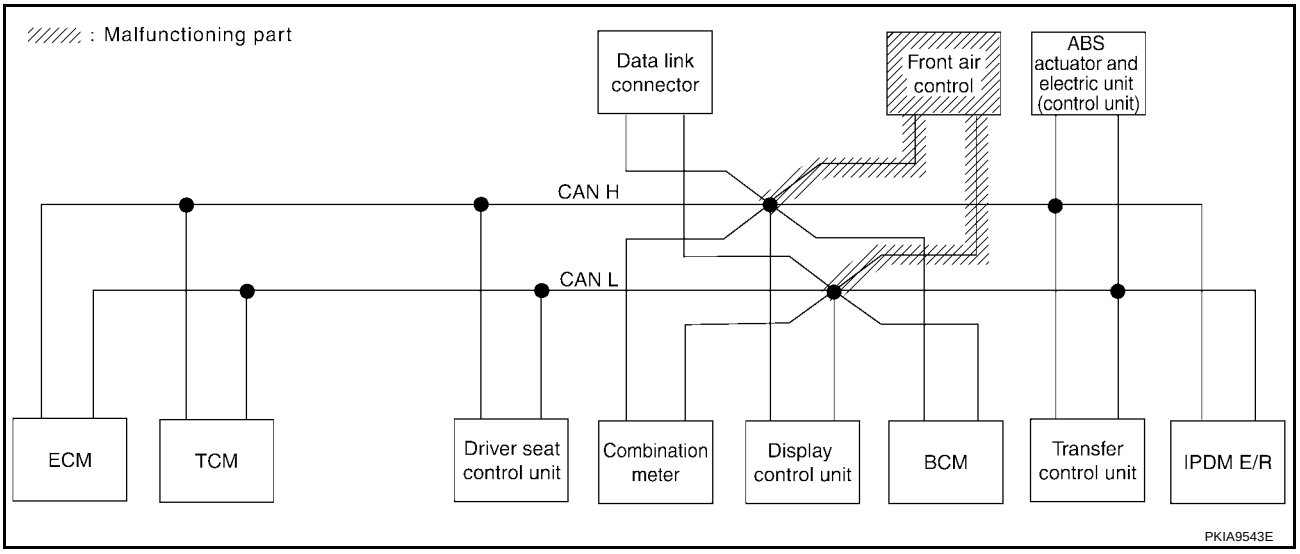
PKIA9542E

Case 11

Check front air control circuit. Refer to LAN-297, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

SKIB2794E



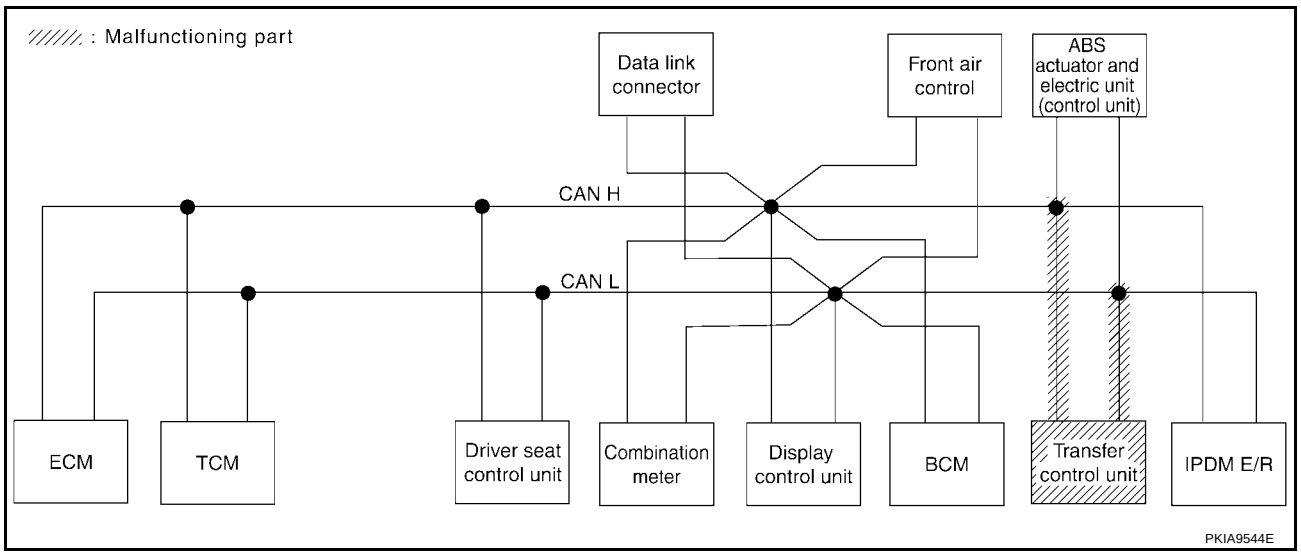
PKIA9543E

Case 12

Check transfer control unit circuit. Refer to LAN-298, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

SKIB2795E



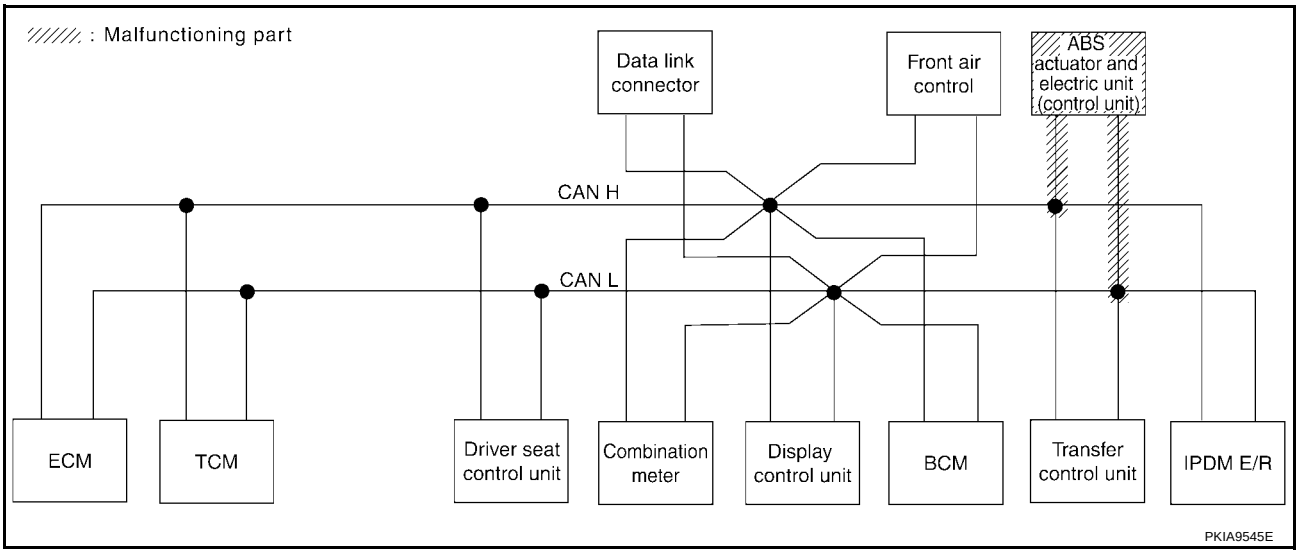
PKIA9544E

Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-298, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

SKIB2796E



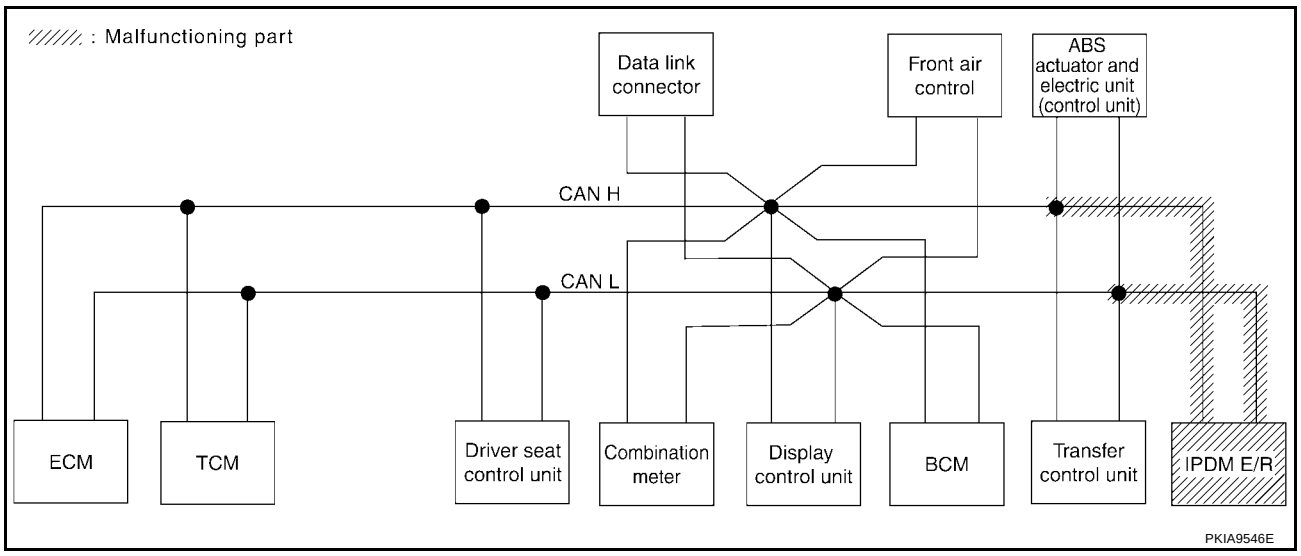
PKIA9545E

Case 14

Check IPDM E/R circuit. Refer to LAN-299, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

SKIB2797E



PKIA9546E

Case 15

Check CAN communication circuit. Refer to LAN-299, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

SKIB2798E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-300, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

SKIB2799E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-300, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	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 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	–	UNKWN
HVAC	No indication	–	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	–	UNKWN	–
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	–

SKIB2800E

Circuit Check Between TCM and Driver Seat Control Unit

UKS001GW

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

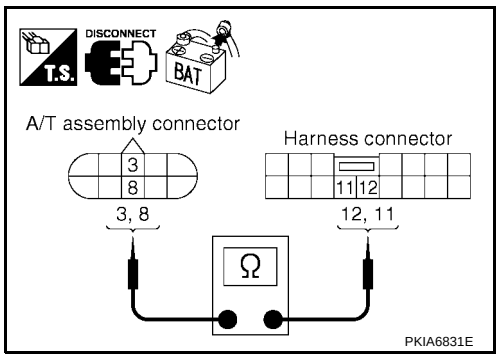
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



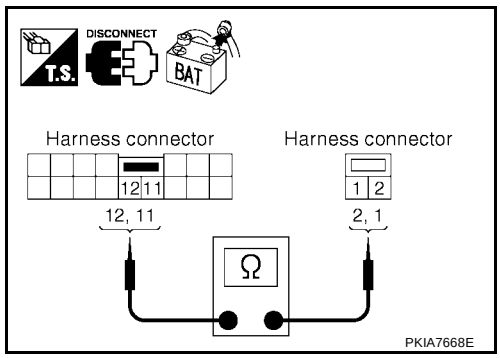
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



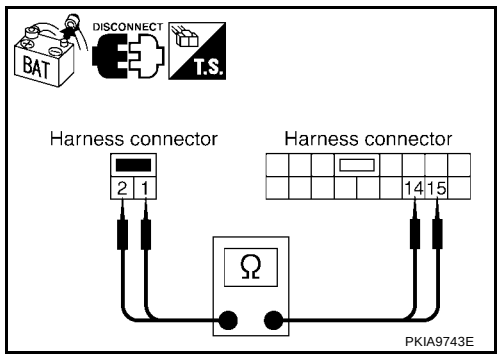
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).

2 (L) - 15 (L) : Continuity should exist.
1 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-272, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001GX

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

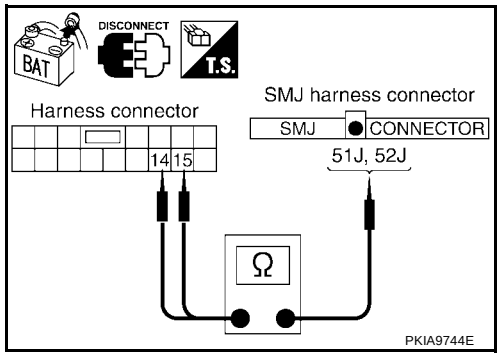
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

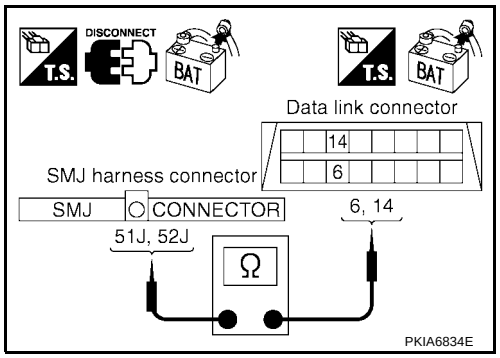
51J (L) - 6 (L) : Continuity should exist.

52J (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-272, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001GY

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

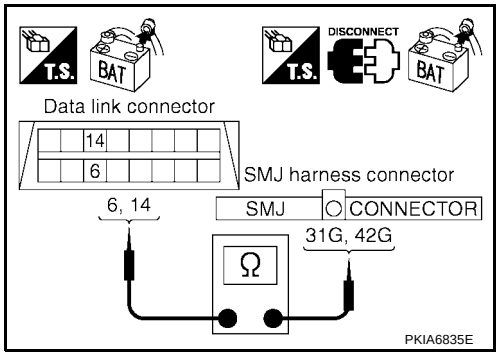
6 (L) - 31G (L) : Continuity should exist.

14 (P) - 42G (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

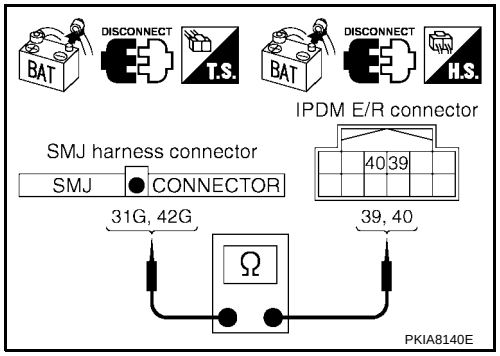
31G (L) - 39 (L) : Continuity should exist.

42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-272, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS001GZ

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

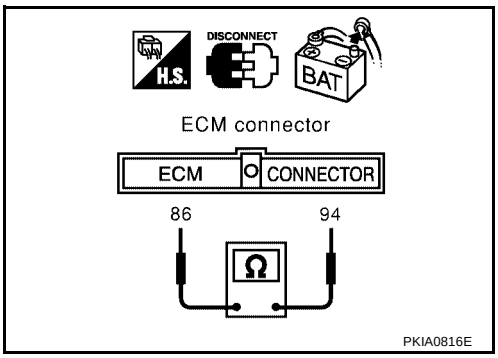
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS001H0

1. CHECK CONNECTOR

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

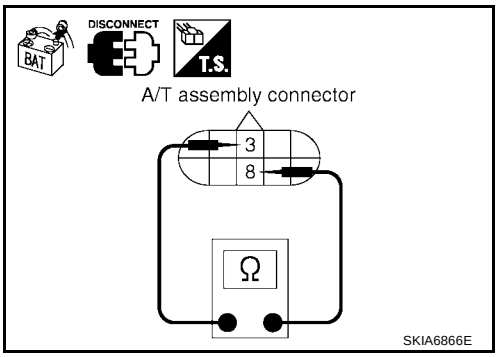
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001H1

1. CHECK CONNECTOR

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

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

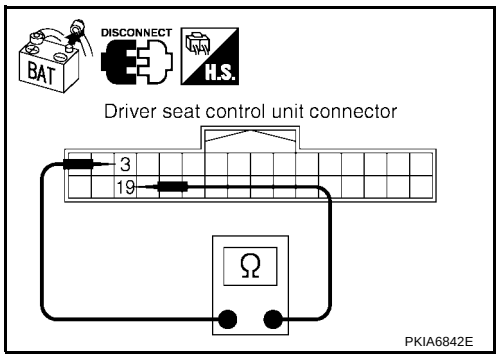
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS001H2

1. CHECK CONNECTOR

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

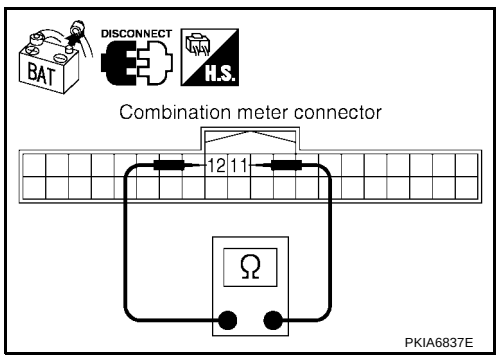
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

Display Control Unit Circuit Check

UKS001H3

1. CHECK CONNECTOR

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

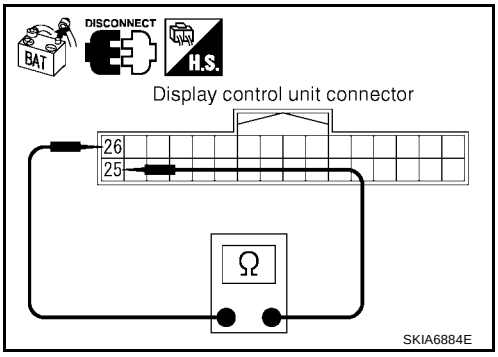
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

25 (L) - 26 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS001H4

1. CHECK CONNECTOR

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

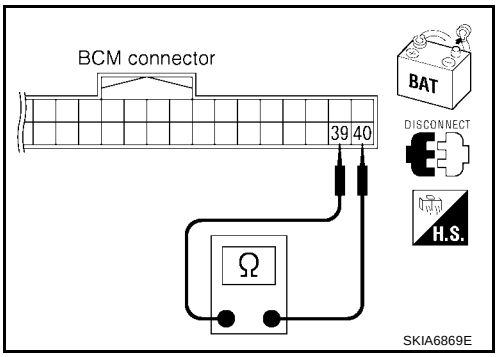
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001H5

1. CHECK CONNECTOR

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

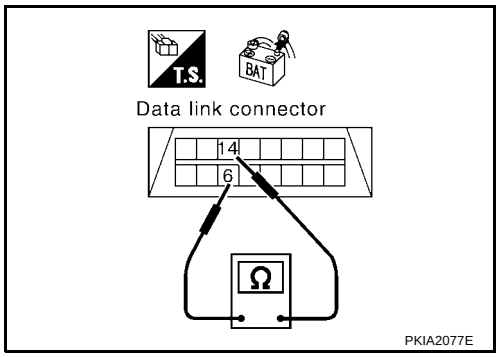
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-272, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS0020E

1. CHECK CONNECTOR

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

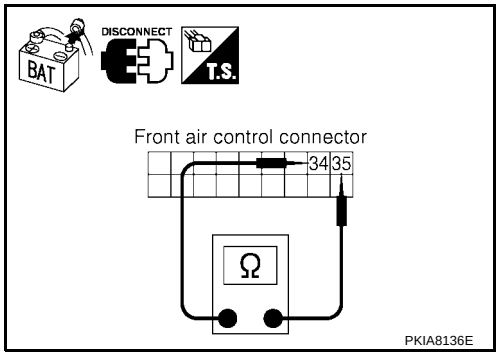
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

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

Transfer Control Unit Circuit Check

UKS001H8

1. CHECK CONNECTOR

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

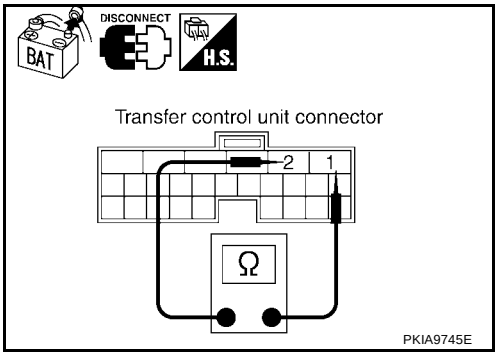
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001H9

1. CHECK CONNECTOR

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

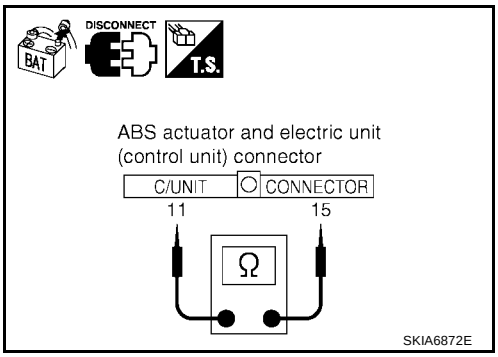
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001HA

1. CHECK CONNECTOR

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

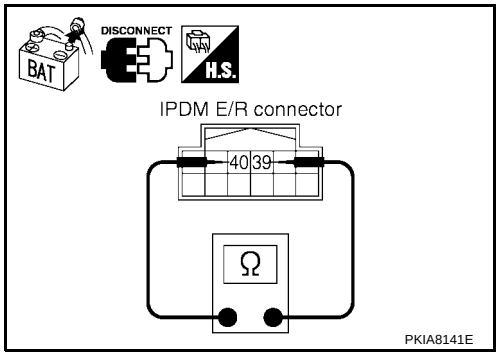
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001HB

1. CHECK CONNECTOR

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
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

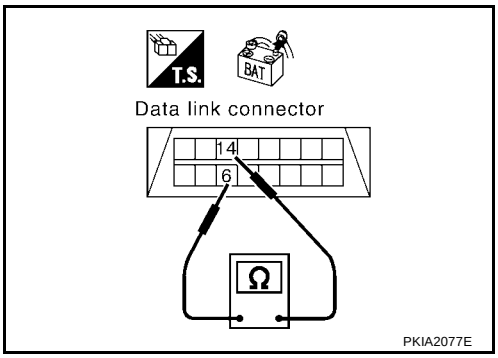
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

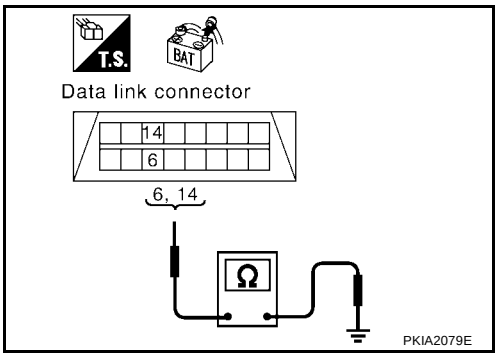
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-300, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001HC

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

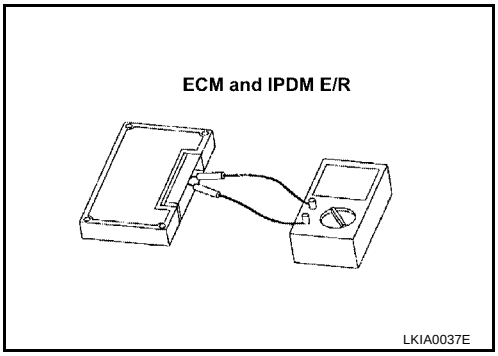
Component Inspection

UKS001HD

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 10)

PFP:23710

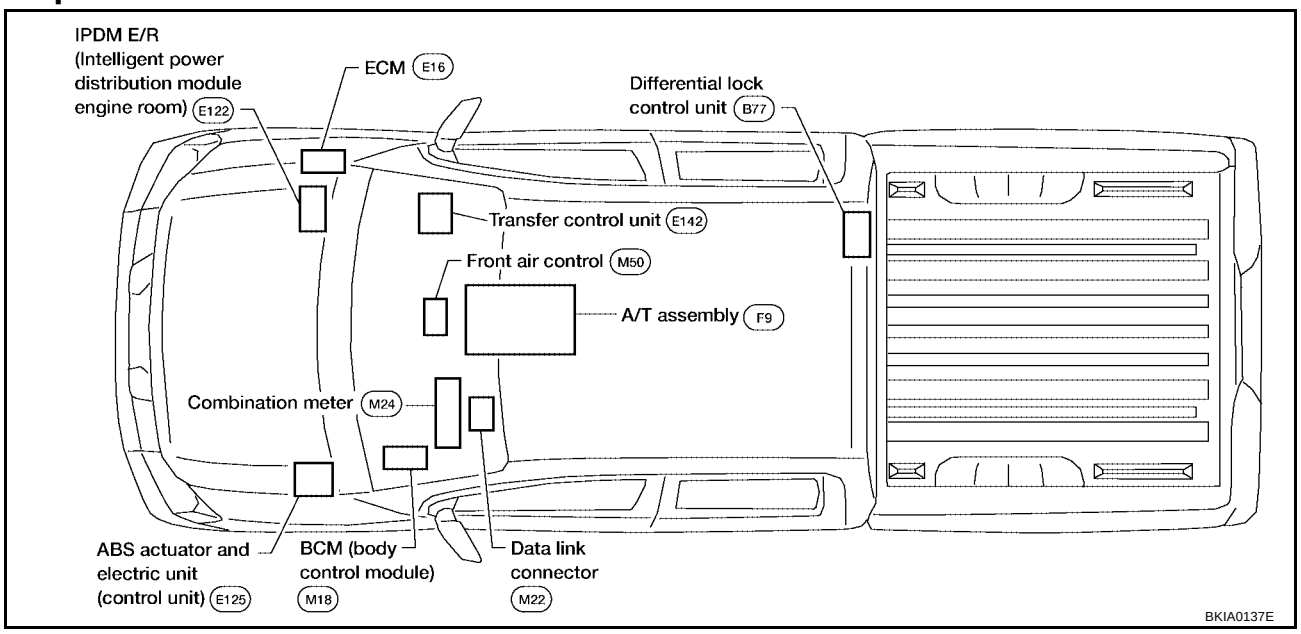
System Description

UKS001HE

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.

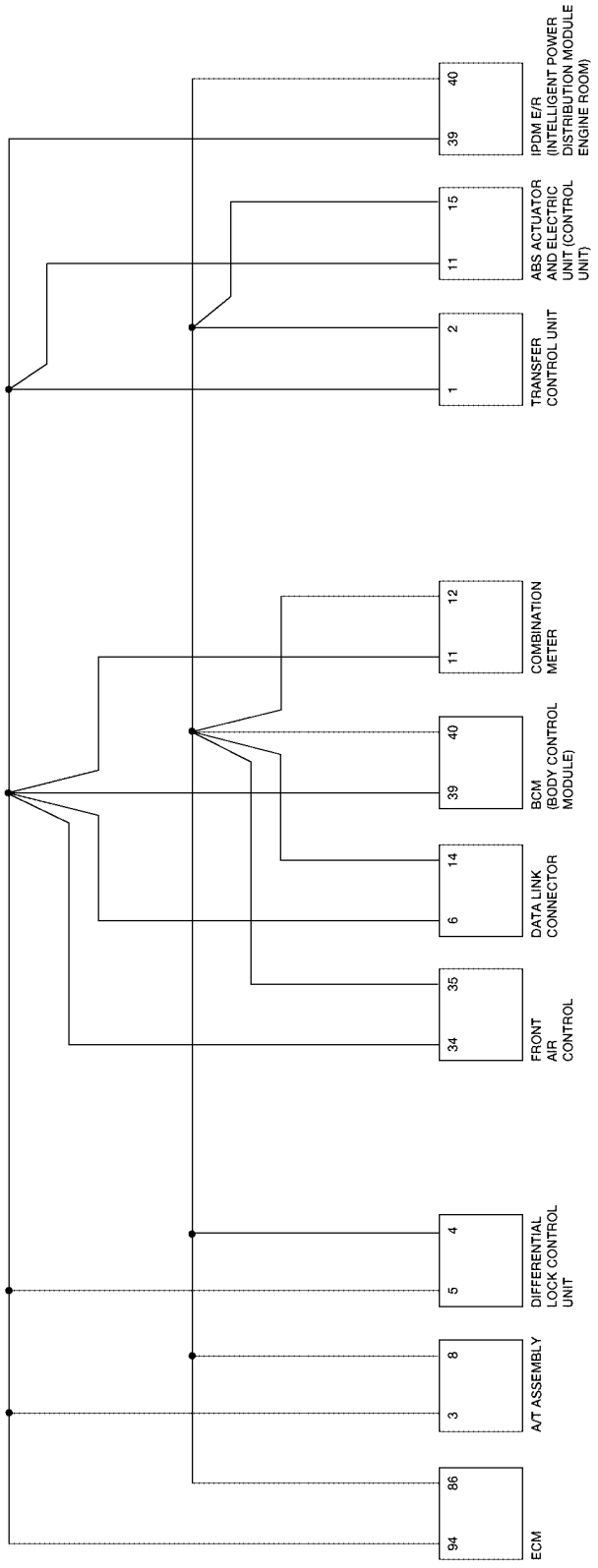
Component Parts and Harness Connector Location

UKS001HF



Schematic

UKS001HG

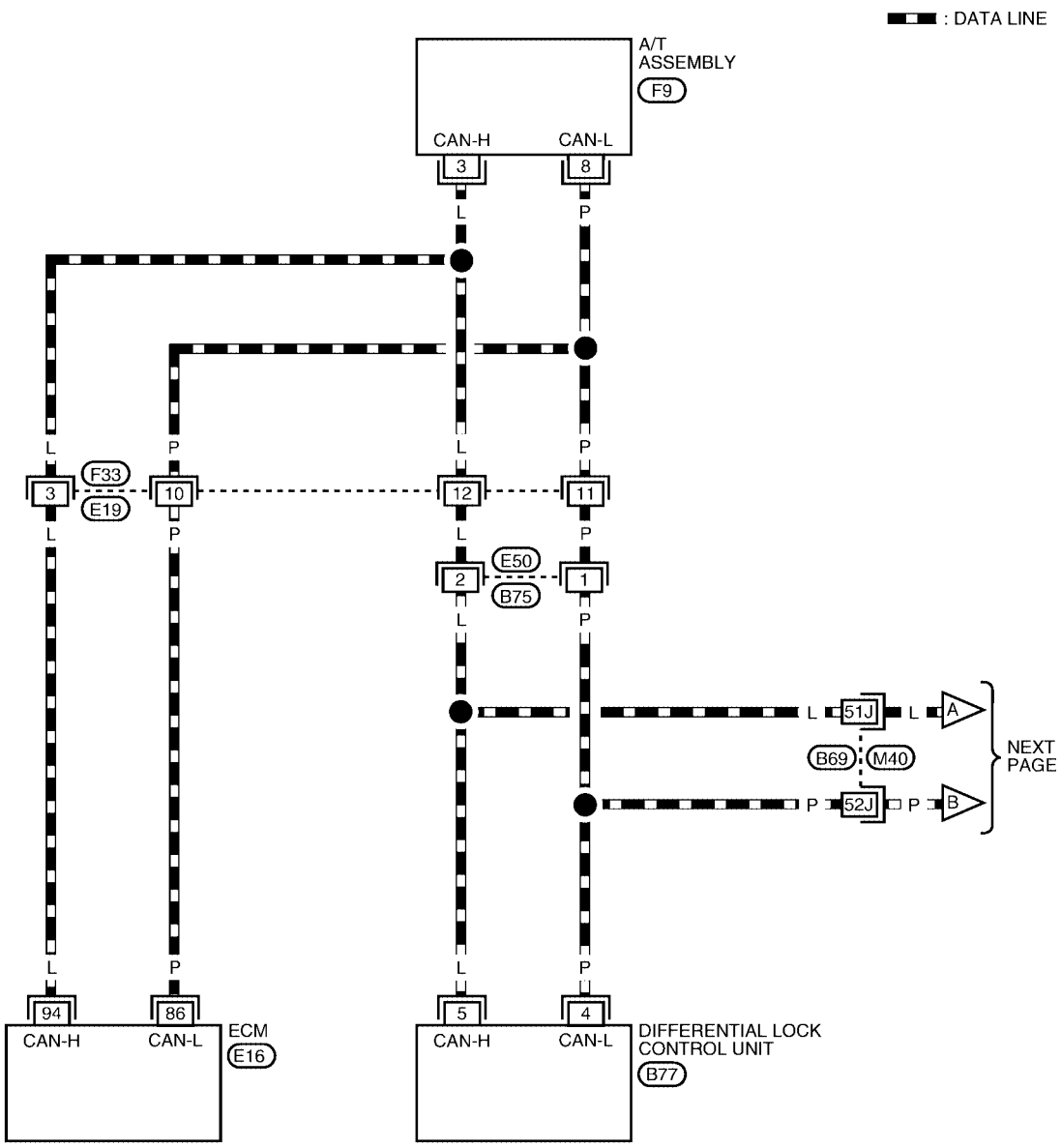


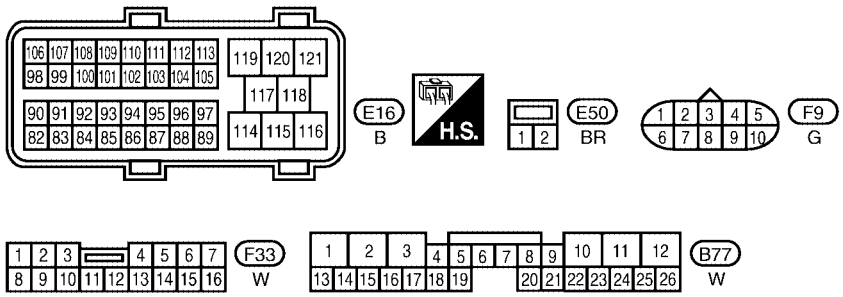
BKWA0148E

Wiring Diagram - CAN -

UKS001HH

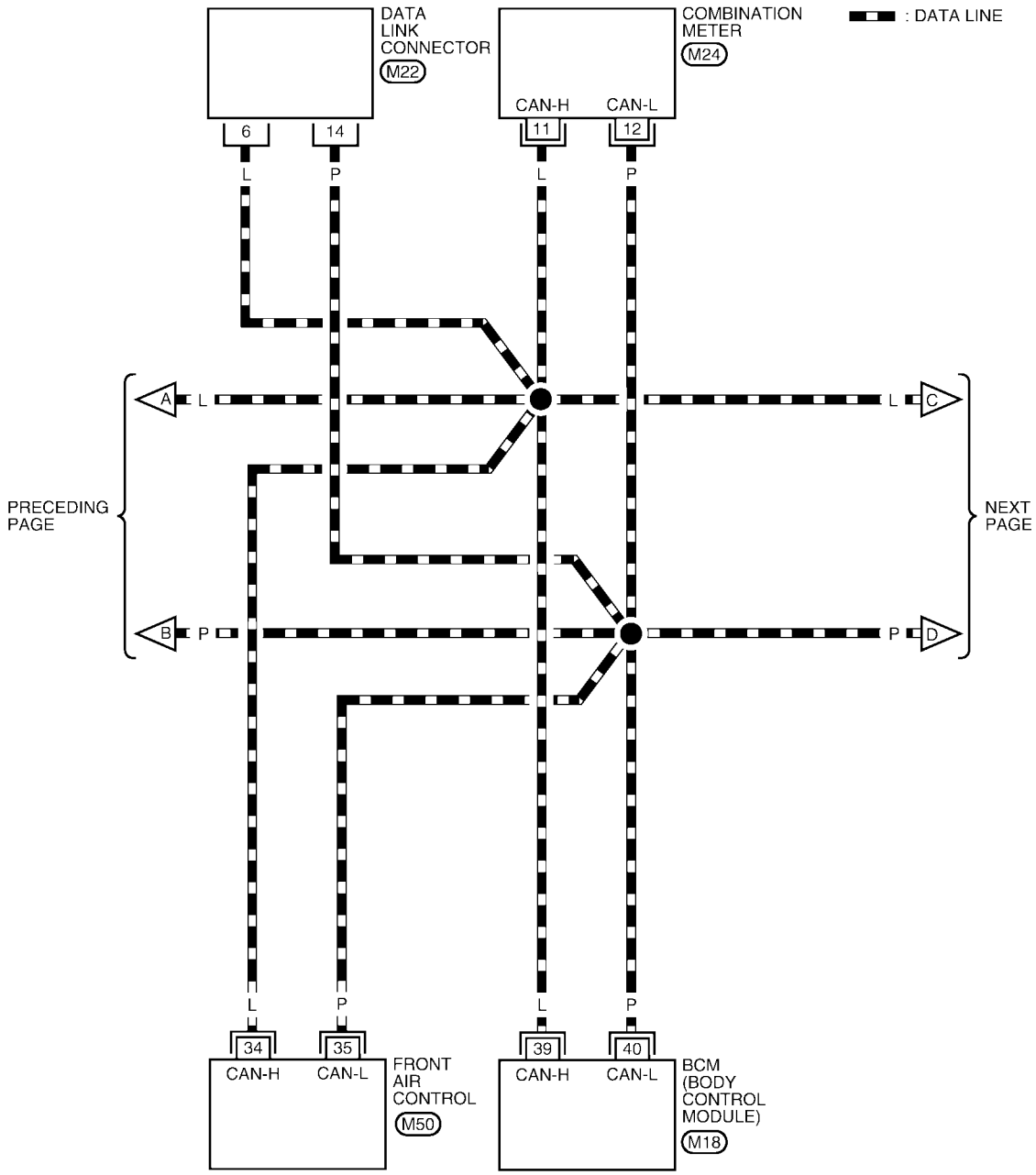
LAN-CAN-28

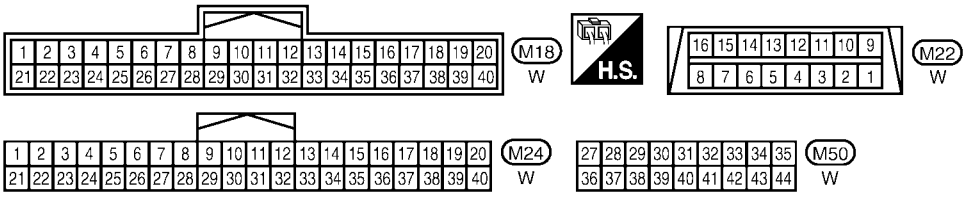




REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

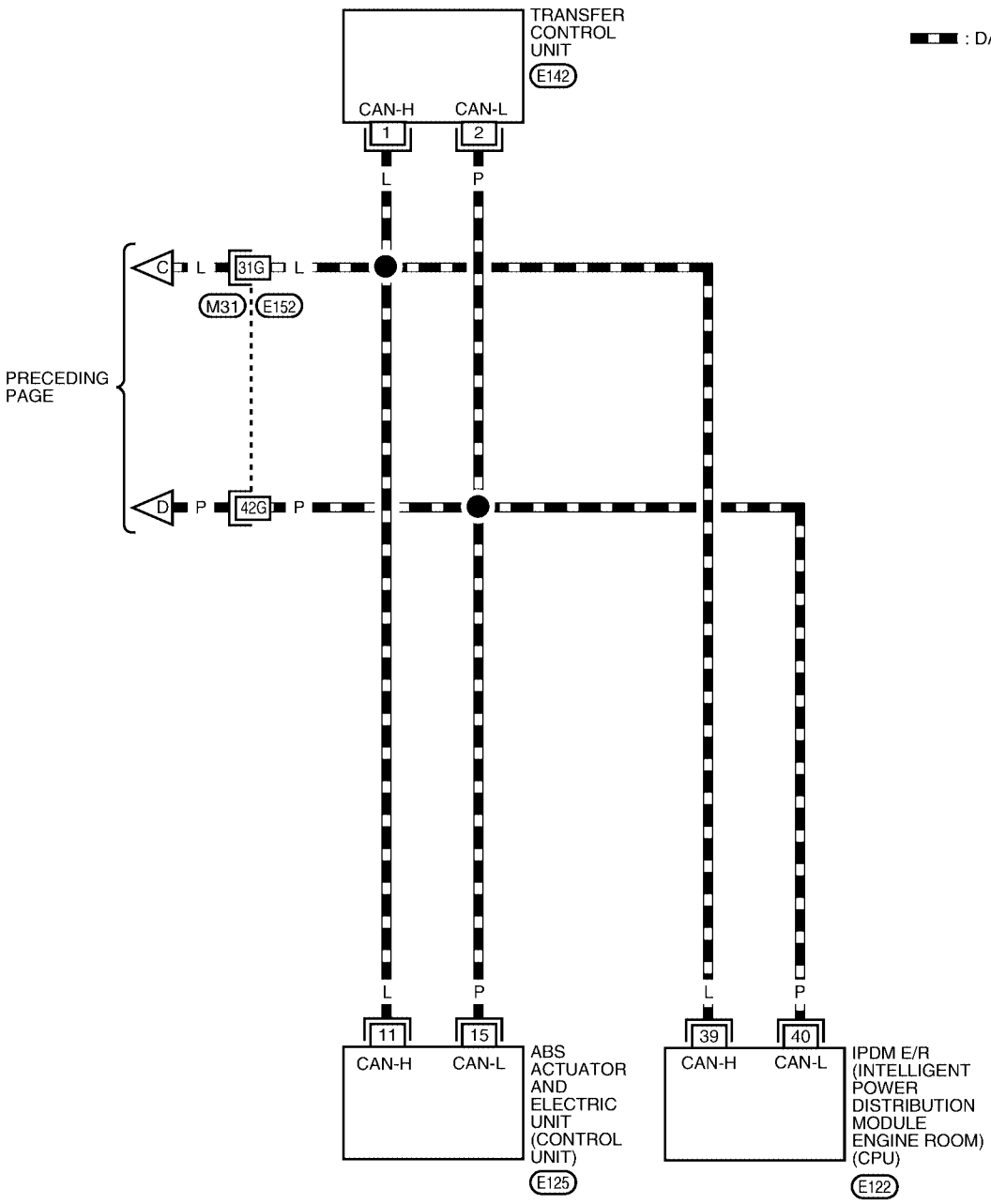
BKWA0452E

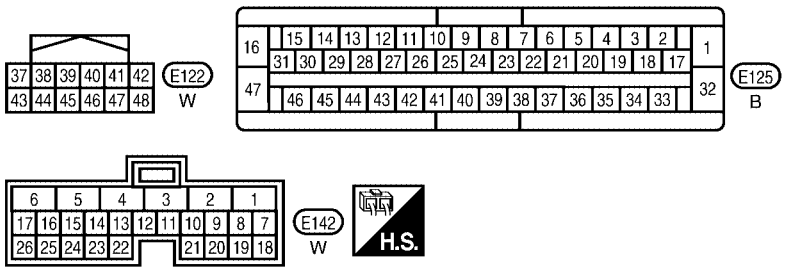

DATA LINK CONNECTOR
M22
COMBINATION METER
M24
: DATA LINE
CAN-H
CAN-L
6
14
11
12
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
34
35
39
40
FRONT AIR CONTROL
M50
BCM (BODY CONTROL MODULE)
M18


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

BKWA0453E

LAN-CAN-30





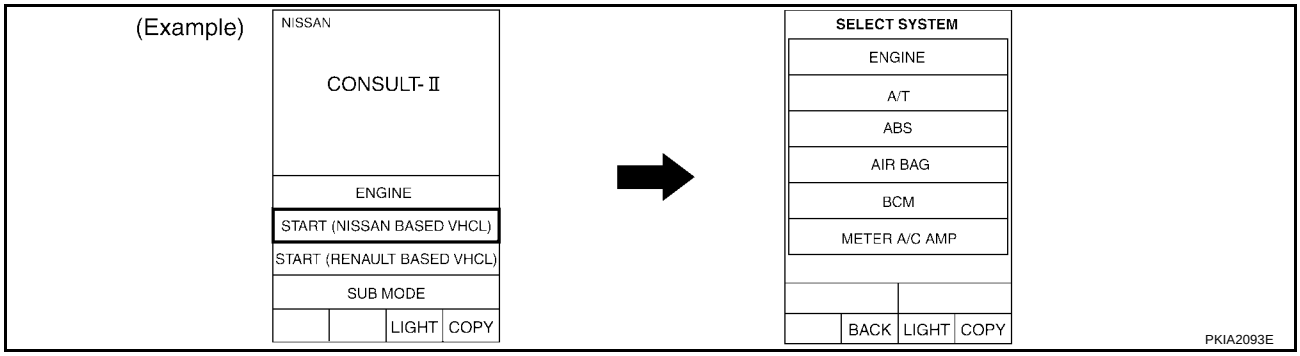
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0454E

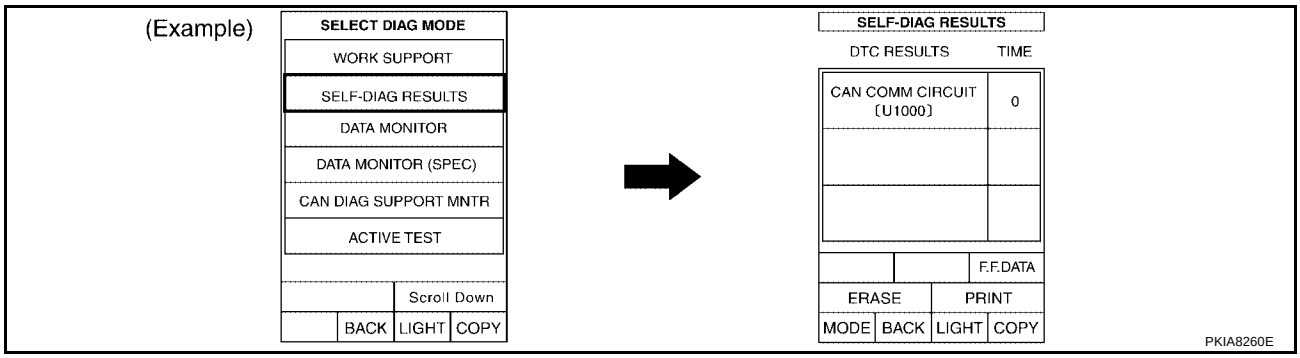
Work Flow

UKS001HI

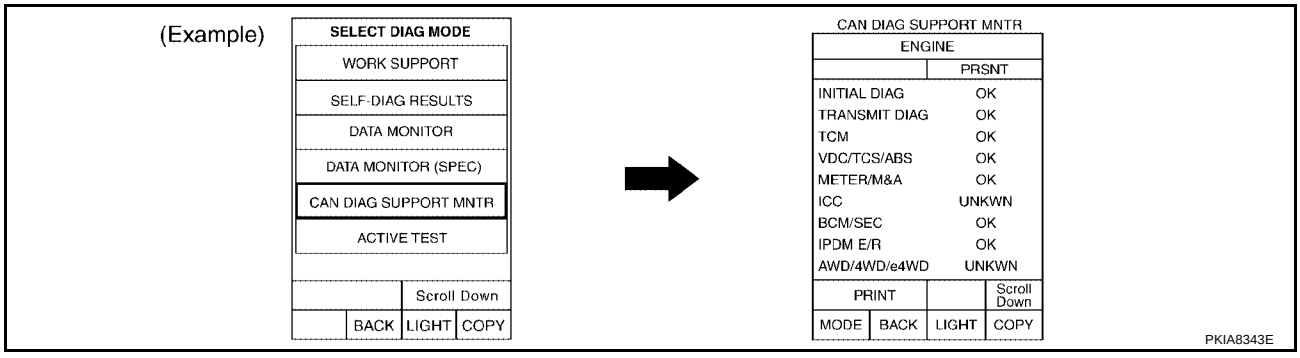
1. When there are no indications of “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “DIFF LOCK”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “DIFF LOCK”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-307, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-307, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-309, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

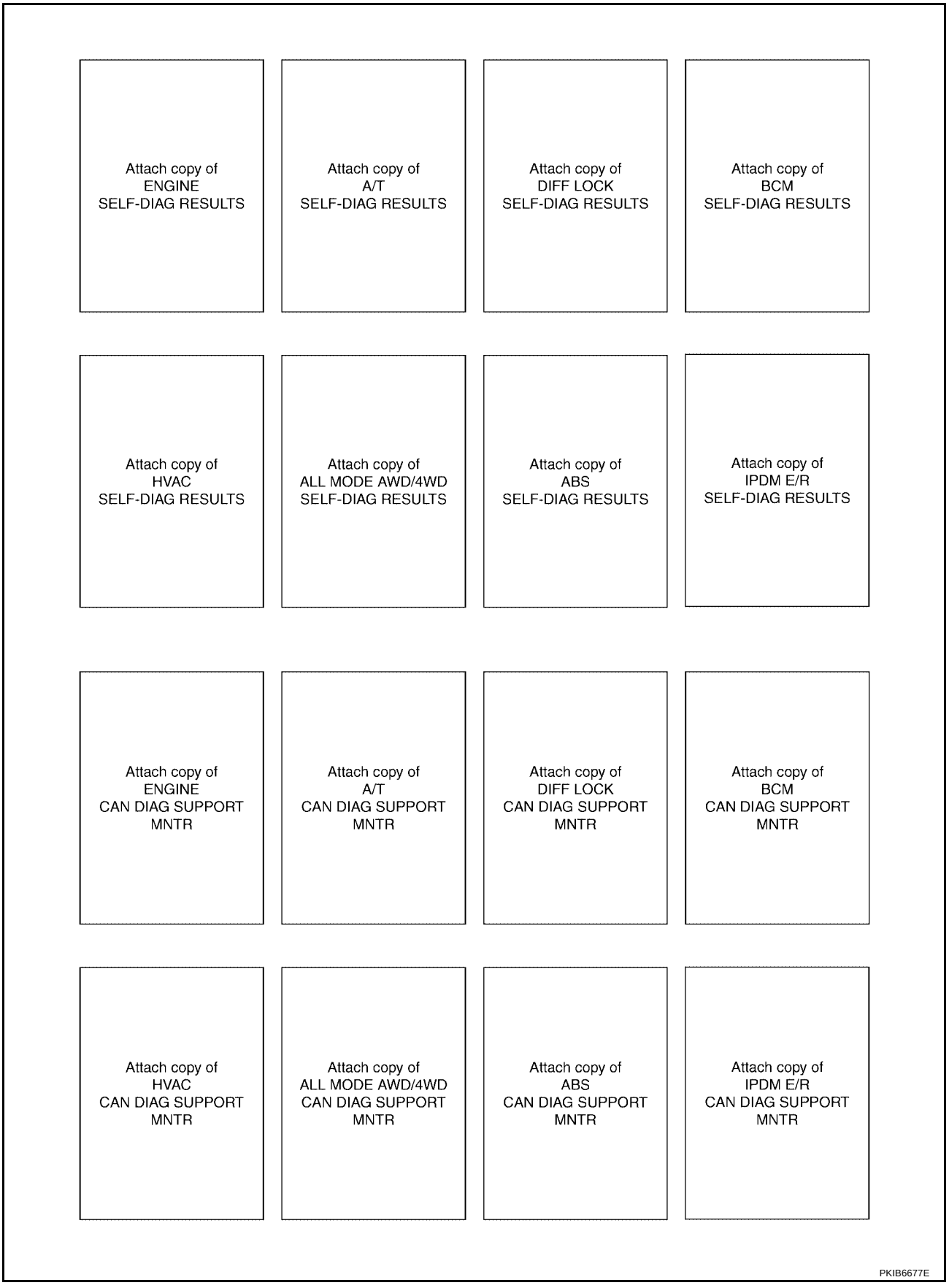
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB6676E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
DIFF LOCK
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
DIFF LOCK
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
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MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6677E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

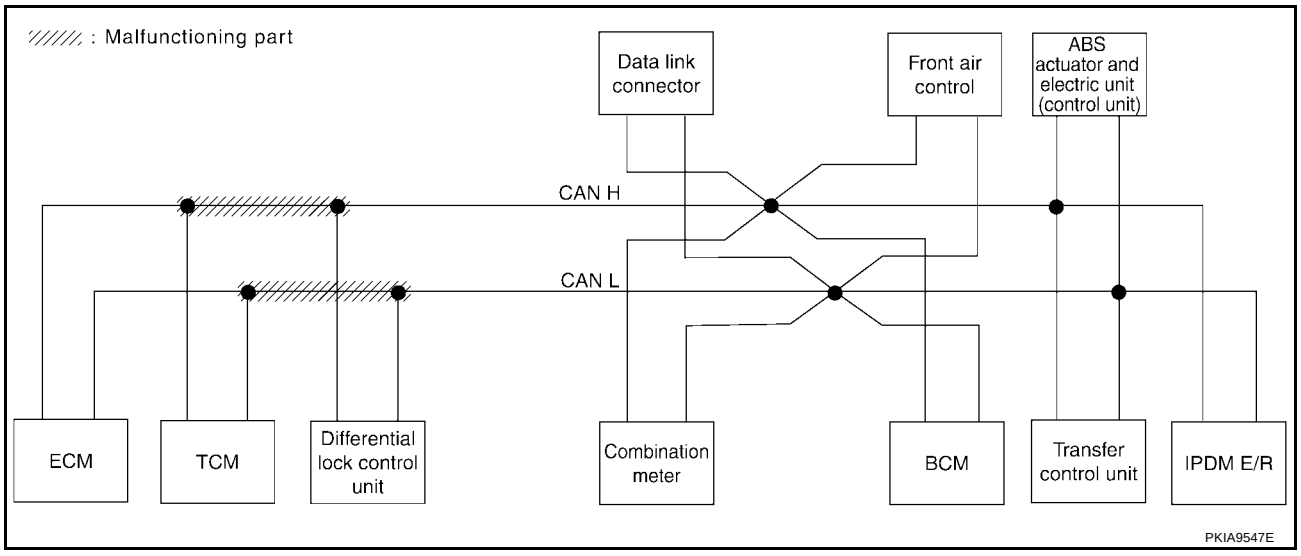
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to LAN-323, "Circuit Check Between TCM and Differential Lock Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	—	—

PKIB6678E



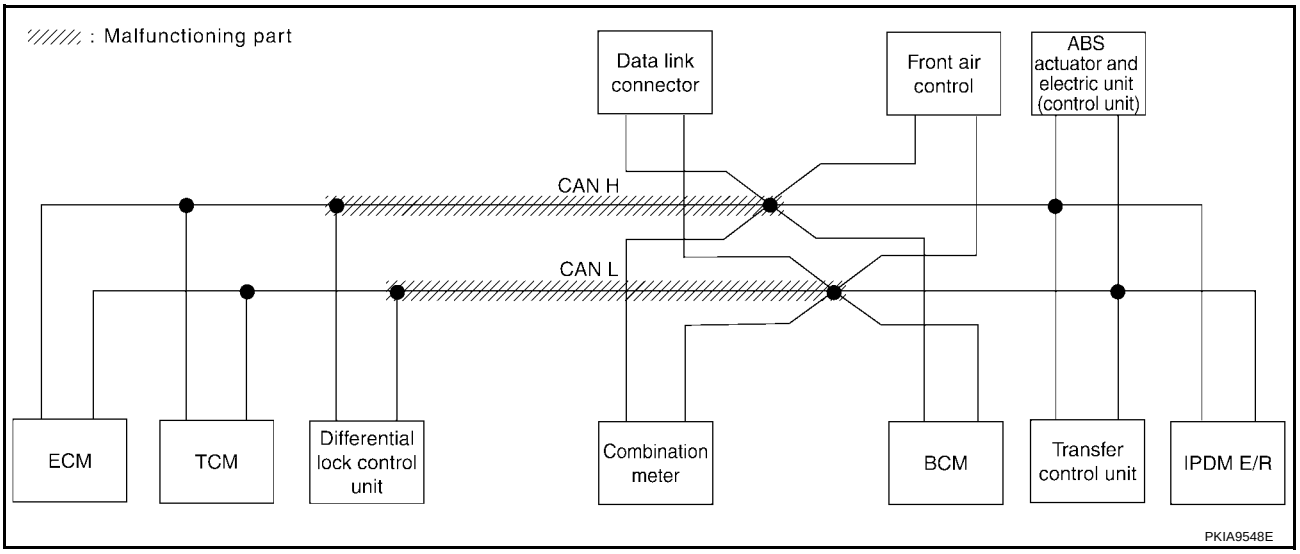
PKIA9547E

Case 2

Check harness between differential lock control unit and data link connector. Refer to LAN-324, "Circuit Check Between Differential Lock Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6679E



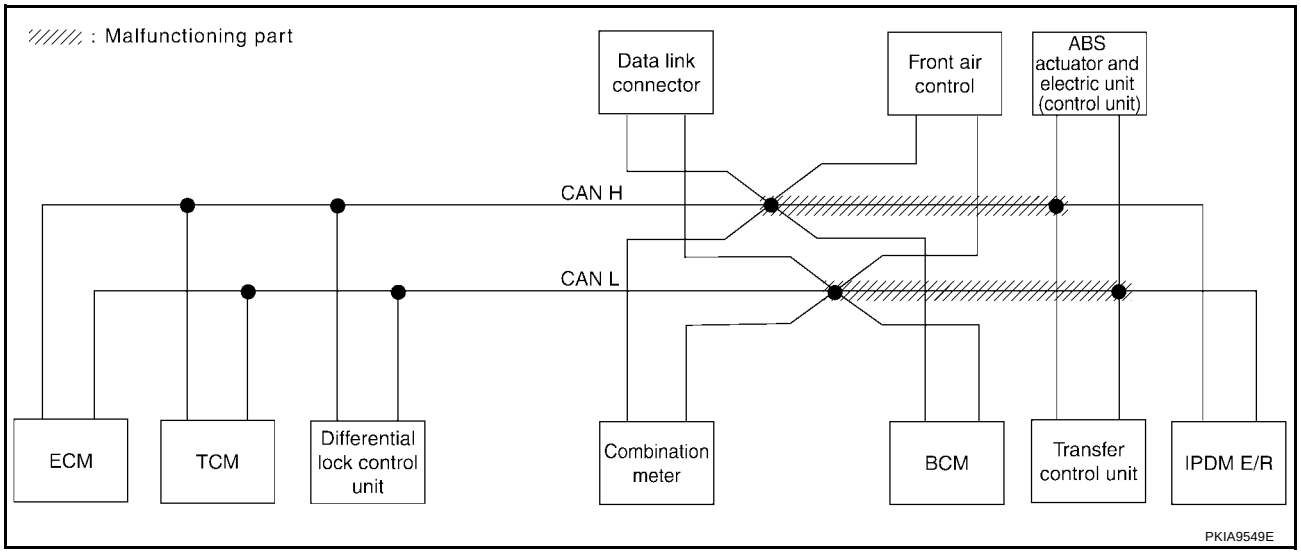
PKIA9548E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-325, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6680E



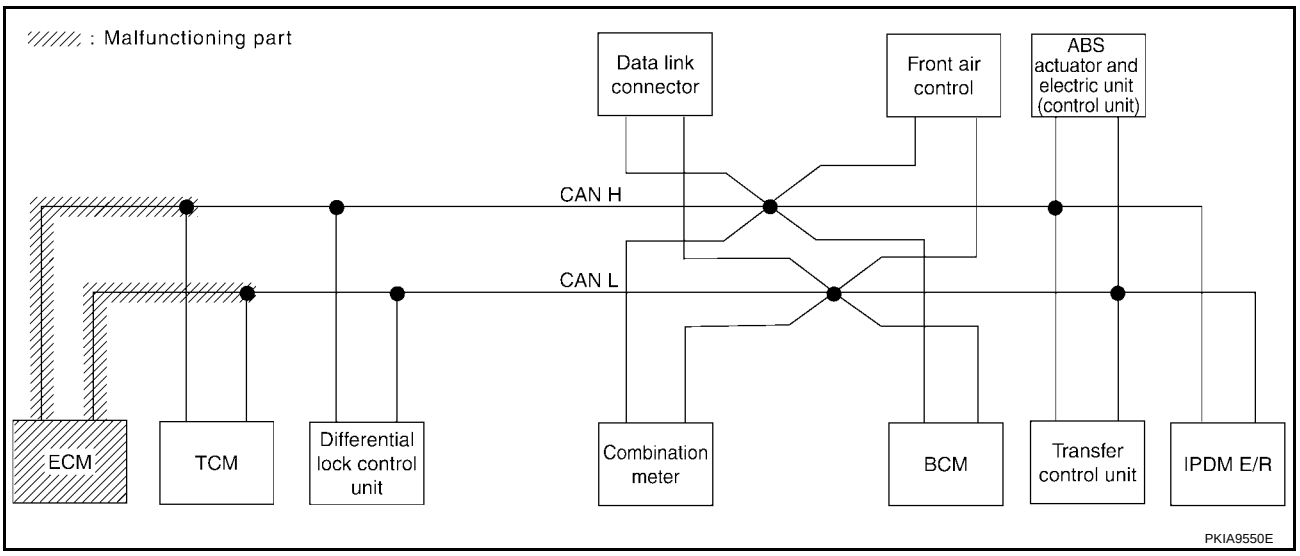
PKIA9549E

Case 4

Check ECM circuit. Refer to LAN-326, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6681E

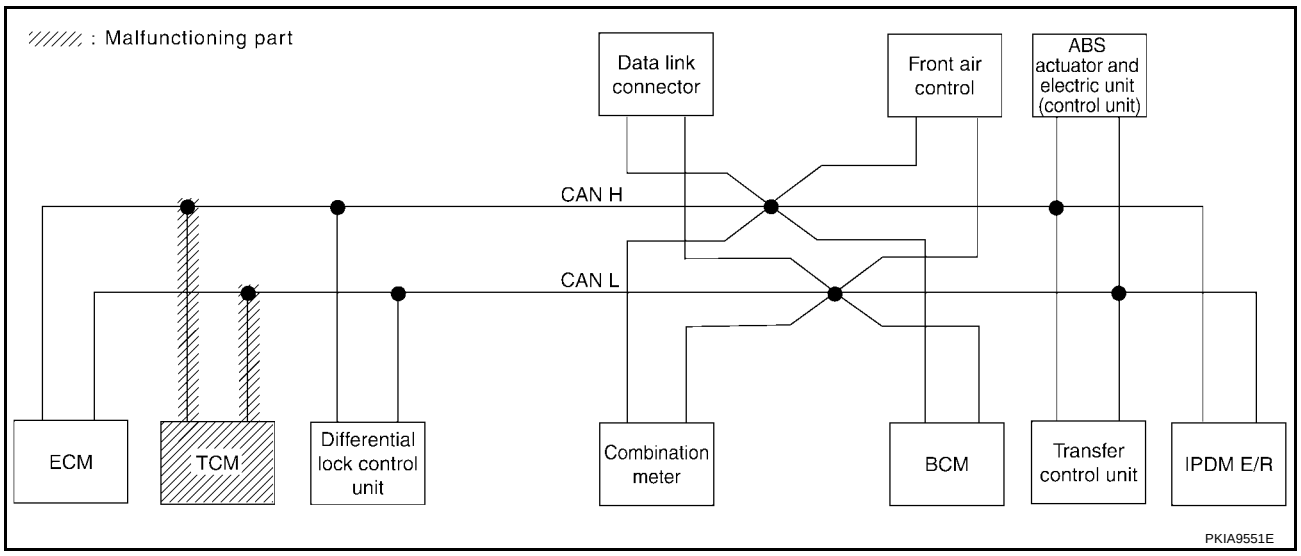


Case 5

Check TCM circuit. Refer to LAN-326, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6682E



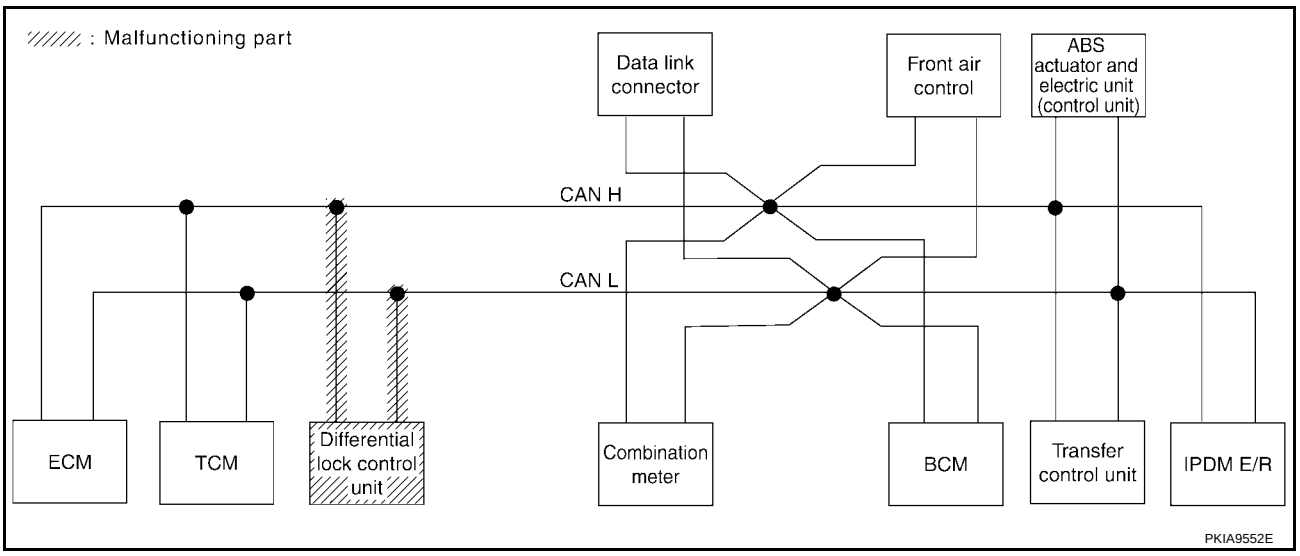
PKIA9551E

Case 6

Check differential lock control unit circuit. Refer to LAN-327, "Differential Lock Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6683E



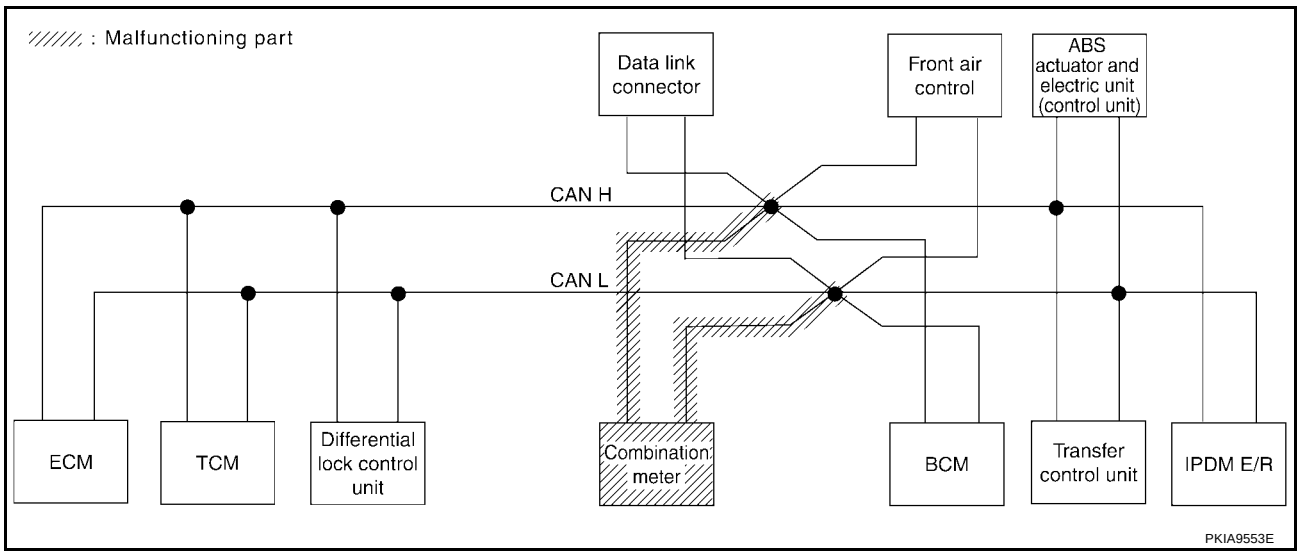
PKIA9552E

Case 7

Check combination meter circuit. Refer to LAN-327, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN ✓	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6684E



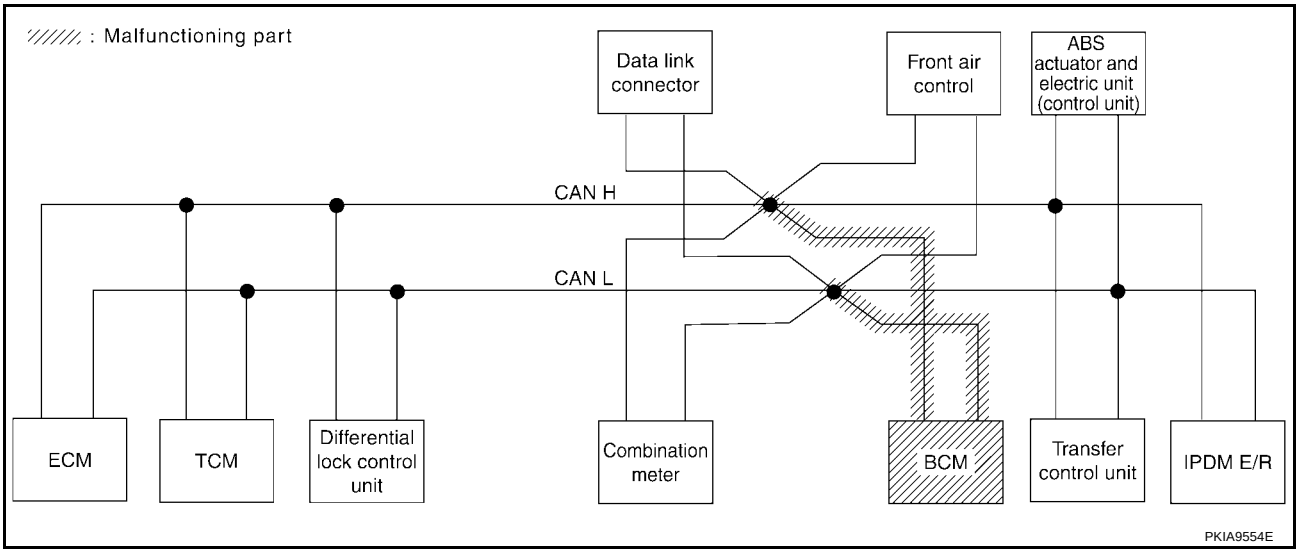
PKIA9553E

Case 8

Check BCM circuit. Refer to LAN-328, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6685E



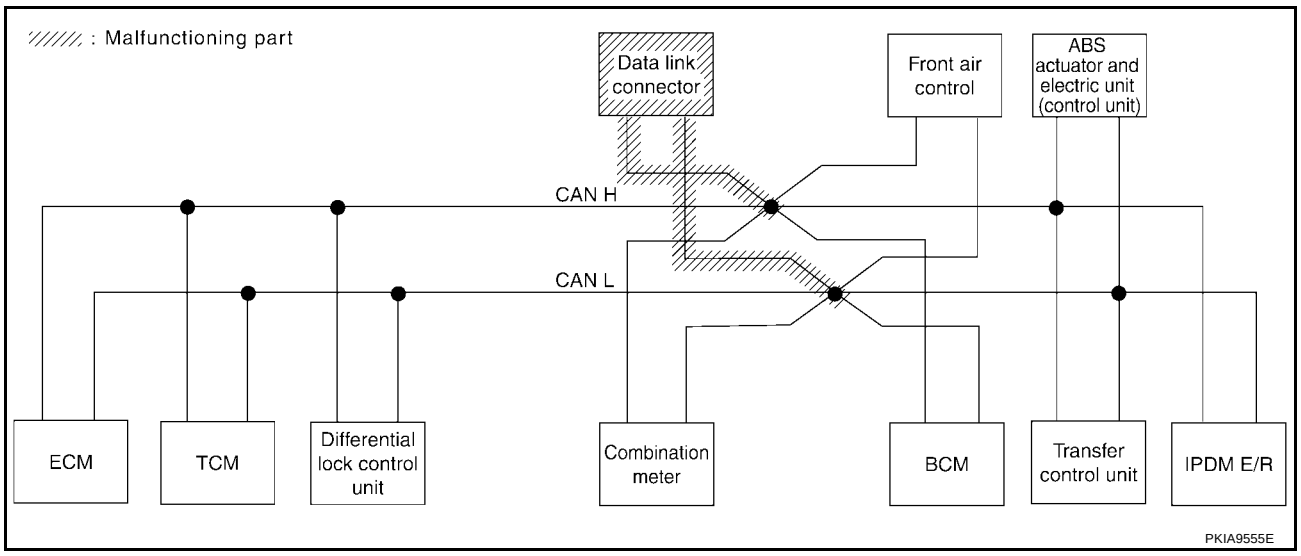
PKIA9554E

Case 9

Check data link connector circuit. Refer to LAN-328, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6686E



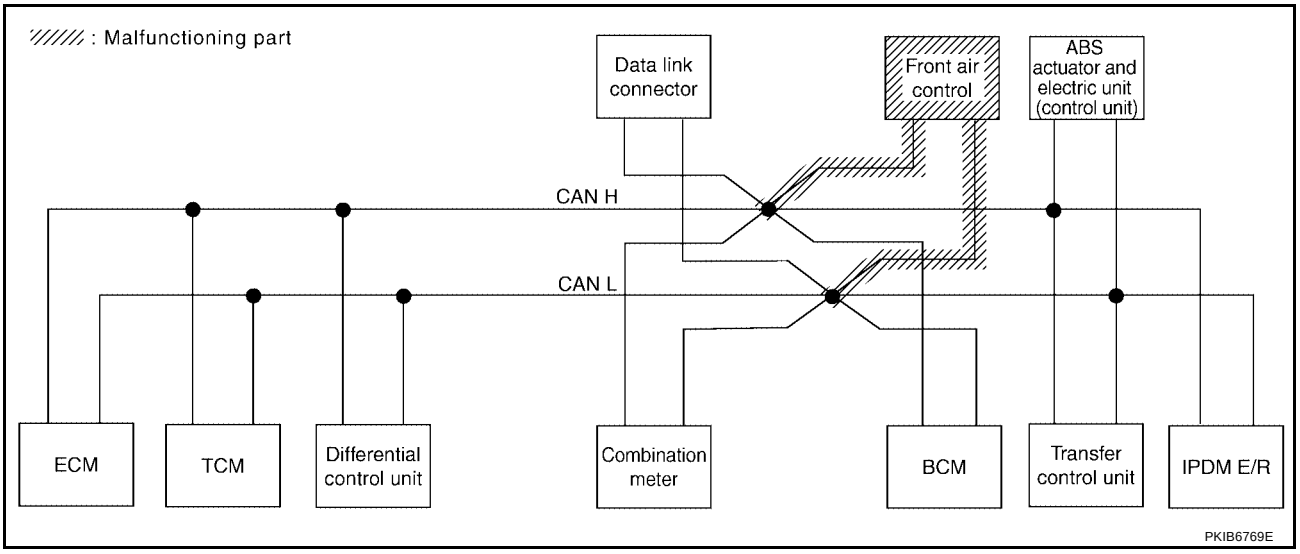
PKIA9555E

Case 10

Check front air control circuit. Refer to LAN-329, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6687E



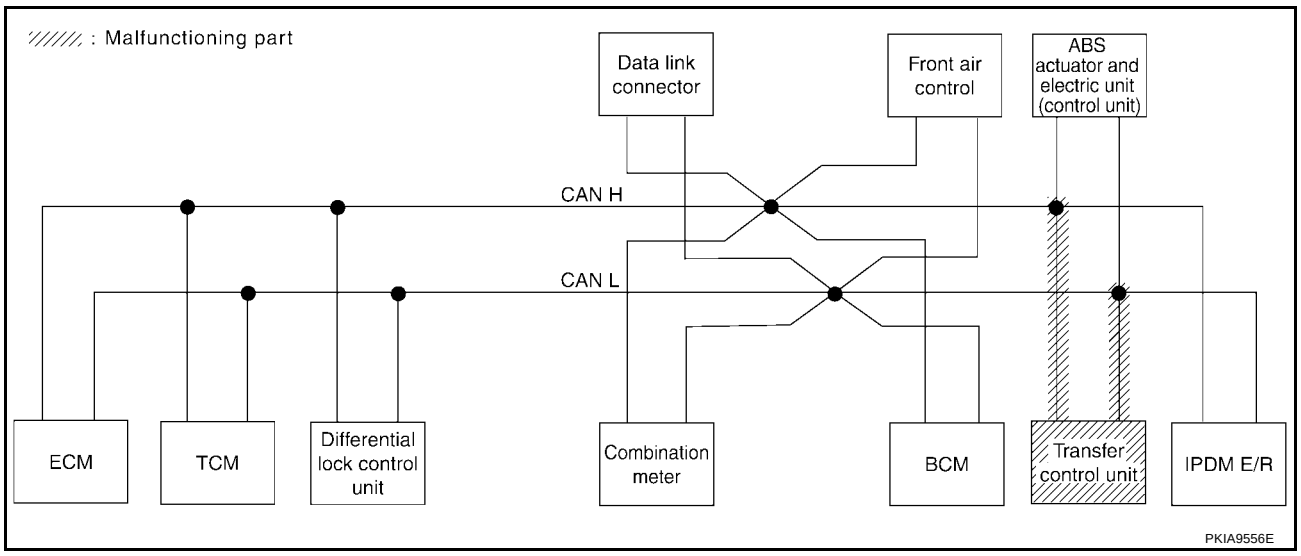
PKIB6769E

Case 11

Check transfer control unit circuit. Refer to LAN-329, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6688E



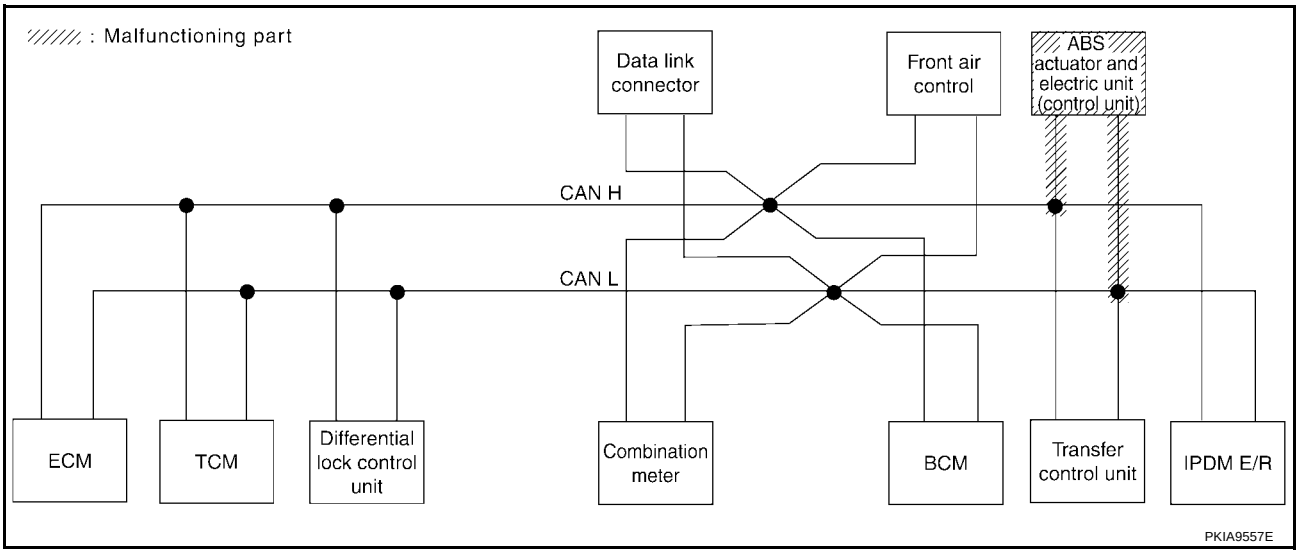
PKIA9556E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-330, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6689E



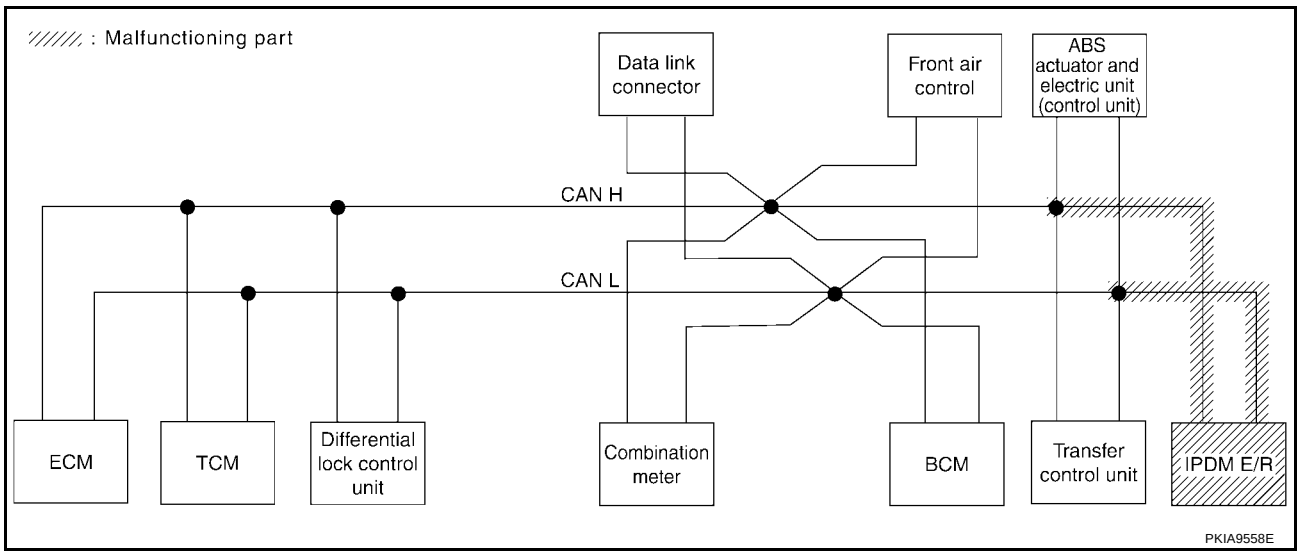
PKIA9557E

Case 13

Check IPDM E/R circuit. Refer to LAN-330, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6690E



PKIA9558E

Case 14

Check CAN communication circuit. Refer to LAN-331, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6691E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-331, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6692E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-331, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6693E

Circuit Check Between TCM and Differential Lock Control Unit

UKS0020I

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

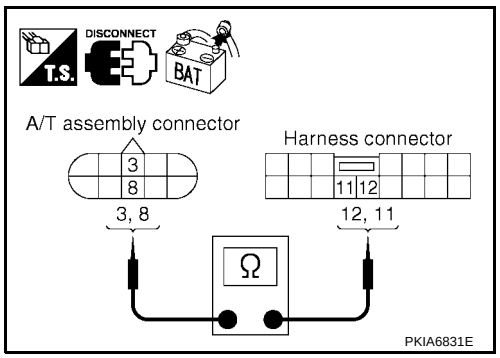
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



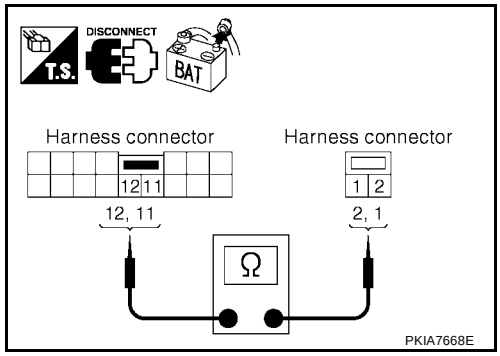
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



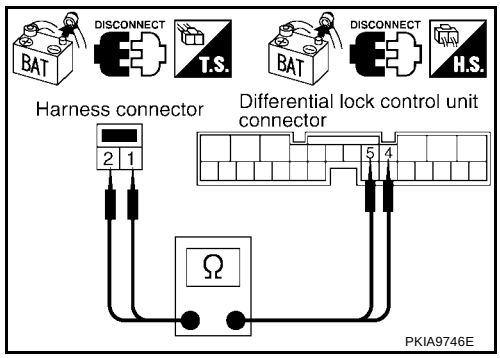
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and differential lock control unit harness connector B77 terminals 5 (L), 4 (P).

2 (L) - 5 (L) : Continuity should exist.
1 (P) - 4 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-306, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Data Link Connector

UKS001HJ

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

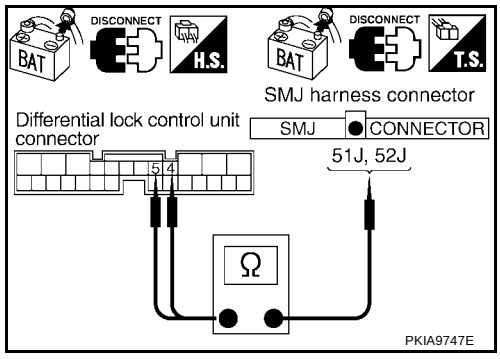
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector and harness connector B69.
2. Check continuity between differential lock control unit harness connector B77 terminals 5 (L), 4 (P) and harness connector B69 terminals 51J (L), 52J (P).

5 (L) - 51J (L) : Continuity should exist.
4 (P) - 52J (P) : Continuity should exist.



OK or NG

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

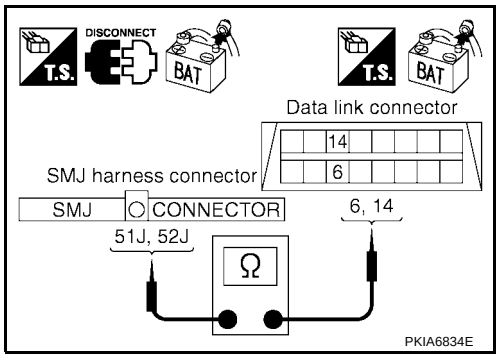
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-306, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001HK

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

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

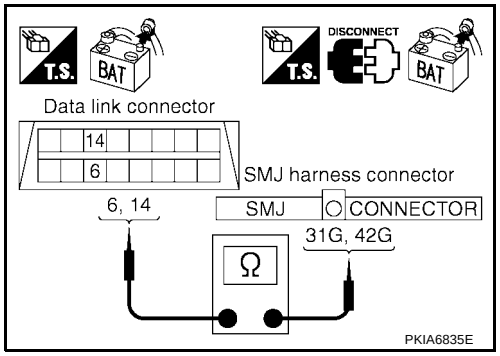
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.

OK or NG

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



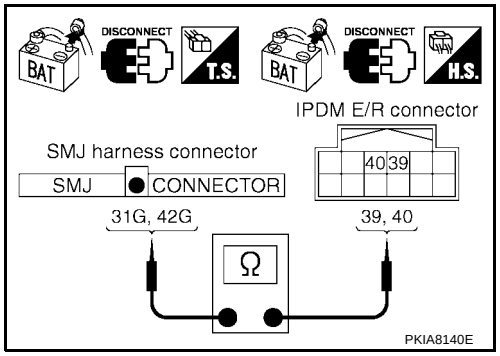
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-306, "Work Flow" .
NG >> Repair harness.



ECM Circuit Check

UKS001HL

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

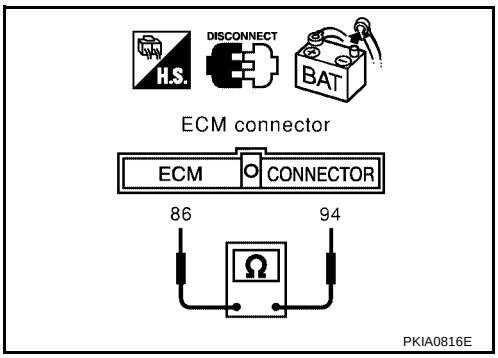
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS001HM

1. CHECK CONNECTOR

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

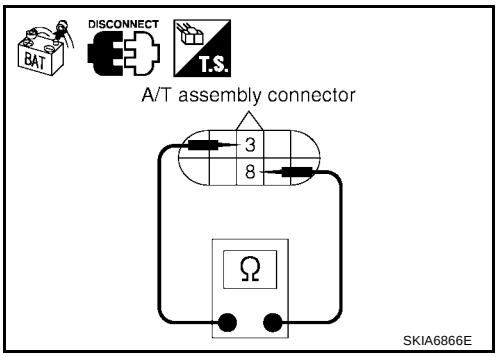
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Differential Lock Control Unit Circuit Check

UKS0020J

1. CHECK CONNECTOR

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

OK or NG

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

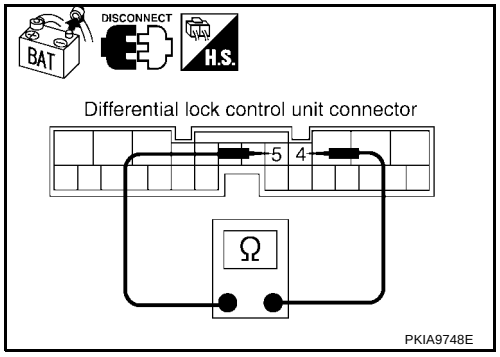
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check resistance between differential lock control unit harness connector B77 terminals 5 (L) and 4 (P).

5 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace differential lock control unit.
NG >> Repair harness between differential lock control unit and harness connector B75.



Combination Meter Circuit Check

UKS001HN

1. CHECK CONNECTOR

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

OK or NG

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

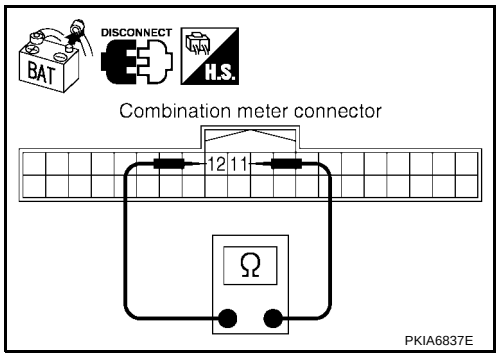
2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω

OK or NG

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



BCM Circuit Check

UKS001HO

1. CHECK CONNECTOR

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

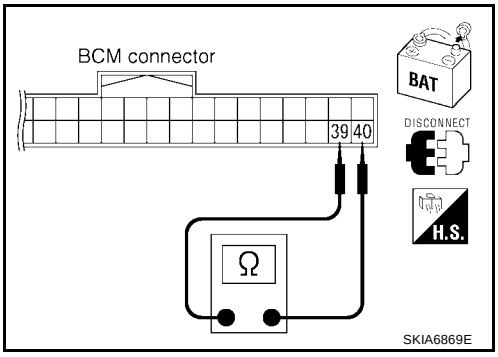
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001HP

1. CHECK CONNECTOR

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

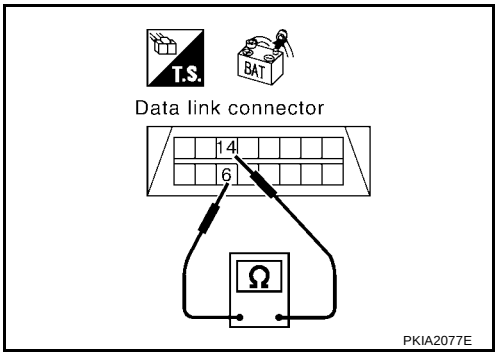
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-306, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS003KS

1. CHECK CONNECTOR

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

OK or NG

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

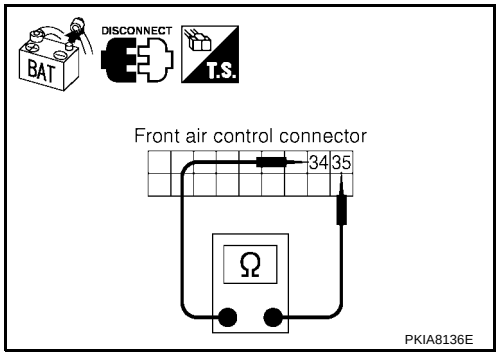
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω

OK or NG

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



Transfer Control Unit Circuit Check

UKS001HR

1. CHECK CONNECTOR

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

OK or NG

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

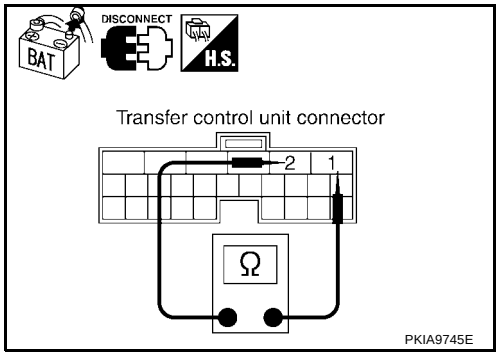
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001HS

1. CHECK CONNECTOR

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

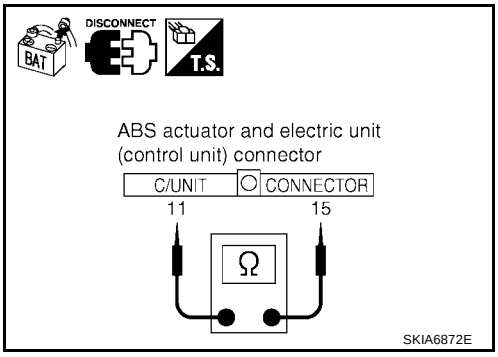
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001HT

1. CHECK CONNECTOR

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

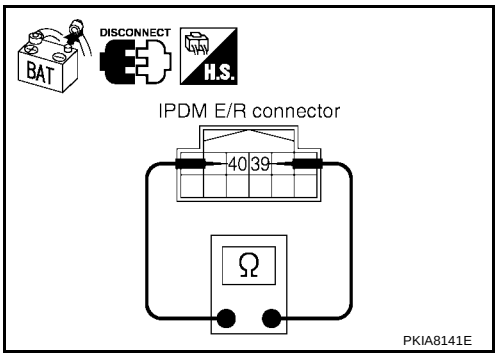
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001HU

1. CHECK CONNECTOR

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
- A/T assembly
- Differential lock control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

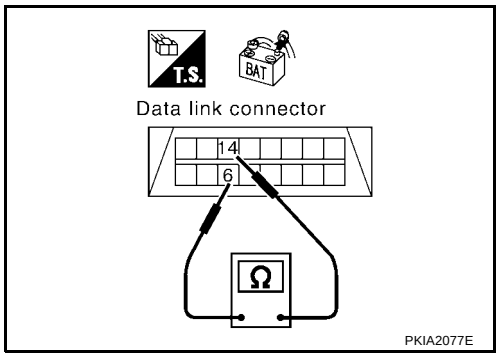
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



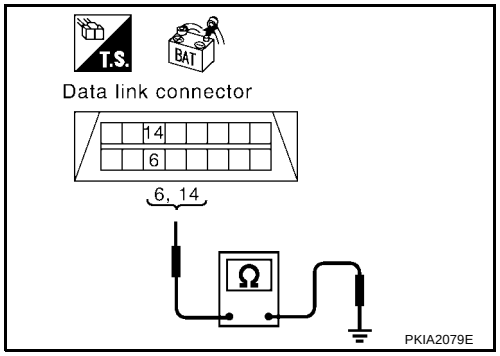
3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-332, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001HV

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

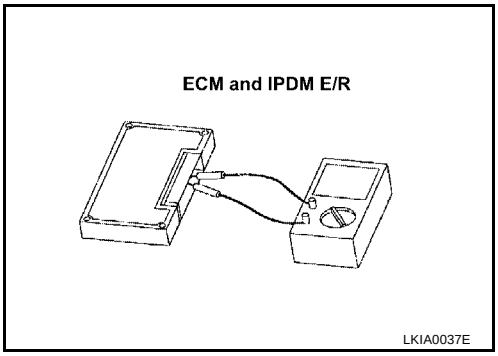
Component Inspection

UKS001HW

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 11)

PFP:23710

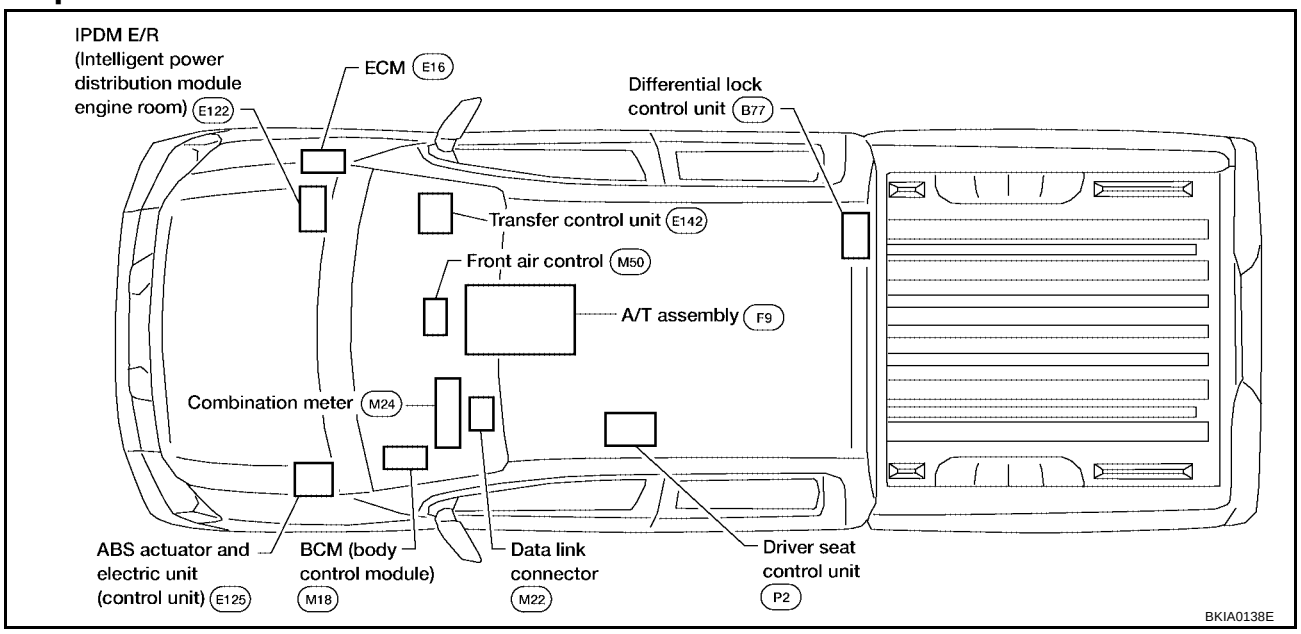
System Description

UKS001HX

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.

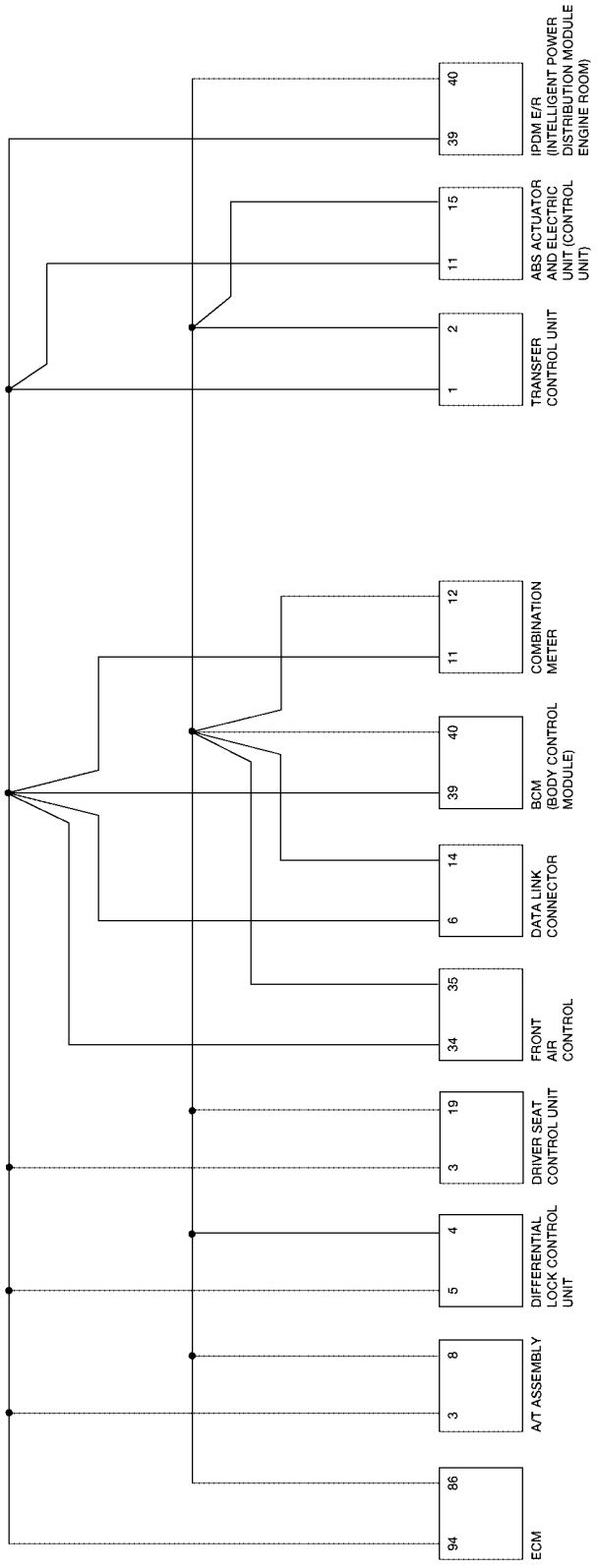
Component Parts and Harness Connector Location

UKS001HY



Schematic

UKS001HZ

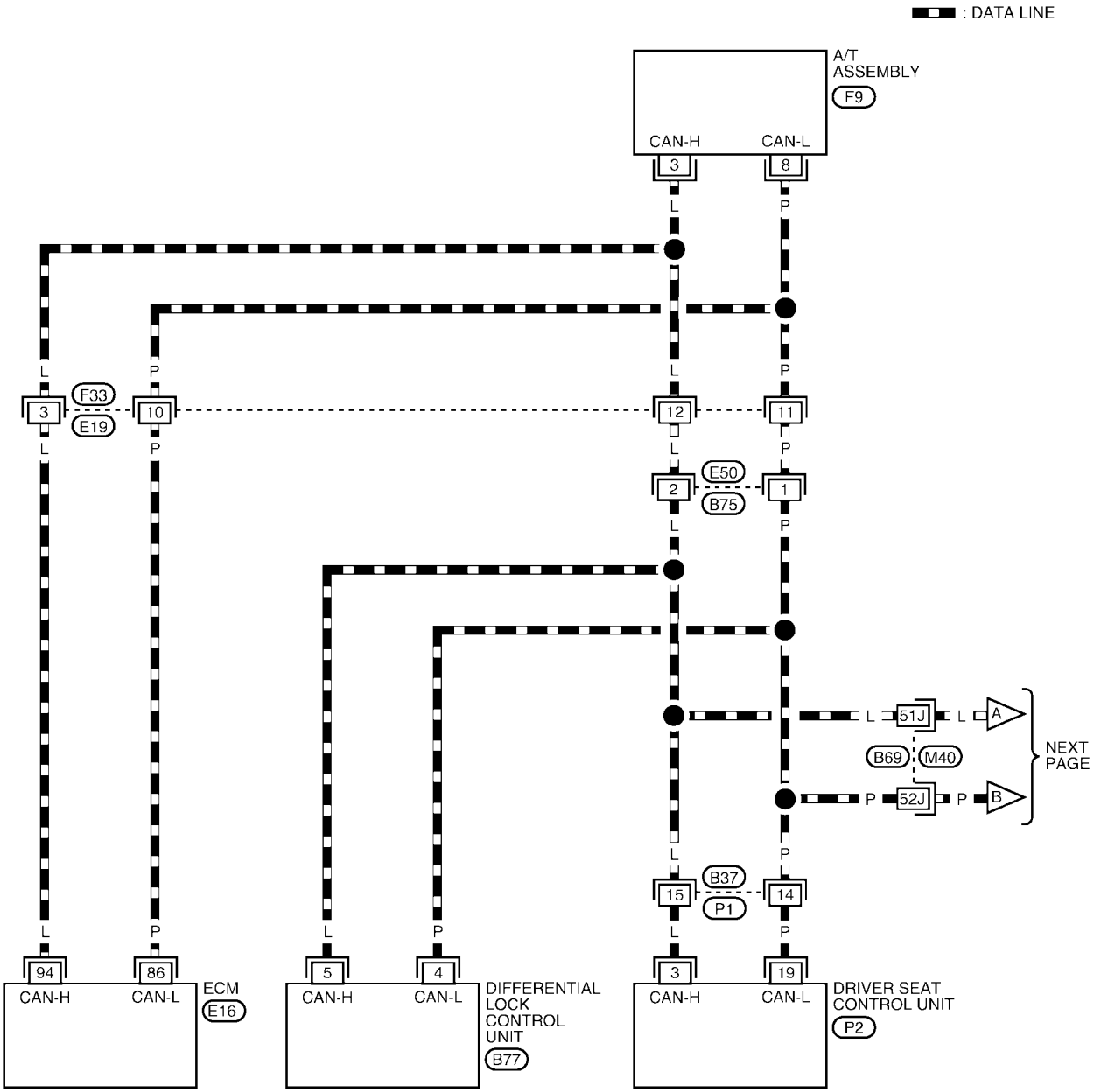


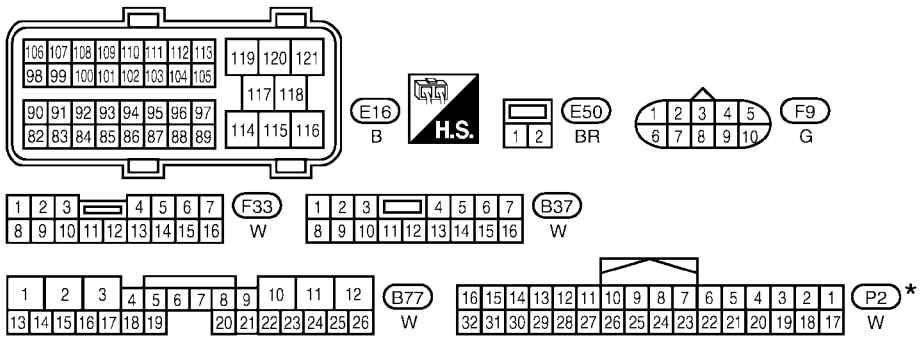
BKWA0152E

Wiring Diagram - CAN -

UKS001I0

LAN-CAN-31



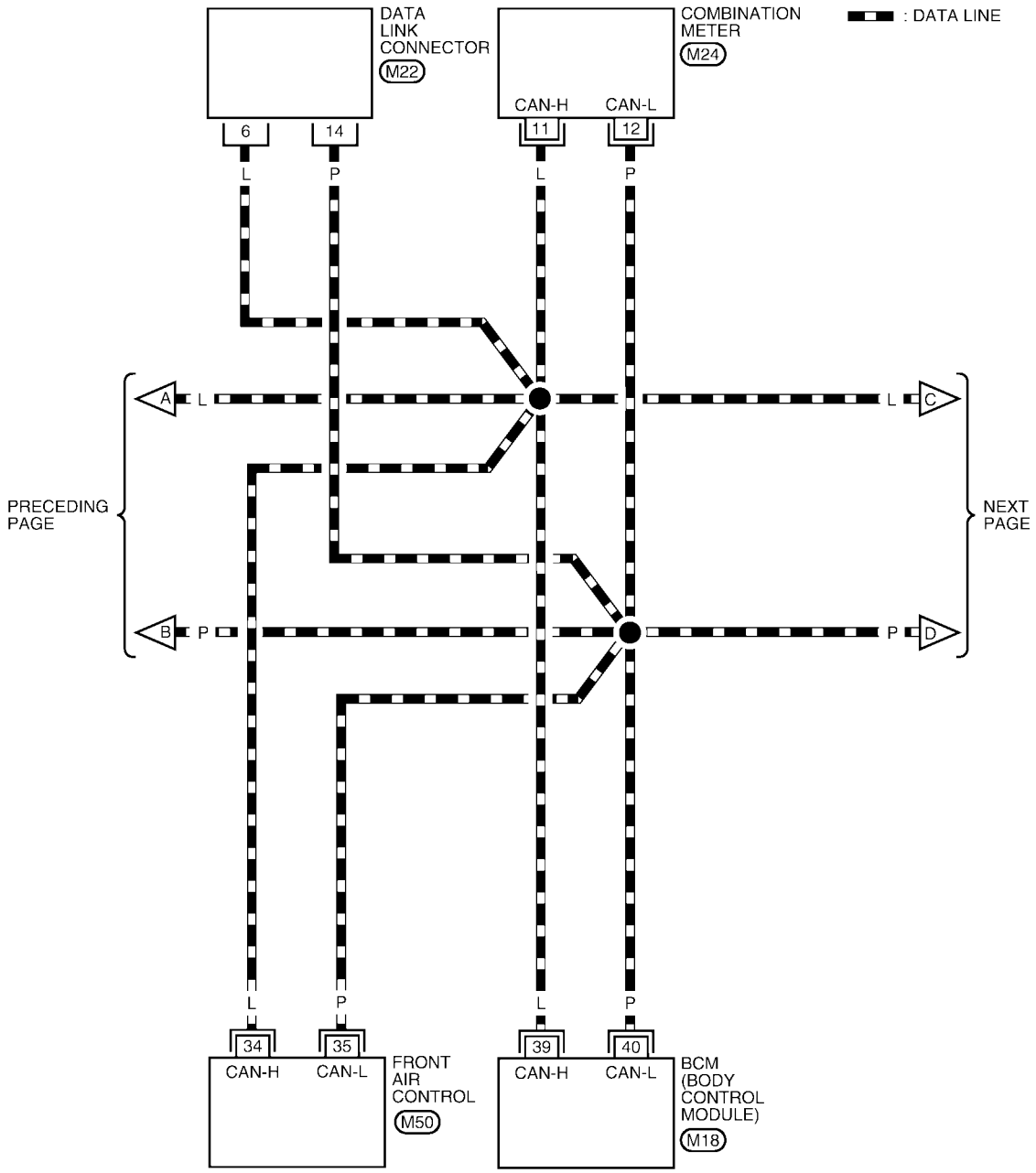


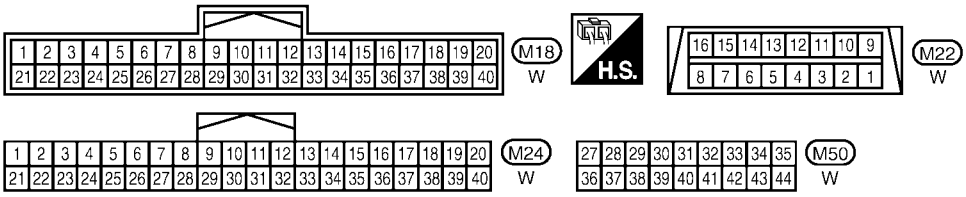
REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

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

BKWA0455E

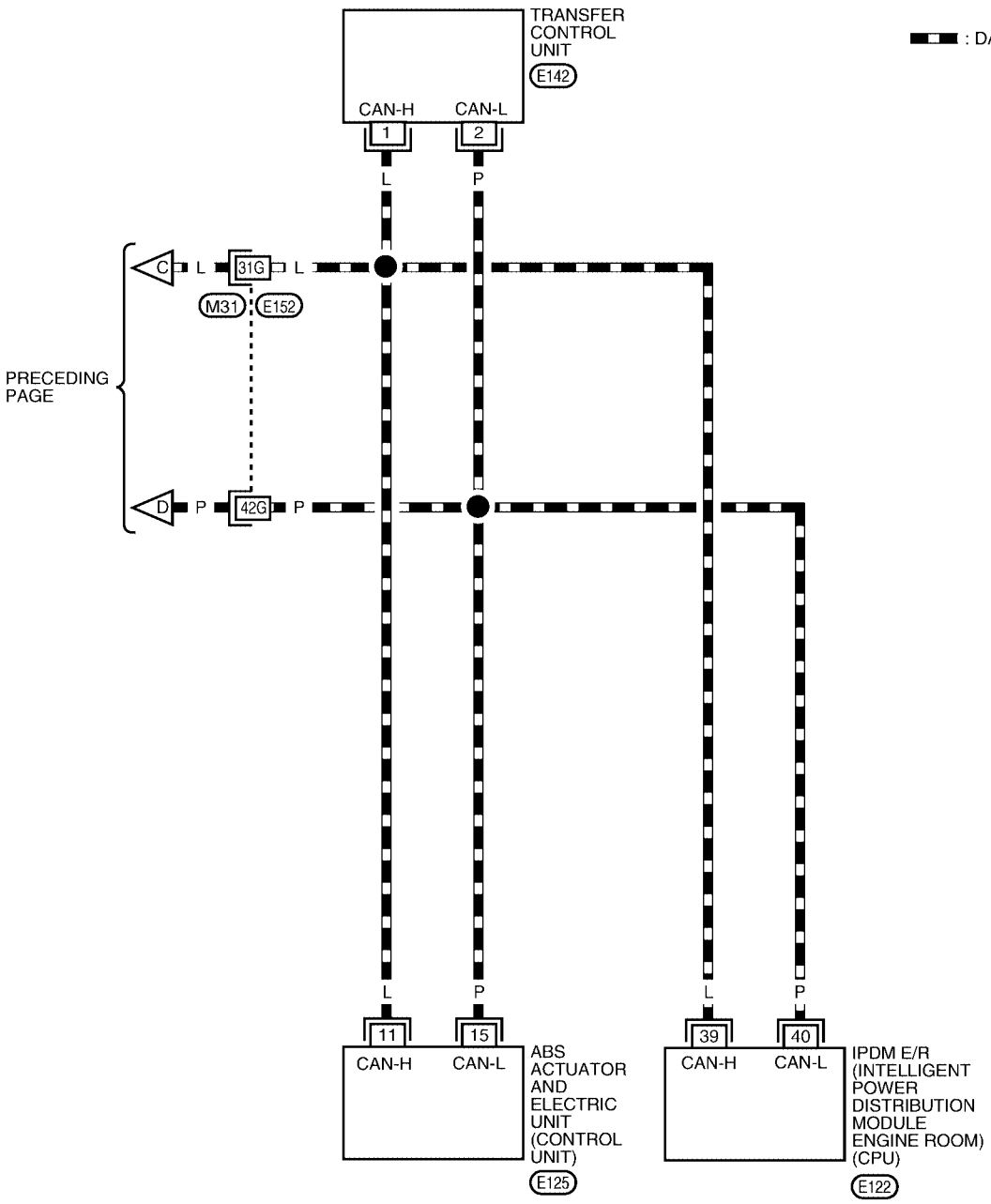
LAN-CAN-32

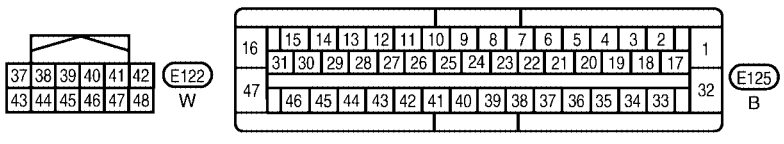


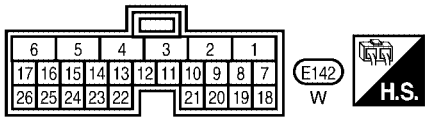


BKWA0456E

LAN-CAN-33







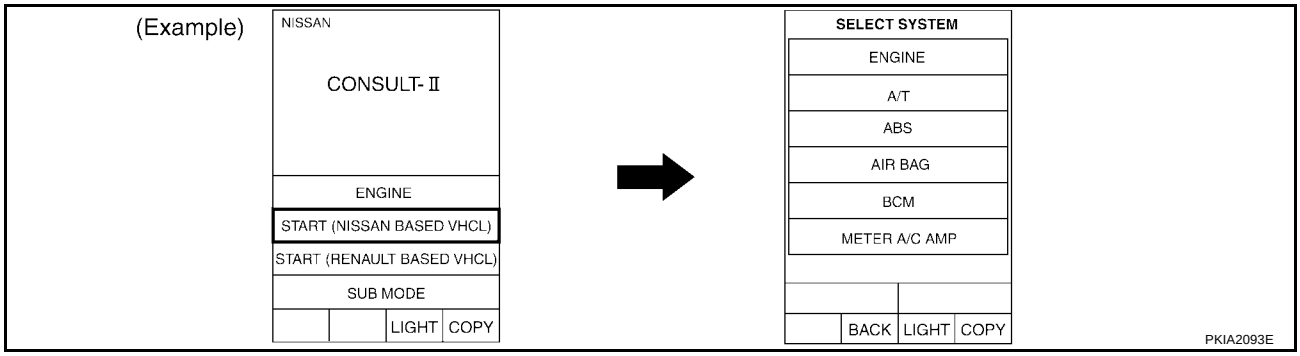
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0457E

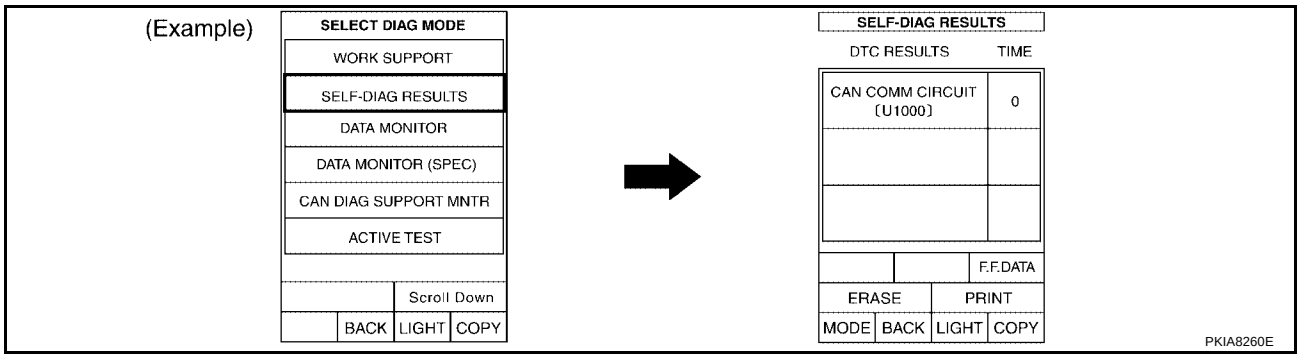
Work Flow

UKS001I1

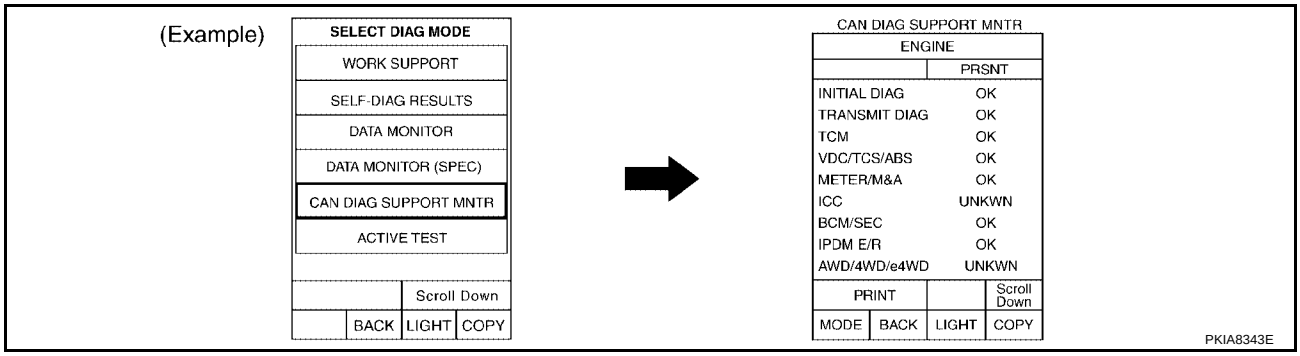
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-339, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-339, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-342, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB6694E

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
DIFF LOCK
SELF-DIAG RESULTS

Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

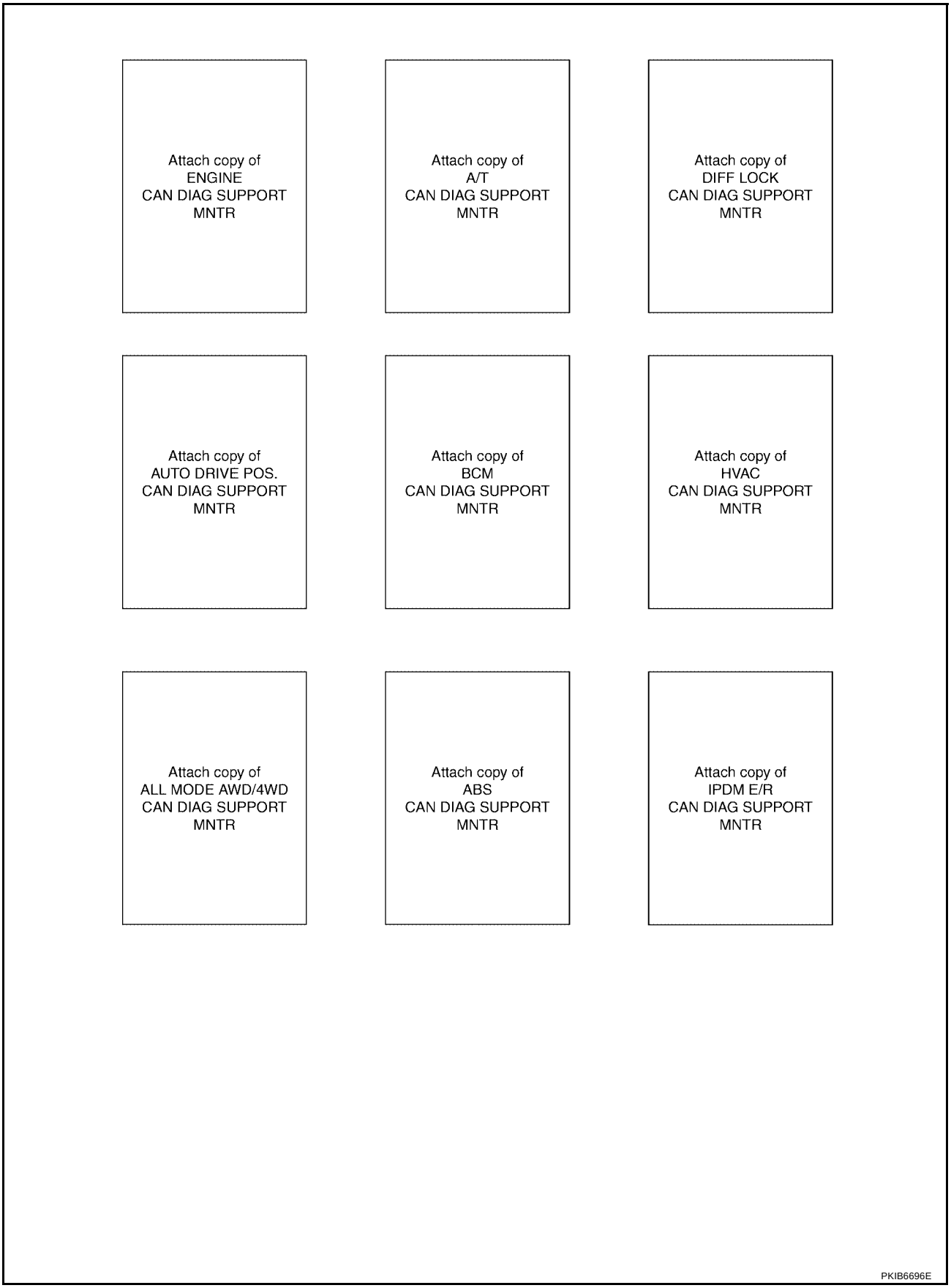
Attach copy of
HVAC
SELF-DIAG RESULTS

Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

PKIB6695E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MNTR
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ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6696E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and differential lock control unit. Refer to LAN-358, "Circuit Check Between TCM and Differential Lock Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	✓	✓	✓	✓	✓
A/T	—	NG	UNKWN	UNKWN	—	—	✓	—	✓	✓	—
DIFF LOCK	—	NG	UNKWN	✓	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	✓	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	✓	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	✓	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	✓	✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	✓	✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	—	UNKWN	—	—	—

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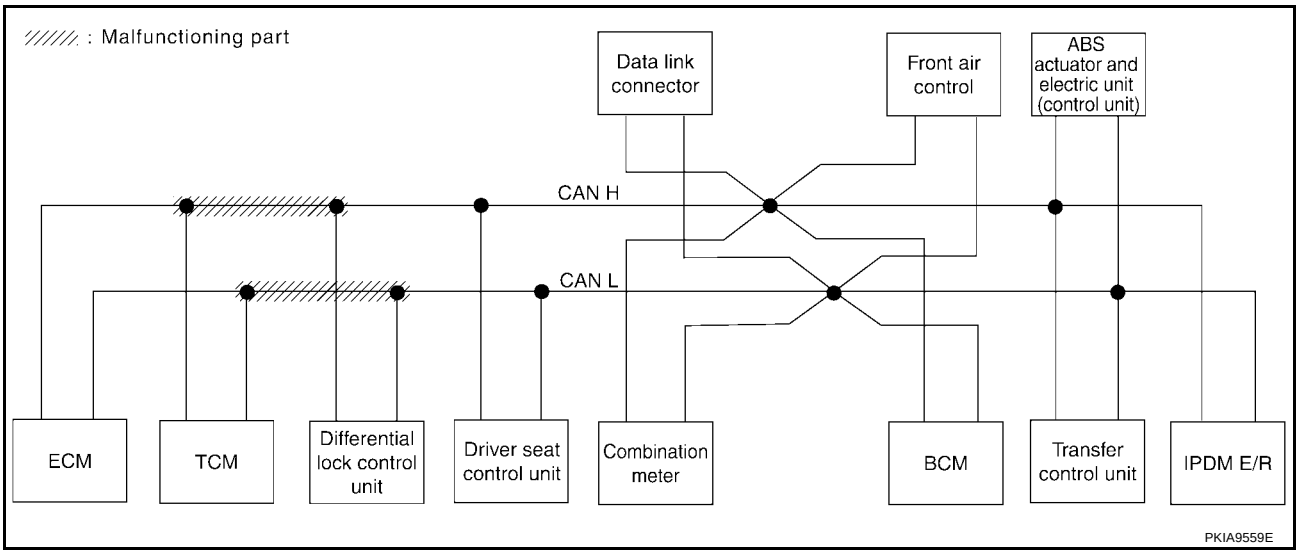

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Case 2

Check harness between differential lock control unit and driver seat control unit. Refer to LAN-359, "Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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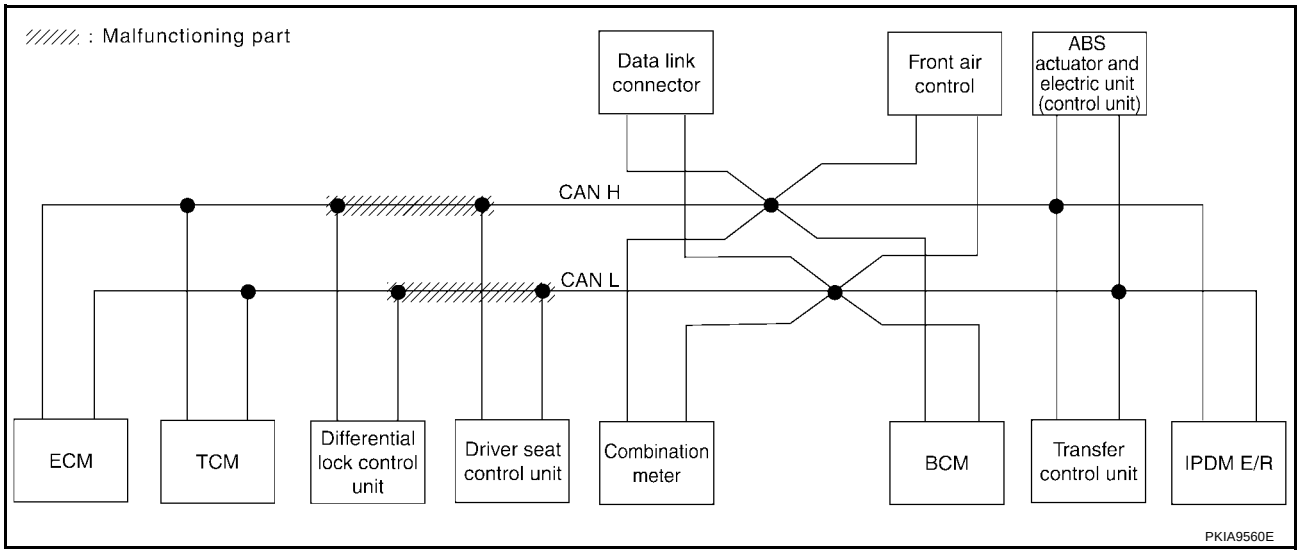

PKIA9560E

Case 3

Check harness between driver seat control unit and data link connector. Refer to LAN-360, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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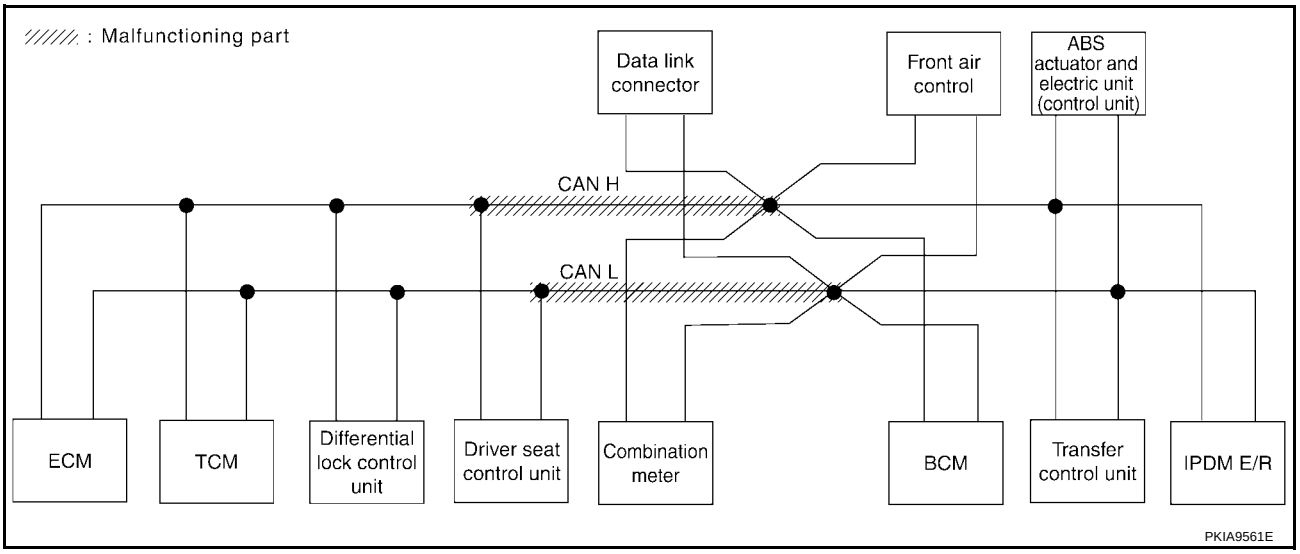

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Case 4

Check harness between data link connector and IPDM E/R. Refer to LAN-360, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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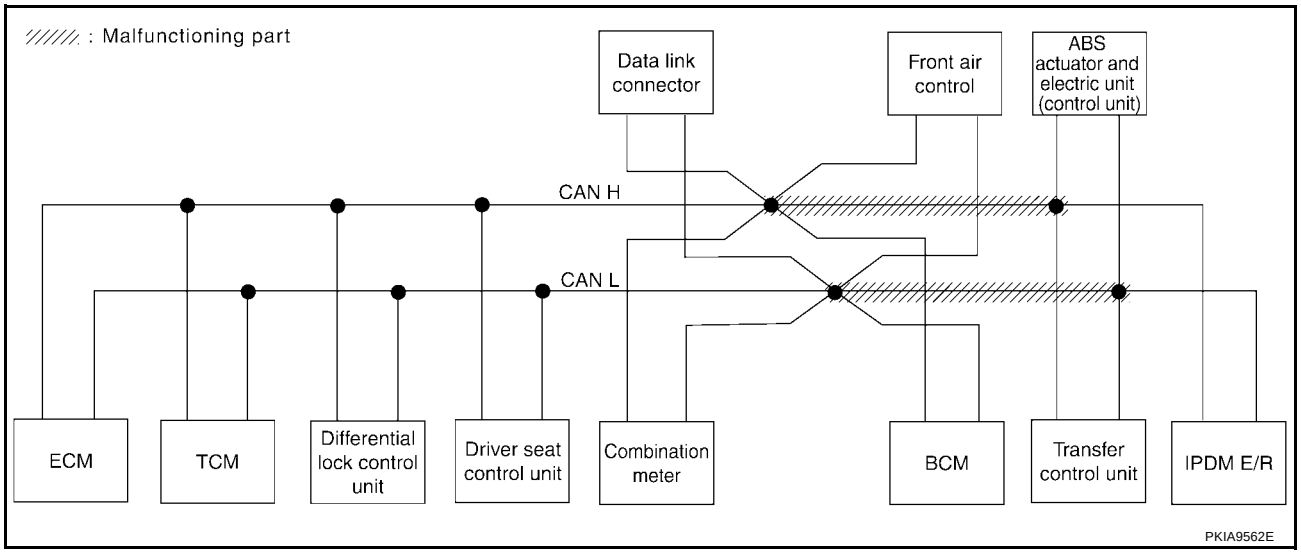

PKIA9562E

Case 5

Check ECM circuit. Refer to LAN-361, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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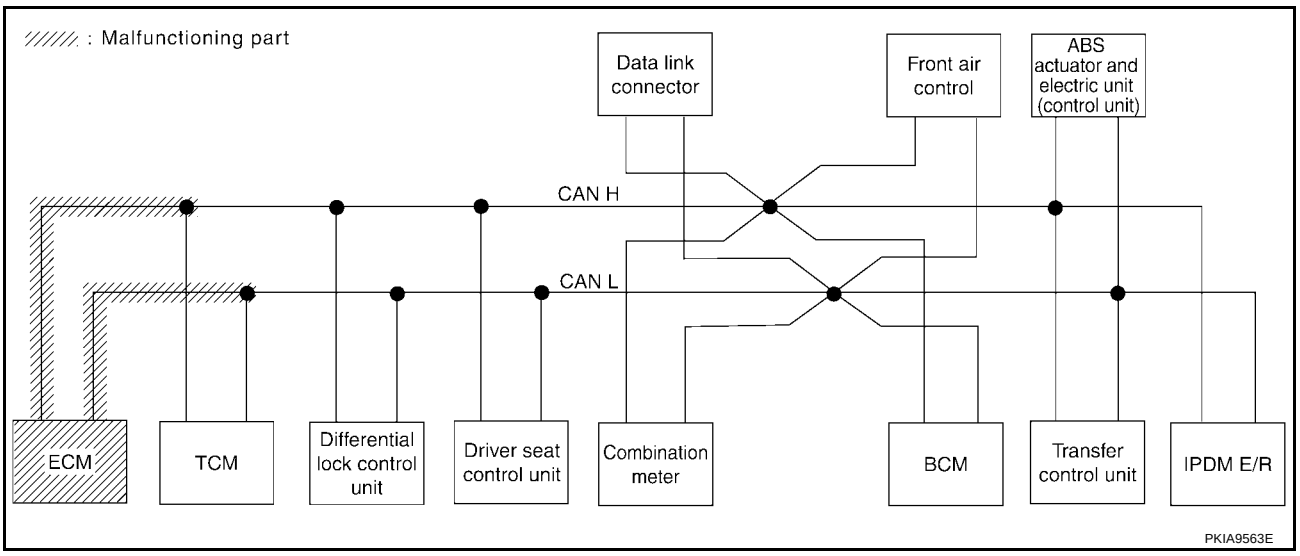

PKIA9563E

Case 6

Check TCM circuit. Refer to LAN-362, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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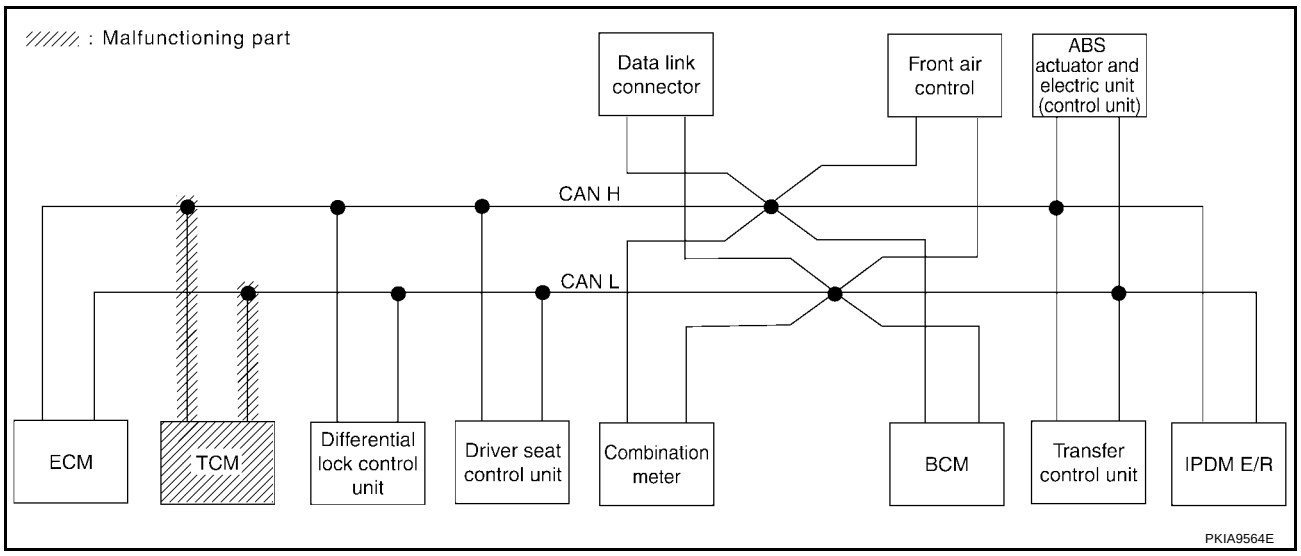


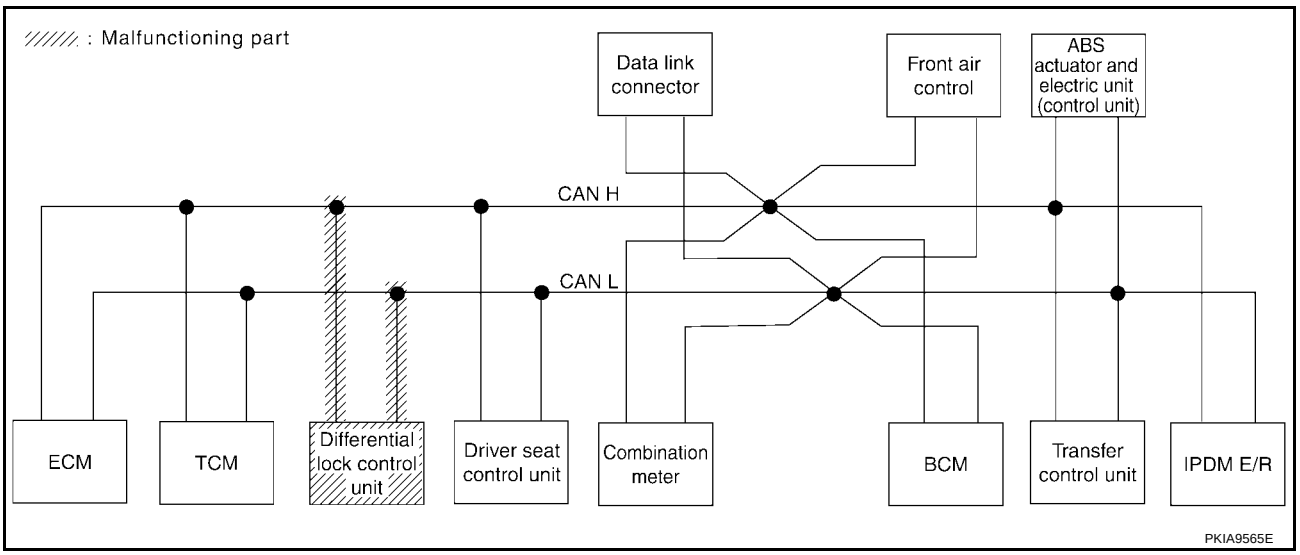
PKIA9564E

Case 7

Check differential lock control unit circuit. Refer to LAN-362, "Differential Lock Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6703E



Case 8

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	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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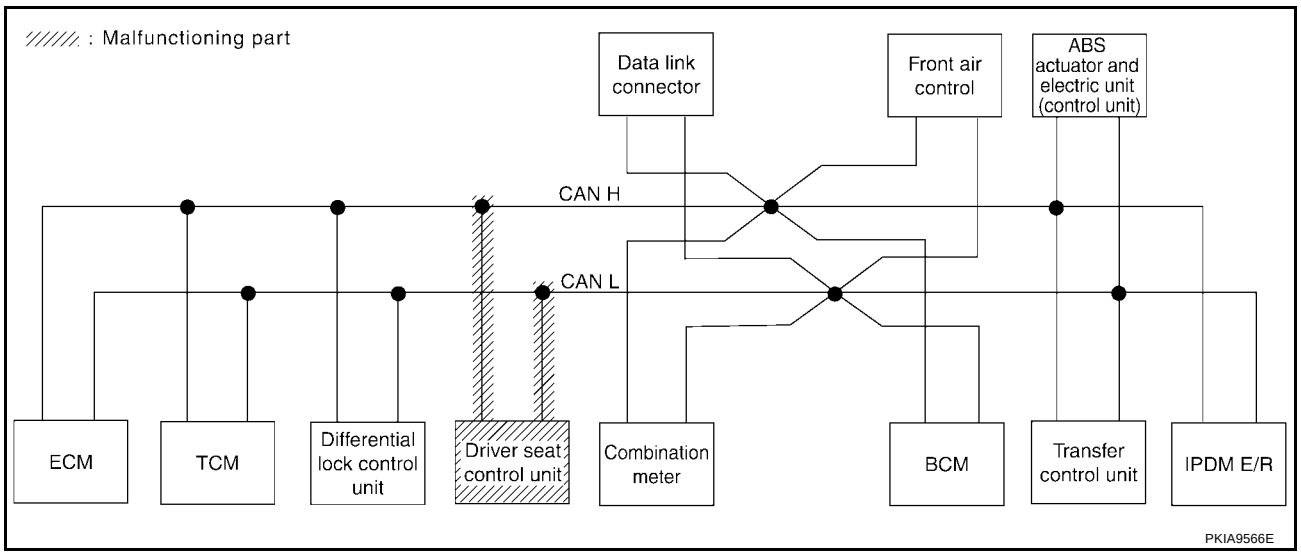

PKIA9566E

Case 9

Check combination meter circuit. Refer to LAN-363, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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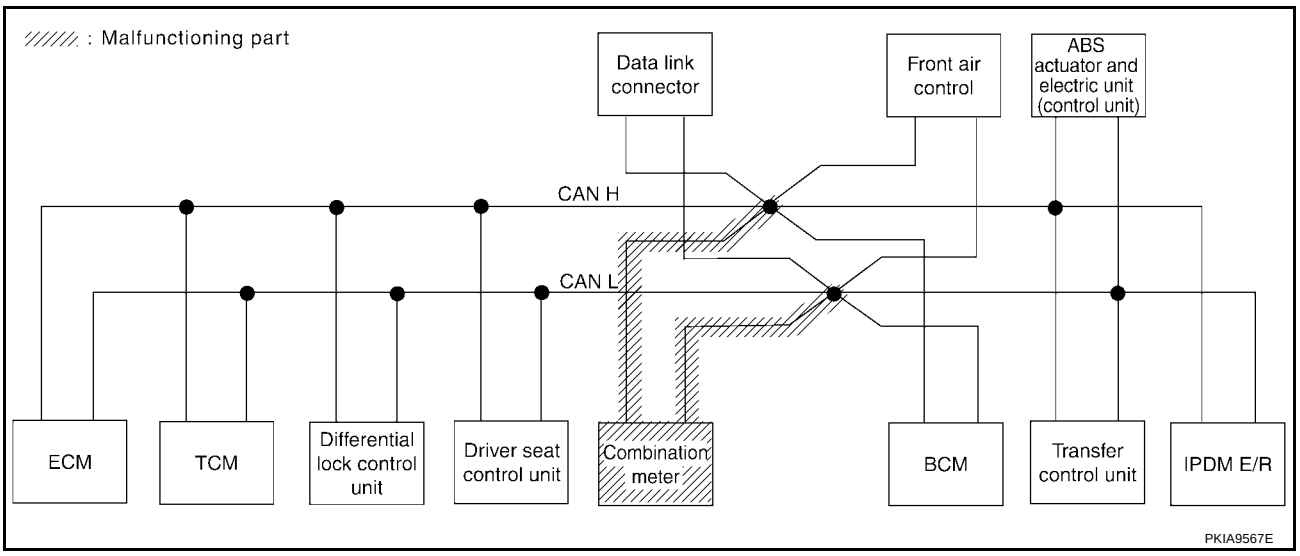

PKIA9567E

Case 10

Check BCM circuit. Refer to LAN-364, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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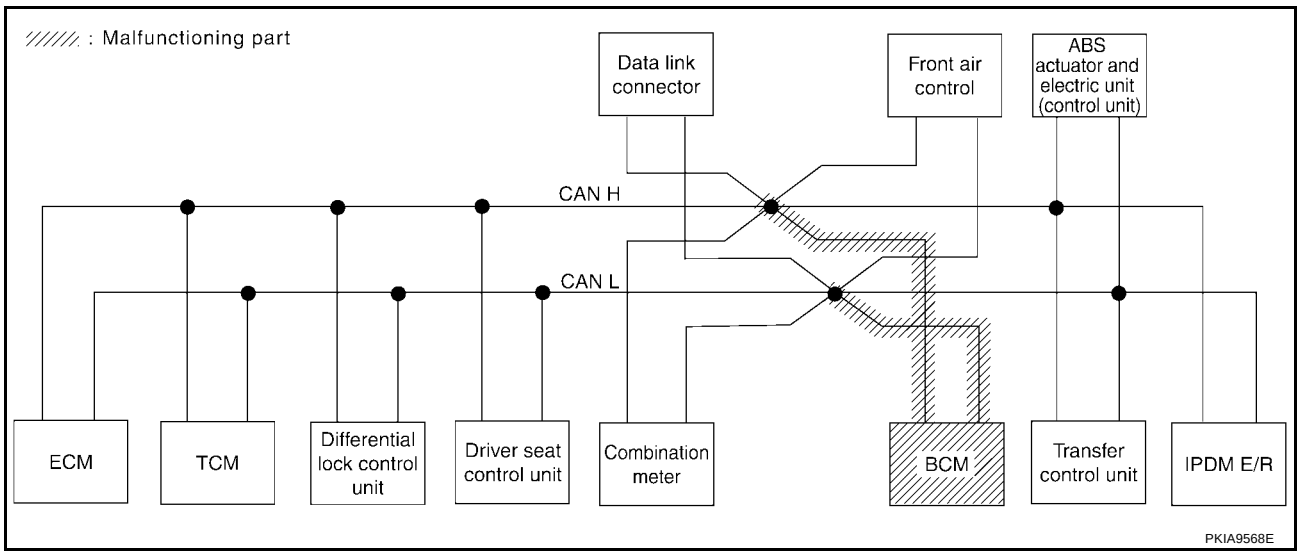

PKIA9568E

Case 11

Check data link connector circuit. Refer to LAN-364, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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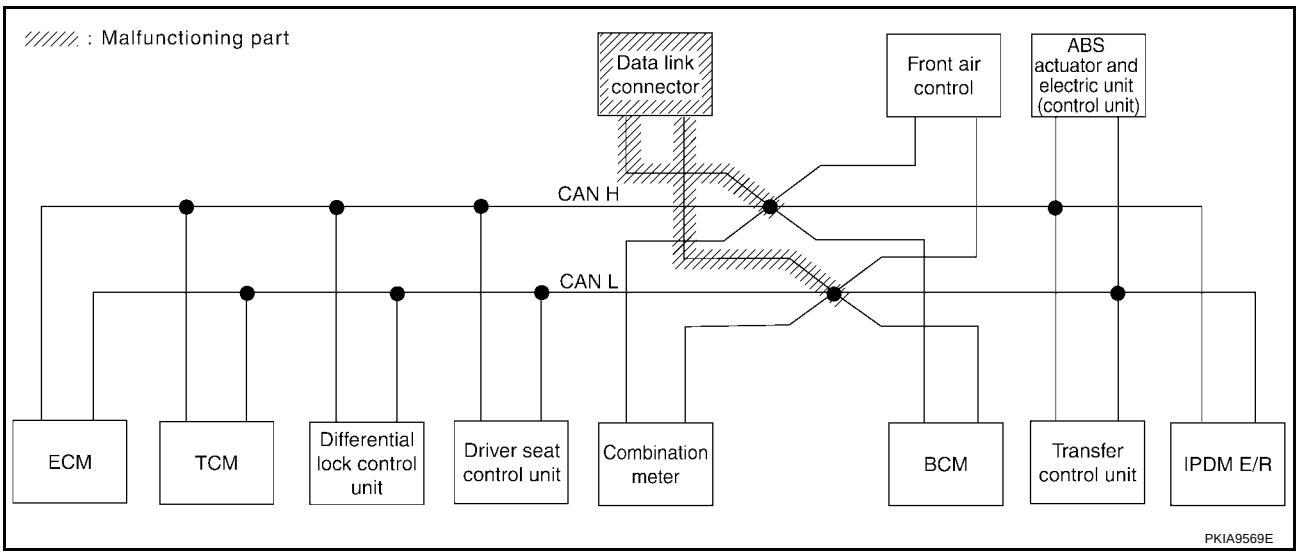
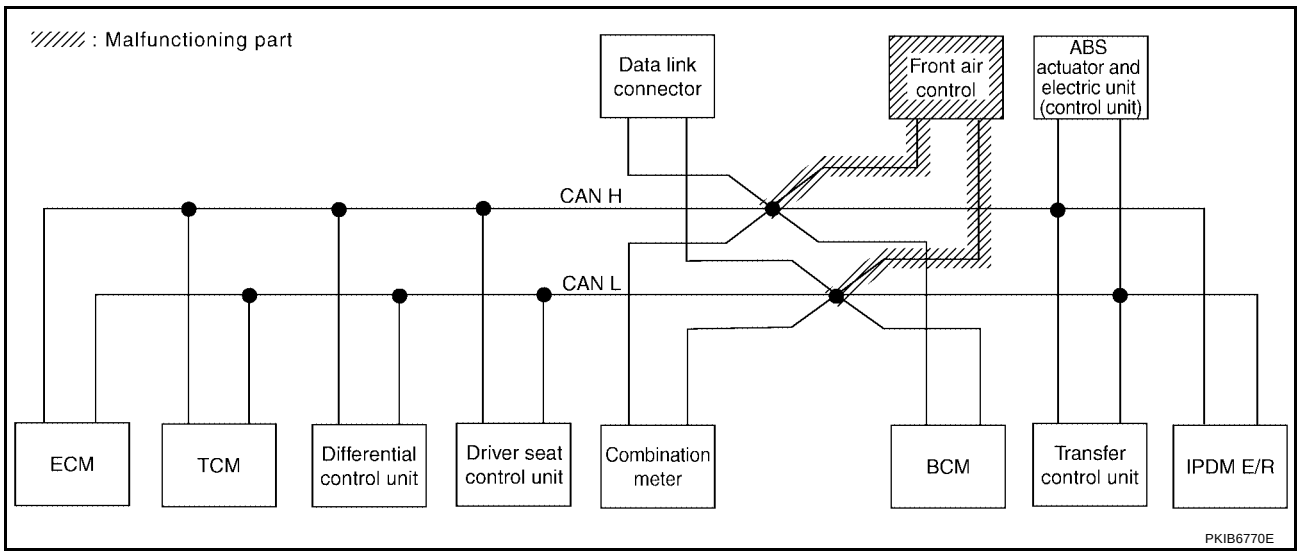


Case 12

Check front air control circuit. Refer to LAN-365, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6708E



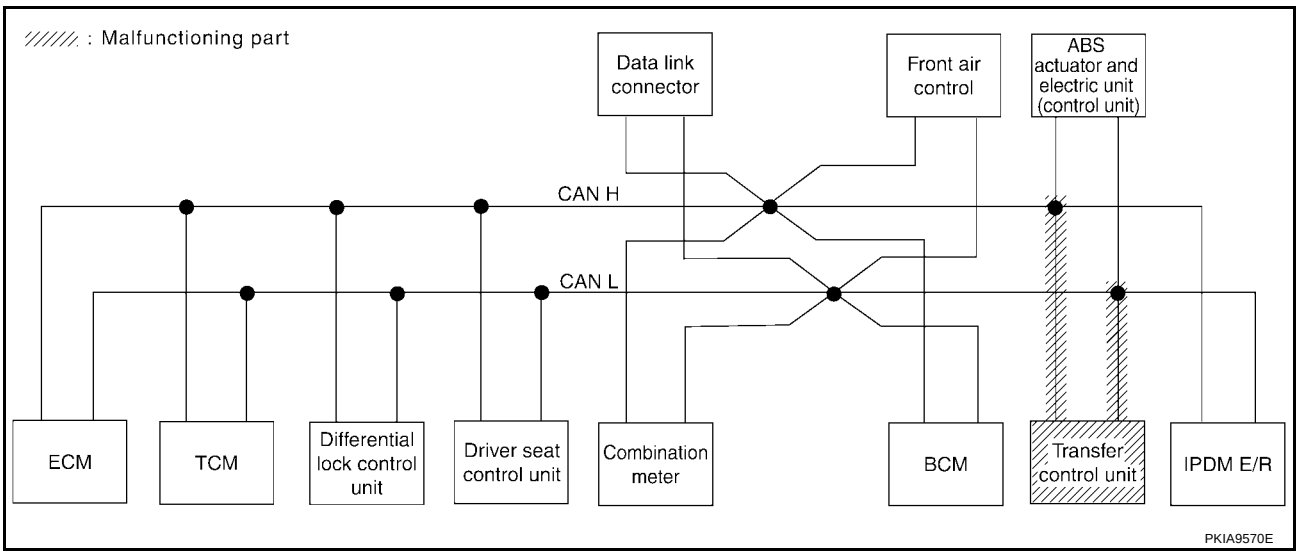
PKIB6770E

Case 13

Check transfer control unit circuit. Refer to LAN-365, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN ✓	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN ✓	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6709E



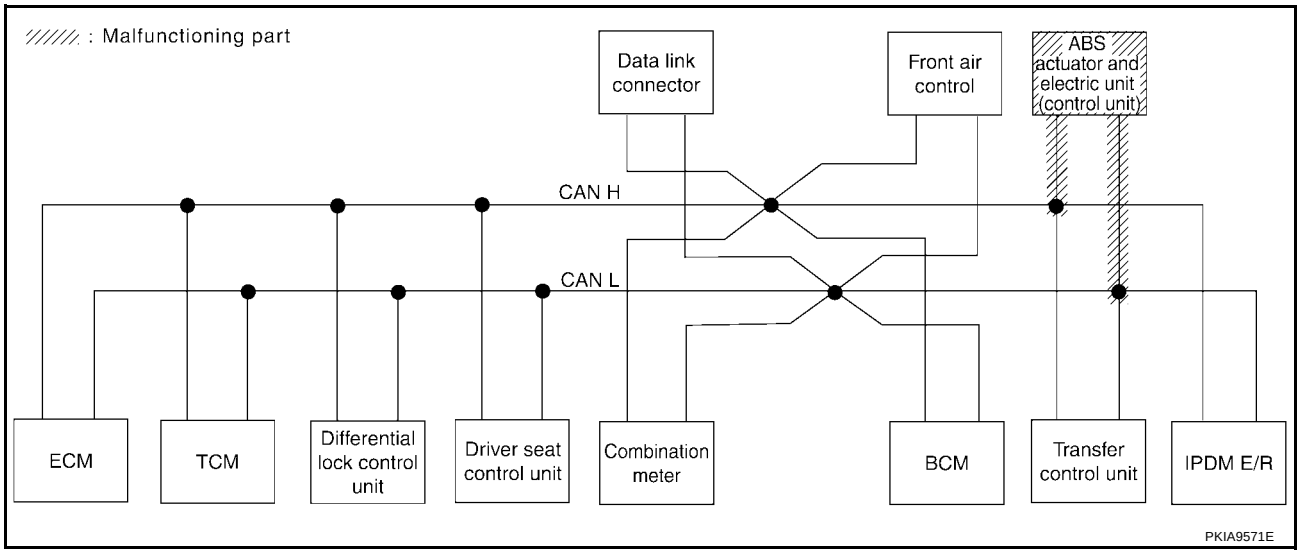
PKIA9570E

Case 14

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-366, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6710E



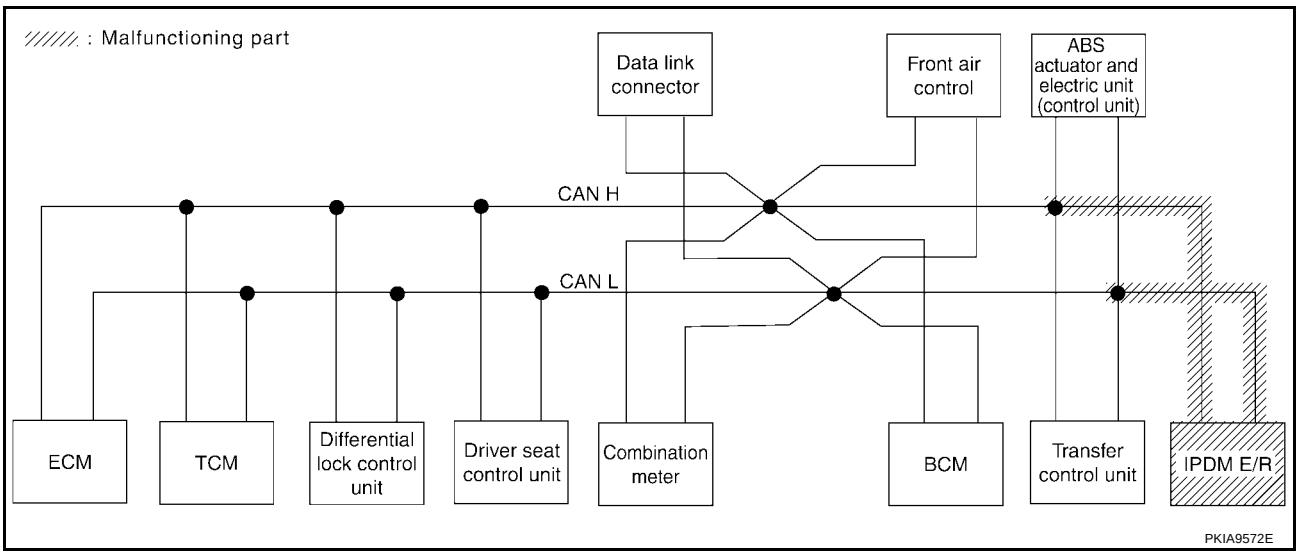
PKIA9571E

Case 15

Check IPDM E/R circuit. Refer to LAN-366, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6711E



PKIA9572E

Case 16

Check CAN communication circuit. Refer to LAN-367, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6712E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-368, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6713E

Case 18

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-368, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIB6714E

Circuit Check Between TCM and Differential Lock Control Unit

UKS0020K

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

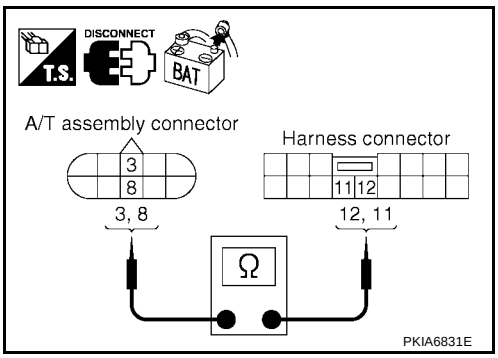
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



PKIA6831E

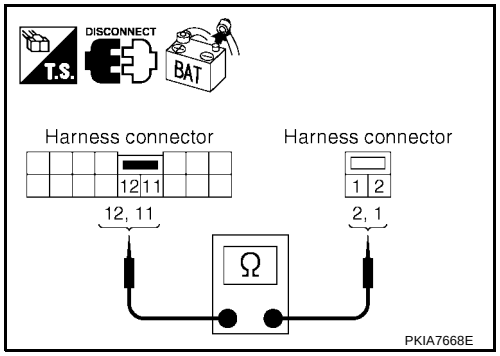
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



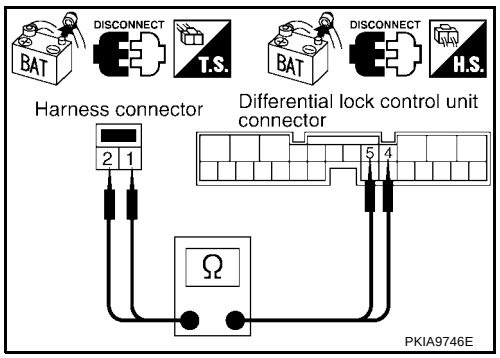
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and differential lock control unit harness connector B77 terminals 5 (L), 4 (P).

2 (L) - 5 (L) : Continuity should exist.
1 (P) - 4 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-338, "Work Flow" .
NG >> Repair harness.

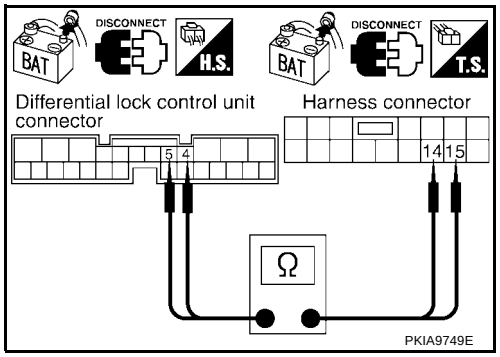
Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit

UKS001I2

1. CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect differential lock control unit connector and harness connector B37.
4. Check continuity between differential lock control unit harness connector B77 terminals 5 (L), 4 (P) and harness connector B37 terminals 15 (L), 14 (P).

5 (L) - 15 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-338, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001I3

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

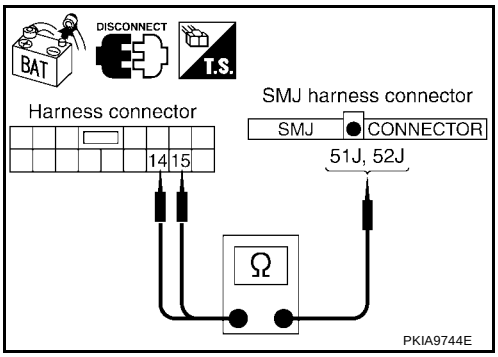
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

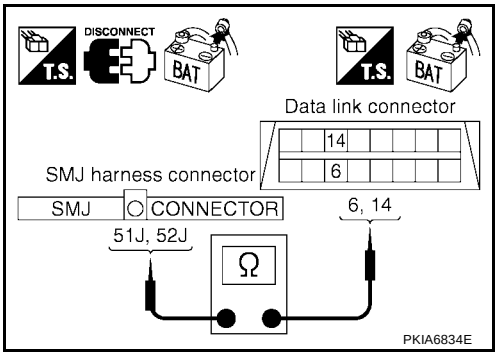
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-338, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001I4

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

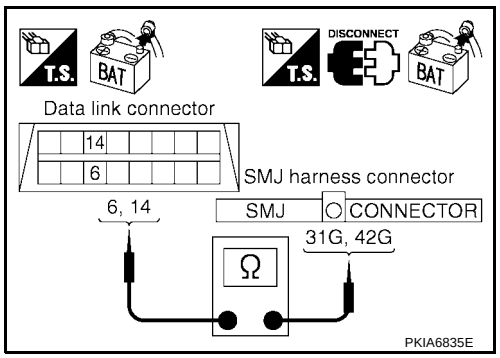
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.



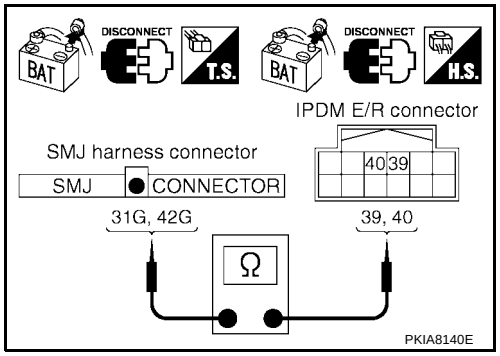
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-338, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001I5

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

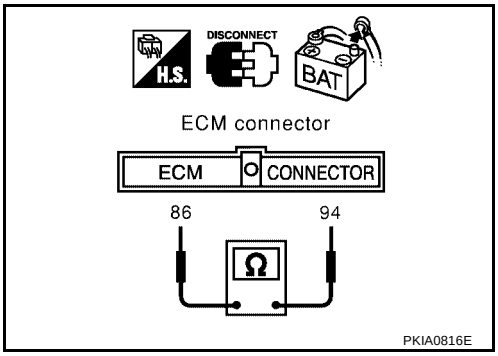
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS001I6

1. CHECK CONNECTOR

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

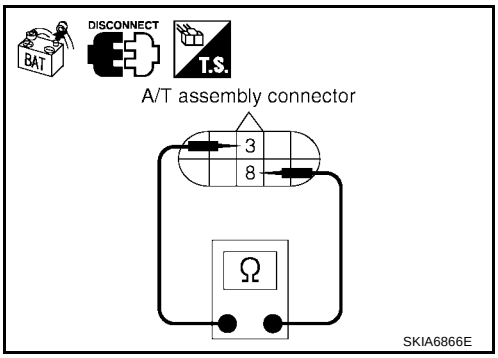
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Differential Lock Control Unit Circuit Check

UKS0020L

1. CHECK CONNECTOR

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

OK or NG

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

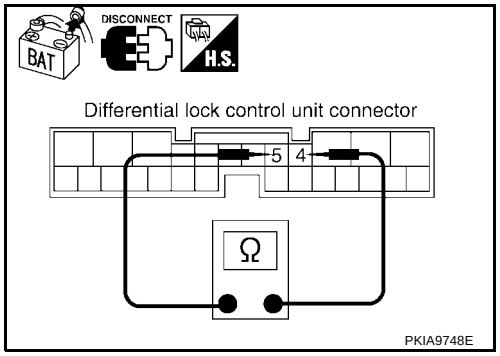
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check resistance between differential lock control unit harness connector B77 terminals 5 (L) and 4 (P).

5 (L) - 4 (P) **: Approx. 54 - 66 Ω**

OK or NG

OK >> Replace differential lock control unit.
NG >> Repair harness between differential lock control unit and harness connector B75.



Driver Seat Control Unit Circuit Check

UKS001I7

1. CHECK CONNECTOR

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

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

OK or NG

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

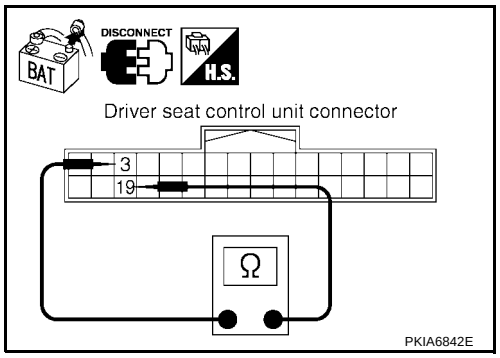
2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) **: Approx. 54 - 66 Ω**

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

UKS001I8

1. CHECK CONNECTOR

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

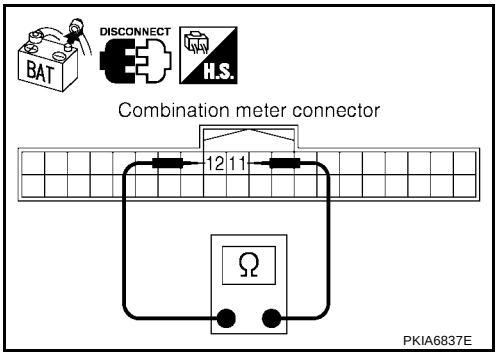
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS001I9

1. CHECK CONNECTOR

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

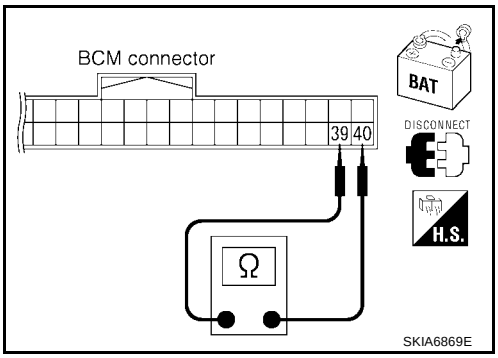
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001IA

1. CHECK CONNECTOR

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

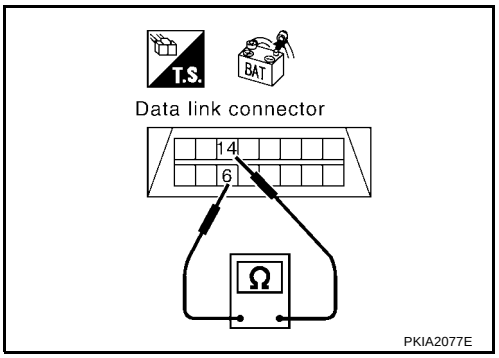
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-338, "Work Flow" .

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

Front Air Control Circuit Check

UKS003KT

1. CHECK CONNECTOR

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

OK or NG

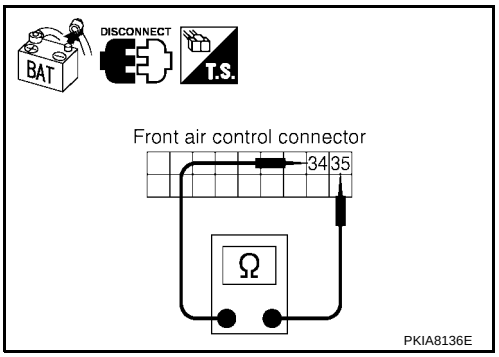
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace front air control.

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

Transfer Control Unit Circuit Check

UKS001IC

1. CHECK CONNECTOR

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

OK or NG

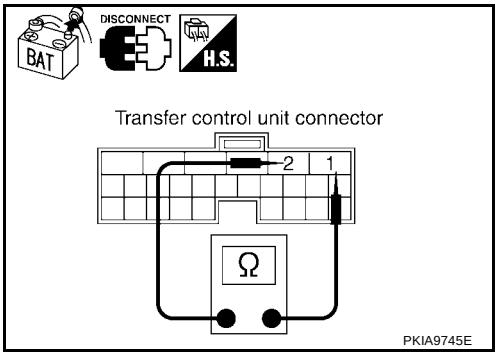
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001ID

1. CHECK CONNECTOR

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

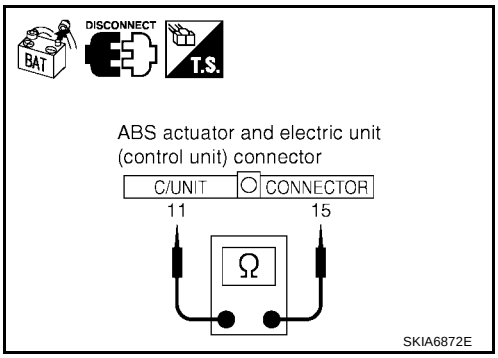
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001IE

1. CHECK CONNECTOR

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

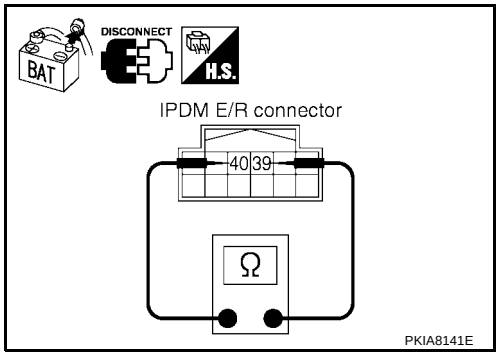
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001IF

1. CHECK CONNECTOR

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
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

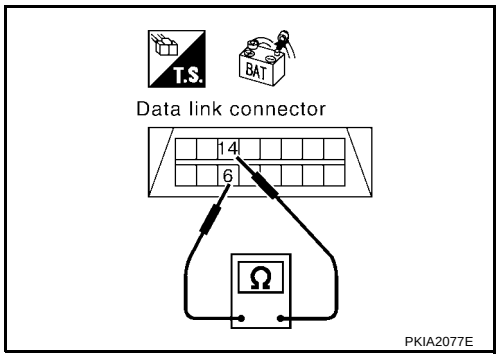
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

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

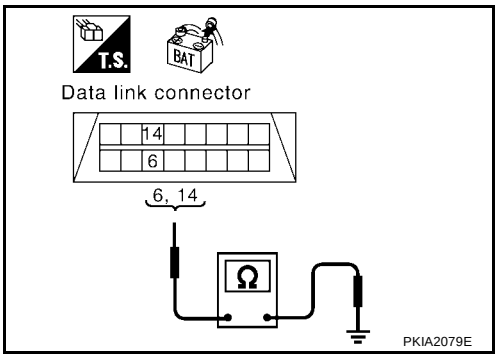
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-368, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001IG

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

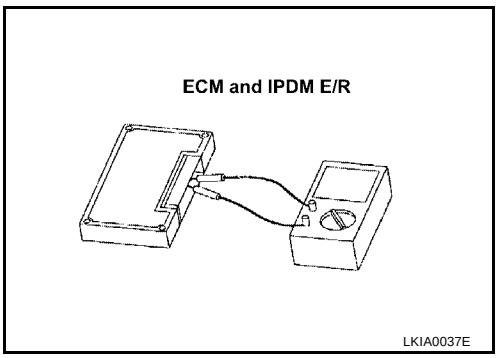
Component Inspection

UKS001IH

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 12)

PFP:23710

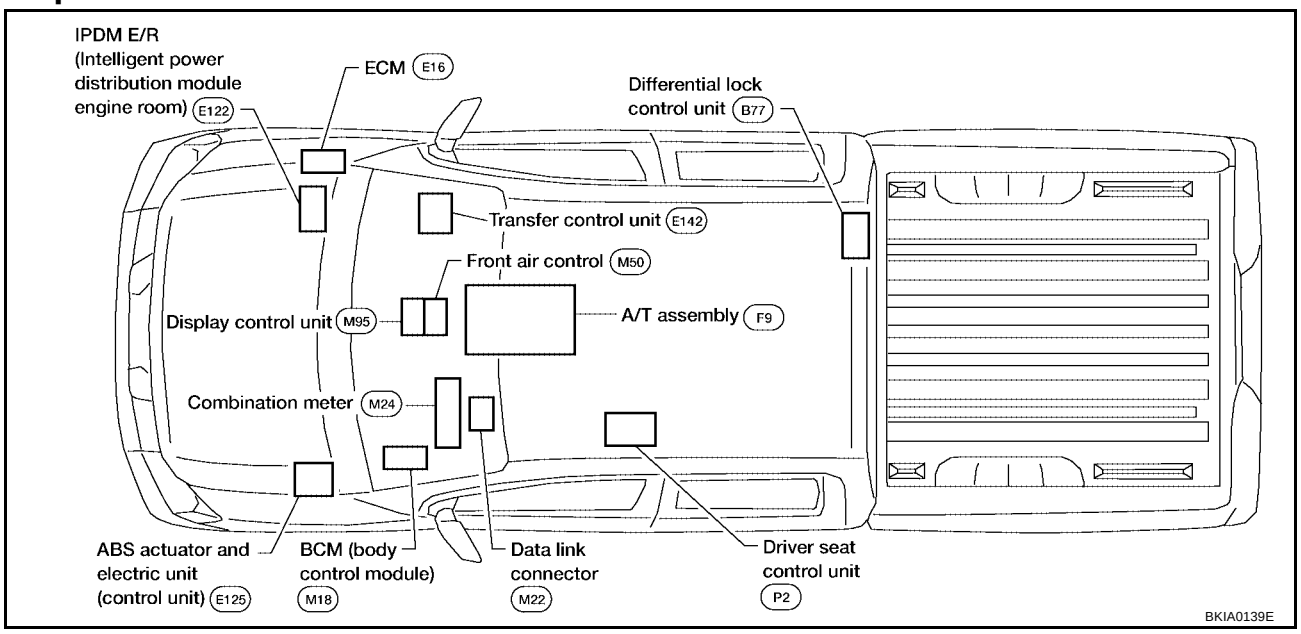
System Description

UKS001II

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.

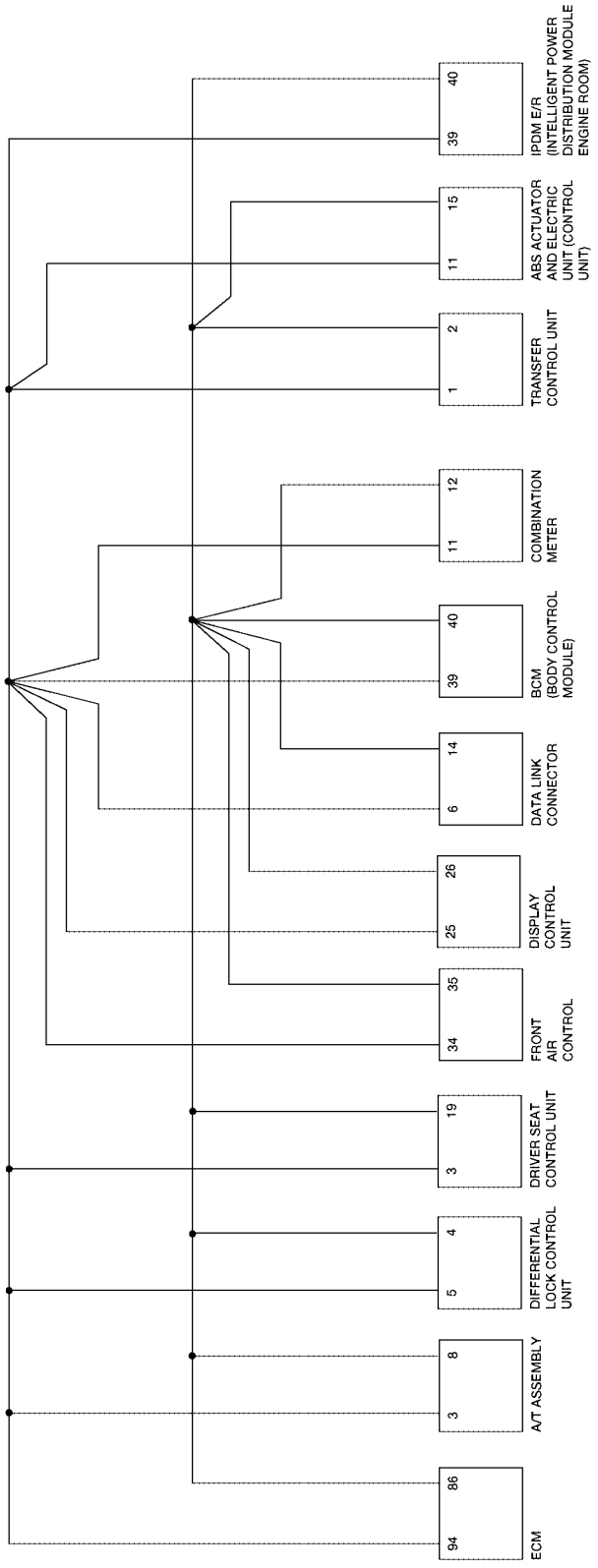
Component Parts and Harness Connector Location

UKS001IJ



Schematic

UKS001IK

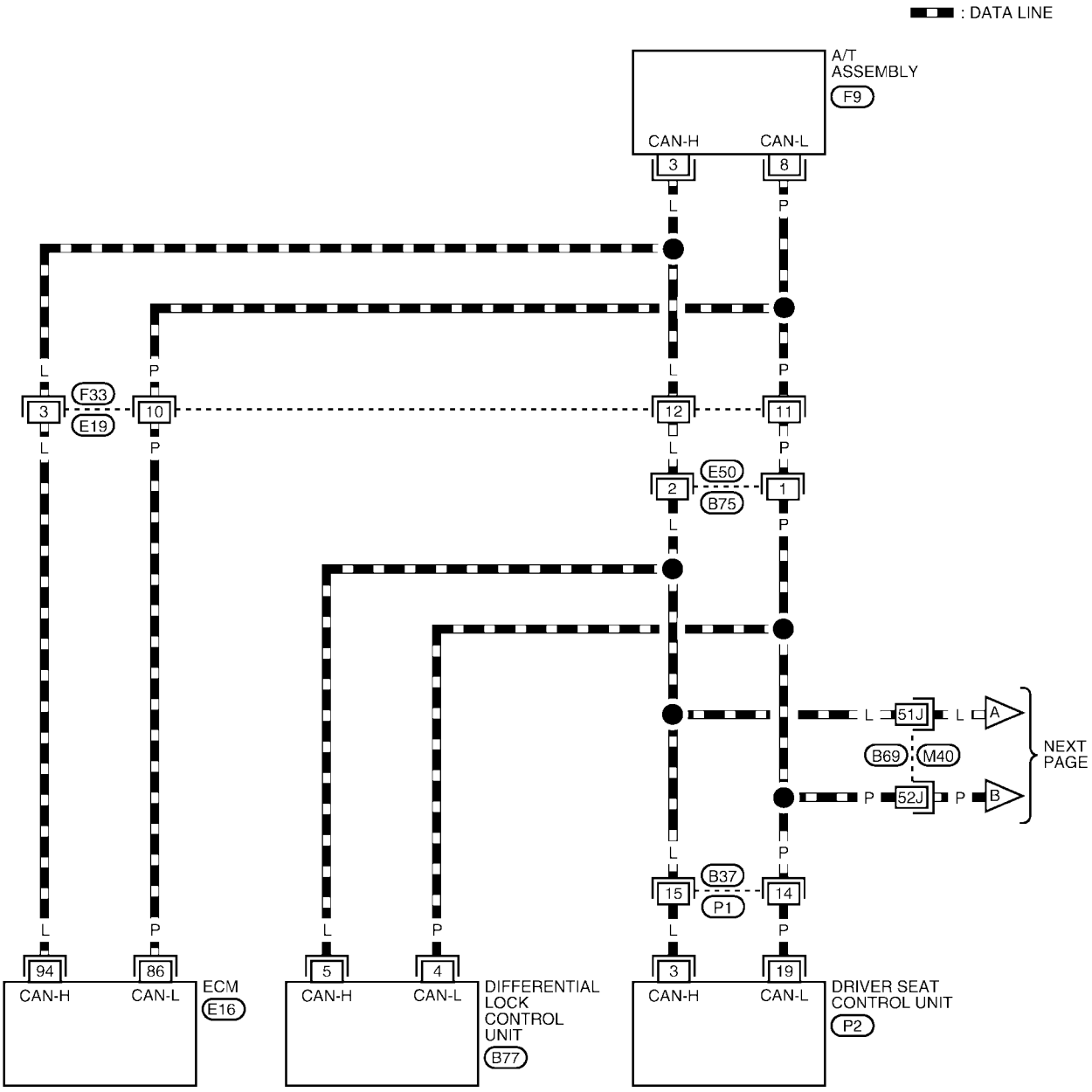


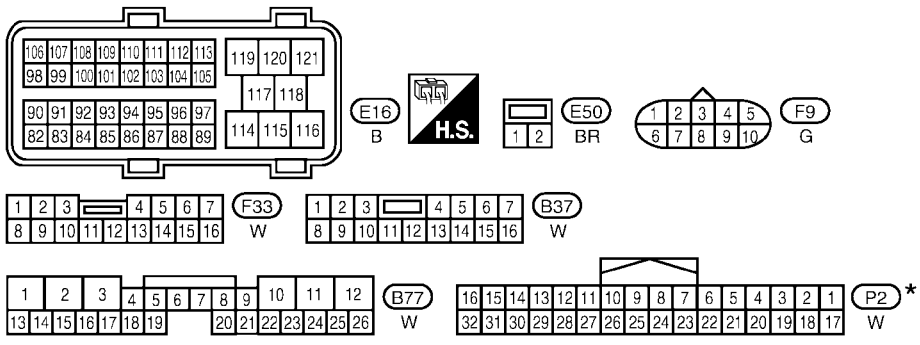
BKWA0156E

Wiring Diagram - CAN -

UKS001IL

LAN-CAN-34

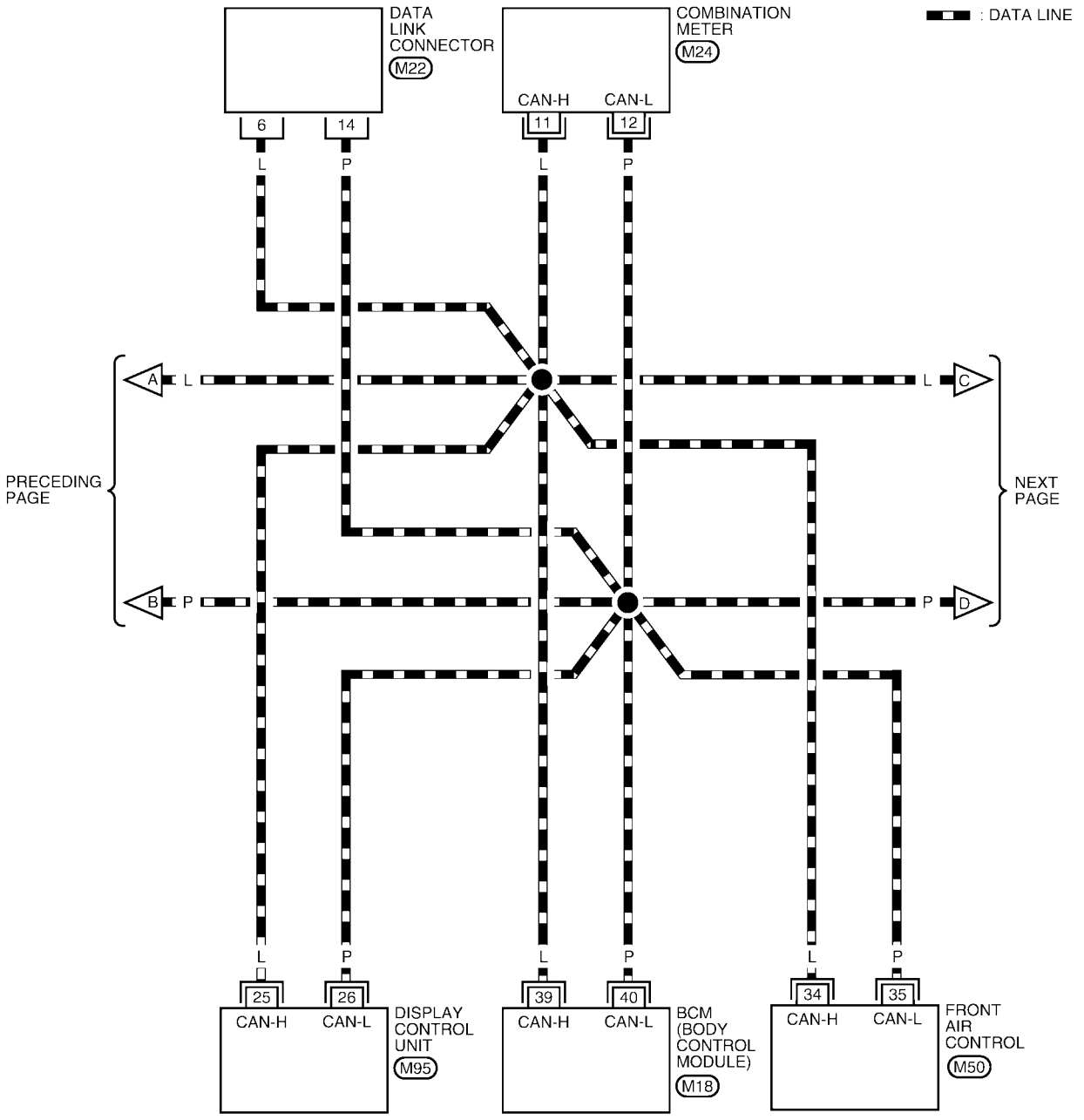


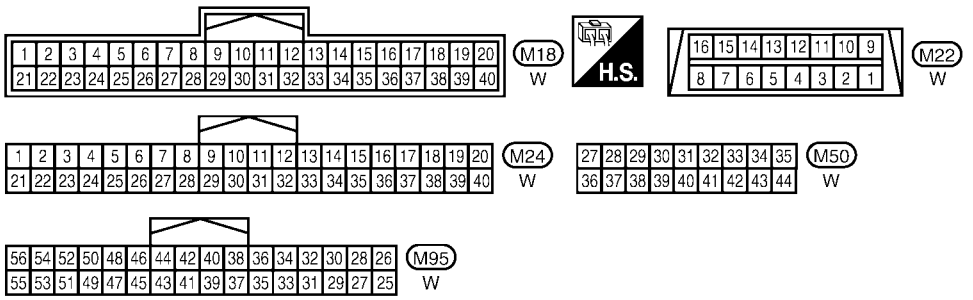


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

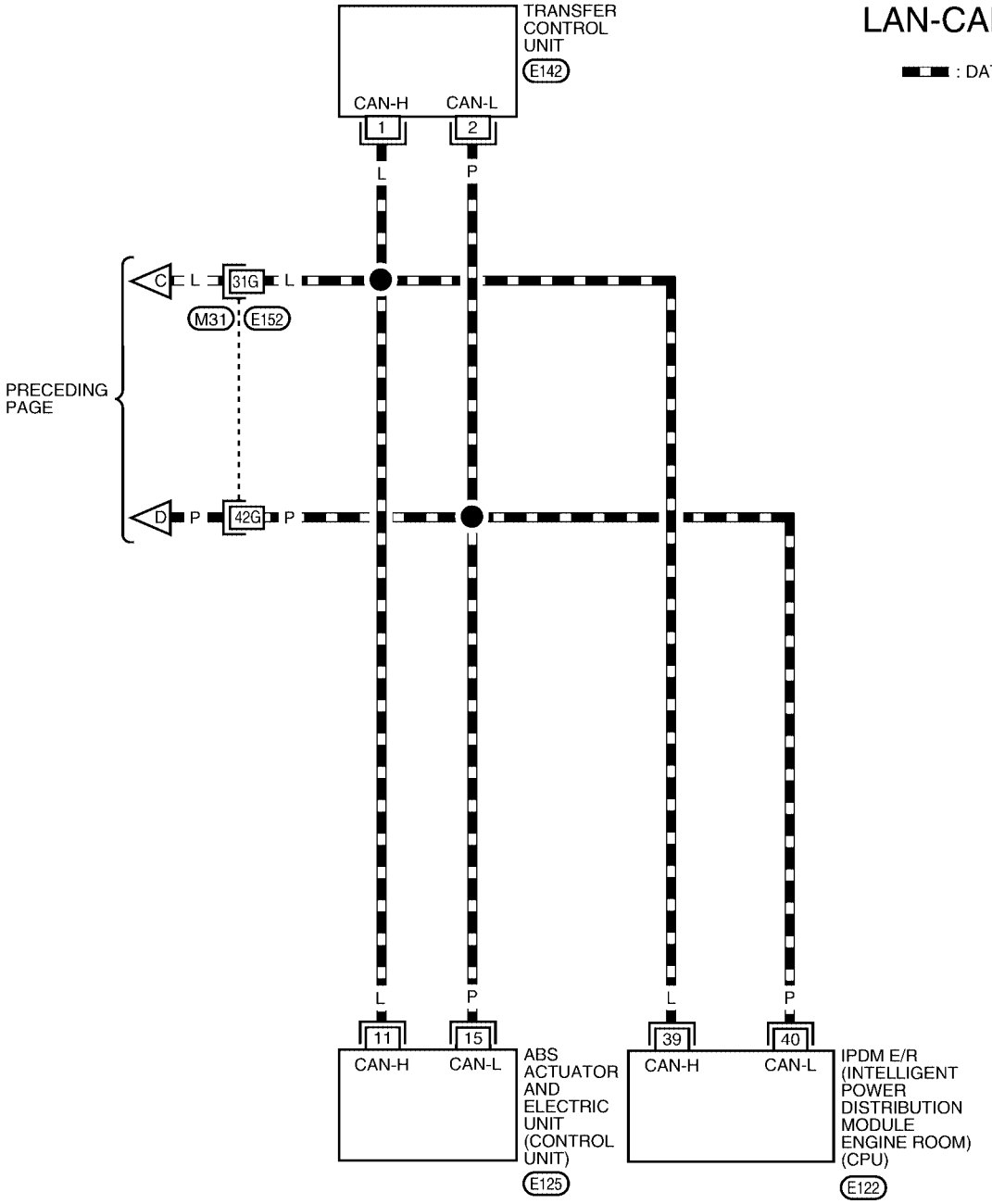
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

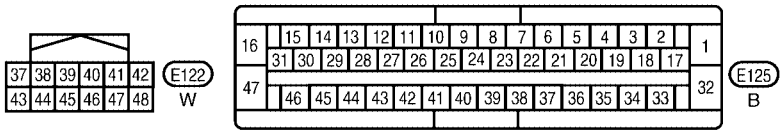
BKWA0458E

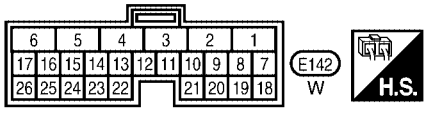

: DATA LINE
DATA LINK CONNECTOR
M22
COMBINATION METER
M24
CAN-H
CAN-L
6
14
11
12
L
P
PRECEDING PAGE
NEXT PAGE
A
B
C
D
25
26
39
40
34
35
DISPLAY CONTROL UNIT
M95
BCM (BODY CONTROL MODULE)
M18
FRONT AIR CONTROL
M50


M18
W
H.S.
M22
W
M24
W
M50
W
M95
W

BKWA0459E







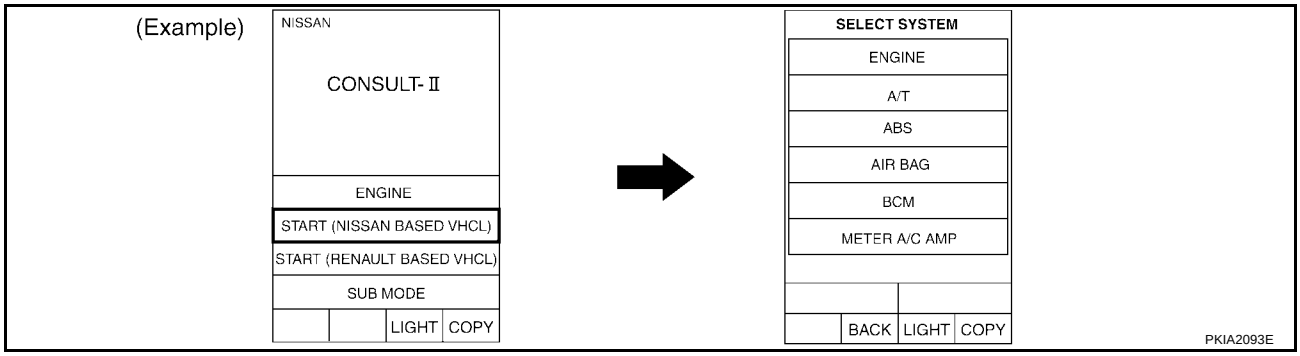
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0460E

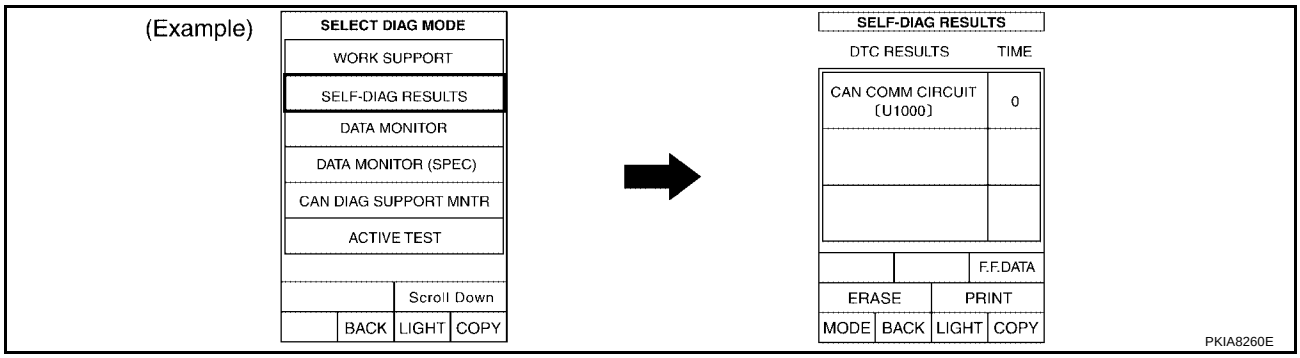
Work Flow

UKS001IM

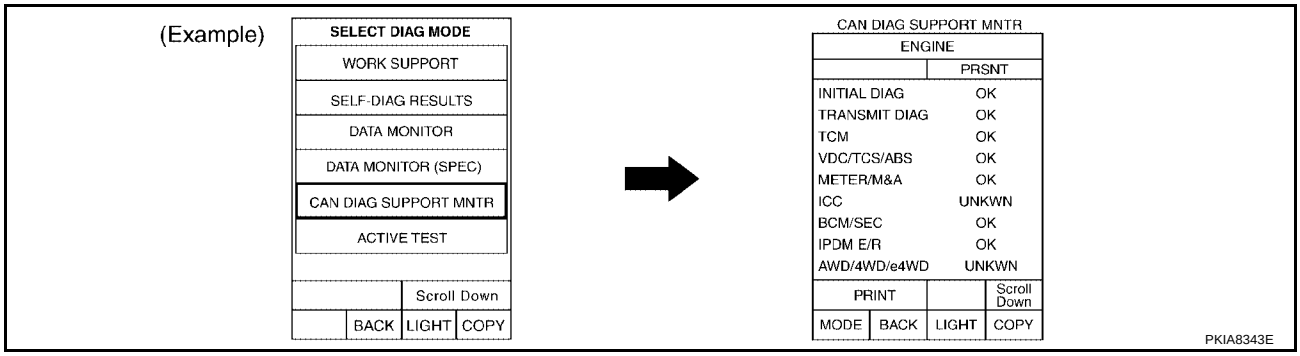
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “HAVC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-376, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-376, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-148, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-376, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-376, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-148, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-379, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

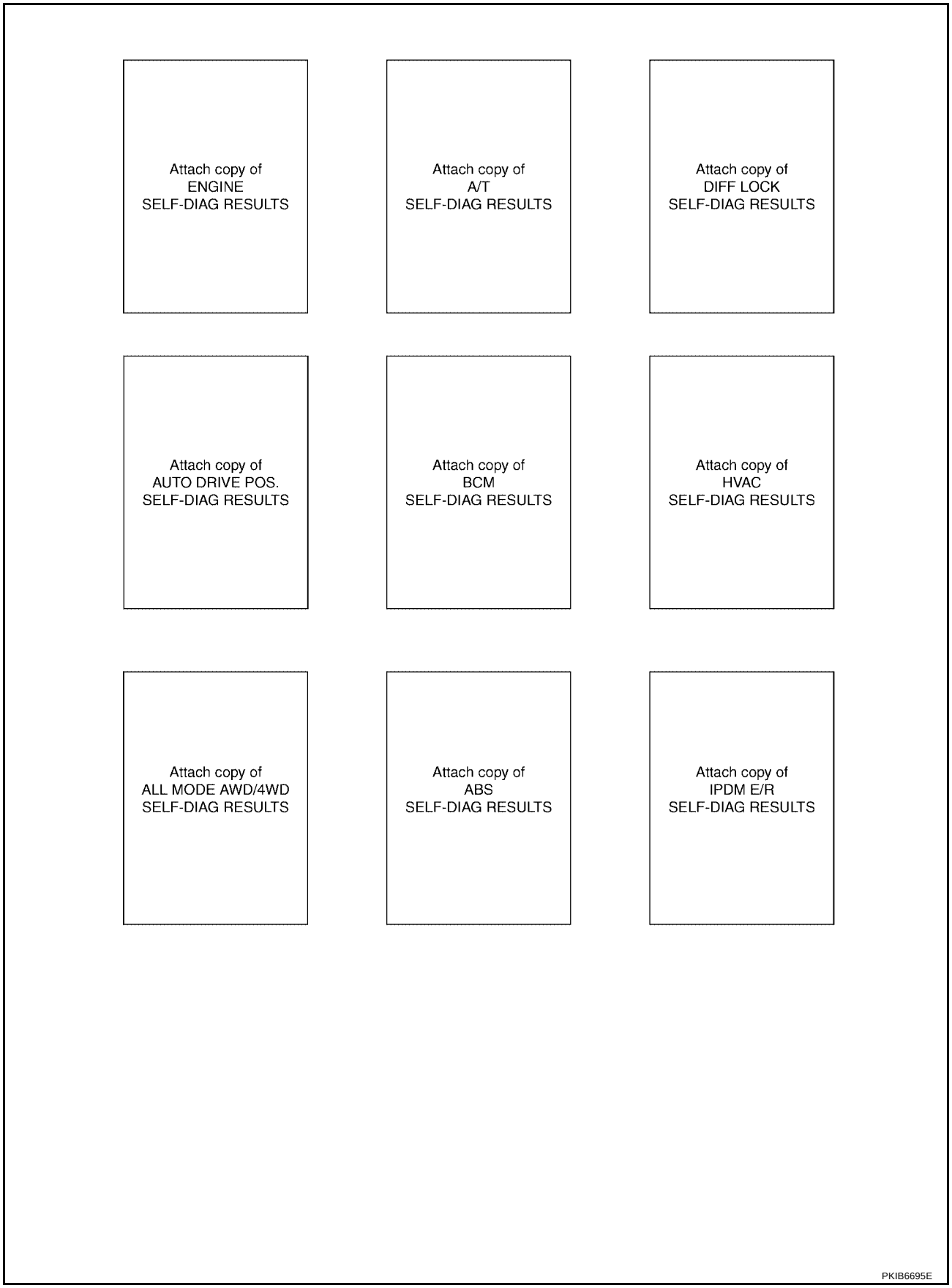
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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

PKIB6725E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
DIFF LOCK
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
PKIB6695E

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
DIFF LOCK
CAN DIAG SUPPORT
MNTR

Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR

Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR

Attach copy of
ABS
CAN DIAG SUPPORT
MNTR

Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR

PKIB6696E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

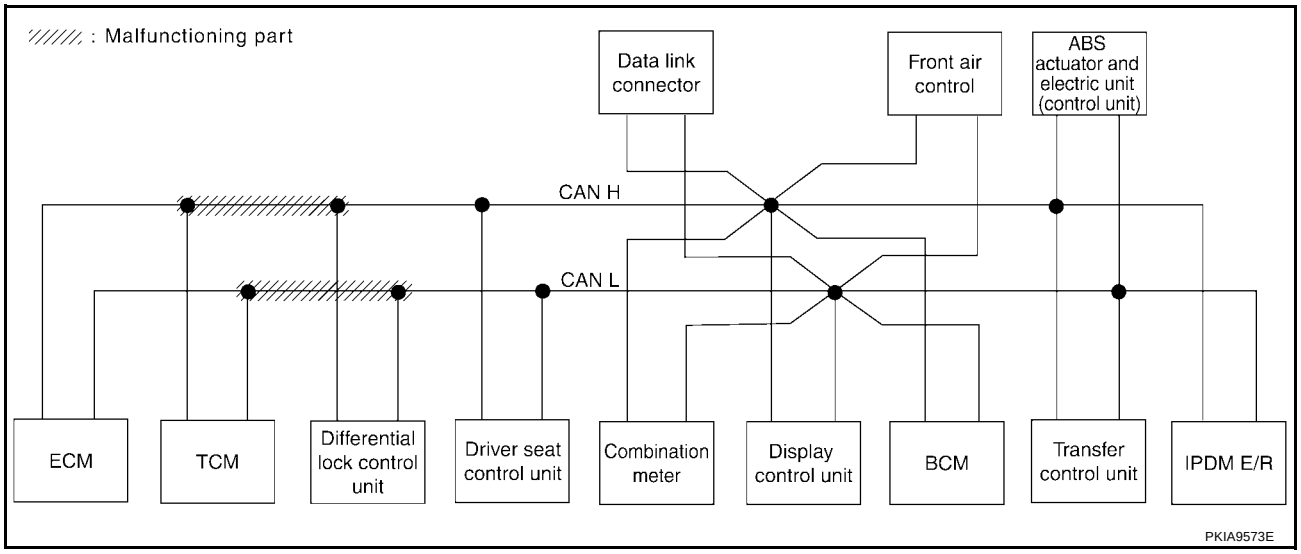
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to LAN-396, "Circuit Check Between TCM and Differential Lock Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6726E

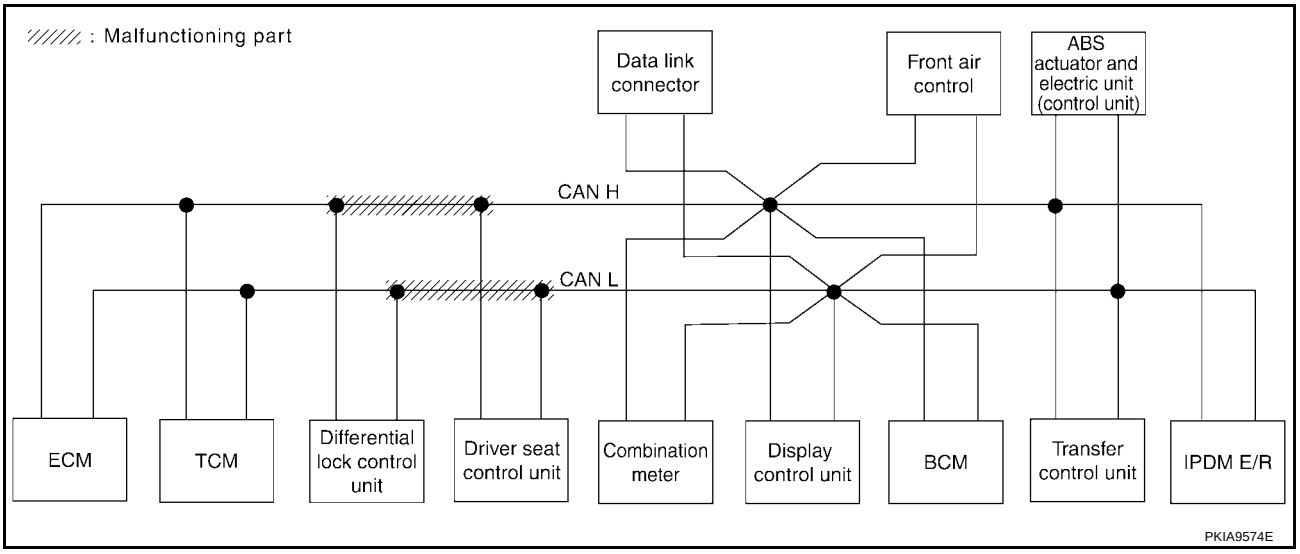


Case 2

Check harness between differential lock control unit and driver seat control unit. Refer to LAN-397, "Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6727E



PKIA9574E

Case 3

Check harness between driver seat control unit and data link connector. Refer to LAN-398, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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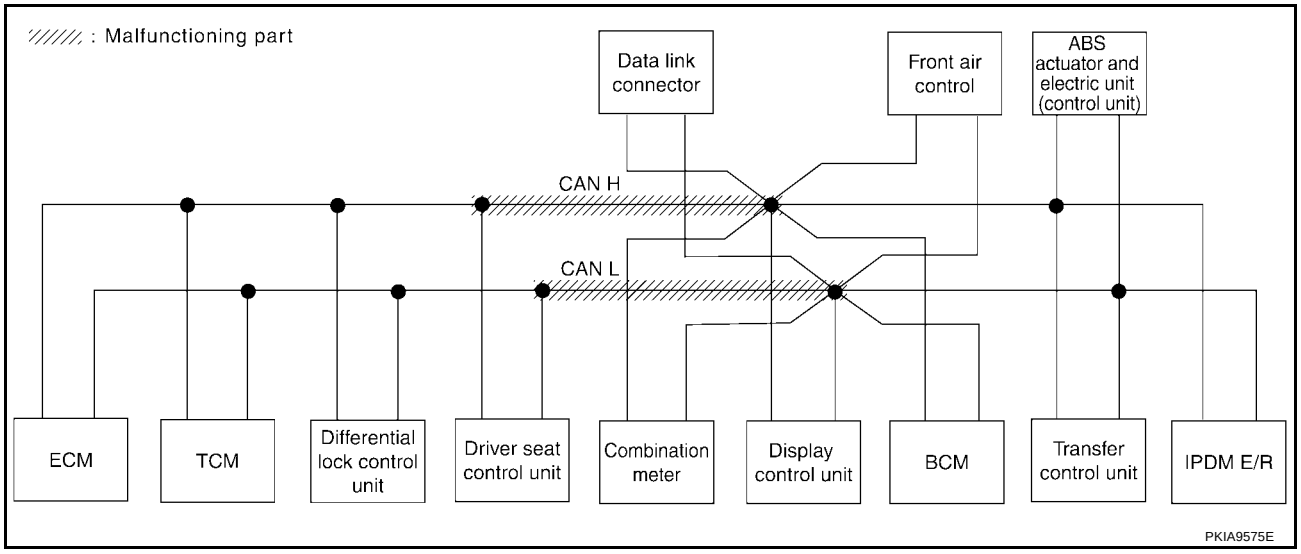

Case 4

Check harness between data link connector and IPDM E/R. Refer to LAN-398, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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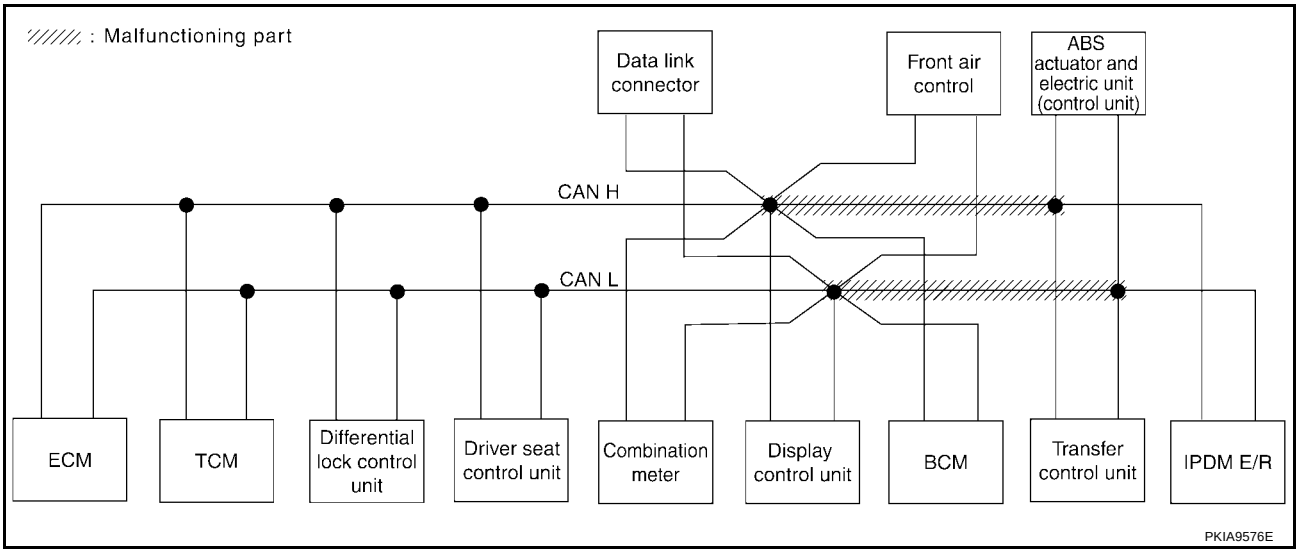

Case 5

Check ECM circuit. Refer to LAN-399, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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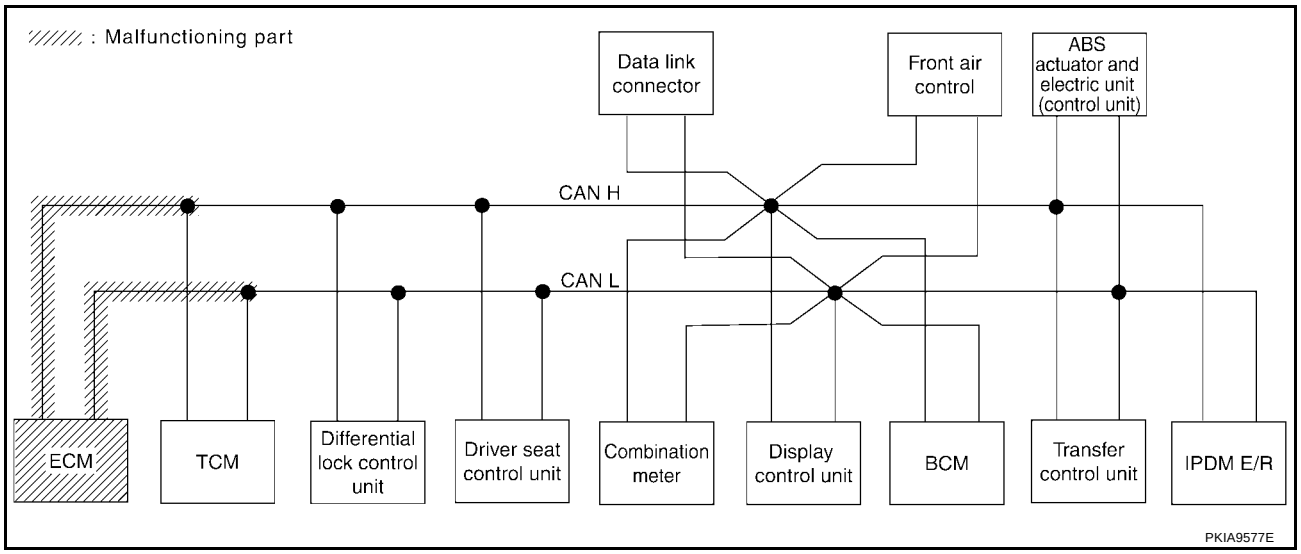

PKIA9577E

Case 6

Check TCM circuit. Refer to LAN-400, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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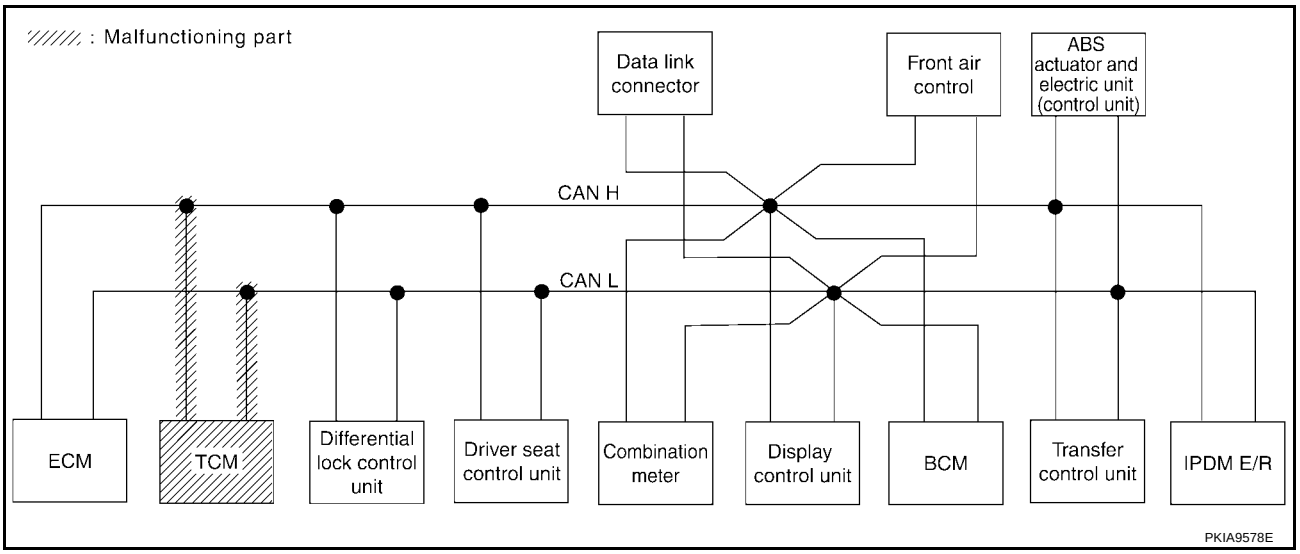

PKIA9578E

Case 7

Check differential lock control unit circuit. Refer to LAN-400, "Differential Lock Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN ✓	UNKWN ✓	—	—	—	—	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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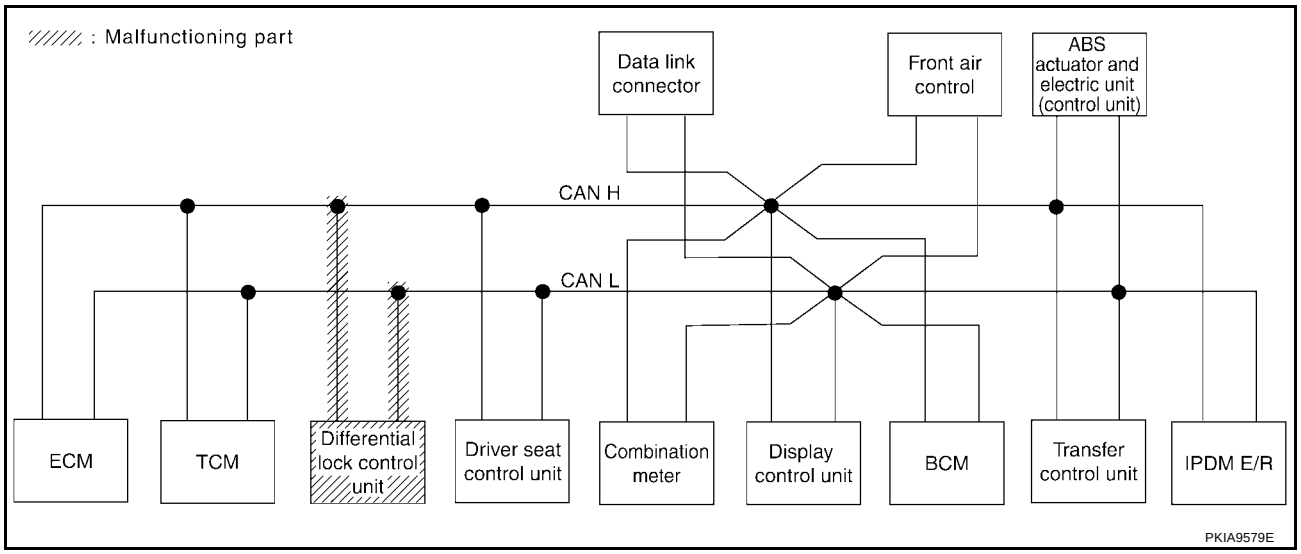

PKIA9579E

Case 8

Check driver seat control unit circuit. Refer to LAN-401, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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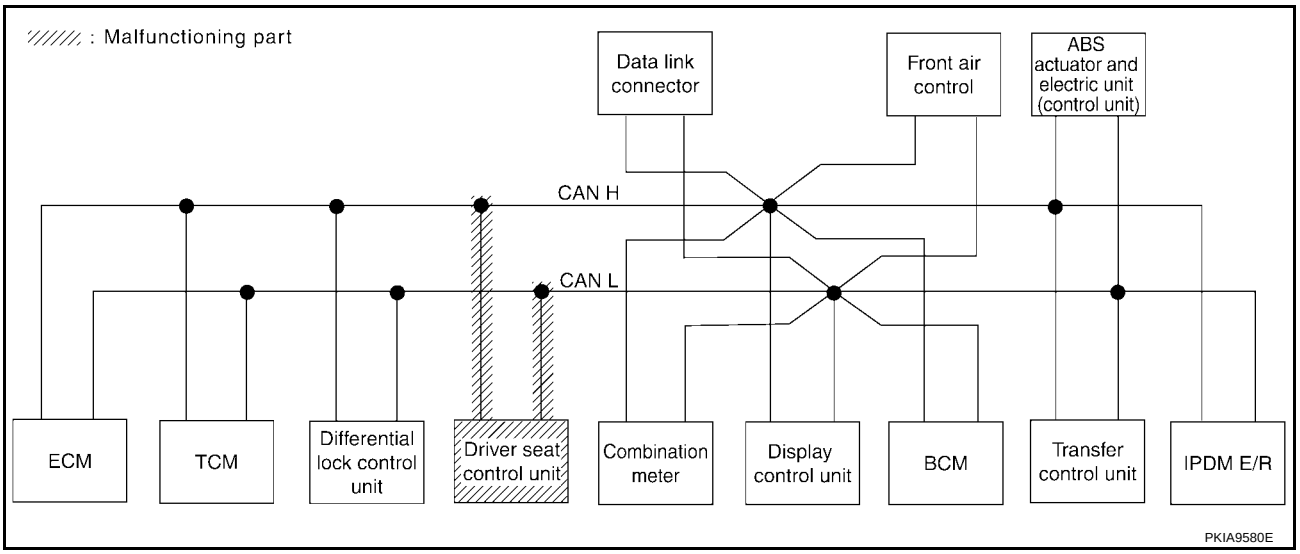


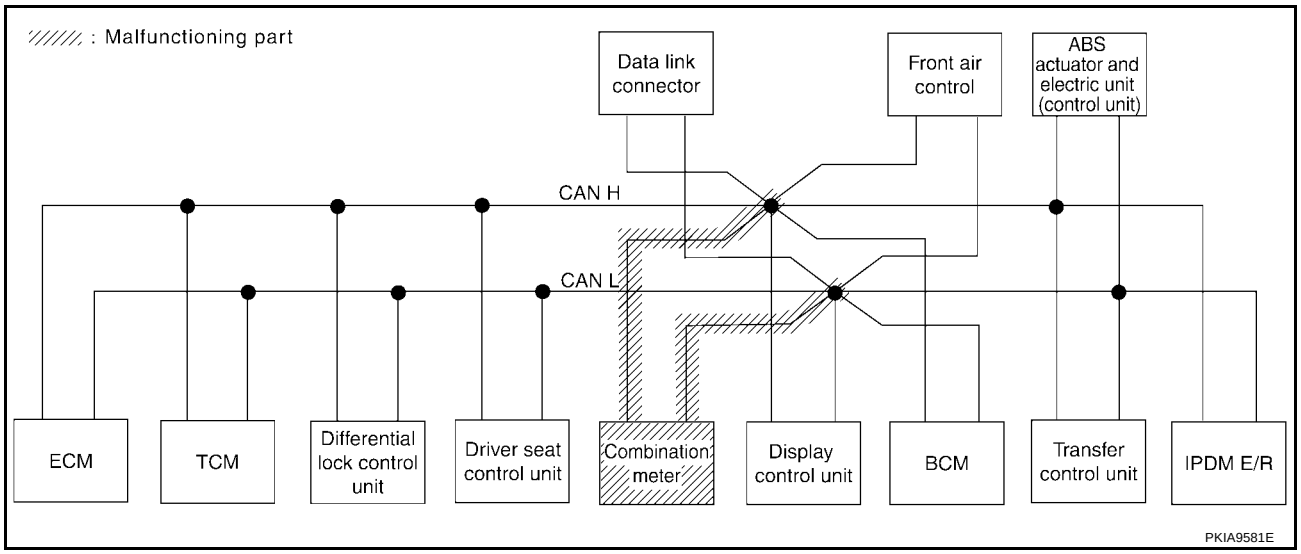
PKIA9580E

Case 9

Check combination meter circuit. Refer to LAN-401, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6734E



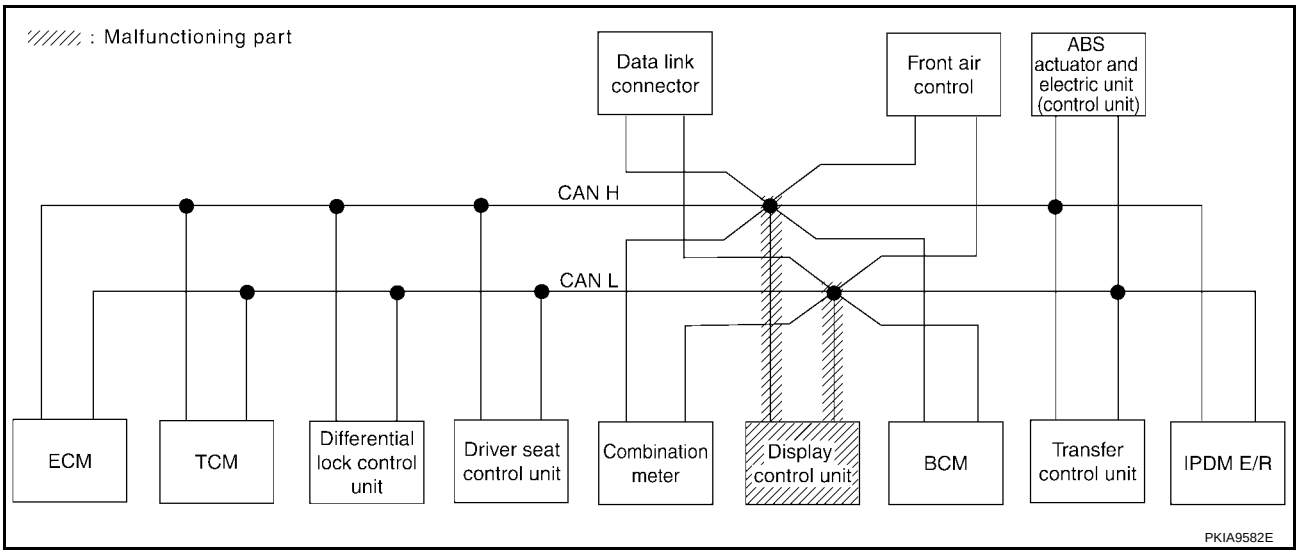
PKIA9581E

Case 10

Check display control unit circuit. Refer to LAN-402, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6735E



PKIA9582E

Case 11

Check BCM circuit. Refer to LAN-402, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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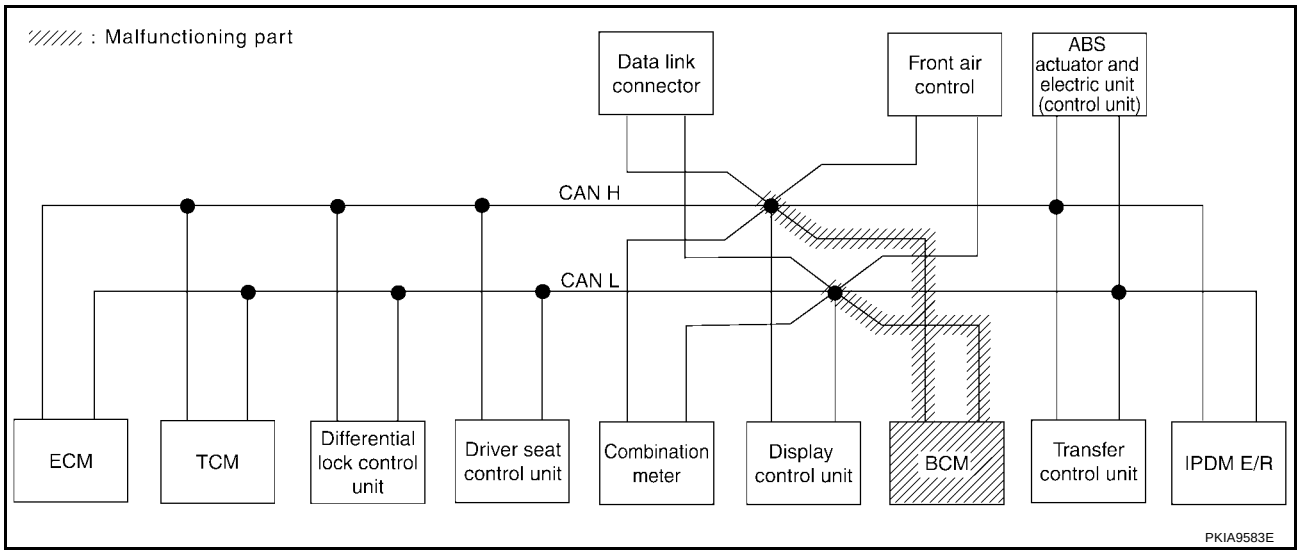

PKIA9583E

Case 12

Check data link connector circuit. Refer to LAN-403, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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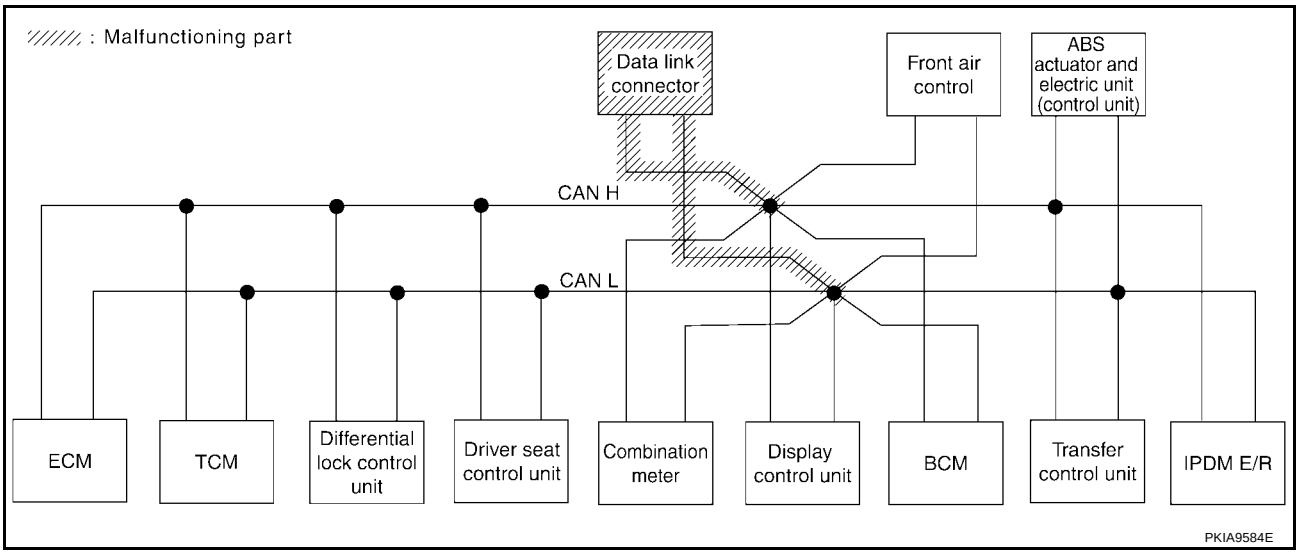

PKIA9584E

Case 13

Check front air control circuit. Refer to LAN-403, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

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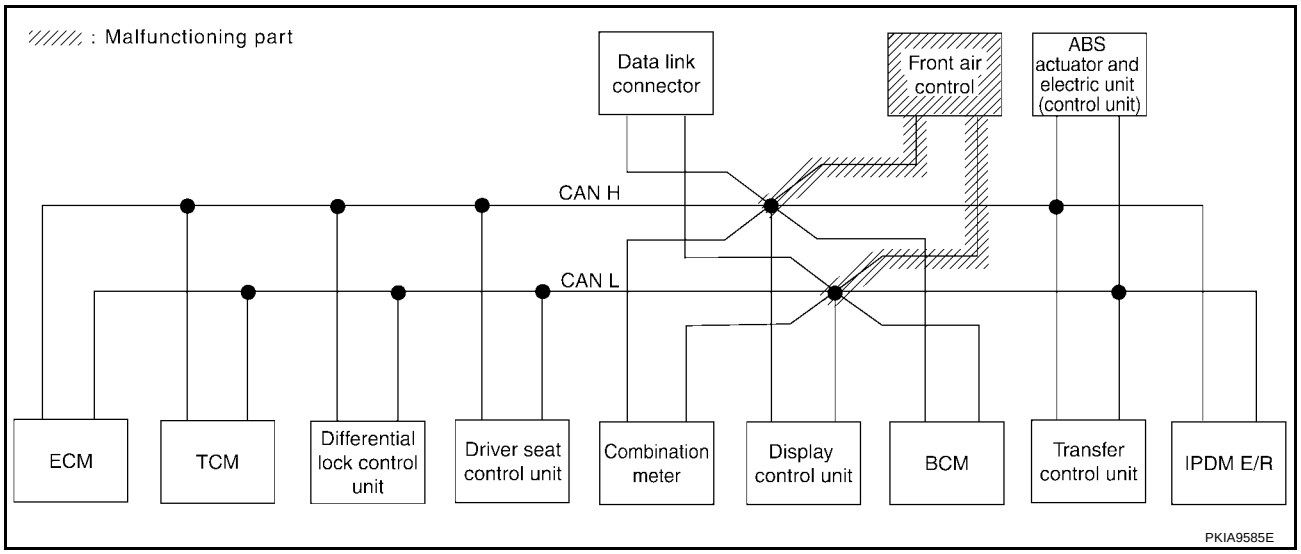


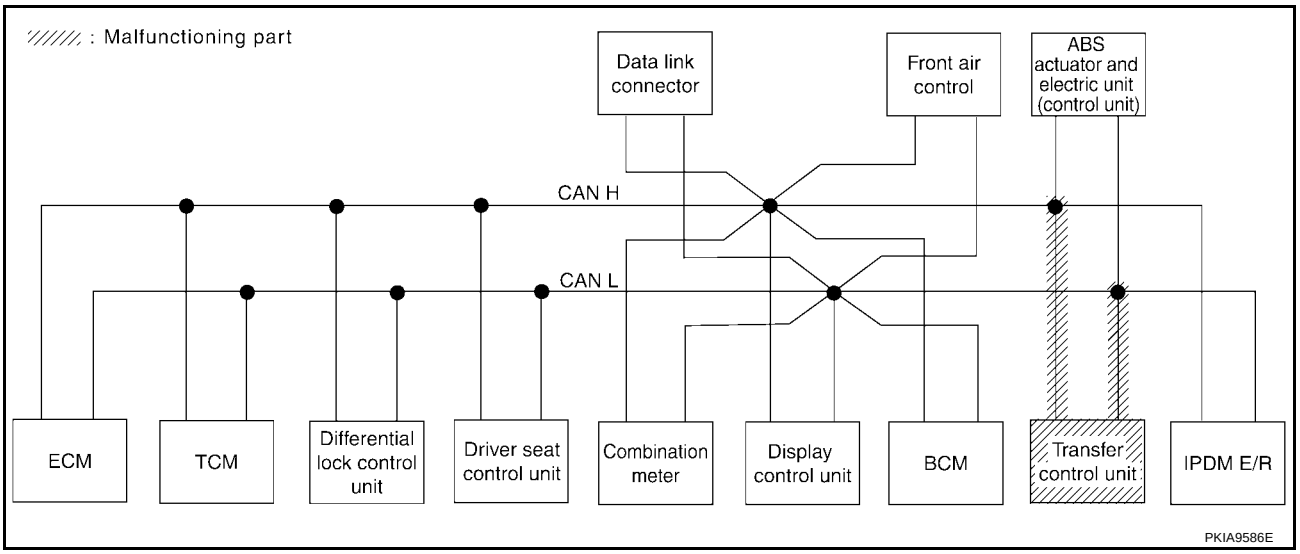
PKIA9585E

Case 14

Check transfer control unit circuit. Refer to LAN-404, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6739E



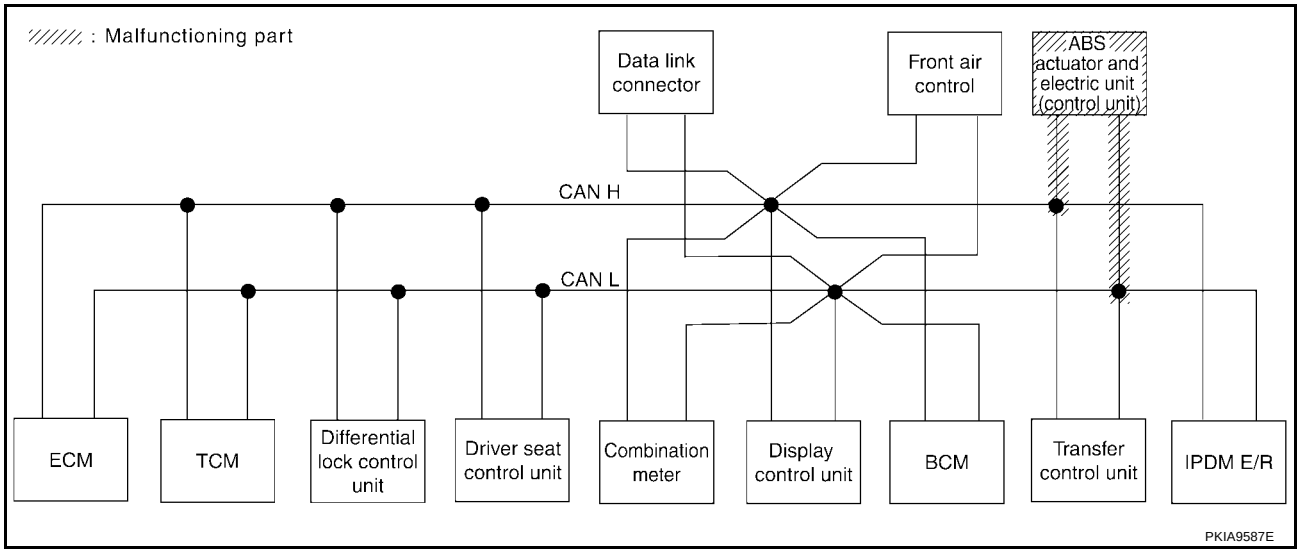
PKIA9586E

Case 15

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-404, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6740E



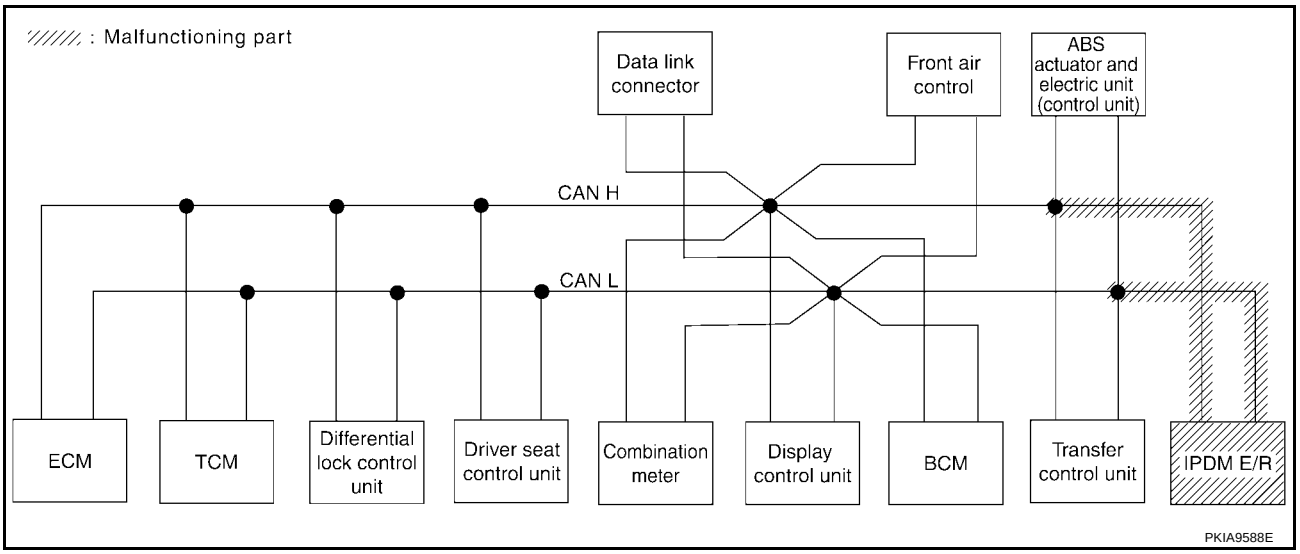
PKIA9587E

Case 16

Check IPDM E/R circuit. Refer to LAN-405, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6741E



PKIA9588E

Case 17

Check CAN communication circuit. Refer to LAN-406, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6742E

Case 18

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-406, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6743E

Case 19

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-406, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	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 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	—	—

PKIB6744E

Circuit Check Between TCM and Differential Lock Control Unit

UKS0020F

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

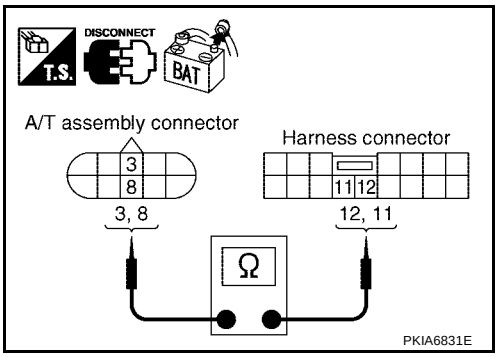
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



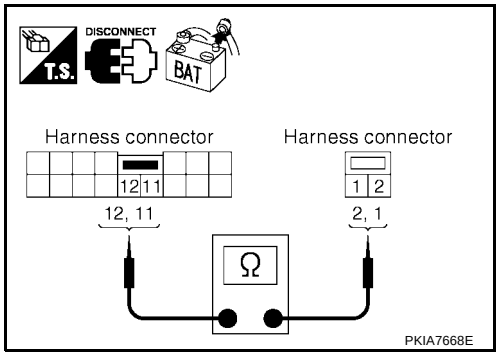
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



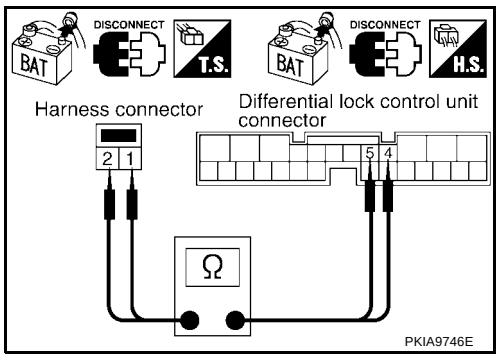
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and differential lock control unit harness connector B77 terminals 5 (L), 4 (P).

2 (L) - 5 (L) : Continuity should exist.
1 (P) - 4 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-374, "Work Flow" .
NG >> Repair harness.

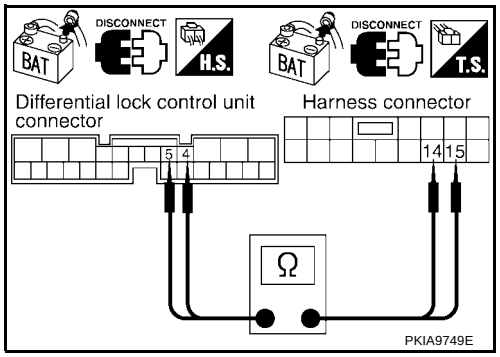
Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit

UKS001IN

1. CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect differential lock control unit connector and harness connector B37.
4. Check continuity between differential lock control unit harness connector B77 terminals 5 (L), 4 (P) and harness connector B37 terminals 15 (L), 14 (P).

5 (L) - 15 (L) : Continuity should exist.
4 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-374, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001IO

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

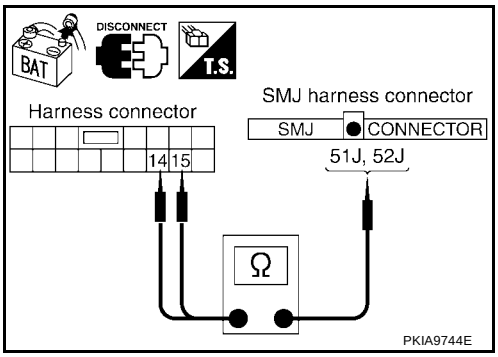
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

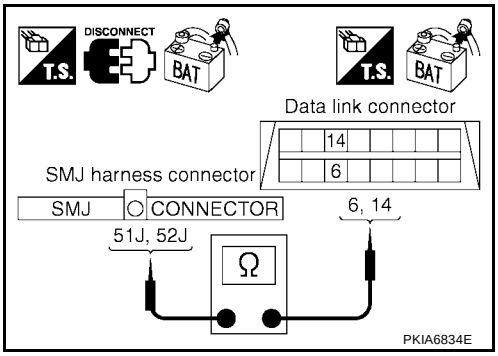
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

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

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-374, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001IP

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

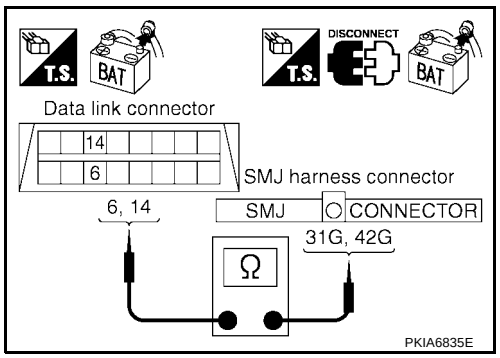
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

6 (L) - 31G (L) : Continuity should exist.
14 (P) - 42G (P) : Continuity should exist.



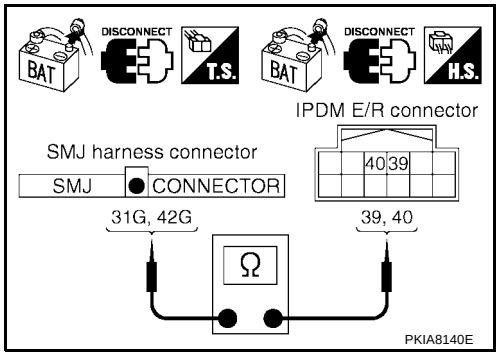
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

31G (L) - 39 (L) : Continuity should exist.
42G (P) - 40 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-374, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001IQ

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

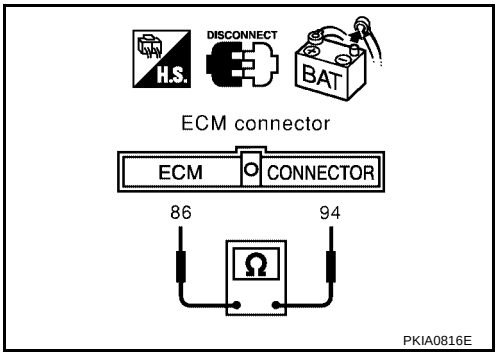
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS001IR

1. CHECK CONNECTOR

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

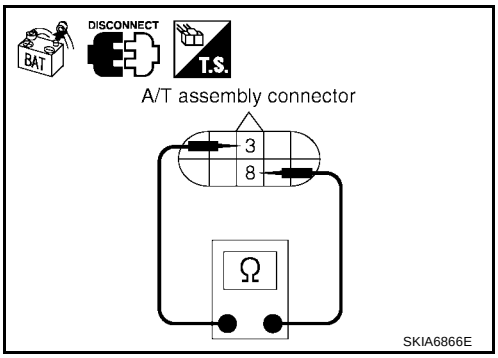
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Differential Lock Control Unit Circuit Check

UKS0020G

1. CHECK CONNECTOR

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

OK or NG

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

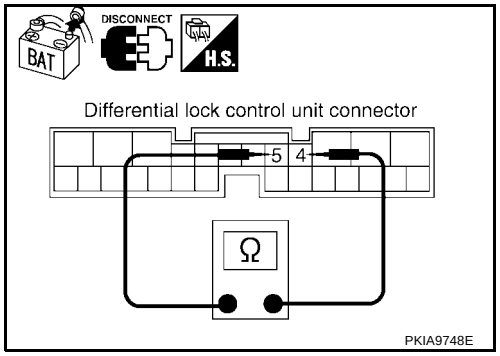
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check resistance between differential lock control unit harness connector B77 terminals 5 (L) and 4 (P).

5 (L) - 4 (P) **: Approx. 54 - 66 Ω**

OK or NG

OK >> Replace differential lock control unit.
NG >> Repair harness between differential lock control unit and harness connector B75.



Driver Seat Control Unit Circuit Check

UKS001IS

1. CHECK CONNECTOR

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

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

OK or NG

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

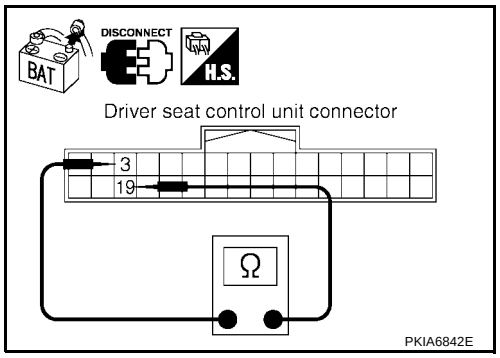
2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) **: Approx. 54 - 66 Ω**

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

UKS001IT

1. CHECK CONNECTOR

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

OK or NG

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

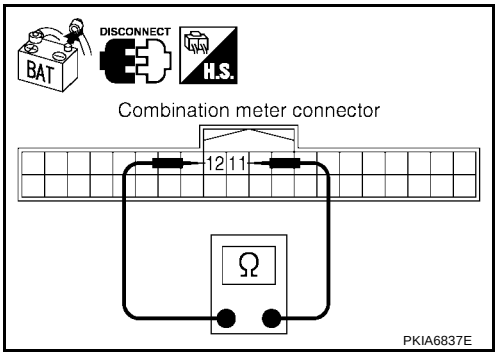
2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω

OK or NG

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



Display Control Unit Circuit Check

UKS001IU

1. CHECK CONNECTOR

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

OK or NG

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

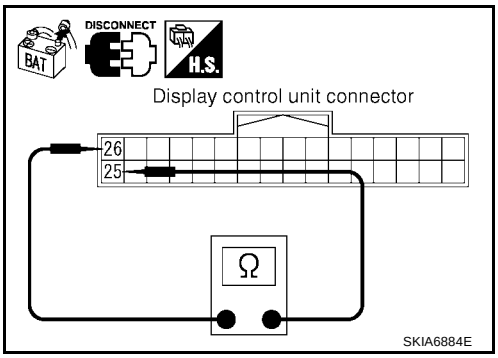
2. CHECK HARNESS FOR OPEN CIRCUIT

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

25 (L) - 26 (P) : Approx. 54 - 66 Ω

OK or NG

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



BCM Circuit Check

UKS001IV

1. CHECK CONNECTOR

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

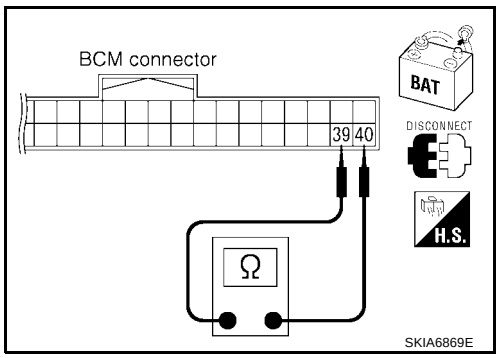
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001IW

1. CHECK CONNECTOR

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

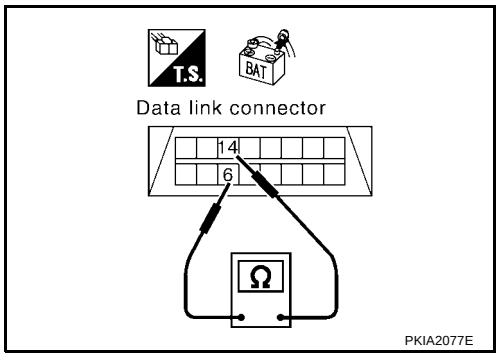
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-374, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS0020H

1. CHECK CONNECTOR

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

OK or NG

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

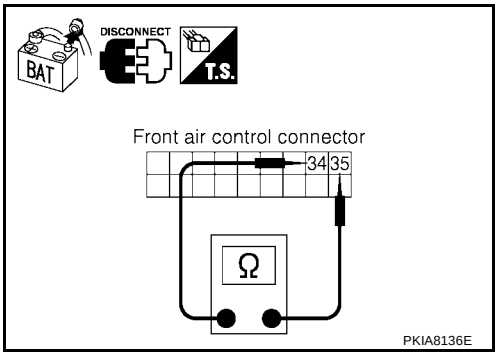
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω

OK or NG

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



Transfer Control Unit Circuit Check

UKS001IZ

1. CHECK CONNECTOR

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

OK or NG

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

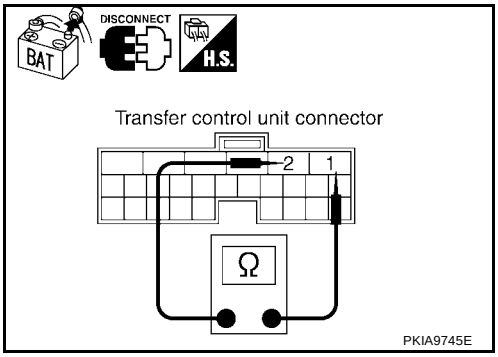
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω

OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001J0

1. CHECK CONNECTOR

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

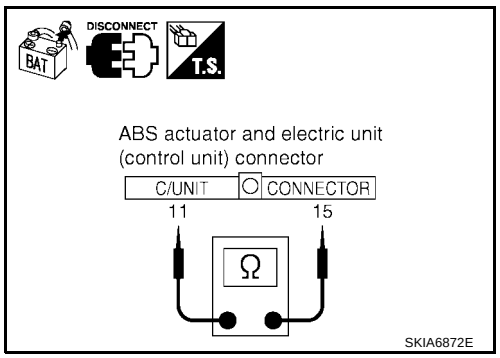
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS001J1

1. CHECK CONNECTOR

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

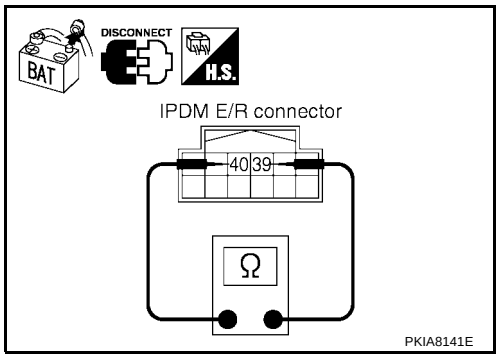
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001J2

1. CHECK CONNECTOR

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
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

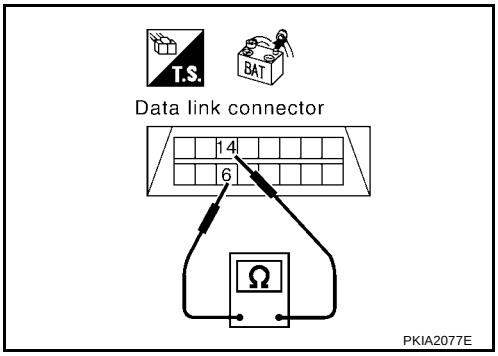
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

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.



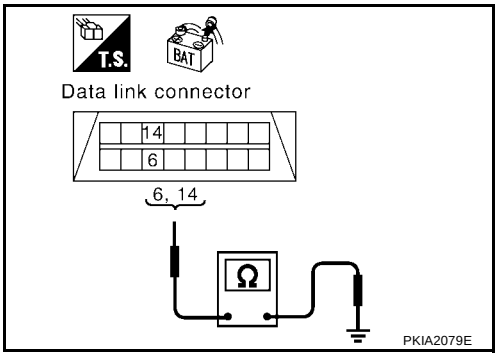
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

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

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-407, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001J3

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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

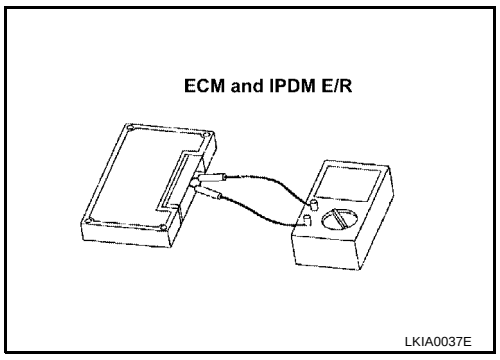
Component Inspection

UKS001J4

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 13)

PFP:23710

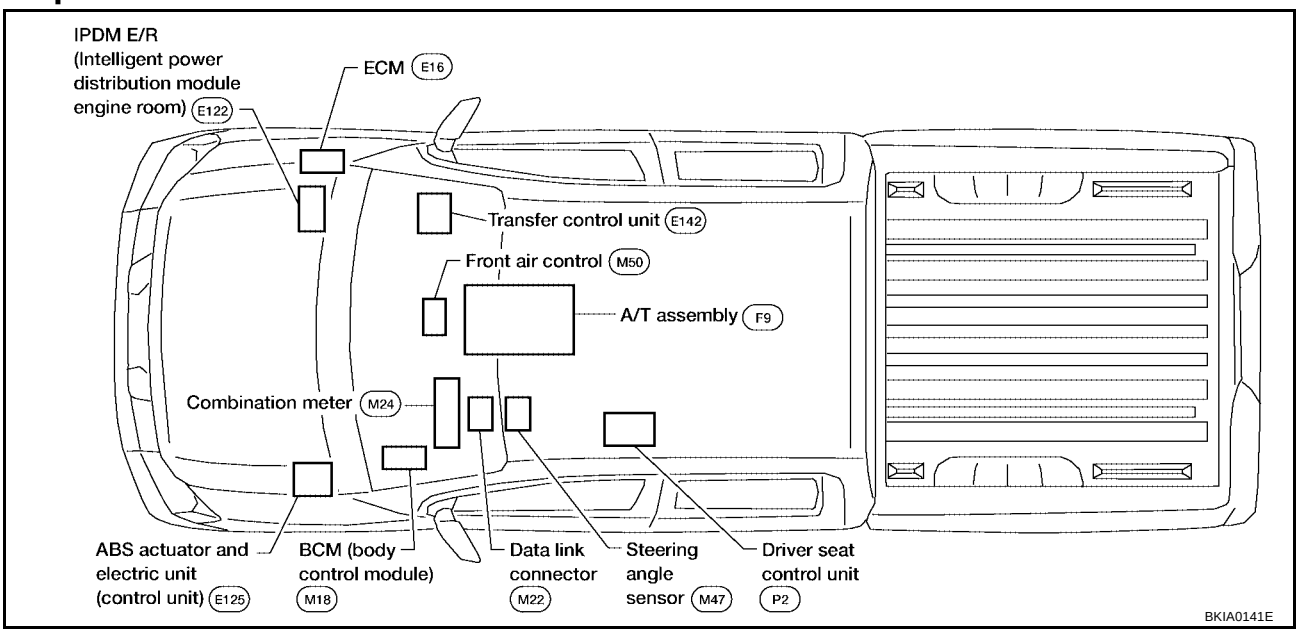
System Description

UKS0038H

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.

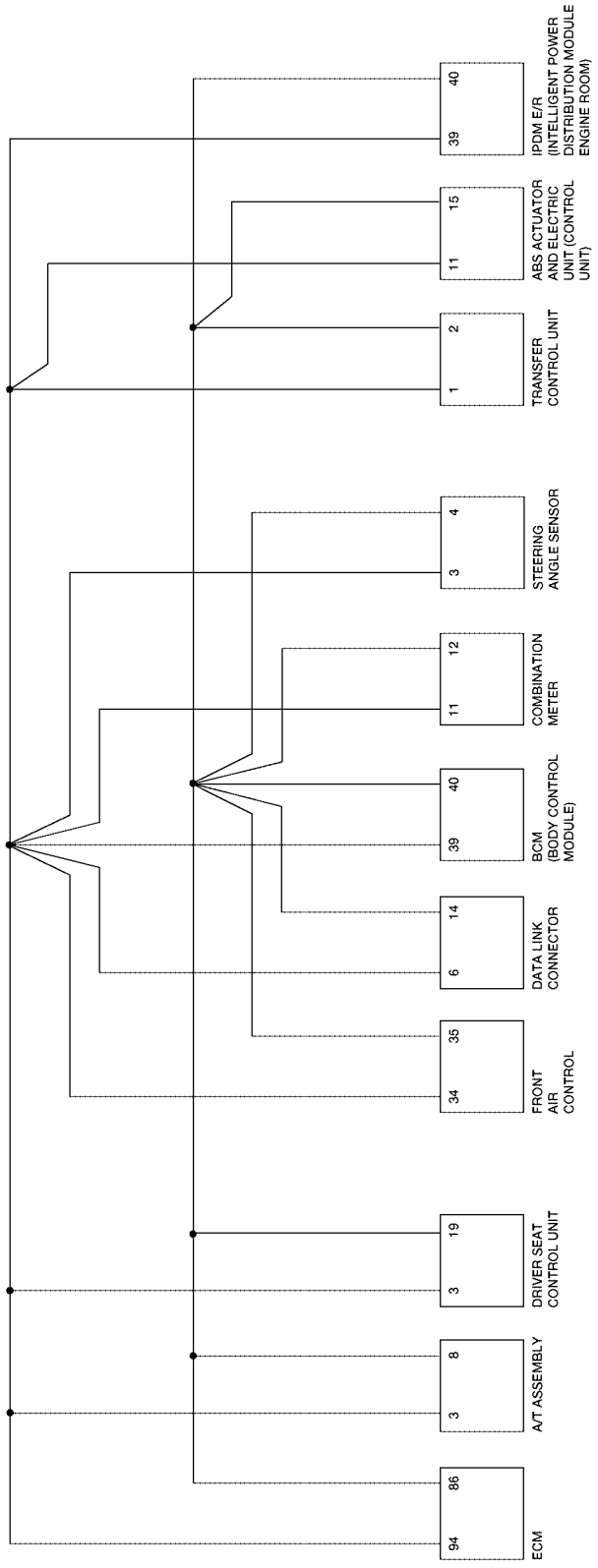
Component Parts and Harness Connector Location

UKS0038I



Schematic

UKS0038J

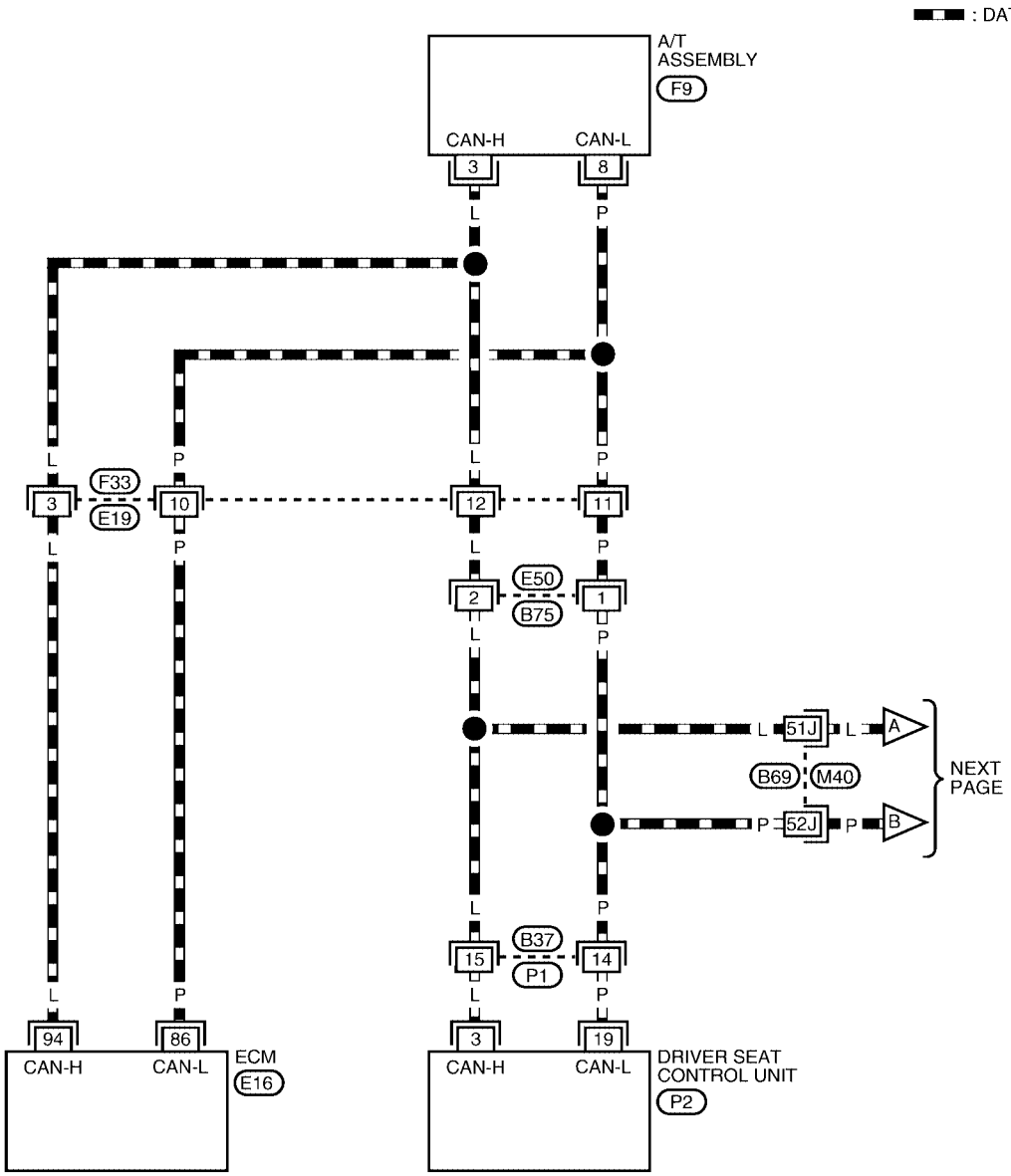


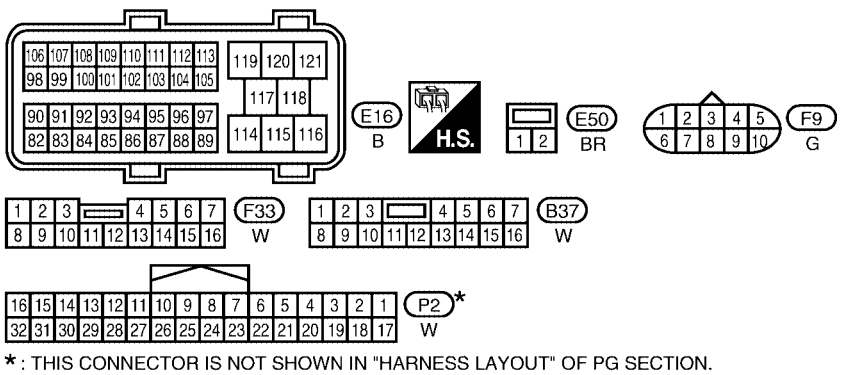
BKWA0164E

Wiring Diagram - CAN -

UKS0038K

LAN-CAN-37

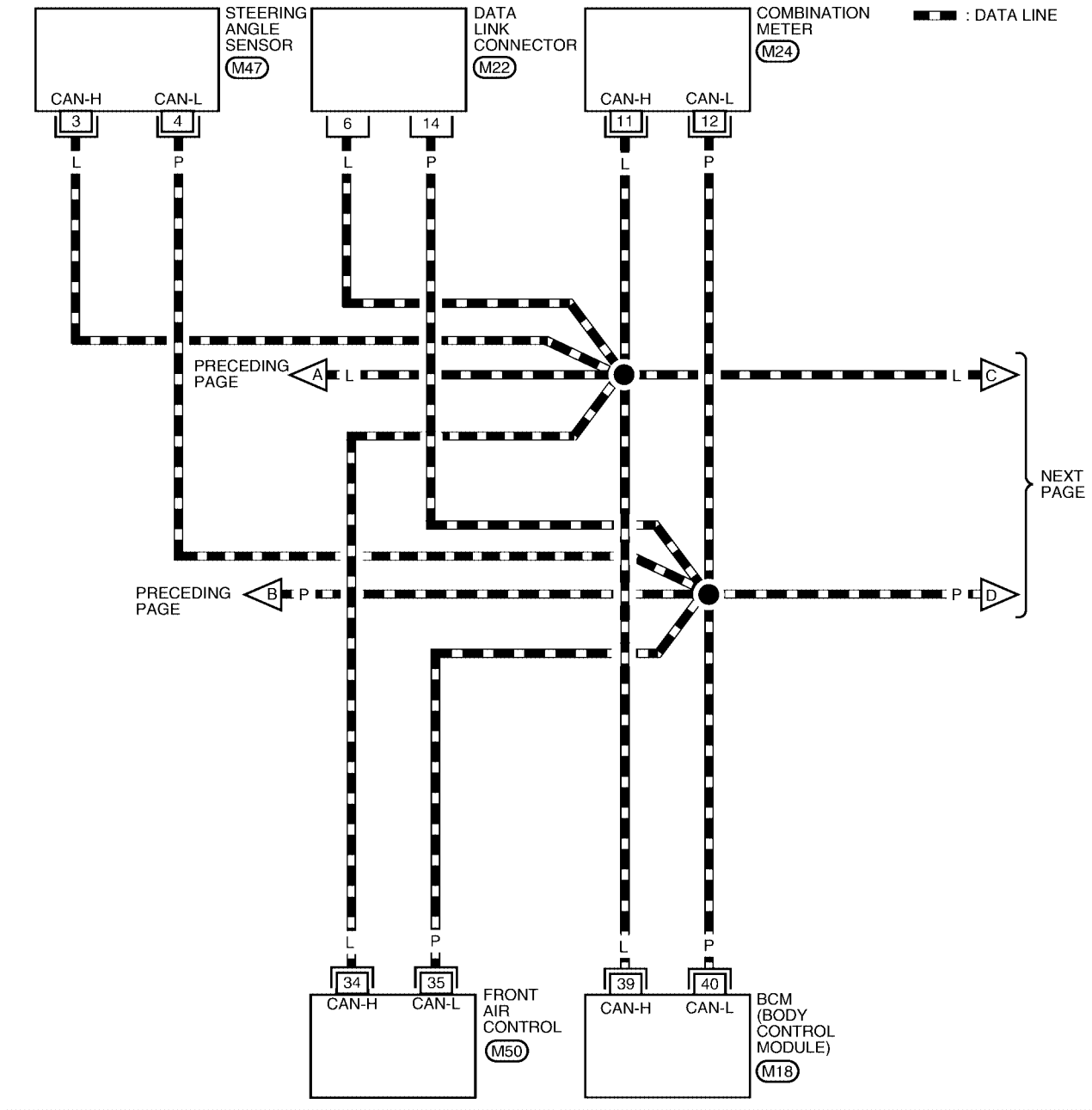


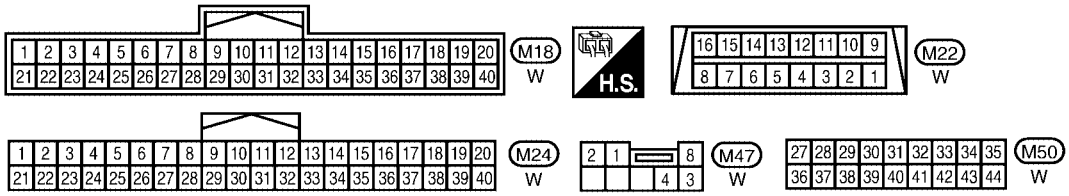


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

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

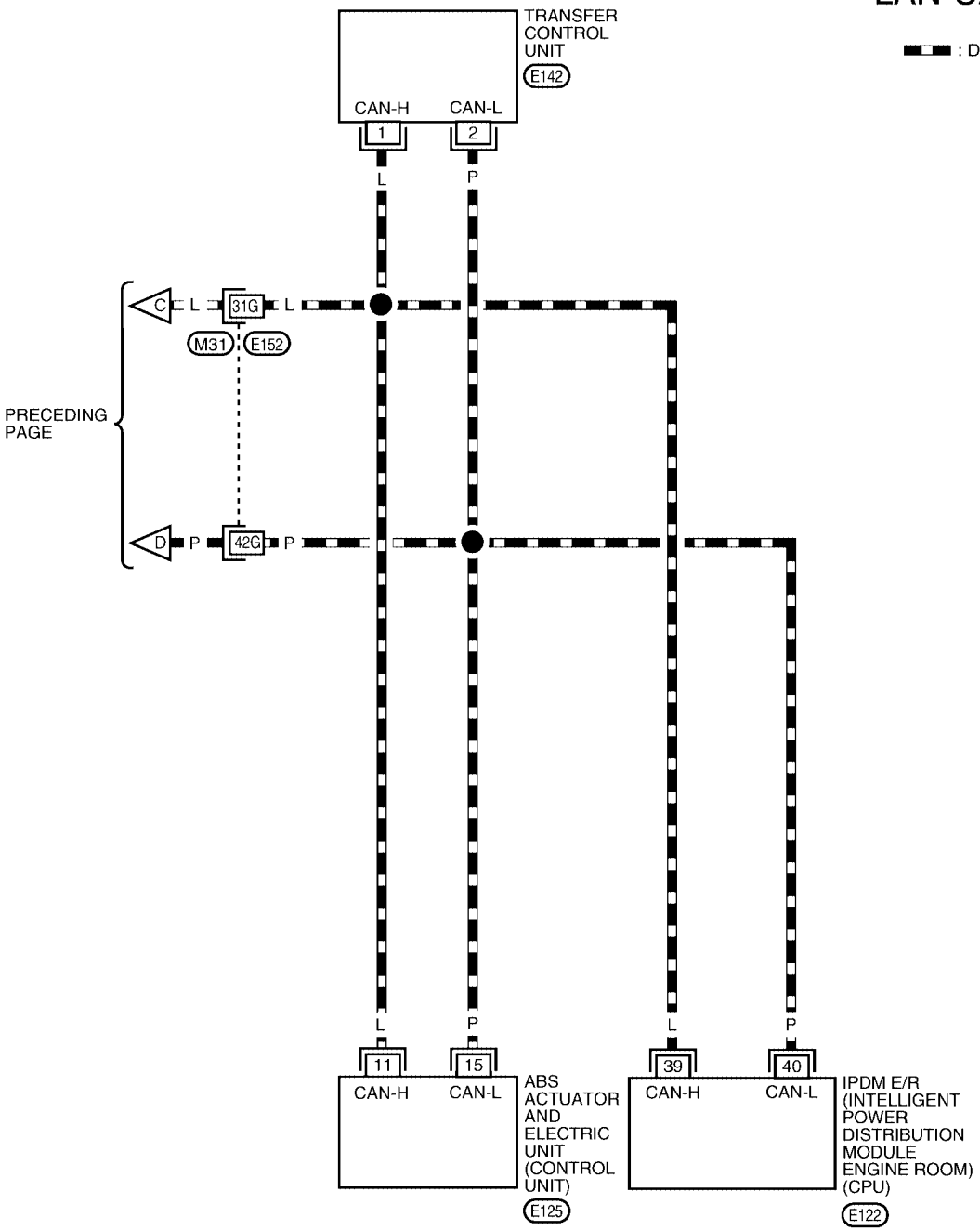
BKWA0464E

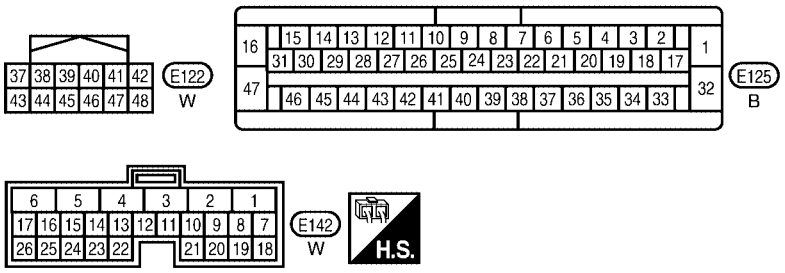

STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
3
4
DATA LINK CONNECTOR
M22
6
14
COMBINATION METER
M24
CAN-H
CAN-L
11
12
: DATA LINE
L
P
PRECEDING PAGE
A
L
C
NEXT PAGE
PRECEDING PAGE
B
P
D
34
35
CAN-H
CAN-L
FRONT AIR CONTROL
M50
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18


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

BKWA0465E

LAN-CAN-39





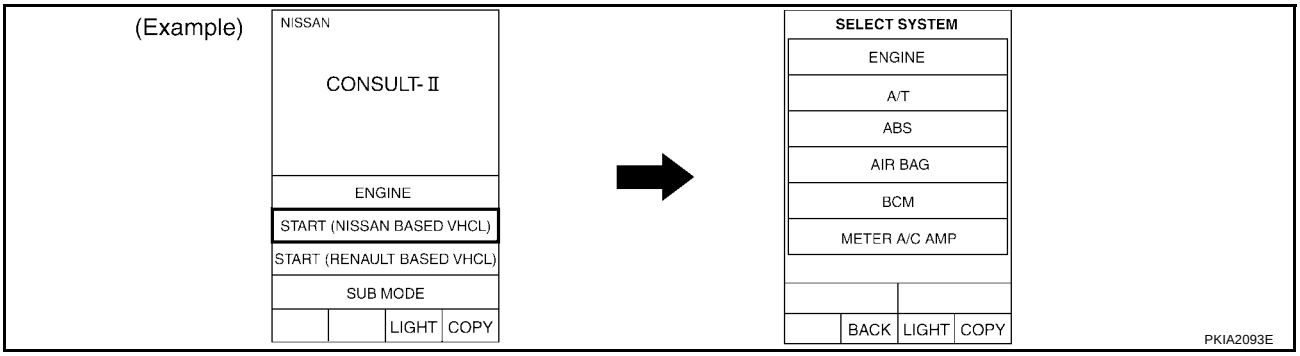
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0466E

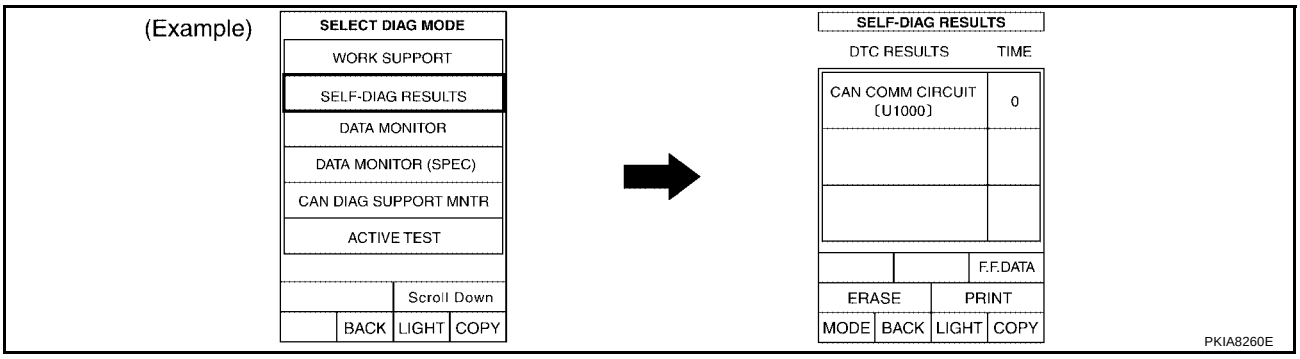
Work Flow

UKS0038L

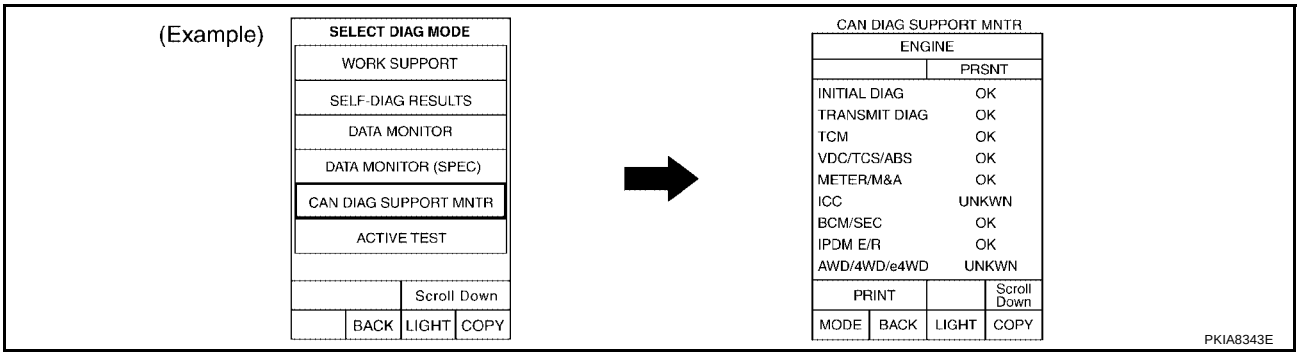
1. When there are no indications of “AUTO DRIVE POS.”, “BCM”, “HVAC” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “HVAC”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-414, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, puts a check mark onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-414, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “CAN DIAG SUPPORT MNTR” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-416, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

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

Check sheet table

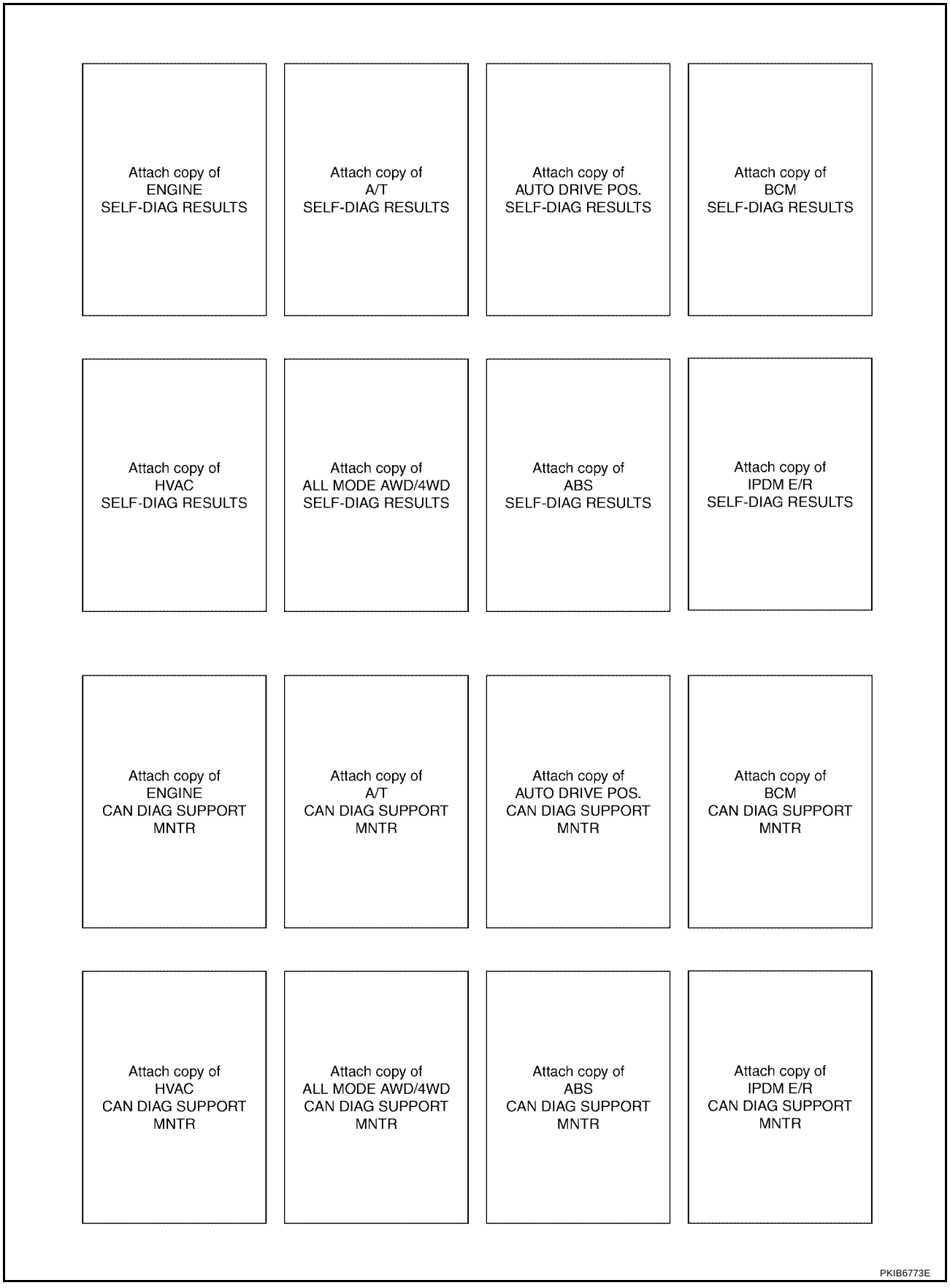
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIB6745E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
HVAC
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
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ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
HVAC
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIB6773E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

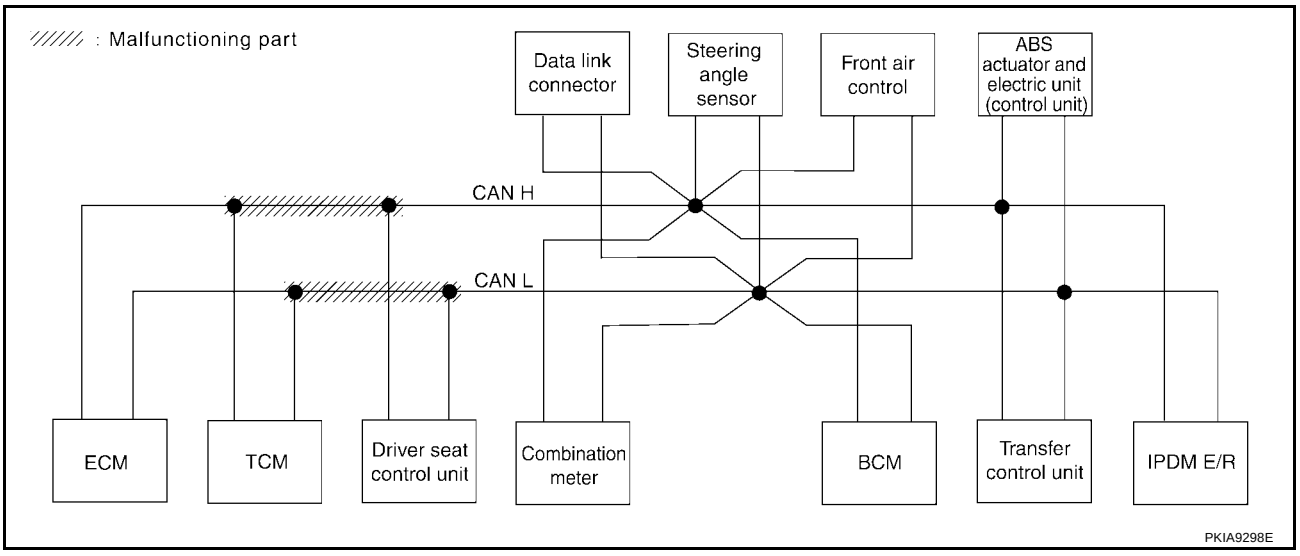
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-431, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6746E



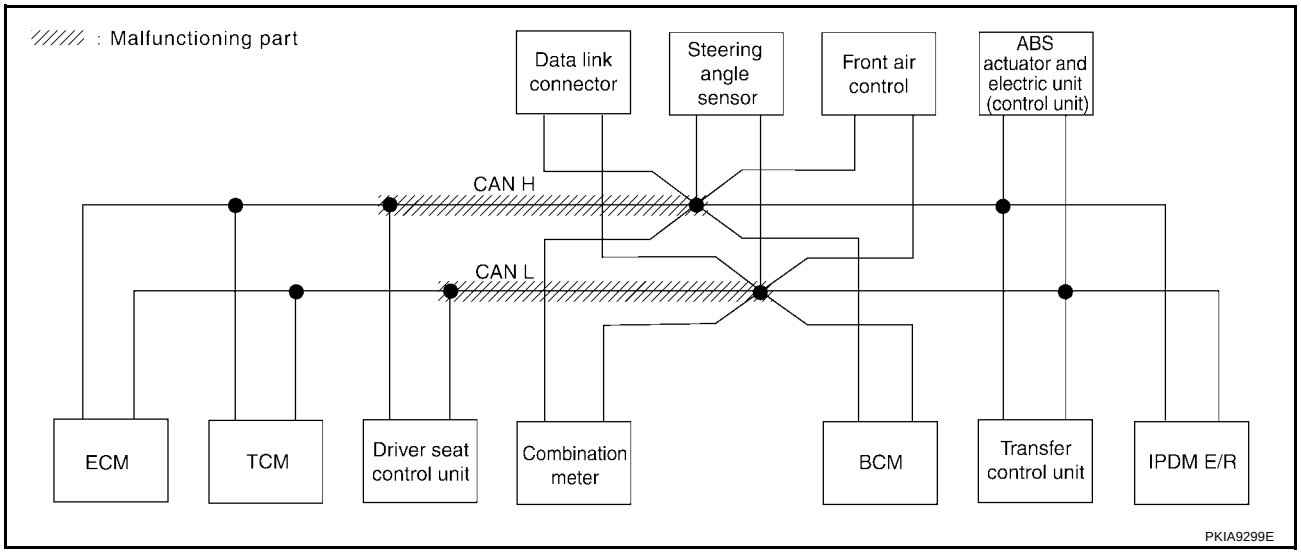
PKIA9298E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-432, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6747E



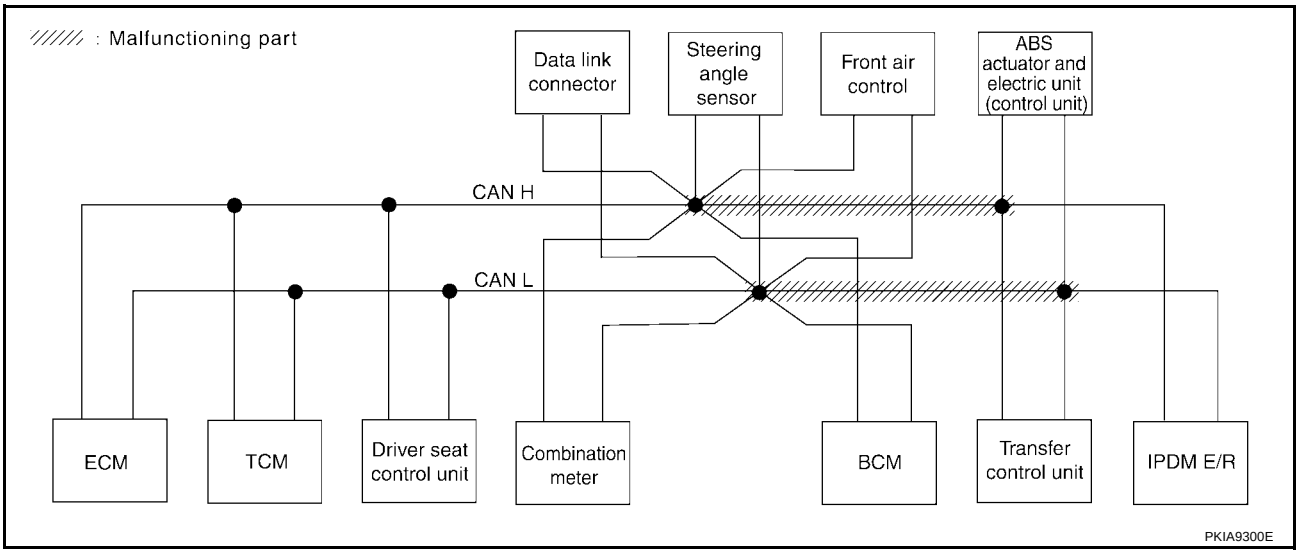
PKIA9299E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-433, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6748E



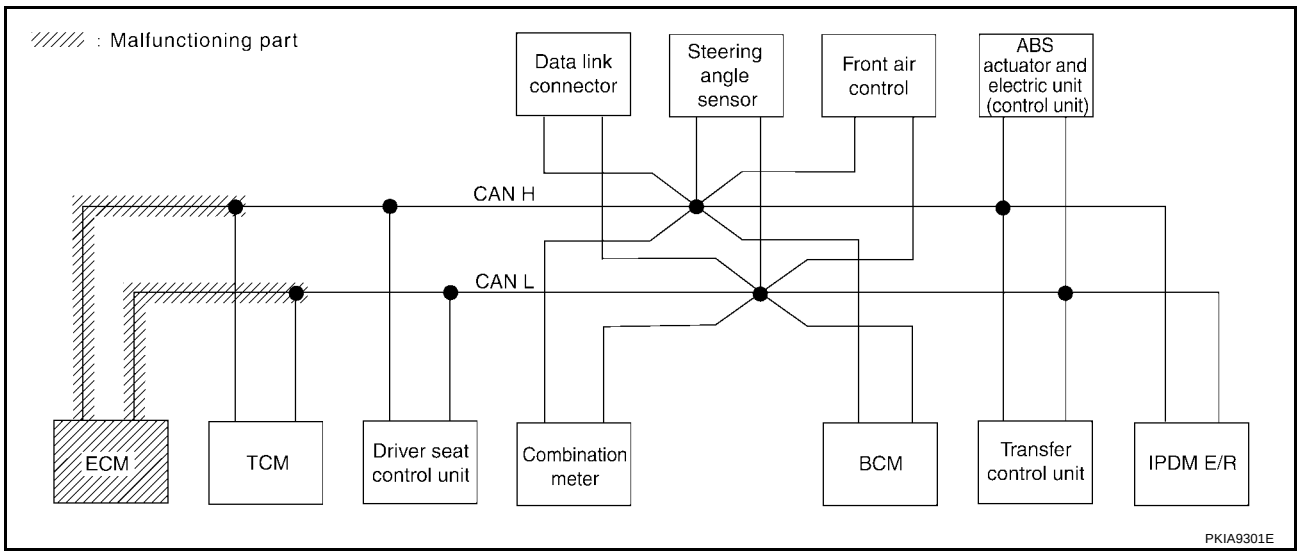
PKIA9300E

Case 4

Check ECM circuit. Refer to LAN-434, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6749E



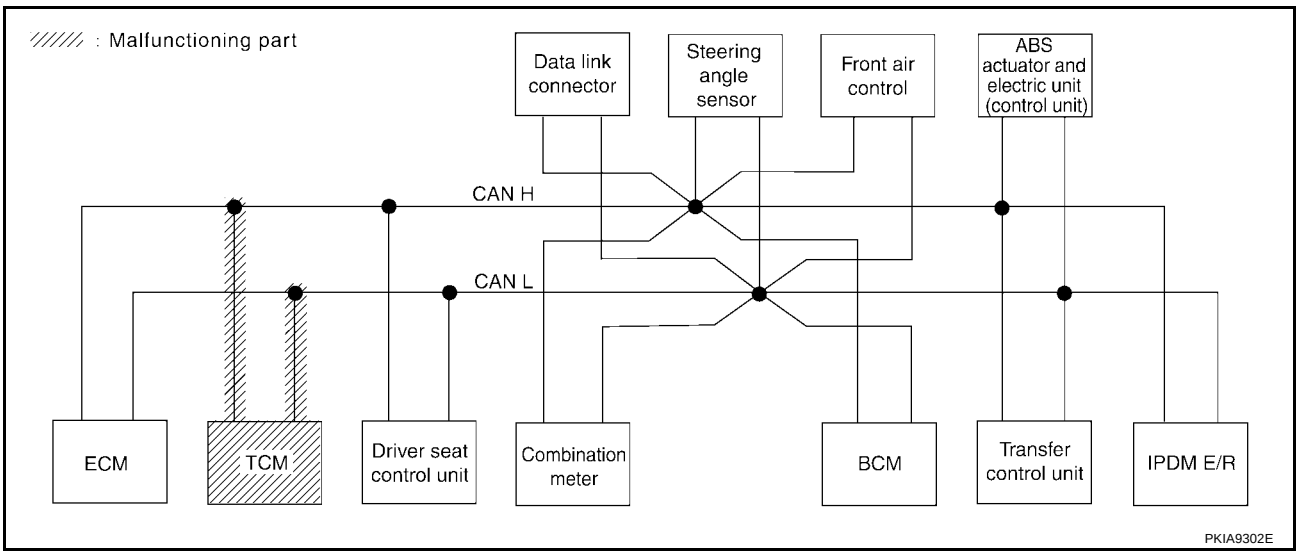
PKIA9301E

Case 5

Check TCM circuit. Refer to LAN-434, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6750E



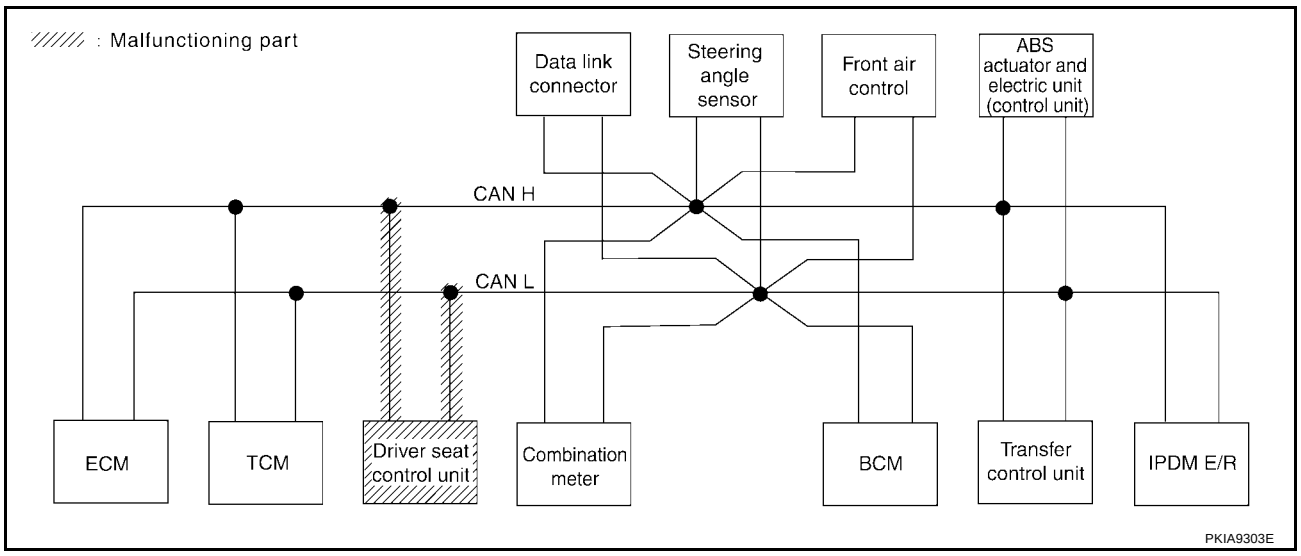
PKIA9302E

Case 6

Check driver seat control unit circuit. Refer to LAN-435, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6751E



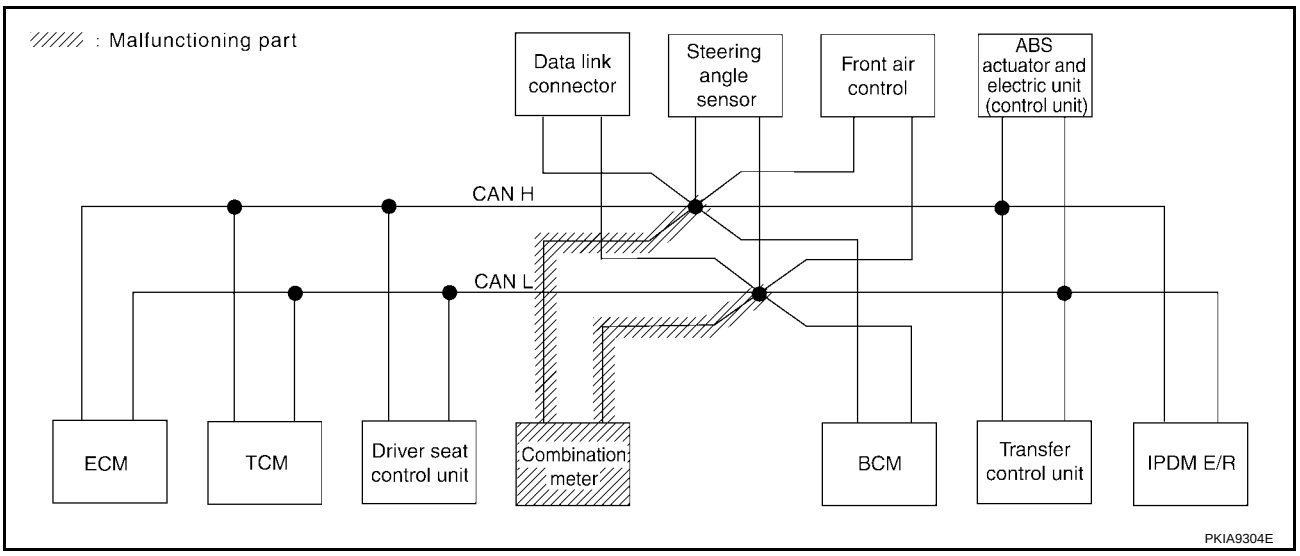
PKIA9303E

Case 7

Check combination meter circuit. Refer to LAN-435, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6752E



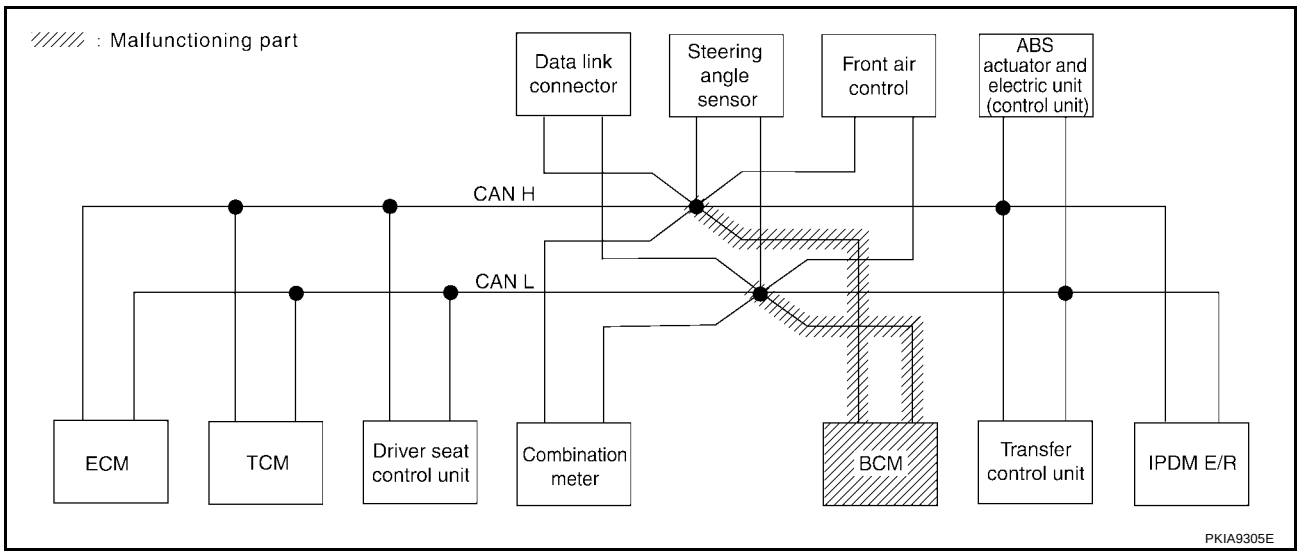
PKIA9304E

Case 8

Check BCM circuit. Refer to LAN-436, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	—	—	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	—	—

PKIB6753E



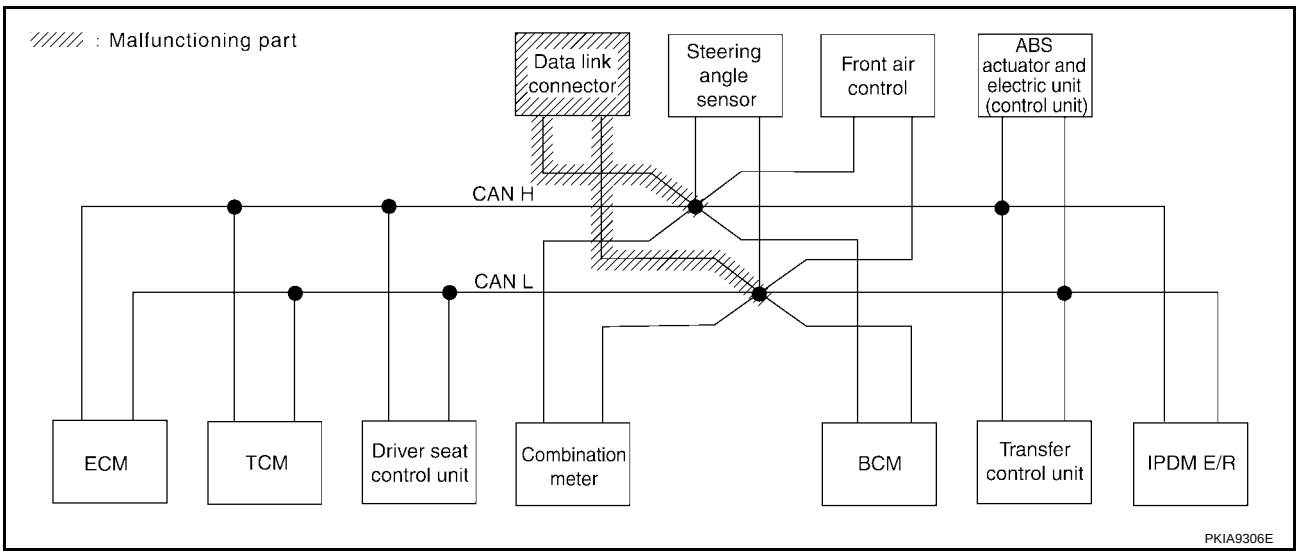
PKIA9305E

Case 9

Check data link connector circuit. Refer to LAN-436, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6754E



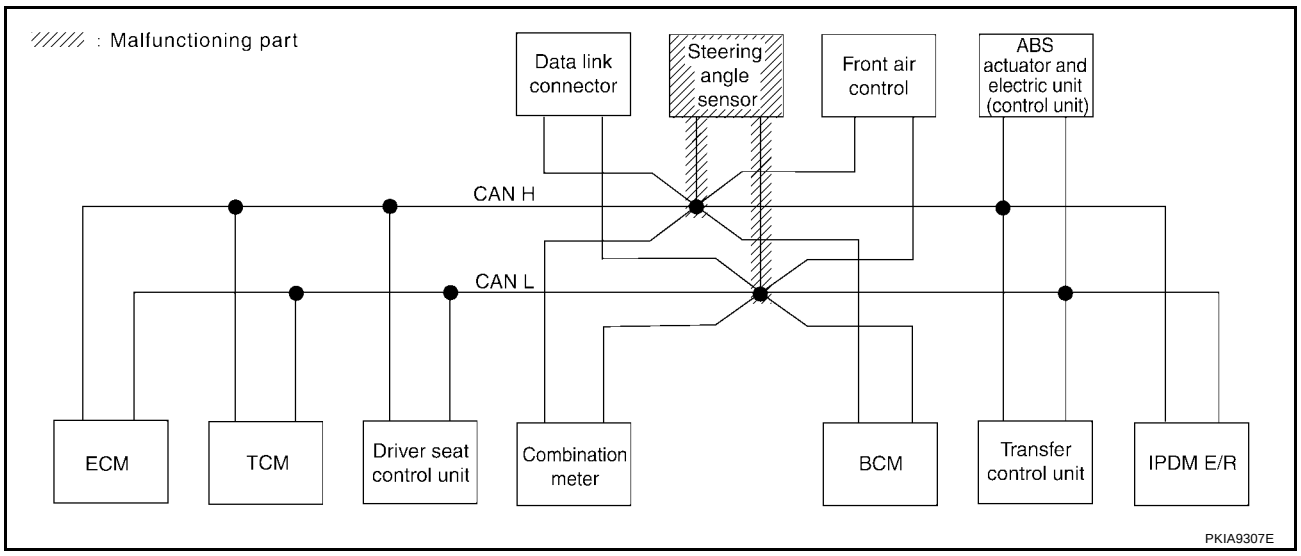
PKIA9306E

Case 10

Check steering angle sensor circuit. Refer to LAN-437, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6756E



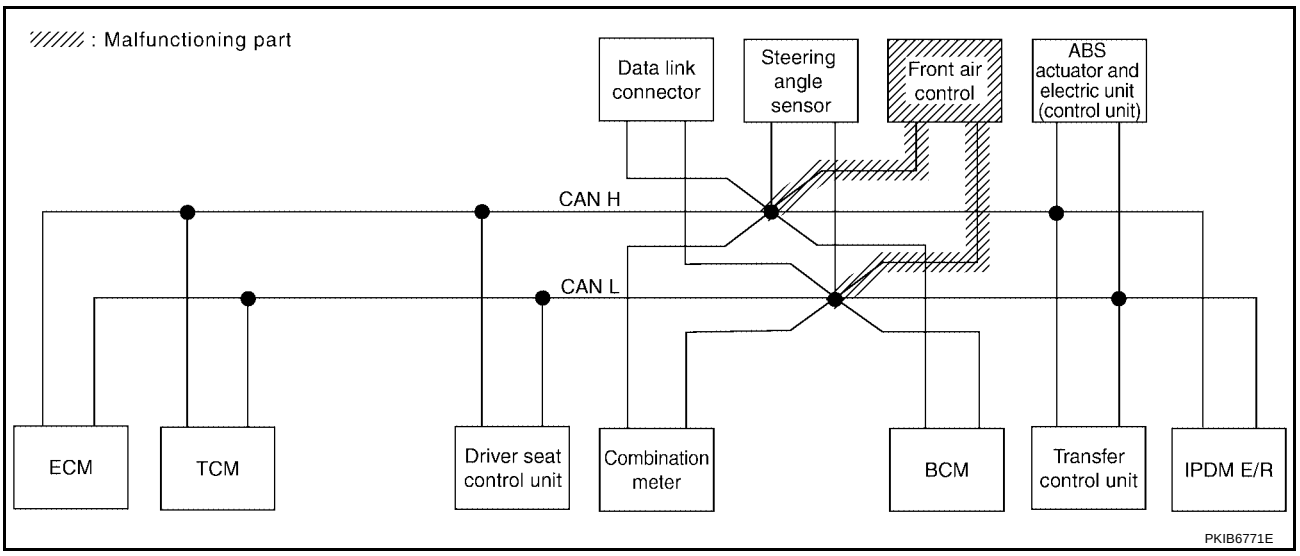
PKIA9307E

Case 11

Check front air control circuit. Refer to LAN-437, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6755E



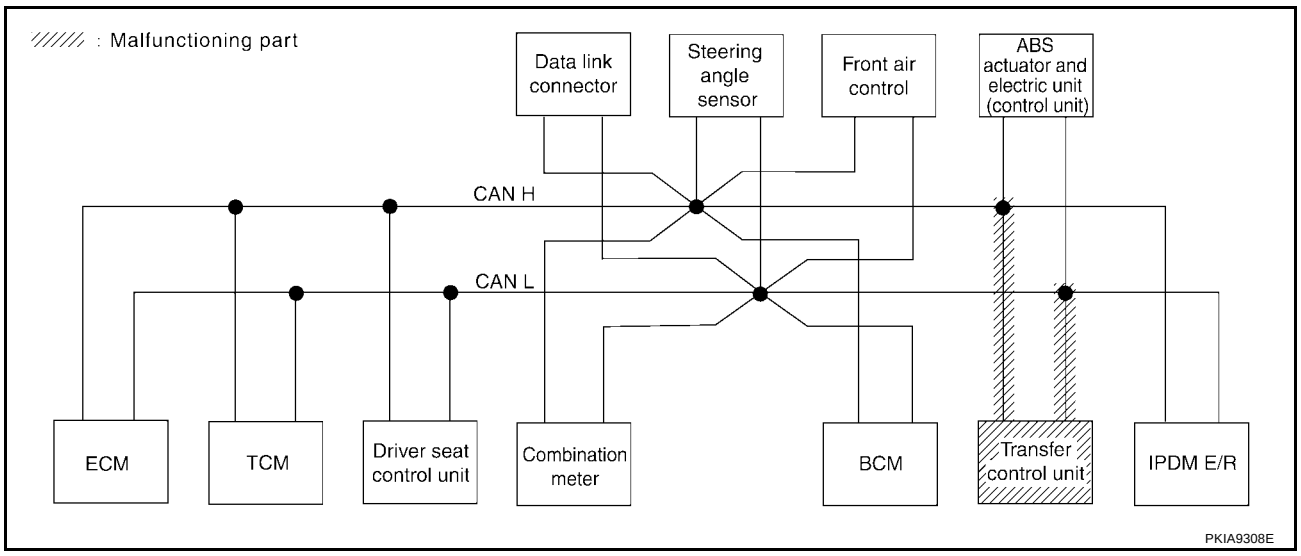
PKIB6771E

Case 12

Check transfer control unit circuit. Refer to LAN-438, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6757E



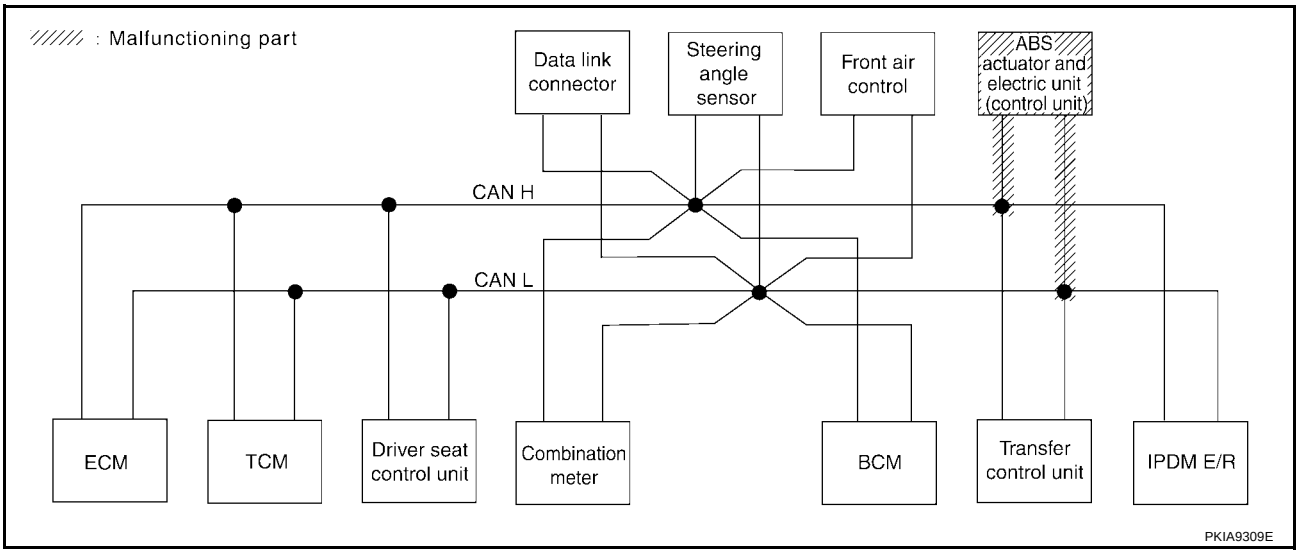
PKIA9308E

Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-438, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN ✓	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6758E



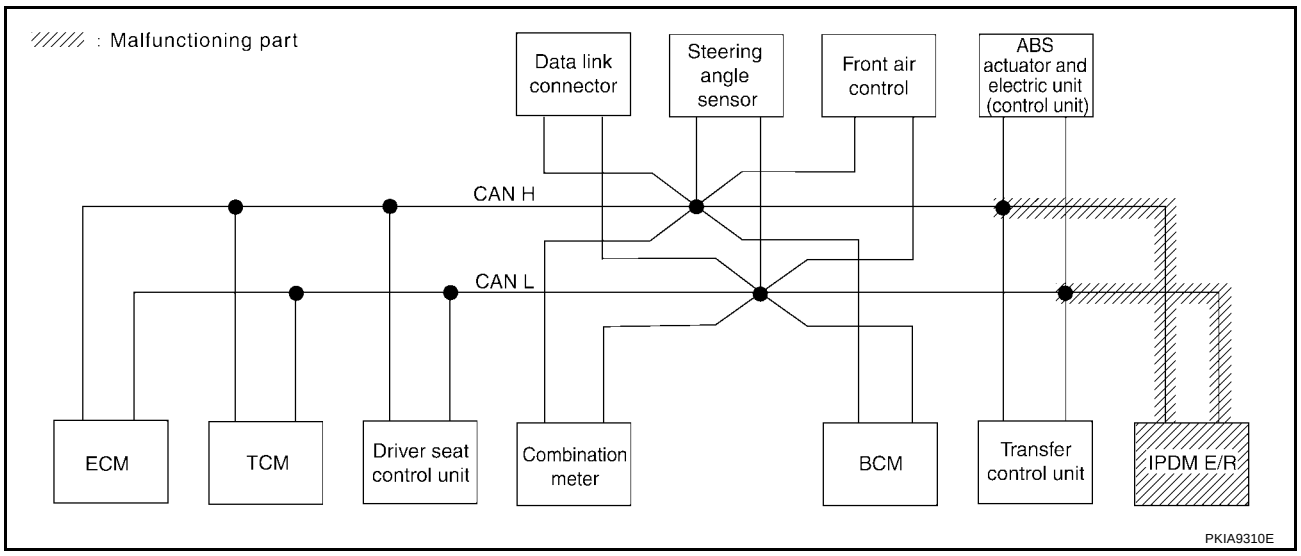
PKIA9309E

Case 14

Check IPDM E/R circuit. Refer to LAN-439, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN ✓
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6759E



PKIA9310E

Case 15

Check CAN communication circuit. Refer to LAN-439, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6760E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-440, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6761E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-440, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	—
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN ✓	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIB6762E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0038M

1. CHECK CONNECTOR

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

- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

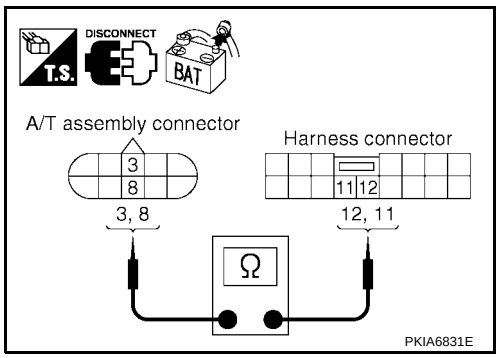
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).

3 (L) - 12 (L) : Continuity should exist.
8 (P) - 11 (P) : Continuity should exist.



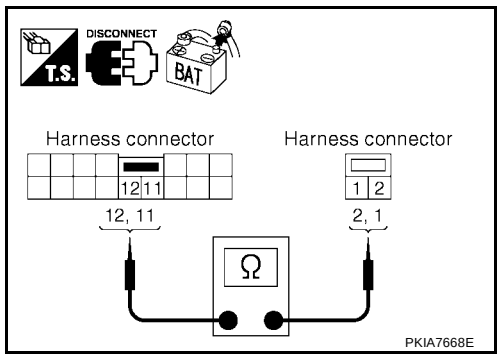
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).

12 (L) - 2 (L) : Continuity should exist.
11 (P) - 1 (P) : Continuity should exist.



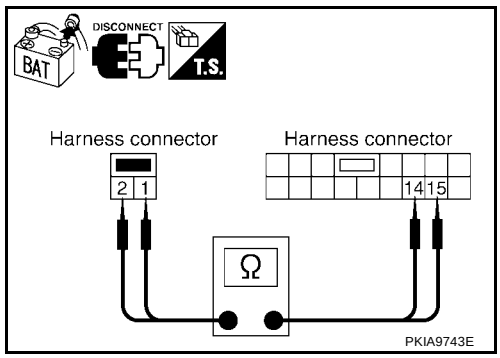
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).

2 (L) - 15 (L) : Continuity should exist.
1 (P) - 14 (P) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-413, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0038N

1. CHECK CONNECTOR

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

- Harness connector B69
- Harness connector M40

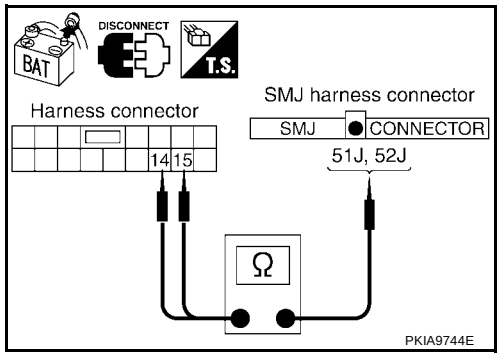
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).

15 (L) - 51J (L) : Continuity should exist.
14 (P) - 52J (P) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

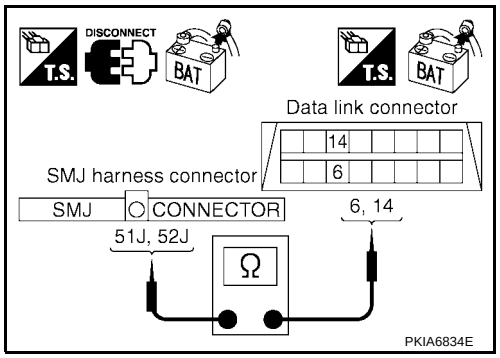
51J (L) - 6 (L) : Continuity should exist.

52J (P) - 14 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-413, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS0038O

1. CHECK CONNECTOR

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

- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).

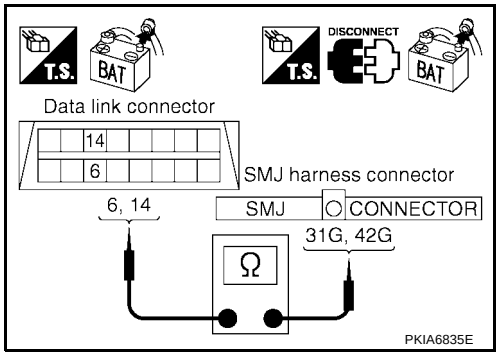
6 (L) - 31G (L) : Continuity should exist.

14 (P) - 42G (P) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).

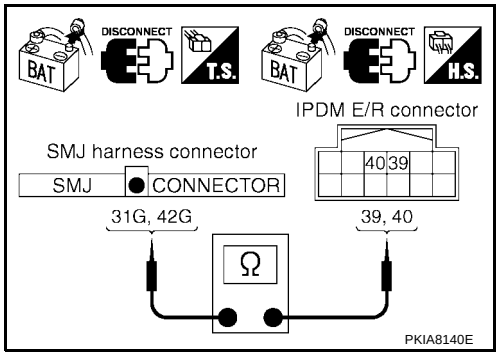
31G (L) - 39 (L) : Continuity should exist.

42G (P) - 40 (P) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-413, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS0038P

1. CHECK CONNECTOR

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

- ECM connector
- Harness connector E19
- Harness connector F33

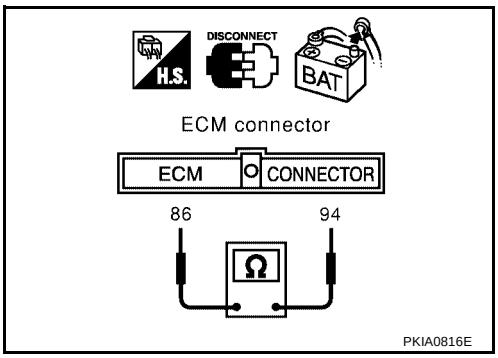
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (P) : Approx. 108 - 132 Ω



OK or NG

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

TCM Circuit Check

UKS0038Q

1. CHECK CONNECTOR

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

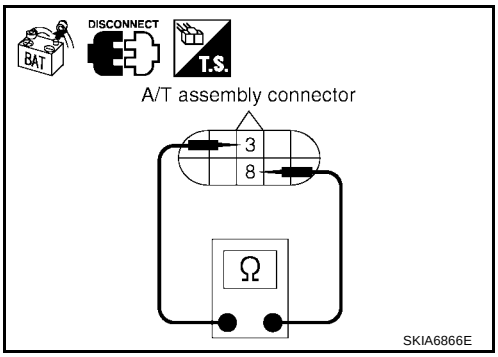
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 8 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS0038R

1. CHECK CONNECTOR

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

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

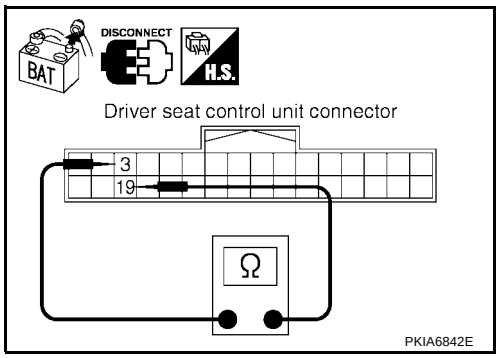
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

3 (L) - 19 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS0038S

1. CHECK CONNECTOR

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

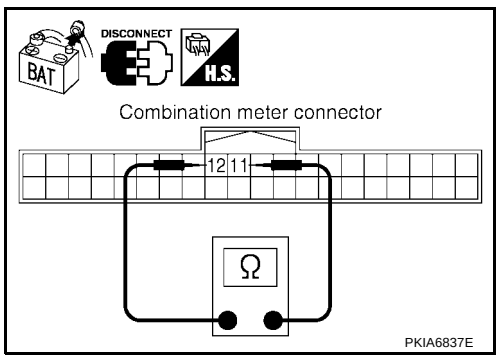
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 12 (P) : Approx. 54 - 66 Ω



OK or NG

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

BCM Circuit Check

UKS0038T

1. CHECK CONNECTOR

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

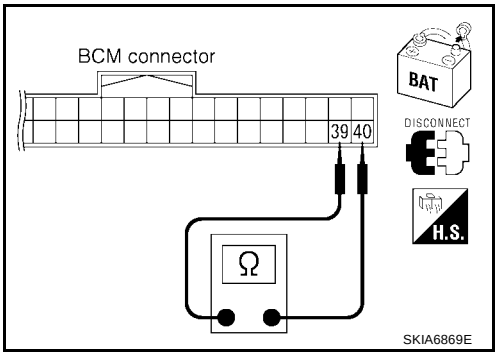
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0038U

1. CHECK CONNECTOR

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

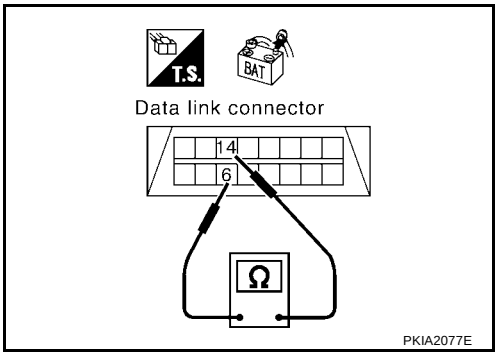
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Diagnose again. Refer to LAN-413, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS0038V

1. CHECK CONNECTOR

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

OK or NG

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

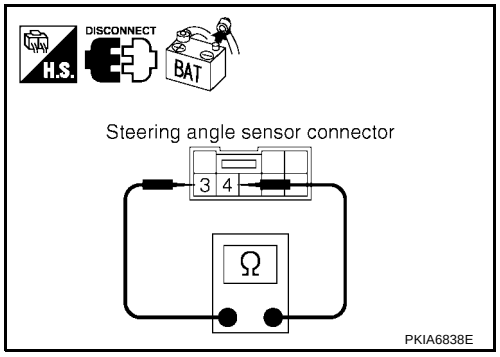
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (L) and 4 (P).

3 (L) - 4 (P) : Approx. 54 - 66 Ω

OK or NG

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



Front Air Control Circuit Check

UKS003KU

1. CHECK CONNECTOR

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

OK or NG

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

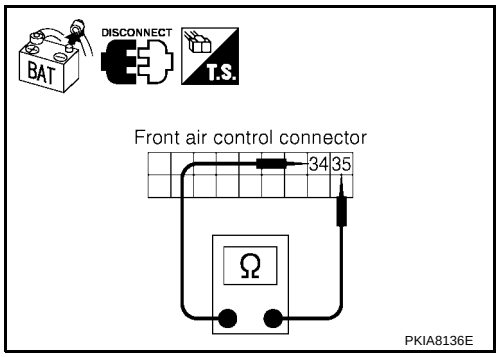
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66 Ω

OK or NG

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



Transfer Control Unit Circuit Check

UKS0038W

1. CHECK CONNECTOR

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

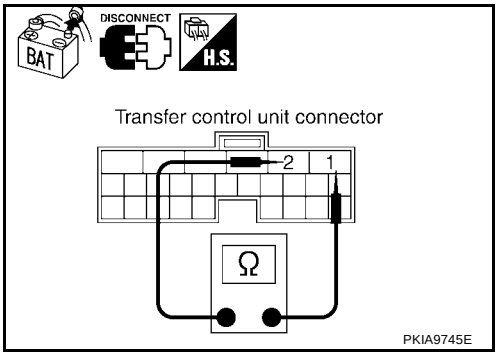
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0038X

1. CHECK CONNECTOR

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

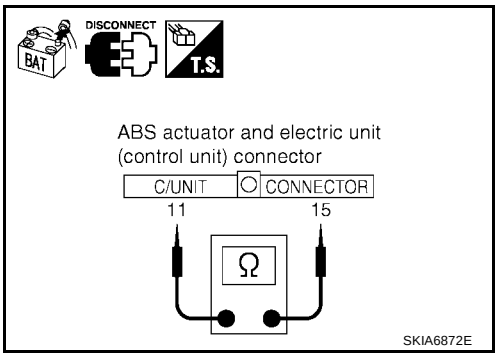
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

11 (L) - 15 (P) : Approx. 54 - 66 Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

UKS0038Y

1. CHECK CONNECTOR

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

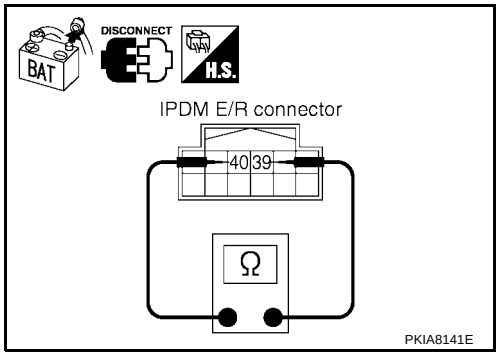
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (P) : Approx. 108 - 132 Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS0038Z

1. CHECK CONNECTOR

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
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

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

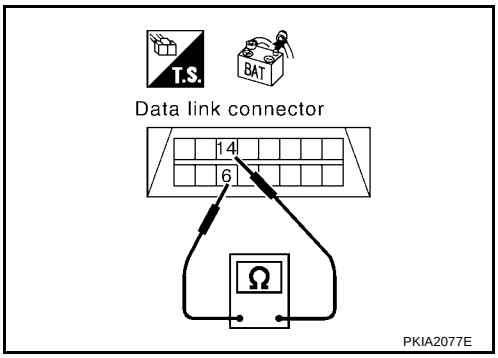
2. CHECK HARNESS FOR SHORT CIRCUIT

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 harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

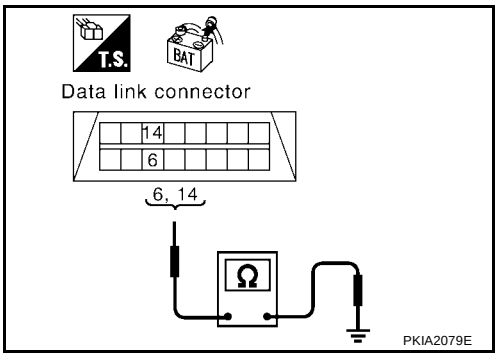
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-440, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS00390

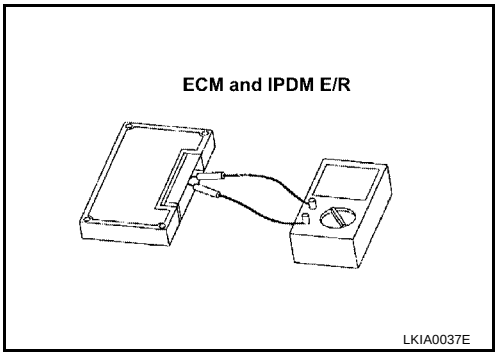
Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS00391

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40