

SECTION **LAN**
LAN SYSTEM

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

CONTENTS

| CAN | |
|---|-----------|
| PRECAUTIONS | 2 |
| Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" | 2 |
| Precautions for Battery Service | 2 |
| Precautions When Using CONSULT-II | 2 |
| CHECK POINTS FOR USING CONSULT-II | 2 |
| Precautions For Trouble Diagnosis | 2 |
| CAN SYSTEM | 2 |
| Precautions For Harness Repair | 3 |
| CAN SYSTEM | 3 |
| CAN COMMUNICATION | 4 |
| System Description | 4 |
| CAN Communication Unit | 4 |
| TYPE 1 | 4 |
| TYPE 2 | 6 |
| CAN SYSTEM (TYPE 1) | 8 |
| System Description | 8 |
| Component Parts and Harness Connector Location | 8 |
| Schematic | 9 |
| Wiring Diagram - CAN - | 10 |
| Work Flow | 13 |
| CHECK SHEET | 14 |
| CHECK SHEET RESULTS (EXAMPLE) | 16 |
| Circuit Check Between Data Link Connector and VDC/TCS/ABS Control Unit | 25 |
| ECM Circuit Check | 26 |
| Data Link Connector Circuit Check | 26 |
| Combination Meter Circuit Check | 27 |
| BCM Circuit Check | 27 |
| Steering Angle Sensor Circuit Check | 28 |
| VDC/TCS/ABS Control Unit Circuit Check | 28 |
| IPDM E/R Circuit Check | 29 |
| CAN Communication Circuit Check | 30 |
| IPDM E/R Ignition Relay Circuit Check | 32 |
| Component Inspection | 32 |
| ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION | 32 |
| CAN SYSTEM (TYPE 2) | 33 |
| System Description | 33 |
| Component Parts and Harness Connector Location | 33 |
| Schematic | 34 |
| Wiring Diagram - CAN - | 35 |
| Work Flow | 38 |
| CHECK SHEET | 39 |
| CHECK SHEET RESULTS (EXAMPLE) | 41 |
| Circuit Check Between TCM and Data Link Connector | 52 |
| Circuit Check Between Data Link Connector and VDC/TCS/ABS Control Unit | 53 |
| ECM Circuit Check | 54 |
| TCM Circuit Check | 54 |
| Data Link Connector Circuit Check | 55 |
| Combination Meter Circuit Check | 55 |
| BCM Circuit Check | 56 |
| Steering Angle Sensor Circuit Check | 56 |
| VDC/TCS/ABS Control Unit Circuit Check | 57 |
| IPDM E/R Circuit Check | 57 |
| CAN Communication Circuit Check | 58 |
| IPDM E/R Ignition Relay Circuit Check | 60 |
| Component Inspection | 60 |
| ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION | 60 |

PRECAUTIONS

PFP:00001

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

AKS003EX

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

Precautions for Battery Service

AKS005IS

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

Precautions When Using CONSULT-II

AKS00AIN

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

CAUTION:

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

CHECK POINTS FOR USING CONSULT-II

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

Precautions For Trouble Diagnosis CAN SYSTEM

AKS003EY

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

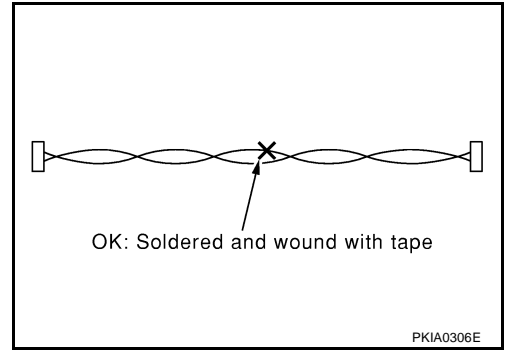
PRECAUTIONS

[CAN]

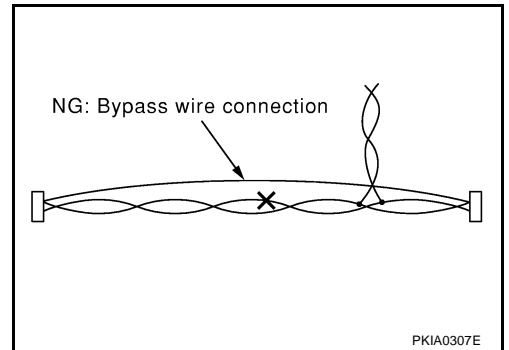
AKS003EZ

Precautions For Harness Repair CAN SYSTEM

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



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



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

CAN COMMUNICATION

PFP:23710

System Description

AKS003F0

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

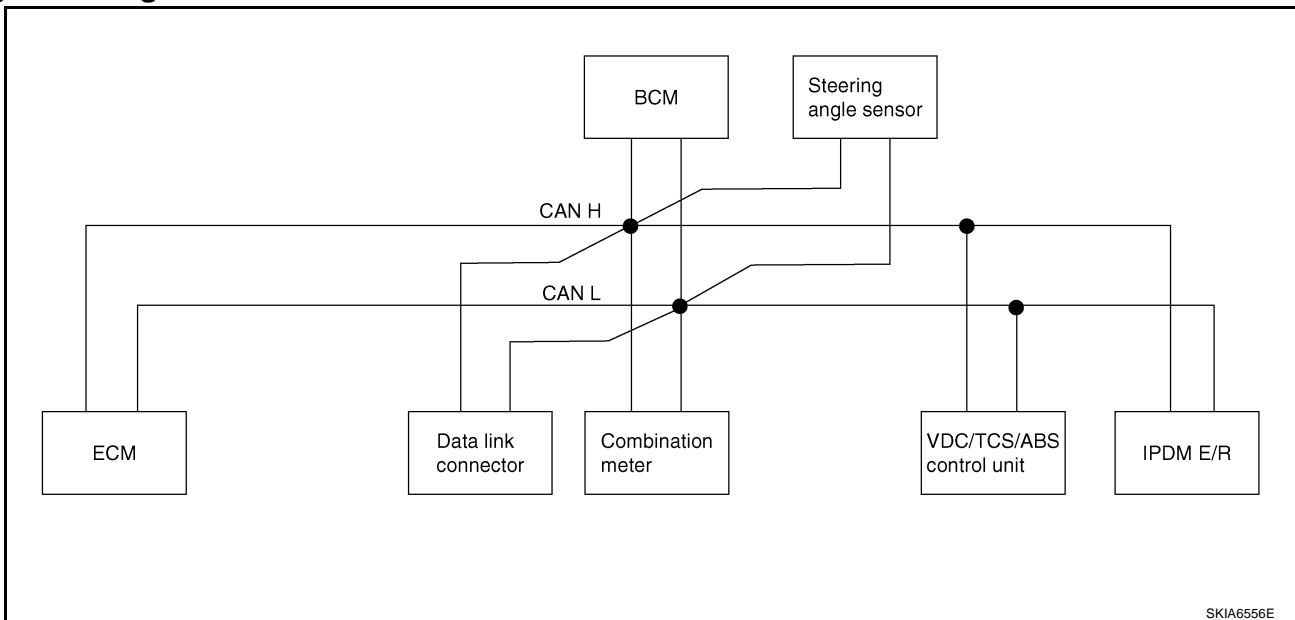
AKS003F1

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

| | | |
|------------------------------|-----------------------|------------------------|
| Body type | Coupe | |
| Axle | 2WD | |
| Engine | VQ35DE | |
| Transmission | M/T | A/T |
| Brake control | VDC | |
| CAN system type | 1 | 2 |
| CAN system trouble diagnosis | LAN-8 | LAN-33 |

TYPE 1

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

| Signals | ECM | Combina- tion meter | BCM | Steering angle sensor | VDC/TCS/ ABS control unit | IPDM E/R |
|-----------------------------------|-----|------------------------|-----|-----------------------------|---------------------------------|----------|
| Engine speed signal | T | R | | | R | |
| Engine coolant temperature signal | T | R | | | | |
| Accelerator pedal position signal | T | | | | R | |
| Fuel consumption monitor signal | T | R | | | | |
| A/C switch signal | R | | T | | | |
| A/C compressor request signal | T | | | | | R |
| A/C compressor feedback signal | T | R | | | | |

CAN COMMUNICATION

[CAN]

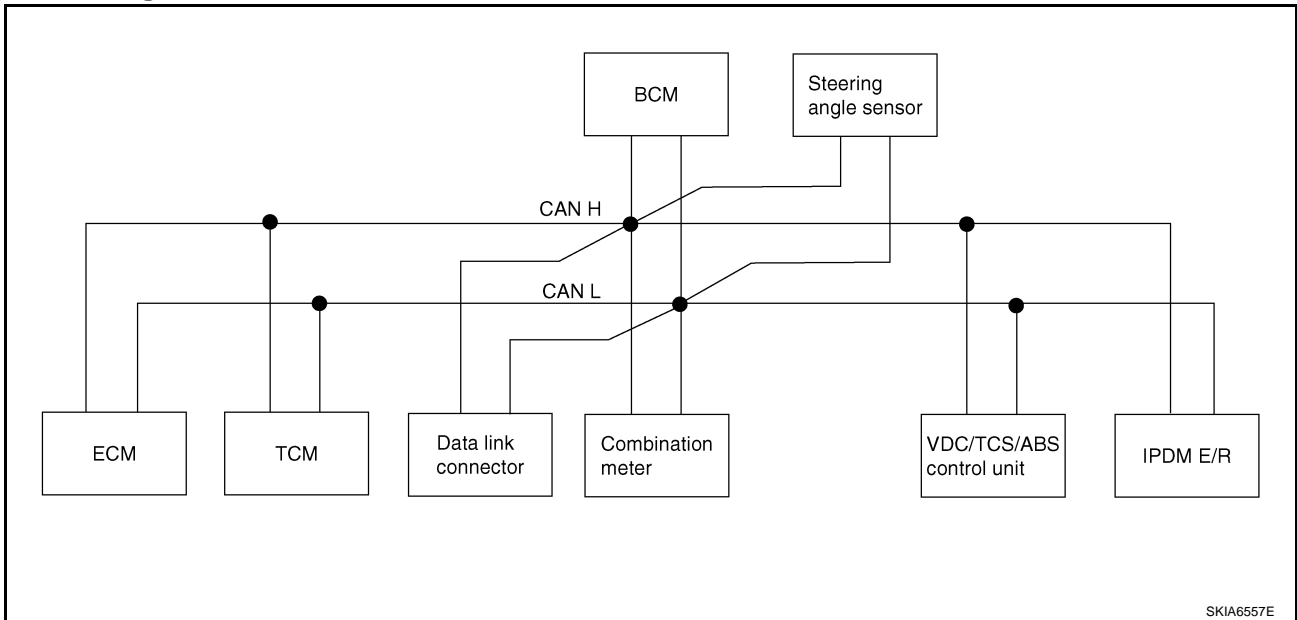
| Signals | ECM | Combina- tion meter | BCM | Steering angle sensor | VDC/TCS/ ABS control unit | IPDM E/R | |
|--|-----|------------------------|-----|-----------------------------|---------------------------------|----------|-----|
| Blower fan motor switch signal | R | | T | | | | A |
| Cooling fan motor operation signal | T | | | | | R | B |
| Position lights request signal | | R | T | | | R | |
| Low beam request signal | | | T | | | R | C |
| Low beam status signal | R | | R | | | T | |
| High beam request signal | | R | T | | | R | |
| High beam status signal | R | | R | | | T | D |
| Front fog lights request signal | | | T | | | R | |
| Vehicle speed signal | | R | | | T | | |
| | R | T | R | | | | E |
| Sleep request 1 signal | | R | T | | | | |
| Sleep request 2 signal | | | T | | | R | F |
| Wake up request 1 signal | | R | T | | | | |
| Wake up request 2 signal | | R | T | | | | |
| Door switch signal (without navigation system) | | R | T | | | R | G |
| Door switch signal (with navigation system) | | T | R | | | | |
| Turn indicator signal | | R | T | | | | H |
| Seat belt buckle switch signal | | T | R | | | | |
| Oil pressure switch signal | | R | | | | T | |
| Buzzer output signal | | R | T | | | | I |
| Trunk switch signal | | R | T | | | | |
| Malfunction indicator lamp signal | T | R | | | | | J |
| ASCD SET lamp signal | T | R | | | | | |
| ASCD CRUISE lamp signal | T | R | | | | | |
| Fuel level sensor signal | R | T | | | | | LAN |
| Front wiper request signal | | | T | | | R | |
| Front wiper stop position signal | | | R | | | T | |
| Rear window defogger switch signal | | | T | | | R | L |
| Rear window defogger control signal | R | | R | | | T | |
| Hood switch signal | | | R | | | T | M |
| Theft warning horn request signal | | | T | | | R | |
| Horn chirp signal | | | T | | | R | |
| Ignition switch signal | | | T | | | R | |
| Steering angle sensor signal | | | | T | R | | |
| Tire pressure signal | | R | T | | | | |

CAN COMMUNICATION

[CAN]

TYPE 2

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

| Signals | ECM | TCM | Combina- tion meter | BCM | Steering angle sensor | VDC/TCS/ ABS control unit | IPDM E/R |
|---|-----|-----|------------------------|-----|-----------------------------|---------------------------------|----------|
| Engine speed signal | T | R | R | | | R | |
| Engine coolant temperature signal | T | R | R | | | | |
| Accelerator pedal position signal | T | R | | | | R | |
| Closed throttle position signal | T | R | | | | | |
| Wide open throttle position signal | T | R | | | | | |
| Battery voltage signal | T | R | | | | | |
| Stop lamp switch signal | | R | T | | | | |
| Fuel consumption monitor signal | T | | R | | | | |
| A/T self-diagnosis signal | R | T | | | | | |
| A/T CHECK indicator lamp signal | | T | R | | | | |
| A/T position indicator signal | | T | R | | | R | |
| ABS operation signal | | R | | | | T | |
| A/T shift schedule change demand signal | | R | | | | T | |
| A/C switch signal | R | | | T | | | |
| A/C compressor request signal | T | | | | | | R |
| A/C compressor feedback signal | T | | R | | | | |
| Blower fan motor switch signal | R | | | T | | | |
| Cooling fan motor operation signal | T | | | | | | R |
| Position lights request signal | | | R | T | | | R |
| Low beam request signal | | | | T | | | R |
| Low beam status signal | R | | | R | | | T |
| High beam request signal | | | R | T | | | R |
| High beam status signal | R | | | R | | | T |
| Front fog lights request signal | | | | T | | | R |

CAN COMMUNICATION

[CAN]

| Signals | ECM | TCM | Combina- tion meter | BCM | Steering angle sensor | VDC/TCS/ ABS control unit | IPDM E/R | |
|---|-----|-----|------------------------|-----|-----------------------------|---------------------------------|----------|-----|
| Vehicle speed signal | | | R | | | T | | A |
| | R | R | T | R | | | | B |
| Sleep request 1 signal | | | R | T | | | | |
| Sleep request 2 signal | | | | T | | | R | C |
| Wake up request 1 signal | | | R | T | | | | |
| Wake up request 2 signal | | | R | T | | | | |
| Door switch signal (without naviga- tion system) | | | R | T | | | R | D |
| Door switch signal (with navigation system) | | | T | R | | | | E |
| Turn indicator signal | | | R | T | | | | |
| Seat belt buckle switch signal | | | T | R | | | | |
| Oil pressure switch signal | | | R | | | | T | F |
| Buzzer output signal | | | R | T | | | | |
| Trunk switch signal | | | R | T | | | | G |
| Malfunction indicator lamp signal | T | | R | | | | | |
| ASCD SET lamp signal | T | | R | | | | | |
| ASCD CRUISE lamp signal | T | | R | | | | | H |
| Fuel level sensor signal | R | | T | | | | | |
| Output shaft revolution signal | R | T | | | | | | I |
| Turbine revolution signal | R | T | | | | | | |
| Front wiper request signal | | | | T | | | R | |
| Front wiper stop position signal | | | | R | | | T | J |
| Rear window defogger switch signal | | | | T | | | R | |
| Rear window defogger control sig- nal | R | | | R | | | T | LAN |
| Manual mode signal | | R | T | | | | | |
| Not manual mode signal | | R | T | | | | | |
| Manual mode shift up signal | | R | T | | | | | L |
| Manual mode shift down signal | | R | T | | | | | |
| Manual mode indicator signal | | T | R | | | | | M |
| Hood switch signal | | | | R | | | T | |
| Theft warning horn request signal | | | | T | | | R | |
| Horn chirp signal | | | | T | | | R | |
| Ignition switch signal | | | | T | | | R | |
| Steering angle sensor signal | | | | | T | R | | |
| Tire pressure signal | | | R | T | | | | |

CAN SYSTEM (TYPE 1)

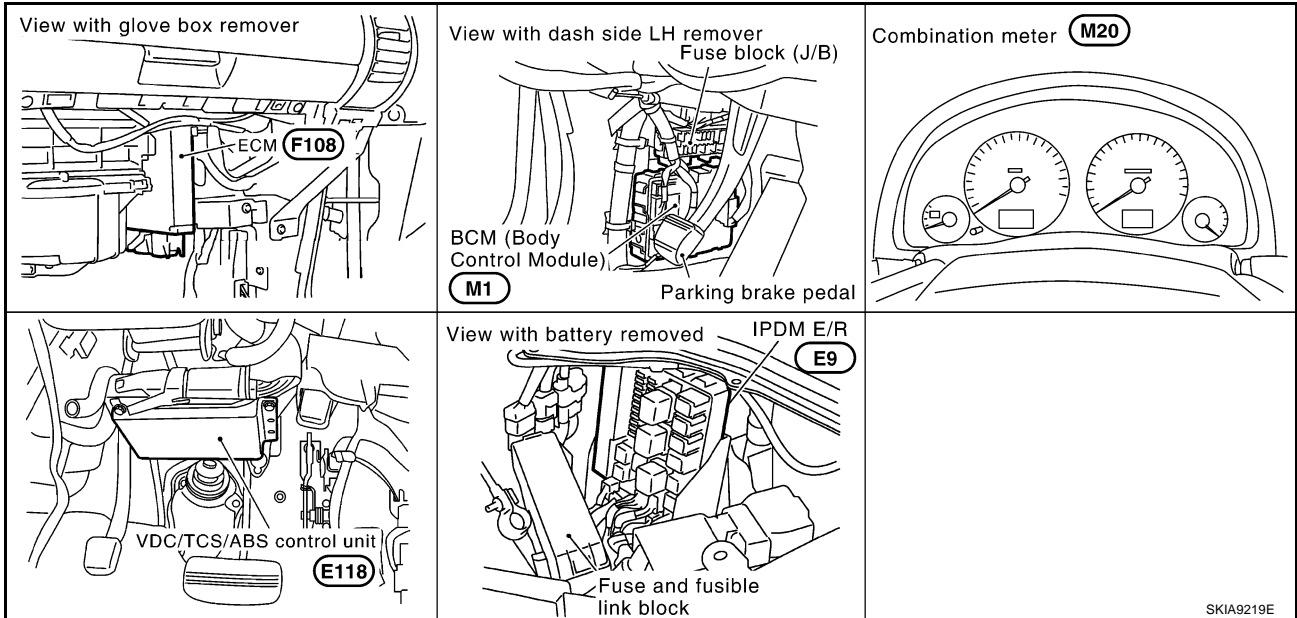
System Description

AKS00A10

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

AKS00A1P

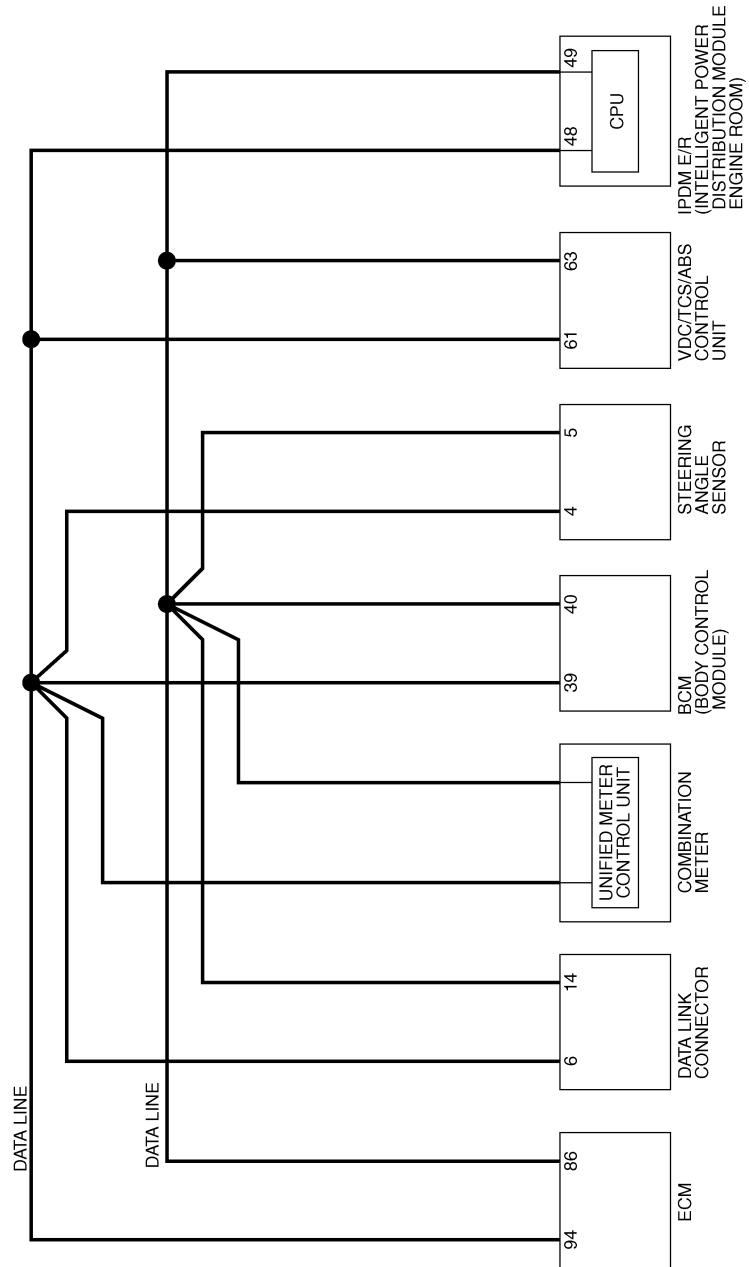


CAN SYSTEM (TYPE 1)

[CAN]

Schematic

AKS00A1Q



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

LAN

CAN SYSTEM (TYPE 1)

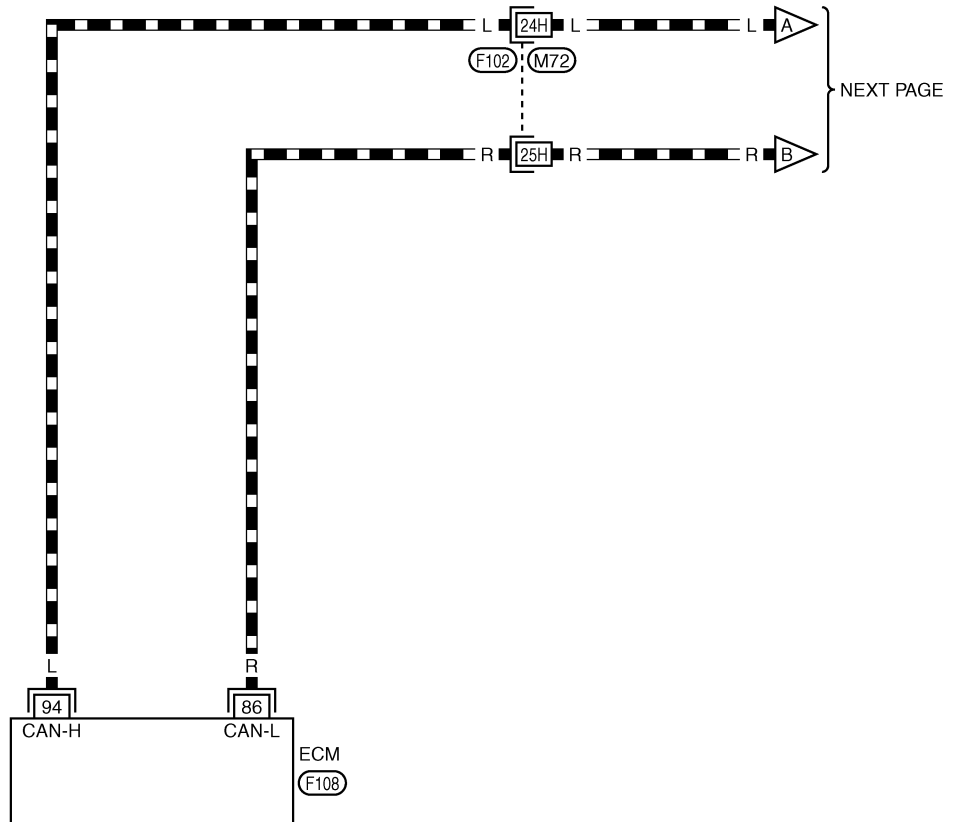
[CAN]

Wiring Diagram - CAN -

AKS00AIR

LAN-CAN-01

DATA LINE



REFER TO THE FOLLOWING.

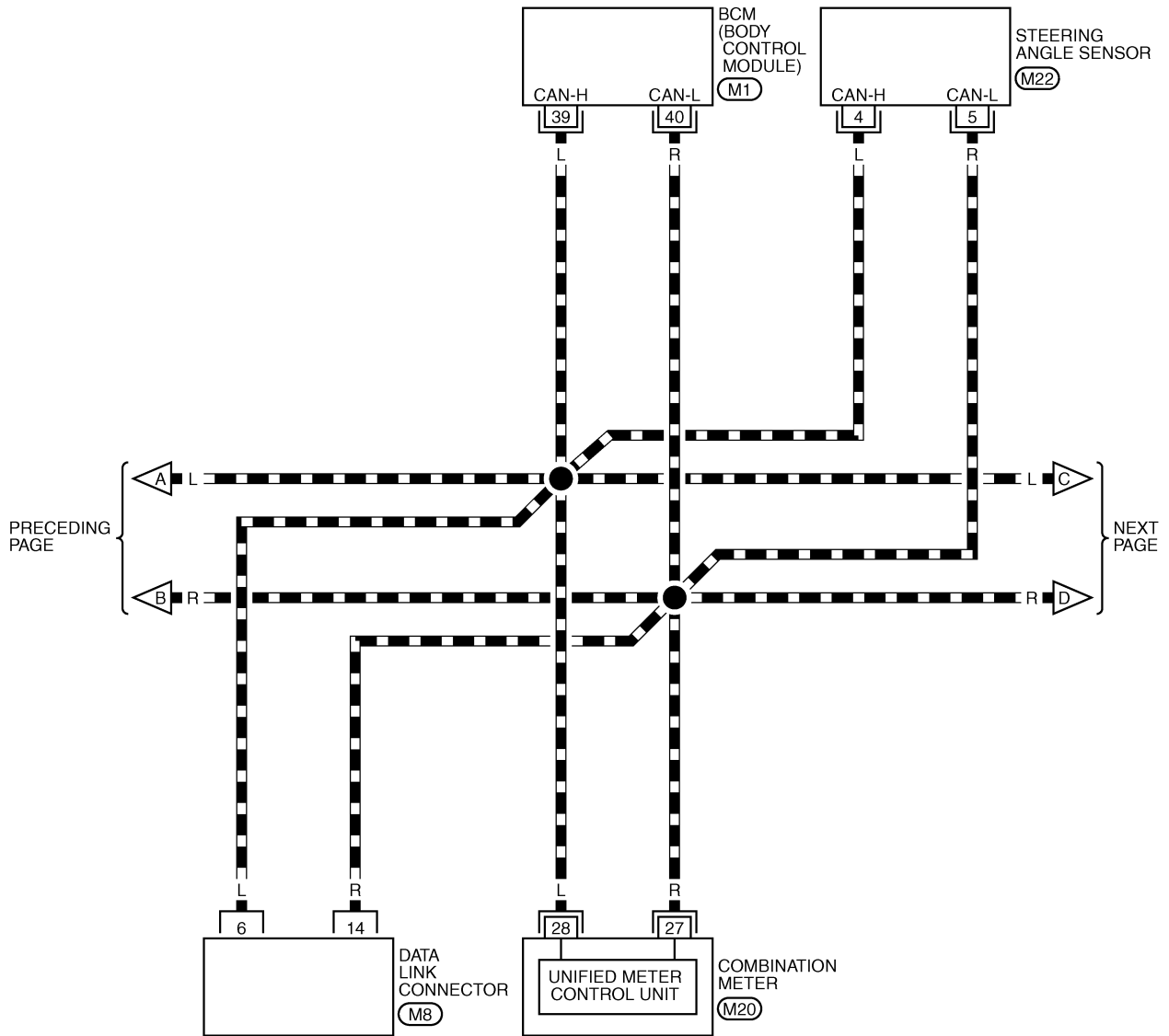
(F102) -SUPER MULTIPLE
JUNCTION (SMJ)

(F108) -ELECTRICAL UNITS

TKWT0573E

LAN-CAN-02

▬ : DATA LINE



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

(M8)
W

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

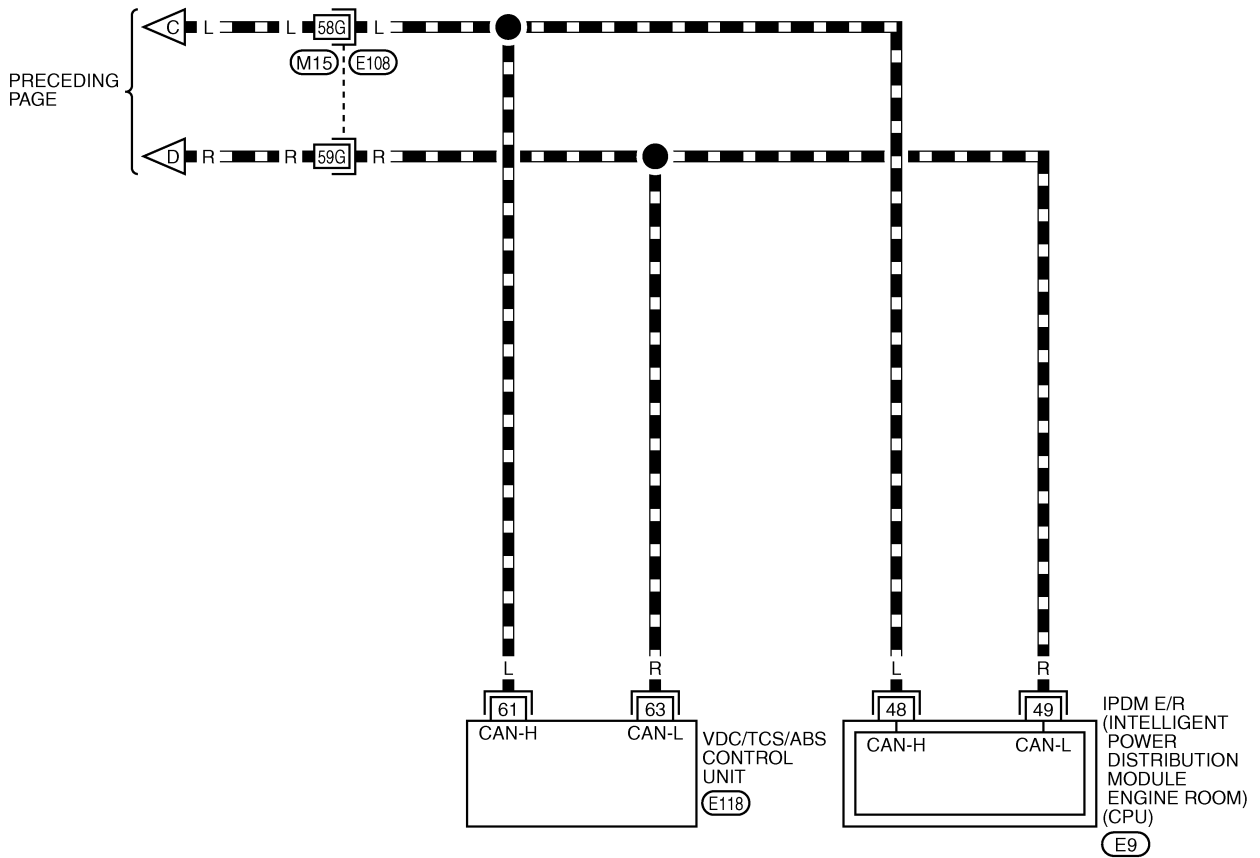
(M20)
W

| | | | | |
|---|---|---|---|---|
| 3 | 2 | 1 | | |
| 8 | 7 | 6 | 5 | 4 |

(M22)
W

REFER TO THE FOLLOWING.
(M1) -ELECTRICAL UNITS

▬ : DATA LINE



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

E9
W



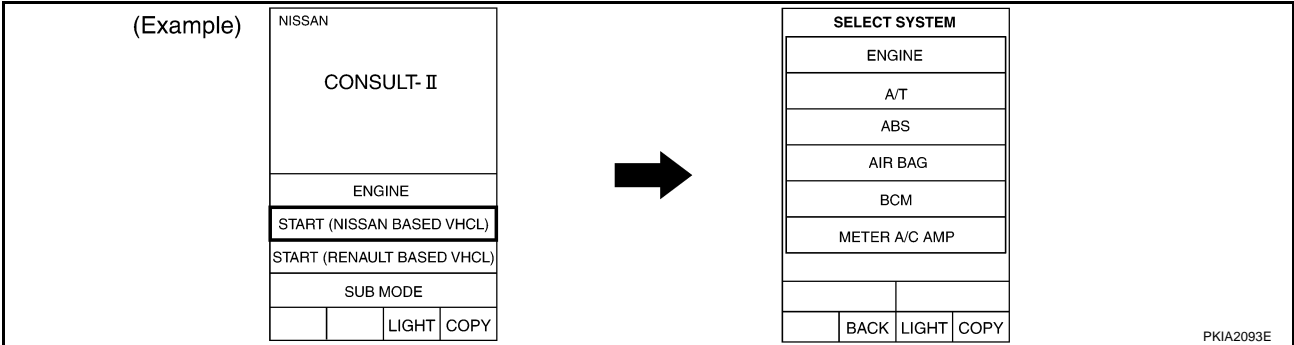
REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

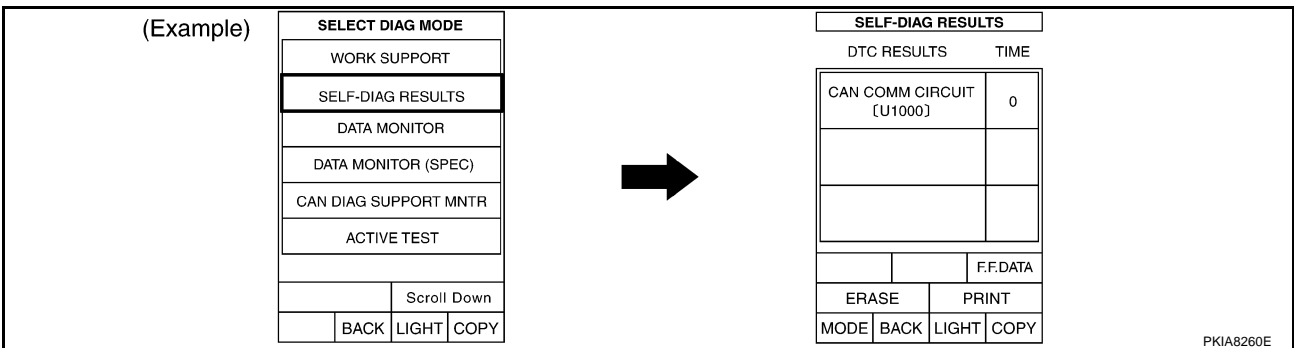
E118 -ELECTRICAL UNITS

Work Flow

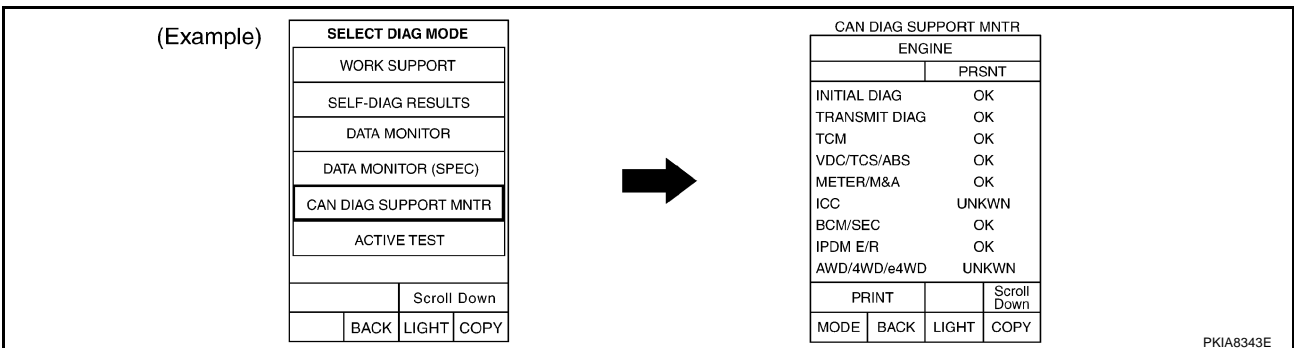
- When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-14, "CHECK SHEET"](#) .
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWNN" in the check sheet table. Refer to [LAN-14, "CHECK SHEET"](#) .

NOTE:

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

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

CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET

NOTE:

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

Check sheet table

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

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 1)

[CAN]

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

PKIA7914E

A

B

C

D

E

F

G

H

I

J

LAN

L

M

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

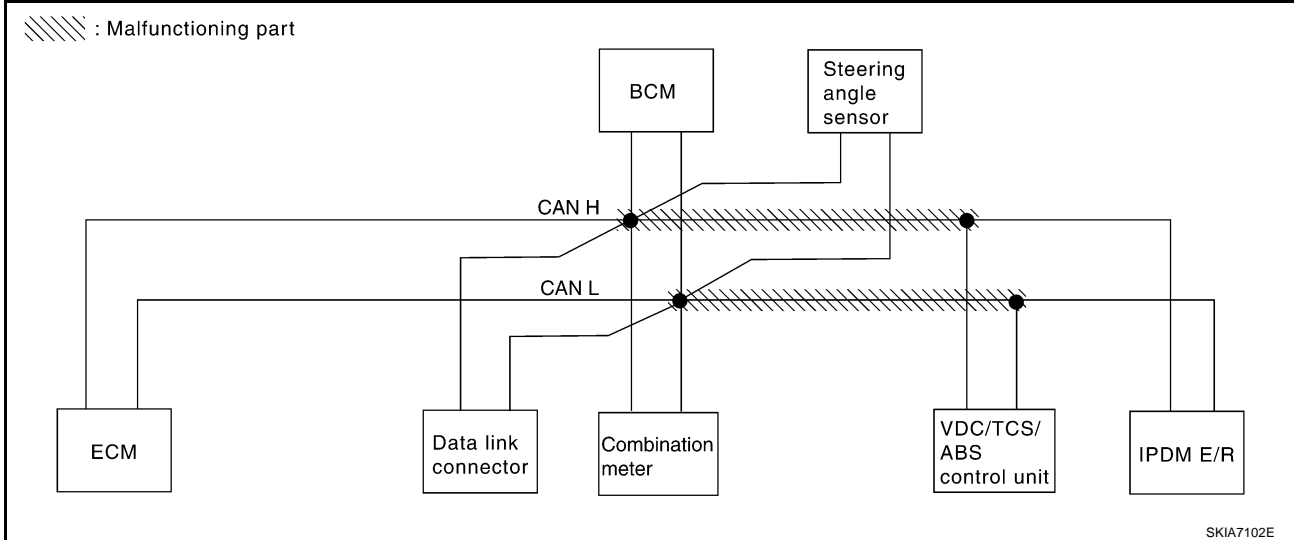
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case1

Check harness between data link connector and VDC/TCS/ABS control unit. Refer to [LAN-25, "Circuit Check Between Data Link Connector and VDC/TCS/ABS Control Unit"](#) .

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

PKIA7915E



SKIA7102E

CAN SYSTEM (TYPE 1)

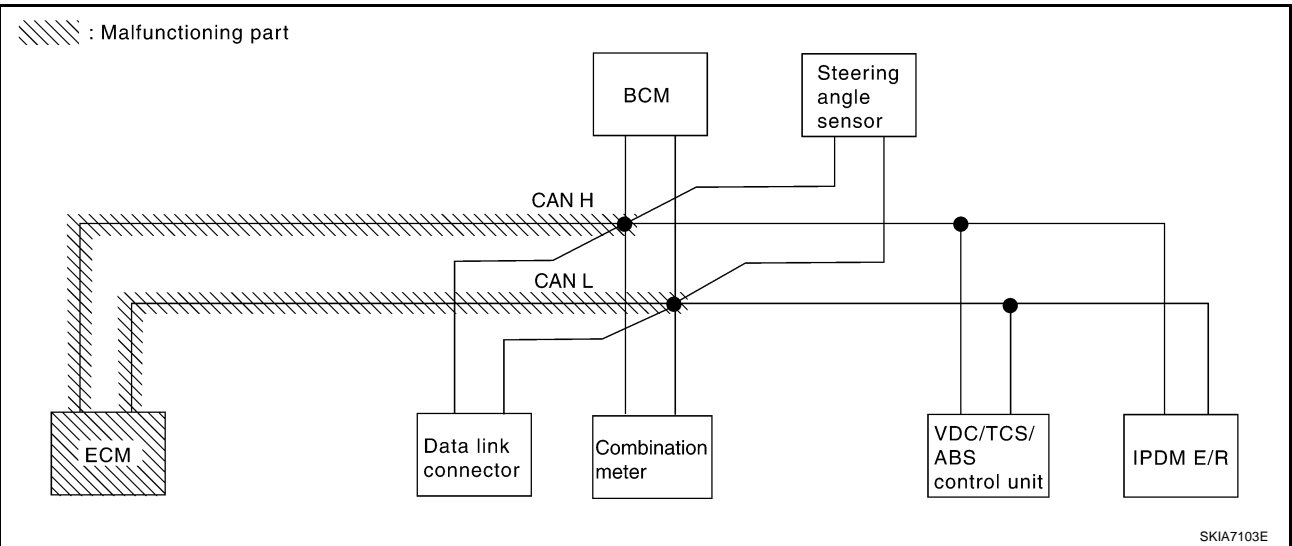
[CAN]

Case2

Check ECM circuit. Refer to [LAN-26, "ECM Circuit Check"](#) .

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

PKIA7916E



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

CAN SYSTEM (TYPE 1)

[CAN]

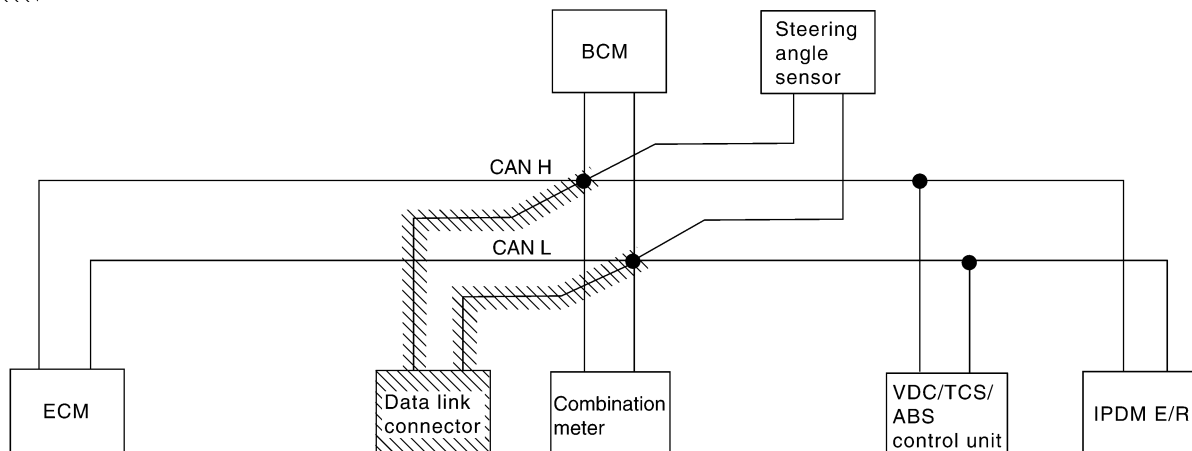
Case3

Check data link connector circuit. Refer to [LAN-26, "Data Link Connector Circuit Check"](#) .

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

PKIA7917E

//// : Malfunctioning part



PKIA4658E

CAN SYSTEM (TYPE 1)

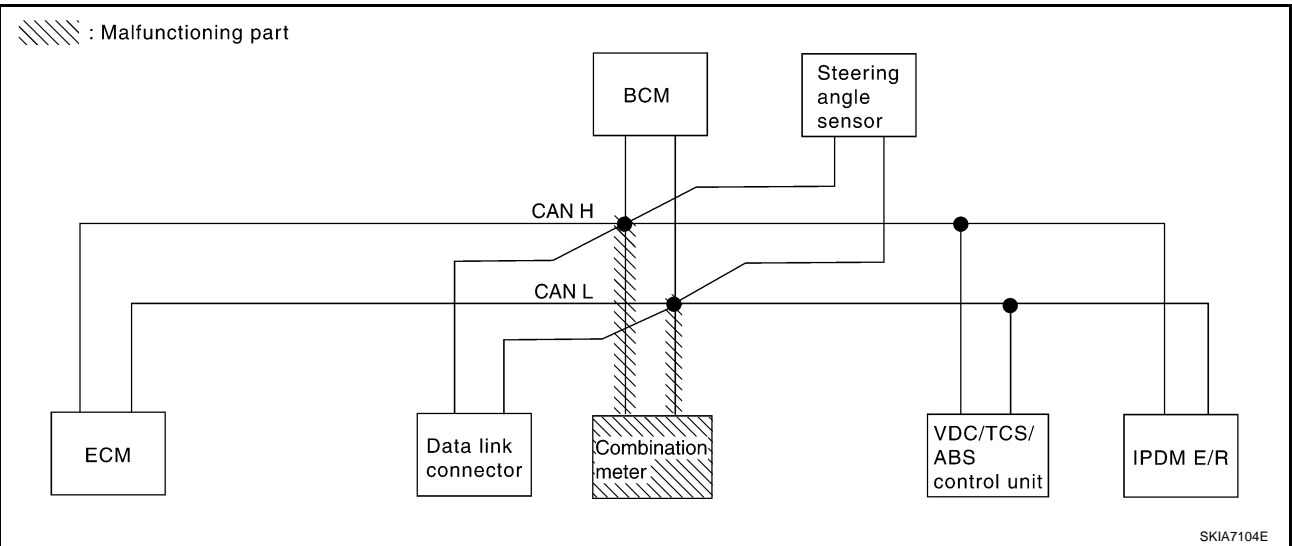
[CAN]

Case4

Check combination meter circuit. Refer to [LAN-27, "Combination Meter Circuit Check"](#) .

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

PKIA7918E



SKIA7104E

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

CAN SYSTEM (TYPE 1)

[CAN]

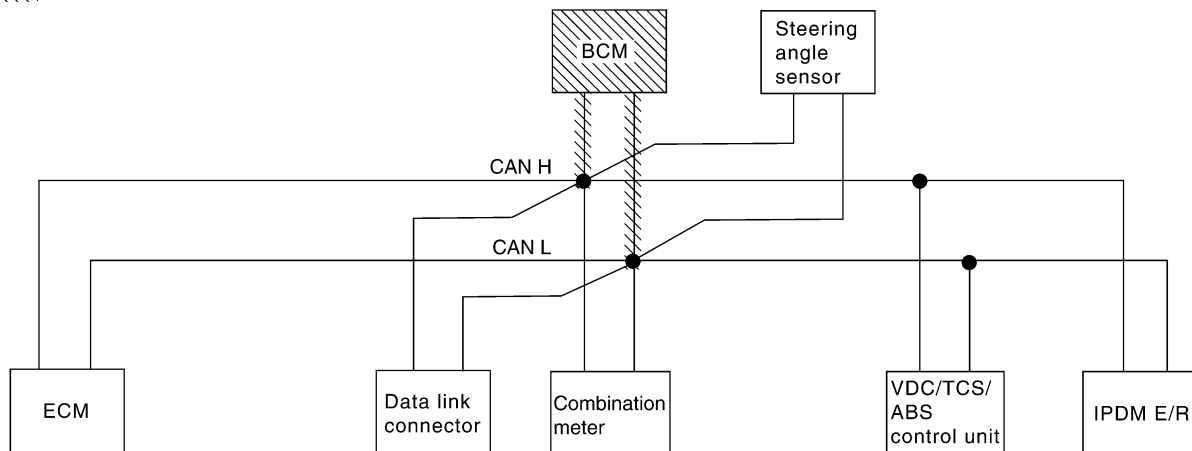
Case5

Check BCM circuit. Refer to [LAN-27, "BCM Circuit Check"](#) .

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

PKIA7919E

//// : Malfunctioning part



SKIA7105E

CAN SYSTEM (TYPE 1)

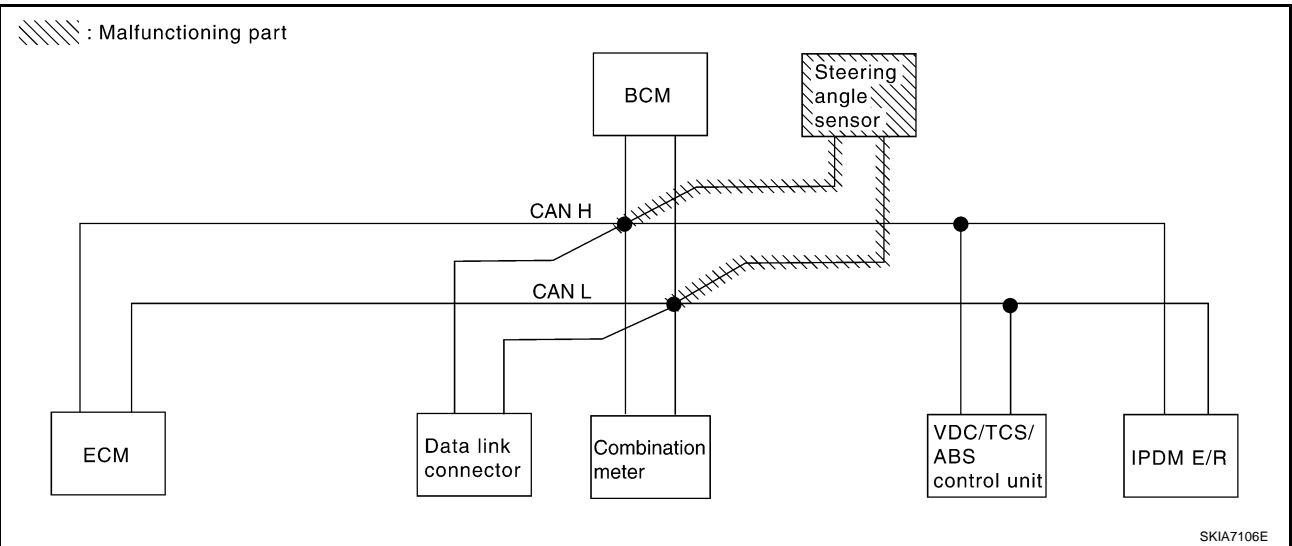
[CAN]

Case6

Check steering angle sensor circuit. Refer to [LAN-28, "Steering Angle Sensor Circuit Check"](#) .

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

PKIA7920E



SKIA7106E

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

CAN SYSTEM (TYPE 1)

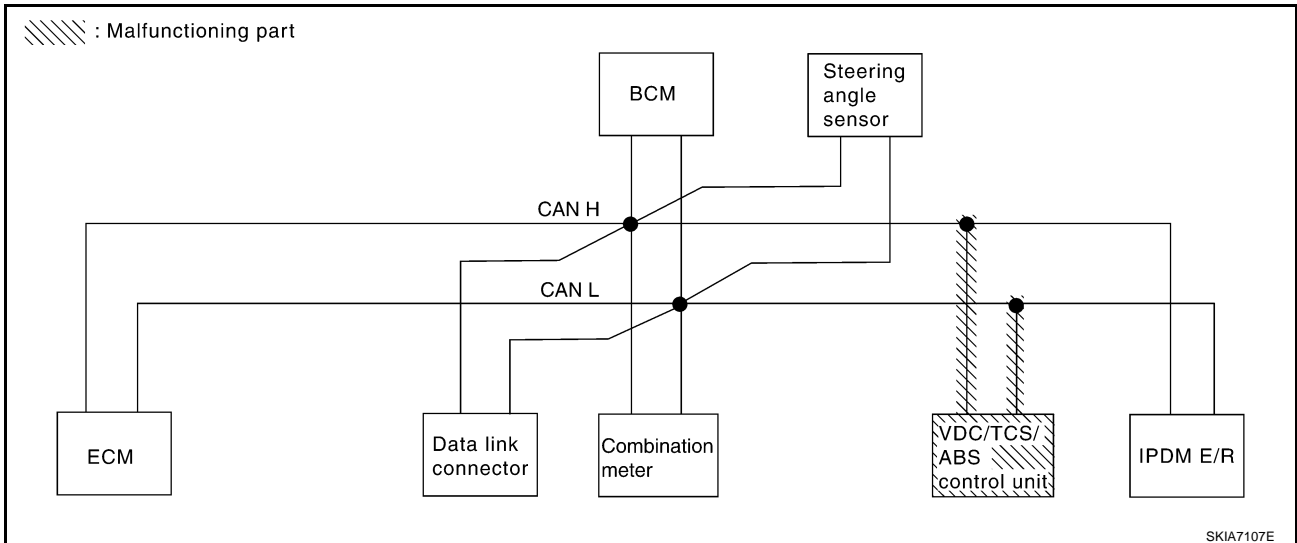
[CAN]

Case7

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-28, "VDC/TCS/ABS Control Unit Circuit Check"](#) .

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

PKIA7921E



SKIA7107E

CAN SYSTEM (TYPE 1)

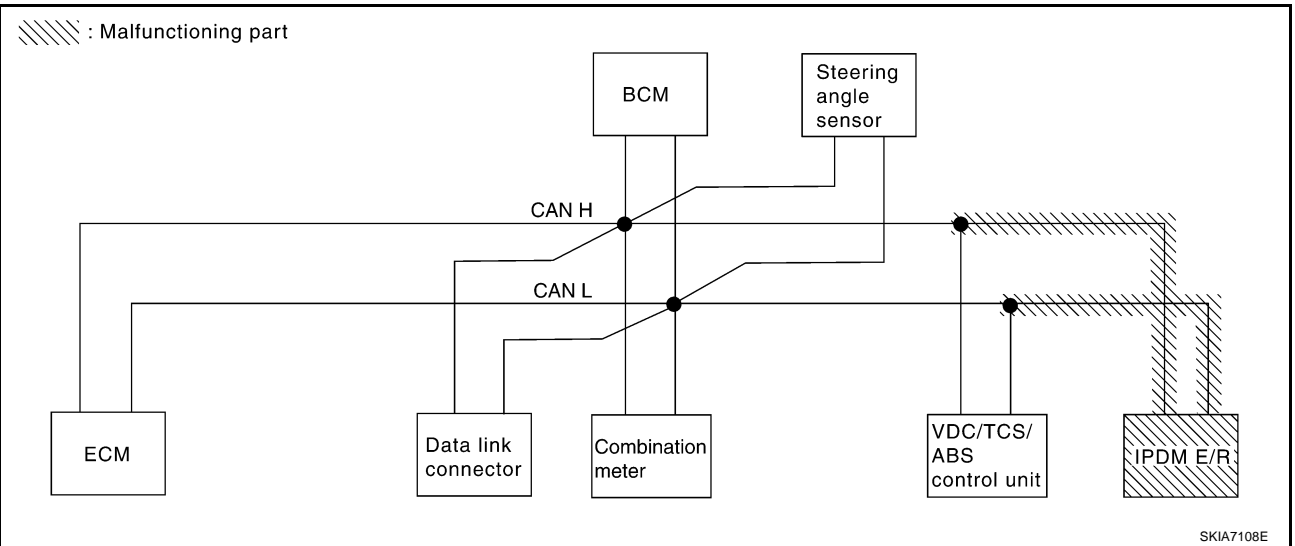
[CAN]

Case8

Check IPDM E/R circuit. Refer to [LAN-29, "IPDM E/R Circuit Check"](#) .

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

PKIA7922E



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

CAN SYSTEM (TYPE 1)

[CAN]

Case9

Check CAN communication circuit. Refer to [LAN-30, "CAN Communication Circuit Check"](#) .

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

PKIA7923E

Case10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-32, "IPDM E/R Ignition Relay Circuit Check"](#) .

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

PKIA7924E

Case11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-32, "IPDM E/R Ignition Relay Circuit Check"](#) .

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

PKIA7925E

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

AKS00AIT

1. CHECK CONNECTOR

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

OK or NG

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

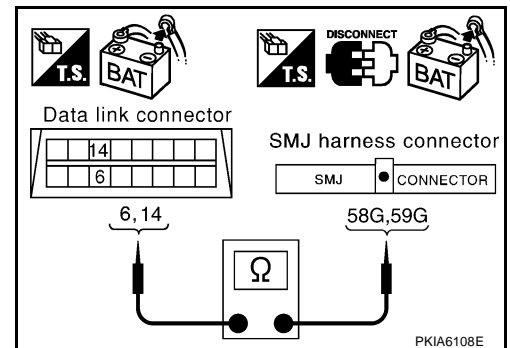
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (R) and harness connector M15 terminals 58G (L), 59G (R).

6 (L) - 58G (L) **: Continuity should exist.**
14 (R) - 59G (R) **: Continuity should exist.**

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

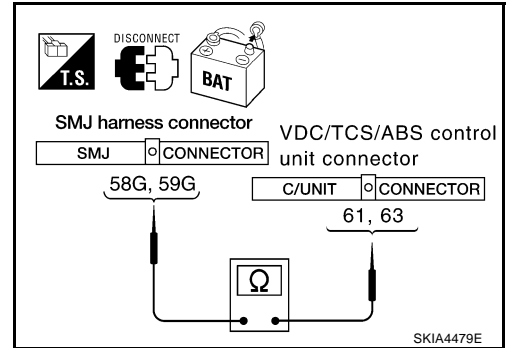
1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E108 terminals 58G (L), 59G (R) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (R).

58G (L) - 61 (L) : Continuity should exist.

59G (R) - 63 (R) : Continuity should exist.

OK or NG

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



AKS00AIU

ECM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

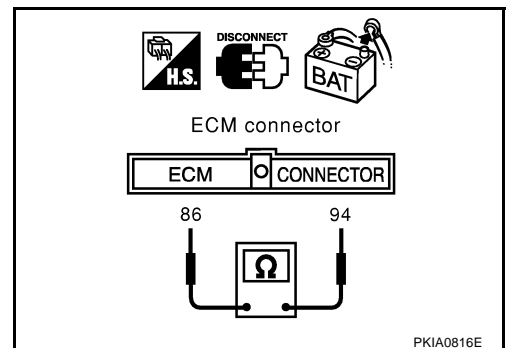
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (R) : Approx. 108 - 132Ω

OK or NG

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



AKS00AIU

Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

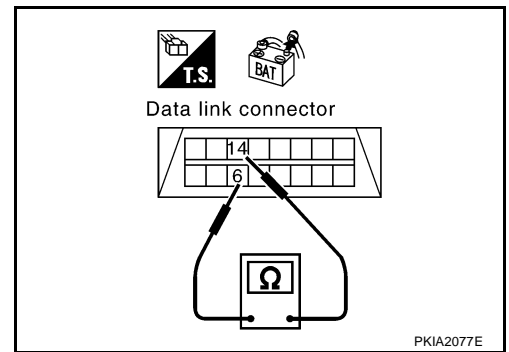
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (R) : Approx. 54 – 66Ω

OK or NG

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



AKS00A1W

Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

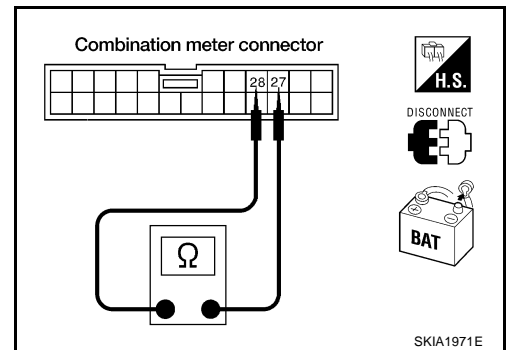
2. CHECK HARNESS FOR OPEN CIRCUIT

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

28 (L) - 27 (R) : Approx. 54 - 66Ω

OK or NG

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



AKS00A1X

BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

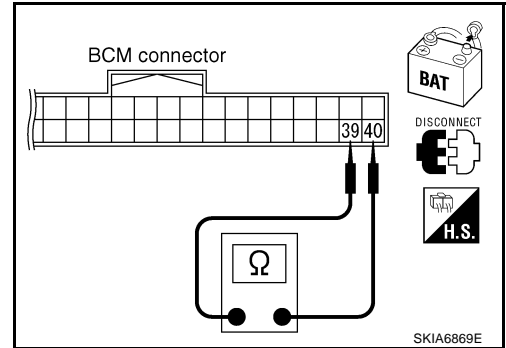
2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (R) : Approx. 54 - 66Ω

OK or NG

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



Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

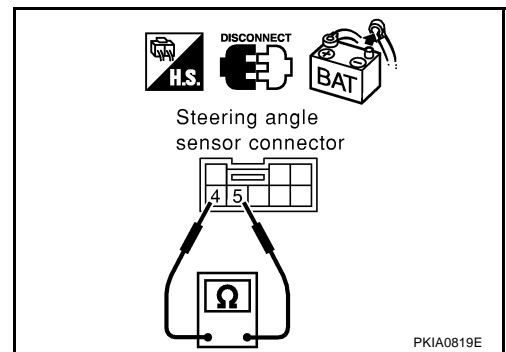
2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) - 5 (R) : Approx. 54 - 66Ω

OK or NG

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



VDC/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

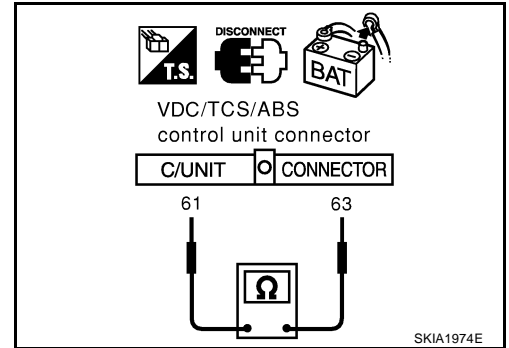
2. CHECK HARNESS FOR OPEN CIRCUIT

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

61 (L) - 63 (R) : Approx. 54 - 66Ω

OK or NG

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



AKS00AJ0

IPDM E/R Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

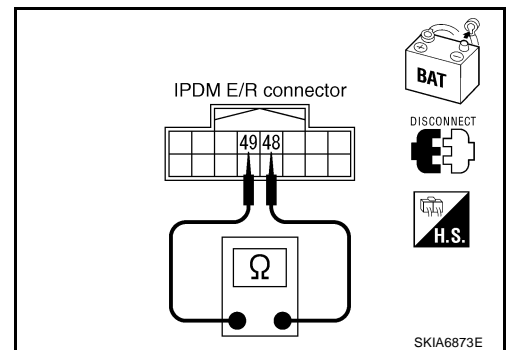
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) - 49 (R) : Approx. 108 - 132Ω

OK or NG

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



SKIA6873E

CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

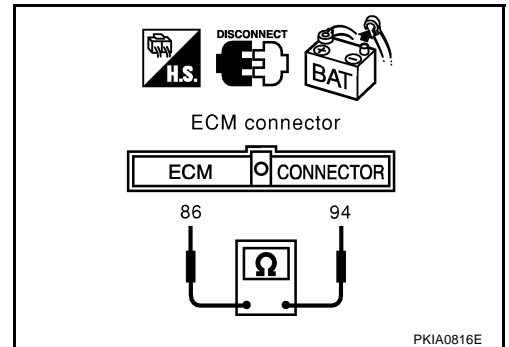
2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

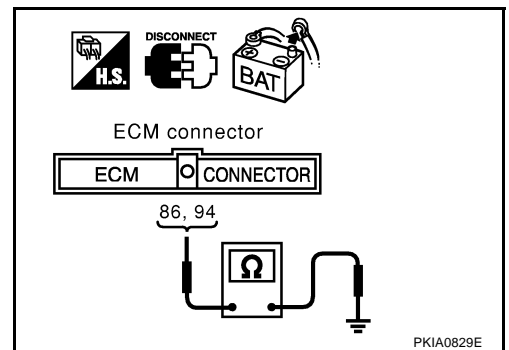
Check continuity between ECM harness connector F108 terminals 94 (L), 86 (R) and ground.

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

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

OK or NG

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



4. CHECK HARNESS FOR SHORT CIRCUIT

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

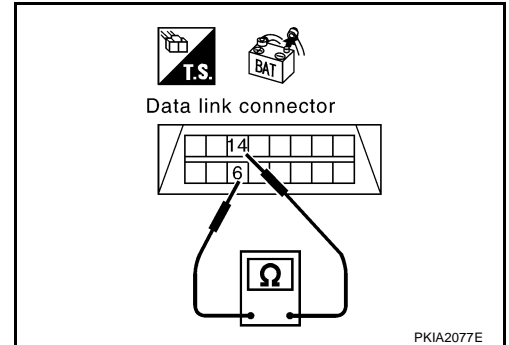
6 (L) - 14 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

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



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

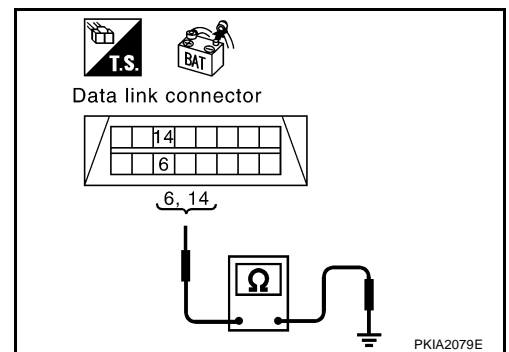
14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

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



6. CHECK HARNESS FOR SHORT CIRCUIT

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

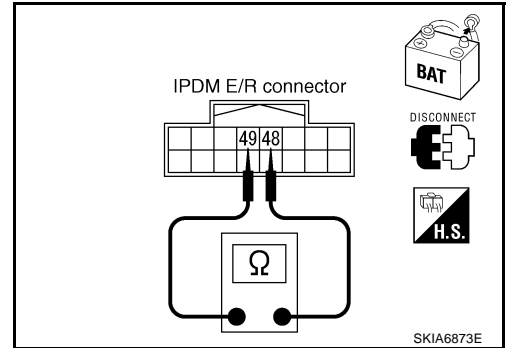
48 (L) - 49 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

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



7. CHECK HARNESS FOR SHORT CIRCUIT

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

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

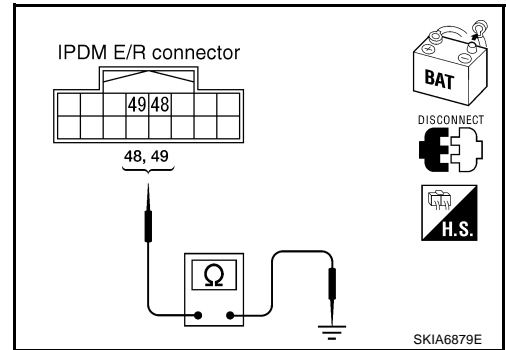
49 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

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



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-32, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

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

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

IPDM E/R Ignition Relay Circuit Check

AKS00AJ2

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

- IPDM E/R power supply circuit. Refer to [PG-27, "IPDM E/R Power/Ground Circuit Inspection"](#) .
- Ignition power supply circuit. Refer to [PG-11, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

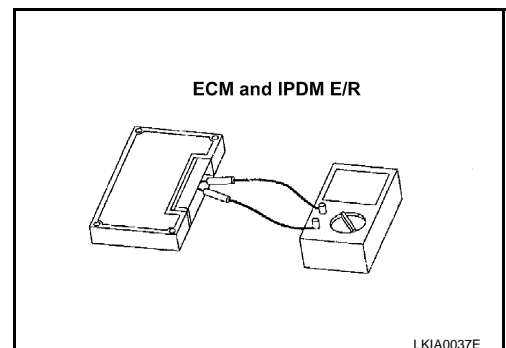
Component Inspection

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

AKS00AJ3

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

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



CAN SYSTEM (TYPE 2)

PFP:23710

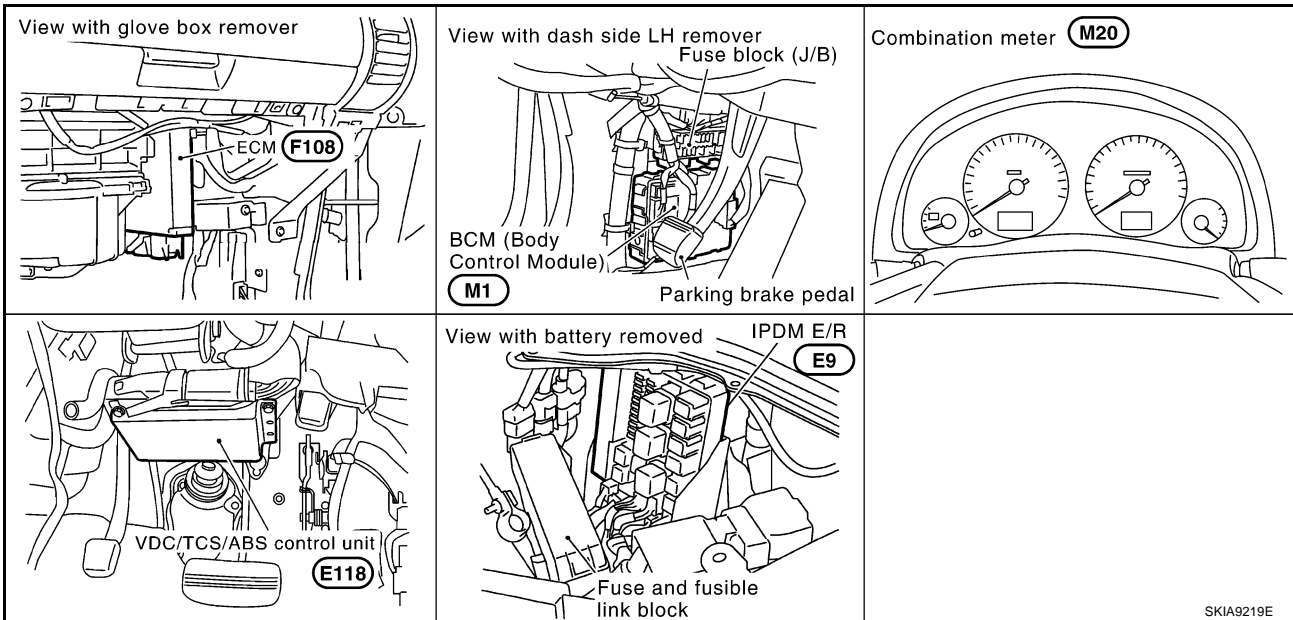
System Description

AKS00AJ4

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

AKS00AJ5



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

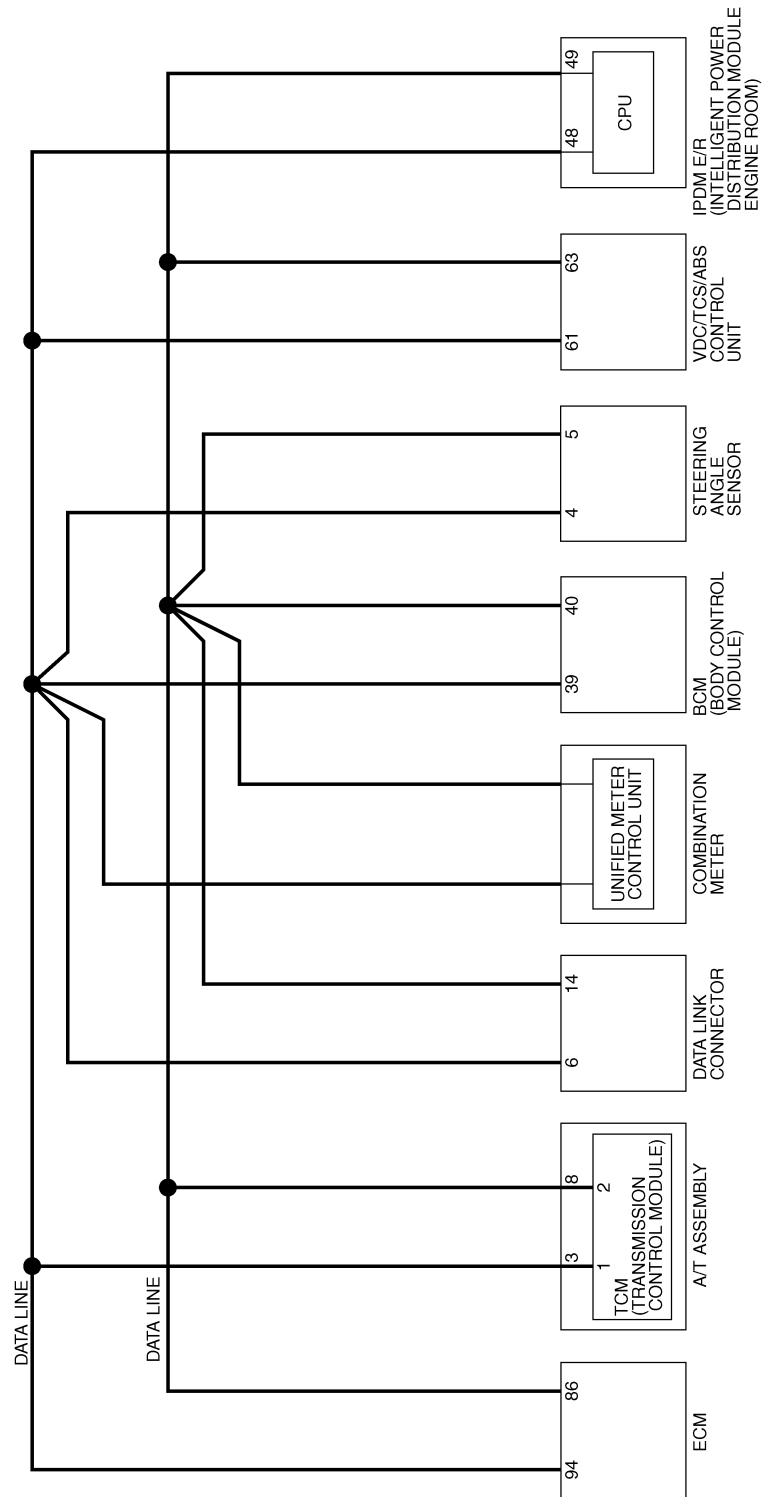
LAN

CAN SYSTEM (TYPE 2)

[CAN]

Schematic

AKS00AJ6



TKWM1405E

CAN SYSTEM (TYPE 2)

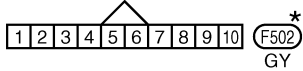
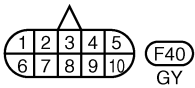
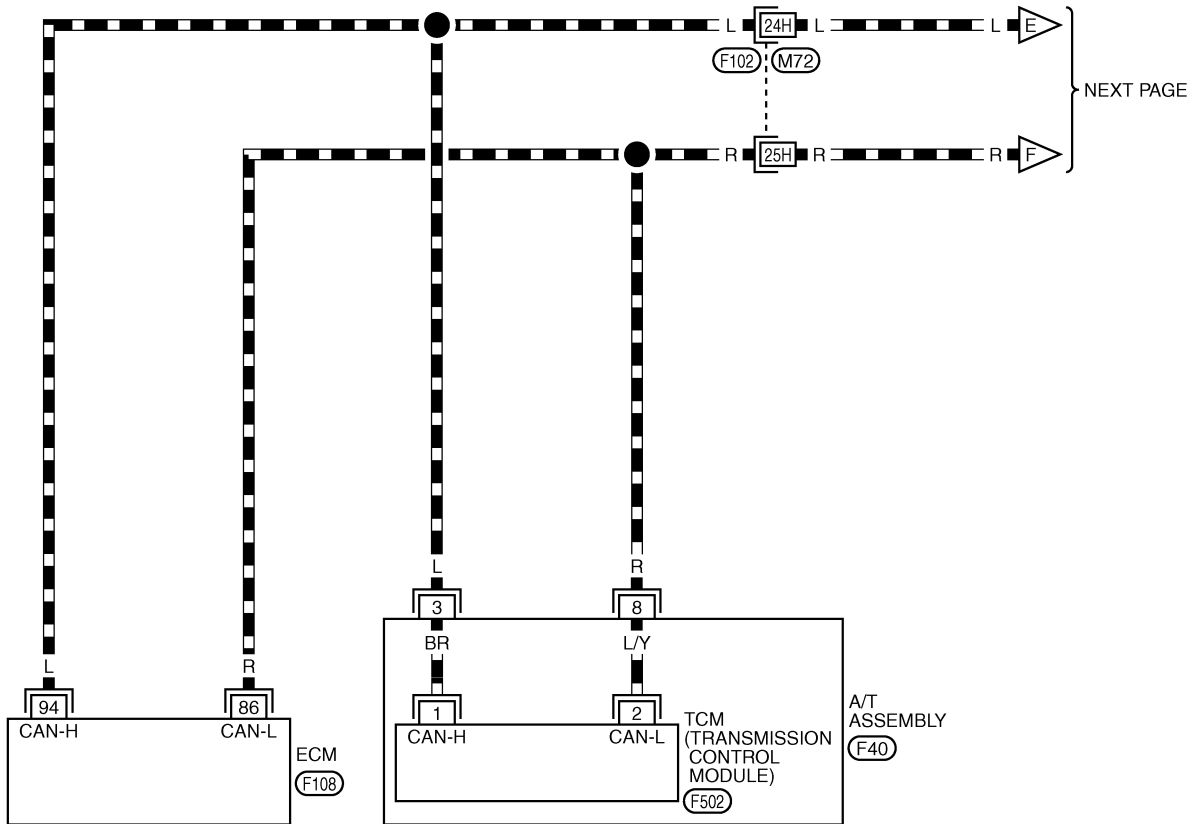
[CAN]

Wiring Diagram - CAN -

AKS00AJ7

LAN-CAN-04

▬ : DATA LINE



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

REFER TO THE FOLLOWING.

(F102) -SUPER MULTIPLE JUNCTION (SMJ)

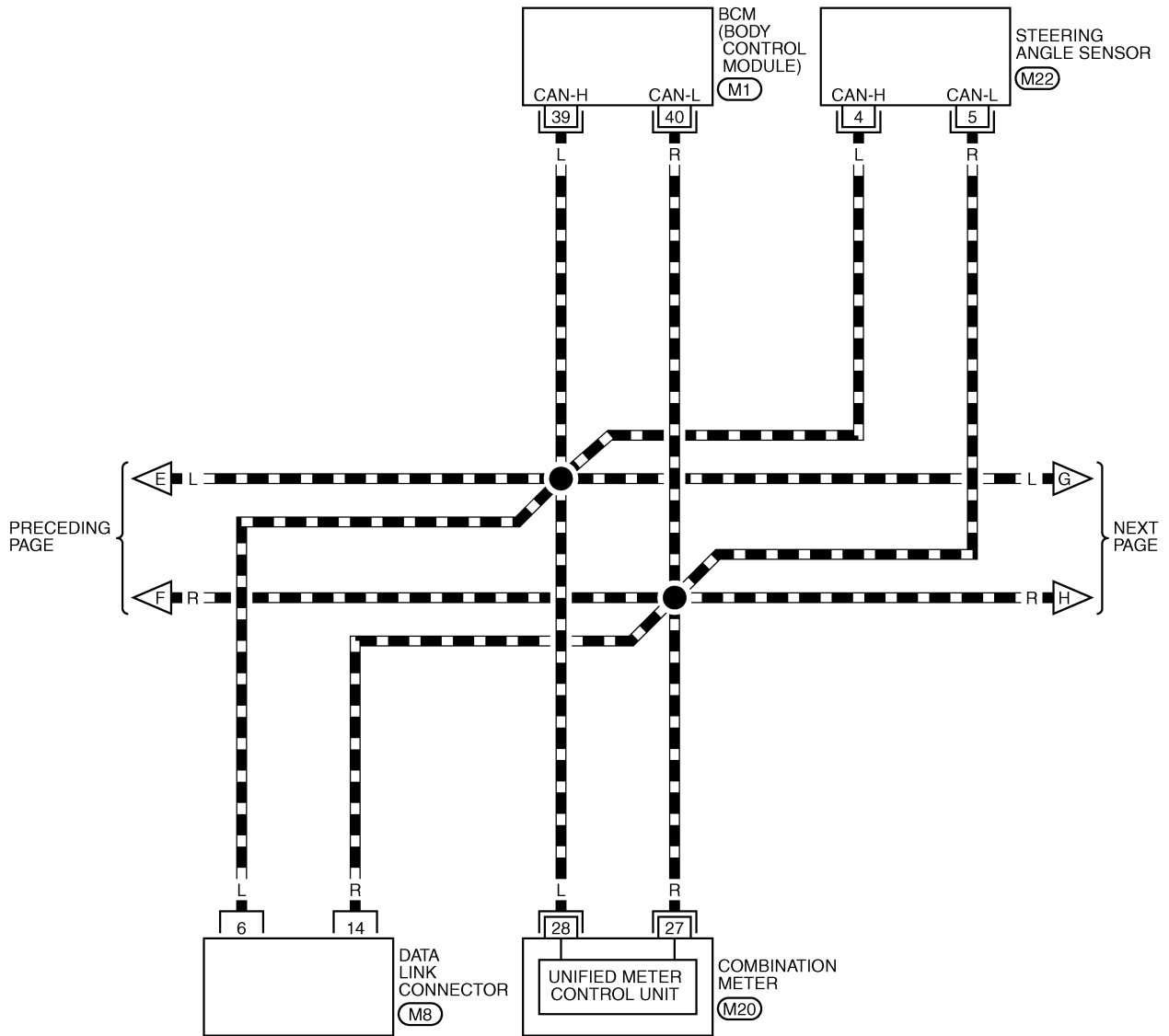
(F108) -ELECTRICAL UNITS

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

LAN

LAN-CAN-05

▬ : DATA LINE



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

(M8)
W

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

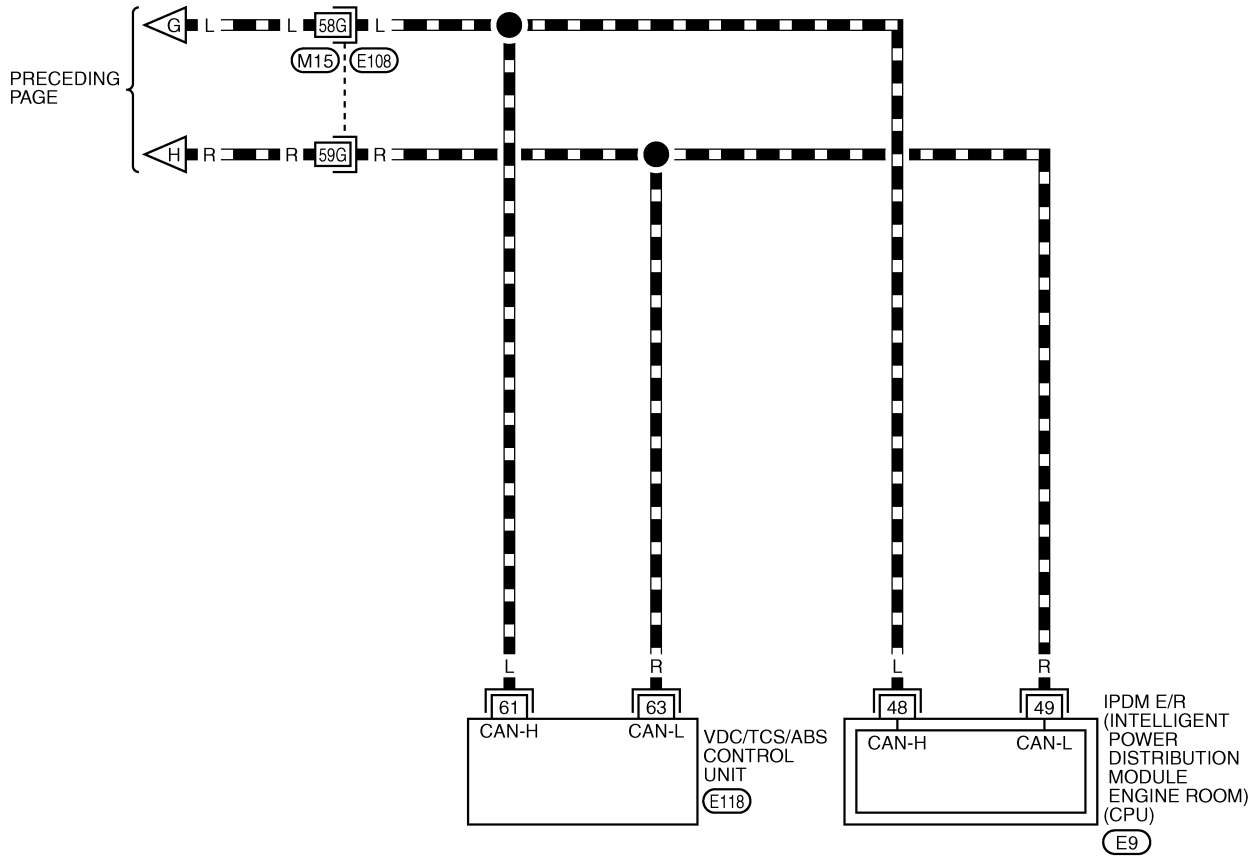
(M20)
W

| | | | | |
|---|---|---|---|---|
| 3 | 2 | 1 | | |
| 8 | 7 | 6 | 5 | 4 |

(M22)
W

REFER TO THE FOLLOWING.
(M1) -ELECTRICAL UNITS

▬ : DATA LINE



PRECEDING PAGE

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

E9
W



REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

E118 -ELECTRICAL UNITS

Work Flow

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

| | | | | |
|-----------|--|---|---|-----------|
| (Example) | NISSAN CONSULT- II ENGINE START (NISSAN BASED VHCL) START (RENAULT BASED VHCL) SUB MODE LIGHT COPY | ➔ | SELECT SYSTEM ENGINE A/T ABS AIR BAG BCM METER A/C AMP BACK LIGHT COPY | PKIA2093E |
|-----------|--|---|---|-----------|

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

| | | | | |
|-----------|--|---|---|-----------|
| (Example) | SELECT DIAG MODE WORK SUPPORT SELF-DIAG RESULTS DATA MONITOR DATA MONITOR (SPEC) CAN DIAG SUPPORT MNTR ACTIVE TEST Scroll Down BACK LIGHT COPY | ➔ | SELF-DIAG RESULTS DTC RESULTS TIME CAN COMM CIRCUIT [U1000] 0 F.F.DATA ERASE PRINT MODE BACK LIGHT COPY | PKIA8260E |
|-----------|--|---|---|-----------|

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

| | | | | |
|-----------|--|---|---|-----------|
| (Example) | SELECT DIAG MODE WORK SUPPORT SELF-DIAG RESULTS DATA MONITOR DATA MONITOR (SPEC) CAN DIAG SUPPORT MNTR ACTIVE TEST Scroll Down BACK LIGHT COPY | ➔ | CAN DIAG SUPPORT MNTR ENGINE INITIAL DIAG OK TRANSMIT DIAG OK TCM OK VDC/TCS/ABS OK METER/M&A OK ICC UNKWN BCM/SEC OK IPDM E/R OK AWD/4WD/e4WD UNKWN PRINT Scroll Down MODE BACK LIGHT COPY | PKIA8343E |
|-----------|--|---|---|-----------|

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-39, "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-39, "CHECK SHEET"](#) .

NOTE:

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

- According to the check sheet results (example), start inspection. Refer to [LAN-41, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 2)

[CAN]

CHECK SHEET

NOTE:

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

Check sheet table

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

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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

CAN SYSTEM (TYPE 2)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

Attach copy of
ABS
CAN DIAG SUPPORT
MNTR

Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR

PKIA7899E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

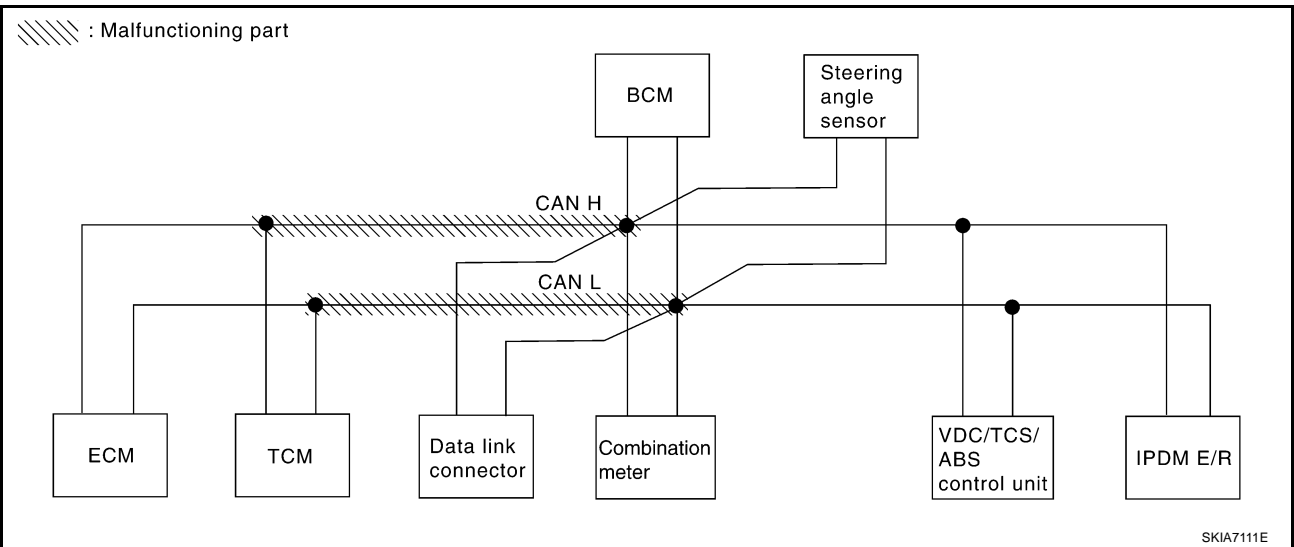
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case1

Check harness between TCM and data link connector. Refer to [LAN-52, "Circuit Check Between TCM and Data Link Connector"](#) .

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

PKIA7900E



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

CAN SYSTEM (TYPE 2)

[CAN]

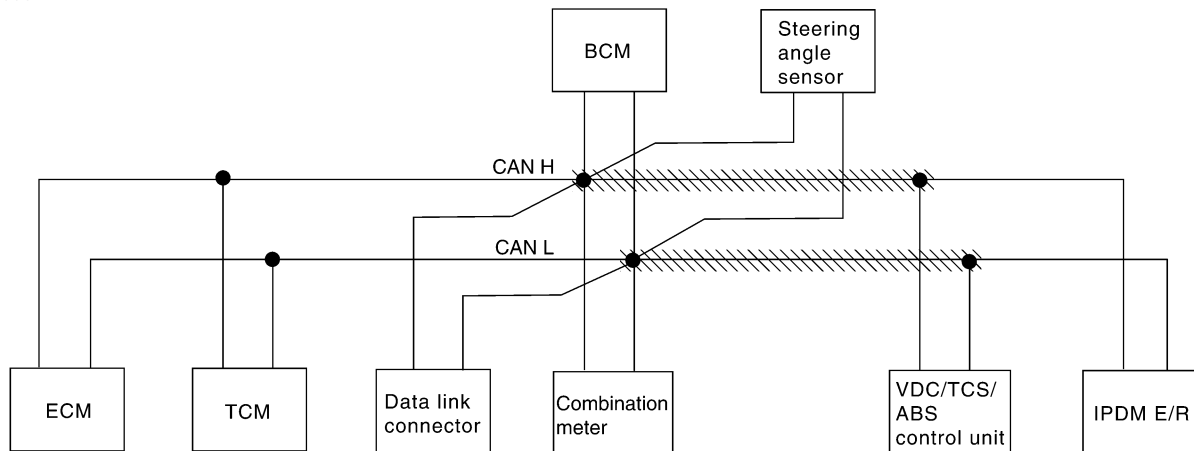
Case2

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

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

PKIA7901E

//// : Malfunctioning part



SKIA7112E

CAN SYSTEM (TYPE 2)

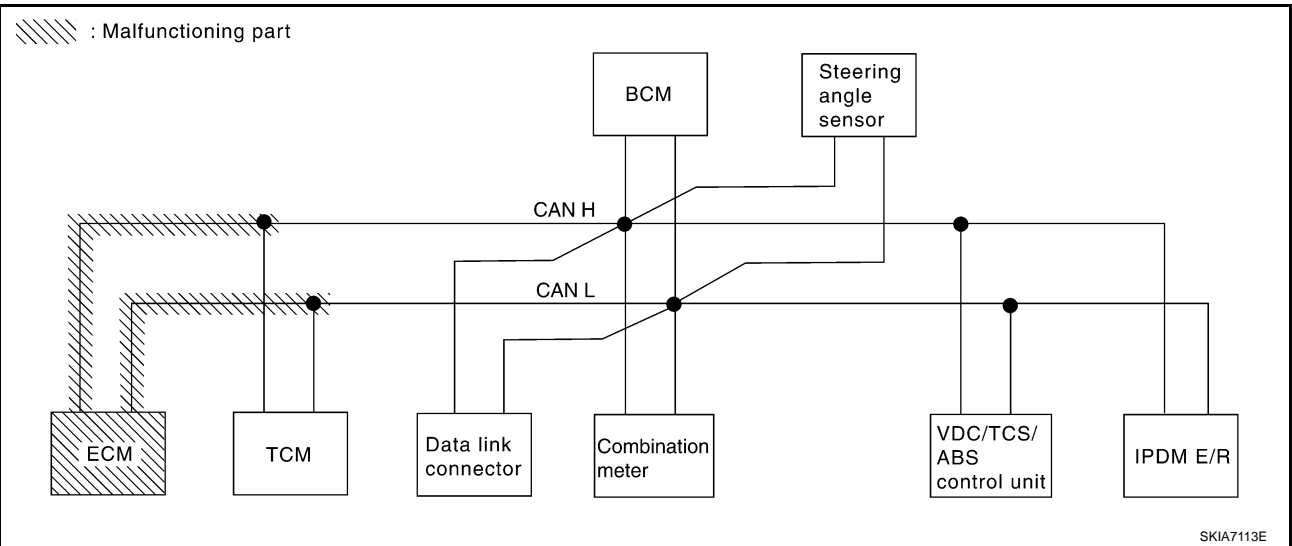
[CAN]

Case3

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

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

PKIA7902E



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

CAN SYSTEM (TYPE 2)

[CAN]

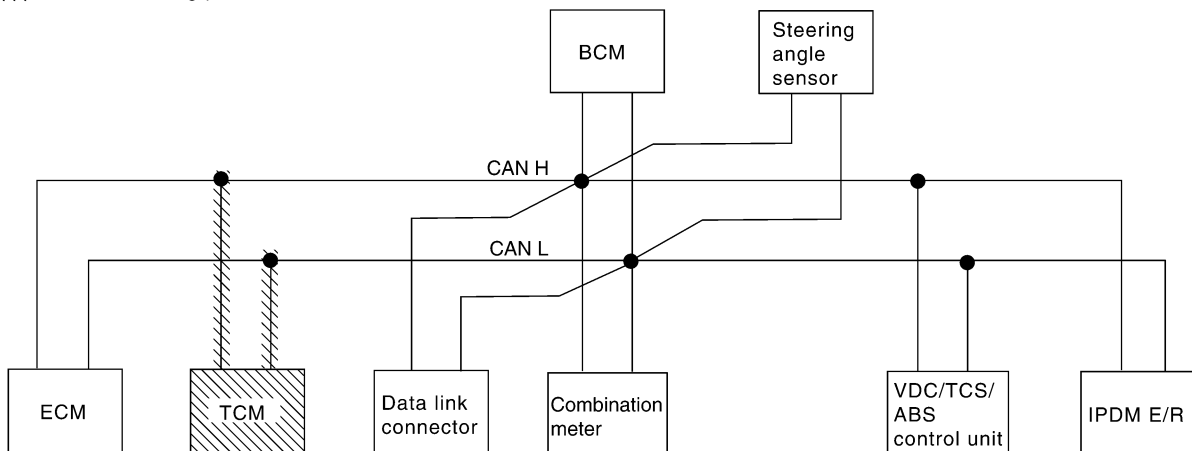
Case4

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

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

PKIA7903E

//// : Malfunctioning part



SKIA7114E

CAN SYSTEM (TYPE 2)

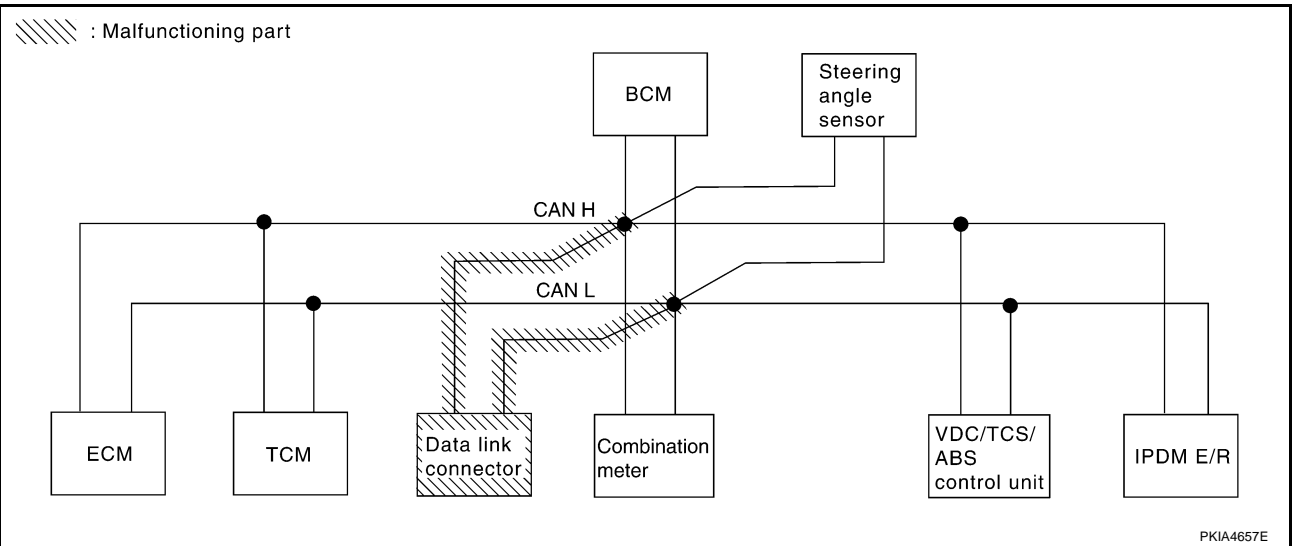
[CAN]

Case5

Check data link connector circuit. Refer to [LAN-55, "Data Link Connector Circuit Check"](#) .

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

PKIA7904E



PKIA4657E

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

CAN SYSTEM (TYPE 2)

[CAN]

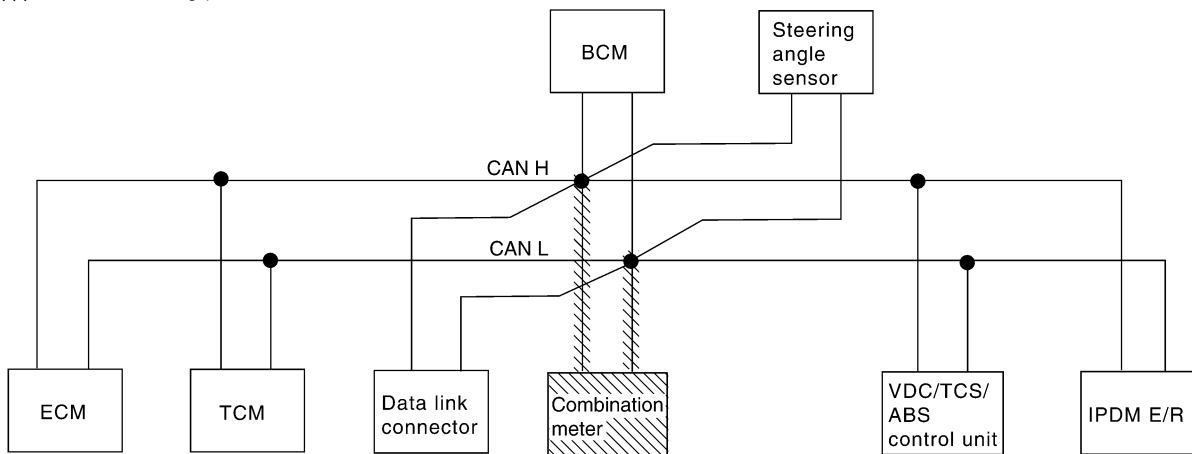
Case6

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

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

PKIA7905E

//// : Malfunctioning part



SKIA7115E

CAN SYSTEM (TYPE 2)

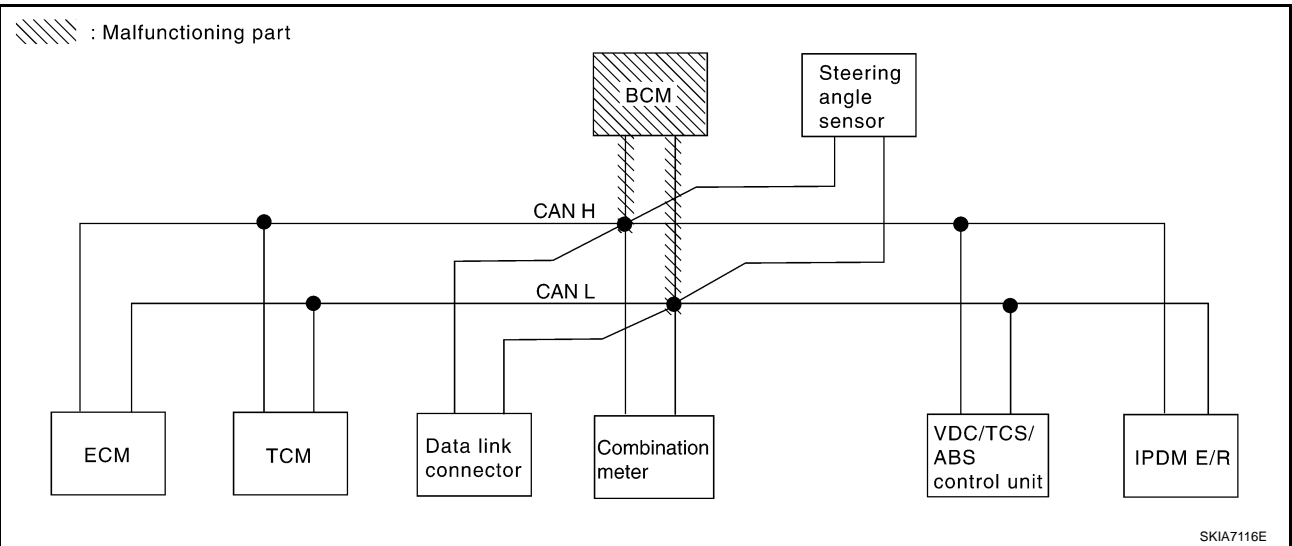
[CAN]

Case7

Check BCM circuit. Refer to [LAN-56. "BCM Circuit Check"](#) .

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

PKIA7906E



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

CAN SYSTEM (TYPE 2)

[CAN]

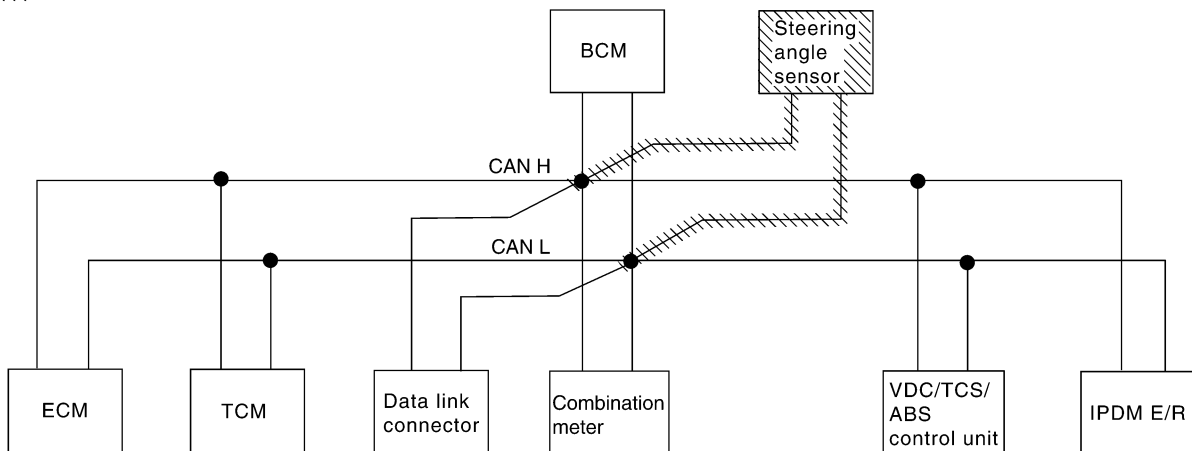
Case8

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

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

PKIA7907E

▨ : Malfunctioning part



SKIA7117E

CAN SYSTEM (TYPE 2)

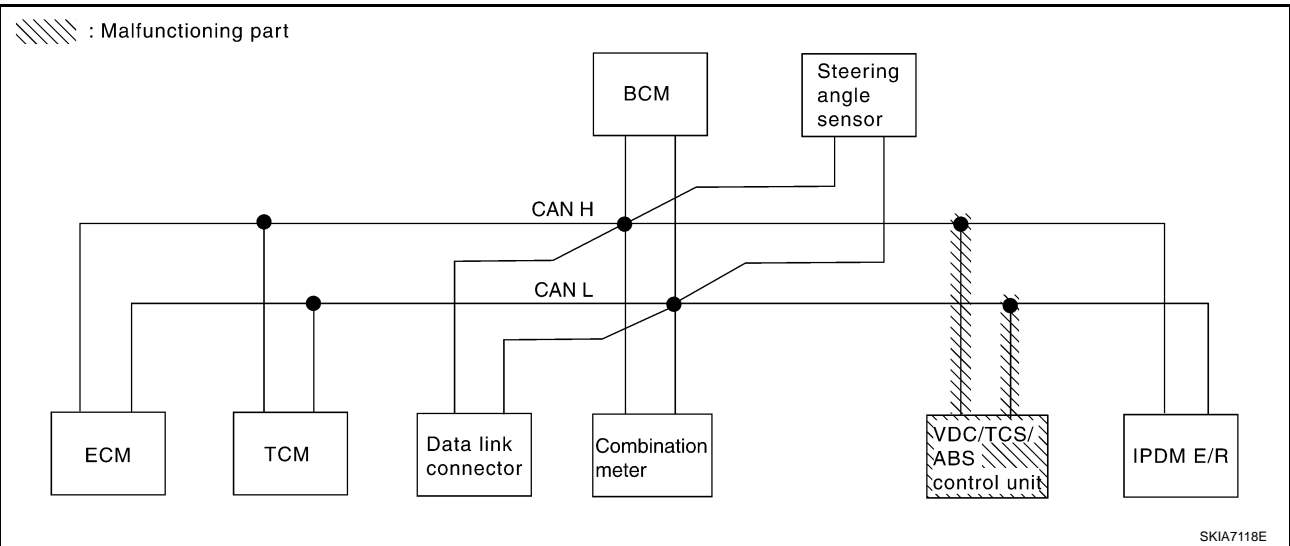
[CAN]

Case9

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-57, "VDC/TCS/ABS Control Unit Circuit Check"](#) .

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

PKIA7908E



SKIA7118E

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

CAN SYSTEM (TYPE 2)

[CAN]

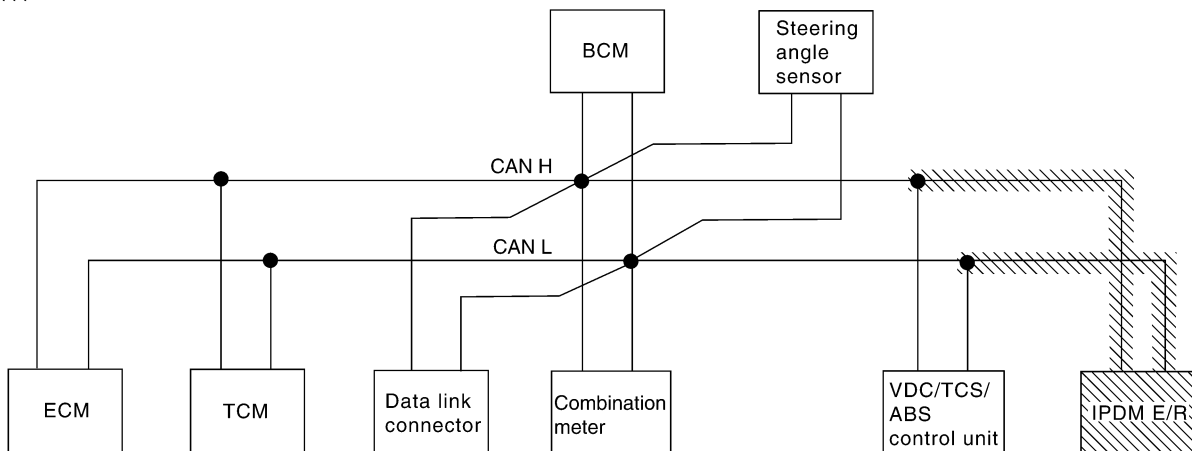
Case10

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

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

PKIA7909E

▨ : Malfunctioning part



SKIA7119E

Case11

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

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

PKIA7910E

Case12

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

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

PKIA7911E

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

LAN

Case13

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

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

PKIA7912E

Circuit Check Between TCM and Data Link Connector

AKS00AJ9

1. CHECK CONNECTOR

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

OK or NG

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

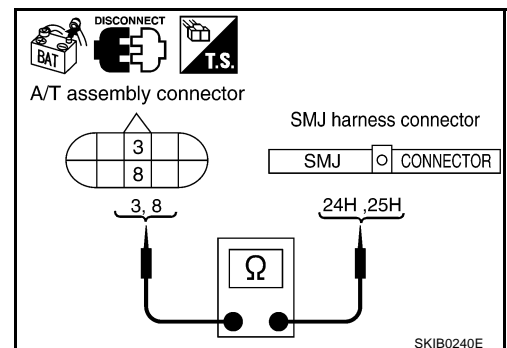
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F40 terminals 3 (L), 8 (R) and harness connector F102 terminals 24H (L), 25H (R).

3 (L) - 24H (L) : Continuity should exist.
8 (R) - 25H (R) : Continuity should exist.

OK or NG

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



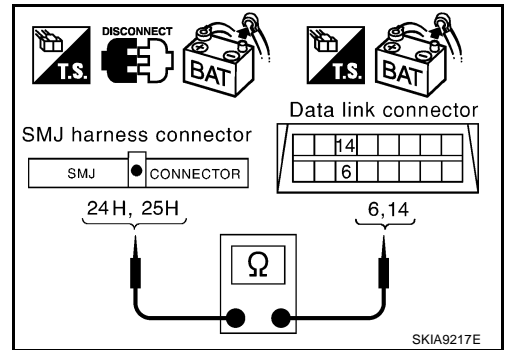
3. CHECK HARNESS FOR OPEN CIRCUIT

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

- 24H (L) - 6 (L) : Continuity should exist.**
- 25H (R) - 14 (R) : Continuity should exist.**

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-38, "Work Flow"](#).
- NG >> Repair harness.



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

AKS00AJA

1. CHECK CONNECTOR

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

OK or NG

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

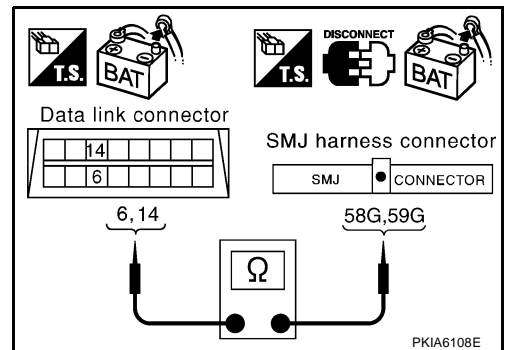
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M15.
2. Check continuity between data link connector M8 terminals 6 (L), 14 (R) and harness connector M15 terminals 58G (L), 59G (R).

- 6 (L) - 58G (L) : Continuity should exist.**
- 14 (R) - 59G (R) : Continuity should exist.**

OK or NG

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



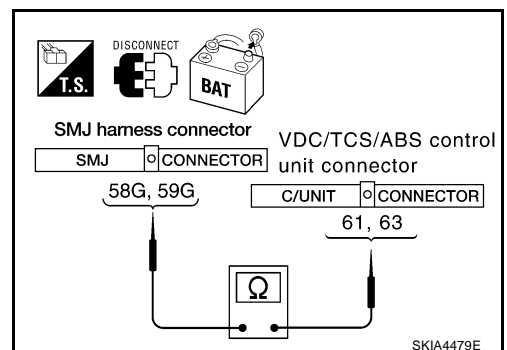
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E108 terminals 58G (L), 59G (R) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (R).

- 58G (L) - 61 (L) : Continuity should exist.**
- 59G (R) - 63 (R) : Continuity should exist.**

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-38, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

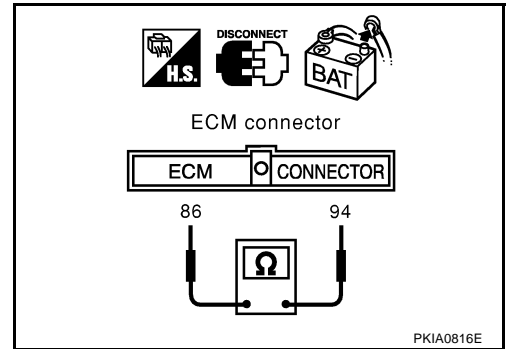
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94 (L) - 86 (R) : Approx. 108 - 132Ω

OK or NG

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



TCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

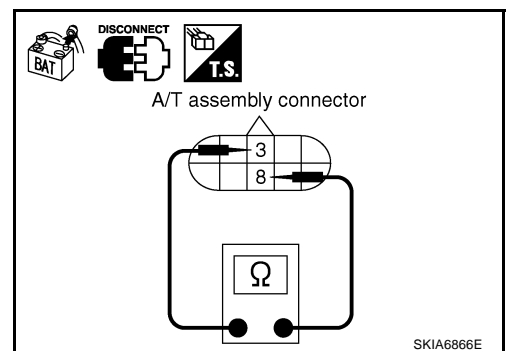
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F40 terminals 3 (L) and 8 (R).

3 (L) - 8 (R) : Approx. 54 - 66Ω

OK or NG

- OK >> Replace control valve with TCM.
 NG >> Repair harness between harness connector F102 and A/T assembly.



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

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

OK or NG

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

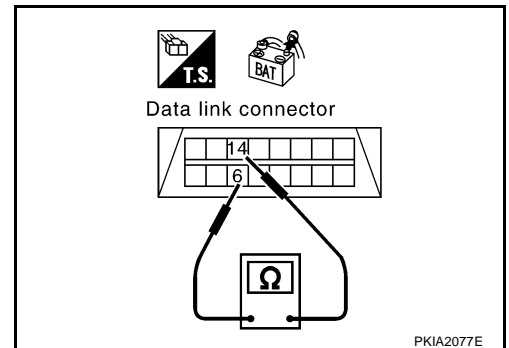
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (R) : Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-38, "Work Flow"](#) .
 NG >> Repair harness between data link connector and combination meter.

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

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

OK or NG

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

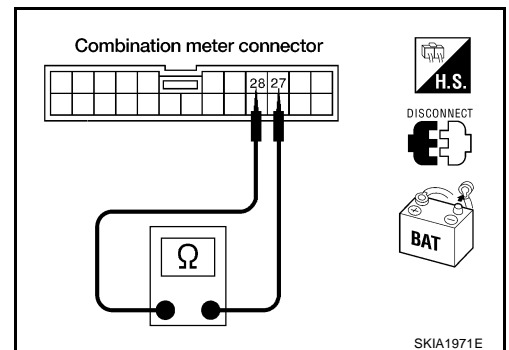
2. CHECK HARNESS FOR OPEN CIRCUIT

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

28 (L) - 27 (R) : Approx. 54 - 66Ω

OK or NG

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



A

B

C

D

E

F

G

H

I

J

LAN

L

M

BCM Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

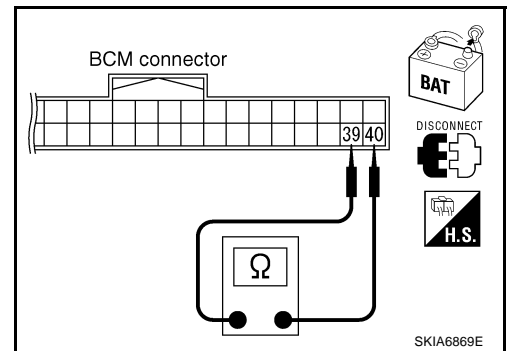
2. CHECK HARNESS FOR OPEN CIRCUIT

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

39 (L) - 40 (R) : Approx. 54 - 66Ω

OK or NG

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

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

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

OK or NG

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

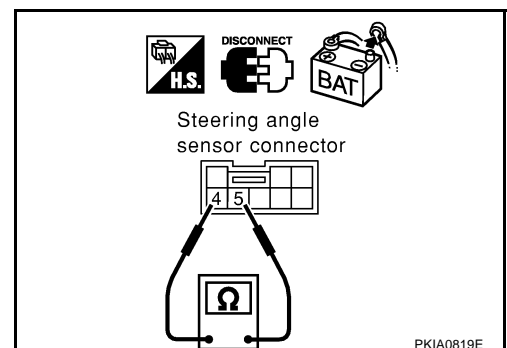
2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) - 5 (R) : Approx. 54 - 66Ω

OK or NG

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



VDC/TCS/ABS Control Unit Circuit Check**1. CHECK CONNECTOR**

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

OK or NG

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

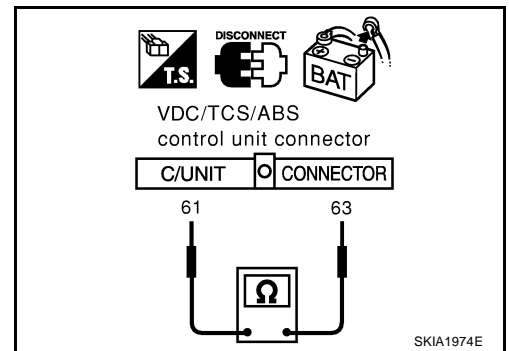
2. CHECK HARNESS FOR OPEN CIRCUIT

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

61 (L) - 63 (R) : Approx. 54 - 66Ω

OK or NG

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

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

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

OK or NG

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

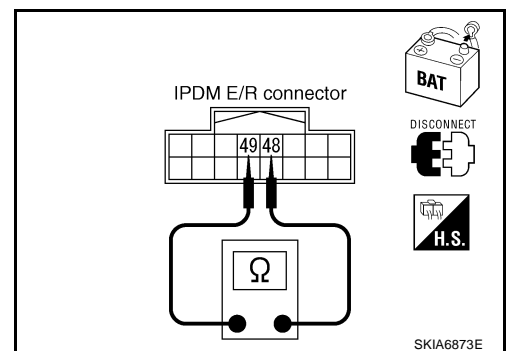
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) - 49 (R) : Approx. 108 - 132Ω

OK or NG

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



CAN Communication Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

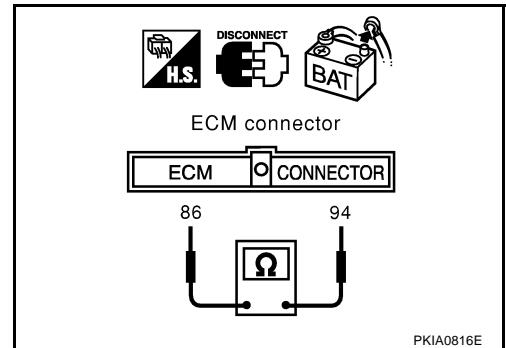
2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

- OK >> GO TO 3.
 NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and harness connector F102
 - Harness between A/T assembly and harness connector F102



3. CHECK HARNESS FOR SHORT CIRCUIT

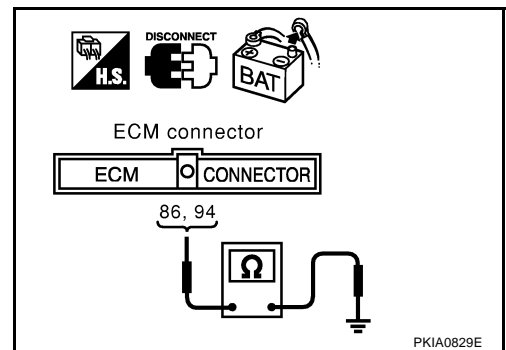
Check continuity between ECM harness connector F108 terminals 94 (L), 86 (R) and ground.

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

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

OK or NG

- OK >> GO TO 4.
 NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ECM and harness connector F102
 - Harness between A/T assembly and harness connector F102



4. CHECK HARNESS FOR SHORT CIRCUIT

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

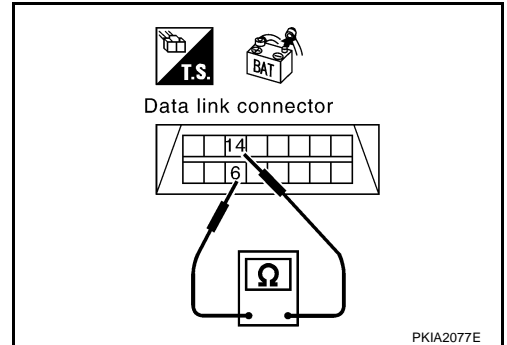
6 (L) - 14 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

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

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



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

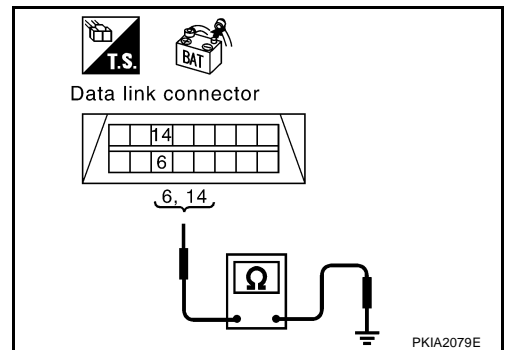
14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

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



6. CHECK HARNESS FOR SHORT CIRCUIT

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

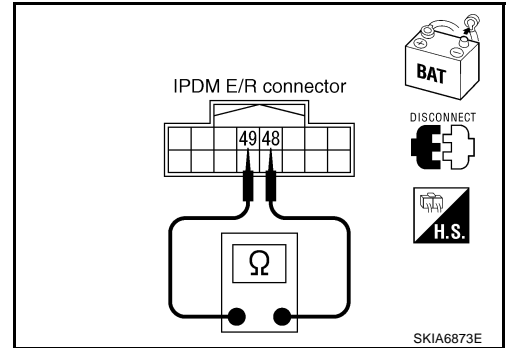
48 (L) - 49 (R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

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



7. CHECK HARNESS FOR SHORT CIRCUIT

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

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

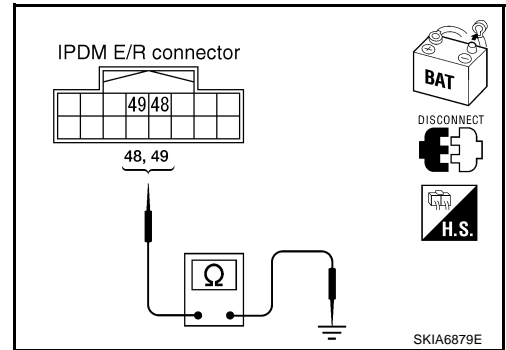
49 (R) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

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



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

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

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-38, "Work Flow"](#) .

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

IPDM E/R Ignition Relay Circuit Check

AKS00AJK

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

- IPDM E/R power supply circuit. Refer to [PG-27, "IPDM E/R Power/Ground Circuit Inspection"](#) .
- Ignition power supply circuit. Refer to [PG-11, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

Component Inspection

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

AKS00AJL

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

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

