

SECTION **LAN**
LAN SYSTEM

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PRECAUTIONS

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

EKS0089Q

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. 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.

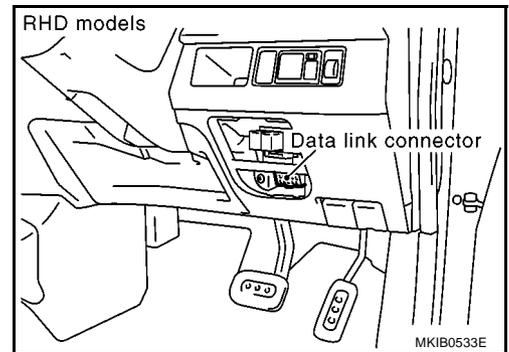
Precautions When Using CONSULT-II

EKS0073H

When connecting CONSULT-II to data link connector, connect them through CONSULT-II CONVERTER.

CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.



CHECK POINTS FOR USING CONSULT-II

1. Has CONSULT-II been used without connecting CONSULT-II CONVERTER on this vehicle?
 - If YES, GO TO 2.
 - If NO, GO TO 5.
2. Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
 - If YES, GO TO 3.
 - If NO, GO TO 4.
3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
4. Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefore, erase the self-diagnosis results.
5. Diagnose CAN communication system. Refer to [LAN-6, "CAN Communication Unit"](#) .

Precautions For Trouble Diagnosis CAN SYSTEM

EKS0073I

- 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.

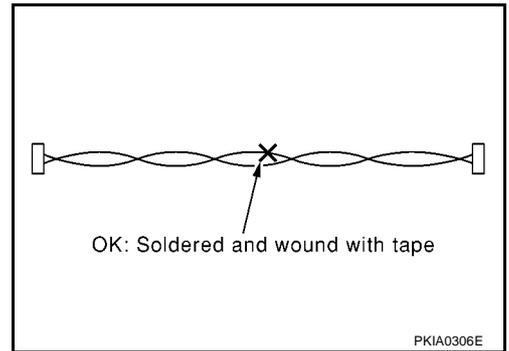
PRECAUTIONS

[CAN]

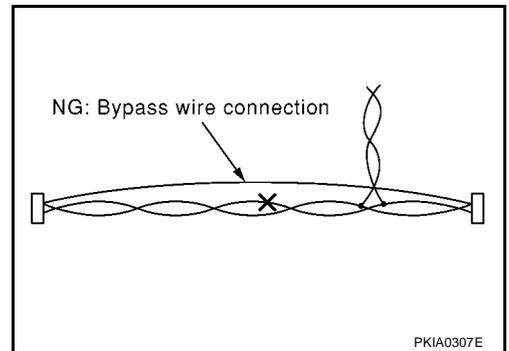
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Precautions For Harness Repair CAN SYSTEM

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



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



Maintenance Information

EKS008WQ

If any of following part is replaced, always replace with new* one.
If it's not (or fail to do so), the electrical system may not be operated properly.
*: New one means a virgin control unit that has never been energized on-board.

RHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM
- IPDM E/R
- Combination meter
- EPS control unit

LHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM

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CAN COMMUNICATION

[CAN]

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CAN COMMUNICATION

System Description

EKS007UG

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

EKS007UH

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

Body type	3door/5door									
Axle	2WD									
Engine	CR10DE/CR12DE/CR14DE				CR12DE/CR14DE				K9K	
Handle	LHD/RHD									
Brake control	ABS system				ESP system				ABS	
Transmission	A/T		M/T		A/T		M/T		M/T	
Intelligent Key system	Appli- cable	Not appli- cable	Appli- cable	Not appli- cable	Appli- cable	Not appli- cable	Appli- cable	Not appli- cable	Appli- cable	Not appli- cable

CAN communication unit

ECM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Data link connector	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Combination meter	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Intelligent Key unit	x	x			x	x			x	x			x	x			x	x		
Drive computer	x		x		x		x		x		x		x		x		x		x	
EPS control unit	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
BCM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
ABS actuator and electric unit (control unit)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TCM	x	x	x	x					x	x	x	x								
IPDM E/R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CAN communication type	LAN-7. "TYPE 1/TYPE 2"		LAN-10. "TYPE 3/TYPE 4"		LAN-12. "TYPE 5/TYPE 6"		LAN-15. "TYPE 7/TYPE 8"		LAN-17. "TYPE 9/TYPE 10"											
CAN system trouble diagnosis	LAN-20. "CAN SYS-TEM (TYPE 1)"	LAN-52. "CAN SYS-TEM (TYPE 2)"	LAN-82. "CAN SYS-TEM (TYPE 3)"	LAN-112. "CAN SYS-TEM (TYPE 4)"	LAN-140. "CAN SYS-TEM (TYPE 5)"	LAN-172. "CAN SYS-TEM (TYPE 6)"	LAN-202. "CAN SYS-TEM (TYPE 7)"	LAN-232. "CAN SYS-TEM (TYPE 8)"	LAN-260. "CAN SYS-TEM (TYPE 9)"	LAN-290. "CAN SYS-TEM (TYPE 10)"										

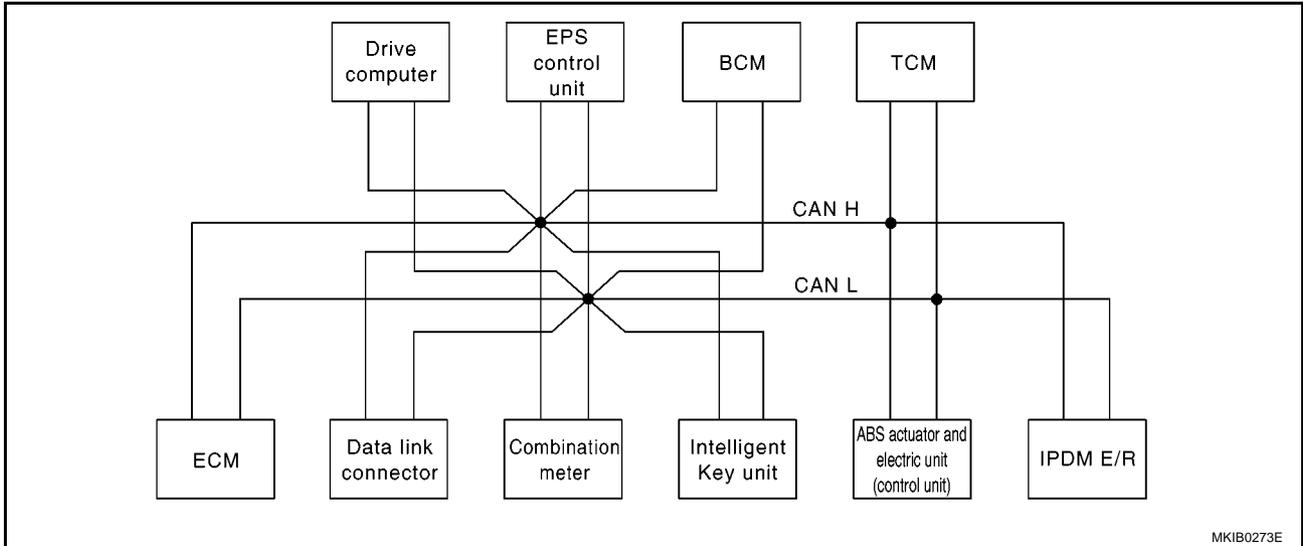
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CAN COMMUNICATION

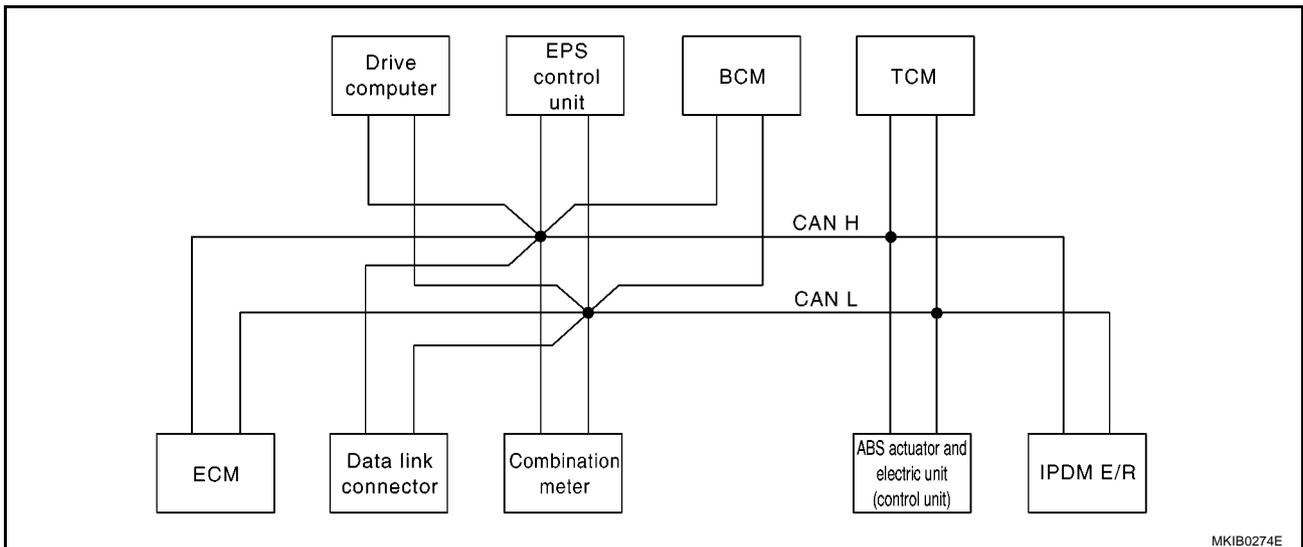
[CAN]

TYPE 1/TYPE 2 System diagram

- Type 1



- Type 2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R				
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T							R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T							R	

CAN COMMUNICATION

[CAN]

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T shift position signal		R						T	
Stop lamp switch signal		T						R	
O/D OFF indicator lamp signal		R						T	
Engine and A/T integrated control signal	T							R	
	R							T	
Fuel consumption monitor signal	T	R							
Oil pressure switch signal		R		R					T
A/C compressor request signal	T								R
Heater fan switch signal	R					T			
Cooling fan speed request signal	T								R
Cooling fan speed status signal	R								T
Position lights request signal		R		R		T			R
Position light status signal	R								T
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
Day time light request signal						T			R
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			
Sleep/wake up signal		R	R			T			R
Door switch signal		R	R	R		T			R
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						
MI signal	T	R		R					
Front wiper request signal						T			R
Front wiper stop position signal						R			T
Rear window defogger switch signal						T			R
Rear window defogger control signal	R								T
Drive computer signal		T		R					
EPS warning lamp signal		R		R	T				
ABS warning lamp signal		R		R			T		
ABS operation signal	R						T		
Brake warning lamp signal		R		R			T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					

CAN COMMUNICATION

[CAN]

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

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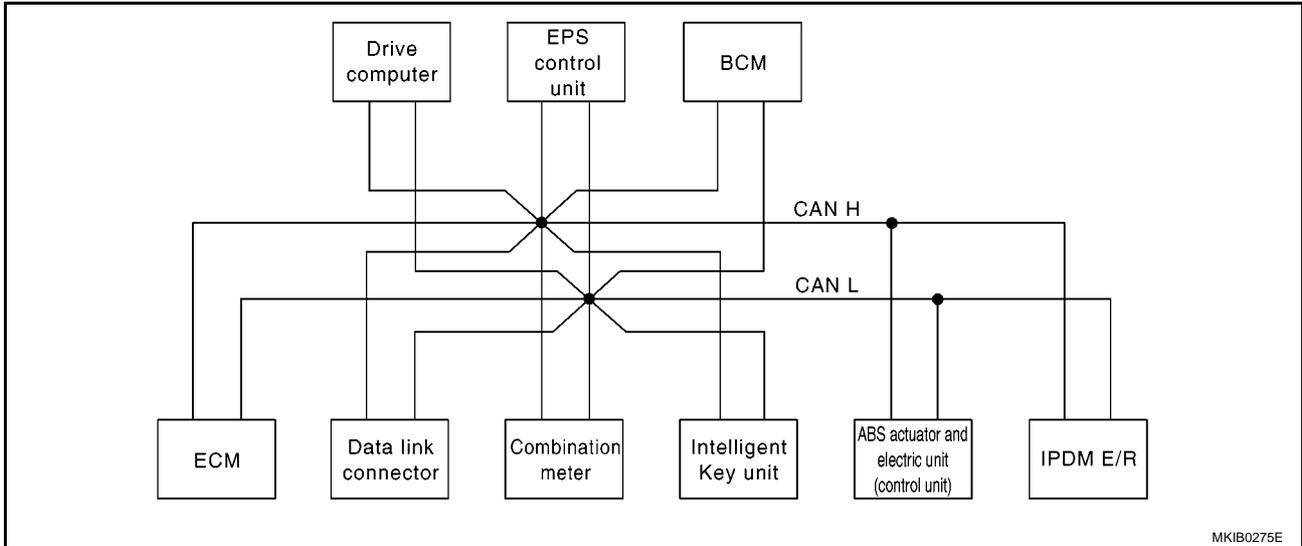
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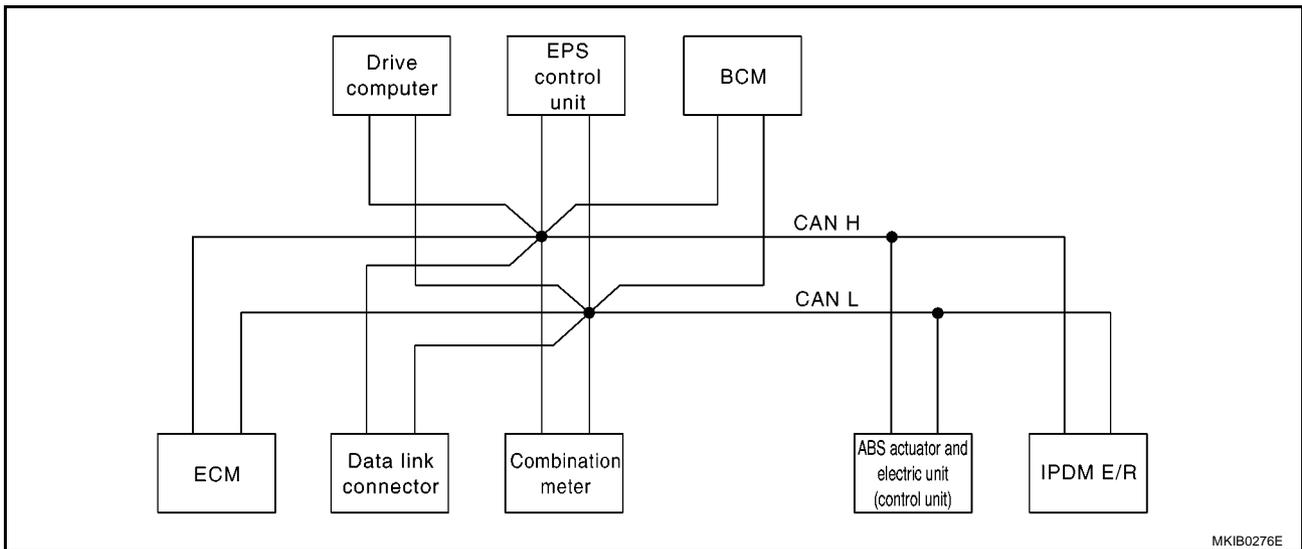
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TYPE 3/TYPE 4
System diagram

- Type 3



- Type 4



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R

CAN COMMUNICATION

[CAN]

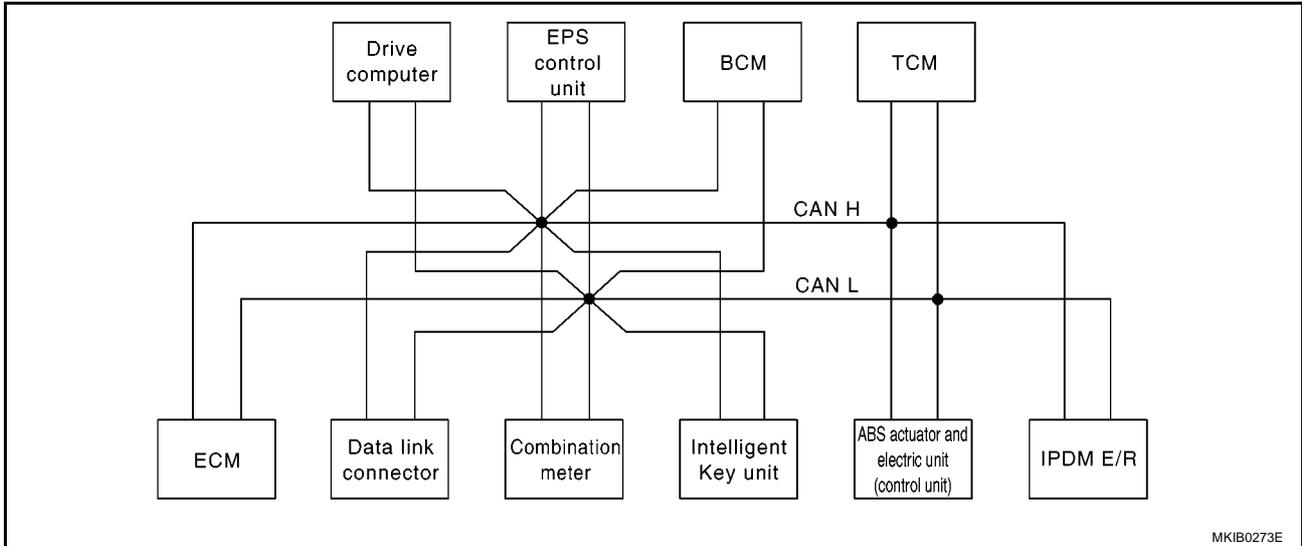
Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R	
Position light status signal	R							T	A
Low beam request signal						T		R	B
Low beam status signal	R							T	C
High beam request signal		R				T		R	D
High beam status signal	R							T	D
Day time light request signal						T		R	
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			E
Sleep/wake up signal		R	R			T		R	
Door switch signal		R	R	R		T		R	F
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						G
MI signal	T	R		R					
Front wiper request signal						T		R	H
Front wiper stop position signal						R		T	
Rear window defogger switch signal						T		R	
Rear window defogger control signal	R							T	I
Drive computer signal		T		R					
EPS warning indicator signal		R		R	T				J
ABS warning lamp signal		R		R			T		
ABS operation signal	R			R			T		LAN
Brake warning lamp signal		R					T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					L
Battery charge malfunction signal		T		R					
Air bag system warning signal		T		R					M
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T		R	
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T		R	
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

CAN COMMUNICATION

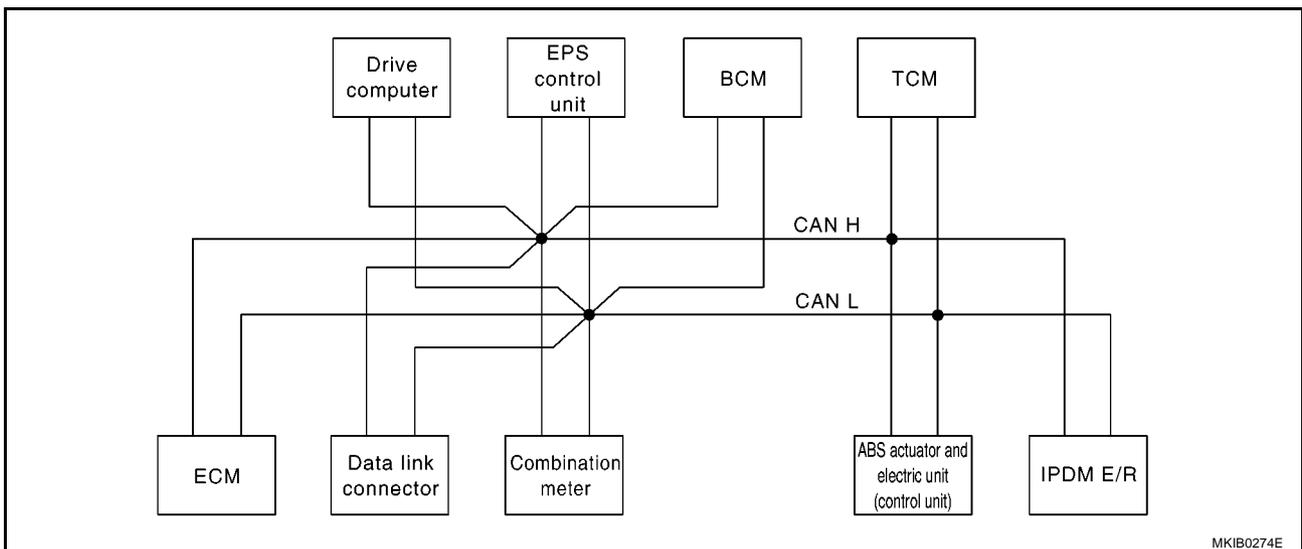
[CAN]

TYPE 5/TYPE 6 System diagram

- Type 5



- Type 6



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R		R		
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T						R	R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T						R	R	

CAN COMMUNICATION

[CAN]

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R	A B C D E F G H I J LAN L M
A/T shift position signal		R						T		
A/T shift schedule change demand signal							T	R		
Stop lamp switch signal		T						R		
O/D OFF indicator lamp signal		R						T		
Engine and A/T integrated control signal	T							R		
	R							T		
Fuel consumption monitor signal	T	R								
Oil pressure switch signal		R		R					T	
A/C compressor request signal	T								R	
A/C switch signal	R								T	
Heater fan switch signal	R					T				
Cooling fan speed request signal	T								R	
Cooling fan speed status signal	R								T	
Position lights request signal		R		R		T			R	
Position light status signal	R								T	
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	
Day time light request signal						T			R	
Vehicle speed signal	R	R			R		T			
	R	T	R	R	R	R				
Sleep/wake up signal		R	R			T			R	
Door switch signal		R	R	R		T			R	
Turn indicator signal		R				T				
Buzzer output signal		R				T				
		R	T							
MI signal	T	R		R						
Front wiper request signal						T			R	
Front wiper stop position signal						R			T	
Rear window defogger switch signal						T			R	
Rear window defogger control signal	R								T	
Drive computer signal		T		R						
EPS warning lamp signal		R		R	T					
ABS warning lamp signal		R		R			T			
ESP warning lamp signal		R		R			T			
ESP OFF indicator signal		R					T			
SLIP indicator lamp signal		R					T			

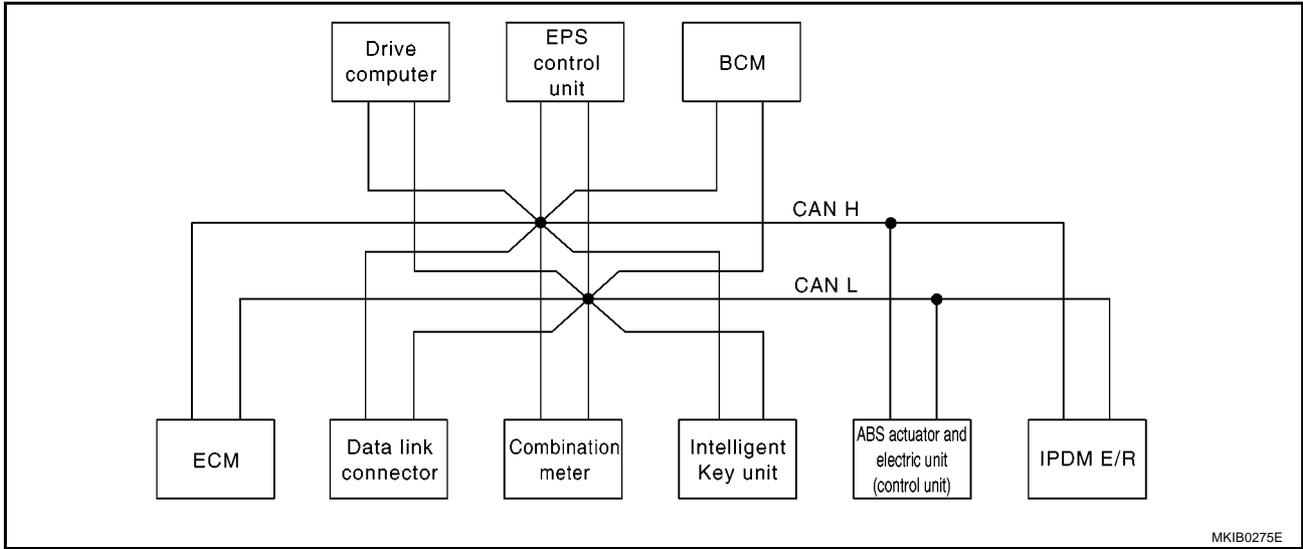
CAN COMMUNICATION

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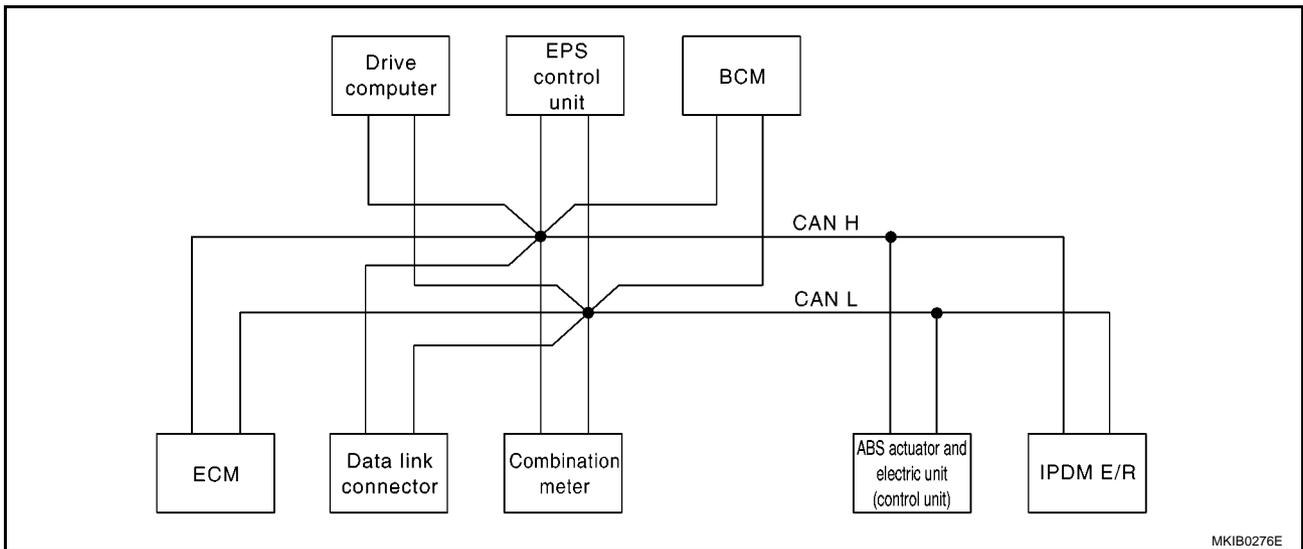
Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
ESP operation signal	R						T		
TCS operation signal	R						T		
ABS operation signal	R						T		
Steering angle signal					T		R		
Brake warning lamp signal		R					T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

TYPE 7/TYPE 8
System diagram

- Type 7



- Type 8



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
Engine speed signal	T	R		R	R		R	
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Accelerator pedal position signal	T						R	
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
A/C switch signal	R							T
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R

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CAN COMMUNICATION

[CAN]

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R
Position light status signal	R							T
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
Day time light request signal						T		R
Vehicle speed signal	R	R			R		T	
	R	T	R	R	R	R		
Sleep/wake up signal		R	R			T		R
Door switch signal		R	R	R		T		R
Turn indicator signal		R				T		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		R				
Front wiper request signal						T		R
Front wiper stop position signal						R		T
Rear window defogger switch signal						T		R
Rear window defogger control signal	R							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ESP warning lamp signal		R		R			T	
ESP OFF indicator signal		R					T	
SLIP indicator lamp signal		R					T	
ESP operation signal	R						T	
TCS operation signal	R						T	
ABS operation signal	R						T	
Steering angle signal					T		R	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warning signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R

CAN COMMUNICATION

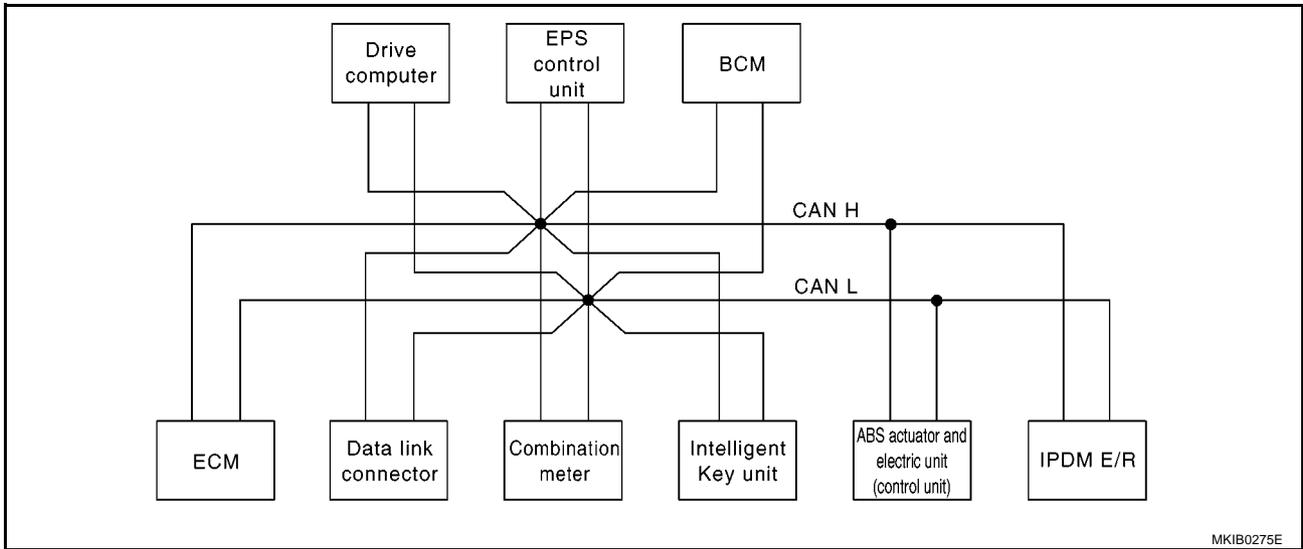
[CAN]

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
Door lock/unlock request signal			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

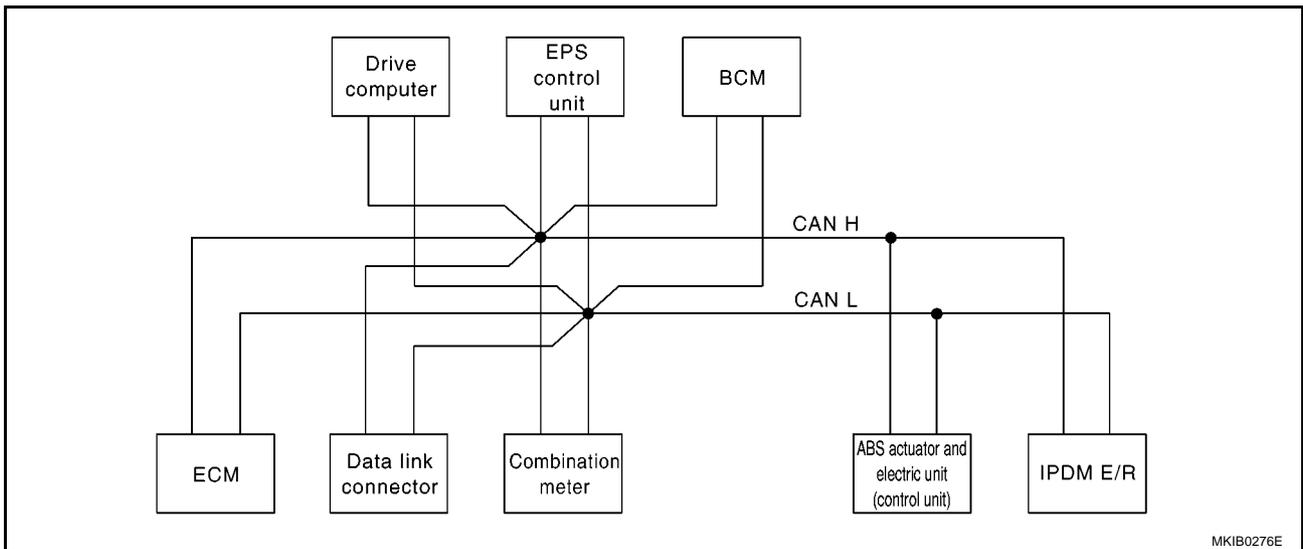
TYPE 9/TYPE 10

System diagram

- Type 9



- Type 10



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CAN COMMUNICATION

[CAN]

Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R				R		
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Position lights request signal		R		R		T		R
Low beam request signal						T		R
High beam request signal		R				T		R
Day time light request signal						T		R
Vehicle speed signal	R	R			R	R	T	
	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		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		R				
Front wiper request signal						T		R
Front wiper stop position signal						R		T
Rear window defogger switch signal						T		R
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal				R			T	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warn- ing signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R
Door lock/unlock request signal			T			R		
Door lock/unlock status signal			R			T		

CAN COMMUNICATION

[CAN]

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

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CAN SYSTEM (TYPE 1)

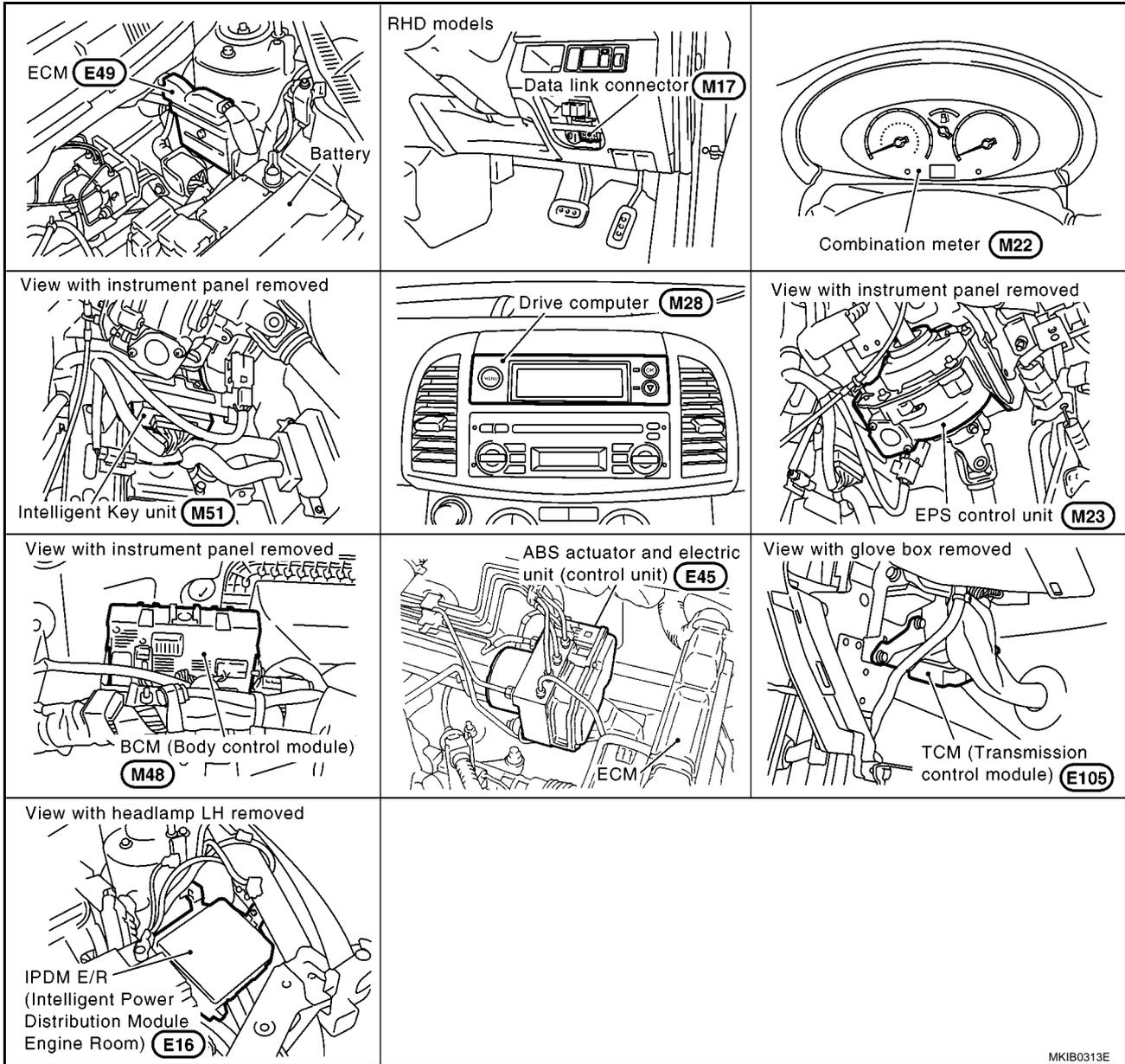
System Description

EKS0073M

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

EKS0073N



MKIB0313E

CAN SYSTEM (TYPE 1)

[CAN]

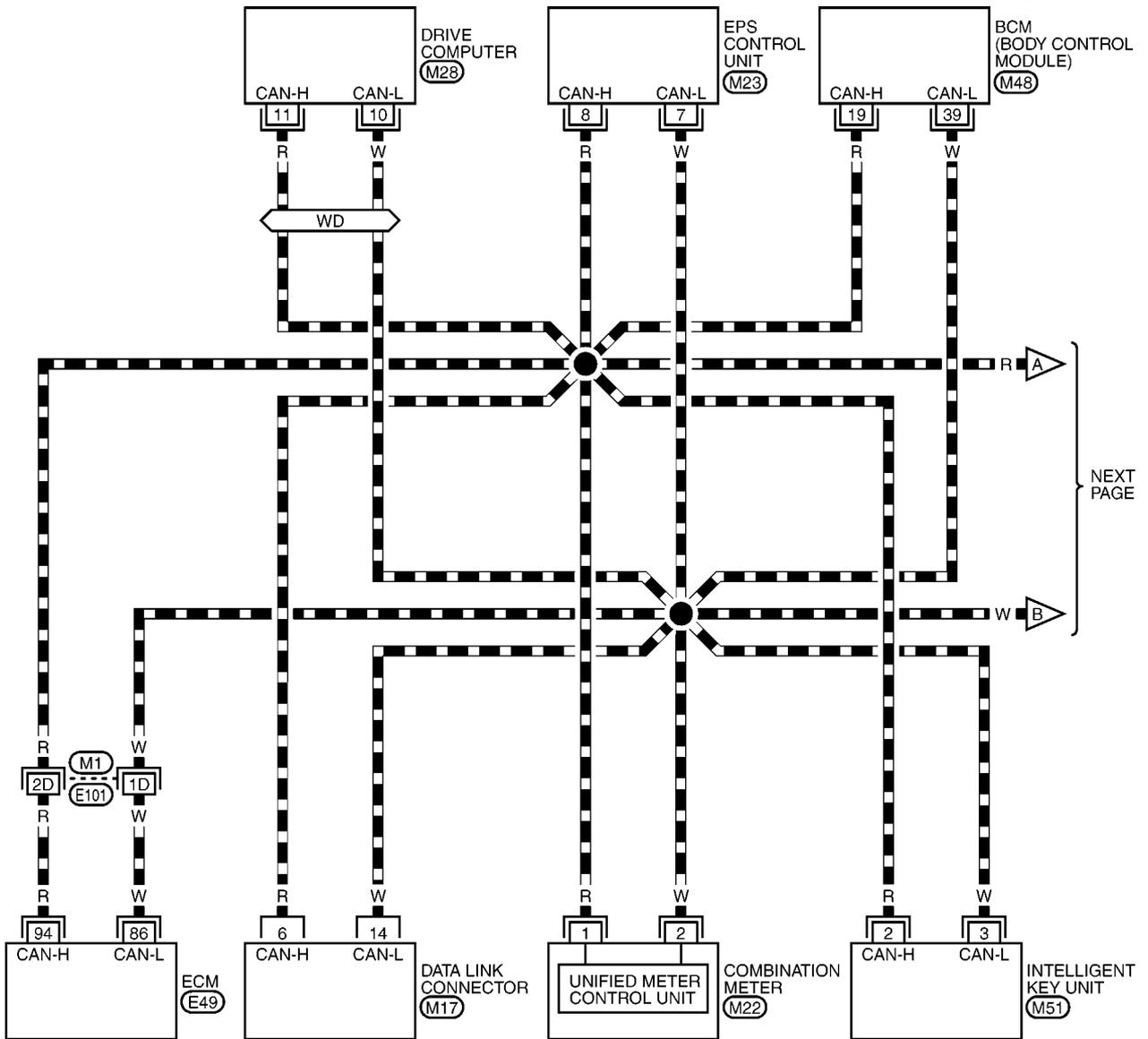
Wiring Diagram — CAN —

EKS00730

LAN-CAN-01

▬ : DATA LINE

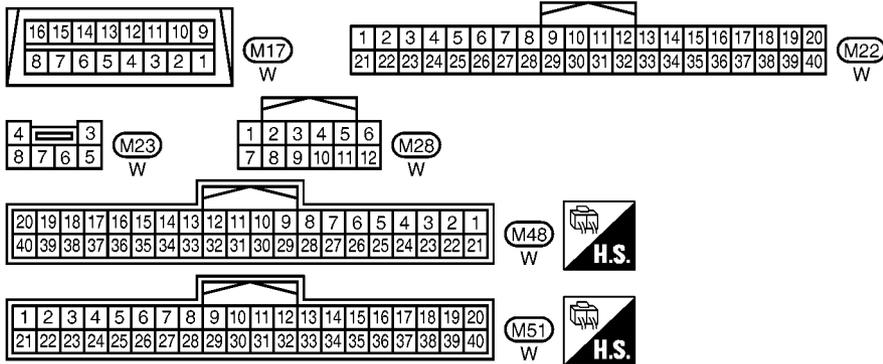
WD : WITH DRIVE COMPUTER



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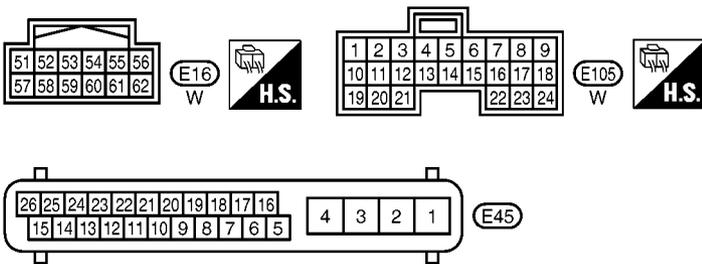
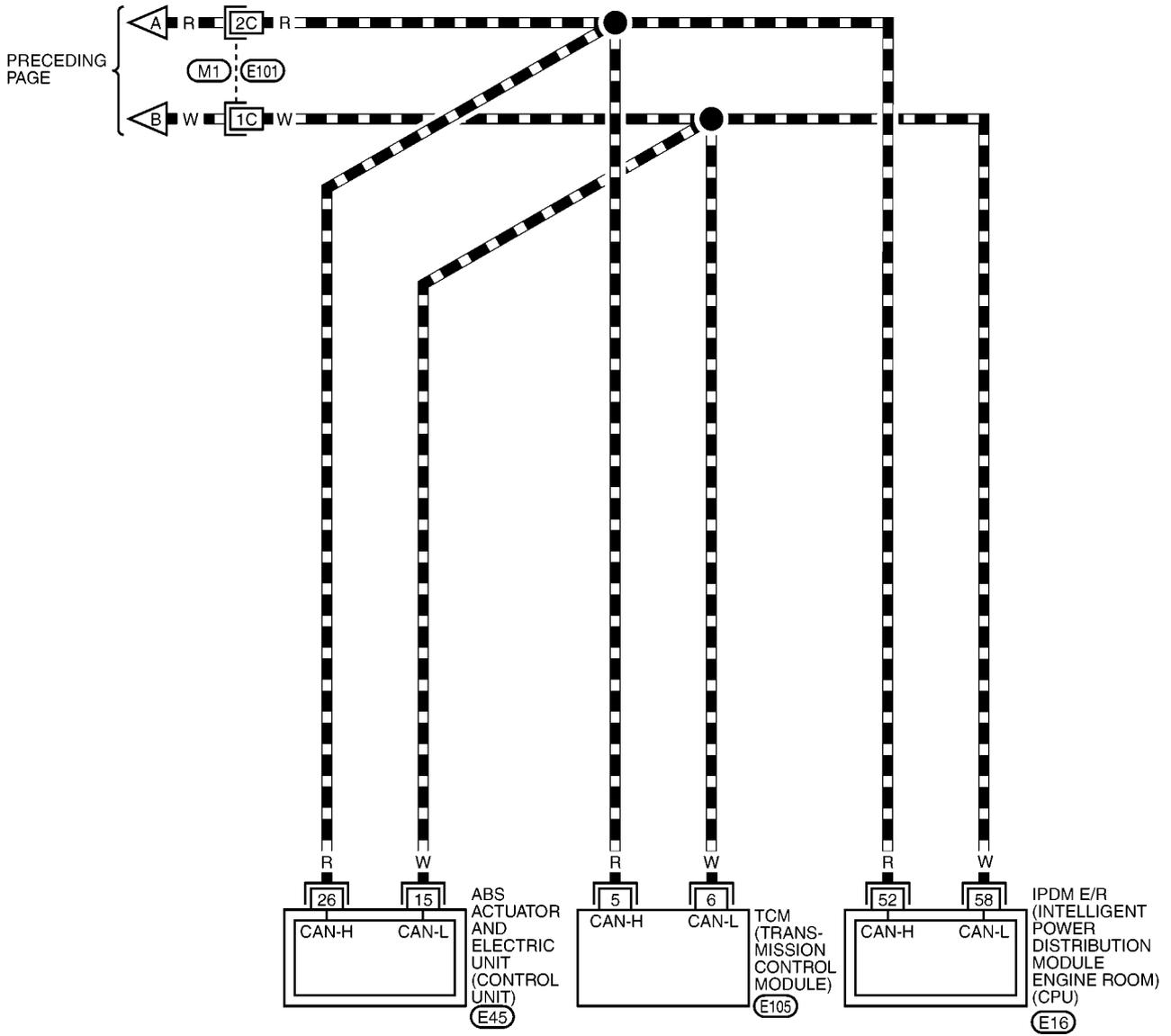
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

LAN-CAN-02

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

CAN SYSTEM (TYPE 1)

[CAN]

6. Convert "v" mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 8	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis								
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Convert

MKIB1682E

7. According to the check sheet results (example), start inspection. Refer to [LAN-27, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET

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Check sheet table

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis								
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 1)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS

Attach copy of
EPS
SELF-DIAG RESULTS

Attach copy of
BCM
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ABS
SELF-DIAG RESULTS

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A/T
SELF-DIAG RESULTS

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IPDM E/R
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CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

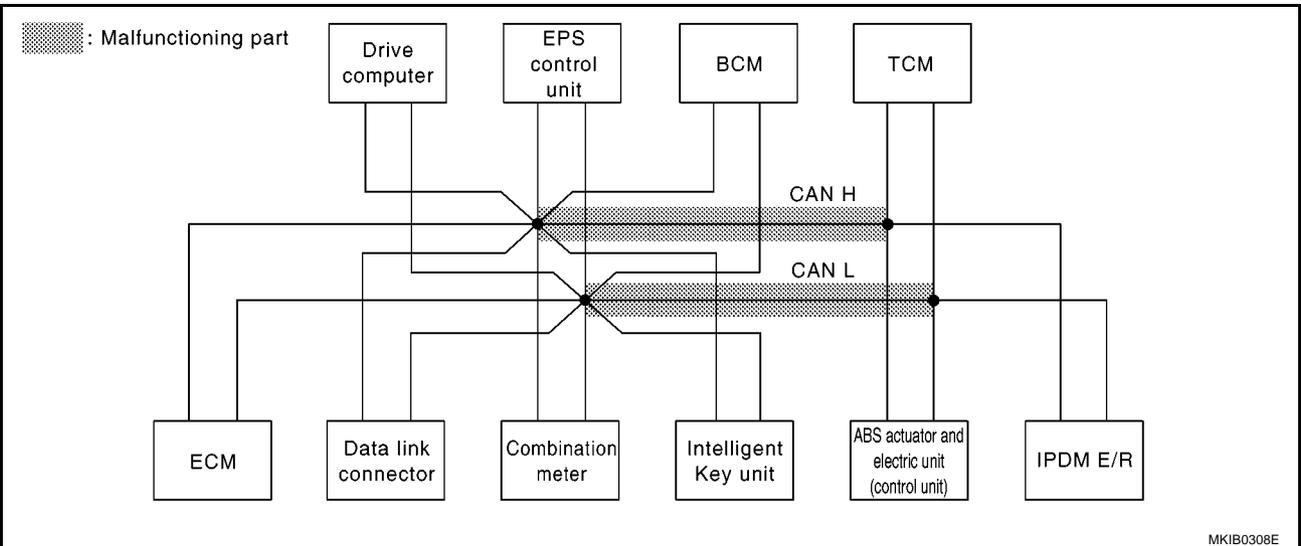
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-38, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1611E



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CAN SYSTEM (TYPE 1)

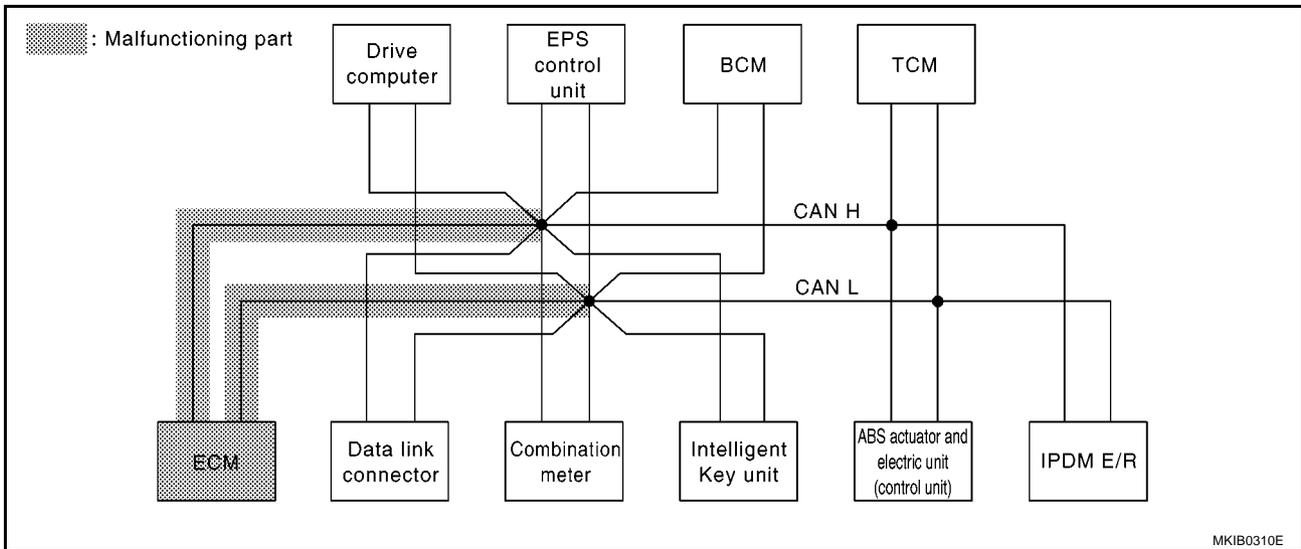
[CAN]

Case 2

Check ECM circuit. Refer to [LAN-39, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1612E



MKIB0310E

CAN SYSTEM (TYPE 1)

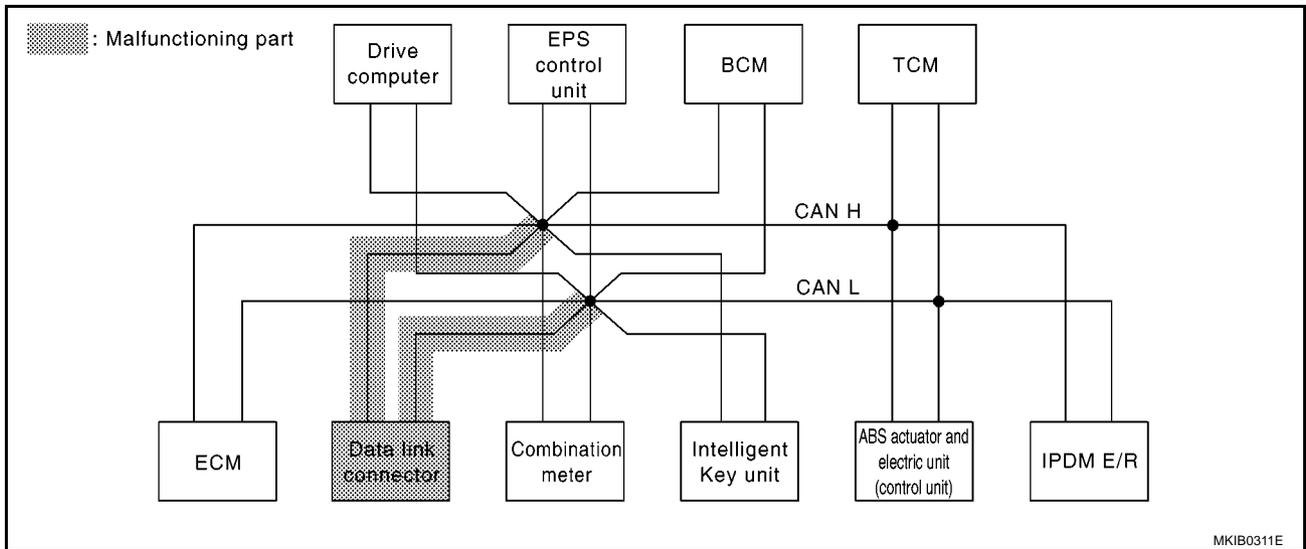
[CAN]

Case 3

Check data link connector circuit. Refer to [LAN-40, "Data Link Connector Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

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CAN SYSTEM (TYPE 1)

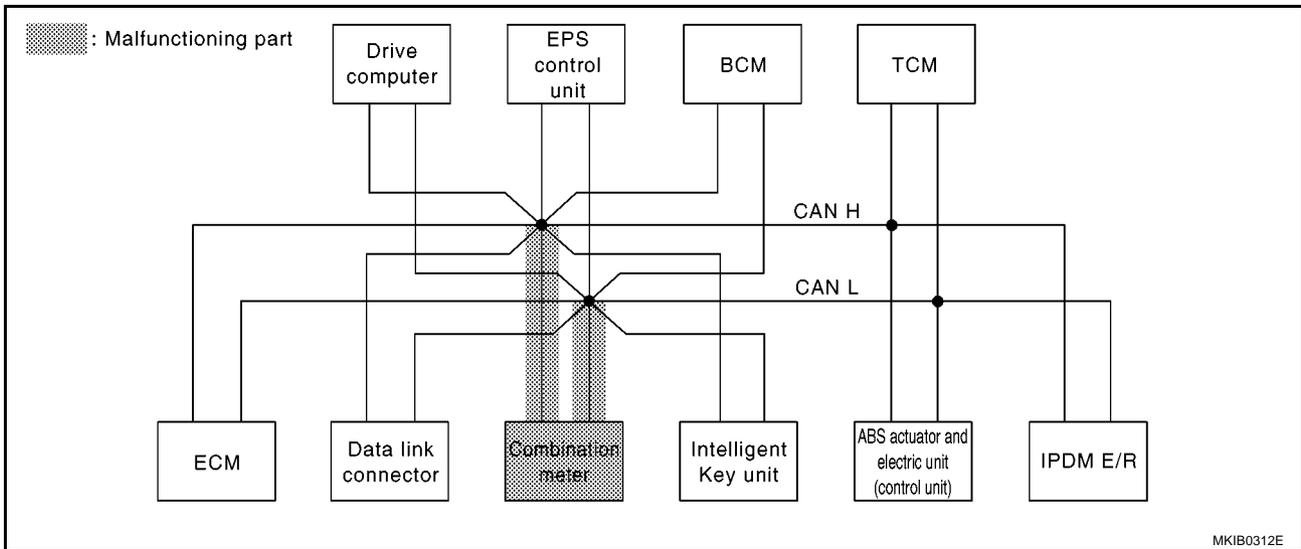
[CAN]

Case 4

Check combination meter circuit. Refer to [LAN-41, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1614E



MKIB0312E

CAN SYSTEM (TYPE 1)

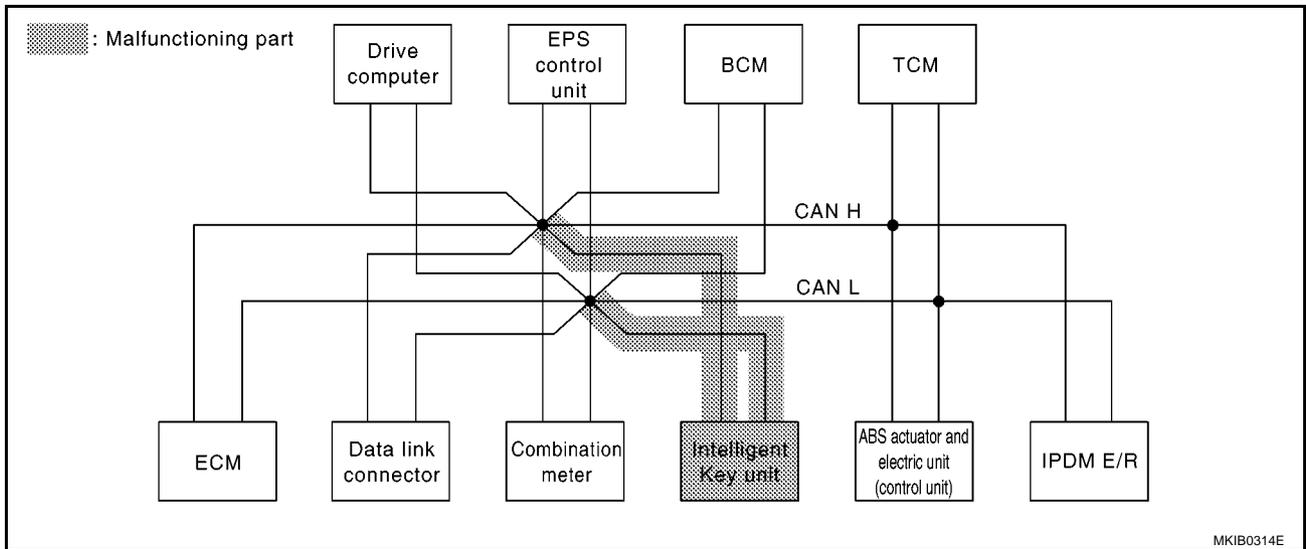
[CAN]

Case 5

Check Intelligent Key unit circuit. Refer to [LAN-42, "Intelligent Key Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5 ✓	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

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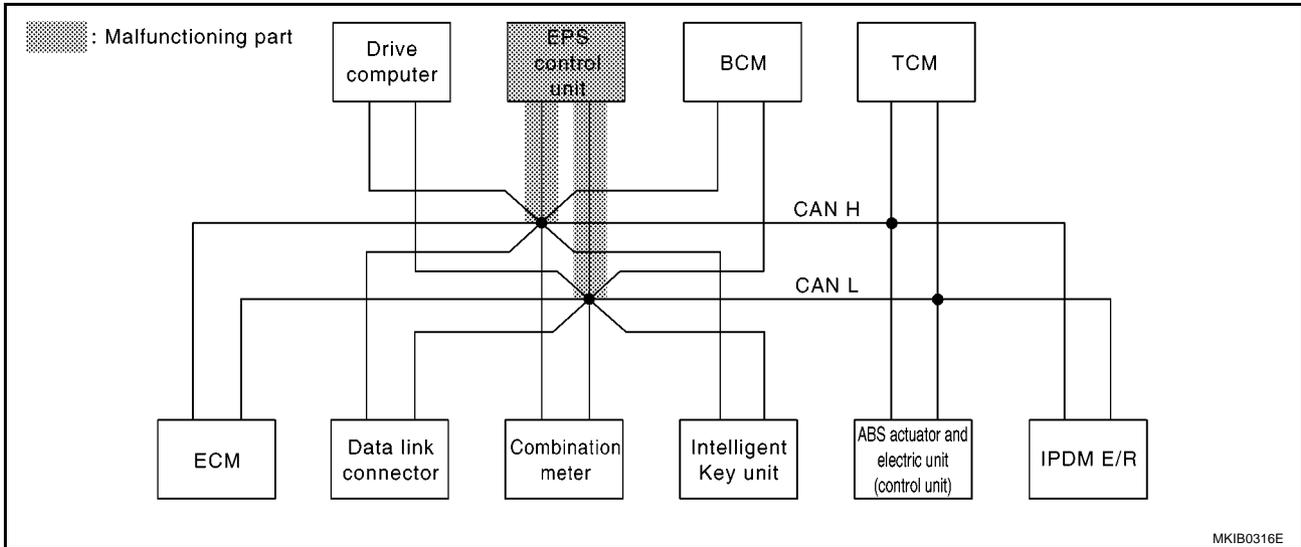
[CAN]

Case 6

Check EPS control unit circuit. Refer to [LAN-43, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

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CAN SYSTEM (TYPE 1)

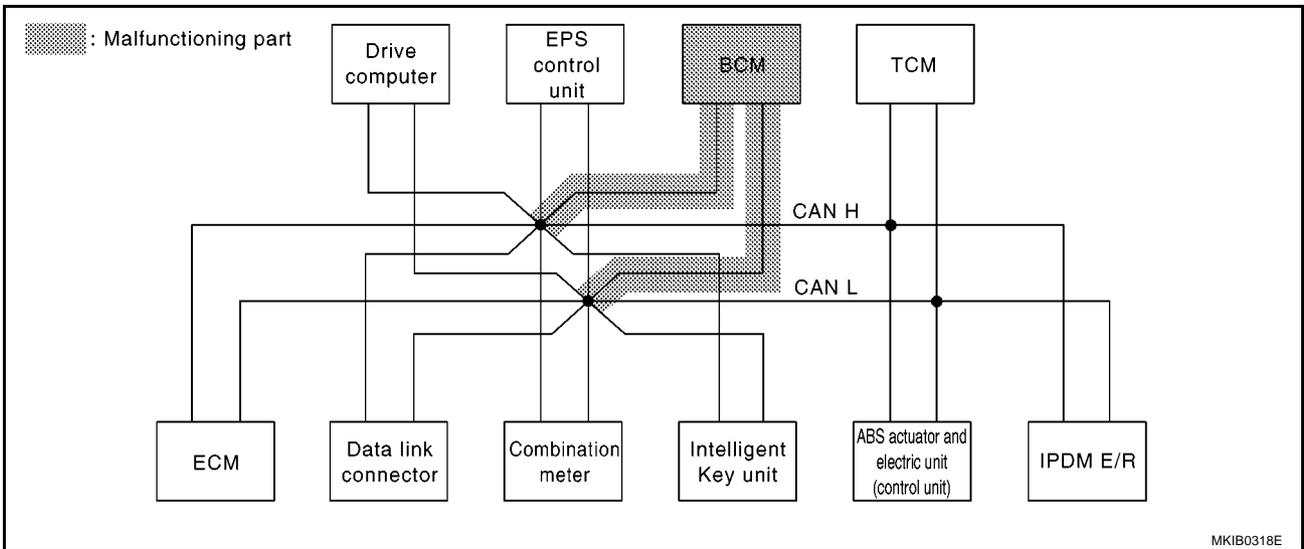
[CAN]

Case 7

Check BCM circuit. Refer to [LAN-44, "BCM Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2 ✓	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5 ✓	CAN CIRC 3	—	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3 ✓	—	—	—

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CAN SYSTEM (TYPE 1)

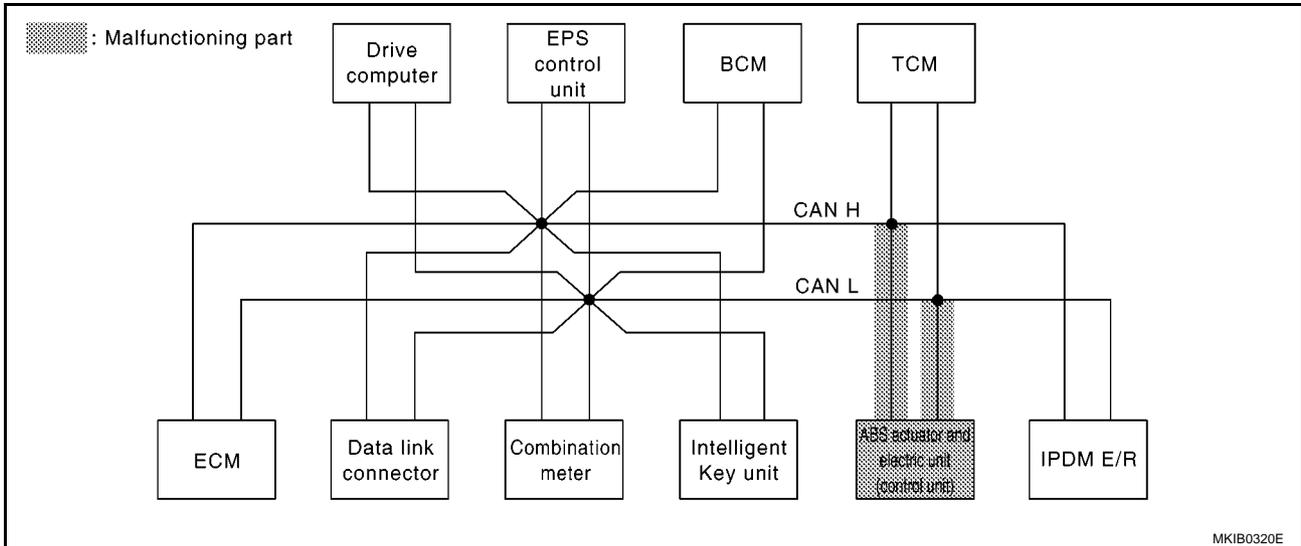
[CAN]

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-45, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1618E



MKIB0320E

CAN SYSTEM (TYPE 1)

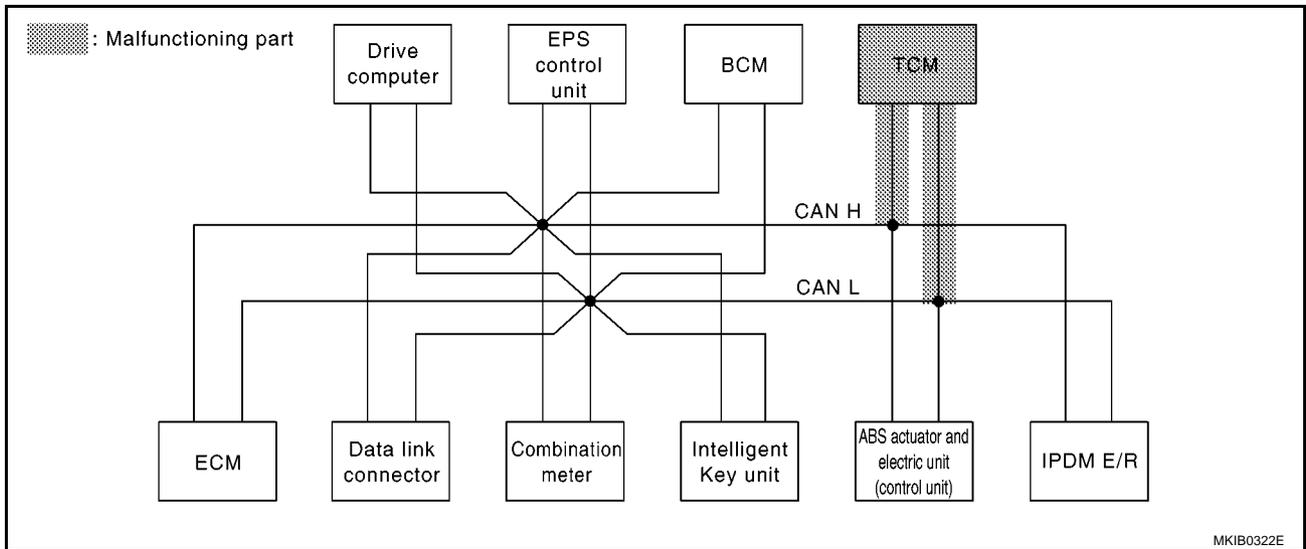
[CAN]

Case 9

Check TCM circuit. Refer to [LAN-46. "TCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2 ✓	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1619E



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CAN SYSTEM (TYPE 1)

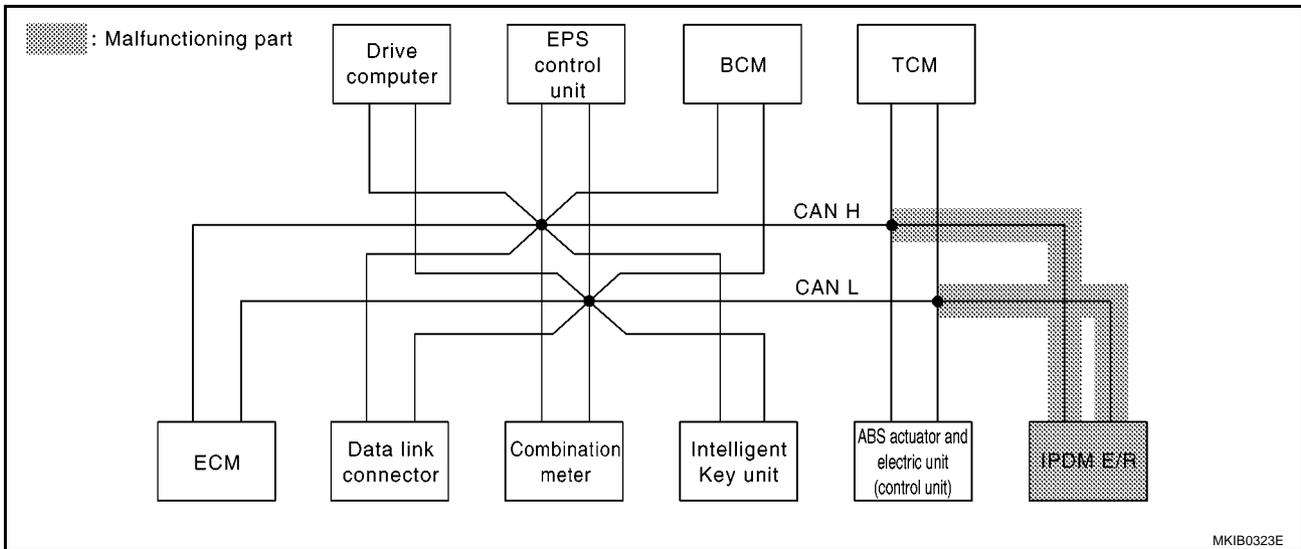
[CAN]

Case 10

Check IPDM E/R circuit. Refer to [LAN-47, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1620E



MKIB0323E

CAN SYSTEM (TYPE 1)

[CAN]

Case 11

Check CAN communication circuit. Refer to [LAN-48, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1621E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-51, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1623E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-51, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1622E

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Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

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 M1
 - Harness connector E101

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

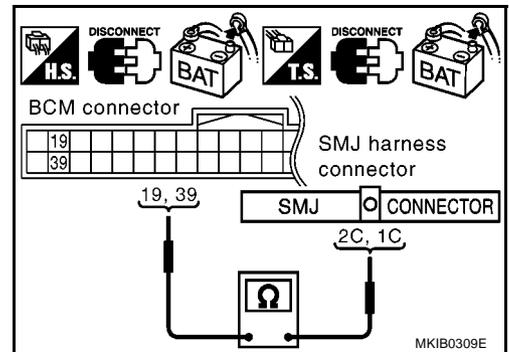
1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.

39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

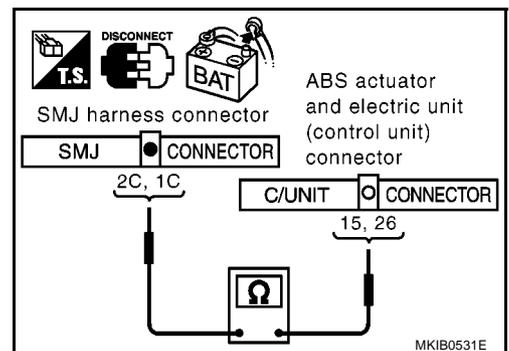
Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-23, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

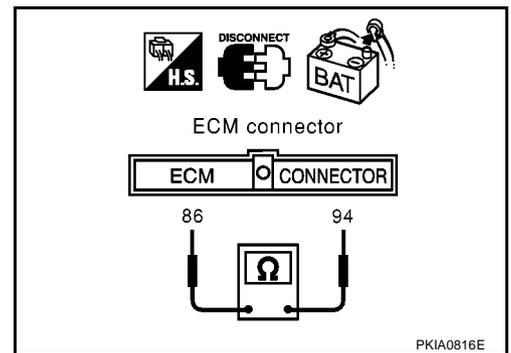
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

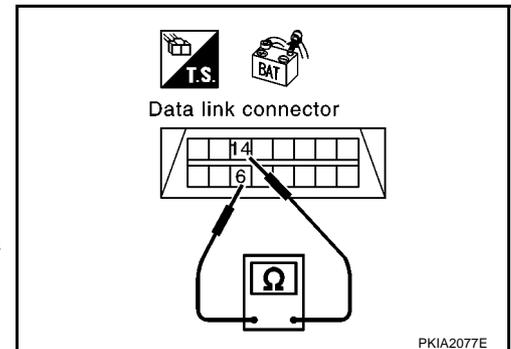
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-23, "Work Flow"](#).
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

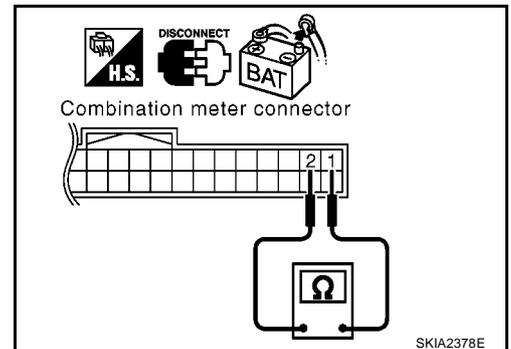
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



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Intelligent Key Unit Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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.

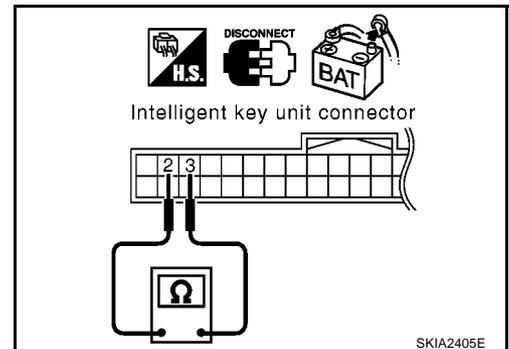
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace Intelligent Key unit.
 NG >> Repair harness between Intelligent Key unit and data link connector.



EPS Control Unit Circuit Check**1. CHECK CONNECTOR**

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

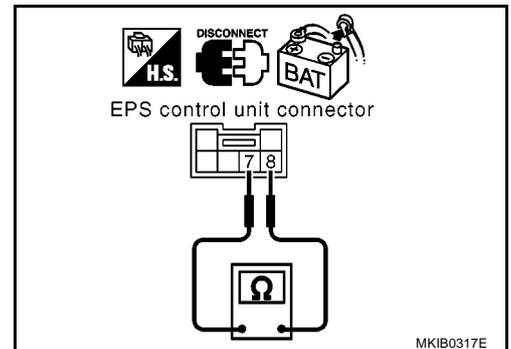
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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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.

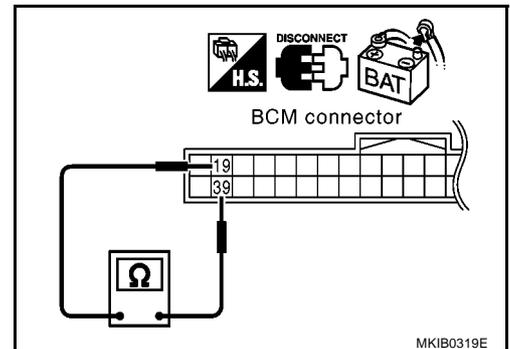
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0073Z

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.

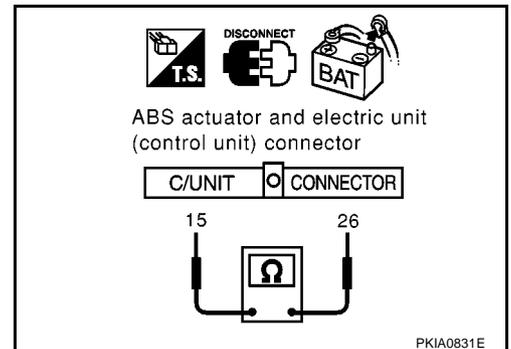
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

OK or NG

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

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TCM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

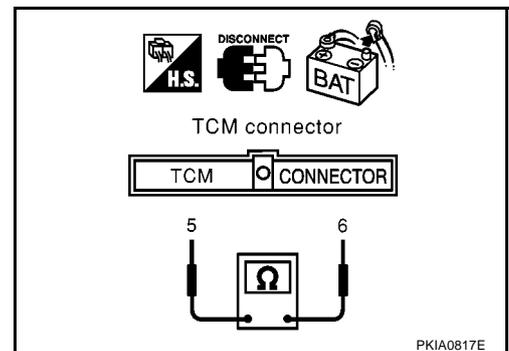
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

5 (R) – 6 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

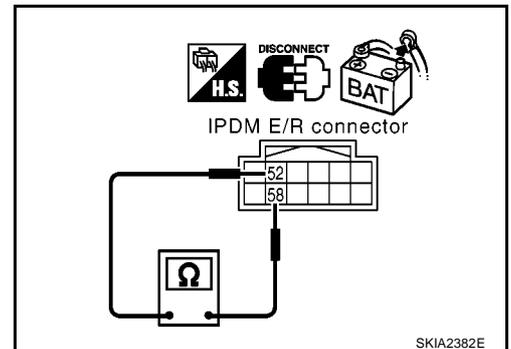
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).
 - ECM
 - Combination meter
 - Intelligent Key unit
 - Drive computer
 - EPS control unit
 - BCM
 - ABS actuator and electric unit (control unit)
 - TCM
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

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

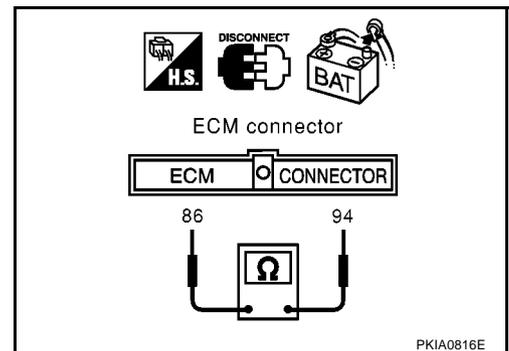
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

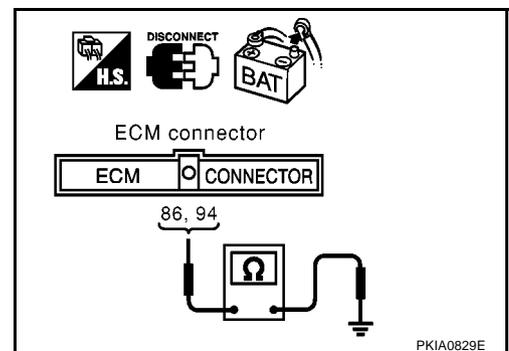
Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

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

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

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - TCM connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

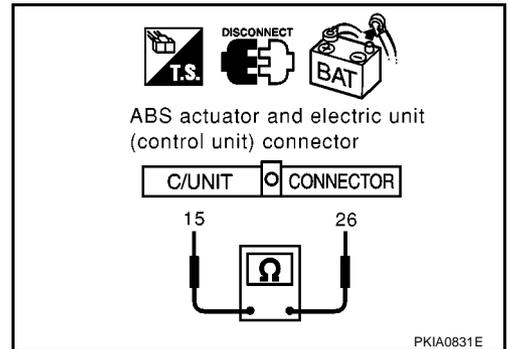
26 (R) – 15 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

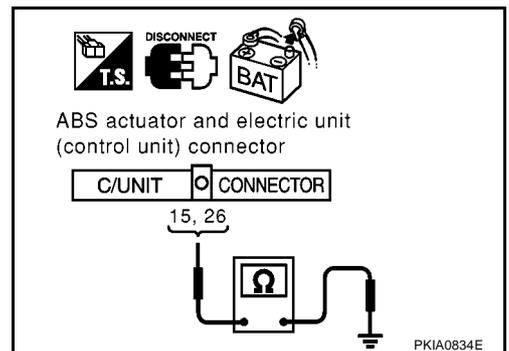
15 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

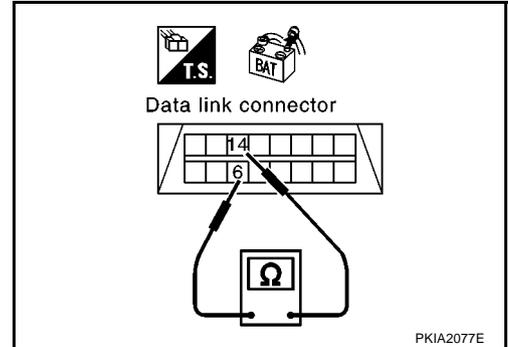
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

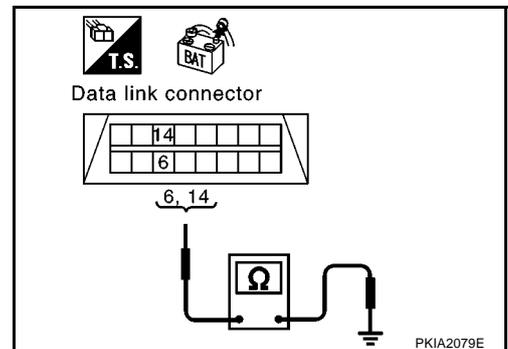
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-51, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-23, "Work Flow"](#).

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

IPDM E/R Ignition Relay Circuit Check

EKS00742

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

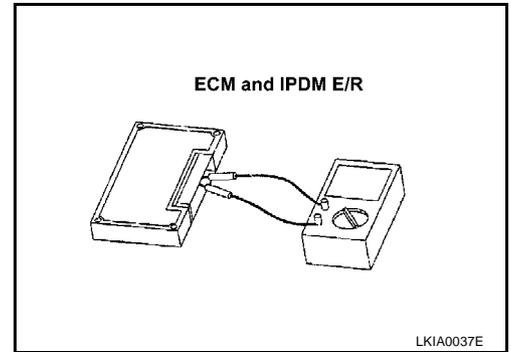
Component Inspection

EKS00743

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 2)

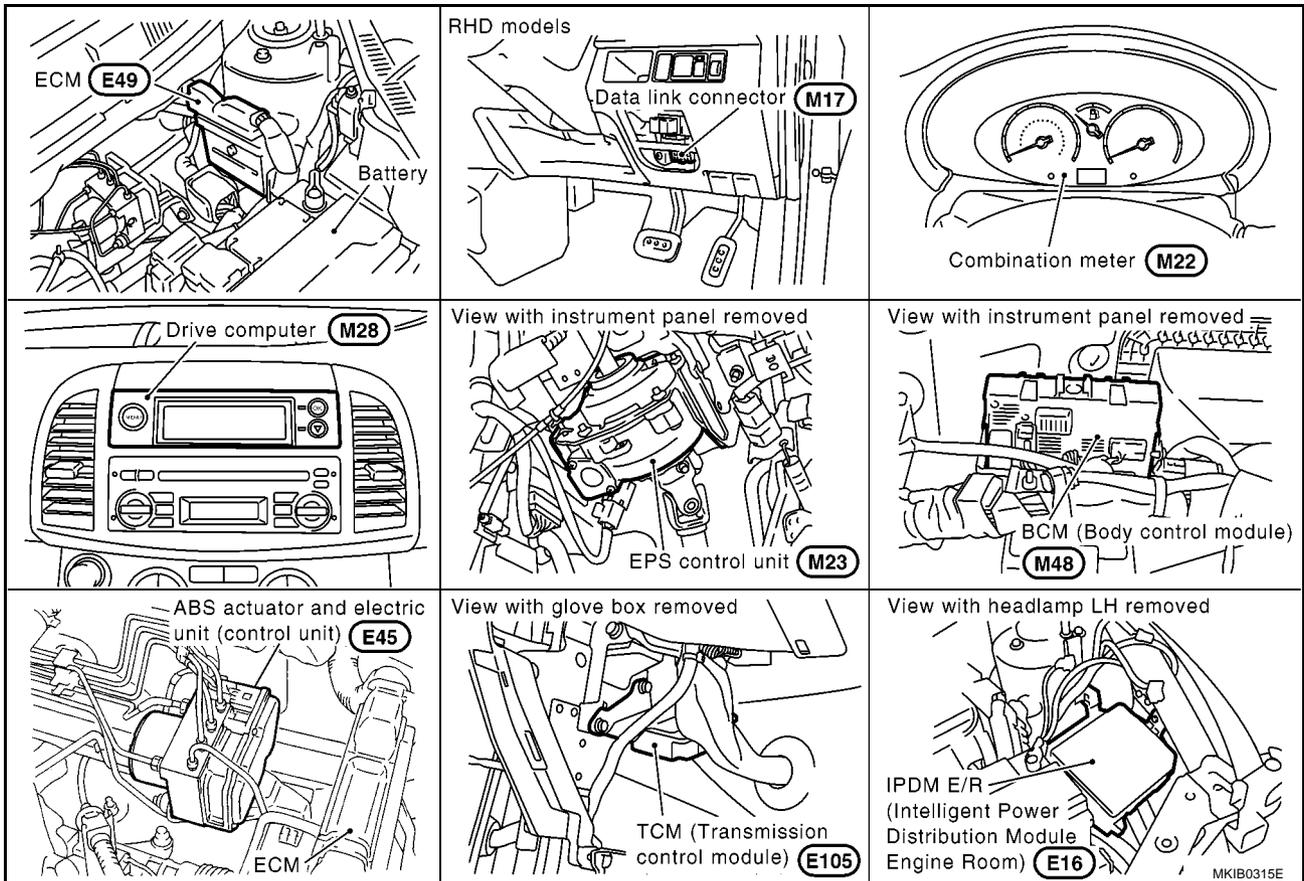
System Description

EKS00744

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

EKS00745



CAN SYSTEM (TYPE 2)

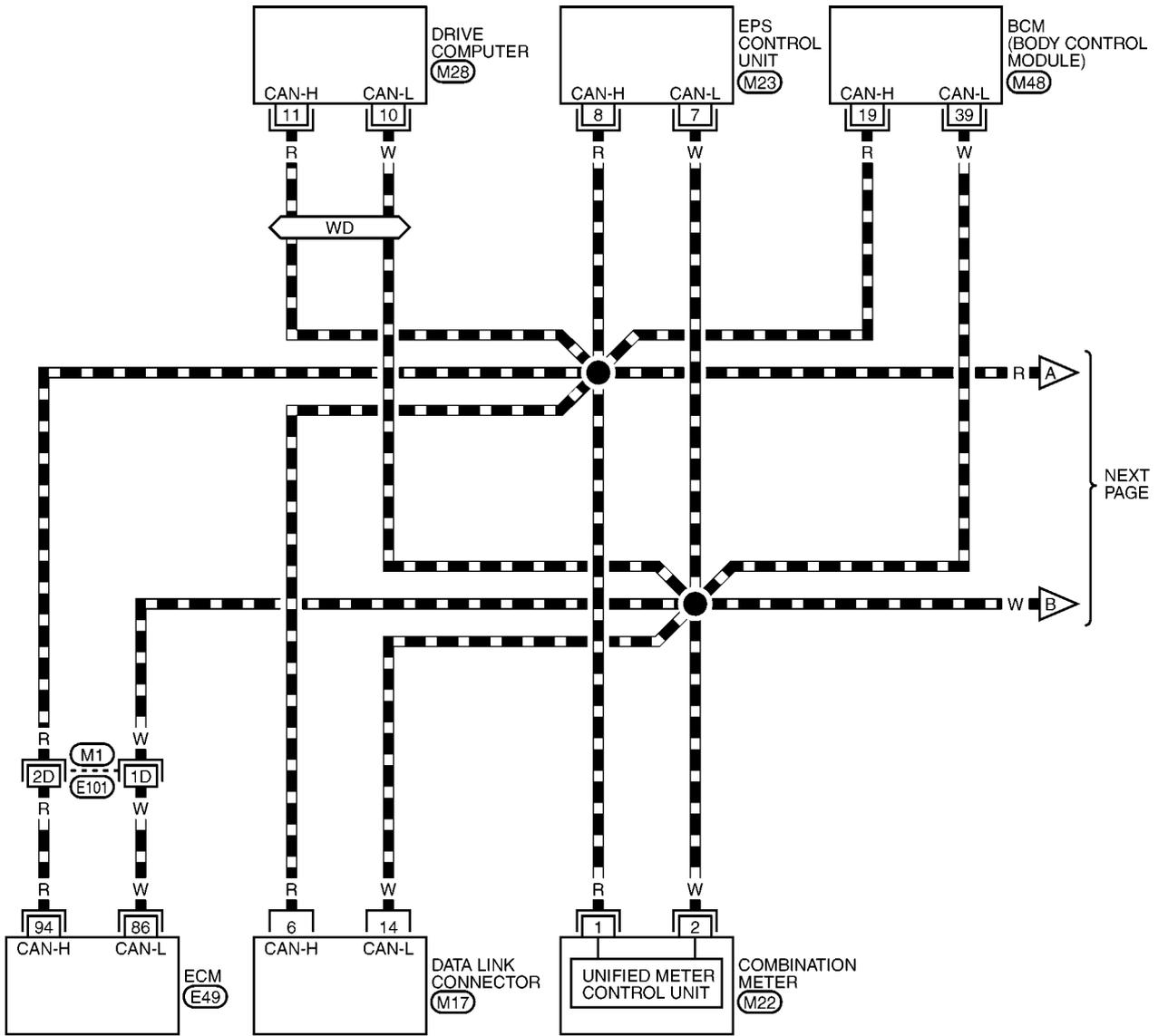
[CAN]

Wiring Diagram — CAN —

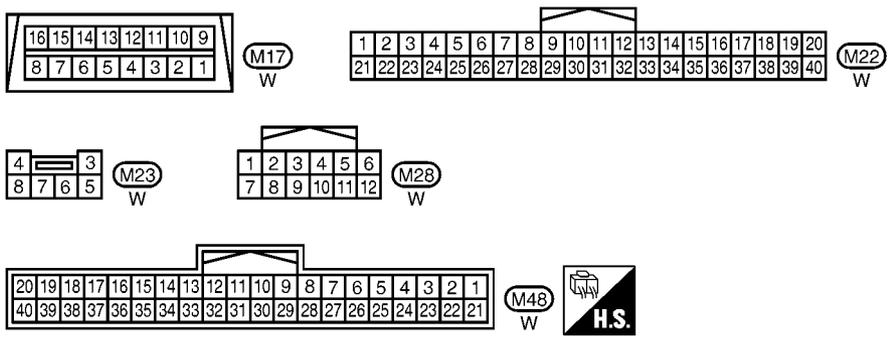
EKS007Y0

LAN-CAN-03

▬ : DATA LINE
 ◊ : WITH DRIVE COMPUTER



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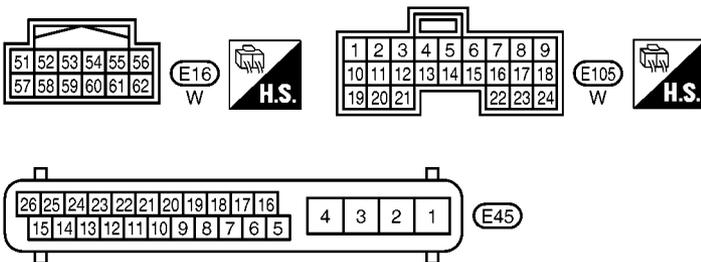
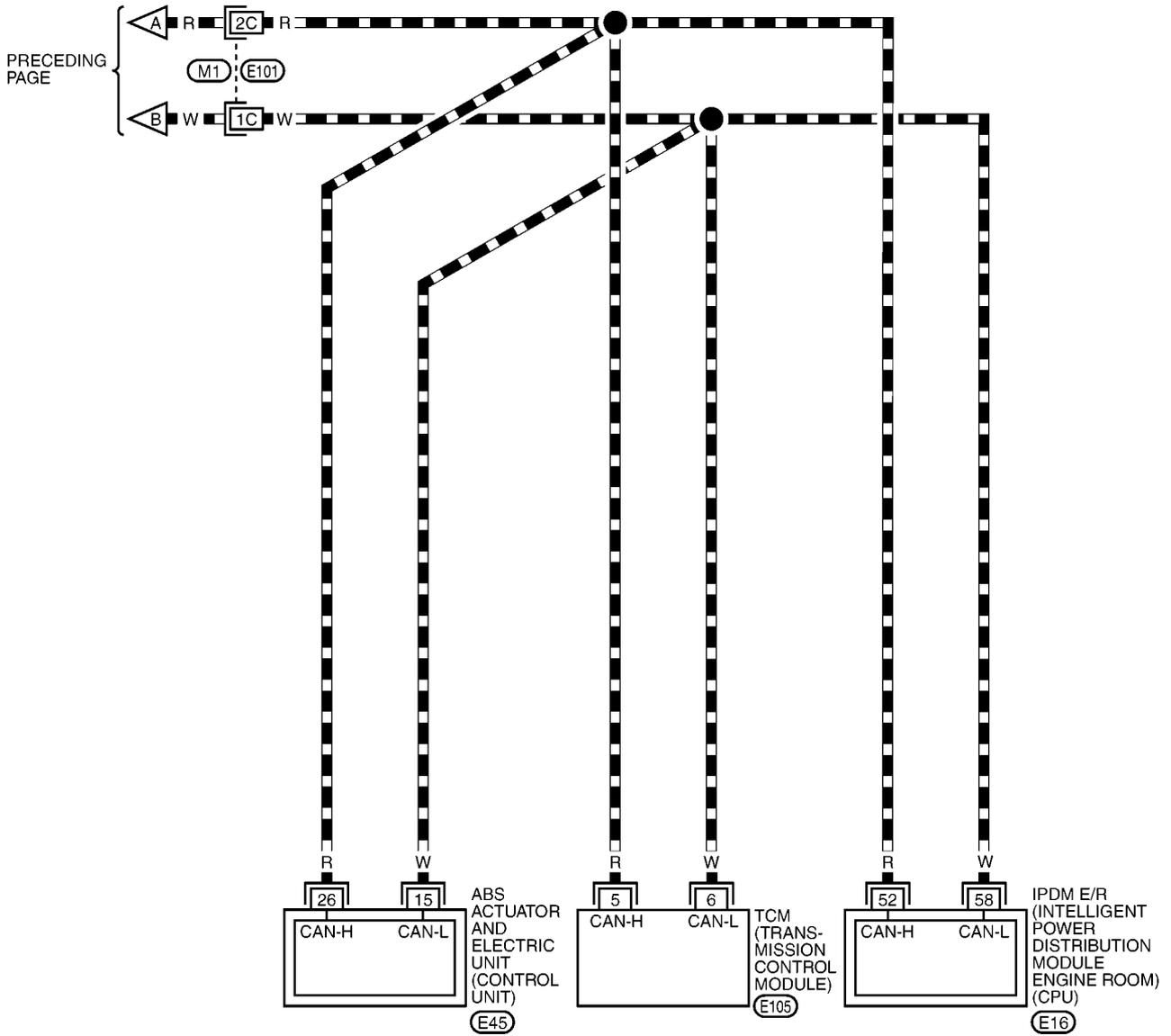


REFER TO THE FOLLOWING.
 (M1) -SUPER MULTIPLE JUNCTION (SMJ)
 (E49) -ELECTRICAL UNITS

MKWA0792E

LAN-CAN-04

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

CAN SYSTEM (TYPE 2)

[CAN]

EKS00810

Work Flow

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

(Example)

NISSAN			
CONSULT-II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY

SELECT SYSTEM				
ENGINE				
A/T				
ABS				
AIR BAG				
BCM				
METER A/C AMP				
		BACK	LIGHT	COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE				
WORK SUPPORT				
SELF-DIAG RESULTS				
DATA MONITOR				
DATA MONITOR (SPEC)				
CAN DIAG SUPPORT MNTR				
ACTIVE TEST				
Scroll Down				
		BACK	LIGHT	COPY

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]	0		
F.F.DATA			
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE				
WORK SUPPORT				
SELF-DIAG RESULTS				
DATA MONITOR				
DATA MONITOR (SPEC)				
CAN DIAG SUPPORT MNTR				
ACTIVE TEST				
Scroll Down				
		BACK	LIGHT	COPY

CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSNTR	
INITIAL DIAG	OK		
TRANSMIT DIAG	OK		
TCM	OK		
VDC/TCS/ABS	OK		
METER/M&A	OK		
ICC	UNKWN		
BCM/SEC	OK		
IPDM E/R	OK		
AWD/4WD/e4WD	UNKWN		
PRINT			Scroll Down
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to [LAN-57, "CHECK SHEET"](#) .
- Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to [LAN-57, "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 “CAN DIAG SUPPORT MNTR” items which are not indicated in check sheet table.

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LAN

CAN SYSTEM (TYPE 2)

[CAN]

6. Convert "v" mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Comparison table

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

Convert

MKIB1683E

7. According to the check sheet results (example), start inspection. Refer to [LAN-59, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 2)

[CAN]

CHECK SHEET

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Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Comparison table

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

Symptoms:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 2)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
EPS
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
A/T
DATA MONITOR

Attach copy of
IPDM E/R
DATA MONITOR

MKIB0288E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

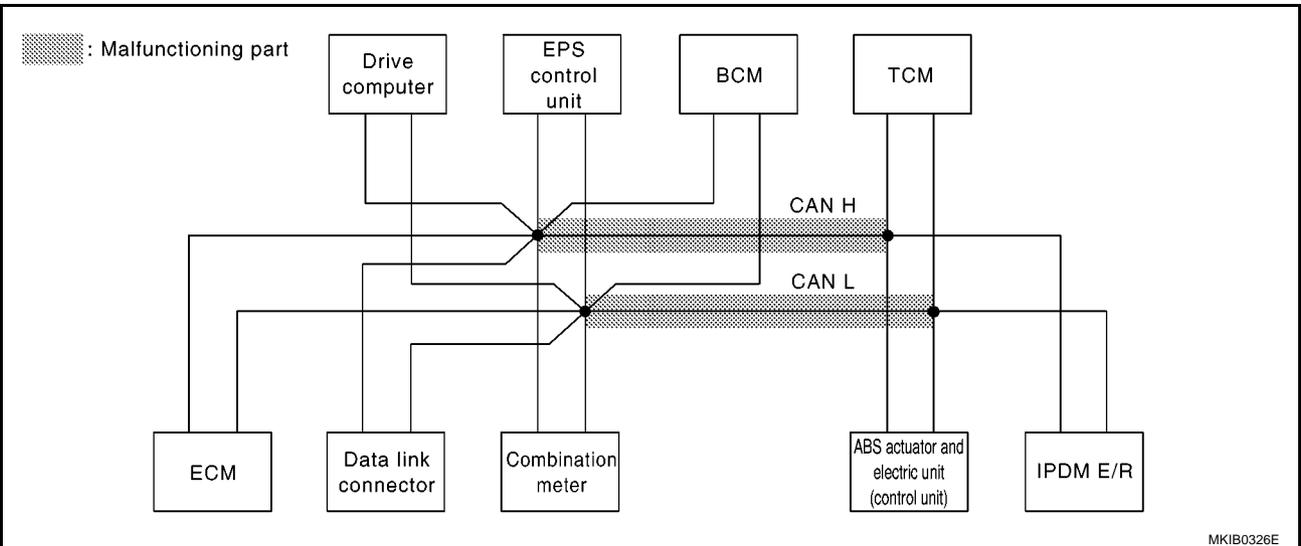
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-69, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1624E



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CAN SYSTEM (TYPE 2)

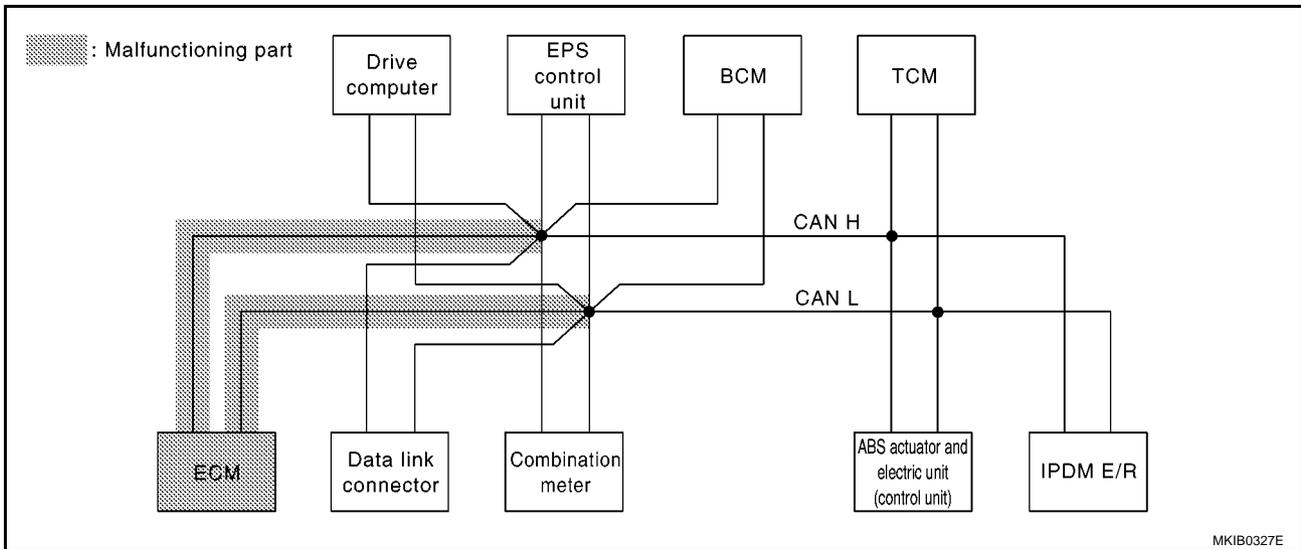
[CAN]

Case 2

Check ECM circuit. Refer to [LAN-70, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1625E



MKIB0327E

CAN SYSTEM (TYPE 2)

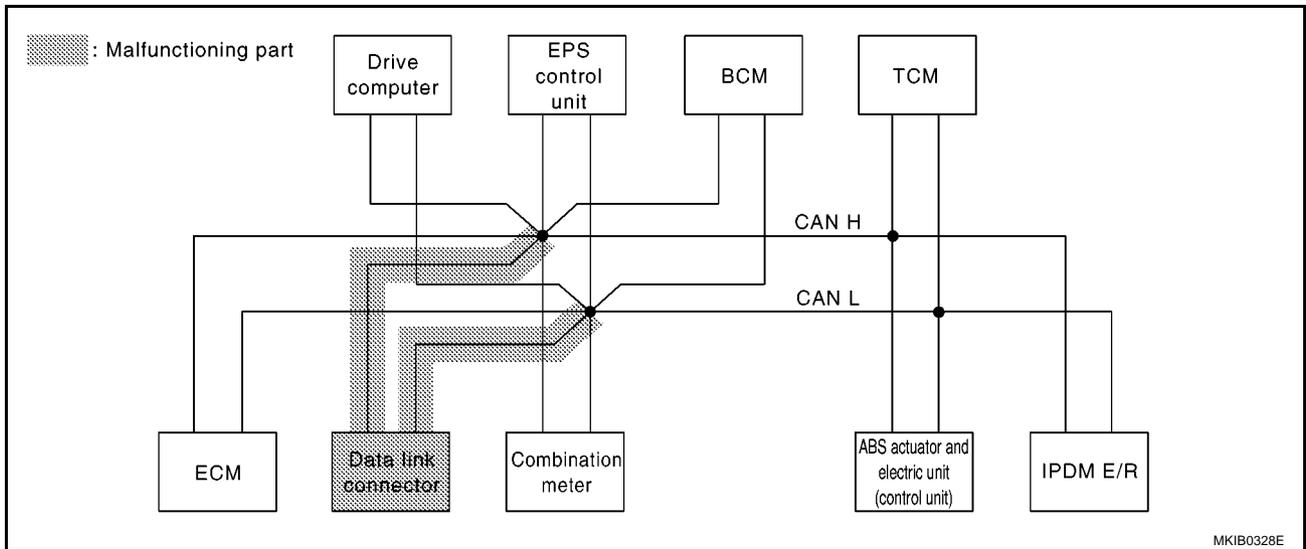
[CAN]

Case 3

Check data link connector circuit. Refer to [LAN-71, "Data Link Connector Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1626E



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CAN SYSTEM (TYPE 2)

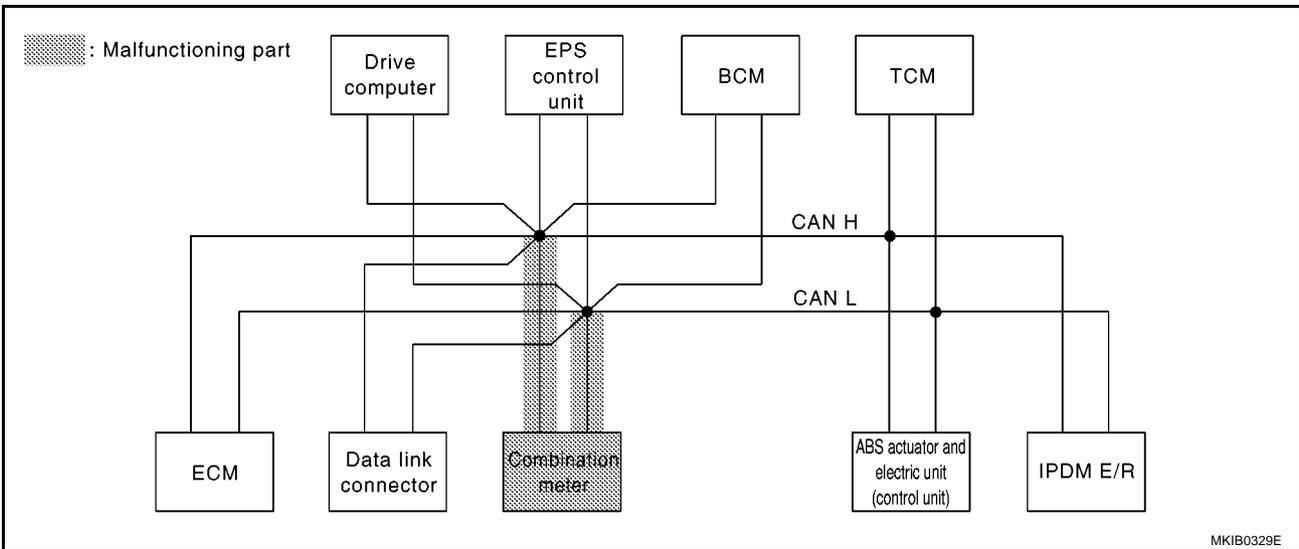
[CAN]

Case 4

Check combination meter circuit. Refer to [LAN-72, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1627E



MKIB0329E

CAN SYSTEM (TYPE 2)

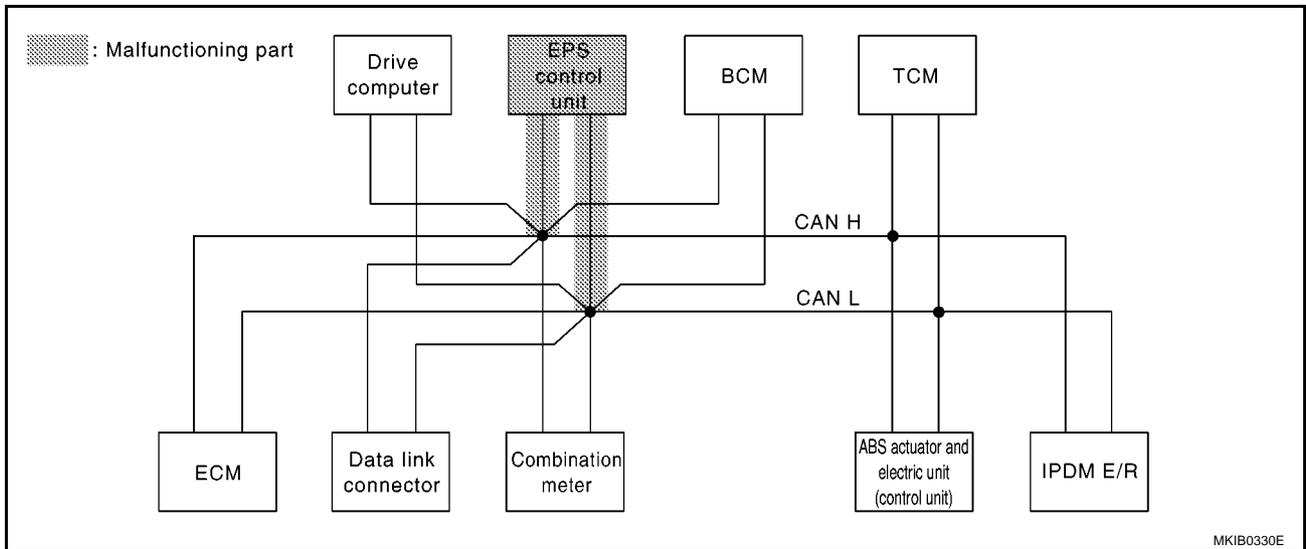
[CAN]

Case 5

Check EPS control unit circuit. Refer to [LAN-73, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

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CAN SYSTEM (TYPE 2)

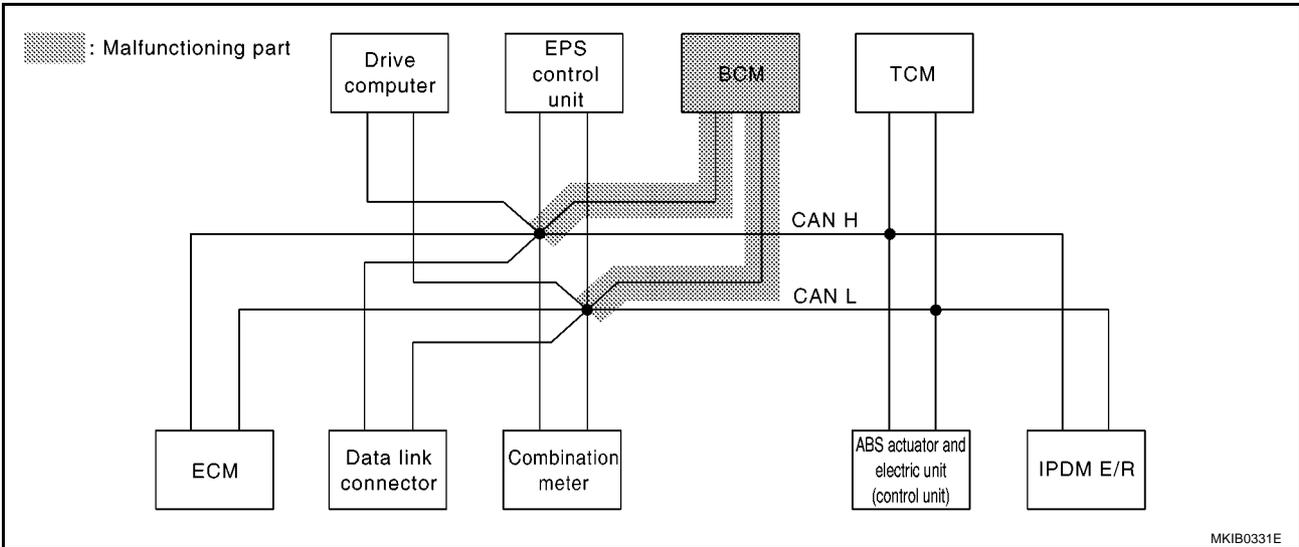
[CAN]

Case 6

Check BCM circuit. Refer to [LAN-74, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1629E



MKIB0331E

CAN SYSTEM (TYPE 2)

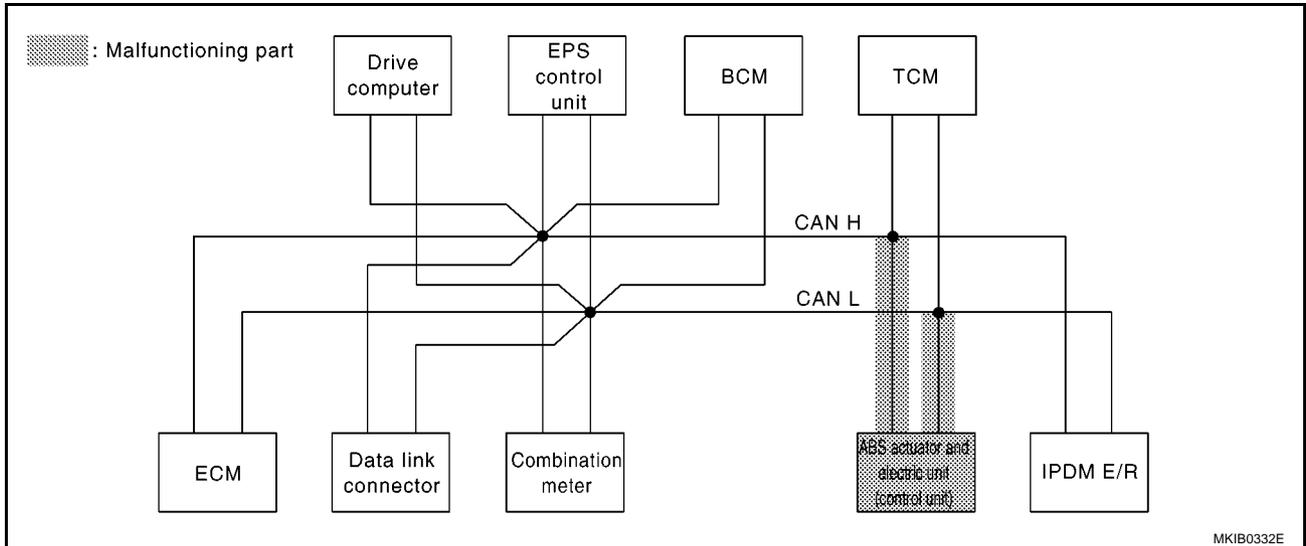
[CAN]

Case 7

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-75, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1630E



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CAN SYSTEM (TYPE 2)

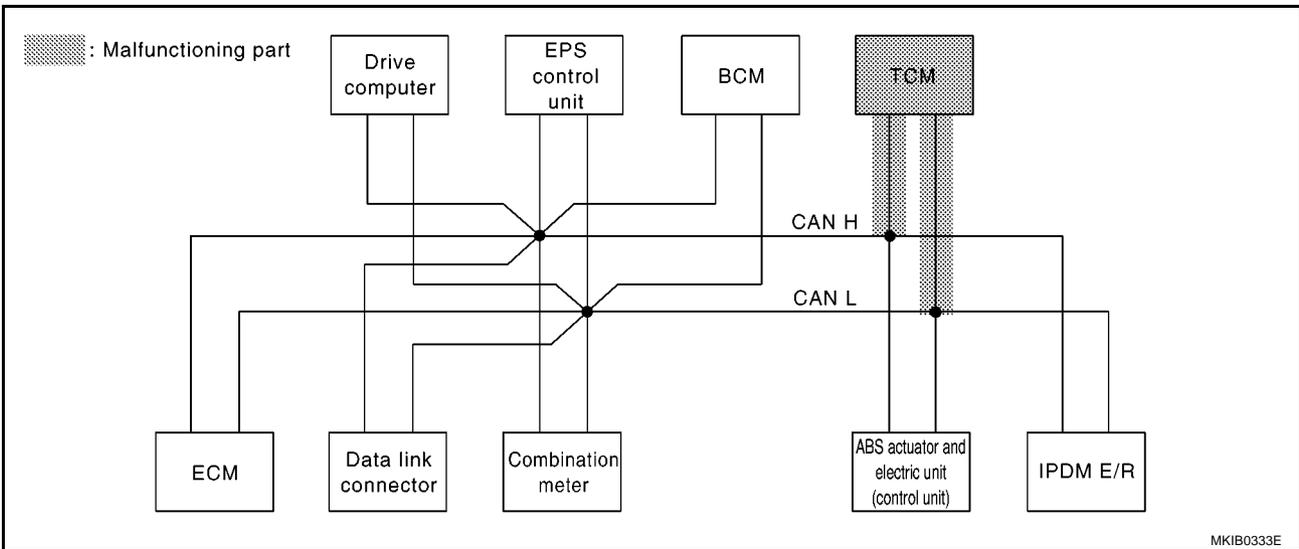
[CAN]

Case 8

Check TCM circuit. Refer to [LAN-76, "TCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1631E



MKIB0333E

CAN SYSTEM (TYPE 2)

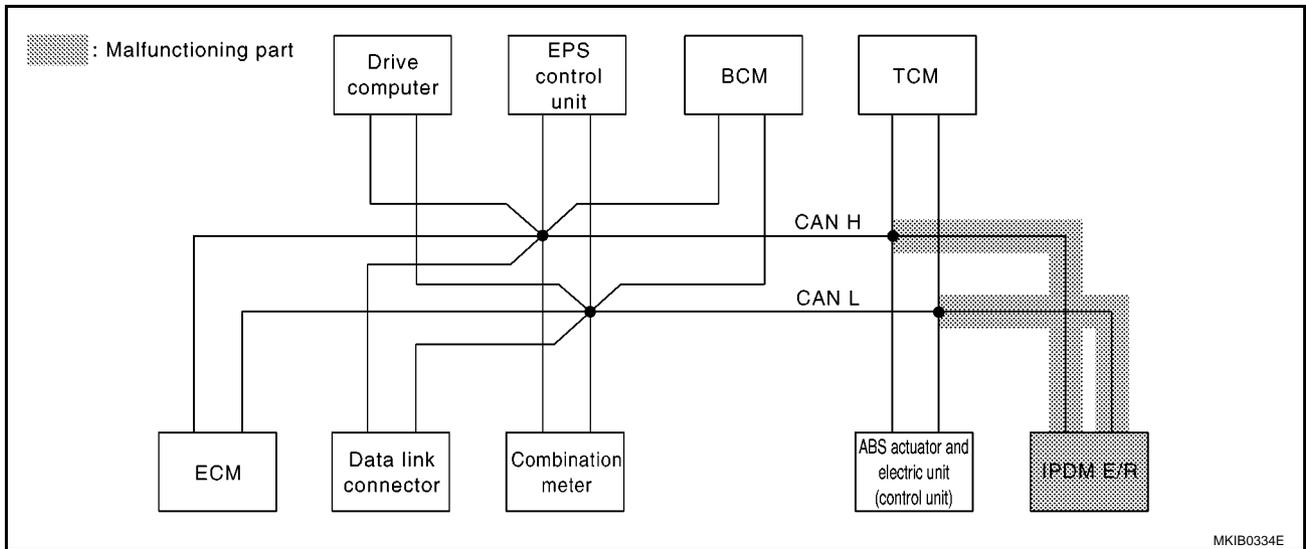
[CAN]

Case 9

Check IPDM E/R circuit. Refer to [LAN-77, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1632E



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LAN

CAN SYSTEM (TYPE 2)

[CAN]

Case 10

Check CAN communication circuit. Refer to [LAN-78, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1633E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-81, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1635E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-81, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB1634E

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS00811

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 M1
 - Harness connector E101

OK or NG

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

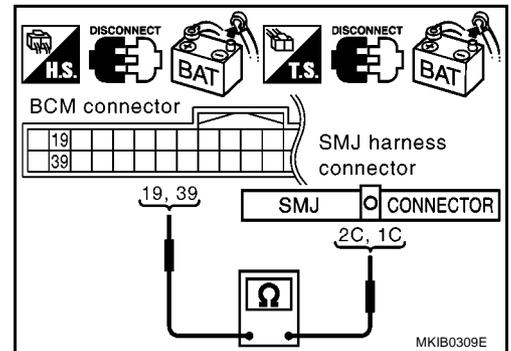
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



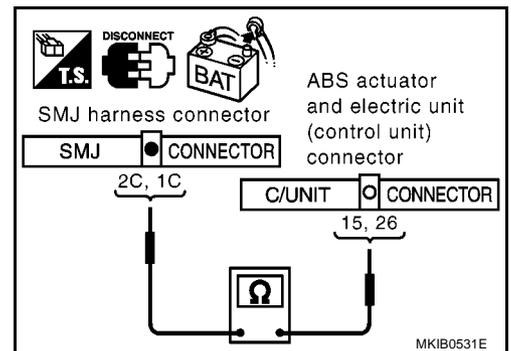
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.
1C (W) – 15 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-55, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

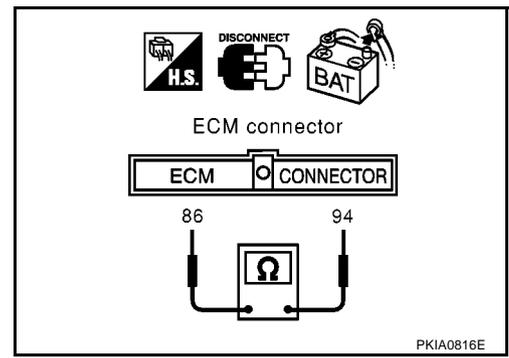
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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

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

OK or NG

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

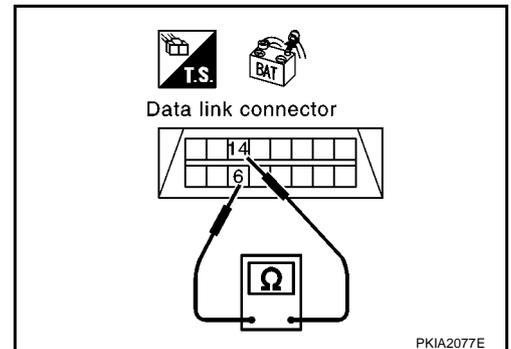
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-55, "Work Flow"](#).
- NG >> Repair harness between data link connector and combination meter



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Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

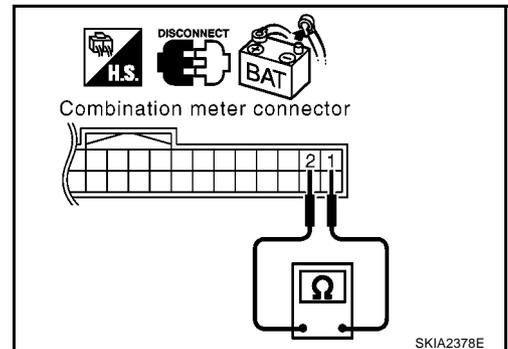
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



EPS Control Unit Circuit Check**1. CHECK CONNECTOR**

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

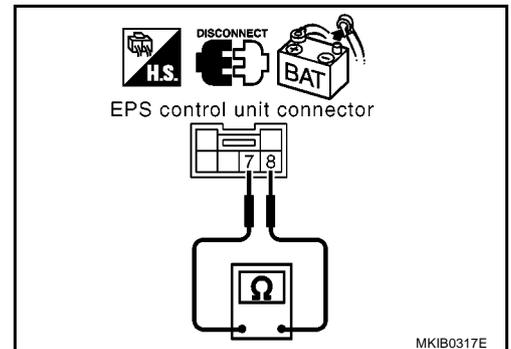
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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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.

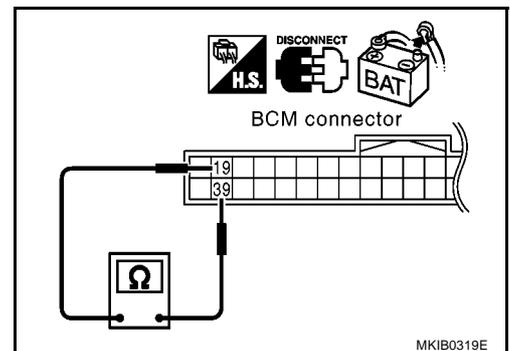
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00817

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.

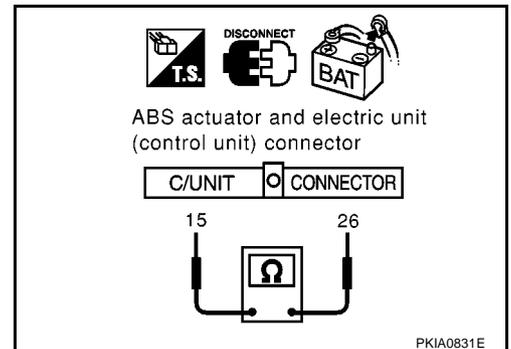
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

OK or NG

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

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TCM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

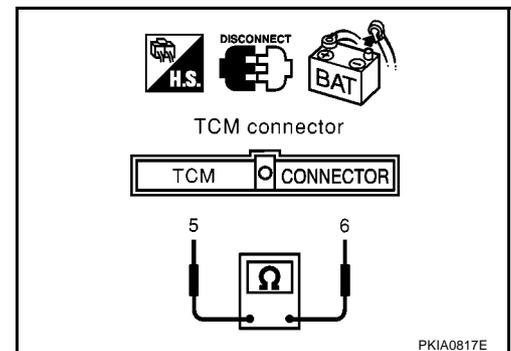
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

5 (R) – 6 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

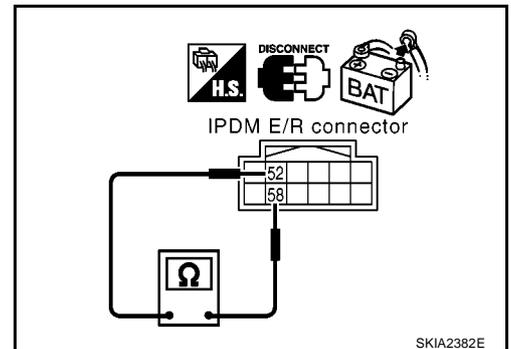
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

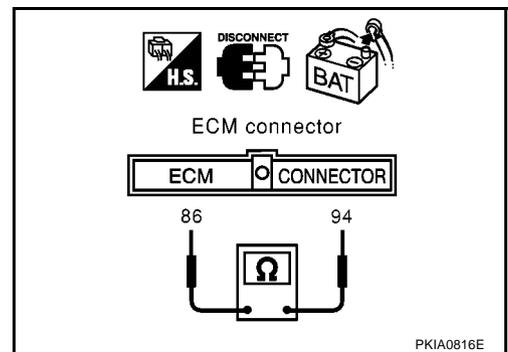
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

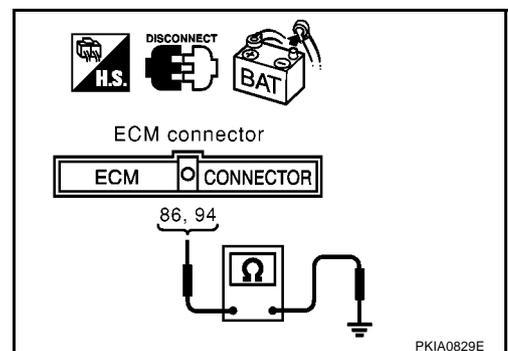
Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

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

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

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - TCM connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

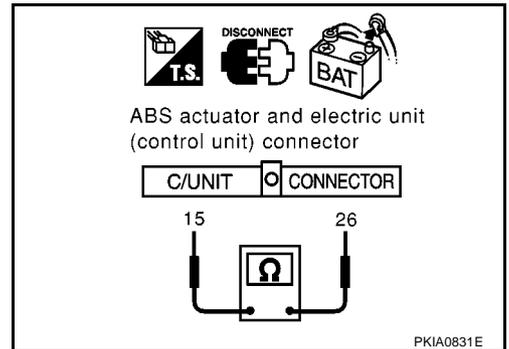
26 (R) – 15 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

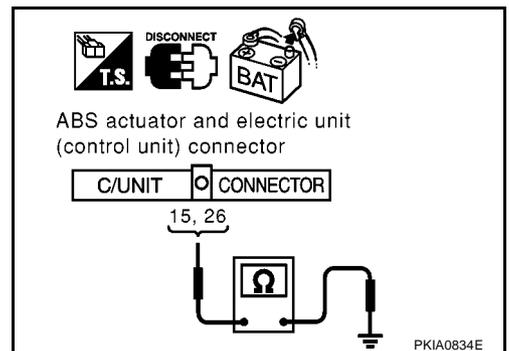
15 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

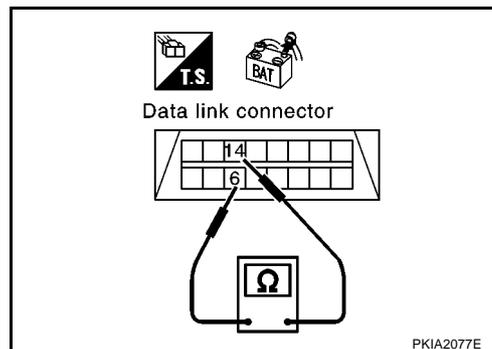
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM.



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

6 (R) – ground : Continuity should not exist.

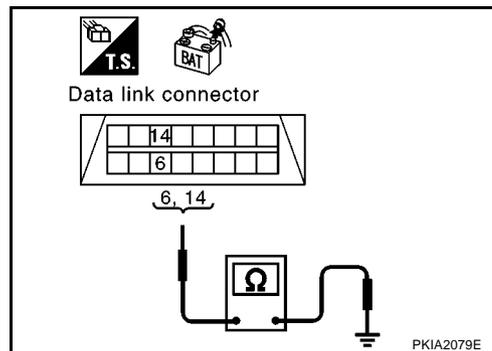
14 (W) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM.



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-81, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-55, "Work Flow"](#).

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

IPDM E/R Ignition Relay Circuit Check

EKS0081B

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

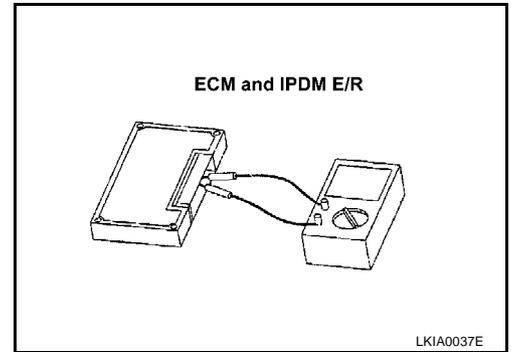
Component Inspection

EKS0081C

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 3)

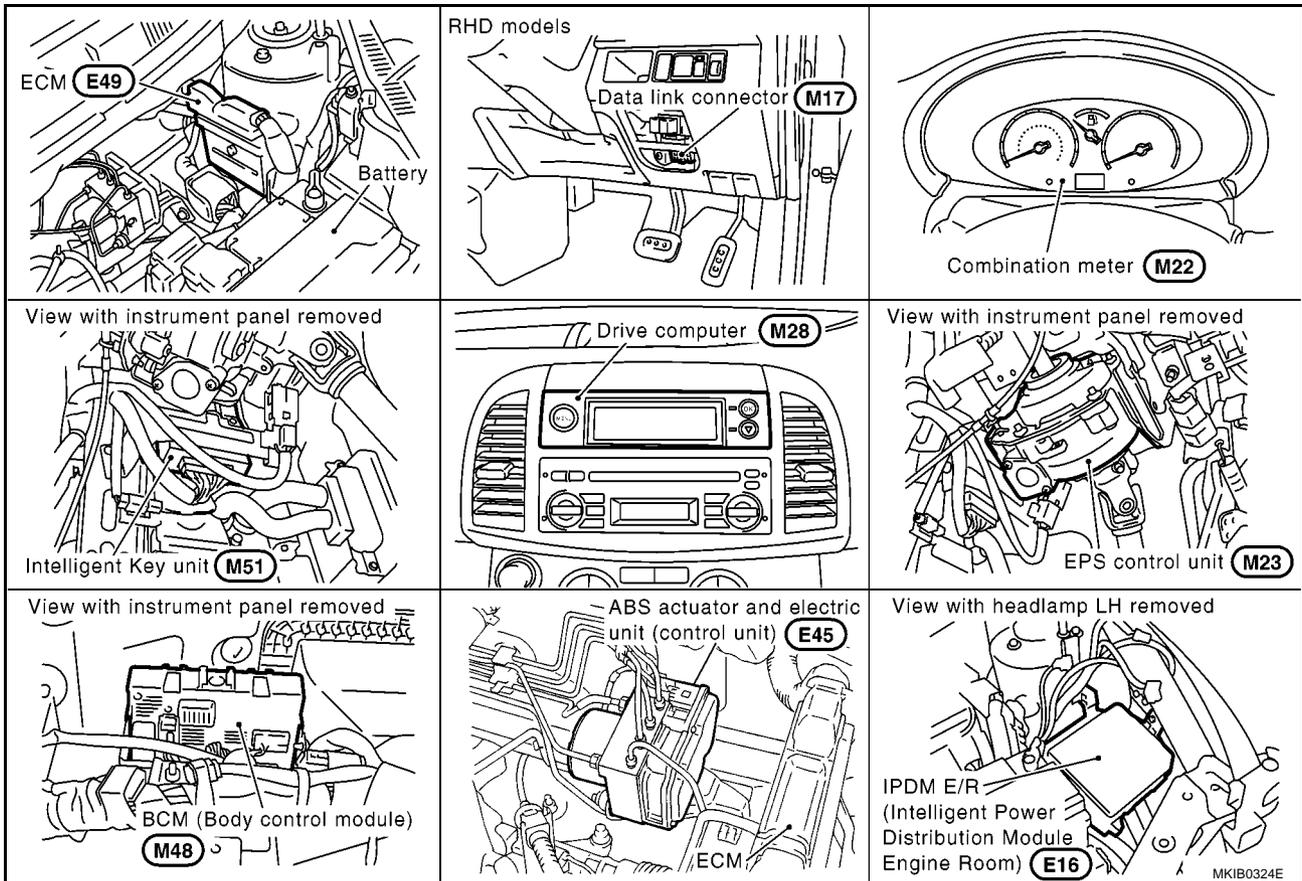
System Description

EKS0074L

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

EKS0074M



CAN SYSTEM (TYPE 3)

[CAN]

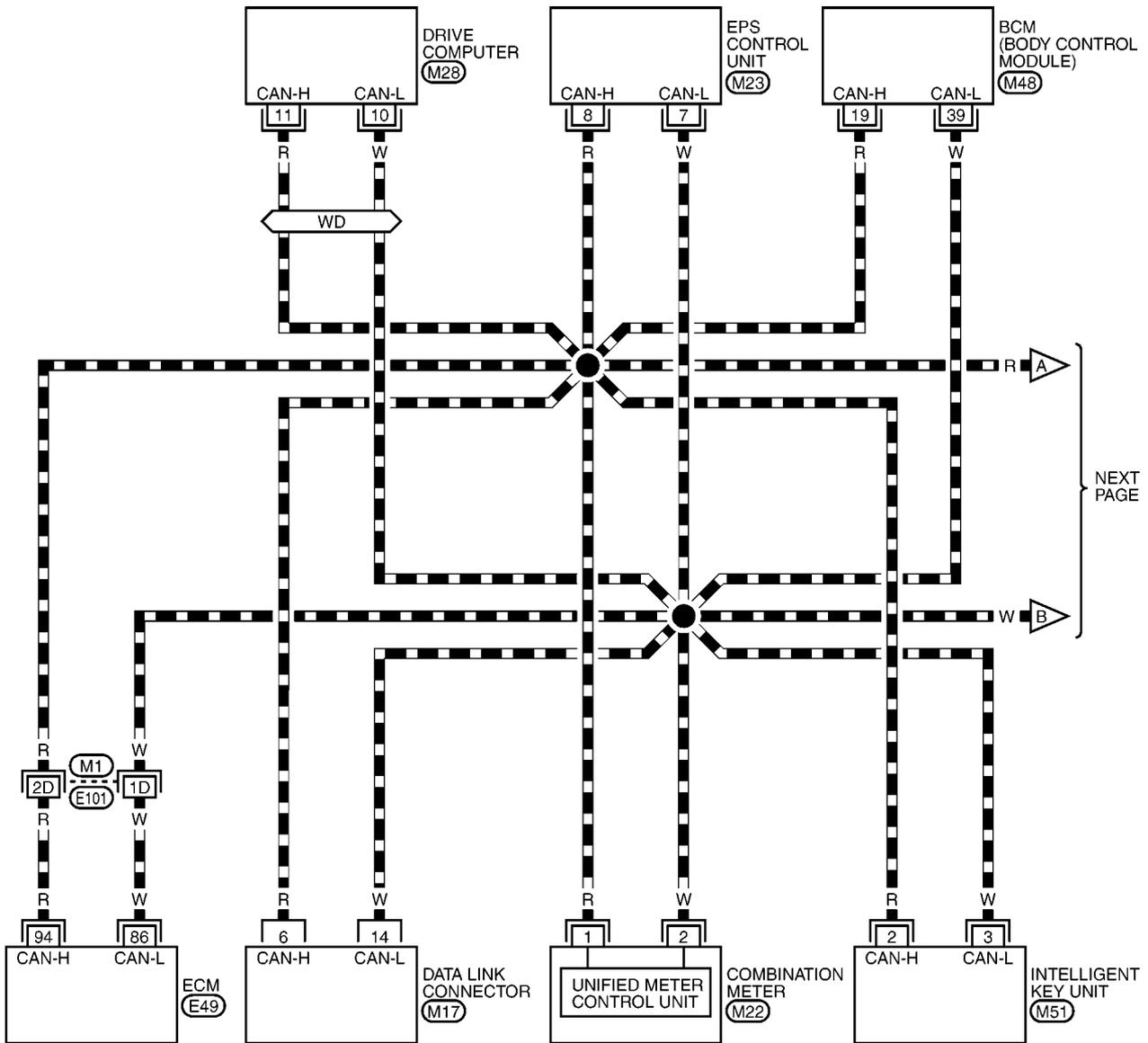
Wiring Diagram — CAN —

EKS007YF

LAN-CAN-05

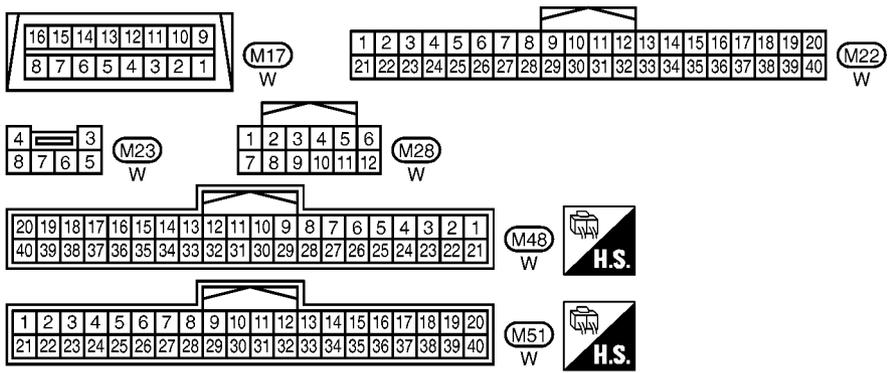
▬ : DATA LINE

WD : WITH DRIVE COMPUTER



NEXT PAGE

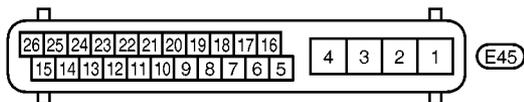
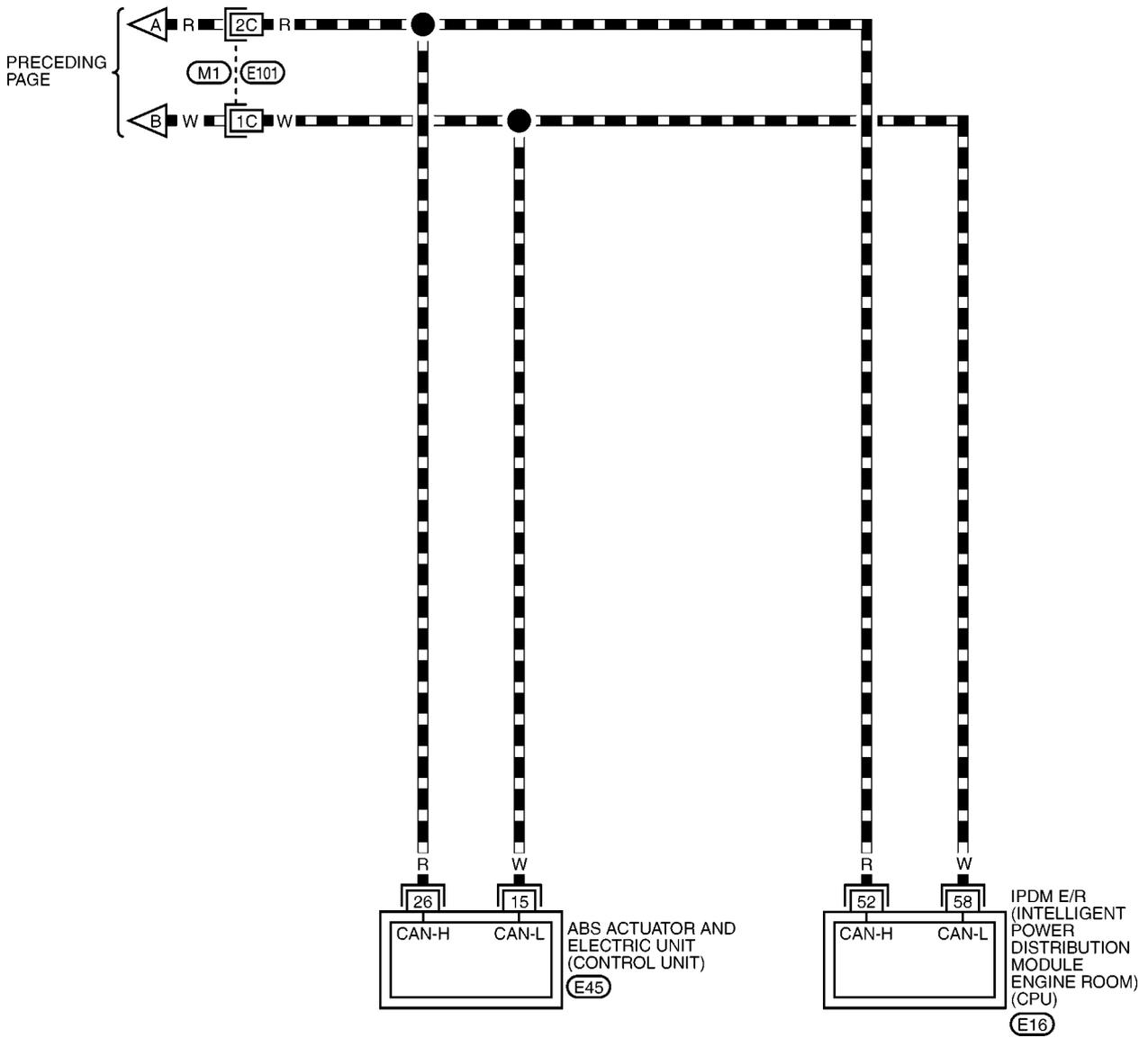
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REFER TO THE FOLLOWING.
 (M1) -SUPER MULTIPLE JUNCTION (SMJ)
 (E49) -ELECTRICAL UNITS

LAN-CAN-06

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

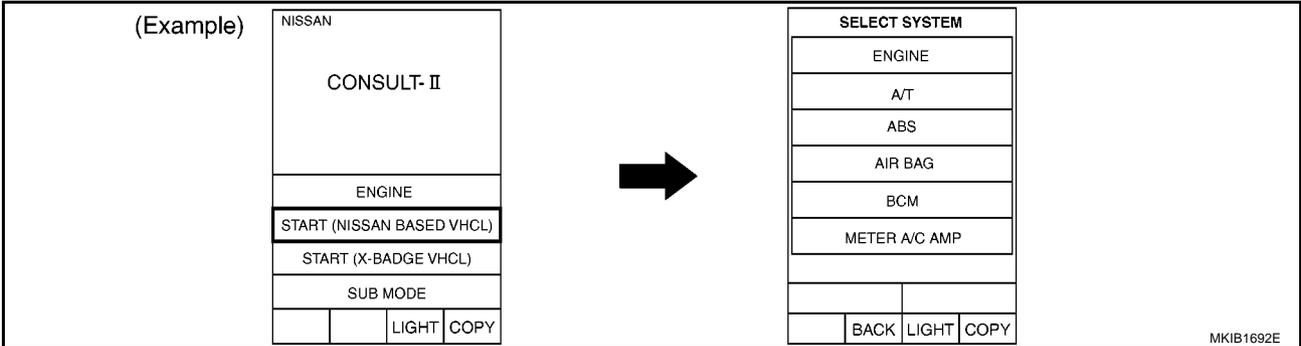
CAN SYSTEM (TYPE 3)

[CAN]

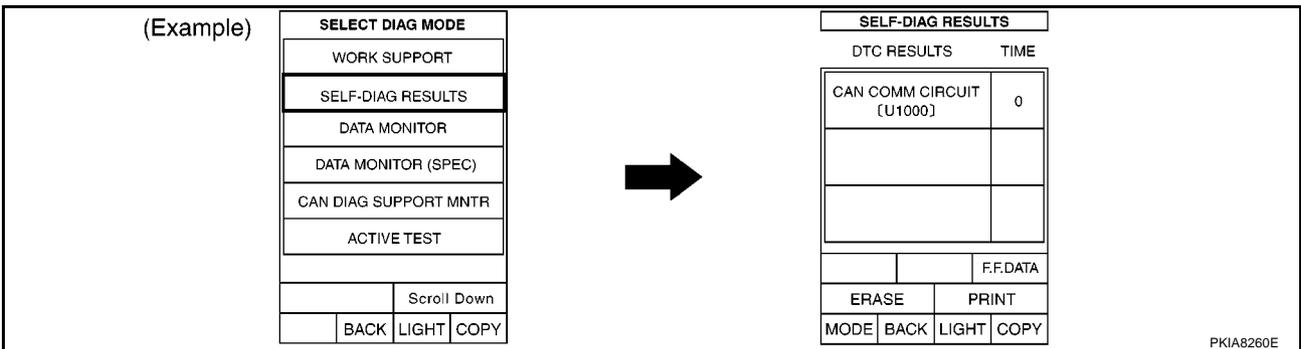
EKS0081D

Work Flow

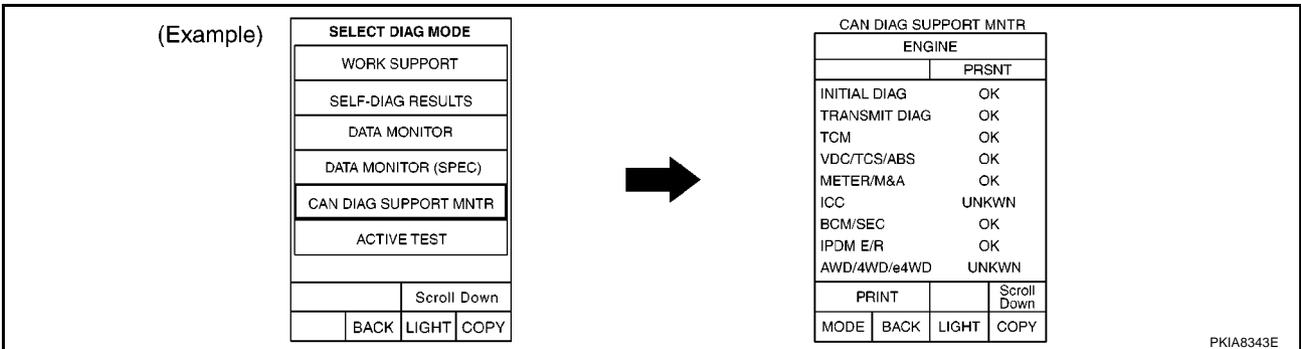
- When there are no indications of "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-87, "CHECK SHEET"](#) .
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWVN" in the check sheet table. Refer to [LAN-87, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 3)

[CAN]

6. Convert "v" mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis							
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Convert

MKIB1684E

7. According to the check sheet results (example), start inspection. Refer to [LAN-89, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 3)

[CAN]

CHECK SHEET

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Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Comparison table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Symptoms:

Attach copy of
SELECT SYSTEM

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SELECT SYSTEM

CAN SYSTEM (TYPE 3)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS

Attach copy of
EPS
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
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DATA MONITOR

Attach copy of
INTELLIGENT KEY
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
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Attach copy of
ABS
DATA MONITOR

Attach copy of
IPDM
DATA MONITOR

MKIB0296E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

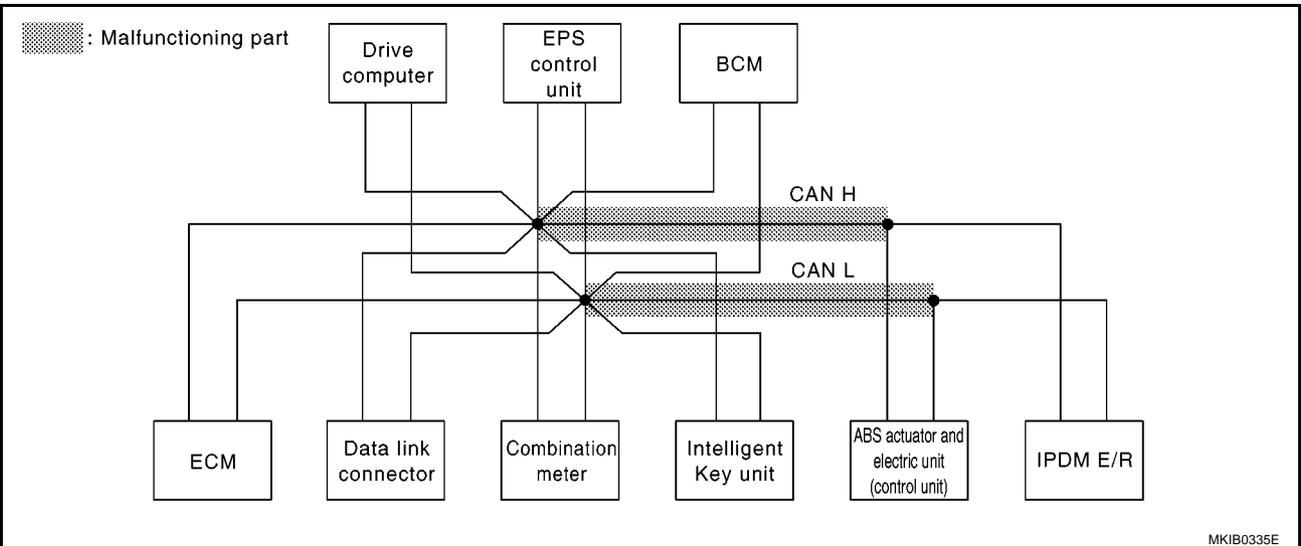
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-99, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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CAN SYSTEM (TYPE 3)

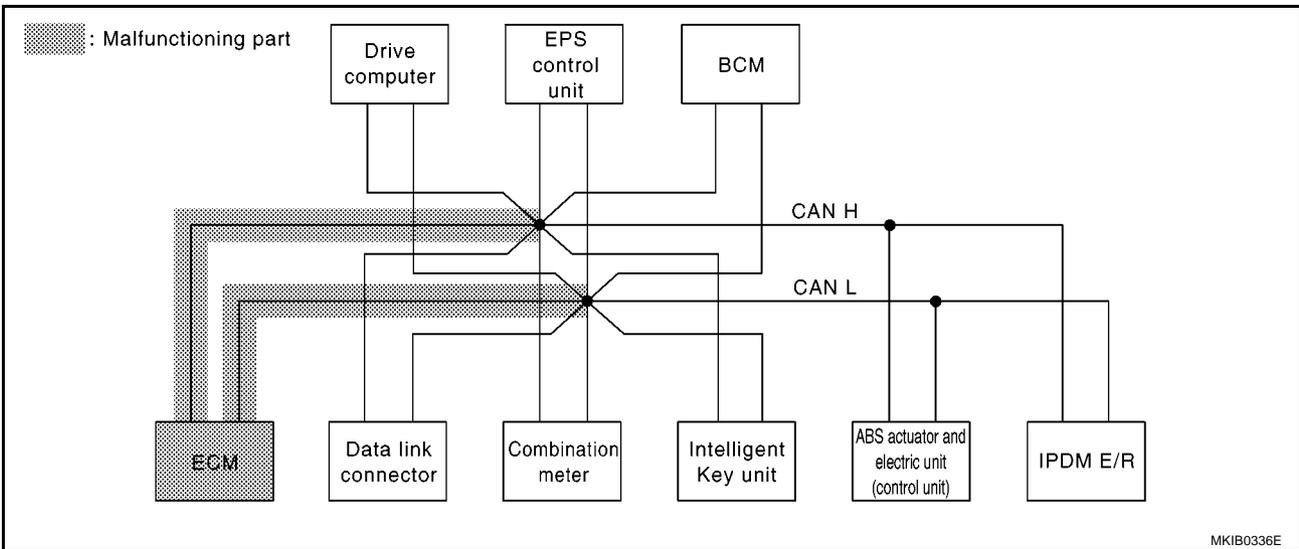
[CAN]

Case 2

Check ECM circuit. Refer to [LAN-100, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1 ✓	—	CAN CIRC 4	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✓	—	—	—	CAN CIRC 3	—	—

MKIB1637E



MKIB0336E

CAN SYSTEM (TYPE 3)

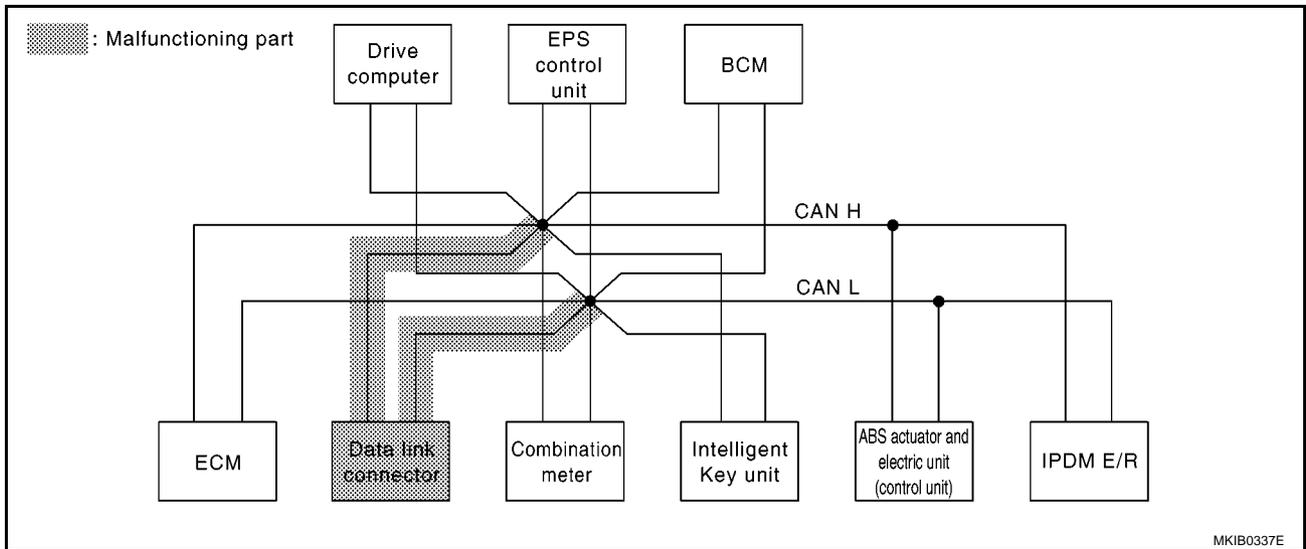
[CAN]

Case 3

Check data link connector circuit. Refer to [LAN-101, "Data Link Connector Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

MKIB1638E



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CAN SYSTEM (TYPE 3)

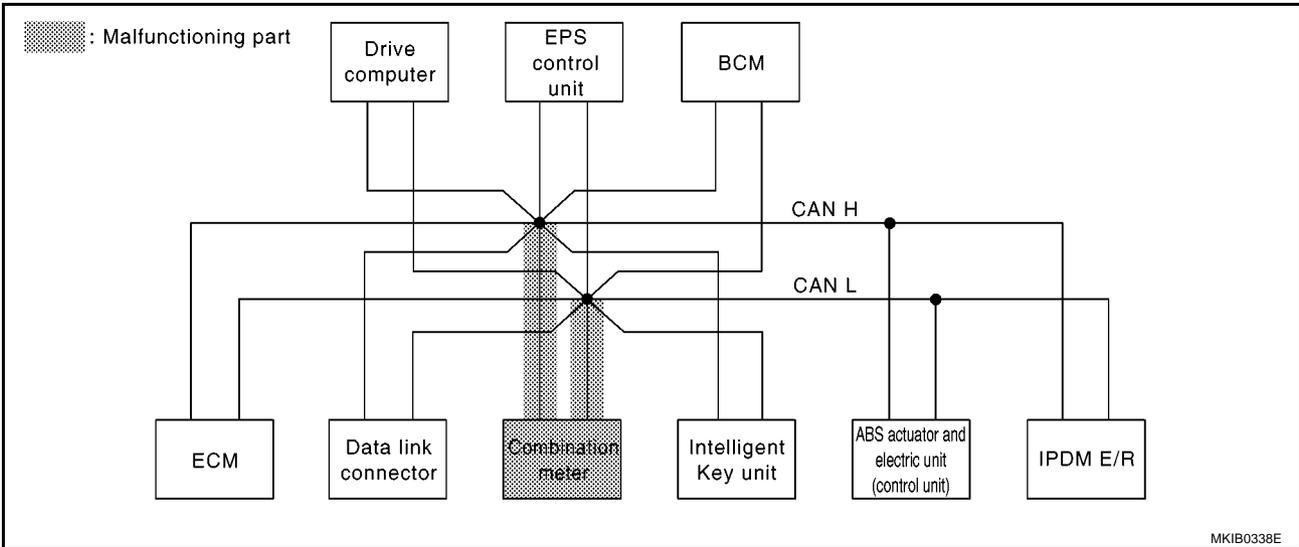
[CAN]

Case 4

Check combination meter circuit. Refer to [LAN-102, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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MKIB0338E

CAN SYSTEM (TYPE 3)

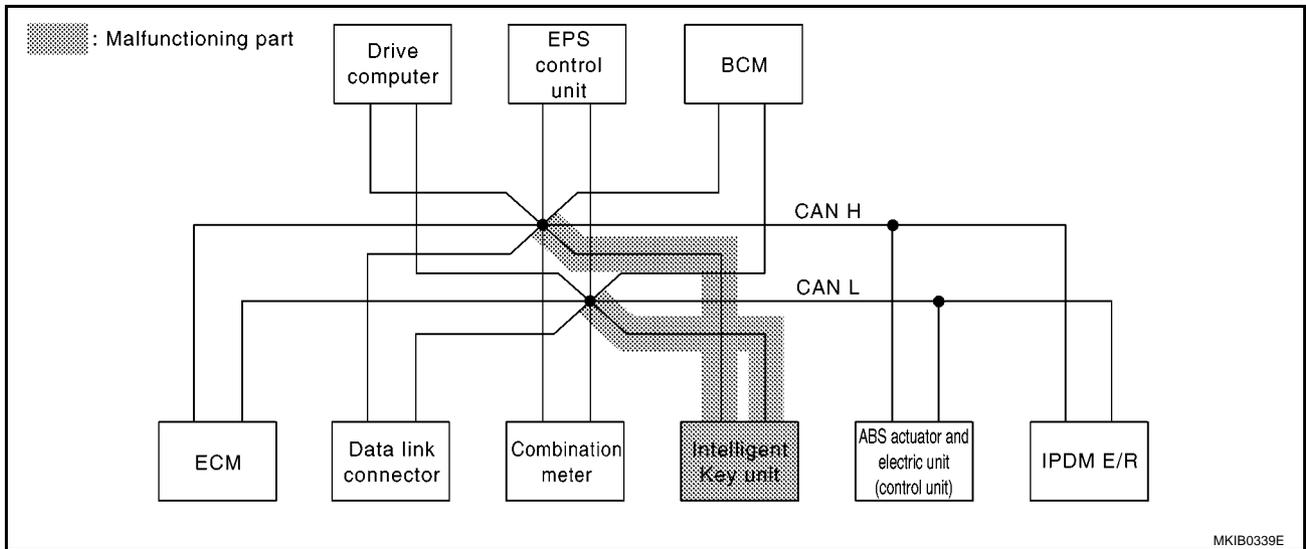
[CAN]

Case 5

Check Intelligent Key unit circuit. Refer to [LAN-103, "Intelligent Key Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5 ✓	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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CAN SYSTEM (TYPE 3)

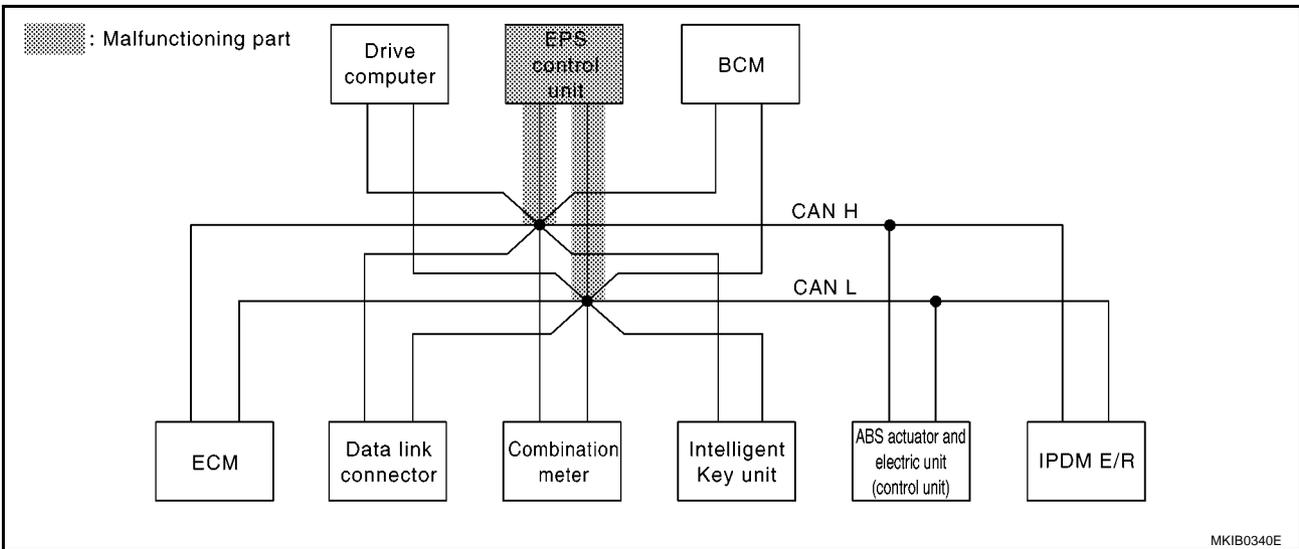
[CAN]

Case 6

Check EPS control unit circuit. Refer to [LAN-104, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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MKIB0340E

CAN SYSTEM (TYPE 3)

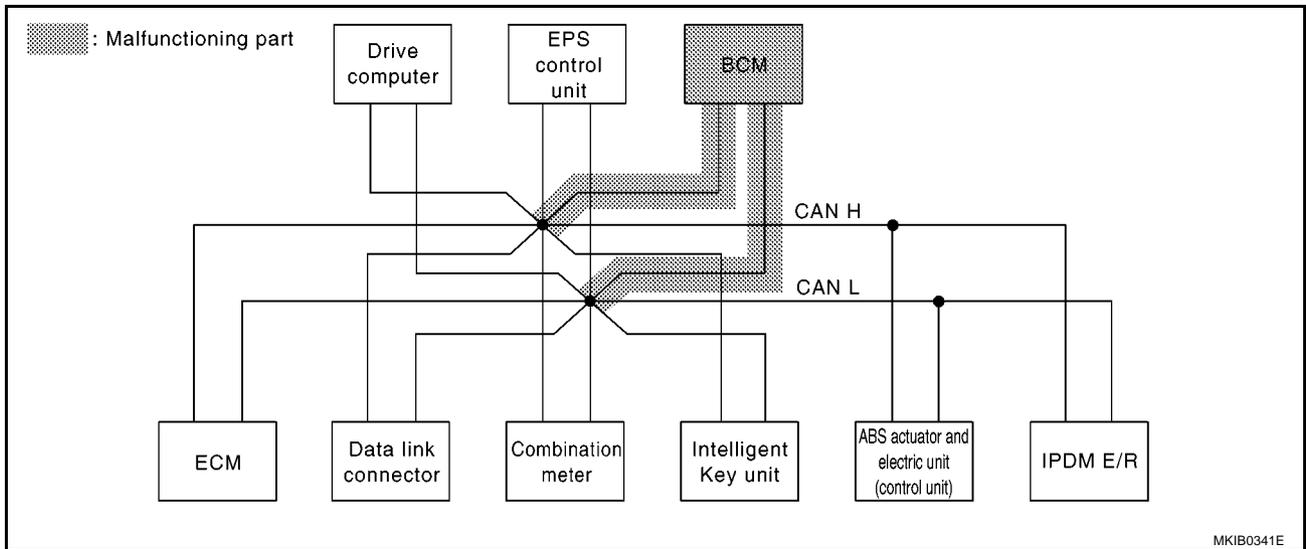
[CAN]

Case 7

Check BCM circuit. Refer to [LAN-105, "BCM Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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CAN SYSTEM (TYPE 3)

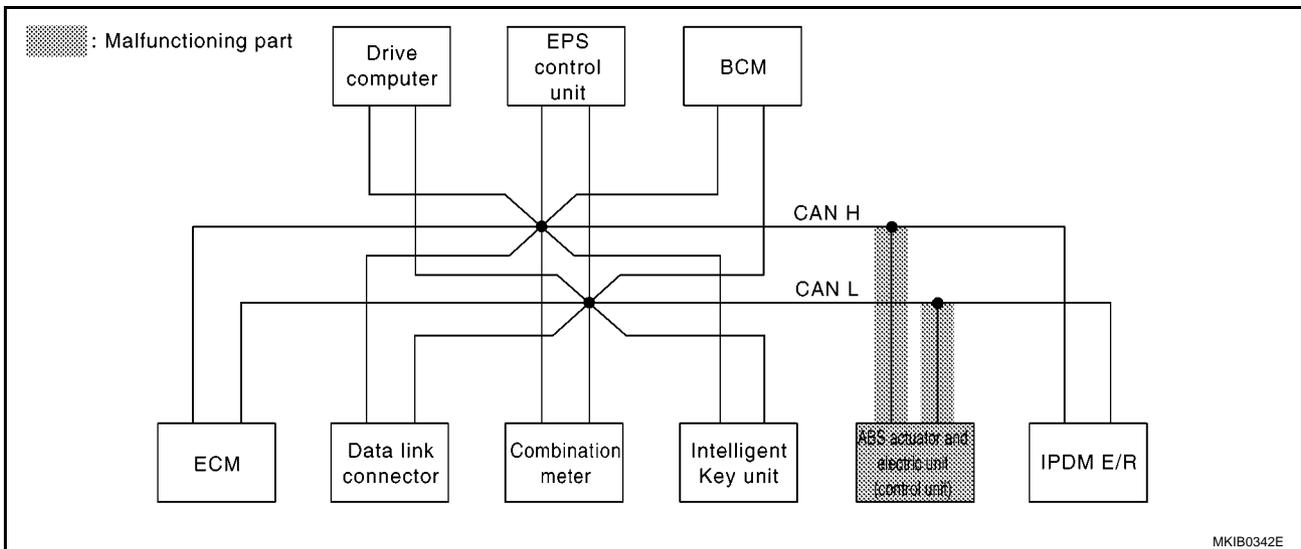
[CAN]

Case 8

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

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

MKIB1643E



MKIB0342E

CAN SYSTEM (TYPE 3)

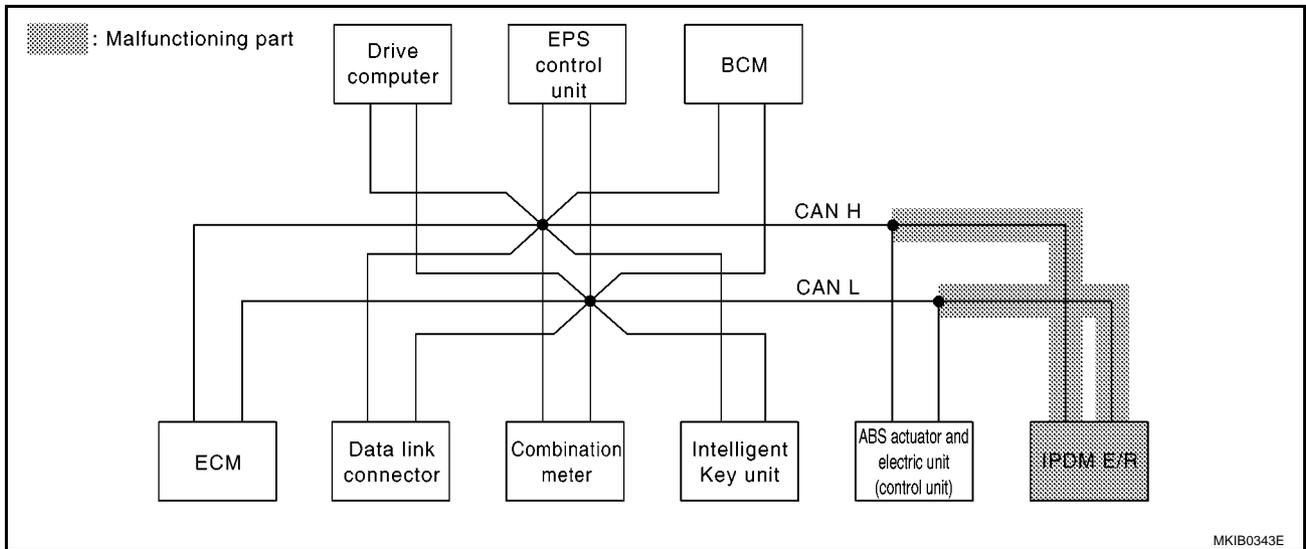
[CAN]

Case 9

Check IPDM E/R circuit. Refer to [LAN-107, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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CAN SYSTEM (TYPE 3)

[CAN]

Case 10

Check CAN communication circuit. Refer to [LAN-108, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1 ✓	—	CAN CIRC 4 ✓	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1 ✓	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1 ✓	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

MKIB1645E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-111, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✓	—	—	—	CAN CIRC 3	—	—

MKIB1647E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-111, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

MKIB1646E

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS0081E

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 M1
 - Harness connector E101

OK or NG

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

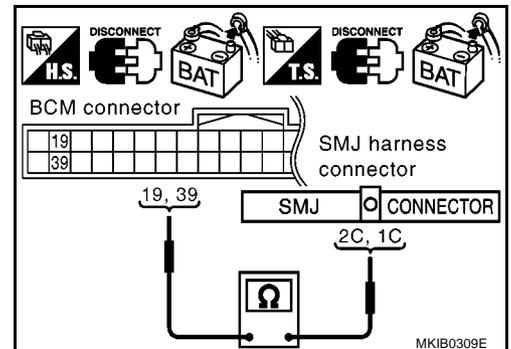
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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

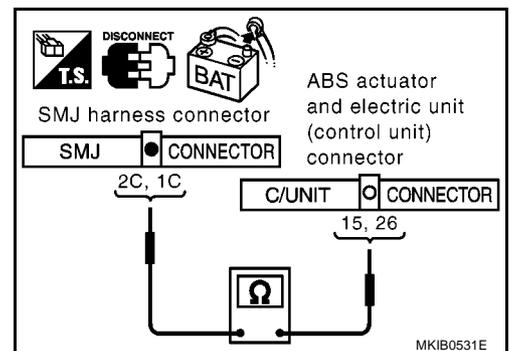
**3. CHECK HARNESS FOR OPEN CIRCUIT**

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.
1C (W) – 15 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-85, "Work Flow"](#) .
 NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

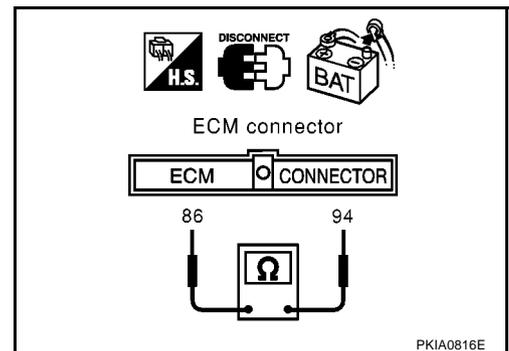
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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

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

OK or NG

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

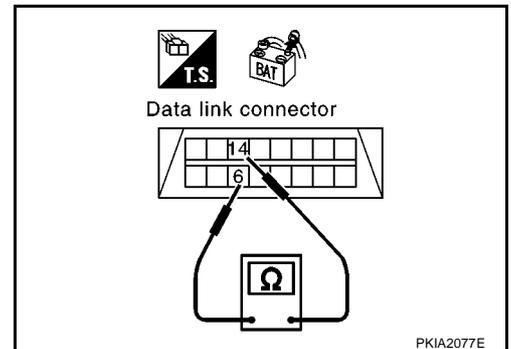
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-85, "Work Flow"](#).
- NG >> Repair harness between data link connector and combination meter



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Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

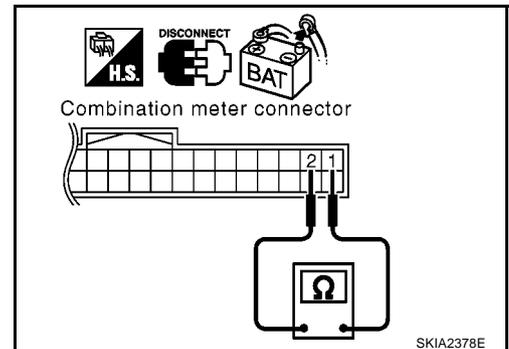
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



Intelligent Key Unit Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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.

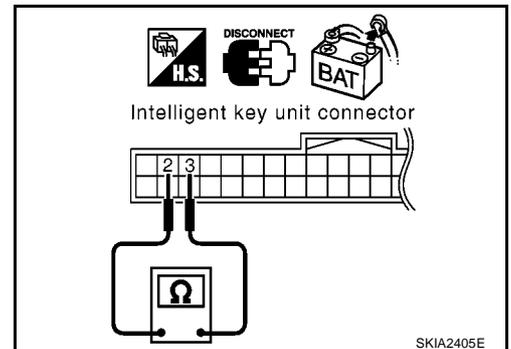
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace Intelligent Key unit.
 NG >> Repair harness between Intelligent Key unit and data link connector.



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EPS Control Unit Circuit Check

1. CHECK CONNECTOR

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

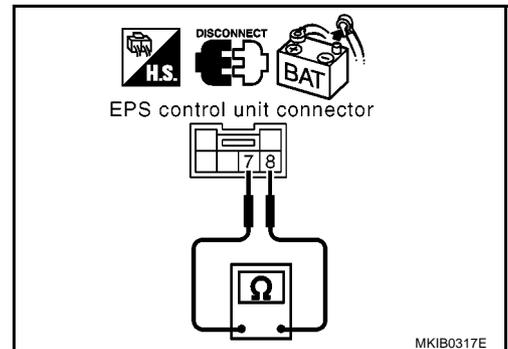
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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.

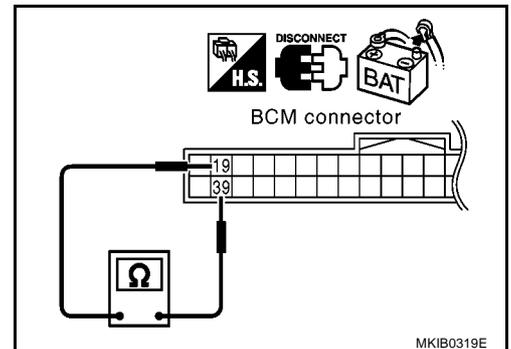
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0081L

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.

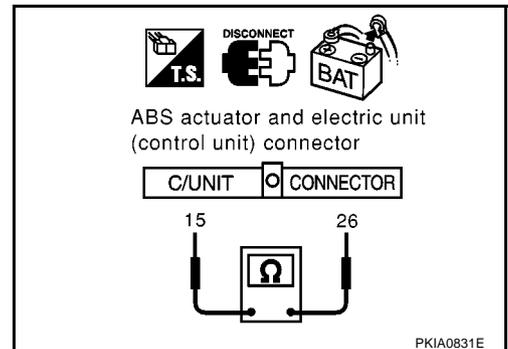
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

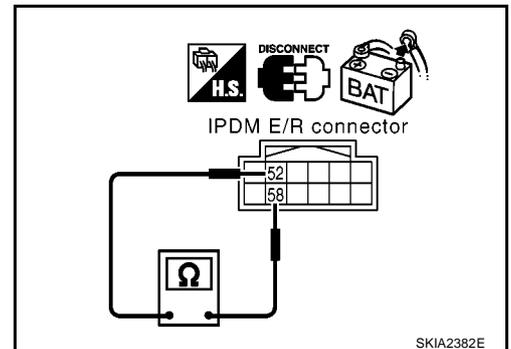
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).
 - ECM
 - Combination meter
 - Intelligent Key unit
 - Drive computer
 - EPS control unit
 - BCM
 - ABS actuator and electric unit (control unit)
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

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

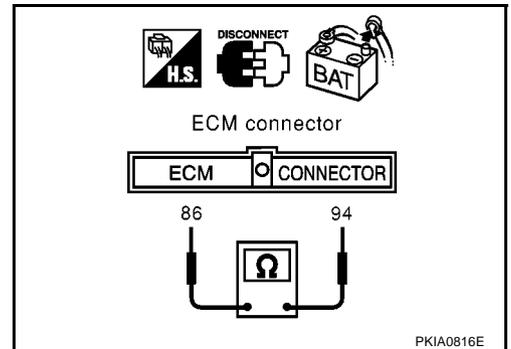
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

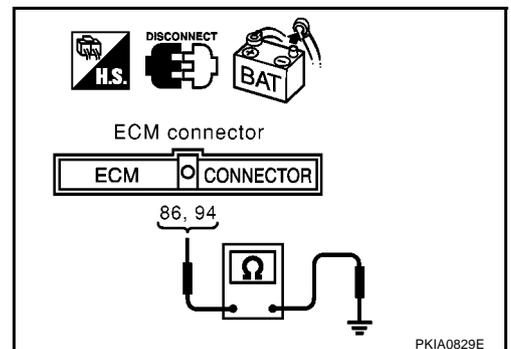
Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

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

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

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

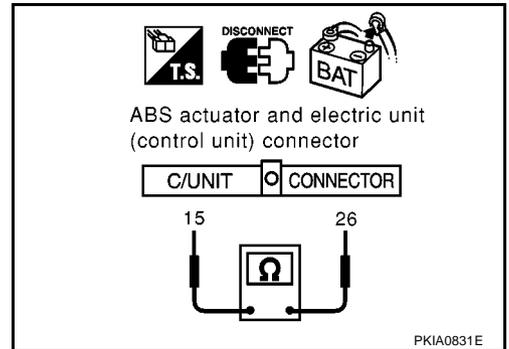
26 (R) – 15 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

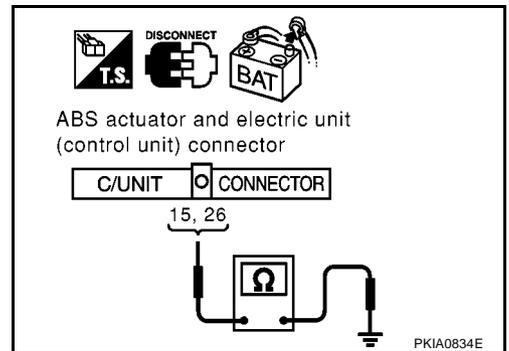
15 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



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6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

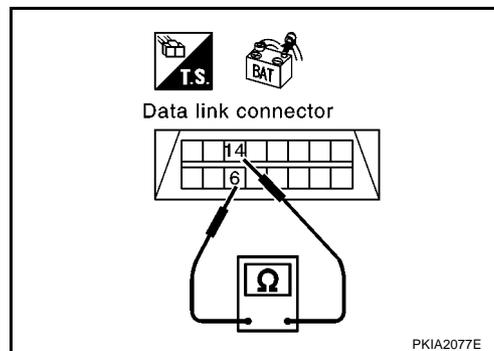
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

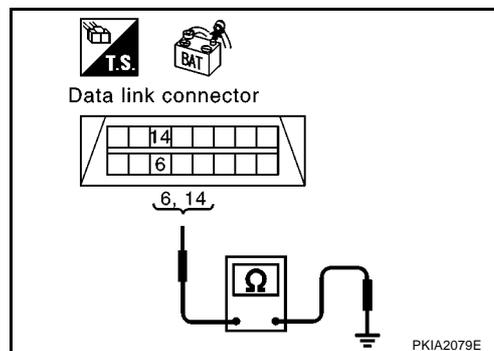
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-111, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-85, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00810

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

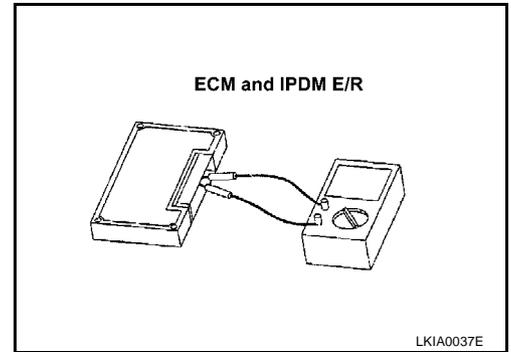
Component Inspection

EKS0081P

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 4)

PFP:23710

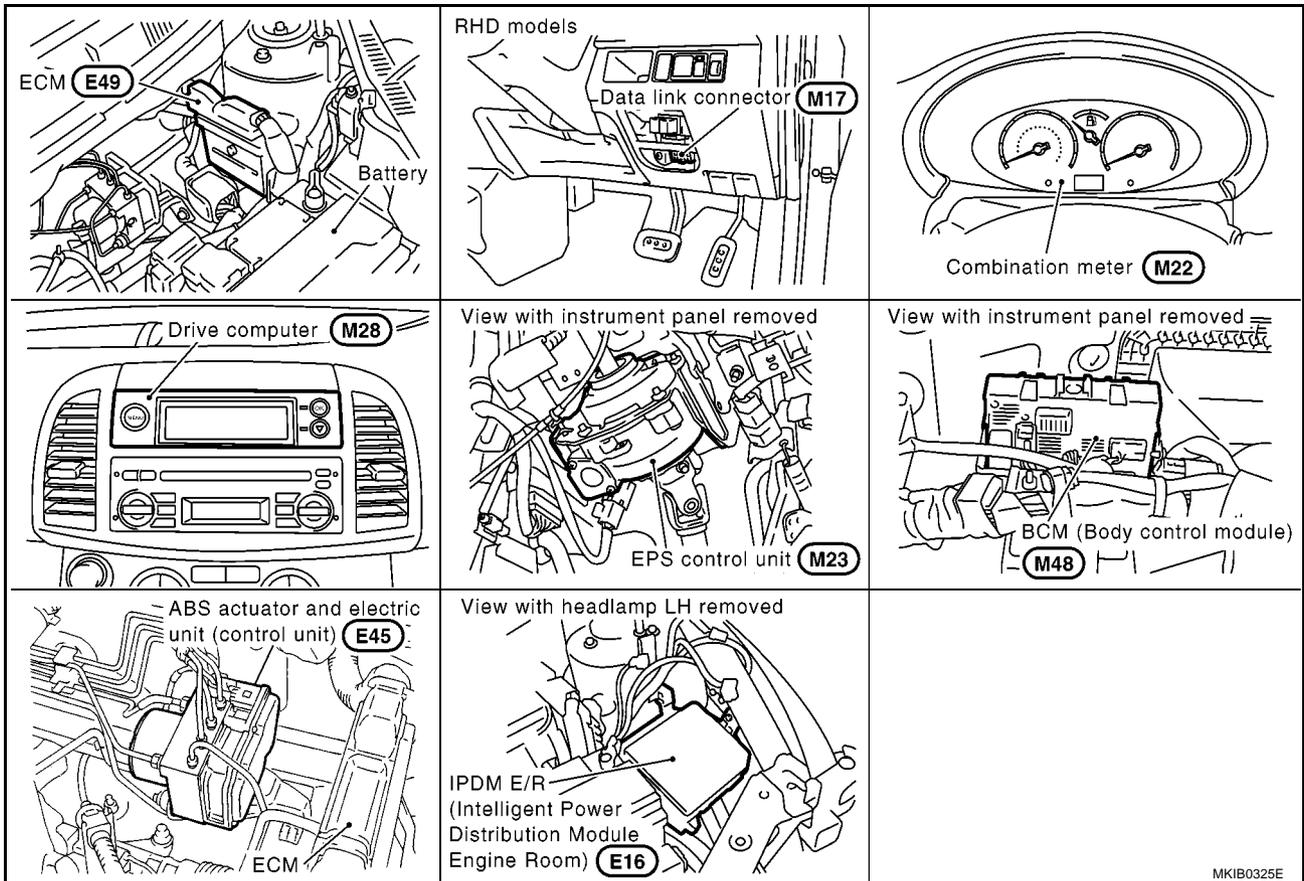
System Description

EKS00754

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

EKS00755



MKIB0325E

CAN SYSTEM (TYPE 4)

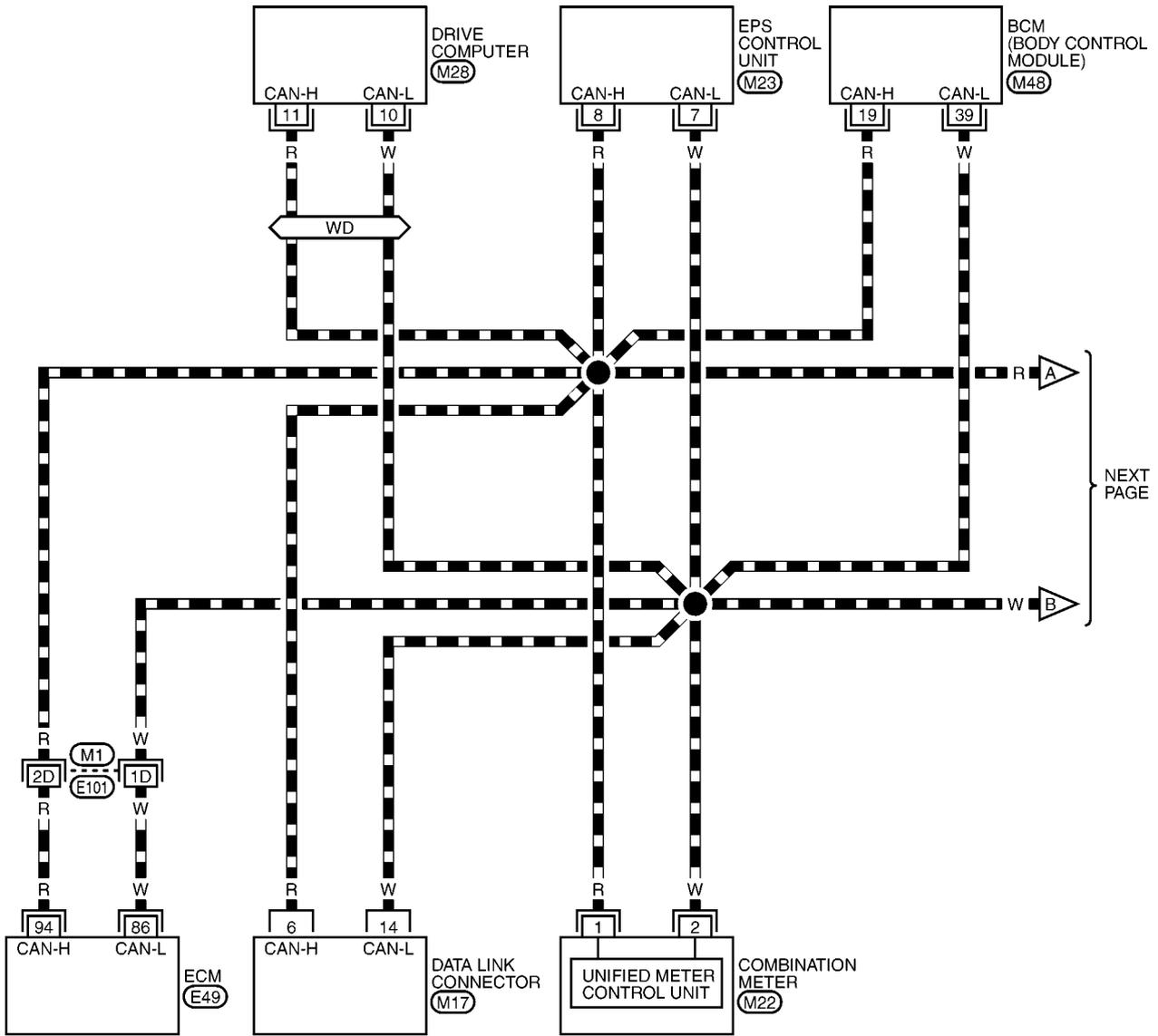
[CAN]

Wiring Diagram — CAN —

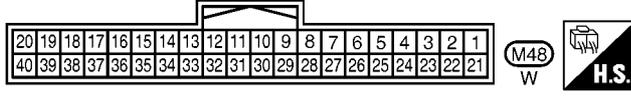
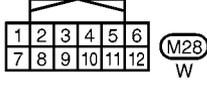
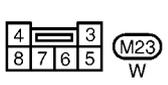
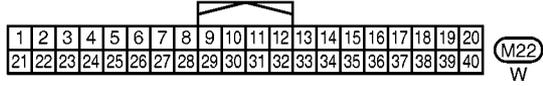
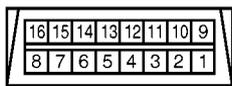
EKS007YU

LAN-CAN-07

▬ : DATA LINE
 ◀▶ : WITH DRIVE COMPUTER



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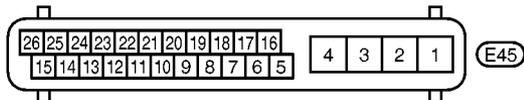
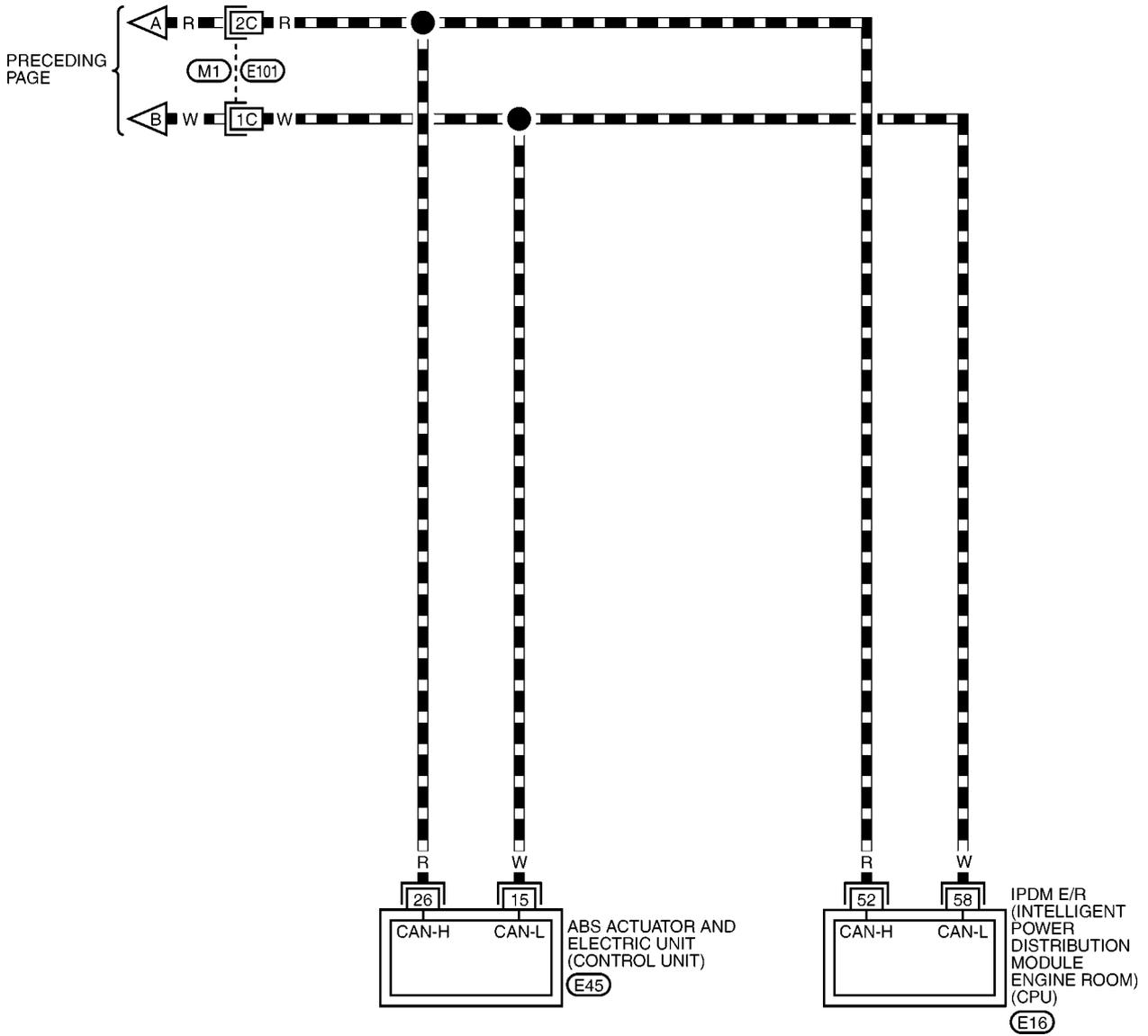
REFER TO THE FOLLOWING.

- (M1) -SUPER MULTIPLE JUNCTION (SMJ)
- (E49) -ELECTRICAL UNITS

MKWA1310E

LAN-CAN-08

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

CAN SYSTEM (TYPE 4)

[CAN]

EKS0081Q

Work Flow

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

(Example)

NISSAN			
CONSULT-II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY

SELECT SYSTEM				
ENGINE				
A/T				
ABS				
AIR BAG				
BCM				
METER A/C AMP				
		BACK	LIGHT	COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE				
WORK SUPPORT				
SELF-DIAG RESULTS				
DATA MONITOR				
DATA MONITOR (SPEC)				
CAN DIAG SUPPORT MNTR				
ACTIVE TEST				
Scroll Down				
		BACK	LIGHT	COPY

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
F.F.DATA			
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE				
WORK SUPPORT				
SELF-DIAG RESULTS				
DATA MONITOR				
DATA MONITOR (SPEC)				
CAN DIAG SUPPORT MNTR				
ACTIVE TEST				
Scroll Down				
		BACK	LIGHT	COPY

CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSNTR	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWVN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWVN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- 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"](#) .
- Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWVN” in the check sheet table. Refer to [LAN-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 “CAN DIAG SUPPORT MNTR” items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 4)

[CAN]

6. Convert "v" mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Comparison table

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

Convert

MKIB1685E

7. According to the check sheet results (example), start inspection. Refer to [LAN-119, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 4)

[CAN]

CHECK SHEET

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Check sheet table

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Comparison table

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

CAN SYSTEM (TYPE 4)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
EPS
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
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DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
IPDM E/R
DATA MONITOR

MKIB0304E

CAN SYSTEM (TYPE 4)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

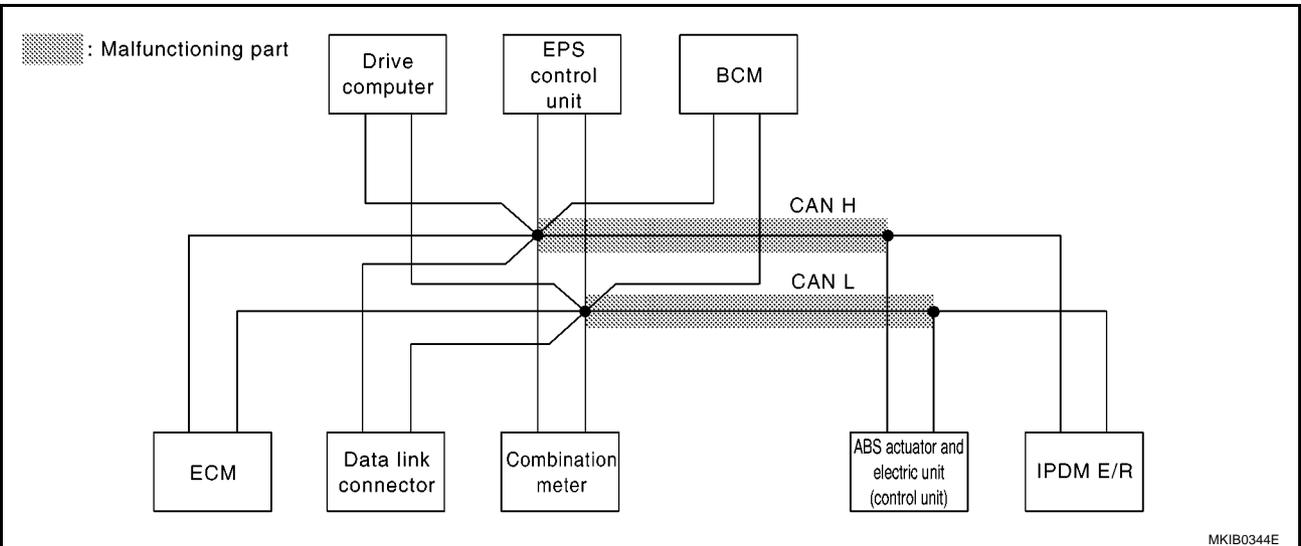
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-128, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB1648E



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CAN SYSTEM (TYPE 4)

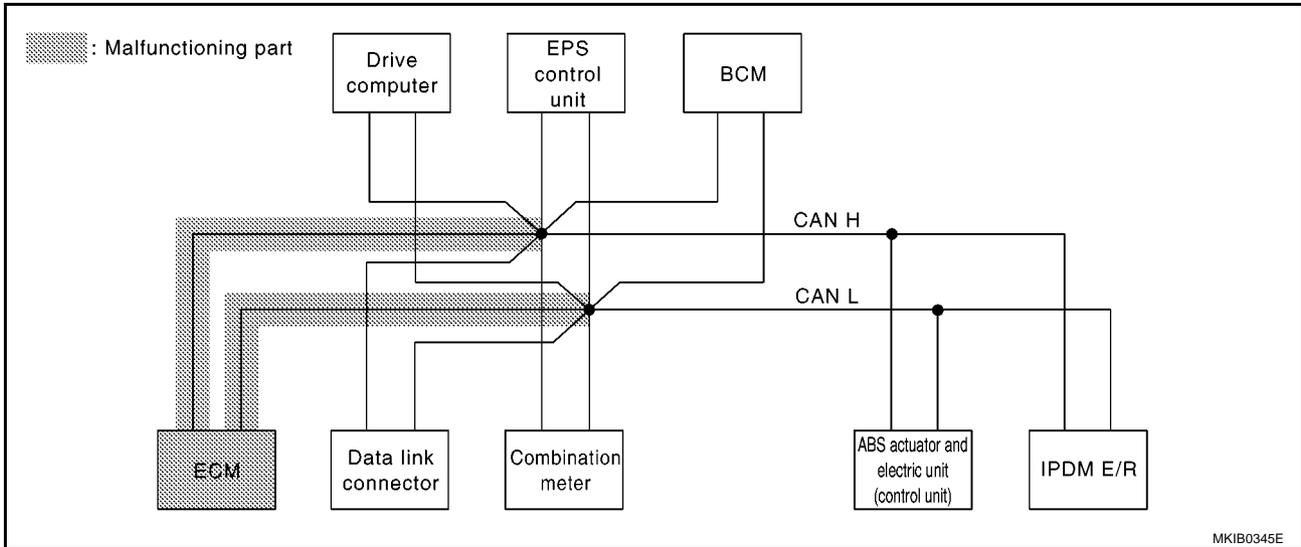
[CAN]

Case 2

Check ECM circuit. Refer to [LAN-129, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1 ✓	—	CAN CIRC 4	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✓	—	—	CAN CIRC 3	—	—

MKIB1649E



MKIB0345E

CAN SYSTEM (TYPE 4)

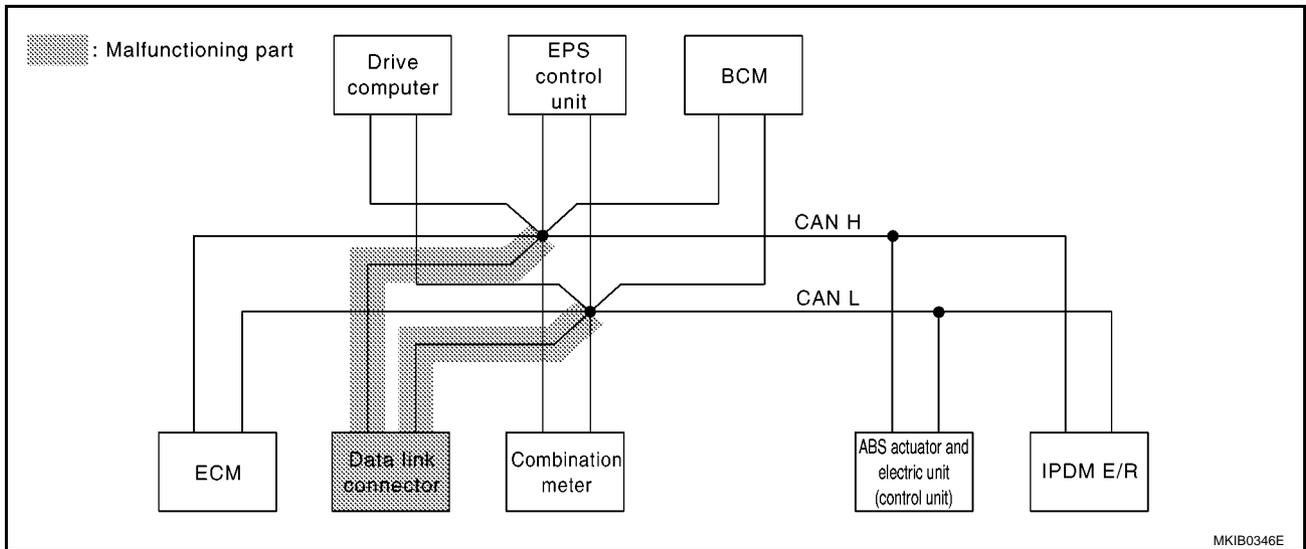
[CAN]

Case 3

Check data link connector circuit. Refer to [LAN-130, "Data Link Connector Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB1650E



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CAN SYSTEM (TYPE 4)

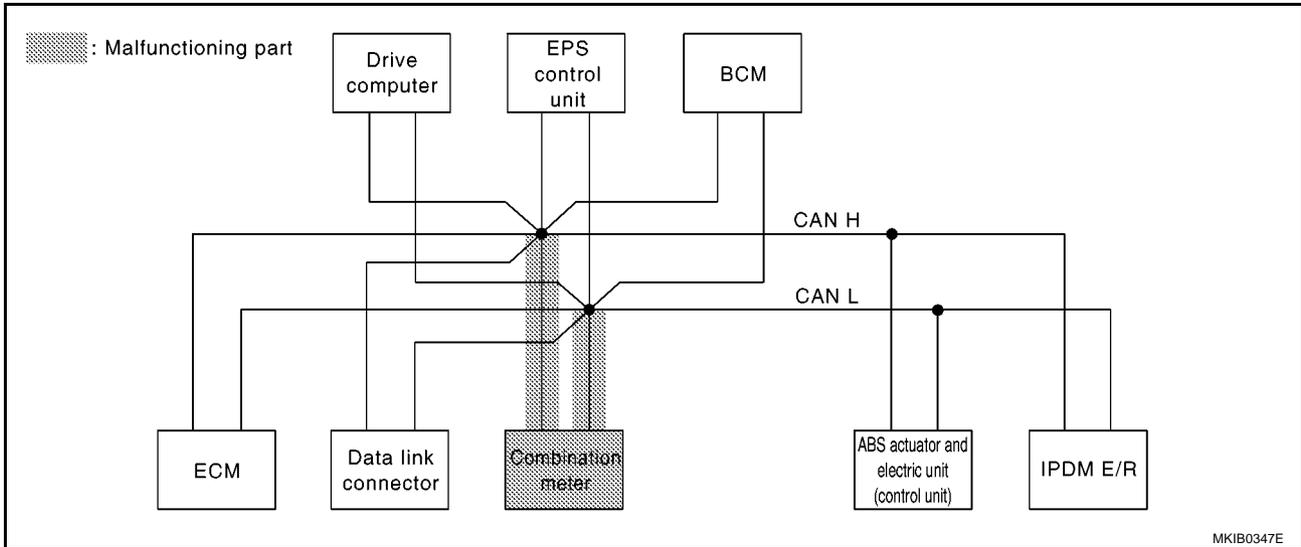
[CAN]

Case 4

Check combination meter circuit. Refer to [LAN-131, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

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MKIB0347E

CAN SYSTEM (TYPE 4)

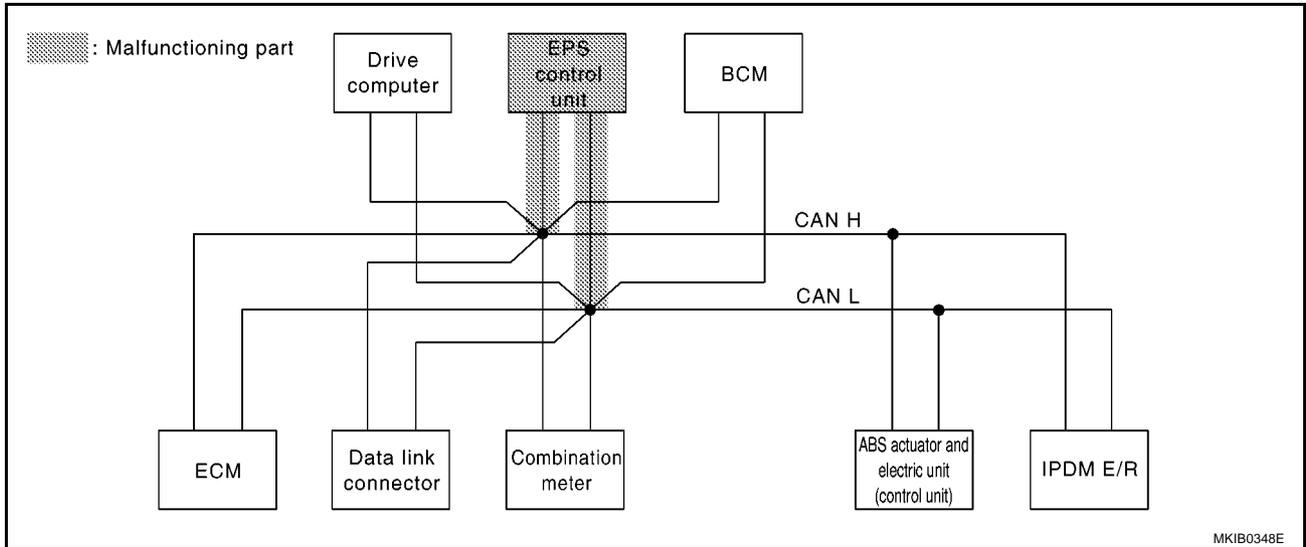
[CAN]

Case 5

Check EPS control unit circuit. Refer to [LAN-132, "EPS Control Unit Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

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CAN SYSTEM (TYPE 4)

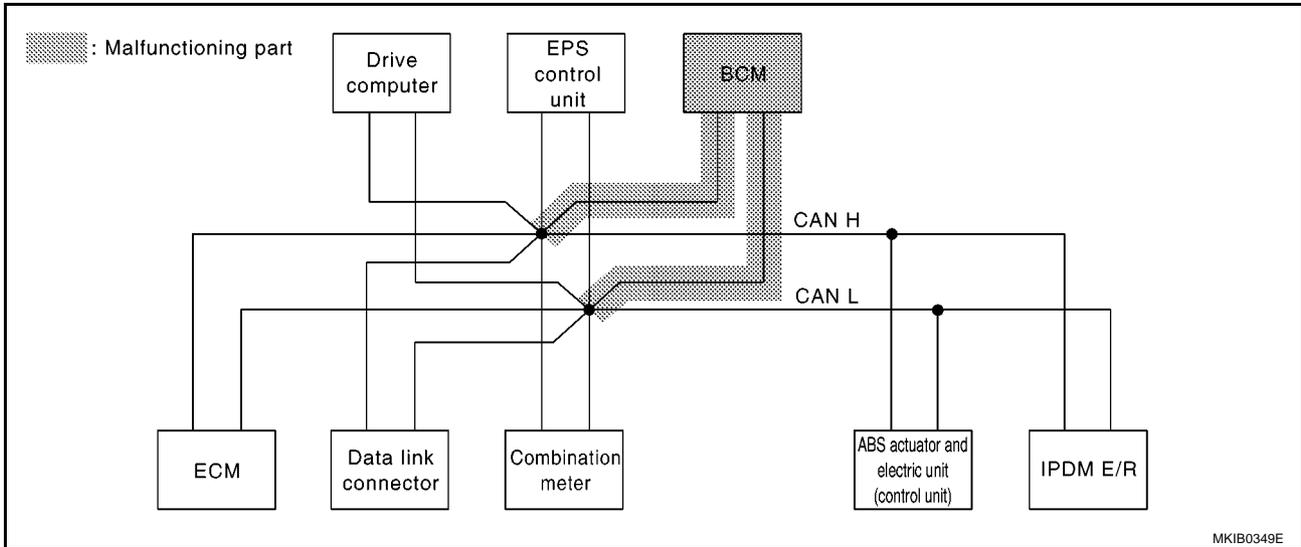
[CAN]

Case 6

Check BCM circuit. Refer to [LAN-133, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5 ✓	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3 ✓	—	—

MKIB1653E



MKIB0349E

CAN SYSTEM (TYPE 4)

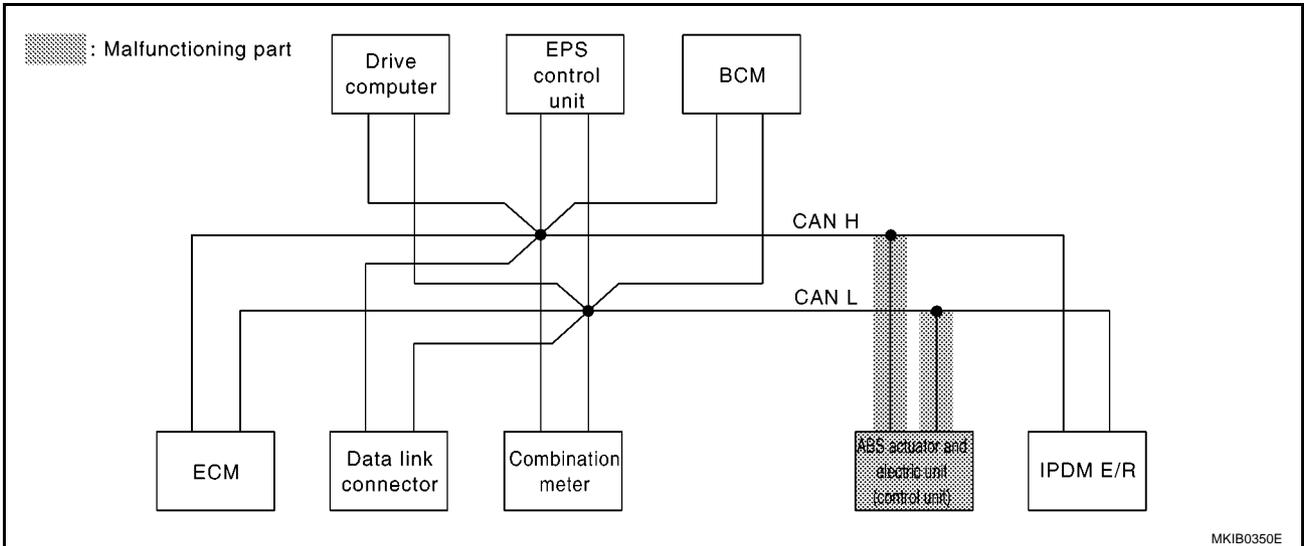
[CAN]

Case 7

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-134, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

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CAN SYSTEM (TYPE 4)

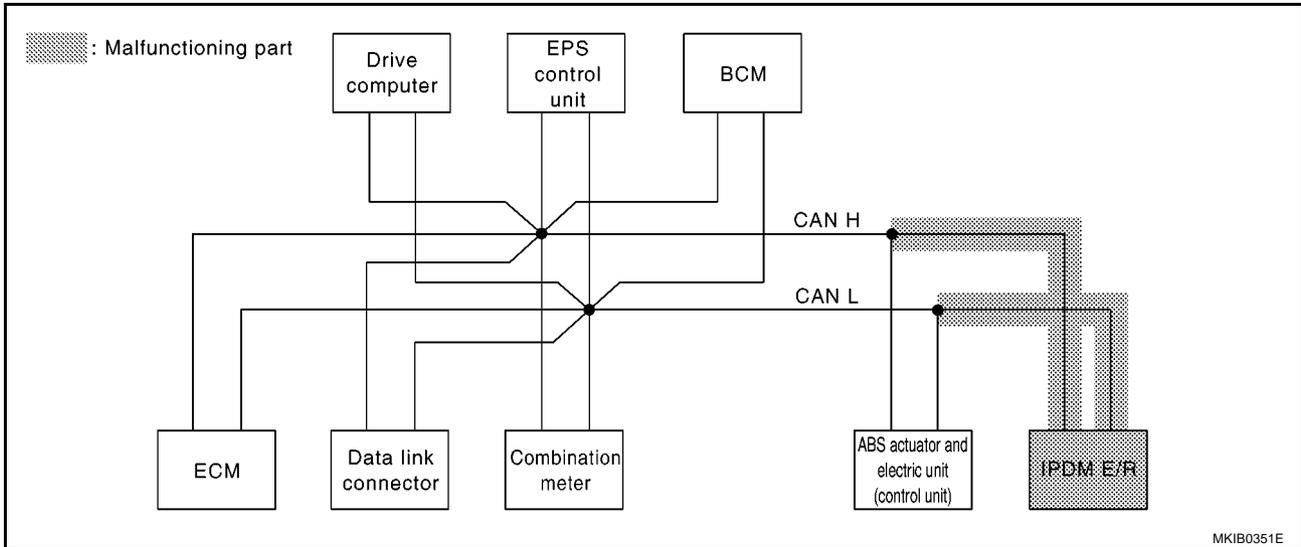
[CAN]

Case 8

Check IPDM E/R circuit. Refer to [LAN-135, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB1655E



MKIB0351E

CAN SYSTEM (TYPE 4)

[CAN]

Case 9

Check CAN communication circuit. Refer to [LAN-136, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB1656E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-139, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB1658E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-139, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB1657E

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Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

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 M1
 - Harness connector E101

OK or NG

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

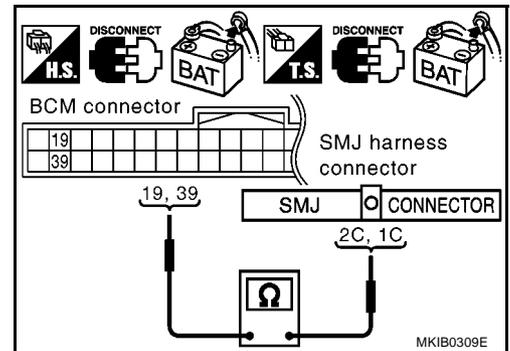
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



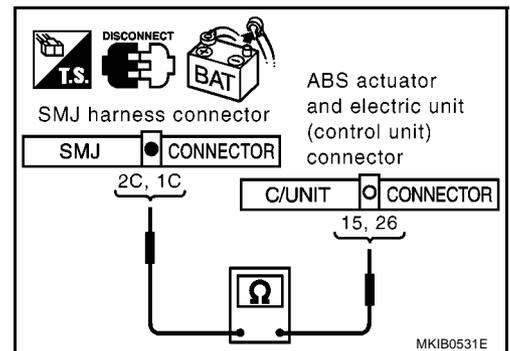
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.
1C (W) – 15 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to [LAN-115, "Work Flow"](#) .
- NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

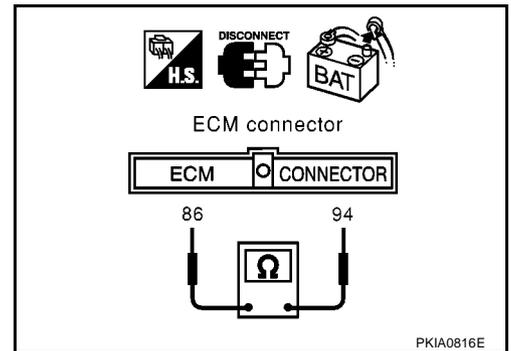
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω****OK or NG**

OK >> Replace ECM.

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



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

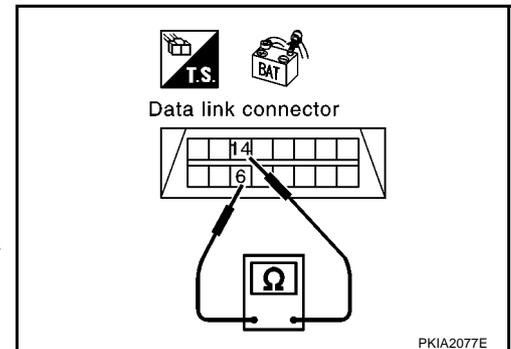
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-115](#). "Work Flow".
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

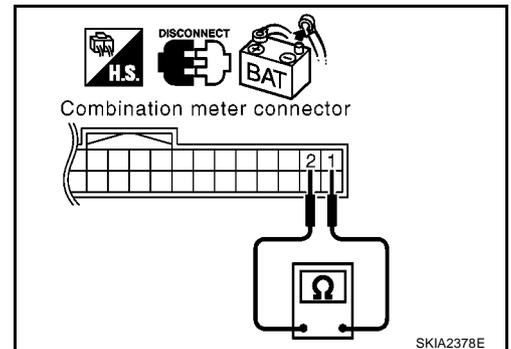
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



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EPS Control Unit Circuit Check

1. CHECK CONNECTOR

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

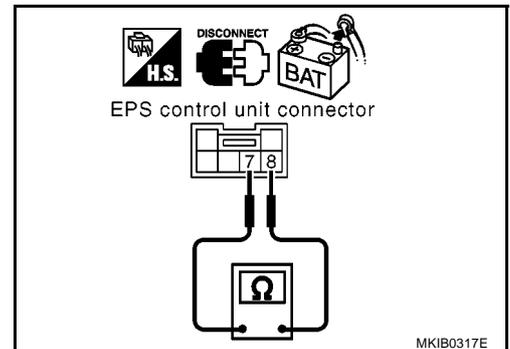
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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.

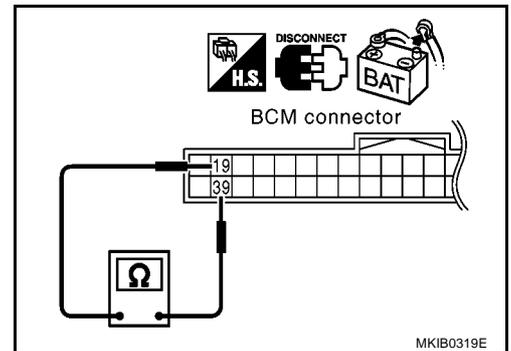
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0081X

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.

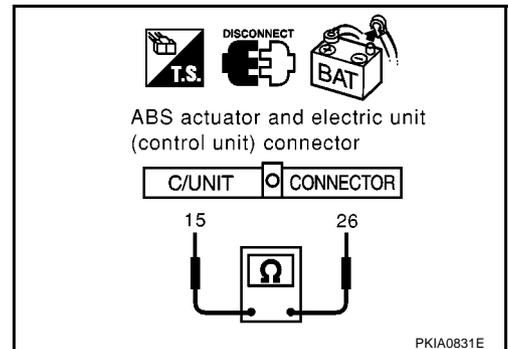
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

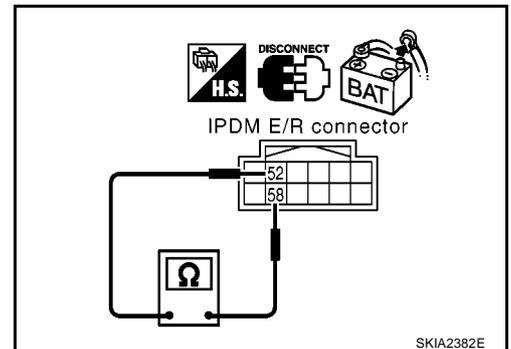
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

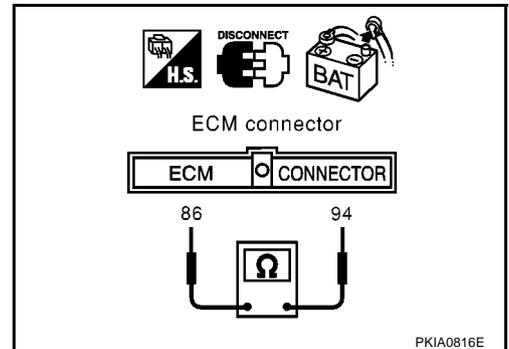
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector E101.



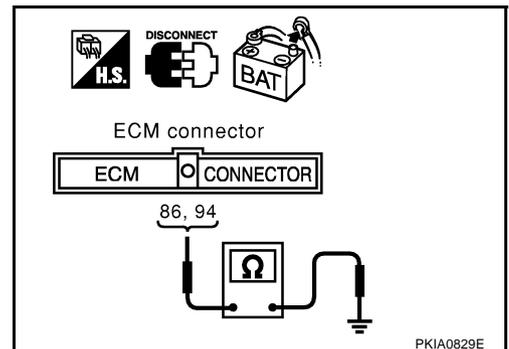
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

94 (R) – Ground : Continuity should not exist.
86 (W) – Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

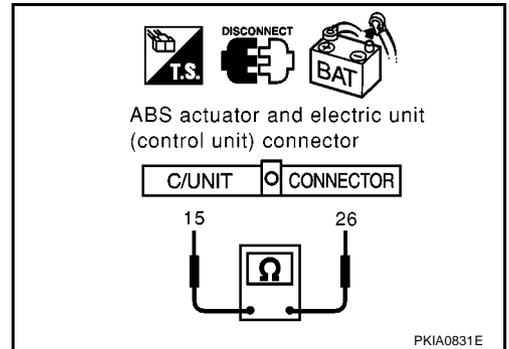
26 (R) – 15 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

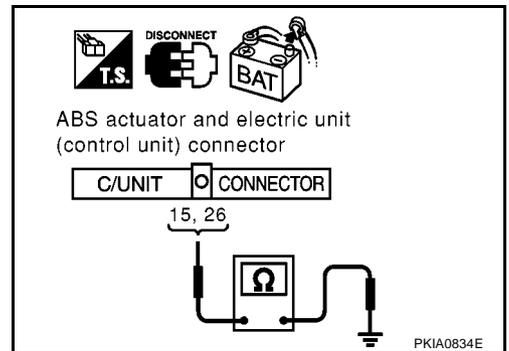
15 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



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6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

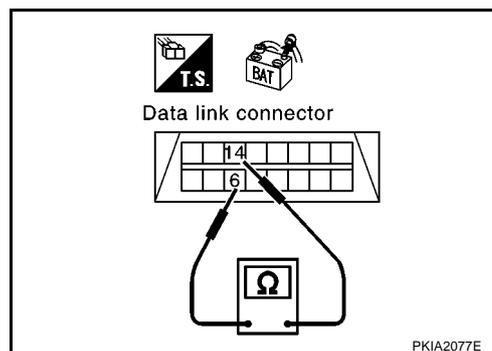
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

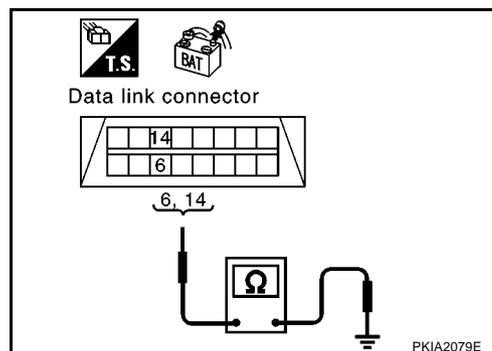
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-139, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-115, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00820

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

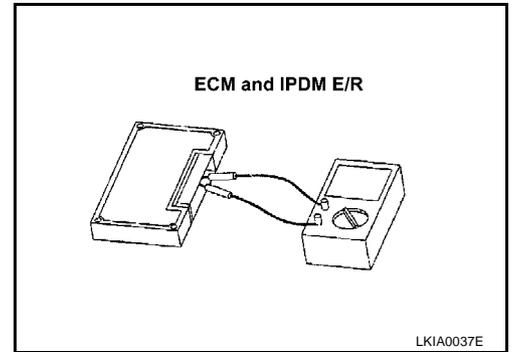
Component Inspection

EKS00821

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 5)

PFP:23710

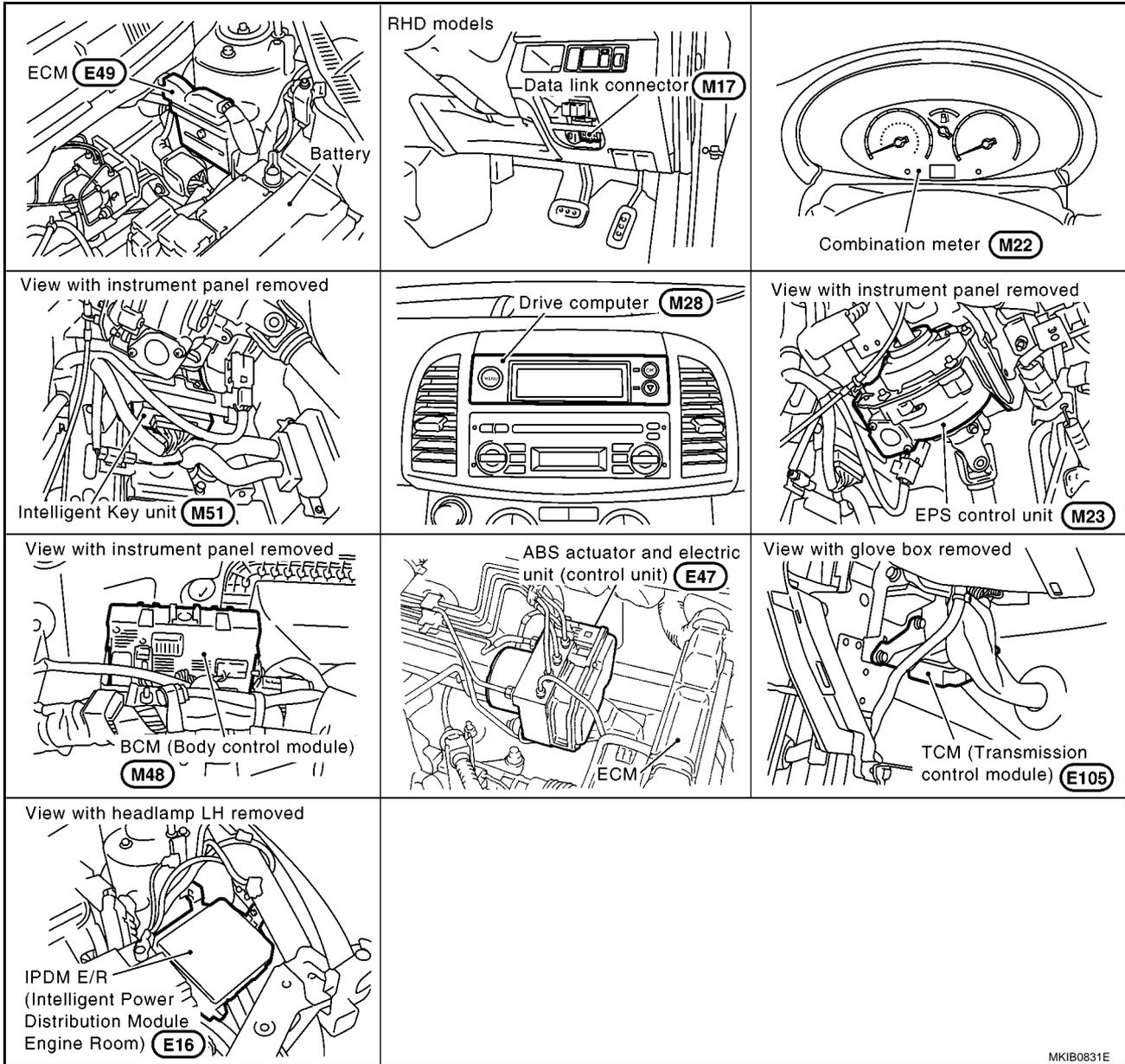
System Description

EKS00J05

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

EKS00J06



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CAN SYSTEM (TYPE 5)

[CAN]

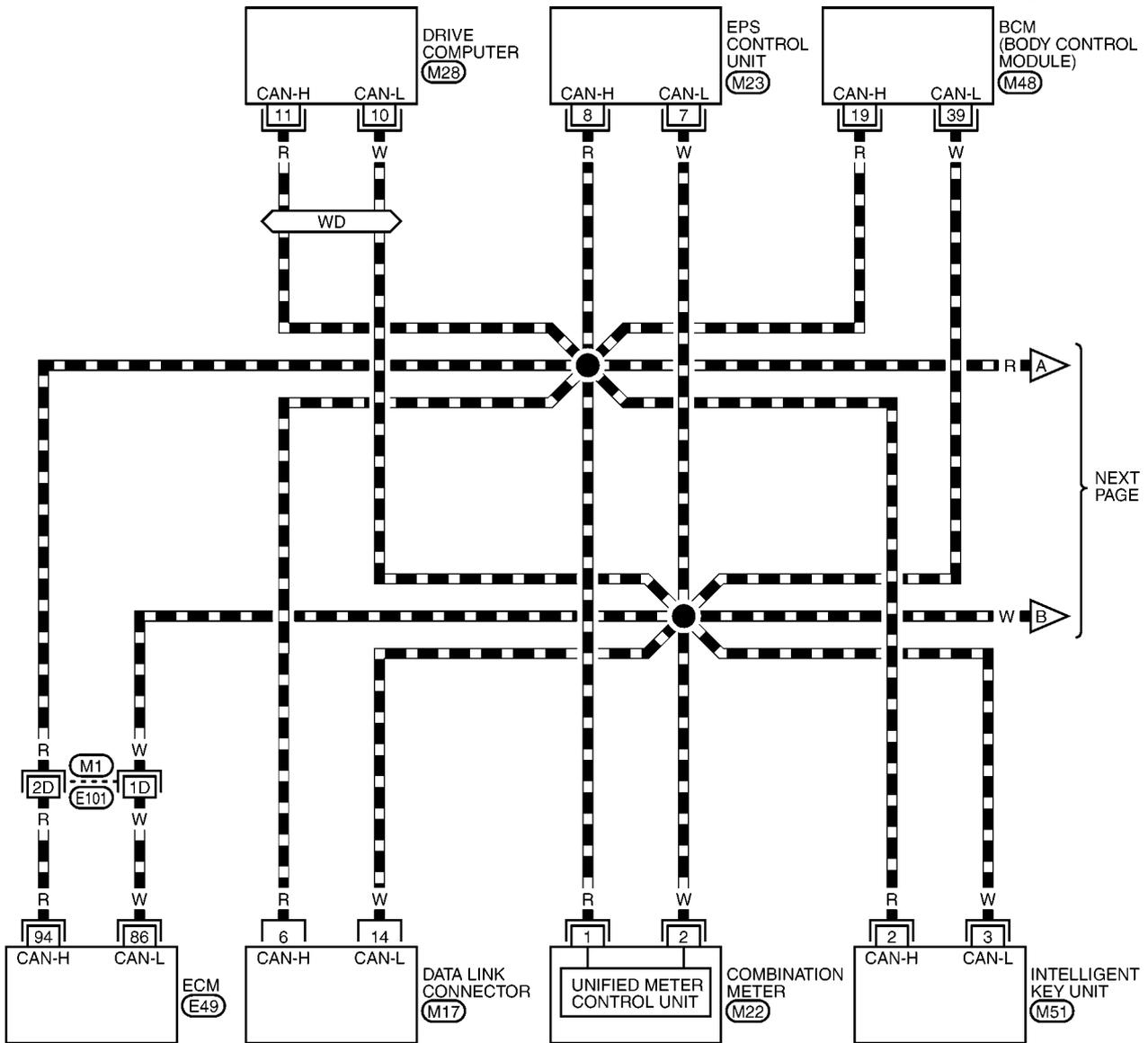
EKS00J07

Wiring Diagram — CAN —

LAN-CAN-09

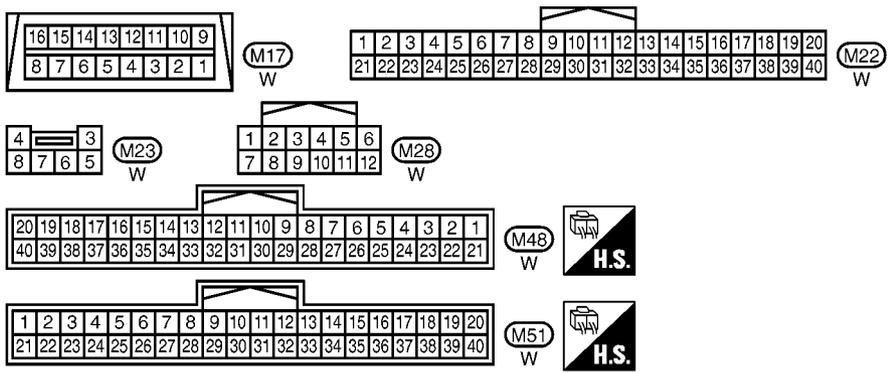
▬ : DATA LINE

WD : WITH DRIVE COMPUTER



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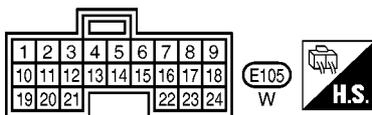
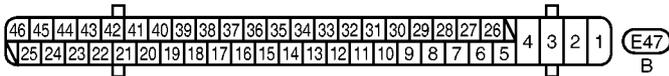
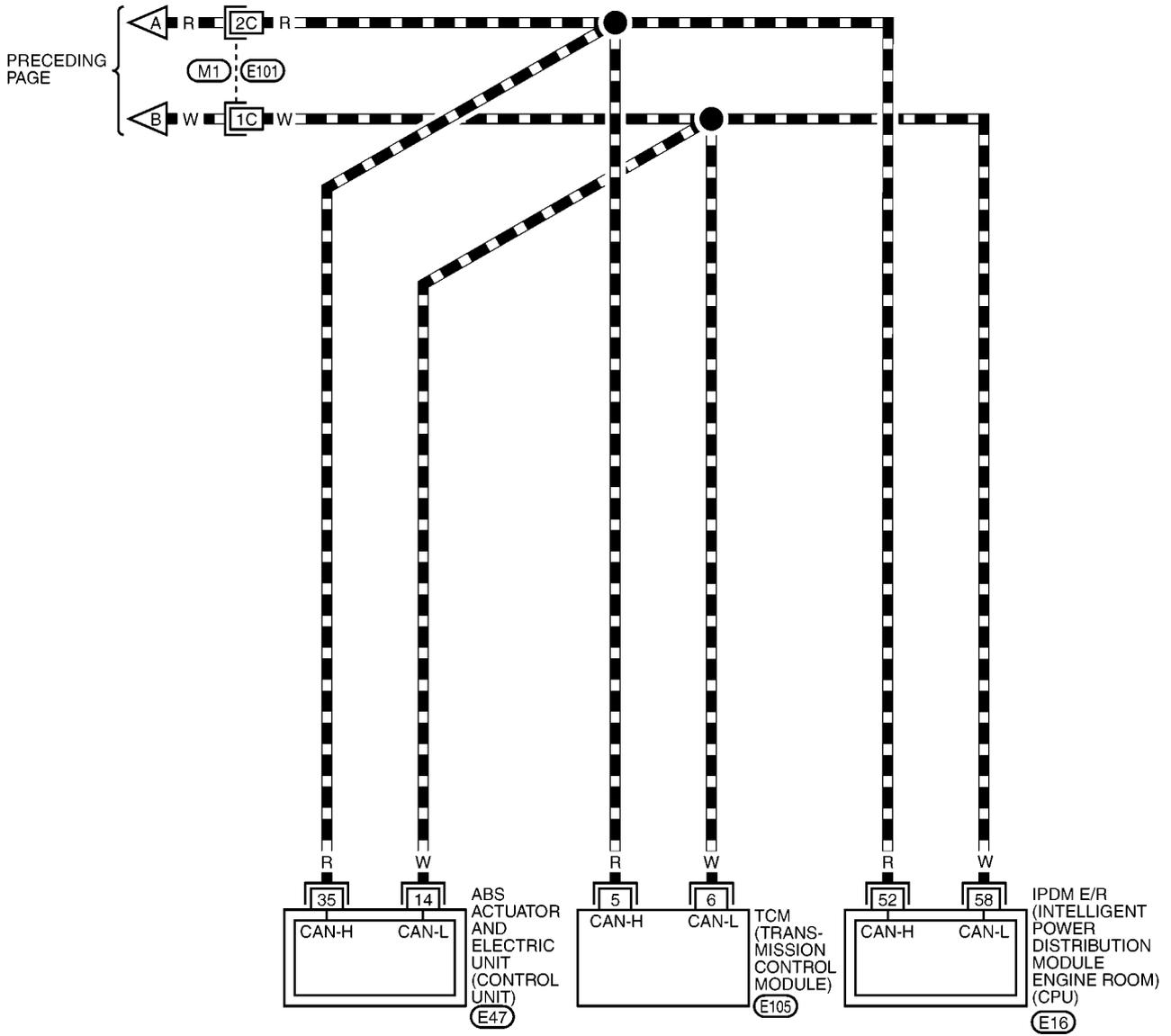
REFER TO THE FOLLOWING.
 (M1) -SUPER MULTIPLE JUNCTION (SMJ)
 (E49) -ELECTRICAL UNITS

CAN SYSTEM (TYPE 5)

[CAN]

LAN-CAN-10

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

CAN SYSTEM (TYPE 5)

[CAN]

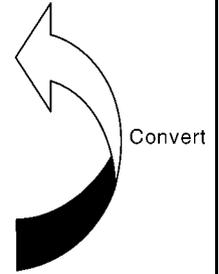
6. Convert "v" mark on comparison table to check sheet table.

(Example) Check sheet table

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis								
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-	-
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	-
BCM	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	-
A/T	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-	-
IPDM E/R	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-	-



MKIB1686E

7. According to the check sheet results (example), start inspection. Refer to [LAN-147, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 5)

[CAN]

CHECK SHEET

Check sheet table

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	—	—	CAN CIRC 3	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—	—

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis								
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms:

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LAN

CAN SYSTEM (TYPE 5)

[CAN]

Attach copy of
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Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS

Attach copy of
EPS
SELF-DIAG RESULTS

Attach copy of
BCM
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Attach copy of
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A/T
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
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EPS
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BCM
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MKIB0278E

CAN SYSTEM (TYPE 5)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

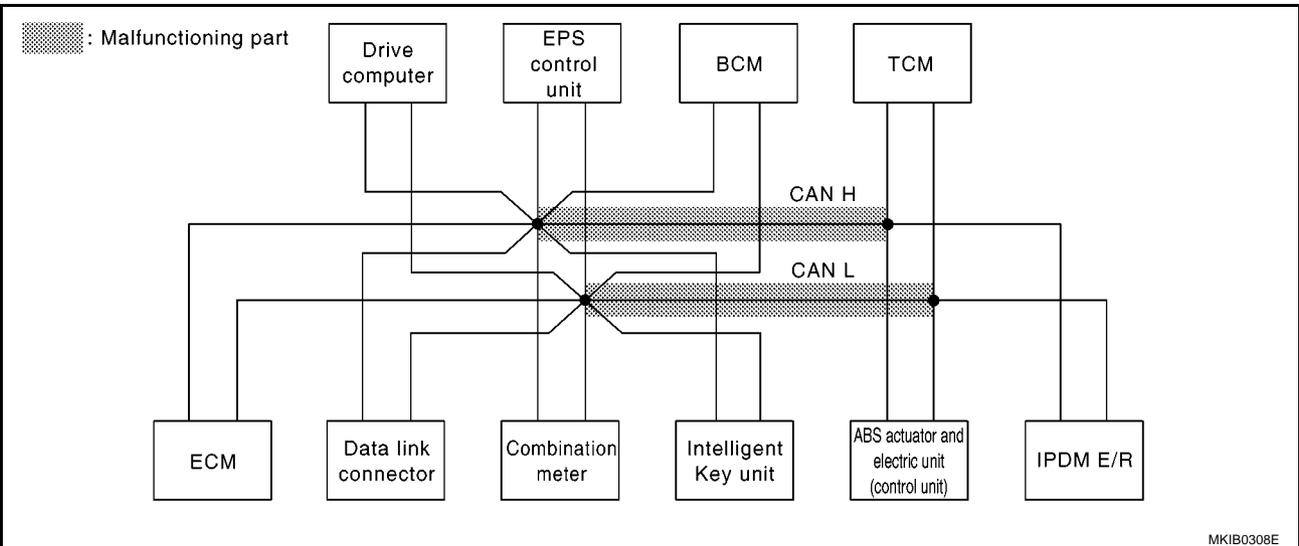
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-158, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	—	—	CAN CIRC 3	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—	—

MKIB077E



CAN SYSTEM (TYPE 5)

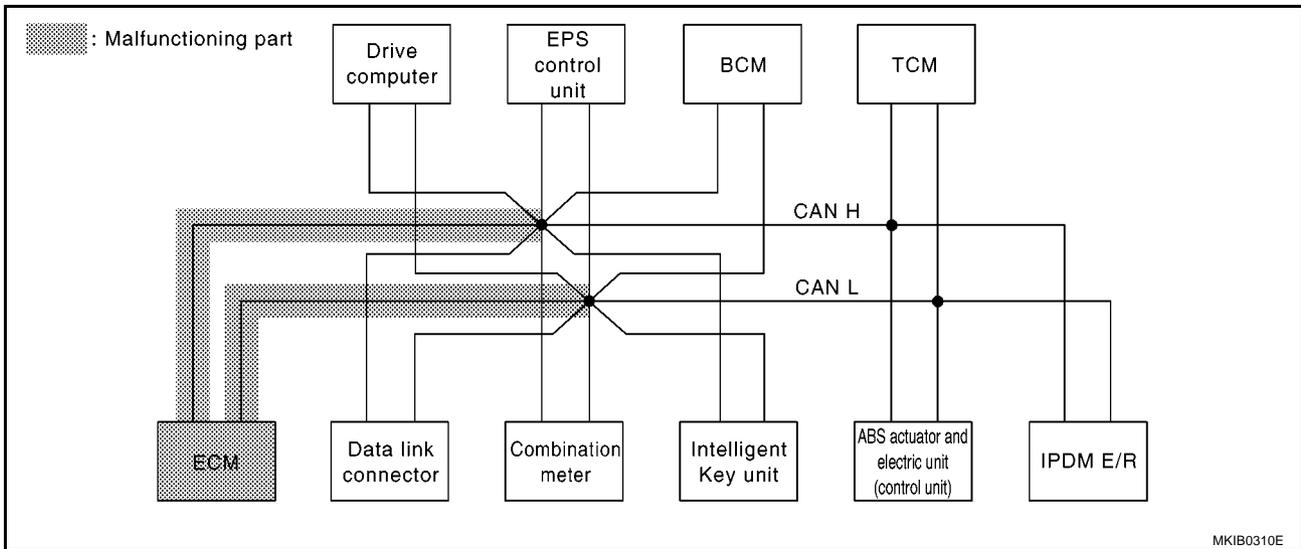
[CAN]

Case2

Check ECM circuit. Refer to [LAN-159, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1 ✓	-	CAN CIRC 4 ✓	-	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	-	-	CAN CIRC 2	-	-	-

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MKIB0310E

CAN SYSTEM (TYPE 5)

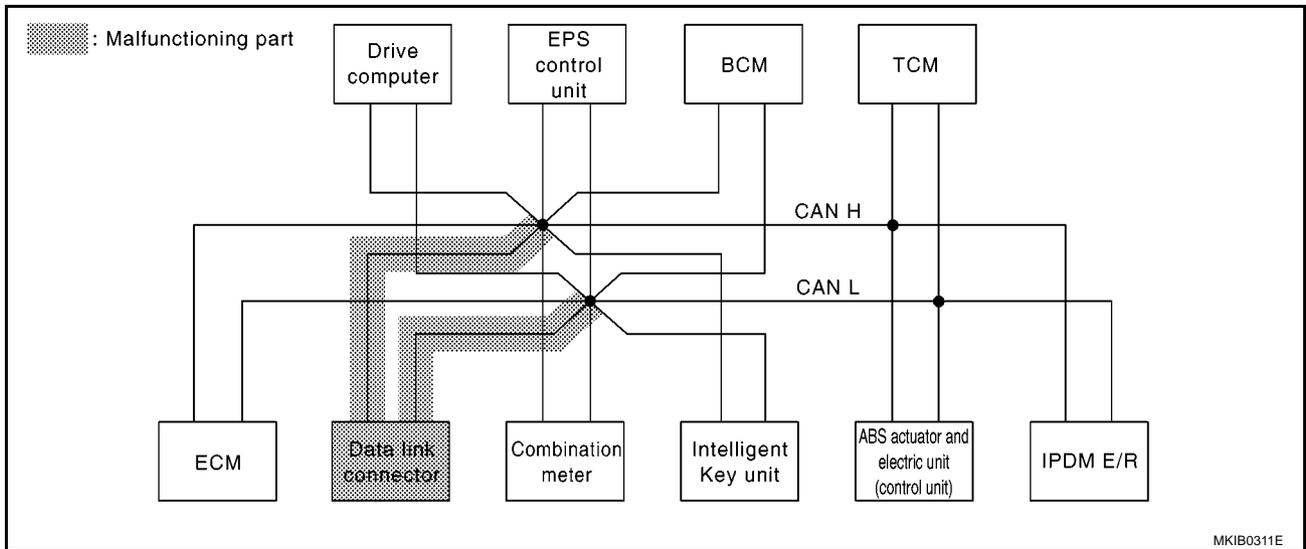
[CAN]

Case3

Check data link connector circuit. Refer to [LAN-160, "Data Link Connector Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 5)

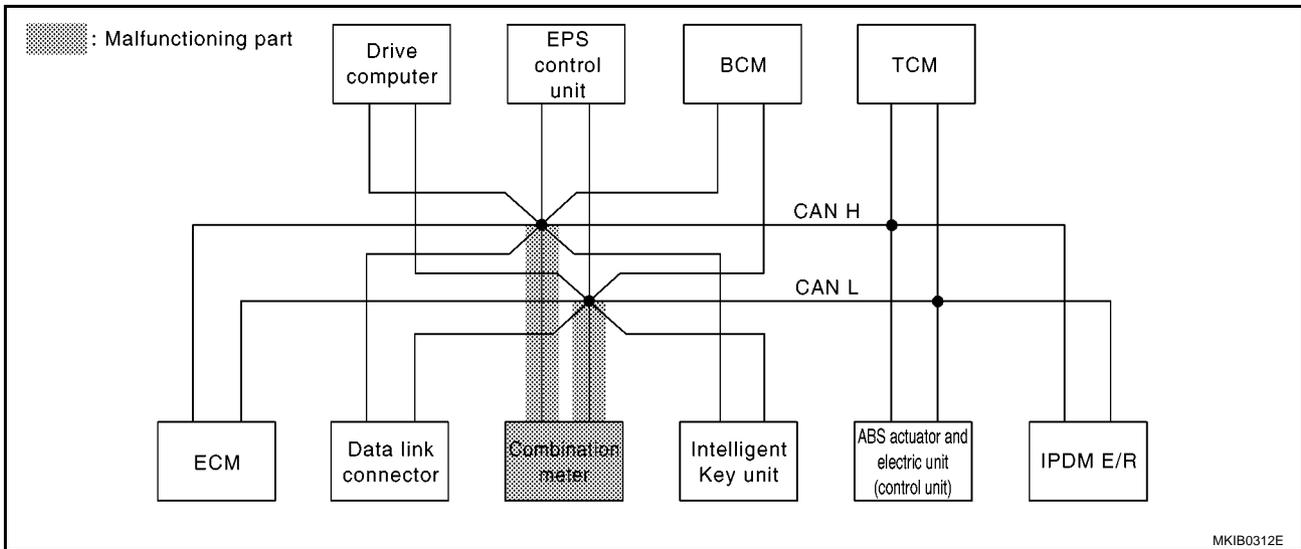
[CAN]

Case4

Check combination meter circuit. Refer to [LAN-161, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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MKIB0312E

CAN SYSTEM (TYPE 5)

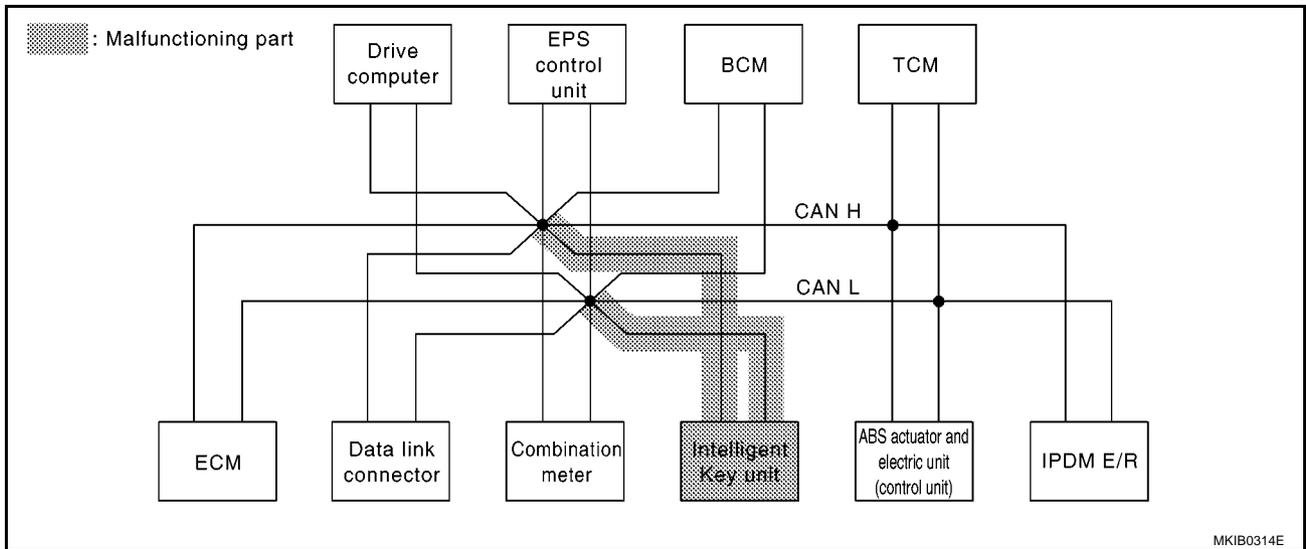
[CAN]

Case5

Check Intelligent Key unit circuit. Refer to [LAN-162, "Intelligent Key Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 5)

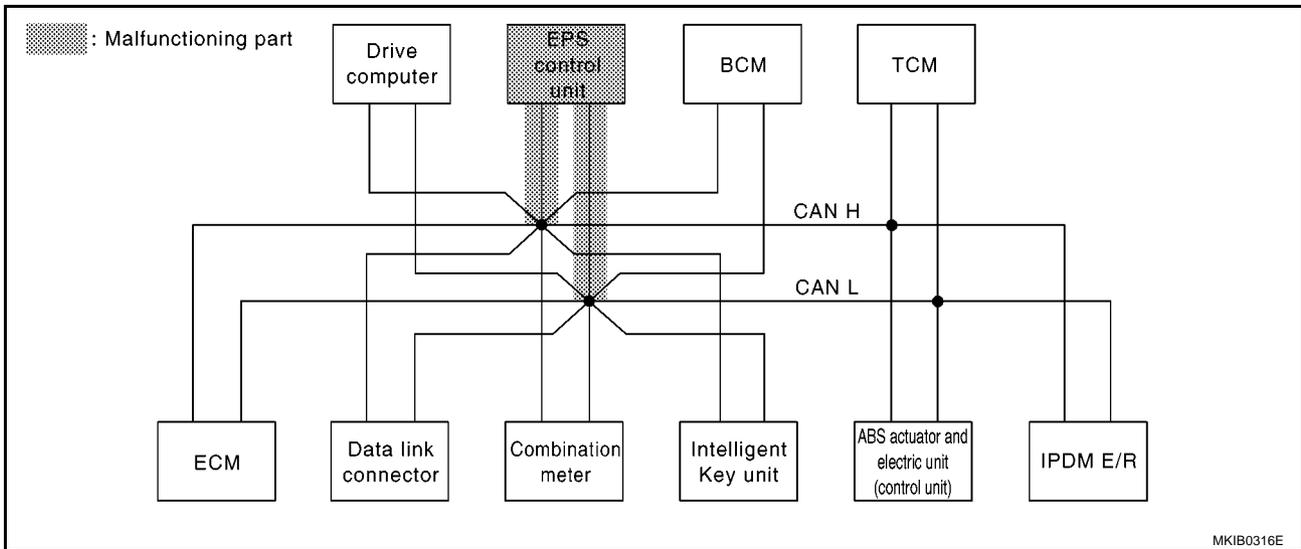
[CAN]

Case6

Check EPS control unit circuit. Refer to [LAN-163, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 5)

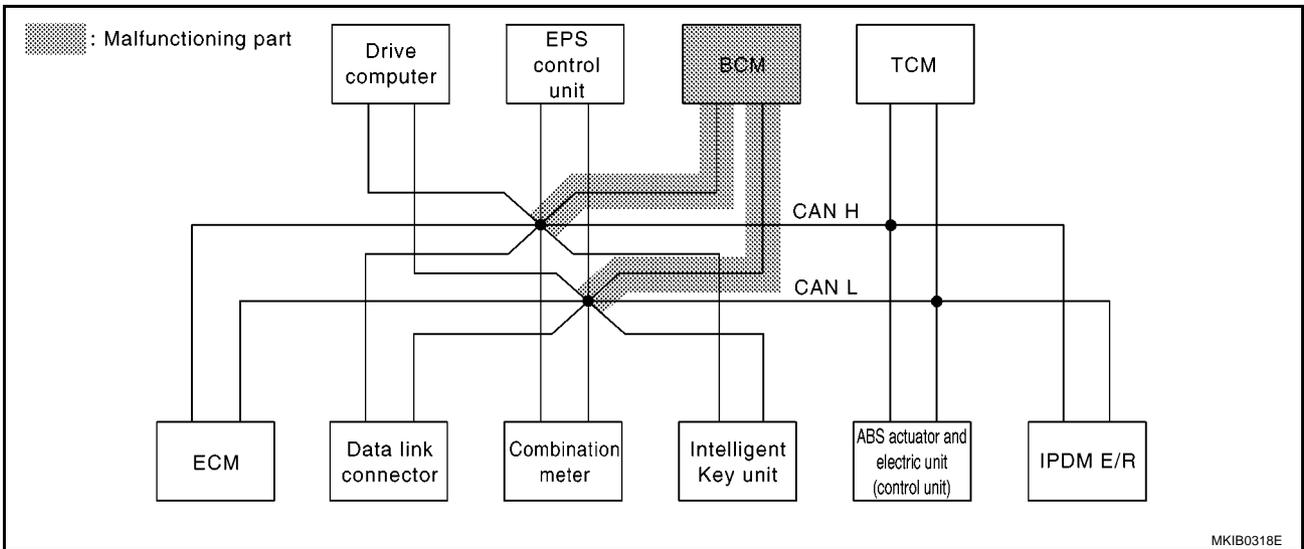
[CAN]

Case7

Check BCM circuit. Refer to [LAN-164, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 5)

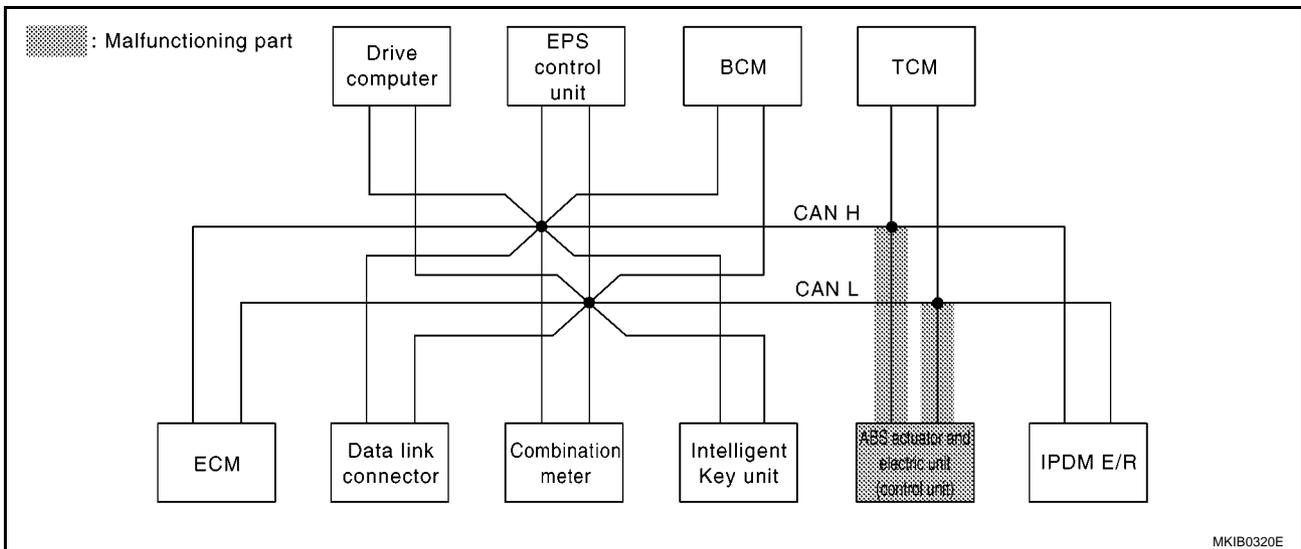
[CAN]

Case8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-165, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 5)

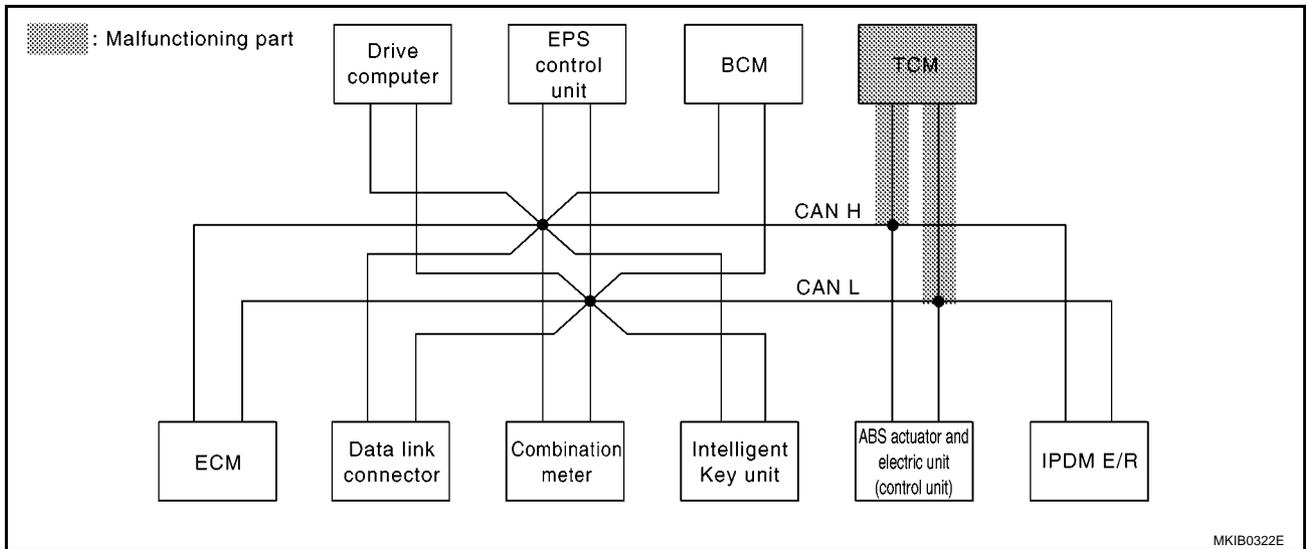
[CAN]

Case9

Check TCM circuit. Refer to [LAN-166. "TCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 5)

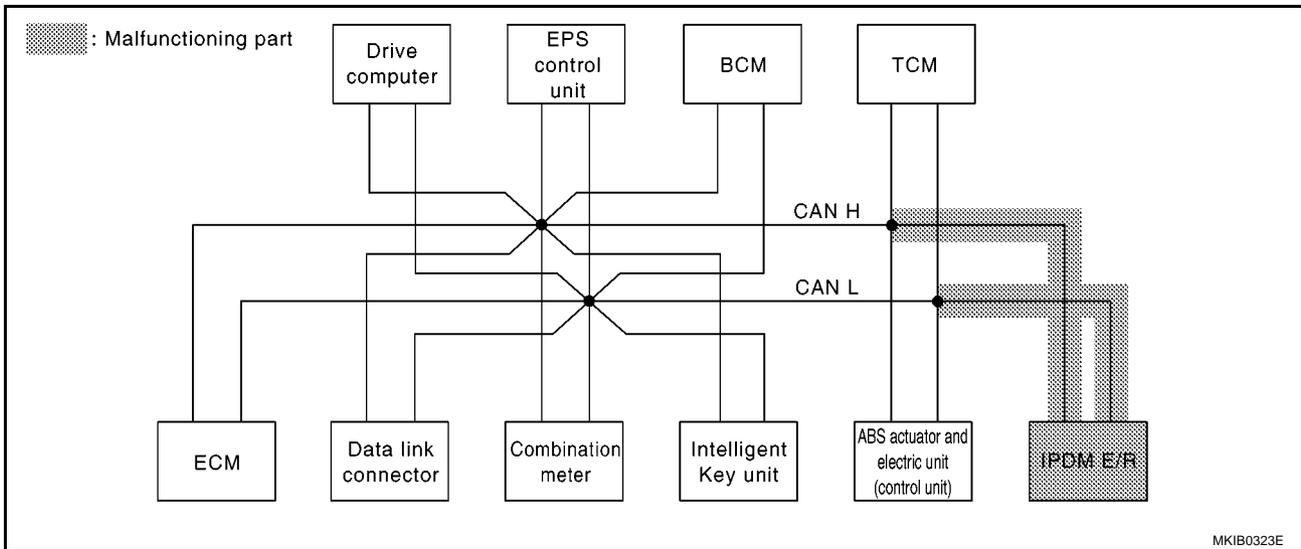
[CAN]

Case10

Check IPDM E/R circuit. Refer to [LAN-167, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-	-

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MKIB0323E

CAN SYSTEM (TYPE 5)

[CAN]

Case11

Check CAN communication circuit. Refer to [LAN-168, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	—	—	CAN CIRC 3	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—	—

MKIB0787E

Case12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-171, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	—	—	CAN CIRC 3	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—	—

MKIB0788E

Case13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-171, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	—	—	CAN CIRC 3	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—	—

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Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

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 M1
 - Harness connector E101

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

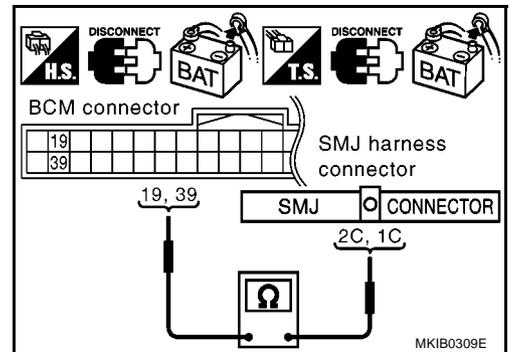
1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.

39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

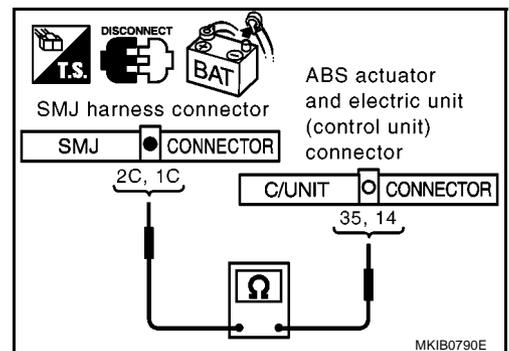
Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

2C (R) – 35 (R) : Continuity should exist.

1C (W) – 14 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-143, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

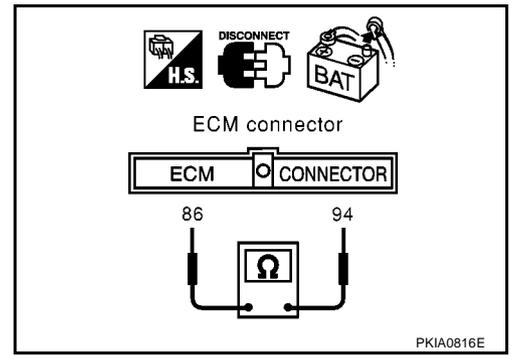
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω****OK or NG**

OK >> Replace ECM.

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



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

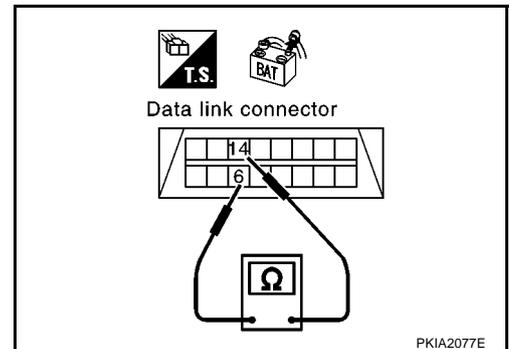
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-143, "Work Flow"](#).
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

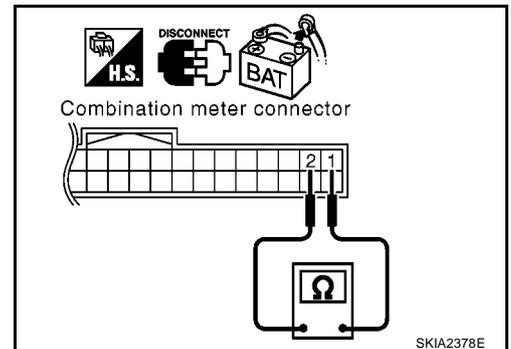
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



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Intelligent Key Unit Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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.

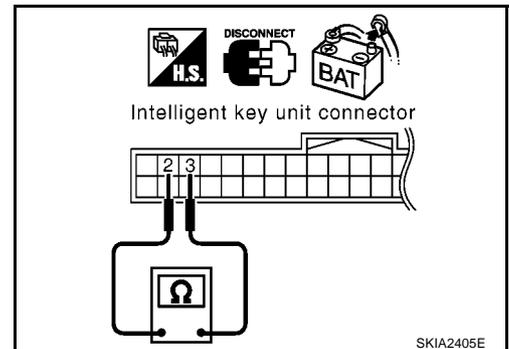
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace Intelligent Key unit.
 NG >> Repair harness between Intelligent Key unit and data link connector.



EPS Control Unit Circuit Check**1. CHECK CONNECTOR**

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

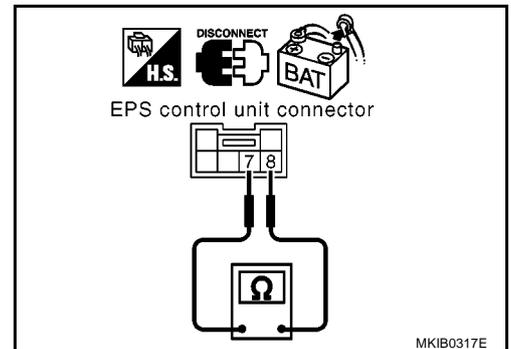
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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

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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.

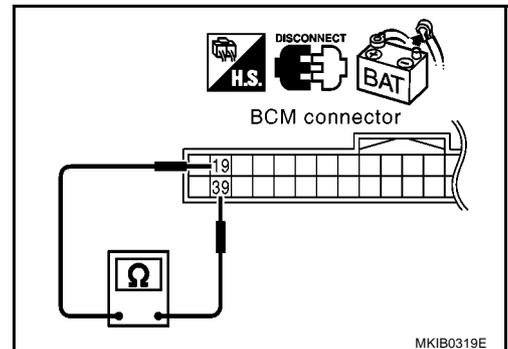
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check**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.

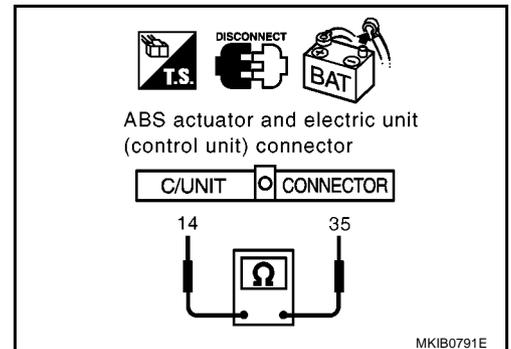
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

35 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

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

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TCM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

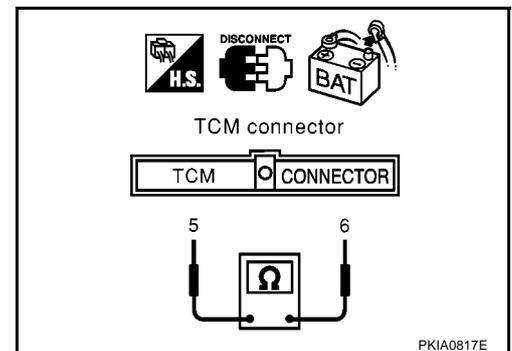
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

5 (R) – 6 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

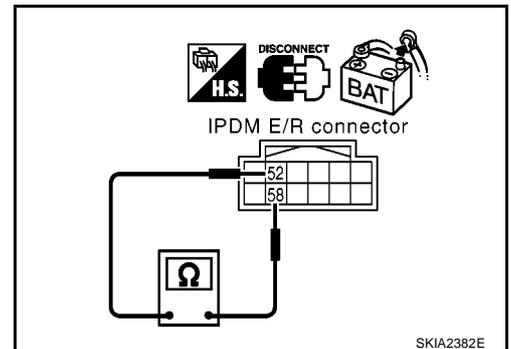
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).
 - ECM
 - Combination meter
 - Intelligent Key unit
 - Drive computer
 - EPS control unit
 - BCM
 - ABS actuator and electric unit (control unit)
 - TCM
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

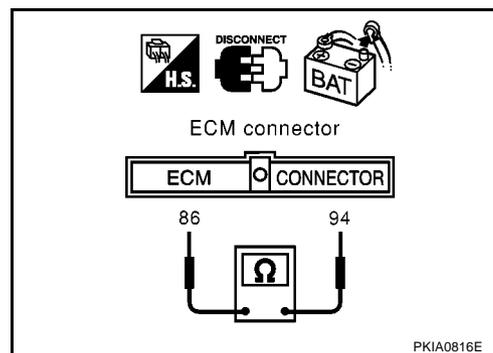
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

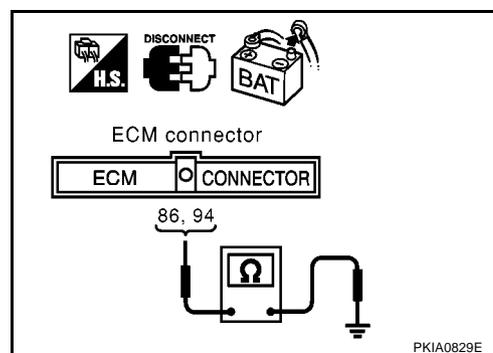
94 (R) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - TCM connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

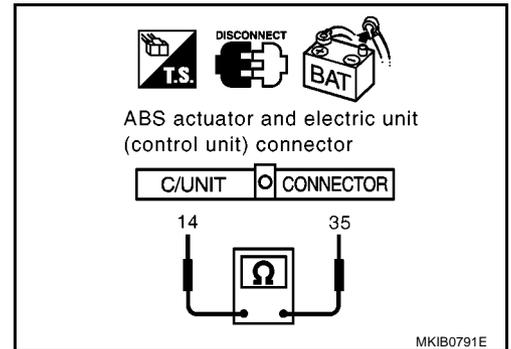
35 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

35 (R) – Ground : Continuity should not exist.

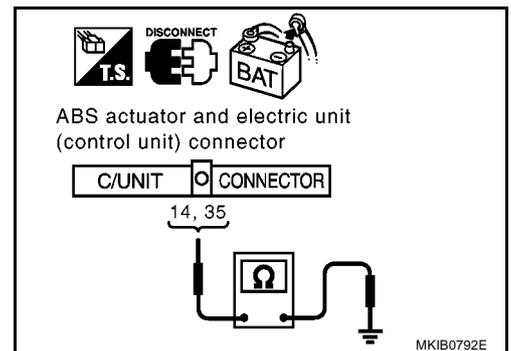
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

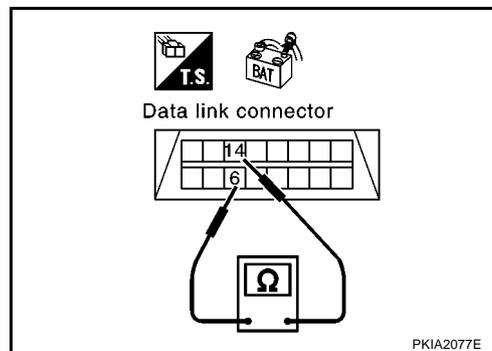
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

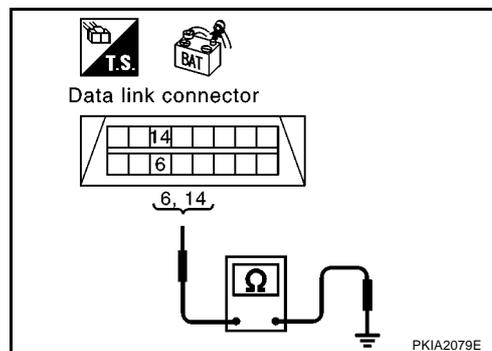
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-171, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-143, "Work Flow"](#).

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

IPDM E/R Ignition Relay Circuit Check

EKS00JOK

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

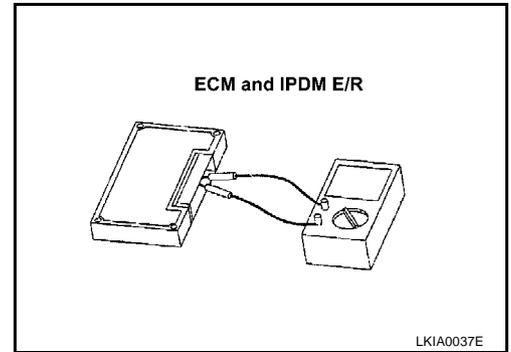
Component Inspection

EKS00JOL

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 6)

PFP:23710

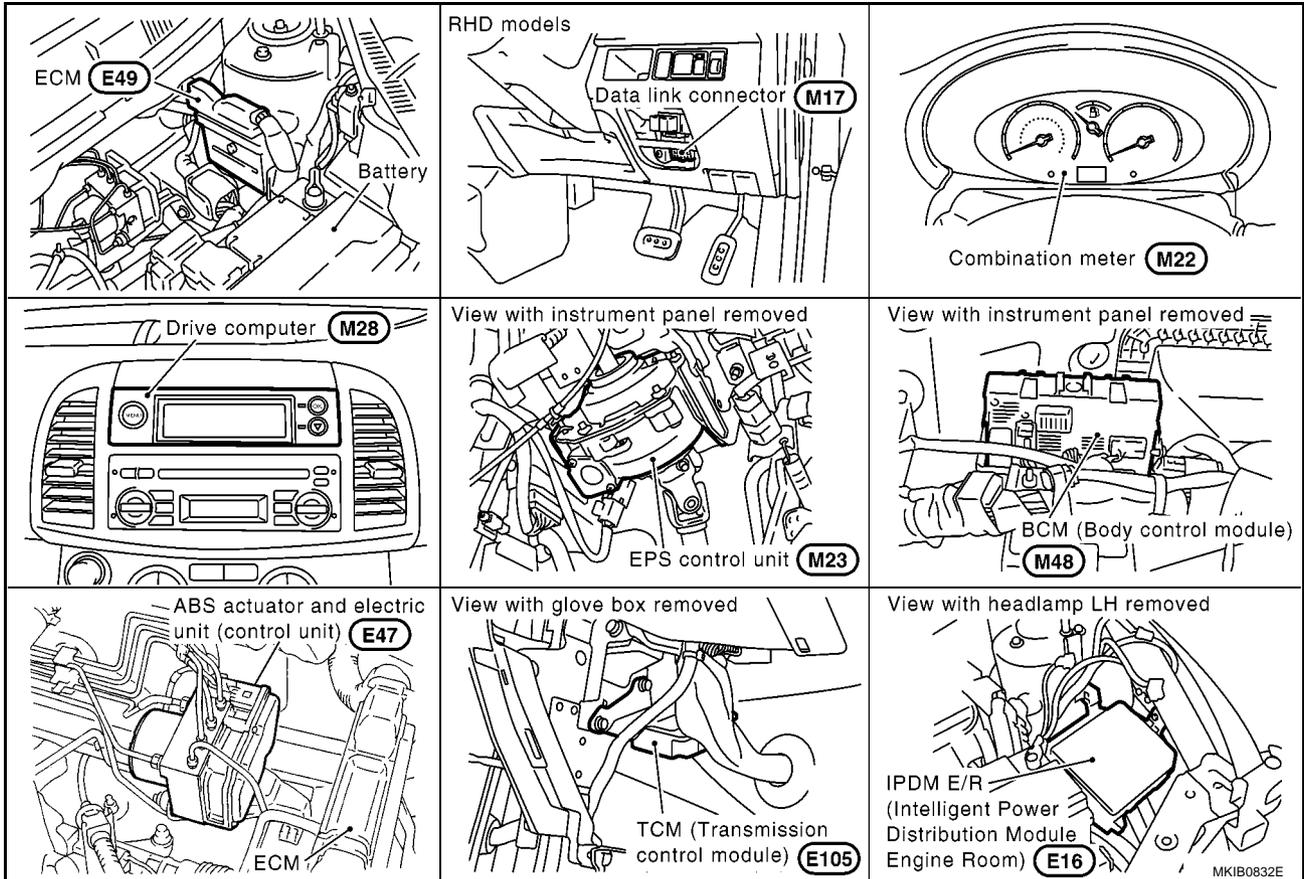
System Description

EKS00JOM

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

EKS00JON



CAN SYSTEM (TYPE 6)

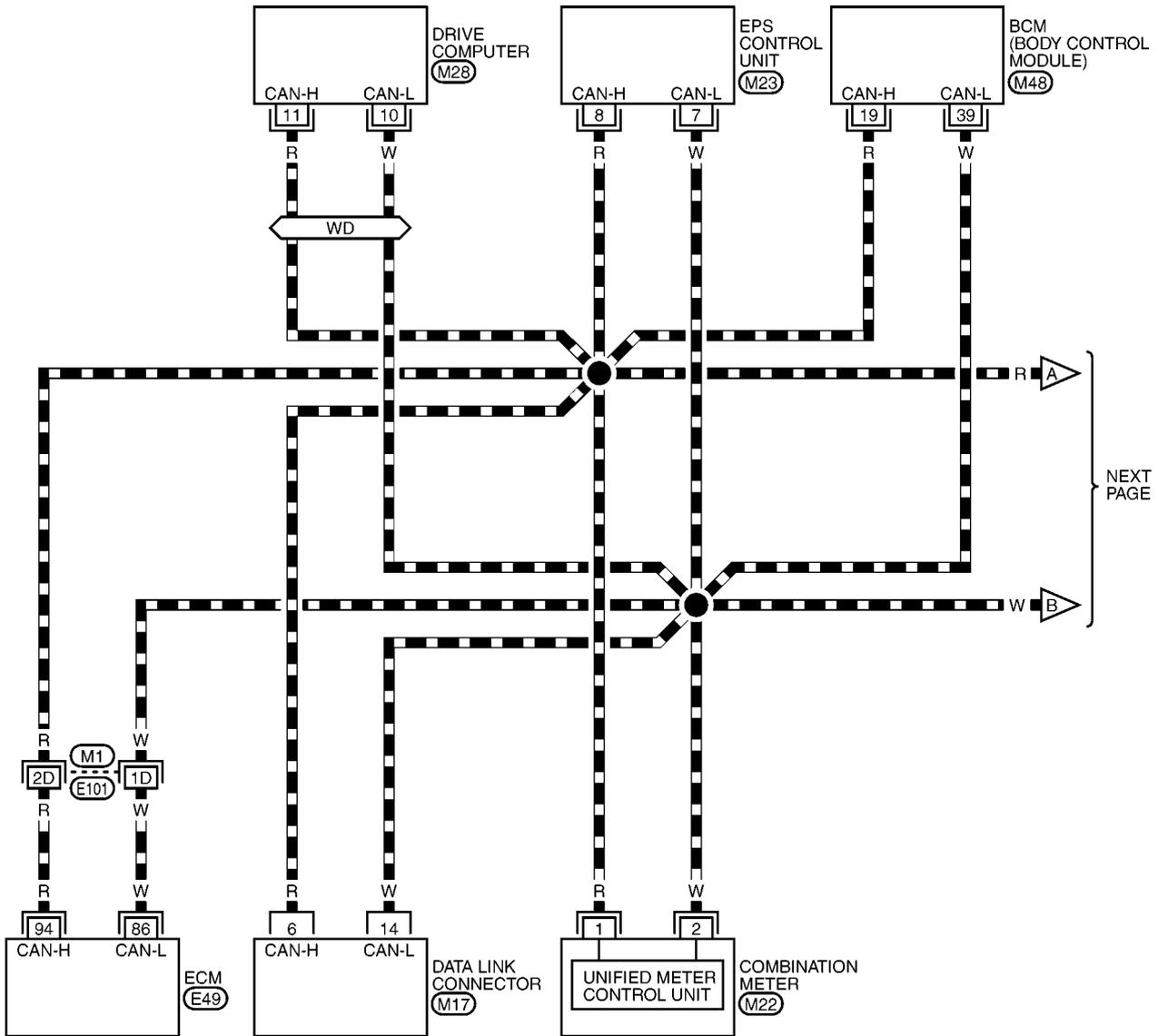
[CAN]

Wiring Diagram — CAN —

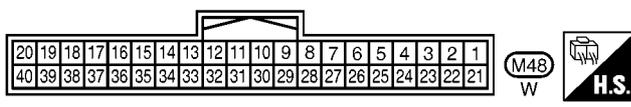
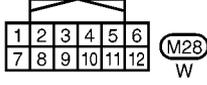
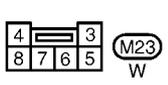
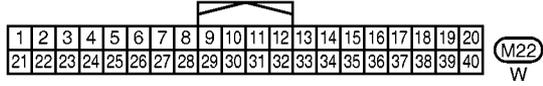
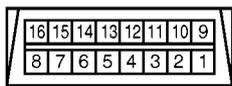
EKS00J00

LAN-CAN-11

▬ : DATA LINE
 ◀▶ : WITH DRIVE COMPUTER



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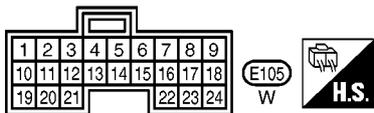
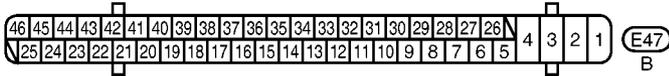
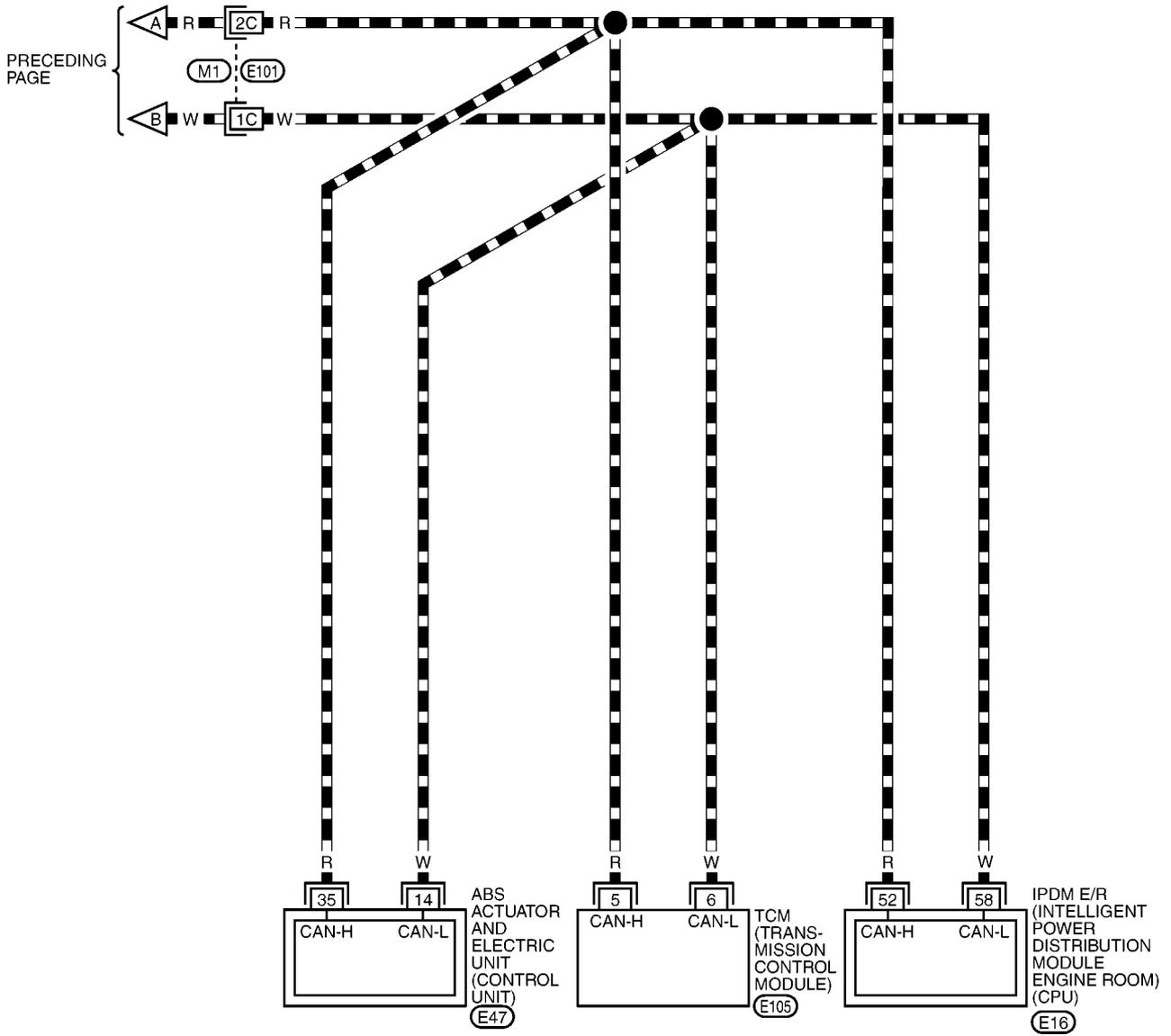
REFER TO THE FOLLOWING.

- (M1) -SUPER MULTIPLE JUNCTION (SMJ)
- (E49) -ELECTRICAL UNITS

MKWA2711E

LAN-CAN-12

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

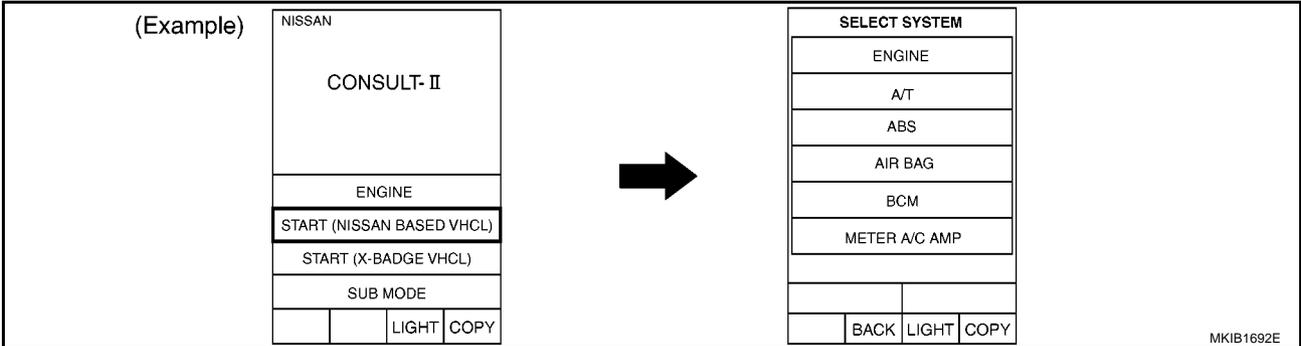
CAN SYSTEM (TYPE 6)

[CAN]

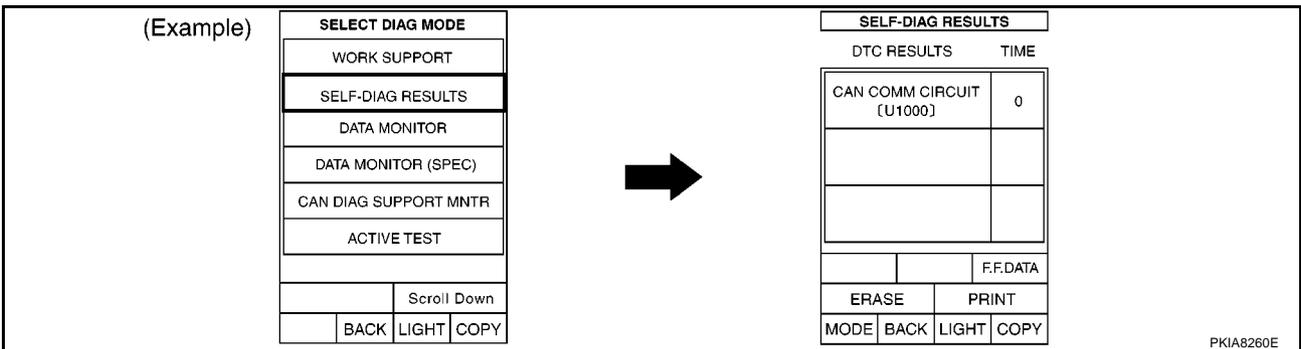
EKS00JOP

Work Flow

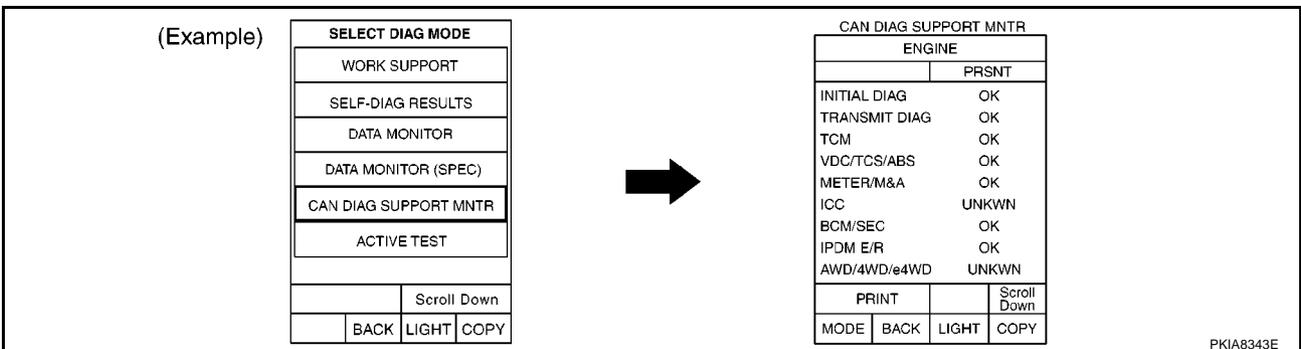
- When there are no indications of “EPS”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



- Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to [LAN-177, "CHECK SHEET"](#) .
- Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWVN” in the check sheet table. Refer to [LAN-177, "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 “CAN DIAG SUPPORT MNTR” items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 6)

[CAN]

6. Convert “v” mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3 ✓	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6 ✓	CAN CIRC 3 ✓
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	-	-	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis							
			ECM	METER /M&A	EPS	BCM/SEC	VDO/TCS /ABS	TCM	IPDM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN ✓	-	-
BCM	No indication	-	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN ✓	UNKWN ✓
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-
A/T	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-

Convert

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7. According to the check sheet results (example), start inspection. Refer to [LAN-179, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 6)

[CAN]

CHECK SHEET

Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

Comparison table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	-	-
BCM	No indication	-	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	UNKWN
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-
A/T	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-

Symptoms:

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SELECT SYSTEM

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CAN SYSTEM (TYPE 6)

[CAN]

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SELF-DIAG RESULTS

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EPS
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
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A/T
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Attach copy of
IPDM E/R
SELF-DIAG RESULTS

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DATA MONITOR

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DATA MONITOR

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BCM
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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

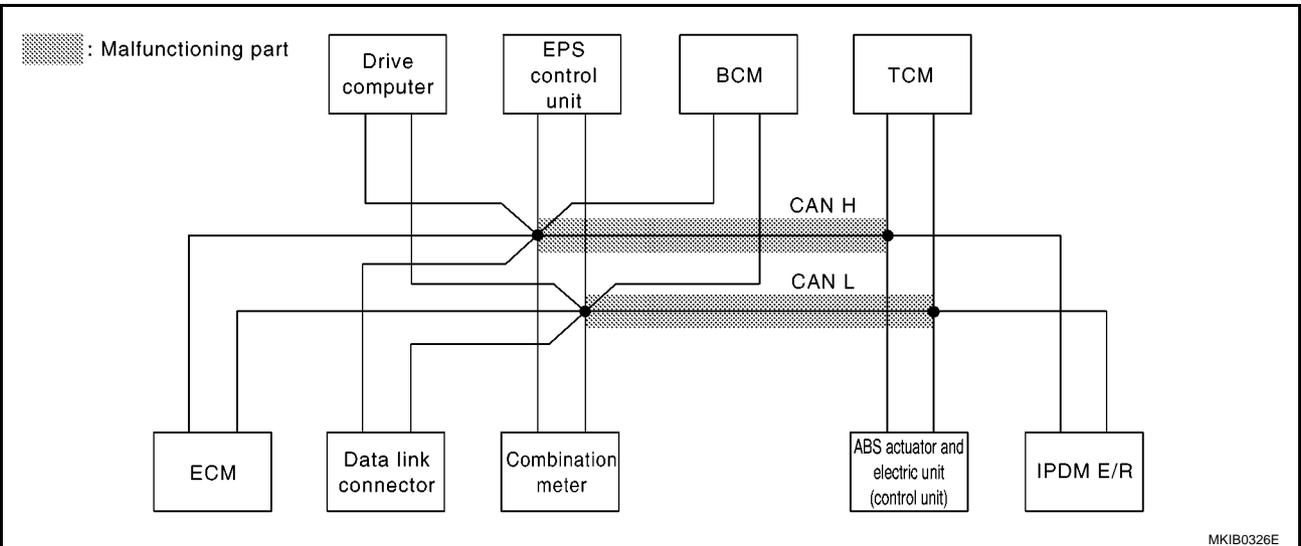
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-189, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN ✓CIRC 3	CAN ✓CIRC 2	CAN ✓CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN ✓CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN ✓CIRC 6	CAN ✓CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN ✓CIRC 2	CAN ✓CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 6)

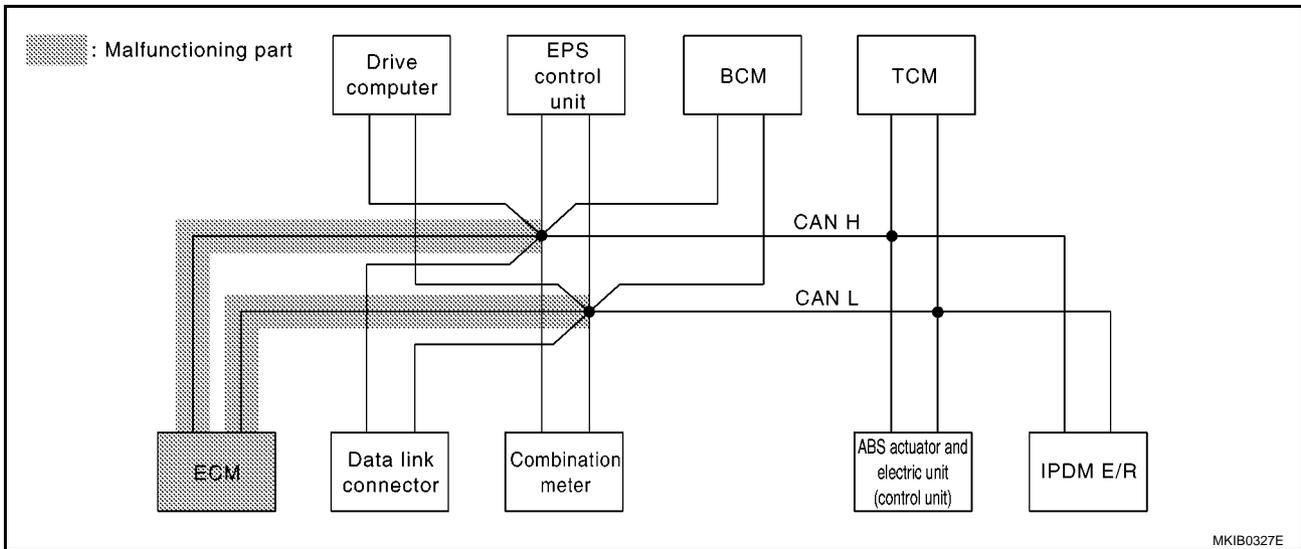
[CAN]

Case2

Check ECM circuit. Refer to [LAN-190, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1 ✓	-	CAN CIRC 4 ✓	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	-	CAN CIRC 2	-	-	-

MKIB0795E



MKIB0327E

CAN SYSTEM (TYPE 6)

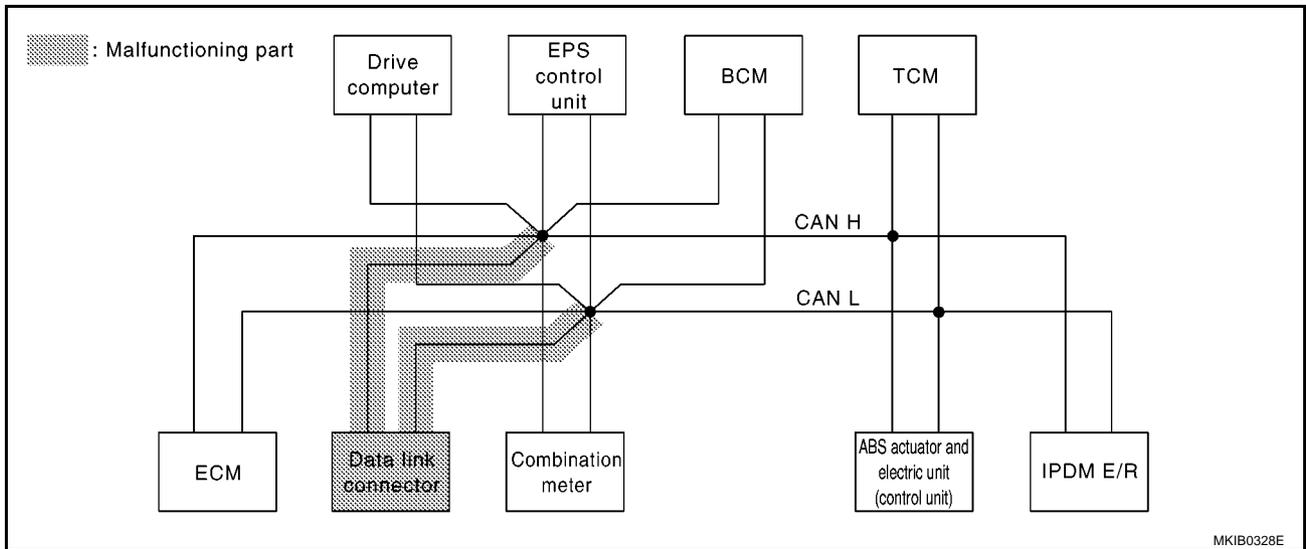
[CAN]

Case3

Check data link connector circuit. Refer to [LAN-191, "Data Link Connector Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication ✓	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

MKIB0796E



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CAN SYSTEM (TYPE 6)

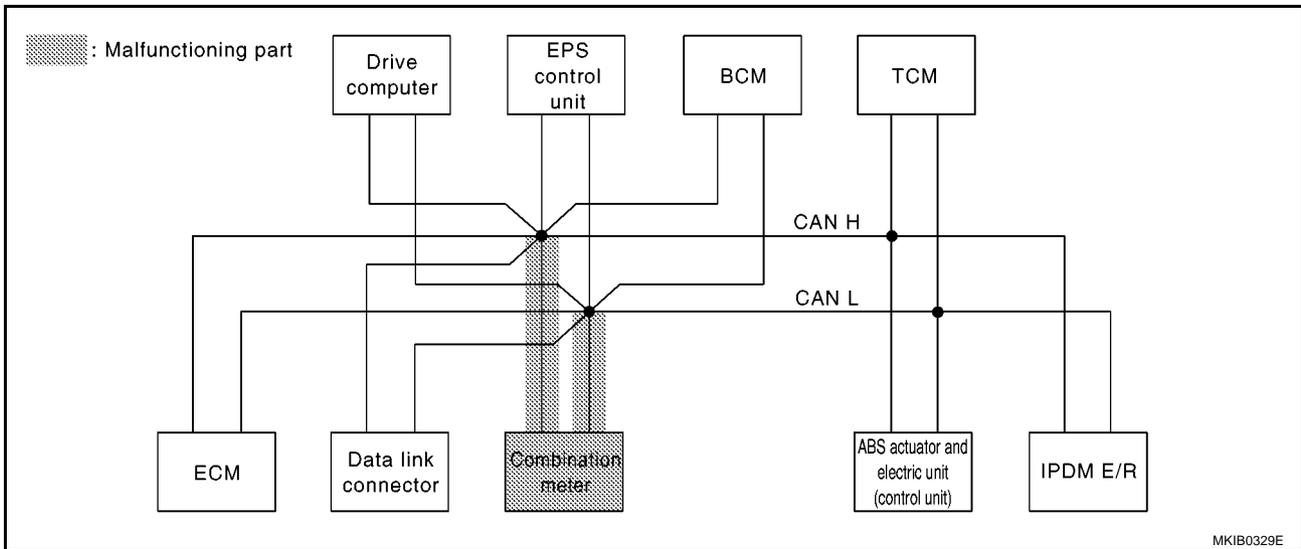
[CAN]

Case4

Check combination meter circuit. Refer to [LAN-192, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4 ✓	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

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MKIB0329E

CAN SYSTEM (TYPE 6)

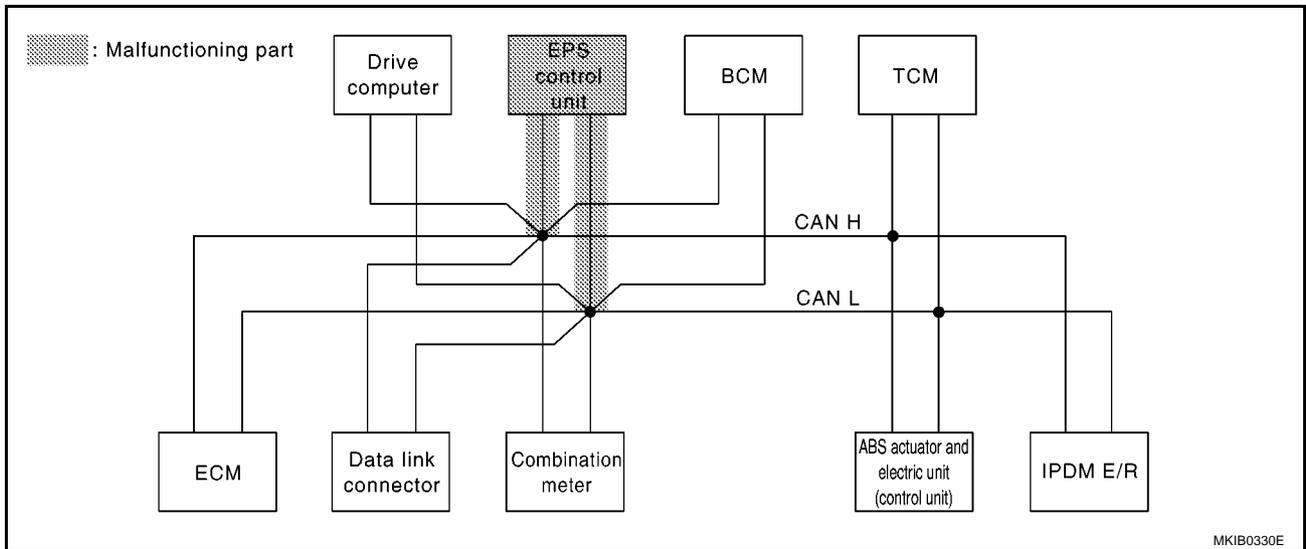
[CAN]

Case5

Check EPS control unit circuit. Refer to [LAN-193, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 6)

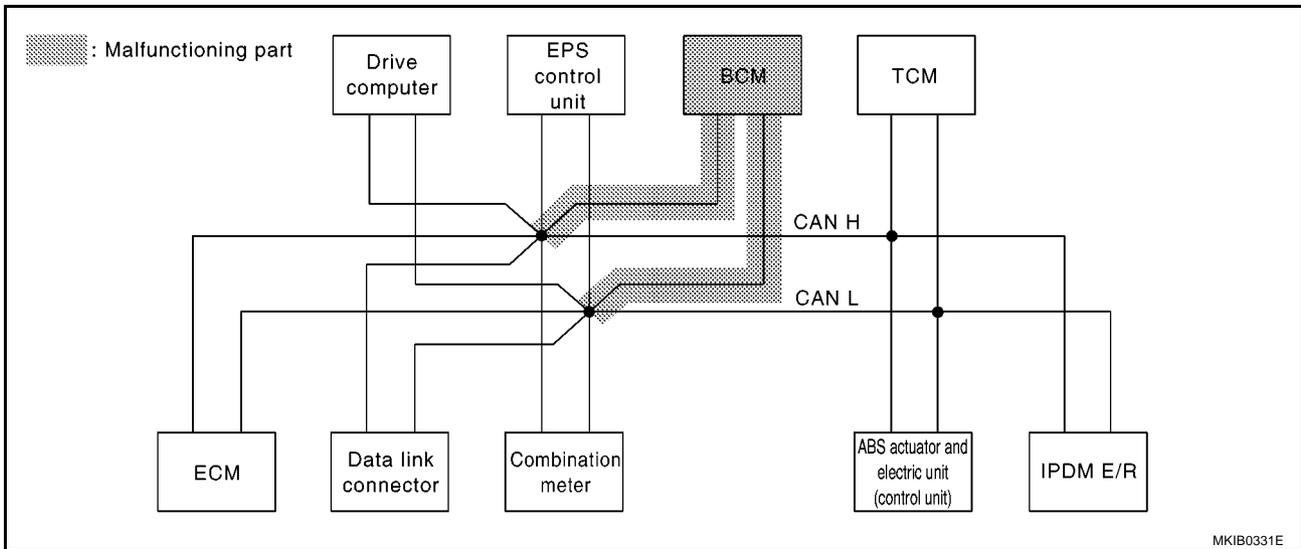
[CAN]

Case6

Check BCM circuit. Refer to [LAN-194, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

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MKIB0331E

CAN SYSTEM (TYPE 6)

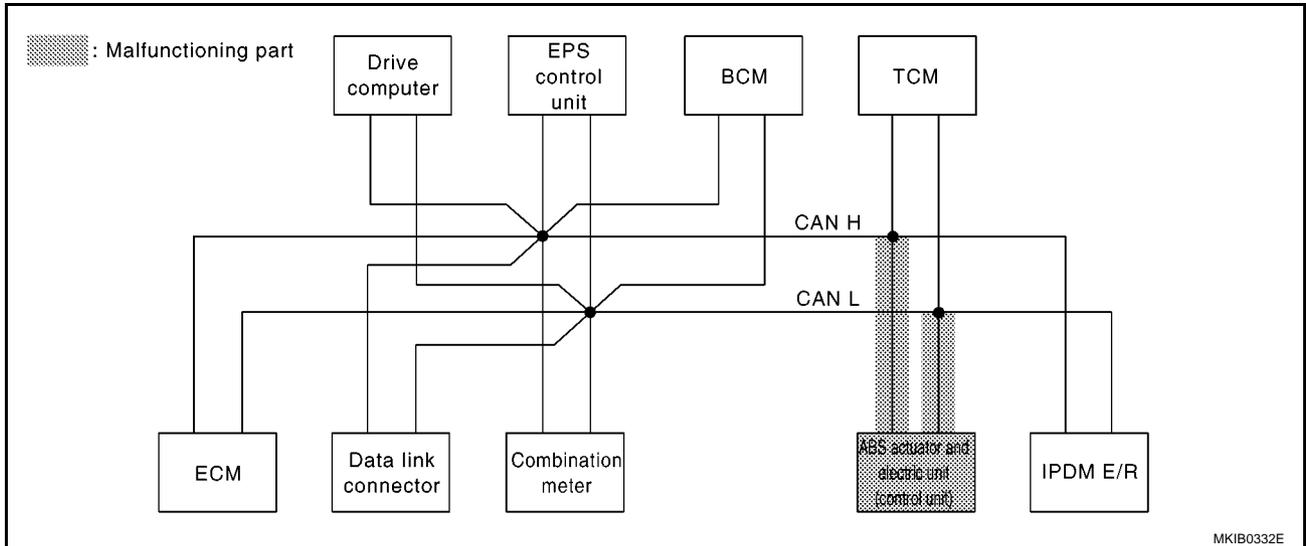
[CAN]

Case7

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-195, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

MKIB0800E



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CAN SYSTEM (TYPE 6)

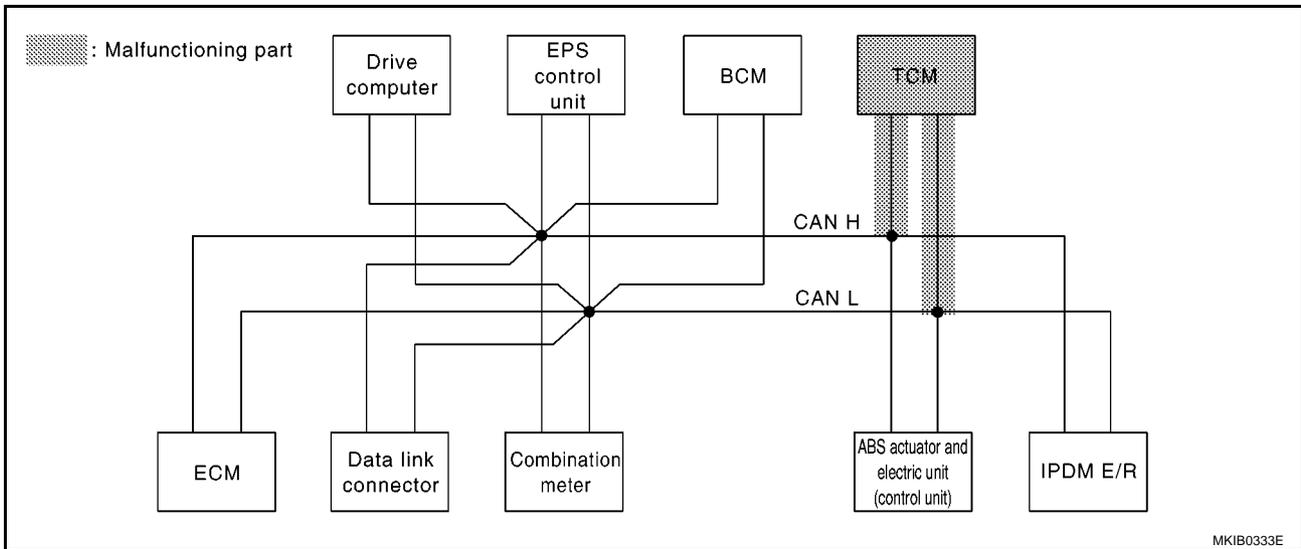
[CAN]

Case8

Check TCM circuit. Refer to [LAN-196, "TCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

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MKIB0333E

CAN SYSTEM (TYPE 6)

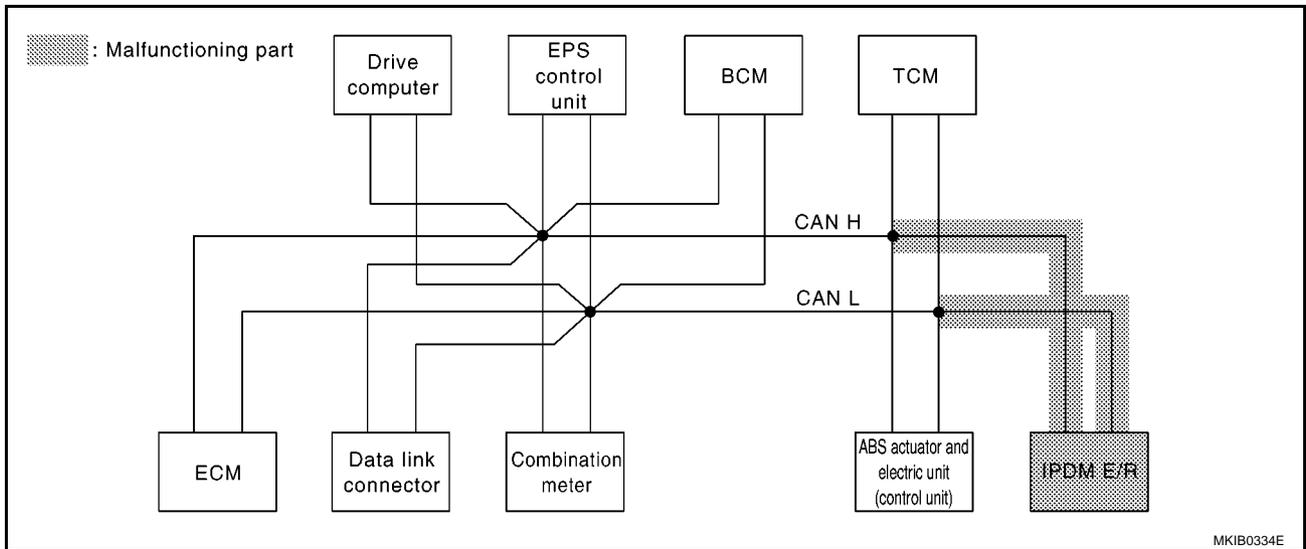
[CAN]

Case9

Check IPDM E/R circuit. Refer to [LAN-197, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

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CAN SYSTEM (TYPE 6)

[CAN]

Case10

Check CAN communication circuit. Refer to [LAN-198, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1 ✓	-	CAN CIRC 4 ✓	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication ✓	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	-	-	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

MKIB0803E

Case11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-201, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3 ✓	-	-
BCM	No indication ✓	-	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	-	-	CAN CIRC 6 ✓	CAN CIRC 3
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	-	CAN CIRC 2	-	-	-

MKIB0804E

Case12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-201, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4 ✓	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7 ✓
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-	-
BCM	No indication ✓	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 6	CAN CIRC 3
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 5 ✓	-	-	CAN CIRC 3	-
A/T	-	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	-	-	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-	-

MKIB0805E

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS00J00

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 M1
 - Harness connector E101

OK or NG

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

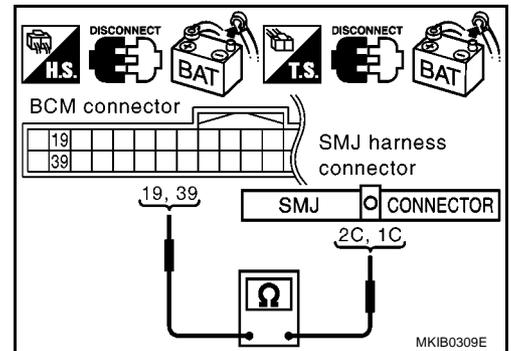
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



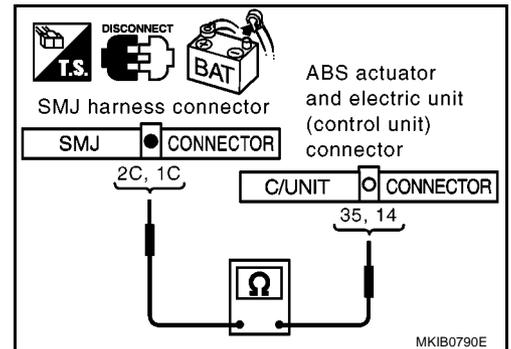
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

2C (R) – 35 (R) : Continuity should exist.
1C (W) – 14 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-175, "Work Flow"](#) .
 NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

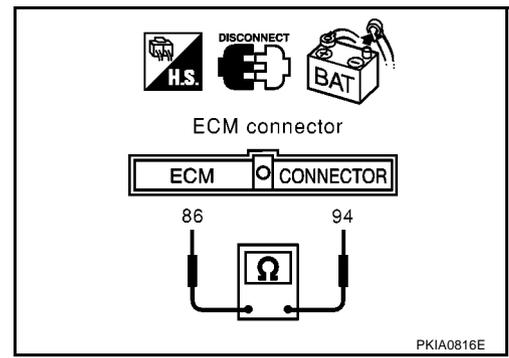
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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

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

OK or NG

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

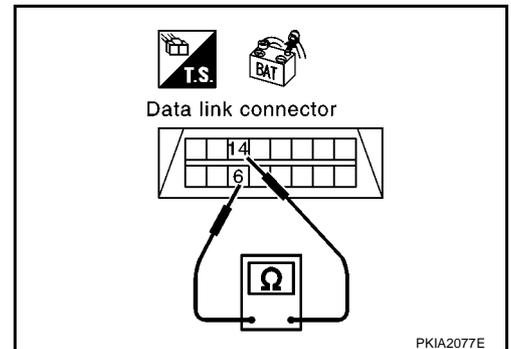
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-175. "Work Flow"](#).
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

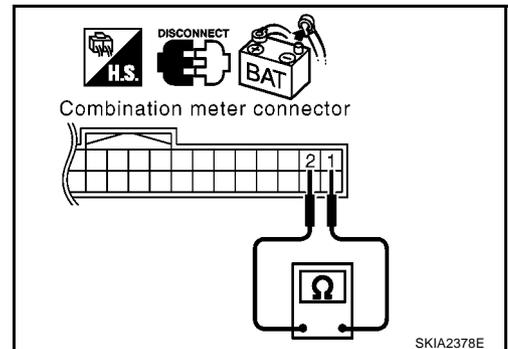
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



EPS Control Unit Circuit Check**1. CHECK CONNECTOR**

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

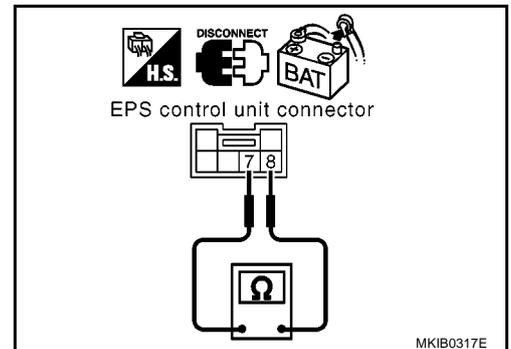
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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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.

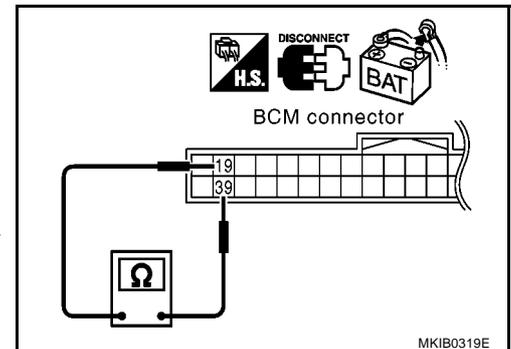
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check**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.

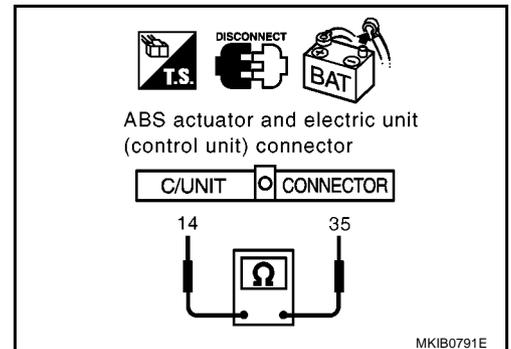
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

35 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

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



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TCM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

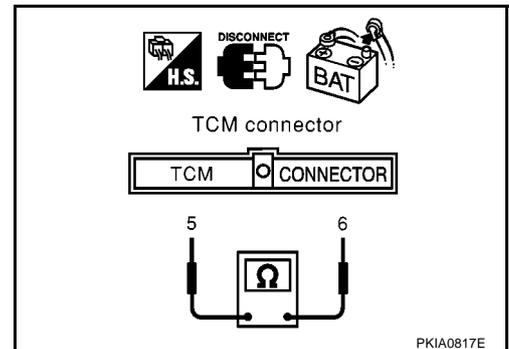
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

5 (R) – 6 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

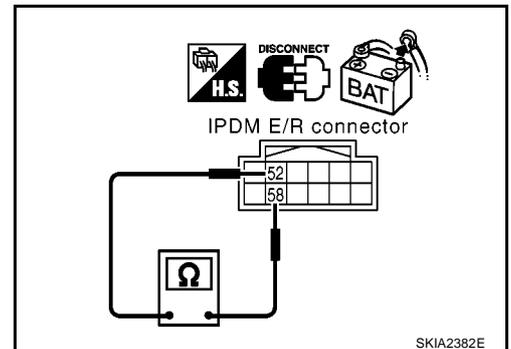
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

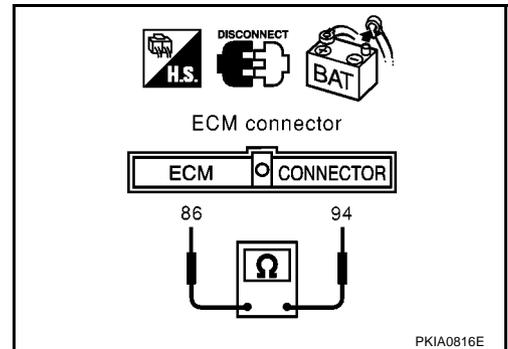
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

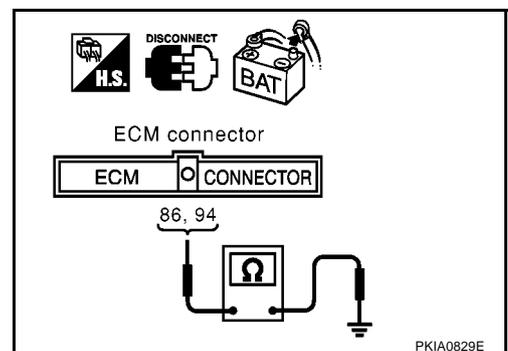
Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

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

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

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - TCM connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

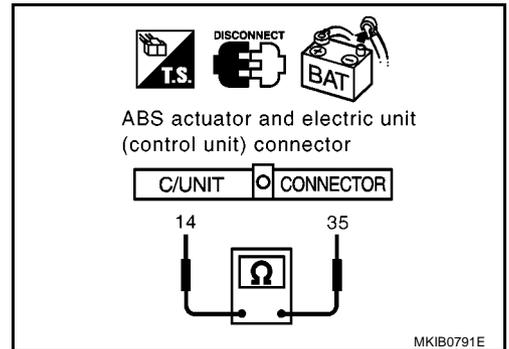
35 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

35 (R) – Ground : Continuity should not exist.

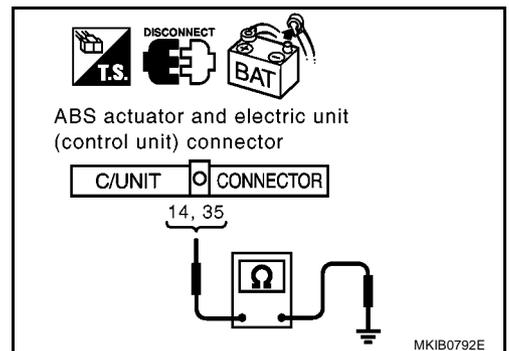
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

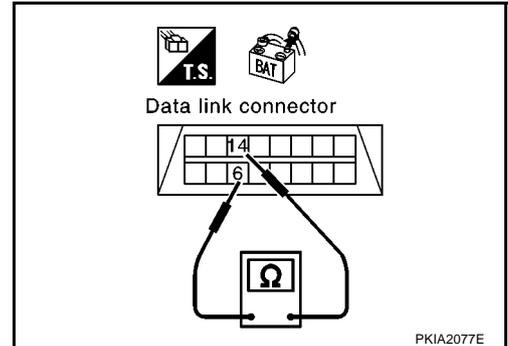
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM.



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

6 (R) – ground : Continuity should not exist.

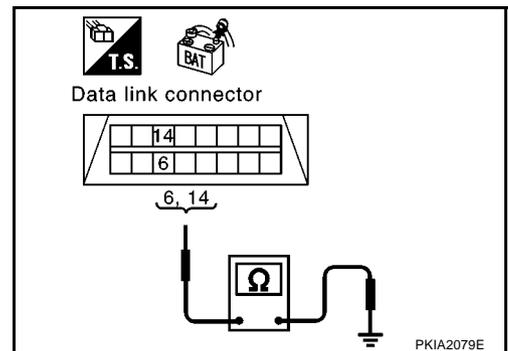
14 (W) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM.



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-201, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-175, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00JP0

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

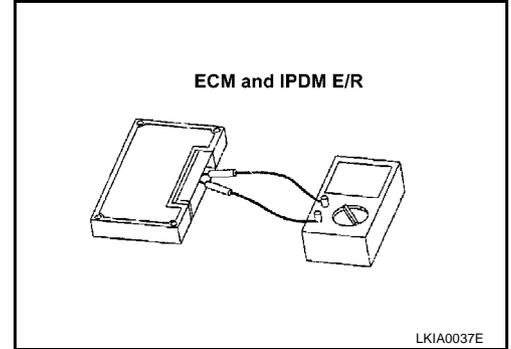
Component Inspection

EKS00JP1

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 7)

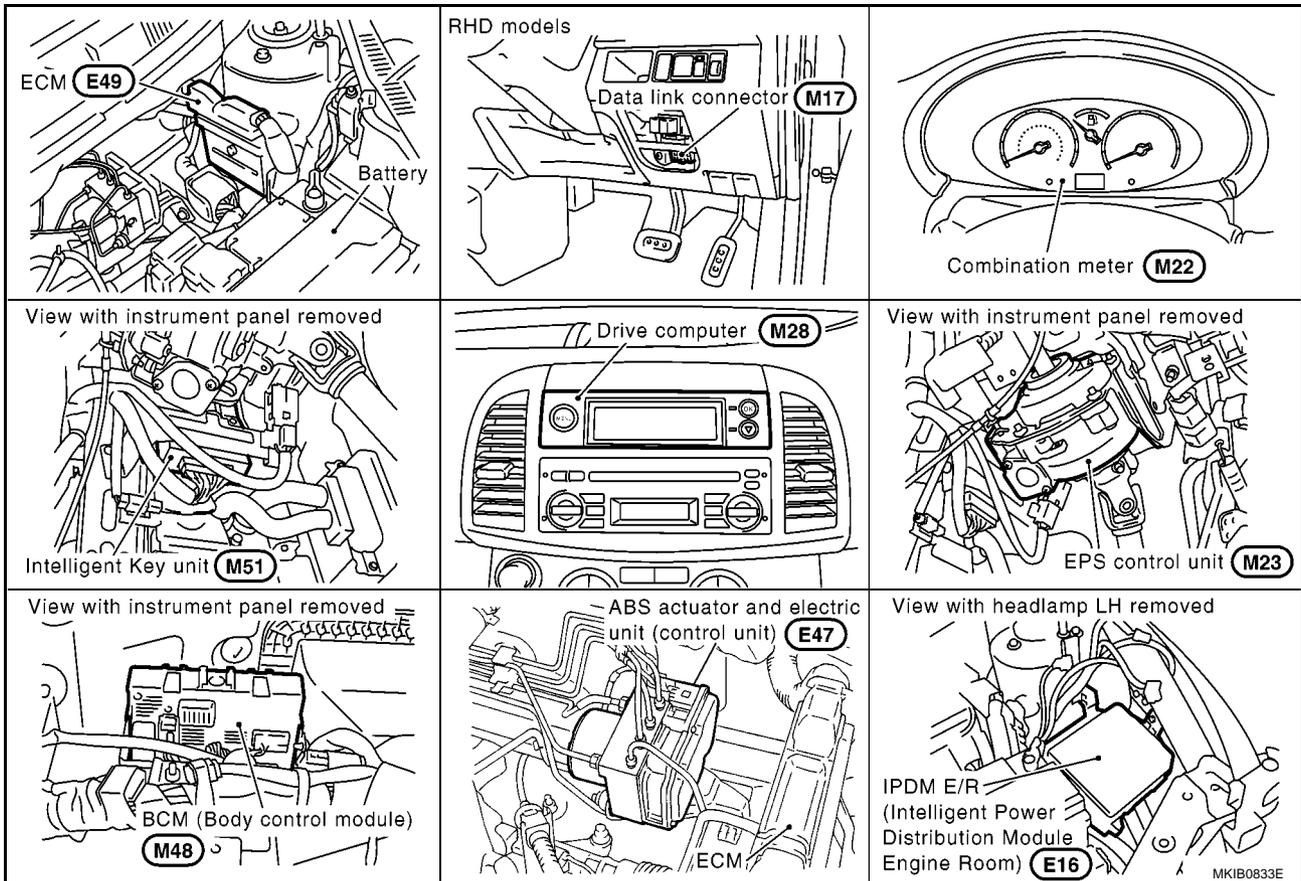
System Description

EKS00JP2

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

EKS00JP3



CAN SYSTEM (TYPE 7)

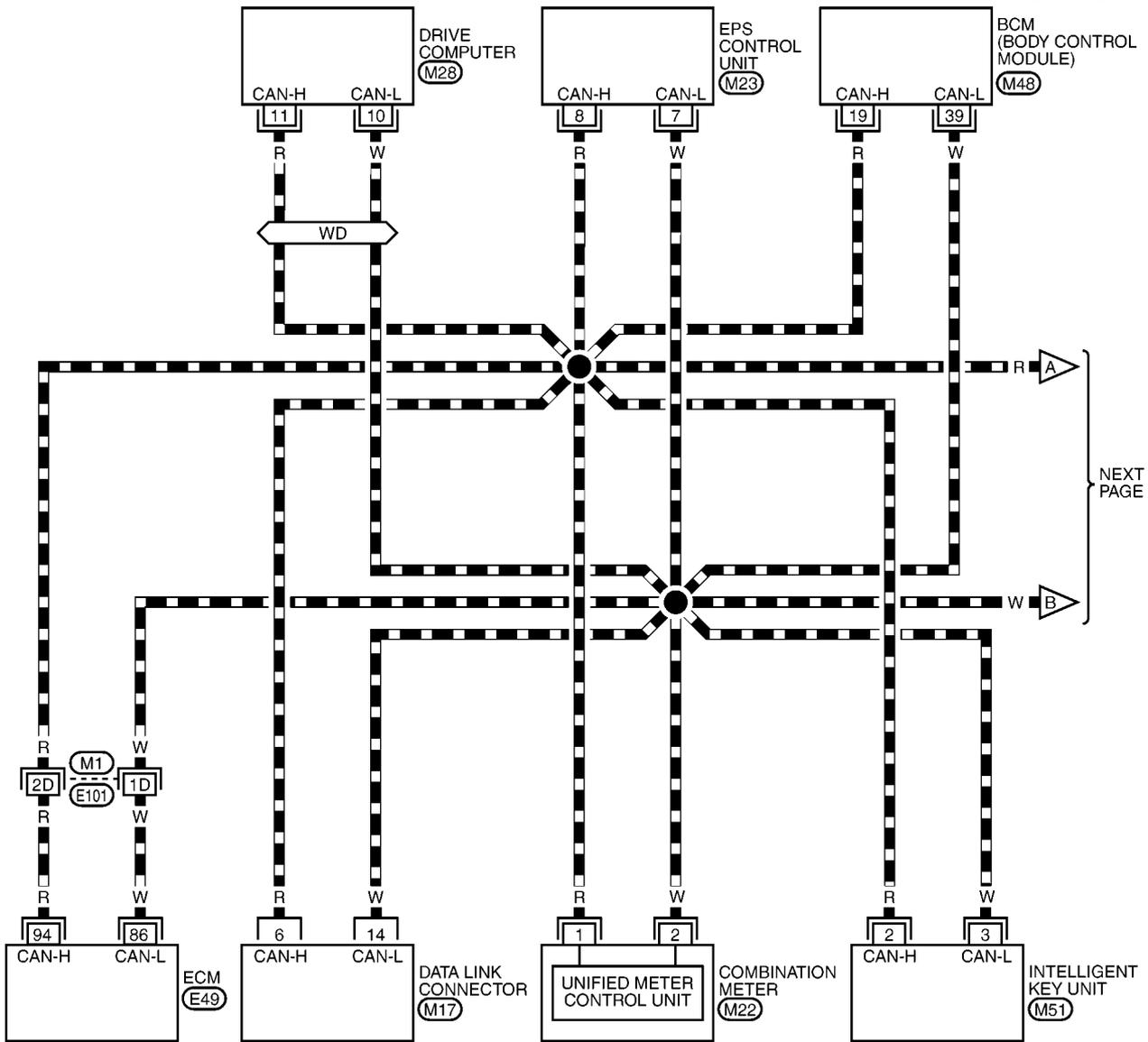
[CAN]

Wiring Diagram — CAN —

EKS00JP4

LAN-CAN-13

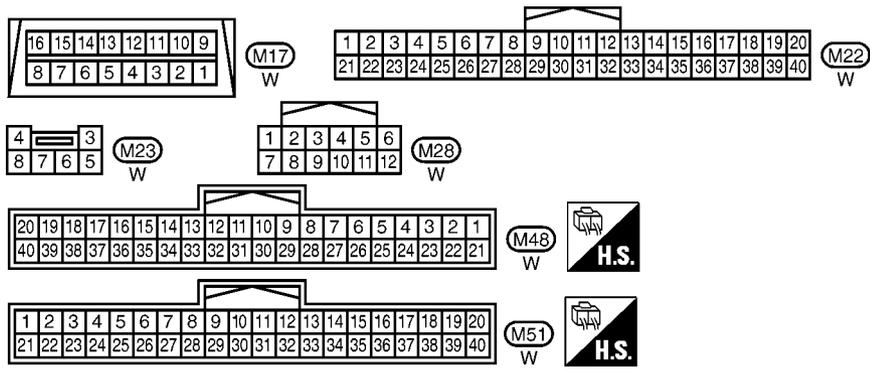
▬ : DATA LINE
 (WD) : WITH DRIVE COMPUTER



NEXT PAGE

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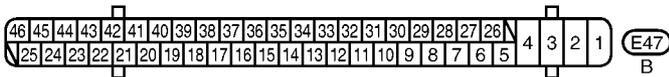
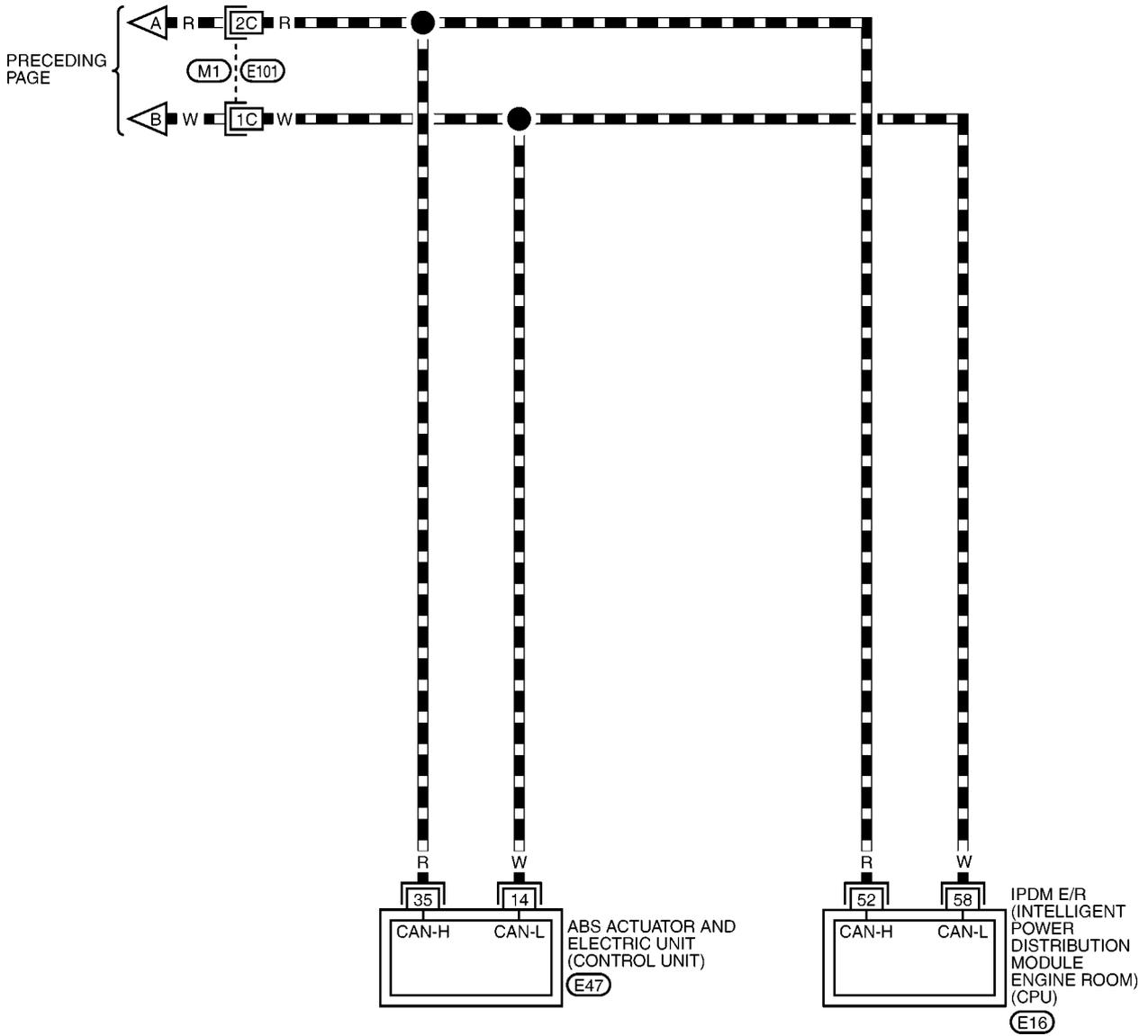
REFER TO THE FOLLOWING.

- (M1) -SUPER MULTIPLE JUNCTION (SMJ)
- (E49) -ELECTRICAL UNITS

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LAN-CAN-14

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

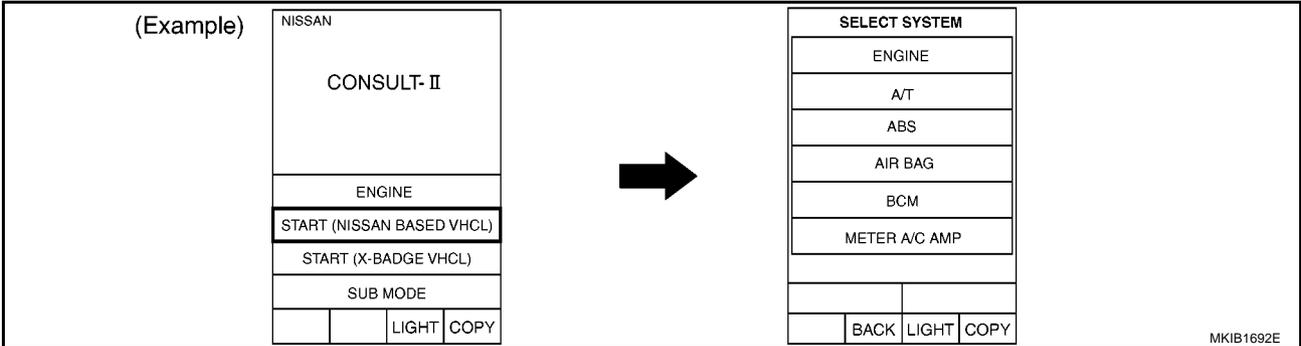
CAN SYSTEM (TYPE 7)

[CAN]

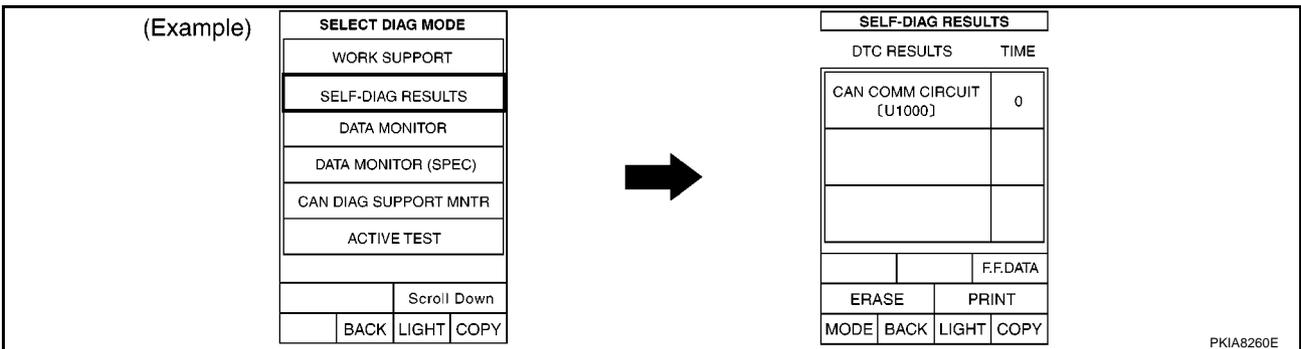
EKS00JP5

Work Flow

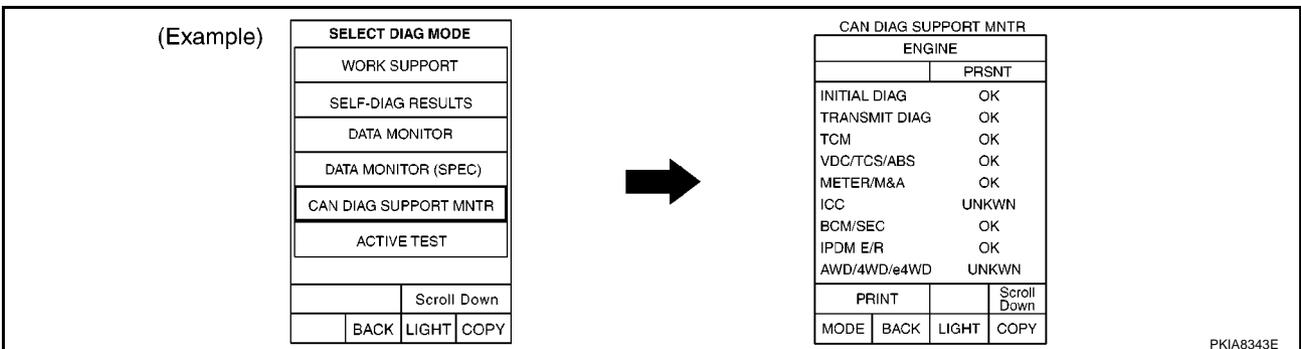
- When there are no indications of "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-207, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWKN" in the check sheet table. Refer to [LAN-207, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 7)

[CAN]

6. Convert “v” mark on comparison table to check sheet table.

(Example)

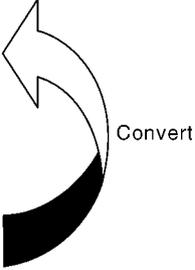
Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	–	CAN COMM	CAN CIRC 1	–	CAN CIRC 4	–	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	–	–	CAN CIRC 2	–	–
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 5	CAN CIRC 3 ✓	–
BCM	No indication	–	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	–	–	–	CAN CIRC 3 ✓
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	–	CAN CIRC 5	–	–	–
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	–	–	CAN CIRC 2	–	–

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis							
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	UNKWN ✓	–
BCM	No indication	–	UNKWN	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN ✓
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	–	UNKWN	–	–	–
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	–	–	–	UNKWN	–	–

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7. According to the check sheet results (example), start inspection. Refer to [LAN-209, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 7)

[CAN]

CHECK SHEET

Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

Comparison table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-
BCM	No indication	-	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	-	-	-
IPDM E/R	No indication	NG	UNKWN	UNKWN	-	-	-	UNKWN	-	-

Symptoms:

Attach copy of
SELECT SYSTEM

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CAN SYSTEM (TYPE 7)

[CAN]

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SELF-DIAG RESULTS

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INTELLIGENT KEY
SELF-DIAG RESULTS

Attach copy of
EPS
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ABS
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IPDM E/R
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INTELLIGENT KEY
DATA MONITOR

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EPS
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BCM
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IPDM
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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

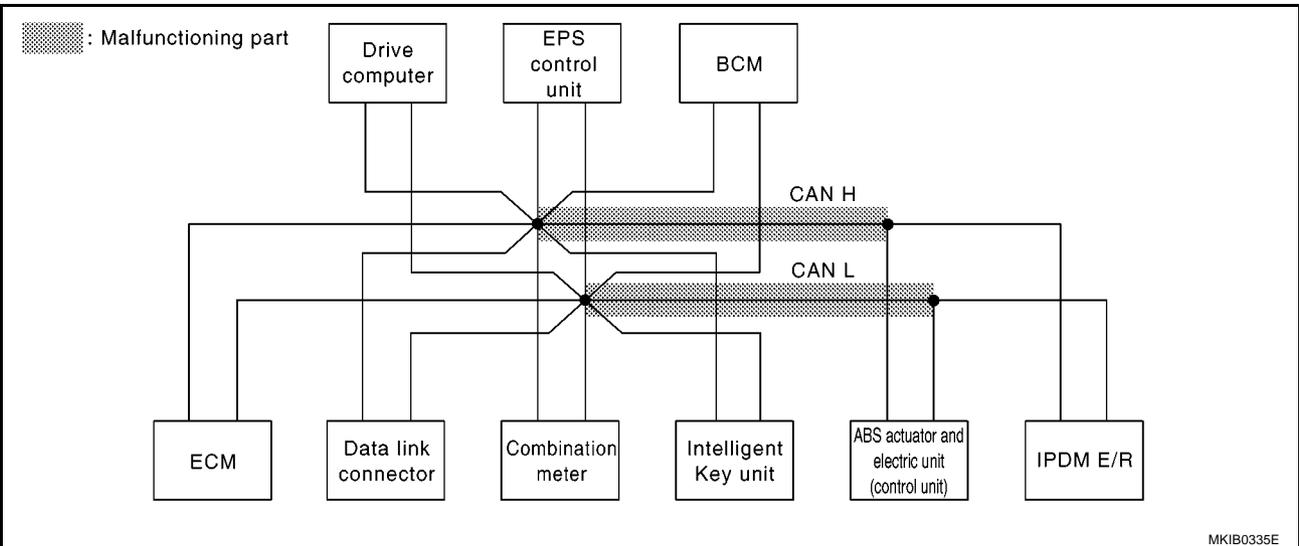
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-219, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3 ✓	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3 ✓
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 7)

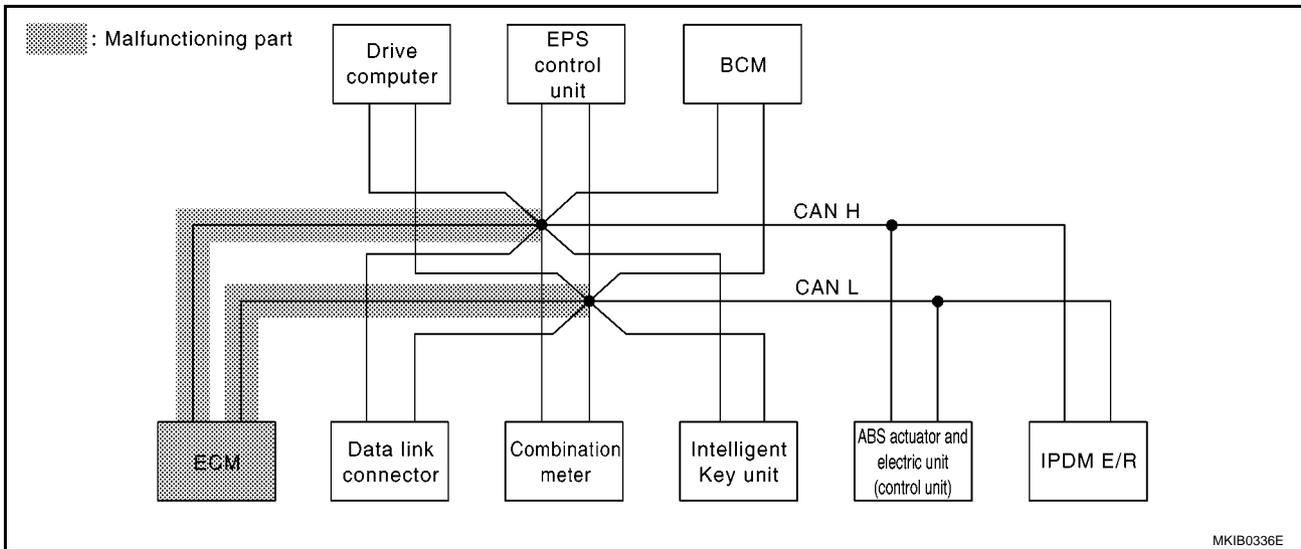
[CAN]

Case2

Check ECM circuit. Refer to [LAN-220, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 7)

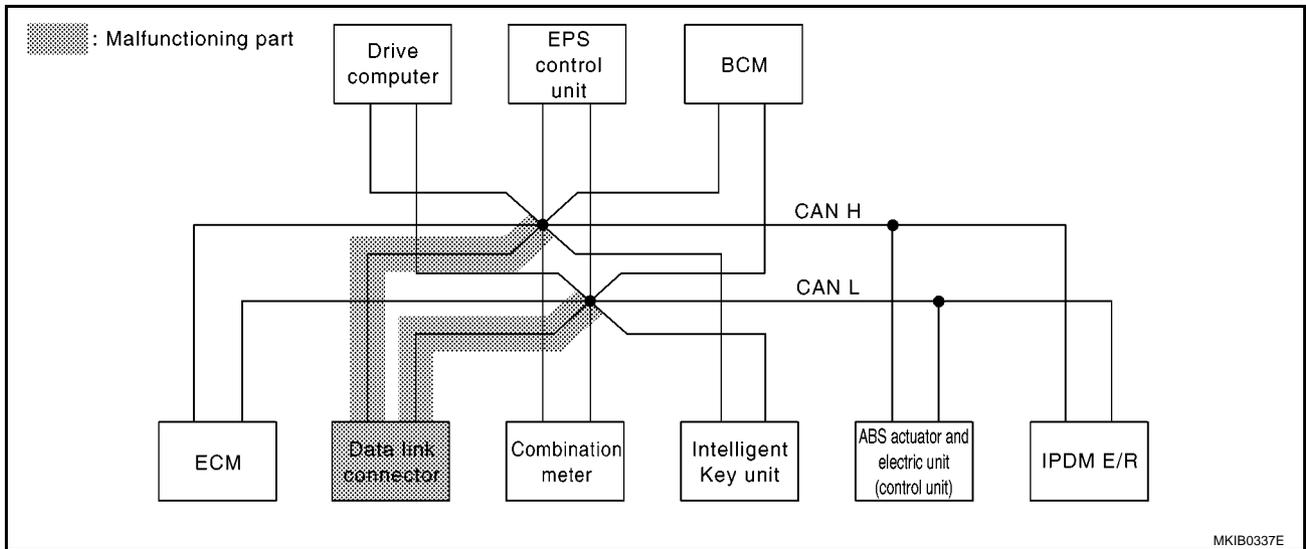
[CAN]

Case3

Check data link connector circuit. Refer to [LAN-221, "Data Link Connector Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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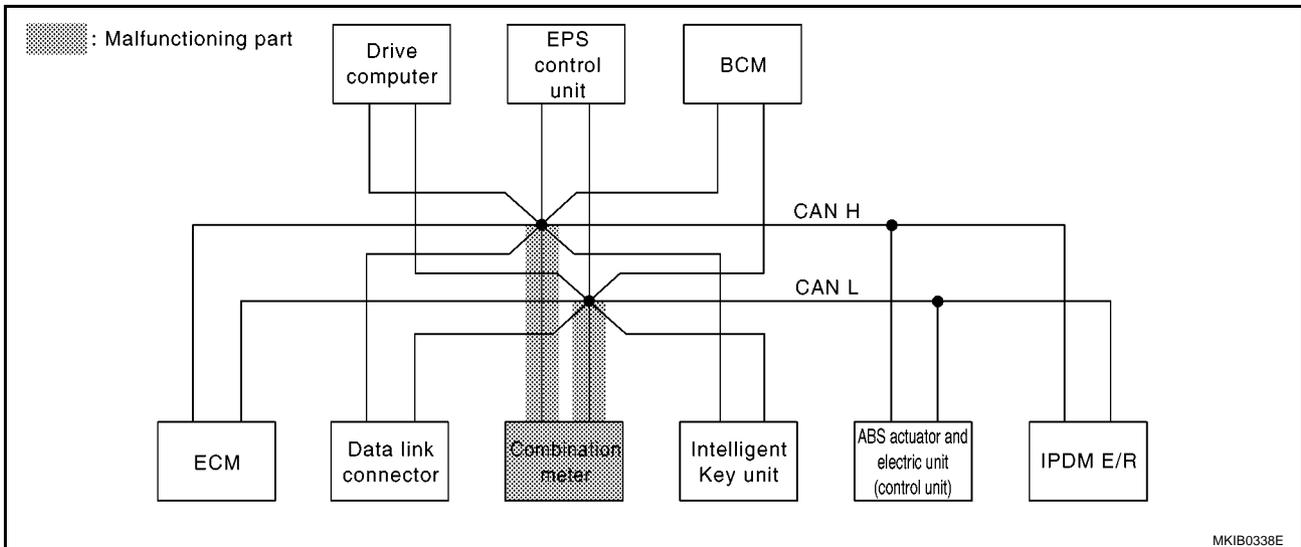
[CAN]

Case4

Check combination meter circuit. Refer to [LAN-222, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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MKIB0338E

CAN SYSTEM (TYPE 7)

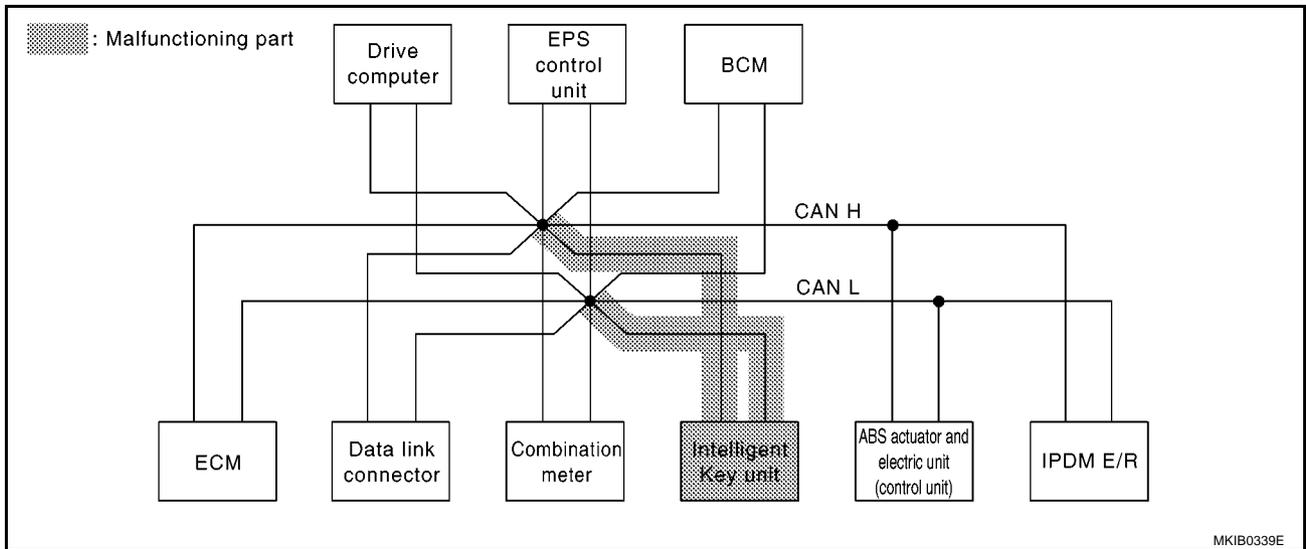
[CAN]

Case5

Check Intelligent Key unit circuit. Refer to [LAN-223, "Intelligent Key Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 7)

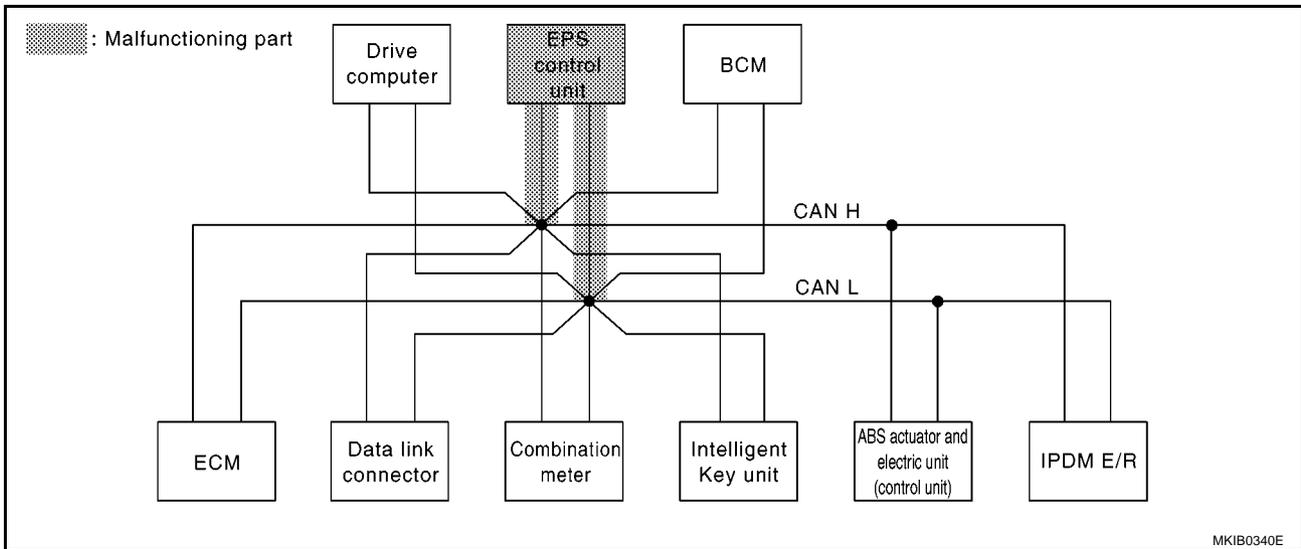
[CAN]

Case6

Check EPS control unit circuit. Refer to [LAN-224, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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MKIB0340E

CAN SYSTEM (TYPE 7)

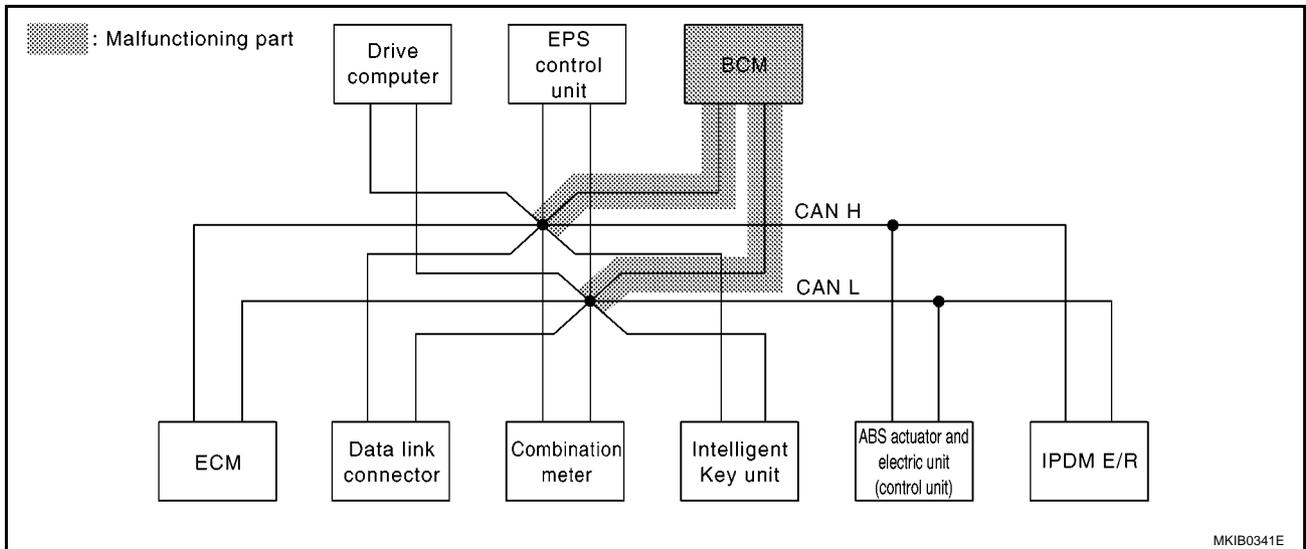
[CAN]

Case7

Check BCM circuit. Refer to [LAN-225, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 7)

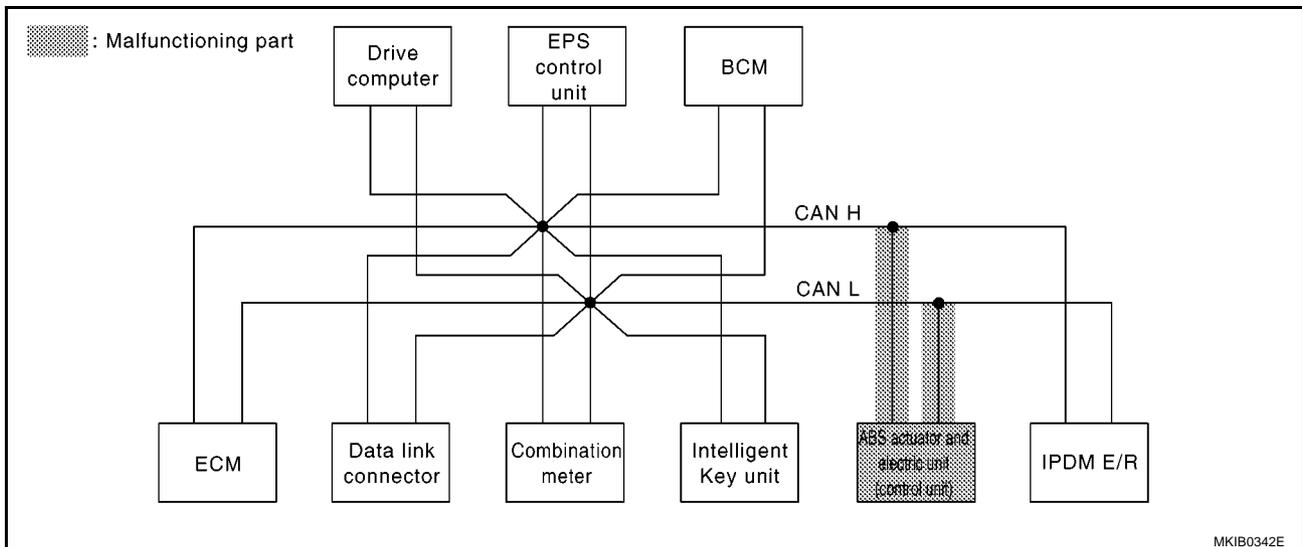
[CAN]

Case8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-226, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3 ✓	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

MKIB0814E



MKIB0342E

CAN SYSTEM (TYPE 7)

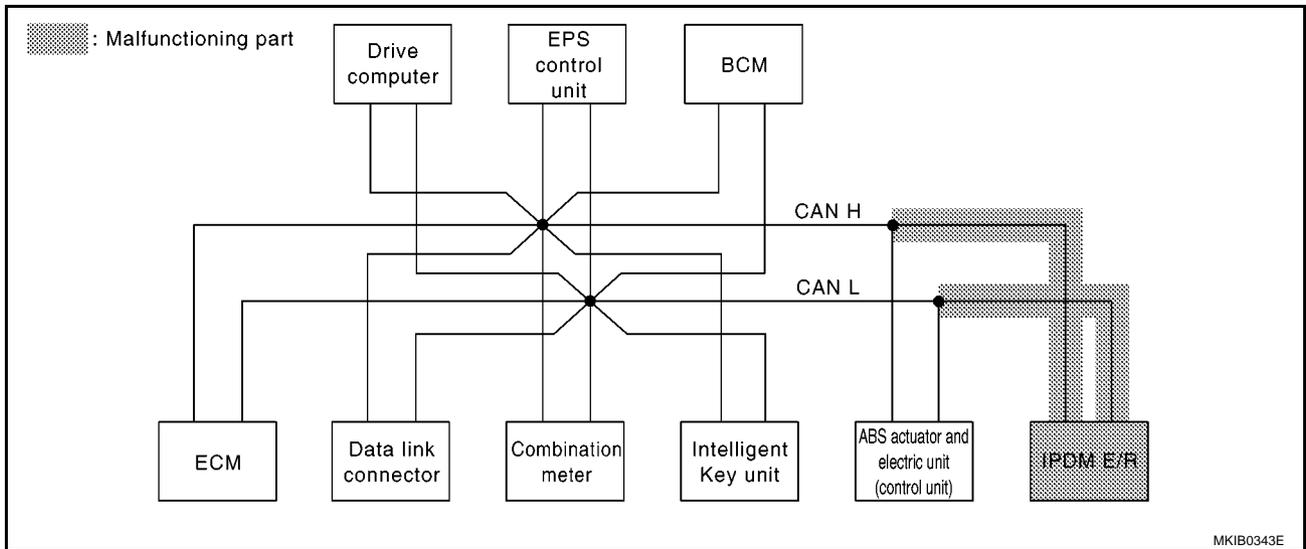
[CAN]

Case9

Check IPDM E/R circuit. Refer to [LAN-227, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3 ✓
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

MKIB0815E



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CAN SYSTEM (TYPE 7)

[CAN]

Case10

Check CAN communication circuit. Refer to [LAN-228, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1 ✓	-	CAN CIRC 4 ✓	-	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication ✓	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

MKIB0816E

Case11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-231, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	-	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3 ✓	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	-	-	-	CAN CIRC 2	-	-

MKIB0817E

Case12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-231, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4 ✓	-	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	-	-	CAN CIRC 2	-	-
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	-	CAN CIRC 5 ✓	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	-	CAN CIRC 2	-	-

MKIB0818E

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS00JP6

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 M1
 - Harness connector E101

OK or NG

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

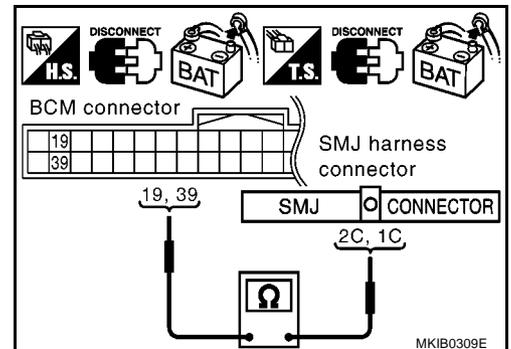
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



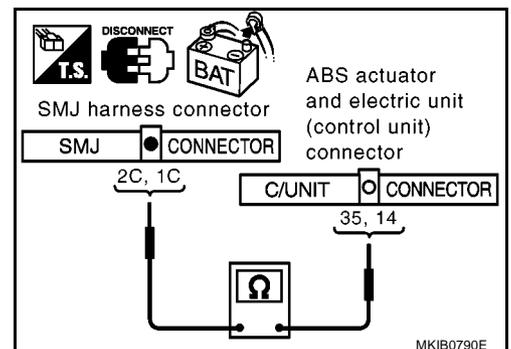
3. CHECK HARNESS FOR OPEN CIRCUIT

- Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

2C (R) – 35 (R) : Continuity should exist.
1C (W) – 14 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-205, "Work Flow"](#) .
 NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

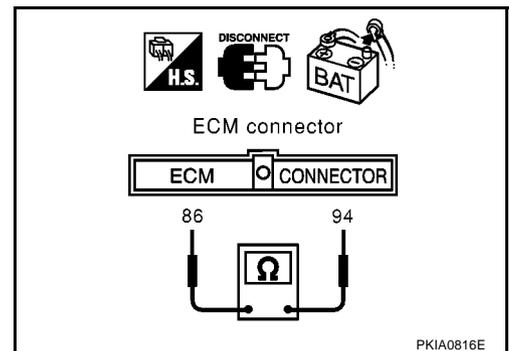
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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

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

OK or NG

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

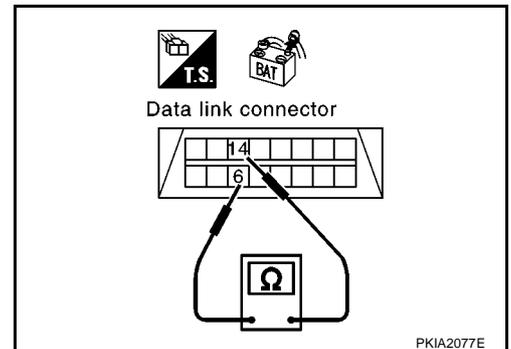
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-205](#), "Work Flow".
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

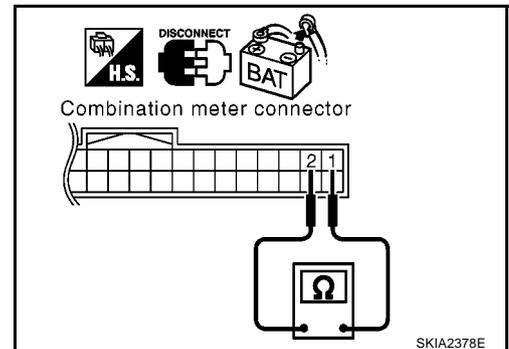
1 (R) – 2 (W)

: Approx. 54 – 66Ω

OK or NG

OK >> Replace combination meter.

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



Intelligent Key Unit Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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.

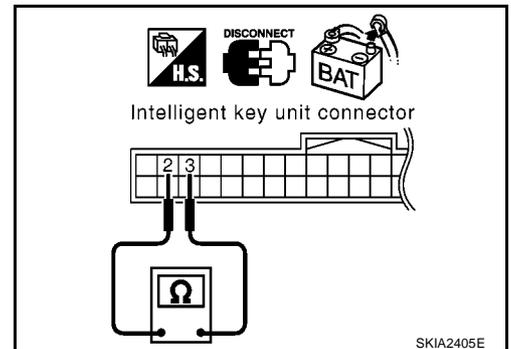
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace Intelligent Key unit.
 NG >> Repair harness between Intelligent Key unit and data link connector.



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EPS Control Unit Circuit Check

1. CHECK CONNECTOR

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

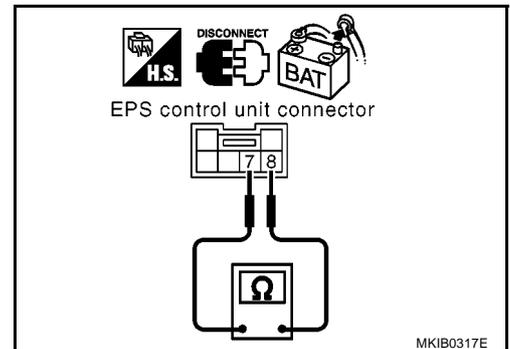
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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.

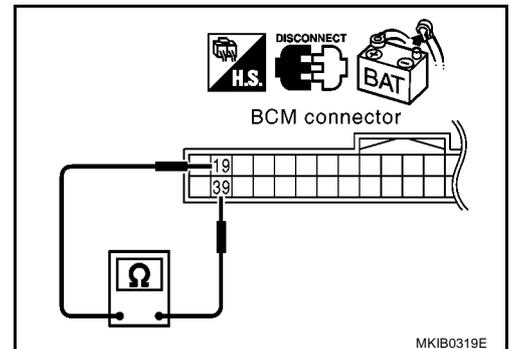
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

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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.

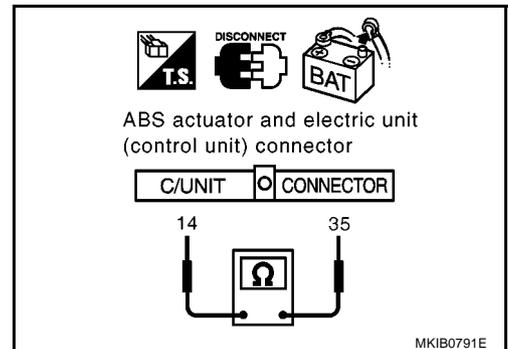
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

35 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

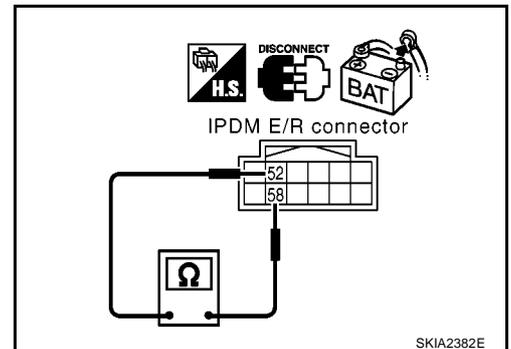
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).
 - ECM
 - Combination meter
 - Intelligent Key unit
 - Drive computer
 - EPS control unit
 - BCM
 - ABS actuator and electric unit (control unit)
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

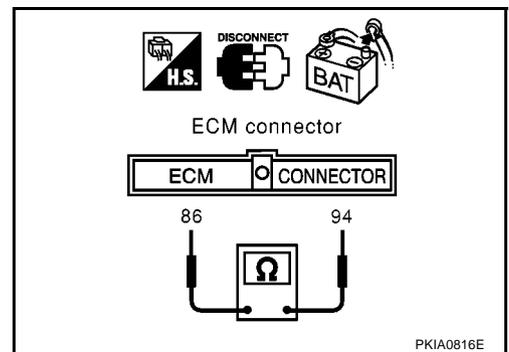
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

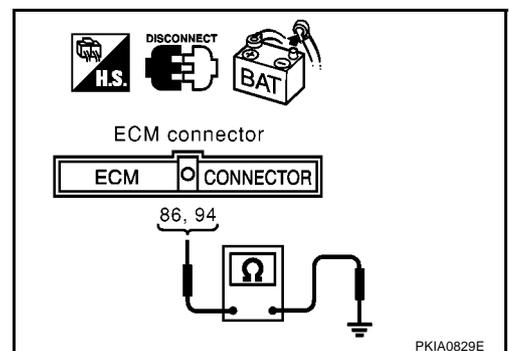
94 (R) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

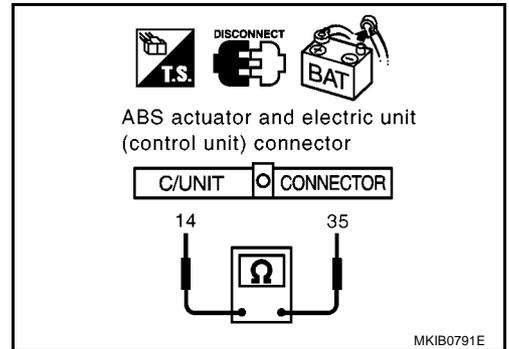
35 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E47 terminals 35 (R), 14 (W) and ground.

35 (R) – Ground : Continuity should not exist.

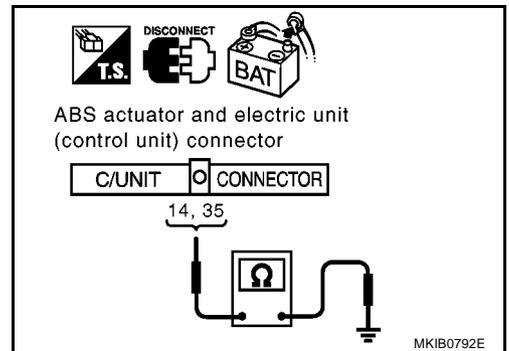
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



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6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

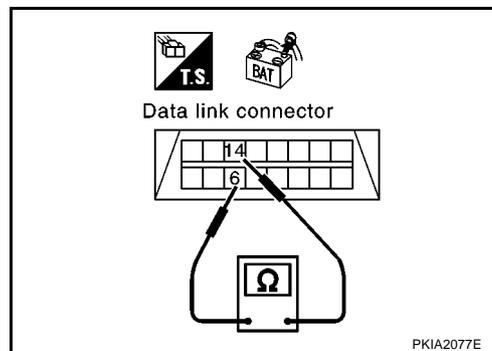
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

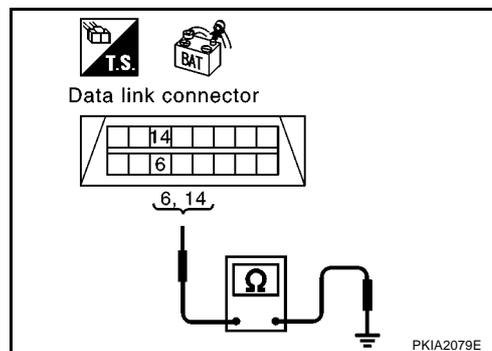
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-231, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-205, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00JPG

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

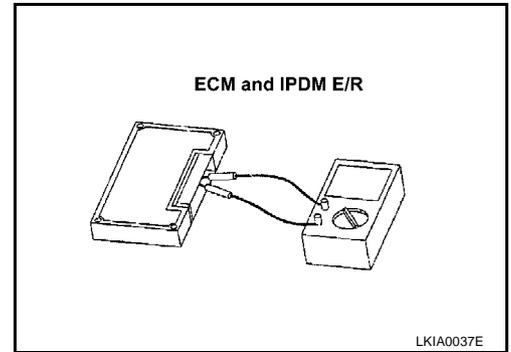
Component Inspection

EKS00JPH

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 8)

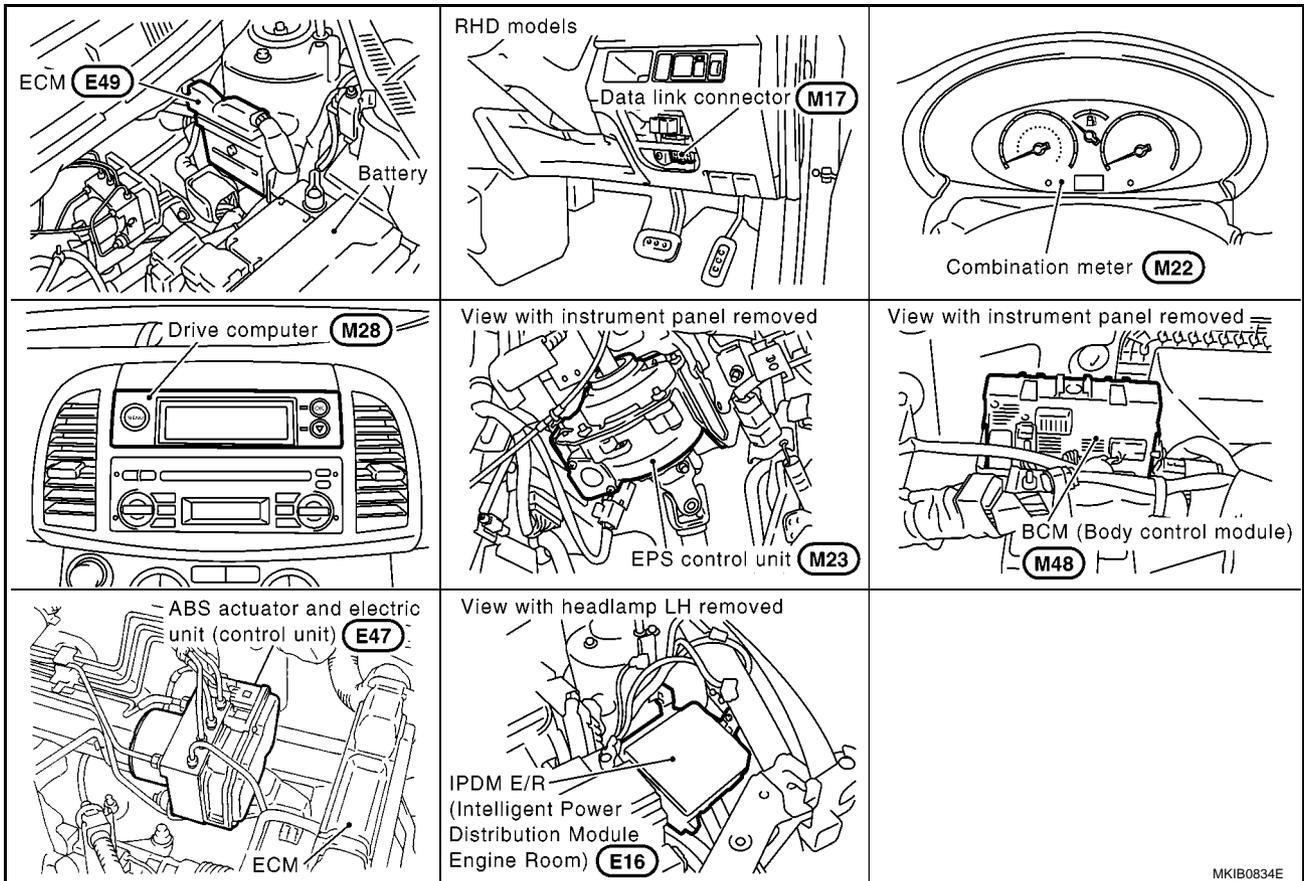
System Description

EKS00JP1

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

EKS00JPJ



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CAN SYSTEM (TYPE 8)

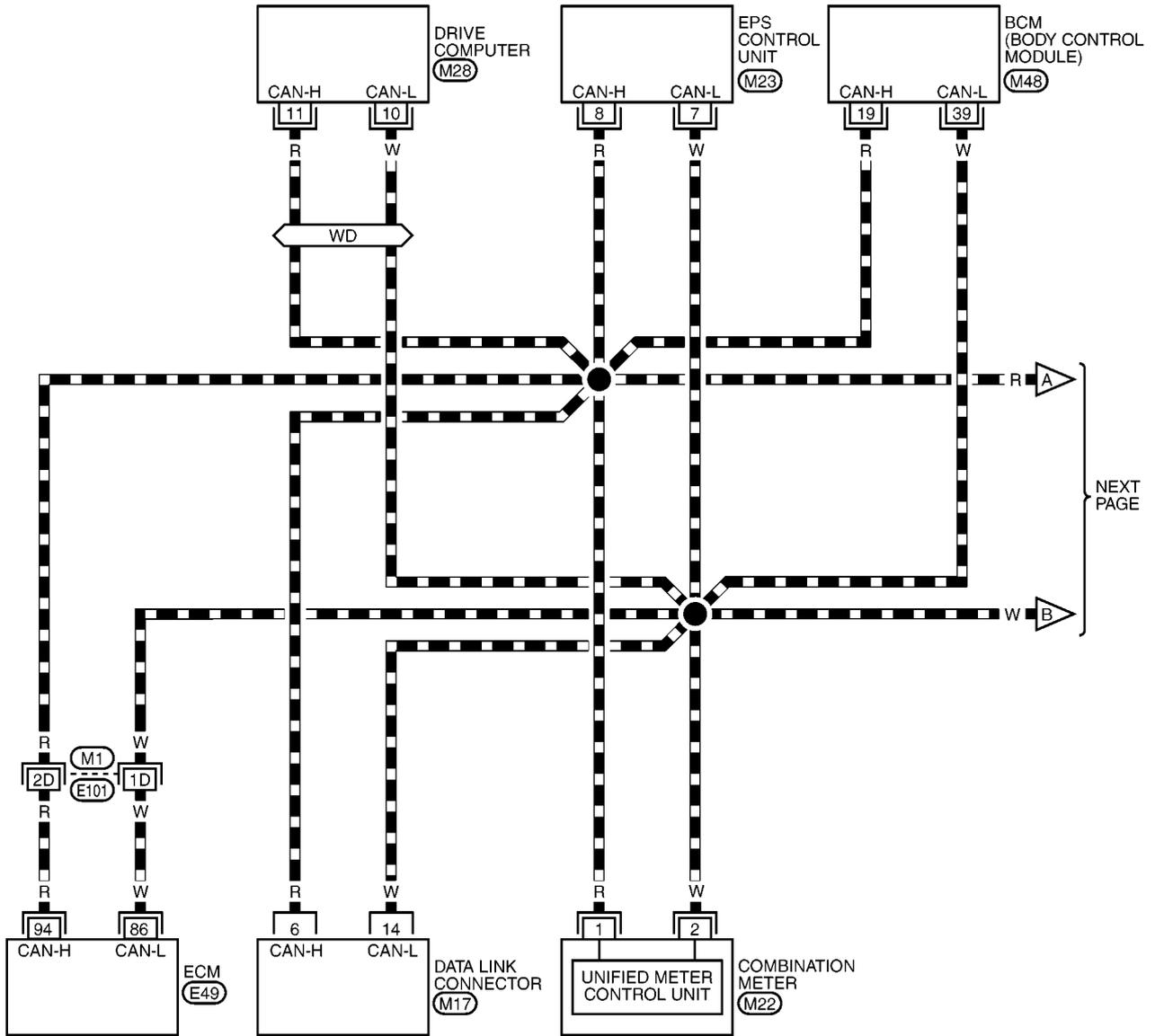
[CAN]

Wiring Diagram — CAN —

EKS00JPK

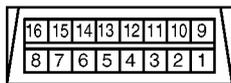
LAN-CAN-15

— : DATA LINE
 (WD) : WITH DRIVE COMPUTER

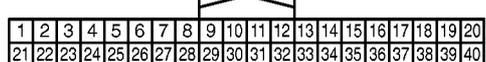


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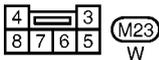
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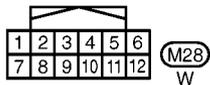
(M17)
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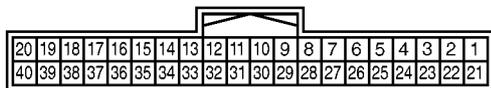
(M22)
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(M23)
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(M28)
W



(M48)
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REFER TO THE FOLLOWING.

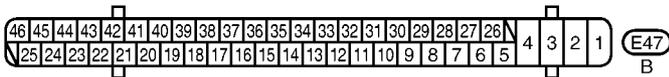
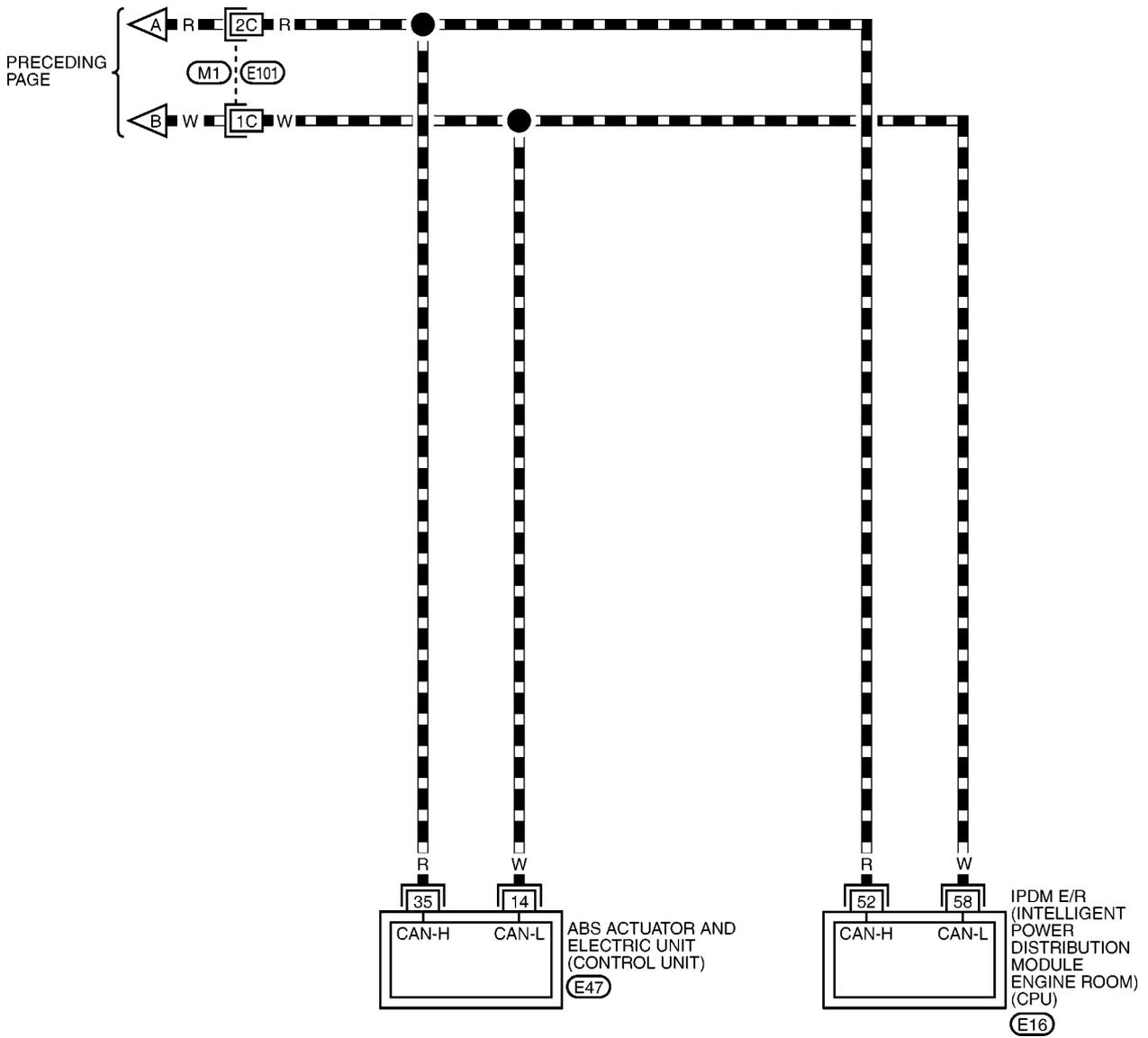
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

MKWA2715E

LAN-CAN-16

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

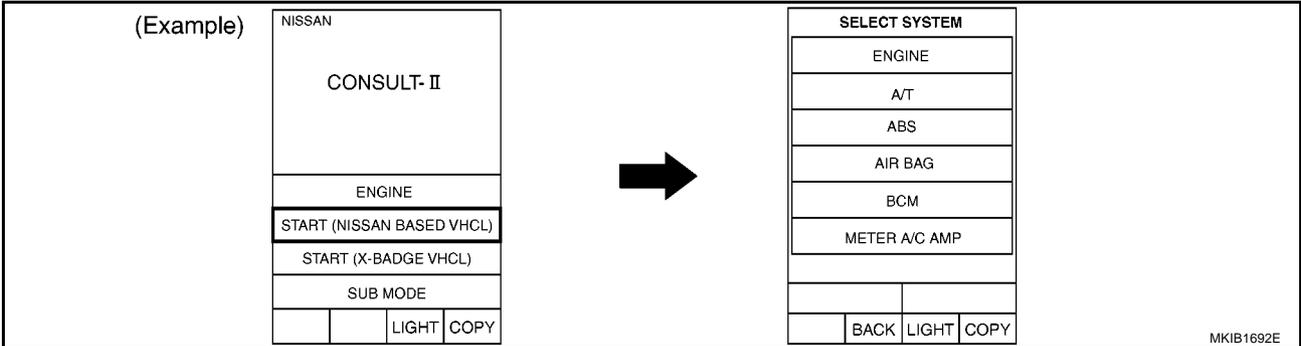
CAN SYSTEM (TYPE 8)

[CAN]

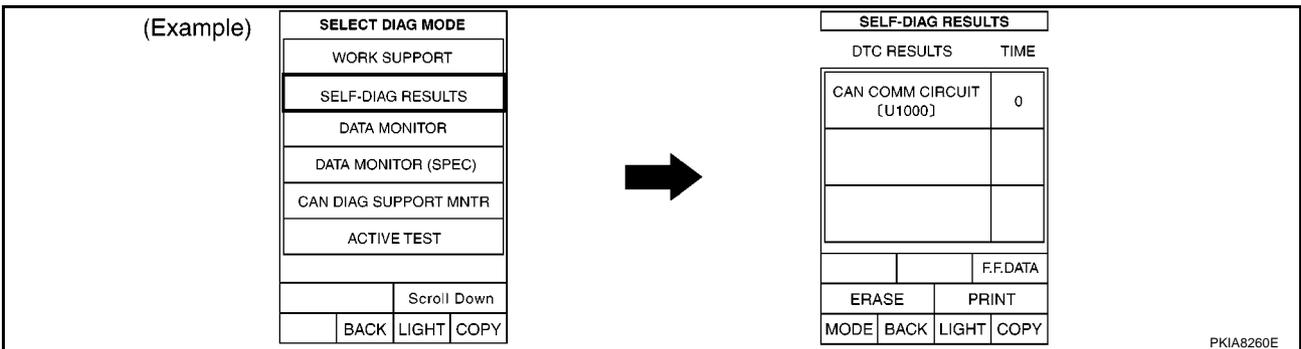
EKS00JPL

Work Flow

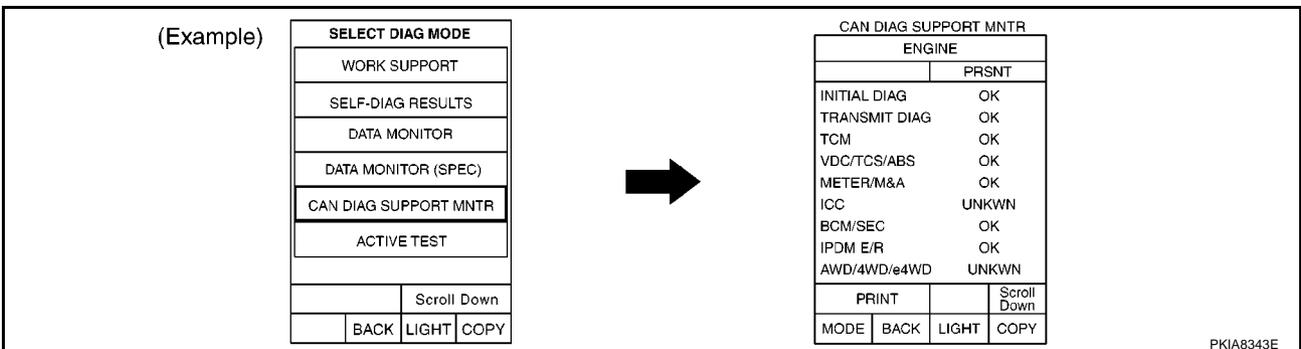
- When there are no indications of “EPS”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



- Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to [LAN-237, "CHECK SHEET"](#) .
- Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWVN” in the check sheet table. Refer to [LAN-237, "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 “CAN DIAG SUPPORT MNTR” items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 8)

[CAN]

6. Convert “v” mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3 ✓	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3 ✓
ABS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

Comparison table

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

Convert

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7. According to the check sheet results (example), start inspection. Refer to [LAN-239, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 8)

[CAN]

CHECK SHEET

Check sheet table

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

Comparison table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	-
BCM	No indication	-	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-
IPDM E/R	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-

Symptoms:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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CAN SYSTEM (TYPE 8)

[CAN]

Attach copy of
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SELF-DIAG RESULTS

Attach copy of
EPS
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

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Attach copy of
ABS
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Attach copy of
IPDM E/R
DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

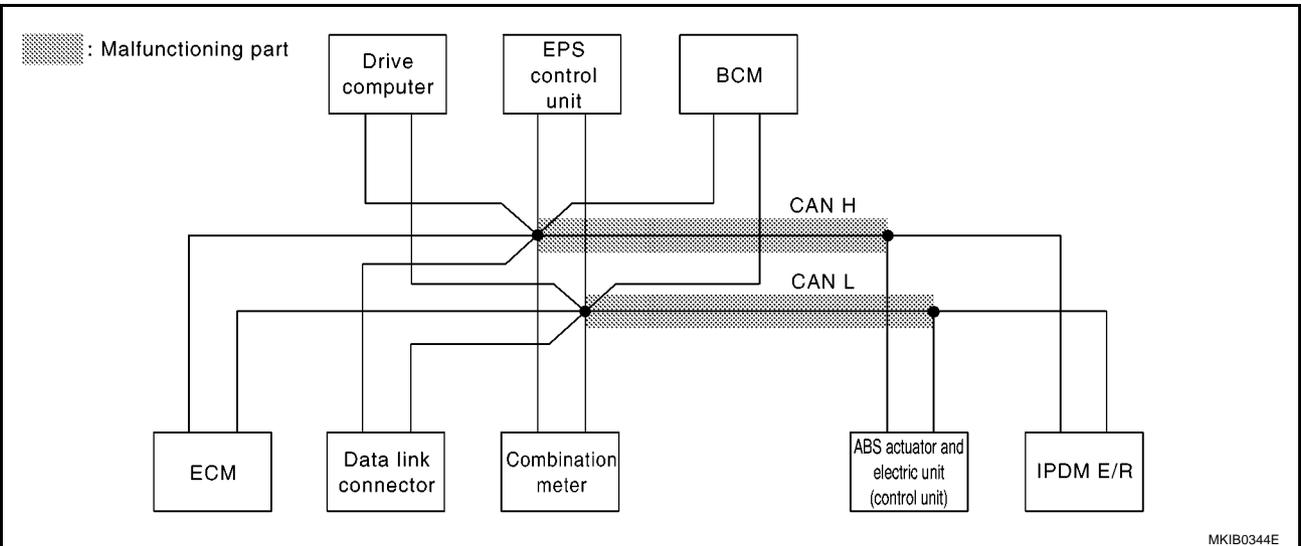
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-248, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3 ✓	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3 ✓
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 8)

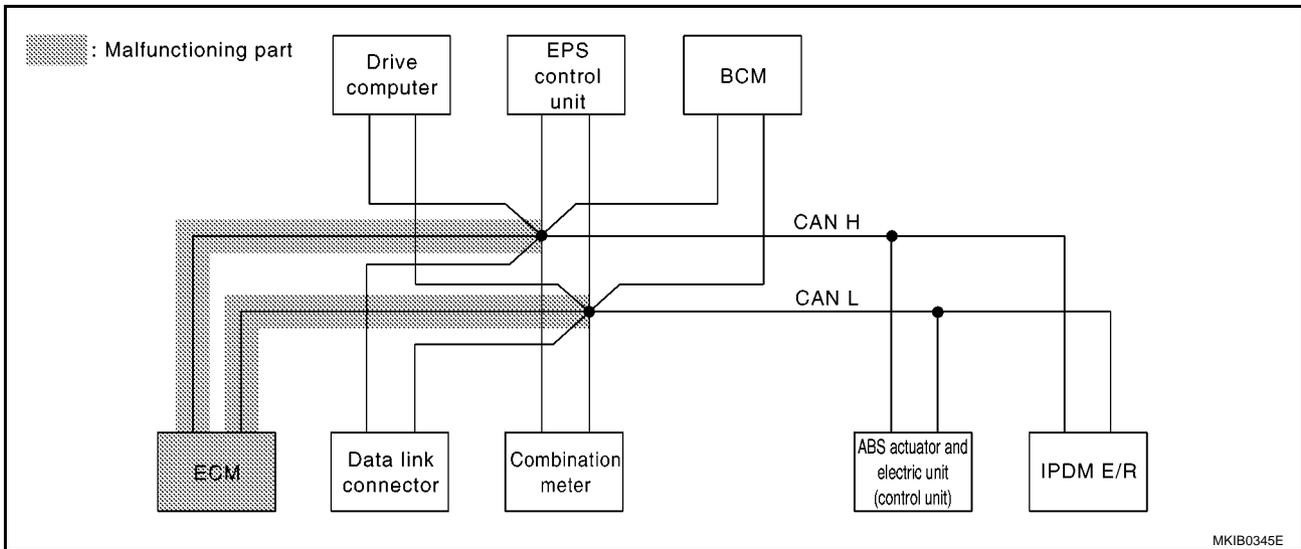
[CAN]

Case2

Check ECM circuit. Refer to [LAN-249, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN ✓CIRC 1	-	CAN ✓CIRC 4	CAN ✓CIRC 9	CAN ✓CIRC 6	CAN ✓CIRC 3	CAN ✓CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN ✓CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN ✓CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN ✓CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN ✓CIRC 3	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 8)

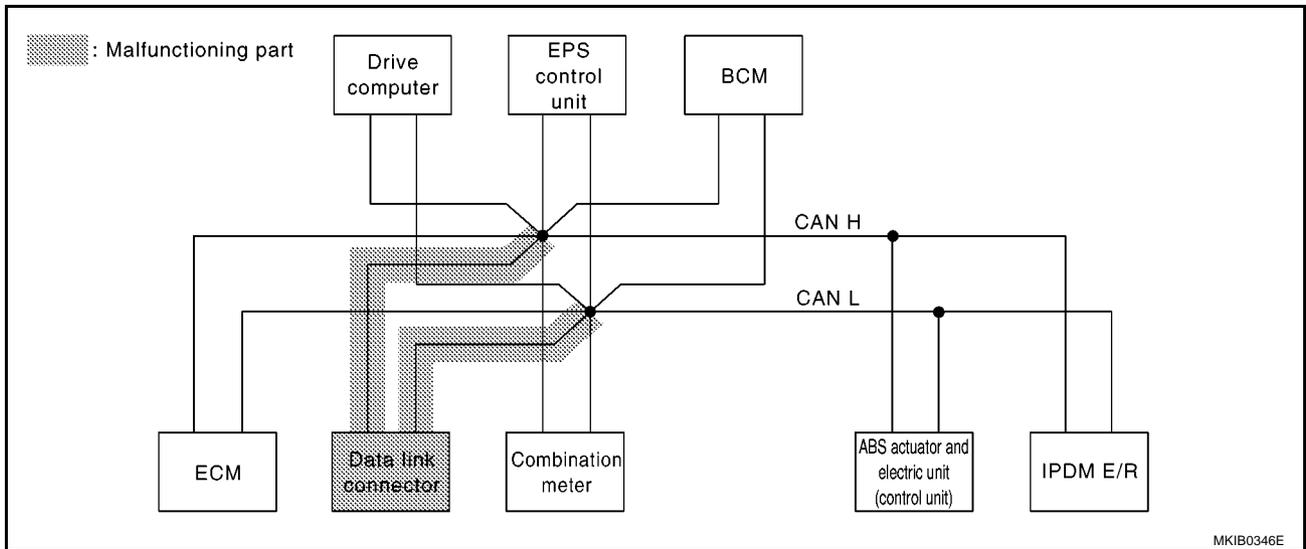
[CAN]

Case3

Check data link connector circuit. Refer to [LAN-250, "Data Link Connector Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 8)

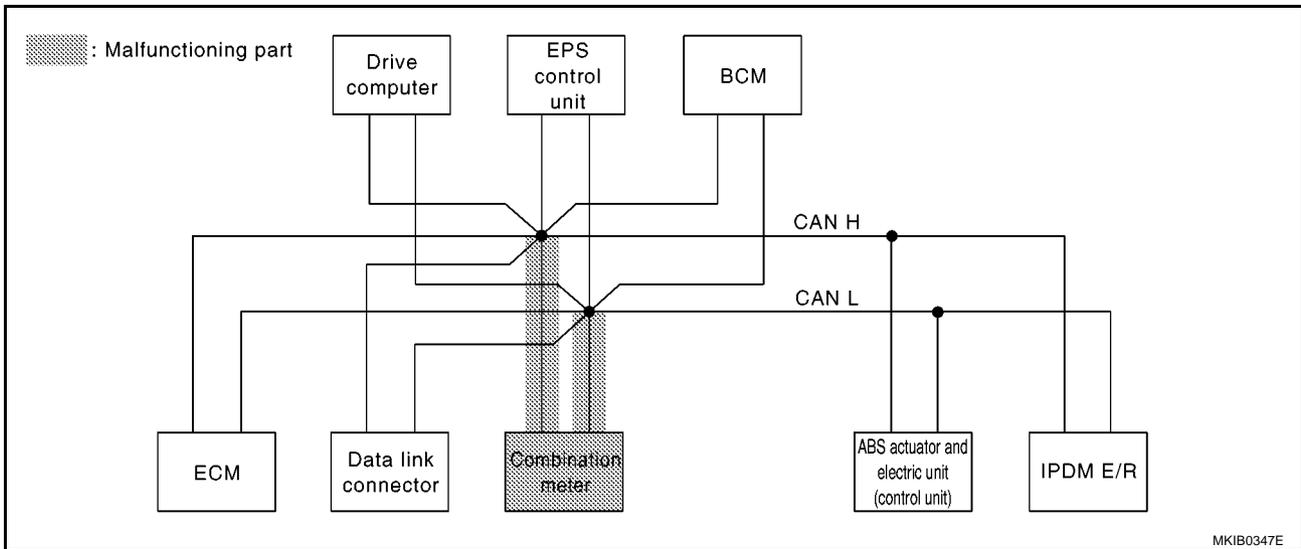
[CAN]

Case4

Check combination meter circuit. Refer to [LAN-251, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 8)

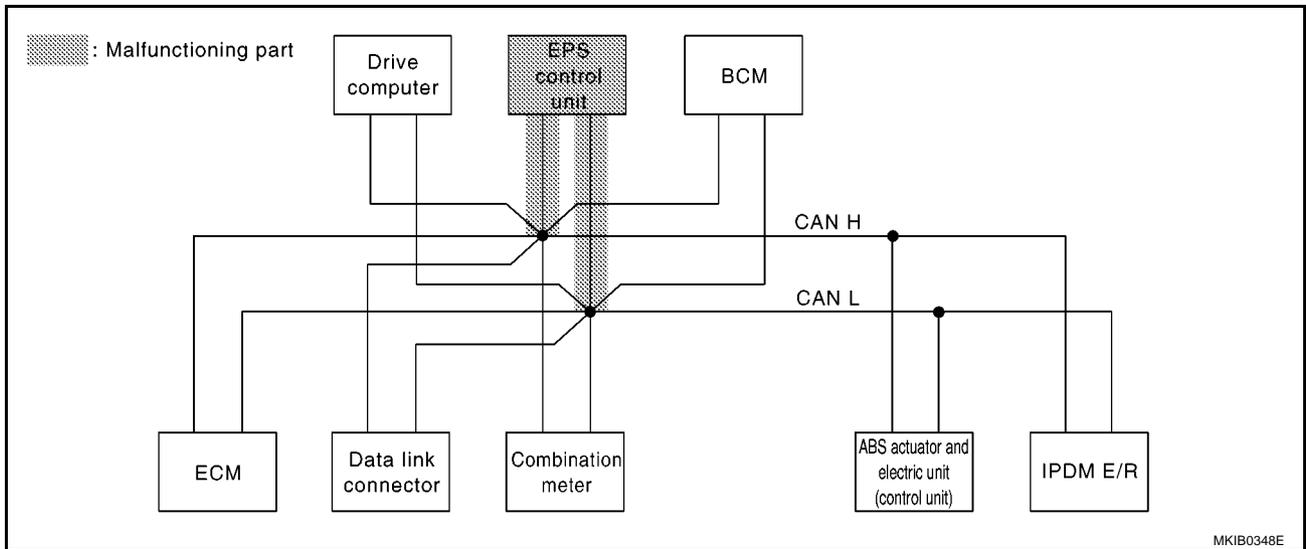
[CAN]

Case5

Check EPS control unit circuit. Refer to [LAN-252, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 8)

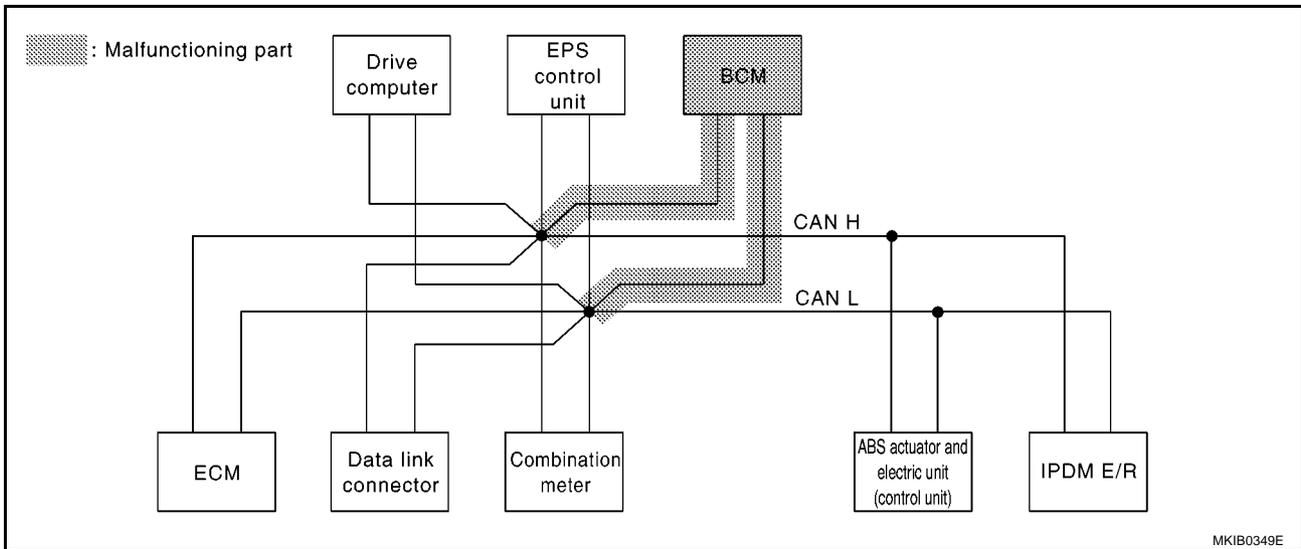
[CAN]

Case6

Check BCM circuit. Refer to [LAN-253, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 7
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5 ✓	CAN CIRC 3	-
BCM	No indication ✓	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2 ✓	-	-

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CAN SYSTEM (TYPE 8)

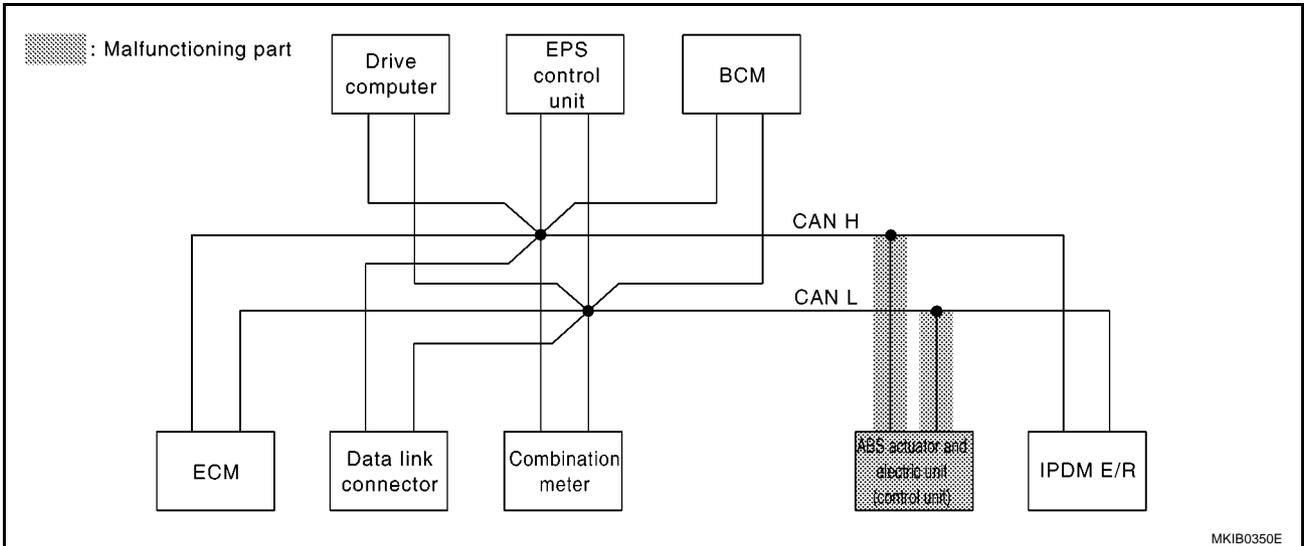
[CAN]

Case7

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-254, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	–	CAN COMM	CAN CIRC 1	–	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	–	CAN CIRC 5	CAN CIRC 3	–
BCM	No indication	–	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	–	–	–	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	–	–	–
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	–	CAN CIRC 2	–	–

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CAN SYSTEM (TYPE 8)

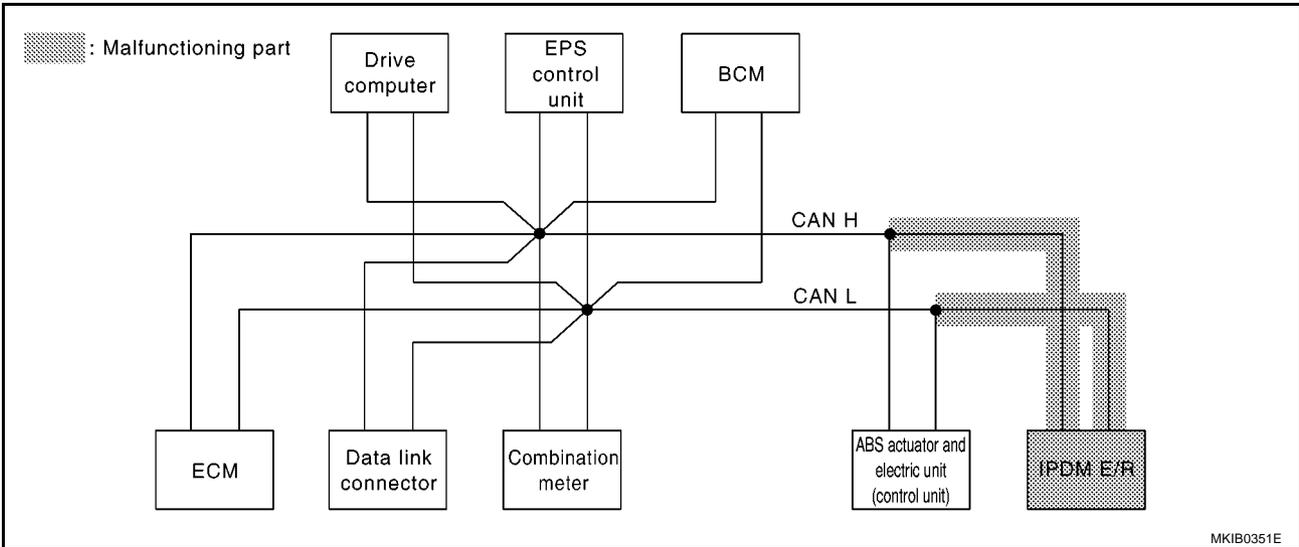
[CAN]

Case8

Check IPDM E/R circuit. Refer to [LAN-255, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3 ✓
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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CAN SYSTEM (TYPE 8)

[CAN]

Case9

Check CAN communication circuit. Refer to [LAN-256, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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Case10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-259, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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Case11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-259, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	-	CAN COMM	CAN CIRC 1	-	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 5	CAN CIRC 3	-
BCM	No indication	-	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	-	-	-	CAN CIRC 3
ABS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	-	-	-
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 2	-	-

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Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

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 M1
 - Harness connector E101

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

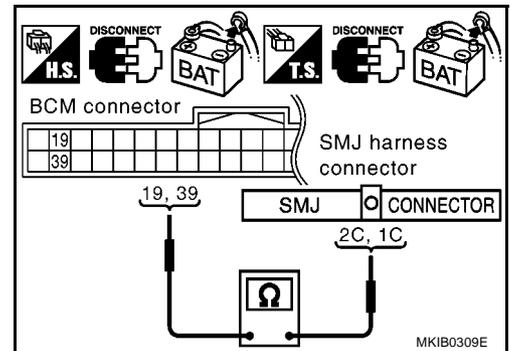
1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.

39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

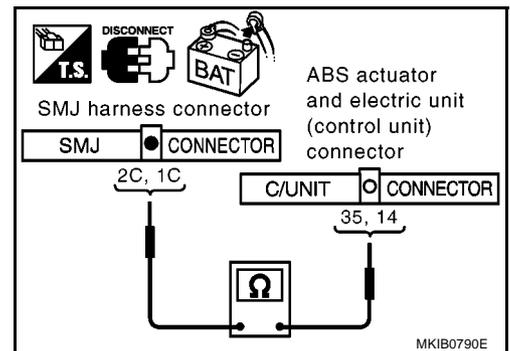
Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

2C (R) – 35 (R) : Continuity should exist.

1C (W) – 14 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to [LAN-235, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

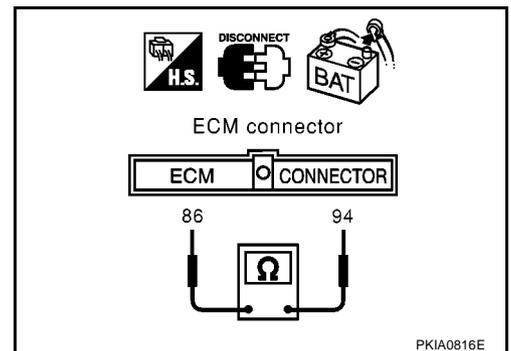
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

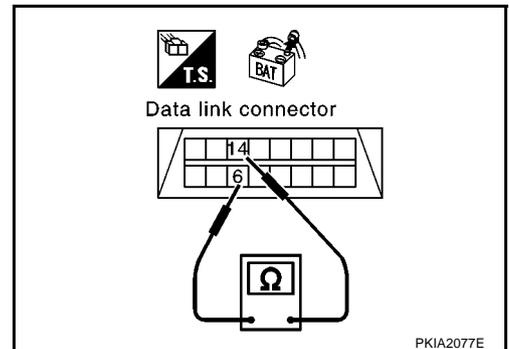
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-235](#), "Work Flow".
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

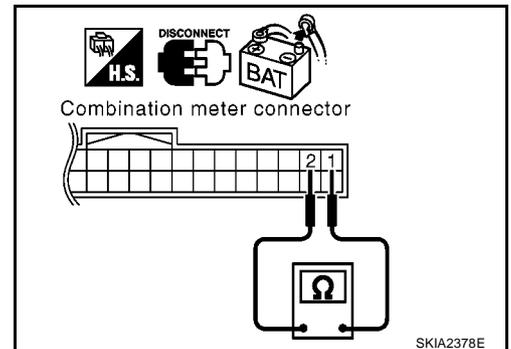
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



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EPS Control Unit Circuit Check

1. CHECK CONNECTOR

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

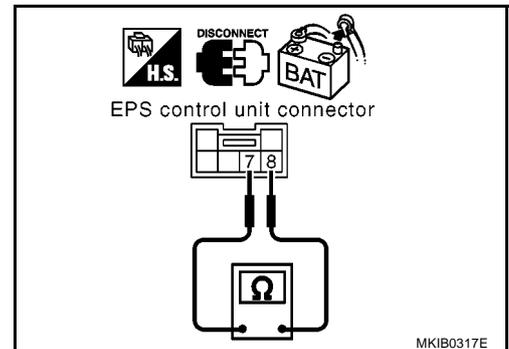
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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.

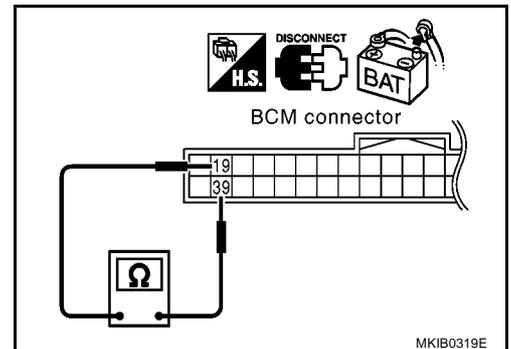
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00JPS

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.

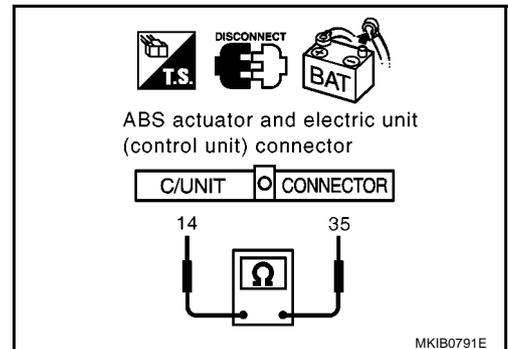
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

35 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

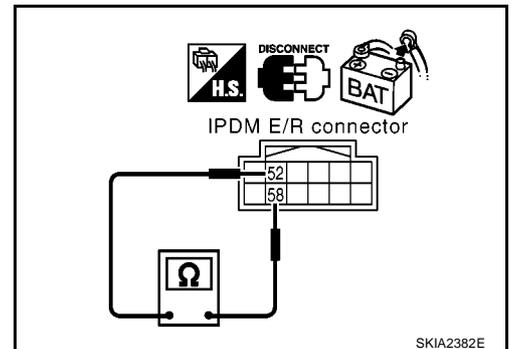
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

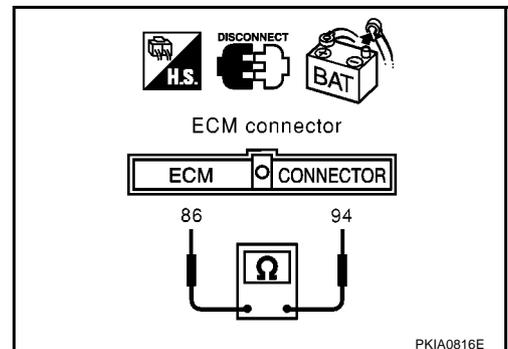
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

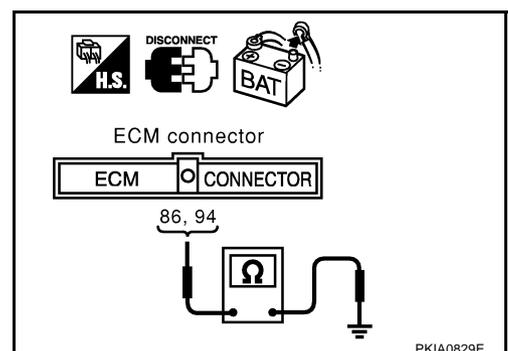
94 (R) – Ground : Continuity should not exist.

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

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

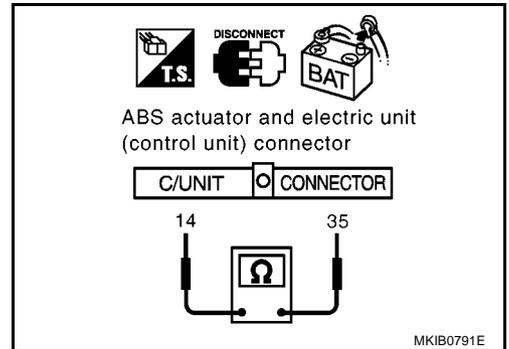
35 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E47 terminals 35 (R), 14 (W) and ground.

35 (R) – Ground : Continuity should not exist.

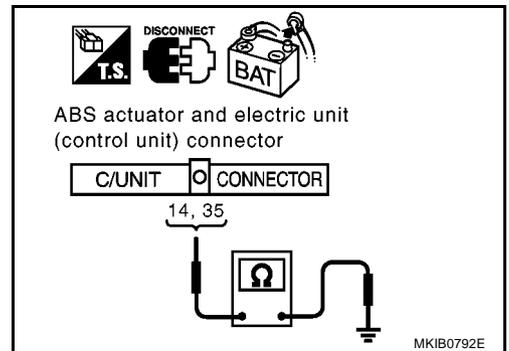
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



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6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

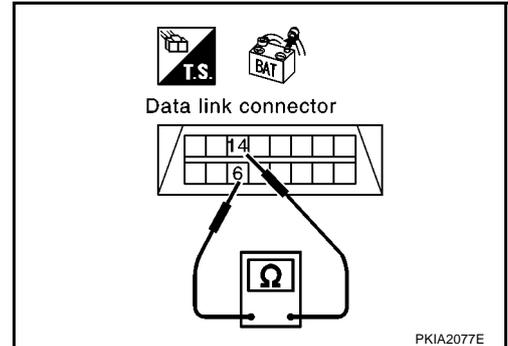
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

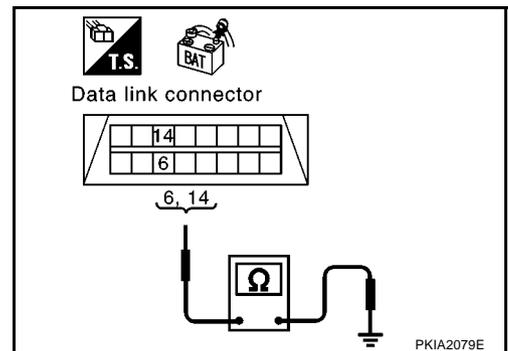
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-259, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-235, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00JPV

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

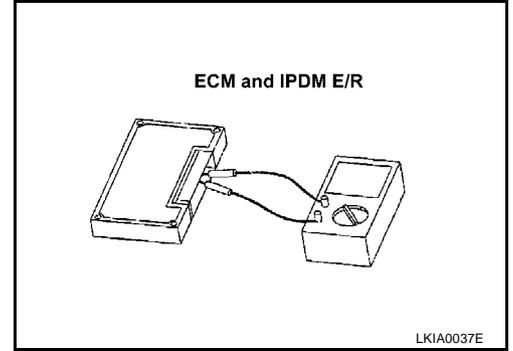
Component Inspection

EKS00JPW

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 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 9)

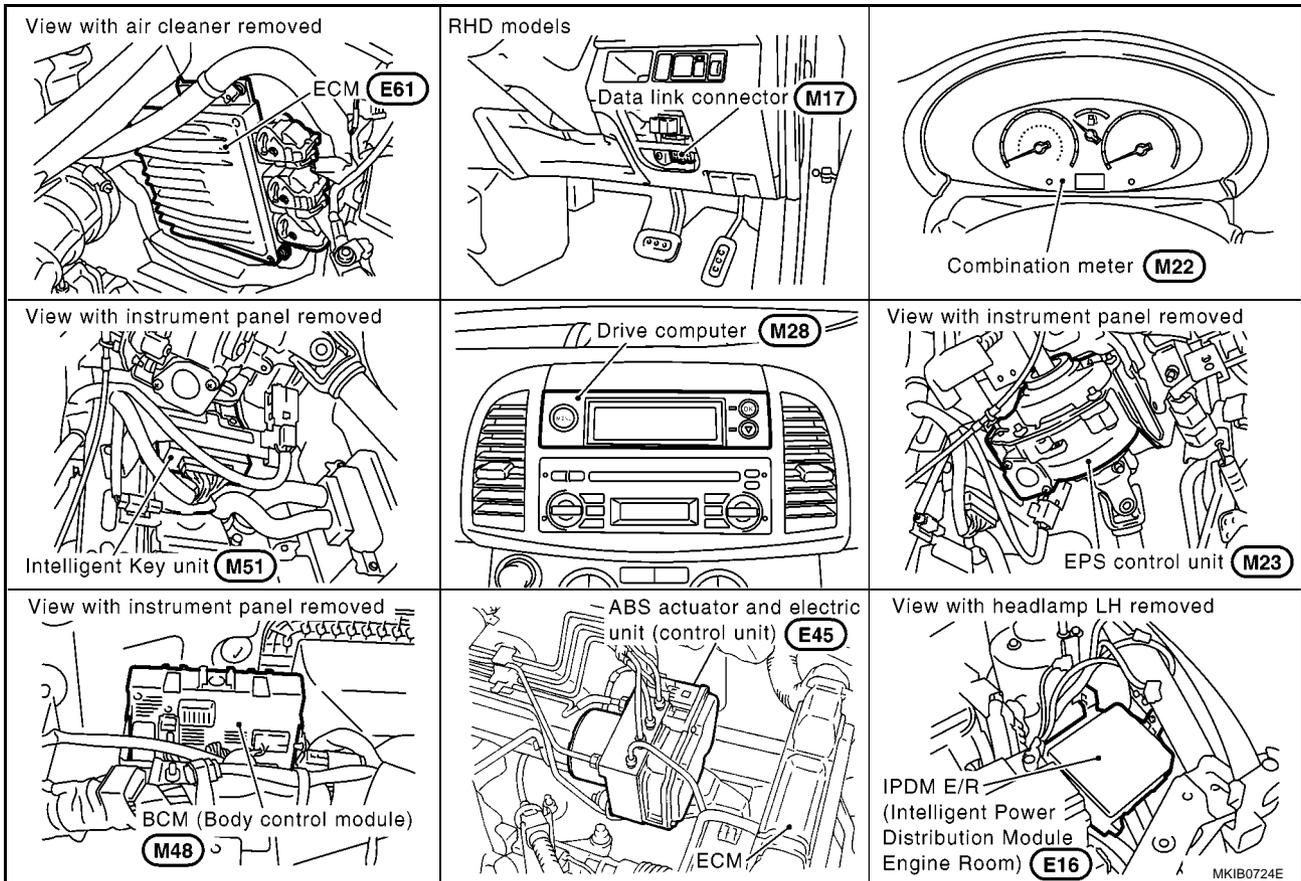
System Description

EKS00JPX

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

EKS00JPY



CAN SYSTEM (TYPE 9)

[CAN]

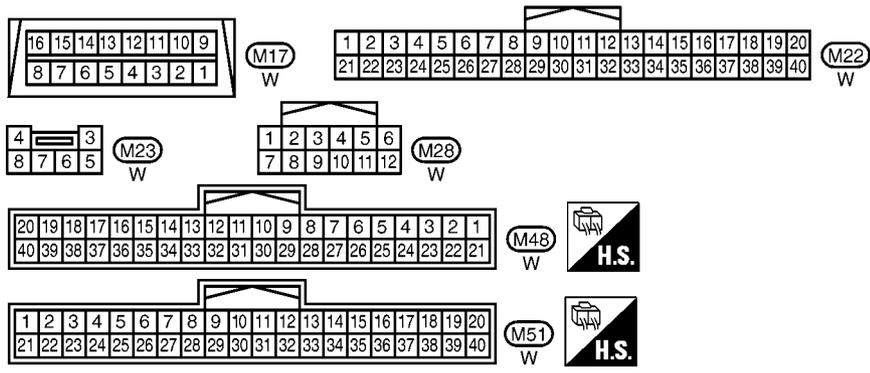
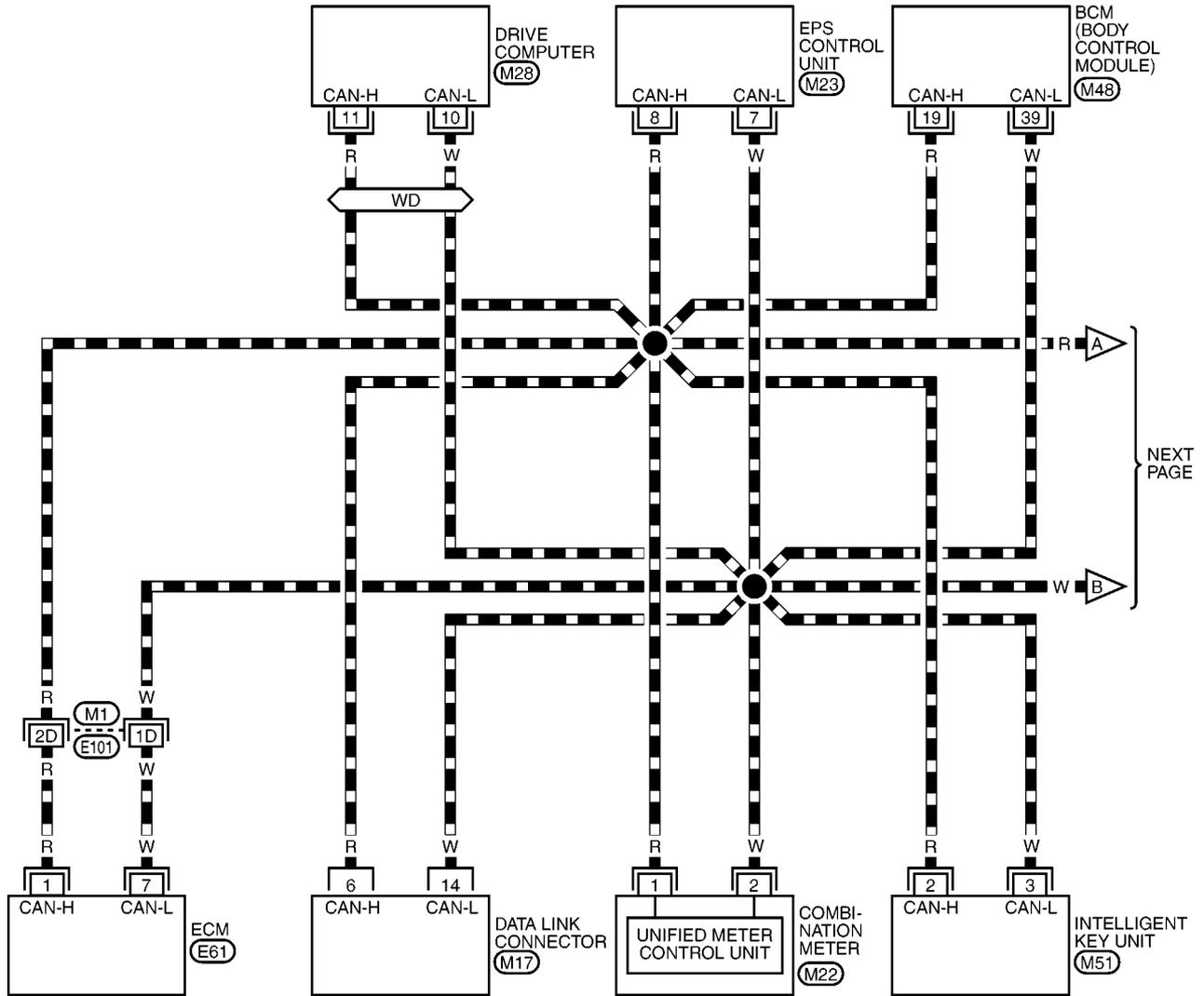
Wiring Diagram — CAN —

EKS00JPZ

LAN-CAN-17

▬ : DATA LINE

◀WD▶ : WITH DRIVE COMPUTER



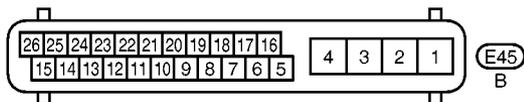
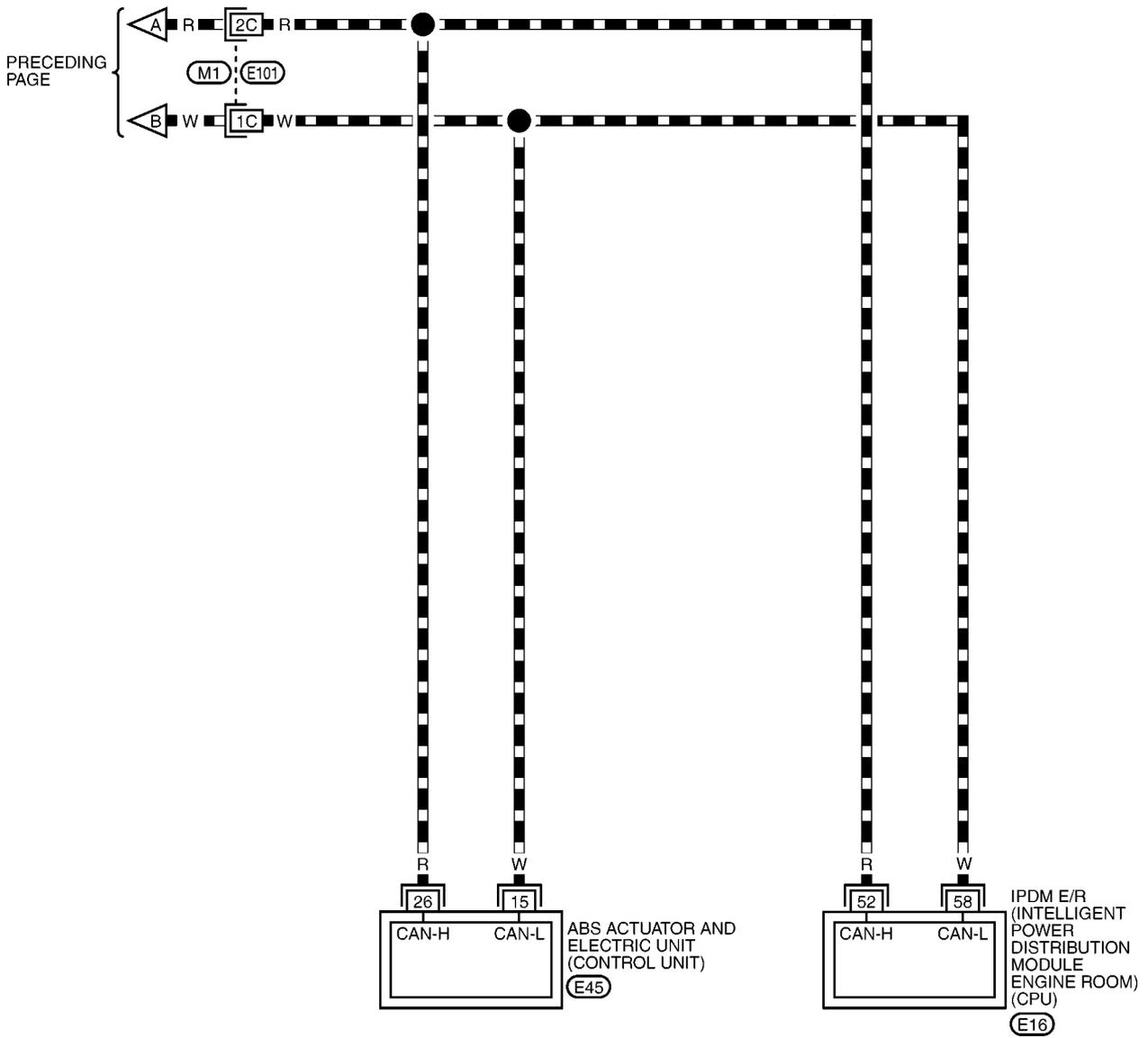
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E61) -ELECTRICAL UNITS

LAN-CAN-18

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

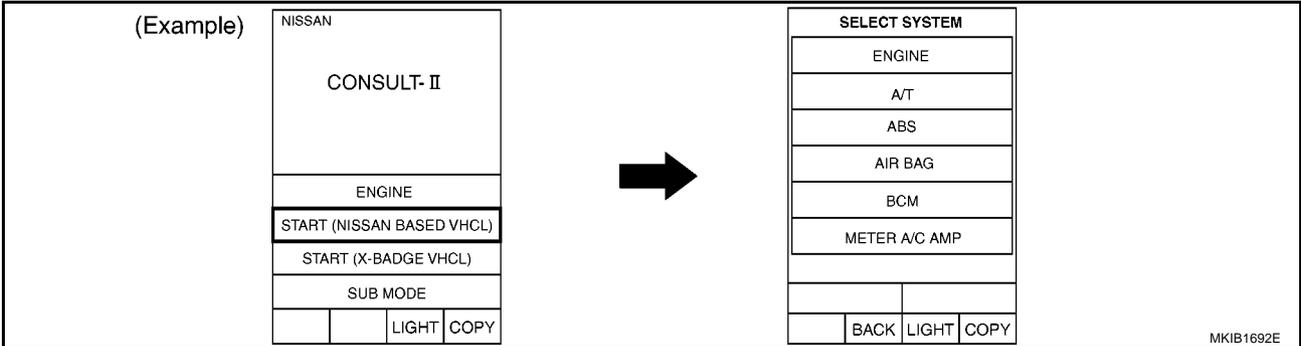
CAN SYSTEM (TYPE 9)

[CAN]

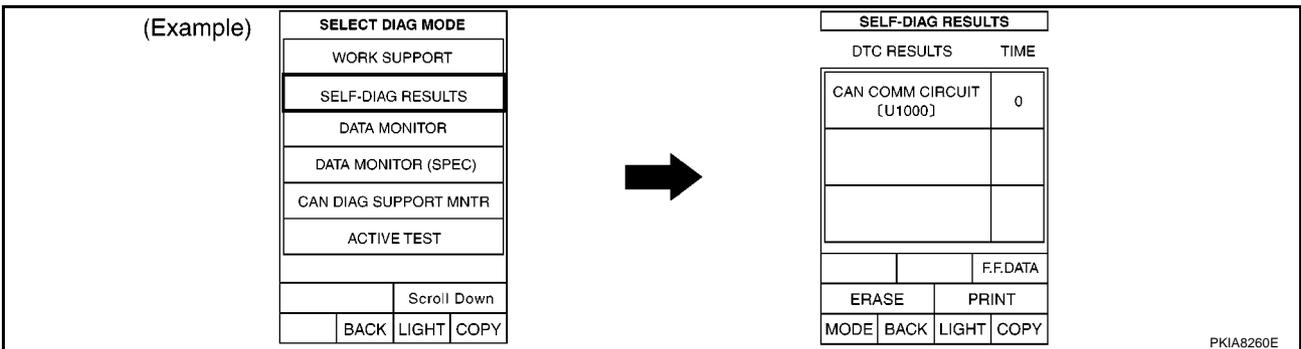
EKS00JQ0

Work Flow

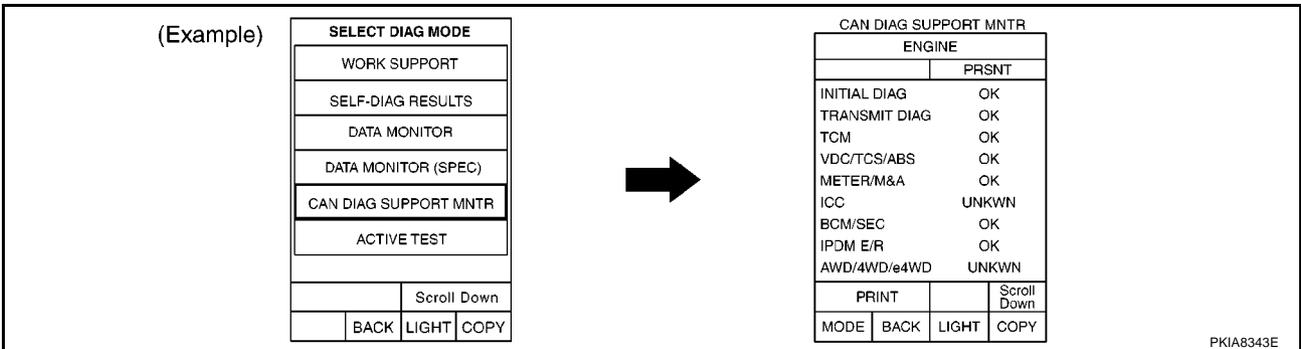
- When there are no indications of "ENGINE", "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-265, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-265, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 9)

[CAN]

6. Convert "v" mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis							
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	No indication	—	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Convert

MKIB1690E

7. According to the check sheet results (example), start inspection. Refer to [LAN-267, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 9)

[CAN]

CHECK SHEET

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Check sheet table

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

Comparison table

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	Receive diagnosis							
			ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	No indication	—	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN
INTELLIGENT	No indication	NG	UNKWN	—	UNKWN	—	—	UNKWN	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Symptoms:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 9)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS

Attach copy of
EPS
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

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ENGINE
DATA MONITOR

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INTELLIGENT KEY
DATA MONITOR

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EPS
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BCM
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IPDM
DATA MONITOR

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CAN SYSTEM (TYPE 9)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

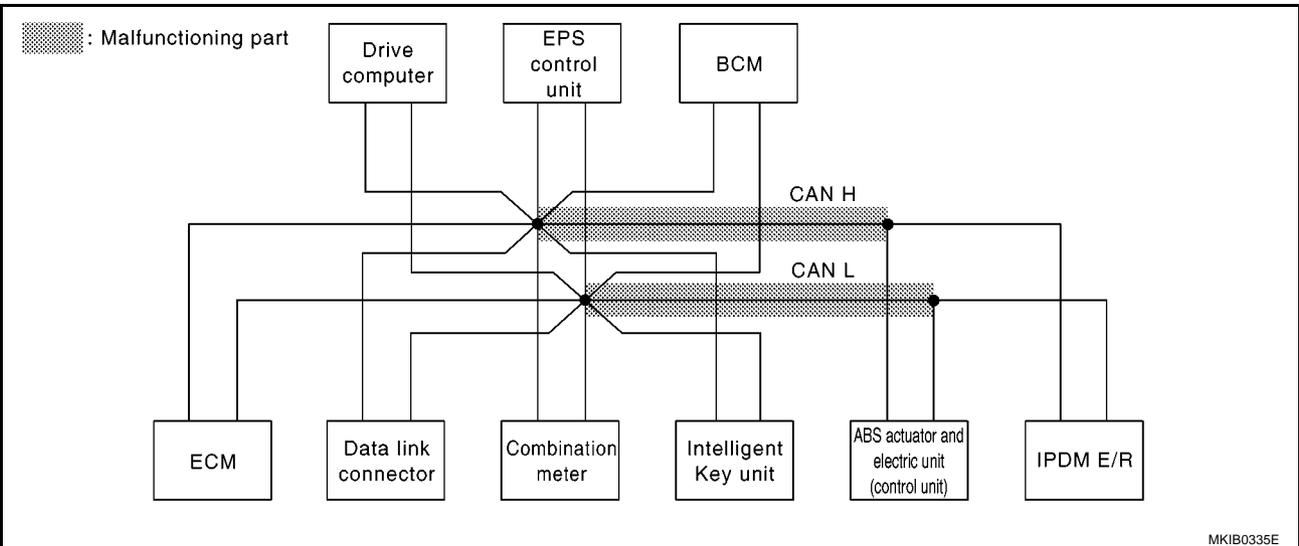
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-277, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 9)

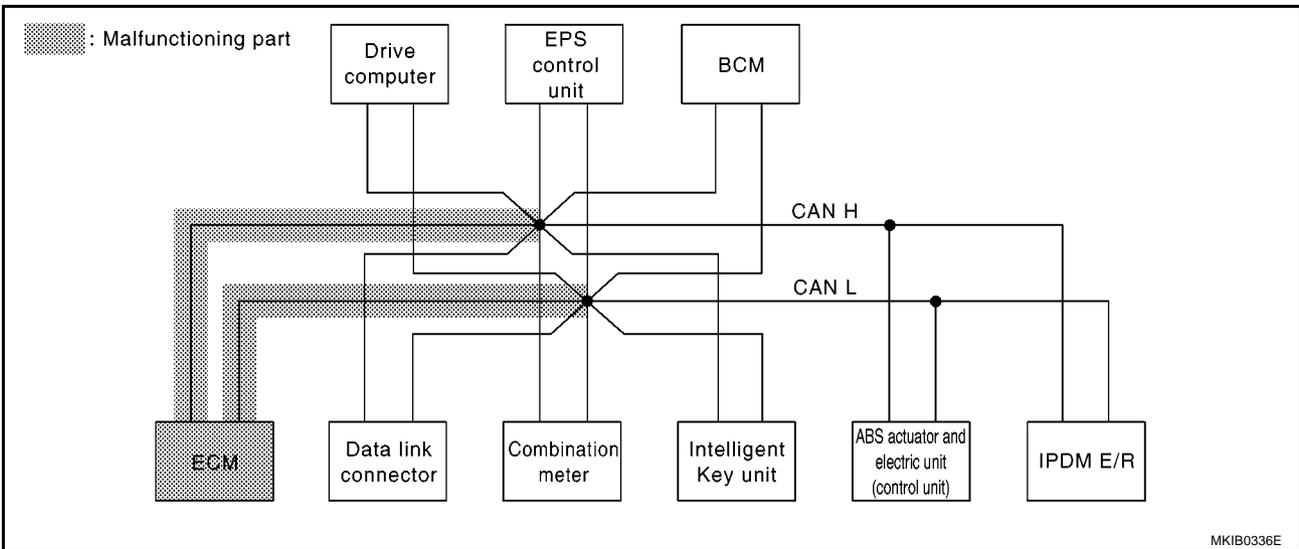
[CAN]

Case 2

Check ECM circuit. Refer to [LAN-278, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	✓	CAN CIRC 2	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	✓	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	✓	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	✓	CAN CIRC 3	—	—	—	CAN CIRC 2	—

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CAN SYSTEM (TYPE 9)

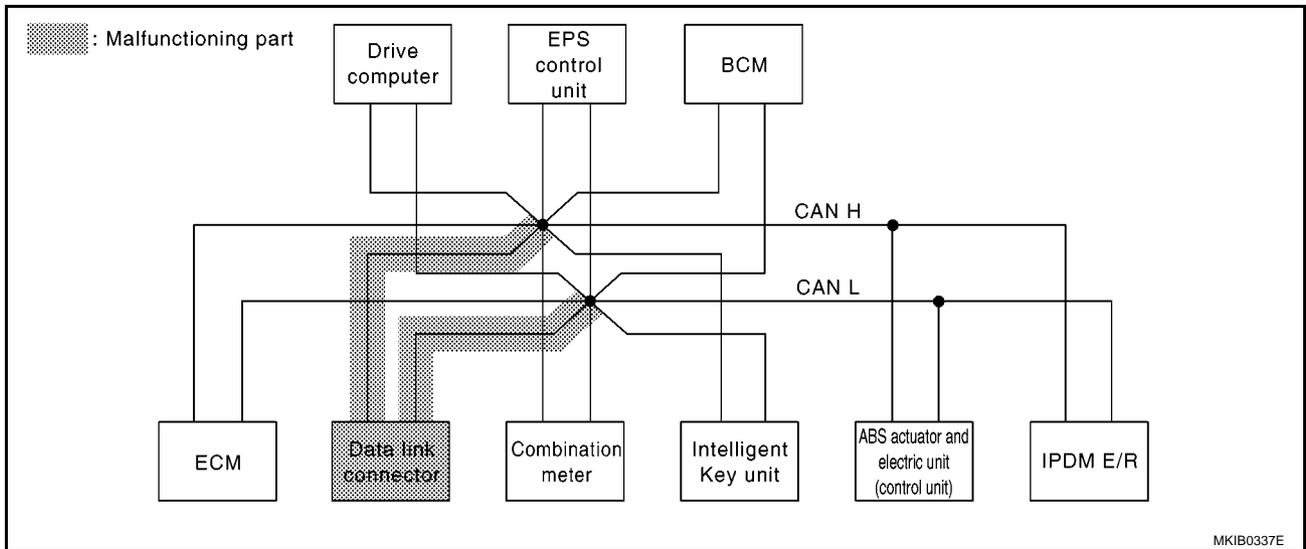
[CAN]

Case 3

Check data link connector circuit. Refer to [LAN-279, "Data Link Connector Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication ✓	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

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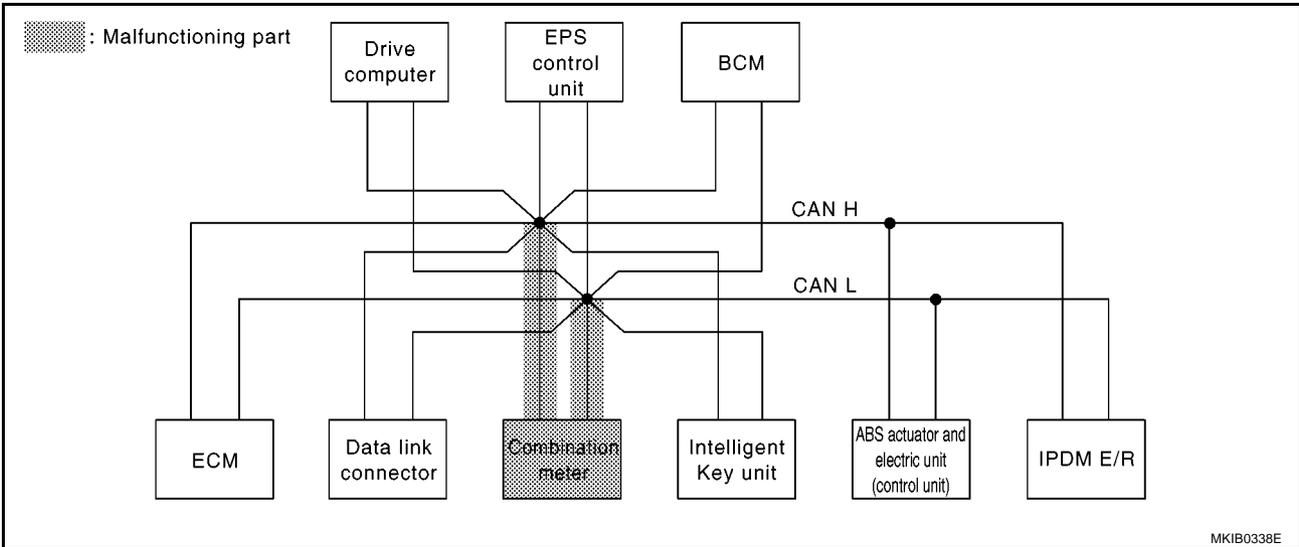
[CAN]

Case 4

Check combination meter circuit. Refer to [LAN-280, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 9)

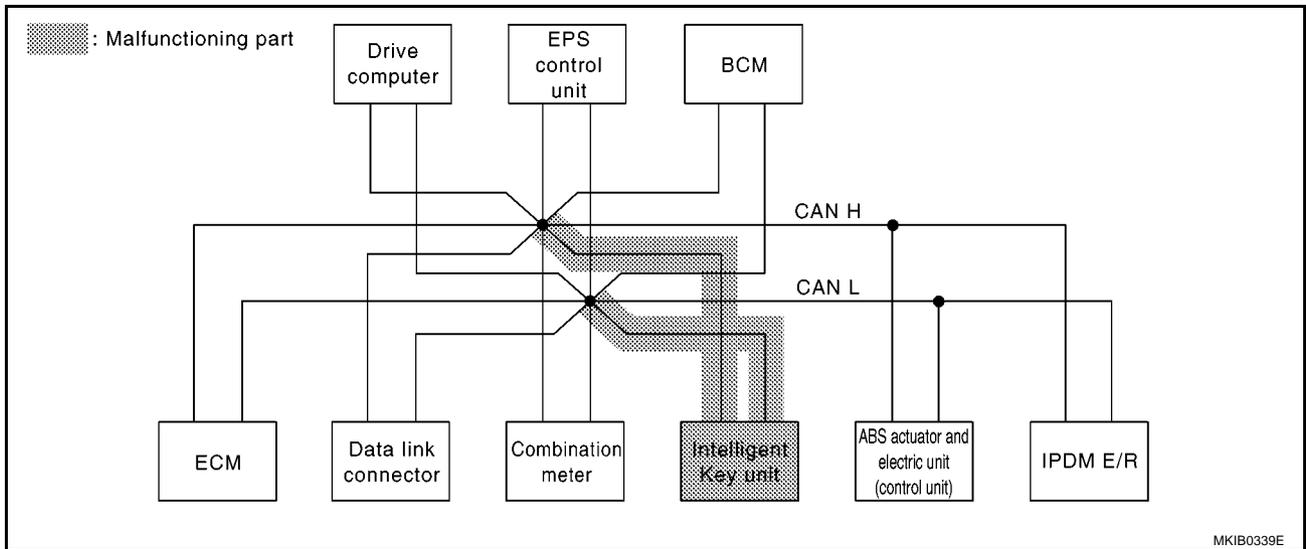
[CAN]

Case 5

Check Intelligent Key unit circuit. Refer to [LAN-281, "Intelligent Key Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 9)

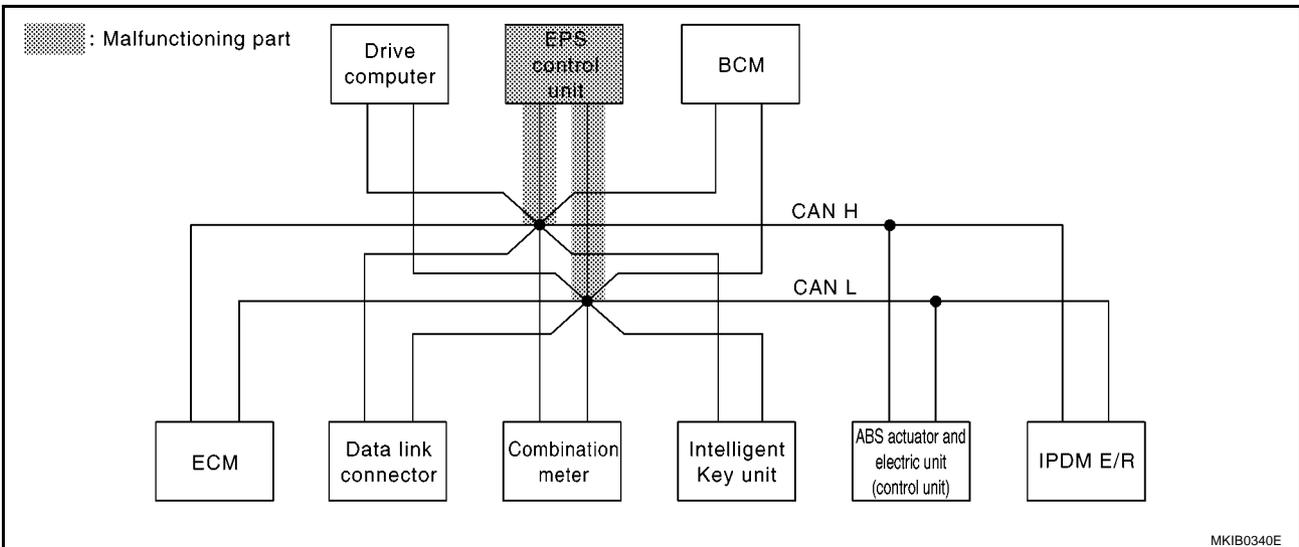
[CAN]

Case 6

Check EPS control unit circuit. Refer to [LAN-282, "EPS Control Unit Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

MKIB1664E



MKIB0340E

CAN SYSTEM (TYPE 9)

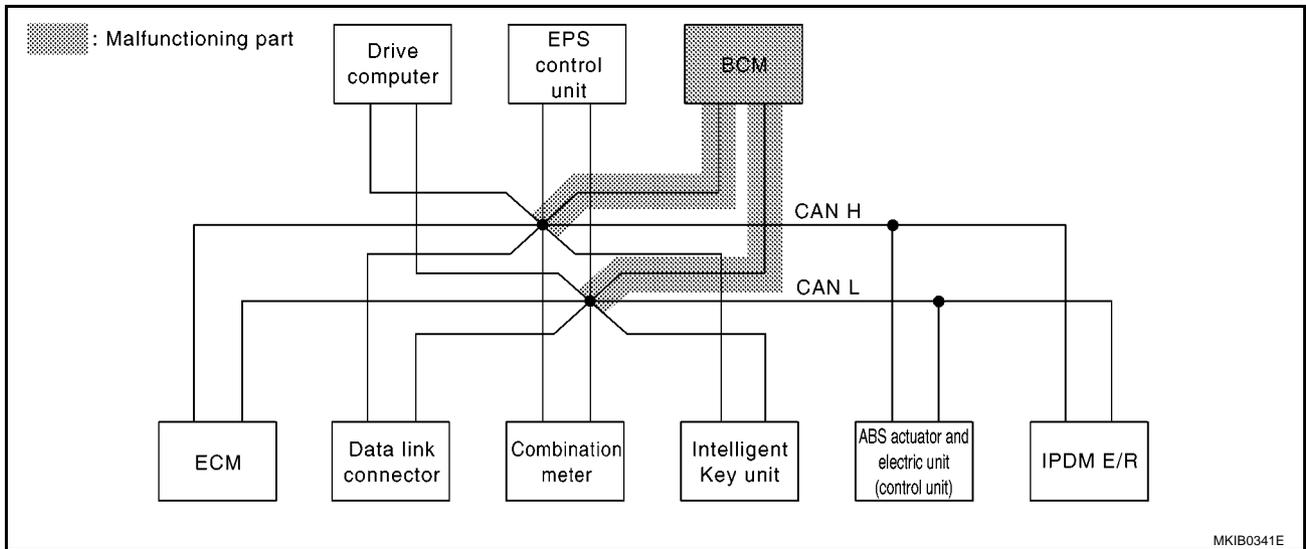
[CAN]

Case 7

Check BCM circuit. Refer to [LAN-283, "BCM Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 9)

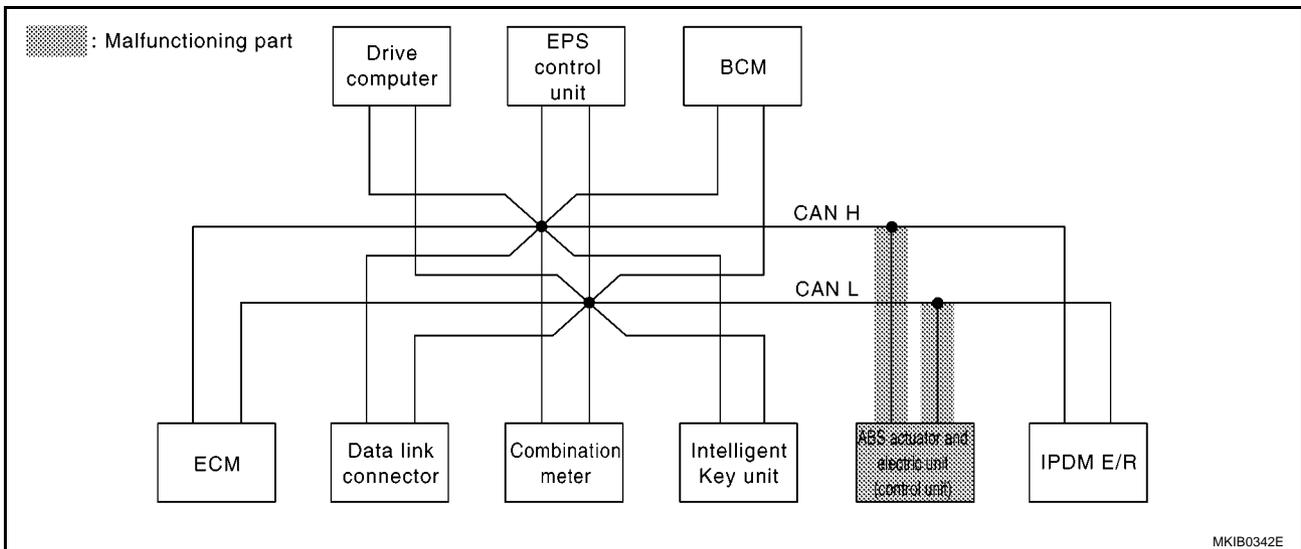
[CAN]

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-284, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

MKIB1666E



MKIB0342E

CAN SYSTEM (TYPE 9)

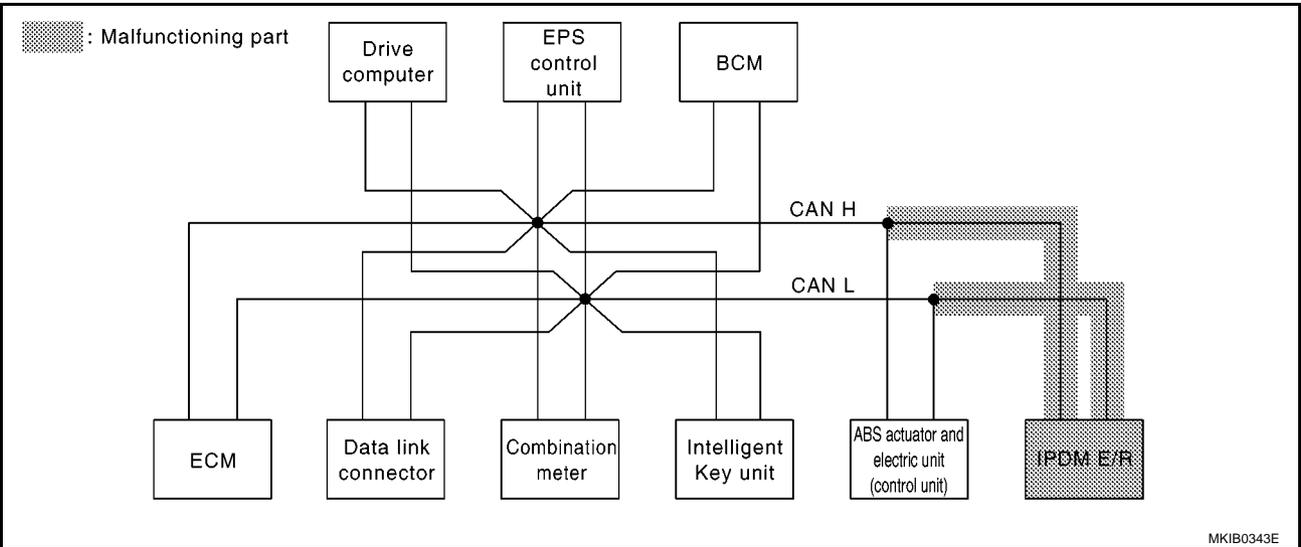
[CAN]

Case 9

Check IPDM E/R circuit. Refer to [LAN-285, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 9)

[CAN]

Case 10

Check CAN communication circuit. Refer to [LAN-286, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication ✓	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

MKIB1668E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-289, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2 ✓	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

MKIB1670E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-289, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx						
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 2	—	—

MKIB1669E

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS00JQ1

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 M1
 - Harness connector E101

OK or NG

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

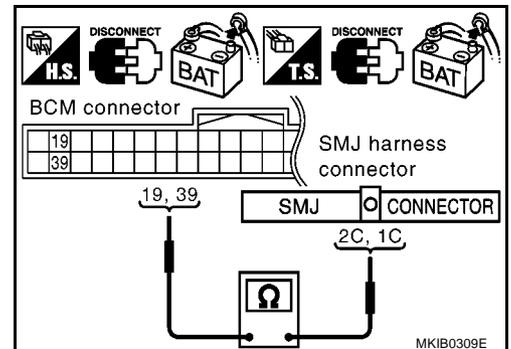
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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

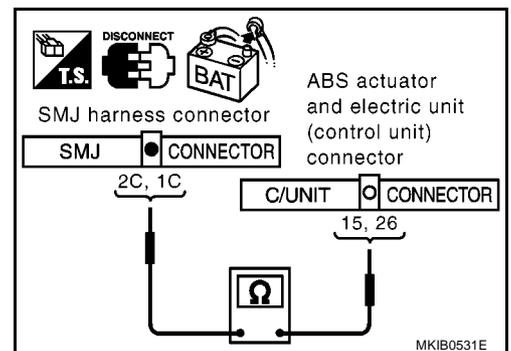
**3. CHECK HARNESS FOR OPEN CIRCUIT**

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.
1C (W) – 15 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-263, "Work Flow"](#) .
 NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

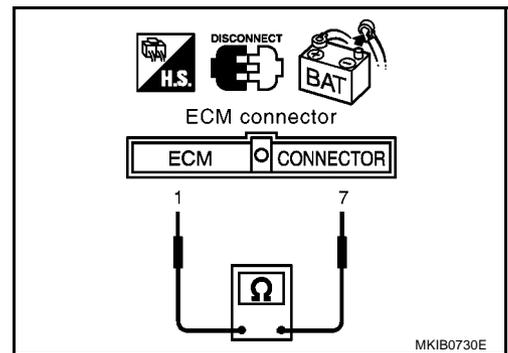
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E61 terminals 1 (R) and 7 (W).

1 (R) – 7 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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

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

OK or NG

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

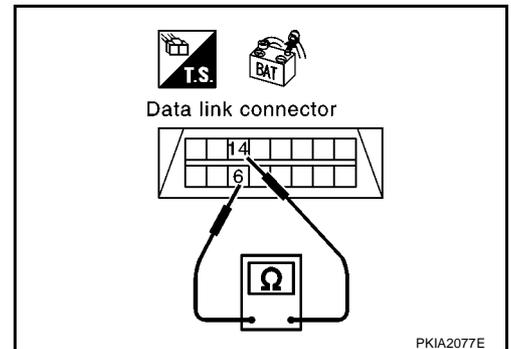
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-263](#), "Work Flow".
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

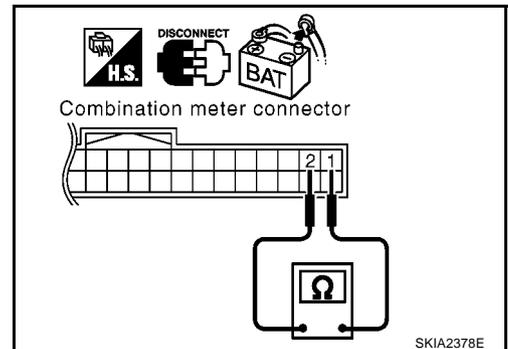
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



Intelligent Key Unit Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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.

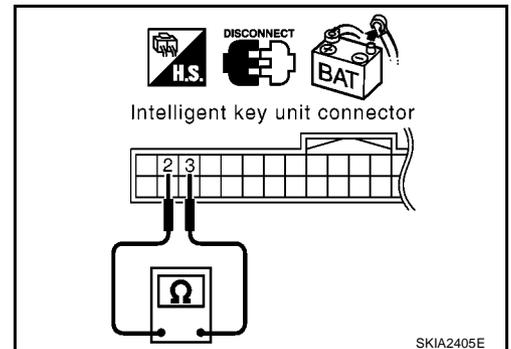
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace Intelligent Key unit.
 NG >> Repair harness between Intelligent Key unit and data link connector.



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EPS Control Unit Circuit Check

1. CHECK CONNECTOR

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

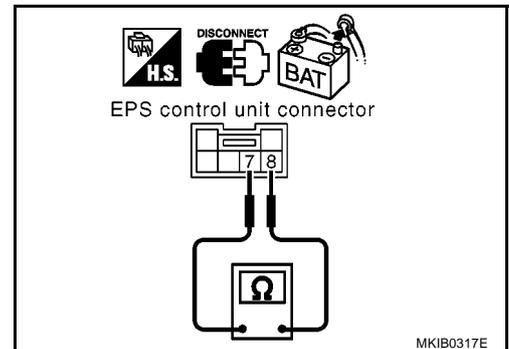
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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.

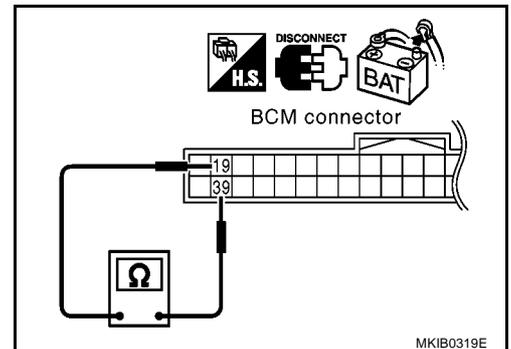
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

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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.

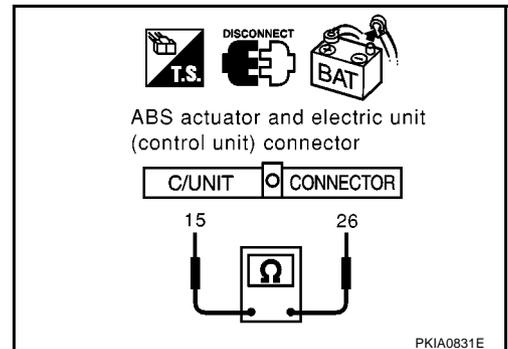
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

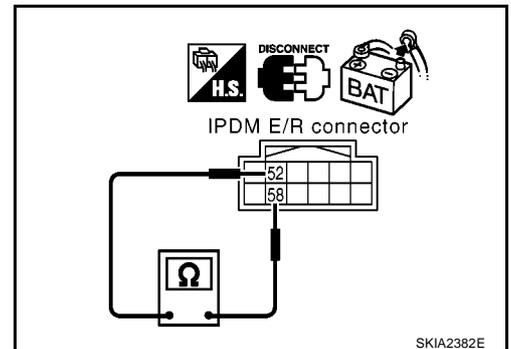
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).
 - ECM
 - Combination meter
 - Intelligent Key unit
 - Drive computer
 - EPS control unit
 - BCM
 - ABS actuator and electric unit (control unit)
 - IPDM E/R
 - Between ECM and IPDM E/R

OK or NG

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

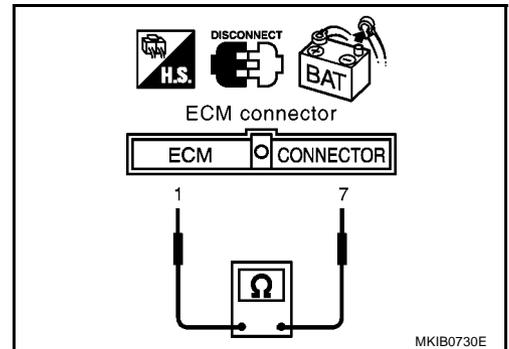
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E61 terminals 1 (R) and 7 (W).

1 (R) – 7 (W) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

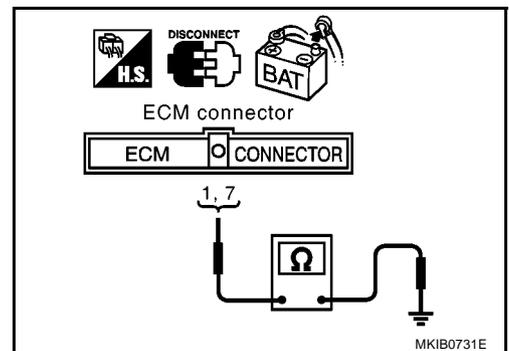
Check continuity between ECM harness connector E61 terminals 1 (R), 7 (W) and ground.

1 (R) – Ground : Continuity should not exist.

7 (W) – Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

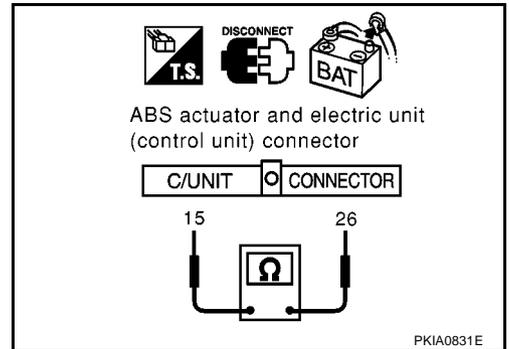
26 (R) – 15 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

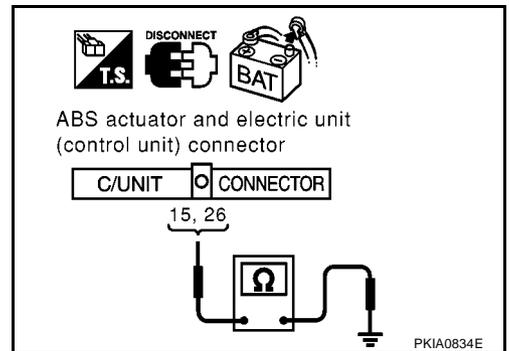
15 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



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6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - Combination meter connector
 - Intelligent Key unit connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

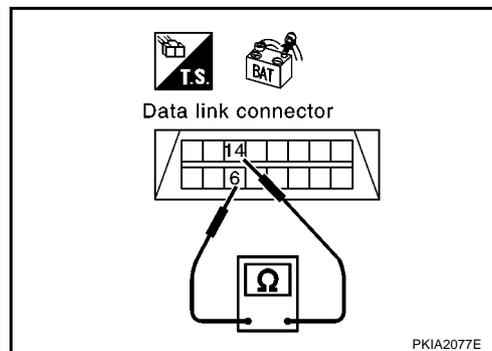
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

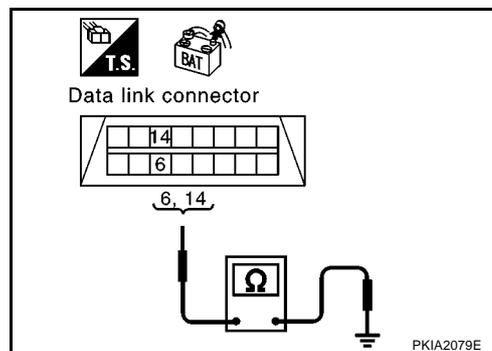
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-289, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-263, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00JQB

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

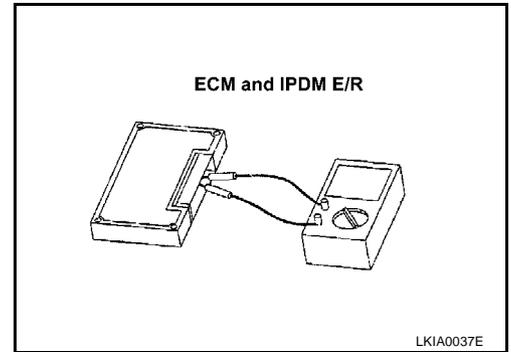
Component Inspection

EKS00JQC

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 1 and 7.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	1 – 7	108 - 132
IPDM E/R	52 – 58	



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CAN SYSTEM (TYPE 10)

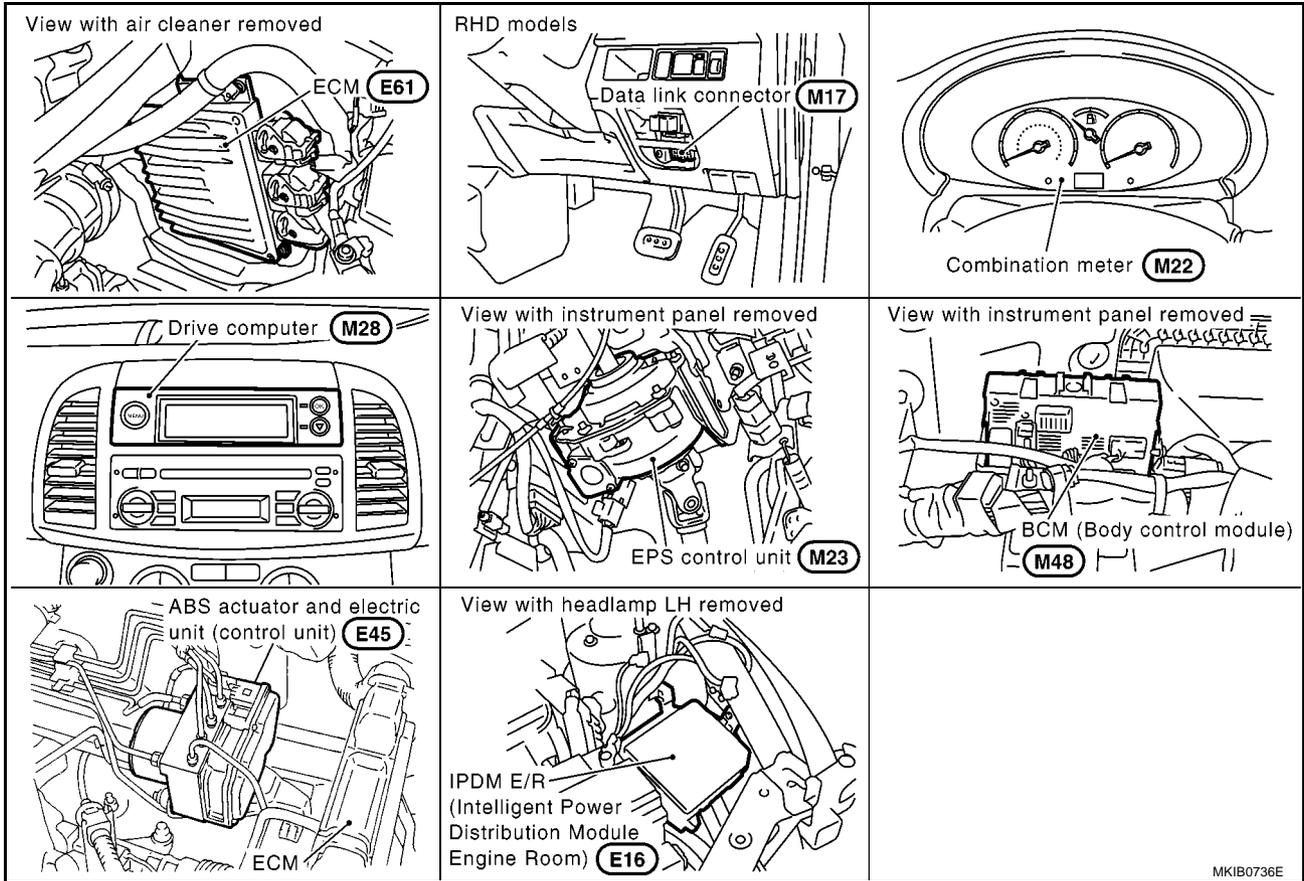
System Description

EKS00JQD

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

EKS00JQE



MKIB0736E

CAN SYSTEM (TYPE 10)

[CAN]

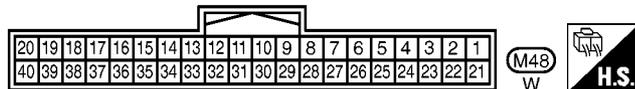
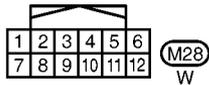
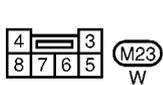
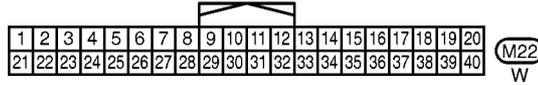
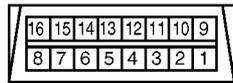
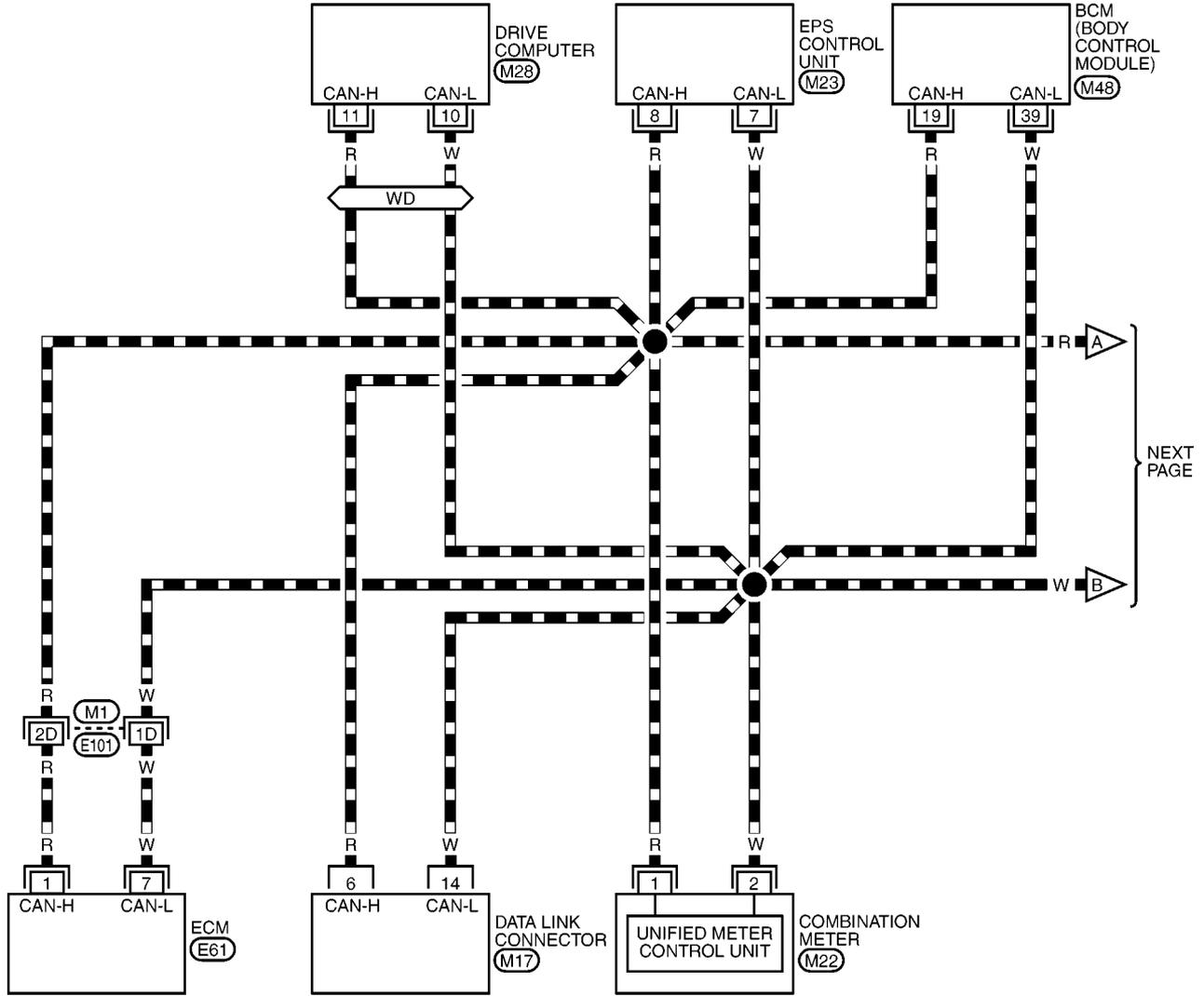
Wiring Diagram — CAN —

EKS00JQF

LAN-CAN-19

▬ : DATA LINE

◊WD◊ : WITH DRIVE COMPUTER



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E61) -ELECTRICAL UNITS

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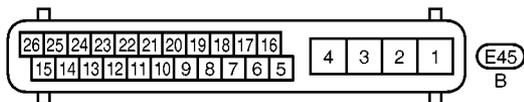
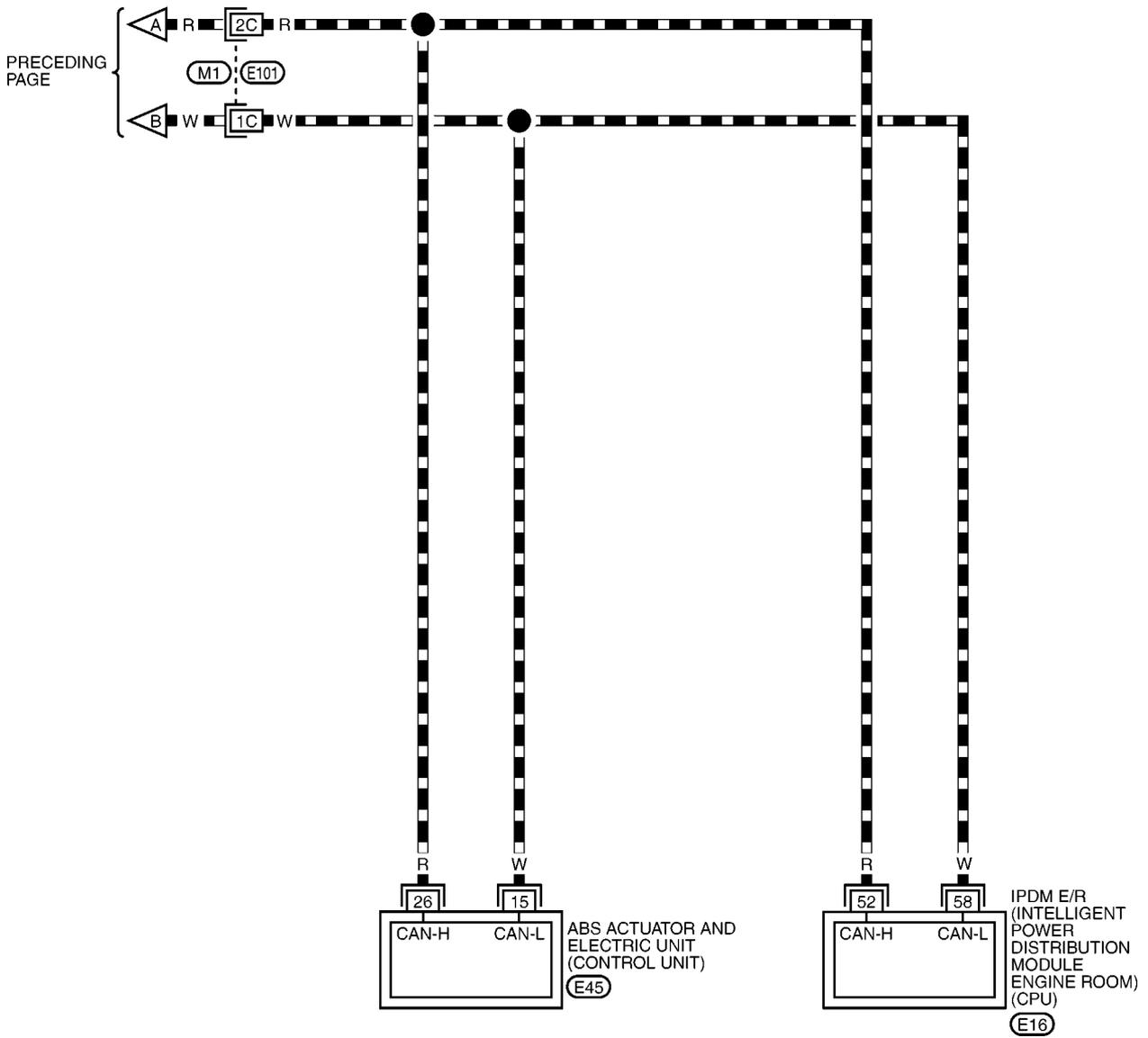
LAN

CAN SYSTEM (TYPE 10)

[CAN]

LAN-CAN-20

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

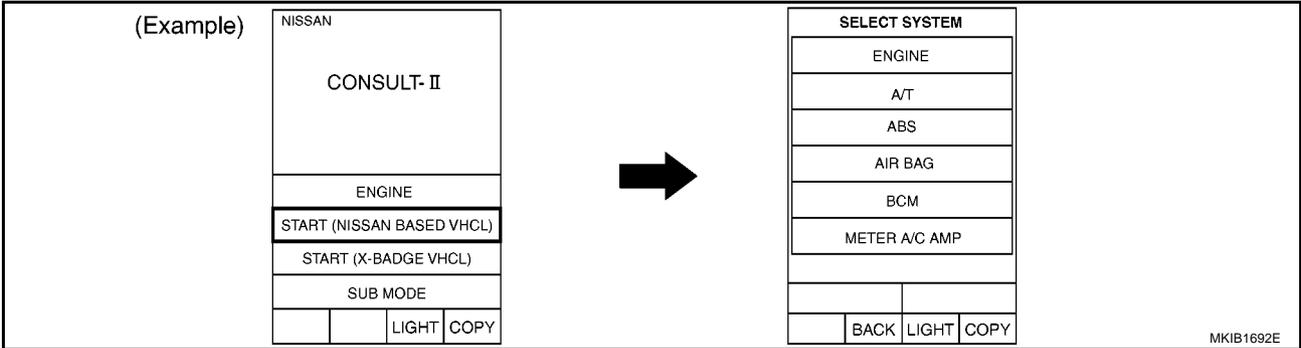
CAN SYSTEM (TYPE 10)

[CAN]

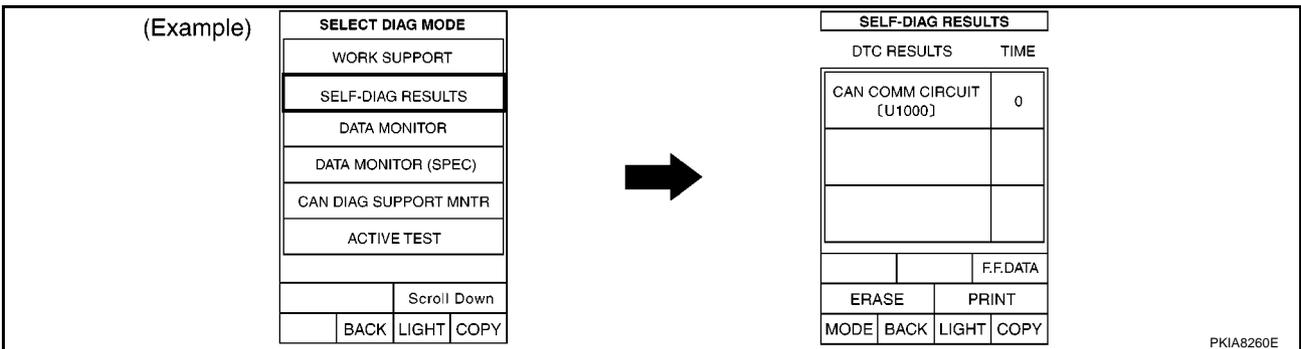
EKS00JQG

Work Flow

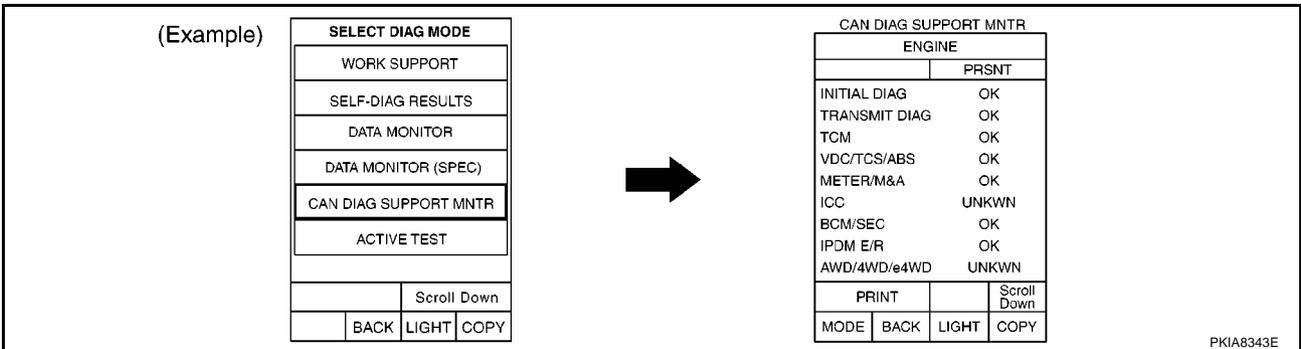
- When there are no indications of "ENGINE", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-295, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWVN" in the check sheet table. Refer to [LAN-295, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

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CAN SYSTEM (TYPE 10)

[CAN]

6. Convert "v" mark on comparison table to check sheet table.

(Example)

Check sheet table

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

Comparison table

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

Convert

MKIB1691E

7. According to the check sheet results (example), start inspection. Refer to [LAN-297, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

CAN SYSTEM (TYPE 10)

[CAN]

CHECK SHEET

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Check sheet table

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

Comparison table

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

Symptoms:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 10)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
EPS
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
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
IPDM E/R
DATA MONITOR

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CAN SYSTEM (TYPE 10)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

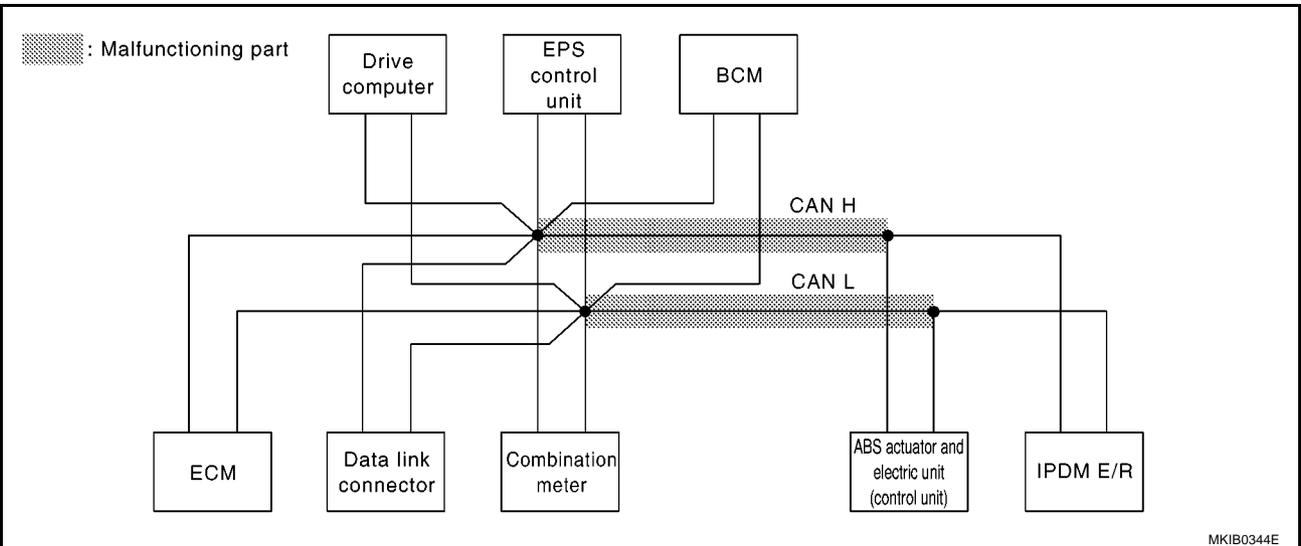
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-306, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 10)

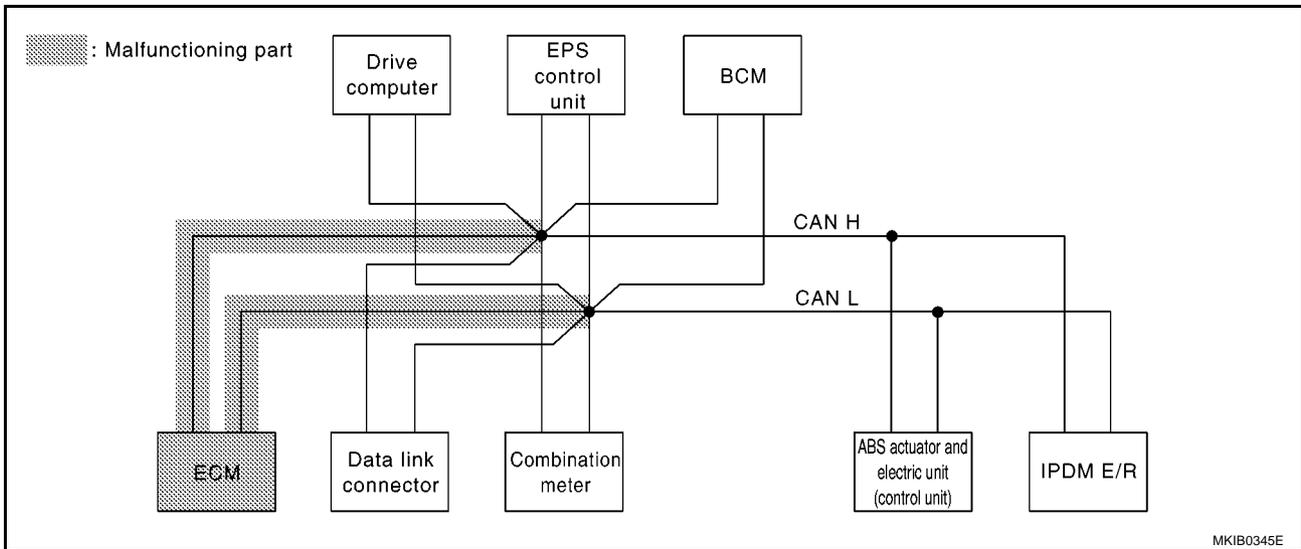
[CAN]

Case 2

Check ECM circuit. Refer to [LAN-307, "ECM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication ✓	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	—	—	CAN CIRC 2	—	—

MKIB1672E



CAN SYSTEM (TYPE 10)

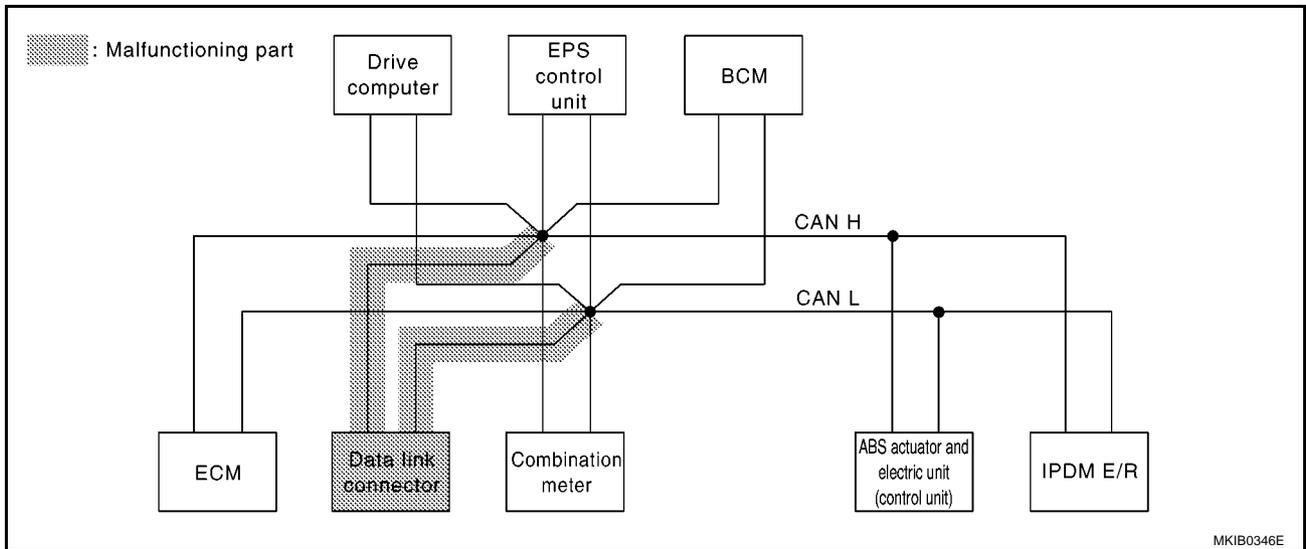
[CAN]

Case 3

Check data link connector circuit. Refer to [LAN-308, "Data Link Connector Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 10)

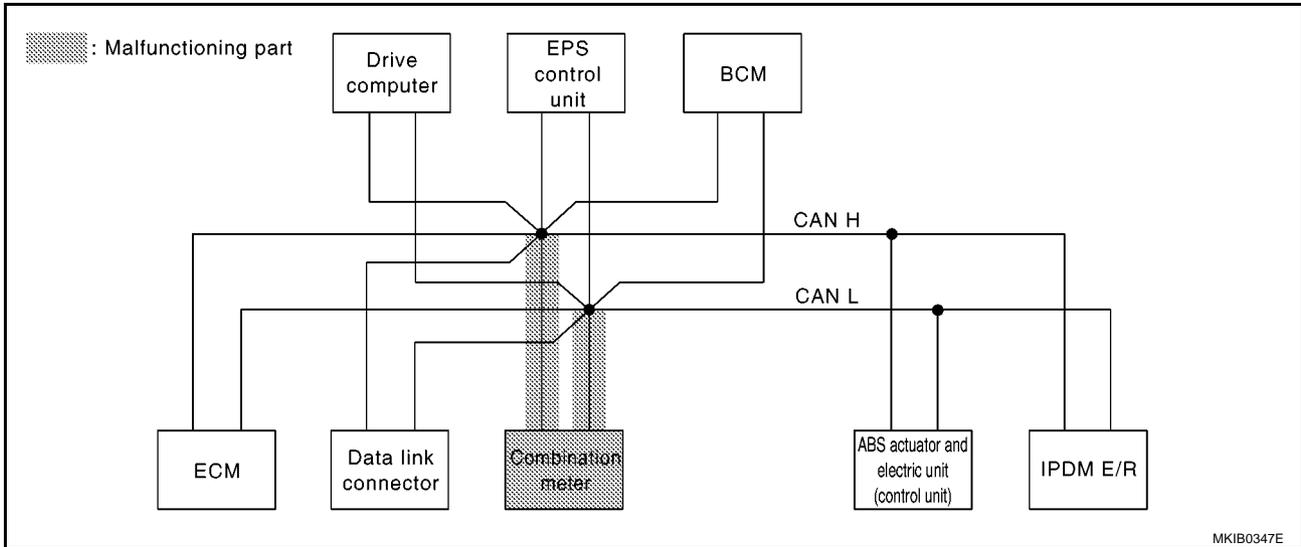
[CAN]

Case 4

Check combination meter circuit. Refer to [LAN-309, "Combination Meter Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 10)

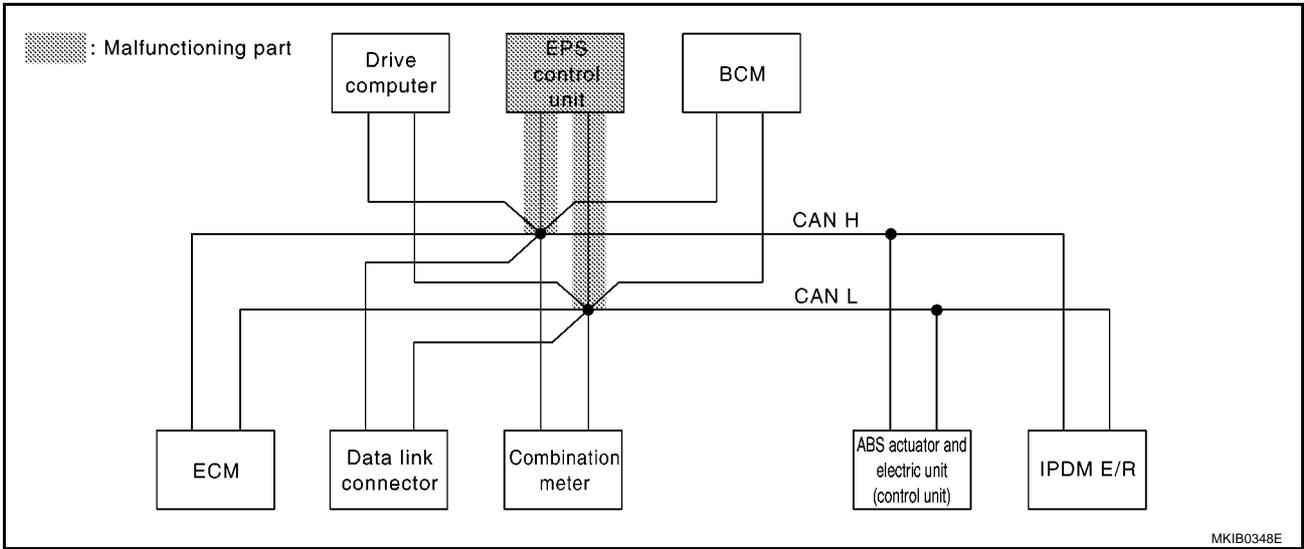
[CAN]

Case 5

Check EPS control unit circuit. Refer to [LAN-310, "EPS Control Unit Circuit Check"](#).

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 10)

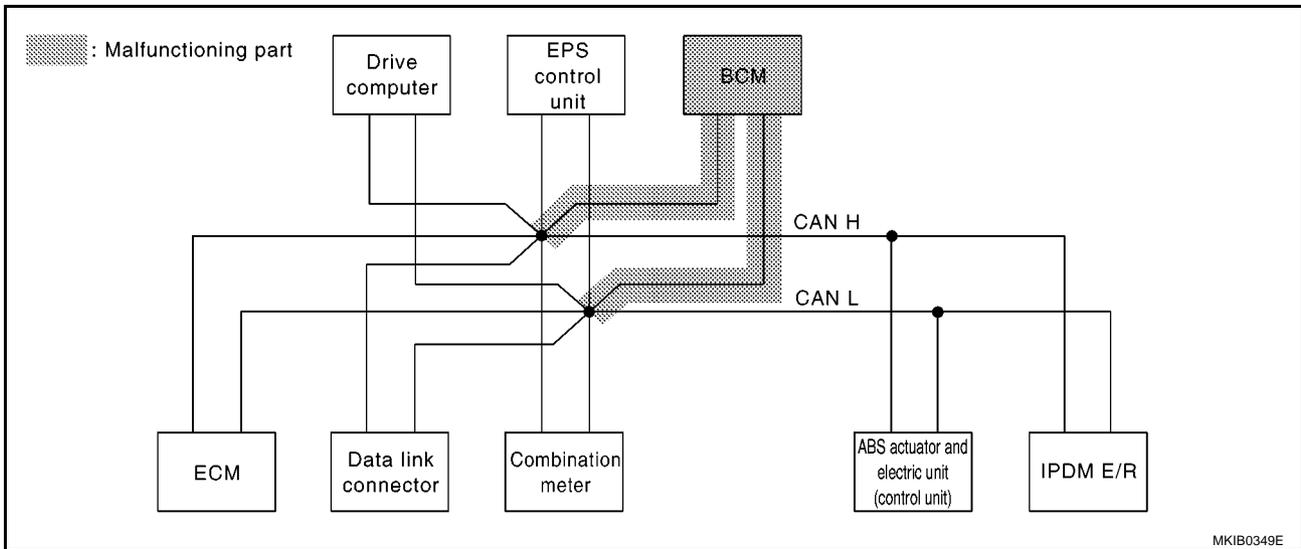
[CAN]

Case 6

Check BCM circuit. Refer to [LAN-311, "BCM Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 10)

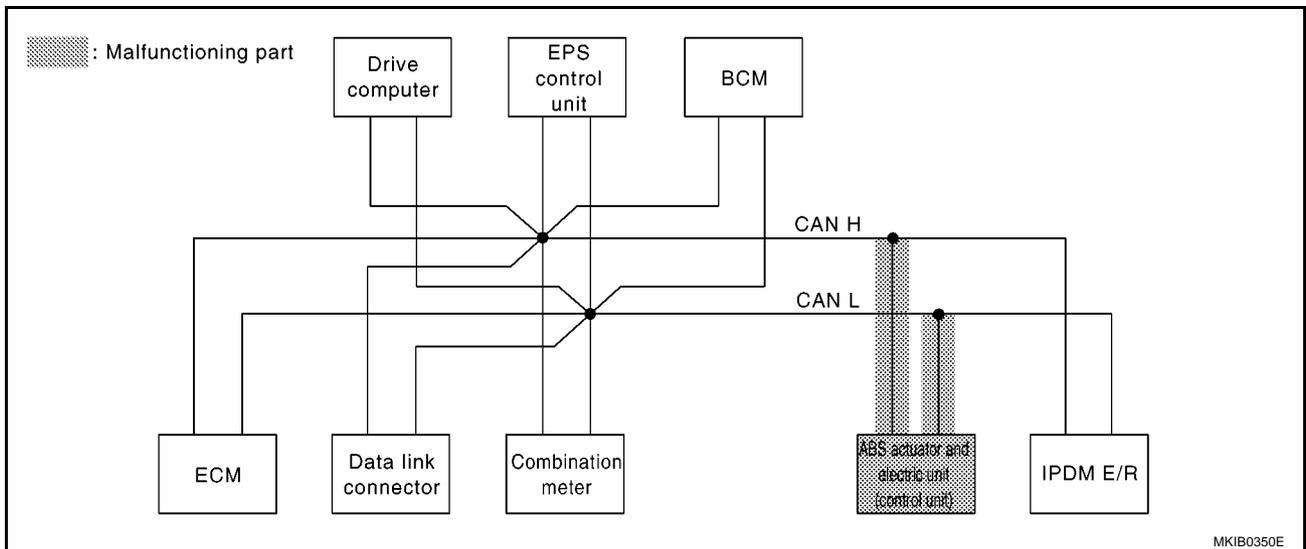
[CAN]

Case 7

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-312, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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CAN SYSTEM (TYPE 10)

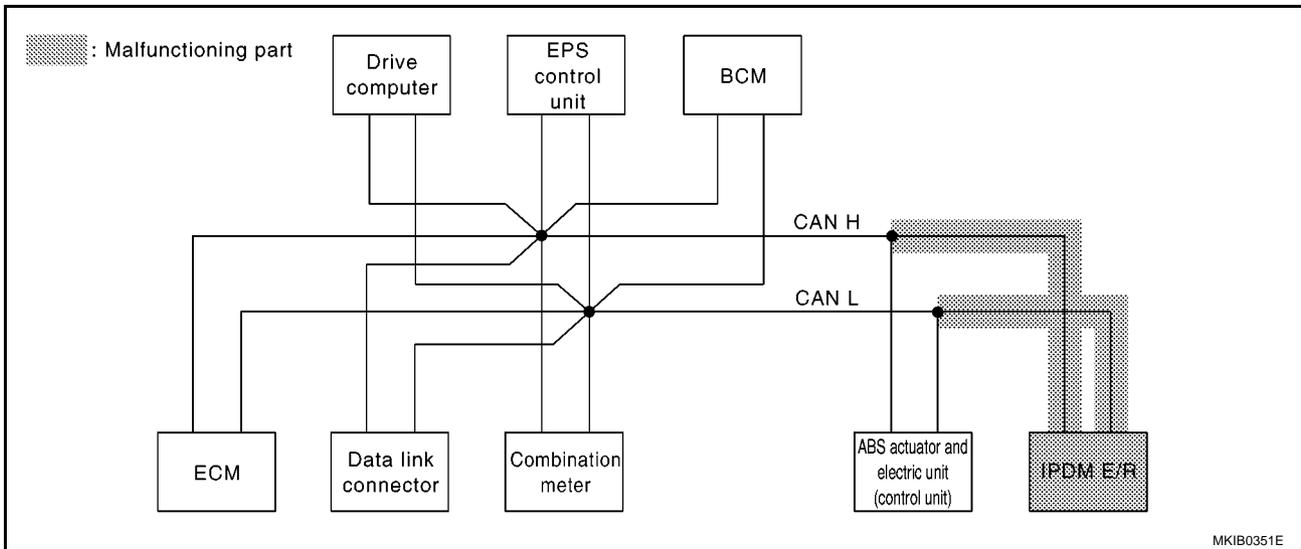
[CAN]

Case 8

Check IPDM E/R circuit. Refer to [LAN-313, "IPDM E/R Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

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MKIB0351E

CAN SYSTEM (TYPE 10)

[CAN]

Case 9

Check CAN communication circuit. Refer to [LAN-314, "CAN Communication Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication ✓	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

MKIB1679E

Case 10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-317, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2 ✓	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

MKIB1681E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-317, "IPDM E/R Ignition Relay Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx					
				ECM	Combination meter	EPS	BCM	ABS	IPDM E/R
ENGINE	No indication	—	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 4	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—
IPDM E/R	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 2	—	—

MKIB1680E

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Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS00JQH

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 M1
 - Harness connector E101

OK or NG

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

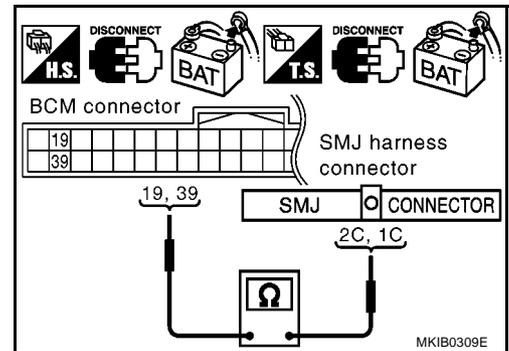
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
 - Harness connector M1
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) – 1C (W) : Continuity should exist.

OK or NG

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



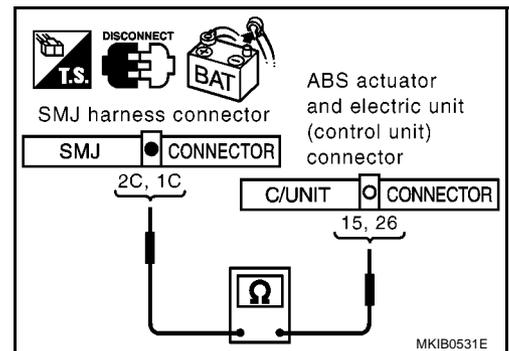
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.
1C (W) – 15 (W) : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-293, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
 - ECM connector
 - Harness connector M1
 - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

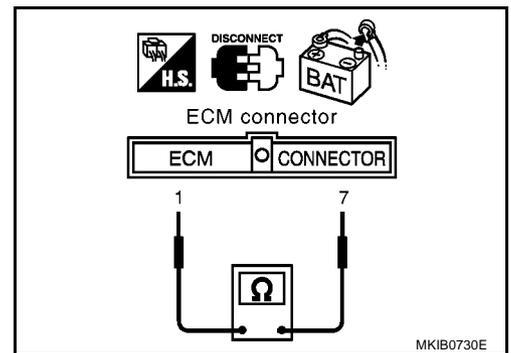
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E61 terminals 1 (R) and 7 (W).

1 (R) – 7 (W)**: Approx. 108 – 132Ω**OK or NG

OK >> Replace ECM.

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



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

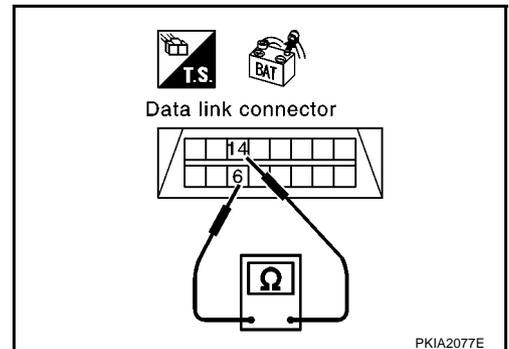
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-293, "Work Flow"](#).
- NG >> Repair harness between data link connector and combination meter



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

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

OK or NG

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

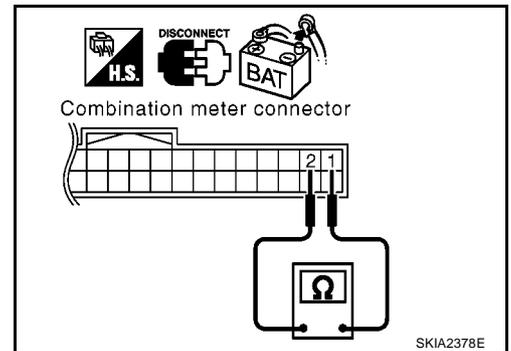
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

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



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EPS Control Unit Circuit Check**1. CHECK CONNECTOR**

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

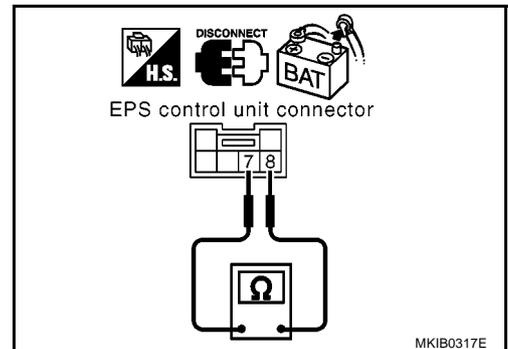
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

OK or NG

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



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.

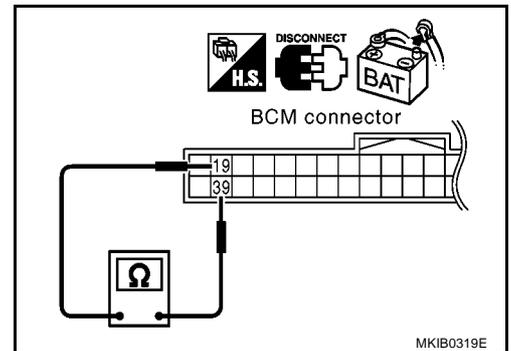
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM. Refer to [BCS-31, "Removal and Installation of BCM"](#) .
 NG >> Repair harness between BCM and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check**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.

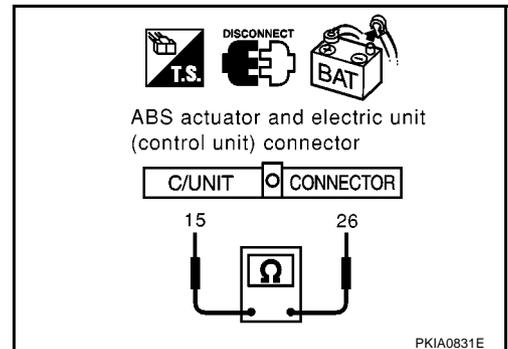
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

OK or NG

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



IPDM E/R Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

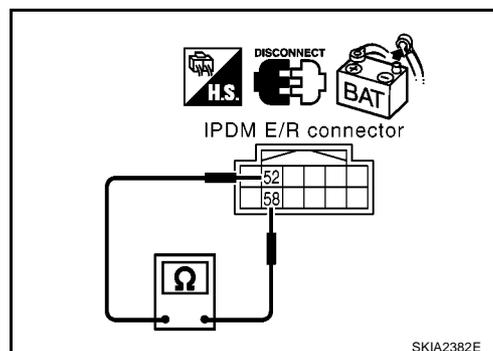
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω

OK or NG

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



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CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

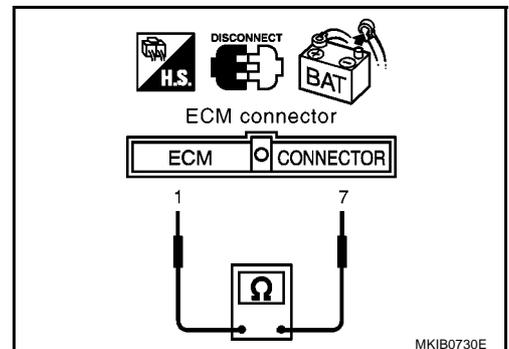
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E61 terminals 1 (R) and 7 (W).

1 (R) – 7 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E61 terminals 1 (R), 7 (W) and ground.

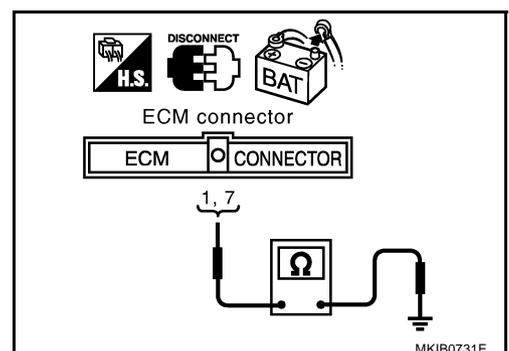
1 (R) – Ground : Continuity should not exist.

7 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
 - ABS actuator and electric unit (control unit) connector
 - IPDM E/R connector
- Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

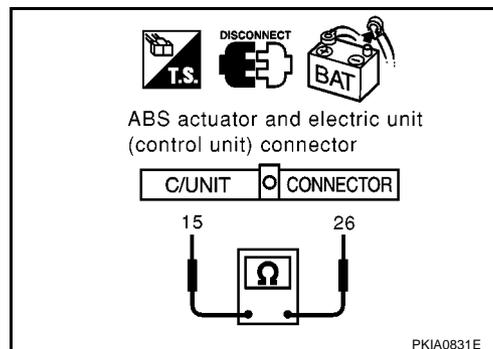
26 (R) – 15 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

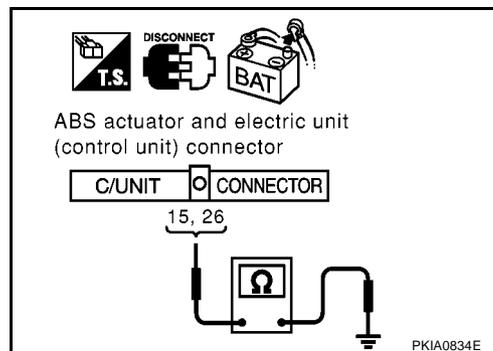
15 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.

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

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



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6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Combination meter connector
 - Drive computer connector
 - EPS control unit connector
 - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

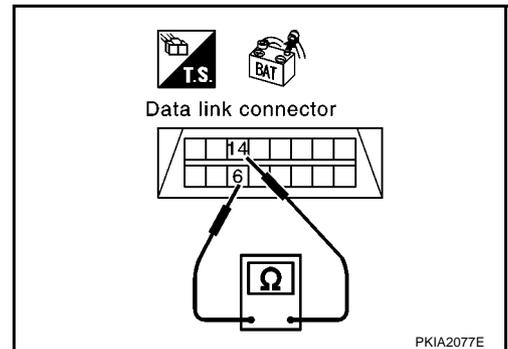
6 (R) – 14 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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

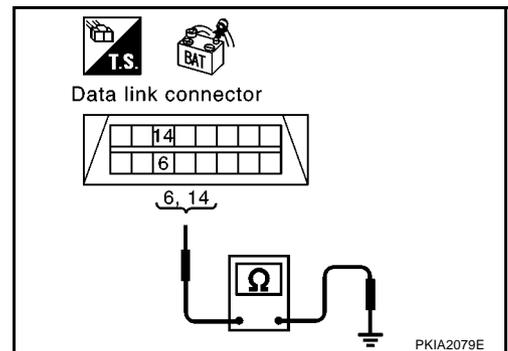
14 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-317, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

OK >> Reconnect all connectors to perform "SELECT SYSTEM", "SELF-DIAG RESULTS" and "DATA MONITOR (CAN DIAG SUPPORT MNTR)" displayed on CONSULT-II. Refer to [LAN-293, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

EKS00JQQ

Perform the self-diagnosis for IPDM E/R. Refer to [PG-48, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-49, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

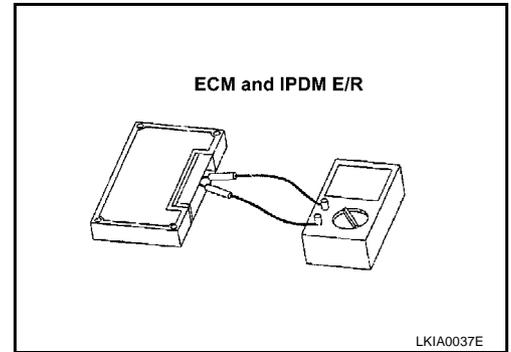
Component Inspection

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ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 1 and 7.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	1 – 7	108 - 132
IPDM E/R	52 – 58	



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