

SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS	4
Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	4
Precautions When Using CONSULT-II	4
CHECK POINTS FOR USING CONSULT-II	4
Precautions For Trouble Diagnosis	4
CAN SYSTEM	4
Precautions For Harness Repair	5
CAN SYSTEM	5
Maintenance Information	5
RHD MODELS	5
LHD MODELS	5
CAN COMMUNICATION	6
System Description	6
CAN Communication Unit	6
TYPE 1/TYPE 2	7
TYPE 3/TYPE 4	10
TYPE 5/TYPE 6	12
TYPE 7/TYPE 8	15
TYPE 9/TYPE 10	17
CAN SYSTEM (TYPE 1)	20
System Description	20
Component Parts and Harness Connector Location	20
Wiring Diagram — CAN —	21
Work Flow	23
CHECK SHEET	25
CHECK SHEET RESULTS (EXAMPLE)	27
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	38
ECM Circuit Check	39
Data Link Connector Circuit Check	40
Combination Meter Circuit Check	41
Intelligent Key Unit Circuit Check	42
EPS Control Unit Circuit Check	43
BCM Circuit Check	44
ABS Actuator and Electric Unit (Control Unit) Circuit Check	45
TCM Circuit Check	46

IPDM E/R Circuit Check	47
CAN Communication Circuit Check	48
IPDM E/R Ignition Relay Circuit Check	51
Component Inspection	51
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	51
CAN SYSTEM (TYPE 2)	52
System Description	52
Component Parts and Harness Connector Location	52
Wiring Diagram — CAN —	53
Work Flow	55
CHECK SHEET	57
CHECK SHEET RESULTS (EXAMPLE)	59
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	69
ECM Circuit Check	70
Data Link Connector Circuit Check	71
Combination Meter Circuit Check	72
EPS Control Unit Circuit Check	73
BCM Circuit Check	74
ABS Actuator and Electric Unit (Control Unit) Circuit Check	75
TCM Circuit Check	76
IPDM E/R Circuit Check	77
CAN Communication Circuit Check	78
IPDM E/R Ignition Relay Circuit Check	81
Component Inspection	81
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	81
CAN SYSTEM (TYPE 3)	82
System Description	82
Component Parts and Harness Connector Location	82
Wiring Diagram — CAN —	83
Work Flow	85
CHECK SHEET	87
CHECK SHEET RESULTS (EXAMPLE)	89
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	99
ECM Circuit Check	100
Data Link Connector Circuit Check	101

Combination Meter Circuit Check	102	CAN SYSTEM (TYPE 6)	172
Intelligent Key Unit Circuit Check	103	System Description	172
EPS Control Unit Circuit Check	104	Component Parts and Harness Connector Location	172
BCM Circuit Check	105	Wiring Diagram — CAN —	173
ABS Actuator and Electric Unit (Control Unit) Circuit Check	106	Work Flow	175
IPDM E/R Circuit Check	107	CHECK SHEET	177
CAN Communication Circuit Check	108	CHECK SHEET RESULTS (EXAMPLE)	179
IPDM E/R Ignition Relay Circuit Check	111	Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	189
Component Inspection	111	ECM Circuit Check	190
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC- TION	111	Data Link Connector Circuit Check	191
CAN SYSTEM (TYPE 4)	112	Combination Meter Circuit Check	192
System Description	112	EPS Control Unit Circuit Check	193
Component Parts and Harness Connector Location	112	BCM Circuit Check	194
Wiring Diagram — CAN —	113	ABS Actuator and Electric Unit (Control Unit) Circuit Check	195
Work Flow	115	TCM Circuit Check	196
CHECK SHEET	117	IPDM E/R Circuit Check	197
CHECK SHEET RESULTS (EXAMPLE)	119	CAN Communication Circuit Check	198
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	128	IPDM E/R Ignition Relay Circuit Check	201
ECM Circuit Check	129	Component Inspection	201
Data Link Connector Circuit Check	130	ECM/IPDM E/R INTERNAL CIRCUIT INSPEC- TION	201
Combination Meter Circuit Check	131	CAN SYSTEM (TYPE 7)	202
EPS Control Unit Circuit Check	132	System Description	202
BCM Circuit Check	133	Component Parts and Harness Connector Location	202
ABS Actuator and Electric Unit (Control Unit) Circuit Check	134	Wiring Diagram — CAN —	203
IPDM E/R Circuit Check	135	Work Flow	205
CAN Communication Circuit Check	136	CHECK SHEET	207
IPDM E/R Ignition Relay Circuit Check	139	CHECK SHEET RESULTS (EXAMPLE)	209
Component Inspection	139	Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	219
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC- TION	139	ECM Circuit Check	220
CAN SYSTEM (TYPE 5)	140	Data Link Connector Circuit Check	221
System Description	140	Combination Meter Circuit Check	222
Component Parts and Harness Connector Location	140	Intelligent Key Unit Circuit Check	223
Wiring Diagram — CAN —	141	EPS Control Unit Circuit Check	224
Work Flow	143	BCM Circuit Check	225
CHECK SHEET	145	ABS Actuator and Electric Unit (Control Unit) Circuit Check	226
CHECK SHEET RESULTS (EXAMPLE)	147	IPDM E/R Circuit Check	227
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	158	CAN Communication Circuit Check	228
ECM Circuit Check	159	IPDM E/R Ignition Relay Circuit Check	231
Data Link Connector Circuit Check	160	Component Inspection	231
Combination Meter Circuit Check	161	ECM/IPDM E/R INTERNAL CIRCUIT INSPEC- TION	231
Intelligent Key Unit Circuit Check	162	CAN SYSTEM (TYPE 8)	232
EPS Control Unit Circuit Check	163	System Description	232
BCM Circuit Check	164	Component Parts and Harness Connector Location	232
ABS Actuator and Electric Unit (Control Unit) Circuit Check	165	Wiring Diagram — CAN —	233
TCM Circuit Check	166	Work Flow	235
IPDM E/R Circuit Check	167	CHECK SHEET	237
CAN Communication Circuit Check	168	CHECK SHEET RESULTS (EXAMPLE)	239
IPDM E/R Ignition Relay Circuit Check	171	Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	248
Component Inspection	171	ECM Circuit Check	249
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC- TION	171	Data Link Connector Circuit Check	250

BCM Circuit Check	253
ABS Actuator and Electric Unit (Control Unit) Circuit Check	254
IPDM E/R Circuit Check	255
CAN Communication Circuit Check	256
IPDM E/R Ignition Relay Circuit Check	259
Component Inspection	259
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	259
CAN SYSTEM (TYPE 9)	260
System Description	260
Component Parts and Harness Connector Location	260
Wiring Diagram — CAN —	261
Work Flow	263
CHECK SHEET	265
CHECK SHEET RESULTS (EXAMPLE)	267
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	277
ECM Circuit Check	278
Data Link Connector Circuit Check	279
Combination Meter Circuit Check	280
Intelligent Key Unit Circuit Check	281
EPS Control Unit Circuit Check	282
BCM Circuit Check	283
ABS Actuator and Electric Unit (Control Unit) Circuit Check	284
IPDM E/R Circuit Check	285
CAN Communication Circuit Check	286
IPDM E/R Ignition Relay Circuit Check	289
Component Inspection	289
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	289
CAN SYSTEM (TYPE 10)	290
System Description	290
Component Parts and Harness Connector Location	290
Wiring Diagram — CAN —	291
Work Flow	293
CHECK SHEET	295
CHECK SHEET RESULTS (EXAMPLE)	297
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	306
ECM Circuit Check	307
Data Link Connector Circuit Check	308
Combination Meter Circuit Check	309
EPS Control Unit Circuit Check	310
BCM Circuit Check	311
ABS Actuator and Electric Unit (Control Unit) Circuit Check	312
IPDM E/R Circuit Check	313
CAN Communication Circuit Check	314
IPDM E/R Ignition Relay Circuit Check	317
Component Inspection	317
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	317

A

B

C

D

E

F

G

H

I

J

LAN

L

M

PRECAUTIONS

PFP:00001

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.

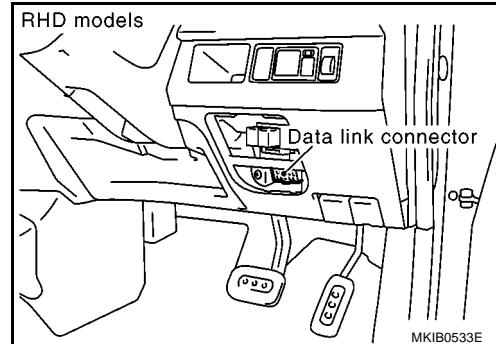
Precautions When Using CONSULT-II

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**

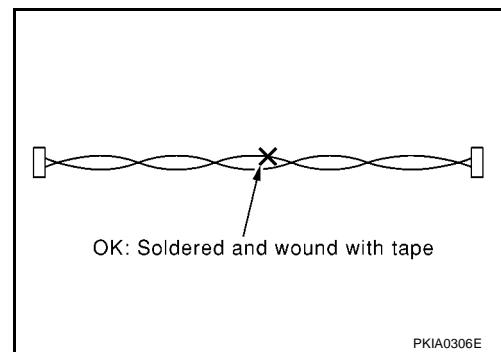
EKS0073I

- 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.

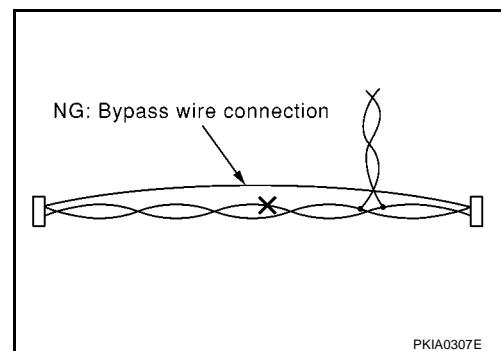
Precautions For Harness Repair CAN SYSTEM

EKS0073J

- Solder the repaired parts, and wrap with tape. [Fray 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

A

B

C

D

E

F

G

H

I

J

LAN

L

M

CAN COMMUNICATION

[CAN]

CAN COMMUNICATION

PFP:23710

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

x: Applicable

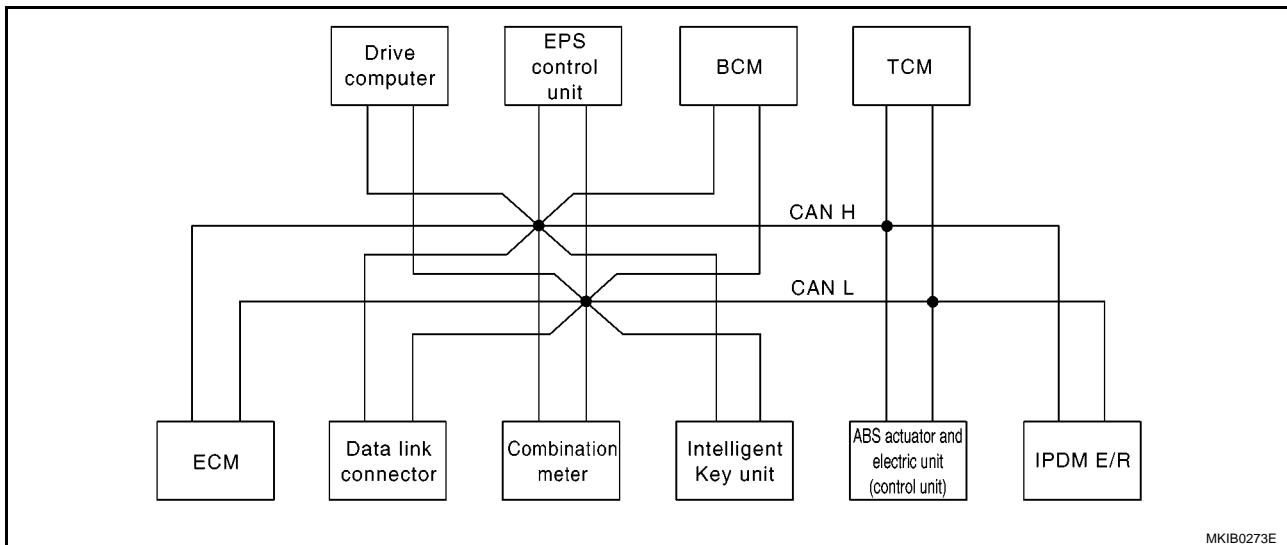
CAN COMMUNICATION

[CAN]

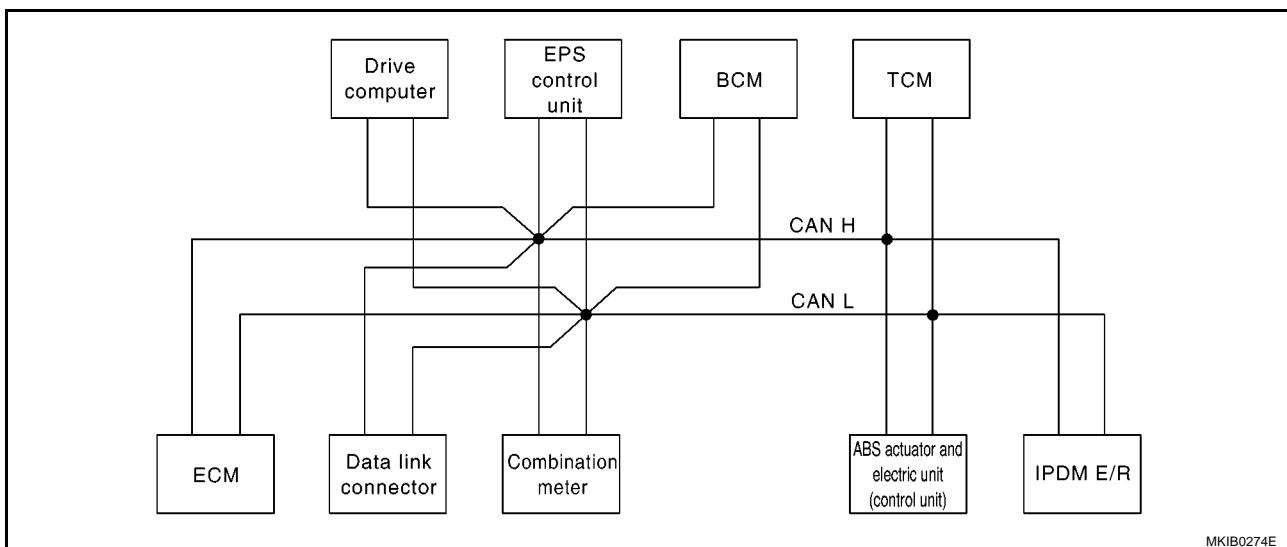
TYPE 1/TYPE 2

System diagram

- Type 1



- Type 2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelli-gentKey unit	Drive com-puter	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	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	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	Combi-nation meter.	Intelli-gentKey unit	Drive com-puter	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						

A

B

C

D

E

F

G

H

I

J

LAN

L

M

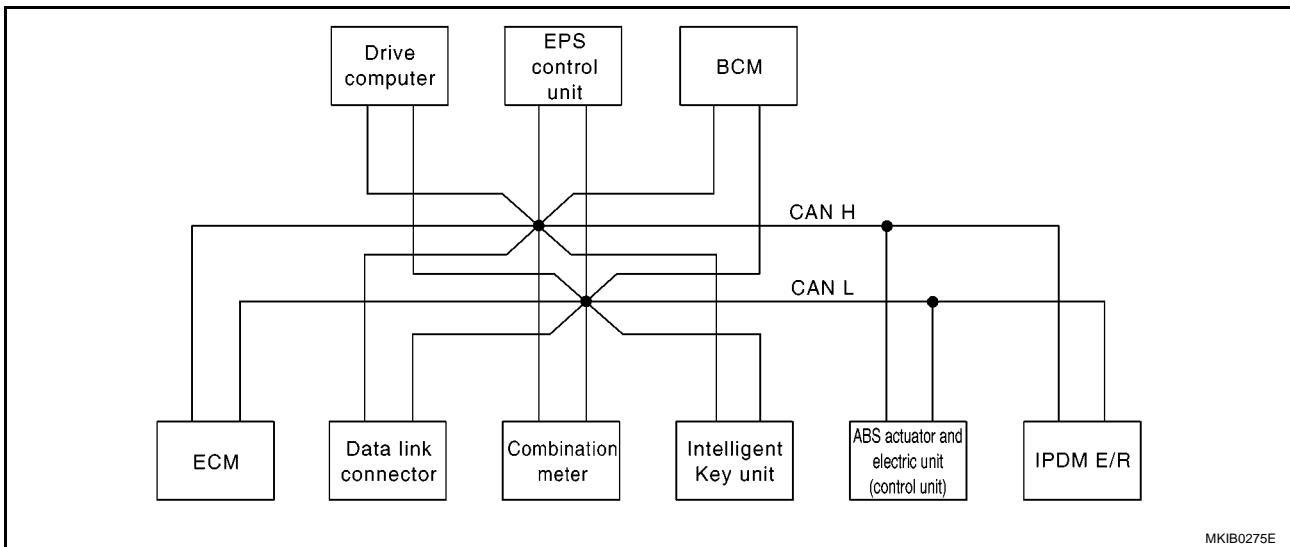
CAN COMMUNICATION

[CAN]

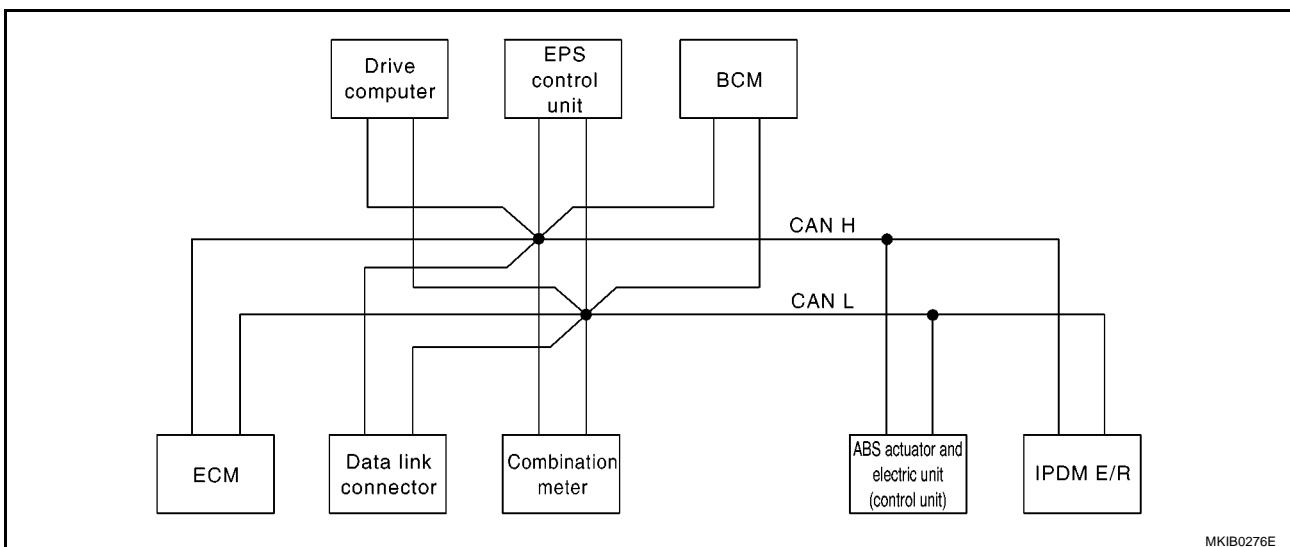
TYPE 3/TYPE 4

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 control unit	BCM	ABS actuator and elec-tric unit (control unit)	IPDM E/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 sig-nal	R							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal	R			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			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

A
B
C
D
E
F
G
H
I
J

LAN

L
M

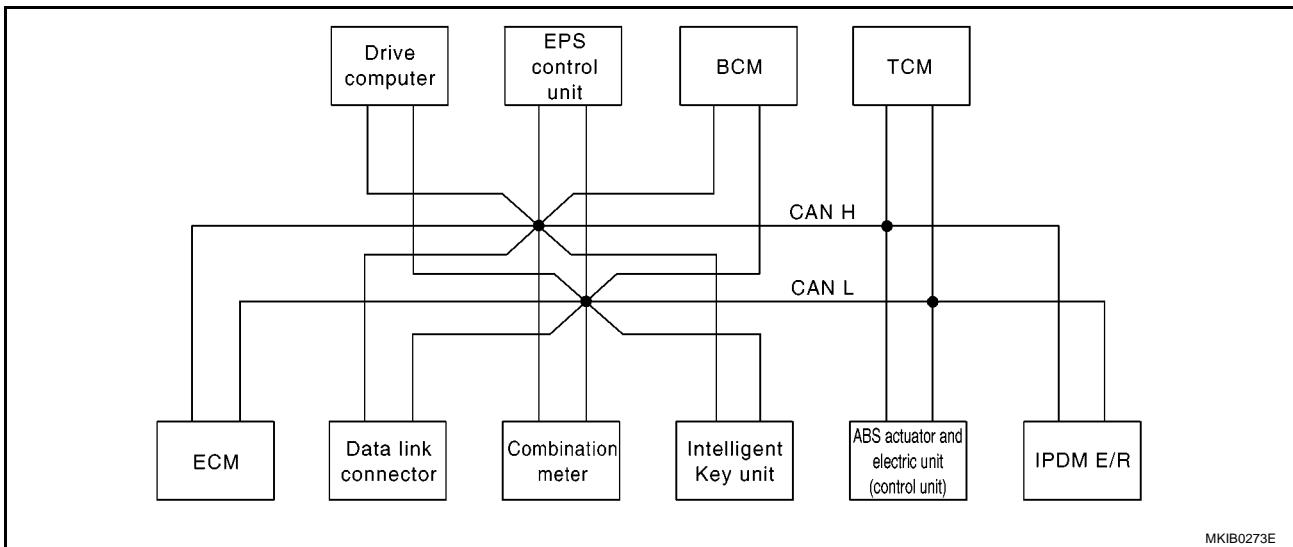
CAN COMMUNICATION

[CAN]

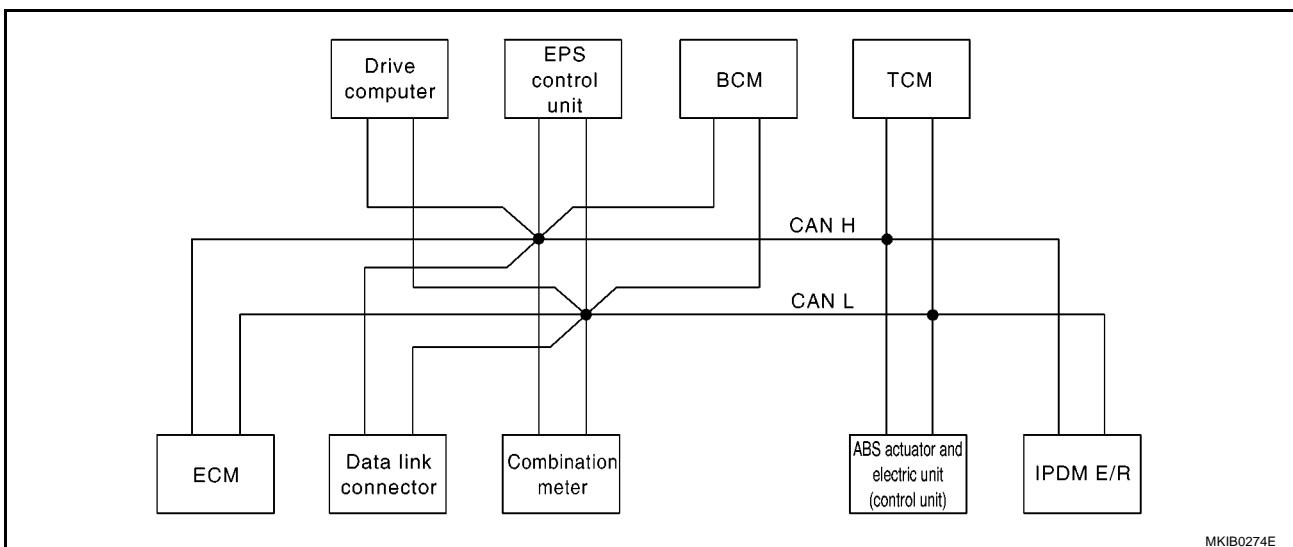
TYPE 5/TYPE 6

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	Combina-tion meter.	Intelli-gentKey unit	Drive com-puter	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
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		

A
B
C
D
E
F
G
H
I
J

LAN

L
M

CAN COMMUNICATION

[CAN]

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	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						

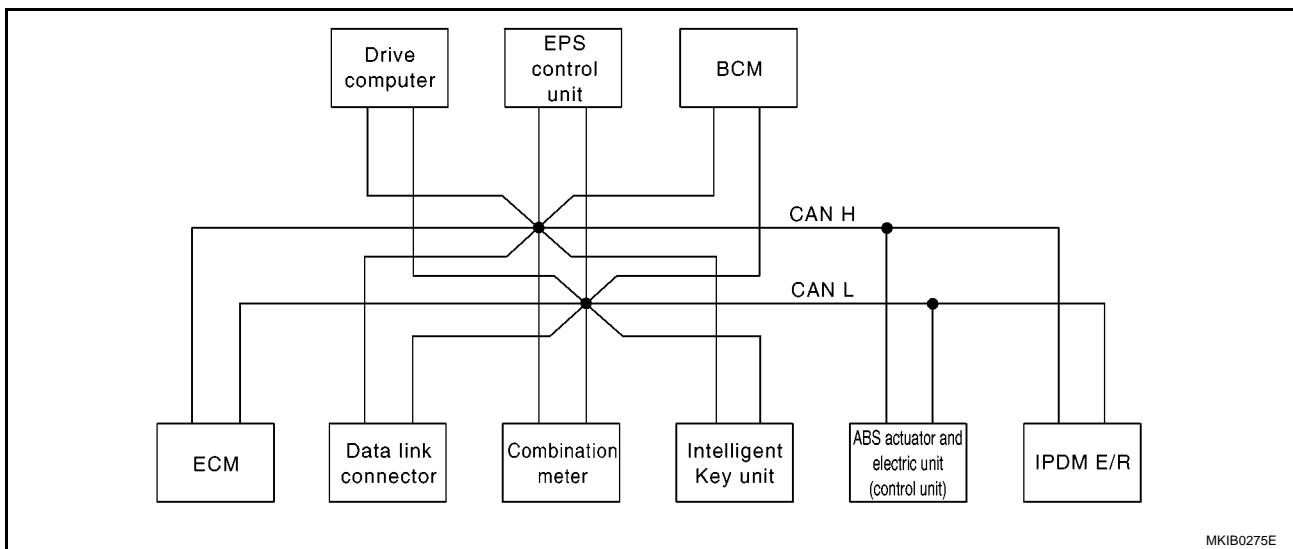
CAN COMMUNICATION

[CAN]

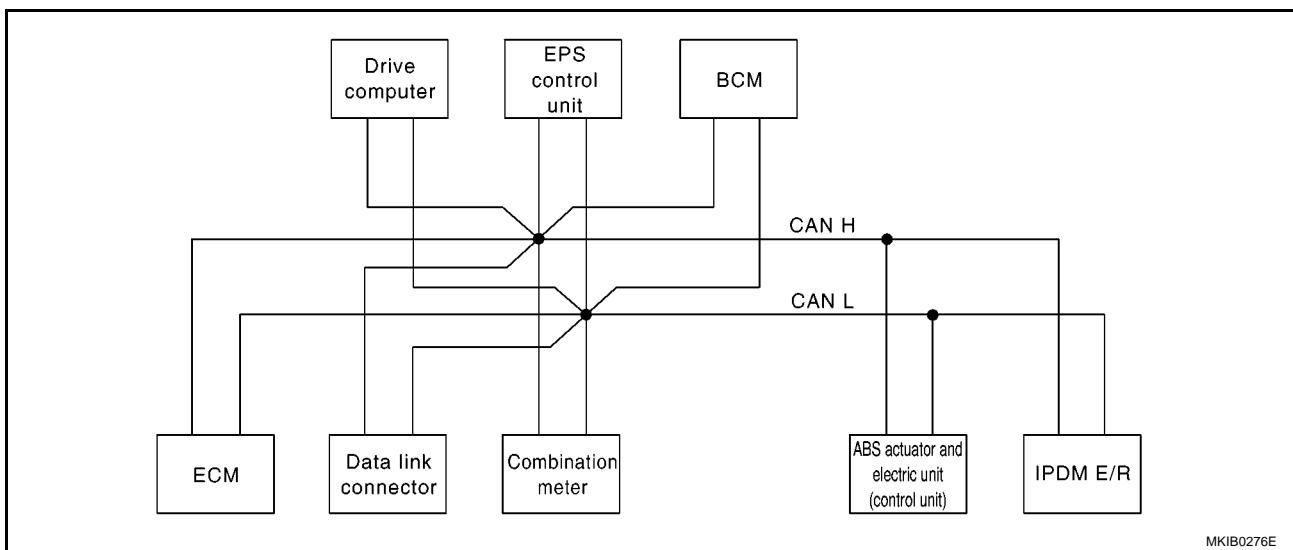
TYPE 7/TYPE 8

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

CAN COMMUNICATION

[CAN]

Signals	ECM	Combina-tion meter.	Intelli-gent Key unit	Drive computer	EPS control 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

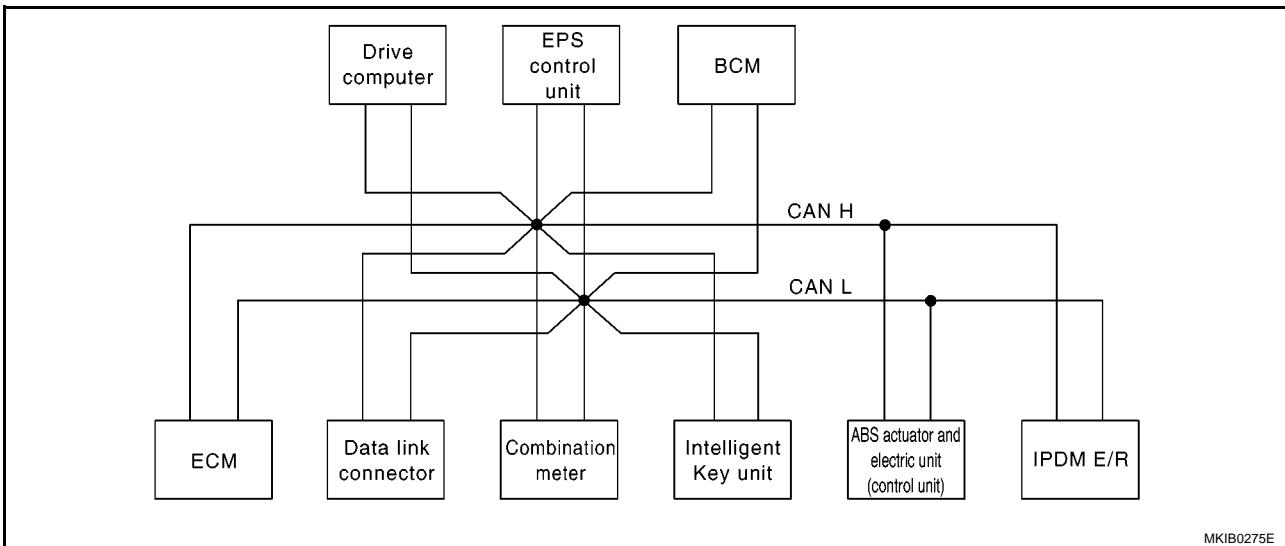
[CAN]

Signals	ECM	Combina-tion meter.	Intelli-gent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric 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						

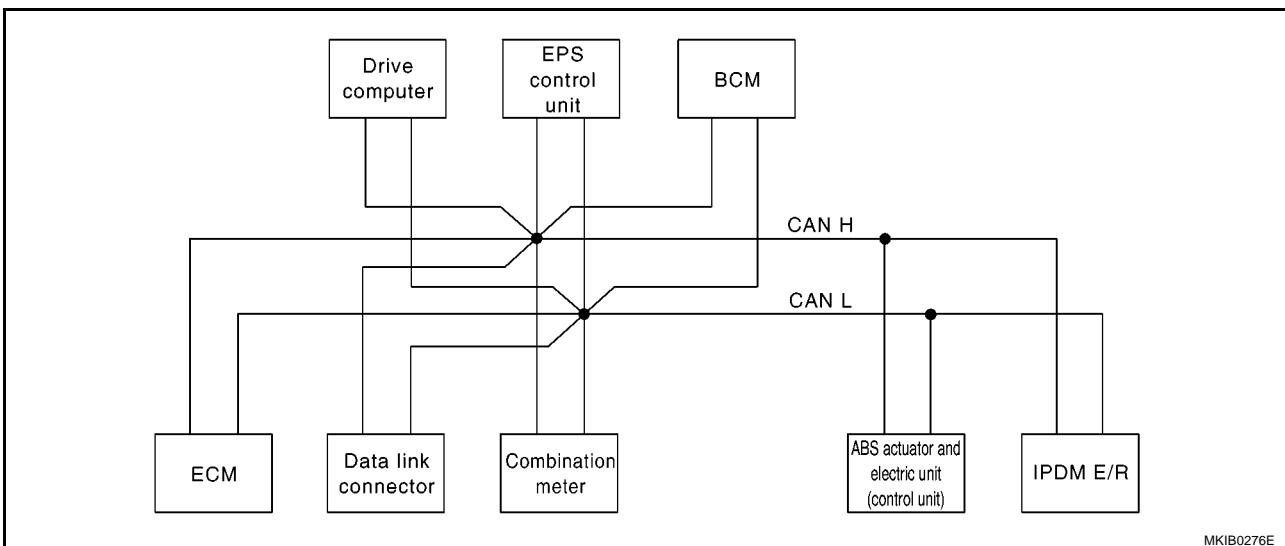
TYPE 9/TYPE 10

System diagram

- Type 9



- Type 10



A
B
C
D
E
F
G
H
I
J

LAN
L
M

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 control unit	BCM	ABS actuator and elec-tric unit (control unit)	IPDM E/R
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

A

B

C

D

E

F

G

H

I

J

LAN

L

M

CAN SYSTEM (TYPE 1)

PFP:23710

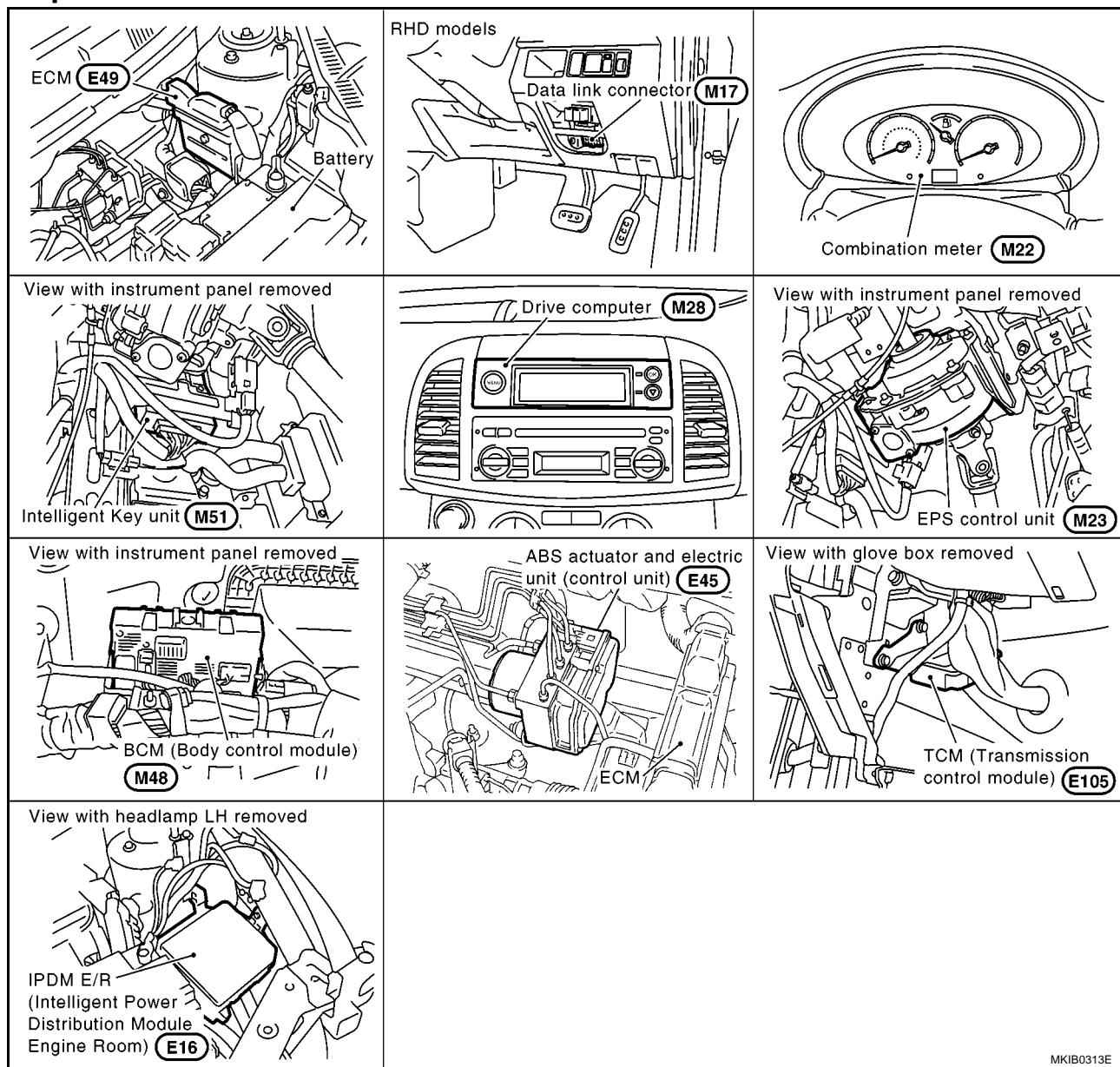
System Description

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



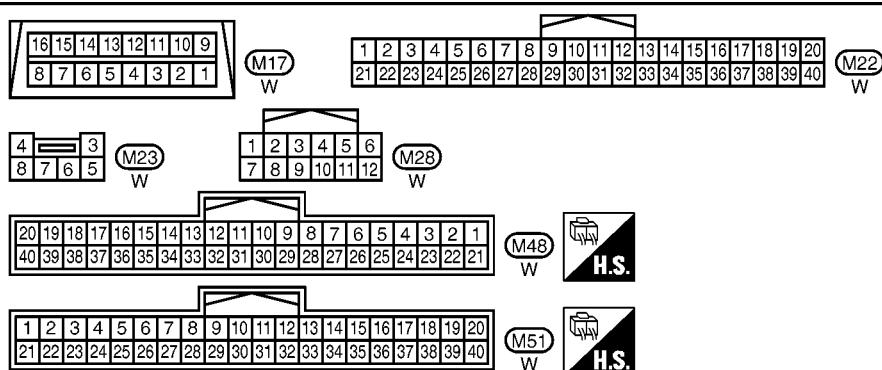
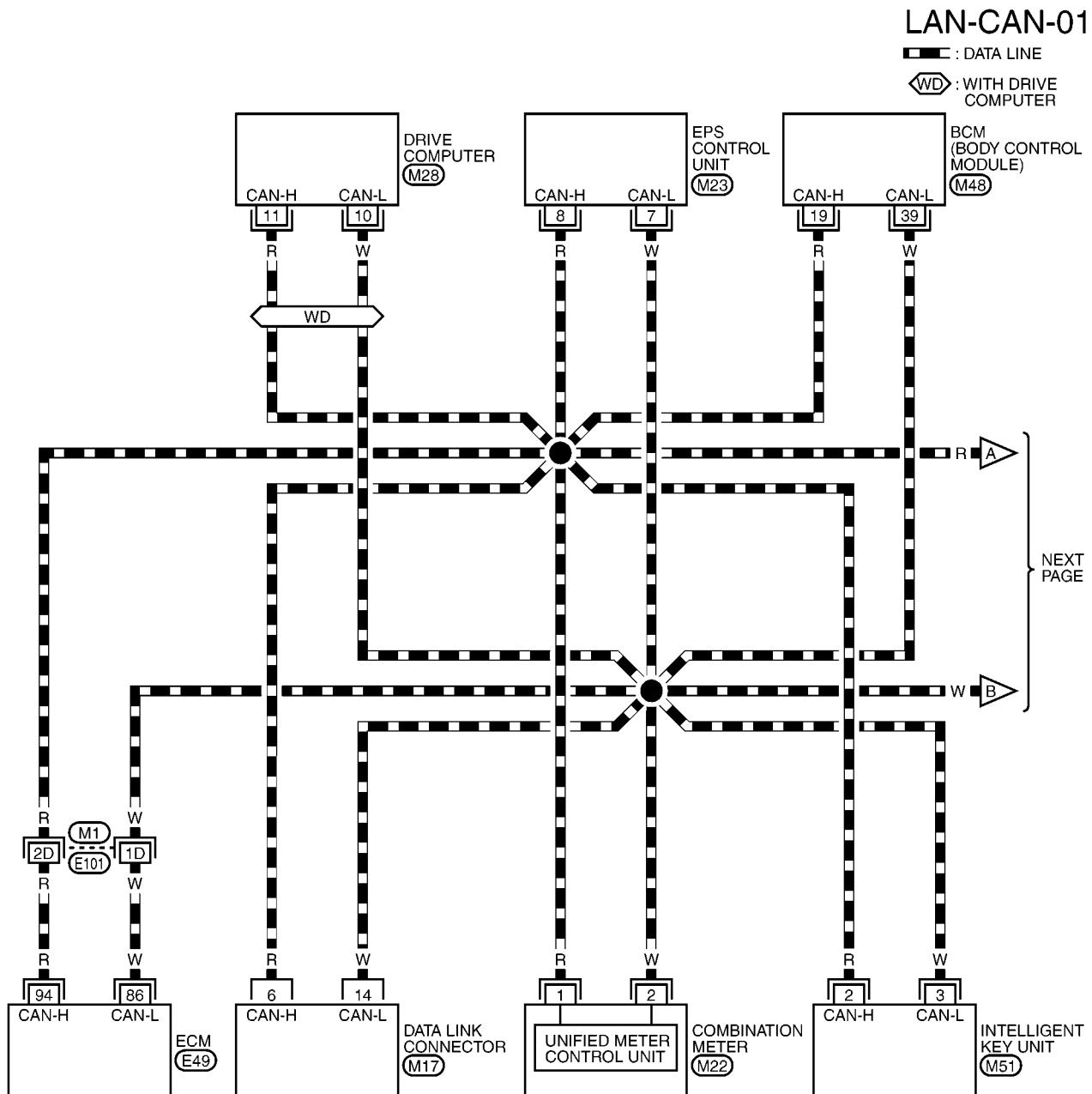
MKIB0313E

CAN SYSTEM (TYPE 1)

[CAN]

Wiring Diagram — CAN —

EKS00730



REFER TO THE FOLLOWING.

**M1 -SUPER MULTIPLE
JUNCTION (SMJ)**

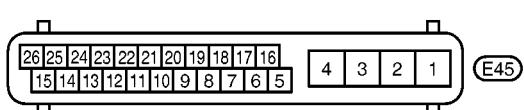
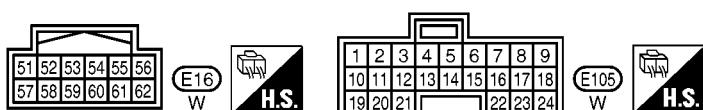
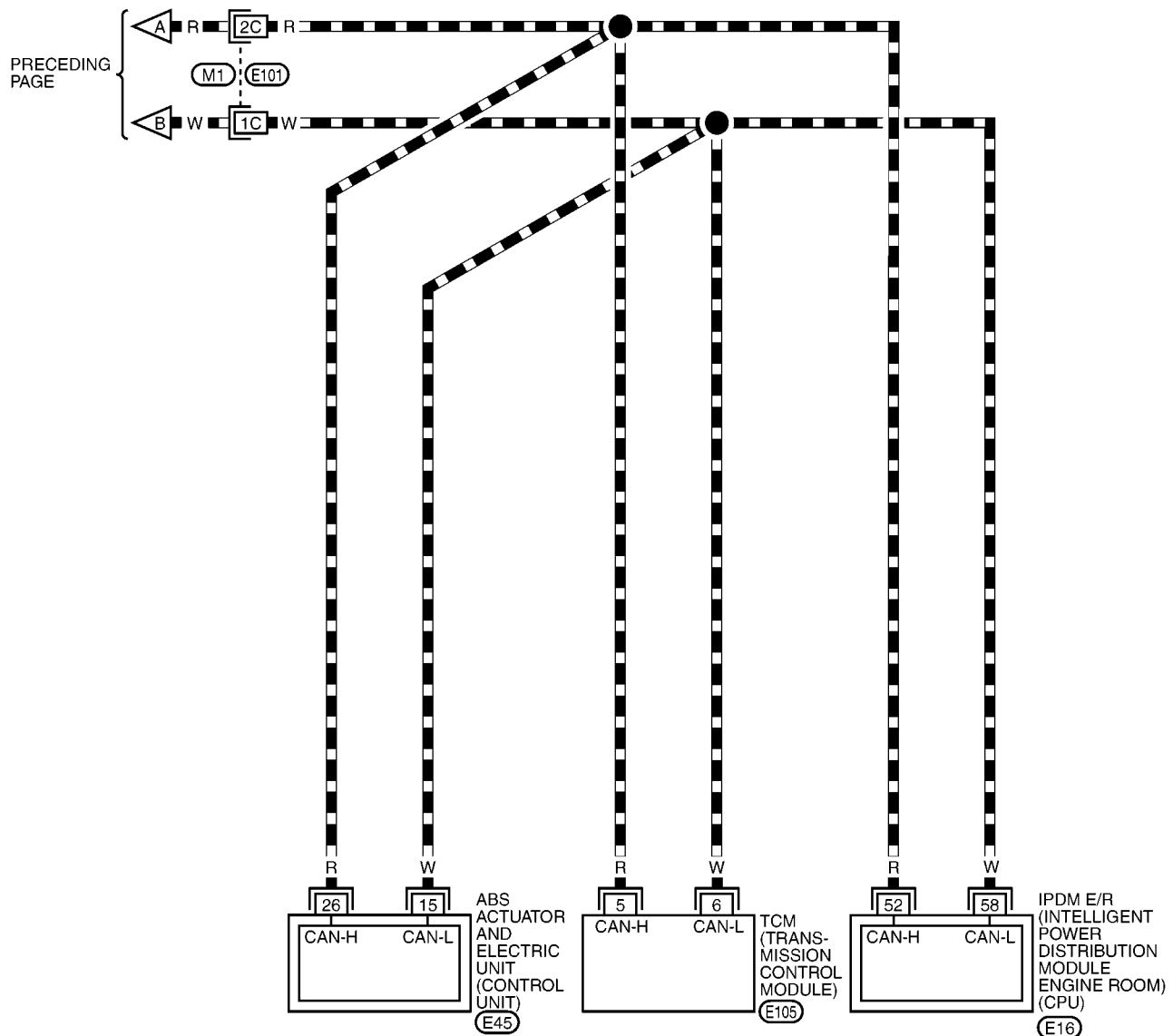
E49 -ELECTRICAL UNITS

CAN SYSTEM (TYPE 1)

[CAN]

LAN-CAN-02

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0791E

LAN-22

CAN SYSTEM (TYPE 1)

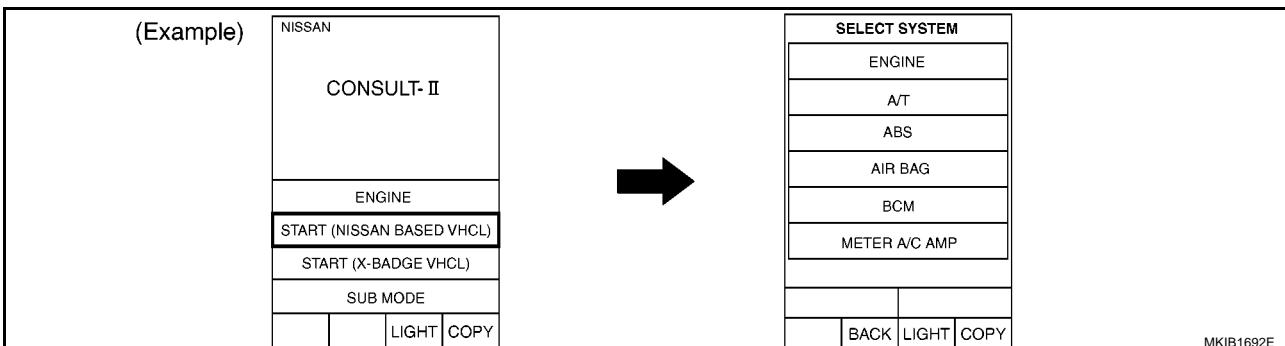
[CAN]

Work Flow

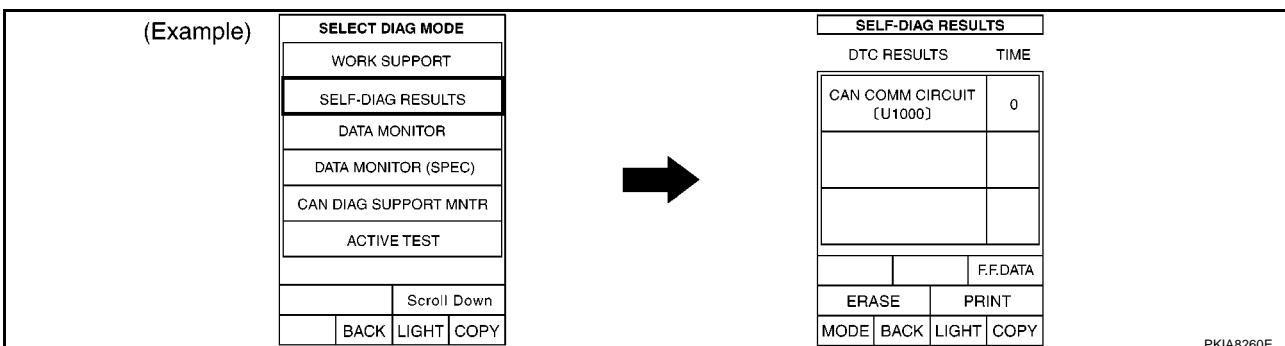
EKS0073P

A
B
C
D
E
F
G
H
I
J
LAN
L
M

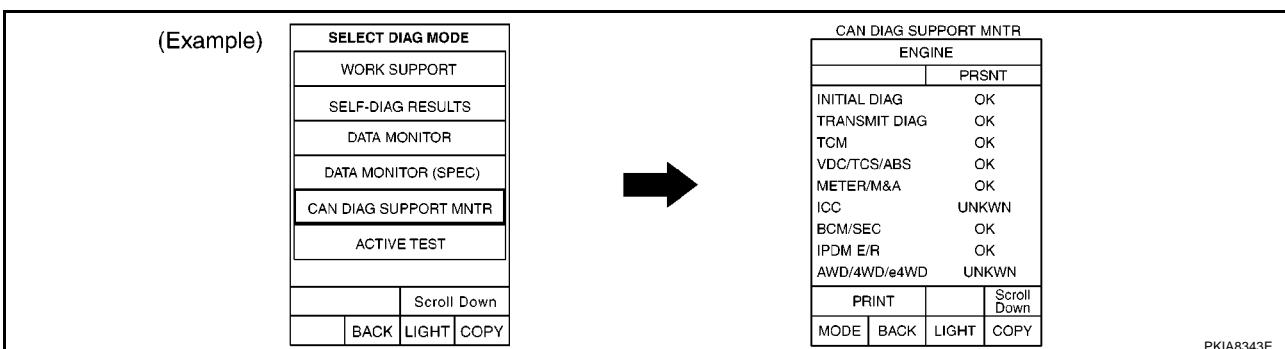
- When there are no indications of "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "INTELLIGENT KEY", "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-25, "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-25, "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.

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 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	CAN CIRC 4	—	—	—	—	—	—
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
MKIB1682E

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	UN✓VN	UN✓VN	UN✓VN
INTELLIGENT	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UN✓VN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UN✓VN	UN✓VN
ABS	—	NG	UNKWN	UN✓VN	UN✓VN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UN✓VN	UN✓VN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

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

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

LAN

L

M

MKIB1601E

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
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
INTELLIGENT KEY
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
DATA MONITOR

MKIB0278E

CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

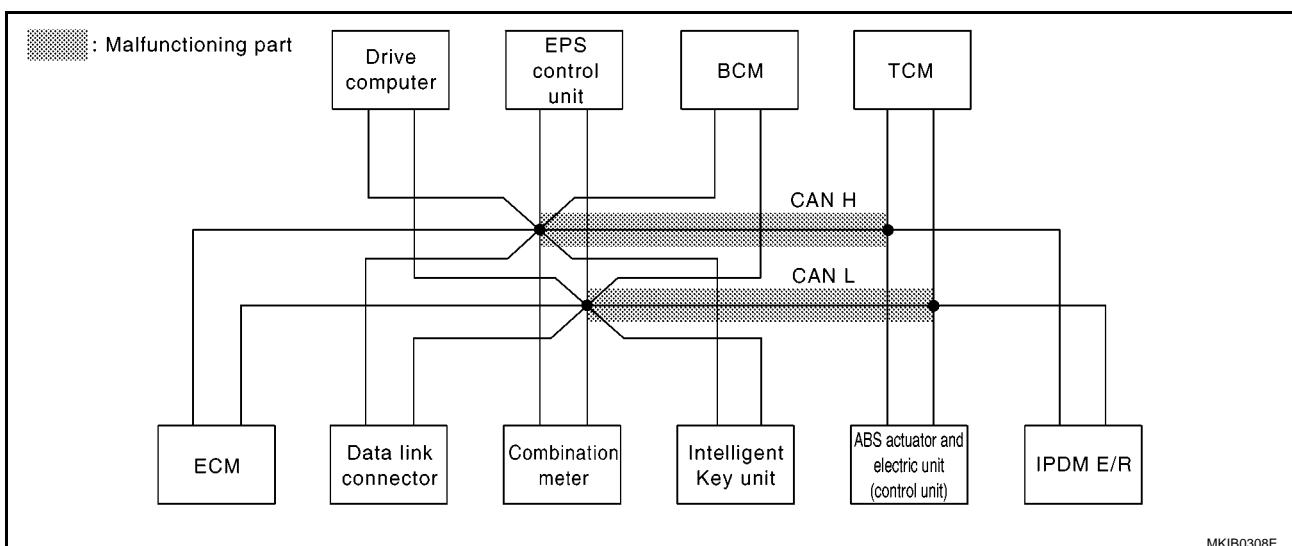
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

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



MKIB0308E

CAN SYSTEM (TYPE 1)

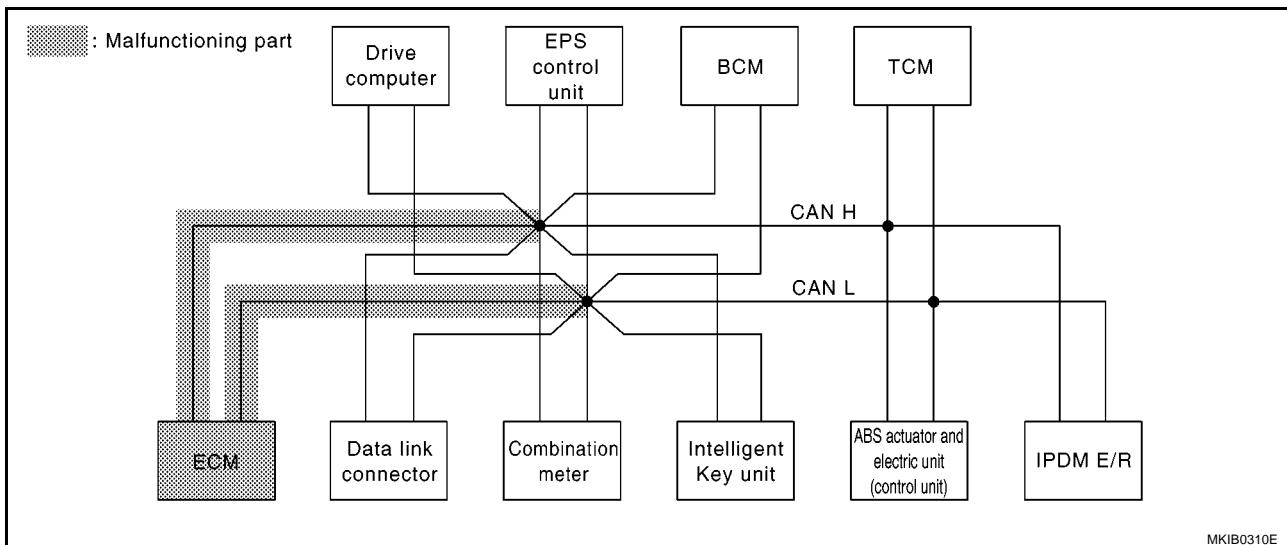
[CAN]

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)

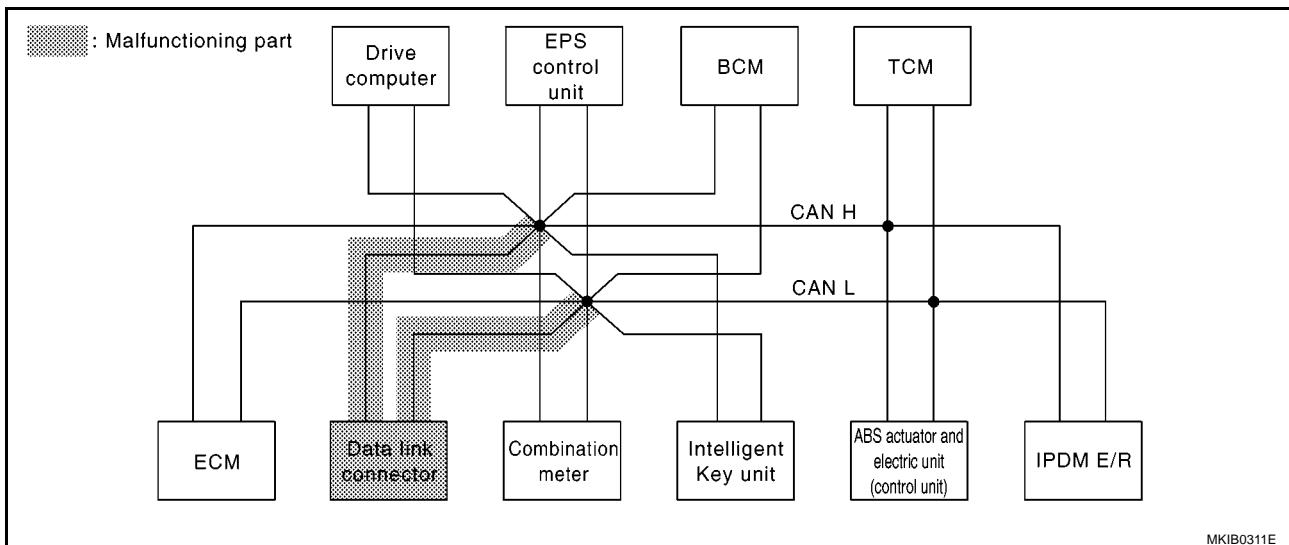
[CAN]

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	—	—	—

MKIB1613E



MKIB0311E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 1)

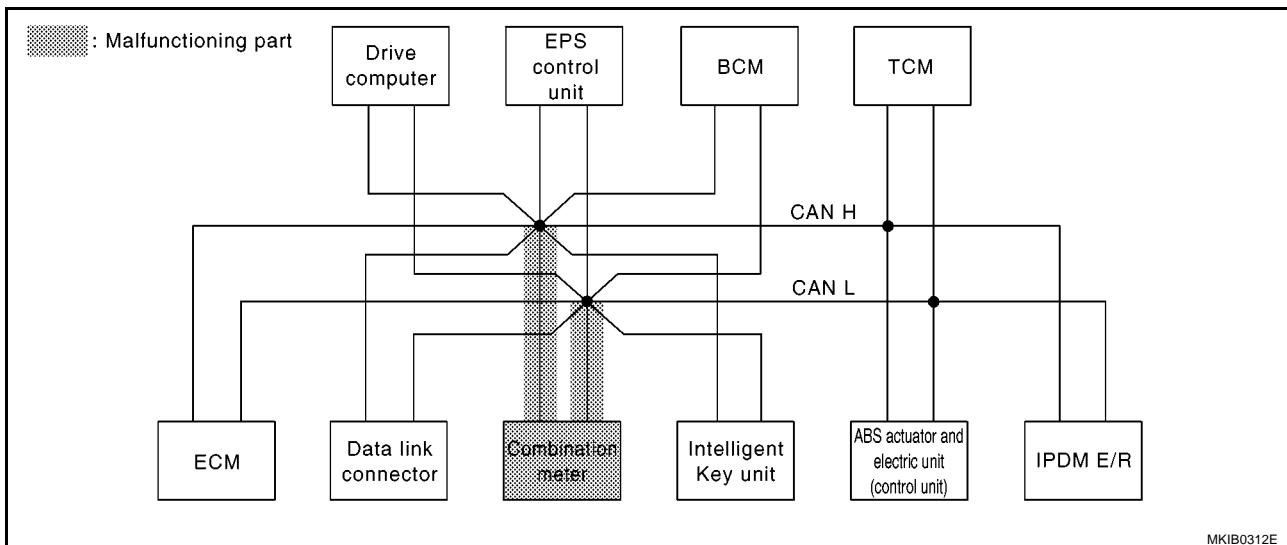
[CAN]

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)

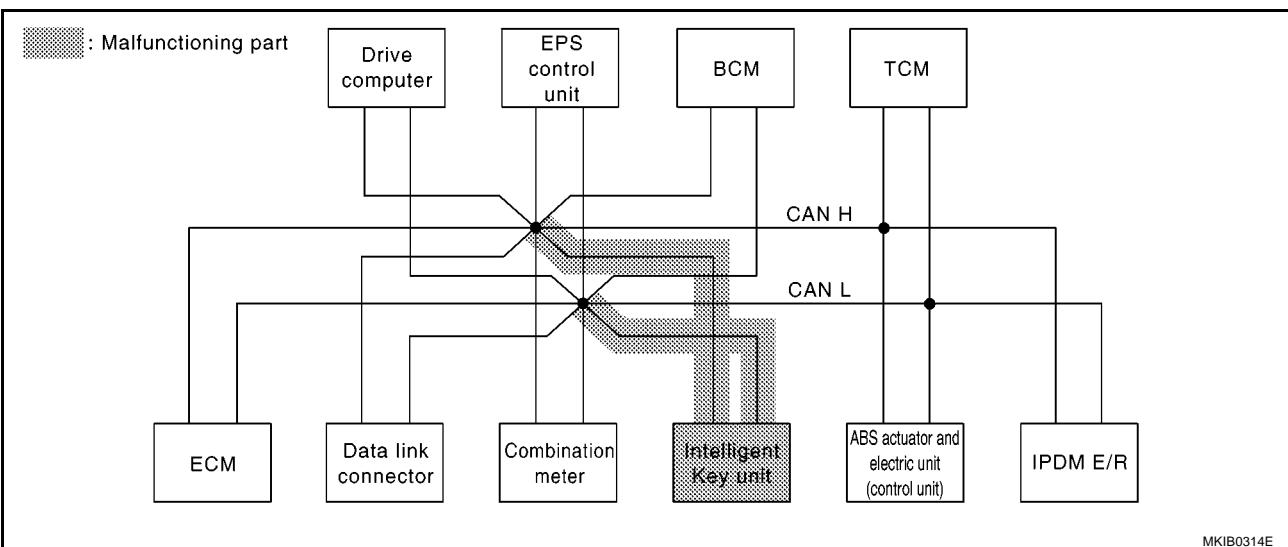
[CAN]

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	—	—	—

MKIB1615E



MKIB0314E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 1)

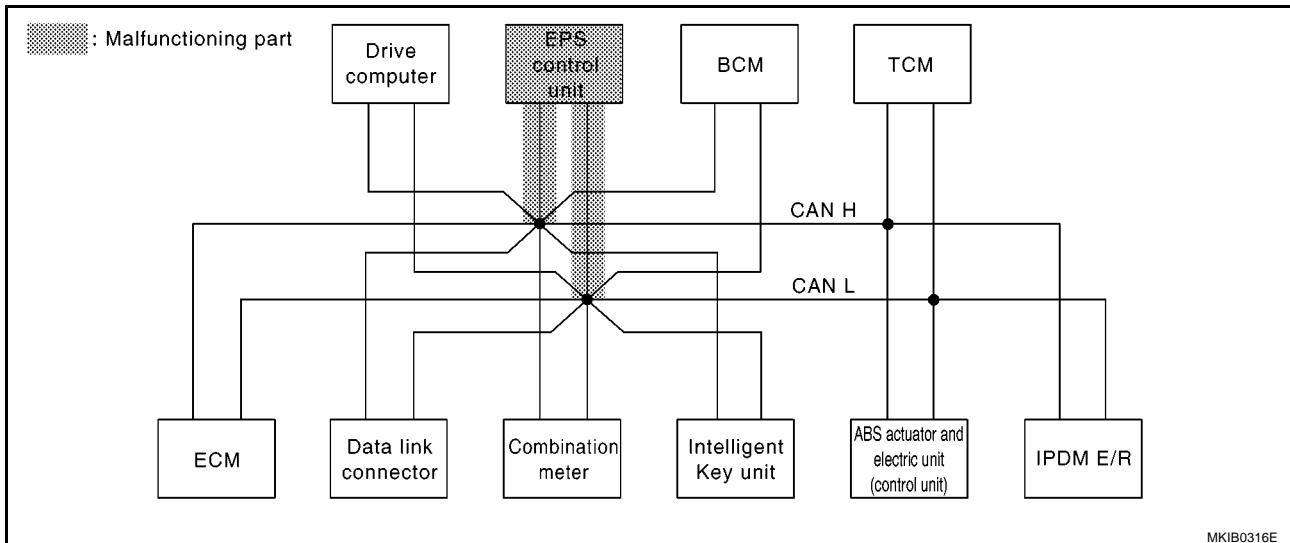
[CAN]

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	—	—	—

MKIB1616E



CAN SYSTEM (TYPE 1)

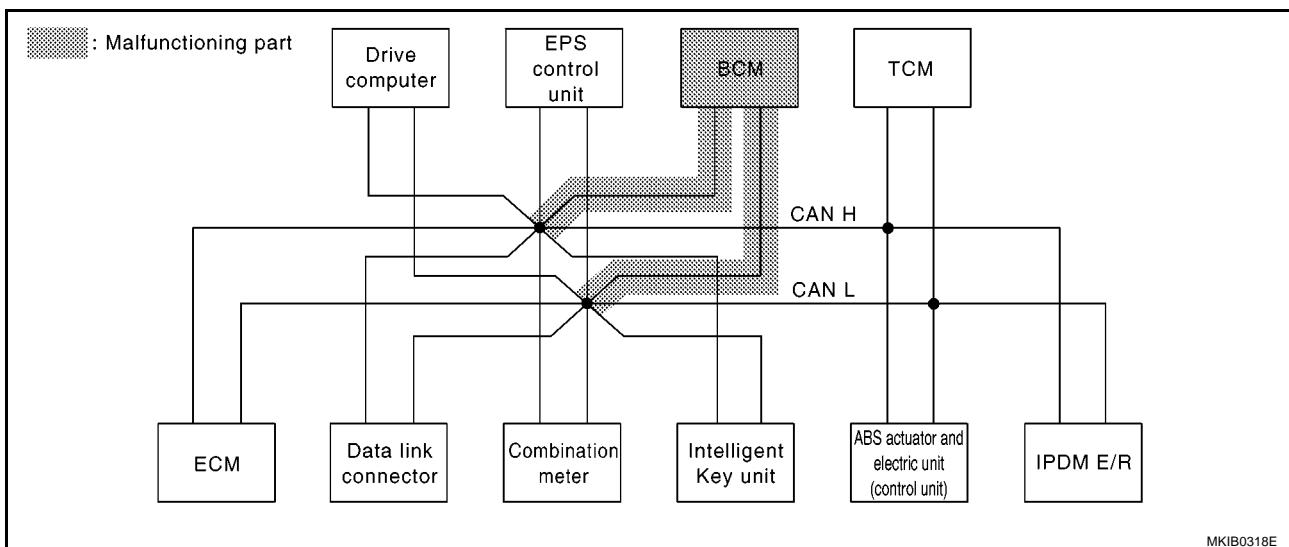
[CAN]

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	—	—	—

MKIB1617E



MKIB0318E

LAN

L

M

CAN SYSTEM (TYPE 1)

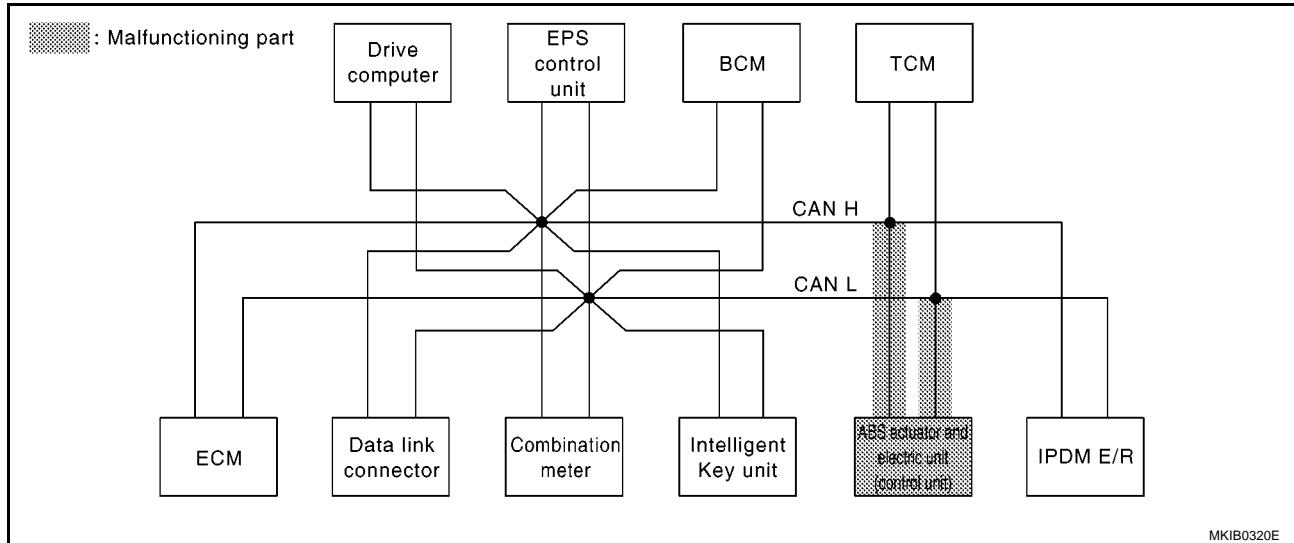
[CAN]

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)

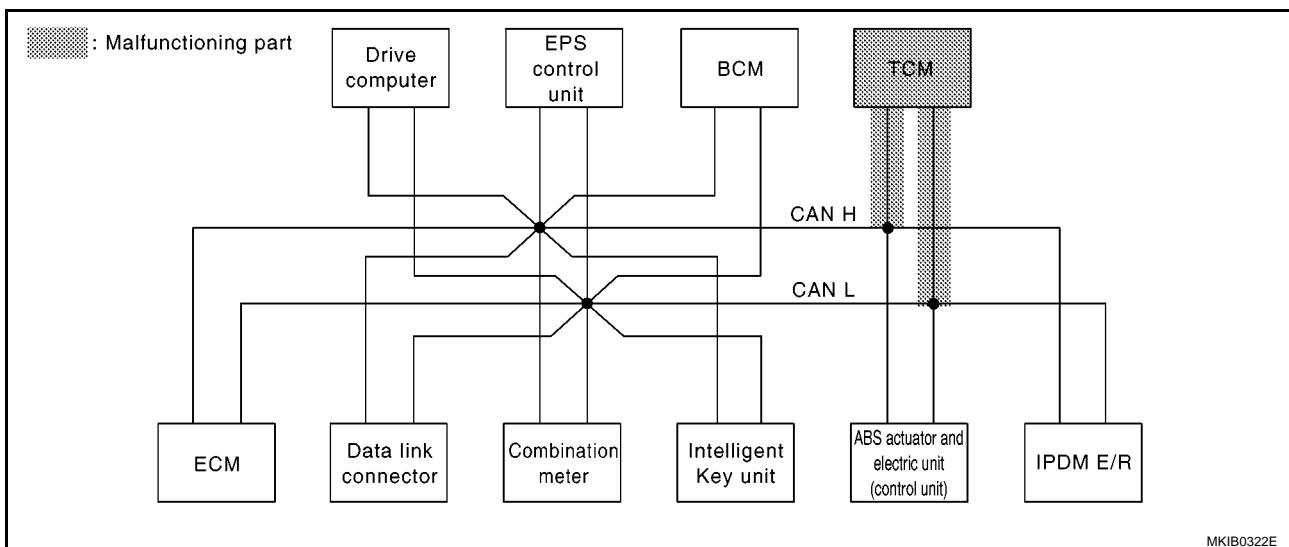
[CAN]

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



MKIB0322E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 1)

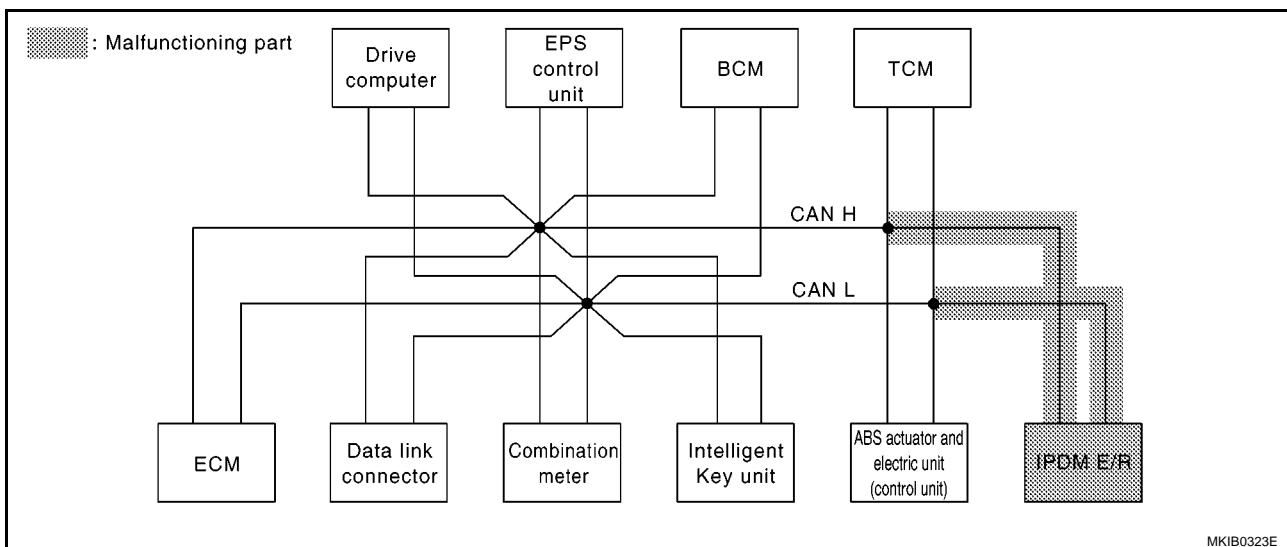
[CAN]

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

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

EKS0073Q

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.

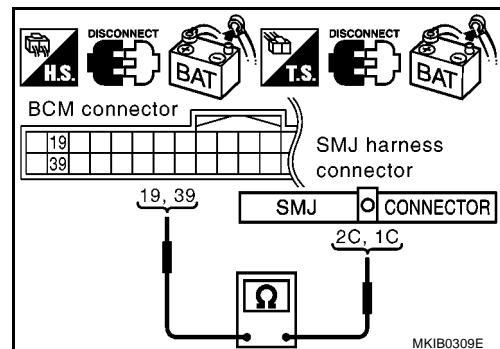
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

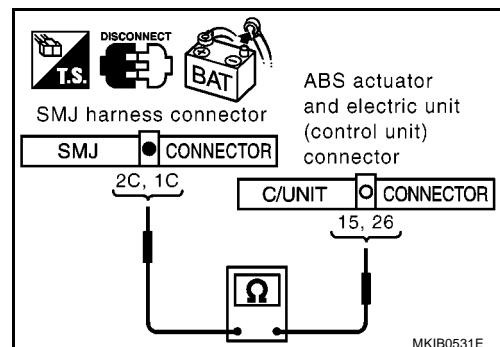
**3. CHECK HARNESS FOR OPEN CIRCUIT**

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

EKS0073U

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.

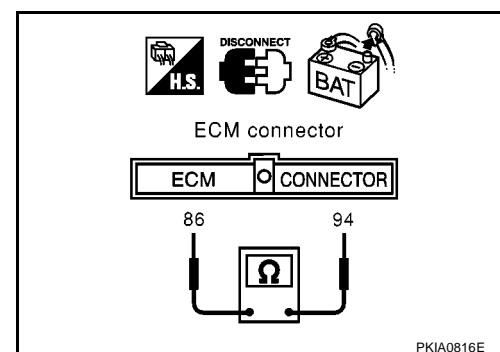
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS0073W

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check date 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.

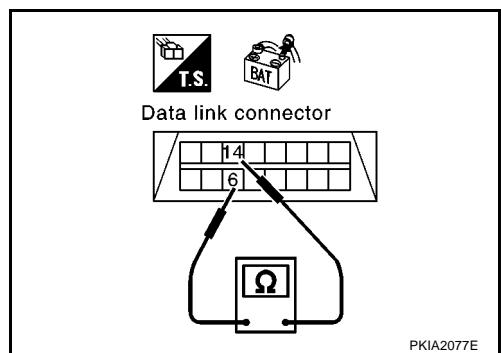
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (R) – 14 (W) : Approx. 54 – 66ΩOK 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

EKS0073X

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.

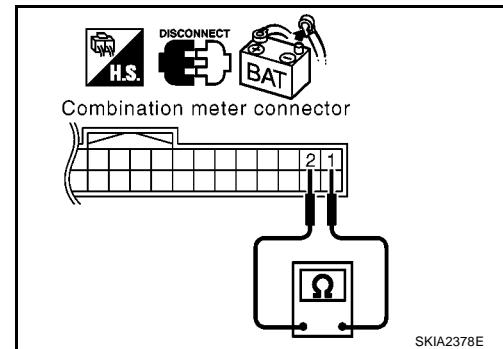
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace combination meter

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



Intelligent Key Unit Circuit Check

EKS007XM

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.

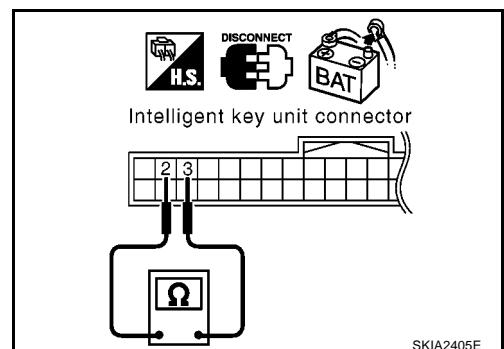
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS007XN

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.

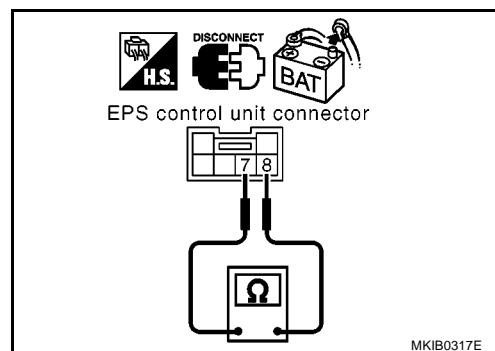
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace EPS control unit.

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



BCM Circuit Check

EKS0073Y

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.

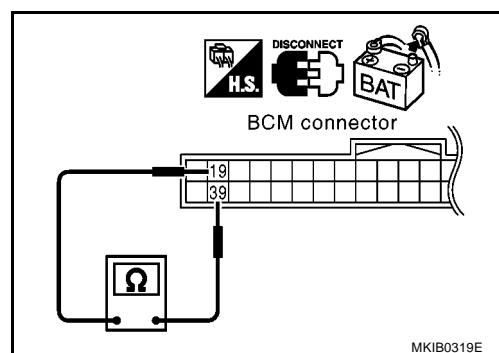
NG >> Repair terminal or connector.

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 NGOK >> 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.

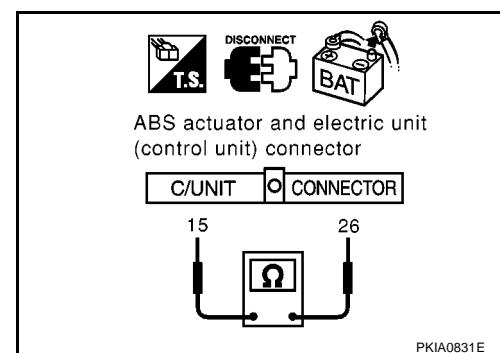
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



TCM Circuit Check

EKS0073V

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.

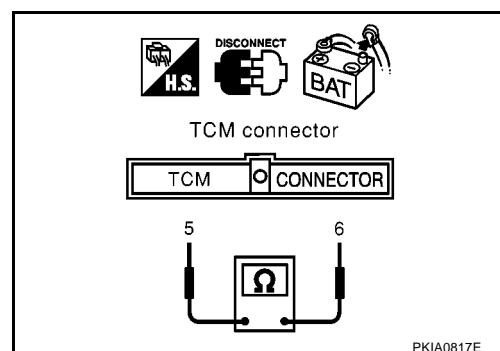
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



PKIA0817E

IPDM E/R Circuit Check

EKS00740

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.

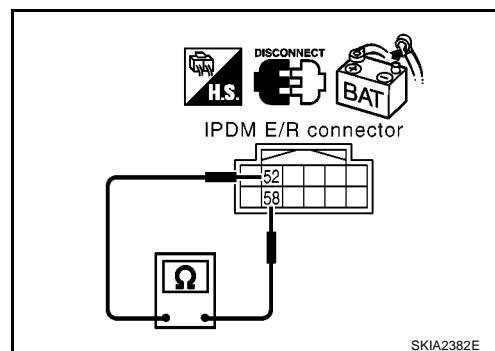
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



CAN Communication Circuit Check

EKS00741

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.

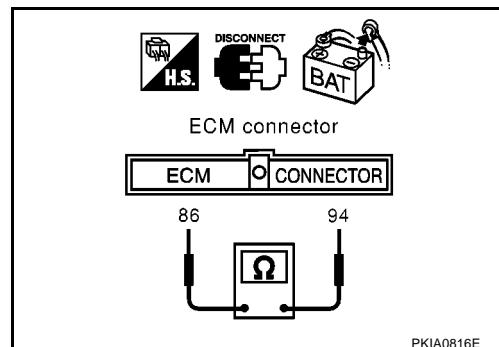
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

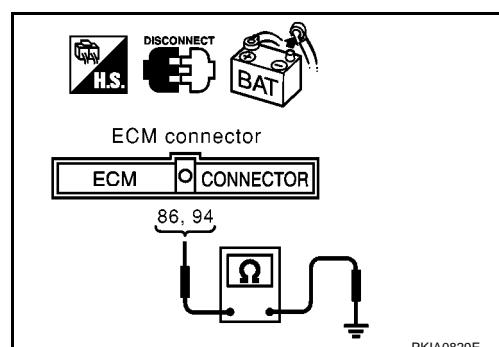
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

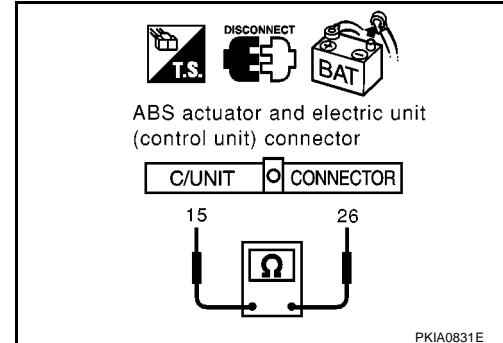
26 (R) – 15 (W) : Continuity should not exist.

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.

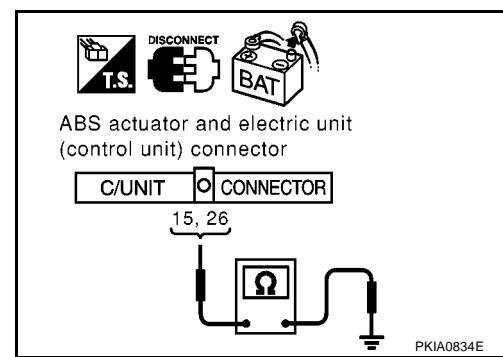
15 (W) – Ground : Continuity should not exist.

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



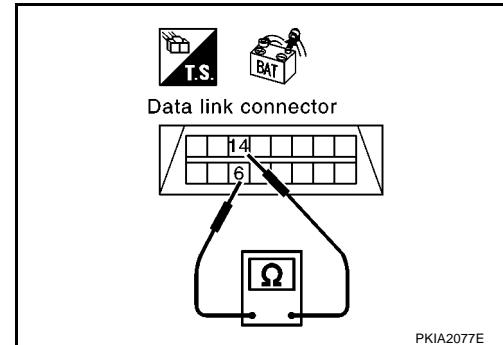
6. CHECK HARNESS FOR SHORT CIRCUIT

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



PKIA2077E

7. CHECK HARNESS FOR SHORT CIRCUIT

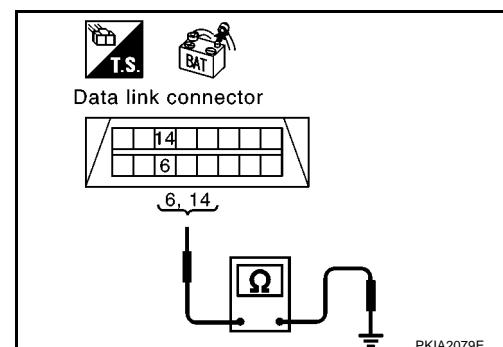
Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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



PKIA2079E

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""](#).

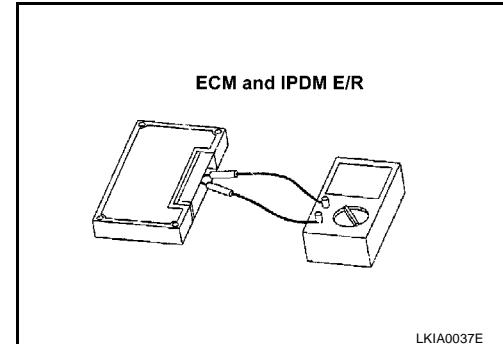
Component Inspection

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	



LKIA0037E

CAN SYSTEM (TYPE 2)

PFP:23710

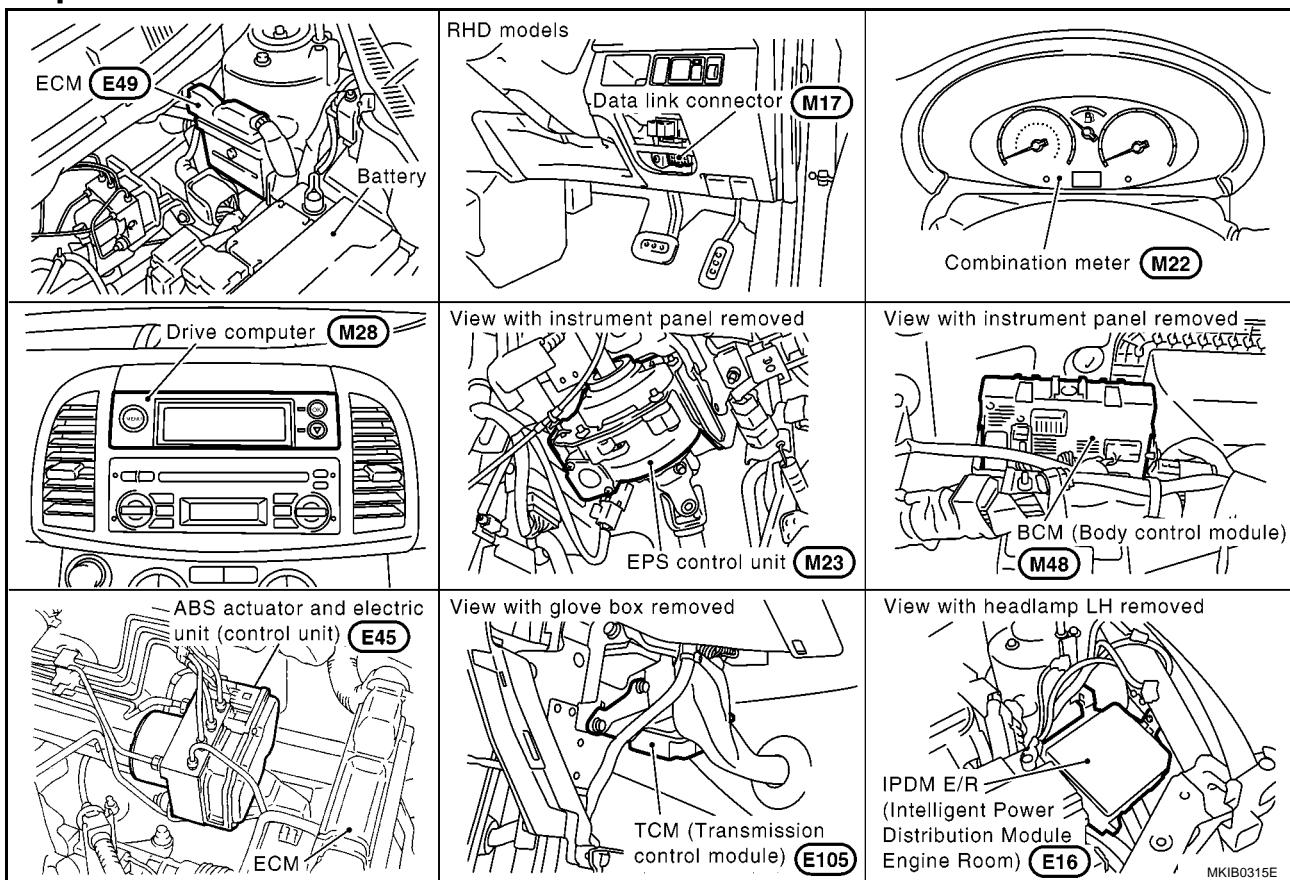
System Description

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)

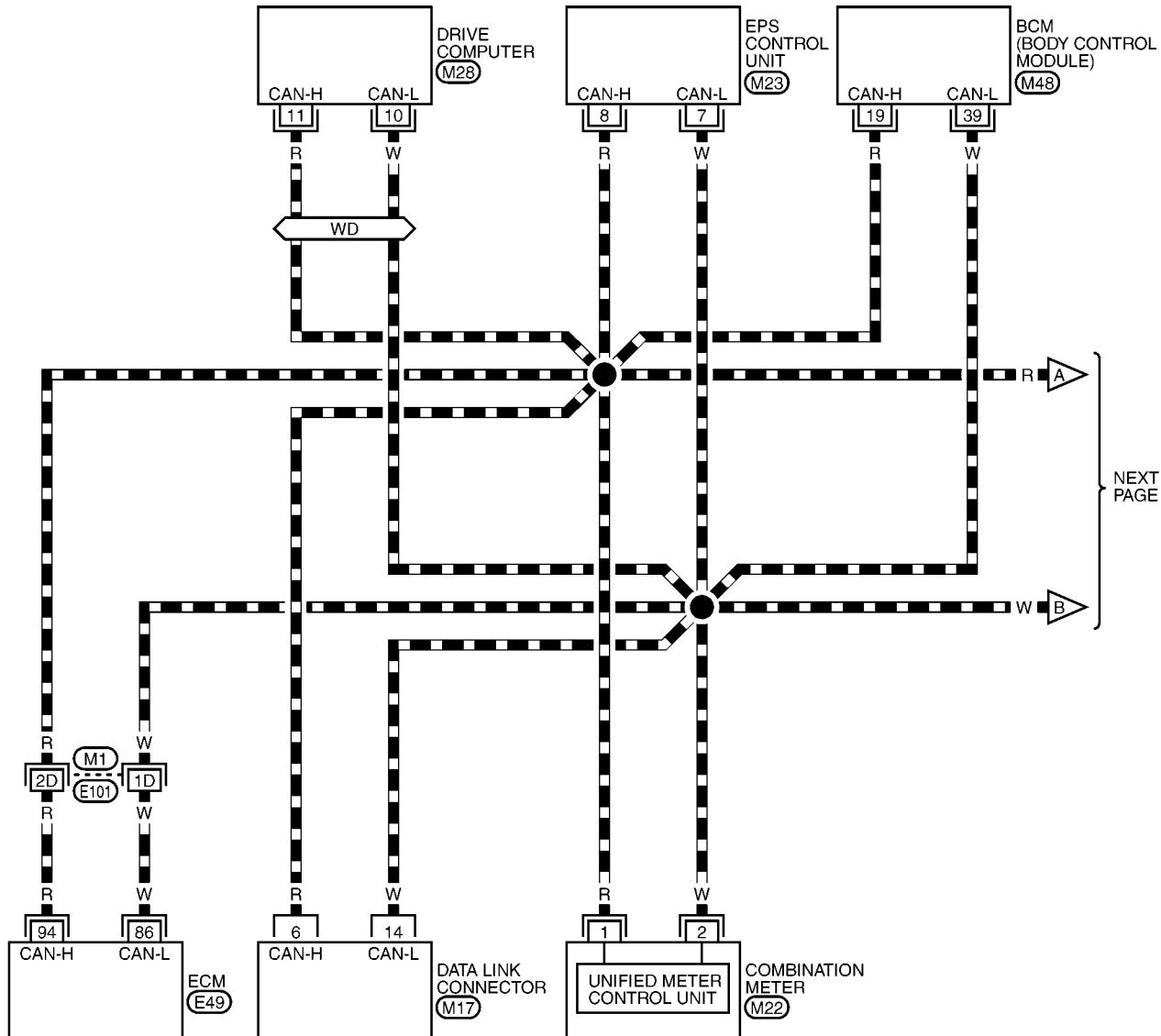
[CAN]

Wiring Diagram — CAN —

EKS007Y0

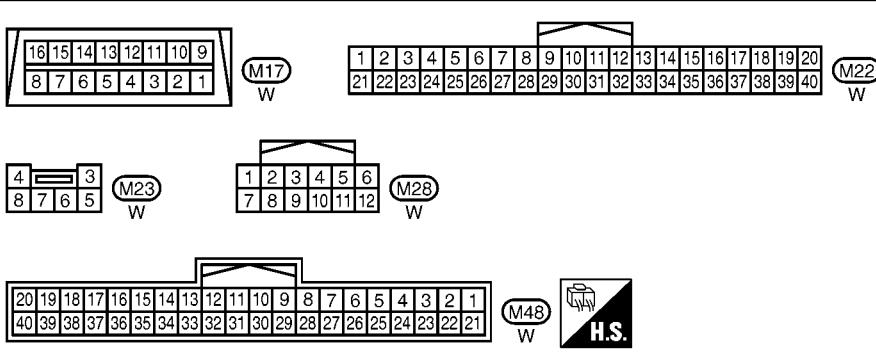
LAN-CAN-03

— : DATA LINE
WD : WITH DRIVE COMPUTER



REFER TO THE FOLLOWING.

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



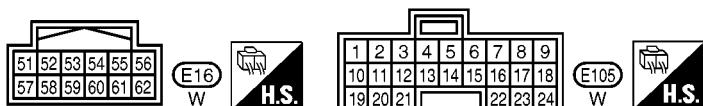
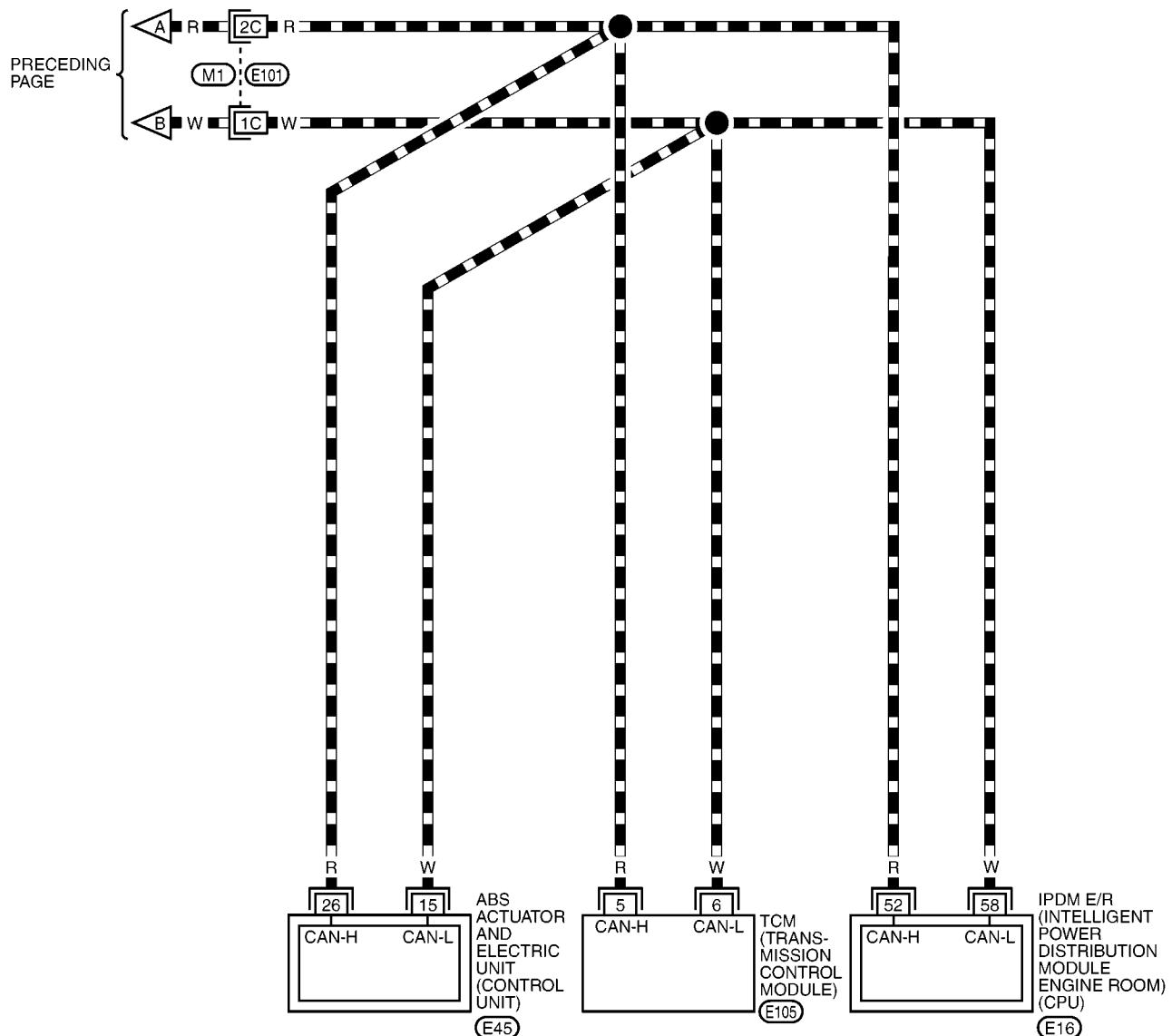
MKWA0792E

CAN SYSTEM (TYPE 2)

[CAN]

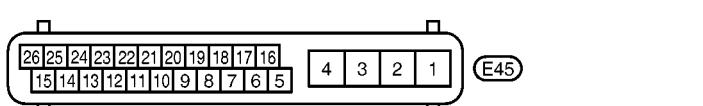
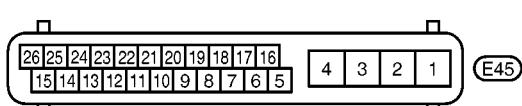
LAN-CAN-04

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE
JUNCTION (SMJ)



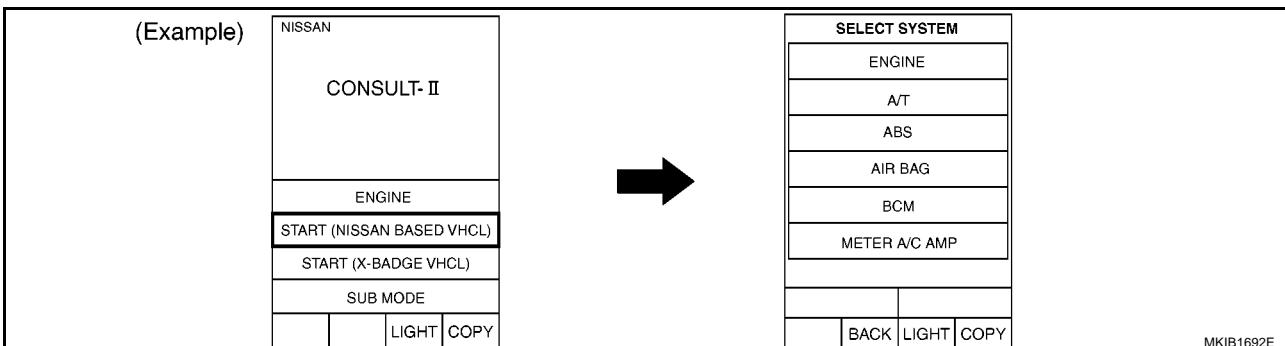
CAN SYSTEM (TYPE 2)

[CAN]

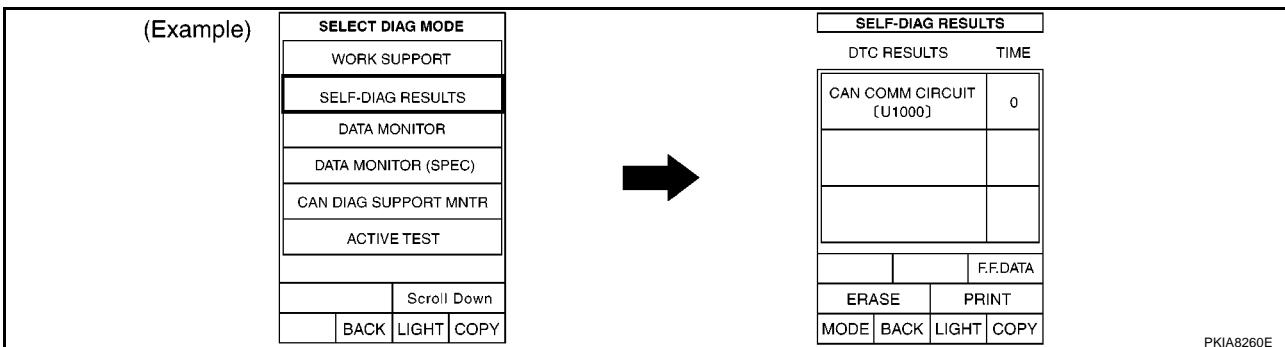
Work Flow

EKS00810

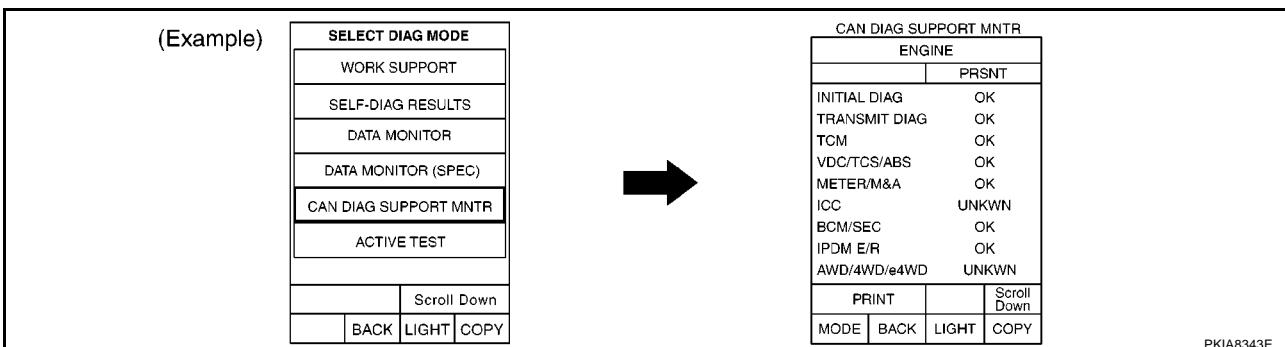
- When there are no indications of "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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-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.

A
B
C
D
E
F
G
H
I
J
LAN
L
M

CAN SYSTEM (TYPE 2)

[CAN]

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

Check sheet table										
(Example)	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	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB1683E

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

LAN-56

CAN SYSTEM (TYPE 2)

[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	—	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
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

LAN

L

M

MKIB1602E

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

CAN SYSTEM (TYPE 2)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

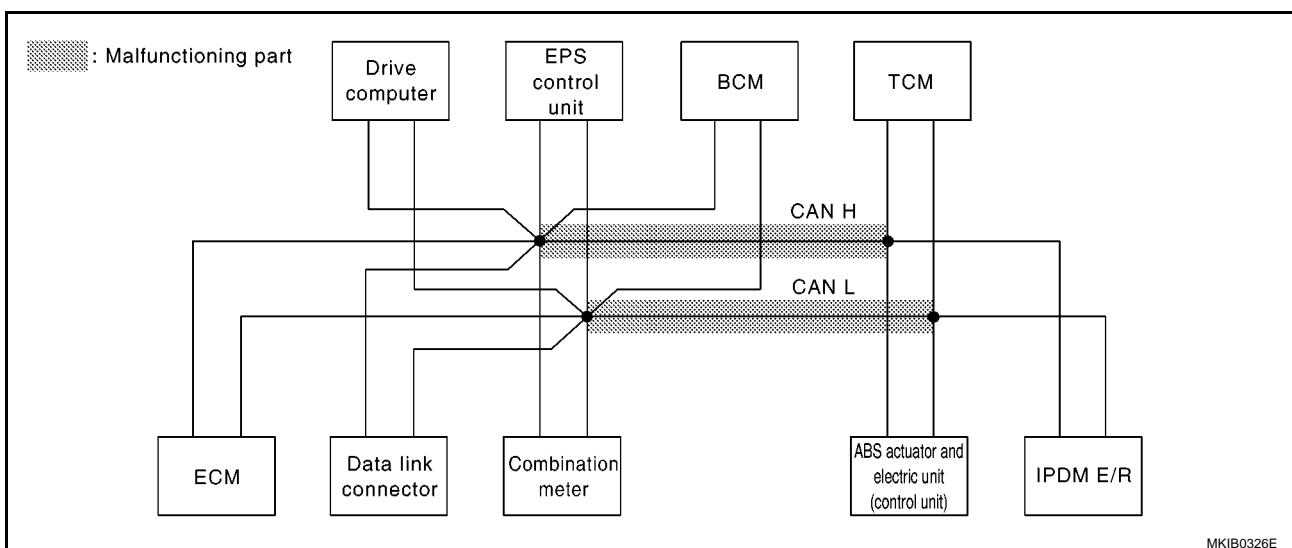
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-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



MKIB0326E

CAN SYSTEM (TYPE 2)

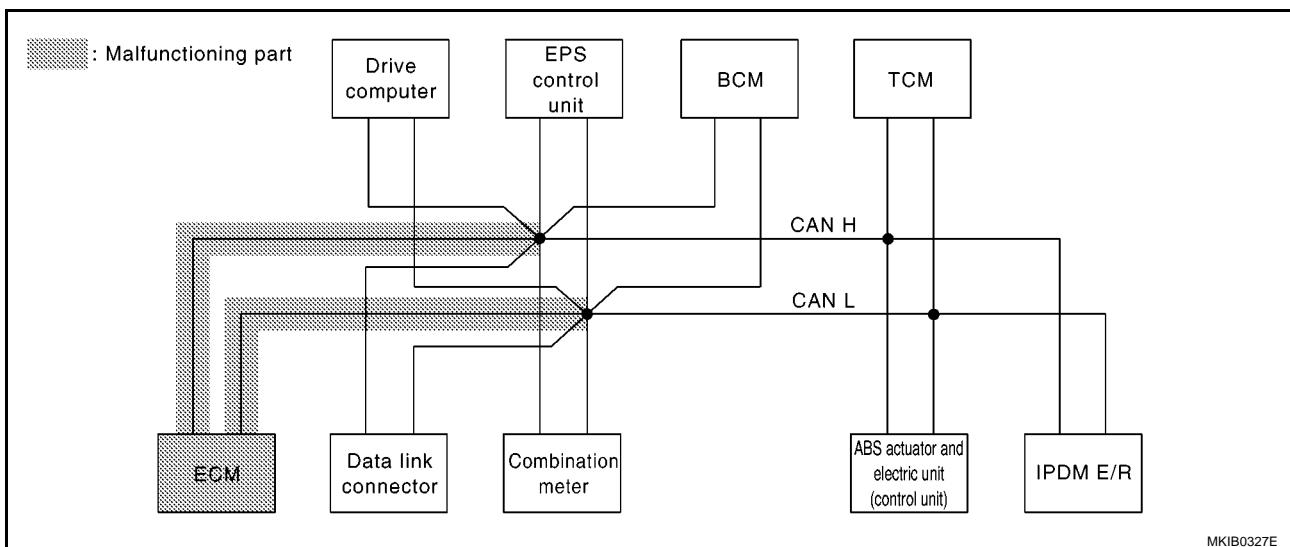
[CAN]

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



CAN SYSTEM (TYPE 2)

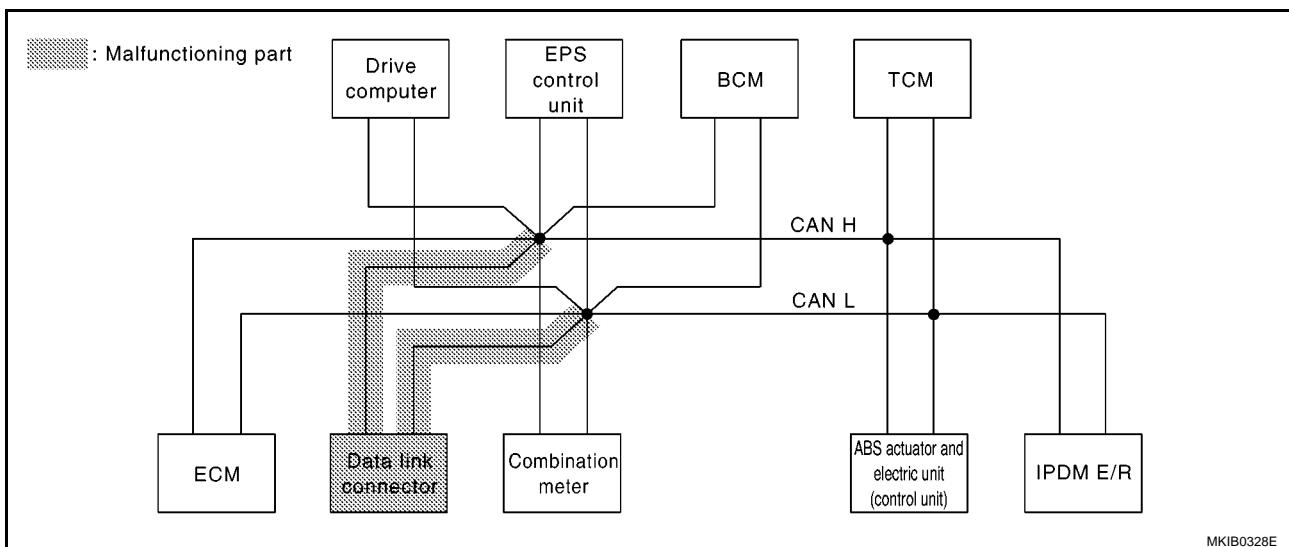
[CAN]

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



CAN SYSTEM (TYPE 2)

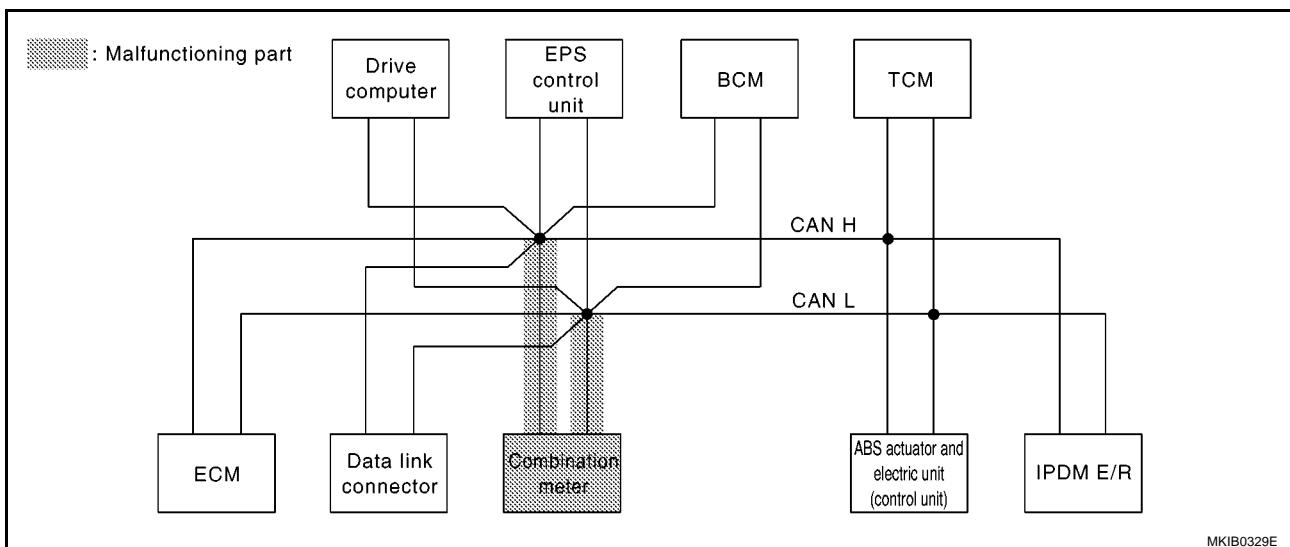
[CAN]

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



CAN SYSTEM (TYPE 2)

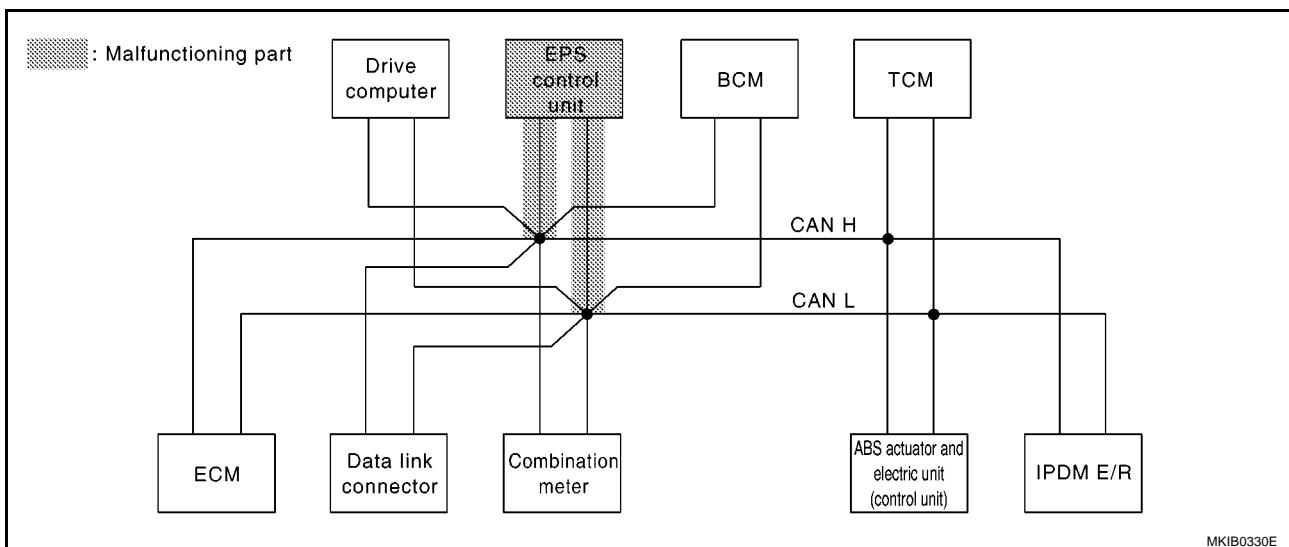
[CAN]

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	—	—	—	

MKIB1628E



MKIB0330E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 2)

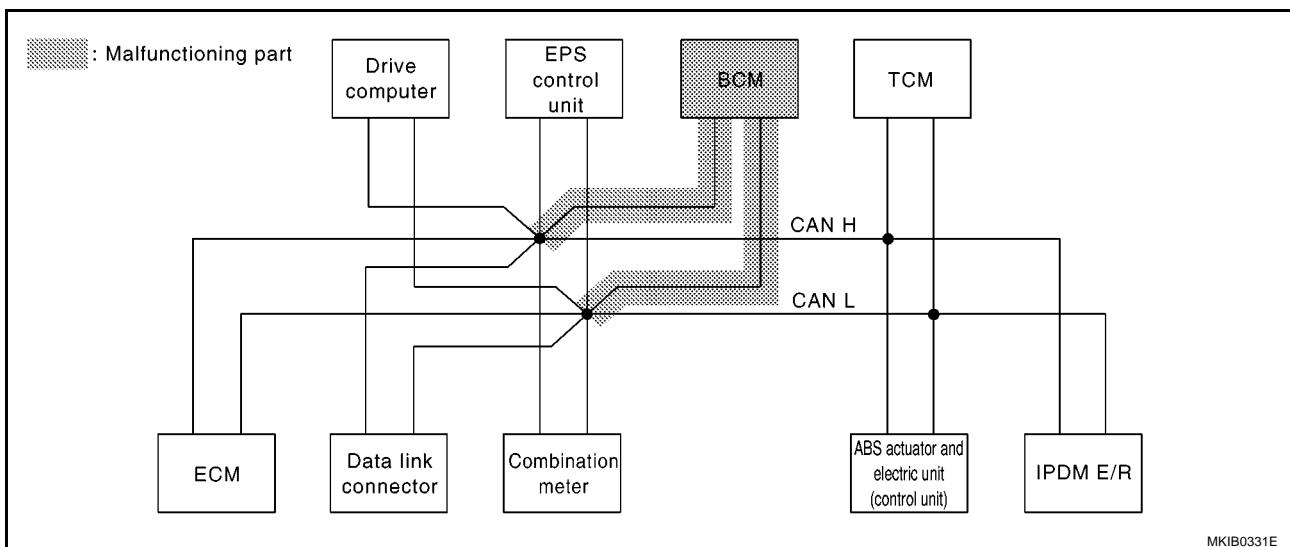
[CAN]

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)

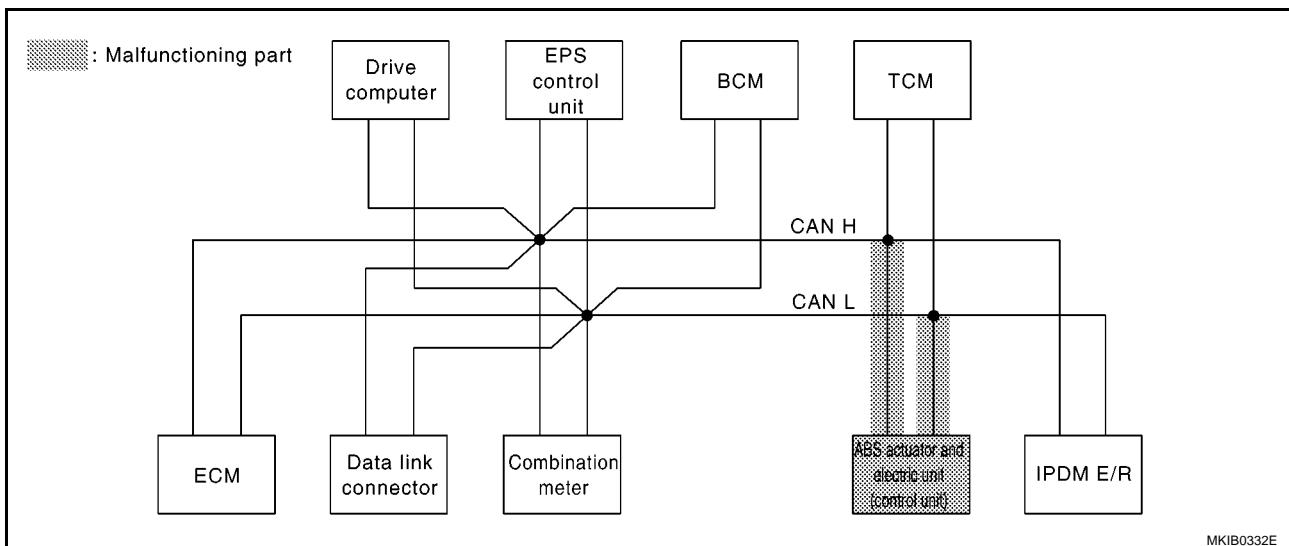
[CAN]

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



MKIB0332E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 2)

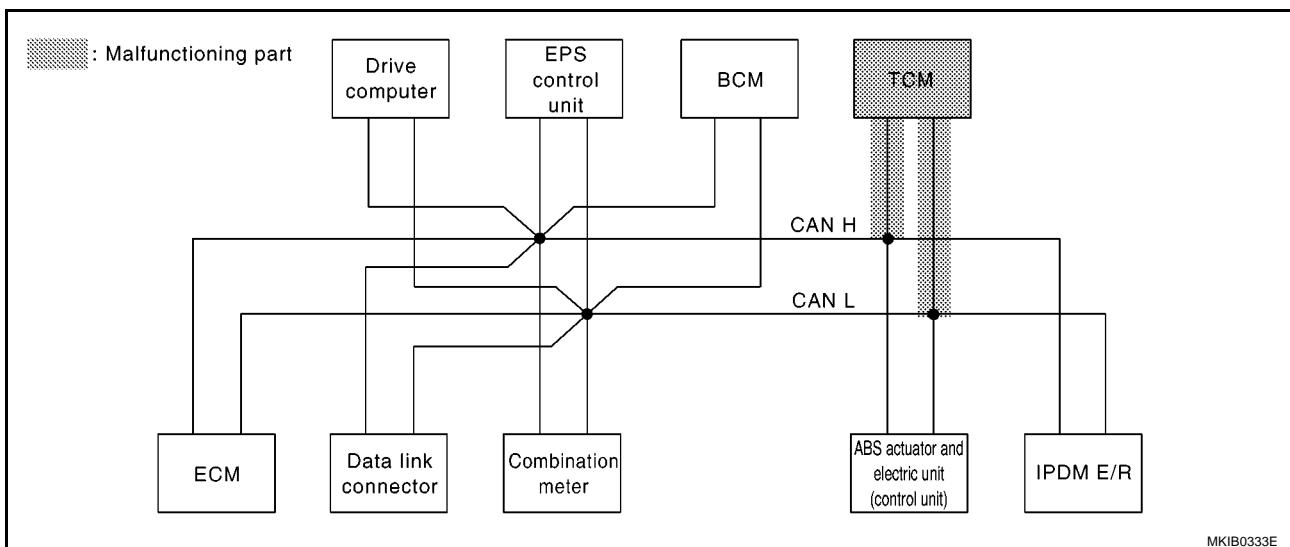
[CAN]

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)

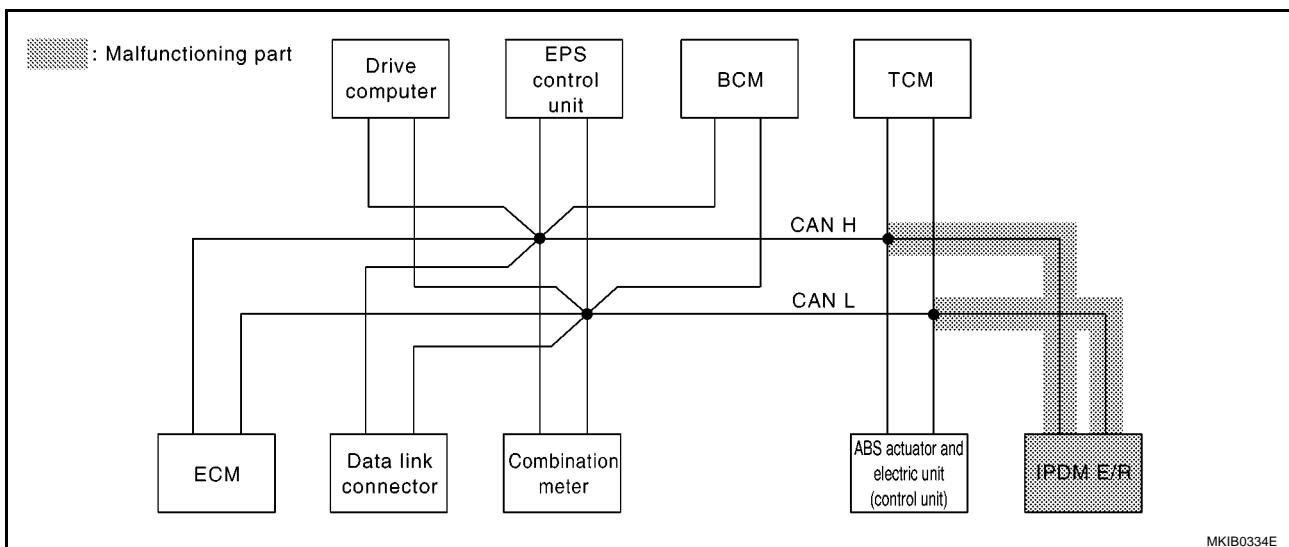
[CAN]

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



MKIB0334E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

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.

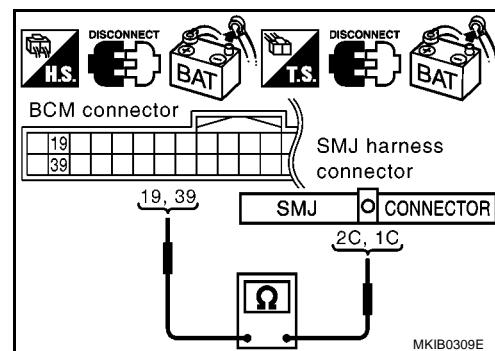
39 (W) – 1C (W)

: 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.

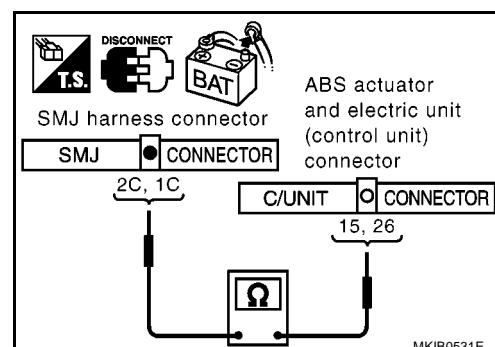
1C (W) – 15 (W)

: 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

EKS00812

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.

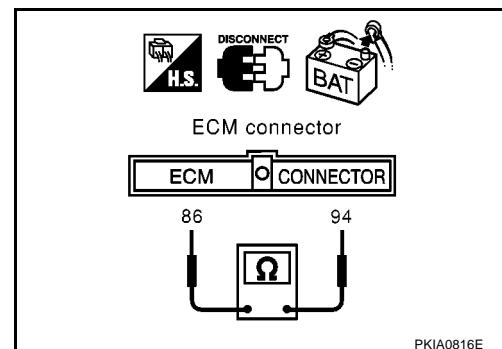
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00813

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.

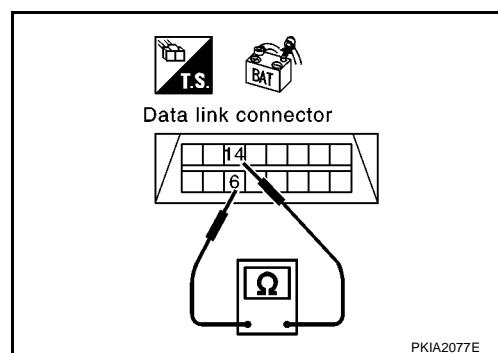
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (R) – 14 (W) : Approx. 54 – 66ΩOK 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



Combination Meter Circuit Check

EKS00814

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.

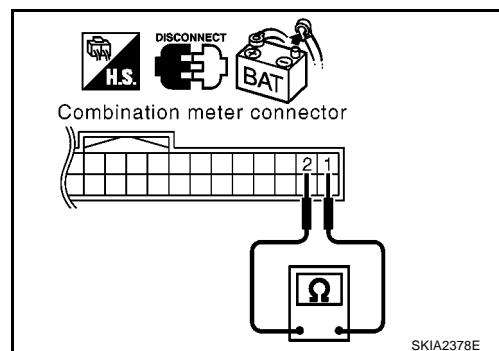
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace combination meter

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



EPS Control Unit Circuit Check

EKS00815

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.

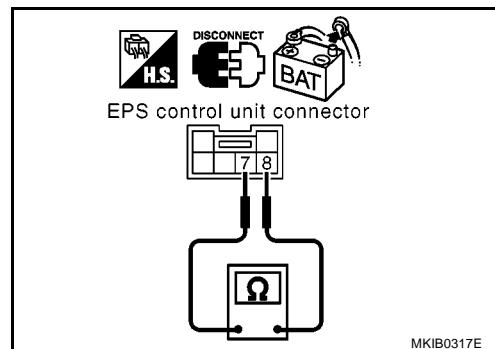
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace EPS control unit.

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



BCM Circuit Check

EKS00816

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.

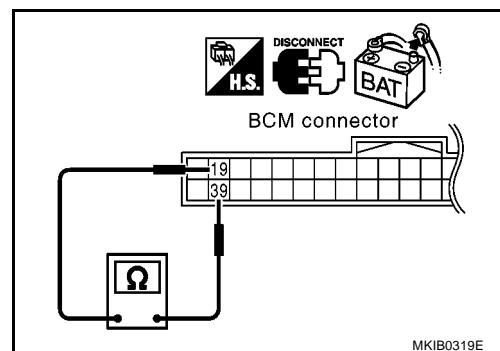
NG >> Repair terminal or connector.

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 NGOK >> 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.

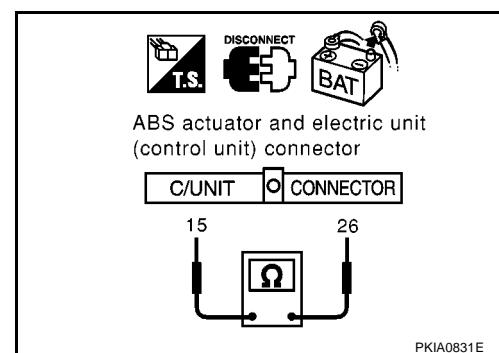
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



TCM Circuit Check

EKS00818

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.

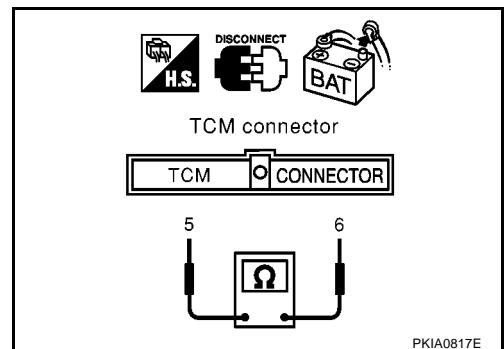
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00819

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.

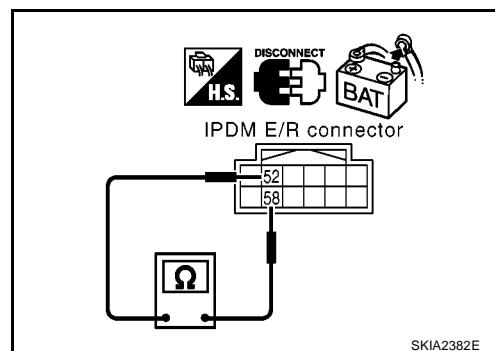
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



CAN Communication Circuit Check

EKS0081A

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.

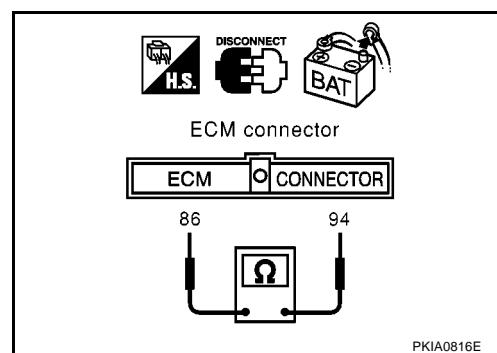
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

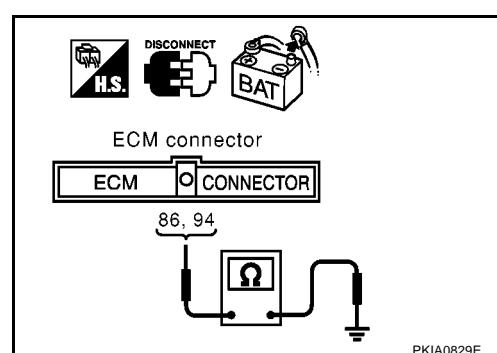
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

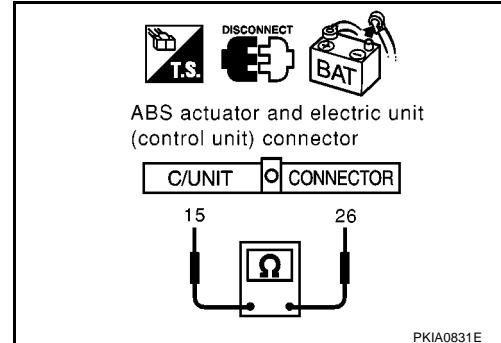
26 (R) – 15 (W) : Continuity should not exist.

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.

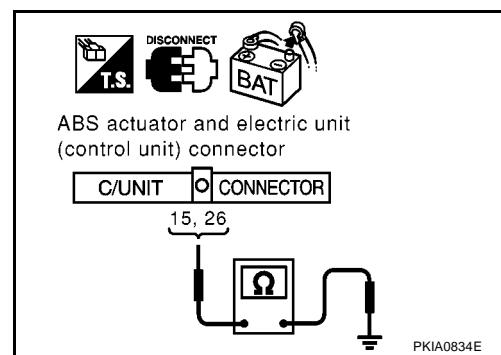
15 (W) – Ground : Continuity should not exist.

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

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).

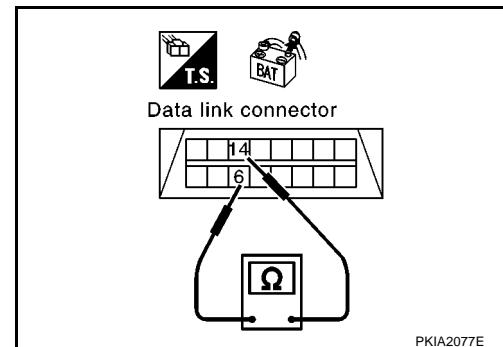
6 (R) – 14 (W) : Continuity should not exist.

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.

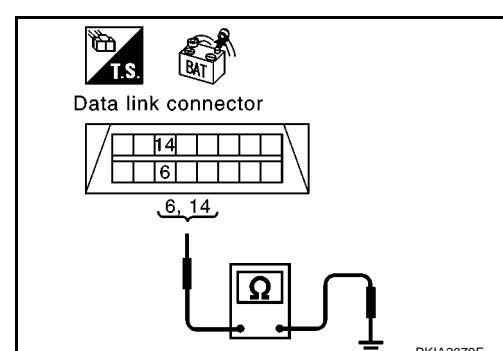
14 (W) – ground : Continuity should not exist.

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-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""](#).

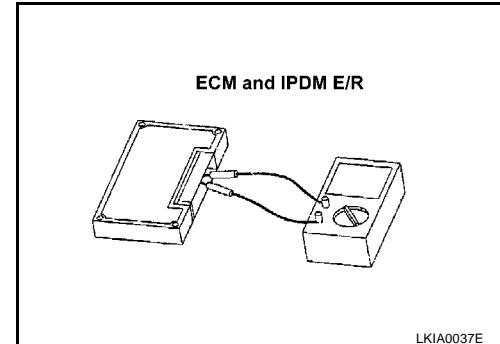
Component Inspection

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	



CAN SYSTEM (TYPE 3)

PFP:23710

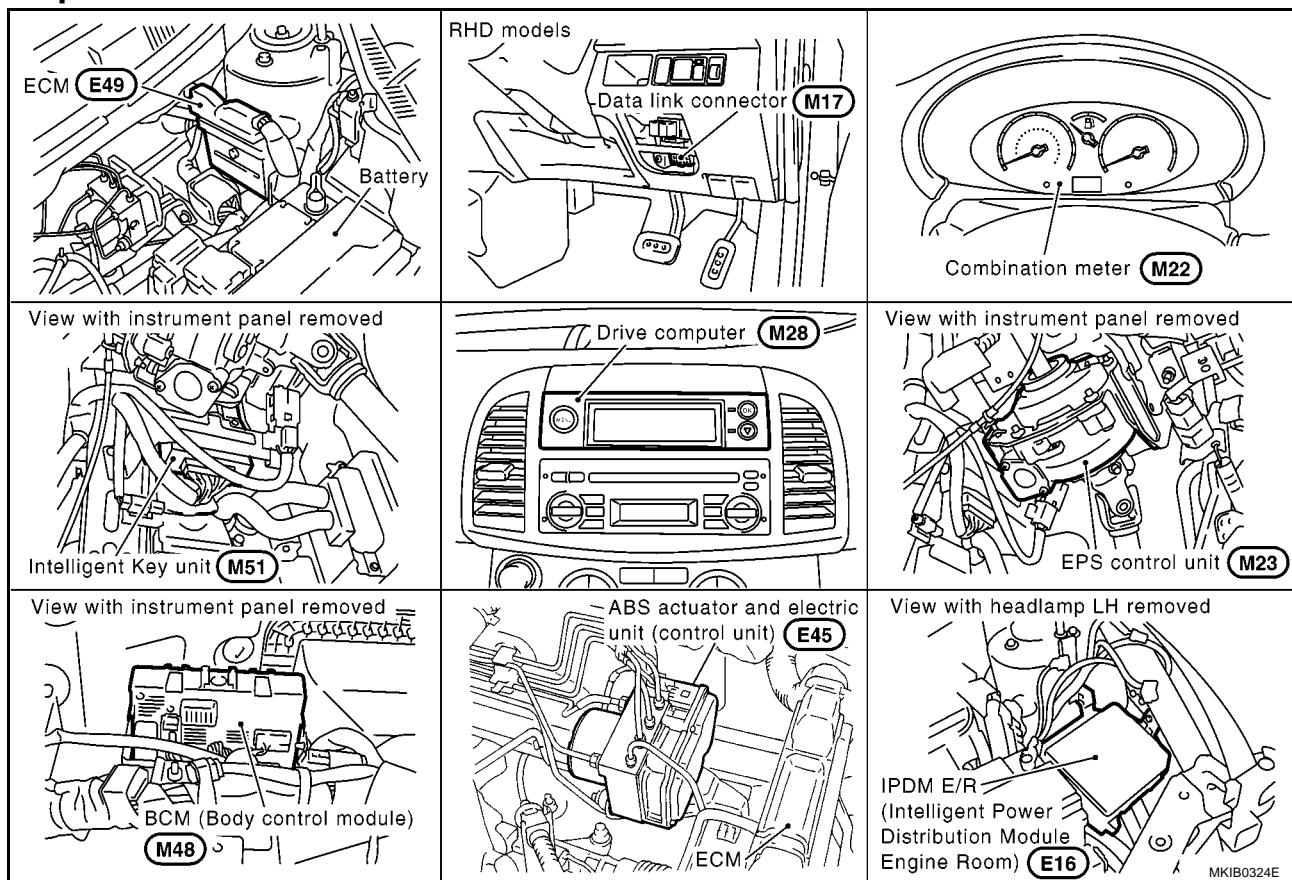
System Description

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]

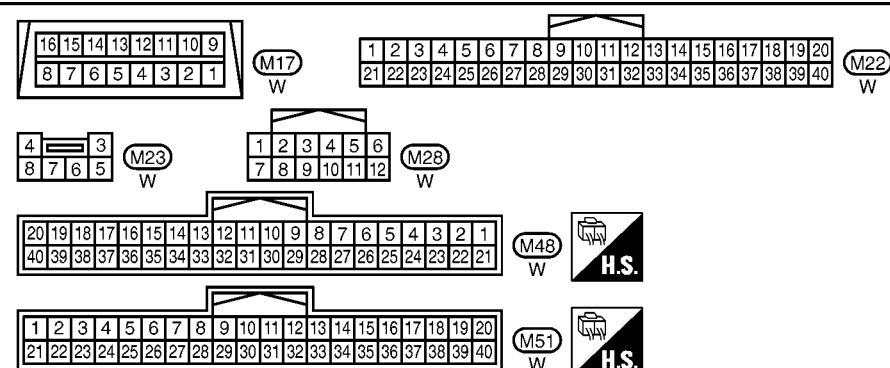
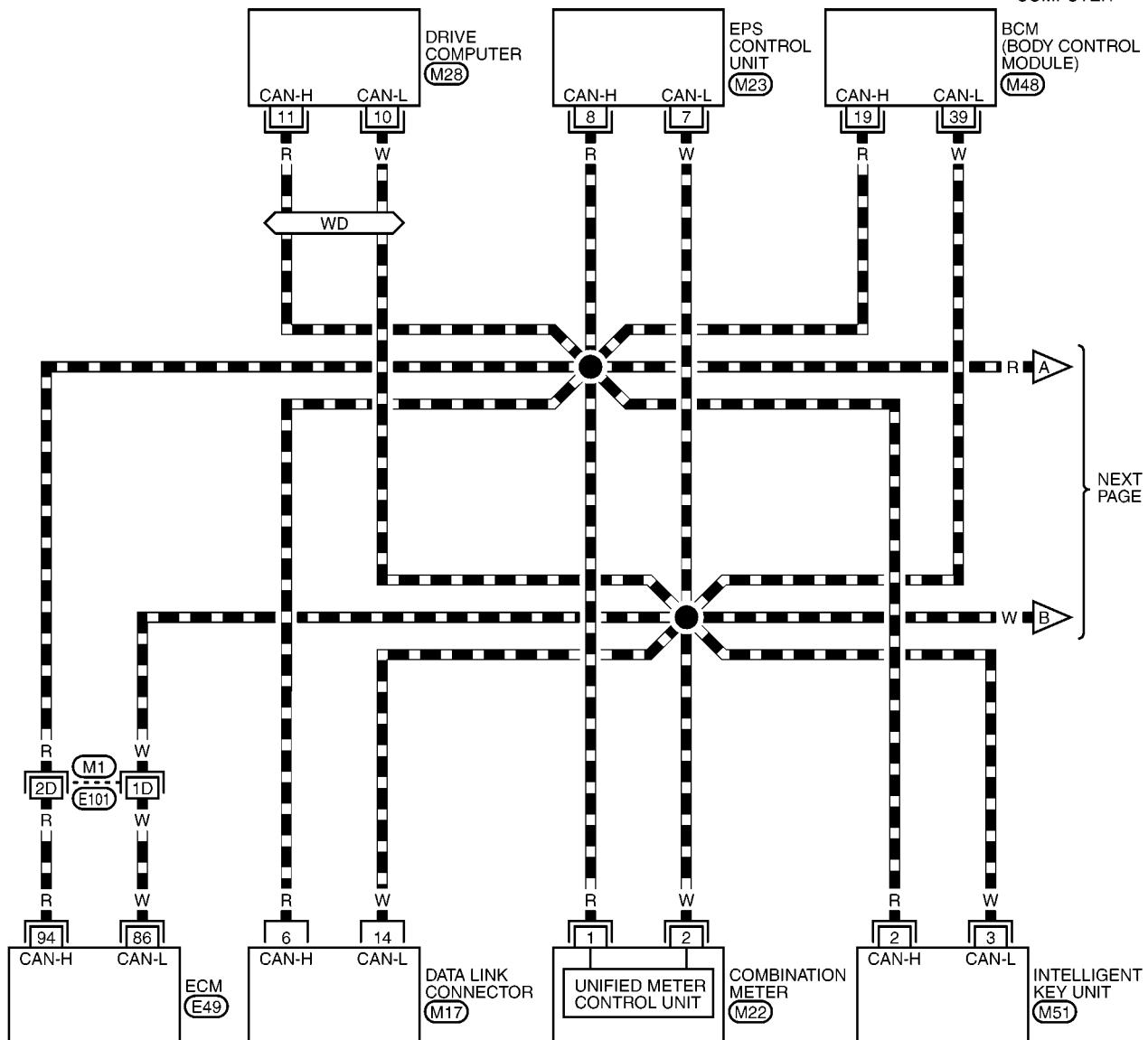
Wiring Diagram — CAN —

EKS007YF

LAN-CAN-05

— : DATA LINE

WD : WITH DRIVE COMPUTER



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

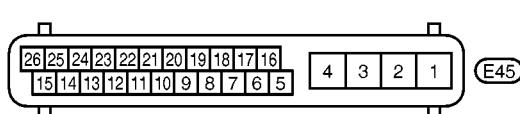
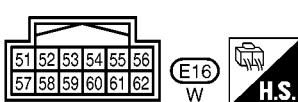
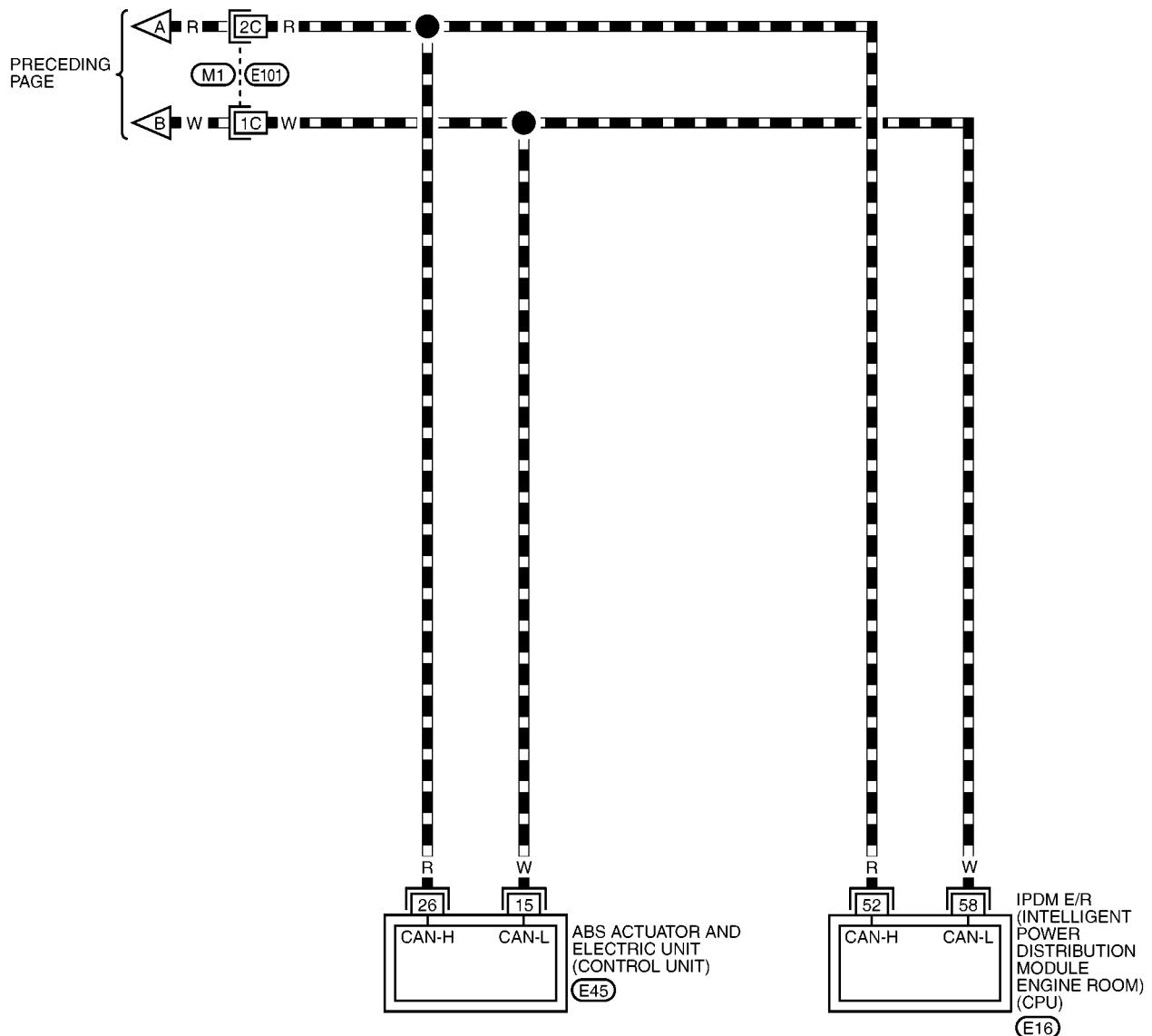
MKWA1308E

CAN SYSTEM (TYPE 3)

[CAN]

LAN-CAN-06

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA1309E

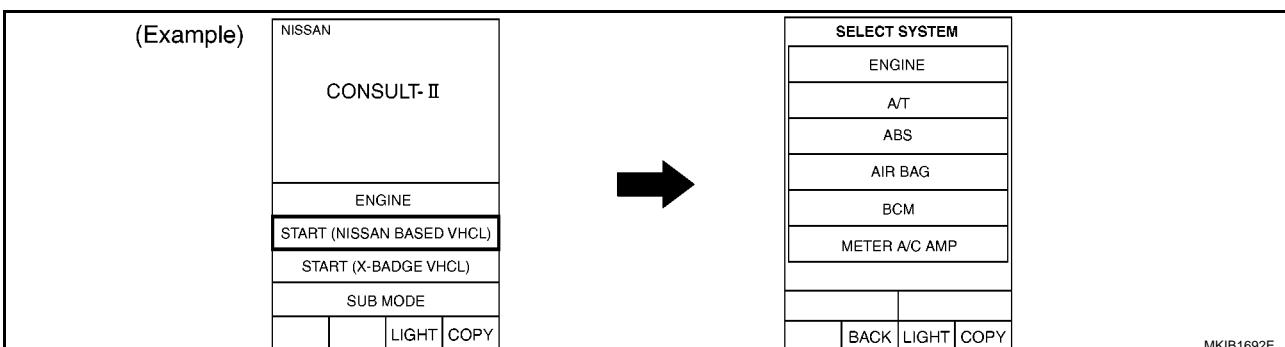
CAN SYSTEM (TYPE 3)

[CAN]

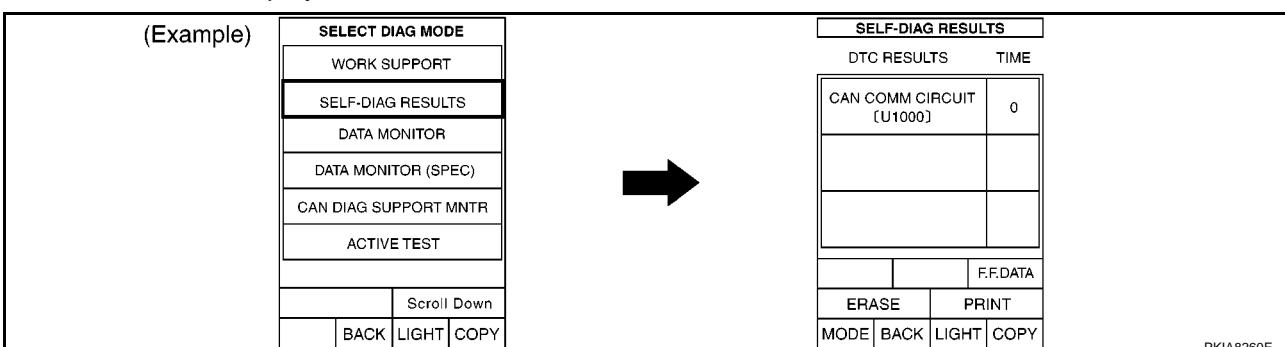
Work Flow

EKS0081D

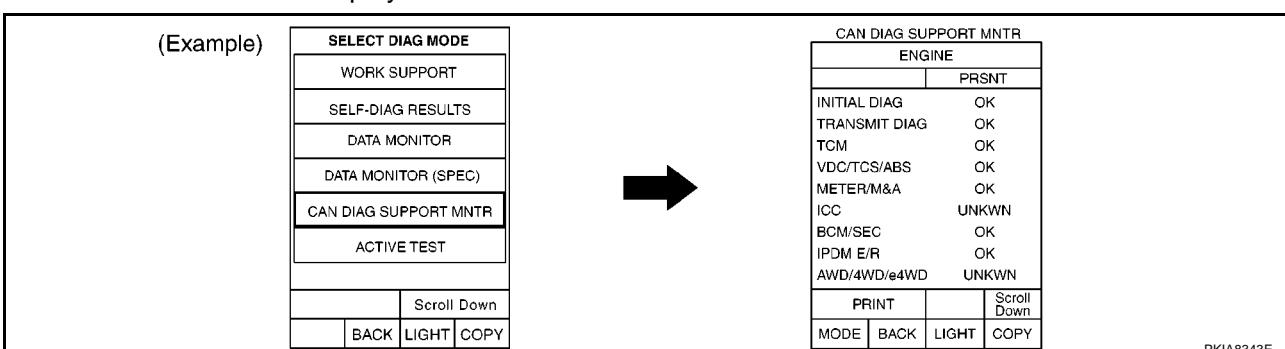
- When there are no indications of "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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 "UNKWN" 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.

A
B
C
D
E
F
G
H
I
J
LAN
L
M

CAN SYSTEM (TYPE 3)

[CAN]

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

Check sheet table										
(Example)	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 VRC 3	CAN VRC 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 VRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN VRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN VRC 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	—	—

MKIB1684E

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

LAN-86

CAN SYSTEM (TYPE 3)

[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	—	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

Attach copy of
SELECT SYSTEM

LAN

L

M

MKIB1603E

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
ENGINE
DATA MONITOR

Attach copy of
INTELLIGENT KEY
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
IPDM
DATA MONITOR

MKIB0296E

CAN SYSTEM (TYPE 3)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

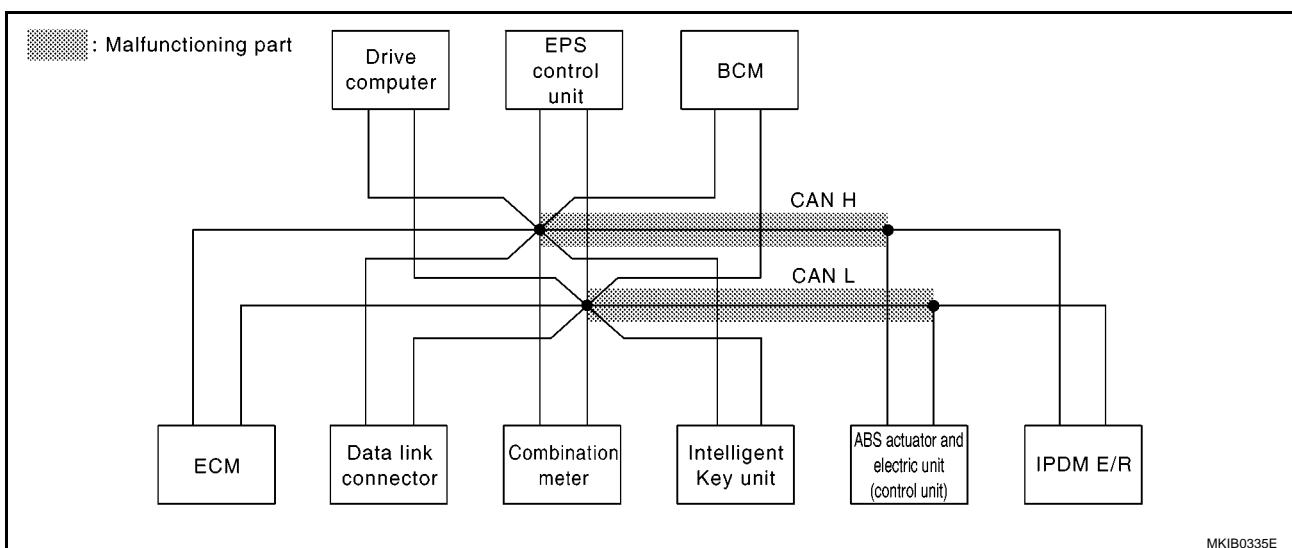
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-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	—	—

MKIB1636E



MKIB0335E

CAN SYSTEM (TYPE 3)

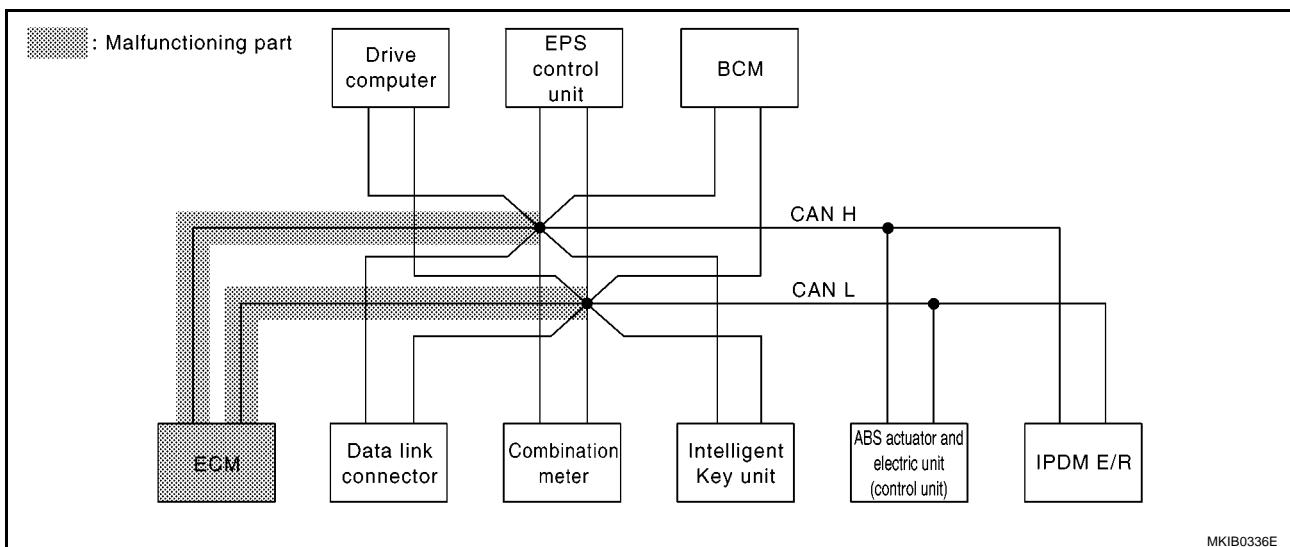
[CAN]

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



CAN SYSTEM (TYPE 3)

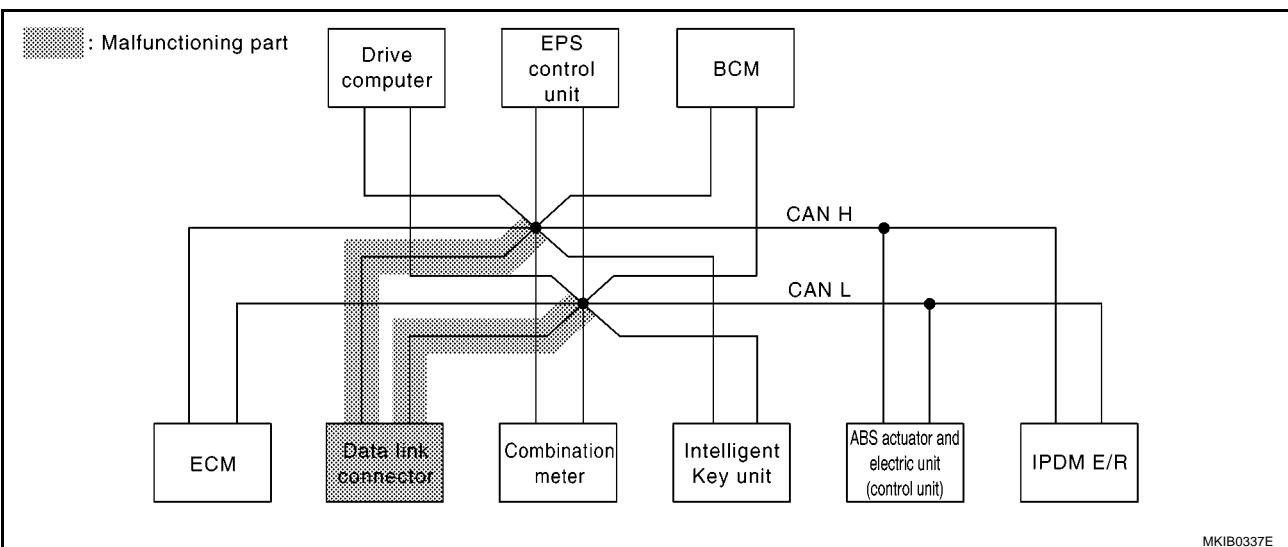
[CAN]

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



MKIB0337E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 3)

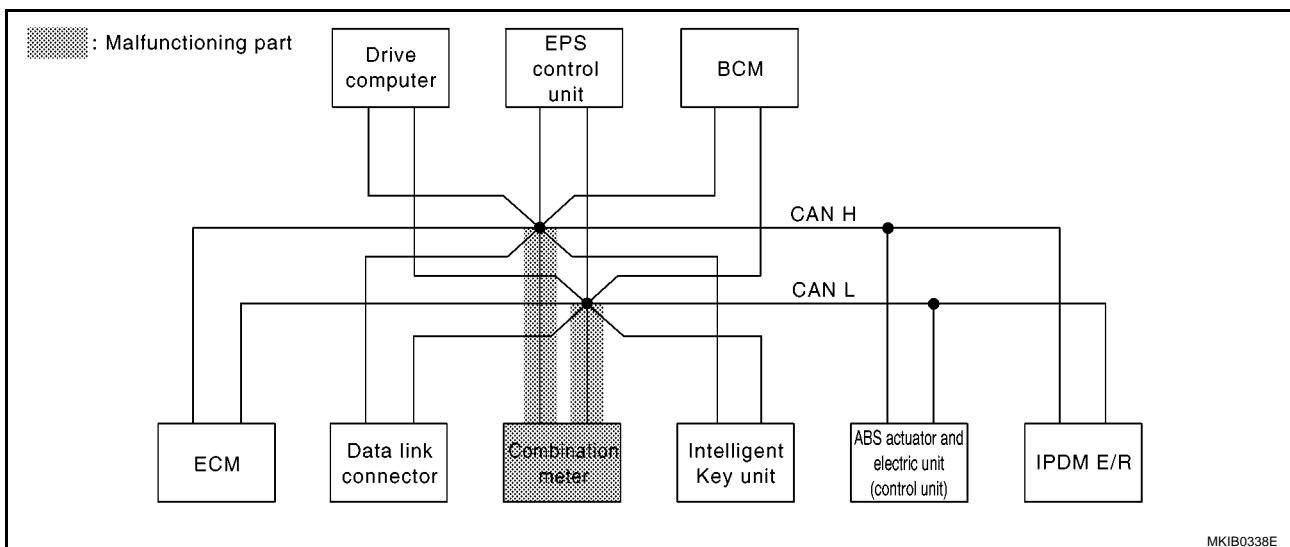
[CAN]

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	—	—

MKIB1639E



CAN SYSTEM (TYPE 3)

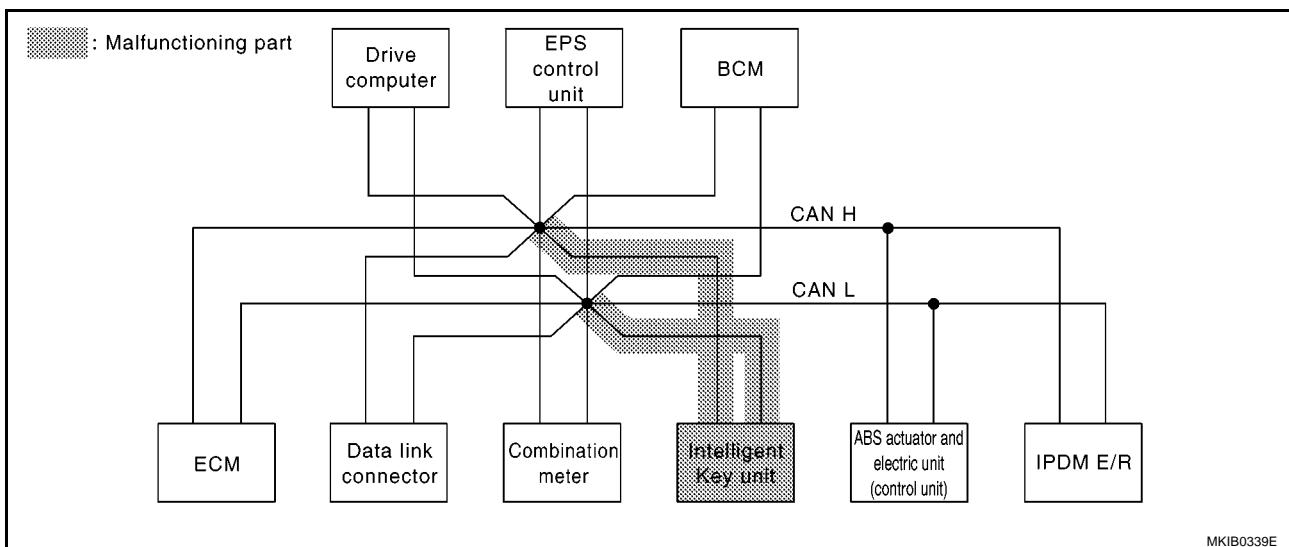
[CAN]

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	—	—	

MKIB1640E



A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 3)

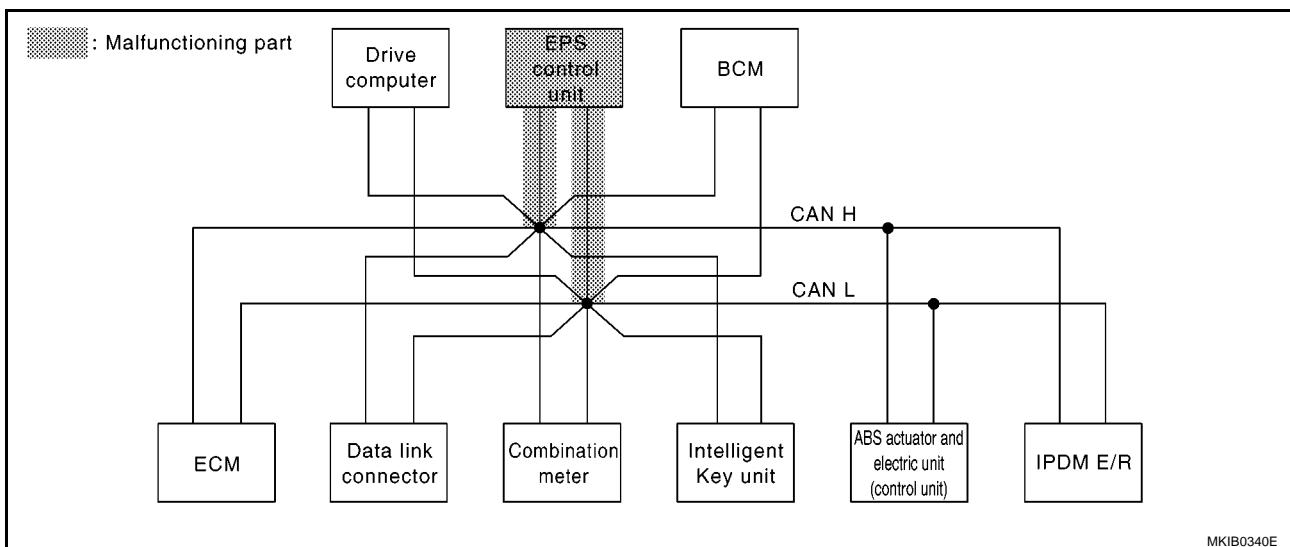
[CAN]

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	—	—

MKIB1641E



CAN SYSTEM (TYPE 3)

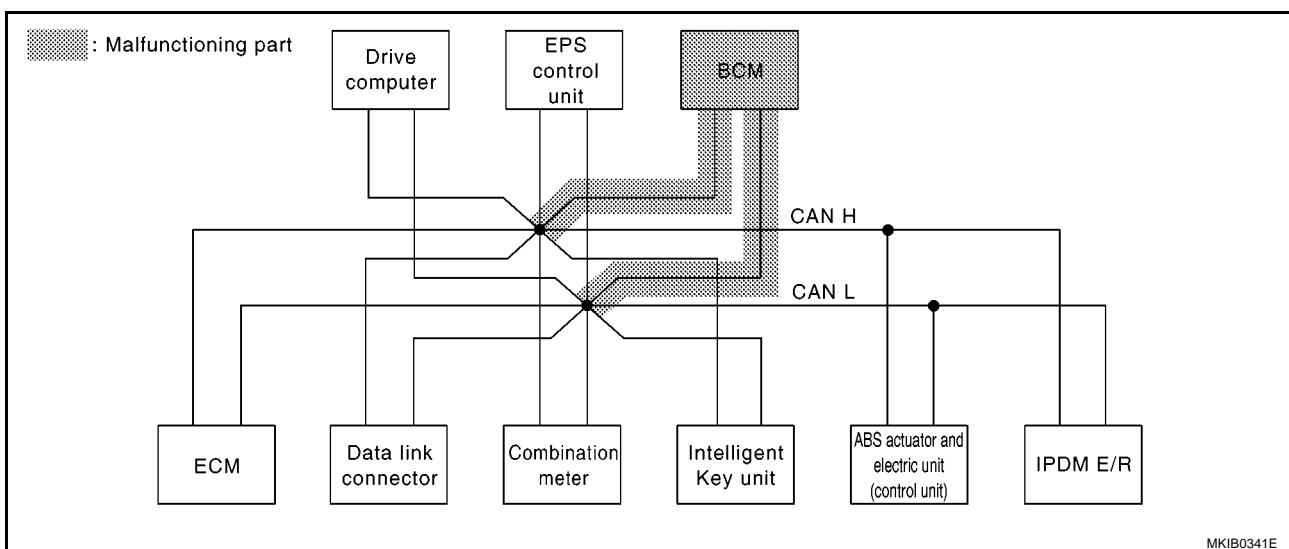
[CAN]

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	—	—

MKIB1642E



A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 3)

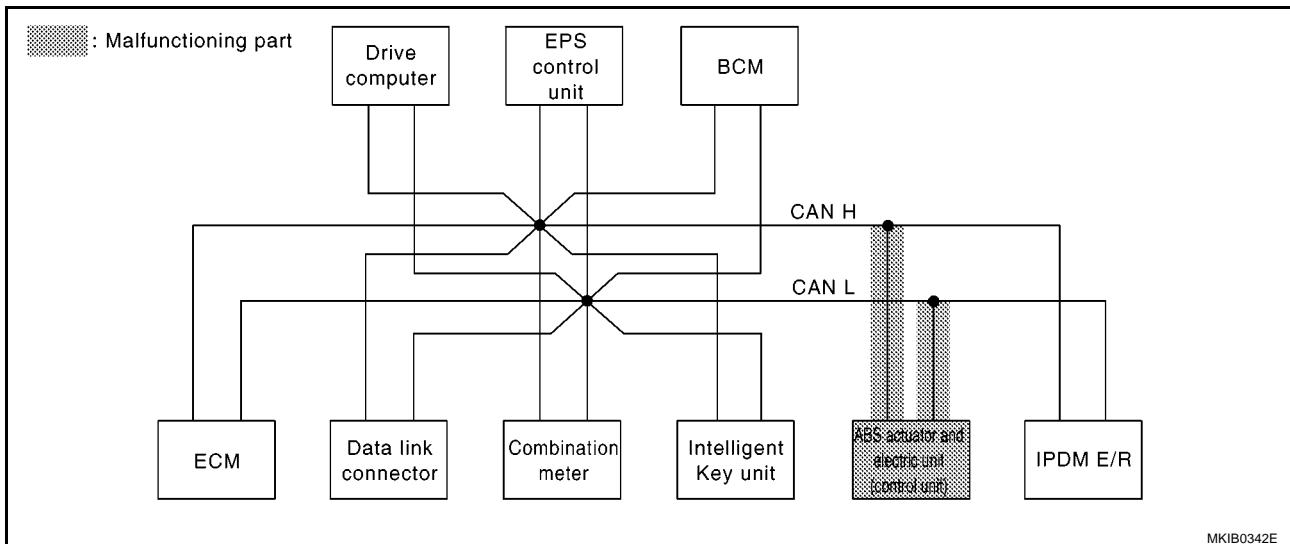
[CAN]

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)

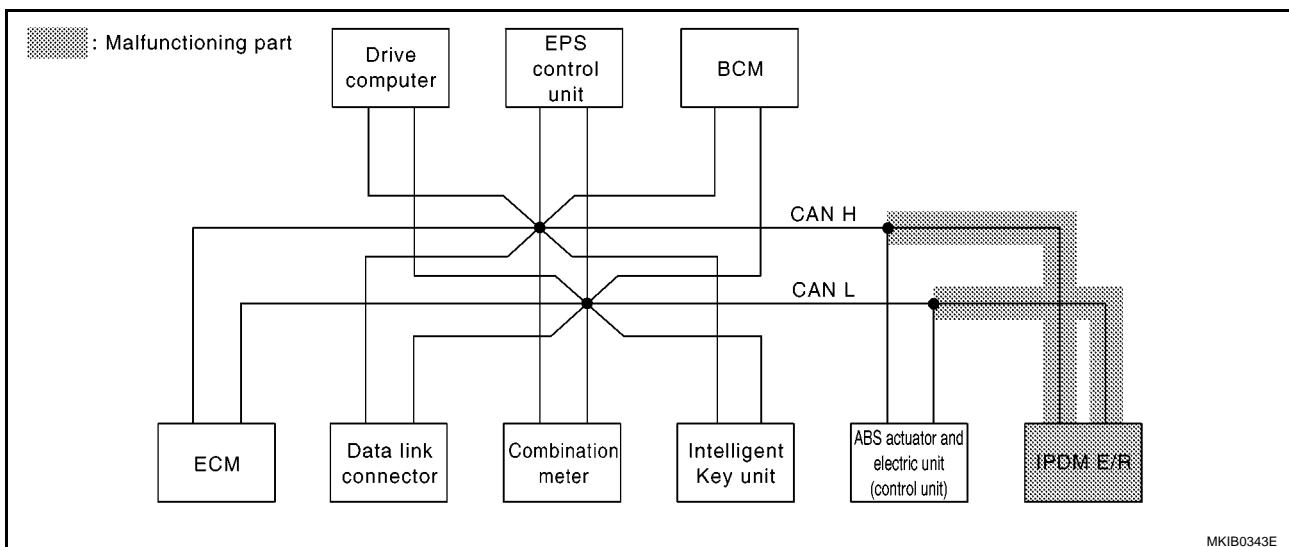
[CAN]

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	—	—	

MKIB1644E



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.

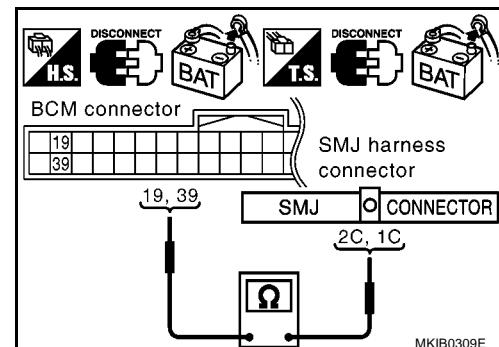
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

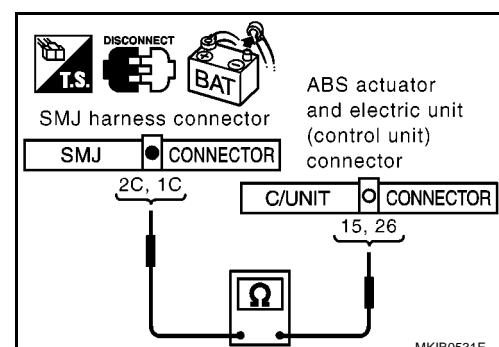
**3. CHECK HARNESS FOR OPEN CIRCUIT**

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

EKS0081F

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.

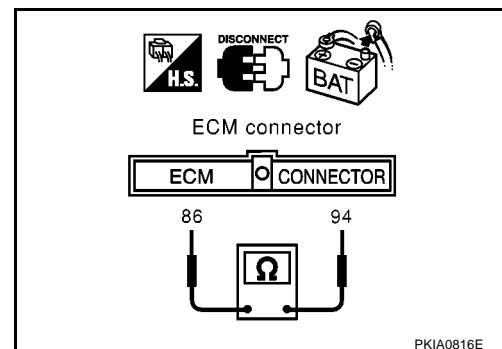
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS0081G

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.

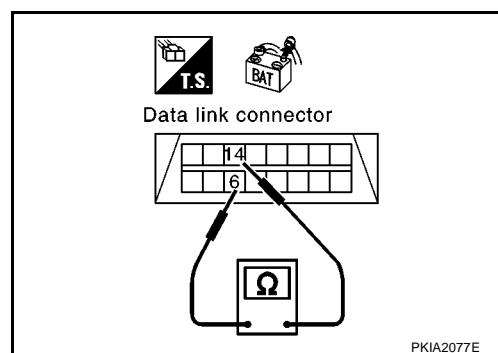
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (R) – 14 (W) : Approx. 54 – 66ΩOK 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



Combination Meter Circuit Check

EKS0081H

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).

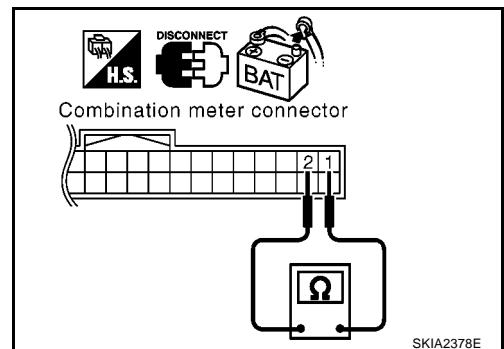
1 (R) – 2 (W)

: 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

EKS0081I

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.

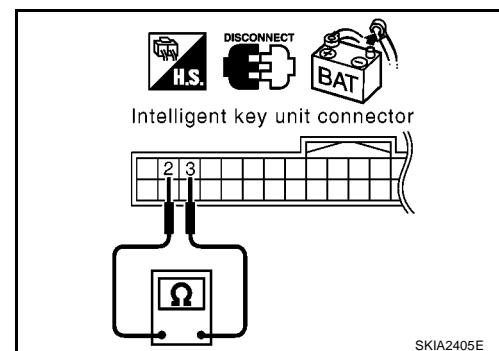
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace Intelligent Key unit.

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



EPS Control Unit Circuit Check

EKS0081J

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.

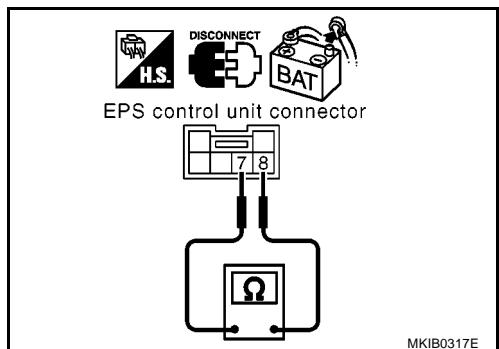
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace EPS control unit.

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



BCM Circuit Check

EKS0081K

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.

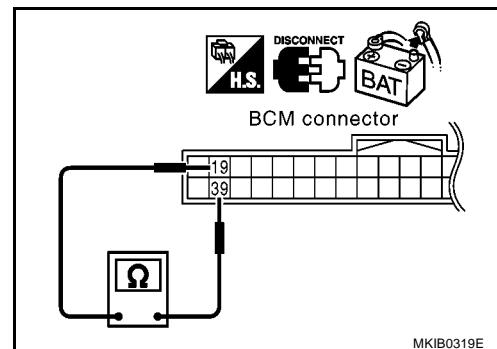
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

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.

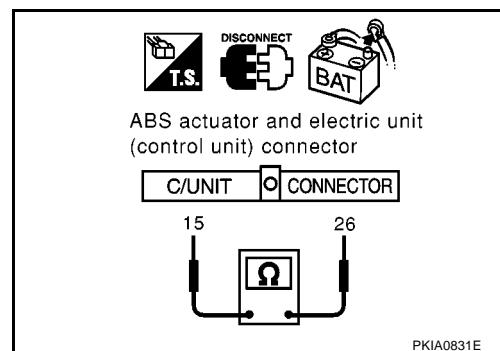
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS0081M

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.

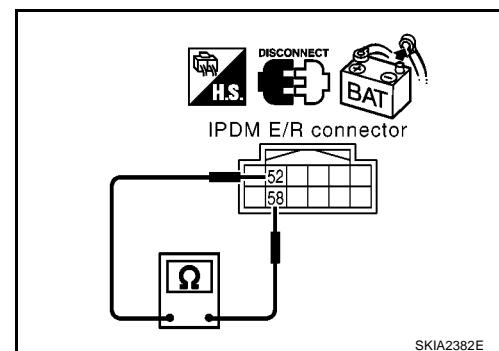
2. CHECK HARNESS FOR OPEN CIRCUIT

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).



CAN Communication Circuit Check

EKS0081N

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.

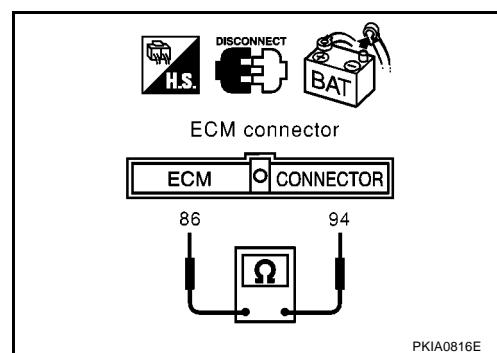
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

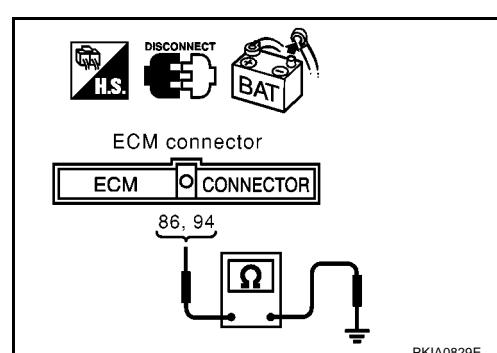
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

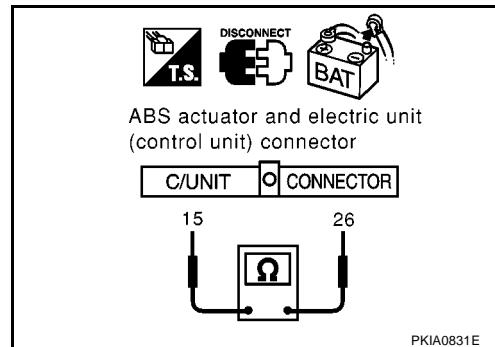
26 (R) – 15 (W) : Continuity should not exist.

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.

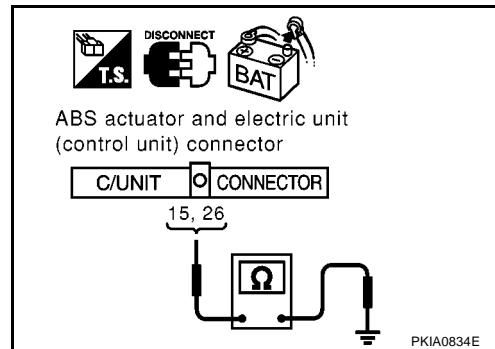
15 (W) – Ground : Continuity should not exist.

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



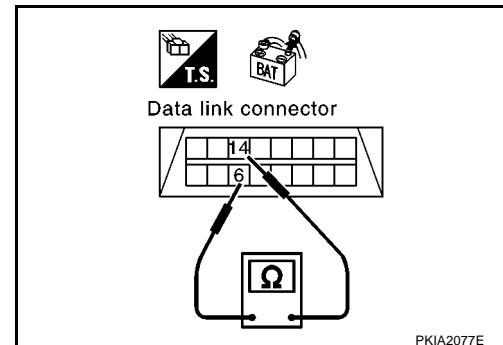
6. CHECK HARNESS FOR SHORT CIRCUIT

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

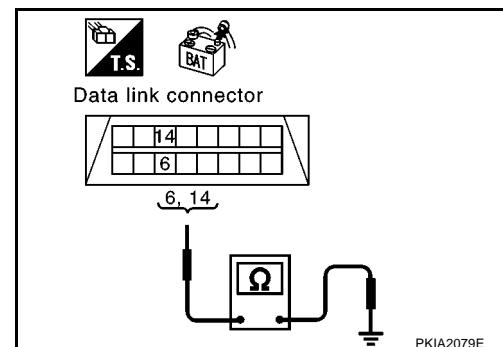
Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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""](#).

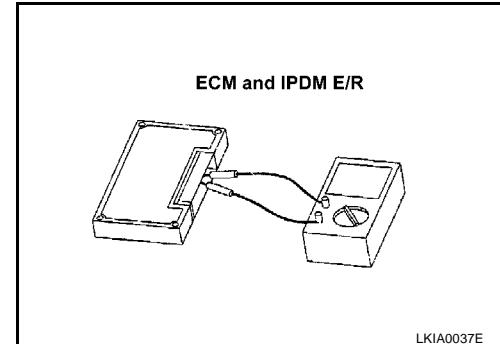
Component Inspection

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	



LKIA0037E

CAN SYSTEM (TYPE 4)

PFP:23710

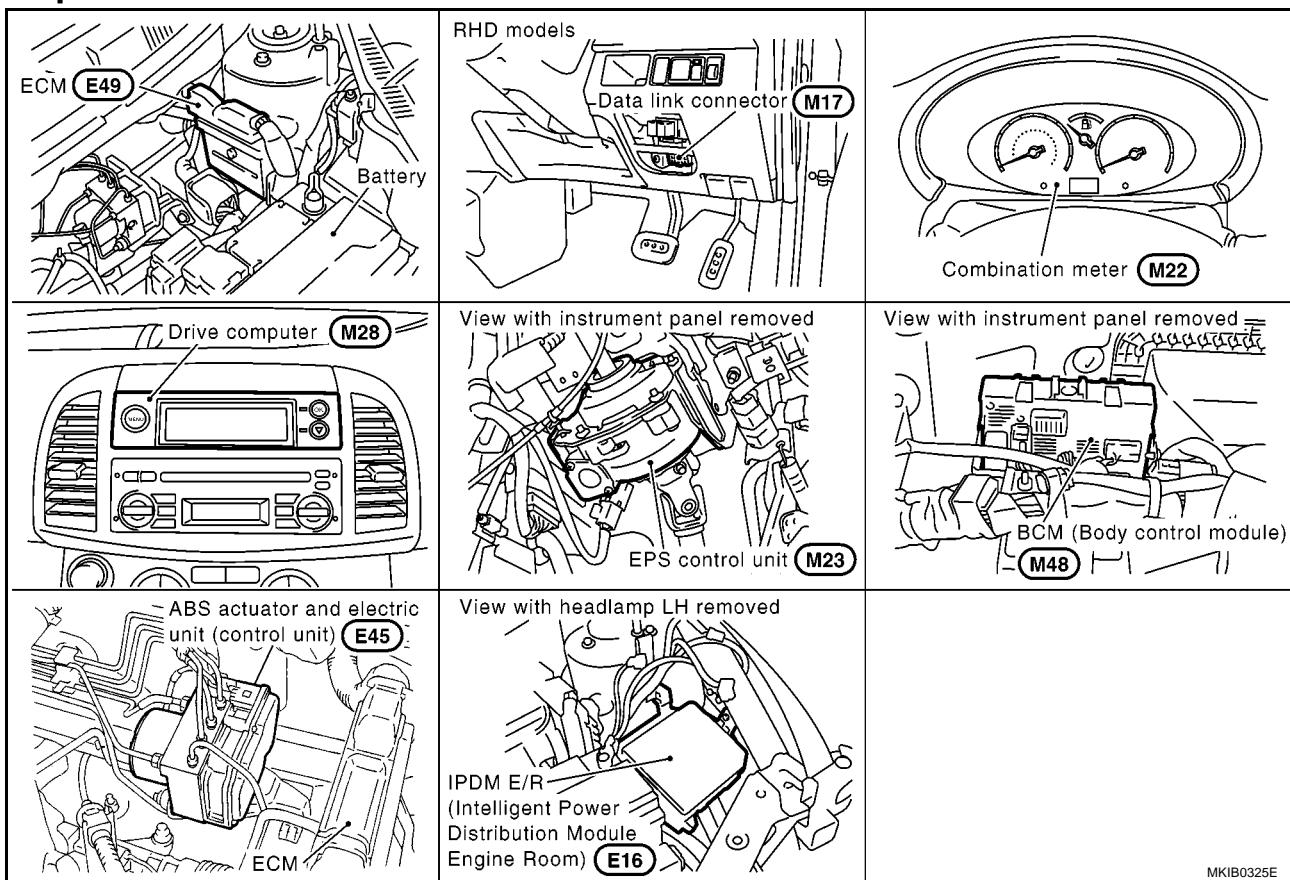
System Description

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)

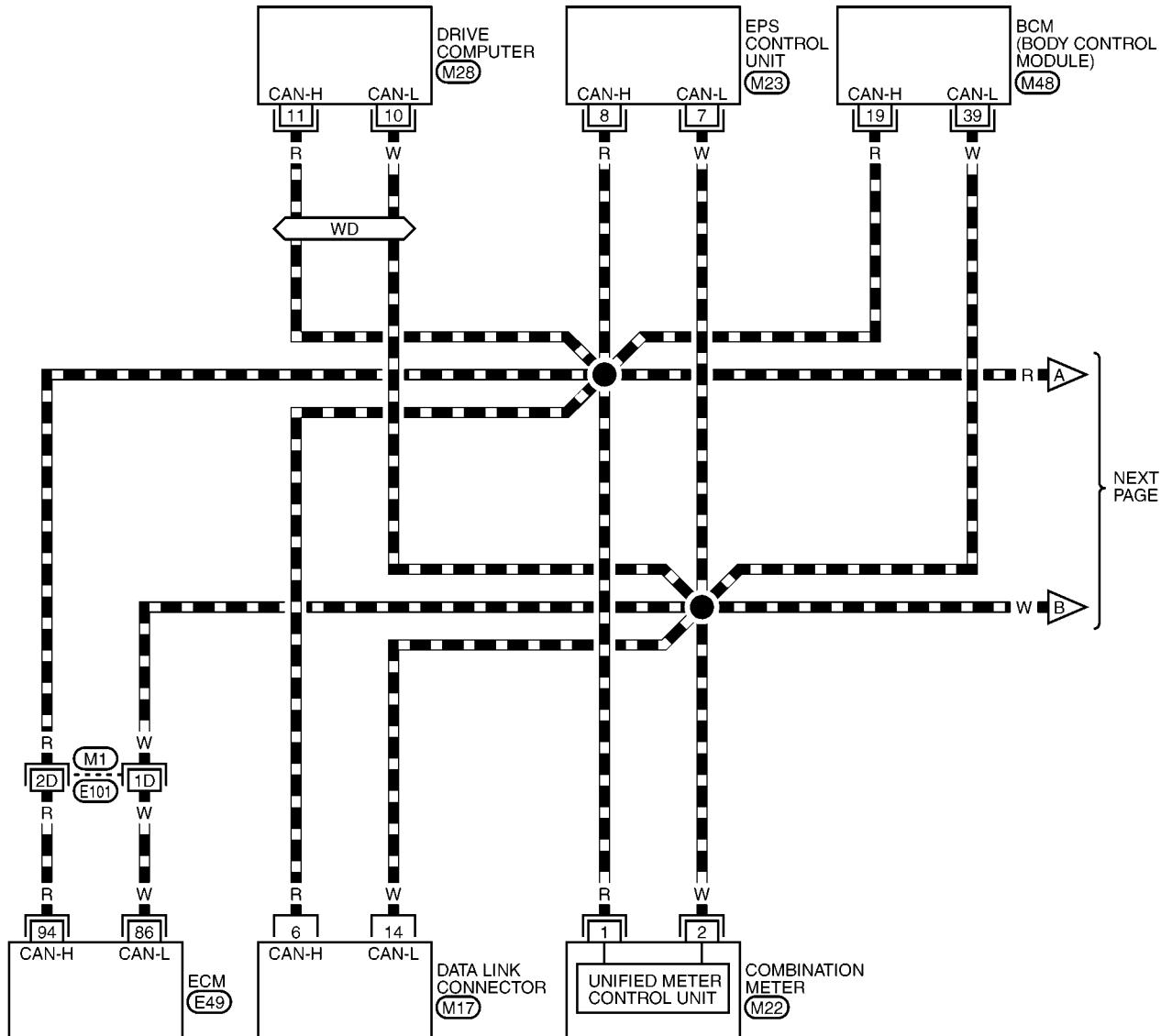
[CAN]

Wiring Diagram — CAN —

EKS007YU

LAN-CAN-07

— : DATA LINE
WD : WITH DRIVE COMPUTER



NEXT PAGE

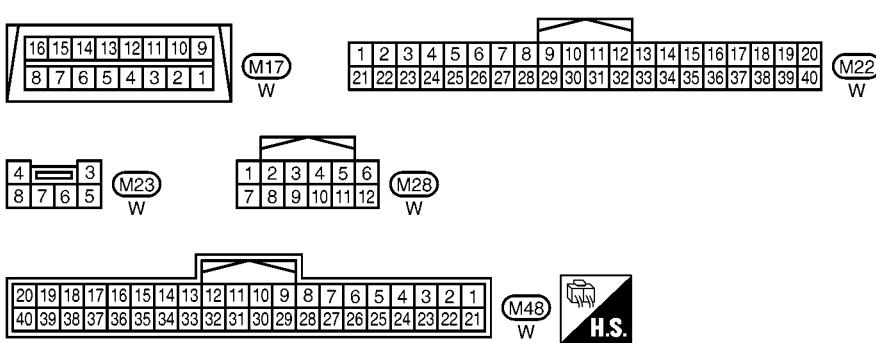
LAN

L

M

REFER TO THE FOLLOWING.

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



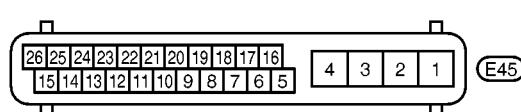
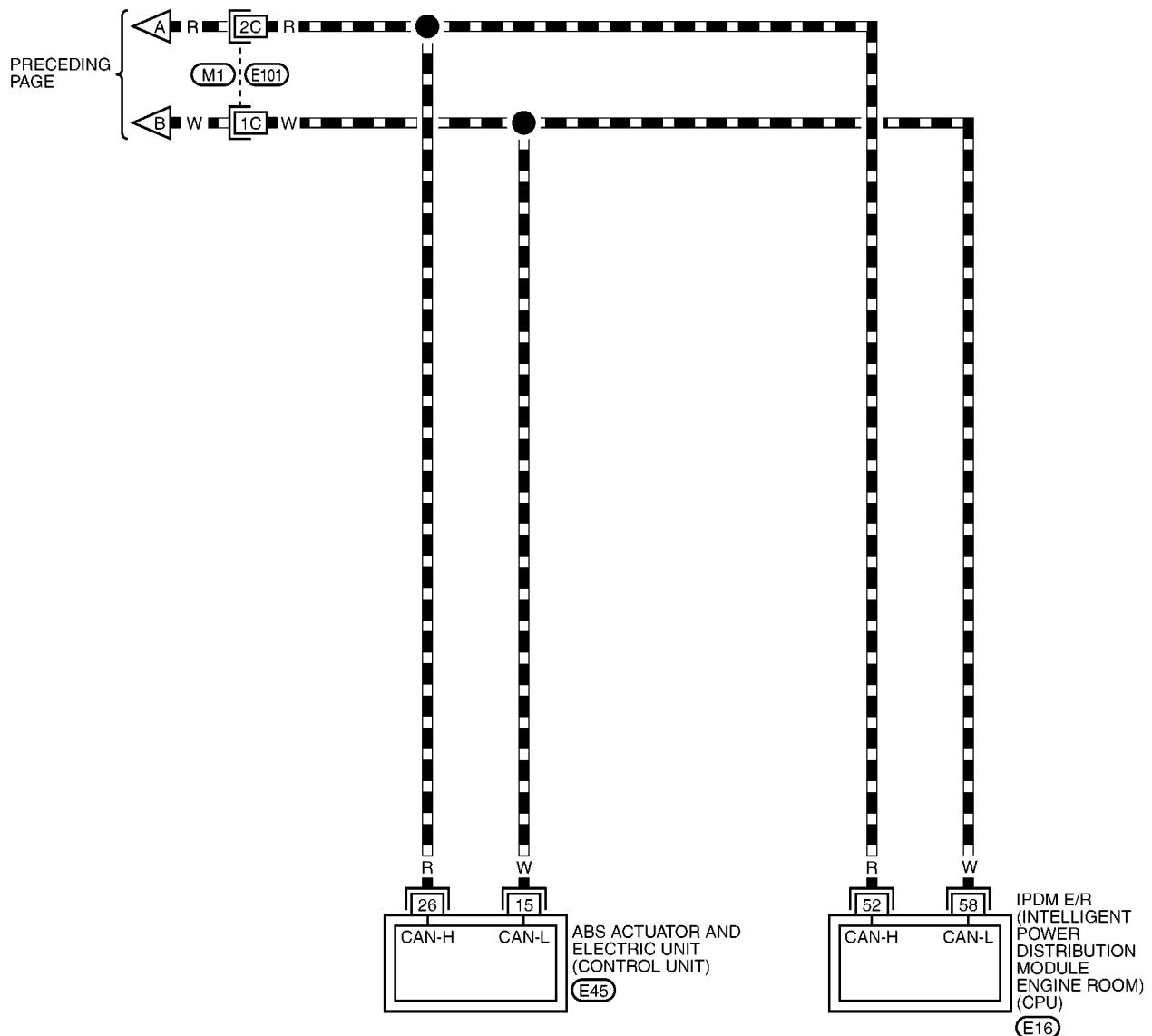
MKWA1310E

CAN SYSTEM (TYPE 4)

[CAN]

LAN-CAN-08

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE
JUNCTION (SMJ)

MKWA1311E

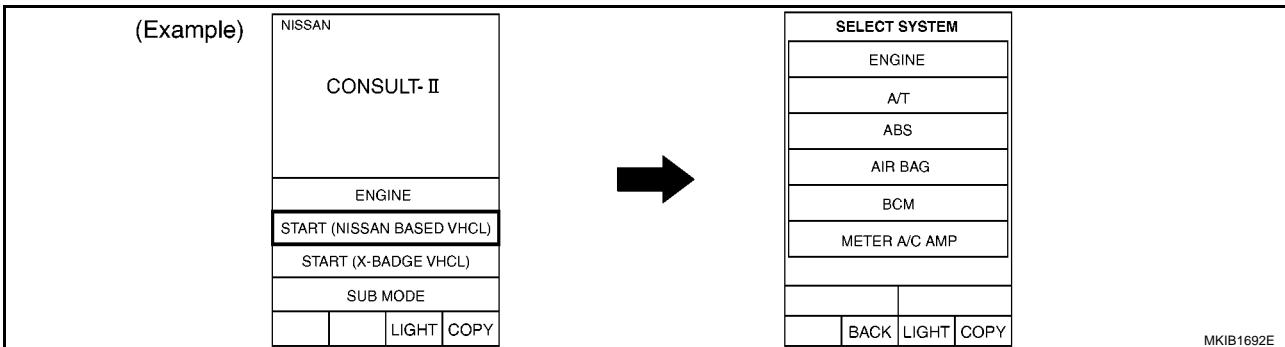
CAN SYSTEM (TYPE 4)

[CAN]

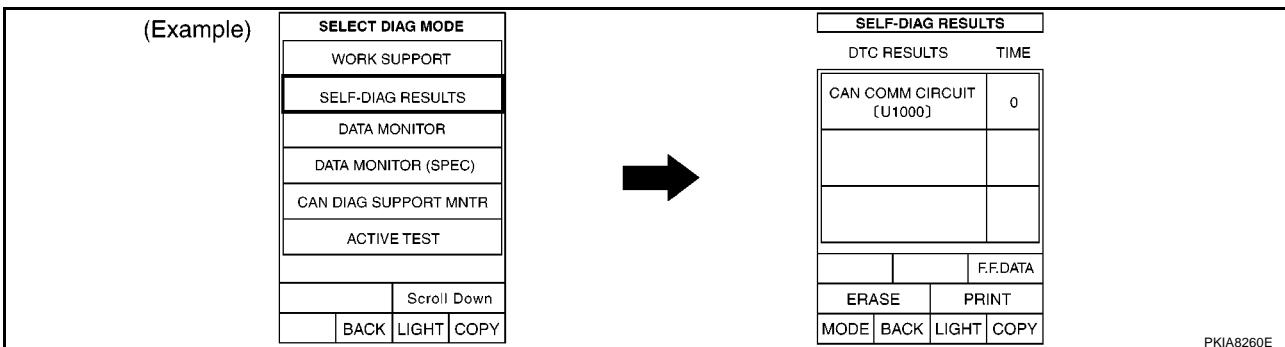
Work Flow

EKS0081Q

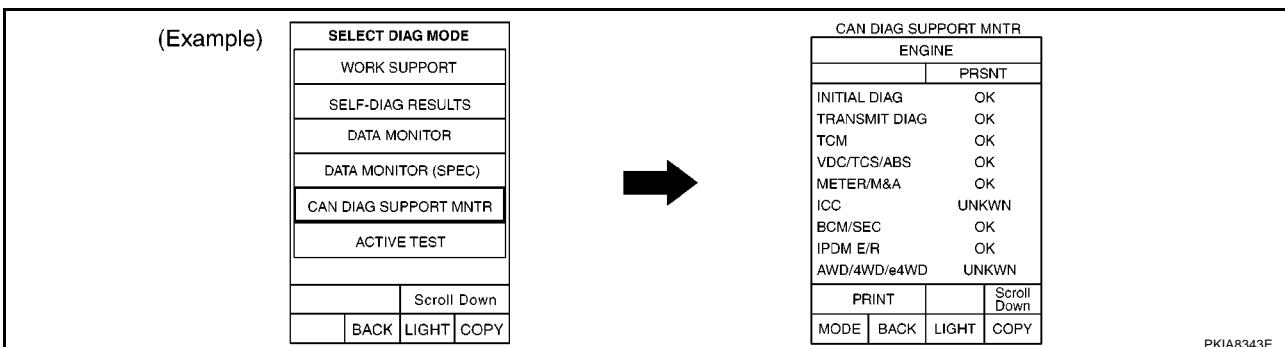
- When there are no indications of "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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-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 "UNKWN" in the check sheet table. Refer to [LAN-117, "CHECK SHEET"](#).

NOTE:

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

A
B
C
D
E
F
G
H
I
J

LAN
L
M

CAN SYSTEM (TYPE 4)

[CAN]

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

Check sheet table									
(Example)	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	—	—

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

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

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

LAN

MKIB1604E

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
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

MKIB0304E

CAN SYSTEM (TYPE 4)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

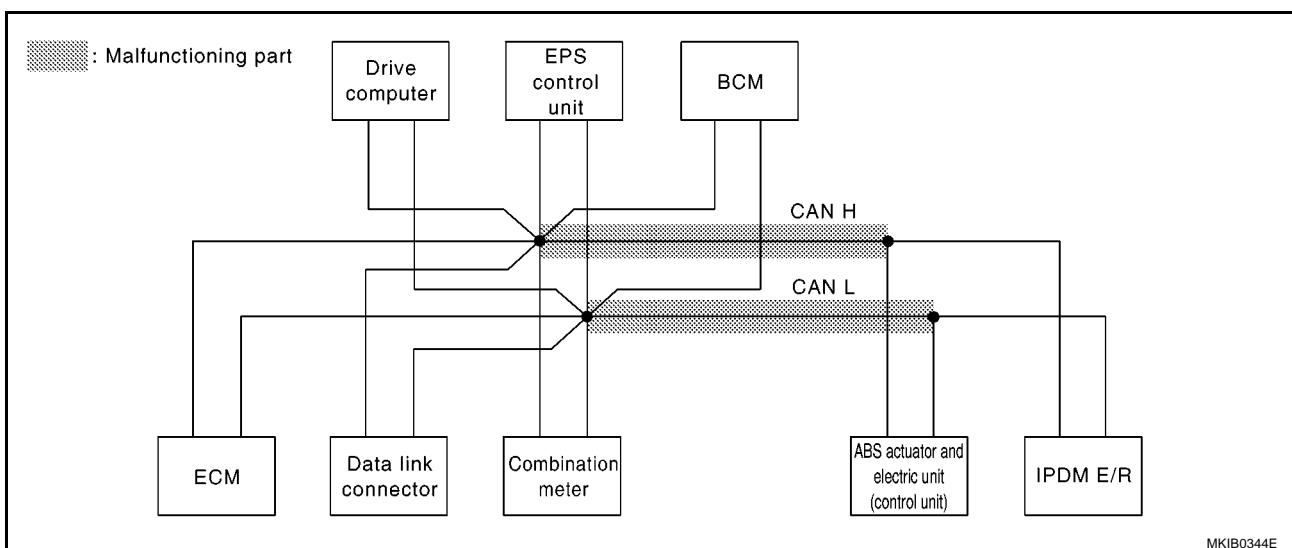
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

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



MKIB0344E

CAN SYSTEM (TYPE 4)

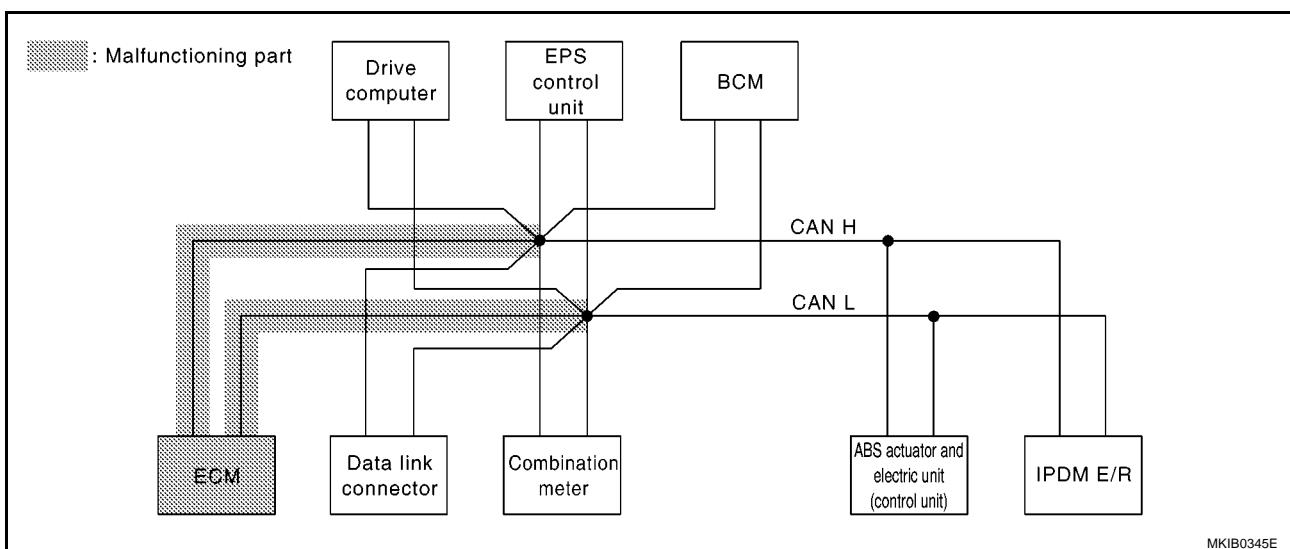
[CAN]

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)

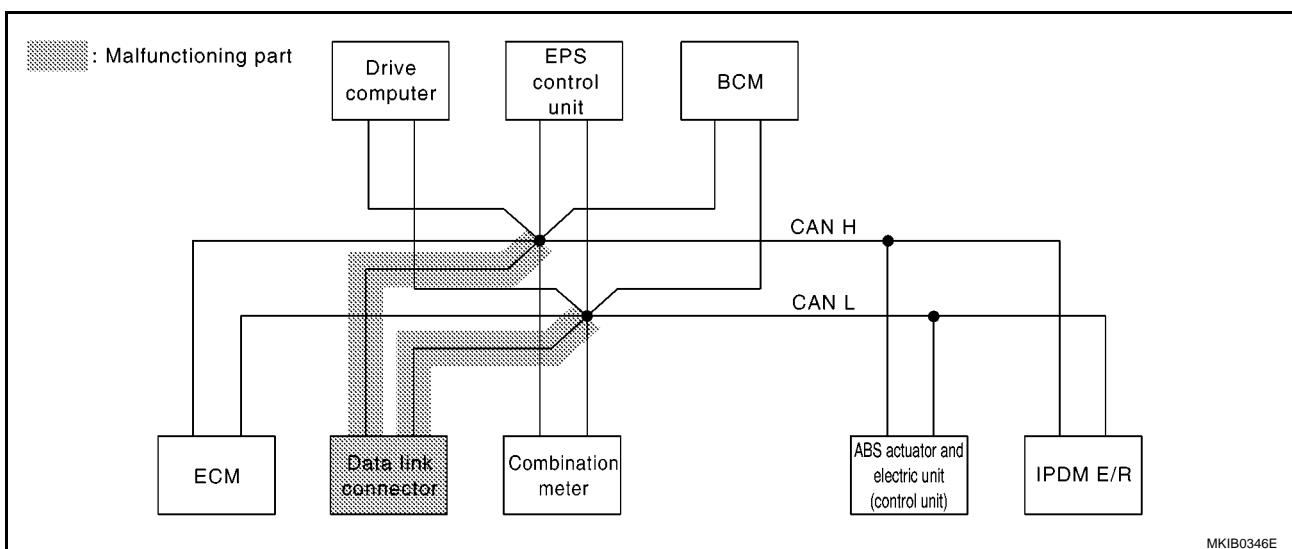
[CAN]

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



CAN SYSTEM (TYPE 4)

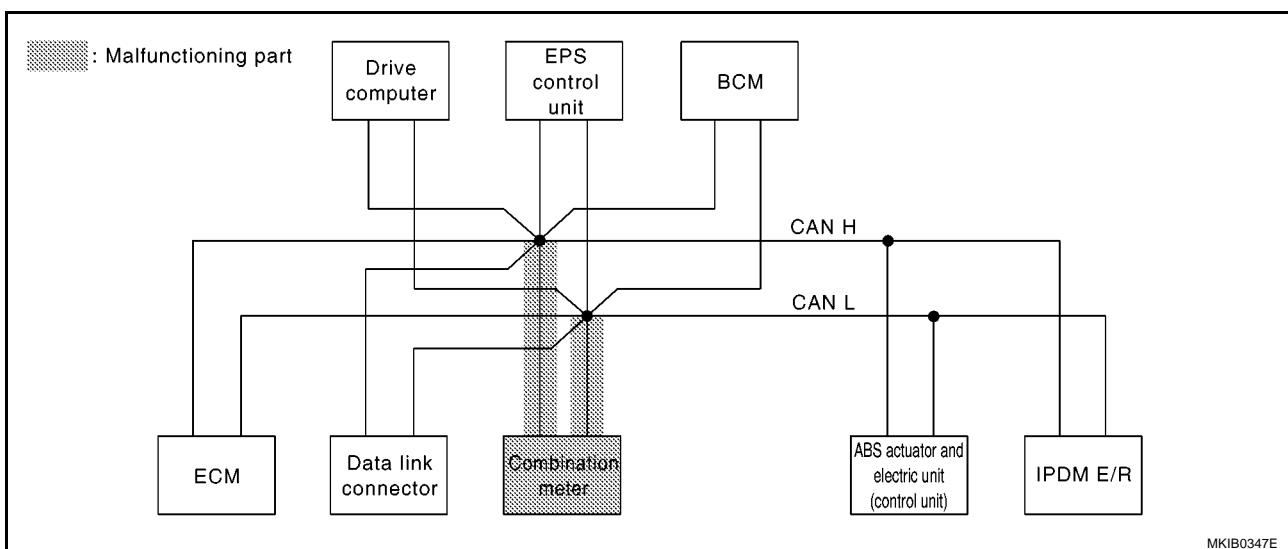
[CAN]

Case 4

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

	CONSULT indication	CAN system	Tx	Rx					IPDM E/R
				ECM	Combination meter	EPS	BCM	ABS	
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	—	—

MKIB1651E



MKIB0347E

CAN SYSTEM (TYPE 4)

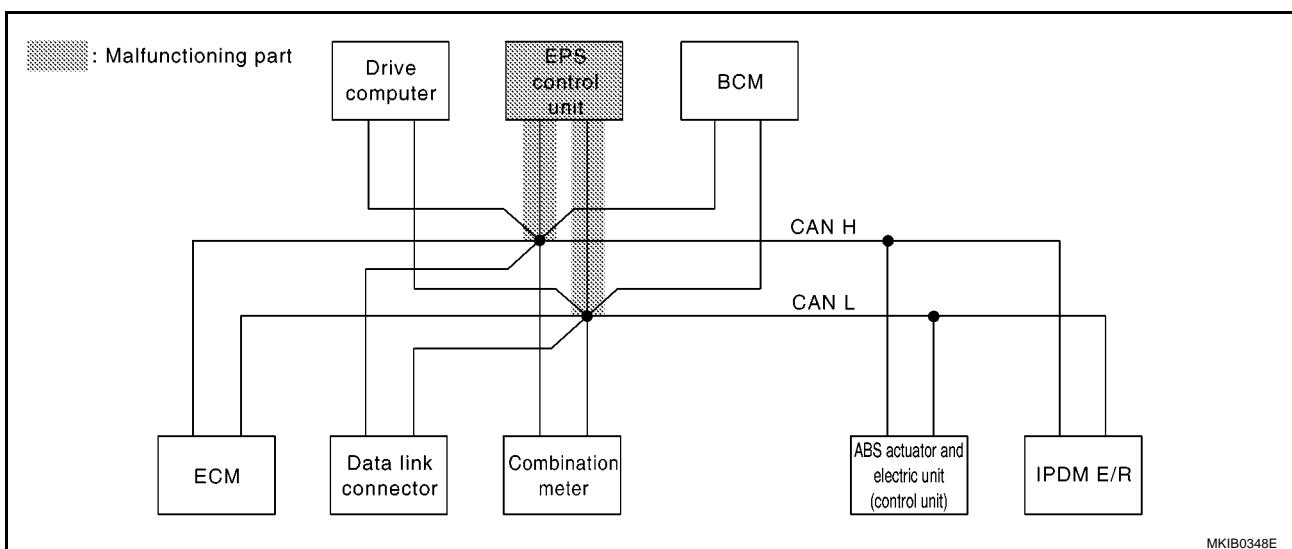
[CAN]

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	—	—

MKIB1652E



CAN SYSTEM (TYPE 4)

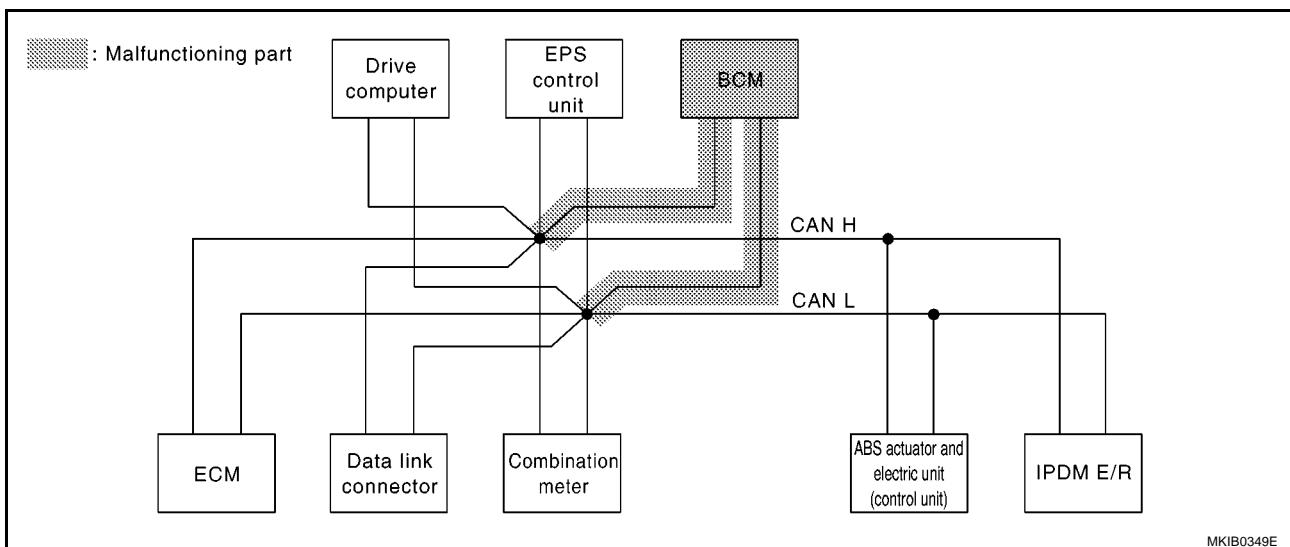
[CAN]

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



CAN SYSTEM (TYPE 4)

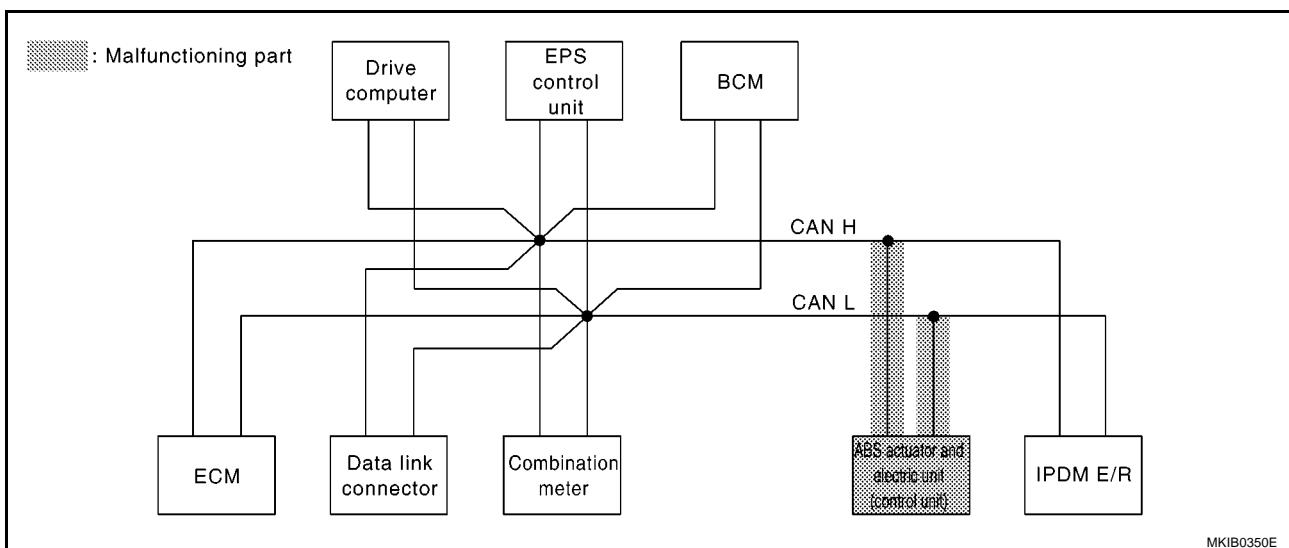
[CAN]

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	—	—

MKIB1654E



MKIB0350E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 4)

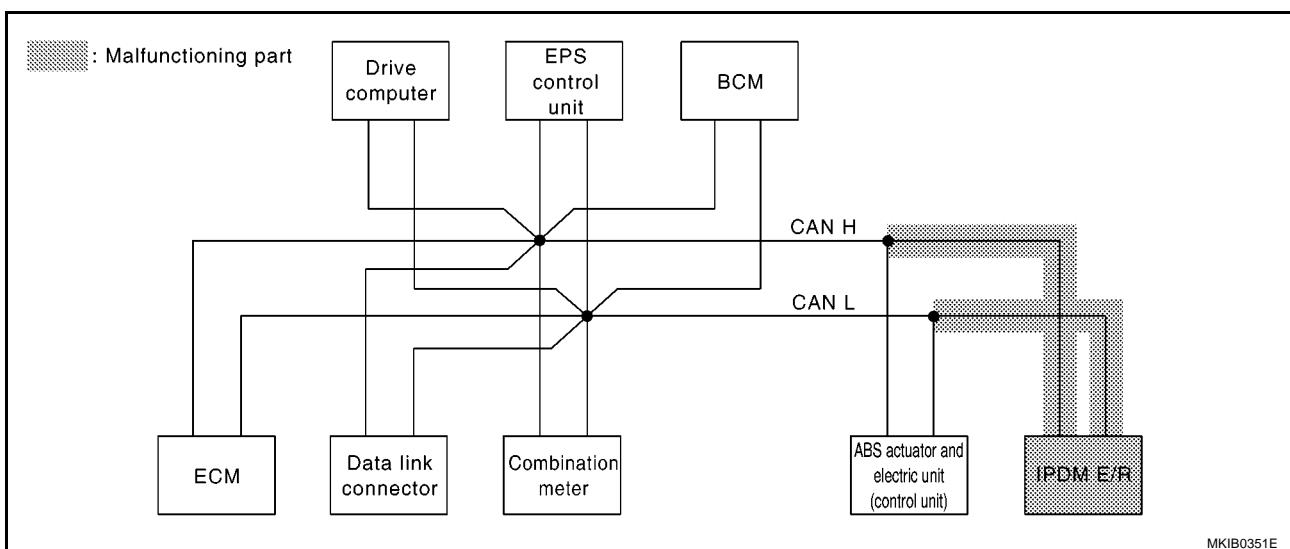
[CAN]

Case 8

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

	CONSULT indication	CAN system	Tx	Rx					IPDM E/R
				ECM	Combination meter	EPS	BCM	ABS	
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

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

EKS0081R

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.

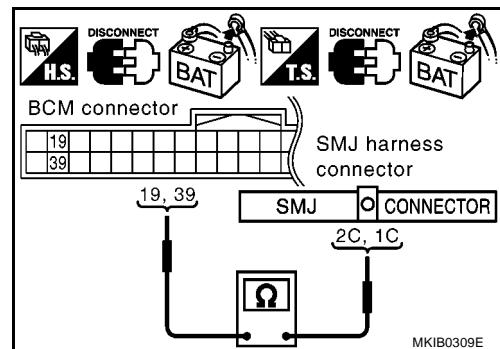
39 (W) – 1C (W)

: 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.

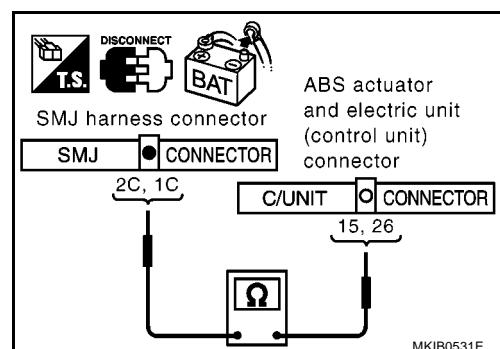
1C (W) – 15 (W)

: 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

EKS0081S

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.

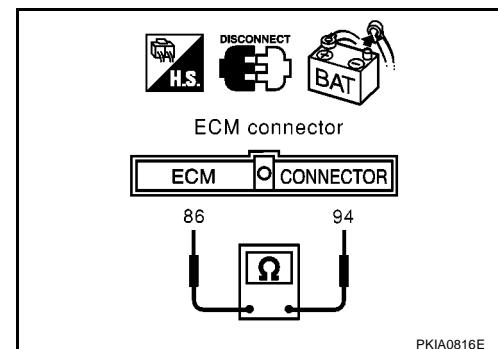
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS0081T

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.

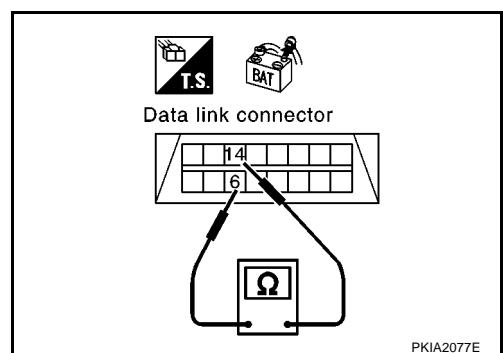
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

EKS0081U

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

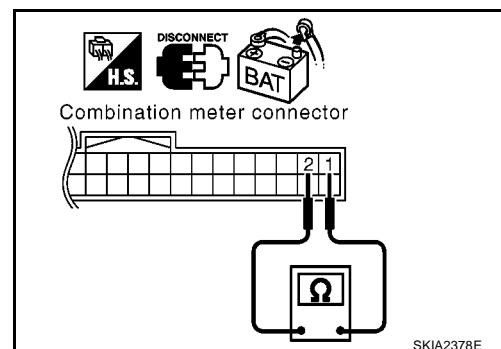
1. Disconnect combination meter connector.
 2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

OK or NG

OK >> Replace combination meter

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



EPS Control Unit Circuit Check

EKS0081V

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).

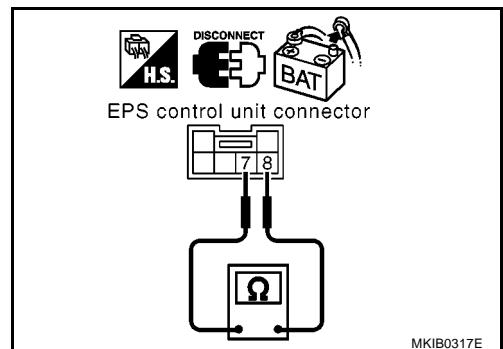
8 (R) – 7 (W)

: 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

EKS0081W

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.

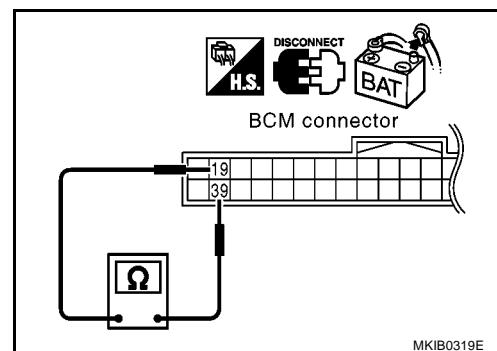
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

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.

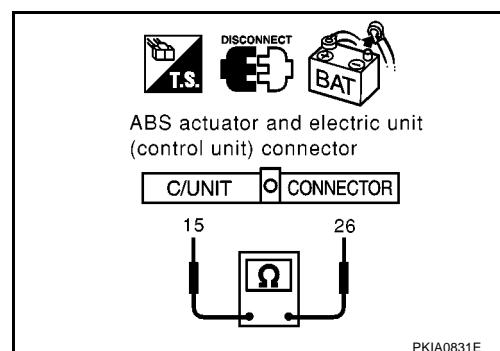
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS0081Y

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.

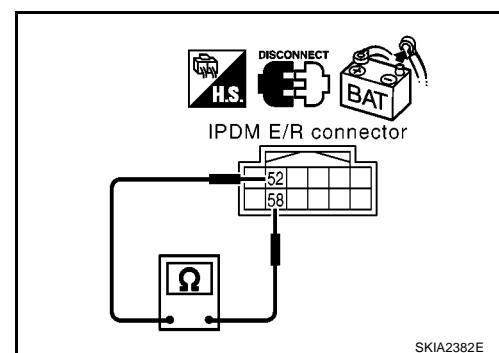
2. CHECK HARNESS FOR OPEN CIRCUIT

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).



CAN Communication Circuit Check

EKS0081Z

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.

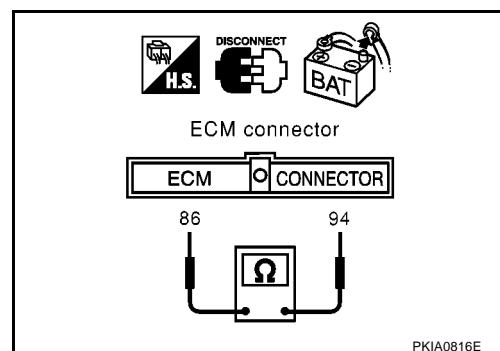
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

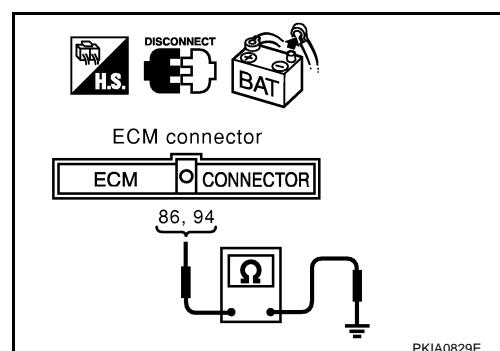
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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.



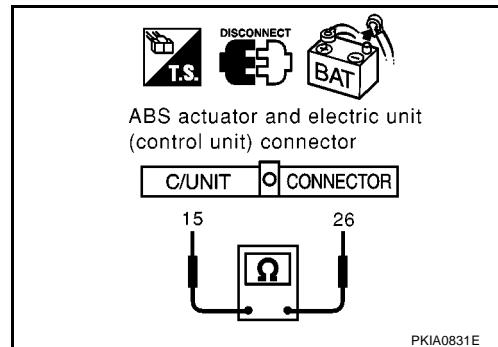
4. CHECK HARNESS FOR SHORT CIRCUIT

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



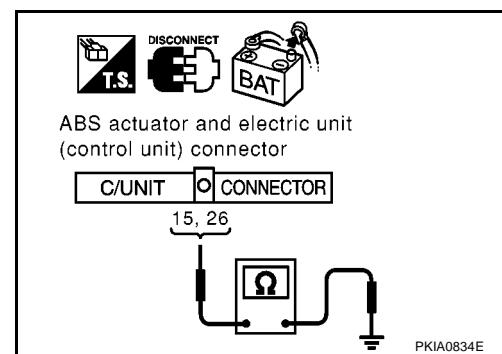
5. CHECK HARNESS FOR SHORT CIRCUIT

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



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).

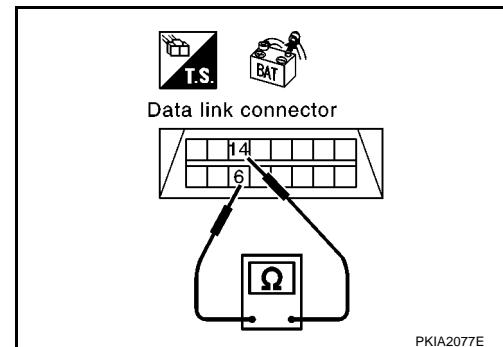
6 (R) – 14 (W) : Continuity should not exist.

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.

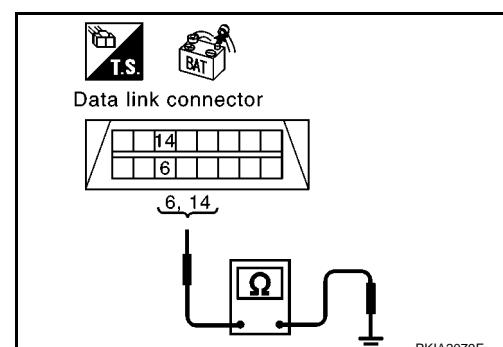
14 (W) – Ground : Continuity should not exist.

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-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""](#).

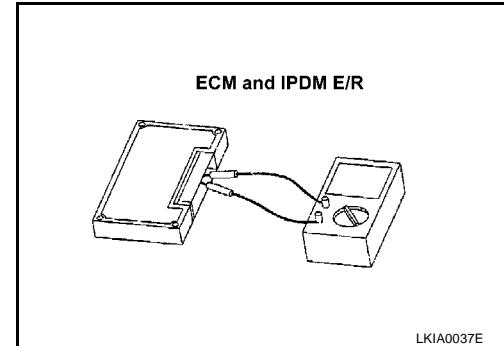
Component Inspection

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	



LKIA0037E

A
B
C
D
E
F
G
H
I
J
LAN
L
M

CAN SYSTEM (TYPE 5)

PFP:23710

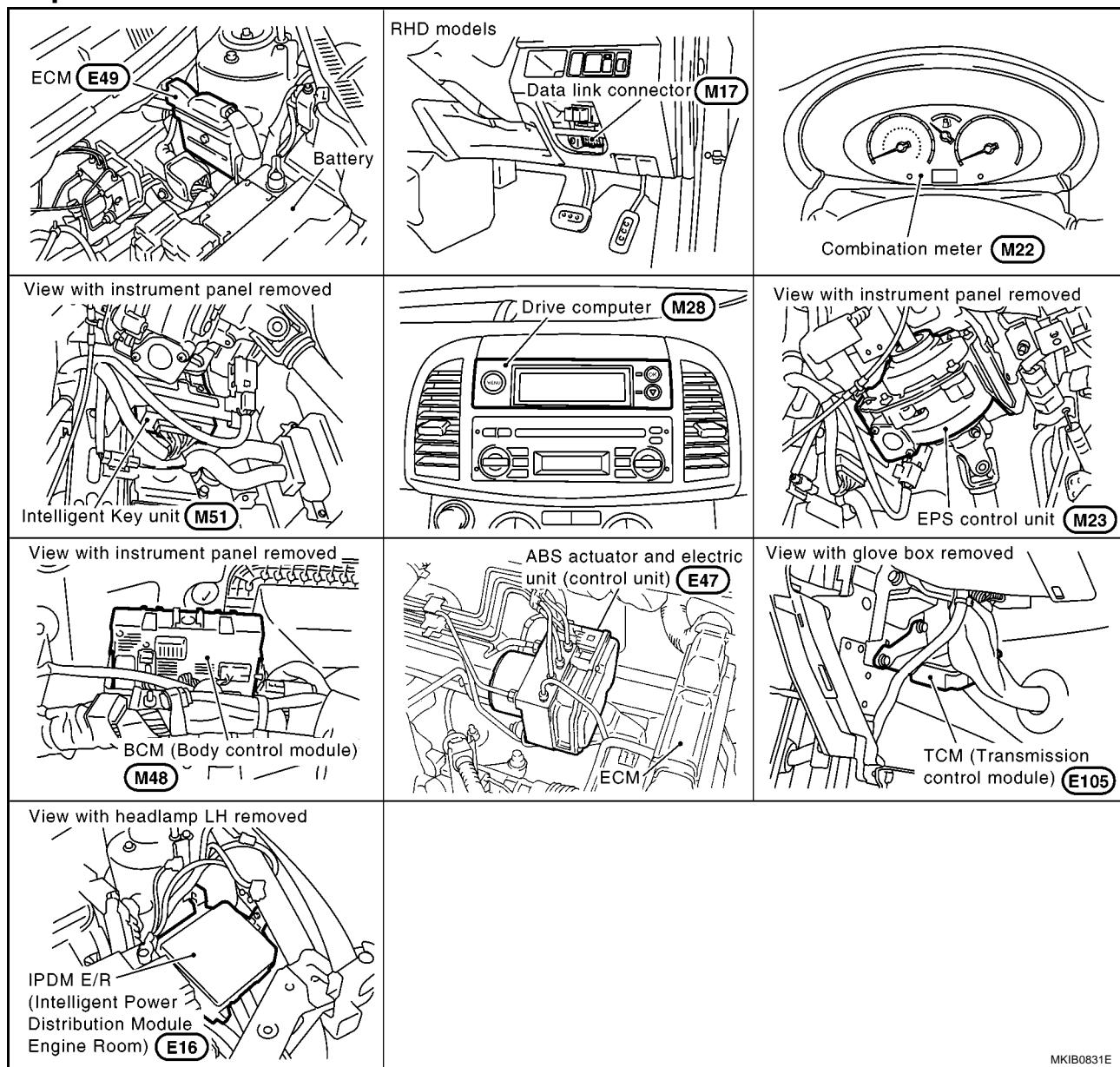
System Description

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



MKIB0831E

CAN SYSTEM (TYPE 5)

[CAN]

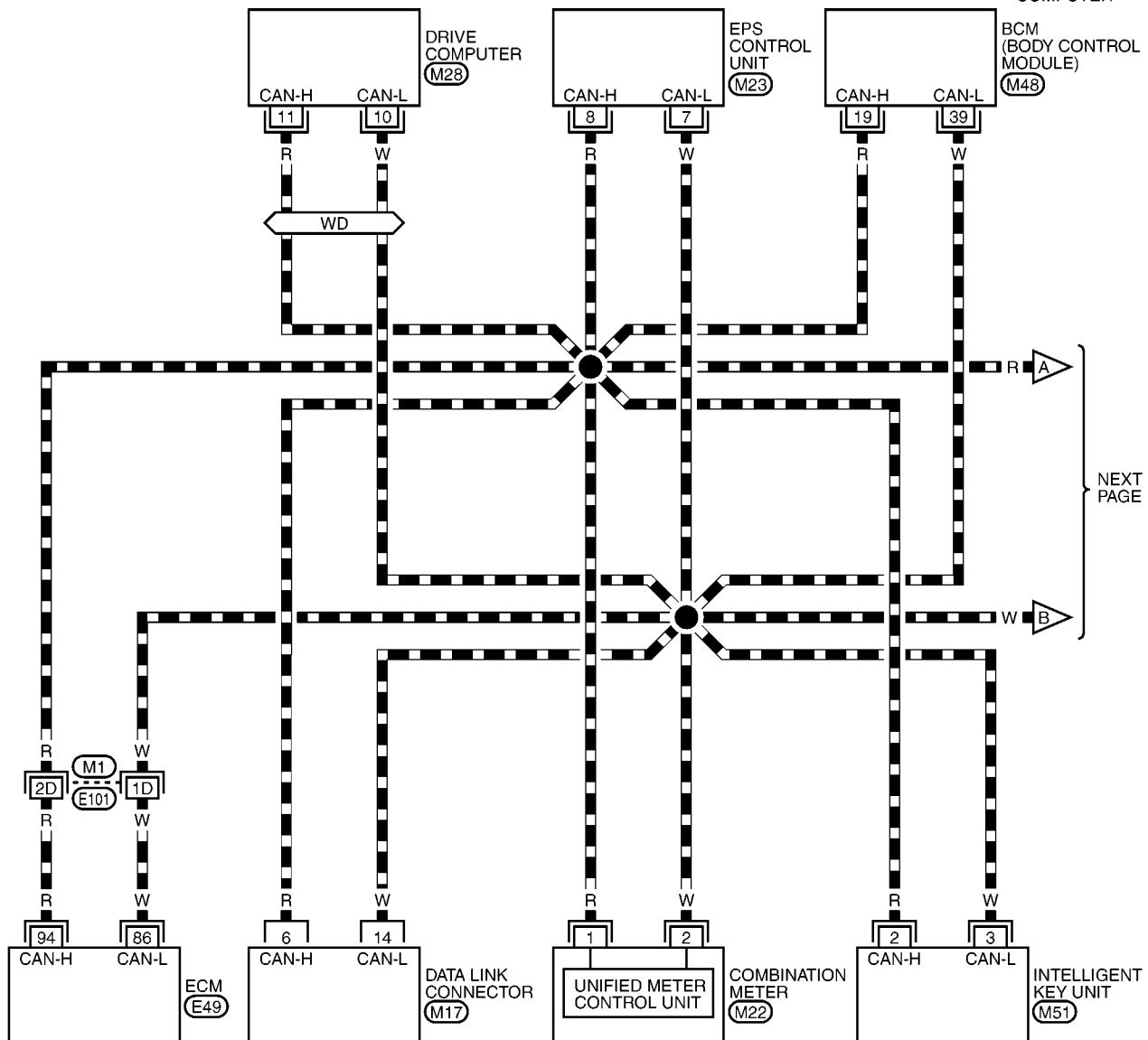
Wiring Diagram — CAN —

EKS00J07

LAN-CAN-09

— : DATA LINE

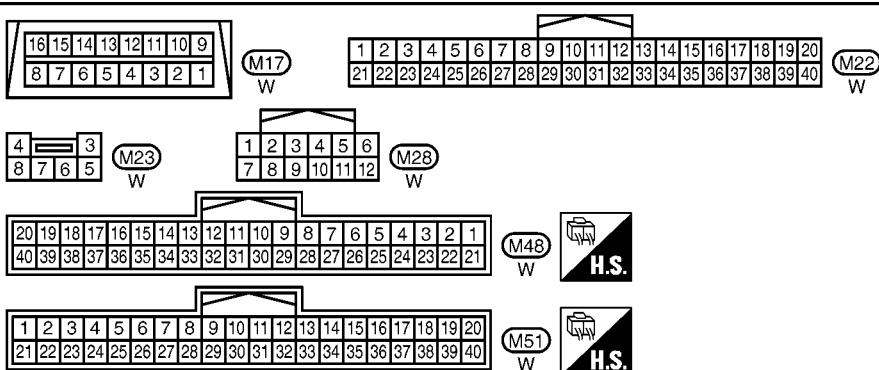
WD : WITH DRIVE COMPUTER



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS



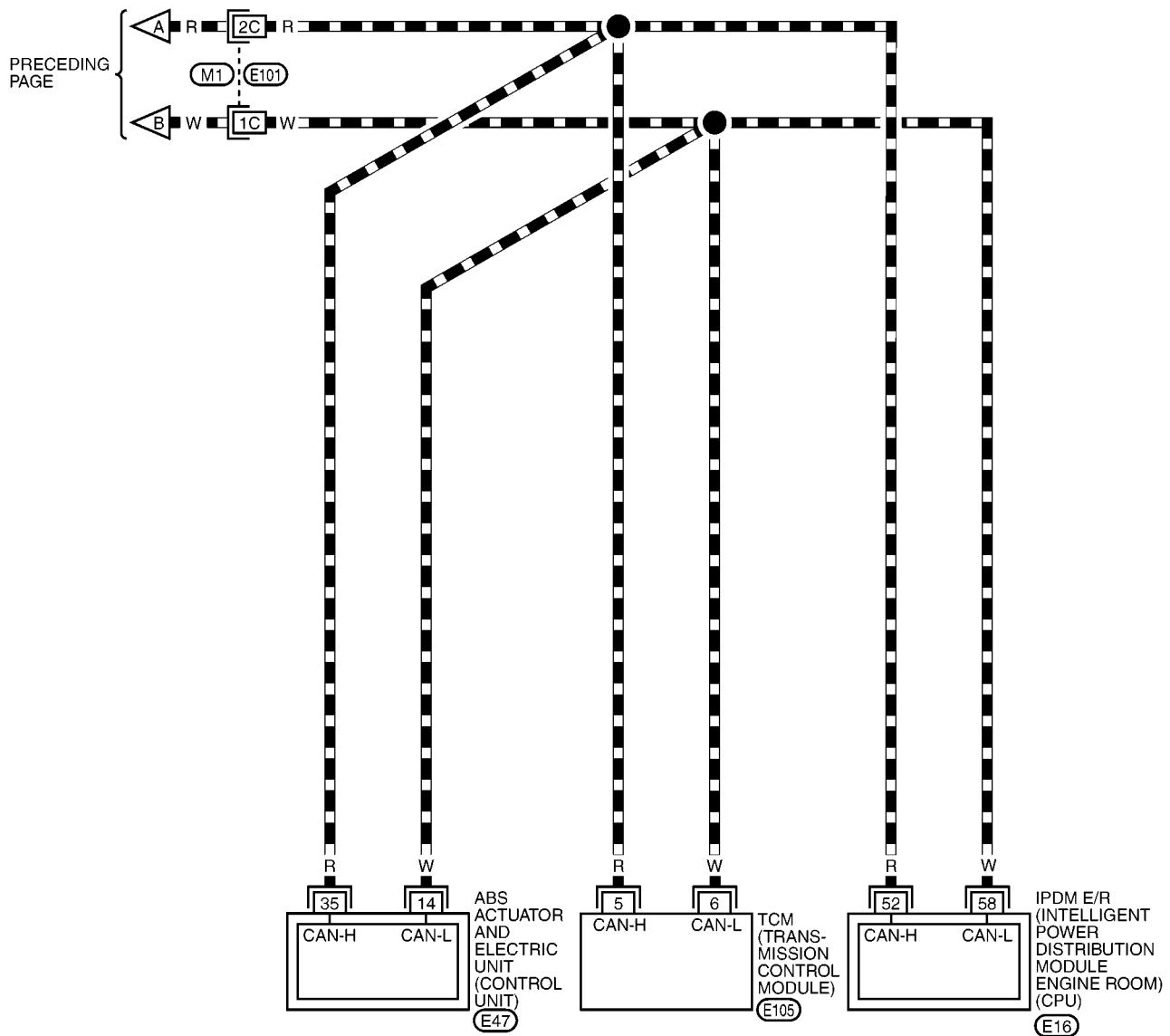
MKWA2709E

CAN SYSTEM (TYPE 5)

[CAN]

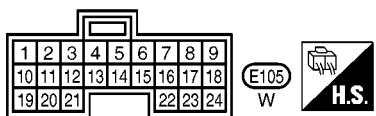
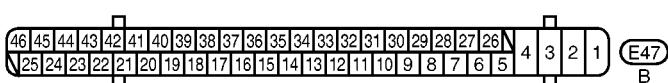
LAN-CAN-10

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE
JUNCTION (SMJ)



MKWA2710E

LAN-142

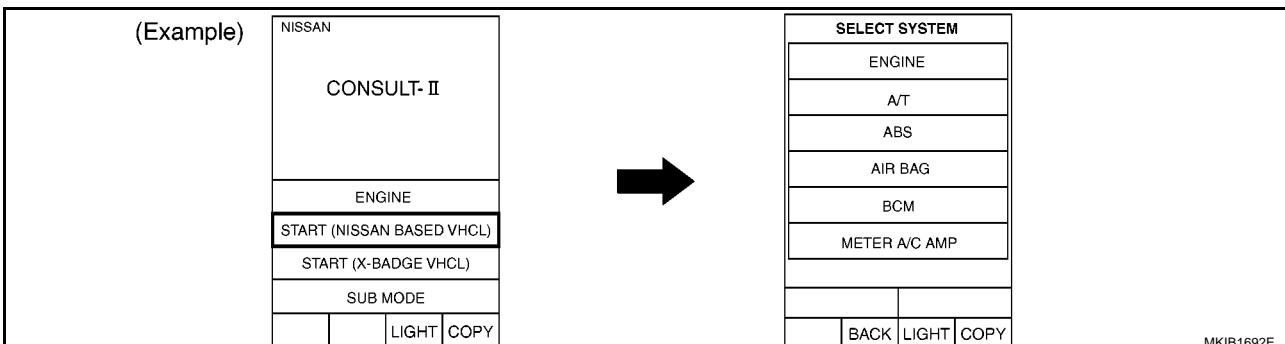
CAN SYSTEM (TYPE 5)

[CAN]

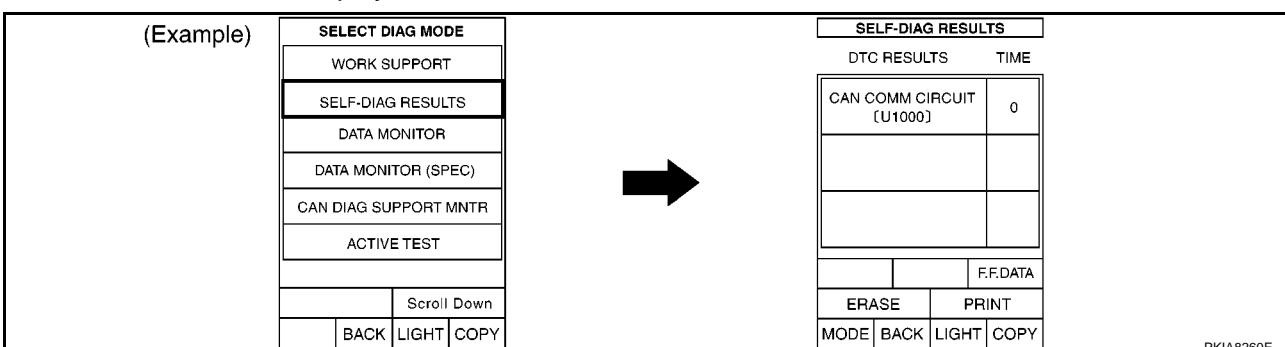
Work Flow

EKS00J08

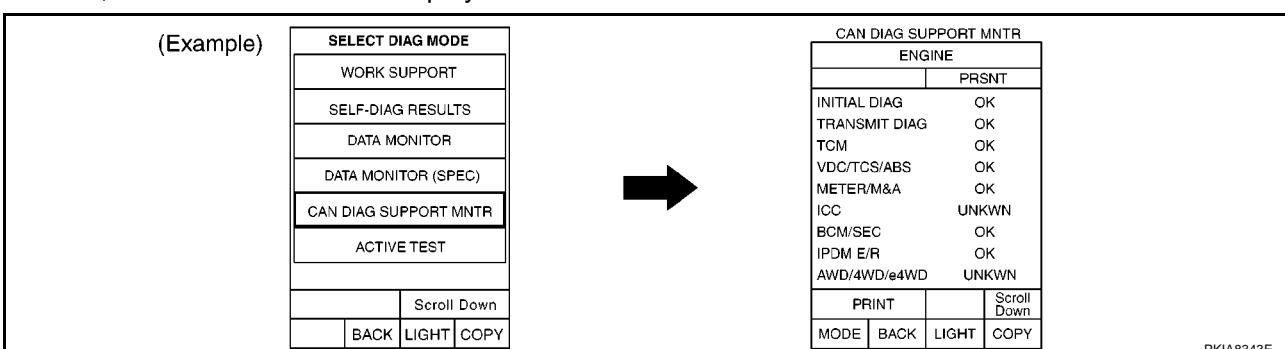
- When there are no indications of "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "INTELLIGENT KEY", "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-145, "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-145, "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.

A
B
C
D
E
F
G
H
I
J
LAN
L
M

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 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
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	-	-



Convert

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:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

LAN

L

M

MKIB1605E

CAN SYSTEM (TYPE 5)

[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
A/T
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
INTELLIGENT KEY
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
DATA MONITOR

MKIB0278E

CAN SYSTEM (TYPE 5)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

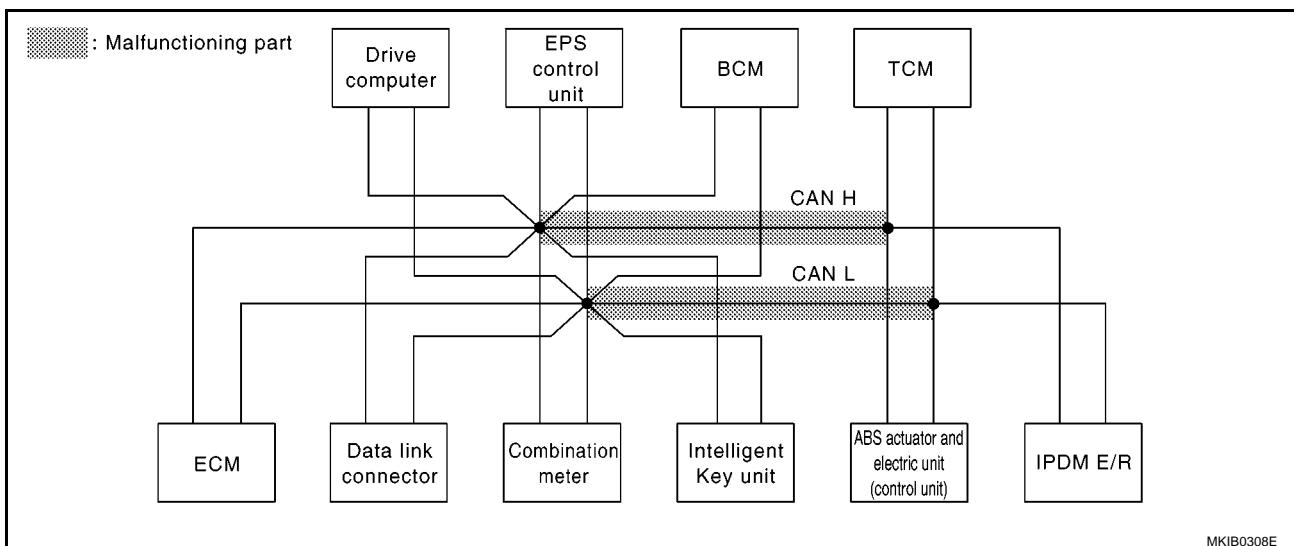
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

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



MKIB0308E

CAN SYSTEM (TYPE 5)

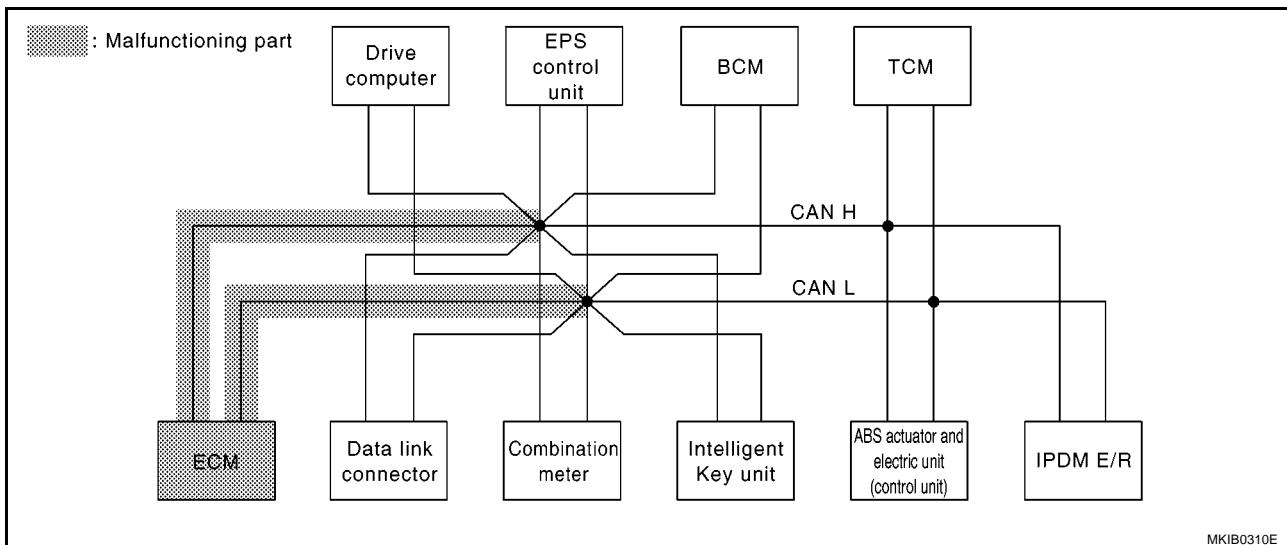
[CAN]

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	-	-	-

MKIB0778E



MKIB0310E

CAN SYSTEM (TYPE 5)

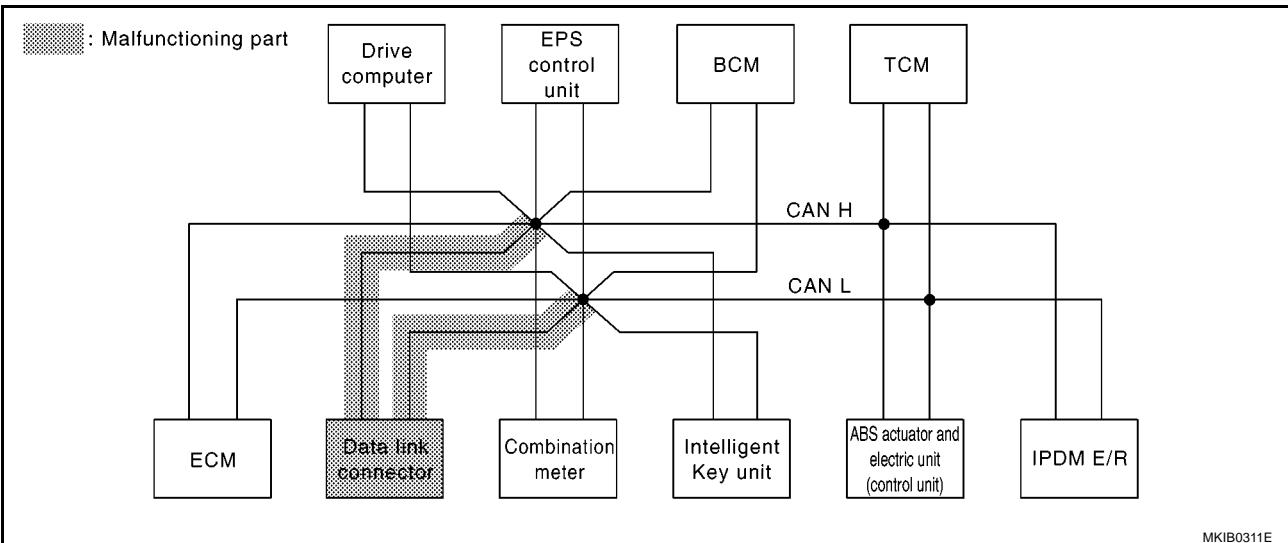
[CAN]

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	-	-	-

MKIB0779E



MKIB0311E

LAN

L

M

CAN SYSTEM (TYPE 5)

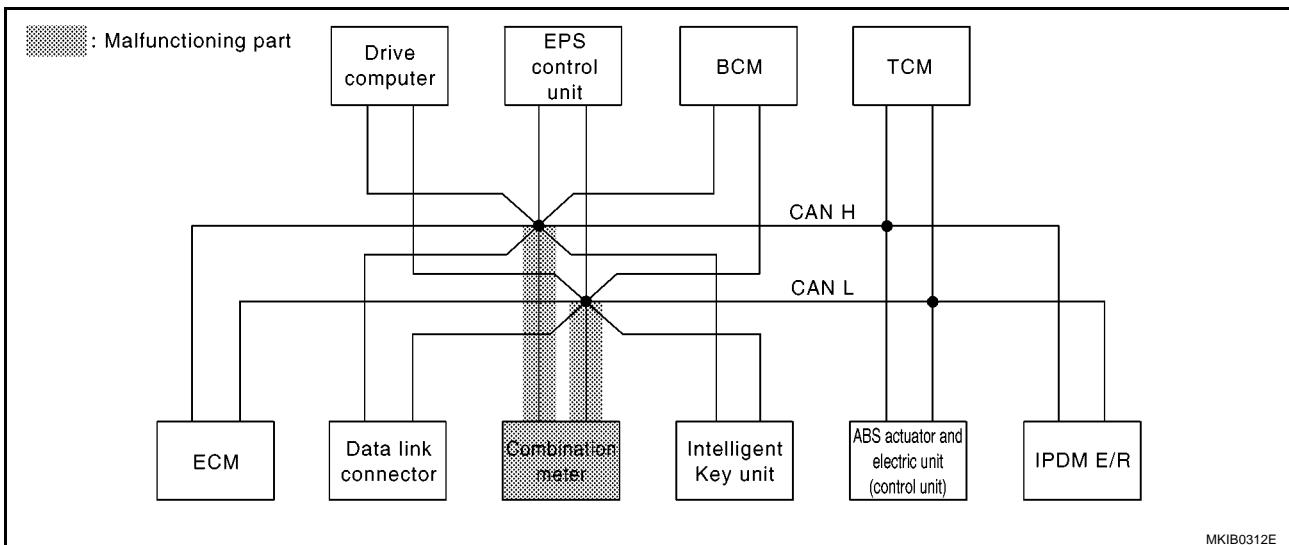
[CAN]

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	-	-	-

MKIB0780E



MKIB0312E

CAN SYSTEM (TYPE 5)

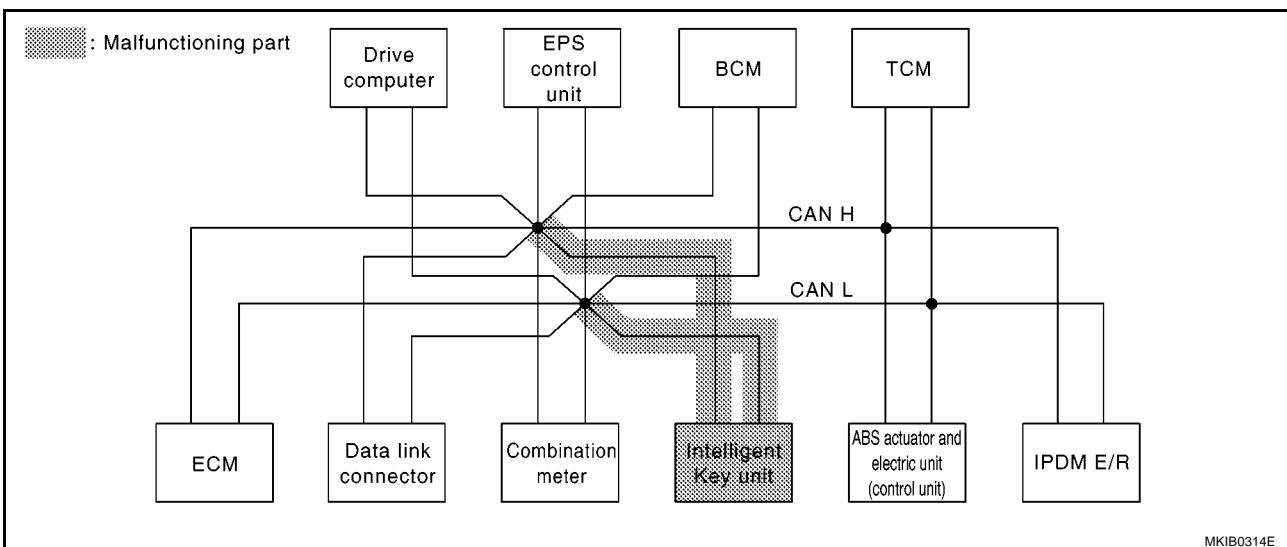
[CAN]

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	-	-	-

MKIB0781E



MKIB0314E

LAN

L

M

CAN SYSTEM (TYPE 5)

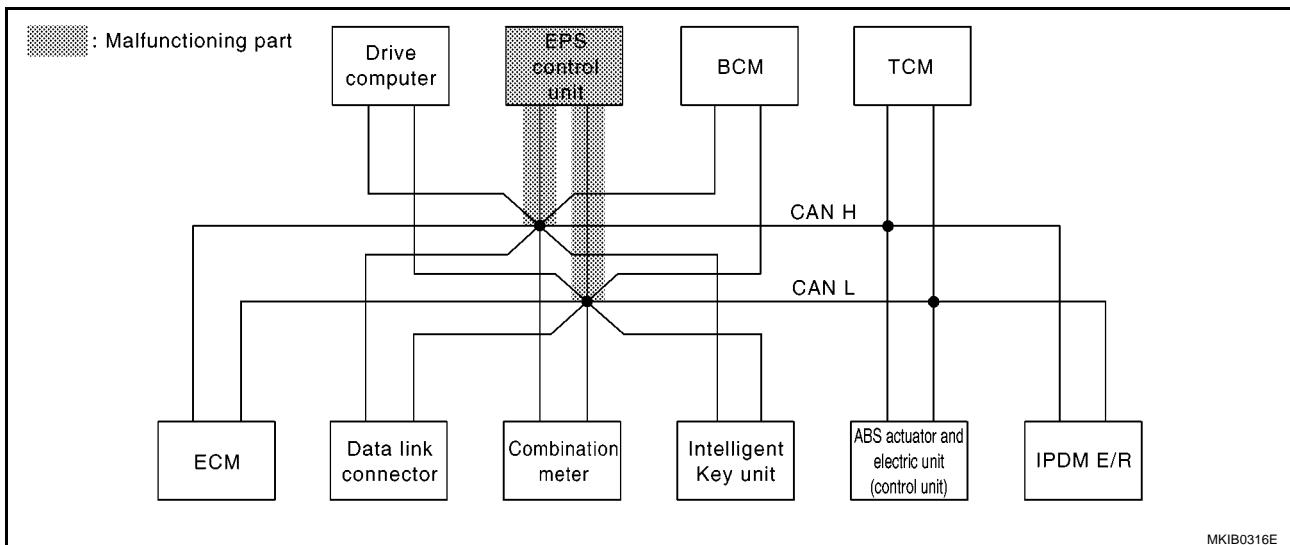
[CAN]

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	-	-	-

MKIB0782E



MKIB0316E

CAN SYSTEM (TYPE 5)

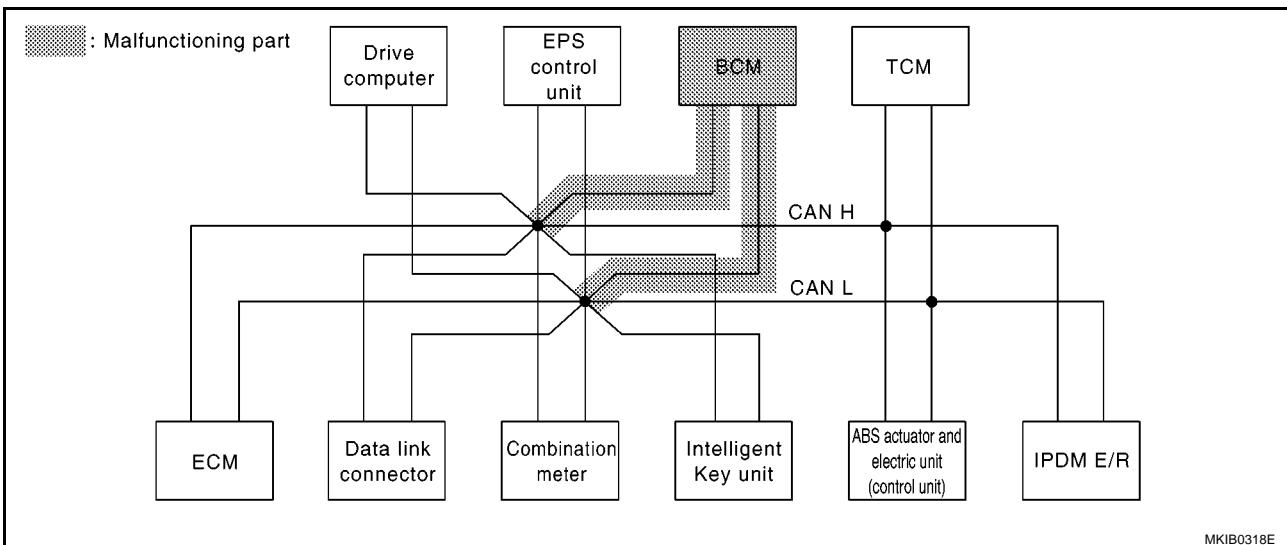
[CAN]

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	-	-	-

MKIB0783E



MKIB0318E

LAN

L

M

CAN SYSTEM (TYPE 5)

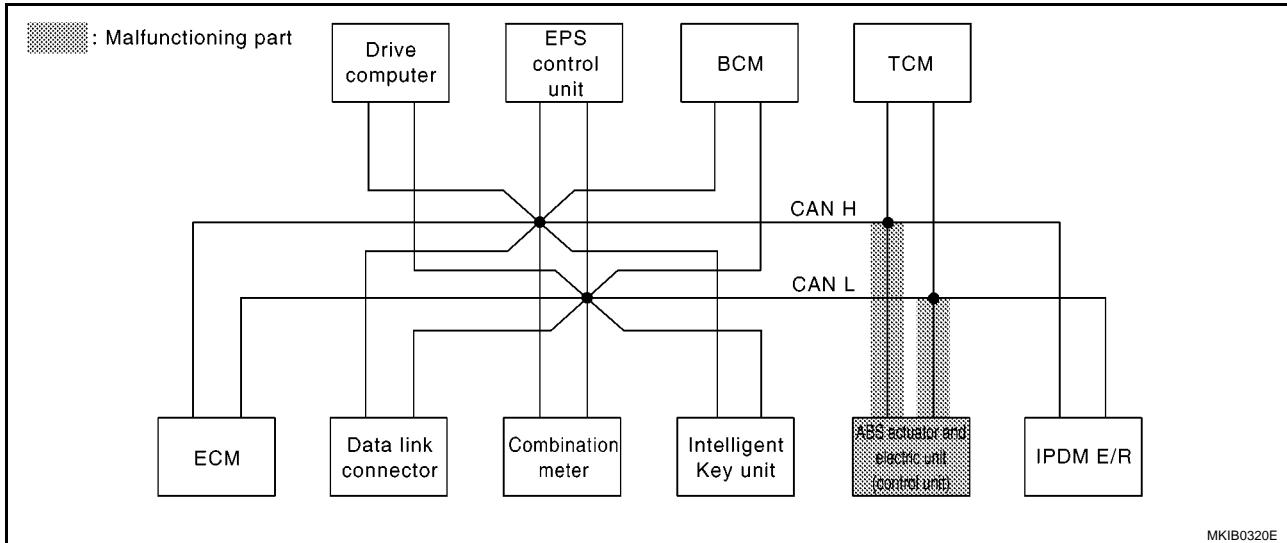
[CAN]

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	-	-	-

MKIB0784E



MKIB0320E

CAN SYSTEM (TYPE 5)

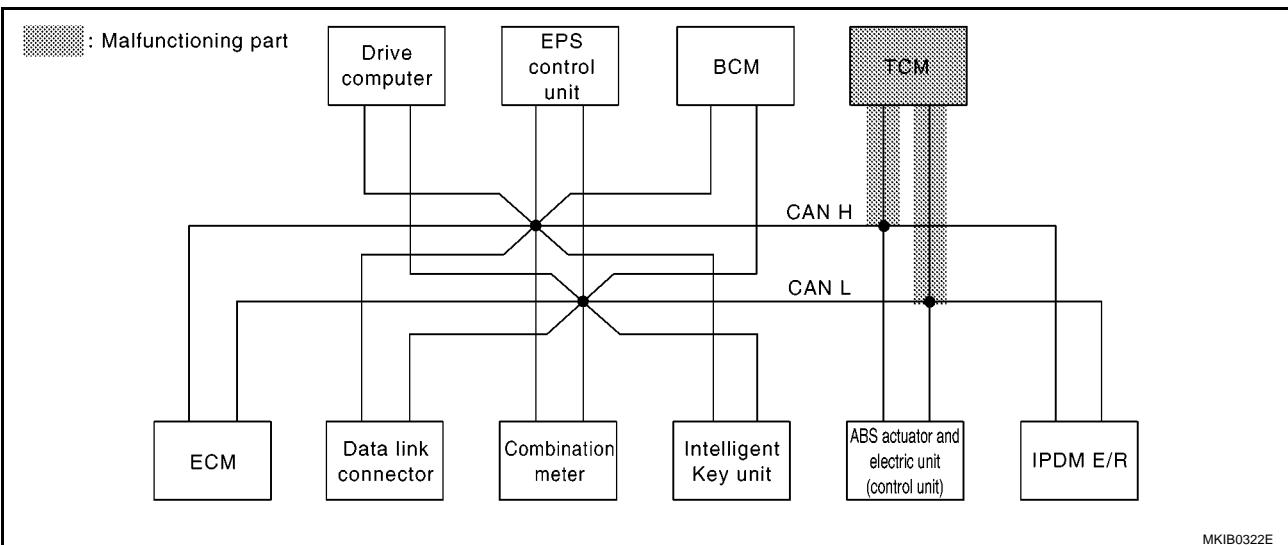
[CAN]

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	-	-	-

MKIB0785E



MKIB0322E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 5)

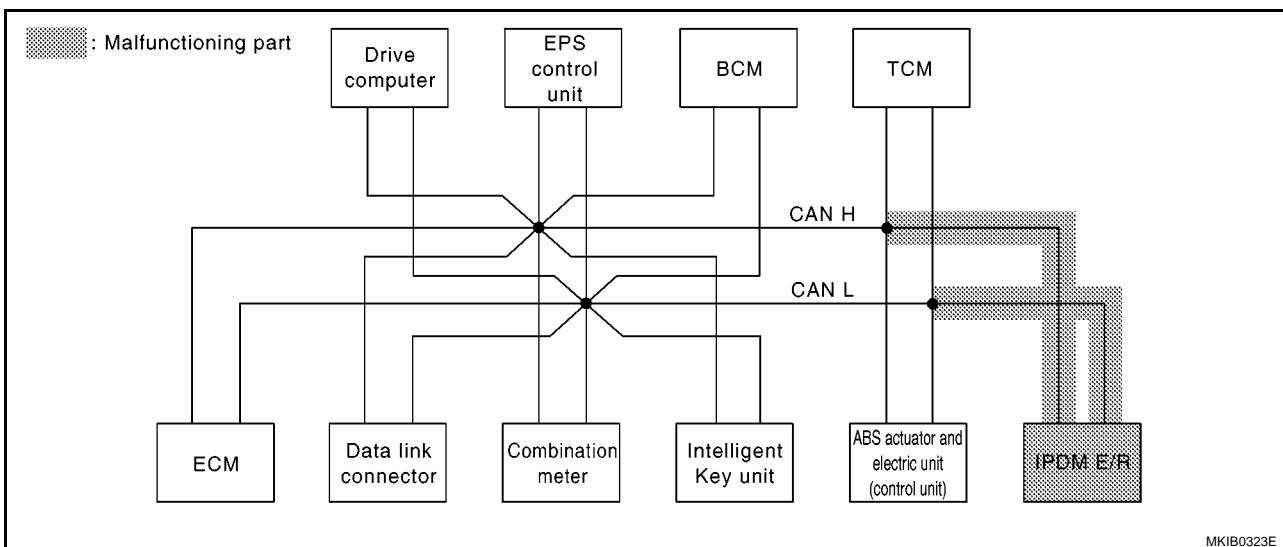
[CAN]

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	—	—	—

MKIB0786E



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	-	-	-

MKIB0789E

LAN

L

M

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

EKS00J09

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.

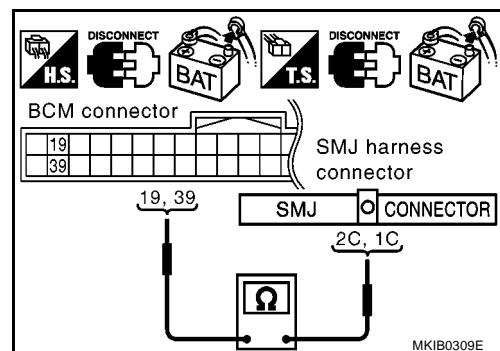
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

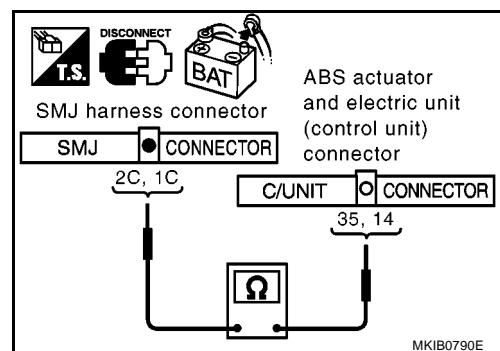
**3. CHECK HARNESS FOR OPEN CIRCUIT**

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

EKS00JOA

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.

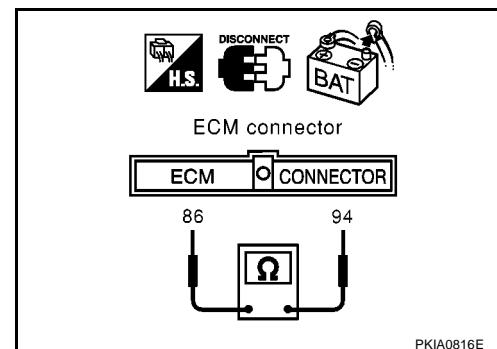
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JOB

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
 2. Disconnect the negative battery terminal.
 3. Check date 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

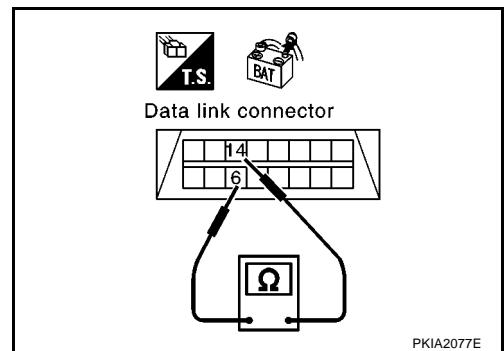
Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

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

EKS00JOC

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

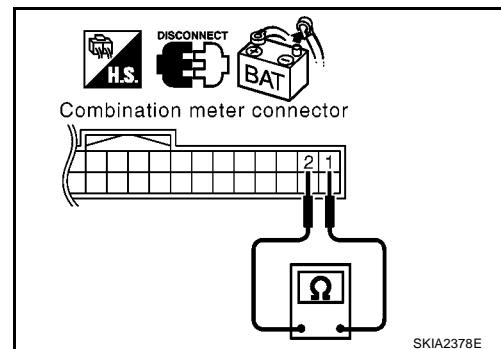
1. Disconnect combination meter connector.
 2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

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

EKS00JOD

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.

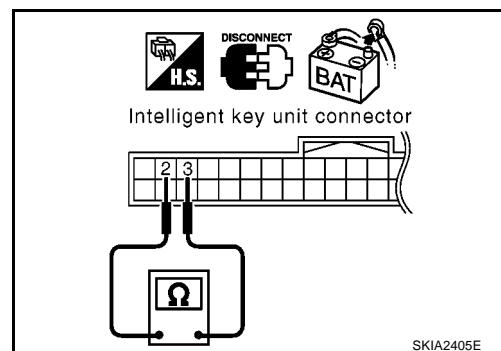
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JOE

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.

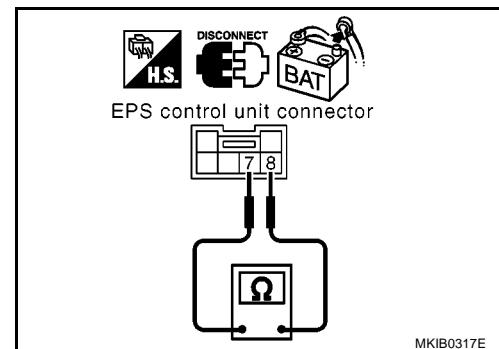
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace EPS control unit.

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



BCM Circuit Check

EKS00JOF

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.

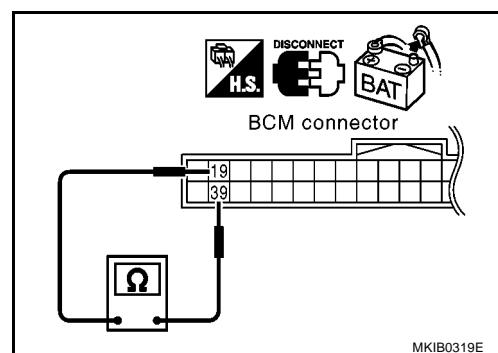
NG >> Repair terminal or connector.

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 NGOK >> 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

EKS00JOG

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.

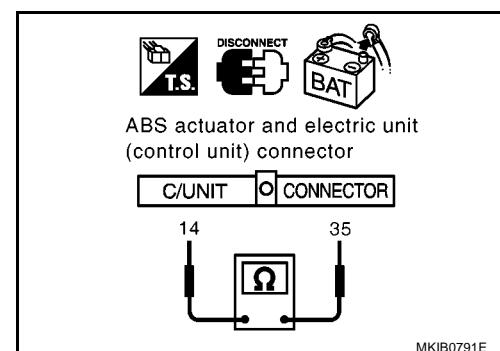
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



TCM Circuit Check

EKS00JOH

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).

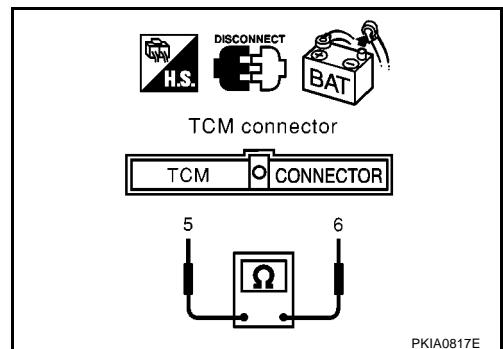
5 (R) – 6 (W)

: Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.

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



IPDM E/R Circuit Check

EKS00JOI

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.

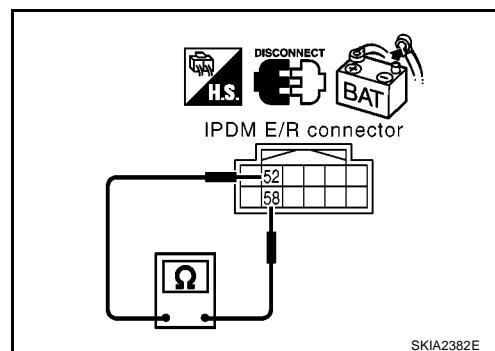
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



CAN Communication Circuit Check

EKS0000J

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.

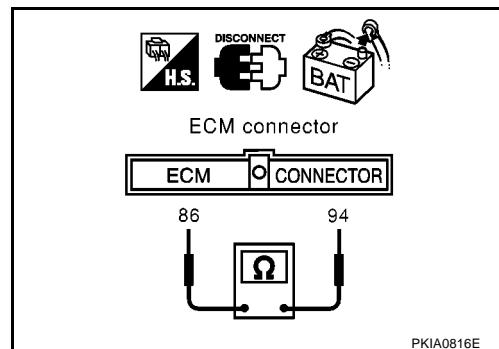
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

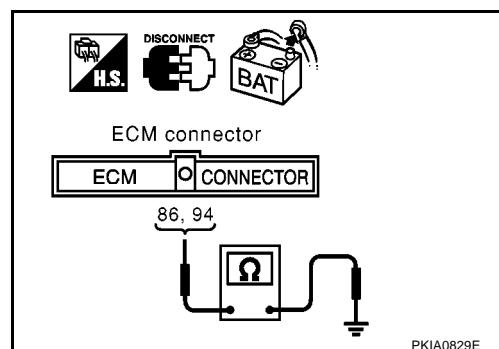
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

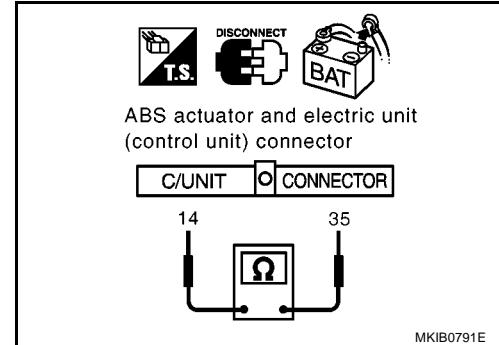
35 (R) – 14 (W) : Continuity should not exist.

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.

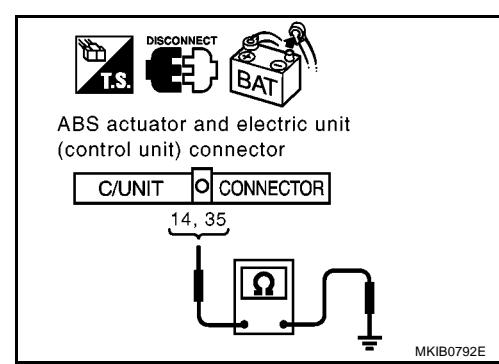
14 (W) – Ground : Continuity should not exist.

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)

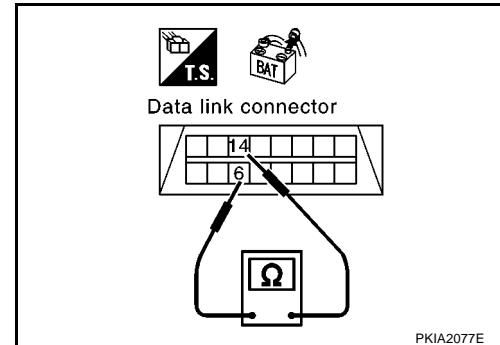
: Continuity should not exist.

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

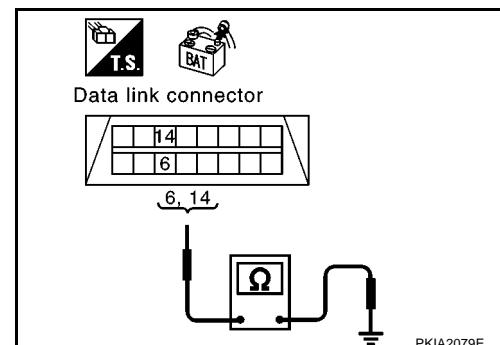
: Continuity should not exist.

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""](#).

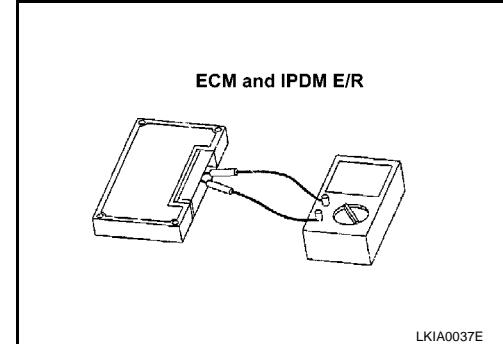
Component Inspection

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	



CAN SYSTEM (TYPE 6)

PFP:23710

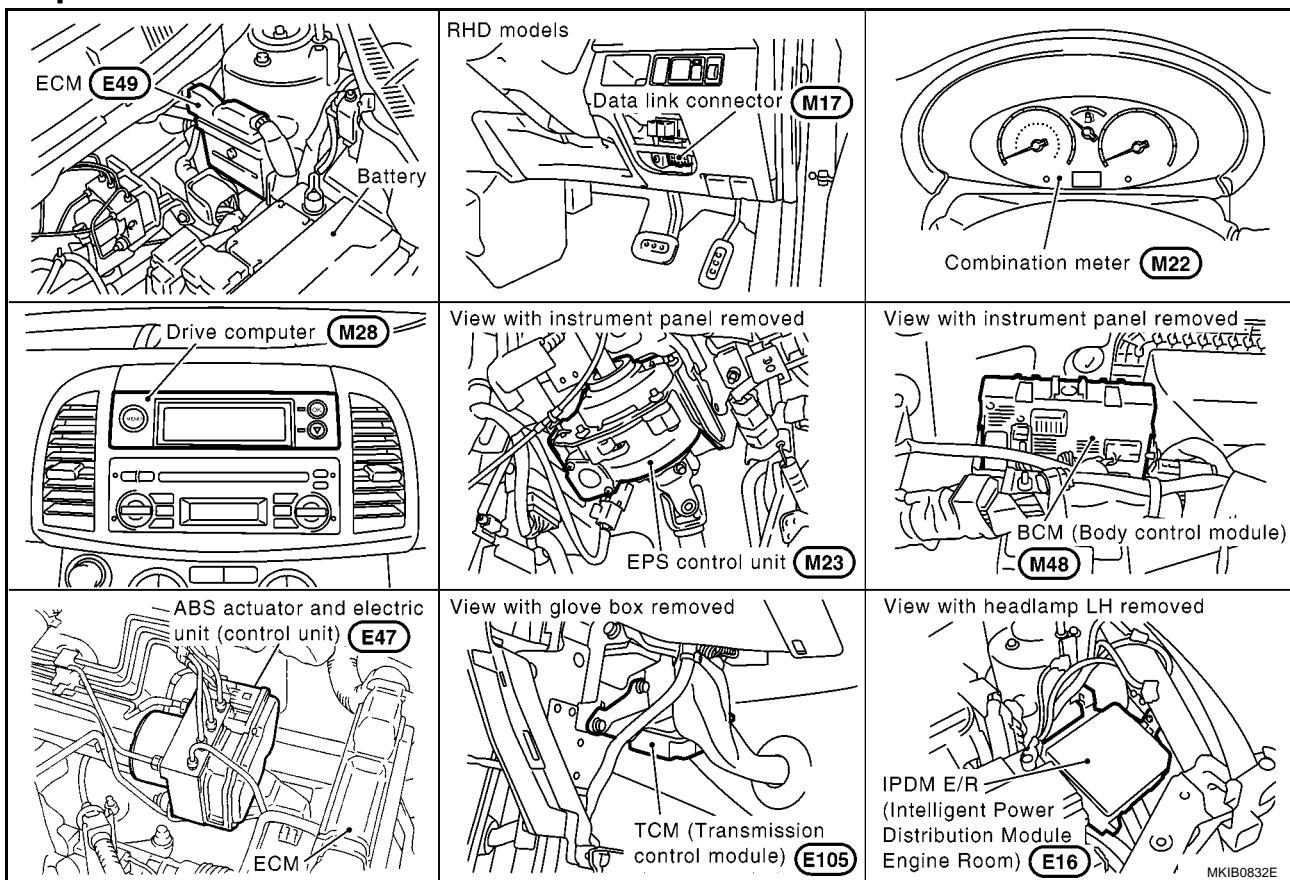
System Description

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)

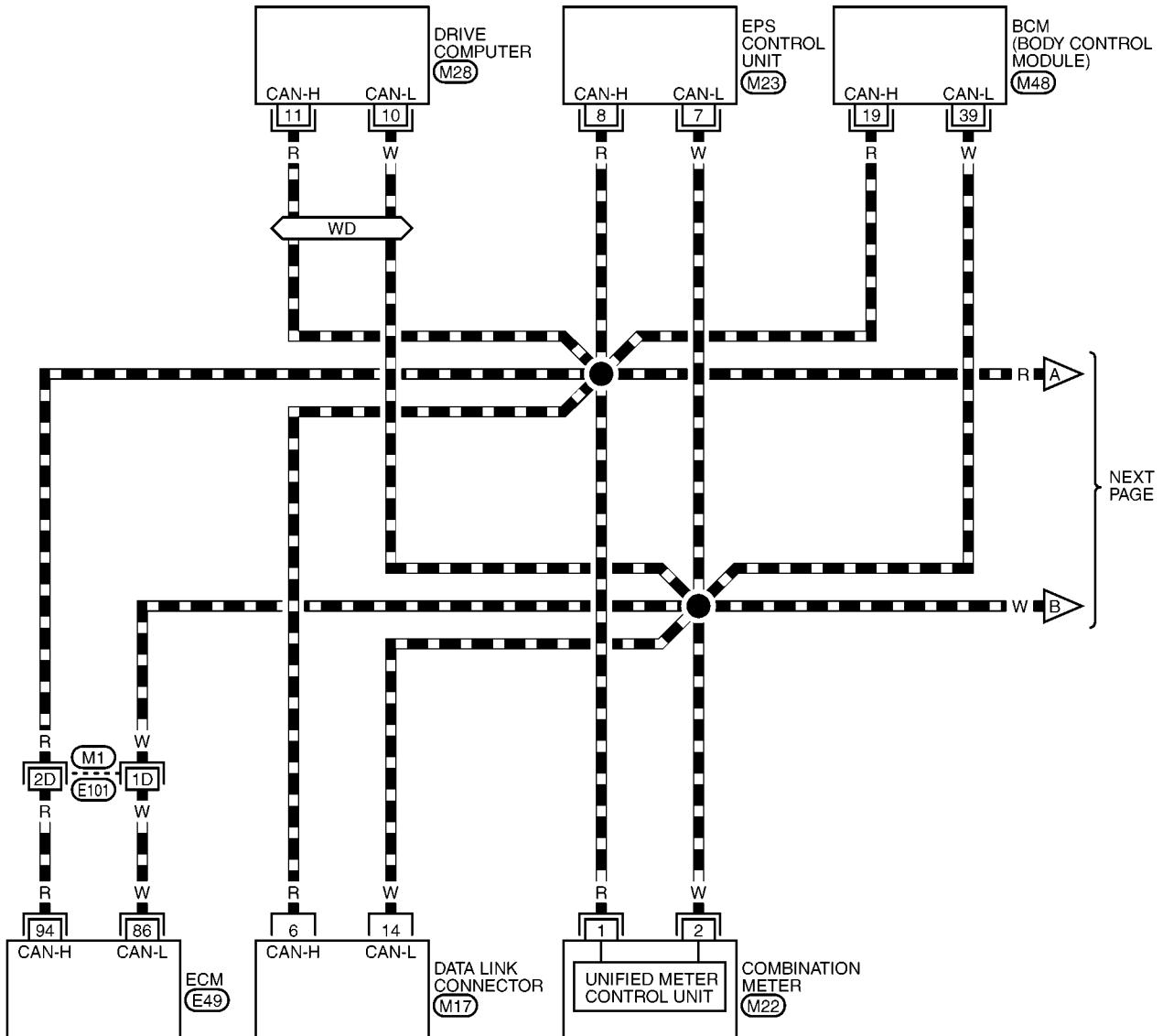
[CAN]

Wiring Diagram — CAN —

EKS00J00

LAN-CAN-11

— : DATA LINE
WD : WITH DRIVE COMPUTER

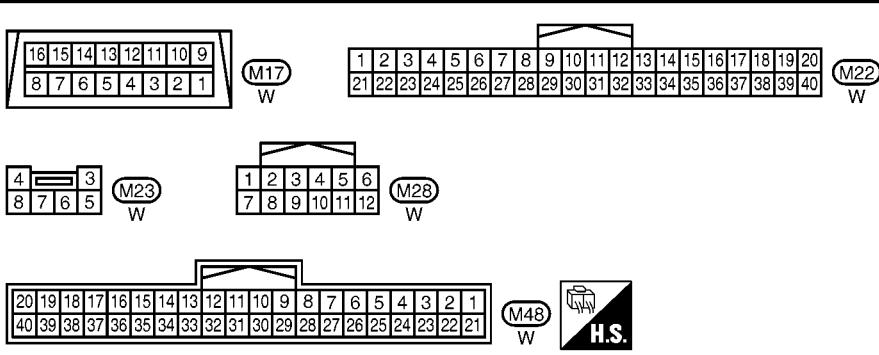


A
B
C
D
E
F
G
H
I
J

LAN
L
M

REFER TO THE FOLLOWING.

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



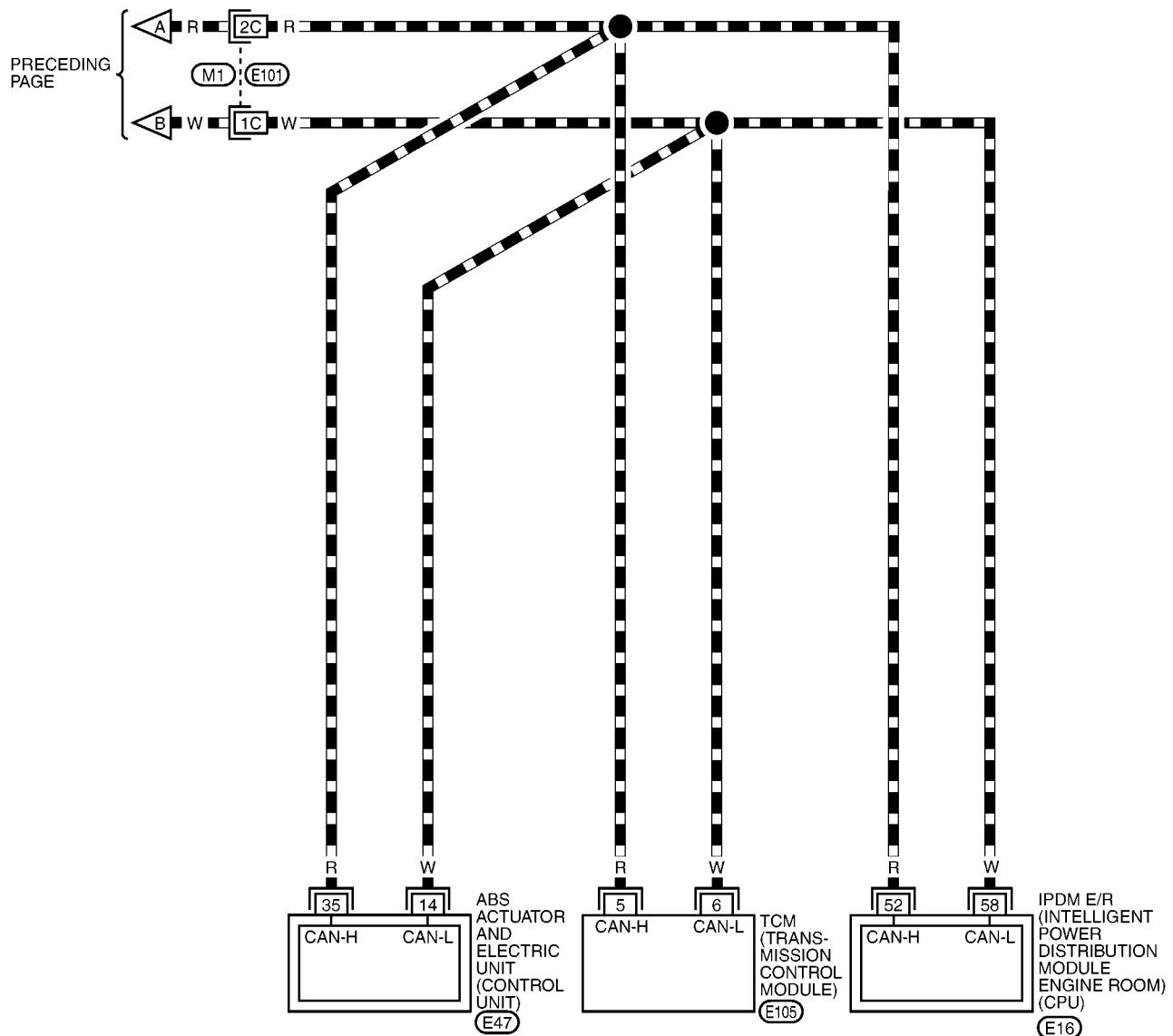
MKWA2711E

CAN SYSTEM (TYPE 6)

[CAN]

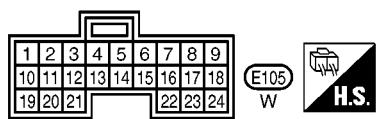
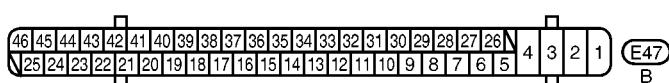
LAN-CAN-12

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE
JUNCTION (SMJ)

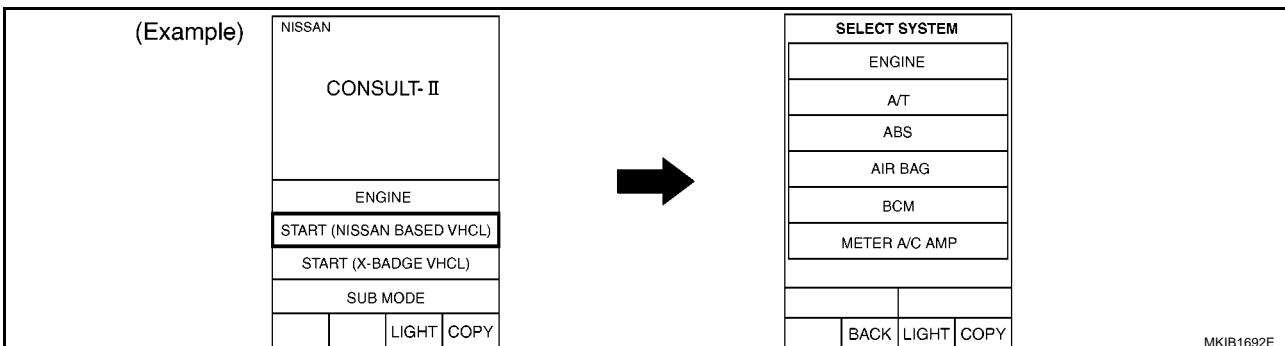


MKWA2712E

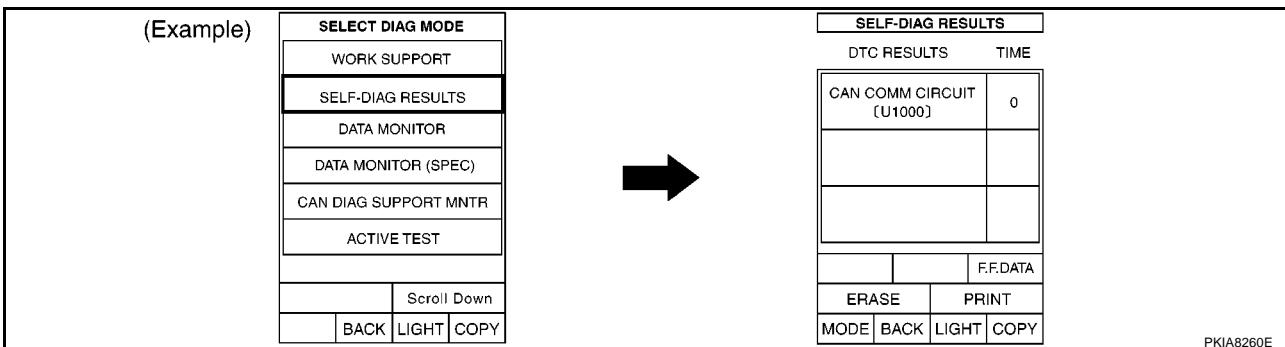
Work Flow

EKS00JOP

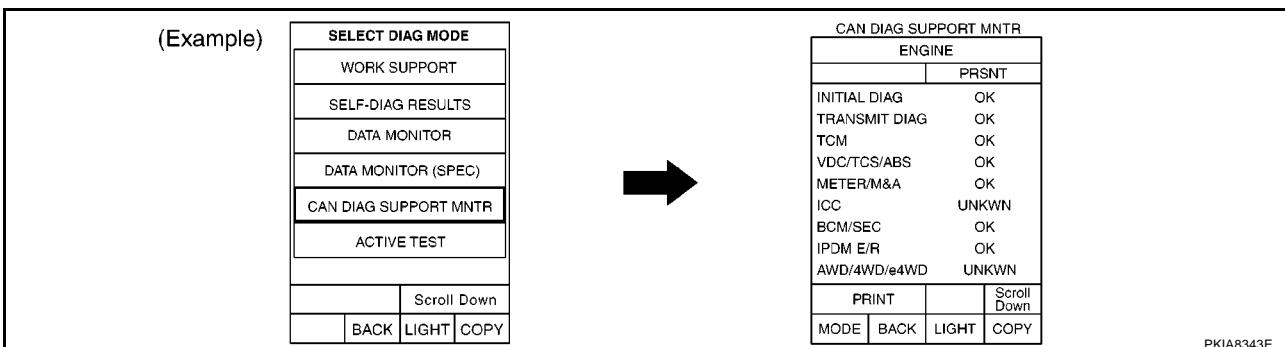
- When there are no indications of "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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 "UNKWN" 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.

A
 B
 C
 D
 E
 F
 G
 H
 I
 J
 LAN
 L
 M

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	-	-	-



Convert

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
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	-	-

MKIB1687E

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
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:

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

LAN

L

M

MKIB1606E

CAN SYSTEM (TYPE 6)

[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

CAN SYSTEM (TYPE 6)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

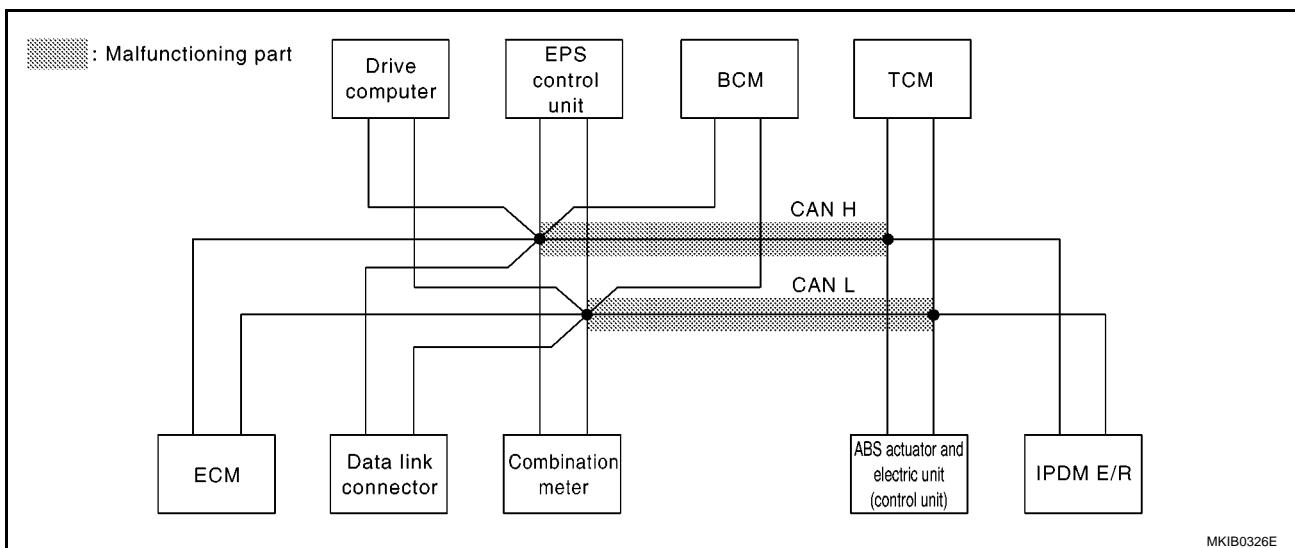
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-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	-	-	-

MKIB0794E



MKIB0326E

CAN SYSTEM (TYPE 6)

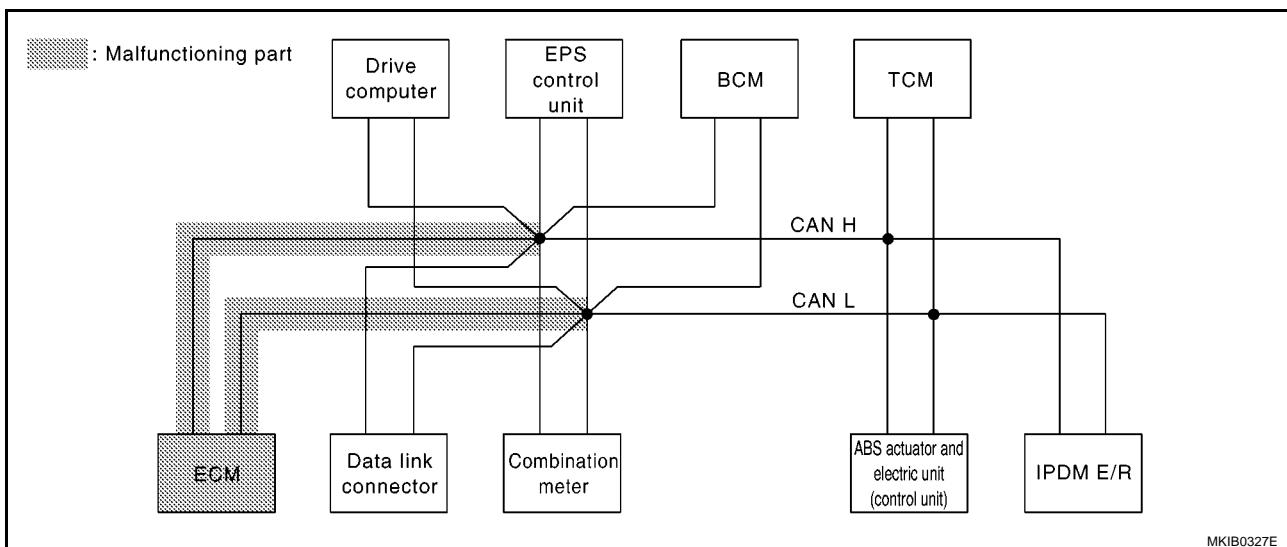
[CAN]

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)

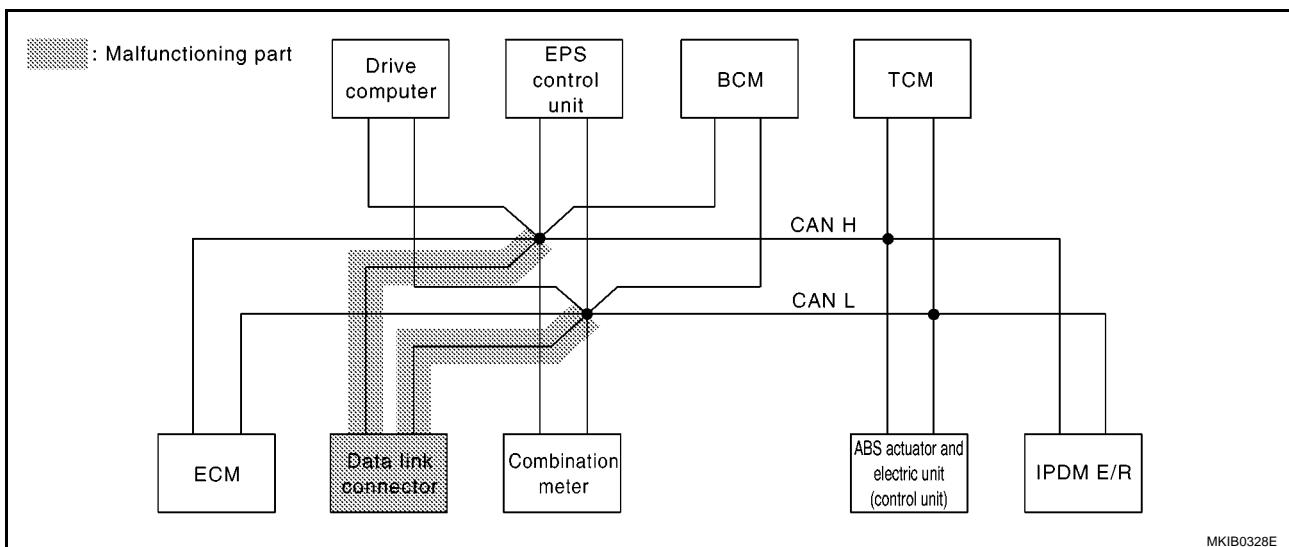
[CAN]

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



MKIB0328E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 6)

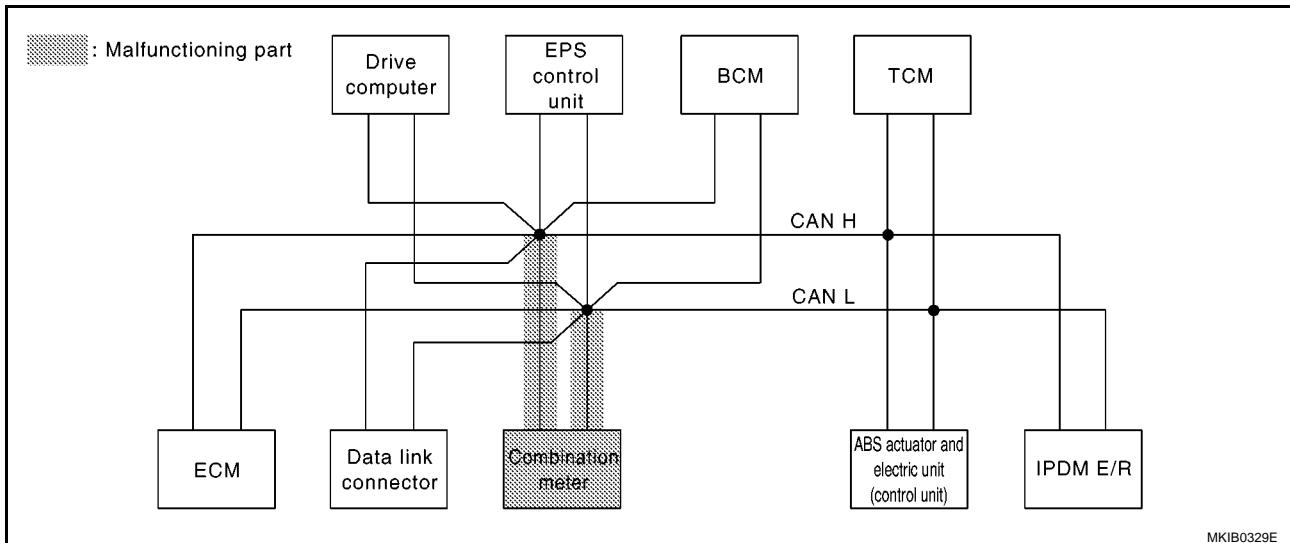
[CAN]

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	–	–	–	

MKIB0797E



MKIB0329E

CAN SYSTEM (TYPE 6)

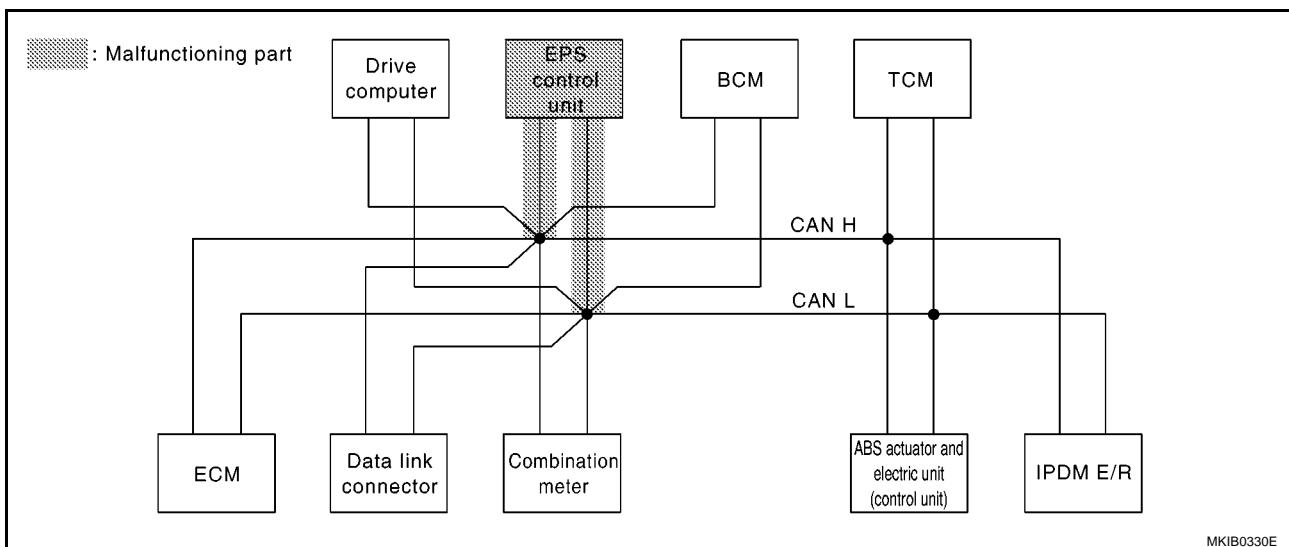
[CAN]

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	-	-	-	

MKIB0798E



MKIB0330E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 6)

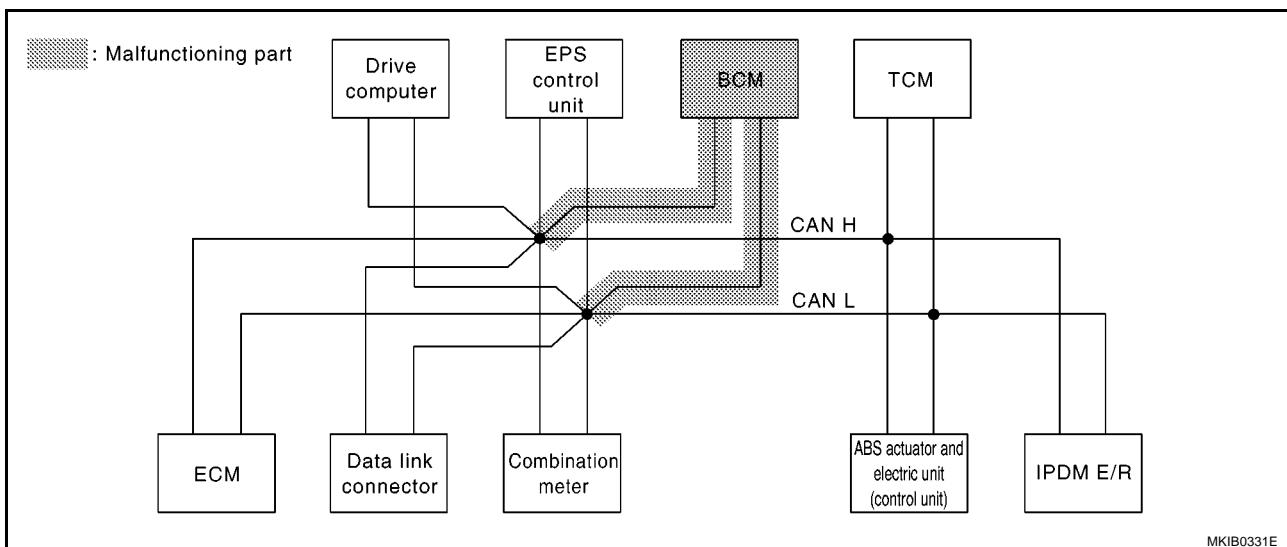
[CAN]

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	–	–	–	

MKIB0799E



MKIB0331E

CAN SYSTEM (TYPE 6)

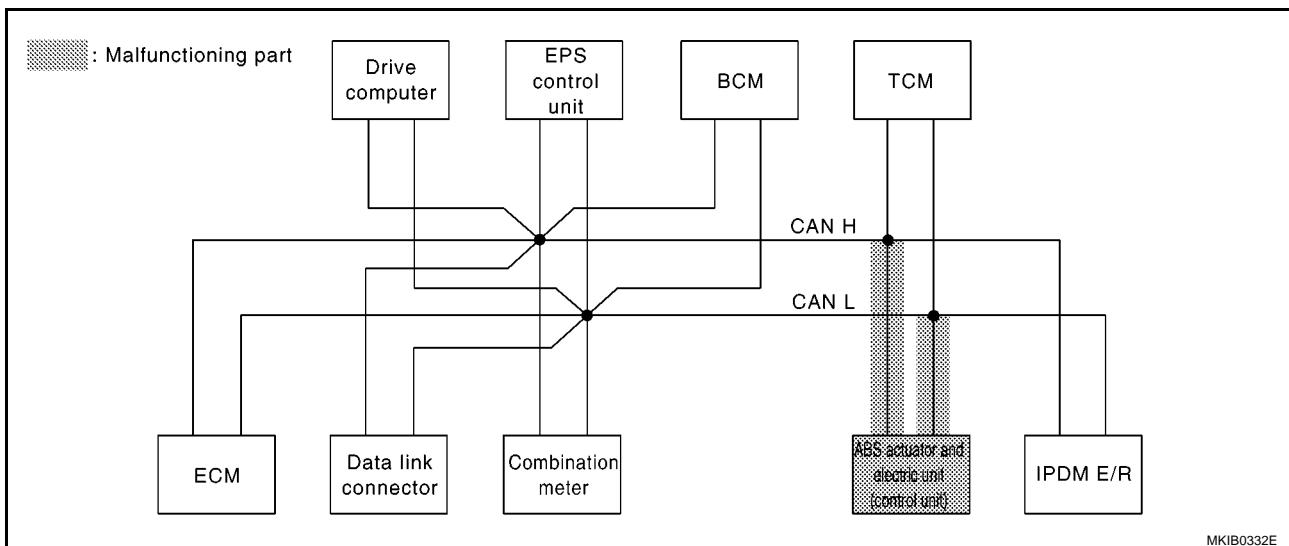
[CAN]

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



MKIB0332E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 6)

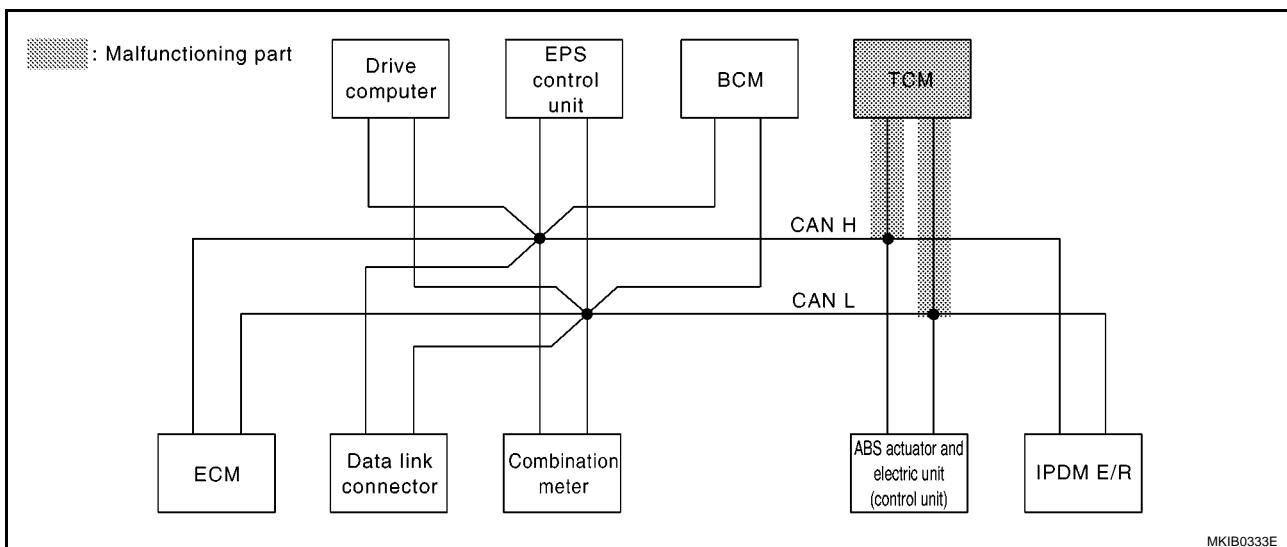
[CAN]

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	–	–	–	

MKIB0801E



MKIB0333E

CAN SYSTEM (TYPE 6)

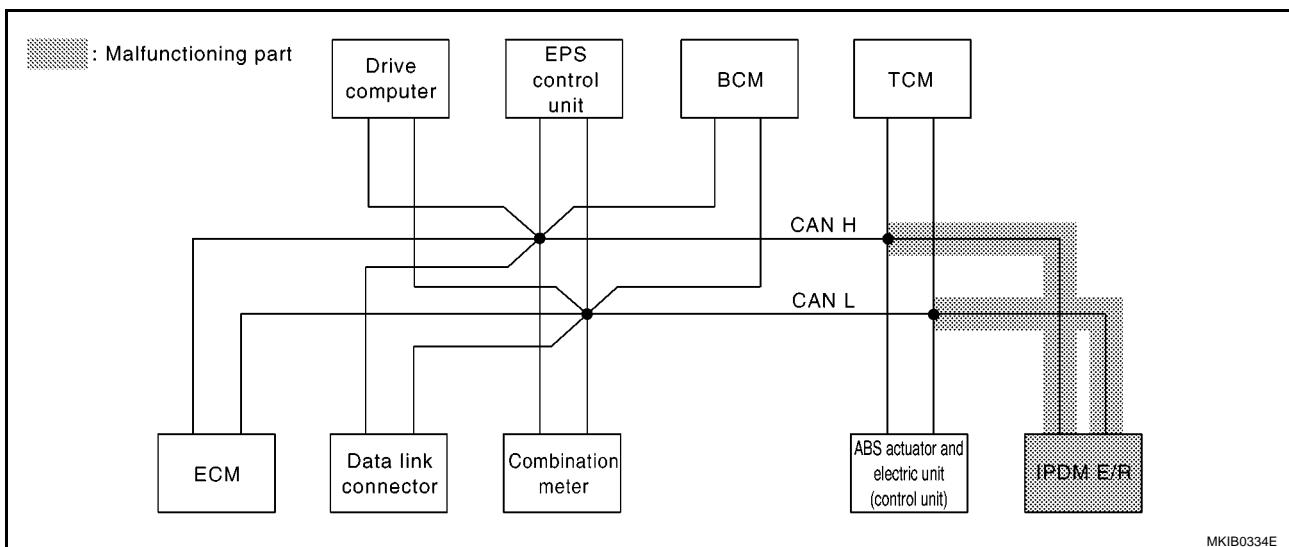
[CAN]

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	—	—	—	

MKIB0802E



MKIB0334E

LAN

L

M

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)

EKS00JOQ

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.

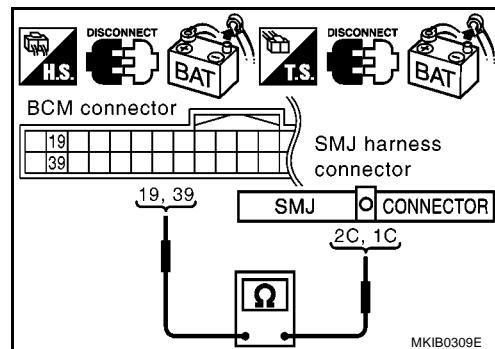
39 (W) -1C (W)

: 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.

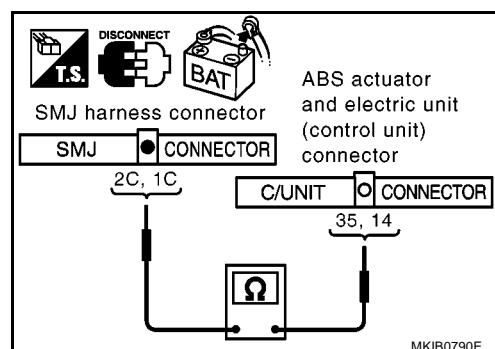
1G (W) = 14 (W)

: 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

EKS00JOR

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.

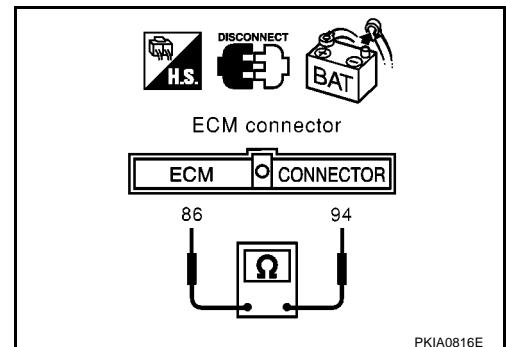
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JOS

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).

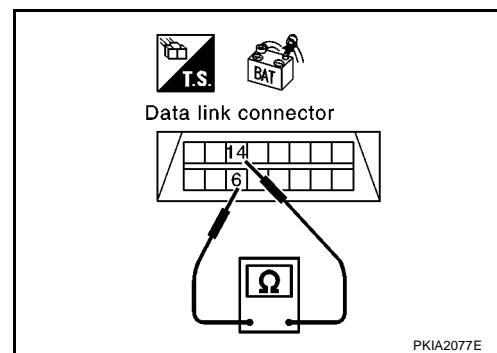
6 (R) – 14 (W)

: 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



Combination Meter Circuit Check

EKSOOJOT

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).

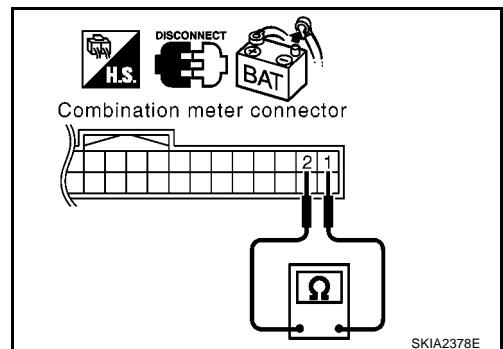
1 (R) – 2 (W)

: 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

EKS00JOU

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.

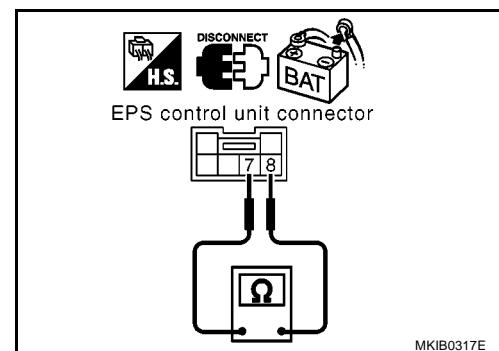
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace EPS control unit.

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



BCM Circuit Check

EKS00JOV

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.

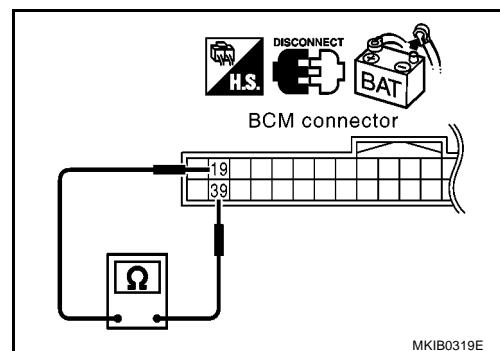
NG >> Repair terminal or connector.

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 NGOK >> 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

EKS00JOW

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.

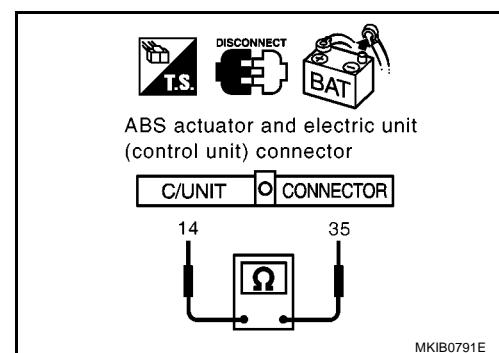
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



TCM Circuit Check

EKS00JOX

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).

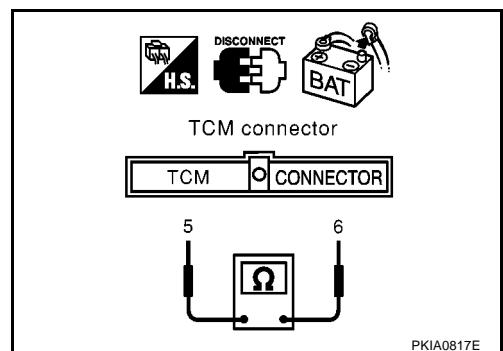
5 (R) – 6 (W)

: Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.

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



IPDM E/R Circuit Check

EKS00JOY

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.

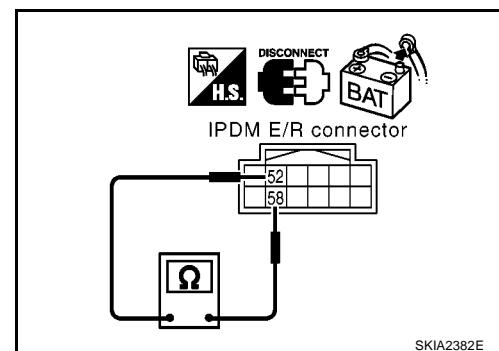
2. CHECK HARNESS FOR OPEN CIRCUIT

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.



CAN Communication Circuit Check

EKS00J0Z

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.

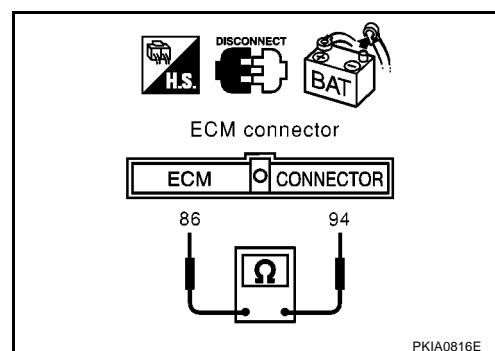
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

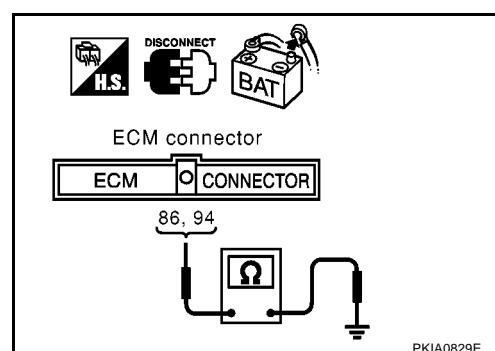
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

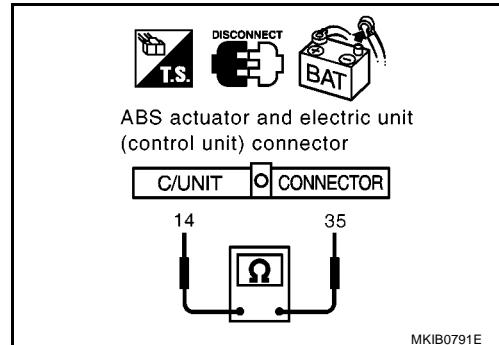
35 (R) – 14 (W) : Continuity should not exist.

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.

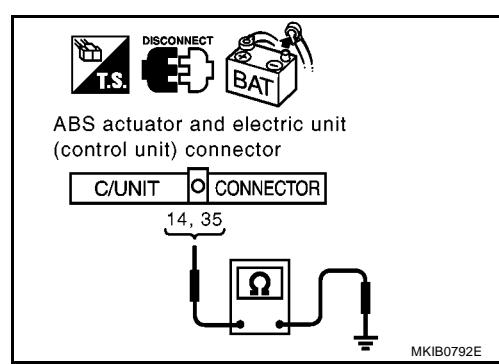
14 (W) – Ground : Continuity should not exist.

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).

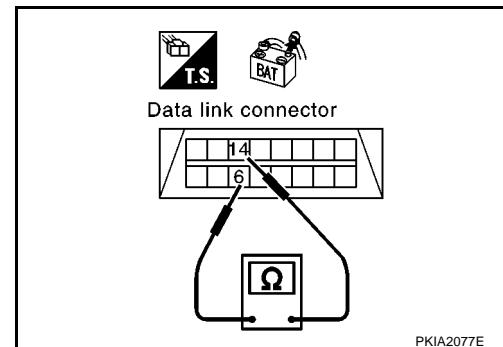
6 (R) – 14 (W) : Continuity should not exist.

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.



PKIA2077E

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.

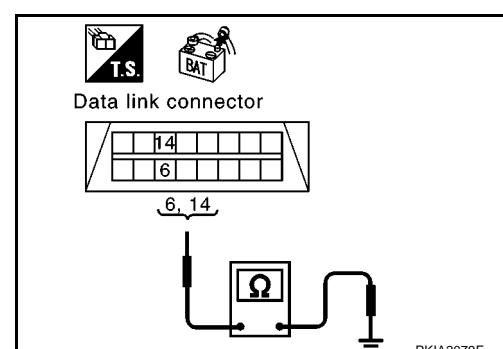
14 (W) – ground : Continuity should not exist.

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.



PKIA2079E

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""](#).

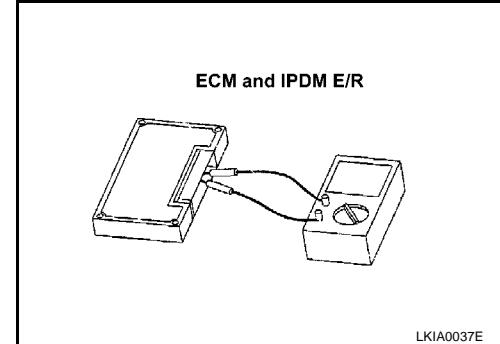
Component Inspection

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	



CAN SYSTEM (TYPE 7)

PFP:23710

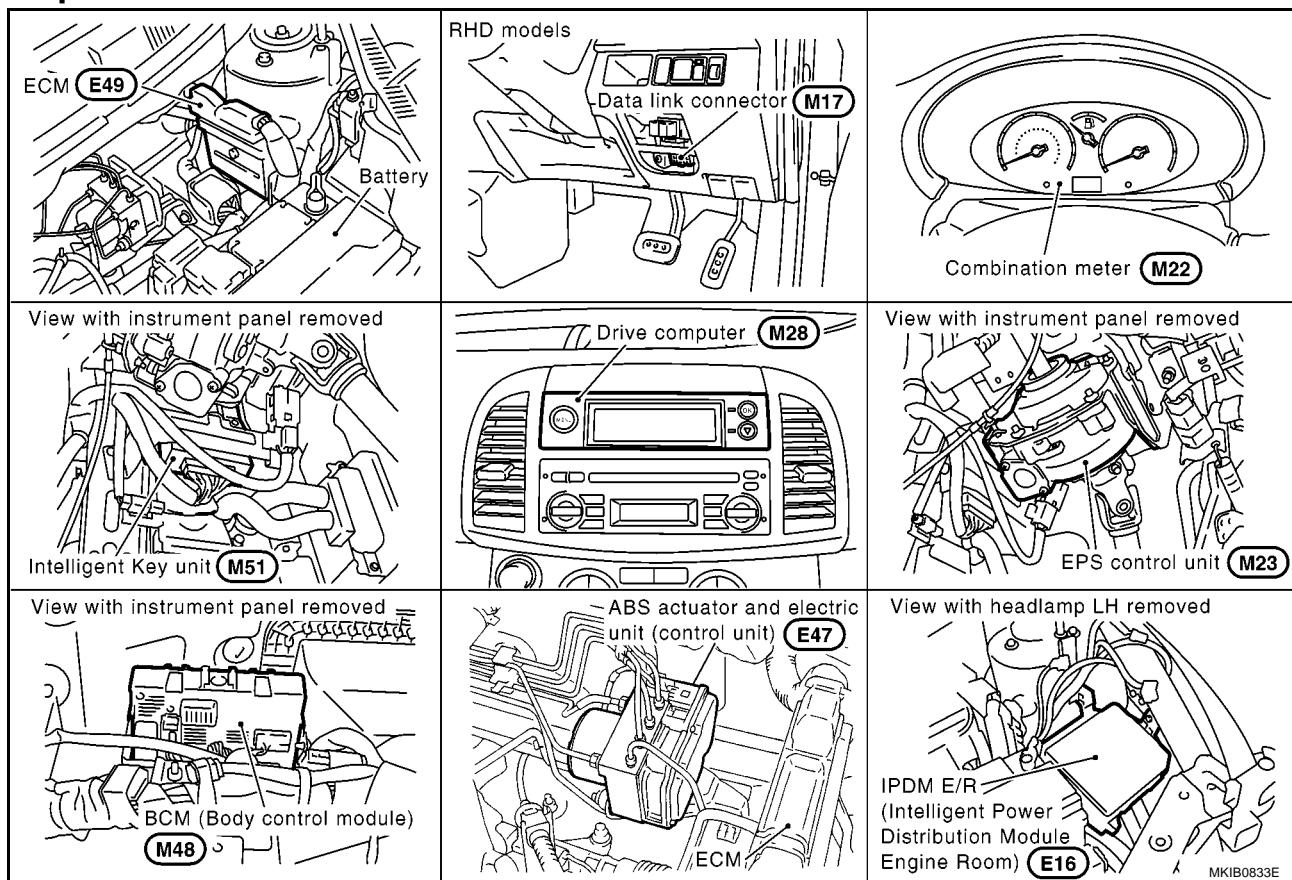
System Description

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



MKIB0833E

CAN SYSTEM (TYPE 7)

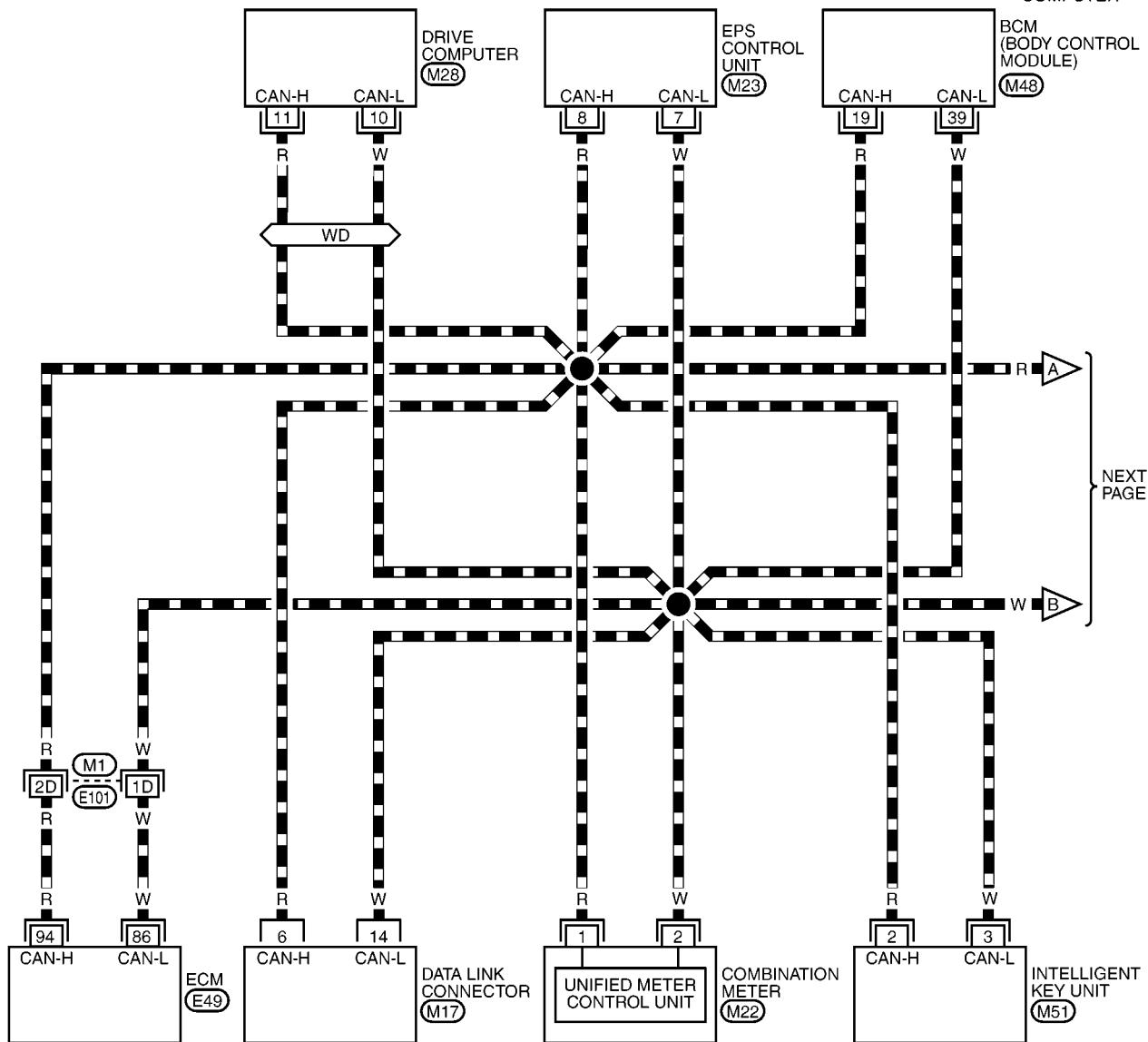
[CAN]

Wiring Diagram — CAN —

EKS00JP4

LAN-CAN-13

— : DATA LINE
WD : WITH DRIVE COMPUTER

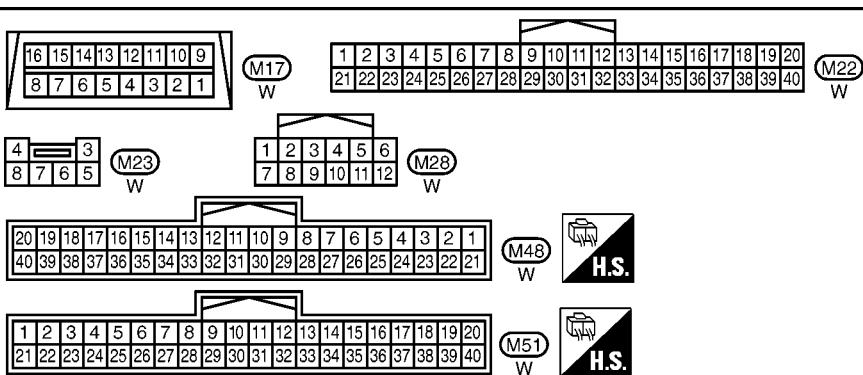


A
B
C
D
E
F
G
H
I
J

LAN
L
M

REFER TO THE FOLLOWING.

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



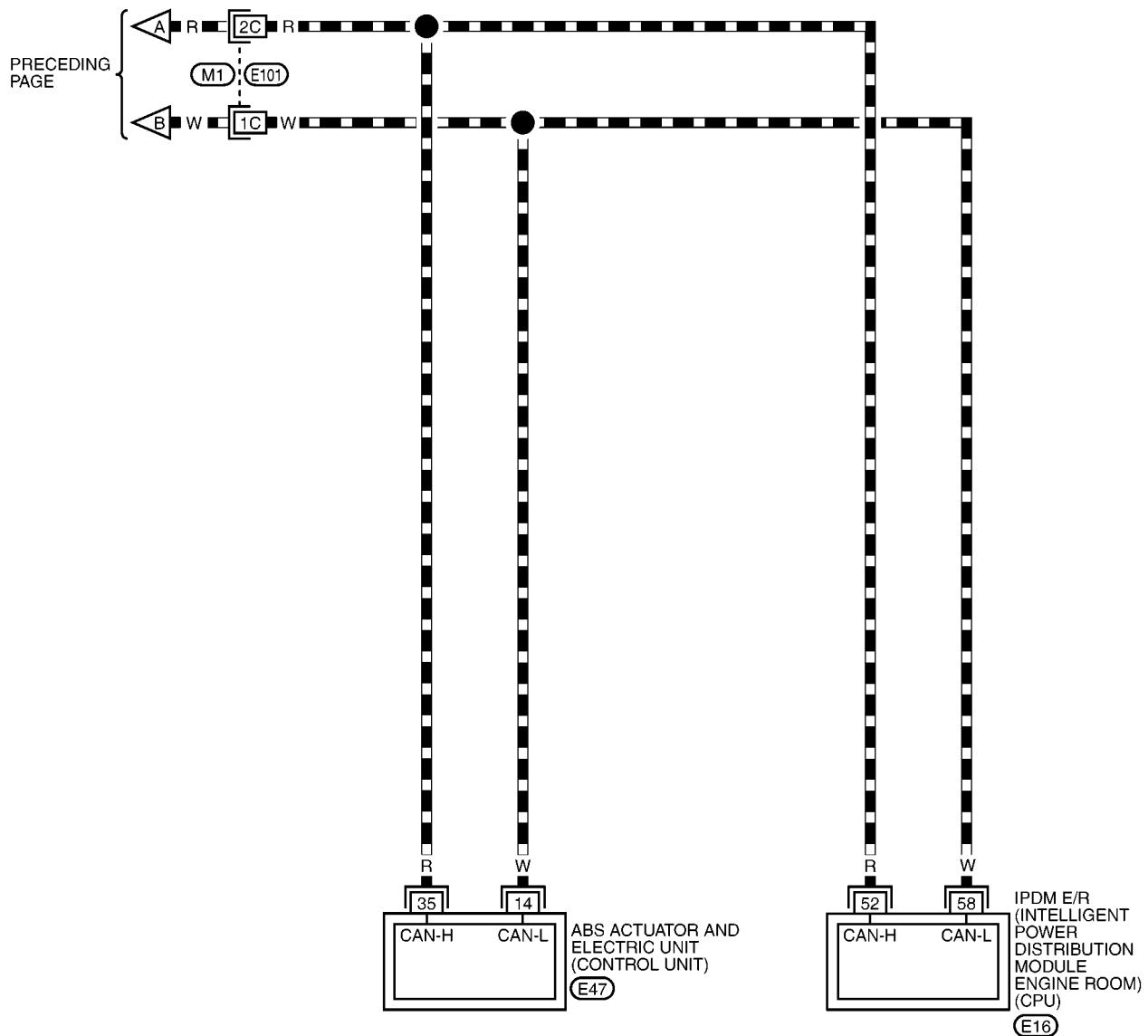
MKWA2713E

CAN SYSTEM (TYPE 7)

[CAN]

LAN-CAN-14

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA2714E

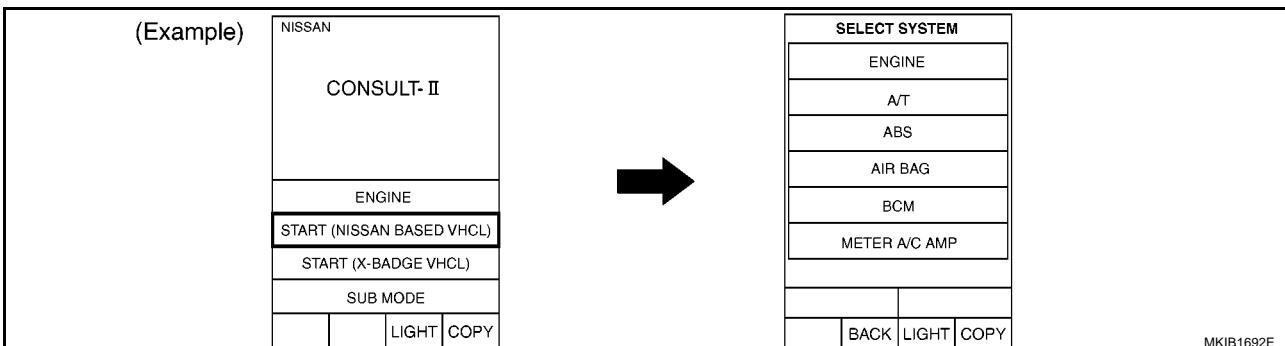
CAN SYSTEM (TYPE 7)

[CAN]

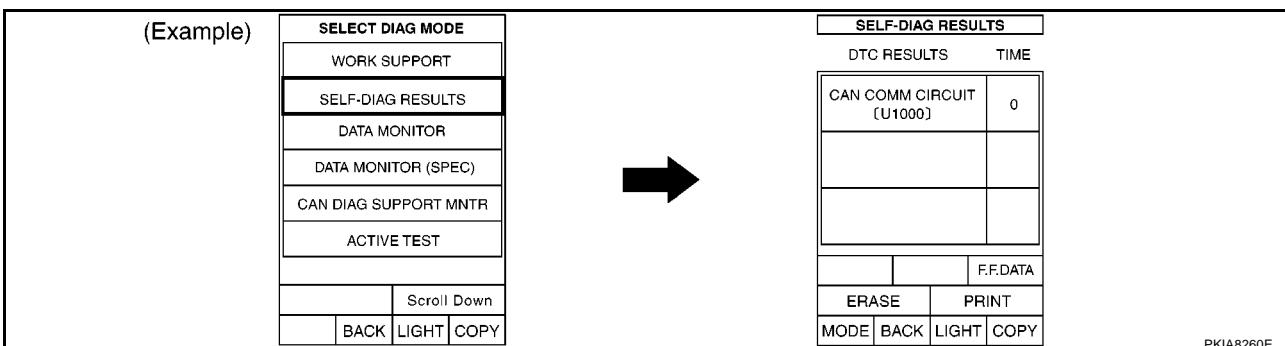
Work Flow

EKS00JPS

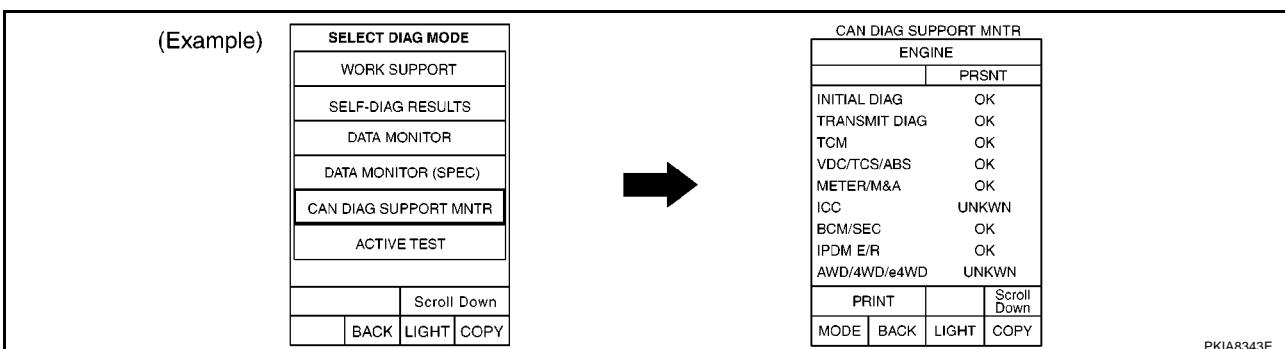
- When there are no indications of "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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 "UNKWN" 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.

A
B
C
D
E
F
G
H
I
J
LAN
L
M

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	-	-



Convert

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
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	-	-

MKIB1688E

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
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

Attach copy of
SELECT SYSTEM

LAN

L

M

MKIB1607E

CAN SYSTEM (TYPE 7)

[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
ENGINE
DATA MONITOR

Attach copy of
INTELLIGENT KEY
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
IPDM
DATA MONITOR

MKIB0296E

CAN SYSTEM (TYPE 7)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

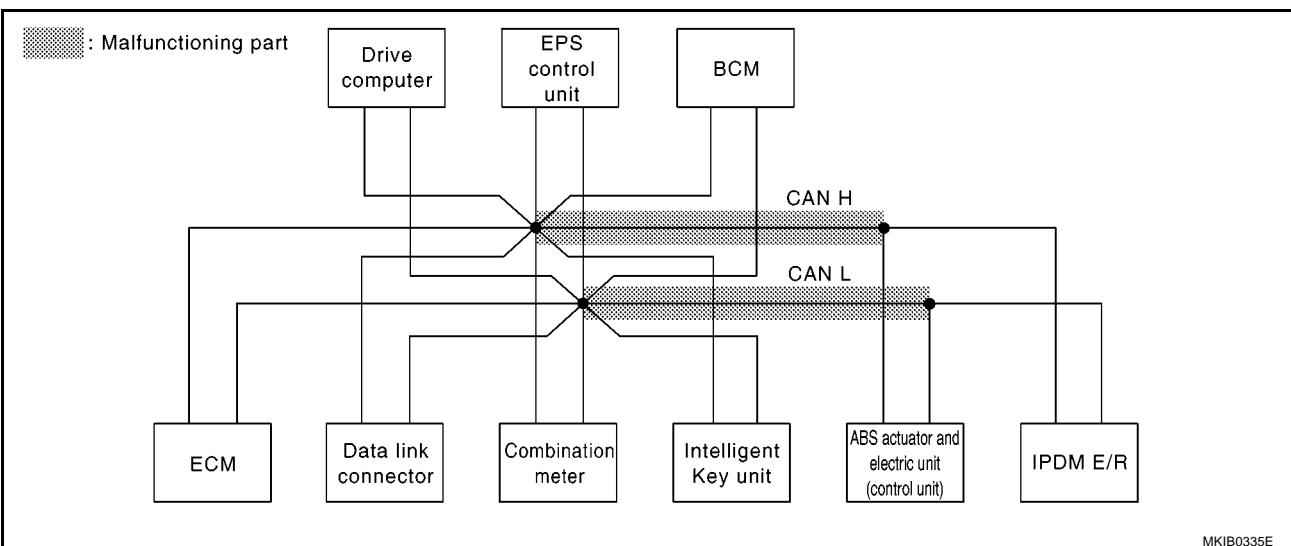
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-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	-	-

MKIB0807E



MKIB0335E

CAN SYSTEM (TYPE 7)

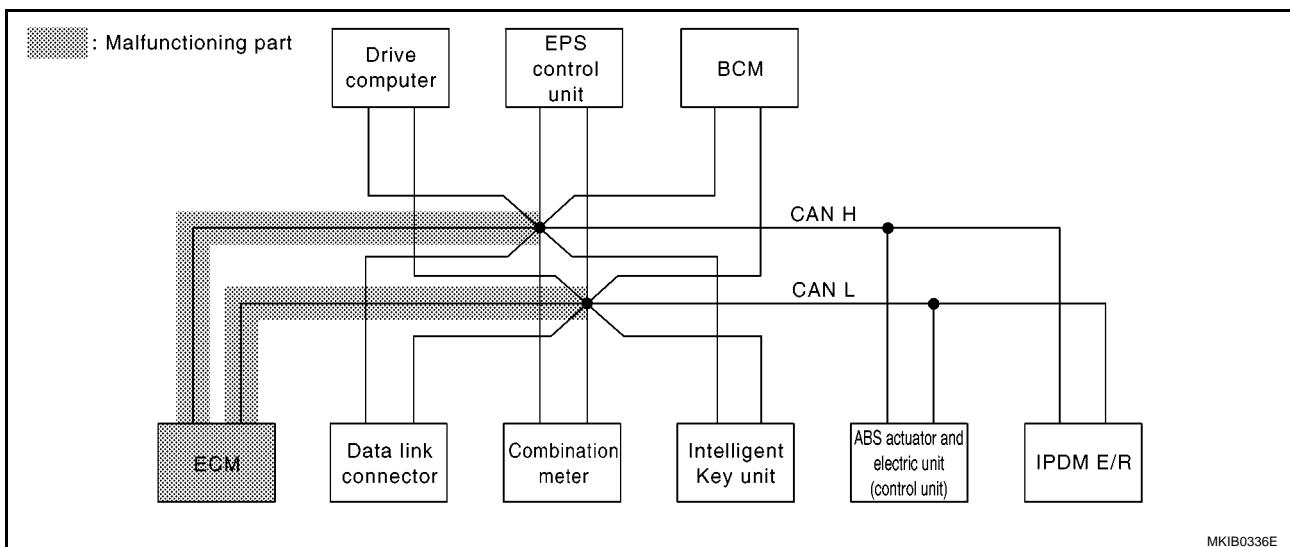
[CAN]

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	–	–

MKIB0808E



MKIB0336E

CAN SYSTEM (TYPE 7)

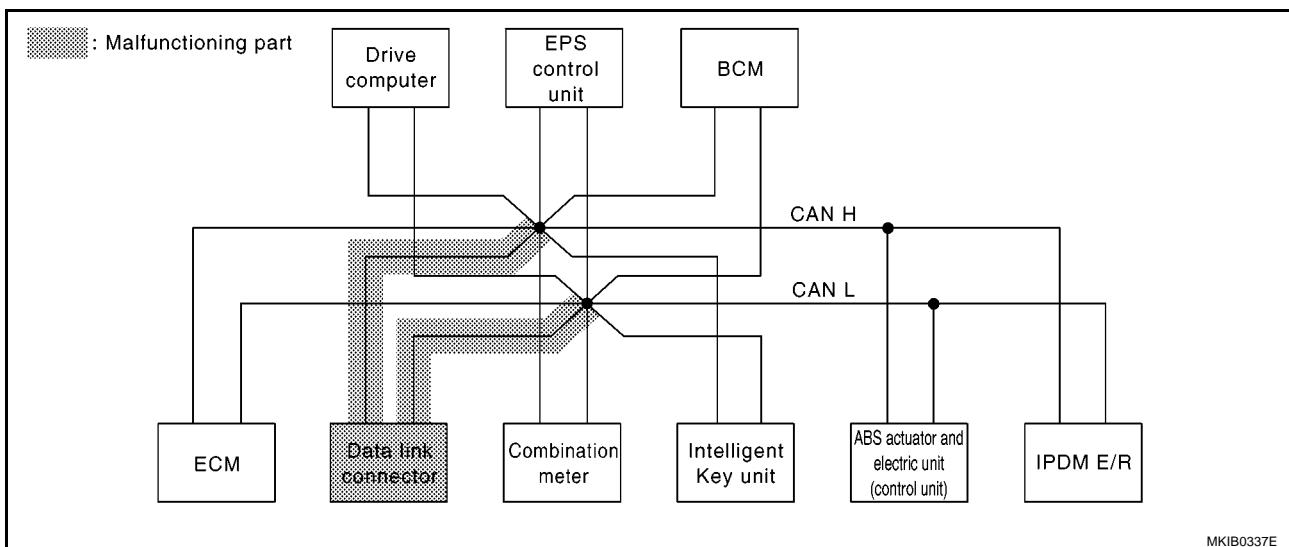
[CAN]

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	—	—

MKIB0809E



MKIB0337E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 7)

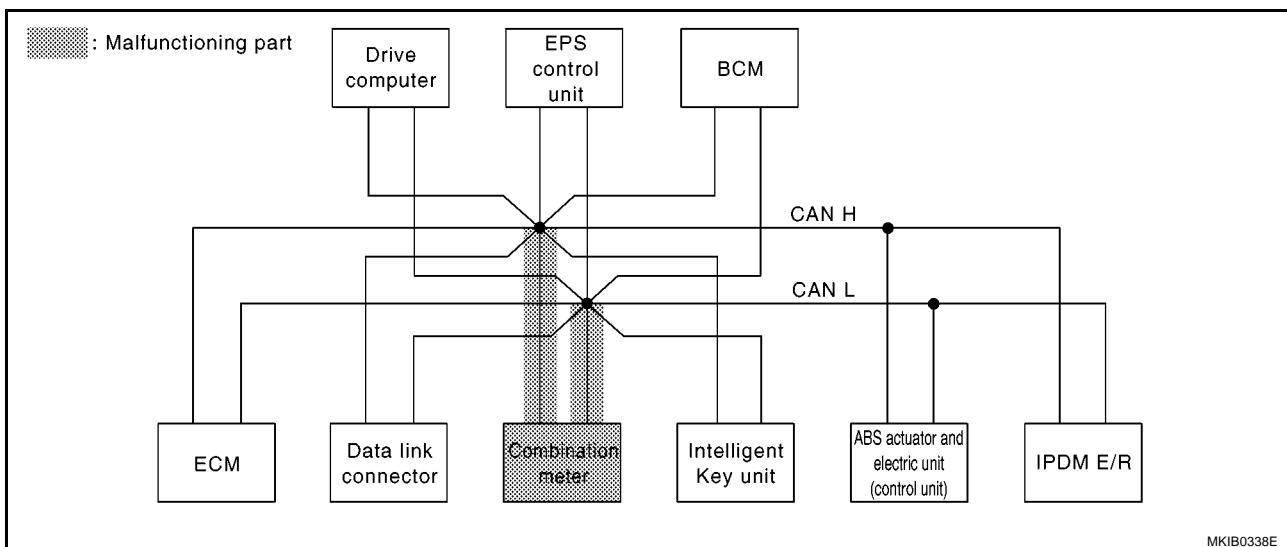
[CAN]

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	–	–

MKIB0810E



MKIB0338E

CAN SYSTEM (TYPE 7)

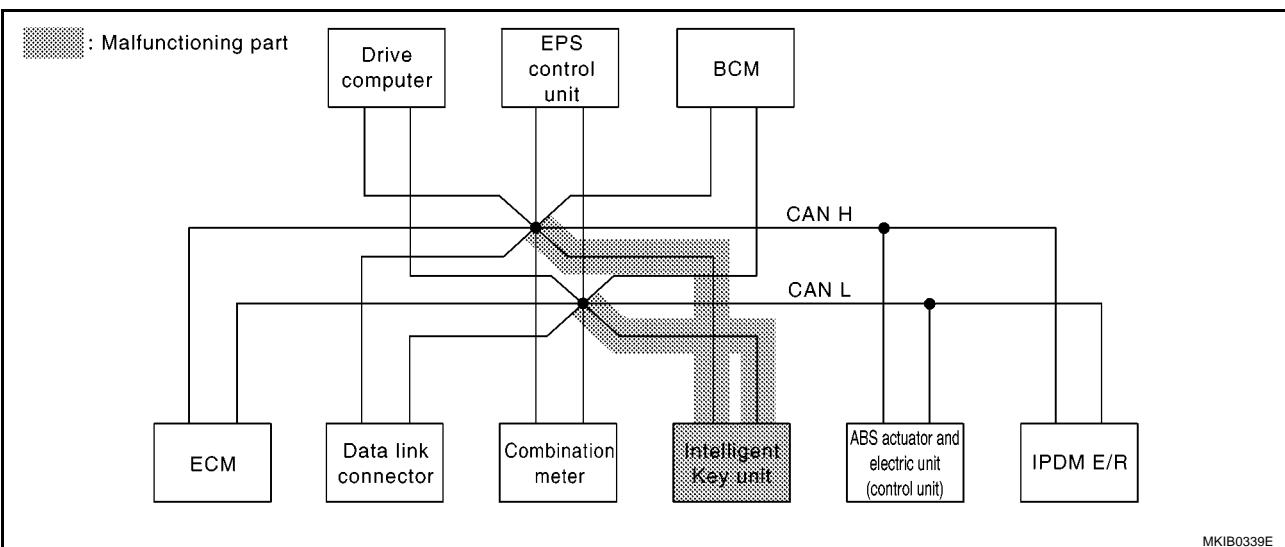
[CAN]

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	—	—

MKIB0811E



MKIB0339E

LAN

L

M

CAN SYSTEM (TYPE 7)

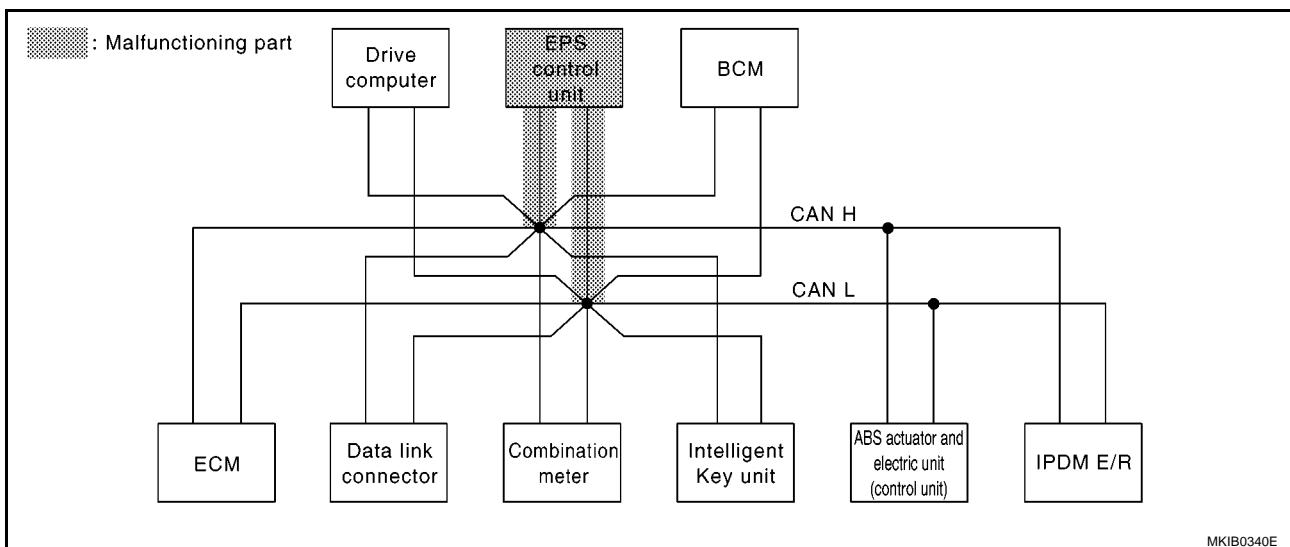
[CAN]

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	–	–

MKIB0812E



MKIB0340E

CAN SYSTEM (TYPE 7)

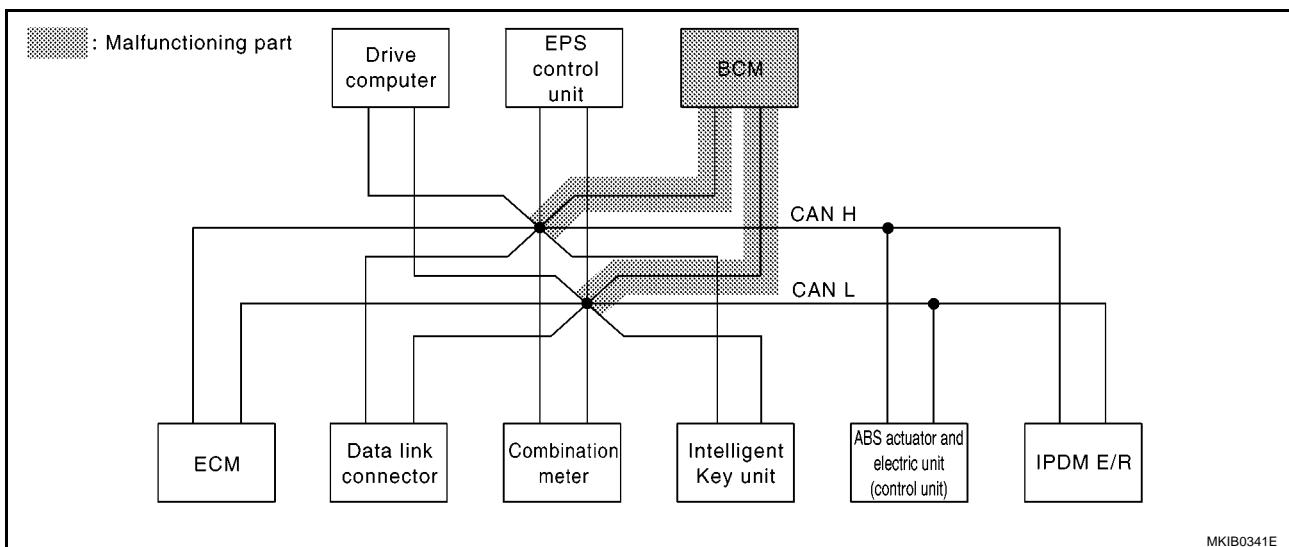
[CAN]

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	—	—

MKIB0813E



MKIB0341E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 7)

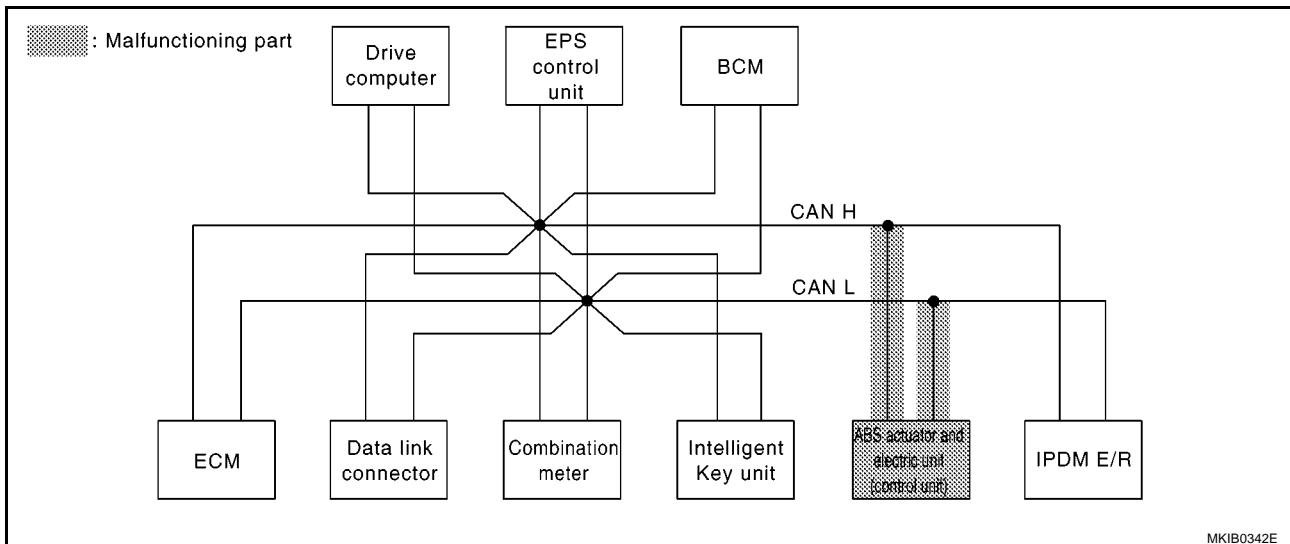
[CAN]

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)

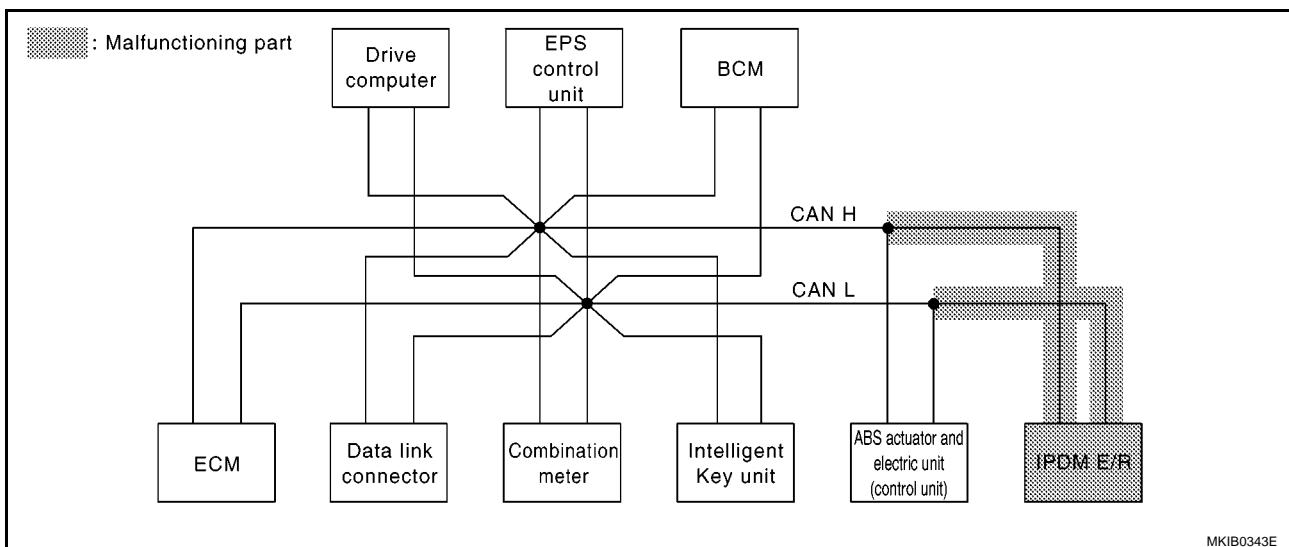
[CAN]

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



MKIB0343E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

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.

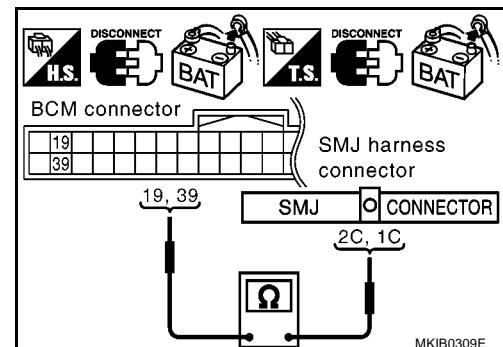
2. CHECK HARNESS FOR OPEN CIRCUIT

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**

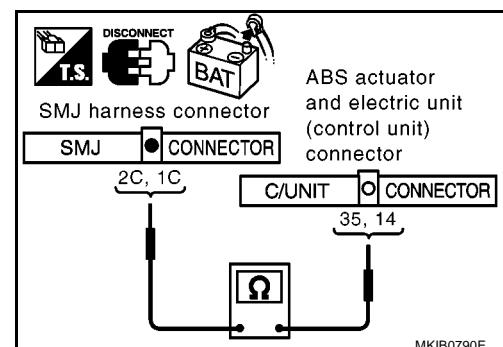
Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

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

EKS00JP7

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.

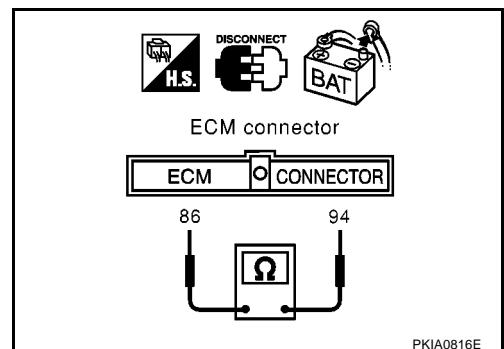
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JP8

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

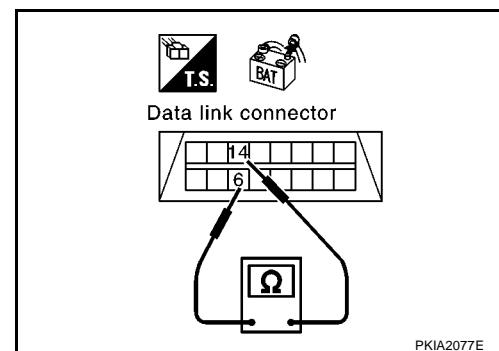
Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

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



Combination Meter Circuit Check

EKS00JP9

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).

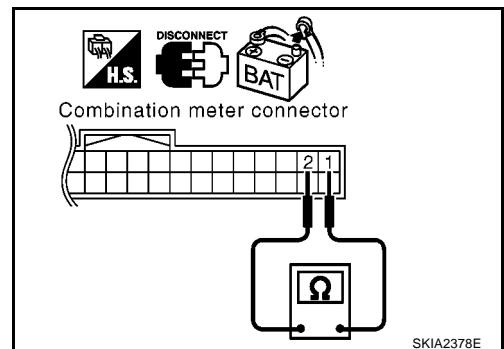
1 (R) – 2 (W)

: 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

EKS00JPA

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.

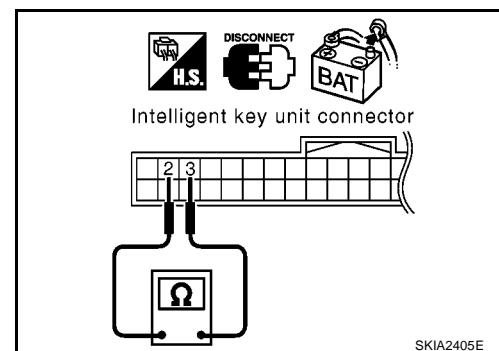
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace Intelligent Key unit.

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



EPS Control Unit Circuit Check

EKS00JPB

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).

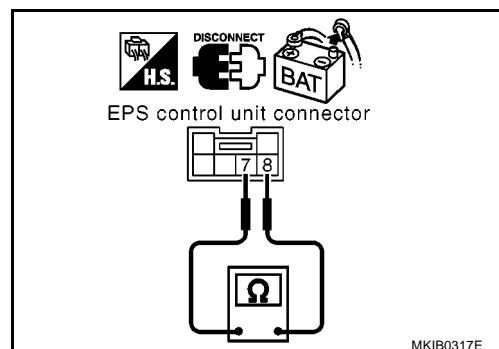
8 (R) – 7 (W)

: 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

EKS00JPC

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.

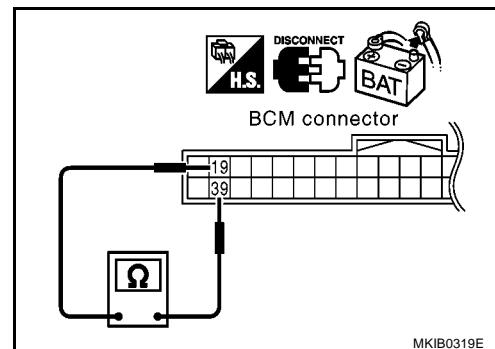
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

EKS00JPD

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.

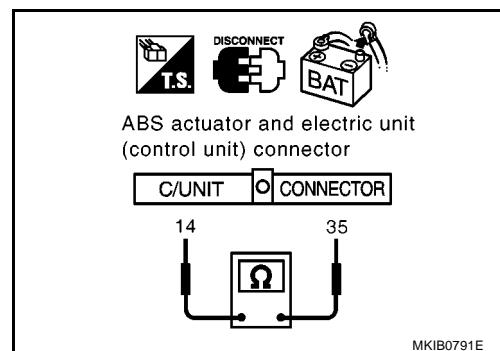
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JPE

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.

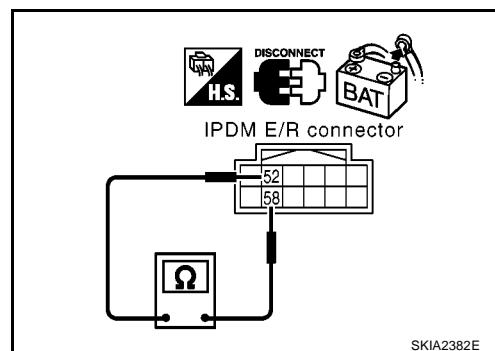
2. CHECK HARNESS FOR OPEN CIRCUIT

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).



CAN Communication Circuit Check

EKS00JPF

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.

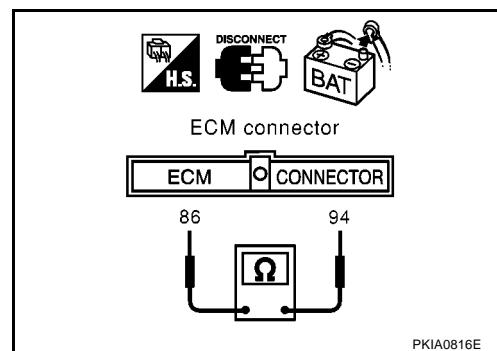
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

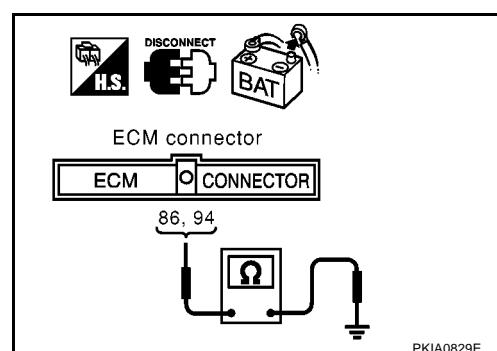
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

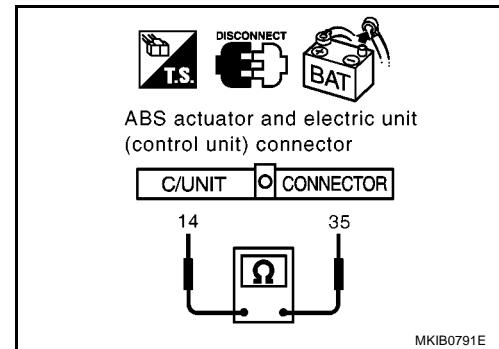
35 (R) – 14 (W) : Continuity should not exist.

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



MKIB0791E

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.

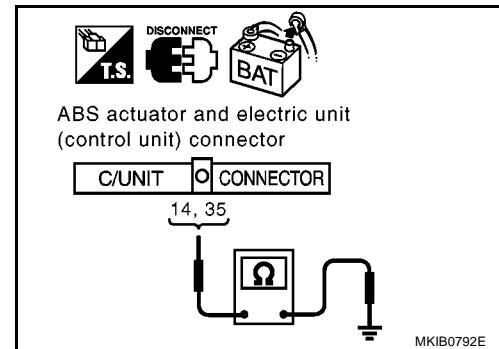
14 (W) – Ground : Continuity should not exist.

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



MKIB0792E

LAN

L

M

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)

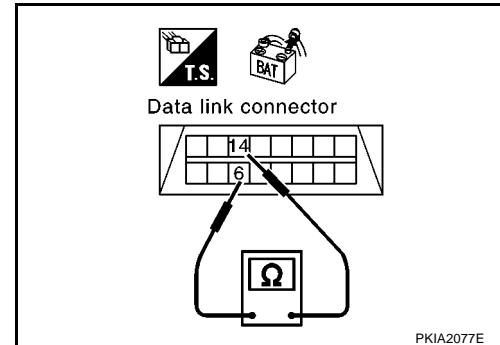
: Continuity should not exist.

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

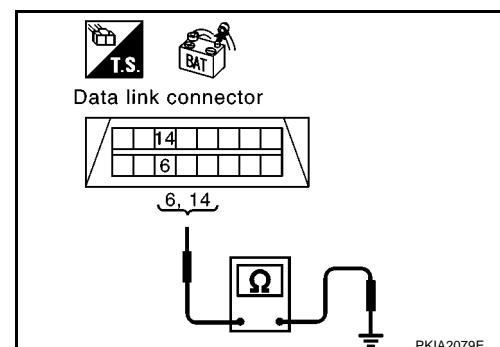
: Continuity should not exist.

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""](#).

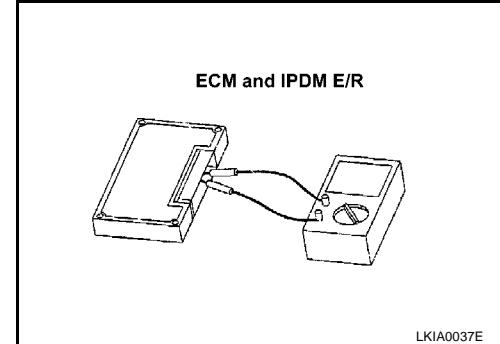
Component Inspection

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	



LKIA0037E

A

B

C

D

E

F

G

H

I

J

LAN

L

M

CAN SYSTEM (TYPE 8)

PFP:23710

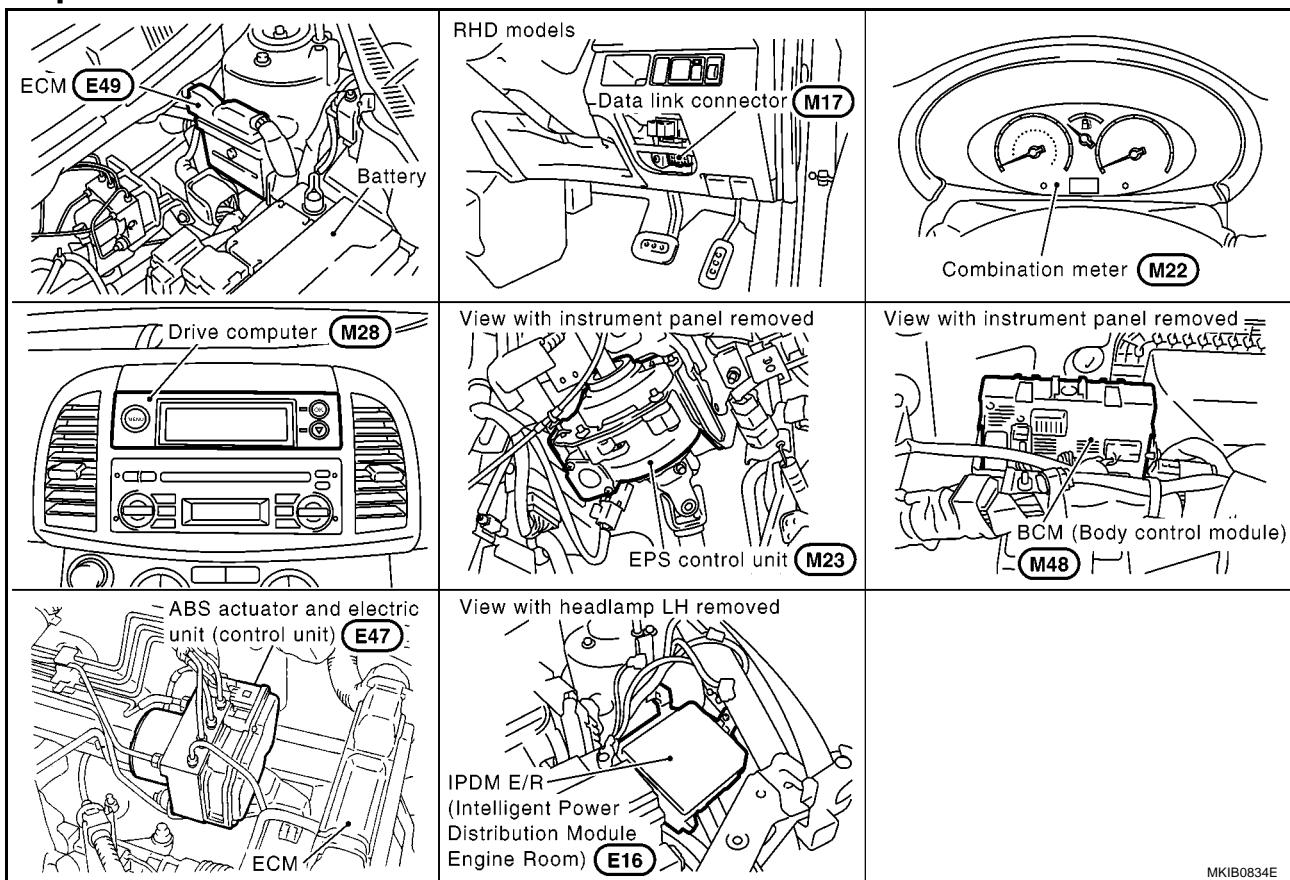
System Description

EKS00JPI

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



CAN SYSTEM (TYPE 8)

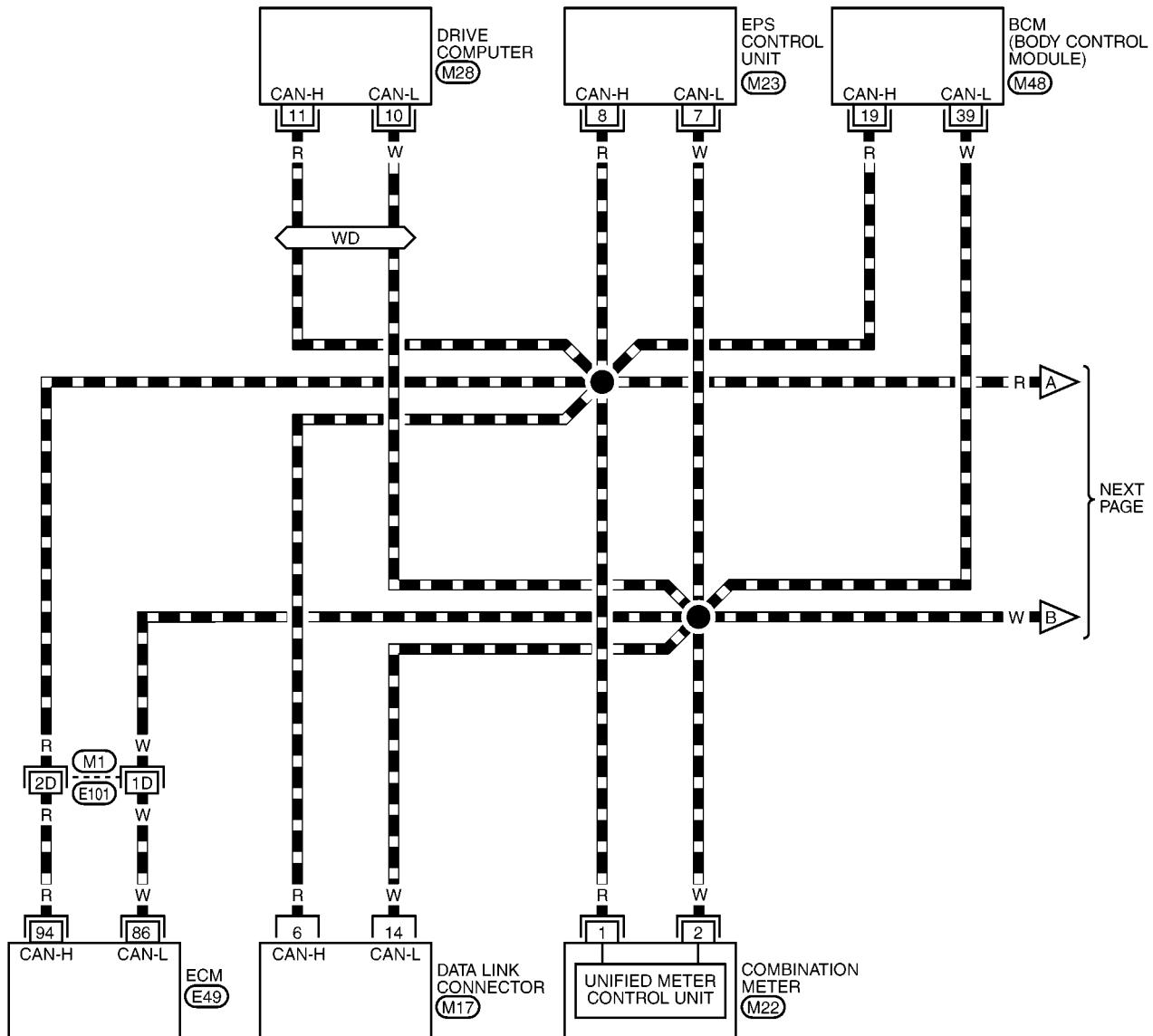
[CAN]

Wiring Diagram — CAN —

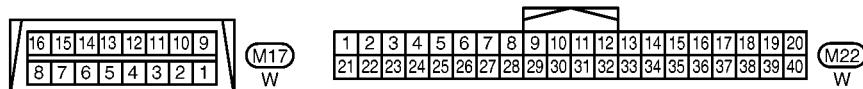
EKS00JKK

LAN-CAN-15

: DATA LINE
 : WITH DRIVE COMPUTER

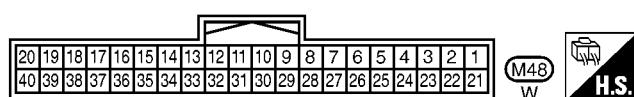
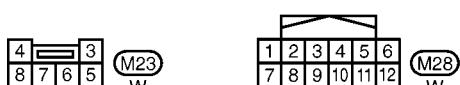


NEXT PAGE



REFER TO THE FOLLOWING.

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



MKWA2715E

A
B
C
D
E
F
G
H
I
J

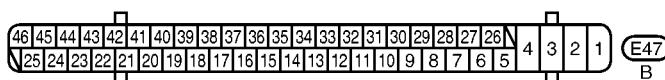
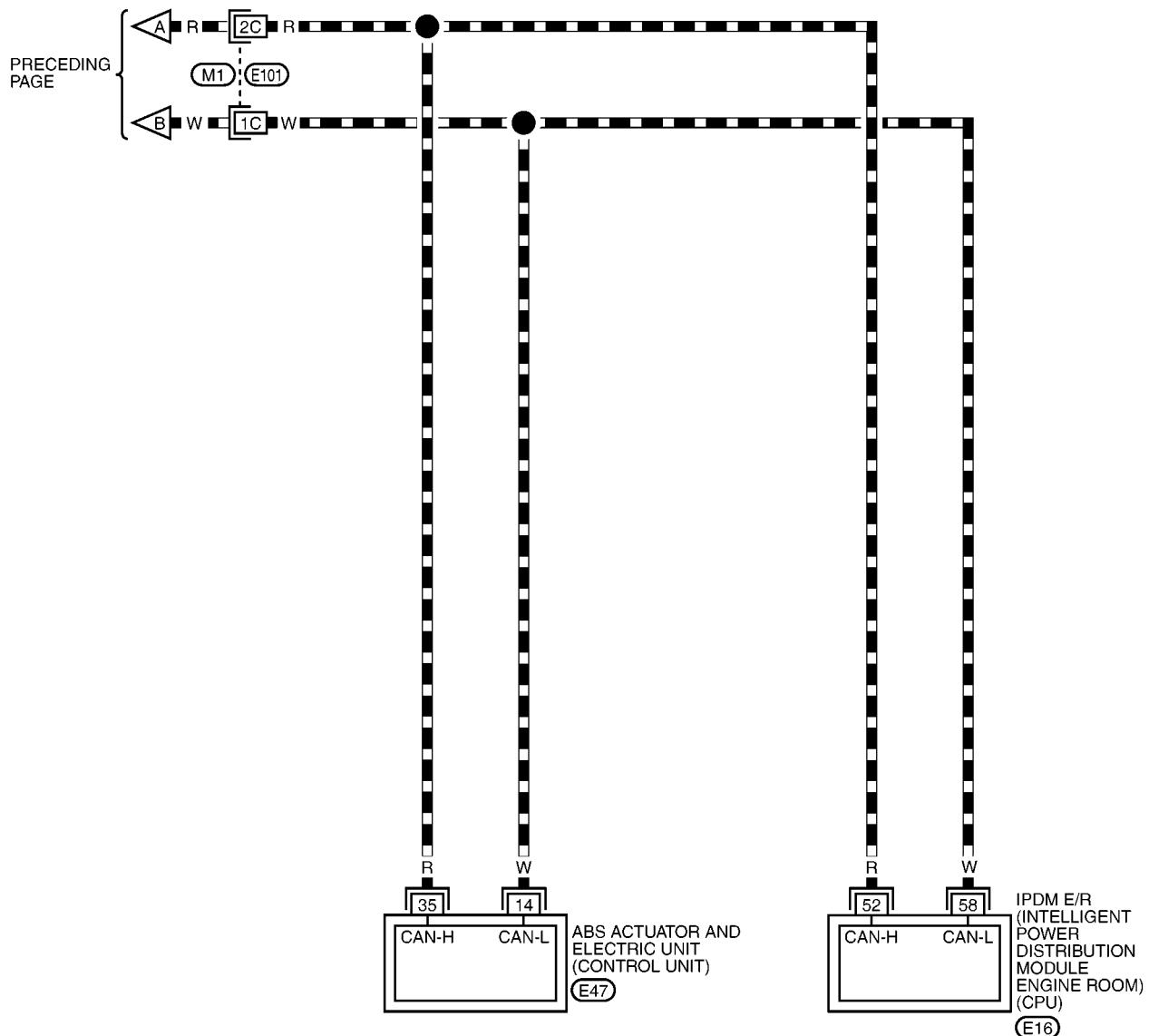
LAN
L
M

CAN SYSTEM (TYPE 8)

[CAN]

LAN-CAN-16

■ : DATA LINE



REFER TO THE FOLLOWING.

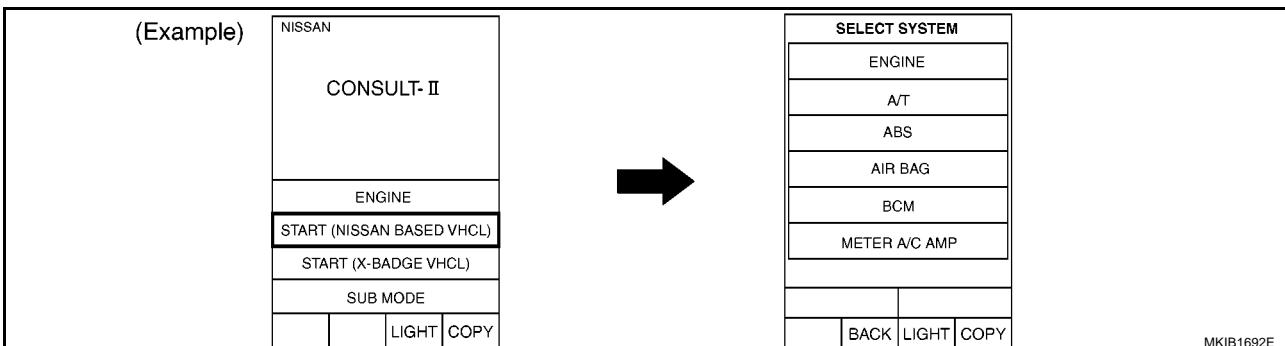
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA2716E

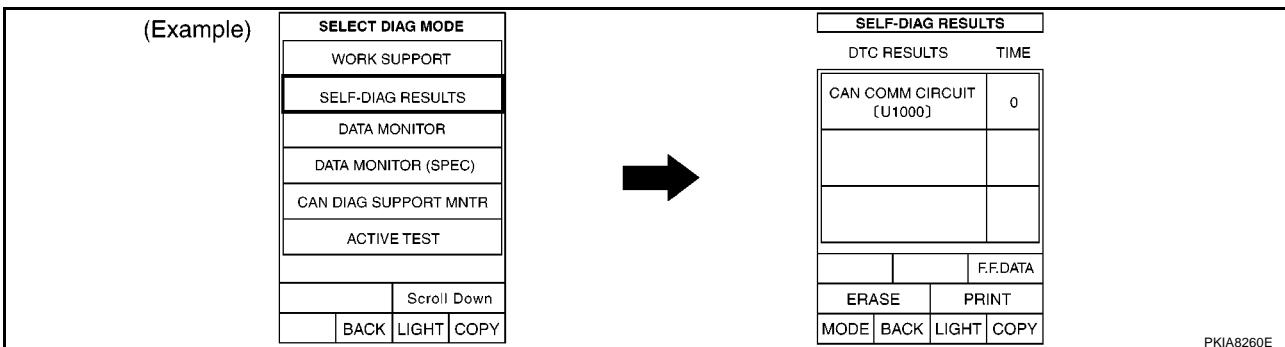
Work Flow

EKS00JPL

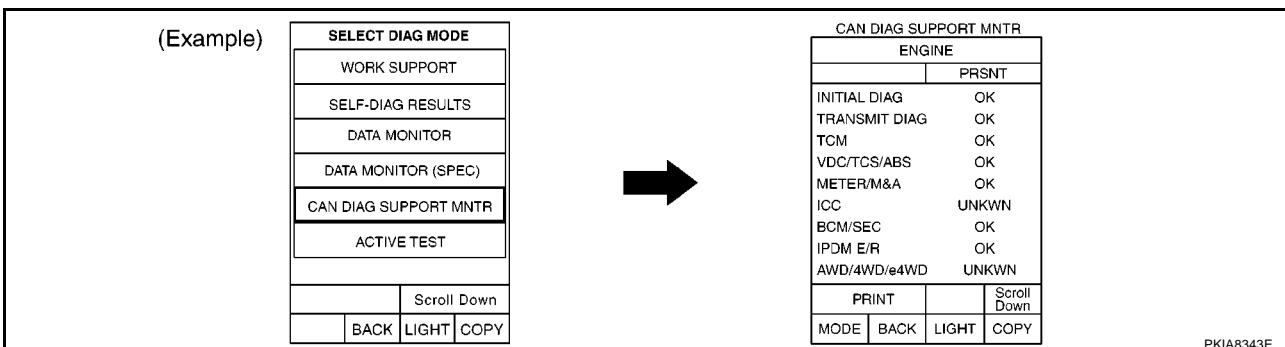
1. When there are no indications of "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-237, "CHECK SHEET"](#).

5. 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-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.

A
B
C
D
E
F
G
H
I
J
LAN
L
M

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	-	-



Convert

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
EPS	No indication	NG	UNKWN	UNKWN	-	UNKWN	UNKWN	-
BCM	No indication	-	UNKWN	UNKWN	UNKWN	-	-	UNKWN
ABS	No indication	NG	UNKWN	UNKWN	UNKWN	-	-	-
IPDM E/R	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-

MKIB1689E

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

LAN

L

M

MKIB1608E

CAN SYSTEM (TYPE 8)

[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

MKIB0304E

CAN SYSTEM (TYPE 8)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

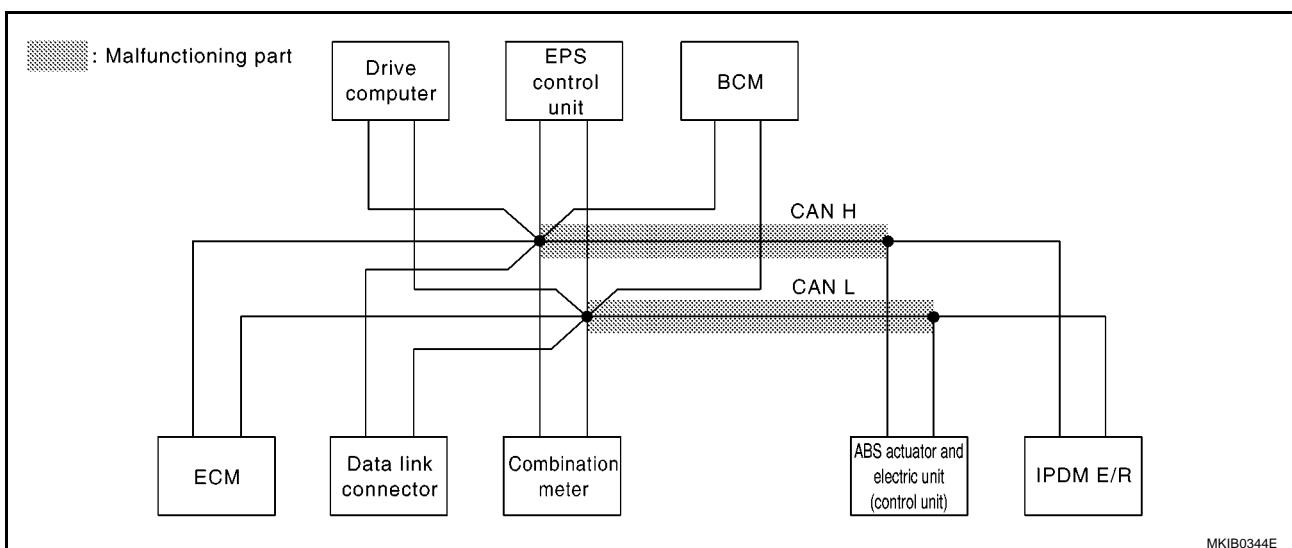
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-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	-	-

MKIB0820E



MKIB0344E

CAN SYSTEM (TYPE 8)

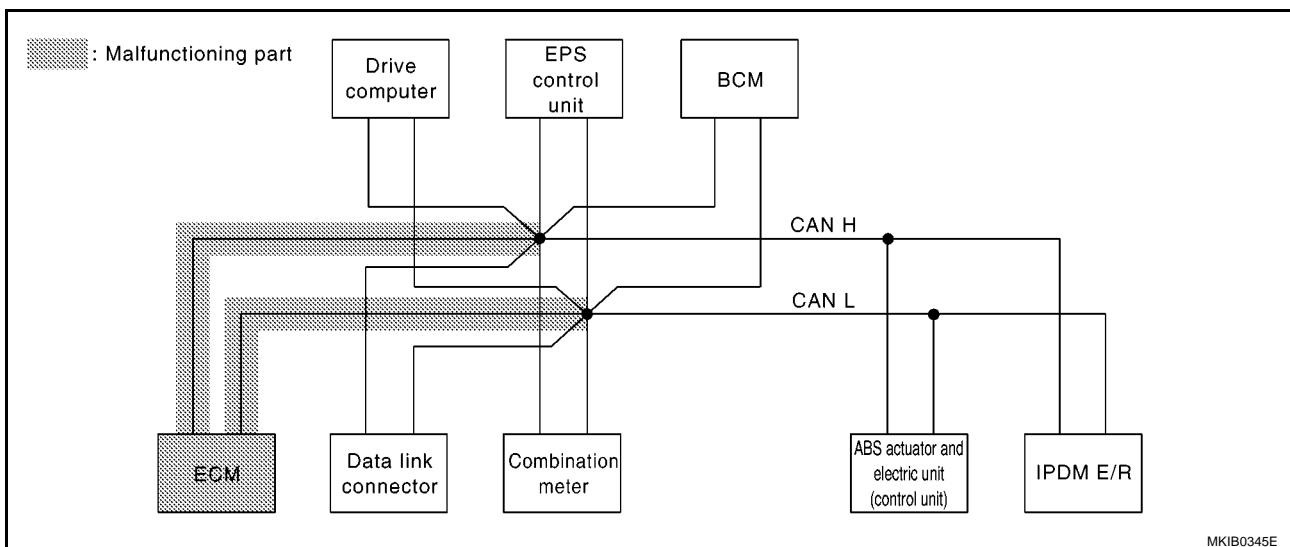
[CAN]

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	-	-

MKIB0821E



CAN SYSTEM (TYPE 8)

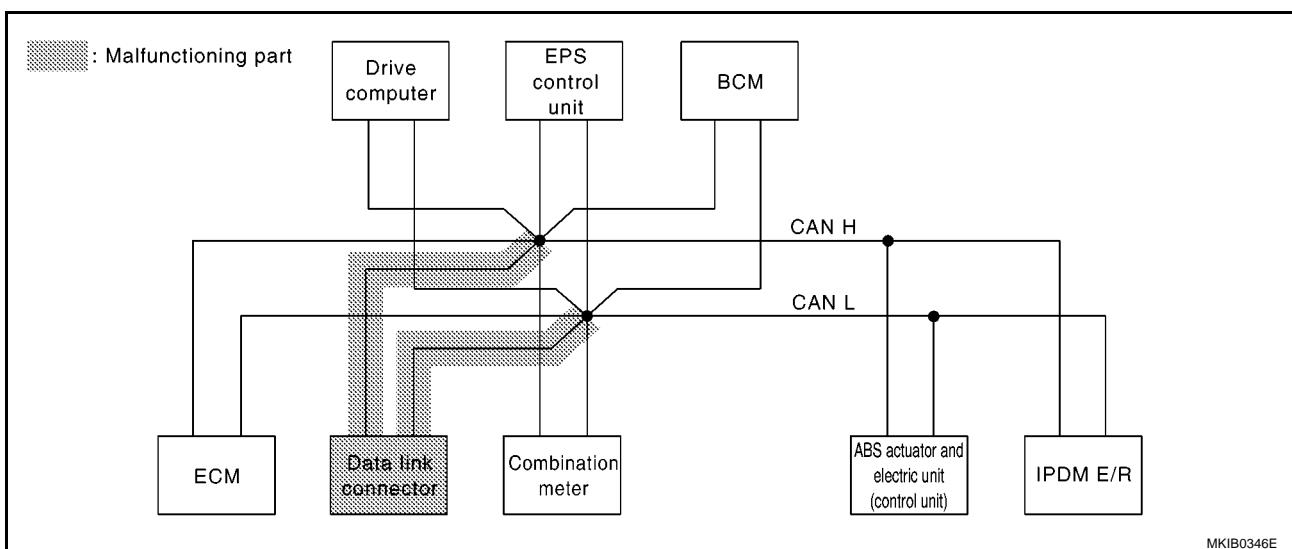
[CAN]

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	-	-

MKIB0822E



MKIB0346E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 8)

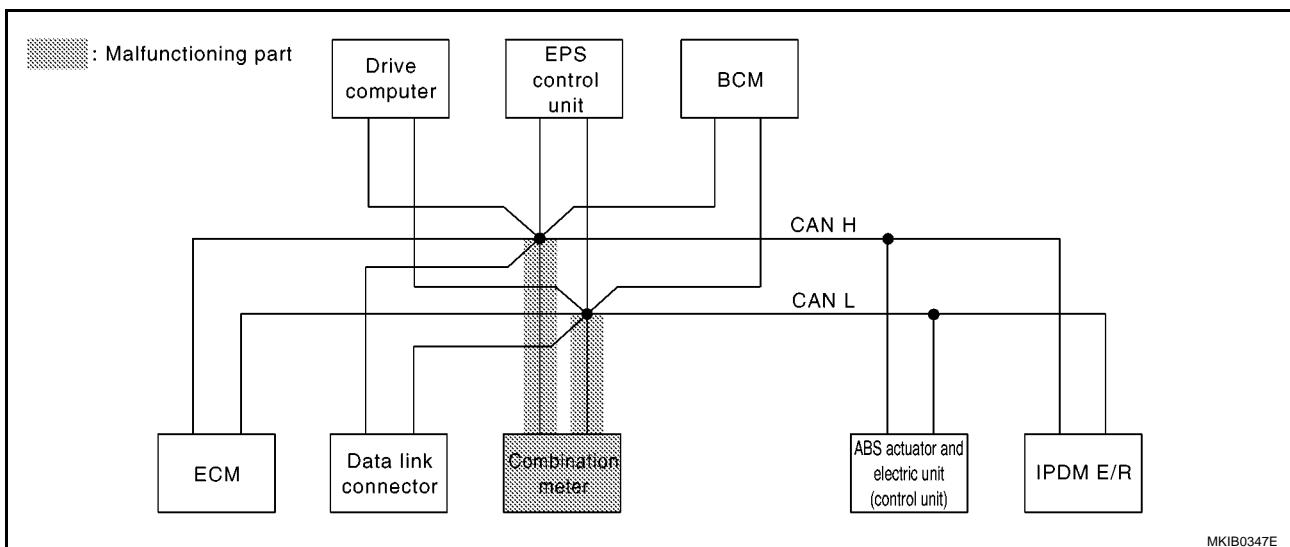
[CAN]

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	-	-

MKIB0823E



CAN SYSTEM (TYPE 8)

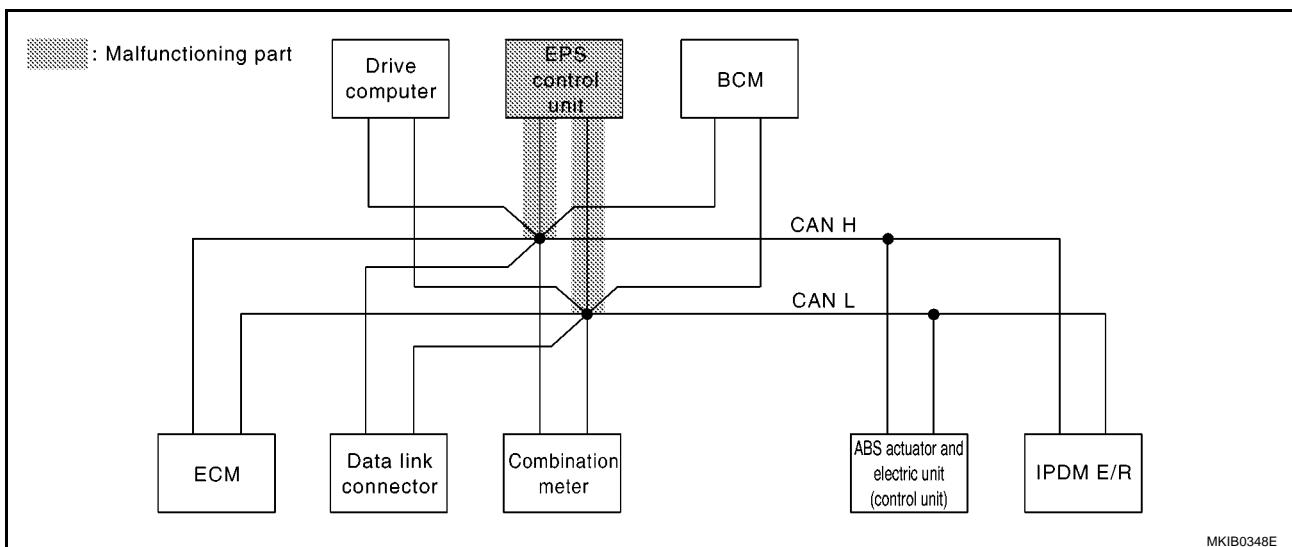
[CAN]

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	-	-

MKIB0824E



MKIB0348E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 8)

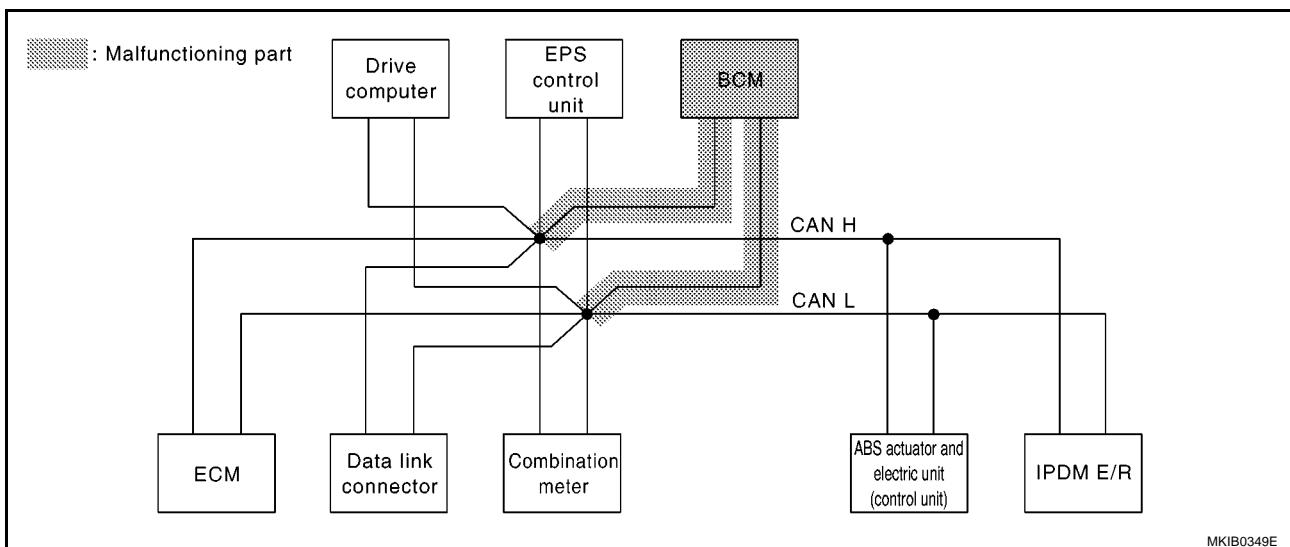
[CAN]

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	-	-

MKIB0825E



CAN SYSTEM (TYPE 8)

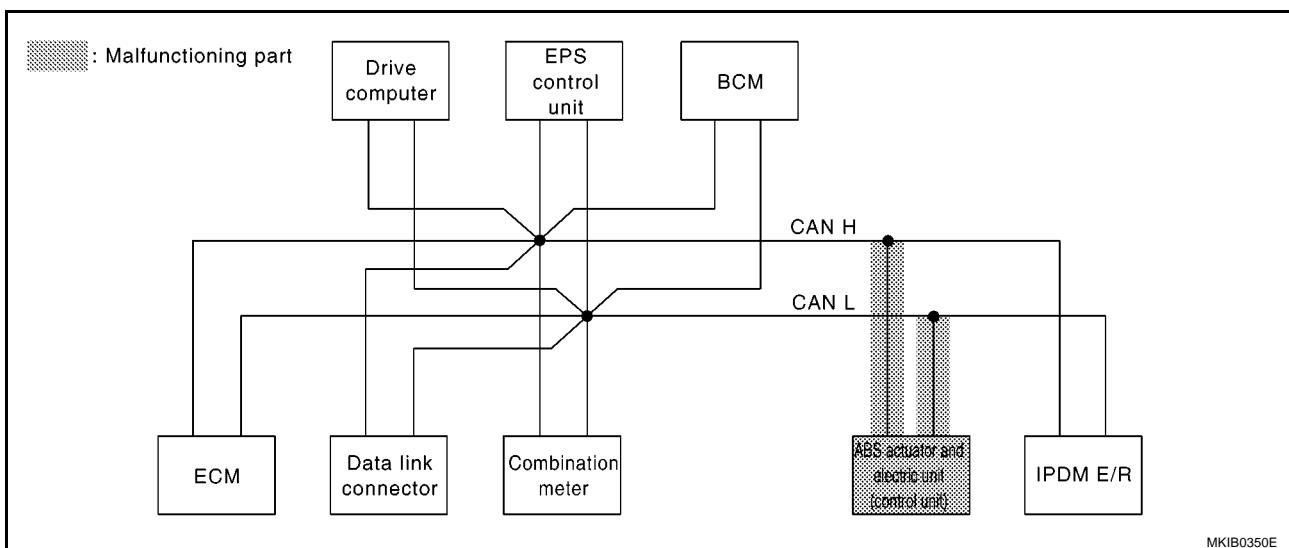
[CAN]

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	–	–

MKIB0826E



MKIB0350E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 8)

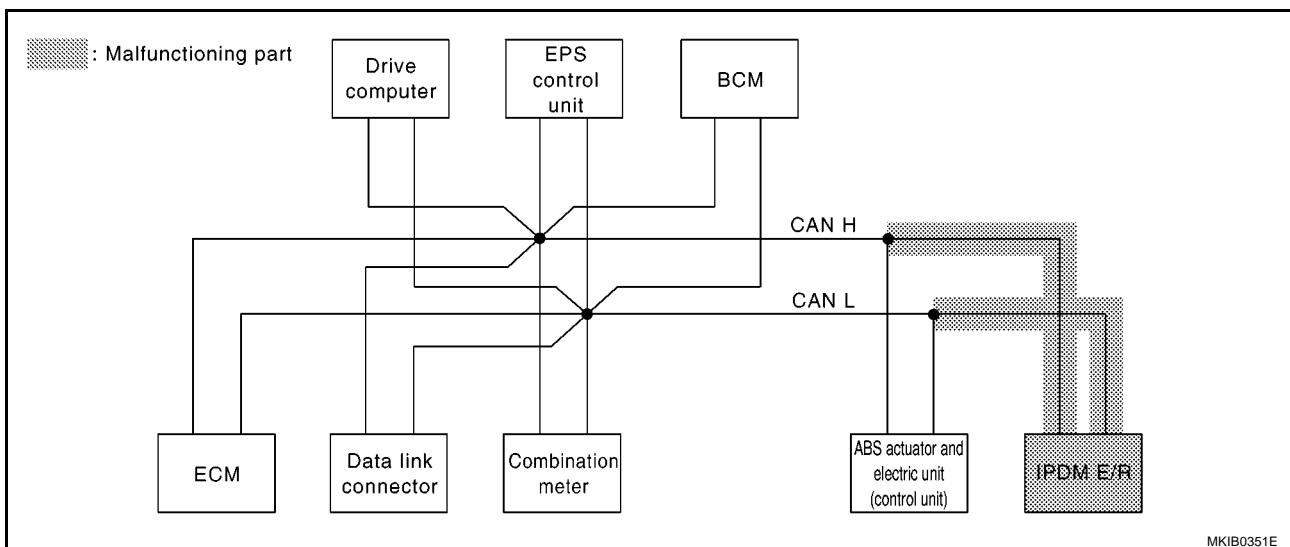
[CAN]

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	-	-

MKIB0827E



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	-	-

MKIB0828E

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	-	-

MKIB0829E

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	-	-

MKIB0830E

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

EKS00JPM

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.

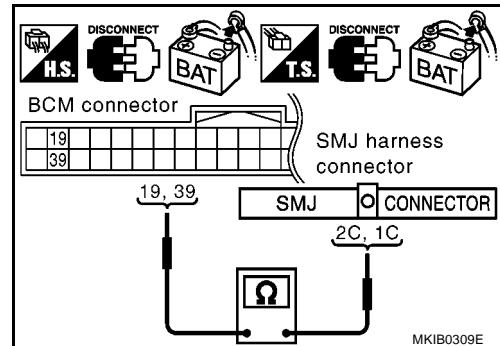
2. CHECK HARNESS FOR OPEN CIRCUIT

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.

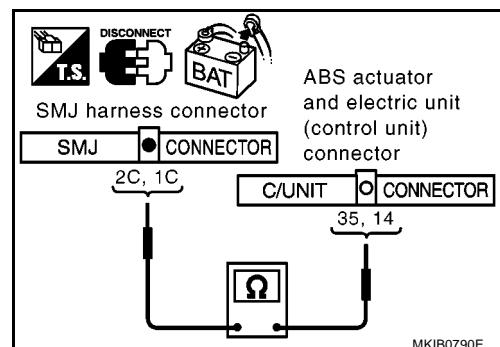
**3. CHECK HARNESS FOR OPEN CIRCUIT**

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

EKS00JPN

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.

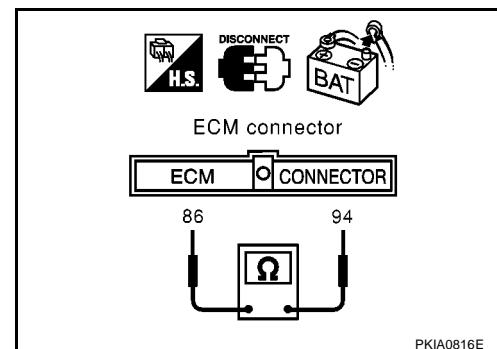
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JPO

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

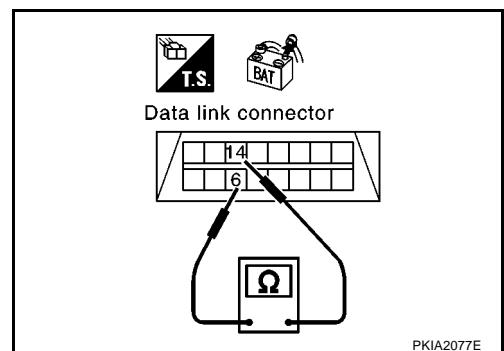
Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

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

EKS00JPP

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

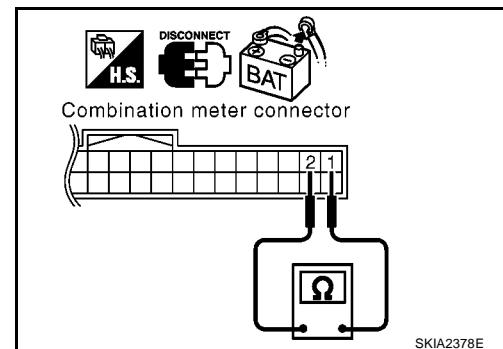
1. Disconnect combination meter connector.
 2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

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

EKS00JPQ

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).

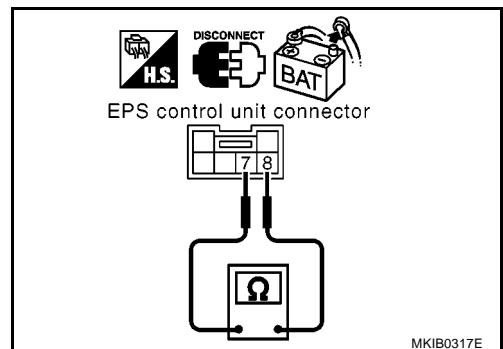
8 (R) – 7 (W)

: 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

EKS00JPR

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.

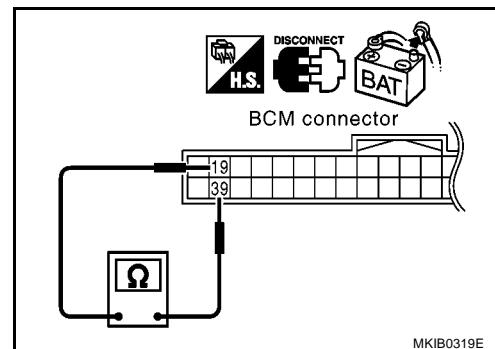
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

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.

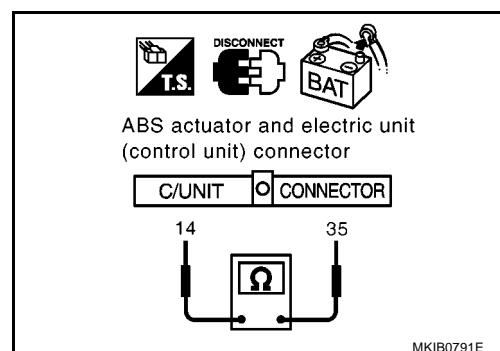
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS000PT

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.

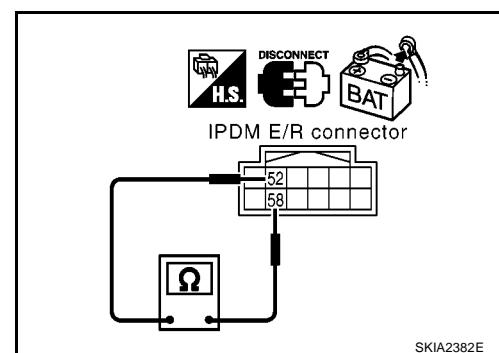
2. CHECK HARNESS FOR OPEN CIRCUIT

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).



CAN Communication Circuit Check

EKS00JPU

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.

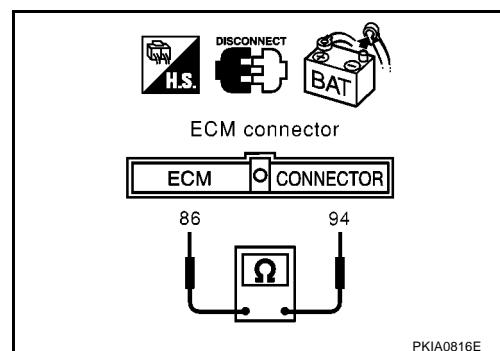
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

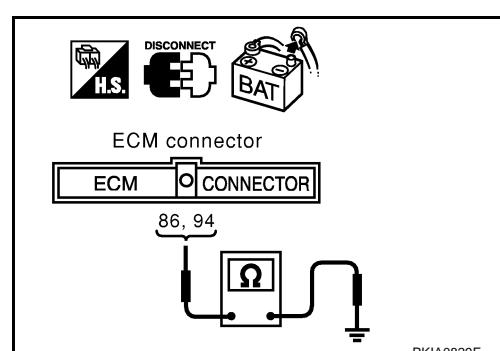
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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).

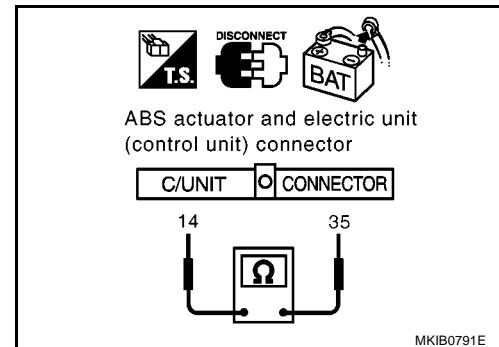
35 (R) – 14 (W) : Continuity should not exist.

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.

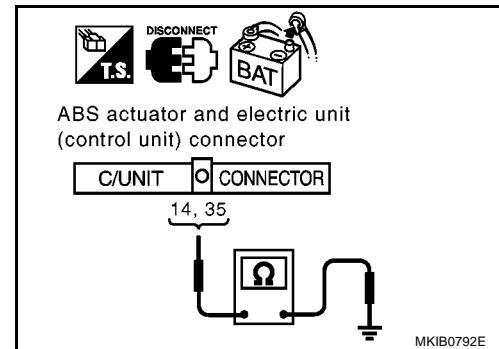
14 (W) – Ground : Continuity should not exist.

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



A
B
C
D
E
F
G
H
I
J

LAN
L
M

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).

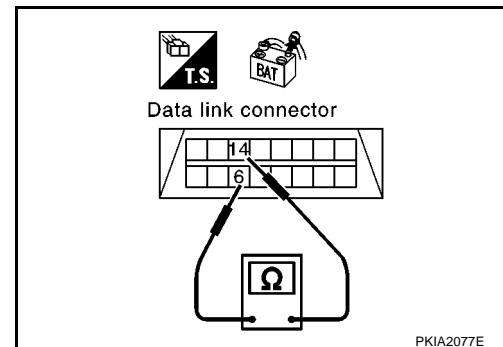
6 (R) – 14 (W) : Continuity should not exist.

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.

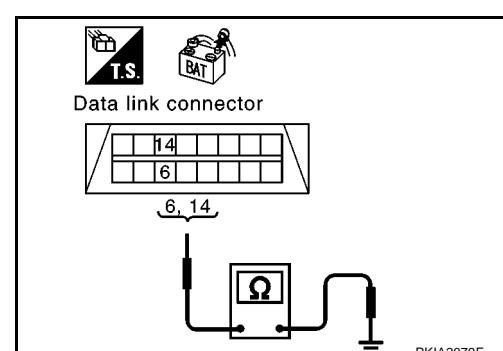
14 (W) – Ground : Continuity should not exist.

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-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""](#).

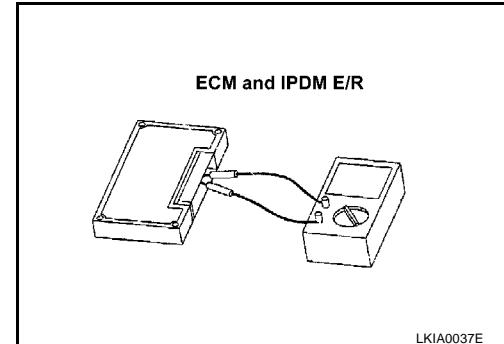
Component Inspection

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	



A

B

C

D

E

F

G

H

I

J

LAN

L

M

CAN SYSTEM (TYPE 9)

PFP:23710

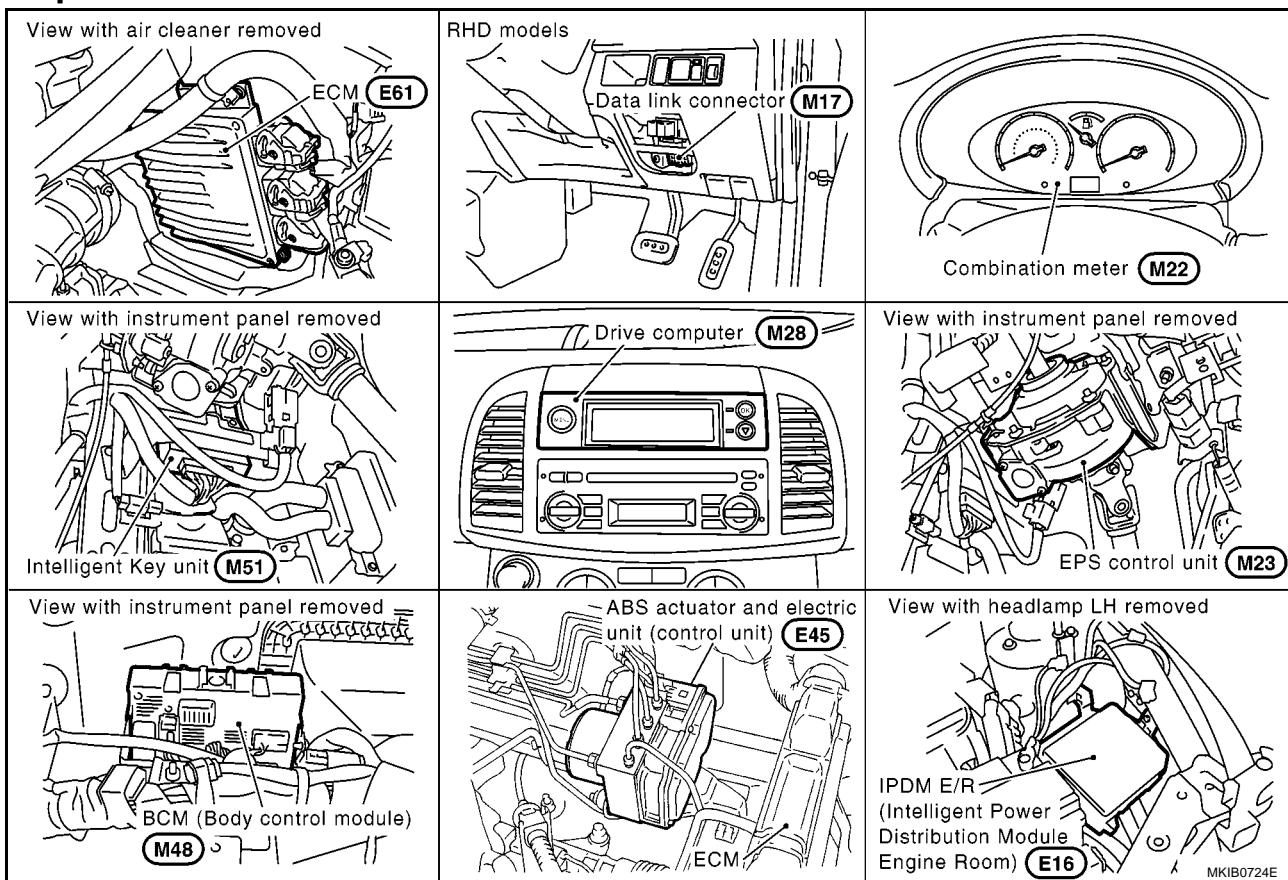
System Description

EKS000JPX

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

EKS000JPY



CAN SYSTEM (TYPE 9)

[CAN]

Wiring Diagram — CAN —

EKS00JPZ

LAN-CAN-17

: DATA LINE

: WITH DRIVE COMPUTER

A

B

C

D

E

F

G

H

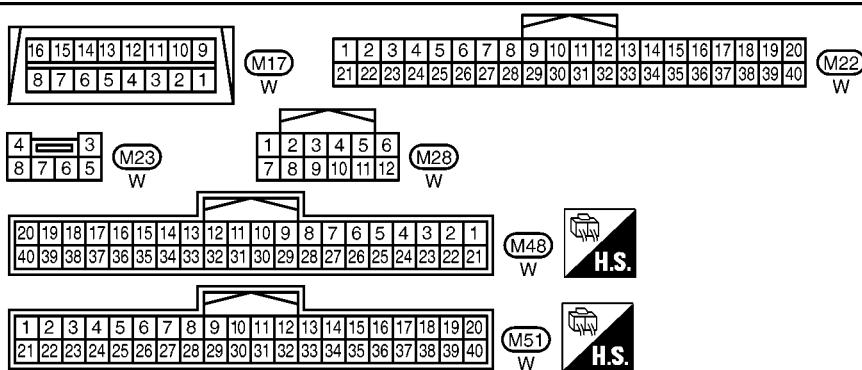
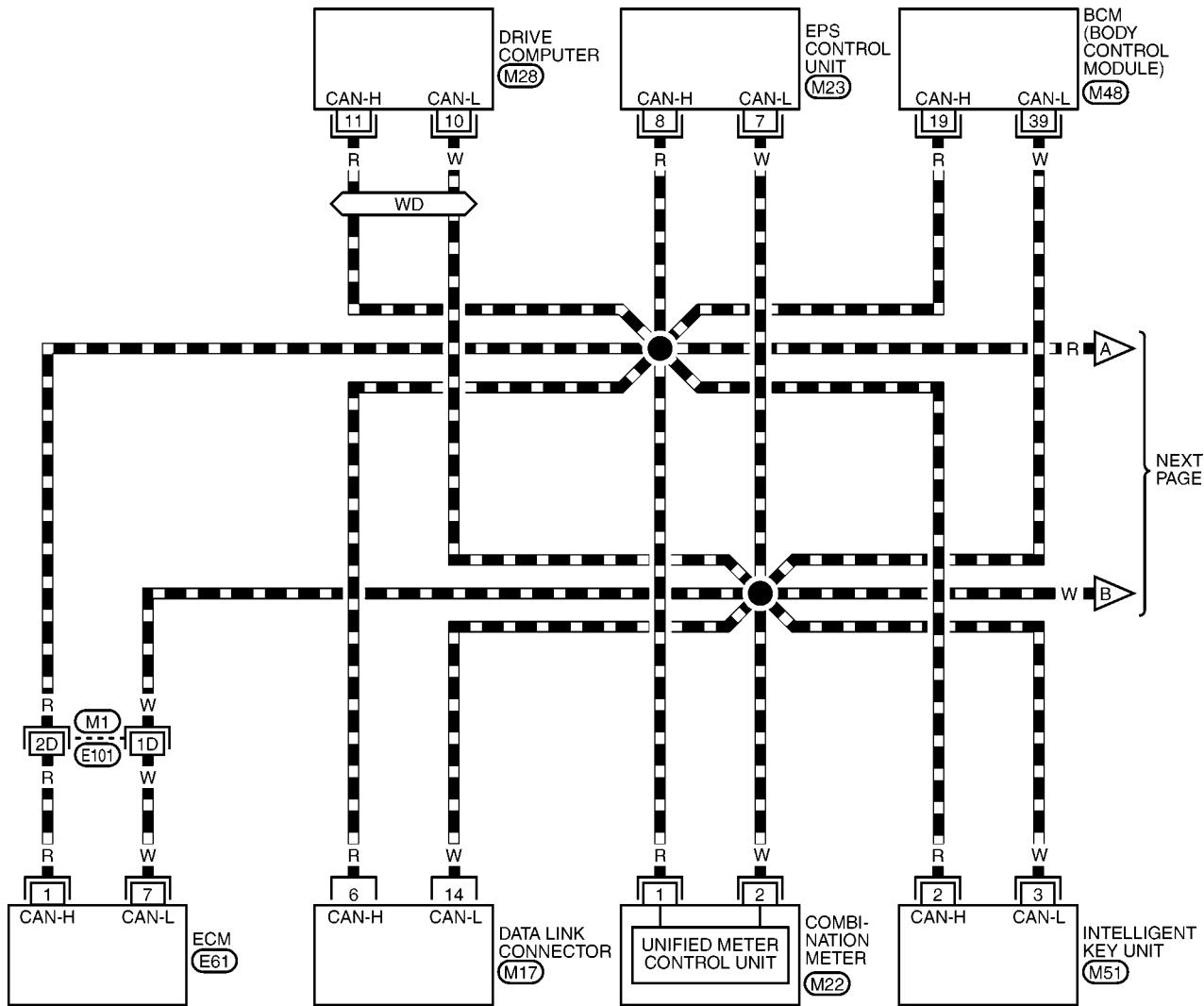
I

J

LAN

L

M



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E61) -ELECTRICAL UNITS

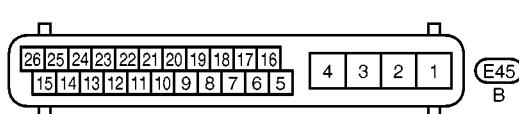
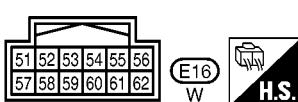
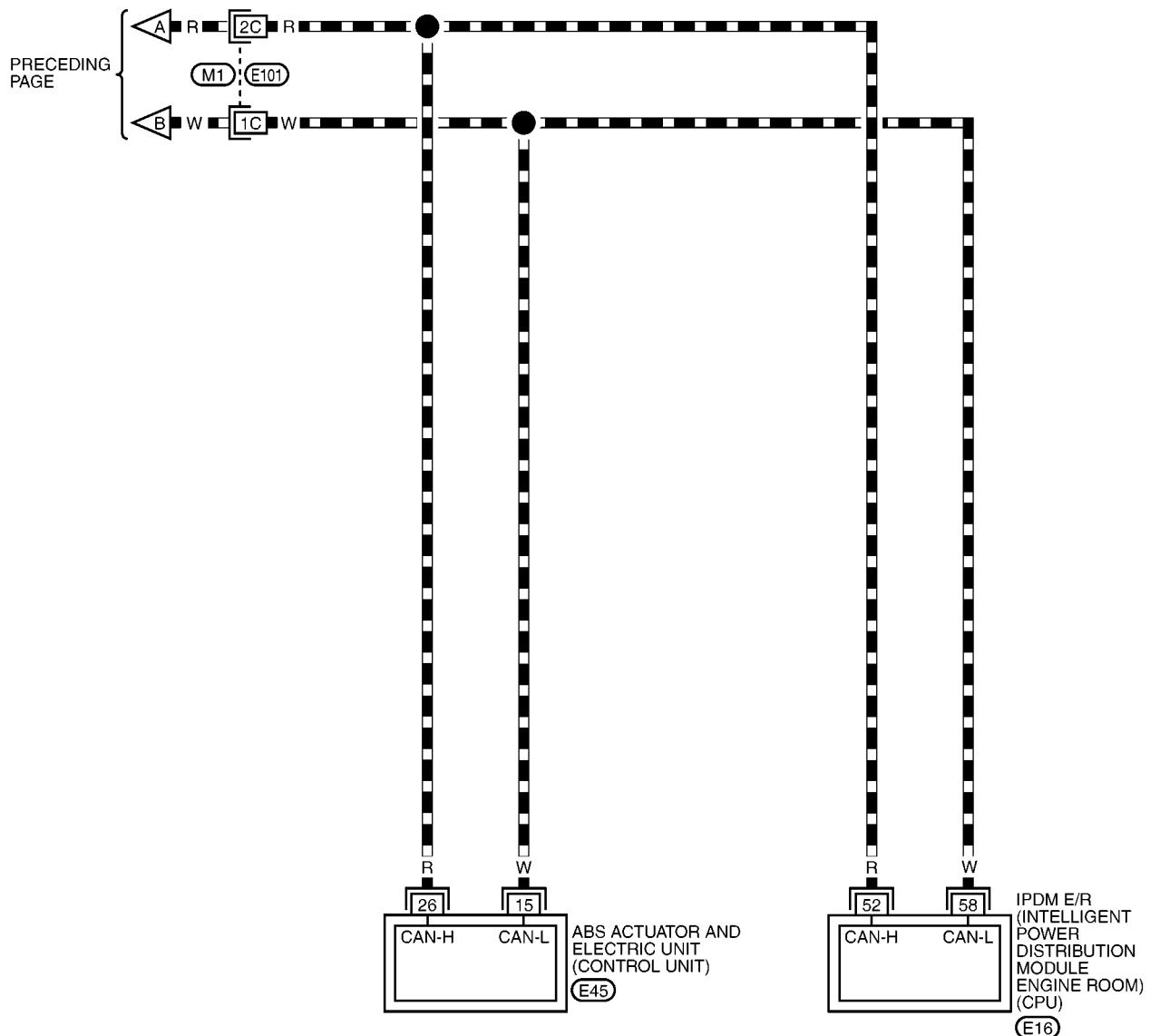
MKWA2705E

CAN SYSTEM (TYPE 9)

[CAN]

LAN-CAN-18

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA2706E

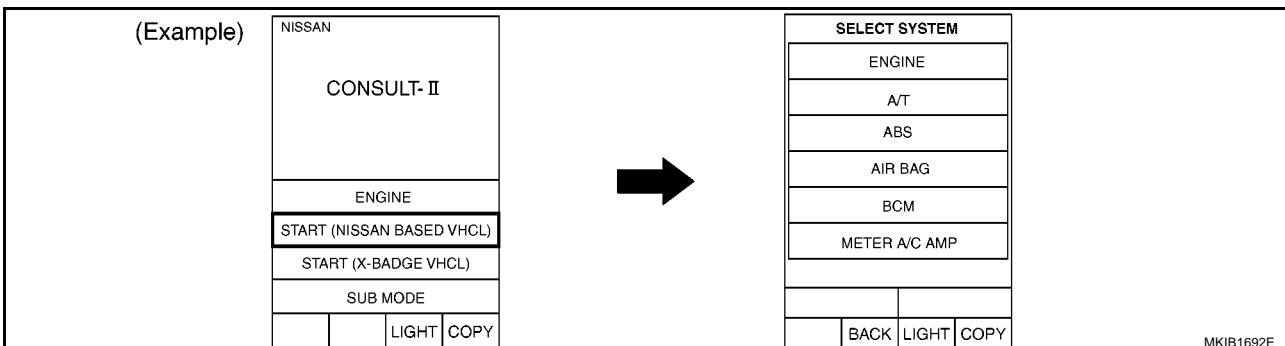
CAN SYSTEM (TYPE 9)

[CAN]

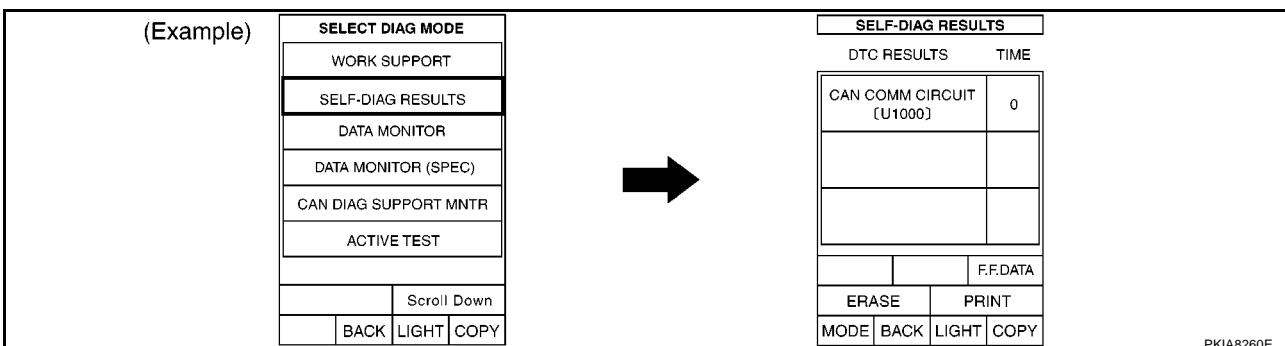
Work Flow

EKS00JQ0

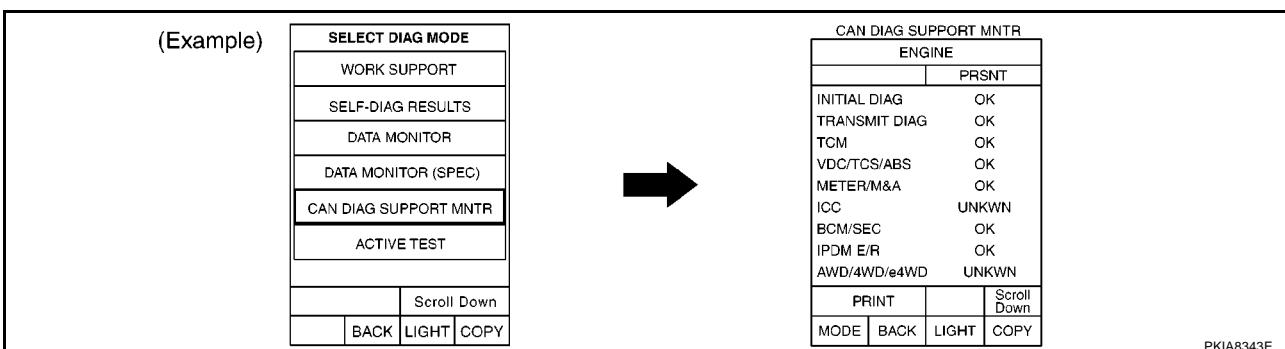
- When there are no indications of "ENGINE", "INTELLIGENT KEY", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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.

A
B
C
D
E
F
G
H
I
J

LAN
L
M

CAN SYSTEM (TYPE 9)

[CAN]

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

Convert

MKIB1690E

<div style="position

CAN SYSTEM (TYPE 9)

[CAN]

CHECK SHEET

A
B
C
D
E
F
G
H
I
J

LAN
L
M

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
ENGINE	No indication	—	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

MKIB1609E

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

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
INTELLIGENT KEY
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
IPDM
DATA MONITOR

MKIB0296E

CAN SYSTEM (TYPE 9)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

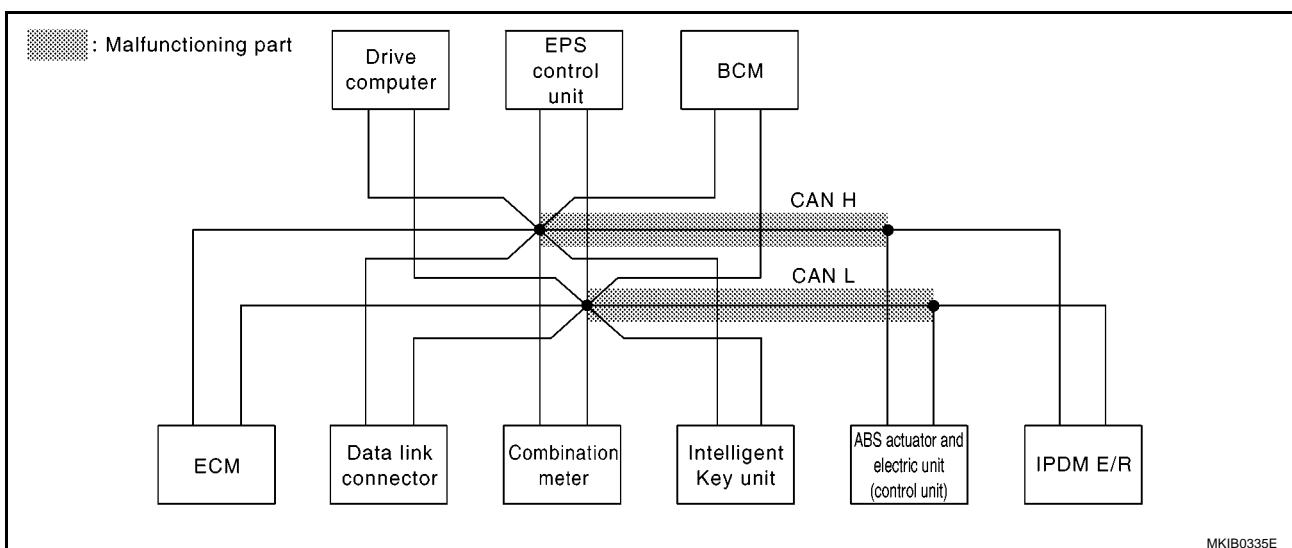
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

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	—	—

MKIB1659E



MKIB0335E

CAN SYSTEM (TYPE 9)

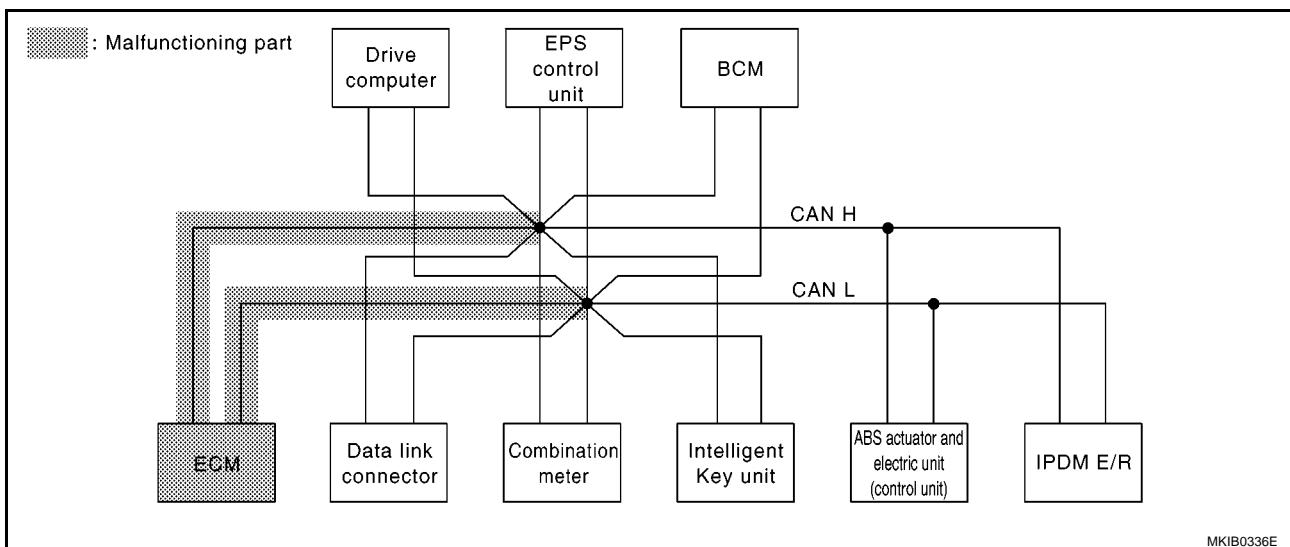
[CAN]

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 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	—	—

MKIB1660E



CAN SYSTEM (TYPE 9)

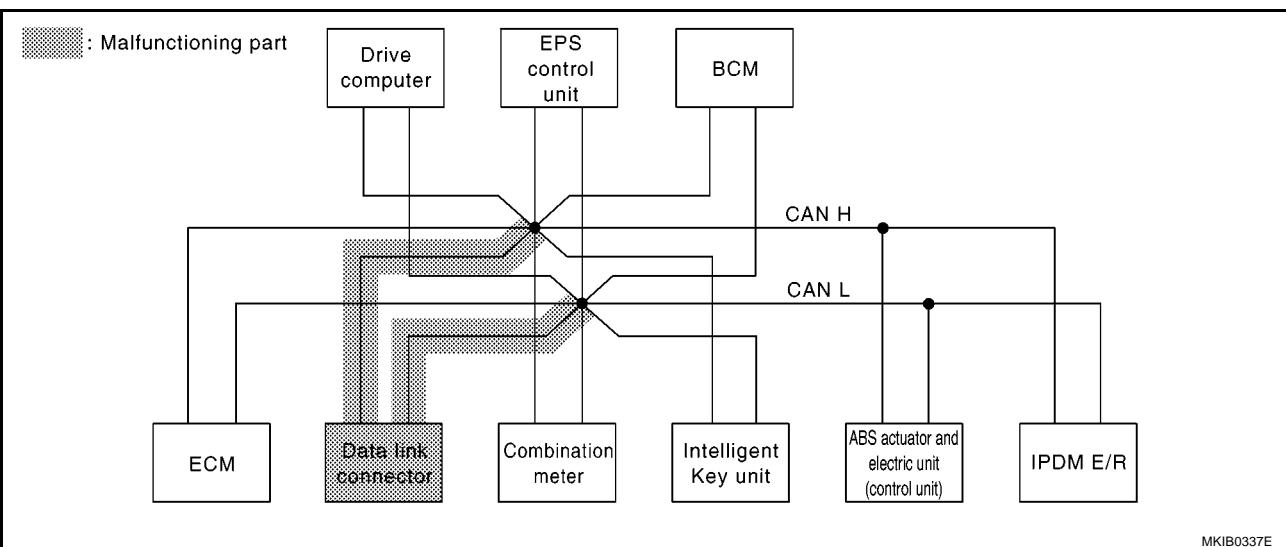
[CAN]

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	—	—

MKIB1661E



MKIB0337E

LAN

L

M

CAN SYSTEM (TYPE 9)

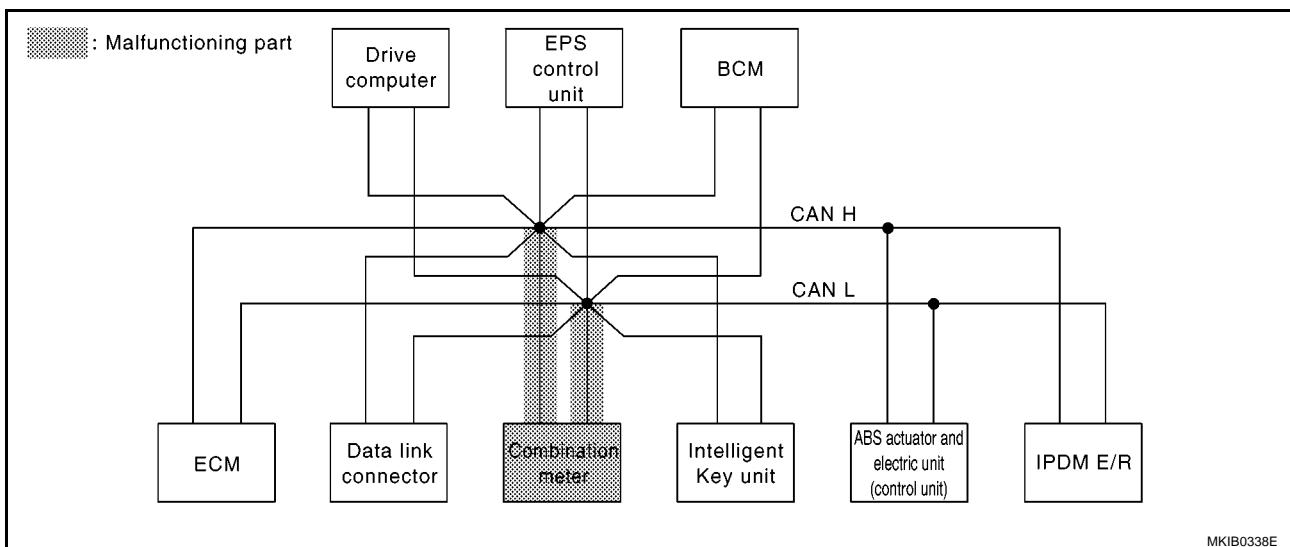
[CAN]

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	—	—

MKIB1662E



CAN SYSTEM (TYPE 9)

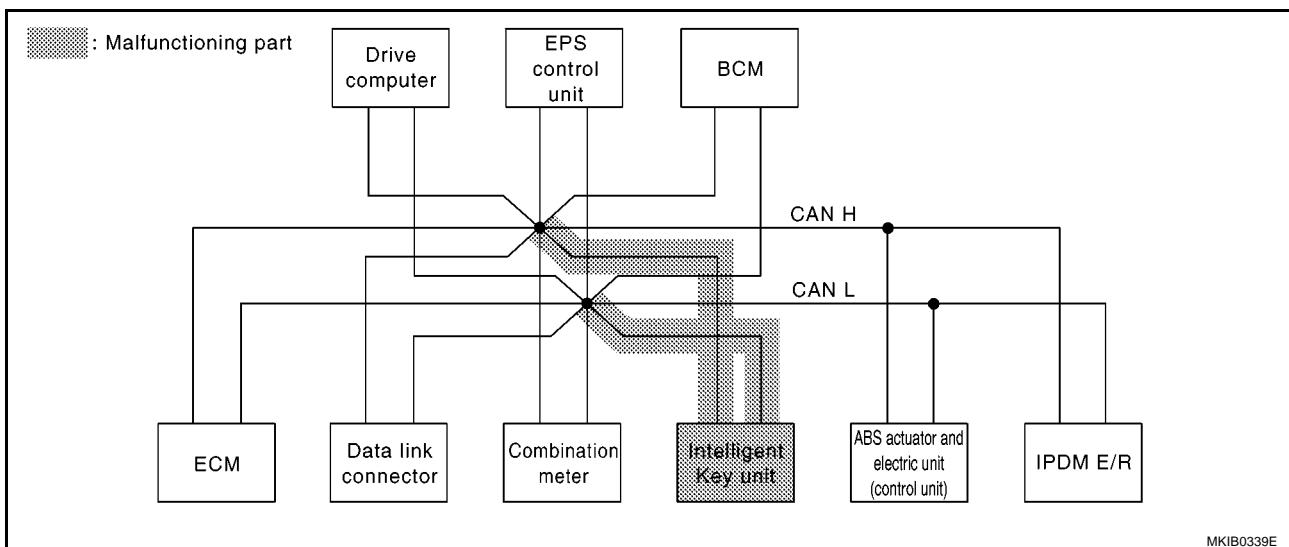
[CAN]

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	—	—

MKIB1663E



A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 9)

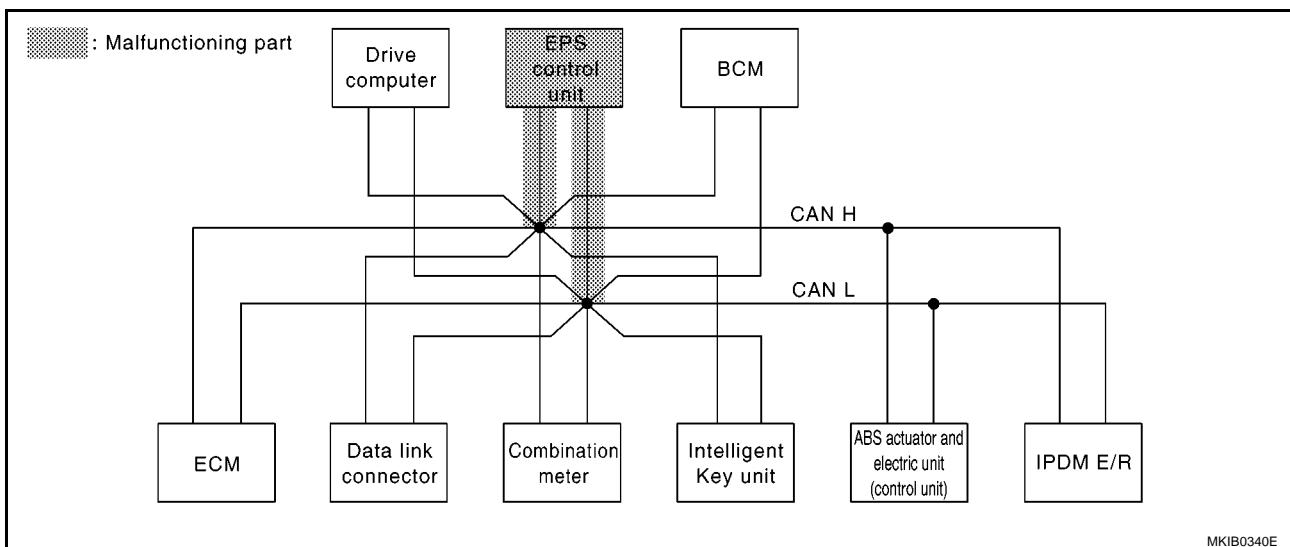
[CAN]

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



CAN SYSTEM (TYPE 9)

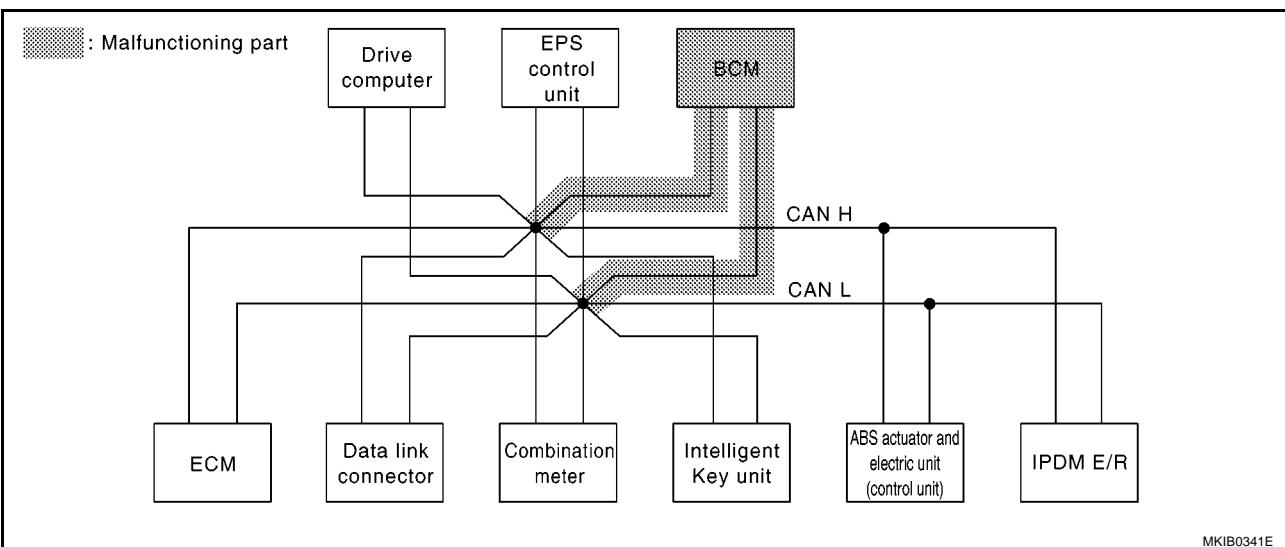
[CAN]

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	—	—

MKIB1665E



MKIB0341E

LAN

L

M

CAN SYSTEM (TYPE 9)

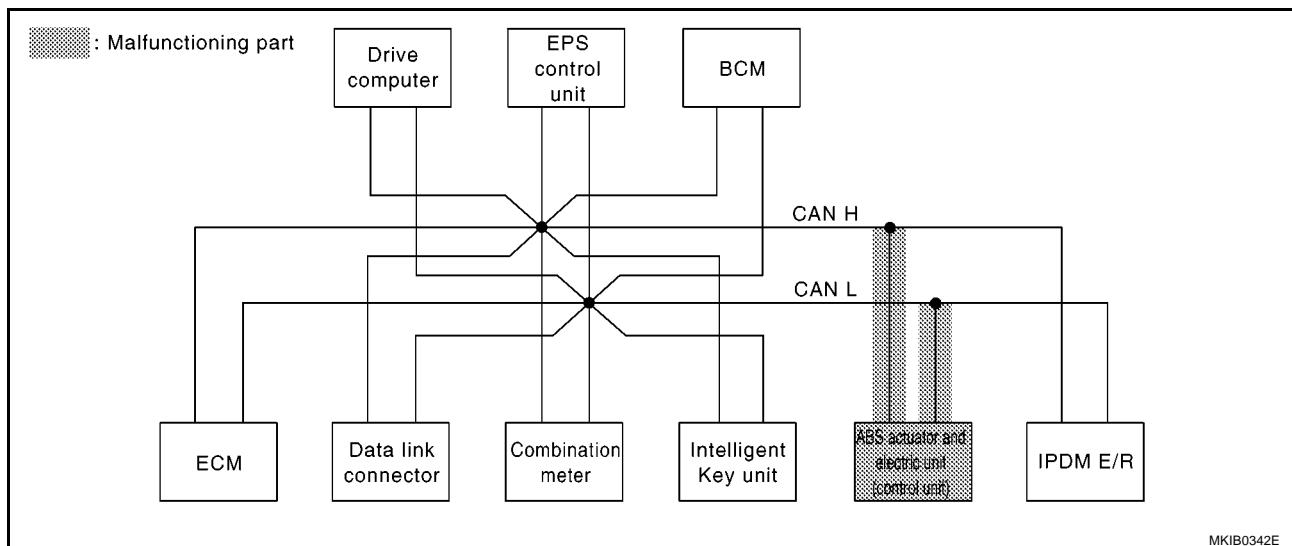
[CAN]

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)

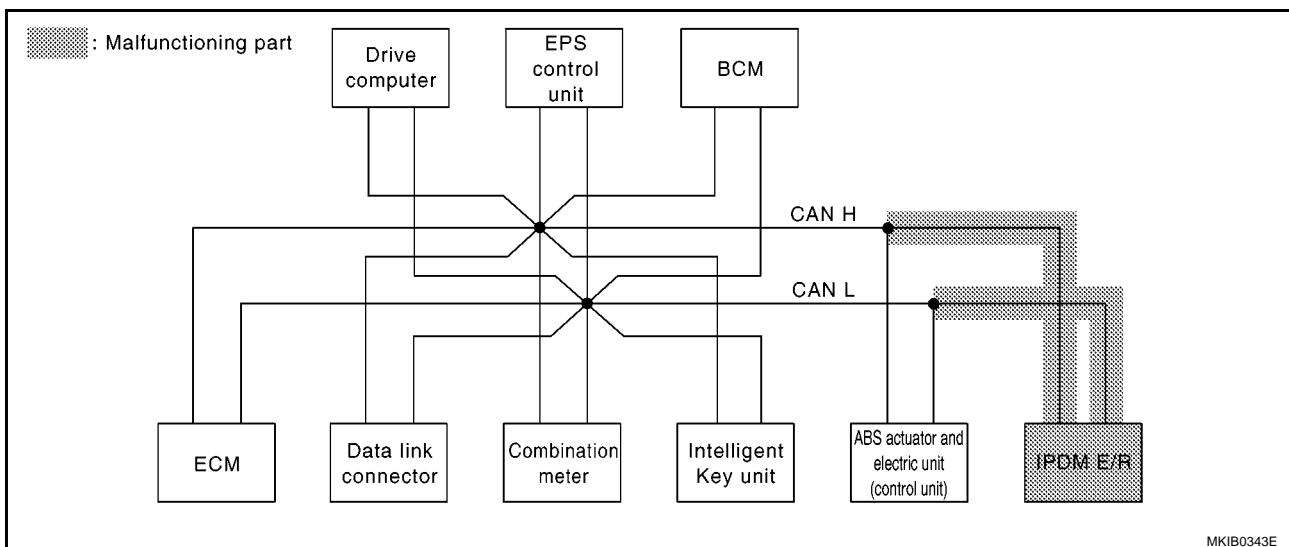
[CAN]

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	—	—

MKIB1667E



A
B
C
D
E
F
G
H
I
J

LAN

L

M

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.

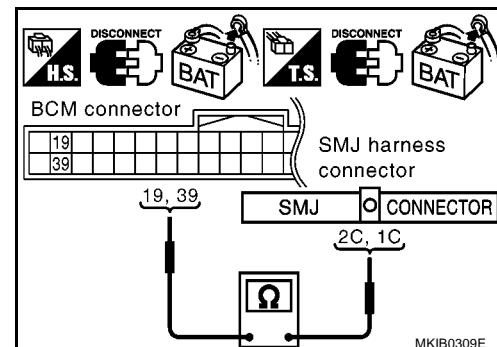
2. CHECK HARNESS FOR OPEN CIRCUIT

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**

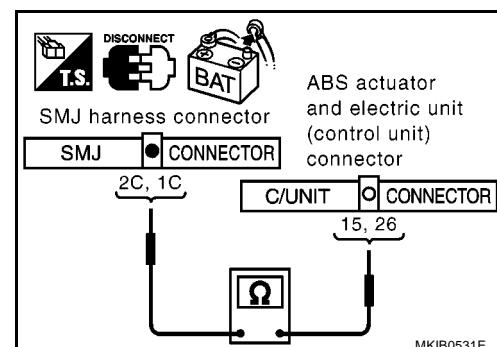
Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

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

EKS00JQ2

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.

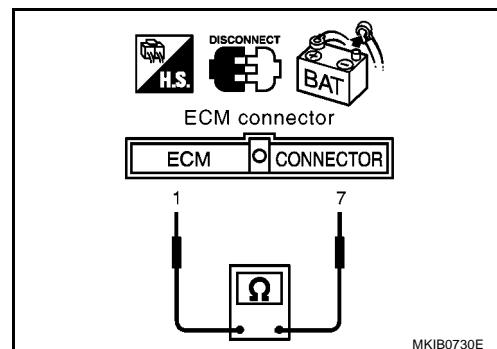
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E61 terminals 1 (R) and 7 (W).

1 (R) – 7 (W) : Approx. 108 – 132ΩOK or NG

OK >> Replace ECM.

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



Data Link Connector Circuit Check

EKS00JQ3

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

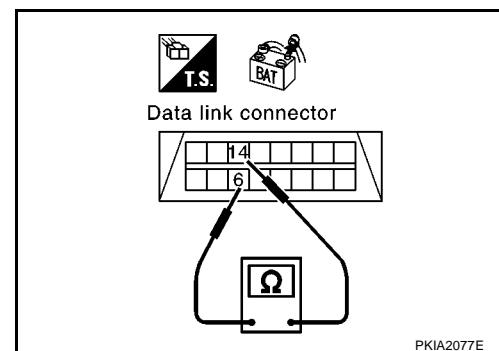
Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

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



Combination Meter Circuit Check

EKS00JQ4

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).

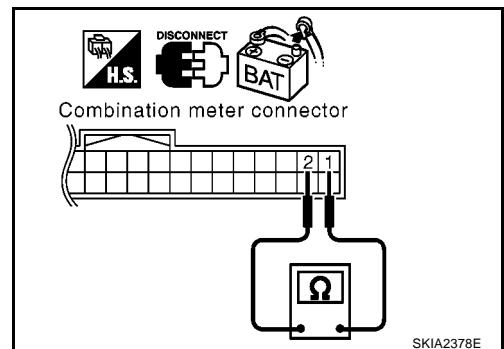
1 (R) – 2 (W)

: 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

EKS00JQ5

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.

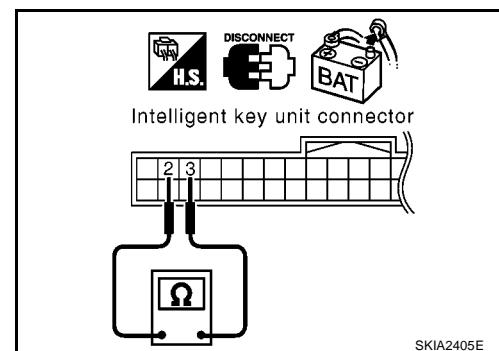
2. CHECK HARNESS FOR OPEN CIRCUIT

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 – 66ΩOK or NG

OK >> Replace Intelligent Key unit.

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



EPS Control Unit Circuit Check

EKS00JQ6

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).

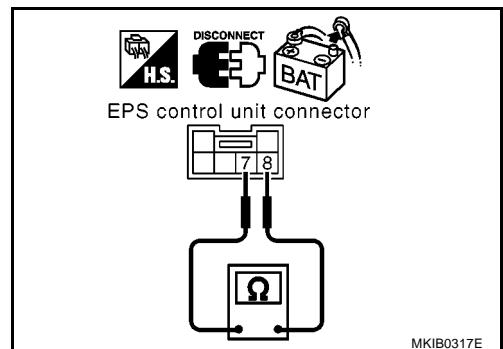
8 (R) – 7 (W)

: 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

EKS00JQ7

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.

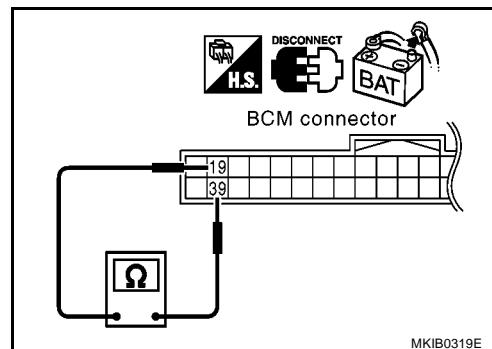
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

EKS00JQ8

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.

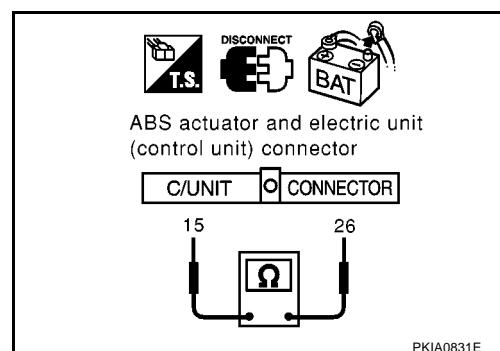
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JQ9

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.

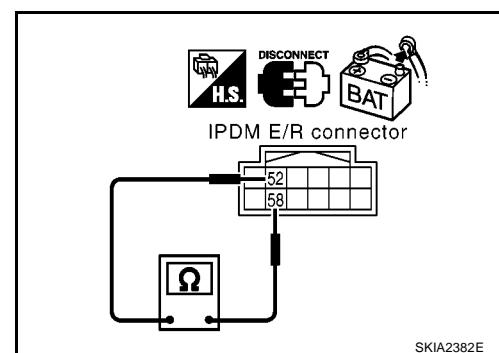
2. CHECK HARNESS FOR OPEN CIRCUIT

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).



CAN Communication Circuit Check

EKS00JQA

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.

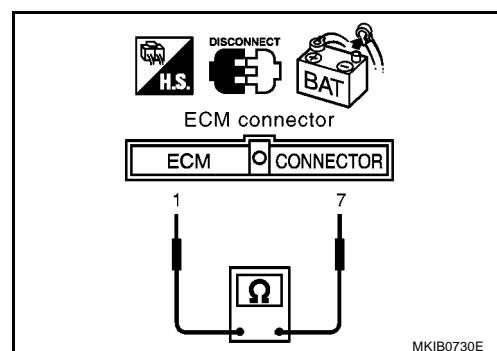
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

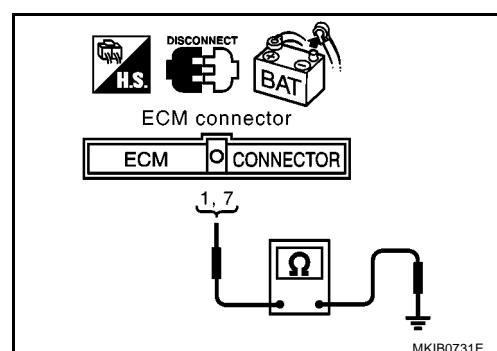
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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.



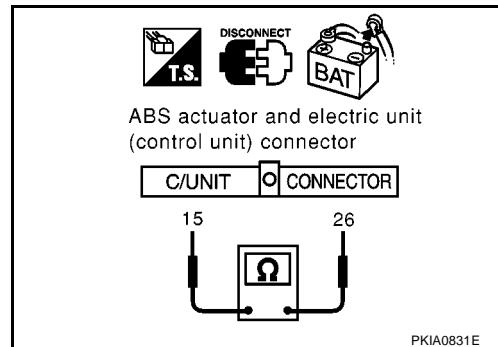
4. CHECK HARNESS FOR SHORT CIRCUIT

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



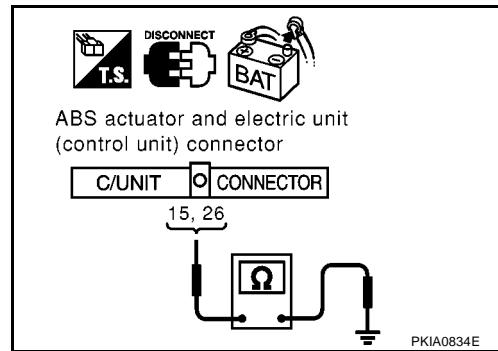
5. CHECK HARNESS FOR SHORT CIRCUIT

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



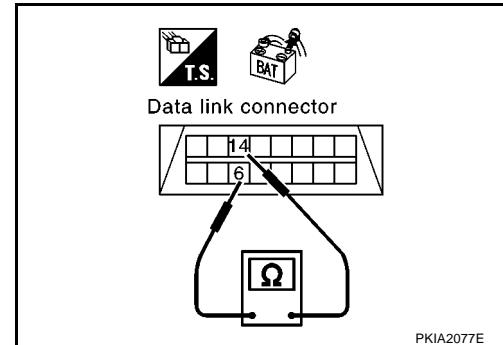
6. CHECK HARNESS FOR SHORT CIRCUIT

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

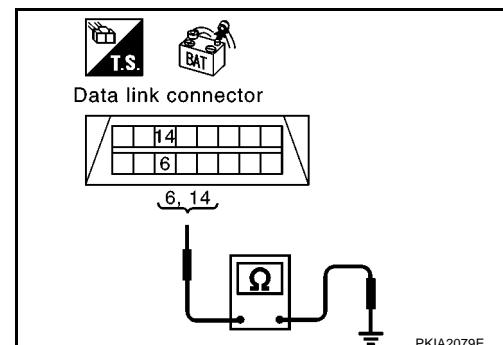
Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

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-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""](#).

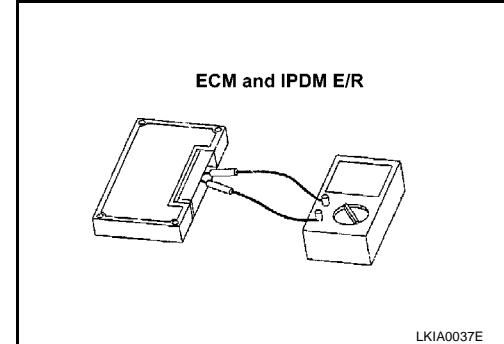
Component Inspection

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	



LKIA0037E

CAN SYSTEM (TYPE 10)

PFP:23710

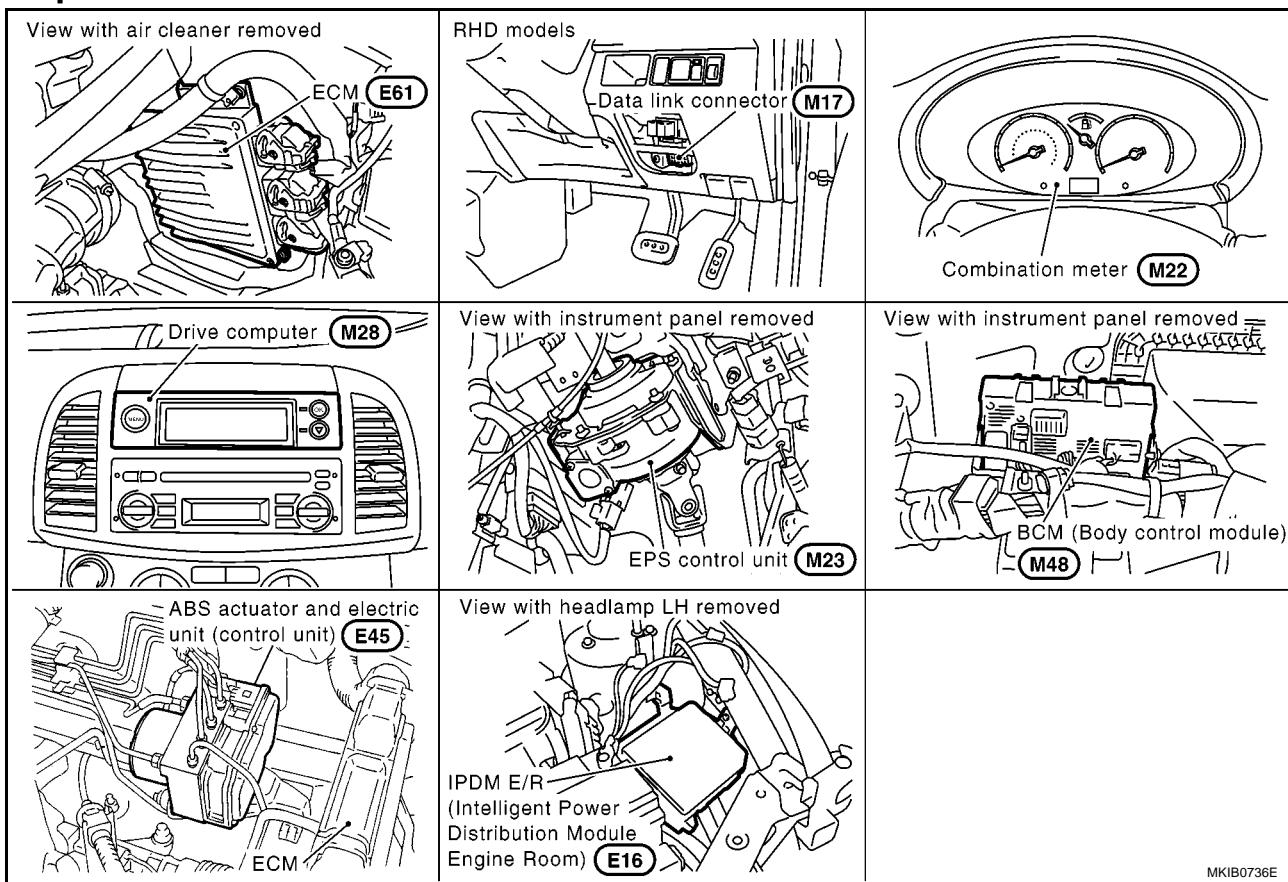
System Description

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]

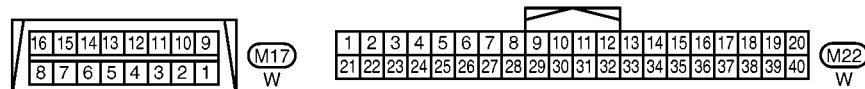
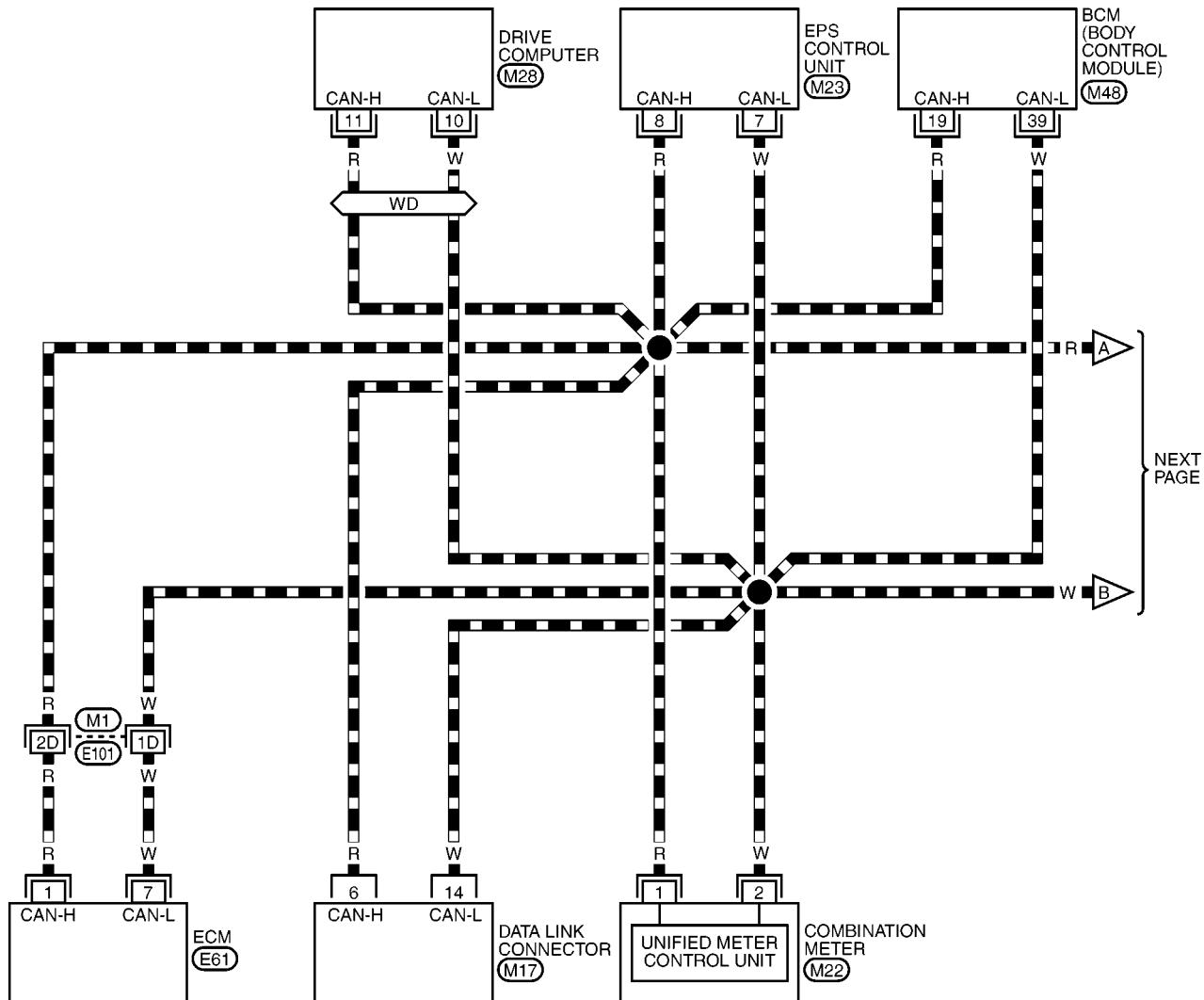
Wiring Diagram — CAN —

EKS00JQF

LAN-CAN-19

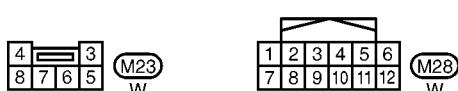
: DATA LINE

: WITH DRIVE COMPUTER



(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E61) -ELECTRICAL UNITS

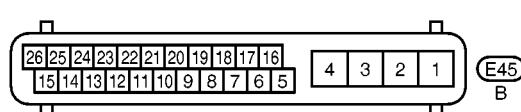
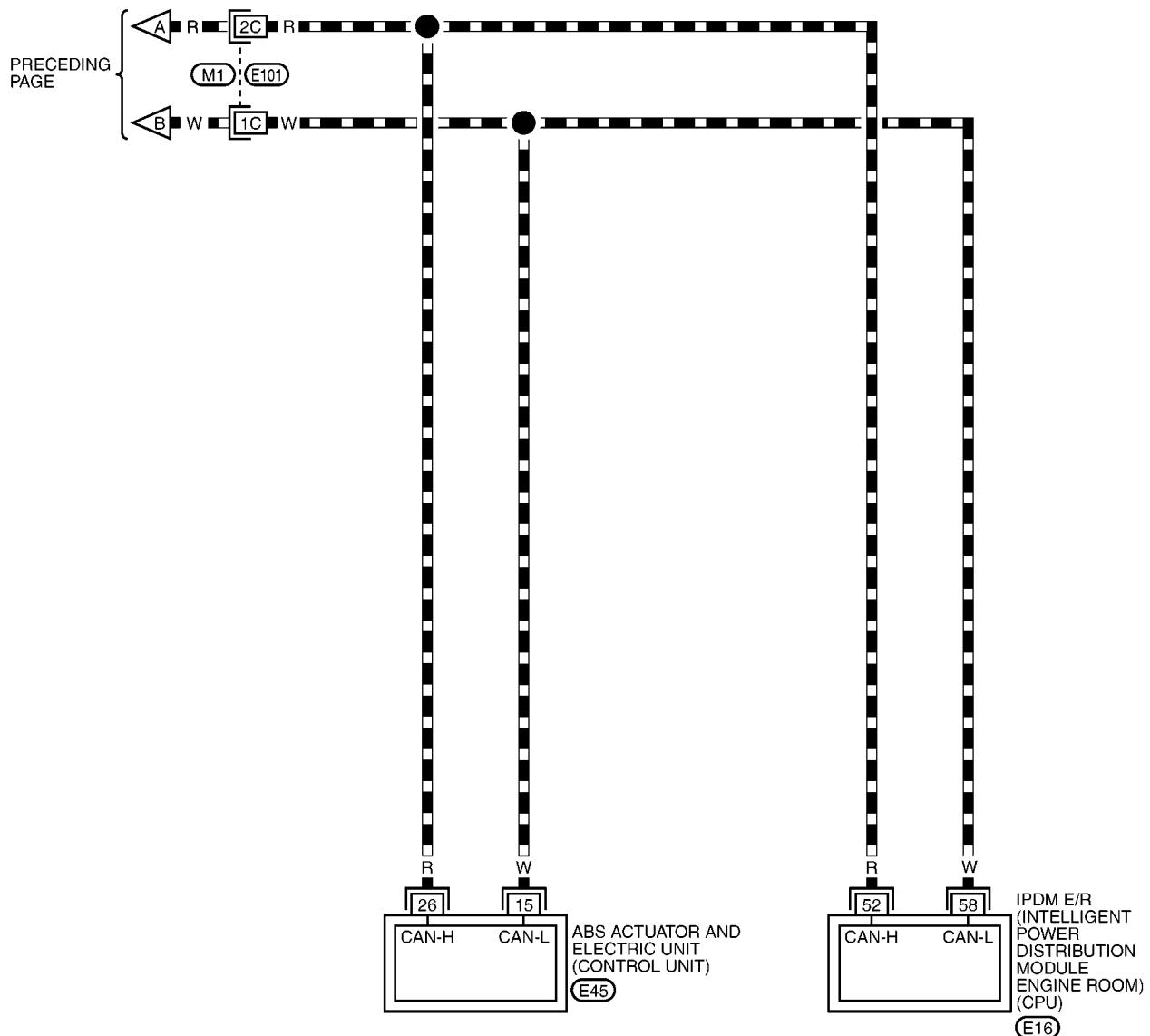


CAN SYSTEM (TYPE 10)

[CAN]

LAN-CAN-20

■ : DATA LINE



REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA2708E

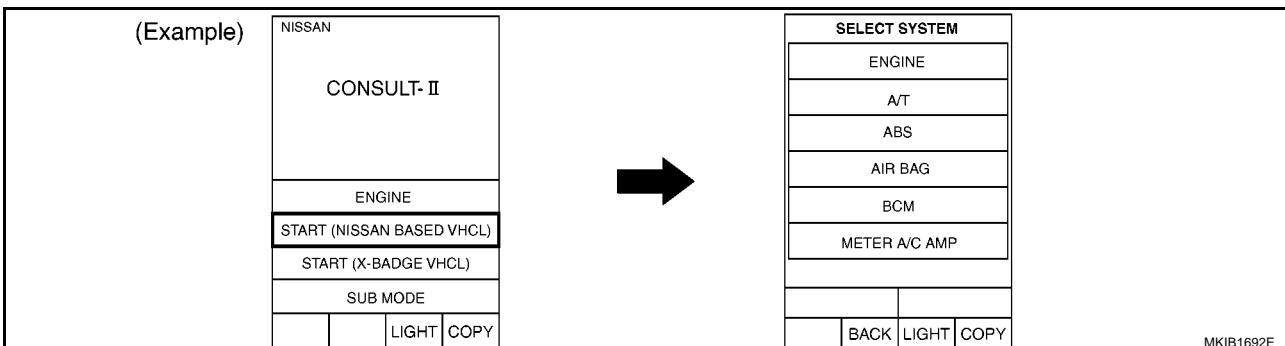
CAN SYSTEM (TYPE 10)

[CAN]

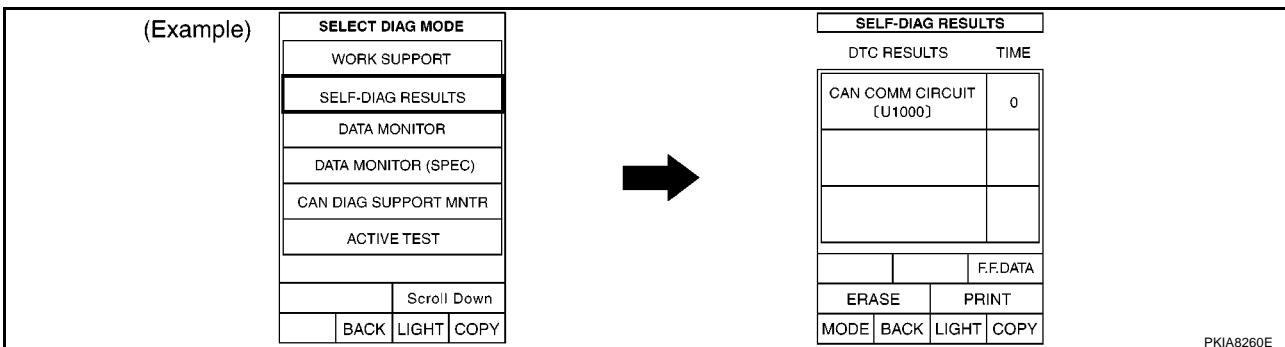
Work Flow

EKS00JQG

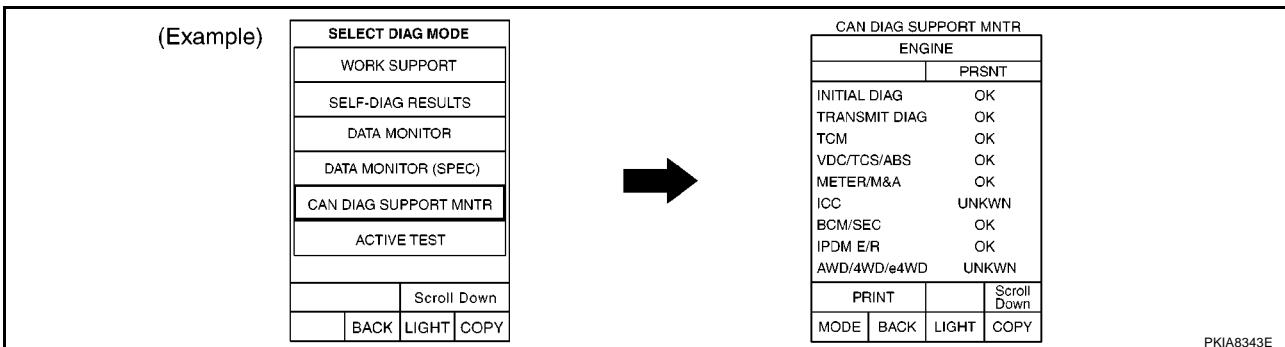
- When there are no indications of "ENGINE", "EPS", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



- 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 "UNKWN" 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.

A
B
C
D
E
F
G
H
I
J
LAN
L
M

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		
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	—	—

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

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

Check sheet table

	CONSULT indication	CAN system	Tx	Rx					IPDM E/R
				ECM	Combination meter	EPS	BCM	ABS	
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					IPDM E/R
			ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN
EPS	No indication	NG	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

LAN

L

M

MKIB1610E

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

MKIB0304E

CAN SYSTEM (TYPE 10)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

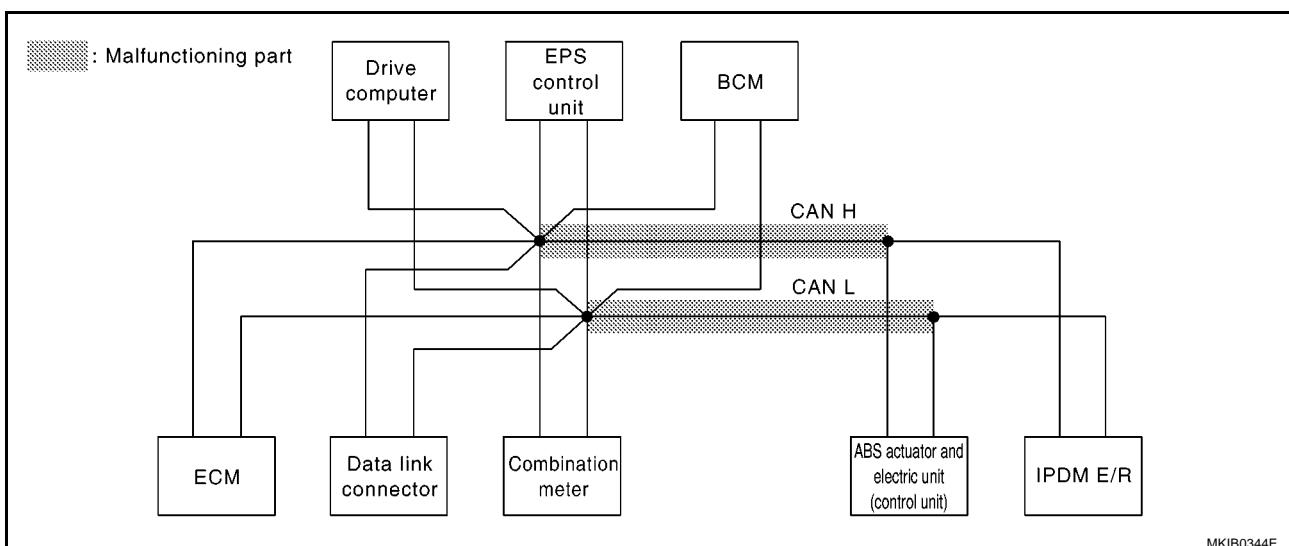
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

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	—	—

MKIB1671E



MKIB0344E

CAN SYSTEM (TYPE 10)

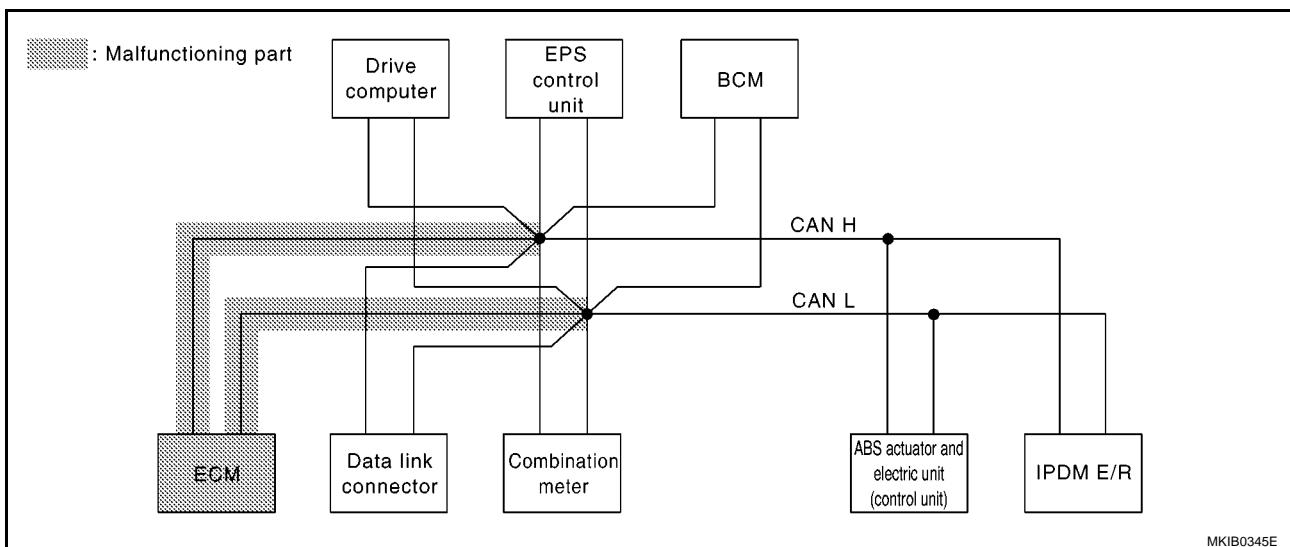
[CAN]

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)

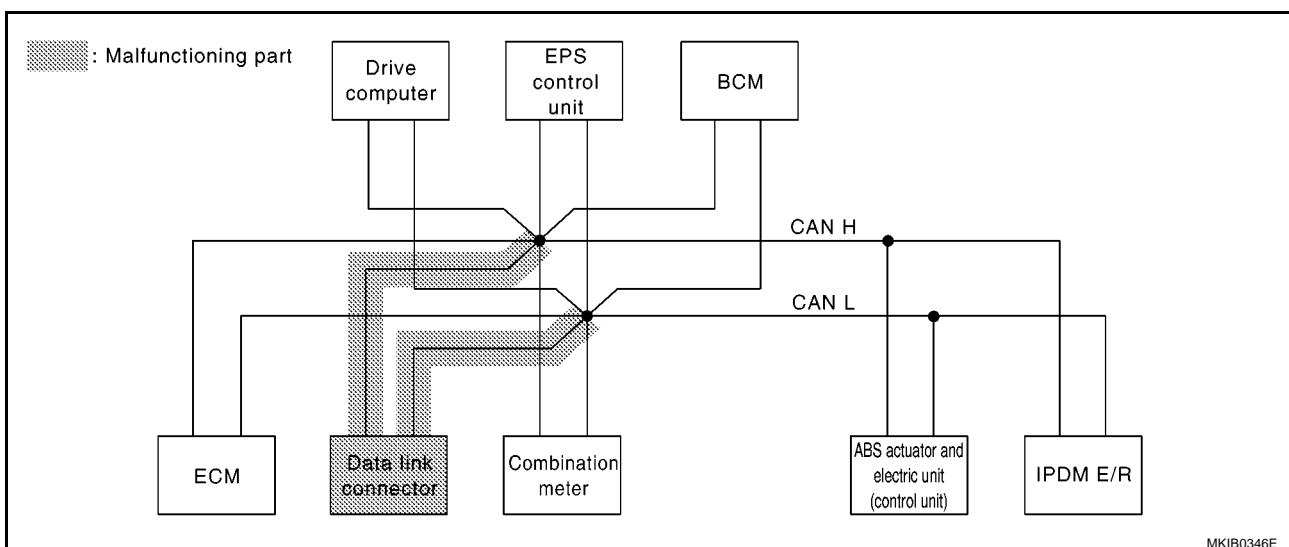
[CAN]

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	—	—

MKIB1673E



MKIB0346E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 10)

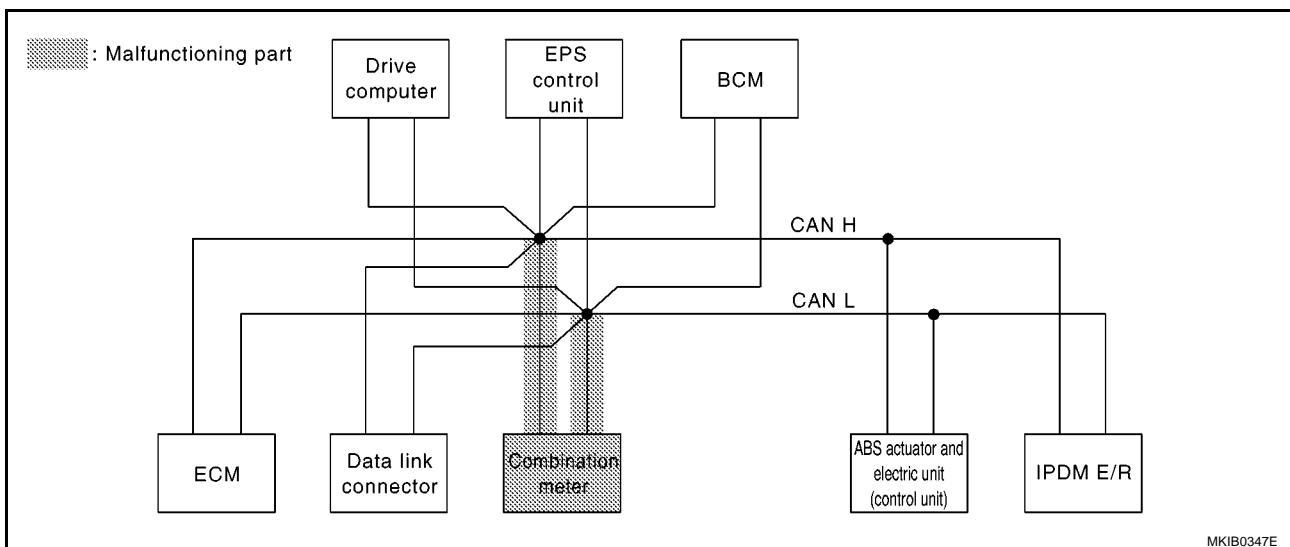
[CAN]

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	—	—

MKIB1674E



CAN SYSTEM (TYPE 10)

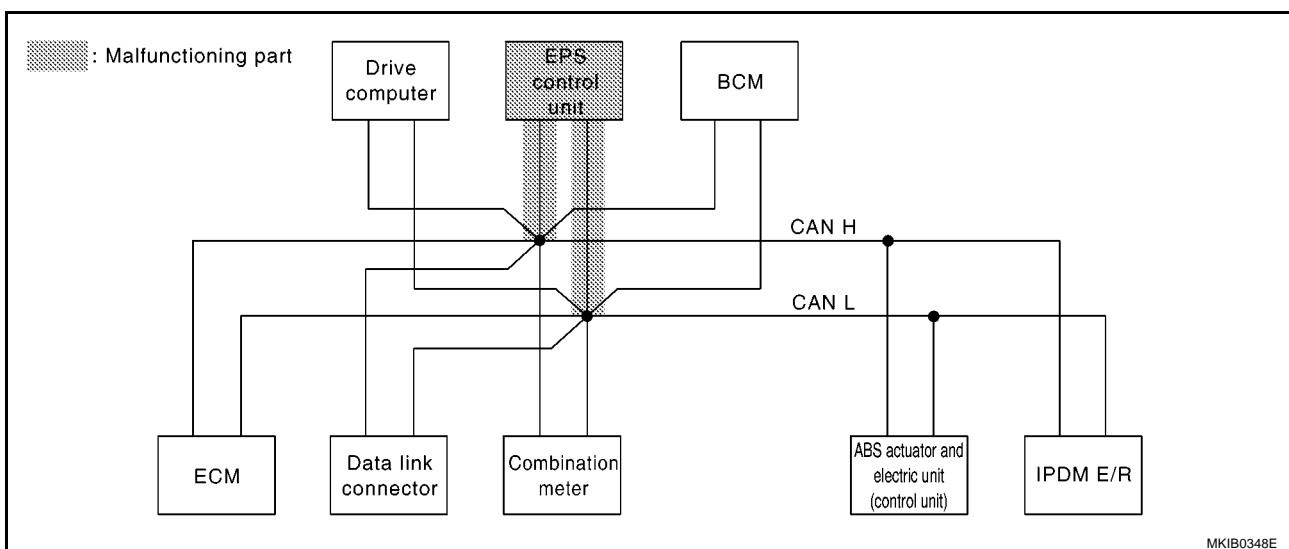
[CAN]

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	—	—

MKIB1675E



MKIB0348E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 10)

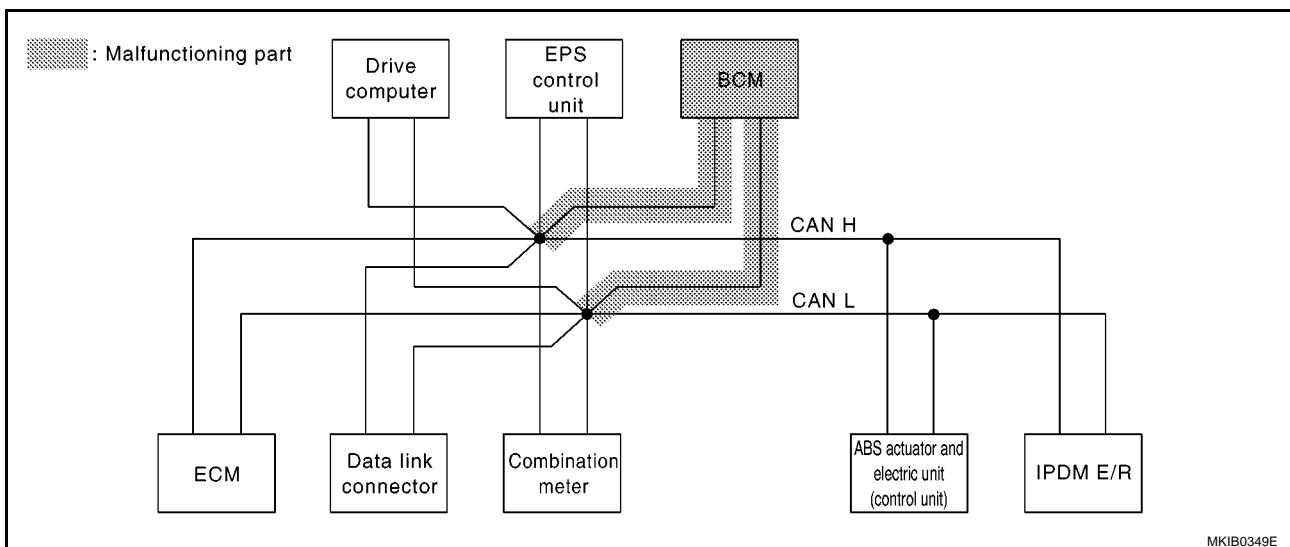
[CAN]

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	—	—

MKIB1676E



CAN SYSTEM (TYPE 10)

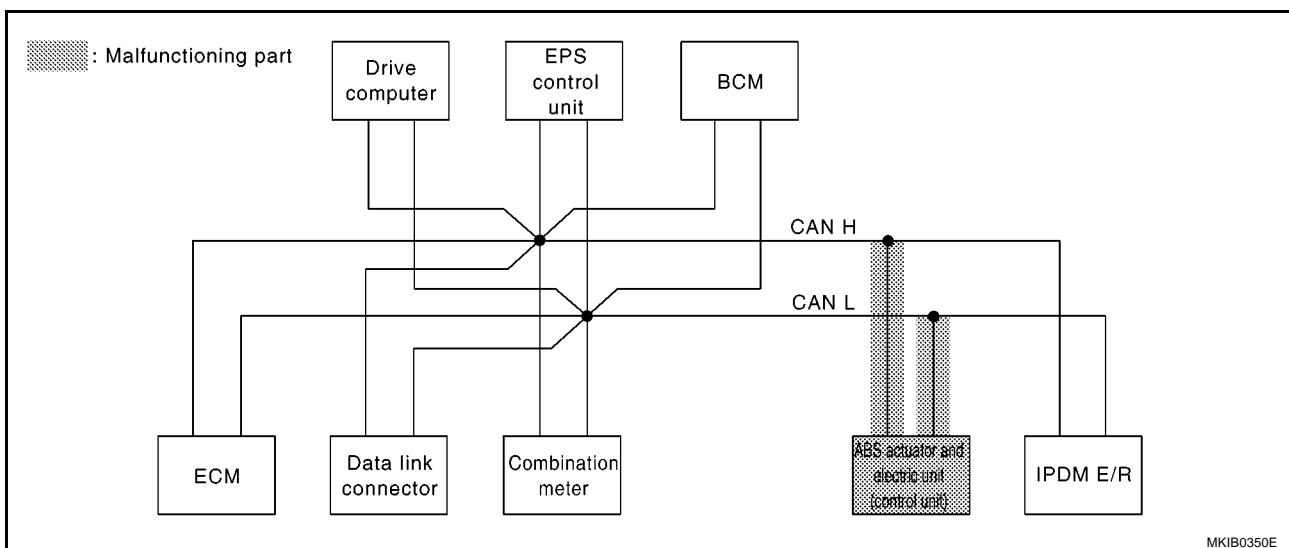
[CAN]

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	—	—

MKIB1677E



MKIB0350E

A
B
C
D
E
F
G
H
I
J

LAN

L

M

CAN SYSTEM (TYPE 10)

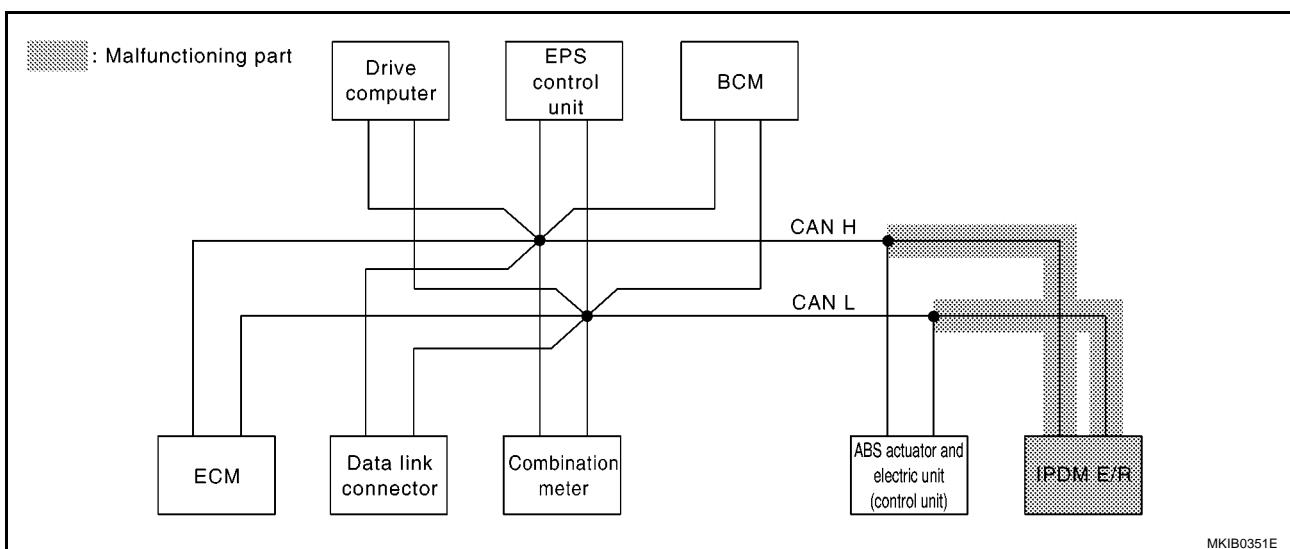
[CAN]

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	—	—

MKIB1678E



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					IPDM E/R
				ECM	Combination meter	EPS	BCM	ABS	
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					IPDM E/R
				ECM	Combination meter	EPS	BCM	ABS	
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					IPDM E/R
				ECM	Combination meter	EPS	BCM	ABS	
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

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.

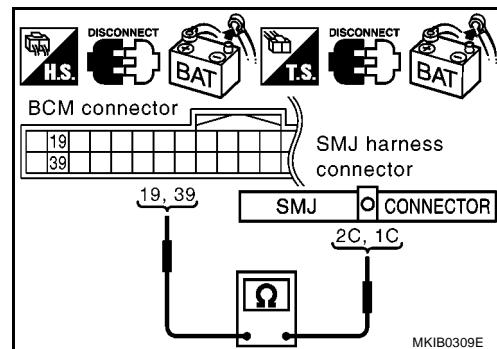
39 (W) – 1C (W)

: 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.

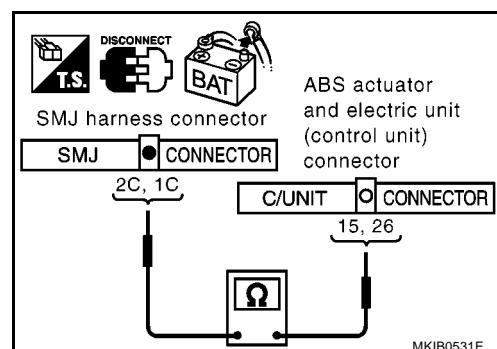
1C (W) – 15 (W)

: 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

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 (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).

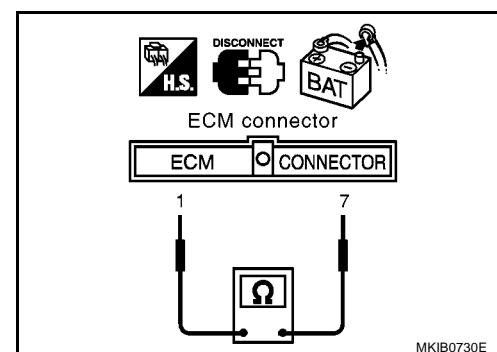
1 (R) – 7 (W)

: Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.

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



Data Link Connector Circuit Check

EKS00JQJ

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

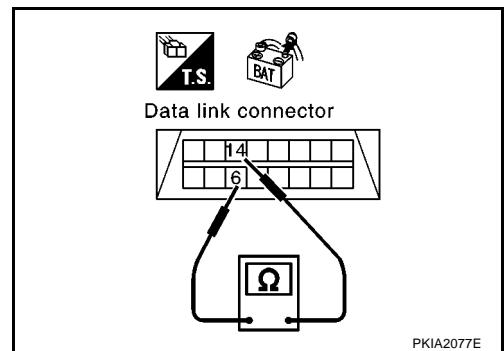
Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

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

EKS00JQK

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

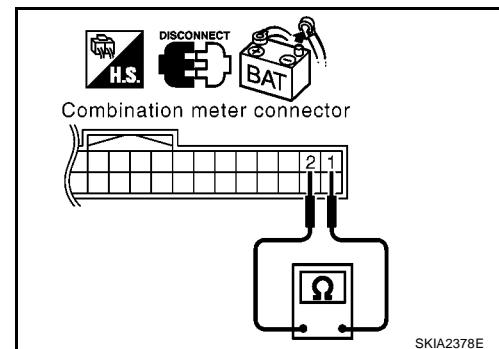
1. Disconnect combination meter connector.
 2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

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

EKS00JQL

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).

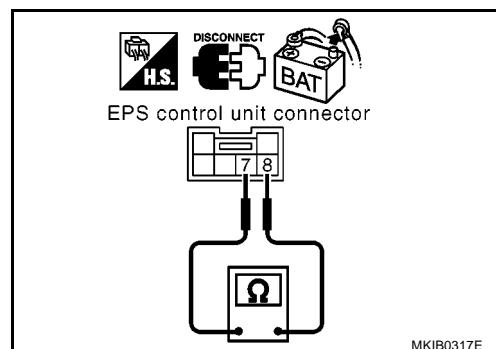
8 (R) – 7 (W)

: 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

EKS00JQM

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.

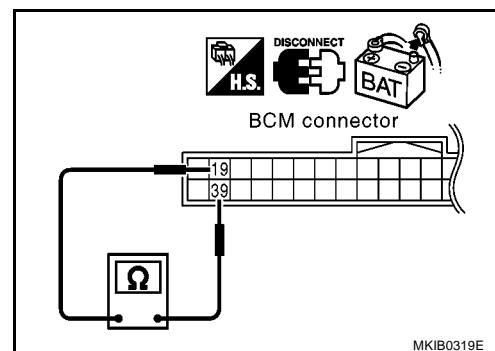
NG >> Repair terminal or connector.

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 – 66ΩOK or NGOK >> 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

EKS00JQN

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.

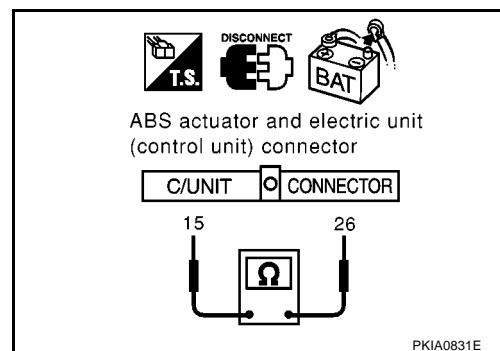
2. CHECK HARNESS FOR OPEN CIRCUIT

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

EKS00JQO

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.

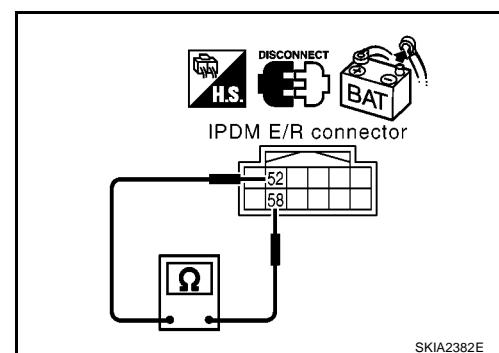
2. CHECK HARNESS FOR OPEN CIRCUIT

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).



CAN Communication Circuit Check

EKS00JQP

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.

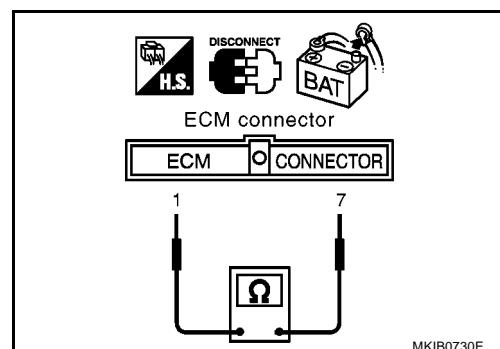
2. CHECK HARNESS FOR SHORT CIRCUIT

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.

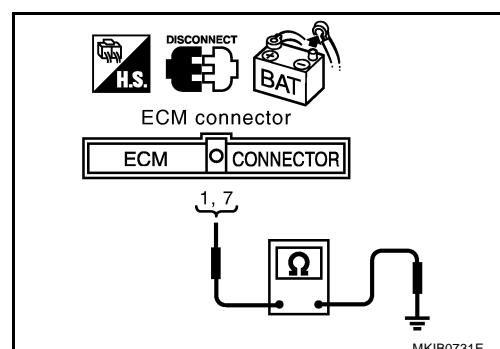
**3. CHECK HARNESS FOR SHORT CIRCUIT**

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.



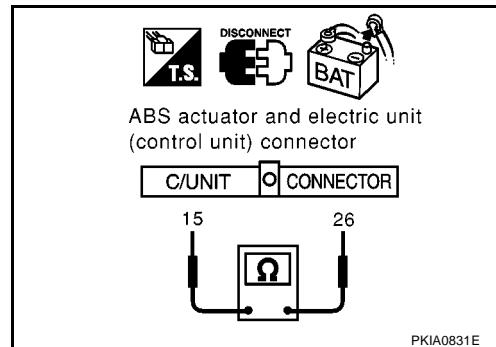
4. CHECK HARNESS FOR SHORT CIRCUIT

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



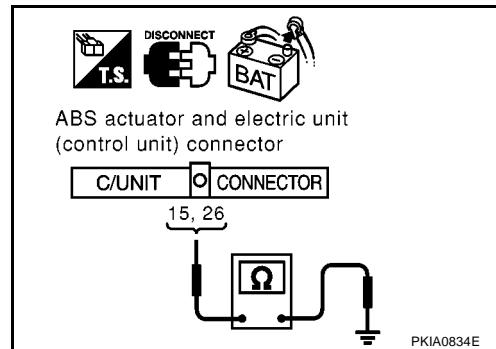
5. CHECK HARNESS FOR SHORT CIRCUIT

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



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).

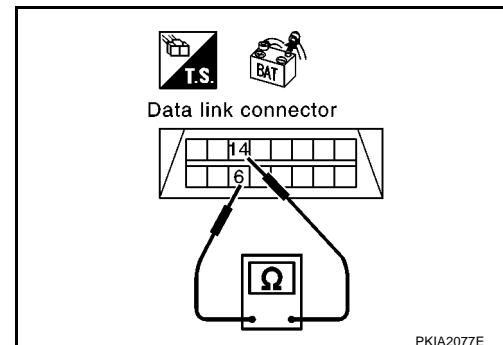
6 (R) – 14 (W) : Continuity should not exist.

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.

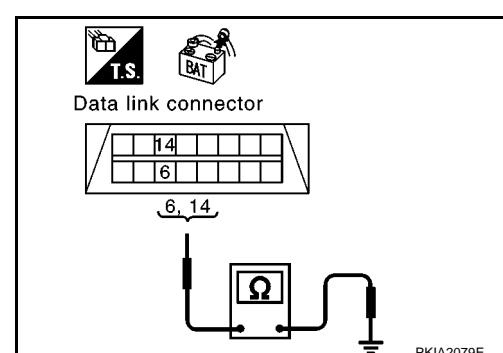
14 (W) – Ground : Continuity should not exist.

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""](#).

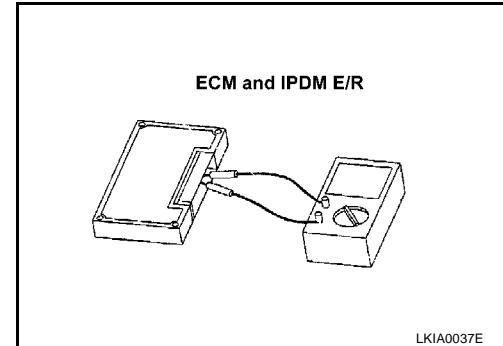
Component Inspection

EKS00JQR

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	



LKIA0037E

A

B

C

D

E

F

G

H

I

J

LAN

L

M

CAN SYSTEM (TYPE 10)

[CAN]
